

# Instruction Manual



**Tektronix**

**760A/760D/760N**  
**Stereo Audio Monitors**  
**(760A S/N B050000 & Above)**  
**(760D/760N S/N B030000 & Above)**  
**070-5992-05**

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# General Safety Summary

Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it. To avoid potential hazards, use this product only as specified.

*Only qualified personnel should perform service procedures.*

## To Avoid Fire or Personal Injury

**Use Proper Power Cord.** Use only the power cord specified for this product and certified for the country of use.

**Ground the Product.** This product is grounded through the grounding conductor of the power cord. To avoid electric shock, the grounding conductor must be connected to earth ground. Before making connections to the input or output terminals of the product, ensure that the product is properly grounded.

**Do Not Operate Without Covers.** Do not operate this product with covers or panels removed.

**Use Proper Fuse.** Use only the fuse type and rating specified for this product.

**Avoid Exposed Circuitry.** Do not touch exposed connections and components when power is present.

**Do Not Operate With Suspected Failures.** If you suspect there is damage to this product, have it inspected by qualified service personnel.

**Do Not Operate in Wet/Damp Conditions.**

**Do Not Operate in an Explosive Atmosphere.**

**Keep Product Surfaces Clean and Dry.**

**Provide Proper Ventilation.** Refer to the manual's installation instructions for details on installing the product so it has proper ventilation.

## Symbols and Terms

**Terms in this Manual.** These terms may appear in this manual:



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

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**CAUTION.** Caution statements identify conditions or practices that could result in damage to this product or other property.

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**Terms on the Product.** These terms may appear on the product:

**DANGER** indicates an injury hazard immediately accessible as you read the marking.

**WARNING** indicates an injury hazard not immediately accessible as you read the marking.

**CAUTION** indicates a hazard to property including the product.

**Symbols on the Product.** The following symbols may appear on the product:





# Preface

This manual documents the TEKTRONIX 760A/760D/760N Stereo Audio Monitor and is intended for instrument operators and service technicians. Operators are assumed to be familiar with basic television terms and measurements. Qualified service technicians are also assumed to be familiar with television terms and measurements, and have moderate experience with analog and logic circuits.

The manual is divided into two parts: Operator's Information and Service Information. The Operator's information is useful to both operators and service technicians. The Service Information is intended only for qualified service technicians.

## Features

**Operators Part** The Operators part includes Sections 1 and 2.

**Section 1, Introduction and Specification**, includes a general description of the instrument, followed by the Specifications. The Specifications include references to the corresponding Performance Check steps.

**Section 2, Operating Instructions**, familiarizes the user with the front- and rear-panel controls, connectors, and indicators; includes operator familiarization information.

**Service Part** The Service part contains information required by service technicians to install, calibrate, maintain, and troubleshoot the instrument. This is included in the remaining sections of the manual.

**Section 3, Installation**, includes electrical and mechanical installation information. The electrical installation information includes operational changes available within the instrument.

**Section 4, Maintenance**, includes preventive troubleshooting and corrective information.

**Section 5 Performance Check and Calibration Procedures**, includes information to verify and restore the instrument to meet its specifications. The procedures are preceded by list of recommended test equipment.



# **Introduction and Specifications**

# Section 1

## Introduction and Specifications

### Introduction

The 760A Stereo Audio Monitor is a simple yet accurate tool that the audio engineer can use to perform setup, monitoring, measuring, and troubleshooting tasks in the studio. There are two special versions of the 760A Stereo Audio Monitor: the 760D and the 760N. All three operate in exactly the same manner, but are set to use different scales for the Bar Graph displays. The three different scales are shown in Figure 1–1.

### Features

**CRT Display** The CRT provides a pattern display to monitor stereo separation, monaural phase compatibility, and audio system phase errors.

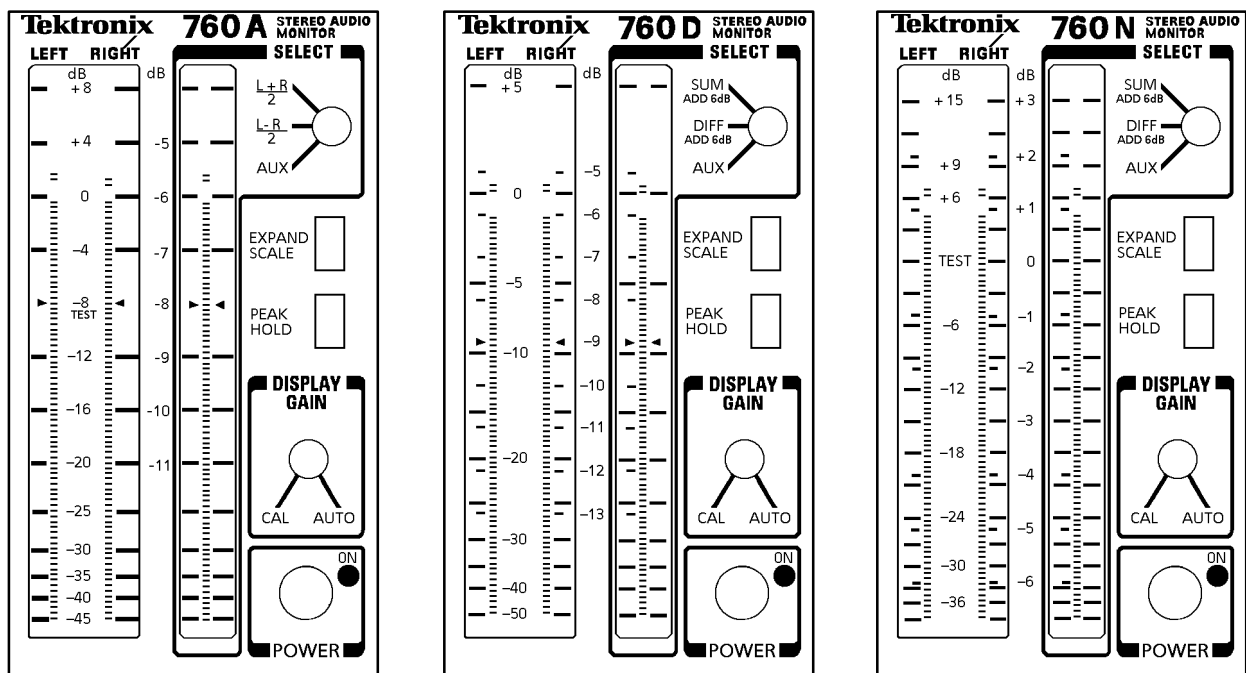


Figure 1–1: LED Bar Graph scales for the 760A, 760D, and 760N

The display is set for a “Sound Stage” orientation when the 760A is shipped from the factory. This provides a display where monaural amplitudes are oriented on the vertical axis of the CRT.

An alternate XY graticule is shipped as a standard accessory with the 760A. This graticule can be installed if you are familiar with or desire the display orientation provided by an XY monitor. Instructions for installing the XY graticule are found in SECTION 3 INSTALLATION.

Automatic or manual gain control is front panel selectable. This feature allows flexible control of the pattern size over a wide range of input signal amplitudes.

In the absence of an input signal, Z–Axis dimming prolongs CRT life.

### Bar Graph

Three 100–segment LED bars indicate the levels of the left stereo channel, right stereo channel and a selectable third channel. The third bar can be set to display the levels of  $(L+R)/2$ ,  $(LR)/2$ , or the rear–panel AUXILIARY input. Both  $(L+R)/2$  and  $(LR)/2$  are internally derived, and represent half the sum or difference of the input voltages ( $[VLVR] / 2$ ). In this way when the left and right channels are balanced the sum will be displayed at that same level, while the difference will be displayed at “0”.

The EXPAND SCALE control is a momentary contact front–panel push button, which greatly improves the accuracy of level setups. Pressing this button switches to the blue expanded scale which allows accurate setting of the signal level for alignment, as specified by broadcast authorities. For the 760A the alignment level is 8 dB. This level is labeled “TEST”, and is indicated by the “arrow head” scale marks.

For the 760D the alignment level is –9 dB, indicated by the “arrow head” scale marks. The 760N alignment level is marked “TEST”, and is at 0 dB. In all cases, the normal scale lines up with the expanded scale at the alignment level.

The PEAK HOLD control is a latching front–panel push button. Indicated peaks are displayed for approximately three seconds when this function is selected.

### Dynamic response characteristics for peak program meters

The 760A, 760D, and 760N conform to the dynamic response characteristics of:

760A: EBU–3205, IEC 268–10, and IEEE Proposed PPM specification.

760D: DIN 45 406

760N: Nordic Technical Recommendation N9.

Table 1–1 shows the peak bar indication when an isolated tone burst of a given duration is applied. The response shown is relative to the indication for a continuous tone of the same amplitude. The burst must contain at least 5 cycles, which requires a frequency of at least 10 kHz for the shortest bursts.

**Table 1-1: Response Time**

<b>Inst</b>	<b>Tone Burst (mS)</b>	<b>Response (dB)</b>
760A	100.0	0 ± 0.5
	10.0	2 ± 0.5
	5.0	4 ± 0.75
	1.5	9 ± 1.0
	0.5	17 ± 2.0
760D 760N	10.0	1 ± 0.5
	5.0	2 ± 1.0
	3.0	4 ± 1.0
	0.4	15 ± 2.0

**Return Time** Return Time is the elapsed time for the reading to decay a specified amount after the abrupt removal of a tone. See Table 1-2.

**Table 1-2: Return Time**

<b>Inst</b>	<b>Return Time</b>
760A	2.8 ± 0.3 seconds to fall 24 dB
760D	1.5 ± 0.2 seconds to fall 20 dB
760N	1.7 ± 0.3 seconds to fall 20 dB

**Rear Panel** The rear-panel AUDIO INPUTs are female XLR connectors with balanced bridging and jumper selectable input sensitivity and termination.

**Safety Standards** This product is designed and tested in accordance with the requirements for industry safety standards. These standards include the following:

UL1244, Second Edition –Standard for Electrical and Electronic Measuring and Testing Equipment.

ANSI C39.5 –Safety Requirements for Electrical and Electronic Measuring and Controlling Instrumentation, 1984, Draft #11.

CSA –Electrical Bulletin No. 556B.

IEC-348, Second Edition –Safety Standards For Electronic Measuring Apparatus.

VDE 0871.5 (Class B) –Radio Frequency Interference Suppression of Electrical Equipment and Systems.

FCC EMI Compatibility –FCC Rules Part 15 Subpart J, Class A.

## Specifications

The Performance Requirements listed in Table 13 are warranted over an ambient temperature range of 0°C to 50°C only when the 760A has been calibrated at 25°C ±5°C, following a warm-up period of 20 minutes.

A Performance Check procedure is provided in SECTION 5, PERFORMANCE CHECK AND CALIBRATION PROCEDURES, to verify the Performance Requirements listed in the following table.

**Table 1-3: Electrical Characteristics**

Characteristic	Performance Requirement	Supplemental Information	Perf Check Step No.
<b>Audio Inputs</b>			
Balanced Bridging		>10 kΩ/side.	
Termination	Selectable from >20 kΩ, 600Ω, or 150Ω	(internal jumper)	2
Protection	Will withstand 50 V peak common-mode input, dc to 20kHz, without damage.		
Sensitivity 760A	Gain selectable for 0 dB bar indication for sine waves of 0, +4, +8, +12, and +16 dBu.	(internal jumper) One user-definable position available, on standard only.	3
760D	1.55 V rms for +0 dB indication.		
760N	1.55 V rms for +6 dB indication.		
<b>CRT Display</b>			
Automatic Gain Control Control Range 760A 760D 760N	+8 dB to -20 dB (0 dB bar reference). +5 to -25 dB. +15 to -15 dB.		4
Gain Match and Tracking (over AGC range).	± 0.3 dB.		5, 6
Phase Match	± 1° @ 0 dB.		7
Frequency Response	± 0.5 dB, 20 Hz to 20 kHz throughout AGC Control Range.		8
Z- Axis Dimming	With absence of signal.		10
<b>Bar Graph</b>			
100 Segment LED 760A 760D 760N		Green to 0 dB, red above. Green to 0 dB, red above. Green to +6 dB, red above.	

Table 1-3: Electrical Characteristics (Cont.)

Characteristic	Performance Requirement	Supplemental Information	Perf Check Step No.
Display Range 760A –Normal –Expanded 760D –Normal –Expanded 760N –Normal –Expanded		+8 dB to –45 dB 5 dB to –11 dB +5 dB to –50 dB –5 dB to –13 dB +15 dB to –36 dB +3 dB to –6 dB	
Scale 760A 760D 760N		dB linear from +8 to 20 dB. Progressively compressed. dB linear from +15 to –24 dB.	
Resolution 760A  760D  760N		0.4 dB/segment, from +8 to 20 dB. 0.04 dB/ segment with EXPAND SCALE depressed. 0.25 dB/segment from 0 to +5 dB, tapering to 2dB/segment from –40 to –50 dB. 0.125 dB/ segment with EXPAND SCALE depressed. 0.5 dB/segment, from +15 to –24 dB. 0.1 dB/ segment with EXPAND SCALE depressed.	
Accuracy	0.3 dB at 0 dB and 1 kHz		3
Peak Hold		Indicated peaks held approximately 3 seconds.	9
Attack/Decay Dynamics		Conforms to DIN 45 406. 760N also conforms to Technical Recommendation N9.	
Frequency Response 760A 760D 760N	± 0.5 dB, 20 Hz to 20 kHz: +8 to 20 dB +5 to 20 dB +15 to 18 dB		11
Gain Match	0.3 dB.		12
Crosstalk	A full-scale indication on any bar causes no indication on any other bars.	SELECT set to AUX.	13

**Table 1-4: Environmental Limits**

Characteristic	Supplemental Information
Temperature Stored	-55° C to +75° C.
Operational	0° C to +50° C.
Humidity Operational	Will operate at 95% relative humidity for up to five days. Do not operate with visible moisture on boards.
Altitude Stored	50,000 feet.
Operational	15,000 feet.
Vibration Operational	15 minutes each axis at 0.025 inch, with frequency varied from 10–55–10 Hz in 1 minute cycles with instrument secured to vibration table. 10 minutes each axis at any resonant frequency or at 55 Hz if no resonant frequency is found .
Shock Non-Operating	50 g's ½ sine, 11 ms duration, 3 shocks per surface.
Transportation	Qualified under NTSB Test Procedure 1-A, Category II (30 inch drop).

**Table 1-5: Physical Characteristics**

Characteristic	Supplemental Information
Height	5.25 inches (13.3 cm).
Width	8.424 inches (21.4 cm).
Length	16.875 inches (42.9 cm).
Weight	Approximately 10 pounds.



Table 1-6: Certifications and Compliances

EC Declaration of Conformity – EMC <sup>1</sup>	<p>Meets intent of Directive 89/336/EEC for Electromagnetic Compatibility. Compliance was demonstrated to the following specifications as listed in the Official Journal of the European Communities:</p> <p>EN 50081-1 Emissions: EN 55022 Class B Radiated and Conducted Emissions</p> <p>EN 50082-1 Immunity: IEC 801-2 Electrostatic Discharge Immunity IEC 801-3 RF Electromagnetic Field Immunity IEC 801-4 Electrical Fast Transient/Burst Immunity</p> <p><sup>1</sup> High-quality shielded cables must be used to ensure compliance to the above listed standards. This product complies when installed into any of the following Tektronix instrument enclosures: 1700F00 Standard Cabinet 1700F02 Portable Cabinet 1700F05 Rack Adapter</p>
CSA Certified Power Cords	CSA Certification includes the products and power cords appropriate for use in the North America power network. All other power cords supplied are approved for the country of use.
Safety Standards U.S. Nationally Recognized Laboratory Listing	UL1244 Standard for Electrical and Electronic Measuring and Testing Equipment.
Canadian Certification	CAN/CSA C22.2 No. 231 CSA Safety Requirements for Electrical and Electronic Measuring and Test Equipment.
European Union Compliance	Low Voltage Directive 73/23/EEC, Amended by 93/68/EEC. EN61010-1 Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use.
Additional Compliance	IEC1010-1 Safety Requirements for Electrical for Measurement, Control, and Laboratory Use.
Safety Certification Compliance Temperature, operating	+5 to +40° C
Altitude (maximum operating)	2000 meters
Equipment Type	Test and measuring
Safety Class	Class I (as defined in IEC 1010-1, Annex H) – grounded product
Overvoltage Category	Overvoltage Category II (as defined in IEC 1010-1, Annex J).
Pollution Degree	Pollution Degree 2 (as defined in IEC 1010-1). Note: rated for indoor use only.



# Operating Instructions

# Section 2

## Operating Instructions

### Introduction

This section of the manual will familiarize you with the 760A Stereo Audio Monitor's operation. The contents include a brief description of the controls, connectors, displays (including a discussion of the graticules), and the basic uses of the instrument.

### Front-Panel Controls

Table 2-1 contains a brief description of the front-panel control functions. The front panel is shown in Figure 2-1.

**Table 2-1: Front-Panel Controls**

Control	Function
Select	Rotary switch; selects input to third bar from SUM, DIFF and AUX.
Expand Scale	Momentary push button; increases sensitivity for precise level set-ups. While holding this button refer to the scale printed in blue.
Peak Hold	Latching push button; ON when back lit.
Display Gain	Double detent pot; CW detent is AGC, CCW detent is CAL; MAN GAIN range is between detents.
Power	Switches instrument power ON and OFF.
Focus	For optimum display definition.
Graticule	Varies external graticule illumination.
Position (Vert & Horiz)	Center the display on the graticule.
Intensity	Varies intensity of trace.
Trace Rot	Rotates trace into alignment with graticule lines.

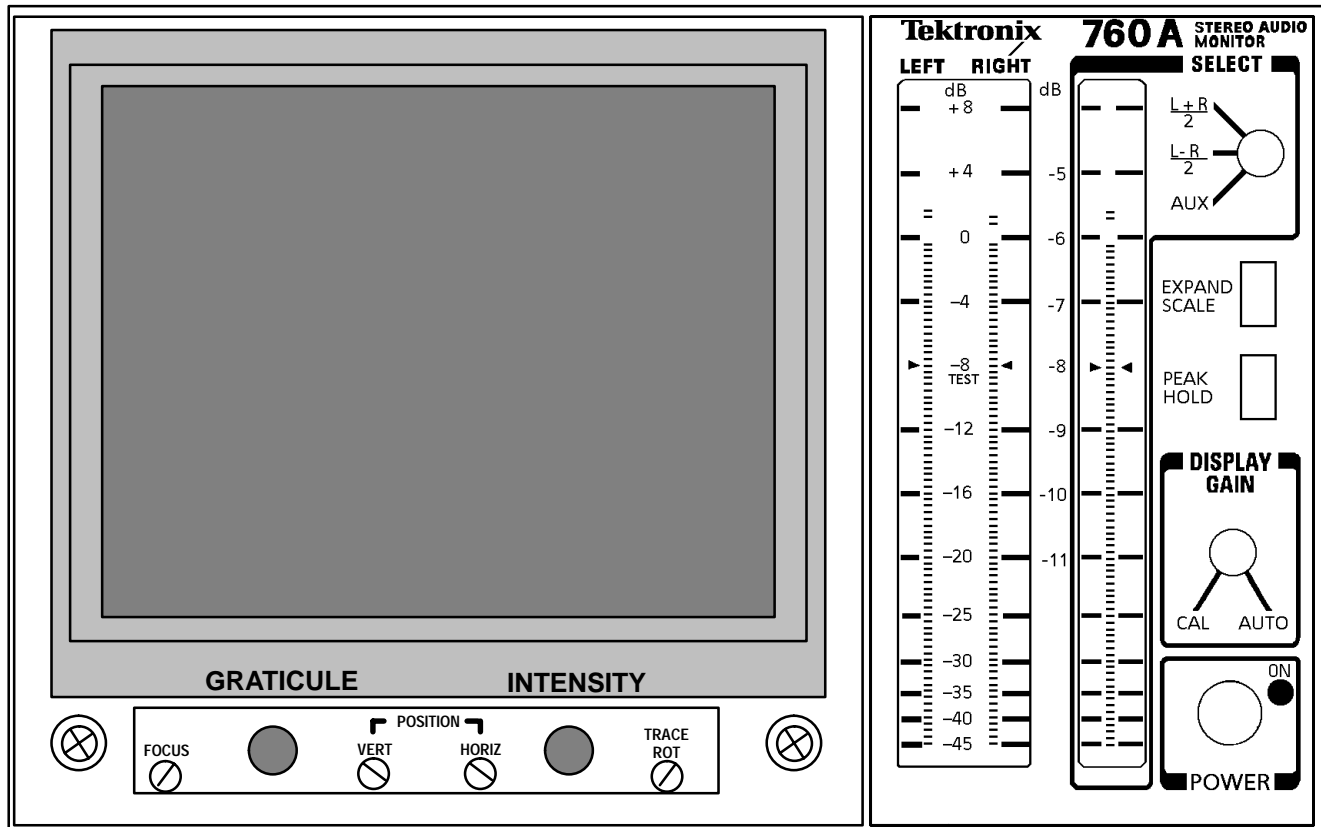


Figure 2-1: 760A Front Panel

## Rear-Panel Connectors

The three rear-panel AUDIO INPUTS: LEFT, RIGHT, and AUXILIARY, are balanced bridging male XLR connectors. The connectors are wired as follows:

- Pin 1: Ground
- Pin 2: +
- Pin 3: -

The LEFT and RIGHT AUDIO INPUTS are for the left and right channels of your stereo signal. The AUXILIARY input can be used for an externally derived monaural signal or a SAP signal. The rear panel is shown in Figure 2-2.

