



SY31-0623-2

IBM 5280 Distributed Data System

IBM 5285 Programmable Data Station Maintenance Analysis Procedures

Preface

These Maintenance Analysis Procedures (MAPs) are to be used for servicing the IBM 5285 Programmable Data Station. Customer engineers using these MAPs are assumed to have completed the course on the IBM 5280 Distributed Data System.

It is suggested that you start your call with the System *Entry MAP*, which leads to a repair action.

Definition of terms and abbreviations that are not common, but are used in the MAPs, are in the Glossary of Terms and Abbreviations section of the IBM 5285 Programmable Data Station Maintenance Information Manual, SY31-0600.

There are several DANGER and CAUTION notices in the manual. You can use the blank lines below each notice to translate it into your own words. The locations of these notices are listed in the safety section.

Related Publications

Related information can be found in the following manuals:

- IBM 5280 Operator's Guide, GA21-9364
- IBM 5285 Programmable Data Station Maintenance Information Manual, SY31-0600
- IBM 5280 Diskette Drive Maintenance Information Manual, SY31-0602
- IBM 5280 Message Manual, GA21-9354

Third Edition (December 1980)

This is a major revision of, and makes obsolete, SY31-0623-1. Because the changes and additions are extensive, this publication should be reviewed in its entirety. Changes are periodically made to the information herein; these changes will be reported in technical newsletters or in new editions of this publication.

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SUMMARY CHART

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0300 0500 0501 0510 0511	X X	1 1	POWER ON RESET	840874
0500 0501 0510 0511	X	1 1	CONDITION CODE	840874
0501 0510 0511			ERROR CODES	840874
0510 0511	1		BASE ENTRY	840874
0511	X		BASE AREA MENU	840874
1	x		MAIN MPU TEST	840874
	X		MAIN MPU ATTENTION ERROR	840874
0520	x		MAIN STORAGE A TEST (AUTOMATIC)	840874
0530	x		MAIN STORAGE B TEST (MANUAL)	840874
0531	X		MAIN STORAGE ACCESS ERROR	840874
0532	X		MAIN STORAGE PARITY CHECK ERROR	840874
0600	X		ROS PATCH CARD	840874
0800	X		INTERMITTENT ERROR	840874
1000	x		DATA ENTRY ENTRY	840874
1001	x		DATA ENTRY AREA MENU	840874
1010	X		DATA ENTRY A-A1 DISPLAY	840874
1011	X		DATA ENTRY A-E1 DISPLAY	840874
1020	X		DATA ENTRY A-A1 KEYBOARD	840874
1021	X		DATA ENTRY A-E1 KEYBOARD	840874
1025	X		DATA ENTRY ERROR CODE	840874
1026	X		DATA ENTRY KEYLOCK	840874
1030	X		DATA ENTRY MAGNETIC STRIPE READER	840874
1040	×		DATA ENTRY ELAPSED TIME COUNTER	840874
1060	×		DATA ENTRY KEYBOARD/DISPLAY STORAGE	840874
1070	X		DATA ENTRY KEYBOARD ADAPTER TEST	840874
		X	D. E. KEYBOARD SCAN CODE TEST	840874
		×	D. E. MAGNETIC STRIPE READER TEST	840874
	j j	X	D. E. ELAPSED TIME COUNTER TEST	840874
		X	D. E. DISPLAY EXERCISER TEST	840874

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MAP 0001-1

BASE MAP

MAP 0001-2

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SUMMARY CHART

PAGE 2 OF 2

NUMBER	MDI	MAP	EXER- CIZER	NAME	EC NUMBER
2000	+ 	⊦· x	++	DISKETTE DRIVE ENTRY	840874
2001	x			DISKETTE AREA MENU	840874
2010		Х		DISKETTE BASE SWAP	840874
2050	x			MAP SUPPORT EXERCISER	840874
2060	x			DRIVE FUNCTIONAL CHECK	840874
2210		X		DISKETTE CABLE SWAP	840874
2250		x		2 DRIVE, N/DDCC	840874
2260		x		2 DRIVE, DDCC	840874
2270		x		MINIMUM CONFIGURATION SYSTEM	840874
2280		x		INTERFACE/ LED	840874
2510	x			DISKETTE HEAD ALIGNMENT TEST	840874
			х	DISKETTE MEDIA ANALYZE (TMEDIA)	840874
3000		x		COMMUNICATION ENTRY	840874
3001	х			COMMUNICATIONS AREA MENU	840874
3010	х			COMMUNICATION SET UP	840874
3011		х		TRANSMIT/RECEIVE LEVEL CHECK	840874
3012		х		CBS TYPE COUPLER TEST	840874
3013		х		CDT TYPE COUPLER TEST	840874
3014		х		DIGITAL NETWORK WITH DDSA	840874
3015		х		OTHER COMMUNICATIONS ERRORS	840874
3016		х		W.T. LINE PLATE AUTO ANS	839661
3017		Х		W.T. LINE PLATE MANUAL CALL	840874
3018		х		W.T. LINE PLATE MANUAL ANSWER	839661
3019		х		EIA OPEN/SHORT TEST	840874
7000		х		PRINTER ENTRY	840874
7001	X			PRINTER AREA MENU	840874
7010	х			PRINTER ADAPTER TEST	840874
			X	VERIFICATION TEST	840874
8000		x		POWER ENTRY	840874
8030		×		D. C. DISTRIBUTION	840874
9001	×			MAIN OPTION MENU	840874

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MAP 0001-2

DANGER AND CAUTION NOTICES

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Throughout this manual, the word DANGER is used to inform the CE of an action that could cause a personal injury. The word CAUTION is used to inform the CE of an action that could damage the machine, or affect the running of a customer program.

If desired, translate these notices and write your own words on the blank lines provided on these pages.

Ensure that you understand and observe the safety precautions printed on the CE Safety Practices card that is used in the country where you work. A copy of the card that is used by customer engineers who work in the United States follows.

CE SAFETY PRACTICES

All Customer Engineers are expected to take every safety precaution possible and observe the following safety practices while maintaining IBM equipment:

- 1. You should not work alone under hazardous conditions or around equipment with dangerous voltage. Always advise your manager if you MUST work alone.
- Remove all power, ac and dc, when removing or assembling major components, working in immediate areas of power supplies, performing mechanical inspection of power supplies, or installing changes in machine circuitry.
- After turning off wall box power switch, lock it in the Off position or tag it with a "Do Not Operate" tag, Form 229-1266. Pull power supply cord whenever possible.
- 4. When it is absolutely necessary to work on equipment having exposed operating mechanical parts or exposed live electrical circuitry anywhere in the machine, observe the following precautions:
 - a. Another person familiar with power off controls must be in immediate vicinity.
 - b. Do not wear rings, wrist watches, chains, bracelets, or metal cuff links.
 - c. Use only insulated pliers and screwdrivers.
 - d. Keep one hand in pocket.
 - When using test instruments, be certain that controls are set correctly and that insulated probes of proper capacity are used.
 - f. Avoid contacting ground potential (metal floor strips, machine frames, etc.). Use suitable rubber mats, purchased locally if necessary.
- 5. Wear safety glasses when:
 - a. Using a hammer to drive pins, riveting, staking, etc.
 - b. Power or hand drilling, reaming, grinding, etc.
 - c. Using spring hooks, attaching springs.
 - d. Soldering, wire cutting, removing steel bands.
 - e. Cleaning parts with solvents, sprays, cleaners, chemicals, etc.
 - f. Performing any other work that may be hazardous to your eyes. REMEMBER-THEY ARE YOUR EYES.
- Follow special safety instructions when performing specialized tasks, such as handling cathode ray tubes and extremely high voltages. These instructions are outlined in CEMs and the safety portion of the maintenance manuals.
- 7. Do not use solvents, chemicals, greases, or oils that have not been approved by IBM.
- 8. Avoid using tools or test equipment that have not been approved by IBM.
- 9. Replace worn or broken tools and test equipment.
- Lift by standing or pushing up with stronger leg muscles-this takes strain off back muscles. Do not lift any equipment or parts weighing over 60 pounds.
- 11. After maintenance, restore all safety devices, such as guards, shields, signs, and grounding wires.
- Each Customer Engineer is responsible to be certain that no action on his part renders products unsafe or exposes customer personnel to hazards.
- 13. Place removed machine covers in a safe out-of-the-way place where no one can trip over them.
- 14. Ensure that all machine covers are in place before returning machine to customer.

- 15. Always place CE tool kit away from walk areas where no one can trip over it; for example, under desk or table.
- Avoid touching moving mechanical parts when lubricating, checking for play, etc.
- 17. When using stroboscope, do not touch ANYTHING-it may be moving.
- Avoid wearing loose clothing that may be caught in machinery. Shirt sleeves must be left buttoned or rolled above the elbow.
- Ties must be tucked in shirt or have a tie clasp (preferably nonconductive) approximately 3 inches from end. Tie chains are not recommended.
- 20. Before starting equipment, make certain fellow CEs and customer personnel are not in a hazardous position.
- 21. Maintain good housekeeping in area of machine while performing and after completing maintenance. Knowing safety rules is not enough.
 - An unsafe act will inevitably lead to an accident. Use good judgment—eliminate unsafe acts.

ARTIFICIAL RESPIRATION

General Considerations

- Start Immediately–Seconds Count Do not move victim unless absolutely necessary to remove from danger. Do not wait or look for help or stop to loosen clothing, warm the victim, or apply stimulants.
- 2. Check Mouth for Obstructions Remove foreign objects. Pull tongue forward.
- Loosen Clothing–Keep Victim Warm Take care of these items after victim is breathing by himself or when help is available.
- 4. Remain in Position
- After victim revives, be ready to resume respiration if necessary.
- 5. Call a Doctor Have someone summon medical aid.
- Don't Give Up Continue without interruption until victim is breathing without help or is certainly dead.

Rescue Breathing for Adults

- 1. Place victim on his back immediately.
- 2. Clear throat of water, food, or foreign matter.
- 3. Tilt head back to open air passage.
- 4. Lift jaw up to keep tongue out of air passage.
- 5. Pinch nostrils to prevent air leakage when you blow.
- 6. Blow until you see chest rise.
- 7. Remove your lips and allow lungs to empty.
- 8. Listen for snoring and gurglings-signs of throat obstruction.
- Repeat mouth to mouth breathing 10-20 times a minute. Continue rescue breathing until victim breathes for himself.



Thumb and finger positions



Final mouth-tomouth position

Map Introduction

The following items are covered in the MAP introduction:

- MAP arrangement
- MAP flow
- MAP example
- · How to use the MAPs
- · Probing information when using the MAPs
- · Normal conditions after power on

MAP Arrangement

MAPs contain procedures that let you follow symptoms, one step at a time, until you find the cause of the failure. Each MAP contains the following information:

- · The purpose
- · A list of conditions
- Step-by-step procedures to follow

When problems occur on the IBM 5280 Distributed Data System, use the System Entry MAPs. The system entry MAPs contain general questions that send you to one of the following MAPs:

- A power on checkout
- · An intermittent failure
- · An error code
- An operational symptom
- · An area entry

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The power on checkout MAP contains specific questions that enable you to isolate any hardware functions or microcode test problems that occur during a check of the basic system. You may be directed to a unit MAP to determine the failing FRU (field replaceable unit). The intermittent failure MAP contains charts for operational symptom failures or error codes and a list of probable FRUs that could cause the failure.

The error code MAP contains specific questions that enable you to isolate hardware functions or microcode tests and direct you to another MAP or a failing FRU.

The operational symptom MAP contains symptom tables that will direct you to another MAP or a failing FRU.

The area entry MAP contains specific questions that send you to one of the following:

- A stand-alone program
- A MDI test
- A unit MAP

The stand-alone programs are tests used for diagnosis. After a repair action has been completed the stand-alone programs are used to verify the operation.

The MDI tests are diagnostic routines that prompt you through a diagnostic procedure to aid you in finding system failures and to isolate failing FRUs.

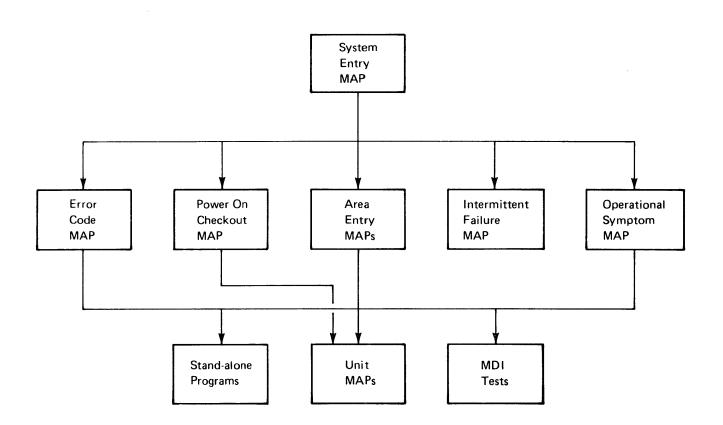
The unit MAPs contain detailed questions that enable you to identify the failing FRU.

MAP Flow

The following chart shows the normal path to follow to isolate a failure:

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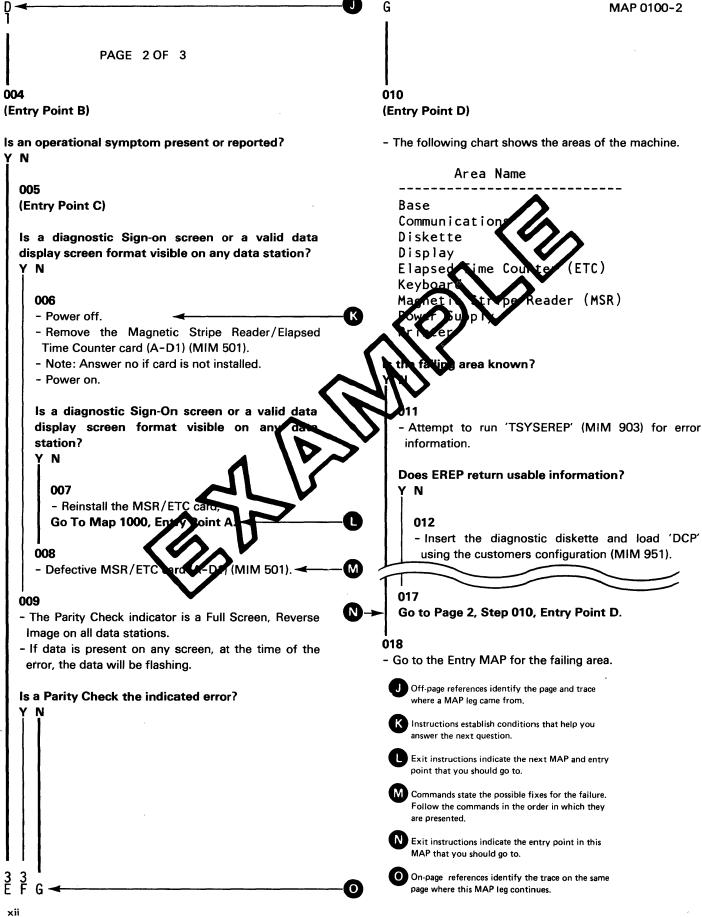
PAGE 1 OF 3

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FROM ENTER THIS MAP MAP ENTRY PAGE STEP No entries in this table 3 024 0200 A No entries in this table 3 024 0200 A 3 021 0300 A 3 020 0400 A 3 021 0300 A 3 022 0500 B 3 014 0600 A 3 022 0800 A 2 007 1000 A 3 021 0300 A 3 014 0600 A 3 022 0800 A 3 014 0600 A 3 021 0800 A Centry Point A) - The kychoard speaker(s) should buzz near the start and again at the end of Power On Checkout: - Noteckout termines at the second buzz - Noteckout termines at the second buzz - MAP number and page sequence number. 1 The second buzz is audible on at least or data study - - MAP number and page sequence number. - 0	ENTRY P		₿→		NTS		
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 Out - (Entry Point A) Power On Checkout starts when the 'Power' switch is set to the On position (MIM 931). The keyboard speaker(s) should buzz near the start and again at the end of Power On Checkout. A buzz is a series of clicks (1 to 2 seconds). Power On Checkout terminates at the second buzz. If the second buzz is audible on at least or data strick keyboard, Power On Checkout is OK Is a Power On Checkout aniue prosention seported? Mode and from the System operator or from running 'TSYSEREP' (MIM 971). Is an error code present or reported? M (a) Copyright IBM Corp. 1980 (b) Copyright IBM Corp. 1980 (c) Copyright IBM Corp. 1980	No e	entries in this table		3 3 3 3 3 3	021 020 025 019 014 022	0300 0400 0500 0532 0600 0800	A A B A
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 Is a Power On Checkout tailue aresentor reported? N 002 Is the machine problem intermittent? N 003 - Error codes can be obtained from the System operator or from running 'TSYSEREP' (MIM 971). Is an error code present or reported? N Statements that provide additional information about a step. Questions are to be answered either yes or no. Continue from your answer to the next question or instruction. Y = yes; N = no. Reference numbers refer to a location graphic, a maintenance procedure, a chart, or other pertinent information in the MIM. Engineering change number of the MAP. Off-page references identify the page and trace where a MAP leg continues. EC 839661 	set to th - The key again at - A buzz i - Power (- If the se	e On position (MIM 931). board speaker(s) should buzz near the the end of Power On Checkout. s a series of clicks (1 to 2 seconds). On Checkout terminates at the second econd buzz is audible on at least or a	e start and	General us thote interele A MAP B These	number and p	be in all short prob age sequence the <u>Entry Poi</u>	MAPS, except whe be tips due to noi number.
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MAP Introduction xi



How to Use the MAPs

You should observe the following rules and procedures when using the MAPs or running MDI tests:

- 1. When any MDI tests are to be run, the MAP describes how to set up the machine in the correct condition to answer the MAP questions.
- 2. Before starting the error analysis, always observe and record any existing error symptoms.
- The MAP might send you to the MIM for instructions on how to remove, check, adjust, or reinstall a FRU. After completing the action, return to the MAP for additional instructions.
- 4. If the failure symptoms do not remain constant, you should still attempt to use the MAPs and MDI tests to isolate the failure.
- Unless you are instructed not to, always power off the system before you remove or install a fuse, cable, or card.
- 6. When a MAP indicates that a card or cable is bad, perform the following steps:
 - a. Inspect the card and socket, then reseat the card and rerun the test that failed.
 - b. Remove the card or cable, install a good one, and rerun the test that failed.
- 7. Probe all the lines indicated before answering the question that follows in the MAP or MDI test.
- 8. Names of all switches and indicators are shown in MAPs in the same way that they appear on the keyboard/display or operator panel.
- 9. Hexidecimal numbers are shown as hex AB23.
- An X indicates a don't care position within the number. For example, the X in hex X54B represents any hexadecimal number.
- 11. After you diagnose and repair a failure, run the failing MAP or MDI test again to verify that the failure is corrected.

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Probing Information When Using MAPs

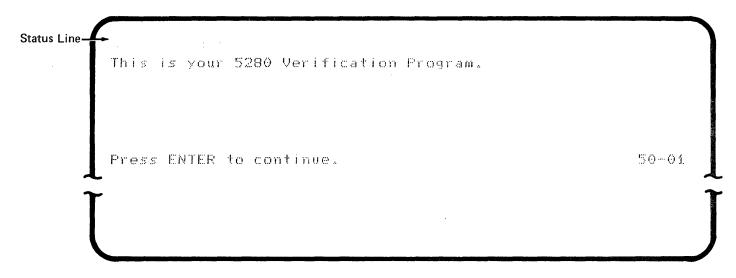
When instructed by the MAPs, you should use the general logic probe II (part 453212) to measure signal levels. This probe is used for normal IBM 5280 Distributed Data System maintenance. The probe extender (part 453605) is used with the general logic probe in all MAPs except where you are instructed to use the short probe tips. Detailed information on using and maintaining the probe is found in the *IBM General Logic Probe II Manual*, SY27-0127, and in the *Diagnostic Aids* section (see 905) of the *IBM 5285 Programmable Data Station Maintenance Information Manual*, SY31-0600.

Normal Conditions After Power On

After you have powered on the system, the following display examples show the normal conditions of the display screen on the IBM 5285. All other attached data stations or dual data stations are blank.

The selected program diskette must be inserted into a diskette drive and the diskette locking lever must be closed.

If the selected program diskette is inserted into an attached data station diskette drive, that data station must also be powered on. Display Example for a Diagnostic Diskette



Display Example for a Machine Verification Diskette

Verificat	ion test in operation.	
Program r	ame:	
Device ad	dress:	
Partition	number:	
L	Press ENTER	50-00
T		

Display Example for a User IPL Program Diskette

Device address: Partition number:	0 0001 A 16 4	¥⊖	
Partition number:			
- Press ENTER 05-(
	•	Press ENTER	05-0

IBM 5285 BASE MAP

MAP 0002-1

DESCRIPTIONS

PAGE 1 OF 4

NUMBER	DESCRIPTION
0100	SYSTEM ENTRY: This MAP is the start of call, and directs you to area, error code, or operational symptom MAPs or MDI's.
0200	POWER ON CHECKOUT: This MAP diagnoses the P.O.C. failure syndrome.
0210	POWER ON RESET: This MAP diagnoses loss of the system Power On Reset function.
0220	CONDITION CODE: The MAP directs you to other MAPs based on a condition code returned by microcode tests.
0300	ERROR CODE: This MAP directs you from a system error code to an entry or unit MAP.
0500	BASE ENTRY: This MAP directs you to a unit MAP for a problem in the base system.
0511	MAIN MPU ATTENTION ERROR: This MAP diagnoses the attentio lines to and from the main microprocessor.
0531	MAIN STORAGE ACCESS: This MAP diagnoses the failure of a microprocessor to access main storage correctly.
0532	MAIN STORAGE PARITY CHECK ERROR: This MAP diagnoses the cause of a main storage parity check.
0600	ROS PATCH CARD: This MAP isolates the ROS Patch card from the microprocessor that it is connected to.
0800	INTERMITTENT ERROR: This MAP is a sequential replacement of FRUs in relation to an error code or operational conditions.

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BASE MAP

MAP 0002-2

DESCRIPTIONS

PAGE 2 OF 4

NUMBER	DESCRIPTION
1000	DATA ENTRY ENTRY: This MAP directs you to a unit MAP or MDI based on a data entry type of error condition.
1010	DATA ENTRY A-Cl DISPLAY: This MAP diagnoses display failures related to display #0 and/or common bus failures.
1011	DATA ENTRY A-E1 DISPLAY: This MAP diagnoses display failures related to displays #1/2.
1020	DATA ENTRY A-Cl KEYBOARD: This MAP diagnoses keybord failures related to keyboard #0 and/or common bus failures.
1021	DATA ENTRY A-El KEYBOARD: This MAP diagnoses failures related to keyboards #1/2.
1025	DATA ENTRY ERROR CODE: This MAP diagnoses failures related to Data Entry error codes 9119, 9120 or 9231 are generated by IPL of the Diagnostic Diskette.
1026	DATA ENTRY KEYLOCK: This MAP diagnoses failures with the keylock feature.
1030	DATA ENTRY MAGNETIC STRIPE READER: This MAP diagnoses failures related to MSR #0, 1, 2 or 3.
1040	DATA ENTRY ELAPSED TIME COUNTER: This MAP diagnoses failures related to Elapsed Time Counter feature.
2000	DISKETTE DRIVE ENTRY: This MAP directs you to a unit MAP based on error codes and condition codes.
2010	DISKETTE BASE SWAP: This MAP directs you to perform basic swapping and directs you to a specific problem area.
2210	DISKETTE CABLE SWAP: This MAP is used for cable problems.

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MAP 0002-2

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BASE MAP

DESCRIPTIONS

PAGE 3 OF 4

NUMBER	DESCRIPTION
2250	2 DRIVE, N/DDCC: This MAP is for problem determination for two drives installed and the diskette drive control card is not failing.
2260	2 DRIVE, DDCC: This MAP is for problem determination for two drives installed and the diskette drive control card might be failing.
2270	MINIMUM CONFIGURATION SYSTEM: This MAP is for a minimum configuration system,l drive only, connected to the system.
2280	INTERFACE/ LED: This MAP is for problem isolation with DRIVE IN USE led failures and interchange problems.
3000	COMMUNICATIONS ENTRY: This MAP checks the type of communications feature installed and directs you to the communications MDI's.
3011	TRANSMIT/RECEIVE LEVEL CHECK: This MAP checks the dB levels that are being transmitted and received for 38LS.
3012	CBS TYPE COUPLER TEST: This MAP diagnoses the CBS coupler.
3013	CDT TYPE COUPLER TEST: This MAP diagnoses the CDT coupler.
3014	DIGITAL NETWORK WITH DDSA: This MAP is used to do a remote wrap for DDSA.
3015	OTHER COMMUNICATIONS ERRORS: This MAP diagnoses errors not detected by the MDI's.

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DESCRIPTIONS

PAGE 4 OF 4

NUMBER	DESCRIPTION
3016	W.T. LINE PLATE AUTO ANSWER: This MAP diagnoses the auto answer funciton of the W.T. line plate.
3017	W.T. LINE PLATE MANUAL CALL: This MAP diagnoses the manua call function of the W.T. line plate.
3018	W.T. LINE PLATE MANUAL ANSWER: This MAP diagnoses the manual answer function of the W.T. line plate.
3019	EIA OPEN/SHORT CIRCUIT TEST: This MAP is used to check fo shorts or opens in the EIA cables.
7000	PRINTER ENTRY: Directs you to device MAPs or MDI's, based on a printer type errors.
8000	POWER ENTRY: This MAP diagnoses primary power and D.C. power problems.
8030	D. C. DISTRIBUTION: This MAP isolates D.C. distribution cable type of problems.
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MAP 0002-4

SYSTEM ENTRY MAP

PAGE 1 OF 5

ENTRY POINTS

FROM	ENTER	THIS MAP	
МАР	ENTRY	PAGE	STEP
NUMBER	POINT	NUMBER	NUMBER
	•		
0300	AD	2	004
1000	A	1	001
1010	A	1	001
1025	A	1	001
1030	A	1	001
3000	A	1	001
7000	A	1	001

EXIT POINTS					
EXIT TH	IS MAP	то			
PAGE	STEP	МАР	ENTRY		
NUMBER	NUMBER	NUMBER	POINT		
2	007	0200	A		
5	036	0200	Α		
5	030	0300	А		
3	015	0300	Α		
3	012	0300	Α		
5	038	0500	В		
5	032	0532	А		
5	028	0800	А		
4	021	0800	Α		
5	031	0800	Α		
3	017	1000	Α		
3	020	1000	Α		
3	011	1000	В		
4	025	1000	В		
4	023	1025	А		

001 (ENTRY POINT A)

- If the GLP extender cable (PN 453605) is used, the following must be observed.
- The extender cable must not be used to probe any clock lines.
- The extender cable must not lay across the logic board. Signals may be induced into the probe giving false indications.
- See MIM 905 for PROBE setup and test.

Did the System fail to IPL using the Customer's diskette? Y N Copyright IBM Corp 1980

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52

A B

```
В
          BASE MAP
                                       F
                                                            MAP 0100-2
1
           SYSTEM ENTRY
                  2 OF
           PAGE
                        5
002
                                       005
(ENTRY POINT AA)
                                       - The 5280 System is divided into
                                         the following functional areas.
- See MIM 925 for EXAMPLES of
 Parity
             Check
                         display
                                              Area Name
  indications.
                                       - The Parity Check indicator is a
                                       Base (Main MPU and Main Storage)
 Full Screen Reverse Image on ALL
                                       Base (Feature Main MPU)
  Data Stations.
                                       Keyboard/Display
– If data is present
                                       Keylock
                        on
                             any
  screen, at the time of
                             the
                                       Magnetic Stripe Reader
  error,
          the data will
                                       Elapsed Time Counter
                              be
  flashing.
                                       Diskette
                                       Communications
Is a Parity Check the indicated
                                       Printer
error?
                                       Power Supply
YN
                                       NOTE: If you have been through
 003
                                         this step before answer NO to
 - Error codes can be obtained
                                         this question.
   from the System operator or
   from running 'TSYSEREP'
                              or
                                       Does the reported failure fit into
   'TCOMEREP' (MIM 975).
                                       one of these areas?
                                       Y N
 Is an error code present or
 reported?
                                         006
 YN
                                         (ENTRY POINT B)
   004
                                         SYSTEM CHECKOUT PROCEDURE
   (ENTRY POINT AD)
                                         - Power Off.
   Is the
               machine
                                         - Insert Diagnostic Diskette 1
                         problem
                                           in drive 4000 and close the
   intermittent?
   Y N
                                          locking lever.
                                         - Power On.
                                         Is
                                             the First Display Prompt
                                         (50-01) (MIM 941) visible on
                                         Data Station 0?
                                         Y N
                                           007
                                           GO TO MAP 0200,
                                          ENTRY POINT A.
                                                   EC840874 PEC839787
5 5 5
                                       5 3
CDEF
                                       GH
                                                           MAP 0100-2
```

```
н
            BASE MAP
                                         J
                                                               MAP 0100-3
2
            SYSTEM ENTRY
            PAGE
                 3 OF 5
008
                                         016
- Press the 'x' key and then the
                                         (ENTRY POINT C)
  'ENTER' key.
                                         - Press the 'ENTER' key.
Is the Keyboard Information Prompt
(50-02) (MIM 941) visible on Data
                                         Is Prompt 50-03 (MIM 941) visible
Station 0?
                                         on Data Station 0?
YN
                                         Y N
  009
                                          017
  Is Prompt
              50-06
                       (MIM)
                              941)
                                           GO TO MAP 1000, ENTRY POINT A.
  visible on Data Station 0?
  Y N
                                         018
                                         - Select the 'CURRENT' definition
    010
                                           and press the 'ENTER' key.
    Is there a 9930 or 9231 error
    displayed on Data Station 0?
                                         Is there a 9120 error displayed on
    YN
                                         Data Station 0?
                                         Y N
      011
      - This is a keyboard failure
                                           019
       (no response),
                                           - Press the 'SYS REQ' key.
      GO TO MAP 1000,
      ENTRY POINT B.
                                           Is the Load Prompt (MIM 941)
                                           displayed on Data Station 0?
                                           ΥN
    012
    GO TO MAP 0300,
    ENTRY POINT A.
                                             020
                                             GO TO MAP 1000,
                                             ENTRY POINT A.
  013
  - Use MIM 207 to determine the
   answer to the Prompt on the
    display.
  - Enter the correct option and
   press the 'ENTER' key.
  Are there
               any
                     error
                             codes
  displayed?
  Y N
    014
    GO TO STEP 016,
   ENTRY POINT C.
  015
  GO TO MAP 0300, ENTRY POINT A.
                                                      EC840874
                                                                 PEC839787
                                         4 4
                                                               MAP 0100-3
                                         KL
. 1
```

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L BASE MAP к MAP 0100-4 3 3 SYSTEM ENTRY PAGE 4 OF 5 022 021 (ENTRY POINT D) - Power Off, wait at least 30 seconds, Power On. - Remove Diagnostic Diskette 1 - When the First Prompt (50-01) (MIM 941) is displayed on Data from drive 4000 and insert Diagnostic Diskette 2. Station 0, press the 'x' key and then the 'ENTER' key. - Load 'DCP' and run the following - When the Keyboard Information MDI's against all possible devices. Prompt (50-02) (MIM 941) is displayed, record the number of 0510 MPU Test keyboards displayed 0520 Auto. Main Mem. Test screen. 2060 Funct. Disk. Drive Test 3010 Comm. Adapter Test Does the number of 7010 Printer Adapter Test displayed on the screen match the number of keyboards installed in - Go to the MAP indicated by the the system? MDI. ΥN - Replace the Fru called out by the MDI. 023 - If an error code is indicated: - This is a 9120 error, GO TO MAP 0300, ENTRY POINT A. GO TO MAP 1025, ENTRY POINT A. - If no problems were encountered in this checkout procedure, ask 024 - Press the 'ENTER' key. the customer to demonstrate the failure. - When Prompt (50-03) (MIM 941) is - If MDI 2060 fails to complete displayed, select the option. successfully, GO TO MAP 2000, ENTRY POINT A. - Select the correct display size for each foreground partition as _ _ _ _ OR _ _ _ _ the prompts are displayed. - Press the 'SYS REQ', '2' and 'z' GO TO MAP 0800, ENTRY POINT A. keys on Data Station 0. Is the Load Prompt displayed on Data Station 0? YN

025 - This is a display failure, GO TO MAP 1000, ENTRY POINT B.

026 GO TO STEP 021, ENTRY POINT D.

> EC840874 PEC839787

on

keyboards

'NO'

the

```
MAP 0100-5
          BASE MAP
CDEG
                                     Α
2222
                                     1
           SYSTEM ENTRY
           PAGE 5 OF 5
                                     033
     027
                                     - Install the customer's 'IPL'
     - Go to the Entry MAP for
      the failing area.
                                       diskette that caused the failure
                                       in Drive 4000 and close the
                                       locking lever.
      MAP
           Entry Area Name
     Number Point
                                     - Power Off, wait at least 30
                                       seconds, Power On.
      0500
             A Base(Main MPU/
                                     - Check the display at Data
                 Main Storage)
                                       Station 0.
      0500
             A Base (Feature
                 Main MPU)
                                    Did Power On Checkout complete
             A Keyboard/
      1000
                                     correctly?
                                     ΥN
                 Display
      1026
            A Keylock
           A MSR
                                       034
      1030
             A ETC
      1040
                                       Is ONLY ONE Display Indicator on
                                       (MIM 931)?
      2000
           A Diskette
      3000
           A Communications
                                       ΥN
           A Printer
      7000
      8000
            A Power Supply
                                         035
                                         - Power Off.
   028
                                         - Insert Diagnostic Diskette 1
   GO TO MAP 0800,
                                          in drive 4000 and close the
   ENTRY POINT A.
                                           locking lever.
                                         - Power On.
 029
                                         Is the First Display Prompt
                        problem
 T S
        the machine
                                         (50-01) (MIM 941) visible on
 intermittent?
                                         Data Station 0?
 ΥN
                                         YN
   030
   GO TO MAP 0300,
                                           036
   ENTRY POINT A.
                                          GO TO MAP 0200,
                                          ENTRY POINT A.
 031
 GO TO MAP 0800, ENTRY POINT A.
                                         037
                                         - Suspect the customer's 'IPL'
                                         diskette.
032
GO TO MAP 0532, ENTRY POINT A.
                                       038
                                       GO TO MAP 0500, ENTRY POINT B.
```

1

```
039
GO TO PAGE 2, STEP 002,
ENTRY POINT AA.
```

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MAP 0100-5

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IBM 5285 BASE MAP

POWER ON CHECKOUT MAP

PAGE 1 OF 7

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	P AGE NUMBER	STEP Number
0100	A A	1	001

EXIT POINTS

001 (Entry Point A)

- Ensure Diagnostic Diskette 1 is loaded in drive 4000.
- Ensure all Diskette locking levers are open.
- Power Off, wait at least 30 seconds, Power On.
- See MIM 931 for the Condition Code table diagram.

Is the Condition Code table displayed at Data Station 0? Y N

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NOTE: Before proceeding with this MAP, ensure All voltages are within tolerance and the RIPPLE check is OK (MIM 461, 463).

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```
MAP 0200-2
В
           BASE MAP
                                       EFG
1
           POWER ON CHECKOUT
           PAGE 2 OF
                         7
002
                                           006
- Check location A-E5 for a card
                                           GO TO MAP 8000,
  (MIM
        501). If a card is
                                           ENTRY POINT A.
 installed, check MIM 402 and 811
     see which card you have
 to
                                         007
 installed.
                                         GO TO MAP 1020, ENTRY POINT B.
٦ſ
    the feature Main MPU card
                                       008
installed in location A-E5?
                                       - Install a jumper at A-Cl-TP40
Y N
                                         '- Test POR' (MIM 303).
                                       - Probe A-A8B04 '+ POR' (MIM 501).
 003

    Observe the lights as you

  (ENTRY POINT AA)
                                         momentarily ground the jumper to
                                         frame ground.
 - Power Off, wait at least
                              30
   seconds, Power On.
                                            light: Pulse
                                       Up
                                       Down light: Ignore
 Does the speaker
                     sound
                              at
 keyboard 0?
                                       Are the lights correct?
 YN
                                       ΥN
   004
                                         009
                                         GO TO MAP 0210, ENTRY POINT A.
   - Install
              а
                    jumper
                              at
     A-A1-TP06 '- Click A'
                             (MIM)
     200).
                                       010
                    ground
   - Momentarily
                                       - Check for +8.5 Vdc from A-C2B11
                             the
                                         to A-C2D08 (MIM 501).
      jumper to frame ground.
   Does the speaker sound at
                                       Is +7.7 to +9.3 Vdc present?
   keyboard 0?
                                       YN
   YN
                                         011
     005
                                         GO TO MAP 8000, ENTRY POINT A.
     (ENTRY POINT B)
                                       012
     - Check for +5 Vdc from the
                                       GO TO MAP 1000, ENTRY POINT A.
       Data Station 0 keyboard
       logic card J03-2(+) to
       J02-1(-) (Data Station MIM
       220).
     Is +4.5 to +5.5 Vdc present?
     YN
                                                    EC840874
                                                              PEC839787
6 3
CDEFG
                                                            MAP 0200-2
```

1

D

κ

2 POWER ON CHECKOUT PAGE 3 OF 7 013 (ENTRY POINT C) - See MIM 931 for examples of 'Valid Display indicators'. - The 'Valid Display indicators' (located at the right side of the screen) are in one vertical column of 12 positions with dashes (off condition) at one end and squares (on condition) at the opposite end. - During Power On Checkout the Display indicators change from squares to dashes in sequence. Are any of the 'Valid Display indicators' On? YN 014 - Load a different 'IPL' diskette and IPL. - The Power On Checkout should terminate with a sign-on screen. Does Power On Checkout terminate correctly? ΥN

```
015
- Install a jumper at A-C1-TP40
  '- Test POR' (MIM 303).
- Probe A-C2B04 '- POR' (MIM 501).
- Observe the lights as you
 momentarily ground the jumper to
 frame ground.
Up light: Ignore
Down light: Pulse
Are the lights correct?
ΥN
 016
  - Check for -5 Vdc from A-C1B06
   to A-C1D08 (MIM 501).
  Is -4.5 to -5.5 Vdc present?
 ΥN
    017
    GO TO MAP 8000,
   ENTRY POINT A.
  018
  GO TO MAP 0210, ENTRY POINT A.
019
- Probe A-A8B04 '+ POR' (MIM 501).
- Observe the lights
                         as you
  momentarily ground the jumper to
  frame ground.
    light: Pulse
Up
Down light: Ignore
Are the lights correct?
YN
  020
  GO TO MAP 0210, ENTRY POINT A.
021
GO TO MAP 1000, ENTRY POINT A.
             EC840874 PEC839787
```

4 4 НЈК

```
НJ
          BASE MAP
33
           POWER ON CHECKOUT
           PAGE 4 OF 7
 022
 - The first diskette has a data
  problem.
  - Replace or initialize the
   diskette again.
023
(ENTRY POINT D)
- See MIM 925 for EXAMPLES of
 Parity
         Check display
 indications.
- The Parity Check indicator is a
 Full Screen Reverse Image on All
 Data Stations.
- If data is present on any
 screen, at the time of the
error, the data will be
 flashing.
Is a Parity Check the indicated
error?
ΥN
65
LM
```

EC840874 PEC839787

MAP 0200-4

MAP 0200-4

M 4	BASE MAP				МАР	0200-5
1	POWER ON	CHECH	OUT			
	PAGE 5	OF	7			
			,			

024

- Match the TOTAL number of 'Valid Display Indicators' that are 'On' at Data Station 0 to the numbers in the 'On' column below. See the display example to the right and MIM 931 for EXAMPLES of 'Valid Display Indicators' On.

ΟŇ	REPAIR OR Go to entry point (e.p.)	
1	Main Storage Size error. GO TO MAP 0500, ENTRY POINT A.	
• • •	Condition Code error. GO TO MAP 0220, ENTRY POINT A.	-
7	Defective MPU card (A-Al or A-Cl). If a 'Ros Patch' cable is connected to the card, GO TO MAP 0600, ENTRY POINT A.	- - - - - - - - - - - - - - - - - - -
8	Main Storage error. GO TO MAP 0500, ENTRY POINT A.	X X X
9	Defective Main MPU card(A-Cl). If a 'Ros Patch' cable is connected to the card, GO TO MAP 0600, ENTRY POINT A.	X
10	Main MPU error. GO TO MAP 0500, ENTRY POINT A.	
11	Defective Feature Keyboard/ Display storage card (A-B7). OR GO TO MAP 1000, ENTRY POINT A.	DISPLAY EXAMPLE This Display Example shows '&' Display indicators 'On'.
12	Keyboard/Display MPU error. GO TO MAP 1000, ENTRY POINT A.	

```
CL
           BASE MAP
                                        A N
                                                             MAP 0200-6
2 4
                                        1
           POWER ON CHECKOUT
           PAGE
                  6 OF 7
 025
                                         030
 - Probe A-C4D04 '- Parity Error'
                                                       feature Main MPU

    Defective

   (MIM 501).
                                           card (A-E5) (MIM 402).
                                         - Remove the jumpers and replace
 Up light: Off
                                           the feature Main MPU card.
 Down light: On
                                         - If a 'Ros Patch' cable is
                                           connected to the card,
                                          GO TO MAP 0600, ENTRY POINT A.
  Are the lights correct?
 ÝΝ
                                        031
   026
                                       - See MIM 931 for the Condition
   - Keyboard/Display storage is
                                         Code table diagram.
    causing a Power On Checkout
                                       NOTE: DO NOT PRESS A KEY. If a
     failure,
                                         key has been pressed Power Off,
   GO TO MAP 1010,
                                          wait at least 30 seconds, Power
   ENTRY POINT A.
                                          On.
 027
                                       Is a Scan Code present on line 1?
 GO TO MAP 0532, ENTRY POINT A.
                                       YN
028
                                          032
- Power Off.
                                         - Close the Diskette
                                                                  locking
- Remove the feature Main MPU card
                                           lever on drive 4000.
 and install the following
                                          - Listen for a sound from the
 jumpers;
                                           speaker at keyboard 0.
                                         Note: The sound might be delayed
  A-Cl Jumpers 2,4,5 (MIM 303)
                                           from 2 to 3 seconds.
  A-E7D09 to A-E7D10 KBD/Disp
  A-E7B11 to A-E7B12 Printer
                                         Does the speaker sound?
  A-E7D12 to A-E7D13 Comm.
                                         YN
- Power On.
                                           033
                                           - Install
                                                       а
                                                            jumper
                                                                       at
                                             A-A1-TP06 '- Click A' (MIM
Is the Condition Code
                            table
displayed on Data Station 0?
                                             200).
Y N
                                           - Momentarily ground
                                                                      the
                                             jumper to frame ground.
 029
 - Power Off.
                                           Does the speaker sound
                                                                       at
 - Remove the
                                           keyboard 0?
                    jumpers
                              and
                                           ΥN
   reinstall the Feature Main MPU
   card.
 GO TO PAGE 2, STEP 003,
                                             034
 ENTRY POINT AA.
                                             GO TO PAGE 2, STEP 005,
                                             ENTRY POINT B.
                                                    EC840874 PEC839787
                                        777
                                                             MAP 0200-6
Ν
                                        PQR
```

```
BASE MAP
QR
6 6
           POWER ON CHECKOUT
           PAGE 7 OF 7
 035
 GO TO PAGE 4, STEP 023,
 ENTRY POINT D.
036
- Execute a 'SOFT IPL' from Data
 Station 0 with the following
 command key sequence.
1. Press the 'Command' key.
2. Press and hold the
    'Numeric Shift' key.
3. Press the 'G' key.
Is the First Display
                          Prompt
(50-01) (MIM 941) visible on Data
Station 0?
YN
 037
 - Check location A-E5 for a card
   (MIM 501). If a card is
   installed, check MIM 402 and
   811 to see which card you have
   installed.
 Is the feature Main MPU card
 installed in location A-E5?
 YN
   038
   GO TO MAP 0210,
   ENTRY POINT A.
```

```
039
   - Power Off.
   - Remove the feature Main MPU
     card
             and
                    install
                              the
     following jumpers;
    A-C1 Jumpers 2,4,5 (MIM 303)
    A-E7D09 to A-E7D10 KBD/DISP
    A-E7B11 to A-E7B12 Printer
    A-E7D12 to A-E7D13 Comm.
   - Power On.
   - Execute a 'SOFT IPL' from
     Data Station 0 with the
     following
                command
                              key
     sequence.
    1. Press the 'Command' key.
    2. Press and hold the
       'Numeric Shift' key.
    3. Press the 'G' key.
   Is the First Display Prompt
    (50-01) (MIM 941) visible on
   Data Station 0?
   Y N
     040
     GO TO MAP 0210,
     ENTRY POINT A.
   041
   GO TO MAP 1000,
   ENTRY POINT A.
 042
 GO TO MAP 1000, ENTRY POINT A.
GO TO MAP 1000, ENTRY POINT A.
```

MAP 0200-7

PST

043

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POWER ON RESET MAP

PAGE 1 OF 5

ENTRY POINTS

FROM	ENTER	THIS MAP	ang ang hang sang ang ang ang ang ang ang ang ang ang
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0200	A	1	001

EXIT TH	IS MAP	то		
PAGE	STEP	MAP	ENTRY	
NUMBER	NUMBER	NUMBER	POINT	
		•		
2	010	0600	А	
3	012	0600	А	
2	006	0600	А	
3	019	0600	А	
4	021	0600	А	
4	025	0600	А	
4	027	0600	А	
5	030	0600	А	
2	007	0600	А	
2	004	8000	А	

EXIT POINTS

001 (ENTRY POINT A)

- Install a jumper at A-Cl-TP40 '-Test POR' (MIM 303).
- Probe A-C2B04 '- POR' (MIM 501).
- Observe the lights as you momentarily ground the jumper to frame ground.
- NOTE: Ensure the probe power leads are correctly connected to the power supply regulator card (MIM 905).

Up light: Ignore Down light: Pulse

Are the lights correct? Y N

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```
В
           BASE MAP
                                        CD
                                                             MAP 0210-2
1
           POWER ON RESET
           PAGE 2 OF 5
002
                                          007
- Leave the probe connected.
                                         - Defective Diskette/Main MPU
                                           card (A-C1) (MIM 303).
Up light: Off
                                          - If a 'Ros Patch' cable is
Down light: On
                                           connected to the card,
                                          GO TO MAP 0600, ENTRY POINT A.
Are the lights correct?
Y N
                                        008
                                        - Power Off.
 003
                                        - Use the C.E. voltmeter set to
 - Check for +5 Vdc from A-C1D03
                                         the RX1 scale.
   and A-C3D03 to ground (MIM
                                        - Check for a ground at A-C2B04 '-
   501).
                                         POR' (MIM 501).
 Is +4.5 to +5.5 Vdc present at
                                        Does the meter have a 5 ohm or
 both pins?
                                        less reading?
 Y N
                                        ΥN
   004
                                          009
   GO TO MAP 8000,
                                          - Power On.
   ENTRY POINT A.
                                          - Probe A-C4B04 '- POR CMND'
                                           (MIM 501).
 005
 (ENTRY POINT C)
                                         Up light: Off
                                          Down light: On
 - Install a jumper at A-A4B04 '-
   POR CMND' (MIM 501).
                                          Are the lights correct?
 - Probe A-C4B04 '- POR CMND'
                                          Y N
   (MIM 501).
 - Observe the lights as you
                                           010
   momentarily ground the jumper
                                           - Defective Diskette/Main MPU
   to frame ground.
                                             card (A-C1) (MIM 303).
                                           - If a 'Ros Patch' cable is
 Up light: Ignore
                                             connected to the card,
 Down light: Pulse
                                           GO TO MAP 0600,
                                           ENTRY POINT A.
 Are the lights correct?
 YN
   006
   - Defective Keyboard/Display
    MPU card (A-A1) (MIM 200).
   - If a 'Ros Patch' cable is
     connected to the card,
   GO TO MAP 0600.
   ENTRY POINT A.
                                                    EC840874 PEC839787
                                        33
CD
                                        EF
```

MAP 0210-2

```
EF
           BASE MAP
                                        A G
2 2
                                        1
           POWER ON RESET
           PAGE 3 OF 5
                                          016
 011
 - Power Off.
  - Use the C.E. voltmeter set to
   the RX1 scale.
 - Check for a ground at A-C4B04
   '- POR CMND' (MIM 501).
                                          - If
 Does the meter have a 5 ohm or
 less reading?
 YN
                                        017
   012
   - Defective Keyboard/Display
     MPU card (A-A1) (MIM 200).
   - If a 'Ros Patch' cable is
                                         frame ground.
     connected to the card,
   GO TO MAP 0600,
                                        Up
                                             light: Pulse
   ENTRY POINT A.
                                        Down light: Ignore
  013
                                        Are the lights correct?
  - Use MIM 531 for '- POR CMND'.
                                        YN
 - Remove the cards in the net,
   one at a time, until the meter
                                          018
   reading is 100 ohms or more.
 — If
       all cards have been
   removed, and the meter reading
                                          Up light: Off
                                          Down light: On
   is still zero ohms, check the
   logic board for a ground.
                                          Y N
014
                C.E.
- Leave
          the
                        voltmeter
                                            019
 connected.
- Disconnect
               A-A1-P01
                              (if
 installed) from the card (MIM
                                             POR' (MIM 531).
 219).
Does the meter have a 5 ohm or
less reading?
ΥN
 015
                                            GO TO MAP 0600,
 - Use MIM 219 '- POR' to find
                                            ENTRY POINT A.
   the grounded line.
                                                     EC840874 PEC839787
                                        44
G
                                        ΗJ
```

- Use MIM 531 for '- POR'. - Remove the cards in the net, one at a time, until the meter reading is 100 ohms or more. all cards have been removed, and the meter reading is still zero ohms, check the logic board for a ground. - Probe A-A8B04 '+ POR' (MIM 501). - Observe the lights as you momentarily ground the jumper to - Leave the probe connected. Are the lights correct? - The logic board is open '+ _ _ _ _ OR _ _ _ _ - Defective Diskette/Main MPU card (A-C1) (MIM 303). - If a 'Ros Patch' cable is connected to the card,

MAP 0210-3

```
MAP 0210-4
          BASE MAP
НJ
                                       L
33
           POWER ON RESET
           PAGE 4 OF 5
 020
                                       024
 - Power Off.
                                       - Leave the probe connected.
 - Use the C.E. voltmeter set to
   the RX1 scale.
                                       Up light: Off
 - Check for a ground at A-A8B04
                                       Down light: On
   '+ POR' (MIM 501).
 Does the meter have a 5 ohm or
                                       Are the lights correct?
 less reading?
                                       YN
 ΥN
                                         025
   021
                                         - The logic board is open '100
   - Defective Diskette/Main MPU
                                          Hz' (MIM 531).
     card (A-C1) (MIM 303).
   - If a 'Ros Patch' cable is
                                         ____ OR ____
     connected to the card,
   GO TO MAP 0600,
                                         - Defective Diskette/Main MPU
                                           card (A-C1) (MIM 303).
   ENTRY POINT A.
                                         - If a 'Ros Patch' cable is
 022
                                           connected to the card,
 - Use MIM 531 for '+ POR'.
                                         GO TO MAP 0600, ENTRY POINT A.
 - Remove the cards in the net,
   one at a time, until the meter
                                       026
   reading is 100 ohms or more.
                                       - Power off.
                                       - Use the C.E. voltmeter set to
 - If all cards have been
   removed, and the meter reading
                                        the RX1 scale.
   is still zero ohms, check the
                                       - Check for a ground at A-A4B02
                                         '100 Hz' (MIM 501).
   logic board for a ground.
                                       Does the meter have a 5 ohm or
023
- Probe A-A4B02 '100 Hz'
                             (MIM)
                                       less reading?
 501).
                                       YN
Up light: On
                                         027
Down light: On
                                         - Defective Diskette/Main MPU
                                           card (A-C1) (MIM 303).
                                         - If a 'Ros Patch' cable is
Are the lights correct?
                                           connected to the card,
                                         GO TO MAP 0600, ENTRY POINT A.
Y N
                                                    EC840874 PEC839787
5
                                       5
K L
                                       М
                                                            MAP 0210-4
```

```
км
           BASE MAP
4 4
           POWER ON RESET
           PAGE 5 OF 5
 028
 - Use MIM 531 for '100 Hz'.
 - Remove all cards in the net,
   one at a time, until the meter
  reading is 100 ohms or more.
 - If all cards have been removed
   and the meter reading is still
   zero ohms, check the logic
   board for a ground.
029
Did Power On Checkout fail on
'SOFT IPL'?
YN
 030
 - Defective Keyboard/Display MPU
   card (A-A1) (MIM 200).
 - If a 'Ros Patch' cable is
  connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
031
GO TO PAGE 2, STEP 005,
ENTRY POINT C.
```

MAP 0210-5

A.

