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PLEASE CHECK FOR CHANGE INFORMATION AT THE REAR OF THIS MANUAL.

CG 5001/CG 551AP PROGRAMMABLE CALIBRATION GENERATOR

(SN B050000 & UP)

VOL 2
With Options

INSTRUCTION MANUAL

Tektronix, Inc.
P.O. Box 500
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Product Group 76

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INSTRUMENT SERIAL NUMBERS

Each instrument has a serial number on a panel insert, tag, or stamped on the chassis. The first number or letter designates the country of manufacture. The last five digits of the serial number are assigned sequentially and are unique to each instrument. Those manufactured in the United States have six unique digits. The country of manufacture is identified as follows:

B000000	Tektronix, Inc., Beaverton, Oregon, USA
100000	Tektronix Guernsey, Ltd., Channel Islands
200000	Tektronix United Kingdom, Ltd., London
300000	Sony/Tektronix, Japan
700000	Tektronix Holland, NV, Heerenveen, The Netherlands

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OPERATORS SAFETY SUMMARY

The general safety information in this part of the summary is for both operating and servicing personnel. Specific warnings and cautions will be found throughout the manual where they apply, but may not appear in this summary.

TERMS

In This Manual

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.

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

In This Manual

This symbol indicates where applicable cautionary or other information is to be found.

As Marked on Equipment

DANGER — High voltage.

Protective ground (earth) terminal.

ATTENTION — refer to manual.

Power Source

This product is intended to operate in a power module connected to a power source that will not apply more than 250 volts rms between the supply conductors or between either supply conductor and ground. A protective ground connection by way of the grounding conductor in the power module power cord is essential for safe operation.

Grounding the Product

This product is grounded through the grounding conductor of the power module power cord. To avoid electrical shock, plug the power cord into a properly wired receptacle before connecting to the product input or output terminals. A protective ground connection by way of the grounding conductor in the power module power cord is essential for safe operation.

Danger Arising From Loss of Ground

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

Use the Proper Fuse

To avoid fire hazard, use only the fuse of correct type, voltage rating and current rating as specified in the parts list for your product.

Refer fuse replacement to qualified service personnel.

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.

Do Not Operate Without Covers

To avoid personal injury, do not operate this product without covers or panels installed. Do not apply power to the plug-in via a plug-in extender.

SERVICE SAFETY SUMMARY

FOR QUALIFIED SERVICE PERSONNEL ONLY

Refer also to the preceding Operators Safety Summary.

Do Not Service Alone

Do not perform internal 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 removing protective panels, soldering, or replacing components.

Power Source

This product is intended to operate in a power module connected to a power source that will not apply more than 250 volts rms between the supply conductors or between either supply conductor and ground. A protective ground connection by way of the grounding conductor in the power module power cord is essential for safe operation.

CALIBRATION

Introduction

This section of the manual is in two parts: Performance Check and Adjustment Procedure. Each subsection has a different purpose and important information regarding their use is included at the beginning of both subsections. These procedures also may be useful as preliminary troubleshooting aids.

Test Equipment Required

The test equipment listed in Table 5-1, or equivalent equipment, is required to complete the Performance Check and Adjustment Procedure. In Table 5-1, the specifications given for the equipment are the minimum necessary to provide accurate results. Therefore, the equipment used must meet or exceed the listed specifications. Detailed operating instructions for the test equipment are not given in this procedure. Refer to the appropriate instruction manual if more test equipment operating information is required.

Table 5-1
LIST OF TEST EQUIPMENT REQUIREMENTS

Item No.	Description	Minimum Specifications	Application		Example
			Performance Check	Adjustment Procedure	
1	Oscilloscope System	Minimum vertical deflection factor, 10 μV/div. Fastest calibrated sweep rate, .5 ns/div.	X See footnote[a]	X See footnote[b]	TEKTRONIX 7904A/7A22/7A26/ 7A19/7B92A (7B80)
2	Sampling System		X See footnote[c]	X	TEKTRONIX 7904A/7T11/ 7S11/S-6/S-3A with 100X Attenuator Head
3	Digital Voltmeter	5 1/2 digits, .005% dc voltage accuracy	X	X	Fluke Model 8500A/8502A
4	Dc current meter, with test leads.	Measure dc current to 250 mA.	X		TEKTRONIX DM 501A. Requires TM 500-Series Power Module
5	Function Generator	100 kHz trigger source, ≥1 V output	X		TEKTRONIX FG 503. Requires TM 500-Series Power Module
6	Calibration Fixture	Tunnel Diode Pulser 250 mV output, risetime ≤125 ps	X		Tektronix Part No. 067-0681-01
7	Frequency Counter	10 Hz to 100 MHz, 1 Hz resolution	X	X	TEKTRONIX DC 503A, Option 01. Requires TM 500-Series Power Module
8	Universal Counter	Ratio A/B, Period Averaging	X		TEKTRONIX DC 503A, Option 01. Requires TM 500-Series Power Module
9	Probe	10X, 1 MΩ, DC to 1 MHz	X	X	TEKTRONIX P6105

Table 5-1 (cont)

Item No.	Description	Minimum Specifications	Application		Example
			Performance Check	Adjustment Procedure	
10	Probe	100X, 50 Ω	X		TEKTRONIX P6057
11	Output Cable Assembly	Supplied with CG 5001/CG 551AP	X	X	Tektronix Part No. 012-0884-00
12	Coaxial Cable	50 Ω, bnc connectors	X	X	Tektronix Part No. 012-0076-00 (18″) or 012-0057-01 (42″)
13	Termination	50 Ω, precision feedthrough	X	X	Tektronix Part No. 011-0129-00
14	Termination	50 Ω, female (SMA)	X	X	Tektronix Part No. 015-1004-00
15	2X Attenuator	50 Ω, (6 dB)	X	X	Tektronix Part No. 011-0069-02
16	2.5X Attenuator	50 Ω, (8 dB)	X	X	Tektronix Part No. 011-0076-02
17	5X Attenuator	50 Ω, (14 dB)	X		Tektronix Part No. 011-0060-02
18	10X Attenuator	50 Ω, (20 dB)	X		Tektronix Part No. 011-0059-02
19	Load resistor	1 kΩ, 2W, 5%	X		Tektronix Part No. 305-0102-00
20	Load resistor	10 kΩ, 2W, 5%	X		Tektronix Part No. 305-0103-00
21	Load resistor	20 kΩ, 2W, 5%		X	Tektronix Part No. 305-0203-00
22	Adapter	bnc female to dual banana	X	X	Tektronix Part No. 103-0090-00
23	Adapter	bnc male to dual binding post	X	X	Tektronix Part No. 103-0035-00
24	Adapter	bnc to probe tip	X	X	Tektronix Part No. 103-0084-01
25	Adapter	bnc female to bnc female	X	X	Tektronix Part No. 103-0028-00
26	Adapter (2 required)	SMA male to bnc female	X	X	Tektronix Part No. 015-1018-00
27	Marking pencil	For glazed surfaces	X		Dixon Phano
28	Flexible Plug-in Extender (3 required)	Compatible with TM 500-Series power modules		X	Tektronix Part No. 067-0645-02
29	Power Module	GPIB compatibility	X	X	TEKTRONIX TM 515 (Mod UB) or TM 5003 or TM 5006 for CG 5001 & GPIB Extender or TM 506 (Mod JB)

Table 5-1 (cont)

Item No.	Description	Minimum Specifications	Application		Example
			Performance Check	Adjustment Procedure	
30	Controller	GPIB compatibility	X		TEKTRONIX 4050-Series; for example, 4051
31	GPIB cable	Standard GPIB Interconnect, 2 meters	X		Tektronix Part No. 012-0630-01

[a]The TEKTRONIX 7B80 Time Base may be substituted in all Performance Check steps, except for the SLEWED EDGE MODE which requires the 7B92A/7A19/7A26 combination.

[b]The TEKTRONIX 7B80 Time Base may be substituted for the 7B92A Time Base when performing all of the Adjustments. The 7A22 and 7A19 are not used for Adjustments.

[c]The S-3A Sampling Head with 100X Attenuator Head is required only for the Performance Check. The S-6 Sampling Head is used for both the Performance Check and Adjustments.

PERFORMANCE CHECK

Purpose

The following Performance Check procedures are intended to be used for incoming inspection to determine the acceptability of newly purchased or recently purchased instruments.

The procedures do not check every facet of instrument calibration; rather they are concerned primarily with those portions of the instrument that are essential to measurement accuracy and correct operation.

This procedure is written such that it can be independently performed for the operating mode desired. The numerically numbered steps within an operating mode check must be performed in the sequence presented.

Removing the CG 5001/CG 551AP from the power module is not necessary to perform the Performance Check procedures. All checks can be made from the front panel and via the GPIB.

NOTE

Performance Check procedures for the Pulse Head (FAST EDGE MODE), Comparator, and Remote Variable accessories are found in their respective instruction manuals.

Limits and Tolerances

All limits and tolerances given in this procedure are performance guides and should not be interpreted as instrument specifications unless they are listed as such in the Specification section.

Equipment Required

Equipment required to perform a completed Performance Check is described in Table 5-1. At the beginning of the instructions for each operating mode check is a list of test equipment required to accomplish the steps in that block of instruction.

When equipment other than that recommended is used, control settings or test setups may need to be altered. If the item of equipment given as an example in Table 5-1 is not available, check the Minimum Specification column and the footnotes following Table 5-1 carefully to determine whether any other equipment might suffice. Then, check the list of equipment required under the performance checks for the individual operating modes. If the item is used for a performance check that is of little or no importance to your measurement requirements, the item and corresponding steps can be deleted.

Preparation

Before installing the CG 5001/CG 551AP in the power module for a first time Performance Check, set the GPIB address switches for an address of 01 (decimal) and the end of message terminator switch to the EOI only position. Instructions for setting those switches are found in Section 3, Vol. 1 (Fig. 3-1).

List of Performance Checks

Preliminary Instructions

Apply power to the CG 5001/CG 551AP and perform the following steps:

1. Press the INST ID button and check for the GPIB address displayed in the readout window; address should be decimal 01.

2. Observe the displayed power on default values and that the CG 5001/CG 551AP OUTPUT is off.

3. Press and hold the CG 5001/CG 551AP RESET button for about 1 second; all LED segments in the display window should be illuminated.

4. The CG 5001/CG 551AP does not have to be connected to the GPIB controller until you are ready for the GPIB Interface Test.

5. Allow approximately 15-20 minutes warmup time.

6. Proceed with the following Performance Checks.

VOLTAGE AMPLITUDE MODE

Equipment Required (see footnotes following Table 5-1)

Oscilloscope System—TEKTRONIX 7904A/7A22/7A26/7B80.
Sampling System—TEKTRONIX 7904A/7S11/7T11/S-6/S-3A/100X Attenuator Head.
Digital Voltmeter—Fluke Model 8500A/8502A.
Dc Current Meter—TEKTRONIX DM 501A.
Function Generator—TEKTRONIX FG 503.
Probe, 10X, 1 MΩ—TEKTRONIX P6105.
Output Cable Assembly (supplied with CG 5001/CG 551AP).
Coaxial Cable, 50 Ω, bnc connectors.
Adapter, bnc to dual binding post.
Adapter, bnc to probe tip.
Adapter, bnc female to dual banana.
Adapter, SMA male to bnc female (2 required).
Termination, 50 Ω, female (SMA).
Termination, 50 Ω, precision feedthrough.
10X Attenuator, 50 Ω.
Load resistor, 10 kΩ, 2 W, 5%.

1. Check Voltage Range and Dc Accuracy

a. Set the CG 5001/CG 551AP controls as follows:

AMPLITUDE MODE	VOLTAGE
OUTPUT	ON
FREQUENCY	DC
USE FOR 50 Ω LOAD	Off
VARIABLE	Off

b. Connect the CG 5001/CG 551AP OUTPUT connector through the output cable assembly to the digital voltmeter input terminals.

c. Set the UNITS/DIV control and NUMBER OF DIVISIONS (MULTIPLIER) pushbuttons as listed in Table 5-2.

d. CHECK—that the voltmeter reads within the limits shown in Table 5-2.

Table 5-2
VOLTAGE RANGE AND DC ACCURACY

UNITS/DIV (V/D)	NUMBER OF DIVISIONS (MULTIPLIER)	Voltmeter Reading Limits (Vdc)
20	10	200.50 to 199.50
10	10	100.25 to 99.75
10	2	20.05 to 19.95
10	1	10.025 to 9.975
1	8	8.020 to 7.980
1	6	6.015 to 5.985
1	5	5.0125 to 4.9875
1	4	4.010 to 3.990
1	3	3.0075 to 2.9925
.5	5	2.5062 to 2.4938
.5	3	1.5037 to 1.4963
.1	1	0.1002 to 0.0998

e. Leave the control settings and proceed to the next step.

2. Check Voltage Variable Range Accuracy

a. Set the digital voltmeter to the 20 Vdc scale.

b. Change the CG 5001/CG 551AP controls as follows:

UNITS/DIV	10 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	1
VARIABLE	ON

c. Turn the CG 5001/CG 551AP VARIABLE control so that the readout in the display window indicates the percent values shown in Table 5-3.

d. CHECK—that the voltmeter reads within the voltmeter reading limits in Table 5-3.

Table 5-3
VOLTAGE VARIABLE RANGE ACCURACY

CG 5001/CG 551AP Display	Voltmeter Reading Limits (Vdc)
5.0% LOW	10.5000 to 10.5526
9.9% LOW	11.0711 to 11.1265
5.0% HIGH	9.5000 to 9.5476
9.9% HIGH	9.0764 to 9.1219

e. Leave the control settings and connections and continue to the next step.

3. Check Voltage Mode Current Limit

a. Change the CG 5001/CG 551AP controls as follows:

UNITS/DIV	5 V/D
VARIABLE	Off

b. Remove the output cable assembly connection to the voltmeter and connect the precision 50 Ω load between the cable and the voltmeter.

c. Set the CG 5001/CG 551AP USE FOR 50 Ω LOAD pushbutton to ON.

d. Set the CG 5001/CG 551AP UNITS/DIV control and NUMBER OF DIVISIONS (MULTIPLIER) pushbuttons to the values shown in Table 5-4.

e. CHECK—that the voltmeter reads between the limits listed in Table 5-4.

Table 5-4
VOLTAGE MODE CURRENT LIMITS

UNITS/DIV (V/D)	NUMBER OF DIVISIONS (MULTIPLIER)	Voltmeter Reading Limits (Vdc)
5	1	4.9875 to 5.0125
1	1	0.9975 to 1.0025
.1	1	0.09975 to 0.10025

f. Set the USE FOR 50 Ω LOAD to off and the OUTPUT to off.

g. Remove the precision 50 Ω termination.

h. Using appropriate adapters and test leads, connect the output cable to the voltmeter with a 10 kΩ, 2 W resistor in parallel with the voltmeter input terminals.

WARNING

Do not touch the output terminals during this test; 100 V is present on these terminals.

i. Set the CG 5001/CG 551AP UNITS/DIV control to 10 V/D and the NUMBER OF DIVISIONS (MULTIPLIER) to 10.

j. Set the digital voltmeter to the 200 Vdc scale and the CG 5001/CG 551AP OUTPUT to ON.

k. CHECK—that the voltmeter reads between 99.75 and 100.25 Vdc.

l. Set the CG 5001/CG 551AP NUMBER OF DIVISIONS (MULTIPLIER) to 1 and the OUTPUT to off. Remove the 10 kΩ load resistor and the connections to the voltmeter. Proceed to the next step.

4. Check Voltage Mode Short Circuit Current

a. Set the CG 5001/CG 551AP UNITS/DIV control for 10 V/D and NUMBER OF DIVISIONS (MULTIPLIER) to 1.

b. Connect the CG 5001/CG 551AP OUTPUT through the output cable assembly to the dc current meter with appropriate adapters.

c. Set the dc current meter to measure 200 mA. Set the CG 5001/CG 551AP OUTPUT to ON.

d. CHECK—that UNCAL is shown in the CG 5001/CG 551AP display and that the dc current meter reads less than 200 mA.

e. Set the CG 5001/CG 551AP UNITS/DIV control to 20 V/D.

f. CHECK—that UNCAL is shown on the CG 5001/CG 551AP display and that the dc current meter reads less than 30 mA.

g. Remove all connections to the dc current meter and proceed to the next step.

5. Check Square-wave Voltage Accuracy

NOTE

Perform all of the following measurements as quickly as possible; otherwise, drift of the Sampling Units (in time) may cause measurement errors.

a. Set the CG 5001/CG 551AP controls as follows:

UNITS/DIV	0.5 V/D
VARIABLE	Off
NUMBER OF DIVISIONS (MULTIPLIER)	1
FREQUENCY	100 kHz
USE FOR 50 Ω LOAD	ON
TRIGGER OUTPUT	ON

b. Using the output cable assembly and an SMA male to bnc female adapter, connect the CG 5001/CG 551AP OUTPUT to the S-6 Sampling Head installed in the 7S11 Sampling Unit. Terminate the S-6 with the 50 Ω, female (SMA) terminator.

c. Connect the CG 5001/CG 551AP TRIGGER OUTPUT through a 50 Ω coaxial cable and SMA male to bnc female adapter to the 7T11 Trigger Input connector.

d. Set the 7S11 and 7T11 to the settings in Table 5-5. See NOTE following Table 5-5.

e. Change the 7T11 Time/Div to 2 μs/div.

Table 5-5
INITIAL SETTINGS FOR SAMPLING SYSTEM

Unit	Control	Setting
7S11 (with S6)	mVolts/DIV	200
	VAR	on (out)
	Polarity	+ up
	DC Offset	centered
	Dot Response	Smooth
7T11	Slope	+
	Sampling	Sequential
	TRIG AMP	X 1
	TRIG SEL	EXT
		50 Ω, 2 V max
	SCAN	Rep
	Time Pos Rng	50 μs
	Time/Div	.5 μs

NOTE

Table 5-5 is also used (referenced) for certain steps in the CURRENT AMPLITUDE MODE and LOW EDGE AMPLITUDE MODE checks. Adjust the Sampling System TRIG LEVEL and STABILITY controls for a stable display. Adjust the SCAN control for good squarewave response.

f. Adjust the 7S11 Variable control for 4 divisions of vertical deflection on the crt display.

g. Change 7S11 vertical deflection to 2 mV/div and align the top of the square wave exactly on the center horizontal graticule line.

h. Disconnect the cable from the CG 5001/CG 551AP TRIGGER OUTPUT and connect the cable to the FG 503 TRIG OUT connector. Set FG 503 controls for a trigger output of approximately 100 kHz.

i. Set the CG 5001/CG 551AP FREQUENCY to DC.

j. CHECK—that the sweep trace (dc level on the crt) is within ±1 major division of the center horizontal graticule line.

k. Disconnect the output cable from the S-6 Sampling Head and connect a 10X attenuator to the cable. Reconnect the attenuator and cable to the S-6 Sampling Head.

l. Change the CG 5001/CG 551AP controls as follows:

UNITS/DIV	5 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	1
FREQUENCY	100 kHz

m. Repeat steps 5d through 5j.

n. Replace the S-6 Sampling Head with an S-3A Sampling Head and 100X attenuator head. Remove the 10X attenuator from the output cable assembly and reconnect the cable via a bnc to probe tip adapter to the 100X attenuator head on the S-3A.

o. Set the 7S11 vertical deflection to 200 mV/div and set the 7T11 Sampling Sweep Unit to 5 μsec/div.

p. Connect the CG 5001/CG 551AP TRIGGER OUTPUT to the 7T11 Trigger Input.

q. Change the CG 5001/CG 551AP controls as follows:

FREQUENCY	10 kHz
USE FOR 50 Ω LOAD	Off
UNITS/DIV	50 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	4

r. Adjust the 7S11 Variable for 5 divisions of vertical deflection on the crt display.

s. Set the 7S11 vertical deflection to 2 mV/div. Set the S-3A Offset to X2 position. Align the top of the square wave exactly on the center horizontal graticule line.

t. Disconnect the cable from the CG 5001/CG 551AP TRIGGER OUTPUT and connect the cable to the FG 503 TRIG OUT connector. Set FG 503 for a trigger output of approximately 100 kHz. Set the CG 5001/CG 551AP FREQUENCY to DC.

u. CHECK—that the sweep trace is within ±1.25 major divisions of the center horizontal graticule line.

v. Set the CG 5001/CG 551AP OUTPUT to off. Remove all connections to the Sampling System.

w. Replace the sampling plug-in units with a 7A22 Differential Amplifier and 7B80 Time Base. Set the CG 5001/CG 551AP controls as follows:

FREQUENCY	1 kHz
VARIABLE	Off
UNITS/DIV	20 mV/D
USE FOR 50 Ω LOAD	ON
NUMBER OF DIVISIONS (MULTIPLIER)	4
OUTPUT	ON

x. Connect the CG 5001/CG 551AP OUTPUT connector through the output cable and precision 50 Ω terminator to the 7A22 + INPUT connector, DC Coupled. Connect the CG 5001/CG 551AP TRIGGER OUTPUT through a 50 Ω coaxial cable to the 7B80 EXT TRIG IN connector.

NOTE

The trigger signal must NOT be terminated in 50 Ω when operating at low amplitudes. Circulating ground currents can cause output amplitude errors.

y. Set the 7A22 VOLTS/DIV controls to match the CG 5001/CG 551AP UNITS/DIV setting. Set the 7A22 HF −3 dB point to 1 MHz and the LF −3 dB point to DC. Set 7B80 Time Base controls for a stable, displayed signal.

z. CHECK—that the displayed waveform is approximately 4 divisions high.

aa. Change the CG 5001/CG 551AP UNITS/DIV control to .2 mV/D.

bb. Repeat steps 5y and 5z.

cc. Change the CG 5001/CG 551AP UNITS/DIV control to 10 μV/D.

dd. Repeat steps 5y and 5z.

ee. Remove the connections to the 7A22 Differential Amplifier.

6. Check Voltage Aberrations

a. Replace the 7A22 Differential Amplifier with a 7A26 Amplifier plug-in unit.

b. Set the CG 5001/CG 551AP controls as follows:

UNITS/DIV	20 mV/D
VARIABLE	Off
NUMBER OF DIVISIONS (MULTIPLIER)	5
FREQUENCY	100 kHz
TRIGGER OUTPUT	ON
OUTPUT	ON
USE FOR 50 Ω LOAD	Off

c. Connect the CG 5001/CG 551AP through the output cable assembly to the 7A26 Amplifier. Connect the TRIGGER OUTPUT through a coaxial cable to the 7B80 EXT

TRIG IN connector. Set 7A26 for 10 mV/DIV and adjust 7B80 controls and 7A26 Variable control for a stable 8 division display.

d. CHECK—that the preshoot and overshoot are less than ±2.0 major divisions (±15% ±10 mV) in amplitude and less than 0.5 μs in duration.

e. Insert a 10X probe (compensated) and bnc to probe tip adapter between the output cable and the input to the 7A26. Set 7A26 for 5 VOLTS/DIV.

f. Change the CG 5001/CG 551AP controls as follows:

FREQUENCY	10 kHz
UNITS/DIV	20 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	10

g. Adjust 7A26 Variable control and 7B80 controls for a stable 4 division display.

h. CHECK—that the preshoot and overshoot amplitude are less than ±3 minor divisions (±3 V) and less than 5 μs in duration.

i. Set the CG 5001/CG 551AP UNITS/DIV control to 1 V/D and remove all connections to the CG 5001/CG 551AP.

✓ CURRENT AMPLITUDE MODE

Equipment Required (see footnotes following Table 5-1)

Sampling System—TEKTRONIX 7904A/7S11/7T11/S-6.
Digital Voltmeter—Fluke Model 8500A/8502A.
Function Generator—TEKTRONIX FG 503.
Output Cable Assembly (supplied with CG 5001/CG 551AP).
5X Attenuator, 50 Ω.
Coaxial Cable, 50 Ω, bnc connectors.
Termination, 50 Ω, precision feedthrough.
Termination, 50 Ω female (SMA).
Adapter, SMA male to bnc female (2 required).
Adapter, bnc female to dual banana.

7. Check Dc Current Accuracy and Range

a. Set the CG 5001/CG 551AP controls as follows:

AMPLITUDE MODE	CURRENT
FREQUENCY	DC
VARIABLE	ON
OUTPUT	ON

b. Connect the CG 5001/CG 551AP OUTPUT through the output cable assembly, precision 50 Ω termination, and appropriate adapter to the dc voltmeter.

c. Set the CG 5001/CG 551AP UNITS/DIV, NUMBER OF DIVISIONS (MULTIPLIER), and VARIABLE controls as listed in Table 5-6.

d. CHECK—that the voltmeter reads within the limits listed in Table 5-6.

Table 5-6
DC CURRENT ACCURACY AND RANGE

UNITS/DIV	NUMBER OF DIVISIONS (MULTIPLIER)	VARIABLE (percent)	Voltmeter Reading	
			Lower Limit	Upper Limit
10 mA	10	0.0%	4.9875 V	5.0125 V
10 mA	10	9.9% LOW	5.5356 V	5.5633 V
10 mA	10	9.9% HIGH	4.5382 V	4.5610 V
1 mA	10	0.0%	0.4987 V	0.5013 V
1 mA	1	0.0%	49.77 mV	50.23 mV

e. Disconnect the output cable assembly from the dc voltmeter and remove the precision 50 Ω termination.

8. Check Square-wave Current Accuracy

NOTE

Perform this check as quickly as possible; Sampling System drift (in time) may cause errors in the measurements.

a. Change the CG 5001/CG 551AP controls as follows:

UNITS/DIV	1 mA/D
NUMBER OF DIVISIONS (MULTIPLIER)	5
VARIABLE	Off
FREQUENCY	100 kHz
TRIGGER OUTPUT	ON

b. Connect the CG 5001/CG 551AP OUTPUT through the output cable assembly to the S-6 Sampling Head installed in the 7S11 Sampling Unit. Terminate the S-6 with 50 Ω female (SMA) termination. Connect the CG 5001/CG 551AP TRIGGER OUTPUT through a coaxial cable to the 7T11 Trigger Input connector.

c. Set the 7S11 and 7T11 to the settings listed in Table 5-5. Change the 7T11 Time Pos Rng to 5 μs; set Time/Div to .5 μs.

d. Adjust the 7S11 Variable control for a displayed waveform amplitude of 2 major divisions.

e. Change the 7S11 vertical deflection to 2 mV/div. Align the top of the waveform exactly on the center horizontal graticule line.

f. Set the CG 5001/CG 551AP FREQUENCY to DC. Disconnect the cable connected to the CG 5001/CG 551AP TRIGGER OUTPUT and connect the cable to the FG 503 TRIG OUT connector. Set the FG 503 controls for a trigger output of approximately 100 kHz.

g. CHECK—that the sweep trace (dc level on the crt) is within 2.5 minor divisions of the center horizontal graticule line.

h. Insert a 5X attenuator between the output cable assembly and the S-6 Sampling Head.

i. Set the CG 5001/CG 551AP controls as follows:

UNITS/DIV	20 mA/D
NUMBER OF DIVISIONS (MULTIPLIER)	5
FREQUENCY	100 kHz
TRIGGER OUTPUT	ON
OUTPUT	ON

j. Connect CG 5001/CG 551AP TRIGGER OUTPUT to 7T11 Trigger input.

k. Set the 7S11 vertical deflection to 200 mV/div. Adjust the 7S11 Variable control for a displayed waveform amplitude of 4 major divisions.

l. Set 7S11 vertical deflection to 2 mV/DIV. Align the top of the waveform exactly on the center horizontal graticule line.

m. Change the CG 5001/CG 551AP FREQUENCY to DC. Remove the coaxial cable from the CG 5001/CG 551AP TRIGGER OUTPUT and connect it to the FG 503 TRIG OUT connector. Set the FG 503 controls for a trigger output of approximately 100 kHz.

n. CHECK—that the sweep trace (dc level on the crt) is within one major division of the center horizontal graticule line.

o. Remove the 5X attenuator. Proceed to the next step.

9. Check Current Droop or Tilt

a. Set the CG 5001/CG 551AP controls as follows:

UNITS/DIV	20 mA/D
FREQUENCY	100 kHz
NUMBER OF DIVISIONS (MULTIPLIER)	1

b. Connect the CG 5001/CG 551AP OUTPUT through the output cable assembly to the S-6 Sampling Head isntalled in the 7S11 Sampling Unit. Connect the CG 5001/CG 551AP TRIGGER OUTPUT through a coaxial cable to the 7T11 Trigger Input connector.

c. Set the 7S11 vertical deflection to 200 mV/div. Adjust the 7S11 Variable control for a displayed waveform amplitude of 5 major divisions.

d. Set the 7S11 vertical deflection to 20 mV/div. Be sure to slow the SCAN rate down to a low rate or use normal dot response. You may have to use random sampling.

e. CHECK—that after the first 500 ns, the waveform top is within one major division of its final value.

10. Check Current Aberrations

a. Set the CG 5001/CG 551AP controls as follows:

UNITS/DIV	2 mA/D
NUMBER OF DIVISIONS (MULTIPLIER)	1
FREQUENCY	100 kHz

b. Set the 7S11 vertical deflection to 20 mV/div, 7T11 Time Pos Rng to 50 μs and Time/Div to 2 μs. Adjust the 7S11 Variable control for a displayed waveform amplitude of 5 major divisions.

c. Change the 7S11 vertical deflection to 5 mV/div.

d. Change the 7T11 Time/Div to 500 ns/div.

e. CHECK—that the duration of the aberrations are less than 1 major horizontal division and that their amplitude is less than 4 major vertical divisions.

f. Remove all connections from the Sampling System.

11. Check Current Mode Voltage Limit and Open Circuit Voltage

a. Set the CG 5001/CG 551AP controls as follows:

UNITS/DIV	10 mA/D
VARIABLE	9.9% LOW
FREQUENCY	DC
NUMBER OF DIVISIONS (MULTIPLIER)	10

b. Connect the CG 5001/CG 551AP OUTPUT through the output cable assembly and precision 50 Ω feedthrough termination to the digital voltmeter input connector.

c. CHECK—that the voltmeter reads between 5.535 V and 5.563 V and that UNCAL is not displayed on the CG 5001/CG 551AP.

d. Remove the 50 Ω termination and reconnect the output cable assembly to the voltmeter.

e. CHECK—that the voltmeter reads less than 10 V and that UNCAL is displayed on the CG 5001/CG 551AP.

f. Remove all connections to the voltmeter.

✓ LOW AMPLITUDE EDGE MODE

Equipment Required (see footnotes following Table 5-1)

Oscilloscope System—TEKTRONIX 7904A/7A26/7B80.
Sampling System—TEKTRONIX 7904/7T11/7S11/S-6.
Calibration Fixture—TEKTRONIX Tunnel Diode Pulser.
Dc Current Meter—TEKTRONIX DM 501A.
Output Cable Assembly (supplied with CG 5001/CG 551AP).
Coaxial Cable, 50 Ω, bnc connectors.
Termination, 50 Ω, precision feedthrough.
Termination, 50 Ω female (SMA).
Adapter, bnc female to dual banana.
Adapter, SMA male to bnc female (2 required).
2.5X Attenuator, 50 Ω.
5X Attenuator, 50 Ω.
Marking pencil (for glazed surfaces).

12. Check Low Amplitude Accuracy

a. Set the CG 5001/CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	0.2 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	5
FREQUENCY	100 kHz
EDGE POLARITY	∫ (Negative)
USE FOR 50 Ω LOAD	ON
OUTPUT	ON
VARIABLE	Off

b. Connect the CG 5001/CG 551AP OUTPUT through the output cable assembly and precision 50 Ω termination to the 7A26 channel 1 or 2 input connector. Set the Oscilloscope System controls for an untriggered displayed (free-running sweep).

c. Set the 7A26 to 200 mV/div. Adjust the 7A26 Variable control for a displayed amplitude of exactly 4 major divisions. Do not change the position of the 7A26 Variable control.

d. Set the CG 5001/CG 551AP controls as follows:

AMPLITUDE MODE	VOLTAGE
UNITS/DIV	1 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	1
VARIABLE	ON
USE FOR 50 Ω LOAD	ON
OUTPUT	ON
FREQUENCY	100 kHz

e. Adjust the CG 5001/CG 551AP VARIABLE control for a displayed amplitude of exactly 4 major divisions.

f. CHECK—that the percent error displayed on the CG 5001/CG 551AP is between 2.7% LOW and 2.7% HIGH.

NOTE

Steps 12a through 12f also check the current limit of 20 mA (minimum); 1 V across a 50 Ω load.

g. Change the CG 5001/CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	0.2 V/D
EDGE POLARITY	∫ (Positive)
NUMBER OF DIVISIONS (MULTIPLIER)	5
OUTPUT	ON
FREQUENCY	100 kHz
VARIABLE	Off
USE FOR 50 Ω LOAD	ON

h. Repeat steps 12c through 12f.

i. Use a coaxial cable to connect the CG 5001/CG 551AP TRIGGER OUTPUT to the EXT TRIG IN connector on the 7B80 Time Base. Set the 7A26 Variable control to the calibrated position (CAL IN).

j. Set the CG 5001/CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	1 V/D
VARIABLE	Off
NUMBER OF DIVISIONS (MULTIPLIER)	1
FREQUENCY	1 kHz
TRIGGER OUTPUT	ON
OUTPUT	ON
USE FOR 50 Ω LOAD	ON
EDGE POLARITY	∫ (Positive)

k. Set the 7A26 vertical deflection to .2 VOLT/DIV and use the 7B80 Time Base controls for a stable, 1 kHz signal on the crt graticule.

l. Use the test system settings listed in Table 5-7 to check for the presence of a displayed square wave of the correct amplitudes on the low amplitude edge range. For all settings listed in Table 5-7, check amplitudes for both polarities (positive-going and negative-going).

Table 5-7
LOW AMPLITUDE EDGE SIGNAL CHECK

CG 5001/CG 551AP UNITS/DIV	7A26 VOLTS/DIV	Amplitude (Vertical Divisions)
1 V/D	.2	5
.5 V/D	.1	5
.2 V/D	50 mV	4
.1 V/D	20 mV	5
50 mV/D	10 mV	5
20 mV/D	5 mV	4

m. Remove the precision 50 Ω termination and all connections to the Oscilloscope System.

13. Check Low Edge Aberrations

a. Set the CG 5001/CG 551AP controls as follows:

OUTPUT	Off
AMPLITUDE MODE	EDGE
EDGE POLARITY	∫ (Positive)
UNITS/DIV	10 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	6
FREQUENCY	100 kHz

b. Connect the CG 5001/CG 551AP OUTPUT through the output cable assembly directly to the input of the Tunnel Diode Pulser.

c. Connect the CG 5001/CG 551AP TRIGGER OUTPUT through a 50 Ω coaxial cable to the Trig Input connector on 7T11 via a 2.5X (8 dB), 50 Ω attenuator and SMA male to bnc female adapter.

d. Connect the output of the Tunnel Diode Pulser, via a SMA male to bnc female adapter, to the input of S-6 Sampling Head installed in the 7S11 Sampling Unit.

e. Set 7T11 and 7S11 controls as listed in Table 5-5. See the NOTE following Table 5-5.

f. Set the 7T11 controls as follows:

Time Pos Rng	5 μs
Time/Div	500 ns

g. Set the 7S11 controls as follows:

mVolts/DIV	50
Variable	OUT

h. Set the CG 5001/CG 551AP OUTPUT to ON and rotate the TD Triggered Level on the TD Pulser fully counterclockwise.

i. Rotate TD Triggered Level control on the TD Pulser slowly clockwise just to the point of obtaining a stable triggered display on the crt. The display should be a positive-going pulse approximately 5 divisions in amplitude.

NOTE

It may be necessary to readjust the Time Position and Triggering controls on the 7T11 to locate the leading edge of a positive-going pulse. When a stable, triggered display is obtained, do not readjust the Trig Level or Stability controls on the 7T11.

j. Set the 7T11 Time/Div control to 5 ns.

k. Use the Time Position control on the 7T11 to align the 50% level of the positive-going pulse with the first-division reference line. Use the 7S11 Variable deflection and DC Offset controls to expand and display an exact 5-division (vertical) signal on the crt.

NOTE

If stable triggering is lost after this time position reference point has been established, repeat steps 13h through 13k.

l. Without changing the Variable deflection control on the 7S11, switch to 5 mV/div. Use the DC Offset controls to return the top of the waveform to center screen.

NOTE

Set the SCAN control on the 7T11 for the slowest convenient scanning rate just above an eye-flicker rate (about 15 Hz); faster scanning rates tend to smooth out the front-corner aberrations.

A display similar to Fig. 5-1 should be obtained. Each major vertical division now represents 2% of the original 5-division signal. This display is the total sampling system response to a signal from the TD Pulser and is used as a reference for comparison purposes.

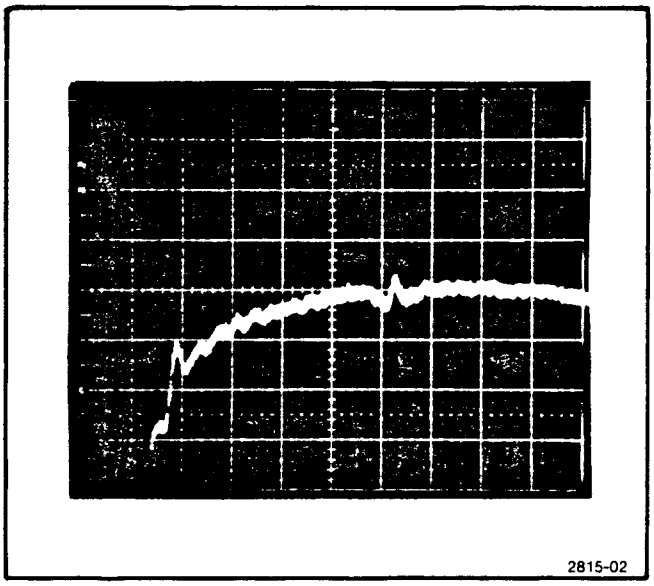


Fig. 5-1. Typical response curve of sampling system with the TD Pulser. Reference curve for the Low Edge Aberration Check. (steps 13l and 13m).

m. Use the marking pencil (for glazed surfaces) to carefully reproduce the displayed signal (average values) on the crt graticule. Ignore aberrations during first 200 ps. Not all sampling systems will display exactly as illustrated in Fig. 5-1. Once this reference graph has been drawn on the crt, do not erase it until all aberration checks and risetime measurements have been completed.

NOTE

If stable triggering or the Trig Level (Stability) control on the 7T11 have been readjusted before the graph has been drawn, repeat steps 13h through 13m.

n. Change the CG 5001/CG 551AP controls as follows:

VOLTS/DIV	50 mV/D
NUMBER OF DIVISIONS (MULTIPLIER)	5
FREQUENCY	1 MHz
VARIABLE	ON

o. Remove the TD Pulser from the system. Connect the CG 5001/CG 551AP OUTPUT to the S-6. Set the 7S11 for a calibrated 50 mV/div (Cal In). Reset the 7T11 Trigger controls if necessary, to obtain a stable display.

p. Use the CG 5001/CG 551AP VARIABLE control and the 7S11 DC Offset controls to establish a 5-division display.

q. Use the 7T11 Time Position controls to set the 50% level of the positive-going pulse on the first-division reference line.

r. Switch the deflection factor of the 7S11 to a calibrated 5 mV/div (Cal In). Use the 7S11 DC Offset controls to return the top of the waveform to center screen and align the displayed signal vertically with the reference graph in the area of the last horizontal division. See Fig. 5-2.

NOTE

Do not use the Time Position or Triggering controls on the 7T11 in an attempt to align the leading edges of the displayed signal with the leading edge of the reference graph. The signal from the TD Pulser has a faster risetime than the CG 5001/CG 551AP. Do not expect to obtain the same aberration amplitudes as the reference graph.

s. CHECK—that the displayed signal aberrations do not deviate from the reference graph by more than 1 vertical division.

t. Change CG 5001/CG 551AP EDGE POLARITY to ⨍ (Negative).

u. Reset the 7S11 for a calibrated, 50 mV/div deflection factor and push the INVERT button.

v. Use the CG 5001/CG 551AP VARIABLE control and 7S11 DC Offset controls to establish a 5-division display.

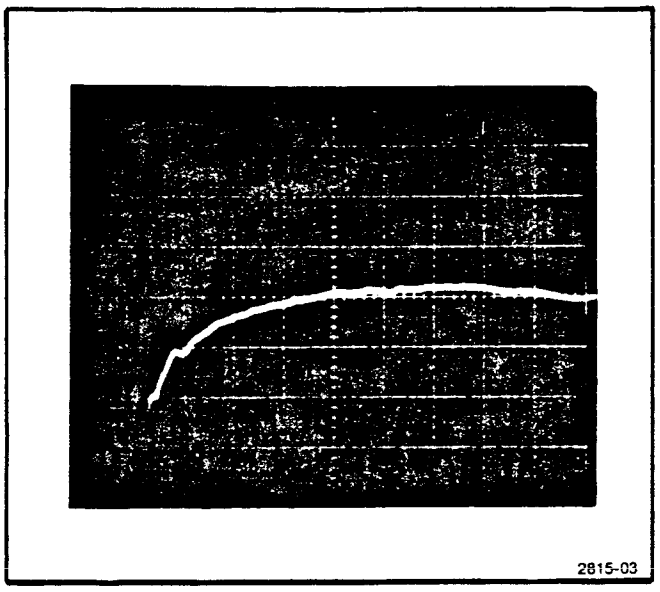


Fig. 5-2. Typical sampling system response curve without the TD Pulser (Low Edge Aberration Check, steps 13r and 13x).

w. Use the Time Position controls on the 7T11 to position the 50% level of the pulse on the first-division reference line.

x. Switch the vertical deflection factor control on the 7S11 for a calibrated 5 mV/div. Use the 7S11 DC Offset controls to return the top of the waveform to center screen and vertically align the displayed signal with the reference graph in the area of the last horizontal division. See Fig. 5-2.

NOTE

Do not readjust Triggering controls or Time Position controls on the 7T11. Do not expect to obtain the same aberration amplitudes as the reference graph.

y. CHECK—that displayed signal aberrations do not deviate from the reference graph by more than 1 vertical division.

z. Proceed to the next step.

14. Check Risetime and Falltime (Low Amplitude Edge)

a. Set the CG 5001/CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
NUMBER OF DIVISIONS (MULTIPLIER)	1
UNITS/DIV	.5 V/D
EDGE POLARITY	⌐ (Positive)
TRIGGER OUTPUT	ON
OUTPUT	ON

b. Insert a 5X, 50 Ω attenuator between the output cable assembly and the S-6 Sampling Head.

c. Set Sampling System controls as follows:

7S11	mV/DIV	20
	Variable	out
	Polarity	+ UP
7T11	Time Pos Rng	50 ns
	Time/Div	.5 ns
	Dot Response	Normal
	Sampling	Random

d. Use the Sampling System DC Offset, Time Position, Trig Level, and Stability controls to display a 500 mV, positive-going edge on the crt.

e. Adjust the 7S11 Variable control to set the waveform amplitude limits on the 0% and 100% risetime points on the crt.

f. CHECK—that the waveform risetime is equal to or less than 1.3 ns (between the 10% and 90% risetime points).

g. Change the CG 5001/CG 551AP EDGE POLARITY to ⌐ (Negative).

h. Adjust the 7S11 Variable control to set the waveform amplitude limits on the 0% and 100% risetime points on the crt.

i. CHECK—that the waveform falltime is equal to or less than 1.3 ns (10% and 90% points).

j. Remove all connections to the Sampling System.

15. Check Short Circuit Current (Low Amplitude Edge)

a. Set the CG 5001/CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	1 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	1
FREQUENCY	1 kHz
EDGE POLARITY	⌐ (Positive)
OUTPUT	ON

b. Connect the CG 5001/CG 551AP OUTPUT to the dc current meter.

c. CHECK—that the dc current magnitude (value) is equal to or less than 40 mA.

d. Change the CG 5001/CG 551AP EDGE POLARITY to ⌐ (Negative).

e. CHECK—that the dc current magnitude (value) is equal to or less than 40 mA.

f. Disconnect all cables.

✓ HIGH AMPLITUDE EDGE MODE

Equipment Required (see footnotes following Table 5-1)

Oscilloscope System—TEKTRONIX 7904A/7A26/7B80.
Sampling System—TEKTRONIX 7904A/7S11/7T11/S-6.
Digital Voltmeter—TEKTRONIX DM 501A.
Probe, 10X—TEKTRONIX P6105.
Probe, 100X, 50 Ω—TEKTRONIX P6057.
Output Cable Assembly (supplied with CG 5001/CG 551AP).
Coaxial Cable, 50 Ω, bnc connectors.
Load Resistor, 1 kΩ, 2 W.
Load Resistor, 10 kΩ, 2 W.
2.5X Attenuator, 50 Ω.
Termination, 50 Ω, precision feedthrough.
Termination, 50 Ω, female (SMA).
Adapter, bnc to probe tip.
Adapter, bnc female to dual banana.
Adapter, bnc female to bnc female.
Adapter, bnc male to dual binding post.
Adapter, SMA male to bnc female (2 required).

16. Check Amplitude Range and Accuracy

a. Set the CG 5001/CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
EDGE POLARITY	⌜ (Positive)
FREQUENCY	10 kHz
UNITS/DIV	0.2 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	6
VARIABLE	Off
OUTPUT	ON

b. Connect the CG 5001/CG 551AP OUTPUT through the output cable assembly to the 7A26 input connector (CH1 or CH2). Connect the CG 5001/CG 551AP TRIGGER OUTPUT through a coaxial cable to the 7B80 EXT TRIG IN connector. Set the oscilloscope system controls for a freerunning sweep (nontriggered).

c. Set the 7A26 vertical deflection to .2 V/div.

d. Adjust the 7A26 Variable control for a displayed amplitude of exactly 5 major divisions.

e. Change the CG 5001/CG 551AP controls as follows:

AMPLITUDE MODE	VOLTAGE
UNITS/DIV	.2 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	6
VARIABLE	ON
FREQUENCY	10 kHz
OUTPUT	ON
USE FOR 50 Ω LOAD	Off

f. Adjust the CG 5001/CG 551AP VARIABLE control for a displayed amplitude of exactly 5 major divisions.

g. CHECK—that the percent error displayed on the CG 5001/CG 551AP is between 2.7% HIGH and 2.7% LOW.

h. Change the CG 5001/CG 551AP controls to the EDGE mode. UNITS/DIV to 2 V/D, NUMBER OF DIVISIONS (MULTIPLIER) to 8 and OUTPUT to ON. Set the 7A26 to 2 V/div.

i. Repeat steps 16d through 16g, except in step 16e, change the CG 5001/CG 551AP VOLTAGE mode controls as follows:

UNITS/DIV	2 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	8

j. Remove the output cable assembly from the 7A26 and reconnect the output cable assembly through a compensated 10X probe and bnc to probe tip adapter to the 7A26 input.

k. Set the CG 5001/CG 551AP controls to the EDGE mode, UNITS/DIV to 2 V/D, NUMBER OF DIVISIONS (MULTIPLIER) to 10, and OUTPUT to ON. Set the 7A26 to .2 V/div (waveform will be off screen).

l. Repeat steps 16d through 16g, except in step 16e, change the CG 5001/CG 551AP VOLTAGE mode controls as follows:

UNITS/DIV	2 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	10

m. Set the CG 5001/CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	10 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	10
OUTPUT	ON

n. Set the 7A26 to 2 V/div.

o. Repeat steps 16d through 16g, except in step 16e, change the CG 5001/CG 551AP VOLTAGE mode controls as follows:

UNITS/DIV	10 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	10

p. Set the CG 5001/CG 551AP OUTPUT to off and proceed to the next step.

17. Check Current Limit and Short Circuit Current

a. Set the CG 5001/CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	10 V/D
VARIABLE	Off
NUMBER OF DIVISIONS (MULTIPLIER)	1
FREQUENCY	1 kHz
OUTPUT	ON

b. Connect a 10X, compensated probe to the 7A26 input (CH1 or CH2).

c. Connect the CG 5001/CG 551AP OUTPUT through the output cable assembly and appropriate adapters, such that a 1 kΩ load resistor is connected in parallel with the CG 5001/CG 551AP OUTPUT, to the input of the 10X probe. Connect the CG 5001/CG 551AP TRIGGER OUTPUT through a coaxial cable to the 7B80 EXT TRIG IN connector.

d. Set the 7A26 vertical deflection to .2 V/DIV and Variable control to the calibrated position (CAL IN).

e. Use the oscilloscope controls to display a stable, 1 kHz signal.

f. CHECK—that the waveform amplitude is at least 4.75 divisions and that the CG 5001/CG 551AP UNCAL indicator is off.

g. Replace the 1 kΩ resistor with a 10 kΩ load resistor.

h. Set the 7A26 to 2 V/DIV.

WARNING

Do not touch any exposed leads; 100 V is present on the output terminals during this step.

i. Change the CG 5001/CG 551AP UNITS/DIV to 20 V/D and NUMBER OF DIVISIONS (MULTIPLIER) to 5.

j. CHECK—that the waveform amplitude is at least 4.975 divisions and that the CG 5001/CG 551AP UNCAL indicator is off.

k. Change the CG 5001/CG 551AP UNITS/DIV to 10 V/D, NUMBER OF DIVISIONS (MULTIPLIER) to 1, and OUTPUT to off.

l. Disconnect all probes, adapters, and load resistors from the CG 5001/CG 551AP output cable assembly.

m. Use the precision 50 Ω terminator and appropriate adapter to connect the output cable assembly to the input of the digital voltmeter.

n. Set the CG 5001/CG 551AP OUTPUT to ON.

o. CHECK—that the magnitude of the voltmeter reading is less than 1.5 V and that the CG 5001/CG 551AP UNCAL indicator is on.

p. Set the CG 5001/CG 551AP NUMBER OF DIVISIONS (MULTIPLIER) to 10.

q. CHECK—that the magnitude of the voltmeter reading is less than 1.5 V and that the CG 5001/CG 551AP UNCAL indicator is on.

r. Set the CG 5001/CG 551AP UNITS/DIV to 1 V/D.

s. Remove the 50 Ω terminator and all connections to the digital voltmeter.

18. Check High Amplitude Edge Risetime and Aberrations

a. Set the CG 5001/CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
FREQUENCY	100 kHz
UNITS/DIV	10 V/D
VARIABLE	Off
NUMBER OF DIVISIONS (MULTIPLIER)	5

b. Connect the CG 5001/CG 551AP OUTPUT through the output cable assembly and bnc to probe tip adapter to the 100X, 50 Ω probe (P6057) connected to the 50 Ω terminated S-6, installed in the 7S11 Sampling Unit.

c. Connect the CG 5001/CG 551AP TRIGGER OUTPUT through a coaxial cable to the 7T11 Trigger Input via a 2.5X, 50 Ω attenuator.

d. Set the CG 5001/CG 551AP OUTPUT to ON.

e. Refer to Table 5-8. The following steps are performed three times. Set the CG 5001/CG 551AP UNITS/DIV and NUMBER OF DIVISIONS (MULTIPLIER) controls to the first, (second), (third) values listed in lines 1, (2), (3) of Table 5-8.

f. Set the 7S11 vertical deflection to first value, listed in lines 1, (2), and (3) of Table 5-8.

g. Set the 7T11 Sampling Sweep Unit Time Pos Rng to 50 μs, and Time/Div to 5 μs.

h. Adjust the 7S11 Variable control to set the waveform amplitude limits on the 0% and 100% graticule lines.

i. Set the 7T11 Sampling Sweep Unit to 20 ns/div.

j. CHECK—that the risetime is less than 100 ns between the 10% and 90% levels.

k. Set the 7T11 Time/Div to 200 ns/div.

l. Set the 7S11 to the second value listed on line 1, (2), (3) in Table 5-8 and position the top of the waveform at center screen.

m. CHECK—that aberrations on the top leading edge are less than ±1 division (2% of waveform amplitude).

n. Repeat steps 18e through 18m for line 2 of Table 5-8.

o. Repeat steps 18e through 18m for line 3 of Table 5-8.

p. Remove all connections to the Sampling System.

MARKERS MODE

Equipment Required (see footnotes following Table 5-1)

Oscilloscope System—TEKTRONIX 7904A/7A19/7A26/7B80.
Digital Counter—TEKTRONIX DC 503A, Option 01.
Output Cable Assembly (supplied with the CG 5001/CG 551AP).
Coaxial Cable, 50 Ω, bnc connectors.
Termination, 50 Ω, precision feedthrough.

19. Check the 1 MHz Reference Frequency

a. Set the CG 5001/CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	1 V/D
VARIABLE	Off
NUMBER OF DIVISIONS (MULTIPLIER)	1
FREQUENCY	1 MHz
TRIGGER OUTPUT	NORM, ON

b. Connect the CG 5001/CG 551AP TRIGGER OUTPUT through a 50 Ω coaxial cable to the Digital Counter Channel A connector.

c. Set the Digital Counter for A frequency with 1 Hz resolution.

d. CHECK that the Digital Counter reads between 999.900 kHz and 1000.100 kHz.

e. Proceed to the next step.

20. Check Markers and Trigger Amplitude and Range

a. Change the CG 5001/CG 551AP controls as follows:

TIMING MODE	MARKERS
UNITS/DIV	1 ms/D
OUTPUT	ON

b. Connect the CG 5001/CG 551AP OUTPUT through the output cable assembly to the 7A19 vertical input. Set the 7B80 for 1 ms/div sweep rate.

c. Connect the CG 5001/CG 551AP TRIGGER OUTPUT through a 50 Ω coaxial cable and precision 50 Ω termination to the 7A26 input (CH1 or CH2).

Table 5-8
SETTINGS FOR RISETIME AND ABERRATIONS CHECK

Line	UNITS/DIV	CG 5001/CG 551AP NUMBER OF DIVISIONS (MULTIPLIER)	7S11 (first value)	7S11 (second value)
1.	5 V/D	10	100 mV/div	10 mV/div
2.	2 V/D	10	50 mV/div	5 mV/div
3.	2 V/D	8	50 mV/div	5 mV/div

d. Set both of the 7A19 and 7A26 vertical deflection controls to 0.5 V/div. Set the 7B80 for dc triggering, automatic mode. Trigger the oscilloscope from the 7A26 input signal. Display and observe both signals (trigger and markers) on the crt.

e. Change the CG 5001/CG 551AP UNITS/DIV control and the 7B80 sweep rate to 10 ns/div.

f. CHECK—that the markers and trigger amplitudes are equal to or greater than 1 V and that the markers and triggers fall approximately on the vertical graticule lines.

g. Advance the CG 5001/CG 551AP UNITS/DIV control and the oscilloscope horizontal sweep rate simultaneously in a 1-2-5 sequence from 10 ns/div to 5 sec/div. Repeat step 20f for each setting. Observe that the trigger rate remains at 100 ns for the 50 ns through 10 ns scales.