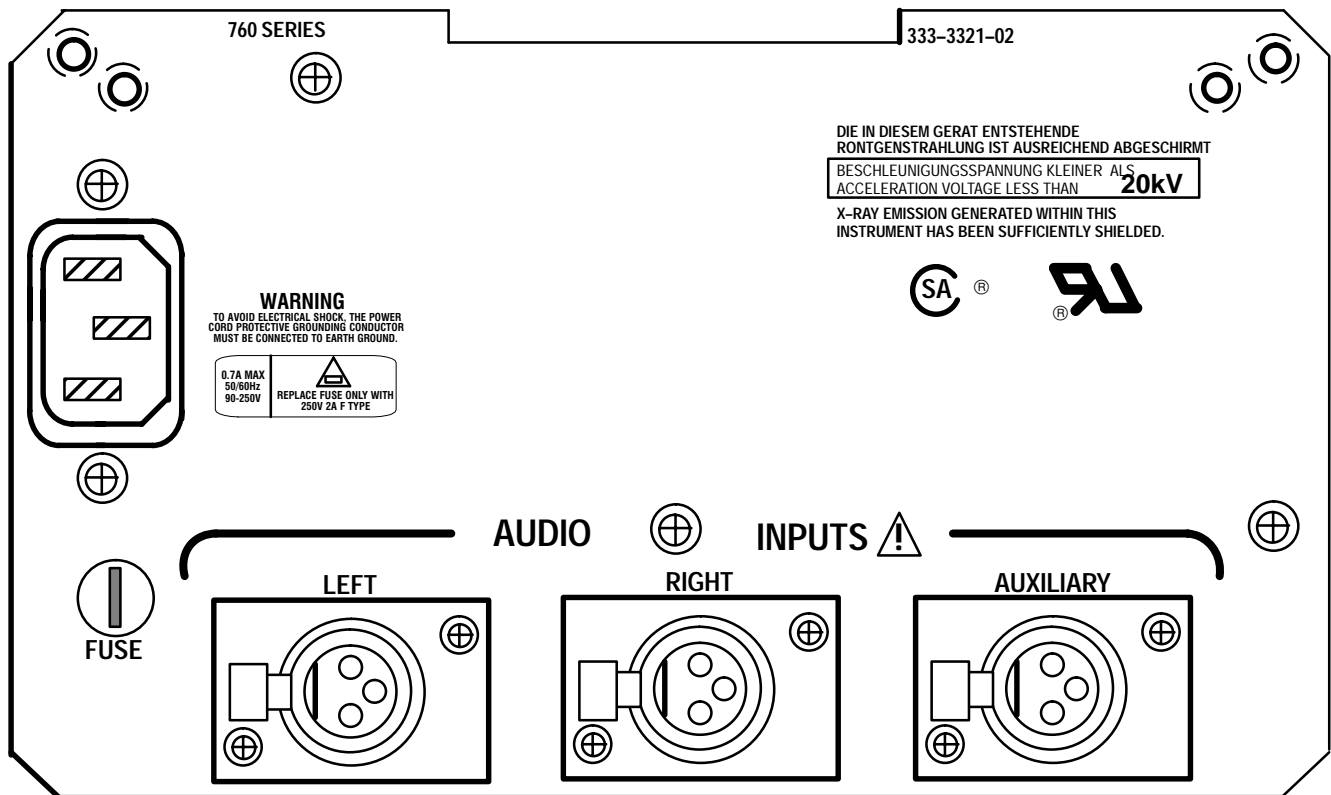


Figure 2-2: 760A Rear Panel

## CRT Display

The CRT display provides visual feedback of the amplitude and relative phasing of the stereo audio signal. With this display, you can determine the fitness of audio signals for monaural or stereo transmission/reception. Audio system phase errors can also be measured on the 760A CRT display.

### Display Orientation

The 760A is shipped from the factory set for “Sound Stage” display orientation. This orientation provides a display where monaural amplitudes are displayed on the vertical axis, and stronger left content in the stereo signal would deflect the signal toward the left 45° axis (“L” line on the Sound Stage graticule).

An alternate XY graticule is shipped as a standard accessory with the 760A. This graticule can be installed if you are familiar with or desire the display orientation provided by an XY monitor. Instructions for installing the XY graticule are found in SECTION 3, INSTALLATION.

**Graticule** The graticule provides calibrated reference marks for a variety of uses. Both graticule options have the same markings and differ only in their orientation. Figures 2-3 and 2-4 show the Sound Stage and XY graticules.

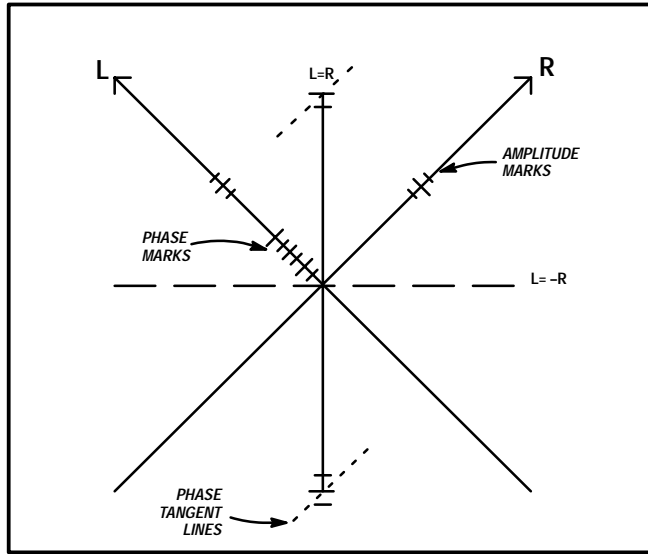


Figure 2-3: 760A Sound Stage Graticule

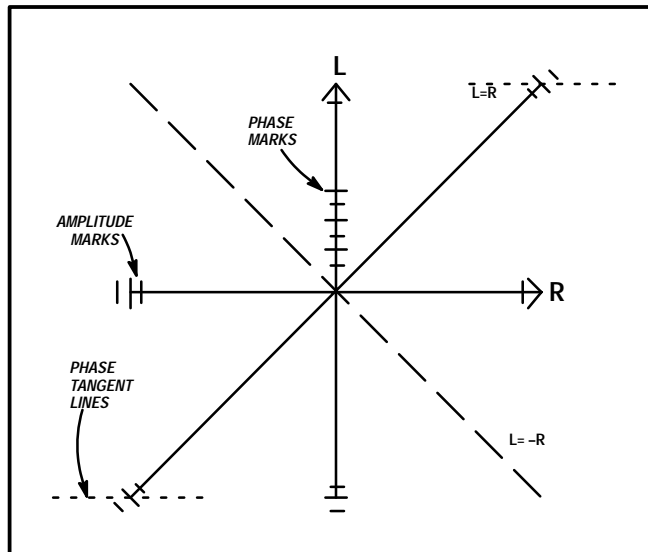


Figure 2-4: 760A X-Y Graticule

**L** indicates signal amplitude from the LEFT channel input.  
**R** indicates signal amplitude from the RIGHT channel input.  
**L=R** indicates monaural amplitudes and “in phase” left and right signal amplitudes.  
**L=-R** indicates “out of phase” left and right signals. A pattern display oriented along this line is poorly suited for monaural reception.

**Phase Marks and Phase Tangent Lines** are used in conjunction with one another to make system phase error measurements. This procedure is explained later in this section. All other graticule markings are used for performance verification and adjustments in SECTION 5, PERFORMANCE CHECK AND CALIBRATION.

## LED BARS

The three 100-segment LED bars allow direct readout of the signal levels. Two of the bars are dedicated to the left and right channels, while the third bar can be switched to display  $\frac{L+R}{2}$  (sum), or  $\frac{L-R}{2}$  (difference) of the input voltages, or to display the level of the AUXILIARY<sup>2</sup> input. By dividing Left + Right by two, the third bar will read the same as the left and right bars do, when the two channels are of the same phase and amplitude.

The standard 760A, the 760D (DIN scale), and the 760N (Nordic scale) employ different scales and resolutions for the LED bars, as described below:

**760A** The scale is dB linear between +8 and -20dB, with scale marks every 4 dB. Below -20 dB the scale is progressively tapered to -45 dB with marks every 5 dB. Above -20 dB each LED segment represents a 0.4 dB increment. The LED bars are green up to 0 dB, and red above that point. With the EXPAND SCALE button depressed, the scale is expanded by a factor of four, and the resolution is increased to 0.1 dB. The scale range is -5 dB to -11 dB while the EXPAND SCALE button is being held in, as shown by the scale printed in blue. The sensitivity for the standard 760A is jumper selectable (see SECTION 3, INSTALLATION).

**760D** The 760D uses a DIN scale in accordance with DIN 45 406, with a range of +5 to -50 dB. The scale is progressively compressed from top to bottom, having a resolution of 0.25 dB from +5 to 0 dB, and tapering to 2 dB from -40 to -50 dB. With the EXPAND SCALE button depressed, the resolution is increased to 0.125 dB and the scale range is -5 to -13 dB (shown in blue). The LED bars are green up to 0 dB, and red above that point. A 1.55 V rms sinusoidal input (+6 dBu) produces a reading of 0 dB, and there are arrows which indicate the -9 dB test level.

**760N** The 760N uses a scale in accordance with Technical Recommendation N9 of the Nordic broadcast authorities, with a range of +15 to –36 dB. The scale is dB linear from +15 dB to –24 dB, and is progressively compressed to –36 dB with scale marks at 3 dB intervals. The resolution of this scale is 0.5 dB from +15 to –24 dB. With the EXPAND SCALE button depressed the resolution is increased to 0.1 dB and the scale range is +3 to –6 dB (shown in blue). The LED bars are green up to +6 dB, and red above that point. A 1.55 V rms sinusoidal input (+6 dBu) produces a reading of +6 dB, and there is a TEST mark to indicate the 0 dB test level. This test level corresponds to an input level of 0.775 V rms (0 dBu).

## Using The 760A / 760D / 760N

Once the 760A / 760D / 760N has been properly configured for your application and installed, performing the following initial alignment procedure is necessary prior to any other measurements. All 760A / 760D / 760N front-panel control names are upper case.

---

**NOTE.** All waveform photographs in this section were taken using the Sound Stage graticule. Remember that your display will be shifted 45° clockwise from the figures in this section if you are using the XY graticule.

---

### Initial Alignment

2. Connect power to the 760A / 760D / 760N and set the instrument POWER to ON.
3. With no input to the LEFT or RIGHT AUDIO INPUTs, set the front panel INTENSITY control fully clockwise.
4. Set the VERTICAL and HORIZONTAL POSITION controls so the illuminated dot is centered on the graticule.
5. Connect a sine wave signal between 20 Hz and 15kHz to the LEFT AUDIO INPUT, and set the INTENSITY control to your preference.
6. Set the FOCUS control for the sharpest trace possible.
7. Set the TRACE ROTATION control to overlay the trace on the L graticule line.



## Level Setups

**760A** When a ppm such as the 760A is used in conjunction with vu meters, it is important to consider the difference in dynamic characteristics when aligning system levels. The vu meter is an average reading meter with a relatively long integration time. Its slow response causes it to indicate between 6 and 15 dB below actual audio peaks, depending on program content. The ppm is a quasi-peak meter with a short (but not instantaneous) attack time and very slow decay. It reads much closer to actual audio peaks, within 3 to 6 dB. So when lining up a system with a test tone, the ppm must read lower than the vu meter to make them read the same on program audio. Broadcast authorities have found that 8 dB is a good average difference between peak-to-reading ratio of the ppm and vu meter. Hence, they have specified that a line-up tone reading of 0 vu on the vu meter should read -8 dB on the ppm. With this alignment, both meters will read substantially the same with audio program material, with the ppm giving more reliable control of program peak levels. The input sensitivity of the 760A is set using internal jumpers. See SECTION 3 INSTALLATION for details.

**760D** The Alignment Signal Level should indicate -9 dB on either the normal (white) or the expanded (blue) scale. The two scales coincide at the -9 dB “arrowhead” marks. Very accurate level settings can be achieved using the blue expanded scale, activated by pressing and holding the EXPAND SCALE button

**760N** System alignment is done at the 0 dB TEST level. Both the normal (white) and the expanded (blue) scales coincide at the TEST mark. Very accurate level settings can be achieved using the blue expanded scale, activated by pressing and holding the EXPAND SCALE button.

## System Phase Error Measurements

---

**NOTE.** Perform the preceding alignment procedure before making any measurements, to ensure accurate results.

---

Phase difference between LEFT and RIGHT sine waves of the same frequency can be measured with the phase marks on the CRT graticule. The signals need not have the same amplitude, though the measurement is easier if they are approximately equal.

Adjust the MANual DISPLAY GAIN control to make the edges of the ellipse just touch the Phase Tangent Lines (see Figure 2-3 or 2-4). Read the phase difference where the ellipse crosses the axis with the phase marks. The longer marks represent 10° increments and the shorter ones represent 5°. Figure 2-5 shows a stereo signal with approximately 13° phase error.

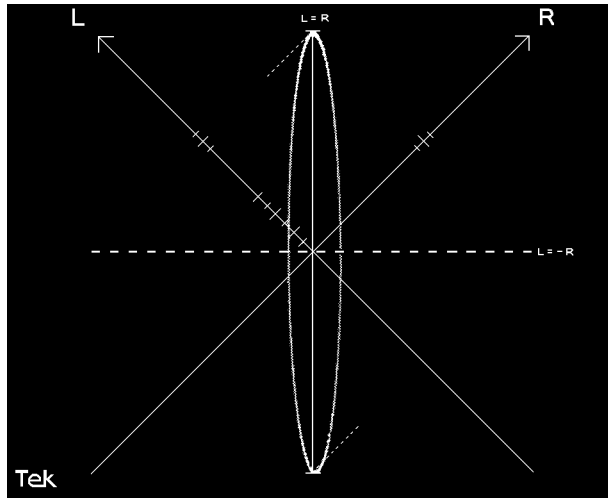


Figure 2-5: Ellipse with approximately 13° phase error

If the ellipse closes to a single line, the LEFT and RIGHT channels are in phase as long as the line is within 45° of the L=R axis. The line may tilt if the amplitudes are unequal. A line within 45° of the L=-R axis indicates the channels are out of phase.

### Energy Distribution

The 760A's pattern display provides a graphic representation of the stereo signal's overall energy distribution. The pattern orientation tells you at a glance whether the present mix is balanced or concentrated to either side. Figures 2-6 and 2-7 illustrate different energy distributions.

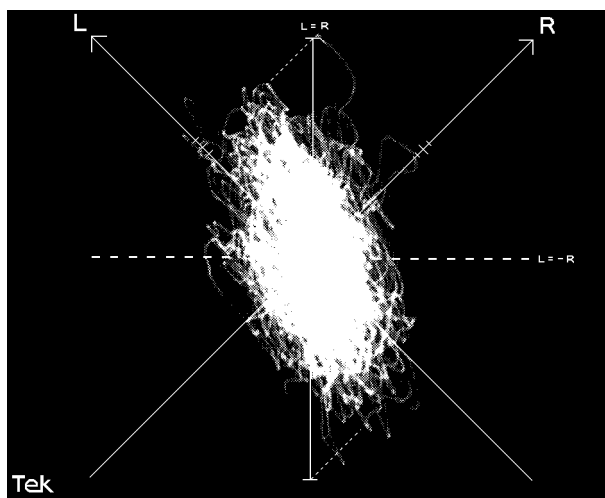


Figure 2-6: Strong left content

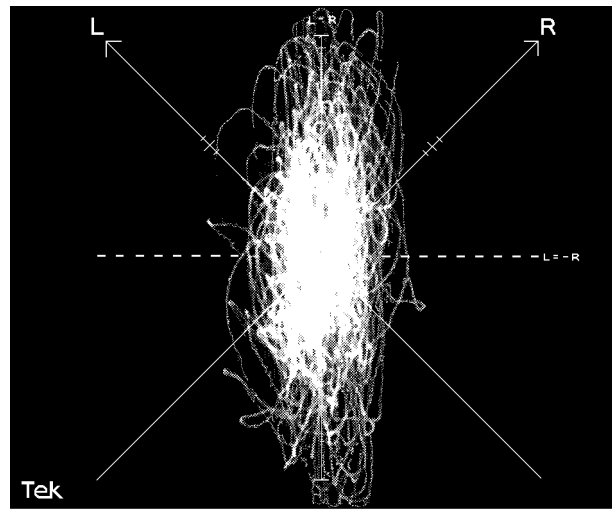


Figure 2-7: Well balanced stereo

### Monaural Compatibility

Transmitting a mono-compatible stereo television signal is, and will remain, critical for broadcasters since most viewers have monaural receivers. The 760A pattern display and the L+R bar indicate the fitness of your audio for monaural reception. Figures 2-7 and 2-8 show, respectively, a stereo signal well suited for monaural reception and a stereo signal unsuited for monaural use due to its large L=-R (out-of-phase) component.

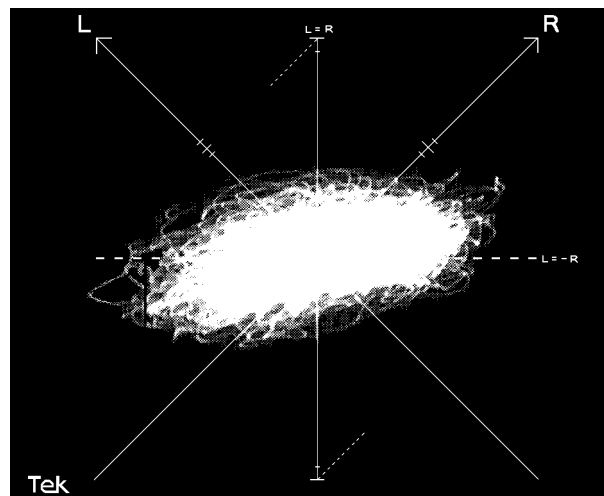


Figure 2-8: Stereo unsuited to monaural reception

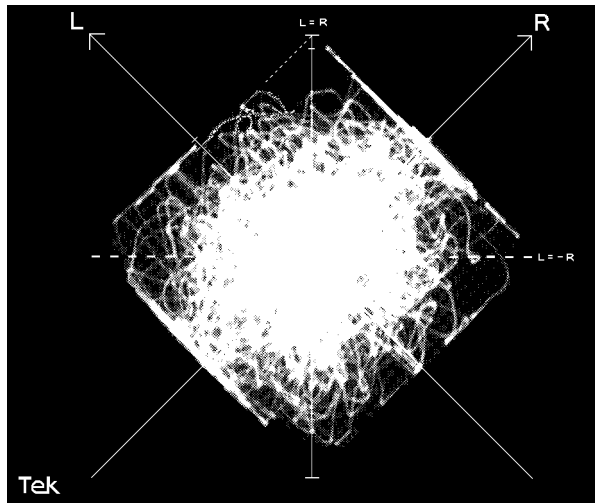
### Polarity Reversal

Routing audio through a complex studio presents many opportunities to introduce polarity reversals. Any time a polarity reversal occurs, the 760A can be used to trace the problem back to its source quickly. By introducing a sine

wave into both channels of the system and checking outputs stage by stage, the source of the phase reversal can be quickly identified.