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IBM 5285 BASE MAP

CONDITION CODE MAP

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER	THIS MAP	
-	•		
MAP	ENTRY	PAGE	STEP
NUMBER	POINT	NUMBER	NUMBER
	•		
0200	A	1	001

EXIT TH	IS MAP	то	
		+	
PAGE	STEP	MAP	ENTRY

EXIT POINTS

PAGE	STEP	MAP	ENTRY
NUMBER	NUMBER	NUMBER	POINT
2	004	0200	Α
2	005	0600	А
2	007	0600	Α
2	008	0600	Α
2	015	1000	А
2	012	2000	А
2	013	3000	А
2	014	7000	А

001 (ENTRY POINT A)

- Power Off, open All diskette locking levers, Power On.

Is the Condition Code table displayed on Data Station 0? Y N 002 - Power Off. - Remove the following Feature MPU card(s) (if installed) (MIM 501). Feature Location A-D5 Printer Communications A-E5 - Power On. Is the Condition Code table displayed on Data Station 0? ΥN Copyright IBM Corp 1980

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2 2 2 A B C

1

```
BC
           BASE MAP
                                                             MAP 0220-2
                                        A D
1 1
                                        1
           CONDITION CODE
           PAGE 2 OF 2
  003
                                         008
  Is the same failure present?
                                         - The Feature MPU card you did
  Y N
                                           not reinstall is defective.
   004
                                          _ _ _ _ OR _ _ _ _
   GO TO MAP 0200,
   ENTRY POINT A.
                                          - Defective Diskette/Main MPU
                                           card (A-C1) (MIM 303).
 005
                                          - If a 'Ros Patch' cable is
                                           connected to the card,
 - Defective Diskette/Main
                              MPU
   card (A-C1) (MIM 303)
                                         GO TO MAP 0600, ENTRY POINT A.
                             or
   Keyboard/Display
                       MPU card
   (A-A1) (MIM 200).
                                        009
 - If a 'Ros Patch' cable is
                                        - See MIM 931 for the Condition
   connected to the card,
                                         Code table diagram.
 GO TO MAP 0600, ENTRY POINT A.
                                        NOTE: DO NOT PRESS A KEY. If a
                                         key has been pressed Power Off,
006
                                         wait at least 30 seconds, Power
- Power Off.
                                         On.
- Reinstall ONE Feature MPU card.
- Power On.
                                        Is a Scan Code present on line 1?
                                        ΥN
Is the Condition Code table
displayed on Data Station 0?
                                         010
Y N
                                         Are you diagnosing a Printer
                                         feature error?
 007
                                         Y N
 - The Feature MPU
                       card
                              you
   reinstalled is defective.
                                           011
                                           Are
                                                  you
                                                        diagnosing
                                                                        а
 _ _ _ _ OR _ _ _ _ _
                                           Communications feature error?
                                           YN
 - Defective Diskette/Main
                              MPU
   card (A-C1) (MIM 303).
                                             012
 - If a 'Ros Patch' cable is
                                             GO TO MAP 2000,
   connected to the card,
                                             ENTRY POINT A.
 GO TO MAP 0600, ENTRY POINT A.
                                           013
                                           GO TO MAP 3000,
                                           ENTRY POINT A.
                                          014
                                         GO TO MAP 7000, ENTRY POINT A.
                                        015
                                        GO TO MAP 1000, ENTRY POINT A.
                                                    120CT80
                                                    EC840874 PEC839787
D
```

MAP 0220-2

ERROR CODE MAP

PAGE 1 DF 2

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP	ENTRY	PAGE	STEP
NUMBER	Point	NUMBER	NUMBER
0100	A	1	001
1025	A	1	001

EXIT POINTS

EXIT TH	IS MAP	то		
P AGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT	
1 2	002	0100	AD AD	
2	016	0100	AD	
2 2	017 014	0600 1000	A A	
2 2	012 011	2000 3000	A A	
2	013	7000	А	

001 (ENTRY POINT A)

 The v	alid	ei	ror	codes	on	this
system	have	а	four	digit	nun	nber.

Is a 4 digit error code present or reported?

YN

002 - The number you have is not an error code. GO TO MAP 0100, ENTRY POINT AD.

```
003
Is the first digit equal to a 0?
ΥN
```

004 Is the first digit equal to a 1? ΥN 005 Is the first digit equal to a

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2222

1

2? Y N

ABCD

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MAP 0300-1

,

```
D
          BASE MAP
                                                      MAP 0300-2
                                    ABC
                                    1 1 1
1
          ERROR CODE
          PAGE 2 OF 2
006
                                       013
Is the first digit equal to a 3?
                                       - The 2XXX error codes are
YN
                                         Printer feature errors,
                                       GO TO MAP 7000,
                                       ENTRY POINT A.
 007
 Is the first digit equal to a 4
 or 5?
                                      014
 YN
                                      - The 1XXX error codes are
                                        Keyboard/Display errors,
   008
                                      GO TO MAP 1000, ENTRY POINT A.
   Is the error code a 9119,
   9120, 9231, or 9930?
                                    015
   ΥN
                                    Is the second digit equal to a 7?
                                    YN
     009
     - The other 9XXX error codes
                                     016
                                     - The other OXXX error codes are
      are programming related.
     - Use the Operator's Guide
                                       Main microprocessor errors,
                                     GO TO MAP 0100, ENTRY POINT AD.
      and Message Manual to
       diagnose the error.
                                    017
     - If a machine error is
       still indicated,
                                    - Defective Diskette/Main MPU card
     GO TO MAP 0100,
                                      (A-C1) (MIM 303).
     ENTRY POINT AD.
                                    - If a 'Ros Patch' cable is
                                      connected to the card,
   010
                                    GO TO MAP 0600, ENTRY POINT A.
   Error
             Map Entry
                                    ---- OR ----
     Code Point (E.P.)
                                    - Defective Feature MPU card that
              9119
              1025,A
                                      you are trying to access (MIM
                                      501).
     9120
              1025,A
     9231
              1025,A
                                    - If a 'Ros Patch' cable is
   9930 0500,A
                                     connected to the card,
                                    GO TO MAP 0600, ENTRY POINT A.
       011
 - The 4XXX and 5XXX error codes
   are
        Communications feature
   errors,
 GO TO MAP 3000, ENTRY POINT A.
012
- The
       3XXX error codes are
 Diskette errors,
GO TO MAP 2000, ENTRY POINT A.
```

MAP 0300-2

BASE ENTRY MAP

PAGE 1 OF 3

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP	ENTRY	P AGE	STEP
NUMBER	POINT	NUMBER	NUMBER
0100	A	1	001
0100	B	2	013
0200	A	1	001
0300	A	1	001

001

(ENTRY POINT A)

 Check location A-E5 for a card (MIM 501). If a card is installed, check MIM 402 and 811 to see which card you have installed.

Is the feature Main MPU card installed in location A--E5? Y N

002 (ENTRY POINT AA)

- Ensure the 'IPL' diskette that caused the error is loaded in drive 4000.
- Power Off, wait at least 30 seconds, Power On.
- See MIM 931 for a description of Power On Checkout.

Does Power On Checkout fail with only EIGHT Display Indicators On? Y N NOTE: Before proceeding with this MAP, ensure All voltages are within tolerance and the RIPPLE check is OK (MIM 461, 463).

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332 ABC

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EXIT POI	INTS		
EXIT THE	IS MAP	то	
P AGE	STEP	MAP	ENTRY
NUMBER	NUMBER	NUMBER	POINT
2	012	0511	A
3	017	0531	A
3	018	0531	B
3	021	0600	A
2	014	0600	A

```
С
           BASE MAP
                                        DEF
                                                              MAP 0500-2
1
            BASE ENTRY
            PAGE
                  2 OF
                        3
003
                                            011
                                            - Run the Main MPU test (MDI
Does Power On Checkout fail with
only ONE Display Indicator on?
                                               0510) in loop mode to check
YN
                                               for an intermittent
                                                                      (MIM)
                                               951, 961).
  004
 Does Power On Checkout fail with
                                           012
  only TEN Display Indicators on?
                                           GO TO MAP 0511, ENTRY POINT A.
 YN
                                         013
    005
                                         (ENTRY POINT B)
    - IPL Diagnostic Diskette 1.
    - Load 'DCP' (MIM 951).
                                         - Probe A-C7B02 '- Feature Storage
                                          Select' (MIM 501).
    Is
       the
              main
                     option menu
    displayed on the screen?
                                        Up light: On
    Y N
                                         Down light: On
     006
                                         Are the lights correct?
     - The MDI and step number
                                        YN
       should be displayed in the
       status line.
                                           014
                                           - Defective Diskette/Main
                                                                       MPU
                0510 step
     IS MDI
                               002
                                            card (A-C1) (MIM 303).
                                          - If a 'Ros Patch' cable is
      displayed?
                                            connected to the card,
     Y N
                                          GO TO MAP 0600, ENTRY POINT A.
        007
        - Use Display/Alter
                               to
                                         015
         isolate
                   further
                              (MIM
                                         - Probe;
                                           A-C6D13 '- SAR BIT 0'
          991).
                                           A-C6B02 '- SAR GRP BIT 7'
      008
                                           (MIM 501).
      - Perform
                  the
                         indicated
     repair.
                                        Up
                                             light: Off
                                         Down light: On
    009
    Are you diagnosing a Main MPU
                                        Are the lights correct for either
    error?
                                         line?
    YN
                                         Y N
      010
                                           016
                                          - Load 'DCP' (MIM 951) and run
     - Run the Main Storage A
        test
               (MDI
                       0520)
                               to
                                            Main
                                                   Storage
                                                            A test (MDI
                                             0520).
        diagnose the error (MIM
        961).
                                                      EC840874
                                                                 PEC839787
                                         3
DEF
                                                              MAP 0500-2
                                         G
```

```
ABG
       BASE MAP
1 1 2
           BASE ENTRY
           PAGE 3 OF 3
   017
   GO TO MAP 0531,
   ENTRY POINT A.
  018
 - The Base 32K of Main Storage
   failed.
 - Use the Main Storage Access
   MAP to diagnose a grounded
   address, data or control line.
 GO TO MAP 0531, ENTRY POINT B.
019
- Power Off.
- Remove the feature Main MPU card
 and install the following
  jumpers;
  A-C1 Jumpers 2,4,5 (MIM 303)
  A-E7D09 to A-E7D10 KBD/Disp
  A-E7B11 to A-E7B12 Printer
  A-E7D12 to A-E7D13 Comm.
- Power On.
Is the Condition Code table
displayed on Data Station 0?
ΥN
 020
 - Power Off.
 - Remove the jumpers
                             and
  reinstall the Feature Main MPU
   card.
 - Power On.
 GO TO PAGE 1, STEP 002,
 ENTRY POINT AA.
021
- Defective feature Main MPU card
 (A-E5) (MIM 402).
- Remove the jumpers and replace
 the Feature Main MPU card.
- If a 'Ros Patch'
                     cable is
 connected to the card,
GO TO MAP 0600, ENTRY POINT A.
```

1

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IBM 5285 BASE MAP

MAIN MPU ATTN ERROR MAP

PAGE 1 OF 4

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0500	A	1	001

EXIT POINTS

EXIT TH	IS MAP	то	
P AGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2 3 3 3 3 2	003 009 010 012 014 007	0600 0600 0600 0600 0600 0600	A A A A A
4	015	0600	A

001 (ENTRY POINT A)

	Line	Name	Probe (MIM	Point 501)
-ATTI	N From	COMM	A-C	4B07
-ATTI	N From	1 2 TP	A-C	4B08
-ATT	N From	Printer	A-C	4B09
-ATT	N From	n KBD/Disp	A-C	4D06
-ATT	N From	n Diskette	A-C	4D07
-ATT	N From	1 1 T P	A-C	4D09
-ATT	N To K	BD/Disp	A-C	4D13
Down	Light: Light:	On		
Are	the]	ights co	prrect	for ANY
line?				
YN		Copyrigi	nt IBM C	orp 1980
32				

```
- Probe All attention lines in the chart.
```

ΑB

EC840874 PEC839787

В BASE MAP 1 MAIN MPU ATTN ERROR PAGE 2 OF 4 002 - Install terminating resistor (PN:4177566) (5.1K) from A-C4D03 to A-C4D13 (MIM 501). - Install a jumper at A-C1-TP40 '-Test POR' (MIM 303). - Probe A-C4D13 '- ATTN to KBD/Disp' (MIM 501). - Observe the lights as you momentarily ground the jumper to frame ground. Up Light: On Down Light: Pulse Are the lights correct? YN 003 - Defective Diskette/Main MPU card (A-Cl) (MIM 303). - If a 'Ros Patch' cable is connected to the card, GO TO MAP 0600, ENTRY POINT A. 004 - Check location A-E5 for a card (MIM 501). If a card is installed, check MIM 402 and 811 to see which card you have installed. Is the feature Main MPU card installed in location A-E5? Y N 005 - Ensure that the jumper from A-E7D09 A-E7D10 to is installed. GO TO PAGE 3, STEP 008. ENTRY POINT AA.

С

006 - Install terminating resistor (PN:4177566) (5.1K) from A-E7D03 to A-E7D09 (MIM 501). - Probe A-E7D09 '- Attn to KBD/Disp' (MIM 501). - Observe the lights as you momentarily ground the jumper to frame ground. Up light: On Down light: Pulses Are the lights correct? ΥN 007 - The Logic board is open '-Attn to KBD/Disp' (MIM 531). _ _ _ _ OR _ _ _ _ _ - Defective Feature Main MPU card (A-E5) (MIM 303). - If a 'Ros Patch' cable is connected to the card, GO TO MAP 0600, ENTRY POINT A.

MAP 0511-2

EC840874 PEC839787

С

MAP 0511-2

```
D
           BASE MAP
                                                            MAP 0511-3
                                       А
2
                                       1
           MAIN MPU ATTN ERROR
           PAGE 3 OF
                         4
008
                                       011
(ENTRY POINT AA)
                                       (ENTRY POINT C)
- Install terminating
                        resistor
                                       - Power Off.
  (PN:4177566) (5.1K) from A-A4D03
                                       - Check the Attention line(s),
  to A-A4D06 (MIM 501).
                                         that match the probe
                                                                  liqht
- Probe A-A4D06 '- ATTN from
                                         condition, for a ground.
  KBD/Disp' (MIM 501).
                                       - Use the CE voltmeter set to the
- Observe the
                 lights as you
                                         RX1 scale.
 momentarily ground the jumper to
                                       - Connect the C.E. voltmeter to
 frame ground.
                                         the probe point for the failing
                                         Attention line(s).
- NOTE: The pulse may be delayed 3
 to 4 seconds.
                                       Does the meter have a 5 ohm or
Up Light: On
                                       less reading?
Down Light: Pulse
                                       ΥN
Are the lights correct?
                                         012
YN
                                         - Defective MPU card for the
                                           attention line(s) that match
  009
                                           the probe condition (MIM 501).
                                         - If a 'Ros Patch' cable is
 - The logic board is open '-
   ATTN to KBD/Disp' (MIM 531).
                                           connected to the card,
                                         GO TO MAP 0600, ENTRY POINT A.
 ---- OR ----
                                       013
 - Defective Keyboard/Display MPU
                                                the Diskette/Main MPU
                                       - Remove
   card (A-A1) (MIM 200).
                                         card (A-C1) (MIM 501).
 - If a 'Ros Patch' cable is
                                       - Check the Attention line(s),
   connected to the card,
                                         that match the probe light
 GO TO MAP 0600, ENTRY POINT A.
                                         condition, for a ground.
010
                                       Does the meter have a 5 ohm or
(ENTRY POINT B)
                                       less reading for ANY line?
                                       ΥN
- The logic board is open '- ATTN
 from KBD/Disp' (MIM 531).
                                         014
                                         - Defective Diskette/Main
                                                                     MPU
_ _ _ _ OR _ _ _ _ _
                                           card (A-C1) (MIM 303).
                                         - If a 'Ros Patch' cable is
                                           connected to the card,
- Defective Diskette/Main MPU card
                                         GO TO MAP 0600, ENTRY POINT A.
  (A-C1) (MIM 303).
- If a 'Ros Patch' cable
                              15
 connected to the card,
GO TO MAP 0600, ENTRY POINT A.
```

```
4
E
```

MAP 0511-3

PEC839787

EC840874

E BASE MAP 3 MAIN MPU ATTN ERROR PAGE 4 DF 4 015 - Defective MPU card for the attention line(s) that is grounded (MIM 501). - If a 'Ros Patch' cable is connected to the card, GO TO MAP 0600, ENTRY POINT A.

EC840874 PEC839787

MAP 0511-4

(

(

MAP 0511-4

IBM 5285 BASE MAP

MAIN STORAGE ACCESS MAP

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP	ENTRY	P AGE	STEP
NUMBER	Point	NUMBER	NUMBER
0500	A	1	001
0500	B	1	002

⁰⁰¹

(ENTRY POINT A)

- Insure the 'IPL' diskette that caused the error is loaded in drive 4000.
- Power Off, wait at least 30 seconds, Power On.
- See MIM 931 for a description of Power On checkout.

Does Power On Checkout fail with only ONE Display Indicator On? Y N

```
002
(ENTRY POINT B)
```

- If installed, the Feature Main Storage card is located at A-B5 (MIM 501).

Is a Feature Main Storage card installed? Y N EXIT POINTS

EXIT TH	IS MAP	то	
P AGE	STEP	MAP	ENTRY
NUMBER	NUMBER	NUMBER	POINT
2	004	0600	A
2	006	0600	A
2	007	0600	A

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2 2 2 A B C

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EC840874 PEC839787

MAP 0531-1

MAP 0531-1

```
С
          BASE MAP
                                     ABD
                                                         MAP 0531-2
1
                                     1 1
          MAIN STORAGE ACCESS
           PAGE 2 OF 2
003
                                         007
(ENTRY POINT C)
                                         - Reinstall the Feature MPU
                                          card(s), one at a time,
- If installed, the Feature MPU
                                           until Power On Checkout
 card(s) is located at:
                                           fails.
                                         - If a 'Ros Patch' cable is
      Feature
                Location
                                           connected to the card,
                  (MIM 501)
                                         GO TO MAP 0600,
   ENTRY POINT A.
   Printer
                   A-D5
   Communications A-E5
                                       800
                                       - Power Off.
Is a Feature MPU card(s)
                                       - Remove the Feature Main
installed?
                                        Storage card.
Y N
                                       - Power On.
 004
                                       Does Power On Checkout complete
 - Defective Diskette/Main MPU
                                       correctly?
   card (A-C1) (MIM 303) or
                                       YN
  Keyboard/Display MPU card
   (A-A1) (MIM 200).
                                        009
 - If a 'Ros Patch' cable is
                                        GO TO STEP 003,
   connected to the card,
                                        ENTRY POINT C.
 GO TO MAP 0600, ENTRY POINT A.
                                       010
005
                                       - Defective Feature Main Storage
- Power Off.
                                        card (A-B5) (MIM 403).
- Remove all Feature MPU cards
 installed.
                                     011
- Power On.
                                     GO TO PAGE 1, STEP 002,
                                     ENTRY POINT B.
Does Power On Checkout complete
correctly?
Y N
 006
 - Defective Diskette/Main MPU
   card (A-C1) (MIM 303) or
                     MPU card
   Keyboard/Display
   (A-A1) (MIM 200).
 - If a 'Ros Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
                                                          5
```

```
EC840874 PEC839787
```

MAP 0531-2

PARITY CHECK MAP

PAGE 1 OF 4

ENTRY POINTS

F R OM	ENTER	THIS MAP	
	ENTRY	PAGE	STEP
NUMBER	POINT	NUMBER	NUMBER
0100	A	1	001
0200	A	1	001
1025	A	1	001

EXIT POINTS

EXIT TH	IS MAP	ТО	
P AGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3 3 4 3 4	010 014 015 020 017 025	0600 0600 0600 0600 0600 0600	A A A A A A

001 (Entry point a)
 Роwer Off. Ensure Diagnostic Diskette 1 is loaded in drive 4000. Close the locking lever. Роwer On.
Is the first Display Prompt (50-01) (MIM 941) visible on Data Station 0? Y N
002 - Check location A-E5 for a card (MIM 501). If a card is intsalled, check MIM 402 and 811 to see which card you have installed.
Is the feature Main MPU card installed in location A-E5? Y N
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MAP 0532-1

```
С
          BASE MAP
                                    Ε
                                                        MAP 0532-2
1
          PARITY CHECK
          PAGE 2 OF 4
003
                                     008
(ENTRY POINT AA)
                                     (ENTRY POINT AB)
Is the feature Main Storage card
                                    - Probe All control lines in the
installed in location A-B5?
                                      chart.
YN
                                        Line Name
                                                     Probe Point
 004
                                                      (MIM 501)
 GO TO STEP 008,
                                    A-C4D02
 ENTRY POINT AB.
                                    - Valid Address
                                    - Parity Error
                                                       A-C4D04
005
                                    + WT/-RD
                                                       A-C5D04
- Probe;
                                    - T Comp
                                                        A-C5D05
A-B5-TP01 '+feature parity check'
                                    - Stor Request Dot A-C5D06
        (MIM 403).
                                    - Parity Bit
                                                       A-C5D09
                                    - Feat Stor Select A-C7B02
Up light: On
Down light: Off
                                    Up light: Off
                                    Down light: On
NOTE: Answer 'No' if no TP on the
 card.
                                    Are the lights correct for any
                                    line?
Are the lights correct?
                                    YN
YN
                                      009
 006
                                      - Probe Both lines in the chart.
 - Power Off.
 - Remove the Feature Main
                                           Line Name
                                                       Probe Point
   Storage card (A-B5) (MIM 501).
                                                        (MIM 501)
 - Power On.
                                       - SAR Bit 0 Dot A-C6D13
                                       + Device Select 4 A-C7B11
 Does Power On Checkout fail with
 a Parity Check?
 ΥN
                                      Up light: Off
                                      Down light: On
   007
   - Defective Feature
                                      Are the lights correct for both
                          Main
                          (MIM)
     Storage card (A-B5)
                                      lines?
     403).
                                      ΥN
                                                EC840874 PEC839787
3
                                     333
DE
                                     FGH
                                                        MAP 0532-2
```

```
FGH
           BASE MAP
2 2 2
           PARITY CHECK
           PAGE 3 OF 4
   010
   - Defective Diskette/Main MPU
     card (A-C1) (MIM 303).
   - If a 'Ros Patch' cable is
     connected to the card,
   GO TO MAP 0600,
   ENTRY POINT A.
 011
 GO TO STEP 012,
 ENTRY POINT B.
012
(ENTRY POINT B)
- Power Off.
- Check the control line(s) that
 match the probe light condition
 for a ground.
- Use the C.E. Voltmeter set to
 the RX1 range.
- Connect the C.E. voltmeter to
 the probe point for the failing
 control line(s).
Does the meter have a 5 ohm or
less reading?
YN
 013
 - Power Off.
 - Remove the following feature
   MPU card(s) (if installed)
   (MIM 501).
        Feature Location
     Printer
                    A-D5
     Communications A-E5
 - Power On.
 Does Power On Checkout fail with
 a Parity Check?
 YN
```

```
014
      - Install the feature MPU
       card(s), one at a time.
       until the error ocurrs.
      - If a 'Ros Patch' cable is
       connected to the card,
     GO TO MAP 0600,
     ENTRY POINT A.
    015
    - Defective Diskette/Main MPU
     card (A-C1) (MIM 303) or the
     Keyboard/Display MPU card
     (A-A1) (MIM 200).
    - If a 'Ros Patch' cable is
     connected to the card.
    GO TO MAP 0600,
    ENTRY POINT A.
  016
  - Use MIM 531 for the failing
   line net.
  - Remove all cards in the net,
   one at a time, until the meter
   reading is 100 ohms or more.
  - If all cards have
                            been
    removed, and the meter reading
   is still zero, check the logic
   board for a ground.
017
- Defective Feature Main Storage
 card (A-B5) (MIM 403).
---- OR ----
- Defective Diskette/Main MPU card
 (A-C1) (MIM 303).
- If a 'Ros Patch' cable is
  connected to the card,
GO TO MAP 0600, ENTRY POINT A.
```

MAP 0532-3

DJKL

2

1

EC840874 PEC839787

```
A B
           BASE MAP
1 1
           PARITY CHECK
            PAGE
                  4 OF
                         4
  018
 - Power Off.
  - Remove the feature Main MPU
    card and install the following
    jumpers;
    A-C1 Jumpers 2,4,5 (MIM 303)
    A-E7D09 to A-E7D10 KBD/Disp
    A-E7B11 to A-E7B12 Printer
     A-E7D12 to A-E7D13 Comm.
 - Power On.
 Is the Condition Code table
  displayed on Data Station 0?
 ΥN
   019
   - Power Off.
   - Remove the
                     jumpers
                              and
     reinstall the Feature Main
     MPU card.
   - Power On.
   GO TO PAGE 2, STEP 003.
   ENTRY POINT AA.
 020
 - Defective feature Main
                              MP U
   card (A-E5) (MIM 402).
 - Remove the jumpers and replace
   the Feature Main MPU card.
 - If a 'Ros Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
021
- Run Main Storage A test (MDI
  0520) (MIM 961).
Does
        the
                test
                         complete
successfully?
YN
```

```
022
(ENTRY POINT C)
- Defective Feature Main Storage
card (A-B5) (MIM 403).
023
Is the size tested equal to the
total size of Main storage?
Y N
024
- Run Main Storage B test (MDI
0530) (MIM 961) for the total
size.
025
GO TO MAP 0800, ENTRY POINT A.
```

MAP 0532-4

MN

```
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```

IBM 5285 BASE MAP

ROS PATCH CARD MAP

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP	ENTRY	PAGE	STEP
NUMBER	POINT	NUMBER	NUMBER
0200	A	1	001
0210	A	1	001
0220	A	1	001
0500	A	1	001
0511	A	1	001
0531	A	1	001
0532	A	1	001
1000	A	1	001
1010	A	1	001
1011	A	1	001
1020	A	1	001
1021	A	1	001
1025	A	1	001
1026	A	1	001
1030	A	1	001
1040	A	1	001
3011	A	1	001
3012	A	1	001
3013	A	1	001
3015	A	1	001
3019	A	1	001
7000	A	1	001

001

(ENTRY POINT A)

- See the Theory Section for a description of the 'Ros Patch' card and it's purpose.
- You should use this MAP if the other MAPs instructed you to replace a microprocessor card.
- This MAP will help you in the isolation of 'Ros Patch' card errors from microprocessor card errors.
- 'Ros Patch' card errors are caused by failing hardware or a (Step 001 continues)

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EXIT POINTS

EXIT TH	IS MAP	то	Paus und adde after uner fige
P AGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	004	8000	A

.

.

```
BASE MAP
                                        A B
                                                             MAP 0600-2
           ROS PATCH CARD
           PAGE 2 OF 2
(Step 001 continued)
                                          006
 wrong level of card installed
  for the specific Ros level on an
                                          - See
                                                  MIM
                                                        565
                                                             for
 MPU card.
                                            definition on the cards.
                                          - Ensure that the 'Ros Patch'
NOTE:
         Each
                 MPU
                                            card label is at the correct
                        on
                              the
  Diskette/Main MPU card must be
                                           level for the MPU Ros level
  checked seperatly.
                                           that it is correcting (MIM
                                            200, 303, 402, 731, 801).
- Power Off.
- Disconnect the 'Ros Patch' card
                                          Is the 'Ros Patch' card label at
 cable from the MPU card.
                                          the correct level?
- Install the MPU 'Ros'
                                          YN
                           jumper
 (PN.
        1794401) on the MPU card
  (MIM 200, 303, 402, 731, 801).
                                           007
- Power On.
                                           - Order the correct level of
                                             'Ros Patch' card for the MPU
Does
                                             card Ros level.
      the same error condition
occur?
YN
                                          800
                                          - Replace the 'Ros Patch' card
 002
                                           with the same or higher level
 - Check for +5 Vdc from J02-03
                                           of card for the MPU card Ros
   to J02-01 at the 'Ros Patch'
                                           level.
   card (MIM 455, 563).
                                          ---- OR ----
 Is +4.5 to +5.5 Vdc present?
 ΥN
                                          - Defective 'Ros Patch' cable.
   003
                                        009
   - Check for +5 Vdc from J2-10
                                        - See MIM 565 for label definition
     to J2-03 at the power supply
                                          on the cards.
     (MIM 451,455).
                                        - Replace the MPU card with one
                                          that has the same or higher
                                          level of Ros.
   Is +4.5 to +5.5 Vdc present?
   YN
                                        NOTE: The new MPU card might not
     004
                                             need a 'Ros Patch' card.
     GO TO MAP 8000,
     ENTRY POINT A.
   005
   - Check the D.C. distribution
     cable for an open (MIM 455).
```

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label

INTERMITTENT ERROR MAP

PAGE 1 OF 5

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP	ENTRY	PAGE	STEP
NUMBER	Point	NUMBER	NUMBER
0100	A	1	001
0532	A	1	001
3015	A	1	001

001

(ENTRY POINT A)

- This chart assigns numbers to each Field Field Replaceable Unit (FRU) used in this map.

NUMBER	FIELD REPLACEABLE UNIT (FRU)
0 1	DISKETTE DRIVE (MIM 301)
02	DISKETTE DRV CNTRL CARD (DISK MIM 377
03	READ/WRITE HEAD (DISKETTE MIM 341)
04	STEPPER MOTOR (DISKETTE MIM 357)
05	A C MOTOR (DISKETTE MIM 351)
06	COMMUNICATIONS MPU CARD (MIM 811)
07	LINE ADAPTER CARD (MIM 8XX)
08	D/S DRV/REV CARD (MIM 211)
09	DISPLAY UNIT (MIM 181)
10	OPERATOR PANEL (MIM 071)
11	KEYBOARD SPEAKER (MIM 101)
12	KEY MODULE (MIM 121)
13	DISKETTE
14	DISKETTE/MAIN MPU CARD (MIM 303)
15	VFO CARD (MIM 501)
16	FEAT KBD/DISP STORAGE CARD (MIM 207)
17	MSR/ETC CARD (MIM 751)
18	MSR UNIT (MIM 78X)
19	KEYBOARD LOGIC OR PAD CARD (MIM 127)
20	VERTICAL ADJUSTMENT (MIM 163)
21	KEYBOARD ADAPTER CARD (MIM 205)
22	D/S ADAPTER CARD (MIM 201, 203)
23	ROS PATCH CARD (MIM 451)
24	USE THE PRINTER MAPS

(Step 001 continues)

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INTERMITTENT ERROR

PAGE 2 OF 5

(Step 001 continued)

NUMBER	FIELD REPLACEABLE UNIT
	(FRU)
2 5	FEATURE MAIN STORAGE CARD (MIM 403)
26	PRINTER ATTACHMENT MPU CARD (MIM 73)
27	KEYBOARD/DISPLAY MPU CARD (MIM 200)
28	FILE IN USE LED (MIM 079)
29	HORIZONTAL ADJUSTMENT (MIM 165)
30	VIDEO/BRIGHTNESS ADJ (MIM 161,171)
31	FEATURE MAIN MPU CARD (MIM 402)
32	MAIN MPU (SEE CHART #14 OR #31)

NOTES: Before proceeding in this MAP;
1. Ensure All voltages are within tolerance and the RIPPLE check is OK (MIM 461, 463).
2. Check all capacitor mounting screws on the power supply P.C. board assembly(s) (MIM 451).
Error codes can be obtained from the System operator or from running 'TSYSEREP' or 'TCOMEREP' (MIM 971).

Is an error code present or reported? Y N

002 Do you have a Display, Keyboard, Elapsed Time Counter (ETC) or Magnetic Stripe Reader (MSR) operational symptom? Y N

543 ABC EC840874 PEC839787

BASE MAP

MAP 0800-3

INTERMITTENT ERROR

PAGE 3 OF 5

003

)

DISKETTE / FEATURE / MISCELLANEOUS OPERATIONAL SYMPTOMS	01	PAIR : 02		
1. 'SOFT IPL' fails	27	32	23	+
2. System stops during 'IPL'	32	27	23	
3. Printer problems	26	32	23	
4. Communications problems	06	07	32	23
5. Diskette ready problems	01	02	05	14
6. Diskette seek errors	04	02	14	23
7. Diskette read errors	03	02	15	14
8. Diskette write errors	03	02	14	13
9. 'File in use' LED problems	28	14		
10. Single drive destroys data	03	02	14	23
11. Diskette interchange errors	03	13		
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				

BASE MAP

INTERMITTENT ERROR

PAGE 4 OF 5

004

В

2

DISPLAY / KEYBOARD / ETC / MSR Operational symptoms	RE1 01		SEQUEI 03	NCE 1 0
1. Single screen dark	09	08	, 	+ 2
	 	• •	• •	ו +
2. All screens dark	09	27	22	0
3. Characters missing in the corners	09	 +	 }	 +
4. Display out of focus	09			
5. Only one vertical line displayed	09			İ
6. Only one horizontal line displayed	09			
7. No contrast control	10			
8. Horizontal centering problem	29	09		
9. Vertical centering problem	09			
10. No brightness control	10	30	09	
ll. Video problems	30	09		
12. Vertical size, hold, or linearity problems	20	09		
13. Single key failure	12	19		
14. Multiple key failure	19			
15. Keyboard speaker failure	11	08	19	2
16. No keyboard response	19	08	22	2
17. Elapsed time counter failure	17	27	+	+
18. Magnetic stripe reader failure	17	18	27	+
19. No valid sign-on or data (display is stable)	27	32	22	2
20. Full screen reverse image	25	14	16	2

EC840874 PEC839787

INTERMITTENT ERROR

PAGE 5 OF 5

```
005
```

ERROR CODES			SEQUEI 03	
	• • • 	~~ 	+	04
0 X X X	32	23	NOTE	
1 1 1 0	16	27	22	
1200	16	27	22	
1201	16	27	22	
1204	17	27		
1 × × ×	19	22	27	
2 X X X	26	14	24	
3201	02	03	14	
3 2 5 1	01	08	05	13
3261	02	03	14	
32××	14	13	08	01
3301	13	03		

NOTE: If the Diskette/Main MPU card does not fix the problem, the feature MPU card that you are trying to access might be failing.

ERROR			SEQUE	
CODES	01	02	03	04
3 3 0 2	i 03		i 16	┝
		•~ 	* -	
3304	04	02	14	
3307	13	02	19	14
33XX	13			
3 5 X X	13			
4 X X X	06	07	32	
5 X X X	06	07	32	
9119	16	27	22	
9120	27	22	16	
9231	16	27	2.2	
9930	25			
9 X X X	32	27	23	

EC840874 PEC839787

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PAGE 1 OF 7

ENTRY	POINTS
-------	--------

FROM	ENTER	THIS MAP	
MAP	ENTRY	PAGE	STEP
NUMBER	POINT	NUMBER	NUMBER
0100	A	1	001
0100	В	2	004
0200	А	1	001
0220	A	1	001
0300	A	1	001
1025	С	5	039
	•		

EXIT POINTS

EXIT TH	IS MAP	то	
PAGE	STEP	МАР	ENTRY
NUMBER	NUMBER	NUMBER	POINT
2	003	0100	A
3	008	0100	Α
6	050	0100	А
4	029	0600	А
3	021	1010	А
3	019	1010	А
7	063	1010	А
3	018	1011	А
3	015	1020	А
3	014	1020	А
7	061	1020	А
3	013	1021	A
6	054	1025	А
5	038	1025	А
5	035	1025	А
3	022	1026	А
3	010	1030	А
3	009	1040	А
		-	

001 (ENTRY POINT A)

- The Keyboard/Display MPU controls the keyboard and display units attached to the 5285 system. In addition, it services the magnetic stripe readers and the interval timer.
- The partition to which the keyboard display is attached is normally displayed as the first byte of the status line.
- Each Keyboard/Display unit and magnetic stripe reader must be attached to a foreground partition in main storage. The interval timer may be serviced from any partition.
- The Keyboard/Display microprocessor handles from 1 to 4 Keyboard/Displays, from 1 to 4 magnetic stripe readers, and one interval timer.
- DCP can only handle 3 foreground partitions. See error code 9999, MIM 951.

(Step 001 continues)

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ENTRY

PAGE 2 OF 7

(Step 001 continued)

1.				
	KEYBOARD	DISPLAY	MAGNETIC	FOREGROUND
	DISPLAY	NUMBER	STRIPE READER	PARTITION
	NUMBER		NUMBER (MSR)	NUMBER
		++		
	U	U ·	U	U
	1(ADS)	1 (ADS)	1	1
	2(ADS)	2 (ADS)	2	2
	-			-

- 2. ADS=Auxiliary Data Station.
- 3. Foreground partition number 0 supports the console Keyboard/Display/MSR. The console is controlled by the Keyboard/Display MPU card A-A1 (MIM 501).
- 4. If there is a 5281 Data Station attached to the system it is supported by foreground partition number 1. The Remote Data Station is controlled by the Data Station Adapter Card (A-El) (MIM 501).
- 5. If there is a 5282 Data Station attached to the system, it is supported by foreground partition numbers 1 and 2. The Remote Data Station is controlled by the Dual Data Station Adapter Card A-E1 (MIM 501).

```
Did you start this call at the
System Entry MAP's?
Y N
  002
  Did you start this call from a
  remote Data Station MAP?
  Y N
    003
    GO TO MAP 0100,
    ENTRY POINT A.
  004
  (ENTRY POINT B)
  Is this a Display failure?
  YN
3 3 3
```

ABC

EC840847 PEC839787

MAP 1000-2

```
DATA ENTRY MAP
С
                                                           MAP 1000-3
                                       A B
2
                                       2 2
           ENTRY
           PAGE 3 OF 7
005
                                         016
Is this a Keyboard failure?
                                         Are all the displays failing?
Y N
                                         Y N
 006
                                           017
 Is this a Magnetic Stripe
                                           Is display number 0 failing?
 Reader failure?
                                           YN
 Y N
                                            018
   007
                                             GO TO MAP 1011,
                                            ENTRY POINT A.
   Is this an Elapsed
                            Time
   Counter failure?
   YN
                                           019
                                           GO TO MAP 1010,
     800
                                           ENTRY POINT A.
    GO TO MAP 0100,
    ENTRY POINT A.
                                         020
                                         Is
                                               the
                                                      Keylock feature
   009
                                         installed?
   GO TO MAP 1040,
                                         ΥN
   ENTRY POINT A.
                                           021
  010
                                           GO TO MAP 1010,
 GO TO MAP 1030, ENTRY POINT A.
                                           ENTRY POINT A.
011
                                         022
Are all the keyboards failing?
                                         GO TO MAP 1026, ENTRY POINT A.
Y N
                                       023
                                       Did you enter this MAP as a
 012
 Is keyboard number 0 failing?
                                       result of a Power On Checkout
 Y N
                                       failure?
                                       Y N
   013
  GO TO MAP 1021,
   ENTRY POINT A.
 014
 GO TO MAP 1020, ENTRY POINT A.
015
GO TO MAP 1020, ENTRY POINT A.
                                                   EC840847 PEC839787
                                       74
                                       DΕ
                                                            MAP 1000-3
```

)

```
Ε
           DATA ENTRY MAP
                                      GΗ
3
           ENTRY
           PAGE 4 OF 7
024
                                        028
(ENTRY POINT D)
- Power off.
- Ensure that
                 all
                        Diskette
 locking levers are open.
- Ensure that all 5281/5282 Data
  Station power switches are in
 the ON position.
- Power on.
- Wait at least 30 seconds.
                                        Y N
Is the condition code table
                                          029
displayed on Data Station 0 (MIM
931)?
Y N
 025
 - This is a Keyboard failure.
   Go to Step 004, Entry Point
   B, for further isolation.
026
Is there a keyboard scan code
displayed in line 1 of
                           the
condi on code table (MIM 931)?
Y N
                                        030
 027
 - Insert
             the
                      Diagnostic
   Diskette 1 in drive 4000 and
   close the locking lever.
                                      031
  Is the First Display Prompt
  (50-01) (MIM 941)
                      displayed
  correctly on Data Station 0?
  Y N
                                      Y N
                                        032
                                        Y N
                                      5 5 5
FGH
                                      JKL
```

```
- Power off.
 - Remove
          the Data Station
   Adapter card (A-E1) (MIM
   501).
 - Power on.
 Is the First Display Prompt
 (50-01) (MIM 941) displayed
 correctly on Data Station 0?
   - Defective Keyboard/Display
     Storage card (A-B7) (MIM
     207).
   ____OR____
   - Defective Keyboard/Display
    MPU card (A-A1) (MIM 200).
   - If a 'Ros Patch' cable is
     connected to the card
   GO TO MAP 0600.
   ENTRY POINT A.
 - Defective
               Data
                       Station
   Adapter card (A-E1) (MIM
   501).
- Press the 'X' key and then the
 ENTER key.
         Keyboard Information
Is the
Prompt (50-02) (MIM 941) visible
on Data Station 0?
 Is Prompt (50-06) (MIM 941)
 visible on Data Station 0?
           EC840847
                     PEC839787
                   MAP 1000-4
```

MAP 1000-4

```
JKL
           DATA ENTRY MAP
                                                           MAP 1000-5
                                       ΜN
4 4 4
            ENTRY
            PAGE 5 OF
                         7
    033
                                         040
    Is there a 9930 or 9231 error
                                         - Press the ENTER key.
    displayed on Data Station 0?
    Y N
                                         Is Prompt (50-03) (MIM 941)
                                         visible on Data Station 0?
      034
                                         Y N
      - This is a Keyboard
        failure (no response).
                                           041
        Go to Step 004, Entry
                                           - This is a display failure.
        Point B,
                   for further
                                             Go to Step 004, Entry Point
        isolation.
                                             B, for further isolation.
    035
                                         042
    GO TO MAP 1025,
                                         GO TO STEP 039,
    ENTRY POINT A.
                                         ENTRY POINT C.
  036
                                       043
  - To determine the answer to
                                       - Select the current definition
   the Prompt on the display, go
                                         and press the ENTER key.
   to MIM 207.
  - Enter the correct option and
                                       Is there a 9120 error displayed
    press the ENTER key.
                                       on Data Station 0?
                                       Y N
  Are there any
                           codes
                   error
  displayed?
                                         044
  Y N
                                         - Press the SYS REQ key.
    037
                                         Is the Load Prompt (MIM 941)
    GO TO STEP 039,
                                         displayed on Data Station 0?
   ENTRY POINT C.
                                         YN
  038
                                           045
  GO TO MAP 1025, ENTRY POINT A.
                                           - This is a display failure,
                                             go to MAP 1000, Entry Point
039
                                             B, for further isolation.
(ENTRY POINT C)
                                         046
Is Prompt (50-03)
                     (MIM)
                            941)
                                         - Press the SYS REQ key on all
visible on Data Station 0?
                                           other keyboards.
Y N
                                         Do all Data Station have a Load
                                         Prompt
                                                  displayed on their
                                         screens?
                                         Y N
                                                   EC840847
                                                              PEC839787
                                       6 6 6
MN
                                       PQR
                                                           MAP 1000-5
```

9

```
DATA ENTRY MAP
                                        Ρ
QR
                                                            MAP 1000-6
5 5
                                        5
            ENTRY
            PAGE
                   6 OF
                         7
  047
                                        053
  - This is a display failure, qo
                                        - Power off.
    to MAP 1000, Entry Point B,
                                        - Wait approximately 30 seconds.
    for further isolation.
                                        - When the First Prompt (50-01)
                                          (MIM 941) is displayed on Data
048
                                          Station 0, press the 'X' key
- Power off.
                                          and then the ENTER key.
- 'IPL'.
            using
                      Diagnostic
                                        - When the Keyboard Information
  Diskette 1, from Data Station 0
                                          Prompt (50-02) (MIM 941) is
  (MIM 941).
                                          displayed, record the number of
- Do
        not use the current
                                         keyboards displayed
                                                                on the
  definition.
                                         screen.
- Select a single partition.
- Select 'DCP' (MIM 951).
                                        Does the number of
                                                               keyboards
- Select and run MDI 1060 (MIM
                                        displayed on the screen match the
  961).
                                        number of keyboards installed on
                                        the system?
Was the failure found by MDI
                                        ΥN
1060?
YN
                                          054
                                         - This is a 9120 error.
  049
                                         GO TO MAP 1025, ENTRY POINT A.
  - Select and run MDI 1070
                            (MIM
   961).
                                        055
                                        - Press the ENTER key.
  Was the failure found by MDI
                                        - Prompt (50-03) (MIM 941) will
  1070?
                                          be displayed.
  ΥN
                                        - Select the 'No' option.
                                        - Select the correct display size
                                          for each foreground partition
    050
    GO TO MAP 0100,
                                          as the prompts are displayed.
    ENTRY POINT A.
                                        - Press the SYS REQ, 2, and z
                                          keys on Data Station O.
  051
  End of call.
                                        Is the Load Prompt displayed on
                                        Data Station 0?
052
                                        Y N
End of call.
                                          056
                                          - This is a display failure.
                                          GO TO PAGE 2, STEP 004,
                                         ENTRY POINT B.
                                        057
                                        GO TO PAGE 4, STEP 024,
```

```
ENTRY POINT D.
```

EC840847 PEC839787

```
F
           DATA ENTRY MAP
                                       D
4
                                       3
           ENTRY
           PAGE 7 OF 7
058
                                       063
- See MIM 931 to determine which
 keyboard may be causing the
 scan code to be displayed.
- Power off.
- Disconnect
               the
                       keyboard
 associated with the displayed
 scan code from the system.
- Power on.
- Wait at least 30 seconds for
 the condition code table to be
 displayed on Data Station 0.
Is the scan code still displayed
in line 1 of the condition code
table (MIM 931)?
YN
  059
 Was the scan code displayed
 generated by keyboard 0 (MIM
 931)?
 YN
    060

    Suspect

               a single
                             key
     failure (repeating
      characters).
   - GO TO THE 5281 OR 5282 DATA
     STATION
               DATA ENTRY MAP
     1000, ENTRY POINT A.
 061
 - Suspect a single key failure
   (repeating characters).
 GO TO MAP 1020, ENTRY POINT A.
062
- There is a Keyboad
                         Service
  Request bit active.
GO TO PAGE 2, STEP 004,
ENTRY POINT B.
```

1

GO TO MAP 1010, ENTRY POINT A.

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A-A1 DISPLAY MAP

PAGE 1 OF 18

ENTRY POINTS

.

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP
0200 1000	A	2 2	001 001
1026	A	2	001
8000	A	2	001

EXIT POINTS

EXIT TH	IS MAP	то	
PAGE	STEP	MAP	ENTRY
NUMBER		NUMBER	POINT
		, +	
9	036	0100	А
6	011	0600	А
6	017	0600	Α
7	023	0600	А
9	040	0600	Α
12	058	0600	А
12	060	0600	А
13	069	0600	А
15	086	0600	А
16	092	0600	А
16	097	0600	Α
18	107	0600	А
18	109	0600	Α
17	103	0600	Α
7	026	0600	Α
11	055	0600	Α
13	072	0600	Α
15	089	0600	A
16	095	0600	А
7	020	0600	A
17	101	0600	A
12	061	0600	Α
11	056	0600	А
18	110	. 0600	А
5	800	0600	A
12	063	0600	A
14	081	0600	A
9	035	0600	A
9	034	0600	A
14	080	0600	A
8	027	0600	A
5	007	8000	A
8	033	8000	Α
10	043	8000	A
14	078	8000	A

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indicator in the MAP's.3. The probe must be correctly grounded to ensure correct operation (MIM 905).

	DISPLAY	
SYMP TOM	COMMENTS	REPAIR ACTION
DARK DISPLAY	NO DISPLAY	 ENSURE THAT THE DISPLAY FUSE IS GOOD (MIM 141). ENSURE THAT THE +5 VDC, -5 VDC AND +8.5 VDC ARE PRESENT AT THE A-A1 CAR LOCATION (MIM 531). SEE MIM 461 AND 463 FOR LEVEL AND RIPPLE CHECKS IF ANY VOLTAGE IS MISSING OR OUT OF TOLERANCE, GO TO POWER MAP 8000, ENTRY POINT A IF ALL DISPLAYS FAIL AND THE KEYLOCK FEATURE IS INSTALLED, GO TO MAP 1026, ENTRY POINT A IF THE REPAIR ACTIONS ABOVE DO NOT CORRECT TH FAILURE, GO TO MAP 1010 STEP 002.

(Step 001 continues)

MAP 1010-2

DATA ENTRY MAP

MAP 1010-3

A-A1 DISPLAY

PAGE 3 OF 18

(Step 001 continued)

	DISPLAY	
SYMPTOM	COMMENTS	REPAIR ACTION
OUT OF FOCUS		REPLACE THE DISPLAY ASSEMBLY (MIM 181).
CHARACTERS MISSING ONLY IN THE CORNERS		MIM 160
DISPLAY Changes Size	DISPLAY IS STABLE	REPLACE THE DISPLAY Assembly (MIM 181).
ONLY A Horizontal Line IS Displayed	LINE MAY BE SOLID OR BROKEN	REPLACE THE DISPLAY Assembly (MIM 181).
ONLY A VERTICAL LINE IS DISPLAYED	LINE MAY BE SOLID OR BROKEN	REPLACE THE DISPLAY Assembly (MIM 181).
NO CONTRAST Control	CANNOT ADJUST INTENSITY OF HIGHLIGHTED FIELDS.	MAP 1010 , ENTRY POINT B.
DISPLAY IS HORIZONTALLY OFF CENTER	DISPLAY IS EITHER TOO MUCH TO THE LEFT OR RIGHT SIDE OR SHIFTING BACK AND FORTH.	 SEE MIM 165 FOR THE HORIZONTAL ADJUSTMENT. IF THE ADJUSTMENT CANNOT BE MADE, REPLACE THE DISPLAY UNIT (MIM 181).

(Step 001 continues)

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A-A1 DISPLAY

PAGE 4 OF 18

(Step 001 continued)

	DISPLAY	
SYMPTOM	COMMENTS	REPAIR ACTION
BRIGHTNESS, OR VIDEO PROBLEMS	TOO LITTLE BRIGHTNESS. 2. RASTER DISPLAYED.	 SEE VIDEO ADJUSTMENT (MIM 161, 171). SEE BRIGHTNESS LIMITER ADJUSTMENT (MIM 161, 171). IF THE ADJUSTMENT CANNOT BE MADE, GO TO MAP 1010, STEP 6.
	TOO LARGE OR	 SEE VERTICAL ADJUSTMENT (MIM 163) IF THE ADJUSTMENT CANNOT BE MADE, GO TO MAP 1010, STEP 5.

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```
DATA ENTRY MAP
                                      FG
                                                          MAP 1010-5
С
4
           A-A1 DISPLAY
           PAGE 5 OF 18
003
                                        008
                           panel
                                        - Suspect a defective ground to
- Turn
         the
                control
                                                Brightness
                                                               Control
  Brightness Control
                     clockwise
                                         the
                                          terminal 1 (MIM 217).
  until video appears, or fully
  clockwise if no video.
                                        ____ OR ____
Is the Display completely dark
                                        - Defective Display (MIM 181).
(no raster)?
YN
                                        _ _ _ _ OR _ _ _ _
  004
                                        - Defective Keyboard/Display
 Is
             Display
                          stable
       the
  (synchronized)?
                                          MPU card (A-A1) (MIM 200).
                                        - If a 'ROS Patch' cable is
 YN
                                          connected to the card,
                                        GO TO MAP 0600, ENTRY POINT A.
   005
   - This checks for a vertical
                                      009
     sync problem.
                                      - Probe the display connector
                                        P20-009, '- Vertical Drive'
   Is the
              complete Display
                                        (MIM 200, 217).
   moving up or down?
   YN
                                      Up light: On
                                      Down light: On
     006
     - Power problems can appear
                                      Are the lights correct?
       as display problems such
       as distortion, flashing,
                                      Y N
       etc.
                        voltages
                                        010
     - Measure
                 all
       supplied to
                      the A-Al
                                        - Power off.
                                        - Disconnect A-Al-P01
       card.
                                                                 (MIM)
      - See MIM 463
                     for
                            the
                                          217).
       ripple voltage check.
                                        - Power on.
                                        - Probe A-Al-TP-13, '- Vertical
                                          Drive' (MIM 200, 217).
     Are the voltages correct?
     Y N
                                        Up light: On
       007
                                        Down light: On
       GO TO MAP 8000,
       ENTRY POINT A.
                                        Are the lights correct?
                                        ΥN
                                                  EC840874 PEC839787
                                      6 6 6
9 6
DEFG
                                      HJK
                                                          MAP 1010-5
```

```
EHJK
          DATA ENTRY MAP
                                      Ν
                                                           MAP 1010-6
5 5 5 5
           A-A1 DISPLAY
           PAGE 6 OF 18
     011
                                       016
     - Defective
                                      - For the line probed in the
       Keyboard/Display MPU card
                                        previous step,
       (A-A1) (MIM 200).
     - If a 'ROS Patch' cable is
                                       Up light: Off
       connected to the card,
                                       Down light: On
      GO TO MAP 0600.
     ENTRY POINT A.
                                       Are the lights correct?
                                       Y N
    012
    - Use MIM 217 to trace the '-
                                        017
     Vertical Drive' line for
                                        - Defective Diskette/Main MPU
     opens or grounds.
                                         card (A-C1) (MIM 303).
                                        - If a 'ROS Patch' cable is
   ---- OR ----
                                          connected to the card,
                                        GO TO MAP 0600, ENTRY POINT A.
   - Defective Display Unit (MIM
     181).
                                       018
                                      - Power off.
  013
                                      - Set the CE meter to the RX1
 - Defective Display Unit (MIM
                                        scale.
   181).
                                      - Connect the positive lead to
                                        A-A1B04, '18 MHz clock', and
014
                                        the negative lead to ground.
(ENTRY POINT B)
                                      Is the meter reading 30 ohms or
- The Contrast Control is only
                                      above?
  used to change the intensity of
                                      YN
 highlighted fields.
                                         019
Ī5
    there a problem with the
                                        - Leave the meter connected as
Contrast Control?
                                          in the previous step.
Y N
                                        - Use the net list (MIM 531).
                                          Remove each card in the net,
  015
                                          one at a time, until the
  (ENTRY POINT C)
                                          meter reads 30 ohms or above.
                                        - Replace
                                                   the last card
  - Probe A-A1B04, '18 MHz clock'
                                          removed.
   (MIM 531).
                                         - If all cards in the net have
                                          been removed and the meter
  Up light: On
                                          reading is still below 30
  Down light: On
                                          ohms, suspect a ground on the
                                          Logic Board.
  Are the lights correct?
  ΥN
                                                  EC840874
                                                             PEC839787
8 7
                                       7
LMN
                                      P
                                                           MAP 1010-6
```

```
ΜP
           DATA ENTRY MAP
                                      R
                                                          MAP 1010-7
66
           A-A1 DISPLAY
           PAGE 7 OF 18
                                      024
 020
 - Defective Diskette/Main MPU
                                      - Power off.
                                      - Set the CE meter to the RX1
   card (A-C1) (MIM 303).
  - If a 'ROS Patch' cable is
                                        scale.
   connected to the card,
                                      - Connect the positive lead to
 GO TO MAP 0600, ENTRY POINT A.
                                       A-A3B05, '1 MHz clock', and the
                                        negative lead to ground.
021
- Probe A-A3B05, '1 MHz clock'
                                      Is the meter reading 30 ohms or
  (MIM 531).
                                       above?
                                      ΥN
Up light: On
Down light: On
                                        025
                                        - Leave the meter connected as
Are the lights correct?
                                          in the previous step.
Y N
                                        - Use the net list (MIM 531).
                                          Remove each card in the net,
                                          one at a time, until the
 022
  - For the line probed in the
                                          meter reads 30 ohms or above.
                                        - Replace
                                                    the last card
   previous step,
                                          removed.
  Up light: Off
                                        - If all cards in the net have
                                          been removed and the meter
  Down light: On
                                          reading is still below 30
  Are the lights correct?
                                          ohms, suspect a ground on the
  YN
                                          Logic Board.
   023
                                       026
   - Defective Diskette/Main MPU
                                      - Defective Diskette/Main MPU
                                        card (A-C1) (MIM 303).
     card (A-C1) (MIM 303).
   - If a 'ROS Patch' cable is
                                      - If a 'ROS Patch' cable is
     connected to the card,
                                        connected to the card,
   GO TO MAP 0600,
                                      GO TO MAP 0600, ENTRY POINT A.
    ENTRY POINT A.
```