21. Check X10 Magnifier

a. Set the CG 5001/CG 551AP UNITS/DIV and oscilloscope horizontal sweep rate to 1 μs/div.

b. CHECK—that, when the CG 5001/CG 551AP MAG X10 pushbutton is pressed, that the marker rate increases by a factor of ten and that every tenth marker is of higher amplitude. Also check that the trigger rate remains unchanged (trigger pulse width will decrease by a factor of ten).

c. Set the CG 5001/CG 551AP to the MAG X1 mode and continue to the next step.

22. Check Trigger Divider (Rate ÷ 10 and Rate ÷ 100)

a. Set the CG 5001/CG 551AP UNITS/DIV control and oscilloscope horizontal sweep rate to 1 μs/div; MAG X1 (MAG X10 off).

b. Press the CG 5001/CG 551AP RATE ÷ 10 pushbutton.

c. CHECK—that the trigger rate decreases by a factor of ten from 1 μs (10 μs triggers).

d. Press the CG 5001/CG 551AP RATE ÷ 100 pushbutton.

e. CHECK—that the trigger rate decreases by a factor of 100 from 1 μs (100 μs triggers).

23. Check Marker and Trigger Period Accuracy (Standard Time Base)

NOTE

Do not perform this step if you are checking the CG 5001/CG 551AP, Option 01. Go to step 24.

a. Set the CG 5001/CG 551AP UNITS/DIV to 10 ns/D and TRIGGER OUTPUT to NORM.

b. Change the CG 5001/CG 551AP TRIGGER OUTPUT connection from the 7A26 input to the Digital Counter Channel A connector. Do not remove time marks input to 7A19.

c. Set the Digital Counter resolution for Freq A with 1 Hz resolution.

d. CHECK that the Digital Counter reads between 9999.000 and 10001.000 kHz.

e. Proceed to step 25a if the CG 5001/CG 551AP does not have Option 01 installed (high accuracy time base).

24. Check Marker and Trigger Period Accuracy (Option 01 Time Base)

NOTE

Perform steps 24a through 24e only if you are checking the CG 5001/CG 551AP Option 01.

a. Set the CG 5001/CG 551AP UNITS/DIV control to 10 ns/D and TRIGGER OUTPUT to NORM, ON.

b. Change the CG 5001/CG 551AP TRIGGER OUTPUT connection from the 7A26 input to the Digital Counter Channel A. Do not remove time marks input to 7A19.

NOTE

The DC 503A must have Option 01 (high stability time base) installed and must be calibrated to be accurate within 1 part in 10^7.

c. Set the counter to measure frequency with 1 Hz resolution.

d. CHECK that the Digital Counter reads between 9999.971 and 10000.029 kHz.

e. Proceed to the next step.

25. Check Variable Timing Range and Accuracy

a. Press the CG 5001/CG 551AP VARIABLE pushbutton.

b. Turn the CG 5001/CG 551AP VARIABLE control until the CG 5001/CG 551AP display reads 9.9% SLOW.

c. CHECK—that the counter reads between 9009.1 and 9010.9 kHz.

d. Turn the CG 5001/CG 551AP VARIABLE control until the CG 5001/CG 551AP display reads 9.9% FAST.

e. CHECK—that the counter reads between 10988.9 and 10991.1 kHz.

f. Change the CG 5001/CG 551AP TRIGGER OUTPUT from the counter input connection to the 7B80 EXT TRIG IN connector. Set the oscilloscope sweep rate to 10 ns/div and obtain a stable, externally triggered, display on the crt (time marks are still applied to the 7A19 vertical input).

g. Slowly turn the CG 5001/CG 551AP VARIABLE control from 9.9% FAST to 9.9% SLOW.

h. CHECK—that the 10 ns marker period varies smoothly and monotonically across the range. Time marks should move only in one direction (closer together) in step, with the CG 5001/CG 551AP VARIABLE control.

i. Continue to the next step.

✓ SLEWED EDGE MODE

Equipment Required (see footnotes following Table 5-1)

Oscilloscope System—TEKTRONIX 7904A/7A19/7B92A.
Universal Counter—TEKTRONIX DC 503A.
Output Cable Assembly (supplied with CG 5001/CG 551AP).
Coaxial Cable, 50 Ω, bnc connectors.

26. Check Slewed Edge and Trigger Amplitude and Range

a. Set the CG 5001/CG 551AP controls as follows:

TIMING MODE	SLEWED EDGE
UNITS/DIV	0.1 μs/D
OUTPUT	ON
VARIABLE	Off

b. Connect the CG 5001/CG 551AP OUTPUT through the output cable assembly to the 7A19 50 Ω vertical input. Set the 7A19 vertical deflection to a calibrated .5 V/div.

c. Connect the CG 5001/CG 551AP TRIGGER OUTPUT to the 7B92A MAIN TRIG IN connector via a 50 Ω coaxial cable.

d. Set the 7B92 sweep rate to .1 μs/div. Use the oscilloscope controls to trigger the sweep externally and display a stable, slewed edge pattern centered on the crt screen.

e. CHECK—that the amplitude of the slewed edges are equal to or greater than 1 V and that the pattern contains the correct number of edges (at least 10).

f. Remove the trigger cable from the 7B92A and the output cable assembly from the 7A19. Reconnect the trigger cable to the 50 Ω vertical input on the 7A19. Set the oscilloscope controls to trigger the sweep internally and display the CG 5001/CG 551AP TRIGGER OUTPUT signal on the crt.

g. CHECK—that the amplitude of the trigger signal is equal to or greater than 1 V.

h. Remove the trigger cable connection to the 7A19 and reconnect to the 7B92 MAIN TRIG IN connector. Connect the output cable assembly to the 50 Ω vertical input on the 7A19. Set the oscilloscope controls to trigger the sweep externally and display the same slewed edge pattern as observed in step 25d.

i. Set the 7A19 vertical deflection to .2 V/div.

j. Advance the CG 5001/CG 551AP UNITS/DIV control and the 7B92A sweep rate simultaneously, in step, through the slewed edge range from .1 μs/div through .4 ns/div.

NOTE

The 7B92A calibrated sweep rate limits at .5 ns/div. As you approach the fastest sweep rates, the complete slewed edge pattern may shift horizontally on the screen. If necessary, use the CG 5001/CG 551AP SHIFT pushbuttons to recenter the edges on the crt; do not use the oscilloscope horizontal position controls.

k. CHECK—that for each CG 5001/CG 551AP UNITS/DIV setting that the amplitude of the slewed edge pattern is equal to or greater than 1 V and that the pattern contains the correct number of edges (at least 10).

l. Reset the CG 5001/CG 551AP UNITS/DIV control for 0.5 ns/D and the oscilloscope sweep rate to 2 ns/div.

m. Press the CG 5001/CG 551AP RESET button and without using the SHIFT pushbuttons, align the first edge in the pattern on a vertical graticule line.

n. CHECK—that the first edge in the pattern does not move more than 1/2 division (1 ns) as the CG 5001/CG 551AP UNITS/DIV control is turned from 0.5 ns/D to .1 μs/D.

NOTE

The complete pattern will shift left about 3 ns when the .4 ns/D scale is selected.

27. Check Variable Range

NOTE

This step checks the operation of the phase-lock-loop in the Main Timing Generator circuit.

a. Set the CG 5001/CG 551AP UNITS/DIV control to 1 ns/D and VARIABLE to ON.

b. Turn the CG 5001/CG 551AP VARIABLE control slowly through its full range.

c. CHECK—that the pattern of edges remains consistently clear across the tuning range. The pattern may blur somewhat during the knob rotation, but should rapidly settle.

NOTE

Use the SHIFT function, if necessary, to keep the pattern on screen.

d. Turn the CG 5001/CG 551AP VARIABLE off.

28. Check Shift Function

a. Note the horizontal position of the slewed edges on the oscilloscope display.

b. Press the SHIFT → (right) pushbutton.

c. CHECK—that the slewed edges move one division to the right on the display each time the button is pressed.

d. Press the RESET pushbutton.

e. CHECK—that the slewed edges have moved back to their original position.

f. Press the SHIFT ← (left) pushbutton.

g. CHECK—that the slewed edges move one division to the left on the display each time the button is pressed.

h. Press the RESET pushbutton and remove all connections to the CG 5001/CG 551AP.

29. Check Slewed Edge Accuracy (Average)

Method 1

a. Set the Digital Counter controls to measure the period averaged over 10,000 cycles.

b. Connect the CG 5001/CG 551AP OUTPUT to the Digital Counter Channel B input connector via the output cable assembly.

c. Put the CG 5001/CG 551AP in continuous slewing mode by pressing and **holding** the SLEWED EDGE pushbutton for about one second. The Shift → and Shift ← pushbuttons should both be illuminated.

d. Set the CG 5001/CG 551AP UNITS/DIV to the values listed in Table 5-9.

e. CHECK—that the counter reads the OUTPUT value listed in Table 5-9 for each UNITS/DIV setting listed. Allow for CG 5001/CG 551AP time base error (standard time base is .01%; Option 01 time base is .0003%) plus one count error.

NOTE

Tabulate and record the OUTPUT readings for step 29e and the TRIGGER OUTPUT readings for step 29g. The difference between the readings must equal the CG 5001/CG 551AP UNITS/DIV setting.

Table 5-9
COUNTER DISPLAY FOR SLEWED EDGE ACCURACY

UNITS/DIV	OUTPUT	TRIGGER OUTPUT
0.1 μs	5.7400 μs	5.6400 μs
50 ns	5.3300 μs	5.2800 μs
20 ns	4.1000 μs	4.0800 μs
10 ns	4.5100 μs	4.5000 μs
5 ns	4.3050 μs	4.3000 μs
2 ns	4.1820 μs	4.1800 μs
1 ns	4.1410 μs	4.1400 μs
0.5 ns	4.1205 μs	4.1200 μs
0.4 ns	4.1004 μs	4.1000 μs

f. Remove the output cable assembly and connect the CG 5001/CG 551AP TRIGGER OUTPUT to the digital counter input connector.

g. Repeat steps 28c through 28e using the values listed under TRIGGER OUTPUT in Table 5-9.

Method 2

NOTE

Do not use Method 2 unless you are a qualified service technician.

a. Connect the 1 MHz Internal Reference Output of the CG 5001/CG 551AP (located on pin 25A of the A4 Time Mark board rear interface connector; pin 26A is GROUND) to the counter A input connector.

b. Connect the CG 5001/CG 551AP OUTPUT through the output cable assembly to the counter B input connector.

c. Set the counter to the RATIO A/B mode.

d. Set the CG 5001/CG 551AP UNITS/DIV to the values listed in Table 5-9.

e. CHECK—that the counter reads the OUTPUT value listed in Table 5-9 for each UNITS/DIV value shown. Allow one count error.

f. Remove the output cable assembly and connect the CG 5001/CG 551AP TRIGGER OUTPUT through a coaxial cable to the counter B input.

g. Repeat steps 29d and 29e using the values in Table 5-9 under TRIGGER OUTPUT.

h. Remove all connections to the CG 5001/CG 551AP.

✓ GPIB INTERFACE TEST

Equipment Required

Controller—TEKTRONIX 4051.
GPIB Interconnect Cable.

29. Check GPIB Operation

a. Turn off the power to the CG 5001/CG 551AP. Be sure the GPIB address switch is set to decimal 1.

b. Connect the TEKTRONIX 4051 to the CG 5001/CG 551AP power module via the GPIB interconnect cable. The GPIB connector is located on the rear of the power module. Power up the controller only.

c. Enter the following program into the 4051 memory.

```
  1  ON SRQ THEN 500
  2  GO TO 100
100  DIM B$(120)
110  INPUT A$
```

```
120  PRINT @1:A$
130  P=POS(A$,"?",1)
140  IF P<>0 THEN 160
150  GO TO 110
160  INPUT @1:B$
170  PRINT B$
180  GO TO 110
500  POLL X,Y;1
510  PRINT "CG 5001/CG 551AP SRQ NOTED AND
     SERVICED"
520  RETURN
```

d. Turn on the power to the CG 5001/CG 551AP. Check that the message below appears on the 4051 display:

NO SRQ ON UNIT—IN IMMEDIATE LINE—MESSAGE NUMBER 43

e. Execute the 4051 program by typing RUN<CR>. Type another <CR> on the 4051.

f. CHECK—that the 4051 displays the message:

CG 5001/CG 551AP SRQ NOTED AND SERVICED

g. The 4051 will then display a faint question mark indicating that it is awaiting input.

Press the following controls on the CG 5001/CG 551AP:

MODE	MARKERS
OUTPUT	ON
VARIABLE	ON
VARIABLE Control	1.0% FAST
UNITS/DIV	1 μS/D
TRIGGER	RATE ÷ 10

h. Type SET? on the 4051.

i. CHECK—that the 4051 will display the following response:

MODE MKRS; U/D 1.0E-6; VAR; PCT 1.0; OUT ON; MAG X1; TRIG X.1;

j. Type INIT <CR> on the 4051.

k. CHECK—that the CG 5001/CG 551AP goes to:

MODE	VOLTAGE
UNITS/DIV	1 V/D
FREQUENCY	1 kHz
NUMBER OF DIVISIONS (MULTIPLIER)	1
OUTPUT	Off
TRIGGER	NORM, Off

l. Type MODE MARKERS <CR> on the 4051.

m. CHECK—that the CG 5001/CG 551AP goes to:

MODE	MARKERS
OUTPUT	Off
TRIGGER	NORM, ON
VARIABLE	Off
UNITS/DIV	1 mS/D

n. This completes the CG 5001/CG 551AP Performance Check.

ADJUSTMENT PROCEDURE

Introduction

This procedure should be performed if the instrument fails to meet the performance requirements of the electrical characteristics listed in the Specification section (Vol. 1). To ensure continued instrument accuracy, adjustment should be performed every 1000 hours of operation or every six months if used infrequently. Adjustment is also recommended following instrument repair or modification. Adjustments must be made at an ambient temperature between +20°C to +30°C. Allow thirty minutes warm-up time before beginning adjustments (sixty minutes after exposure to or storage in high humidity environment).

Services Available

Tektronix, Inc. provides complete instrument repair and adjustment at local field service centers and at the factory service center. Contact your local Tektronix Field Office or representative for further information.

Limits and Tolerances

All limits and tolerances given in this procedure are calibration guides and should not be interpreted as instrument specifications unless they are also found in the Specification section (Vol. I) of this manual.

Tolerances given are for the instrument under test and do not include test equipment error.

Internal Adjustments

Do not preset the internal controls.

Equipment Alternatives and Partial Procedures

When other than recommended test equipment is substituted, control settings or calibration setups might need to be altered. If the exact equipment listed is not available, check the Minimum Specification column in Table 5-1 to see if any other equipment will suffice.

Equipment Required (see Table 5-1 for part numbers)

Digital Voltmeter—Fluke Model 8500A/8502A.
Oscilloscope System—TEKTRONIX 7904A/7A26/7B80.
Sampling System—TEKTRONIX 7904A/7S11/S-6/7T11.
Frequency Counter—TEKTRONIX DC 503A, Option 01.
Output Cable Assembly (supplied with CG 5001/CG 551AP).
Coaxial Cable, 50 Ω, bnc to bnc connectors.
Load Resistor, 20 kΩ, 2 W, 5%.
Probe, X10, 1 MΩ, TEKTRONIX P6105.
Adapter, bnc female to bnc female.
Adapter, bnc to dual binding post.
Adapter, probe tip to bnc.
Adapter, bnc female to dual banana.
Adapter, SMA male to bnc female (2 required).
Termination, 50 Ω, precision feedthrough.
Termination, 50 Ω, female (SMA).
Attenuator, 50 Ω, 2X (6 dB).
Attenuator, 50 Ω, 2.5X (8 dB).
Flexible Plug-in Extender (3 required).
Power Module, TEKTRONIX TM 515 (Mod UB) or TM 506 (Mod JB).

Preliminary Procedure

WARNING

Dangerous potentials exist at several points throughout this instrument. When the instrument is operated with the covers removed, do not touch exposed connections or components. Disconnect the power before removing or replacing components.

Remove the top cover and both side covers from the CG 5001/CG 551AP and connect the instrument to the power module interface via the three flexible plug-in extenders. Instructions for removing the covers is found in the Maintenance section. Apply power and allow at least 20 minutes warmup time for all equipment.

NOTE

Refer to the foldout page labeled ADJUSTMENTS AND TEST POINT LOCATIONS before proceeding with the Adjustment Procedure. Make adjustments at an ambient temperature between +20° C (+68° F) and +30° C (+86° F), unless otherwise noted.

ADJUSTMENT STEPS

1. Adjust the +5 V Supply

a. Press the SLEWED EDGE pushbutton on the CG 5001/CG 551AP.

b. Connect the positive lead of the voltmeter to A4TP1410 and the negative lead to A4TP1400.

c. CHECK—that the voltmeter indication is between +5.10 V dc and +5.20 V dc.

d. ADJUST—A5R1004, +5 V Adjust, for a voltmeter indication of +5.15 V dc.

e. Disconnect the voltmeter leads from both test points.

2. Adjust the High Voltage Supply

a. Set the CG 5001/CG 551AP front panel controls as follows:

AMPLITUDE MODE	VOLTAGE
UNITS/DIV	20 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	10
FREQUENCY	DC
OUTPUT	Off

WARNING

Dangerous potentials exist between A5TP1702 and A5TP1103. Use extreme caution in handling the voltmeter leads for this step. +239 V dc exists at A5TP1702.

b. Use the output cable assembly (suppied with the CG 5001/CG 551AP), the bnc to dual binding post adapter, and the bnc female to bnc female adapter to connect the 20 kΩ, 2 W load resistor to the CG 5001/CG 551AP OUTPUT connector.

c. Connect the positive lead of the voltmeter to A5TP1702 and the negative lead to A5TP1103.

d. Press the CG 5001/CG 551AP OUTPUT ON button (turns output on).

e. CHECK—that the voltmeter indication is between +235 V dc and +239 V dc.

f. ADJUST—A5R1106, HV Adjust, for a voltmeter indication of +237 V dc.

g. Press the CG 5001/CG 551AP OUTPUT ON button (turns output off).

h. Disconnect the voltmeter leads from both test points and remove the 20 kΩ load resistor and adapters from the end of the output cable assembly.

3. Adjust the Low Voltage Supply

a. Change the CG 5001/CG 551AP front panel controls as follows:

UNITS/DIV	1 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	1

b. Attach the positive lead of the voltmeter to A5TP1102 and the negative lead to A5TP1103.

c. CHECK—that the voltmeter indication is between +14.98 V dc and +15.02 V dc.

d. ADJUST—A5R1104, LV Adjust, for a voltmeter indication of +15.00 V dc.

e. Disconect the voltmeter leads from the two test points.

4. Adjust the DAC Offset

a. Set the internal CAL/NORMAL switch, A9S1731, located on the CPU (A9) assembly, to the CAL position (up). The CG 5001/CG 551AP display window should read: DAC 0.

b. Connect the positive lead of the voltmeter to A6TP1304 and the negative lead to A6TP1400.

c. CHECK—that the voltmeter indicates between −3.9806 V dc and −3.9812 V dc.

d. ADJUST—A6R1325, DAC Offset, for a voltmeter indication of −3.9809 V dc.

e. Leave the voltmeter connected for the next step.

5. Adjust DAC Gain

a. Press the CONTINUE button on the CG 5001/CG 551AP. The display window should read: DAC 1.

b. CHECK—that the voltmeter indication is between −6.7104 V dc and −6.7124 V dc.

c. ADJUST—A6R1324, DAC Gain, for a voltmeter indication of −6.7114 V dc.

d. Disconnect the voltmeter leads from the two test points. DO NOT press the CONTINUE button. Proceed to the next step.

6. Adjust the Pulse Head Drive

a. Connect the positive lead of the voltmeter to A7TP1200 and the negative lead to A7TP1302.

b. CHECK—that the voltmeter indicates between −5.20 V dc and −5.30 V dc.

c. ADJUST—A7R1202, Head Drive (−), for a voltmeter indication of −5.25 V dc.

d. Press the CG 5001/CG 551AP CONTINUE button. The display should be: HEAD.

e. CHECK—that the voltmeter indicates between +5.20 V dc and +5.30 V dc.

f. ADJUST—A7R1300, Head Drive (+), for a voltmeter indication of +5.25 V dc.

g. Disconnect the voltmeter leads from the two test points.

7. Adjust the Pulse Drive Delay

a. Press the CG 5001/CG 551AP CONTINUE button. The display should read: DELY.

b. Use a 50 Ω coaxial cable to connect the CG 5001/CG 551AP TRIGGER OUTPUT to the channel 1 vertical input of the oscilloscope's dual trace amplifier.

c. Use the oscilloscope's X10 probe to connect test point A7TP1200 to channel 2 vertical input of the oscilloscope's dual trace amplifier. Trigger the sweep on Channel 1. Use positive slope trigger.

d. CHECK—the time delay between the two waveforms displayed on the crt graticule. At the 50% amplitude points, the delay should be between 110 ns and 130 ns.

e. ADJUST—A7R1200, Head Drive Delay, for a delay of 120 ns at the 50% amplitude points between the trigger positive edge and the pulse drive negative edge waveforms.

f. Disconnect the X10 probe and 50 Ω cable from the CG 5001/CG 551AP.

8. Zero the Calibration Constants

a. Press the CG 5001/CG 551AP CONTINUE button. The display should read the same as shown in line 1 of Table 5-10.

b. CHECK—that the value displayed for the % error is 0.0%.

c. ADJUST—the CG 5001/CG 551AP VARIABLE knob for a display of 0.0%.

d. Repeat steps 8a through 8c for the remaining lines in Table 5-10. Each time you press CONTINUE, the display should agree with the corresponding line.

For line 6 in Table 5-10, connect the precision 50 Ω termination to the output cable assembly and connect the cable to the CG 5001/CG 551AP OUTPUT connector. Remove the cable assembly and 50 Ω termination before you press CONTINUE for line 7.

e. When line 11 of Table 5-10 is reached and the display reads CAL DONE, set the internal CAL/NORMAL switch, A9S1731, to the NORMAL position (down).

Table 5-10
CALIBRATION DISPLAYS FOR STEP 8

Line	CG 5001/CG 551AP Display Reading	
1	5 V	* 1 X 1
2	50 mV	* 2 X 1
3	50 mV	* 3 X 1
4	1 V	* 4 X 1
5	1 V	* 5 X 1
6	(connect 50 Ω load) 10 mA	* 6 X 10
7	(remove 50 Ω load) 50 mA	* 7 X 1
8	50 mV	* 8 X 1
9	10 V	* 9 X 1
10	10 V	* 10 X 10
11	CAL DONE	

9. Adjust the Translator Offset

a. Change the CG 5001/CG 551AP front panel controls as follows:

AMPLITUDE MODE	VOLTAGE
UNITS/DIV	10 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	1
FREQUENCY	DC

b. Connect the positive lead of the voltmeter to A6TP1200 and the negative lead to A6TP1202.

c. CHECK—that the voltmeter indicates between +9.9990 V dc and +10.0010 V dc.

d. ADJUST—A6R1532, Translator Offset, for a voltmeter indication of +10.0000 V dc.

e. Disconnect the voltmeter leads from the two test points.

10. Adjust the Low SAC Offset

a. Change the CG 5001/CG 551AP front panel controls as follows:

UNITS/DIV	.1 V/D
OUTPUT	ON
USE FOR 50 Ω LOAD	Off

b. Use the bnc to male banana adapter and the output cable assembly to connect the CG 5001/CG 551AP OUTPUT to the digital voltmeter.

c. CHECK—that the voltmeter indication is between +0.099990 V dc and +0.100010 V dc.

d. ADJUST—A6R1203, Low SAC Offset, for a voltmeter indication of +0.100000 V dc.

e. Leave the voltmeter connections for the next step.

11. Adjust the High SAC Offset

a. Change the CG 5001/CG 551AP front panel controls as follows:

UNITS/DIV	20 V/D

b. CHECK—that the voltmeter indication is between +19.950 V dc and +20.050 V dc.

c. ADJUST—A6R1411, High SAC Offset, for a voltmeter indication of +20.000 V dc.

d. Press the CG 5001/CG 551AP OUTPUT ON button (turns output off).

e. Proceed to the next step.

12. Adjust the Current Offset

a. Insert the precision 50 Ω termination between the output cable assembly and the bnc female to dual banana adapter on the voltmeter.

b. Change the CG 5001/CG 551AP front panel controls as follows:

AMPLITUDE MODE	CURRENT
UNITS/DIV	10 mA/D
NUMBER OF DIVISIONS (MULTIPLIER)	10
FREQUENCY	DC
VARIABLE	ON
OUTPUT	ON

c. ADJUST—the CG 5001/CG 551AP VARIABLE knob for a voltmeter indication between +4.995 V dc and +5.005 V dc. Do not change the VARIABLE knob for the remainder of this step.

d. Change the CG 5001/CG 551AP UNITS/DIV control for 1 mA/D and press the MULTIPLIER button 1.

e. CHECK—that the voltmeter indication is between +49.975 mV dc and +50.025 mV dc.

f. ADJUST—A6R1601, Current Offset, for a voltmeter indication of +50.000 mV dc.

g. Disconnect the voltmeter, cable assembly, and 50 Ω termination from the CG 5001/CG 551AP.

13. Adjust the Low SAC Compensation

a. Set the CG 5001/CG 551AP front panel controls as follows:

AMPLITUDE MODE	VOLTAGE
UNITS/DIV	.1 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	1
FREQUENCY	100 kHZ
VARIABLE	Off
OUTPUT	ON
USE FOR 50 Ω LOAD	Off
TRIGGER OUTPUT	ON

b. Connect the CG 5001/CG 551AP OUTPUT through the output cable assembly to the vertical input of the oscilloscope.

c. Set the oscilloscope vertical deflection for 20 mV/div and the horizontal sweep for 0.5 μs/div.

d. Use a 50 Ω coaxial cable to connect the CG 5001/CG 551AP TRIGGER OUTPUT to the oscilloscope external trigger input. Adjust the oscilloscope trigger level for a stable display with the rising edge of the signal at the first vertical graticule line.

e. CHECK—the positive pulse for squarest leading edge corner and flat top.

f. ADJUST—A6C1201, Low SAC Comp, so that the positive pulse has the best leading edge corner and flat top.

g. For instruments below serial number B064185 skip to Step 13j.

NOTE

A new value for A6R1400 will not need to be selected unless operational amplifier A6U1311 has been replaced.

h. If the leading edge corner and top of the waveform does not look like Fig. 5-3, a new value for A6R1400 must be selected. Select one of the following to replace the existing A6R1400 value depending on the waveform appearance.

51 ohm	.25, 5%	315-0510-00
47 ohm	.25, 5%	315-0470-00
43 ohm	.25, 5%	315-0430-00
39 ohm	.25, 5%	315-0390-00
36 ohm	.25, 5%	315-0360-00
33 ohm	.25, 5%	315-0330-00

i. Repeat 13f, then 13h until the waveform appearance is similar to that in Fig. 5-3.

j. Press the CG 5001/CG 551AP OUTPUT ON button (turns output off).

k. Proceed to the next step.

14. Adjust the High SAC Compensation

a. Disconnect the output cable assembly from the oscilloscope vertical input.

b. Connect the X10 probe (compensated) to the output cable assembly with a probe tip to bnc adapter and connect the probe to the oscilloscope vertical input.

c. Set the oscilloscope vertical deflection for 50 volts/div and the horizontal sweep rate for 10 μs/div.

d. Change the CG 5001/CG 551AP front panel controls as follows:

FREQUENCY	10 kHz
UNITS/DIV	20 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	10
OUTPUT	ON

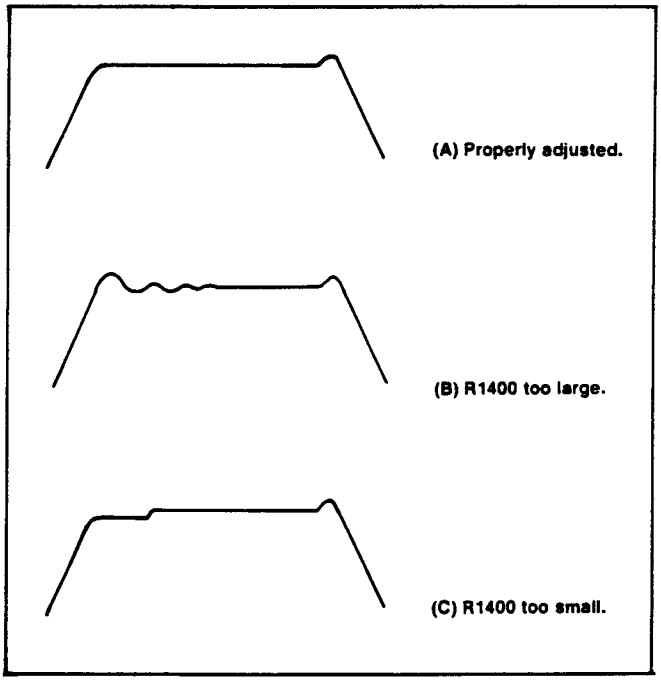


Fig. 5-3. Waveforms indicating A6R1400 value is: (A) properly selected; (B) too large; (C) too small.

e. Adjust the oscilloscope controls for a stable display with the rising edge of the signal at the first vertical graticule line.

f. CHECK—the positive pulse, leading edge corner, for no overshoot.

g. ADJUST—A6C1401, High SAC Comp, so that the positive pulse has the best leading edge corner with no overshoot.

h. Press the CG 5001/CG 551AP OUTPUT ON button (Turns output off).

i. Remove all connections to the CG 5001/CG 551AP.

15. Adjust Power On Reference

a. Connect the positive lead of the voltmeter to A8TP1202 and the negative lead to A8TP1200.

b. CHECK—for a voltmeter indication between +2.70 V dc and +2.76 V dc.

c. ADJUST—A8R1300, Power On Ref, for a voltmeter indication of +2.73 V dc.

d. Proceed to the next step.

16. Adjust the Head Offset

a. Connect the positive lead of the voltmeter to A8TP1300.

b. CHECK—for a voltmeter indication between −3.000 mV dc and +3.000 mV dc.

c. ADJUST—A8R1301, Head Offset, for a voltmeter indication of 0.0 mV dc.

d. Disconnect the voltmeter leads from the two test points.

17. Adjust Low Edge Risetime and Aberrations

a. Use the output cable assembly, a 2X 50 Ω attenuator, and the SMA male to bnc female adapter to connect the CG 5001/CG 551AP OUTPUT connector to the input of the S-6 Sampling Head (installed in the 7S11 Sampling Unit). Terminate the S-6 with the SMA female (50 Ω) termination.

b. Connect the CG 5001/CG 551AP TRIGGER OUTPUT connector to the 7T11 Sampling Sweep Unit Trig Input connector, using a 50 Ω coaxial cable, 2.5X 50 Ω attenuator, and SMA male to bnc female adapter.

c. Set the 7S11 controls as follows:

mV/Div	100
Polarity	+Up
Delay	centered
Dot Response	Normal
Variable	Off (CAL IN)

d. Set the 7T11 controls as follows:

Time Pos Rng	50 ns
Time/Div	1 ns
Slope	+
Ext Trig	50 Ω, 2 V Max
Scan	Rep
Sampling	Random

e. Set the CG 5001/CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	1 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	1
FREQUENCY	1 MHZ
EDGE POLARITY	⨍ (Positive)
VARIABLE	Off (fixed)
TRIGGER OUTPUT	ON
OUTPUT	ON

f. Use the DC Offset, Time Position, Trig Level, Scan, and other controls on the Sampling System to display a 500 mV, 1 ns, positive going edge on the crt.

g. CHECK—that the risetime of the displayed edge is less than 1.3 ns, with minimum aberrations (see Fig. 5-4).

h. ADJUST—A7C1621, Low Edge Comp (+), to obtain a risetime less than 1.3 ns and minimum aberrations (similar to Fig. 5-4).

i. Change the CG 5001/CG 551AP EDGE POLARITY to ⨍ (negative) and the 7S11 from +Up to Invert.

j. Readjust the Sampling System controls to display a 500 mV, 1 ns, negative going edge.

k. CHECK—that the risetime of the displayed edge is less than 1.3 ns, with minimum aberrations.

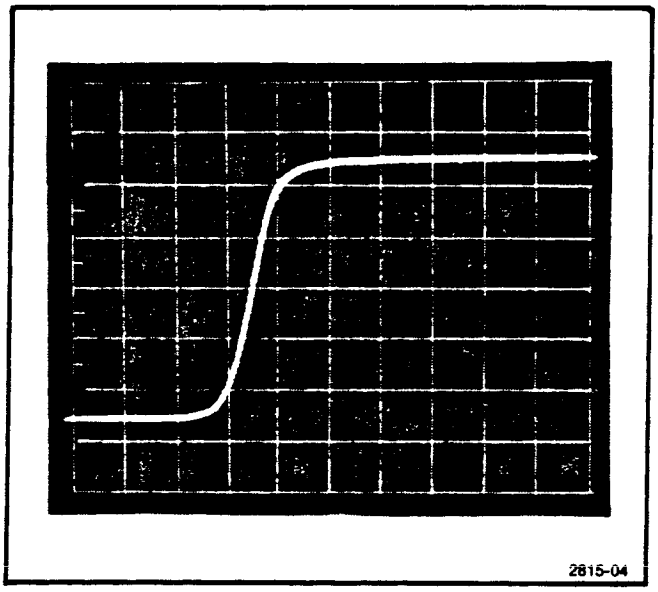


Fig. 5-4. Typical waveform for positive and negative low edge aberration checks.

l. ADJUST—A7C1721, Low Edge Comp (−), to obtain a risetime less than 1.3 ns and minimum aberrations (similar to Fig. 5-4).

m. Remove all connections to the CG 5001/CG 551AP.

18. Adjust Mid Edge Offset and Mid Edge Comp

a. Use the output cable assembly to connect the CG 5001/CG 551AP OUTPUT to the channel 1 vertical input on the oscilloscope. Set the oscilloscope vertical deflection for 2 volts/div, ac coupled, and untriggered in the automatic mode.

b. Set the CG 5001/CG 551AP front panel controls in the order listed below:

AMPLITUDE MODE	EDGE
EDGE POLARITY	∫ (Positive)
FREQUENCY	1 kHZ
UNITS/DIV	2 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	8
VARIABLE	Off (fixed)
OUTPUT	ON

c. Adjust the oscilloscope channel 1 variable control for exactly six vertical divisions of trace separation.

d. Change the CG 5001/CG 551AP front panel controls as follows:

AMPLITUDE	VOLTS
UNITS/DIV	2 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	8
FREQUENCY	1 kHZ
VARIABLE	ON
OUTPUT	ON

e. Adjust the CG 5001/CG 551AP VARIABLE control for exactly six vertical divisions of trace separation on the oscilloscope. Do not change the CG 5001/CG 551AP or the oscilloscope's VARIABLE controls.

f. Change the CG 5001/CG 551AP front panel controls as follows:

UNITS/DIV	.2 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	6

g. Change the oscilloscope vertical deflection to .2 volts/division.

h. Adjust the oscilloscope channel 1 variable control for exactly five vertical divisions of trace separation.

i. Change the CG 5001/CG 551AP front panel controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	.2 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	6
OUTPUT	ON

j. CHECK—for exactly five vertical divisions of trace separation.

k. ADJUST—A7R1408, Mid Edge Offset, for exactly five vertical divisions of trace separation.

l. Change the CG 5001/CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
EDGE POLARITY	∫ (Positive)
UNITS/DIV	2 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	6
FREQUENCY	100 kHZ
OUTPUT	ON

m. Set the 7A26 for 2 volts/div and use the 7B80 controls to display the first leading edge of the 100 kHz signal.

n. CHECK—that the risetime is equal to or less than 40 ns.

o. ADJUST—A7R1527, Mid Edge Comp, for a displayed risetime of 40 ns.

p. Press the CG 5001/CG 551AP OUTPUT ON button (turns output off) and proceed to the next step.

19. Adjust High Edge Offset

a. Connect the CG 5001/CG 551AP output cable assembly to the channel 1 vertical input of the oscilloscope via the X10 probe (compensated) and bnc to probe tip adapter.

b. Set the oscilloscope vertical deflection for 20 volts/division, ac coupled, and untriggered in the automatic mode.

c. Set the CG 5001/CG 551AP front panel controls in the order listed:

AMPLITUDE MODE	EDGE
NUMBER OF DIVISIONS (MULTIPLIER)	5
UNITS/DIV	20 V/D
FREQUENCY	1 kHZ
VARIABLE	Off (fixed)
OUTPUT	ON

d. Adjust the oscilloscope channel 1 variable control for exactly four vertical divisions of trace separation.

e. Change the CG 5001/CG 551AP front panel controls as follows:

AMPLITUDE MODE	VOLTS
UNITS/DIV	20 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	5
FREQUENCY	1 kHZ
VARIABLE	ON
OUTPUT	ON

f. Adjust the CG 5001/CG 551AP VARIABLE control for exactly four vertical divisions of trace separation on the oscilloscope. Do not change the CG 5001/CG 551AP or the oscilloscope's VARIABLE controls.

g. Change the CG 5001/CG 551AP front panel controls as follows:

UNITS/DIV	5 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	4

h. Change the oscilloscope vertical deflection to 2 volts/division.

i. Adjust the oscilloscope channel 1 variable control for exactly six vertical divisions of trace separation.

j. Change the CG 5001/CG 551AP front panel controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	5 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	4
OUTPUT	ON

k. CHECK—for exactly six vertical divisions of trace separation.

l. ADJUST—A8R1401, High Edge Offset, for exactly six vertical divisions of trace separation on the oscilloscope.

m. Press the CG 5001/CG 551AP OUTPUT ON button (turns output off) and idsconnect all probes and cables from the CG 5001/CG 551AP.

20. Adjust the Time Mark Power Supply (+12 V)

a. Press the CG 5001/CG 551AP MARKERS pushbutton.

b. Connect the positive lead of the digital voltmeter to A4TP1501 and the negative lead to A4TP1400.

c. CHECK—that the voltmeter indicates between +11.9 V dc and +12.1 V dc.

d. ADJUST—A4R1400, 12 V Adjust, for a voltmeter indication of +12.0 V dc.

e. Remove the voltmeter leads from the two test points.

21. Adjust the Fast Marker Shaper

a. Use the output cable assembly, a 2X 50Ω attenuator, and the SMA male to bnc female adapter to connect the CG 5001/CG 551AP OUTPUT connector to the input of the S-6 Sampling Head. Terminate the S-6 with the 50 Ω female SMA terminator.

b. Use a 50 Ω coaxial cable, 2.5X 50 Ω attenuator, and SMA male to bnc female adapter to connect the CG 5001/CG 551AP TRIGGER OUTPUT connector to the Trig Input on the 7T11.

c. Set 7T11 Time/Div for 2 ns, Time Position Rng for 50 ns.

d. Set 7S11 for 100 mV/div, +Up, and Normal Dot Response.

e. Set the CG 5001/CG 551AP front panel controls as follows:

TIMING MODE	MARKERS
UNITS/DIV	20 ns/D
VARIABLE	Off (fixed)
MAG X10	Off
TRIGGER OUTPUT	NORM—ON
OUTPUT	ON

f. Adjust the Sampling System controls for a display of two time marks.

g. CHECK—that the displayed marker amplitude is greater than 1.25 V (peak) and that the markers have a triangular shape.

h. ADJUST—A4C1011, Fast Marker Shaper, for a triangular shaped marker amplitude greater than 1.25 V (peak).

i. Proceed to the next step.

22. Adjust the 1 MHz Reference Frequency

NOTE

Do not perform this step if the instrument being adjusted is the CG 5001/CG 551AP, Option 01; go to step 23.

a. Remove the trigger input connection to the 7T11 Sampling Sweep unit and connect the coaxial cable to the Channel A input terminal on the counter. Set the counter for a resolution of 1 Hz or a gate time of 1 second.

b. Change the CG 5001/CG 551AP front panel controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	1 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	1
FREQUENCY	1 MHz
TRIGGER OUTPUT	NORM—ON

c. CHECK—that the counter display indicates between 999.990 kHz and 1000.010 kHz.

d. ADJUST—A3A8R1220, 1 MHz Adjust, for a counter display of 1000.000 kHz. A3A8R1220 is accessible through a hole in the circuit board shield (from the rear of the instrument).

NOTE

Proceed to step 24 if the CG 5001/CG 551AP does not have Option 01 installed.

23. Adjust the Option 01, 5 MHz TCXO

NOTE

Allow at least 30 minutes warmup time for the CG 5001/CG 551AP and the DC 503A counter. The DC 503A must have the Option 01 time base installed.

a. Set the CG 5001/CG 551AP front panel controls as follows:

TIMING MODE	MARKERS
UNITS/DIV	.2 μS/D
VARIABLE	Off (fixed)
TRIGGER OUTPUT	ON—NORMAL

b. Use a 50 Ω coaxial cable to connect the CG 5001/CG 551AP TRIGGER OUTPUT to the Channel A input terminal of the counter. Set the counter for a resolution of 1 Hz or a gate time of 1 second.

c. CHECK—that the counter display is between 4999.990 kHz and 5000.010 kHz.

NOTE

Do not adjust the 5 MHz frequency unless it is outside the limits stated in step 23c. The frequency is factory adjusted to assure that it will remain within tolerance over the specified temperature range (+15°C to +50°C). The frequency at normal room temperature may not be exactly 5000.000 kHz.

d. Remove the screw covering the adjustment hole in the side of the TCXO case. Note the marking on the TCXO case, "Set the XXXX.XXXX kHz at 27°C".

e. ADJUST—the TCXO frequency trimmer for a counter display reading equal to the frequency marked on the TCXO case.

f. Replace the screw covering the adjustment hole.

g. Disconnect all cables.

h. Proceed to the next step.

24. Adjust the Calibration Factors

a. Use the output cable assembly, precision 50 Ω termination, and the bnc to dual banana plug adapter to connect the CG 5001/CG 551AP OUTPUT connector to the digital voltmeter input. Insert termination between cable and adapter.

b. Set the internal CAL/NORMAL switch, A9S1731, to the CAL (~~DN~~ down) position.

c. Press the CG 5001/CG 551AP CONTINUE button four times, skipping the first four CG 5001/CG 551AP display readings shown in Table 5-11.

d. CHECK—that the CG 5001/CG 551AP display is that shown in line 5 of Table 5-11 and that the voltmeter indication is between the voltage limits shown for line 5.

e. ADJUST—the CG 5001/CG 551AP VARIABLE control so that the voltmeter display is within the indicated voltage limits and as close to the nominal value as possible.

Table 5-11
CALIBRATION FACTOR VOLTAGE LIMITS

Line	CG 5001/CG 551AP Display	Nominal Value	Termination	Voltage Limits
1.	DAC 0			
2.	DAC 1			
3.	HEAD			
4.	DELY			
5.	5 V * 1 X 1	5.0000 V	50 Ω	4.9963 V to 5.0038 V
6.	50 mV * 2 X 1	50.000 mV	50 Ω	49.963 mV to 50.038 mV
7.	50 mV * 3 X 1	50.000 mV	50 Ω	49.963 mV to 50.038 mV
8.	1 V * 4 X 1	1.00000 V	50 Ω	.99925 V to 1.00075 V
9.	1 V * 5 X 1	1.00000 V	50 Ω	.99925 V to 1.00075 V
10.	10 mA * 6 X 10	5.0000 V	50 Ω	4.9963 V to 5.0038 V
11.	50 mV * 7 X 1	50.000 mV	Open	49.963 mV to 50.038 mV
12.	50 mV * 8 X 1	50.000 mV	Open	49.963 mV to 50.038 mV
13.	10 V * 9 X 1	10.000 V	Open	9.9925 V to 10.0075 V
14.	10 V * 10 X 10	100.000 V	Open	99.925 V to 100.075 V
15.	CAL DONE			

f. Press the CG 5001/CG 551AP CONTINUE button and proceed to the next line in Table 5-11 (line 6).

g. Repeat steps 24d through 24f for line 6 and the remaining lines in Table 5-11. Check and adjust the CG 5001/CG 551AP VARIABLE control for the voltage limits as indicated for each line. For lines 11 through 15, remove the 50 Ω termination and connect the output cable assembly directly to the voltmeter input.

h. When CAL DONE is displayed for line 15, set the internal CAL/NORMAL switch, A9S1731, to the NORMAL (~~Down~~) position.

i. This completes the Adjustment Procedure for the CG 5001/CG 551AP.

MAINTENANCE

This section of the manual contains information for performing preventive maintenance, instrument disassembly, circuit board maintenance, troubleshooting, and corrective maintenance for the CG 5001/CG 551AP. In addition, specific diagnostic procedures using the signature analysis method of troubleshooting is found in the latter part of this section.

PREVENTIVE MAINTENANCE

INTRODUCTION

Preventive maintenance, when performed on a regular basis, can prevent instrument breakdown and may improve instrument reliability. The severity of the environment to which the instrument is subjected will determine the frequency of maintenance. A convenient time to perform preventive maintenance is preceding electrical adjustment of the instrument.

STATIC-SENSITIVE COMPONENTS

Precautions

CAUTION

Static discharge can damage any semiconductor component in this instrument.

This instrument contains electrical components that are susceptible to damage from static discharge. See Table 6-1 for relative susceptibility of various classes of semiconductors. Static voltages of 1 kV to 30 kV are common in unprotected environments.

Observe the following precautions to avoid damage:

1. Minimize handling of static-sensitive components.
2. Transport and store static-sensitive components or assemblies in their original containers, on a metal rail, or on conductive foam. Label any package that contains static-sensitive assemblies or components.
3. Discharge the static voltage from your body by wearing a wrist strap while handling these components. Servicing static-sensitive assemblies or components should be performed only at a static-free work station by qualified service personnel.
4. Nothing capable of generating or holding a static charge should be allowed on the work station surface.
5. Keep the component leads shorted together whenever possible.
6. Pick up components by the body, never by the leads.
7. Do not slide the components over any surface.
8. Avoid handling components in areas that have a floor or work surface covering capable of generating a static charge.
9. Use a soldering iron that is connected to earth ground.
10. Use only special antistatic suction type or wick type desoldering tools.

Test Equipment

Before using any test equipment to make measurements on static-sensitive components or assemblies, be certain that any voltage or current supplied by the test equipment does not exceed the limits of the component to be tested.

Table 6-1
RELATIVE SUSCEPTIBILITY TO STATIC DISCHARGE DAMAGE

Semiconductor Classes	Relative Susceptibility Levels[a]
MOS or CMOS microcircuits or discretes, or linear microcircuits with MOS inputs. (Most Sensitive)	1
ECL	2
Schottky signal diodes	3
Schottky TTL	4
High-frequency bipolar transistors	5
JFETs	6
Linear microcircuits	7
Low-power Schottky TTL	8
TTL (Least Sensitive)	9

[a]Voltage equivalent for levels:

1 = 100 to 500 V 4 = 500 V 7 = 400 to 1000 V(est.)
2 = 200 to 500 V 5 = 400 to 600 V 8 = 900 V
3 = 250 V 6 = 600 to 800 V 9 = 1200 V

(Voltage discharged from a 100 pF capacitor through a resistance of 100 ohms.)

CLEANING

Introduction

The CG 5001/CG 551AP should be cleaned as often as operating conditions require. Accumulation of dirt in the instrument can cause overheating and component breakdown. Dirt on components acts as an insulating blanket and prevents efficient heat dissipation. It also provides an electrical conduction path which may result in instrument failure. The side panels reduce the amount of dust reaching the interior of the instrument. Operation without the panels in place necessitates more frequent cleaning.

CAUTION

Use a nonresidue type of cleaner, preferably isopropyl alcohol, or totally denatured ethyl alcohol. Do not use alcohol or petroleum based cleansing agents on the front panel. Do not use air or any solvent to clean the Front Panel circuit board. Before using any other type of cleaner, consult your Tektronix Service Center or representative.

Exterior

Loose dust accumulated on the outside of the instrument can be removed with a soft cloth or small brush. The brush is particularly useful for dislodging dirt on and around the front panel and front-panel controls. Dirt which remains can be removed with a soft cloth dampened in a mild detergent and water solution. Do not use abrasive cleaners.

Interior

Cleaning the interior of the instrument should only be necessary occasionally. The best way to clean the interior is to blow off the accumulated dust with dry, low-velocity air (approximately 5 lb/in^2). Remove any dirt which remains with a soft brush or a cloth dampened with a mild detergent and water solution. A cotton-tipped applicator is useful for cleaning in narrow spaces, or for cleaning more delicate circuit components.

To properly hand clean a circuit board with edge connectors, hold the board so the cleaning residue runs away from the connectors. Do not scrape or use an eraser to clean the edge connector contacts. Abrasive cleaning can remove the gold plating resulting in possible destruction of electrical continuity.

CAUTION

Circuit boards and components must be dry before applying power to prevent damage from electrical arcing.

VISUAL INSPECTION

The CG 5001/CG 551AP should be inspected occasionally for such defects as broken connections, improperly seated semiconductors, damaged or improperly installed circuit boards, and heat-damaged parts. The corrective procedure for most visible defects is obvious; however, particular care must be taken if heat-damaged parts are found. Overheating usually indicates other trouble in the instrument; therefore, correcting the cause of overheating is important to prevent recurrence of the damage.

SEMICONDUCTOR CHECKS

Periodic checks of semiconductors are not recommended. The best check of semiconductor performance is actual operation in the instrument. More details on semiconductors are given under Troubleshooting later in this section.

GENERAL TROUBLESHOOTING

The following general information is provded to facilitate troubleshooting of the CG 5001/CG 551AP. Information contained in other sections of this manual should be used in conjunction with the following data to aid in locating a defective component. An understanding of the circuit operation is helpful in locating troubles; refer to the Theory of Operation section in Vol. 1 for this information.

WARNING

The Lithium battery used in this instrument should last about three years. This is a safety controlled part, and should be replaced with the same part number.

Do not dispose of the battery in a fire or open flame as the battery may explode.

TROUBLESHOOTING AIDS

Diagrams

Complete schematic diagrams are given on the pullout pages located in the rear of this manual. The component number and electrical value of each component in this instrument are shown on these diagrams. (See the first page of the Diagrams and Circuit Board Illustrations section for definitions of the reference designators and symbols used to identify components in this instrument.)

Circuit Board Illustrations

To aid in locating components, a circuit board illustration(s) appears on the back of the pullout page facing the associated schematic diagram. Each circuit board illustration is arranged in a grid locator with a component reference chart to facilitate rapid location of components contained in the schematic diagrams and on the circuit board.

Troubleshooting Charts

Troubleshooting charts and diagnostic procedures for the Central Processing circuits are located in the latter part of this section.

Troubleshooting charts for the Amplitude and Timing circuits are located in the foldout pages. The troubleshooting charts locate the malfunctions to a circuit block level. The circuits listed are discussed in detail in the Theory of Operation section.

Component Color Coding

The instrument contains brown composition resistors, some metal film resistors, and some wire-wound resistors. The resistance values of wire-wound resistors are usually printed on the component body. The resistance values of composition resistors and metal film resistors are color coded on the components using the EIA color code (some metal film resistors may have the value printed on the body). The color code is read starting with the stripe nearest the end of the resistor. Composition resistors have four stripes, which consist of two significant figures, a multiplier and a tolerance value. Metal film resistors have five stripes consisting of three significant figures, a multiplier and a tolerance value.

The values of common disc capacitors and small electrolytics are marked on the side of the component body. The epoxy coated tantalum capacitors used in the instrument are color coded using a modified EIA code (see Fig. 6-1).

The cathode end of glass encased diodes is indicated by a stripe, a series of stripes, or a dot. The cathode and anode ends of metal encased diodes can be identified by the diode symbol marked on the body.

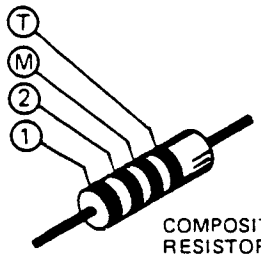
Semiconductor Lead Configurations

Lead configurations for semiconductor devices and some integrated circuits used in the CG 5001/CG 551AP are shown in Fig. 6-2.

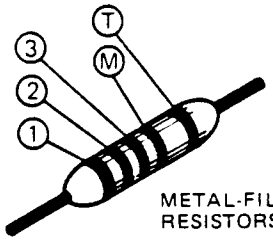
Multipin Connectors

Pin 1 on multipin connectors is designated with a triangle. A triangle, dot, or square printed on circuit boards denotes pin 1. When a connection is made to a circuit board, the orientation of the triangle on the multipin holder is determined by the index (triangle, dot or square) printed on the circuit board (see Fig. 6-3). Some multipin connectors are keyed with a plastic pin that protudes through a hole on the circuit board. Proper mating with the multipin connector and the pin(s) on the circuit board cannot be accomplished unless this pin is aligned with the hole on the circuit board.

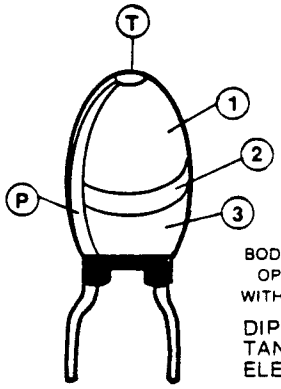
Some multipin connectors are equipped with a locking mechanism to more readily secure the connector to the circuit board. To remove these connectors, grasp the connector body and pull perpendicular to the circuit board. They should not be removed by pulling on the wire leads; this causes the locking mechanism to clamp onto the circuit board pins.