**Clipping**

Another problem illustrated clearly by the 760A is clipping. Regardless of its source, clipping manifests itself on the 760A pattern display as a "squaring off" of the pattern edges. Figure 2-9 illustrates a severe case of clipping. The 760A's AGC keeps the pattern within the screen boundaries in spite of the amplitude of the signals



**Figure 2-9: Severe clipping of stereo signal**

**WARNING**

*The following servicing instructions are for use only by qualified personnel. To avoid injury, do not perform any servicing other than that stated in the operating instructions unless you are qualified to do so. Refer to all Safety Summaries before performing any service.*



# Installation

## Section 3 Installation

**Unpacking** At installation time, save the shipping carton and packaging materials for repackaging in case shipment becomes necessary. See Repackaging for Shipment in SECTION 6, MAINTENANCE, for repackaging instructions.

### Electrical Installation

**Power Source** This instrument is intended to operate from a single-phase power source having one of its current-carrying conductors at or near earth-ground (the neutral conductor). Only the Line conductor is fused for over-current protection. Systems that have both current-carrying conductors live with respect to ground (such as phase-to-phase in multiphase systems) are not recommended as power sources.



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**WARNING.** For your protection and to avoid damage to the instrument, unplug the instrument power cord before removing or replacing any circuit boards, connectors, or jumpers.

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### Mains Frequency and Voltage Ranges

The 760A / 760D / 760N Stereo Audio Monitor operate over a frequency range of 48 to 66 Hz, at any mains voltage between 90 VAC and 250 VAC. These newer versions of the 760-Series instruments *do not* require any internal changes to select their operating voltage range.

### Changing Input Sensitivity (Standard 760A only)

The 760A is factory set so that a specific level applied to each input will indicate a specific level on the bar graph scale (see Table 3-1). While this required input level may be changed for the standard 760A, the 760D and 760N are constrained to use only the factory set levels.

**Table 3-1: Factory Set Input Sensitivity**

Instrument Type	Input Level	Bar Graph Readout
760A	+8 dBu	0 dB
760D	+6 dBu	0 dB
760N	+6 dBu	+6 dB

To enable the 760A bar graph to indicate 0 dB with an input of 0, +4, +8, +12, or +16 dBm, move the jumpers on J185 (LEFT), J385 (RIGHT) and J657 (AUXILIARY) to the desired sensitivity, which is marked on the Main circuit board (Assembly A3) at each jumper location. Figure 3-3 shows all jumper locations on the Main board and what each jumper position represents.

---

**NOTE.** *The specified level is that of a sine wave which reads 0 dB peak program level, not the line-up level. For a ppm, line-up level is 8 dB below peak program level. This means that if the house level is +4 dBu (the level that indicates 0 on a VU meter), then the 760A sensitivity jumper should be set 8 dB higher, or +12 dBu. The line-up tone should then read 8 dB. See the discussion about ppm vs. VU meters under Level Setups in Section 2.*

---

A User-definable jumper position is provided for installations that use a reference level other than 0, +4, +8, +12, or +16 dBm. The following paragraphs explain the procedure for selecting the proper resistor value so any input level will indicate 0 dB on the bars.

**User-Definable Input Sensitivity (Standard 760A only)**

User-definable resistors may be installed at R183 (LEFT), R383 (RIGHT), and R658 (AUXILIARY) if the standard range of input sensitivities previously listed does not fit your needs. These resistor positions are already used in the 760D and 760N. The following formula can be used to determine the value of resistors needed to achieve a 0 dB indication with your reference level:

$$R_{SET} = \frac{20K}{\left(\frac{7.962}{10^{G/20}}\right) - 1}$$

where  $R_{SET}$  is the user-definable resistor value and G is the desired reference level in dBu.

Once the resistor value is determined and resistors are installed at R183, R383, and R658, move the jumpers on J385, J185, and J657 to the "U" position. This is the factory set jumper position for the 760D and 760N.

**Changing Input Termination**

The 760A is set at the factory for Infinite input termination, with 600 or 150 termination being jumper selectable. The position of the jumper on J192 (LEFT), J292 (RIGHT), or J664 (AUXILIARY) determines the input termination for that channel. The Main circuit board is marked at the jumper location to indicate the termination value that each jumper position represents. See Figure 3-1.

**Changing Display Orientation**

The 760A CRT display can be changed from the factory set "sound stage" orientation (where L=R is vertical) to a standard X-Y orientation (where Left is vertical). To accomplish this change, you must install the optional external



graticule supplied with the instrument. Detailed instructions for removing the bezel can be found under the Mechanical Assembly/Disassembly topic in SECTION 4, MAINTENANCE. Then move two jumpers on the Main circuit board, J273 and J373, to the position labeled X-Y (pins 2 & 3) in Figure 3-1.

Also for X-Y display orientation, rotate P886 (on back of A3, Main board) so pins 1 and 2 of the connector mate with pins 2 and 1 of J886 (connect backward). Repeat with P862/J862. Remember to return P886 and P862 to their normal (pin 1 to pin 1) positions for Sound Stage display orientation. This provides correct phasing for both display orientations.

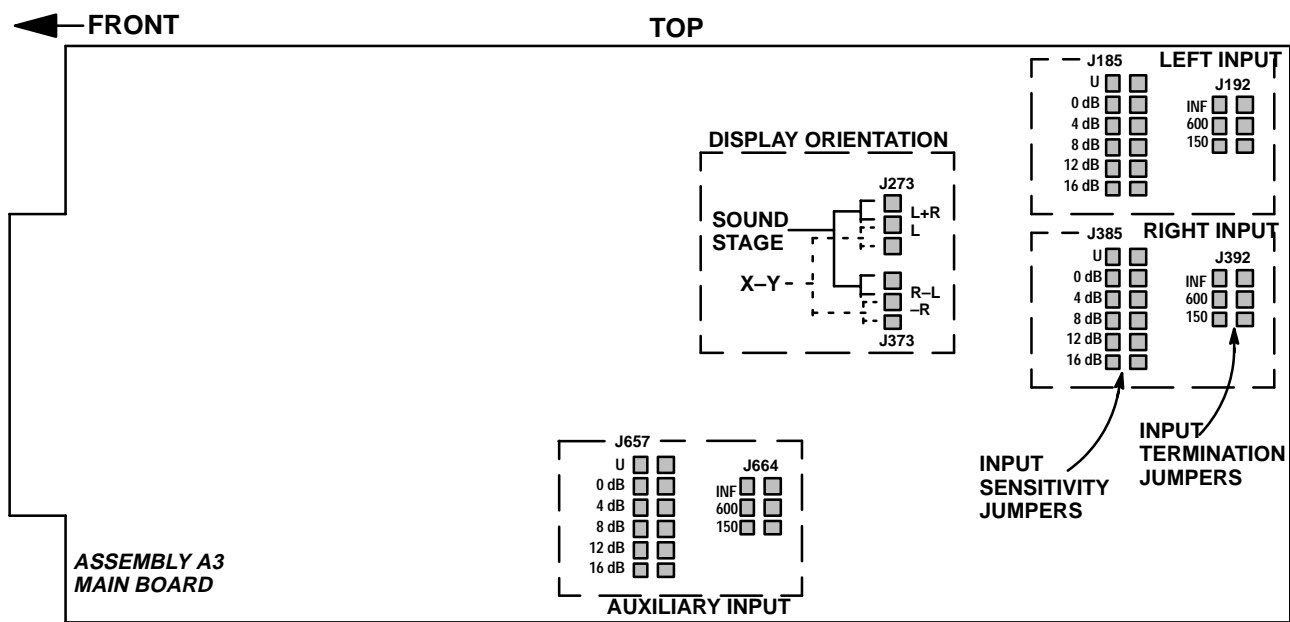


Figure 3-1: 760A / 760D / 760N jumper locations for input and display orientation selections



# Maintenance

## Section 4

# Maintenance

**Introduction** This section discusses preventive maintenance, general troubleshooting information, and corrective maintenance. If the instrument does not function properly, troubleshooting and other corrective measures should be taken immediately to prevent any additional problems.

### Preventive Maintenance

Preventive maintenance consists of cleaning, visual inspection, a performance check, and, if needed, readjustment. The preventive maintenance schedule that is established for the instrument should be based on the environment in which the instrument is operated and the amount of use. Under average conditions, a preventive maintenance check should be performed every 2000 hours of instrument operation.

**Cleaning** Clean the instrument often enough to prevent dust or dirt accumulation. Dirt acts as a thermal insulating blanket and prevents effective heat dissipation. It also provides high resistance electrical leakage paths between conductors or components in a humid environment.

**Exterior.** Clean the dust from the outside of the instrument by wiping or brushing the surface with a soft cloth or small brush. The brush will remove dust from around the selector buttons and connectors. Hardened dirt may be removed with a cloth dampened in water that contains a mild detergent. Abrasive cleaners should not be used.

**CRT.** Clean the light filter, graticule and CRT face plate with a soft, lint-free cloth dampened in denatured alcohol.

**Interior.** Clean the interior by loosening the accumulated dust with a dry, soft brush, then remove the loosened dirt with low pressure air to blow the dust clear (high velocity air can damage some parts). Hardened dirt or grease may be removed with a cotton tipped applicator dampened with a solution of mild detergent in water. Abrasive cleaners should not be used. If the circuit board assemblies need cleaning, remove the circuit board by referring to the instructions under Corrective Maintenance in this section.

After cleaning, allow the interior to thoroughly dry before applying power to the instrument.



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**CAUTION.** Do not allow water to get inside any enclosed assembly or component. Do not clean any plastic materials with organic cleaning solvents, such as benzene, toluene, xylene, acetone, or similar compounds, because they may damage the plastic.

---

### Visual Inspection

After cleaning, carefully check the instrument for defective connections, damaged parts, and improperly seated transistors and integrated circuits. The remedy for most visible defects is obvious; however, if heat damaged parts are discovered, try to determine the cause of overheating before the damaged part is replaced, otherwise the damage may be repeated.

### Static-Sensitive Components



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**CAUTION.** Static discharge can damage any semiconductor component in this instrument.

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This instrument contains electrical components that are susceptible to damage from static discharge. Static voltages of 1 kV to 30 kV are common in unprotected environments.

### Performance Checks and Readjustments

The instrument performance should be checked after each 2000 hours of operation, or every 12 months if the instrument is used intermittently, to ensure maximum performance and assist in locating defects that may not be apparent during regular operation. Instructions for conducting a performance check and an adjustment procedure are provided in SECTION 5 , PERFORMANCE CHECK AND CALIBRATION.

## CORRECTIVE MAINTENANCE

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**NOTE.** No repair should be attempted during the warranty period.

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### How To Use This Manual

**Foldout Pages.** Figure 4–1 illustrates the foldout pages at the back of the manual which contain useful information for troubleshooting this instrument. Block and schematic diagrams, circuit board illustrations, and parts locating charts are located on the foldout pages.

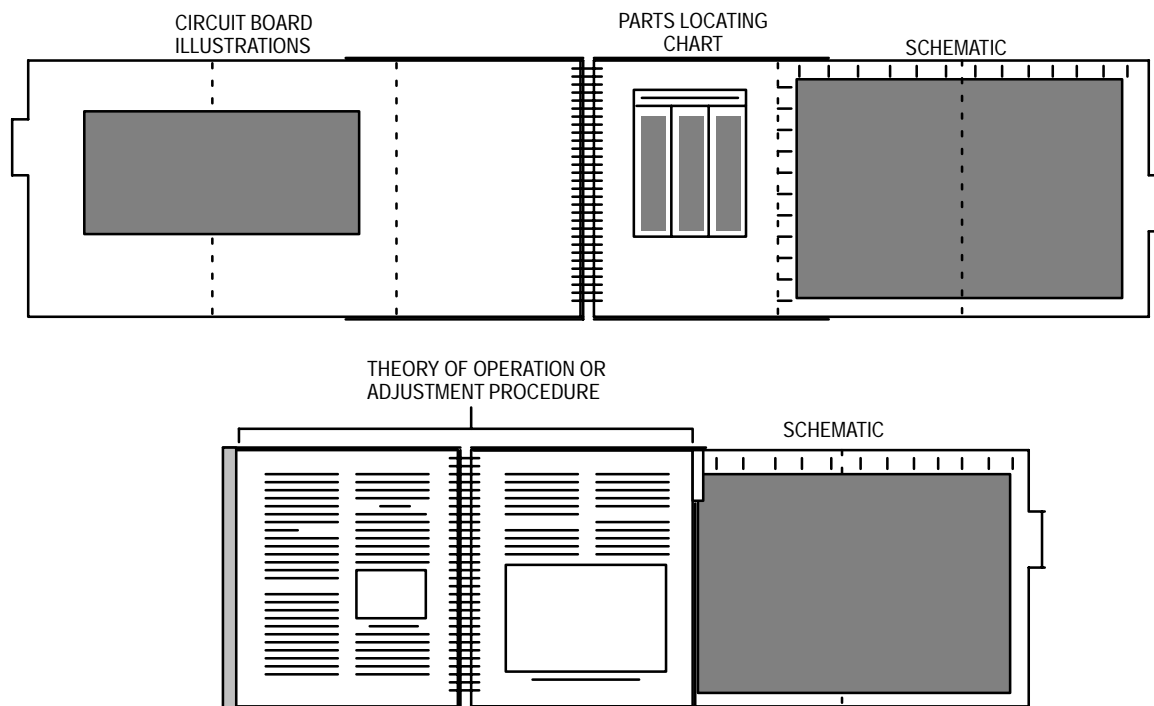


Figure 4-1: Using the foldout pages

**Diagrams.** Block and circuit diagrams are the most often used aids to troubleshooting. The circuit number and electrical value of each component is shown on the diagram (see the first page in the Diagrams section for a definition of the reference symbology used to identify components in each circuit.) Refer to the Replaceable Electrical Parts List for a complete description of each component. Those portions of the circuits that are mounted on circuit boards or assemblies are enclosed in a gray border, with the name and assembly number shown on the border.

Circuit board input and output signals are applied through multi-pin connectors. The connector holder has numbers that identify terminal connectors numbered 2 and up. A triangular key symbol on the connector is also located on the circuit board to identify pin 1 so that the connector can be properly oriented. A pin replacement kit including necessary tools, instructions, and replacement pins is available from Tektronix, Inc.

**Circuit Board Illustrations.** Electrical components, connectors, and test points are identified on circuit board illustrations located on the back of the preceding schematic diagram.

**Theory of Operation.** These pages can be turned to and read while the schematic diagram for that circuit description is folded out.

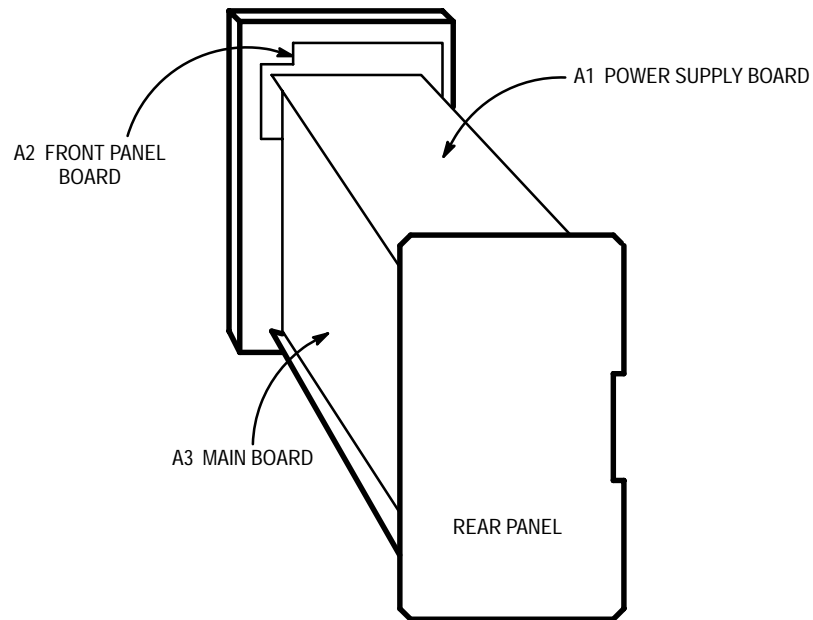
**Replaceable Electrical Parts List.** The Replaceable Electrical Parts List is arranged in assembly-by-assembly order, as designated by ANSI Standard Y32.16-1975. The circuit number in the parts list is made up by combining the assembly number and the circuit number.

EXAMPLE: R117 on A4 would be listed in the Replaceable Electrical Parts List as A4R117.

In the Replaceable Electrical Parts List, assemblies are listed first, followed by circuit board mounted parts in alpha numeric order.

**Parts Locating Charts.** The schematic diagrams are assigned location grids. A parts locating chart for each assembly gives grid locations of components on that schematic.

**Assembly and Circuit Numbering.** . The circuit board assemblies are assigned assembly numbers. Figure 4-2 shows the location of the circuit board assemblies in this instrument.



**Figure 4-2: Circuit board locations in the 760A/760D/760N**

The part numbers for ordering these boards are given in Section 8, Replaceable Electrical Parts.

Generally, each component is assigned a circuit number according to its geographic location within an assembly.

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**NOTE.** The parts lists in this manual should be used when ordering replacement parts.

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## Obtaining Replacement Parts

Replacement parts are available from or through the 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:

1. Part Number
2. Instrument Type or Number
3. Serial Number
4. Modification or Option Number (if applicable)

If a part that has been ordered has been replaced with a new or improved part, the local Tektronix field office or representative will contact the customer concerning any changes in the part number. After repair, the circuits may need readjustment.

## TROUBLESHOOTING INFORMATION

### DAC Servicing

The following paragraphs describe information contained in ROMs in the 760A. It is intended to help the technician isolate any problems that appear to originate with the DAC.

The service switch, S340, selects different look-up tables in the scale-shaper ROM. (Positions 8 & 9 are unused).

**Position 0** selects normal scale.

**Position 1** is the Expanded scale that is also enabled when the EXPAND SCALE push button is depressed.

**Position 2** an absolute linear scale used for DAC linearity checks which has 35 leading zero positions and two all-ones positions for markers.

**Position 3** a step function used to check DAC linearity and bit transition glitches. The first nine addresses are one-bit steps. Single transitions are present until one-quarter scale where three successive bits are used for position markers. Since maximum glitch occurs at half scale, the MSB transition is exhibited three times (the only times the scale goes down). The eight bits surrounding the MSB transition are displayed. The upper addresses nearly mirror the lower 50.

**Position 4** is all zeros which is maximum DAC output and is used to adjust gain.

**Position 5** is all ones which is minimum DAC output and is used to set offset.

**Position 6** is a linear scale with one-half LSB error on odd addresses and is used to check system linearity with linear input.

**Position 7** is the Expanded scale with 20 dB Offset that is used in the Performance Check procedure to check bar accuracy with a 20 dB (18 dB for 760N) input signal.

### PAL Signal Specification

The following PAL signal specification details the operation of PALs U438, U638, and U848 and may be helpful when troubleshooting the Peak Hold circuit.

PIN 1  $\overline{\text{CLOCK}}$  from U825, approx. 30 kHz

PIN 2  $\overline{\text{CMP}}$  goes low when measured signal is equal to or greater than DAC ramp.

PIN 3  $\overline{\text{EQUALS}}$  goes low when DAC ramp is equal to stored peak.

PIN 4  $\overline{\text{TIMEOUT}}$  goes low while the monostable circuit is timing the three-second peak-hold delay.

PIN 5  $\overline{\text{PK BLK}}$  (peak blank): a low level prevents peak segment from being turned on. This line is controlled by a bit position in the scale-shaper ROM, and is used to keep from displaying peaks below 20 dB.

PIN 6  $\overline{\text{PK ON}}$  (peak on): a high level from the PEAK-ON flip-flop U823 turns on the PEAK-HOLD feature.

PIN 7  $\overline{\text{GREATER}}$  goes low when DAC ramp is greater than the stored peak.