MAP 1010-7

8 QR

Ŋ

```
LQ
           DATA ENTRY MAP
                                      U
                                                         MAP 1010-8
6 7
           A-A1 DISPLAY
           PAGE 8 OF 18
  027
                                      030
  - - - - SUSPECT A - - - -
                                      - Power off.
                                      - Disconnect A-A1-P01 (MIM 200,
  - Defective Keyboard/Display
                                        217).
   Storage card (A-B7) (MIM
                                      - Remove the +5 Vdc lead from the
   207).
                                       Contrast Control terminal 3
                                        (MIM 217).
  ____ OR ____
                                      - Set the CE meter to the RX1
                                        scale.
 - Defective Keyboard/Display
                                      - Measure the resistance from
   MPU card (A-A1) (MIM 200).
                                       A-A1-P01-13 to frame ground.
  - If a 'ROS Patch' cable is
                                     - The meter should change from
   connected to the card,
                                       approximately 0 to 350 ohms as
 GO TO MAP 0600, ENTRY POINT A.
                                       the Contrast Control is turned
                                       from maximum counterclockwise
028
                                       to maximum clockwise.
- Load 'CRITEST' on the failing
 data station (MIM 933).
                                      Is the meter reading correct?
- Select TU03.
                                      Y N
- Adjust the Brightness Control
 so that normal characters are
                                       031
  just visible on the screen.
                                       - Use MIM 217 to trace the
- Turn the Contrast Control from
                                         'Contrast Control' line for
 maximum counterclockwise to
                                         opens or grounds.
 maximum clockwise.
                                       ---- OR ----
Is there a visual change only in
the highlighted area of the
                                        - Defective Contrast Control
pattern?
                                         (MIM 077, 217).
YN
                                      032
 029
                                      - Power on.
 - Measure the voltage at
                                      - Measure the voltage from the +5
   A-Al-TP-11 ( Contrast Control
                                       Vdc lead, removed from terminal
   ) to A-A1-TP18 ( Ground) (MIM
                                       3 of the Contrast Control, to
   200, 217).
                                       frame ground.
 - The voltage should change
   from 0 to + 5 Vdc as the
                                      Is the voltage +4.5 to +5.5 Vdc
   Contrast Control is turned
                                      present?
   clockwise.
                                      Y N
 Is the voltage correct?
                                       033
  ΥN
                                        GO TO MAP 8000, ENTRY POINT A.
                                                 EC840874 PEC839787
9 9
                                      9
STU
                                                         MAP 1010-8
                                      v
```

```
DSTV
         DATA ENTRY MAP
                                     Y
                                                        MAP 1010-9
5888
           A-A1 DISPLAY
           PAGE 9 OF 18
     034
                                     039
     - Defective
                                     - Power off.
       Keyboard/Display MPU card
                                    - Disconnect A-A1-P01 (MIM 217).
       (A-A1) (MIM 200).
                                     - Power on.
     - If a 'ROS Patch' cable is
                                    - Probe A-Al-TP16, '+ Horizontal
                                      Drive' (MIM 217).
       connected to the card,
     GO TO MAP 0600,
     ENTRY POINT A.
                                     Up light: On
                                     Down light: On
   035
   - Defective Keyboard/Display
                                     Are the lights correct?
     MPU card (A-A1) (MIM 200).
                                     ΥN
   - If a 'ROS Patch' cable is
    connected to the card,
                                       040
   GO TO MAP 0600,
                                       - Defective Keyboard/Display
   ENTRY POINT A.
                                        MPU card (A-A1) (MIM 200).
                                       - If a 'ROS Patch' cable is
                                        connected to the card,
 036
 GO TO MAP 0100, ENTRY POINT A.
                                       GO TO MAP 0600, ENTRY POINT A.
037
                                     041
Is the Display CRT filament on?
                                     - Use MIM 217 to trace the '+
YN
                                       Horizontal Drive' line for
                                       opens or grounds.
 038
 - Probe the display connector
                                     ____ OR ____
   P20-006 (MIM 217).
                                     - Defective Display Unit (MIM
 Up light: On
                                      181).
 Down light: On
 Are the lights correct?
 Y N
1 1
                                                EC840874 PEC839787
0 0
W X Y
                                                         MAP 1010-9
```

```
DATA ENTRY MAP
                                       ωz
х
9
                                       9
           A-A1 DISPLAY
           PAGE 10 OF 18
042
                                         046
* * * * * * * * * * * * * * * * *
                                          181).
            DANGER
* * * * * * * * * * * * * * * * *
                                       047
     THE NEXT PROCEDURE IS A
    POSSIBLE SHOCK HAZARD,
    BE EXTRA CAREFUL.
                                         (MIM 217).
                                       Up light: On
                                       Down light: On
- Power off.
                                       YN
- Disconnect the Display AC
  connector (MIM 141).
                                         048
- Power on.
- With the CE meter, measure the
  AC voltage for the display at
                                          217).
 the AC voltage connector (MIM
 141).
Is 99 to 121 Vac present?
                                           217).
YN
 043
 GO TO MAP 8000, ENTRY POINT A.
044
                                         YN
- Power off.
- Check the Display fuse (MIM.
                                           049
 141).
Is the Display fuse OK?
YN
  045
 - Replace the Display fuse (MIM
   141).
 - Reconnect the Display
                              AC
    connector (MIM 141).
  - Power on.
  - If the new
                   fuse
                                           Y N
                         opens,
    replace the Display Unit (MIM
    181).
                                       1 1 1 1
                                       2 2 2 1
                                       AAAA
```

- Defective Display Unit (MIM - Probe the display connector P20-006, '+ Horizontal Drive' Are the lights correct? - Power off. - Disconnect A-Al-POl (MIM - Power on. - Probe A-Al-TP16, * -Horizontal Drive' (MIM 200, Up light: On Down light: On Are the lights correct? - Power off. - Reconnect A-A1-P01 (MIM 217). - Power on. - Probe the display connector P20-008 (MIM 217). Up light: On Down light: On Are the lights correct? EC840874 PEC839787 MAP 1010-10 ABCD

MAP 1010-10

```
А
           DATA ENTRY MAP
                                       A A
D
                                       GН
1
           A-A1 DISPLAY
0
           PAGE 11 OF 18
050
                                         053
- Power off.
- Disconnect A-A1-P01 (MIM 217).
- Power on.
- Check
       to see
                   that
                            the
  Brightness Control and Contrast
 Control are fully clockwise.
        A-A1-TP10, '+ Video
- Probe
  Drive' (MIM 200, 217).
                                         above?
Up light: On
                                         YN
Down light: On
                                           054
Are the lights correct?
YN
 051
  - Probe A-A1B04, '18 MHz clock'
   (MIM 531).
  Up light: On
  Down light: On
  Are the lights correct?
  YN
   052
   - Probe A-C8B03, '18
                             MHz
     Clock' (MIM 531).
                                         055
   Up light: On
   Down light: On
   Are the lights correct?
    YN
                                       056
1 1
2 2
AAAA
EFGH
```

```
MAP 1010-11
  - Power off.
  - Set the CE meter to the RX1
   scale.
  - Connect the positive lead to
   A-C8B03, '18 MHz clock', and
   the negative lead to ground.
  Is the meter reading 30 ohms or
   - Leave the meter connected
     as in the previous step.
   - Use the net list (MIM 531).
     Remove each card in the
     net, one at a time, until
     the meter reads 30 ohms or
     above.
   - Replace the last card
     removed.
   - If all cards in the net
     have been removed and the
     meter reading is still
     below 30 ohms, suspect a
     ground on the Logic Board.
  - Defective Diskette/Main MPU
   card (A-C1) (MIM 303).
  - If a 'ROS Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
- Defective Keyboard/Display MPU
 card (A-A1) (MIM 200).
- If a 'ROS Patch' cable is
  connected to the card.
GO TO MAP 0600, ENTRY POINT A.
```

9

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MAP 1010-11

```
А
           DATA ENTRY MAP
F
1
           A-A1 DISPLAY
1
           PAGE 12 OF 18
057
- Probe A-A2B04, '- POR'
                           (MIM)
 531).
Up light: On
Down light: Off
Are the lights correct?
YN
 058
 - Defective Diskette/Main MPU
   card (A-C1) (MIM 303).
 - If a 'ROS Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
059
- Probe A-A2B04, '- POR' (MIM
 531).
- Momentarily jumper the line at
 A-C1-TP40, '- Test POR', to
 frame ground (MIM 303).
Up light: On
Down light: Pulses
Are the lights correct?
YN
                                       065
 060
 - Defective Diskette/Main MPU
   card (A-C1) (MIM 303).
 - If a 'ROS Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
061
                                       YN
- Defective Keyboard/Display MPU
 card (A-A1) (MIM 200).
- If a 'ROS Patch' cable
                             is
 connected to the card,
GO TO MAP 0600, ENTRY POINT A.
                                       1 1
```

AAAA MAP 1010-12 ABCE 1 1 1 1 0 0 0 1 062 - Use MIM 217 to trace the '+ Video Drive' line for opens or grounds. ---- OR ----- Defective Display Unit (MIM 181). 063 - Defective Keyboard/Display MPU card (A-A1) (MIM 200). - If a 'ROS Patch' cable is connected to the card, GO TO MAP 0600, ENTRY POINT A. 064 - Use MIM 217 to trace the '+ Horizontal Drive' line for opens or grounds. ____ OR ____ - Defective Display Unit (MIM. 181). - Probe P20-008, '+ Video Drive', at the display connector P20-008 (MIM 217). Up light: On Down light: On Are the lights correct? 53 EC840874 PEC839787 A A MAP 1010-12

JK

ł.

```
А
           DATA ENTRY MAP
κ
1
           A-A1 DISPLAY
2
           PAGE 13 OF 18
066
- Power off.
– Disconnect the
                         Display
  connector P20 (MIM 217).
- Power on.
- Check to see that the
 Brightness Control and Contrast
  Control are fully clockwise.
- Probe A-A1-TP10, '+ Video
 Drive' (MIM 200, 217).
Up
    light: On
Down light: On
Are the lights correct?
ΥN
 067
 - Probe A-A3B05, '1 MHz clock'
   (MIM 531).
  Up light: On
  Down light: On
 Are the lights correct?
 ΥN
    068
   - For the line probed in the
     previous step.
   Up light: Off
   Down light: On
   Are the lights correct?
   YN
     069
     - Defective Diskette/Main
       MPU
            card (A-Cl) (MIM
       303).
     - If a 'ROS Patch' cable is
       connected to the card,
     GO TO MAP 0600,
     ENTRY POINT A.
1
5
AAA
LMN
```

```
A A
                   MAP 1010-13
MN
  070
  - Power off.
  - Set the CE meter to the RX1
    scale.
  - Connect the positive lead to
    A-A3B05, '1 MHz clock', and
   the negative lead to ground.
  Is the meter reading 30 ohms or
  above?
  YN
    071
    - Leave the meter connected
     as in the previous step.
   - Use the net list (MIM 531).
     Remove each card in the
     net, one at a time, until
     the meter reads 30 ohms or
     above.
   - Replace the last card
     removed.
   - If all cards in the net
     have been removed and the
     meter reading is still
     below 30 ohms, suspect a
     ground on the Logic Board.
  072
  - Defective Diskette/Main MPU
   card (A-C1) (MIM 303).
  - If a 'ROS Patch' cable is
   connected to the card,
  GO TO MAP 0600, ENTRY POINT A.
073
- Connect the CE meter from
  A-A1-TP-12, 'Brightness
  Control', to ground (MIM 217).
- The voltage should change from
  0 to +5 Vdc as the Brightness
  Control is turned clockwise.
Is the voltage correct?
ΥN
1 1
44
           EC840874 PEC839787
A A
ΡQ
                  MAP 1010-13
```

```
А
           DATA ENTRY MAP
Q
           A-A1 DISPLAY
1
3
           PAGE 14 OF 18
074
- Power off.
- Disconnect A-A1-P01 (MIM 200,
  217).
- Remove the +5 Vdc lead from the
 Brightness Control terminal 3
  (MIM 217).
- Measure
          the resistance from
  A-A1-P01-14 to frame ground.
- The meter should change from
  approximately 0 to 100 ohms as
 the Brightness
                    Control
                               is
 turned
              from
                         maximum
 counterclockwise
                    to
                         maximum
 clockwise.
Is the meter reading correct?
ΥN
 075
 - Use MIM 217 to trace the
   'Brightness Control' line for
   opens or grounds.
 - - - - OR - - - - -
 - Defective Brightness Control
   (MIM 077, 217).
076
- Power on.
- Measure the voltage from the +5
 Vdc lead, removed from terminal
 3 of the Brightness Control, to
 frame ground.
Is +4.5 to +5.5 Vdc present?
YN
A A
```

R S

```
PRS
   077
   - Power off.
   - Remove the +5 Vdc lead from
     the
             Contrast
                        Control
     terminal 3 (MIM 217).
   - Power on.
   - Measure the voltage from
     the +5 Vdc lead, removed
     from terminal 3 of the
     Contrast Control, to frame
     ground.
   Is +4.5 to +5.5 Vdc present?
   YN
     078
     GO TO MAP 8000,
     ENTRY POINT A.
   079
   - Repair
               the
                     open
                           wire
               Contrast Control
     between
     terminal 3 and Brightness
     Control terminal 3 (MIM
     217).
  080
  - Defective Keyboard/Display
   MPU card (A-A1) (MIM 200).
  - If a 'ROS Patch' cable is
   connected to the card,
  GO TO MAP 0600, ENTRY POINT A.
081
- Use MIM 217 to trace the '+
  Video Drive' line for opens or
  grounds.
____ OR ____
- Defective Keyboard/Display
                             MPU
  card (A-A1) (MIM 200).
- If a 'ROS Patch' cable
                            15
  connected to the card,
GO TO MAP 0600, ENTRY POINT A.
```

MAP 1010-14

AAA

1

3

```
BAA
          DATA ENTRY MAP
4 J L
 1 1
           A-A1 DISPLAY
 23
           PAGE 15 OF 18
   082
   - Use MIM 217 to trace the '+
     Video Drive' line for opens
     or grounds.
   ---- OR ----
   - Defective Display Unit (MIM
     181).
 083
 - Defective the Display unit
    (MIM 181).
084
- Probe A-A3B04, '9 MHz clock'
  (MIM 531).
Up light: On
Down light: On
Are the lights correct?
YN
 085
 - For the line probed in the
   previous step.
 Up light: Off
 Down light: On
 Are the lights correct?
 ΥN
   086
   - Defective Diskette/Main MPU
     card (A-C1) (MIM 303).
    - If a 'ROS Patch' cable is
     connected to the card,
    GO TO MAP 0600,
    ENTRY POINT A.
A A
ΤU
```

```
MAP 1010-15
A A
ΤU
  087
  - Power off.
  - Set the CE meter to the RX1
    scale.
  - Connect the positive lead to
    A-C7D04, '9 MHz clock', and
    the negative lead to ground.
  Is the meter reading 30 ohms or
  above?
  YN
    088
   - Leave the meter connected
     as in the previous step.
    - Use the net list (MIM 531).
     Remove each card in the
     net, one at a time, until
     the meter reads 30 ohms or
      above.
    - Replace the last
                            card
     removed.
    - If all cards in the net
     have been removed and the
     meter reading is still
     below 30 ohms, suspect a
      ground on the Logic Board.
  089
  - Defective Diskette/Main MPU
    card (A-C1) (MIM 303).
  - If a 'ROS Patch' cable is
    connected to the card,
  GO TO MAP 0600, ENTRY POINT A.
090
- Probe A-A7B09, '2.25 MHz clock'
 (MIM 531).
Up light: On
Down light: On
Are the lights correct?
Y N
1 1
          EC840874 PEC839787
6 6
```

MAP 1010-15

A A

VW

DATA ENTRY MAP А М 1 À-A1 DISPLAY 5 PAGE 16 OF 18 091 - For the line probed in the previous step, Up light: Off Down light: On Are the lights correct? YN 092 - Defective Diskette/Main MPU card (A-C1) (MIM 303). - If a 'ROS Patch' cable is connected to the card, GO TO MAP 0600, ENTRY POINT A. 093 - Power off. - Set the CE meter to the RX1 scale. - Connect the positive lead to A-A1B04, '18 MHz clock', and the negative lead to ground. Is the meter reading 30 ohms or above? Y N 094 - Leave the meter connected as in the previous step. - Use the net list (MIM 531). Remove each card in the net, one at a time, until the meter reads 30 ohms or above. - Replace the last card removed. - If all cards in the net have been removed and the meter reading is still below 30 ohms, suspect a ground on the Logic Board. Α

х

A A MAP 1010-16 VΧ 1 5 095 - Defective Diskette/Main MPU card (A-C1) (MIM 303). - If a 'ROS Patch' cables is connected to the card, GO TO MAP 0600, ENTRY POINT A. 096 - Probe A-A4B04, '- POR CMD' (MIM 531). Up light: On Down light: Off Are the lights correct? YN 097 - Suspect a ground on Logic Board (MIM 501, 531). ____ OR ____ - Defective Diskette/Main MPU card (A-C1) (MIM 303). - If a 'ROS Patch' cable is connected to the card, GO TO MAP 0600, ENTRY POINT A. 098 - Probe A-A2B04, '- POR' (MIM 531). Up light: On Down light: Off Are the lights correct? YN 1 1 77 EC840874 PEC839787 A A ΥZ MAP 1010-16

```
А
           DATA ENTRY MAP
                                      Α
Z
                                      Y
1
           A-A1 DISPLAY
                                      1
6
                                      6
           PAGE 17 OF 18
099
                                      102
- Power off.
- Set the CE meter to the RX1
                                        531).
 scale.
- Connect the positive lead to
  A-A2B04, '- POR', and the
 negative lead to ground.
                                      Up
Is the meter reading 30 ohms or
above?
YN
                                      YN
 100
  - Leave the meter connected as
                                        103
   in the previous step.
 - Use the net list (MIM 531).
   Remove each card in the net,
   one at a time, until the
   meter reads 30 ohms or above.
 - Replace
             the last
                           card
   removed.
                                      104
 - If all cards in the net have
   been removed and the meter
   reading is still below 30
   ohms, suspect a ground on the
   Logic Board.
                                      ΥN
101
                                        105
- Defective Diskette/Main
                            MPU
 card (A-C1) (MIM 303).
- If a 'ROS Patch' cable
                             is
 connected to the card,
GO TO MAP 0600, ENTRY POINT A.
                                        YN
                                          106
                                          Do
                                          YN
                                      1 1 1 1
                                      8888
                                      B B B B
                                      ABCD
```

```
- Probe A-A2B04, "- POR' (MIM
- Momentarily jumper the line at
 A-C1-TP40, '- Test POR', to
 frame ground (MIM 303).
    light: On
Down light: Pulses
Are the lights correct?
 - Defective Diskette/Main MPU
   card (A-C1) (MIM 303).
 - If a 'ROS Patch' cable is
  connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
Do you have a Magnetic Stripe
Reader (MSR) or Elapsed
                           Time
Counter (ETC) feature installed
(A-B1) (MIM 501)?
 (ENTRY POINT D)
 Do you have an auxiliary Data
 Station feature installed
 (A-E1, A-F1 or A-G1) (MIM 501)?
   (ENTRY POINT E)
            you
                    have
                              а
   Keyboard/Display Storage
   feature card installed in
   A-B7 (MIM 207, 501)?
          EC840874 PEC839787
```

MAP 1010-17

```
BB
           DATA ENTRY MAP
CD
1 1
           A-A1 DISPLAY
77
           PAGE 18 OF 18
 107
 - Defective Keyboard/Display
   MPU card (A-A1) (MIM 200).
 - If a 'ROS Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
108
- Power off.
- Remove the Keyboard/Display
 storage card (A-B7) (MIM 207).
- Power on.
Does Power On Checkout terminate
correctly?
Y N
 109
 - Defective Keyboard/Display
   MPU card (A-A1) (MIM 200).
 - If a 'ROS Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
110
- Defective Keyboard/Display
 Storage card (A-B7) (MIM 207).
_ _ _ OR _ _ _ _
- Defective Keyboard/Display MPU
 card (A-A1) (MIM 200).
- If
     a 'ROS Patch' cable is
 connected to the card,
GO TO MAP 0600, ENTRY POINT A.
```

```
ABB
                   MAP 1010-18
4 A B
 1 1
 77
   111
   - Power off.
    - Remove the Data Station
     Adapter card (A-El) (MIM
     501).
   - Power on.
           Power
                   On
                        Checkout
   Does
    terminate correctly?
   YN
     112
     GO TO PAGE 17,
     STEP 106,
     ENTRY POINT E.
   113
   - Defective Data
                        Station
     Adapter card (A-El) (MIM
     501, 503).
 114
 - Power off.
  - Remove the MSR/ETC card
   (A-B1) (MIM 501).
  - Power on.
  Does
         Power
                 , On
                        Checkout
  terminate correctly?
  YN
   115
   GO TO PAGE 17, STEP 105,
   ENTRY POINT D.
 116
  - Defective MSR/ETC card (A-B1)
    (MIM 501).
117
- Perform the repair action.
```

IBM 5285 DATA ENTRY MAP

A-E1 DISPLAY MAP

PAGE 1 OF 10

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP Number
1000	A	1	001

ЕХІТ ТН	IS MAP	то	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY
		+	
2	007	0600	A
2	010	0600	А
4	022	0600	А
7	037	0600	Α
7	040	0600	Α
7	042	0600	Α
8	046	0600	Α
8	047	0600	А
2	008	0600	А
10	064	1026	B

EXIT POINTS

001 (ENTRY POINT A)

- The system must be dedicated to maintenance at this time.
- The display controlled by the Data Station Adapter card will be attached to partition 1 or 1 and 2 in main storage, depending on whether the second Data Station is a 5281 or 5282 Data Station. See MIM 201 or 203.
- The display adapter control and signal lines are common for both 5281 and 5282 Data Stations, with the exception of the partitions of keyboard display storage and main storage to which displays are attached.
- Ensure all voltages are present at the A-El card Logic Board pins. If any voltage is missing, go to MAP 8000, Entry Point A (MIM 531).
- Power off.
- 'IPL' Diagnostic Diskette 1 from Data Station 0 (MIM 941).
- Do not use the current definition.
- Select a single partition.
- Select 6 lines.
- Load 'DCP' (MIM 951).
- Select and run MDI 1060 (MIM 961).

Was the failure found by MDI 1060?

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1

0 2 AB

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MAP 1011-1

```
DATA ENTRY MAP
                                     FGH
В
                                                         MAP 1011-2
1
           A-E1 DISPLAY
           PAGE 2 OF 10
002
                                         007
- Select and run MDI 1070 (MIM
                                         - Failing Diskette/Main MPU
 961).
                                           Card (A-C1) (MIM 303).
                                         - If a 'ROS Patch' cable is
Was the failure found by MDI
                                           connected to the card,
1070?
                                         GO TO MAP 0600,
YN
                                         ENTRY POINT A.
 003
                                       008
 Is
      the failing
                        Display
                                       - The '18 MHz Clock' line is
 completely dark?
                                         failing. Suspect a shorted
 ΥN
                                         net. Use the net list (MIM
                                         531) to isolate the problem.
   004
                                       ____ OR ____
   Is the Display stable?
   YN
                                       - Failing Diskette/Main MPU
     005
                                         Card (A-C1) (MIM 303).
     - Probe A-E4D04, '18 MHz
                                       - If a 'ROS Patch' cable is
      clock' (MIM 531).
                                        connected to the card,
                                       GO TO MAP 0600, ENTRY POINT A.
     Up light: On
     Down light: On
                                     009
                                     - Probe A-E3D02, '1 MHz clock'
     Are the lights correct?
                                       (MIM 531).
     YN
                                     Up light: On
                                     Down light: On
       006
       - For the line probed in
        the previous step,
                                     Are the lights correct?
                                     ΥN
       Up light: Off
       Down light: On
                                       010
                                       - Failing Diskette/Main MPU
       Are the lights correct?
                                        Card (A-C1) (MIM 303).
                                       - If a 'ROS Patch' cable is
       Y N
                                         connected to the card,
                                       GO TO MAP 0600, ENTRY POINT A.
                                                 EC840874 PEC839787
1
0 6 4
                                     3
CDEFGH
                                     J
                                                         MAP 1011-2
```

```
J
          DATA ENTRY MAP
                                     Μ
                                                        MAP 1011-3
2
           A-E1 DISPLAY
           PAGE 3 OF 10
011
                                     013
- Probe A-E1-TP08, '+ Vertical
                                     - Power off.
Drive' (MIM 201, 203, 227).
                                     - Remove the terminating
                                      resistor.
Up light: On
                                     - Set the CE meter to the RX1
Down light: On
                                       scale.
                                     - Disconnect P01 on A-E1 (MIM
Are the lights correct?
                                      201, 203, 227).
YN
                                     - Connect the positive lead of
                                      the meter to A-E1-P01-5, '+
 012
                                       Vertical Drive', and the
 - Power off.
                                      negative lead to ground (MIM
 – Connect the
                  terminating
                                      201, 203, 227).
   resistor, P/N 417566 (5.1K)
                                     - The meter should read in the
   (MIM 903), from A-E1-TP-08 (+
                                     range of 30 ohms to 150 ohms.
   Vertical Drive) to A-E1-TP-15
   (ground) (MIM 200, 201, 203,
                                     Is the meter reading correct?
   227).
                                     YN
 - Power on.
 - Probe A-E1-TP08, '+ Vertical
                                      014
   Drive' (MIM 201, 203, 227).
                                       - Use MIM 227 to trace the '+
                                        Vertical Drive' line for
 Up light: On
                                        opens or grounds.
 Down light: On
                                       ---- OR ----
 Are the lights correct?
 Y N
                                      - GO TO THE 5281 OR 5282 DATA
                                         STATION DATA ENTRY MAP 1000,
                                         ENTRY POINT A.
                                     015
                                     - Failing Data Station Adapter
                                       Card (A-E1) (MIM 501).
                                                EC840874 PEC839787
4 4
KLM
                                                        MAP 1011-3
```

ΚL DATA ENTRY MAP 33 A-E1 DISPLAY PAGE 4 OF 10 016 - Power off. - Remove the terminating resistor. - Set the CE meter to the RX1 scale. - Disconnect PO1 on A-E1 (MIM 201, 203, 227). - Connect the positive lead of the meter to A-E1-P01-5, '+ Vertical Drive', and the negative lead to ground (MIM 201, 203, 227). - The meter should read in the range of 30 ohms to 150 ohms. Is the meter reading correct? YN 017 - Use MIM 227 to trace the '+ Vertical Drive' line for opens or grounds. ____ OR ____ - GO TO THE 5281 OR 5282 DATA STATION DATA ENTRY MAP 1000, ENTRY POINT A. 018 - Failing Data Station Adapter Card (A-E1) (MIM 501). 019 - GO TO THE 5281 OR 5282 DATA STATION DATA ENTRY MAP 1000, ENTRY POINT A. -If the failure is not isolated by the Data Station Maps, replace the Data Station Adapter Card (A-E1) (MIM 501).

2 020 - The High Intensity Drive line is turned on by an attribute to highlight fields. Is there a problem with the intensity of highlighted fields? YN 021 - Probe A-A5B08, '+ Diagnostic Force Video' (MIM 531). Up light: Off Down light: On Are the lights correct? YN 022 - Failing Keyboard/Display MPU card (A-A1) (MIM 200). - If a 'Ros Patch' cable is connected to the card, GO TO MAP 0600, ENTRY POINT A. 023 - Failing Data Station Adapter card (A-E1) (MIM 501).

MAP 1011-4

EC840874 PEC839787

Е

```
DATA ENTRY MAP
                                      Q
           A-E1 DISPLAY
           PAGE 5 OF 10
024
                                      025
- Load 'CRTTEST' on the failing
                                      - Power off.
  data station (MIM 933).
                                      - Set the CE meter to the RX1
- Select TU03.
                                        scale.
- Set up the CE meter and dB
                                      - Disconnect PO1 on A-E1 (MIM
 meter as in the ripple voltage
                                       201, 203, 227).
  level service check (MIM 463).
                                      - Connect the positive lead to
- Set the dB meter to the -20 dB
                                        A-E1-P01-12, '- High Intensity
  scale.
                                        Drive' and the negative lead to
- Connect the positive lead to
                                        ground (MIM 201, 203 227).
 A-E1-TP09, '- High Intensity
                                      - The meter should read in the
 Drive', and the negative lead
                                        range of 30 ohms to 150 ohms.
 to ground at A-E1-TP-15 (MIM
  201, 203 227).
                                      Is the meter reading correct?
- The
         meter
                 should
                          read
                                      YN
 approximately full scale on the
  6 Volt scale.
                                        026
- Press the 'Enter' key on the
                                        - Use MIM 227 to trace the '-
 data station to return to the
                                          High Intensity Drive' line
 prompt display.
                                          for opens or grounds.
                 should
- The
        meter
                           read
  approximately 0 on the 6 Volt
                                        _ _ _ _ OR _ _ _ _
  scale.
- Press the 'Enter' key.
                                        - GO TO THE 5281 OR 5282 DATA
- Screen will continuously change
                                          STATION DATA ENTRY MAP 1000,
                                          ENTRY POINT A.
```

027

- Failing Data Station Adapter

Card (A-E1) (MIM 501).

Ν

4

- from high intensity pattern to normal screen.
- The meter should continuously change from about full scale to about 0 reading.

Are the meter readings correct?

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P Q

6

Y N

```
DP
           DATA ENTRY MAP
                                      s
2 5
           A-E1 DISPLAY
           PAGE 6 OF 10
 028
                                      032
  - Power off.
                                      (ENTRY POINT B)
 - Set the CE meter to the RX1
   scale.
                                      - Probe A-E1-TP11, '+ Video
 - Disconnect P01 on A-E1 (MIM
                                       Drive' (MIM 201, 203, 227).
   201, 203, 227).
 - Connect the positive lead to
                                      Up
                                          light: On
   A-E1-P01-12, '-
                                      Down light: On
                           High
   Intensity Drive and the
   negative lead to ground (MIM
                                      Are the lights correct?
   201, 203, 227).
                                      ΥN
 - The meter should read in the
   range of 30 ohms to 150 ohms.
                                       033
                                        - Power off.
 Is the meter reading correct?
                                        - Connect the terminating
                                         resistor, P/N 4177566 (5.1K)
 YN
                                          (MIM 903), from A-E1-TP-11,
   029
                                         74
                                              Video
   - Use MIM 227 to trace the '-
                                         A-E1-TP-15 (ground) (MIM 200,
    High Intensity Drive' line
                                         201, 203, 227).
     for opens or grounds.
                                        - Power on.
                                        - Probe A-El-TP11, '+ Video
   ____ OR ____
                                         Drive' (MIM 201, 203, 227).
   - GO TO THE 5281 OR 5282 DATA
                                        Up light: On
     STATION
             DATA ENTRY MAP
                                        Down light: On
     1000, ENTRY POINT A.
                                        Are the lights correct?
 030
                                        YN
 GO TO THE 5281 OR 5282 DATA
 STATION DATA ENTRY MAP 1000,
                                         034
 ENTRY POINT A.
                                         - Probe
                                                     A-E1-TP10,
                                           Horizontal Drive' (MIM 201,
031
                                          203, 227).
Is Keylock feature installed?
Y N
                                         Up light: On
                                         Down light: On
                                         Are the lights correct?
                                         YN
                                                 EC840874 PEC839787
1
n
                                      9 9 8 7
R S
                                      τυνω
```

MAP 1011-6

Drive',

to

· +

```
Μ
           DATA ENTRY MAP
                                      Х
                                                          MAP 1011-7
6
           A-E1 DISPLAY
           PAGE 7 OF 10
035
                                      039
                                      - Probe A-E1B02, '- POR' (MIM
- Probe A-E4D04, '18 MHz Clock'
 (MIM 531).
                                       531).
Up light: On
                                      Up light: On
Down light: On
                                      Down light: Off
Are the lights correct?
                                      Are the lights correct?
                                      YN
YN
  036
                                        040
  - Probe A-C8B03, '18 MHz Clock'
                                        - Failing Diskette/Main MPU
   (MIM 531).
                                         Card (A-C1) (MIM 303).
                                        - If a 'ROS Patch' cable is
  Up light: On
                                         connected to the card,
  Down light: On
                                        GO TO MAP 0600, ENTRY POINT A.
                                      041
  Are the lights correct?
                                      - Probe A-E1B02, '- POR' (MIM
  YN
                                        531).
   037
                                      - Momentarily jumper the '- Test
   - The '18 MHz Clock' line is
                                       POR' line at A-C1-TP-040 to
    failing. Suspect a shorted
                                       frame ground (MIM 303).
     net. Use the net list (MIM
     531) to isolate the
                                      Up light: On
     failure.
                                      Down light: Pulses
    - - - - OR - - - - -
                                      Are the lights correct?
                                      YN
   - Failing Diskette/Main MPU
     Card (A-C1) (MIM 303).
                                        042
   - If a 'ROS Patch' cable is
                                        - Failing Diskette/Main MPU
     connected to the card,
                                        Card (A-Cl) (MIM 303).
   GO TO MAP 0600,
                                        - If a 'ROS Patch' cable is
   ENTRY POINT A.
                                         connected to the card,
                                        GO TO MAP 0600, ENTRY POINT A.
  038
  - Failing Data Station Adapter
                                      043
   Card (A-E1) (MIM 501).
                                      - Failing Data Station Adapter
                                        Card (A-E1) (MIM 501).
                                                 EC840874 PEC839787
```

```
۷
           DATA ENTRY MAP
6
           A-E1 DISPLAY
           PAGE 8 OF 10
044
- Probe A-E3D02, '1 MHz Clock'
 (MIM 531).
Up light: On
Down light: On
Are the lights correct?
YN
 045
 - For the line probed in the
  previous step,
 Up light: Off
 Down light: On
 Are the lights correct?
 ΥN
   046
   - Failing Diskette/Main MPU
     Card (A-C1) (MIM 303).
   - If a 'ROS Patch' cable is
    connected to the card,
   GO TO MAP 0600,
   ENTRY POINT A.
  047
 - The 'l MHz Clock' line is
   failing. Suspect a shorted
   net. Use the net list (MIM
   531) to isolate the problem.
 _ _ _ _ OR _ _ _ _ _ _
 - Failing Diskette/Main MPU
   Card (A-C1) (MIM 303).
 - If a 'ROS Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
```

```
048
- Power off.
- Remove
         the terminating
 resistor.
- Set the CE meter to the RX1
 scale.
- Disconnect P01 on A-E1 (MIM
 201, 203, 227).
- Connect the positive end of the
 meter to A-E1-P01-4, '+ Video
 Drive', and the negative lead
 to ground (MIM 201, 203, 227).
- The meter should read in the
 range of 30 ohms to 150 ohms.
Is the meter reading correct?
YN
 049
 - Use MIM 227 to trace the '+
  Video Drive' line for opens
   or grounds.
 ____ OR ____
 - GO TO THE 5281 OR 5282 DATA
   STATION DATA ENTRY MAP 1000,
   ENTRY POINT A.
050
- Failing Data Station Adapter
Card (A-E1) (MIM 501).
```

MAP 1011-8

Y

τU DATA ENTRY MAP MAP 1011-9 А 6 6 А A-E1 DISPLAY PAGE 9 OF 10 051 055 - Power off. - Power off. - Remove the terminating - Connect the terminating resistor. resistor, P/N 4177566 (5.1K) - Set the CE meter to the RX1 (MIM 903), from A-E1-TP-10, '+ scale. Horizontal Drive', to - Disconnect PO1 on A-E1 (MIM A-E1-TP-15, ground (MIM 200, 201, 203, 227). 201, 203, 227). - Connect the positive end of - Power on. the meter to A-E1-P01-4, '+ - Probe A-E1-TP10, '+ Horizontal Video Drive', the Drive' (MIM 201, 203, 227). and negative lead to ground (MIM 201, 203, 227). Up light: On - The meter should read in the Down light: On range of 30 ohms to 150 ohms. Are the lights correct? Is the meter reading correct? YN YN 056 052 - Power off. - Use MIM 227 to trace the '+ - Remove the terminating Video Drive' line for opens resistor. or grounds. - Set the CE meter to the RX1 scale. ---- OR ----- Disconnect PO1 on A-E1 (MIM 201, 203, 227). - GO TO THE 5281 OR 5282 DATA - Connect the positive lead of STATION DATA ENTRY MAP the meter to A-E1-P01-8, '+ 1000, ENTRY POINT A. Horizontal Drive', and the negative lead to ground (MIM 053 201, 203, 227). - Failing Data Station Adapter - The meter should read in the Card (A-E1) (MIM 501). range of 30 ohms and 150 ohms. 054 - Probe A-E1-TP10, '+ Horizontal Is the meter reading correct? Drive' (MIM 201, 203, 227). Y N Up light: On Down light: On Are the lights correct? Y N 1 1 1 0 0 0 EC840874 PEC839787 1 0 A AAA ZA BCD MAP 1011-9

DATA ENTRY MAP AAA MAP 1011-10 ACRZA 1269E BCD 999 A-E1 DISPLAY PAGE 10 OF 10 057 061 - Use MIM 227 to trace the '+ - Failing Data Station Horizontal Drive' line for Adapter Card (A-E1) opens or grounds. (MIM 501). _ _ _ _ OR _ _ _ _ 062 GO TO THE 5281 OR 5282 DATA - GO TO THE 5281 OR 5282 DATA STATION DATA ENTRY MAP STATION DATA ENTRY MAP 1000, ENTRY POINT A. 1000, ENTRY POINT A. 063 058 - Ensure that the keylock - Failing Data Station Adapter switch is in the local Card (A-E1) (MIM 501). position (MIM 229). - Probe A-E1D04, '- Keylock 059 Disable' (MIM 531). - Power off. Up light: On - Remove the terminating Down light: Off resistor. - Set the CE meter to the RX1 scale. Are the lights correct? - Disconnect PO1 on A-E1 (MIM YN 201, 203, 227). - Connect the positive lead of 064 GO TO MAP 1026, the meter to A-E1-P01-8, '+ Horizontal Drive', and the ENTRY POINT B. negative lead to ground (MIM 065 201, 203, 227). - The meter should read in the GO TO PAGE 6, STEP 032, range of 30 ohms and 150 ohms. ENTRY POINT B. Is the meter reading correct? 066 YN End of call. 060 067 - Use MIM 227 to trace the '+ End of call. Horizontal Drive' line for opens or grounds. _ _ _ OR _ _ _ _ - GO TO THE 5281 OR 5282 DATA STATION DATA ENTRY MAP 1000, ENTRY POINT A. EC840874 PEC839787

IBM 5285 DATA ENTRY MAP

A-A1 KEYBOARD MAP

PAGE 1 OF 11

ENTRY POIN	T S	
------------	-----	--

ENTER	THIS MAP	
ENTRY POINT	PAGE NUMBER	STEP NUMBER
B	3	003
	ENTRY POINT	POINT NUMBER

EXIT POINTS

EXIT TH	IS MAP	ТО	
PAGE	STEP	MAP	ENTRY
NUMBER	NUMBER	NUMBER	POINT
3	0 0 5	0600	A
4	012	0600	Α
9	040	0600	Α
9	043	0600	А
9	045	0600	А
9	049	0600	А
10	052	0600	Α
6	021	0600	Α
7	027	0600	А
5	016	0600	А
6	022	0600	Α
8	033	0600	Α
7	028	0600	Α
8	034	0600	Α
5	015	0600	Α
9	041	0600	А
11	059	0600	Α
10	055	0600	Α
11	062	0600	А
3	008	0600	А

001 (ENTRY POINT A)

- Data station cover removal procedure is in MIM 031.
- Keyboard cover removal procedure is in MIM 031.
- To diagnose single or multiple key failures, load the keyboard scan test into the partition to which the keyboard is attached (MIM 931).

 If the display station is powered on and there is power to the keyboard, the operation of the interface lines may be checked by probing the interface lines while pressing any typamatic key.
 To determine if there is power applied to the keyboard, see MIM 219 for the location of power probe points.
 (Step 001 continues)

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MAP 1020-1

A-A1 KEYBOARD

PAGE 2 OF 11

(Step 001 continued)

	KEYBOARD	
SYMP TOMS	COMMENTS	REPAIR ACTION
SINGLE KEY Failure	TO OPERATE	 CLEAN OR REPLACE THE KEYBOARD PAD PC BOARD. CLEAN OR REPLACE FAILING KEY MODULE (MIM 121).
MULTIPLE KEY FAILURES	SUSPECTED BIT FAILURES CHANGING ALL CHARACTERS OR INVALID SCAN CODES. LOOK FOR FAILURES GROUPED BY ROWS OR COLUMNS. THE POWER ON CHECKOUT FUNCTION (MIM 931) MAY BE USED TO COMPARE SCAN CODES TO THOSE IN MIM 113.	 RESEAT CABLES TO AND FROM THE KEYBOARD LOGIC CARD (MIM 101). CLEAN TOP AND BOTTOM CONNECTOR CONTACTS ON THE KEYBOARD PAD PC BOARD (MIM 127). REPLACE THE KEYBOARD LOGIC CARD (MIM 101). REPLACE THE KEYBOARD PAD PC BOARD (MIM 127).
NO KEYBOARD Response	NO RESPONSE TO Any Key.	 CHECK POWER TO THE KEYBOARD (MIM 219). IF ANY VOLTAGE IS MISSING, GO TO POWER MAP 8000, ENTRY POINT A. MAP 1020, STEP 003, ENTRY POINT B.
SPÉAKER FAILURE		MAP 1020, STEP 048, ENTRY POINT C.

Did you find the indication in the symptom index? Y N | | | | 1 1 3 A B

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1

```
ΕF
                                                          MAP 1020-3
В
           DATA ENTRY MAP
2
           A-A1 KEYBOARD
           PAGE 3 OF 11
002
                                        005
                                        - Defective Diskette/Main MPU
Note: The System
                      must
                             be
 dedicated to maintenance
                                          card (A-C1) (MIM 303).
                              at
                                        - If a 'Ros Patch' cable is
  this time.
- Power off.
                                          connected to the card,
- Énsure that all
                                        GO TO MAP 0600, ENTRY POINT A.
                       Diskette
  locking levers are open.
- Power on.
                                      006
- Wait at least 30 seconds for
                                      - Power off.
                                      - Set the CE meter to the RX1
  the condition code table to be
  displayed on Data Station 0
                                        scale.
  (MIM 931).
                                      - Connect the positve lead to
                                        A-A4B02, '100 Hz Clock', and
Is there a Scan code for Keyboard
                                        the negative lead to ground.
0 displayed in line 1 of the
condition code tables (MIM 931)?
                                      Is the meter reading 30 ohms or
YN
                                      above?
                                      YN
  003
                                        007
  (ENTRY POINT B)
                                        - Leave the meter connected as
 - Probe the '100 Hz Clock' line
                                          in the previous step.
   at A-A4B02 (MIM 531).
                                        - Use the net list (MIM 531).
                                        - Remove each card in the net,
                                          one at a time, until the
 Up light: On
 Down light: On
                                          meter reads 30 ohms or above.
                                        - Replace the last
                                                                  card
 Are the lights correct?
                                          removed.
 ΥN
                                        - If all the cards in the net
                                          have been removed and the
   004
                                          meter reading is still below
   - For the line probed in the
                                          30 ohms, suspect a ground on
                                          the Logic board.
     previous step:
   Up light: Off
                                      008
   Down light: On
                                      - Defective Diskette/Main MPU
                                        card (A-C1) (MIM 303).
   Are the lights correct?
                                      - If a 'Ros Patch' cable is
   YN
                                        connected to the card,
                                      GO TO MAP 0600, ENTRY POINT A.
                                                  EC840874 PEC839787
1
1 4
CDEF
                                                          MAP 1020-3
```

}

```
D
          DATA ENTRY MAP
                                       JK
3
           A-A1 KEYBOARD
           PAGE 4 OF 11
009
                                         012
- Answer the following questions
 for a single key depression.
- Probe A-Al-TPl, '- Serial Data
                                          grounds.
 Keyboard A' (MIM 200, 219).
    light: Pulses with a
Up
           key pressed.
Down light: On
Are the lights correct?
YN
 010
 - Probe J01-005,
                    '- Serial
   Data' on the Keyboard Logic
   Card (MIM 219).
 Up light: Pulses with a
                                       013
             key pressed.
                                       - Power off.
                                       - Disconnect
 Down light: On
                                        200,219).
 Are the lights correct?
                                       - Power on.
 YN
   011
                                        219).
   - Probe J01-01, '- POR', on
     the Keyboard Logic Card
                                      Up
     (MIM 219).
                                       Down light: On
   Up light: On
   Down light: Off
                                       ΥN
   Are the lights correct?
   YN
                                                  EC840874
5 5
                                       5 5
GHJK
                                       LM
```

- Use the MIM 219 to trace the '- POR' line for opens or _ _ _ _ OR _ _ _ _ - Defective Keyboard Logic card (MIM 101). _ _ _ _ OR _ _ _ _ - Defective Keyboard/Display MPU card (A-A1) (MIM 200). - If a 'Ros Patch' cable is connected to the card, GO TO MAP 0600, ENTRY POINT A. A-A1-P01 (MIM - Probe J01-05, '- Serial Data', on the Keyboard Logic card (MIM light: Pulses with a key pressed. Are the lights correct?

