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91HS8/91HSE8
SERVICE MANUAL ADDENDUM

TO THE DAS 9100 SERIES SERVICE MANUAL (PART NUMBER 062-5848-00, -01, AND UP)

This Tektronix Manual Addendum supports the following products

91HS8 High-Speed Acquisition Module
91HSE8 High-Speed Acquisition Module

The 062-5848-00 DAS service manual set is a package consisting of loose leaf binders with manuals and addenda. Each manual and addendum in the set has its own part number with prefix 070. You can order an extra service manual binder (Vol. III) by using P/N 016-0769-00.

Refer to the *DAS 9100 Series Service Manual* for information on other DAS products, including mainframes, instrument modules, probes, and options.

How To Use This Addendum. This addendum is organized similiarly to the *DAS 9100 Series Service Manual*; sections in the addendum correspond to the sections in the service manual. You can either leave the addendum whole and place it in one of the service manual binders, or you can separate the sections and insert them after the corresponding sections in the DAS service manual.

PLEASE CHECK FOR CHANGE INFORMATION AT THE REAR OF THIS MANUAL

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WARNING

THE FOLLOWING SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED PERSONNEL ONLY. TO AVOID PERSONAL INJURY, DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.

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Section 6 - MAINTENANCE: GENERAL INFORMATION **Page**

OPERATOR'S SAFETY SUMMARY

The general safety information in this summary is for both operator and service personnel. Specific cautions and warnings are found throughout the addendum where they apply but may not appear in this summary.

TERMS IN THIS ADDENDUM

CAUTION statements identify conditions or practices that could result in damage to the equipment or other property.

WARNING statements identify conditions or practices that could result in personal injury or loss of life.

TERMS AS MARKED ON EQUIPMENT

CAUTION indicates a personal injury hazard not immediately accessible as one reads the marking, or a hazard to property, including the equipment itself.

DANGER indicates a personal injury hazard immediately accessible as one reads the marking.

SYMBOLS AS MARKED ON EQUIPMENT

 **DANGER** - High voltage.

 Protective ground (earth) terminal.

 **ATTENTION** - Refer to manual.

GROUNDING THE PRODUCT

The mainframe in which this product is installed is intended to operate from a power source that does not apply more than 250 V rms between the supply conductors or between either supply conductor and ground.

This product is grounded through the mainframe in which it is operating. To avoid electrical shock, plug the power cord of the mainframe into a properly wired receptacle before connecting to the product. A protective-ground connection by way of the grounding conductor in the power cord is essential for safe operation.

OPERATOR'S SAFETY SUMMARY (cont.)

DANGER ARISING FROM LOSS OF GROUND

Upon loss of the protective ground connection, all accessible conductive parts (including keys and controls that may appear to be insulated) can render an electric shock.

DO NOT OPERATE WITHOUT COVERS

To avoid personal injury, do not operate this product without mainframe covers or panels installed. Circuit boards and components can become very hot during operation.

DO NOT OPERATE IN EXPLOSIVE ATMOSPHERES

To avoid explosion, do not operate this product in an explosive atmosphere unless it has been specifically certified for such operation.

SERVICE SAFETY SUMMARY

FOR QUALIFIED SERVICE PERSONNEL ONLY

Refer also to the preceding Operator's Safety Summary.

DO NOT SERVICE ALONE

Do not perform service or adjustment of this product unless another person capable of rendering first aid and resuscitation is present.

USE CARE WHEN SERVICING WITH POWER ON

Dangerous voltages exist at several points in this product. To avoid personal injury, do not touch exposed connections and components while power is on.

Disconnect power before soldering or replacing components.

DO NOT WEAR JEWELRY WHEN SERVICING

Remove jewelry prior to servicing. Rings, necklaces, and other metallic objects could come into contact with dangerous voltages.

REMOVE THE LOOSE OBJECTS

During disassembly or installation procedures, screws or other small objects may fall to the bottom of the mainframe. To avoid shorting out the power supply, do not power up the instrument until such objects have been removed.

USE THE PROPER FUSE

To avoid fire hazard, use only a fuse of the correct type, voltage rating, and current rating as specified in the parts list for this product. Also, ensure that the line selector switch is in the proper position for the power source being used.

SECTION 1
INTRODUCTION AND SPECIFICATIONS

The 91HS8 and 91HSE8 Data Acquisition Modules are fully described in the 91HS8, 91HSE8 Operator's Manual Addendum. Refer to the operator's manual for the following information:

- o modes of operation
- o standard and optional accessories
- o specifications
- o operating instructions
- o menu descriptions
- o error messages

Contents Of This Manual

This 91HS8/E8 service manual addendum does not contain information for every corresponding section in the DAS 9100 Series Service Manual. The sections supported in this addendum are:

Section 4 - Theory Of Operation
Section 5 - Verification And Adjustment Procedures
Section 6 - Maintenance: General Information
Section 8 - Maintenance: Diagnostic Test Descriptions
Section 9 - Reference Information
Section 10 - Replaceable Electrical Parts
Section 11 - Diagrams And Circuit Board Illustrations
Section 12 - Replaceable Mechanical Parts

Conventions In This Manual

In this manual addendum, directional terms (top, bottom, left, right, etc.) are based on the assumption that your 91HS8/91HSE8 is in a normal, upright position and that you are facing the front of the instrument.

Signal names on schematics suffixed by the ~ symbol denote active low signals. Signals without the suffix are active high. For example, STRT CLKS~ is an active low signal.

Schematics are referenced by a 3-digit schematic number in a diamond bracket; for example, <123> corresponds to schematic diamond number 123.

SECTION 2
OPTIONS

There are no options to the 91HS8/91HSE8 modules. A list of standard accessories is in the 91HS8, 91HSE8 Operator's Manual Addendum.

SECTION 3
OPERATING INSTRUCTIONS

A complete description of the operating instructions can be found in the 91HS8, 91HSE8 Operator's Manual Addendum.

SECTION 4
THEORY OF OPERATION

91HS8 ARCHITECTURE

Refer to the block diagrams in Figures 4-1 and 11-1 while reading the following description.

The fastest signals on circuit board traces (between gate arrays) are the acquisition clocks, which can go up to 500 MHz. All high-speed signals between circuit elements are differential. This avoids many problems associated with common-mode noise, and provides cancellation of high speed-switching currents.

The login gate arrays receive a 500 MHz clock and, consequently, generate four clock phases (500 ps apart) which are used to sample data from the probes. Sampled data is thus multiplexed (slowed down) by a factor of four. To avoid degradation of the high-speed performance of the data signal path, channel-to-channel deskewing is done by varying the delay of the clock signals rather than the data signals. Special variable delay cells are provided. Also, a glitch-detector circuit can detect 1.5 ns glitches in the data signal from the probes.

The memory multiplexer gate arrays receive data and clocks from the logins. At full speed, these data and clock edges occur every 2 ns. The data is multiplexed by an additional factor of eight before it is delivered to industry-standard RAM chips. The memory multiplexer fully supports the RAM chips (provides address, bank switching, write enables, and other supportive information).

Very tight timing requirements at the word recognizers must be met because signals from all channels come together here to be compared as a group. Because the data coming from the logins has been multiplexed into several phases, the word recognizers must simultaneously compare data on different phases for possible trigger words. A digital word-duration filter and a word level/edge detector are also included.

The trigger sequencer and clock switch array gates the system acquisition clock on and off. It synchronizes the START/STOP signal to the acquisition clock (up to 500 MHz) to avoid metastable flip-flop problems which could result in marginal clock pulses. Events from word recognizers and counters, together with START/STOP and ARM signals, are inputs to a programmable state machine which finds the trigger point and stops the acquisition clock, thus ending a data acquisition cycle.

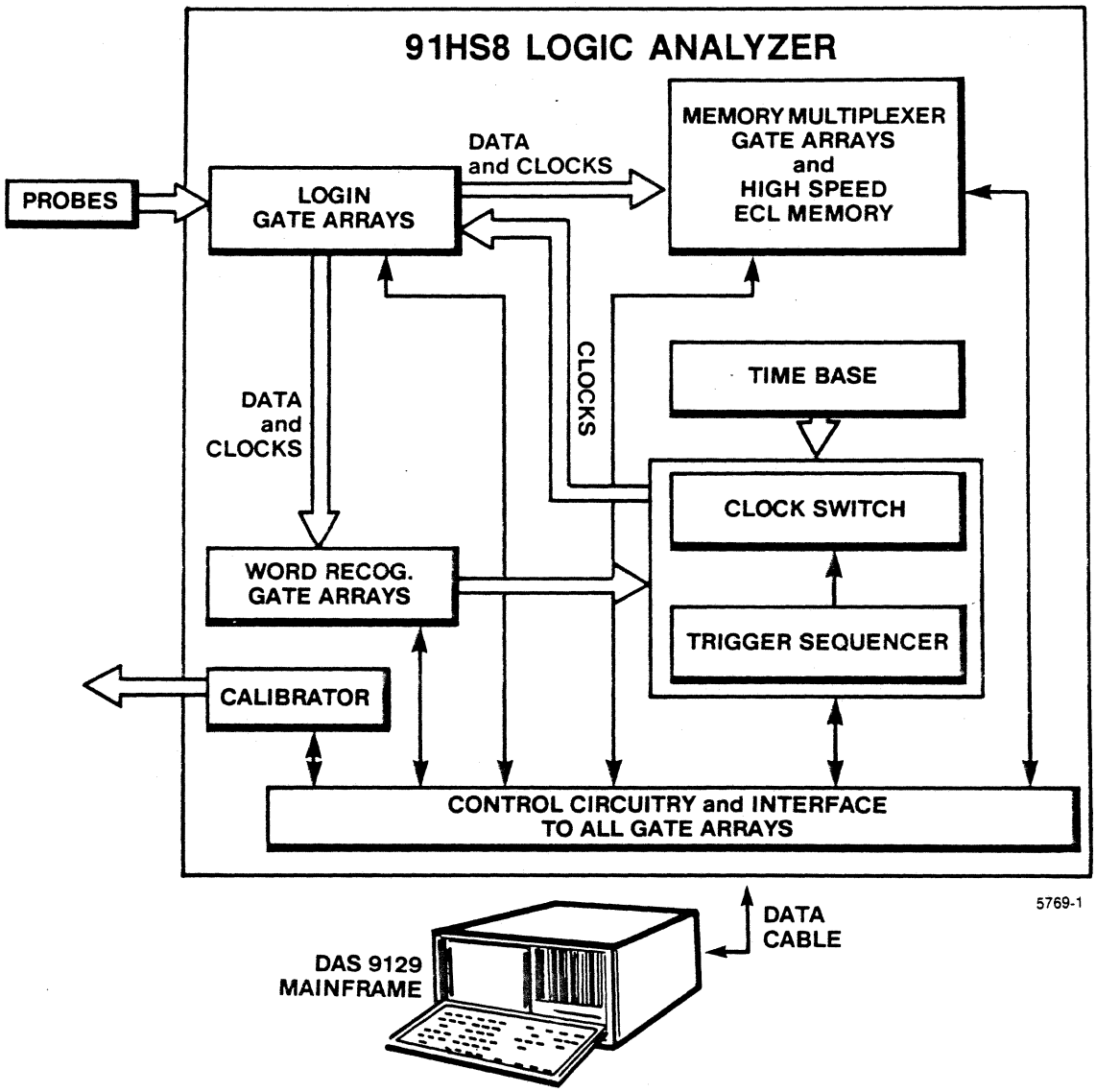


Figure 4-1. 91HS8 general block diagram.

91HS8/91HSE8 BLOCK DIAGRAM DESCRIPTIONS

Refer to Figure 11-1 in the Diagrams section of this addendum while reading the following description. Schematic diagram numbers relating to text are shown as: <###>.

ACQUISITION BOARD A50

DAS Interface <111>

The DAS Interface circuits provide the interface between the DAS 9100 mainframe's microprocessor (the Z80) and the 91HS8. Address, Data, and Control signals are received from the mainframe. From these signals, the appropriate data and strobe signals are generated to load the 91HS8 control registers. Using this interface, the mainframe can also read data from the 91HS8 circuits.

Digital-to-Analog Converter (DAC) State Machine <112> Sample and Hold Analog Controls <113>

The Digital-to-Analog Converter (DAC), together with the Sample and Hold circuits, generates 28 different analog voltages. These voltages are used as follows:

- o to set the threshold and reference voltages for all probes
- o to control special variable delay cells in the Login Gate Arrays. These cells can compensate for skew between channels, and are also used to adjust the 500 ps timing.

The analog control voltages are generated by sample and hold circuits which are periodically refreshed by the DAC state machine. The analog voltage values are stored in digital form in RAM U154. A DAC Converter, U184, converts these digital values to analog voltages which can be fed to the sample and hold circuits. The DAC state machine sequentially updates or refreshes all the sample and hold circuits.

Two comparators, U798, are used to calibrate the whole DAC converter system. They can compare one of the analog control voltages against ground and against accurate +1.2 V reference voltage.

Login Gate Arrays <113><114>

Each of the 91HS8 login gate arrays (U360, U380, U760 and U780) is a two-channel data acquisition circuit. It accepts a differential clock input, CK, of 200 Hz to 500 MHz, deskews the clock, and distributes it to four login flip-flops and a glitch detector on each of the two input data channels. The data inputs (DR & DL, for data right and data left) are differential with two stages of amplification prior to the flip-flop and glitch detector. The glitch detector can detect an nth order glitch of either polarity and operates at clock frequencies of 200 MHz or less.

Each gate array operates in three modes that are selected by the 2 ns and 1 ns inputs. In half-ns mode (2 gs/sec; 2 ns=0, 1 ns=0) the 500 MHz clock is inverted and skewed by 500 ps to produce four-phase clocking (phases A - D) on the four login flip-flops. A special synchronizing circuit transfers data on phases A - C to clock phase D, thereby producing four outputs called LA - LD (left side) and RA - RD (right side). The data transferred can be latched at a 2 ns rate using the phase D clock output. Clock-to-Data deskew is provided in each channel. The glitch detector is not used in this mode.

The one-ns mode (1 gs/sec; 2 ns=0, 1 ns=1) is the same as half-ns mode, excepet that output data phases A and C are copied to phases B and D, respectively.

In two-ns mode (2 ns=1, 1 ns=1), the four login flip-flops on each data channel receive a simultaneous clock. This means that the four data outputs on a channel have the same data and change every input clock. Phases B and D on both channels can be replaced by the glitch output if GLITCH=1 (both channels are selected by one glitch control line).

The phase D clock, divided by two, is output (LCK, RCK, and CKW) synchronously with the data. The output data is given an extra delay so that an external flip-flop can latch in the data. Both data and clock outputs are differential. LCK and RCK drive four two-channel memory multiplexers. CKW drives the word recognizers. Phases B and D in both channels appear on two pairs of pins for the memory and word recognizer. Phases A and C go only to the memory.

A set of digital and analog controls are used to deskew each channel by changing the delay in the clock path for that channel (inside the gate array). DESKS0 and DESKS1 are coarse digital controls (1 or 0). PBDESK and DPDC1 are fine analog controls.

Word Recognizer Gate Arrays <114>

A pair of word recognizers (U564 and U579) are used in the 91HS8. Each word recognizer operates on a separate phase of input data in the front end, but contains components of two word recognizers called A and B. The component of one word recognizer is exported through the Crossover Outputs (O1 & O2), and the corresponding component of the other word recognizer is imported through the Crossover Inputs (I1 & I2). The remainder of each gate array generates Event A or B.

Eight differential input signals (A - H) constitute the data inputs to the Input Latches. These latches are parallel, D-type flip-flops that clock on both edges of clock CK. Data out of the latches are compared with `1-X-0´ reference values for each channel in the Comparators. The Comparator outputs are logically ANDed and one word recognizer component is exported through the Crossover Outputs. A corresponding word recognizer component is imported through the Crossover Inputs.

These word recognizer components are combined in a Glitch Filter, which requires true input data (matching the `1-X-0´ reference values in each channel) for a selectable delay time of 0 - 4 clock periods. This means that a narrow race or sliver pulse may be rejected, but that a longer true signal will produce a TRUE value on the Glitch Filter output.

The Glitch Filter output drives an Event Detector, which gives a selection of level or edge sensitivity and of True or False value, and also produces an Event output EVTO (U564-3, U579-3) when the incoming signal matches the specification. One word recognizer IC will produce Event A; the other produces Event B. These two signals are inputs to the Trigger Sequencer IC. A clock signal, CKO (U564-7), is used to clock these events into the Trigger Sequencer.

The final block of this gate array is a Processor Interface, where 16 CMOS-compatible data input lines (D00-D07, D10-D17) are either buffered or latched to control 37 different points in the IC. There are two different Latch Enable Bar signals, LE1B (U564-31, U579-31) and LE2B (U564-30, U579-30), for two banks of latched data inputs. The buffered inputs are intended to be latched externally in octal CMOS latches U490, U590, U454, and U654.

Timebase <115>

The Timebase circuits provide the internal clock used to sample data. For 500 ps, 1 ns, and 2 ns acquisition, a 500 MHz oscillator (Y642) is used and clock input ACK of the Trigger Sequencer (U534) is selected as the clock source.

For slower acquisitions, the BCK input of the Trigger Sequencer (U534) is selected as the clock source. This clock input is derived from a 200 MHz oscillator (Y518) and a counting chain (U720, U620, U722, and U726), providing clocks down to 5 ms.

The clocks coming into the Trigger Sequencer (U534) are synchronized to a start/stop signal, SACQ (U534-35 of <116>), that gates the clock on and off. The gated clock is then distributed to the four Login Gate Arrays as CK-A, CK-B, CK-C, and CK-D.

Trigger Sequencer Gate Array <116>

The Trigger Sequencer gate array, U534, performs clock switching to start the 91HS8, selects trigger modes and also calculates when to stop the 91HS8. The IC consists of six major sections:

- o Clock Switch
- o Sequencer
- o T-Counter
- o Delay Counter
- o Test Section
- o Processor Interface

The Clock Switch selects one of three possible clock sources: ACK, BCK or ECK <115>. The SACQ input gates the selected clock on or off. Clock outputs CKOA, CKOB, CKOC, and CKOD <115> from the Clock Switch drive four Login ICs (U360, U380, U760, & U780 <114>). A STOP signal inside the Sequencer will, if enabled, turn off the Clock Switch regardless of the state of SACQ.

Synchronizers in the Clock Switch guarantee that the output clocks start and stop cleanly. Clocks in the Clock Switch are separate from the clock for the remainder of the gate array.

The Sequencer is a state machine with five states: Start, Armed, Ready, Triggered, and Stop. The following chart lists the signals that cause the transitions between states.

Input Causing State Change	Resulting State
RESET signal	START
ARM signal	ARMED
Event A, B, or T-Counter Terminal Count	READY
Same as above	TRIGGERED
Delay-Counter Terminal Count	STOP

The 91HS8 has six posible possible trigger modes:

Trigger on Event A	Trigger on A followed by B
Trigger on Event B	Trigger on A followed by B, reset on TCTC
Trigger on A or B	Trigger on A followd by TCTC, reset on B

The Delay and T-Counters are similar, but not identical. Each counter contains a four-state Johnson counter and a multiplexer which selects one of four output phases. The selected phase, with a period four times the input clock CKIN, is sent to an external counter. In the T-Counter, which can run repeatedly, the external counter (comprised of U329, U334, and U339) is ECL so that it can be quickly reloaded. In the Delay Counter, which runs once during an acquisition cycle, the external counter (comprised of U420, U424, and U524) can be an ECL/CMOS version, loaded by the processor. When either counter starts, the first clock to the external counter causes a load, but subsequent clocks are counted. The terminal counts of the external counters are returned to the Trigger Sequencer (via TCTC & DCTC) and cause an internal terminal count signal to the Sequencer.

The Test Section selects numerous internal points to appear on four test outputs (TST1 - TST4). These are used for diagnostic purposes. This section can also force the counters to run and can force TCTC or DCTC to the Sequencer section.

The Processor Interface contains processor-bus-compatible inputs (D0 - D7) and internal low-power latches. Some signals are latched internally by two latch-enable bar signals (LE1B & LE2B), but others are directly connected to the inputs. Therefore, the octal CMOS latch U529 is left in the transparent mode when the processor writes to the internal latches. U529 is then latched with data for the direct inputs.

MEMORY BOARD A51
Acquisition Memory Microprocessor Interface <117>

These circuits provide the interface between the Z80 microprocessor in the DAS 9200 mainframe and the 91HS8 acquisition memory. The Z80 processor can write to three control registers U340, U341, and U342. The outputs from these registers control the operation of the Memory Multiplexer gate arrays and associated circuitry.

The Z80 microprocessor can read data from several sources using multiplexers (U242, U244, U246, and U248) and ECL-to-TTL converters (U343 and U350). The read data can come from the data outputs of the ECL RAMs or from various selected outputs of the Memory Multiplexer gate arrays (Bank Select, Address, Overflow, etc.).

Memory Multiplexer Gate Arrays: Channels 0 - 7, <118> to <125>

Each Memory Multiplexer (Mux) gate array has two input channels (IA, IB). Two Memory Mux gate arrays are required to store data provided by the four outputs on each login array.

CH 0: U260, U270	CH 4: U324, U314
CH 1: U174, U164	CH 5: U410, U420
CH 2: U210, U220	CH 6: U374, U364
CH 3: U124, U114	CH 7: U460, U470

Each input channel of the array is multiplexed to produce eight output data channels (OA1-OA8, OB1-OB8). These eight outputs are stored in a RAM bank; refer to Figure 4-2. Each bank consists of two 4x256-bit ECL RAMs (Type 10422). Thus, each Memory Multiplexer array controls and stores information in two RAM banks. Data from each channel of the 91HS8 is stored in four RAM banks using two Memory Mux gate arrays.

The Memory Multiplexer array generates all signals required to store data in the RAMs. These include 16 data, 8 address, 1 write enable and 4 bank select outputs. The RAM banks store data only when enabled by a bank select signal (BSA1,2 and BSB1,2).

When the 91HS8 clock is 2 ns or slower, the four outputs on each login array are identical. Data is then stored in the RAM banks sequentially, one bank at a time. Data is stored starting at address 00 in bank 0. When bank 0 is full, it is deselected and bank 1 is selected. This continues until bank 3 is full. When this occurs, an overflow bit is set and bank 0 starts storing data again.

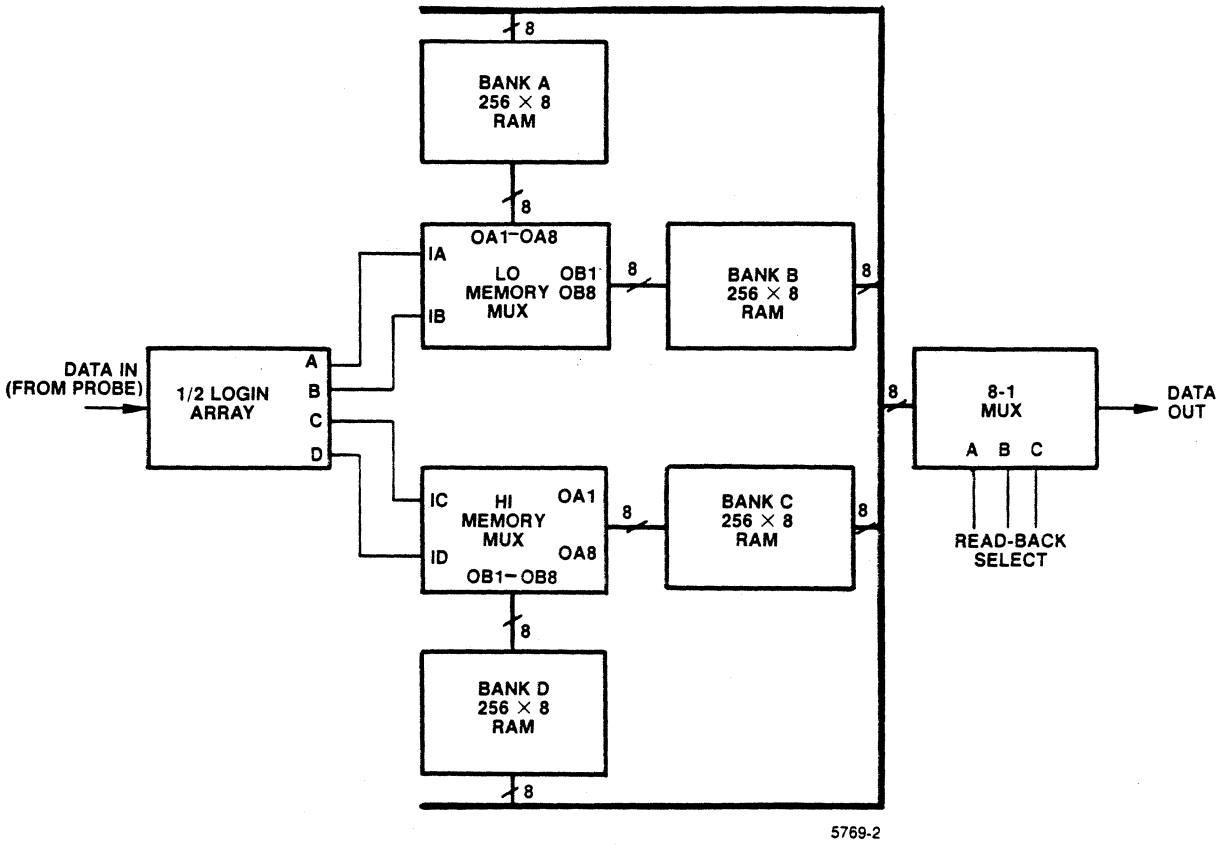


Figure 4-2. 91HS8 acquisition memory data path for one channel.

When the 91HS8 clock is 1 ns (or when GLITCHES=ON is selected at slower clock speeds), the outputs on each login gate array are paired. Output phases A and B are identical; phases C and D are also identical. Two `channels´ of data must be stored, so two of the four RAM banks are enabled at one time. Data is stored in banks 0 and 2 first. When these are full, they are deselected and banks 1 and 3 are selected. When they are full, the overflow bit is set and the cycle is repeated.

When the 91HS8 clock is 500 ps, all four outputs on each login array can be different and all must be stored. In this mode, all four RAM banks are simultaneously enabled. Data is stored at the same time in all four banks starting at address 00. When the banks are full, the overflow bit is set and the cycle is repeated.

91HS8/91HSE8 INTERFACE BOARDS A52 & A53 <126> to <133>

The following discussion applies to both 91HS8 and 91HSE8 Interface Boards, unless otherwise stated. The Interface Boards are the only difference between a 91HS8 and a 91HSE8; all internal components of both cabinets are the same.

The Interface Board resides in a slot of the DAS 9100 Series mainframe. This board provides the overall interface between the mainframe and the 91HS8/91HSE8 cabinet; an Interface cable attaches the Interface Board to the cabinet.

The Interface Board circuits connect to the Z80 microprocessor bus in the mainframe. Three EPROMs, U450, U458, and U460, contain the firmware used by the mainframe to control and operate the 91HS8.

After the 91HS8 acquires data, the data resides in ECL RAM on the Memory Board. This data is then transferred to MOS RAM U660 on the Interface Board. The transfer routine organizes the data so it can be read by the DAS mainframe.

The Interface Board also contains circuits that start and stop 91HS8 acquisitions. In a multiple-91HS8 configuration, the stop-store signal can come from any one of the 91HS8s. Trigger cables are used to carry the stop-store signals from one Interface Board to another (i.e., out of J139 schematic <132> and into J144, J145, and J146 of schematic <128>). Refer to the 91HS8, 91HSE8 Operator's Manual Addendum for cable connection information.

The 91HS8 Interface Board is different from the 91HSE8 Interface Board in that the 91HS8 contains the timebase used as a Clock Source <129> in a multiple-91HS8 configuration. Clock cables are used to distribute the clock signal to the different 91HS8 cabinets.

91HS8 CALIBRATOR BOARD A54 <110>

The Calibrator circuit is used during a calibration procedure to:

- compensate for probe offset voltages
- deskew the channels
- adjust the 500 ps timing

The probes are calibrated by the 91HS8 software in the following manner. First, both inputs of all probes are connected to ground. The calibration software then compensates for probe offset voltages. Second, a 50.065 MHz signal is applied to the Vin input of all probes (with all Vref inputs connected to ground). The calibration software then compensates for skew between channels and adjusts the 500 ps timing in all the Login Gate Arrays.

POWER SUPPLY BOARD A55

91HS8/91HSE8 Power Supply <134>

The 91HS8/E8 power supply is a switching-type supply that provides +16vdc, +15vdc, -15vdc, +5vdc, -5vdc, and +3vdc to all system circuitry. Thses voltages are carried through ribbon cables to the Acquisition and Memory Boards. The Line Select switch on the Power Supply Board controls selection of either 115 vac or 230 vac power source. The instrument fuse is also located on the Power Supply Board.

Line Filter And Rectifier

The incoming ac line is rectified by the full-wave bridge CR211 and filtered by C121 and C131 to approximately 350 volts dc (across TP411 and TP422). Switch S100 removes the ac line from the power supply circuitry (however, not from the fuse or switch itself). S401 selects internal circuitry for operation using either a 115 volt or 230 volt power source.

CAUTION

A lighted or blinking neon lamp (DS121) indicates that the line filter capacitors remain charged to at least 70 volts. Do not touch the power supply circuitry while the lamp is on.

On/Off Control

Transistor Q918 on the Acquisition Board senses the +5 volt supply on the DAS mainframe and turns on the 91HS8 supply when the DAS mainframe is powered up. A thermal fuse is mounted in series with the collector of Q918 on the Acquisition Board. When Q918 is turned off, or when the thermal fuse is open, transistor Q273 holds the reset line low to the Main Regulator U375-5. When Q918 is turned on, transistor Q273 allows the line to go high, removing U375's reset condition. T141 temporarily supplies current to Q283 in the Kick Start Circuitry until the supply begins to run.

The SHUTDOWN(L) signal is a wire-OR of Q273 and U375-8 and is activated by either Q273 or the shutdown signal (via U375-8). The active low shutdown signal from pin 8 comes in response to a current limit condition in the supply.

Kick Start Circuitry

When powering up, the current from transformer T141 passes through Q283 and charges C465 to approximately +25 volts. At this time, the Schmitt trigger transistors (Q472 and Q485) turn on and deliver approximately +25 volts to the input of the +20 volt regulator U371. The capacitor C465 temporarily supplies the current passing through Q471 for the base drive transistors (Q341 and Q445, in the Main Regulator) until the +25 volt supply is up. When the Schmitt trigger fires, Q283 turns off and current is no longer drawn from T141.

When the DAS mainframe power is turned off, or when the thermal fuse has blown, Q273 pulls down on the reset and shutdown lines of U375. During power-down, the Schmitt trigger turns off when C465 reaches approximately +15 volts. This removes the voltages used by U375 and shuts down the power supply.

Main Regulator

The Pulse Width Modulator I.C. U375 is the main controller of the power supply. When the Kick Start Circuit's Schmitt trigger transistors turn on, approximately +25 volts is supplied to the +20 volt regulator U371. The regulator then provides the vcc to U375. This allows U375 to produce complementary base drive signals for Q341, Q441, Q445, and Q446. Components C364, R375, C379, and R365 control the timing of these base drive signals on pins 13 and 16. Q471 supplies current to the collectors of the base drive transistors Q341 and Q445. T431 couples the drive signal to the primary switching transistors, Q421 and Q422.

Primary current is sensed through T432 as a 20 kHZ signal across R440. A precision rectifier, formed by U275C and D, rectifies the waveform across R440 into a unidirectional pulse. The low pass filter, R274 and C276, produces an average dc voltage proportional to the current in the primary winding of T241. This primary-sensed dc voltage is fed to comparator U275B.

U275B compares the primary-sensed current limit voltage value at U275B-6 against a voltage reference at U275B-5 to determine the load conditions in the Primary Switching Circuit. If the primary-sensed value is less than the reference value, comparator U275B drives the current limit input high at U375-7 and shuts down the power supply. R280 provides a signal that keeps the current limit point relatively constant as the input line voltage changes.

Primary Switching Circuit

The half-wave bridge chopper (formed by Q422, Q421, C321, and C322) converts the 350 volt dc level to a 20 kHZ pulse width modulated wave. T431 couples a complementary pair of 20 kHZ base drive switching signals from the Main Regulator to Q421 and Q422. Power transformer T241 couples the square wave (at TP421) to the Secondary Rectifier And Filter.

Over-Voltage Protection

Output over-voltage protection is provided by the SCR Q371. The SCR pulls down on the +20 volt line to U375 pin 17 when the +5 volt supply exceeds approximately +6.2 volts, or the -12 or -5 volt supplies are pulled positive. If Q371 is triggered, the power must be turned off, then on again, to restart the supply.

Secondary Rectifier And Filter

A 20 kHZ pulse width modulated wave from the primary switching circuit is rectified and filtered on the secondary side of T241. The +5 volt output is full-wave rectified and filtered by CR445, CR451, L151, L351, and C451. Additional +5 volt filtering is provided by L461 and C161. Full-wave rectifying and filtering circuitry produces a +20 volt supply (balanced by T261) to feed the +16 volt regulator and the +/-15 volt regulators. The -5 volt regulator is supplied with -8 volts by half-wave rectifying and filtering the 20 kHz waveform.

3-Terminal Regulators

These regulators convert voltages from the secondary rectifier circuitry to output voltages used by the 91HS8 circuitry. All four regulators have built-in current limiting and thermal shut-down protection. The +16 volt regulator, U472, -15 volt regulator, U181, and the +15 volt regulator, U481, are fed by +/-20 volt inputs; the -5 volt regulator, U471, is fed by a -8 volt input.

+3 Volt Supply

The +3 volt supply (TP162) is actually a -2 volt supply down from the +5 volt supply, forming a current sink instead of a current source. The comparator U385B controls the output voltage and switching frequency. The +5 volt sense line supplying a reference voltage to U385B causes the +3 volt supply to shutdown if the +5 volt supply shuts down. Transistors Q487 and Q387 act as signal buffers which feed the switching transistor Q461. Comparator U385A controls current limiting by using R461 as the current sense.

SECTION 5
VERIFICATION AND ADJUSTMENT PROCEDURES

ADJUSTMENTS

Adjustments in the 91HS8/91HSE8 require special test equipment, and must be performed only at the Tektronix Factory Service Center. Contract your local Tektronix Field Office for this service.

VERIFICATION PROCEDURES

NOTE

The following procedure checks some of the functions and performance requirements of the 91HS8/91HSE8. A complete check of all performance requirements can only be accomplished at the Tektronix Factory Service Center.

Equipment Required

The following items (or their equivalents) are required to perform the procedures in this section.

DM501A Digital Mulitmeter
SG504 Signal Generator
PG502 Pulse Generator
PS503A Variable DC Voltage Source
350 MHz Oscilloscope
500 Ohm Probe
50 Ohm Coaxial Cable
BNC-to-Dual Banana Adapter (103-0090-00)
BNC T Connector (103-0030-00)
BNC-to-Probe Adapter (013-0084-02)
Threshold Test Fixture (see build procedure)
Data Amplitude Test Fixture (see build procedure)

Threshold Test Fixture Build Procedure

Parts List

1 ea. vector board, .1 in. grid (vector board may be obtained locally)	388-1699-00
1 ea. 1 uF capacitor	283-0059-00
1 ea. BNC, female	131-0106-02
1 ea. BNC solder lug	210-0255-00
4 ea. post, alum., .5 in., 6-32	385-0070-00
8 ea. 6-32 screws	211-0504-00
2 ea. Berg pins (2 rows of 36 ea.)	131-1614-00
1 ft. 16 gauge strapping wire	

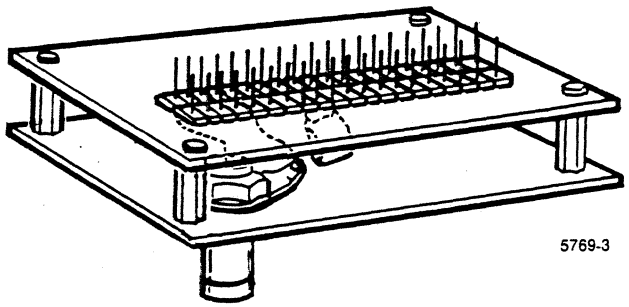


Figure 5-1. Threshold test fixture for 91HS8/91HSE8.

Build Procedure

1. Cut two matching pieces of vector board (25 holes wide by 12 holes long). Cut a hole in one piece of vector board to accomodate the BNC connector. This can be done by cutting between pairs of holes with side cutters. Mount the BNC connector and solder lug as shown in Figure 5-1.

2. Cut out a square of four holes in each corner (of both vector boards) for mounting the four corner posts.

3. Solder in two rows of Berg pins, each row containing at least 20 pins. Ensure that the pins have 0.1 inch spacing between rows. The spacing may be obtained by installing several pairs of jumpers across the rows while soldering.

4. Connect all pins (in each row) with strapping wire; however, make sure the two rows of pins remain unconnected with each other.

5. Solder one lead of the capacitor to the end of one row; solder the remaining lead to the end of the opposing row.

6. Add a post to each of the four corners and mount both vector boards together.

7. Using the strapping wire, solder one row to the center conductor of the BNC; solder the other row to the BNC lug.

Data Amplitude Test Fixture Build Procedure

Parts List

1 ea.	vector board, .1 in. grid (small piece from Threshold fixture is acceptable)	388-1699-00
1 ea.	BNC connector, female	131-0106-02
1 ea.	SMB connector, female	131-1170-00
1 ea.	SMB connector, male	131-0582-00
3 ea.	solder lug	210-0207-00
1 ea.	Berg pins (1 row of 36 pins) (pins left over from Threshold fixture are acceptable)	131-1614-00
1 ea.	51 Ohm, 1/8 Watt resistor (use carbon resistor only)	317-0510-00

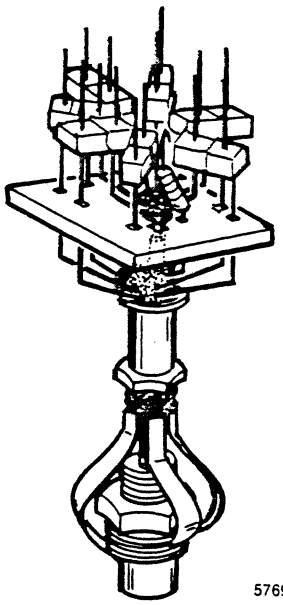


Figure 5-2. Data amplitude test fixture for 91HS8/91HSE8.

Build Procedure

NOTE

This fixture is operated at a high frequency, therefore it is important that all connections are made as short as possible to minimize signal delay and degradation.

1. Attach the three solder lugs to the BNC connector as shown in Figure 5-2. Solder the center conductor of the male SMB to the center conductor of the BNC.

2. Fold the solder lugs up to the SMB connector and trim to fit. Solder the lugs to the side of the SMB connector; set this piece aside until step 10.

3. Cut a piece of vector board that is 11 holes by 11 holes. Insert the center conductor of the female SMB connector through the center hole of the vector board; solder it in place.

4. Cut the ground legs away from the SMB connector, leaving the center conductor sticking up from the board.

5. Cut eight pairs of Berg pins from the strip of pins; bend out one leg on each pair.

6. Insert the straight leg of one pair (same end as the bent leg) through the vector board so that the bent leg is positioned towards the center conductor. Trim the bent leg for a proper fit against the center conductor of the SMB connector; solder it in place.

7. Ensuring that the pair of pins is perpendicular to the board, solder the straight leg to the vector board.

8. Fit, trim, and solder each of the seven remaining pairs around the SMB connector in the same fashion. The finished Berg-pin assembly should occupy a 5 x 5 hole grid at the center of the vector board.

9. Position the resistor body between two of the pin pairs (on top of the board) and put one end of the resistor through the board. Solder the resistor lead to the center conductor of the SMB connector (the same point the bent Berg pins are soldered).

10. Now, there should be eight Berg-pin legs and a resistor leg sticking out the bottom of the vector board (along with the female SMB connector). Bend and trim the Berg pins and resistor lead, then carefully solder them to the body of the SMB connector. Attach the piece of the fixture that was set aside in Step 2.

(1) Probe Thresholds

NOTE

Connections must be kept as short as possible and close to the source. Any high frequency noise from the source must be filtered out, or the 91HS8 will acquire it as valid data.

1. Using the Threshold Test Fixture and BNC-To-Dual Banana Adapter, connect CH0-CH7 to the dc voltage source.
2. Set the 91HS8 Clock to 500 ps.
3. Set Vth on all channels; and for each Vth, check acquired data as follows:

Vth	DC Voltage Source	Acquired Data
0.00 V	-0.025 V	All 0s
0.00 V	+0.025 V	All 1s
+1.40 V	+1.355 V	All 0s
+1.40 V	+1.445 V	All 1s
-1.30 V	-1.345 V	All 0s
-1.30 V	-1.255 V	All 1s

(2) Minimum Data Amplitude And Timing Resolution

1. Connect the BNC-to-Probe Adapter, the cable from the PG502A, and the Data Amplitude Test Fixture to the BNC T Connector; connect CH0-CH7 91HS8 probes to the test fixture.
2. Set the pulse generator for 100 MHz square wave, 500 mV p-p centered around 0 V.
3. Set the 91HS8 Clock to 500 ps, and set Vth at 0.00 V for all channels.
4. Check for proper data acquisition on all channels as follows:

   Nine to Eleven 1s followed by nine to eleven 0s, followed by nine to eleven 1s, etc.

5. Check that all channels display the same edge on one of two adjacent locations (that is, an edge on one channel always appears as coincident or within one sample interval from the edge on any other channel).

6. Remove the PG502A connection from the BNC T Connector and connect the SG504.

7. Set the SG504 for a 333 MHz sine wave at 500 mV amplitude centered around 0 V.

8. Set the 91HS8 Clock at 500 ps, and set vth at 0.00 V (all channels).

9. Check for proper data acquisition on all channels as follows:

   Every sine wave cycle produces at least one 1 and one 0.

SECTION 6
MAINTENANCE: GENERAL INFORMATION

Repair and maintenance facilities for the 91HS8 and 91HSE8 are located at the Tektronix Factory Service Center. For further information or assistance, contact your local Tektronix Field Office or representative.

REPACKAGING INFORMATION

All DAS 9100 Series products are shipped in specially designed transportation packaging. If you need to ship a product, use its original packaging. If the original packaging is no longer fit for use, contact your nearest Tektronix Field Office and obtain new packaging.

If you need to ship any part of your 91HS8 Series system to a Tektronix Service Center, always include all components of your system.

When you ship a product to a Tektronix Service Center, be sure to attach an identifying tag to the product (inside the packaging). On this tag include: your name, the name of your company, the name and serial number of the enclosed product, a detailed description of all failure indications, and a description of the service requested.

MAINTENANCE NOTES

1. Replacement of hybrids (Hypcon connectors) must be performed under controlled, clean conditions and should be done only at the Tektronix Factory Service Center.

2. Component changes in the critical high-speed paths (gate arrays) and clock bias potentiometer adjustment changes require special equipment to verify high-speed performance. This equipment is available only at the Factory Service Center.

3. The 91HS8 must be recalibrated after any probe replacement. Calibration and deskew procedures are contained in the 91HS8, 91HSE8 Operator's Manual Addendum.

4. If the 91HS8 cabinet is operated with the Memory Board hinged open, use a separate fan to blow air across the Memory board to prevent overheating the open portion.

INSTALLING 91HS8 AND 91HSE8 MODULES

Refer to Service Information in your 91HS8, 91HSE8 Operator's Manual Addendum.

PREVENTIVE AND CORRECTIVE MAINTENANCE

When cleaning 91HS8/91HSE8 circuit boards after they have been soldered, perform the following steps.

CAUTION

Do not solder in areas near the Hypcon connectors. Doing so can damage the Hypcons. The following procedure does not apply to Hypcon assembly elastomers. Keep isopropyl alcohol away from the Hypcons.

1. Flush the circuit board repeatedly with isopropyl alcohol (do not brush).
2. Wait 60 seconds after flushing, then blow-dry the board with low-velocity air.
3. Heat the module for 60 seconds in a compartment or oven using circulating air at +51 to +65 degrees C (+125 to +150 degrees F).

DISASSEMBLY/REASSEMBLY OF THE 91HS8 CABINET

The following procedure describes disassembly of the 91HS8 cabinet. Reassembly is the reverse of this procedure. The item numbers referred to in the following procedures correspond to item numbers in the exploded view drawings in the Replaceable Mechanical Parts list at the rear of this addendum.

WARNING

The interior of the 91HS8 module contains hazardous voltages. Power down the unit and disconnect the ac power cord before removing the top cover.

CAUTION

When reassembling the 91HS8, fold the cables so as to allow maximum flow of cooling air over the hybrid. The hybrids can become quite hot if air flow is restricted.

(1) Removing the Top, Bottom, and Side Covers

1. Make sure all cabling is clear of the rear edge of the cover.
2. Remove the corner retainers (Figure 12-1 item 57) at the rear of the cabinet.
3. Slide the cover to the rear and remove it from the cabinet.

(2) Elevating the Memory Board

Remove the seven screws (Figure 12-3 item 5) and swing the Memory Board to the upright position. It is secured to the cabinet by a hinge on the left side of the cabinet.

NOTE

You may find it necessary to prop this board up in the upright position.

(3) Removing the Memory Board

1. Disconnect all cables between the Memory Board and other assemblies.
2. Remove the four (two per hinge) screws securing the left edge of the Memory Board to the two hinges. These screws are accessed through cutouts in the chassis frame with the Memory Board closed down over the Acquisition Board.

(4) Removing the Acquisition Board

The bottom cover must be removed from the cabinet to perform this procedure. See procedure (1).

1. Elevate the Memory Board in accordance with procedure (2).
2. Disconnect the probes from the Acquisition Board.
3. Disconnect all cables between the Acquisition Board and other assemblies.
4. Remove 12 screws (Figure 12-3 item 14). These screws secure the Acquisition Board to the mounting brackets, and are accessed through the bottom of the cabinet.
5. Remove the two screws which secure the interface cable connector to the back of the cabinet.

(5) Removing the Power Supply

1. Remove the two screws (Figure 12-2 item 3) from the top cover of the Power Supply and lift off the cover.

2. Remove the six screws (Figure 12-2 item 6) and the two spacer posts (Figure 12-2 item 4) which secure the power supply to the cabinet. Tip the power supply onto its side.

3. Disconnect (unsolder) all cables from back of the Power Supply.

(6) Removing the Cooling Fans

The following procedure applies to any of the three fans.

1. Remove the Power Supply in accordance with procedure (5).

2. Disconnect the fan power cable.

3. Remove the four screws (Figure 12-1 item 13) and nuts (Figure 12-1 item 14) from the four corners of the fan housing.

PROBE REMOVAL AND REPLACEMENT

Probes (Figure 12-1 item 47) must be installed from the inside of the instrument and pulled through to the outside. Observe the following precautions when removing and replacing the probes:

1. To remove the old probe, remove the probe ground clamp and carefully disconnect the leads from the SMB and harmonica connectors on the Acquisition Board and pull the probe through from the inside of the cabinet.

2. Feed the new probe through the back panel from the inside of the cabinet. Make sure the probe strain relief is properly seated in the back panel.

3. Dress the probes carefully so that the shields do not come in contact with the chassis (probe shields are at 5 V).

4. Make sure the red coax connects to the +SMB connector and the black coax connects to the -SMB connector.

5. Make sure pin 1 on the three-wide harmonica connector is correctly oriented with pin 1 on the socket.

6. After probe replacement, the 91HS8 must be recalibrated. Refer to the calibration and deskew procedures in the 91HS8, 91HSE8 Operator's Manual Addendum.

LINE SELECTOR/LINE FUSE ACCESS AND FUSE REPLACEMENT

The line selector and fuses are located behind the 91HS8's side panel. If it becomes necessary to change the line voltage selector (and corresonding line fuse) for the power source being used, follow the instruction provided in the Service Information of your 91HS8, 91HSE8 Operator's Manual Addendum.

SECTION 7
MAINTENANCE: TROUBLESHOOTING

Troubleshooting information for the 91HS8/91HSE8 has been incorporated in Section 8, Maintenance: Diagnostic Test Descriptions.

Section 8 -- 91HS8/91HSE8 Service

INTRODUCTION

This document describes the DIAGNOSTIC tests as designed for the 91HS8. First, a road map of the functions and tests is presented to show an overall view of the complete HS8 diagnostic activity, as well as providing a quick lookup table for HS8's failures. Following this chart are the individual function/test descriptions with each description following a heading of two numbers such as 3.4. This indicates that this description is for the fourth test of the third function as found on the road map. A CONST include file is presented next which relates HS8 terms with actual hexadecimal numbers for use with the previous descriptions and the following source code.

The unique layout of the 91HS8 requires that the data probes be attached and operable to achieve testing of that particular data path. The data path of any one probe passes through the probe, the login, both word recognizers, and into the acquisition memory. If the probe is missing or inoperable, this data path will not be tested, and no failure of that path will result. The indication to the user of this non tested area is available as a probe display on the extended diagnostic menu during HS8 testing. FF indicates a full set of eight data prbs, while any lo bit will indicate a missing or inoperable probe. As a troubleshooting aid, FUNC 5 executes the WORD RECOGNIZER tests with all probes assumed attached and operable, even if they are not. FUNC 5 is only available during extended diagnostic testing.

HS8 DIAGNOSTIC TEST MAP

V|>>	FUNC 0	FUNC 1	FUNC 2, 5	FUNC 3	FUNC 4	FUNC 6
V|--						
V|>>	HS8 IF	SAMP*HOLD	WORD REC	TRIG SEQ	ACQ MEM	MEM ALIGN
TST 0	PRB SET	SAMP IF	X O 1 (not at po)	ARM SEL	LOAD ADDR	SINGLE MOD
	not during power up. to monitor prbs	manipulates readbacks at acq's interface	word rec A chk for X's O's, 1's B rec=O's	trigger seq arm mux chk shrt + arms during loop	walks bit across cntr all move, U324 readbk	monitor bsb's at SEQ's 500mhz clk
TST 1	WAIT STATE	DAC RAM	X O 1	EVNTS SEL	ADDR CNTS	MULTI MODS
	not during power up. to monitor wait width	64 byte ram check on d to a ram	word rec B chk for X's O's, 1's A rec=O's	A and B rec events out to trigger seq paths	chks cntrs count from 0-80. all mv U324 readbk	monitor bsb's at INTERFACES 500mhz clk
TST 2	STATS	OSC ON	TIME TO EVT	T D CNTRS	BS GEN	NO TST
	manipulates das status port	turns 50mhz calibrator on, holds during loop	A and B rec glitch filter dlay 1 to 8 clks	trigger seq cntrs mode chk. seq bus activity	chks bsb's of all and bsa of U324 all move	
TST 3	DIFF CNTR	OSC OFF	EVNTS DET	CNT T D	SEL 2GHZ	NO TST
	chks cnting ability of difference cntr	turns 50mhz calibrator off, holds during loop	A and B rec events chks detector's 1 of 4 levs	T and D cnt external clking chk. during ~all	chks 2ghz rd, oflow on U324 all move	
TST 4	EXOR	RAMPING	GLITCH	TBASE DRVR	FOUR GEN	NO TST
	walks level thro trig exor, clking diff cntr	ramps at displayed address. not during all	positive negative glitch chk each chan	trigger seq tbase chk 200-500mhz. skip 200 po	monitors wel of U324 states of clk, protect	
TST 5	TBASE DRVR	NO TST	NO TST	TBASE DRVR	BIT IND	NO TST
	interface tbase check if cables, else skip			trigger seq tbase display during ~all	8k mem bit chk 256 bit chk during po	
TST 6	MEM	NO TST	NO TST	NO TST	NO TST	NO TST
	interface 8k ram chck 256 at PO else 8k chk					
TST 7	TBASE DRVR	NO TST	NO TST	NO TST	NO TST	NO TST
	interface tbase display during ~all					

0.0 HS8 IF PRB SET

The PRB SET routine is run prior to each entry into the HS8's menu of procedures to make known the immediate probe configuration to the called procedure. This includes power up, all, and individually called tests. In these cases, PRB SET is called only once per procedure call or group call, and also just once during looping mode.

TST 0 provides a method by which PRB SET may be treated as a regular procedure and therefore looped on. This provides a general troubleshooting exercise during the loop mode for the data prbs, data paths, and their associated circuitry including DAC activity. <112>, <114>, and <116>.

Prbs is an eight bit word with each bit representing the presence or absence of a specific data channel. If the bit is hi, then the probe is present and operable, whereas if the bit is lo, then the probe is missing or inoperable. FF indicates all probes are present and operable. For example, BE would indicate channels 6 and 0 are missing or inoperable; 1011 1110.

PRB SET asserts all 91HS8's SEQ RESETs as an initialization to the HS8 interface under test. This allows for unasserted stop store levels which otherwise would interfere with other tests in a multi HS8 configuration. PRBS is initialized to 0 which indicates no probes are attached. The DAS STATUS register, U448 <126>, bit 6, is read to verify if a module is attached or not. If it is hi than no module is attached and the PRBS remain at 0. Since no module is available, the test ends and a failure is generated during power on to indicate this lack of module. If a module is attached, but the failure occurs anyway, then extended diagnostics will allow pursuing the failure by using the remaining diagnostics.

If the module is there, then PRB SET sets the A Word Recognizer, U564 <114>, to X's except for channel 0 which is set to recognize a 0. The thresholds are set lo so all probes will appear to have a lo level on them. B Word Recognizer, U579 <114>, is set to recognize AA's which should never occur. The diag clk of the SEQ's time base is clocked to allow the A WR to respond by asserting EVT A if the channel is there. PRBS becomes 01 if channel 0 caused an EVT A, otherwise, it remains 00. The A WR is then set with X's for each channel except channel 1 and the process is repeated. This occurs for each channel, 0 to 7.

To assure validity of the probe attachments, the above process is repeated with the thresholds hi and the A WR recognizing a 1 rather than a 0. The hi threshold value of PRBS is then and'ed with the previous lo threshold value which results in a valid PRBS indication which is displayed during extended testing as well as part of this test.

SLOT X,91HS8 PRBS FF

	ADDR	EXP	ACT
PASS RESPONSE:	FF	FF	FF

ACTIVE PATHS: data prb thresholds
data clk paths
data paths from probes to Word Recognizers
READBACK: HS8 ON (bit 6), <111>, <126>, and <130>
A Word Recognizer A evnt out

0.1 HS8 IF WAIT STATE

The WAIT STATE routine exercises the HS8 interface wait state generator, U245, U345, U430, and U548 <126>, by repeatedly reading from the module during loop mode. Each read generates a wait period of seven input clocks. By placing a scope probe on the output of the wait state generator, U430A-3 <126>, prior to the last gate which drives wait~, the waveform's width may be determined. (app. 2 usec) With a second probe placed on U245-4 <126>, a time delay between the two leading edges may be determined. (app. .5 usec) The display of 6's indicates that the wait state generator is set for a shift of 6 input clocks and will not generate a failure.

	ADDR	EXP	ACT
PASS RESPONSE:	06	06	06

ACTIVE PATHS: WAIT~
READBACK: none

0.2 HS8 IF STATS

This test was effectively initialized by PRB SET by asserting all HS8's seq resets. This leaves the STOP STORE or'ing, U238B-15 <128>, at an unasserted lo level which allows signal manipulation through that area of circuitry. STRT is placed lo and the DAS STATUS is checked for bits 2, 5, and 7. EXPECTED is 04 at this point such that bit 2, pod ID, is always hi; bit 5, TRIG, is lo if the SEQ was correctly reset; and bit 7, STOP STORE, is lo if all the HS8's SEQs were reset correctly.

The next check involves bit 2 only, therefore EXPECTED is 04 again. A read of MOS PRB, U608-3 <127>, results in bit 2 being hi as it always should be, however, an idle data line may result in a correct level also.

The last check of this series unasserts STRT so that STOP STORE goes hi. Reading DAS STATUS, the result should be bit 7 hi with the EXPECTED of 84.

	ADDR	EXP	ACT
PASS RESPONSE:	01	84	84

ACTIVE PATHS: STOP STORE
TRIG
MOS PRB

READBACK: DAS STATUS (bit 2, 5, 7), U448 <126>.

0.3 HS8 IF DIFF CNTR

The interface DIFFERENCE COUNTER, U435, U438, U535, and U538 <128>, is reset to 00 and checked by reading the LSB DIFF CNTR latch, U445, and MSB DIFF CNTR latch, U440 <128>. The upper half and lower half are then clocked in parallel by manipulating CLK CNTL latch, U638-11 <128>, signals of C1, C2, C3, and DIAG U638-19 <128>. C1 through C3 select hi and lo diff cntr clock levels providing a programmable clock source. At the same time, DIAG goes up and down providing a like clock source to the msb half of the CNTR.

At predetermined counts, 0, 1, 2, 4, 8, 10, 20, 40, and 80, the DIFF CNTR is checked and verified through the LSB and MSB DIFF CNTR latches. In this way the counter counts by one's from 0 to 7F normally, and is checked as each bit is uniquely hi. When the counter reaches 7F, the MSB half must be clocked to 80 before the LSB, as the LSB would inhibit the DIAG clocking. The LSB is then clocked to 80 and both MSB and LSB are checked for the last time.

If an error occurs in the MSB half, the ADDR will reflect the MSB DIFF CNTR value of 4, otherwise, the LSB DIFF CNTR value of 3 will be displayed.

	ADDR	EXP	ACT
PASS RESPONSE:	03	80	80

ACTIVE PATHS: slow arm clock register U638 <128>
difference counter
READBACK: LSB DIFF CNTR
MSB DIFF CNTR

0.4 HS8 IF EXOR

The DIFFERENCE COUNTER is used to verify the enabling path through the TRIG EXOR circuitry U528A,B, U630, U530A,B, and U535 <128>. First, START ALL is unasserted disallowing the DIFFERENCE COUNTER to count. TRIGO, U620-12 <128>, is set hi, as well as SAEN. ARM1, U620-13, and ARM2, U620-10 <128>, are set lo to block the incoming TRIGO and ARM. The 91A32 SINGLE STEP CLK is used to clock the DIFFERENCE COUNTER four times after each adjustment, the first four times to assure that the counter is disabled. Second, START ALL is asserted hi allowing the asserted SAEN resulting level to enter the TRIG EXOR. Clocking the DIFFERENCE COUNTER four times brings the level throught the TRIG EXOR and enables the DIFFERENCE COUNTER for a count of one. Third, SAEN is unasserted and four more clocks are placed to the DIFFERENCE COUNTER. The enabling level is clocked out of the TRIG EXOR in three clocks disabling the DIFFERENCE COUNTER at a total count of four. Then fourth, ARM1 is asserted to allow TRIGO's level to enable the DIFFERENCE COUNTER once more, so after four more clocks the DIFFERENCE COUNTER is incremented once for a total of five counts. Since the incoming ARM signal can not be controlled, ARM2 is now asserted just to move this line, but no further clocking to the DIFFERENCE COUNTER is done.