COMPOSITION RESISTORS



METAL-FILM RESISTORS



BODY COLOR OPTIONAL WITH VENDOR

DIPPED TANTALUM ELECTROLYTICS

(1) (2) and (3) - 1ST, 2ND, AND 3RD SIGNIFICANT FIGS. (T) AND/OR (TC) COLOR CODE MAY NOT BE PRESENT ON SOME CAPACITORS;
(M) - MULTIPLIER (T) - TOLERANCE;
(TC) - TEMPERATURE COEFFICIENT. (P) - POLARITY AND VOLTAGE RATING

COLOR	SIGNIFICANT FIGURES	RESISTORS		CAPACITORS		
		MULTIPLIER (OHMS)	TOLERANCE	MULTIPLIER (pF)	TOLERANCE	VOLTAGE RATING
BLACK	0	1	---			4VDC
BROWN	1	10	±1%			6VDC
RED	2	10^2 or 100	±2%			10VDC
ORANGE	3	10^3or 1 K	±3%			15VDC
YELLOW	4	10^4 or 10K	±4%	10^4 or 10,000		20VDC
GREEN	5	10^5 or 100 K	±1/2%	10^5or 100,000		25VDC
BLUE	6	10^6 or 1 M	±1/4%	10^6 or 1,000,000		35VDC
VIOLET	7	---	±1/10%	10^7 or 10,000,000		50VDC
GRAY	8	---	---			---
WHITE	9	---	---			
GOLD	---	10^{-1} or 0.1	±5%	---	±5%	---
SILVER	---	10^{-2} or 0.01	±10%	---	±10%	---
NONE	---	---	±20%	---	−20%	---

2815-05 (C1862-74)

Fig. 6-1. Color code for resistors and capacitors.

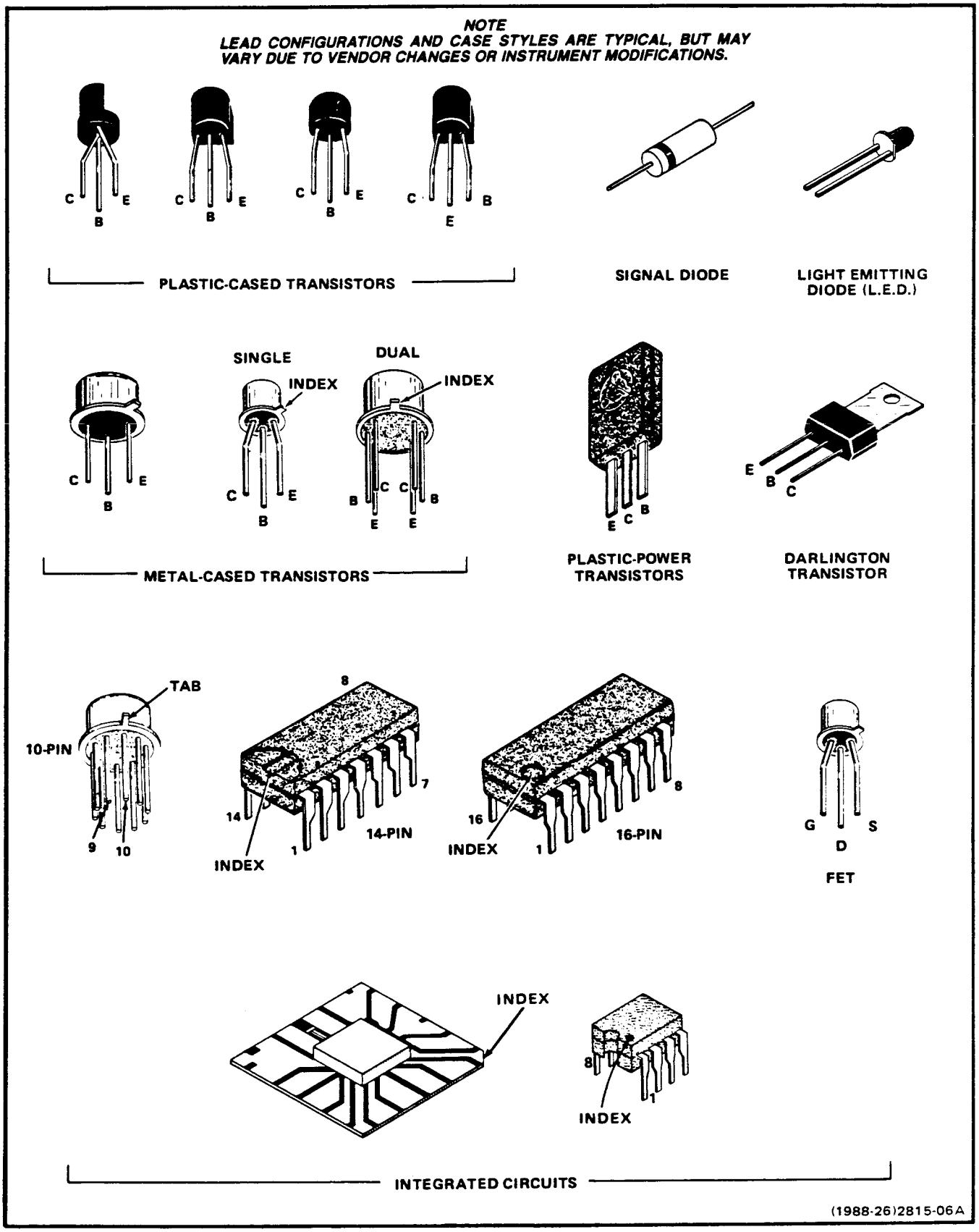


Fig. 6-2. Semiconductor lead configurations.

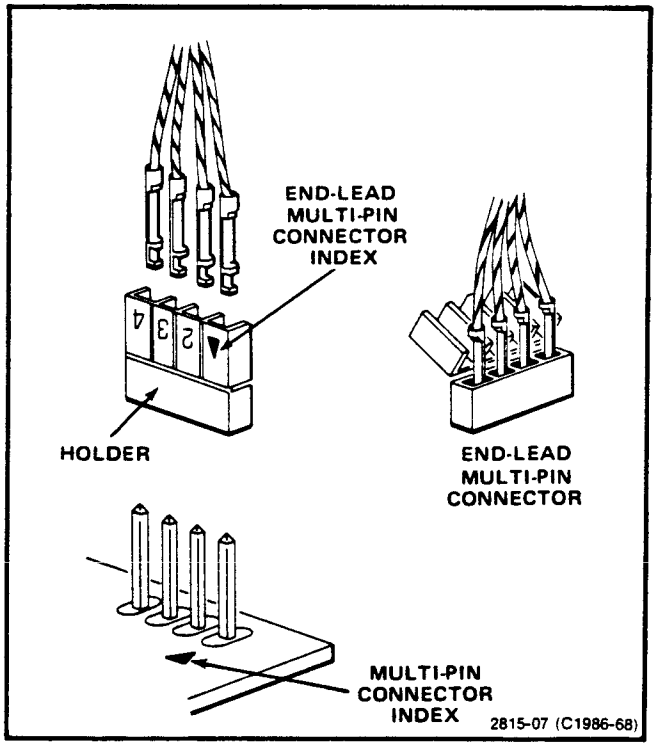


Fig. 6-3. Orientation of multi-pin connectors.

TROUBLESHOOTING EQUIPMENT

See the equipment in the Calibration section of this manual for equipment suggestions for maintaining the CG 5001/CG 551AP.

Extender Cables and Board Extenders

Several extenders are available to improve accessibility to the CG 5001/CG 551AP for servicing. The entire instrument can be operated outside of the power module using three Flexible Extender Cables (Tektronix Part Number 067-0645-02).

Individual boards may be extended at right angles outside the top of the instrument using a Rigid Circuit Board Extender (Tektronix Part Number 067-0975-00). To use this extender remove the desired board, replace the board with the extender, with the word Top at the top of the instrument, and plug the board into the socket on the rigid extender. Make certain the board is correctly plugged into the rigid extender (top of board toward front of instrument). If the board chosen has connectors on both ends, use the Flexible Extender Cable (Tektronix Part Number 067-0645-02) to connect the board to the power module.

For further flexibility, another Flexible Circuit Board Extender (Tektronix Part Number 067-0974-00) can be plugged into the Main Interconnect board or the rigid extender and the chosen board plugged into the flexible extender. In either case, if the board has a power module connector, it must be connected to the power module as previously described. Make certain all connectors are properly oriented.

GENERAL TROUBLESHOOTING TECHNIQUES

This troubleshooting procedure is arranged to check the simple trouble possibilities before proceeding with extensive troubleshooting. The first few checks ensure proper connection, operation, and adjustment. If the trouble is not located by these checks, the remaining steps aid in locating the defective component. When the defective component is located, replace it following the procedures given under Corrective Maintenance.

1. Check Control Settings

Incorrect control settings can appear to be an equipment problem. If there is any question about the correct function or operation of any control on the CG 5001/CG 551AP, refer to the Operating Instructions (Vol. 1).

2. Check Associated Equipment

Before proceeding with troubleshooting, check that the equipment used with this instrument is operating correctly. Also, check that the interconnecting cables are not defective.

3. Visual Check

Visually check that portion of the instrument in which the trouble is located. Many troubles can be found by visible indications such as unsoldered connections, loose cable connections, broken wires, damaged circuit boards, and damaged components.

4. Check Instrument Adjustment

Check the electrical adjustment of this instrument, or of the affected circuit if the trouble appears in one circuit. The apparent trouble may only be a result of misadjustment. Complete adjustment instructions are given in the Calibration section.

5. Isolate Trouble to a Circuit

To isolate trouble to a particular circuit, note the trouble symptom. The symptom often identifies the circuit in which the trouble is located. When trouble symptoms appear in more than one circuit, check the affected circuits by taking voltage and waveform measurements. Also check for the

correct output signals at the front and rear-panel input/output connectors with a test oscilloscope. If the signal is correct, the circuit is working correctly up to that point.

The CG 5001/CG 551AP Troubleshooting Charts in the Diagrams and Illustrations (foldout) section provides a guide for locating defective circuits to the circuit block level. Start at the top of the chart and perform the checks until a step is found that does not produce the indicated results.

After the defective circuit has been located, proceed with step 6 to locate the defective component(s).

6. Check Individual Components

The following procedures describe methods of checking individual components in the CG 5001/CG 551AP. Components which are soldered in place are best checked by first disconnecting one end. This isolates the measurements from the effects of surrounding circuitry.

FUSES. Check for open fuses by checking continuity with an ohmmeter.

TRANSISTORS. A good check of transistor operation is actual performance under operating conditions. A transistor can most effectively be checked by substituting a new component for it (or one which has been previously checked). However, be sure that circuit conditions are not such that a replacement transistor might also be damaged. If substitute transistors are not available, use a dynamic tester. Static-type testers are not recommended since they do not check operation under simulated operating conditions.

INTEGRATED CIRCUITS. Integrated circuits can be checked with a voltmeter, test oscilloscope, or by direct substitution. A good understanding of the circuit operation is essential to troubleshooting circuits using integrated circuits. In addition, operating waveforms, logic levels, and other operating information for the integrated circuits are given in the Theory of Operation section and troubleshooting charts. Use care when checking voltages and waveforms around the integrated circuits so that adjacent leads are not shorted together. A convenient means of clipping a test probe to the in-line, multi-pin integrated circuits is with an integrated circuit test clip. This device also doubles as an integrated circuit extraction tool.

DIODES. A diode can be checked for an open or shorted condition by measuring the resistance between terminals with an ohmmeter on a scale having a low internal source current, such as the R X 1k scale. The resistance should be very high in one direction and very low when the meter leads are reversed.

CAUTION

When checking diodes, do not use an ohmmeter scale that has a high internal current since high currents may damage the diodes under test.

RESISTORS. Check the resistors with an ohmmeter. Resistor tolerances are given in the Replaceable Electrical Parts list. Normally, resistors do not need to be replaced unless the measured value varies widely from the specified value.

CAPACITORS. A leaky or shorted capacitor can best be detected by checking resistance with an ohmmeter on the highest scale. Do not exceed the voltage rating of the capacitor. The resistance reading should be high after initial charge of the capacitor. An open capacitor can best be detected with a capacitance meter or by checking to see if the capacitor passes ac signals.

7. Repair and Adjust the Circuit

If any defective parts are located, follow the replacement procedures given under Component Replacement in this section. Check the performance of any circuit that has been repaired or that has had any electrical components replaced. Adjustment of that circuit may be necessary.

INSTRUMENT DISASSEMBLY AND BOARD MAINTENANCE

Circuit Board Removal

See Fig. 6-4 for an exploded view of CG 5001/CG 551AP circuit board locations.

Before removing the circuit boards, other than the Front Panel and Main Interconnect boards, remove the screw shown in Fig. 6-5.

To remove top and bottom covers, see Fig. 6-6 and Fig. 6-7.

CAUTION

When replacing a circuit board, or connecting a board to an extender cable, be certain that the boards are in their proper slot and aligned with the proper power module interface connection.

Front Panel Removal

To remove the front panel and gain access to the Main Interconnect board, remove the fifteen screws attaching the front panel. These screws are shown in Figs. 6-6 and 6-7. Separate the front panel from the chassis and remove the ribbon cable connector attached to the Main Interconnect board. Also, note the routing of the coaxial cables through the Main Interconnect board to the Output and Time Mark boards.

Display LED Removal

To gain access to the LEDs, remove the transparent, red front cover by depressing the three tabs that attach the cover to the top of the front panel. The LEDs may then be unsoldered from the Front Panel circuit board and removed without removing the Front Panel circuit board.

Front Panel Circuit Board (A1)

To remove the Front Panel circuit board, disconnect the wires attaching the REMOTE VARIABLE connector to the Front Panel circuit board. Also remove the wires connected to the OUTPUT, TRIGGER OUTPUT, and the CURRENT LOOP. Remove the two knobs attached to the UNITS/DIV control and remove the five screws attaching the circuit board to the front panel. To remove the pushbutton switches, push them out of the circuit board from the rear.

The UNITS/DIV switch, if defective, must be replaced as a unit. To remove this switch, unsolder the four wires attached to the switch and remove the three screws.

Do not clean the Front Panel circuit board with water, air, or any solvent unless the pushbutton switches are removed first. Any dirt forced or carried under the switch contacts can cause intermittent operation.

Main Interconnect Board (A2)

This board is removed from the instrument after the front panel is removed. The Main Interconnect board is attached by two screws in angle brackets attached to the bottom of the instrument. See Fig. 6-7. Also, remove the four screws attaching the shields to this board. No special maintenance procedures are required when servicing this board.

Time Interface Board (A3/A3A1—A3A8)

To remove the A3 board, see Fig. 6-8. To gain access to the small circuit boards mounted in the shields attached to the Time Interface board, remove the two aluminum covers attached to the shields. The rubber pads attached to the cover improve heat transfer characteristics from components mounted on the circuit boards. These pads are attached to the shields with self-sticking adhesive. The inside of the aluminum covers are silk screened to show the pad outlines. Make certain, when replacing the covers, that they are replaced with the pads next to the components and that all screws are installed.

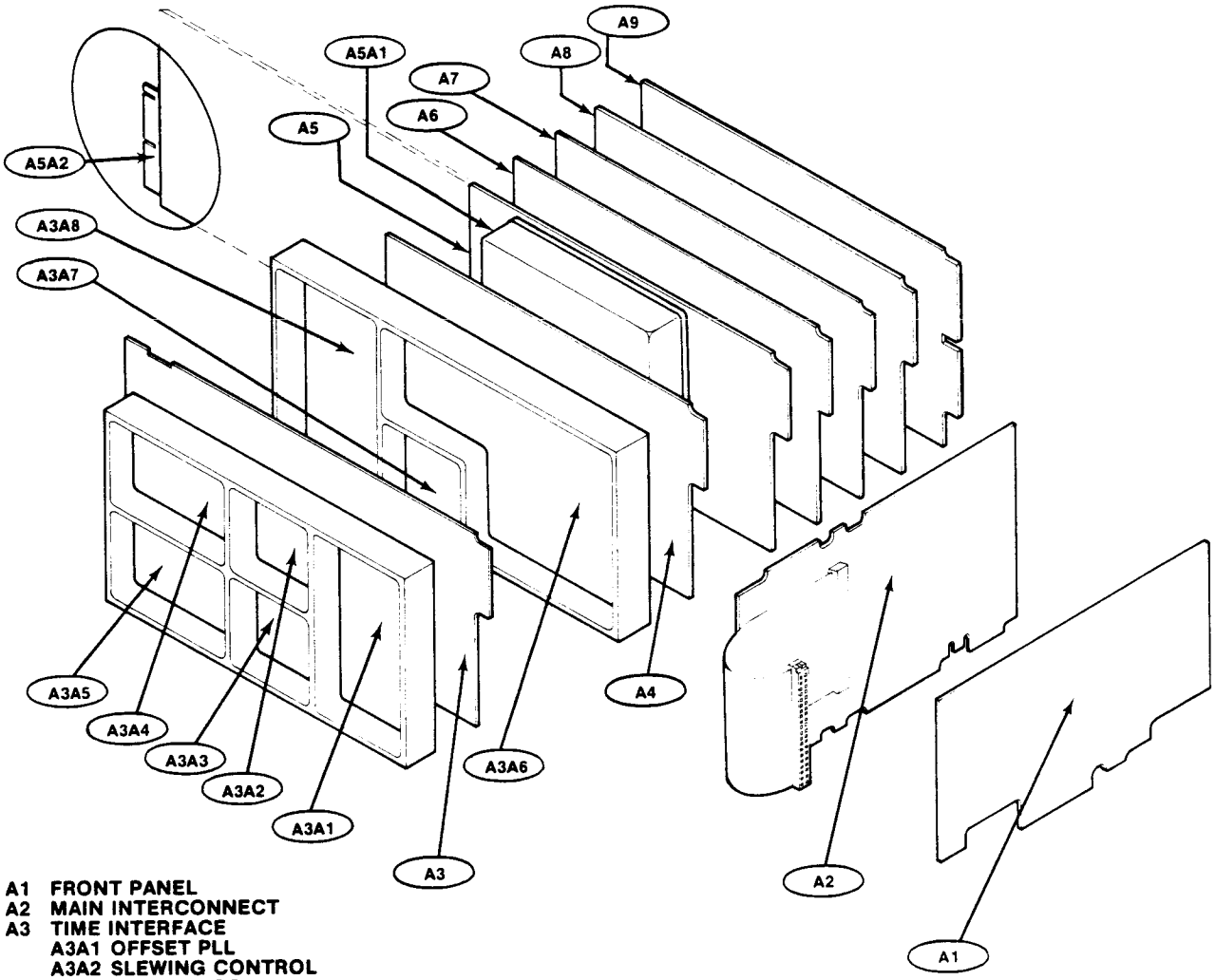
To remove the small circuit boards (A3A1-A3A8) from the shields and to remove the shields from the Time Interface board, refer to the instructions in Fig. 6-9.

Time Mark Board (A4)

No special board maintenance procedures are required for this board. Make certain the two fuses are replaced with the correct values.

Power Supply Boards (A5/A5A1)

To remove the Power Supply Isolator board from the Power Supply Main board, remove the four screws attaching the Isolator to the main board.



A1 FRONT PANEL
A2 MAIN INTERCONNECT
A3 TIME INTERFACE
- A3A1 OFFSET PLL
- A3A2 SLEWING CONTROL
- A3A3 OFFSET VCO
- A3A4 COUNTER (TRIGGER)
- A3A5 COUNTER (SLEWING)
- A3A6 STEERING
- A3A7 MAIN VCO
- A3A8 MAIN PLL

A4 TIME MARK
A5 PS MAIN
- A5A1 PS ISOLATOR
- A5A2 PS INTERFACE

A6 REFERENCE
A7 OUTPUT
A8 HIGH EDGE
- A8A1 GPIB CONNECTOR (INSTALLED IN CG 5001 ONLY)

A9 CPU

(2815-08)4767-01

LOOK AT MECHANICAL FIG. 2 FOR A8A1 DETAILS

Fig. 6-4. CG 5001/CG 551AP circuit board locations. Power is lost to all boards except CPU and Front Panel if the A3 board is removed.

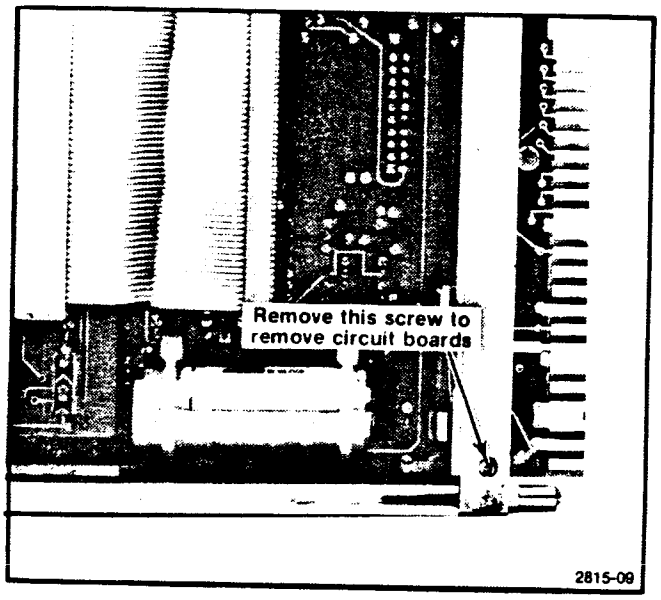


Fig. 6-5. Circuit board holding screw.

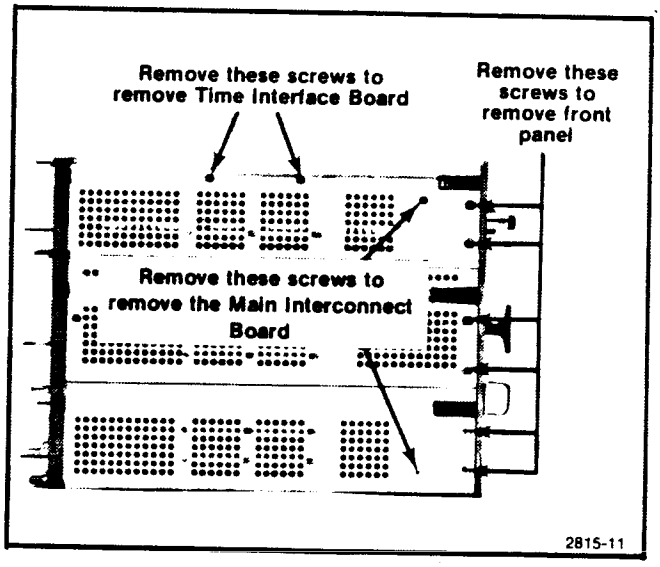


Fig. 6-7. Bottom view of CG 5001/CG 551AP.

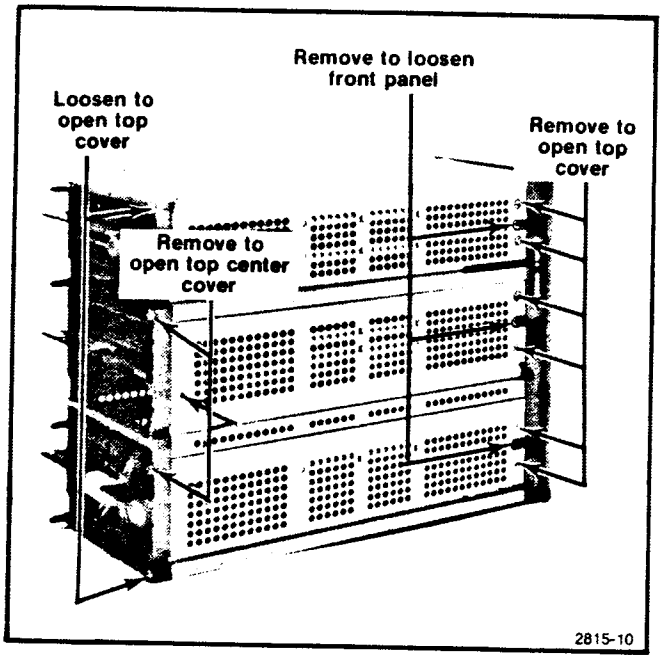


Fig. 6-6. Top view of CG 5001/CG 551AP.

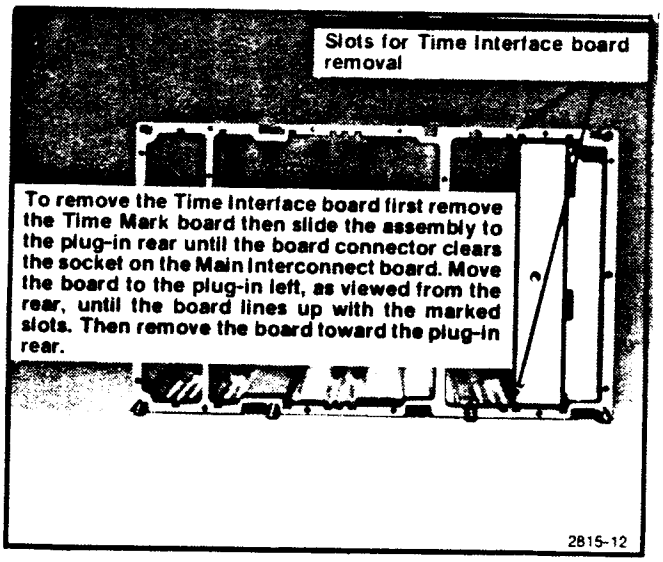


Fig. 6-8. Rear view of CG 5001/CG 551AP.

To remove the Isolator board from the shield, unsolder the wires from the board to the shield feed-throughs at the feed-through connections. Then remove the four hex posts and remove the board.

Power Supply Interface Board (A5A2)

No special maintenance procedures are required for servicing this board.

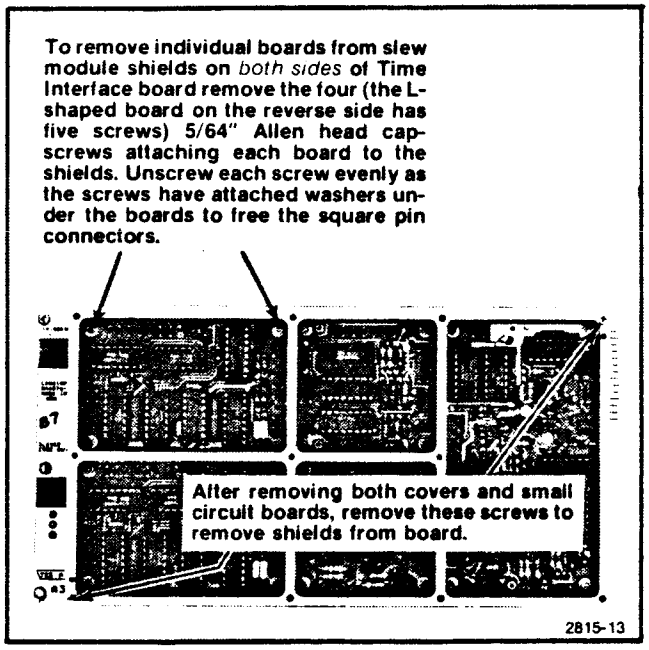


Fig. 6-9. Outside of Time Interface board. Although only one side is shown, small board removal instructions are identical for both sides.

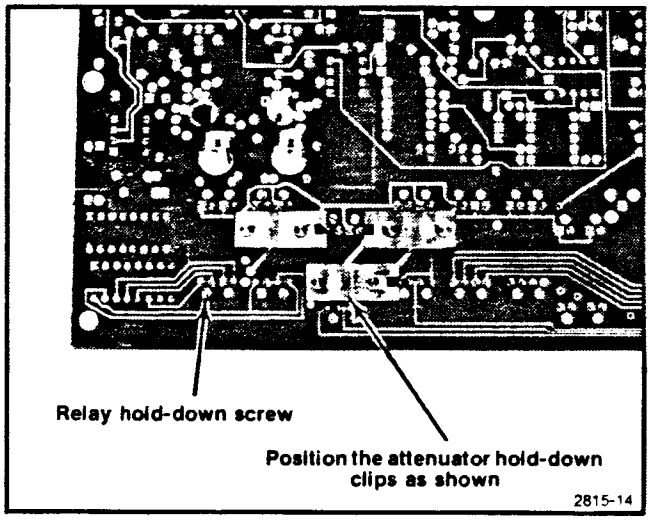


Fig. 6-10. Output board.

Reference Board (A6)

No special maintenance procedures are required on this board.

Output Board (A7)

To remove the attenuator chips press down on both ends of the clips holding the ceramic attenuators to the circuit board. Slide the clips in the proper direction and remove. Refer to Fig. 6-10.

Make certain the ceramic chips are replaced so that the contact points contact the runs on the circuit board. Also, make certain the clips are replaced facing the proper direction.

When replacing the Output board in the instrument, connect the coaxial cable from the CURRENT LOOP to the front-most connector. Connect the coaxial cable from the OUTPUT connector to the socket toward the rear of the board.

MAGNETIC LATCHING RELAYS. To prevent damage to these relays, do not remove them from the Output circuit board unless absolutely necessary. If the relay contacts become noisy or the relay fails to operate, remove the relay from the circuit board. Remove the two screws, attaching each relay, from the back of the board.

Clean the circuit board contacts with a small brush and isopropyl alcohol. Do not use any solvent that may attach polycarbonates, such as hydrocarbon chlorides, ketones, esters, etc. Do not use a cotton swab as small cotton filaments may remain on the contact area.

Clean the contact fingers on the relay armature by lightly brushing the contacts with a brush dipped in isopropyl alcohol.

To remove the relay armature from the relay, obtain a wire or tool with a diameter less than 0.040″, such as a paperclip. Before removing the armature, mark the orientation of the armature to the housing. Orientation is important for proper operation. Place the tool in the slot on the side of the housing and gently lift the relay armature. See Fig. 6-11.

Clean the interior of the relay, around the pole pieces, with isopropyl alcohol. The interior of the relay must be completely dry before reinstalling the armature. Use air to dry excess alcohol from the housing.

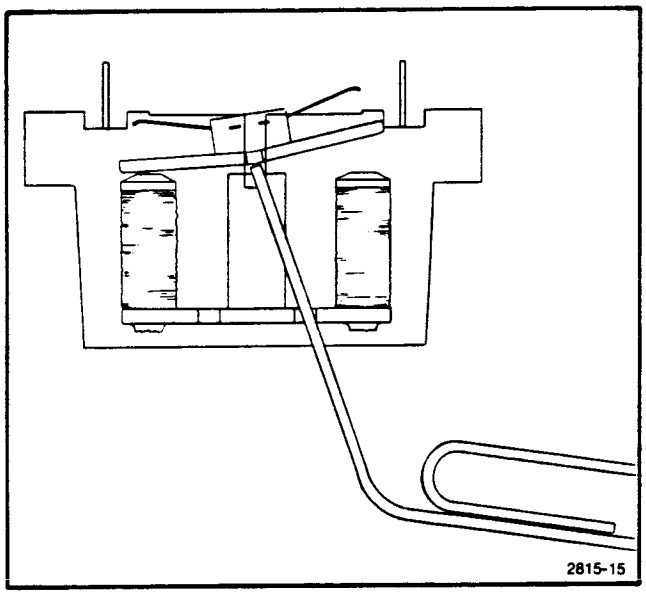


Fig. 6-11. Method of removing magnetic latch relay armature.

NOTE

Do not spray contact cleaner on the relays or anywhere on the board when they are installed on the board. Any foreign material between the pole pieces and the armature can cause faulty operation.

High Edge Board (A8)

No special maintenance procedures are required for this board.

GPIB Connector (A8A1)

Installed on the CG 5001 only. No special maintenance procedures are required.

CPU Board (A9)

When replacing the CPU board in a CG 5001, U1032 will need to be removed from the old board and reused in the new one; otherwise, a new U1032 will also need to be obtained. The same applies to the CG 551AP; however, for this instrument W2091 and W3091 will need to be installed as well. These parts must all be ordered separately. Refer to the parts list for part numbers and ordering information.

BATTERY. A battery to maintain calibration data in the CMOS RAM during power off times is located on the CPU board (A9).

Never use an ammeter to measure the short-circuit current supplied by the battery as the cell may be damaged.

Be careful to not short the battery terminals. If the battery terminals are shorted without power applied to the instrument, all calibration data in the RAM will be lost.

When the board is out of the instrument, lay the board on an insulating surface, such as sponge rubber.

To remove the battery from the board for replacement, unsolder the leads at the ends of the battery. The battery is attached with a cable tiedown strap. Cut the strap and replace it with a new strap when installing a new battery.

If the calibration constants are lost due to low battery voltage, an ERROR 17 (and ERROR 13 if last used setting of jumper is set) message will appear on the display. To determine if the battery is defective, measure the voltage across the end terminals with a high impedance voltmeter. The voltage should be $\geq$3.6 V. The life of the battery in the circuit is approximately three years.

WARNING

The Lithium battery used in this instrument should last about three years. This is a safety controlled part, and should be replaced with the same part number.

Do not dispose of the battery in a fire or open flame as the battery may explode.

CORRECTIVE MAINTENANCE

INTRODUCTION

Corrective maintenance consists of component replacement and instrument repair. Special techniques required to replace components in the CG 5001/CG 551AP are given here.

Obtaining Replacement Parts

Electrical and mechanical parts can be obtained through your local Tektronix Field Office or representative. However, it may be possible to obtain many of the standard electronic components from a local commercial source. Before purchasing or ordering a part from a source other than Tektronix, Inc., check the Replaceable Electrical Parts list for the proper value, rating, tolerance, and description.

NOTE

When selecting replacement parts, remember that the physical size and shape of a component may affect its performance in the instrument.

Some parts are manufactured or selected by Tektronix, Inc. to satisfy particular requirements, or are manufactured for Tektronix, Inc. to our specifications. Most of the mechanical parts used in this instrument have been manufactured by Tektronix, Inc. To determine manufacturer of parts, refer to the Replaceable Parts list and the Cross Reference Index, Mfr. Code Number to Manufacturer.

When ordering replacment parts from Tektronix, Inc., include the following information:

1. Instrument type and Option number.

2. Instrument serial number.

3. A description of the part (if electrical, include complete circuit number).

4. Tektronix part number.

SOLDERING TECHNIQUES

WARNING

To avoid electric shock hazard, disconnect the instrument from the power source before soldering.

The reliability and accuracy of this instrument can be maintained only if proper soldering techniques are used when repairing or replacing parts. General soldering techniques which apply to maintenance of any precision electronic equipment should be used when working on this instrument. Use only 60/40 rosin-core, electronic grade solder. The choice of soldering iron is determined by the repair to be made.

CAUTION

Several of the circuit boards in the CG 5001/CG 551AP are multilayer type boards with a conductive path laminated between the top and bottom board layers. All soldering on these boards should be done with extreme care to prevent breaking the connections to this center conductor. Only experienced maintenance personnel should attempt repair of the following boards:

A1-Front Panel, A2-Main Interconnect, A3-Time Interface, A3A4-Counter (Trigger), A3A5-Counter (Slewing), A4-Time Mark, A6-Reference, A7-Output.

Do not allow solder or solder flux to flow under printed circuit board switches. The printed circuit board is part of the switch contacts; intermittent switch operation can occur if the contacts are contaminated.

When soldering on circuit boards or small wiring, use only a 15 watt, pencil type soldering iron. A higher wattage soldering iron can cause the etched circuit wiring to separate from the board base material and melt the insulation from small wiring. Always keep the soldering iron tip properly tinned to ensure the best heat transfer to the solder joint. Apply only enough heat to remove the component or to make a good solder joint. To protect heat sensitive components, hold the component lead with a pair of long-nose pliers between the component body and the solder joint. Use a solder removing wick to remove excess solder from connections or to clean circuit board pads.

The following techniques should be used to replace a component on any of the circuit boards not mentioned in the preceding Caution note.

1. Touch the soldering iron to the lead at the solder connection. Never place the iron directly on the board as this may damage the board.

2. Melt a small amount of solder onto the component lead connection. This replaces the flux, which may have been removed during instrument cleaning, and facilitates removal of the component.

3. Grip the component lead with a pair of long-nose pliers. When the solder begins to flow, gently pull the component lead from the board. If unable to separate the lead from the board, try removing the other end of the component.

NOTE

Some components are difficult to remove from the circuit boards due to a bend placed in each lead during machine insertion of the component. The purpose of the bent leads is to hold the component in position during a flow-solder manufacturing process which solders all components at once. To make removal of machine inserted components easier, straighten the leads of the component on the back of the circuit board, using a small screwdriver or pliers, while heating the soldered connection.

4. Bend the leads of the replacement component to fit the holes in the circuit board. If the component is replaced while the board is mounted in the instrument, cut the leads so they will just protrude through the board. Insert the leads into the holes in the board so that the component is firmly seated against the board, or as originally positioned.

5. Touch the iron to the connection and apply enough solder to make a firm solder joint.

6. Cut off any excess lead protruding through the board (if not clipped in step 4).

7. Clean the area around the solder connection with a flux removing solvent. Be careful not to remove information printed on the circuit board.

COMPONENT REMOVAL AND REPLACEMENT

WARNING

To avoid electric shock hazard, always disconnect the instrument from the power source before removing or replacing components or plug-in units.

The exploded view drawings associated with the Replaceable Mechanical Parts list (located at the rear of this manual) may be helpful in the removal or disassembly of individual components or subassemblies.

Semiconductors

Semiconductors should not be replaced unless actually defective. If removed from their sockets during routine maintenance, return them to their original sockets. Unnecessary replacement of semiconductors may affect the adjustment of the instrument. When semiconductors are replaced, check the operation of circuits which may be affected.

Replacement semiconductors should be of the original type or a direct replacement. Lead configurations of the semiconductors used in this instrument are shown in Fig. 6-2. Some plastic case transistors have lead configurations which do not agree with those shown. If a replacement transistor is made by a different manufacturer than the original, check the manufacturer's basing diagram for correct basing. When removing soldered-on transistors, use a solder-removing wick to remove the solder from the circuit board pads. When replacing transistors requiring silicone grease for heat transfer, replace the silicone grease as necessary.

WARNING

Handle silicone grease with care. Avoid getting the silicone grease in your eyes. Wash hands thoroughly after use.

An extracting tool should be used to remove the in-line integrated circuits to prevent damaging the pins. This tool is available from Tektronix, Inc.; order Tektronix Part Number 003-0619-00. If an extracting tool is not available, use care to avoid damaging the pins. Pull slowly and evenly on both ends of the integrated circuit. Try to avoid disengaging one end from the socket before the other end.

Interconnecting Pins

Several methods of interconnection, including ribbon cable connectors, are used to electrically connect the circuit boards with other boards and components. When the interconnection is made with a coaxial cable, a special end-lead connector plugs into a socket on the board. Other interconnections are made with a pin soldered into the board.

Two types of mating connectors are used for these interconnecting pins. If the mating connector is mounted on a plug-on circuit board, a special socket is soldered into the

board. If the mating connector is on the end of a lead, an end-lead pin connector is used which mates with the interconnecting pin. The following information provides the removal and replacement procedure for the various types of interconnecting methods.

COAXIAL-TYPE, END-LEAD CONNECTORS. Replacement of the coaxial type end lead connectors requires special tools and techniques; only experienced maintenance personnel should attempt to remove or replace these connectors. Damaged cable or wiring harness should be replaced as a unit. For cable or wiring harness part numbers, see the Replaceable Mechanical Parts list.

An alternative solution is to refer the replacement of the defective connector to your local Tektronix Field Office or representative. Figure 6-12 gives an exploded view of a coaxial end lead connector assembly.

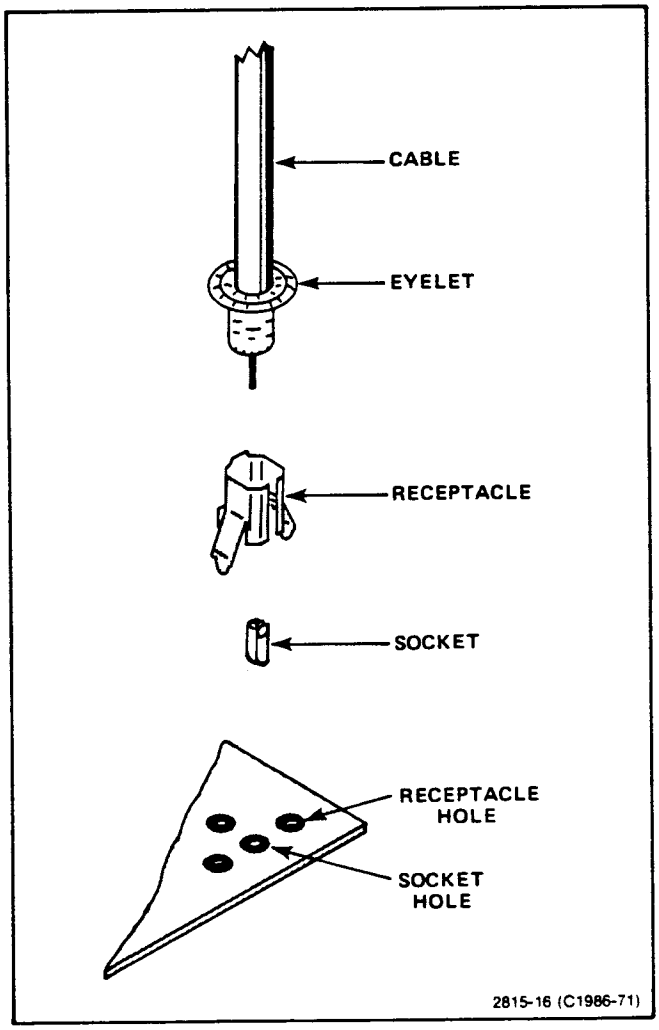


Fig. 6-12. Coaxial end lead connector assembly.

CIRCUIT BOARD PINS. A circuit board pin replacement kit (including necessary tools, instructions, and replacement pins with attached ferrules) is available from Tektronix, Inc.; order Tektronix Part Number 040-0542-00. Replacing circuit board pins on multilayer boards is not recommended. (The multilayer boards in this instrument are listed under Soldering Techniques in this section.)

To replace a damaged pin, first disconnect any pin connectors. Then unsolder the damaged pin and pull it from the board with a pair of pliers, leaving the ferrule (see Fig. 6-13) in the circuit board, if possible. If the ferrule remains in the circuit board, remove the spare ferrule from the replacement pin and press the new pin into the hole in the circuit board. If the ferrule is removed with the damaged pin, clean out the hole using a solder-removing wick and a scribe. Then press the replacement pin, with attached spare ferrule, into the circuit board.

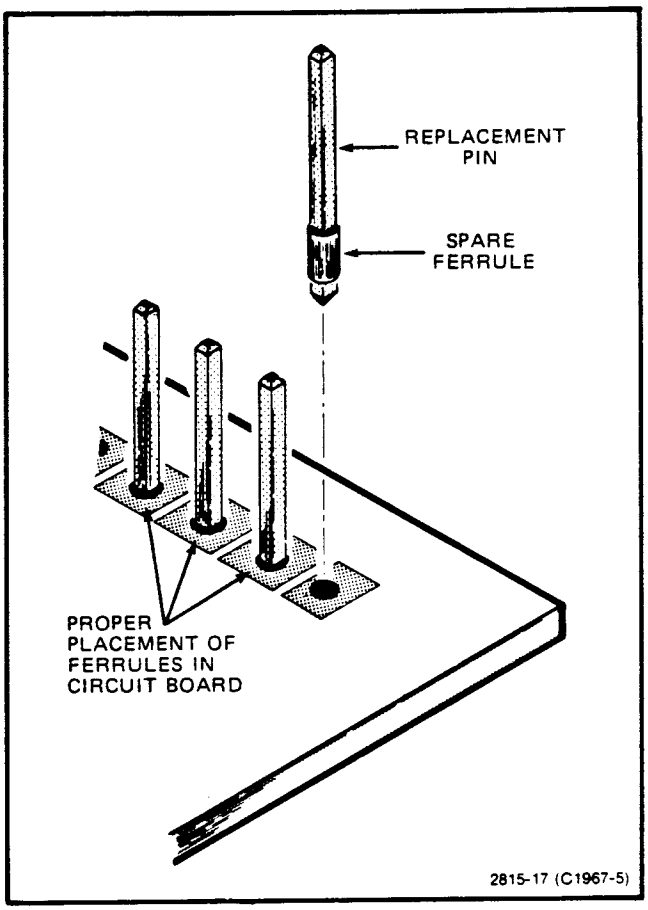


Fig. 6-13. Exploded view of circuit board pin and ferrule.

Position the replacement pin in the same manner as the original. Solder the pin to the circuit board on each side of the board. If the original pin was bent at an angle to mate with a connector, carefully bend the new pin to the same angle. Replace the pin connector.

CIRCUIT BOARD PIN SOCKETS. The pin sockets on the circuit boards are soldered to the back of the board. To remove or replace one of these sockets, first unsolder the pin (use a vacuum-type desoldering tool to remove excess solder). Then straighten the tabs on the socket and remove the socket from the board.

Place the new socket in the circuit board hole and press the tabs down against the board. Solder the tabs of the socket to the circuit board; be careful not to get solder inside the socket.

NOTE

The spring tension of the pin sockets ensures a good connection between the circuit board and the pin. This spring tension can be destroyed by using the pin sockets as a connecting point for spring loaded probe tips, alligator clips, etc.

MULTIPIN CONNECTORS. The pin connectors used to connect the wires to the interconnecting pins are clamped to the ends of the associated leads. To remove or replace damaged multipin connectors, remove the old pin connector from the end of the lead and clamp the replacement connector to the lead.

NOTE

Some multipin connectors are equipped with a special locking mechanism. These connectors cannot be removed by pulling on the wire(s). To remove the connectors from the pin(s) grasp the plastic holder and pull.

To remove an individual wire from the holder insert a scribe in the hole on the side of the holder and slide the extended portion under the holder. This will allow the wire to be removed from the holder.

Some of the pin connectors are grouped together and mounted in a plastic holder; the overall result is that these connectors are removed and installed as a multipin connector (see Troubleshooting Aids). If the individual end lead pin connectors are removed from the plastic holder, note the order of the individual wires for correct replacement in the holder.

ADJUSTMENT AFTER REPAIR

After any electrical component has been replaced, the adjustment of that particular circuit should be checked, as well as the adjustment of any closely related circuits. Since the low voltage supplies affect all circuits, adjustment of the entire instrument should be checked if component replacements have been made in these supplies or if a power transformer has been replaced. See the Calibration section for a complete adjustment procedure.

CG 551AP DIAGNOSTIC PROCEDURES

INTRODUCTION

This part of the manual, along with the troubleshooting flow charts in the foldout pages, contain specific information for troubleshooting the CG 5001/CG 551AP.

This section contains six troubleshooting flow charts and four signature analysis tables related to the Central Processing section of the CG 5001/CG 551AP (Block Diagram A).

Two troubleshooting flow charts located in the foldout pages, Amplitude Mode Check (Troubleshooting Tree 1) or the Timing Mode Check (Troubleshooting Tree 22), are the lead-in charts that must be followed before proceeding with the specific analog circuit checks related to the amplitude and timing modes of the CG 5001/CG 551AP (Block Diagrams B, C, and D). The service technician is directed toward either of these two charts when a certain point is reached in the Power On Sequence Test located in this section.

Equipment Required

This part of the manual contains signature analysis tables and other data that the technician may use to verify proper operation, or detect malfunctions in the Central Processing section of the CG 5001/CG 551AP. The diagnostic tests require the following equipment:

Data Analyzer, TEKTRONIX 308, or equivalent (for signature analysis).
Digital Counter, TEKTRONIX DC 508, or equivalent (for frequency checks).
Digital Voltmeter, TEKTRONIX DC 501A, or equivalent (for checking power supplies).

Refer to Table 5-1 in the Calibration section for suggestions on oscilloscope systems, probes, adapters, terminations, and other items that may be useful for maintenance purposes.

Adjustment and Test Point Locations

To aid in locating test points and adjustable components called out in various portions of the Calibration section and troubleshooting flow charts, refer to the illustrations for the Adjustment and Test Point Locations and associated circuit board in the foldout pages. For convenience, a complete list of all test points in the CG 5001/CG 551AP is given below.

NOTE

Refer to the associated circuit board illustration in the foldout pages to locate the following test points.

A1	TP1730	1	Control Pin
A2	TP1630	2	ST3 Start/Stop
A2	TP1636	2	CLK2
A2	TP1632	2	ST4 Start/Stop
A2	TP1638	2	Ground
A3A1	TP1210	6	Mixer Clock Signal to Offset Loop Phase Detector
A3A1	TP1220	6	Offset Loop Phase Detector Clock
A3A1	TP1140	6	Tune Output to Offset VCO
A3A1	TP1100	6	+5 V SW2 Ground
A3A6	TP1301	10	100 MHz Buffer Ground
A3A6	TP1302	10	100 MHz Buffer Output to Programmable Divider
A3A6	TP1101	10	Power Ground
A3A6	TP1310	11	10 kHz Clock to Coarse Steering Circuit
A3A6	TP1130	11	100 kHz Strobe Holdoff
A3A8	TP1040	12	Loop Filter Output
A3A8	TP1010	12	1 MHz Buffer Output

NOTE

There are no test point locations on the following circuit boards or schematics.

A3	4, 5
A3A2	7
A3A3	6
A3A4	8
A3A5	9
A3A7	12

NOTE

Refer to the Adjustment Locations and Test Points illustration to locate test points on or near the top edge of the circuit board.

A4	TP1020	13	Power Input Ground
A4	TP1010	13	Fast Marker Shaper Ground
A4	TP1200	16	Chop Amplifier Ground
A4	TP1400	17	±12 V Ground
A4	TP1410	17	+5 V Test Point
A4	TP1401	17	−12 V Test Point
A4	TP1501	17	+12 V Test Point
A4	TP1630	14	Slow Marker Sync (refer to A4 circuit board illustration)
A4	TP1620	14	10 MHz Drive (refer to A4 circuit board illustration)
A5	TP1802	18	Ground
A5	TP1702	19	+120 V, +240 V
A5	TP1104	18	HV Primary, +20 V
A5	TP1103	19	Ground
A5	TP1102	19	+15 V
A5	TP1101	18	+5 V
A6	TP1200	22	Low SAC Output
A6	TP1202	22	Low SAC Input
A6	TP1304	20	Reference (DAC) Output
A6	TP1400	20	Floating Ground
A6	TP1401	22	High SAC Output
A7	TP1200	24	Pulse Head Drive Output
A7	TP1302	24	Floating Ground
A8	TP1500	27	High Edge Chop Signal
A8	TP1510	27	High Edge Chop Signal
A8	TP1400	27	High Edge Generator Output
A8	TP1402	27	−120 V —Current Limit Sense
A8	TP1520	27	−120 V
A8	TP1420	27	High Edge Error Signal
A8	TP1302	26	Power on Test Circuit Input
A8	TP1300	26	Head Programmer (Comparator Input)
A8	TP1202	26	Power On Test Reference (+2.73 V)
A8	TP1210	26	Power On Test (Window Comparator Input)
A8	TP1200	26	Ground
A8	TP1100	26	Power On Test (A8U1110 Output)

NOTE

Refer to the associated circuit board illustration in the foldout pages to locate the following test points.

A9	TP1071	28	CK1
A9	TP1062	28	ST2 Start/Stop
A9	TP2071	28	ST1 Start/Stop
A9	TP2066	28	Ground

SELF-TEST DESCRIPTION

Introduction

This is a short outline of the sequence of events occurring during the power-on sequence of the CG 5001/CG 551AP. The CG 5001/CG 551AP goes through a self-test sequence which verifies the RAM and ROM within the instrument and performs some checking of the analog and timing hardware. The results of these tests are in the form of error codes on the front panel and service requests with error codes to a GPIB controller. The self-test sequence can also be initiated by a TEST command sent over the GPIB by a controller.

Components

The CG 5001/CG 551AP is controlled by a M6808 microprocessor with one 16kX8 ROM, 2kX8 of CMOS RAM with battery keep alive, two PIAs for communication to the hardware within the instrument and a general purpose interface adapter (GPIA) for implementation of the GPIB interface.

A serial bus extends from the CPU portion of the instrument to the analog and timing hardware and is used to program the various settings. This programming bus also has provisions to read status from the other circuit boards plugged into the Main Interconnect board (A2) and determine possible error conditions.

On the High Edge board (A8) there is a special comparator circuit (Power On Test, schematic 26) that can be switched to the output circuitry to verify ranges of output voltages. At power on, and at initiation of the TEST command, the microprocessor sequences through special setting combinations to test the operation of the circuits in the instrument.

Self-Test Sequence

This is a description of the sequence of events from initiation of power on or when the TEST command is received from the GPIB. At power on, the:

1. Interrupts are masked.

2. PIAs are initialized (A9U1701 and A9U1721).

3. GPIA (A9U1124) is reset.

4. SELF-TEST message is displayed.

5. Part of the unprotected CMOS memory is tested.

If there is an error detected, the processor will try to indicate ERROR 12 RAM and then loop at address $0200.

6. The ROM is checked by calculating the checksum and comparing the result to the first two bytes in the ROM. If there is an error, the processor tries to indicate with message ERROR 61 ROM. After indicating the bad ROM, the processor loops continuously:

```
LOOP LDA A $C005
     LDA A $00
     BRA LOOP
```

Where LDA A means, read the contents of the specified memory location and place it into the A accumulator. This provides a repeating test pattern to verify the chip select.

7. If the ROM on assembly A9 checks out, then the rest of the unprotected CMOS memory is checked. If there is an error detected, ERROR 11 will be indicated, and a loop at the bad location will be repeated continuously.

NOTE

Refer to RAM TEST, ROM TEST, and CMOS TEST parts of troubleshooting information for more detail.

NOTE

The above self tests act as a verification of the basic components of the central processor and the address decoding circuits.

The following self tests verify the analog and timing circuitry.

8. Initialize the shift registers on all of the circuit boards.

Register	Hex Output
A6U1121	$80
A6U1242	$80
A6U1341	$14
A6U1541	$8F
A6U1841	$FF
A8U1130	$00
A7U1020	$0A
A7U1130 A7U1234 A7U1833	These registers operate to close K1433, K1300, K1314, and K1432; all others open.
A4U1320	$48
A4U1420	$00
A4U1421	$49
A4U1520	$06
A3A6U1220	$21
A3A6U1120	$8D
A3A5U1000	$2C
A3A5U1100	$34
A3A4U1000	$26
A3A4U1100	$2F
A3A2U1001	$C5

Once the shift registers are initialized, a check is made to see if SA TEST is desired by reading the SA TEST jumper J5031. If the bit is zero, the SA TEST is executed; otherwise, the self-test routine continues.