MAP 1020-4

MAP 1020-4

PEC839787

```
HLM
          DATA ENTRY MAP
                                     G
444
                                     4
           A-A1 KEYBOARD
           PAGE 5 OF 11
   014
                                     017
   - Use MIM 219 to trace the '-
     Serial Data' line for opens
     or grounds.
    - Defective Keyboard Logic
     card (MIM 101).
   _ _ _ _ OR _ _ _ _
                                     YN
   - Defective Keyboard Pad PC
                                      018
     Board (MIM 101, 127).
 015
 - Defective Keyboard/Display
   MPU card (A-A1) (MIM 200).
                                      Up
 - If a 'Ros Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
016
                                      YN
- Use MIM 219 to trace the '-
 Serial Data' line for opens or
 grounds.
---- OR ----
- Defective Keyboard/Display MPU
 Card (A-A1) (MIM 200).
- If a 'Ros Patch' cable is
 connected to the card,
GO TO MAP 0600, ENTRY POINT A.
```

```
- Probe A-Al-TP3, '+ Serial Data
 Clock Keyboard A' (MIM 200,
 219).
Up light: Pulses with a
           key pressed.
Down light: On
Are the lights correct?
 - Probe J01-006, '+ Serial Data
   Clock', on the Keyboard Logic
    card (MIM 219).
      light: Pulses with a
             key pressed.
  Down light: On
  Are the lights correct?
   019
   - Power off.
   - Disconnect A-A1-P01 (MIM
     200,219).
   - Power on.
   - Probe J01-006, '+ Serial
     Data Clock', on the
     Keyboard Logic card (MIM
     219).
    Up light: Pulses with a
               key pressed.
    Down light: On .
    Are the lights correct?
    Y N
           EC840874 PEC839787
6 6 6 6
```

MAP 1020-5

NPQR

MAP 1020-5

```
PQR
           DATA ENTRY MAP
555
           A-A1 KEYBOARD
           PAGE 6 OF 11
   020
   - Use MIM 219 to trace the '+
     Serial Data Clock' line for
     opens or grounds.
   _ _ _ _ OR _ _ _ _ _
   - Defective Keyboard Logic
     card (MIM 101).
   _ _ _ _ OR _ _ _ _
   - Defective Keyboard Pad PC
     Board (MIM 101, 127).
 021
 - Defective Keyboard/Display
   MPU card (A-A1) (MIM 200).
 - If a 'Ros Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
022
- Use MIM 219 to trace the '+
 Serial Data Clock' line for
 opens or grounds.
---- OR ----
- Defective Keyboard/Display MPU
 Card (A-A1) (MIM 200).
- If a 'Ros Patch' cable is
  connected to the card,
GO TO MAP 0600, ENTRY POINT A.
```

```
023
- Probe
         A-A1-TP2, '- Strobe
 Keyboard A' (MIM 200, 219).
    light: On
Up
Down light: Pulses with a
           key pressed.
Are the lights correct?
YN
 024
 - Probe J01-004, '- Strobe', on
   the Keyboard Logic card (MIM
   219).
 Up light: On
 Down light: Pulses with a
             key pressed.
 Are the lights correct?
 YN
   025
   - Power off.
   - Disconnect
                  P 0 1
                            (MIM)
     200,219).
    - Power on.
   - Probe J01-004, '- Strobe',
     on the Keyboard Logic Card
     (MIM 219).
   Up light: On
    Down light: Pulses with a
               key pressed.
    Are the lights correct?
    YN
```

MAP 1020-6

Ν

5

7777 STUV

MAP 1020-6

EC840874 PEC839787

```
DATA ENTRY MAP
STUV
                                      Х
6 6 6 6
           A-A1 KEYBOARD
           PAGE 7 OF 11
     026
     - Use MIM 219 to trace the
       '- Strobe' line for opens
       or grounds.
     _ _ _ _ OR _ _ _ _ _
     - Defective Keyboard Logic
       card (MIM 101).
     _ _ _ _ OR _ _ _ _
     - Defective Keyboard Pad PC
       Board (MIM 101, 127).
   027
   - Defective Keyboard/Display
     MPU card (A-A1) (MIM 200).
   - If a 'Ros Patch' cable is
     connected to the card,
   GO TO MAP 0600,
   ENTRY POINT A.
 028
 - Use MIM 219 to trace the '-
   Strobe' line for opens or
   grounds.
 _ _ _ _ OR _ _ _ _
 - Defective Keyboard/Display
   MPU Card (A-A1) (MIM 200).
 - If a 'Ros Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
029
- Probe A-Al-TP4, '- Break Code
 Keyboard A' (MIM 200, 219).
Up light: On
Down light: On
Are the lights correct?
Y N
8
                                       88
ΜХ
                                       ΥZ
```

030 - Probe J01-007, '- Break Code', on the Keyboard Logic card (MIM 219). Up light: On Down light: On Are the lights correct? YN 031 - Power off. - Disconnect P01 (MIM 200, 219). - Power on. - Probe J01-007, '- Break Code' on the Keyboard Logic Card (MIM 219). Up light: On Down light: On Are the lights correct? YN 032 - Use MIM 219 to trace the '-Break Code' line for opens or grounds. _ _ _ _ OR _ _ _ _ _ - Defective Keyboard Logic card (MIM 101). ---- OR ----- Defective Keyboard Pad PC Board (MIM 101, 127). EC840874 PEC839787

MAP 1020-7

```
MAP 1020-8
WYZ
          DATA ENTRY MAP
                                      А
777
                                      Δ
           A-A1 KEYBOARD
           PAGE 8 OF 11
                                      037
   033
   - Defective Keyboard/Display
                                      - Power off.
     MPU card (A-A1) (MIM 200).
                                      - IPL Diagnostic Diskette 1 from
                                      Data Station 0 (MIM 941).
   - If a 'Ros Patch' cable is
     connected to the card,
                                      - Do
                                           not use the current
   GO TO MAP 0600,
                                        definition.
   ENTRY POINT A.
                                      - Select a single partition.
                                      - Select 6 lines.
                                      - Load 'DCP' (MIM 951).
  034
                                      - Select MDI 1070 (MIM 961).
  - Use MIM 219 to trace the '-
   Break Code' line for opens or
   grounds.
                                      Can 'DCP' be loaded and MDI 1070
                                      be selected?
 ____ OR ____
                                      YN
 - Defective Keyboard/Display
                                       03.8
                                       Is there another keyboard on
   MPU Card (A-A1) (MIM 200).
 - If a 'Ros Patch' cable is
                                        the system?
                                       ΥN
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
                                         039
035
                                         - Power off.
                                         - Make the 'IPL' Diskette not
- To ensure correct operation of
 the 'Break Code' line, go to
                                           ready.
 MIM 111 and do the service
                                          - Power on.
 check.
                                         - Use the Power On Checkout
                                            function (MIM 931) to
                                            determine if the scan codes
Is the service check good?
YN
                                            from the keyboard are
                                           correct. See MIM 113 for
                                            scan codes.
 036
 - Defective Keyboard Logic card
   (MIM 101).
                                          Are the scan codes correct?
                                          Y N
                                      9999
                                                 EC840874 PEC839787
                                       A A A
Α
                                      BCDE
                                                          MAP 1020-8
Α
```

```
AAA
          DATA ENTRY MAP
                                      A A
                                                       MAP 1020-9
CDE
                                      BF
888
           A-A1 KEYBOARD
                                       8
           PAGE 9 OF 11
                                        044
   040

    Defective

                 Keyboard Logic
                                        - Run
                                                MDI
                                                      1070 for
                                                                  more
     card (MIM 101).
                                          isolation.
   ____ OR ____
                                        Was the failure found by MDI
                                        1070?
                                        YN
   - Defective Keyboard/Display
     MPU card (A-A1) (MIM 200).
   - If a 'Ros Patch' cable is
                                         045
     connected to the card,
                                         - Defective Keyboard/Display
   GO TO MAP 0600,
                                           MPU card (A-A1) (MIM 200).
   ENTRY POINT A.
                                          - If a 'Ros Patch' cable is
                                           connected to the card,
 041
                                          GO TO MAP 0600,
 - Defective Keyboard/Display
                                          ENTRY POINT A.
   MPU card (A-A1) (MIM 200).
 - If a 'Ros Patch' cable is
                                        046
   connected to the card,
                                        - End of call.
 GO TO MAP 0600, ENTRY POINT A.
                                       047
042
                                      - Run
                                               MDI
                                                      1070 for
                                                                  more
- Load 'DCP' from another Data
                                        isolation.
 Station (MIM 913, 951).
- Select MDI 1070 (MIM 961).
                                      Was the failure found by MDI
                                      1070?
Can 'DCP' be loaded and MDI 1070
                                      YN
be selected?
YN
                                        048
                                        (ENTRY POINT C)
 043
 - Defective Keyboard/Display
                                        Is this a speaker failure only?
   Storage card (A-B7) (MIM
                                        YN
   207).
                                          049
 _ _ _ _ OR _ _ _ _ _
                                          - Defective Keyboard/Display
                                           MPU card (A-A1) (MIM 200).
                                          - If a 'Ros Patch' cable is
 - Defective Keyboard/Display
   MPU card (A-A1) (MIM 200).
                                            connected to the card,
 - If a 'Ros Patch' cable is
                                          GO TO MAP 0600,
   connected to the card,
                                          ENTRY POINT A.
 GO TO MAP 0600, ENTRY POINT A.
                                       1 1
                                       1 0
                                                  EC840874 PEC839787
                                       A A
A
F
                                      GH
                                                           MAP 1020-9
```

```
DATA ENTRY MAP
А
                                       AAA
                                                           MAP 1020-10
н
                                       JKL
9
           A-A1 KEYBOARD
           PAGE 10 OF 11
050
                                           054
- Probe the '100 Hz Clock'
                                           - Leave the meter connected
                            line
 at A-A4B02 (MIM 531).
                                             as in the previous step.
                                           - Use the net list (MIM 531).
Up
    light: On
                                           - Remove each card in the
Down light: On
                                             net, one at a time, until
                                             the meter reads 30 ohms or
Are the lights correct?
                                             above.
Y N
                                           - Replace
                                                       the last
                                                                    card
                                             removed.
 051
                                           - If all the cards in the net
 - For the line probed in the
                                             have been removed and the
   previous step.
                                             meter reading is still
                                             below 30 ohms, suspect a
 Up light: Off
                                             ground on the Logic board.
 Down light: On
                                         055
 Are the lights correct?
                                         - Defective Diskette/Main MPU
 YN
                                           card (A-C1) (MIM 303).
                                         - If a 'Ros Patch' cable is
   052
                                           connected to the card,
   - Defective Diskette/Main MPU
                                         GO TO MAP 0600, ENTRY POINT A.
     card (A-C1) (MIM 303).
   - If a 'Ros Patch' cable is
                                       056
     connected to the card,
                                       - Probe A-Al-TP6, '-
                                                                   Click
   GO TO MAP 0600,
                                         Keyboard A' (MIM 200, 219).
   ENTRY POINT A.
                                       - Answer the following questions
                                         for a single key depression.
 053
 - Power off.
                                       Up light: On
 - Set the CE meter to the RX1
                                       Down light: Pulses with a
   scale.
                                                   key pressed.
 - Connect the positve lead to
   A-A4B02, '100 Hz Clock', and
                                       Are the lights correct?
   the negative lead to ground.
                                       YN
 Is the meter reading 30 ohms or
 above?
 Y N
                                       1 1
                                       1 1
                                                   EC840874
                                                              PEC839787
AAA
                                       A A
JKL
                                                            MAP 1020-10
                                       M N
```

```
А
           DATA ENTRY MAP
                                     ACAA
                                                         MAP 1020-11
                                      23 G M
N
           A-A1 KEYBOARD
1
                                         9 1
0
                                           Û
           PAGE 11 OF 11
057
                                           060
- Power off.
                                           - Use MIM 219 to isolate a
- Disconnect P01 (MIM 200,219).
                                             failing Speaker.
- Set the CE meter to the RX1
                                         061
  scale.
- Connect the NEGATIVE lead to
                                         - End of call.
 P01-5, '- Click A' (Keyboard
 A), and the POSITIVE lead to
                                       062
                                       - Defective Keyboard/Display
 ground.
NOTE:
                                         MPU card (A-A1) (MIM 200).
                                       - If a 'Ros Patch' cable is
This measurement must be made
                                         connected to the card,
 with
        the positive
                           lead
                                       GO TO MAP 0600, ENTRY POINT A.
 connected to ground to ensure
 an accurate reading.
                                      063
Is
     the
          resistance
                       measured
                                      - Perform the repair action.
between 30 and 50 ohms?
YN
  058
 - Use MIM 219 to trace '-
   Click' line for opens or
   grounds.
 _ _ _ _ OR _ _ _ _
 - Use MIM 219 to isolate a
   failing Speaker.
 ---- OR ----
 - Defective Keyboard Logic card
   (MIM 101).
059
- Defective Keyboard Logic card
 (MIM 101).
_ _ _ OR _ _ _ _ _
- Defective Keyboard/Display MPU
 card (A-A1) (MIM 200).
- If a 'Ros Patch' cable is
  connected to the card,
GO TO MAP 0600, ENTRY POINT A.
```

1

MAP 1020-11

This page is intentionally left blank.

1

A-E1 KEYBOARD MAP

PAGE 1 OF 6

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY Point	PAGE NUMBER	STEP NUMBER
1000	A	1	001

EXIT POINTS

EXIT TH	IS MAP	то	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
6	033	0600	A

(ENTRY POINT A)

001

- Power off.
- Ensure that all Diskette locking levers are open.
- Ensure that the 5281/5282 Data Station is powered on.
- Power on.
- Wait at least 30 seconds for the condition code table to be displayed on Data Station O (MIM 931).

```
Is there a Scan code for keyboard
1 or 2 displayed in line 1 of the
condition code table?
Y N
```

002 - Probe the '100 Hz Clock' line at A-E2D13 (MIM 531).

Up light: On Down light: On

Are the lights correct? ΥN

003 - Suspect an open net on the '100 Hz Clock' line (MIM 531).

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MAP 1021-1

```
В
           DATA ENTRY MAP
                                                          MAP 1021-2
1
           A-E1 KEYBOARD
           PAGE 2 OF 6
004
- Press and hold any typamatic
                                      NOTE:
                                      - 1. If the display station is
 key on the failing keyboard.
- Probe A-E1-TP12, '+ Serial Data
                                       powered on and there is power
 Keyboard A', or A-E1-TP1, '+
                                      to the keyboard, the operation
  Serial Data Keyboard B' (MIM
                                      of the interface lines may be
 201, 203, 227).
                                       quickly checked by probing the
                                        interface lines while pressing
Up light: On
                                        any typamatic key.
Down light: Pulses with a
           key pressed.
Are the lights correct?
Y N
  005
 - Power off.
  - Remove the Data Station cable
   from the cable connector
   panel position labeled 1 or
   1/2 (J103) (MIM 227).
 - Set the C.E. Meter to the
   RX1 scale.
 - Measure the resistance from
   the cable connector panel
   J103-13, ' + Serial Data
   Keyboard A', or pin 3, '+
   Serial Data Keyboard B', to
   frame ground (MIM 227).
 - The meter should read in the
   range of 50 to 100 Ohms.
  Is the meter reading between 50
  to 100 ohms?
  Y N
                                                 EC840874 PEC839787
3 3 3
CDE
                                                          MAP 1021-2
```

(

1

СD	E DATA ENTRY MAP	G	MAP 1021-3
22	2		
	A-E1 KEYBOARD		
	PAGE 3 OF 6		
		1	
	006	009	
	- Use MIM 227 to trace the '+		Power off.
	Serial Data Keyboard A or		Remove the Data Station cable
	B' line for opens or		from the cable connector panel position labeled 1 or 1/2
	grounds.		position labeled 1 or 1/2 (J103) (MIM 227).
	OR		Set the C.E. Meter to the RX1
			scale.
	- Defective Data Station		leasure the resistance from the
	Adapter Card (A-El) (MIM		cable connector panel J103-12,
	501).		' – Serial Data Clock Keyboard
			A', or J103-02, '- Serial Data
00	17		Clock Keyboard B', to frame
-	GO TO THE 5281 OR 5282 DATA		ground (MIM 227).
	STATION DATA ENTRY MAP 1000,	- 1	The meter should read in the
	ENTRY POINT A.	1	ange of 50 to 100 Ohms.
-	If the failure is not		
	isolated by the Data Station	Is	the meter reading between 50
	MAP's, replace the Data	to	100 ohms?
	Station Adapter Card (A-El)	YI	4
	(MIM 501).		
008		-	- Use MIM 227 to trace the '-
	obe A-E1-TP6 '- Serial Data ock Keyboard A' or A-E1-TP2		Serial Data Clock Keyboard A or B' line for opens or
	- Serial Data Clock Keyboard		or B' line for opens or grounds.
	(MIM 201, 203, 227).		gi banas.
5			OR
Up	light: On		•
	n light: Pulses with a		- Defective Data Station
	key pressed.		Adapter Card (A-El) (MIM
			501).
Are	the lights correct?	ł	
YN		01	1
			GO TO THE 5281 OR 5282 DATA
			STATION DATA ENTRY MAP 1000,
			ENTRY POINT A.
			If the failure is not isolated
			by the Data Station MAP's,
			replace the Data Station
		1	Adapter Card (A-El) (MIM 501).
.			EC840874 PEC839787
4			
FG			MAP 1021-3

.1.

.

```
F
           DATA ENTRY MAP
                                      НJ
3
           A-E1 KEYBOARD
           PAGE 4 OF
                        6
012
                                        015
         A-E1-TP14, '+ Strobe
- Probe
                                        - GO TO THE 5281 OR 5282 DATA
 Keyboard A', or A-E1-TP4, '+
                                          STATION DATA ENTRY MAP 1000,
  Strobe Keyboard B', (MIM 201,
                                          ENTRY POINT A.
 203, 227).
                                        - If
                                              the failure
                                          isolated by the Data Station
    light: Pulses with a
Up
                                          MAP's,
                                                 replace the
           key pressed.
                                          Station Adapter Card (A-E1)
Down light: On
                                          (MIM 501).
Are the lights correct?
                                      016
YN
                                      - Probe A-E1-TP13, '+ Break Code
                                        Keyboard A', or A-E1-TP5, '+
 013
                                        Break Code Keyboard B', (MIM
 - Power off.
                                        201, 203, 227).
 - Remove the Data Station cable
   from the cable connector
                                      Up light: On
   panel position labeled 1 or
                                      Down light: On
   1/2 (J103) (MIM 227).
 - Set the C.E. Meter to the
                                      Are the lights correct?
   RX1 scale.
                                      YN
 - Measure the resistance from
   the cable connector panel
                                        017
   J103-10, ' + Strobe Keyboard
                                        - Power off.
   A', or pin 14, ' + Strobe
                                        - Remove the Data Station cable
   Keyboard B', to frame ground
                                          from the cable connector
   (MIM 227).
                                          panel position labeled 1 or
 - The meter should read in the
                                         1/2 (J103) (MIM 227).
                                        - Set the C.E. Meter to the
   range of 50 to 100 Ohms.
                                          RX1 scale.
 Is the meter reading between 50
                                        - Measure the resistance from
 to 100 ohms?
                                         the cable connector panel
 YN
                                         J103-11, ' + Break Code
                                         Keyboard A', or pin 1, '+
   014
                                         Break Code Keyboard B', to
   - Use MIM 227 to trace the '+
                                         frame ground (MIM 227).
     Strobe Keyboard A or B!
                                        - The meter should read in the
     line for opens or grounds.
                                          range of 50 to 100 Ohms.
   _ _ _ OR _ _ _ _
                                        Is the meter reading between 50
                                        to 100 ohms?
   - Defective Data
                       Station
                                        Y N
     Adapter Card (A-El) (MIM
     501).
                                      555
                                      KLM
```

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MAP 1021-4

MAP 1021-4

is not

Data

```
KLM
           DATA ENTRY MAP
                                      ΡQ
444
           A-E1 KEYBOARD
           PAGE 5 OF 6
   018
   - Use MIM 227 to trace the '+
     Break Code Keyboard A or B'
     line for opens or grounds.
   _ _ _ _ OR _ _ _ _
                                      023
   - Defective Data Station
     Adapter Card (A-E1) (MIM
     501).
  019
  - GO TO THE 5281 OR 5282 DATA
   STATION DATA ENTRY MAP 1000,
                                      YN
   ENTRY POINT A.
        the
  - If
            failure is
                           not
   isolated by the Data Station
   MAP's,
           replace the
                           Data
   Station Adapter Card (A-E1)
    (MIM 501).
                                      025
020
- Power off.
- 'IPL' Diagnostic Diskette 1
 from Data Station 0 (MIM 941).
- Do
       not
            use the current
 definition.
- Select a single partition.
- Select 6 lines.
- Load 'DCP' (MIM 951).
- Select and run MDI 1070 (MIM
 961).
                                      Y N
NOTE:
The system must be dedicated to
 maintenance at this time.
Was the failure isolated by MDI
1070?
YN
 021
 (ENTRY POINT B)
 Is this a speaker failure only?
 YN
                                      6 6
6
NPQ
                                      RS
```

022 Defective Data Station Adapter Card (A-El) (MIM 501). - Probe the '100 Hz Clock' line at A-E2D13 (MIM 531). Up light: On Down light: On Are the lights correct? 024 - Suspect an open net on the '100 Hz Clock' line (MIM 531). - Probe A-E1-TP7, '- Click Keyboard A', or A-E1-TP3, '-Click Keyboard B' (MIM 201, 203, 227). light: On Up Down light: Pulses with a key pressed. Are the lights correct? EC840874 PEC839787

MAP 1021-5

MAP 1021-5

```
RS
          DATA ENTRY MAP
55
           A-E1 KEYBOARD
           PAGE 6 OF 6
 026
 - Power off.
 - Unplug A-E1-P01 (MIM 201,
   203, 227).
 - Set the C.E. Meter to the
   RX10 scale.
 - Measure the resistance from
   A-E1-P01-3, '- Click
   Keyboard A', or A-El-P01-14,
   ' - Click Keyboard B', to
   frame ground (MIM 201, 203,
   227).
 - The meter should read in the
   range of 200 to 350 Ohms.
 Is the meter reading between
 200 to 350 ohms?
 Y N
   027
   - Use MIM 227 to trace the '-
     Click Keyboard A or B' line
     for opens or grounds.
   _ _ _ _ OR _ _ _ _
   - GO TO THE 5281 OR 5282 DATA
     STATION DATA ENTRY MAP
     1000, ENTRY POINT A.
   - If the failure is not
     isolated
              by the
                          Data
     Station MAP's, replace the
     Data Station Adapter Card
     (A-E1) (MIM 501).
 028
 - Defective Data Station
   Adapter Card (A-E1) (MIM
   501).
029
- GO TO THE 5281 OR 5282 DATA
 STATION DATA ENTRY MAP 1000,
 ENTRY POINT A.
```

```
MAP 1021-6
A N
1 5
  030
  End of call.
031
- Power off.
- Remove the Data Station Adapter
  card (A-E1) (MIM 501, 503).
- Power on.
- Wait at least 30 seconds for
 the condition code table to be
 displayed on Data Station 0.
Is the scan code still displayed
in line 1 of the condition code
table (MIM 931)?
ΥN
  032
  - Defective Data Station
    Adapter card (A-E1) (MIM
    501).
033
- Defective Keyboard/Display MPU
  card (A-A1) (MIM 200).
- If
       a 'Ros Patch' cable is
  connected to the card,
GO TO MAP 0600, ENTRY POINT A.
```

MAP 1021-6

ERROR CODE MAP

PAGE 1 OF 3

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP	ENTRY	P AGE	STEP
Number	Point	NUMBER	Number
0100	A	1	001
0300	A	1	001
1000	A	1	001

EXIT POINTS EXIT THIS MAP | TO

PAGE NUMBER	STEP Number	MAP Number	ENTRY Point
2	005	0100	A
2	014	0100	Α
3	021	0300	Α
3	016	0600	А
2	010	0600	А
3	020	0600	А
2	012	1000	В
2	007	1000	С

001

(ENTRY POINT A)

- Power off.
 - Insert Diagnostic Diskette 1 in drive 4000 and close the locking lever.
 - Power on.
 - When the First Display Prompt (50-01) (MIM 941) is displayed on Data Station 0,
 - Press the 'X' key and then the ENTER key.

```
Is there a '9930' error

displayed?

Y N

002

Is there a '9231' error

displayed?

Y N

003

Is the Keyboard Information

Prompt (50-02) (MIM 941)

visible on Data Station 0?

Y N

V N

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```

THE SYSTEM MUST BE DEDICATED TO MAINTENANCE AT THIS TIME.

EC840874 PEC839787

3 3 2 2

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```
D
            DATA ENTRY MAP
                                        CE
                                                             MAP 1025-2
1
                                        1
            ERROR CODE
            PAGE 2 OF
                          3
004
                                          010
Is Prompt 50-06 (MIM 941) visible
                                          - Defective Keyboard/Display
on Data Station 0?
                                            Storage card (A-B7) (MIM 207,
Y N
                                            501, 503).
                                          _ _ _ _ OR _ _ _ _
  005
  GO TO MAP 0100, ENTRY POINT A.
                                          - Defective Keyboard/Display
                                            MPU card (A-A1) (MIM 200,
006
                                            501, 503).
- To determine the answer to the
                                          - If a 'ROS Patch' cable is
  Prompt on the display, go to
  MIM 207.
                                            connected to the card,
- Enter the correct option and
                                          GO TO MAP 0600, ENTRY POINT A.
  press the ENTER key.
                                        011
Is there a 9119 error displayed?
                                        - Press the ENTER key.
Y N
                                        Is Prompt 50-03 (MIM 941) visible
  007
                                        on Data Station 0?
                                        Y N
  GO TO MAP 1000, ENTRY POINT C.
008
                                          012
- Power off.
                                          - This is a display failure.
- Remove the Data Station Adapter
                                          GO TO MAP 1000, ENTRY POINT B.
  Card (A-E1) (MIM 501).
- Power on.
                                        013
- When the First Display Prompt
                                        - Select the current definition
  (50-01) (MIM 941) is displayed
                                          and press the ENTER key.
  on Data Station 0,
- Press the 'X' key and then the
                                        Is there a 9120 error displayed?
  ENTER key.
                                        YN
- When Prompt (50-06) (MIM 941)
  is displayed.
                                          014
- Select the no option and press
                                          GO TO MAP 0100, ENTRY POINT A.
  the ENTER key.
Is there a 9119 error displayed?
YN
  009
  - Defective
                 Data
                          Station
    Adapter card (A-El) (MIM 501,
    503).
                                                    EC840874
                                                               PEC839787
                                        3
```

F.

```
F
           DATA ENTRY MAP
2
           ERROR CODE
           PAGE 3 OF 3
015
- Power off.
- 'IPL' Diagnostic Diskette 1
 from Data Station 0 (MIM 941).
     not use the current
- Do
 definition.
- Select a single partition.
- Select 6 lines.
- Load 'DCP' (MIM 951).
- Select and run MDI 1070 (MIM
 961).
Was the failure found by MDI
1070?
Y N
 016

    Defective

               Data
                        Station
   Adapter card (A-E1) (MIM 501,
   503).
 ____ OR ____
 - Defective Keyboard/Display
   MPU card (A-A1) (MIM 200,
   501, 503).
 - If a 'ROS Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
017
End of call.
```

```
1 1
 018
  - Power off.
  - Remove the Data Station
   Adapter Card from location
   A-E1 (MIM 501).
  - Power on.
  - When the First Display Prompt
   (50-01) (MIM 941) is
   displayed on Data Station 0,
  - Press the 'X' key and then
   the ENTER key.
  Is there a 9231 error
  displayed.
  Y N
   019

    Defective

                Data Station
     Adapter card (A-E1) (MIM
     501, 503).
  020
  - Defective Keyboard/Display
   Storage card (A-B7) (MIM 207,
   501, 503).
  _ _ _ _ OR _ _ _ _
 - Defective Keyboard/Display
   MPU card (A-A1) (MIM 200,
   501, 503).
 - If a 'ROS Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
021
```

MAP 1025-3

ΑB

GO TO MAP 0300, ENTRY POINT A.

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KEYLOCK MAP

PAGE 1 OF 4

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP	ENTRY	PAGE	STEP
NUMBER	POINT	NUMBER	Number
0100	A	1	001
1000	A	1	001
1011	A	1	001

EXIT POINTS

	ب الله عام علم وي وي جده سن ال		
EXIT TH	IS MAP	TO	
PAGE	STEP	МАР	ENTRY
NUMBER	NUMBER	NUMBER	POINT
2	006	0600	A
2	000	0800	*
2	005	0600	A
3	010	0600	А
4	012	0600	А
4	016	1010	Α
4	019	1010	А

001 (ENTRY POINT A) Are all Displays dark? Y N 002 - Ensure that the keylock switch is in the locked position (MIM 229). - Any display which is not dark is failing. Are all displays failing? YN 003 Is display number 0 failing? YN 004 Defective Data Station Adapter card (A-E1) (MIM 501, 503). Copyright IBM Corp 1980

2 2 2 A B C

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MAP 1026-1

```
ABC
         DATA ENTRY
1 1 1
           KEYLOCK
           PAGE 2 OF 4
   005
   - Defective Keyboard Display
    MPU card (A-C1) (MIM 200).
   - If a 'ROS Patch' cable is
     connected to the card,
   GO TO MAP 0600,
   ENTRY POINT A.
 006
 - Defective Keyboard Display
   MPU card (A-C1) (MIM 200).
 - If a 'ROS Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
007
- Ensure the keylock switch is in
 the local position (MIM 229).
- Probe both lines in the chart;
```

LOCAL POSITION

PIN	LINE NAME	Probe condition
A-A1802	-COMM REMOTE	Up Light: On Down Light: Off
A-A1B07	-KEYLOCK DISABLE	Up Light: On Down Light: Off

CHART A

Are the lights correct? Y N

MAP 1026-2

(

```
Ε
       DATA ENTRY
2
        KEYLOCK
        PAGE 3 OF 4
008
(ENTRY POINT B)
- Power off.
- Remove A-A1=P03 (MIM 229)
- Install a jumper from
 A-A1-J03-1 to A-A1-J03-3 (MIM
 229).
- Power on.
- Probe both lines in the chart;
           POSITION
 NORMAL
-----
      PIN LINE NAME Probe Condition
 A-A1B02 -COMM REMOTE Up Light: Off
Down Light: On
 A-A1B07 -KEYLOCK DISABLE Up Light: On
Down Light: Off
```

```
------ CHART B
```

```
Are the lights correct?

Y N

009

Do you have an auxiliary Data

Station Adapter card installed

in A-E1 (MIM 501)?

Y N

010

- Defective Keyboard/Display

MPU card (A-A1) (MIM 200).

- If a 'ROS Patch' cable is

connected to the card,

GO TO MAP 0600,

ENTRY POINT A.
```

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h

4 4 F G MAP 1026-3

```
DFG
          DATA ENTRY
                                                           MAP 1026-4
                                       Н
2 3 3
           KEYLOCK
           PAGE 4 OF
                         4
   011
                                       017
   - Power off.
                                       - Ensure the keylock switch is in
   - Remove the Data Station
                                        the normal position (MIM 229).
     Adapter card (MIM 501).
                                       - Probe the lines in Chart B.
   - Power on.
   - Probe the lines in Chart B.
                                       Are the lights correct?
                                      -YN
   Are the lights correct?
   YN
                                         018
                                        GO TO PAGE 3, STEP 008,
     012
                                         ENTRY POINT B.
     - Defective
      Keyboard/Display MPU card
                                       019
       (A-A1) (MIM 200).
                                       GO TO MAP 1010, ENTRY POINT A.
     - If a 'ROS Patch' cable is
       connected to the card,
     GO TO MAP 0600,
     ENTRY POINT A.
   013
   - Defective Data Station
     Adapter card (A-E1) (MIM
     501).
 014
 - Defective keylock cable (MIM
   229).
 _ _ _ _ OR _ _ _ _ _
 - Defective keylock switch (MIM
   229).
015
Is
      communications feature
installed?
YN
 016
 GO TO MAP 1010, ENTRY POINT A.
                                                   EC840874 PEC839787
```

```
MAP 1026-4
```

IBM 5285 DATA ENTRY MAP

MAGNETIC STRIPE READER

PAGE 1 OF 14

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP	ENTRY	PAGE	STEP
NUMBER	POINT	NUMBER	NUMBER
0100	A	1	001
1000	A	1	001

EXIT POINTS				
EXIT TH	IS MAP	то		
	STEP NUMBER	MAP NUMBER		
NUMBER				
10	070	0100	А	
6	040	0100	А	
14	106	0100	Α	
5	027	0600	Α	
4	023	0600	Α	
5	030	0600	Α	
6	036	0600	Α	
12	086	0600	Α	
13	093	0600	Α	
12	090	0600	Α	
13	096	0600	Α	
14	102	0600	Α	
4	024	0600	А	

001 (ENTRY POINT A)

ΥN

Does this machine have the communications feature?

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1 0 2 A B

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EC839787 PEC839661

DATA ENTRY MAP MSR

MSR Page 2 of 14

002

B

1

- There can be up to three magnetic stripe readers attached to the MSR control card. Each MSR is attached to a partition in storage which is the same one used by its associated keyboard. These partitions/stations are numbered 0, 1, and 2.
- The signal lines to and from the MSR control card are common to all three stations. The only exceptions are the 'Photocell' and 'Raw Data' inputs coming into plugs on the of the card from the side reader stations. Each of these plugs works with a specific partition only.
- To check each station for operation load correct 'MSRTEST' from the diagnostic diskette at the associated keyboard station and pass the test MSR card (P/N 8331402) through the reader (MIM 751). correct message The which should appear on the screen is: BBB0123456789BACDE0123456789.
- All three stations need not be used on any given system.

Is station 0 working (answer 'yes' if no MSR is attached to this station)? 003 - Disconnect the connector at A-B1J01 (MIM 773). - Check for +5 Vdc from A-B1-J01-8 to ground at A-B1-J01-7 (MIM 785). Is +4.5 to +5.5 Vdc present? YN 004 - Defective MSR card (A-B1) (MIM 501, 773). 005 --5 - Check for Vdc from A-B1-J01-10 to ground at A-B1-J01-9 (MIM 785). Is -4.5 to -5.5 Vdc present? YN 006 - Defective MSR card (A-B1) (MIM 501, 773). 007 - Plug the connector back in at A-B1-J01. - With a CE meter, check for +2 Vdc to +3 Vdc from A-B1TP-12 to frame ground (MIM 773). Is the voltage correct? YN 008 - Defective Reader Assembly (MIM 761). EC839787 PEC839661

6 C D

Y N

```
Ε
          DATA ENTRY MAP
2
           MSR
           PAGE 3 OF 14
009
- Probe A-B1-TP-10, '+ Photocell
 MSR A' (MIM 773, 785).
Up light: Off
Down light: On
Are the lights correct?
ΥN
 010
 - Defective Reader
                      Assembly
   (MIM 761).
011
- Insert the test card into the
 reader
          and
                   leave it
 approximately in the center of
 the slot.
- Probe A-B1-TP-10, '+ Photocell
 MSR A' (MIM 773, 785).
Up light: On
Down light: Off
Are the lights correct?
YN
 012
 - Disconnect the MSR cable at
   A-B1-J01 (MIM 773)
  - Probe A-B1-TP-10,
                            *+
   Photocell MSR A' (MIM 773,
   785).
  Up light: On
  Down light: Off
  Are the lights correct?
  Y N
   013
   - Defective MSR card (A-B1)
     (MIM 501, 773).
```

014 Defective Reader Assembly (MIM 761). 015 - Probe A-B1-TP-09, '+ Raw Data MSR A' (MIM 773, 785). Up light: On Down light: On Are the lights correct as a test card is passed through the reader (MIM 751)? YN 016 - Disconnect the MSR cable at A-B1-J01 (MIM 773). - Probe A-B1-TP-09, *+ Raw Data MSR A' (MIM 773, 785). Up light: On Down light: Off Are the lights correct? Y N 017 - Defective MSR card (A-B1) (MIM 501, 773). 018 - Defective Reader Assembly (MIM 761).

MAP 1030-3

EC839787 PEC839661

FG

```
Н
           DATA ENTRY MAP
                                      JKLM
                                                          MAP 1030-4
3
           MSR
           PAGE 4 OF 14
019
                                            022
(ENTRY POINT B)
                                            - Leave the meter connected
                                              as in the previous step.
- Probe A-B2B04, '- POR' (MIM
                                            - Use the net list (MIM
  531).
                                              531). Remove each card
- Momentarily install a jumper
                                              in the net, one at a
                                              time, until the meter
  from A-C1-TP-040, '- Test POR',
  to frame ground (MIM 303).
                                              reads 30 ohms or above.
                                            - Replace the last card
Up
    light: On
                                              removed.
Down light: Pulses
                                            - If all the cards in the
                                              net have been removed and
Are the lights correct?
                                              the meter reading
                                                                    is
Y N
                                              still below 30 ohms,
                                              suspect a ground on the
  020
                                              Logic Board.
 - Leave probe on A-B2B04, '-
   POR' (MIM 531).
                                          023
                                          - Defective Diskette/Main MPU
  - Remove the
                  jumper from
   A-C1-TP-040, '- Test POR', to
                                            card (A-C1) (MIM 303, 501).
   ground (MIM 303).
                                          - If a'Ros Patch' cable is
                                            connected to the card,
  Up light: On
                                          GO TO MAP 0600,
 Down light: Off
                                          ENTRY POINT A.
 Are the lights correct?
                                        024
  YN
                                        - Defective Disk/Main MPU Card
                                          (A-C1) (MIM 303, 501).
   021
                                        - If a 'Ros Patch' cable is
   - Power off.
                                          connected to the card,
   - With the CE meter set to
                                        GO TO MAP 0600, ENTRY POINT A.
     the RX1 scale,
   - Connect the positive lead
                                      025
     to A-B2B04, '- POR', and
                                      - Probe A-B2B02, '1 MHz Clock'
            negative lead
                                        (MIM 531).
     the
                            to
     ground.
                                      Up light: On
   Is the meter reading 30 ohms
                                      Down light: On
   or above?
   ΥN
                                      Are the lights correct?
                                      Y N
                                                  EC839787
                                                            PEC839661
                                      55
                                      N P
JKLM
                                                          MAP 1030-4
```

```
Ρ
           DATA ENTRY MAP
                                       NQ
                                                           MAP 1030-5
4
           MSR
           PAGE
                  5 OF 14
026
                                         030
- Leave the probe connected.
                                         - Defective Disk/Main MPU card
                                           (A-C1) (MIM 303, 501).
Up
     light: Off
                                         - If a 'Ros Patch' cable is
Down light: On
                                           connected to the card,
                                         GO TO MAP 0600, ENTRY POINT A.
Are the lights correct?
YN
                                       031
                                       - Load
                                                'MSRTEST' from
                                                                    the
 027
                                         diagnostic diskette at
                                                                    the
 - Defective Diskette/Main MPU
                                        keyboard station associated
   Card (A-C1) (MIM 303, 501).
                                         with the failing MSR (MIM 971).
 - If a 'Ros Patch cable is
                                       - Probe A-B2B07, '- Extended
   connected to the card,
                                        Sense Bit' (MIM 531).
 GO TO MAP 0600, ENTRY POINT A.
                                       - Pass the test card through the
                                         reader several times (MIM 751).
028
- Power off.
                                       Up
                                            light: On
- With the CE meter set to the
                                       Down light: Pulses
  RX1 scale.
- Connect the positive lead to
                                       Are the lights correct each time
 A-B2B02, '1 MHz clock', and the
                                       a test card is passed through the
 negative lead to ground.
                                       reader?
                                       Y N
Is the meter reading 30 ohms or
above?
                                         032
Y N
                                         - Leave the probe connected.
 029
                                         Up
                                              light: Off
  - Leave the meter connected as
                                         Down light: On
   in the previous step.
  - Use the net list (MIM 531).
                                         Are the lights correct?
   Remove each card in the net,
                                         ΥN
   one at at time, until the
   meter reads 30 ohms or above.
                                           033
 - Replace
             the last
                            card
                                           - Defective MSR card (A-B1)
   removed.
                                             (MIM 501, 773).
  - If all the cards in the net
   have been removed and the
   meter reading is still below
   30 ohms, suspect a ground on
   the Logic Board.
                                                   EC839787
                                                             PEC839661
                                       6 6
Q
                                       RS
                                                           MAP 1030-5
```

```
R S
           DATA ENTRY MAP
                                      СТ U
                                                           MAP 1030-6
55
                                      2
           MSR
           PAGE
                  6 OF 14
 034
                                          038
  - Power off.
                                          - The test card should be
  - Set the CE meter to the RX1
                                            passed through the reader
   scale.
                                            reader upside down to cause
 - Connect the positive lead to
                                            an error condition.
   A-B2B07, '- Extended Sense
                                          - Pass the card through the
   Bit', and the negative lead
                                            reader upside down, so that
   to ground.
                                            the magnetic stripe will
                                            not be read by the reader.
 Is the meter reading 30 ohms or
  above?
                                          Is
                                                any
                                                       error
                                                               message
 Y N
                                          presented on the display?
                                          ΥN
   035
   - Leave the meter connected
                                            039
     as in the previous step.
                                            - Defective MSR card (A-B1)
   - Use the net list (MIM 531).
                                              (MIM 501, 773).
     Remove each card in the
     net, one at at time, until
                                          040
     the meter reads 30 ohms or
                                          GO TO MAP 0100,
     above.
                                          ENTRY POINT A.
   - Replace
               the last
                            card
     removed.
                                        041
   - If all the cards in the net
                                        - Defective MSR card (A-B1)
     have been removed and the
                                          (MIM 501, 773).
     meter reading is still
     below 30 ohms, suspect a
                                      042
                                      Is station 1 working
     ground on the Logic Board.
                                                                (answer
                                      'yes' if no MSR is attached to
 036
                                      this station.)?
                                      ΥN
 - Defective Keyboard/Display
   MPU card (A-A1) (MIM 200,
   501).
                                        043
 - If a 'Ros Patch' cable is
                                        - Probe
                                                  A-B1-TP-08,
                                                                    14
   connected to the card,
                                          Photocell MSR A' (remote)
 GO TO MAP 0600, ENTRY POINT A.
                                          (MIM 773, 787).
037
                                        Up light: Off
- Pass the test card through the
                                        Down light: On
 reader several times while
 observing the display.
                                        Are the lights correct?
                                        Y N
Is an error message presented on
the display each time?
YN
                                                  EC839787 PEC839661
                                       877
ΤU
                                       VWX
                                                           MAP 1030-6
```

```
Х
           DATA ENTRY MAP
6
           MSR
           PAGE 7 OF 14
044
- Power Off.
- Disconnect the connector from
  J103 of the cable connector
  panel (MIN 787).
- Set the CE meter to the RX1
  scale.
- Measure the resistance from the
  back panel connector (J103) pin
  16, '+ Photocell MSR
                            Α'
  (remote), to frame ground (MIM
  787).
- The meter should read in the
  range of 50 to 100 ohms.
Does the meter read between 50 to
100 ohms?
Y N
 045
  - Use MIM 787 to trace the '+
   Photocell MSR A' (remote)
   line for opens or grounds.
  _ _ _ OR _ _ _ _ _
  - Defective MSR card
                          (A-B1)
   (MIM 501, 773).
046
- Use the data station MSR MAP's
  for more FRU isolation.
```

```
047
- Insert the test card into the
              leaving
                             it
 reader,
 approximately in the center of
 the slot.
- Probe A-B1-TP-08, '+ Photocell
 MSR A' (remote) (MIM 773, 787).
Up light: On
Down light: Off
Are the lights correct?
YN
 048
 - Power Off.
 - Disconnect the connector from
   J103 of the cable connector
   panel (MIM 787).
 - Set the CE meter to the RX1
   scale.
 - Measure the resistance from
   the back panel connector
   (J103) pin 16, '+ Photocell
   MSR A' (remote), to frame
   ground (MIM 787).
 - The meter should read in the
   range of 50 to 100 ohms.
 Does the meter read between 50
  to 100 ohms?
 YN
    049
   - Use MIM 787 to trace the '+
     Photocell MSR A' (remote)
     line for opens or grounds.
   _ _ _ _ OR _ _ _ _ _
   - Defective MSR card (A-B1)
     (MIM 501).
           EC839787 PEC839661
88
```

MAP 1030-7

Μ

6

ΥZ

DATA ENTRY MAP ΥZ VAA 77 6 A B MSR PAGE 8 OF 14 050 054 - GO TO THE 5281 OR 5282 DATA STATION MAP 1030, ENTRY POINT Α. 051 055 - Probe A-B1-TP-07, '- Raw Data MSR A' (MIM 773, 787). Up light: On 056 Down light: On Is Are the lights correct as a test card is passed through the reader YN (MIM 751)? Y N 057 052 - Power Off. - Disconnect the connector from J103 of the cable connector panel (MIM 787). - Set the CE meter to the RX1 scale. - Measure the resistance from YN the back panel connector (J103) pin 17, '-Raw Data MSR 058 A', to frame ground (MIM) 787). - The meter should read in the range of 50 to 100 ohms. Does the meter read between 50 to 100 ohms? YN 053 - Use MIM 787 to trace the '-Raw Data MSR A' line for opens or grounds. _ _ _ OR _ _ _ _ _ - Defective MSR card (A-B1) (MIM 501, 773). Y N 0 9 9 9 A A AAAA CDEF

MAP 1030-8 - GO TO THE 5281 OR 5282 DATA MAP 1030, ENTRY STATION POINT A. GO TO PAGE 4, STEP 019, ENTRY POINT B. station 2 working (answer 'yes' if no MSR is attached to this station)? - Probe A-B1-TP04, '+ Photocell MSR B' (remote) (MIM 773, 787). Up light: Off Down light: On Are the lights correct? - Power Off. - Disconnect the connector from J103 of the cable connector panel (MIM 787). - Set the CE meter to the RX1 scale. - Measure the resistance from the back panel connector (J103) pin 18, '+ Photocell MSR B' (remote), to frame ground (MIM 787). - The meter should read in the range of 50 to 100 ohms. Does the meter read between 50 to 100 ohms? EC839787 PEC839661

A B

```
AAA
           DATA ENTRY MAP
                                      Α
                                                          MAP 1030-9
DEF
                                      н
888
           MSR
           PAGE 9 OF 14
   059
                                      062
   - Use MIM 787 to trace the '+
                                      - Power Off.
                                      - Unplug the connector from J103
     Photocell MSR B' (remote)
     line for opens or grounds.
                                       of the cable connector panel
                                        (MIM 787).
   _ _ _ _ OR _ _ _ _ _
                                      - Set the CE meter to the RX1
                                        scale.
   - Defective MSR card (A-Bl)
                                      - Measure the resistance from the
                                        back panel connector (J103) pin
     (MIM 501, 773).
                                             '+ Photocell
                                                            MSR
                                                                   В'
                                        18,
 060
                                        (remote), to frame ground (MIM
 - GO TO THE 5281 OR 5282 DATA
                                        787).
   STATION MAP 1030, ENTRY POINT
                                      - The meter should read in the
   Α.
                                        range of 50 to 100 ohms.
061
                                      Is the meter reading within the
- Insert the test card into the
                                      required range?
 reader,
                leaving
                             it
                                      Y N
 approximately in the center of
                                        063
 the slot.
- Probe A-B1-TP-04, '+ Photocell
                                        - Use MIM 787 to trace the '+
                                         Photocell MSR B' (remote)
 MSR B' (remote) (MIM 773, 787).
                                          line for opens or grounds.
Up light: On
Down light: Off
                                        ____ OR ____
Are the lights correct?
                                        - Defective MSR card (A-B1)
                                          (MIM 501, 773).
YN
                                      064
                                      - GO TO THE 5281 OR 5282 DATA
                                        STATION MAP 1030, ENTRY POINT
                                        Α.
1
0
                                                  EC839787 PEC839661
A A
                                                          MAP 1030-9
GН
```

А DATA ENTRY MAP AAAA MAP 1030-10 G 1 C J K MSR 9 \$ PAGE 10 OF 14 065 068 - Probe A-B1-TP-03, '- Raw Data - GO TO THE 5281 OR 5282 MSR B' (MIM 773, 787). DATA STATION MAP 1030, - Observe the probe while the ENTRY POINT A. test card is being moved through the reader (MIM 751). 069 GO TO PAGE 4, STEP 019, ENTRY POINT B. Up light: On Down light: On 070 Are the lights correct as a test GO TO MAP 0100, ENTRY POINT A. card is passed through the reader (MIM 751)? 071 Y N (ENTRY POINT C) 066 - There can be only one magnetic - Power Off. stripe reader attached to the - Disconnect the connector from MSR control card. The MSR is J103 of the cable connector attached to partition 0 in panel (MIM 787). storage, which is the same as - Set the CE meter to the RX1 the one used by its associated scale. keyboard. - Measure the resistance from - To check for correct operation, the back panel connector load 'MSRTEST' from the (J103) pin 19, '-Raw Data MSR diagnostic diskette and pass B[†], to frame ground (MIM) the test MSR card (P/N 8331402) 787). through the reader (MIM 751). - The meter should read in the The correct message which range of 50 to 100 ohms. should appear on the screen is: BBB0123456789BACDE0123456789. Does the meter read between 50 - Disconnect the connector at to 100 ohms? A-B1-J01 (MIM 771). YN - Check for +5 Vdc from A-B1-J01-8 to ground at 067 A-B1-J01-7 (MIM 785). - Use MIM 787 to trace the '-Raw Data MSR B' line for Is +4.5 to +5.5 Vdc present? opens or grounds. YN _ _ _ OR _ _ _ _ 072 - Defective MSR card (A-B1) - Defective MSR card (A-B1) (MIM 501, 771). (MIM 501, 773). 1 EC839787 PEC839661 1 A A Α JK L MAP 1030-10

```
А
            DATA ENTRY MAP
L
            MSR
1
0
            PAGE 11 OF 14
073
- Check
         for
                -5
                      Vdc
                             from
 A-B1-J01-10
                      ground
               to
                               at
  A-B1-J01-9 (MIM 785).
Is -4.5 to -5.5 Vdc present?
YN
 074
 - Defective MSR card (A-B1)
    (MIM 501, 771).
075
- Plug the connector back in
                               at
 A-B1-J01.
- Probe '+ Photocell MSR A' at
 A-B1-TP-02 (MIM 771, 785)
Up light: Off
Down light: On
Are the lights correct?
YN
 076
 - Defective
               Reader
                         Assembly
    (MIM 761).
077
- Insert the test card into the
 reader,
                leaving
                              it
  approximately in the center of
  the slot.
- Probe A-B1-TP-02, '+ Photocell
  MSR A' (MIM 771, 785).
Up
    light: On
Down light: Off
Are the lights correct?
YN
A A
M N
```

h

```
A A
                    MAP 1030-11
ΜN
 078
  - Disconnect the MSR cable at
    A-B1-J01 (MIM 771)
  - Probe
              A-B1-TP-02,
                            ۲+
    Photocell MSR A' (MIM 771,
    785).
  Up light: On
  Down light: Off
  Are the lights correct?
  ΥN
   079
   - Defective MSR card (A-B1)
     (MIM 501, 771).
  080
  - Defective
               Reader Assembly
    (MIM 761).
081
- Probe A-B1-TP-01, '+ Raw Data
 MSR A' (MIM 771, 785).
Up light: On
Down light: On
Are the lights correct as a test
card is passed through the reader
(MIM 751)?
ΥN
 082
 - Disconnect the MSR cable at
   A-B1-J01 (MIM 771).
  - Probe A-B1-TP-01, '+ Raw Data
   MSR A' (MIM 771, 785).
  Up light: On
  Down light: Off
  Are the lights correct?
  Y N
1 1 1
2 2 2
           EC839787
                      PEC839661
AAA
                    MAP 1030-11
PQR
```

```
AAA
          DATA ENTRY MAP
                                       A A
PQR
                                       S T
1 1 1
           MSR
1 1 1
           PAGE 12 OF 14
    083
                                         088
   - Defective MSR card (A-B1)
                                         - Power off.
     (MIM 501, 771).
                                           scale.
 084
 - Defective Reader Assembly
   (MIM 761).
                                           ground.
085
- Probe A-B2B04, '- POR'
                           (MIM
 501).
                                         above?
- Install a jumper
                                         YN
                            from
 A-C1-TP-040, '- Test POR', to
 ground (MIM 303).
                                           0.89
Up light: Off
Down light: On
Are the lights correct?
YN
                                             above.
 086
 - Defective Disk/Main MPU Card
   (A-C1) (MIM 303, 501).
 - If a 'Ros Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
087
- Leave probe on A-B2B04, '- POR'
                                         090
 (MIM 501).
- Remove the
                  jumper from
 A-C1-TP-040, '- Test POR', to
 ground (MIM 303).
Up light: On
Down light: Off
                                       091
Are the lights correct?
                                        (MIM 531).
YN
                                       Up
                                       Down light: On
                                       ΥN
                                       1 1
                                       33
A A
                                       A A
S.T
                                       υv
```

```
MAP 1030-12
 - Set the CE meter to the RX1
 - Connect the positive lead to
   A-B2B04, '- POR' (MIM 531),
   and the negative lead
                            to
 Is the meter reading 30 ohms or
   - Leave the meter connected
     as in the previous step.
   - Use the net list (MIM 531).
     Remove each card in the
     net, one at a time, until
     the meter reads 30 ohms or
   - Replace the last card
     removed.
   - If all the cards in the net
     have been removed and the
     meter reading
                     is still
     below 30 ohms, suspect a
     ground on the Logic Board.
 - Defective Diskette/Main MPU
   Card (A-C1) (MIM 303, 501).
 - If a 'Ros Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
- Probe A-B2B02, '1 MHz Clock'
    light: On
Are the lights correct?
           EC839787
                     PEC839661
```

```
DATA ENTRY MAP
Α
                                       A A
                                       υω
v
           MSR
1
                                       1
2
                                       2
           PAGE 13 OF 14
092
- Leave the probe connected.
Up light: Off
Down light: On
Are the lights correct?
                                       097
YN
  093
 - Defective Disk/Main MPU Card
   (A-C1) (MIM 303, 501).
 - If a 'Ros Patch cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
094
- Power off.
- Set the CE meter to the RX1
  scale.
- Connect the positive lead to
  A-B2B02, '1 MHz clock', and the
                                       Y N
 negative lead to ground.
Is the meter reading 30 ohms or
above?
Y N
  095
  - Leave the meter connected as
   in the previous step.
 - Use the net list (MIM 531).
   Remove each card in the net,
    one at a time, until the
   meter reads 30 ohms or above.
 - Replace
            the last card
    removed.
  - If all the cards in the net
   have been removed and the
   meter reading is still below
   30 ohms, suspect a ground on
    the Logic Board.
Α
```

)

М

```
096
 - Defective Diskette/Main MPU
   Card (A-C1) (MIM 303, 501).
  - If a 'Ros Patch' cable is
    connected to the card.
  GO TO MAP 0600, ENTRY POINT A.
- Load
        'MSRTEST' from
                             the
  diagnostic diskette (MIM 971).
- Probe A-B2B07, '- Extended
 Sense Bit' (MIM 531).
- Pass the test card through the
 reader several times (MIM 751).
Up light: On
Down light: Pulses
Are the lights correct each time
a test card is passed through the
reader?
  098
  - Leave the probe connected.
     light: Off
  Up
  Down light: On
  Are the lights correct?
  YN
    099
   - Defective MSR card
                            (MIM)
     501).
```

×	Y		MAP	1030-13
Α	Α			
4	4	EC839787	PE	EC839661
1	1			

```
DATA ENTRY MAP
A A
                                      A B
ΧY
                                      ΖA
1 1
           MSR
33
           PAGE 14 OF 14
 100
                                        104
 - Power off.
 - Set the CE meter to the RX1
   scale.
 - Connect the positive lead to
   A-B2B07, '- Extended Sense
   Bit', and the negative lead
   to ground.
 Is the meter reading 30 ohms or
 above?
 YN
                                        Y N
   101
   - Leave the meter connected
                                          105
     as in the previous step.
   - Use the net list (MIM 531).
     Remove each card in the
     net, one at a time, until
                                        106
     the meter reads 30 ohms or
     above.
                                      107
   - Replace
             the last card
     removed.
   - If all the cards in the net
     have been removed and the
     meter reading is still
     below 30 ohms, suspect a
     ground on the Logic Board.
 102
 - Defective Keyboard/Display
   MPU Card (A-Al) (MIM 200,
   501).
 - If a 'Ros Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
103
- Pass the test card through the
 reader
         several
                   times while
 observing the display.
Is an error message presented on
the display each time?
YN
A B
ZA
```

```
- The test card should
                             be
   passed through the
                        reader
   upside down to cause an error
   condition on purpose.
 - Pass the card through the
   reader upside down, so that
   the magnetic stripe will not
   be read by the reader.
 Is any error message presented
 on the display?
   - Defective MSR card (A-B1)
     (MIM 501, 771).
 GO TO MAP 0100, ENTRY POINT A.
- Defective MSR card (A-B1) (MIM
```

```
Defective MSR card (A-B1) (MI)
501, 771).
```

IBM 5285 DATA ENTRY MAPS

ELAPSED TIME COUNTER MAP

PAGE 1 OF 4

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP	ENTRY	PAGE	STEP
NUMBER	POINT	NUMBER	NUMBER
0100	A	1	001
1000	A	1	001

EXIT POINTS

EXIT THIS MAP	TO	
PAGE STEP	MAP	ENTRY
NUMBER NUMBER	NUMBER	POINT
2 003	0600	A
4 021	0600	A
2 006	0600	A
3 011	0600	A
4 018	0600	A
3 012	0600	A

001 (ENTRY POINT A)

- The Elapsed Time Counter can be activated from any keyboard on the system. It may be tested for correct operation by loading 'TMRTEST1' from the diagnostic diskette and observing a digital display of elapsed time in hours, minutes, and seconds on the associated display. Any, or all, stations can be set up to show this display at the same time and each will show how much time has elapsed since the program was entered at that keyboard.