	ADDR	EXP	ACT
PASS RESPONSE:	03	05	05

ACTIVE PATHS: TRIG EXOR
DIFFERENCE COUNTER
READBACK: LSB DIFF CNTR

0.5 HS8 IF TBASE DRVR

The TBASE DRVR routine verifies that each frequency of the INTERFACE TIMEBASE is within the range of what it should be, although, the tolerance is not within that of the crystals involved. The HS8 is set up to start an acquisition and trigger on WR event A. The TRIGGER SEQ is set to mode 6 which is trigger on A, then T counter, then D counter, and finally stop. A frequency is selected from the INTERFACE TIMEBASE as well as a corresponding frequency from the TRIGGER 91A32 CLOCK. The TIMEBASE clock runs the HS8's acquisition, once START ALL, U620-1,2 <128>, is asserted. The 91A32 clock is used to clock the DIFFERENCE COUNTER which also is enabled after START ALL is asserted. Due to the range of frequencies to be tested, the values placed in the T and D counters are larger as the frequency under test becomes faster. Likewise, the incoming reference frequency from the TRIGGER BD is also changed relative to the frequency under test. The number of counts on the DIFFERENCE COUNTER after START ALL, the HS8 trigger, the terminal count of the T and D counters, and finally the STOP signal of the HS8 represents the time that the selected INTERFACE TIMEBASE clock took to accomplish the above, and therefore, its relative frequency.

The INTERFACE TIMEBASE can only be tested if its differential clock out cables are attached to the ext clock inputs of a 91HS8 module. During power up and this test, if no response is found at the 500 HZ frequency, (a zero count after a fixed time), then it is assumed that such connections or possibly no timebase exists and the test is passed over without a failure indication. If any counts at all are found, such as noise due to the external clocks reference jumpers being misplaced if no clock is attached, failure will occur if the count is not correct for the frequency under test. All frequencies are checked except for 200 Hz.

The ADDR is used to indicate which frequency failed, with the EXP and ACT indicating to what extent by their difference.

2 = 500 hz	6 = 1 Mhz	A =100 Mhz
3 = 1 khz	7 = 10 Mhz	B =200 Mhz
4 = 10 khz	8 = 20 Mhz	C =500 Mhz
5 = 100 khz	9 = 50 Mhz	

	ADDR	EXP	ACT	
PASS RESPONSE:	0C	0668	0668	
	02	0000	0000	(if no timebase)

ACTIVE PATHS: clk paths
READBACK: LSB DIFF CNTR
MSB DIFF CNTR

0.6 HS8 IF MEM

The INTERFACE's 8k ram address counters U568, U570, U668, U670, and U675 <127> are first checked by resetting them to 0 and writing a 0 to ram. The counter is then loaded with 1 and that is written to ram which represents the address it is suppose to be at. This continues with the following values of 2, 4, 8, 10, 20, 40, 80, 100, 200, 400, 800, and 1000, and each time, the loaded value is written to ram. Since only one address line is asserted at a time, if a short exists, that address value will be written to address 0 indicating which line has a problem. If, after these writes, address 0 is not still 0, ADDR will show which address line is at fault from address line 0 to address line C. EXP will equal 0, and ACT will be one of the above values.

If the above is correct, the memory test continues by writing EE's to the entire memory, then verifying their existence, then the same with 55's, and finally with 11's. ADDR now becomes a value from 0 to 1FFF indicating an error at that address. EXP will be the current test value of EE, 55, or 11, and ACT will be the value of the resultant read from that address. During power up, only 256 write and reads are done, otherwise, 8192 write and reads are done checking the entire memory.

	ADDR	EXP	ACT
PASS RESPONSE:	1FFF	11	11

ACTIVE PATHS: interface memory and memory counters <127>
interface memory
READBACK: RD RAM DATA U475 <127>

0.7 HS8 IF TBASE DRVR

This is the same test as in 0.5 with the added feature of selecting the frequency under test. The INC key selects the next higher frequency, while the DEC key selects the next lowest. The test runs once on the selected frequency, but maintains the selection so that it may be probed undisturbed from the HS8's activity during the test. The NEXT key may be held down to do repetitive tests on the same frequency to view erratic ACT values. 200hz is included in this test as well as the rest of the available frequencies.

1 = 200 hz	5 =100 khz	9 = 50 Mhz
2 = 500 hz	6 = 1 Mhz	A =100 Mhz
3 = 1 khz	7 = 10 Mhz	B =200 Mhz
4 = 10 khz	8 = 20 Mhz	C =500 Mhz

	ADDR	EXP	ACT
PASS RESPONSE:	0C	0668	0668

ACTIVE PATHS: clk paths
READBACK: LSB DIFF CNTR
MSB DIFF CNTR

1.0 SAMP*HOLD SAMP IF

This test manipulates the readback lines of the DIAGNOSE latch, U294 <111> except for the A and B event lines which are tested later. First, DAC HALT, U294-15 <111>, is set lo by writing a 0 to MISC WR, U128-6 <112> and then writing 16 66x to CH 0 DAC RAM. This completes the DAC HALT as well as placing OVth hi and 1.2Vth lo. COUTRES, U349-9 <111>, and GLITCH, U349-6 <111>, are set lo, and DESKS01, U394-2 <111>, is set hi. The remaining DESKS's are set lo. All of this results in an EXP of 14. The next check sets OVth and 1.2Vth both hi by placing the CH 0 threshold hi. A DAC ADD WR places DAC HALT hi and the remaining lines are complemented. This results in an EXP of EC. The last change sets OVth and 1.2Vth both lo by setting CH 0 threshold hi. COUTRES and GLITCH are both set lo which results in an EXP of 50.

	ADDR	EXP	ACT
PASS RESPONSE:	73	50	50

ACTIVE PATHS: LOGIN MODE U349 <111>
CH 0 Vth, OVth, 1.2Vth <112>
READBACK: DIAGNOSE

1.1 SAMP*HOLD DAC RAM

To disable the DAC COUNTER, U150, U154 <112>, MISC WR is written with a 1. Starting at DAC RAM address 0, the ram is filled with EE's. Then, back at 0, the ram is checked for the EE, and a 11 is put in its place. The 11 is read and verified, and a 55 is written. It is then read and verified and the DAC address is incremented. If an upcoming ram location has a 55 instead of an EE, an addressing problem exists. ADDR is the DAC RAM's address of failure from 0 to 3F.

	ADDR	EXP	ACT
PASS RESPONSE:	40	55	55

ACTIVE PATHS: DAC RAM
READBACK: DAC DATA RD

1.2 SAMP*HOLD OSC ON

This turns the external 50Mhz calibrator on; <110>. In looping mode, the calibrator would remain on for verifying its frequency by external equipment. ADDR, EXP, and ACT are all set to 55's to differ from the next test.

	ADDR	EXP	ACT
PASS RESPONSE:	55	55	55

ACTIVE PATHS: LOGIN MODE
OSC EN U349-12 <111>
CALIBRATOR
READBACK: none

1.3 SAMP*HOLD OSC OFF

This turns the external 50Mhz calibrator off; <110>. In looping mode, the calibrator would remain off for verifying its resistance to ground by external equipment. ADDR, EXP, and ACT are all set to 0's to differ from the previous test.

	ADDR	EXP	ACT
PASS RESPONSE:	00	00	00

ACTIVE PATHS: LOGIN MODE
OSC EN U349-12 <111>
CALIBRATOR
READBACK: none

1.4 SAMP*HOLD RAMPING

RAMPING displays an address value from 0 to 3F instead of the ADDR, EXP, and ACT. Each even address represents the four bit nibble going to the associated integrator, pbdesk or dpdesk of U360, U380, U760, and U780 <113> . Each odd address represents the eight bit word going to the associated integrator. At each address, the DAC address is set to the same and a repetitive sequence is written to the DAC. This sequence is 80, 40, 20, 10, 8, 4, 2, 1, 0 which produces a declining stair step, each step smaller than the preceding. The odd addresses have nine levels and the even have five. The INC key is used to advance to the next address and the DEC key to the previous address.

pbdesk(0)	00	01	Vth(0)	20	21
pbdesk(1)	03	02	Vth(1)	22	23
pbdesk(2)	05	04	Vth(2)	24	25
pbdesk(3)	06	07	Vth(3)	26	27
dpdesk(0)	08	09	Vth(4)	28	29
dpdesk(1)	0A	0B	Vth(5)	2A	2B
dpdesk(2)	0C	0D	Vth(6)	2C	2D
dpdesk(3)	0E	0F	Vth(7)	2E	2F
pbdesk(4)	10	11	Vth(clock)	30 and 38	
pbdesk(5)	12	13		31 and 39	
pbdesk(6)	14	15	Vth(ext arms)	32 and 3A	
pbdesk(7)	16	17		33 and 3B	
dpdesk(4)	18	19	Vtt 0	34 and 3C	
dpdesk(5)	1A	1B		35 and 3D	
dpdesk(6)	1C	1D	Vtt 1	36 and 3E	
dpdesk(7)	1E	1F		37 and 3F	

2.0 WORD REC X 0 1

X 0 1 verifies that the A WR, U564 <114>, can distinguish between a 1 or a 0, or also an X condition on each channel. The probes are set to a high level by their thresholds. Both the main word and alternate word of the B WR are set to 0 to disallow any event which might occur in the B WR. The A WR is set to X's except for the single channel under test. Channel 8 (channel 0 to 7 will be referred to as channel 1 to 8 to correspond to the bit manipulations of the test) is the first to be tested. First, both the main and alternate words of A WR channel 8 are set to 0's. The WR's are clocked by the TRIGGER SEQ's DIAG CLK. The result or EXP value of the A and B EVNT lines will be 0, since no word should have been recognized. Next, A WR's main word is set to 80 which enables channel 8 to recognize a hi level. A WR's alternate word is left at 0. After clocking the WRs, the EXP value is 1, or an A EVNT. B WR had no event due to A WR's alternate word not matching the hi incoming level from channel 8. Finally, A WR's alternate word is set to 80 to match the channel under test. The WRs are clocked again and the EXP value becomes 3. Both A and B EVNTs occurred due to both A WR's main and alternate words set to recognize a hi level at channel 8. A WR's alternate word crosses over to B WR and asserts the B EVNT line even though B WR did not recognize a word since it is set all lo. If channel 8 passes, channel 7 is tested in the same manner, except the test word is shifted right by 1 to equal 40 rather than 80 to match the channel under test. This repeats to channel 1 with a test word of 01. If a probe is missing or inoperable as described by the prbs display, test 0.0, then that channel is not tested.

ADDR keeps the channel under test current such that if a failure of channel 5 occurs, ADDR will display 10. EXP displays which function is at fault as described above.

	ADDR	EXP	ACT
PASS RESPONSE:	00	03	03

ACTIVE PATHS: A and B WR's latches
A and B WR's cross over paths
READBACK: DIAGNOSE (bits 0 and 1)

2.1 WORD REC X 0 1

X 0 1 verifies that the B WR, U579 <114>, can distinguish between a 1 or a 0, or also an X condition on each channel. The probes are set to a high level by their thresholds. Both the main word and alternate word of the A WR are set to 0 to disallow any event which might occur in the A WR. The B WR is set to X's except for the single channel under test. B WR is unique in that data channels 1 to 4 corresponds to channels 5 to 8 of the B WR, and data channels 5 to 8 corresponds to B WR's channels 1 to 4. Consequently, the testing order is data channels 4, 3, 2, 1, 8, 7, 6, 5. Also, the test is described by data channels 1 to 8, rather that 0 to 7 to correspond to the bit manipulations of the test. So, data channel 4 is the first to be tested by B WR channel 8. First, both the main and alternate words of B WR channel 8 are set to 0's. The WR's are clocked by the TRIGGER SEQ's DIAG CLK. The result or EXP value of the A and B EVNT lines will be 0, since no word should have been recognized. Next, B WR's main word is set to 80 which enables channel 8 to recognize a hi level. B WR's alternate word is left at 0. After clocking the WRs, the EXP value is 2, or a B EVNT. A WR had no event due to B WR's alternate word not matching the hi incoming level from data channel 4. Finally, B WR's alternate word is set to 80 to match the channel under test. The WRs are clocked again and the EXP value becomes 3. Both A and B EVNTs occurred due to both B WR's main and alternate words set to recognize a hi level at channel 8. B WR's alternate word crosses over to A WR and asserts the A EVNT line even though A WR did not recognize a word since it is set all lo. If channel 8 passes, channel 7 is tested in the same manner, except the test word is shifted right by 1 to equal 40 rather than 80 to match the channel under test. This repeats to channel 1 with a test word of 01. If a probe is missing or inoperable as described by the prbs display, then that channel is not tested.

ADDR keeps the channel under test current such that if a failure of channel 5 occurs, ADDR will display 01, remembering that the hi and lo nibbles of the data paths are switched. EXP displays which function is at fault as described above.

	ADDR	EXP	ACT
PASS RESPONSE:	00	03	03

ACTIVE PATHS: A and B WR's latches
A and B WR's cross over paths
READBACK: DIAGNOSE (bits 0 and 1)

2.2 WORD REC TIME TO EVT

The glitch filter delay paths are verified in both the A and B WRs as well as the filter select lines. Both WR's are tested in parallel since each have unique event lines. The probes are set to a hi level by the thresholds and both WR's are set to recognize a lo level as the main and alternate words. This allows for a reset of an asserted event by clocking the WR's under this condition. Since no word is recognized, the WR's internal pipeline is in a known state. The glitch filter is set in both WR's to the test length as shown below, as well as setting the main and alternate words of each WR to X's for an immediate event. Then, the WR's are clocked by the TRIGGER SEQ's timebase DIAG clock. Just prior to an event occurrence, both A and B EVNTs are verified to be unasserted or lo. With EXP set to 0, if ACT equals 1, A WR is at fault and if ACT equals 2, then B WR is at fault. 3 would be both A and B WR's at fault. If no failure is detected at this point, the DIAG clock occurs once more, at which time EXP becomes 3 since both A and B WR should have their events asserted. The test progresses through each time delay available from 1 to 8 clock delays, each time resetting the WR's as described above. ADDR is set to the delay word written to the WR's to select the 1 to 8 clock delays. If a failure occurs, ADDR reflects which delay failed.

If ADDR=30 time delay=1 clock

If ADDR=32 time delay=2 clock

If ADDR=36 time delay=4 clock

If ADDR=3A time delay=6 clock

If ADDR=3E time delay=8 clock

	ADDR	EXP	ACT
PASS RESPONSE:	3E	03	03

ACTIVE PATHS: WR's latches
WR's events out
READBACK: DIAGNOSE (bits 0 and 1) WRA, BTST9 U790 <111>

2.3 WORD REC EVNTS DET

The selectability as well as the correct levels of the A and B WR's EVNT DETECTORs are checked under a true level event and a false level event condition. The probes are set to a hi level by their thresholds. Both A and B WR are tested in parallel, first by loading all 0's into the main and alternate words, and unasserting the X's of each. This produces a false level after clocking the WR's with the TRIGGER SEQ's timebase DIAG clock. Each event detector has four selections which are accessed by writing to the WR's. Each selection is made and both A and B event readbacks are read and shifted left two places. This creates one eight bit word which represents the A and B WR's activity on each detector's selection. On this first section of the test, both A and B WR's events should be the same and EXP is 0C which shows all selections are lo except the false level selection. Asserting the X's in both A and B WRs, then clocking that event in, another word is created as the first was. This time with a true event occurring, EXP is 03 indicating all selections are lo except for the true level selection. ADDR is set to FF to indicate the testing of the false level, X's unasserted, and set to a 0 to indicate the testing of the true level where the X's are asserted.

The test word consists of 4 pair of bits, the lsb of each pair representing A WR EVNT and the msb of each pair representing B WR EVNT.

B A false edge, B A true edge, B A false level, B A true level

	ADDR	EXP	ACT
PASS RESPONSE:	00	03	03

ACTIVE PATHS: WR latches
A and B WR's events <114>
READBACK: DIAGNOSE (bits 0 and 1)

2.4 WORD REC GLITCH

The GLITCH routine verifies the ability of the LOGIN's glitch detectors, <114>, to recognize a positive and negative going glitch on each data channel. B WR is the glitch recognizer as A WR does not receive glitch information. A WR's alternate word is set to X's, however, to facilitate the priming of the cross over paths, U564 and U579, pins 13, 14, 21, and 22, from the A WR to the B WR. On the first half of the test, the data probes are set to a lo level by their thresholds. The B WR main word is loaded with FF which is the normal level for no glitches. The channel under test is selected by unasserting the X for that channel and leaving the rest at X's. This set up maintains a constant internal recognition of the normally hi level of the glitch detector. When a glitch occurs, the normally hi level goes lo, causing the B WR not to recognize that channel any longer which results in an event from the glitch mode setup of the B WR. The glitch must occur during the cycle of the clock or it will be considered data. This is accomplished by the control of the TRIGGER SEQ's timebase DIAG clock and the probes' thresholds. For a positive glitch to occur, the WR's are clocked and checked for steady input levels, since no glitches should be occurring at this time. If an event occurs during this time an error will result and the ACT value will represent how many clock edges the apparent glitch lasted. EXP is 0. If no events have occurred, a simulated positive glitch is presented to the LOGINs by changing threshold levels between edges created by the DIAG clk, and the B WR is checked for a B EVNT with a duration of just two clock edges. This is done to each channel from 8 to 1. If no failures occur, the probes are set to a hi level and negative glitch detection is tested in the exact same manner. No changes are made to the WR's, except for channel selection, since the no glitch indication is always hi and a positive or negative glitch both result in this level going lo.

B WR is unique in that data channels 1 to 4 are swapped with data channels 5 to 8. Therefore, ADDR is such that if data channel 8 had an error, it would be presented as 08, rather than 80.

	ADDR	EXP	ACT
PASS RESPONSE:	00	02	02

ACTIVE PATHS: data prb thresholds
data clk paths
data paths from probes to B WR
READBACK: DIAGNOSE (bit 1, B WR EVNT)

3.C TRIG SEQ ARM SEL

ARM SEL is concerned with the TRIGGER SEQ's arm mux as controlled by the INTERFACE's ARM signal and the TRIGGER SEQ's selection lines. ARM is asserted to enable the TRIGGER SEQ's arm mux. This is done by asserting SAEN on the INTERFACE board and START ALL. STOP DIS is asserted to prevent any clocking activity in the TRIGGER SEQ, U534 <116>. The TRIGGER SEQ's tst3 should mimic the ARM MUX level selection while tst1 will reflect the input of EXT ARM PRB +, J438 <116>. The TRIGGER SEQ is reset and arm- is selected from the ARM MUX. A check of TRIGGER SEQ's tst3 will show a lo level. The TRIGGER SEQ's ARM MUX then selects the EXT ARM PRB path and verifies that the incoming level matches the MUX's selected level. During looping on this test, the EXT ARM PRB + side of the incoming signal may be shorted to the 5V shield with a change in ADDR values to indicate a change is taking place. The last ARM MUX selection places a hi level on tst3 by selecting arm +.

	ADDR	EXP	ACT	
PASS RESPONSE:	04	04	04	
	05	04	04	(EXT ARM PRB + set hi)

ACTIVE PATHS: TRIGGER SEQ latches
TRIGGER SEQ tst1-4 <116> readbacks
READBACK: TSRD (bit 0 and 3)

3.1 TRIG SEQ EVNTS SEL

EVNTS SEL verifies the A and B WR event paths to the TRIGGER SEQ by manipulating the event levels and verifying a like result through the TRIGGER SEQ's tst3. Both A and B WR's have their main and alternate words set to X's for a true level event to occur. These asserted events are clocked into the TRIGGER SEQ by the TRIGGER SEQ's timebase DIAG clock. The result is read from tst3. First, the status of B EVNT is read, then an internal selection of A EVNT is made, and tst3 shows the status of A EVNT. The status level is inverted, so if the events were asserted, tst3 would be lo during the event status selection. The results are arranged such that bit 0 will represent a B EVNT if 0, and not B EVNT if a 1. Likewise, bit 1 will represent an A EVNT if 0, and not A EVNT if a 1. The result of this first test is 0, both A and B EVNTS being true. The EVNT DETECTOR selector of the A WR is changed to a false level, which is lo. DIAG clock brings this event into the SEQ, and another check is made. Since B EVNT stayed the same, and only A EVNT changed, EXP equals 2. The same thing is done to the B WR and A WR is left as is. With DIAG clocks, the result is both EVNTS are unasserted and EXP equals 3.

	ADDR	EXP	ACT
PASS RESPONSE:	AB	03	03

ACTIVE PATHS: WR EVNT paths
SEQ's latches
SEQ's tst3 readback

READBACK: TSRD (bit 3)

3.2 TRIG SEQ T D CNTRS

The TRIGGER SEQ's T CNTRS, U329, U334, and U339 <116>, and D CNTRS, U420, U424, and U524 <116>, are used to verify the SEQ's data input lines as well as the internal portions of the SEQ. Both T and D CNTRS are run in parallel. First, one of six clocking modes is loaded into the TRIGGER SEQ. This resets the counters' terminal count to 0. This is checked prior to each TRIGGER SEQ's timebase DIAG clocking sequence. The result is found at the SEQ's tst1 and 2, 1 representing the T CNTR and 2 representing the D CNTR. Both should be 0 at this time. If this is the case, a specified number of DIAG clocks are run relative to the mode that the counters have been loaded with. One clock prior to the expected terminal count of both counters, the tst1 and 2 are checked to be still 0. If not, an error is reported. One more DIAG clock places both counters at terminal count, and this is verified as both tst1 and 2 should be hi.

The first four bits of the SEQ's latch are loaded with the following values relative to the value of ADDR.

ADDR = 1 latch value = C

ADDR = 2 latch value = 8

ADDR = 3 latch value = 4

ADDR = 4 latch value = 5

ADDR = 5 latch value = 6

ADDR = 6 latch value = 7

	ADDR	EXP	ACT
PASS RESPONSE:	06	03	03

ACTIVE PATHS: TRIGGER SEQ's latches
TRIGGER SEQ's tst1 and 2 U534 <116>
READBACK: TSRD (bits 0 and 1)

3.3 TRIG SEQ CNT T D

This verifies the parallel load lines of the external portions of the T and D counters. Both counters are set to count to a point where all available carrys of the counter are asserted by the TRIGGER SEQ's timebase DIAG clock in a specific number of counts relative to the parallel load values. The first value is AA, which is loaded to all counters. The D CNTR is checked first as it arrives at the final count prior to the T CNTR. U520C-10 <116>, of the TSRD readback should be hi at this time and TC of the previous four bit counter should be lo. After a few more DIAG clocks, the TC CNTR is checked. C1 to C3 of TSRD should be hi at this time and all TC's of the TC CNTR should be lo. The test is repeated with 55's being loaded into all the parallel loads. The results should be the same, as the specific count is changed to correspond to the new loaded value. ADDR is set to the parallel load word value of AA, then 55.

	ADDR	EXP	ACT
PASS RESPONSE:	55	F3	F3

ACTIVE PATHS: T and D counters
READBACK: TSRD (bits 0 and 1, and 4-7)

3.4 TRIG SEQ TBASE DRVR

The TBASE DRVR routine verifies that each frequency of the TRIGGER SEQ TIMEBASE <115> is within the range of what it should be, although, the tolerance is not within that of the crystals involved. The HS8 is set up to start an acquisition and trigger on WR event A. The TRIGGER SEQ is set to mode 6 which is trigger on A, then T counter, then D counter, and finally stop. A frequency is selected from the TRIGGER SEQ TIMEBASE as well as a corresponding frequency from the TRIGGER 91A32 CLOCK. The TIMEBASE clock runs the HS8's acquisition, once START ALL is asserted. The 91A32 clock is used to clock the DIFFERENCE COUNTER which also is enabled after START ALL is asserted. Due to the range of frequencies to be tested, the values placed in the T and D counters are larger as the frequency under test becomes faster. Likewise, the incoming reference frequency from the TRIGGER BD is also changed relative to the frequency under test. The number of counts on the DIFFERENCE COUNTER after START ALL, the HS8 trigger, the terminal count of the T and D counters, and finally the STOP signal of the HS8 represents the time that the selected TRIGGER SEQ TIMEBASE clock took to accomplish the above, and therefore, its relative frequency. All frequencies are checked except for 200 HZ.

The ADDR is used to indicate which frequency failed, with the EXP and ACT indicating to what extent by their difference.

2 = 500 hz	6 = 1 Mhz	A =100 Mhz
3 = 1 khz	7 = 10 Mhz	B =200 Mhz
4 = 10 khz	8 = 20 Mhz	C =500 Mhz
5 = 100 khz	9 = 50 Mhz	

	ADDR	EXP	ACT
PASS RESPONSE:	0C	0668	0668

ACTIVE PATHS: clk paths
READBACK: LSB DIFF CNTR
MSB DIFF CNTR

3.5 TRIG SEQ TBASE DRVR

This is the same test as in 3.4 with the added feature of selecting the frequency under test. The INC key selects the next higher frequency, while the DEC key selects the next lowest. The test runs once on the selected frequency, but maintains the selection so that it may be probed undisturbed from the HS8's activity during the test. The NEXT key may be held down to do repetitive tests on the same frequency to view erratic ACT values. 200hz is included in this test as well as the rest of the available frequencies.

1 = 200 hz	5 =100 khz	9 = 50 Mhz
2 = 500 hz	6 = 1 Mhz	A =100 Mhz
3 = 1 khz	7 = 10 Mhz	B =200 Mhz
4 = 10 khz	8 = 20 Mhz	C =500 Mhz

	ADDR	EXP	ACT
PASS RESPONSE:	0C	0668	0668

ACTIVE PATHS: clk paths
READBACK: LSB DIFF CNTR
MSB DIFF CNTR

4.0 ACQ MEM LOAD ADDR

U324 <122> of the ACQ MEMORY is the only gate array with readback, so only if it has an error will this test fail. All other gate arrays are exercised similar to U324 and may be comparatively probed. It is important to note that PCD ADD WR is not read back as PAB ADD WR is through U324. The monitoring of the appropriate gate array's address lines will insure these lines are valid, as this test manipulates them the most of any ACQ MEM test. The address counter of each gate array is loaded with values 01 through 80, walking a bit across the counters. After each load, U324 address outputs are verified to match the loaded value. ADDR is set to M ADD RD, EXP is set to the current load value, and ACT is what is read from M ADD RD.

	ADDR	EXP	ACT
PASS RESPONSE:	69	80	80

ACTIVE PATHS: ACQ MEM data buss
U324 address lines
READBACK: M ADD RD

4.1 ACQ MEM ADDR CNTS

U324 <122> of the ACQ MEMORY is the only gate array with readback, so only if it has an error will this test fail. All other gate arrays are exercised similar to U324 and may be comparatively probed. The address counter of each gate array is first reset to 0 and U324's address readback is used to verify it is at 0. Then all address counters are incremented by INC, and U324 is checked and verified at counts of 1, 2, 4, 8, 10, 20, 40, and 80. ADDR is set to the number of INCs which have been sent to the address counters. EXP is set to the current check count as listed above, and ACT becomes U324 address output at that checkpoint.

	ADDR	EXP	ACT
PASS RESPONSE:	81	80	80

ACTIVE PATHS: ACQ MEM data buss
U324 address lines

READBACK: M ADD RD

4.2 ACQ MEM BS GEN

The ACQ MEM's bank sel lines are manipulated to assure independence. U324 <122> has both BSA and BSB readback capability, while the rest of the gate arrays have only BSB readback. After an address counter reset, the address load lines which double as BS GENERATOR control lines, are loaded with FF's. The BSB of each gate array is read by M ALIGN 0 3 RD and M ALIGN 4 7 RD. The BSA of U324 is then read as bit 0, and also BSB as bit 1 of M STATUS RD. EXP is set to 0 for the BSB's and also for the U324 BSB BSA. The redundant U324's BSB should match the previous BSB read. If U324's BSB BSA is bad, then ADDR is set to M STATUS RD from where it was read, otherwise, ADDR is set to M ALIGN 0 3 RD and the BSB's are displayed. If no error occurs, the address load lines are set to OF's which places all BSBs to a lo level and all BSAs to a hi level. EXP for the U324 readback is 2, and for the BSB readback EXP is FF. The next value loaded is 0 which results in all BSAs and all BSBs being set to a hi level. EXP for U324 readback is 3, and FF for the BSBs.

The resulting display from this test is XX00XX, where the 0's are a function of the display mechanism and have no meaning towards this test. The MSB XX's represent the BSBs readback from M ALIGN 4 7 RD and the LSB XX's represent the BSBs readback from M ALIGN 0 3 RD.

U224 U200 U132 U110 U274 U250 U160 U182 M ALIGN 4 7 RD

U310 U332 U402 U424 U382 U370 U450 U474 M ALIGN 0 3 RD

	ADDR	EXP	ACT
PASS RESPONSE:	68	FF00FF	FF00FF

ACTIVE PATHS: ACQ MEM data bus
All BSBs and U324 BSA

READBACK: M ALIGN 0 3 RD
M ALIGN 4 7 RD
M STATUS RD (bit 0 and 1)

4.3 ACQ MEM SEL 2GHZ

The OFLOW is verified by using the 2GHZ RD mode of the AQC MEM address counters. Only U324 has OFLOW readback, but all gate arrays are manipulated in the same manner. The address counter is reset and 2GHZ mode is selected. OFLOW and the address lines from U324 are verified to be lo. The address counters are then incremented by M ADD INC, pin 68, five times. In the 2GHZ mode, this should produce an OFLOW as well as advance address 0 from 0 to 1. The address lines of U324 are read and or'ed with M STATUS RD bit 2 which is the OFLOW bit from U324. EXP is set to a 5 and ADDR is set to M ADD RD.

	ADDR	EXP	ACT
PASS RESPONSE:	69	05	05

ACTIVE PATHS: ACQ MEM address lines
ACQ MEM OFLOWs U324 only
READBACK: M ADD RD
M STATUS RD (bit 2)

4.4 ACQ MEM FOUR GEN

The WE1 line of U324 is monitored as the FOUR GEN is clocked by the TRIGGER SEQ timebase DIAG clock to verify the FOUR GEN's activity and also the validity of the PROTECT line. All other gate arrays are manipulated in the same manner, however, U324 is the only gate array with readback. The gate arrays are reset and the clocking pipeline is filled so that the next clock will result in a known level of WE1. The reset is dropped and six checks of WE1 are made, one after each DIAG clock. On the last check, PROTECT is asserted which maintains WE1 at a hi level at a time when it would normally be lo. The resulting correct samples should find WE1 hi lo lo hi hi hi, the last hi due to PROTECT being asserted. ADDR is set to the current check, 1 through 6. WE1 is bit 3 of M STATUS RD and is equal to 8 if it is hi, and 0 if it is lo.

	ADDR	EXP	ACT
PASS RESPONSE:	06	08	08

ACTIVE PATHS: ACQ MEM clock path
WE1
PROTECT
READBACK: M STATUS RD (bit 3)

4.5 ACQ MEM BIT IND

The ACQ MEM is bit oriented and when read, each bit of the eight bit result represents a single data channel of 0 to 7. The first test sets the HS8 up to acquire at 200 MHz sampling rate. The data probes are set to a hi level by their thresholds, and the ACQ MEM is set up to read in four banks of memory at a time. This allows the memory to fill in 256 writes rather than 1024. When the HS8 is started, the entire memory is quickly filled with 1's. The clocking is stopped and PROTECT is asserted. The address counters are reset and the memory is set to the 1024 bit readback so each individual bit is independently verified. The same test is repeated, except the probe thresholds are set for a lo level at the probes. After sampling at 200 MHz once again, the memory bits are verified to be 0's. The next test is time consuming due to the great many manipulations of the probe thresholds. Everything is set up as in the previous tests, except rather than a 200 MHz sampling rate, the TRIGGER SEQ timebase DIAG clock is used to clock a hi level, then a lo level into the ACQ MEM. The probe thresholds are complemented after each clock. In this way, the memory is filled with alternating bits for independence verification. Address 0 of the ACQ MEM will start with a 1 and end with a 0. Any probe which is missing or inoperable as shown by the PRBS display will cause this test to ignore that data path.

The resulting display from this test is XX00XX, where the 0's are a function of the display mechanism and have no meaning towards this test. The MSB XX's represent M DATA0 RD through M DATA7 RD and the LSB XX's represent the eight bit value at that address position across the eight channels. ADDR is set to the current memory position from which M DATA0 RD through M DATA7 RD read their eight bits.

58 to 5F, 00 , ch7 ch6 ch5 ch4 ch3 ch2 ch1 ch0

58 to 5B = lo 4 bits, 5C to 5F = hi 4 bits

ADDR = 0 to FF Upper left ram in channel grouping

ADDR = 100 to 1FF Lower left ram in channel grouping

ADDR = 200 to 2FF Upper right ram in channel grouping

ADDR = 300 to 3FF Lower right ram in channel grouping

	ADDR	EXP	ACT
PASS RESPONSE:	03FF	5F0000	5F0000

ACTIVE PATHS: data prb thresholds
data clk paths
data paths to ACQ MEM
ACQ MEM

READBACK: M DATA0 RD
M DATA1 RD
M DATA2 RD
M DATA3 RD
M DATA4 RD
M DATA5 RD
M DATA6 RD
M DATA7 RD

5.0 ALL PROBES

ALL PROBES is a call to the WORD REC FUNC 2.0 with the PRBS set to FF. This allows a troubleshooting technique to be used for probe problems as well as some WORD RECOGNIZER problems. PRBS as displayed at the top of the extended diagnostic screen will still report the actual attached and operable probes.

6.0 MEM ALIGN

MEM ALIGN is a calibration method used for aligning the ACQ MEM's address counters between channels, and also between modules in a multi-HS8 system. If a single HS8 interface is in the DAS during this test, it will come up in the single mode and test with the module's SEQ 500Mhz clock. If more than one, and up to four, HS8 interfaces are in the DAS during this test, it will come up in the multi mode and test with the interface's 500Mhz clock. The SELECT key may be used to switch modes during the test.

In the multi mode, the slot selected must be the master interface with an operable timebase, and properly connected to all modules. The display must contain all the same number, either 0's or FF's, and each slot must equal the other on a given pass. Switching to single mode, the slot selected will be tested as a single HS8 and all other displays will be ignored. In either case, the appropriate adjustment should be centered in the window of adjustment which produces a constant pass indication.

The 16 bits displayed after each slot number represent:

M ALIGN 4 7 RD M ALIGN 0 3 RD

00 00 00 00 00 00 00 00 MSB(hi mux, lo mux)()()() ()()()()LSB

91HS8 CONST DECLARATIONS

```
        (********** Interface Board **********)

DAS MAP          = 0;    (*      Write port                          *)
                         (*      0   ROM addr 13                     *)
                         (*      1   ROM sel0                        *)
                         (*      2   ROM sel1                        *)
                         (*      3   ROM sel2                        *)
                         (*    4-7   un-used                         *)
ARM SOURCE       = 2;    (*      Write port                          *)
                         (*      0   DIAG CLK XF                     *)
                         (*    1-4   un-used                         *)
                         (*      5   ARM2                            *)
                         (*      6   ARM1                            *)
                         (*      7   SEQ RES XF                      *)
SLO ARM CLK      = 3;    (*      Write port                          *)
                         (*      0   DIF CNTR RES                    *)
                         (*      1   SCA ! Controls clock sel.       *)
                         (*      2   SCB ! 0=91A16, 1=First clk      *)
                         (*      3   SCC ! 2=91A32 Intl clk,         *)
                         (*              ! 3=CK1, 4=CK1,5=HI,        *)
                         (*              ! 6=LO, 7=LO                *)
                         (*      4   /STAR CLKS                      *)
                         (*      5   STDIS                           *)
                         (*      6   ST ACQ EN                       *)
                         (*      7   DIAG DF CNTR                    *)
RAM ADDL REG     =   04; (* Write port                              *)
                         (*    0-7   address load 0-7                *)
RAM ADDH REG     =   05; (* Write port                              *)
                         (*    0-7   address load 0-7                *)
WR RAM DATA      =   06; (* Write port                              *)
                         (*    0-7   data 0-7                        *)
TSLE1 XF         =   08; (* Write port                              *)
                         (*      8 bits, (D4,D5)                     *)
TSLE2 XF         =   09; (* Write port                              *)
                         (*      8 bits, (D4,D5)                     *)
TBSEL XF         =   0A; (* Write port                              *)
                         (*      0   TSEL0                           *)
                         (*      1   TSEL1                           *)
                         (*      2   TSEL2                           *)
                         (*      3   500MHZ OSC                      *)
                         (*      4   TSEL4                           *)
                         (*      5   TSEL5                           *)
                         (*      6   TSEL6                           *)
                         (*      7   /200 MHz OSC                    *)
```

```
DAS ID          = 0;    (* Read port                                  *)
                        (* 91HS8 card ID is 16 84                     *)
DAS STATUS      = 1;    (* Read port                                  *)
                        (*    0-4   un-used                           *)
                        (*      5   trig                              *)
                        (*      6   HSA present                       *)
                        (*      7   stop/store                        *)
MOS STAT        = 2;    (*Read port                                  *)
                        (*    0-2   un-used                           *)
                        (*      3   mos probe (always hi)             *)
                        (*    4-8   un-used                           *)
LSB DIFF CNTR   = 3;    (* Read port                                  *)
                        (*    0-7   data bits 0-7                     *)
MSB DIFF CNTR   = 4;    (* Read port                                  *)
                        (*    0-7   data bits 0-7                     *)
RD RAM DATA     = 6;    (* Read port                                  *)
                        (*    0-7   data bits 0-7                     *)

(********** Memory    Board **********)

M CNTL WR       =   58; (* Write port                                 *)
                        (*      0   1S1 control                       *)
                        (*      1   1S0 control                       *)
                        (*      2   2S1 control                       *)
                        (*      3   2S0 control                       *)
                        (*      4   /LOAD control                     *)
                        (*      5   /RESET control                    *)
                        (*      6   PROTECT control                   *)
                        (*      7   2GHZ RD control                   *)
PAB ADD WR      =   59; (* Write port, phase A _B address write*)
                        (*    0-7   address load 0-7                  *)
PCD ADD WR      =   5A; (* Write port, phase C _D address write*)
                        (*    0-7   address load 0-7                  *)
M ADD INC       =   5B; (* Write port, increment address counter*)

M DATA0 RD      =   58; (* Read port                                  *)
                        (*    0-7    ch 0-7                          *)
M DATA1 RD      =   59; (* Read port                                  *)
                        (*    0-7    ch 0-7                          *)
M DATA2 RD      =   5A; (* Read port                                  *)
                        (*    0-7    ch 0-7                          *)
M DATA3 RD      =   5B; (* Read port                                  *)
                        (*    0-7    ch 0-7                          *)
M DATA4 RD      =   5C; (* Read port                                  *)
                        (*    0-7    ch 0-7                          *)
M DATA5 RD      =   5D; (* Read port                                  *)
                        (*    0-7    ch 0-7                          *)
M DATA6 RD      =   5E; (* Read port                                  *)
                        (*    0-7    ch 0-7                          *)
M DATA7 RD      =   5F; (* Read port                                  *)
                        (*    0-7    ch 0-7                          *)
```

```
M ALIGN 0 3 RD   =    68; (* Read port                         *)
                          (*      0    BSB0      low mux        *)
                          (*      1    BSB0     hign mux        *)
                          (*      2    BSB1      low mux        *)
                          (*      3    BSB1     hign mux        *)
                          (*      4    BSB2      low mux        *)
                          (*      5    BSB2     hign mux        *)
                          (*      6    BSB3      low mux        *)
                          (*      7    BSB3     hign mux        *)
M ADD RD         =    69; (* Read port                         *)
                          (*    0-7     address 0-7             *)
M STATUS RD      =    6A; (* Read port                         *)
                          (*      0    BSA  read back           *)
                          (*      1    BSB  read back           *)
                          (*      2    OFLOW   read back        *)
                          (*      3    WE1     read back        *)
                          (*    4-7    un-used                  *)
M ALIGN 4 7 RD   =    6B; (* Read port                         *)
                          (*      0    BSB4      low mux        *)
                          (*      1    BSB4     hign mux        *)
                          (*      2    BSB5      low mux        *)
                          (*      3    BSB5     hign mux        *)
                          (*      4    BSB6      low mux        *)
                          (*      5    BSB6     hign mux        *)
                          (*      6    BSB7      low mux        *)
                          (*      7    BSB7     hign mux        *)

(********** Login      Board **********)

DESK1 LOGIN      =    5D; (* Write port                        *)
                          (*      0    DESK0(0)                 *)
                          (*      1    DESK1(0)                 *)
                          (*      2    DESK0(2)                 *)
                          (*      3    DESK1(2)                 *)
                          (*      4    DESK0(4)                 *)
                          (*      5    DESK1(4)                 *)
                          (*      6    DESK0(6)                 *)
                          (*      7    DESK1(6)                 *)
MISC WR          =    5E; (* Write port                        *)
                          (*      0    DAC halt bit             *)
                          (*    1-7    un-used                  *)
TBSEL            =    5F; (* Write port                        *)
                          (*      0    TBSEL0                   *)
                          (*      1    TBSEL1                   *)
                          (*      2    TBSEL2                   *)
                          (*      3    500MHZ OSC               *)
                          (*      4    TBSEL4                   *)
                          (*      5    TBSEL5                   *)
                          (*      6    TBSEL6                   *)
                          (*      7    DIAG CLK                 *)
```

```
TS LE0          =    68; (* Write port                                    *)
                         (*       0   TC0                                 *)
                         (*       1   TC1                                 *)
                         (*       2   TC2                                 *)
                         (*       3   TC3                                 *)
                         (*       4   ARM0                                *)
                         (*       5   ARM1                                *)
                         (*       6   N123                                *)
                         (*       7   N124                                *)
TS LE1          =    69; (* Write port                                    *)
                         (*       0   SEQ1                                *)
                         (*       1   SEQ2                                *)
                         (*       2   SEQ3                                *)
                         (*       3   SEQ4                                *)
                         (*       4   SEQ5                                *)
                         (*       5   CS2                                 *)
                         (*       6   TSTA                                *)
                         (*       7   TSTB                                *)
TS LE2          =    6A; (* Write port                                    *)
                         (*       0   DC0                                 *)
                         (*       1   DC1                                 *)
                         (*       2   DC2                                 *)
                         (*       3   DC3                                 *)
                         (*       4   CS0                                 *)
                         (*       5   CS1                                 *)
                         (*     6-7   un-used                             *)
CNTR0           =    6B; (* Write port                                    *)
                         (*       0   T0    T-counter bit 0               *)
                         (*       1   T1    T-counter bit 1               *)
                         (*       2   T2    T-counter bit 2               *)
                         (*       3   T3    T-counter bit 3               *)
                         (*       4   T4    T-counter bit 4               *)
                         (*       5   T5    T-counter bit 5               *)
                         (*       6   T6    T-counter bit 6               *)
                         (*       7   T7    T-counter bit 7               *)
CNTR1           =    6C; (* Write port                                    *)
                         (*       0   T8    T-counter bit 8               *)
                         (*       1   T9    T-counter bit 9               *)
                         (*       2   T10   T-counter bit 10              *)
                         (*       3   T11   T-counter bit 11              *)
                         (*       4   D0    D-counter bit 0               *)
                         (*       5   D1    D-counter bit 1               *)
                         (*       6   D2    D-counter bit 2               *)
                         (*       7   D3    D-counter bit 3               *)
CNTR2           =    6D; (* Write port                                    *)
                         (*       0   D4    D-counter bit 4               *)
                         (*       1   D5    D-counter bit 5               *)
                         (*       2   D6    D-counter bit 6               *)
                         (*       3   D7    D-counter bit 7               *)
                         (*       4   D8    D-counter bit 8               *)
                         (*       5   D9    D-counter bit 9               *)
                         (*       6   D10   D-counter bit 10              *)
                         (*       7   D11   D-counter bit 11              *)
```

```
WR A LE0        =    6E; (* Write port. Don't care control bits  *)
                         (* for event A, phase B.                *)
                         (*       0   E0a                        *)
                         (*       1   E1a                        *)
                         (*       2   E2a                        *)
                         (*       3   E3a                        *)
                         (*       4   E4a                        *)
                         (*       5   E5a                        *)
                         (*       6   E6a                        *)
                         (*       7   E7a                        *)
WR A LE1        =    6F; (* Write port. Don't care control bits  *)
                         (* for event B, phase B.                *)
                         (*       0   E0b                        *)
                         (*       1   E1b                        *)
                         (*       2   E2b                        *)
                         (*       3   E3b                        *)
                         (*       4   E4b                        *)
                         (*       5   E5b                        *)
                         (*       6   E6b                        *)
                         (*       7   E7b                        *)
WR B LE0        =    70; (* Write port. Don't care control bits  *)
                         (* for event B, phase D.                *)
                         (*       0   E4b                        *)
                         (*       1   E5b                        *)
                         (*       2   E6b                        *)
                         (*       3   E7b                        *)
                         (*       4   E0b                        *)
                         (*       5   E1b                        *)
                         (*       6   E2b                        *)
                         (*       7   E3b                        *)
WR B LE1        =    71; (* Write port. Don't care control bits  *)
                         (* for event A, phase D.                *)
                         (*       0   E4a                        *)
                         (*       1   E5a                        *)
                         (*       2   E6a                        *)
                         (*       3   E7a                        *)
                         (*       4   E0a                        *)
                         (*       5   E1a                        *)
                         (*       6   E2a                        *)
                         (*       7   E3a                        *)
```

```
WR LE1          =    72; (* Write port.                                  *)
                         (*  The following 16 bits are the WR          *)
                         (*  bits for event A + B, phase B. Must       *)
                         (*  first be loaded into WRALE0 + WRBLE1      *)
                         (*       0    D0a      D0b                     *)
                         (*       1    D1a      D1b                     *)
                         (*       2    D2a      D2b                     *)
                         (*       3    D3a      D3b                     *)
                         (*       4    D4a      D4b                     *)
                         (*       5    D5a      D5b                     *)
                         (*       6    D6a      D6b                     *)
                         (*       7    D7a      don't care              *)
                         (*  The following 16 bits are the WR          *)
                         (*  bits for event A  B, phase D. Must        *)
                         (*  first be loaded into WRBLE0  WRBLE1       *)
                         (*       0    D4b      D4a                     *)
                         (*       1    D5b      D5a                     *)
                         (*       2    D6b      D6a                     *)
                         (*       3    D7b      D7a                     *)
                         (*       4    D0b      D0a                     *)
                         (*       5    D1b      D1a                     *)
                         (*       6    D2b      D2a                     *)
                         (*       7    D3b      D3a                     *)
WR LE2          =    73; (* Write port.                                  *)
                         (*  The following 16 bits are the WR          *)
                         (*  control bits. Must first be loaded        *)
                         (*  into WRALE0 and WRBLE0.                   *)
                         (*       0    D7B      D3A                     *)
                         (*       1    GF0a     GF0b                    *)
                         (*       2    GF1a     GF1b                    *)
                         (*       3    GF2a     GF2b                    *)
                         (*       4    POLa     POLb                    *)
                         (*       5    LVLa     LVLb                    *)
                         (*       6    don't    care                    *)
                         (*       7    dont     care                    *)
DESK0 LOGIN     =    74; (* Write port                                   *)
                         (*       0    DESK0(1)                         *)
                         (*       1    DESK1(1)                         *)
                         (*       2    DESK0(3)                         *)
                         (*       3    DESK1(3)                         *)
                         (*       4    DESK0(5)                         *)
                         (*       5    DESK1(5)                         *)
                         (*       6    DESK0(7)                         *)
                         (*       7    DESK1(7)                         *)
```

```
LOGIN MODE      =     75; (* Write port                          *)
                          (*       0     2ns                     *)
                          (*       1     1ns                     *)
                          (*       2     GLITCH                  *)
                          (*       3     COUTRES clk out reset   *)
                          (*       4     OSC EN                  *)
                          (*       5     don't care              *)
                          (*       6     don't care              *)
                          (*       7     SEQ RESET               *)
DAC DATA WR     =     76; (* Write port                          *)
                          (*     0-7     DO - D7                 *)
DAC ADD WR      =     77; (* Write port                          *)
                          (*     0-7     DO - D7                 *)
 TSRD           =     71; (* Read port                           *)
                          (*       0    TST1 T/S diag read back  *)
                          (*       1    TST2 T/S diag read back  *)
                          (*       2    TST4 ! T/S diag read back *)
                          (*       3    TST3 ! T/S diag read back *)
                          (*       4    C1  T-counter diag read back*)
                          (*       5    C2  T-counter diag read back*)
                          (*       6    C3  T-counter diag read back*)
                          (*       7    C4  D-counter diag read back*)
 DAC DATA RD    =     72; (* Read port                           *)
                          (*     0-7    DO - D7                  *)
 DIAGNOSE       =     73; (* Read port                           *)
                          (*       0    WRATST9 read back        *)
                          (*       1    WRBTST9 read back        *)
                          (*       2    OVth read back           *)
                          (*       3    1.2Vth read back         *)
                          (*       4    DESKS01 read back        *)
                          (*       5    COUTRES read back        *)
                          (*       6    DAC HALT read back       *)
                          (*       7    GLITCH  read back        *)

 ID HS8 =             84; (* 91HS8 card ID                       *)
```

SECTION 9
REFERENCE INFORMATION

ERROR CODES AND MESSAGES

For a complete list of messages, refer to Appendix A of the 91HS8, 91HSE8 Operator's Manual Addendum.

ROM Checksum Codes

If the DAS detects a checksum error on power-up, an error code is displayed at the top of the screen reading ROM CHECKSUM ERROR. The message also contains a numeric code that corresponds to a socket location on a DAS board. The code for the 91HS8/91HSE8 is interpreted as shown in Table 9-1.

Table 9-1
91HS8/91HSE8 ROM CHECKSUM ERROR CODES

ROM Position	Part Location
0	U450
1	U458
2	U460

CABLING INFORMATION

Table 9-2 lists the cable connections internal and external to the 91HS8/E8. The assembly `A' number of each 91HS8/E8 board is also listed for reference.

A50: Acquisition Bd.
A51: Memory Bd.
A52: Master Interface Bd.
A53: Expander Interface Bd.
A54: Calibrator Bd.
A55: Power Supply Bd.

Table 9-2
91HS8/91HSE8 CABLING SUMMARY

Description	Connection
TRIG/ARMS Probe	3-wire plug to A50J915 red coaxial lead to A50J438 black coaxial lead to A50J442
Channel 0 Probe	3-wire plug to A50J930 red coaxial lead to A50J786 black coaxial lead to A50J788
Channel 1 Probe	3-wire plug to A50J940 red coaxial lead to A50J888 black coaxial lead to A50J789
Channel 2 Probe	3-wire plug to A50J945 red coaxial lead to A50J766 black coaxial lead to A50J768
Channel 3 Probe	3-wire plug to A50J955 red coaxial lead to A50J868 black coaxial lead to A50J769
Channel 4 Probe	3-wire plug to A50J960 red coaxial lead to A50J353 black coaxial lead to A50J351
Channel 5 Probe	3-wire plug to A50J965 red coaxial lead to A50J253 black coaxial lead to A50J350
Channel 6 Probe	3-wire plug to A50J970 red coaxial lead to A50J373 black coaxial lead to A50J371
Channel 7 Probe	3-wire plug to A50J975 red coaxial lead to A50J273 black coaxial lead to A50J370
Clock Cable #1-#4	Refer to Operator's Manual
Trigger Cable #1-#4	Refer to Operator's Manual

Table 9-2 (cont.)
91HS8/91HSE8 CABLING SUMMARY

Description	Connection
W100, power cable	A55J100 to A50J290 & A51J350
W110, power cable	A55J110 to A51J490
W120, power cable	A55J120 to A50J590 & A51J290
W130, power cable	A55J130 to A50J190 & A51J495
W150, AC power cable	A55J301 to J150 chassis
W301, green ground wire	A55J301 to chassis
W200, 3-wire cable	A50J100 to A54J200
W300, data cable	A50J224 to A51J280
W350, data cable	A50J772 to A51J169
W360, data cable	A50J752 to A51J119
W370, data cable	A50J368 to A51J319
W380, data cable	A50J373 to A51J369
W900, interconnect cable	A50J910 to A52 or A53J500
B134 Fan wire, black	A50J134
B152 Fan wire, black	A50J152
B160 Fan wire, black	A50J160

I/O MAPS

Table 9-3 lists the write ports on the 91HS8/91HSE8, and Table 9-4 lists the read ports. If the schematic name differs from the software name, it is so listed in the Port Name (schematic) column.

Table 9-3
91HS8 WRITE PORT LISTING

Port #	User	Port Name (software)	Port Name (schematic)
00	INT	DAS MAP	(MAP)
01	INT	---------	
02	INT	ARM SOURCE	
03	INT	SLO ARM CLK	(CLK CNTL)
04	INT	RAM ADDL REG	(RAL)
05	INT	RAM ADDH REG	(RAH)
06	INT	WR RAM DATA	(WR RAM)
07	INT	----------	
08	INT	TSLE1 XF	(TSLE1)
09	INT	TSLE2 XF	(TSLE2)
0A	INT	TBSEL XF	(TBSEL)
58	MEM	M CNTL WR	
59	MEM	PAB ADD WR	
5A	MEM	PCD ADD WR	
5B	MEM	MEM ADD INC	
5C	LOGIN	----------	
5D	LOGIN	DESK1 LOGIN	
5E	LOGIN	MISC WR	
5F	LOGIN	TB SEL	
68	LOGIN	TS LE0	
69	LOGIN	TS LE1	
6A	LOGIN	TS LE2	
6B	LOGIN	CNTR0	
6C	LOGIN	CNTR1	
6D	LOGIN	CNTR2	
6E	LOGIN	WR A LE0	
6F	LOGIN	WR A LE1	
70	LOGIN	WR B LE0	
71	LOGIN	WR B LE1	
72	LOGIN	WR LE1	
73	LOGIN	WR LE2	
74	LOGIN	DESK0 LOGIN	
75	LOGIN	LOGIN MODE	
76	LOGIN	DAC DATA WR	
77	LOGIN	DAC ADD WR	

Table 9-4
91HS8 READ PORT LISTING

Port #	User	Port Name (software)	Port Name (schematic)
00	INT	DAS ID	(ID)
01	INT	DAS STATUS	(POD STATUS)
02	INT	MOS STATUS	
03	INT	LSB DIFF CNTR	(DIFLSB)
04	INT	MSB DIFF CNTR	(DIFMSB
06	INT	RD RAM DATA	(RD RAM)
58	MEM	M DATA0 RD	
59	MEM	M DATA1 RD	
5A	MEM	M DATA2 RD	
5B	MEM	M DATA3 RD	
5C	MEM	M DATA4 RD	
5D	MEM	M DATA5 RD	
5E	MEM	M DATA6 RD	
5F	MEM	M DATA7 RD	
68	MEM	M ALIGN0-3 RD	
69	MEM	----------	
6A	MEM	----------	
6B	MEM	----------	
6C	MEM	----------	
6D	MEM	----------	
6E	MEM	----------	
6F	MEM	----------	
70	LOGIN	----------	
71	LOGIN	TSRD	
72	LOGIN	DAC DATA RD	
73	LOGIN	DIAGNOSE	
74	LOGIN	----------	
75	LOGIN	(TSRD alias)	
76	LOGIN	(DAC DATA RD alias)	
77	LOGIN	(DIAGNOSE alias)	

REPLACEABLE ELECTRICAL PARTS

PARTS ORDERING INFORMATION

Replacement parts are available from or through your local Tektronix, Inc. Field Office or representative.

Changes to Tektronix instruments are sometimes made to accommodate improved components as they become available, and to give you the benefit of the latest circuit improvements developed in our engineering department. It is therefore important, when ordering parts, to include the following information in your order: Part number, instrument type or number, serial number, and modification number if applicable.

If a part you have ordered has been replaced with a new or improved part, your local Tektronix, Inc. Field Office or representative will contact you concerning any change in part number.

Change information, if any, is located at the rear of this manual.

LIST OF ASSEMBLIES

A list of assemblies can be found at the beginning of the Electrical Parts List. The assemblies are listed in numerical order. When the complete component number of a part is known, this list will identify the assembly in which the part is located.

CROSS INDEX-MFR. CODE NUMBER TO MANUFACTURER

The Mfr. Code Number to Manufacturer index for the Electrical Parts List is located immediately after this page. The Cross Index provides codes, names and addresses of manufacturers of components listed in the Electrical Parts List.

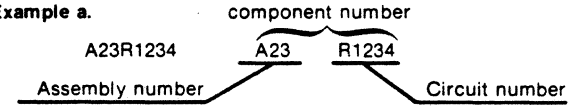
ABBREVIATIONS

Abbreviations conform to American National Standard Y1.1.

COMPONENT NUMBER (column one of the Electrical Parts List)

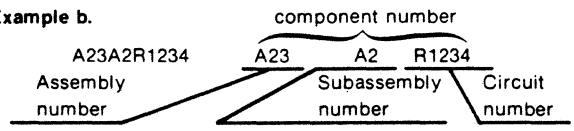
A numbering method has been used to identify assemblies, subassemblies and parts. Examples of this numbering method and typical expansions are illustrated by the following:

Example a.



Read: Resistor 1234 of Assembly 23

Example b.



Read: Resistor 1234 of Subassembly 2 of Assembly 23

Only the circuit number will appear on the diagrams and circuit board illustrations. Each diagram and circuit board illustration is clearly marked with the assembly number. Assembly numbers are also marked on the mechanical exploded views located in the Mechanical Parts List. The component number is obtained by adding the assembly number prefix to the circuit number.

The Electrical Parts List is divided and arranged by assemblies in numerical sequence (e.g., assembly A1 with its subassemblies and parts, precedes assembly A2 with its subassemblies and parts).

Chassis-mounted parts have no assembly number prefix and are located at the end of the Electrical Parts List.

TEKTRONIX PART NO. (column two of the Electrical Parts List)

Indicates part number to be used when ordering replacement part from Tektronix.

SERIAL/MODEL NO. (columns three and four of the Electrical Parts List)

Column three (3) indicates the serial number at which the part was first used. Column four (4) indicates the serial number at which the part was removed. No serial number entered indicates part is good for all serial numbers.

NAME & DESCRIPTION (column five of the Electrical Parts List)

In the Parts List, an Item Name is separated from the description by a colon (:). Because of space limitations, an Item Name may sometimes appear as incomplete. For further Item Name identification, the U.S. Federal Cataloging Handbook H6-1 can be utilized where possible.

MFR. CODE (column six of the Electrical Parts List)

Indicates the code number of the actual manufacturer of the part. (Code to name and address cross reference can be found immediately after this page.)

MFR. PART NUMBER (column seven of the Electrical Parts List)

Indicates actual manufacturers part number.