9. The next test performed is the test of the shift registers. The test is accomplished by shifting a 10101010 pattern through all the shift registers and reading back the pattern through error lines E1 or E4 depending on the assembly being tested (see Fig. 4-3 in the Theory of Operation section). The indicated error identifies the chain in question and then the processor cycles all of the shift registers and their strobes (TS1, TS2, VS1, and VS2) continuously. If there is no error in the shift registers (ERRORs 95, 96, 97, or 98), the self-test continues with a block called the Amplitude Test.

10. Buzz the mag latch relays.

11. The Amplitude Test is used to verify portions of the analog circuitry used to generate signals for VOLTAGE, CURRENT, and EDGE modes. The tests are as follows:

a. Set up for VOLTAGE mode, 1 V/D. Check for 1 V into 50 Ω load by switching output to Power On Test circuit and using the current loop as a 50 Ω load; if this test fails, it is ERROR 51.

b. Take away the 50 Ω termination and set up for 1 V into high impedance load; if this test fails, it is ERROR 52. Tests 11a and 11b were DC tests.

c. The next test is to verify the chopping circuitry by setting the output of the LOW SAC to 1 V, high impedance load, 1 kHz; if this test fails, it is ERROR 53. The preceding tests are used to verify the operation, not the accuracy, of the LOW SAC amplifier.

d. Similar tests are done to verify the HIGH SAC by setting the output to VOLTAGE Mode, 20 V and high impedance load, DC and 1 kHz chopping tests are done. The DC and 1 kHz failures are ERROR 54 and 55, respectively.

e. Next is a check of CURRENT mode by setting the output to 100 mA and terminating into 50 Ω, again using the current loop. The DC and 1 kHz chopping tests are performed. The DC and 1 kHz failures are ERROR 56 or 57, respectively.

f. The hardware is reconfigured to check the EDGE modes. Tests for DC level and 1 kHz chopping of both the plus and minus edge generators are performed on the LOW EDGE circuitry. The failures are ERRORS 81, 82, 83, or 84, respectively.

g. The MID EDGE circuitry is checked next by setting the output to 5 V and doing the DC and 1 kHz tests. Failures are ERROR 85 or 86.

h. The last EDGE test verifies the HIGH EDGE generator at 20 V into a high impedance load, again with the DC and 1 kHz chop tests. Failures are ERROR 87 or 88.

NOTE

The tests of the amplitude and timing hardware allow the user to continue past each failure (press CONTINUE pushbutton) or to use the setup for troubleshooting the error condition.

12. The self-test routine continues with a verification of the timing section, called the Time test. This is accomplished by setting up the Markers and Slewed Edge sections to gate a 10 kHz pulse train, derived from the crystal refernce on the Time Mark board (A4) with a 1, .5, or .2 Hz square wave signal derived from the output of the Countdown circuit (schematic 14).

a. The processor sets up the hardware, looks at the resulting output waveform, and counts the number of pulses in a burst. For the 1 Hz gate, 5000 pulses should be accumulated; if not, ERROR 91 is indicated. For the .5 and .2 Hz gates, the corresponding errors are 92 and 93.

b. Before the pulses are generated, an Offset Loop Out-of-Lock condition is looked for, as the error status signal is shared on the same line as this pulse burst output. This out-of-lock condition makes it impossible to run the timing verification test, and ERROR 94 is indicated.

13. Once the time tests are completed, the processor proceeds by verifying the calibration constants in CMOS memory by checking a saved checksum of those constants. If there is any discrepancy, ERROR 17 is indicated and a flag is set to indicate to the user that the amplitude outputs that have a cal constant associated with it may be in error by as much as ±10%.

14. The last test done in this power on self-test is a possible verification of saved settings. Normally, the instrument powers up to a predefined state—VOLTAGE mode, 1 V/D, etc. However, the user may select the option of powering up to the settings that were in use when power was last removed from the instrument. If this is the case, the validity of those saved settings must be verified before allowing the hardware to go to those settings; the microprocessor does not allow illegal settings.

NOTE

To select the power up default settings to those settings when the instrument was last powered down, set the LUS jumper J1032 to the ON position. Refer to schematic 30 and the Parts Location Grid for the CPU board (A9).

When the self-test routine is completed, the instrument is ready for operation and is either accessible via the front panel, or it may be programmed from the GPIB if an appropriate controller is attached to the interface.

CMOS TEST

This test is automatically executed at power on, and will perform the following actions if failed. First ERROR 11 will be displayed on the front panel. This shows that the region of RAM with stored settings has an error.

Once ERROR 11 is indicated, the following test routine executes:

Write 10101010 pattern to bad memory location (D7-D0);

→ read back pattern,

write complement,

└ and repeat forever.

This has the effect of a pulse pattern appearing on the data bus. By observing the address during the memory write, the bad location may be noted.

While this test is running, only memory locations in the range $0300-$03FF and $F800-$FFFF should be accessed. Addresses outside of this range indicate problems in the address decode circuitry.

If after replacing A9U1043 the problem still remains, verify presence of R/W signal, the chip enable lines, and check the power suppies. Use the SA TEST to verify chip enable and R/W.

RAM TEST

This test will automatically be executed when the microprocessor indicates ERROR 12 on the front panel display. The microprocessor checks 768 bytes of RAM in the address range $0000-$02FF. Once ERROR 12 is indicated, the following test routine is executed:

Write 10101010 pattern to location $0300 (D7-DØ),

→ read location,

write complement,

└ repeat forever.

Either A9U1043 may be bad or the supporting circuitry (i.e., address decode) may make the RAM appear to be faulty. The KERNEL TEST may be used to verify if the microprocessor is working correctly.

To isolate problems to the RAM or to the supporting circuitry, verify presence of R/W signal, the chip enable lines, and check the power supplies.

ROM TEST

The error code indicated on the front panel (ERROR 61) should indicate replacement of the ROM. If the problem persists, check for shorted address lines or a failure of U1063. Generally, however, these errors will cause the instrument to not even get the SELF TEST message on the front panel.

After indicating the error code, the microprocessor executes a test routine which does the following:

→ Set A15 high.

Access memory locations:

$C005 A9A1U1012

Set A15 low, then high.

└ Repeat forever.

By observing data bus contents during the indicated memory accesses, the data bus should indicate most significant byte of address. This means that $C0 should be on the bus during the $C005 access.

SHIFT REGISTER TEST

NOTE

Refer to Fig. 4-3 in the Theory of Operation section (Vol. 1).

This test will indicate if there is any break in the string of shift registers used to set up the hardware in the amplitude and timing circuitry. The microprocessor reads programming information from the front panel or via the GPIB for new setting parameters, calculates the proper information, and then sets up the shift registers in each string.

The microprocessor tests each shift register chain by first loading all registers with a known bit pattern.

NOTE

Only the shift register is loaded with the pattern; the output latches do not necessarily follow the same information in the shift register portion of each register.

The microprocessor then reads out the pattern by shifting in new data. As it is being read out any discrepancies are noted, and at the end of the test, the strings with errors are indicated on the front panel.

The order of errors reported (order of tests) are:

Error 95	TS1
Error 97	VS1
Error 98	VS2
Error 96	TS2

Press the CONTINUE button to step past each error. After stepping past ERROR 96, the microprocessor then cycles a pattern through all the shift registers for fault isolation. The pattern sent is an alternating 1—0 level, simulating a pulse train 28 pulses long, followed by activating the VS2, TS1, TS2, and VS1 strobes in sequence. This is repeated until power is removed and fault is corrected.

NOTE

Check the power supplies first, as this may cause failure of the SHIFT REGISTER TEST.

NOTE

Jumper J1031 may be set to cause the CG 551AP to NOT WAIT for the CONTINUE button to clear the displayed error codes during the self-test routine. Refer to schematic 30 and the Parts Location Grid for the CPU board (A9).

AMPLITUDE TEST

The Amplitude Test is performed during the self-test routine. The error codes related to this test are ERRORS 51 through 57 and 81 through 88. Refer to CG 5001/CG 551AP Error Messages, block diagrams, and troubleshooting flow charts to identify the faulty circuit blocks.

Look for combinations of error codes which indicate a failure in a circuit common to the circuit block(s) that failed. The troubleshooting chart for the POWER ON TEST CHECK in the foldout pages will be helpful in identifying some combinations of error codes.

TIME TEST

The Time Test is performed during the self-test routine. The error codes related to this test are ERRORS 91 through 94. Refer to the CG 5001/CG 551AP Error Messages, block diagrams, and troubleshooting charts to identify the faulty circuit block(s).

Look for combinations of error codes which indicate a failure common to the circuit block(s) that failed.

FRONT PANEL TEST

Reset and Display Test

NOTE

The display lamp test illuminates all display characters, lighted pushbuttons, and all annunciators in the readout window, except TLK and LSN.

Press the RESET button and hold. If in the SLEWED EDGE mode, the display will alternate between all display LEDs illuminated and normal display. In other modes, the display will alternate between the ENTRY ERROR message and all LEDs illuminated.

Check Pushbuttons and Controls

Press the INST ID pushbutton and check for the GPIB address in the display.

The CONTINUE button, when pressed, shows no response if there are no error codes in the display.

Each key push and control change should either change setting or indicate an ENTRY ERROR (if that key push is an invalid command). The pushbuttons are arranged in a matrix format. If there is a pattern (row or column) failure, check A1U1221, A2U1621, or A9U1701; otherwise, replace the defective key switch or other associated component.

DISPLAY TEST

The troubleshooting flow chart for the Display Test is located in Fig. 6-14. Use this chart if the display is dark, an error code is displayed, or if the display is random or missing information.

CPU POWER TEST

Perform the procedure outlined in the troubleshooting chart for Fig. 6-15 if the CG 5001/CG 551AP front panel display appears dark.

POWER ON SEQUENCE TEST

Perform the procedure outlined in the troubleshooting chart for Fig. 6-16 if the output(s) from the CG 5001/CG 551AP appear to be faulty, SELF TEST is displayed continuously, all displays are lit and flashing, or relay switching is not audible during the self-test routine.

VARIABLE AND UNITS/DIV TEST

Perform the procedure outlined in the troubleshooting chart for Fig. 6-17 if the VARIABLE control or the UNITS/DIV control appears faulty.

HEAD SENSE TEST

Perform the procedure outlined in the troubleshooting chart for Fig. 6-18 if the CG 5001/CG 551AP does not seem to respond to presence of the Pulse Head or Comparator accessory connected to the main OUTPUT connector.

DISPLAY TEST

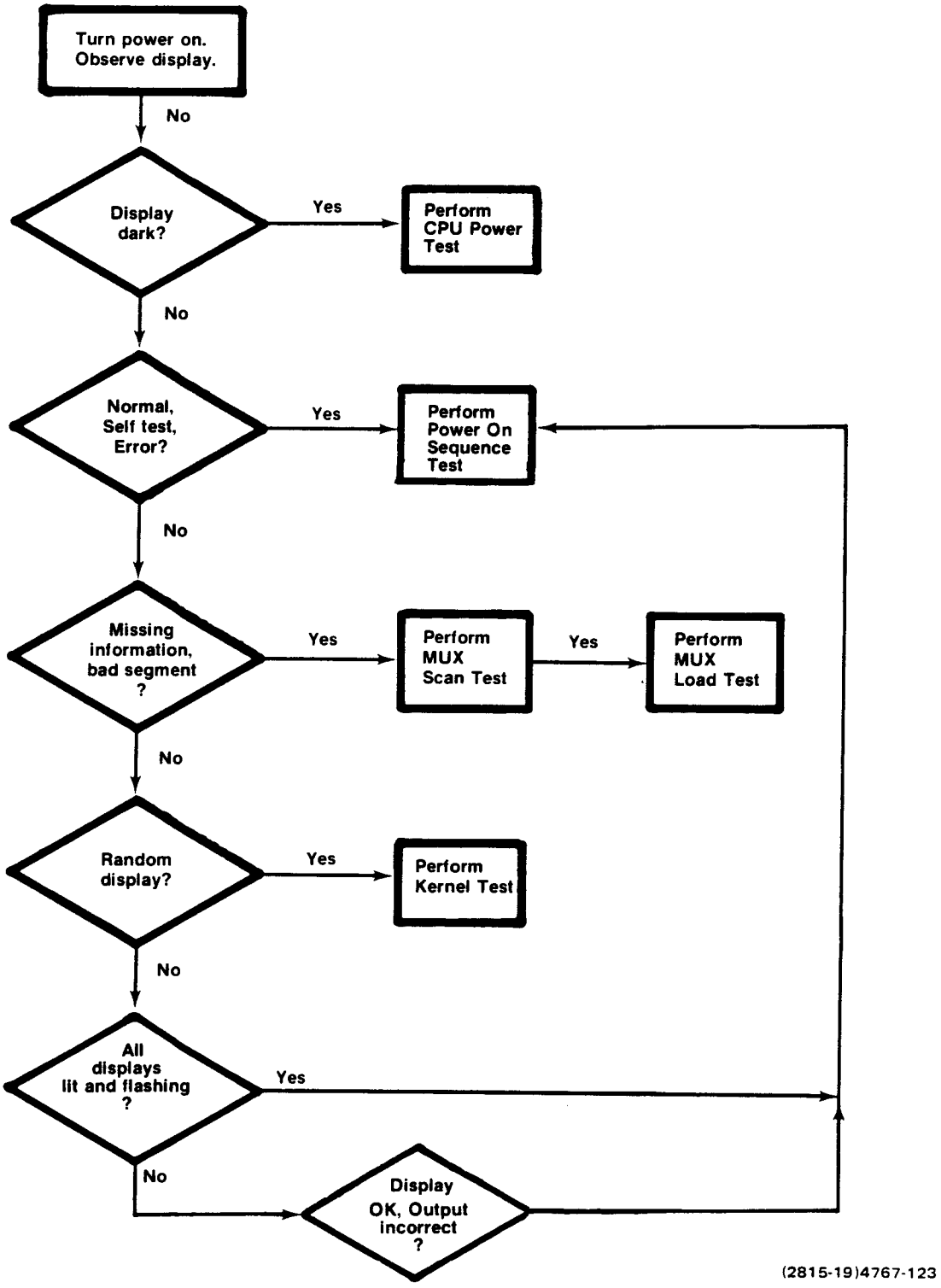


Fig. 6-14. Troubleshooting chart for the Display Test.

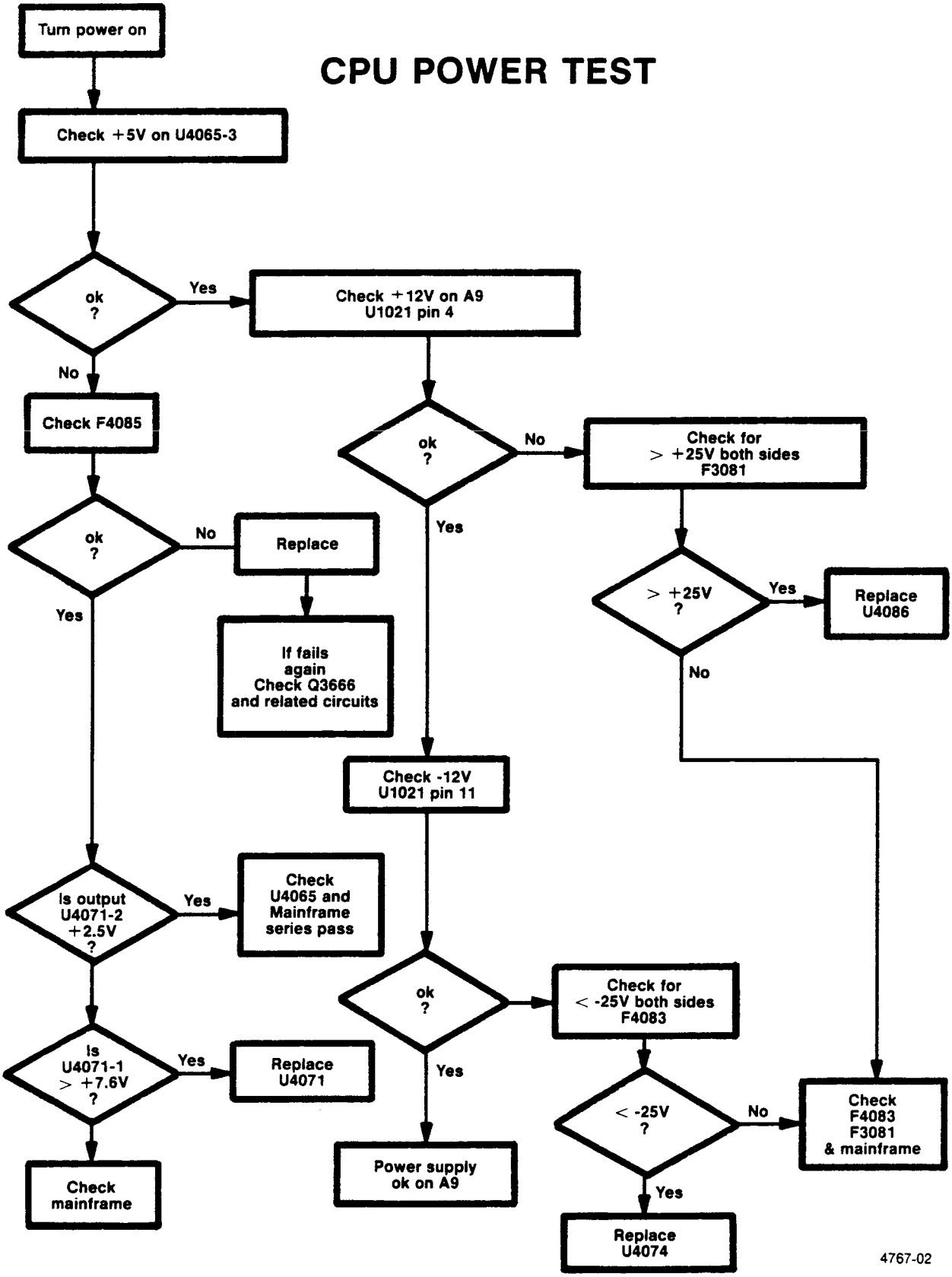


Fig. 6-15. Troubleshooting chart for the CPU Power Test.

POWER ON SEQUENCE TEST

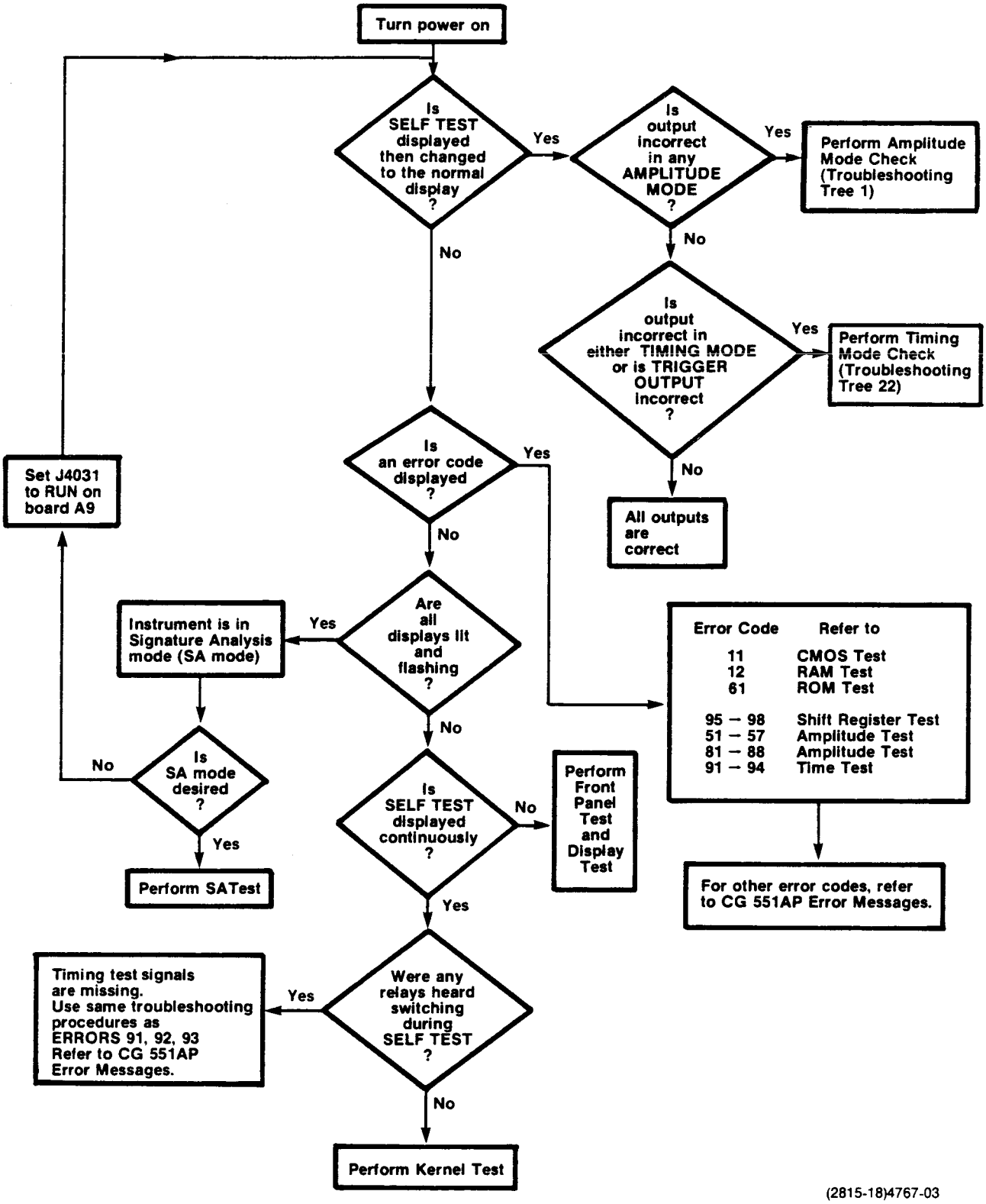


Fig. 6-16. Troubleshooting chart for the Power On Sequence Test.

VARIABLE and UNITS/DIV TEST

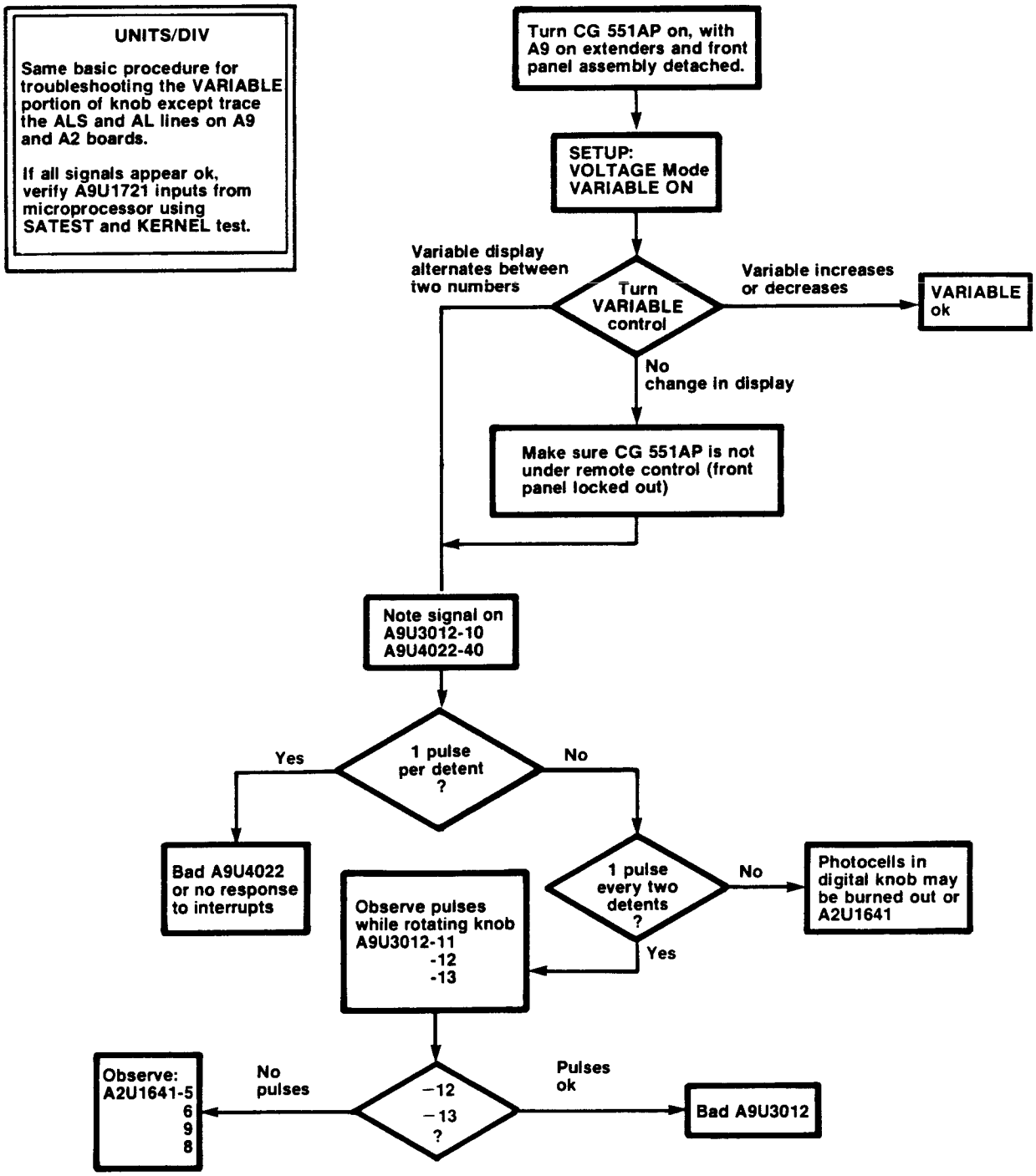
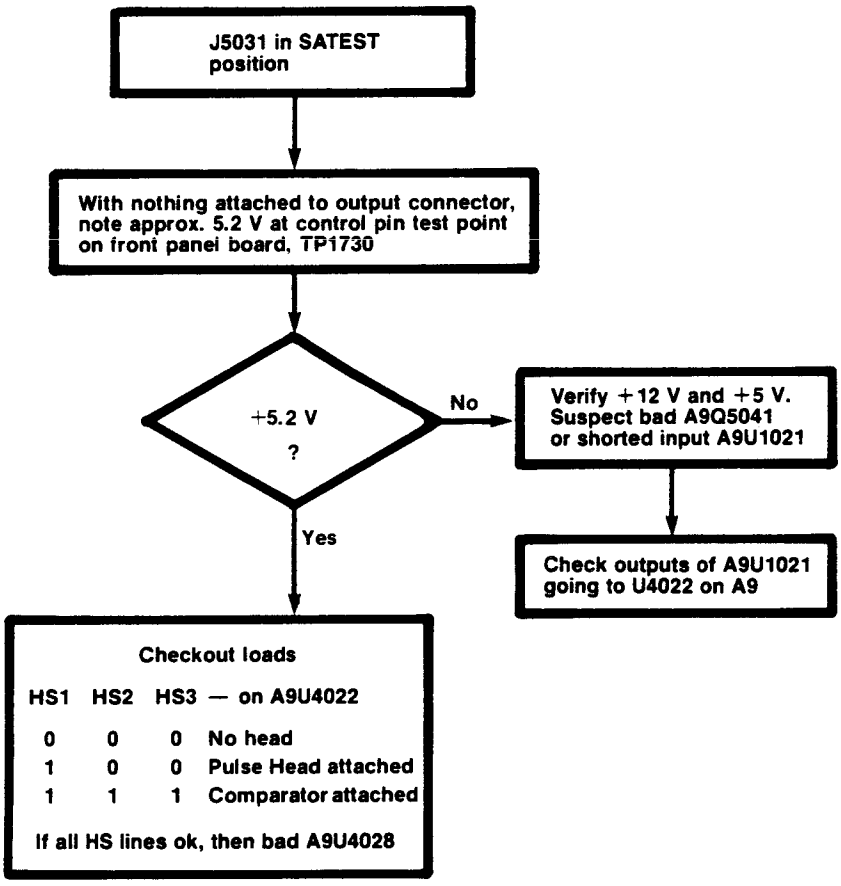


Fig. 6-17. Troubleshooting chart for the Variable and Units/Div Test.

HEAD SENSE TEST



(2815-21)4767-05

Fig. 6-18. Troubleshooting chart for the Head Sense Test.

SIGNATURE ANALYSIS

NOTE

The signature tables listed in Table 6-3, Table 6-4, Table 6-5, and Table 6-6 are historical documents and begin with Version 2.0.

Future firmware or hardware changes to the CG 5001/CG 551AP may require an update to portions of the signature tables. The new version number for an updated signature table should be inserted behind the corresponding earlier versions which should remain in the manual.

Version 2.0 of the signature tables is applicable only to the ROM and circuit board numbers listed in Table 6-2. Table 6-2 should also be updated if the updated signature versions are affected by part numbers different than those listed in Table 6-2.

Table 6-2
SIGNATURE VERSION TABLE
CPU-A9

Version 2.0	Circuit Board Numbers	ROM Numbers
CG 551AP	670-8273-00	160-2371-00
CG 5001	670-8273-01	160-2372-00

SA TEST

The purpose of this test is as follows:

1. Access all defined memory in instrument to verify address decode circuitry and address lines.

2. Illuminate all LEDs on front panel.

This test should not be used to verify operation of address lines; use the KERNEL TEST for this purpose. Use the signatures listed in Table 6-3 to verify operation of address decode and display interface. For further information refer to DISPLAY TEST, MUX LOAD TEST, and MUX SCAN TEST.

This test is selected by setting A9J5031 to the SA TEST position (Jumper A9J5031) while the instrument is powered down. Switch A9S1611 is located in the lower front part of the CPU board.

1. Read location 9004 (drives $\overline{\text{ASE}}$, A2 & GPIBSEL) (A15, A12 set address switch to known state, R/W)
2. Write 80 to 9003 (drives GPIA to reset, A0, A1, GPIBSEL, A15, A12, R/W)
3. Write 00 to 0000 (drives $\overline{\text{RAMSEL}}$, R/W)
4. Read 00
5. Read FFF0
6. Write 00 to 400
7. Read SA POINT (0500)
8. Write 55 to SA POINT (duplicates what is in there) (2 signatures)
9. Read SUPCRB
10. Write to SUPCRB
11. Read FPCRA
12. Write it to FPCRA
13. Write display all blanks
14. Delay $\approx$ 10ms
15. Write display all lights
16. Read $8000 to generate start/stop

Table 6-3
SA TEST SIGNATURE TABLES

Version 2.0

ASSEMBLY A9: ◇28 ◇29 ◇30 ◇32

CONFIGURATION: Turn power off. Set jumper A9J5031 to SA TEST position. Set LUS jumper to LUS. Set WFC jumper to WFC. All address switches closed. Leave other jumpers as they are. Place A9 on extenders. Turn on power. Where different signatures are not listed for the CG 5001 and the CG 551AP, they are the same.

+5 V Sig 1565

Gnd Sig 0000

①

A9U3041	CG5001 Signature	CG551AP Signature
4	1565	1565
5	42U5	42U5
9	27CH	9652
10	53CC	FA44
11	P0AP	CP41
12	132A	FA8H
13	7AP8	PHA9
14	H3CU	7F54
15	5F0A	CF03
16	FCFU	53C2
17	HH8A	6H99
18	9744	2757
19	A025	A025
20	6C0H	6C0H
22	1ACH	1ACH
23	87P2	87P2
24	936U	936U
25	7F83	7F83
26	U41C	UF00
27	71CF	71CF
28	3AUP	3AUP
29	321P	321P
30	17A6	P363
31	5HUG	A933
32	9FC5	6870
33	H117	A81C
34	42P9	42P9
37	1565	1565
40	1565	1565

ANALYZER:	Location
START ↓	ST1-A9TP2071 (U2065-11)
STOP ↓	ST1-A9TP2071 (U2065-11)
CLOCK ↓	CLK1-A9TP1071 (U3041-37)
GROUND	GND-A9TP2066 (U3041-1, 21, 36)

②

A9U2065	Signature
7	1565
9	3967
10	1565
11	8AC2
12	1565
13	1565
14	H7U9
15	4UF6

③

A9U2064B	Signature
4	H7U9
5	H7U9
6	F29F

④

A9U2051	CG5001 Signature	CG551AP Signature
2	U41C	UF00
3	0845	71CF
4	3AUP	3AUP
5	0578	321P
6	17A6	P363
7	5HUG	A933
8	9FC5	6870
9	H117	A81C
11	H117	A81C
12	9FC5	6870
13	6A90	A933
14	17A6	P363
15	0578	321P
16	3AUP	3AUP
17	0845	71CF
18	U41C	UF00

⑤

A9U1063A	Signature
1	7F83
2	936U
3	1U09

⑥

A9U1063B	Signature
4	1565
5	42U5
6	5790

⑦

A9U2064D	Signature
11	4UF6
12	1565
13	5AA3

⑧

A9U1043	Signature
18	0000
19	9P0F
20	4UF6

Table 6-3 (cont)
KERNEL TEST SIGNATURE TABLES

Version 2.0

(9)

A9U1032	Signature
20	1U09
22	5790

(10)

A9U4022	Signature
22	F29F
25	1565
34	1565

(11)

A9U3026	Signature
2	CA48
3	CA48
4	CA48
5	CA48
6	3600
7	3600
8	3600
9	3600
10	7C95
11	U5AC
12	53P0
13	FH55
14	U47C
15	9H98
19	8F48

(12)

A9U1072	Signature
4	5CUA

(13)

A9U2028	Signature
1	5CUA
19	5CUA

MUX SCAN TEST

This test is used to verify that the Display Multiplexer is scanning correctly (i.e., that each row and column of display matrix is being selected in the proper sequence). Symptoms of failure of multiplexer scan are bright digit or digits, abnormally bright pushbuttons, dark or dim digits or pushbuttons. Once the power supply (+5 V) has been verified, this test may be run.

This test uses signature analysis to do signal tracing and identify the fault. For this test, the Front Panel board must be unfastened from the front of the CG 5001/CG 551AP. Refer to disassembly information.

For the Mux Scan Test, verify the signatures listed in Table 6-4. In addition to the signatures, follow the signals on the schematics to isolate the problem area. Refer to the schematics noted in Table 6-4. If all signatures are correct, suspect segment drive transistors, digit select transistors, A2U1341, bad LED's, or bad interconnecting cables.

If there is just a bad segment in one display, or an unlit pushbutton (observed while doing lamp test), suspect a bad LED.

NOTE

Signature Analyzer connections and CG 5001/CG 551AP test locations for the Mux Scan Test are given in Table 6–4.

Table 6-4
MUX SCAN TEST SIGNATURE TABLES

Version 2.0

ASSEMBLY A2: ◇2 ◇3 ◇30 ◇32

CONFIGURATION: Unfasten the CG 551AP front panel—refer to disassembly information. Set all switches on A9S1611 to the off position. Turn the power on.

+5 V Sig	**UP73**
Gnd Sig	**0000**

ANALYZER:	**Location**
START ↑	ST4-A2TP1632 (U1631-12)
STOP ↑	ST4-A2TP1632 (U1631-12)
CLOCK ↑	CLK2-A2TP1636 (U1631-8)
GROUND	GND-A2TP1638 (U1631-7)

(1)

Test Point	**Frequency**
A2U1621-13	≠2.5 kHz
A2U1631-8	≠2.5 kHz
A2U1432-5	≠2.5 kHz

(2)

A2U1631	**Signature**
2	0U16
5	55H1
6	55H1
7	0000
9	334U
12	UP8H
13	UP73
14	UP73

(3)

A2U1432	**Signature**
1	55H1
2	334U
3	0U16
4	0000
6	UP8H
7	UU71
8	0000
9	UF76
10	UA79
11	U667
12	PP5A
13	HP21
14	CPH6
15	7U39
16	UP73

(4)

A2U1441	**Signature**
1	55H1
2	334U
3	0U16
4	0081
5	0040
6	0020
7	0010
8	0000
9	0008
10	0004
11	0002
12	0001
13	UP73
14	UP8H
15	0000
16	UP73

(5)

A2U1341	**Signature**
1	0001
2	0040
3	0002
4	0020
5	0004
6	0010
7	0008
8	0000
9	UP73

Continued on next page

Two signatures are checked for each of the following points. The signatures listed under the heading "Standard" are obtained with the CG 551AP set to its standard power up default values. These values are automatically set by the CG 551AP when power is applied. When checking these signatures, observe that the CG 551AP readout displays 1 V/D X 1, 1 kHz is on, and the VARIABLE, CURRENT LOOP, and TRIGGER OUTPUT are off. The SRQ bus lines will be asserted.

To check the signatures listed under "Entry Error", press SHIFT → and hold button in. Observe that "ENTRY ERROR" is displayed. After checking an "Entry Error" signature, press SHIFT ← to return the CG 551AP to the standard power up default values.

Table 6-4 (cont)
MUX SCAN TEST SIGNATURE TABLES

Version 2.0

(6)

A2U1521	Signature (Standard)	Signature (Entry Error)
1	55H1	55H1
2	0000	0000
3	UP73	UP73
5	HP23	HP5F
7	UPU2	PP27
8	0000	0000
9	UP31	PPHC
11	P6FU	UP77
13	UP8H	UP8H
14	0U16	0U16
15	334U	334U
16	UP73	UP73

(7)

A2U1522	Signature (Standard)	Signature (Entry Error)
1	55H1	55H1
2	0000	0000
3	UP73	UP73
5	UP71	PP27
7	UPU2	UP76
8	0000	0000
9	UP73	PPHA
11	CPH6	PP22
13	UP8H	UP8H
14	0U16	0U16
15	334U	334U
16	UP73	UP73

(8)

A2U1531	Signature (Standard)	Signature (Entry Error)
1	55H1	55H1
2	0000	0000
3	UP73	UP73
5	UPU2	UP0H
7	UPU2	PP58
8	0000	0000
9	UPU2	PP24
11	UP73	UP0A
13	UP8H	UP8H
14	0U16	0U16
15	334U	334U
16	UP73	UP73

(9)

A2U1532	Signature (Standard)	Signature (Entry Error)
1	55H1	55H1
2	0000	0000
3	UP73	UP73
5	A6A9	UP73
7	CP57	APUC
8	0000	0000
9	CPH6	AP87
11	UPU2	PPH9
13	UP8H	UP8H
14	0U16	0U16
15	334U	334U
16	UP73	UP73

MUX LOAD TEST

This test is used to ensure that the microprocessor is loading the Display Multiplexer correctly. Symptoms for this failure are random display or no display at all; also, there may be a partially intelligible display. Observe that E1, E2, E3, and E4 error lines are shared with data bits DS4, DS5, DS6, and DS7, respectively; failure of any of the error detection circuitry in the amplitude or timing sections may appear to cause a failure in this test. Symptoms of that particular failure would be those data lines stuck low or stuck high.

The procedure for this test is to use the signatures listed in Table 6-5 to verify correct signals.

NOTE

For this test, Front Panel assembly must be unfastened to access the Main Interconnect board (A2).

Signature Analyzer input signal connections and the related CG 551AP test point locations for the Mux Load Test are given in Table 6-5.

Table 6-5

MUX LOAD TEST SIGNATURE TABLES

Version 2.0

ASSEMBLIES A2 and A9: ◇2 ◇28

CONFIGURATION: Unfasten front panel for access to components on A2, Main Interconnect board. Set A9 J5031 to SA TEST and turn on the power.

+5 V Sig	**1C98**
Gnd Sig	**0000**

ANALYZER:	Location
START ↑	ST3-A2TP1630 (U1631-1)
STOP ↑	ST3-A2TP1630 (U1631-1)
CLOCK ↓	CLK1-A9TP1071 (U1422-7)
GROUND	GND-A2TP1638 (U1631-7)

(1)

A9U2065	Signature
1	FPU2
2	H7U7
3	H7U7
4	H7U7
5	H7U7
6	52H2
14	HC9P

(2)

A9U2064	Signature
4	HC9P
5	HC9P
6	F006

(3)

A9U3026	Signature
1	0000
2	23AP
3	23AP
4	23AP
5	23AP
6	F6PH
7	F6PH
8	F6PH
9	F6PH
10	AC1H

(4)

A9U3026	Signature
11	14U9
12	U9FP
13	3907
14	5A08
15	0738
19	P543
20	1C98
21	09C7
22	F006
34	1C98

(5)

A2U1631	Signature
1	P543
3	U9FP
4	AC1H
7	0000
10	14U9
11	3907
13	1C98
14	1C98

(6)

A2U1521	Signature
3	5A08
4	23AP
6	23AP
8	0000
10	23AP
12	23AP
16	1C98

(7)

A2U1522	Signature
3	0738
4	23AP
6	23AP
8	0000
10	23AP
12	23AP
16	1C98

(8)

A2U1531	Signature
3	5A08
4	F6PH
6	F6PH
8	0000
10	F6PH
12	F6PH
16	1C98

(9)

A2U1532	Signature
3	0738
4	F6PH
6	F6PH
8	0000
10	F6PH
12	F6PH
16	1C98

KERNEL TEST

The purpose of this test is to verify that the microprocessor can execute a known instruction, and that the address lines perform as expected. This is accomplished by disabling the memory in the instrument and forcing the data bus to a known state by switch J1053 on the CPU board.

NOTE

Configure the instrument according to instructions given in Table 6-6.

Switching J1053 on disables the CPU data Bus Buffer in the instrument. Therefore, you cannot verify this circuitry using KERNEL TEST.

There is a choice of a signature analyzer or a frequency counter to verify proper operation. Table 6-6 indicates what the correct signatures or frequencies are on the address lines. Any place these signal lines are present, the corresponding signature or frequency should be present.

If no signatures or frequencies are indicated, suspect System Clock, Reset, Microprocessor, or Power Supplies.

NOTES

Table 6-6
KERNEL TEST SIGNATURE TABLES

Version 2.0

ASSEMBLY A9: ◇28 ◇29 ◇30 ◇32

CONFIGURATION: Turn power off. Position FIM-RUN jumper P1053 to its FIM configuration and set all switches on S1022 to on (closed). Turn on power.

+5 V Sig	0003
Gnd Sig	0000

ANALYZER:	Location
START ↓	ST2-A9TP1062 (A9U3041-25)
STOP ↓	ST2-A9TP1062 (A9U3041-25)
CLOCK ↓	CLK1-A9TP1071 (A9U3041-37)
GROUND	GND-A9TP2066 (A9U3041-1,21,36)

(1)

Address Line	Signature
A15	0001
A14	9UP1
A13	4868
A12	4FCA
A11	6U28
A10	37C5
A9	6321
A8	7791
A7	6F9A
A6	U759
A5	0356
A4	1U5P
A3	P763
A2	8484
A1	FFFF
A0	UUUU

(3)

A9U2065	Signature
6	0003
7	04UU
9	160H
10	7633
11	3838
12	09Ua
13	2F1U
14	PF63
15	7074

(5)

A9U2051	Signature
1	0003

(2)

A9U3041	Signature
4	0003
5	0003
34	0003
37	0003
40	0003

(4)

A9U2064	Signature
1	7074
2	7074
3	7077
4	PF63
5	PF63
6	PF60
111	7074
12	0003
13	7077

(6)

A9U1063	Signature
1	0001
2	9UP1
3	755F
4	0003
5	0003
6	0000

Table 6-6 (cont)
KERNEL TEST SIGNATURE TABLES

Version 2.0

(7)

A9U1032	Signature
20	755F
22	0000

(9)

A9U1032	Signature
21	0003
22	PF60
25	0003

(11)

A9U1072	Signature
3	160H
4	U2P8
5	0003
6	0003

(8)

A9U1043	Signature
19	37C5
20	7074
21	0003

(10)

A9U3026	Signature
21	0003
22	PF60
25	0003

(12)

A9U2028	Signature
1	U2P8
19	U2P8

DATA REGISTER FORMATS

Introduction

The CG 551AP uses 21 eight bit shift register/latches to control the amplitude and timing circuitry. The microprocessor circuitry loads these registers with data to produce the desired output setting. See Table 6-7.

The data presented is in hexadecimal format and represents the output of the registers. All calibration constants are set to 0. This means the data measured in registers R2 and R3 may differ from the values listed in Table 6-7.

If no data is shown for a register output or a register is not listed, this means no data is present because its power supplies have been disabled.

The outputs of registers V3, V4, and V5 are set to 00 (hexadecimal), except for a brief period to change the output relays. This changing condition is not presented in the format list.

In amplitude mode, the first half of M1 data may be 0 or 4, depending upon previous time mode settings.

In the SLEWED EDGE mode, measuring the outputs of T3, T4, T5, and T6 must be done when the register has pin 15 at logic 1. The measurement can best be made by triggering an oscilloscope with pin 15 output.

A data register output may be verified by selecting a setting listed below the desired mode in Table 6-7 and measuring the register's output.

EXAMPLE: If R3 data is 34 (hex), then U1341 on board A6 has the following output:

Pin #	4	5	6	7	14	13	12	11	
	0	0	1	1	0	1	0	0	= 34 (hex)

0 = logic low
1 = logic high
X = independent of setting

Register Definitions

Register	Circuit Number
R1	A6U1121
R2	A6U1242
R3	A6U1341
R4	A6U1541
R5	A6U1841
V1	A8U1130
V2	A7U1020
V3	A7U1130
V4	A7U1234
V5	A7U1833
M1	A4U1320
M1	A4U1420
M1	A4U1421
M1	A4U1520
T1	A3A6U1220
T2	A3A6U1120
T3	A3A6U1000
T4	A3A6U1100
T5	A3A6U1000
T6	A3A6U1100
T7	A3A6U1001

Table 6-7
DATA REGISTER FORMAT LIST

VOLTAGE MODE SETTINGS

MODE V;U/D 1.0E+0;MULT 1;FREQ 1.0E+3;POS;FXD;PCT 0.0;OUT ON;LDZ HI;TRIG OFF;

SETTING	R1	R2	R3	R4	R5	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
MULT 1;	82	80	24	9F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
MULT 2;	82	80	24	8F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
MULT 3;	82	80	24	BE	FB	08	65	00	00	00	48	XX	45	4E	XX	X1
MULT 4;	82	80	24	DE	FB	08	65	00	00	00	48	XX	45	4E	XX	X1
MULT 5;	82	80	24	9E	FB	08	65	00	00	00	48	XX	45	4E	XX	X1
MULT 6;	82	80	24	EE	FB	08	65	00	00	00	48	XX	45	4E	XX	X1
MULT 8;	82	80	24	CE	FB	08	65	00	00	00	48	XX	45	4E	XX	X1
MULT 10;	82	80	24	8E	FB	08	65	00	00	00	48	XX	45	4E	XX	X1

MODE V;U/D 1.0E+0;MULT 1;FREQ 1.0E+3;POS;FXD;PCT 0.0;OUT ON;LDZ HI;TRIG OFF;

SETTING	R1	R2	R3	R4	R5	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
LDZ HI;	82	80	24	9F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
LDZ 50;	82	85	A4	1F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1

MODE V;U/D 1.0E+0;MULT 1;FREQ 1.0E+3;POS;FXD;PCT 0.0;OUT ON;LDZ HI;TRIG OFF;

SETTING	R1	R2	R3	R4	R5	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
OUT ON;	82	80	24	9F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
OUT OFF;	80	80	34	9F	7B	08	6A	00	00	00	48	XX	45	4E	XX	X1

MODE V;U/D 1.0E+0;MULT 1;FREQ 1.0E+3;POS;VAR;PCT 0.0;OUT ON;LDZ HI;TRIG OFF;

SETTING	R1	R2	R3	R4	R5	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
PCT 0.0;	82	80	24	9F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
PCT −5.0;	82	99	24	9F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
PCT −9.9;	82	B1	A4	9F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
PCT 5.0;	82	67	24	9F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
PCT 9.9;	82	4E	A4	9F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1

MODE V;U/D 2.0E+0;MULT 1;FREQ 1.0E+3;POS;FXD;PCT 0.0;OUT ON;LDZ HI;TRIG OFF;

SETTING	R1	R2	R3	R4	R5	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
U/D 2.0E+0;	82	80	24	8F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
U/D 2.0E+1;	01	80	24	8F	DE	08	65	00	00	00	48	XX	45	4E	XX	X1
U/D 2.0E+1; MULT 10;	01	80	26	8F	7E	08	65	00	00	00	48	XX	45	4E	XX	X1

Continued on next page

Table 6-7 (cont)

CURRENT MODE SETTINGS

MODE CUR;U/D 1.0E−3;MULT 1;FREQ 1.0E+3;POS;FXD;PCT 0.0;OUT ON;LOOP OFF;TRIG OFF;

SETTING	R1	R2	R3	R4	R5	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
OUT ON;	84	7E	04	9F	CF	08	65	00	00	00	48	XX	45	4E	XX	X1
OUT OFF;	80	7E	34	9F	CF	08	6A	00	00	00	48	XX	45	4E	XX	X1
LOOP ON;	84	7E	04	9F	CF	08	70	00	00	00	48	XX	45	4E	XX	X1
LOOP OFF;	80	7E	34	9F	CF	08	7A	00	00	00	48	XX	45	4E	XX	X1

MODE CUR;U/D 1.0E−3;MULT 1;FREQ DC;POS;FXD;PCT 0.0;OUT OFF;LOOP ON;TRIG OFF;

SETTING	R1	R2	R3	R4	R5	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
FREQ DC ;	84	7E	14	9F	CF	08	70	00	00	00	48	XX	4B	06	XX	X1
FREQ 1.0E+1;	84	7E	04	9F	CF	08	70	00	00	00	48	XX	49	4E	XX	X1
FREQ 1.0E+2;	84	7E	04	9F	CF	08	70	00	00	00	48	XX	47	4E	XX	X1
FREQ 1.0E+3;	84	7E	04	9F	CF	08	70	00	00	00	48	XX	45	4E	XX	X1
FREQ 1.0E+4;	84	7E	04	9F	CF	08	70	00	00	00	48	XX	43	4E	XX	X1
FREQ 1.0E+5;	84	7E	04	9F	CF	08	70	00	00	00	48	XX	41	4E	XX	X1
FREQ 1.0E+6;	84	7E	04	9F	CF	08	70	00	00	00	48	XX	41	4D	XX	X1

EDGE MODE SETTINGS

MODE EDGE;U/D 1.0E+0;MULT 1;FREQ 1.0E+3;NEG;FXD;OUT ON;LDZ 50;TRIG NORM;

SETTING	R1	R2	R3	R4	R5	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
U/D 1.0E+0;NEG;	80	90	B5	8F	B7	08	60	00	00	00	4C	XX	45	4E	XX	X1
U/D 1.0E+0;POS;	80	8D	35	8F	B7	08	60	00	00	00	4C	XX	45	4E	XX	X1
U/D 2.0E+0;	80	80	31	8F	DB	08	60	00	00	00	4C	XX	45	4E	XX	X1
U/D 2.0E+1;	00	80	31	8F	DB	00	60	00	00	00	4C	XX	45	4E	XX	X1

FAST EDGE MODE SETTINGS

MODE FAST EDGE;FREQ 1.0E+3;POS;FXD;OUT ON;LDZ 50;TRIG NORM;

SETTING	R1	R2	R3	R4	R5	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
POS;	80	80	14	80	FB	10	40	00	00	00	4C	XX	45	4E	XX	X1
NEG;	80	80	14	80	FD	10	C0	00	00	00	4C	XX	45	4E	XX	X1

Continued on next page

Table 6-7 (cont)

MARKERS MODE SETTINGS

MODE MKRS;U/D 5.0E+0;FXD;PCT 0.0;OUT ON;MAG X10;TRIG NORM;

SETTING	R1	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
U/D 5.0E+0;	C0	08	6A	00	00	00	26	23	29	5E	21	85
U/D 2.0E+0;	C0	08	6A	00	00	00	16	24	29	5E	21	85
U/D 1.0E+0;	C0	08	6A	00	00	00	OE	25	29	5E	21	85
U/D 5.0E−1;	C0	08	6A	00	00	00	26	10	27	5E	21	85
U/D 2.0E−1;	C0	08	6A	00	00	00	16	11	27	5E	21	85
U/D 1.0E−1;	C0	08	6A	00	00	00	OE	12	27	5E	21	85
U/D 5.0E−2;	C0	08	6A	00	00	00	26	13	25	5E	21	85
U/D 2.0E−2;	C0	08	6A	00	00	00	16	14	25	5E	21	85
U/D 1.0E−2;	C0	08	6A	00	00	00	OE	15	25	5E	21	85
U/D 5.0E−3;	C0	08	6A	00	00	00	26	08	23	5E	21	85
U/D 2.0E−3;	C0	08	6A	00	00	00	16	09	23	5E	21	85
U/D 1.0E−3;	C0	08	6A	00	00	00	OE	0A	23	5E	21	85
U/D 5.0E−4;	C0	08	6A	00	00	00	26	0B	21	5E	21	85
U/D 2.0E−4;	C0	08	6A	00	00	00	16	0C	21	5E	21	85
U/D 1.0E−4;	C0	08	6A	00	00	00	OE	0D	21	5E	21	85
U/D 5.0E−5;	C0	08	6A	00	00	00	26	03	20	9E	21	85
U/D 2.0E−5;	C0	08	6A	00	00	00	16	04	20	9E	21	85
U/D 1.0E−5;	C0	08	6A	00	00	00	OE	05	20	9E	21	85
U/D 5.0E−6;	C0	08	6A	00	00	00	26	C0	30	AC	21	85
U/D 2.0E−6;	C0	08	6A	00	00	00	16	C0	30	AC	21	85
U/D 1.0E−6;	C0	08	6A	00	00	00	OE	C0	30	AC	21	85
U/D 5.0E−7;	C0	08	6A	00	00	00	64	80	30	8C	21	85
U/D 2.0E−7;	C0	08	6A	00	00	00	54	40	30	8C	21	85
U/D 1.0E−7;	C0	08	6A	00	00	00	4C	00	30	8C	21	85

Continued on next page

Table 6-7 (cont)

MODE MKRS;U/D 5.0E+0;FXD;PCT 0.0;OUT ON;MAG X1;TRIG NORM;												
SETTING	R1	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
U/D 5.0E+0;	C0	08	6A	00	00	00	64	20	2B	5E	21	85
U/D 2.0E+0;	C0	08	6A	00	00	00	54	21	2B	5E	21	85
U/D 1.0E+0;	C0	08	6A	00	00	00	4C	22	2B	5E	21	85
U/D 5.0E−1;	C0	08	6A	00	00	00	64	23	29	5E	21	85
U/D 2.0E−1;	C0	08	6A	00	00	00	54	24	29	5E	21	85
U/D 1.0E−1;	C0	08	6A	00	00	00	4C	25	29	5E	21	85
U/D 5.0E−2;	C0	08	6A	00	00	00	64	10	27	5E	21	85
U/D 2.0E−2;	C0	08	6A	00	00	00	54	11	27	5E	21	85
U/D 1.0E−2;	C0	08	6A	00	00	00	4C	12	27	5E	21	85
U/D 5.0E−3;	C0	08	6A	00	00	00	64	13	25	5E	21	85
U/D 2.0E−3;	C0	08	6A	00	00	00	54	14	25	5E	21	85
U/D 1.0E−3;	C0	08	6A	00	00	00	4C	15	25	5E	21	85
U/D 5.0E−4;	C0	08	6A	00	00	00	64	08	23	5E	21	85
U/D 2.0E−4;	C0	08	6A	00	00	00	54	09	23	5E	21	85
U/D 1.0E−4;	C0	08	6A	00	00	00	4C	0A	23	5E	21	85
U/D 5.0E−5;	C0	08	6A	00	00	00	64	0B	21	5E	21	85
U/D 2.0E−5;	C0	08	6A	00	00	00	54	0C	21	5E	21	85
U/D 1.0E−5;	C0	08	6A	00	00	00	4C	0D	21	5E	21	85
U/D 5.0E−6;	C0	08	6A	00	00	00	64	03	20	9E	21	85
U/D 2.0E−6;	C0	08	6A	00	00	00	54	04	20	9E	21	85
U/D 1.0E−6;	C0	08	6A	00	00	00	4C	05	20	9E	21	85
U/D 5.0E−7;	C0	08	6A	00	00	00	64	C0	30	AC	21	85
U/D 2.0E−7;	C0	08	6A	00	00	00	54	C0	30	AC	21	85
U/D 1.0E−7;	C0	08	6A	00	00	00	4C	C0	30	AC	21	85
U/D 5.0E−8;	C0	08	6A	00	00	00	64	80	30	8C	21	85
U/D 2.0E−8;	C0	08	6A	00	00	00	54	40	30	8C	21	85
U/D 1.0E−8;	C0	08	6A	00	00	00	4C	00	30	8C	21	85

Continued on next page

Table 6-7 (cont)

MODE MKRS;U/D 1.0E−3;FXD;PCT 0.0;OUT ON;MAG X1;TRIG NORM;

SETTING	R1	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
TRIG NORM;	C0	08	6A	00	00	00	4C	15	25	5E	21	85
TRIG X1;	C0	08	6A	00	00	00	4D	15	25	5E	21	85
TRIG X.01;	C0	08	6A	00	00	00	4F	15	25	5E	21	85
TRIG OFF;	C0	08	6A	00	00	00	4B	15	25	5E	21	85

MODE MKRS;U/D 1.0E−3;VAR;PCT 0.0;OUT ON;MAG X1;TRIG NORM;

SETTING	R1	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
PCT 0.0;	C0	08	6A	00	00	00	4C	15	25	5E	21	85
PCT −5.0;	C0	08	6A	00	00	00	4C	15	25	5E	24	A5
PCT −9.9;	C0	08	6A	00	00	00	4C	15	25	5E	27	B5
PCT 5.0;	C0	08	6A	00	00	00	4C	15	25	5E	1E	65
PCT 9.9;	C0	08	6A	00	00	00	4C	15	25	5E	1B	55

SLEWED EDGE MODE SETTINGS

MODE SLWD;U/D 1.0E−7;FXD;PCT 0.0;OUT ON;MAG X1;SHFT 0;

SETTING	R1	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2	T3	T4	T5	T6	T7
U/D 1.0E−7;	C0	08	6A	00	00	00	4C	00	80	0A	21	8D	E8	E8	E1	E6	F4
U/D 5.0E−8;	C0	08	6A	00	00	00	4C	00	80	0A	21	8D	E8	FC	E1	F8	F4
U/D 2.0E−8;	C0	08	6A	00	00	00	4C	00	80	0A	21	8D	38	38	33	34	F5
U/D 1.0E−8;	C0	08	6A	00	00	00	4C	00	80	0A	21	8D	38	24	33	1F	F5
U/D 5.0E−9;	C0	08	6A	00	00	00	4C	00	80	0A	21	8D	38	2E	33	29	F5
U/D 2.0E−9;	C0	08	6A	00	00	00	4C	00	80	0A	21	8D	38	34	33	2F	F5
U/D 1.0E−9;	C0	08	6A	00	00	00	4C	00	80	0A	21	8D	38	36	33	31	F5
U/D 5.0E−10;	C0	08	6A	00	00	00	4C	00	80	0A	21	8D	38	37	33	32	F5
U/D 4.0E−10;	C0	08	6A	00	00	00	4C	00	80	0A	21	8D	38	37	34	33	F1

INSTRUMENT OPTIONS

Your instrument may be equipped with one or more instrument options or optional accessories. A brief description of each instrument option is given below. For further information on instrument options or accessories, see your Tektronix Catalog or contact your Tektronix Field Office. If additional options are made available for this instrument, they may be described in a Change Information insert at the back of this manual or in this section.