PIN 8 (not used)

PIN 12  $\overline{\text{GATE}}$  goes low to reset the peak value latch after the three-second timer has timed out.



PIN 18 DELAY makes a low-to-high transition when the current signal value is  $\geq$  the stored peak value. This clocks the current value into the peak value latch and starts the peak-hold time-out circuit.

PIN 19  $\overline{\text{BAR ENABLE}}$  goes low when a segment should be lit.

The following pins are internal nodes without external connection.

PIN 13 LCMP is a delayed and inverted CMP signal.

PIN 14 PEAK goes high when the first peak segment should be turned on.

PIN 15 DPEAK goes high when the second peak segment should be turned on.

PIN 16 S, S and CLEAR (PIN 17); are state variables for a state machine that looks for the low-to-high transition of TIMEOUT.

## Power Supply Troubleshooting Procedure

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***NOTE.** A review of the power supply theory of operation is recommended before attempting repairs.*

---

The equipment needed to troubleshoot the power supply:

- Digital Multimeter (DMM), with a diode check function
- Oscilloscope
- 0 to 20 VDC Variable Power Supply
- Clip Lead – to short across a component
- High Voltage Probe,  $\geq 1 \text{ G}\Omega$  input resistance

### Introduction

The Troubleshooting Procedure for the Power Supply (Assembly A1) is split into two sections, the Low Volts and High Volts Supplies. Start the procedure by determining which section of the power supply the problem is in. Apply AC power and turn on the power supply. From Table 4-1, determine which symptom the power supply exhibits and refer to the corresponding procedure.

**Table 4-1: Power Supply Fault Symptoms**

Symptom	Procedure
Line fuse open	Rectifier/Switcher Check (Low Volts)
Power supply cycles OFF/ON	Output Check (Low Volts), or High Voltage Oscillator Check (High Volts)
Does not power up	Control Circuit Check (Low Volts)
5 V not regulating	Error Amplifier Check (Low Volts)
Improper CRT display	High Volts Supply

## Low Volts Supply

**NOTE.** A 20 $\Omega$ , 2-watt resistor should be used as a load for the Low Volts Supply. Disconnect J4 and connect the 20 $\Omega$  resistor between W1 (+5 V) and TP1 (secondary ground).

### 1. Preliminary Checks

- a. A properly functioning and loaded Low Volts supply will output the voltages listed in Table 4-2. Use the DMM to measure the voltages between TP1 and the voltage test points. If the supply is not regulating properly, continue with the procedure.

**Table 4-2: Low Volts Supply Voltages**

Test Point	Voltage
W1 - (+5 V)	+4.88 to +5.12 V
W4 - (+15 V)	+14.0 to +16.0 V
W3 - (-15 V)	-14.0 to -16.0 V
W2 - (+40 V)	+39.0 to +41.0 V

**NOTE.** The Low Volts Power Supply troubleshooting is performed without applying AC power.

- b. Disconnect AC power from the instrument. Disconnect the instrument from the Power Supply by removing the jumper from J4.
- c. Use the digital multimeter to measure the voltage between TP2 and the tab (drain) of Q9. Be sure the voltage is near 0 V before proceeding.



---

**CAUTION.** Do not proceed until the the drain of Q9 is near 0 V. Dangerous voltage potentials are present in the circuit until the capacitors discharge.

---

## 2. Rectifier/Switcher Check

- a. Use the digital multimeter to measure the voltage between TP2 and the tab (drain) of Q9. Be sure the voltage is near 0 V before proceeding.
- b. Unsolder and lift one end of R102.
- c. With the negative lead of the digital multimeter connected to TP2 and the positive lead connected to the tab of Q9, measure the circuit resistance. A resistance of less than 20 k $\Omega$  indicates a shorted mosfet (Q9). If the mosfet is shorted, replace it and perform the Control Circuit Check.
- d. Using the digital multimeter diode test function, test CR21, CR22, CR23, and CR24 for shorts. Diode replacements must be fast reverse recovery (300 ns) types to reduce conducted noise.
- e. Reconnect the lifted end of R102.

## 3. Output Check

- a. Connect the negative output from the 20 VDC Power Supply to TP1. Connect the positive output to W4 (+15 V). The circuit should draw less than 20 mA. Excessive current draw can be caused by CR11 or U2 (High Volts Power Supply).
- b. Connect the negative output from the 20 VDC Power Supply to TP1. Connect the positive output to W2 (+40 V). The circuit should draw less than 20 mA. Excessive current draw can be caused by CR14 or Q6 (High Volts Power Supply).
- c. Connect the positive output from the 20 VDC Power Supply to TP1. Connect the negative output to W3 (-15 V). The circuit should draw less than 20 mA. Excessive current draw can be caused by CR12.
- d. Connect the negative output from the 5 VDC Power Supply to TP1. Connect the positive output to W1 (+5 V). The circuit should draw less than 20 mA. Excessive current draw can be caused by CR13 or Q1 and Q2 (High Volts Power Supply).

## 4. Control Circuit Check

- a. Connect the negative output from the 20 VDC Power Supply to TP2. Connect the positive output to the cathode of CR17. Short C47 with a clip lead. Connect the oscilloscope probe ground to TP2.

- b. Table 4–3 lists the signal present in a properly functioning control circuit.

**Table 4–3: Control Circuit Test Points**

Circuit Location	Signal
U5, pin 1	Approximately 5 VDC
U5, pin 2	Approximately 2 VDC
U5, pin 3	0 V
U5, pin 4	80 kHz triangle wave, 2 V <sub>p-p</sub>
U5, pin 6	80 kHz square wave, 18 V <sub>p-p</sub>
U3, pin 1	80 kHz square wave, 5 V <sub>p-p</sub>
U3, pin 2	2.1 VDC
U3, pin 6	2.9 VDC
U3, pin 7	Approximately 5 VDC
U4, pin 13	80 kHz repetition rate, 300 ns width, approximately 3 V <sub>p-p</sub>
Q8, collector	80 kHz repetition rate, 400 ns width, switching from 5 V to approximately 2 V

### 5. Error Amplifier Check

- a. Connect the negative output from the variable DC power supply to TP1. Connect the positive output to W1 (+5 V).
- b. Connect the negative output of another variable DC power supply to TP1. Connect the positive output to W4 (+15 V). Set the variable power supply to 20 VDC.
- c. Connect the digital multimeter between TP1 and the cathode of CR15.
- d. Set the variable DC power supply connected to W1 (+5 V) to 4.8 V. The cathode of CR15 should be approximately 20 V.
- e. Set the variable DC power supply connected to W1 (+5 V) to 5.2 V. The cathode of CR15 should be approximately 2 V.
- f. If this check did not reveal the cause for the +5 V supply not regulating, refer to the Output Check and the Control Circuit Check.

### High Volts Supply

Table 4–4 lists the High Volts Supply fault symptoms and procedures.

Load the Low Volts Supply with the instrument, or with the 20  $\Omega$  resistor as stated at the beginning of the Troubleshooting Procedure.

**Table 4–4: High Volts Supply Fault Symptoms**

Symptom	Procedure
Unable to focus CRT using the front-panel control	Focus Amplifier Check
Unable to adjust CRT intensity using the front-panel control	Z-Axis Amplifier Check Grid Drive Check
No CRT display	High Voltage Oscillator Check CRT Voltage Check

#### Focus Amplifier Check

- Unsolder and lift one end of R24.
- Turn on the power supply.
- Using the digital multimeter, measure the voltage between TP1 and the collector of Q1. It should be approximately  $-140$  V.
- Turn off the power supply.
- Reconnect the lifted end of R24.

#### Z-Axis Amplifier Check

- Unsolder and lift one end of R8.
- Turn on the power supply.
- Using the digital multimeter, measure the voltage between TP1 and the collector of Q4. It should be approximately  $+10$  V.
- Short together the base and emitter of Q5. The collector of Q4 should be approximately  $+100$  V.
- Turn off the power supply.
- Reconnect the lifted end of R8.

#### Grid Drive Check

- Turn off the power supply. Use the digital multimeter's diode check to test CR1, CR2, CR3, CR5, and CR6 for shorts.
- Turn on the power supply.

- Using the digital multimeter, measure the voltage between TP1 and the cathode of CR5. It should vary between approximately +75 and +200 V as R58 (CRT Bias) is adjusted.
- Connect the oscilloscope probe to the anode of CR5 and the probe ground to TP1. The signal should be a clipped sine wave of +75 to +200 V<sub>p-p</sub>.

### High Voltage Oscillator Check

- Connect the oscilloscope probe to T1 pin 3 (Q6 collector) and the probe ground to TP1. Turn on the power supply. The signal should be a +60 V<sub>p-p</sub>, 22 kHz sine wave.
- Check the following voltages using the digital multimeter:

**Table 4-5: High Voltage Oscillator Test Points**

Circuit Location	Voltage
T1, pin 4	Approximately +40 V.
T1, pin 13	Less than +2 V.
U2, pin 2	Approximately +4.8 V.
U2, pin 6	+4 to +11 V.
CR9, cathode	Approximately +100 V.

### CRT Voltage Check

---

**NOTE.** This check requires a high voltage probe having an input resistance of 1 GΩ or more.

---

- Connect the high voltage probe ground to TP1.
- Load the Low Volts supply with the instrument, or with a 20Ω, 2 watt resistor loading the 5 V supply.
- Turn on the power supply.
- Use the high voltage probe to measure the voltage at the anode of CR4. It should be approximately -2530 V.
- Measure the voltage at the anode end of CR3. It should be 50-150 V more negative than the reading from the anode of CR4.

## MECHANICAL DISASSEMBLY AND ASSEMBLY

Before removing parts from the 760A, disconnect the power cord and then remove the instrument from its cabinet. Reassembly is performed by reversing the steps used to disassemble the instrument.



**WARNING.** For your protection and to avoid damage to the instrument, when removing or replacing any of the circuit boards, shut the instrument off.



**CAUTION.** Do not reinsert screws in the rear panel when removed from the cabinet.

**NOTE.** All screws, unless otherwise noted, are TORX\_ screws and can be removed with a T15 screwdriver tip (Tektronix part number 006-3461-00). The exception is #2 Pozidrive screws which fasten the front-panel POWER switch and rear-panel XLR connectors. They can be removed with a #1 Pozidrive tip (003-0443-00).

### Bezel Removal

1. Remove the two bezel retaining screws. See Figure 4-3.

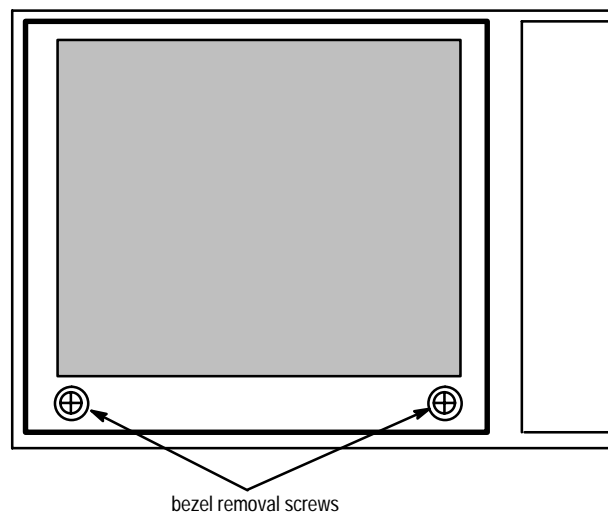


Figure 4-3: Bezel removal

2. Grasping the bottom of the bezel, pull out and upward. The bezel has two hinges that hold the top in place that need to be cleared.
3. To replace, reverse the procedure.

### Graticule Light Removal and Replacement

1. Remove the bezel, following the preceding procedure.
2. Using a pair of needle nose pliers, gently grasp the graticule light and carefully pull straight out.
3. The light is replaced by carefully lining up the holders with the round pins that they are to be inserted into. Use the needle nose pliers to lock them back into place.
4. Replace the bezel.

### Removal of the CRT

1. Remove the bezel.



---

**WARNING.** *The CRT may retain a dangerous charge. Ground the conductor of the anode to discharge the CRT. Do not allow the conductor to touch your body or any circuitry.*

---

2. Slide a screwdriver with an insulated handle under the anode cap on the side of the CRT, and ground the anode to the chassis, to discharge the CRT. **DO NOT** touch the metal shaft of the screwdriver while doing this. Disconnect the anode cap by prying it gently away from the CRT.
3. Disconnect P419 (trace rotation) on the Main board and push the connector through the hole in the board.
4. The CRT can now be pulled straight out (some pressure may be needed). The CRT shield, along with the grommet around its front and the rubber manchet around its back, should come out with the CRT.

### Replacing the CRT

1. If the CRT is to be replaced, remove the metal shield from the neck of the old CRT and place it around the neck of the new CRT, with the **WARNING** sticker towards the top of the instrument. This should place the opening in the grommet on the front edge of the shield towards the bottom of the instrument. Ensure that the rubber manchet is on the back edge of the shield.



2. Slip the CRT part way back into position and feed the trace rotation wires (and plug) back through the hole in the Main board.




---

**WARNING.** *The CRT may retain a dangerous charge. Ground the the anode connector to discharge the CRT. Do not allow the conductor to touch your body or any circuitry.*

---

3. Use a screwdriver to ground the anode connector on the CRT to the chassis.
4. Slide the CRT into the instrument, guiding the rubber manchet on the end of the shield into the rear CRT support.
5. Align the socket on the A10 CRT Socket board with the pins and key on the CRT. Gently push the CRT and the socket board together until the CRT pins are fully seated in the socket.
6. Replace the trace rotation connector (P419, Main board), and snap the anode lead onto the anode connector on the side of the CRT.
7. Wipe the faceplate of the CRT to remove fingerprints, then replace the bezel. If the fit is too tight to allow the bezel to go into position, or if the CRT has a loose fit after the bezel is completely tightened down, then the rear CRT support must be repositioned.

To reposition the rear CRT support, loosen the two nuts that hold the support in place. With the CRT and bezel in place, push the support towards the front of the instrument until it is snug against the rubber manchet on the rear of the CRT shield. Tighten the two support nuts.

### Rear Panel Removal and Replacement

1. Remove the two Pozidrive screws from each rear-panel XLR connector.
2. Remove the five screws from the rear panel.
3. To replace, reverse the procedure.

### Front Panel Assembly Removal and Replacement

1. Remove multi-pin connectors P110 and P135 from the Main board.
2. Remove the two screws that hold the front-panel assembly in place.
3. The assembly can now be removed by slipping it through the front.
4. To access the Front Panel board components:
  - a. Remove the two knobs from the front.

- b. Remove the four screws from the rear.
    - c. The board may now be separated from the front panel and the components should be accessible.
5. To reassemble, reverse the procedure.

---

*NOTE. When remounting the Front Panel board to the front panel, carefully line up the LED bars so they fit inside the cut-outs in the front panel.*

---

### **LED Bar and Socket Removal and Replacement**

1. Disassemble the front-panel assembly using the procedure just given, and remove the LED bar.
2. Install the new LED bar so the end with the three leads closely spaced are at the top of the LED bar socket. The LED bar will not work properly if installed backwards.
3. To replace a damaged socket, unsolder the old socket. Notice that there are two sockets for each LED bar.
4. Replace the socket with two 20-pin sockets, trimming three pins from either one to provide the 37 pins necessary for the LED bar.

### **Main Board Removal and Replacement**

1. Remove the following connections: P110 and P135 (to Front Panel board), P153 (to Power Supply board), P419, trace rotation (to CRT), P862 (to H defl. amp) and P882 (to V defl. amp).
2. Push the trace rotation lead through its hole in the Main board.
3. Remove the knobs from the GRATICULE and ILLUMINATION controls.
4. Remove the eight retaining screws. See Figure 4-4 for locations.

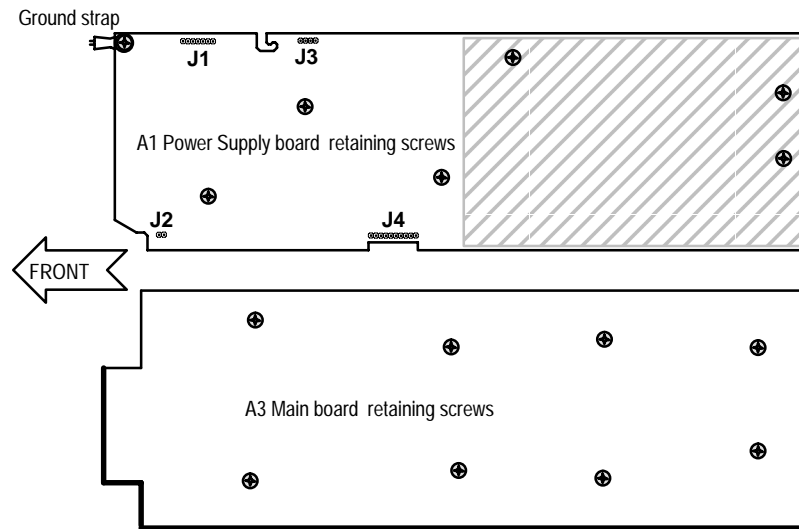


Figure 4-4: Retaining screw locations

5. To remove the board, slide it toward the rear panel until the potentiometer shafts clear the front and then lift it out.
6. To replace the Main board, lay the board flat and slide it back into place (there are grooves in the front molding for the board to slide into). Perform steps 1 through 4 above in reverse order.

### Power Supply Board Removal and Replacement

1. Remove the plug from J4 on the Power Supply board (the connection to the Main board).
2. Remove the anode connection from the CRT and discharge it to ground.



**WARNING.** The CRT may retain a dangerous charge. Ground the conductor of the anode to discharge the CRT. Do not allow the conductor to touch your body or any circuitry.

3. Remove the plugs from J1 and J3 (the CRT wires). Remove the plug from J2 (the power switch).
4. Remove the two screws from the rear panel that hold the AC line filter in place.
5. Using a #1 Pozidrive tip, disconnect the power ON/OFF switch from the Front Panel assembly.
6. Remove the seven screws that are holding the board down. See Figure 4-4.

7. Remove the board by sliding it forward and lifting it up.
8. To replace the board, reverse this procedure.

## REPACKAGING

If the instrument is to be shipped to a Tektronix Service Center for service or repair, attach a tag to the instrument showing:

1. Owner (with complete address) and the name of the person at your firm that can be contacted.
2. Instrument serial number and a description of the service required.

Repackage the instrument in the original manner for maximum protection (see Figure 4-5).

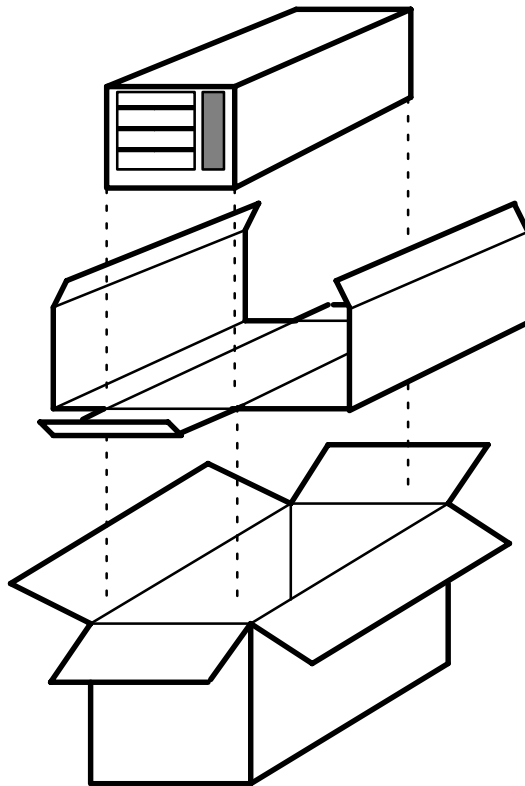


Figure 4-5: Repackaging the 760A/760D/760N

For best results, save and reuse the package in which your instrument was shipped. If the original package is unfit for use or not available, repackage the instrument as follows:

1. Obtain a carton of corrugated cardboard having inside dimensions of six inches, or more, greater than the dimensions of the instrument. This will allow for cushioning. Use a shipping carton that has a test strength of at least 275 pounds.
2. Surround the instrument with polyethylene sheeting to protect the finish.
3. Cushion the instrument on all sides by tightly packing dunnage or urethane foam between the carton and the instrument. Allow three inches on all sides for cushioning.
4. Seal the carton with shipping tape or an industrial stapler.