CROSS INDEX - MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip Code
00213	NYTRONICS COMPONENTS GROUP INC SUBSIDIARY OF NYTRONICS INC	ORANGE ST	DARLINGTON SC 29532
00779	AMP INC	P O BOX 3608	HARRISBURG PA 17105
00853	SANGAMO WESTON INC SANGAMO CAPACITOR DIV	SANGAMO RD P O BOX 128	PICKENS SC 29671
01121	ALLEN-BRADLEY CO	1201 SOUTH 2ND ST	MILWAUKEE WI 53204
01295	TEXAS INSTRUMENTS INC SEMICONDUCTOR GROUP	13500 N CENTRAL EXPRESSWAY P O BOX 225012 M/S 49	DALLAS TX 75265
02735	RCA CORP SOLID STATE DIVISION	ROUTE 202	SOMERVILLE NJ 08876
03508	GENERAL ELECTRIC CO SEMI-CONDUCTOR PRODUCTS DEPT	W GENESEE ST	AUBURN NY 13021
04222	AVX CERAMICS DIV OF AVX CORP	19TH AVE SOUTH P O BOX 867	MYRTLE BEACH SC 29577
04713	MOTOROLA INC SEMICONDUCTOR GROUP	5005 E MCDOWELL RD	PHOENIX AZ 85008
05347	ULTRONIX INC	461 N 22ND ST	GRAND JUNCTION CO 81501
05397	UNION CARBIDE CORP MATERIALS SYSTEMS DIV	11901 MADISON AVE	CLEVELAND OH 44101
05828	GENERAL INSTRUMENT CORP GOVERNMENT SYSTEMS DIV	600 W JOHN ST	HICKSVILLE NY 11802
06665	PRECISION MONOLITHICS INC SUB OF BOURNS INC	1500 SPACE PARK DR	SANTA CLARA CA 95050
07263	FAIRCHILD CAMERA AND INSTRUMENT CORP SEMICONDUCTOR DIV	464 ELLIS ST	MOUNTAIN VIEW CA 94042
07716	TRW INC TRW ELECTRONICS COMPONENTS TRW IRC FIXED RESISTORS/BURLINGTON	2850 MT PLEASANT AVE	BURLINGTON IA 52601
11236	CTS OF BERNE INC	406 PARR ROAD	BERNE IN 46711
12969	UNITRODE CORP	580 PLEASANT ST	WATERTOWN MA 02172
14193	CAL-R INC	1601 OLYMPIC BLVD	SANTA MONICA CA 90404
14552	MICRO/SEMICONDUCTOR CORP	2830 S FAIRVIEW ST	SANTA ANA CA 92704
14752	ELECTRO CUBE INC	1710 S DEL MAR AVE	SAN GABRIEL CA 91776
15636	ELEC-TROL INC	26477 N GOLDEN VALLEY RD	SAUGUS CA 91350
16428	BELDEN CORP ELECTRONIC DIV	2200 US HWY 27 SOUTH P O BOX 1980	RICHMOND IN 47374
17217	GORE W L AND ASSOCIATES INC	555 PAPER MILL ROAD	NEWARK DE 19711
18324	SIGNETICS CORP	811 E ARQUES	SUNNYVALE CA 94086
19701	MEPCO/ELECTRA INC A NORTH AMERICAN PHILIPS CO	P O BOX 760	MINERAL WELLS TX 76067
22526	DU PONT E I DE NEMOURS AND CO INC DU PONT CONNECTOR SYSTEMS	30 HUNTER LANE	CAMP HILL PA 17011
22753	UID SWITCHES INC DIV OF ILLINOIS TOOL WORKS INC	6615 W IRVING PARK RD	CHICAGO IL 60634
23936	PAMOTOR DIV WILLIAM J PURDY CO	770 AIRPORT BLVD	BURLINGAME CA 94010
24355	ANALOG DEVICES INC	RT 1 INDUSTRIAL PK P O BOX 280	NORWOOD MA 02062
24546	CORNING GLASS WORKS	550 HIGH ST	BRADFORD PA 16701
24931	SPECIALTY CONNECTOR CO INC	2620 ENDRESS PLACE P O BOX D	GREENWOOD IN 46142
27012	MICRO DEVICES CORP	1320 SOUTH MAIN	MANSFIELD OH 44907
27014	NATIONAL SEMICONDUCTOR CORP	2900 SEMICONDUCTOR DR	SANTA CLARA CA 95051
27802	VECTRON LABORATORIES INC	166 GLOVER AVE	NORWALK CT 06850
31433	UNION CARBIDE CORP ELECTRONICS DIV	PO BOX 5928	GREENVILLE SC 29606
32159	WEST-CAP ARIZONA	2201 E ELVIRA ROAD	TUCSON AZ 85706
32997	BOURNS INC TRIMPOT DIV	1200 COLUMBIA AVE	RIVERSIDE CA 92507
54473	MATSUSHITA ELECTRIC CORP OF AMERICA	ONE PANASONIC WAY	SECAUCUS NJ 07094
55680	NICHICON /AMERICA/ CORP	927 E STATE PKY	SCHAUMBURG IL 60195
56289	SPRAGUE ELECTRIC CO	87 MARSHALL ST	NORTH ADAMS MA 01247
57668	ROHM CORP	16931 MILLIKEN AVE	IRVINE CA 92713
59660	TUSONIX INC	2155 N FORBES BLVD	TUCSON, ARIZONA 85705
62786	HITACHI AMERICA LTD	1800 BERING DRIVE	SAN JOSE CA 95122
71400	MCGRAW-EDISON CO BUSSMANN MFG DIV	502 EARTH CITY PLAZA P O BOX 14460	ST LOUIS MO 63178
71744	GENERAL INSTRUMENT CORP LAMP DIV	4433 N RAVENSWOOD AVE	CHICAGO IL 60640

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Mfr. Code	Manufacturer	Address	City, State, Zip Code
75042	TRW INC TRW ELECTRONIC COMPONENTS IRC FIXED RESISTORS PHILADELPHIA DIV	401 N BROAD ST	PHILADELPHIA PA 19108
76493	BELL INDUSTRIES INC MILLER J W DIV	19070 REYES AVE P O BOX 5825	COMPTON CA 90224
80009	TEKTRONIX INC	4900 S W GRIFFITH DR P O BOX 500	BEAVERTON OR 97077
81483	INTERNATIONAL RECTIFIER	9220 SUNSET BLVD P O BOX 2321 TERMINAL ANNEX	LOS ANGELES CA 90069
91637	DALE ELECTRONICS INC	P O BOX 609	COLUMBUS NE 68601
98291	SEALECTRO CORP	225 HOYT	MAMARONECK NY 10544
TK0213	TOPTRON CORP	TOKYO	JAPAN
TK0515	RIFA WORLD PRODUCTS INC	19678 8TH STREET EAST P O BOX 517	SONOMA CA 95476
TK1015	MUSASHI WORKS OF HITACHI LTD	1450 JOSUIHON-CHO KODAIRA-SHI	TOKYO JAPAN
TK1031	L AND W COMPONENTS DIV OF LAMB INDUSTRIES	PO BOX 25110	PORTLAND OR 97225
TK1148	ACACIA SALES	7763 SW CIRRUS DR BLDG 26	BEAVERTON OR 97005
TK1374	TRI-TEC ENGINEERING CORP	13130 S NORMANDIE AVE	GARDENA CA 90249
TK1483	TEKA PRODUCTS INC	45 SALEM ST	PROVIDENCE RI 02907
TK1549	VOLTA INC	2118 ZANKER RD	SAN JOSE CA 95131

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A50	670-8503-00			CIRCUIT BD ASSY:ACQUISITION	80009	670-8503-00
A50C112	290-0755-00			CAP,FXD,ELCTLT:100UF,+50%-10%,10V	54473	ECE-A10V100L
A50C128	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C140	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C150	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C174	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C179	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C186	283-0000-00			CAP,FXD,CER DI:0.001UF,+100-0%,500V	59660	831-610-Y5U0102P
A50C195	290-0804-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	55680	ULA1E100TEA
A50C197	290-0804-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	55680	ULA1E100TEA
A50C199	290-0755-00			CAP,FXD,ELCTLT:100UF,+50%-10%,10V	54473	ECE-A10V100L
A50C204	290-0804-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	55680	ULA1E100TEA
A50C205	290-0804-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	55680	ULA1E100TEA
A50C206	290-0804-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	55680	ULA1E100TEA
A50C214	290-0804-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	55680	ULA1E100TEA
A50C215	290-0804-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	55680	ULA1E100TEA
A50C216	290-0804-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	55680	ULA1E100TEA
A50C229	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C238	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C240	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C241	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C242	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C243	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C244	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C245	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C246	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C247	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C249	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C250	290-0755-00			CAP,FXD,ELCTLT:100UF,+50%-10%,10V	54473	ECE-A10V100L
A50C260	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C278	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C279	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C280	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C282	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C284	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C295	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C308	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C312	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A50C314	290-0804-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	55680	ULA1E100TEA
A50C327	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C330	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C339	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C348	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C359	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C414	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C426	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C434	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C484	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C490	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C494	290-0759-00			CAP,FXD,ELCTLT:290UF,+75-10%,15V	56289	500D150
A50C518	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C530	281-0786-00			CAP,FXD,CER DI:150PF,10%,100V	04222	MA101A151KAA
A50C531	281-0786-00			CAP,FXD,CER DI:150PF,10%,100V	04222	MA101A151KAA
A50C532	281-0786-00			CAP,FXD,CER DI:150PF,10%,100V	04222	MA101A151KAA
A50C533	281-0786-00			CAP,FXD,CER DI:150PF,10%,100V	04222	MA101A151KAA
A50C534	281-0786-00			CAP,FXD,CER DI:150PF,10%,100V	04222	MA101A151KAA
A50C535	281-0786-00			CAP,FXD,CER DI:150PF,10%,100V	04222	MA101A151KAA
A50C536	281-0786-00			CAP,FXD,CER DI:150PF,10%,100V	04222	MA101A151KAA
A50C537	281-0786-00			CAP,FXD,CER DI:150PF,10%,100V	04222	MA101A151KAA

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A50C550	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C570	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C590	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C595	290-0755-00			CAP,FXD,ELCTLT:100UF,+50%-10%,10V	54473	ECE-A10V100L
A50C614	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C620	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C624	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C628	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C629	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A50C632	283-0059-00			CAP,FXD,CER DI:1UF,+80-20%,50V	31433	C330C105M5R5CA
A50C633	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C639	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C641	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C650	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C662	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C663	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C664	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C678	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C684	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C686	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C687	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C688	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C689	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C692	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C693	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C694	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C695	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C700	290-0755-00			CAP,FXD,ELCTLT:100UF,+50%-10%,10V	54473	ECE-A10V100L
A50C719	281-0762-00			CAP,FXD,CER DI:27PF,20%,100V	04222	MA101A270MAA
A50C724	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C726	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C730	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C731	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C732	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C733	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C734	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C735	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C736	290-0755-00			CAP,FXD,ELCTLT:100UF,+50%-10%,10V	54473	ECE-A10V100L
A50C738	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C739	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C740	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C741	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C742	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C743	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C744	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C745	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C746	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C747	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C748	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C750	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C776	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C789	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C790	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C798	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C799	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C800	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C808	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C809	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C816	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A50C818	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C823	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A50C824	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C825	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C826	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C827	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C828	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C829	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C834	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C835	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C836	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C837	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C840	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C841	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C844	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C845	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C846	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C847	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C848	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C849	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A50C884	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C895	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A50C910	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C912	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C916	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C918	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C920	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C924	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C925	290-0804-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	55680	ULA1E100TEA
A50C940	290-0755-00			CAP,FXD,ELCTLT:100UF,+50%-10%,10V	54473	ECE-A10V100L
A50C960	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50C970	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A50CR734	152-0141-02			SEMICOND DVC,DI:SM,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A50F745	159-0166-00			FUSE,THERMAL:15A,240V	27012	4178A1
A50J100	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J134	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J152	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J160	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J190	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J224	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J253	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1
A50J273	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1
A50J290	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J350	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1
A50J351	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1
A50J353	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1
A50J368	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J370	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1
A50J371	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1
A50J373	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1
A50J388	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J438	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1
A50J440	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J442	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1
A50J568	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J574	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J590	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J642	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1
A50J645	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A50J745	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J747	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J752	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J766	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1
A50J768	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1
A50J769	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1
A50J772	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J786	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1
A50J788	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1
A50J789	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1
A50J868	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1
A50J888	131-0391-00			CONN,RCPT,ELEC:SNAP-ON,MALE	24931	32JR105-1
A50J910	131-3372-00			CONN,RCPT,ELEC:CKT BD,RTANG,37 CONTACTS	00779	745115-2
A50J915	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J925	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J930	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J940	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J945	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J955	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J960	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J965	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J970	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50J975	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A50L190	108-0245-00			CHOKE,RF:FIXED,3.9UH	76493	B6310-1
A50L192	108-0245-00			CHOKE,RF:FIXED,3.9UH	76493	B6310-1
A50L294	108-0422-00			COIL,RF:FIXED,80UH	80009	108-0422-00
A50P440	131-0993-00			BUS,CONDUCTOR:SHUNT ASSEMBLY,BLACK	22526	65474-005
A50P745	131-0993-00			BUS,CONDUCTOR:SHUNT ASSEMBLY,BLACK	22526	65474-005
A50P747	131-0993-00			BUS,CONDUCTOR:SHUNT ASSEMBLY,BLACK	22526	65474-005
A50Q520	151-0220-00			TRANSISTOR:PNP,SI,TO-92	80009	151-0220-00
A50Q629	151-0220-00			TRANSISTOR:PNP,SI,TO-92	80009	151-0220-00
A50Q630	151-0220-00			TRANSISTOR:PNP,SI,TO-92	80009	151-0220-00
A50Q736	151-0220-00			TRANSISTOR:PNP,SI,TO-92	80009	151-0220-00
A50Q738	151-0190-00			TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A50Q918	151-0190-00			TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A50R124	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A50R132	307-0790-00			RES NTWK,FXD,FI:5,220 OHM 2%,0.15M EA	11236	750-61-R220
A50R148	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25M	19701	5043CX10K00J
A50R149	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25M	19701	5043CX10K00J
A50R164	307-0542-00			RES NTWK,FXD,FI:(5)10K OHM,5%,0.125M	01121	106A1030R706A103
A50R170	321-0184-00			RES,FXD,FILM:806 OHM,1%,0.125M,TC=T0	19701	5033ED806R0F
A50R172	321-0155-00			RES,FXD,FILM:402 OHM,1%,0.125M,TC=T0	07716	CEAD402R0F
A50R174	321-0155-00			RES,FXD,FILM:402 OHM,1%,0.125M,TC=T0	07716	CEAD402R0F
A50R176	321-0247-00			RES,FXD,FILM:3.65K OHM,1%,0.125M,TC=T0	19701	5043ED3K650F
A50R177	321-0184-00			RES,FXD,FILM:806 OHM,1%,0.125M,TC=T0	19701	5033ED806R0F
A50R178	321-0247-00			RES,FXD,FILM:3.65K OHM,1%,0.125M,TC=T0	19701	5043ED3K650F
A50R185	321-0289-00			RES,FXD,FILM:10.0K OHM,1%,0.125M,TC=T0	19701	5033ED10K0F
A50R186	321-0181-00			RES,FXD,FILM:750 OHM,1%,0.125M,TC=T0	07716	CEAD750R0F
A50R187	321-0352-00			RES,FXD,FILM:45.3K OHM,1%,0.125M,TC=T0	07716	CEAD45301F
A50R188	321-0191-00			RES,FXD,FILM:953 OHM,1%,0.125M,TC=T0	07716	CEAD953R0F
A50R204	321-0105-00			RES,FXD,FILM:121 OHM 1%,0.125M,TC=\0	07716	CEAD121R0F
A50R206	321-0105-00			RES,FXD,FILM:121 OHM 1%,0.125M,TC=\0	07716	CEAD121R0F
A50R214	321-0119-00			RES,FXD,FILM:169 OHM,1%,0.125M,TC=T0	07716	CEAD169R0F
A50R216	321-0105-00			RES,FXD,FILM:121 OHM 1%,0.125M,TC=\0	07716	CEAD121R0F
A50R230	307-0540-00			RES NTWK,FXD,FI:(5)1K OHM,10%,0.7M	11236	750-61-R1K0HM
A50R234	307-0675-00			RES NTWK,FXD,FI:9,1K OHM,2%1.25M	11236	750-101-R1K OHM
A50R286	321-0289-00			RES,FXD,FILM:10.0K OHM,1%,0.125M,TC=T0	19701	5033ED10K0F
A50R287	321-0222-07			RES,FXD,FILM:2.0K OHM,0.1%,0.125M,TC=T9	19701	5033RE2K000B
A50R289	321-0126-07			RES,FXD,FILM:200 OHM,0.1%,0.125M,TC=T9	19701	5033RE200R0B

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A50R292	321-0808-07			RES,FXD,FILM:300 OHM,0.1%,0.125W,TC=T9	24546	NE55E3000B
A50R294	307-0637-00			RES NTWK,FXD,FI:5,2K OHM,2%,0.125W	01121	206A202
A50R300	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A50R301	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A50R302	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A50R312	321-0133-00			RES,FXD,FILM:237 OHM,1%,0.125W,TC=T0	07716	CEAD237R0F
A50R314	321-0168-00			RES,FXD,FILM:549 OHM,1%,0.125W,TC=T0	07716	CEAD549R0F
A50R315	307-0540-00			RES NTWK,FXD,FI:(5)1K OHM,10%,0.7W	11236	750-61-R1K0HM
A50R318	307-0540-00			RES NTWK,FXD,FI:(5)1K OHM,10%,0.7W	11236	750-61-R1K0HM
A50R324	307-0488-00			RES NTWK,FXD,FI:5 100 OHM,20%,0.75W	01121	106A1010R706A101
A50R339	307-0488-00			RES NTWK,FXD,FI:5 100 OHM,20%,0.75W	01121	106A1010R706A101
A50R340	321-0184-00			RES,FXD,FILM:806 OHM,1%,0.125W,TC=T0	19701	5033ED806R0F
A50R342	321-0247-00			RES,FXD,FILM:3.65K OHM,1%,0.125W,TC=T0	19701	5043ED3K650F
A50R344	321-0184-00			RES,FXD,FILM:806 OHM,1%,0.125W,TC=T0	19701	5033ED806R0F
A50R346	321-0155-00			RES,FXD,FILM:402 OHM,1%,0.125W,TC=T0	07716	CEAD402R0F
A50R347	321-0247-00			RES,FXD,FILM:3.65K OHM,1%,0.125W,TC=T0	19701	5043ED3K650F
A50R348	321-0155-00			RES,FXD,FILM:402 OHM,1%,0.125W,TC=T0	07716	CEAD402R0F
A50R424	321-0126-07			RES,FXD,FILM:200 OHM,0.1%,0.125W,TC=T9	19701	5033RE200R0B
A50R438	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A50R456	321-0052-00			RES,FXD,FILM:34.0 OHM,1%,0.125W,TC=T0	57668	CRB14 FXE 34 OHM
A50R457	321-0052-00			RES,FXD,FILM:34.0 OHM,1%,0.125W,TC=T0	57668	CRB14 FXE 34 OHM
A50R458	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R459	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R460	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R461	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R462	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R463	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R464	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R465	321-0052-00			RES,FXD,FILM:34.0 OHM,1%,0.125W,TC=T0	57668	CRB14 FXE 34 OHM
A50R466	321-0052-00			RES,FXD,FILM:34.0 OHM,1%,0.125W,TC=T0	57668	CRB14 FXE 34 OHM
A50R467	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R474	321-0052-00			RES,FXD,FILM:34.0 OHM,1%,0.125W,TC=T0	57668	CRB14 FXE 34 OHM
A50R475	321-0052-00			RES,FXD,FILM:34.0 OHM,1%,0.125W,TC=T0	57668	CRB14 FXE 34 OHM
A50R476	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R477	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R478	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R479	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R480	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R481	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R482	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R483	321-0052-00			RES,FXD,FILM:34.0 OHM,1%,0.125W,TC=T0	57668	CRB14 FXE 34 OHM
A50R484	321-0052-00			RES,FXD,FILM:34.0 OHM,1%,0.125W,TC=T0	57668	CRB14 FXE 34 OHM
A50R485	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R518	315-0751-00			RES,FXD,FILM:750 OHM,5%,0.25W	57668	NTR25J-E750E
A50R519	315-0242-00			RES,FXD,FILM:2.4K OHM,5%,0.25W	57668	NTR25J-E02K4
A50R520	321-0218-00			RES,FXD,FILM:1.82K OHM,1%,0.125W,TC=T0	19701	5033ED1K82F
A50R522	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A50R524	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A50R526	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A50R528	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A50R529	307-0488-00			RES NTWK,FXD,FI:5 100 OHM,20%,0.75W	01121	106A1010R706A101
A50R530	317-0160-00			RES,FXD,CMPSN:16 OHM,5%,0.125W	01121	BB1605
A50R531	317-0160-00			RES,FXD,CMPSN:16 OHM,5%,0.125W	01121	BB1605
A50R532	317-0160-00			RES,FXD,CMPSN:16 OHM,5%,0.125W	01121	BB1605
A50R533	317-0160-00			RES,FXD,CMPSN:16 OHM,5%,0.125W	01121	BB1605
A50R534	317-0160-00			RES,FXD,CMPSN:16 OHM,5%,0.125W	01121	BB1605
A50R535	317-0160-00			RES,FXD,CMPSN:16 OHM,5%,0.125W	01121	BB1605
A50R536	317-0160-00			RES,FXD,CMPSN:16 OHM,5%,0.125W	01121	BB1605
A50R537	317-0160-00			RES,FXD,CMPSN:16 OHM,5%,0.125W	01121	BB1605

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A50R545	315-0110-00			RES,FXD,FILM:11 OHM,5%,0.25W	19701	5043CX11R00J
A50R547	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A50R554	321-0052-00			RES,FXD,FILM:34.0 OHM,1%,0.125W,TC=T0	57668	CRB14 FXE 34 OHM
A50R555	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R556	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R568	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A50R569	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A50R574	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A50R575	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A50R584	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R585	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R586	321-0052-00			RES,FXD,FILM:34.0 OHM,1%,0.125W,TC=T0	57668	CRB14 FXE 34 OHM
A50R624	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A50R626	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A50R627	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A50R628	315-0392-00			RES,FXD,FILM:3.9K OHM,5%,0.25W	57668	NTR25J-E03K9
A50R630	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A50R631	315-0561-00			RES,FXD,FILM:560 OHM,5%,0.25W	19701	5043CX560R0J
A50R632	315-0271-00			RES,FXD,FILM:270 OHM,5%,0.25W	57668	NTR25J-E270E
A50R633	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A50R634	315-0160-00			RES,FXD,FILM:16 OHM,5%,0.25W	19701	5043CX16R00J
A50R635	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A50R638	315-0470-00			RES,FXD,FILM:47 OHM,5%,0.25W	57668	NTR25J-E47E0
A50R639	321-0196-00			RES,FXD,FILM:1.07K OHM,1%,0.125W,TC=T0	07716	CEAD10700F
A50R640	321-0196-00			RES,FXD,FILM:1.07K OHM,1%,0.125W,TC=T0	07716	CEAD10700F
A50R641	315-0160-00			RES,FXD,FILM:16 OHM,5%,0.25W	19701	5043CX16R00J
A50R642	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A50R644	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A50R645	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A50R657	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R658	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R659	321-0052-00			RES,FXD,FILM:34.0 OHM,1%,0.125W,TC=T0	57668	CRB14 FXE 34 OHM
A50R660	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R661	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R662	321-0052-00			RES,FXD,FILM:34.0 OHM,1%,0.125W,TC=T0	57668	CRB14 FXE 34 OHM
A50R663	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R664	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R665	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R666	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R667	321-0052-00			RES,FXD,FILM:34.0 OHM,1%,0.125W,TC=T0	57668	CRB14 FXE 34 OHM
A50R668	321-0052-00			RES,FXD,FILM:34.0 OHM,1%,0.125W,TC=T0	57668	CRB14 FXE 34 OHM
A50R674	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R675	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R676	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R677	321-0052-00			RES,FXD,FILM:34.0 OHM,1%,0.125W,TC=T0	57668	CRB14 FXE 34 OHM
A50R678	321-0052-00			RES,FXD,FILM:34.0 OHM,1%,0.125W,TC=T0	57668	CRB14 FXE 34 OHM
A50R679	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R680	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R681	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R682	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R683	321-0052-00			RES,FXD,FILM:34.0 OHM,1%,0.125W,TC=T0	57668	CRB14 FXE 34 OHM
A50R684	321-0052-00			RES,FXD,FILM:34.0 OHM,1%,0.125W,TC=T0	57668	CRB14 FXE 34 OHM
A50R685	321-0079-00			RES,FXD,FILM:64.9 OHM,1%,0.125W,TC=T0	91637	CMF55116G64R90F
A50R694	321-0184-00			RES,FXD,FILM:806 OHM,1%,0.125W,TC=T0	19701	5033ED806R0F
A50R696	321-0155-00			RES,FXD,FILM:402 OHM,1%,0.125W,TC=T0	07716	CEAD402R0F
A50R710	321-0195-00			RES,FXD,FILM:1.05K OHM,1%,0.125W,TC=T0	07716	CEAD10500F
A50R712	321-0148-00			RES,FXD,FILM:340 OHM,1%,0.125W,TC=T0	07716	CEAD340R0F
A50R714	321-0132-00			RES,FXD,FILM:232 OHM,1%,0.125W,TC=T0	19701	5043ED232R0F
A50R716	315-0121-00			RES,FXD,FILM:120 OHM,5%,0.25W	19701	5043CX120R0J

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A50R720	307-0488-00			RES NTMK,FXD,FI:5 100 OHM,20%,0.75M	01121	106A1010R706A101
A50R724	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A50R726	307-0488-00			RES NTMK,FXD,FI:5 100 OHM,20%,0.75M	01121	106A1010R706A101
A50R734	315-0622-00			RES,FXD,FILM:6.2K OHM,5%,0.25M	19701	5043CX6K200J
A50R738	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A50R745	321-0082-00			RES,FXD,FILM:69.8 OHM,1%,0.125M,TC=T0	91637	CMF55116G69R80F
A50R770	321-0155-00			RES,FXD,FILM:402 OHM,1%,0.125M,TC=T0	07716	CEAD402R0F
A50R771	321-0247-00			RES,FXD,FILM:3.65K OHM,1%,0.125M,TC=T0	19701	5043ED3K650F
A50R772	321-0155-00			RES,FXD,FILM:402 OHM,1%,0.125M,TC=T0	07716	CEAD402R0F
A50R773	321-0184-00			RES,FXD,FILM:806 OHM,1%,0.125M,TC=T0	19701	5033ED806R0F
A50R774	321-0247-00			RES,FXD,FILM:3.65K OHM,1%,0.125M,TC=T0	19701	5043ED3K650F
A50R775	321-0184-00			RES,FXD,FILM:806 OHM,1%,0.125M,TC=T0	19701	5033ED806R0F
A50R790	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A50R791	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A50R793	315-0202-00			RES,FXD,FILM:2K OHM,5%,0.25M	57668	NTR25J-E 2K
A50R794	315-0106-00			RES,FXD,FILM:10M OHM,5%,0.25M	01121	CB1065
A50R795	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25M	57668	NTR25J-E04K7
A50R796	315-0106-00			RES,FXD,FILM:10M OHM,5%,0.25M	01121	CB1065
A50R797	315-0202-00			RES,FXD,FILM:2K OHM,5%,0.25M	57668	NTR25J-E 2K
A50R798	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25M	57668	NTR25J-E04K7
A50R804	307-0592-00			RES NTMK,FXD,FI:9,220 OHM,2%,2M	11236	750-101-R220
A50R809	307-0675-00			RES NTMK,FXD,FI:9,1K OHM,2%1.25M	11236	750-101-R1K OHM
A50R810	307-0594-00			RES NTMK,FXD,FI:7,220 OHM,2%,1.0M	11236	750-81-R220
A50R815	307-0790-00			RES NTMK,FXD,FI:5,220 OHM 2%,0.15M EA	11236	750-61-R220
A50R816	315-0680-00			RES,FXD,FILM:68 OHM,5%,0.25M	57668	NTR25J-E68E0
A50R817	315-0680-00			RES,FXD,FILM:68 OHM,5%,0.25M	57668	NTR25J-E68E0
A50R818	315-0680-00			RES,FXD,FILM:68 OHM,5%,0.25M	57668	NTR25J-E68E0
A50R819	315-0680-00			RES,FXD,FILM:68 OHM,5%,0.25M	57668	NTR25J-E68E0
A50R824	307-0488-00			RES NTMK,FXD,FI:5 100 OHM,20%,0.75M	01121	106A1010R706A101
A50R880	321-0247-00			RES,FXD,FILM:3.65K OHM,1%,0.125M,TC=T0	19701	5043ED3K650F
A50R882	321-0184-00			RES,FXD,FILM:806 OHM,1%,0.125M,TC=T0	19701	5033ED806R0F
A50R884	321-0247-00			RES,FXD,FILM:3.65K OHM,1%,0.125M,TC=T0	19701	5043ED3K650F
A50R886	321-0155-00			RES,FXD,FILM:402 OHM,1%,0.125M,TC=T0	07716	CEAD402R0F
A50R912	317-0201-00			RES,FXD,CMPSN:200 OHM,5%,0.125M	01121	BB2015
A50R918	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A50R920	311-1859-00			RES,VAR,NONWW:TRMR,200 OHM,0.5M,LINEAR	32997	3299X-R27-201
A50R924	315-0150-00			RES,FXD,FILM:15 OHM,5%,0.25M	19701	5043CX15R00J
A50R928	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25M	19701	5043CX510R0J
A50T252	120-0444-00			XFMR,TOROID:	80009	120-0444-00
A50T272	120-0444-00			XFMR,TOROID:	80009	120-0444-00
A50T352	120-0444-00			XFMR,TOROID:	80009	120-0444-00
A50T372	120-0444-00			XFMR,TOROID:	80009	120-0444-00
A50T438	120-0444-00			XFMR,TOROID:	80009	120-0444-00
A50T640	120-0444-00			XFMR,TOROID:	80009	120-0444-00
A50T768	120-0444-00			XFMR,TOROID:	80009	120-0444-00
A50T788	120-0444-00			XFMR,TOROID:	80009	120-0444-00
A50T868	120-0444-00			XFMR,TOROID:	80009	120-0444-00
A50T888	120-0444-00			XFMR,TOROID:	80009	120-0444-00
A50U108	156-1451-00			MICROCKT,LINEAR:3-TERM NEG VOLT RGLTR,ADJ	27014	LM337T
A50U118	156-1451-00			MICROCKT,LINEAR:3-TERM NEG VOLT RGLTR,ADJ	27014	LM337T
A50U128	156-0541-02			MICROCKT,DGTL:DUAL 2-TO 4-LINE DCDR/DEMUX	04713	SN74LS139NDS
A50U130	156-1722-00			MICROCKT,DGTL:HEX INVERTER,SCRN	04713	MC74F04ND
A50U134	156-0382-02			MICROCKT,DGTL:QUAD 2 INP NAND GATE BURN	18324	N74LS00NB
A50U139	156-0718-03			MICROCKT,DGTL:TRIPLE 3-INP NOR GATE,SCRN	01295	SN74LS27NP3
A50U144	156-0388-03			MICROCKT,DGTL:DUAL D FLIP-FLOP,SCRN	01295	SN74LS74ANP3
A50U150	156-0422-02			MICROCKT,DGTL:UP/DOWN SYN BINARY CNTR,SCRN	18324	N74LS191NB
A50U154	156-1594-00			MICROCKT,DGTL:NMOS,2048 X 8 SRAM	TK1015	HM6116P-3(DP-24)
A50U158	156-0422-02			MICROCKT,DGTL:UP/DOWN SYN BINARY CNTR,SCRN	18324	N74LS191NB
A50U160	156-0469-02			MICROCKT,DGTL:3/8 LINE DCDR,SCRN	01295	SN74LS138NP3

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A50U179	156-1111-02			MICROCKT,DGTL:OCT BUS XCVRS W/3 ST OUT	01295	SN74LS245N3
A50U180	156-0735-02			MICROCKT,DGTL:4-BIT BISTABLE LCH,SCRN	01295	SN74LS75NP3
A50U184	156-1589-00			MICROCKT,LINEAR:DAC,12 BIT,HIGH SPEED,MONO	06665	DAC312FR
A50U194	156-1191-00			MICROCKT,LINEAR:DUAL BI-FET OPNL AMPL	01295	TL072ACP
A50U230	156-0469-02			MICROCKT,DGTL:3/8 LINE DCDR,SCRN	01295	SN74LS138NP3
A50U234	156-0469-02			MICROCKT,DGTL:3/8 LINE DCDR,SCRN	01295	SN74LS138NP3
A50U239	156-1200-01			MICROCKT,LINEAR:OPERATIONAL AMPL,QUAD BIFET	80009	156-1200-01
A50U243	156-0513-02			MICROCKT,DGTL:8-CHENNEL MUX,SEL	02735	CD4051BFX
A50U249	156-1200-01			MICROCKT,LINEAR:OPERATIONAL AMPL,QUAD BIFET	80009	156-1200-01
A50U288	156-1322-00			MICROCKT,LINEAR:VOLTAGE REFERENCE	24355	AD40374
A50U294	156-0956-04			MICROCKT,DGTL:OCTAL BFR W/3 STATE OUT	18324	N74LS244NB OR FB
A50U310	156-0411-02			MICROCKT,LINEAR:QUAD COMPARATOR,SCREENED	04713	LM339JDS
A50U312	156-1529-00			MICROCKT,LINEAR:3-TERM ADJ OUT POS V RGLTR	04713	LM317LZ
A50U314	156-0956-04			MICROCKT,DGTL:OCTAL BFR W/3 STATE OUT	18324	N74LS244NB OR FB
A50U324	156-0411-02			MICROCKT,LINEAR:QUAD COMPARATOR,SCREENED	04713	LM339JDS
A50U327	156-1327-00			MICROCKT,DGTL:CMOS,3 STATE OCTAL D FF,SCRN	27014	MM74C374NA+
A50U329	156-1038-00			MICROCKT,DGTL:ECL,4 BIT BINARY COUNTER	07263	F10016DC
A50U334	156-1038-00			MICROCKT,DGTL:ECL,4 BIT BINARY COUNTER	07263	F10016DC
A50U339	156-1038-00			MICROCKT,DGTL:ECL,4 BIT BINARY COUNTER	07263	F10016DC
A50U349	156-1327-00			MICROCKT,DGTL:CMOS,3 STATE OCTAL D FF,SCRN	27014	MM74C374NA+
A50U360	165-2039-00			MICROCKT,DGTL:1GHZ GATE ARRAY	80009	165-2039-00
A50U380	165-2039-00			MICROCKT,DGTL:1GHZ GATE ARRAY	80009	165-2039-00
A50U394	156-1327-00			MICROCKT,DGTL:CMOS,3 STATE OCTAL D FF,SCRN	27014	MM74C374NA+
A50U420	156-0412-02			MICROCKT,DGTL:SYN 4 BIT UP/DOWN CNTR,SCRN	27014	DM74LS193NA+
A50U424	156-0412-02			MICROCKT,DGTL:SYN 4 BIT UP/DOWN CNTR,SCRN	27014	DM74LS193NA+
A50U429	156-1327-00			MICROCKT,DGTL:CMOS,3 STATE OCTAL D FF,SCRN	27014	MM74C374NA+
A50U454	156-1327-00			MICROCKT,DGTL:CMOS,3 STATE OCTAL D FF,SCRN	27014	MM74C374NA+
A50U490	156-1327-00			MICROCKT,DGTL:CMOS,3 STATE OCTAL D FF,SCRN	27014	MM74C374NA+
A50U520	156-0383-02			MICROCKT,DGTL:QUAD 2-INP NOR GATE,SCRN,	18324	N74LS02NB
A50U524	156-1038-00			MICROCKT,DGTL:ECL,4 BIT BINARY COUNTER	07263	F10016DC
A50U529	156-1327-00			MICROCKT,DGTL:CMOS,3 STATE OCTAL D FF,SCRN	27014	MM74C374NA+
A50U534	165-2052-00			MICROCKT,DGTL:SEQUENCER GATE ARRAY	80009	165-2052-00
A50U564	230-0007-50			INTEGRATED CKT:WORD RECOGNIZER CIRCUIT	80009	230-0007-50
A50U579	230-0007-50			INTEGRATED CKT:WORD RECOGNIZER CIRCUIT	80009	230-0007-50
A50U590	156-1327-00			MICROCKT,DGTL:CMOS,3 STATE OCTAL D FF,SCRN	27014	MM74C374NA+
A50U614	156-1327-00			MICROCKT,DGTL:CMOS,3 STATE OCTAL D FF,SCRN	27014	MM74C374NA+
A50U620	156-2142-00			MICROCKT,DGTL:ECL,4-BIT COUNTER	04713	MC10H016(P OR L)
A50U624	156-1641-01			MICROCKT,DGTL:SCREENED	04713	MC10H102(LDORPD)
A50U650	156-1327-00			MICROCKT,DGTL:CMOS,3 STATE OCTAL D FF,SCRN	27014	MM74C374NA+
A50U654	156-1327-00			MICROCKT,DGTL:CMOS,3 STATE OCTAL D FF,SCRN	27014	MM74C374NA+
A50U689	156-1200-01			MICROCKT,LINEAR:OPERATIONAL AMPL,QUAD BIFET	80009	156-1200-01
A50U690	156-0513-02			MICROCKT,DGTL:8-CHENNEL MUX,SEL	02735	CD4051BFX
A50U694	156-1200-01			MICROCKT,LINEAR:OPERATIONAL AMPL,QUAD BIFET	80009	156-1200-01
A50U710	156-0642-00			MICROCKT,DGTL:ECL,BI-QUINARY CNTR	04713	MC10138L
A50U719	156-0994-02			MICROCKT,DGTL:8 INPUT DATA SEL/MUX,SCRN	01295	SN74LS151NP3
A50U720	156-2142-00			MICROCKT,DGTL:ECL,4-BIT COUNTER	04713	MC10H016(P OR L)
A50U722	156-0910-02			MICROCKT,DGTL:DUAL DECADE COUNTER,SCRN	01295	SN74LS390N3
A50U724	156-1667-00			MICROCKT,DGTL:SCREENED	04713	MC10H164LD
A50U726	156-0910-02			MICROCKT,DGTL:DUAL DECADE COUNTER,SCRN	01295	SN74LS390N3
A50U729	156-0514-02			MICROCKT,DGTL:DIFF 4 CHANNEL MUX,SEL	04713	MC14052BCP
A50U734	156-1200-01			MICROCKT,LINEAR:OPERATIONAL AMPL,QUAD BIFET	80009	156-1200-01
A50U740	156-1200-01			MICROCKT,LINEAR:OPERATIONAL AMPL,QUAD BIFET	80009	156-1200-01
A50U744	156-0513-02			MICROCKT,DGTL:8-CHENNEL MUX,SEL	02735	CD4051BFX
A50U749	156-1200-01			MICROCKT,LINEAR:OPERATIONAL AMPL,QUAD BIFET	80009	156-1200-01
A50U760	165-2039-00			MICROCKT,DGTL:1GHZ GATE ARRAY	80009	165-2039-00
A50U780	165-2039-00			MICROCKT,DGTL:1GHZ GATE ARRAY	80009	165-2039-00
A50U790	156-1225-01			MICROCKT,LINEAR:DUAL COMPARATOR,SCREENED	01295	LM393P3
A50U798	156-1225-01			MICROCKT,LINEAR:DUAL COMPARATOR,SCREENED	01295	LM393P3
A50U809	156-1111-02			MICROCKT,DGTL:OCT BUS XCVRS W/3 ST OUT	01295	SN74LS245N3

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A50U810	156-0914-02			MICROCKT,DGTL:OCT ST BFR W/3 STATE OUT,SCRN	01295	SN74LS240NP3
A50U819	156-1640-00			MICROCKT,DGTL:ECL,TPL LINE RCVR	04713	MC10H116(L OR P)
A50U820	156-0182-02			MICROCKT,DGTL:TRIPLE 2-3-2 INPUT GATE	04713	MC10105PD/LD
A50U824	156-0854-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	27014	LM308AJ-8A+
A50U825	156-0854-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	27014	LM308AJ-8A+
A50U828	156-0854-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	27014	LM308AJ-8A+
A50U829	156-0854-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	27014	LM308AJ-8A+
A50U834	156-0854-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	27014	LM308AJ-8A+
A50U835	156-0854-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	27014	LM308AJ-8A+
A50U840	156-0854-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	27014	LM308AJ-8A+
A50U841	156-0854-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	27014	LM308AJ-8A+
A50U844	156-0854-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	27014	LM308AJ-8A+
A50U845	156-0854-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	27014	LM308AJ-8A+
A50U848	156-0854-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	27014	LM308AJ-8A+
A50U849	156-0854-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	27014	LM308AJ-8A+
A50Y518	119-2059-00			OSCILLATOR,RF:200MHZ,DIP PKG	27802	CO-633-8C-200MHZ
A50Y642	119-2014-00			OSCILLATOR,RF:SAW RESONATOR,SELECTED	80009	119-2014-00
A50A1	010-0431-10			PROBE,BUFFER:REPLACEABLE (NO REPLACEABLE PARTS)	80009	010-0431-10
A51	670-8499-00			CIRCUIT BD ASSY:MEMORY	80009	670-8499-00
A51C106	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C107	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C110	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C112	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C114	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C116	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C118	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C119	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C130	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C132	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C140	290-0965-00			CAP,FXD,ELCTLT:1200UF,+100-10%,20VDC	00853	301AXGJ122U020B
A51C144	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C146	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C150	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C152	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C160	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C162	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C164	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C166	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C167	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C172	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C180	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C182	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C200	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C202	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C210	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C211	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C212	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C213	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C214	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C215	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C230	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C231	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C240	290-0804-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	55680	ULA1E100TEA
A51C250	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C252	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C260	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C261	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C262	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA

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A51C263	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C264	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C275	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C280	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C282	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C300	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C302	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C310	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C312	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C313	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C314	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C316	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C322	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C333	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C335	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C340	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C342	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C344	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C345	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C346	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C347	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C350	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C352	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C354	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C356	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C358	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C360	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C361	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C362	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C363	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C372	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C373	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C380	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C382	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C400	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C402	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C410	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C411	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C412	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C413	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C414	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C415	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C430	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C431	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C440	290-0965-00			CAP,FXD,ELCTLT:1200UF,+100-10%,20VDC	00853	301AXGJ122U020B
A51C441	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C442	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C450	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C452	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C460	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C461	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C462	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C463	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C464	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C465	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C480	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51C482	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A51J119	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A51J169	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02

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A51J280	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A51J290	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A51J319	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A51J369	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A51J390	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A51J490	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A51J495	131-1343-00			TERM SET,PIN:36-0.525 L X 0.025 SQ	TK1483	082-3643-SS02
A51Q240	151-0301-00			TRANSISTOR:PNP,SI,TO-18	04713	ST898
A51R100	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R101	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R102	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R103	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R104	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R105	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R106	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R110	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R111	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25W	57668	NTR25J-E330E
A51R112	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R113	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R114	307-0819-00			RES NTWK,FXD,FI:9,62 OHM,2%,0.15W EACH	11236	750-101-R62
A51R115	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25W	19701	5043CX63R00J
A51R116	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25W	19701	5043CX63R00J
A51R117	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25W	57668	NTR25J-E330E
A51R120	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R121	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R122	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R123	307-0819-00			RES NTWK,FXD,FI:9,62 OHM,2%,0.15W EACH	11236	750-101-R62
A51R124	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R125	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R130	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R131	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R132	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R133	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R134	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R140	307-0897-00			RES NTWK,FXD,FI:9,330 OHM,2%,1.2W	01121	210A331
A51R141	307-0897-00			RES NTWK,FXD,FI:9,330 OHM,2%,1.2W	01121	210A331
A51R142	307-0897-00			RES NTWK,FXD,FI:9,330 OHM,2%,1.2W	01121	210A331
A51R143	307-0897-00			RES NTWK,FXD,FI:9,330 OHM,2%,1.2W	01121	210A331
A51R150	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R151	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R152	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R153	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R154	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R155	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R156	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R160	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R161	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25W	57668	NTR25J-E330E
A51R162	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R163	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R164	307-0819-00			RES NTWK,FXD,FI:9,62 OHM,2%,0.15W EACH	11236	750-101-R62
A51R165	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25W	19701	5043CX63R00J
A51R166	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25W	19701	5043CX63R00J
A51R167	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25W	57668	NTR25J-E330E
A51R170	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R171	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R172	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R173	307-0819-00			RES NTWK,FXD,FI:9,62 OHM,2%,0.15W EACH	11236	750-101-R62
A51R174	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R175	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0

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A51R180	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R181	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R182	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R183	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R184	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R185	307-0541-00			RES NTWK,FXD,FI:(7)1K OHM,10%,1W	01121	108A102
A51R186	307-0541-00			RES NTWK,FXD,FI:(7)1K OHM,10%,1W	01121	108A102
A51R200	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R201	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R202	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R203	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R204	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R210	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A51R211	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R212	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R213	307-0819-00			RES NTWK,FXD,FI:9,62 OHM,2%,0.15W EACH	11236	750-101-R62
A51R214	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R215	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R216	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R217	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R218	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R220	307-0819-00			RES NTWK,FXD,FI:9,62 OHM,2%,0.15W EACH	11236	750-101-R62
A51R221	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25W	19701	5043CX63R00J
A51R222	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25W	57668	NTR25J-E330E
A51R223	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25W	19701	5043CX63R00J
A51R224	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R225	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25W	57668	NTR25J-E330E
A51R230	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R231	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R232	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R233	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R234	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R235	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R236	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R240	315-0221-00			RES,FXD,FILM:220 OHM,5%,0.25W	57668	NTR25J-E220E
A51R241	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25W	57668	NTR25J-E04K3
A51R250	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R251	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R252	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R253	315-0241-00			RES,FXD,FILM:240 OHM,5%,0.25W	19701	5043CX240R0J
A51R254	315-0361-00			RES,FXD,FILM:360 OHM,5%,0.25W	19701	5043CX360R0J
A51R255	315-0911-00			RES,FXD,FILM:910 OHM,5%,0.25W	57668	NTR25J-E910E
A51R256	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R257	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R260	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A51R261	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R262	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R263	307-0819-00			RES NTWK,FXD,FI:9,62 OHM,2%,0.15W EACH	11236	750-101-R62
A51R264	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R265	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R266	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R267	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R268	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R270	307-0819-00			RES NTWK,FXD,FI:9,62 OHM,2%,0.15W EACH	11236	750-101-R62
A51R271	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25W	19701	5043CX63R00J
A51R272	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25W	57668	NTR25J-E330E
A51R273	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25W	19701	5043CX63R00J
A51R274	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R275	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25W	57668	NTR25J-E330E

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A51R280	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R281	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R282	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R283	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R284	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R285	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R286	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R287	307-0541-00			RES NTWK,FXD,FI:(7)1K OHM,10%,1M	01121	108A102
A51R288	307-0541-00			RES NTWK,FXD,FI:(7)1K OHM,10%,1M	01121	108A102
A51R300	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R301	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R302	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R303	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R304	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R305	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R306	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R309	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R310	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R311	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25M	57668	NTR25J-E330E
A51R312	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25M	57668	NTR25J-E330E
A51R313	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R314	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R315	307-0819-00			RES NTWK,FXD,FI:9,62 OHM,2%,0.15M EACH	11236	750-101-R62
A51R316	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25M	19701	5043CX63R00J
A51R317	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25M	57668	NTR25J-E330E
A51R318	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25M	19701	5043CX63R00J
A51R319	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R320	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R321	307-0819-00			RES NTWK,FXD,FI:9,62 OHM,2%,0.15M EACH	11236	750-101-R62
A51R322	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R323	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R324	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25M	57668	NTR25J-E330E
A51R325	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25M	57668	NTR25J-E330E
A51R326	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25M	57668	NTR25J-E330E
A51R327	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25M	57668	NTR25J-E330E
A51R328	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25M	57668	NTR25J-E330E
A51R329	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25M	57668	NTR25J-E330E
A51R330	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R331	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R332	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25M	57668	NTR25J-E330E
A51R333	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R334	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R335	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R336	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25M	57668	NTR25J-E330E
A51R337	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25M	57668	NTR25J-E330E
A51R338	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25M	57668	NTR25J-E330E
A51R339	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25M	57668	NTR25J-E330E
A51R340	307-0675-00			RES NTWK,FXD,FI:9,1K OHM,2%1.25M	11236	750-101-R1K OHM
A51R350	307-0541-00			RES NTWK,FXD,FI:(7)1K OHM,10%,1M	01121	108A102
A51R351	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R352	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R353	315-0361-00			RES,FXD,FILM:360 OHM,5%,0.25M	19701	5043CX360R0J
A51R354	315-0131-00			RES,FXD,FILM:130 OHM,5%,0.25M	19701	5043CX130R0J
A51R355	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R356	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R357	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R358	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R359	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R360	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A51R361	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25M	57668	NTR25J-E330E
A51R362	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R363	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R364	307-0819-00			RES NTWK,FXD,FI:9,62 OHM,2%,0.15M EACH	11236	750-101-R62
A51R365	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25M	19701	5043CX63R00J
A51R366	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25M	57668	NTR25J-E330E
A51R367	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25M	19701	5043CX63R00J
A51R370	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R371	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R372	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R373	307-0819-00			RES NTWK,FXD,FI:9,62 OHM,2%,0.15M EACH	11236	750-101-R62
A51R374	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R375	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R380	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R381	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R382	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R383	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R384	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R400	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R401	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R402	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R403	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R404	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R410	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R411	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R412	307-0819-00			RES NTWK,FXD,FI:9,62 OHM,2%,0.15M EACH	11236	750-101-R62
A51R413	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R414	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R415	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R416	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R417	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R420	307-0819-00			RES NTWK,FXD,FI:9,62 OHM,2%,0.15M EACH	11236	750-101-R62
A51R421	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25M	19701	5043CX63R00J
A51R422	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A51R423	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25M	57668	NTR25J-E330E
A51R424	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25M	19701	5043CX63R00J
A51R425	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25M	57668	NTR25J-E330E
A51R426	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R430	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R431	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R432	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R434	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R435	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R436	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R437	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R440	307-0897-00			RES NTWK,FXD,FI:9,330 OHM,2%,1.2M	01121	210A331
A51R441	307-0897-00			RES NTWK,FXD,FI:9,330 OHM,2%,1.2M	01121	210A331
A51R442	307-0897-00			RES NTWK,FXD,FI:9,330 OHM,2%,1.2M	01121	210A331
A51R443	307-0897-00			RES NTWK,FXD,FI:9,330 OHM,2%,1.2M	01121	210A331
A51R450	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R451	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R452	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R453	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R454	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0M	11236	750-81-R100
A51R460	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R461	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R462	307-0819-00			RES NTWK,FXD,FI:9,62 OHM,2%,0.15M EACH	11236	750-101-R62
A51R463	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A51R464	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A51R465	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R466	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R467	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R470	307-0819-00			RES NTWK,FXD,FI:9,62 OHM,2%,0.15W EACH	11236	750-101-R62
A51R471	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25W	19701	5043CX63R00J
A51R472	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A51R473	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25W	57668	NTR25J-E330E
A51R474	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25W	19701	5043CX63R00J
A51R475	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25W	57668	NTR25J-E330E
A51R476	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R480	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R481	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A51R482	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R483	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R484	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R485	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51R486	307-0489-00			RES NTWK,FXD,FI:7,100 OHM,20%,1.0W	11236	750-81-R100
A51TP114	131-1939-00			TERM SET,PIN:1 X 14,0.15 SPACING	22526	65561-114
A51TP164	131-1939-00			TERM SET,PIN:1 X 14,0.15 SPACING	22526	65561-114
A51TP220	131-1939-00			TERM SET,PIN:1 X 14,0.15 SPACING	22526	65561-114
A51TP245	131-1939-00			TERM SET,PIN:1 X 14,0.15 SPACING	22526	65561-114
A51TP270	131-1939-00			TERM SET,PIN:1 X 14,0.15 SPACING	22526	65561-114
A51TP314	131-1939-00			TERM SET,PIN:1 X 14,0.15 SPACING	22526	65561-114
A51TP345	131-1939-00			TERM SET,PIN:1 X 14,0.15 SPACING	22526	65561-114
A51TP364	131-1939-00			TERM SET,PIN:1 X 14,0.15 SPACING	22526	65561-114
A51TP420	131-1939-00			TERM SET,PIN:1 X 14,0.15 SPACING	22526	65561-114
A51TP470	131-1939-00			TERM SET,PIN:1 X 14,0.15 SPACING	22526	65561-114
A51U100	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U102	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U110	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U112	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U114	230-0006-50			INTEGRATED CKT:DIGITAL DATA MULTIPLEXER	80009	230-0006-50
A51U120	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U122	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U124	230-0006-50			INTEGRATED CKT:DIGITAL DATA MULTIPLEXER	80009	230-0006-50
A51U130	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U132	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U140	156-0513-02			MICROCKT,DGTL:8-CHENNEL MUX,SEL	02735	CD4051BFX
A51U142	156-0513-02			MICROCKT,DGTL:8-CHENNEL MUX,SEL	02735	CD4051BFX
A51U144	156-0513-02			MICROCKT,DGTL:8-CHENNEL MUX,SEL	02735	CD4051BFX
A51U146	156-0513-02			MICROCKT,DGTL:8-CHENNEL MUX,SEL	02735	CD4051BFX
A51U150	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U152	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U160	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U162	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U164	230-0006-50			INTEGRATED CKT:DIGITAL DATA MULTIPLEXER	80009	230-0006-50
A51U170	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U172	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U174	230-0006-50			INTEGRATED CKT:DIGITAL DATA MULTIPLEXER	80009	230-0006-50
A51U180	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U182	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U200	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U202	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U210	230-0006-50			INTEGRATED CKT:DIGITAL DATA MULTIPLEXER	80009	230-0006-50
A51U212	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U214	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U220	230-0006-50			INTEGRATED CKT:DIGITAL DATA MULTIPLEXER	80009	230-0006-50
A51U222	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U224	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A51U230	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U232	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U242	156-0514-02			MICROCKT,DGTL:DIFF 4 CHANNEL MUX,SEL	04713	MC14052BCP
A51U244	156-0514-02			MICROCKT,DGTL:DIFF 4 CHANNEL MUX,SEL	04713	MC14052BCP
A51U246	156-0514-02			MICROCKT,DGTL:DIFF 4 CHANNEL MUX,SEL	04713	MC14052BCP
A51U248	156-0514-02			MICROCKT,DGTL:DIFF 4 CHANNEL MUX,SEL	04713	MC14052BCP
A51U250	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U252	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U254	156-0543-01			MICROCKT,DGTL:HEX BUFFER,SCREENED	04713	MC10188PD/LD
A51U256	156-0386-02			MICROCKT,DGTL:TRIPLE 3-INP NAND GATE,SCRN	07263	74LS10PCQR
A51U260	230-0006-50			INTEGRATED CKT:DIGITAL DATA MULTIPLEXER	80009	230-0006-50
A51U262	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U264	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U270	230-0006-50			INTEGRATED CKT:DIGITAL DATA MULTIPLEXER	80009	230-0006-50
A51U272	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U274	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U280	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U282	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U300	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U302	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U310	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U312	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U314	230-0006-50			INTEGRATED CKT:DIGITAL DATA MULTIPLEXER	80009	230-0006-50
A51U320	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U322	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U324	230-0006-50			INTEGRATED CKT:DIGITAL DATA MULTIPLEXER	80009	230-0006-50
A51U330	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U332	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U340	156-1327-00			MICROCKT,DGTL:CMOS,3 STATE OCTAL D FF,SCRN	27014	MM74C374NA+
A51U341	156-1327-00			MICROCKT,DGTL:CMOS,3 STATE OCTAL D FF,SCRN	27014	MM74C374NA+
A51U342	156-1327-00			MICROCKT,DGTL:CMOS,3 STATE OCTAL D FF,SCRN	27014	MM74C374NA+
A51U343	156-0411-02			MICROCKT,LINEAR:QUAD COMPARATOR,SCREENED	04713	LM339JDS
A51U344	156-0543-01			MICROCKT,DGTL:HEX BUFFER,SCREENED	04713	MC10188PD/LD
A51U345	156-0543-01			MICROCKT,DGTL:HEX BUFFER,SCREENED	04713	MC10188PD/LD
A51U346	156-0543-01			MICROCKT,DGTL:HEX BUFFER,SCREENED	04713	MC10188PD/LD
A51U347	156-0543-01			MICROCKT,DGTL:HEX BUFFER,SCREENED	04713	MC10188PD/LD
A51U350	156-0411-02			MICROCKT,LINEAR:QUAD COMPARATOR,SCREENED	04713	LM339JDS
A51U352	156-0469-02			MICROCKT,DGTL:3/8 LINE DCDR,SCRN	01295	SN74LS138NP3
A51U354	156-0956-04			MICROCKT,DGTL:OCTAL BFR W/3 STATE OUT	18324	N74LS244NB OR FB
A51U356	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U358	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U360	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U362	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U364	230-0006-50			INTEGRATED CKT:DIGITAL DATA MULTIPLEXER	80009	230-0006-50
A51U370	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U372	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U374	230-0006-50			INTEGRATED CKT:DIGITAL DATA MULTIPLEXER	80009	230-0006-50
A51U380	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U382	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U400	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U402	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U410	230-0006-50			INTEGRATED CKT:DIGITAL DATA MULTIPLEXER	80009	230-0006-50
A51U412	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U414	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U420	230-0006-50			INTEGRATED CKT:DIGITAL DATA MULTIPLEXER	80009	230-0006-50
A51U422	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U424	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U430	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U432	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A

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A51U440	156-0513-02			MICROCKT,DGTL:8-CHENNEL MUX,SEL	02735	CD4051BFX
A51U442	156-0513-02			MICROCKT,DGTL:8-CHENNEL MUX,SEL	02735	CD4051BFX
A51U444	156-0513-02			MICROCKT,DGTL:8-CHENNEL MUX,SEL	02735	CD4051BFX
A51U446	156-0513-02			MICROCKT,DGTL:8-CHENNEL MUX,SEL	02735	CD4051BFX
A51U450	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U452	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U460	230-0006-50			INTEGRATED CKT:DIGITAL DATA MULTIPLEXER	80009	230-0006-50
A51U462	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U464	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U470	230-0006-50			INTEGRATED CKT:DIGITAL DATA MULTIPLEXER	80009	230-0006-50
A51U472	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U474	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U480	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A51U482	156-1635-00			MICROCKT,DGTL:256 X 4 SRAM	27014	DM10422A
A52	670-9166-00			CIRCUIT BD ASSY:INTERFACE,MASTER (91HS8 ONLY)	80009	670-9166-00
A52C100	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A52C108	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A52C110	283-0059-00			CAP,FXD,CER DI:1UF,+80-20%,50V	31433	C330C105M5R5CA
A52C111	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C112	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C116	283-0059-00			CAP,FXD,CER DI:1UF,+80-20%,50V	31433	C330C105M5R5CA
A52C119	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C124	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C127	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C130	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C135	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C200	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A52C201	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A52C208	281-0809-00			CAP,FXD,CER DI:200 PF,5%,100V	04222	MA101A201JAA
A52C209	281-0809-00			CAP,FXD,CER DI:200 PF,5%,100V	04222	MA101A201JAA
A52C210	281-0809-00			CAP,FXD,CER DI:200 PF,5%,100V	04222	MA101A201JAA
A52C211	281-0809-00			CAP,FXD,CER DI:200 PF,5%,100V	04222	MA101A201JAA
A52C219	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A52C223	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C230	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C238	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C245	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C300	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A52C301	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A52C302	281-0809-00			CAP,FXD,CER DI:200 PF,5%,100V	04222	MA101A201JAA
A52C303	281-0809-00			CAP,FXD,CER DI:200 PF,5%,100V	04222	MA101A201JAA
A52C304	281-0809-00			CAP,FXD,CER DI:200 PF,5%,100V	04222	MA101A201JAA
A52C305	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A52C306	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A52C307	281-0809-00			CAP,FXD,CER DI:200 PF,5%,100V	04222	MA101A201JAA
A52C308	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C309	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C324	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C325	281-0770-00			CAP,FXD,CER DI:1000PF,20%,100V	04222	MA101C102MAA
A52C330	281-0762-00			CAP,FXD,CER DI:27PF,20%,100V	04222	MA101A270MAA
A52C335	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C338	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C346	290-0943-00			CAP,FXD,ELCTLT:47UF,+50-10%,25V	55680	ULB1E470TAAANA
A52C348	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C406	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A52C415	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C416	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C421	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA

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A52C424	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C425	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C427	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C431	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C440	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C445	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C448	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C450	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C458	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C460	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C475	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C509	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C519	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C527	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C531	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C534	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C537	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C543	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C570	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C605	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C617	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C621	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C622	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C623	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C631	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C644	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C650	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C658	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C670	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C700	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C701	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C705	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C706	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C724	290-0943-00			CAP,FXD,ELCTLT:47UF,+50-10%,25V	55680	ULB1E470TAAANA
A52C725	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C726	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A52C734	290-0943-00			CAP,FXD,ELCTLT:47UF,+50-10%,25V	55680	ULB1E470TAAANA
A52C739	290-0943-00			CAP,FXD,ELCTLT:47UF,+50-10%,25V	55680	ULB1E470TAAANA
A52CR121	152-0141-02			SEMICOND DVC,DI:SM,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A52J100	131-0265-00			CONN,RCPT,ELEC:MINTR,CKT BD MTD,MALE	98291	051-053-0000
A52J105	131-0265-00			CONN,RCPT,ELEC:MINTR,CKT BD MTD,MALE	98291	051-053-0000
A52J144	131-0265-00			CONN,RCPT,ELEC:MINTR,CKT BD MTD,MALE	98291	051-053-0000
A52J145	131-0265-00			CONN,RCPT,ELEC:MINTR,CKT BD MTD,MALE	98291	051-053-0000
A52J146	131-0265-00			CONN,RCPT,ELEC:MINTR,CKT BD MTD,MALE	98291	051-053-0000
A52J200	131-0265-00			CONN,RCPT,ELEC:MINTR,CKT BD MTD,MALE	98291	051-053-0000
A52J205	131-0265-00			CONN,RCPT,ELEC:MINTR,CKT BD MTD,MALE	98291	051-053-0000
A52J300	131-0265-00			CONN,RCPT,ELEC:MINTR,CKT BD MTD,MALE	98291	051-053-0000
A52J305	131-0265-00			CONN,RCPT,ELEC:MINTR,CKT BD MTD,MALE	98291	051-053-0000
A52J400	131-0265-00			CONN,RCPT,ELEC:MINTR,CKT BD MTD,MALE	98291	051-053-0000
A52J405	131-0265-00			CONN,RCPT,ELEC:MINTR,CKT BD MTD,MALE	98291	051-053-0000
A52J500	131-3087-00			CONN,RCPT,ELEC:HEADER,RIGHT ANGLE,2 X 17	22526	67950-001
A52Q119	151-0190-00			TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A52Q120	151-0220-00			TRANSISTOR:PNP,SI,TO-92	80009	151-0220-00
A52Q326	151-0220-00			TRANSISTOR:PNP,SI,TO-92	80009	151-0220-00
A52Q327	151-0220-00			TRANSISTOR:PNP,SI,TO-92	80009	151-0220-00
A52Q338	156-1569-00			MICROCKT,DGTL:QUAD TRANSISTOR ARRAY,PNP	04713	MPQ3467
A52Q416	151-0220-00			TRANSISTOR:PNP,SI,TO-92	80009	151-0220-00
A52Q435	151-0221-00			TRANSISTOR:PNP,SI,TO-92	80009	151-0221-00
A52Q436	151-0221-00			TRANSISTOR:PNP,SI,TO-92	80009	151-0221-00

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A52R110	311-1858-00			RES,VAR,NONWW:TRMR,100 OHM,0.5W	32997	3299X-R27-101
A52R111	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A52R112	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25W	57668	NTR25J-E04K3
A52R113	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25W	57668	NTR25J-E04K3
A52R114	321-0183-00			RES,FXD,FILM:787 OHM,1%,0.125W,TC=T0	07716	CEAD787R0F
A52R115	321-0183-00			RES,FXD,FILM:787 OHM,1%,0.125W,TC=T0	07716	CEAD787R0F
A52R116	315-0470-00			RES,FXD,FILM:47 OHM,5%,0.25W	57668	NTR25J-E47E0
A52R120	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A52R121	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25W	57668	NTR25J-E04K3
A52R122	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A52R123	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A52R124	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A52R125	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A52R126	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A52R127	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A52R128	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A52R129	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A52R208	317-0100-00			RES,FXD,CMPSN:10 OHM,5%,0.125W	01121	BB1005
A52R209	317-0100-00			RES,FXD,CMPSN:10 OHM,5%,0.125W	01121	BB1005
A52R210	317-0100-00			RES,FXD,CMPSN:10 OHM,5%,0.125W	01121	BB1005
A52R211	317-0100-00			RES,FXD,CMPSN:10 OHM,5%,0.125W	01121	BB1005
A52R224	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A52R231	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A52R232	321-0148-00			RES,FXD,FILM:340 OHM,1%,0.125W,TC=T0	07716	CEAD340R0F
A52R235	321-0195-00			RES,FXD,FILM:1.05K OHM,1%,0.125W,TC=T0	07716	CEAD10500F
A52R236	321-0132-00			RES,FXD,FILM:232 OHM,1%,0.125W,TC=T0	19701	5043ED232R0F
A52R244	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A52R245	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A52R246	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A52R247	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A52R248	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A52R249	315-0120-00			RES,FXD,FILM:12 OHM,5%,0.25W	57668	NTR25J-R12
A52R305	317-0100-00			RES,FXD,CMPSN:10 OHM,5%,0.125W	01121	BB1005
A52R306	317-0100-00			RES,FXD,CMPSN:10 OHM,5%,0.125W	01121	BB1005
A52R307	317-0100-00			RES,FXD,CMPSN:10 OHM,5%,0.125W	01121	BB1005
A52R308	317-0100-00			RES,FXD,CMPSN:10 OHM,5%,0.125W	01121	BB1005
A52R320	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A52R327	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A52R340	315-0120-00			RES,FXD,FILM:12 OHM,5%,0.25W	57668	NTR25J-R12
A52R341	315-0151-00			RES,FXD,FILM:150 OHM,5%,0.25W	57668	NTR25J-E150E
A52R342	315-0120-00			RES,FXD,FILM:12 OHM,5%,0.25W	57668	NTR25J-R12
A52R343	315-0120-00			RES,FXD,FILM:12 OHM,5%,0.25W	57668	NTR25J-R12
A52R344	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25W	19701	5043CX63R00J
A52R345	315-0131-00			RES,FXD,FILM:130 OHM,5%,0.25W	19701	5043CX130R0J
A52R346	315-0181-00			RES,FXD,FILM:180 OHM,5%,0.25W	57668	NTR25J-E180E
A52R407	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A52R417	315-0431-00			RES,FXD,FILM:430 OHM,5%,0.25W	19701	5043CX430R0J
A52R422	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A52R423	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A52R426	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A52R430	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A52R431	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A52R436	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A52R437	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A52R513	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25W	57668	NTR25J-E04K3
A52R514	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A52R540	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A52R541	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A52R542	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A52R543	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A52R544	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A52R545	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A52R546	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A52R547	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A52R548	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A52R549	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A52R610	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A52R611	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A52R612	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A52R613	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A52R614	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A52R615	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A52R616	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A52R617	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A52R618	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A52R619	315-0241-00			RES,FXD,FILM:240 OHM,5%,0.25M	19701	5043CX240R0J
A52R620	315-0361-00			RES,FXD,FILM:360 OHM,5%,0.25M	19701	5043CX360R0J
A52R621	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A52R622	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A52R623	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A52R624	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A52R625	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A52R626	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A52R627	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A52R628	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A52R629	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A52R630	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A52R634	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A52R635	307-0811-00			RES NTWK,FXD,FI:6,180 OHM,6,270 OHM,6,820 OHM,2%,0.125M EACH	01121	316T110
A52R636	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A52R644	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A52R645	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A52R667	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A52R701	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A52R702	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A52R703	315-0680-00			RES,FXD,FILM:68 OHM,5%,0.25M	57668	NTR25J-E68E0
A52R704	315-0680-00			RES,FXD,FILM:68 OHM,5%,0.25M	57668	NTR25J-E68E0
A52R705	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A52R706	315-0271-00			RES,FXD,FILM:270 OHM,5%,0.25M	57668	NTR25J-E270E
A52R707	315-0680-00			RES,FXD,FILM:68 OHM,5%,0.25M	57668	NTR25J-E68E0
A52R708	315-0271-00			RES,FXD,FILM:270 OHM,5%,0.25M	57668	NTR25J-E270E
A52R709	315-0680-00			RES,FXD,FILM:68 OHM,5%,0.25M	57668	NTR25J-E68E0
A52R710	315-0911-00			RES,FXD,FILM:910 OHM,5%,0.25M	57668	NTR25J-E910E
A52R711	315-0911-00			RES,FXD,FILM:910 OHM,5%,0.25M	57668	NTR25J-E910E
A52R712	315-0361-00			RES,FXD,FILM:360 OHM,5%,0.25M	19701	5043CX360R0J
A52R713	315-0241-00			RES,FXD,FILM:240 OHM,5%,0.25M	19701	5043CX240R0J
A52R735	315-0150-00			RES,FXD,FILM:15 OHM,5%,0.25M	19701	5043CX15R00J
A52R740	315-0100-00			RES,FXD,FILM:10 OHM,5%,0.25M	19701	5043CX10RR00J
A52TP649	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A52U225	156-1667-00			MICROCKT,DGTL:SCREENED	04713	MC10H164LD
A52U228	156-2142-00			MICROCKT,DGTL:ECL,4-BIT COUNTER	04713	MC10H016(P OR L)
A52U230	156-0642-00			MICROCKT,DGTL:ECL,BI-QUINARY CNTR	04713	MC10138L
A52U235	156-0910-02			MICROCKT,DGTL:DUAL DECADE COUNTER,SCRN	01295	SN74LS390N3
A52U238	156-1682-00			MICROCKT,DGTL:DUAL 4-5 INPUT OR/NOR GATE	04713	MC10H109LD
A52U245	156-0651-02			MICROCKT,DGTL:8-BIT PRL-OUT SER SHF RGTR	01295	SN74LS164NP3
A52U315	165-2052-00			MICROCKT,DGTL:SEQUENCER GATE ARRAY	80009	165-2052-00
A52U325	156-1733-00			MICROCKT,DGTL:QUAD OR/NOR GATE,SCREENED	04713	MC10H101PD

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A52U328	156-2142-00			MICROCKT,DGTL:ECL,4-BIT COUNTER	04713	MC10H016(P OR L)
A52U330	156-0994-02			MICROCKT,DGTL:8 INPUT DATA SEL/MUX,SCRN	01295	SN74LS151NP3
A52U335	156-0910-02			MICROCKT,DGTL:DUAL DECADE COUNTER,SCRN	01295	SN74LS390N3
A52U345	156-0479-02			MICROCKT,DGTL:QUAD 2-INP OR GATE,SCRN	01295	SN74LS32NP3
A52U348	156-0481-02			MICROCKT,DGTL:TRIPLE 3-INP & GATE,SCRN	01295	SN74LS11NP3
A52U405	156-1111-02			MICROCKT,DGTL:OCT BUS XCVRS W/3 ST OUT	01295	SN74LS245N3
A52U408	156-1708-00			MICROCKT,DGTL:TTL,OCTAL D FF W/CLEAR	01295	SN74273NP3
A52U415	156-1327-00			MICROCKT,DGTL:CMOS,3 STATE OCTAL D FF,SCRN	27014	MM74C374NA+
A52U418	156-0469-02			MICROCKT,DGTL:3/8 LINE DCDR,SCRN	01295	SN74LS138NP3
A52U428	156-0495-00			MICROCKT,LINEAR:OPNL AMPL	01295	LM324N
A52U430	156-0112-02			MICROCKT,DGTL:QUAD 2-INP NAND GATE,SCRN	18324	N7426(NB OR FB)
A52U435	156-0646-02			MICROCKT,DGTL:4-BIT BINARY CNTR,SCRN	04713	SN74LS93NDS
A52U438	156-1172-01			MICROCKT,DGTL:DUAL 4 BIT BIN CNTR,SCRN	01295	SN74LS393NP3
A52U440	156-0956-04			MICROCKT,DGTL:OCTAL BFR W/3 STATE OUT	18324	N74LS244NB OR FB
A52U445	156-0956-04			MICROCKT,DGTL:OCTAL BFR W/3 STATE OUT	18324	N74LS244NB OR FB
A52U448	156-0956-04			MICROCKT,DGTL:OCTAL BFR W/3 STATE OUT	18324	N74LS244NB OR FB
A52U450	160-3609-00			MICROCKT,DGTL:16138 X 8 EPROM,PRGM	80009	160-3609-00
A52U458	160-3610-00			MICROCKT,DGTL:16138 X 8 EPROM,PRGM	80009	160-3610-00
A52U460	160-3611-00			MICROCKT,DGTL:16138 X 8 EPROM,PRGM	80009	160-3611-00
A52U468	156-0391-02			MICROCKT,DGTL:HEX LATCH W/CLEAR,SCRN	01295	SN74LS174NP3
A52U470	156-0469-02			MICROCKT,DGTL:3/8 LINE DCDR,SCRN	01295	SN74LS138NP3
A52U475	156-0469-02			MICROCKT,DGTL:3/8 LINE DCDR,SCRN	01295	SN74LS138NP3
A52U528	156-1639-00			MICROCKT,DGTL:ECL,DUAL D MA-SLAVE FF	04713	MC10H131(P OR L)
A52U530	156-1639-00			MICROCKT,DGTL:ECL,DUAL D MA-SLAVE FF	04713	MC10H131(P OR L)
A52U535	156-1889-00			MICROCKT,DGTL:MECL,UNIVERSAL HEXADECIMAL	04713	MC10H136 LD/PD
A52U538	156-0411-02			MICROCKT,LINEAR:QUAD COMPARATOR,SCREENED	04713	LM339JDS
A52U548	156-0385-02			MICROCKT,DGTL:HEX INVERTER,SCRN	07263	74LS04PCQR
A52U568	156-0536-02			MICROCKT,DGTL:TTL,PRESETTABLE BIN CNTR/LCH	01295	SN74177NP3
A52U570	156-0536-02			MICROCKT,DGTL:TTL,PRESETTABLE BIN CNTR/LCH	01295	SN74177NP3
A52U575	156-0469-02			MICROCKT,DGTL:3/8 LINE DCDR,SCRN	01295	SN74LS138NP3
A52U605	156-0914-02			MICROCKT,DGTL:OCT ST BFR W/3 STATE OUT,SCRN	01295	SN74LS240NP3
A52U608	156-1753-01			MICROCKT,DGTL:OCTAL BUFFER & LINE DRIVER	01295	74ALS240-1 N3/J4
A52U618	156-1642-00			MICROCKT,DGTL:ECL,TPL 2-3-2 INP OR/NOR GATE	04713	MC10H105(L OR P)
A52U620	156-0384-02			MICROCKT,DGTL:QUAD 2-INP NAND GATE,SCRN	07263	74LS03PCQR
A52U625	156-1667-00			MICROCKT,DGTL:SCREENED	04713	MC10H164LD
A52U630	156-1674-00			MICROCKT,DGTL:SCREENED	04713	MC10H104LD
A52U638	156-1708-00			MICROCKT,DGTL:TTL,OCTAL D FF W/CLEAR	01295	SN74273NP3
A52U640	156-0956-04			MICROCKT,DGTL:OCTAL BFR W/3 STATE OUT	18324	N74LS244NB OR FB
A52U645	156-0479-02			MICROCKT,DGTL:QUAD 2-INP OR GATE,SCRN	01295	SN74LS32NP3
A52U648	156-0469-02			MICROCKT,DGTL:3/8 LINE DCDR,SCRN	01295	SN74LS138NP3
A52U650	156-1111-02			MICROCKT,DGTL:OCT BUS XCVRS W/3 ST OUT	01295	SN74LS245N3
A52U655	156-0956-04			MICROCKT,DGTL:OCTAL BFR W/3 STATE OUT	18324	N74LS244NB OR FB
A52U658	156-0956-04			MICROCKT,DGTL:OCTAL BFR W/3 STATE OUT	18324	N74LS244NB OR FB
A52U660	156-1842-00			MICROCKT,DGTL:CMOS,8192 X 8 SRAM	62786	HM6264P-15
A52U668	156-0536-02			MICROCKT,DGTL:TTL,PRESETTABLE BIN CNTR/LCH	01295	SN74177NP3
A52U670	156-0536-02			MICROCKT,DGTL:TTL,PRESETTABLE BIN CNTR/LCH	01295	SN74177NP3
A52U675	156-0480-02			MICROCKT,DGTL:QUAD 2-INP & GATE,SCRN,	01295	SN74LS08NP3
A52U700	156-1642-00			MICROCKT,DGTL:ECL,TPL 2-3-2 INP OR/NOR GATE	04713	MC10H105(L OR P)
A52U705	156-1640-00			MICROCKT,DGTL:ECL,TPL LINE RCVR	04713	MC10H116(L OR P)
A52VR706	152-0667-00			SEMICOND DVC,DI:ZEN,SI,3.0 V # 2% AT 2MA	04713	SZG30025RL
A52YG115	119-2014-00			OSCILLATOR,RF:SAW RESONATOR,SELECTED	80009	119-2014-00
A52YG424	119-2059-00			OSCILLATOR,RF:200MHZ,DIP PKG	27802	CO-633-8C-200MHZ
A53	670-8498-00			CIRCUIT BD ASSY:INTFC (91HSE8 ONLY)	80009	670-8498-00
A53C111	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C112	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C119	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C124	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C127	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A53C130	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C135	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C223	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C230	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C238	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C245	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C308	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C309	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C324	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C325	281-0770-00			CAP,FXD,CER DI:1000PF,20%,100V	04222	MA101C102MAA
A53C330	281-0762-00			CAP,FXD,CER DI:27PF,20%,100V	04222	MA101A270MAA
A53C335	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C338	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C346	290-0943-00			CAP,FXD,ELCTLT:47UF,+50-10%,25V	55680	ULB1E470TAAANA
A53C348	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C415	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C416	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C421	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C424	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C425	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C427	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C431	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C440	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C445	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C448	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C450	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C458	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C460	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C475	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C509	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C519	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C527	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C531	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C534	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C537	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C543	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C570	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C605	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C617	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C621	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C622	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C623	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C631	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C644	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C650	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C658	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C670	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C700	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C701	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C705	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C706	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C725	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53C726	283-0422-00			CAP,FXD,CER DI:0.047UF,+80-20%,50V	04222	MD015E473ZAA
A53CR121	152-0141-02			SEMICOND DVC,DI:SM,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A53J139	131-0265-00			CONN,RCPT,ELEC:MINTR,CKT BD MTD,MALE	98291	051-053-0000
A53J500	131-3087-00			CONN,RCPT,ELEC:HEADER,RIGHT ANGLE,2 X 17	22526	67950-001
A53Q338	156-1569-00			MICROCKT,DGTL:QUAD TRANSISTOR ARRAY,PNP	04713	MPQ3467
A53Q416	151-0220-00			TRANSISTOR:PNP,SI,TO-92	80009	151-0220-00
A53Q435	151-0221-00			TRANSISTOR:PNP,SI,TO-92	80009	151-0221-00

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A53Q436	151-0221-00			TRANSISTOR:PNP,SI,TO-92	80009	151-0221-00
A53R111	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R112	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A53R113	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A53R114	321-0183-00			RES,FXD,FILM:787 OHM,1%,0.125M,TC=T0	07716	CEAD787R0F
A53R115	321-0183-00			RES,FXD,FILM:787 OHM,1%,0.125M,TC=T0	07716	CEAD787R0F
A53R116	315-0470-00			RES,FXD,FILM:47 OHM,5%,0.25M	57668	NTR25J-E47E0
A53R120	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A53R121	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A53R122	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R123	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R124	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R125	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R126	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R127	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R128	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R129	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R224	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R231	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R232	321-0148-00			RES,FXD,FILM:340 OHM,1%,0.125M,TC=T0	07716	CEAD340R0F
A53R235	321-0195-00			RES,FXD,FILM:1.05K OHM,1%,0.125M,TC=T0	07716	CEAD10500F
A53R236	321-0132-00			RES,FXD,FILM:232 OHM,1%,0.125M,TC=T0	19701	5043ED232R0F
A53R244	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R245	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A53R246	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A53R247	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A53R248	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A53R249	315-0120-00			RES,FXD,FILM:12 OHM,5%,0.25M	57668	NTR25J-R12
A53R320	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A53R327	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R340	315-0120-00			RES,FXD,FILM:12 OHM,5%,0.25M	57668	NTR25J-R12
A53R341	315-0151-00			RES,FXD,FILM:150 OHM,5%,0.25M	57668	NTR25J-E150E
A53R342	315-0120-00			RES,FXD,FILM:12 OHM,5%,0.25M	57668	NTR25J-R12
A53R343	315-0120-00			RES,FXD,FILM:12 OHM,5%,0.25M	57668	NTR25J-R12
A53R344	315-0620-00			RES,FXD,FILM:62 OHM,5%,0.25M	19701	5043CX63R00J
A53R345	315-0131-00			RES,FXD,FILM:130 OHM,5%,0.25M	19701	5043CX130R0J
A53R346	315-0181-00			RES,FXD,FILM:180 OHM,5%,0.25M	57668	NTR25J-E180E
A53R407	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A53R417	315-0431-00			RES,FXD,FILM:430 OHM,5%,0.25M	19701	5043CX430R0J
A53R422	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R423	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R426	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R430	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R431	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A53R436	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A53R437	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A53R513	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A53R514	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25M	19701	5043CX510R0J
A53R540	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A53R541	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A53R542	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A53R543	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A53R544	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A53R545	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A53R546	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A53R547	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A53R548	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A53R549	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A53R610	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A53R611	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A53R612	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A53R613	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A53R614	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A53R615	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A53R616	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A53R617	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A53R618	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25M	57668	NTR25J-E04K3
A53R619	315-0241-00			RES,FXD,FILM:240 OHM,5%,0.25M	19701	5043CX240R0J
A53R620	315-0361-00			RES,FXD,FILM:360 OHM,5%,0.25M	19701	5043CX360R0J
A53R621	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A53R622	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A53R623	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A53R624	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A53R625	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A53R626	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A53R627	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A53R628	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R629	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R630	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A53R634	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R635	307-0811-00			RES NTWK,FXD,FI:6,180 OHM,6,270 OHM,6,820 OHM,2%,0.125M EACH	01121	316T110
A53R636	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A53R644	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A53R645	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A53R667	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A53R701	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R702	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R703	315-0680-00			RES,FXD,FILM:68 OHM,5%,0.25M	57668	NTR25J-E68E0
A53R704	315-0680-00			RES,FXD,FILM:68 OHM,5%,0.25M	57668	NTR25J-E68E0
A53R705	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25M	19701	5043CX51R00J
A53R706	315-0271-00			RES,FXD,FILM:270 OHM,5%,0.25M	57668	NTR25J-E270E
A53R707	315-0680-00			RES,FXD,FILM:68 OHM,5%,0.25M	57668	NTR25J-E68E0
A53R708	315-0271-00			RES,FXD,FILM:270 OHM,5%,0.25M	57668	NTR25J-E270E
A53R709	315-0680-00			RES,FXD,FILM:68 OHM,5%,0.25M	57668	NTR25J-E68E0
A53R710	315-0911-00			RES,FXD,FILM:910 OHM,5%,0.25M	57668	NTR25J-E910E
A53R711	315-0911-00			RES,FXD,FILM:910 OHM,5%,0.25M	57668	NTR25J-E910E
A53R712	315-0361-00			RES,FXD,FILM:360 OHM,5%,0.25M	19701	5043CX360R0J
A53R713	315-0241-00			RES,FXD,FILM:240 OHM,5%,0.25M	19701	5043CX240R0J
A53R735	315-0150-00			RES,FXD,FILM:15 OHM,5%,0.25M	19701	5043CX15R00J
A53R740	315-0100-00			RES,FXD,FILM:10 OHM,5%,0.25M	19701	5043CX10RR00J
A53TP649	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A53U225	156-1667-00			MICROCKT,DGTL:SCREENED	04713	MC10H164LD
A53U228	156-2142-00			MICROCKT,DGTL:ECL,4-BIT COUNTER	04713	MC10H016(P OR L)
A53U230	156-0642-00			MICROCKT,DGTL:ECL,BI-QUINARY CNTR	04713	MC10138L
A53U235	156-0910-02			MICROCKT,DGTL:DUAL DECADE COUNTER,SCRN	01295	SN74LS390N3
A53U238	156-1682-00			MICROCKT,DGTL:DUAL 4-5 INPUT OR/NOR GATE	04713	MC10H109LD
A53U245	156-0651-02			MICROCKT,DGTL:8-BIT PRL-OUT SER SHF RGTR	01295	SN74LS164NP3
A53U325	156-1733-00			MICROCKT,DGTL:QUAD OR/NOR GATE,SCREENED	04713	MC10H101PD
A53U328	156-2142-00			MICROCKT,DGTL:ECL,4-BIT COUNTER	04713	MC10H016(P OR L)
A53U330	156-0994-02			MICROCKT,DGTL:8 INPUT DATA SEL/MUX,SCRN	01295	SN74LS151NP3
A53U335	156-0910-02			MICROCKT,DGTL:DUAL DECADE COUNTER,SCRN	01295	SN74LS390N3
A53U345	156-0479-02			MICROCKT,DGTL:QUAD 2-INP OR GATE,SCRN	01295	SN74LS32NP3
A53U348	156-0481-02			MICROCKT,DGTL:TRIPLE 3-INP & GATE,SCRN	01295	SN74LS11NP3
A53U405	156-1111-02			MICROCKT,DGTL:OCT BUS XCVRS W/3 ST OUT	01295	SN74LS245N3
A53U408	156-1708-00			MICROCKT,DGTL:TTL,OCTAL D FF W/CLEAR	01295	SN74273NP3
A53U415	156-1327-00			MICROCKT,DGTL:CMOS,3 STATE OCTAL D FF,SCRN	27014	MM74C374NA+
A53U418	156-0469-02			MICROCKT,DGTL:3/8 LINE DCDR,SCRN	01295	SN74LS138NP3

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A53U428	156-0495-00			MICROCKT,LINEAR:OPNL AMPL	01295	LM324N
A53U430	156-0112-02			MICROCKT,DGTL:QUAD 2-INP NAND GATE,SCRN	18324	N7426(NB OR FB)
A53U435	156-0646-02			MICROCKT,DGTL:4-BIT BINARY CNTR,SCRN	04713	SN74LS93NDS
A53U438	156-1172-01			MICROCKT,DGTL:DUAL 4 BIT BIN CNTR,SCRN	01295	SN74LS393NP3
A53U440	156-0956-04			MICROCKT,DGTL:OCTAL BFR W/3 STATE OUT	18324	N74LS244NB OR FB
A53U445	156-0956-04			MICROCKT,DGTL:OCTAL BFR W/3 STATE OUT	18324	N74LS244NB OR FB
A53U448	156-0956-04			MICROCKT,DGTL:OCTAL BFR W/3 STATE OUT	18324	N74LS244NB OR FB
A53U450	160-3609-00			MICROCKT,DGTL:16138 X 8 EPROM,PRGM	80009	160-3609-00
A53U458	160-3610-00			MICROCKT,DGTL:16138 X 8 EPROM,PRGM	80009	160-3610-00
A53U460	160-3611-00			MICROCKT,DGTL:16138 X 8 EPROM,PRGM	80009	160-3611-00
A53U468	156-0391-02			MICROCKT,DGTL:HEX LATCH W/CLEAR,SCRN	01295	SN74LS174NP3
A53U470	156-0469-02			MICROCKT,DGTL:3/8 LINE DCDR,SCRN	01295	SN74LS138NP3
A53U475	156-0469-02			MICROCKT,DGTL:3/8 LINE DCDR,SCRN	01295	SN74LS138NP3
A53U528	156-1639-00			MICROCKT,DGTL:ECL,DUAL D MA-SLAVE FF	04713	MC10H131(P OR L)
A53U530	156-1639-00			MICROCKT,DGTL:ECL,DUAL D MA-SLAVE FF	04713	MC10H131(P OR L)
A53U535	156-1889-00			MICROCKT,DGTL:MECL,UNIVERSAL HEXADECIMAL	04713	MC10H136 LD/PD
A53U538	156-0411-02			MICROCKT,LINEAR:QUAD COMPARATOR,SCREENED	04713	LM339JDS
A53U548	156-0385-02			MICROCKT,DGTL:HEX INVERTER,SCRN	07263	74LS04PCQR
A53U568	156-0536-02			MICROCKT,DGTL:TTL,PRESETTABLE BIN CNTR/LCH	01295	SN74177NP3
A53U570	156-0536-02			MICROCKT,DGTL:TTL,PRESETTABLE BIN CNTR/LCH	01295	SN74177NP3
A53U575	156-0469-02			MICROCKT,DGTL:3/8 LINE DCDR,SCRN	01295	SN74LS138NP3
A53U605	156-0914-02			MICROCKT,DGTL:OCT ST BFR W/3 STATE OUT,SCRN	01295	SN74LS240NP3
A53U608	156-1753-01			MICROCKT,DGTL:OCTAL BUFFER & LINE DRIVER	01295	74ALS240-1 N3/J4
A53U618	156-1642-00			MICROCKT,DGTL:ECL,TPL 2-3-2 INP OR/NOR GATE	04713	MC10H105(L OR P)
A53U620	156-0384-02			MICROCKT,DGTL:QUAD 2-INP NAND GATE,SCRN	07263	74LS03PCQR
A53U625	156-1667-00			MICROCKT,DGTL:SCREENED	04713	MC10H164LD
A53U630	156-1674-00			MICROCKT,DGTL:SCREENED	04713	MC10H104LD
A53U638	156-1708-00			MICROCKT,DGTL:TTL,OCTAL D FF W/CLEAR	01295	SN74273NP3
A53U640	156-0956-04			MICROCKT,DGTL:OCTAL BFR W/3 STATE OUT	18324	N74LS244NB OR FB
A53U645	156-0479-02			MICROCKT,DGTL:QUAD 2-INP OR GATE,SCRN	01295	SN74LS32NP3
A53U648	156-0469-02			MICROCKT,DGTL:3/8 LINE DCDR,SCRN	01295	SN74LS138NP3
A53U650	156-1111-02			MICROCKT,DGTL:OCT BUS XCVRS W/3 ST OUT	01295	SN74LS245N3
A53U655	156-0956-04			MICROCKT,DGTL:OCTAL BFR W/3 STATE OUT	18324	N74LS244NB OR FB
A53U658	156-0956-04			MICROCKT,DGTL:OCTAL BFR W/3 STATE OUT	18324	N74LS244NB OR FB
A53U660	156-1842-00			MICROCKT,DGTL:CMOS,8192 X 8 SRAM	62786	HM6264P-15
A53U668	156-0536-02			MICROCKT,DGTL:TTL,PRESETTABLE BIN CNTR/LCH	01295	SN74177NP3
A53U670	156-0536-02			MICROCKT,DGTL:TTL,PRESETTABLE BIN CNTR/LCH	01295	SN74177NP3
A53U675	156-0480-02			MICROCKT,DGTL:QUAD 2-INP & GATE,SCRN,	01295	SN74LS08NP3
A53U700	156-1642-00			MICROCKT,DGTL:ECL,TPL 2-3-2 INP OR/NOR GATE	04713	MC10H105(L OR P)
A53U705	156-1640-00			MICROCKT,DGTL:ECL,TPL LINE RCVR	04713	MC10H116(L OR P)
A53VR706	152-0667-00			SEMICOND DVC,DI:ZEN,SI,3.0 V # 2% AT 2MA	04713	SZG30025RL
A54	670-9059-00			CIRCUIT BD ASSY:CALIBRATOR	80009	670-9059-00
A54C200	283-0421-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	MD015C104MAA
A54C300	290-0748-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	54473	ECE-B1EV100S
A54CR290	152-0242-00			SEMICOND DVC,DI:SIG,SI,225V,0.2A,DO-7	07263	FDH5004
A54DS200	150-1139-00			LT EMITTING DIO:GREEN	71744	T134CM054154200
A54J200	131-0608-00			TERMINAL,PIN:0.365 L X 0.025 BRZ GLD PL (QUANTITY OF 3)	22526	48283-036
A54J250	131-0608-00			TERMINAL,PIN:0.365 L X 0.025 BRZ GLD PL (QUANTITY OF 16)	22526	48283-036
A54K290	148-0102-00			RELAY,REED:2 FORM A,200MA,100VDC,COIL	15636	RA 30212941
A54R150	315-0181-00			RES,FXD,FILM:180 OHM,5%,0.25M	57668	NTR25J-E180E
A54R200	315-0391-00			RES,FXD,FILM:390 OHM,5%,0.25M	57668	NTR25J-E390E
A54U100	156-0302-02			MICROCKT,DGTL:DUAL 2-INP NAND DRVR,SCRN	01295	SN75452PP3
A54U130	156-1745-00			MICROCKT,DGTL:ASTTL,OCTAL BUFFER/LINE DRIVE	18324	74F241 NB OR FB
A54Y200	119-1972-00			OSCILLATOR,RF:50.065MHZ,CLOCK	91637	X0438 50.065M
A55	670-9070-00			CIRCUIT BD ASSY:PWR SPLY	80009	670-9070-00
A55C101	285-1302-00			CAP,FXD,PLASTIC:0.22UF,20%,250V	80009	285-1302-00
A55C121	290-1015-00			CAP,FXD,ELCTLT:1000UF,+100-10%%,200V	00853	DCM102M200AA2PC

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A55C122	283-0178-00			CAP,FXD,CER DI:0.1UF,+80-20%,100V	05397	C330C104Z1U1CA
A55C131	290-1015-00			CAP,FXD,ELCTLT:1000UF,+100-10%%,200V	00853	DCM102M200AA2PC
A55C161	290-0901-00			CAP,FXD,ELCTLT:800UF,+50-10%,50V	56289	674D807H050JJ5A
A55C165	290-0804-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	55680	ULA1E100TEA
A55C171	290-0800-00			CAP,FXD,ELCTLT:250UF,+100-10%,20V	56289	672D257H020DM5C
A55C172	290-0932-00			CAP,FXD,ELCTLT:390UF,+100-10%,15VDC	56289	672D676
A55C173	290-0845-00			CAP,FXD,ELCTLT:330UF,+50-10%,25V	54473	ECE-A25V330L
A55C181	290-0944-00			CAP,FXD,ELCTLT:220UF,+50-10%,10V	55680	ULB1A221TPAANA
A55C187	290-0804-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	55680	ULA1E100TEA
A55C188	290-0804-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	55680	ULA1E100TEA
A55C189	290-0804-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	55680	ULA1E100TEA
A55C210	285-1302-00			CAP,FXD,PLASTIC:0.22UF,20%,250V	80009	285-1302-00
A55C211	285-1196-00			CAP,FXD,PPR DI:0.01UF,20%,250V	TK0515	PME 265 MB 510
A55C212	285-1196-00			CAP,FXD,PPR DI:0.01UF,20%,250V	TK0515	PME 265 MB 510
A55C274	283-0204-00			CAP,FXD,CER DI:0.01UF,20%,50V	04222	SR155E103MAA
A55C276	283-0203-00			CAP,FXD,CER DI:0.47UF,20%,50V	04222	SR305C474MAA
A55C278	290-0804-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	55680	ULA1E100TEA
A55C279	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A55C281	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A55C282	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A55C284	290-0804-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	55680	ULA1E100TEA
A55C285	290-0804-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	55680	ULA1E100TEA
A55C321	285-1203-00			CAP,FXD,PLASTIC:4UF,10%,200V	14752	C2551
A55C322	285-1203-00			CAP,FXD,PLASTIC:4UF,10%,200V	14752	C2551
A55C325	283-0696-00			CAP,FXD,MICA DI:2300PF,1%,500V	00853	D195F232F0
A55C341	281-0812-00			CAP,FXD,CER DI:1000PF,10%,100V	04222	MA101C102KAA
A55C361	290-0844-00			CAP,FXD,ELCTLT:100UF,+75-10%,35V	54473	ECE-A35V100L
A55C362	283-0198-00			CAP,FXD,CER DI:0.22UF,20%,50V	05397	C330C224M5U1CA
A55C364	281-0865-00			CAP,FXD,CER DI:1000PF,5%,100V	04222	MA101A102JAA
A55C371	283-0178-00			CAP,FXD,CER DI:0.1UF,+80-20%,100V	05397	C330C104Z1U1CA
A55C372	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A55C378	281-0865-00			CAP,FXD,CER DI:1000PF,5%,100V	04222	MA101A102JAA
A55C379	290-0891-00			CAP,FXD,ELCTLT:1UF,+75 -10%,50V	55680	ULA1H010TEA
A55C383	283-0198-00			CAP,FXD,CER DI:0.22UF,20%,50V	05397	C330C224M5U1CA
A55C384	290-0804-00			CAP,FXD,ELCTLT:10UF,+50-10%,25V	55680	ULA1E100TEA
A55C386	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A55C387	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A55C408	285-1302-00			CAP,FXD,PLASTIC:0.22UF,20%,250V	80009	285-1302-00
A55C410	285-1302-00			CAP,FXD,PLASTIC:0.22UF,20%,250V	80009	285-1302-00
A55C411	290-0944-00			CAP,FXD,ELCTLT:220UF,+50-10%,10V	55680	ULB1A221TPAANA
A55C427	290-0944-00			CAP,FXD,ELCTLT:220UF,+50-10%,10V	55680	ULB1A221TPAANA
A55C445	281-0812-00			CAP,FXD,CER DI:1000PF,10%,100V	04222	MA101C102KAA
A55C451	290-0818-01			CAP,FXD,ELCTLT:390UF,+100-10%,40V	00853	301AER391U040B3
A55C460	290-0877-00			CAP,FXD,ELCTLT:1200UF,+100-10%,6.3V	56289	672D371
A55C465	290-0950-00			CAP,FXD,ELCTLT:100UF,+50-10%,50V	55680	ULB1H101TJAANA
A55C472	290-0844-00			CAP,FXD,ELCTLT:100UF,+75-10%,35V	54473	ECE-A35V100L
A55C487	290-0944-00			CAP,FXD,ELCTLT:220UF,+50-10%,10V	55680	ULB1A221TPAANA
A55CR151	152-0333-00			SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35	07263	FDH-6012
A55CR152	152-0333-00			SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35	07263	FDH-6012
A55CR153	152-0333-00			SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35	07263	FDH-6012
A55CR154	152-0333-00			SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35	07263	FDH-6012
A55CR211	152-0750-00			SEMICOND DVC,DI:RECT BRDG,600V,3A,FAST RCVY	05828	RKBPC606-12
A55CR251	152-0398-00			SEMICOND DVC,DI:RECT,SI,200V,1A	04713	SR3609RL
A55CR252	152-0398-00			SEMICOND DVC,DI:RECT,SI,200V,1A	04713	SR3609RL
A55CR253	152-0655-00			SEMICOND DVC,DI:RECT,SI,100V,3A,A249	03508	A115AX39
A55CR254	152-0655-00			SEMICOND DVC,DI:RECT,SI,100V,3A,A249	03508	A115AX39
A55CR255	152-0398-00			SEMICOND DVC,DI:RECT,SI,200V,1A	04713	SR3609RL
A55CR262	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A55CR266	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A55CR267	152-0141-02			SEMICOND DVC,DI:SM,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A55CR271	152-0141-02			SEMICOND DVC,DI:SM,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A55CR276	152-0141-02			SEMICOND DVC,DI:SM,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A55CR281	152-0141-02			SEMICOND DVC,DI:SM,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A55CR282	152-0141-02			SEMICOND DVC,DI:SM,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A55CR285	152-0333-00			SEMICOND DVC,DI:SM,SI,55V,200MA,DO-35	07263	FDH-6012
A55CR341	152-0398-00			SEMICOND DVC,DI:RECT,SI,200V,1A	04713	SR3609RL
A55CR342	152-0398-00			SEMICOND DVC,DI:RECT,SI,200V,1A	04713	SR3609RL
A55CR372	152-0141-02			SEMICOND DVC,DI:SM,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A55CR381	152-0141-02			SEMICOND DVC,DI:SM,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A55CR382	152-0141-02			SEMICOND DVC,DI:SM,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A55CR411	152-0066-00			SEMICOND DVC,DI:RECT,SI,400V,1A,DO-41	05828	GP10G-020
A55CR412	152-0400-00			SEMICOND DVC,DI:RECT,SI,400V,1A	04713	SR1977K
A55CR421	152-0655-00			SEMICOND DVC,DI:RECT,SI,100V,3A,A249	03508	A115AX39
A55CR423	152-0400-00			SEMICOND DVC,DI:RECT,SI,400V,1A	04713	SR1977K
A55CR424	152-0655-00			SEMICOND DVC,DI:RECT,SI,100V,3A,A249	03508	A115AX39
A55CR431	152-0066-00			SEMICOND DVC,DI:RECT,SI,400V,1A,DO-41	05828	GP10G-020
A55CR445	152-0793-00			SEMICOND DVC,DI:DUAL RECT,SI,40V,25A	81483	28CPQ040
A55CR451	152-0793-00			SEMICOND DVC,DI:DUAL RECT,SI,40V,25A	81483	28CPQ040
A55CR461	152-0794-00			SEMICOND DVC,DI:RECT,SI,DUAL SCHOTTKY,10A, 30V,TO-220	81483	95-4269
A55CR471	152-0141-02			SEMICOND DVC,DI:SM,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A55CR472	152-0141-02			SEMICOND DVC,DI:SM,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A55CR481	152-0141-02			SEMICOND DVC,DI:SM,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A55DS121	150-0035-00			LAMP,GLOW:90V MAX,0.3MA,AID-T,WIRE LD	TK0213	JH005/3011JA
A55J181	131-0589-00			TERMINAL,PIN:0.46L X 0.025 SQ PH BRZ GLD	22526	48283-029
A55J301	131-2663-00			CONN,RCPT,ELEC:PWR,3 MALE,250VAC,6A	TK1031	NC187
A55L115	108-0708-00			COIL,RF:FIXED,75NH	80009	108-0708-00
A55L151	108-0911-00			COIL,RF:FIXED,65UH	80009	108-0911-00
A55L171	108-1146-00			COIL,RF:FXD,18UH	80009	108-1146-00
A55L232	108-0808-00			COIL,RF:FIXED,500UH	80009	108-0808-00
A55L351	108-0911-00			COIL,RF:FIXED,65UH	80009	108-0911-00
A55L362	108-0585-00			COIL,RF:FIXED,116UH	80009	108-0585-00
A55L363	108-0317-00			COIL,RF:FIXED,15 UH	32159	71501W+10PERCENT
A55L445	108-1147-00			COIL,RF:FXD,122UH	80009	108-1147-00
A55L451	108-0909-00			COIL,RF:FIXED,1.6MH	80009	108-0909-00
A55L461	108-1137-00			COIL,RF:FIXED,3.2MH	80009	108-1137-00
A55P181	131-0993-00			BUS,CONDUCTOR:SHUNT ASSEMBLY,BLACK	22526	65474-005
A55Q273	151-0192-00			TRANSISTOR:SELECTED	04713	SPS8801
A55Q283	151-0453-00			TRANSISTOR:PNP,SI,TO-92	27014	ORDER BY DESCR
A55Q284	151-0432-00			TRANSISTOR:NPN,SI,TO-106	04713	SPS8512
A55Q341	151-0710-00			TRANSISTOR:NPN,SI,TO-92 PLUS	04713	MPSM01A
A55Q371	151-0503-00			SCR:SI,TO-92	04713	SCR5138
A55Q387	151-0622-00			TRANSISTOR:PNP,SI,TO-92	04713	SPS8956(MPSM51A)
A55Q421	151-0679-00			TRANSISTOR:NPN,SI,TO-220	04713	MJE13009
A55Q422	151-0679-00			TRANSISTOR:NPN,SI,TO-220	04713	MJE13009
A55Q441	151-0622-00			TRANSISTOR:PNP,SI,TO-92	04713	SPS8956(MPSM51A)
A55Q445	151-0710-00			TRANSISTOR:NPN,SI,TO-92 PLUS	04713	MPSM01A
A55Q446	151-0622-00			TRANSISTOR:PNP,SI,TO-92	04713	SPS8956(MPSM51A)
A55Q461	151-0621-00			TRANSISTOR:NPN,SI,T-220	03508	X44H382
A55Q471	151-0464-00			TRANSISTOR:NPN,SI,TO-220	04713	SJE412
A55Q472	151-0301-00			TRANSISTOR:PNP,SI,TO-18	04713	ST898
A55Q485	151-0273-00			TRANSISTOR:SELECTED	03508	X16E3616
A55Q487	151-0496-00			TRANSISTOR:NPN,SI	03508	X40KR374
A55R121	315-0106-00			RES,FXD,FILM:10M OHM,5%,0.25M	01121	CB1065
A55R172	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25M	19701	5043CX10K00J
A55R173	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A55R174	315-0223-00			RES,FXD,FILM:22K OHM,5%,0.25M	19701	5043CX22K00J92U
A55R175	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A55R182	315-0100-00			RES,FXD,FILM:10 OHM,5%,0.25M	19701	5043CX10RR00J
A55R184	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25M	19701	5043CX10K00J
A55R186	315-0242-00			RES,FXD,FILM:2.4K OHM,5%,0.25M	57668	NTR25J-E02K4
A55R221	302-0224-00			RES,FXD,CMPSN:220K OHM,10%,0.5M MI	01121	EB 2241
A55R222	302-0224-00			RES,FXD,CMPSN:220K OHM,10%,0.5M MI	01121	EB 2241
A55R234	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25M	19701	5043CX10K00J
A55R261	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A55R263	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A55R264	321-0193-00			RES,FXD,FILM:1K OHM,1%,0.125M,TC=T0	19701	5033ED1K00F
A55R265	321-0193-00			RES,FXD,FILM:1K OHM,1%,0.125M,TC=T0	19701	5033ED1K00F
A55R271	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A55R273	315-0562-00			RES,FXD,FILM:5.6K OHM,5%,0.25M	57668	NTR25J-E05K6
A55R274	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25M	19701	5043CX10K00J
A55R275	315-0562-00			RES,FXD,FILM:5.6K OHM,5%,0.25M	57668	NTR25J-E05K6
A55R276	321-0342-00			RES,FXD,FILM:35.7K OHM,1%,0.125M,TC=T0	07716	CEA035701F
A55R277	315-0203-00			RES,FXD,FILM:20K OHM,5%,0.25M	57668	NTR25J-E 20K
A55R280	321-0481-00			RES,FXD,FILM:1M OHM,1%,0.125M,TC=T0	19701	5043ED1M000F
A55R282	315-0105-00			RES,FXD,FILM:1M OHM,5%,0.25M	19701	5043CX1M000J
A55R284	321-0392-00			RES,FXD,FILM:118K OHM,1%,0.125M,TC=T0	07716	CEA011802F
A55R285	315-0224-00			RES,FXD,FILM:220K OHM,5%,0.25M	57668	NTR25J-E220K
A55R286	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25M	57668	NTR25J-E100K
A55R287	321-0238-00			RES,FXD,FILM:2.94K OHM,1%,0.125M,TC=T0	07716	CEA029400F
A55R288	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25M	57668	NTR25J-E470E
A55R289	321-0222-00			RES,FXD,FILM:2.00K OHM,1%,0.125M,TC=T0	19701	5033ED2K00F
A55R290	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25M	57668	NTR25J-E470E
A55R291	315-0334-00			RES,FXD,FILM:330K OHM,5%,0.25M	57668	NTR25J-E 330K
A55R301	308-0237-00			RES,FXD,MM:8.2K OHM,5%,5M	00213	1550S-8200-5
A55R311	308-0336-00			RES,FXD,MM:7K OHM,5%,5M	05347	CS6-7001J
A55R321	315-0152-00			RES,FXD,FILM:1.5K OHM,5%,0.25M	57668	NTR25J-E01K5
A55R331	308-0079-00			RES,FXD,MM:117 OHM,5%,5M	00213	1500S-117-5
A55R365	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25M	57668	NTR25J-E75E0
A55R368	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A55R369	321-0222-00			RES,FXD,FILM:2.00K OHM,1%,0.125M,TC=T0	19701	5033ED2K00F
A55R370	321-0222-00			RES,FXD,FILM:2.00K OHM,1%,0.125M,TC=T0	19701	5033ED2K00F
A55R372	321-0661-00			RES,FXD,FILM:600 OHM,1%,0.125M,TC=T0	19701	5033RD600R0F
A55R373	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25M	57668	NTR25J-E 100E
A55R374	301-0751-00			RES,FXD,FILM:750 OHM,5%,0.5M	19701	5053CX750R0J
A55R375	321-0344-00			RES,FXD,FILM:37.4K OHM,1%,0.125M,TC=T0	19701	5033ED 37K40F
A55R376	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A55R377	315-0751-00			RES,FXD,FILM:750 OHM,5%,0.25M	57668	NTR25J-E750E
A55R381	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25M	57668	NTR25J-E100K
A55R383	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A55R385	321-0443-00			RES,FXD,FILM:402K OHM,1%,0.125M,TC=T0	19701	5043ED402K0F
A55R386	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25M	57668	NTR25J-E04K7
A55R387	321-0134-00			RES,FXD,FILM:243 OHM,1%,0.125M,TC=T0	19701	5043ED243R0F
A55R388	315-0241-00			RES,FXD,FILM:240 OHM,5%,0.25M	19701	5043CX240R0J
A55R389	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A55R390	307-0051-00			RES,FXD,CMPSN:2.7 OHM,5%,0.5M	01121	EB2705
A55R440	321-0001-00			RES,FXD,FILM:10 OHM,1%,0.125M,TC=T0	19701	5043ED10R00F
A55R461	308-0757-00			RES,FXD,MM:0.025 OHM,3%,5M	14193	SA50-R025H
A55R462	308-0710-00			RES,FXD,MM:0.27 OHM,10%,1M	75042	BM-20-R2700J
A55R471	307-0056-00			RES,FXD,CMPSN:4.3 OHM,5%,0.5M	01121	EB4305
A55R472	303-0242-00			RES,FXD,CMPSN:2.4K OHM,5%,1M	01121	GB2425
A55R473	321-0473-00			RES,FXD,FILM:825K OHM,1%,0.125M,TC=T0	07716	CEA082502F
A55R474	315-0474-00			RES,FXD,FILM:470K OHM,5%,0.25M	19701	5043CX470K0J92U
A55R481	321-0469-04			RES,FXD,FILM:750K OHM,.1%,.125M,TC=T2	19701	5033RC750K0B
A55R483	315-0122-00			RES,FXD,FILM:1.2K OHM,5%,0.25M	57668	NTR25J-E01K2
A55R484	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25M	57668	NTR25JE01K0
A55R487	315-0152-00			RES,FXD,FILM:1.5K OHM,5%,0.25M	57668	NTR25J-E01K5

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A55R488	315-0241-00			RES,FXD,FILM:240 OHM,5%,0.25W	19701	5043CX240R0J
A55RT311	307-0350-00			RES,THERMAL:7.5 OHM,10%,3.9%/DEG C	80009	307-0350-00
A55RV221	307-0663-00			RES,V SENSITIVE:330 V,0.25 W	03508	V250LA4
A55RV224	307-0415-00			RES,V SENSITIVE:DISC	03508	V130LA10A
A55RV401	307-0415-00			RES,V SENSITIVE:DISC	03508	V130LA10A
A55S100	260-2116-01			SWITCH,SLIDE:DPDT,10A,125VAC,POWER	22753	SE1022SDCEPBLORA
A55S401	260-2116-00			SWITCH,SLIDE:DPDT,10A,125VAC,LINE SEL	22753	SE1022SCCEPRHKRA
A55T111	120-1507-00			TRANSFORMER,RF:TOROID	80009	120-1507-00
A55T141	120-1354-00			XFMR,PWR,STPDN:TRIGGER,LF	80009	120-1354-00
A55T211	120-1460-00			TRANSFORMER,RF:COMMON MODE	80009	120-1460-00
A55T241	120-1624-00			XFMR,PWR,STPDN:CONVERTER HIGH FREQUENCY	80009	120-1624-00
A55T261	120-1266-00			TRANSFORMER,RF:TOROID	80009	120-1266-00
A55T431	120-1415-00			TRANSFORMER,RF:HF DRIVER,CONVERTER	80009	120-1415-00
A55T432	120-0747-00			XFMR,TOROID:	80009	120-0747-00
A55TP161	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A55TP162	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A55TP171	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A55TP172	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A55TP173	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A55TP181	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A55TP182	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A55TP183	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A55TP184	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A55TP185	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A55TP411	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A55TP421	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A55TP422	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A55U181	156-0527-00			MICROCKT,LINEAR:VOLTAGE REGULATOR	01295	MICROA7915CKC
A55U275	156-0495-00			MICROCKT,LINEAR:OPNL AMPL	01295	LM324N
A55U371	156-1261-00			MICROCKT,LINEAR:VOLTAGE REGULATOR	04713	MC78L15ACP
A55U375	156-1585-02			MICROCKT,DGTL:SWITCHING REGULATOR,1% VREF	12969	UC3526N
A55U385	156-1225-01			MICROCKT,LINEAR:DUAL COMPARATOR,SCREENED	01295	LM393P3
A55U471	156-0846-00			MICROCKT,LINEAR:VOLTAGE RGTR	01295	UA7905CKC
A55U472	156-1967-00			MICROCKT,LINEAR:3 AMP ADJUSTABLE POWER REG	27014	LM350T
A55U481	156-0312-00			MICROCKT,LINEAR:VOLTAGE REGULATOR	04713	MC7815CT
A55VR271	152-0175-00			SEMICOND DVC,DI:ZEN,SI,5.6V,5%,0.4W,DO-7	14552	TD3810976
A55VR481	153-0058-00			SEMICOND DVC,DI:SELECTED	04713	SZG231-1
A55VR489	152-0611-00			SEMICOND DVC,DI:ZEN,SI,9V,2%,0.4W,DO-7	04713	SZ14347
A55W100	175-9688-00			CA ASSY,SP,ELEC:10,22 AWG,22.0 L,RIBBON	TK1549	ORDER BY DESCR
A55W110	175-9687-00			CA ASSY,SP,ELEC:3,22 AWG,19.0 L,RIBBON	TK1549	ORDER BY DESCR
A55W120	175-9793-00			CA ASSY,SP,ELEC:10,22 AWG,24.0 L,RIBBON	TK1549	175-9793-00
A55W130	175-9795-00			CA ASSY,SP,ELEC:9,22 AWG,17.0 L,RIBBON	TK1549	175-9795-00
A55W301	196-1157-01			LEAD,ELECTRICAL:18 AWG,5.5 L,5-4	80009	196-1157-01
A55W432	175-3114-00			WIRE,ELECTRICAL:STRD,18 AWG,GRAY,PVC DBL	80009	175-3114-00
				CHASSIS PARTS		
B134	119-1790-00			FAN,TUBEAXIAL:12VDC,3W,3450 RPM,36 CFM	23936	8112G
B152	119-1790-00			FAN,TUBEAXIAL:12VDC,3W,3450 RPM,36 CFM	23936	8112G
B160	119-1790-00			FAN,TUBEAXIAL:12VDC,3W,3450 RPM,36 CFM	23936	8112G
F201	159-0014-00			FUSE,CARTRIDGE:3AG,5A,250V,0.8SEC (STANDARD ONLY)	71400	MTH-CM-5
F201	159-0126-00			FUSE,CARTRIDGE:3AG,2.5A,250V,0.65SEC (OPTION A1,A2,A3,A4 & A5 ONLY)	71400	AGC-CM-2 1/2
W150	161-0202-00			CABLE ASSY,PWR,:3 WIRE,18.0 L,RTANG CONN (INTERNAL POWER CORD)	16428	CH78483
W200	175-9791-00			CA ASSY,SP,ELEC:3 CONDUCTOR,RIBBON W/CONN (FROM A50J100 TO A54J200)	TK1148	175-9791-00

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
M300	175-9686-00			CA ASSY,SP,ELEC:26,28,AMG,22.25 L,RIBBON (FROM A50J224 TO A51J280)	TK1148	ASI 61636
M350	175-9794-00			CA ASSY,SP,ELEC:2,33 AMG,10.0 L,RIBBON (FROM A50J772 TO A51J169)	17217	HTN 1167 B
M360	175-9796-00			CA ASSY,SP,ELEC:2,26 AMG,16.0 L,RIBBON (FROM A50J752 TO A51J119)	17217	HTN1167B
M370	175-9796-00			CA ASSY,SP,ELEC:2,26 AMG,16.0 L,RIBBON (FROM A50J368 TO A51J319)	17217	HTN1167B
M380	175-9794-00			CA ASSY,SP,ELEC:2,33 AMG,10.0 L,RIBBON (FROM A50J388 TO A51J369)	17217	HTN 1167 B
M900	175-9792-00			CA ASSY,SP,ELEC:MULTI CONDUCTOR,SHIELDED,RO UND W/CONNECTORS (FROM A52 OR A53J500 TO A50J910)	TK1374	

DIAGRAMS AND CIRCUIT BOARD ILLUSTRATIONS

Symbols

Graphic symbols and class designation letters are based on ANSI Standard Y32.2-1975.

Logic symbology is based on ANSI Y32.14-1973 in terms of positive logic. Logic symbols depict the logic function performed and may differ from the manufacturer's data.

The overline on a signal name indicates that the signal performs its intended function when it is in the low state.

Abbreviations are based on ANSI Y1.1-1972.

Other ANSI standards that are used in the preparation of diagrams by Tektronix, Inc. are:

Y14.15, 1966 Drafting Practices.
Y14.2, 1973 Line Conventions and Lettering.
Y10.5, 1968 Letter Symbols for Quantities Used in Electrical Science and Electrical Engineering.

American National Standard Institute
1430 Broadway
New York, New York 10018

Component Values

Electrical components shown on the diagrams are in the following units unless noted otherwise:

Capacitors = Values one or greater are in picofarads (pF). Values less than one are in microfarads (μF).
Resistors = Ohms (Ω).

The information and special symbols below may appear in this manual.

Assembly Numbers and Grid Coordinates

Each assembly in the instrument is assigned an assembly number (e.g., A20). The assembly number appears on the circuit board outline on the diagram, in the title for the circuit board component location illustration, and in the lookup table for the schematic diagram and corresponding component locator illustration. The Replaceable Electrical Parts list is arranged by assemblies in numerical sequence; the components are listed by component number *(see following illustration for constructing a component number).