OPTION 01

Adds a temperature compensated 5 MHz crystal oscillator for a higher accuracy time base. Information relative to Option 01 can be found on schematic 17 and Block Diagram B, in the Specification section (Vol. 1), in the Calibration section (Vol. 2), and in the Theory of Operation (Vol. 1).

OPTION 02

Deletes the standard Pulse Head accessory. The CG 551AP does not operate in the FAST EDGE mode if the Pulse Head is not attached to the OUTPUT connector.

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.

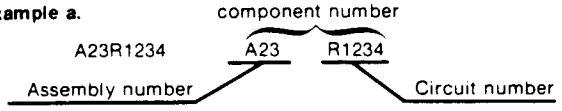
ABBREVIATIONS

Abbreviations conform to American National Standard Y1.1.

COMPONENT NUMBER (column one of the Electrical Parts List)

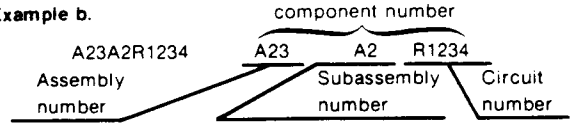
A numbering method has been used to identify assemblies, subassemblies and parts. Examples of this numbering method and typical expansions are illustrated by the following:

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	2800 FULLING MILL PO 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 53204-2410
01281	TRW INC TRW SEMICONDUCTOR DIV	14520 AVIATION BLVD	LAWNDALE CA 90260
01295	TEXAS INSTRUMENTS INC SEMICONDUCTOR GROUP	13500 N CENTRAL EXPRESSWAY P O BOX 225012 M/S 49	DALLAS TX 75265
01686	RCL ELECTRONICS INC	195 MCGREGOR ST	MANCHESTER NH 03102
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
03888	PYROFILM DIV DIV OF KDI ELECTRONICS INC	60 S JEFFERSON RD	WHIPPANY NJ 07981-1001
04009	COOPER INDUSTRIES INC ARROW HART DIV	103 HAWTHORN ST	HARTFORD CT 06101
04099	CAPCO INC	1328 WINTERS AVE PO BOX 1028	GRAND JUNCTION CO 81502
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
05292	ITT COMPONENTS DIV		CLIFTON NJ
05347	ULTRONIX INC	461 N 22ND ST	GRAND JUNCTION CO 81501
05397	UNION CARBIDE CORP MATERIALS SYSTEMS DIV	11901 MADISON AVE	CLEVELAND OH 44101
05464	INDUSTRIAL ELECTRONIC ENGINEERS INC	7720 LEMONA AVE	VAN NUYS CA 91405-1136
05574	VIKING CONNECTORS INC	21001 NORDHOFF ST	CHATSWORTH CA 91311
05828	GENERAL INSTRUMENT CORP GOVERNMENT SYSTEMS DIV	600 W JOHN ST	HICKSVILLE NY 11802
07088	KELVIN ELECTRIC CO	5907 NOBLE AVE	VAN NUYS CA 91411
07263	FAIRCHILD SEMICONDUCTOR CORP NORTH AMERICAN SALES SUB OF SCHLUMBERGER LTD MS 118	10400 RIDGEVIEW CT	CUPERTINO CAW CA 95014
07716	TRW INC TRW ELECTRONICS COMPONENTS TRW IRC FIXED RESISTORS/BURLINGTON	2850 MT PLEASANT AVE	BURLINGTON IA 52601
09019	GENERAL ELECTRIC CO POWER ELECTRONICS SYSTEMS DEPT	ELECTRONICS PARK BLDG 7	SYRACUSE NY 13221
10389	LICON DIV OF ILLINOIS TOOL WORKS INC	1714 N DAMEN AVE	CHICAGO IL 60647-5509
11236	CTS CORP BERNE DIV THICK FILM PRODUCTS GROUP	406 PARR ROAD	BERNE IN 46711-9506
12633	FIFTH DIMENSION INC	801 NEW YORK AVE	TRENTON NJ 08638-3913
12954	MICROSEMI CORP	8700 E THOMAS RD P O BOX 1390	SCOTTSDALE AZ 85252
12969	UNITRODE CORP	580 PLEASANT ST	WATERTOWN MA 02172
14433	ITT SEMICONDUCTORS DIV		WEST PALM BEACH FL
14552	MICRO/SEMICONDUCTOR CORP	2830 S FAIRVIEW ST	SANTA ANA CA 92704
14752	ELECTRO CUBE INC	1710 S DEL MAR AVE	SAN GABRIEL CA 91776-3825
15636	ELEC-TROL INC	26477 N GOLDEN VALLEY RD	SAUGUS CA 91350-2621
17856	SILICONIX INC	2201 LAURELWOOD RD	SANTA CLARA CA 95054
18324	SIGNETICS CORP	811 E ARQUES	SUNNYVALE CA 94086
19701	MEPCO/CENTRALAB A NORTH AMERICAN PHILIPS CO	P O BOX 760	MINERAL WELLS TX 76067-0760
22526	DU PONT E I DE NEMOURS AND CO INC DU PONT CONNECTOR SYSTEMS DIV MILITARY PRODUCTS GROUP	515 FISHING CREEK RD	NEW CUMBERLAND PA 17070-3007
24355	ANALOG DEVICES INC	RT 1 INDUSTRIAL PK PO BOX 9106	NORWOOD MA 02062
24546	CORNING GLASS WORKS	550 HIGH ST	BRADFORD PA 16701-3737

CROSS INDEX - MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip Code
25403	AMPEREX ELECTRONIC CORP SEMICONDUCTOR SOLID STATE AND ACTIVE DEVICES-ELECTRO OPTICAL DEVICES	PROVIDENCE PIKE	SLATERSVILLE RI 02876
26769	MEPCO/ELECTRA INC A NORTH AMERICAN PHILIPS COMPANY	5900 AUSTRALIAN AVE	WEST PALM BEACH FL 33407
27014	NATIONAL SEMICONDUCTOR CORP	2900 SEMICONDUCTOR DR	SANTA CLARA CA 95051
31433	UNION CARBIDE CORP ELECTRONICS DIV	PO BOX 5928	GREENVILLE SC 29606
32293	INTERSIL INC SUB OF GENERAL ELECTRIC CO	10600 RIDGEVIEW COURT	CUPERTINO CA 95014-0704
32997	BOURNS INC TRIMPOT DIV	1200 COLUMBIA AVE	RIVERSIDE CA 92507-2114
33095	SPECTRUM CONTROL INC	8061 AVONIA RD	FAIRVIEW PA 16415
33256	HYBRID SYSTEMS CORP	SUBURBAN INDUSTRIAL PARK 22 LINNELL CIRCLE	BILLERICA MA 01821
34335	ADVANCED MICRO DEVICES	901 THOMPSON PL	SUNNYVALE CA 94086-4518
34630	K AND L/QUARTZTEK INC	3940 W MONTECITO	PHOENIX AZ 85019
49956	RAYTHEON CO EXECUTIVE OFFICES	141 SPRING ST	LEXINGTON MA 02173
50088	MOSTEK CORP	1400 UPFIELD DR	CARROLLTON TX 75006
50434	HEWLETT-PACKARD CO OPTOELECTRONICS DIV	370 W TRIMBLE RD	SAN JOSE CA 95131
51642	CENTRE ENGINEERING INC	2820 E COLLEGE AVE	STATE COLLEGE PA 16801
51984	NEC AMERICA INC	2741 PROSPERITY AVE	FAIRFAX VA 22031-4308
52763	STETTNER ELECTRONICS INC	6135 AIRWAYS BLVD PO BOX 21947	CHATTANOOGA TN 37421
52769	SPRAGUE-GOODMAN ELECTRONICS INC	134 FULTON AVE	GARDEN CITY PARK NY 11040
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
57027	TRW INC TRW IRC RESISTORS	4222 S STAPLES	CORPUS CHRISTI TX 78411
57668	ROHM CORP	16931 MILLIKEN AVE	IRVINE CA 92713
58361	GENERAL INSTRUMENT CORP OPTOELECTRONICS DIV	3400 HILLVIEW AVE	PALO ALTO CA 94304-1319
58854	GTE PRODUCTS CORP LIGHTING PRODUCTS GROUP	60 BOSTON ST	SALEM MA 01970-2147
59492	K AND L QUARTZTEK DIV OF K AND L MICROWAVE INC SUB OF DOVER CORP	20 S 48TH AVE	PHOENIX AZ 85043-3820
59660	TUSONIX INC	2155 N FORBES BLVD	TUCSON, ARIZONA 85705
59821	MEPCO/CENTRALAB A NORTH AMERICAN PHILIPS CO	7158 MERCHANT AVE	EL PASO TX 79915-1207
71400	BUSSMANN DIV OF COOPER INDUSTRIES INC	114 OLD STATE RD PO BOX 14460	ST LOUIS MO 63178
71482	CLARE DIV OF GENERAL INSTRUMENTS CORP	3101 W PRATT BLVD	CHICAGO IL 60645-4125
72982	ERIE SPECIALTY PRODUCTS INC	645 W 11TH ST	ERIE PA 16512
75042	TRW INC TRW ELECTRONIC COMPONENTS IRC FIXED RESISTORS PHILADELPHIA DIV	401 N BROAD ST	PHILADELPHIA PA 19108-1001
75915	LITTELFUSE INC	800 E NORTHWEST HWY	DES PLAINES IL 60016
76493	BELL INDUSTRIES INC JW MILLER DIV	19070 REYES AVE PO BOX 5825	COMPTON CA 90224-5825
80009	TEKTRONIX INC	4900 S W GRIFFITH DR P O BOX 500	BEAVERTON OR 97077
81073	GRAYHILL INC	561 HILLGROVE AVE PO BOX 10373	LA GRANGE IL 60525-5914
81483	INTERNATIONAL RECTIFIER	9220 SUNSET BLVD P O BOX 2321 TERMINAL ANNEX	LOS ANGELES CA 90069-3501
91637	DALE ELECTRONICS INC	2064 12TH AVE PO BOX 609	COLUMBUS NE 68601-3632
C0130	LEMOSA INC	2015 SECOND ST.	BERKELEY CA 94710
S0545	NIPPON ELECTRIC CO LTD		TOKYO JAPAN
TK0271	COMPONENT CONCEPTS INC	3229 PINE ST	EVERETT WA 98201-4536
TK0768	SUPERTEX INC	1225 BORDEAUX DRIVE	SUNNYVALE CA 94086

CROSS INDEX - MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip Code
TK0987	SEMI PROCESSES INC	1971 N CAPITOL AVE	SAN JOSE CA 95132
TK1016	TOSHIBA AMERICA INC ELECTRONIC COMPONENTS DIV BUSINESS SECTOR	2692 DOW AVE	TUSTIN CA 92680
TK1320	PLANVIEW ELECTRONICS TADIRAN	8 MANETTO HILL RD	PLAINVIEW NY 11803
TK1345	ZMAN AND ASSOCIATES	7633 S 180TH	KENT WA 98032
TK1375	ESAM	PO BOX 376	GRANTS PASS OR 97526
TK1483	TEKA PRODUCTS INC	45 SALEM ST	PROVIDENCE RI 02907
TK1855	ALEPH INTERNATIONAL CORP	1026 GRISWOLD AVE	SAN FERNANDO CA 91340
TK2042	ZMAN & ASSOCIATES	7633 SO. 180TH	KENT, WA 98032

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A1	670-6075-01			CIRCUIT BD ASSY:FRONT PANEL	80009	670-6075-01
A2	670-6076-00			CIRCUIT BD ASSY:MAIN INTERCONNECT	80009	670-6076-00
A3	670-6081-00			CIRCUIT BD ASSY:TIME INTERFACE	80009	670-6081-00
A3A1	670-6077-00			CIRCUIT BD ASSY:OFFSET PLL 388-6572-01	80009	670-6077-00
A3A2	670-6078-00			CIRCUIT BD ASSY:SLEWING CONTROL	80009	670-6078-00
A3A3	670-6079-00			CIRCUIT BD ASSY:VCO,50MHZ	80009	670-6079-00
A3A4	670-6080-01			CIRCUIT BD ASSY:COUNTER	80009	670-6080-01
A3A5	670-6080-01			CIRCUIT BD ASSY:COUNTER	80009	670-6080-01
A3A6	670-6083-00			CIRCUIT BD ASSY:STEERING	80009	670-6083-00
A3A7	670-6179-00			CIRCUIT BD ASSY:VCO,100MHZ	80009	670-6179-00
A3A8	670-6082-00			CIRCUIT BD ASSY:MAIN PLL	80009	670-6082-00
A4	670-6084-00			CIRCUIT BD ASSY:TIME MARK	80009	670-6084-00
A4	670-6203-00			CIRCUIT BD ASSY:TIME MARK (OPTION 01 ONLY)	80009	670-6203-00
A5	670-6086-01			CIRCUIT BD ASSY:PS MAIN	80009	670-6086-01
A5A1	670-6085-01			CIRCUIT BD ASSY:PS ISOLATOR	80009	670-6085-01
A5A2	670-6087-00			CIRCUIT BD ASSY:PS INTERFACE	80009	670-6087-00
A6	670-6088-04	B050000	B063791	CIRCUIT BD ASSY:REFERENCE	80009	670-6088-04
A6	670-6088-05	B063792	B063834	CIRCUIT BD ASSY:REFERENCE (CG5001 ONLY)	80009	670-6088-05
A6	670-6088-06	B063835	B063843	CIRCUIT BD ASSY:REFERENCE (CG5001 ONLY)	80009	670-6088-06
A6	670-6088-07	B063844	B063948	CIRCUIT BD ASSY:REFERENCE (CG5001 ONLY)	80009	670-6088-07
A6	670-6088-05	B063792	B063864	CIRCUIT BD ASSY:REFERENCE (CG551AP ONLY)	80009	670-6088-05
A6	670-6088-07	B063865	B063948	CIRCUIT BD ASSY:REFERENCE (CG551AP ONLY)	80009	670-6088-07
A6	670-6088-08	B063949	B063971	CIRCUIT BD ASSY:REFERENCE	80009	670-6088-08
A6	670-6088-09	B063971	B064184	CIRCUIT BD ASSY:REFERENCE	80009	670-6088-09
A6	670-6088-10	B064185		CIRCUIT BD ASSY:REFERENCE	80009	670-6088-10
A7	672-0102-02	B050000	B063791	CIRCUIT BD ASSY:ATTENUATOR COMP	80009	672-0102-02
A7	670-6089-05	B063792		CIRCUIT BD ASSY:OUTPUT	80009	670-6089-05
A7A1	670-7509-00	B050000	B063791	CIRCUIT BD ASSY:ATTENUATOR COMP	80009	670-7509-00
A8	670-6221-00			CIRCUIT BD ASSY:HIGH EDGE	80009	670-6221-00
A8A1	670-7386-00			CIRCUIT BD ASSY:GPIB INTFC (CG5001 ONLY-NO ELECTRICAL PARTS)	80009	670-7386-00
A9	670-8273-00	B050000	B063948	CIRCUIT BD ASSY:CPU (CG551AP ONLY)	80009	670-8273-00
A9	672-0174-00	B063945	B064083	CIRCUIT BD ASSY:CPU (CG551AP ONLY)	80009	672-0174-00
A9	670-8522-00	B050000	B063948	CIRCUIT BD ASSY:CPU (CG5001 ONLY)	80009	670-8522-00
A9	672-0175-00	B063949	B064083	CIRCUIT BD ASSY:CPU (CG5001 ONLY)	80009	672-0175-00
A9	672-0174-01	B064084		CIRCUIT BD ASSY:CPU	80009	672-0174-01
A1	670-6075-01			CIRCUIT BD ASSY:FRONT PANEL	80009	670-6075-01
A1C1221	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A1C1530	281-0814-00			CAP,FXD,CER DI:100 PF,10%,100V	04222	MA101A101KAA
A1DS1001	150-1048-00			LAMP,LED RDOUT:ORANGE,7 SEG,1 DIGIT	58361	Q3383/MAN4640A
A1DS1002	150-1048-00			LAMP,LED RDOUT:ORANGE,7 SEG,1 DIGIT	58361	Q3383/MAN4640A
A1DS1031	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1101	150-1114-00			LAMP,LED RDOUT:16 SEGMENT NUMERIC,4-DIGIT	50434	QDSP-6551
A1DS1121	150-0093-01			LAMP,INCAND:5V,0.06A,6833AS15,WIRE LD SEL	58854	6833AS15
A1DS1131	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1132	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1201	150-1070-00			LT EMITTING DIO:RED,635NM,35MA MAX	05464	LL 7124R
A1DS1202	150-1048-00			LAMP,LED RDOUT:ORANGE,7 SEG,1 DIGIT	58361	Q3383/MAN4640A
A1DS1203	150-1048-00			LAMP,LED RDOUT:ORANGE,7 SEG,1 DIGIT	58361	Q3383/MAN4640A

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A1DS1211	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1231	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1301	150-1070-00			LT EMITTING DIO:RED,635NM,35MA MAX	05464	LL 7124R
A1DS1302	150-1070-00			LT EMITTING DIO:RED,635NM,35MA MAX	05464	LL 7124R
A1DS1311	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1312	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1401	150-1048-00			LAMP,LED RDOUT:ORANGE,7 SEG,1 DIGIT	58361	Q3383/MAN4640A
A1DS1402	150-1048-00			LAMP,LED RDOUT:ORANGE,7 SEG,1 DIGIT	58361	Q3383/MAN4640A
A1DS1403	150-1070-00			LT EMITTING DIO:RED,635NM,35MA MAX	05464	LL 7124R
A1DS1411	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1412	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1413	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1414	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1421	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1422	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1423	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1424	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1425	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1431	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1432	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1501	150-1114-00			LAMP,LED RDOUT:16 SEGMENT NUMERIC,4-DIGIT	50434	QDSP-6551
A1DS1511	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1521	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1522	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1531	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1601	150-1070-00			LT EMITTING DIO:RED,635NM,35MA MAX	05464	LL 7124R
A1DS1611	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1621	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1DS1701	150-1070-00			LT EMITTING DIO:RED,635NM,35MA MAX	05464	LL 7124R
A1DS1702	150-1070-00			LT EMITTING DIO:RED,635NM,35MA MAX	05464	LL 7124R
A1DS1703	150-1070-00			LT EMITTING DIO:RED,635NM,35MA MAX	05464	LL 7124R
A1DS1721	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A1J1330	131-1426-00			CONN,RCPT,ELEC:RTANGLE HEADER,1 X 36	22526	65524-136
A1J1431	131-1003-00			CONN,RCPT,ELEC:CKT BD MT,3 PRONG	80009	131-1003-00
A1J1435	131-1426-00			CONN,RCPT,ELEC:RTANGLE HEADER,1 X 36	22526	65524-136
A1J1521	131-2401-00			CONN,RCPT,ELEC:2 X 25,MALE	TK1483	082-2543-SD10
A1J1630	131-1426-00			CONN,RCPT,ELEC:RTANGLE HEADER,1 X 36	22526	65524-136
A1L1730	108-0328-00			COIL,RF:FIXED,275UH	TK1345	108-0328-00
A1Q1121	151-0629-00			SEMICOND DVC,PH:NPN,SI,0.1W,TO-18	07263	FPT 110
A1Q1122	151-0629-00			SEMICOND DVC,PH:NPN,SI,0.1W,TO-18	07263	FPT 110
A1Q1123	151-0629-00			SEMICOND DVC,PH:NPN,SI,0.1W,TO-18	07263	FPT 110
A1Q1124	151-0629-00			SEMICOND DVC,PH:NPN,SI,0.1W,TO-18	07263	FPT 110
A1R1301	315-0300-00			RES,FXD,FILM:30 OHM,5%,0.25W	19701	5043CX30R00J
A1R1302	315-0300-00			RES,FXD,FILM:30 OHM,5%,0.25W	19701	5043CX30R00J
A1R1303	315-0300-00			RES,FXD,FILM:30 OHM,5%,0.25W	19701	5043CX30R00J
A1R1311	315-0300-00			RES,FXD,FILM:30 OHM,5%,0.25W	19701	5043CX30R00J
A1R1312	315-0300-00			RES,FXD,FILM:30 OHM,5%,0.25W	19701	5043CX30R00J
A1R1313	315-0300-00			RES,FXD,FILM:30 OHM,5%,0.25W	19701	5043CX30R00J
A1R1331	323-0097-00			RES,FXD,FILM:100 OHM,1%,0.5W,TC=T0	91637	CMF65116G100R0F
A1R1332	323-0097-00			RES,FXD,FILM:100 OHM,1%,0.5W,TC=T0	91637	CMF65116G100R0F
A1R1601	315-0300-00			RES,FXD,FILM:30 OHM,5%,0.25W	19701	5043CX30R00J
A1R1602	315-0300-00			RES,FXD,FILM:30 OHM,5%,0.25W	19701	5043CX30R00J
A1R1603	315-0300-00			RES,FXD,FILM:30 OHM,5%,0.25W	19701	5043CX30R00J
A1R1604	315-0300-00			RES,FXD,FILM:30 OHM,5%,0.25W	19701	5043CX30R00J
A1R1605	315-0300-00			RES,FXD,FILM:30 OHM,5%,0.25W	19701	5043CX30R00J
A1R1611	315-0300-00			RES,FXD,FILM:30 OHM,5%,0.25W	19701	5043CX30R00J
A1R1612	315-0300-00			RES,FXD,FILM:30 OHM,5%,0.25W	19701	5043CX30R00J

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A1R1613	315-0300-00			RES,FXD,FILM:30 OHM,5%,0.25W	19701	5043CX30R00J
A1R1614	315-0300-00			RES,FXD,FILM:30 OHM,5%,0.25W	19701	5043CX30R00J
A1R1615	315-0300-00			RES,FXD,FILM:30 OHM,5%,0.25W	19701	5043CX30R00J
A1R1621	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A1R1622	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A1R1623	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A1R1624	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A1R1721	315-0361-00			RES,FXD,FILM:360 OHM,5%,0.25W	19701	5043CX360R0J
A1R1722	315-0361-00			RES,FXD,FILM:360 OHM,5%,0.25W	19701	5043CX360R0J
A1S1011	263-0019-30			SWITCH PB ASSY:MOMENTARY	80009	263-0019-30
A1S1031	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1031	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1101	263-0019-04	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-04
A1S1101	263-0117-00	B064276		SWITCH PB ASSY:MOMENTARY	80009	263-0117-00
A1S1121	263-0027-00			SWITCH,ROTARY:OPTICAL	80009	263-0027-00
A1S1131	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1131	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1132	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1132	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1211	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1211	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1231	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1231	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1311	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1311	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1312	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1312	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1321	263-0019-03			SWITCH PB ASSY:MOMENTARY	80009	263-0019-03
A1S1322	263-0019-03			SWITCH PB ASSY:MOMENTARY	80009	263-0019-03
A1S1323	263-0019-03			SWITCH PB ASSY:MOMENTARY	80009	263-0019-03
A1S1324	263-0019-03			SWITCH PB ASSY:MOMENTARY	80009	263-0019-03
A1S1325	263-0019-03			SWITCH PB ASSY:MOMENTARY	80009	263-0019-03
A1S1326	263-0019-03			SWITCH PB ASSY:MOMENTARY	80009	263-0019-03
A1S1331	263-0019-03			SWITCH PB ASSY:MOMENTARY	80009	263-0019-03
A1S1332	263-0019-03			SWITCH PB ASSY:MOMENTARY	80009	263-0019-03
A1S1411	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1411	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1412	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1412	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1413	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1413	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1414	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1414	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1421	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1421	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1422	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1422	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1423	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1423	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1424	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1424	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1425	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1425	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1431	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1431	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1432	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1432	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1511	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A1S1511	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1521	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1521	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1522	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1522	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1523	263-0019-03			SWITCH PB ASSY:MOMENTARY	80009	263-0019-03
A1S1531	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1531	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1611	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1611	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1612	263-0019-03			SWITCH PB ASSY:MOMENTARY	80009	263-0019-03
A1S1621	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1621	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1S1721	263-0019-01	B050000	B064275	SWITCH PB ASSY:MOMENTARY	80009	263-0019-01
A1S1721	263-0113-00	B064276		SWITCH,PB ASSY:MOMENTARY	80009	263-0113-00
A1T1630	120-0459-00			XFMR,TOROID:	80009	120-0459-00
A1TP1730	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A1U1221	156-0736-02			MICROCKT,DGTL:BCD TO DECIMAL DCDR,SCRN	01295	SN74LS42NP3
A2	670-6076-00			CIRCUIT BD ASSY:MAIN INTERCONNECT	80009	670-6076-00
A2C1241	290-0748-00			CAP,FXD,ELCTLT:10UF,+50-20%,25WVDC	54473	ECE-BIEV100S
A2C1541	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A2C1612	290-0748-00			CAP,FXD,ELCTLT:10UF,+50-20%,25WVDC	54473	ECE-BIEV100S
A2C1621	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A2C1631	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A2C1632	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A2C1711	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A2C1741	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A2J1011	131-2063-00			CONN,RCPT,ELEC:CIRCUIT BOARD,15/30 FEMALE	05574	000-201-4986
A2J1111	131-2063-00			CONN,RCPT,ELEC:CIRCUIT BOARD,15/30 FEMALE	05574	000-201-4986
A2J1411	131-2063-00			CONN,RCPT,ELEC:CIRCUIT BOARD,15/30 FEMALE	05574	000-201-4986
A2J1412	131-2063-00			CONN,RCPT,ELEC:CIRCUIT BOARD,15/30 FEMALE	05574	000-201-4986
A2J1511	131-2063-00			CONN,RCPT,ELEC:CIRCUIT BOARD,15/30 FEMALE	05574	000-201-4986
A2J1611	131-2063-00			CONN,RCPT,ELEC:CIRCUIT BOARD,15/30 FEMALE	05574	000-201-4986
A2J1701	131-2063-00			CONN,RCPT,ELEC:CIRCUIT BOARD,15/30 FEMALE	05574	000-201-4986
A2J1721	131-2063-00			CONN,RCPT,ELEC:CIRCUIT BOARD,15/30 FEMALE	05574	000-201-4986
A2L1711	108-0329-00			COIL,RF:FIXED,2.4UH	TK2042	ORDER BY DESCR
A2Q1031	151-0334-00			TRANSISTOR:NPN,SI,TO-126,SEL	04713	SJE914
A2Q1032	151-0334-00			TRANSISTOR:NPN,SI,TO-126,SEL	04713	SJE914
A2Q1131	151-0334-00			TRANSISTOR:NPN,SI,TO-126,SEL	04713	SJE914
A2Q1132	151-0334-00			TRANSISTOR:NPN,SI,TO-126,SEL	04713	SJE914
A2Q1133	151-0334-00			TRANSISTOR:NPN,SI,TO-126,SEL	04713	SJE914
A2Q1141	151-0190-05	B050000	B064013	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A2Q1141	151-0190-00	B064014		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A2Q1142	151-0190-05	B050000	B064013	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A2Q1142	151-0190-00	B064014		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A2Q1321	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1321	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1322	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1322	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1323	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1323	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1324	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1324	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1325	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1325	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1326	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1326	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1327	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A2Q1327	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1328	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1328	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1331	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1331	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1332	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1332	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1333	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1333	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1334	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1334	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1335	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1335	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1336	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1336	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1421	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1421	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1422	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1422	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1423	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1423	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1424	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1424	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1431	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1431	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1432	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1432	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2Q1433	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A2Q1433	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A2R1131	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A2R1132	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A2R1133	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A2R1134	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A2R1135	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A2R1141	315-0302-00			RES,FXD,FILM:3K OHM,5%,0.25W	57668	NTR25J-E03K0
A2R1142	315-0752-00			RES,FXD,FILM:7.5K OHM,5%,0.25W	57668	NTR25J-E07K5
A2R1211	315-0200-00			RES,FXD,FILM:20 OHM,5%,0.25W	19701	5043CX20R00J
A2R1221	315-0200-00			RES,FXD,FILM:20 OHM,5%,0.25W	19701	5043CX20R00J
A2R1222	315-0200-00			RES,FXD,FILM:20 OHM,5%,0.25W	19701	5043CX20R00J
A2R1223	315-0200-00			RES,FXD,FILM:20 OHM,5%,0.25W	19701	5043CX20R00J
A2R1224	315-0200-00			RES,FXD,FILM:20 OHM,5%,0.25W	19701	5043CX20R00J
A2R1225	315-0200-00			RES,FXD,FILM:20 OHM,5%,0.25W	19701	5043CX20R00J
A2R1226	315-0200-00			RES,FXD,FILM:20 OHM,5%,0.25W	19701	5043CX20R00J
A2R1227	315-0200-00			RES,FXD,FILM:20 OHM,5%,0.25W	19701	5043CX20R00J
A2R1228	315-0200-00			RES,FXD,FILM:20 OHM,5%,0.25W	19701	5043CX20R00J
A2R1229	315-0200-00			RES,FXD,FILM:20 OHM,5%,0.25W	19701	5043CX20R00J
A2R1231	315-0200-00			RES,FXD,FILM:20 OHM,5%,0.25W	19701	5043CX20R00J
A2R1232	315-0200-00			RES,FXD,FILM:20 OHM,5%,0.25W	19701	5043CX20R00J
A2R1233	315-0200-00			RES,FXD,FILM:20 OHM,5%,0.25W	19701	5043CX20R00J
A2R1234	315-0200-00			RES,FXD,FILM:20 OHM,5%,0.25W	19701	5043CX20R00J
A2R1235	315-0200-00			RES,FXD,FILM:20 OHM,5%,0.25W	19701	5043CX20R00J
A2R1236	315-0200-00			RES,FXD,FILM:20 OHM,5%,0.25W	19701	5043CX20R00J
A2R1241	315-0272-00			RES,FXD,FILM:2.7K OHM,5%,0.25W	57668	NTR25J-E02K7
A2R1421	307-0368-00			RES NTWK,FXD,FI:7,500 & 250 OHM,5%,0.025W	03888	A3UT02
A2R1422	307-0368-00			RES NTWK,FXD,FI:7,500 & 250 OHM,5%,0.025W	03888	A3UT02
A2R1431	307-0368-00			RES NTWK,FXD,FI:7,500 & 250 OHM,5%,0.025W	03888	A3UT02
A2R1541	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25W	57668	NTR25J-E100K
A2R1542	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25W	57668	NTR25J-E100K

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A2R1543	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25W	57668	NTR25J-E100K
A2R1544	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25W	57668	NTR25J-E100K
A2R1719	315-0100-00			RES,FXD,FILM:10 OHM,5%,0.25W	19701	5043CX10RR00J
A2R1721	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A2R1741	315-0222-00			RES,FXD,FILM:2.2K OHM,5%,0.25W	57668	NTR25J-E02K2
A2TP1630	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A2TP1632	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A2TP1636	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A2TP1638	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A2U1341	156-1245-00			MICROCKT,LINEAR:7 XSTR,NPN,SI,HV/HIGH CUR	01295	ULN2003AN-P3
A2U1432	156-0469-02			MICROCKT,DGTL:3/8 LINE DCDR,SCRN	01295	SN74LS138NP3
A2U1441	156-0874-02			MICROCKT,DGTL:8 BIT ADDRESSABLE LATCH	04713	SN74LS259NDS
A2U1521	156-0599-01			MICROCKT,DGTL:RAM,THREE STATE,BURN-IN	34335	AM27LS03DCB
A2U1522	156-0599-01			MICROCKT,DGTL:RAM,THREE STATE,BURN-IN	34335	AM27LS03DCB
A2U1531	156-0599-01			MICROCKT,DGTL:RAM,THREE STATE,BURN-IN	34335	AM27LS03DCB
A2U1532	156-0599-01			MICROCKT,DGTL:RAM,THREE STATE,BURN-IN	34335	AM27LS03DCB
A2U1621	156-0720-02			MICROCKT,DGTL:HEX DRVR,4-TO-2 LINE ENABLE	01295	SN74LS368NP3
A2U1631	156-0629-01			MICROCKT,DGTL:30-MHZ PRESETTABLE BIN CNTR	01295	SN74LS197NP3
A2U1641	156-0876-01			MICROCKT,DGTL:HEX SCHMITT TRIGGER,SCRN	27014	MM74C14N
A3	670-6081-00			CIRCUIT BD ASSY:TIME INTERFACE	80009	670-6081-00
A3J1007	131-0589-00			TERMINAL,PIN:0.46 L X 0.025 SQ PH BRZ (QUANTITY OF 4)	22526	48283-029
A3J1010	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ (QUANTITY OF 4)	22526	47359-000
A3J1020	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ (QUANTITY OF 7)	22526	47359-000
A3J1021	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ (QUANTITY OF 3)	22526	47359-000
A3J1027	131-0589-00			TERMINAL,PIN:0.46 L X 0.025 SQ PH BRZ (QUANTITY OF 4)	22526	48283-029
A3J1031	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ (QUANTITY OF 4)	22526	47359-000
A3J1100	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ (QUANTITY OF 7)	22526	47359-000
A3J1106	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ (QUANTITY OF 6)	22526	47359-000
A3J1126	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ (QUANTITY OF 7)	22526	47359-000
A3J1200	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ (QUANTITY OF 5)	22526	47359-000
A3J1204	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ (QUANTITY OF 3)	22526	47359-000
A3J1207	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ (QUANTITY OF 8)	22526	47359-000
A3J1217	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ (QUANTITY OF 3)	22526	47359-000
A3J1220	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ (QUANTITY OF 2)	22526	47359-000
A3J1222	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ (QUANTITY OF 2)	22526	47359-000
A3J1225	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ (QUANTITY OF 8)	22526	47359-000
A3J1230	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ (QUANTITY OF 4)	22526	47359-000
A3J1300	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ (QUANTITY OF 7)	22526	47359-000
A3J1310	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ (QUANTITY OF 5)	22526	47359-000
A3J1315	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ (QUANTITY OF 3)	22526	47359-000
A3J1320	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
				(QUANTITY OF 3)		
A3J1324	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
				(QUANTITY OF 3)		
A3J1403	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
				(QUANTITY OF 4)		
A3J1420	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
				(QUANTITY OF 3)		
A3J1424	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
				(QUANTITY OF 2)		
A3J1427	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
				(QUANTITY OF 5)		
A3J1434	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
				(QUANTITY OF 4)		
A3J1500	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
				(QUANTITY OF 2)		
A3J1502	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
				(QUANTITY OF 7)		
A3J1510	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
				(QUANTITY OF 5)		
A3J1521	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
				(QUANTITY OF 7)		
A3J1533	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
				(QUANTITY OF 6)		
A3J1603	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
				(QUANTITY OF 6)		
A3J1615	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
				(QUANTITY OF 2)		
A3J1620	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
				(QUANTITY OF 8)		
A3A1	670-6077-00			CIRCUIT BD ASSY:OFFSET PLL 388-6572-01	80009	670-6077-00
A3A1C1005	283-0359-00			CAP,FXD,CER DI:1000PF,10%,200V	05397	C330C102K2G5CA
A3A1C1016	283-0108-00			CAP,FXD,CER DI:220PF,10%,200V	31433	C320C221K2G5CA
A3A1C1020	283-0204-00			CAP,FXD,CER DI:0.01UF,20%,50V	04222	SR155E103MAA
A3A1C1030	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3A1C1031	283-0204-00			CAP,FXD,CER DI:0.01UF,20%,50V	04222	SR155E103MAA
A3A1C1032	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A1C1033	283-0000-00			CAP,FXD,CER DI:0.001UF,+100-0%,500V	59660	831-610-Y5U0102P
A3A1C1034	283-0032-00			CAP,FXD,CER DI:470PF,5%,500V	59660	831-000-Z5E0471J
A3A1C1040	283-0204-00			CAP,FXD,CER DI:0.01UF,20%,50V	04222	SR155E103MAA
A3A1C1042	283-0341-00			CAP,FXD,CER DI:0.047UF,10%,100V	04222	SR301C473KAA
A3A1C1100	283-0204-00			CAP,FXD,CER DI:0.01UF,20%,50V	04222	SR155E103MAA
A3A1C1102	283-0330-00			CAP,FXD,CER DI:100PF,5%,50V	05397	C320C101J5R5CA
A3A1C1104	283-0330-00			CAP,FXD,CER DI:100PF,5%,50V	05397	C320C101J5R5CA
A3A1C1110	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A1C1124	283-0010-00			CAP,FXD,CER DI:0.05UF,+80-20%,50V	04222	SR305E503ZAA
A3A1C1126	290-0534-00			CAP,FXD,ELCTLT:1UF,20%,35V	05397	T368A105M035AZ
A3A1C1130	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A1C1132	283-0032-00			CAP,FXD,CER DI:470PF,5%,500V	59660	831-000-Z5E0471J
A3A1C1200	283-0204-00			CAP,FXD,CER DI:0.01UF,20%,50V	04222	SR155E103MAA
A3A1C1201	283-0204-00			CAP,FXD,CER DI:0.01UF,20%,50V	04222	SR155E103MAA
A3A1C1210	283-0204-00			CAP,FXD,CER DI:0.01UF,20%,50V	04222	SR155E103MAA
A3A1C1211	283-0204-00			CAP,FXD,CER DI:0.01UF,20%,50V	04222	SR155E103MAA
A3A1C1242	283-0203-00			CAP,FXD,CER DI:0.47UF,20%,50V	04222	SR305SC474MAA
A3A1C1244	290-0523-00			CAP,FXD,ELCTLT:2.2UF,20%,20V	05397	T368A225M020AS
A3A1CR1010	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A1CR1012	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A1CR1020	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A1CR1022	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A1CR1030	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A1CR1110	152-0536-00			SEMICOND DVC,DI:SW,4V,C132	04713	SMV1110 (MBD101)

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3A1CR1118	152-0536-00			SEMICOND DVC,DI:SW,4V,C132	04713	SMV1110 (MBD101)
A3A1CR1122	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A1CR1140	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A1CR1240	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A1DS1142	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A3A1L1020	108-0249-00			CHOKE,RF:FIXED,12MF	76493	B-4992
A3A1L1210	108-0226-00			COIL,RF:FIXED,100UH	76493	B4257
A3A1L1212	108-0226-00			COIL,RF:FIXED,100UH	76493	B4257
A3A1P1500	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 2)	22526	75377-001
A3A1P1510	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 5)	22526	75377-001
A3A1P1521	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 7)	22526	75377-001
A3A1P1615	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 2)	22526	75377-001
A3A1Q1020	151-0254-00			TRANSISTOR:DARLINGTON,NPN,SI,625MW,TO-92	03508	X38L3118
A3A1Q1030	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A3A1Q1030	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A3A1Q1110	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A3A1Q1110	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A3A1Q1112	151-0441-00			TRANSISTOR:NPN,SI,TO-72	04713	SRF501
A3A1Q1114	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A3A1Q1114	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A3A1Q1116	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A3A1Q1116	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A3A1Q1118	151-0441-00			TRANSISTOR:NPN,SI,TO-72	04713	SRF501
A3A1R1005	315-0181-00			RES,FXD,FILM:180 OHM,5%,0.25W	57668	NTR25J-E180E
A3A1R1008	315-0121-00			RES,FXD,FILM:120 OHM,5%,0.25W	19701	5043CX120R0J
A3A1R1010	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3A1R1012	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3A1R1014	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A1R1016	315-0132-00			RES,FXD,FILM:1.3K OHM,5%,0.25W	57668	NTR25J-E01K3
A3A1R1020	315-0361-00			RES,FXD,FILM:360 OHM,5%,0.25W	19701	5043CX360R0J
A3A1R1030	315-0474-00			RES,FXD,FILM:470K OHM,5%,0.25W	19701	5043CX470K0J92U
A3A1R1031	315-0202-00			RES,FXD,FILM:2K OHM,5%,0.25W	57668	NTR25J-E 2K
A3A1R1032	315-0152-00			RES,FXD,FILM:1.5K OHM,5%,0.25W	57668	NTR25J-E01K5
A3A1R1034	315-0152-00			RES,FXD,FILM:1.5K OHM,5%,0.25W	57668	NTR25J-E01K5
A3A1R1040	315-0152-00			RES,FXD,FILM:1.5K OHM,5%,0.25W	57668	NTR25J-E01K5
A3A1R1042	315-0271-00			RES,FXD,FILM:270 OHM,5%,0.25W	57668	NTR25J-E270E
A3A1R1100	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3A1R1114	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25W	57668	NTR25J-E330E
A3A1R1116	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A3A1R1118	315-0151-00			RES,FXD,FILM:150 OHM,5%,0.25W	57668	NTR25J-E150E
A3A1R1120	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A1R1122	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A1R1124	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A1R1126	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A3A1R1130	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A1R1132	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A1R1134	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A1R1140	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A1R1142	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A1R1144	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A1R1146	315-0222-00			RES,FXD,FILM:2.2K OHM,5%,0.25W	57668	NTR25J-E02K2
A3A1R1148	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A1R1210	315-0132-00			RES,FXD,FILM:1.3K OHM,5%,0.25W	57668	NTR25J-E01K3
A3A1R1212	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3A1R1213	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A3A1R1220	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A3A1R1240	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A1R1242	315-0222-00			RES,FXD,FILM:2.2K OHM,5%,0.25W	57668	NTR25J-E02K2
A3A1T1200	120-0487-00			XFMR,TOROID:	80009	120-0487-00
A3A1TP1100	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A3A1TP1140	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A3A1TP1210	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A3A1TP1220	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A3A1U1000	156-0870-01			MICROCKT,DGTL:BCD DECADE COUNTER,SCREENED	07263	SL81658
A3A1U1002	156-0870-01			MICROCKT,DGTL:BCD DECADE COUNTER,SCREENED	07263	SL81658
A3A1U1030	156-0158-07			MICROCKT,LINEAR:DUAL OPNL AMPL,SCREENED	01295	MC1458JG4
A3A1U1100	156-0517-01	B050000	B064001	MICROCKT,DGTL:DOUBLY BAL MIXER,SCREENED	80009	156-0517-01
A3A1U1100	156-0517-00	B064002		MICROCKT,DGTL:DOUBLY BAL MIXER	01295	TL442CN
A3A1U1130	156-0382-02			MICROCKT,DGTL:QUAD 2 INP NAND GATE BURN	18324	N74LS00NB
A3A1U1220	156-0387-02			MICROCKT,DGTL:DUAL J-K FF,SCRN	04713	SN74LS73NDS
A3A1U1230	156-0382-02			MICROCKT,DGTL:QUAD 2 INP NAND GATE BURN	18324	N74LS00NB
A3A1VR1200	152-0278-00			SEMICOND DVC,DI:ZEN,SI,3V,5%,0.4W,DO-7	80009	152-0278-00
A3A2	670-6078-00			CIRCUIT BD ASSY:SLEWING CONTROL	80009	670-6078-00
A3A2C1103	281-0613-00			CAP,FXD,CER DI:10PF,1%,500V	59660	374-018C0G0100F
A3A2C1110	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3A2C1114	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A2C1119	283-0154-00			CAP,FXD,CER DI:22PF,5%,50V	04222	SR155A220JAA
A3A2CR1001	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A3A2CR1102	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A3A2CR1111	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A3A2CR1112	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A2CR1113	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A3A2P1300	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 7)	22526	75377-001
A3A2P1310	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 5)	22526	75377-001
A3A2P1403	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 4)	22526	75377-001
A3A2Q1103	151-0192-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0192-03
A3A2Q1103	151-0192-00	B064002		TRANSISTOR:SELECTED	04713	SPS8801
A3A2Q1112	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A3A2Q1112	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A3A2Q1113	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A3A2Q1113	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A3A2Q1114	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A3A2Q1114	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A3A2R1010	307-0526-00			RES NTWK,FXD,FI:5,510 OHM,10%,0.125 W	11236	750-61-R510 OHM
A3A2R1101	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A2R1102	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A2R1103	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A2R1110	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A3A2R1111	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A3A2R1112	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A2R1113	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A3A2R1114	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A2R1115	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A3A2U1001	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A3A2U1011	156-0582-03			MICROCKT,DGTL:BINARY UP/DOWN CNTR,SCRN	02735	CD4516 BFX
A3A2U1012	156-0688-01			MICROCKT,DGTL:DUAL J-K MASTER-SLAVE FF,SCRE ENED	04713	MC10135PD/LD
A3A3	670-6079-00			CIRCUIT BD ASSY:VCO,50MHZ	80009	670-6079-00
A3A3C1001	283-0339-00			CAP,FXD,CER DI:0.22UF,10%,50V	05397	C330C224K5R5CA

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3A3C1002	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A3C1011	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3A3C1101	283-0204-00			CAP,FXD,CER DI:0.01UF,20%,50V	04222	SR155E103MAA
A3A3C1102	283-0204-00			CAP,FXD,CER DI:0.01UF,20%,50V	04222	SR155E103MAA
A3A3C1103	283-0197-00			CAP,FXD,CER DI:470PF,5%,50V	04222	SR205A471JAA
A3A3C1104	283-0204-00			CAP,FXD,CER DI:0.01UF,20%,50V	04222	SR155E103MAA
A3A3C1111	283-0204-00			CAP,FXD,CER DI:0.01UF,20%,50V	04222	SR155E103MAA
A3A3C1112	290-0536-00			CAP,FXD,ELCTLT:10UF,20%,25V TANTALUM	05397	T368B106M025AS
A3A3C1113	283-0204-00			CAP,FXD,CER DI:0.01UF,20%,50V	04222	SR155E103MAA
A3A3CR1011	152-0269-00			SEMICOND DVC,DI:VVC,SI,35V,33PF,DO-7	04713	SMV1263
A3A3CR1012	152-0269-00			SEMICOND DVC,DI:VVC,SI,35V,33PF,DO-7	04713	SMV1263
A3A3L1011	120-1307-00			TRANSFORMER,RF:TOROID	TK1345	[120-1307-00
A3A3L1012	108-0408-00			COIL,RF:FIXED,91NH	TK1345	108-0408-00
A3A3L1111	120-0342-00			XFMR,TOROID:	TK1345	120-0342-00
A3A3L1112	120-0342-00			XFMR,TOROID:	TK1345	120-0342-00
A3A3P1320	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 3)	22526	75377-001
A3A3P1420	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 3)	22526	75377-001
A3A3P1424	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 2)	22526	75377-001
A3A3P1434	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 4)	22526	75377-001
A3A3Q1001	151-0441-00			TRANSISTOR:NPN,SI,TO-72	04713	SRF501
A3A3Q1002	151-0441-00			TRANSISTOR:NPN,SI,TO-72	04713	SRF501
A3A3Q1011	151-0367-00			TRANSISTOR:NPN,SI,X-55	04713	SPS 8811
A3A3Q1012	151-0367-00			TRANSISTOR:NPN,SI,X-55	04713	SPS 8811
A3A3Q1101	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A3A3Q1101	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A3A3R1003	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A3A3R1004	315-0121-00			RES,FXD,FILM:120 OHM,5%,0.25W	19701	5043CX120R0J
A3A3R1005	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A3A3R1006	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A3A3R1011	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A3A3R1103	315-0821-00			RES,FXD,FILM:820 OHM,5%,0.25W	19701	5043CX820R0J
A3A3R1104	315-0152-00			RES,FXD,FILM:1.5K OHM,5%,0.25W	57668	NTR25J-E01K5
A3A3R1111	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A3R1112	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A3A3R1113	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A3A3R1114	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A3T1101	120-1105-00			TRANSFORMER,RF:TOROID	TK1345	120-1105-00
A3A3W1002	131-0566-00			BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225 L	24546	OMA 07
A3A3W1101	131-0566-00			BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225 L	24546	OMA 07
A3A4	670-6080-01			CIRCUIT BD ASSY:COUNTER	80009	670-6080-01
A3A4C1010	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A4C1020	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A4C1100	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3A4C1101	283-0359-00			CAP,FXD,CER DI:1000PF,10%,200V	05397	C330C102K2G5CA
A3A4C1128	281-0823-00			CAP,FXD,CER DI:470PF,10%,50V	04222	MA105A471KAA
A3A4C1218	283-0359-00			CAP,FXD,CER DI:1000PF,10%,200V	05397	C330C102K2G5CA
A3A4CR1103	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A4CR1128	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A3A4L1015	108-0249-00			CHOKE,RF:FIXED,12MF	76493	B-4992
A3A4P1010	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 4)	22526	75377-001
A3A4P1100	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 7)	22526	75377-001
A3A4P1207	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 8)	22526	75377-001

