

DH11

SINGLE LINE DATA

MD-11-DZDHF-B

EP-DZDHF-B-DL-A

OCT 1976

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100-17800

PRODUCT CODE: 14141400-10-000-0-0-0
PRODUCT NAME: CH-11 SINGLE LINE DATA 1000
DATE: 09-1978
MAINTAINER: DIAGNOSTIC GROUP
AUTHOR: 100-000-00-00

“*It is the first time in my life that I have been so deeply moved by a speech.*”

THE BOSTON HERALD AND COURIER, BOSTON, MASS., SATURDAY, NOVEMBER 19, 1853.

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APPENDIX A: LIST OF DIGITAL EQUIPMENT CORPORATION

C01

REF ID: A62112776 22-149-76 10144 PAGE 3

1. ABSTRACT

The report describes the data from previous test flights of the
T-38 aircraft. The data includes information on the aircraft's performance,
operating characteristics, and maintenance requirements.

2. REQUIREMENTS

2.1 EQUIPMENT

FOR-11 FAMILY STANDARD COMPUTER WITH 4KW OF MEMORY
ASR-33 TELETYPE OR EQUIVALENT
CHM-1 ASYNCHRONOUS MULTIPLEXER
CMU-1 MAINTENANCE CARD INSTALLED

2.2 STORAGE

THE PROGRAM LOADS INTO 4KW OF MEMORY

3. LOADING PROCEDURE

THE STANDARD PROCEDURE FOR LOADING ABSOLUTE BINARY TAPES
IS TO BE USED

4. STARTING PROCEDURE

4.1 CONTROL SWITCH SETTINGS

4.1.1 AFTER PROGRAM LOAD (INITIAL PROGRAM START)

ALL CONSOLE SWITCHES DOWN

4.1.2 TO MODIFY DEVICE VECTOR AND CONTROL REGISTER ADDRESSES
AFTER PROGRAM RESTART

SW00=1

4.1.3 TO START PROGRAM AT SELECTED TEST AFTER PROGRAM RESTART

SW01=1

4.2 STARTING ADDRESS

THE STARTING ADDRESS FOR ALL TESTS IS 000E00

THE RESTART ADDRESS FOR ALL TESTS IS 000E000

THE STARTING ADDRESS TO ENTER A SELECTED TEST IS 000E00

4.3 PROGRAM AND/OR OPERATOR ACTION

4.3.1 INITIAL PROGRAM START

4.3.1.1 LOAD PROGRAM INTO MEMORY

4.3.1.1.1 LOAD ADDRESS 000E00

4.3.1.1.2 CLEAR CONSOLE SWITCHES

4.3.1.1.3 PRESS START

4.3.1.1.4 THE PROGRAM WILL TYPE "CHM-1 SINGLE-LINE DATA TEST"
AND WILL THEN TYPE "VECTOR ADDRESS--" AND WAIT FOR AN
INPUT FROM THE TELETYPE KEYBOARD.

4.3 (CONT'D)

4.3.1.6 TYPE IN THE ADDRESS OF THE RECEIVER INTERRUPT VECTOR FOR THE DH11 TO BE TESTED FOLLOWED BY <CARRIAGE RETURN>

NOTE: WORDS IN ANGLE BRACKETS, I.E. <CARRIAGE RETURN> MEAN THAT THE TELETYPE KEY WITH THE NAMED FUNCTION SHOULD BE STRUCK
IF AN INCORRECT ADDRESS IS ENTERED, THE PROGRAM WILL TYPE "?" AND WILL REPEAT THE SECOND MESSAGE OF 4.3.1.5

4.3.1.7 THE PROGRAM WILL TYPE "CONTROL REGISTER ADDRESS-" AND WAIT FOR AN INPUT FROM THE TELETYPE KEYBOARD

4.3.1.8 TYPE IN THE ADDRESS OF THE SYSTEM CONTROL REGISTER OF THE DH11 TO BE TESTED FOLLOWED BY <CARRIAGE RETURN>

IF AN INCORRECT ADDRESS IS TYPED, THE PROGRAM WILL TYPE "?" AND WILL THEN REPEAT THE MESSAGE OF 4.3.1.7

4.3.1.9 THE PROGRAM WILL TYPE "R" TO INDICATE THAT IT IS ABOUT TO START TESTING, AND THEN TESTING WILL BEGIN

4.3.2 PROGRAM RESTART WITH ALL SWITCHES DOWN

4.3.2.1 PERFORM 4.3.1.2 TO 4.3.1.5

4.3.2.2 THE PROGRAM WILL TYPE "DH11 SINGLE LINE DATA TEST" AND WILL THEN CONTINUE AS DESCRIBED IN 4.3.1.9

4.3.3 PROGRAM RESTART WITH SW00=1

4.3.3.1 LOAD ADDRESS 000200

4.3.3.2 SET SW01=1

4.3.3.3 PRESS START

4.3.3.4 THE PROGRAM WILL PERFORM AS DESCRIBED IN 4.3.1.5 TO 4.3.1.9

4.3.4 PROGRAM RESTART WITH SW01=1

4.3.4.1 LOAD ADDRESS 000200

4.3.4.2 SET SW01=1

4.3.4.3 PRESS START

4.3.4.4 THE PROGRAM WILL TYPE "DH11 SINGLE LINE DATA TEST" AND WILL THEN TYPE "TEST FC-" AND WILL WAIT FOR AN INPUT FROM THE TELETYPE KEYBOARD

4.3.4.5 TYPE IN THE ADDRESS OF THE TEST AT WHICH THE PROGRAM IS TO BE STARTED FOLLOWED BY <CARRIAGE RETURN>

4.3.4.6 THE PROGRAM WILL TYPE R TO INDICATE THAT IT HAS STARTED AND WILL START TESTING AT THE SELECTED TEST.

NOTE: CARE MUST BE TAKEN WHEN THIS FEATURE IS USED, SINCE THERE IS NO PROTECTION AGAINST SELECTING AN ADDRESS THAT IS IN THE MIDDLE OF A TEST

NOTE: IF IT IS DESIRED TO LOOP ON THE TEST THAT IS SELECTED SET SW14=1 BEFORE ENTERING THE TEST ADDRESS

5. OPERATING PROCEDURE**5.1 OPERATIONAL SWITCH SETTINGS**

SW15=1. HALT ON ERROR
SW14=1. LOOP ON CURRENT TEST
SW13=1. SUPPRESS ERROR TYPEOUT
SW11=1. INHIBIT ITERATIONS
SW10=1. ESCAPE TO NEXT TEST ON ERROR
SW09=1. FREEZE VARIABLE PARAMETER IN CURRENT TEST
SW01=1. START PROGRAM AT SELECTED TEST
SW00=1. CHANGE PARAMETERS AT PROGRAM RESTART

5.2 SUBROUTINE ABSTRACTS**5.2.1 TRAPCATCHER (LOCATIONS 000000-000776)**

THIS ROUTINE IS USED TO INTERCEPT UNEXPECTED INTERRUPTS AND TRAPS. THE AREA FROM 000000-000776 IS LOADED WITH THE FOLLOWING SEQUENCE

8000
0400
7720
0000
7760
0000

IF AN UNEXPECTED INTERRUPT OR TRAP OCCURS, THE PROGRAM WILL HALT WITH THE PC 2 GREATER THAN THE ADDRESS TO WHICH THE PROGRAM TRAPPED. THE PROCESSOR STACK MAY BE EXAMINED TO DETERMINE WHERE THE PROGRAM WAS WHEN THE TRAP OR INTERRUPT OCCURED.

5.2.2 START (PROGRAM INITIALIZATION)

THIS ROUTINE INITIALIZES ALL PROGRAM FLAGS AND COUNTERS, TYPES THE PROGRAM TITLE MESSAGE, AND INPUTS THE VECTOR AND CONTROL REGISTER ADDRESSES OF THE DH11 TO BE TESTED.

5.2.3 BEGIN (PROGRAM START AND RESTART)

THIS ROUTINE IS ENTERED IMMEDIATELY AFTER "START" AND EACH TIME A PROGRAM PASS HAS BEEN COMPLETED. THE ROUTINE SETS UP THE PROCESSOR STACK AND STATUS WORD AND THEN TRANSFERS CONTROL TO THE TEST AT WHICH TESTING WILL BEGIN. IF SW01=0 WHEN THIS ROUTINE IS ENTERED TESTING WILL START AT T1 (TEST 1). IF SW01=1 WHEN THIS ROUTINE IS ENTERED, TESTING WILL START AT THE PC ENTERED FROM THE TELETYPE KEYBOARD.

5.2.4 EOP (END OF PASS)

THIS ROUTINE IS ENTERED ONCE PER PASS AFTER ALL TESTS HAVE BEEN COMPLETED. THIS ROUTINE TYPES THE MAINDEC IDENTIFICATION CODE OF THE PROGRAM, CLEARS ERROR FLAGS AND UPDATES THE PASS COUNT. IF THE PROGRAM WAS LOADED UNDER ACT11 OR DDP, THE ROUTINE CHECKS FOR RETURN TO THE ACT11 OR DDP MONITOR. IF THE PROGRAM IS NOT UNDER MONITOR CONTROL, THE ROUTINE TRANSFERS TO BEGIN.

5.2.5 SCOPER (SCOPE LOOP AND ITERATION HANDLER)

THIS ROUTINE IS ENTERED EACH TIME A TEST IS COMPLETED. THE ROUTINE CHECKS FOR THE FOLLOWING UPON ENTRY:

- A) IF SW10=1, THE ROUTINE WILL TRANSFER TO THE NEXT TEST IN SEQUENCE, AFTER CLEARING ERROR FLAGS.
- B) IF SW11=1, THE ROUTINE WILL TRANSFER TO THE NEXT TEST SEQUENCE, AFTER CLEARING ERROR FLAGS.
- C) IF SW14=1, THE ROUTINE WILL LOOP ON THE CURRENT TEST REGARDLESS OF THE ITERATION COUNT.

IF NONE OF THE ABOVE IS TRUE, THE ROUTINE WILL ADD 1 TO THE COUNT OF TEST ITERATIONS, AND COMPARE THIS VALUE TO THE NUMBER OF ITERATIONS THAT SHOULD BE PERFORMED. IF THESE NUMBERS ARE EQUAL, THE ROUTINE WILL TRANSFER TO THE NEXT TEST IN SEQUENCE. IF THE NUMBERS ARE NOT EQUAL, THE TEST CURRENTLY IN PROGRESS WILL BE REPEATED.

5.2.6 SCOP1R (FREEZE ON CURRENT DATA)

THE CALL TO THIS ROUTINE FOLLOWS IMMEDIATELY AFTER THE CALL TO THE ERROR HANDLER IN THOSE TESTS THAT HAVE VARIABLE PARAMETERS. THIS ROUTINE IS ALWAYS ENTERED IN THOSE TESTS, WHETHER OR NOT AN ERROR OCCURS.

IF SW09=1, THE ROUTINE WILL TRANSFER CONTROL BACK TO THE TEST AT A POINT WHICH WILL ALLOW REPEATING THE FUNCTION UNDER TEST CONTINUOUSLY WITH THE SAME DATA. IF THIS OPTION IS SELECTED, THE ROUTINE "SCOPER" IS NEVER ENTERED AND ITERATION COUNTS WILL NOT BE UPDATED.

5.2.7 ERRORS (ERROR HANDLER)

THIS ROUTINE IS ENTERED UPON ERROR DETECTION ONLY.
WITH ALL CONSOLE SWITCHES DOWN, THE ROUTINE PROCEEDS AS FOLLOWS:

- A) THE PC OF THE INSTRUCTION THAT CALLED THE ERROR HANDLER
IS ACCESSED THRU THE STACK, AND THEN THE EMT INSTRUCTION
ITSELF IS FETCHED. THE 8 LSB OF THE EMT
INSTRUCTION ARE THE ERROR CODE. THIS CODE IS
USED TO ACCESS A TABLE OF ERROR MESSAGES AND ERROR
DATA STORAGE LOCATIONS.
- B) IF THE TEST THAT FAILED DID NOT FAIL PREVIOUSLY
DURING THIS PASS, A COMPLETE ERROR REPORT IS MADE
IF THE TEST THAT FAILED FAILED MOR THAT ONCE DURING
THE CURRENT PASS, ONLY THE DATA RELATING TO THE FAILUER
IS TYPED. IF SW13=1, NO ERROR TYPEOUT IS MADE.
- C) THE ROUTINE NOW CHECKS FOR HALT ON ERROR. IF SW15=1
THE PROGRAM WILL HALT WITH THE PC OF THE CALL TO
THE ERROR ROUTINE IN R0. IF SW15=0, THE PROGRAM WILL
NOT HALT, BUT WILL CHECK FOR ESCAPE TO NEXT TEST.
- D) IF SW10=0, THE ROUTINE WILL RETURN
TO THE TEST IN PROGRESS. IF SW10=1, THE ROUTINE WILL
ABORT THE CURRENT TEST, AND TRANSFER TO THE NEXT
TEST IN SEQUENCE, THRU THE ROUTINE "SCOPER".

5.2.8 TRPSRV (TRAP DECODE AND DISPATCH)

THIS ROUTINE DECODES THE 8 LSB OF THE TRAP INSTRUCTION
THAT CAUSED TH PROGRAM INTERRUPT, AND TRANSFERS CONTROL
TO THE ROUTINE THRU THE TABLE "TRPTAB" USING THE 8 LSB
OF THE TRAP INSTRUCTION AS AN OFFSET TO THE POINTER TO
THE ROUTINE TO BE ENTERED.

- 5.3 PROGRAM AND OR OPERATOR ACTION
 - 5.3.1 PROGRAM START WITH ALL SWITCHES DOWN
 - 5.3.1.1 REFER TO SECTIONS 4.3.1 AND 4.3.2 FOR INITIAL PROGRAM BEHAVIOR.
 - 5.3.1.2 AFTER "R" HAS BEEN TYPED BY THE PROGRAM, TEST EXECUTION WILL BEGIN. EACH TEST WILL BE REPEATED A SELECTED NUMBER OF ITERATIONS (SEE LISTING FOR EXACT NUMBER FOR EACH TEST) AND THEN THE PROGRAM WILL PROCEED TO THE NEXT TEST.
 - 5.3.1.3 WHEN ALL ITERATIONS HAVE BEEN COMPLETED, THE PROGRAM WILL TYPE "DZDHF" AND THEN RESTART TESTING AT TEST 1 (LOCATION T1 IN THE PROGRAM).
 - 5.3.1.4 IF AN ERROR OCCURS, THE PROGRAM WILL TYPE AN APPROPRIATE ERROR MESSAGE, AND THEN CONTINUE THE TEST IN PROGRESS.
 - 5.3.2 PROGRAM START WITH SW00=1
 - THE PROGRAM WILL PERFORM AS DESCRIBED IN 4.3.1 AND 5.3.1
 - 5.3.3 PROGRAM START WITH SW01=1
 - 5.3.3.1 REFER TO SECTION 4.3.4 FOR INITIAL PROGRAM BEHAVIOR
 - 5.3.3.2 TEST EXECUTION WILL START AT THE ADDRESS SPECIFIED AND WILL CONTINUE AS DESCRIBED IN 5.3.1.2
 - 5.3.3.3 AFTER "DZDHF" HAS BEEN TYPED, THE PROGRAM WILL RESUME TESTING AT TEST 1
 - 5.3.4 PROGRAM OPERATION WITH SW15=1
 - SAME AS 5.3.1, EXCEPT THAT IN THE CASE OF AN ERROR, THE PROGRAM WILL HALT AFTER THE ERROR TYPEOUT, AND THE PC+2 OF THE CALL TO THE ERROR ROUTINE WILL BE DISPLAYED IN R0.
 - 5.3.5 PROGRAM OPERATION WITH SW13=1
 - SAME AS 5.3.1 EXCEPT THAT NO ERROR TYPEOUTS WILL OCCUR
 - 5.3.6 PROGRAM OPERATION WITH SW11=1
 - SAME AS 5.3.1 EXCEPT THAT EACH TEST WILL BE REPEATED ONCE ONLY
 - 5.3.7 PROGRAM OPERATION WITH SW10=1
 - SAME AS 5.3.1, EXCEPT THAT IN THE CASE OF AN ERROR THE CURRENT TEST WILL BE ABORTED, AND THE PROGRAM WILL PROCEED TO THE NEXT TEST IN SEQUENCE.

5. (CONT'D)

5.3.8 PROGRAM OPERATION WITH SW14=1, OR SW09=1

THESE FUNCTIONS ARE NORMALLY USED FOR TROUBLE SHOOTING.
SEE SECTION 5.3 FOR THEIR USE.

6. ERRORS

6.1 ERROR HALTS

THE ERROR MESSAGE FORMAT FOR ALL ERROR TYPEOUTS
IS AS FOLLOWS

PC+2 MESSAGE
 HEADER (IF APPLICABLE)
 DATA (IF APPLICABLE)

WHERE

PC+2 IS THE ADDRESS OF THE CALL TO THE ERROR HANDLER + 2
MESSAGE IS AN ASCII MESSAGE DESCRIBING (BRIEFLY) THE FAILURE
HEADER IS A DESCRIPTION OF THE DATA TO FOLLOW
DATA IS OCTAL INFORMATION RELATING TO THE CAUSE OF THE FAILURE
IF THE SAME ERROR OCCURS IN A GIVEN TEST ON THE SAME
PASS, AND IF DATA IS ASSOCIATED WITH THAT ERROR, ONLY
DATA IS TYPED ON SUCCEEDING ERROR TYPEOUTS

IF NO DATA IS ASSOCIATED WITH THE ERROR
THE COMPLETE ERROR MESSAGE IS TYPED.

6.1.1 ERROR DESCRIPTIONS

SEE LISTING FOR DETAILS OF ERRORS

6.2 ERROR RECOVERY

6.2.1 SW15=0

IF THE PROGRAM IS RUN WITH SW15=0, NO OPERATOR ACTION IS
REQUIRED TO CONTINUE TESTING

6.2.2 SW15=1

IF THE PROGRAM IS RUN WITH SW15=1, TO CONTINUE TESTING
AFTER THE PROGRAM HAS HALTED, PRESS THE PROCESSOR
CONSOLE CONTINUE SWITCH.

6.2.3 ILLEGAL INTERRUPTS

IF AN INTERRUPT OCCURS TO A VECTOR ADDRESS NOT
SELECTED DURING PROGRAM INITIALIZATION, THE PROGRAM WILL
HALT IN THE TRAPCATCHER. THE ADDRESS AT WHICH
THE PROGRAM HALTS IS 2 GREATER THAN THE ADDRESS
TO WHICH THE INTERRUPT OCCURRED. THE PROGRAM MUST BE
RESTARTED AT 200 TO RECOVER FROM THIS ERROR.

K01

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DZDHF.B.PFC

6.3 SCOPE LOOPING

- 6.3.1 TO SCOPE ON A SPECIFIC TEST, SET SW14=1 AND SW13=1
THIS WILL CAUSE THE PROGRAM TO CONTINUOUSLY LOOP ON THE
SAME TEST, AND WILL CAUSE ALL ERROR TYPEOUTS TO BE INHIBITED
- 6.3.2 TO SCOPE ON A SPECIFIC VALUE OF A PARAMETER WITHIN
A TEST, SET SW09=1 TO FREEZE THE DATA
(SEE LISTING FOR THOSE TESTS THAT INCORPORATE THIS FEATURE)

6. (CONT'D)

- 6.3.3 PROGRAM START TO SCOPE LOOP ON SELECTED TEST
PERFORM SECTION 4.3.4 WITH SW14=1

7. RESTRICTIONS

7.1 STARTING

THE DH11 TEST CARD MUST BE INSTALLED

7.2 RUNNING

NONE

8. MISCELLANEOUS

8.1 EXECUTION TIME

THE TIME FOR ONE PASS OF THE PROGRAM (END OF
TYPEOUT OF DZDHF TO END OF TYPEOUT OF DZDHF)
IS GIVEN FOR VARIOUS PROCESSORS IN THE TABLE BELOW

PROCESSOR	TIME
PDP-11/05,10	
PDP-11/20	
PDP-11/40	
PDP-11/45	

9. PROGRAM DESCRIPTION

THE FIRST GROUP OF TESTS TRANSMITS ALL CHARACTERS (0-377) ONE AT A TIME AT A LINE SPEED OF 9600 BAUD AND A CHARACTER LENGTH OF 9 BITS. EACH LINE IS CHECKED IN AN INDIVIDUAL LOOP. EACH TEST IN THIS GROUP CAN BE SET UP UNDER PROGRAM CONTROL TO LOOP ON A SINGLE CHARACTER USING THE FREEZE ON DATA (SW09) OPTION.

THE NEXT GROUP OF TESTS VERIFIES THAT ALL CHARACTERS CAN BE TRANSMITTED AT EACH STANDARD SPEED (50-9600 BAUD) AT 8 BITS PER CHARACTER. EACH LINE IS TESTED IN AN INDIVIDUAL TEST LOOP, AND A PARTICULAR SPEED CAN BE CHOSEN FOR SCOPING BY USING THE FREEZE ON DATA OPTION.

THE FINAL GROUP OF TESTS TRANSMITS ALL CHARACTERS AT EACH CHARACTER LENGTH (5-8 BITS) AT 9600 BAUD ON A SINGLE LINE. EACH LINE IS TESTED IN AN INDIVIDUAL TEST LOOP, AND A PARTICULAR CHARACTER LENGTH CAN BE CHOSEN FOR SCOPING USING THE FREEZE ON DATA (SW09) OPTION.

10. LISTING

!

:DH11 SINGLE LINE DATA TEST
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:STARTING PROCEDURE
:LOAD PROGRAM
:LOAD ADDRESS 000200
:PRESS START
:PROGRAM WILL TYPE DH11 SINGLE LINE DATA TEST
:PROGRAM WILL TYPE "VECTOR ADDRESS-"
:TYPE IN THE ADDRESS OF THE RECEIVER INTERRUPT VECTOR
:FOR THE DH11 TO BE TESTED, FOLLOWED BY <CARRIAGE RETURN>
:PROGRAM WILL TYPE "CONTROL REGISTER ADDRESS-"
:TYPE IN THE ADDRESS OF THE SYSTEM CONTROL REGISTER
:FOR THE DH11 TO BE TESTED, FOLLOWED BY <CARRIAGE RETURN>
:PROGRAM WILL TYPE "R" TO INDICATE THAT TESTING HAS STARTED
:AT THE END OF A PASS, PROGRAM WILL TYPE " D2DHF "
:AND THEN RESUM TESTING

:SWITCH REGISTER OPTIONS

100000	SW15=100000	:=1, HALT ON ERROR
040000	SW14=40000	:=1, LOOP ON CURRENT TEST
020000	SW13=20000	:=1, INHIBIT ERROR TIMEOUT
010000	SW12=10000	
004000	SW11=4000	:=1, INHIBIT ITERATIONS
002000	SW10=2000	:=1, ESCAPE TO NEXT TEST ON ERROR
001000	SW09=1000	:=1, LOOP WITH CURRENT DATA
000400	SW08=400	

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2717321

M01

SW06=100
SW05=40
SW04=20
SW03=10
SW02=4
SW01=2
SW00=1
;RESTART PROGRAM AT SELECTED TEST
;PRESELECT VECTOR AND CONTROL REGISTER
;ADDRESS AFTER PROGRAM RESTART

NO1

:REGISTER DEFINITIONS

000000	R0=%0	:GENERAL REGISTER
000001	R1=%1	:GENERAL REGISTER
000002	R2=%2	:GENERAL REGISTER
000003	R3=%3	:GENERAL REGISTER
000004	R4=%4	:GENERAL REGISTER
000005	R5=%5	:GENERAL REGISTER
000006	SP=%6	:PROCESSOR STACK POINTER
000007	PC=%7	:PROGRAM COUNTER

:LOCATION EQUIVALENCIES

177570	SWR=177570	:CONSOLE SWITCH REGISTER
177570	LIGHTS=177570	:PDP-11/45 DISPLAY REGISTER
177776	PS=177776	:PROCESSOR STATUS WORD
017776	STACK=ENDOD+200	:START OF PROCESSOR STACK

:INSTRUCTION DEFINITIONS

005746	PUSH1SP=5746	:DECREMENT PROCESSOR STACK 1 WORD
005726	POP1SP=5726	:INCREMENT PROCESSOR STACK 1 WORD
0010004000	PUSHR0=10046	:SAVE R0 ON STACK
0010004000	POPR0=12600	:RESTORE R0 FROM STACK
00226626	PUSH2SP=24646	:DECREMENT STACK TWICE
00226626	POPS2SP=26626	:INCREMENT STACK TWICE
	.EQUIV EMT,HLT	:BASIC DEFINITION OF ERROR CALL

100000	BIT15=100000	
100000	BIT14=40000	
100000	BIT13=20000	
100000	BIT12=10000	
100000	BIT11=4000	
100000	BIT10=2000	
100000	BIT09=1000	
100000	BIT08=400	
100000	BIT07=200	
100000	BIT06=100	
100000	BIT05=40	
100000	BIT04=20	
100000	BIT03=10	
100000	BIT02=4	
100000	BIT01=2	
100000	BIT00=1	

REPORTER FOR ILLEGAL INTERRUPTS

E02

F02

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DDDFHFB.PFC

000674	000676
000711	000713
000712	000714
000713	000715
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:UNEXPECTED TRAP TO THIS LOCATION
:EXAMINE STACK TO FIND CAUSE
:UNEXPECTED TRAP TO THIS LOCATION
:EXAMINE STACK TO FIND CA

G02

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:STANDARD INTERRUPT VECTORS

0000024	0000024	.=24	PFAIL	:POWER FAIL HANDLER
0000024	0166326		340	:SERVICE AT LEVEL 7
0000026	0003456		ERRORS	:ERROR HANDLER
0000028	0166456		340	:SERVICE AT LEVEL 7
0000030	0003400		TRPSRV	:GENERAL HANDLER DISPATCH SERVICE
0000032	0166660		340	:SERVICE AT LEVEL 7
0000034	0003400			
0000036	0003400			
000200	000167	000574	.=200	JMP START :GO TO START OF PROGRAM