- Probe A-B1D07, '100 Hz Clock', (MIM 501).

Up light: On Down light: On

Are the lights correct? Y N 002 - Leave the probe connected.

Up light: Off Down light: On

Are the lights correct? Y N

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222 ABC EC840874 PEC839787

```
B C
           DATA ENTRY MAP
                                      А
1 1
                                       1
           TIME COUNTER
           PAGE
                  2 OF
                         4
 003
                                       007
 - Defective Diskette/Main MPU
   card (A-C1) (MIM 303).
  - If a 'Ros Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
004
                                       Up
- Power off.
- Set the CE meter to the RX1
  scale.
- Connect the positive lead to
                                      YN
  A-B1D07, '100 Hz clock', and
      negative lead to Logic
                                        008
  the
  ground.
Is the meter reading 30 ohms or
above?
Y N
  005
  - Leave the meter connected.
  - Use the net list (MIM 531).
                                        Y N
   Remove each card in the net,
   one at a time, until the
   meter reads 30 ohms or above.
  - Replace
            the
                    last
                           card
   removed.
 - If all the cards in the net
   have been removed and the
   meter reading is still below
   30 ohms, suspect a ground on
   the Logic Board.
006
- Defective Diskette/Main
                            MPU
  card (A-C1) (MIM 303).
- If a 'Ros Patch' cable is
  connected to the card,
GO TO MAP 0600, ENTRY POINT A.
                                       3333
```

```
- Probe A-B2B04, '- POR' (MIM
 501).
                          jumper
- Momentarily install a
  from A-C1-TP40, '- Test POR',
  to Logic ground (MIM 303).
   light: On
Down light: Pulses
Are the lights correct?
  - Leave the probe connected.
  - Remove the jumper installed
   in the last step.
  Up light: On
  Down light: Off
  Are the lights correct?
   009
    - Power off.
    - Set the CE meter to the RX1
     scale.
   - Connect the positive lead
     to A-B2B04, '- POR', and
     the negative lead to Logic
     ground.
    Is the meter reading 30 ohms
    or above?
    Y N
            EC840874
                      PEC839787
```

MAP 1040-2

```
MAP 1040-2
```

DEFG

```
DEFG
        DATA ENTRY MAP
                                                          MAP 1040-3
                                      J
2 2 2 2
           TIME COUNTER
           PAGE
                  3 OF
                         4
     010
                                      014
     - Leave
                  the
                          meter
                                      - Leave the probe connected.
       connected.
     - Use the net list (MIM
                                           light: Off
                                      Up
       531). Remove each card
                                      Down light: On
       in the net, one at a
       time, until the
                                      Are the lights correct?
                         meter
       reads 30 ohms or above.
                                      ΥN
     - Replace the last card
       removed.
                                        015
     - If all the cards in the

    Defective

                                                       Elapsed
                                                                  Time
       net have been removed and
                                          Counter card (A-B1) (MIM 501,
       the meter reading is
                                          773).
       still below 30 ohms,
       suspect a ground on the
                                      016
       Logic Board.
                                      - Power Off.
                                      - Set the C.E. meter to the RX1
   011
                                        scale.
   - Defective Diskette/Main MPU
                                      - Connect the positive lead to
                                        A-B2B08, '- Timer Overflow',
     card (A-C1) (MIM 303).
   - If a 'Ros Patch' cable is
                                        and the negative lead to Logic
     connected to the card,
                                        ground.
   GO TO MAP 0600,
   ENTRY POINT A.
                                      Is the meter reading 30 ohms or
                                      above?
 012
                                      ΥN
 - Defective Diskette/Main MPU
   card (A-C1) (MIM 303).
                                        017
 - If a 'Ros Patch' cable is
                                        - Leave the meter connected.
   connected to the card,
                                        - Use the net list (MIM 531).
 GO TO MAP 0600, ENTRY POINT A.
                                          Remove each card in the net,
                                          one at a time, until the
013
                                          meter reads 30 ohms or above.
- Load 'TMRTEST1' (MIM 971).
                                        - Replace the last
                                                                card
- Probe A-B2B08, 'Timer Overflow'
                                          removed.
 (MIM 501)
                                        - If all the cards in the net
                                          have been removed and the
    light: On
Up
                                          meter reading is still below
                                          30 ohms, suspect a ground on
Down light: Pulses
                                          the Logic Board.
Are the lights correct?
ΥN
                                                  EC840874 PEC839787
4
                                      4
НJ
                                      κ
                                                          MAP 1040-3
```

```
нк
           DATA ENTRY MAP
33
           TIME COUNTER
           PAGE 4 OF 4
 018
 - Defective Keyboard/Display
  MPU card (A-A1) (MIM 200).
 - If a 'Ros Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
019
- Load 'TMRTEST2' (MIM 971).
Do you get this message: 'IOD
bits 4-7 test out OK' on the
display?
YN
 020
 - Defective Elapsed Time
   Counter Card (A-B1) (MIM 501,
   773).
021
GO TO MAP 0600, ENTRY POINT A.
```

MAP 1040-4

(

IBM 5285 DISKETTE MAP

DISKETTE DRIVE ENTRY MAP

PAGE 1 OF 9

ENTRY POINTS

ENTER	THIS MAP	
ENTRY	PAGE	STEP
POINT	NUMBER	NUMBER
•		
A	2	001
	ENTRY POINT A A A	POINT NUMBER A 2 A 2 A 2 A 2

EXIT PO	INTS		
EXIT TH	IS MAP	то	
PAGE	STEP	MAP	ENTRY
NUMBER	NUMBER	NUMBER	POINT
3	008	0100	Α
4	016	0600	Α
4	014	0600	А
9	042	0600	Α
4	013	2010	А
6	025	2010	Α
9	039	2010	Α
9	041	2010	А
7	029	2010	А
7	031	2010	Α
8	037	2010	А
6	026	2280	Α
6	027	2280	Α
4	011	8000	Α

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DISKETTE MAP

MAP 2000-2

DISKETTE ENTRY MAP

PAGE 2 OF 9

001 (ENTRY POINT A)

This is the Diskette Drive Entry Map. For your convenience, information about your 5280 system can be kept by filling out the configuration record below.

Mark the information below, as required, so you can accurately return this system to its original configuration at the end of this call.

If this information was previously marked, check the system configuration for changes (Due to RPQs, MESs, ETC).

CONTROL UNIT TYPE: 5285 SERIAL NUMBER______ 1. DRIVE TYPE: 1 2D ADDRESS______ 2. DRIVE TYPE: 1 2D ADDRESS______ DATA STATION TYPE: 5281 5282 SERIAL NUMBER_____ 1. DRIVE TYPE: 1 2D ADDRESS______ 2. DRIVE TYPE: 1 2D ADDRESS______

Diagnostic Diskette 1? Y N 						IPL'ec	with		
EC84087			10311	0 010	 				
9 3									
9 3	I	ł							EC94097
									EU0408/9

```
DISKETTE MAP
                                     DΕ
                                                          MAP 2000-3
В
2
           DISKETTE ENTRY MAP
           PAGE 3 OF 9
                                        004
002
- Remove all diskette(s) from the
                                        Is only the Down Light on?
 drives attached to this system.
                                        Y N
- Attempt to 'IPL' the system
                                         0.05
 using Diagnostic Diskette 1.
- Do Not attempt to 'IPL' the
                                         - The card listed across from
                                           the failing line is the
 failing drive.
- If the system cannot be 'IPLed',
                                           defective card.
 leave the diskette in the
 failing drive with the locking
                                             Line Name
                                                          Card
 lever closed and the condition
                                           4F Clk Phase 2
 codes displayed.
                                                          A-D3
                                          4F Clk Phase 1 A-D3
Can the system be IPL'ed from any
                                         - All other clock lines,
                                           Defective Diskette/Main MPU
drive?
Y N
                                           card (A-C1) (MIM 303).
 003
                                        006
 - Probe the lines in the table.
                                        - The
                                              failing clock line is
   See MIM 905 For Probe setup.
                                         grounded.
                                        - See MIM 531 for cards in the
                                         net that could cause this
    Line Name
                   Probe
                                          failure. If the line is not
  4F Clk Phase 2 A-C2D10
                                         listed,
  4F Clk Phase 1 A-C2D13
                                       - Defective Diskette/Main MPU
                                          card (A-C1) (MIM 303).
  4 MHz clock
                   A-C5B05
                 A-C6D02
  250 Hz clock
  2.25 MHz clock
                 A-C7B09
                                      007
  1 MHz clock
                  A-C7D02
                                      - Insert the Diagnostic Diskette 1
  9 MHz clock
                  A-C7D04
                                        into the failing drive and close
  6 MHz clock
                  A-C8B02
                                        the locking lever.
  18 MHz clock
                  A-C8B03
                                      - See MIM 931 for an explanation
  200 KHz clock
                                        of the condition codes.
                  A-C8B05
  41.66 Hz clock
                   A-C8B09
  400 Hz clock
                  A-C8B12
                                      Are the condition codes displayed?
  100 Hz clock
                  A-C8D07
                                      Y N
  1 KHz clock
                  A-C8D10
                                        008
 Up light: On
                                        GO TO MAP 0100, ENTRY POINT A.
 Down light: On
 Are the lights correct?
 ΥN
                                                  EC840874
                                      4
6
CDE
                                      F
                                                          MAP 2000-3
```

F DISKETTE MAP GН MAP 2000-4 3 DISKETTE ENTRY MAP PAGE 4 OF 9 014 009 NOTE: The XX preceding the Hex - Defective Diskette/Main MPU card (A-C1) (MIM 303). number can be any number, but not '00'. - If a 'Ros Patch' cable is connected to the card, Is the condition code a Hex XX10 GO TO MAP 0600, ENTRY POINT A. through XXFF? YN 015 Is the condition code a Hex XX18 through XX20, XX23 through XX2C, 010 - Measure +5, -5 and +8.5 Vdc or XX2E through XXFF? for voltage and ripple at the YN Diskette/Main MPU card (A-C1) (MIM 461, 463 and 531). 016 - Check ALL listed points on the - Defective VFO card (A-D3)(MIM card. 501). Are all of the measurements _ _ _ _ OR _ _ _ _ _ within tolerance? YN - Defective Diskette/Main MPU card (A-C1) (MIM 303). - If a 'Ros Patch' cable is 011 GO TO MAP 8000, connected to the card, ENTRY POINT A. GO TO MAP 0600, ENTRY POINT A. 012 - Probe A-C1-TP16 '+Write/Erase Sense 4000', on the Diskette/Main MPU card (MIM 313). Up light: Off Down light: On Are the lights correct? YN 013 GO TO MAP 2010, ENTRY POINT A. EC840874 5 GH Ъ MAP 2000-4

```
DISKETTE MAP
J
4
           DISKETTE ENTRY MAP
           PAGE 5 OF 9
017
- Locate the condition code (Hex) in the table,
locate the correct note letter(s) and look to
the right to find the comment.
        -----Condition Code Table-----Condition
                      *******NOTES******
  COND SEE
 CODE NOTES
                XX = DO NOT CARE
              A -Speed slow or no index pulses
  _____
 XX18
         A,Q
                 detected.
              B -Speed too fast.
 XX1C
        B,Q
              C -- Erase Mis-match error.
              D -Dropped Ready.
  XX20
        C,Q
              E -Missing Address Marks.
              F -CRC error.
  XX23
        D,Q
              G -Missing Data Address Marks.
              H -Bad Track error.
  XX24
        E,Q
              J -Controlled Address Mark in the IPL
                 data, Non-recoverable
  XX26
        F,L,Q
              K -Vol-label Mis-match, check and
                 rewrite.
  XX29
       H,G,L
              L -Suspect the diskette.
              M -Non-'IPL' diskette.
         Q
              N -Incorrect Header Label, check and
                 rewrite.
  XX2A
        J,L,S
              P -Storage Size Mis-compare.
  XX2C
        R,Q
              Q -GO TO MAP 2010, ENTRY POINT A.
              R -Read or Access problem.
  XX2E
       K, L, S
              S -GO TO MAP 2280, ENTRY POINT B.
  XX30
       M,L,S
  XX32
       K,L,S
  XX34
       N,L,S
  XX38
       N,P,L
         S
  XXFF
        L,S
```

```
С
           DISKETTE MAP
                                       PQ
                                                           MAP 2000-6
3
           DISKETTE ENTRY MAP
           PAGE 6 OF 9
018
                                         023
(ENTRY POINT B)
                                         Can the problem be isolated to
                                         one or more diskette(s) that
Can the problem be isolated to a
                                         seem to fail on one type of
group of drives (remote Data
                                         drive (31SD or 51TD)?
Station drives only or local
                                         YN
drives only)?
Y N
                                           024
                                           - If
                                                 a
                                                       diskette
                                                                  works
 019
                                            correctly in one diskette
 Can the problem be isolated to
                                            drive, but has too many
 one diskette drive?
                                            errors or does not work at
 ΥN
                                            all in another drive, this
                                            type of failure is probably
   020
                                            a 'Diskette Interchange'
   (ENTRY POINT E)
                                            problem.
   Is an error code present or
                                           Is the symptom related to a
   reported?
                                           diskette interchange problem?
   Y N
                                           Y N
     021
                                            025
     (ENTRY POINT D)
                                            GO TO MAP 2010,
                                            ENTRY POINT A.
     Did the customer save the
     Error Log?
                                          026
     YN
                                          GO TO MAP 2280,
                                          ENTRY POINT A.
       022
       Can the
                                         027
                   problem
                              be
       isolated to one or more
                                        GO TO MAP 2280, ENTRY POINT A.
       diskette(s) that seem to
       fail on more than
                                       028
                             one
       drive?
                                       - Suspect the diskette(s) as being
       Y N
                                         defective.
                                       - Run
                                                     diskette
                                             the
                                                                surface
                                         analysis program 'TMEDIA' (MIM
                                        971) on the failing diskette(s)
                                         on more than one drive.
                                       Are over 50 percent of the errors
                                       indicated on the two drives from
                                       the same sectors?
                                       Y N
                                                   EC840874
9887
                                       77
KLMNPQ
                                       RS
                                                            MAP 2000-6
```

```
DISKETTE MAP
NRS
666
          DISKETTE ENTRY MAP
          PAGE 7 OF 9
   029
   - Suspect an interchange
     problem due to an incorrect
    hardware adjustment.
   GO TO MAP 2010,
   ENTRY POINT A.
 030
 - Suspect the diskette(s).
 - Run the diskette surface
   analysis program 'TMEDIA' (MIM
   971), with a good diskette of
   the same type on one of the
   same drives.
 Did this test complete without
 any errors?
 Y N
   031
  - Suspect problems with the
    diskette drive.
   GO TO MAP 2010.
   ENTRY POINT A.
 032
 - Try to initialize the failing
   diskette after the customer
   data has been transferred to
   another diskette.
 - If the diskette cannot be
   successfully initialized, it
   is suggested that this
   diskette be taken out of
   service.
033
- Attempt to run 'TSYSEREP' (MIM
 975).
    useful information be
Can
obtained?
Y N
```

```
034
GO TO PAGE 6, STEP 018,
ENTRY POINT B.
035
GO TO PAGE 8, STEP 036,
```

ENTRY POINT C.

MAP 2000-7

τυ

LM DISKETTE MAP MAP 2000-8 66 DISKETTE ENTRY MAP PAGE 8 OF 9 036 (ENTRY POINT C) - Locate the Error Code in the table, locate the correct Note Letter(s) and look to the RIGHT to find the comments. ----Error Code Table----Error Code Table----ERROR CODE(s) 0133/0731 K,L A -Write/Erase mis-match error. B -Write verify error. 3151/3251 R,N C -Storage overrun error. D -Missing address mark. 3201/3212/3272 A,N E -Missing data address mark. F -Missing sector. 3261 A,K,L G -Seek error. H -Data CRC error. 3203 C,K,L J -ID field CRC error. 3207 D,N K -Defective Diskette/Main MPU card (A-C1) 3301 H,Q,N (MIM 303). L -If a 'Ros Patch' cable is connected to 3302 B,Q,N the card, GO TO MAP 0600, ENTRY POINT A M -GO TO MAP 2280, ENTRY POINT B. 3303 F,Q,N N -GO TO MAP 2010, ENTRY POINT A. P -GO TO MAP 2280, ENTRY POINT A. 3304 G,N Q -Suspect a defective diskette. R -Diskette drive Dropped Ready. CHECK: 3305 J,Q,M The diskette, to ensure it is correct for the type of drive it is installed 3306 E,S,N in, and the Locking Lever is Closed. Reseat the Diskette I/O cables. 3307 T,Q,P S -Suspect the diskette drive that wrote the diskette. Check for a write failure T -Initialization problem, re-initialize the diskette in another diskette drive. - If the error code that is displayed is not in the table GO TO PAGE 6, STEP 018, ENTRY POINT B. 037 GO TO MAP 2010, ENTRY POINT A.

```
ΑK
          DISKETTE MAP
2 6
           DISKETTE ENTRY MAP
           PAGE 9 OF 9
 038
 Are there two diskette drives
 installed in the IBM 5285?
  YN
  039
  GO TO MAP 2010,
   ENTRY POINT A.
  040
  Do All diskette drives connected
  to the Diskette/Main MPU card
  fail (MIM 303)?
 ΥN
   041
   GO TO MAP 2010,
   ENTRY POINT A.
 042
 - Defective VFO card (A-D3) (MIM
   501).
 _ _ _ OR _ _ _ _ _
 - Defective Diskette/Main MPU
   card (A-C1) (MIM 303).
 - If a 'Ros Patch' cable is
  connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
043
GO TO PAGE 6, STEP 021,
ENTRY POINT D.
```

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DISKETTE BASE SWAP MAP

PAGE 1 OF 12

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP Number	ENTRY POINT	PAGE NUMBER	STEP Number
2000	A	2	001

EXIT PO	INTS		
EXIT TH	IS MAP	то	
PAGE	STEP	MAP	ENTRY
NUMBER	NUMBER	NUMBER	POINT
2	008	0600	A
11	097	0600	А
5	034	0600	Α
8	067	0600	А
10	081	0600	А
9	075	0600	А
3	019	0600	А
2	010	0600	А
12	100	0600	А
12	103	0600	А
10	083	2210	А
5	036	2210	А
9	077	2210	A
8	069	2210	А
3	017	2250	А
6	046	2250	А
4	028	2250	А
11	094	2250	А
3	014	2260	А
4	025	2260	А
6	043	2260	А
11	089	2260	А
3	021	2270	А

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DISKETTE MAP F MAP 2010-2 DISKETTE BASE SWAP PAGE 2 OF 12 001 006 (ENTRY POINT A) (ENTRY POINT B) When using this MAP you will be Is there only one Diskette Drive expected to swap Cards, Cables and installed in the IBM 5285? Diskette Drives. Whenever a swap Y N is called for, 'POWER OFF THE COMPLETE SYSTEM'. Also, when the 007 problem has been fixed, return the Is only ONE of the diskette system to the customer in the drives failing? original configuration. YN Do All diskette drives connected 008 to this system fail? - Defective VFO card (A-D3) YN (MIM 501). 002 _ _ _ _ OR _ _ _ _ Are there failing diskette drives located in both the IBM - Defective Diskette/Main MPU 5285 and 5281 or 5282? card (A-C1) (MIM 303). YN - If a 'Ros Patch' cable is connected to the card, 003 GO TO MAP 0600. Are only 51TD diskette drives ENTRY POINT A. failing? ΥN 009 - Swap plug P40 with P44 on the 004 Diskette/Main MPU card (A-C1) (ENTRY POINT S) (MIM 313). Is the failing diskette Does the same diskette drive drive located in an IBM 5281 fail? or 5282? YN YN 010 005 - Defective Diskette/Main MPU Is the failing diskette card (A-C1) (MIM 303). drive in an 'OEM' Data - If a 'Ros Patch' cable is Station? connected to the card, YN GO TO MAP 0600. ENTRY POINT A. 1 1 1 EC840874 22154 33 ABCDEF GH MAP 2010-2

```
Н
           DISKETTE MAP
                                       G
                                                            MAP 2010-3
2
                                       2
           DISKETTE BASE SWAP
           PAGE 3 OF 12
011
                                       018
- Without moving the plugs (P40
                                       - Move plug P40 to J44 on the
  and P44) back to their original
                                         Diskette/Main MPU card (A-C1)
  positions, swap the
                         I/O
                             CP
                                         (MIM 313).
  connectors
               between
                         diskette
                                       - Remove
                                                 the Diskette/Main MPU
  drives 4000 and 4400 (MIM 313).
                                         card and ensure the switches are
                                         set to include drive 4400 (A-Cl)
Does the same diskette drive fail?
                                         (MIM 303 and 313).
YN
                                       - Install the Diskette/Main MPU
                                         card (A-C1).
 012
 - Defective cable between the
                                       Does the diskette drive still
   Diskette/Main MPU card and the
                                       fail?
   failing diskette drive (MIM
                                       YN
    313).
                                         019
013
                                         - Defective Diskette/Main MPU
                                           card (A-C1) (MIM 303).
Are
     there any diskette drives
connected to this system that are
                                         - If a 'Ros Patch' cable is
the same type as the failing drive
                                           connected to the card,
(31SD or 51TD)?
                                         GO TO MAP 0600, ENTRY POINT A.
YN
                                       020
                                       Is there a Data Station with a
 014
 GO TO MAP 2260, ENTRY POINT A.
                                       diskette drive connected to this
                                       system?
015
                                       Y N
- Swap the Diskette Drive Control
 cards between the two drives
                                         021
 (Diskette MIM 377).
                                         GO TO MAP 2270, ENTRY POINT A.
Does the same diskette drive fail?
                                       022
YN
                                       - Swap the diskette drives between
                                               IBM 5281 or 5282 Data
                                         the
 016
                                         Station and the IBM 5285 (MIM
  - Defective
               Diskette
                           Drive
                                         301).
   Control card (Diskette MIM
    377).
                                       Does the same diskette drive fail?
                                       Y N
017
                                         023
GO TO MAP 2250, ENTRY POINT A.
                                         - Defective cable between the
                                           Diskette Drive Control card
                                           and the Diskette/Main MPU card
                                           (MIM 313).
                                                    EC840874
```

4

J

MAP 2010-3

```
J
           DISKETTE MAP
                                        Ε
3
                                        2
           DISKETTE BASE SWAP
           PAGE 4 OF 12
024
Are there any diskette
                           drives
connected to this system that are
the same type as the failing drive
(31SD or 51TD)?
ΥN
 025
 GO TO MAP 2260, ENTRY POINT A.
026
- Swap the Diskette Drive Control
 cards between the two drives
 (Diskette MIM 377).
Does the same diskette drive fail?
Y N
 027
 - Defective Diskette
                            Drive
   Control card (Diskette MIM
   377).
028
GO TO MAP 2250, ENTRY POINT A.
```

- 029
- The following is a list, by probability, of cards and cables which could cause a failure in a remote Data Station.
- Replace these parts, one at a time, in an attempt to determine if the problem is in the IBM 5285. The cables can be checked for opens using the CE meter and MIM 319.
- If these cards and cables DO NOT fix the problem: Advise the customer to call the OEM Service Representitive.

1.Defective Diskette Driver/Receiver card (A-D1) (MIM 305). 2.Defective VFO card (A-D3) (MIM 501). 3.Defective Diskette/Main MPU card (A-C1) (MIM 303). 4.Defective cable between P48 and P4C and J111 (MIM 319). 5.If a ROS Patch cable is connected to the Diskette/Main MPU card: Go To Map 0600, Entry Point A

D DISKETTE MAP LM MAP 2010-5 2 DISKETTE BASE SWAP PAGE 5 OF 12 030 034 - Measure +5 and -5 Vdc at P02 on - Defective Diskette the Data Station Driver/Receiver Driver/Receiver card (A-D1) card (IBM 5281 or 5282 MIM 209 (MIM 305). and 455). - Measure +5, -5 and +24 Vdc on ---- OR ---the Diskette Drive Control card for the failing drive (IBM 5281 - Defective Diskette/Main MPU or 5282 MIM 325). card (A-C1) (MIM 303). - If a 'Ros Patch' cable is Check all of these for both voltage and ripple (5281 or 5282 connected to the card, MIM 463). GO TO MAP 0600, ENTRY POINT A. Are All of the measurements within 035 tolerence? - Swap the input plugs P09 and P11 Data YN the Station at Driver/Receiver card (IBM 5281 031 or 5282 MIM 325). - GO TO MAP 8000, ENTRY POINT A Note: For this and future step's, of the Data Station that has the failing drive is back to the incorrect voltage it's original address. or ripple (IBM 5281 or 5282). Does the same diskette drive fail? 032 YN Are all of the Diskette Drives attached to this Data Station 036 GO TO MAP 2210, ENTRY POINT A. failing? Y N 037 033 - Swap input plugs P09 and P11 - Swap plug P48 with P4C on the back to their original Diskette Driver/Receiver card positions. (A-D1) (MIM 319). - Swap the output plugs Pl0 and NOTE: The failing diskette drive P12 at the Data Station will now have the other Driver/Receiver card (IBM 5281 address (was 48 now 4C or was or 5282 MIM 325). 4C now 48). Does the same diskette drive fail? Does the same diskette drive YN fail? Y N 038 - Defective Data Station Driver/Receiver card (IBM 5281 or 5282 MIM 211). EC840874 6 KLM Ν MAP 2010-5

```
Ν
           DISKETTE MAP
                                        KPQ
                                                             MAP 2010-6
5
                                        5
           DISKETTE BASE SWAP
            PAGE 6 OF 12
039
                                            046
- Swap the I/O CP connectors at
                                            GO TO MAP 2250,
  the Diskette Drive Control cards
                                            ENTRY POINT A.
  (IBM 5281 or 5282 MIM 325).
                                          047
Does the same diskette drive fail?
                                          - IPL the system with Diagnostic
ΥN
                                            Diskette 1.
                                          - Load 'DCP', select MDI 2050
  040
                                            and the failing 51TD diskette
  - Defective cable between the
                                            drive. Select option 20, and
   Diskette Drive Control card
                                            then select option 5 (Head
                 Data Station
                                            Select 1).
    and
         the
    Driver/Receiver card (IBM 5281
                                          - This
                                                    MDI
                                                           will
                                                                    100p
    or 5282 MIM 325).
                                            automatically.
                                          - Probe TPB03 '+ Select Head 1'
041
                                            on the Diskette Drive Control
Is the failing diskette drive a
                                            card (Diskette MIM 331).
51TD?
YN
                                          Up light: Pulses
                                          Down light: Ignore
  042
  (ENTRY POINT E)
                                          Are the lights correct?
                                          YN
  Are there any diskette drives
  connected to this system that
                                            048
  are the same type as the failing
                                            GO TO PAGE 9, STEP 072,
  drive (31SD or 51TD)?
                                            ENTRY POINT D.
  YN
                                          049
   043
                                          GO TO STEP 042.
   GO TO MAP 2260,
                                          ENTRY POINT E.
   ENTRY POINT A.
                                        050
  044
                                        Are the AC Drive Motors turning?
  - Ѕыар
         the Diskette
                            Drive
                                        YN
   Control cards between the two
   drives (Diskette MIM 377).
                                         051
                                         - GO TO MAP 8000, ENTRY POINT A
  Does the same diskette drive
                                           in the IBM 5281 or 5282 MAPs.
  fail?
  YN
                                        052
                                        Is there only one diskette drive
   045
                                        installed in the Data Station?
    - Defective Diskette
                                        Y N
                            Drive
      Control card (Diskette MIM
      377).
                                        1
                                                     EC840874
                                        0 7
P Q
                                        R S
                                                             MAP 2010-6
```

```
S
           DISKETTE MAP
6
           DISKETTE BASE SWAP
           PAGE 7 OF 12
053
Is
    there a diskette
                            drive
installed in the IBM 5281 or 5282
that is a '51TD'?
Y N
  054
  (ENTRY POINT C)
 - Power Off the controller.
 - Measure for ground between
   A3B05 '- Write Trigger' and
   A3D08 'Ground' on the Data
   Station Driver/Receiver card
   (IBM 5281 or 5282 MIM 325).
 NOTE: Leave the meter connected
   to these points until you are
   told to remove it.
 Does the meter read 20 ohms or
 more?
 YN
   055
   - Remove J48 from the Diskette
     Driver/Receiver card (A-D1)
     (MIM 319).
   Does the meter read 20 ohms or
   more?
   YN
     056
     - Remove the Diskette I/O
       Interface cable from J111
       (MIM 319).
     Does the meter read 20 ohms
     or more?
     Y N
9 8
тихмх
```

```
057
              the Diskette I/O
   - Remove
     Interface cable from J111 on
     the Data Station (IBM 5281
     or 5282 MIM 325).
   Does the meter read 20 ohms or
   more?
    YN
     058
     - Remove Pll from the Data
       Station Driver/Receiver
       card (IBM 5281 or 5282 MIM
       325).
     Does the meter read 20 ohms
     or more?
     ΥN
       059
       - Defective Data Station
         Driver/Receiver card
         (IBM 5281 or 5282 MIM
         211).
     060
     - Defective cable between
       J111 and the Data Station
       Driver/Receiver card (IBM
       5281 or 5282 MIM 325).
   061
   - Defective
                 Diskette I/O
     Interface cable, advise the
     Customer.
 062
 - Defective cable between J111
   and the Diskette Driver/Card
    (MIM 319).
- Defective Diskette
 Driver/Receiver card (A-D1).
```

MAP 2010-7

VWX

```
U
           DISKETTE MAP
                                      YZA
                                                           MAP 2010-8
7
           DISKETTE BASE SWAP
           PAGE 8 OF 12
064
                                          066
                                          - Probe AD1D10 '+ Write
- IPL the system with Diagnostic
 Diskette 1.
                                            Trigger' on the Diskette
- Load 'DCP', select MDI 2050 and
                                            Driver/Receiver card (A-D1)
 diskette drive address 4800.
                                            (MIM 319).
 Select option 15 (Write Data).
                                          Up light: On
- Load a scratch diskette into
 address 4800, select track 1 and
                                          Down light: Pulses
 sector 15.
- Loop on this command until told
                                          Are the lights correct?
 to terminate or load another
                                          YN
 MDI.
- Probe A3B05 '- Write Trigger' on
                                           067
                                           - Defective Diskette/Main
 the Data Station Driver/Receiver
 card (IBM 5281 or 5282 MIM 209
                                              MPU card (A-C1) (MIM 303).
 and 325).
                                            - If a 'Ros Patch' cable is
                                              connected to the card,
Up light: Pulses
                                            GO TO MAP 0600,
Down light: On
                                            ENTRY POINT A.
Are the lights correct?
                                          068
YN
                                          - Defective Diskette
                                            Driver/Receiver card (A-D1).
 065
 - Probe A-D1-TP22 '-
                                        069
                           Write
  Trigger' on the Diskette
                                        GO TO MAP 2210, ENTRY POINT A.
   Driver/Receiver card (A-D1)
   (MIM 319).
                                       070
                                       - Defective
                                                     Data
                                                                Station
 Up light: Pulses
                                        Driver/Receiver card (IBM 5281
 Down light: On
                                        or 5282 MIM 211).
 Are the lights correct?
 YN
                                                   EC840874
YZA
                                                            MAP 2010-8
```

```
Т
          DISKETTE MAP
7
           DISKETTE BASE SWAP
           PAGE 9 OF 12
071
- IPL the system with Diagnostic
 Diskette 1.
- Load 'DCP', select MDI 2050 and
 the failing 51TD diskette drive.
 Select option 20, and then
 select option 5 (Head Select 1).
- This
         MDI
                  will loop
 automatically.
- Probe TPB03 '+ Select Head 1' on
 the Diskette Drive Control card
 (Diskette MIM 331).
Up light: Pulses
Down light: Ignore
Are the lights correct?
Y N
 072
 (ENTRY POINT D)
 - Probe A3D04 '+ Select Head 1'
   on the
               Data Station
   Driver/Receiver card (IBM 5281
   or 5282 MIM 325).
 Up light: Pulses
 Down light: Ignore
 Are the lights correct?
 YN
   073
   - Probe A-D1-TP23 '+
                            Head
     Select 1' on the Diskette
     Driver/Receiver card (A-D1)
     (MIM 319).
   Up light: Pulses
   Down light: Ignore
   Are the lights correct?
   ΥN
AAAA
BCDE
```

```
AAAA
                   MAP 2010-9
BCDE
     074
     - Probe A-C1B10 '-
                            Head
       Select 1'
                      on
                            the
       Diskette/Main MPU
                            card
       (A-C1) (MIM 319).
     Up light: Ignore
     Down light: Pulses
     Are the lights correct?
     YN
       075
       - Defective Diskette/Main
        MPU card (A-Cl) (MIM
         303).
       - If a 'Ros Patch' cable
        is connected to the
         card.
       GO TO MAP 0600,
       ENTRY POINT A.
     076
     - Defective Diskette
       Driver/Receiver card
       (A-D1).
    077
   GO TO MAP 2210,
   ENTRY POINT A.
  078
  – Defective Data
                       Station
   Driver/Receiver card (IBM 5281
   or 5282 MIM 211).
079
GO TO PAGE 7, STEP 054,
ENTRY POINT C.
```

```
R
           DISKETTE MAP
                                       A A
                                                            MAP 2010-10
6
                                       FG
           DISKETTE BASE SWAP
           PAGE 10 OF 12
080
                                         083
                                         GO TO MAP 2210, ENTRY POINT A.
- Swap the output plug P48 with
 P4C
          at
                the
                        Diskette
 Driver/Receiver card (A-D1) (MIM
                                       084
 319).
                                       - Swap the cable plugs back to
- Remove the Diskette/Main MPU
                                         their origional positions on the
 card and ensure the switches are
                                         Data
                                               Station Driver/Receiver
 set to include drive 4800 and
                                         card (IBM 5281 or 5282 MIM 325).
 4C00 (A-C1) (MIM 303).
                                       - Move the output plug Pl2 from
                                         J12 to J10 on the Data Station
- Install the Diskette/Main MPU
 card (A-C1).
                                         Driver/Receiver card (IBM 5281
                                         or 5282 MIM 325).
      the diskette drive still
                                       Ensure the jumper, located on the
Does
fail?
                                         Data
                                              Station Driver/Receiver
YN
                                         card is plugged for a two drive
                                         configuration (IBM 5281 or 5282
                                         MIM 211).
 081
 - Defective Diskette
   Driver/Receiver card (A-D1)
                                       Does the diskette drive still
   (MIM 305).
                                       fail?
                                       YN
 _ _ _ _ OR _ _ _ _ _
                                        085
 - Defective Diskette/Main MPU
                                        - Defective
                                                       Data
                                                                 Station
   card (A-C1) (MIM 303).
                                           Driver/Receiver card (IBM 5281
 - If a 'Ros Patch' cable is
                                           or 5282 MIM 211).
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
                                       086
                                       Is there a drive of the same type
082
                                       located in the system (31SD or
- Swap the cable plugs back to
                                       51TD)?
 their origional positions on the
                                       Y N
 Diskette Driver/Receiver card
 (A-D1) (MIM 319).
                                         087
- Swap the input plugs P09 with
                                         - Swap the diskette drives
 P11
       at the Data Station
                                           between the IBM 5281 or 5282
 Driver/Receiver card (IBM 5281
                                           Data Station and the IBM 5288
 or 5282 MIM 325).
                                           (MIM 301).
NOTE: Plug P09 may be taped back
 to the cable harness that P11 is
                                         Does the same diskette drive
 connected to.
                                         still fail?
                                         YN
      the diskette drive still
Does
fail?
YN
                                       1 1 1
                                       1 1 1
                                                   EC840874
                                       AAA
A A
FG
                                       нјк
                                                            MAP 2010-10
```

```
AAA
          DISKETTE MAP
                                       CA
HJK
                                       2 L
1 1 1
           DISKETTE BASE SWAP
0 0 0
           PAGE 11 OF 12
   088
                                        094
   - Defective cable between the
                                         - Swap the diskette drives back
     Diskette Drive Control card
                                          to their origional positions
                 Data
                        Station
                                          (MIM 301).
     and the
                                         GO TO MAP 2250, ENTRY POINT A.
     Driver/Receiver card (IBM
     5281 or 5282 MIM 325).
                                       095
                                       - Load 'DCP' and select MDI 2050
 089
 - Swap the diskette drives back
                                        option 20. Select a failing
   to their origional positions
                                         drive and Select option 7 (MFM
   (MIM 301).
                                        Mode In).
 GO TO MAP 2260, ENTRY POINT A.
                                       - Probe A-C2D11 '+ MFM Mode' on
                                        the Diskette/Main MPU card
090
                                        (A-C1) (MIM 531).
- Swap the Diskette Drive Control
 cards between the two drives
                                       Up light: Pulses
 (Diskette MIM 377).
                                       Down light: Ignore
Does the same diskette drive still
                                       Are the lights correct?
fail?
                                       ΥN
Y N
                                         096
 091
                                        Is there a problem with the
 - Defective Diskette
                                         diskette drive coming Ready?
                          Drive
   Control card (Diskette MIM
                                         YN
   377).
                                          097
092
                                           - Defective VFO card (A-D3)
                                            (MIM 501).
- Swap the diskette drives between
      IBM 5281 or 5282 Data
 the
 Station and the IBM 5288 (MIM
                                          _ _ _ _ OR _ _ _ _ _
 301).
                                          - Defective Diskette/Main MPU
Does the same diskette drive still
                                            card (A-C1) (MIM 303).
                                           - If a 'Ros Patch' cable is
fail?
Y N
                                            connected to the card,
                                          GO TO MAP 0600,
 093
                                           ENTRY POINT A.
 - Defective cable between the
   Diskette Drive Control card
                                         098
                                         GO TO PAGE 2, STEP 004,
   and the
               Data Station
   Driver/Receiver card (IBM 5281
                                         ENTRY POINT S.
   or 5282 MIM 325).
                                       099
                                       GO TO PAGE 2, STEP 004,
                                       ENTRY POINT S.
```

```
MAP 2010-11
```

EC840874

MAP 2010-11

```
A B
          DISKETTE MAP
22
          DISKETTE BASE SWAP
          PAGE 12 OF 12
 100
 - Defective Diskette
   Driver/Receiver card (A-D1)
   (MIM 305).
 ____ OR ____
 - Defective VFO card (A-D3) (MIM
  501).
 ---- OR ----
 - Defective Diskette/Main MPU
   card (A-C1) (MIM 303).
 - If a 'Ros Patch' cable is
  connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
101
Is there a Data Station with a
diskette drive connected to this
system?
YN
 102
 GO TO PAGE 2, STEP 006,
 ENTRY POINT B.
103
- Defective VFO card (A-D3) (MIM
 501).
---- OR ----
- Defective Diskette/Main MPU card
 (A-C1) (MIM 303).
- If a 'Ros Patch' cable is
 connected to the card,
GO TO MAP 0600, ENTRY POINT A.
```

MAP 2010-12

IBM 5285 DISKETTE MAP

DISKETTE CABLE SWAP MAP

PAGE 1 OF 1

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP	ENTRY	PAGE	STEP
NUMBER	POINT	NUMBER	NUMBER
	+		
2010	A	1	001
2280	A	1	001

```
001
```

(ENTRY POINT A)

- Power Off the IBM 5285 and the IBM 5281 or 5282.
- Inspect both ends of the cable that goes from the Diskette Driver/Receiver card to the Cable Connector panel at J111 (MIM 319).

Are any wires or pins damaged? Y N

002

 Inspect both ends of the cable that goes from the Data Station Driver/Receiver card to the Cable Connector panel at J111 (IBM 5281 or 5282 MIM 325).

Are any wires or pins damaged? Y N

003 - Defective cable between the Diskette Driver/Receiver card and the Cable Connector panel J111 (MIM 319). _ _ _ _ OR _ _ _ _ _ - Defective cable between the Data Station Driver/Receiver card and the Cable Connector panel J111 (IBM 5281 or 5282 MIM 325). _ _ _ _ OR _ _ _ _ _ - If neither of the above, advise the customer you I/0 suspect that the interface cable is defective. 004 - Repair or replace the defective cable or pins. 005

- Repair or replace the defective cable or pins.

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IBM 5285 DISKETTE MAP

2 DRIVE, N/DDCC

PAGE 1 OF 4

ENTRY POINTS

FROM	ENTER	THIS MAP	ويت الله الله الله الله الله الله الله الل
MAP NUMBER	ENTRY Point	PAGE NUMBER	STEP Number
2010	A	1	001

EXIT POINTS

EXIT TH	IS MAP	то	
PAGE	STEP	MAP	ENTRY
NUMBER	Number	Number	Point
2	005	2280	A
3	024	8000	A

(ENTRY POINT A)

001

- Power Off.
 Carefully move the Head/Carriage on the failing drive, to the innermost track.
- Power On and observe the Head/Carriage on the failing drive.

Does the Head/Carriage access to the outermost track? Y N

002

- Stepper Motor Drive Band loose or out of adjustment (Diskette MIM 361).
- Stepper Motor Drive Pulley loose or out of adjustment (Diskette MIM 359).

____ OR ____

- Defective Stepper Motor (Diskette MIM 357).

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EC840874

2 A

CD А DRIVE MAP 1 2 DRIVE, N/DDCC PAGE 2 OF 4 003 - IPL the system with Diagnostic Diskette 1. - Load 'DCP' and run MDI 2060 to test the failing drive. - Answer the following questions as you run this MDI. Does the MDI stop with ' Drive Failed To Come Ready'? Y N 004 Was the 'Drive in Use' LED working correctly? YN 005 GO TO MAP 2280, ENTRY POINT A. 006 Is the Head loading and unloading? ΥN 007 - Defective Solenoid (Diskette 014 MIM 349). _ _ _ _ OR _ _ _ _ - Bail Actuator cable not installed correctly (Diskette MIM 349). ____ OR ____ - Head Load Bail out Y N of adjustment (Diskette MIM 346). 008 Was a Read problem encountered? Y N 3 3 Ε

009 Was a Write problem encountered? YN 010 2060 complete Did MDI correctly? Y N 011 - Defective Head/Carriage assembly (Diskette MIM 341). 012 - Suspect defective а diskette. _ _ _ _ OR _ _ _ _ - Suspect a Customer User problem. 013 - Defective Head/Carriage assembly (Diskette MIM 341). - Do the Head Load Solenoid and Bail service check (Diskette MIM 343). - Do the Drive Band service check (Diskette MIM 361). - Do the Head/Carriage service check (Diskette MIM 337). Was a problem observed when doing these service checks? 015 - Defective Head/Carriage assembly (Diskette MIM 341). EC840874

MAP 2250-2

1

BCD

```
ΒE
           DRIVE MAP
                                       GHJ
                                                           MAP 2250-3
22
           2 DRIVE, N/DDCC
           PAGE 3 OF 4
 016
                                          024
                                          GO TO MAP 8000,
  - Load and run 'SYSTEST' to test
   the failing drive (MIM 975).
                                          ENTRY POINT A.
 Is the drive still failing?
                                         025
 ΥN
                                         - Defective AC Drive Motor
                                           (Diskette MIM 351).
   017
   - End of call. Remember
                                         _ _ _ _ OR _ _ _ _ _
                             to
     return the IBM 5285 to the
     customer in its original
                                        - Defective AC Motor Starting
     configuration.
                                          Capacitor (Diskette MIM 353).
  018
                                       026
  - Defective Head/Carriage
                                       - Measure for the correct AC
   assembly (Diskette MIM 341).
                                         voltage at the Diskette AC
                                         Connector (IBM 5281 or 5282 MIM
019
                                         453).
Is the belt installed?
Y N
                                       Is the AC voltage present at the
                                       Diskette AC Connector?
 020
                                       YN
 - Check the belt for wear and to
   determine why the belt came
                                       027
   off. See the Diskette MIM's
                                        - GO TO MAP 8000, ENTRY POINT A
   for
         any replacement or
                                          of the Data Station that has
   adjustment needed.
                                          the incorrect voltage
                                                                    or
                                          ripple (IBM 5281 or 5282).
021
Is the AC Motor turning?
                                       028
                                       - Defective AC Drive Motor
YN
                                         (Diskette MIM 351).
  022
  Is the failing drive located in
                                       _ _ _ _ OR _ _ _ _ _
  an IBM 5281 or 5282?
 YN
                                       - Defective AC Motor
                                                               Starting
                                         Capacitor (Diskette MIM 353).
   023
   - Measure for the correct AC
     voltage at the Diskette AC
     Connector (MIM 453).
   Is the AC voltage present at
   the Diskette AC Connector?
    YN
                                                   EC840874
FGHJ
                                                           MAP 2250-3
```

```
F
          DRIVE MAP
3
           2 DRIVE, N/DDCC
           PAGE 4 OF 4
029
- Probe TPE03 (31SD) or TPE01
  (51TD) '+ Index' on the failing
  drive at the Diskette Drive
  Control card (Diskette MIM 331).
Up light: Pulses
Down light: On
Are the lights correct?
YN
 030
 - Defective PTX (Diskette MIM
   375).
                             .
 ---- OR ----
 - Defective LED (Diskette MIM
   371).
031
- Defective AC Motor (Diskette MIM
 351).
_ _ _ _ OR _ _ _ _
- Defective Drive Belt.
_ _ _ OR _ _ _ _
- Slipping AC Drive Belt Pulley.
_ _ _ _ OR _ _ _ _
- Collet not engaging diskette
```

correctly (Diskette MIM 335).

MAP 2250-4

IBM 5285 DISKETTE MAP

2 DRIVE, DDCC

PAGE 1 OF 5

ENTRY POINTS

FROM	ENTER	THIS MAP	نین وی این این این این این این این این این ای
MAP NUMBER	ENTRY Point	P AGE NUMBER	STEP NUMBER
2010	A	1	001

001

(ENTRY POINT A)

- Power Off.
- Carefully move the Head/Carriage on the failing drive to the innermost track.
- Observe to see if the stepper motor pulley and drive band are tight are operating correctly. If not, see the Diskette MIM's for the replacement or adjustment procedures.
- Power On.
- Observe the Head/Carriage on the failing drive.