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3A4R1012	307-0526-00			RES NTWK,FXD,FI:5,510 OHM,10%,0.125 W	11236	750-61-R510 OHM
A3A4R1015	315-0181-00			RES,FXD,FILM:180 OHM,5%,0.25W	57668	NTR25J-E180E
A3A4R1025	315-0121-00			RES,FXD,FILM:120 OHM,5%,0.25W	19701	5043CX120R0J
A3A4R1101	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A3A4R1112	307-0526-00			RES NTWK,FXD,FI:5,510 OHM,10%,0.125 W	11236	750-61-R510 OHM
A3A4R1115	315-0301-00			RES,FXD,FILM:300 OHM,5%,0.25W	57668	NTR25J-E300E
A3A4R1128	315-0222-00			RES,FXD,FILM:2.2K OHM,5%,0.25W	57668	NTR25J-E02K2
A3A4R1200	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3A4R1202	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3A4R1204	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A4R1205	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3A4R1210	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3A4R1212	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3A4U1000	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A3A4U1010	156-1038-01	B050000	B064186	MICROCKT,DGTL:4 BIT BINARY COUNTER	07263	SL81660
A3A4U1010	156-2142-01	B064187		MICROCKT,DGTL:ECL,4-BIT COUNTER	80009	156-2142-01
A3A4U1100	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A3A4U1110	156-1038-01			MICROCKT,DGTL:4 BIT BINARY COUNTER	07263	SL81660
A3A4U1112	156-0182-02			MICROCKT,DGTL:TRIPLE 2-3-2 INPUT GATE,SCREENED	04713	MC10105PD/LD
A3A4U1200	156-0458-01			MICROCKT,DGTL:QUAD AND GATE 2 INP	04713	MC10104PD/LD
A3A4U1210	156-0880-02			MICROCKT,DGTL:DUAL D MASTER SLAVE FF,SCRN	04713	MC10231PD/LD
A3A5	670-6080-01			CIRCUIT BD ASSY:COUNTER	80009	670-6080-01
A3A5C1010	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A5C1020	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A5C1100	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3A5C1101	283-0359-00			CAP,FXD,CER DI:1000PF,10%,200V	05397	C330C102K2G5CA
A3A5C1128	281-0823-00			CAP,FXD,CER DI:470PF,10%,50V	04222	MA105A471KAA
A3A5C1218	283-0359-00			CAP,FXD,CER DI:1000PF,10%,200V	05397	C330C102K2G5CA
A3A5CR1103	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A5CR1128	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A3A5L1015	108-0249-00			CHOKE,RF:FIXED,12MF	76493	B-4992
A3A5P1020	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 7)	22526	75377-001
A3A5P1031	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 4)	22526	75377-001
A3A5P1225	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 8)	22526	75377-001
A3A5R1012	307-0526-00			RES NTWK,FXD,FI:5,510 OHM,10%,0.125 W	11236	750-61-R510 OHM
A3A5R1015	315-0181-00			RES,FXD,FILM:180 OHM,5%,0.25W	57668	NTR25J-E180E
A3A5R1025	315-0121-00			RES,FXD,FILM:120 OHM,5%,0.25W	19701	5043CX120R0J
A3A5R1101	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A3A5R1112	307-0526-00			RES NTWK,FXD,FI:5,510 OHM,10%,0.125 W	11236	750-61-R510 OHM
A3A5R1115	315-0301-00			RES,FXD,FILM:300 OHM,5%,0.25W	57668	NTR25J-E300E
A3A5R1128	315-0222-00			RES,FXD,FILM:2.2K OHM,5%,0.25W	57668	NTR25J-E02K2
A3A5R1200	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3A5R1202	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3A5R1204	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A5R1205	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3A5R1210	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3A5R1212	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3A5U1000	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A3A5U1010	156-1038-01			MICROCKT,DGTL:4 BIT BINARY COUNTER	07263	SL81660
A3A5U1100	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A3A5U1110	156-1038-01	B050000	B064186	MICROCKT,DGTL:4 BIT BINARY COUNTER	07263	SL81660
A3A5U1110	156-2142-01	B064187		MICROCKT,DGTL:ECL,4-BIT COUNTER	80009	156-2142-01
A3A5U1112	156-0182-02			MICROCKT,DGTL:TRIPLE 2-3-2 INPUT GATE,SCREENED	04713	MC10105PD/LD

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3A5U1200	156-0458-01			MICROCKT,DGTL:QUAD AND GATE 2 INP	04713	MC10104PD/LD
A3A5U1210	156-0880-02			MICROCKT,DGTL:DUAL D MASTER SLAVE FF,SCRN	04713	MC10231PD/LD
A3A6	670-6083-00			CIRCUIT BD ASSY:STEERING	80009	670-6083-00
A3A6C1005	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A6C1010	290-0743-00			CAP,FXD,ELCTLT:100UF,+50%-20%,16WVDC	54473	ECE-B16V100L
A3A6C1020	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A6C1021	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3A6C1101	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A6C1105	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A6C1125	283-0198-00			CAP,FXD,CER DI:0.22UF,20%,50V	05397	C330C224M5U1CA
A3A6C1130	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A6C1133	283-0347-00			CAP,FXD,CER DI:68PF,5%,100V	72982	8121A108P3K680J
A3A6C1201	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A6C1220	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A6C1225	283-0347-00			CAP,FXD,CER DI:68PF,5%,100V	72982	8121A108P3K680J
A3A6C1228	281-0791-00			CAP,FXD,CER DI:270PF,10%,100V	04222	MA101C271KAA
A3A6C1301	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A6C1302	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3A6C1401	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A6C1402	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3A6C1403	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3A6C1404	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3A6CR1020	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A6CR1030	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A6CR1031	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A6CR1130	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A6CR1131	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A6CR1132	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A6CR1133	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A6CR1230	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A6CR1231	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A6CR1232	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A6CR1233	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A6CR1310	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A3A6DS1130	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A3A6L1101	120-0342-00			XFMR,TOROID:	TK1345	120-0342-00
A3A6L1301	120-0342-00			XFMR,TOROID:	TK1345	120-0342-00
A3A6P1200	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 5)	22526	75377-001
A3A6P1204	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 3)	22526	75377-001
A3A6P1217	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 3)	22526	75377-001
A3A6P1315	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 3)	22526	75377-001
A3A6P1427	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 5)	22526	75377-001
A3A6P1502	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 7)	22526	75377-001
A3A6P1533	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 6)	22526	75377-001
A3A6P1603	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 6)	22526	75377-001
A3A6P1620	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 8)	22526	75377-001
A3A6Q1001	151-0625-01			TRANSISTOR:SCREENED	80009	151-0625-01
A3A6Q1002	151-0281-00			TRANSISTOR:NPN,SI,400 MILLIWATTS	80009	151-0281-00
A3A6Q1010	151-0302-01	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0302-01
A3A6Q1010	151-0302-00	B064002		TRANSISTOR:NPN,SI,TO-18	04713	ST899

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3A6Q1011	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A3A6Q1011	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A3A6Q1012	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A3A6Q1012	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A3A6Q1020	151-0302-01			TRANSISTOR:SELECTED	80009	151-0302-01
A3A6Q1021	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A3A6Q1021	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A3A6Q1101	151-0625-01			TRANSISTOR:SCREENED	80009	151-0625-01
A3A6Q1102	151-0281-00			TRANSISTOR:NPN,SI,400 MILLIWATTS	80009	151-0281-00
A3A6Q1230	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A3A6Q1230	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A3A6Q1231	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A3A6Q1231	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A3A6Q1301	151-0221-05			TRANSISTOR:SCREENED	TK0271	151-0221-05
A3A6R1001	301-0101-00			RES,FXD,FILM:100 OHM,5%,0.5W	01121	EB1015
A3A6R1002	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A6R1010	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A6R1011	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A6R1012	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A6R1013	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A6R1020	315-0222-00			RES,FXD,FILM:2.2K OHM,5%,0.25W	57668	NTR25J-E02K2
A3A6R1021	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A3A6R1022	315-0222-00			RES,FXD,FILM:2.2K OHM,5%,0.25W	57668	NTR25J-E02K2
A3A6R1023	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A6R1024	315-0222-00			RES,FXD,FILM:2.2K OHM,5%,0.25W	57668	NTR25J-E02K2
A3A6R1030	315-0222-00			RES,FXD,FILM:2.2K OHM,5%,0.25W	57668	NTR25J-E02K2
A3A6R1031	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A6R1035	315-0222-00			RES,FXD,FILM:2.2K OHM,5%,0.25W	57668	NTR25J-E02K2
A3A6R1100	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A6R1101	301-0101-00			RES,FXD,FILM:100 OHM,5%,0.5W	01121	EB1015
A3A6R1110	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A3A6R1111	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A3A6R1112	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A3A6R1113	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A3A6R1130	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A6R1131	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A6R1132	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A6R1133	315-0302-00			RES,FXD,FILM:3K OHM,5%,0.25W	57668	NTR25J-E03K0
A3A6R1201	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A6R1220	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A6R1221	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A6R1225	315-0302-00			RES,FXD,FILM:3K OHM,5%,0.25W	57668	NTR25J-E03K0
A3A6R1230	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1
A3A6R1231	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1
A3A6R1301	315-0180-00			RES,FXD,FILM:18 OHM,5%,0.25W	19701	5043CX18R00J
A3A6R1302	315-0180-00			RES,FXD,FILM:18 OHM,5%,0.25W	19701	5043CX18R00J
A3A6R1303	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3A6R1304	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3A6R1310	307-0526-00			RES NTWK,FXD,FI:5,510 OHM,10%,0.125 W	11236	750-61-R510 OHM
A3A6R1410	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A3A6R1411	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A3A6R1412	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A3A6R1413	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3A6R1414	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A6R1415	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3A6R1416	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A6T1401	120-1108-00			TRANSFORMER,RF:BALUN,TD-339	TK1345	120-1108-00
A3A6TP1101	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3A6TP1130	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A3A6TP1301	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A3A6TP1302	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A3A6TP1310	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A3A6U1020	156-0728-02			MICROCKT,DGTL:QUAD 2 INP GATE W/OC OUT,SCRN	01295	SN74LS09NP3
A3A6U1030	156-0384-02			MICROCKT,DGTL:QUAD 2-INP NAND GATE,SCRN	07263	74LS03PCQR
A3A6U1110	156-0784-02			MICROCKT,DGTL:SYNC 4-BIT BINARY COUNTER	01295	SN74LS163AN P3
A3A6U1120	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A3A6U1121	156-0366-02			MICROCKT,DGTL:DUAL D FLIP-FLOP,SCREENED	02735	CD4013BFX
A3A6U1130	156-0366-02			MICROCKT,DGTL:DUAL D FLIP-FLOP,SCREENED	02735	CD4013BFX
A3A6U1201	156-0382-02			MICROCKT,DGTL:QUAD 2 INP NAND GATE BURN	18324	N74LS00NB
A3A6U1210	156-0784-02			MICROCKT,DGTL:SYNC 4-BIT BINARY COUNTER	01295	SN74LS163AN P3
A3A6U1211	156-0784-02			MICROCKT,DGTL:SYNC 4-BIT BINARY COUNTER	01295	SN74LS163AN P3
A3A6U1220	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A3A6U1221	156-0349-06			MICROCKT,DGTL:QUAD 2 INP NOR GATE	02735	CD4001BFX
A3A6U1230	156-0752-01			MICROCKT,DGTL:DUAL BCD UP COUNTER,SCRN	04713	MC14518BCL
A3A6U1310	156-0642-01			MICROCKT,DGTL:BI QUINARY CNTR,SCREENED	04713	MC10138PD/LD
A3A6U1311	156-0282-00			MICROCKT,DGTL:ECL,DUAL 4-INPUT OR/NOR GATE	04713	MC1660L
A3A6U1410	156-0880-02			MICROCKT,DGTL:DUAL D MASTER SLAVE FF,SCRN	04713	MC10231PD/LD
A3A6W1401	131-0566-00			BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225 L	24546	OMA 07
A3A7	670-6179-00			CIRCUIT BD ASSY:VCO,100MHZ	80009	670-6179-00
A3A7C1001	283-0339-00			CAP,FXD,CER DI:0.22UF,10%,50V	05397	C330C224K5R5CA
A3A7C1002	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A7C1011	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3A7C1101	283-0204-00			CAP,FXD,CER DI:0.01UF,20%,50V	04222	SR155E103MAA
A3A7C1102	283-0204-00			CAP,FXD,CER DI:0.01UF,20%,50V	04222	SR155E103MAA
A3A7C1103	283-0197-00			CAP,FXD,CER DI:470PF,5%,50V	04222	SR205A471JAA
A3A7C1104	283-0204-00			CAP,FXD,CER DI:0.01UF,20%,50V	04222	SR155E103MAA
A3A7C1111	283-0204-00			CAP,FXD,CER DI:0.01UF,20%,50V	04222	SR155E103MAA
A3A7C1112	290-0536-00			CAP,FXD,ELCTLT:10UF,20%,25V TANTALUM	05397	T368B106M025AS
A3A7C1113	283-0204-00			CAP,FXD,CER DI:0.01UF,20%,50V	04222	SR155E103MAA
A3A7CR1011	152-0269-00			SEMICOND DVC,DI:VVC,SI,35V,33PF,DO-7	04713	SMV1263
A3A7CR1012	152-0269-00			SEMICOND DVC,DI:VVC,SI,35V,33PF,DO-7	04713	SMV1263
A3A7L1011	120-1308-00			TRANSFORMER,RF:TOROID	TK1345	120-1308-00
A3A7L1012	108-0408-00			COIL,RF:FIXED,91NH	TK1345	108-0408-00
A3A7L1111	120-0342-00			XFMR,TOROID:	TK1345	120-0342-00
A3A7L1112	120-0342-00			XFMR,TOROID:	TK1345	120-0342-00
A3A7P1220	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 2)	22526	75377-001
A3A7P1222	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 2)	22526	75377-001
A3A7P1230	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 4)	22526	75377-001
A3A7P1324	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 3)	22526	75377-001
A3A7Q1001	151-0441-00			TRANSISTOR:NPN,SI,TO-72	04713	SRF501
A3A7Q1002	151-0441-00			TRANSISTOR:NPN,SI,TO-72	04713	SRF501
A3A7Q1011	151-0367-00			TRANSISTOR:NPN,SI,X-55	04713	SPS 8811
A3A7Q1012	151-0367-00			TRANSISTOR:NPN,SI,X-55	04713	SPS 8811
A3A7Q1101	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A3A7Q1101	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A3A7R1001	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3A7R1002	315-0180-00			RES,FXD,FILM:18 OHM,5%,0.25W	19701	5043CX18R00J
A3A7R1003	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A3A7R1004	315-0121-00			RES,FXD,FILM:120 OHM,5%,0.25W	19701	5043CX120R0J
A3A7R1005	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A3A7R1006	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A3A7R1011	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3A7R1101	315-0180-00			RES,FXD,FILM:18 OHM,5%,0.25W	19701	5043CX18R00J
A3A7R1102	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A3A7R1103	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25W	57668	NTR25J-E330E
A3A7R1104	315-0152-00			RES,FXD,FILM:1.5K OHM,5%,0.25W	57668	NTR25J-E01K5
A3A7R1111	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A7R1112	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A3A7R1113	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A3A7R1114	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A7T1101	120-1105-00			TRANSFORMER,RF:TOROID	TK1345	120-1105-00
A3A8	670-6082-00			CIRCUIT BD ASSY:MAIN PLL	80009	670-6082-00
A3A8C1001	283-0203-00			CAP,FXD,CER DI:0.47UF,20%,50V	04222	SR305SC474MAA
A3A8C1010	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3A8C1012	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A8C1014	283-0203-00			CAP,FXD,CER DI:0.47UF,20%,50V	04222	SR305SC474MAA
A3A8C1020	283-0065-01			CAP,FXD,CER DI:0.001UF,5%,100V	59821	2DDH60L102J
A3A8C1024	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A3A8C1034	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A3A8C1035	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A3A8C1040	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A3A8C1042	283-0238-00			CAP,FXD,CER DI:0.01UF,10%,50V	04222	SR205C103KAA
A3A8C1043	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3A8C1045	283-0187-00			CAP,FXD,CER DI:0.047UF,10%,400V	04222	SR308C473KAA
A3A8C1100	283-0339-00			CAP,FXD,CER DI:0.22UF,10%,50V	05397	C330C224K5R5CA
A3A8C1102	283-0339-00			CAP,FXD,CER DI:0.22UF,10%,50V	05397	C330C224K5R5CA
A3A8C1110	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A8C1112	283-0620-00			CAP,FXD,MICA DI:470PF,1%,300V	00853	D155F471F0
A3A8C1120	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3A8C1122	283-0103-00			CAP,FXD,CER DI:180PF,5%,500V	59821	2DDH73L181J
A3A8C1124	281-0634-00			CAP,FXD,CER DI:10PF,+/-0.25PF,500V	52763	2RDPLZ007 10P0CC
A3A8C1130	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3A8C1132	283-0203-00			CAP,FXD,CER DI:0.47UF,20%,50V	04222	SR305SC474MAA
A3A8C1134	283-0203-00			CAP,FXD,CER DI:0.47UF,20%,50V	04222	SR305SC474MAA
A3A8C1135	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A3A8C1140	283-0107-00			CAP,FXD,CER DI:51PF,5%,200V	04222	SR206A510JAA
A3A8C1210	283-0698-00			CAP,FXD,MICA DI:390PF,1%,500V	00853	D155F391F0
A3A8C1230	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A8C1232	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A8C1240	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A3A8C1242	283-0186-00			CAP,FXD,CER DI:27PF,5%,50V	04222	SR155A 270JAA
A3A8C1244	283-0186-00			CAP,FXD,CER DI:27PF,5%,50V	04222	SR155A 270JAA
A3A8C1246	283-0032-00			CAP,FXD,CER DI:470PF,5%,500V	59660	831-000-Z5E0471J
A3A8CR1012	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A8CR1020	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A8CR1030	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A8CR1031	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A8CR1040	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A8CR1120	152-0536-00			SEMICOND DVC,DI:SW,4V,C132	04713	SMV1110 (MBD101)
A3A8CR1122	152-0536-00			SEMICOND DVC,DI:SW,4V,C132	04713	SMV1110 (MBD101)
A3A8CR1130	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A8CR1132	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A8CR1133	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A8CR1134	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A3A8CR1212	152-0673-00			SEMICOND DVC,DI:VVC,SI,480PF,18V,TO-92	04713	SMV1361
A3A8CR1214	152-0673-00			SEMICOND DVC,DI:VVC,SI,480PF,18V,TO-92	04713	SMV1361
A3A8CR1230	152-0536-00			SEMICOND DVC,DI:SW,4V,C132	04713	SMV1110 (MBD101)
A3A8CR1232	152-0536-00			SEMICOND DVC,DI:SW,4V,C132	04713	SMV1110 (MBD101)
A3A8CR1240	152-0536-00			SEMICOND DVC,DI:SW,4V,C132	04713	SMV1110 (MBD101)
A3A8CR1244	152-0536-00			SEMICOND DVC,DI:SW,4V,C132	04713	SMV1110 (MBD101)

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3A8DS1131	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A3A8L1200	108-0800-00			COIL,RF:FIXED,820MH	04072	9230-90
A3A8P1021	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 3)	22526	75377-001
A3A8P1106	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 6)	22526	75377-001
A3A8P1126	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN (QUANTITY OF 7)	22526	75377-001
A3A8Q1042	151-0254-00			TRANSISTOR:DARLINGTON,NPN,SI,625MW,TO-92	03508	X38L3118
A3A8Q1133	151-0435-00			TRANSISTOR:DARLINGTON,PNP,SI,TO-92	04713	SPS8335
A3A8Q1220	151-0288-00			TRANSISTOR:NPN,SI,TO-39	80009	151-0288-00
A3A8R1001	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A3A8R1002	315-0361-00			RES,FXD,FILM:360 OHM,5%,0.25W	19701	5043CX360R0J
A3A8R1010	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A8R1012	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A8R1014	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A3A8R1020	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A8R1022	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A3A8R1024	315-0473-00			RES,FXD,FILM:47K OHM,5%,0.25W	57668	NTR25J-E47K0
A3A8R1026	315-0185-00			RES,FXD,FILM:1.8M OHM,5%,0.25W	01121	CB1855
A3A8R1030	315-0222-00			RES,FXD,FILM:2.2K OHM,5%,0.25W	57668	NTR25J-E02K2
A3A8R1031	321-0222-00			RES,FXD,FILM:2.00K OHM,1%,0.125W,TC=T0	19701	5033ED2K00F
A3A8R1032	321-0222-00			RES,FXD,FILM:2.00K OHM,1%,0.125W,TC=T0	19701	5033ED2K00F
A3A8R1034	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A3A8R1040	315-0474-00			RES,FXD,FILM:470K OHM,5%,0.25W	19701	5043CX470K0J92U
A3A8R1042	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A3A8R1043	315-0392-00			RES,FXD,FILM:3.9K OHM,5%,0.25W	57668	NTR25J-E03K9
A3A8R1045	315-0271-00			RES,FXD,FILM:270 OHM,5%,0.25W	57668	NTR25J-E270E
A3A8R1100	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A8R1102	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A8R1104	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A8R1112	315-0182-00			RES,FXD,FILM:1.8K OHM,5%,0.25W	57668	NTR25J-E1K8
A3A8R1120	315-0271-00			RES,FXD,FILM:270 OHM,5%,0.25W	57668	NTR25J-E270E
A3A8R1122	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A8R1132	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A3A8R1133	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25W	57668	NTR25J-E100K
A3A8R1134	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25W	57668	NTR25J-E100K
A3A8R1140	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A3A8R1141	315-0273-00			RES,FXD,FILM:27K OHM,5%,0.25W	57668	NTR25J-E27K0
A3A8R1142	315-0105-00			RES,FXD,FILM:1M OHM,5%,0.25W	19701	5043CX1M000J
A3A8R1144	321-0510-00			RES,FXD,FILM:2.00M OHM,1%,0.125W,TC=T0	03888	PME55D20003F
A3A8R1146	321-0510-00			RES,FXD,FILM:2.00M OHM,1%,0.125W,TC=T0	03888	PME55D20003F
A3A8R1200	321-0193-00			RES,FXD,FILM:1K OHM,1%,0.125W,TC=T0	19701	5033ED1K00F
A3A8R1202	315-0475-00			RES,FXD,FILM:4.7M OHM,5%,0.25W	01121	CB4755
A3A8R1210	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25W	57668	NTR25J-E100K
A3A8R1212	315-0473-00			RES,FXD,FILM:47K OHM,5%,0.25W	57668	NTR25J-E47K0
A3A8R1214	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25W	57668	NTR25J-E100K
A3A8R1220	311-1245-00			RES,VAR,NONWW:TRMR,10K OHM,0.5W	32997	3386X-DY6-103
A3A8R1230	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A3A8R1240	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A3A8R1242	321-0097-00			RES,FXD,FILM:100 OHM,1%,0.125W,TC=T0	91637	CMF55116G100ROF
A3A8R1244	321-0097-00			RES,FXD,FILM:100 OHM,1%,0.125W,TC=T0	91637	CMF55116G100ROF
A3A8T1230	120-1109-00			TRANSFORMER,RF:PULSE	80009	120-1109-00
A3A8T1232	120-1108-00			TRANSFORMER,RF:BALUN,TD-339	TK1345	120-1108-00
A3A8TP1010	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A3A8TP1040	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A3A8U1024	156-0912-01			MICROCKT,LINEAR:OPNL AMPL,SCREENED	02735	CA3080EX-98
A3A8U1100	156-0067-10			MICROCKT,LINEAR:OPNL AMPL,CHECKED	04713	MC1741CP1DS

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3A8U1110	156-1304-00			MICROCKT,INTFC:DUAL INLINE RCVR,SCRN	01295	SN75140JG4
A3A8U1112	156-0387-02			MICROCKT,DGTL:DUAL J-K FF,SCRN	04713	SN74LS73NDS
A3A8U1140	156-0512-02			MICROCKT,LINEAR:OPNL AMPL,SELECTED	04713	LM308J-8DS
A3A8Y1200	158-0079-00			XTAL UNIT,QTZ:1MHZ 0.001%, PARALLEL	34630	150-4240
A4	670-6084-00			CIRCUIT BD ASSY:TIME MARK	80009	670-6084-00
A4	670-6203-00			CIRCUIT BD ASSY:TIME MARK (OPTION 01 ONLY)	80009	670-6203-00
A4C1000	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1001	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1003	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1005	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1010	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1011	281-0140-00			CAP,VAR,CER DI:5-25PF,100V	59660	518-023A 5-25
A4C1020	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1021	281-0812-00			CAP,FXD,CER DI:1000PF,10%,100V	04222	MA101C102KAA
A4C1022	281-0759-00			CAP,FXD,CER DI:22PF,10%,100V	04222	MA101A220KAA
A4C1030	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4C1031	283-0177-00			CAP,FXD,CER DI:1UF,+80-20%,25V	04222	SR302E105ZAATR
A4C1100	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1101	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1110	281-0814-00			CAP,FXD,CER DI:100 PF,10%,100V	04222	MA101A101KAA
A4C1111	281-0797-00			CAP,FXD,CER DI:15PF,10%,100V	04222	MA106A150KAA
A4C1120	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1121	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1122	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4C1130	281-0811-00			CAP,FXD,CER DI:10PF,10%,100V	04222	MA101A100KAA
A4C1210	281-0762-00			CAP,FXD,CER DI:27PF,20%,100V	04222	MA101A270MAA
A4C1211	290-0524-00			CAP,FXD,ELCTLT:4.7UF,20%,10V	05397	T368A475M010AZ
A4C1212	281-0762-00			CAP,FXD,CER DI:27PF,20%,100V	04222	MA101A270MAA
A4C1213	281-0788-00			CAP,FXD,CER DI:470PF,10%,100V	04222	MA101C471KAA
A4C1214	281-0813-00			CAP,FXD,CER DI:0.047UF,20%,50V	05397	C412C473M5V2CA
A4C1220	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1230	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4C1231	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4C1300	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4C1310	283-0047-00			CAP,FXD,CER DI:270PF,5%,500V	59660	0831604Z5F0271J
A4C1311	281-0762-00			CAP,FXD,CER DI:27PF,20%,100V	04222	MA101A270MAA
A4C1330	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4C1331	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4C1400	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1401	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1410	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4C1411	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4C1412	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4C1414	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4C1415	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4C1420	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1421	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1430	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1431	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1500	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4C1501	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4C1502	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4C1510	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4C1520	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1530	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1531	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1532	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A4C1600	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1601	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1602	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1610	290-0529-00			CAP,FXD,ELCTLT:47UF,20%,20V	05397	T362C476M020AS
A4C1620	281-0814-00			CAP,FXD,CER DI:100 PF,10%,100V	04222	MA101A101KAA
A4C1621	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4C1622	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A4C1623	290-0529-00			CAP,FXD,ELCTLT:47UF,20%,20V	05397	T362C476M020AS
A4C1628	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4C1629	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A4CR1010	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A4CR1011	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A4CR1012	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A4CR1020	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1021	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1031	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A4CR1102	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A4CR1103	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1110	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A4CR1111	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A4CR1112	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A4CR1121	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1122	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1200	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1210	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A4CR1211	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1212	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1217	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A4CR1220	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1221	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1223	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1224	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1230	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1231	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1310	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1311	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1312	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1313	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1320	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A4CR1330	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1331	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A4CR1410	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A4CR1411	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A4CR1610	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A4CR1611	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A4DS1410	150-1043-00			LT EMITTING DIO:ORANGE,635NM,35MA MAX	58361	MV5774C
A4F1630	159-0042-00			FUSE,CARTRIDGE:3AG,0.75A,250V,0.15SEC	75915	312.750
A4F1631	159-0042-00			FUSE,CARTRIDGE:3AG,0.75A,250V,0.15SEC	75915	312.750
A4J1220	131-1003-00			CONN,RCPT,ELEC:CKT BD MT,3 PRONG	80009	131-1003-00
A4L1020	120-0285-00			XFMR,TOROID:	80009	120-0285-00
A4Q1010	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A4Q1010	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A4Q1011	151-0216-02	B050000	B064001	TRANSISTOR:PNP,SI	80009	151-0216-02
A4Q1011	151-0216-00	B064002		TRANSISTOR:PNP,SI,TO-92	04713	SPS8803
A4Q1012	151-0324-00			TRANSISTOR:SELECTED	04713	SJE915
A4Q1021	151-0450-01			TRANSISTOR:SCREENED	04713	SRF507H
A4Q1023	151-0472-00			TRANSISTOR:NPN,SI,TO-92	51984	NE41632B
A4Q1024	151-0271-03			TRANSISTOR:SELECTED	04713	SPS8521

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A4Q1025	151-0271-03			TRANSISTOR:SELECTED	04713	SPS8521
A4Q1030	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A4Q1030	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A4Q1031	151-0271-03			TRANSISTOR:SELECTED	04713	SPS8521
A4Q1032	151-0472-00			TRANSISTOR:NPN,SI,TO-92	51984	NE41632B
A4Q1035	151-0450-01			TRANSISTOR:SCREENED	04713	SRF507H
A4Q1100	151-0271-03			TRANSISTOR:SELECTED	04713	SPS8521
A4Q1110	151-0216-02	B050000	B064001	TRANSISTOR:PNP,SI	80009	151-0216-02
A4Q1110	151-0216-00	B064002		TRANSISTOR:PNP,SI,TO-92	04713	SPS8803
A4Q1130	151-0192-03			TRANSISTOR:SELECTED	80009	151-0192-03
A4Q1131	151-0192-03			TRANSISTOR:SELECTED	80009	151-0192-03
A4Q1132	151-0367-00			TRANSISTOR:NPN,SI,X-55	04713	SPS 8811
A4Q1133	151-0192-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0192-03
A4Q1133	151-0192-00	B064002		TRANSISTOR:SELECTED	04713	SPS8801
A4Q1134	151-0192-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0192-03
A4Q1134	151-0192-00	B064002		TRANSISTOR:SELECTED	04713	SPS8801
A4Q1135	151-0221-05			TRANSISTOR:SCREENED	TK0271	151-0221-05
A4Q1200	151-0271-03			TRANSISTOR:SELECTED	04713	SPS8521
A4Q1201	151-0271-03			TRANSISTOR:SELECTED	04713	SPS8521
A4Q1202	151-0424-00			TRANSISTOR:NPN,SI,TO-92	04713	SPS8246
A4Q1203	151-0424-00			TRANSISTOR:NPN,SI,TO-92	04713	SPS8246
A4Q1204	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A4Q1204	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A4Q1210	151-0424-00			TRANSISTOR:NPN,SI,TO-92	04713	SPS8246
A4Q1211	151-0192-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0192-03
A4Q1211	151-0192-00	B064002		TRANSISTOR:SELECTED	04713	SPS8801
A4Q1212	151-0192-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0192-03
A4Q1212	151-0192-00	B064002		TRANSISTOR:SELECTED	04713	SPS8801
A4Q1213	151-0192-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0192-03
A4Q1213	151-0192-00	B064002		TRANSISTOR:SELECTED	04713	SPS8801
A4Q1214	151-1042-00			SEMICOND DVC SE:FET,SI,TO-92	04713	SPF627M2
A4Q1215	151-1042-00			SEMICOND DVC SE:FET,SI,TO-92	04713	SPF627M2
A4Q1216	151-0192-03			TRANSISTOR:SELECTED	80009	151-0192-03
A4Q1217	151-0424-00			TRANSISTOR:NPN,SI,TO-92	04713	SPS8246
A4Q1220	151-0271-03			TRANSISTOR:SELECTED	04713	SPS8521
A4Q1221	151-0271-03			TRANSISTOR:SELECTED	04713	SPS8521
A4Q1310	151-0232-00			TRANSISTOR:NPN,SI,TO-78	07263	SP12141
A4Q1311	151-0261-00			TRANSISTOR:PNP,SI,TO-77	04713	SD441
A4Q1312	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A4Q1312	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A4Q1313	151-0221-05			TRANSISTOR:SCREENED	TK0271	151-0221-05
A4Q1314	151-0424-00			TRANSISTOR:NPN,SI,TO-92	04713	SPS8246
A4Q1315	151-0221-05			TRANSISTOR:SCREENED	TK0271	151-0221-05
A4Q1330	151-0324-00			TRANSISTOR:SELECTED	04713	SJE915
A4Q1331	151-0192-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0192-03
A4Q1331	151-0192-00	B064002		TRANSISTOR:SELECTED	04713	SPS8801
A4Q1332	151-0221-05			TRANSISTOR:SCREENED	TK0271	151-0221-05
A4Q1333	151-0221-05			TRANSISTOR:SCREENED	TK0271	151-0221-05
A4Q1410	151-0192-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0192-03
A4Q1410	151-0192-00	B064002		TRANSISTOR:SELECTED	04713	SPS8801
A4Q1530	151-0192-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0192-03
A4Q1530	151-0192-00	B064002		TRANSISTOR:SELECTED	04713	SPS8801
A4Q1600	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A4Q1600	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A4Q1601	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A4Q1601	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A4Q1620	151-0424-00			TRANSISTOR:NPN,SI,TO-92	04713	SPS8246
A4R1002	315-0270-00			RES,FXD,FILM:27 OHM,5%,0.25W	19701	5043CX27R00J

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A4R1004	315-0270-00			RES,FXD,FILM:27 OHM,5%,0.25W	19701	5043CX27R00J
A4R1006	307-0539-00			RES NTWK,FXD,FI:(7)510 OHM,10%,1W	11236	750-81-R510 OHM
A4R1011	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A4R1012	315-0131-00			RES,FXD,FILM:130 OHM,5%,0.25W	19701	5043CX130R0J
A4R1013	315-0240-00			RES,FXD,FILM:24 OHM,5%,0.25W	57668	NTR25J-E24E0
A4R1014	315-0131-00			RES,FXD,FILM:130 OHM,5%,0.25W	19701	5043CX130R0J
A4R1015	315-0820-00			RES,FXD,FILM:82 OHM,5%,0.25W	57668	NTR25J-E82E0
A4R1016	315-0820-00			RES,FXD,FILM:82 OHM,5%,0.25W	57668	NTR25J-E82E0
A4R1020	315-0180-00			RES,FXD,FILM:18 OHM,5%,0.25W	19701	5043CX18R00J
A4R1021	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A4R1022	315-0180-00			RES,FXD,FILM:18 OHM,5%,0.25W	19701	5043CX18R00J
A4R1025	315-0201-00			RES,FXD,FILM:200 OHM,5%,0.25W	57668	NTR25J-E200E
A4R1026	315-0201-00			RES,FXD,FILM:200 OHM,5%,0.25W	57668	NTR25J-E200E
A4R1030	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A4R1031	315-0330-00			RES,FXD,FILM:33 OHM,5%,0.25W	19701	5043CX33R00J
A4R1032	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A4R1033	315-0330-00			RES,FXD,FILM:33 OHM,5%,0.25W	19701	5043CX33R00J
A4R1034	315-0220-00			RES,FXD,FILM:22 OHM,5%,0.25W	19701	5043CX22R00J
A4R1035	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A4R1036	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A4R1037	308-0387-00			RES,FXD,WW:178 OHM,1%,3W	00213	1240S 178-1
A4R1038	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25W	57668	NTR25J-E330E
A4R1039	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A4R1101	307-0526-00			RES NTWK,FXD,FI:5,510 OHM,10%,0.125 W	11236	750-61-R510 OHM
A4R1110	315-0202-00			RES,FXD,FILM:2K OHM,5%,0.25W	57668	NTR25J-E 2K
A4R1111	307-0526-00			RES NTWK,FXD,FI:5,510 OHM,10%,0.125 W	11236	750-61-R510 OHM
A4R1120	315-0243-00			RES,FXD,FILM:24K OHM,5%,0.25W	57668	NTR25J-E24K0
A4R1121	315-0243-00			RES,FXD,FILM:24K OHM,5%,0.25W	57668	NTR25J-E24K0
A4R1122	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A4R1123	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A4R1124	315-0220-00			RES,FXD,FILM:22 OHM,5%,0.25W	19701	5043CX22R00J
A4R1130	315-0182-00			RES,FXD,FILM:1.8K OHM,5%,0.25W	57668	NTR25J-E1K8
A4R1131	315-0181-00			RES,FXD,FILM:180 OHM,5%,0.25W	57668	NTR25J-E180E
A4R1132	315-0473-00			RES,FXD,FILM:47K OHM,5%,0.25W	57668	NTR25J-E47K0
A4R1133	315-0223-00			RES,FXD,FILM:22K OHM,5%,0.25W	19701	5043CX22K00J92U
A4R1134	315-0473-00			RES,FXD,FILM:47K OHM,5%,0.25W	57668	NTR25J-E47K0
A4R1137	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A4R1138	315-0681-00			RES,FXD,FILM:680 OHM,5%,0.25W	57668	NTR25J-E680E
A4R1139	315-0431-00			RES,FXD,FILM:430 OHM,5%,0.25W	19701	5043CX430R0J
A4R1200	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A4R1201	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A4R1202	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A4R1203	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A4R1204	315-0561-00			RES,FXD,FILM:560 OHM,5%,0.25W	19701	5043CX560R0J
A4R1205	315-0751-00			RES,FXD,FILM:750 OHM,5%,0.25W	57668	NTR25J-E750E
A4R1206	321-0193-00			RES,FXD,FILM:1K OHM,1%,0.125W,TC=T0	19701	5033ED1K00F
A4R1207	321-0193-00			RES,FXD,FILM:1K OHM,1%,0.125W,TC=T0	19701	5033ED1K00F
A4R1208	315-0302-00			RES,FXD,FILM:3K OHM,5%,0.25W	57668	NTR25J-E03K0
A4R1209	315-0111-00			RES,FXD,FILM:110 OHM,5%,0.25W	57668	NTR25J-E110E
A4R1210	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A4R1211	315-0752-00			RES,FXD,FILM:7.5K OHM,5%,0.25W	57668	NTR25J-E07K5
A4R1212	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25W	57668	NTR25J-E04K3
A4R1213	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25W	57668	NTR25J-E04K3
A4R1214	315-0473-00			RES,FXD,FILM:47K OHM,5%,0.25W	57668	NTR25J-E47K0
A4R1215	315-0332-00			RES,FXD,FILM:3.3K OHM,5%,0.25W	57668	NTR25J-E03K3
A4R1216	315-0332-00			RES,FXD,FILM:3.3K OHM,5%,0.25W	57668	NTR25J-E03K3
A4R1217	315-0242-00			RES,FXD,FILM:2.4K OHM,5%,0.25W	57668	NTR25J-E02K4
A4R1218	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A4R1219	315-0271-00			RES,FXD,FILM:270 OHM,5%,0.25W	57668	NTR25J-E270E
A4R1220	315-0430-00			RES,FXD,FILM:43 OHM,5%,0.25W	19701	5043CX43R00J
A4R1221	315-0222-00			RES,FXD,FILM:2.2K OHM,5%,0.25W	57668	NTR25J-E02K2
A4R1222	315-0222-00			RES,FXD,FILM:2.2K OHM,5%,0.25W	57668	NTR25J-E02K2
A4R1223	315-0222-00			RES,FXD,FILM:2.2K OHM,5%,0.25W	57668	NTR25J-E02K2
A4R1224	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A4R1225	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A4R1226	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A4R1227	315-0911-00			RES,FXD,FILM:910 OHM,5%,0.25W	57668	NTR25J-E910E
A4R1228	315-0911-00			RES,FXD,FILM:910 OHM,5%,0.25W	57668	NTR25J-E910E
A4R1230	315-0272-00			RES,FXD,FILM:2.7K OHM,5%,0.25W	57668	NTR25J-E02K7
A4R1231	315-0682-00			RES,FXD,FILM:6.8K OHM,5%,0.25W	57668	NTR25J-E06K8
A4R1232	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A4R1233	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A4R1234	315-0223-00			RES,FXD,FILM:22K OHM,5%,0.25W	19701	5043CX22K00J92U
A4R1235	315-0473-00			RES,FXD,FILM:47K OHM,5%,0.25W	57668	NTR25J-E47K0
A4R1236	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A4R1237	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A4R1238	315-0302-00			RES,FXD,FILM:3K OHM,5%,0.25W	57668	NTR25J-E03K0
A4R1300	315-0391-00			RES,FXD,FILM:390 OHM,5%,0.25W	57668	NTR25J-E390E
A4R1301	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A4R1302	315-0272-00			RES,FXD,FILM:2.7K OHM,5%,0.25W	57668	NTR25J-E02K7
A4R1303	315-0562-00			RES,FXD,FILM:5.6K OHM,5%,0.25W	57668	NTR25J-E05K6
A4R1304	315-0123-00			RES,FXD,FILM:12K OHM,5%,0.25W	57668	NTR25J-E12K0
A4R1305	315-0303-00			RES,FXD,FILM:30K OHM,5%,0.25W	19701	5043CX30K00J
A4R1306	321-0193-00			RES,FXD,FILM:1K OHM,1%,0.125W,TC=T0	19701	5033ED1K00F
A4R1307	321-0193-00			RES,FXD,FILM:1K OHM,1%,0.125W,TC=T0	19701	5033ED1K00F
A4R1308	321-0126-00			RES,FXD,FILM:200 OHM,1%,0.125W,TC=T0	19701	5033ED200R0F
A4R1309	321-0126-00			RES,FXD,FILM:200 OHM,1%,0.125W,TC=T0	19701	5033ED200R0F
A4R1310	315-0152-00			RES,FXD,FILM:1.5K OHM,5%,0.25W	57668	NTR25J-E01K5
A4R1311	315-0332-00			RES,FXD,FILM:3.3K OHM,5%,0.25W	57668	NTR25J-E03K3
A4R1312	315-0122-00			RES,FXD,FILM:1.2K OHM,5%,0.25W	57668	NTR25J-E01K2
A4R1313	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A4R1320	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A4R1330	307-0111-00			RES,FXD,CMPSN:3.6 OHM,5%,0.25W	80009	307-0111-00
A4R1331	315-0361-00			RES,FXD,FILM:360 OHM,5%,0.25W	19701	5043CX360R0J
A4R1332	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A4R1333	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A4R1334	321-0150-00			RES,FXD,FILM:357 OHM,1%,0.125W,TC=T0	07716	CEAD357R0F
A4R1335	321-0287-00			RES,FXD,FILM:9.53K OHM,1%,0.125W,TC=T0	19701	5033ED9K530F
A4R1400	311-1238-00			RES,VAR,NONWW:TRMR,5K OHM,0.5W	32997	3386X-DY6-502
A4R1401	315-0202-00			RES,FXD,FILM:2K OHM,5%,0.25W	57668	NTR25J-E 2K
A4R1402	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A4R1403	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A4R1404	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A4R1410	315-0241-00			RES,FXD,FILM:240 OHM,5%,0.25W	19701	5043CX240R0J
A4R1411	315-0302-00			RES,FXD,FILM:3K OHM,5%,0.25W	57668	NTR25J-E03K0
A4R1412	315-0183-00			RES,FXD,FILM:18K OHM,5%,0.25W	19701	5043CX18K00J
A4R1413	315-0473-00			RES,FXD,FILM:47K OHM,5%,0.25W	57668	NTR25J-E47K0
A4R1414	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A4R1415	315-0184-00			RES,FXD,FILM:180K OHM,5%,0.25W	19701	5043CX180K0J
A4R1430	315-0202-00			RES,FXD,FILM:2K OHM,5%,0.25W	57668	NTR25J-E 2K
A4R1431	315-0473-00			RES,FXD,FILM:47K OHM,5%,0.25W	57668	NTR25J-E47K0
A4R1432	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A4R1510	315-0332-00			RES,FXD,FILM:3.3K OHM,5%,0.25W	57668	NTR25J-E03K3
A4R1511	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A4R1530	315-0473-00			RES,FXD,FILM:47K OHM,5%,0.25W	57668	NTR25J-E47K0
A4R1531	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A4R1601	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A4R1610	315-0332-00			RES,FXD,FILM:3.3K OHM,5%,0.25W	57668	NTR25J-E03K3
A4R1611	315-0822-00			RES,FXD,FILM:8.2K OHM,5%,0.25W	19701	5043CX8K200J
A4R1620	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25W	57668	NTR25J-E330E
A4R1621	315-0151-00			RES,FXD,FILM:150 OHM,5%,0.25W	57668	NTR25J-E150E
A4R1622	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A4R1623	321-0331-00			RES,FXD,FILM:27.4K OHM,1%,0.125W,TC=T0	19701	5043ED27K40F
A4R1624	321-0371-00			RES,FXD,FILM:71.5K OHM,1%,0.125W,TC=T0	07716	CEAD71501F
A4R1625	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A4R1626	307-0659-00			RES,FXD,FILM:2.2 OHM,5%,0.25W	19701	5043CX2R200J
A4R1627	307-0093-00			RES,FXD,CMPSN:1.2 OHM,5%,0.5W	01121	EB12G5
A4TP1010	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A4TP1020	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A4TP1200	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A4TP1400	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A4TP1401	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A4TP1410	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A4TP1501	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A4TP1620	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A4TP1630	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A4U1001	156-0369-03			MICROCKT,DGTL:TRIPLE LINE RECEIVER,SCREENED	04713	MC10216PD/LD
A4U1010	156-0282-00			MICROCKT,DGTL:ECL,DUAL 4-INPUT OR/NOR GATE	04713	MC1660L
A4U1101	156-0642-01			MICROCKT,DGTL:BI QUINARY CNTR,SCREENED	04713	MC10138PD/LD
A4U1102	156-0870-01			MICROCKT,DGTL:BCD DECADE COUNTER,SCREENED	07263	SL81658
A4U1110	156-0205-02			MICROCKT,DGTL:QUAD 2 INP NOR GATE	04713	MC10102PD/LD
A4U1111	156-0205-02			MICROCKT,DGTL:QUAD 2 INP NOR GATE	04713	MC10102PD/LD
A4U1120	156-0480-02			MICROCKT,DGTL:QUAD 2-INP & GATE,SCRN,	01295	SN74LS08NP3
A4U1220	156-0384-02			MICROCKT,DGTL:QUAD 2-INP NAND GATE,SCRN	07263	74LS03PCQR
A4U1230	156-0788-01			MICROCKT,DGTL:SYN 4-BIT CNTR W/SYN CLEAR,SCRN	27014	DM74LS162NA+
A4U1231	156-0788-01			MICROCKT,DGTL:SYN 4-BIT CNTR W/SYN CLEAR,SCRN	27014	DM74LS162NA+
A4U1232	156-1149-01			MICROCKT,LINEAR:OPERATION AMP JFET INPUT	27014	AL160307
A4U1300	156-1149-01			MICROCKT,LINEAR:OPERATION AMP JFET INPUT	27014	AL160307
A4U1320	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A4U1321	156-0875-02			MICROCKT,DGTL:DUAL 2-W/2 INP AOI GATES,SCRN	04713	SN74LS51NDS
A4U1330	156-0182-02			MICROCKT,DGTL:TRIPLE 2-3-2 INPUT GATE,SCREENED	04713	MC10105PD/LD
A4U1400	156-0382-02			MICROCKT,DGTL:QUAD 2 INP NAND GATE BURN	18324	N74LS00NB
A4U1410	156-1235-00			MICROCKT,DGTL:LSTTL,BCD TO DEC DECODER/DR	01295	SN74LS145N3
A4U1411	156-1304-00			MICROCKT,INTFC:DUAL INLINE RCVR,SCRN	01295	SN75140JG4
A4U1420	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A4U1421	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A4U1422	156-0388-03			MICROCKT,DGTL:DUAL D FLIP-FLOP,SCRN	01295	SN74LS74ANP3
A4U1430	156-0452-02			MICROCKT,DGTL:4-WIDE,2-INP AOI,SCREENED	04713	SN74LS54 ND/JD
A4U1431	156-0382-02			MICROCKT,DGTL:QUAD 2 INP NAND GATE BURN	18324	N74LS00NB
A4U1510	156-1324-00			MICROCKT,LINEAR:COMPARATOR	27014	LM361N/GLAA054
A4U1520	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A4U1521	156-0410-00			MICROCKT,DGTL:MOS,TIME BASE	50088	MK5009(N OR P)
A4U1530	156-0656-02			MICROCKT,DGTL:DECADE COUNTER,SCRN	01295	SN74LS90NP3
A4U1531	156-0910-02			MICROCKT,DGTL:DUAL DECADE COUNTER,SCRN	01295	SN74LS390N3
A4U1610	156-1308-01	B050000	B064001	MICROCKT,LINEAR:VOLTAGE REGULATOR DUAL TRKG,SCRN	80009	156-1308-01
A4U1610	156-1308-00	B064002		MICROCKT,LINEAR:VOLTAGE REGULATOR DUAL TRKG	49956	RM4194DC
A4U1630	156-0382-02			MICROCKT,DGTL:QUAD 2 INP NAND GATE BURN	18324	N74LS00NB
A4VR1031	152-0647-00			SEMICOND DVC,DI:ZENER,SI,6.8V,5%,400MW,DO-7	04713	SZG35014K3RL
A4VR1630	152-0733-00			SEMICOND DVC,DI:ZEN,SI,15V,5%,5W,A-LEE	01281	1N5352B
A4VR1631	152-0733-00			SEMICOND DVC,DI:ZEN,SI,15V,5%,5W,A-LEE	01281	1N5352B

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A4W1510	175-2829-00			CA ASSY,SP,ELEC:2,26 AWG,5.5 L,RIBBON	80009	175-2829-00
A4W1520	----- -----			(PART OF A4W1510)		
A4W1601	131-0566-00			BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225 L	24546	OMA 07
A4W1602	131-0566-00			BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225 L	24546	OMA 07
A4W1620	131-0566-00			BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225 L	24546	OMA 07
A4W1630	131-0566-00			BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225 L	24546	OMA 07
A4W1632	131-0566-00			BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225 L	24546	OMA 07
A4Y1501	119-1187-00			OSCILLATOR,RF:XTAL CONTROLLED,5MHZ ADJ (OPTION 01 ONLY)	34630	001-45340
A5	670-6086-01			CIRCUIT BD ASSY:PS MAIN	80009	670-6086-01
A5C1001	290-0574-00			CAP,FXD,ELCTLT:47UF,10%,20V	05397	T368C476K0202AS
A5C1002	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A5C1003	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A5C1011	290-0136-00			CAP,FXD,ELCTLT:2.2UF,20%,20V	05397	T322B225M020AS
A5C1021	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A5C1031	281-0812-00			CAP,FXD,CER DI:1000PF,10%,100V	04222	MA101C102KAA
A5C1041	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A5C1101	281-0812-00			CAP,FXD,CER DI:1000PF,10%,100V	04222	MA101C102KAA
A5C1111	283-0210-00			CAP,FXD,CER DI:0.0056UF,20%,100V	51642	300 100-X7R-562M
A5C1131	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A5C1141	290-0261-00			CAP,FXD,ELCTLT:6.8UF,10%,35V	05397	T110B685K035AS
A5C1702	290-0273-00			CAP,FXD,ELCTLT:68UF,10%,60V	56289	109D686X9060T2
A5C1704	290-0273-00			CAP,FXD,ELCTLT:68UF,10%,60V	56289	109D686X9060T2
A5C1740	290-0513-00			CAP,FXD,ELCTLT:510UF,+75-10%,25V	26769	40EW517C015U1A
A5C1742	290-0513-00			CAP,FXD,ELCTLT:510UF,+75-10%,25V	26769	40EW517C015U1A
A5C1822	283-0211-00			CAP,FXD,CER DI:0.1UF,10%,200V	04222	SR406C104KAA
A5C1830	283-0211-00			CAP,FXD,CER DI:0.1UF,10%,200V	04222	SR406C104KAA
A5CR1041	152-0414-00			SEMICOND DVC,DI:RECT,SI,200V,1.0A,TEK A59	80009	152-0414-00
A5CR1102	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A5CR1722	152-0586-00			SEMICOND DVC,DI:RECT,SI,600V,0.5A	25403	BYV96D OR BYV95C
A5CR1730	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A5CR1734	152-0586-00			SEMICOND DVC,DI:RECT,SI,600V,0.5A	25403	BYV96D OR BYV95C
A5CR1812	152-0586-00			SEMICOND DVC,DI:RECT,SI,600V,0.5A	25403	BYV96D OR BYV95C
A5CR1814	152-0586-00			SEMICOND DVC,DI:RECT,SI,600V,0.5A	25403	BYV96D OR BYV95C
A5F1041	159-0015-00			FUSE,CARTRIDGE:3AG,3A,250V,0.65SEC	75915	312 003
A5F1141	159-0016-00			FUSE,CARTRIDGE:3AG,1.5,250V,FAST BLOW	71400	AGC-CW-1 1/2
A5J1021	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN	22526	75377-001
A5J1031	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN	22526	75377-001
A5J1032	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN	22526	75377-001
A5J1033	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN	22526	75377-001
A5J1034	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN	22526	75377-001
A5J1035	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN	22526	75377-001
A5J1036	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN	22526	75377-001
A5J1041	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN	22526	75377-001
A5J1043	136-0263-04			SOCKET,PIN TERM:U/W 0.025 SQ PIN	22526	75377-001
A5J1101	136-0608-00			SKT,PL-IN ELEK:ELCTRN TUBE,14 CONT W/LEADS (QUANTITY OF 3)	TK1375	ORDER BY DESCR
A5J1121	131-0608-00			TERMINAL,PIN:0.365 L X 0.025 BRZ GLD PL (QUANTITY OF 4)	22526	48283-036
A5J1712	131-0608-00			TERMINAL,PIN:0.365 L X 0.025 BRZ GLD PL (QUANTITY OF 5)	22526	48283-036
A5J1824	131-0608-00			TERMINAL,PIN:0.365 L X 0.025 BRZ GLD PL (QUANTITY OF 4)	22526	48283-036
A5Q1011	151-0190-05	B050000	B064013	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A5Q1011	151-0190-00	B064014		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A5Q1021	151-0311-01			TRANSISTOR:NPN,SI,TO-126	04713	SJE908
A5Q1031	151-0311-01			TRANSISTOR:NPN,SI,TO-126	04713	SJE908
A5Q1041	151-0521-00			SCR:SI,MU-27	02735	C122B1
A5Q1111	151-0190-05	B050000	B064013	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A5Q1111	151-0190-00	B064014		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A5Q1712	151-0190-05	B050000	B064013	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A5Q1712	151-0190-00	B064014		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A5Q1714	151-0443-00			TRANSISTOR:PNP,SI,TO-92	04713	SPS7950
A5Q1720	151-0444-00			TRANSISTOR:NPN,SI,TO-92	04713	SPS797
A5Q1722	151-0443-00			TRANSISTOR:PNP,SI,TO-92	04713	SPS7950
A5Q1730	151-0444-00			TRANSISTOR:NPN,SI,TO-92	04713	SPS797
A5Q1732	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A5Q1732	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A5Q1830	151-0444-00			TRANSISTOR:NPN,SI,TO-92	04713	SPS797
A5R1001	315-0751-00			RES,FXD,FILM:750 OHM,5%,0.25W	57668	NTR25J-E750E
A5R1002	315-0222-00			RES,FXD,FILM:2.2K OHM,5%,0.25W	57668	NTR25J-E02K2
A5R1003	315-0302-00			RES,FXD,FILM:3K OHM,5%,0.25W	57668	NTR25J-E03K0
A5R1004	311-1248-00			RES,VAR,NONWW:TRMR,500 OHM,0.5W	32997	3386X-T07-501
A5R1005	315-0822-00			RES,FXD,FILM:8.2K OHM,5%,0.25W	19701	5043CX8K200J
A5R1011	315-0152-00			RES,FXD,FILM:1.5K OHM,5%,0.25W	57668	NTR25J-E01K5
A5R1012	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A5R1021	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A5R1022	308-0742-00			RES,FXD,WW:0.24 OHM,5%,2W	75042	BWH-R2400J
A5R1031	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A5R1032	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1
A5R1041	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A5R1042	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A5R1101	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A5R1102	315-0203-00			RES,FXD,FILM:20K OHM,5%,0.25W	57668	NTR25J-E 20K
A5R1103	315-0752-00			RES,FXD,FILM:7.5K OHM,5%,0.25W	57668	NTR25J-E07K5
A5R1104	311-1918-00			RES,VAR,NONWW:TRMR,2K OHM,10%,0.5 W	32997	3386C-T07-202
A5R1105	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A5R1106	311-1918-00			RES,VAR,NONWW:TRMR,2K OHM,10%,0.5 W	32997	3386C-T07-202
A5R1107	315-0203-00			RES,FXD,FILM:20K OHM,5%,0.25W	57668	NTR25J-E 20K
A5R1111	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A5R1112	315-0682-00			RES,FXD,FILM:6.8K OHM,5%,0.25W	57668	NTR25J-E06K8
A5R1113	308-0703-00			RES,FXD,WW:1.8 OHM,5%,2W	75042	BWH 1.8 OHM 5%
A5R1121	308-0755-00			RES,FXD,WW:0.75 OHM,5%,2W	75042	BWH-R7500J
A5R1131	315-0123-00			RES,FXD,FILM:12K OHM,5%,0.25W	57668	NTR25J-E12K0
A5R1132	315-0682-00			RES,FXD,FILM:6.8K OHM,5%,0.25W	57668	NTR25J-E06K8
A5R1133	315-0682-00			RES,FXD,FILM:6.8K OHM,5%,0.25W	57668	NTR25J-E06K8
A5R1134	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1
A5R1135	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A5R1136	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A5R1141	301-0152-00			RES,FXD,FILM:1.5K OHM,5%,0.5W	19701	5053CX1K500J
A5R1712	315-0153-00			RES,FXD,FILM:15K OHM,5%,0.25W	19701	5043CX15K00J
A5R1714	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25W	57668	NTR25J-E04K3
A5R1716	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A5R1720	315-0124-00			RES,FXD,FILM:120K OHM,5%,0.25W	19701	5043CX120K0J
A5R1722	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A5R1730	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A5R1830	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A5TP1101	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A5TP1102	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A5TP1103	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A5TP1104	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A5TP1702	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A5TP1802	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A5U1011	156-0071-02			MICROCKT,LINEAR:VOLTAGE REGULATOR,CHECKED	04713	MC1723CLDS
A5U1111	156-0067-10			MICROCKT,LINEAR:OPNL AMPL,CHECKED	04713	MC1741CP1DS
A5U1112	156-0109-01	B050000	B064159	MICROCKT,LINEAR:LED & PHOTOTRANSISTOR,CHK	58361	MCT-2
A5U1112	156-0109-00	B064160		CPLR,OPTOELECTR:LED & PHOTOTRANSISTOR	09019	H11AX881