The schematic diagram and circuit board component location illustration have grids. A lookup table with the grid coordinates is provided for ease of locating the component. Only the components illustrated on the facing diagram are listed in the lookup table. When more than one schematic diagram is used to illustrate the circuitry on a circuit board, the circuit board illustration may only appear opposite the first diagram on which it was illustrated; the lookup table will list the diagram number of other diagrams that the circuitry of the circuit board appears on.

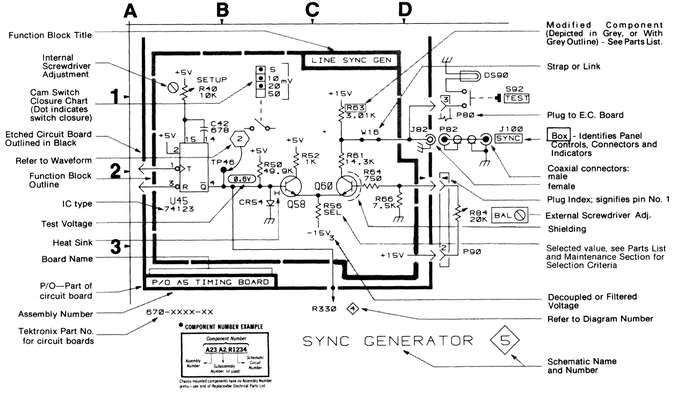


Table 11-1
IC PIN INFORMATION

Device Type	V_{CC} or V_{DD}	GND
10016(H)	1,16	8
10H101	1,16	8
10H102	1,16	8
10H104	1,16	8
10105(H)	1,16	8
10H109	1,16	8
10H116	1,16	8
10H131	1,16	8
10H136	1,16	8
10138	1,16	8
10H164	1,16	8
10188	1,16	8
10422	1,24	12
40374	-	3
4051	16 +5V, 7 -5V	8
4052	16 +5V, 7 -5V	8
6012	20	13
6116	24	12
6264	28	14
74LS00	14	7
74LS02	14	7
74LS03	14	7
74F04(LS)	14	7
74LS08	14	7
74LS10	14	7
74LS11	14	7
7426	14	7
74LS27	14	7
74LS32	14	7
74LS74	14	7
74LS75	5	12
74LS93	5	10
74LS138	16	8
74LS139	16	8
74LS151	16	8
74LS164	14	7
74F074	14	7
74LS174	16	8
74177	14	7
74LS191	16	8
74LS193	16	8
74ALS240-1	20	10
74LS240	20	10
74F241	20	10
74LS244	20	10
74LS245	20	10
74273	20	10
74C374	20	10
74LS390	16	8
74LS393	14	7
75452	8	4
7815	-	2
78L15	-	2
7915	-	1
LF347	4 +5V, or +15V	*11 -5V, or -15V
LF353	8	*4 -15V
LM308AN	7	*4 -5V
LM324	4	11
LM339	3	12
LM393	8	*4 -5V
LM393N	8	4
MC7905	-	1
UG3526N	-	15

*Note: Pin is connected to a reference voltage other than ground.

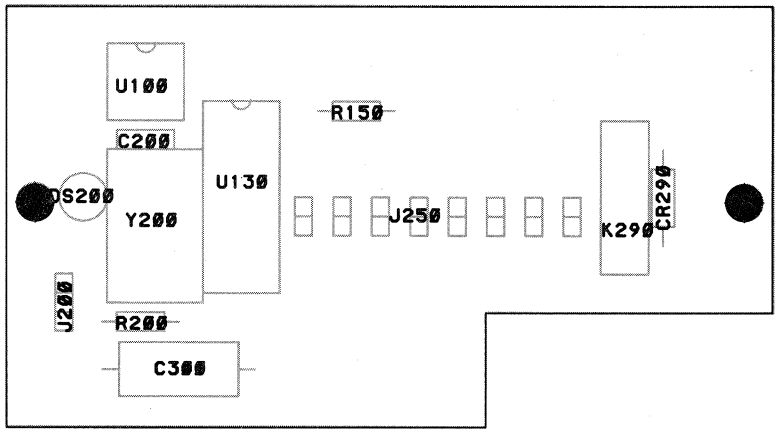
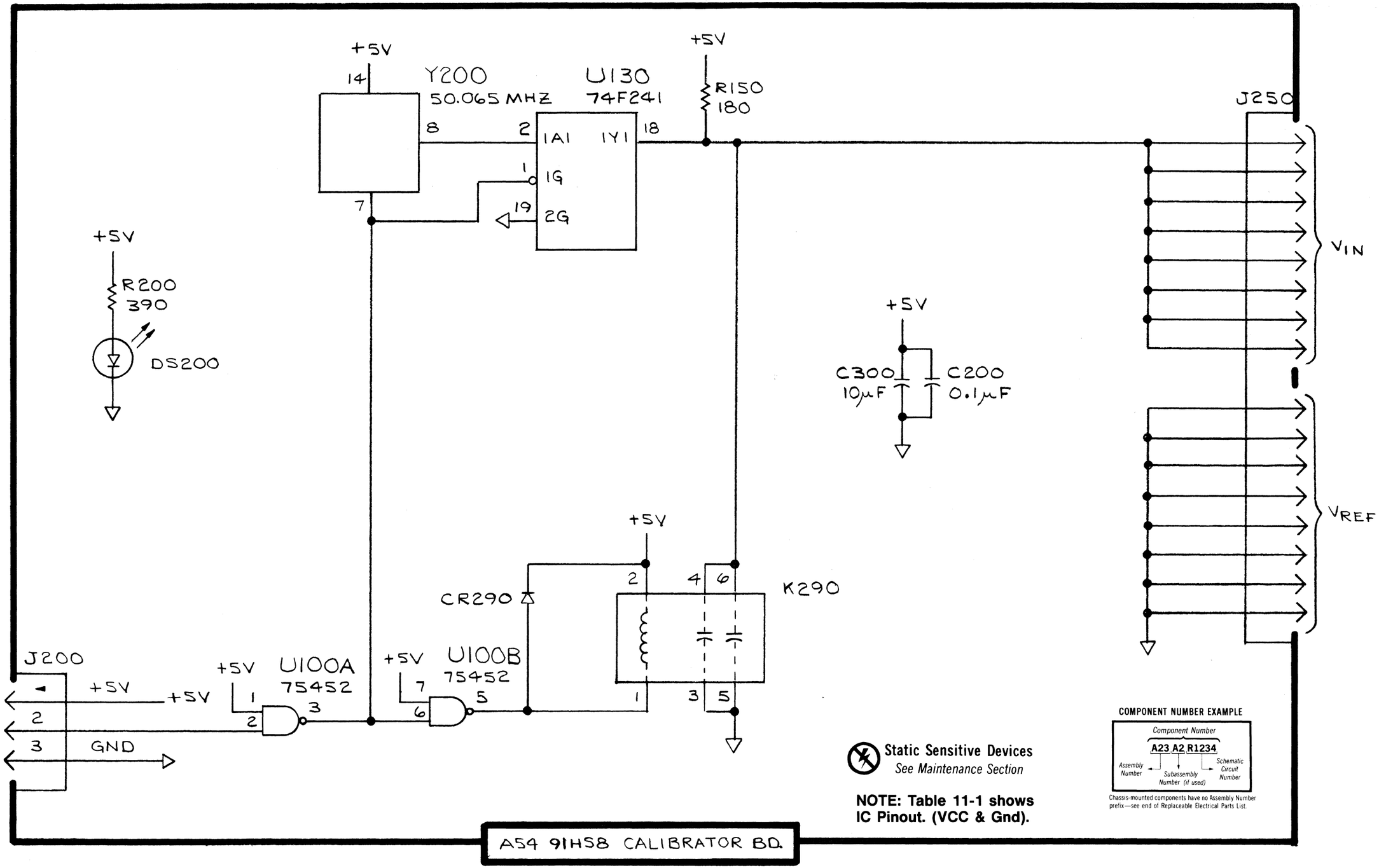


Figure 11-1. A54 Calibrator Board Component Locations



Static Sensitive Devices
See Maintenance Section

NOTE: Table 11-1 shows IC Pinout. (VCC & Gnd).

COMPONENT NUMBER EXAMPLE

Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

A54 91HS8 CALIBRATOR BD.

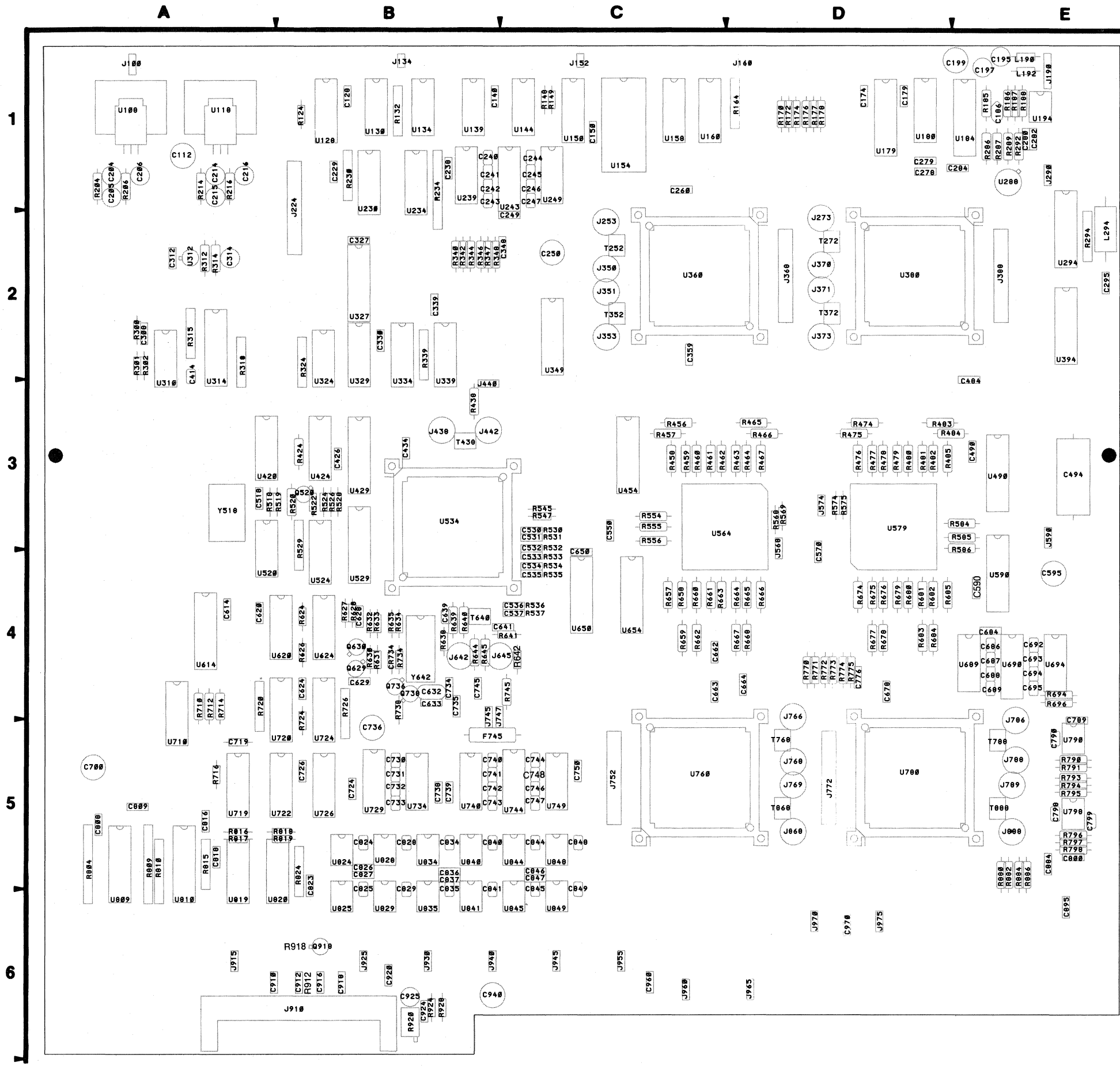


Figure 11-2. A50 Acquisition Board Component Locations

Table 11-2

DAS INTERFACE (111) — 91HS8 ACQUISITION BOARD, ASSEMBLY A50

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C790	A4	E5	R804	A2	A5
C895	A4	E6	R809	B3	A5
C910	A4	A6	R810A	A1	A5
C916	A4	B6	R810B	A1	A5
C918	A5	B6	R810C	A1	A5
J100	F5	A1	R810E	A1	A5
J224	F1	B1	R815A	B1	A5
J910	A1	B6	R815B	B1	A5
R124	D2	B1	R815D	B1	A5
R132C	B1	B1	R815E	B1	A5
R132D	B1	B1	U128	D1	B1
R230D	E2	B1	U130A	C2	B1
R230E	E2	B1	U130B	C1	B1
R234A	D3	B1	U130C	B1	B1
R234B	D3	B1	U130D	B1	B1
R234D	D1	B1	U130E	C1	B1
R234E	D3	B1	U134A	C2	B1
R234F	D3	B1	U139	C2	B1
R234G	D2	B1	U230	D3	B1
R234H	D2	B1	U234	D4	B1
R234I	D2	B1	U294	B4	E2
R294A	B3	E2	U349	E5	C2
R294B	B3	E2	U394	D5	E2
R294C	B3	E2	U650	C5	C4
R294D	B3	E2	U790	B3	E5
R790	A3	E5	U809	B3	A5
R791	A3	E5	U810	B2	A5

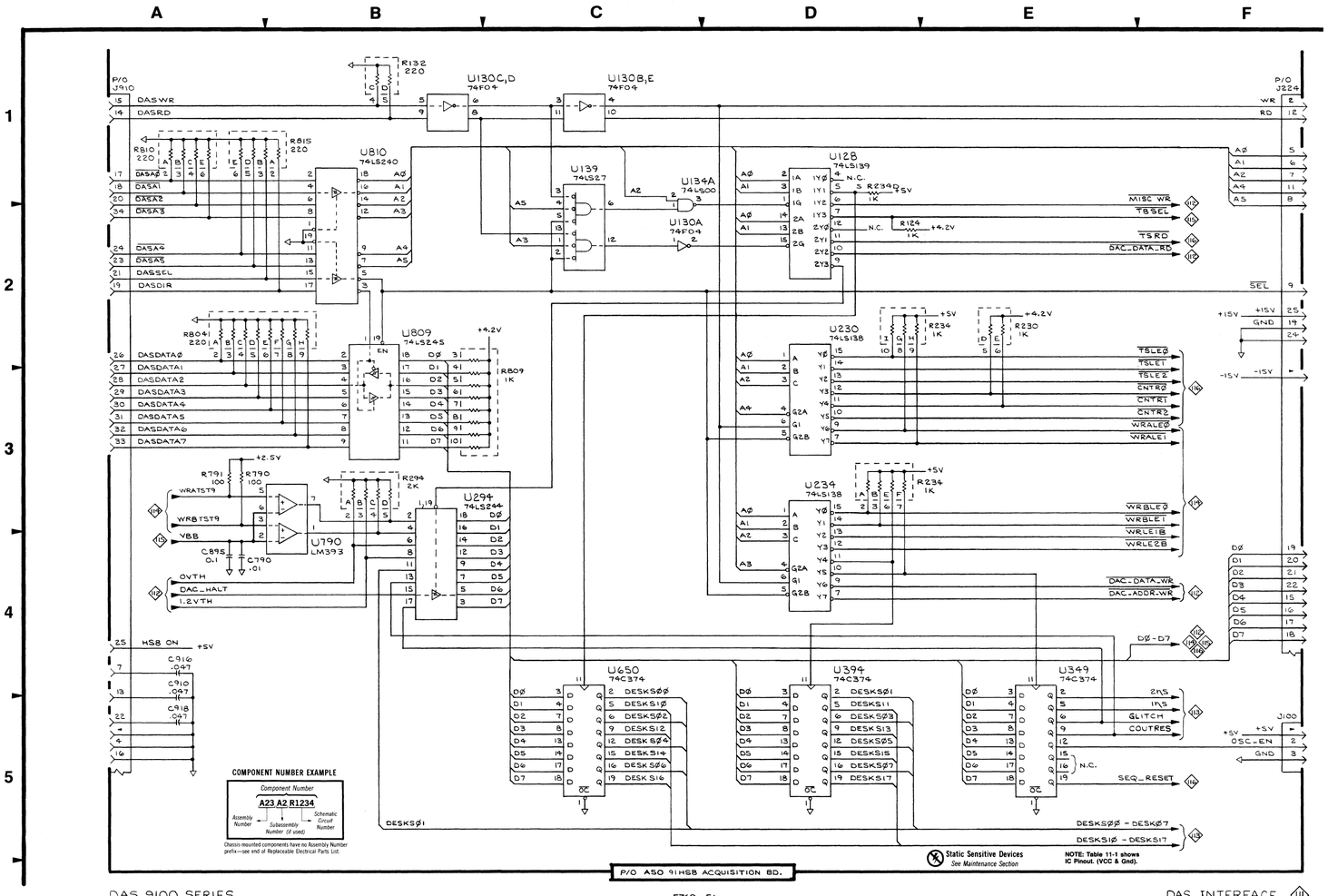
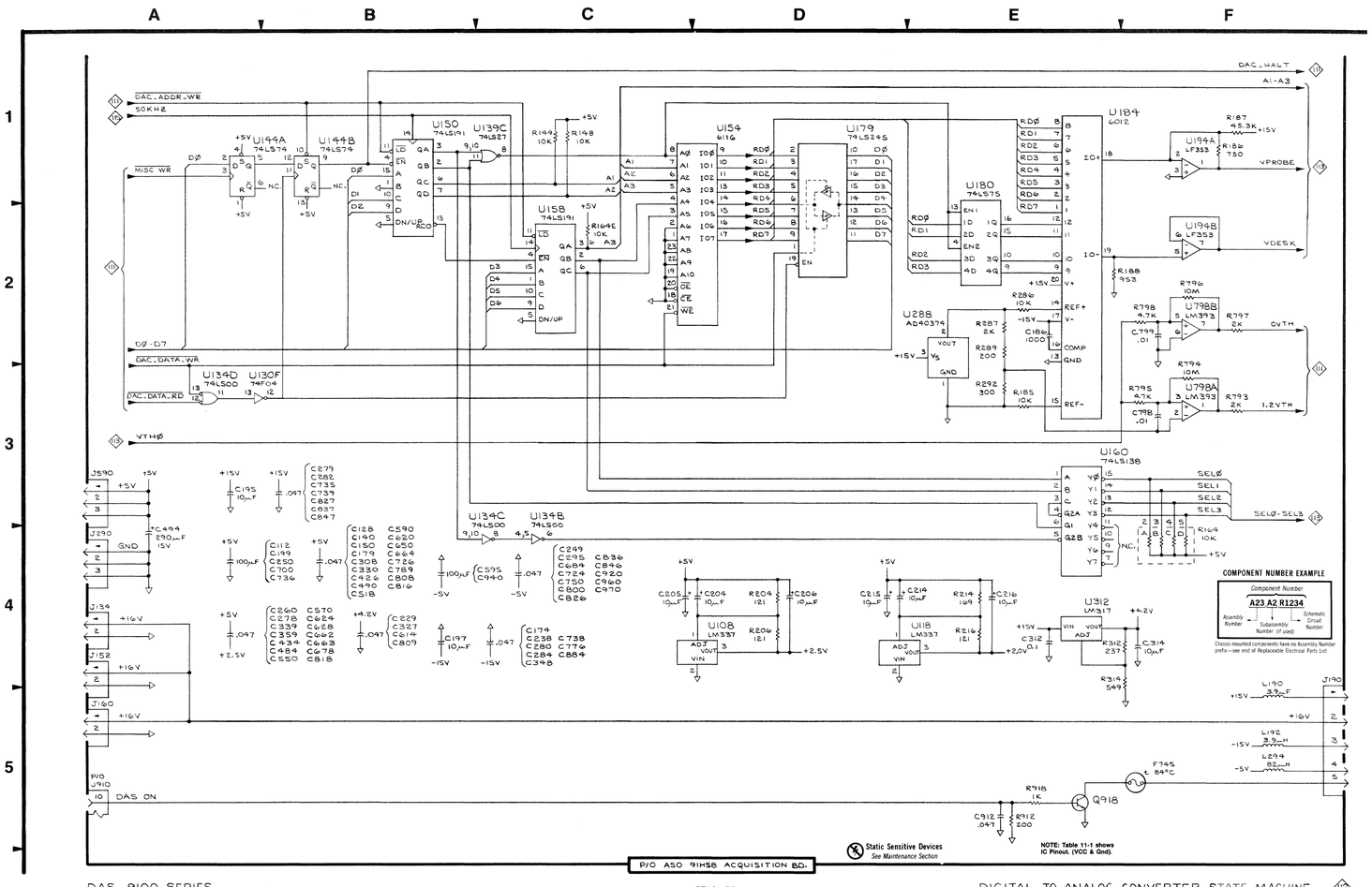


Table 11-3

DIGITAL TO ANALOG CONVERTER STATE MACHINE (112) — 91HS8 ACQ BD., ASSY A50

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C112	B4	A1	C650	B4	C4	R164A	F4	D1
C128	B4	B1	C662	B4	C4	R164B	F4	D1
C140	B4	B1	C663	B4	C4	R164C	F4	D1
C150	B4	C1	C664	B4	D4	R164D	F4	D1
C174	C4	D1	C678	B4	D4	R164E	C2	D1
C179	B4	D1	C684	C4	E4	R185	E3	E1
C186	E2	E1	C700	B4	A5	R186	F1	E1
C195	A3	E1	C724	C4	B5	R187	F1	E1
C197	B4	E1	C726	B4	B5	R188	E2	E1
C199	B4	E1	C735	B3	B4	R204	D4	A1
C204	D4	A1	C736	B4	B5	R206	D4	A1
C205	C4	A1	C738	C4	B5	R214	E4	A1
C206	D4	A1	C739	B3	B5	R216	E4	A1
C214	E4	A1	C750	C4	C5	R286	E2	E1
C215	D4	A1	C776	C4	D4	R287	E2	E1
C216	E4	A1	C789	B4	E4	R289	E2	E1
C229	B4	B1	C798	F3	E5	R292	E3	E1
C238	C4	B1	C799	F2	E5	R312	F4	A2
C249	C4	C2	C800	C4	E5	R314	F4	A2
C250	B4	C2	C808	B4	A5	R793	F3	E5
C260	B4	C1	C809	B4	A5	R794	F3	E5
C278	B4	D1	C816	B4	A5	R795	F3	E5
C279	B3	D1	C818	B4	A5	R796	F2	E5
C280	C4	E1	C826	C4	B5	R797	F2	E5
C282	B3	E1	C827	B3	B5	R798	F2	E5
C284	C4	E1	C836	C4	B5	R912	E5	B6
C295	C4	E2	C837	B3	B5	R918	E5	B6
C308	B4	A2	C846	C4	C5	U108	D4	A1
C312	E4	A2	C847	B3	C5	U118	E4	A1
C314	F4	A2	C884	C4	E5	U130F	A3	B1
C327	B4	B2	C912	E5	B6	U134B	C4	B1
C330	B4	B2	C920	C4	B6	U134C	C4	B1
C339	B4	B2	C940	C4	B6	U134D	A3	B1
C348	C4	C2	C960	C4	C6	U139C	C1	B1
C359	B4	C2	C970	C4	D6	U144A	A1	C1
C426	B4	B3	F745	F5	B5	U144B	B1	C1
C434	B4	B3	J134	A4	B1	U150	B1	C1
C484	B4	E3	J152	A4	C1	U154	D1	C1
C490	B4	E3	J160	A5	D1	U158	C2	C1
C494	A4	E3	J190	F5	E1	U160	E3	C1
C518	B4	A3	J290	A4	E1	U179	D1	D1
C550	B4	C3	J590	A3	E3	U180	E2	D1
C570	B4	D3	J910	A5	B6	U184	E1	E1
C590	B4	E4	L190	F5	E1	U194A	F1	E1
C595	C4	E4	L192	F5	E1	U194B	F2	E1
C614	A4	A4	L294	F5	E2	U288	E2	E1
C620	B4	A4	Q918	E5	B6	U312	E4	A2
C624	B4	B4	R148	C1	C1	U798A	F3	E5
C628	B4	B4	R149	C1	C1	U798B	F2	E5



DAS 9100 SERIES

5769-52

DIGITAL TO ANALOG CONVERTER STATE MACHINE (112)

Table 11-4

SAMPLE AND HOLD ANALOG CONTROLS <113> — 91HS8 ACQ BD., ASSY A50

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C240	B5	B1	R348	C4	B2
C241	B4	B1	R694	C2	E4
C242	B4	B1	R696	C1	E4
C243	B5	B1	R770	C2	D4
C244	B5	C1	R771	C3	D4
C245	B6	C1	R772	C2	D4
C246	B6	C1	R773	C3	D4
C247	B5	C1	R774	C3	D4
C686	B3	E4	R775	C3	D4
C687	B2	E4	R880	C1	E5
C688	B3	E4	R882	C2	E5
C689	B3	E4	R884	C1	E5
C692	B2	E4	R886	C1	E5
C693	B2	E4	U239A	C4	B1
C694	B1	E4	U239B	B5	B1
C695	B2	E4	U239C	C4	B1
C730	E5	B5	U239D	B4	B1
C731	E4	B5	U243	B5	C1
C732	E4	B5	U249A	C5	C1
C733	E5	B5	U249B	B5	C1
C740	E1	B5	U249C	C6	C1
C741	E4	B5	U249D	B6	C1
C742	E2	B5	U360	D4	C2
C743	E3	B5	U380	D5	D2
C744	E3	C5	U689A	C3	E4
C746	E3	C5	U689B	B3	E4
C747	E1	C5	U689C	B2	E4
C748	E2	C5	U689D	C2	E4
C824	F4	B5	U690	B2	E4
C825	F5	B6	U694A	C2	E4
C828	F4	B5	U694B	C1	E4
C829	F5	B6	U694C	B2	E4
C834	F2	B5	U694D	B1	E4
C835	F1	B6	U729	E4	B5
C840	F3	B5	U734A	E5	B5
C841	F4	B6	U734B	E4	B5
C844	F1	C5	U734C	E5	B5
C845	F3	C6	U734D	E4	B5
C848	F2	C5	U740A	E1	B5
C849	F2	C6	U740B	E3	B5
J915	F4	A6	U740C	E2	B5
J925	F4	B6	U740D	E4	B5
J930	F1	B6	U744	E2	C5
J940	F1	B6	U749A	E2	C5
J945	F2	C6	U749B	E1	C5
J955	F2	C6	U749C	E3	C5
J960	F2	C6	U749D	E2	C5
J965	F3	D6	U750	D2	C5
J970	F3	D6	U780	D1	D5
J975	F3	D6	U824	F4	B5
R170	C6	D1	U825	F5	B6
R172	C5	D1	U828	F4	B5
R174	C5	D1	U829	F5	B6
R176	C6	D1	U834	F2	B5
R177	C5	D1	U835	F1	B6
R178	C6	D1	U840	F3	B5
R340	C5	B2	U841	F4	B6
R342	C4	B2	U844	F1	C5
R344	C4	B2	U845	F3	C6
R346	C4	B2	U848	F2	C5
R347	C4	B2	U849	F2	C6

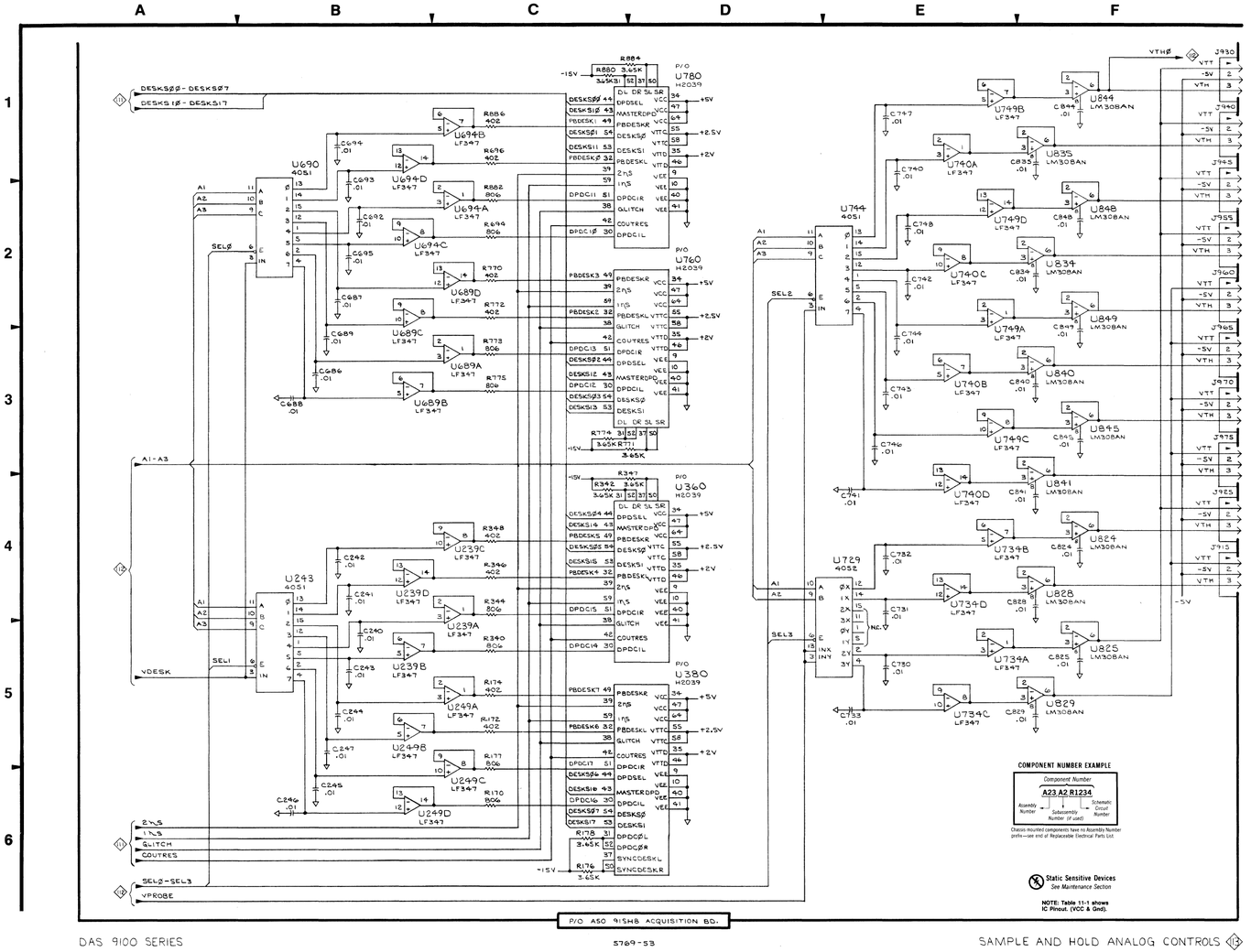


Table 11-5

LOG-INS AND WORD RECOGNIZERS (114) — 91HS8 ACQ. BD, ASSY A50

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J253	D3	C2	R569	B3	D3
J273	D4	D2	R574	C3	D3
J350	D3	C2	R575	C3	D3
J351	D1	C2	R584	B5	E3
J353	D1	C2	R585	B5	E3
J368	D2	D2	R586	B5	E3
J370	D4	D2	R657	B1	C4
J371	D3	D2	R658	B1	C4
J373	D3	D2	R659	B1	C4
J388	D4	E2	R660	B2	C4
J568	F1	D3	R661	B2	C4
J574	F3	D3	R662	B1	C4
J752	A1	C5	R663	B2	D4
J766	A3	D4	R664	B2	D4
J768	A3	D5	R665	B3	D4
J769	A1	D5	R666	B3	D4
J772	A4	D5	R667	B2	D4
J786	A5	E5	R668	B2	D4
J788	A5	E5	R674	B3	D4
J789	A3	E5	R675	B3	D4
J868	A1	D5	R676	B4	D4
J888	A3	E5	R677	B3	D4
R456	C2	C3	R678	B4	D4
R457	C1	C3	R679	B4	D4
R458	C1	C3	R680	B4	D4
R459	C1	C3	R681	B4	D4
R460	C2	C3	R682	B5	D4
R461	C2	C3	R683	B4	D4
R462	C2	C3	R684	B5	D4
R463	C2	D3	R685	B5	D4
R464	C3	D3	T252	D3	C2
R465	C2	D3	T272	D4	D2
R466	C3	D3	T352	D1	C2
R467	C3	D3	T372	D3	D2
R474	C4	D3	T768	A3	D5
R475	C3	D3	T788	A5	E5
R476	C3	D3	T868	A1	D5
R477	C3	D3	T888	A3	E5
R478	C4	D3	U360	D1	C2
R479	C4	D3	U380	D4	D2
R480	C4	D3	U454	F1	C3
R481	C4	D3	U490	F4	E3
R482	C5	D3	U564	F1	C3
R483	C4	D3	U564	C1	C3
R484	C5	D3	U579	F3	D3
R485	C5	D3	U579	C4	D3
R554	C1	C3	U590	F3	E4
R555	C1	C3	U654	F2	C4
R556	C1	C3	U760	A1	C5
R568	B3	D3	U780	A4	D5

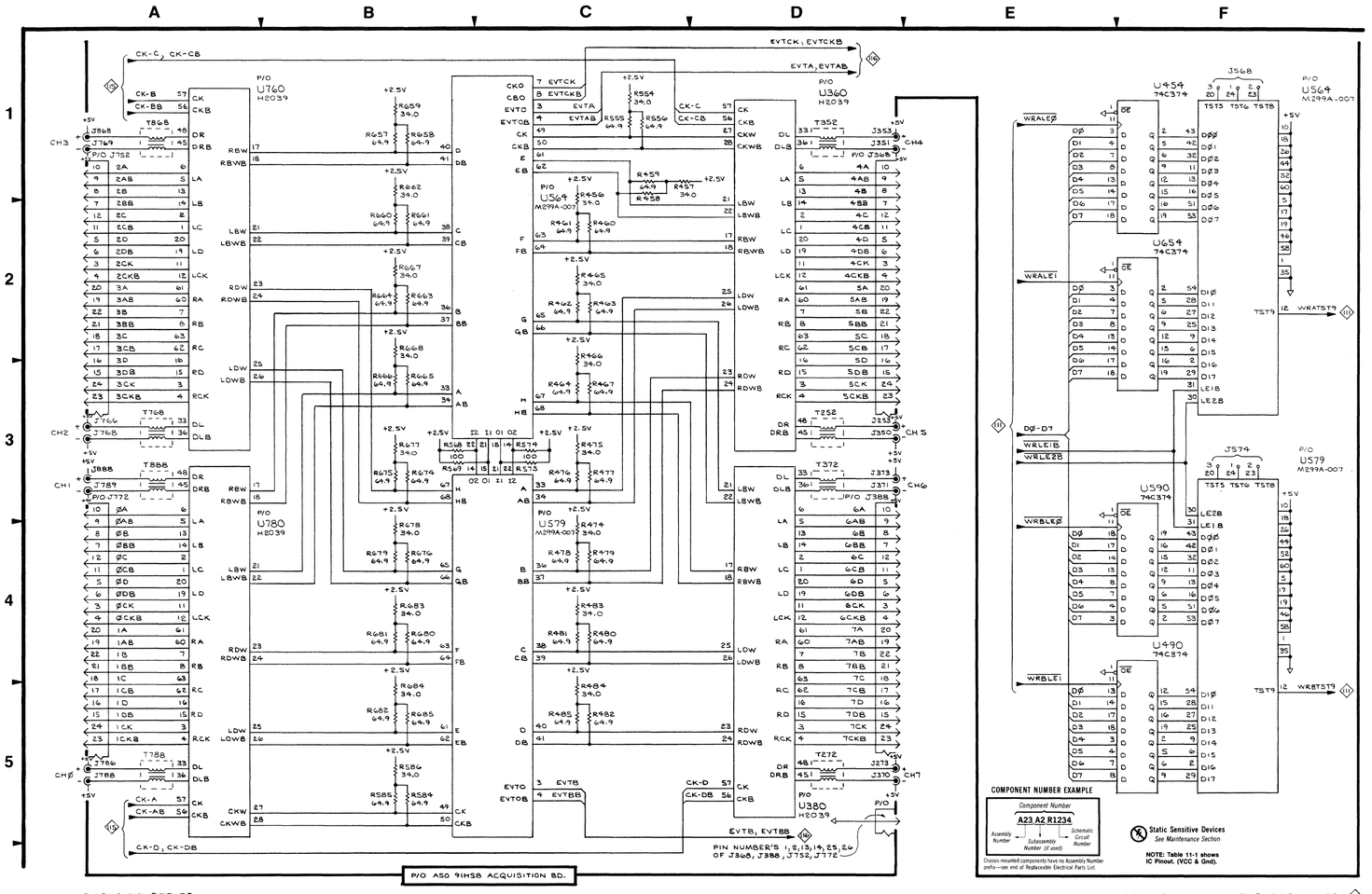


Table 11-6

TIMEBASE 115 — 91HS8 ACQUISITION BOARD, ASSEMBLY A50

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C530	E4	C3	R639	C4	B4
C531	E4	C3	R640	C4	B4
C532	E3	C4	R644	B5	B4
C533	E3	C4	R645	B5	B4
C534	E3	C4	R710	C3	A4
C535	E3	C4	R712	D2	A4
C536	E2	C4	R714	C2	A4
C537	E2	C4	R716	A3	A5
C629	B3	B4	R720A	B2	A4
C632	C5	B4	R720B	C1	A4
C633	C5	B4	R720C	B2	A4
C639	C4	B4	R720D	C1	A4
C719	C2	A5	R724	D1	B4
C734	C4	B4	R726B	D2	B4
C745	D4	B4	R726C	D1	B4
C823	A4	B5	R726D	D2	B4
C924	D4	B6	R734	B4	B4
C925	D4	B6	R738	B5	B4
CR734	B4	B4	R920	C4	B6
J642	A5	B4	R924	D4	B6
J645	A5	C4	R928	A4	B6
J745	B5	B4	T640	D5	B4
Q629	A3	B4	U534	E2	B3
Q630	A3	B4	U614	B4	A4
Q736	B4	B4	U620	B2	B4
Q738	C5	B4	U624A	B1	B4
R530	E4	C3	U624D	D2	B4
R531	E4	C3	U710	C2	A5
R532	E3	C4	U719	C3	A5
R533	E3	C4	U720	B2	B4
R534	E3	C4	U722A	B3	B5
R535	E3	C4	U722B	B3	B5
R536	E2	C4	U724	D1	B4
R537	E2	C4	U726A	C3	B5
R626	B1	B4	U726B	C3	B5
R627	D2	B4	U820B	A3	B5
R630	A2	B4	Y518	A1	A3
R631	A2	B4	Y642	C4	B4
R638	C4	B4			

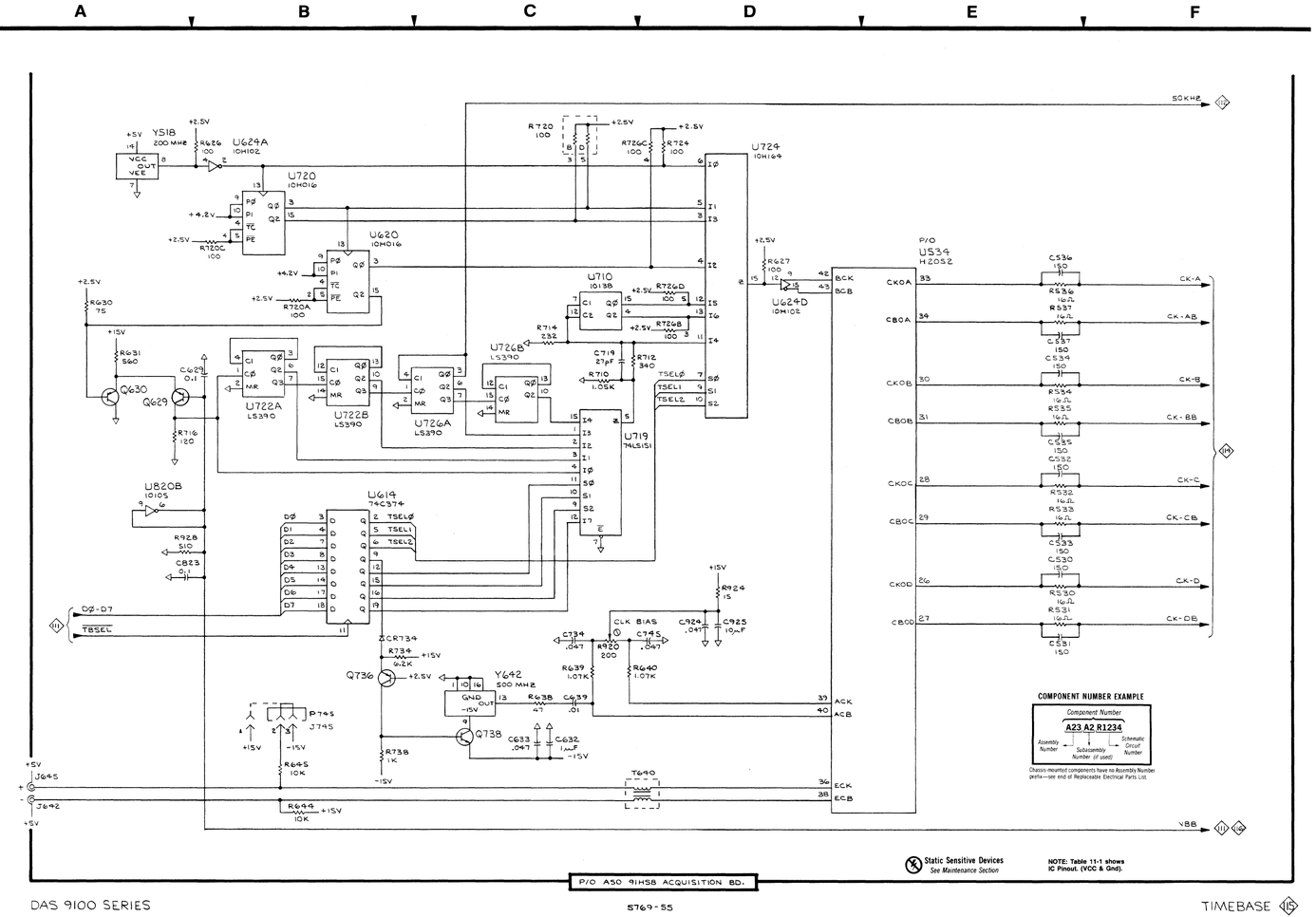
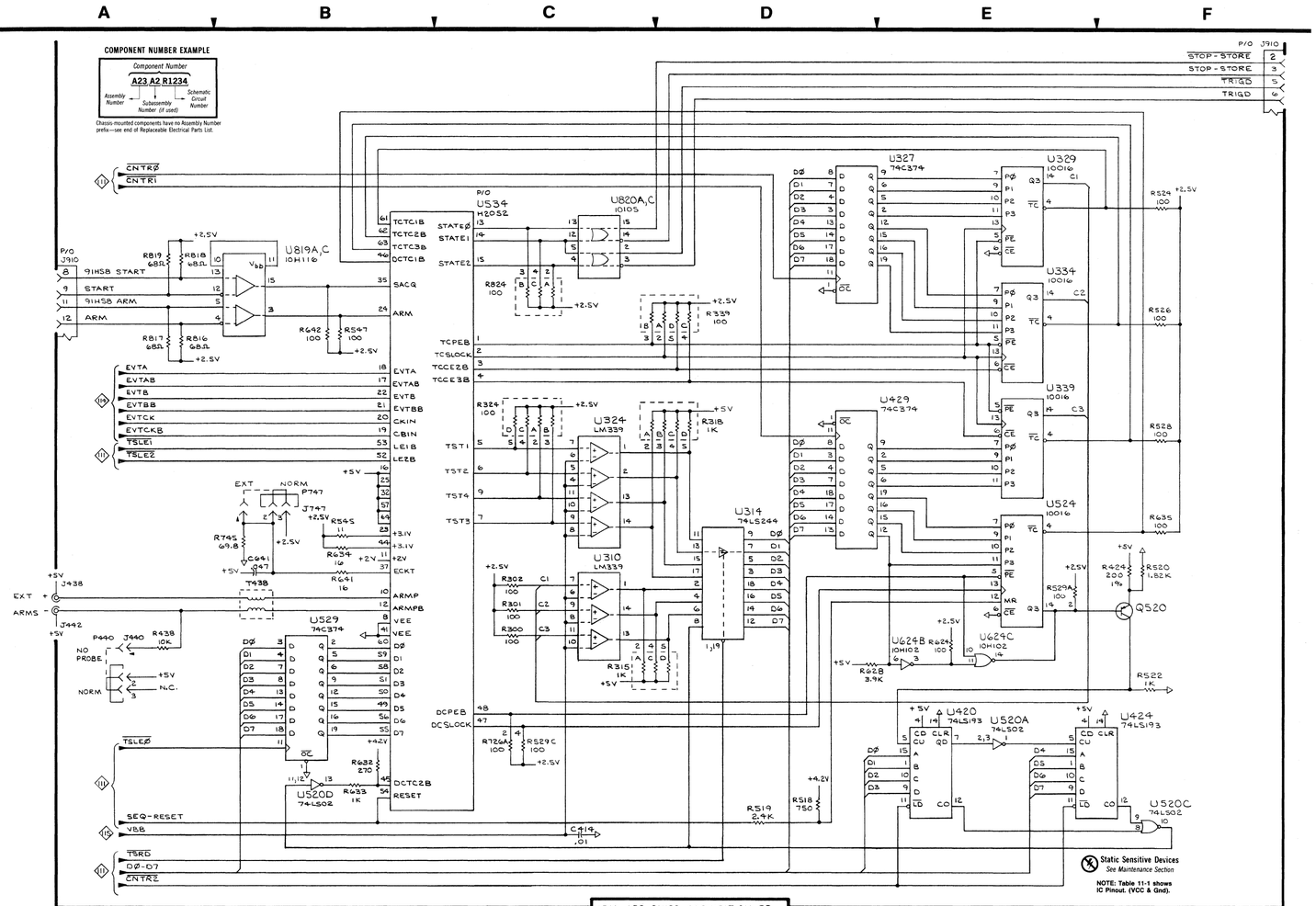


Table 11-7

TRIGGER SEQUENCER 116 — 91HS8 AQUISITION BOARD, ASSEMBLY A50

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C414	C5	A2	R624	E4	B4
C641	B4	C4	R628	D4	B4
J438	A4	B3	R632	B5	B4
J440	A4	B3	R633	B5	B4
J442	A4	B3	R634	B4	B4
J747	B3	C4	R635	F3	B4
J910	A2	B6	R641	B4	C4
J910	F1	B6	R642	B2	C4
Q520	F4	B3	R726A	C5	B4
R300	C4	A2	R745	B4	C4
R301	C4	A2	R816	A2	A5
R302	C4	A2	R817	A2	A5
R315A	C4	A2	R818	A2	B5
R315C	C4	A2	R819	A2	B5
R315D	C4	A2	R824A	C2	B5
R318A	D3	A2	R824B	C2	B5
R318B	D3	A2	R824C	C2	B5
R318C	D3	A2	T438	B4	B3
R318D	D3	A2	U310	C4	A2
R324A	C3	B2	U314	D4	A2
R324B	C3	B2	U324	C3	B2
R324C	C3	B2	U327	D2	B2
R324D	C3	B2	U329	E1	B2
R339A	D2	B2	U334	E2	B2
R339B	D2	B2	U339	E3	B2
R339C	D2	B2	U420	E5	A3
R339D	D2	B2	U424	F5	B3
R424	F4	B3	U429	D3	B3
R438	A4	B3	U520A	E5	A4
R518	D5	A3	U520C	F5	A4
R519	D5	B3	U520D	B5	A4
R520	F4	B3	U524	E4	B4
R522	F4	B3	U529	B4	B4
R524	F2	B3	U534	C2	B3
R526	F2	B3	U624B	E4	B4
R528	F3	B3	U624C	E4	B4
R529A	E4	B3	U819A	B2	A5
R529C	C5	B3	U819C	B2	A5
R545	B4	C3	U820A	C2	B5
R547	B2	C3	U820C	C2	B5



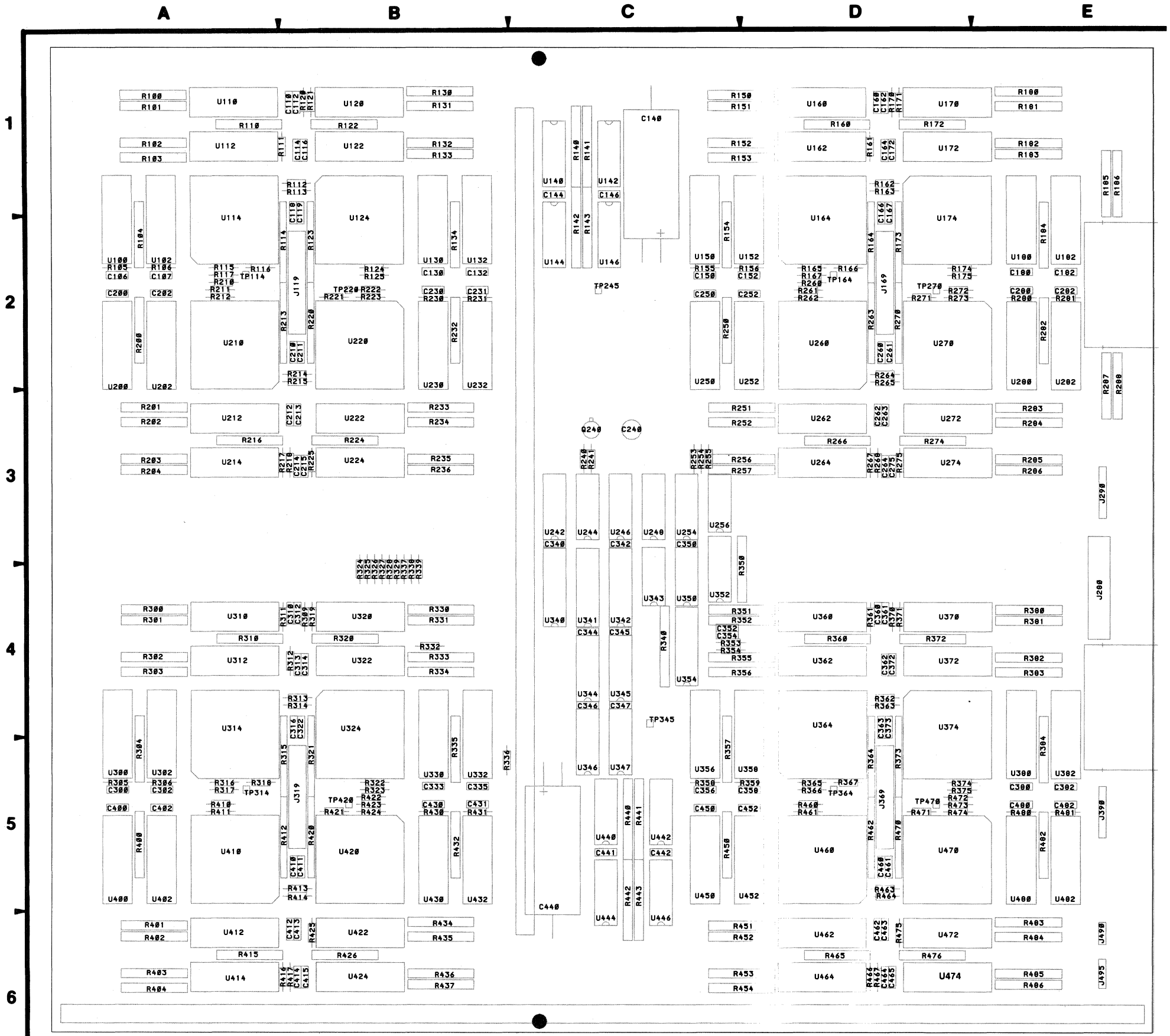


Figure 11-3. A51 Memory Board Component Locations

Table 11-8

ACQUISITION MEMORY MICROPROCESSOR INTERFACE 117 — 91HS8 MEMORY BOARD, ASSEMBLY A51

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C106	B5	A2	C362	D5	D4	R340C	D3	C4
C107	B5	A2	C363	D5	D4	R340D	D2	C4
C110	C5	B1	C372	B5	D4	R340E	D3	C4
C112	B5	B1	C373	D5	D4	R340F	D2	C4
C114	C5	B1	C380	D5	E5	R340G	D3	C4
C116	B5	B1	C382	D5	E5	R340I	D3	C4
C118	C5	B2	C400	B5	A5	R350A	A5	C4
C119	C5	B2	C402	B5	A5	R350B	A4	C4
C130	B5	B2	C410	D5	B5	R350C	A4	C4
C132	B5	B2	C411	D5	B5	R350D	A4	C4
C140	A2	C1	C412	B5	B6	R350E	A4	C4
C144	A5	C1	C413	D5	B6	R353	C4	C4
C146	B5	C1	C414	C5	B6	R354	C2	C4
C150	B5	C2	C415	D5	B6	R422	F4	B5
C152	B5	C2	C430	C5	B5	R472	F4	D5
C160	C5	D1	C431	C5	B5	TP114	D5	A2
C162	B5	D1	C440	A2	C5	TP164	D5	D2
C164	C5	D1	C441	A5	C5	TP220	D5	B2
C166	C5	D1	C442	C5	C5	TP245	D5	C2
C167	C5	D1	C450	C5	C5	TP270	D5	D2
C172	B5	D1	C452	C5	D5	TP314	D5	A5
C180	B5	E2	C460	D5	D5	TP345	D5	C4
C182	B5	E2	C461	D5	D5	TP364	D5	D5
C200	C5	A2	C462	C5	D6	TP420	D5	B5
C202	C5	A2	C463	D5	D6	TP470	D5	D5
C210	C5	B2	C464	C5	D6	U242	C2	C3
C211	C5	B2	C465	D5	D6	U244	C3	C3
C212	B5	B3	C480	C5	E5	U246	B2	C3
C213	C5	B3	C482	C5	E5	U248	B3	C3
C214	C5	B3	J280	F1	E4	U254B	E4	C3
C215	B5	B3	J280	A4	E4	U254C	E4	C3
C230	C5	B2	J290	A1	E3	U254D	E4	C3
C231	C5	B2	J390	A2	E5	U254F	E4	C3
C240	C5	C3	J490	A2	E6	U256A	B5	C3
C250	C5	C2	J495	A3	E6	U256B	B5	C3
C252	C5	C2	Q240	C4	C3	U256C	B5	C3
C260	C5	D2	R185A	F2	E1	U340	E3	C4
C261	C5	D2	R185B	F2	E1	U341	E2	C4
C262	B5	D3	R185C	F2	E1	U342	E1	C4
C263	C5	D3	R185D	F2	E1	U343	D3	C4
C264	C5	D3	R185E	F1	E1	U344A	E3	C4
C275	B5	D3	R185F	F1	E1	U344B	E3	C4
C280	C5	E2	R186A	F4	E1	U344C	E3	C4
C282	C5	E2	R186B	F4	E1	U344D	E3	C4
C300	C5	A5	R186C	F3	E1	U344E	E3	C4
C302	C5	A5	R186D	F4	E1	U344F	F4	C4
C310	B5	B4	R186E	F3	E1	U345A	E1	C4
C312	C5	B4	R186F	F4	E1	U345B	E1	C4
C313	C5	B4	R210	F4	A2	U345C	E1	C4
C314	B5	B4	R240	C4	C3	U345D	E2	C4
C316	C5	B4	R241	C5	C3	U345E	E2	C4
C322	C5	B4	R253	E4	C3	U345F	E2	C4
C333	D5	B5	R254	E4	C3	U346A	E3	C5
C335	D5	B5	R255	E4	C3	U346B	E3	C5
C340	D5	C3	R260	F4	D2	U346C	E3	C5
C342	B5	C3	R287A	F1	E2	U346D	E4	C5
C344	B5	C4	R287B	F2	E2	U346E	E4	C5
C345	B5	C4	R287D	F3	E2	U346F	E4	C5
C346	B5	C4	R287E	F3	E2	U347A	E2	C5
C347	B5	C4	R287F	F3	E2	U347B	E2	C5
C350	A4	C3	R288A	F1	E2	U347C	F1	C5
C352	B5	C4	R288C	F2	E2	U347D	E2	C5
C354	D4	C4	R288D	F3	E2	U347E	E2	C5
C356	D5	C5	R288E	F3	E2	U347F	E2	C5
C358	D5	D5	R288F	F3	E2	U350	D2	C4
C360	B5	D4	R340A	D2	C4	U352	B4	C4
C361	D5	D4	R340B	D2	C4	U354	D1	C4