Does the Head/Carriage access to the outermost track? Y N 002 - Probe TPF02 (31SD) or TPG01 (51TD) '+ Write/Erase Sense' on the failing Diskette Drive Control card (MIM 313). Up light: Off Down light: On Are the lights correct? Y N Copyright IBM Corp 1980 2 2 2

ABC

EXIT POINTS

EXIT TH	IS MAP	то	
P AGE	STEP	MAP	ENTRY
NUMBER	NUMBER	NUMBER	POINT
2	009	2280	A
5	037	8000	A

.

```
ABC
           DRIVE MAP
                                        Ε
                                                             MAP 2260-2
1 1 1
           2 DRIVE, DDCC
           PAGE
                2 OF 5
    003
                                        008
    - Defective
                 Diskette
                            Drive
                                        Was the 'Drive In Use' LED working
      Control card (Diskette MIM
                                        correctly?
      377).
                                        Y N
  004
                                          009
  - Measure the voltage on the
                                         GO TO MAP 2280, ENTRY POINT A.
    Diskette Drive Control card
   test points MC-0, MC-1, MC-2
                                        010
    and
         MC-3.
                   Connect
                              the
                                        Is the Head loading and unloading?
    negative meter lead to ground,
                                        Y N
    TPF01 if the failing drive is
    a 31SD or to TPA05 if it is a
                                          011
   51TD and the positive lead to
                                          - Probe TPE02 (31SD) or TPB05
    the TP's.
                                           (51TD) '+ Head Engage' on the
  Three of the TP's should be at
                                           failing Diskette Drive Control
   +24Vdc and one of them should
                                           card (Diskette MIM 331).
   be at + or - 1 Vdc (Diskette
   MIM 331).
                                          Up light: Pulses
                                          Down light: On
  Are the voltages correct?
 YN
                                          Are the lights correct?
                                          YN
   005
   - Defective
                 Diskette
                            Drive
                                           012
     Control card (Diskette MIM
                                            - Defective Diskette
                                                                    Drive
     377).
                                              Control card (Diskette MIM
                                              377).
 006
 - Defective
                 Stepper
                                          013
                            Motor
    (Diskette MIM 357).
                                          - See if the Head Load Bail
                                           moves
                                                   enough
                                                           to load the
007
                                            head(s) when the locking lever
- IPL the system with Diagnostic
                                            is closed. See Diskette MIM
 Diskette 1.
                                            344 for service check.
- Load 'DCP' and run MDI 2060,
 test the failing drive.
                                          Does the Head Load Bail move
- Answer the following questions
                                          enough to allow the head(s) to
  as you run this MDI.
                                          load?
                                          Y N
Does the MDI stop with 'Drive
Failed To Come Ready'?
Y N
                                                     EC840874
                                        3 3 3
DE
                                        FGH
                                                             MAP 2260-2
```

```
FGH
          DRIVE MAP
                                      JKL
                                                           MAP 2260-3
2 2 2
           2 DRIVE, DDCC
           PAGE 3 OF 5
   014
                                          020
                                                MDI
                                                       2060 complete
   - Bail Actuator cable
                             not
                                          Did
     installed correctly
                                          correctly?
     (Diskette MIM 349).
                                          YN
   _ _ _ _ OR _ _ _ _
                                            021
                                            - Defective Head/Carriage
   - Head Load Bail out
                                              assembly (Diskette MIM
                              of
     adjustment (Diskette
                             MIM
                                              341).
     346).
                                            _ _ _ OR _ _ _ _
 015
 - Disconnect the Head
                            Load
                                            - Defective Diskette Drive
   Solenoid
             plug
                     from the
                                              Control card Diskette MIM
   Diskette Drive Control card
                                              377).
   (Diskette MIM 333).
 - Measure the resistance of the
                                          022
   Head
          Load Solenoid
                            by

    Suspect

                                                     a defective
   measuring on the cable plug
                                            diskette.
   between the A03 and A04 hole.
 - The resistance should be from
                                         ---- OR ----
   113 to 250 ohms.
                                          - Suspect a User problem.
 Is the Solenoid resistance
 within these limits?
                                        023
 YN
                                        - Defective Head/Carriage
                                          assembly (Diskette MIM 341).
   016
   - Defective Solenoid (Diskette
                                      024
     MIM 349).
                                      - Do the Head Load Solenoid and
                                        Bail service check (Diskette MIM
 017
                                        343).
 - Defective Diskette Drive
                                      - Do the Drive Band service check
   Control card (Diskette MIM
                                        (Diskette MIM 361).
   377).
                                      - Do the Head/Carriage service
                                        check (Diskette MIM 337).
018
Was a Read problem encountered?
                                      Was
                                               problem observed when
                                            а
YN
                                      performing these service checks?
                                      Y N
 019
 Was a Write problem encountered?
 Y N
                                                  EC840874
                                      4 4
                                                           MAP 2260-3
JKL
                                      M N
```

```
DMN
          DRIVE MAP
                                       Ρ
                                                           MAP 2260-4
233
           2 DRIVE, DDCC
           PAGE 4 OF 5
   025
                                       031
   - Defective Head/Carriage
                                       Is the AC Motor turning?
     assembly (Diskette MIM 341).
                                      YN
   _ _ _ _ OR _ _ _ _
                                        032
                                         Is the failing diskette drive
   - Defective Diskette Drive
                                         located in the IBM 5285?
     Control card (Diskette MIM
                                        Y N
     377).
                                          033
   _ _ _ _ OR _ _ _ _ _
                                          - Measure for the correct AC
                                            voltage at the Diskette AC
                                            Connector. Use IBM 5281 or
   - Defective cable between the
     Diskette Drive Control card
                                            5282 MIM 453.
     and
           the Data Station
                                          Is the AC voltage present at
     Driver/Receiver card (IBM
     5281 or 5282 MIM 325).
                                          the Diskette AC Connector?
                                          Y N
  026
 - Load and run 'SYSTEST' to test
                                            034
   the failing drive (MIM 975).
                                            - GO TO MAP 8000, ENTRY
                                              POINT A of the Data
 Is the drive still failing?
                                              Station that
                                                             has
                                                                    the
                                              incorrect
                                                          voltage
 YN
                                                                     or
                                              ripple (IBM 5281 or 5282).
   027
   - End of call.
                    Remember to
                                          035
     return the IBM 5285 to the
                                          - Defective AC Drive
                                                                  Motor
                                            (Diskette MIM 351).
     customer in its original
     configuration.
                                          _ _ _ _ OR _ _ _ _ _
  028
                                          - Defective AC Motor Starting
 - Defective Head/Carriage
   assembly (Diskette MIM 341).
                                            Capacitor (Diskette MIM
                                            353).
029
Is the belt installed?
                                         036
Y N
                                        - Measure for the correct AC
                                          voltage at the Diskette AC
                                          Connector. Use IBM 5285 MIM
  030
  - Check the belt for wear and to
                                          453.
   determine why the belt came
   off. See the Diskette MIM's
                                         Is the AC voltage present at the
                                         Diskette AC Connector?
   for
                replacement or
         any
                                         Y N
   adjustment procedure.
                                                   EC840874
                                       555
                                       QRS
                                                           MAP 2260-4
```

```
MAP 2260-5
QRS
      DRIVE MAP
                                      Т
444
           2 DRIVE, DDCC
           PAGE 5 OF 5
   037
                                      041
   GO TO MAP 8000,
                                      - Defective AC Motor (Diskette MIM
   ENTRY POINT A.
                                        351).
 038
                                      _ _ _ _ OR _ _ _ _ _
 - Defective AC Drive Motor
   (Diskette MIM 351).
                                      - Defective Drive Belt.
 ---- OR ----
                                      _ _ _ _ OR _ _ _ _
 - Defective AC Motor Starting
                                      - Slipping AC Drive Belt Pulley.
   Capacitor (Diskette MIM 353).
                                      _ _ _ _ OR _ _ _ _ _
039
- Probe TPE03 (31SD) or TPE01
(51TD) '+ Index' on the failing
                                    - Collet not engaging diskette
                                       correctly (Diskette MIM 335).
 Diskette Drive
                  Control card
 (Diskette MIM 331).
Up light: Pulses
Down light: On
Are the lights correct?
YN
 040
 - Defective Diskette Drive
   Control card (Diskette MIM
   377).
 ____ OR ____
 - Defective PTX (Diskette MIM
   375).
 ____ OR ____
 - Defective LED (Diskette MIM
   371).
                                                  EC840874
```

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MIN CONF SYS

PAGE 1 OF 6

ENTRY POINTS

FROM		THIS MAP	
MAP	ENTRY	PAGE	STEP
NUMBER	POINT	NUMBER	NUMBER
	h		
2010	A	1	001
		-	•••

EXIT POINTS

EXIT TH	IS MAP	то	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	027	0600	А
4	030	2280	А
2	006	8000	А
2	009	8000	А

001 (ENTRY POINT A)

 This Map is to be used for a minimum configuration system, that is one diskette drive located in the 5285 and no other diskette drives attached to this system.

```
Can the system be IPL'ed?

Y N

002

Is the belt installed?

Y N

003

- Check the belt for wear and

to determine why the belt

came off. See the Diskette

MIM's for any replacement or

adjustment procedure.

004

Is the AC Motor turning?

Y N
```

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422 ABC

```
BC
           DRIVE MAP
                                       Ε
1 1
           MIN CONF SYS
           PAGE 2 OF
                         6
  005
                                       011
                                       (ENTRY POINT B)
  - Measure for the correct AC
   voltage at the Diskette AC
    Connector (MIM 453).
  Is the AC voltage present at the
  Diskette AC Connector?
  Y N
    006
    GO TO MAP 8000,
    ENTRY POINT A.
  007
  - Defective AC Drive Motor
    (Diskette MIM 351).
  _ _ _ OR _ _ _ _
                                       Does
  - Defective AC Motor Starting
                                       fail?
    Capacitor (Diskette MIM 353).
                                       YN
008
- Measure +5, -5 and +24 Vdc for
  voltage and ripple
                         at
                              the
  Diskette Drive Control card (MIM
  313, 461 and 463).
                                       013
Are all of the measurements within
tolerence?
YN
  009
  GO TO MAP 8000, ENTRY POINT A.
010
                                       Up
Is a 'Ros Patch' cable connected
to the Base Diskette MPU 'Ros
Patch' Signal Cable Connector
(A-C1) (MIM 303)?
                                       YN
Y N
                                       3 3
                                       FG
DE
     ۰.,
```

```
- Due to the lack of swappable
 FRUs, it is suggested at this
 time the following be replaced
 one at a time to determine the
 failing FRU or isolate
                             the
 problem.
1. VFO card (A-D3).
2. Diskette Drive Control
                            card
  (Diskette MIM 377).
3. Cable between the Diskette/Main
  MPU card and the Diskette Drive
  Control card (MIM 313).
4. Diskette/Main MPU card (A-C1)
  (MIM 303).
      the diskette drive still
 012
 - End of call. Run 'SYSTEST'
  before returning the system to
   the Customer.
- Load a good scratch Diskette 1
 into the failing drive.
- Probe TPE03 (31SD) or TPE01
(51TD) '+ Index' on the failing
 Diskette Drive Control
                            card
(Diskette MIM 331).
    light: Pulses
Down light: On
Are the lights correct?
```

MAP 2270-2

EC840874

MAP 2270-2

7 3

```
FG
           DRIVE MAP
                                        J
                                                             MAP 2270-3
22
           MIN CONF SYS
           PAGE 3 OF
                         6
  014
                                        018
                                        - Do the Head Load Solenoid and
  - Defective PTX (Diskette MIM
    375)
                                          Bail service check (Diskette MIM
                                          343).
  _ _ _ _ OR _ _ _ _
                                        Was a problem observed when doing
  - Defective LED (Diskette MIM
                                        this service check?
                                        YN
    371).
015
                                          019
- Do the Diskette Speed service
                                          - Preform the Drive Band service
  check (Diskette MIM 367).
                                            check (Diskette MIM 361).
                                          - Preform
                                                     the
                                                           Head/Carriage
                                           service check (Diskette MIM
Was a problem observed when doing
this service check?
                                            337).
YN
                                          Was a problem observed when
  016
                                          doing these service checks?
  - Power Off.
                                          YN
  - Carefully
                   move
                              the
                                            020
   Head/Carriage on the drive to
    the innermost track.
                                           - Defective Head/Carriage
  - Observe to see if the stepper
                                             assembly (Diskette MIM 341).
   motor pulley and drive band
    are tight and are operating
                                           ____ OR ____
    correctly. If not see the
    Diskette
              MIM's
                      for
                              the
                                           - Defective cable between the
    adjustment
                 or
                      replacement
                                              Diskette Drive Control card
                                              and the Diskette/Main MPU
   procedures.
                                              card (MIM 313).
  - Power On.
  - Observe the Head/Carriage on
    the drive.
                                          021
                                          Can the system be IPL'ed now?
  Does the Head/Carriage access to
                                          Y N
  the outermost track?
  Y N
                                           022
                                            - Defective Head/Carriage
    017
                                             assembly (Diskette MIM 341).

    Defective

                  Stepper
                            Motor
      (Diskette MIM 357).
                                          023
                                                            Run 'SYSTEST'
                                          - End of call.
                                            before returning the system to
                                            the Customer (MIM 975).
                                                    EC840874
                                        4
ΗJ
                                                             MAP 2270-3
                                        κ
```

```
DHK
     DRIVE MAP
                                      ALM
                                                          MAP 2270-4
233
                                      1
          MIN CONF SYS
           PAGE 4 OF 6
   024
                                         027
   - Defective Solenoid (Diskette
                                         GO TO MAP 0600,
    MIM 349).
                                         ENTRY POINT A.
   _ _ _ _ OR _ _ _ _ _
                                        028
                                        GO TO PAGE 2, STEP 011,
   - Bail Actuator cable not
                                        ENTRY POINT B.
     installed correctly
     (Diskette MIM 349).
                                      029
                                      - IPL the system with Diagnostic
   _ _ _ _ OR _ _ _ _
                                       Diskette 1.
                                      - Load 'DCP' and run MDI 2060 to
   - Head Load Bail out of
                                       test the failing drive.
     adjustment (Diskette MIM
                                      - Answer the following questions
     346).
                                        as you run this MDI.
                                      Was the 'Drive in Use' LED working
 025
                                      correctly?
 - Defective AC Motor (Diskette
                                      Y N
   MIM 351).
                                        030
 _ _ _ _ OR _ _ _ _ _
                                       GO TO MAP 2280, ENTRY POINT A.
 - Defective Drive Belt.
                                      031
                                      Was a Read problem encountered?
 _ _ _ _ OR _ _ _ _ _
                                      YN
 - Slipping AC Drive Belt Pully.
                                        032
                                        Was a Write problem encountered?
 _ _ _ _ OR _ _ _ _ _
                                        YN
 - Collet not engaging diskette
                                         033
   correctly (Diskette MIM 335).
                                         Is the failing diskette drive
                                         a 51TD?
026
                                          YN
- Power Off and remove the 'Ros
 Patch' cable.
                                           034
- Install a 'Ros Patch' jumper on
                                            - Suspect a defective
 the Diskette/Main MPU card
                                             diskette.
 (A-C1) (MIM 303).
- Power On.
                                           ____ OR ____
Does the diskette drive still
                                            - Suspect a User problem.
fail?
YN
                                                  EC840874
                                      6 5 5
LM
                                      NPQ
                                                           MAP 2270-4
```

```
Q
          DRIVE MAP
4
          MIN CONF SYS
          PAGE 5 OF 6
035
- Load a good scratch Diskette 2
 or 2D into the failing drive.
- Probe TPE01 '+ Index' on the
 Diskette Drive Control card
 (Diskette MIM 331).
Up
    light: Pulses
Down light: On
Are the lights correct?
YN
 036
 - Defective PTX (Diskette MIM
   375).
 ____ OR ____
 - Defective LED (Diskette MIM
   371).
 ---- OR ----
 - Defective
            Diskette
                         Drive
   Control card (Diskette MIM
   377).
 ---- OR ----
 - Defective cable between the
   Diskette Drive Control card
   and the Diskette/Main MPU card
   (MIM 313).
```

037

PR

- Due to the possibility of multiple FRUs causing this problem it is suggested that the following be replaced one at a time to determine the failing FRU or isolate the problem.
- Diskette Drive Control card (Diskette MIM 377).
- Cable between the Diskette/Main MPU card and the Diskette Drive Control card (MIM 313).
- Head/Carriage assembly (Diskette MIM 341).

- Due to the possibility of multiple FRUs causing this problem it is suggested at this time the following be replaced one at a time to determine the failing FRU or isolate the problem.
- Diskette Drive Control card (Diskette MIM 377).
- Cable between the Diskette/Main MPU card and the Diskette Drive Control card (MIM 313).
- Head/Carriage assembly (Diskette MIM 341).
- Diskette/Main MPU card (A-C1) (MIM 303).
- 5. If the above Do Not resolve this problem,
- GO TO MAP 0600, ENTRY POINT A.

```
-4
Ν
          DRIVE MAP
4
           MIN CONF SYS
           PAGE 6 OF 6
039
- Do the Drive Band service check
 (Diskette MIM 361).
- Do the Head/Carriage service
 check (Diskette MIM 337).
Was a problem observed when doing
these service checks?
YN
 040
 - Defective Head/Carriage
   assembly (Diskette MIM 341).
041
- Load and run 'SYSTEST' to test
 the failing drive (MIM 975).
Is the drive still failing?
Y N
 042
 - End of call.
043
- Defective Head/Carriage assembly
```

```
(Diskette MIM 341).
```

MAP 2270-6

INTER LED

PAGE 1 OF 8

ENTRY POINTS

FROM	ENTER	THIS MAP	
МАР	ENTRY	PAGE	STEP
NUMBER	POINT	NUMBER	NUMBER
2000	A A	 1	001
2250	A	1	001
2260	A	1	001
2270	A	1	001

EXIT POINTS

EXIT TH	IS MAP	то	
PAGE	STEP	MAP	ENTRY
NUMBER	NUMBER	NUMBER	POINT
6	050	0600	A
6	054	0600	А
7	059	0600	Α
7	063	0600	А
8	068	0600	Α
7	066	0600	Α
2	003	2000	Α
3	018	2000	А
4	027	2000	Α
5	037	2000	Α
5	044	2000	Α
3	022	2000	Α
5	042	2000	А
6	056	2000	Α
7	065	2000	А
8	069	2000	A

001

(ENTRY POINT A)

Did you enter this MAP because of a 'Drive In Use' LED failure? Y N

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EC840874

```
B
           DISKETTE MAP
                                        DE
                                                             MAP 2280-2
1
           INTER LED
           PAGE
                2 OF 8
002
                                          008
                                         - Load and run 'SYSTEST' to test
- If a diskette works correctly in
  one diskette drive, but has too
                                           the drive you were
                                                                  having
 many errors or does not work at
                                           problems with (MIM 975).
 all in another drive, this type
                     probably
  of
      failure is
                                          Are you still having problems
                              a
  'Diskette Interchange' problem.
                                         with the drive?
  See MIM 963 for a description of
                                         YN
  other Media problems.
                                           009
Did you enter this MAP because you
                                           - End of call.
                                                              Return the
suspect a diskette or interchange
                                             system to the customer in
problem?
                                             its original configuration.
Y N
                                          010
 003
                                         - Defective Head/Carriage
 GO TO MAP 2000, ENTRY POINT A.
                                           assembly (Diskette MIM 341).
004
                                        011
Does the diskette(s) fail in more
                                        - IPL the system with Diagnostic
than one drive.
                                         Diskette 1.
ΥN
                                        - Load 'DCP' and run MDI 2060 to
                                         test the failing drive. Be sure
  005
                                         to use a known good scratch
  Can the System be IPL'ed?
                                         diskette.
 YN
                                        Did the drive fail when running
    006
                                        this MDI?
    - Do the Drive Band service
                                        YN
     check (Diskette MIM 361) and
     the Head/Carriage
                          service
                                          012
     check (Diskette MIM 337) on
                                         - Load and run 'TMEDIA' to test
     the drive you are having
                                           the diskette(s) you are having
      problems with.
                                           problems with (MIM 971).
    Was a problem observed when
                                          Did the diskette(s) fail when
    performing these
                          service
                                         running this test?
    checks?
                                          YN
    YN
      007
      - Defective Head/Carriage
       assembly (Diskette MIM
       341).
                                                    EC840874
4
                                        3 3 3
CDE
                                        FGH
                                                             MAP 2280-2
```

```
FGH
           DISKETTE MAP
                                       J
                                                            MAP 2280-3
222
           INTER LED
           PAGE 3 OF 8
   013
                                       019
   - Do the Drive Band service
                                       - Do the Drive Band service check
     check (Diskette MIM 361) and
                                         (Diskette MIM 361)
                                                               and
                                                                     the
      the Head/Carriage service
                                         Head/Carriage service
                                                                   check
     check (Diskette MIM 337) on
                                         (Diskette MIM 337) on the drive
     the drive you are having
                                         you are having problems with.
     problems with.
                                       - Load 'DCP' and run MDI 2060
   - If the problem occurs again,
                                         again to test the failing drive.
     replace the Head/Carriage
                                         Be sure to use another known
      assembly (Diskette MIM 341).
                                         good scratch diskette.
  014
                                       Did the drive fail when running
  - Initialize the diskette(s) you
                                       this MDI?
   are having problems with. Run
                                       YN
   'TMEDIA' again and test the
   diskette(s) (MIM 971).
                                         020
                                         - Load and run 'SYSTEST' to test
  Did the diskette(s) fail when
                                           the
                                                 drive you were having
  running this test?
                                           problems with (MIM 975).
  YN
                                         Are you still having problems
   015
                                         with the drive?
   - Suspect that the heads are
                                         YN
     Worn
              or
                     that
                              the
     Head/Carriage
                   is out of
                                           021
     alignment on the drive that
                                           - End of call.
                                                             Return the
     wrote the diskette.
                                            system to the customer in
                                             its original configuration.
  016
                                           - If the problem occurs again,
 - Defective Diskette(s), advise
                                             replace the Head/Carriage
   the customer to take these
                                             assembly (Diskette MIM 341).
   diskette(s) out of service.
                                         022
017
                                         - If Read errors occur, replace
Was a Read problem encountered?
                                           the Head/Carriage assembly
YN
                                           (diskette MIM 341). If other
                                           errors occur,
  018
                                         GO TO MAP 2000, ENTRY POINT A.
 - The
          problem
                    is
                         not
                              an
  interchange problem,
                                       023
 GO TO MAP 2000, ENTRY POINT A.
                                       - Defective Head/Carriage assembly
                                         (Diskette MIM 341).
```

```
С
           DISKETTE MAP
                                       LMN
2
           INTER LED
           PAGE 4 OF 8
024
                                           029
Are you having problems with more
than one diskette?
Y N
  025
  (ENTRY POINT B)
  Did you run 'TMEDIA' to test the
  diskette?
 YN
   026
   - Load and run 'TMEDIA' to
     test the diskette you are
     having problems with (MIM
                                         030
     971).
   Are any errors displayed when
   running this test?
    YN
                                        031
     027
     - The problem is not an
      interchange problem,
     GO TO MAP 2000,
     ENTRY POINT A.
                                       Does
   028
                                       YN
   - Initialize the diskette you
     are having problems with.
                                         032
     Run 'TMEDIA' again to test
     the diskette (MIM 971).
   Does the diskette fail when
   running this test?
   Y N
5
                                       5
KLMN
                                        P
```

- Suspect that the heads are worn or that the Head/Carriage is out of alignment on the drive that wrote the diskette. _ _ _ OR _ _ _ _ - Mark this diskette and if the problem occurs again, advise the Customer to take this diskette out of service. - Defective Diskette, advise the customer take this diskette out of service. - Initialize the diskette you are having problems with. Run 'TMEDIA' again to test the diskette (MIM 971). the diskette fail when running this test? - Suspect that the heads are worn or that the Head/Carriage is out of alignment on the drive that wrote the diskette. ---- OR ----- Mark this diskette and if the problem occurs again, advise the Customer to take this diskette out of service.

MAP 2280-4

EC840874

```
MAP 2280-5
KP
           DISKETTE MAP
                                        AQ
44
                                        1
            INTER LED
           PAGE 5 OF
                         8
 033
                                          040
  - Defective Diskette, advise the
                                          - Load and run 'SYSTEST' to test
    customer take this diskette
                                            the drive you were
                                                                    having
    out of service.
                                            problems with (MIM 975).
034
                                          Are you still having problems
Was
                                          with the drive?
      the
            failing
                      diskette(s)
written on this system?
                                          ΥN
Y N
                                            041
 035
                                            - End of call.
                                                              Return the
 - Suspect the system's drive(s)
                                              system to the customer in
                                              its original configuration.
   that wrote this diskette(s).
                                            - If the problem occurs again,
036
                                              replace the Head/Carriage
- Run 'TMEDIA' with a known good
                                              assembly (Diskette MIM 341).
  scratch diskette (MIM 971).
- Test all the drives connected to
                                          042
 this system.
                                          - If Read errors occur, replace
                                            the Head/Carriage assembly
                                            (diskette MIM 341). If other
      only one drive give you
Does
                                            errors occur,
errors?
Y N
                                          GO TO MAP 2000, ENTRY POINT A.
 037
                                        043
                                        Are
                                                    the
                                                        drives
                                                                   working
 - You have a hardware failure
                                              all
                                        correctly except for the 'Drive In
   because
              of the
                         multiple
                                        Use' LED?
    failures.
 GO TO MAP 2000, ENTRY POINT A.
                                        YN
038
                                          044
                                          GO TO MAP 2000, ENTRY POINT A.
- Do the Drive Band service check
  (Diskette MIM 361)
                        and
                              the
 Head/Carriage
                  service
                            check
                                        045
  (Diskette MIM 337) on the drive
                                        - Power Off the controller.
 you are having problems with.
                                        - Remove All diskette(s) from the
                                          drives and leave All the locking
Were problems encountered
                                          lever(s) open.
                            when
                                        - Power On the controller.
doing these service checks?
Y N
                                        Do all the 'Drive In Use' LEDs
                                        turn on?
 039
                                        Y N
 - Defective Head/Carriage
   assembly (Diskette MIM 341).
                                                     EC840874
                                        8 6
                                        R S
                                                              MAP 2280-5
Q
```

```
S
           DISKETTE MAP
                                      VW
                                                           MAP 2280-6
5
           INTER LED
           PAGE 6 OF 8
046
                                        051
More than one 'Drive In Use' LED
                                        - There is an open or short in
fail?
                                          this line, use MIM 313 and
YN
                                          Logic Diagram LD01-3 to
                                          isolate the failure.
 047
 Is the failing 'Drive In Use'
                                      052
 LED in the controller?
                                      - IPL the system with Diagnostic
 YN
                                        Diskette 1.
   048
                                      Do all the 'Drive In Use' LEDs
   - Probe A-C1B08 (4800) or
                                      turn off?
     A-C2D05 (4C00) '- File In
                                      YN
     Use' for the failing LED on
     the logic board (MIM 501).
                                        053
                                        - Probe
                                                  A-C1B08 (4800)
                                                                   or
   Up light: On
                                          A-C2D05 (4C00) '- File In Use'
   Down light: Off
                                         for the failing LED on the
                                         logic board (MIM 501).
   Are the lights correct?
   YN
                                        Up light: Off
                                        Down light: On
     049
     - Leave the probe on the
                                        Are the lights correct?
                                        ΥN
       previous point.
     Up light: Off
                                          054
     Down light: On
                                          - Defective Diskette/Main MPU
                                            card (A-C1) (MIM 303).
     Are the lights correct?
                                          - If a 'Ros Patch' cable is
     YN
                                            connected to the card,
                                          GO TO MAP 0600,
       050
                                          ENTRY POINT A.
       - Defective Diskette/Main
        MPU card (A-C1) (MIM
                                        055
         303).
                                        - There is an open or short in
       - If a 'Ros Patch' cable
                                          this line, use MIM 313 and
            connected to the
         is
                                          Logic Diagram LD01-3 to
         card,
                                          isolate the failure.
       GO TO MAP 0600.
       ENTRY POINT A.
                                      056
                                      - There is no problem with the
                                        'Drive In Use' LEDs.
                                      GO TO MAP 2000, ENTRY POINT A.
                                                   EC840874
77
τυνω
```

MAP 2280-6

```
U
           DISKETTE MAP
6
           INTER LED
           PAGE 7 OF
                        8
057
- Probe
         A-C1-TP30 (4000)
                              or
 A-C1-TP31 (4400) for the failing
 LED on the Diskette/Main MPU
 card (A-C1) (MIM 313).
Up light: On
Down light: Off
Are the lights correct?
YN
 058
 - Leave the probe
                             the
                         on
   previous point.
 Up light: Off
 Down light: On
 Are the lights correct?
 YN
   059
   - Defective Diskette/Main MPU
     card (A-C1) (MIM 303).
   - If a 'Ros Patch' cable is
     connected to the card,
   GO TO MAP 0600.
   ENTRY POINT A.
 060
 - There is an open or short in
   this line, use MIM 313 and
   Logic
           Diagram LD01-3 to
   isolate the failure.
061
- IPL the system with Diagnostic
 Diskette 1.
Do all the 'Drive In Use' LEDs
turn off?
YN
```

062 - Probe A-C1-TP30 (4000) or A-C1-TP31 (4400) for the failing LED on the Diskette/Main MPU card (A-C1) (MIM 313). Up light: Off Down light: On Are the lights correct? YN 063 - Defective Diskette/Main MPU card (A-Cl) (MIM 303). - If a 'Ros Patch' cable is connected to the card, GO TO MAP 0600, ENTRY POINT A. 064 - There is an open or short in this line, use MIM 313 and Logic Diagram LD01-3 to isolate the failure. 065 - There is no problem with the 'Drive In Use' LEDs. GO TO MAP 2000, ENTRY POINT A. 066 - Defective Diskette/Main MPU card (A-C1) (MIM 303). - If a 'Ros Patch' cable is connected to the card, GO TO MAP 0600, ENTRY POINT A.

MAP 2280-7

ТХҮ

6

EC840874

```
DISKETTE MAP
R
5
           INTER LED
           PAGE 8 OF 8
067
- IPL the system with Diagnostic
Diskette 1.
Do all the 'Drive In Use' LEDs
turn off?
YN
 068
 - Defective Diskette/Main MPU
  card (A-Cl) (MIM 303).
 - If a 'Ros Patch' cable is
  connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
069
- There is no problem with the
'Drive In Use' LEDs.
GO TO MAP 2000, ENTRY POINT A.
```

MAP 2280-8

EC840874

PAGE 1 OF 3

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP	ENTRY	P AGE	STEP
NUMBER	POINT	NUMBER	NUMBER
0100	A	1	001
0220	A	1	001
0300	A	1	001

001 (ENTRY POINT A)

THIS IS THE COMMUNICATIONS ENTRY MAP.

For your convenience, information about your communications system can be kept by filling out the configuration record on the right. When you have completed the configuration record, continue with the following question. EXIT POINTS

EXIT TH	IS MAP	то	
PAGE	STEP	MAP	ENTRY
NUMBER	Number	NUMBER	Point
3	007	0100	A
3	010	0100	A

HARDCOPY CONFIGURATION RECORD FOR DIAGNOSTIC USE:

If this information was previously marked, go to Note at the end of this block. IF not:

- See MIM 811,812,823, and 825 to determine which cards are installed and how they are configured.
- Mark the information below as required so you can accurately answer questions about the communications configuration when needed by the diagnostic programs.

MIM 823 () EIA MIM 825 () DDSA - (US only) - 2400 bps

() DDSA - (US only) - 4800 bps

MIM 812

() 38LS - switched -Equalizer switch _____ set ON (Only World Trade except Canada)

(Step 001 continues)

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EC840874 PEC839787

ENTRY MAP

MAP 3000-2

PAGE 2 OF 3 (Step 001 continued) MIM 812 () 38LS - nonswitched -()2 wire ()4 wire ()30 ms CTS delay, 0 ms echo clamp ()80 ms CTS delay, 50 ms echo clamp ()230 ms CTS delay, 150 ms echo clamp ()Transmit level (Only World Trade except Canada) = ____ dB Equalizer switch _____ set On (only World Trade except Canada) MIM 811 ()Programmable Attenuators on the Communications MPU card Note: If this is the first CE call on the communications system, verify that the CTS delay and the echo clamp are compatable with the remote station(s). Continue with the question to the left. Is the system totally available for your use? YN 002 - Do not run diagnostics until the customer is finished with the machine 003 Has the system been IPLED using the C E DIAGNOSTIC DISKETTE 1? Y N EC840874 PEC839787 33 A B MAP 3000-2

```
В
           COMMUNICATIONS MAP
                                       ACD
                                                             MAP 3000-3
2
                                        2
           ENTRY MAP
           PAGE 3 OF 3
004
                                            009
- To IPL the system see MIM 941.
                                           - Enter the communications MDI
- A full screen Reverse Image on
                                             area map number (3001) and
 all displays is the way the
                                             press the 'Enter' key (This
 system indicates a parity check.
                                             should give a menu of the
                                             MDIs available to be used
Is a Parity Check the indicated
                                             for communications).
error?
                                                     the communications
                                           - Enter
YN
                                             test number (3010).
                                           - Follow the prompts given by
  005
                                             the MDIs.
  (ENTRY POINT B)
                                          010
 Has DCP been loaded?
                                         GO TO MAP 0100, ENTRY POINT A.
 YN
                                        011
   006
                                        GO TO STEP 005,
   - To load DCP see MIM 951.
                                       ENTRY POINT B.
   Were you able to load DCP?
   YN
     007
     - Check
                        obvious
                for
       problems, such as:
     - Diskette inserted
       improperly.
     - Wrong diskette inserted.
     - If 'DCP' still cannot be
       loaded,
     GO TO MAP 0100.
     ENTRY POINT A.
   800
   - Enter the communications MDI
     area map number (3001) and
     press the 'Enter' key (This
     should give a menu of the
     MDIs available to be used
     for communications).
   - Enter the communications
     test number (3010).
   - Follow the prompts given by
     the MDIs.
                                                    EC840874 PEC839787
```

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(

38LS XMIT/RECV CHECK

PAGE 1 OF 20

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
3010 3010	A	1 2	001
3010 3010 3010	C D	2 3 5	013 030
3010	F	12	065

IS MAP	то	
	•	
STEP	MAP	ENTRY
NUMBER	NUMBER	POINT
	+	
086	0600	Α
101	0600	А
115	0600	Α
060	0600	Α
096	0600	Α
075	0600	Α
081	0600	Α
028	0600	А
027	0600	Α
041	0600	А
	STEP NUMBER 086 101 115 060 096 075 081 028 027	STEP MAP NUMBER NUMBER 086 0600 101 0600 115 0600 060 0600 096 0600 075 0600 081 0600 028 0600 027 0600

EXIT POINTS

001 (ENTRY POINT A)

USE THIS MAP TO CHECK THE MODEM TRANSMIT OR RECEIVE LEVEL FOR A 38LS INTERNAL MODEM. For this map use the IBM CE meter with the dB adapter.

1749231 - CE meter 1749299 - dB adapter 1647116 - adapter plug assembly 2728116 - earphone

User instructions are supplied with the parts.

Ensure that the CE meter is set to the .6 ma scale and the +/-DC switch is on + DC when using the dB adapter.

Do you want the procedure for a transmit check with a switched network?

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1 2 2

Y N

A B

```
В
           COMMUNICATION MAP
                                      Ε
                                                           MAP 3011-2
1
           38LS XMIT/RECV CHECK
           PAGE 2 OF 20
002
                                       006
Do you want the procedure for a
                                       (ENTRY POINT B)
receive check with a switched
network?
                                      THIS IS THE RECEIVE LEVEL CHECK
Y N
                                      PROCEDURE
                                                  FOR A NONSWITCHED
                                      NETWORK.
 003
 Do you want the procedure for a
                                      - Set the dB meter to the bridge
 transmit
             check
                       with a
                                        position.
 nonswitched network?
                                      - For a 2 wire network, Connect
                                        the dB meter leads to the Red
 Y N
                                        and Green (White on some cables)
                                        terminals in the 4 pin plug
   004
   Do you want the procedure for
                                        connector.
                                                      For a 4
                                                                   wire
                                        network, connect the leads to
   a receive check with a
   nonswitched network?
                                        the Yellow and Black terminals.
   Y N
                                      - Have the remote station transmit
                                        a constant test pattern of hex
     005
                                        FFFF.
     - You are in the wrong map.
                                      Is the receive level correct? (US
     - Return to the MDIs.
                                      should be between -15 and -17 dB.
                                      In World Trade, this information
                                      may be obtained from the PTT
                                      representative.)
                                      ΥN
                                        007
                                        - Have the remote station check
                                          that the transmit level is
                                          correct.
                                        ____ OR ____
                                        - Telephone network problem.
                                        - Have the customer inform the
                                          person responsible.
                                       008
                                       Is the system connected to a 4
                                      wire nonswitched network?
                                       Y N
                                                   EC840874
                                                             PEC839787
5 3
                                      3 3
CDE
                                                           MAP 3011-2
                                       FG
```

1

```
FG
           COMMUNICATION MAP
                                       D
                                                            MAP 3011-3
22
                                       2
           38LS XMIT/RECV CHECK
           PAGE
                  3 OF 20
 009
                                        013
 - The test is complete.
                                       (ENTRY POINT C)
 - Return to the MDIs, answer 'Y'
   and follow the prompts.
                                       THIS IS THE TRANSMIT LEVEL CHECK
                                       PROCEDURE
                                                 FOR A NONSWITCHED
010
                                       NETWORK.
            the
- To
                  internal and
      check
 external cables.
                                                this
                                                         point,
                                       - At
                                                                     the
- Connect the dB meter to A-D8B09
                                         communications MDIs should be
 '+ Rec nonsw data' and A-D&D13
                                         loaded
                                                  and
                                                        transmitting
                                                                     а
  '- Rec Nonsw data' (MIM 865,
                                         constant test pattern of hex
 probe point C).
                                         FFFF.
                                       - Take the cover off the 4 pin
Is the receive level correct?
                                         plug connector to the telephone
YN
                                         line.
                                       - The plug must be connected to
 011
                                         the telephone line to read the
 - see MIM 865 to find
                                         dB level correctly.
                              the
 failure.
                                       - Set the dB meter to the bridge
                                         position.
012
                                       - Connect the dB meter to the Red
- The test is complete.
                                         and Green (or White in some
- Return to the MDIs, answer 'Y'
                                         cables) terminals inside
                                                                    the
 and follow the prompts.
                                         plug.
                                       - The transmit level for US and
                                         Canada nonswitched networks is
                                         00
                                               dB.
                                                     For World Trade
                                         countries (except Canada), this
                                         information may be obtained from
                                         the PTT representative.)
                                       Does the dB meter indicate the
                                       value expected within a tolerance
                                       of one dB?
                                       ΥN
                                         014
                                         - Connect the dB meter between
                                           A-D8B02 '+ Xmit Nonsw Data',
                                           (MIM 865, probe point C) and
                                           A-D8D05, '- Xmit Nonsw Data',
                                           (MIM 865, probe point C).
                                         Is the dB level correct?
                                         YN
                                                    EC840874
                                                              PEC839787
                                       544
                                       HJK
                                                            MAP 3011-3
```

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κ COMMUNICATION MAP J MAP 3011-4 3 З 38LS XMIT/RECV CHECK PAGE 4 OF 20 015 022 Note: A quick way to identify a - Power off. communications MPU card which - Remove the 38LS card. has programmable attenuation is - Check continuity between as follows: A-E8B02, '+ Xmit Nonsw Data' (MIM 865, probe point D), and If there are 4 transmit level attenuators on the lower left the red lead AT THE 4 PIN PLUG quadrant of the communications CONNECTOR to the telephone line. card, MPU the card - Check has continuity between programmable attenuation (MIM A-E8D05, '- Xmit Nonsw Data', 811). (MIM 865, probe point D), and the green lead AT THE 4 PIN PLUG Does the communications MPU card CONNECTOR to the telephone line. have programmable attenuation? YN Is continuity good? ΥN 016 Is this a world trade machine? 023 YN - Disconnect the internal cable from the communications MPU 017 card at connector A-E5-J01. - Defective 38LS line adapter - At the PO1 connector ON THE card (A-D7)(MIM 812). INTERNAL CABLE check continuity between P01-03 '+ 018 Xmit Nonsw Data' (MIM 865, - See 38LS switch setting chart probe point E), and the red in MIM 813, 815, or 817 to lead AT THE 4 PIN PLUG. - At the PO1 connector ON THE determine which switches should be on. INTERNAL CABLE check continuity between P01-04 '-Are all switches on the 38LS Xmit Nonsw Data' (MIM 865, line adapter card set correctly? probe point E) and the green YN lead AT THE 4 PIN PLUG. 019 Is continuity good? - Set correctly and retry the YN test. 020 - Defective 38LS line adapter card (A-D7)(MIM 812). 021 - Defective 38LS line adapter card (A-D7)(MIM 812). EC840874 PEC839787 5 5 5 LMN MAP 3011-4

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COMMUNICATION MAP
                                       СН
                                                            MAP 3011-5
LMN
                                       23
444
           38LS XMIT/RECV CHECK
           PAGE 5 OF 20
   024
                                         029
   - Disconnect
                  the
                                         - The test is complete.
                        external
     cable from the machine at
                                         - Return to the MDIs, answer
     connector J140.
                                          'Y', and follow the prompts.
    - At the P140 connector ON THE
     EXTERNAL
                  CABLE
                                       030
                          check
                                       (ENTRY POINT D)
     continuity between P140-13
     '+ Xmit Nonsw Data' (MIM
                                       THIS IS THE RECEIVE LEVEL CHECK
     865, probe point F), and the
     red lead AT THE 4 PIN PLUG.
                                       PROCEDURE FOR A SWITCHED NETWORK.
   - At the P140 connector ON THE
     EXTERNAL
                 CABLE
                                       - Set the dB meter to the bridge
                           check
     continuity between P140-14
                                        position.
     '- Xmit Nonsw Data' (MIM
     865, probe point F) and the
                                       Is the World Trade line plate
     green lead AT THE 4 PIN
                                       being used?
     PLUG.
                                       ΥN
   Is continuity good?
   YN
     025
     - Defective external cable.
   026
   - Defective internal cable.
  027
  - Defective communications MPU
   card (A-E5)(MIM 811).
 - If a 'Ros Patch' cable is
   connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
028
- Defective communications
                             MPU
 card (A-E5)(MIM 811).
- If a 'Ros Patch' cable is
 connected to the card,
GO TO MAP 0600, ENTRY POINT A.
  .
                                                    EC840874 PEC839787
                                       9 6
                                                            MAP 3011-5
                                       PQ
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38LS XMIT/RECV CHECK

PAGE 6 OF 20

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THIS IS THE RECEIVE LEVEL CHECK PROCEDURE FOR A SWITCHED NETWORK USING THE CBS COUPLER ONLY.

- Ensure that the test switch (if present) on the CBS type coupler is in the normal position.
- Have the receiving system powered on and connected to the coupler.
- Set the dB meter to the -30 dB scale.
- Set the dB meter to the 'Bridge' position.
- Connect meter across 'Data Tip' & 'Data Ring' on the receiving coupler.
- Call the transmitting station from the receiving station.
- Have the transmitting system transmit constant hex FFFF test patterns.
- You will hear a constant tone at the receiving station.
- Carefully place the telephone switch in the alternate position to permit the constant tone to be switched to 'Data Tip' and 'Data Ring' on the coupler.
- Keep the telephone off hook until all measurements have been made.
- Measure the dB level.

Is the receive level correct? (US should be between -21.5 and -27.2 dB. In World Trade, this information may be obtained from the PTT representative.) Y N 032

- Disconnect '+Data Tip' and 'Data Ring' wires FROM THE COUPLER.
- Set the dB meter to the '600 ohm' position.
- Connect meter across 'Data Tip' & 'Data Ring' ON THE RECEIVING COUPLER.

Does the db measurement look close to the expected value for normal operation?

(I	Ν	

- 033
- Have the person at the transmitting station ensure that his transmit dB level is correct at the coupler.
- If his tranmit level is correct, place another call to see if another connection improves the received dB level.
- If these were not the cause of the bad receive dB level measurement, have the customer place a call to the telephone company.

034 GO TO PAGE 7, STEP 036, ENTRY POINT E.

EC840874 PEC839787

MAP 3011-6

RS

R COMMUNICATION MAP v MAP 3011-7 6 38LS XMIT/RECV CHECK PAGE 7 OF 20 035 037 Note: If you cannot verify the - Disconnect the internal cable following dB measurements (bad from the communications MPU card dB meter or such), seeing that at connector A-E5-J01. '-Carrier Det' is active - At the PO1 connector ON THE verifies that the 38LS is INTERNAL CABLE check continuity receiving the signal. between P01-07 'Data Tip (DT)' - Probe A-D7B12, '- Carrier Det' and the White lead AT THE (MIM 867, probe point B). COUPLER. - At the PO1 connector ON THE Up light: Off INTERNAL CABLE check continuity Down light: On between P01-23 'Data Ring (DR)'and the Black lead AT THE Are the lights correct? COUPLER. Y N Is continuity good? 036 ΥN (ENTRY POINT E) 038 - Reconnect '+Data Tip' and - Disconnect the external cable Ring' wires to the '+Data from the machine at connector coupler if they were removed. J140. - Power off. - At the P140 connector ON THE - Remove the 38LS card. EXTERNAL CABLE check continuity between - Check continuity between P140-09 A-D7D06 'Data Tip (DT)' and 'Data Tip (DT)' and the White the White lead AT THE COUPLER. lead AT THE COUPLER. continuity - At the P140 connector ON THE - Check between A-E5D08 'Data Ring (DR)' and CABLE EXTERNAL check the Black lead AT THE COUPLER. continuity between P140-21 'Data Ring (DR)' and the Black Is continuity good? lead AT THE COUPLER. YN Is continuity good? YN 039 - Defective external cable. 040 - Defective internal cable. EC840874 PEC839787 88 8 τυν М MAP 3011-7

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COMMUNICATION MAP
TUW
777
           38LS XMIT/RECV CHECK
           PAGE 8 OF 20
   041
   - Defective communications MPU
     card (A-E5)(MIM 811).
   - If a 'Ros Patch' cable is
     connected to the card,
   GO TO MAP 0600,
   ENTRY POINT A.
 042
 - Defective 38LS line adapter
   card (A-D7)(MIM 812).
043
```

- The receive test is complete.
- Return to the MDIs, answer 'Y' and follow the prompts.

MAP 3011-8

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P	COMMI	JNIC	TIO	N MAP
5	38LS	хмі	F/REI	CV CHECK
	PAGE	9	OF	20

044

Y N

1 1

1 0 X Y

THIS IS THE RECEIVE CHECK FOR A 38LS WITH WORLD TRADE LINE PLATE CONNECTED TO A PUBLIC SWITCHED NETWORK (MIM 869)

- Connect the dB meter to 'Telephone Line l' and 'Telephone Line 2' AT THE END OF THE EXTERNAL CABLE (See Fig 1 at right).
- Note: The Cable must be connected to the Public Switched network for correct dB level checking.
- At this point, the remote station should be transmitting a constant test pattern of hex FFFF.

Note: For World Trade the dB information may be obtained from the PTT representative.

MAP 3011-9

Line name	WT line plate cable conn	extern cable lead color
Telephone Line 1 Telephone Line 2		Red Green or White
Telephone Set 1 Telephone Set 2	TB1-7 TB1-6	Yellow Black

Fig 1. Aid for dB level check on the telephone lines and at the PSN connector.

Does the dB meter indicate the value expected within a tolerance of one dB?

EC840874 PEC839787

MAP 3011-9

Y z MAP 3011-10 COMMUNICATION MAP 9 38LS XMIT/RECV CHECK PAGE 10 OF 20 045 047 - Disconnect 'Telephone Line 1' - Power off. and 'Telephone Line 2' wires - Disconnect external cable from FROM THE WALL MOUNTED CONNECTOR. the PTT interface. - Set the dB meter to the '600 - Check for an open line or a ohm' position. short to ground between TP1 (MIM - Connect meter across 'Telephone 827) (which is a direct line to TB1-9) and THE END OF Line 1' and 'Telephone Line 2' THE ON THE RECEIVING WALL MOUNTED EXTERNAL CABLE. CONNECTOR. - Check for an open line or a short to ground between TP2 (MIM Does the db measurement look close 827) (which is a direct line to to the expected value for normal TB1-8) and THE END OF operation? EXTERNAL CABLE. YN Did the cables check out ok? 046 Y N - Have the person at the 048 transmitting station ensure that his transmit dB level is - Check the cable for open lines or shorts to ground from the correct at the wall mounted external cable interface at connector. the J140 connector (MIM 869, - If his transmit level 15 correct, place another call to probe point H) to the PTT see if another connection connector. improves the received dB Did the cables check out ok? level. - If these were not the cause of Y N the pad receive dB level measurement, have the customer 049 place a call to the telephone - Defective external cable. company. 050 - Defective internal cable to the World Trade line plate. 051 - Defective World Trade line plate.

THE

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COMMUNICATION MAP
                                                             MAP 3011-11
Х
                                        А
9
                                        Α
           38LS XMIT/RECV CHECK
           PAGE 11 OF 20
052
                                        056
- Check for the correct dB level
                                        Note: If you cannot verify the
                                          following dB measurements (bad
  going into the the World Trade
  line plate.
                                          dB meter or such), seeing that
- Connect the dB meter between
                                          ۰....
                                             Carrier
                                                        Det'
                                                              is active
  TP1, 'Telephone Line 1', (MIM
                                          verifies
                                                    that
                                                           the 38LS is
 827) (which is a direct line to
                                          receiving the signal.
                                        - Probe A-D7B12, '- Carrier Det'
  TB1-9) and TB2, 'Telephone Line
  2' (MIM 827) (which is a direct
                                          (MIM 869, probe point B).
  line to TB1-8).
                                        Up
                                             light: Off
Is the dB level correct?
                                        Down light: On
YN
                                        Are the lights correct?
 053
                                        Y N
 - Check for the correct dB level
                                          057
   at the J140 connector on the
   external cable (MIM 869, probe
                                          - Power off.
    point H).
                                          - Disconnect the internal cable
 - Connect the dB meter between
                                            from the communications MPU
                                            card at connector A-E5-J01.
   J140-13 '- Telephone Line 1',
   and J140-14 'Telephone Line
                                          - At the PO1 connector ON THE
   21.
                                            INTERNAL
                                                         CABLE
                                            continuity between
 Is the dB level correct?
                                            'Data Tip', (MIM 869, probe
  Y N
                                            point E), and the line plate
                                            connector A08 (MIM 869, probe
   054
                                            point F).
    - Defective external cable.
                                          - At the PO1 connector ON THE
                                            INTERNAL
                                                         CABLE
  055
                                            continuity
                                                         between
 - Defective internal cable that
                                            'Data Ring',(MIM 869, probe
    connects the World Trade line
                                            point E), and the line plate
    plate to J140.
                                            connector BO8 (MIM 869, probe
                                            point F).
                                          Is continuity good?
                                          Y N
                                            058
                                            - Defective cable between the
                                              Communications MPU card and
                                              the World Trade line plate.
                                        1 1
                                        22
                                                     EC840874 PEC839787
Α
                                        A A
                                        B C
                                                             MAP 3011-11
Α
```

check

check

P01-23,

P01-07,

```
A A
          COMMUNICATION MAP
                                                          MAP 3011-12
                                       А
BC
                                       1
           38LS XMIT/RECV CHECK
1 1
1 1
           PAGE 12 OF 20
 059
                                       065
 - Check
                                       (ENTRY POINT F)
           continuity
                         between
   A-E5-J01-23, 'Data Ring' (MIM
                                      THIS IS THE TRANSMIT LEVEL CHECK
   869, probe point E) and A-E5
   D08.
                                       PROCEDURE FOR A SWITCHED NETWORK.
 Is continuity good?
                                      - Set the dB meter to the bridge
 YN
                                        position.
   060
                                       Is the World Trade line plate
   - Defective Communications MPU
                                       being used?
     card (A-E5)(MIM 811).
                                       YN
   - If a 'Ros Patch' cable is
     connected to the card,
                                        066
   GO TO MAP 0600,
                                        THIS IS THE TRANSMIT LEVEL CHECK
   ENTRY POINT A.
                                        PROCEDURE FOR A SWITCHED NETWORK
                                        USING THE CBS COUPLER ONLY.
  061
 - Remove the 38LS card.
                                        - Ensure that the test switch
  - Check continuity between
                                          (if present) on the CBS type
   A-E7D06, 'Data Tip (DT)' (MIM
                                          coupler is in the normal
   869, probe point D), and
                                         position.
   A-D7D06, (MIM 869, probe point
                                        - Connect the dB meter to the
                                          'Data Tip' (white lead) and
   C).
 - Check
           continuity between
                                          'Data Ring' (Black lead) AT
   A-D7B10 '- Rec Line Data' (MIM
                                          THE COUPLER.
                                                this
   869, probe point B) and
                                        – At
                                                        point,
                                                                  the
   A-E7B10, (MIM 869, probe point
                                          communications MDIs should be
   A).
                                          loaded and transmitting a
                                          constant test pattern of hex
 Is continuity good?
                                          FFFF.
 YN
                                        Does the dB meter indicate the
   062
                                        value expected within a
   - Defective Logic Board.
                                        tolerance of one dB?
                                        Y N
  063
  - Defective world trade line
   plate.
064
- The receive test is complete.
- Return to the MDIs, answer 'Y'
 and follow the prompts.
                                       1 1 1
                                       873
                                                   EC840874 PEC839787
                                       AAA
                                       DEF
                                                           MAP 3011-12
```

```
А
           COMMUNICATION MAP
                                       А
                                                            MAP 3011-13
F
                                       Н
           38LS XMIT/RECV CHECK
1
2
           PAGE 13 OF 20
067
                                       070
- See 38LS switch setting chart in
                                       - Power off.
 MIM 813, 815, or 817 to
                                       - Remove the 38LS card.
 determine which switches should
                                       - Check continuity between A-D&D09
 be on. (If using programmable
                                         '+Coupler Cut Through (CCT)',
 attenuation, the 38LS card
                                         (MIM 867, probe point C), and
 should have been set for 00 dB).
                                         the Brown lead AT THE COUPLER.
Note: A quick way to identify a
 communications MPU card which
                                       Is continuity good?
 has programmable attenuation is
                                       Y N
 as follows:
   If there are 4 transmit level
                                         071
   attenuators on the lower left
                                         - Disconnect the internal cable
   quadrant of the communications
                                           from the communications MPU
   MPU card, the card has
                                           card at connector A-E5 J01.
   programmable attenuation (MIM
                                         - At the PO1 connector ON THE
   811).
                                           INTERNAL
                                                        CABLE
                                                                  check
                                           continuity between
                                                                  P01-06
Are all switches on the 38LS line
                                           '+Coupler Cut Through (CCT)',
adapter card set correctly?
                                           (MIM 867, probe point E), and
YN
                                           the Brown lead AT THE COUPLER.
 068
                                         Is continuity good?
 - Set correctly and retry the
                                         Y N
   test.
                                           072
069
                                           - Disconnect
                                                         the
                                                                external
                                             cable from the machine at
- Connect the dB meter between
  A-D7D05 'Data Tip (DT)' (MIM
                                             connector J140.
                                           - At the P140 connector ON THE
  867, probe point C), and A-D7D03
  'Gnd'. The DB level should be
                                             EXTERNAL
                                                        CABLE
                                                                  check
 equal to the LEVEL SET IN THE
                                             continuity between P140-06
 3815
         1 I N E
                ADAPTER
                            CARD
                                             '+Coupler Cut
                                                                 Through
 SWITCHES(MIM 812).
                                             (CCT)', (MIM 867,
                                                                   probe
                                             point F), and the Brown lead
                                             AT THE COUPLER.
Is the dB level correct?
YN
                                           Is continuity good?
                                           YN
                                             073
                                             - Defective external cable.
                                           074
                                           - Defective internal cable.
1
                                       1 1
5
                                                    EC840874 PEC839787
                                       4 4
A A
                                       A A
                                                            MAP 3011-13
GH
                                       JK
```

```
A A
           COMMUNICATION MAP
                                       AAA
                                                            MAP 3011-14
JK
                                       LMN
1 1
           38LS XMIT/RECV CHECK
33
           PAGE 14 OF 20
 075
                                           080
 - Defective communications MPU
                                           - Defective internal cable.
   card (A-E5)(MIM 811).
 - If a 'Ros Patch' cable is
                                         081
   connected to the card,
                                         - Defective communications MPU
 GO TO MAP 0600, ENTRY POINT A.
                                           card (A-E5)(MIM 811).
                                         - If a 'Ros Patch' cable is
076
                                           connected to the card,
- Check continuity between A-D7D05
                                         GO TO MAP 0600, ENTRY POINT A.
 '+Data Tip (DT)', (MIM
                            867,
 probe point C), and the White
                                       082
 lead AT THE COUPLER.
                                       - Use the CE meter on the RX1
                                         scale to measure the resistance
Is continuity good?
                                         to a ground pin. A short will
Y N
                                         read less than 20 ohms. Measure
                                         A-D7D05, 'Data Tip', to A-D8D08,
 077
                                         'Gnd' (MIM 867, probe point C).
 - Disconnect the internal cable
   from the communications MPU
                                       Is the line grounded?
   card at connector A-E5 J01.
                                       YN,
 - At the PO1 connector ON THE
   INTERNAL
                CABLE
                          check
                                         083
   continuity between
                          P01-07
                                         - Defective 38LS line adapter
   '+Data Tip (DT)', (MIM 867,
                                           card (A-D7)(MIM 812).
   probe point E), and the White
   lead AT THE COUPLER.
                                       084
                                       - Remove the communications MPU
 Is continuity good?
                                         card (A-E5)(MIM 811)
 YN
                                       Is the line grounded?
   078
                                       YN
   - Disconnect
                 the
                        external
     cable from the machine at
     connector J140.
   - At the P140 connector DN THE
     EXTERNAL
                 CABLE
                          check
     continuity between P140-09
     '+Data Tip (DT)', (MIM 867,
     probe point F), and
                            the
     White lead AT THE COUPLER.
   Is continuity good?
   YN
     079
     - Defective external cable.
                                       1 1
                                       55
                                                    EC840874 PEC839787
AAA
                                       A A
LMN
                                                            MAP 3011-14
                                       PQ
```

```
А
           COMMUNICATION MAP
                                        A A
                                                             MAP 3011-15
Q
                                        G P
1
           38LS XMIT/RECV CHECK
                                        1 1
4
                                        3 4
           PAGE 15 OF 20
085
                                          090
- Disconnect the internal cable
                                          - Defective logic board
 from the A-E5-J01 connector.
- Use the CE meter on the RX1
                                        091
  scale to measure the resistance
                                        - Power off.
 to a ground pin. A short will
                                        - Remove the 38LS card.
 read less than 20 ohms. At the
                                        - Check continuity between A-D7D06
 P01 connector ON THE INTERNAL
                                          'Data Tip (DT)' (MIM 867, probe
 CABLE, measure from P01-07 'Data
                                          point C), and the White lead AT
 Tip', to P01-23 ,'Signal Ground'
                                          THE COUPLER.
 (MIM 867, probe point E).
                                        - Check continuity between A-E5D08
                                          'Data Ring (DR)' and the Black
Is the line grounded?
                                          lead AT THE COUPLER.
YN
                                        Is continuity good?
 086
                                        ΥN
 - Defective communications MPU
   card (A-E5)(MIM 811).
                                          092
 - If a 'Ros Patch' cable is
                                          - Disconnect the internal cable
   connected to the card,
                                            from the communications MPU
 GO TO MAP 0600, ENTRY POINT A.
                                            card at connector A-E5-J01.
                                          - At the PO1 connector ON THE
087
                                                         CABLE
                                            INTERNAL
                                                                    check
- Disconnect the external cable
                                                                   P01-07
                                            continuity
                                                        between
  from the machine at connector
                                            'Data Tip (DT)' (MIM
                                                                     867,
  J140.
                                            probe point E), and the White
- Use the CE meter on the RX1
                                            lead AT THE COUPLER.
 scale to measure the resistance
                                          - At the PO1 connector ON THE
 to a ground pin. A short will
                                            INTERNAL
                                                         CABLE
                                                                    check
 read less than 20 ohms. At the
                                            continuity between
                                                                   P01-23
 P140 connector ON THE EXTERNAL
                                            'Data Ring (DR)' (MIM 867,
 CABLE, measure
                  from
                         P140-09
                                            probe point E), and the Black
  'Data Tip', to P140-21 ,'Signal
                                            lead AT THE COUPLER.
 Ground' (MIM 867, probe point
 F).
                                          Is continuity good?
                                          YN
Is the line grounded?
ΥN
 088
 - Defective internal cable.
089
- Defective external cable
                                        1 1 1
                                        6 6 6
                                                    EC840874 PEC839787
                                        AAA
                                        RST
                                                             MAP 3011-15
```

```
AAA
           COMMUNICATION MAP
                                       Α
                                                            MAP 3011-16
RST
                                       11
1 1 1
           38LS XMIT/RECV CHECK
5 5 5
           PAGE 16 OF 20
   093
                                       099
   - Disconnect
                  the
                       external
                                       - Remove the communications MPU
     cable from the machine at
                                        card (A-E5)(MIM 811)
     connector J140.
   - At the P140 connector ON THE
                                       Is the line grounded?
     EXTERNAL
                 CABLE check
                                       YN
     continuity between P140-09
     'Data Tip (DT)',(MIM 867,
                                         100
     probe point F), and the
                                         - Disconnect the internal cable
     White lead AT THE COUPLER.
                                           from the A-E5-J01 connector.
   - At the P140 connector ON THE
                                         - Use the CE meter on the RX1
     EXTERNAL
                 CABLE
                           check
                                           scale to measure
                                                                     the
     continuity between P140-21
                                           resistance to a ground pin. A
     'Data Ring (DR)'and the
                                           short will read less than 20
     Black lead AT THE COUPLER.
                                           ohms. At the PO1 connector ON
                                           THE INTERNAL CABLE, measure
   Is continuity good?
                                           from P01-07 'Data Tip', to
   YN
                                           P01-23 ,'Signal Ground' (MIM
                                           867, probe point E).
     094
     - Defective external cable.
                                         Is the line grounded?
                                         YN
   095
   - Defective internal cable.
                                           101
                                           - Defective communications MPU
  096
                                            card (A-E5)(MIM 811).
 - Defective communications MPU
                                           - If a 'Ros Patch' cable is
   card (A-E5)(MIM 811).
                                             connected to the card,
 - If a 'Ros Patch' cable is
                                           GO TO MAP 0600,
   connected to the card,
                                           ENTRY POINT A.
 GO TO MAP 0600, ENTRY POINT A.
097
- Use the CE meter on the RX1
 scale to measure the resistance
  to a ground pin. A short will
  read less than 20 ohms. Measure
  A-D7D06, 'Data Tip', to A-D8D08,
  'Gnd' (MIM 867, probe point C).
Is the line grounded?
Y N
  098
  - Defective 38LS line adapter
   card (A-D7)(MIM 812).
                                       1 1
                                       77
                                                    EC840874
                                                              PEC839787
Α
                                       A A
U
                                        νм
                                                            MAP 3011-16
```

```
AAA
         COMMUNICATION MAP
EVW
1 1 1
          38LS XMIT/RECV CHECK
2 6 6
          PAGE 17 OF 20
   102
   - Disconnect the
                      external
     cable from the machine at
     connector J140.
   - Use the CE meter on the RX1
     scale to measure the
     resistance to a ground pin.
     A short will read less than
     20 ohms. At the P140
     connector ON THE EXTERNAL
     CABLE, measure from P140-09
     'Data Tip', to P140-21
     ,'Signal Ground' (MIM 867,
     probe point F).
   Is the line grounded?
   ΥN
     103
     - Defective internal cable.
   104
   - Defective external cable
 105
 - Defective logic board
106
- The test is complete.
- Return to the MDIs, answer 'Y'
```

and follow the prompts.