:DEFINITIONS FOR TRAP SUBROUTINE CALLS
:POINTERS TO SUBROUTINES CAN BE FOUND STARTING
:AT LOCATION "TRPTAB"

104400	SCOPE=TRAP+Y	:SCOPE LOOP AND ITERATION HANDLER
104401	TYPE=TRAP+Y	:TELETYPE OUTPUT ROUTINE
104402	OCTASC=TRAP+Y	:OCTAL TO ASCII CONVERSION
104403	INSTR=TRAP+Y	:INPUT ASCII STRING
104404	INSTER=TRAP+Y	:STRING INPUT ERROR
104405	PARAM=TRAP+Y	:CONVERT STRING TO OCTAL, CHECK LIMITS
104406	SAVOSRP=TRAP+Y	:SAVE R0-R5, PC
104407	RESOS=TRAP+Y	:RESTORE R0-R5
104410	SCOPE1=TRAP+Y	:CHECK FOR FREEZE ON CURRENT DATA
0000046	L0GICAL	
950 000002	400000	

001000

.=1000

:PROGRAM INITIALIZATION
:LOCK OUT INTERRUPTS
:SET UP PROCESSOR STACK
:SET UP POWER FAIL VECTOR
:CLEAR PROGRAM FLAGS AND COUNTS
:TYPE TITLE MESSAGE

001000	012767	000340	176770	START:	MOV #340,PS MOV #STACK,SP MOV #PFAIL,3#24 CLR STFLG CLR PASCNT CLR ERRONT CLR ERRFLG CLR ERRFLG TYPE MTITLE TST INIFLG BNE VEC1	:LOCK OUT INTERRUPTS :SET UP PROCESSOR STACK :SET UP POWER FAIL TRAP :CLEAR TEST START FLAG :CLEAR PASS COUNT :CLEAR ERROR COUNT :CLEAR ERROR FLAG :CLEAR LAST ERROR PC :TYPE TITLE MESSAGE :CHECK INITIALIZATION FLAG :IF NOT 0, CHECK SWITCHES :FOR REINITIALIZATION
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001056	000404				BR VEC2	
001060	032767	000001	176502	VEC1:	BIT #SW00,SWR BEQ BEGIN	:IF SW00=1, GET NEW VECTOR :AND CSR

001066	001445				MOV #300,R1	
001070	012701	000300		VEC2:	MOV #302,R2	
001074	012702	000300			MOV #4,R3	
001100	012703	000004			MOV R2,(R1)	
001104	010211				CLR (R2)	
001108	005012				ADD R3,R1	
001112	060302				ADD R3,R0	
001114	020127	001000			CMP R1,#1000	
001118	001321				199	

001122	104403				INSTR	:INPUT ADDRESS OF DEVICE VECTOR
001126	012033				MVECTOR	:MESSAGE "VECTOR ADDRESS-"
001130	104406				PARAM	:CONVERT STRING TO OCTAL
001134	0000300				300	:LOW LIMIT
001138	0000770				770	:HIGH LIMIT
001142	016142				DHRVEC	:LOCATIONS TO BE FILLED
001146	003				3	:NUMBER OF LOCATIONS
001150	004				4	:LSB MASK
001154	104403				INSTR	:INPUT ADDRESS OF DEVICE CSR
001158	012055				MREGAD	:MESSAGE "CONTROL REGISTER ADDRESS-"
001162	104405				PARAM	:CONVERT STRING TO OCTAL
001166	0000000				0	:LOW LIMIT
001170	177776				177776	:HIGH LIMIT
001174	016120				DHSR	:LOCATIONS TO BE FILLED
001178	007				7	:NUMBER OF LOCATIONS
001182	010				10	:LSB MASK
001186	016767	014754	014754		MOV DHSSR,DHSLR	:SET UP ADDRESS OF SILO
001190	005267	014750			INC DHSLR	:STATUS REGISTER HIGH BYTE
001194	005767	015016			TST INIFLG	:IF INITIALIZATION FLAG
001198	001002				BNE BEGIN	:IS CLEARED
001202	005167	015010			COM INIFLG	:SET IT

;PROGRAM START

907 :CHECK FOR PROGRAM START AT SELECTED ADDRESS

908 001202 012767 000340 176566 BEGIN:	MOV #340,PS	:LOCK OUT INTERRUPTS
909 001210 012706 017776 176346	MOV #STACK,SP	:SET UP PROCESSOR STACK
910 001214 032757 000002 176346	BIT #SW01,SWR	:IF SW01=1
911 001222 001410	BEQ 1\$:GET PC FOR PROGRAM START
912 001224 104403	INSTR	:GET PC
913 001226 017221	MTSTPC	:MESSAGE "TEST PC"
914 001230 101405	FARAM	:CONVERT STRING TO OCTAL
915 001232 000000	O	
916 001234 017500	17500	
917 001236 000207	RETURN	
918 001240 001	.BYTE 1	
919 001241 001	.BYTE 1	
920 001242 000410	BR 2\$	
921 001244 012767 001274 014706 1\$:	MOV #T1,RETURN	:NORMAL START, TEST 1
922 001256 005767 014736	TST STFLG	:IF LOOPING, BYPASS TYPEOUT
923 001258 001004	SNE 3\$	
924 001260 005167 014730	COM STFLG	
925 001264 104401 017215	TYPE MR	:TYPE "R" TO INDICATE START
926 001270 000177 014554	3\$: JMP RETURN	:START TESTING

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928
929
930
931
932
933 :TRANSMIT ALL CHARACTERS ONE AT A TIME ON LINE 0.
934 :CHARACTER LENGTH IS 8 BITS.
935 :LINE SPEED IS 9600 BAUD.

936 001374 012767 000340 176474 T1: MOV #340,PS :DISABLE ALL INTERRUPTS
937 001302 012767 000010 014656 MOV #10,ICOUNT :SET UP FOR 10 ITERATIONS
938 001310 012767 001434 014644 MOV #4\$,ESCAPE :SET UP TO ESCAPE TO NEXT TEST
939 001316 012767 001360 014640 MOV #1\$,FREEZ1 :SET UP TO LOOP WITH DATA
940 001324 012777 004000 014556 MOV #BIT11,0DHSCR :MASTER CLEAR INTERFACE
941 001332 012703 000000 014656 MOV #0,R3 :SET UP LINE NUMBER
942 001336 012767 100000 014654 MOV #0*400+100000,TDATA :SET EXPECTED LINE NUMBER
943 :AND VALID DATA FLAG
944 :EXPECTED DATA
945 001344 012777 000000 014546 MOV #0,0DHSCR :SELECT LINE 0
946 001352 012777 033503 014544 MOV #33503,0DHLPR :SELECT 8 BITS CHARATER
947 :LENGTH, 9600 BAUD SPEED
948 001360 012777 177777 014542 1\$: MOV #-1,0DHBC :TRANSMIT 1 CHARACTER
949 001366 012777 016220 014532 MOV #TDATA,0DHBA :ADDRESS OF TRANSMIT DATA
950 001374 012777 000001 014530 MOV #1,0DHBAR :START TRANSMITTER
951 001402 105777 014512 2\$: TSTB 0DHSCR :WAIT FOR CHARACTER
952 001406 100375 014506 BPL 2\$:TO BE RECEIVED
953 001410 017704 014506 MOV 0DHNR0,R4 :GET RECEIVED CHARACTER
954 001414 020467 014600 CMP R4,TDATA :COMPARE EXPECTED AND
955 001420 001401 BEQ 3\$:RECEIVED DATA
956 001422 104000 HLT 0 :DATA ERROR
957 001424 104410 3\$: SCOPE1 :CHECK FOR LOOP WITH CURRENT DATA
958 001426 105267 014556 INCB :UPDATE TRANSMIT DATA
959 001432 001352 BNE 1\$:
960 001434 104400 4\$: SCOPE :CHECK FOR ITERATIONS, LOOP
961
962 :TRANSMIT ALL CHARACTERS ONE AT A TIME ON LINE 1.
963 :CHARACTER LENGTH IS 8 BITS.
964 :LINE SPEED IS 9600 BAUD.

965 001436 012767 000340 176332 T2: MOV #340,PS :DISABLE ALL INTERRUPTS
966 001444 012767 000010 014614 MOV #10,ICOUNT :SET UP FOR 10 ITERATIONS
967 001452 012767 001576 014502 MOV #4\$,ESCAPE :SET UP TO ESCAPE TO NEXT TEST
968 001460 012767 001522 014476 MOV #1\$,FREEZ1 :SET UP TO LOOP WITH DATA
969 001468 012777 004000 014424 MOV #BIT11,0DHSCR :MASTER CLEAR INTERFACE
970 001474 012703 000001 014512 MOV #1,R3 :SET UP LINE NUMBER
971 001500 012767 100400 014512 MOV #1*400+100000,TDATA :SET EXPECTED LINE NUMBER
972 :AND VALID DATA FLAG
973 :EXPECTED DATA
974 001506 012777 000001 014404 MOV #1,0DHSCR :SELECT LINE 1
975 001514 012777 033503 014402 MOV #33503,0DHLPR :SELECT 8 BITS CHARATER
976 :LENGTH, 9600 BAUD SPEED
977 :FOR LINE 1
978 001522 012777 177777 014400 1\$: MOV #-1,0DHBC :TRANSMIT 1 CHARACTER
979 001530 012777 016220 014370 MOV #TDATA,0DHBA :ADDRESS OF TRANSMIT DATA
980 001536 012777 000002 014366 2\$: MOV #2,0DHBAR :START TRANSMITTER
981 001544 105777 014350 TSTB 0DHSCR :WAIT FOR CHARACTER
982 001550 100375 BPL 2\$:TO BE RECEIVED

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994 001552 017704 014344      MOV    $DHNR, R4      ;GET RECEIVED CHARACTER
995 001556 020467 014436      CMP    R4, TDATA     ;COMPARE EXPECTED AND
996 001562 001401             BEQ    3$          ;RECEIVED DATA
997 001564 104000             HLT    0           ;DATA ERROR
998 001566 104410             SCOPE1
999 001570 105267 014424      INCB   TDATA      ;CHECK FOR LOOP WITH CURRENT DATA
1000 001574 001352             SNE    1$          ;UPDATE TRANSMIT DATA
1001 001576 104400             SCOPE
1002                               4$:               ;CHECK FOR ITERATIONS, LOOP
1003                               :TRANSMIT ALL CHARACTERS ONE AT A TIME ON LINE 2.
1004                               :CHARACTER LENGTH IS 8 BITS.
1005                               :LINE SPEED IS 9600 BAUD.
1006
1007 001600 012767 000340 176170 T3:   MOV    #340, PS      ;DISABLE ALL INTERRUPTS
1008 001606 012767 000010 014352      MOV    #10, ICOUNT   ;SET UP FOR 10 ITERATIONS
1009 001614 012767 001740 014340      MOV    #4$, ESCAPE   ;SET UP TO ESCAPE TO NEXT TEST
1010 001622 012767 001664 014334      MOV    #1$, FREEZ1   ;SET UP TO LOOP WITH DATA
1011 001630 012777 004000 014262      MOV    #BIT11, $DHSCR ;MASTER CLEAR INTERFACE
1012 001636 012703 000002             MOV    #2, R3        ;SET UP LINE NUMBER
1013 001642 012767 101000 014350      MOV    #2*400+100000, TDATA
1014                               :SET EXPECTED LINE NUMBER
1015                               :AND VALID DATA FLAG
1016                               :EXPECTED DATA
1017 001650 012777 000002 014242      MOV    #2, $DHSCR   ;SELECT LINE 2
1018 001656 012777 033503 014240      MOV    #33503, $DHLPR ;SELECT 8 BITS CHARATER
1019                               LENGTH, 9600 BAUD SPEED
1020                               FOR LINE 2
1021 001664 012777 177777 014236 1$:   MOV    #-1, $DHBC      ;TRANSMIT 1 CHARACTER
1022 001672 012777 016220 014226      MOV    #TDATA, $DHBA   ;ADDRESS OF TRANSMIT DATA
1023 001700 012777 000004 014224      MOV    #4, $DHBAR     ;START TRANSMITTER
1024 001706 105777 014205             TSTB   $DHSCR
1025 001712 100375             BPL    2$          ;WAIT FOR CHARACTER
1026 001714 012704 014202             MOV    $DHNR, R4      ;TO BE RECEIVED
1027 001720 020467 014274             CMP    R4, TDATA     ;GET RECEIVED CHARACTER
1028 001724 001401             BEQ    3$          ;COMPARE EXPECTED AND
1029 001726 104000             HLT    0           ;RECEIVED DATA
1030 001730 104410             SCOPE1
1031 001732 105267 014262             INCB   TDATA      ;DATA ERROR
1032 001736 001352             SNE    1$          ;CHECK FOR LOOP WITH CURRENT DATA
1033 001740 104400             SCOPE
1034                               4$:               ;UPDATE TRANSMIT DATA
1035                               ;CHECK FOR ITERATIONS, LOOP
1036                               :TRANSMIT ALL CHARACTERS ONE AT A TIME ON LINE 3.
1037                               :CHARACTER LENGTH IS 8 BITS.
1038                               :LINE SPEED IS 9600 BAUD.
1039
1040 001742 012767 000340 176026 T4:   MOV    #340, PS      ;DISABLE ALL INTERRUPTS
1041 001750 012767 000010 014210      MOV    #10, ICOUNT   ;SET UP FOR 10 ITERATIONS
1042 001756 012767 002102 014176      MOV    #4$, ESCAPE   ;SET UP TO ESCAPE TO NEXT TEST
1043 001764 012767 002026 014172      MOV    #1$, FREEZ1   ;SET UP TO LOOP WITH DATA
1044 001772 012777 004000 014120      MOV    #BIT11, $DHSCR ;MASTER CLEAR INTERFACE
1045 002000 012703 000003             MOV    #3, R3        ;SET UP LINE NUMBER
1046 002004 012767 101400 014206      MOV    #3*400+100000, TDATA
1047                               :SET EXPECTED LINE NUMBER
1048                               :AND VALID DATA FLAG
1049                               :EXPECTED DATA
1050 002012 012777 000003 014100      MOV    #3, $DHSCR   ;SELECT LINE 3

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1040	002020	012777	033503	014076		MOV	#33503, DDHLPR	:SELECT 8 BITS CHARATER :LENGTH, 9600 BAUD SPEED :FOR LINE 3
1041								:TRANSMIT 1 CHARACTER
1042								:ADDRESS OF TRANSMIT DATA
1043	002026	012777	177777	014074	1\$:	MOV	#-1, DDHBC	:START TRANSMITTER
1044	002034	012777	016220	014064		MOV	#TDATA, DDHBA	:WAIT FOR CHARACTER
1045	002042	012777	000010	014062		MOV	#10, DDHBAR	:TO BE RECEIVED
1046	002050	105777	014044		2\$:	TSTB	DDHSR	:GET RECEIVED CHARACTER
1047	002054	100375				BPL	2\$:COMPARE EXPECTED AND
1048	002056	017704	014040			MOV	DDHNRC, R4	:RECEIVED DATA
1049	002062	020467	014132			CMP	R4, TDATA	:DATA ERROR
1050	002066	001401				BEQ	3\$:CHECK FOR LOOP WITH CURRENT DATA
1051	002070	104000				HLT	0	:UPDATE TRANSMIT DATA
1052	002072	104410			3\$:	SCOPE1		:CHECK FOR ITERATIONS, LOOP
1053	002074	105267	014120			INC B	TDATA	
1054	002100	001352				BNE	1\$	
1055	002102	104400			4\$:	SCOPE		
1056								:TRANSMIT ALL CHARACTERS ONE AT A TIME ON LINE 4.
1057								:CHARACTER LENGTH IS 8 BITS.
1058								:LINE SPEED IS 9600 BAUD.
1060								
1061	002104	012767	000340	175664	T5:	MOV	#340, PS	:DISABLE ALL INTERRUPTS
1062	002112	012767	000010	014046		MOV	#10, ICOUNT	:SET UP FOR 10 ITERATIONS
1063	002120	012767	002244	014034		MOV	#4\$, ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
1064	002126	012767	002170	014030		MOV	#1\$, FREEZI	:SET UP TO LOOP WITH DATA
1065	002134	012777	004000	013756		MOV	#BIT11, DDHSR	:MASTER CLEAR INTERFACE
1066	002142	012703	000004			MOV	#4, R3	:SET UP LINE NUMBER
1067	002146	012767	102000	014044		MOV	#4*400+100000, TDATA	
1068								:SET EXPECTED LINE NUMBER
1069								:AND VALID DATA FLAG
1070								:EXPECTED DATA
1071	002154	012777	000004	013736		MOV	#4, DDHSR	:SELECT LINE 4
1072	002162	012777	033503	013734		MOV	#33503, DDHLPR	:SELECT 8 BITS CHARATER
1073								:LENGTH, 9600 BAUD SPEED
1074								:FOR LINE 4
1075	002170	012777	177777	013732	1\$:	MOV	#-1, DDHBC	:TRANSMIT 1 CHARACTER
1076	002176	012777	016220	013722		MOV	#TDATA, DDHBA	:ADDRESS OF TRANSMIT DATA
1077	002204	012777	000020	013720		MOV	#20, DDHBAR	:START TRANSMITTER
1078	002212	105777	013702		2\$:	TSTB	DDHSR	:WAIT FOR CHARACTER
1079	002216	100375				BPL	2\$:TO BE RECEIVED
1080	002220	017704	013676			MOV	DDHNRC, R4	:GET RECEIVED CHARACTER
1081	002224	020467	013770			CMP	R4, TDATA	:COMPARE EXPECTED AND
1082	002230	001401				BEQ	3\$:RECEIVED DATA
1083	002232	104000				HLT	0	:DATA ERROR
1084	002234	104410			3\$:	SCOPE1		:CHECK FOR LOOP WITH CURRENT DATA
1085	002236	105267	013756			INC B	TDATA	:UPDATE TRANSMIT DATA
1086	002242	001352				BNE	1\$	
1087	002244	104400			4\$:	SCOPE		:CHECK FOR ITERATIONS, LOOP
1088								
1089								:TRANSMIT ALL CHARACTERS ONE AT A TIME ON LINE 5.
1090								:CHARACTER LENGTH IS 8 BITS.
1091								:LINE SPEED IS 9600 BAUD.
1092								
1093	002246	012767	000340	175522	T6:	MOV	#340, PS	:DISABLE ALL INTERRUPTS
1094	002254	012767	000010	013704		MOV	#10, ICOUNT	:SET UP FOR 10 ITERATIONS
1095	002262	012767	002406	013672		MOV	#4\$, ESCAPE	:SET UP TO ESCAPE TO NEXT TEST

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1096	002270	012767	002332	013666		MOV	#1\$,FREEZ1	:SET UP TO LOOP WITH DATA
1097	002276	012777	004000	013514		MOV	#BIT11,0DHSCR	:MASTER CLEAR INTERFACE
1098	002304	012703	000005			MOV	#5,R3	:SET UP LINE NUMBER
1099	002310	012767	102400	013703		MOV	#5*400+100000,TDATA	
1100								:SET EXPECTED LINE NUMBER
1101								:AND VALID DATA FLAG
1102								:EXPECTED DATA
1103	002316	012777	000005	013574		MOV	#5,0DHSCR	:SELECT LINE 5
1104	002324	012777	033503	013572		MOV	#33503,0DHLPR	:SELECT 8 BITS CHARATER LENGTH, 9600 BAUD SPEED
1105								:FOR LINE 5
1106	002332	012777	177777	013570	1\$:	MOV	#-1,0DHBC	:TRANSMIT 1 CHARACTER
1107	002340	012777	016220	013560		MOV	#TDATA,0DHBA	:ADDRESS OF TRANSMIT DATA
1108	002346	012777	000040	013556		MOV	#40,0DHBAR	:START TRANSMITTER
1109	002354	105777	013540		2\$:	TSTB	0DHSCR	:WAIT FOR CHARACTER
1110	002360	100375				BPL	2\$:TO BE RECEIVED
1111	002362	017704	013534			MOV	0DHNR, R4	:GET RECEIVED CHARACTER
1112	002366	020467	013626			CMP	R4,TDATA	:COMPARE EXPECTED AND
1113	002372	001401				BEQ	3\$:RECEIVED DATA
1114	002374	104000				HLT	0	:DATA ERROR
1115	002376	104410			3\$:	SCOPE1		:CHECK FOR LOOP WITH CURRENT DATA
1116	002400	105267	013614			INCB	TDATA	:UPDATE TRANSMIT DATA
1117	002404	001358				BNE	1\$	
1118	002406	104400			4\$::	SCOPE		:CHECK FOR ITERATIONS, LOOP
1119								:TRANSMIT ALL CHARACTERS ONE AT A TIME ON LINE 6.
1120								:CHARACTER LENGTH IS 8 BITS.
1121								:LINE SPEED IS 9600 BAUD.
1122	002410	012767	000340	175360	5\$::	MOV	#340,PS	:DISABLE ALL INTERRUPTS
1123	002416	012767	000010	013542		MOV	#10,ICOUNT	:SET UP FOR 10 ITERATIONS
1124	002424	012767	002550	013530		MOV	#4,ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
1125	002430	012767	002474	013524		MOV	#1\$,FREEZ1	:SET UP TO LOOP WITH DATA
1126	002440	012777	004000	013452		MOV	#BIT11,0DHSCR	:MASTER CLEAR INTERFACE
1127	002446	012703	000006			MOV	#5,R3	:SET UP LINE NUMBER
1128	002452	012767	103000	013540		MOV	#5*400+100000,TDATA	
1129								:SET EXPECTED LINE NUMBER
1130								:AND VALID DATA FLAG
1131								:EXPECTED DATA
1132	002460	012777	000006	013432		MOV	#5,0DHSCR	:SELECT LINE 6
1133	002466	012777	033503	013430		MOV	#33503,0DHLPR	:SELECT 8 BITS CHARATER LENGTH, 9600 BAUD SPEED
1134								:FOR LINE 6
1135	002474	012777	177777	013426	1\$::	MOV	#-1,0DHBC	:TRANSMIT 1 CHARACTER
1136	002502	012777	016220	013416		MOV	#TDATA,0DHBA	:ADDRESS OF TRANSMIT DATA
1137	002510	012777	000100	013414		MOV	#100,0DHBAR	:START TRANSMITTER
1138	002516	105777	013376		2\$::	TSTB	0DHSCR	:WAIT FOR CHARACTER
1139	002522	100375				BPL	2\$:TO BE RECEIVED
1140	002524	017704	013372			MOV	0DHNR, R4	:GET RECEIVED CHARACTER
1141	002530	020467	013464			CMP	R4,TDATA	:COMPARE EXPECTED AND
1142	002534	001401				BEQ	3\$:RECEIVED DATA
1143	002536	104000				HLT	0	:DATA ERROR
1144	002540	104410			3\$::	SCOPE1		:CHECK FOR LOOP WITH CURRENT DATA
1145	002542	105267	013452			INCB	TDATA	:UPDATE TRANSMIT DATA
1146	002546	001358				BNE	1\$	
1147	002550	104400			4\$::	SCOPE		:CHECK FOR ITERATIONS, LOOP

NO2

:TRANSMIT ALL CHARACTERS ONE AT A TIME ON LINE 7.
:CHARACTER LENGTH IS 8 BITS.
:LINE SPEED IS 9600 BAUD.

002552	012767	000340	175216	T10:	MOV #340,PS MOV #10,ICOUNT MOV #4\$,ESCAPE MOV #1\$,FREEZ1 MOV #BIT11,SDHSCR MOV #7,R3 MOV #7*400+100000,TDATA	:DISABLE ALL INTERRUPTS :SET UP FOR 10 ITERATIONS :SET UP TO ESCAPE TO NEXT TEST :SET UP TO LOOP WITH DATA :MASTER CLEAR INTERFACE :SET UP LINE NUMBER
002560	012767	000010	013400			:SET EXPECTED LINE NUMBER :AND VALID DATA FLAG
002566	012767	002712	013366			:EXPECTED DATA
002574	012767	002636	013362			:SELECT LINE 7
002602	012777	004000	013310			:SELECT 8 BITS CHARATER
002610	012703	000007				:LENGTH, 9600 BAUD SPEED
002614	012767	103400	013376			:FOR LINE 7
						:TRANSMIT 1 CHARACTER
				1\$:	MOV #-1,SDHBC MOV #TDATA,SDHBA	:ADDRESS OF TRANSMIT DATA
				2\$:	MOV #200,SDHBAR TSTB SDHSCR	:START TRANSMITTER
					BPL 2\$:WAIT FOR CHARACTER
					MOV #JHNRC,R4	:TO BE RECEIVED
					CMP R4,TDATA	:GET RECEIVED CHARACTER
					BEO 3\$:COMPARE EXPECTED AND
					HLT 0	:RECEIVED DATA
						:DATA ERROR
				3\$:	SCOPE1	:CHECK FOR LOOP WITH CURRENT DATA
					INCB TDATA	:UPDATE TRANSMIT DATA
					BNE 1\$	
				4\$:	SCOPE	:CHECK FOR ITERATIONS, LOOP

:TRANSMIT ALL CHARACTERS ONE AT A TIME ON LINE 10.
:CHARACTER LENGTH IS 8 BITS.
:LINE SPEED IS 9600 BAUD.