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A5U1113	156-0071-02			MICROCKT,LINEAR:VOLTAGE REGULATOR,CHECKED	04713	MC1723CLDS
A5U1121	156-0071-02			MICROCKT,LINEAR:VOLTAGE REGULATOR,CHECKED	04713	MC1723CLDS
A5VR1041	152-0175-00			SEMICOND DVC,DI:ZEN,SI,5.6V,5%,0.4W,DO-7	14552	TD3810976
A5VR1042	152-0265-00			SEMICOND DVC,DI:ZEN,SI,24V,5%,0.4W	14552	TD3810986
A5VR1043	152-0265-00			SEMICOND DVC,DI:ZEN,SI,24V,5%,0.4W	14552	TD3810986
A5VR1101	152-0464-00			SEMICOND DVC,DI:ZEN,SI,6.4V,5%,0.4W,DO-7	04713	SZG25002K3
A5VR1141	152-0243-00			SEMICOND DVC,DI:ZEN,SI,15V,5%,0.4W,DO-7	04713	SZ13203 (1N965B)
A5A1	670-6085-01			CIRCUIT BD ASSY:PS ISOLATOR	80009	670-6085-01
A5A1C1000	281-0785-00			CAP,FXD,CER DI:68PF,10%,100V	04222	MA101A680KAA
A5A1C1020	281-0814-00			CAP,FXD,CER DI:100 PF,10%,100V	04222	MA101A101KAA
A5A1C1021	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A5A1C1100	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A5A1C1101	290-0517-00			CAP,FXD,ELCTLT:6.8UF,20%,35V	05397	T368B685M035AZ
A5A1C1110	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A5A1C1111	290-0517-00			CAP,FXD,ELCTLT:6.8UF,20%,35V	05397	T368B685M035AZ
A5A1C1112	281-0763-00			CAP,FXD,CER DI:47PF,10%,100V	04222	MA101A470KAA
A5A1C1113	281-0763-00			CAP,FXD,CER DI:47PF,10%,100V	04222	MA101A470KAA
A5A1C1114	281-0814-00			CAP,FXD,CER DI:100 PF,10%,100V	04222	MA101A101KAA
A5A1C1120	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A5A1C1121	290-0745-00			CAP,FXD,ELCTLT:22UF,+50-20%,25WVDC	54473	ECE-A25V22L
A5A1C1122	281-0763-00			CAP,FXD,CER DI:47PF,10%,100V	04222	MA101A470KAA
A5A1C1123	281-0763-00			CAP,FXD,CER DI:47PF,10%,100V	04222	MA101A470KAA
A5A1C1131	290-0517-00			CAP,FXD,ELCTLT:6.8UF,20%,35V	05397	T368B685M035AZ
A5A1C1132	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A5A1C1300	283-0211-00			CAP,FXD,CER DI:0.1UF,10%,200V	04222	SR406C104KAA
A5A1C1301	283-0211-00			CAP,FXD,CER DI:0.1UF,10%,200V	04222	SR406C104KAA
A5A1C1310	283-0211-00			CAP,FXD,CER DI:0.1UF,10%,200V	04222	SR406C104KAA
A5A1C1311	283-0211-00			CAP,FXD,CER DI:0.1UF,10%,200V	04222	SR406C104KAA
A5A1C1312	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A5A1C1313	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A5A1C1320	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A5A1C1321	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A5A1C1330	290-0261-00			CAP,FXD,ELCTLT:6.8UF,10%,35V	05397	T110B685K035AS
A5A1C1331	290-0261-00			CAP,FXD,ELCTLT:6.8UF,10%,35V	05397	T110B685K035AS
A5A1C1332	290-0261-00			CAP,FXD,ELCTLT:6.8UF,10%,35V	05397	T110B685K035AS
A5A1C1333	290-0261-00			CAP,FXD,ELCTLT:6.8UF,10%,35V	05397	T110B685K035AS
A5A1C1420	290-0745-00			CAP,FXD,ELCTLT:22UF,+50-20%,25WVDC	54473	ECE-A25V22L
A5A1C1421	290-0745-00			CAP,FXD,ELCTLT:22UF,+50-20%,25WVDC	54473	ECE-A25V22L
A5A1CR1020	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A5A1CR1200	152-0398-00			SEMICOND DVC,DI:RECT,SI,200V,1A	04713	SR3609RL
A5A1CR1201	152-0398-00			SEMICOND DVC,DI:RECT,SI,200V,1A	04713	SR3609RL
A5A1CR1202	152-0398-00			SEMICOND DVC,DI:RECT,SI,200V,1A	04713	SR3609RL
A5A1CR1203	152-0398-00			SEMICOND DVC,DI:RECT,SI,200V,1A	04713	SR3609RL
A5A1CR1220	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A5A1CR1221	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A5A1CR1222	152-0333-00			SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35	07263	FDH-6012
A5A1CR1223	152-0333-00			SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35	07263	FDH-6012
A5A1CR1230	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A5A1CR1231	152-0574-00			SEMICOND DVC,DI:SW,SI,120V,0.15A,DO-35	12969	NDP566
A5A1CR1232	152-0333-00			SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35	07263	FDH-6012
A5A1CR1233	152-0333-00			SEMICOND DVC,DI:SW,SI,55V,200MA,DO-35	07263	FDH-6012
A5A1CR1300	152-0398-00			SEMICOND DVC,DI:RECT,SI,200V,1A	04713	SR3609RL
A5A1CR1301	152-0398-00			SEMICOND DVC,DI:RECT,SI,200V,1A	04713	SR3609RL
A5A1CR1302	152-0398-00			SEMICOND DVC,DI:RECT,SI,200V,1A	04713	SR3609RL
A5A1CR1303	152-0398-00			SEMICOND DVC,DI:RECT,SI,200V,1A	04713	SR3609RL
A5A1L1100	108-0237-00			COIL,RF:FIXED,80UH	TK2042	ORDER BY DESCR
A5A1L1130	108-0422-00			COIL,RF:FIXED,80UH	80009	108-0422-00
A5A1L1300	108-0226-00			COIL,RF:FIXED,100UH	76493	B4257

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A5A1L1301	108-0226-00			COIL,RF:FIXED,100UH	76493	B4257
A5A1L1302	108-0226-00			COIL,RF:FIXED,100UH	76493	B4257
A5A1L1310	108-0226-00			COIL,RF:FIXED,100UH	76493	B4257
A5A1L1311	108-0237-00			COIL,RF:FIXED,80UH	TK2042	ORDER BY DESCR
A5A1L1312	108-0422-00			COIL,RF:FIXED,80UH	80009	108-0422-00
A5A1L1320	108-0422-00			COIL,RF:FIXED,80UH	80009	108-0422-00
A5A1L1321	108-0237-00			COIL,RF:FIXED,80UH	TK2042	ORDER BY DESCR
A5A1Q1020	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A5A1Q1020	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A5A1Q1110	151-1119-00			TRANSISTOR:FE,N-CHAN,SI,TO-39	81483	IRFF122
A5A1Q1120	151-1119-00			TRANSISTOR:FE,N-CHAN,SI,TO-39	81483	IRFF122
A5A1Q1210	151-1119-00			TRANSISTOR:FE,N-CHAN,SI,TO-39	81483	IRFF122
A5A1Q1220	151-1119-00			TRANSISTOR:FE,N-CHAN,SI,TO-39	81483	IRFF122
A5A1R1020	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A5A1R1030	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A5A1R1100	315-0333-00			RES,FXD,FILM:33K OHM,5%,0.25W	57668	NTR25J-E33K0
A5A1R1101	315-0203-00			RES,FXD,FILM:20K OHM,5%,0.25W	57668	NTR25J-E 20K
A5A1R1110	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25W	57668	NTR25J-E100K
A5A1R1120	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A5A1R1121	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A5A1R1200	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A5A1R1201	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A5A1R1202	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A5A1R1203	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A5A1R1220	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A5A1R1221	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A5A1R1400	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25W	57668	NTR25J-E100K
A5A1R1410	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25W	57668	NTR25J-E100K
A5A1T1010	120-0508-00			XFMR,TOROID:	80009	120-0508-00
A5A1T1210	120-1305-00			XFMR,PWR,STU:HF CONVERTER	80009	120-1305-00
A5A1T1230	120-1304-00			XFMR,PWR,SDN&SU:HF CONVERTER	80009	120-1304-00
A5A1T1300	120-0697-00			XFMR,TOROID:	TK1345	120-0697-00
A5A1T1310	120-0697-00			XFMR,TOROID:	TK1345	120-0697-00
A5A1T1420	120-1306-00			TRANSFORMER,RF:COMMON MODE	TK1345	120-1306-00
A5A1U1000	156-1408-00			MICROCKT,LINEAR:TIMER,LOW POWER	32293	ITS9217
A5A1U1010	156-0366-02			MICROCKT,DGTL:DUAL D FLIP-FLOP,SCREENED	02735	CD4013BFX
A5A1U1011	156-0494-02			MICROCKT,DGTL:HEX INV/BUFF,SELECTED	02735	CD4049UBFX
A5A1U1020	156-0494-02			MICROCKT,DGTL:HEX INV/BUFF,SELECTED	02735	CD4049UBFX
A5A1VR1021	152-0123-00			SEMICOND DVC,DI:ZEN,SI,9V,5%,0.5W,DO-7	04713	SZ11530RL
A5A2	670-6087-00			CIRCUIT BD ASSY:PS INTERFACE	80009	670-6087-00
A5A2P1021	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
A5A2P1031	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
A5A2P1032	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
A5A2P1033	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
A5A2P1034	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
A5A2P1035	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
A5A2P1036	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
A5A2P1041	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
A5A2P1043	131-0787-00			TERMINAL,PIN:0.64 L X 0.025 SQ PH BRZ	22526	47359-000
A6	670-6088-04	B050000	B063791	CIRCUIT BD ASSY:REFERENCE	80009	670-6088-04
A6	670-6088-05	B063792	B063834	CIRCUIT BD ASSY:REFERENCE (CG5001 ONLY)	80009	670-6088-05
A6	670-6088-06	B063835	B063843	CIRCUIT BD ASSY:REFERENCE (CG5001 ONLY)	80009	670-6088-06
A6	670-6088-07	B063844	B063948	CIRCUIT BD ASSY:REFERENCE (CG5001 ONLY)	80009	670-6088-07
A6	670-6088-05	B063792	B063864	CIRCUIT BD ASSY:REFERENCE (CG551AP ONLY)	80009	670-6088-05

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A6	670-6088-07	B063865	B063948	CIRCUIT BD ASSY:REFERENCE (CG551AP ONLY)	80009	670-6088-07
A6	670-6088-08	B063949	B063971	CIRCUIT BD ASSY:REFERENCE	80009	670-6088-08
A6	670-6088-09	B063971	B064184	CIRCUIT BD ASSY:REFERENCE	80009	670-6088-09
A6	670-6088-10	B064185		CIRCUIT BD ASSY:REFERENCE	80009	670-6088-10
A6C1001	290-0517-00			CAP,FXD,ELCTLT:6.8UF,20%,35V	05397	T368B685M035AZ
A6C1002	290-0517-00			CAP,FXD,ELCTLT:6.8UF,20%,35V	05397	T368B685M035AZ
A6C1003	290-0517-00			CAP,FXD,ELCTLT:6.8UF,20%,35V	05397	T368B685M035AZ
A6C1004	290-0517-00			CAP,FXD,ELCTLT:6.8UF,20%,35V	05397	T368B685M035AZ
A6C1011	290-0517-00			CAP,FXD,ELCTLT:6.8UF,20%,35V	05397	T368B685M035AZ
A6C1121	290-0534-00			CAP,FXD,ELCTLT:1UF,20%,35V	05397	T368A105M035AZ
A6C1131	290-0219-00			CAP,FXD,ELCTLT:5UF,+75-10%,25V	56289	30D505G025BA9
A6C1141	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A6C1201	281-0226-00			CAP,VAR,PLASTIC:4-38PF,100V	52769	GXD38000
A6C1211	283-0618-00			CAP,FXD,MICA DI:130PF,2%,400V	00853	D155F131G0
A6C1221	290-0534-00			CAP,FXD,ELCTLT:1UF,20%,35V	05397	T368A105M035AZ
A6C1241	281-0812-00			CAP,FXD,CER DI:1000PF,10%,100V	04222	MA101C102KAA
A6C1242	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A6C1301	281-0813-00			CAP,FXD,CER DI:0.047UF,20%,50V	05397	C412C473M5V2CA
A6C1311	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A6C1312	290-0534-00			CAP,FXD,ELCTLT:1UF,20%,35V	05397	T368A105M035AZ
A6C1313	281-0768-00			CAP,FXD,CER DI:470PF,20%,100V	04222	MA101A471MAA
A6C1321	290-0534-00			CAP,FXD,ELCTLT:1UF,20%,35V	05397	T368A105M035AZ
A6C1331	281-0814-00			CAP,FXD,CER DI:100 PF,10%,100V	04222	MA101A101KAA
A6C1332	281-0791-00			CAP,FXD,CER DI:270PF,10%,100V	04222	MA101C271KAA
A6C1400	281-0815-00			CAP,FXD,CER DI:0.027UF,20%,50V	04222	MA205C273MAA
A6C1401	281-0097-00			CAP,VAR,AIR DI:9-35PF,200V	33095	53-717-029-D9-35
A6C1402	281-0809-00			CAP,FXD,CER DI:200 PF,5%,100V	04222	MA101A201JAA
A6C1404	290-0276-00			CAP,FXD,ELCTLT:0.68UF,10%,35V	05397	T3200A684K035AS
A6C1411	283-0189-00			CAP,FXD,CER DI:0.1UF,20%,400V	51642	500400X5R 104M
A6C1412	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A6C1421	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A6C1431	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A6C1531	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A6C1609	281-0792-00			CAP,FXD,CER DI:82PF,10%,100V	04222	MA101A820KAA
A6C1610	281-0813-00			CAP,FXD,CER DI:0.047UF,20%,50V	05397	C412C473M5V2CA
A6C1611	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A6C1612	281-0812-00			CAP,FXD,CER DI:1000PF,10%,100V	04222	MA101C102KAA
A6C1613	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A6C1621	281-0812-00			CAP,FXD,CER DI:1000PF,10%,100V	04222	MA101C102KAA
A6C1622	290-0527-00			CAP,FXD,ELCTLT:15UF,20%,20V	05397	T368B156M020AS
A6C1632	281-0809-00			CAP,FXD,CER DI:200 PF,5%,100V	04222	MA101A201JAA
A6C1633	281-0770-00	B063971	B064184	CAP,FXD,CER DI:1000PF,20%,100V	04222	MA101C102MAA
A6C1633	281-0775-00	B064185		CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A6C1641	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A6C1700	281-0814-00			CAP,FXD,CER DI:100 PF,10%,100V	04222	MA101A101KAA
A6C1701	281-0809-00			CAP,FXD,CER DI:200 PF,5%,100V	04222	MA101A201JAA
A6C1702	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A6C1721	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A6C1722	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A6C1841	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A6CR1111	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1112	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1113	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1121	152-0066-00			SEMICOND DVC,DI:RECT,SI,400V,1A,DO-41	05828	GP10G-020
A6CR1141	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1211	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1212	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)

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A6CR1213	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1241	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1242	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1401	152-0107-00			SEMICOND DVC,DI:RECT,SI,400 V,400MA,A1	12969	"G727"
A6CR1421	152-0246-00			SEMICOND DVC,DI:SW,SI,40V,200MA,DO-7	14433	WG1537TK
A6CR1422	152-0246-00			SEMICOND DVC,DI:SW,SI,40V,200MA,DO-7	14433	WG1537TK
A6CR1510	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1521	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1522	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1523	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1524	152-0245-00			SEMICOND DVC,DI:SW,SI,40V,DO-7	03508	DA2740
A6CR1525	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1526	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1527	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1528	152-0245-00			SEMICOND DVC,DI:SW,SI,40V,DO-7	03508	DA2740
A6CR1611	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1621	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1622	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1623	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1624	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1625	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1626	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1701	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A6CR1702	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A6CR1731	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1732	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1733	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1801	152-0536-00			SEMICOND DVC,DI:SW,4V,C132	04713	SMV1110 (MBD101)
A6CR1802	152-0536-00			SEMICOND DVC,DI:SW,4V,C132	04713	SMV1110 (MBD101)
A6CR1811	152-0536-00			SEMICOND DVC,DI:SW,4V,C132	04713	SMV1110 (MBD101)
A6CR1821	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1822	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1831	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6CR1832	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A6K1101	108-0355-00			COIL,REED SW:6.5VDC,18MA,SINGLE REED	80009	108-0355-00
A6K1102	148-0076-00			RLY,REED:FRM A,250MA,100V,COIL,5V,500 OHM	15636	R4060-1
A6K1111	148-0142-00	B050000	B063791	RELAY,ARMATURE:FORM A,0.25A,52VDC,COIL 5VDC 100 OHM	12633	A20924
A6K1111	148-0167-00	B063792		RELAY REED:FORM A,5VDC COIL	71482	MSS-21A05
A6Q1041	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1041	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A6Q1111	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A6Q1111	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A6Q1112	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A6Q1112	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A6Q1121	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1121	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A6Q1141	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A6Q1141	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A6Q1142	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A6Q1142	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A6Q1143	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1143	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A6Q1211	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A6Q1211	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A6Q1212	151-0208-00			TRANSISTOR:PNP,SI,TO-39	80009	151-0208-00
A6Q1221	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1221	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A6Q1241	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1241	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A6Q1311	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A6Q1311	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A6Q1312	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A6Q1312	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A6Q1321	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1321	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A6Q1322	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A6Q1322	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A6Q1411	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1411	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A6Q1412	151-0279-03			TRANSISTOR:SELECTED	80009	151-0279-03
A6Q1421	151-0136-00			TRANSISTOR:NPN,SI,TO-39	02735	35495
A6Q1431	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1431	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A6Q1510	151-0698-00			TRANSISTOR:PNP,SI,TO-126	04713	SJE350
A6Q1512	151-0444-00			TRANSISTOR:NPN,SI,TO-92	04713	SPS797
A6Q1514	151-0443-00			TRANSISTOR:PNP,SI,TO-92	04713	SPS7950
A6Q1521	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1521	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A6Q1522	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1522	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A6Q1531	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A6Q1531	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A6Q1537	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A6Q1537	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A6Q1541	151-1103-00			TRANSISTOR:FET,N CHANNEL,SI,TO-72	17856	DM1001
A6Q1611	151-1097-00			TRANSISTOR:FE,SI,TO-92	04713	SPF713
A6Q1612	151-1120-00			TRANSISTOR:FE,P CHANNEL,SI,TO-92	TK0768	VP0106N3
A6Q1621	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A6Q1621	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A6Q1631	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1631	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A6Q1632	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1632	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A6Q1640	151-1103-00			TRANSISTOR:FET,N CHANNEL,SI,TO-72	17856	DM1001
A6Q1641	151-1103-00			TRANSISTOR:FET,N CHANNEL,SI,TO-72	17856	DM1001
A6Q1642	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A6Q1642	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A6Q1643	151-1103-00			TRANSISTOR:FET,N CHANNEL,SI,TO-72	17856	DM1001
A6Q1644	151-1103-00			TRANSISTOR:FET,N CHANNEL,SI,TO-72	17856	DM1001
A6Q1645	151-1097-00			TRANSISTOR:FE,SI,TO-92	04713	SPF713
A6Q1701	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A6Q1701	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A6Q1702	151-0302-01	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0302-01
A6Q1702	151-0302-00	B064002		TRANSISTOR:NPN,SI,TO-18	04713	ST899
A6Q1711	151-0440-00			TRANSISTOR:SELECTED	03508	X41E603
A6Q1731	151-1098-00	B050000	B063948	TRANSISTOR:FE,N-CHANNEL,SI,TO-72	TK0987	20S002
A6Q1731	151-1121-00	B063949		TRANSISTOR:FE,N CHANNEL,SI,TO-92	17856	V10206
A6Q1732	151-1098-00	B050000	B063948	TRANSISTOR:FE,N-CHANNEL,SI,TO-72	TK0987	20S002
A6Q1732	151-1121-00	B063949		TRANSISTOR:FE,N CHANNEL,SI,TO-92	17856	V10206
A6Q1733	151-1098-00	B050000	B063948	TRANSISTOR:FE,N-CHANNEL,SI,TO-72	TK0987	20S002
A6Q1733	151-1103-00	B063949		TRANSISTOR:FET,N CHANNEL,SI,TO-72	17856	DM1001
A6Q1734	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1734	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A6Q1735	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1735	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A6Q1736	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1736	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A6Q1737	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1737	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A6Q1741	151-1103-00			TRANSISTOR:FET,N CHANNEL,SI,TO-72	17856	DM1001
A6Q1742	151-1103-00			TRANSISTOR:FET,N CHANNEL,SI,TO-72	17856	DM1001
A6Q1743	151-1103-00			TRANSISTOR:FET,N CHANNEL,SI,TO-72	17856	DM1001
A6Q1744	151-1098-00	B050000	B063948	TRANSISTOR:FE,N-CHANNEL,SI,TO-72	TK0987	20S002
A6Q1744	151-1121-00	B063949		TRANSISTOR:FE,N CHANNEL,SI,TO-92	17856	V10206
A6Q1745	151-1103-00			TRANSISTOR:FET,N CHANNEL,SI,TO-72	17856	DM1001
A6Q1811	151-0301-01	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0301-01
A6Q1811	151-0301-00	B064002		TRANSISTOR:PNP,SI,TO-18	04713	ST898
A6Q1821	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A6Q1821	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A6Q1831	151-1098-00	B050000	B063948	TRANSISTOR:FE,N-CHANNEL,SI,TO-72	TK0987	20S002
A6Q1831	151-1121-00	B063949		TRANSISTOR:FE,N CHANNEL,SI,TO-92	17856	V10206
A6Q1832	151-1098-00	B050000	B063948	TRANSISTOR:FE,N-CHANNEL,SI,TO-72	TK0987	20S002
A6Q1832	151-1121-00	B063949	B064184	TRANSISTOR:FE,N CHANNEL,SI,TO-92	17856	V10206
A6Q1832	151-1103-00	B064185		TRANSISTOR:FET,N CHANNEL,SI,TO-72	17856	DM1001
A6Q1833	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1833	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A6Q1834	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1834	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A6Q1835	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1835	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A6Q1836	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A6Q1836	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A6R1011	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A6R1012	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A6R1021	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A6R1022	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A6R1023	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A6R1024	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A6R1025	315-0302-00			RES,FXD,FILM:3K OHM,5%,0.25W	57668	NTR25J-E03K0
A6R1031	315-0302-00			RES,FXD,FILM:3K OHM,5%,0.25W	57668	NTR25J-E03K0
A6R1032	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A6R1033	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A6R1041	315-0302-00			RES,FXD,FILM:3K OHM,5%,0.25W	57668	NTR25J-E03K0
A6R1042	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1
A6R1043	315-0391-00			RES,FXD,FILM:390 OHM,5%,0.25W	57668	NTR25J-E390E
A6R1111	308-0720-01			RES,FXD,WW:50 OHM,0.5%,3W	00213	1200S 50-0.5
A6R1113	315-0152-00			RES,FXD,FILM:1.5K OHM,5%,0.25W	57668	NTR25J-E01K5
A6R1114	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A6R1115	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A6R1121	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25W	57668	NTR25J-E100K
A6R1131	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A6R1132	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A6R1133	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A6R1134	315-0473-00			RES,FXD,FILM:47K OHM,5%,0.25W	57668	NTR25J-E47K0
A6R1141	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A6R1142	315-0752-00			RES,FXD,FILM:7.5K OHM,5%,0.25W	57668	NTR25J-E07K5
A6R1143	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A6R1144	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A6R1145	315-0302-00			RES,FXD,FILM:3K OHM,5%,0.25W	57668	NTR25J-E03K0
A6R1146	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A6R1147	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1
A6R1148	315-0332-00			RES,FXD,FILM:3.3K OHM,5%,0.25W	57668	NTR25J-E03K3

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A6R1201	325-0330-00			RES SET,MATCHED:7,RATIO 0.025%,(2)1K OHM,(1)100K,250,4K,5K,40K OHM	05347	1793
A6R1203	311-1241-00			RES,VAR,NONWW:TRMR,100K OHM,0.5W	32997	3386X-T07-104
A6R1205	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A6R1210	307-0103-00	B050000	B063873	RES,FXD,CMPSN:2.7 OHM,5%,0.25W (CG551AP ONLY)	01121	CB27G5
A6R1210	307-0659-00	B063874		RES,FXD,FILM:2.2 OHM,5%,0.25W (CG551AP ONLY)	19701	5043CX2R200J
A6R1210	307-0103-00	B050000	B063834	RES,FXD,CMPSN:2.7 OHM,5%,0.25W (CG5001 ONLY)	01121	CB27G5
A6R1210	307-0659-00	B063835		RES,FXD,FILM:2.2 OHM,5%,0.25W (CG5001 ONLY)	19701	5043CX2R200J
A6R1211	315-0182-00			RES,FXD,FILM:1.8K OHM,5%,0.25W	57668	NTR25J-E1K8
A6R1213	307-0107-00	B050000	B063873	RES,FXD,CMPSN:5.6 OHM,5%,0.25W (CG551AP ONLY)	01121	CB56G5
A6R1213	307-0103-00	B063874		RES,FXD,CMPSN:2.7 OHM,5%,0.25W (CG551AP ONLY)	01121	CB27G5
A6R1213	307-0107-00	B050000	B063834	RES,FXD,CMPSN:5.6 OHM,5%,0.25W (CG5001 ONLY)	01121	CB56G5
A6R1213	307-0103-00	B063835		RES,FXD,CMPSN:2.7 OHM,5%,0.25W (CG5001 ONLY)	01121	CB27G5
A6R1214	315-0153-00			RES,FXD,FILM:15K OHM,5%,0.25W	19701	5043CX15K00J
A6R1215	315-0132-00			RES,FXD,FILM:1.3K OHM,5%,0.25W	57668	NTR25J-E01K3
A6R1216	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A6R1217	315-0301-00			RES,FXD,FILM:300 OHM,5%,0.25W	57668	NTR25J-E300E
A6R1231	308-0326-00			RES,FXD,WW:9.9K OHM,0.01%,0.125W	07088	812P99000T
A6R1232	308-0738-00			RES,FXD,WW:10K OHM,0.01%,0.5W,TC=5PPM AXIAL LEADS	07088	812P1001T
A6R1241	315-0332-00			RES,FXD,FILM:3.3K OHM,5%,0.25W	57668	NTR25J-E03K3
A6R1242	315-0272-00			RES,FXD,FILM:2.7K OHM,5%,0.25W	57668	NTR25J-E02K7
A6R1243	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A6R1244	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1
A6R1301	315-0100-00			RES,FXD,FILM:10 OHM,5%,0.25W	19701	5043CX10RR00J
A6R1302	321-0193-00			RES,FXD,FILM:1K OHM,1%,0.125W,TC=T0	19701	5033ED1K00F
A6R1311	315-0203-00			RES,FXD,FILM:20K OHM,5%,0.25W	57668	NTR25J-E 20K
A6R1312	----- -----			(PART OF A6R1201)		
A6R1314	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A6R1315	315-0132-00			RES,FXD,FILM:1.3K OHM,5%,0.25W	57668	NTR25J-E01K3
A6R1321	315-0430-00			RES,FXD,FILM:43 OHM,5%,0.25W	19701	5043CX43R00J
A6R1322	315-0430-00			RES,FXD,FILM:43 OHM,5%,0.25W	19701	5043CX43R00J
A6R1323	307-0103-00	B050000	B063873	RES,FXD,CMPSN:2.7 OHM,5%,0.25W (CG551AP ONLY)	01121	CB27G5
A6R1323	307-0659-00	B063874	B063875	RES,FXD,FILM:2.2 OHM,5%,0.25W (CG551AP ONLY)	19701	5043CX2R200J
A6R1323	307-0103-00	B050000	B063834	RES,FXD,CMPSN:2.7 OHM,5%,0.25W (CG5001 ONLY)	01121	CB27G5
A6R1323	307-0659-00	B063835	B063843	RES,FXD,FILM:2.2 OHM,5%,0.25W (CG5001 ONLY)	19701	5043CX2R200J
A6R1323	307-0103-00	B063865		RES,FXD,CMPSN:2.7 OHM,5%,0.25W (CG551AP ONLY)	01121	CB27G5
A6R1323	307-0103-00	B063844		RES,FXD,CMPSN:2.7 OHM,5%,0.25W (CG5001 ONLY)	01121	CB27G5
A6R1324	311-1236-00			RES,VAR,NONWW:TRMR,250 OHM,0.5W	32997	3386X-T07-251
A6R1325	311-1936-00			RES,VAR,NONWW:TRMR,50 OHM,20%,0.5W	32997	3386X-T07-500
A6R1326	321-0073-00			RES,FXD,FILM:56.2 OHM,1%,0.125W,TC=T0	57668	RB14FXE 56E2
A6R1327	308-0658-00			RES,FXD,WW:4K OHM,0.01%,0.125W	01686	4060-4001-R01-2
A6R1328	307-0107-00	B050000	B063873	RES,FXD,CMPSN:5.6 OHM,5%,0.25W (CG551AP ONLY)	01121	CB56G5
A6R1328	307-0103-00	B063875	B063864	RES,FXD,CMPSN:2.7 OHM,5%,0.25W (CG551AP ONLY)	01121	CB27G5

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A6R1328	307-0107-00	B050000	B063834	RES,FXD,CMPSN:5.6 OHM,5%,0.25W (CG5001 ONLY)	01121	CB56G5
A6R1328	307-0103-00	B063835	B063843	RES,FXD,CMPSN:2.7 OHM,5%,0.25W (CG5001 ONLY)	01121	CB27G5
A6R1328	307-0107-00	B063865		RES,FXD,CMPSN:5.6 OHM,5%,0.25W (CG551AP ONLY)	01121	CB56G5
A6R1328	307-0107-00	B063844		RES,FXD,CMPSN:5.6 OHM,5%,0.25W (CG5001 ONLY)	01121	CB56G5
A6R1331	321-1133-02			RES,FXD,FILM:240 OHM,0.5%,0.125W,TC=T2	24546	NC60D2400D
A6R1400	315-0470-00			RES,FXD,FILM:47 OHM,5%,0.25W	57668	NTR25J-E47E0
A6R1401	315-0221-00			RES,FXD,FILM:220 OHM,5%,0.25W	57668	NTR25J-E220E
A6R1402	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A6R1404	315-0470-00			RES,FXD,FILM:47 OHM,5%,0.25W	57668	NTR25J-E47E0
A6R1406	315-0201-00			RES,FXD,FILM:200 OHM,5%,0.25W	57668	NTR25J-E200E
A6R1410	315-0392-00			RES,FXD,FILM:3.9K OHM,5%,0.25W	57668	NTR25J-E03K9
A6R1411	311-1240-00			RES,VAR,NONWW:TRMR,25K OHM,10%,0.5W	32997	3386X-T07-253
A6R1412	315-0241-00			RES,FXD,FILM:240 OHM,5%,0.25W	19701	5043CX240R0J
A6R1421	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25W	57668	NTR25J-E100K
A6R1422	315-0621-00			RES,FXD,FILM:620 OHM,5%,0.25W	57668	NTR25J-E620E
A6R1423	315-0133-00			RES,FXD,FILM:13K OHM,5%,0.25W	19701	5043CX13K00J
A6R1424	315-0432-00			RES,FXD,FILM:4.3K OHM,5%,0.25W	57668	NTR25J-E04K3
A6R1425	315-0621-00			RES,FXD,FILM:620 OHM,5%,0.25W	57668	NTR25J-E620E
A6R1431	315-0222-00			RES,FXD,FILM:2.2K OHM,5%,0.25W	57668	NTR25J-E02K2
A6R1432	325-0248-00			RES SET,MATCHED:(9) RESISTORS,RATIO 0.025%	57027	TK059
A6R1433	----- -----			(PART OF A6R1432)		
A6R1434	----- -----			(PART OF A6R1432)		
A6R1435	315-0123-00			RES,FXD,FILM:12K OHM,5%,0.25W	57668	NTR25J-E12K0
A6R1436	----- -----			(PART OF A6R1432)		
A6R1437	----- -----			(PART OF A6R1432)		
A6R1438	----- -----			(PART OF A6R1432)		
A6R1441	----- -----			(PART OF A6R1432)		
A6R1442	----- -----			(PART OF A6R1432)		
A6R1501	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A6R1512	315-0243-00			RES,FXD,FILM:24K OHM,5%,0.25W	57668	NTR25J-E24K0
A6R1521	315-0153-00			RES,FXD,FILM:15K OHM,5%,0.25W	19701	5043CX15K00J
A6R1522	315-0161-00			RES,FXD,FILM:160 OHM,5%,0.25W	57668	NTR25J-E 160E
A6R1523	315-0161-00			RES,FXD,FILM:160 OHM,5%,0.25W	57668	NTR25J-E 160E
A6R1524	315-0153-00			RES,FXD,FILM:15K OHM,5%,0.25W	19701	5043CX15K00J
A6R1525	315-0202-00			RES,FXD,FILM:2K OHM,5%,0.25W	57668	NTR25J-E 2K
A6R1526	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A6R1527	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A6R1528	315-0163-00			RES,FXD,FILM:16K OHM,5%,0.25W	57668	NTR25J-E 16K
A6R1531	315-0302-00			RES,FXD,FILM:3K OHM,5%,0.25W	57668	NTR25J-E03K0
A6R1532	311-1240-00			RES,VAR,NONWW:TRMR,25K OHM,10%,0.5W	32997	3386X-T07-253
A6R1533	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1
A6R1534	315-0822-00			RES,FXD,FILM:8.2K OHM,5%,0.25W	19701	5043CX8K200J
A6R1537	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A6R1541	325-0331-00			RES SET,MATCHED:2,1K OHM,1,4K OHM,0.1%,0.1W	05347	1774
A6R1601	311-1918-00			RES,VAR,NONWW:TRMR,2K OHM,10%,0.5 W	32997	3386C-T07-202
A6R1602	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A6R1613	315-0202-00			RES,FXD,FILM:2K OHM,5%,0.25W	57668	NTR25J-E 2K
A6R1614	315-0221-00			RES,FXD,FILM:220 OHM,5%,0.25W	57668	NTR25J-E220E
A6R1615	----- -----			(PART OF A6R1201)		
A6R1616	308-0644-00			RES,FXD,WW:25 OHM,1%,5W,TC=10PPM	01686	T5-25R0-F-10
A6R1621	315-0181-00			RES,FXD,FILM:180 OHM,5%,0.25W	57668	NTR25J-E180E
A6R1622	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1
A6R1631	315-0682-00			RES,FXD,FILM:6.8K OHM,5%,0.25W	57668	NTR25J-E06K8
A6R1632	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A6R1633	315-0563-00			RES,FXD,FILM:56K OHM,5%,0.25W	19701	5043CX56K00J
A6R1634	315-0563-00			RES,FXD,FILM:56K OHM,5%,0.25W	19701	5043CX56K00J
A6R1635	315-0563-00			RES,FXD,FILM:56K OHM,5%,0.25W	19701	5043CX56K00J
A6R1641	----- -----			(PART OF A6R1541)		
A6R1642	----- -----			(PART OF A6R1541)		
A6R1643	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A6R1644	----- -----			(PART OF A6R1201)		
A6R1645	----- -----			(PART OF A6R1201)		
A6R1646	----- -----			(PART OF A6R1201)		
A6R1647	----- -----			(PART OF A6R1201)		
A6R1701	315-0152-00			RES,FXD,FILM:1.5K OHM,5%,0.25W	57668	NTR25J-E01K5
A6R1702	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A6R1711	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A6R1721	315-0123-00			RES,FXD,FILM:12K OHM,5%,0.25W	57668	NTR25J-E12K0
A6R1722	315-0302-00			RES,FXD,FILM:3K OHM,5%,0.25W	57668	NTR25J-E03K0
A6R1723	315-0123-00			RES,FXD,FILM:12K OHM,5%,0.25W	57668	NTR25J-E12K0
A6R1724	315-0302-00			RES,FXD,FILM:3K OHM,5%,0.25W	57668	NTR25J-E03K0
A6R1725	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25W	57668	NTR25J-E100K
A6R1726	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25W	57668	NTR25J-E100K
A6R1727	315-0105-00			RES,FXD,FILM:1M OHM,5%,0.25W	19701	5043CX1M000J
A6R1731	307-0499-00			RES,FXD,FILM:9,100K OHM,5%,0.125W	11236	750-101-R100K
A6R1732	307-0445-00			RES NTWK,FXD,FI:4.7K OHM,20%,(9)RES	32997	4310R-101-472
A6R1811	315-0242-00			RES,FXD,FILM:2.4K OHM,5%,0.25W	57668	NTR25J-E02K4
A6R1812	301-0390-00			RES,FXD,FILM:39 OHM,5%,0.5W	01121	EB3905
A6R1822	315-0302-00			RES,FXD,FILM:3K OHM,5%,0.25W	57668	NTR25J-E03K0
A6R1823	315-0393-00			RES,FXD,FILM:39K OHM,5%,0.25W	57668	NTR25J-E39K0
A6S1101	260-1112-00			SWITCH,REED:SPST,NO,200V,500MA	TK1855	HYR200102030
A6T1041	120-1104-00			TRANSFORMER,RF:PULSE,TOROID	TK1345	120-1104-00
A6T1042	120-1104-00			TRANSFORMER,RF:PULSE,TOROID	TK1345	120-1104-00
A6T1241	120-1104-00			TRANSFORMER,RF:PULSE,TOROID	TK1345	120-1104-00
A6TP1200	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A6TP1202	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A6TP1304	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A6TP1400	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A6TP1401	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A6U1031	156-0109-01	B050000	B064159	MICROCKT,LINEAR:LED & PHOTOTRANSISTOR,CHK	58361	MCT-2
A6U1031	156-0109-00	B064160		CPLR,OPTOELECTR:LED & PHOTOTRANSISTOR	09019	H11AX881
A6U1032	156-0109-01	B050000	B064159	MICROCKT,LINEAR:LED & PHOTOTRANSISTOR,CHK	58361	MCT-2
A6U1032	156-0109-00	B064160		CPLR,OPTOELECTR:LED & PHOTOTRANSISTOR	09019	H11AX881
A6U1121	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A6U1122	156-0384-02			MICROCKT,DGTL:QUAD 2-INP NAND GATE,SCRN	07263	74LS03PCQR
A6U1123	156-0366-02			MICROCKT,DGTL:DUAL D FLIP-FLOP,SCREENED	02735	CD4013BFX
A6U1131	156-1152-00			MICROCKT,DGTL:DUAL PRCN RETRIGGERABLE	04713	MC14538BCL
A6U1211	156-1156-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	80009	156-1156-01
A6U1222	156-0991-01	B050000	B064001	MICROCKT,LINEAR:VOLTAGE REGULATOR,SCREENED	80009	156-0991-01
A6U1222	156-0991-00	B064002		MICROCKT,LINEAR:VOLTAGE REGULATOR	04713	MC78L05ACP
A6U1241	156-1321-00	B050000	B064184	MICROCKT,LINEAR:MULTIPLYING D/A CONVERTER	33256	DAC331C-10-1
A6U1241	156-0719-00	B064185		MICROCKT,LINEAR:CMOS,10 BIT MULTIPLYING DAC	24355	AD7533LN
A6U1242	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A6U1311	156-0685-03			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	27014	LM725CN/A+
A6U1331	156-0854-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	27014	LM308AJ-8A+
A6U1332	156-0854-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	27014	LM308AJ-8A+
A6U1341	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A6U1411	156-1156-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	80009	156-1156-01
A6U1432	156-1322-00			MICROCKT,LINEAR:VOLTAGE REFERENCE	24355	AD40374
A6U1531	156-0513-02			MICROCKT,DGTL:CMOS,ANALOG MUX/DEMUX	02735	CD4051BFX
A6U1541	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A6U1611	156-0918-00			MICROCKT,LINEAR:OPNL AMPL,SCREENED	27014	LM321AH

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A6U1612	156-1156-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	80009	156-1156-01
A6U1621	156-0158-07			MICROCKT,LINEAR:DUAL OPNL AMPL,SCREENED	01295	MC1458JG4
A6U1631	156-1156-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	80009	156-1156-01
A6U1632	156-0512-02			MICROCKT,LINEAR:OPNL AMPL,SELECTED	04713	LM308J-8DS
A6U1841	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A6VR1821	152-0175-00			SEMICOND DVC,DI:ZEN,SI,5.6V,5%,0.4W,DO-7	14552	TD3810976
A6W1111	131-0566-00	B050000	B063791	BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225 L	24546	OMA 07
A7	672-0102-02	B050000	B063791	CIRCUIT BD ASSY:ATTENUATOR COMP	80009	672-0102-02
A7	670-6089-05	B063792		CIRCUIT BD ASSY:OUTPUT	80009	670-6089-05
A7AT1630	307-1020-00			ATTENUATOR,FXD:2X,50 OHM	80009	307-1020-00
A7AT1632	307-1023-00			ATTENUATOR,FXD:5X,50 OHM	80009	307-1023-00
A7AT1634	307-1038-00			ATTENUATOR,FXD:50 OHM,20 DB	80009	307-1038-00
A7C1001	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A7C1003	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A7C1005	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A7C1011	281-0811-00			CAP,FXD,CER DI:10PF,10%,100V	04222	MA101A100KAA
A7C1017	281-0762-00			CAP,FXD,CER DI:27PF,20%,100V	04222	MA101A270MAA
A7C1019	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A7C1030	290-0183-00			CAP,FXD,ELCTLT:1UF,10%,35V	05397	T3228105K035AS
A7C1034	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A7C1102	281-0762-00			CAP,FXD,CER DI:27PF,20%,100V	04222	MA101A270MAA
A7C1131	290-0395-00			CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T110B475M050AS
A7C1200	283-0629-00			CAP,FXD,MICA DI:62PF,1%,500V	00853	D105E620F0
A7C1209	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A7C1210	281-0786-00			CAP,FXD,CER DI:150PF,10%,100V	04222	MA101A151KAA
A7C1217	283-0024-00			CAP,FXD,CER DI:0.1UF,+80-20%,50V	04222	SR215C104MAA
A7C1304	281-0786-00			CAP,FXD,CER DI:150PF,10%,100V	04222	MA101A151KAA
A7C1308	281-0786-00			CAP,FXD,CER DI:150PF,10%,100V	04222	MA101A151KAA
A7C1334	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A7C1401	290-0183-00			CAP,FXD,ELCTLT:1UF,10%,35V	05397	T3228105K035AS
A7C1412	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A7C1413	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A7C1414	290-0135-01			CAP,FXD,ELCTLT:15UF,20%,20V	05397	T110B156M020AS
A7C1426	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A7C1518	290-0525-00			CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T368B475M050AS
A7C1520	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A7C1524	281-0768-00			CAP,FXD,CER DI:470PF,20%,100V	04222	MA101A471MAA
A7C1603	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A7C1605	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A7C1608	281-0810-00			CAP,FXD,CER DI:5.6PF,+/-0.5PF,100V	04222	MA101A5R6DAA
A7C1616	290-0525-00			CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T368B475M050AS
A7C1620	283-0353-00			CAP,FXD,CER DI:0.1UF,10%,50V	04222	12105C104KA2075
A7C1621	281-0170-00			CAP,VAR,CER DI:1.25-3PF,100V	52763	302506151
A7C1701	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A7C1705	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A7C1709	281-0810-00			CAP,FXD,CER DI:5.6PF,+/-0.5PF,100V	04222	MA101A5R6DAA
A7C1713	290-0525-00			CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T368B475M050AS
A7C1721	281-0170-00			CAP,VAR,CER DI:1.25-3PF,100V	52763	302506151
A7C1725	283-0353-00			CAP,FXD,CER DI:0.1UF,10%,50V	04222	12105C104KA2075
A7C1802	281-0812-00			CAP,FXD,CER DI:1000PF,10%,100V	04222	MA101C102KAA
A7C1803	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A7C1813	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A7C1824	290-0525-00			CAP,FXD,ELCTLT:4.7UF,20%,50V	05397	T368B475M050AS
A7CR1010	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A7CR1018	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A7CR1032	152-0066-00			SEMICOND DVC,DI:RECT,SI,400V,1A,DO-41	05828	GP10G-020
A7CR1106	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A7CR1108	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A7CR1109	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A7CR1113	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A7CR1114	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A7CR1116	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A7CR1205	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A7CR1207	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A7CR1210	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A7CR1413	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A7CR1421	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A7CR1423	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A7CR1424	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A7CR1519	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A7CR1624	152-0536-00			SEMICOND DVC,DI:SW,4V,C132	04713	SMV1110 (MBD101)
A7CR1724	152-0536-00			SEMICOND DVC,DI:SW,4V,C132	04713	SMV1110 (MBD101)
A7J1121	131-1003-00			CONN,RCPT,ELEC:CKT BD MT,3 PRONG	80009	131-1003-00
A7J1332	131-1003-00			CONN,RCPT,ELEC:CKT BD MT,3 PRONG	80009	131-1003-00
A7K1225	148-0076-00			RLY,REED:FRM A,250MA,100V,COIL,5V,500 OHM	15636	R4060-1
A7K1300	148-0142-01	B050000	B063791	RELAY,ARMATURE:FORM A,0.25A,52VDC,COIL 5VDC ,67 OHM	12633	A20924
A7K1300	148-0167-00	B063792		RELAY REED:FORM A,5VDC COIL	71482	MSS-21A05
A7K1312	148-0142-01	B050000	B063791	RELAY,ARMATURE:FORM A,0.25A,52VDC,COIL 5VDC ,67 OHM	12633	A20924
A7K1312	148-0167-00	B063792		RELAY REED:FORM A,5VDC COIL	71482	MSS-21A05
A7K1314	148-0142-01	B050000	B063791	RELAY,ARMATURE:FORM A,0.25A,52VDC,COIL 5VDC ,67 OHM	12633	A20924
A7K1314	148-0167-00	B063792		RELAY REED:FORM A,5VDC COIL	71482	MSS-21A05
A7K1323	148-0142-01	B050000	B063791	RELAY,ARMATURE:FORM A,0.25A,52VDC,COIL 5VDC ,67 OHM	12633	A20924
A7K1323	148-0167-00	B063792		RELAY REED:FORM A,5VDC COIL	71482	MSS-21A05
A7K1431	148-0128-01	B050000	B064338	RELAY,ARMATURE:FORM X&Y,25A,28V,COIL 8V	80009	148-0128-01
A7K1431	148-0128-04	B064339		RELAY,ARMATURE:1 FORM X & 1 FORM Y,25A,28VD C,COIL 8VDC	80009	148-0128-04
A7K1432	148-0128-01	B050000	B064338	RELAY,ARMATURE:FORM X&Y,25A,28V,COIL 8V	80009	148-0128-01
A7K1432	148-0128-04	B064339		RELAY,ARMATURE:1 FORM X & 1 FORM Y,25A,28VD C,COIL 8VDC	80009	148-0128-04
A7K1433	148-0128-01	B050000	B064338	RELAY,ARMATURE:FORM X&Y,25A,28V,COIL 8V	80009	148-0128-01
A7K1433	148-0128-04	B064339		RELAY,ARMATURE:1 FORM X & 1 FORM Y,25A,28VD C,COIL 8VDC	80009	148-0128-04
A7K1434	148-0128-01	B050000	B064338	RELAY,ARMATURE:FORM X&Y,25A,28V,COIL 8V	80009	148-0128-01
A7K1434	148-0128-04	B064339		RELAY,ARMATURE:1 FORM X & 1 FORM Y,25A,28VD C,COIL 8VDC	80009	148-0128-04
A7K1532	148-0128-01	B050000	B064338	RELAY,ARMATURE:FORM X&Y,25A,28V,COIL 8V	80009	148-0128-01
A7K1532	148-0128-04	B064339		RELAY,ARMATURE:1 FORM X & 1 FORM Y,25A,28VD C,COIL 8VDC	80009	148-0128-04
A7K1534	148-0128-01	B050000	B064338	RELAY,ARMATURE:FORM X&Y,25A,28V,COIL 8V	80009	148-0128-01
A7K1534	148-0128-04	B064339		RELAY,ARMATURE:1 FORM X & 1 FORM Y,25A,28VD C,COIL 8VDC	80009	148-0128-04
A7K1535	148-0128-01	B050000	B064338	RELAY,ARMATURE:FORM X&Y,25A,28V,COIL 8V	80009	148-0128-01
A7K1535	148-0128-04	B064339		RELAY,ARMATURE:1 FORM X & 1 FORM Y,25A,28VD C,COIL 8VDC	80009	148-0128-04
A7K1537	148-0128-01	B050000	B064338	RELAY,ARMATURE:FORM X&Y,25A,28V,COIL 8V	80009	148-0128-01
A7K1537	148-0128-04	B064339		RELAY,ARMATURE:1 FORM X & 1 FORM Y,25A,28VD C,COIL 8VDC	80009	148-0128-04
A7K1632	148-0128-01	B050000	B064338	RELAY,ARMATURE:FORM X&Y,25A,28V,COIL 8V	80009	148-0128-01
A7K1632	148-0128-04	B064339		RELAY,ARMATURE:1 FORM X & 1 FORM Y,25A,28VD C,COIL 8VDC	80009	148-0128-04
A7K1634	148-0128-01	B050000	B064338	RELAY,ARMATURE:FORM X&Y,25A,28V,COIL 8V	80009	148-0128-01