# Performance Check and Calibration

# Section 5

## Performance Check and Calibration Procedures

**Introduction** This section of the manual consists of two procedures. The Performance Check procedure is a guide to verifying warranted specifications of the 760A, while the Adjustment procedure, when properly performed, will result in a 760A that performs as warranted in SECTION 1, INTRODUCTION AND SPECIFICATION.

Throughout both procedures, all 760A front- and rear-panel nomenclature is fully capitalized, (e.g., DISPLAY GAIN). All 760A internal adjustment and jumper names have only the first letter capitalized, (e.g., Geometry).

**Required Test Equipment** The following list of test equipment and requirements are the minimum necessary to perform the Performance Check and Adjustment procedures. The specific test gear that was used to develop this procedure is listed in parenthesis after each generic test equipment name.

1. Leveled Audio Frequency Signal Generator  
(TEKTRONIX SG 505 Opt. 2)  
Balanced Output      50 $\Omega$  impedance  
Frequency Range      20 Hz to 20 kHz  
Output Level Range    3.5 mV<sub>rms</sub> to 4.89 V<sub>rms</sub>  
Frequency Response     $\pm 0.1$  dB from 20 Hz to 20 kHz (1 kHz reference)
2. RMS Voltmeter  
(TEKTRONIX DM 501A)  
Accuracy:  $\pm 2\%$  of reading, 20 Hz to 20 kHz.
3. Digital Volt/Ohm meter  
(TEKTRONIX DM 501A)  
Dc Accuracy:  $\pm 0.5\%$  of reading,  $-12$  V to  $+12$  V.
4. Test Oscilloscope with Differential Comparator, with two X1 probes.  
Adjustment procedure only  
(TEKTRONIX 7704 w/7A13)  
Common-Mode Rejection: 1000:1
5. Variable Autotransformer  
(General Radio Metered Auto Transformer W10MT3W)  
If 220 volt operation must be checked, a conversion transformer or appropriate 220 volt autotransformer is needed.
6. Male XLR adapter cables (3)  
Manufacture three cables that will interconnect the 760A rear-panel XLR connectors with the Leveled and Second Audio Signal Generator outputs.  
XLR pin 1 = Gnd  
XLR pin 2 = +  
XLR pin 3 = -

## Performance Check Procedure

### 1. Initial Alignment

**NOTE.** This step must be performed prior to beginning this procedure.

- a. Set the 760A for a “Sound Stage” orientation (on A3 Main board, J273 and J373 to pins 2 and 3) and install the “Sound Stage” graticule, if your 760A is not set up in this way. See Figure 5–1 for jumper locations.

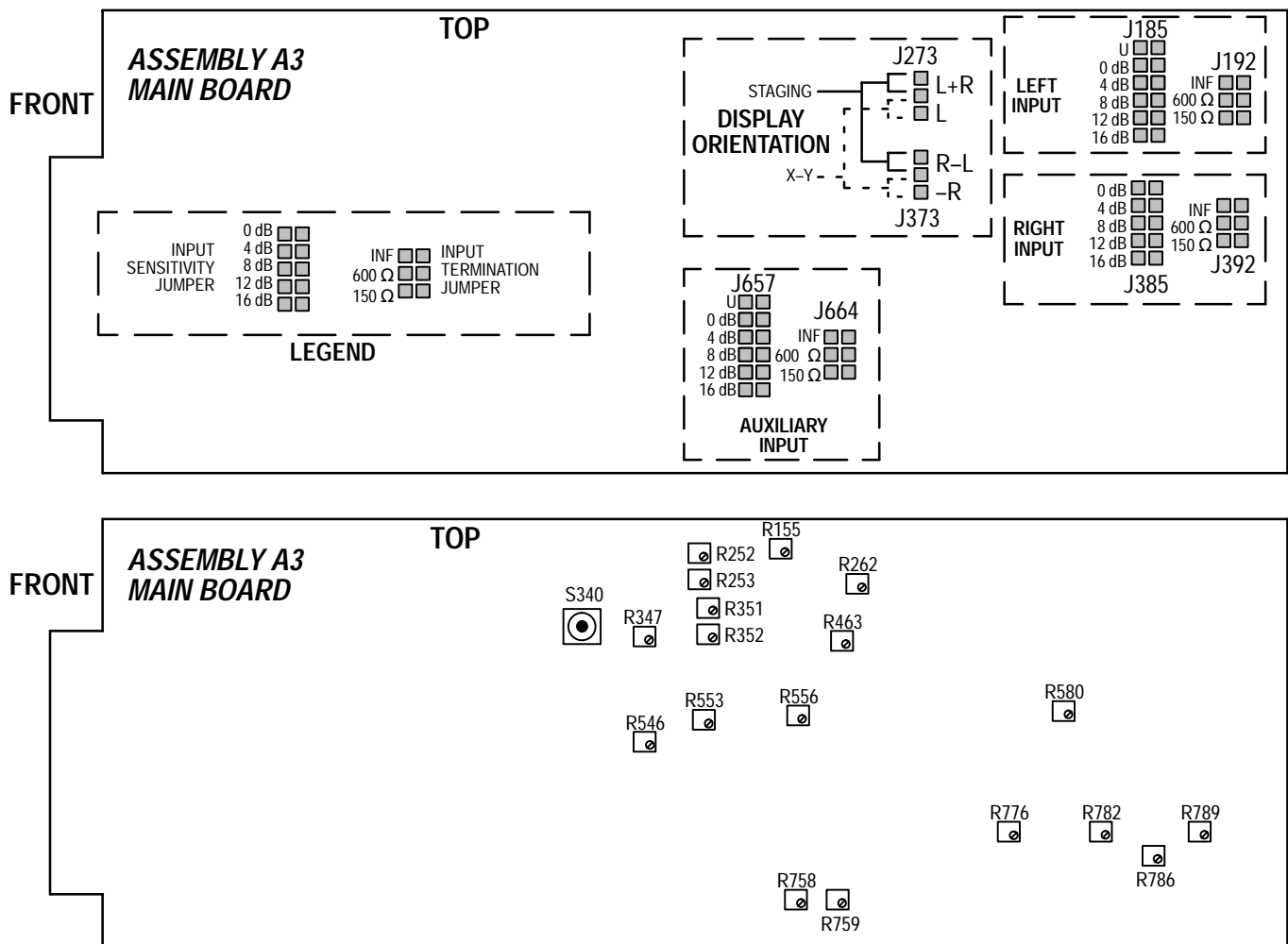


Figure 5–1: Jumper (top) and adjustment (bottom) locations on the A3 Main board



- b. Connect the 760-series AC power cord to the variable autotransformer. Turn power on and set the autotransformer to the local nominal mains voltage (either 110 or 220 volts). Set the GRATICULE illumination so the graticule markings are clearly visible.
- c. With no inputs to the LEFT or RIGHT AUDIO INPUTS, set the INTENSITY control for an easily visible dot.
- d. Set the VERTICAL and HORIZONTAL POSITION controls so the illuminated dot is centered on the graticule.
- e. Set the INTENSITY control to a comfortable display level.
- f. Set the FOCUS control for the sharpest possible dot.
- g. Connect the leveled audio signal generator balanced output to the LEFT AUDIO INPUT and set the equipment controls as follows:

<b>760A</b>	
SELECT	AUX
PEAK HOLD	OFF
DISPLAY GAIN	AUTO
INPUT TERMINATION	INFinite
INPUT SENSITIVITY	
760A	0 dB
760D	U
760N	U

<b>Leveled Audio Signal Generator</b>	
Output	Sine Wave
Frequency	1 kHz
Output Level	
760A	775 mV <sub>rms</sub>
760D	550 mV <sub>rms</sub>
760N	777 mV <sub>rms</sub>

---

**NOTE.** Unless directed otherwise, use these Leveled Audio Signal Generator settings for all steps of this procedure.

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- h. Set the INTENSITY control for an easily visible trace and set the TRACE ROTATION control to overlay the trace on the “L” graticule line.

## 2. Check Power Supply Operation

- a. Vary the autotransformer from low-line to high-line voltage (90 – 132 V for 110 V, or 180 – 250 V for 220 V operation).
- b. **CHECK** – for stable instrument operation over the prescribed voltage range.

- c. Return the autotransformer to the local nominal mains voltage.

### 3. Check Input Termination

- a. Disconnect the input from the LEFT AUDIO INPUT.
- b. **CHECK** – that the resistance across pins 2 and 3 of each rear-panel XLR input is greater than 10k  $\Omega$
- c. Set the Input Termination for each AUDIO INPUT to the 600  $\Omega$  position (see Figure 5-1).
- d. **CHECK** – that the resistance across pins 2 and 3 of each input is 600  $\Omega \pm 50 \Omega$
- e. Set the Input Termination for each AUDIO INPUT to the 150  $\Omega$  position.
- f. **CHECK** – that the resistance across pins 2 and 3 of each input is 150  $\Omega \pm 20 \Omega$
- g. Set the Input Termination for each AUDIO INPUT to the INF position.

### 4. Check Bar Graph Accuracy (0 dB $\pm$ 0.3 dB)

- a. Connect the leveled audio signal generator output to the LEFT AUDIO INPUT.
- b. Adjust the signal generator amplitude so that the bar graph's top green LED is just lit.
- c. **CHECK** – that the signal generator amplitude is within the following limits:
  - 760A: 748.7 – 802.1 mV<sub>rms</sub>  
(775 mV<sub>rms</sub>  $\pm$  0.3 dB)
  - 760D: 531.4 – 569.3 mV<sub>rms</sub>  
(550 mV<sub>rms</sub>  $\pm$  0.3 dB)
  - 760N: 750.7 – 804.2 mV<sub>rms</sub>  
(777 mV<sub>rms</sub>  $\pm$  0.3 dB)
- d. Set the audio generator output level to:
  - 760A: 308.5 mV<sub>rms</sub> (–8 dB TEST)
  - 760D: 550 mV<sub>rms</sub> (–9 dB arrowhead)
  - 760N: 777 mV<sub>rms</sub> (0 dB TEST)
- e. **CHECK** – the bar level while holding the EXPAND SCALE button in:
  - 760A: –8 dB  $\pm$  0.3 dB (3 segments)
  - 760D: –9 dB  $\pm$  0.3 dB (2 segments)
  - 760N: 0 dB  $\pm$  0.3 dB (3 segments)

Check the RIGHT and AUXILIARY bars in the same manner, connecting the input signal to one 760A AUDIO INPUT at a time.

- f. (760A only) Set S340 to position 6.
- g. **CHECK** – (760A only) that each bar indicates 0 dB  $\pm$  0.3 dB (6 segments or less from 0 dB) with the combinations of 760A INPUT SENSITIVITY jumper settings and audio signal generator output levels given in Table 5–1.
- h. (760A only) Set S340 to position 0.

**Table 5–1: Verifying Input Sensitivity (760A only)**

Input Sensitivity Jumper Setting	Input Level	760A Bar Reading
+4 dB	1.228 V <sub>rms</sub>	0 dB
+8 dB	1.947 V <sub>rms</sub>	0 dB
+12 dB	3.085 V <sub>rms</sub>	0 dB
+16 dB	4.890 V <sub>rms</sub>	0 dB
0 dB	775 mV <sub>rms</sub>	0 dB

### 5. Check AGC Control Range

- a. Connect the leveled audio signal generator output to the LEFT and RIGHT AUDIO INPUTS.
- b. **CHECK** – that when the leveled audio signal generator output level is varied (as indicated on the RIGHT and LEFT bars) between:

760A: +8dB and –20 dB  
 760D: +5 dB and –25 dB  
 760N: +15 dB and –15 dB

that the size of the CRT display changes very little.

### 6. Check Gain Match

- a. Connect the leveled audio signal generator output to the LEFT AUDIO INPUT and set the DISPLAY GAIN control to CAL.
- b. Set the leveled audio signal generator output level so the trace ends on the center amplitude mark of the “L” graticule line. See Figure 2–3 for a description of the graticule markings.
- c. Move the input signal from the LEFT AUDIO INPUT to the RIGHT AUDIO INPUT.

- d. **CHECK** – that the trace ends within one-half division of the center amplitude mark of the “R” graticule line.

### 7. Check Gain Tracking

- a. With the leveled audio signal generator output still connected to the RIGHT AUDIO INPUT, set the DISPLAY GAIN control to AUTO.
- b. Align the trace with the “R” graticule line.
- c. **CHECK** – that when the leveled audio signal generator output level is varied (as indicated on the RIGHT bar) between:

**760A:** +8dB and –20 dB

**760D:** +5 dB and –25 dB

**760N:** +15 dB and –15 dB

that the trace rotates less than one-half the length of the minor amplitude mark (the distance from the axis to the end of the minor amplitude mark). See Figure 2–3 for a description of the graticule.

### 8. Check Phase Match

- a. Set the 760A for an X–Y display orientation (P273 & P373 on pins 1 & 2, lower pins). Do not change to the X–Y graticule.
- b. Connect the leveled audio signal generator output to the LEFT and RIGHT AUDIO INPUTS.
- c. **CHECK** – that when the leveled audio signal generator frequency is set at 20 Hz, 500Hz, 1 kHz and 20 kHz, any trace separation is less than one trace width.
- d. Reset the 760A for a “sound stage” display orientation (P273 & P373 on pins 2 & 3, upper pins).

### 9. Check CRT Frequency Response

- a. Connect the leveled audio signal generator output to the RIGHT AUDIO INPUT and set the DISPLAY GAIN control to MANual.
- b. Set the MANual GAIN control so the trace ends on the center amplitude mark.
- c. **CHECK** – that when the leveled audio signal generator frequency is varied from 20 Hz to 20 kHz, the trace length changes less than one division.

- d. Move the leveled audio signal generator output from the RIGHT to the LEFT AUDIO INPUT and repeat part c of this step.

#### 10. MANual Gain, CAL Gain and PEAK HOLD

- a. Connect the leveled audio signal generator output to the LEFT and RIGHT AUDIO INPUTs.
- b. **CHECK** – that when the DISPLAY GAIN is varied in its MANual gain range (between detents), the CRT display size varies with no rotation of the trace.
- c. Set the DISPLAY GAIN control to CAL and remove the signal from the RIGHT AUDIO INPUT.
- d. **CHECK** – that the trace extends to the major amplitude mark on the L graticule line.
- e. Connect inputs to all three AUDIO INPUTs.
- f. **CHECK** – that when the audio inputs are removed from the 760A, two segments at the top of the indicated levels remain lit for approximately three seconds.

#### 11. Check Z–Axis Dimming

- a. Connect the leveled audio signal generator output to the RIGHT AUDIO INPUT and set the DISPLAY GAIN control to MANual.
- b. **CHECK** – that when the input signal is removed, the display disappears.

#### 12. Check Bar Frequency Response

- a. Connect the leveled audio signal generator outputs to the LEFT, RIGHT, and AUXILIARY AUDIO INPUTs, and set SELECT to AUX.
- b. With the EXPAND SCALE push button depressed, set the audio signal generator output level so the LEFT bar indicates:

760A: –8 dB (TEST)  
760D: –9 dB  
760N: 0 dB (TEST)

- c. **CHECK** – that when the audio signal generator frequency is varied from 20 Hz to 20 kHz and the EXPAND SCALE push button is depressed, each bar amplitude changes less than 0.5 dB, which is:

760A: ± 5 bar segments  
760D: ± 4 bar segments

760N:  $\pm 5$  bar segments

- d. Set S340 to Position 7 (expanded scale with offset).
- e. Set the leveled audio signal generator output level so the LEFT bar indicates:

760A: 0 dB

760D : 0 dB on white scale

760N : 0 dB on blue scale

- f. **CHECK** – that when the audio signal generator frequency is varied from 20 Hz to 20 kHz each bar amplitude changes less than 0.5 dB. With S340 set to position 7, this is:

760A:  $\pm 10$  bar segments (+4 to –4 scale marks)

760D:  $\pm 4$  bar segments

760N:  $\pm 5$  bar segments

- g. Set S340 to Position 0 (normal scale).

### 13. Check Bar Gain Match

- a. Connect the leveled audio signal generator output to the LEFT AUDIO INPUT only, and set SELECT to AUX.
- b. With the EXPAND SCALE push button depressed, set the audio signal generator output level so the LEFT bar indicates:

760A: –8 dB (TEST)

760D: 0 dB

760N: –9 dB

- c. Move the input from the LEFT to the RIGHT AUDIO INPUT.
- d. **CHECK** – that with the EXPAND SCALE push button depressed, the RIGHT bar amplitude matches the LEFT bar amplitude within 0.3dB:

760A:  $\pm 3$  bar segments

760D:  $\pm 2$  bar segments

760N:  $\pm 3$  bar segments

- e. Move the input from the RIGHT to the AUXILIARY AUDIO INPUT.
- f. **CHECK** – that with the EXPAND SCALE push button depressed, the AUXILIARY bar amplitude matches the LEFT bar amplitude within 0.3 dB.

**14. Check Bar Crosstalk**

- a. Connect the leveled audio signal generator output to the LEFT AUDIO INPUT and set SELECT to AUX.
- b. Set the leveled audio signal generator for the following output:
 

Output	Sine Wave
Frequency	1 kHz
Output Level	
760A	4.2 V <sub>rms</sub>
760D	5.5 V <sub>rms</sub>
760N	9.8 V <sub>rms</sub>
- c. **CHECK** – that none of the RIGHT or AUXILIARY bar segments are lit.
- d. Move the input from the LEFT to the RIGHT AUDIO INPUT.
- e. **CHECK** – that none of the LEFT or AUXILIARY bar segments are lit.
- f. Move the input from the RIGHT to the AUXILIARY AUDIO INPUT.
- g. **CHECK** – that none of the LEFT or RIGHT bar segments are lit.

**15. Check Third Bar Selection**

- a. Connect the output of the leveled audio signal generator to the LEFT and RIGHT AUDIO INPUTS, and ensure there is no input to the AUXILIARY AUDIO INPUT. Set the audio generator output level to 775 mV<sub>rms</sub> (1.55 mV<sub>rms</sub> for 760D or 760N).
- b. Set the SELECT control to AUX and PEAK HOLD to ON.
- c. **CHECK** – that no segments of the third bar are lit.
- d. Set the SELECT control to  $\frac{L+R}{2}$  (SUM).
- e. **CHECK** – that the third bar is at the same level as the LEFT and RIGHT LED bars.
- f. Set the SELECT control to  $\frac{L-R}{2}$  (DIFF).
- g. **CHECK** – that no segments are lit on the third bar.
- h. (760D and 760N only) Reset the Input Termination, Sensitivity and Orientation jumpers to fit your application. Factory set positions are:
 

Input Sensitivity:	U
Input Termination:	INF
Display Orientation:	Sound Stage

See Figure 5–1 for jumper locations.

## 16. Check Dynamic Response (760A only)

### Attack Time

- a. Set S340 to position 6, and turn off (release) the PEAK HOLD control.
- b. Connect the output of the audio signal generator to the LEFT AUDIO INPUT. Set the generator frequency to 10 kHz, and set the output level for a bar reading of 0 dB (top green LED on).
- c. Set S340 to position 2, and turn on the PEAK HOLD control.
- d. Without changing the frequency or output level of the audio generator, set it for:
  - On Cycles: 50
  - Off Cycles: 50,000
  - Mode: Tone Burst
- e. **CHECK** – that the peak-held reading is between the +4 dB and –4 dB scale marks ( $\pm 0.75$  dB with S340 at position 2).
- f. Set S340 to position 3, and change the audio generator On Cycles to 5. Do not change any other generator settings.
- g. **CHECK** – that the peak-held reading is between the +4 dB and –4 dB scale marks ( $\pm 2.0$  dB with S340 at position 3).