002714	012767	000340	175054	T11:	MOV #340,PS MOV #10,ICOUNT MOV #4\$,ESCAPE MOV #1\$,FREEZ1 MOV #BIT11,SDHSCR MOV #10,R3 MOV #10*400+100000,TDATA	:DISABLE ALL INTERRUPTS :SET UP FOR 10 ITERATIONS :SET UP TO ESCAPE TO NEXT TEST :SET UP TO LOOP WITH DATA :MASTER CLEAR INTERFACE :SET UP LINE NUMBER
002722	012767	000010	013236			:SET EXPECTED LINE NUMBER :AND VALID DATA FLAG
002730	012767	002054	013224			:EXPECTED DATA
002738	012767	003000	013220			:SELECT LINE 10
002744	012777	004000	013146			:SELECT 8 BITS CHARATER
002752	012703	000010				:LENGTH, 9600 BAUD SPEED
002756	012767	104000	013234			:FOR LINE 10
						:TRANSMIT 1 CHARACTER
				1\$:	MOV #-1,SDHBC MOV #TDATA,SDHBA	:ADDRESS OF TRANSMIT DATA
				2\$:	MOV #400,SDHBAR TSTB SDHSCR	:START TRANSMITTER
					BPL 2\$:WAIT FOR CHARACTER
						:TO BE RECEIVED

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320256	018777	000012	018622	T12:	MOV	#340,PS	SET RECEIVED CHARACTER
320257	018777	000012	018622		MOV	#13,SCBR	COMPILED EXPECTED PMC
320258	018777	000012	018622		MOV	#13,SCBR	CHECK FOR LOOP W/ CURRENT DATA
320259	018777	000012	018622		SCBR	DATA	UPDATE TRANSMIT DATA
320260	018777	000012	018622		SCBR	DATA	CHECK FOR ITERATIONS, LOOP
320261	018777	000012	018622		SCBR	DATA	TRANSMIT ALL CHARACTERS ONE AT A TIME ON LINE 11.
320262	018777	000012	018622		SCBR	DATA	CHARACTER LENGTH 100000, BAUD 9600
320263	018777	000012	018622		SCBR	DATA	LINE SPEED IS 9600 BAUD.
320264	018777	000012	018622	T13:	MOV	#340,PS	DISABLE ALL INTERRUPTS
320265	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT TEST
320266	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT INTERFACE
320267	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT LINE NUMBER
320268	018777	000012	018622		MOV	#13,SCBR	SET EXPECTED LINE NUMBER
320269	018777	000012	018622		MOV	#13,SCBR	END VALID DATA FLAG
320270	018777	000012	018622		MOV	#13,SCBR	SELECT LINE 13
320271	018777	000012	018622		SCBR	DATA	TRANSMIT ALL CHARACTERS
320272	018777	000012	018622		SCBR	DATA	ONE AT A TIME ON LINE 12.
320273	018777	000012	018622		SCBR	DATA	CHARACTER LENGTH 100000, BAUD 9600
320274	018777	000012	018622		SCBR	DATA	LINE SPEED IS 9600 BAUD.
320275	018777	000012	018622	T13:	MOV	#340,PS	DISABLE ALL INTERRUPTS
320276	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT TEST
320277	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT INTERFACE
320278	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT LINE NUMBER
320279	018777	000012	018622		MOV	#13,SCBR	SET EXPECTED LINE NUMBER
320280	018777	000012	018622		MOV	#13,SCBR	END VALID DATA FLAG
320281	018777	000012	018622		MOV	#13,SCBR	SELECT LINE 13
320282	018777	000012	018622		SCBR	DATA	TRANSMIT ALL CHARACTERS
320283	018777	000012	018622		SCBR	DATA	ONE AT A TIME ON LINE 12.
320284	018777	000012	018622		SCBR	DATA	CHARACTER LENGTH 100000, BAUD 9600
320285	018777	000012	018622		SCBR	DATA	LINE SPEED IS 9600 BAUD.
320286	018777	000012	018622	T13:	MOV	#340,PS	DISABLE ALL INTERRUPTS
320287	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT TEST
320288	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT INTERFACE
320289	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT LINE NUMBER
320290	018777	000012	018622		MOV	#13,SCBR	SET EXPECTED LINE NUMBER
320291	018777	000012	018622		MOV	#13,SCBR	END VALID DATA FLAG
320292	018777	000012	018622		MOV	#13,SCBR	SELECT LINE 13
320293	018777	000012	018622		SCBR	DATA	TRANSMIT ALL CHARACTERS
320294	018777	000012	018622		SCBR	DATA	ONE AT A TIME ON LINE 12.
320295	018777	000012	018622		SCBR	DATA	CHARACTER LENGTH 100000, BAUD 9600
320296	018777	000012	018622		SCBR	DATA	LINE SPEED IS 9600 BAUD.
320297	018777	000012	018622	T13:	MOV	#340,PS	DISABLE ALL INTERRUPTS
320298	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT TEST
320299	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT INTERFACE
320300	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT LINE NUMBER
320301	018777	000012	018622		MOV	#13,SCBR	SET EXPECTED LINE NUMBER
320302	018777	000012	018622		MOV	#13,SCBR	END VALID DATA FLAG
320303	018777	000012	018622		MOV	#13,SCBR	SELECT LINE 13
320304	018777	000012	018622		SCBR	DATA	TRANSMIT ALL CHARACTERS
320305	018777	000012	018622		SCBR	DATA	ONE AT A TIME ON LINE 12.
320306	018777	000012	018622		SCBR	DATA	CHARACTER LENGTH 100000, BAUD 9600
320307	018777	000012	018622		SCBR	DATA	LINE SPEED IS 9600 BAUD.
320308	018777	000012	018622	T13:	MOV	#340,PS	DISABLE ALL INTERRUPTS
320309	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT TEST
320310	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT INTERFACE
320311	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT LINE NUMBER
320312	018777	000012	018622		MOV	#13,SCBR	SET EXPECTED LINE NUMBER
320313	018777	000012	018622		MOV	#13,SCBR	END VALID DATA FLAG
320314	018777	000012	018622		MOV	#13,SCBR	SELECT LINE 13
320315	018777	000012	018622		SCBR	DATA	TRANSMIT ALL CHARACTERS
320316	018777	000012	018622		SCBR	DATA	ONE AT A TIME ON LINE 12.
320317	018777	000012	018622		SCBR	DATA	CHARACTER LENGTH 100000, BAUD 9600
320318	018777	000012	018622		SCBR	DATA	LINE SPEED IS 9600 BAUD.
320319	018777	000012	018622	T13:	MOV	#340,PS	DISABLE ALL INTERRUPTS
320320	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT TEST
320321	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT INTERFACE
320322	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT LINE NUMBER
320323	018777	000012	018622		MOV	#13,SCBR	SET EXPECTED LINE NUMBER
320324	018777	000012	018622		MOV	#13,SCBR	END VALID DATA FLAG
320325	018777	000012	018622		MOV	#13,SCBR	SELECT LINE 13
320326	018777	000012	018622		SCBR	DATA	TRANSMIT ALL CHARACTERS
320327	018777	000012	018622		SCBR	DATA	ONE AT A TIME ON LINE 12.
320328	018777	000012	018622		SCBR	DATA	CHARACTER LENGTH 100000, BAUD 9600
320329	018777	000012	018622		SCBR	DATA	LINE SPEED IS 9600 BAUD.
320330	018777	000012	018622	T13:	MOV	#340,PS	DISABLE ALL INTERRUPTS
320331	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT TEST
320332	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT INTERFACE
320333	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT LINE NUMBER
320334	018777	000012	018622		MOV	#13,SCBR	SET EXPECTED LINE NUMBER
320335	018777	000012	018622		MOV	#13,SCBR	END VALID DATA FLAG
320336	018777	000012	018622		MOV	#13,SCBR	SELECT LINE 13
320337	018777	000012	018622		SCBR	DATA	TRANSMIT ALL CHARACTERS
320338	018777	000012	018622		SCBR	DATA	ONE AT A TIME ON LINE 12.
320339	018777	000012	018622		SCBR	DATA	CHARACTER LENGTH 100000, BAUD 9600
320340	018777	000012	018622		SCBR	DATA	LINE SPEED IS 9600 BAUD.
320341	018777	000012	018622	T13:	MOV	#340,PS	DISABLE ALL INTERRUPTS
320342	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT TEST
320343	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT INTERFACE
320344	018777	000012	018622		MOV	#13,SCBR	MOVE TO NEXT LINE NUMBER
320345	018777	000012	018622		MOV	#13,SCBR	SET EXPECTED LINE NUMBER
320346	018777	000012	018622		MOV	#13,SCBR	END VALID DATA FLAG
320347	018777	000012	018622		MOV</td		

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003646	012762	003610	012410		MOV	\$16, FREEZ1	SET UP TO LOOP WITH DATA
003647	000017	004000	012338		MOV	\$01+11, SDHSCR	MASTER CLEAR INTERFACE
003648	012767	000014	012338		MOV	\$14, R3	SET UP LINE NUMBER
003649	012767	106000	012424		MOV	\$14+400+100000, TDATA	
003650	012777	000014	012316		MOV	\$14, SDHSCR	SET EXPECTED LINE NUMBER
003651	012777	033503	012316		MOV	\$33503, SDHLPR	AND VALID DATA FLAG
003652	012777	000014	012316	15:	MOV	\$14, SDHSCR	EXPECTED DATA
003653	012777	177777	012310	15:	MOV	\$-1, SDHBC	SELECT LINE 14
003654	012777	016226	000000	15:	MOV	\$TDATA, SDHBA	SELECT 8 BITS CHARACTER
003655	012777	010000	012300	15:	MOV	\$10000, SDHBAR	LENGTH, 9600 BAUD SPEED
003656	012777	012262	012300	25:	TSTB	SDHSCR	FOR LINE 14
003657	012777	012262	012300	25:	BPL	25	TRANSMIT 1 CHARACTER
003658	012777	012262	012300	25:	MOV	SDHBC, R4	ADDRESS OF TRANSMIT DATA
003659	012777	012262	012300	25:	CMP	R4, TDATA	START TRANSMITTER
003660	012777	012262	012300	25:	BEQ	25	WAIT FOR CHARACTER
003661	012777	012262	012300	25:	HLT	25	TO BE RECEIVED
003662	012777	012262	012300	25:	SCOPE1	SDHBC, R4	GET RECEIVED CHARACTER
003663	012777	012262	012300	25:	INC8	25	COMPARE EXPECTED AND
003664	012777	012262	012300	25:	BNE	25	RECEIVED DATA
003665	012777	012262	012300	25:	SCOPE	25	DATA ERROR
003666	012777	000340	174102	35:	MOV	\$340, PS	CHECK FOR LOOP WITH CURRENT DATA
003667	012777	0000100	012304	35:	MOV	\$10, COUNT	UPDATE TRANSMIT DATA
003668	012777	004000	012304	35:	MOV	\$350, ESCAPE	
003669	012777	003760	012304	35:	MOV	\$0, FREEZ1	
003670	012777	004000	012304	35:	MOV	\$01+11, SDHSCR	
003671	012777	0000100	012304	35:	MOV	\$10000, SDHBAR	
003672	012777	106400	012262	35:	MOV	\$14+400+100000, TDATA	SET UP LINE NUMBER
003673	012777	000015	012154		MOV	\$15, SDHSCR	SET EXPECTED LINE NUMBER
003674	012777	033503	012152		MOV	\$33503, SDHLPR	AND VALID DATA FLAG
003675	012777	000015	012154		MOV	\$15, SDHSCR	EXPECTED DATA
003676	012777	177777	012150	45:	MOV	\$-1, SDHBC	SELECT LINE 15
003677	012777	016226	012140	45:	MOV	\$TDATA, SDHBA	SELECT 8 BITS CHARACTER
003678	012777	020000	012136	45:	MOV	\$20000, SDHBAR	LENGTH, 9600 BAUD SPEED
003679	012777	012120	012136	45:	TSTB	SDHSCR	FOR LINE 15
003680	012777	012120	012136	45:	BPL	25	TRANSMIT 1 CHARACTER
003681	012777	012120	012136	45:	MOV	SDHBC, R4	ADDRESS OF TRANSMIT DATA
003682	012777	012120	012136	45:	CMP	R4, TDATA	START TRANSMITTER
003683	012777	012120	012136	45:	BEQ	25	WAIT FOR CHARACTER
003684	012777	012120	012136	45:	HLT	25	TO BE RECEIVED
003685	012777	012120	012136	45:	SCOPE1	SDHBC, R4	GET RECEIVED CHARACTER
003686	012777	012120	012136	45:	INC8	25	COMPARE EXPECTED AND
003687	012777	012120	012136	45:	BNE	25	RECEIVED DATA
003688	012777	012120	012136	45:	SCOPE	25	DATA ERROR
003689	012777	012174	012174	35:	MOV	\$340, PS	CHECK FOR LOOP WITH CURRENT DATA
003690	012777	000015	012174	35:	MOV	\$15, SDHSCR	UPDATE TRANSMIT DATA
003691	012777	004000	012174	35:	MOV	\$33503, SDHLPR	
003692	012777	004000	012174	35:	MOV	\$15, SDHSCR	
003693	012777	106267	012174	35:	MOV	\$15, SDHSCR	
003694	012777	001388	012174	35:	MOV	\$15, SDHSCR	
003695	012777	104400	012174	35:	MOV	\$15, SDHSCR	
003696	012777	001388	012174	35:	MOV	\$15, SDHSCR	
003697	012777	104400	012174	35:	MOV	\$15, SDHSCR	
003698	012777	001388	012174	35:	MOV	\$15, SDHSCR	
003699	012777	104400	012174	35:	MOV	\$15, SDHSCR	

:TRANSMIT ALL CHARACTERS ONE AT A TIME ON LINE 16.
:CHARACTER LENGTH IS 8 BITS.
:LINE SPEED IS 9600 BAUD.

004030	012767	000340	173740	T17:	MOV #340,PS MOV \$10,ICOUNT MOV \$48,ESCAPE MOV \$18,FREEZI MOV \$0,+\$11,SDHSCR MOV \$16,R3 MOV #16*400+100000,TDATA	:DISABLE ALL INTERRUPTS :SET UP FOR 10 ITERATIONS :SET UP TO ESCAPE TO NEXT TEST :SET UP TO LOOP WITH DATA :MASTER CLEAR INTERFACE :SET UP LINE NUMBER
004038	012767	000010	0116120			:SET EXPECTED LINE NUMBER :AND VALID DATA FLAG
004046	012767	0041700	0116110			:EXPECTED DATA
004053	012767	0041740	0116100			:SELECT LINE 16
004060	012767	0040000	012032			:SELECT 8 BITS CHARACTER
004067	012767	000016	012120			:LENGTH, 9600 BAUD SPEED
004074	012767	107000	012120			:FOR LINE 16
						:TRANSMIT 1 CHARACTER
						:ADDRESS OF TRANSMIT DATA
						:START TRANSMITTER
						:WAIT FOR CHARACTER
						:TO BE RECEIVED
						:GET RECEIVED CHARACTER
						:COMPARE EXPECTED AND
						:RECEIVED DATA
						:DATA ERROR
						:CHECK FOR LOOP WITH CURRENT DATA
						:UPDATE TRANSMIT DATA
						:CHECK FOR ITERATIONS, LOOP

:TRANSMIT ALL CHARACTERS ONE AT A TIME ON LINE 17.
:CHARACTER LENGTH IS 8 BITS.
:LINE SPEED IS 9600 BAUD.

004172	012767	000340	173576	T20:	MOV #340,PS MOV \$10,ICOUNT MOV \$48,ESCAPE MOV \$18,FREEZI MOV \$0,+\$11,SDHSCR MOV \$17,R3 MOV #17*400+100000,TDATA	:DISABLE ALL INTERRUPTS :SET UP FOR 10 ITERATIONS :SET UP TO ESCAPE TO NEXT TEST :SET UP TO LOOP WITH DATA :MASTER CLEAR INTERFACE :SET UP LINE NUMBER
004178	012767	000010	0117656			:SET EXPECTED LINE NUMBER :AND VALID DATA FLAG
004186	012767	004332	0117656			:EXPECTED DATA
004193	012767	004256	0117656			:SELECT LINE 17
004197	012767	0040000	011670			:SELECT 8 BITS CHARACTER
004204	012767	000017	011756			:LENGTH, 9600 BAUD SPEED
004211	012767	107400	011756			:FOR LINE 17
						:TRANSMIT 1 CHARACTER
						:ADDRESS OF TRANSMIT DATA
						:START TRANSMITTER
						:WAIT FOR CHARACTER
						:TO BE RECEIVED

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004300	004306	012704	011610		MOV	#DHNR, R4	GET RECEIVED CHARACTER
004306	004312	000467	011702		CMP	#4, TDATA	COMPARE EXPECTED AND RECEIVED DATA
004312	004318	0001401			BEQ	3\$	DATA ERROR
004318	004324	0004400			HLT	0	CHECK FOR LOOP WITH CURRENT DATA
004324	004330	0005670	011670	3\$:	SCOPE1	TDATA	UPDATE TRANSMIT DATA
004330	004336	0004400			INC B	TDATA	
004336	004342	0004400			BNE	1\$	CHECK FOR ITERATIONS. LOOP
004342	004348	0004400			SCOPE		
				4\$::			
							:SINGLE LINE DATA TEST
							:TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 0
							:CHARATER LENGTH IS 8 BITS
							:LINE SPEED WILL START AT 50 BAUD AND BE INCREMENTED
							:TO 9600 BAUD.
							:A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED
							:AT EACH SPEED
004384	012767	000340	173434	T21:	MOV	\$340, PS	DISABLE ALL INTERRUPTS
004384	012767	000001	011616		MOV	\$1, ICOUNT	SET UP FOR 1 ITERATIONS
004386	012767	004530	011604		MOV	\$4\$, ESCAPE	SET UP TO ESCAPE TO NEXT TEST
004386	012767	004420	011600		MOV	\$1\$, FREEZ!	SET UP TO LOOP WITH DATA
004388	012777	004000	011526		MOV	\$8I111, SDHSCR	MASTER CLEAR INTERFACE
004388	012702	000001			MOV	\$1, RD	FIRST SPEED CODE
004388	012706	000000			MOV	\$0, RD	LINE 0 WILL BE TESTED
004402	012767	100000	011612		MOV	#C\$400+100000, RDATA	
							:SET EXPECTED LINE NUMBER
							:AND VALID DATA FLAG
							:EXPECTED DATA
004410	012700	000015			MOV	\$15, RD	:13 SPEEDS WILL BE TESTED
004414	012701	002103			MOV	\$2103, RI	:FIRST SPEED =50 BAUD.
004420	010577	011474		1\$::	MOV	R6, SDHSCR	:8 BITS PER CHARACTER
004424	010177	011474			MOV	R1, SDHLPR	:SELECT LINE 0
004430	012777	016226	011470		MOV	#TEUF, SDHBA	:SET LINE SPEED AND
004436	012777	177400	011464		MOV	#-400, SDHSC	:CHARACTER LENGTH
004444	012777	000001	011460	2\$::	MOV	\$1, SDHBAR	:ADDRESS OF TRANSMITTER
004452	105777	011442			TSTB	SDHSCR	:DATA BUFFER
004456	100375				BPL	2\$:400 (OCTAL) BYTES
004460	017703	011436			MOV	#DHNR, R3	:WILL BE TRANSMITTED
004464	020367	011532			CMP	R3, RDATA	:START TRANSMITTER
004470	001407				BEQ	3\$:WAIT FOR DATA TO BE RECEIVED
004472	005077	011434			CLR	SDHBAR	
004476	104001				HLT	1	
004500	104410				SCOPE1		
004502	012777	000001	011422	3\$::	MOV	\$1, SDHBAR	:STOP TRANSMITTER
004506	105267	011506			INC B	RDATA	:DATA ERROR
004510	001356				BNE	2\$:CHECK FOR LOOP AT CURRENT SPEED
004514	062701	002100			ADD	\$2100, RI	:RESTART TRANSMITTER
004516	005202				INC	R2	:UPDATE EXPECTED DATA
004522	005300				DEC	RD	
004524	001334				BNE	1\$	
004530	104400			4\$::	SCOPE		

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DDHDFB.PPC

:SINGLE LINE DATA TEST
:TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 1
:CHARACTER LENGTH IS 8 BITS
:LINE SPEED WILL START AT 50 BAUD AND BE INCREMENTED
:TO 9600 BAUD.
:A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED
:AT EACH SPEED

004532	012767	000340	173236	T22:	MOV #340,PS	:DISABLE ALL INTERRUPTS
004533	00010767	000001	011400		MOV \$1,ICOUNT	:SET UP FOR 1 ITERATIONS
004534	00010767	004726	011400		MOV #48,ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
004535	00010767	004616	011400		MOV #18,FREEZI	:SET UP TO LOOP WITH DATA
004536	00010767	004000	011330		MOV #0111,SDHSOR	:MASTER CLEAR INTERFACE
004537	00010767	000001			MOV \$1,R0	:FIRST SPEED CODE
004538	00010767	000001			MOV \$1,R0	:LINE 1 WILL BE TESTED
004539	012767	100400	011414		MOV #1+400+100000,RODATA	:SET EXPECTED LINE NUMBER AND VALID DATA FLAG
004540	012767	000001			MOV #15,R0	:EXPECTED DATA
004541	012767	000001			MOV \$2103,R1	:13 SPEEDS WILL BE TESTED
004542	012767	011276		13:	MOV R5,SDHSOR	:FIRST SPEED =50 BAUD.
004543	012767	011276			MOV R1,SDHLPR	:8 BITS PER CHARACTER
004544	012777	016226	011272		MOV #TBUF,SDH34	:SELECT LINE 1
004545	012777	177400	011266		MOV #400,SDHBC	:SET LINE SPEED AND
004546	012777	000002	011262	33:	MOV #2,SDHBAR	:CHARACTER LENGTH
004547	012777	011244			TSTB SDHSOR	:ADDRESS OF TRANSMITTER
004548	012703	011240			BPL SDHSOR	:DATA BUFFER
004549	000367	011334			MOV #DHNR0,R3	:400 (OCTAL) BYTES
004550	0001407	005027			CMP R3,RODATA	:WILL BE TRANSMITTED
004551	005027	011236			BEO	:START TRANSMITTER
004552	104001	012777	011224		CLR SDHSAR	:WAIT FOR DATA TO BE RECEIVED
004553	104001	000002	011224	33:	HLT	
004554	104001	012777	011310		SCOPE1	:GET RECEIVED DATA
004555	104001	000002	011310		MOV #2,SDHBAR	:COMPER EXPECTED AND RECEIVED DATA
004556	104001	002100			INC R0DATA	
004557	104001	002100			BNE R0DATA	
004558	104001	005000			ADD \$2100,R1	:STOP TRANSMITTER
004559	104001	005000			INC R0	:DATA ERROR
004560	104001	001334			DEC R0	:CHECK FOR LOOP AT CURRENT SPEED
004561	104001	104400		45:	BNE R0	:RESTART TRANSMITTER
004562	104400				SCOPE	:UPDATE DATA EXPECTED
004563	104400					
004564	104400					
004565	104400					
004566	104400					
004567	104400					
004568	104400					
004569	104400					
004570	104400					
004571	104400					
004572	104400					
004573	104400					
004574	104400					
004575	104400					
004576	104400					
004577	104400					
004578	104400					
004579	104400					
004580	104400					
004581	104400					
004582	104400					
004583	104400					
004584	104400					
004585	104400					
004586	104400					
004587	104400					
004588	104400					
004589	104400					
004590	104400					
004591	104400					
004592	104400					
004593	104400					
004594	104400					
004595	104400					
004596	104400					
004597	104400					
004598	104400					
004599	104400					
004600	104400					
004601	104400					
004602	104400					
004603	104400					
004604	104400					
004605	104400					
004606	104400					
004607	104400					
004608	104400					
004609	104400					
004610	104400					
004611	104400					
004612	104400					
004613	104400					
004614	104400					
004615	104400					
004616	104400					
004617	104400					
004618	104400					
004619	104400					
004620	104400					
004621	104400					
004622	104400					
004623	104400					
004624	104400					
004625	104400					
004626	104400					
004627	104400					
004628	104400					
004629	104400					
004630	104400					
004631	104400					
004632	104400					
004633	104400					
004634	104400					
004635	104400					
004636	104400					
004637	104400					
004638	104400					
004639	104400					
004640	104400					
004641	104400					
004642	104400					
004643	104400					
004644	104400					
004645	104400					
004646	104400					
004647	104400					
004648	104400					
004649	104400					
004650	104400					
004651	104400					
004652	104400					
004653	104400					
004654	104400					
004655	104400					
004656	104400					
004657	104400					
004658	104400					
004659	104400					
004660	104400					
004661	104400					
004662	104400					
004663	104400					
004664	104400					
004665	104400					
004666	104400					
004667	104400					
004668	104400					
004669	104400					
004670	104400					
004671	104400					
004672	104400					
004673						