MAP 3011-17

A	COMMUNICATION MAP		MAP 3011-18
D 1	38LS XMIT/RECV CHECK		
2	PAGE 18 OF 20		
38LS WITH Connected	TRANSMIT CHECK FOR A WORLD TRADE LINE PLATE TO A PUBLIC SWITCHED M 827, 869).	Note: For World T information may be c the PTT representativ France: -06 dB.	btained from
THE EXTER right). Note: The C	e Line 2' AT THE END OF NAL CABLE (See Fig 1 at able must be connected	WT lin Line name pla cab con	ate cable ble lead
for corre - At th communica loaded	· • • • • • • • • • • • • • • • • • • •	Telephone Line 1 TB1 Telephone Line 2 TB1	
FFFF.		Telephone Set 1 TB1 Telephone Set 2 TB1	1 1
		Fig 1. Aid for dB lev on the telepho and at the PSN	one lines
	dB meter indicate the ted within a tolerance		
in MIM switche	LS switch setting chart 821 to determine which s should be on for the dB level.		
	B level switches on the adapter card set for ct dB?		
109 - Set MDIs.	correctly and retry the		
2 1 0 9		EC840874	4 PEC839787
A A X Y			MAP 3011-18

Line name	WT line plate cable conn	extern cable lead color
Telephone Line 1 Telephone Line 2	1	Red Green or White
Telephone Set 1 Telephone Set 2	1	Yellow Black

evel check hone lines SN connector.

```
А
           COMMUNICATION MAP
Y
           38LS XMIT/RECV CHECK
1
8
           PAGE 19 OF 20
110
- Check for the correct dB level
           into the
  qoinq
                             the
  communications MPU card.
- Connect the dB meter between
 A-D7D05 'Data Tip (DT)', and
  A-E5D08 'Gnd' (MIM 869, probe
 point C).
Is the dB level correct?
YN
 111
 - Defective 38LS line adapter
   card (A-D7)(MIM 812).
112
- Check for the correct dB level
 at the World Trade line plate:
- Connect the dB meter between TP1
  and TP2 (MIM 827).
Does the dB meter indicate the
correct value now?
YN
 113
 - Power off.
  - Check
         the cable continuity
   from the communications MPU
   card to the World Trade line
   plate.
 - Check the cable for shorts.
  Is the cable the problem?
  YN
   114
   - Defective World Trade line
     plate.
   Is the World Trade line plate
   the problem?
   YN
ABBB
ZABC
```

)

```
MAP 3011-19
ABBB
ZABC
     115
     - Defective communications
       MPU card (A-E5)(MIM 811).
     - If a 'Ros Patch' cable is
       connected to the card,
     GO TO MAP 0600,
     ENTRY POINT A.
   116
    - The test is complete.
    - Return to the MDIs, answer
     'Y' and follow the prompts.
  117
  - The test is complete.
  - Return to the MDIs, answer 'Y'
    and follow the prompts.
118
- Power off.
- Disconnect external cable from
  the PTT interface.
- Check for an open line or a
  short to ground between TP1 (MIM
  827) (which is a direct line to
  TB1-9) and THE END OF THE
  EXTERNAL CABLE.
- Check for an open line or a
  short to ground between TP2 (MIM
  827) (which is a direct line to
  TB1-8) and THE END OF THE
 EXTERNAL CABLE.
Did the cable check out ok?
YN
22
0 0
            EC840874 PEC839787
ΒB
DE
                     MAP 3011-19
```

```
ABB
     COMMUNICATION MAP
XDE
1 1 1
          38LS XMIT/RECV CHECK
899
          PAGE 20 OF 20
   119
   - Check the cable for open
     lines or shorts to ground
     from the World Trade line
     plate (MIM 869, probe point
     G) to the J140 connector(MIM
     869, probe point H).
   Did the cable check out ok?
   ΥN
     120
     - Defective internal cable
              from the World
       coming
       Trade line plate to the
       external cable interface
       at J140 connector.
   121
   - Check the cable for open
     lines or shorts to ground
     from the J140 connector (MIM
     869, probe point H) to the
     PTT connector.
   Did the cable check out ok?
   ΥN
    122
     - Defective external cable.
   123
   - Defective World Trade line
     plate.
 124
 - Defective World Trade line
   plate.
125
- The test is complete.
- Return to the MDIs, answer 'Y'
 and follow the prompts.
```

EC840874 PEC839787

MAP 3011-20

MAP 3011-20

5285 COMMUNICATIONS MAP

AUTO ANSWER COUPLER

PAGE 1 OF 13

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
3010	A	1	001

		للموار المدان المهار الأفق وتهاية أحدي ويعهد ألمتها وراد	
EXIT TH	IS MAP	то	
PAGE	STEP	MAP	ENTRY
NUMBER	NUMBER	NUMBER	
3	009	0600	A
6	039	0600	A
7	055	0600	A
9	067	0600	A
11	092	0600	A
10	079	0600	A
11	087	0600	A
4	026	0600	A
7	050	0600	A

EXIT POINTS

001 (ENTRY POINT A)

USE THIS MAP TO FIND PROBLEMS IN THE LOCAL 38LS INTEGRATED MODEM OR LOCAL AUTO ANSWER TYPE COUPLER (CBS) BY USING ANOTHER TELEPHONE.

- Before continuing, verify that the connections from the modem to the coupler are correct (see color code chart on the right).
- Ensure that the test switch (if present) on the CBS type coupler is in the normal position.
- When measuring EIA levels, select the 60 Vdc scale on the CE meter to prevent meter damage.
- Place the +/- DC switch on the CE meter to the + DC position.
- The meter lead connections will be indicated by the MAP questions so that the expected signal will deflect the meter in a positive direction.
- Place the telephone(s) on hook.

- Some telephones have a Talk/Data (Step 001 continues)

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*** LINE NAMES AND COLOR CODES. *** Lines are listed from left-to-right as they appear when

looking at the coupler.

'Switch Hook' = Red 'Signal Ground' = Gray 'Data Modem Ready' = Yellow 'Coupler Cut Through' = Brown 'Off Hook' = Blue 'Ring Indicate' = Violet 'Data Tip' = White 'Data Ring' = Black

NOTES:

'+ EIA levels' are +3 to +25 Vdc when measured to 'Signal Ground'.

'- EIA levels' are -3 to -25 Vdc when measured to 'Signal Ground'.

All above coupler connections except 'Data Tip' and 'Data Ring' have active levels which are at '+ EIA levels.'

EC840874 PEC839787

MAP 3012-1

С

```
(Step 001 continued)
 switch on the base. Place the
 Talk/Data Switch (if present on
 the
       telephone base) to Talk
 position.
- Connect the CE meter leads TO
 THE COUPLER as follows:
 Plus to 'Signal Ground' (gray)
 Minus to 'Switch Hook' (red)
- A positive deflection indicates
 a -EIA level.
Is 'Switch Hook', (red lead), at a
- EIA level?
Y N
 002
 - Connect the CE meter leads TO
   THE COUPLER as follows:
   Minus
           to 'Signal
                          Ground'
   (gray)
   Plus to 'Switch Hook' (red)
 Is 'Switch Hook', (red lead), at
 a +EIA level?
 YN
   003
   - Disconnect
                  the
                         external
     cable from the machine at
     connector J140.
   Did 'Switch Hook' (red lead)
   qo to +EIA or -EIA level?
   ΥN
     004
     - The
             EIA level is not
       correct.
     - Have the customer place a
                the telephone
       call to
       company.
```

005 - Power off. - Reinstall the external cable at connector J140. - Remove the 38LS line adapter card. - Use the CE meter on the RX1 scale to measure the resistance to a ground pin. A short will read less than 20 ohms. Measure A-D8810, 'Switch Hook', to A-D8D08, 'Gnd' (MIM 867, probe point C). Is the line grounded? YN 006 - Defective 38LS line adapter card (A-D7)(MIM 812). 007 - Remove the communications MPU card (A-E5)(MIM 811) Is the line still grounded? YN 008 - Disconnect the internal cable from the A-E5-J01 connector. - Use the CE meter on the RX1 scale to measure the resistance to a ground pin. A short will read less than 20 ohms. At the PO1 connector ON THE INTERNAL CABLE, measure from P01-14 'Switch Hook', to P01-23 ,'Signal Ground' (MIM 867, probe point E). Is the line grounded? YN

333

DEF

3 3

MAP 3012-2

```
DEF
           COMMUNICATIONS MAP
                                        A B
                                                              MAP 3012-3
2 2 2
                                        2 2
           CBS COUPLER
           PAGE 3 OF 13
   009
                                          014
   - Defective communications MPU
                                          - Connect the CE meter leads TO
     card (A-E5)(MIM 811).
                                            THE COUPLER as follows:
    - If a 'Ros Patch' cable is
     connected to the card.
                                            Plus to 'Signal Ground' (gray)
    GO TO MAP 0600,
                                            Minus to 'Switch Hook' (red)
    ENTRY POINT A.
                                          - Take the telephone off hook.
  010
                                          - A
                                                   positive deflection
 - Disconnect the external cable
                                            indicates a -EIA level.
   from the machine at connector
    J140.
                                          Does 'Switch Hook', (red lead),
 - Use the CE meter on the RX1
                                          go to a -EIA level?
           to measure
                                          YN
   scale
                              the
   resistance to a ground pin. A
   short will read less than 20
                                            015
    ohms. At the P140 connector
                                            - Defective coupler
                                                                        or
   ON THE EXTERNAL CABLE, measure
                                              talk/data mode switch.
   from P140-05 'Switch Hook', to
   P140-21 ,'Signal Ground' (MIM
                                          016
   867, probe point F).
                                          - The talk/data mode switch is
                                            reversed in the telephone.
 Is the line grounded?
 YN
                                        017
                                        - Connect the CE meter leads TO
   011
                                          THE COUPLER as follows:
    - Defective internal cable.
                                          Minus to 'Signal Ground' (gray)
  012
                                          Plus to 'Switch Hook' (red)
  - Defective external cable.
                                        - Take the telephone off hook.
013
                                        - A positive deflection indicates
- Defective logic board.
                                          a +EIA level.
                                        Does 'Switch Hook', (red lead), go
                                        to a +EIA level?
                                        YN
                                          018
                                          - The talk/data mode switch is
                                            not wired to the coupler.
                                          - Have the customer place a call
                                           to the telephone company.
                                                     EC840874 PEC839787
                                        4
                                                              MAP 3012-3
                                        G
```

```
G
           COMMUNICATIONS MAP
                                       JKLM
                                                             MAP 3012-4
3
           CBS COUPLER
           PAGE 4 OF 13
019
                                             023
Do you hear the dial tone? NOTE:
                                             - Disconnect the external
Talk/Data mode switch NOT manually
                                               cable from the machine at
raised.
                                               connector J140.
YN
                                             - At the P140 connector ON
                                               THE EXTERNAL CABLE check
 020
                                               continuity between P140-20
                                               '+Data Modem Ready' (MIM
 - Lift the talk/data
                            mode
   switch.
                                               867, probe point F) and
                                               the Yellow lead AT THE
 Do you hear the dial tone?
                                               COUPLER.
 YN
                                             Is continuity good?
   021
                                             YN
   - Power off.
   - Remove the 38LS card.
                                               024
   - Check continuity
                          between
                                               - Defective external
     A-D8D02 '+Data Modem Ready'
                                                 cable.
     (MIM 867, probe point C) and
     the
           Yellow lead AT THE
                                             025
     COUPLER.
                                             - Defective internal cable.
   Is continuity good?
                                           026
   YN
                                           - Defective communications MPU
                                             card (A-E5)(MIM 811).
     022
                                           - If a 'Ros Patch' cable is
     - Disconnect the internal
                                             connected to the card,
       cable
                  from
                                           GO TO MAP 0600,
                             the
       communications MPU card at
                                           ENTRY POINT A.
       connector A-E5-J01.
     - At the POl connector ON
                                         027
       THE EXTERNAL CABLE check
                                         - Defective 38LS line adapter
       continuity between P01-15
                                           card (A-D7)(MIM 812).
       '+Data Modem Ready' (MIM
       867, probe point E) and
                                        028
       the Yellow lead AT THE
                                        Can calls be placed as with a
       COUPLER.
                                       normal telephone?
                                       YN
     Is continuity good?
     Y N
                                         029
                                         - The
                                                  problem
                                                          is
                                                                 in
                                                                      the
                                          telephone.
                                         - Have the customer place a call
                                           to the telephone company.
                                                    EC840874 PEC839787
1
з
                                        5
HJKLM
                                        Ν
                                                             MAP 3012-4
```

```
Ν
           COMMUNICATIONS MAP
                                        Q
                                                             MAP 3012-5
4
           CBS COUPLER
           PAGE
                  5 OF 13
030
                                        035
- Place the telephone(s) on hook.
                                       - Power off.
- Place a call from another
                                        - Reinstall the external cable at
  telephone to the coupler number.
                                         connector J140.
                                        - Remove the 38LS line adapter
Does the bell ring in coupler
                                         card.
                                        - Use the CE meter on the RX1
telephone?
ΥN
                                          scale to measure the resistance
                                         to a ground pin. A short will
 031
                                         read less than 20 ohms. Measure
 - Have the customer place a call
                                         A-D8B13, 'Ring Indicate', to
   to the telephone company to
                                         A-D8D08, 'Gnd' (MIM 867, probe
   check that 'Ringer On The Line
                                         point C).
   Side' option is installed.
                                        Is the line grounded?
032
                                        ΥN
- Connect the CE meter leads TO
 THE COUPLER as follows:
                                         036
                                         - Defective 38LS line adapter
 Minus to 'Signal Ground' (gray)
                                           card (A-D7)(MIM 812).
 Plus to 'Ring Indicate' (violet)
                                        037
While the call is being placed and
                                        - Remove the communications MPU
the coupler telephone is ringing,
                                         card (A-E5)(MIM 811).
does
      'Ring Indicate', (violet
lead), go to a +EIA level with
                                        Is the line still grounded?
each ring?
                                        YN
YN
                                         038
 033
                                         - Disconnect the internal cable
 - Disconnect the external cable
                                           from the A-E5-J01 connector.
   from the machine at connector
                                         - Use the CE meter on the RX1
   J140.
                                           scale
                                                    to
                                                          measure
                                                                     the
                                           resistance to a ground pin. A
  Did 'Ring Indicate',
                                           short will read less than 20
                          (violet
  lead), go to a +EIA or -EIA
                                           ohms. At the POl connector ON
                                           THE INTERNAL CABLE, measure
  level?
 YN
                                           from PO1-21, 'Ring Indicate',
                                           to P01-23 ,'Signal
                                                                 Ground'
   034
                                           (MIM 867, probe point E).
   - The
           problem
                     15
                          in the
     coupler.
                                         Is the line grounded?
   - Have the customer
                         place a
                                         ΥN
     call
            to the
                        telephone
     company.
                                                    EC840874
                                                             PEC839787
                                       6 6 6
6
PQ
                                       RST
                                                             MAP 3012-5
```

)

```
RST
           COMMUNICATIONS MAP
                                        Ρ
                                                             MAP 3012-6
5 5 5
                                        5
           CBS COUPLER
           PAGE
                  6 OF 13
   039
                                        044
    - Defective communications MPU
                                        - Connect the CE meter leads TO
     card(A-E5)(MIM 811).
                                          THE COUPLER as follows:
    - If a 'Ros Patch' cable is
     connected to the card,
                                          Plus to 'Signal Ground' (gray)
    GO TO MAP 0600,
                                         Minus to 'Off Hook' (blue)
   ENTRY POINT A.
                                        - A positive deflection indicates
  040
                                          -EIA signal.
 - Disconnect the external cable
   from the machine at connector
                                        While the call is being placed and
    J140.
                                        the coupler telephone is ringing,
 - Use the CE meter on the RX1
                                        is 'Off Hook' (blue lead) at -EIA
   scale to measure the
                                        level?
   resistance to a ground pin. A
                                        Y N
   short will read less than 20
   ohms. At the P140 connector
                                          045
   ON THE EXTERNAL CABLE, measure
                                         - Power off.
   from P140-22, 'Ring Indicate',
                                         - Remove the 38LS card.
   to P140-21 ,'Signal Ground'
                                         - Check continuity
                                                                  between
   (MIM 867, probe point F).
                                           A-D8B03 '+Off Hook' (MIM 867,
                                           probe point C) and the Blue
 Is the line grounded?
                                           lead AT THE COUPLER.
 YN
                                         Is continuity good?
   041
                                          ΥN
   - Defective internal cable.
                                            046
 042
                                           - Disconnect
                                                          the internal
 - Defective external cable.
                                             cable
                                                          from
                                                                      the
                                             communications MPU card at
043
                                             connector A-E5-J01.
- Defective logic board.
                                            - At the POl connector ON THE
                                              INTERNAL
                                                          CABLE
                                                                   check
                                                                   P01-17
                                             continuity between
                                             '+Off Hook' (MIM 867, probe
                                             point E) and the Blue lead
                                             AT THE COUPLER.
                                            Is continuity good?
                                            YN
                                                               PEC839787
                                                    EC840874
                                        8777
                                        υνωχ
                                                             MAP 3012-6
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VWX
           COMMUNICATIONS MAP
                                                             MAP 3012-7
                                        Y
6 6 6
           CBS COUPLER
           PAGE
                  7 OF 13
   047
                                        053
    - Disconnect
                   the
                         external
                                        - Remove the communications MPU
     cable from the machine at
                                         card (A-E5)(MIM 811)
     connector J140.
    - At the P140 connector ON THE
                                        Is the line grounded?
     EXTERNAL
                 CABLE
                          check
                                        ΥN
     continuity between P140-04
     '+Off Hook' (MIM 867, probe
                                          054
     point F) and the Blue lead
                                          - Disconnect the internal cable
     AT THE COUPLER.
                                            from the A-E5-J01 connector.
                                          - Use the CE meter on the RX1
                                                                     the
   Is continuity good?
                                            scale
                                                   to
                                                         measure
   YN
                                            resistance to a ground pin. A
                                            short will read less than 20
     048
                                            ohms. At the PO1 connector ON
     - Defective external cable.
                                            THE INTERNAL CABLE, measure
                                            from P01-17 'Off Hook', to
    049
                                            P01-23 ,'Signal Ground' (MIM
    - Defective internal cable.
                                            867, probe point E).
 050
                                          Is the line grounded?
 - Defective communications MPU
                                          Y N
   card(A-E5)(MIM 811).
 - If a 'Ros Patch' cable is
                                            055
   connected to the card,
                                            - Defective communications MPU
                                             card (A-E5)(MIM 811).
 GO TO MAP 0600, ENTRY POINT A.
                                           - If a 'Ros Patch' cable is
051
                                             connected to the card,
- Use the CE meter on the RX1
                                            GO TO MAP 0600,
 scale to measure the resistance
                                           ENTRY POINT A.
 to a ground pin. A short will
 read less than 20 ohms. Measure
 A-D8B03, 'Off HOOK', to A-D8D08,
  'Gnd' (MIM 867, probe point C).
Is the line grounded?
YN
 052
 - Defective 38LS line adapter
   card (A-D7)(MIM 812).
                                                    EC840874 PEC839787
                                        8 A
Y
                                        ZĂ
                                                             MAP 3012-7
```

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UZA
           COMMUNICATIONS MAP
                                                             MAP 3012-8
                                        А
67A
                                        С
           CBS COUPLER
    7
           PAGE
                  8 OF 13
    056
                                        061
    - Disconnect
                  the
                         external
                                        - Disconnect the external cable
      cable from the machine at
                                         from the machine at connector
      connector J140.
                                          J140.
    - Use the CE meter on the RX1
      scale
              to
                   measure
                              the
                                        Did 'Coupler Cut Through' (brown
                                        lead) go to -EIA level?
      resistance to a ground pin.
      A short will read less than
                                        Y N
                  At the P140
      20
          ohms.
      connector ON THE EXTERNAL
                                         062
      CABLE, measure from P140-04
                                         - The problem is in the coupler.
      '0ff
           Hook', to P140-21
                                         - Have the customer place a call
      ,'Signal Ground' (MIM 867,
                                            to the telephone company.
      probe point F).
                                        063
    Is the line grounded?
                                        - Power off.
    ΥN
                                        - Reinstall the external cable at
                                          connector J140.
      057
                                        - Remove the 38LS line adapter
      - Defective internal cable.
                                          card.
                                        - Use the CE meter on the RX1
   058
                                          scale to measure the resistance
    - Defective external cable.
                                          to a ground pin. A short will
                                          read less than 20 ohms. Measure
  059
                                          A-D8D09, 'Coupler Cut Through',
  - Defective logic board.
                                          to A-D&D08, 'Gnd' (MIM
                                                                     867,
                                          probe point C).
060
- Connect the CE meter leads TO
                                        Is the line grounded?
 THE COUPLER as follows:
                                        Y N
  Plus to 'Signal Ground' (gray)
                                         064
 Minus to 'Coupler Cut Through'
                                          - Defective 38LS line adapter
  (brown)
                                            card (A-D7)(MIM 812).
- A positive deflection indicates
                                        065
 -EIA signal.
                                        - Remove the communications MPU
                                          card.
While the call is being placed and
the coupler telephone is ringing,
                                        Is the line still grounded?
is 'Coupler Cut Through' (brown
                                        ΥN
lead) at -EIA level?
Y N
9
                                        99
                                                     EC840874
                                                               PEC839787
A A
                                        A A
BC
                                        DΕ
                                                             MAP 3012-8
```

1

(

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MAP 3012-9
Α
           COMMUNICATIONS MAP
                                       A A
Ε
                                       B D
           CBS COUPLER
8
                                       8 8
           PAGE 9 OF 13
066
                                         071
- Disconnect the internal cable
                                         - Defective logic board.
  from the A-E5-J01 connector.
- Use the CE meter on the RX1
                                       072
  scale to measure the resistance
                                       - Place the telephone(s) on hook.
                                       - Connect the CE meter leads TO
  to a ground pin. A short will
  read less than 20 ohms. At the
                                         THE COUPLER as follows:
  P01 connector ON THE INTERNAL
  CABLE, measure
                   from P01-06,
                                         Minus to 'Signal Ground' (gray)
  'Coupler Cut Through', to P01-23
                                         Plus to 'Data Modem Ready'
  ,'Signal Ground' (MIM 867, probe
                                         (yellow)
  point E).
                                       (ENTRY POINT B)
Is the line grounded?
YN
                                       - Again place a call from another
                                         telephone to the coupler number.
  067
                                       - When
                                               the coupler
                                                              telephone
  - Defective communications MPU
                                         rings, take the telephone off
   card(A-E5)(MIM 811).
                                         hook and observe the CE meter
  - If a 'Ros Patch' cable is
                                         for a +EIA level.
    connected to the card,
  GO TO MAP 0600, ENTRY POINT A.
                                       Does 'Data Modem Ready' (yellow
                                       lead) go to +EIA level?
068
                                        YN
- Disconnect the external cable
  from the machine at connector
                                         073
  J140.
- Use the CE meter on the RX1
                                         Did the telephone stop ringing
  scale to measure the resistance
                                         when taken off hook?
  to a ground pin. A short will
                                         YN
  read less than 20 ohms. At the
                                           074
  P140 connector ON THE EXTERNAL
         measure from P140-06,
                                           - Power off.
  CABLE,
  'Coupler Cut Through',
                              to
                                           - Remove the 38LS card.
  P140-21 ,'Signal Ground'
                                           - Check continuity between
                            (MIM)
  867, probe point F).
                                             A-D8B10 '+Switch Hook' (MIM
                                             867, probe point C) and the
Is the line grounded?
                                             Red lead AT THE COUPLER.
YN
                                           Is continuity good?
                                           YN
 069
  - Defective internal cable.
070
- Defective external cable.
                                       1 1 1 1
                                       2000
                                                    EC840874 PEC839787
                                       AAAA
                                       FGHJ
                                                            MAP 3012-9
```

A A COMMUNICATIONS MAP Α MAP 3012-10 НJ G 99 CBS COUPLER Q PAGE 10 OF 13 075 081 - Disconnect the internal cable Is auto-call selected on the modem? from the communications MPU card at connector A-E5-J01. YN - At the PO1 connector ON THE INTERNAL CABLE check 082 continuity between P01-14 - Power off. '+Switch Hook' (MIM 867, probe - Remove the 38LS card. point E) and the Red lead AT - Check continuity between THE COUPLER. A-D8D02 '+Data Modem Ready' (MIM 867, probe point C) and Is continuity good? the Yellow lead ON THE ΥN COUPLER. 076 Is continuity good? - Disconnect the YN external cable from the machine at connector J140. 083 - At the P140 connector ON THE - Disconnect the internal EXTERNAL CABLE cable from the check continuity between P140-05 communications MPU card at '+Switch Hook' (MIM 867, connector A-E5-J01. probe point F) and the Red - At the PO1 connector ON THE lead AT THE COUPLER. INTERNAL CABLE check continuity between P01-15 Is continuity good? '+Data Modem Ready' (MIM ΥN 867, probe point E) and the Yellow lead AT THE COUPLER. 077 - Defective external cable. Is continuity good? ΥN 078 - Defective internal cable. 079 - Defective communications MPU card(A-E5)(MIM 811). - If a 'Ros Patch' cable is connected to the card, GO TO MAP 0600, ENTRY POINT A. 080 - Defective 38LS line adapter card (A-D7)(MIM 812). 1 1 1 1 2 1 1 1 EC840874 PEC839787 AAAA KLMN MAP 3012-10

AAA COMMUNICATIONS MAP MAP 3012-11 А LMN Ρ 1 1 1 CBS COUPLER 0 0 0 PAGE 11 OF 13 084 090 - Disconnect the external - Remove the communications MPU cable from the machine at card (A-E5)(MIM 811) connector J140. - At the P140 connector ON THE Is the line grounded? EXTERNAL CABLE YN check continuity between P140-20 '+Data Modem Ready' (MIM 091 867, probe point F) and the - Disconnect the internal cable Yellow lead AT THE COUPLER. from the A-E5-J01 connector. - Use the CE meter on the RX1 the Is continuity good? scale to measure Y N resistance to a ground pin. A short will read less than 20 0.85 ohms. At the PO1 connector ON - Defective external cable. THE INTERNAL CABLE, measure from P01-15 'Data Modem 086 Ready', to P01-23 ,'Signal - Defective internal cable. Ground' (MIM 867, probe point E). 087 - Defective communications MPU Is the line grounded? card(A-E5)(MIM 811). YN - If a 'Ros Patch' cable is connected to the card, 092 GO TO MAP 0600, ENTRY POINT A. - Defective communications MPU card (A-E5)(MIM 811). 088 - If a 'Ros Patch' cable is - Use the CE meter on the RX1 connected to the card, scale to measure the resistance GO TO MAP 0600. to a ground pin. A short will ENTRY POINT A. read less than 20 ohms. Measure A-D8D02, 'Data Modem Ready', to A-D8D08, 'Gnd' (MIM 867, probe point C). Is the line grounded? YN 089 - Defective 38LS line adapter card (A-D7)(MIM 812). 1 1 2 2 EC840874 PEC839787 А A A Ρ QR MAP 3012-11

```
COMMUNICATIONS MAP
AAA
                                       А
                                                           MAP 3012-12
KQR
                                      F
          CBS COUPLER
1 1 1
                                       9
0 1 1
           PAGE 12 OF 13
                                       098
   093
                 the
                                      - Place the telephone(s) on hook.
   - Disconnect
                        external
     cable from the machine at
                                       - Connect the CE meter leads TO
     connector J140.
                                        THE COUPLER as follows:
   - Use the CE meter on the RX1
                                        Minus to 'Signal Ground' (gray)
     scale to measure the
     resistance to a ground pin.
                                        Plus to 'Off Hook' (blue)
     A short will read less than
     20
         ohms.
                  At the P140
                                      - Again place a call from another
     connector ON THE EXTERNAL
                                        telephone to the coupler number.
     CABLE, measure from P140-20
                                      - When the coupler telephone
     'Data Modem Ready', to
                                       rings, take the telephone off
     P140-21 ,'Signal
                       Ground'
                                       hook and observe the CE meter
     (MIM 867, probe point F).
                                        for a +EIA level.
                                      Is 'Off Hook' (blue lead) at a
   Is the line grounded?
   ΥN
                                      +EIA level?
                                      ΥN
     094
    - Defective internal cable.
                                        099
                                        - Check
                                                  continuity
                                                              between
   095
                                          A-D8B03 '+Off Hook' (MIM 867,
   - Defective external cable.
                                          probe point C) and the Blue
                                          lead ON THE COUPLER.
  096
 - Defective logic board.
                                        Is continuity good?
                                        YN
097
- Place the auto-call switch (on
                                          100
 the 38LS) in the position to
                                          - The
                                                  problem is in the
 originate a normal telephone
                                            cables.
 call.
GO TO PAGE 9, STEP 072,
                                        101
ENTRY POINT B.
                                        - Place
                                                  the telephone(s) on
                                          hook.
                                        - Go back to the MDI prompt,
                                          answer 'Y', and follow the
                                          prompts.
                                       1
                                       3
                                                   EC840874 PEC839787
                                       А
                                       S
                                                           MAP 3012-12
```

```
H A
          COMMUNICATIONS MAP
                                                         MAP 3012-13
4 S
 1
          CBS COUPLER
 2
          PAGE 13 OF 13
 102
 - In order to see the delay
                                     Note: The delay indicates to the
                                     modem that it is being called.
   expected,
                                     This signals the modem to send
 - Place the telephone(s) on
   hook.
                                     answer tone.
 - Connect the CE meter leads TO
   THE COUPLER as follows:
   Minus to 'Signal Ground'
   (gray)
   Plus to 'Coupler Cut Through'
   (brown)
 - Again place a call from
   another telephone to the
   coupler number.
 - When the coupler telephone
   rings, take the telephone off
   hook and observe the CE meter
   for a +EIA level.
 Does
      'Coupler Cut Through'
 (brown lead) go to a +EIA level
 after 1 to 3 seconds of delay?
 YN
   103
   - The problem is in the
    coupler.
   - Have the customer place a
     call to the telephone
     company.
 104
 - Place the telephone(s)
                            on
   hook.
 - Go back to the MDI prompt,
   answer 'Y', and follow the
   prompts.
105
- The talk/data mode switch is not
 wired correctly in the
 telephone.
```

 $\boldsymbol{\mathcal{I}}\xspace$ his page is intentionally left blank.

-

NON AUTO ANSWER COUPLER

PAGE 1 OF 5

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP	ENTRY	PAGE	STEP
NUMBER	Point	NUMBER	NUMBER
3010	A	1	001
3010	B	2	009

EXIT POINTS

EXIT TH	IS MAP	то	
		, 	
PAGE	STEP	MAP	ENTRY
NUMBER	NUMBER	NUMBER	POINT
ipak alio tan ana ana ana ini		•	
3	016	0600	А
5	025	0600	А
5	028	0600	А
3	017	0600	А
4	023	0600	А

001 (ENTRY POINT A)

USE THIS MAP TO FIND CONNECTION PROBLEMS BY USING ANOTHER TELEPHONE WHEN THE LOCAL STATION HAS A COUPLER WITH NO AUTO-ANSWER FUNCTION (CDT), (MANUAL CALL TO A MANUAL ANSWER STATION).

- Ensure the test switch (if present) on the CDT type coupler is in the normal position.
- Take the telephone off hook.

Do you hear the dial tone? Y N 002 - Lift the data/talk mode switch. Do you hear the dial tone? Y N 003 - Telephone problem. - Have the customer place a call to the telephone company.

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For this map use the IBM CE meter with the dB adapter.

1749231 - CE meter 1749299 - dB adapter 1647116 - adapter plug assembly 2728116 - earphone

User instructions are supplied with the parts.

Ensure that the CE meter is set to the .6 ma scale and the +/-DC switch is on + DC when using the dB adapter.

```
EC840874 PEC839787
```

22 AB

MAP 3013-1

```
A B
            COMMUNICATIONS MAP
                                         С
                                                              MAP 3013-2
1 1
            NON AUTO ANSWER
            PAGE
                   2 OF
                          5
  004
                                         009
 - The data/talk switch is
                                         - Place the telephone(s) on hook.
                               not
   wired,
           correctly
                          in
                               the
                                         - Go back to the MDI prompt,
                                                   'Y',
    telephone.
                                                          and follow the
                                           answer
                                           prompts.
005
- Place the telephone on hook.
                                         (ENTRY POINT B)
- Have a call placed from another
                                         THIS IS THE TRANSMIT LEVEL CHECK
  telephone.
                                         FOR A SWITCHED NETWORK WITH A CDT
                                         TYPE COUPLER.
Does the telephone ring?
Y N
                                         - The communications MDIs should
 006
                                           be loaded and set up to transmit
 - Telephone problem.
                                           a constant data pattern of hex
 - Have the customer place a call
                                           FFFF.
    to the telephone company.
                                         - Again, place a call to the modem
                                           telephone
                                                         from
                                                                   another
007
                                           telephone.
- Take the telephone off hook.
                                         - Carefully place the talk/data
                                           mode switch into its alternate
Can you talk with the person on
                                                      This puts the modem
                                           position.
the other telephone?
                                           telephone into data mode.
Y N
                                         - Do not place the modem telephone
                                           on hook.
  008

    Connect the dB meter between

 - Telephone problem.
                                           'Data Tip' and 'Data Ring' at
 - Have the customer place a call
                                           the coupler.
    to the telephone company.
                                         Does the dB meter indicate the
                                         value expected (should be marked
                                         on the coupler) within a tolerance
                                         of one dB?
                                         Y N
                                                      EC840874
                                                                 PEC839787
                                         53
С
                                                               MAP 3013-2
                                         DE
```

1

Ε COMMUNICATIONS MAP G MAP 3013-3 2 NON AUTO ANSWER PAGE 3 OF 5 010 013 - Power off. - See 38LS switch setting chart in MIM 813,815, or 817 to determine - Remove the 38LS card. which switches should be on. - Use the CE meter on the RX1 (If using programable scale to measure the resistance attenuation, the 38LS card to a ground pin. A short will should have been set for 0 db. read less than 20 ohms. Measure A-D7D05, 'SW Data Xmit', Are all switches on the 38LS line A-D8D08, 'Gnd' (MIM 867, probe adapter card set correctly? point C). YN Is the line grounded? 011 YN - Set correctly and rerun the test. 014 - Defective 38LS line adapter 012 card (A-D7)(MIM &12). - Connect the dB meter between A-D7D05 'SW Data Xmit' and 015 A-D7D08 'Gnd'. The DB level - Remove the communications MPU should be equal to the level set card (A-E5)(MIM 811) in the 38LS line adapter card switches. Is the line grounded? Y N - Note: A quick way to indentify a communications MPU card that has programmable attenuation is as 016 follows: - Defective communications MPU - If there are 4 transmit card (A-E5)(MIM 811). level attenuators on the lower - If a 'Ros Patch' cable is left connected to the card, corner of the GO TO MAP 0600, ENTRY POINT A. communications MPU card, the card has programmable attenuation(MIM 811). 017 - Defective communications MPU Is the db level correct? card (A-E5)(MIM 811). YN - If 'Ros Patch' cable is а connected to the card, GO TO MAP 0600, ENTRY POINT A. EC840874 PEC839787 MAP 3013-3 FG

to

```
F
           COMMUNICATIONS MAP
                                        нјк
3
           NON AUTO ANSWER
           PAGE 4 OF
                       5
018
                                            020
- Power off.
- Remove the 38LS card.
- Check continuity between A-D7D06
 '+Data Tip' and the lead at the
 coupler.
- Check continuity between A-D7D08
 '+Data Ring' and the lead at the
 coupler.
Is continuity good?
YN
 019
 - Disconnect the internal cable
   from the communications MPU
   card at connector A-E5-J01.
 - At the P01 connector ON THE
   INTERNAL
                 CABLE
                           check
   continuity
                 between P01-07
    '+Data Tip' and the lead AT
   THE COUPLER.
                                            022
 - At the PO1 connector ON THE
   INTERNAL
                 CABLE
                            check
                between P01-23
   continuity
                                          023
    '+Data Ring' and the lead AT
   THE COUPLER.
 Is continuity good?
 YN
                                        024
                                        YN
                                        55
```

```
- Disconnect
                  the
                         external
     cable from the machine at
     connector J140.
   - At the P140 connector ON THE
                  CABLE
     EXTERNAL
                           check
     continuity between P140-09
     '+Data Tip' and the lead AT
     THE COUPLER.
   - At the P140 connector ON THE
     EXTERNAL
                  CABLE
                           check
     continuity between P140-21
     '+Data Ring' and the lead AT
     THE COUPLER.
   Is continuity good?
   Y N
     021
     - Defective external cable.
   - Defective internal cable.
 - Defective communications MPU
   card (A-E5)(MIM 811).
 - If a 'Ros Patch' cable is
   connected to the card.
 GO TO MAP 0600, ENTRY POINT A.
- Use the CE meter on the RX1
 scale to measure the resistance
 to a ground pin. A short will
 read less than 20 ohms. Measure
 A-D7D06, 'Data Tip', to A-D8D08,
  'Gnd' (MIM 867, probe point C).
Is the line grounded?
            EC840874
                       PEC839787
```

MAP 3013-4

LM

(

MAP 3013-4

```
LM
           COMMUNICATIONS MAP
                                       DNP
                                                            MAP 3013-5
44
                                        2
           NON AUTO ANSWER
           PAGE 5 OF
                       5
 025
                                           029
                                           - Disconnect the
 - Defective communications MPU
                                                                 external
   card (A-E5)(MIM 811).
                                             cable from the machine at
 - If a 'Ros Patch' cable is
                                             connector J140.
   connected to the card,
                                           - Use the CE meter on the RX1
 GO TO MAP 0600, ENTRY POINT A.
                                             scale
                                                    to
                                                          measure
                                                                    the
                                             resistance to a ground pin.
026
                                             A short will read less than
                                             20 ohms.
                                                         At the

    Remove the communications MPU

 card (A-E5)(MIM 811)
                                             connector ON THE EXTERNAL
                                             CABLE, measure from P140-09
                                             'Data Tip', to P140-21
Is the line grounded?
                                             ,'Signal Ground' (MIM 867,
YN
                                             probe point F).
 027
 - Disconnect the internal cable
                                           Is the line grounded?
   from the A-E5-J01 connector.
                                           Y N
 - Use the CE meter on the RX1
   scale
            to
                  measure
                            the
                                            030
   resistance to a ground pin. A
                                             - Defective internal cable.
   short will read less than 20
    ohms. At the P01 connector DN
                                           031
   THE INTERNAL CABLE, measure
                                           - Defective external cable.
   from P01-07 'Data Tip', to
   P01-23 ,'Signal Ground' (MIM
                                         032
   867, probe point E).
                                         - Defective logic board.
 Is the line grounded?
                                        033
  ΥN
                                        Can the constant test pattern of
                                        hex FFFF be heard at the calling
   028
                                        telephone?
                                       YN
   - Defective communications MPU
     card (A-E5)(MIM 811).
   - If a 'Ros Patch' cable is
                                         034
     connected to the card,
                                         - Telephone problem
   GO TO MAP 0600,
                                         - Have the customer place a call
   ENTRY POINT A.
                                           to the telephone company.
                                        035
                                        - The test is complete.
                                        - Return to the MDIs, answer 'Y',
                                         and follow the prompts.
                                                    EC840874 PEC839787
                                                             MAP 3013-5
N P
```

P140

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PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY Point	PAGE NUMBER	STEP NUMBER
3010	A	1	001

⁰⁰¹ (ENTRY POINT A)

USE THIS MAP TO TEST THE DIGITAL NETWORK WITH A REMOTE DDSA STATION (WRAP TEST PROCEDURE).

- Ensure that MDI 3010 runs without errors and the diagnostics at other stations also run without errors.
- If the disable double loopback (DDL) jumper is installed on the remote DDSA line adapter .card, have the remote service person remove it (see MIM 825, jumper position E for the location of the jumper).
- Have the remote station loop a local wrap test.

Did the test run correctly? Y N 002 - Verify that the local and remote stations are set up correctly to run the test. If they are set up correctly, the problem is in the digital telephone network. - Have the customer inform the person responsible.

2

Α

- Note: For normal operation DDL (MIM 825, jumper positon E) must be jumpered on all secondary stations on a multipoint network. If not, the wrap tests run by any secondary station will slow the operation of the rest of network.

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```
Α
           COMMUNICATIONS MAP
1
           DDSA ADAPTER
           PAGE 2 OF 2
003
Does the remote station have a
remote wrap test?
Y N
 004
 - The test is complete.
005
- Remove the DDL jumper from the
 DDSA line adapter card at the
 local station and run MDIs.
- Have the remote station run the
 remote test.
Did the test run correctly?
Y N
 006
 - Verify that the local and
   remote stations are set up
   correctly to run the test.
 - If the set up is correct, the
   problem is in the digital
   telephone network.
 - Have the customer inform the
   person responsible.
007
- The local and remote BSCA and
 the
       digital network tested
 correctly.
```

- Replace the DDL jumper if it was removed.

EC840874 PEC839787

5285 COMMUNICATIONS MAP

OTHER COMM PROBLEMS

PAGE 1 OF 4

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
3010	A	1	001

EXIT POI	NTS		
EXIT THI	S MAP	то	
P AGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY
3	006	0600	A
3	008	0600	А
4	013	0600	А
3	009	0800	А
3	010	0800	А

001 (ENTRY POINT A)

PROBLEMS WHICH THE MAPS AND MDIS CANNOT FIND.

- Some failure conditions exist which the MDIs and MAPs cannot find because they do not cause an observable error.

Examples:

- If 'Rate Select' is in the wrong state the symptom will be: The system is running slow, or performance is affected in an adverse way (different from that which the customer expects).
- 2. If 'Data Set Ready' is open, the line may float to the correct polarity and there will be no error.
- 3. Other problems that cannot be found by diagnostics are added here for your information. Customer reported error codes 4206, 4207, 5206, and 5207.
- 4. When all else fails to fix the problem, replace FRUs in the following order until the problem goes away.

the feature line adapter card.
 the communications MPU card.
 the internal cable.
 the external cable.
 call for assistance.

For these and intermittent problems use the methods listed in Note 1:

Note 1: DEALING WITH INTERMITTENT COMMUNICATIONS PROBLEMS. (Step 001 continues)

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EC840874 PEC839787

MAP 3015-1

COMM PROBLEMS

PAGE 2 OF 4

(Step 001 continued)

- Have the customer maintain a record of the communications error log and the internal data trap by calling 'TCOMLOG' after his program ends in an abnormal termination.
- Use the program 'TCOMEREP' to display and print the error logs recorded by 'TCOMLOG'.
- Work with the customer to verify that the communications configuration record is correct. This may require knowing what the DCR name is and using the program 'SYSCCU' to look at the configuration record.
- Verify that all jumpers, strapping, and cable hook ups are correct for the communications feature and modems being used.
 (See MIM for strapping information.)
- Verify that all lines from the coupler have continuity through the cables, the communications MPU card, the logic board, and to the feature card (38LS, EIA, or DDSA).

(See MIM for cable routing and pin information.)

- For line problems:
 - * Use the TRAP or PT-2 to make recordings of activity for later analysis.
 - * Use the internal trap save program 'TCOMLOG' to save data sent and received at the communications MPU card.
- For BSC communications access method:
- * Use the BSC on line test to verify BSC operation of the line.
- For SDLC communications access method:

* Have a host system run an SNA SDLC test on your system (this test is transparrent to your system and may be run when SNA is active).

- If there is an external IBM modem, use the tests provided by that modem.
- Marginal voltages cause intermittent problems. Check all voltages for nominal values. Check for excessive ripple in the DC supplies.
- Check common ground continuity between the machine and the telephone company interface.
- Vibrate the machine to show up loose connections.
- Heat and cool the machine to show up temperature sensitivity.

Is	i the	communi	catio	าธ	MDI	
di	agnostic	routine	in	а	hang	
cc	ndition?					
Y	N					
3	3					

```
MAP 3015-3
В
           COMMUNICATIONS MAP
                                        ACD
2
           COMM PROBLEMS
           PAGE 3 OF 4
002
                                            007
- Run the MDI several times to
                                            - Probe A-D7B13, '- Data Set
 show up intermittent problems.
                                             Ready'.
Does the MDI run without error?
                                            Up light: Off
YN
                                            Down light: On
 003
                                            Are the lights correct?
 - Correct any problems indicated
                                            YN
  by MDIs.
                                              008
004
                                              - Defective communications
Is the DDSA line adapter card
                                                MPU card (A-E5)(MIM 811).
installed?
                                              - If a 'Ros Patch' cable is
Y N
                                                connected to the card,
                                              GO TO MAP 0600,
 005
                                              ENTRY POINT A.
 - Probe A-D7804,
                       ۰....
                             Rate
   Select'.
                                            009
 - For full rate the lights will
                                            GO TO MAP 0800,
                                            ENTRY POINT A.
   be:
 Up light: Off
                                          010
 Down light: On
                                          GO TO MAP 0800, ENTRY POINT A.
  - For half rate the lights will
                                        011
   be:
                                        - The
                                                 9
                                                   MHZ oscillator is
                                          essential to the communications
  Up light: On
                                          MDI routines because it is used
  Down light: Off
                                          for timing. If the oscillator
                                          is not active, the diagnostic
  Are the lights correct?
                                          routine will not end.
 YN
                                        - This problem is not detected by
                                          any diagnostic.
   006
                                        - Probe A-E5B08 '9 MHZ'.
   - Defective communications MPU
     card (A-E5)(MIM 811).
                                        Up light: On or Pulsing.
   - If a 'Ros Patch' cable is
                                        Down light: On or Pulsing.
      connected to the card,
   GO TO MAP 0600,
                                        Are the lights correct?
   ENTRY POINT A.
                                        Y N
                                                     EC840874 PEC839787
                                        4 4
CD
                                        EF
                                                              MAP 3015-3
```

```
EF
          COMMUNICATIONS MAP
33
           COMM PROBLEMS
                4 OF 4
           PAGE
 012
 - Trace the '9 MHZ' signal from
   its origin to find the failing
   FRU.
 - The '9 MHZ' signal originates
   on the Main MPU card (See MIM
   531 for the net list).
013
- Defective communications MPU
 card (A-E5)(MIM 811).
- If a 'Ros Patch' cable is
 connected to the card,
```

GO TO MAP 0600, ENTRY POINT A.

MAP 3015-4

MAP 3015-4

5285 COMMUNICATIONS MAP

38LS WITH AUTOMATIC ANSWER

PAGE 1 OF 7

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	i	PAGE NUMBER	STEP NUMBER
3010	A	1	001

```
001
(ENTRY POINT A)
```

USE THIS MAP TO FIND PROBLEMS USING THE 38LS WITH WORLD TRADE LINE PLATE (AUTOMATIC-ANSWER) TO THE PUBLIC SWITCHED NETWORK.

```
Is there a telephone associated
with the data station?
YN
  002
 (ENTRY POINT B)
 - Connect a jumper from A-D7B02
           Terminal Ready' to
   '-Data
   A-D7D08 'GND'.
 - Dial the data station from
   another telephone.
  Is the busy tone present?
  YN
   003
   - Ring-back tone can be heard
     in another telephone. Data
     station answers after the
     third ring pulse train.
   Is the 3.5 second answering
   tone (2100 Hz) present?
   Y N
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7542
ABCD
```

EXIT POINTS

EXIT TH		то	
PAGE NUMBER	STEP	MAP NUMBER	ENTRY POINT
7	032	3018	A

The jumper will permit the machine to go to data mode after three good ring trains.