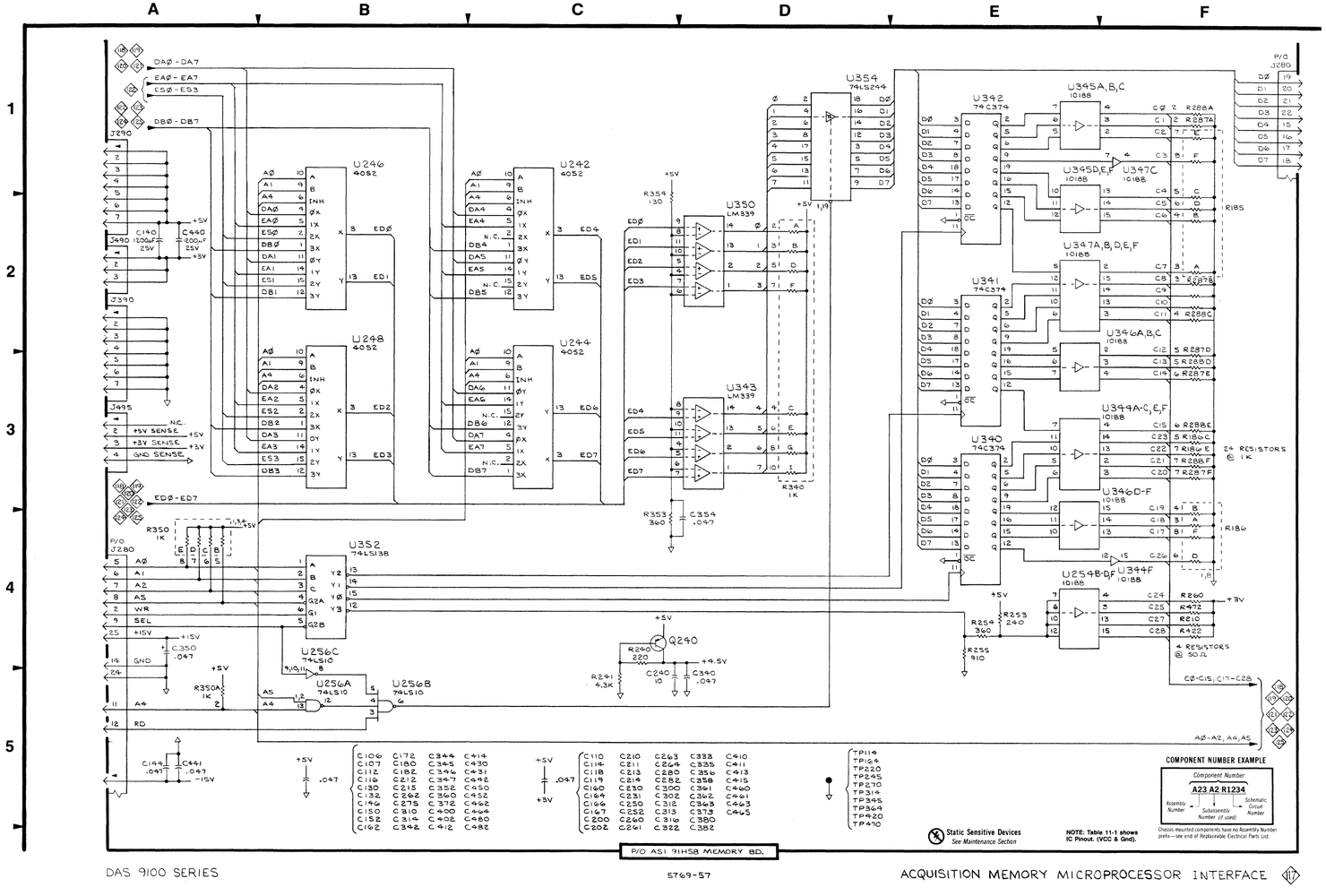


Table 11-9

ACQUISITION MEMORY CHANNEL 0 ⟨118⟩ — 91HS8 MEMORY BD., ASSY A51

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J169	A1	D2	R271	D1	D2
R143	C5	C2	R273	D1	D2
R167	C5	D2	R274A	F3	D3
R250A	D3	C2	R274B	E3	D3
R250C	C3	C2	R274D	F3	D3
R250D	D3	C2	R274E	E3	D3
R250E	C3	C2	R274F	F3	D3
R250F	D3	C2	R275	E5	D3
R251A	C3	C3	R280	E2	E2
R251B	C3	C3	R281	D2	E2
R251C	B4	C3	R282B	F2	E2
R251D	B5	C3	R282C	F2	E2
R251E	B5	C3	R282D	F2	E2
R251F	B5	C3	R282E	E1	E2
R252A	C3	C3	R282F	F2	E2
R252B	D3	C3	R282G	E1	E2
R252C	B5	C3	R283A	E5	E3
R252D	B4	C3	R283B	E5	E3
R252E	B4	C3	R283C	E5	E3
R252F	B4	C3	R283D	E5	E3
R256A	B5	C3	R283E	E2	E3
R256B	B5	C3	R283F	E2	E3
R256C	B5	C3	R284A	E4	E3
R256D	B4	C3	R284B	E4	E3
R256E	B4	C3	R284C	E4	E3
R256F	B4	C3	R284E	E4	E3
R257A	C2	C3	R284F	E3	E3
R257B	C2	C3	R285A	E5	E3
R257C	B5	C3	R285B	F3	E3
R257E	B3	C3	R285C	E3	E3
R257F	B4	C3	R285D	E4	E3
R261	C4	D2	R285E	E4	E3
R262	B4	D2	R285F	E4	E3
R263A	A2	D2	R286A	E5	E3
R263B	A2	D2	R286B	E5	E3
R263C	A2	D2	R286C	E5	E3
R263D	A3	D2	R286D	E4	E3
R264	E4	D2	R286E	F3	E3
R265	D4	D2	R286F	E3	E3
R266A	D1	D3	U146	F5	C2
R266B	D2	D3	U250	B3	C2
R266C	C1	D3	U252	C3	C2
R266E	C1	D3	U260	A2	D2
R266F	D2	D3	U262	C2	D3
R266G	D1	D3	U264	B2	D3
R267	B2	D3	U270	D2	D2
R268	C2	D3	U272	F3	D3
R270A	D2	D2	U274	E3	D3
R270B	D2	D2	U280	F2	E2
R270C	D2	D2	U282	E2	E2
R270D	D2	D2			

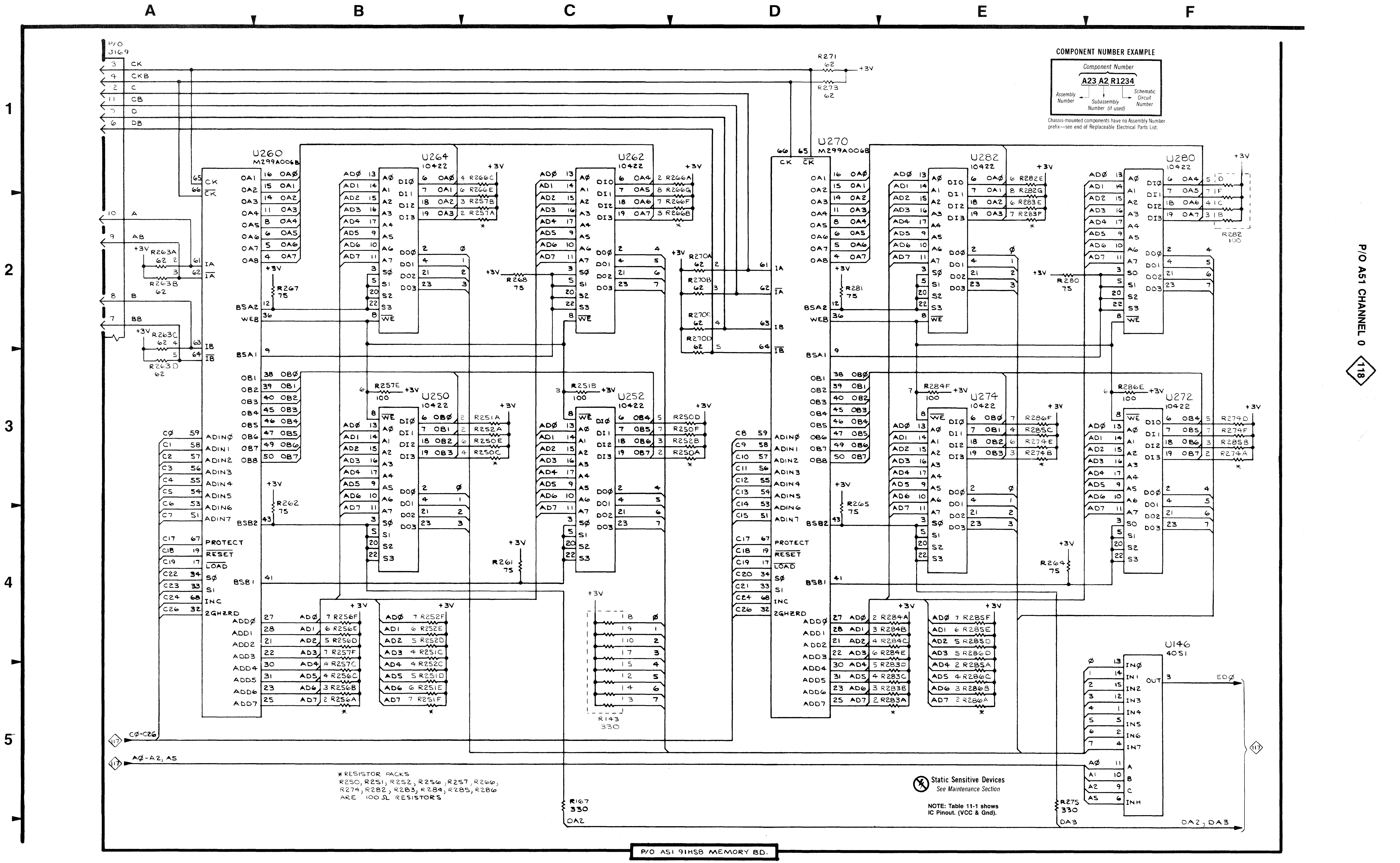


Table 11-10

ACQUISITION MEMORY CHANNEL 1 (119) — 91HS8 MEMORY BD., ASSY A51

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J169	A1	D2	R172C	D2	D1
R141	C5	C1	R172D	C1	D1
R150A	E3	C1	R172E	D2	D1
R150B	F3	C1	R172F	D2	D1
R150C	E4	C1	R172G	C2	D1
R150D	E5	C1	R173A	A3	D2
R150E	E5	C1	R173D	A3	D2
R150F	E5	C1	R174	C4	D2
R151A	E4	C1	R175	B4	D2
R151B	E4	C1	R180A	B4	E1
R151C	E4	C1	R180B	B3	E1
R151D	E3	C1	R180D	B5	E1
R151E	F3	C1	R180E	C2	E1
R151F	E5	C1	R180F	C2	E1
R152A	E3	C1	R181A	B4	E1
R152B	E4	C1	R181B	B4	E1
R152D	E4	C1	R181C	B4	E1
R152E	E4	C1	R181D	B5	E1
R152F	E4	C1	R181E	B5	E1
R153A	E2	C1	R181F	B5	E1
R153B	E2	C1	R182A	C3	E1
R153C	E5	C1	R182B	C3	E1
R153D	E5	C1	R182C	B5	E1
R153E	E5	C1	R182D	B4	E1
R153F	E5	C1	R182E	B5	E1
R154B	F2	C2	R182F	B5	E1
R154C	F2	C2	R183A	B4	E1
R154D	E2	C2	R183B	B4	E1
R154E	E2	C2	R183C	B4	E1
R154F	F2	C2	R183D	B5	E1
R154G	F2	C2	R183E	D3	E1
R155	D2	C2	R183F	C3	E1
R156	E2	C2	R184A	D3	E2
R160A	F3	D1	R184C	C3	E2
R160B	E3	D1	R184D	D3	E2
R160D	F3	D1	R184E	C3	E2
R160E	E3	D1	R184F	D3	E2
R160F	F3	D1	R272	C5	D2
R161	E5	D1	U142	F5	C1
R162	D4	D1	U150	E2	C2
R163	E4	D1	U152	F2	C2
R164A	D2	D2	U160	E3	D1
R164B	D2	D2	U162	F3	D1
R164C	D2	D2	U164	D2	D2
R164D	D2	D2	U170	B2	D1
R165	D1	D2	U172	C2	D1
R166	D1	D2	U174	A3	D2
R170	B2	D1	U180	C3	E2
R171	C2	D1	U182	B3	E2
R172B	D2	D1			

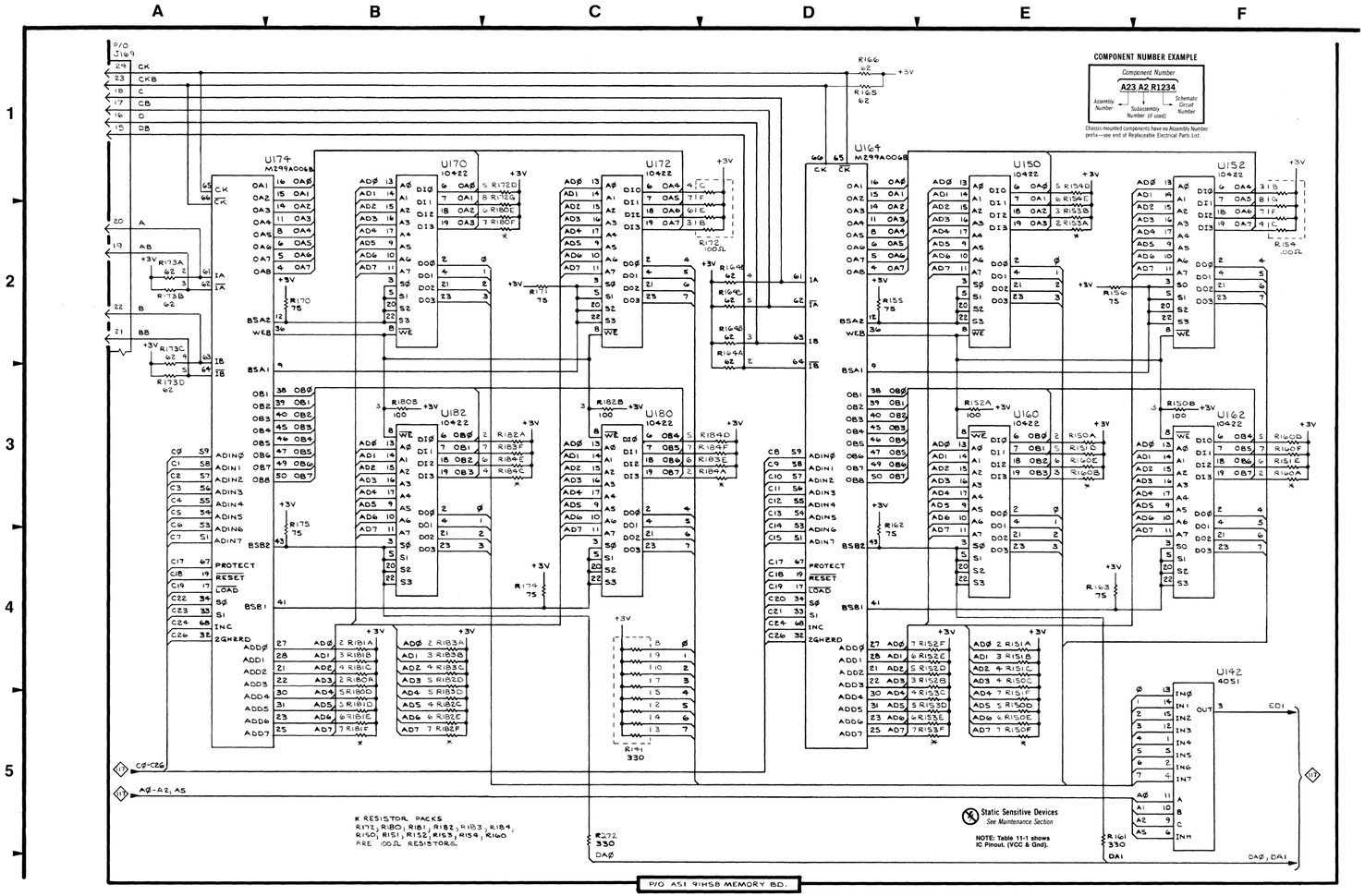
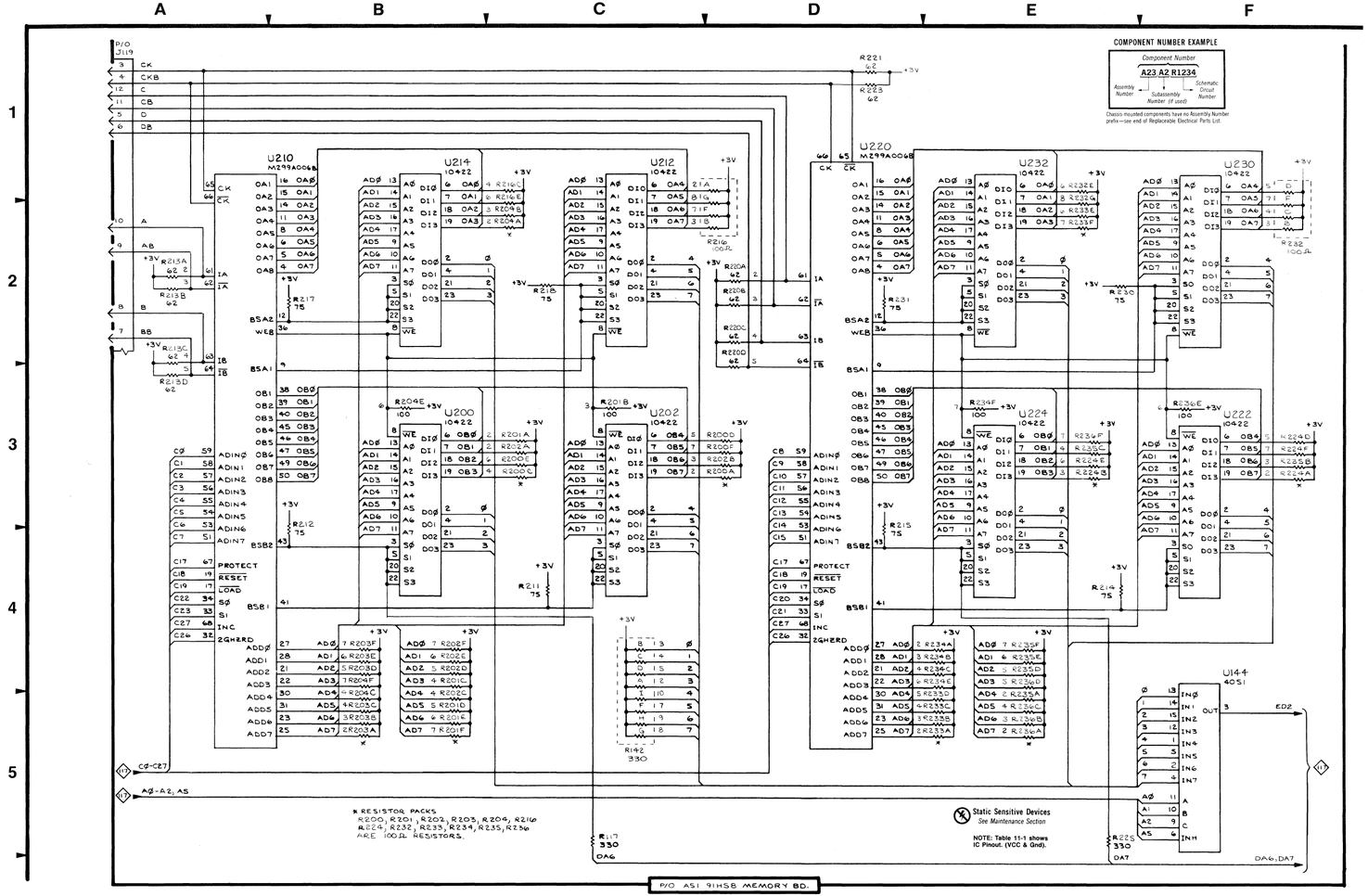


Table 11-11

ACQUISITION MEMORY CHANNEL 2 (120) — 91HS8 MEMORY BD., ASSY A51

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J119	A1	B2	R221	D1	B2
R117	C5	A2	R223	D1	B2
R142	C5	C2	R224A	F3	B3
R200A	D3	A2	R224B	E3	B3
R200C	C3	A2	R224D	F3	B3
R200D	D3	A2	R224E	E3	B3
R200E	C3	A2	R224F	F3	B3
R200F	D3	A2	R225	E5	B3
R201A	C3	A3	R230	E2	B2
R201B	C3	A3	R231	D2	B2
R201C	B4	A3	R232B	F2	B2
R201D	B5	A3	R232C	F2	B2
R201E	B5	A3	R232D	F2	B2
R201F	B5	A3	R232E	E1	B2
R202A	C3	A3	R232F	F2	B2
R202B	D3	A3	R232G	E1	B2
R202C	B5	A3	R233A	E5	B3
R202D	B4	A3	R233B	E5	B3
R202E	B4	A3	R233C	E5	B3
R202F	B4	A3	R233D	E5	B3
R203A	B5	A3	R233E	E2	B3
R203B	B5	A3	R233F	E2	B3
R203C	B5	A3	R234A	E4	B3
R203D	B4	A3	R234B	E4	B3
R203E	B4	A3	R234C	E4	B3
R203F	B4	A3	R234E	E4	B3
R204A	C2	A3	R234F	E3	B3
R204B	C2	A3	R235A	E5	B3
R204C	B5	A3	R235B	F3	B3
R204E	B3	A3	R235C	E3	B3
R204F	B4	A3	R235D	E4	B3
R211	C4	A2	R235E	E4	B3
R212	B4	A2	R235F	E4	B3
R213A	A2	A2	R236A	E5	B3
R213B	A2	A2	R236B	E5	B3
R213C	A3	A2	R236C	E5	B3
R213D	A2	A2	R236D	E4	B3
R214	E4	B2	R236E	F3	B3
R215	D4	B2	R236F	E3	B3
R216A	D2	A3	U144	F5	C2
R216B	D2	A3	U200	B3	A2
R216C	C1	A3	U202	C3	A2
R216E	C1	A3	U210	A2	A2
R216F	D2	A3	U212	C2	A3
R216G	D2	A3	U214	B2	A3
R217	B2	A3	U220	D2	B2
R218	C2	B3	U222	F3	B3
R220A	D2	B2	U224	E3	B3
R220B	D2	B2	U230	F2	B2
R220C	D2	B2	U232	E2	B2
R220D	D2	B2			



DAS 9100 SERIES

ACQUISITION MEMORY CHANNEL 2 (120)

P/O A51 CHANNEL 2 (120)

Table 11-12

ACQUISITION MEMORY CHANNEL 3 (121) — 91HS8 MEMORY BD., ASSY A51

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J119	A1	B2	R122E	D2	B1
R100A	E3	A1	R122F	D1	B1
R100B	F3	A1	R122G	C1	B1
R100C	E4	A1	R123A	A2	B2
R100D	E5	A1	R123B	A2	B2
R100E	E5	A1	R123C	A3	B2
R100F	E5	A1	R123D	A3	B2
R101A	E4	A1	R124	C4	B2
R101B	E4	A1	R125	B4	B2
R101C	E4	A1	R130A	B4	B1
R101D	E3	A1	R130B	B3	B1
R101E	F3	A1	R130D	B5	B1
R101F	E5	A1	R131A	B4	B1
R102A	E3	A1	R131B	B4	B1
R102B	E4	A1	R131C	B4	B1
R102D	E4	A1	R131D	B5	B1
R102E	E4	A1	R131E	B5	B1
R102F	E4	A1	R131F	B5	B1
R103C	E5	A1	R132A	C3	B1
R103D	E5	A1	R132B	C3	B1
R103E	E5	A1	R132C	B5	B1
R103F	E5	A1	R132D	B4	B1
R104B	F1	A2	R132E	B5	B1
R104C	F2	A2	R132F	B5	B1
R104D	E1	A2	R133A	B4	B1
R104E	E1	A2	R133B	B4	B1
R104F	F2	A2	R133C	B4	B1
R104G	F1	A2	R133D	B5	B1
R105	D2	A2	R133E	D3	B1
R106	E2	A2	R133F	C3	B1
R110A	F3	A1	R134A	D3	B2
R110B	E3	A1	R134C	C3	B2
R110D	F3	A1	R134D	D3	B2
R110E	E3	A1	R134E	C3	B2
R110F	F3	A1	R134F	D3	B2
R111	E5	A1	R140	C5	C1
R112	D4	B1	R222	C5	B2
R113	E4	B1	U100	E2	A2
R114A	D2	A2	U102	F2	A2
R114B	D2	A2	U110	E3	A1
R114C	D2	A2	U112	F3	A1
R114D	D2	A2	U114	D2	A2
R115	D1	A2	U120	B2	B1
R116	D1	A2	U122	C2	B1
R120	B2	B1	U124	A2	B2
R121	C2	B1	U130	C3	B2
R122B	D2	B1	U132	B3	B2
R122C	D1	B1	U140	F5	C1
R122D	C1	B1			

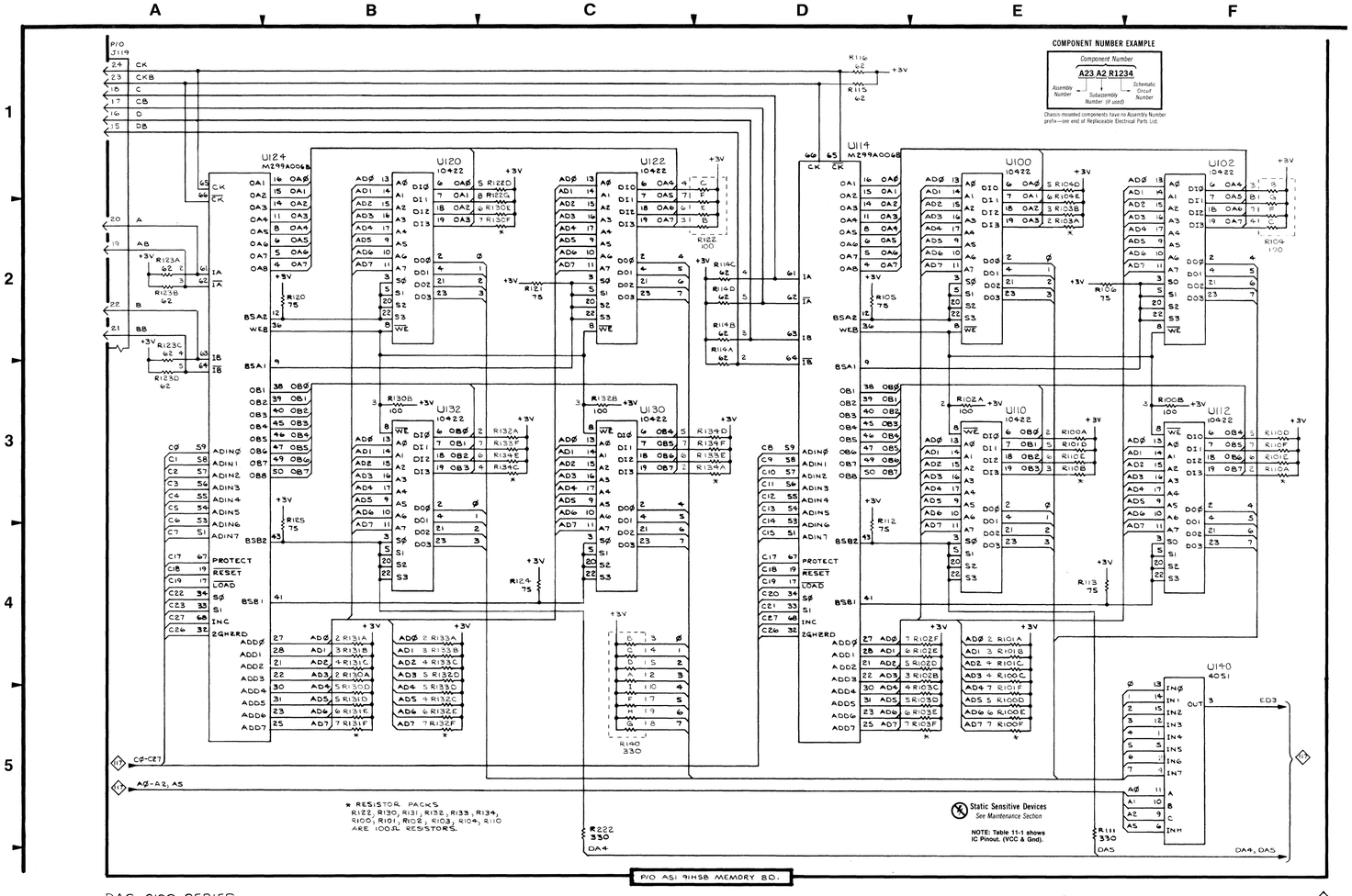


Table 11-13

ACQUISITION MEMORY CHANNEL 4 (122) — 91HS8 MEMORY BD., ASSY A51

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J319	A1	B5	R321C	A3	B5
R300A	E5	A4	R321D	A3	B5
R300B	E5	A4	R322	B4	B5
R300C	E5	A4	R323	C4	B5
R300D	E4	A4	R324	C5	B4
R300E	F3	A4	R325	C5	B4
R300F	E3	A4	R326	B5	B4
R301A	E5	A4	R327	B5	B4
R301B	F3	A4	R328	B5	B4
R301C	E3	A4	R329	B5	B4
R301D	E4	A4	R330A	C2	B4
R301E	E4	A4	R330B	C2	B4
R301F	E4	A4	R330C	B5	B4
R302A	E4	A4	R330E	B3	B4
R302B	E4	A4	R330F	B4	B4
R302C	E4	A4	R331A	B5	B4
R302E	E4	A4	R331B	B5	B4
R302F	E3	A4	R331C	B5	B4
R303A	E5	A4	R331D	B4	B4
R303B	E5	A4	R331E	B4	B4
R303C	E5	A4	R331F	B4	B4
R303D	E5	A4	R332	C4	B4
R303E	E2	A4	R333A	C3	B4
R303F	E2	A4	R333B	D3	B4
R304B	F2	A5	R333C	B5	B4
R304C	F2	A5	R333D	B4	B4
R304D	F1	A5	R333E	B4	B4
R304E	E1	A5	R333F	B4	B4
R304F	F1	A5	R334A	C3	B4
R304G	E1	A5	R334B	C3	B4
R305	D2	A5	R334C	B4	B4
R306	E2	A5	R334D	B5	B4
R309	C2	B4	R334E	B5	B4
R310A	F3	A4	R334F	B5	B4
R310B	E3	A4	R335A	D3	B5
R310D	F3	A4	R335C	C3	B5
R310E	E3	A4	R335D	D3	B5
R310F	F3	A4	R335E	C3	B5
R311	E5	A4	R335F	D3	B5
R312	C5	B4	R336	C5	B5
R313	D4	B4	R337	B5	B4
R314	E4	B4	R338	B5	B4
R315A	D2	A5	R339	C5	B4
R315B	D2	A5	R423	C5	B5
R315C	D2	A5	R440	C5	C5
R315D	D2	A5	U300	E2	A5
R316	D1	A5	U302	F2	A5
R318	D1	A5	U310	E3	A4
R319	B2	B4	U312	F3	A4
R320A	D1	B4	U314	D2	A4
R320B	D2	B4	U320	B2	B4
R320C	C1	B4	U322	C2	B4
R320E	C1	B4	U324	A2	B4
R320F	D2	B4	U330	C3	B5
R320G	D1	B4	U332	B3	B5
R321A	A2	B5	U440	F5	C5
R321B	A2	B5			

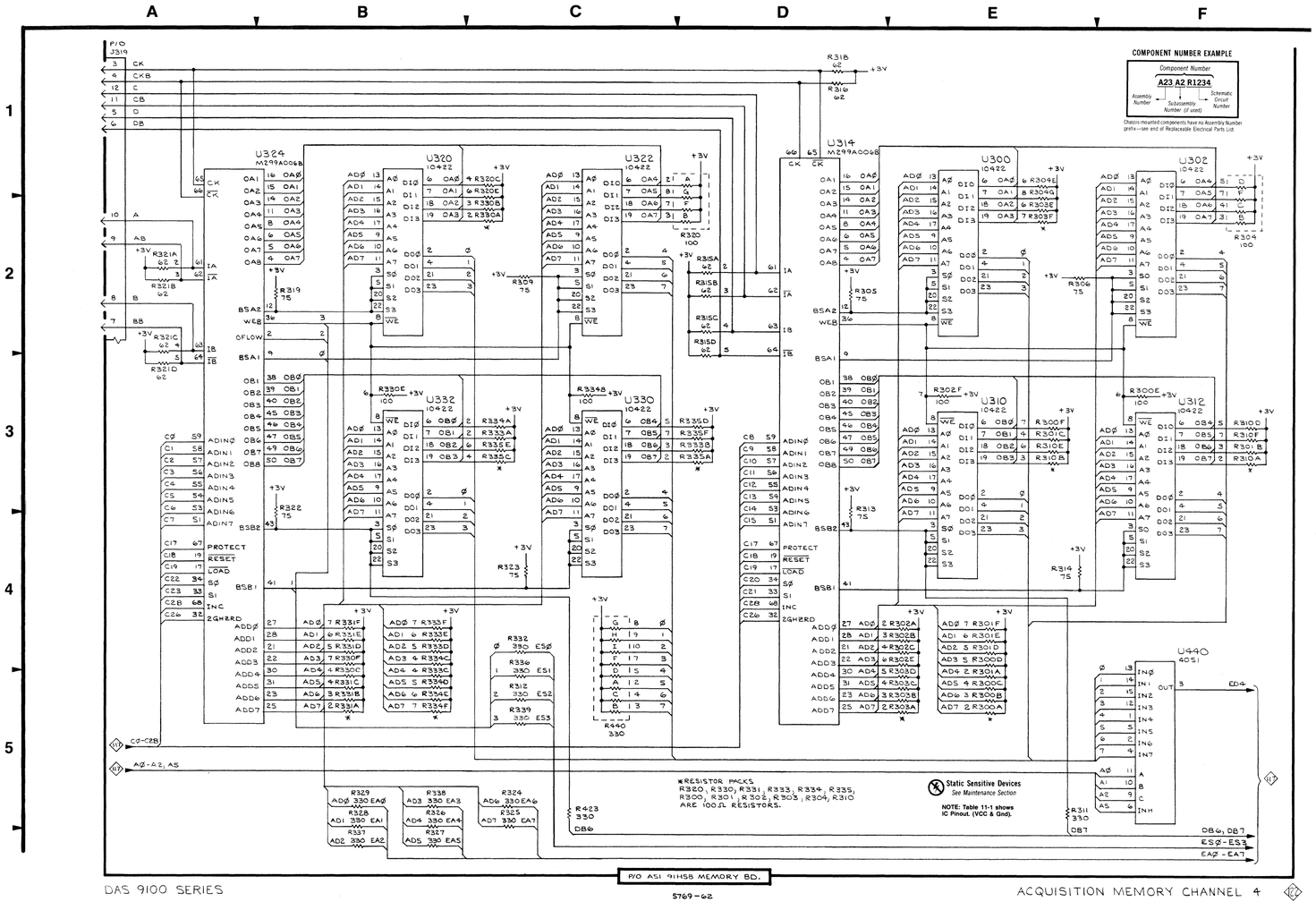


Table 11-14

ACQUISITION MEMORY CHANNEL 5 (123) — 91HS8 MEMORY BD., ASSY A51

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J319	A1	B5	R424	D1	B5
R317	C5	A5	R425	E5	B6
R400A	D3	A5	R426A	F3	B6
R400C	C3	A5	R426B	E3	B6
R400D	D3	A5	R426D	F3	B6
R400E	C3	A5	R426E	E3	B6
R400F	D3	A5	R426F	F3	B6
R401A	B4	A6	R430	E2	B5
R401B	B4	A6	R431	D2	B5
R401C	B4	A6	R432B	F1	B5
R401D	B5	A6	R432C	F2	B5
R401E	D3	A6	R432D	E1	B5
R401F	C3	A6	R432E	E1	B5
R402A	C3	A6	R432F	F2	B5
R402B	C3	A6	R432G	F1	B5
R402C	B5	A6	R434A	E2	B6
R402D	B4	A6	R434B	E2	B6
R402E	B5	A6	R434C	E5	B6
R402F	B5	A6	R434D	E5	B6
R403A	B4	A6	R434E	E5	B6
R403B	B4	A6	R434F	E5	B6
R403C	B4	A6	R435A	E3	B6
R403D	B5	A6	R435B	E4	B6
R403E	B5	A6	R435D	E4	B6
R403F	B5	A6	R435E	E4	B6
R404A	B4	A6	R435F	E4	B6
R404B	B3	A6	R436A	E4	B6
R404D	B5	A6	R436B	E4	B6
R404E	C2	A6	R436C	E4	B6
R404F	C2	A6	R436D	E3	B6
R410	B4	A5	R436E	F3	B6
R411	C4	A5	R436F	E5	B6
R412A	A2	A5	R437A	E3	B6
R412B	A2	A5	R437B	F3	B6
R412C	A3	A5	R437C	E4	B6
R412D	A3	A5	R437D	E5	B6
R413	E4	B5	R437E	E5	B6
R414	D4	B5	R437F	E5	B6
R415B	D2	A6	R442	C5	C5
R415C	D1	A6	U400	B3	A5
R415D	C1	A6	U402	C3	A5
R415E	D2	A6	U410	A2	A5
R415F	D1	A6	U412	C2	A6
R415G	C1	A6	U414	B2	A6
R416	C2	A6	U420	D2	B5
R417	B2	B6	U422	F3	B6
R420A	D2	B5	U424	E3	B6
R420B	D2	B5	U430	F2	B5
R420C	D2	B5	U432	E2	B5
R420D	D2	B5	U444	F5	C5
R421	D1	B5			

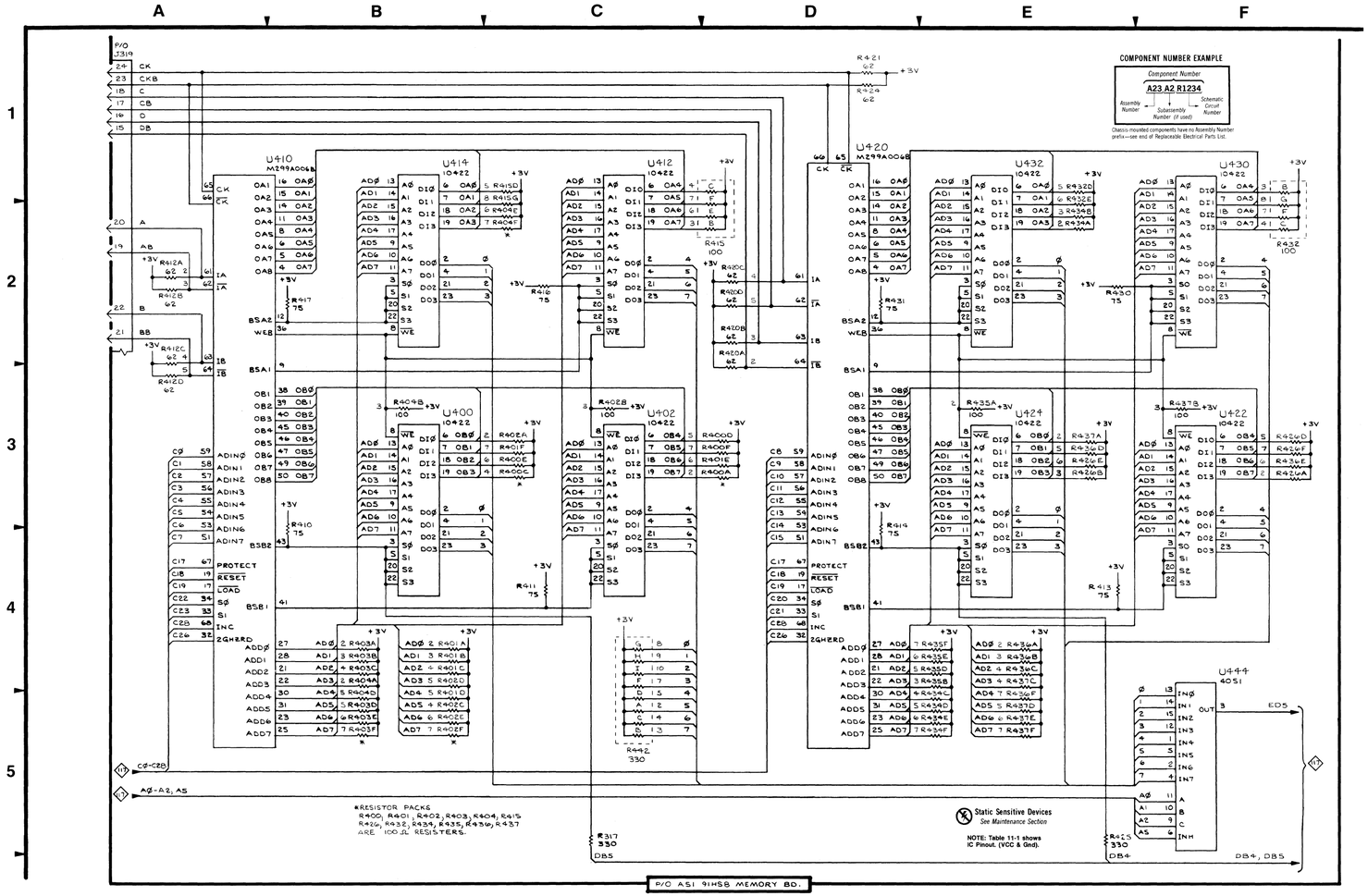


Table 11-15

ACQUISITION MEMORY CHANNEL 6 (124) — 91HS8 MEMORY BD., ASSY A51

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J369	A1	D5	R372E	C1	D4
R351A	E5	C4	R372F	D2	D4
R351B	E5	C4	R372G	D1	D4
R351C	E5	C4	R373A	A2	D5
R351D	E4	C4	R373B	A2	D5
R351E	F3	C4	R373C	A3	D5
R351F	E3	C4	R373D	A3	D5
R352A	E5	C4	R374	B4	D5
R352B	F3	C4	R375	C4	D5
R352C	E3	C4	R380A	C2	E4
R352D	E4	C4	R380B	C2	E4
R352E	E4	C4	R380C	B5	E4
R352F	E4	C4	R380E	B3	E4
R355A	E4	C4	R380F	B4	E4
R355B	E4	C4	R381A	B5	E4
R355C	E4	C4	R381B	B5	E4
R355E	E4	C4	R381C	B5	E4
R355F	E3	C4	R381D	B4	E4
R356A	E5	C4	R381E	B4	E4
R356B	E5	C4	R381F	B4	E4
R356C	E5	C4	R382A	C3	E4
R356D	E5	C4	R382B	D3	E4
R356E	E2	C4	R382C	B5	E4
R356F	E2	C4	R382D	B4	E4
R357B	F2	C5	R382E	B4	E4
R357C	F2	C5	R382F	B4	E4
R357D	F1	C5	R383A	C3	E4
R357E	E1	C5	R383B	C3	E4
R357F	F1	C5	R383C	B4	E4
R357G	E1	C5	R383D	B5	E4
R358	D2	C5	R383E	B5	E4
R359	E2	D5	R383F	B5	E4
R360A	F3	D4	R384A	D3	E5
R360B	E3	D4	R384C	C3	E5
R360D	F3	D4	R384D	D3	E5
R360E	E3	D4	R384E	C3	E5
R360F	F3	D4	R384F	D3	E5
R361	E5	D4	R441	C5	C5
R362	D4	D4	R473	C5	D5
R363	E4	D4	U356	E2	C5
R364A	D2	D5	U358	F2	D5
R364B	D2	D5	U360	E3	D4
R364C	D2	D5	U362	F3	D4
R364D	D2	D5	U364	D1	D4
R365	D1	D5	U370	B2	D4
R367	D1	D5	U372	C2	D4
R370	C2	D4	U374	A2	D4
R371	B2	D4	U380	C3	E5
R372A	D1	D4	U382	B3	E5
R372B	D2	D4	U442	F5	C5
R372C	C1	D4			

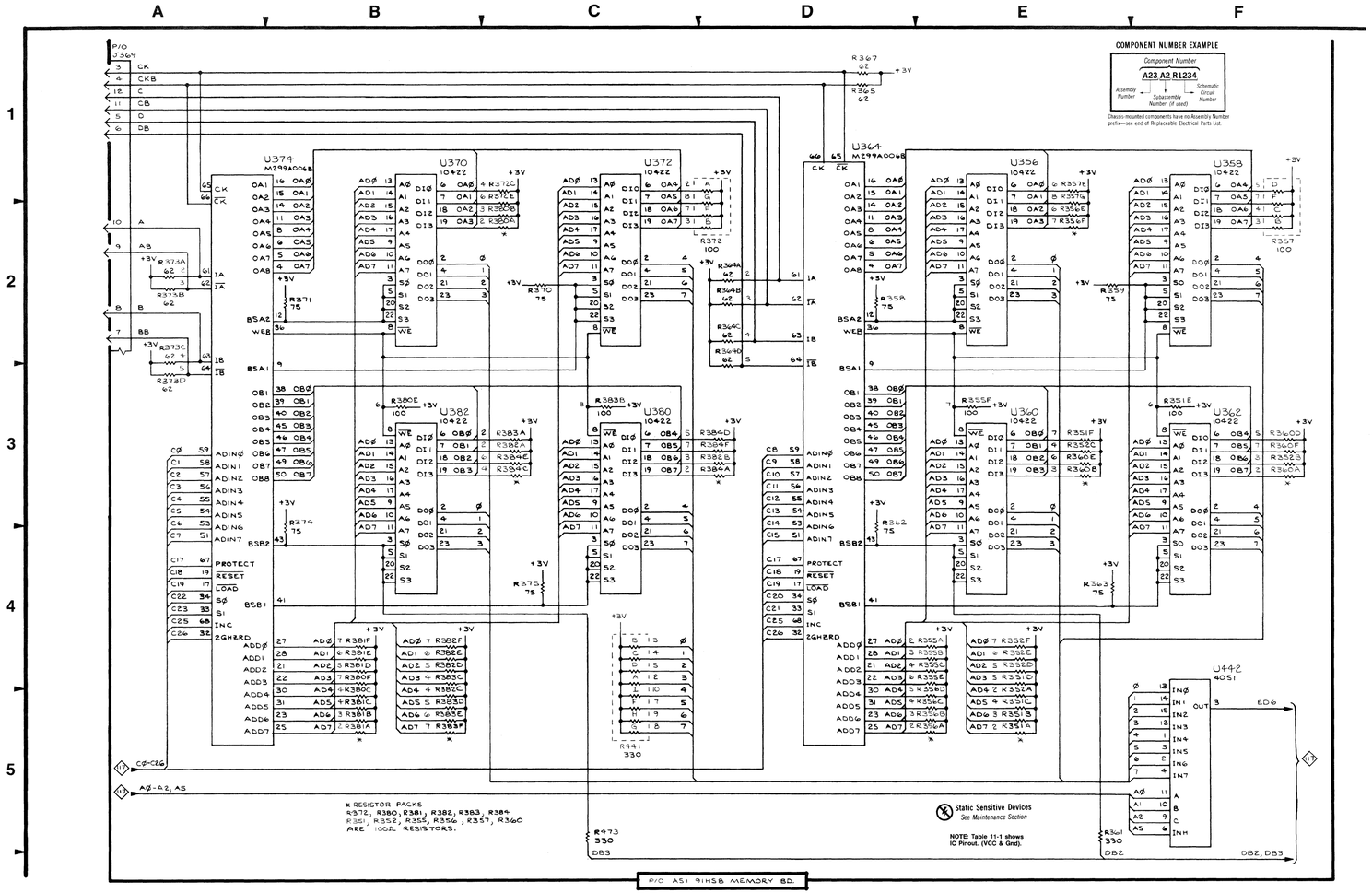
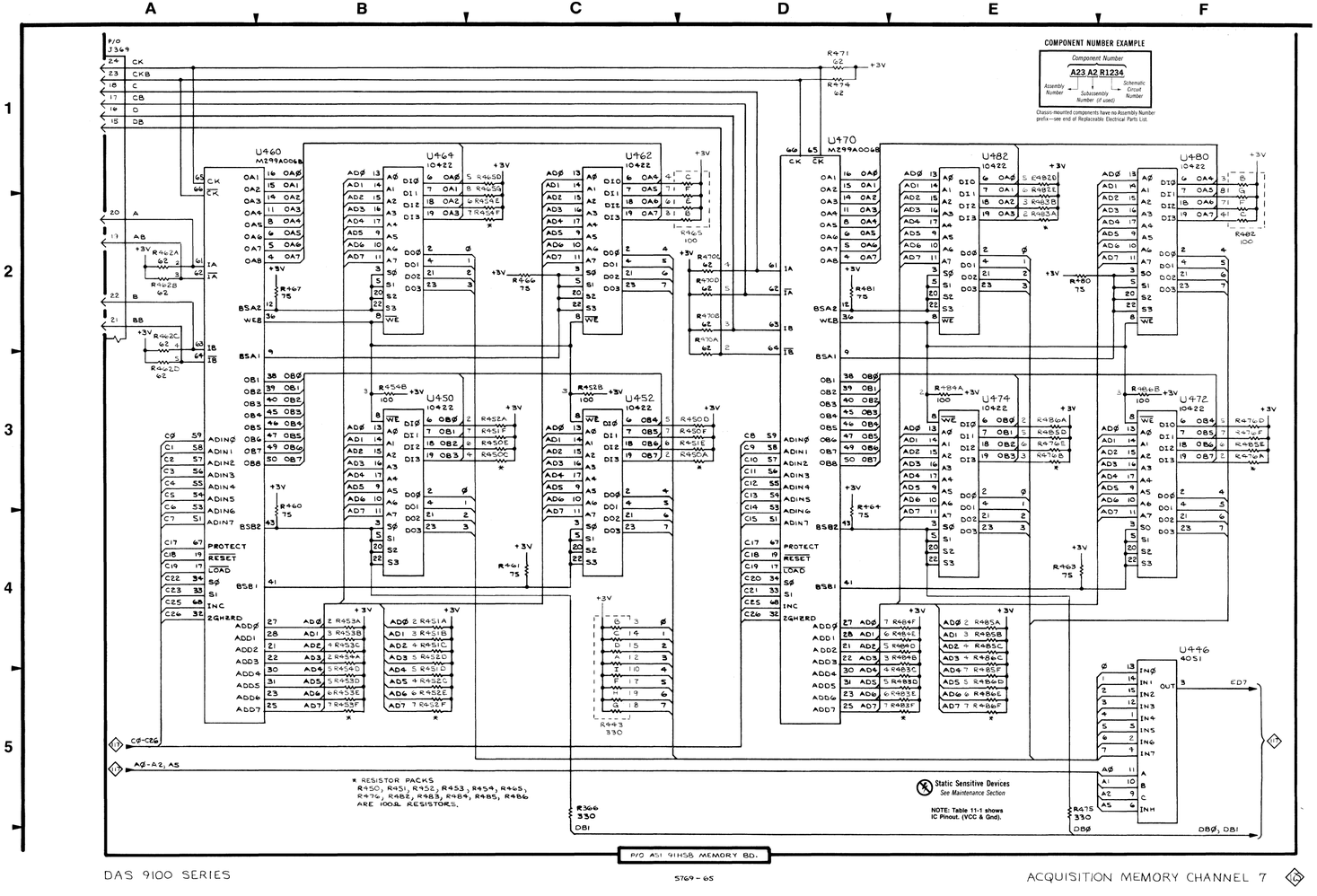


Table 11-16

ACQUISITION MEMORY CHANNEL 7 125 — 91HS8 MEMORY BD., ASSY A51

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J369	A1	D5	R471	D1	D5
R366	C5	D5	R474	D1	D5
R443	C5	C5	R475	E5	D6
R450A	D3	C5	R476A	F3	D6
R450C	C3	C5	R476B	E3	D6
R450D	D3	C5	R476D	F3	D6
R450E	C3	C5	R476E	E3	D6
R450F	D3	C5	R476F	F3	D6
R451A	B4	C6	R480	E2	E5
R451B	B4	C6	R481	D2	E5
R451C	B4	C6	R482B	F1	E5
R451D	B5	C6	R482C	F2	E5
R451E	D3	C6	R482D	E1	E5
R451F	C3	C6	R482E	E1	E5
R452A	C3	C6	R482F	F2	E5
R452B	C3	C6	R482G	F1	E5
R452C	B5	C6	R483A	E2	E6
R452D	B4	C6	R483B	E2	E6
R452E	B5	C6	R483C	E5	E6
R452F	B5	C6	R483D	E5	E6
R453A	B4	C6	R483E	E5	E6
R453B	B4	C6	R483F	E5	E6
R453C	B4	C6	R484A	E3	E6
R453D	B5	C6	R484B	E4	E6
R453E	B5	C6	R484D	E4	E6
R453F	B5	C6	R484E	E4	E6
R454A	B4	C6	R484F	E4	E6
R454B	B3	C6	R485A	E4	E6
R454D	B5	C6	R485B	E4	E6
R454E	C2	C6	R485C	E4	E6
R454F	C2	C6	R485D	E3	E6
R460	B4	D5	R485E	F3	E6
R461	C4	D5	R485F	E5	E6
R462A	A2	D5	R486A	E3	E6
R462B	A2	D5	R486B	F3	E6
R462C	A3	D5	R486C	E4	E6
R462D	A3	D5	R486D	E5	E6
R463	E4	D5	R486E	E5	E6
R464	D4	D5	R486F	E5	E6
R465B	D2	D6	U446	F5	C5
R465C	D1	D6	U450	B3	C5
R465D	C1	D6	U452	C3	D5
R465E	D2	D6	U460	A2	D5
R465F	D1	D6	U462	C2	D6
R465G	C1	D6	U464	B2	D6
R466	C2	D6	U470	D2	D5
R467	B2	D6	U472	F3	D6
R470A	D2	D5	U474	E3	D6
R470B	D2	D5	U480	F2	E5
R470C	D2	D5	U482	E2	E5
R470D	D2	D5			



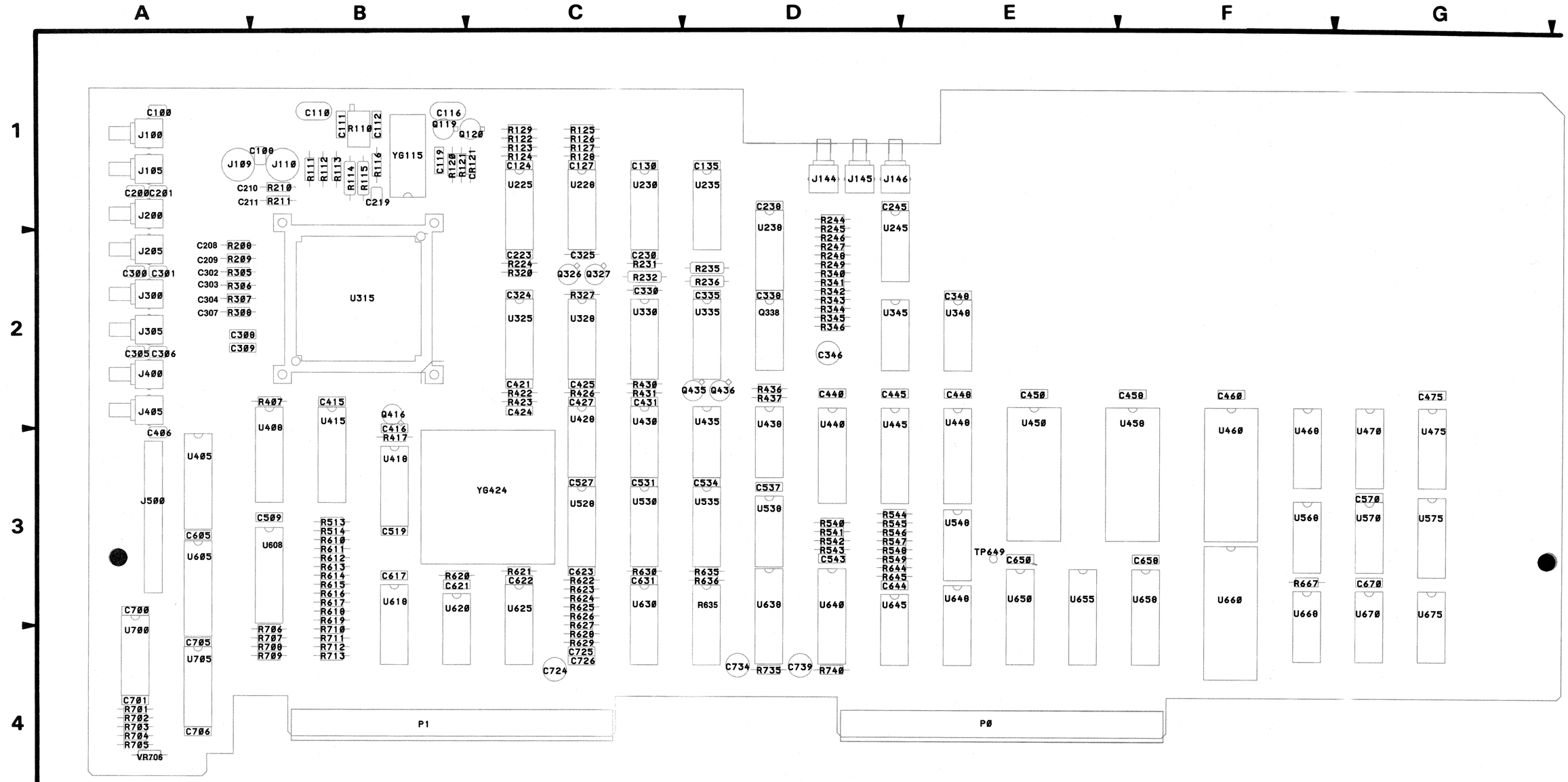
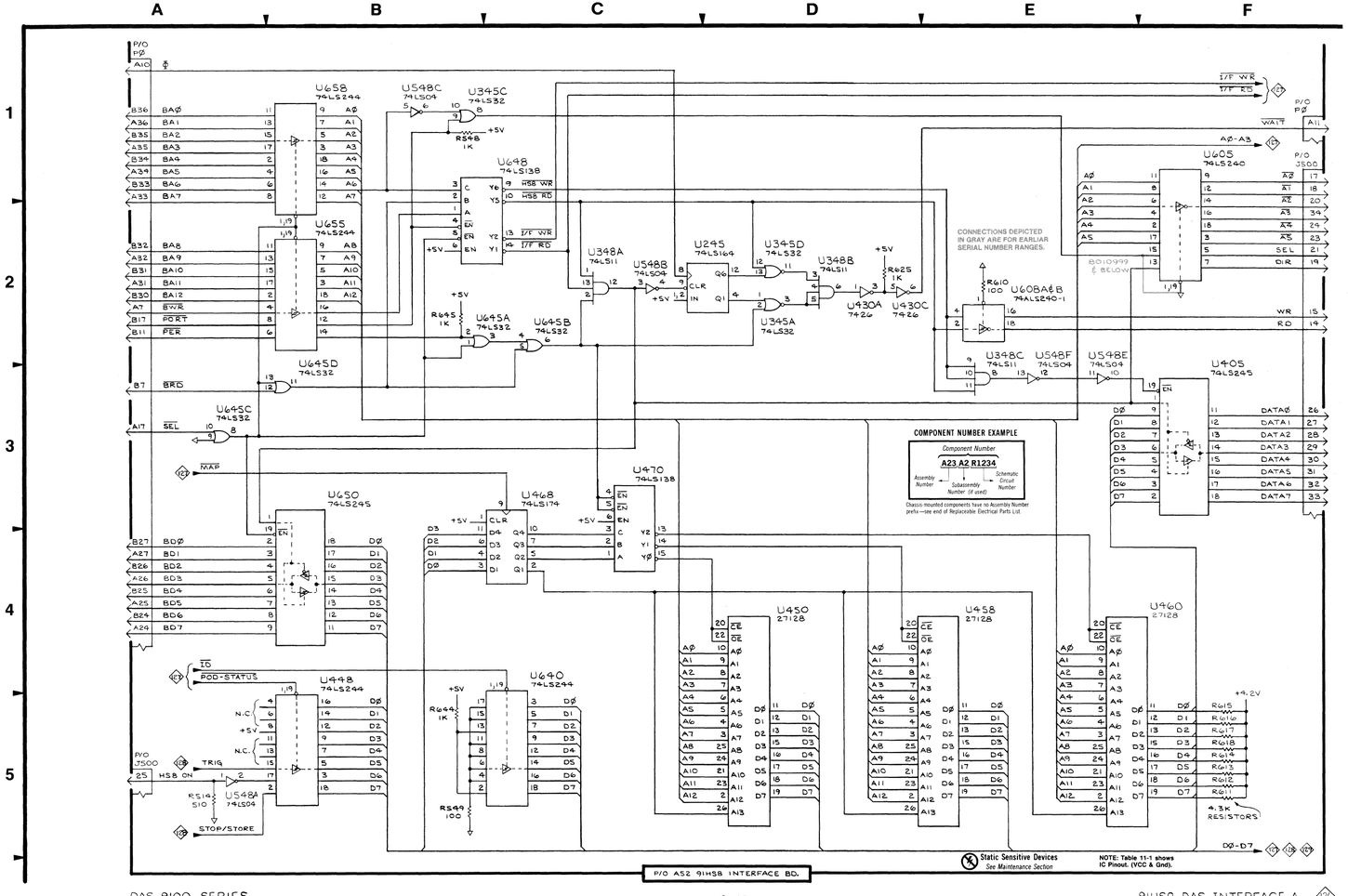