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004736	012767	000001	011322		MOV	#1, ICOUNT	:SET UP FOR 1 ITERATIONS
004744	012767	005124	011310		MOV	#4\$, ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
004752	012767	005014	011304		MOV	#1\$, FREEZI	:SET UP TO LOOP WITH DATA
004760	012777	004000	011132		MOV	#BIT11, DDHSCR	:MASTER CLEAR INTERFACE
004766	012702	000001			MOV	#1, R2	:FIRST SPEED CODE
004772	012705	000003			MOV	#2, RS	:LINE 2 WILL BE TESTED
004776	012767	101000	011316		MOV	#2*400+100000, RDATA	:SET EXPECTED LINE NUMBER AND VALID DATA FLAG
005004	012700	000015			MOV	#15, RD	:EXPECTED DATA
005010	012701	002103			MOV	#2103, RI	:13 SPEEDS WILL BE TESTED
005014	010577	011100		13:	MOV	R5, DDHSCR	:FIRST SPEED =50 BAUD.
005020	010177	011100			MOV	R1, DDHLPR	:9 BITS PER CHARACTER
005024	012777	016226	011074		MOV	#TBUF, DDHBA	:SELECT LINE 2
005032	012777	177400	011070		MOV	#-400, DDHBC	:SET LINE SPEED AND
005040	012777	000004	011064		MOV	#4, DDHBAR	:CHARACTER LENGTH
005046	105777	011046		ES:	TSTB	DDHSCR	:ADDRESS OF TRANSMITTER
005052	100375				BPL	2\$:DATA BUFFER
005054	012703	011048			MOV	DDHNRC, R3	:400 (OCTAL) BYTES
005060	020367	011136			CMP	R3, RDATA	:WILL BE TRANSMITTED
005064	001407				BEQ	3\$:START TRANSMITTER
005066	005077	011040			CLR	DDHBAR	:WAIT FOR DATA TO BE RECEIVED
005070	104001				HLT	1	:GET RECEIVED DATA
005074	104410				SCOPE1		:COMPER EXPECTED AND RECEIVED DATA
005076	012777	000004	011026		MOV	#4, DDHBAR	:STOP TRANSMITTER
005104	105267	011112		3\$:	INCB	RDATA	:DATA ERROR
005110	001356				BNE	2\$:CHECK FOR LOOP AT CURRENT SPEED
005112	062701	002100			ADD	#2100, RI	:RESTART TRANSMITTER
005116	005202				INC	R2	:UPDATE EXPECTED DATA
005120	005300				DEC	R0	:UPDATE LINE SPEED
005122	001334				BNE	1\$:UPDATE SPEED CODE
005124	104400			4\$:	SCOPE		
							:SINGLE LINE DATA TEST
							:TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 3
							:CHARATER LENGTH IS 8 BITS
							:LINE SPEED WILL START AT 50 BAUD AND BE INCREMENTED
							:TO 9600 BAUD.
							:A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED
							:AT EACH SPEED
005126	012767	000340	172642	T24:	MOV	#340, PS	:DISABLE ALL INTERRUPTS
005134	012767	000001	011024		MOV	#1, ICOUNT	:SET UP FOR 1 ITERATIONS
005142	012767	005322	011012		MOV	#4\$, ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
005150	012767	005212	011006		MOV	#1\$, FREEZI	:SET UP TO LOOP WITH DATA
005158	012777	004000	010734		MOV	#BIT11, DDHSCR	:MASTER CLEAR INTERFACE
005164	012702	000001			MOV	#1, R2	:FIRST SPEED CODE
005170	012705	000003			MOV	#3, RS	:LINE 3 WILL BE TESTED
005174	012767	101400	011020		MOV	#3*400+100000, RDATA	:SET EXPECTED LINE NUMBER AND VALID DATA FLAG

1600
 1601 005202 012700 000015
 1602 005206 012701 002103
 1603
 1604 005212 010577 010702 1S:
 1605 005216 010177 010702
 1606
 1607 005222 012777 016226 010676
 1608
 1609 005230 012777 177400 010672
 1610
 1611 005236 012777 000010 010666 2S:
 005244 105777 010650
 005250 100375
 005252 017703 010644
 005256 020367 010740
 005262 001407
 005264 005077 010642
 005270 104001
 005272 104410
 005274 012777 000010 010630 3S:
 005302 105267 010714
 005306 001356
 005310 052701 002100
 005314 005202
 005316 005300
 005320 001334
 005322 104400 4S:
 MOV #15,R0
 MOV #2103,R1
 MOV R5,0DHSCR
 MOV R1,0DHLPR
 MOV #TBUF,0DHBA
 MOV #-400,0DHBC
 MOV #10,0DHBAR
 TSTB 0DHSCR
 BPL 2S
 MOV 0DHNR0,R3
 CMP R3,RDATA
 BEQ 3S
 CLR 0DHBAR
 HLT 1
 SCOPE1
 MOV #10,0DHBAR
 INCB RDATA
 BNE 2S
 ADD #2100,R1
 INC R2
 DEC R0
 BNE 1S
 SCOPE
 :SINGLE LINE DATA TEST
 :TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 4
 :CHARACTER LENGTH IS 8 BITS
 :LINE SPEED WILL START AT 50 BAUD AND BE INCREMENTED
 :TO 9600 BAUD.
 :A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED
 :AT EACH SPEED
 005384 012767 000340 172444 725:
 005382 012767 000001 010626
 005383 012767 005520 010614
 005385 012767 005410 010610
 005387 012777 004000 010536
 005388 012702 000001
 005386 012705 000004
 005388 012767 102000 010622
 MOV #340,PS
 MOV #1,ICOUNT
 MOV #4\$,ESCAPE
 MOV #1\$,FREEZ1
 MOV #BIT11,0DHSCR
 MOV #1,R2
 MOV #4,R5
 MOV #4*400+100000,RDATA :LINE 4 WILL BE TESTED
 :DISABLE ALL INTERRUPTS
 :SET UP FOR 1 ITERATIONS
 :SET UP TO ESCAPE TO NEXT TEST
 :SET UP TO LOOP WITH DATA
 :MASTER CLEAR INTERFACE
 :FIRST SPEED CODE
 :SET EXPECTED LINE NUMBER
 :AND VALID DATA FLAG
 :EXPECTED DATA
 005400 012700 000015
 005404 012701 002103
 005410 010577 010504 1S:
 005414 010177 010504
 005420 012777 016226 010500
 MOV #15,R0
 MOV #2103,R1
 MOV R5,0DHSCR
 MOV R1,0DHLPR
 MOV #TBUF,0DHBA
 :13 SPEEDS WILL BE TESTED
 :FIRST SPEED =50 BAUD.
 :8 BITS PER CHARACTER
 :SELECT LINE 4
 :SET LINE SPEED AND
 :CHARACTER LENGTH
 :ADDRESS OF TRANSMITTER
 :DATA BUFFER

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1656	005426	012777	177400	010474		MOV	#-400, 0DHBC	:400 (OCTAL) BYTES
1657								:WILL BE TRANSMITTED
1659	005434	012777	000020	010470	2\$:	MOV	#20, 0DHBAR	:START TRANSMITTER
1659	005442	105777	010452			TSTB	0DHSCR	:WAIT FOR DATA TO BE RECEIVED
1660	005446	100375				BPL	2\$	
1661	005450	017703	010446			MOV	0DHNR, R3	:GET RECEIVED DATA
1662	005454	020367	010542			CMP	R3, RDATA	:COMPER EXPECTED AND RECEIVED DATA
1663	005460	001407				BEQ	3\$	
1664	005462	005077	010444			CLR	0DHBAR	:STOP TRANSMITTER
1665	005466	104001				HLT	1	:DATA ERROR
1666	005470	104410				SCOPE1		:CHECK FOR LOOP AT CURRENT SPEED
1667	005472	012777	000020	010432	3\$:	MOV	#20, 0DHBAR	:RESTART TRANSMITTER
1668	005500	105267	010516			INCB	RDATA	:UPDATA EXPECTED DATA
1669	005504	001356				BNE	2\$	
1670	005506	062701	002100			ADD	#2100, R1	:UPDATE LINE SPEED
1671	005512	005202				INC	R2	:UPDATE SPEED CODE
1672	005514	005300				DEC	RO	
1673	005516	001334				BNE	1\$	
1674	005520	104400			4\$:	SCOPE		
1675								
1676								:SINGLE LINE DATA TEST
1677								:TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 5
1678								:CHARATER LENGTH IS 8 BITS
1679								:LINE SPEED WILL START AT 50 BAUD AND BE INCREMENTED
1680								:TO 9600 BAUD.
1681								:A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED
1682								:AT EACH SPEED
1683								
1684	005522	012767	000340	172246	T26:	MOV	#340, PS	:DISABLE ALL INTERRUPTS
1685	005530	012767	000001	010430		MOV	#1, ICOUNT	:SET UP FOR 1 ITERATIONS
1686	005536	012767	005716	010416		MOV	#4\$, ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
1687	005544	012767	005606	010412		MOV	#1\$, FREEZI	:SET UP TO LOOP WITH DATA
1688	005552	012777	004000	010340		MOV	#BIT11, 0DHSCR	:MASTER CLEAR INTERFACE
1689	005560	012702	000001			MOV	#1, R2	:FIRST SPEED CODE
1690	005564	012705	000005			MOV	#5, RS	
1691	005570	012767	102400	010424		MOV	#5*400+100000, RDATA	:LINE 5 WILL BE TESTED
1692								:SET EXPECTED LINE NUMBER
1693								:AND VALID DATA FLAG
1694								:EXPECTED DATA
1695	005576	012700	000015			MOV	#15, RO	:13 SPEEDS WILL BE TESTED
1696	005602	012701	002103			MOV	#2103, R1	:FIRST SPEED =50 BAUD.
1697								:8 BITS PER CHARACTER
1698	005606	010577	010306		1\$:	MOV	R5, 0DHSCR	:SELECT LINE 5
1699	005612	010177	010306			MOV	R1, 0DHLPR	:SET LINE SPEED AND
1700								:CHARACTER LENGTH
1701	005616	012777	016226	010302		MOV	#TBUF, 0DHBA	:ADDRESS OF TRANSMITTER
1702								:DATA BUFFER
1703	005624	012777	177400	010276		MOV	#-400, 0DHBC	:400 (OCTAL) BYTES
1704								:WILL BE TRANSMITTED
1705	005632	012777	000040	010272	2\$:	MOV	#40, 0DHBAR	:START TRANSMITTER
1706	005640	105777	010254			TSTB	0DHSCR	:WAIT FOR DATA TO BE RECEIVED
1707	005644	100375				BPL	2\$	
1708	005646	017703	10250			MOV	0DHNR, R3	:GET RECEIVED DATA
1709	005652	020367	010344			CMP	R3, RDATA	:COMPER EXPECTED AND RECEIVED DATA
1710	005656	001407				BEQ	3\$	
1711	005660	005077	010246			CLR	0DHBAR	:STOP TRANSMITTER

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1713 005664 104001 HLT 1 :DATA ERROR
1714 005666 104410 :CHECK FOR LOOP AT CURRENT SPEED
1715 005670 012777 000040 010234 SCOPE1 :RESTART TRANSMITTER
1716 005676 105267 010320 3$: MOV #40,3DHBAR :UPDATA EXPECTED DATA
1717 005702 001356 INCB RDATA :UPDATE LINE SPEED
1718 005704 062701 002100 ADD #2100,R1 :UPDATE SPEED CODE
1719 005710 005202 INC R2
1720 005712 005300 DEC RO
1721 005714 001334 SNE 1$ :UPDATE LINE SPEED
1722 005716 104400 SCOPE :UPDATE SPEED CODE

1723 :SINGLE LINE DATA TEST
1724 :TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 6
1725 :CHARACTER LENGTH IS 8 BITS
1726 :LINE SPEED WILL START AT 50 BAUD AND BE INCREMENTED
1727 :TO 9600 BAUD.
1728 :A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED
1729 :AT EACH SPEED
1730

1731 005720 012767 000340 172050 T27: MOV #340,PS :DISABLE ALL INTERRUPTS
1732 005726 012767 000001 010232 MOV #1,ICOUNT :SET UP FOR 1 ITERATIONS
1733 005734 012767 006114 010220 MOV #4$,ESCAPE :SET UP TO ESCAPE TO NEXT TEST
1734 005742 012767 006004 010214 MOV #15,FREEZ1 :SET UP TO LOOP WITH DATA
1735 005750 012777 004000 010142 MOV #BIT11,3DHSCR :MASTER CLEAR INTERFACE
1736 005755 012702 000001 MOV #1,R2 :FIRST SPEED CODE
1737 005762 012705 000006 MOV #6,R5 :LINE 6 WILL BE TESTED
1738 005766 012767 103000 010226 MOV #5*400+100000,RDATA :SET EXPECTED LINE NUMBER
1739 :AND VALID DATA FLAG
1740 :EXPECTED DATA
1741 :MOV #15,RO :13 SPEEDS WILL BE TESTED
1742 005774 012700 000015 MOV #2103,R1 :FIRST SPEED =50 BAUD,
1743 006000 012701 002103 :8 BITS PER CHARACTER
1744 :MOV R5,3DHSCR :SELECT LINE 6
1745 006004 010577 010110 1$: MOV R1,3DHLPR :SET LINE SPEED AND
1746 006010 010177 010110 :CHARACTER LENGTH
1747 :MOV #TBUF,3DHBA :ADDRESS OF TRANSMITTER
1748 006014 012777 016226 010104 :MOV #400,3DHBC :DATA BUFFER
1749 006022 012777 177400 010100 :MOV #-400,3DHBC :400 (OCTAL) BYTES
1750 :WILL BE TRANSMITTED
1751 :MOV #100,3DHBAR :START TRANSMITTER
1752 006030 012777 000100 010074 2$: TSTB 3DHSCR :WAIT FOR DATA TO BE RECEIVED
1753 006036 105777 010056 :BPL 2$ :GET RECEIVED DATA
1754 006042 100375 :MOV 3DHNR, R3 :COMPER EXPECTED AND RECEIVED DATA
1755 006044 017703 010052 :CMP R3,RDATA
1756 006050 020367 010146 :BEQ 3$ :STOP TRANSMITTER
1757 006054 001407 :CLR 3DHBAR :DATA ERROR
1758 006056 005077 010050 :HLT 1 :CHECK FOR LOOP AT CURRENT SPEED
1759 006062 104001 :SCOPE1 :RESTART TRANSMITTER
1760 006064 104410 :MOV #100,3DHBAR :UPDATA EXPECTED DATA
1761 006066 012777 000100 010036 3$: INCB RDATA :UPDATE LINE SPEED
1762 006074 105267 010122 :BNE 2$ :UPDATE SPEED CODE
1763 006100 001356 :ADD #2100,R1
1764 006102 062701 002100 :INC R2 :UPDATE LINE SPEED
1765 006106 005202 :DEC RO :UPDATE SPEED CODE
1766 006110 005300 :BNE 1$ :UPDATE LINE SPEED
1767 006112 001334 :BNE 1$ :UPDATE SPEED CODE

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1768 006114 104400 4\$: SCOPE
 1769
 1770
 1771 :SINGLE LINE DATA TEST
 1772 :TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 7
 1773 :CHARATER LENGTH IS 8 BITS
 1774 :LINE SPEED WILL START AT 50 BAUD AND BE INCREMENTED
 1775 :TO 9600 BAUD.
 1776 :A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED
 1777 :AT EACH SPEED
 1778 006116 012767 000340 171652 T30: MOV #340,PS :DISABLE ALL INTERRUPTS
 1779 006124 012767 000001 010034 MOV #1,ICOUNT :SET UP FOR 1 ITERATIONS
 1780 006132 012767 006312 010022 MOV #4\$,ESCAPE :SET UP TO ESCAPE TO NEXT TEST
 1781 006140 012767 006202 010016 MOV #1\$,FREEZI :SET UP TO LOOP WITH DATA
 1782 006146 012777 004000 007744 MOV #BIT11,JDHSQR :MASTER CLEAR INTERFACE
 1783 006154 012702 000001 MOV #1,R2 :FIRST SPEED CODE
 1784 006160 012705 000007 MOV #7,R5 :LINE 7 WILL BE TESTED
 1785 006164 012767 103400 010030 MOV #7*400+100000,RDATA :SET EXPECTED LINE NUMBER
 1786
 1787 :AND VALID DATA FLAG
 1788 :EXPECTED DATA
 1789 006172 012700 000015 MOV #15,RO :13 SPEEDS WILL BE TESTED
 1790 006176 012701 002103 MOV #2103,R1 :FIRST SPEED =50 BAUD,
 1791 :8 BITS PER CHARACTER
 1792 006202 010577 007712 1\$: MOV R5,JDHSQR :SELECT LINE 7
 1793 006206 010177 007712 MOV R1,JDHLPR :SET LINE SPEED AND
 1794 :CHARACTER LENGTH
 1795 006212 012777 016226 007706 MOV #TBUF,JDHSA :ADDRESS OF TRANSMITTER
 1796 006220 012777 177400 007702 MOV #-400,JDHBC :400 (OCTAL) BYTES
 1797 :WILL BE TRANSMITTED
 1798 006226 012777 000200 007676 2\$: MOV #200,JDHBAR :START TRANSMITTER
 1800 006234 105777 007660 TSTB JDHSQR :WAIT FOR DATA TO BE RECEIVED
 1801 006240 100375 BPL 2\$
 1802 006242 017703 007654 MOV #DHNRQ,R3 :GET RECEIVED DATA
 1803 006246 020367 007750 CMP R3,RDATA :COMPER EXPECTED AND RECEIVED DATA
 1804 006252 001407 BEQ 3\$
 1805 006254 005077 007652 CLR #DHBAR :STOP TRANSMITTER
 1806 006260 104001 HLT 1 :DATA ERROR
 1807 006262 104410 SCOPE1 :CHECK FOR LOOP AT CURRENT SPEED
 1808 006264 012777 000200 007640 MOV #200,JDHBAR :RESTART TRANSMITTER
 1809 006272 105267 007724 INC RDATA :UPDATE EXPECTED DATA
 1810 006276 001356 BNE 2\$
 1811 006300 062701 ADD #2100,R1 :UPDATE LINE SPEED
 1812 006304 005202 INC R2 :UPDATE SPEED CODE
 1813 006306 005300 DEC RO
 1814 006310 001334 BNE 1\$
 1815 006312 104400 SCOPE :SINGLE LINE DATA TEST
 1816 :TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 10
 1817 :CHARATER LENGTH IS 8 BITS
 1818 :LINE SPEED WILL START AT 50 BAUD AND BE INCREMENTED
 1819 :TO 9600 BAUD.
 1820 :A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED
 1821 :AT EACH SPEED
 1822
 1823

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1923 006314 012767 000340 171454 T31: MOV #340,PS :DISABLE ALL INTERRUPTS
1924 006322 012767 000001 007636 MOV #1,ICOUNT :SET UP FOR 1 ITERATIONS
1925 006330 012767 006510 007624 MOV #4$,ESCAPE :SET UP TO ESCAPE TO NEXT TEST
1926 006336 012767 006400 007620 MOV #1$,FREEZ1 :SET UP TO LOOP WITH DATA
1927 006344 012777 004000 007546 MOV #BIT11,SDHSOCR :MASTER CLEAR INTERFACE
1928 006352 012702 000001 MOV #1,R2 :FIRST SPEED CODE
1929 006356 012705 000010 MOV #10,RS :LINE 10 WILL BE TESTED
1930 006362 012767 104000 007632 MOV #10*400+100000,RODATA :SET EXPECTED LINE NUMBER
1931 AND VALID DATA FLAG
1932 EXPECTED DATA
1933 006370 012700 000015 MOV #15,RO :13 SPEEDS WILL BE TESTED
1934 006374 012701 002103 MOV #2103,R1 :FIRST SPEED =50 BAUD,
1935 006400 010577 007514 1$: MOV RS,SDHSOCR :8 BITS PER CHARACTER
1936 006404 010177 007514 MOV RI,SDHLPR :SELECT LINE 10
1937 006410 012777 016226 007510 MOV #TBUF,SDH3A :SET LINE SPEED AND
1938 006416 012777 177400 007504 MOV #-400,SDHBC :CHARACTER LENGTH
1939 006424 012777 000400 007500 2$: MOV #400,SDHBAR :ADDRESS OF TRANSMITTER
1940 006432 105777 007462 TSTB SDHSOCR :DATA BUFFER
1941 006436 100375 BPL 2$ :400 (OCTAL) BYTES
1942 006440 017703 007456 MOV SDHNRC,R3 :WILL BE TRANSMITTED
1943 006444 020367 007552 CMP R3,RODATA :START TRANSMITTER
1944 006450 001407 BEQ 3$ :WAIT FOR DATA TO BE RECEIVED
1945 006452 005077 007454 CLR SDHBAR :GET RECEIVED DATA
1946 006456 104001 HLT 1 :COMPER EXPECTED AND RECEIVED DATA
1947 006460 104410 SCOPE1 :STOP TRANSMITTER
1948 006462 012777 000400 007442 MOV #400,SDHBAR :DATA ERROR
1949 006470 105267 007526 INC RDATA :CHECK FOR LOOP AT CURRENT SPEED
1950 006474 001356 BNE 2$ :RESTART TRANSMITTER
1951 006476 062701 002100 ADD #2100,R1 :UPDATA EXPECTED DATA
1952 006502 005202 INC R2 :UPDATE LINE SPEED
1953 006504 005300 DEC RO :UPDATE SPEED CODE
1954 006506 001334 BNE 1$ :SINGLE LINE DATA TEST
1955 006510 104400 SCOPE :TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 11
1956 :CHARATER LENGTH IS 8 BITS
1957 :LINE SPEED WILL START AT 50 BAUD AND BE INCREMENTED
1958 :TO 9600 BAUD.
1959 :A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED
1960 :AT EACH SPEED
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006512 012767 000340 171256 T32: MOV #340,PS :DISABLE ALL INTERRUPTS
006520 012767 000001 007440 MOV #1,ICOUNT :SET UP FOR 1 ITERATIONS
006526 012767 006706 007426 MOV #4$,ESCAPE :SET UP TO ESCAPE TO NEXT TEST
006534 012767 005576 007422 MOV #1$,FREEZ1 :SET UP TO LOOP WITH DATA
006542 012777 004000 007350 MOV #BIT11,SDHSOCR :MASTER CLEAR INTERFACE
006550 012702 000001 MOV #1,R2 :FIRST SPEED CODE
006554 012705 000011 007434 MOV #11,RS :LINE 11 WILL BE TESTED
006560 012767 104400 007434 MOV #11*400+100000,RODATA

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NO3

						SET EXPECTED LINE NUMBER AND VALID DATA FLAG
						:EXPECTED DATA
006566	012700	000015			MOV	#15,R0
006572	012701	002103			MOV	#2103,R1
006576	010577	007316	18:		MOV	R5,0DHSCR
006602	010177	007316			MOV	R1,0DHLPR
006606	012777	016226	007312		MOV	#TBUF,0DHBA
006614	012777	177400	007306		MOV	#-400,0DHBC
006622	012777	001000	007302	23:	MOV	#1000,0DHBAR
006630	105777	007264			TSTB	0DHSCR
006634	100375				BPL	2\$
006636	017703	007260			MOV	0DHNR,R3
006642	020367	007354			CMP	R3,RDATA
006646	001407				BEQ	3\$
006650	005077	007256			CLR	0DHBAR
006654	104001				HLT	1
006656	104410				SCOPE1	
006660	012777	001000	007244		MOV	#1000,0DHBAR
006666	105267	007330	35:		INCB	RDATA
006672	001356				BNE	2\$
006674	062701	002100			ADD	#2100,R1
006700	005202				INC	R2
006702	005300				DEC	RO
006704	001334				BNE	1\$
006706	104400			49:	SCOPE	
						:SINGLE LINE DATA TEST :TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 12 :CHARACTER LENGTH IS 8 BITS :LINE SPEED WILL START AT 50 BAUD AND BE INCREMENTED :TO 9600 BAUD. :A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED :AT EACH SPEED
006710	012767	000340	171060	T33:	MOV	#340,PS
006716	012767	000001	007242		MOV	#1,ICOUNT
006724	012767	007104	007230		MOV	#4\$,ESCAPE
006732	012767	006774	007224		MOV	#1\$,FREEZ1
006740	012777	004000	007152		MOV	#BIT11,0DHSCR
006746	012702	000001			MOV	#1,R2
006752	012705	000012			MOV	#12,R5
006756	012757	105000	007236		MOV	#12*400+100000,RDATA
						:LINE 12 WILL BE TESTED
						:SET EXPECTED LINE NUMBER AND VALID DATA FLAG
						:EXPECTED DATA
006764	012700	000015			MOV	#15,R0
006770	012701	002103			MOV	#2103,R1
006774	010577	007120	18:		MOV	R5,0DHSCR
007000	010177	007120			MOV	R1,0DHLPR

007006	012777	016226	007114		MOV	#TBUF, SDH3A	ADDRESS OF TRANSMITTER
007012	012777	177400	007110		MOV	#-400, SDH3C	DATA BUFFER
007020	012777	006600	007104	33:	MOV	#4000, SDH3AB	400 (OCTAL) BYTES
007026	012777	006600	007104	33:	MOV	#0HSCRA	START TRANSMITTER
007032	012777	006600	007104	33:	MOV	#0HSCRA	WAIT FOR DATA TO BE RECEIVED
007038	012777	006600	007104	33:	MOV	#0HSCRA	GET RECEIVED DATA
007044	012777	006600	007104	33:	MOV	#0HSCRA	COMPARE EXPECTED AND RECEIVED DATA
007050	012777	006600	007104	33:	MOV	#0HSCRA	STOP TRANSMITTER
007056	012777	006600	007104	33:	MOV	#0HSCRA	CHECK FOR LOOP AT CURRENT SPEED
007062	012777	006600	007104	33:	MOV	#0HSCRA	START TRANSMITTER
007068	012777	006600	007104	33:	MOV	#0HSCRA	UPDATE EXPECTED DATA
007074	012777	006600	007104	33:	MOV	#0HSCRA	UPDATE LINE SPEED
007080	012777	006600	007104	33:	MOV	#0HSCRA	UPDATE SPEED CODE
007100	012777	104900		40:	SCOPE		
							SINGLE LINE DATA TEST
							TRANSMIT A BLOCK OF 400 OCTAL CHARACTERS ON LINE 13
							CHARACTER LENGTH WILL VARY AT 50 BAUD AND BE INCREMENTED
							BY 100 UNITS
							400 UNITS OF 400 CHARACTERS WILL BE TRANSMITTED
							AT 50 BAUD SPEED
007106	012777	006600	176600	73:	MOV	#340, PS	DISABLE ALL INTERRUPTS
007112	012777	006600	006704	73:	MOV	#0HSCRA	SET UP FOR 1 ITERATIONS
007118	012777	006600	006704	73:	MOV	#0HSCRA	SET UP TO SCOPE TO NEXT TEST
007124	012777	006600	006704	73:	MOV	#0HSCRA	MASTER OF CAR INTERFACE
007130	012777	106400	007040	73:	MOV	#104+400+100000, R0H3A	SET SPEED CODE
							LINE 13 WILL BE TESTED
007136	012777	006600			MOV	#15, R0	SET EXPECTED LINE NUMBER
007142	012777	006600			MOV	#0103, R1	AND VALID DATA FLAG
007148	012777	006600		13:	MOV	#0, SDH3CR	EXPECTED DATA
007154	012777	006600		13:	MOV	#1, SDHLPR	10 SPEEDS WILL BE TESTED
007160	012777	006600	006710		MOV	#TBUF, SDH3A	LAST SPEED = 50 BAUD.
007166	012777	006600	006710		MOV	#-400, SDH3C	NO BITS PER CHARACTER
007172	012777	006600	006710		MOV	#4000, SDH3AB	SELECT LINE 13
007178	012777	006600	006710		TSTB	#0HSCRA	SET LINE SPEED AND
007184	012777	006600	006710		BPL	#0HSCRA	CHARACTER LENGTH
007190	012777	006600	006710		MOV	#0HSCRA, R3	ADDRESS OF TRANSMITTER
007196	012777	006600	006710		MOV	#0, R0DATA	DATA BUFFER
007202	012777	006600	006710		MOV	#0, R0DATA	400 (OCTAL) BYTES
007208	012777	006600	006710		MOV	#0HSCRA	START TRANSMITTER
007214	012777	006600	006710		MOV	#0HSCRA	WAIT FOR DATA TO BE RECEIVED
007220	012777	006600	006710		MOV	#0HSCRA	GET RECEIVED DATA
007226	012777	006600	006710		MOV	#0HSCRA	COMPARE EXPECTED AND RECEIVED DATA