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A7K1634	148-0128-04	B064339		RELAY,ARMATURE:1 FORM X & 1 FORM Y,25A,28VD C,COIL 8VDC	80009	148-0128-04
A7K1636	148-0128-01	B050000	B064338	RELAY,ARMATURE:FORM X&Y,25A,28V,COIL 8V	80009	148-0128-01
A7K1636	148-0128-04	B064339		RELAY,ARMATURE:1 FORM X & 1 FORM Y,25A,28VD C,COIL 8VDC	80009	148-0128-04
A7K1638	148-0128-01	B050000	B064338	RELAY,ARMATURE:FORM X&Y,25A,28V,COIL 8V	80009	148-0128-01
A7K1638	148-0128-04	B064339		RELAY,ARMATURE:1 FORM X & 1 FORM Y,25A,28VD C,COIL 8VDC	80009	148-0128-04
A7K1737	148-0128-01	B050000	B064338	RELAY,ARMATURE:FORM X&Y,25A,28V,COIL 8V	80009	148-0128-01
A7K1737	148-0128-04	B064339		RELAY,ARMATURE:1 FORM X & 1 FORM Y,25A,28VD C,COIL 8VDC	80009	148-0128-04
A7K1739	148-0128-01	B050000	B064338	RELAY,ARMATURE:FORM X&Y,25A,28V,COIL 8V	80009	148-0128-01
A7K1739	148-0128-04	B064339		RELAY,ARMATURE:1 FORM X & 1 FORM Y,25A,28VD C,COIL 8VDC	80009	148-0128-04
A7L1002	108-0249-00			CHOKE,RF:FIXED,12MF	76493	B-4992
A7L1100	108-0249-00			CHOKE,RF:FIXED,12MF	76493	B-4992
A7L1223	108-0715-00			COIL,RF:FIXED,245NH	TK1345	11108-0715-00
A7L1626	108-0436-00			COIL,RF:FIXED,235NH	80009	108-0436-00
A7L1627	108-0606-00			COIL,RF:FIXED,31NH	80009	108-0606-00
A7L1721	108-0606-00			COIL,RF:FIXED,31NH	80009	108-0606-00
A7L1724	108-0436-00			COIL,RF:FIXED,235NH	80009	108-0436-00
A7Q1010	151-0441-00			TRANSISTOR:NPN,SI,TO-72	04713	SRF501
A7Q1012	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A7Q1012	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A7Q1030	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A7Q1030	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A7Q1032	151-0281-00			TRANSISTOR:NPN,SI,400 MILLIWATTS	80009	151-0281-00
A7Q1108	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A7Q1108	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A7Q1109	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A7Q1109	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A7Q1117	151-0451-00			TRANSISTOR:NPN,SI,TO-39	04713	SRF503
A7Q1120	151-0441-00			TRANSISTOR:NPN,SI,TO-72	04713	SRF501
A7Q1121	151-0434-01			TRANSISTOR:SELECTED	04713	SS7144H
A7Q1133	151-0625-01			TRANSISTOR:SCREENED	80009	151-0625-01
A7Q1200	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A7Q1200	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A7Q1217	151-0450-01			TRANSISTOR:SCREENED	04713	SRF507H
A7Q1301	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A7Q1301	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A7Q1406	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A7Q1406	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A7Q1407	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A7Q1407	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A7Q1410	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A7Q1410	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A7Q1412	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A7Q1412	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A7Q1413	151-0311-01			TRANSISTOR:NPN,SI,TO-126	04713	SJE908
A7Q1422	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A7Q1422	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A7Q1502	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A7Q1502	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A7Q1504	151-0441-00			TRANSISTOR:NPN,SI,TO-72	04713	SRF501
A7Q1505	151-0441-00			TRANSISTOR:NPN,SI,TO-72	04713	SRF501
A7Q1507	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A7Q1507	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A7Q1513	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03

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A7Q1513	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A7Q1516	151-0188-03	B050000	B064001	TRANSISTOR:SELECTED	80009	151-0188-03
A7Q1516	151-0188-00	B064002		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A7Q1517	151-0190-05	B050000	B064001	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A7Q1517	151-0190-00	B064002		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A7Q1527	151-1121-00			TRANSISTOR:FE,N CHANNEL,SI,TO-92	17856	V10206
A7Q1528	151-1120-00			TRANSISTOR:FE,P CHANNEL,SI,TO-92	TK0768	VP0106N3
A7Q1601	151-0103-00			TRANSISTOR:NPN,SI,TO-5	80009	151-0103-00
A7Q1602	151-0271-03			TRANSISTOR:SELECTED	04713	SPS8521
A7Q1604	151-0271-03			TRANSISTOR:SELECTED	04713	SPS8521
A7Q1614	151-0447-00			TRANSISTOR:NPN,SI,TO-72	04713	SRF502-1
A7Q1624	151-0630-00			TRANSISTOR:NPN,SI,4 LEAD,CER PKG	S0545	NE02135
A7Q1705	151-0434-01			TRANSISTOR:SELECTED	04713	SS7144H
A7Q1706	151-0434-01			TRANSISTOR:SELECTED	04713	SS7144H
A7Q1712	151-0441-00			TRANSISTOR:NPN,SI,TO-72	04713	SRF501
A7Q1713	151-0441-00			TRANSISTOR:NPN,SI,TO-72	04713	SRF501
A7Q1715	151-0271-03			TRANSISTOR:SELECTED	04713	SPS8521
A7Q1725	151-0271-03			TRANSISTOR:SELECTED	04713	SPS8521
A7Q1808	151-1097-00			TRANSISTOR:FE,SI,TO-92	04713	SPF713
A7Q1814	151-0134-00			TRANSISTOR:PNP,SI,TO-39	04713	SM3195
A7R1004	315-0243-00			RES,FXD,FILM:24K OHM,5%,0.25W	57668	NTR25J-E24K0
A7R1007	315-0332-00			RES,FXD,FILM:3.3K OHM,5%,0.25W	57668	NTR25J-E03K3
A7R1008	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A7R1012	321-0193-00			RES,FXD,FILM:1K OHM,1%,0.125W,TC=T0	19701	5033ED1K00F
A7R1014	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A7R1015	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A7R1018	321-0193-00			RES,FXD,FILM:1K OHM,1%,0.125W,TC=T0	19701	5033ED1K00F
A7R1030	315-0820-00			RES,FXD,FILM:82 OHM,5%,0.25W	57668	NTR25J-E82E0
A7R1032	315-0121-00			RES,FXD,FILM:120 OHM,5%,0.25W	19701	5043CX120R0J
A7R1103	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A7R1104	315-0222-00			RES,FXD,FILM:2.2K OHM,5%,0.25W	57668	NTR25J-E02K2
A7R1111	315-0201-00			RES,FXD,FILM:200 OHM,5%,0.25W	57668	NTR25J-E200E
A7R1112	321-0356-00			RES,FXD,FILM:49.9K OHM,1%,0.125W,TC=T0	19701	5033ED49K90F
A7R1113	321-0356-00			RES,FXD,FILM:49.9K OHM,1%,0.125W,TC=T0	19701	5033ED49K90F
A7R1114	321-0356-00			RES,FXD,FILM:49.9K OHM,1%,0.125W,TC=T0	19701	5033ED49K90F
A7R1116	315-0391-00			RES,FXD,FILM:390 OHM,5%,0.25W	57668	NTR25J-E390E
A7R1117	315-0220-00			RES,FXD,FILM:22 OHM,5%,0.25W	19701	5043CX22R00J
A7R1121	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A7R1122	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1
A7R1131	315-0123-00			RES,FXD,FILM:12K OHM,5%,0.25W	57668	NTR25J-E12K0
A7R1133	301-0121-00			RES,FXD,FILM:120 OHM,5%,0.5W	19701	5053CX120K0
A7R1135	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1
A7R1200	311-1237-00			RES,VAR,NONWW:1K OHM,10%,0.50W	32997	3386X-DY6-102
A7R1201	315-0821-00			RES,FXD,FILM:820 OHM,5%,0.25W	19701	5043CX820R0J
A7R1202	311-1198-00			RES,VAR,NONWW:TRMR,20K OHM,0.5W	32997	3386X-T07-203
A7R1203	315-0681-00			RES,FXD,FILM:680 OHM,5%,0.25W	57668	NTR25J-E680E
A7R1204	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
A7R1208	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A7R1209	321-0346-00			RES,FXD,FILM:39.2K OHM,1%,0.125W,TC=T0	19701	5043ED39K20F
A7R1215	321-0388-00			RES,FXD,FILM:107K OHM,1%,0.125W,TC=T0	07716	CEAD10702F
A7R1217	315-0220-00			RES,FXD,FILM:22 OHM,5%,0.25W	19701	5043CX22R00J
A7R1219	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A7R1300	311-1245-00			RES,VAR,NONWW:TRMR,10K OHM,0.5W	32997	3386X-DY6-103
A7R1301	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A7R1305	315-0391-00			RES,FXD,FILM:390 OHM,5%,0.25W	57668	NTR25J-E390E
A7R1307	315-0391-00			RES,FXD,FILM:390 OHM,5%,0.25W	57668	NTR25J-E390E
A7R1314	321-0816-07			RES,FXD,FILM:5K OHM,0.1%,0.125W,TC=T9	19701	5033RE5K000B
A7R1316	321-1068-07			RES,FXD,FILM:50.5 OHM,0.1%,0.125W,TC=T9	57668	RB14 BZE 50E5

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A7R1326	321-0816-07			RES,FXD,FILM:5K OHM,0.1%,0.125W,TC=T9	19701	5033RE5K000B
A7R1328	321-1068-07	B063792		RES,FXD,FILM:50.5 OHM,0.1%,0.125W,TC=T9	57668	RB14 BZE 50E5
A7R1400	307-0106-00			RES,FXD,CMPSN:4.7 OHM,5%,0.25W	01121	CB 47G5
A7R1401	321-0239-00			RES,FXD,FILM:3.01K OHM,1%,0.125W,TC=T0	19701	5043ED3K010F
A7R1402	307-0106-00			RES,FXD,CMPSN:4.7 OHM,5%,0.25W	01121	CB 47G5
A7R1403	321-0251-00			RES,FXD,FILM:4.02K OHM,1%,0.125W,TC=T0	19701	5033ED4K020F
A7R1404	315-0822-00			RES,FXD,FILM:8.2K OHM,5%,0.25W	19701	5043CX8K200J
A7R1405	321-0164-00			RES,FXD,FILM:499 OHM,1%,0.125W,TC=T0	19701	5033ED499R0F
A7R1406	315-0910-00			RES,FXD,FILM:91 OHM,5%,0.25W	19701	5043CX91R00J
A7R1407	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A7R1408	311-1240-00			RES,VAR,NONWW:TRMR,25K OHM,10%,0.5W	32997	3386X-T07-253
A7R1410	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1
A7R1411	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A7R1414	315-0360-00			RES,FXD,FILM:36 OHM,5%,0.25W	19701	5043CX36R00J
A7R1420	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A7R1421	321-0222-03			RES,FXD,FILM:2.0K OHM,0.25%,0.125W,TC=T2	19701	5033RC2K000C
A7R1422	321-0318-02			RES,FXD,FILM:20.0K 0.5%,0.125W,TC=T2	19701	5033RC20K00D
A7R1423	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A7R1424	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A7R1425	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A7R1427	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A7R1428	315-0201-00			RES,FXD,FILM:200 OHM,5%,0.25W	57668	NTR25J-E200E
A7R1429	321-0771-01			RES,FXD,FILM:50 OHM,0.5%,0.125W,TC=T0	57668	RB14DXE 50E
A7R1500	315-0360-00			RES,FXD,FILM:36 OHM,5%,0.25W	19701	5043CX36R00J
A7R1501	315-0750-00			RES,FXD,FILM:75 OHM,5%,0.25W	57668	NTR25J-E75E0
A7R1502	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A7R1503	321-0164-00			RES,FXD,FILM:499 OHM,1%,0.125W,TC=T0	19701	5033ED499R0F
A7R1504	315-0822-00			RES,FXD,FILM:8.2K OHM,5%,0.25W	19701	5043CX8K200J
A7R1505	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A7R1506	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A7R1507	307-0106-00			RES,FXD,CMPSN:4.7 OHM,5%,0.25W	01121	CB 47G5
A7R1508	315-0201-00			RES,FXD,FILM:200 OHM,5%,0.25W	57668	NTR25J-E200E
A7R1509	307-0106-00			RES,FXD,CMPSN:4.7 OHM,5%,0.25W	01121	CB 47G5
A7R1510	315-0621-00			RES,FXD,FILM:620 OHM,5%,0.25W	57668	NTR25J-E620E
A7R1511	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A7R1512	315-0242-00			RES,FXD,FILM:2.4K OHM,5%,0.25W	57668	NTR25J-E02K4
A7R1515	315-0242-00			RES,FXD,FILM:2.4K OHM,5%,0.25W	57668	NTR25J-E02K4
A7R1516	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A7R1519	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A7R1525	315-0243-00			RES,FXD,FILM:24K OHM,5%,0.25W	57668	NTR25J-E24K0
A7R1526	315-0182-00			RES,FXD,FILM:1.8K OHM,5%,0.25W	57668	NTR25J-E1K8
A7R1527	311-1238-00			RES,VAR,NONWW:TRMR,5K OHM,0.5W	32997	3386X-DY6-502
A7R1602	315-0180-00			RES,FXD,FILM:18 OHM,5%,0.25W	19701	5043CX18R00J
A7R1604	315-0162-00			RES,FXD,FILM:1.6K OHM,5%,0.25W	19701	5043CX1K600J
A7R1606	315-0162-00			RES,FXD,FILM:1.6K OHM,5%,0.25W	19701	5043CX1K600J
A7R1607	321-0069-00			RES,FXD,FILM:51.1 OHM,1%,0.125W,TC=T0	91637	CMF55116G51R10F
A7R1608	315-0390-00			RES,FXD,FILM:39 OHM,5%,0.25W	57668	NTR25J-E39E0
A7R1609	317-0220-00			RES,FXD,CMPSN:22 OHM,5%,0.125W	01121	BB2205
A7R1610	315-0220-00			RES,FXD,FILM:22 OHM,5%,0.25W	19701	5043CX22R00J
A7R1611	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A7R1612	315-0151-00			RES,FXD,FILM:150 OHM,5%,0.25W	57668	NTR25J-E150E
A7R1613	307-0106-00			RES,FXD,CMPSN:4.7 OHM,5%,0.25W	01121	CB 47G5
A7R1614	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A7R1615	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A7R1617	321-0032-00			RES,FXD,FILM:21.0 OHM,1%,0.125W,TC=T0	57668	RB14FXE 21E0
A7R1618	321-0222-03			RES,FXD,FILM:2.0K OHM,0.25%,0.125W,TC=T2	19701	5033RC2K000C
A7R1619	321-0150-00			RES,FXD,FILM:357 OHM,1%,0.125W,TC=T0	07716	CEAD357R0F
A7R1620	317-0121-00			RES,FXD,CMPSN:120 OHM,5%,0.125W	01121	BB1215

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A7R1621	315-0330-00			RES,FXD,FILM:33 OHM,5%,0.25W	19701	5043CX33R00J
A7R1622	317-0180-00			RES,FXD,CMPSN:18 OHM,5%,0.125W	01121	BB1805
A7R1623	315-0431-00			RES,FXD,FILM:430 OHM,5%,0.25W	19701	5043CX430R0J
A7R1624	317-0471-00			RES,FXD,CMPSN:470 OHM,5%,0.125W	01121	BB4715
A7R1625	315-0130-00			RES,FXD,FILM:13 OHM,5%,0.25W	01121	CB1305
A7R1626	317-0101-00			RES,FXD,CMPSN:100 OHM,5%,0.125W	01121	BB1015
A7R1627	317-0750-00			RES,FXD,CMPSN:75 OHM,5%,0.125W	01121	BB7505
A7R1629	315-0300-00			RES,FXD,FILM:30 OHM,5%,0.25W	19701	5043CX30R00J
A7R1630	317-0330-00			RES,FXD,CMPSN:33 OHM,5%,0.125W	01121	BB3305
A7R1700	315-0911-00			RES,FXD,FILM:910 OHM,5%,0.25W	57668	NTR25J-E910E
A7R1702	315-0911-00			RES,FXD,FILM:910 OHM,5%,0.25W	57668	NTR25J-E910E
A7R1703	321-0069-00			RES,FXD,FILM:51.1 OHM,1%,0.125W,TC=T0	91637	CMF55116G51R10F
A7R1704	315-0162-00			RES,FXD,FILM:1.6K OHM,5%,0.25W	19701	5043CX1K600J
A7R1706	315-0162-00			RES,FXD,FILM:1.6K OHM,5%,0.25W	19701	5043CX1K600J
A7R1708	317-0220-00			RES,FXD,CMPSN:22 OHM,5%,0.125W	01121	BB2205
A7R1710	317-0220-00			RES,FXD,CMPSN:22 OHM,5%,0.125W	01121	BB2205
A7R1711	315-0220-00			RES,FXD,FILM:22 OHM,5%,0.25W	19701	5043CX22R00J
A7R1712	315-0220-00			RES,FXD,FILM:22 OHM,5%,0.25W	19701	5043CX22R00J
A7R1713	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
A7R1714	307-0106-00			RES,FXD,CMPSN:4.7 OHM,5%,0.25W	01121	CB 47G5
A7R1715	315-0151-00			RES,FXD,FILM:150 OHM,5%,0.25W	57668	NTR25J-E150E
A7R1716	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A7R1717	315-0220-00			RES,FXD,FILM:22 OHM,5%,0.25W	19701	5043CX22R00J
A7R1720	315-0300-00			RES,FXD,FILM:30 OHM,5%,0.25W	19701	5043CX30R00J
A7R1721	317-0750-00			RES,FXD,CMPSN:75 OHM,5%,0.125W	01121	BB7505
A7R1722	317-0180-00			RES,FXD,CMPSN:18 OHM,5%,0.125W	01121	BB1805
A7R1724	317-0101-00			RES,FXD,CMPSN:100 OHM,5%,0.125W	01121	BB1015
A7R1725	315-0330-00			RES,FXD,FILM:33 OHM,5%,0.25W	19701	5043CX33R00J
A7R1726	303-0820-00			RES,FXD,CMPSN:82 OHM,5%,1W	01121	GB8205
A7R1727	317-0471-00			RES,FXD,CMPSN:470 OHM,5%,0.125W	01121	BB4715
A7R1728	303-0820-00			RES,FXD,CMPSN:82 OHM,5%,1W	01121	GB8205
A7R1729	317-0121-00			RES,FXD,CMPSN:120 OHM,5%,0.125W	01121	BB1215
A7R1730	315-0130-00			RES,FXD,FILM:13 OHM,5%,0.25W	01121	CB1305
A7R1802	321-0891-00			RES,FXD,FILM:800K OHM,1%,0.125W,TC=T0	19701	5043ED800K0F
A7R1803	321-0193-02			RES,FXD,FILM:1K OHM,0.5%,0.125W,TC=T2	07716	CEA 1KOHM 0.5%T2
A7R1808	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1
A7R1809	321-0222-03			RES,FXD,FILM:2.0K OHM,0.25%,0.125W,TC=T2	19701	5033RC2K000C
A7R1812	321-0150-00			RES,FXD,FILM:357 OHM,1%,0.125W,TC=T0	07716	CEAD357R0F
A7R1814	315-0180-00			RES,FXD,FILM:18 OHM,5%,0.25W	19701	5043CX18R00J
A7R1816	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A7R1817	321-0033-00			RES,FXD,FILM:21.5 OHM,1%,0.125W,TC=T0	91637	CMF55116G21R50F
A7R1819	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A7R1824	315-0431-00			RES,FXD,FILM:430 OHM,5%,0.25W	19701	5043CX430R0J
A7T1407	120-0582-00			XFMR,TOROID:	80009	120-0582-00
A7TP1200	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A7TP1302	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A7U1020	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A7U1022	156-1245-00			MICROCKT,LINEAR:7 XSTR,NPN,SI,HV/HIGH CUR	01295	ULN2003AN-P3
A7U1130	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A7U1132	156-1245-00			MICROCKT,LINEAR:7 XSTR,NPN,SI,HV/HIGH CUR	01295	ULN2003AN-P3
A7U1210	156-1156-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	80009	156-1156-01
A7U1234	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A7U1236	156-1245-00			MICROCKT,LINEAR:7 XSTR,NPN,SI,HV/HIGH CUR	01295	ULN2003AN-P3
A7U1412	156-1156-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	80009	156-1156-01
A7U1619	156-0067-10			MICROCKT,LINEAR:OPNL AMPL,CHECKED	04713	MC1741CP1DS
A7U1802	156-0067-10			MICROCKT,LINEAR:OPNL AMPL,CHECKED	04713	MC1741CP1DS
A7U1824	156-0067-10			MICROCKT,LINEAR:OPNL AMPL,CHECKED	04713	MC1741CP1DS
A7U1833	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX

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A7U1835	156-1245-00			MICROCKT,LINEAR:7 XSTR,NPN,SI,HV/HIGH CUR	01295	ULN2003AN-P3
A7VR1032	152-0647-00			SEMICOND DVC,DI:ZENER,SI,6.8V,5%,400MW,DO-7	04713	SZG35014K3RL
A7VR1112	152-0123-00			SEMICOND DVC,DI:ZEN,SI,9V,5%,0.5W,DO-7	04713	SZ11530RL
A7VR1412	152-0281-00			SEMICOND DVC,DI:ZEN,SI,22V,5%,0.4W,DO-7	12954	1N969B/DO-35
A7VR1421	152-0195-00			SEMICOND DVC,DI:ZEN,SI,5.1V,5%,0.4W,DO-7	04713	SZ11755RL
A7VR1422	152-0195-00			SEMICOND DVC,DI:ZEN,SI,5.1V,5%,0.4W,DO-7	04713	SZ11755RL
A7VR1500	152-0195-00			SEMICOND DVC,DI:ZEN,SI,5.1V,5%,0.4W,DO-7	04713	SZ11755RL
A7VR1600	152-0195-00			SEMICOND DVC,DI:ZEN,SI,5.1V,5%,0.4W,DO-7	04713	SZ11755RL
A7VR1823	152-0217-00			SEMICOND DVC,DI:ZEN,SI,8.2V,5%,0.4W,DO-7	04713	SZG20
A7VR1824	152-0217-00			SEMICOND DVC,DI:ZEN,SI,8.2V,5%,0.4W,DO-7	04713	SZG20
A7W1311	131-0566-00	B050000	B063791	BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225 L	24546	OMA 07
A7W1312	131-0566-00	B050000	B063791	BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225 L	24546	OMA 07
A7W1322	131-0566-00	B050000	B063791	BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225 L	24546	OMA 07
A7W1323	131-0566-00	B050000	B063791	BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225 L	24546	OMA 07
A7A1	670-7509-00	B050000	B063791	CIRCUIT BD ASSY:ATTENUATOR COMP	80009	670-7509-00
A7A1R1328	321-1068-07			RES,FXD,FILM:50.5 OHM,0.1%,0.125W,TC=T9	57668	RB14 BZE 50E5
A8	670-6221-00			CIRCUIT BD ASSY:HIGH EDGE	80009	670-6221-00
A8C1113	281-0814-00			CAP,FXD,CER DI:100 PF,10%,100V	04222	MA101A101KAA
A8C1123	281-0819-00			CAP,FXD,CER DI:33 PF,5%,50V	04222	GC105A330J
A8C1207	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A8C1219	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A8C1220	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A8C1221	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A8C1300	290-0261-00			CAP,FXD,ELCTLT:6.8UF,10%,35V	05397	T110B685K035AS
A8C1301	290-0261-00			CAP,FXD,ELCTLT:6.8UF,10%,35V	05397	T110B685K035AS
A8C1302	290-0177-00			CAP,FXD,ELCTLT:1UF,20%,50V	05397	T320A105M050AS
A8C1315	281-0814-00			CAP,FXD,CER DI:100 PF,10%,100V	04222	MA101A101KAA
A8C1320	281-0814-00			CAP,FXD,CER DI:100 PF,10%,100V	04222	MA101A101KAA
A8C1400	281-0771-00			CAP,FXD,CER DI:2200PF,20%,200V	04222	MA106E222MAA
A8C1412	281-0770-00			CAP,FXD,CER DI:1000PF,20%,100V	04222	MA101C102MAA
A8C1424	281-0762-00			CAP,FXD,CER DI:27PF,20%,100V	04222	MA101A270MAA
A8C1425	285-1082-00			CAP,FXD,PLASTIC:0.47UF,20%,200V	04009	TEK33MMR.47
A8C1430	290-0426-00			CAP,FXD,ELCTLT:330UF,20%,6V	05397	T110D337M006AS
A8C1500	285-1049-00			CAP,FXD,PLASTIC:0.01UF,1%,200V	14752	230B1C103F
A8C1510	281-0819-00			CAP,FXD,CER DI:33 PF,5%,50V	04222	GC105A330J
A8C1514	281-0768-00			CAP,FXD,CER DI:470PF,20%,100V	04222	MA101A471MAA
A8C1517	281-0763-00			CAP,FXD,CER DI:47PF,10%,100V	04222	MA101A470KAA
A8C1519	281-0763-00			CAP,FXD,CER DI:47PF,10%,100V	04222	MA101A470KAA
A8C1600	281-0768-00			CAP,FXD,CER DI:470PF,20%,100V	04222	MA101A471MAA
A8CR1124	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A8CR1125	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A8CR1219	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A8CR1222	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A8CR1223	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A8CR1224	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A8CR1320	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A8CR1321	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A8CR1322	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A8CR1323	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A8CR1330	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A8CR1400	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A8CR1405	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A8CR1501	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A8CR1511	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A8CR1515	152-0322-00			SEMICOND DVC,DI:SCHOTTKY,SI,15V,DO-35	50434	5082-2672
A8K1230	148-0076-00			RLY,REED:FRM A,250MA,100V,COIL,5V,500 OHM	15636	R4060-1
A8K1530	148-0076-00			RLY,REED:FRM A,250MA,100V,COIL,5V,500 OHM	15636	R4060-1
A8Q1100	151-1059-00			TRANSISTOR:FET,N-CHAN,TO-106	04713	ORDER BY DESCR

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A8Q1101	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A8Q1101	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A8Q1200	151-1059-00			TRANSISTOR:FET,N-CHAN,TO-106	04713	ORDER BY DESCR
A8Q1201	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A8Q1201	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A8Q1224	151-0190-05	B050000	B064013	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A8Q1224	151-0190-00	B064014		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A8Q1225	151-0190-05	B050000	B064013	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A8Q1225	151-0190-00	B064014		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A8Q1320	151-0190-05	B050000	B064013	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A8Q1320	151-0190-00	B064014		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A8Q1321	151-0190-05	B050000	B064013	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A8Q1321	151-0190-00	B064014		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A8Q1322	151-0190-05	B050000	B064013	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A8Q1322	151-0190-00	B064014		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A8Q1323	151-0188-03	B050000	B064013	TRANSISTOR:SELECTED	80009	151-0188-03
A8Q1323	151-0188-00	B064014		TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A8Q1330	151-0331-00			TRANSISTOR:NPN,SI	03508	X40CR115
A8Q1410	151-0612-01	B050000	B064013	TRANSISTOR:SCREENED	80009	151-0612-01
A8Q1410	151-0612-00	B064014		TRANSISTOR:PNP,SI	04713	SDS359
A8Q1411	151-0279-03			TRANSISTOR:SELECTED	80009	151-0279-03
A8Q1412	151-0190-05			TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A8Q1412	151-0190-05	B050000	B064013	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A8Q1412	151-0190-00	B064014		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A8Q1420	151-0190-05	B050000	B064013	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A8Q1420	151-0190-00	B064014		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A8Q1421	151-0190-05	B050000	B064013	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A8Q1424	151-0443-00			TRANSISTOR:PNP,SI,TO-92	04713	SPS7950
A8Q1500	151-0190-05	B050000	B064013	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A8Q1500	151-0190-00	B064014		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A8Q1501	151-0347-01			TRANSISTOR:SELECTED	TK0271	151-0347-01
A8Q1502	151-0350-00			TRANSISTOR:PNP,SI,TO-92	04713	SPS6700
A8Q1503	151-0190-05	B050000	B064013	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A8Q1503	151-0190-00	B064014		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A8Q1510	151-0350-00			TRANSISTOR:PNP,SI,TO-92	04713	SPS6700
A8Q1511	151-0190-05	B050000	B064013	TRANSISTOR:SELECTED 2N3904	80009	151-0190-05
A8Q1511	151-0190-00	B064014		TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A8Q1515	151-0350-00			TRANSISTOR:PNP,SI,TO-92	04713	SPS6700
A8Q1600	151-0350-00			TRANSISTOR:PNP,SI,TO-92	04713	SPS6700
A8R1100	321-0926-07			RES,FXD,FILM:4K OHM,0.1%,0.125W,TC=T9	19701	5033RE4K00B
A8R1101	321-0466-00			RES,FXD,FILM:698K OHM,1%,0.125W,TC=T0	19701	5043ED698K0F
A8R1110	315-0183-00			RES,FXD,FILM:18K OHM,5%,0.25W	19701	5043CX18K00J
A8R1111	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A8R1112	321-0648-04			RES,FXD,FILM:500K OHM,0.1%,0.125W,TC=T2 MI	19701	5033RC500K0B
A8R1120	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A8R1121	315-0753-00			RES,FXD,FILM:75K OHM,5%,0.25W	57668	NTR25J-E75K0
A8R1122	315-0332-00			RES,FXD,FILM:3.3K OHM,5%,0.25W	57668	NTR25J-E03K3
A8R1124	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A8R1125	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A8R1201	321-0193-07			RES,FXD,FILM:1K OHM,0.1%,0.125W,TC=T9	19701	5033RE1K000B
A8R1202	321-0816-03			RES,FXD,FILM:5K OHM,0.25%,0.125W,TC=T2	19701	5033RC5K000C
A8R1203	321-0603-07			RES,FXD,FILM:15K OHM,0.1%,0.125W,TC=T9	19701	5033RE15K00B
A8R1204	321-0666-07			RES,FXD,FILM:3.04K OHM,0.1%,0.125W,TC=T9	19701	5033RE3K040B
A8R1205	321-0318-00			RES,FXD,FILM:20.0K OHM,1%,0.125W,TC=T0	19701	5033ED20K00F
A8R1206	321-0076-00			RES,FXD,FILM:60.4 OHM,1%,0.125W,TC=T0	91637	CMF55116G0R40F
A8R1208	315-0751-00			RES,FXD,FILM:750 OHM,5%,0.25W	57668	NTR25J-E750E
A8R1210	315-0183-00			RES,FXD,FILM:18K OHM,5%,0.25W	19701	5043CX18K00J
A8R1211	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7

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A8R1212	321-0373-04			RES,FXD,FILM:75.0K OHM,0.1%,0.125W,TC=T2	19701	5033RC75K00B
A8R1213	321-0289-07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A8R1214	321-0816-03			RES,FXD,FILM:5K OHM,0.25%,0.125W,TC=T2	19701	5033RC5K000C
A8R1216	321-0603-07			RES,FXD,FILM:15K OHM,0.1%,0.125W,TC=T9	19701	5033RE15K00B
A8R1217	321-0327-00			RES,FXD,FILM:24.9K OHM,1%,0.125W,TC=T0	07716	CEAD24901F
A8R1218	321-0327-00			RES,FXD,FILM:24.9K OHM,1%,0.125W,TC=T0	07716	CEAD24901F
A8R1222	315-0752-00			RES,FXD,FILM:7.5K OHM,5%,0.25W	57668	NTR25J-E07K5
A8R1223	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A8R1224	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A8R1225	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A8R1226	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1
A8R1227	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25W	57668	NTR25J-E100K
A8R1230	308-0240-00			RES,FXD,WW:2 OHM,5%,3W	05347	MS3-2R00J
A8R1300	311-1245-00			RES,VAR,NONWW:TRMR,10K OHM,0.5W	32997	3386X-DY6-103
A8R1301	311-1237-00			RES,VAR,NONWW:1K OHM,10%,0.50W	32997	3386X-DY6-102
A8R1302	321-0326-00			RES,FXD,FILM:24.3K OHM,1%,0.125W,TC=T0	19701	5043ED24K30F
A8R1310	321-0327-00			RES,FXD,FILM:24.9K OHM,1%,0.125W,TC=T0	07716	CEAD24901F
A8R1311	321-0222-00			RES,FXD,FILM:2.00K OHM,1%,0.125W,TC=T0	19701	5033ED2K00F
A8R1312	321-0350-00			RES,FXD,FILM:43.2K OHM,1%,0.125W,TC=T0	19701	5043ED43K20F
A8R1313	321-0222-00			RES,FXD,FILM:2.00K OHM,1%,0.125W,TC=T0	19701	5033ED2K00F
A8R1314	321-0348-00			RES,FXD,FILM:41.2K OHM,1%,0.125W,TC=T0	19701	5043ED41K20F
A8R1321	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A8R1322	315-0202-00			RES,FXD,FILM:2K OHM,5%,0.25W	57668	NTR25J-E 2K
A8R1323	321-0193-07			RES,FXD,FILM:1K OHM,0.1%,0.125W,TC=T9	19701	5033RE1K000B
A8R1324	315-0302-00			RES,FXD,FILM:3K OHM,5%,0.25W	57668	NTR25J-E03K0
A8R1330	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A8R1331	315-0202-00			RES,FXD,FILM:2K OHM,5%,0.25W	57668	NTR25J-E 2K
A8R1400	322-0385-00			RES,FXD,FILM:100K OHM,1%,0.25W,TC=T0	75042	CEBT0-1003F
A8R1401	311-1240-00			RES,VAR,NONWW:TRMR,25K OHM,10%,0.5W	32997	3386X-T07-253
A8R1410	315-0153-00			RES,FXD,FILM:15K OHM,5%,0.25W	19701	5043CX15K00J
A8R1411	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A8R1412	315-0362-00			RES,FXD,FILM:3.6K OHM,5%,0.25W	19701	5043CX3K600J
A8R1420	315-0123-00			RES,FXD,FILM:12K OHM,5%,0.25W	57668	NTR25J-E12K0
A8R1421	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A8R1422	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A8R1423	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A8R1425	315-0202-00			RES,FXD,FILM:2K OHM,5%,0.25W	57668	NTR25J-E 2K
A8R1426	315-0360-00			RES,FXD,FILM:36 OHM,5%,0.25W	19701	5043CX36R00J
A8R1430	315-0512-00			RES,FXD,FILM:5.1K OHM,5%,0.25W	57668	NTR25J-E05K1
A8R1431	315-0473-00			RES,FXD,FILM:47K OHM,5%,0.25W	57668	NTR25J-E47K0
A8R1433	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A8R1434	315-0431-00			RES,FXD,FILM:430 OHM,5%,0.25W	19701	5043CX430R0J
A8R1501	315-0241-00			RES,FXD,FILM:240 OHM,5%,0.25W	19701	5043CX240R0J
A8R1510	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A8R1511	315-0392-00			RES,FXD,FILM:3.9K OHM,5%,0.25W	57668	NTR25J-E03K9
A8R1512	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A8R1513	315-0332-00			RES,FXD,FILM:3.3K OHM,5%,0.25W	57668	NTR25J-E03K3
A8R1515	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A8R1516	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A8R1518	315-0242-00			RES,FXD,FILM:2.4K OHM,5%,0.25W	57668	NTR25J-E02K4
A8R1519	315-0242-00			RES,FXD,FILM:2.4K OHM,5%,0.25W	57668	NTR25J-E02K4
A8R1530	321-0318-07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A8R1600	315-0243-00			RES,FXD,FILM:24K OHM,5%,0.25W	57668	NTR25J-E24K0
A8R1610	321-0771-01			RES,FXD,FILM:50 OHM,0.5%,0.125W,TC=T0	57668	RB14DXE 50E
A8TP1100	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A8TP1200	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A8TP1202	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A8TP1210	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00

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A8TP1300	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A8TP1302	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A8TP1400	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A8TP1402	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A8TP1420	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A8TP1500	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A8TP1510	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A8TP1520	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A8U1110	156-0854-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	27014	LM308AJ-8A+
A8U1130	156-0796-01			MICROCKT,DGTL:8 STG SHF & STORE BUS RGTR	02735	CD4094BFX
A8U1210	156-0067-10			MICROCKT,LINEAR:OPNL AMPL,CHECKED	04713	MC1741CP1DS
A8U1211	156-0067-10			MICROCKT,LINEAR:OPNL AMPL,CHECKED	04713	MC1741CP1DS
A8U1220	156-0158-07			MICROCKT,LINEAR:DUAL OPNL AMPL,SCREENED	01295	MC1458JG4
A8U1221	156-0158-07			MICROCKT,LINEAR:DUAL OPNL AMPL,SCREENED	01295	MC1458JG4
A8U1230	156-0350-05			MICROCKT,DGTL:QUAD 2 INPUT NAND GATE	02735	CD4011BFX
A8U1410	156-1156-01			MICROCKT,LINEAR:OPERATIONAL AMPL,SCREENED	80009	156-1156-01
A8U1430	156-0109-01	B050000	B064159	MICROCKT,LINEAR:LED & PHOTOTRANSISTOR,CHK	58361	MCT-2
A8U1430	156-0109-00	B064160		CPLR,OPTOELECTR:LED & PHOTOTRANSISTOR	09019	H11AX881
A8U1532	156-0109-01	B050000	B064159	MICROCKT,LINEAR:LED & PHOTOTRANSISTOR,CHK	58361	MCT-2
A8U1532	156-0109-00	B064160		CPLR,OPTOELECTR:LED & PHOTOTRANSISTOR	09019	H11AX881
A8U1620	156-0384-02			MICROCKT,DGTL:QUAD 2-INP NAND GATE,SCRN	07263	74LS03PCQR
A8VR1205	152-0461-00			SEMICOND DVC,DI:ZEN,SI,6.2V,5%,0.4W,DO-7	04713	SZG25002K2
A8VR1324	152-0647-00			SEMICOND DVC,DI:ZENER,SI,6.8V,5%,400MW,DO-7	04713	SZG35014K3RL
A8VR1430	152-0662-00			SEMICOND DVC,DI:ZEN,SI,5V,1%,400MW,DO-7	04713	SZG195RL
A8A1	670-7386-00			CIRCUIT BD ASSY:GPIB INTFC (CG5001 ONLY-NO ELECTRICAL PARTS)	80009	670-7386-00
A9	670-8273-00	B050000	B063948	CIRCUIT BD ASSY:CPU (CG551AP ONLY)	80009	670-8273-00
A9	672-0174-00	B063945	B064083	CIRCUIT BD ASSY:CPU (CG551AP ONLY)	80009	672-0174-00
A9	670-8522-00	B050000	B063948	CIRCUIT BD ASSY:CPU (CG5001 ONLY)	80009	670-8522-00
A9	672-0175-00	B063949	B064083	CIRCUIT BD ASSY:CPU (CG5001 ONLY)	80009	672-0175-00
A9	672-0174-01	B064084		CIRCUIT BD ASSY:CPU	80009	672-0174-01
A9BT4041	146-0045-00			BATTERY,DRY:3.4V,1.75AH,AA CELL	TK1320	15-51-04-410-000
A9C1031	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A9C2021	281-0813-00			CAP,FXD,CER DI:0.047UF,20%,50V	05397	C412C473M5V2CA
A9C2023	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A9C2027	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A9C2031	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A9C3031	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A9C3033	281-0762-00			CAP,FXD,CER DI:27PF,20%,100V	04222	MA101A270MAA
A9C3034	281-0762-00			CAP,FXD,CER DI:27PF,20%,100V	04222	MA101A270MAA
A9C3064	285-1189-00			CAP,FXD,MTLZD:0.1 UF,5%,100 V	05292	PMT 3R .1J 100
A9C3071	281-0813-00			CAP,FXD,CER DI:0.047UF,20%,50V	05397	C412C473M5V2CA
A9C3073	290-0527-00			CAP,FXD,ELCTLT:15UF,20%,20V	05397	T368B156M020AS
A9C3076	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A9C3081	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A9C4011	281-0823-00			CAP,FXD,CER DI:470PF,10%,50V	04222	MA105A471KAA
A9C4021	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A9C4032	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A9C4062	290-0847-00			CAP,FXD,ELCTLT:47UF,+50-20%,10WVDC	55680	TLB1A470MAA
A9C4063	281-0820-00			CAP,FXD,CER DI:680 PF,10%,50V	04222	MA105C651KAA
A9C4072	290-0536-00			CAP,FXD,ELCTLT:10UF,20%,25V TANTALUM	05397	T368B106M025AS
A9C4073	290-0536-00			CAP,FXD,ELCTLT:10UF,20%,25V TANTALUM	05397	T368B106M025AS
A9C4081	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A9C4084	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A9C4091	285-0808-00			CAP,FXD,PLASTIC:0.1UF,10%,50V	04099	EK13-16

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A9C4092	290-0748-00			CAP,FXD,ELCTLT:10UF,+50-20%,25WVDC	54473	ECE-BIEV100S
A9C5061	281-0773-00			CAP,FXD,CER DI:0.01UF,10%,100V	04222	MA201C103KAA
A9C5063	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V	04222	MA205E104MAA
A9CR1021	152-0141-02	B064084		SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A9CR1022	152-0141-02	B064084		SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A9CR2063	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A9CR3011	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A9CR3021	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A9CR3022	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A9CR3023	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A9CR3024	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A9CR3025	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A9CR3063	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A9CR3065	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A9CR3067	152-0075-00			SEMICOND DVC,DI:SW,GE,22V,80MW,DO-7	14433	G866
A9CR4094	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A9CR5041	152-0141-02			SEMICOND DVC,DI:SW,SI,30V,150MA,30V,DO-35	03508	DA2527 (1N4152)
A9F3081	159-0171-00			FUSE,CARTRIDGE:3AG,0.1A,250V,MEDIUM	75915	312.100
A9F4083	159-0024-00			FUSE,CARTRIDGE:3AG,0.062A,250V,0.3SEC	71400	MGB 1/16
A9F4085	159-0015-00			FUSE,CARTRIDGE:3AG,3A,250V,0.65SEC	75915	312 003
A9J1031	131-0608-00			TERMINAL,PIN:0.365 L X 0.025 BRZ GLD PL (QUANTITY OF 3)	22526	48283-036
A9J1032	131-0608-00			TERMINAL,PIN:0.365 L X 0.025 BRZ GLD PL (QUANTITY OF 3)	22526	48283-036
A9J1053	131-0608-00			TERMINAL,PIN:0.365 L X 0.025 BRZ GLD PL (QUANTITY OF 3)	22526	48283-036
A9J1111	131-1425-00			CONN,RCPT,ELEC:RTANG HEADER,1 X 36,0.1 SP	22526	65521-136
A9J1111	131-1426-00			CONN,RCPT,ELEC:RTANGLE HEADER,1 X 36	22526	65524-136
A9J5031	131-0608-00			TERMINAL,PIN:0.365 L X 0.025 BRZ GLD PL (QUANTITY OF 3)	22526	48283-036
A9P1031	131-0993-00			BUS,CONDUCTOR:SHUNT ASSEMBLY,BLACK	22526	65474-005
A9P1032	131-0993-00			BUS,CONDUCTOR:SHUNT ASSEMBLY,BLACK	22526	65474-005
A9P1053	131-0993-00			BUS,CONDUCTOR:SHUNT ASSEMBLY,BLACK	22526	65474-005
A9P5031	131-0993-00			BUS,CONDUCTOR:SHUNT ASSEMBLY,BLACK	22526	65474-005
A9Q1083	151-0190-00			TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A9Q2041	151-1103-00			TRANSISTOR:FET,N CHANNEL,SI,TO-72	17856	DM1001
A9Q2061	151-0190-00			TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A9Q2065	151-0424-00			TRANSISTOR:NPN,SI,TO-92	04713	SPS8246
A9Q2069	151-1103-00			TRANSISTOR:FET,N CHANNEL,SI,TO-72	17856	DM1001
A9Q3061	151-0188-00			TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A9Q3063	151-0190-00			TRANSISTOR:NPN,SI,TO-92	80009	151-0190-00
A9Q3066	151-0515-01			SCR:SI,MU-10	04713	SCR1256K
A9Q5041	151-0188-00			TRANSISTOR:PNP,SI,TO-92	80009	151-0188-00
A9R1011	315-0100-00			RES,FXD,FILM:10 OHM,5%,0.25W	19701	5043CX10RR00J
A9R1012	315-0302-00			RES,FXD,FILM:3K OHM,5%,0.25W	57668	NTR25J-E03K0
A9R1013	315-0751-00			RES,FXD,FILM:750 OHM,5%,0.25W	57668	NTR25J-E750E
A9R1014	315-0122-00			RES,FXD,FILM:1.2K OHM,5%,0.25W	57668	NTR25J-E01K2
A9R1021	315-0153-00	B064029		RES,FXD,FILM:15K OHM,5%,0.25W	19701	5043CX15K00J
A9R1023	307-0445-00			RES NTWK,FXD,FI:4.7K OHM,20%,(9)RES	32997	4310R-101-472
A9R1041	307-0499-00			RES,FXD,FILM:9,100K OHM,5%,0.125W	11236	750-101-R100K
A9R1042	307-0499-00			RES,FXD,FILM:9,100K OHM,5%,0.125W	11236	750-101-R100K
A9R1051	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A9R1052	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A9R1082	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A9R1091	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
A9R2011	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25W	57668	NTR25J-E100K
A9R2012	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A9R2022	315-0513-00			RES,FXD,FILM:51K OHM,5%,0.25W	57668	NTR25J-E51K0
A9R2024	315-0822-00			RES,FXD,FILM:8.2K OHM,5%,0.25W	19701	5043CX8K200J

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A9R2025	315-0822-00			RES,FXD,FILM:8.2K OHM,5%,0.25W	19701	5043CX8K200J
A9R2026	315-0822-00			RES,FXD,FILM:8.2K OHM,5%,0.25W	19701	5043CX8K200J
A9R2042	315-0681-00			RES,FXD,FILM:680 OHM,5%,0.25W	57668	NTR25J-E680E
A9R2052	307-0586-00			RES NTWK,FXD,FI:9,39K OHM,2%,1.25W	91637	CSC10A01393G
A9R2062	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A9R2067	315-0243-00			RES,FXD,FILM:24K OHM,5%,0.25W	57668	NTR25J-E24K0
A9R2068	315-0822-00			RES,FXD,FILM:8.2K OHM,5%,0.25W	19701	5043CX8K200J
A9R3027	315-0273-00			RES,FXD,FILM:27K OHM,5%,0.25W	57668	NTR25J-E27K0
A9R3028	315-0273-00			RES,FXD,FILM:27K OHM,5%,0.25W	57668	NTR25J-E27K0
A9R3029	315-0273-00			RES,FXD,FILM:27K OHM,5%,0.25W	57668	NTR25J-E27K0
A9R3051	315-0112-00			RES,FXD,FILM:1.1K OHM,5%,0.25W	19701	5043CX1K100J
A9R3067	315-0511-00			RES,FXD,FILM:510 OHM,5%,0.25W	19701	5043CX510R0J
A9R3072	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25W	57668	NTR25J-E100K
A9R3074	315-0912-00			RES,FXD,FILM:9.1K OHM,5%,0.25W	57668	NTR25J-E09K1
A9R3075	303-0101-00			RES,FXD,CMPSN:100 OHM,5%,1W	01121	GB1015
A9R4012	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
A9R4042	307-0445-00			RES NTWK,FXD,FI:4.7K OHM,20%,(9)RES	32997	4310R-101-472
A9R4064	308-0742-00			RES,FXD,WW:0.24 OHM,5%,2W	75042	BWH-R2400J
A9R4074	321-0223-00			RES,FXD,FILM:2.05K OHM,1%,0.125W,TC=T0	19701	5033ED2K05F
A9R4075	321-0133-00			RES,FXD,FILM:237 OHM,1%,0.125W,TC=T0	07716	CEAD237R0F
A9R4087	321-0223-00			RES,FXD,FILM:2.05K OHM,1%,0.125W,TC=T0	19701	5033ED2K05F
A9R4088	321-0133-00			RES,FXD,FILM:237 OHM,1%,0.125W,TC=T0	07716	CEAD237R0F
A9R4093	315-0360-00			RES,FXD,FILM:36 OHM,5%,0.25W	19701	5043CX36R00J
A9R5051	315-0162-00			RES,FXD,FILM:1.6K OHM,5%,0.25W	19701	5043CX1K600J
A9R5052	321-0193-03			RES,FXD,FILM:1K OHM,0.25%,0.125W,TC=T2	07716	CEAC10000C
A9R5053	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
A9R5054	321-0193-03			RES,FXD,FILM:1K OHM,0.25%,0.125W,TC=T2	07716	CEAC10000C
A9R5055	315-0751-00			RES,FXD,FILM:750 OHM,5%,0.25W	57668	NTR25J-E750E
A9R5061	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
A9S1022	260-1589-00			SWITCH,ROCKER:(6)SPST,125MA,30VDC	81073	76SB06S
A9S1061	260-1641-00			SWITCH,SLIDE:DPDT,0.5A,125VAC	10389	23-021-114
A9TP1062	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A9TP1071	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A9TP2066	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A9TP2071	214-0579-00			TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A9U1021	156-0495-00			MICROCKT,LINEAR:OPNL AMPL	01295	LM324N
A9U1032	160-2371-00	B050000	B063948	MICROCKT,DGTL:16384 X 8 EPROM,PRGM (CG551AP ONLY)	80009	160-2371-00
A9U1032	160-2371-00	B063949		MICROCKT,DGTL:16384 X 8 EPROM,PRGM (NO LONGER INCLUDED WITH A9 REPL, ORDER SEPARATELY)	80009	160-2371-00
A9U1032	160-2372-00	B050000	B063948	MICROCKT,DGTL:16384 X 8 EPROM,PRGM (CG5001 ONLY)	80009	160-2372-00
A9U1032	160-2372-00	B063949		MICROCKT,DGTL:16384 X 8 EPROM,PRGM (NO LONGER INCLUDED WITH A9 REPL, ORDER SEPARATELY)	80009	160-2372-00
A9U1043	156-1706-00			MICROCKT,DGTL:CMOS,2K X 8 SRAM	TK1016	TC5516APL
A9U1063	156-0382-02			MICROCKT,DGTL:QUAD 2 INP NAND GATE BURN	18324	N74LS00NB
A9U1072	156-1246-01			MICROCKT,DGTL:GPIB PROTOCOL,SCREENED	04713	SC80909LD
A9U1081	156-1414-02			MICROCKT,DGTL:OCTAL GPIB BUS XCVR,SCRN	27014	DS75160A N
A9U2028	156-0914-02			MICROCKT,DGTL:OCT ST BFR W/3 STATE OUT,SCRN	01295	SN74LS240NP3
A9U2051	156-1111-02			MICROCKT,DGTL:OCTAL BUS XCVR W/3 STATE OUT	01295	SN74LS245N3
A9U2064	156-1707-00			MICROCKT,DGTL:QUAD 2-INPUT NAND GATE,SCRN	04713	MC7400(NDORJD)
A9U2065	156-0469-02			MICROCKT,DGTL:3/8 LINE DCDR,SCRN	01295	SN74LS138NP3
A9U2081	156-1415-01			MICROCKT,DGTL:OCTAL GPIB XCVR-MANAGEMENT	27014	DS75161A NA+
A9U3012	156-0786-02			MICROCKT,DGTL:QUAD EXCLUSIVE OR GATE,SCRN	02735	CD4070BFX
A9U3026	156-1205-00			MICROCKT,DGTL:NMOS,PERIPHERAL INTFC ADPTR	04713	MC68B21P OR L
A9U3041	156-1342-01			MICROCKT,DGTL:NMOS,MPU,8-BIT W/CLK	04713	SC67127P
A9U3062	156-1126-00			MICROCKT,LINEAR:VOLTAGE COMPARATOR	01295	LM311P

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A9U4022	156-1205-00			MICROCKT,DGTL:NMOS,PERIPHERAL INTFC ADPTR	04713	MC68B21P OR L
A9U4065	156-0071-00			MICROCKT,LINEAR:VOLTAGE REGULATOR	04713	MC1723CL
A9U4071	156-1173-00			MICROCKT,LINEAR:VOLTAGE REFERENCE	04713	MC1403UDS
A9U4074	156-1161-00			MICROCKT,LINEAR:VOLTAGE REGULATOR,POS,ADJ	12969	UC317T
A9U4086	156-1451-00			MICROCKT,LINEAR:3-TERM NEG VOLTAGE RGLTR	27014	LM337T
A9VR1021	152-0175-00	B064029	B064083	SEMICOND DVC,DI:ZEN,SI,5.6V,5%,0.4W,DO-7	14552	TD3810976
A9VR5052	152-0175-00			SEMICOND DVC,DI:ZEN,SI,5.6V,5%,0.4W,DO-7	14552	TD3810976
A9W2091	307-1137-00	B050000	B063948	RES NTWK,FXD,FI:8,0.005 OHM,+150-50%,0.125W (CG551AP ONLY)	00779	435704-8
A9W2091	307-1137-00	B063949		RES NTWK,FXD,FI:8,0.005 OHM,+150-50%,0.125W (NO LONGER INCLUDED WITH A9 REPL, ORDER SEPARATELY)	00779	435704-8
A9W3091	307-1151-00	B050000	B063948	RES NTWK,DUMMY:10,5 MILLIOHM,NOMINAL (CG551AP ONLY)	00779	1-435704-D
A9W3091	307-1151-00	B063949		RES NTWK,DUMMY:10,5 MILLIOHM,NOMINAL (NO LONGER INCLUDED WITH A9 REPL, ORDER SEPARATELY)	00779	1-435704-D
A9Y3032	158-0256-00			XTAL UNIT,QTZ:4.000MHZ 0.0025% SER (XTAL UNIT REQUIRES FOAM ADHESIVE)	59492	150-6070
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C520	283-0187-00			CAP,FXD,CER DI:0.047UF,10%,400V	04222	SR308C473KAA
C541	281-0697-00			CAP,FXD,CER DI:5000PF,+100-0%,100V	72982	2425-003W5W0502Z
C542	281-0697-00			CAP,FXD,CER DI:5000PF,+100-0%,100V	72982	2425-003W5W0502Z
C551	281-0697-00			CAP,FXD,CER DI:5000PF,+100-0%,100V	72982	2425-003W5W0502Z
C552	281-0697-00			CAP,FXD,CER DI:5000PF,+100-0%,100V	72982	2425-003W5W0502Z
C561	281-0824-00			CAP,FXD,CER DI:100PF,20%,1K HZ	33095	54-743-001-101M
C562	281-0824-00			CAP,FXD,CER DI:100PF,20%,1K HZ	33095	54-743-001-101M
C567	281-0824-00			CAP,FXD,CER DI:100PF,20%,1K HZ	33095	54-743-001-101M
C568	281-0824-00			CAP,FXD,CER DI:100PF,20%,1K HZ	33095	54-743-001-101M
C571	281-0824-00			CAP,FXD,CER DI:100PF,20%,1K HZ	33095	54-743-001-101M
C572	281-0824-00			CAP,FXD,CER DI:100PF,20%,1K HZ	33095	54-743-001-101M
C573	281-0824-00			CAP,FXD,CER DI:100PF,20%,1K HZ	33095	54-743-001-101M
C574	281-0824-00			CAP,FXD,CER DI:100PF,20%,1K HZ	33095	54-743-001-101M
C575	281-0824-00			CAP,FXD,CER DI:100PF,20%,1K HZ	33095	54-743-001-101M
J525	119-0238-00			COIL,CAL:	80009	119-0238-00
J530	131-1471-00			CONN,RCPT,ELEC:RA,3 EA MALE & FEMALE CONT	C0130	RA1306
Q501	151-0497-00			TRANSISTOR:NPN,SI,TO-220	04713	SJE1985

VR1021