```
MAP 3016-1
```

EC840874 PEC839787

```
D
           COMMUNICATIONS MAP
                                                            MAP 3016-2
1
           AUTO ANSWER
           PAGE 2 OF 7
004
- Measure the DC voltage between
                                       A-D8D02 '-Data Indicate' is
 A-D8D02 '-Data Indicate' and
                                       connected to a 'Transfer Relay'
 A-DSD08 'GND'.
                                       point in the line plate. When the
                                       machine is in data mode, A-D&D02
                                       '-Data indicate' is approximately
                                       -3.5 Vdc; if not, it is open.
Is A-D&D02 '-Data Indicate' at
approximately -3.5 Vdc after three
ring pulse trains?
Y N
 005
 - Ensure that A-D7B02 '-Data
                                       A-D8B10 'Current Detection 1' and
   Terminal Ready' is jumpered to
                                       A-D8B13 'Current Detection 2'
   A-D7D08 'GND'.
                                       signal levels:
 - Re-dial the data station from
   another telephone.
                                       Without ring current
 - With a voltmeter
                        (5 Vac
                                       Off: about 1 Vac.
   scale),
             measure
                        A-D8B10
   'Current Detection 1' and
                                       With ring current
   A-D8B13 'Current Detection 2'.
                                       On: voltage increases by about 0.3
                                       Vac.
                                       'Current Detection 1' signal level
                                       can be different from 'Current
                                       Detection 2'.
 Are both signals pulsing with
 the ring signal?
 YN
                                                   EC840874
                                                              PEC839787
4 4 3
EFG
                                                            MAP 3016-2
```

```
MAP 3016-3
G
           COMMUNICATIONS MAP
2
           AUTO ANSWER
           PAGE 3 OF 7
006
                                      DC voltage up to 48 Vdc is
* * * * * * * * * * * * * * * * *
                                      present. The
            DANGER
                                                      voltmeter must
                                      indicate a signal
* * * * * * * * * * * * * * * * *
                                                           oscillating
                                      between 48 V and 78 V, and a gap
                                      of about 30 Vac between silent and
   THE NEXT PROCEDURE IS A
   POSSIBLE SHOCK HAZARD,
                                      ring periods.
   BE EXTRA CAREFUL.
                                      DO NOT ground one of the telephone
                                      wires.
- Measure ac voltage
                        at the
 telephone line.
- Signal measured can be higher
 than 150 Vac.
Are there ac pulses (ringing
current) higher than 30 Vac?
Ý N
 007
 - Ask the customer to call the
   PTT representative.
008
(ENTRY POINT C)
                                      Suspect a short circuit in the
                                       connection.
- With an ohmmeter, check
                             the
 telephone cable(s) from the line
 plate to the wall-mounted
 connector. See MIM 869 to find
 the failure.
Do the
         cable(s) check out
correctly?
Y N
 009
 - Suspect
              the telephone
   cable(s).
010
- Defective World Trade line
 plate.
```

MAP 3016-3

CEF MAP 3016-4 COMMUNICATIONS MAP 122 AUTO ANSWER PAGE 4 OF 7 011 - Measure A-D8B03 'Transfer A-D&B03 'Transfer Relay' signal Relay'. levels: On: -2.7 VdcOff: -4.5 Vdc Is the signal approximately -2.7 Vdc? YN 012 - Defective 38LS line The 38LS should activate the 'Transfer Relay' when 'Current adapter card (A-D7)(MIM 812). Detection 1' and 'Current Detection 2' are activated (together three times), and when the machine is in data mode. 👘 013 - Defective World Trade line plate. 014 - Check for 2100 Hz between Use CE tool 'intercom' or 'dB A-D7D05 '+Data Tip' and meter'. A-D7D08 'GND'. Is 2100 Hz present during 3.5 seconds? YN 015 - Defective 38LS line adapter The 38LS should send a 2100 Hz card (A-D7)(MIM 812). tone when answering a call automatically. 016 - Defective World Trade line plate. 017 Does the answering tone stop after 3.5 seconds? Y N EC840874 PEC839787 55 НJ MAP 3016-4

```
COMMUNICATIONS MAP
                                                          MAP 3016-5
BHJ
144
          AUTO ANSWER
           PAGE 5 OF 7
   018
  - Defective 38LS line adapter
    card (A-D7)(MIM 812).
 019

    Auto-answer

                 function is
   correct. Check other
   functions as needed.
 - Remove the jumper from A-D7B02
   '-Data Terminal Ready' to
   A-D7D08 'GND'.
020
- Power off.
- Keep the jumper on A-D7B02 and
 A-D7D08 'GND'.
- Re-dial the data station.
Is the busy tone present?
ΥN
 021
                                      A-D8B03 'Transfer Relay' signal
 - Power on.
 - Measure A-D8B03 'Transfer
                                      levels:
  Relay'.
                                      On: -2.7 Vdc
                                      Off: -4.5 Vdc
 Is the signal approximately -2.7
 Vdc?
 Y N
   022
   - Defective World Trade line
     plate.
                                                  EC840874 PEC839787
7 6
```

K L

```
L
           COMMUNICATIONS MAP
                                                          MAP 3016-6
5
           AUTO ANSWER
           PAGE 6 OF 7
023
                        'Current
                                      A-D8B10 'Current Detection 1' and
- Measure
            A-D8810
                                      A-D8B13 'Current Detection 2'
 Detection 1' and A-D8B13
 'Current Detection 2'.
                                      signal levels:
                                      On: -3 Vdc
                                      Off: +1 Vdc
Are both signals approximately +1
Vdc?
YN
 024
 - Defective World Trade line
   plate.
025
                                      A-D8B03 'Transfer Relay' signal
- Disconnect the machine from the
 telephone
            line
                    (at
                            the
                                      levels:
 wall-mounted connector level).
- Remove the jumper from A-D7B02
                                     On: -2.7 Vdc
                                     Off: -4.5 Vdc
         Terminal Ready' to
 '-Data
 A-D7D08 'GND'.
- Measure A-D8B03
                     'Transfer
 Relay'.
Is the signal approximately -2.7
Vdc?
YN
 026
 - Defective World Trade line
   plate.
027
- Defective 38LS line adapter card
 (A-D7)(MIM 812).
```

EC840874 PEC839787

(

```
COMMUNICATIONS MAP
AK
                                                              MAP 3016-7
1 5
           AUTO ANSWER
            PAGE 7 OF
                        7
  028
 - Disconnect the machine from
                                       Ring-back tone should be present.
    the telephone line (at the
   wall-mounted connector level).
  - Retry the call.
  Is the busy tone present?
  ΥN
   029
    GO TO PAGE 3, STEP 008,
   ENTRY POINT C.
  030
  - Ask the customer to call the
   PTT representative.
031
- Use MAP 3018 to check the manual
 answer operation, then return to
 this point.
Is the manual answer operation
correct?
Y N
 032
 GO TO MAP 3018, ENTRY POINT A.
033
GO TO PAGE 1, STEP 002,
ENTRY POINT B.
```

1

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5285 COMMUNICATION MAP

38LS WITH MANUAL CALL

PAGE 1 OF 5

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
3010	A	1	001

001 (ENTRY POINT A)

USE THIS MAP TO FIND PROBLEMS USING THE 38LS WITH WORLD TRADE LINE PLATE (MANUAL-CALL) TO THE PUBLIC SWITCHED NETWORK.

```
    Take the associated telephone off hook.
    Is the dial tone present?
```

Y N 002 - Power off and retry the call. Is the dial tone present? Y N 003 Is the machine connected to the telephone line with a jack? Y N Y N Copyright IBM Corp 1980

3322 ABCD EC840874 PEC839787

MAP 3017-1

```
CD
          COMMUNICATION MAP
                                                           MAP 3017-2
1 1
          MANUAL CALL
           PAGE 2 OF 5
 004
                                                     present, called
 - Disconnect from the telephone Dial tone
   line and connect the telephone
                                      telephone rings and connection is
   directly to the line at the
                                      made.
            mounted connector
   wall-
   level).
 (ENTRY POINT B)
 - Dial another telephone.
 Can you communicate correctly?
 YN
   005
   - Ask the customer to call the
    PTT representative.
  006
  (ENTRY POINT C)
                                      Suspect a short circuit in the
                                      connection.
 - With an ohmmeter, check the
   telephone cable(s) from the
   line plate to the wall-mounted
   connector. See MIM 869 to
   find the failure.
 Is the cable(s) correct?
 YN
   007
  - Suspect the cable(s).
 008
 - Defective World Trade line
   plate.
009
- Disconnect the jack.
GO TO STEP 004,
```

```
ENTRY POINT B.
```

EC840874 PEC839787

1

```
MAP 3017-3
A B
           COMMUNICATION MAP
1 1
           MANUAL CALL
           PAGE 3 OF 5
 010
                                       A-D8B03 'Transfer Relay' signal
 - Power on.
 - Measure A-D8B03 'Transfer
                                       levels:
   Relay'.
                                       On: -2.7 Vdc
                                       Off: -4.5 Vdc
 Is the signal approximately -2.7
 Vdc?
 Y N
   011
   - Defective World Trade line
     plate.
 012
 - Defective 38LS line adapter
   card (A-D7)(MIM 812).
013
- Dial another telephone.
                                      Dial tone present,
                                                               called
                                      telephone rings and the connection
                                      is made.
Can you communicate correctly?
ΥN
 014
 - Ask the customer to call the
   the PTT representative.
015
- Keep the telephone off hook.
                                      No more tone; silent telephone.
- Connect a jumper from A-D7B02 '-
 Data Terminal Ready' to A-D7D08
 'GND'.
Is
           associated telephone
     the
disconnected from the line?
Y N
                                                    EC840874 PEC839787
54
EF
                                                            MAP 3017-3
```

```
F
           COMMUNICATION MAP
                                                           MAP 3017-4
3
           MANUAL CALL
           PAGE 4 DF 5
016
- Measure
            A-D8B10
                        'Current
                                      A-D8B10 'Current Detection 1' and
 Detection 1' and
                         A-D8B13
                                      A-D8B13 'Current Detection 2'
  'Current Detection 2'.
                                      signal levels:
                                      On: -3 Vdc
                                      Off: +1 Vdc
                         signals
Is one
          of
               these
approximately -3 Vdc?
ΥN
 017
 GO TO PAGE 2, STEP 006,
 ENTRY POINT C.
018
                                      A-D8B03 'Transfer Relay' signal
- Measure A-D&B03 'Transfer
 Relay'.
                                      levels:
                                      On: -2.7 Vdc
                                      Off: -4.5 Vdc
Is the signal approximately -2.7
Vdc?
Y N
 019

    Defective 38LS Line Adapter

                                      The 'Transfer Relay' should be on
   card (A-D7)(MIM 812).
                                      when the machine is in data mode
                                      and the telephone lifted.
020
- Defective World Trade line
 plate.
- Remove the jumper from A-D7B02
 '- Data Terminal Ready' to
  A-D7D08 'GND'.
```

EC840874 PEC839787

```
Е
           COMMUNICATION MAP
                                                            MAP 3017-5
3
           MANUAL CALL
           PAGE 5 OF 5
021
- Remove the jumper from A-D7B02
 '- Data Terminal Ready' to
 A-D7D08 'GND'.
Is the communication with another
telephone functional again?
YN
 022
 - Defective World Trade line
                                       Busy tone in the other telephone,
   plate.
                                       and/or dial tone in the associated
                                       telephone.
023
- The
      local telephone line is
 correct.
- Ask the customer to make a data
 transmission to a remote data
 station.
Is the data transmission correct?
ΥN
 024
 - Run MDI's again.
 - If MDI's run correctly,
   suspect
            the line plate
   assembly.
025
- Manual call function is correct.
- Check other functions as needed.
```

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(

5285 COMMUNICATIONS MAP

38LS WITH MANUAL ANSWER

PAGE 1 OF 6

```
ENTRY POINTS
```

FROM	ENTER	THIS MAP	
MAP	ENTRY	PAGE	STEP
NUMBER	POINT	NUMBER	NUMBER
3010	A	1	001
3016	A	1	001

001

(ENTRY POINT A)

USE THIS MAP TO FIND PROBLEMS USING THE 38LS WITH WORLD TRADE LINE PLATE (MANUAL-ANSWER) TO THE PUBLIC SWITCHED NETWORK.

```
- Dial the data station from
 another telephone.
Is the busy tone present?
YN
 002
 - Wait for at least 3 rings.
 ,
 Is the associated telephone
 ringing?
 ΥN
   003
   - In the other telephone: the
    modem answering tone or data
     can be heard.
   Is the modem connected to the
   line?
   Y N
```

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5222 ABCD

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EC840874 PEC839787

MAP 3018-1

```
BCD
           COMMUNICATIONS MAP
                                                            MAP 3018-2
1 1 1
           38LS MANUAL ANSWER
           PAGE 2 OF 6
    004
   - Take
             the associated
     telephone off hook.
   Is the dial tone present?
   YN
     005
     GO TO PAGE 6, STEP 030,
     ENTRY POINT C.
   006
   - Ask the customer to call the
     PTT representative.
  007
  - Measure
             A-D8B03 'Transfer
                                      A-D8B03 'Transfer Relay' signal
   Relay'.
                                       levels:
                                       On: -2.7 Vdc
                                       Off: -4.5 Vdc
  Is the signal approximately -2.7
 Vdc?
 ΥN
   008
   - Defective World Trade line
     plate.
  009
 - Defective 38LS line adapter
                                      The 'Transfer Relay' should be off
                                      when the machine is not in data
   card (A-D7)(MIM 812).
                                       mode.
010
- Answer the call.
Can you communicate correctly?
YN
 011
 - Ask the customer to call the
   PTT representative.
                                                    EC840874 PEC839787
3
```

Ε

MAP 3018-2

```
Е
           COMMUNICATIONS MAP
                                                            MAP 3018-3
2
           38LS MANUAL ANSWER
           PAGE 3 OF 6
012
- Keep the telephone off hook.
                                     No more tone; silent telephone.
- Connect a jumper from A-D7B02 '-
 Data Terminal Ready' to A-D7D08
  'GND'.
Is the associated
                       telephone
disconnected from the line?
YN
 013
             A-D8B10 'Current
                                       A-D8B10 'Current Detection 1' and
 - Measure
   Detection 1' and A-D8B13
                                       A-D8B13 'Current Detection 2'
   'Current Detection 2'.
                                       signal levels:
                                       On: -3 Vdc
                                       Off: +1 Vdc
            of these
 Is
                        siqnals
       one
 approximately -3 Vdc?
 Y N
   014
   GO TO PAGE 6, STEP 028,
   ENTRY POINT B.
 015
 - Measure
           A-D8803
                      'Transfer
                                       A-D8B03 'Transfer Relay' signal
   Relay'.
                                       levels:
                                       On: -2.7 Vdc
                                       Off: -4.5 Vdc
 Is the signal approximately -2.7
 Vdc?
 YN
   016
   - Defective 38LS line adapter
                                       The 'Transfer Relay' should be on
     card (A-D7)(MIM 812).
                                       when the machine is in data mode
                                       and the telephone lifted.
                                                   EC840874 PEC839787
4 4
FG
                                                            MAP 3018-3
```

```
FG
           COMMUNICATIONS MAP
                                                             MAP 3018-4
33
           38LS MANUAL ANSWER
                 4 OF 6
           PAGE
 017
 - Defective World Trade
                             line
   plate.
  - Remove the jumper from A-D7B02
    '- Data Terminal Ready' to
    A-D7D08 'GND'.
018
- Remove the jumper from A-D7B02
 '- Data Terminal Ready' to
 A-D7D08 'GND'.
Is the communication with
                              the
other telephone functional again?
YN
 019
 - Defective World Trade line
                                       Busy tone in the other telephone,
                                        and/or dial tone in the associated
   plate.
                                        telephone.
020
- The
      local telephone line is
 correct.
- Ask the customer to prepare the
 machine for a data transmission.
- Ask the remote station to dial
 the local data station.
- Answer the call manually.
- Make a data transmission .
Is the data transmission correct?
YN
 021
 - Run MDIs again.
 - If MDIs run correctly, suspect
   the line plate.
022
- The manual answer function is
 correct.
           Check other functions
  as needed.
```

```
А
          COMMUNICATIONS MAP
                                                            MAP 3018-5
1
           38LS MANUAL ANSWER
           PAGE 5 OF 6
023
- Power off and retry the call.
Is the busy tone still present?
ΥN
 024
 - Power on.
                                       A-D8B03 'Transfer Relay' signal
 - Measure A-D8B03 'Transfer
                                       levels:
   Relay'.
                                       On: -2.7 Vdc
                                       Off: -4.5 Vdc
 Is the signal approximately -2.7
 Vdc?
 ΥN
   025
   - Defective World Trade line
     plate.
 026
 - Defective 38LS line adapter
                                       The 'Transfer Relay' should be off
   card (A-D7)(MIM 812).
                                       when the machine is not in data
                                       mode.
027
Is the data station connected to
the telephone line with a jack?
ΥN
                                                    EC840874 PEC839787
6 6
```

```
НJ
          COMMUNICATIONS MAP
                                                           MAP 3018-6
55
          38LS MANUAL ANSWER
           PAGE 6 OF 6
 028
                                   No busy tone, called telephone
 - Disconnect the data station
   from the telephone line and
                                      rings, and the connection is made.
   connect
              the associated
   telephone directly to the
   telephone line (at the
   wall-mounted connector level).
 (ENTRY POINT B)
 - Dial the data station from
   another telephone.
 Can you communicate correctly?
 YN
   029
   - Ask the customer to call the
     PTT representative.
 030
 (ENTRY POINT C)
                                      Suspect a short circuit in the
                                      connection.
 - With an ohmmeter, check the
   telephone cable(s) from the
   line plate to the wall-mounted
   connector. See MIM 869 to
   find the failure.
 Does the cable(s) check out
 correctly?
 YN
   031
   - Suspect the cable(s).
 032
 - Defective World Trade line
   plate.
033
- Disconnect the jack.
GO TO STEP 028,
ENTRY POINT B.
```

EIA WRAP ERROR MAP

PAGE 1 OF 12

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP NUMBER	ENTRY Point	PAGE NUMBER	STEP NUMBER
	-	+++	3-856

EΧ	I	Т	Ρ	0	I	Ν	Т	S

EXIT TH	IS MAP	то	
 P AGE	57EP	MAP	ENTRY
NUMBER	NUMBER	NUMBER	POINT
	010	0600	 A
5	017	0600	А
7	030	0600	А
7	031	0600	А
7	038	0600	А
7	032	0600	А
7	036	0600	А
8	042	0600	А
9	049	0600	Α
9	053	0600	А
10	060	0600	А
5	020	0600	А
11	063	0600	А
11	070	0600	А
12	074	0600	А
12	081	0600	А

001 (ENTRY POINT A)

THIS IS THE COMMUNICATIONS MAP TO FIND PROBLEMS WITH EIA CONTROL LINES THAT ARE OPENED OR SHORTED.

DISCRIPTION OF THE TEST BEING RUN:

The MDIs cause a test pattern to be transmitted out over the interface cables and back through the wrap connector with one line at a time activated. The output byte will be referred to as 'Transmitted' lines by this map (see Fig. 3).

The 'Received' lines are compared and the diagnostic LOOPS on any test in which the 'Received' lines are NOT CORRECT. This received pattern will be referred to as 'Received' lines by this map (see Fig. 3).

HOW TO IDENTIFY THIS DATA ON THE DISPLAY (see Figures 2 & 3).:

If an error occurs, the status bytes will be displayed. No status bytes displayed indicates the test did not fail. The 'Received' (Step 001 continues)

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EC840874 PEC839787

EIA WRAP ERROR MAP

PAGE 2 OF 12

(Step 001 continued)

lines byte appears on the screen in hexidecimal representation as the test is looping. It is the last hexadecimal byte displayed on the MDI status line just before the DCP options. On the display to the left of the 'Received'lines byte is the hexadecimal byte representation of the 'Transmitted' lines byte.

The hexadecimal value of the 'Received' lines should be equal to the hexadecimal value of the 'Transmitted' lines, except in the case of the Rate Sel (Note 1). Rate Sel, Hex 08 on the 'Transmitted' line should return a Hex 0A on the 'Received' line.

The questions in this map rely on your interpretation of these bytes of test data. You will need to see MIM 861 to obtain the necessary probe point information when needed by the map.

Transmitted lines	Received lines	Error
80	C0	extra bits
40	42	extra bits
00	80	extra bits
80	00	missing bits

Fig. 1. Example of error bytes displayed on the screen.

1	2	3		4		5	6	7
4567890123456	5789012345	567890123	45678	9012	3456789	012345678	890123456	7890
The follow	√ing line	shows how	w the	MDI	status	is prese	ented	
MDIXXXX	XXXX* X	NCOMM01	XX	XX	XX P	RESS HELF	P KEY FOR	OPT
Pqmname	Step	Routine	No	ж×	** *	*****DCP	options*	****
-		itted' li		ļ		and und	linor	
	· iransmi	17760, 11	nes	_v	V ' K G	cerved.	Tines	

Fig. 2. Example of the MDI status line.

(Step 001 continues)

EIA WRAP ERROR MAP

PAGE 3 OF 12

(Step 001 continued)

He×	Bit	'Transmitted' lines	Bit	'Received' lines
80	0	Data Term Rdy>	0	Data Set Rdy
40	1	Req To Send>	1	Clear To Send
20	2	Test Control>	2	Carrier Det
10	3	Sel Standby>	3	Ring Ind
08	4	Rate Sel (Note 1)*>	4	Rec Clk
04	5	open line	5	open line
02	6	open line *>	6	Xmit Clk
01	7	open line	7	open line

Fig. 3. This chart shows the pairs of lines that are wrapped. Each line is assigned a hex value that is used when the error is displayed on the screen.

Note 1: Both Xmit Clk and Rec Clk are driven by Rate Sel on the wrap test (Fig 3).

```
Is an error displayed on the
screen?
Y N
002
- The failure is not present.
003
- You will need to see MIM 861 to
locate the probe points referred
to by this map.
- See Fig. 1 for examples of
extra bits.
```

```
Are there extra bits being returned?
```

YN

```
В
           COMMUNICATIONS MAP
                                        F
                                                              MAP 3019-4
3
           EIA WRAP ERROR MAP
           PAGE 4 OF 12
004
                                        007
- Remove the wrap connector.
                                        - Probe the 'Transmitted' line at
               'Received' line
                                          probe point B.
 Note:
         The
 displayed may change with the
 wrap connector removed. Ignore
                                             light: On or Pulsing.
                                        Up
 this byte for now.
                                        Down light: On or Pulsing.
- Probe the 'Transmitted' line at
 probe point F.
                                        Are the lights correct?
                                        YN
Up light: On or Pulsing.
Down light: On or Pulsing.
                                          008
                                          - Probe the 'Transmitted' line
Are the lights correct?
                                           at probe point A.
YN
                                          Up
                                               light: On or Pulsing.
 005
                                          Down light: On or Pulsing.
 THE SYMPTOMS INDICATE THAT THE
 'TRANSMITTED' LINE IS LOSING THE
                                          Are the lights correct?
                                          Y N
 SIGNAL.
 - Probe the 'Transmitted'
                             line
                                            009
   at probe point D.
                                            - Power off.
                                            - Remove the
                                                          communications
 Up light: On or Pulsing.
                                              MPU card.
                                            - Use the CE meter on the RX1
 Down light: On or Pulsing.
                                                           measure
                                              scale
                                                    to
                                                                      the
                                              resistance to a ground pin.
 Are the lights correct?
 YN
                                              A short will read less than
                                              20
                                                    ohms.
                                                             Measure the
                                              'Transmitted' line at probe
   006
   - Probe the 'Transmitted' line
                                              point A.
     at probe point C.
                                            Is the line grounded?
   Up light: On or Pulsing.
                                            YN
    Down light: On or Pulsing.
                                              010
   Are the lights correct?
                                              - Defective communications
                                                MPU card (A-E5)(MIM 811).
    Y N
                                              - If a 'Ros Patch' cable is
                                                connected to the card,
                                              GO TO MAP 0600,
                                              ENTRY POINT A.
                                                     EC840874 PEC839787
6 5 5
                                        5 5 5
CDEF
                                        GHJ
                                                              MAP 3019-4
```

1

```
COMMUNICATIONS MAP
                                       DEKL
                                                            MAP 3019-5
GHJ
444
                                       4 4
           EIA WRAP ERROR MAP
           PAGE 5 OF 12
                                             016
   011
   - Remove the EIA line adapter
                                             - The internal
                                                              cable is
                                               defective.
     card.
   - If the short goes away the
     EIA line adapter card is
                                           017
     defective (A-D7)(MIM 823).
                                           - Remove the communications
                                             MPU card.
   - If the short is still
     present the logic board is
                                           - If the short goes away the
     defective.
                                             communications MPU card is
                                             defective.
                                           - If the
                                                     short is still
 012
                                             present the logic board is
 - The land pattern is open on
   the logic board
                                             defective.
                                           - If a 'Ros Patch' cable is
                                             connected to the card,
013
- Power off.
                                           GO TO MAP 0600.
                                           ENTRY POINT A.
- Remove the EIA line
                         adapter
 card.
- Use the CE meter on the RX1
                                         018
                                         - The land pattern is open on
 scale to measure the resistance
 to a ground pin. A short will
                                          the logic board
 read less than 20 ohms. Measure
 the 'Transmitted' line at probe
                                       019
 point C.
                                       - Remove the internal cable
                                       - Probe the 'Transmitted' line at
Is the line grounded?
                                         probe point E.
YN
                                            light: On or Pulsing.
                                       Up
 014
                                       Down light: On or Pulsing.
 - The EIA line adapter card is
   defective (A-D7)(MIM 823).
                                       Are the lights correct?
                                       YN
015
- Disconnect the internal cable
                                         020
  from the communications MPU card
                                         - Defective communications MPU
                                          card (A-E5)(MIM 811).
 A-E5-J01 connector.
- Use the CE meter on the RX1
                                         - If a 'Ros Patch' cable is
 scale to measure the resistance
                                           connected to the card,
 to a ground pin. A short will
                                         GO TO MAP 0600, ENTRY POINT A.
 read less than 20 ohms. Measure
 the 'Transmitted' line at probe
                                       021
 point C.
                                       - The internal cable is defective.
Is the line grounded?
Y N
                                                    EC840874 PEC839787
                                                            MAP 3019-5
```

```
KL
```

```
С
           COMMUNICATIONS MAP
                                       R
                                                            MAP 3019-6
4
           EIA WRAP ERROR MAP
           PAGE 6 OF 12
022
                                       026
- Reinstall the wrap connector.
                                       - Power off.
- Probe the 'Received' line at
                                       - Remove the Wrap Connector.
 probe point A.
                                       - Remove the EIA line adapter
                                         card.
Up
    light: On or Pulsing.
                                       - Use the CE meter on the RX1
Down light: On or Pulsing.
                                         scale to measure the resistance
                                        to a ground pin. A short will
Are the lights correct?
                                         read less than 20 ohms. Measure
YN
                                         the 'Received' line at probe
                                         point C.
 023
 THE SYMPTOMS INDICATE THAT THE
                                       Is the line grounded?
 'RECEIVED' LINE IS LOSING THE
                                       YN
 SIGNAL.
                                         027
 - Probe the 'Received' line at
                                         - Use the CE meter on the RX1
   probe point B.
                                           scale
                                                  to measure
                                                                     the
                                           resistance of the 'Received'
 Up light: On or Pulsing.
                                           line from probe point F to
 Down light: On or Pulsing.
                                           probe point C for an open.
 Are the lights correct?
                                         Is the line open?
 YN
                                         YN
   024
                                           028
   - Probe the 'Received' line at
                                           - Use the CE meter on the RX1
     probe point C.
                                             scale
                                                   to measure
                                                                    the
                                             resistance of the 'Received'
   Up light: On or Pulsing.
                                            line from probe point C to
   Down light: On or Pulsing.
                                             each of the other points
                                             listed at C. A short will
   Are the lights correct?
                                             read less than 20 ohms.
   Y N
                                           Is the line shorted to any
     025
                                           other line?
     - Probe the 'Received' line
                                           YN
       at probe point D.
                                             029
     Up
          light: On or Pulsing.
                                             - The EIA line adapter card
     Down light: On or Pulsing.
                                                   defective (A-D7)(MIM
                                              is
                                               823).
     Are the lights correct?
     Y N
                                                   EC840874 PEC839787
7777
                                       777
MNPQR
                                       STU
                                                            MAP 3019-6
```

```
COMMUNICATIONS MAP
QSTU
6 6 6 6
           EIA WRAP ERROR MAP
           PAGE 7 OF 12
     030
     - Remove the communications
       MPU card.
     - If the short goes away the
       communications MPU card is
       bad.
     - If the short is still
       present, the logic board
       is defective.
     - If a 'Ros Patch' cable is
       connected to the card,
     GO TO MAP 0600,
     ENTRY POINT A.
   031
    - Check each FRU to find the
     failure.
    - The internal cable.
    - The communications MPU card.
   - The logic board.
   - If a 'Ros Patch' cable is
     connected to the card,
   GO TO MAP 0600,
   ENTRY POINT A.
  032
  - Remove the parts listed below
   one at a time in the order
   given until the short goes
   away. The last part removed
   is defective.
  - The internal cable.
  - The communications MPU card.
  - The EIA line adapter card.
 - If the short is still present,
   the logic board is defective.
 - If a 'Ros Patch' cable is
    connected to the card,
 GO TO MAP 0600, ENTRY POINT A.
033
- The land pattern is open on the
 logic board.
```

```
MNP
                    MAP 3019-7
6 6 6
   034
   - Power off.
    - Remove the EIA line adapter
     card.
   - Use the CE meter on the RX1
     scale
             to measure the
     resistance to a ground pin.
     A short will read less than
     20
          ohms. Measure the
     'Received' line at probe
     point B.
   Is the line grounded?
   YN
     035
     - The EIA line adapter card
       is defective (A-D7)(MIM
       823).
   036
   - Remove the communications
     MPU card.
   - If the short goes away, the
     communications MPU card is
     defective.
   - If the
              short is still
     present, the logic board is
     defective.
   - If a 'Ros Patch' cable is
     connected to the card,
   GO TO MAP 0600,
   ENTRY POINT A.
 037
 - The land pattern is open on
   the logic board.
038
- Defective communications MPU
 card (A-E5)(MIM 811).
- If a 'Ros Patch' cable is
 connected to the card,
```

```
GO TO MAP 0600, ENTRY POINT A.
```

EC840874 PEC839787

MAP 3019-7

```
А
           COMMUNICATIONS MAP
                                       ΧY
                                                            MAP 3019-8
3
           EIA WRAP ERROR MAP
           PAGE 8 OF 12
039
                                         042
- Probe the extra 'Received' line
                                         - The logic board is defective.
 at probe point A.
                                         _ _ _ OR _ _ _ _
Up
   light: On or Pulsing.
Down light: On or Pulsing.
                                         - The EIA line Adapter card is
                                          defective (A-D7)(MIM 823).
Are the lights correct?
ΥN
                                         ---- OR ----
 040
                                         - Defective communications MPU
 THE SYMPTOMS INDICATE THAT THE
                                          card (A-E5)(MIM 811)
 EXTRA 'RECEIVED' LINE IS STUCK
                                         - If a 'Ros Patch' cable is
 AT ITS ACTIVE LEVEL.
                                          connected to the card,
                                         GO TO MAP 0600, ENTRY POINT A.
 - Remove the wrap connector.
   Note: The 'Received' line
                                       043
   displayed may change with the
                                       - Probe the extra 'Received' line
   wrap
          connector removed.
                                        at probe point C.
  Ignore this byte for now.
 - Probe the extra 'Transmitted'
                                       Up light: On
   line at probe point F.
                                       Down light: Off
 Up light: On
                                       Are the lights correct?
 Down light: Off
                                       YN
 Are the lights correct?
                                        044
 Y N
                                        - The EIA line Adapter card is
                                          defective (A-D7)(MIM 823).
   041
   THE SYMPTOMS INDICATE THAT THE
                                       045
   EXTRA
          'RECEIVED' LINE IS
                                       - Probe the extra 'Received' line
   PICKING UP THE 'RECEIVED'
                                        at probe point D.
   LINE.
                                       Up light: On
   - Reinstall
                   the
                            wrap
                                       Down light: Off
     connector.
   - Probe the extra 'Received'
                                       Are the lights correct?
     line at probe point B.
                                       Y N
   Up
       light: Off
   Down light: On
   Are the lights correct?
   Y N
                                         9
                                                   EC840874 PEC839787
0 9
                                       9 A
VWXY
                                       ΖA
                                                            MAP 3019-8
```

```
COMMUNICATIONS MAP
ZA
8 A
  8
           EIA WRAP ERROR MAP
                9 OF 12
           PAGE
  046
 - The EIA line Adapter card is
    defective (A-D7)(MIM 823).
  _ _ _ _ OR _ _ _ _
  - The logic board is defective.
047
- Power off.
- Remove the wrap connector.
- Remove the EIA line adapter
  card.
- Use the CE meter on the RX1
  scale to measure the resistance
  for a short to the 'Transmitted'
  line. A short will read less
  than 20 ohms. Measure the extra
  'Received' line at probe point
 D.
Is the line shorted to the line
being wrapped?
ΥN
 048
 The wrap connector is defective.
049
- Remove the parts listed below
 one at a time in the order given
  until the short goes away. The
 last part removed is defective.
- The internal cable.
- The communications MPU card.
- If the short is still present,
 the logic board is defective.
- If a 'Ros Patch' cable
                              i 5
  connected to the card,
GO TO MAP 0600, ENTRY POINT A.
                                        1
```

l,

MAP 3019-9 Μ 8 050 - Remove the internal cable - Probe the extra 'Transmitted' line at probe point E. Up light: On Down light: Off Are the lights correct? YN 051 - The internal cable is defective. 052 - Probe the extra 'Iransmitted' line at probe point D. light: On Up Down light: Off Are the lights correct? YN 053 - Defective communications MPU card (A-E5)(MIM 811). - If a 'Ros Patch' cable is connected to the card, GO TO MAP 0600, ENTRY POINT A. 054 - Probe the extra 'Transmitted' line at probe point C. Up light: On Down light: Off Are the lights correct? Y N 055 - The logic board is defective. 0 EC840874 PEC839787 Α

MAP 3019-9

В

```
COMMUNICATIONS MAP
Α
                                       v
                                                            MAP 3019-10
В
                                       8
9
           EIA WRAP ERROR MAP
           PAGE 10 OF 12
056
                                       061
- Probe the extra 'Transmitted'
                                       THE SYMPTOMS INDICATE THAT THE
 line at probe point B.
                                       EXTRA LINE IS PICKING UP THE
                                       WRAPPED LINE.
Up light: Off
Down light: On
                                       - Remove the wrap connector.
                                         Note: The 'Received'
                                                                    line
Are the lights correct?
                                         displayed may change with the
ΥN
                                         wrap connector removed. Ignore
                                         this byte for now.
  057
                                       - Probe the extra 'Transmitted'
  - The EIA line adapter card is
                                         line at probe point F.
   defective (A-D7)(MIM 823).
                                       Up
                                            light: On or Pulsing.
058
                                       Down light: On or Pulsing.
- Probe the extra 'Transmitted'
 line at probe point A.
                                       Are the lights correct?
                                       ΥN
Up light: Off
Down light: On
                                         062
                                         THE SYMPTOMS INDICATE THAT THE
Are the lights correct?
                                         EXTRA LINE IS PICKING UP THE
YN
                                         'RECEIVED' LINE (WHICH IS UNDER
                                         TEST).
  059
 - The logic board is defective.
                                         - Reinstall the wrap connector.
                                         - Probe the extra 'Received'
060
                                           line at probe point B.
- The EIA line adapter card is
  defective (A-D7)(MIM 823).
                                         Up light: On or Pulsing.
                                         Down light: On or Pulsing.
____ OR ____
                                         Are the lights correct?
- Defective communications
                             MPU
                                         YN
 card (A-E5)(MIM 811).
- If a 'Ros' Patch' cable
                               is
  connected to the card,
GO TO MAP 0600, ENTRY POINT A.
                                       1 1 1
                                                    EC840874
                                       1 1 1
                                                               PEC839787
                                       AAA
                                       CDE
                                                             MAP 3019-10
```

l

(

(

```
A A
           COMMUNICATIONS MAP
                                                             MAP 3019-11
                                        A A
DE
                                        CF
           EIA WRAP ERROR MAP
1 1
                                        1
0 0
                                        0
           PAGE 11 OF 12
 063
                                          068
 - The logic board is defective.
                                          - Power off.
                                          - Remove the wrap connector.
 _ _ _ _ OR _ _ _ _ _
                                          - Remove the EIA line adapter
                                           card.
                                         - Use the CE meter on the RX1
 - Defective communications MPU
   card (A-E5)(MIM 811).
                                           scale
                                                   to
                                                          measure
                                                                      the
 - If a 'Ros Patch' cable is
                                           resistance for a short to the
   connected to the card,
                                            'Transmitted' line. A short
 GO TO MAP 0600, ENTRY POINT A.
                                           will read less than 20 ohms.
                                           Measure the extra 'Received'
064
                                           line at probe point D.
- Probe the extra 'Received' line
 at probe point C.
                                          Is the line shorted to the line
                                          being wrapped?
    light: On or Pulsing.
                                          YN
Up
Down light: On or Pulsing.
                                           069
Are the lights correct?
                                           - The wrap
                                                          connector
                                                                      is
YN
                                             defective.
                                          070
 065
 - The EIA line adapter card is
                                          - Remove the parts listed below
   defective (A-D7)(MIM 823).
                                           one at a time in the order
                                           given until the short goes
066
                                           away. The last part removed
- Probe the extra 'Received' line
                                           is defective.
 at probe point D.
                                          - The internal cable.
                                          - The communications MPU card.
Up light: On or Pulsing.
                                          - If the short is still present,
Down light: On or Pulsing.
                                           the logic board is defective.
                                          - If a 'Ros Patch' cable is
                                           connected to the card,
Are the lights correct?
                                          GO TO MAP 0600, ENTRY POINT A.
ΥN
 067
                                        071
 - The EIA line adapter card is
                                        - Remove the internal cable
   defective (A-D7)(MIM 823).
                                        - Probe the extra 'Transmitted'
                                         line at probe point E.
 _ _ _ _ OR _ _ _ _
                                            light: On or Pulsing.
                                        Up
 - The logic board is defective.
                                        Down light: On or Pulsing.
                                        Are the lights correct?
                                        Y N
                                        1 1
                                        2 2
                                                    EC840874 PEC839787
Α
                                        A A
                                        GH
                                                             MAP 3019-11
F
```

```
COMMUNICATIONS MAP
A A
                                                             MAP 3019-12
                                        A A
GΗ
                                        JK
           EIA WRAP ERROR MAP
1 1
1 1
           PAGE 12 OF 12
  072
                                          078
  - The
          internal
                      cable
                               15
                                          - The EIA line adapter card is
   defective.
                                            defective (A-D7)(MIM 823).
073
                                        079
                                        - Probe the extra 'Transmitted'
- Probe the extra 'Transmitted'
 line at probe point D.
                                          line at probe point A.
Up
    light: On or Pulsing.
                                        Up
                                             light: On or Pulsing.
Down light: On or Pulsing.
                                        Down light: On or Pulsing.
Are the lights correct?
                                        Are the lights correct?
YN
                                        YN
 074
                                          080
 - Defective communications MPU
                                          - The logic board is defective.
   card (A-E5)(MIM 811).
 - If a 'Ros Patch' cable is
                                        081
   connected to the card,
                                        - Defective communications
                                                                       MPU
 GO TO MAP 0600, ENTRY POINT A.
                                          card (A-E5)(MIM 811).
                                        - If a 'Ros Patch'
                                                              cable is
075
                                          connected to the card,
- Probe the extra 'Transmitted'
                                       GO TO MAP 0600, ENTRY POINT A.
 line at probe point C.
Up
    light: On or Pulsing.
Down light: On or Pulsing.
Are the lights correct?
YN
 076
 - The logic board is defective.
077
- Probe the extra 'Transmitted'
 line at probe point B.
Up light: On or Pulsing.
Down light: On or Pulsing.
Are the lights correct?
Y N
                                                     EC840874 PEC839787
A A
```

JΚ

MAP 3019-12

IBM 5285 PRINTER MAP

PRINTER ENTRY MAP

PAGE 1 OF 2

ENTRY POINTS

FROM	ENTER	THIS MAP	
MAP	ENTRY	PAGE	STEP
Number	Point	NUMBER	Number
100	A	1	001
220	A	1	001
300	A	1	001

EXIT POINTS

EXIT TH	IS MAP	то	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY Point
1 2	004	0100	A A
2	008	0600	A

```
001
```

(ENTRY POINT A)

This is the Entry MAP for the printer.

Have you been through the Printer MAPs? Y N

002 Go to the printer entry map.

003

- Power off the system.

- Open diskette locking levers on all drives.
- Wait 30 seconds and power on the system.

Is the Condition Code Table displayed (MIM 931)? Y N 004

GO TO MAP 0100, ENTRY POINT A.

005

Is condition code 10 displayed for the Printer Attachment MPU (MIM 931)? Y N | |

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A B

MAP	7000-1

EC840874 PEC839787

```
AB
          PRINTER MAP
1 1
          PRINTER ENTRY
           PAGE 2 OF 2
 006
 Is condition code 08 or 04
 displayed for the Printer
 Attachment MPU (MIM 931)?
 YN
   007
   - Defective Printer Attachment
    MPU card (A-D5) (MIM 501).
   - If a 'ROS Patch' cable is
     connected to the card
   GO TO MAP 0600, ENTRY POINT A.
   ____ OR ____
   - Defective Diskette/Main MPU
     card (A-C1) (MIM 501).
   - If a 'ROS Patch' cable is
    connected to the card
   GO TO MAP 0600,
   ENTRY POINT A.
 008
 - Defective Printer Attachment
   MPU card (A-D5) (MIM 501).
 - If a 'ROS Patch' cable is
  connected to the card
 GO TO MAP 0600, ENTRY POINT A.
009
- 'IPL' the system using a
 diagnostic diskette (MIM 941).
- Load and run the Printer
 Attachment MPU MDI 7001 (MIM
 961).
- Follow the instructions on the
```

```
    Follow the instructions on the 
display.
```

MAP 7000-2

1

IBM 5285 POWER MAP

POWER ENTRY MAP

PAGE 1 OF 5

ENTRY POINTS

ENTER	THIS MAP	
ENTRY	PAGE	STEP
POINT	NUMBER	NUMBER
A	1	001
А	1	001
Α	1	001
	ENTRY POINT A A A A A A A A A A A	POINT NUMBER A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1

EXIT POINTS

EXIT TH	IS MAP	то	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	004	8030	A

```
001
```

(ENTRY POINT A)

```
    Power off the controller.
    Check fuses F1-F2-F3-F4-F6 and
CB1. (F6 present when
communications feature
installed).
```

Are the fuses and CB1 OK? Y N 002 - Replace the open fuse or reset CB1. - Power on. Does the fuse open or CB1 trip again? Y N 003 Verify machine for correct operation. 004

GO TO MAP 8030, ENTRY POINT A.

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MAP 8000-1

2

A

ļ

```
А
           POWER MAP
                                       BC
1
           POWER ENTRY
           PAGE 2 OF 5
005
- Power on the Controller.
Is the diskette drive motor(s)
running?
YN
 006
 - The problem is in the AC
 distribution to the diskette
 drive(s) (MIM 451 and 453).
007
Is the fan motor running?
YN
 008
 - The problem is in the AC
distribution to the fan (MIM
 451, 453 and 457).
009
Is the display completely dark?
YN
 010
GO TO PAGE 3, STEP 016,
ENTRY POINT B.
                                       015
                                       GO TO PAGE 3, STEP 016,
011
                                       ENTRY POINT B.
Is the display CRT filament on?
Y N
```

```
012
* * * * * * * * * * * * * * *
            DANGER
* * * * * * * * * * * * * * *
   THE NEXT PROCEDURE IS A
   POSSIBLE SHOCK HAZARD,
    BE EXTRA CAREFUL.
- Check for 99 to 121 volts AC
 between J5-1 and J5-6 (MIM 451
  and 457).
Is the AC voltage present?
YN
 013
 - Defective Power Supply (MIM
 470).
```

- The problem is in the Display.

GO TO MAP 1010, ENTRY POINT A

014

MAP 8000-2

EC840874 PEC839787

MAP 8000-3 DΕ POWER MAP POWER ENTRY PAGE 3 OF 5 016 019 (ENTRY POINT B) - Defective power supply and AC capacitor C7 (MIM 470 and 476). - Check all DC output voltages at J2 and J4 (MIM 451, 457 and 461). 020 NOTE: J4 will only be present if Are there any voltages missing at the Communication feature is J2 or J4? Y N installed. 021 Are there any output voltages present? Are all the voltages within tolerance at J2 or J4? YN YN 017 022 * * * * * * * * * * * * * * Incorrect output voltage can DANGER * * * * * * * * * * * * * * * be caused by an open AC capacitor (C7), an incorrect THE NEXT PROCEDURE IS A setting of primary taps on transformer (T1), an excessive POSSIBLE SHOCK HAZARD, BE EXTRA CAREFUL. load on the secondary, а defective diode or ground in the power supply (MIM 451 and 457). 023 Did you enter this MAP because - Check primary input voltage at TB1 (MIM 451 and 457). of a missing voltage? Y N - Check that the customers input voltage and the machine transformer (T1) taps are matched correctly (MIM 451 and 457). Is the voltage correct? YN 018 - The customers supply is incorrect or the line cord is open. EC840874 PEC839787 4 4 4 FGH MAP 8000-3 DE

```
FGH
           POWER MAP
                                       Μ
                                                            MAP 8000-4
333
           POWER ENTRY
           PAGE 4 OF 5
   024
                                       029
   - Check 'ripple' on all DC
                                       Is -5 Vdc the missing voltage?
     voltages (MIM 463).
                                       ΥN
   - If excessive ripple is found
                                         030
     on the +24, -5 or +8.5 Vdc
                                         Is +24 Vdc the missing voltage?
     outputs the Base Board
                                         YN
     assembly is defective (MIM
     474).
                                          031
                                           - Check for 7.65 to 9.35 Volts
   _ _ _ _ OR _ _ _ _
                                            AC at the Feature board
                                            assembly from J3-3 to J3-4
                                            and from J3-1 to J3-4 (MIM
   - Defective Power Supply if
     excessive ripple is found on
                                            451 and 457).
     the +5 Vdc output (MIM 470).
                                           Are the AC voltages present at
   _ _ _ _ OR _ _ _ _
                                           both points?
                                           ΥN
   - Defective Feature board or
     base board assembly
                              i f
                                           032
     excessive ripple is found on
                                            - Defective cable from J2 to
     the -8.5 Vdc output (MIM 471
                                              J3 (MIM 451 and 457).
     and 474).
                                          033
 025

    Defective

                                                        Feature board
 - Defective DC distribution
                                            assembly (MIM 471).
   cable.
 - Use MIM 455 to isolate the
                                         034
   problem.
                                         - Check for 21.6 to 26.4 Volts
                                         AC at the Base Board assembly
026
                                         from J1-1 to J1-5 and J1-2 to
                                         J1-5 (MIM 451 and 457).
Is there more than 1 voltage
missing?
Y N
                                         Are the AC voltages present at
                                         both points?
 027
                                         Y N
 Is +5 Vdc the missing voltage?
 YN
                                          035
                                          - Defective power supply and
                                            AC capacitor C7 (MIM 470 and
   028
   Is +8.5 Vdc the
                         missing
                                            476)
   voltage?
   YN
                                         036
                                         - Defective base board assembly
                                           (MIM 474).
                                                   EC840874 PEC839787
5 5 5
                                       5
JKLM
                                       Ν
                                                            MAP 8000-4
```

```
KLN
           POWER MAP
                                       J
4 4 4
                                       4
           POWER ENTRY
           PAGE 5 OF 5
   037
   - Check for 4.5 to 5.5 Volts
     AC at
             the Base Board
     assembly from J1-7 to J1-6
     and J1-8 to J1-6 (MIM 451
     and 457).
   Are the AC voltages present at
   both points?
   Y N
     038
     - Defective power supply and
       AC capacitor C7 (MIM 470
       and 476).
   039
   - Defective
                base
                          board
     assembly (MIM 474).
  040
  - Check for 7.65 to 9.35 Volts
   AC at the Base Board assembly
   from J1-9 to J1-4 and J1-10 to
   J1-4 (MIM 451 and 457).
 Are the AC voltages present at
 both points?
 YN
   041
   - Defective power supply and
     AC capacitor C7 (MIM 470 and
     476).
 042
 - Defective base board assembly
   (MIM 474).
043
- Defective power supply and AC
  capacitor C7 (MIM 470 and 476).
```

044 - Defective power supply and AC capacitor C7 (MIM 470 and 476).

IBM 5285 POWER MAP EF D.C. DISTRIBUTION MAP PAGE 1 OF 3 ENTRY POINTS 006 معد وال جور بعد على على على على على على الله على على على على على على على الله الله على على على على على على على - Power off. FROM ENTER THIS MAP - Disconnect the plug at J4 (MIM 451 and 457). MAP ENTRY PAGE STEP NUMBER POINT NUMBER NUMBER - Replace the fuse. - Power on. 8000 A 1 001 Does F6 open again? ΥN 007 001 (ENTRY POINT A) - Defective feature PC board. Is fuse F4 open? 008 YN - Problem is in the -8.5 Vdc distribution to the Logic 002 board (MIM 455). Is CB1 tripped? - Remove modem card A-D7 to ΥN isolate the problem. 003 009 - Power off. Is fuse F1 open? - Disconnect the plug at J2 (MIM ΥN 451 and 457). - Replace the fuse. 004 - Power on. Is fuse F2 open? ΥN Does F3 open again? ΥN 005 Is fuse F3 open? 010 ΥN - Problem is in the +24 Vdc distribution to the diskette drives or remote keyboard display. - Remove the cables until problem is isolated (MIM 455). 011 - Defective base PC board (MIM 474). Copyright IBM Corp 1980 EC840874 PEC839787 3222

ABCDEF

MAP 8030-1

MAP 8030-1

```
D
           POWER MAP
                                        B C
                                                             MAP 8030-2
1
                                        1 1
           D.C. DISTRIBUTION
           PAGE 2 OF
                         3
012
                                          017
- Power off.
                                          - Power off.
- Disconnect the plug at J2 (MIM
                                          - Disconnect the plug at J2 (MIM
 451 and 457).
                                            451 and 457).
- Replace the fuse.
                                          - Replace the fuse.
- Power on.
                                          - Power on.
Does F2 open again?
                                          Does Fl open again?
YN
                                          YN
 013
                                           018
 - Problem is in the -5 Vdc
                                           - Problem is in the +8.5 Vdc
   distribution.
                                             distribution to the Logic
 - Power off.
                                             board.
 - Reconnect the plug at J2.
                                           - Reconnect the plug at J2.
 - Replace the fuse.
                                            - Remove cards until problem
 - See
        the
               DC
                     distribution
                                             is isolated (MIM 501 and
   diagram MIM 455.
                                              531).
 - Disconnect the diskette drive
   and keyboard DC connectors.
                                          019
 - Power on.
                                          - Defective base PC board (MIM
                                            474).
 Does F2 open again?
                                        020
 YN
                                        - Power off.
   014
                                        - Disconnect the plug at J2 (MIM
   - Problem is in the diskette
                                          451 and 457).
     drives,
              keyboard or DC
                                        - Reset CB1.
     distribution cables.
                                        - Power on.
   - Reconnect
                 cables
                           until
     problem is isolated.
                                        Does CB1 trip again?
                                        YN
 015
 - Problem is in the Logic board,
                                          021
                                          - Problem is in the +5 Vdc
   cards
          or DC distribution
   cables.
                                           distribution.
 - Remove cards and cables until
                                          - Power off.
   problem is isolated (MIM 455,
                                          - Reconnect the plug at J2.
   501 and 531).
                                          - Reset CB1.
                                                  the
                                          - See
                                                        DC
                                                            distribution
016
                                            diagram MIM 455.
- Defective base PC board (MIM
                                          - Disconnect the diskette drive
 474).
                                            and keyboard DC connectors.
                                          - Power on.
                                          (Step 021 continues)
```

```
EC840874 PEC839787
```

MAP 8030-2

```
POWER MAP
A G
1 2
           D.C. DISTRIBUTION
           PAGE 3 OF 3
   (Step 021 continued)
   Does CB1 trip again?
   ΥN
    022
     - Problem is in the diskette
       drives, keyboard or DC
       distribution cables.
     - Reconnect cables until
       problem is isolated.
   023
   - Problem is in the Logic
             cards or
     board,
                             DC
     distribution cables.
   - Remove cards and cables
     until problem is isolated
     (MIM 455, 501 and 531).
 024
 - Defective power supply and AC
   capacitor C7 (MIM 470 and
   476).
025
- Power off.
- Disconnect the plug at J5 (MIM
 451 and 457).
- Replace the open fuse.
- Power on.
Does the fuse open again?
Y N
 026
 - The J5 connector distributes
   AC voltage to the Display
   Unit.
 - Use
        the AC distribution
   diagram MIM 453 and wiring
   diagram MIM 457 to locate the
   cause of of overload in the J5
   circuit.
```

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- Check for a defective fan.
- If necessary, remove fan from TBl and TB3 (MIM 451 and 457).
- If no problem is found with a fan, replace the power supply and AC capacitor C7 (MIM 470).

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