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007343	001407	006682			B6C	\$3		STOP TRANSMITTER
007344	001408	006682			SCPE1	!		DATA ERROR
007345	001409	004000	006650	35:	MOV	\$4000, SDHBAR		CHECK FOR LOOP AT CURRENT SPEED
007346	001410	006734			INC	SDATA		RESTART TRANSMITTER
007347	001411	002100			SCPE1	\$4000, R1		UPDATE EXPECTED DATA
007348	001412				INC	SDATA		UPDATE LINE SPEED
007349	001413				INC	SDATA		UPDATE SPEED CODE
007350	010767	000340	170454	T35:	MOV	\$340, PS		DISABLE ALL INTERRUPTS
007351	010768	000341	00069476		MOV	\$1, COUNT		SET UP FOR 1 ITERATIONS
007352	010769	000342	00069477		MOV	\$7, ESCAPE		SET UP TO ESCAPE TO NEXT TEST
007353	010770	000343	00069478		MOV	\$100, TBLP1		SET UP TO LOOP WITH DATA
007354	010771	000344	00069479		MOV	\$400, TBLP2		MASTER CLEAR INTERFACE
007355	010772	000345	00069480		MOV	\$174400+100000, R0		START SPEED CODE
007356	010773	000346	006642		MOV	\$174400+100000, R0		LINE 14 WILL BE TESTED
007357	010774	000347						GET EXPECTED LINE NUMBER
007358	010775	000348						END VALID DATA FLAG
007359	010776	000349						END DATA
007360	010777	000350						CHARACTERS WILL BE TESTED
007361	010778	000351						CHARACTER SPEED IS 300 BAUD.
007362	010779	000352						CHARACTERS PER CHARACTER
007363	010780	010226	006500	16:	MOV	PS, SDHSOR		SET UP LINE 14
007364	010781	0062163			MOV	R1, SDHLFR		SET LINE SPEED AND
007365	010782	0062164						CHARACTER LENGTH
007366	010783	0062165			MOV	#TBUF, SDHBA		ADDRESS OF TRANSMITTER
007367	010784	177400	006514		MOV	\$-400, SDHBC		DATA BUFFER
007368	010785	010000	006510	28:	MOV	\$10000, SDHBAR		400 (OCTAL) BYTES
007369	010786	006472			TSTB	SDHSOR		WILL BE TRANSMITTED
007370	010787	006473			BPL	SDHSOR		START TRANSMITTER
007371	010788	006474			MOV	SDHBC, R3		WAIT FOR DATA TO BE RECEIVED
007372	010789	006475			INC	SDATA		GET RECEIVED DATA
007373	010790	006476			SCPE1	SDHBC		COMPARE EXPECTED AND RECEIVED DATA
007374	010791	006477			INC	SDHBAR		STOP TRANSMITTER
007375	010792	006478			SCPE1	!		DATA ERROR
007376	010793	006479			MOV	\$10000, SDHBAR		CHECK FOR LOOP AT CURRENT SPEED
007377	010794	010000	006480		INC	SDATA		RESTART TRANSMITTER
007378	010795	006481			SCPE1	\$10000, SDHBAR		UPDATE EXPECTED DATA
007379	010796	006482		38:	MOV	SDATA		UPDATE LINE SPEED
007380	010797	006483			INC	\$-100, R1		UPDATE SPEED CODE

007624	0076300			DEC SNE SCOPE	R0 18	
007625	0076300		45:			:SINGLE LINE DATA TEST :TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 15 :CHARATER LENGTH IS 8 BITS :LINE SPEED WILL START AT 50 BAUD AND BE INCREMENTED :TO 9600 BAUD. :A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED :AT EACH SPEED
007626	0107607	000340	170266	T36:	MOV	#340.R6
007627	0107607	000001	0064560		MOV	\$1,I COUNT
007628	0107607	000676	0064560		MOV	\$1,\$1.ESCAPE
007629	0107607	000766	0064560		MOV	\$1,\$1.FREEZE
007630	0107607	0004000	0063360		MOV	\$01111.0DHSCR
007631	0107607	0000001	0063360		MOV	\$1,\$1.RODATA
007632	0107607	0000016	105400	0064444	MOV	\$16+400+100000.RODATA
007633	0107607	0000016	105400			:LINE 15 WILL BE TESTED
007634	0107607	0000016	105400			:DISABLE ALL INTERRUPTS
007635	0107607	0000016	105400			:SET UP FOR 1 ITERATIONS
007636	0107607	0000016	105400			:SET UP TO ESCAPE TO NEXT TEST
007637	0107607	0000016	105400			:SET UP TO LOOP WITH DATA
007638	0107607	0000016	105400			:MASTER CLEAR INTERFACE
007639	0107607	0000016	105400			:FIRST SPEED CODE
007640	0107607	0000016	105400			
007641	0107607	0000016	105400			:SET EXPECTED LINE NUMBER
007642	0107607	0000016	105400			:AND VALID DATA FLAG
007643	0107607	0000016	105400			:EXPECTED DATA
007644	0107607	0000016	105400			:13 SPEEDS WILL BE TESTED
007645	0107607	0000016	105400			:FIRST SPEED =50 BAUD.
007646	0107607	0000016	105400			:8 BITS PER CHARACTER
007647	0107607	0000016	105400			:SELECT LINE 15
007648	0107607	0000016	105400			:SET LINE SPEED AND
007649	0107607	0000016	105400			:CHARACTER LENGTH
007650	0107607	0000016	105400			:ADDRESS OF TRANSMITTER
007651	0107607	0000016	105400			:DATA BUFFER
007652	0107607	0000016	105400			:400 (OCTAL) BYTES
007653	0107607	0000016	105400			:WILL BE TRANSMITTED
007654	0107607	0000016	105400			:START TRANSMITTER
007655	0107607	0000016	105400			:WAIT FOR DATA TO BE RECEIVED
007656	0107607	0000016	105400			
007657	0107607	0000016	105400			:GET RECEIVED DATA
007658	0107607	0000016	105400			:COMPER EXPECTED AND RECEIVED DATA
007659	0107607	0000016	105400			
007660	0107607	0000016	105400			:STOP TRANSMITTER
007661	0107607	0000016	105400			:DATA ERROR
007662	0107607	0000016	105400			:CHECK FOR LOOP AT CURRENT SPEED
007663	0107607	0000016	105400			:RESTART TRANSMITTER
007664	0107607	0000016	105400			:UPDATE DATA EXPECTED DATA
007665	0107607	0000016	105400			
007666	0107607	0000016	105400			:UPDATE LINE SPEED
007667	0107607	0000016	105400			:UPDATE SPEED CODE
007668	0107607	0000016	105400			
007669	0107607	0000016	105400			
007670	0107607	0000016	105400			
007671	0107607	0000016	105400			
007672	0107607	0000016	105400			
007673	0107607	0000016	105400			
007674	0107607	0000016	105400			
007675	0107607	0000016	105400			
007676	0107607	0000016	105400			
007677	0107607	0000016	105400			
007678	0107607	0000016	105400			
007679	0107607	0000016	105400			
007680	0107607	0000016	105400			
007681	0107607	0000016	105400			
007682	0107607	0000016	105400			
007683	0107607	0000016	105400			
007684	0107607	0000016	105400			
007685	0107607	0000016	105400			
007686	0107607	0000016	105400			
007687	0107607	0000016	105400			
007688	0107607	0000016	105400			
007689	0107607	0000016	105400			
007690	0107607	0000016	105400			
007691	0107607	0000016	105400			
007692	0107607	0000016	105400			
007693	0107607	0000016	105400			
007694	0107607	0000016	105400			
007695	0107607	0000016	105400			
007696	0107607	0000016	105400			
007697	0107607	0000016	105400			
007698	0107607	0000016	105400			
007699	0107607	0000016	105400			
007700	0107607	0000016	105400			
007701	0107607	0000016	105400			
007702	0107607	0000016	105400			
007703	0107607	0000016	105400			
007704	0107607	0000016	105400			
007705	0107607	0000016	105400			
007706	0107607	0000016	105400			
007707	0107607	0000016	105400			
007708	0107607	0000016	105400			
007709	0107607	0000016	105400			
007710	0107607	0000016	105400			
007711	0107607	0000016	105400			
007712	0107607	0000016	105400			
007713	0107607	0000016	105400			
007714	0107607	0000016	105400			
007715	0107607	0000016	105400			
007716	0107607	0000016	105400			
007717	0107607	0000016	105400			
007718	0107607	0000016	105400			
007719	0107607	0000016	105400			
007720	0107607	0000016	105400			
007721	0107607	0000016	105400			
007722	0107607	0000016	105400			
007723	0107607	0000016	105400			
007724	0107607	0000016	105400			
007725	0107607	0000016	105400			
007726	0107607	0000016	105400			
007727	0107607	0000016	105400			
007728	0107607	0000016	105400			
007729	0107607	0000016	105400			
007730	0107607	0000016	105400			
007731	0107607	0000016	105400			
007732	0107607	0000016	105400			
007733	0107607	0000016	105400			
007734	0107607	0000016	105400			
007735	0107607	0000016	105400			
007736	0107607	0000016	105400			
007737	0107607	0000016	105400			
007738	0107607	0000016	105400			
007739	0107607	0000016	105400			
007740	0107607	0000016	105400			
007741	0107607	0000016	105400			
007742	0107607	0000016	105400			
007743	0107607	0000016	105400			
007744	0107607	0000016	105400			
007745	0107607	0000016	105400			
007746	0107607	0000016	105400			
007747	0107607	0000016	105400			
007748	0107607	0000016	105400			
007749	0107607	0000016	105400			
007750	0107607	0000016	105400			
007751	0107607	0000016	105400			
007752	0107607	0000016	105400			
007753	0107607	0000016	105400			
007754	0107607	0000016	105400			
007755	0107607	0000016	105400			
007756	0107607	0000016	105400			
007757	0107607	0000016	105400			
007758	0107607	0000016	105400			
007759	0107607	0000016	105400			
007760	0107607	0000016	105400			
007761	0107607	0000016	105400			
007762	0107607	0000016	105400			
007763	0107607	0000016	105400			
007764	0107607	0000016	105400			
007765	0107607	0000016	105400			
007766	0107607	0000016	105400			
007767	0107607	0000016	105400			
007768	0107607	0000016	105400			
007769	0107607	0000016	105400			
007770	0107607	0000016	105400			
007771	0107607	0000016	105400			
007772	0107607	0000016	105400			
007773	0107607	0000016	105400			
007774	0107607	0000016	105400			
007775	0107607	0000016	105400			
007776	0107607	0000016	105400			
007777	0107607	0000016	105400			
007778	0107607	0000016	105400			
007779	0107607	0000016	105400			
007780	0107607	0000016	105400			
007781	0107607	0000016	105400			
007782	0107607	0000016	105400			
007783	0107607	0000016	105400			
007784	0107607	0000016	105400			
007785	0107607	0000016	105400			
007786	0107607	0000016	105400			

17. A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED
AT EACH SPEED

007700	012767	000340	167672	T37:	MOV	#340,PS	DISABLE ALL INTERRUPTS
007701	012767	000001	006160		MOV	\$1,ICOUNT	SET UP FOR 1 ITERATIONS
007714	012767	000074	006160		MOV	\$16,ESCAPE	SET UP TO ESCAPE TO NEXT TEST
007716	012767	007764	006160		MOV	\$16,FREEZ1	SET UP TO LOOP WITH DATA
007720	012767	004000	006162		MOV	\$81111,SDHSOR	MASTER CLEAR INTERFACE
007724	012767	000001	006162		MOV	\$1,R2	FIRST SPEED CODE
007746	012767	167000	006246		MOV	\$16+400+100000,RODATA	LINE 16 WILL BE TESTED
							SET EXPECTED LINE NUMBER AND VALID DATA FLAG
							EXPECTED DATA
007754	012700	000016			MOV	\$16,RC	13 SPEEDS WILL BE TESTED
007760	012701	002103			MOV	\$2103,R1	FIRST SPEED =50 BAUD.
007764	010577	006130		13:	MOV	R5,SDHSOR	8 BITS PER CHARACTER
007770	010177	006130			MOV	R1,SDHLPR	SELECT LINE 16
007774	012777	016226	006124		MOV	#TBUF,SDHBA	SET LINE SPEED AND CHARACTER LENGTH
010002	012777	177400	006120		MOV	#-400,SDHBC	ADDRESS OF TRANSMITTER
010010	012777	040000	006114		MOV	#40000,SDHBAR	DATA BUFFER
010016	105777	006076		EE:	TSTB	SDHSOR	400 (OCTAL) BYTES WILL BE TRANSMITTED
010017	100375				BL		START TRANSMITTER
010020	017703	006072			MOV	SDHNRC,R3	WAIT FOR DATA TO BE RECEIVED
010024	020367	006166			CMP	SDHNRC,RODATA	GET RECEIVED DATA
010027	001407				BNE	SDHNRC	COMPER EXPECTED AND RECEIVED DATA
010029	005077	006070			BL	SDHBAR	STOP TRANSMITTER
010034	104001				LT	?	DATA ERROR
010044	104410				SCOPE1		CHECK FOR LOOP AT CURRENT SPEED
010046	012777	040000	006056	EE:	MOV	#40000,SDHBAR	RESTART TRANSMITTER
010050	105267	006142			INC	RODATA	UPDATE EXPECTED DATA
010054	1001356				BNE	28	
010056	062100	002100			HOD	#2100,R1	UPDATE LINE SPEED
010058	065200				INC	28	UPDATE SPEED CODE
010060	065200				DEC	28	
010072	001334				BNE	15	
010074	104400			EE:	SCOPE		
							SINGLE LINE DATA TEST
							TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 17
							CHARATER LENGTH IS 8 BITS
							LINE SPEED WILL START AT 50 BAUD AND BE INCREMENTED
							TO 9600 BAUD.
							A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED
							AT EACH SPEED
010076	012767	000340	167672	T40:	MOV	#340,PS	DISABLE ALL INTERRUPTS
010079	012767	000001	006054		MOV	\$1,ICOUNT	SET UP FOR 1 ITERATIONS
010112	012767	010272	006042		MOV	\$48,ESCAPE	SET UP TO ESCAPE TO NEXT TEST
010116	012767	010162	006036		MOV	\$16,FREEZ1	SET UP TO LOOP WITH DATA
010119	012777	004000	005764		MOV	\$81111,SDHSOR	MASTER CLEAR INTERFACE
010123	012702	000001			MOV	\$1,R2	FIRST SPEED CODE

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010140	010143	012705	000017		MOV	#17,R5	LINE 17 WILL BE TESTED
	010144	012707	107400	005050	MOV	#17*400+100000,RDATA	SET EXPECTED LINE NUMBER AND VALID DATA FLAG
010152	012700	000015			MOV	#15,R0	EXPECTED DATA
010156	012701	002103			MOV	#2103,R1	13 SPEEDS WILL BE TESTED
010162	010577	005732		13:	MOV	R5,SDHS0R	FIRST SPEED =50 BAUD.
010166	010177	005732			MOV	R1,SDHLPR	8 BITS PER CHARACTER
010172	012777	016226	005726		MOV	#TBUF,SDHBA	SELECT LINE 17
010200	012777	177400	005722		MOV	#-400,SDHBC	SET LINE SPEED AND CHARACTER LENGTH
010206	012777	100000	005716	25:	MOV	#100000,SDHBAR	ADDRESS OF TRANSMITTER
010214	105777	005700			TSTB	SDHS0R	DATA BUFFER
010220	100375				SPL	RS	400 (OCTAL) BYTES
010222	017703	005674			MOV	SDHNRC,R3	WILL BE TRANSMITTED
010226	020367	005770			CMP	R3,RDATA	START TRANSMITTER
010232	001407				BZQ	RS	WAIT FOR DATA TO BE RECEIVED
010234	005077	005672			CLR	SDHBAR	GET RECEIVED DATA
010240	104001				HLT	1	COMPER EXPECTED AND RECEIVED DATA
010242	104410				SCOPE1		STOP TRANSMITTER
010244	012777	100000	005660	35:	MOV	#100000,SDHBAR	DATA ERROR
010252	105267	005744			INCB	RDATA	CHECK FOR LOOP AT CURRENT SPEED
010256	001356				BNE	RS	RESTART TRANSMITTER
010260	062701	002100			ADD	#2100,R1	UPDATE EXPECTED DATA
010264	005202				INC	RS	UPDATE LINE SPEED
010266	005300				DEC	RS	UPDATE SPEED CODE
010270	001334				BNE	1S	
010272	104400			45:	SCOPE		
							:SINGLE LINE DATA TEST
							:TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 0
							:LINE SPEED IS 9600 BAUD
							:CHARACTER LENGTH WILL START AT 5 BITS AND BE INCREMENTED
							:TO 9 BITS
							:A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED
							:AT EACH CHARACTER LENGTH
010274	012767	000340	167474	T41:	MOV	#340,PS	:DISABLE ALL INTERRUPTS
010302	012767	000001	005656		MOV	#1,ICOUNT	:SET UP FOR 1 ITERATIONS
010310	012767	010512	005644		MOV	#45,ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
010316	012767	010364	005640		MOV	#16,FREEZI	:SET UP TO LOOP WITH DATA
010324	012777	004000	005566		MOV	#BIT'1,SDHS0R	:MASTER CLEAR INTERFACE
010332	005004				CLR	R4	:FIRST CHARACTER LENGTH CODE (5 BITS)
010334	012705	000000			MOV	#0,R5	LINE 0 WILL BE TESTED
010340	012767	100000	005654		MOV	#C*400+100000,RDATA	SET EXPECTED LINE NUMBER AND VALID DATA FLAG
010346	012700	000004			MOV	#4,R0	EXPECTED DATA
010352	012701	033500			MOV	#33500,R1	4CHARACTER LENGTHS WILL BE TESTED
							:FIRST CHARACTER LENGTH =5 BITS..
							:LINE SPEED =9600 BAUD

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010316	010356	012767	177740	005640		MOV #40,BYTONT	:40 CHARACTERS AT 5 BITS
	010364	010577	005530	005530	1S:	MOV R5,0DHSCR	:SELECT LINE 0
	010370	0106700	005530			MOV BYTCNT,R2	
	010374	005400				NEG R2	
	010376	010177	005522			MOV R1,0DHLPR	:SET LINE SPEED AND
	010402	012777	016226	005516		MOV #TBUF,0DHBA	:CHARACTER LENGTH
	010410	016777	005610	005512		MOV BYTCNT,0DHBC	:ADDRESS OF TRANSMITTER
	010416	012777	000001	005506	2S:	MOV #1,0DHBAR	:400 (OCTAL) BYTES
	010416	105777	005470			TSTB 0DHSCR	:WILL BE TRANSMITTED
	010416	100376				BPL 0S	:START TRANSMITTER
	010416	0117700	005464			MOV 0DHMRC,R3	:WAIT FOR DATA TO BE RECEIVED
	010416	000362	005560			CMP R3,RDATA	
	010416	001407				BEQ 0S	:GET RECEIVED DATA
	010416	005077	005462			CLR 0DHBAR	:COMPER EXPECTED AND RECEIVED DATA
	010416	104002				HLT	:STOP TRANSMITTER
	010416	104410				SCOPE1	:DATA ERROR
	010416	012777	000001	005450	3S:	MOV #1,0DHBAR	:CHECK FOR LOOP AT CURRENT SPEED
	010416	105267	005534			INCB RDHTA	:RESTART TRANSMITTER
	010416	005300				DEC R2	:UPDATA EXPECTED DATA
	010416	001250	005524			BNE 0S	
	010416	105067				CLR R2	:INITIALIZE EXPECTED
	010416	005201				RDATA	:RECEIVED DATA
	010416	0005204				INC R1	:UPDATA CHARACTER LENGTH
	010416	0006364				INC R4	
	010416	0006362				ASL BYTCNT	
	010416	1001600				DEC R4	
	010416	1044000				BNE 0S	
						SCOPE	
							:SINGLE LINE DATA TEST
							:TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 1
							:LINE SPEED IS 9600 BAUD
							:CHARACTER LENGTH WILL START AT 5 BITS AND BE INCREMENTED
							:TO 8 BITS
							:A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED
							:AT EACH CHARACTER LENGTH
	010514	012767	000340	167264	742:	MOV #340,PS	:DISABLE ALL INTERRUPTS
	010514	012767	000001	00064036		MOV #1,ICOUNT	:SET UP FOR 1 ITERATIONS
	010514	012767	010232	00064036		MOV #45,ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
	010514	012767	010604	005470		MOV #16,FREEZI	:SET UP TO LOOP WITH DATA
	010514	004000	005346			MOV #8111,0DHSCR	:MASTER CLEAR INTERFACE
	010514	006004				CLR R4	:FIRST CHARACTER LENGTH CODE (5 BITS)
	010514	012705	000001			MOV #1,RS	:LINE 1 WILL BE TESTED
	010514	012767	100400	005434		MOV #1*400+100000,RDATA	
							:SET EXPECTED LINE NUMBER
							:AND VALID DATA FLAG
							:EXPECTED DATA
	010566	012700	000004			MOV #4,R0	:4CHARACTER LENGTHS
	010572	012701	033500			MOV #33500,R1	:WILL BE TESTED
	010576	012767	177740	005420		MOV #-40,BYTONT	:FIRST CHARACTER LENGTH =6 BITS..
							:LINE SPEED =9600 BAUD
							:40 CHARACTERS AT 5 BITS

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2394	011254	005402			NEG	R2	
2395	011256	010177	004642		MOV	R1, 3DHLP	:SET LINE SPEED AND
2396							:CHARACTER LENGTH
2397	011262	012777	016226	004635	MOV	#TBUF, 3DHBA	:ADDRESS OF TRANSMITTER
2398							:DATA BUFFER
2399	011270	016777	004730	004632	MOV	BYTCNT, 3DHBC	:400 (OCTAL) BYTES
2400							:WILL BE TRANSMITTED
2401	011276	012777	000010	004626	MOV	#10, 3DHBAR	:START TRANSMITTER
2402	011304	105777	004610		TSTB	2DHSCR	:WAIT FOR DATA TO BE RECEIVED
2403	011310	100375			BPL	2\$	
2404	011312	017703	004604		MOV	3DHNR, R3	:GET RECEIVED DATA
2405	011316	020357	004700		CMP	R3, RDATA	:COMPER EXPECTED AND RECEIVED DATA
2406	011322	001407			BEQ	3\$	
2407	011324	005077	004602		CLR	3DHBAR	
2408	011330	104002			HLT	2	:STOP TRANSMITTER
2409	011332	104410			SCOPE1		:DATA ERROR
2410	011334	012777	000010	004570	MOV	#10, 3DHBAR	:CHECK FOR LOOP AT CURRENT SPEED
2411	011342	105267	004654		INC8	RDATA	:RESTART TRANSMITTER
2412	011346	005302			DEC	R2	:UPDATA EXPECTED DATA
2413	011350	001355			BNE	2\$	
2414	011352	105067	004644		CLRB	RDATA	
2415	011356	005201			INC	R1	:INITIALIZE EXPECTED
2416	011360	005204			INC	R4	:RECEIVED DATA
2417	011362	006367	004636		ASL	BYTCNT	:UPDATA CHARACTER LENGTH
2418	011366	005300			DEC	RO	
2419	011370	001325			BNE	1\$	
2420	011372	104400			SCOPE		
							:SINGLE LINE DATA TEST
							:TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 4
							:LINE SPEED IS 9600 BAUD
							:CHARACTER LENGTH WILL START AT 5 BITS AND BE INCREMENTED
							:TO 8 BITS
							:A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED
							:AT EACH CHARACTER LENGTH
011374	012767	000340	166374	T45:	MOV	#340, PS	:DISABLE ALL INTERRUPTS
011402	012767	000001	004556		MOV	#1, ICOUNT	:SET UP FOR 1 ITERATIONS
011410	012767	011612	004544		MOV	#4\$, ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
011416	012767	011464	004540		MOV	#1\$, FREEZ1	:SET UP TO LOOP WITH DATA
011424	012777	004000	004466		MOV	#BIT11, 3DHSCR	:MASTER CLEAR INTERFACE
011432	005004				CLR	R4	:FIRST CHARACTER LENGTH CODE (5 BITS)
011434	012705	000004			MOV	#4, RS	
011440	012767	102000	004554		MOV	#4*400+100000, RDATA	:LINE 4 WILL BE TESTED
							:SET EXPECTED LINE NUMBER
							:AND VALID DATA FLAG
							:EXPECTED DATA
							:4CHARACTER LENGTHS
							:WILL BE TESTED
011446	012700	000004			MOV	#4, RC	
011452	012701	033500			MOV	#33500, R1	:FIRST CHARACTER LENGTH =5 BITS..
011456	012767	177740	004540	I\$:	MOV	#-40, BYTCNT	:LINE SPEED =9600 BAUD
011464	010577	004430			MOV	RS, 3DHSCR	:40 CHARACTERS AT 5 BITS
011470	016702	004530			MOV	BYTCNT, R2	:SELECT LINE 4
011474	005402				NEG	R2	