### Decay Time

- h. Set S340 to position 0, and set the audio generator to:
  - On Cycles : 10,000
  - Off Cycles: 25,000
- i. **CHECK** – that the bar does not decay below –24 dB at its lowest point (between bursts).
- j. Change the audio generator Off Cycles to 31,000.
- k. **CHECK** – that the bar does decay below –24 dB at its lowest point (between bursts).
- l. Repeat parts a through k of this step for the RIGHT and then the AUXILIARY AUDIO INPUTS in turn.
- m. Set S340 to position 0. Reset the Input Termination, Sensitivity and Orientation jumpers to fit your application. Factory set positions are:
  - Input Sensitivity: 8 dB
  - Input Termination: INF
  - Display Orientation: Sound StageSee Figure 5–1 for jumper locations.

**This concludes the 760A / 760D / 760N Performance Check Procedure**



## Calibration Procedure

### 1. Preliminary Set Up

---

**NOTE.** Unless otherwise stated, always set the Leveled Audio Signal Generator for a 1 kHz sine wave at the following level:

760A	775 mV <sub>rms</sub>
760D	550 mV <sub>rms</sub>
760N	777 mV <sub>rms</sub>

---

- a. Set the display orientation to X–Y (on A3 Main board, J273 & J373 to pins 1 & 2). Use the “sound stage” graticule even though the X–Y orientation is in use. Set the Input Termination (A3 – J192, J392, and J664) to Inf, and the Input Sensitivity (A3 – J185, J385, and J657) as shown:

760A	0 dB
760D, 760N	U

- b. Set the 760A front panel controls as follows:

SELECT	AUX
PEAK HOLD	OFF
DISPLAY GAIN	AUTO

### 2. Adjust +5 V

- a. Connect the DMM negative lead to TP1 (GND) and the positive lead to W1 (+5V).
- b. **ADJUST** – R99 (+5V ADJ) for +5.0 V ± 0.5V. See Figure 5–2 for adjustment locations.

### 3. Adjust DAC Offset and Gain

- a. Connect the digital voltmeter leads to TP248 (DAC output, on A3) and analog ground (marked A GND).
- b. Set S340 (on A3) to Position 5.
- c. **ADJUST** – R253 (DAC offset, on A3) for 0.000 Vdc.
- d. Set S340 to Position 4.
- e. **ADJUST** – R252 (DAC gain, on A3) for 5.000 Vdc.
- f. Set rotary switch S340 to Position 0 (normal operation).

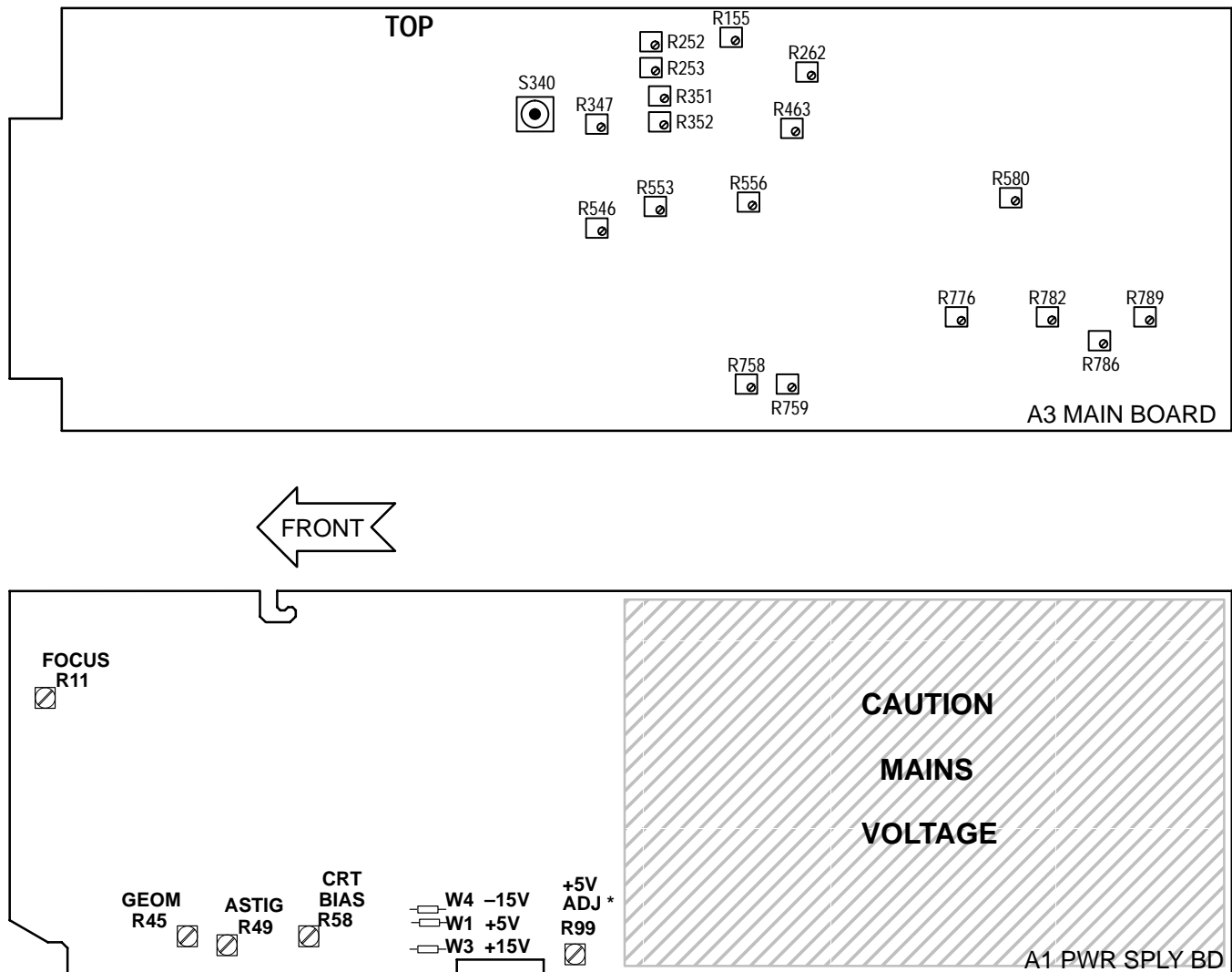


Figure 5-2: 760-Series Adjustment Locations

#### 4. Adjust CRT Bias

- a. Connect the signal from the leveled audio signal generator to the LEFT AUDIO INPUT.
- b. Turn the INTENSITY and GRATICULE controls fully counterclockwise.
- c. **ADJUST** – R58 (CRT BIAS) so that the display is just extinguished.
- d. Set the INTENSITY and GRATICULE controls to a desired level.
- e. Remove the signal at the LEFT AUDIO INPUT.

- f. **CHECK** – that the crt is blanked out while there is no signal applied.

#### 5. Adjust Geometry, Focus, and Astigmatism

- a. **ADJUST** – R45 (GEOM) for  $35V \pm 1V$  at pin 1 of J3.
- a. Reconnect the signal from the leveled audio signal generator to the LEFT AUDIO INPUT.
- b. Set the FOCUS control on the front panel so that it is approximately at the center of its range.
- c. **ADJUST** – R11 (CTR FOCUS) and R49 (ASTIG) for the most clearly defined display.

#### 6. Adjust Horizontal Position, and Trace Rotation

- a. Reconnect the signal from the leveled audio signal generator to the LEFT AUDIO INPUT.
- b. **ADJUST** – The front panel HORIZontal POSition control (R600) to center the trace.
- c. **ADJUST** – The front panel TRACE ROTation control (R400) to align the trace with the vertical (L=R) axis.

#### 7. Adjust Horizontal Dynamic Stability

- a. **ADJUST** – R777 (Horizontal Channel Offset Control, on A3) to eliminate any left–right motion of the vertical trace as the audio generator is turned on and off.

---

*NOTE. If the audio generator is capable of tone burst operation, such as the TEKTRONIX SG5010, it may be set for one second on one second off tone burst operation, instead of turning the generator on and off.*

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#### 8. Adjust Vertical Position and Orthogonality

- a. Move the leveled audio signal generator output to the RIGHT AUDIO INPUT.
- b. **ADJUST** – The front panel VERTical POSition control (R601) to center the trace on the dotted horizontal line.

- c. **ADJUST** – R463 (Orthogonality) on the A3 Main board, to align the trace with the dotted horizontal line.

### 9. Adjust Vertical Dynamic Stability

- a. **ADJUST** – R782 to eliminate updown motion of the horizontal trace as the audio generator is turned on and off.

---

***NOTE.** If the audio generator is capable of tone burst operation, such as the TEKTRONIX SG5010, it may be set for one second on one second off tone burst operation, instead of turning the generator on and off.*

---

### 10. Adjust Vertical/Horizontal Gain Balance

- a. Connect the leveled audio signal generator output to both the RIGHT and LEFT AUDIO INPUTs. Check that the trace is directly under the R graticule line.
- b. Connect the X1 probes from the oscilloscope differential inputs to TP885 and TP866.
- c. **ADJUST** – R580 for minimum differential signal (approximately 5 mV).

### 11. Adjust Horizontal and Vertical Gains

- a. Connect the leveled audio signal generator output to both the RIGHT and LEFT AUDIO INPUTs.
- b. Ensure the DISPLAY GAIN control is set to AUTO.
- c. **ADJUST** – R786 (Vertical Gain Adj, on A3) and R759 (Horiz Gain Adj) so the trace remains directly under the R graticule line (45) and ends at the center amplitude mark.

### 12. Adjust CAL Gain

- a. Set the front panel DISPLAY GAIN control to CAL.
- b. **ADJUST** – R262 (Cal, on A3) to extend the trace to the end of the R graticule line.
- c. Set the audio signal generator frequency to 20 kHz.
- d. **ADJUST** – R789 (Channel Match, on A3) to close the sides of the ellipse to a single line (no trace separation).

- e. Set the audio signal generator frequency to 20 Hz.
- f. **CHECK** – that the display shows no separation of the trace.

### 13. Adjust LED Bar Gains

- a. Connect the leveled audio signal generator output to all three AUDIO INPUTs.
- b. Set the leveled audio signal generator to the output level shown in Table 5–2.

**Table 5–2: LED Bar Gain Adjustment**

Inst	Signal Level	Left R351    Right R352    Aux R553
760A	7.75 mV <sub>rms</sub>	Adjust for 5 segments lit.
760D	15.50 mV <sub>rms</sub>	Adjust for 6 segments lit.
760N	15.50 mV <sub>rms</sub>	Adjust for 4 segments lit.

- c. **ADJUST** – R351 (Left Offset Adjust), R352 (Right Offset Adjust), and R553 (Aux Offset Adjust) so that the correct number of LED segments are lighted, as shown in Table 5–2.
- d. (760A only) Set S340 to position 6 (expands around 0 dB, 0.05 dB/segment resolution).
- e. Set the audio signal generator to the output level shown in Table 5–3.

**Table 5–3: LED Bar Reference Adjustment**

Inst	Signal Level	Left R347    Right R546    Aux R758
760A	775 mV <sub>rms</sub>	0 dB
760D	550 mV <sub>rms</sub>	–9 dB (arrowhead)
760N	777 mV <sub>rms</sub>	0 dB (TEST)

- f. **ADJUST** – R347, R546, and R758 for the LED bar reading shown in Table 5–3. For the 760D and 760N, depress the EXPAND SCALE button while making this adjustment.
- g. (760A only) Set S340 to position 0.

**This concludes the 760A / 760D / 760N Calibration Procedure**



# Theory of Operation

# Section 6

## Theory of Operation

### INTRODUCTION

This section is intended to give a thorough understanding of the 760A / 760D / 760N Stereo Audio Monitor's operational theory. A block diagram is provided to show the relationships between major functional blocks of circuitry. Each block directly relates to a portion of circuitry on a schematic that is described in detail in this section.

The name of each schematic diagram is listed as a paragraph title (upper case) and is followed by the diagram number (in parenthesis). The circuit blocks on each diagram follow the appropriate diagram title. When identical circuits exist for vertical and horizontal, or for left or right channels, only one will be described.

### BLOCK DIAGRAM

Figure 6-1 (on the following page) is the 760A / 760D / 760N block diagram.

### DETAILED CIRCUIT DESCRIPTIONS

**INPUT AMPLIFIERS <1>** The LEFT, RIGHT, and AUX input amplifiers are instrumentation amplifier circuits. For the standard 760A/760D/760N, the gain (in dB) may be selected by moving J185, J385, or J657 for the LEFT, RIGHT, or AUX, respectively, to the appropriate pins for reference levels of 0, +4, +8, +12, or +16 dBu. There is an additional position, U, which is provided for installations which use a reference level other than these. See SECTION 3, INSTALLATION, for instructions on calculating the proper resistor values.

The 760D and the 760N are designed to indicate 0 dB and +6 dB, respectively, with a 1.55 V<sub>rms</sub> input.

This is in accordance with DIN 45 406 and, for the 760N, Technical Recommendation N9. In order to accomplish this, resistors of the appropriate value have been installed in the positions selected by the U settings of J185, J385, and J657; therefore, only the U positions may be used for the 760D and 760N.

The inputs may be terminated by 150 Ω, 600 Ω, or >20k Ω as selected by J192, J392 and J664 for LEFT, RIGHT and AUX, respectively.

**MATRIX & AGC CONTROL LOGIC <4>**

**45° Matrix.** The Left and Right signals are added in U179 and subtracted in U379 to produce L+R and L-R signals. These signals, if applied to the CRT, will rotate the pattern 45° counterclockwise, so that the Left signals are indicated along the left 45° diagonal and Right signals along the right 45° diagonal. A vertical line indicates Left and Right signals are equal and in phase (mono). This orientation makes pattern interpretation more natural. The user may bypass the matrix using jumpers J273 and J373 so that Left signals are indicated on the vertical axis and Right signals on the horizontal. Equal Left and Right signals (Mono) are then indicated along the right 45° diagonal.

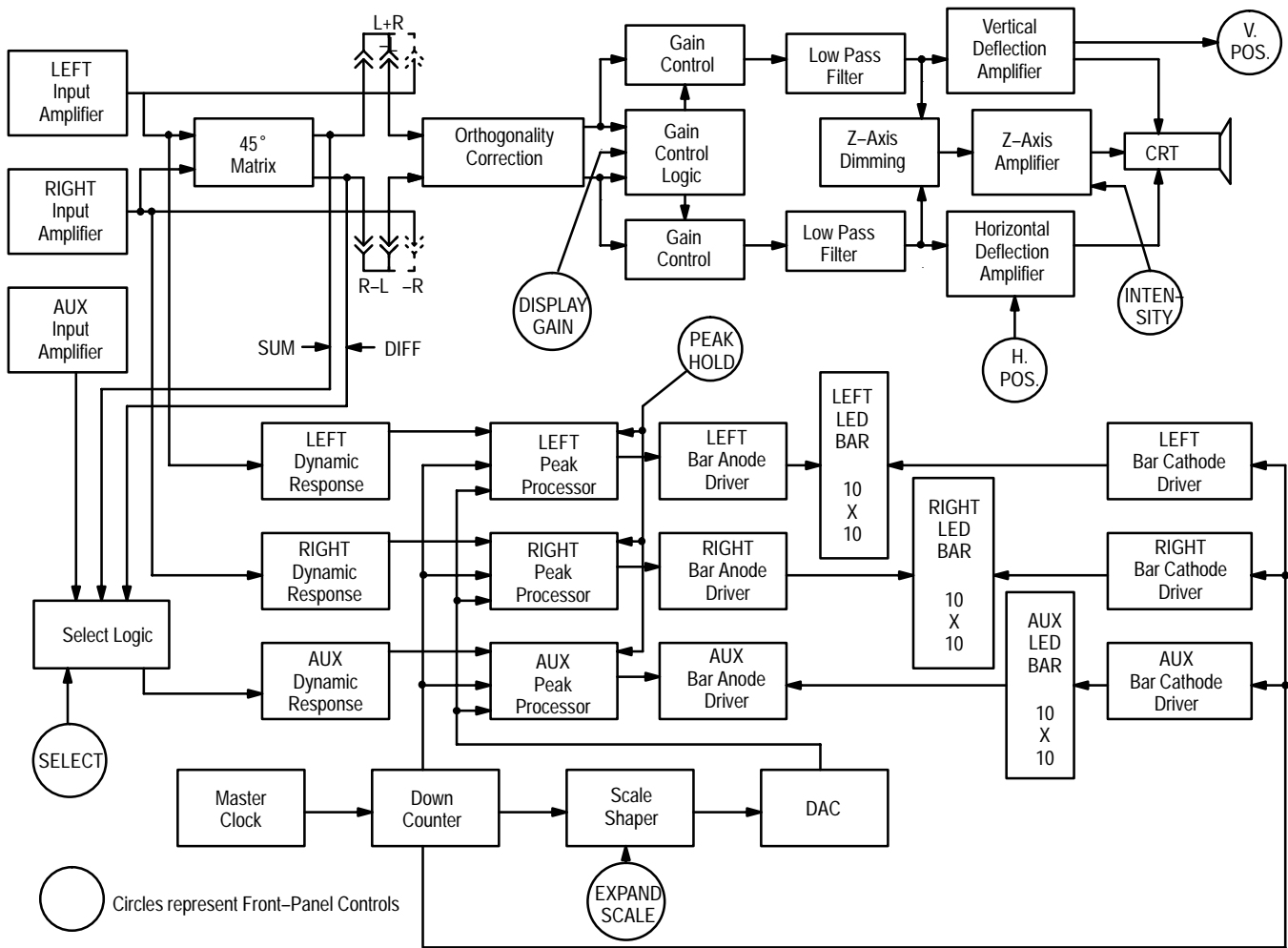


Figure 6-1: 760A / 760D / 760N Block Diagram

**CRT Orthogonality Correction.** A small amount of the signal from the horizontal signal path (amplitude and polarity adjusted by R463) is applied to the vertical path to correct for small differences in CRT deflection orthogonality.



**Trace Rotation.** A dc current through the trace rotation coil magnetically corrects rotation.

**Gain Control Logic.** The signal from the Input Amplifier is full wave rectified in the precision rectifier, U462, and filtered and compared by U361 to determine the largest signal. The comparator output is combined with AUTO and CAL in U153, a one of eight decoder. Depending on the input combination, analog switches U172 and U167 select the appropriate signal to be applied to the Gain Control circuit. AUTO is the clockwise detent position of the front-panel DISPLAY GAIN control, and CAL is the counterclockwise detent. The manual gain control applies a variable dc voltage to the Gain Control circuit. In the CAL detent, the voltage is set by an internal pot, R262. In the AUTO detent, the control voltage is the larger of the Horizontal or Vertical signals as determined by the comparator, U361.

## AGC & CRT DEFLECTION AMPLIFIERS <5>

**Gain Control (Vertical).** U680 is a dual gain control circuit. This circuit rectifies a control signal and buffers it to attack capacitor C586 and decay capacitor C581. The dc level controls the transconductance of the  $\Delta G$  block. In the gain control circuit, the  $\Delta G$  circuit is used to control the ac feedback of an op-amp such that the output level stays constant for an input signal between about  $-20$  dB to about  $+8$  dB, for the standard 760A. This range changes to about  $-25$  dB to  $+5$  dB for the 760D, and about  $-15$  dB to  $+15$  dB for the 760N. The attack and decay capacitors allow for fast gain reduction on signal peaks, and for slow recovery to keep low frequency signals from “pumping” the gain. The dc feedback is provided by R593, R685 and C588. R686 corrects for dc offset, allowing maximum output amplitude. R782 (offset adj) trims out pattern “bounce” that would result from the control signal appearing at the output.

**Low Pass Filter (Vertical).** U894 is a four-pole low pass filter with a cutoff at about 34 kHz. R789 is adjusted for phase match between the two channels.

**Output Amplifier (Vertical).** The output amplifier is a differential cascaded amplifier with R601 (VERT POSITION) adjusted for centering, and R786 adjusted for gain.

**Z-Axis Dimming.** The Z-Axis circuit prevents CRT burn by turning off the CRT when the larger of the horizontal or vertical signals fall below a minimum level. The two signals are amplified, rectified, and filtered by U880, Q776, and C776.

## LEVEL INDICATORS

The level indicator is a broad term that refers to all the circuitry associated with the LED bar graph. This circuitry is found on diagrams 2 and 3, and is based on the principle illustrated in Figure 6-2.