Figure 11-4. A52 Interface Board Component Locations

Table 11-17

91HS8 DAS INTERFACE A (126) — 91HS8 INTERFACE BOARD, ASSEMBLY A52

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J500	A5	A3	U405	F3	A3
J500	F2	A3	U430A	D2	C2
P0	F1	E3	U430C	D2	C2
P0	A1	E3	U448	B5	E2
R514	A5	B3	U450	D4	E2
R548	B1	D3	U458	E4	F3
R549	B5	D3	U460	E4	F3
R610	E2	B3	U468	C4	F3
R611	F5	B3	U470	C3	G3
R612	F5	B3	U548A	A5	E3
R613	F5	B3	U548B	C2	E3
R614	F5	B3	U548C	B1	E3
R615	F5	B3	U548E	E3	E3
R616	F5	B3	U548F	E3	E3
R617	F5	B3	U605	F2	A3
R618	F5	B3	U608A	E2	B3
R625	D2	C3	U608B	E2	B3
R644	B5	D3	U640	C5	D3
R645	B2	D3	U645A	B2	D3
U245	D2	D1	U645B	C2	D3
U345A	D2	D2	U645C	A3	D3
U345C	B1	D2	U645D	B3	D3
U345D	D2	D2	U648	B2	E3
U348A	C2	E2	U650	B4	E3
U348B	D2	E2	U655	B2	E3
U348C	E3	E2	U658	B1	F3



DAS 9100 SERIES

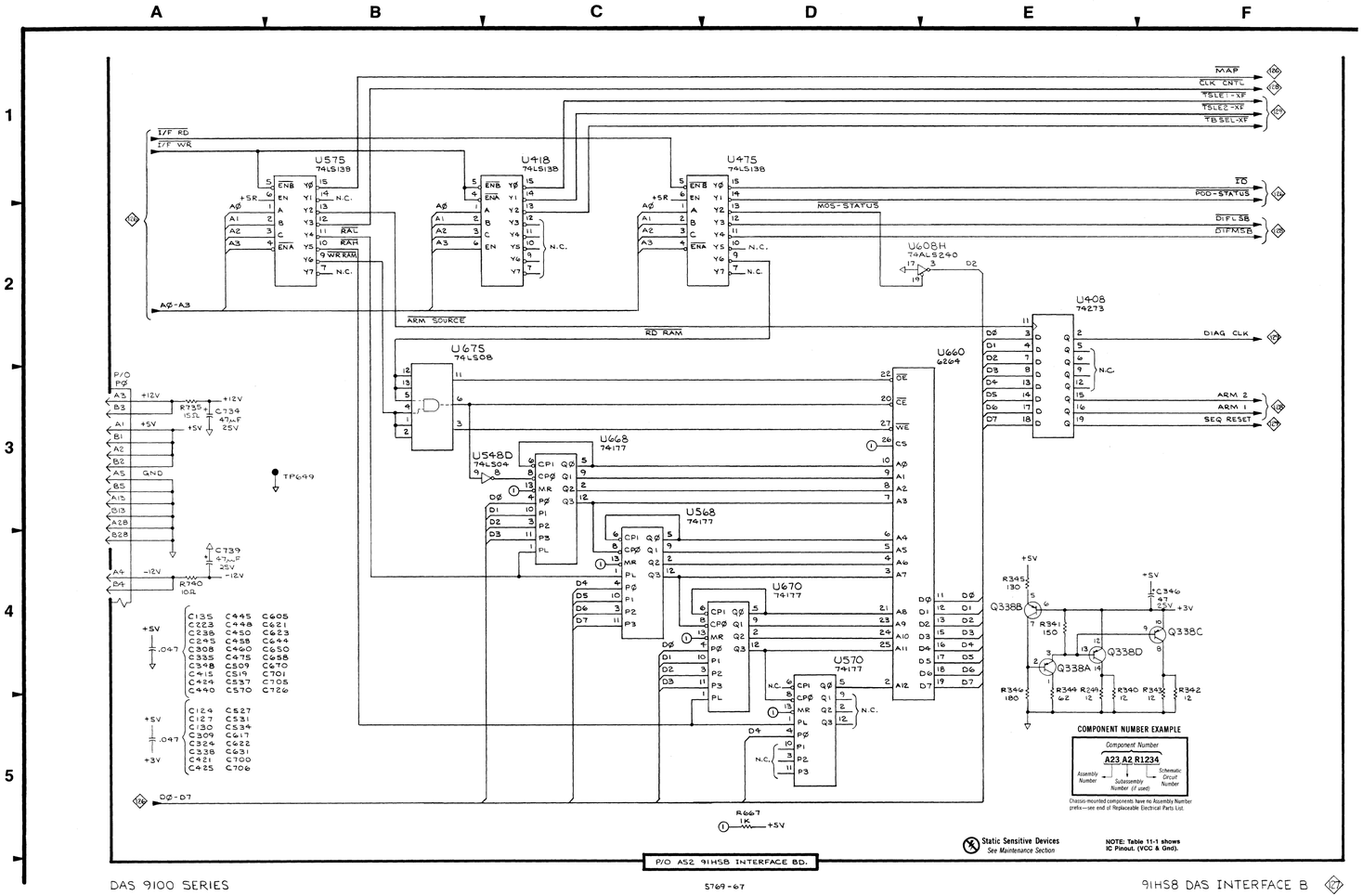
5769-66

91HS8 DAS INTERFACE A (126)

Table 11-18

91HS8 DAS INTERFACE B (127) — 91HS8 INTERFACE BOARD, ASSEMBLY A52

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C124	A5	C1	C650	B4	E3
C127	A5	C1	C658	B4	F3
C130	A5	C1	C670	B4	G3
C135	A4	D1	C700	A5	A3
C223	A4	C2	C701	B4	A4
C238	A4	D1	C705	B4	A4
C245	A4	D1	C706	A5	A4
C308	A4	A2	C726	B4	C4
C309	A5	A2	C734	A3	D4
C324	A5	C2	C739	A4	D4
C335	A4	D2	P0	A3	E3
C338	A5	D2	Q338A	E4	D2
C346	F4	D2	Q338B	E4	D2
C348	A4	E2	Q338C	F4	D2
C415	A4	B2	Q338D	E4	D2
C421	A5	C2	R249	E5	D2
C424	A4	C2	R340	E5	D2
C425	A5	C2	R341	E4	D2
C440	A4	D2	R342	F5	D2
C445	A4	D2	R343	F5	D2
C448	A4	E2	R344	E5	D2
C450	A4	E2	R345	E4	D2
C458	A4	F2	R346	E5	D2
C460	A4	F2	R667	D5	F3
C475	A4	G2	R735	A3	D4
C509	A4	B3	R740	A4	D4
C519	A4	B3	TP649	B3	E3
C527	A5	C3	U408	E2	B3
C531	A5	C3	U418	C2	B3
C534	A5	D3	U475	D2	G3
C537	A4	D3	U548D	C3	E3
C570	A4	G3	U568	C4	F3
C605	B4	A3	U570	D5	G3
C617	A5	B3	U575	B2	G3
C621	B4	B3	U608H	E2	B3
C622	A5	C3	U660	D3	F3
C623	B4	C3	U668	C3	F3
C631	A5	C3	U670	D4	G3
C644	B4	D3	U675	B3	G3



DAS 9100 SERIES

5769-67

91HS8 DAS INTERFACE B (127)

P/O A52 INTERFACE B (127)

Table 11-19

91HS8 START AND ARM CONTROL (128) — 91HS8 INTERFACE BD., ASSY A52

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C427	E2	C2	R635	C3	D3
C431	E2	C2	R636	E1	D3
C543	E1	D3	R701	F1	A4
C724	A2	C4	R702	C5	A4
C725	A2	C4	R703	B5	A4
J144	A5	D1	R704	B5	A4
J145	A5	D1	R705	A3	A4
J146	A5	D1	R706	A5	B4
J500	F1	A3	R707	B2	B4
J500	F5	A3	R708	A2	B4
J500	A2	A3	R709	B2	B4
J500	A4	A3	R710	B1	B4
P1	A3	B4	R711	B1	B4
P1	A1	B4	R712	B1	B4
Q435	E3	D2	R713	B1	B4
Q436	E3	D2	U238A	C5	D1
R244	C5	D1	U238B	B5	D1
R245	B5	D1	U345B	D4	D2
R246	B5	D2	U428B	E1	C2
R247	B5	D2	U428C	D5	C2
R248	B5	D2	U435	E3	D2
R430	E2	C2	U438	E4	D2
R431	E3	C2	U440	E4	D2
R436	E3	D2	U445	F3	D2
R437	D5	D2	U528A	C2	C3
R540	E2	D3	U528B	C2	C3
R541	E2	D3	U530A	D2	C3
R542	E2	D3	U530B	D2	C3
R543	E2	D3	U535	E2	D3
R544	F2	D3	U538	E2	D3
R545	F2	D3	U618B	B1	B3
R546	F2	D3	U618C	A3	B3
R547	F2	D3	U620	B1	B3
R619	B1	B3	U625	B3	C3
R620	B1	B3	U630A	C2	C3
R621	C2	C3	U630B	C2	C3
R622	D2	C3	U630C	E2	C3
R623	D2	C3	U630D	D1	C3
R624	B2	C3	U638	C3	D3
R626	C1	C3	U700B	F1	A4
R627	C1	C3	U700C	D5	A4
R628	C1	C4	U705A	B5	A4
R629	C2	C4	U705B	D4	A4
R630	D2	C3	U705C	B2	A4
R634	D2	D3	VR706	A3	A4

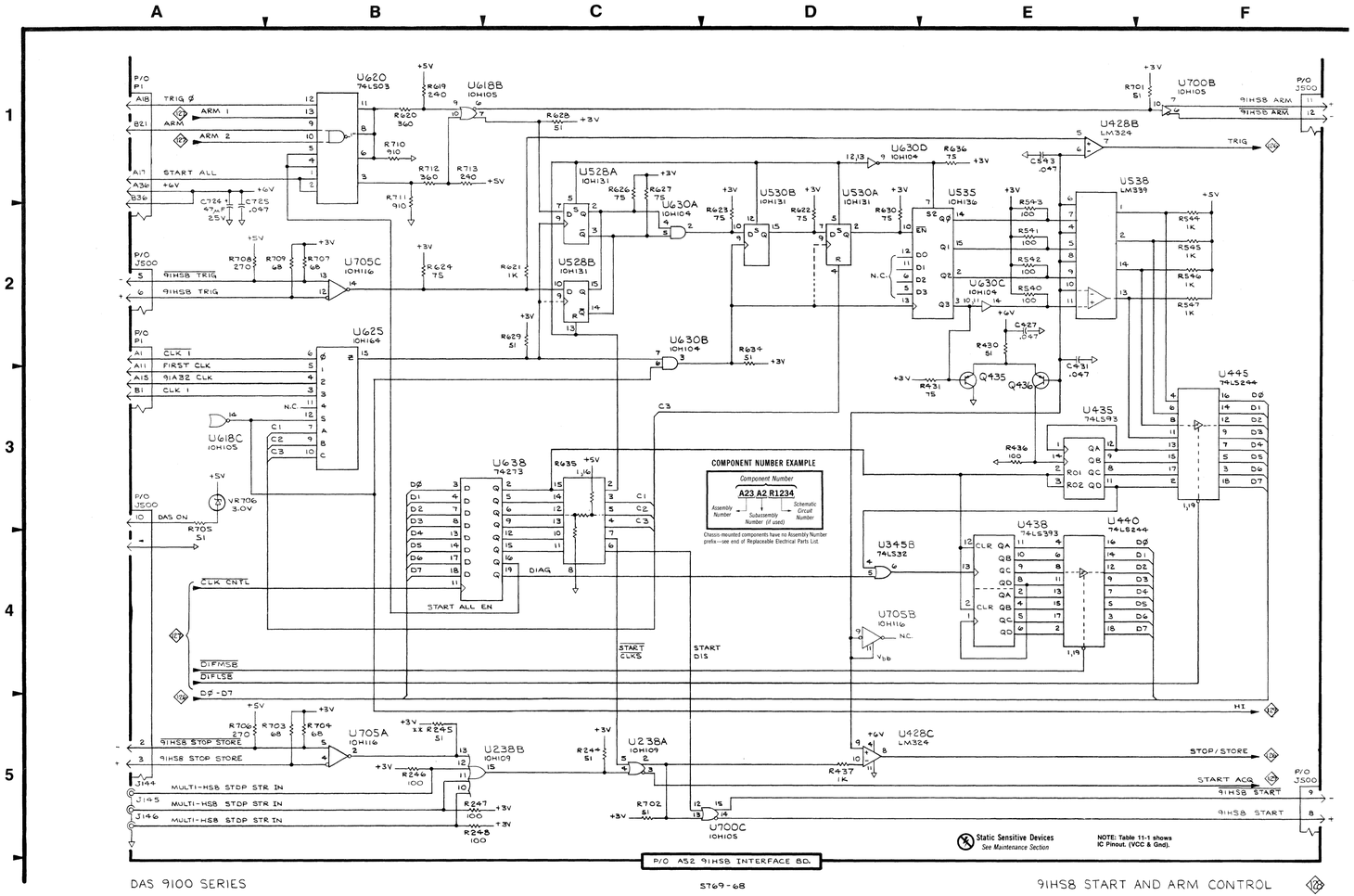
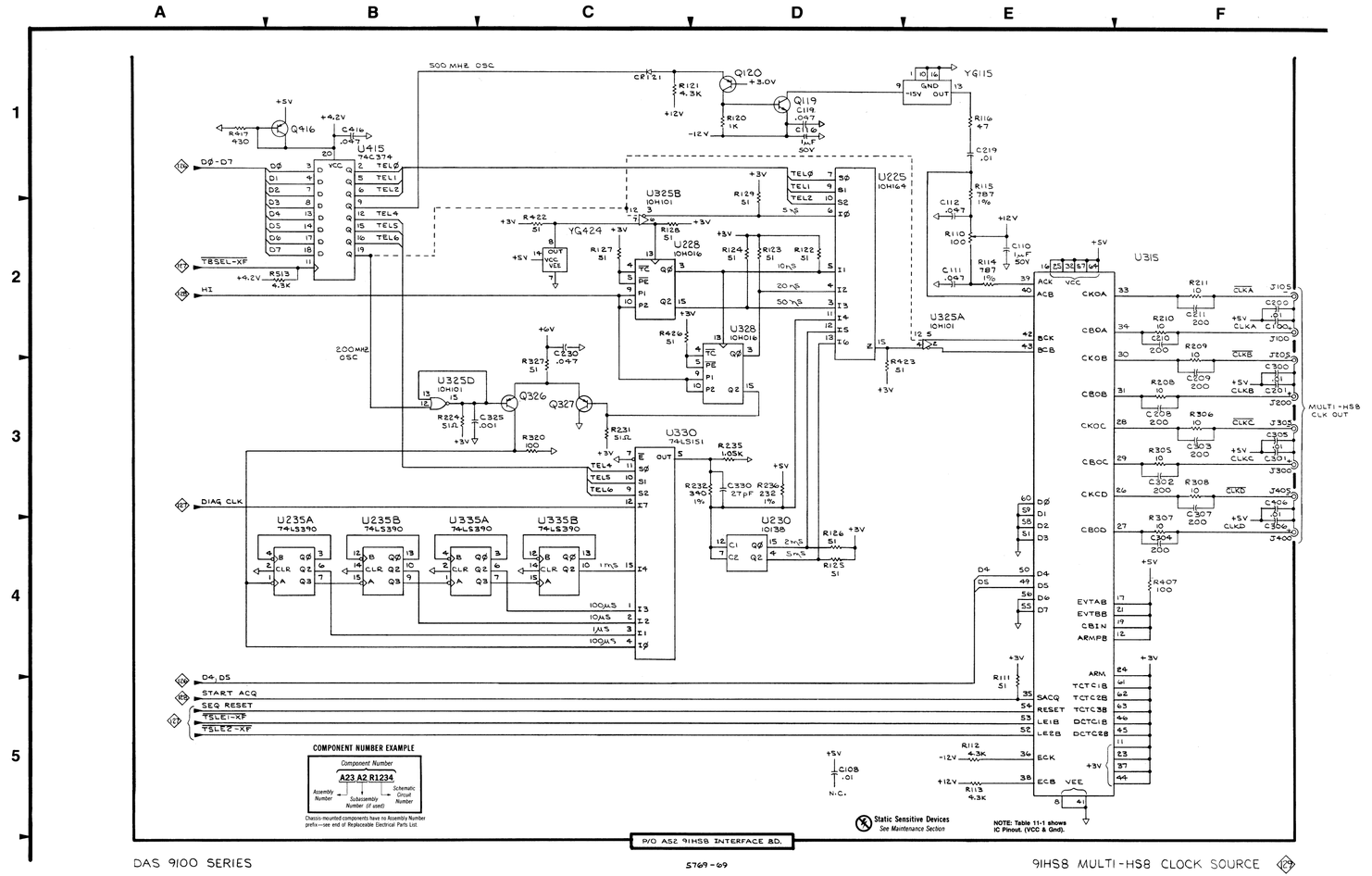


Table 11-20

91HS8 MULT-HS8 CLOCK SOURCE 129 — 91HS8 INTERFACE BD., ASSY A52

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C100	F2	A1	R120	D1	B1
C108	D5	B1	R121	C1	B1
C110	E2	B1	R122	D2	C1
C111	E2	B1	R123	D2	C1
C112	E2	B1	R124	D2	C1
C116	D1	B1	R125	D4	C1
C119	D1	B1	R126	D4	C1
C200	F2	A1	R127	C2	C1
C201	F3	A1	R128	C2	C1
C208	F3	A2	R129	D2	C1
C209	F3	A2	R208	F3	A2
C210	F2	B1	R209	F3	A2
C211	F2	B1	R210	F2	B1
C219	E1	B1	R211	F2	B1
C230	C2	C2	R224	B3	C2
C300	F3	A2	R231	C3	C2
C301	F3	A2	R232	D3	C2
C302	F3	A2	R235	D3	D2
C303	F3	A2	R236	D3	D2
C304	F4	A2	R305	F3	A2
C305	F3	A2	R306	F3	A2
C306	F4	A2	R307	F4	A2
C307	F3	A2	R308	F3	A2
C325	B3	C2	R320	C3	C2
C330	D3	C2	R327	C3	C2
C406	F3	A3	R407	F4	B2
C416	B1	B3	R417	A1	B3
CR121	C1	C1	R422	C2	C2
J100	F2	A1	R423	D3	C2
J105	F2	A1	R426	C2	C2
J200	F3	A1	R513	B2	B3
J205	F3	A2	U225	D2	C1
J300	F3	A2	U228	C2	C1
J305	F3	A2	U230	D4	C1
J400	F4	A2	U235A	B4	D1
J405	F3	A2	U235B	B4	D1
Q119	D1	B1	U315	E2	B2
Q120	D1	B1	U325A	E2	C2
Q326	C3	C2	U325B	C2	C2
Q327	C3	C2	U325D	B3	C2
Q416	B1	B2	U328	D3	C2
R110	E2	B1	U330	C3	C2
R111	E5	B1	U335A	B4	D2
R112	E5	B1	U335B	C4	D2
R113	E5	B1	U415	B1	B3
R114	E2	B1	YG115	E1	B1
R115	E1	B1	YG424	C2	C3
R116	E1	B1			



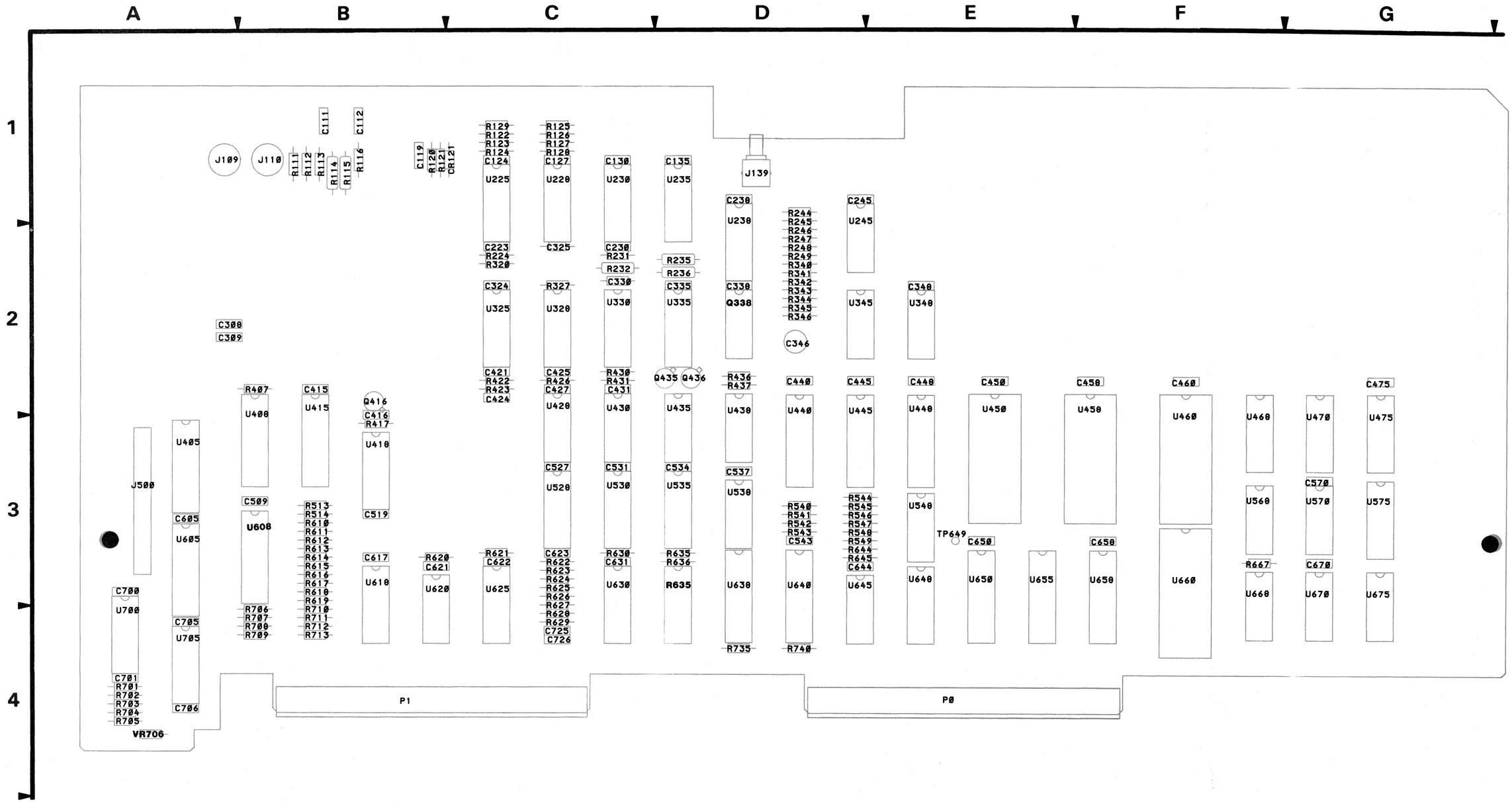
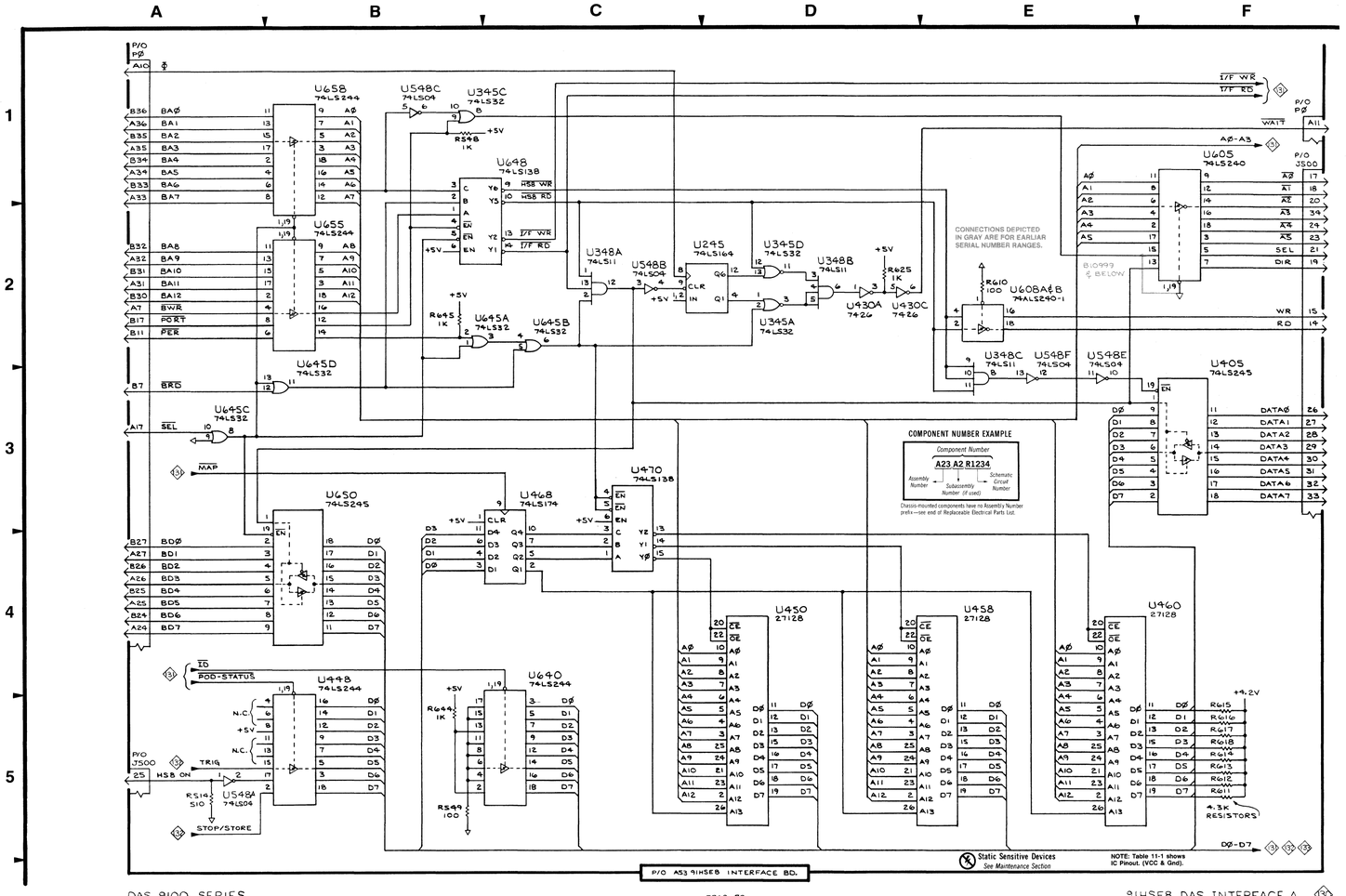


Figure 11-5. A53 Interface Board Component Locations

Table 11-21

91HSE8 DAS INTERFACE A (130) — 91HSE8 INTERFACE BD., ASSEMBLY A53

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J500	F2	A3	U405	F3	A3
J500	A5	A3	U430A	D2	C2
P0	F1	E3	U430C	D2	C2
P0	A1	E3	U448	B5	E2
R514	A5	B3	U450	D4	E2
R548	B1	D3	U458	E4	F3
R549	B5	D3	U460	E4	F3
R610	E2	B3	U468	C4	F3
R611	F5	B3	U470	C3	G3
R612	F5	B3	U548A	A5	E3
R613	F5	B3	U548B	C2	E3
R614	F5	B3	U548C	B1	E3
R615	F5	B3	U548E	E3	E3
R616	F5	B3	U548F	E3	E3
R617	F5	B3	U605	F2	A3
R618	F5	B3	U608A	E2	B3
R625	D2	C3	U608B	E2	B3
R644	B5	D3	U640	C5	D3
R645	B2	D3	U645A	B2	D3
U245	D2	D1	U645B	C2	D3
U345A	D2	D2	U645C	A3	D3
U345C	B1	D2	U645D	B3	D3
U345D	D2	D2	U648	B2	E3
U348A	C2	E2	U650	B4	E3
U348B	D2	E2	U655	B2	E3
U348C	E3	E2	U658	B1	F3



DAS 9100 SERIES

5749-70

91HSE8 DAS INTERFACE A (130)

P/O A53 INTERFACE A (130)

Table 11-22

91HSE8 DAS INTERFACE B (131) — 91HSE8 INTERFACE BD., ASSEMBLY A53

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C124	A5	C1	C644	B4	D3
C127	A5	C1	C650	B4	E3
C130	A5	C1	C658	B4	F3
C135	A4	D1	C670	B4	G3
C223	A4	C2	C700	A5	A3
C238	A4	D1	C701	B4	A4
C245	A4	D1	C705	B4	A4
C308	A4	A2	C706	A5	A4
C309	A5	A2	C726	B4	C4
C324	A5	C2	P0	A3	E3
C335	A4	D2	Q338A	E4	D2
C338	A5	D2	Q338B	E4	D2
C346	F4	D2	Q338C	F4	D2
C348	A4	E2	Q338D	E4	D2
C415	A4	B2	R249	E5	D2
C421	A5	C2	R340	E5	D2
C424	A4	C2	R341	E4	D2
C425	A5	C2	R342	F5	D2
C440	A4	D2	R343	F5	D2
C445	A4	D2	R344	E5	D2
C448	A4	E2	R345	E4	D2
C450	A4	E2	R346	E5	D2
C458	A4	F2	R667	D5	F3
C460	A4	F2	R735	A3	D4
C475	A4	G2	R740	A4	D4
C509	A4	B3	TP649	B3	E3
C519	A4	B3	U408	E2	B3
C527	A5	C3	U418	C2	B3
C531	A5	C3	U475	D2	G3
C534	A5	D3	U548D	C3	E3
C537	A4	D3	U568	C4	F3
C570	A4	G3	U570	D5	G3
C605	B4	A3	U575	B2	G3
C617	A5	B3	U608H	E2	B3
C621	B4	B3	U660	D3	F3
C622	A5	C3	U668	C3	F3
C623	B4	C3	U670	D4	G3
C631	A5	C3	U675	B3	G3

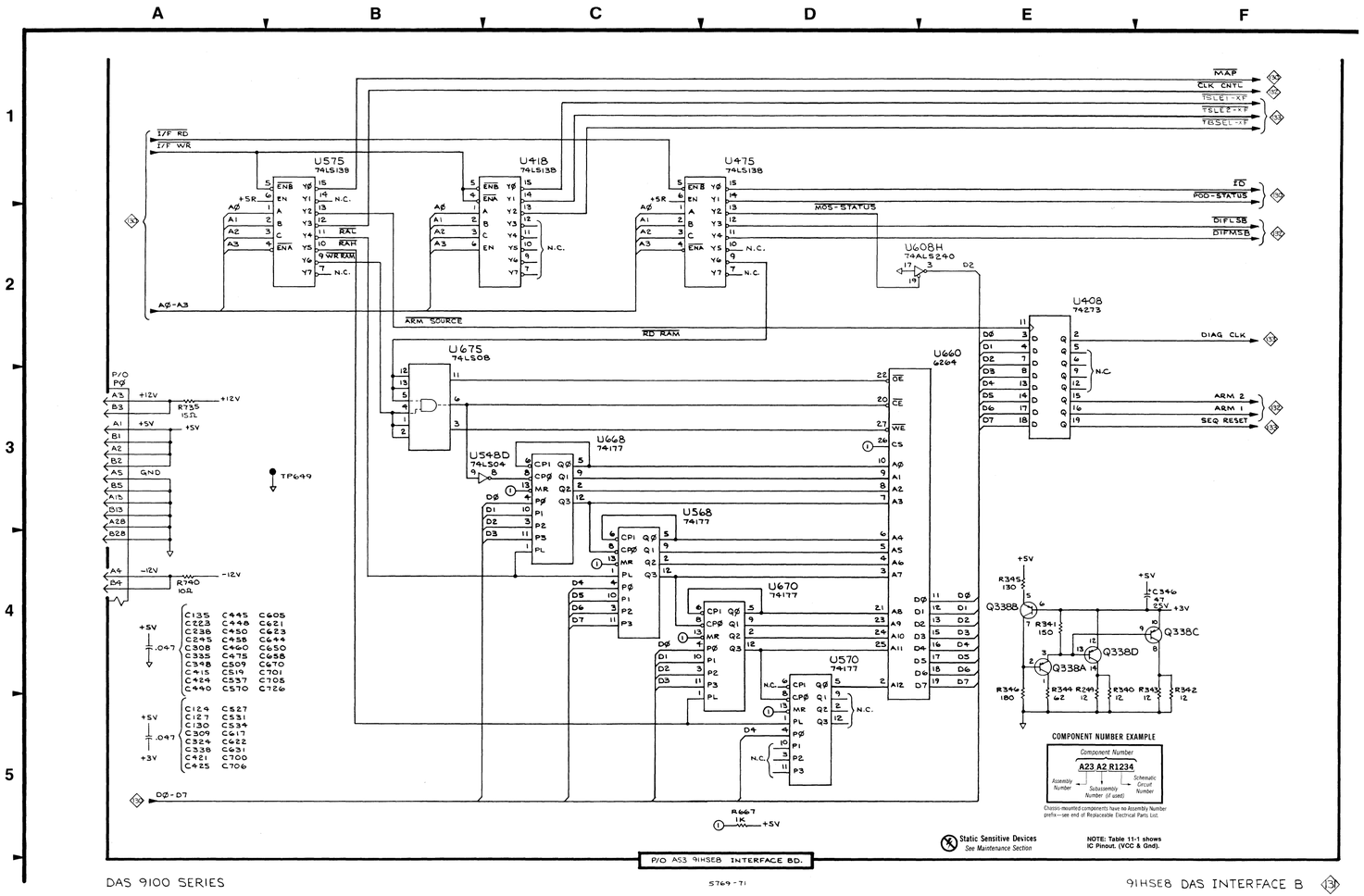


Table 11-23

91HSE8 START AND ARM CONTROL (132) — 91HSE8 INTERFACE BD., ASSY A53

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C427	E2	C2	R701	F1	A4
C431	E2	C2	R702	C5	A4
C543	E1	D3	R703	B5	A4
C725	A2	C4	R704	B5	A4
J139	F5	D1	R705	A3	A4
J500	F1	A3	R706	A5	B4
J500	F5	A3	R707	B2	B4
J500	A2	A3	R708	A2	B4
J500	A4	A3	R709	B2	B4
P1	A3	B4	R710	B1	B4
P1	A1	B4	R711	B1	B4
Q435	E3	D2	R712	B1	B4
Q436	E3	D2	R713	B1	B4
R244	C5	D1	U238A	C5	D1
R245	B5	D1	U238B	B5	D1
R246	B5	D2	U345B	D4	D2
R247	B5	D2	U428B	E1	C2
R248	B5	D2	U428C	D5	C2
R430	E2	C2	U435	E3	D2
R431	E3	C2	U438	E4	D2
R436	E3	D2	U440	E4	D2
R437	D5	D2	U445	F3	D2
R540	E2	D3	U528A	C2	C3
R541	E2	D3	U528B	C2	C3
R542	E2	D3	U530A	D2	C3
R543	E2	D3	U530B	D2	C3
R544	F2	D3	U535	E2	D3
R545	F2	D3	U538	E2	D3
R546	F2	D3	U618B	B1	B3
R547	F2	D3	U618C	A3	B3
R619	B1	B3	U620	B1	B3
R620	B1	B3	U625	B3	C3
R621	C2	C3	U630A	C2	C3
R622	D2	C3	U630B	C2	C3
R623	D2	C3	U630C	E2	C3
R624	B2	C3	U630D	D1	C3
R626	C1	C3	U638	C3	D3
R627	C1	C3	U700B	F1	A4
R628	C1	C4	U700C	D5	A4
R629	C2	C4	U705A	B5	A4
R630	D2	C3	U705B	D4	A4
R634	D2	D3	U705C	B2	A4
R635	C3	D3	VR706	A3	A4
R636	E1	D3			

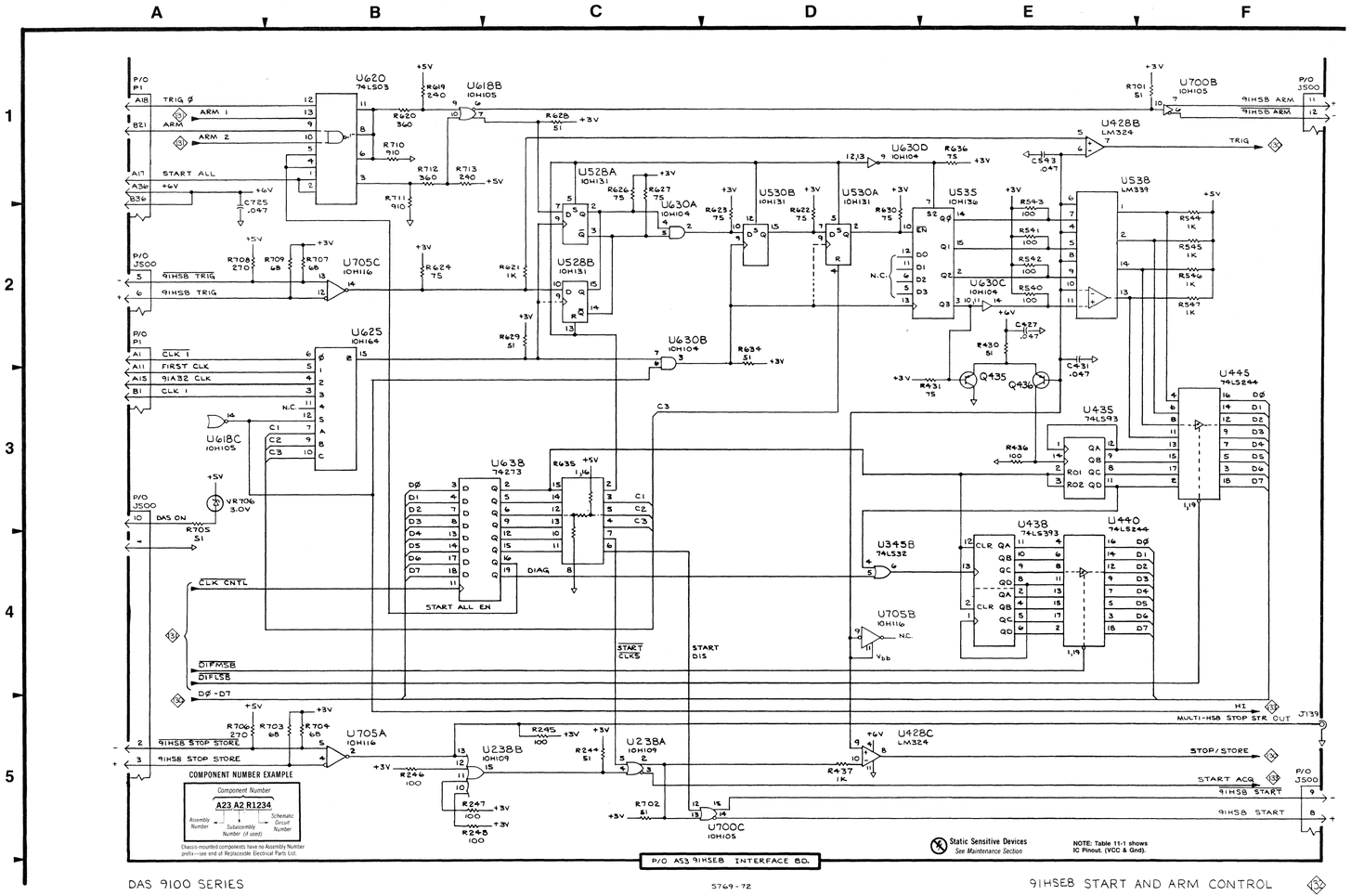
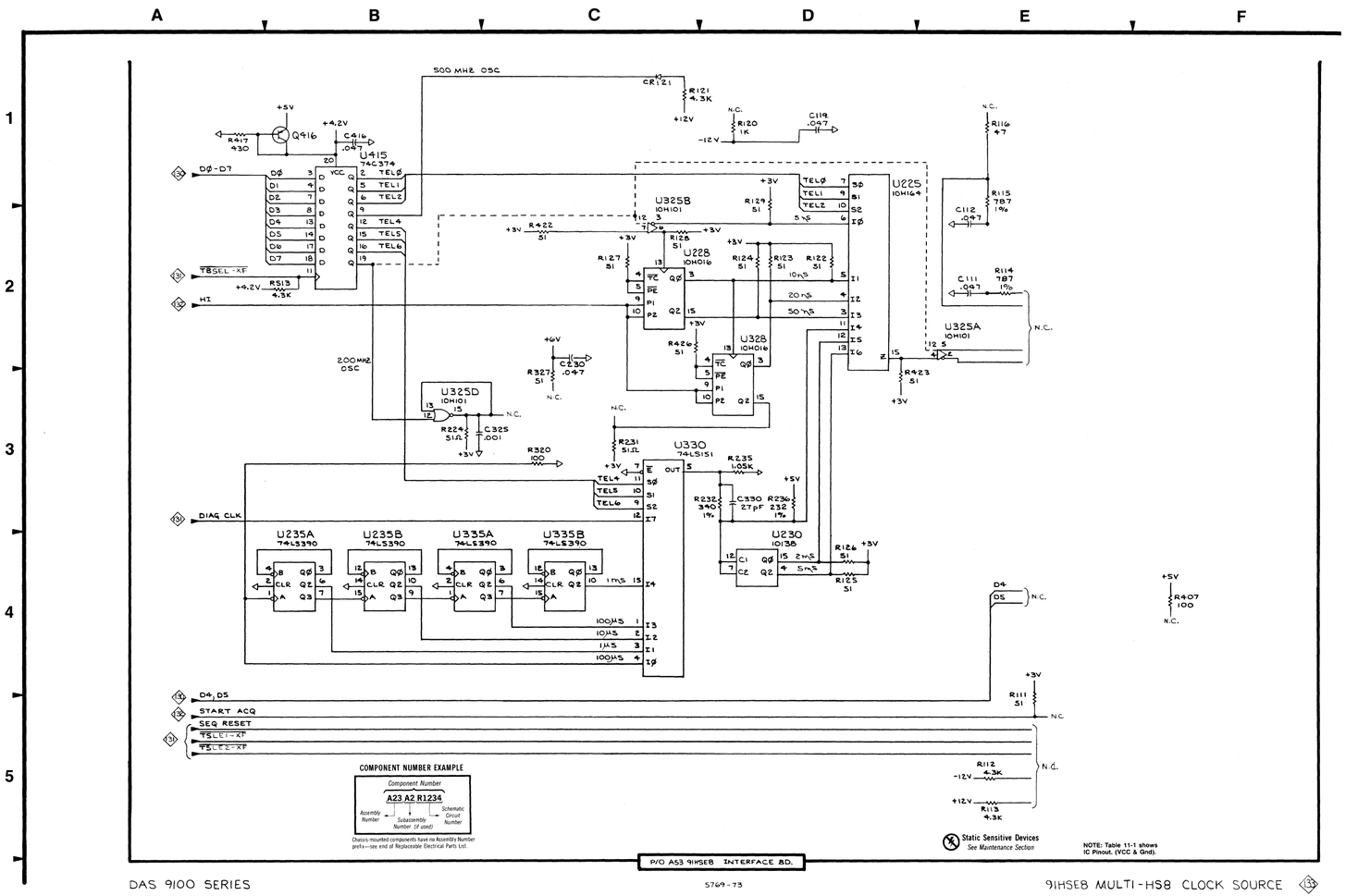


Table 11-24

91HSE8 MULTI-HS8 CLOCK SOURCE 133 — 91HSE8 INTERFACE BD., ASSY A53

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C111	E2	B1	R231	C3	C2
C112	E2	B1	R232	D3	C2
C119	D1	B1	R235	D3	D2
C230	C2	C2	R236	D3	D2
C325	B3	C2	R320	C3	C2
C330	D3	C2	R327	C3	C2
C416	B1	B3	R407	F4	B2
CR121	C1	C1	R417	A1	B3
Q416	B1	B2	R422	C2	C2
R111	E5	B1	R423	D3	C2
R112	E5	B1	R426	C2	C2
R113	E5	B1	R513	B2	B3
R114	E2	B1	U225	D2	C1
R115	E1	B1	U228	C2	C1
R116	E1	B1	U230	D4	C1
R120	D1	B1	U235A	B4	D1
R121	C1	B1	U235B	B4	D1
R122	D2	C1	U325A	E2	C2
R123	D2	C1	U325B	C2	C2
R124	D2	C1	U325D	B3	C2
R125	D4	C1	U328	D3	C2
R126	D4	C1	U330	C3	C2
R127	C2	C1	U335A	B4	D2
R128	C2	C1	U335B	C4	D2
R129	D2	C1	U415	B1	B3
R224	B3	C2			



A55 POWER SUPPLY BOARD

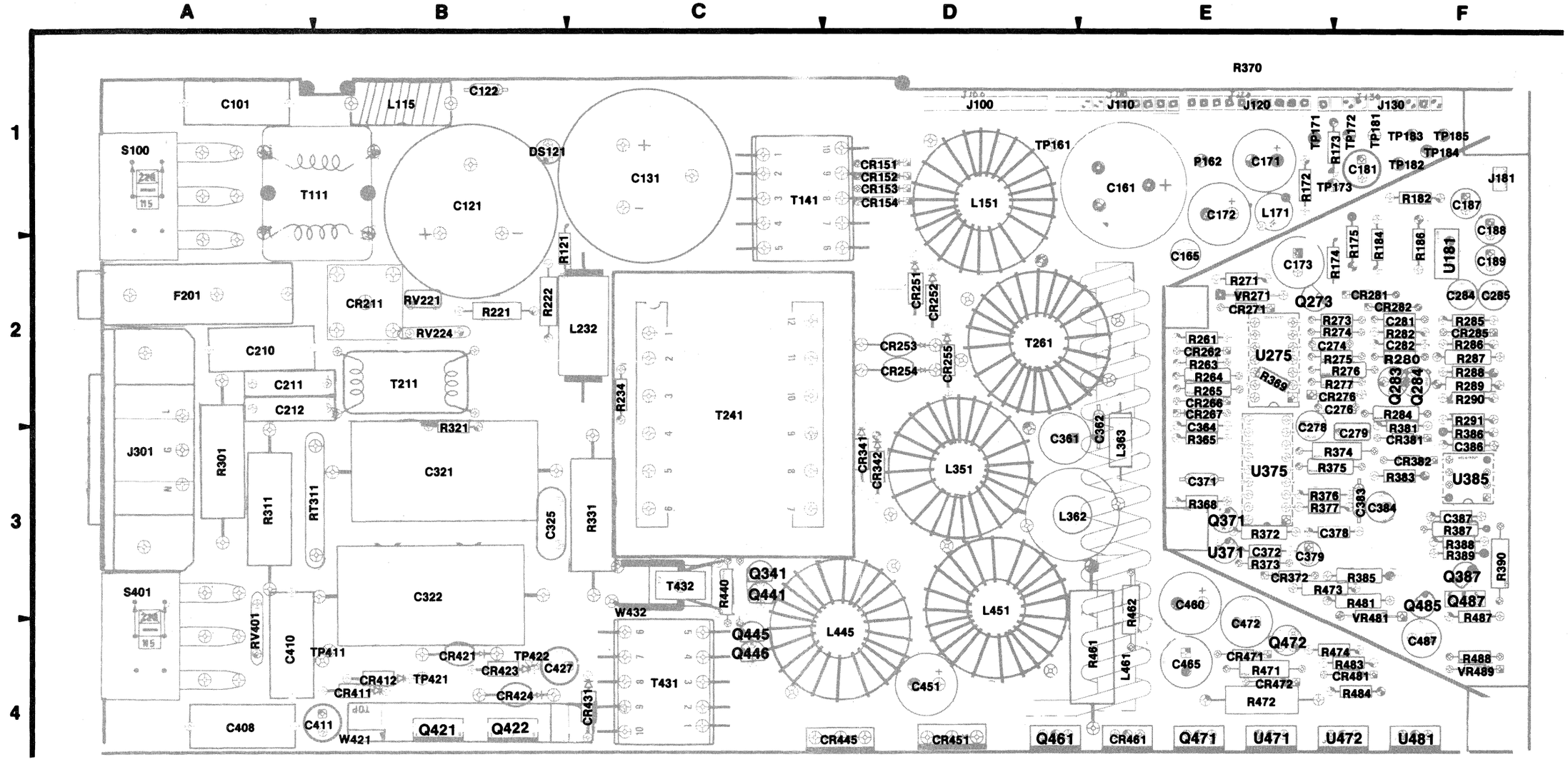
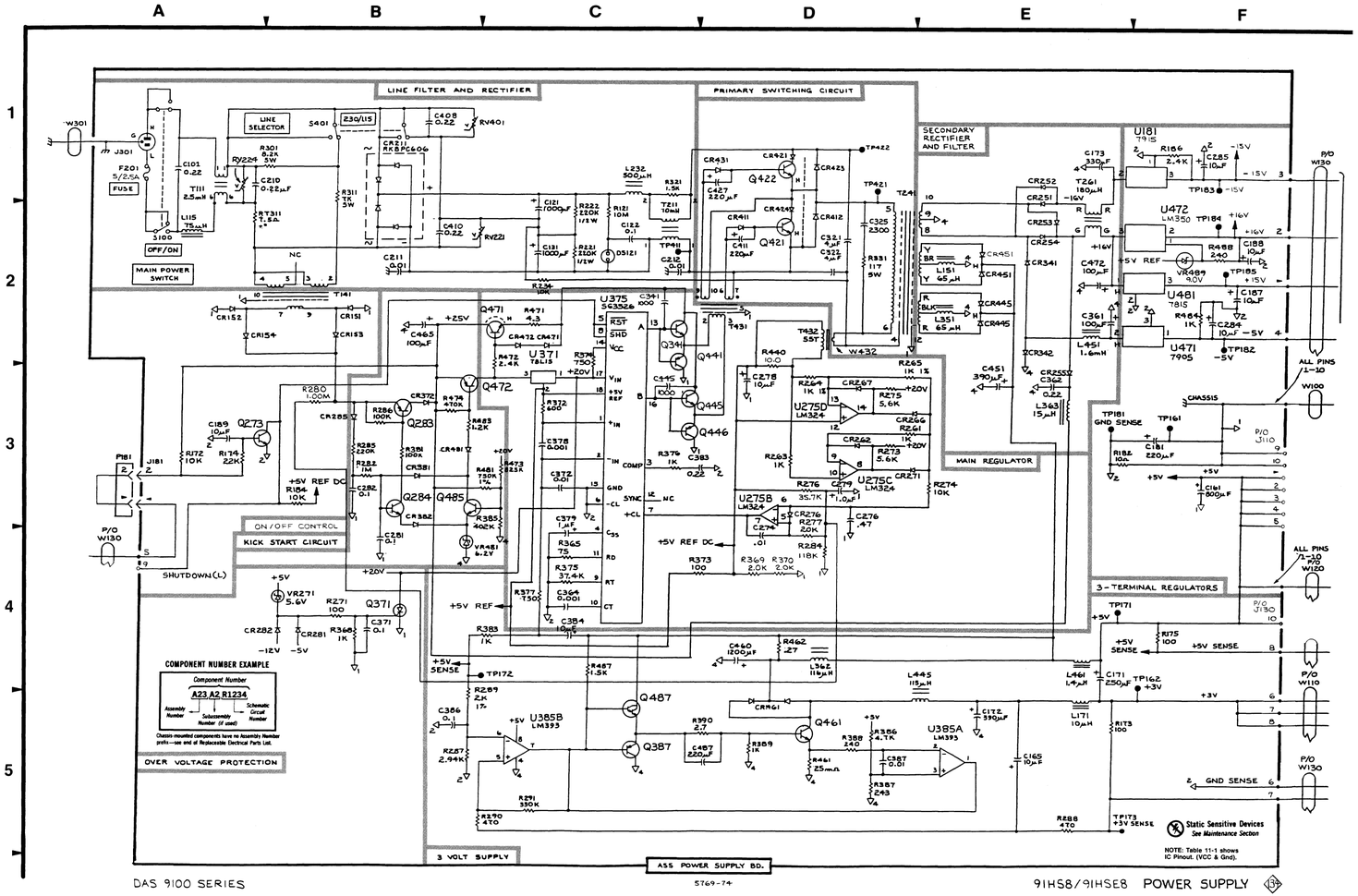


Figure 11-6. A55 Power Supply Board Component Locations

Table 11-25

91HS8/91HSE8 POWER SUPPLY 134 — POWER SUPPLY BD., ASSY A55

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C101	A1	A1	CR461	D5	E4	R370	D4	E2 Back
C121	C2	B1	CR471	C2	E4	R372	C3	E3
C122	C2	B1	CR472	C2	E4	R373	C4	E3
C131	C2	C1	CR481	B3	F4	R374	C2	F3
C161	E3	E1	DS121	C2	B1	R375	C4	F3
C165	E5	E2	F201	A1	A2	R376	C3	E3
C171	E4	E1	J100	F3	D1	R377	C4	E3
C172	E5	E1	J110	F3	E1	R381	B3	F3
C173	E1	E2	J110	F5	E1	R383	C4	F3
C181	F3	F1	J120	F4	E1	R385	C3	F3
C187	F2	F1	J130	A4	F1	R386	D5	F3
C188	F2	F1	J130	F1	F1	R387	D5	F3
C189	A3	F2	J130	F5	F1	R388	D5	F3
C210	A1	A2	J130	F4	F1	R389	D5	F3
C211	B2	A2	J181	A3	F1	R390	D5	F3
C212	C2	A2	J301	A1	A3	R440	D2	C3
C274	D4	F2	L115	A2	B1	R461	D5	E4
C276	D3	F2	L151	E2	D1	R462	D4	E3
C278	D3	E3	L171	E5	E1	R471	C2	E4
C279	D3	F3	L232	C1	C2	R472	C2	E4
C281	B4	F2	L351	E2	D3	R473	C3	E3
C282	B3	F2	L362	D4	D3	R474	B3	F4
C284	F2	F2	L363	E3	E3	R481	C3	F3
C285	F1	F2	L445	E5	D4	R483	B3	F4
C321	D2	B3	L451	E2	D3	R484	F2	F4
C322	D2	B3	L461	E4	E4	R487	C4	F3
C325	D2	B3	Q273	A3	E2	R488	F2	F4
*C341	C2	Back Bd.	Q283	B3	F2	RT311	A2	B3
C361	E2	D3	Q284	B3	F2	RV221	B2	B2
C362	E3	E3	Q341	C2	C3	RV224	A1	B1
C364	C4	E3	Q371	B4	E3	RV401	B1	A4
C371	B4	E3	Q387	C5	F3	S100	A2	A1
C372	C3	E3	Q421	D2	B4	S401	B1	A3
C378	C3	F3	Q422	D1	B4	T111	A1	B1
C379	C4	E3	Q441	C2	C3	T141	B2	C1
C383	C3	F3	Q445	C3	C4	T211	C2	B2
C384	C4	F3	Q446	C3	C4	T241	D2	C2
C386	B5	F3	Q461	D5	D4	T261	E2	D2
C387	D5	F3	Q471	C2	E4	T431	D2	C4
C408	B1	A4	Q472	B3	E4	T432	D2	C3
C410	B2	A4	Q485	B3	F3	TP161	F3	D1
C411	D2	B4	Q487	C5	F3	TP162	F4	E1
C427	D1	B4	R121	C2	B2	TP171	E4	E1
*C445	C3	Back Bd.	R172	A3	E1	TP172	B4	F1
C451	E3	D4	R173	E5	F1	TP173	E5	F1
C460	D4	E3	R174	A3	F2	TP181	E3	F1
C465	B2	E4	R175	F4	F2	TP182	F2	F1
C472	E2	E4	R182	E3	F1	TP183	F1	F1
C487	D5	F4	R184	B3	F2	TP184	F2	F1
CR151	B2	D1	R186	F1	F2	TP185	F2	F1
CR152	A2	D1	R221	C2	B2	TP411	C2	B4
CR153	B2	D1	R222	C2	B2	TP421	D1	B4
CR154	A2	D1	R234	C2	C2	TP422	D1	B4
CR211	B1	B2	R261	D3	E2	U181	F1	F2
CR251	E1	D2	R263	D3	E2	U275B	D3	E2
CR252	E1	D2	R264	D3	E2	U275C	D3	E2
CR253	E2	D2	R265	D3	E2	U275D	D3	E2
CR254	E2	D2	R271	B4	E2	U371	C3	E3
CR255	E3	D2	R273	D3	F2	U375	C2	E3
CR262	D3	E2	R274	E3	F2	U385A	E5	F3
CR266	D3	E2	R275	D3	F2	U385B	C5	F3
CR267	D3	E2	R276	D3	F2	U471	F2	E4
CR271	D3	E2	R277	D4	F2	U472	F2	F4
CR276	D3	F2	R280	B3	F2	U481	F2	F4
CR281	B4	F2	R282	B3	F2	VR271	B4	E2
CR282	B4	F2	R284	D4	F2	VR481	B4	F3
CR285	B3	F2	R285	B3	F2	VR489	F2	F4
CR341	E2	D3	R286	B3	F2	W100	F3	Off Bd.
CR342	E2	D3	R287	B5	F2	W110	F3	Off Bd.
CR372	B3	E3	R288	E5	F2	W110	F5	Off Bd.
CR381	B3	F3	R289	B4	F2	W111	F1	Off Bd.
CR382	B3	F3	R290	B5	F2	W120	F4	Off Bd.
CR411	D2	B4	R291	C5	F2	W130	A4	Off Bd.
CR412	D2	B4	R301	B1	A3	W130	F1	Off Bd.
CR421	D1	B4	R311	B1	A3	W130	F4	Off Bd.
CR423	D1	B4	R321	C1	B3	W130	F5	Off Bd.
CR424	D2	B4	R331	D2	C3	W181	A3	Off Bd.
CR431	D1	C4	R365	C4	E3	W301	A1	Off Bd.
CR445	E2	D4	R368	B4	E3	W421	Not Shown	B4
CR451	E2	D4	R369	D4	E2	W432	D2	C3



REPLACEABLE MECHANICAL PARTS

PARTS ORDERING INFORMATION

Replacement parts are available from or through your local Tektronix, Inc. Field Office or representative.

Changes to Tektronix instruments are sometimes made to accommodate improved components as they become available, and to give you the benefit of the latest circuit improvements developed in our engineering department. It is therefore important, when ordering parts, to include the following information in your order: Part number, instrument type or number, serial number, and modification number if applicable.

If a part you have ordered has been replaced with a new or improved part, your local Tektronix, Inc. Field Office or representative will contact you concerning any change in part number.

Change information, if any, is located at the rear of this manual.

ITEM NAME

In the Parts List, an Item Name is separated from the description by a colon (:). Because of space limitations, an Item Name may sometimes appear as incomplete. For further Item Name identification, the U.S. Federal Cataloging Handbook H6-1 can be utilized where possible.

FIGURE AND INDEX NUMBERS

Items in this section are referenced by figure and index numbers to the illustrations.