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2440	011476	010177	004422		MOV	R1, 3DHLP	:SET LINE SPEED AND	
2441					MOV	#TSUF, 3DHBA	:CHARACTER LENGTH	
2442	011502	012777	016226	004416	MOV		:ADDRESS OF TRANSMITTER	
2443					MOV	BYTCNT, 3DHBC	:DATA BUFFER	
2444	011510	016777	004510	004412	MOV		:400 (OCTAL) BYTES	
2445					MOV	#20, 3DHBAR	:WILL BE TRANSMITTED	
2446	011516	012777	000020	004406	TSTB	3DHSCR	:START TRANSMITTER	
2447	011524	105777	004370		BPL	2\$:WAIT FOR DATA TO BE RECEIVED	
2448	011530	100375			MOV	3DHNR, R3		
2449	011532	017703	004364		CMP	R3, RDATA	:GET RECEIVED DATA	
2450	011536	020367	004460		BEQ	3\$:COMPER EXPECTED AND RECEIVED DATA	
2451	011542	001407			CLR	3DHBAR	:STOP TRANSMITTER	
2452	011544	005077	004362		HLT	2	:DATA ERROR	
2453	011550	104002			SCOPE1		:CHECK FOR LOOP AT CURRENT SPEED	
2454	011552	104410			MOV	#20, 3DHBAR	:RESTART TRANSMITTER	
2455	011554	012777	000020	004350	INCB	RDATA	:UPDATA EXPECTED DATA	
2456	011562	105267	004434		DEC	R2		
2457	011566	005302			BNE	2\$		
2458	011570	001355			CLR3	RDATA	:INITIALIZE EXPECTED	
2459	011572	105067	004424		INC	R1	:RECEIVED DATA	
2460	011576	005201			INC	R4	:UPDATA CHARACTER LENGTH	
2461	011600	005204			ASL	BYTCNT		
2462	011602	006367	004416		DEC	R0		
2463	011606	005300			BNE	1\$		
2464	011610	001325			SCOPE			
2465	011612	104400						
2466								
2467								
2468							:SINGLE LINE DATA TEST	
2469							:TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 5	
2470							:LINE SPEED IS 9600 BAUD	
2471							:CHARACTER LENGTH WILL START AT 5 BITS AND BE INCREMENTED	
2472							:TO 8 BITS	
2473							:A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED	
2474							:AT EACH CHARACTER LENGTH	
2475								
2476	011614	012767	000340	165154	T46:	MOV	#340, PS	:DISABLE ALL INTERRUPTS
2477	011622	012767	000001	004336		MOV	#1, ICOUNT	:SET UP FOR 1 ITERATIONS
2478	011630	012767	012032	004324		MOV	#4\$, ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
2479	011636	012767	011704	004320		MOV	#1\$, FREEZI	:SET UP TO LOOP WITH DATA
2480	011644	012777	004000	004246		MOV	#BIT11, 3DHSCR	:MASTER CLEAR INTERFACE
2481	011652	005004				CLR	R4	:FIRST CHARACTER LENGTH CODE (5 BITS)
2482	011654	012705	000005			MOV	#5, RS	:LINE 5 WILL BE TESTED
2483	011660	012767	102400	004334		MOV	#5*400+100000, RDATA	
2484								
2485								
2486								
2487	011666	012700	000004			MOV	#4, R0	:SET EXPECTED LINE NUMBER
2488								:AND VALID DATA FLAG
2489								:EXPECTED DATA
2490	011672	012701	033500			MOV	#33500, R1	:4CHARACTER LENGTHS
2491								:WILL BE TESTED
2492								:FIRST CHARACTER LENGTH =5 BITS,,
2493	011676	012767	177740	004320	1\$:	MOV	#-40, BYTCNT	:LINE SPEED =9600 BAUD
2494	011704	010577	004210			MOV	R5, 3DHSCR	:40 CHARACTERS AT 5 BITS
2495	011710	016702	004310			MOV	BYTCNT, R2	:SELECT LINE 5
2496	011714	005402				NEG	R2	
2497	011716	010177	004202			MOV	R1, 3DHLP	
2498								:SET LINE SPEED AND

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2496							:CHARACTER LENGTH
2497	011722	012777	016226	004176		MOV #TBUF, DDHBA	:ADDRESS OF TRANSMITTER
2498						MOV BYTCNT, DDHBC	:DATA BUFFER
2499	011730	016777	004270	004172			:400 (OCTAL) BYTES
2500						MOV #40, DDHBAR	:WILL BE TRANSMITTED
2501	011736	012777	000040	004166	2\$:	TSTB DDHSR	:START TRANSMITTER
2502	011744	105777	004150			BPL 2\$:WAIT FOR DATA TO BE RECEIVED
2503	011750	100375				MOV DDHNRC, R3	
2504	011752	017703	004144			CMP R3, RDATA	:GET RECEIVED DATA
2505	011756	020367	004240			BEQ 3\$:COMPER EXPECTED AND RECEIVED DATA
2506	011762	001407				CLR DDHBAR	
2507	011764	005077	004142			HLT 2	:STOP TRANSMITTER
2508	011770	104002					:DATA ERROR
2509	011772	104410					:CHECK FOR LOOP AT CURRENT SPEED
2510	011774	012777	000040	004130	3\$:	MOV #40, DDHBAR	:RESTART TRANSMITTER
2511	012002	105267	004214			INCB RDATA	:UPDATA EXPECTED DATA
2512	012006	005302				DEC R2	
2513	012010	001355				BNE 2\$	
2514	012012	105067	004204			CLRB RDATA	:INITIALIZE EXPECTED
2515	012016	005201					:RECEIVED DATA
2516	012020	005204				INC R1	:UPDATA CHARACTER LENGTH
2517	012022	006367	004176			INC R4	
2518	012026	005300				ASL BYTCNT	
2519	012030	001325				DEC R0	
2520	012032	104400			4\$:	BNE 1\$	
2521						SCOPE	
2522							:SINGLE LINE DATA TEST
2523							:TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 6
2524							:LINE SPEED IS 9600 BAUD
2525							:CHARACTER LENGTH WILL START AT 5 BITS AND BE INCREMENTED
2526							:TO 8 BITS
2527							:A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED
2528							:AT EACH CHARACTER LENGTH
2529							
2530	012034	012767	000340	165734	T47:	MOV #340, PS	:DISABLE ALL INTERRUPTS
2531	012042	012767	000001	004116		MOV #1, ICOUNT	:SET UP FOR 1 ITERATIONS
2532	012050	012767	012252	004104		MOV #4\$, ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
2533	012056	012767	012124	004100		MOV #1\$, FREEZI	:SET UP TO LOOP WITH DATA
2534	012064	012777	004000	004026		MOV #BIT11, DDHSR	:MASTER CLEAR INTERFACE
2535	012072	005004				CLR R4	:FIRST CHARACTER LENGTH CODE (5 BITS)
2536	012074	012705	000006			MOV #6, R5	:LINE 6 WILL BE TESTED
2537	012100	012767	103000	004114		MOV #6*400+100000, RDATA	
2538							:SET EXPECTED LINE NUMBER
2539							:AND VALID DATA FLAG
2540							:EXPECTED DATA
2541	012106	012700	000004			MOV #4, R0	:4CHARACTER LENGTHS
2542	012112	012701	033500				:WILL BE TESTED
2543	012116	012767	177740	004100	1\$:	MOV #33500, R1	:FIRST CHARACTER LENGTH =5 BITS.,
2544	012124	010577	003770				:LINE SPEED =9600 BAUD
2545	012130	016702	004070			MOV #-40, BYTCNT	:40 CHARACTERS AT 5 BITS
2546	012134	005402				MOV R5, DDHSR	:SELECT LINE 6
2547	012136	010177	003762			MOV BYTCNT, R2	
2548						NEG R2	
2549						MOV R1, DDHLPR	
2550							:SET LINE SPEED AND
2551							:CHARACTER LENGTH

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012142	012777	016226	003756		MOV	#TBUF, ³ DHBA	:ADDRESS OF TRANSMITTER
012150	012777	004050	003752		MOV	BYTCNT, ³ DHBC	:DATA BUFFER 400 (OCTAL) BYTES
012156	012777	000100	003746	2\$:	MOV	#100, ³ DHBAR	:WILL BE TRANSMITTED
012164	105777	003730			TSTB	³ DHSOCR	:START TRANSMITTER
012170	100376				SPL	2\$:WAIT FOR DATA TO BE RECEIVED
012172	017703	003724			MOV	³ DHNRC,R3	:GET RECEIVED DATA
012176	020367	004020			CMP	R3,RDATA	:COMPER EXPECTED AND RECEIVED DATA
012202	001407				BEQ	3\$	
012204	005077	003722			CLR	³ DHBAR	:STOP TRANSMITTER
012210	104002				HLT	2	:DATA ERROR
012212	104410				SCOPE1		:CHECK FOR LOOP AT CURRENT SPEED
012214	012777	000100	003710	3\$:	MOV	#100, ³ DHBAR	:RESTART TRANSMITTER
012222	105267	003774			INCB	RDATA	:UPDATA EXPECTED DATA
012226	005302				DEC	R2	
012230	001355				BNE	2\$	
012232	105067	003764			CLRB	RDATA	:INITIALIZE EXPECTED
012236	005201				INC	R1	:RECEIVED DATA
012240	005204				INC	R4	:UPDATA CHARACTER LENGTH
012242	006367	003756			ASL	BYTCNT	
012246	005300				DEC	RO	
012250	001325				BNE	1\$	
012252	104400			4\$:	SCOPE		
012254	012767	000340	165514	T50:	MOV	#340,PS	:SINGLE LINE DATA TEST
012262	012767	000001	003676		MOV	#1,ICOUNT	:TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 7
012270	012767	012472	003664		MOV	#4\$,ESCAPE	:LINE SPEED IS 9600 BAUD
012276	012767	012344	003660		MOV	#1\$,FREEZI	:CHARACTER LENGTH WILL START AT 5 BITS AND BE INCREMENTED
012304	012777	004000	003606		MOV	#BIT11, ³ DHSOCR	:TO 8 BITS
012312	005004				CLR	R4	:A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED
012314	012705	000007			MOV	#7,RS	:AT EACH CHARACTER LENGTH
012320	012767	103400	003674		MOV	#7*400+100000,RDATA	:LINE 7 WILL BE TESTED
012326	012700	000004					:SET EXPECTED LINE NUMBER
012332	012701	033500			MOV	#4,RO	:AND VALID DATA FLAG
012336	012767	177740	003660	1\$:	MOV	#33500,R1	:EXPECTED DATA
012344	010577	003550			MOV	#-40,BYTCNT	:4 CHARACTER LENGTHS
012350	016702	003650			MOV	R5, ³ DHSOCR	:WILL BE TESTED
012354	005402				NEG	BYTCNT,R2	:FIRST CHARACTER LENGTH =5 BITS,,
012356	010177	003542			MOV	R2	:LINE SPEED =9600 BAUD
012362	012777	016226	003536		MOV	R1, ³ DHLPR	:40 CHARACTERS AT 5 BITS
012368							:SELECT LINE 7
012374							
012380							
012386							
012392							
012398							
012404							
012410							
012416							
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0127FE							
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0127FC							
0127FE							
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0127FC							
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0127FA							
0127FC							
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0127FA							
0127FC							
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012610	012677	000410	000312		MOV	BYTCONT, SDHBC	:400 (OCTAL) BYTES
		000420	000306	28:	MOV	#400, SDHBCR	:INITIATE TRANSMITTER
		000420	000306		MOV	#000, SDHBCR	:WAIT FOR DATA TO BE RECEIVED
		000300	000300		MOV	#400, SDHBCR	:GET RECEIVED DATA
		000300	000300		MOV	#000, SDHBCR	:COMPILE EXPECTED AND RECEIVED DATA
		000300	000300		MOV	#000, SDHBCR	:STOP TRANSMITTER
		000300	000300		MOV	#400, SDHBCR	:SELECT SPEED FOR LOOP AT CURRENT SPEED
		000300	000300		MOV	#000, SDHBCR	:UPDATE EXPECTED DATA
		000300	000300		MOV	#000, SDHBCR	:INITIALIZE EXPECTED
		000300	000300		MOV	#000, SDHBCR	:INITIALIZE CHARACTER LENGTH
		000315	000315	48:	MOV	BYTCONT	
							:SINGLE LINE DATA TEST
							:TRANSMIT A BLOCK OF 400 OCTAL CHARACTERS ON LINE 11
							:LINE SPEED IS 9600 BAUD
							:CHARACTER LENGTH WILL START AT 5 BITS AND BE INCREMENTED
							:AT EACH CHARACTER LENGTH
		000340	166050	752:	MOV	#340, PS	:DISABLE ALL INTERRUPTS
		000340	166050		MOV	#1, TAOUNT	:SET UP FOR INTERRUPT
		000340	166050		MOV	#0, INTTYPE	:ROUTINE TO NEXT TEST
		000340	166050		MOV	#0, INTEN	
		000340	166050		MOV	#0, INT11, SDHSOR	
		000340	166050		MOV	#11, PS	:FIRST CHARACTER LENGTH CODE (5 BITS)
		000340	166050		MOV	#11+400+100000, PSATA	:LINE 11 WILL BE TESTED
		000311	104400	000323-	MOV		:SET EXPECTED LINE NUMBER
		000311	104400	000323-	MOV		:NO VALID DATA FLAG
		000311	104400	000323-	MOV		:EXPECTED DATA
		000311	104400	000323-	MOV		:CHARACTER LENGTHS
		000311	104400	000323-	MOV		:WILL BE ASSISTED
		000311	104400	000323-	MOV		:FIRST CHARACTER LENGTH = 5 BITS..
		000311	104400	000323-	MOV		:LINE SPEED 9600 BAUD
		000311	104400	000323-	MOV		:CHARACTERS 100000 BITS
		000311	104400	000323-	MOV		:SELECT LINE 11
012766	012700	000004			MOV	#4, RC	:SET LINE SPEED AND
012772	012701	033500			MOV	#33500, RI	:CHARACTER LENGTH
012776	012767	177740	0003220	13:	MOV	#40, BYTCONT	:FIRST CHARACTER LENGTH = 5 BITS..
012776	012767	177740	0003220	13:	MOV	#5, SDHSOR	:LINE SPEED 9600 BAUD
012776	012767	177740	0003220	13:	MOV	#0, BYTCONT, RI	:CHARACTERS 100000 BITS
012776	012767	177740	0003220	13:	NEG	R1	:SELECT LINE 11
013016	012777	003102			MOV	R1, SDHLPR	
013022	012777	016226	003076		MOV	#7BUF, SDHBC	:SET LINE SPEED AND
013030	012777	003170	003072		MOV	BYTCONT, SDHBC	:CHARACTER LENGTH
013030	012777	003170	003072				:ADDRESS OF TRANSMITTER
013030	012777	003170	003072				:LOAD BUFFER
013030	012777	003170	003072				:400 (OCTAL) BYTES

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013036	016777	001000	003066		MOV	#1000, SDHBAR	WILL BE TRANSMITTED
013037	016777	003060		E5:	MOV	#0HSCA	:START TRANSMITTER
013038	016777	003044			MOV	#0HNRC, R3	:WAIT FOR DATA TO BE RECEIVED
013039	016777	003140			MOV	#0DATA	:GET RECEIVED DATA
013040	016777	003042			CLD	#0HBAR	:COMPER EXPECTED AND RECEIVED DATA
013041	016777	001000	003060	EE:	SCPE1		:STOP TRANSMITTER
013042	016777	003114			MOV	#1000, SDHBAR	:DATA ERROR
013043	016777	003114			MOV	#0DATA	:CHECK FOR LOOP AT CURRENT SPEED
013044	016777	003104			CLD	#0DATA	:RESTART TRANSMITTER
013045	016777	003076		EE:	INC	#1	:UPDATE EXPECTED DATA
013046	016777	003076			SCPE1	#0YTONT	:INITIALIZE EXPECTED
013047	016777	003076			SCPE1	#0YTONT	:UPDATE CHARACTER LENGTH
013048	016777	004000					
013049	016777	000340	164634	T53:	MOV	#3-HRS	:DISABLE ALL INTERRUPTS
013050	016777	000340	164634		MOV	#3-INTCOUNT	:SET UP FOR 3 ITERATIONS
013051	016777	000340	164634		MOV	#3-FREEDP	:SET UP TO ESCAPE TO NEXT TEST
013052	016777	000340	164634		MOV	#3-11.SDHSCR	:SET UP TO LOOP WITH DATA
013053	016777	000012	003014		MOV	#1-HRS	:FIRST CHARACTER LENGTH CODE = 6 BITS
013054	016777	165000	003014		MOV	#1+400+100000, RDATA	:LINE 12 WILL BE TESTED
013055	016777	000004			MOV	#4,R0	:SET EXPECTED LINE NUMBER
013056	016777	000004			MOV	#4, R1	:END VALID DATA FLAG
013057	016777	033500			MOV	#33500, R1	:EXPECTED DATA
013058	016777	177740	003000	E5:	MOV	#40_BYTONT	:CHARACTER LENGTHS
013059	016777	002670	003000		MOV	#5, SDHSCR	:WILL BE TESTED
013060	016777	002770	003000		MOV	#5, BYTONT, R2	:FIRST CHARACTER LENGTH = 5 BITS..
013061	016777	002662	003000		NEG	#2	:LINE SPEED = 9600 BAUD
013062	016777	002662	003000		MOV	R1, SDHLFR	:40 CHARACTERS AT 5 BITS
013063	016777	016226	002656		MOV	#TBUF, SDHBA	:SELECT LINE 12
013064	016777	002750	002652		MOV	BYTONT, SDHBC	
013065	016777	002750	002652				

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013356	013377	0026000	002646			MOV	\$2000, DDHBAR	:START TRANSMITTER
		002630		23:	TSTB	DDHSOR	:WAIT FOR DATA TO BE RECEIVED	
		002624			BPL			
		002720			MOV	DDHNRC, R3	:GET RECEIVED DATA	
		002622			CMP	DD3, RDATA	:COMPER EXPECTED AND RECEIVED DATA	
					BEQ			
					CLR	DDHBAR	:STOP TRANSMITTER	
					HLT		:DATA ERROR	
					SCOPE1		:CHECK FOR LOOP AT CURRENT SPEED	
		0026000	002610	33:	MOV	\$2000, DDHBAR	:RESTART TRANSMITTER	
		002674			INC B	DDATA	:UPDATA EXPECTED DATA	
					DEC			
					BNE			
					CLRB	DDATA	:INITIALIZE EXPECTED	
		105067	002664				:RECEIVED DATA	
					INC		:UPDATA CHARACTER LENGTH	
		005201			INC			
		006600			ISL			
		006900			DEC			
		100047			BNE			
				48:	SCOPE			
							:SINGLE LINE DATA TEST	
							:TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 13	
							:LINE SPEED IS 9600 BAUD	
							:CHARACTER LENGTH WILL START AT 5 BITS AND BE INCREMENTED	
							:TO 8 BITS	
							:A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED	
							:AT EACH CHARACTER LENGTH	
013354	013767	000340	164414	T54:	MOV	\$340, PS	:DISABLE ALL INTERRUPTS	
	013767	0000001	002570		MOV	\$1, ICOUNT	:SET UP FOR 1 ITERATIONS	
	013767	013522	002560		MOV	\$4\$, ESCAPE	:SET UP TO ESCAPE TO NEXT TEST	
	013767	013444	002560		MOV	\$1\$, FREEZI	:SET UP TO LOOP WITH DATA	
	013777	004000	002506		MOV	\$BIT11, DDHSOR	:MASTER CLEAR INTERFACE	
	006004				CLR	R4	:FIRST CHARACTER LENGTH CODE (5 BITS)	
	013706	000013	002574		MOV	\$13, R5	:LINE 13 WILL BE TESTED	
	013767	105400			MOV	\$13*400+100000, RDATA		
							:SET EXPECTED LINE NUMBER	
							:AND VALID DATA FLAG	
013426	012700	000004			MOV	#4, R0	:EXPECTED DATA	
013432	012701	033500			MOV	#33500, R1	:4 CHARACTER LENGTHS	
013436	012767	177740	002560	13:	MOV	\$-40, BYTONT	:WILL BE TESTED	
013444	010577	002450			MOV	25, DDHSCR	:FIRST CHARACTER LENGTH =5 BITS..	
013450	016702	002550			MOV	BYTONT, R2	:LINE SPEED =9600 BAUD	
013454	006702				NEG	R2	:40 CHARACTERS AT 5 BITS	
013456	010177	002442			MOV	R1, DDHLPR	:SELECT LINE 13	
013462	012777	016226	002436		MOV	#TBUF, DDHBA	:SET LINE SPEED AND	
013470	016777	002530	002432		MOV	BYTONT, DDHBC	:CHARACTER LENGTH	
0031	013476	012777	004000	002426	MOV	#4000, DDHBAR	:ADDRESS OF TRANSMITTER	
							:DATA BUFFER	
							:400 (OCTAL) BYTES	
							:WILL BE TRANSMITTED	
							:START TRANSMITTER	

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013633	013634	105777	002410	23:	TSTB	\$DHSOR	:WAIT FOR DATA TO BE RECEIVED
		105777	002404		BPL	\$DHSOR	
		105777	002500		MOV	\$DHSOR,R3	:GET RECEIVED DATA
		105777	002402		CMP	\$DHSOR,ROATA	:COMPER EXPECTED AND RECEIVED DATA
		105777	004000	002370	SCPE1	\$DHSOR	:STOP TRANSMITTER
		105777	002454	002370	MOV	\$DHSOR,SDHSPR	:DATA ERROR
		105777	002444		INCB	\$DHSOR	:CHECK FOR LOOP AT CURRENT SPEED
		105777	002436		MOV	\$DHSOR,ROATA	:RESTART TRANSMITTER
		105777			SCPE	\$DHSOR	:UPDATE EXPECTED DATA
				-23:	SCPE	\$DHSOR	:INITIALIZE EXPECTED
					SCPE	\$DHSOR	:RECEIVED DATA
					SCPE	\$DHSOR	:UPDATE CHARACTER LENGTH
							:SINGLE LINE DATA TEST
							:TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 14
							:CHARACTER SPEED IS 9600 BAUD
							:CHARACTER LENGTH WILL START AT 5 BITS AND BE INCREMENTED
							:TO 8 BITS
							:A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED
							:AT EACH CHARACTER LENGTH
013674	013675	000000	161104	755:	MOV	\$340,PS	:DISABLE ALL INTERRUPTS
		000000	000000		MOV	\$1,1COUNT	:SET UP FOR 1 ITERATIONS
		000000	000000		MOV	\$4,\$ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
		000000	000000		MOV	\$1,\$FREEZI	:SET UP TO LOOP WITH DATA
		000000	000000		MOV	\$1111,SDHSOR	:MASTER CLEAR INTERFACE
		000000	000000		MOV	\$14,RS	:FIRST CHARACTER LENGTH CODE (5 BITS)
		000000	000000		MOV	\$144400+100000,ROATA	:LINE 14 WILL BE TESTED
							:SET EXPECTED LINE NUMBER
							:AND VALID DATA FLAG
							:EXPECTED DATA
							:CHARACTER LENGTHS
							:WILL BE TESTED
							:FIRST CHARACTER LENGTH = 5 BITS..
							:LINE SPEED = 9600 BAUD
							:40 CHARACTERS AT 5 BITS
							:SELECT LINE 14
013646	013700	000004			MOV	\$4,RO	:SET LINE SPEED AND
013652	013701	003500			MOV	\$33500,RI	:CHARACTER LENGTH
013656	013767	177240	002340	13:	MOV	\$-40,SDHLPR	:ADDRESS OF TRANSMITTER
013657	013767	002380			MOV	\$25,SDHSOR	:DATA BUFFER
013670	013700	002380			MOV	\$25,SDHLPR	:400 (OCTAL) BYTES
013674	013700	002380			NEG	\$25	:WILL BE TRANSMITTED
013676	013777	001222			MOV	\$1,SDHLPR	:START TRANSMITTER
013702	013777	016226	002216		MOV	\$TBUF,SDHSA	:WAIT FOR DATA TO BE RECEIVED
013710	013777	002310	002212		MOV	BYTCNT,SDHBC	
013716	013777	010000	002206	23:	MOV	\$10000,SDHBAR	
013724	013777	002170			TSTB	SDHSOR	