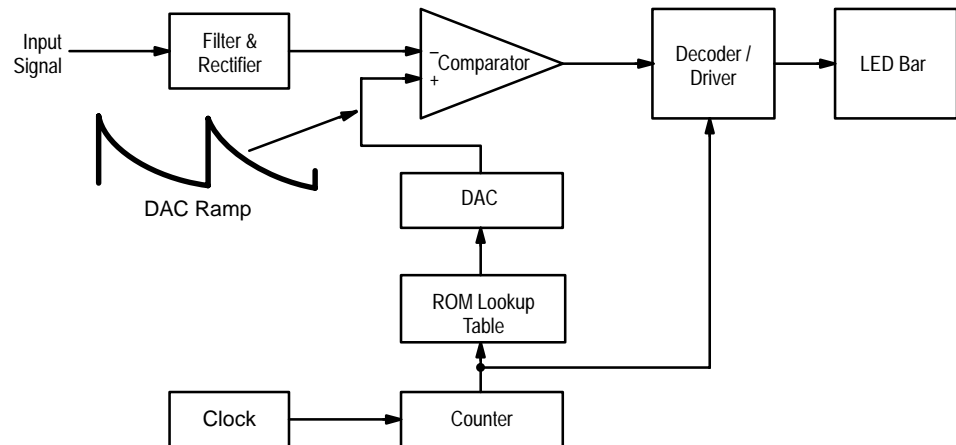


Figure 6-2: Simplified Level Indicator block diagram

The LED segments of a 100-segment bar are scanned from top to bottom about 300 times per second by a down-counter and decoder. The counter simultaneously addresses a ROM lookup table which contains the amplitudes represented by each segment of the bar. A DAC converts this succession of amplitudes to an analog voltage ramp which is compared with the rectified and filtered input signal. When the ramp voltage becomes less than the input signal, the LED bar driver is enabled, lighting the LED segments. Hence, all segments representing amplitudes less than the signal level are lit.

The ROM lookup table determines the shape and range of the scale. In addition to the normal scale range, the ROM also contains the magnified scale range actuated by the EXPAND SCALE button. Other scales for calibration and troubleshooting are selected by a special service switch, S340. Refer to SECTION 4, MAINTENANCE, for information on the settings and uses of S340.

## GRAPH DRIVERS <2>

### Dynamic Response Control (Left)

The signal from the Input Amplifier is full-wave rectified in precision rectifier U445A & B, isolated by U445C & D, filtered with PPM time constants and buffered by U453. The attack time constant is such that a 10 ms sine wave burst will indicate 1 dB below true peak value. The fall time is 1.8 seconds for a 20 dB indicator drop. R347, R546 and R758 provide calibration adjustments for the LEFT, RIGHT and AUX indicators, respectively.

### Signal Peak Processor (Left)

**Comparator.** U635B compares the rectified signal with the DAC ramp and provides the bar enabling signal. This signal is passed through logic contained in a PAL, U438, which is part of the Peak Hold circuit description that follows.

**Peak Hold Circuit.** The Peak Hold circuit is entirely digital. It stores peak values as follows. On each scan of the bar (300 times per second) the Comparator (described above) provides a  $\overline{\text{CMP}}$  signal to PAL U438. The PAL then asserts  $\overline{\text{BAR ENABLE}}$ , which allows the Bar Anode Driver to operate. The PAL also asserts DELAY to clock the counter state corresponding to the signal level into the latch, U428. On succeeding bar scans digital comparator U432 compares the latched number, at its Q inputs, with the counter state corresponding to the new signal level, at its P inputs. If the new state exceeds the old, the comparator signals the PAL through the  $\overline{\text{GREATER}}$  line, and the PAL responds by again asserting DELAY, clocking the new peak value into the latch. Asserting DELAY also clocks a retriggerable monostable circuit, U436, which has a three-second period. If the monostable circuit reaches the end of this period without being retriggered it raises the TIMEOUT line high, to signal the PAL that it is time to cancel the peak. The PAL then asserts  $\overline{\text{GATE}}$ , clearing the latch. In this manner, the latch keeps track of the counter state corresponding to the peak to be indicated.

The circuit indicates peak values as follows. As the counter scans the bar, the comparator monitors the counter and notifies the PAL, via the  $\overline{\text{EQUALS}}$  line, when the counter state matches the stored peak. The PAL then turns on the bar for two clock periods using the  $\overline{\text{BAR ENABLE}}$  line, lighting two successive bar segments to indicate the value of the stored peak. If a stored peak persists for three seconds without being exceeded, it is canceled by the monostable circuit. If it is exceeded, the monostable circuit is retriggered to restart the time-out cycle.

Peaks below -20 dB are prevented from being indicated by the  $\overline{\text{PK BLK}}$  line, which is controlled by a data line from the scale-shaper ROM, U132 on diagram (3).

A further description of the PAL signals for troubleshooting can be found in SECTION 4, MAINTENANCE.

### Bar Anode Driver (Left)

Since the LEDs comprising the bar are internally arranged in a 10-by-10 matrix, they are addressed by two BCD-to-decimal decoders; one driving the anodes and one driving the cathodes. U308 drives the anodes through buffers U208 and U223A. The cathode decoder/driver, U320, is located on the front-panel board (diagram 8). Gate U708 provides a way to turn the bar on and off by forcing the decoder into a non-BCD state when the  $\overline{\text{BAR ENABLE}}$  line is high. This forces all the decoder outputs high, and the LED anodes low.

### Peak Hold On/Off

The PEAK HOLD front-panel switch is debounced by an RC network and Schmitt gate U825A & B, which toggles flip-flop U823 for on/off control.

**BAR SCANNER/DRIVER &  
DAC <3>**

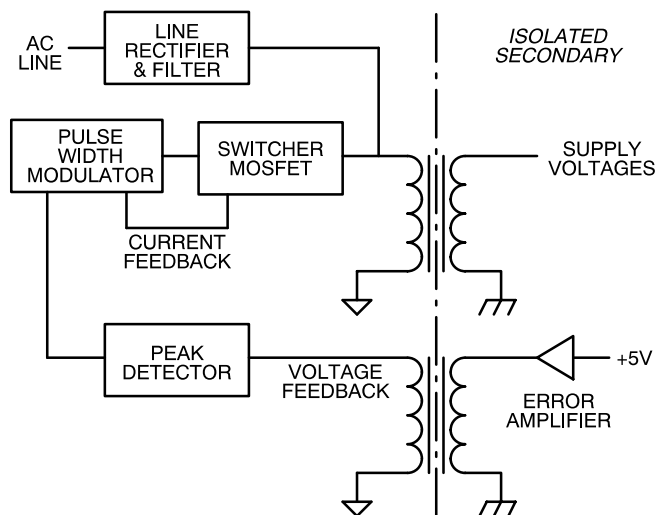
**Master Clock** U818 provides approximately 30 kHz clocking for the counter. Its output is a square wave whose rising edge defines clock phase 1. An inverter U825 provides clock phase 2, whose rising edge is delayed from phase 1 by one-half the clock period.

**Down Counter** U828 and U623 form a two-digit BCD down-counter. The counter output is delayed half a clock period by latch U424 which in turn drives the bar decoders. Monostable circuit U715 provides intersegment blanking by disabling the latch outputs for a few microseconds after each clock pulse.

**Scale Shaper Lookup Table** ROMs U127 and U137 form the look-up table, which determines the shape and range of the scale. Twelve data bits provide the needed resolution. In addition to the normal scale information, the ROM also contains the magnified scale actuated by the EXPAND SCALE button. Other scales for calibration and service are selected by a special service switch S340. Refer to SECTION 4, MAINTENANCE, for information on settings and uses. The ROM data outputs are latched by U132 and U142, to synchronize the output data, and applied to the DAC.

**DAC** U146 is a 12-bit DAC with adjustments provided for gain (R252) and offset (R253). The DAC output range is from 0 V (all LED segments lit) when all DAC inputs are high, to +5 V (all LED segments off) with all DAC inputs low.

**LOW VOLTAGE POWER SUPPLY <6>** The Low Voltage Power Supply converts the mains line voltage (90–250 VAC) to supply the power requirements of the instrument. The voltages supplied by the Low Voltage Power Supply are +40 V, ± 15 V, and +5 V.



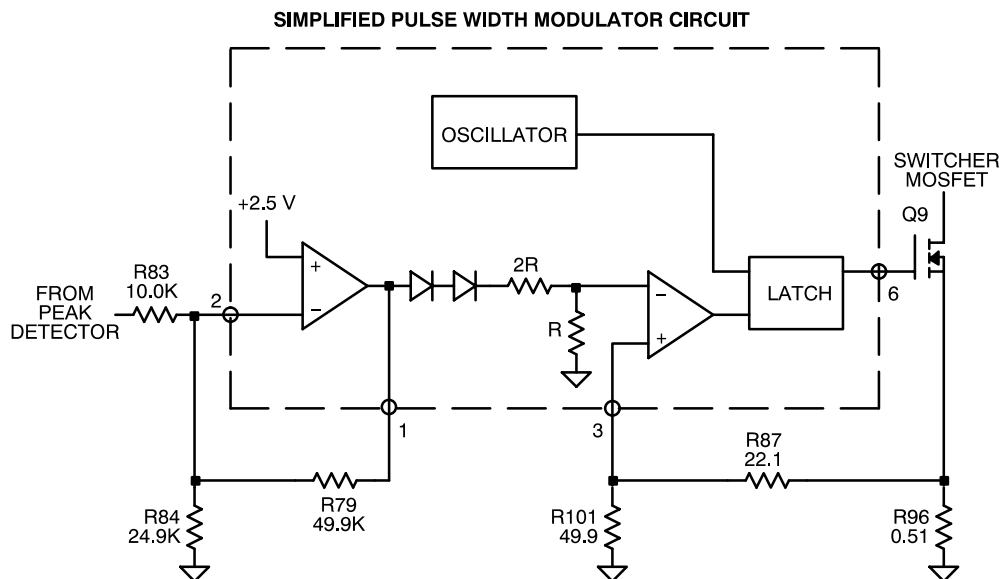
The Low Voltage Power Supply is called a Flyback Switcher. When switcher mosfet Q9 is turned on, its drain voltage drops to approximately 0 V. The current through the 350  $\mu$ H primary winding of T3 begins ramping up. The voltages present at all secondaries is such that the rectifier diodes are reverse biased. Energy is being stored in the magnetic field of T3. When Q9 turns off, the drain voltage “flies back” in a positive direction. Current now flows in all of the secondary windings and supplies power.

### Line Rectifier and Filter

The input line voltage is filtered by the rear-panel connector to reduce the electrical noise conducted into or out of the instrument. R89 limits the initial charging current through the rectifier diodes and C54.

CR21, CR22, CR23, and CR24 form a bridge rectifier. C54 filters the 110 to 350 VDC rectifier output. L4 filters the switching noise produced by the switcher. R102 reduces the circulating current in the parallel circuit consisting of L4 and C44. DS4, R93, and R94 form a line voltage indicator. R91 and R92 charge C42. C42 provides power to U5 until the primary housekeeping winding provides power through CR17.

### Pulse Width Modulator



U5 is a current-mode pulse width modulator (PWM). A current-mode PWM uses two feedback loops. The inner current feedback loop directly controls the switcher mosfet peak current. The outer voltage feedback loop programs the inner loop peak current trip point.

U5 pin 2 is the inverting input of an internal op-amp. The noninverting input is set to 2.5 V by an internal voltage reference. Current from the peak detector flows through R83 and R79. R84 provides a 100  $\mu$ A offset. The voltage at U5 pin 1 will vary in order to maintain U5 pin 2 at 2.5 V.

The voltage at U5 pin 1 is modified by an internal circuit and sets the trip point of the internal comparator. U5 pin 3 is the external input to the comparator. R88 and C52, connected to U5 pin 4, set the internal oscillator to 80 kHz.

The circuit works as follows: The oscillator resets the latch and U5 pin 6 goes high, turning the switcher mosfet on. The current through the switcher mosfet increases, causing the voltage across R96 to increase. This voltage is divided by R87 and R101, and is applied to the comparator (pin 3). When the voltage at U5 pin 3 reaches the comparator trip point, the latch toggles and the switcher mosfet is turned off. This process is repeated at an 80 kHz rate.

C58 increases the PWM noise immunity by rolling off the internal op-amp frequency response. R82 holds the switcher mosfet off as the circuit is powering up. R81 slows the turn-on of the switcher mosfet while CR27 speeds up the turn-off.

#### **Output Filters**

The three output windings supply four output voltages. Each output is rectified by a single diode and filtered by an LC pi filter.

#### **Error Amplifier**

The Error Amplifier regulates the +5 V output by feeding an error signal to the Pulse Width Modulator. VR1 is a 2.5 V shunt regulator containing an op-amp and a voltage reference. The +5 V is divided by R69 and R70 to provide 2.5 V to VR1, with fine adjustment provided by R99. C40 and R71 determine the gain and frequency response of VR1. VR4 controls overshoot of the +5 V at power up. R98 and CR26 provide a minimum operating current for VR1. R68 decouples C39 from VR1. Overvoltage protection for the +5V supply is provided by a crowbar circuit formed by Q11, VR3, R13, and R14.

#### **Feedback Transformer Driver and Peak Detector**

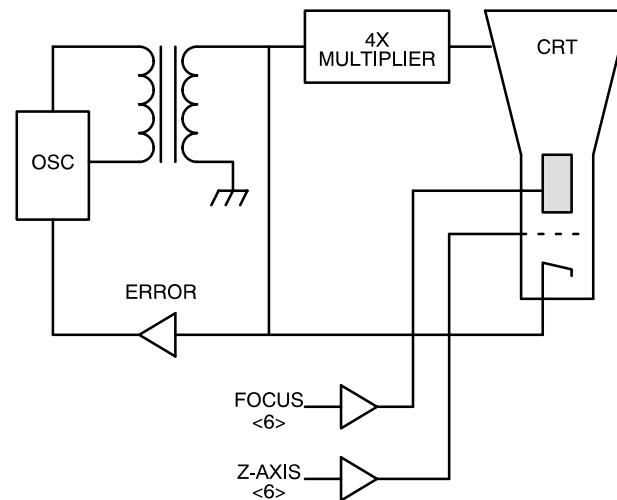
The 80 kHz sawtooth waveform at U3 pin 3 trips comparator U3. U3 pin 1 then feeds a trigger pulse to one-shot U4. U4 pin 13 outputs a 300 ns pulse to the 130 mA current source consisting of Q7 and Q8. When Q8 turns on, T2 pin 2 is pulled down until CR15 (Error Amplifier) is forward biased. The negative-going pulse at T2 pin 2 is peak detected by CR16 and C46. The DC voltage present at the anode of CR16 feeds the pulse width modulator and the Output Under-Voltage Shutdown circuit. CR29 resets T2 between pulses.

#### **Output Under-Voltage Shutdown**

If the +5 V is below 4.9 V, the Error Amplifier will cause the Peak Detector output to go below 2.9 V. The output of comparator U3B will pull low and shut down pulse width modulator U5. C47 and R96 delay the operation of U3B long enough for the power supply to power up. If the +5 V does not reach 4.9 V

within 50 ms of power up, U3B will shut down the switcher. The power supply will then cycle on and off every couple of seconds.

## HIGH VOLTAGE POWER SUPPLY <7>



The High Voltage Power Supply generates the heater, cathode, control grid, focus anode, and post accelerating potentials required to display the outputs of the Vertical and Horizontal Output Amplifiers.

## HV Osc and Error Amp

The High Voltage Power Supply is generated by a sine wave oscillator and step-up transformer. Q6 and T1 are the principal elements of an Armstrong oscillator running at about 22 kHz. Error Amplifier U2 regulates the +100 V output and keeps the High Voltage Power Supply constant under varying load conditions by controlling the base current to Q6. The +100 V output is regulated directly, while the High Voltage Power Supply is indirectly regulated through a current feedback circuit.

R48, C16, R60, and R64 form the High Voltage Power Supply Current Feedback circuit. As the current from the High Voltage Power Supply is increased, the voltage to the + side of the Error Amplifier (U2) increases, which increases the base drive to Q6, the HV Osc. This current feedback compromises the regulation of the +100 V supply to keep the high voltage constant with varying intensities.

C66 and Q10 are a Start Delay circuit that holds the Error Amplifier output low, through CR30, until C66 is charged. Delaying the start of the high voltage oscillator allows the Low Voltage Power Supply to start, unencumbered by the load from the high voltage oscillator.

**Power Supply Outputs**

CR4 is the high voltage rectifier. Filter capacitors C3, C4, and C8 work with CR4 to provide  $-2530\text{ V}$  to the CRT cathode. U1 is a four-times multiplier providing  $+11\text{ kV}$  to the CRT anode.

**Focus Amplifier**

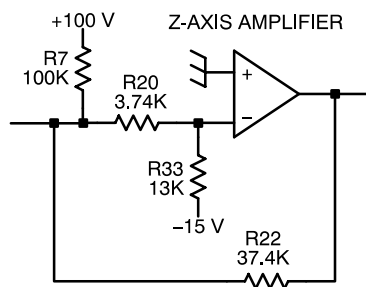
Q1 and Q2 form an operational amplifier that sets the voltage at the bottom of the focus divider. The front-panel FOCUS pot determines the voltage at the bottom of the focus divider. The Center Focus control, R11, is set for optimum beam focus, as viewed on the CRT, with the front-panel FOCUS control set to mid range. Once the Center Focus adjustment has been set, adjusting the front-panel FOCUS control changes the voltage at the bottom end of the divider and, consequently, the voltage on the CRT focus anode.

**Grid Drive Circuit**

The cathode of the CRT is at a  $-2750\text{ V}$  potential with the grid coupled to the Z-Axis Amplifier by the Grid Drive circuit. The grid is approximately  $75\text{ V}$  negative with respect to the cathode. The  $200\text{ V}_{\text{p-p}}$  sine wave present at the cathode of CR8 is input to the Grid Drive circuit where it is clipped for use as CRT control grid bias.

The sine wave from the cathode of CR8 is coupled through R47 to a clipping circuit consisting of CR5 and CR6. Clipping level for the positive excursion of the sine wave is set by the CRT Bias adjustment, R58. The negative clipping level is set by the front-panel INTENSITY control through the Z-Axis Amplifier. The clipped sine wave is coupled through C11 to a rectifier made up of CR1 and CR3. The rectified, clipped sine wave is the CRT control grid bias voltage. C9 couples the blanking signal from the Z-Axis Amplifier to the CRT control grid. DS1 and DS2 limit the CRT grid to cathode voltage at instrument turn on or off. DS3 limits the CRT heater to cathode voltage.

**Z-Axis Amplifier**



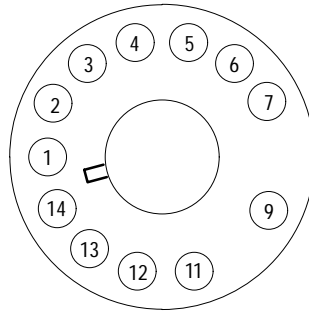
This is an inverting amplifier with negative feedback. R22 is the feedback resistor while R7, R20, and R33 act to maintain the summing junction at  $+5\text{ V}$ . Without any Z-Axis input current, the amplifier output is approximately  $+10\text{ V}$ . Negative Z-Axis input current will cause the output to go positive.

Q5 is a current amplifier feeding the output stage. Q3 and Q4 form a push-pull output stage. Q3 acts as a  $2.7\text{ mA}$  constant current pull-up, while Q4 is the



pull-down transistor. C6 speeds up the amplifier by coupling AC signals to the base of Q3. CR2 and R41 protect the amplifier during CRT arcing.

**CRT** The pinout for the CRT is shown in Figure 6–3.



<u>Pin</u>	<u>Description</u>
1	Filament (f)
2	Cathode (k)
3	GRID (g1)
4	FOCUS (g3)
5	ASTIG (g4)
6	GEOM (g5)
7	VERT PLATE (y2)
9	VERT PLATE (y1)
11	HORIZ PLATE (x2)
12	1st ANODE (g2)
13	HORIZ PLATE (x1)
14	Filament (f)

**Figure 6–3: Pinout of the CRT Socket**



# Options

# Section 7

## Options

**Introduction** This section describes instrument options available for the 760-Series.

### OPTIONS

**CRT Options** The standard instrument is shipped with a P31 (green) phosphor CRT installed. If Option 74 is ordered, the instrument is shipped with a P4 (white) phosphor CRT installed. The CRT part numbers are given at the end of the Replaceable Electrical Parts List.