INDENTATION SYSTEM

This mechanical parts list is indented to indicate item relationships. Following is an example of the indentation system used in the description column.

1 2 3 4 5	*Name & Description*
	Assembly and/or Component
	Attaching parts for Assembly and/or Component
	**** END ATTACHING PARTS ****
	Detail Part of Assembly and/or Component
	Attaching parts for Detail Part
	**** END ATTACHING PARTS ****
	Parts of Detail Part
	Attaching parts for Parts of Detail Part
	**** END ATTACHING PARTS ****

Attaching Parts always appear in the same indentation as the item it mounts, while the detail parts are indented to the right. Indented items are part of, and included with, the next higher indentation.

Attaching parts must be purchased separately, unless otherwise specified.

ABBREVIATIONS

"	INCH
#	NUMBER SIZE
ACTR	ACTUATOR
ADPTR	ADAPTER
ALIGN	ALIGNMENT
AL	ALUMINUM
ASSEM	ASSEMBLED
ASSY	ASSEMBLY
ATTEN	ATTENUATOR
AWG	AMERICAN WIRE GAGE
BD	BOARD
BRKT	BRACKET
BRS	BRASS
BRZ	BRONZE
BSHG	BUSHING
CAB	CABINET
CAP	CAPACITOR
CER	CERAMIC
CHAS	CHASSIS
CKT	CIRCUIT
COMP	COMPOSITION
CONN	CONNECTOR
COV	COVER
CPLG	COUPLING
CRT	CATHODE RAY TUBE
DEG	DEGREE
DWR	DRAWER
ELCTRN	ELECTRON
ELEC	ELECTRICAL
ELCTLT	ELECTROLYTIC
ELEM	ELEMENT
EPL	ELECTRICAL PARTS LIST
EQPT	EQUIPMENT
EXT	EXTERNAL
FIL	FILLISTER HEAD
FLEX	FLEXIBLE
FLH	FLAT HEAD
FLTR	FILTER
FR	FRAME or FRONT
FSTNR	FASTENER
FT	FOOT
FXD	FIXED
GSKT	GASKET
HDL	HANDLE
HEX	HEXAGON
HEX HD	HEXAGONAL HEAD
HEX SOC	HEXAGONAL SOCKET
HLCPS	HELICAL COMPRESSION
HLEXT	HELICAL EXTENSION
HV	HIGH VOLTAGE
IC	INTEGRATED CIRCUIT
ID	INSIDE DIAMETER
IDENT	IDENTIFICATION
IMPLR	IMPELLER
IN	INCH
INCAND	INCANDESCENT
INSUL	INSULATOR
INTL	INTERNAL
LPHLDR	LAMPHOLDER
MACH	MACHINE
MECH	MECHANICAL
MTG	MOUNTING
NIP	NIPPLE
NON WIRE	NOT WIRE WOUND
OBD	ORDER BY DESCRIPTION
OD	OUTSIDE DIAMETER
OVH	OVAL HEAD
PH BRZ	PHOSPHOR BRONZE
PL	PLAIN or PLATE
PLSTC	PLASTIC
PN	PART NUMBER
PNH	PAN HEAD
PWR	POWER
RCPT	RECEPTACLE
RES	RESISTOR
RGD	RIGID
RLF	RELIEF
RTNR	RETAINER
SCH	SOCKET HEAD
SCOPE	OSCILLOSCOPE
SCR	SCREW
SE	SINGLE END
SECT	SECTION
SEMICOND	SEMICONDUCTOR
SHLD	SHIELD
SHLDR	SHOULDERED
SKT	SOCKET
SL	SLIDE
SLFLKG	SELF-LOCKING
SLVG	SLEEVING
SPR	SPRING
SQ	SQUARE
SST	STAINLESS STEEL
STL	STEEL
SW	SWITCH
T	TUBE
TERM	TERMINAL
THD	THREAD
THK	THICK
TNSN	TENSION
TPG	TAPPING
TRH	TRUSS HEAD
V	VOLTAGE
VAR	VARIABLE
W/	WITH
WSHR	WASHER
XFMR	TRANSFORMER
XSTR	TRANSISTOR

CROSS INDEX - MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip Code
0008K	STAUFFER SUPPLY	105 SE TAYLOR	PORTLAND, OR 97214
00779	AMP INC	P O BOX 3608	HARRISBURG PA 17105
01536	TEXTRON INC		ROCKFORD IL 61108
	CAMCAR DIV	1818 CHRISTINA ST	
	SEMS PRODUCTS UNIT		
05820	EG AND G WAKEFIELD ENGINEERING	60 AUDUBON RD	WAKEFIELD MA 01880
06090	RAYCHEM CORP	300 CONSTITUTION DRIVE	MENLO PARK CA 94025
06383	PANDUIT CORP	17301 RIDGELAND	TINLEY PARK IL 60477
06950	VSI CORP	13001 E TEMPLE AVE	CITY OF INDUSTRY CA 91746
	SCREWCORP DIVISION		
09922	BURNDY CORP	RICHARDS AVE	NORWALK CT 06852
11897	PLASTIGLIDE MFG CORP	2701 W EL SEGUNDO BLVD	HAWTHORNE CA 90250
13103	THERMALLOY CO INC	2021 W VALLEY VIEW LANE	DALLAS TX 75234
		P O BOX 34829	
16428	BELDEN CORP	2200 US HWY 27 SOUTH	RICHMOND IN 47374
	ELECTRONIC DIV	P O BOX 1980	
28520	HEYCO MOLDED PRODUCTS	147 MICHIGAN AVE	KENILWORTH NJ 07033
		P O BOX 160	
52152	MINNESOTA MINING AND MFG CO	3M CENTER	ST PAUL MN 55144
	INDUSTRIAL SPECIALTIES DIV		
54583	TDK ELECTRONICS CORP	755 EASTGATE BLVD	GARDEN CITY NY 11530
70903	BELDEN CORP	2000 S BATAVIA AVE	GENEVA IL 60134
72228	AMCA INTERNATIONAL CORP	459 MT PLEASANT	NEW BEDFORD MA 02742
	CONTINENTAL SCREW CO DIV		
73743	FISCHER SPECIAL MFG CO	446 MORGAN ST	CINCINNATI OH 45206
77132	DOT DIV A UNITED-CARR DIV OF TRW INC	250 KNOTTER RD	CHESHIRE CT 06410
		P O BOX 767	
78189	ILLINOIS TOOL WORKS INC	ST CHARLES ROAD	ELGIN IL 60120
	SHAKEPROOF DIVISION		
80009	TEKTRONIX INC	4900 S W GRIFFITH DR	BEAVERTON OR 97077
		P O BOX 500	
83385	MICRODOT MANUFACTURING INC	3221 W BIG BEAVER RD	TROY MI 48098
	GREER-CENTRAL DIV		
83486	ELCO INDUSTRIES INC	1101 SAMUELSON RD	ROCKFORD IL 61101
86928	SEASTROM MFG CO INC	701 SONORA AVE	GLENDALE CA 91201
91500	ASHEVILLE-SCHOONMAKER MICA CO	910 JEFFERSON AVE	NEWPORT NEWS VA 23607
		P O BOX 318	
93907	TEXTRON INC	600 18TH AVE	ROCKFORD IL 61101
	CAMCAR DIV		
S3109	FELLER ASA ADOLF AG	355 TESCONI CIRCLE	SANTA ROSA CA 95401
	C/O PANEL COMPONENTS CORP		
S3629	SCHURTER AG H	2015 SECOND STREET	BERKELEY CA 94170
	C/O PANEL COMPONENTS CORP		
TK0303	FAB TEX INC	17 SUGAR HOLLOW RD	DANBURY CT 06810
TK0308	NATIONAL ELECTRIC CABLE	16566 SW 72 AVENUE	PORTLAND OR 97223
TK0433	PORTLAND SCREW CO	6520 N BASIN	PORTLAND OR 97217
TK0435	LEWIS SCREW CO	4114 S PEORIA	CHICAGO IL 60609
TK0861	H SCHURTER AG DIST PANEL COMPONENTS	2015 SECOND STREET	BERKELEY CA 94170
TK1031	L AND W COMPONENTS	PO BOX 25110	PORTLAND OR 97225
	DIV OF LAMB INDUSTRIES		
TK1148	ACACIA SALES	7763 SW CIRRUS DR	BEAVERTON OR 97005
		BLDG 26	
TK1373	PATELEC-CEM (ITALY)	10156 TORINO	VAICENTALLO 62/45S ITALY
TK1465	BEAVERTON PARTS MFG CO	1800 NW 216TH	HILLSBORO OR 97123
TK1473	RICHARD HIRSCHMANN OF AMERICA	PO BOX 229/INDUSTRIAL ROW	RIVERDALE NJ 07457

Fig. & Index No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
1-1	390-0975-00			1	CABINET TOP:FULL RACK X 22.131	80009	390-0975-00
-2	334-6218-00			1	MARKER,IDENT:MKD TEKTRONIX	80009	334-6218-00
-3	101-0105-00			1	TRIM,DECORATIVE:	80009	101-0105-00
					(ATTACHING PARTS)		
-4	211-0504-00			4	SCREW,MACHINE:6-32 X 0.250,PNH,STL	TK0435	ORDER BY DESCR
					(END ATTACHING PARTS)		
-5	343-0775-00			1	CLIP,SPR TNSN:	52152	3484-1000
-6	407-3298-00			1	BRACKET,CKT BD:LEFT,ALUMINUM	80009	407-3298-00
					(ATTACHING PARTS)		
-7	211-0504-00			8	SCREW,MACHINE:6-32 X 0.250,PNH,STL	TK0435	ORDER BY DESCR
-8	211-0507-00			2	SCREW,MACHINE:6-32 X 0.312,PNH,STL	83385	ORDER BY DESCR
					(END ATTACHING PARTS)		
-9	348-0907-00			1	SHLD GSKT,ELEK:FINGER TYPE,8.088 L	80009	348-0907-00
-10	348-0906-00			1	SHLD GSKT,ELEK:FINGER TYPE,3.74,L	80009	348-0906-00
-11	343-0775-00			1	CLIP,SPR TNSN:	52152	3484-1000
-12	----- -----			3	FAN TUBEAXIAL:(SEE B134,B152,B160 REPL)		
					(ATTACHING PARTS)		
-13	211-0510-00			12	SCREW,MACHINE:6-32 X 0.375,PNH,STL	83385	ORDER BY DESCR
-14	210-0457-00			12	NUT,PL,ASSEM WA:6-32 X 0.312,STL CD PL	78189	511-061800-00
					(END ATTACHING PARTS)		
-15	407-3402-00			1	BRACKET,CKT BD:FRONT,LEFT	80009	407-3402-00
					(ATTACHING PARTS)		
-16	211-0504-00			2	SCREW,MACHINE:6-32 X 0.250,PNH,STL	TK0435	ORDER BY DESCR
					(END ATTACHING PARTS)		
-17	337-3250-00			2	SHIELD,STATIC:CAL BOARD	80009	337-3250-00
					(ATTACHING PARTS)		
-18	211-0007-00			2	SCREW,MACHINE:4-40 X 0.188,PNH,STL	TK0435	ORDER BY DESCR
-19	210-0551-00			2	NUT,PLAIN,HEX:4-40 X 0.25,ST CD PL	TK0435	ORDER BY DESCR
					(END ATTACHING PARTS)		
-20	407-3404-00			1	BRACKET,CKT BD:FRONT,RIGHT	80009	407-3404-00
					(ATTACHING PARTS)		
-21	211-0504-00			2	SCREW,MACHINE:6-32 X 0.250,PNH,STL	TK0435	ORDER BY DESCR
					(END ATTACHING PARTS)		
-22	255-0334-00			1	PLASTIC CHANNEL:12.75 X 0.175 X 0.155,NYL	11897	122-37-2500
-23	334-6311-00			1	MARKER,IDENT:MKD CAUTION	80009	334-6311-00
-24	407-3301-00			1	BRACKET,CKT BD:RIGHT,ALUMINUM	80009	407-3301-00
					(ATTACHING PARTS)		
-25	211-0507-00			8	SCREW,MACHINE:6-32 X 0.312,PNH,STL	83385	ORDER BY DESCR
-26	211-0504-00			2	SCREW,MACHINE:6-32 X 0.250,PNH,STL	TK0435	ORDER BY DESCR
					(END ATTACHING PARTS)		
-27	426-2059-00			4	FRAME SECT,CAB.:	80009	426-2059-00
					(ATTACHING PARTS)		
-28	213-0760-00			4	SCREW,TPG,TF:8-32 X 0.875,SPCL TAPTITE	72228	ORDER BY DESCR
					(END ATTACHING PARTS)		
-29	124-0401-03			2	STRIP,TRIM:CORNER M/STEP TOP,PVC,EARTHBROWN	80009	124-0401-03
-30	124-0402-03			2	STRIP,TRIM:CORNER M/STEP BOTTOM,PVC	80009	124-0402-03
-31	348-0829-00			4	SHLD GSKT,ELEK:RIGHT,CORNER	80009	348-0829-00
-32	348-0830-00			4	SHLD GSKT,ELEK:LEFT,CORNER	80009	348-0830-00
-33	343-0985-00			8	RTNR,ELEK SHLD:LEFT & RIGHT	80009	343-0985-00
-34	348-0617-04			4	FOOT,CABINET:BOT,EARTH BROWN,POLYCARBONATE	80009	348-0617-04
-35	348-0596-00			4	PAD,CAB.FOOT:0.69 X 0.255 X 0.06,PU	80009	348-0596-00
-36	390-0935-00			2	CABINET SIDE:3.5 X 22.131 EARTH BROWN	80009	390-0935-00
-37	346-0120-00			1	STRAP,TIEDOWN,E:5.5 L MIN,PLASTIC	06383	SST1.5M
-38	441-1593-00			1	CHAS,PWR SUPPLY:	80009	441-1593-00
-39	407-3405-00			1	BRACKET,CKT BD:TOP	80009	407-3405-00
					(ATTACHING PARTS)		
-40	212-0106-00			2	SCREW,MACHINE:8-32 X 0.875,FLH,100 DEG,STL	TK0433	ORDER BY DESCR
-41	220-0555-00			2	NUT,PLAIN,HEX:8-32 X 0.25 HEX,STL CD PL	TK0433	ORDER BY DESCR
					(END ATTACHING PARTS)		
-42	407-3403-00			1	BRACKET,CKT BD:BOTTOM	80009	407-3403-00
					(ATTACHING PARTS)		
-43	212-0106-00			2	SCREW,MACHINE:8-32 X 0.875,FLH,100 DEG,STL	TK0433	ORDER BY DESCR
-44	220-0555-00			2	NUT,PLAIN,HEX:8-32 X 0.25 HEX,STL CD PL	TK0433	ORDER BY DESCR
					(END ATTACHING PARTS)		
-45	426-2093-00			1	FRAME,CABINET:REAR,FINISHED,3.5 X FULL RACK	80009	426-2093-00
					(ATTACHING PARTS)		
-46	213-0760-00			4	SCREW,TPG,TF:8-32 X 0.875,SPCL TAPTITE	72228	ORDER BY DESCR

Fig. & Index No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Qty	12345	Name & Description	Mfr. Code	Mfr. Part No.
1-						(END ATTACHING PARTS)		
-47	----- -----			9		PROBE,BUFFER:(SEE A50A1 REPL)		
-48	210-0586-00			9		NUT,PL,ASSEM WA:4-40 X 0.25,STL CD PL	78189	211-041800-00
-49	334-1275-00			1		CLIP,CABLE MKR:BLACK,PLASTIC	80009	334-1275-00
	334-1275-01			1		CLIP,CABLE MKR:BROWN,PLASTIC	80009	334-1275-01
	334-1275-02			1		CLIP,CABLE MKR:RED,PLASTIC	80009	334-1275-02
	334-1275-03			1		CLIP,CABLE MKR:ORANGE,PLASTIC	80009	334-1275-03
	334-1275-04			1		CLIP,CABLE MKR:YELLOW,PLASTIC	80009	334-1275-04
	334-1275-05			1		CLIP,CABLE MKR:GREEN,PLASTIC	80009	334-1275-05
	334-1275-06			1		CLIP,CABLE MKR:BLUE,PLASTIC	80009	334-1275-06
	334-1275-07			1		CLIP,CABLE MKR:VIOLET,PLASTIC	80009	334-1275-07
	334-1275-08			1		CLIP,CABLE MKR:GRAY,PLASTIC	80009	334-1275-08
	334-1275-09			1		CLIP,CABLE MKR:WHITE,PLASTIC	80009	334-1275-09
-50	134-0138-00			1		BUTTON,PLUG:0.625 HOLE,STL CRPL	77132	SS48172
-51	391-0183-00			2		BLOCK,LATCHING:ZINC	TK1465	ORDER BY DESCR
						(ATTACHING PARTS)		
-52	211-0173-00			2		SCREW,MACHINE:4-40 X 0.375,FILH,STL	TK0435	ORDER BY DESCR
						(END ATTACHING PARTS)		
-53	348-0883-00			1		GASKET,RFI:2.73 X 0.8,BRASS	00779	745777-3
-54	119-2046-00			1		FILTER,RFI:6 AMP	54583	ZUB 2206-00
						(ATTACHING PARTS)		
-55	211-0008-00			2		SCREW,MACHINE:4-40 X 0.25,PNH,STL	93907	ORDER BY DESCR
						(END ATTACHING PARTS)		
	162-0531-00			1		INSUL SLVG,ELEC:HT SHRINK,0.165 ID	06090	VERSAFIT
	162-0532-00			1		INSUL SLVG,ELEC:HT SHRINK,0.375 ID	06090	VERSAFIT
-56	----- -----			1		CABLE ASSY,PWR:(SEE W150 REPL)		
-57	348-0544-05			4		RTNR,CAB.COVER:CORNER EARTH BROWN,PC	80009	348-0544-05
						(ATTACHING PARTS)		
-58	212-0140-00			4		SCREW,MACHINE:8-32 X 0.75,SPCL 0.375 OD HD	80009	212-0140-00
						(END ATTACHING PARTS)		
-59	211-0219-00			1		SCREW,CAP:4-40 X 0.125,SCH,STL,HEX REC	80009	211-0219-00
-60	333-3245-00			1		PANEL,REAR:	80009	333-3245-00
						(ATTACHING PARTS)		
-61	213-0801-00			8		SCREW,TPG,TF:8-32 X 0.312,TAPTITE,PNH,STL	83486	ORDER BY DESCR
						(END ATTACHING PARTS)		
-62	390-0976-00			1		CABINET BOTTOM:FULL RACK X 22.131 W/HOLES	80009	390-0976-00

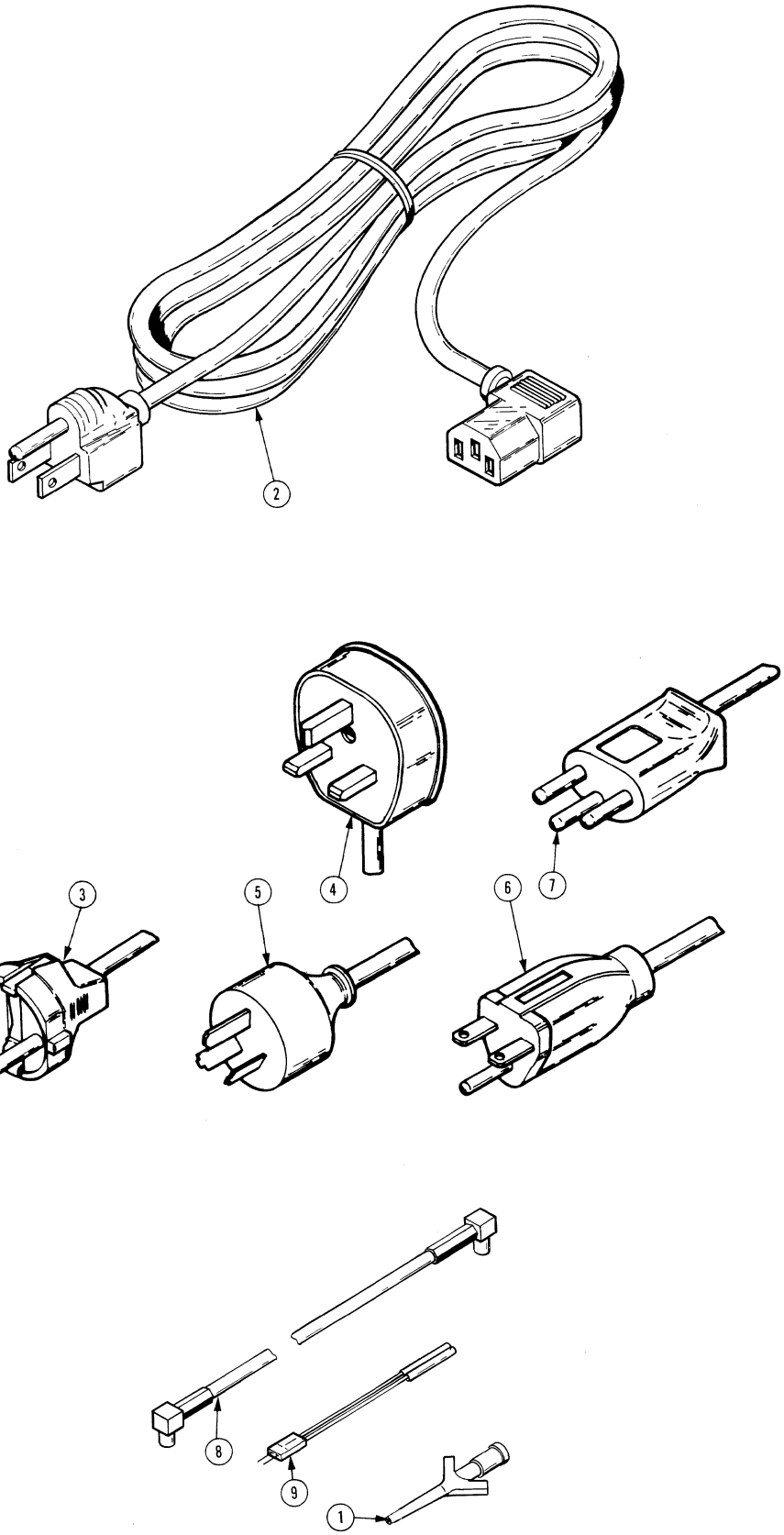
Fig. & Index No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
2-1	334-6260-00			1	MARKER,IDENT:MKD POWER SUPPLY SHIELD	80009	334-6260-00
-2	337-3249-00			1	SHIELD,ELEC:POWER SUPPLY	80009	337-3249-00
					(ATTACHING PARTS)		
-3	211-0008-00			2	SCREW,MACHINE:4-40 X 0.25,PNH,STL	93907	ORDER BY DESCR
					(END ATTACHING PARTS)		
-4	129-1076-00			2	SPACER,POST:2.515 L,4-40A/CT/ EXT,AL	80009	129-1076-00
-5	----- -----			1	CKT BOARD ASSY:POWER SUPPLY(SEE A55 REPL)		
					(ATTACHING PARTS)		
-6	211-0661-00			2	SCR,ASSEM WSHR:4-40 X 0.25,PNH,STL,POZ	01536	821-01655-024
					(END ATTACHING PARTS)		
					CKT BOARD ASSY INCLUDES:		
-7	----- -----			1	.MICROCIRCUIT,LI:(SEE A55U481 REPL)		
					.(ATTACHING PARTS)		
-8	210-0406-00			1	.NUT,PLAIN,HEX:4-40 X 0.188,BRS CD PL	73743	12161-50
-9	210-1178-00			1	.WASHER,SHLDR:	13103	7721-7PPS
					.(END ATTACHING PARTS)		
-10	----- -----			1	.MICROCIRCUIT,LI:(SEE A55U472 REPL)		
					.(ATTACHING PARTS)		
-11	210-0406-00			1	.NUT,PLAIN,HEX:4-40 X 0.188,BRS CD PL	73743	12161-50
-12	210-1178-00			1	.WASHER,SHLDR:	13103	7721-7PPS
					.(END ATTACHING PARTS)		
-13	----- -----			1	.MICROCIRCUIT,LI:(SEE A55U471 REPL)		
					.(ATTACHING PARTS)		
-14	210-0406-00			1	.NUT,PLAIN,HEX:4-40 X 0.188,BRS CD PL	73743	12161-50
-15	210-1178-00			1	.WASHER,SHLDR:	13103	7721-7PPS
					.(END ATTACHING PARTS)		
-16	----- -----			1	.TRANSISTOR:(SEE A55Q471 REPL)		
					.(ATTACHING PARTS)		
-17	210-0406-00			1	.NUT,PLAIN,HEX:4-40 X 0.188,BRS CD PL	73743	12161-50
-18	210-1178-00			1	.WASHER,SHLDR:	13103	7721-7PPS
					.(END ATTACHING PARTS)		
-19	----- -----			1	.SEMICOND DVC,DI:(SEE A55CR461 REPL)		
					.(ATTACHING PARTS)		
-20	210-0406-00			1	.NUT,PLAIN,HEX:4-40 X 0.188,BRS CD PL	73743	12161-50
-21	210-1178-00			1	.WASHER,SHLDR:	13103	7721-7PPS
					.(END ATTACHING PARTS)		
-22	----- -----			1	.TRANSISTOR:(SEE A55Q461 REPL)		
					.(ATTACHING PARTS)		
-23	210-0406-00			1	.NUT,PLAIN,HEX:4-40 X 0.188,BRS CD PL	73743	12161-50
-24	210-1178-00			1	.WASHER,SHLDR:	13103	7721-7PPS
					.(END ATTACHING PARTS)		
-25	342-0613-00			1	.INSULATOR,FILM:TRANSISTORS,MICA	80009	342-0613-00
-26	342-0202-00			1	.INSULATOR,PLATE:TRANSISTOR,MICA	91500	10-21-023-106
-27	----- -----			2	.SEMICOND DVC,DI:(SEE A55CR445,CR451 REPL)		
					.(ATTACHING PARTS)		
-28	210-0406-00			2	.NUT,PLAIN,HEX:4-40 X 0.188,BRS CD PL	73743	12161-50
-29	210-1122-00			2	.WASHER,LOCK:0.12 ID,DISHED,0.025 THK,STL	86928	ORDER BY DESCR
					.(END ATTACHING PARTS)		
-30	342-0449-01			1	.INSULATOR,PLATE:XISTOR,ALUMINA,PRINTED	80009	342-0449-01
					.(ATTACHING PARTS)		
-31	211-0511-00			2	.SCREW,MACHINE:6-32 X 0.5,PNH,STL	TK0435	ORDER BY DESCR
					.(END ATTACHING PARTS)		
-32	342-0458-00			1	.INSULATOR,PLATE:TRANSISTOR,MICA	86928	ORDER BY DESCR
-33	200-2269-00			1	.COVER,XSTR:	80009	200-2269-00
-34	----- -----			1	.LEAD,ELECTRICAL:(SEE A55M301 REPL)		
					.(ATTACHING PARTS)		
-35	210-0457-00			1	.NUT,PL,ASSEM WA:6-32 X 0.312,STL CD PL	78189	511-061800-00
					.(END ATTACHING PARTS)		
-36	334-3379-01			1	.MARKER,IDENT:MARKED GROUND SYMBOL	80009	334-3379-01
-37	214-3709-00			1	.HEAT SINK,XSTR:(6)TO-220,(2)TO-3P,ALUMINUM	80009	214-3709-00
					.(ATTACHING PARTS)		
-38	211-0661-00			2	.SCR,ASSEM WSHR:4-40 X 0.25,PNH,STL,POZ	01536	821-01655-024
					.(END ATTACHING PARTS)		
-39	----- -----			1	.BUS,CONDUCTOR:(SEE A55P181 REPL)		
-40	----- -----			1	.TERMINAL,PIN:(SEE A55J181 REPL)		
-41	----- -----			13	.TERMINAL,TEST POINT:(SEE A55TP161,TP162,		
					.TP171,TP172,TP173,TP181,TP182,TP183,		

Fig. & Index No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
2-					.TP184,TP185,TP411,TP421,TP422 REPL)		
-42	----- -----			1	.CA ASSY,SP,ELEC:(SEE A55M130 REPL)		
-43	----- -----			1	.CA ASSY,SP,ELEC:(SEE A55M120 REPL)		
-44	----- -----			1	.CA ASSY,SP,ELEC:(SEE A55M110 REPL)		
-45	----- -----			1	.CA ASSY,SP,ELEC:(SEE A55M100 REPL)		
-46	253-0135-01			1	.PLASTIC STRIP:VINYL FOAM,0.062 X 0.5	80009	253-0135-01
-47	----- -----			1	.TRANSFORMER,RF:(SEE A55T261 REPL) .(ATTACHING PARTS)		
-48	211-0020-00			1	.SCREW,MACHINE:4-40 X 1.125,PNH,STL	TK0435	ORDER BY DESCR
-49	210-0586-00			1	.NUT,PL,ASSEM WA:4-40 X 0.25,STL CD PL	78189	211-041800-00
-50	352-0725-00			1	.HOLDER,TOROID:PLASTIC .(END ATTACHING PARTS)	80009	352-0725-00
-51	----- -----			2	.COIL,RF:(SEE A55L151,L351 REPL) .COIL,RF:(SEE A55L445 REPL) .COIL,RF:(SEE A55L451 REPL) .(ATTACHING PARTS)		
	211-0020-00			3	.SCREW,MACHINE:4-40 X 1.125,PNH,STL	TK0435	ORDER BY DESCR
-52	211-0021-00			1	.SCREW,MACHINE:4-40 X 1.25,PNH,STL	TK0435	ORDER BY DESCR
-53	210-0586-00			4	.NUT,PL,ASSEM WA:4-40 X 0.25,STL CD PL	78189	211-041800-00
-54	352-0725-00			7	.HOLDER,TOROID:PLASTIC .(END ATTACHING PARTS)	80009	352-0725-00
-55	352-0086-00			1	.HOLDER,TOROID:0.5 DIA,DELRIN	80009	352-0086-00
-56	343-0549-00			4	.STRAP,TIEDOWN,E:0.091 W X 4.0 L,ZYTEL	06383	PLT1M
-57	204-0906-00			1	.BODY,FUSEHOLDER:3AG & 5 X 20MM FUSES	S3629	TYPEFAU031.3573
-58	200-2264-00			1	.CAP,FUSEHOLDER:3AG FUSES .(STANDARD ONLY)	S3629	FEK 031 1666
	200-2265-00			1	.CAP,FUSEHOLDER:5 X 20MM FUSES .(OPTIONS A1,A2,A3,A4 & A5 ONLY)	TK0861	FEK 031.1663
-59	131-2663-00			1	.CONN,RCPT,ELEC:PWR,3 MALE,250VAC,6A .(ATTACHING PARTS)	TK1031	NC187
-60	211-0661-00			2	.SCR,ASSEM WSHR:4-40 X 0.25,PNH,STL,POZ	01536	821-01655-024
-61	210-0586-00			2	.NUT,PL,ASSEM WA:4-40 X 0.25,STL CD PL .(END ATTACHING PARTS)	78189	211-041800-00
-62	----- -----			1	CKT BOARD ASSY:CALIBRATOR(SEE A54 REPL) (ATTACHING PARTS)		
-63	211-0661-00			3	SCR,ASSEM WSHR:4-40 X 0.25,PNH,STL,POZ (END ATTACHING PARTS) CKT BOARD ASSY INCLUDES:	01536	821-01655-024
-64	----- -----			19	.TERMINAL,PIN:(SEE A54J200,J250 REPL)		
-65	----- -----			1	CA ASSY,SP,ELEC:(SEE W200 REPL) (FROM A50J100 TO A54J200)		

Fig. & Index No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
3-1	214-3773-00			2	HINGE,DOOR:ADJUSTABLE	80009	214-3773-00
					(ATTACHING PARTS)		
-2	212-0023-00			4	SCREW,MACHINE:8-32 X 0.375,PNH,STL	TK0435	ORDER BY DESCR
-3	210-0458-00			4	NUT,PL,ASSEM WA:8-32 X 0.344,STL CD PL	78189	511-081800-00
					(END ATTACHING PARTS)		
-4	----- -----			1	CKT BOARD ASSY:MEMORY(SEE A51 REPL)		
					(ATTACHING PARTS)		
-5	211-0658-00			9	SCR,ASSEM WSHR:6-32 X 0.312,PNH,STL,POZ	78189	S51-060545-0X
					(END ATTACHING PARTS)		
					CKT BOARD ASSY INCLUDES:		
-6	----- -----			5	.TERM SET,PIN:(SEE A51J119,J169,J280,		
					.J290,J319,J369,J390,J490,J495 REPL)		
-7	386-5240-00			1	.STIF,CIRCUIT BD:15.0	80009	386-5240-00
					.(ATTACHING PARTS)		
-8	211-0658-00			5	.SCR,ASSEM WSHR:6-32 X 0.312,PNH,STL,POZ	78189	S51-060545-0X
					.(END ATTACHING PARTS)		
-9	386-5239-00			1	.STIF,CIRCUIT BD:11.5	80009	386-5239-00
					.(ATTACHING PARTS)		
-10	211-0658-00			4	.SCR,ASSEM WSHR:6-32 X 0.312,PNH,STL,POZ	78189	S51-060545-0X
					.(END ATTACHING PARTS)		
-11	136-0813-01			16	.SKT,PL-IN ELEK:CHIP CARRIER,68 CONTACT	80009	136-0813-01
-12	214-3775-00			16	.HT SK,MICROCKT:CHIP CARRIER,ALUMINUM	05820	MODEL 665
-13	----- -----			1	CKT BOARD ASSY:ACQUISITION(SEE A50 REPL)		
					(ATTACHING PARTS)		
-14	211-0658-00			10	SCR,ASSEM WSHR:6-32 X 0.312,PNH,STL,POZ	78189	S51-060545-0X
					(END ATTACHING PARTS)		
					CKT BOARD ASSY INCLUDES:		
-15	----- -----			20	.CONN,RCPT,ELEC:(SEE A50J253,J273,J350,		
					.J351,J353,J370,J371,J373,J438,J442,		
					.J642,J645,J766,J768,J769,J786,J788,		
					.J789,J868,J888 REPL)		
-16	136-0813-01			2	.SKT,PL-IN ELEK:CHIP CARRIER,68 CONTACT	80009	136-0813-01
-17	214-3775-00			2	.HT SK,MICROCKT:CHIP CARRIER,ALUMINUM	05820	MODEL 665
-18	----- -----			3	.BUS,CONDUCTOR:(SEE A50P440,P745,P747		
					.REPL)		
-19	----- -----			8	.TERM SET,PIN:(SEE A50J100,J134,J152,		
					.J160,J190,J224,J290,J368,J388,J440,		
					.J568,J574,J590,J745,J747,J752,J772,		
					.J915,J925,J930,J940,J945,J955,J960,		
					.J965,J970,J975 REPL)		
-20	426-1434-00			5	.FRAME,MICROCKT:	80009	426-1434-00
					.(ATTACHING PARTS)		
-21	211-0034-00			20	.SCREW,MACHINE:2-56 X 0.5,PNH,STL	06950	ORDER BY DESCR
					.(END ATTACHING PARTS)		
-22	131-2052-00			5	.CONTACT,ELEC:MICROCKT 1.4 X 1.4 HYPCON	80009	131-2052-00
-23	361-1306-00			5	.SPACER,PLATE:0.003 THK,1.395 SQ BRASS	80009	361-1306-00
-24	----- -----			1	.CONN,RCPT,ELEC:(SEE A50J910 REPL)		
-25	386-5239-00			1	.STIF,CIRCUIT BD:11.5	80009	386-5239-00
					.(ATTACHING PARTS)		
-26	211-0658-00			4	.SCR,ASSEM WSHR:6-32 X 0.312,PNH,STL,POZ	78189	S51-060545-0X
					.(END ATTACHING PARTS)		
-27	214-3711-00			5	.HEAT SINK,ELEC:HYBRID CIRCUIT	80009	214-3711-00
-28	214-2518-00			2	.HEAT SINK,XSTR:TO-220 OR TO-202	TK0303	332-612
	136-0751-00			1	.SKT,PL-IN ELEK:MICROCKT,24 PIN	09922	DILB24P108
	136-0756-00			1	.SKT,PL-IN ELEK:MICROCIRCUIT,18 DIP	09922	DILB18P-108
-29	----- -----			2	CA ASSY,SP,ELEC:(SEE W360,W370 REPL)		
-30	----- -----			2	CA ASSY,SP,ELEC:(SEE W350,W380 REPL)		
-31	----- -----			1	CA ASSY,SP,ELEC:(SEE W300 REPL)		
-32	346-0120-00			9	STRAP,TIEDOWN,E:5.5 L MIN,PLASTIC	06383	SST1.5M
-33	----- -----			1	CA ASSY,SP,ELEC:(SEE W900 REPL)		
-34	----- -----			1	CKT BOARD ASSY:INTERFACE(SEE A52 REPL)		
-35	----- -----			1	.CONN,RCPT,ELEC:(SEE A52J500 REPL)		
-36	----- -----			11	.CONN,RCPT,ELEC:(SEE A52J100,J105,		
					.J144,J145,J146,J200,J205,J300,J305,		
					.J400,J405 REPL)		
-37	426-1434-00			1	.FRAME,MICROCKT:	80009	426-1434-00
					.(ATTACHING PARTS)		

Fig. & Index No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
3-38	211-0034-00			4	.SCREW,MACHINE:2-56 X 0.5,PNH,STL	06950	ORDER BY DESCR
					.(END ATTACHING PARTS)		
-39	131-2052-00			1	.CONTACT,ELEC:MICROCKT 1.4 X 1.4 HYPCON	80009	131-2052-00
-40	361-1306-00			1	.SPACER,PLATE:0.003 THK,1.395 SQ BRASS	80009	361-1306-00
-41	214-3711-00			1	.HEAT SINK,ELEC:HYBRID CIRCUIT	80009	214-3711-00
-42	----- -----			1	.TERM,TEST POINT:(SEE A52TP649 REPL)		
-43	136-0755-00			4	.SKT,PL-IN ELEK:MICROCIRCUIT,28 DIP	09922	DILB28P-108
-44	105-0160-04			1	.EJECTOR,CKT BD:YELLOW PLASTIC	80009	105-0160-04
-45	214-1337-00			1	.PIN,SPRING:0.25 L X 0.103 OD,STL CD PL	0008K	ORDER BY DESCR
-46	----- -----			1	CKT BOARD ASSY:INTERFACE(SEE A53 REPL)		
-47	----- -----			1	.CONN,RCPT,ELEC:(SEE A53J500 REPL)		
-48	----- -----			1	.CONN,RCPT,ELEC:(SEE A53J139 REPL)		
-49	----- -----			1	.TERM,TEST POINT:(SEE A53TP649 REPL)		
-50	136-0755-00			4	.SKT,PL-IN ELEK:MICROCIRCUIT,28 DIP	09922	DILB28P-108
-51	105-0160-04			1	.EJECTOR,CKT BD:YELLOW PLASTIC	80009	105-0160-04
-52	214-1337-00			1	.PIN,SPRING:0.25 L X 0.103 OD,STL CD PL	0008K	ORDER BY DESCR

Fig. & Index No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
4-					STANDARD ACCESSORIES		
-1	013-0217-00			1	GRABBER,IC LEAD:BLACK,2.047 L X 0.137 DIA	TK1473	973 592 500
	070-5768-00			1	MANUAL,TECH:OPERATORS,91HS8	80009	070-5768-00
-2	161-0118-00			1	CABLE ASSY,PWR,:3,16 AWG,125V,90.0 L (STANDARD ONLY)	16428	CH-8686
-3	161-0066-09			1	CABLE ASSY,PWR,:3,0.75MM SQ,220V,99.0 L (OPTION A1 EUROPEAN ONLY)	S3109	86511000
-4	161-0066-10			1	CABLE ASSY,PWR,:3,0.75MM SQ,240V,96.0 L (OPTION A2 UNITED KINGDOM ONLY)	TK1373	24230
-5	161-0066-11			1	CABLE ASSY,PWR,:3,0.75MM,240V,96.0 L (OPTION A3 AUSTRALIAN ONLY)	S3109	ORDER BY DESCR
-6	161-0066-12			1	CABLE ASSY,PWR,:3,18 AWG,250V,99.0 L (OPTION A4 NORTH AMERICAN ONLY)	70903	CH-77893
-7	161-0154-00			1	CABLE ASSY,PWR,:3,0.75MM SQ,240V,6A,2.5M L (OPTION A5 SWISS ONLY)	S3109	86515000
-8	175-6425-00			1	CABLE ASSY,RF:50 OHM COAX,3.0 L,O-N (91HSE8 ONLY)	80009	175-6425-00
-9	196-3047-00			1	LEAD SET,ELEC:PODLET,2.1 L	80009	196-3047-00
	198-5541-00	B020000		1	WIRE SET,ELEC:	80009	198-5541-00
	174-0156-00	B020000		2	.CABLE ASSY,RF:50 OHM COAX,ELECTRICAL	TK0308	ORDER BY DESCR
	348-0518-00	B020000		1	.GROMMET,PLASTIC:BLACK,ROUND,0.5 ID	28520	2073(SB 625-8)BL
	198-5543-00	B020000		1	WIRE SET,ELEC:	80009	198-5543-00
	174-0173-00	B020000		2	.CABLE ASSY,RF:50 OHM COAX,ELECTRICAL	TK0308	ORDER BY DESCR
	334-1290-02	B020000		2	.CLIP,CABLE MKR:RED,PLASTIC	80009	334-1290-02
	334-4645-00	B020000		1	.MARKER,IDENT:MKD TEKTRONIX	80009	334-4645-00
	348-0518-00	B020000		1	.GROMMET,PLASTIC:BLACK,ROUND,0.5 ID	28520	2073(SB 625-8)BL
	016-0127-00			1	MARKER SET,CA:2 EA VARIOUS COLORS CABLES	80009	016-0127-00
	334-1290-02	B020000		2	.CLIP,CABLE MKR:RED,PLASTIC	80009	334-1290-02
	334-4645-00	B020000		1	.MARKER,IDENT:MKD TEKTRONIX	80009	334-4645-00
	348-0518-00	B020000		1	.GROMMET,PLASTIC:BLACK,ROUND,0.5 ID	28520	2073(SB 625-8)BL
	198-5542-00	B020000		1	WIRE SET,ELEC:	80009	198-5542-00
	174-0157-00	B020000		2	.CABLE ASSY,RF:50 OHM COAX,ELECTRICAL	TK0308	ORDER BY DESCR
	334-1290-02	B020000		2	.CLIP,CABLE MKR:RED,PLASTIC	80009	334-1290-02
	334-4645-00	B020000		1	.MARKER,IDENT:MKD TEKTRONIX	80009	334-4645-00



91HS8/91HSE8

FIG. 1 CABINET

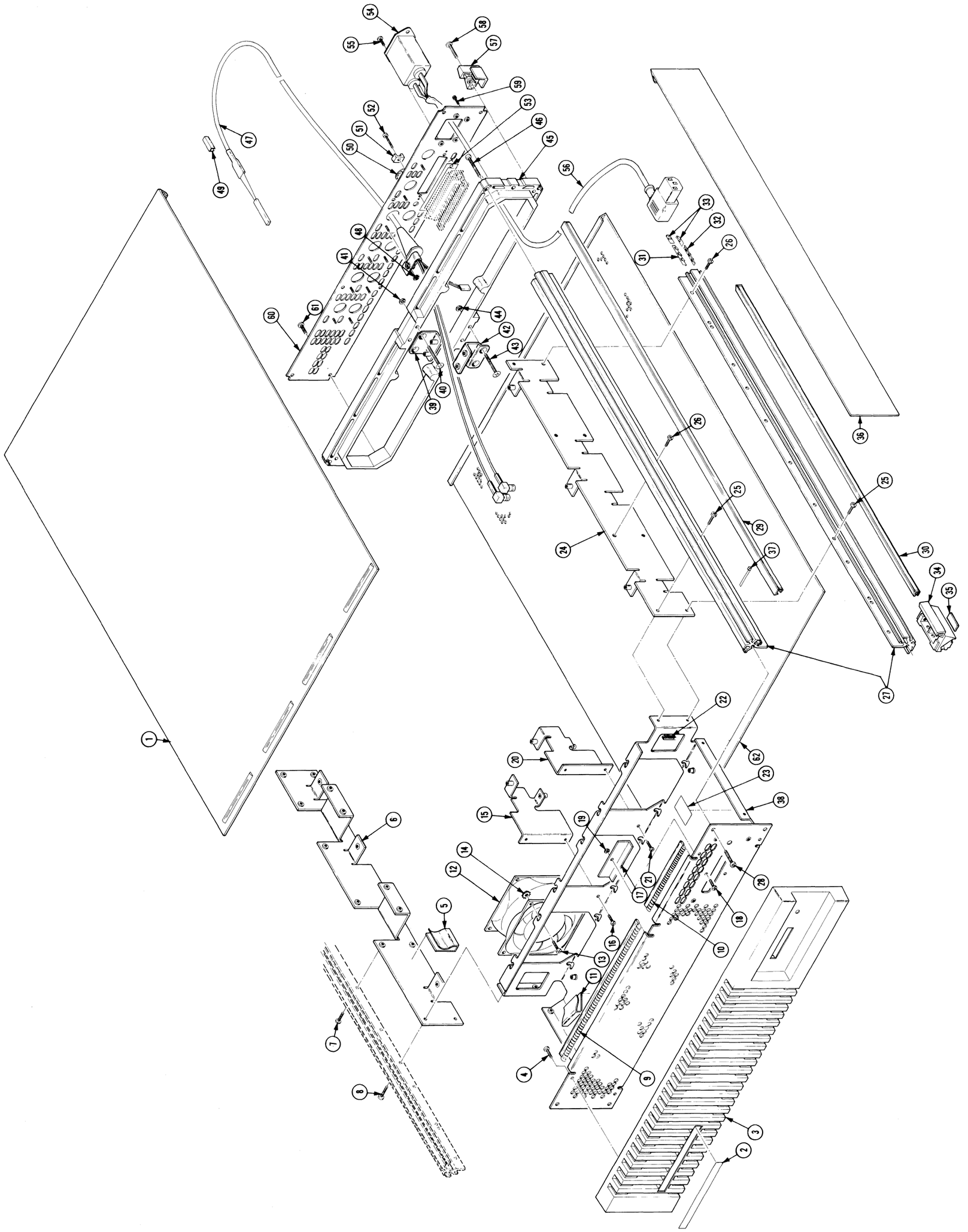


FIG. 2 POWER SUPPLY

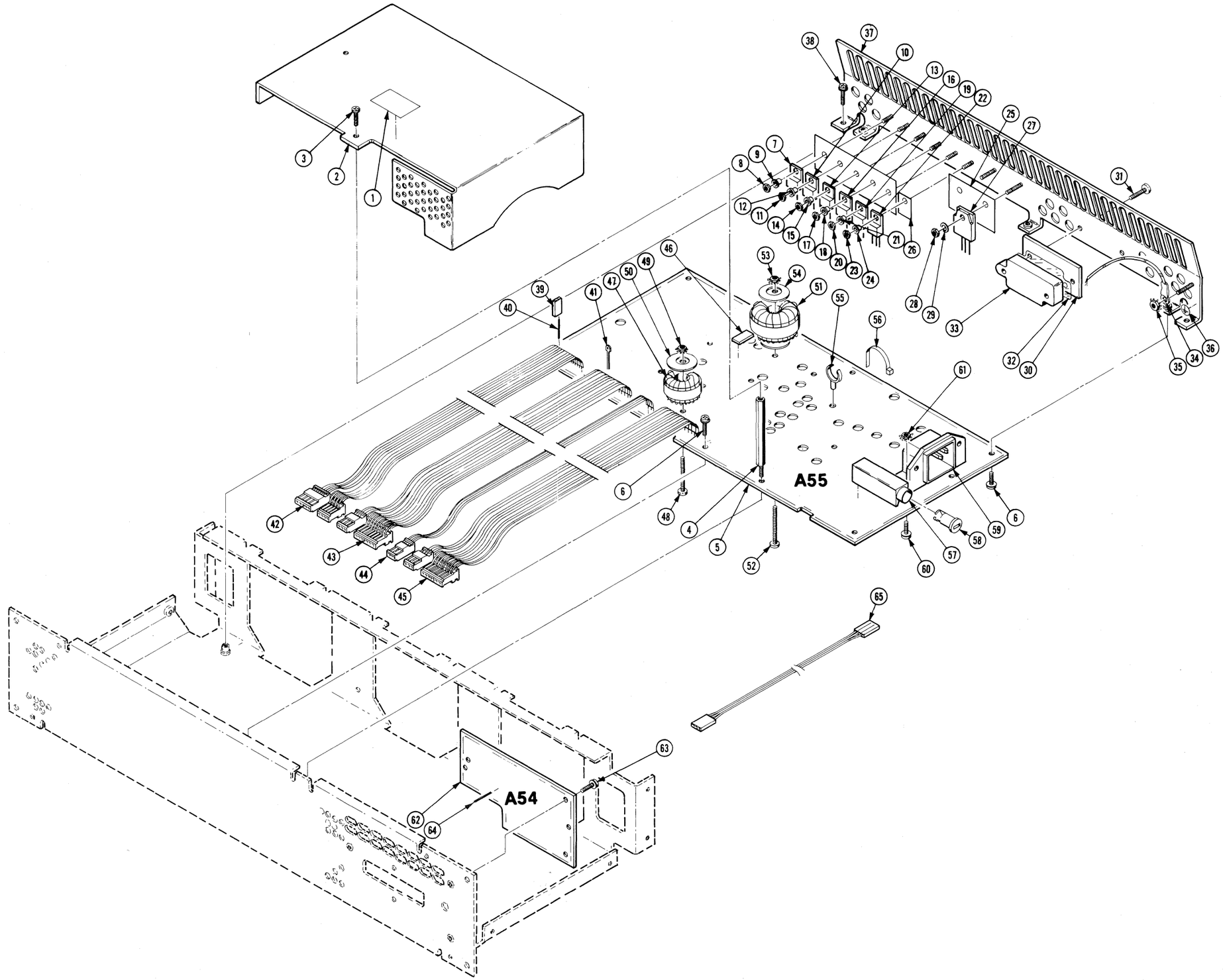
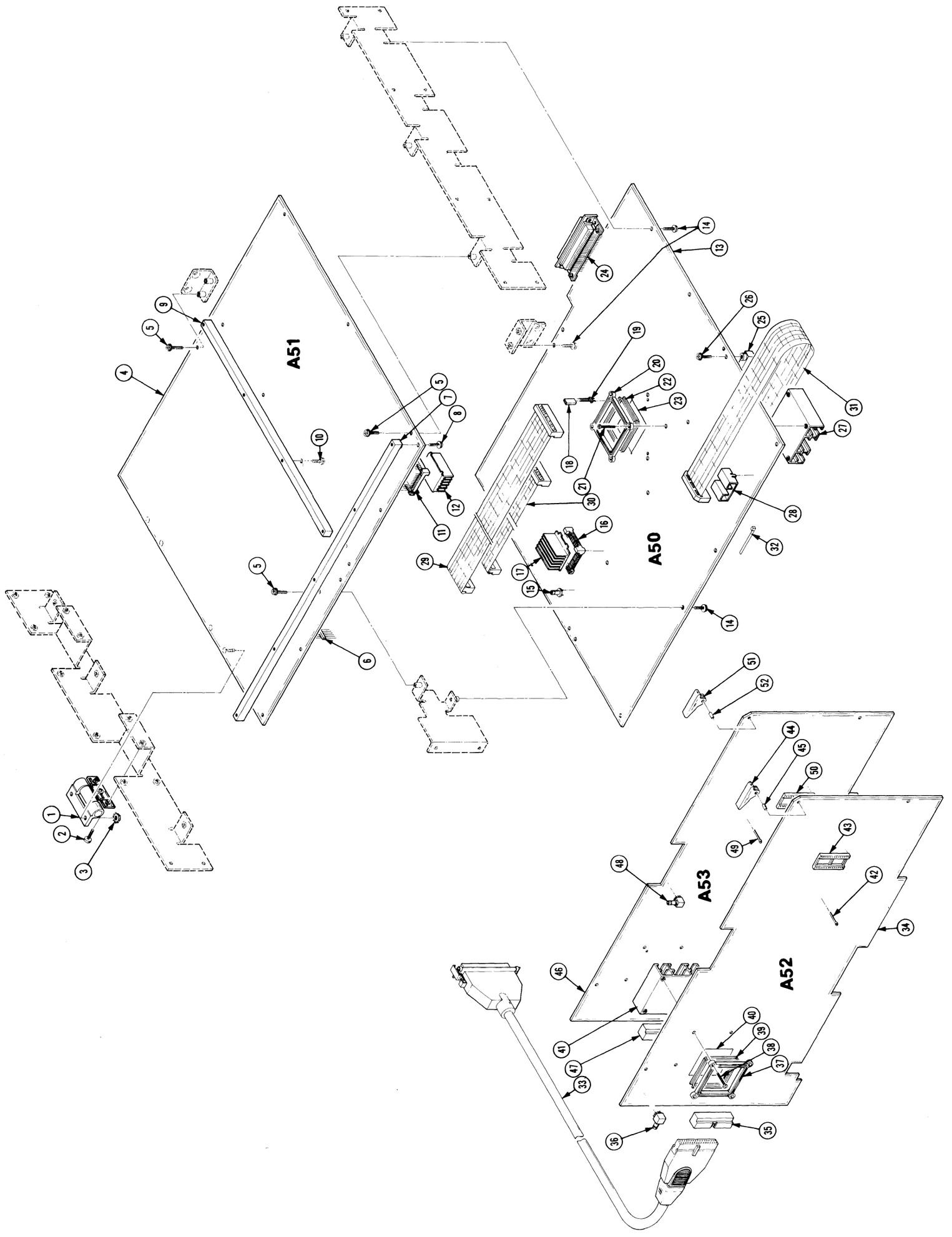


FIG. 3 CIRCUIT BOARDS



MANUAL CHANGE INFORMATION

At Tektronix, we continually strive to keep up with latest electronic developments by adding circuit and component improvements to our instruments as soon as they are developed and tested.

Sometimes, due to printing and shipping requirements, we can't get these changes immediately into printed manuals. Hence, your manual may contain new change information on following pages.

A single change may affect several sections. Since the change information sheets are carried in the manual until all changes are permanently entered, some duplication may occur. If no such change pages appear following this page, your manual is correct as printed.

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MANUAL CHANGE INFORMATION

Date: January 23, 1986 Change Reference: M58671

Product: 91HS8/91HSE8 Service Manual Addendum Manual Part No.: 070-5769-00

DESCRIPTION

91HS8 STANDARD ACCESSORIES ONLY

SN B020100 & UP

STANDARD ACCESSORIES

ADD these items:

198-5543-00	1	WIRE SET,ELEC.,91HS8,CLOCK,APPROX. 27.0 INCHES
174-0173-00	2	.CABLE ASSY.,RF,50 OHM COAX,ELEC. LENGTH 3.5 nS, N-N
334-1290-02	2	.CLIP,CABLE MKR.,RED PLASTIC
348-0518-00	1	.GROMMET,PLASTIC,BLACK,ROUND,0.5 ID,SAFETY CONTROLLED

198-5541-00	1	WIRE SET,ELEC.,91HS8,CLOCK,APPROX. 31.0 INCHES
174-0156-00	2	.CABLE ASSY.,RF,50 OHM COAX,ELEC. LENGTH 4.0 nS, N-N
334-1290-02	2	.CLIP,CABLE MKR.,RED PLASTIC
348-0518-00	1	.GROMMET,PLASTIC,BLACK,ROUND,0.5 ID,SAFETY CONTROLLED

198-5542-00	1	WIRE SET,ELEC.,91HS8,CLOCK,APPROX. 35.0 INCHES
174-0157-00	2	.CABLE ASSY.,RF,50 OHM COAX,ELEC. LENGTH 4.5 nS, N-N
334-1290-02	2	.CLIP,CABLE MKR.,RED PLASTIC
348-0518-00	1	.GROMMET,PLASTIC,BLACK,ROUND,0.5 ID,SAFETY CONTROLLED

000-2775-00D

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MANUAL CHANGE INFORMATION

Date: January 23, 1986 Change Reference: M59366

Product: 91HS8/91HSE8 Service Manual Addendum Manual Part No.: 070-5769-00

DESCRIPTION

91HS8 INTERFACE BOARD ONLY
SN B020100 & UP

670-9166-00 91HS8 INTERFACE BOARD (A52)

CHANGE TO:

670-9166-01

ELECTRICAL PARTS LISTS CHANGES

CHANGE these components to:

A52R208	325-0400-00	RES,FXD,FILM,10 OHM,0.5%,0.05W
A52R209	325-0400-00	RES,FXD,FILM,10 OHM,0.5%,0.05W
A52R210	325-0400-00	RES,FXD,FILM,10 OHM,0.5%,0.05W
A52R211	325-0400-00	RES,FXD,FILM,10 OHM,0.5%,0.05W
A52R305	325-0400-00	RES,FXD,FILM,10 OHM,0.5%,0.05W
A52R306	325-0400-00	RES,FXD,FILM,10 OHM,0.5%,0.05W
A52R307	325-0400-00	RES,FXD,FILM,10 OHM,0.5%,0.05W
A52R308	325-0400-00	RES,FXD,FILM,10 OHM,0.5%,0.05W

ADD this component:

A52YG115	136-0756-00	SKT,PL-IN ELEC,MICROCIRCUIT,18 DIP

000-2775-00D

DESCRIPTION

91HSE8 INTERFACE BOARD ONLY

SN BO20100 & UP

670-8498-00 91HSE8 INTERFACE BOARD (A53)

CHANGE TO:

670-8498-01

ELECTRICAL PARTS LISTS CHANGES

CHANGE these components to:

A53R208	325-0400-00	RES,FXD,FILM,10 OHM,0.5%,0.05W
A53R209	325-0400-00	RES,FXD,FILM,10 OHM,0.5%,0.05W
A53R210	325-0400-00	RES,FXD,FILM,10 OHM,0.5%,0.05W
A53R211	325-0400-00	RES,FXD,FILM,10 OHM,0.5%,0.05W
A53R305	325-0400-00	RES,FXD,FILM,10 OHM,0.5%,0.05W
A53R306	325-0400-00	RES,FXD,FILM,10 OHM,0.5%,0.05W
A53R307	325-0400-00	RES,FXD,FILM,10 OHM,0.5%,0.05W
A53R308	325-0400-00	RES,FXD,FILM,10 OHM,0.5%,0.05W

MANUAL CHANGE INFORMATION

Tektronix®
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Date: 3-17-86 Change Reference: M59790

Product: 91HS8/91HSE8 Service Manual Addendum Manual Part No.: 070-5769-00

DESCRIPTION Product Group 57

91HS8 & 91HS8E DATA ACQUISTION MODULE
91HS8 SN B020112 & UP
91HS8E SN B020108 & UP

A54 670-9059-00 Calibrator Bd.

CHANGE TO:

A54 670-9059-01 Calibrator BD.

ADD:

A54C230	281-0775-00	Cap,fxd,cer,di 0.1uf,20%,50V
A54C260	281-0775-00	Cap,fxd,cer,di 0.1uf,20%,50V

Schmatic 110

CHANGE AS SHOWN