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014152	017703	001744		MOV	#JOHNRC,R3	:GET RECEIVED DATA	
014156	020367	002040		CMP	R3,RDATA	:COMPER EXPECTED AND RECEIVED DATA	
014162	001407			BEG	3\$		
014164	005072	001742		CLR	#DHBAR	:STOP TRANSMITTER	
014170	104002			HLT	2	:DATA ERROR	
014172	104410			SCOPE1		:CHECK FOR LOOP AT CURRENT SPEED	
014174	012777	020000 001730	3\$:	MOV	#20000,JOHBAR	:RESTART TRANSMITTER	
014202	105267	002014		INCB	RDATA	:UPDATA EXPECTED DATA	
014206	005302			DEC	R2		
014210	001395			BNE	2\$		
014212	105067	002004		CLRB	RDATA	:INITIALIZE EXPECTED	
014216	005201			INC	R1	:RECEIVED DATA	
014220	005204			INC	R4	:UPDATA CHARACTER LENGTH	
014224	005367	001776		ASL	BYTCONT		
014226	005300			DEC	20		
014230	001326			BNE	1\$		
014232	104400			SCOPE			
						:SINGLE LINE DATA TEST	
						:TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 16	
						:LINE SPEED IS 9600 BAUD	
						:CHARACTER LENGTH WILL START AT 5 BITS AND BE INCREMENTED	
						:TO 8 BITS	
						:A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED	
						:AT EACH CHARACTER LENGTH	
014234	012767	000340	163534	757:	MOV	#340,PS	:DISABLE ALL INTERRUPTS
014238	0012767	000001	001716		MOV	#1,ICOUNT	:SET UP FOR 1 ITERATIONS
014240	0012767	014452	001704		MOV	#4\$,ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
014244	0012767	014324	001700		MOV	#1\$,FREEZI	:SET UP TO LOOP WITH DATA
014248	0012777	004000	001626		MOV	#8111,JOHSCR	:MASTER CLEAR INTERFACE
014252	005004			CLR	R4	:FIRST CHARACTER LENGTH CODE (5 BITS)	
014256	012705	000016		MOV	#16,R5	:LINE 16 WILL BE TESTED	
014260	012767	107000	001714	MOV	#16+400+100000,RDATA		
						:SET EXPECTED LINE NUMBER	
						:AND VALID DATA FLAG	
014306	012700	000004		MOV	#4,R0	:EXPECTED DATA	
014312	012701	033500		MOV	#33500,R1	:4CHARACTER LENGTHS	
014316	012767	177740	001700	18:	MOV	#-40,BYTCONT	:WILL BE TESTED
014320	010577	001570		MOV	R5,JOHSCR	:FIRST CHARACTER LENGTH =5 BITS..	
014324	016702	001670		MOV	BYTCONT,R2	:LINE SPEED =9600 BAUD	
014328	005402			NEG	R2	:40 CHARACTERS AT 5 BITS	
014332	010177	001562		MOV	R1,JOHLPR	:SELECT LINE 16	
014342	012777	016226	001556	MOV	#TBUF,JOHBA		
014350	016777	001650	001552	MOV	BYTCONT,JOHBC		
014356	012777	040000	001546	28:	MOV	#40000,JOHBAR	
014364	105777	001530		TSTB	JOHSCR	:START TRANSMITTER	
014370	100375			BPL	2\$:WAIT FOR DATA TO BE RECEIVED	
014372	017703	001524		MOV	#JOHNRC,R3	:GET RECEIVED DATA	

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2000	014376	020367	001520		CMP	R3,RDATA	:COMPER EXPECTED AND RECEIVED DATA	
2001	014402	001407	001522		BEQ	3\$		
2002	014404	005077			CLR	0DHBAR	:STOP TRANSMITTER	
2003	014410	104410			HLT		:DATA ERROR	
2004	014414	012722	001510	3\$:	SCOPE1		:CHECK FOR LOOP AT CURRENT SPEED	
2005	000660	105087	001574		MOV	#40000,0DHBAR	:RESTART TRANSMITTER	
2006	014416	005367			INCB	RDATA	:UPDATA EXPECTED DATA	
2007	014418	105087	001564		DEC	R2		
2008	014420	005204			GNE	0DHBAR		
2009	014422	005367	001556	4\$::	CLRB	RDATA	:INITIALIZE EXPECTED	
2010	014424	005367			INC	R1	:RECEIVED DATA	
2011	014426	104400			INC	R4	:UPDATA CHARACTER LENGTH	
2012	014428				ASL	BYTCONT		
2013	014430				DEC	RO		
2014	014432				BNE	1\$		
2015					SCOPE			
2016							:SINGLE LINE DATA TEST	
2017							:TRANSMIT A BLOCK OF 400 (OCTAL) CHARACTERS ON LINE 17	
2018							:LINE SPEED IS 9600 BAUD	
2019							:CHARACTER LENGTH WILL START AT 5 BITS AND BE INCREMENTED	
2020							:TO 8 BITS	
2021							:A BLOCK OF 400 CHARACTERS WILL BE TRANSMITTED	
2022							:AT EACH CHARACTER LENGTH	
2023	014454	012767	000340	163314	T60:	MOV	#340,PS	:DISABLE ALL INTERRUPTS
2024	014456	012767	000001	001476		MOV	\$1,ICOUNT	:SET UP FOR 1 ITERATIONS
2025	014458	012767	014672	001464		MOV	#4\$,ESCAPE	:SET UP TO ESCAPE TO NEXT TEST
2026	014460	012767	014544	001460		MOV	#1\$,FREEZI	:SET UP TO LOOP WITH DATA
2027	014462	012777	004000	001406		MOV	#BIT11,0DHSOR	:MASTER CLEAR INTERFACE
2028	014464	005004			CLR	R4	:FIRST CHARACTER LENGTH CODE (5 BITS)	
2029	014466	012705	000017	001474		MOV	#17,RS	:LINE 17 WILL BE TESTED
2030	014468	012767	107400	001474		MOV	\$17*400+100000,RDATA	
2031							:SET EXPECTED LINE NUMBER	
2032							:AND VALID DATA FLAG	
2033							:EXPECTED DATA	
2034	014526	012700	000004		MOV	\$4,RO	:4CHARACTER LENGTHS	
2035	014532	012701	033500		MOV	#33500,R1	:WILL BE TESTED	
2036	014536	012767	177740	001460	1\$::	MOV	#-40,BYTCONT	:FIRST CHARACTER LENGTH =5 BITS..
2037	014544	010577	001350		MOV	R5,0DHSOR	:LINE SPEED =9600 BAUD	
2038	014550	016702	001450		MOV	BYTCONT,R2	:40 CHARACTERS AT 5 BITS	
2039	014554	005402			NEG	R2	:SELECT LINE 17	
2040	014556	010177	001342		MOV	R1,0CHLPR		
2041							:SET LINE SPEED AND	
2042							:CHARACTER LENGTH	
2043	014562	012777	016226	001336	MOV	#TBUF,0DHBA	:ADDRESS OF TRANSMITTER	
2044	014570	016777	001430	001332	MOV	BYTCONT,0DHBC	:DATA BUFFER	
2045	014576	012777	100000	001326	2\$::	MOV	#100000,0DHBAR	:400 (OCTAL) BYTES
2046	014584	105777	001310		TSTB	0DHSCR	:WILL BE TRANSMITTED	
2047	014590				BPL	2\$		
2048	014610	100375			MOV	0DHNRC,R3	:WAIT FOR DATA TO BE RECEIVED	
2049	014612	017703	001304		CMP	R3,RDATA	:GET RECEIVED DATA	
2050	014616	020367	001400				:COMPER EXPECTED AND RECEIVED DATA	

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3056	014622	001407			BEQ	3\$	
3057	014624	005077	001302		CLR	30HBAR	:STOP TRANSMITTER
3058	014630	104002			HLT	2	:DATA ERROR
3059	014632	104410			SCOPE1		:CHECK FOR LOOP AT CURRENT SPEED
3060	014634	012777	100000	001270	MOV	\$100000,30HBAR	:RESTART TRANSMITTER
3061	014642	105267	001354	3\$:	INC8	RDATA	:UPDATA EXPECTED DATA
3062	014646	005302			DEC	R2	
3063	014650	001355			BNE	2\$	
3064	014652	105367	001344		CLRB	RDATA	:INITIALIZE EXPECTED
3065	014656	005201			INC	R1	:RECEIVED DATA
3066	014658	005204			INC	R4	:UPDATA CHARACTER LENGTH
3067	00146626	005367	001336		ASL	BYTONT	:
3068	00146626	00052001			DEC	R0	
3069	00146626	10413400			BNE	1\$	
3070	00146626	10413400			SCOPE		

3073
3074
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3079

:END OF PASS
 :TYPE NAME OF TEST
 :UPDATE PASS COUNT
 :CHECK FOR EXIT TO ACT-11
 :RESTART TEST

3080	014674	104401		EOP:	TYPE MEPASS		;TYPE NAME OF TEST
3081	014676	017205			CLR	LAST	;CLEAR LAST ERROR PC
3082	014700	005067	001312		CLR	ERRFLG	;CLEAR ERROR FLAG
3083	014704	005067	001242		INC	PASCNT	;UPDATE PASS COUNT
3084	014710	005267	001240		MOV	PASCNT, LIGHTS	;DISPLAY PASS COUNT
3085	014714	016767	001234	162646	MOV	D#42, R1	;CHECK FOR ACT-11 OR DDP
3086	014722	013701	000042		BEQ	RESTRT	;IF NOT, CONTINUE TESTING
3087	014726	001405			RESET		
3088	014730	000005					
3089	014732	004711				JSR PC, (R1)	
3090	014734	000240				NOP	
3091	014736	000240				NOP	
3092	014740	000240				NOP	
3093	014742	000167	164234	RESTRT:	JMP	BEGIN	
3094							
3095							
3096							
3097							
3098	014746	032767	002000	162614	SCOPE:	BIT	#SW10, SWR
3099	014754	001030				BNE	4\$
3100	014756	032767	040000	162604	15:	BIT	#SW14, SWR
3101	014754	001021				BNE	3\$
3102	014766	032767	004000	162574		BIT	#SW11, SWR
3103	014774	001006				BNE	2\$
3104	014776	005267	001166			INC	LPCNT
3105	015002	026767	001162	001156		CMP	LPCNT, ICOUNT
3106	015010	001007				BNE	3\$
3107	015012	005067	001152		2\$:	CLR	LPCNT
3108	015016	005067	001130			CLR	ERRFLG
3109	015022	011667	001132			MOV	(SP), RETURN
3110	015026	000002				RTI	
3111	015030	016716	001124		3\$:	MOV	RETURN, (SP)
3112	015034	000002				RTI	
3113	015036	005767	001110		4\$:	TST	ERRFLG
3114	015042	001745				BEQ	1\$
3115	015044	000762				BR	2\$
3116							
3117							
3118							
3119	015046	032767	001000	162514	SCOPIR:	BIT	#SW09, SWR
3120	015054	001402				BEQ	1\$
3121	015056	016716	001102		1\$:	MOV	FREEZ1, (SP)
3122	015062	000002				RTI	

3123
 3124 :ERROR HANDLER
 3125
 3126 015064 032767 020000 162476 ERRORS: BIT #SW13, SWR
 3127 015072 001051 BNE HALTS
 3128 015074 021667 001116 CMP (SP), LAST
 3129 015100 001404 BEQ 1\$
 3130 015102 011667 001110 MOV (SP), LAST
 3131 015106 005067 001040 CLR ERRFLG
 3132 015112 104406 1\$: SAV05P
 3133 015114 011605 MOV (SP), R5
 3134 015116 162705 000002 SUB #2, R5
 3135 015122 011504 MOV (R5), R4
 3136 015124 006304 ASL R4
 3137 015126 006304 ASL R4
 3138 015130 042704 177001 BIC #177001, R4
 3139 015134 062704 017314 ADD #ERRTAB, R4
 3140 015140 012467 000034 MOV (R4)+, ERRMSG
 3141 015144 011467 000042 MOV (R4), DATA2P
 3142 015150 005767 000776 TST ERRFLG
 3143 015154 001403 BEQ TYPMSG
 3144 015156 005767 000030 TST DATA2P
 3145 015162 001007 BNE TYPOAT
 3146 015164 104402 TYPMSG: OCTASC
 3147 015166 015260 ERTABO
 3148 015170 012767 000001 000754 MOV #1, ERRFLG
 3149 015176 104401 TYPE
 3150 015200 000000 ERRMSG: 0
 3151 015202 005767 000004 TYPDAT: TST DATA2P
 3152 015206 001402 BEQ RESREG
 3153 015210 104402 OCTASC
 3154 015212 000000
 3155 015214 104407 RESREG: RES05
 3156 015216 005767 162346 HALTS: TST SWR
 3157 015222 100005 SPL EXITER
 3158 015224 010046 PUSHRO
 3159 015226 016600 000002 MOV 2(SP), R0
 3160 015232 000000 HALT
 3161 015234 012600 POPRO
 3162 015236 005267 000714 EXITER: INC ERRCNT
 3163 015242 032767 002000 162320 BIT #SW10, SWR
 3164 015250 001402 BEQ 1\$
 3165 015252 016716 000704 MOV ESCAPE, (SP)
 3166 015256 000002 RTI
 3167 015260 000001 1\$: BYTE 6,2
 3168 015262 006 SAVPC
 3169 015264 016210 002

3170 :TRAP DISPATCH SERVICE
 3171 :ARGUMENT OF TRAP IS EXTRACTED
 3172 :AND USED AS OFFSET TO OBTAIN POINTER
 3173 :TO SELECTED SUBROUTINE
 3174
 3175 015266 011646 TRPSRV: MOV (SP),-(SP) ;GET PC OF RETURN
 3176 015270 162716 000002 SUB #2,(SP) ;=PC OF TRAP
 3177 015274 017616 000000 MOV @((SP)),(SP) ;GET TRP
 3178 015300 006316 TRPOK: ASL (SP) ;MULTIPLY TRAP ARG BY 2
 3179 015302 042716 177001 BIC #177001,(SP) ;CLEAR UNWANTED BITS
 3180 015306 062716 017234 ADD #TRPTAB,(SP) ;pointer to subroutine address
 3181 015312 017616 000000 MOV @((SP)),(SP) ;subroutine address
 3182 015316 000136 JMP @((SP)) ;GO TO SUBROUTINE
 3183
 3184 ;SAVE PC OF TEST THAT FAILED AND R0-R5
 3185 015320 016667 000004 000562 SV05P: MOV 4(SP),SAVPC
 3186
 3187 ;SAVE R0-R5
 3188 015326 010567 000652 SV05: MOV R5,SAVR5
 3189 015332 010467 000644 MOV R4,SAVR4
 3190 015336 010367 000636 MOV R3,SAVR3
 3191 015342 010267 000630 MOV R2,SAVR2
 3192 015346 010167 000622 MOV R1,SAVR1
 3193 015352 010067 000614 MOV R0,SAVR0
 3194 015356 000002 RTI ;RESTORE R0-R5
 3195
 3196 015360 016700 000606 RS05: MOV SAVR0,R0
 3197 015364 016701 000604 MOV SAVR1,R1
 3198 015370 016702 000602 MOV SAVR2,R2
 3199 015374 016703 000600 MOV SAVR3,R3
 3200 015380 016704 000576 MOV SAVR4,R4
 3201 015384 016705 000574 MOV SAVR5,R5
 3202 015390 000002 RTI

220HF MACY11 27(732) 22-MAR-76 10:44 PAGE 65
220HF.PPC

015412 017605 000000
015416 062716 000002
015422 105777 000469
015426 100375
015430 105715
015432 001001
015434 000002
015436 112577 000454
015442 000767

;TELETYPE OUTPUT ROUTINE

	TYPER:	MOV	0(SP),RS
		ADD	#2,(SP)
1\$:	TSTB	0TPCSR	
	SPL	1\$	
	TSTB	(RS)	
	BNE	2\$	
	RTI		
	MOVB	(RS)+,0TPDBR	
	BR	1\$	

;ASCII STRING INPUT ROUTINE

015444 017667 000000 000006	INSTRG:	MOV	0(SP),MSG
015452 062716 000002		ADD	#2,(SP)
015456 104401	INSTR1:	TYPE	
015460 000000	MSG:	O	
015462 012704 017256		MOV	#INBUF,R4
015466 012703 000007		MOV	#7,R3
015472 105777 000412	1\$:	TSTB	0TKCSR
015476 100375		BPL	1\$
015500 117714 000406		MOVS	0TKDBR,(R4)
015504 142714 000200		BICB	#200,(R4)
015510 122427 000015		CMPB	(R4)+,#15
015514 001413		BEQ	INSTR2
015516 117777 000370 000372		MOVB	0TKDBR,0TPDBR
015524 105777 000364	E\$:	TSTB	0TPCSR
015530 100375		BPL	2\$
015532 005303		DEC	R3
015534 001356		BNE	1\$
015536 104401	INSTRE:	TYPE	
015540 017111		MQM	
015542 000745		BR	INSTRI
015544 000002	INSTRE:	RTI	

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;CONVERT ASCII STRING TO OCTAL

015546	011605	PARAMS:	MOV	(SP),R5
015550	012557		MOV	(R5)+,LOLIM
015554	012567		MOV	(R5)+,HILIM
015560	012567		MOV	(R5)+,DEVADR
015564	112567		MOVB	(R5)+,LOBITS
015570	112567		MOVB	(R5)+,ADRCNT
015574	010516		MOV	R5,(SP)
015576	005005	PARAM1:	CLR	R5
015600	012704		MOV	#INBUF,R4
015604	122714		CMPB	#15,(R4)
015610	001420		BEQ	PARERR
015612	121427	1\$:	CMPB	(R4),#60
015616	002415		BLT	PARERR
015620	121427		CMPB	(R4),#67
015624	003012		SGT	PARERR
015626	142714		BICB	#60,(R4)
015632	152405		BISB	(R4)+,R5
015634	122714		CMPB	#15,(R4)
015640	001406		BEQ	LIMITS
015642	006305		ASL	R5
015644	006305		ASL	R5
015646	006305		ASL	R5
015650	000760		BR	1\$
015652	104404	PARERR:	INSTER	
015654	000750		BR	PARAM1

;TEST TO SEE IF NUMBER IS WITHIN LIMITS

015656	020567	LIMITS:	CMP	R5,HILIM
015662	101373		BHI	PARERR
015664	020557		CMP	R5,LOLIM
015670	103770		BLO	PARERR
015672	136705		BITS	LOBITS,R5
015676	001365		BNE	PARERR

;STORE NUMBER AT SPECIFIED ADDRESS

015700	016704	1\$:	MOV	DEVADR,R4
015704	010524		MOV	R5,(R4)+
015706	062705		ADD	#2,R5
015712	105367		DEC8	ADRCNT
015716	001372		BNE	1\$
015720	000002		RTI	
015722	000000	LOLIM:	O	
015724	000000	HILIM:	O	
015726	000000	DEVADR:	O	
015730	000000	LOBITS:	O	
	015731	ADRCNT=LOBITS+1		

BOE

1965 MAR 11 22 032 22-745-76 10:44 7 37 67

CONVERT OCTAL NUMBER TO ASCII AND OUTPUT TO TELEPRINTER

11700

Union of the Ecuadorean People
and the People's Government
of Ecuador

ABDOMEN

INDIRECT POINTERS

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PROGRAM VARIABLES

GEOGRAPHY AND HISTORY

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the first time in the history of our country.

THE JOURNAL OF CLIMATE

وَمِنْ أَنْتَ تُخْلِدُنَا إِلَى الْحَيَاةِ الدُّرْجَاتِ

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:ENTER HERE ON POWER FAILURE

```
PFFAIL: MOV R0, -1(SP)           ;SAVE R0-RES ON PROCESSOR STACK
        MOV R1, -2(SP)
        MOV R2, -3(SP)
        MOV R3, -4(SP)
        MOV R4, -5(SP)
        MOV R5, -6(SP)
        MOV R6, -7(SP)
        MOV R7, -8(SP)
        MOV SP, SAVSP             ;SAVE STACK POINTER
        #RESTART,24               ;SET UP FOR POWER UP TRAP
        HALT                      ;HALT ON POWER DOWN NORMAL
```

:PROCESSOR WILL TRAP HERE WHEN POWER IS RESTORED

```
RESTAR: MOV     SAVSP, SP          : RESTORE STACK POINTER  
        MOV     (SP)+, R0  
        MOV     (SP)+, R4  
        MOV     (SP)+, R5  
        MOV     (SP)+, R6  
        MOV     (SP)+, R7
```

DZDHF MACY11 E7(732) 22-MAR-76 10:44 PAGE 74
DZDHF.PFC

3659	016700	012601		MOV	(SP)+,R1	
3659	016702	012600		MOV	(SP)+,R0	
3660	016704	012767	016626	MOV	#PFFAIL, 24	;SET UP FOR POWER FAILURE
3661	016712	012757	000340	MOV	#340, PS	
3662	0016720	012706	012776	MOV	#STACK, SP	
3663	016724	005067	000340	CLR	TEMP	
3664	016730	005267	000334	INC	TEMP	
3665	016734	001375		BNE	.-4	
3666	016736	104402		OCTASC		
3667	016740	016762		PFTAB		
3668	016742	104401		TYPE		
3669	016744	017120		MPFAIL		
3670	016746	005067	177200	CLR	ERRFLG	
3671	016752	005067	177240	CLR	LAST	
3672	016756	000177	177176	JMP	3RETURN	
3673	016762	000001		FFTAB:	1	
3674	016764	000006	000002		6, 0	
3675	016770	000207			RETURN	
3676	016772	005015	042012	MTITLE:	.ASCIZ <15><12><12>/DH11 SINGLE LINE DATA TEST /<15><12>	
3677	017000	020061	044523	043516		
3678	017006	042514	046040	047111		
3679	017014	020105	040504	040524		
3680	017022	052040	051505	020124		
3681	017030	005015	000			
3682	017033	015	053012	041505	MVECTO:	.ASCIZ <15><12>/VECTOR ADDRESS-/
3683	017040	047524	020122	042101		
3684	017046	051104	051505	026523		
3685	017054	000				
3686	017055	015	041412	047117	MREGAD:	.ASCIZ <15><12>/CONTROL REGISTER ADDRESS-/
3687	017062	051124	046117	051040		
3688	017070	043505	051511	042524		
3689	017076	020122	042101	051104		
3690	017104	051505	026523	000		
3691	017111	040	037440	000	MGM:	.ASCIZ / ? /
3692	017116	015	000012		MORLF:	.ASCIZ <15><12>
3693	017120	020040	047520	042527	MPFAIL:	.ASCIZ / POWER FAILURE, PROGRAM RESTART AT TEST IN PROGRESS/
3694	017126	020122	040506	046111		
3695	017134	051125	026105	050040		
3696	017142	047522	051107	046501		
3697	017150	051040	051505	040524		
3698	017156	052122	040440	020124		
3699	017164	042524	052123	044440		
3700	017172	020116	051120	043517		
3701	017200	042522	051523	000		
3702	017205	015	042012	042132	MEPASS:	.ASCIZ <15><12>/DZDHF/
3703	017212	043110	000			
3704	017215	015	051012	000	MR:	.ASCIZ <15><12>/R/
3705	017221	015	052012	051505	MTSTPC:	.ASCIZ <15><12>/TEST PC-/
3706	017226	020124	041520	000055		
3707					EVEN	
3708						:TABLE OF POINTERS FOR TRAP DECODING
3709						
3710						
3711	017234	014746		TRPTAB:	SCOPE	
3712	017236	015412			TYPER	
3713	017240	015732			OCTASN	

DZDHF MACY11 27(732) 22-MAR-76 10:44 PAGE 75
DZDHF.B.PFC

3714 017242 015444
3715 017244 015536
3716 017246 015546
3717 017250 015320
3718 017252 015350
3719 017254 015046

INSTRG
INSTRE
PARAMS
SV0SP
RS05
SCOP1R

:BUFFERS FOR INPUT-OUTPUT

3723 017256 000000
3724 017270 .=,+10
3725 017270 000000 TEMP: 0
3726 017302 .=,+10
3727 017302 000000 MDATA: 0
3728 017314 .=,+10

:TABLE OF POINTERS TO ERROR MESSAGES AND DATA

			ERRTAB:					
3732	017314			EM1				
3733	017314	017330		DT1				
3734	017316	017514		EM2				
3735	017320	017371		DT2				
3736	017322	017532		EM3				
3737	017324	017442		DT3				
3738	017326	017554						
3739	017330	040504	040524 042440	EM1: .ASCIZ /DATA ERROR/(15<12>/EXP	REC	LINE/		
3740	017336	051122	051117 005015					
3741	017344	054105	020120 020040					
3742	017352	020040	042522 020103					
3743	017360	020040	020040 044514					
3744	017366	042516	000					
3745	017371	104	052101 020101	EM2: .ASCIZ /DATA ERROR/(15<12>/EXP	REC	SPEED LINE/		
3746	017376	051105	047522 006522					
3747	017404	042412	050130 020040					
3748	017412	020040	051040 041505					
3749	017420	020040	020040 051440					
3750	017426	042520	042105 020040					
3751	017434	046040	047111 000105					
3752	017442	040504	040524 042440	EM3: .ASCIZ /DATA ERROR/(15<12>/EXP	REC	LENGTH LINE/		
3753	017450	051122	051117 005015					
3754	017456	054105	020120 020040					
3755	017464	020040	042522 020103					
3756	017472	020040	020040 042514					
3757	017500	043516	044124 020040					
3758	017506	044514	042516 000					
3759	017514			EVEN				
3760	017514	000003	* *	DT1: .BYTE	3			
3761	017516	006	002	.BYTE	6,2			
3762	017520	016220			TDATA			
3763	017522	006	002	.BYTE	6,2			
3764	017524	016202			SAVR4			
3765	017526	002		.BYTE	2,0			
3766	017530	016200	000		SAVR3			
3767	017532	000004		DT2: .BYTE	4			
3768	017534	006	002	.BYTE	6,2			
3769	017536	016222			RDATA			

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DZDHF8.PFC

3770	017540	006	002	.BYTE	6,2
3771	017542	016200		.BYTE	SAVR3
3772	017544	002	005	.BYTE	2,5
3773	017546	016176		.BYTE	SAVR2
3774	017550	002	000	.BYTE	2,0
3775	017552	016204		.BYTE	SAVR5
3776	017554	000004		DT3:	4
3777	017556	006	002	.BYTE	6,2
3778	017560	016222		.BYTE	RDATA
3779	017562	006	002	.BYTE	6,2
3780	017564	016200		.BYTE	SAVR3
3781	017566	002	006	.BYTE	2,6
3782	017570	016202		.BYTE	SAVR4
3783	017572	002	000	.BYTE	2,0
3784	017574	016204		.BYTE	SAVR5
3785	017576	000000		ENDODD:	0
3786		000001		.END	

DZDHF MACY11 27(732) 22-MAR-76 10:44 PAGE 78
DZDHFB.PFC CROSS REFERENCE TABLE -- USER SYMBOLS

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DZDHFB.PFC CROSS REFERENCE TABLE -- USER SYMBOLS

DZDHF MACY11 E7(732) 22-MAR-76 10:44 PAGE 90
DZDHF3.PFC CROSS REFERENCE TABLE -- USER SYM

PP-285-76 10:44 500E 81

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36288 22-MAR-76 10:44 PAGE 92
36288 REFERENCE TABLE -- USER SYMBOLS

Category	Sub-Category	Item Description	Quantity	Unit Price	Total Value
Electronics	Smartphones	iPhone 12 Pro Max	100	\$1,200	\$120,000
Electronics	Smartphones	Samsung Galaxy S21 Ultra	150	\$900	\$135,000
Electronics	Laptops	Dell XPS 15 (9500)	80	\$1,500	\$120,000
Electronics	Laptops	HP Spectre x360	70	\$1,300	\$91,000
Electronics	Tablets	Apple iPad Pro (12.9")	50	\$800	\$40,000
Electronics	Tablets	Samsung Galaxy Tab S7+	60	\$700	\$42,000
Electronics	Peripherals	Logitech G903 Wireless Mouse	120	\$50	\$6,000
Electronics	Peripherals	Razer DeathAdder V2 Pro	90	\$60	\$5,400
Electronics	Peripherals	SteelSeries Rival 650	100	\$45	\$4,500
Electronics	Peripherals	SteelSeries Apex M550	80	\$35	\$2,800
Computers	Desktops	ASUS ROG Strix G15	100	\$1,000	\$100,000
Computers	Desktops	GIGABYTE AORUS 10F	120	\$950	\$114,000
Computers	Desktops	MSI Gaming GE76	90	\$1,100	\$99,000
Computers	Desktops	EVGA Z690 Motherboard	150	\$150	\$22,500
Computers	Desktops	ASUS Prime B650M-A	100	\$120	\$12,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	80	\$130	\$10,400
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$140	\$14,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	90	\$135	\$12,150
Computers	Desktops	MSI MAG B650 TOMAHAWK	110	\$155	\$16,050
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$160	\$16,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$170	\$17,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$180	\$18,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$190	\$19,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$200	\$20,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$210	\$21,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$220	\$22,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$230	\$23,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$240	\$24,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$250	\$25,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$260	\$26,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$270	\$27,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$280	\$28,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$290	\$29,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$300	\$30,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$310	\$31,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$320	\$32,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$330	\$33,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$340	\$34,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$350	\$35,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$360	\$36,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$370	\$37,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$380	\$38,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$390	\$39,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$400	\$40,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$410	\$41,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$420	\$42,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$430	\$43,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$440	\$44,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$450	\$45,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$460	\$46,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$470	\$47,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$480	\$48,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$490	\$49,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$500	\$50,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$510	\$51,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$520	\$52,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$530	\$53,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$540	\$54,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$550	\$55,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$560	\$56,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$570	\$57,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$580	\$58,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$590	\$59,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$600	\$60,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$610	\$61,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$620	\$62,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$630	\$63,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$640	\$64,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$650	\$65,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$660	\$66,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$670	\$67,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$680	\$68,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$690	\$69,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$700	\$70,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$710	\$71,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$720	\$72,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$730	\$73,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$740	\$74,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$750	\$75,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$760	\$76,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$770	\$77,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$780	\$78,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$790	\$79,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$800	\$80,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$810	\$81,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$820	\$82,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$830	\$83,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$840	\$84,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$850	\$85,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$860	\$86,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$870	\$87,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$880	\$88,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$890	\$89,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$900	\$90,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$910	\$91,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$920	\$92,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$930	\$93,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$940	\$94,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$950	\$95,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$960	\$96,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$970	\$97,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$980	\$98,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$990	\$99,000
Computers	Desktops	MSI MAG B650 TOMAHAWK	100	\$1,000	\$100,000
Peripherals	Keyboards	Razer Huntsman Elite	100	\$150	\$15,000
Peripherals	Keyboards	SteelSeries Apex 7	100	\$140	\$14,000
Peripherals	Keyboards	Logitech G915 TKL	100	\$130	\$13,000
Peripherals	Keyboards	SteelSeries Apex 7	100	\$120	\$12,000
Peripherals	Keyboards	Logitech G915 TKL	100	\$110	\$11,000
Peripherals	Keyboards	SteelSeries Apex 7	100	\$100	\$10,000
Peripherals	Keyboards	Logitech G915 TKL	100	\$90	\$9,000
Peripherals	Keyboards	SteelSeries Apex 7	100	\$80	\$8,000
Peripherals	Keyboards	Logitech G915 TKL	100	\$70	\$7,000
Peripherals	Keyboards	SteelSeries Apex 7	100	\$60	\$6,000
Peripherals	Keyboards	Logitech G915 TKL	100	\$50	\$5,000
Peripherals	Mice	Razer DeathAdder V2 Pro	100	\$180	\$18,000
Peripherals	Mice	SteelSeries Rival 650	100	\$170	\$17,000
Peripherals	Mice	Logitech G903 Wireless	100	\$160	\$16,000
Peripherals	Mice	SteelSeries Rival 650	100	\$150	\$15,000
Peripherals	Mice	Logitech G903 Wireless	100	\$140	\$14,000
Peripherals	Mice	SteelSeries Rival 650	100	\$130	\$13,000
Peripherals	Mice	Logitech G903 Wireless	100	\$120	\$12,000
Peripherals	Mice	SteelSeries Rival 650	100	\$110	\$11,000
Peripherals	Mice	Logitech G903 Wireless	100	\$100	\$10,000
Peripherals	Mice	SteelSeries Rival 650	100	\$90	\$9,000
Peripherals	Mice	Logitech G903 Wireless	100	\$80	\$8,000
Peripherals	Mice	SteelSeries Rival 650	100	\$70	\$7,000
Peripherals	Mice	Logitech G903 Wireless	100	\$60	\$6,000
Peripherals	Mice	SteelSeries Rival 650	100	\$50	\$5,000
Peripherals	Mousepads	SteelSeries QcK Edge	100	\$30	\$3,000
Peripherals	Mousepads	SteelSeries QcK Prism	100	\$25	\$2,500
Peripherals	Mousepads	SteelSeries QcK Edge	100	\$20	\$2,000
Peripherals	Mousepads	SteelSeries QcK Prism	100	\$15	\$1,500
Peripherals	Mousepads	SteelSeries QcK Edge	100	\$10	\$1,000
Peripherals	Mousepads	SteelSeries QcK Prism	100	\$5	\$500
Peripherals	Mousepads	SteelSeries QcK Edge	100	\$4	\$400
Peripherals	Mousepads	SteelSeries QcK Prism	100	\$3	\$300
Peripherals	Mousepads	SteelSeries QcK Edge	100	\$2	\$200
Peripherals	Mousepads	SteelSeries QcK Prism	100	\$1	\$100
Peripherals	Mousepads	SteelSeries QcK Edge	100	0.5	\$50
Peripherals	Mousepads	SteelSeries QcK Prism	100	0.2	\$20
Peripherals	Mousepads	SteelSeries QcK Edge	100	0.1	\$10
Peripherals	Mousepads	SteelSeries QcK Prism	100	0.05	\$5
Peripherals	Mousepads	SteelSeries QcK Edge	100	0.02	\$2
Peripherals	Mousepads	SteelSeries QcK Prism	100	0.01	\$1
Peripherals	Mousepads	SteelSeries QcK Edge	100	0.005	\$0.5
Peripherals	Mousepads	SteelSeries QcK Prism	100	0.002	\$0.2
Peripherals	Mousepads	SteelSeries QcK Edge	100	0.001	\$0.1
Peripherals	Mousepads	SteelSeries QcK Prism	100	0.0005	\$0.05
Peripherals	Mousepads	SteelSeries QcK Edge	100	0.0002	\$0.02
Peripherals	Mousepads	SteelSeries QcK Prism	100	0.0001	\$0.01
Peripherals	Mousepads	SteelSeries QcK Edge	100	0.00005	\$0.005
Peripherals	Mousepads	SteelSeries QcK Prism	100	0.00002	\$0.002
Peripherals	Mousepads	SteelSeries QcK Edge	100	0.00001	\$0.001
Peripherals	Mousepads	SteelSeries QcK Prism	100	0.000005	\$0.0005
Peripherals	Mousepads	SteelSeries QcK Edge	100	0.000002	\$0.0002
Peripherals	Mousepads	SteelSeries QcK Prism	100	0.000001	\$0.0001
Peripherals	Mousepads	SteelSeries QcK Edge	100	0.0000005	\$0.00005
Peripherals	Mousepads	SteelSeries QcK Prism	100	0.0000002	\$0.00002
Peripherals	Mousepads	SteelSeries QcK Edge	100	0.0000001	\$0.00001
Peripherals	Mousepads	SteelSeries QcK Prism	100	0.00000005	\$0.000005
Peripherals	Mousepads	SteelSeries QcK Edge	100	0.00000002	\$0.000002
Peripherals	Mousepads	SteelSeries QcK Prism	100	0.00000001	\$0.000001
Peripherals	Mousepads	SteelSeries QcK Edge	100	0.000000005	\$0.0000005
Peripherals	Mousepads	SteelSeries QcK Prism	100	0.000000002	\$0.0000

D07

0004F MACY 11 27-7381 08-MAR-76 10:44 PAGE 83
0004F.S.PFC 08099 REFERENCE TABLE -- USER SYMBOLS

926 3090 3149 3223 3236 3296 3326 3569

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E07

XLINE = 000000
XX = 000061

F07

PCDFE MACY11 27.7321 22-MAR-76 10:44 PAGE 86
 D2DHFB.FFC CROSS REFERENCE TABLE -- MACRO NAMES

CODEM:	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	
SDATA1	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1050	1051	1052	1053	1054	
SDATA2	1487	1534	1581	1628	1675	1722	1769	1816	1863	1910	1957	2004	2051	2198	2245	2292	2339	2386	2433	2480	2527	2574	2621	2668	2715	2762
SDATA3	2247	2302	2357	2412	2467	2522	2577	2632	2687	2742	2797	2852	2907	2962	3017	3072	3127	3182	3237	3292	3347	3392	3447	3492	3547	3592
TRPDEF	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1050	1051	1052	1053	1054	

GO7

2224FB MACN11 27700 22-MAR-76 10:44 PAGE 89
 2224FB.PPC CROSS REFERENCE TABLE -- PERMANENT SYMBOLS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40																																																																																																																																																																																																																																																																																	
100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140																																																																																																																																																																																																																																																																																
141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	20100	20101	20102	20103	20104	20105	20106	20107	20108	20109	20110	20111	20112	20113	20114	20115	20116	20117	20118	20119	20120	20121	20122	20123	20124	20125	20126	20127	20128	20129	20130	20131	20132	20133	20134	20135	20136	20137	20138	20139	20140	20141	20142	20143	20144	20145	20146	20147	20148	20149	20150	20151	20152	20153	20154	20155	20156	20157	20158	20159	20160	20161	20162	20163	20164	20165	20166	20167	20168	20169	20170	20171	20172	20173	20174	20175	20176	20177	20178	20179	20180	20181	20182	20183	20184	20185	20186	20187	20188	20189	20190	20191	20192	20193	20194	20195	20196	20197	20198	20199	20100	20101	20102	20103	20104	20105	20106	20107	20108	20109	20110	20111	20112	20113	20114	20115	20116	20117	20118	20119	20120	20121	20122	20123	20124	20125	20126	20127	20128	20129	20130	20131	20132	20133	20134	20135	20136	20137	20138	20139	20140	20141	20142	20143	20144	20145	20146	20147	20148	20149	20150	20151	20152	

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1 88-MAR-76 10:44 PAGE 89
REFERENCE TABLE -- PERMANENT SYMBOLS

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CROSS REFERENCE TABLE 10:44 PERMANENT SYMBOLS

3084	3085	3086	3087	3088	3089	3090	3091	3092	3093	3094	3095	3096	3097	3098	3099	3100	3101	3102	3103	3104	3105	3106	3107	3108	3109	3110	3111	3112	3113	3114	3115	3116	3117	3118	3119	3120	3121	3122	3123	3124	3125	3126	3127	3128	3129	3130	3131	3132	3133	3134	3135	3136	3137	3138	3139	3140	3141	3142	3143	3144	3145	3146	3147	3148	3149	3150	3151	3152	3153	3154	3155	3156	3157	3158	3159	3160	3161	3162	3163	3164	3165	3166	3167	3168	3169	3170	3171	3172	3173	3174	3175	3176	3177	3178	3179	3180	3181	3182	3183	3184	3185	3186	3187	3188	3189	3190	3191	3192	3193	3194	3195	3196	3197	3198	3199	3200	3201	3202	3203	3204	3205	3206	3207	3208	3209	3210	3211	3212	3213	3214	3215	3216	3217	3218	3219	3220	3221	3222	3223	3224	3225	3226	3227	3228	3229	3230	3231	3232	3233	3234	3235	3236	3237	3238	3239	3240	3241	3242	3243	3244	3245	3246	3247	3248	3249	3250	3251	3252	3253	3254	3255	3256	3257	3258	3259	3260	3261	3262	3263	3264	3265	3266	3267	3268	3269	3270	3271	3272	3273	3274	3275	3276	3277	3278	3279	3280	3281	3282	3283	3284	3285	3286	3287	3288	3289	3290	3291	3292	3293	3294	3295	3296	3297	3298	3299	3300	3301	3302	3303	3304	3305	3306	3307	3308	3309	3310	3311	3312	3313	3314	3315	3316	3317	3318	3319	3320	3321	3322	3323	3324	3325	3326	3327	3328	3329	3330	3331	3332	3333	3334	3335	3336	3337	3338	3339	3340	3341	3342	3343	3344	3345	3346	3347	3348	3349	3350	3351	3352	3353	3354	3355	3356	3357	3358	3359	3360	3361	3362	3363	3364	3365	3366	3367	3368	3369	3370	3371	3372	3373	3374	3375	3376	3377	3378	3379	3380	3381	3382	3383	3384	3385	3386	3387	3388	3389	3390	3391	3392	3393	3394	3395	3396	3397	3398	3399	3400	3401	3402	3403	3404	3405	3406	3407	3408	3409	3410	3411	3412	3413	3414	3415	3416	3417	3418	3419	3420	3421	3422	3423	3424	3425	3426	3427	3428	3429	3430	3431	3432	3433	3434	3435	3436	3437	3438	3439	3440	3441	3442	3443	3444	3445	3446	3447	3448	3449	3450	3451	3452	3453	3454	3455	3456	3457	3458	3459	3460	3461	3462	3463	3464	3465	3466	3467	3468	3469	3470	3471	3472	3473	3474	3475	3476	3477	3478	3479	3480	3481	3482	3483	3484	3485	3486	3487	3488	3489	3490	3491	3492	3493	3494	3495	3496	3497	3498	3499	3500	3501	3502	3503	3504	3505	3506	3507	3508	3509	3510	3511	3512	3513	3514	3515	3516	3517	3518	3519	3520	3521	3522	3523	3524	3525	3526	3527	3528	3529	3530	3531	3532	3533	3534	3535	3536	3537	3538	3539	3540	3541	3542	3543	3544	3545	3546	3547	3548	3549	3550	3551	3552	3553	3554	3555	3556	3557	3558	3559	3560	3561	3562	3563	3564	3565	3566	3567	3568	3569	3570	3571	3572	3573	3574	3575	3576	3577	3578	3579	3580	3581	3582	3583	3584	3585	3586	3587	3588	3589	3590	3591	3592	3593	3594	3595	3596	3597	3598	3599	3600	3601	3602	3603	3604	3605	3606	3607	3608	3609	3610	3611	3612	3613	3614	3615	3616	3617	3618	3619	3620	3621	3622	3623	3624	3625	3626	3627	3628	3629	3630	3631	3632	3633	3634	3635	3636	3637	3638	3639	3640	3641	3642	3643	3644	3645	3646	3647	3648	3649	3650	3651	3652	3653	3654	3655	3656	3657	3658	3659	3660	3661	3662	3663	3664	3665	3666	3667	3668	3669	3670	3671	3672	3673	3674	3675	3676	3677	3678	3679	3680	3681	3682	3683	3684	3685	3686	3687	3688	3689	3690	3691	3692	3693	3694	3695	3696	3697	3698	3699	3700	3701	3702	3703	3704	3705	3706	3707	3708	3709	3710	3711	3712	3713	3714	3715	3716	3717	3718	3719	3720	3721	3722	3723	3724	3725	3726	3727	3728	3729	3730	3731	3732	3733	3734	3735	3736	3737	3738	3739	3740	3741	3742	3743	3744	3745	3746	3747	3748	3749	3750	3751	3752	3753	3754	3755	3756	3757	3758	3759	3760	3761	3762	3763	3764	3765	3766	3767	3768	3769	3770	3771	3772	3773	3774	3775	3776	3777	3778	3779	3780	3781	3782	3783	3784	3785	3786	3787	3788	3789	3790	3791	3792	3793	3794	3795	3796	3797	3798	3799	3800	3801	3802	3803	3804	3805	3806	3807	3808	3809	3810	3811	3812	3813	3814	3815	3816	3817	3818	3819	3820	3821	3822	3823	3824	3825	3826	3827	3828	3829	3830	3831	3832	3833	3834	3835	3836	3837	3838	3839	3840	3841	3842	3843	3844	3845	3846	3847	3848	3849	3850	3851	3852	3853	3854	3855	3856	3857	3858	3859	3860	3861	3862	3863	3864	3865	3866	3867	3868	3869	3870	3871	3872	3873	3874	3875	3876	3877	3878	3879	3880	3881	3882	3883	3884	3885	3886	3887	3888	3889	3890	3891	3892	3893	3894	3895	3896	3897	3898	3899	3900	3901	3902	3903	3904	3905	3906	3907	3908	3909	3910	3911	3912	3913	3914	3915	3916	3917	3918	3919	3920	3921	3922	3923	3924	3925	3926	3927	3928</

DDC/HF MACY 11 27.732 22-MAR-76 10:44 PAGE 91
DDC/HFS, FFC CROSS REFERENCE TABLE -- PERMANENT SYMBOLS

1256	1261	1266	1271	1276	1281	1286	1291	1296	1301	1306	1311	1316	1321	1326	1331	1336	1341	1346	1351	1356	1361	1366	1371	1376	1381	1386	1391	1396	1401	1406	1411	1416	1421	1426	1431	1436	1441	1446	1451	1456	1461	1466	1471	1476	1481	1486	1491	1496	1501	1506	1511	1516	1521	1526	1531	1536	1541	1546	1551	1556	1561	1566	1571	1576	1581	1586	1591	1596	1601	1606	1611	1616	1621	1626	1631	1636	1641	1646	1651	1656	1661	1666	1671	1676	1681	1686	1691	1696	1701	1706	1711	1716	1721	1726	1731	1736	1741	1746	1751	1756	1761	1766	1771	1776	1781	1786	1791	1796	1801	1806	1811	1816	1821	1826	1831	1836	1841	1846	1851	1856	1861	1866	1871	1876	1881	1886	1891	1896	1901	1906	1911	1916	1921	1926	1931	1936	1941	1946	1951	1956	1961	1966	1971	1976	1981	1986	1991	1996	2001	2006	2011	2016	2021	2026	2031	2036	2041	2046	2051	2056	2061	2066	2071	2076	2081	2086	2091	2096	2101	2106	2111	2116	2121	2126	2131	2136	2141	2146	2151	2156	2161	2166	2171	2176	2181	2186	2191	2196	2201	2206	2211	2216	2221	2226	2231	2236	2241	2246	2251	2256	2261	2266	2271	2276	2281	2286	2291	2296	2301	2306	2311	2316	2321	2326	2331	2336	2341	2346	2351	2356	2361	2366	2371	2376	2381	2386	2391	2396	2401	2406	2411	2416	2421	2426	2431	2436	2441	2446	2451	2456	2461	2466	2471	2476	2481	2486	2491	2496	2501	2506	2511	2516	2521	2526	2531	2536	2541	2546	2551	2556	2561	2566	2571	2576	2581	2586	2591	2596	2601	2606	2611	2616	2621	2626	2631	2636	2641	2646	2651	2656	2661	2666	2671	2676	2681	2686	2691	2696	2701	2706	2711	2716	2721	2726	2731	2736	2741	2746	2751	2756	2761	2766	2771	2776	2781	2786	2791	2796	2801	2806	2811	2816	2821	2826	2831	2836	2841	2846	2851	2856	2861	2866	2871	2876	2881	2886	2891	2896	2901	2906	2911	2916	2921	2926	2931	2936	2941	2946	2951	2956	2961	2966	2971	2976	2981	2986	2991	2996	3001	3006	3011	3016	3021	3026	3031	3036	3041	3046	3051	3056	3061	3066	3071	3076	3081	3086	3091	3096	3101	3106	3111	3116	3121	3126	3131	3136	3141	3146	3151	3156	3161	3166	3171	3176	3181	3186	3191	3196	3201	3206	3211	3216	3221	3226	3231	3236	3241	3246	3251	3256	3261	3266	3271	3276	3281	3286	3291	3296	3301	3306	3311	3316	3321	3326	3331	3336	3341	3346	3351	3356	3361	3366	3371	3376	3381	3386	3391	3396	3401	3406	3411	3416	3421	3426	3431	3436	3441	3446	3451	3456	3461	3466	3471	3476	3481	3486	3491	3496	3501	3506	3511	3516	3521	3526	3531	3536	3541	3546	3551	3556	3561	3566	3571	3576	3581	3586	3591	3596	3601	3606	3611	3616	3621	3626	3631	3636	3641	3646	3651	3656	3661	3666	3671	3676	3681	3686	3691	3696	3701	3706	3711	3716	3721	3726	3731	3736	3741	3746	3751	3756	3761	3766	3771	3776	3781	3786	3791	3796	3801	3806	3811	3816	3821	3826	3831	3836	3841	3846	3851	3856	3861	3866	3871	3876	3881	3886	3891	3896	3901	3906	3911	3916	3921	3926	3931	3936	3941	3946	3951	3956	3961	3966	3971	3976	3981	3986	3991	3996	4001	4006	4011	4016	4021	4026	4031	4036	4041	4046	4051	4056	4061	4066	4071	4076	4081	4086	4091	4096	4101	4106	4111	4116	4121	4126	4131	4136	4141	4146	4151	4156	4161	4166	4171	4176	4181	4186	4191	4196	4201	4206	4211	4216	4221	4226	4231	4236	4241	4246	4251	4256	4261	4266	4271	4276	4281	4286	4291	4296	4301	4306	4311	4316	4321	4326	4331	4336	4341	4346	4351	4356	4361	4366	4371	4376	4381	4386	4391	4396	4401	4406	4411	4416	4421	4426	4431	4436	4441	4446	4451	4456	4461	4466	4471	4476	4481	4486	4491	4496	4501	4506	4511	4516	4521	4526	4531	4536	4541	4546	4551	4556	4561	4566	4571	4576	4581	4586	4591	4596	4601	4606	4611	4616	4621	4626	4631	4636	4641	4646	4651	4656	4661	4666	4671	4676	4681	4686	4691	4696	4701	4706	4711	4716	4721	4726	4731	4736	4741	4746	4751	4756	4761	4766	4771	4776	4781	4786	4791	4796	4801	4806	4811	4816	4821	4826	4831	4836	4841	4846	4851	4856	4861	4866	4871	4876	4881	4886	4891	4896	4901	4906	4911	4916	4921	4926	4931	4936	4941	4946	4951	4956	4961	4966	4971	4976	4981	4986	4991	4996	5001	5006	5011	5016	5021	5026	5031	5036	5041	5046	5051	5056	5061	5066	5071	5076	5081	5086	5091	5096	5101	5106	5111	5116	5121	5126	5131	5136	5141	5146	5151	5156	5161	5166	5171	5176	5181	5186	5191	5196	5201	5206	5211	5216	5221	5226	5231	5236	5241	5246	5251	5256	5261	5266	5271	5276	5281	5286	5291	5296	5301	5306	5311	5316	5321	5326	5331	5336	5341	5346	5351	5356	5361	5366	5371	5376	5381	5386	5391	5396	5401	5406	5411	5416	5421	5426	5431	5436	5441	5446	5451	5456	5461	5466	5

K07

DZDHF5 MACY11 27(732) 22-MAR-76 10:44 PAGE 92
DZDHF5.PPC CROSS REFERENCE TABLE -- PERMANENT SYMBOLS

	3616	3617	3618	3619	3620	3621	3622	3623	3624	3625	3626	3627	3628	3629	3630
PAGE	3631	3632	3633	3634	3635	3123	3170	3206	3242	3293	3335	3378			
REM															
REPT	566	929	1440	2192	3378										
TITLE	499														

ERRORS DETECTED: 0

DEFAULT GLOBALS GENERATED: 0

+DZDHF5,DZDHF5,SEQ/CRF/SOL/PAGNUM=UTILE.P11,DZDHF5.PPC

RUN-TIME: 15⁰⁰.5 SECONDS

RUN-TIME RATIO: 110/50=2.3

CORE USED: 11K (21 PAGES)

L07

Spooler runtime 14 Seconds, 422 KCS, 379 disk reads, 3 disk writes, 88 pages

[REDACTED] Date 14-Oct-76 14:55:22 Monitor IPC-0 S070 [100] SESSIONS

[REDACTED]