**Power Cord Options** Any of the power cord options shown in Table 7-1 can be ordered for the 760-Series. If no power cord option is ordered, instruments are shipped with a North American 125 V locking power cord and one replacement fuse.

**Table 7-1: Power Cord Options**

Option	Description of power cord*
A1	Universal Europe 220 V/16 A Locking
A2	United Kingdom 240 V/15 A
A3	Australian 240 V/10 A

\* All power cord options include a captive power plug and one replacement fuse

Unless otherwise specified, power cords for use in North America are UL listed and CSA certified. Option cords are approved by at least one test house acceptable in the country to which the product is shipped. Power cord types are illustrated on the exploded view in SECTION 10 REPLACEABLE MECHANICAL PARTS.



# **Replaceable Electrical Parts**

## Section 8

# Replaceable Electrical Parts

This section contains a list of the electrical components for the 760A, 760D, and 760N. Use this list to identify and order replacement parts.

### Parts Ordering Information

Replacement parts are available through your local Tektronix field office or representative.

Changes to Tektronix products are sometimes made to accommodate improved components as they become available and to give you the benefit of the latest improvements. Therefore, when ordering parts, it is important to include the following information in your order:

- Part number
- Instrument type or model number
- Instrument serial number
- Instrument modification number, if applicable

If you order a part that has been replaced with a different or improved part, your local Tektronix 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.

### Using the Replaceable Electrical Parts List

The tabular information in the Replaceable Electrical Parts List is arranged for quick retrieval. Understanding the structure and features of the list will help you find all of the information you need for ordering replacement parts. The following table describes each column of the electrical parts list.

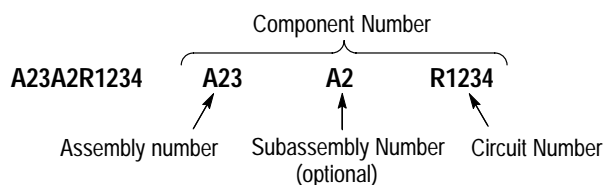
**Parts List Column Descriptions**

Column	Column Name	Description
1	Component number	<p>The component number appears on diagrams and circuit board illustrations, located in the diagrams section. Assembly numbers are clearly marked on each diagram and circuit board illustration in the <i>Diagrams</i> section, and on the mechanical exploded views in the <i>Replaceable Mechanical Parts</i> list section. The component number is obtained by adding the assembly number prefix to the circuit number (see Component Number illustration following this table).</p> <p>The electrical parts list is arranged by assemblies in numerical sequence (A1, with its subassemblies and parts, precedes A2, with its subassemblies and parts).</p> <p>Chassis-mounted parts have no assembly number prefix, and they are located at the end of the electrical parts list.</p>
2	Tektronix part number	Use this part number when ordering replacement parts from Tektronix.
3 and 4	Serial number	Column three indicates the serial number at which the part was first effective. Column four indicates the serial number at which the part was discontinued. No entry indicates the part is good for all serial numbers.
5	Name & description	An item name is separated from the description by a colon (:). Because of space limitations, an item name may sometimes appear as incomplete. Use the U.S. Federal Catalog handbook H6-1 for further item name identification.
6	Mfr. code	This indicates the code number of the actual manufacturer of the part.
7	Mfr. part number	This indicates the actual manufacturer's or vendor's part number.

**Abbreviations**

Abbreviations conform to American National Standard ANSI Y1.1–1972.

**Component Number**



**Read: Resistor 1234 (of Subassembly 2) of Assembly 23**

**List of Assemblies**

A list of assemblies is located at the beginning of the electrical parts list. The assemblies are listed in numerical order. When a part's complete component number is known, this list will identify the assembly in which the part is located.

**Chassis Parts**

Chassis-mounted parts and cable assemblies are located at the end of the Replaceable Electrical Parts List.

**Mfr. Code to Manufacturer Cross Index**

The table titled *Manufacturers Cross Index* shows codes, names, and addresses of manufacturers or vendors of components listed in the parts list.

## Manufacturers Cross Index

Mfr. Code	Manufacturer	Address	City, State, Zip Code
D5243	ROEDERSTEIN ERNST GMBH	LUDMILLA STRASSE 23	8300 LANDSHUT GERMANY
TK0435	LEWIS SCREW CO	4300 S RACINE AVE	CHICAGO IL 60609-3320
TK0515	EVOX-RIFA INC	100 TRI-STATE INTERNATIONAL SUITE 290	LINCOLNSHIRE IL 60015
TK0891	MICONICS	1 FAIRCHILD AVE	PLAINVIEW NY 11803
TK1155	QUALITY PLSTC INJECTION MOLDING	3910 INDUSTRIAL AVE	COEUR D'ALENE ID 83814
TK1352	INTERFACE ELECTRONICS CORP	300 2-ND AVENUE WEST	SEATTLE WA 98119
TK1547	MOORE ELECTRONICS INC (DIST)	19500 SW 90TH COURT PO BOX 1030	TUALATIN OR 97062
TK1617	CRAFT FACTORY PLASTICS	17145 SW ALEXANDER	ALOHA, OR 97007
TK1727	PHILIPS NEDERLAND BV AFD ELONCO	POSTBUS 90050	5600 PB EINDHOVEN THE NETHERLANDS
TK1743	UNITRODE (UK) LTD	6 CRESSWELL PARK BLACKHEATH	LONDON SE 3 9RD ENGLAND
TK1913	WIMA THE INTER-TECHNICAL GROUP IND	2269 SAW MILL RIVER ROAD PO BOX 127	ELMSFORD NY 10523
TK2058	TDK CORPORATION OF AMERICA	1600 FEEHANVILLE DRIVE	MOUNT PROSPECT, IL 60056
TK2073	TOKYO AMERICA INC	565 W GULF ROAD	ARLINGTON HEIGHTS IL 60005
TK2469	UNITREK CORPORATION	3000 LEWIS & CLARK WAY SUITE #2	VANCOUVER WA 98601
0CVK3	ALLEGRO MICROSYSTEMS INC INTEGRATED CIRCUITS DIV	115 NE CUTOFF PO BOX 2036	WORCHESTER MA 01613-2036
0GV52	SCHAFFNER EMC INC	9-B FADEM ROAD	SPRINGFIELD, NJ 07081
0H1N5	TOSHIBA MARCON ELECTRONICS AMERICA CORPORATION	998 FIRST EDGE DRIVE	VERNON HILLS IL 60061
0JR03	ZMAN MAGNETICS INC	7633 S 180th	KENT WA 98032
0JR04	TOSHIBA AMERICA INC ELECTRONICS COMPONENTS DIV	9775 TOLEDO WAY	IRVINE CA 92718
0JR05	TRIQUEST CORP	3000 LEWIS AND CLARK HWY	VANCOUVER WA 98661-2999
0J9R2	HARISON ELECTRIC CO LTD	ASAHIMACHI 5-CHOME IMABARI	EHIME JAPAN
0LUA3	PHILIPS COMPONENTS	100 PROVIDENCE PIKE	SLATERSVILLE, RI 02876
00779	AMP INC	2800 FULLING MILL PO BOX 3608	HARRISBURG PA 17105
01295	TEXAS INSTRUMENTS INC SEMICONDUCTOR GROUP	13500 N CENTRAL EXPY PO BOX 655303	DALLAS TX 75262-5303
04222	AVX/KYOCERA DIV OF AVX CORP	19TH AVE SOUTH P O BOX 867	MYRTLE BEACH SC 29577
04713	MOTOROLA INC SEMICONDUCTOR PRODUCTS SECTOR	5005 E MCDOWELL RD	PHOENIX AZ 85008-4229
09353	C AND K COMPONENTS INC	15 RIVERDALE AVE	NEWTON MA 02158-1057
1CH66	PHILIPS SEMICONDUCTORS	811 E ARQUES AVENUE PO BOX 3409	SUNNYVALE CA 94088-3409
1ES66	MAXIM INTEGRATED PRODUCTS INC	120 SAN GABRIEL DRIVE	SUNNYVALE CA 94086

**Manufacturers Cross Index (Cont.)**

<b>Mfr. Code</b>	<b>Manufacturer</b>	<b>Address</b>	<b>City, State, Zip Code</b>
11236	CTS CORPORATION RESISTOR NETWORKS DIVISION	406 PARR ROAD	BERNE IN 46711-9506
11502	IRC, INC	PO BOX 1860	BOONE NC 28607-1860
12697	CLAROSTAT MFG CO INC	12055 ROJAS DRIVE SUITE K	EL PASO, TX 79936
12954	MICROSEMI CORP - SCOTTSDALE	8700 E THOMAS RD P O BOX 1390	SCOTTSDALE AZ 85252
12969	MICROSEMI CORPORATION WATERTOWN DIVISION	530 PLEASANT STREET	WATERTOWN MA 02172
13103	THERMALLOY CO INC	2021 W VALLEY VIEW LN PO BOX 810839	DALLAS TX 75381
13919	BURR-BROWN RESEARCH CORP	6730 S TUCSON BLVD P O BOX 11400	TUCSON AZ 85734
14552	MICROSEMI CORP	2830 S FAIRVIEW ST	SANTA ANA CA 92704-5948
15454	KETEMA RODAN DIVISION	2900 BLUE STAR STREET	ANAHEIM CA 92806-2591
18796	MURATA ELECTRONICS NORTH AMERICA INC. STATE COLLEGE OPERATIONS	1900 W COLLEGE AVE	STATE COLLEGE PA 16801-2723
19701	PHILIPS COMPONENTS DISCRETE PROD- UCTS DIV RESISTIVE PRODUCTS FACILITY AIRPORT ROAD	PO BOX 760	MINERAL WELLS TX 76067-0760
2N936	VISHAY ELECTRONIC COMPONENTS	1122 23RD STREET	COLUMBUS, NE 68601
22526	BERG ELECTRONICS INC (DUPONT)	857 OLD TRAIL RD	ETTERS PA 17319
24546	DALE ELECTRONICS A VISHAY INTERTECHNOLOGY INC CO	550 HIGH ST	BRADFORD PA 16701-3737
26364	COMPONENTS CORP	6 KINSEY PLACE	DENVILLE NJ 07834-2611
27014	NATIONAL SEMICONDUCTOR CORP	2900 SEMICONDUCTOR DR	SANTA CLARA CA 95051-0606
31918	ITT SCHADOW INC	8081 WALLACE RD	EDEN PRAIRE MN 55344-2224
32997	BOURNS INC TRIMPOT DIV	1200 COLUMBIA AVE	RIVERSIDE CA 92507-2114
34371	HARRIS SEMICONDUCTOR SEMICONDUCTOR SECTOR	MS 58-71 PO BOX 883	MELBOURNE, FL 32902-0883
48726	UNITRODE INTEGRATED CIRCUITS CORP (UICC)	7 CONTINENTAL BLVD PO BOX 399	MERRIMACK NH 03054-0399
50139	ALLEN-BRADLEY CO ELECTRONIC COMPONENTS	1414 ALLEN BRADLEY DR	EL PASO TX 79936
50434	HEWLETT-PACKARD CO OPTOELECTRONICS DIV	370 W TRIMBLE RD	SAN JOSE CA 95131-1008
51406	MURATA ELECTRONICS NORTH AMERICA INC HEADQUARTERS AND GEORGIA OPERATIONS	2200 LAKE PARK DR	SMYRNA GA 30080
53387	3M COMPANY ELECTRONIC PRODUCTS DIV	3M AUSTIN CENTER	AUSTIN TX 78769-2963
55680	NICHICON /AMERICA/ CORP	927 E STATE PKY	SCHAUMBURG IL 60195-4526



## Manufacturers Cross Index (Cont.)

<b>Mfr. Code</b>	<b>Manufacturer</b>	<b>Address</b>	<b>City, State, Zip Code</b>
37942	NORTH AMERICAN CAPACITOR CO	INDIANAPOLIS ROAD, HWY 240 PO BOX 240	GREEN CASTLE, IN 46135
56845	DALE ELECTRONICS INC	2300 RIVERSIDE BLVD PO BOX 74	NORFOLK NE 68701-2242
57668	ROHM CORPORATION	15375 BARRANCA PARKWAY SUITE B207	IRVINE CA 92718
57856	TELTEC INC	7890 12TH AVE SOUTH	MINNEAPOLIS MN 55425
61935	SCHURTER INC	1016 CLEGG COURT	PETALUMA CA 94952-1152
62643	UNITED CHEMICON INC	9801 W HIGGINS ST SUITE 430	ROSEMONT, IL 60018-4771
64155	LINEAR TECHNOLOGY CORP	1630 MCCARTHY BLVD	MILPITAS CA 95035-7417
64537	KDI/TRIANGLE ELECTRONICS	60 S JEFFERSON ROAD	WHIPPANY, NJ 07981
71400	BUSSMANN DIV OF COOPER INDUSTRIES INC	114 OLD STATE RD PO BOX 14460	ST LOUIS MO 63178
71590	CGE SWITCHES - USA	PO BOX 1587	FORT DODGE IA 50501
73743	FISCHER SPECIAL MFG CO	111 INDUSTRIAL RD	COLD SPRING KY 41076-9749
75042	IRC ELECTRONIC COMPONENTS PHILADELPHIA DIV TRW FIXED RESISTORS	401 N BROAD ST	PHILADELPHIA PA 19108-1001
75498	MULTICOMP INC	3005 SW 154TH TERRACE #3	BEAVERTON OR 97006
76493	BELL INDUSTRIES INC JW MILLER DIV	306 E ALONDRA BLVD PO BOX 2859	GARDENA, CA 90247-1059
80009	TEKTRONIX INC	14150 SW KARL BRAUN DR PO BOX 500	BEAVERTON OR 97077-0001
82389	SWITCHCRAFT INC SUB OF RAYTHEON CO	5555 N ELSTRON AVE	CHICAGO IL 60630-1314
83701	ELECTRONIC DEVICES INC	21 GREY OAKS AVE	YONKERS NY 10710-3205
84411	AMERICAN SHIZUKI CORP OGALLALA OPERATIONS	301 WEST O ST	OGALLALA NE 69153-1844
86928	SEASTROM MFG CO INC	456 SEASTROM STREET	TWIN FALLS, ID 83301
8X345	NORTHWEST SPRING MFG CO	5858 WILLOW LANE	LAKE OSWEGO, OR 97035
91637	DALE ELECTRONICS INC	2064 12TH AVE PO BOX 609	COLUMBUS NE 68601-3632
9M860	ESAM INC	PO BOX 376	GRANTS PASS, OR 97526
TK2073	TOKYO COSMOS AMERICA INC	1177 E TOWER ROAD	SCHAUMBURG, IL 60173

## Replaceable Electrical Parts

### Replaceable Electrical Parts List

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A1	671-2890-10			CIRCUIT BD ASSY:POWER SUPPLY	80009	671289010
A2	670-9532-01			CIRCUIT BD ASSY:FRONT PANEL	80009	670953201
A3	671-2383-04	B050000	B052828	CIRCUIT BD ASSY:MAIN (760A ONLY)	80009	671238304
	671-2383-05	B052829		CIRCUIT BD ASSY:MAIN (760A ONLY)	80009	671238305
A3	671-1469-04	B030000	B030174	CIRCUIT BD ASSY:MAIN (760D ONLY)	80009	671146904
A3	671-1469-05	B030175		CIRCUIT BD ASSY:MAIN (760D ONLY)	80009	671146905
A3	671-1472-04	B030000	B030209	CIRCUIT BD ASSY:MAIN (760N ONLY)	80009	671147204
A3	671-1472-05	B030210		CIRCUIT BD ASSY:MAIN (760N ONLY)	80009	671147205
A10	671-3637-00			CIRCUIT BD ASSY:CRT SOCKET BOARD	80009	671363700
A1	671-2890-10			CIRCUIT BD ASSY:POWER SUPPLY	80009	671289010
A1C1	281-0775-01			CAP,FXD,CERAMIC:MCL:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A1C2	283-0021-00			CAP,FXD,CER DI:0.001UF,20%,5000V	TK2058	TCK45YS3H102M-A
A1C3	283-0261-00			CAP,FXD,CER DI:0.01UF,20%,4000V	18796	DHR28Z5U103M4KV
A1C4	283-0261-00			CAP,FXD,CER DI:0.01UF,20%,4000V	18796	DHR28Z5U103M4KV
A1C5	285-1341-01			CAP,FXD,PLSTC:MTLZD FILM:0.1UF,20%,100V,POLYESTER	TK1913	MKS 2 0.1UF 20%
A1C6	281-0771-00			CAP,FXD,CER DI:2200PF,20%,200V	04222	SA102C222MAA
A1C7	285-1470-00			CAP,FXD,PLSTC:MTLZD FILM:330PF, 1600VDC/500VAC,POLYPROPYLENE,11 X18	TK1913	FKP1 330/1600/5
A1C8	283-0261-00			CAP,FXD,CER DI:0.01UF,20%,4000V	18796	DHR28Z5U103M4KV
A1C9	283-0261-00			CAP,FXD,CER DI:0.01UF,20%,4000V	18796	DHR28Z5U103M4KV
A1C10	281-0563-00			CAP,FXD,CERAMIC:MLC:0.47UF,20%,50V,0.150 X0.290	04222	SA305E474MAA
A1C11	283-0021-00			CAP,FXD,CER DI:0.001UF,20%,5000V	TK2058	TCK45YS3H102M-A
A1C12	281-0707-00			CAP,FXD,CER DI:15000PF,10%,200V	04222	MA302C153KAA
A1C13	281-0707-00			CAP,FXD,CER DI:15000PF,10%,200V	04222	MA302C153KAA
A1C14	281-0707-00			CAP,FXD,CER DI:15000PF,10%,200V	04222	MA302C153KAA
A1C15	285-1341-01			CAP,FXD,PLSTC:MTLZD FILM:0.1UF,20%,100V,POLYESTER	TK1913	MKS 2 0.1UF 20%
A1C16	290-1311-00			CAP,FXD,ALUM:10UF,20%,50V,ESR=1.4 OHM(100KHZ,20C),5X11MM,105C,5000HRS	55680	UPL1H100MDH1TD
A1C17	285-1341-01			CAP,FXD,PLSTC:MTLZD FILM:0.1UF,20%,100V,POLYESTER	TK1913	MKS 2 0.1UF 20%
A1C18	281-0775-01			CAP,FXD,CERAMIC:MCL:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A1C19	290-1310-00			CAP,FXD,ALUM:10UF,20%,160V,ESR=24.9 OHM (120HZ,20C),LS=0.200 INCH,13X20MM,105C,5000HRS	0H1N5	CEJSM2C100M
A1C20	281-0707-00			CAP,FXD,CER DI:15000PF,10%,200V	04222	MA302C153KAA
A1C21	281-0707-00			CAP,FXD,CER DI:15000PF,10%,200V	04222	MA302C153KAA

Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A1C22	281-0563-00			CAP,FXD,CERAMIC:MLC:0.47UF,20%,50V,0.150 X0.290	04222	SA305E474MAA
A1C23	285-1328-00			CAP,FXD,PLSTC:MTLZD FILM:0.01UF,5%,2000V,POLYPROPYLENE,1.25X.95	TK1913	FKP1 .01/2000/5
A1C24	290-1310-00			CAP,FXD,ALUM:10UF,20%,160V,ESR=24.9 OHM (120HZ,20C),LS=0.200INCH,13X20MM,105C,5000HRS	0H1N5	CEJSM2C100M
A1C25	281-0775-01			CAP,FXD,CERAMIC:MCL:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A1C27	281-0775-01			CAP,FXD,CERAMIC:MCL:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A1C28	281-0775-01			CAP,FXD,CERAMIC:MCL:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A1C29	290-1267-00			CAP,FXD,ALUM:560UF,20%,50V,ESR=0.40 OHM (100KHZ,20C)	0H1N5	CEEFM1H561M7
A1C30	290-1267-00			CAP,FXD,ALUM:560UF,20%,50V,ESR=0.40 OHM (100KHZ,20C)	0H1N5	CEEFM1H561M7
A1C31	290-1267-00			CAP,FXD,ALUM:560UF,20%,50V,ESR=0.40 OHM (100KHZ,20C)	0H1N5	CEEFM1H561M7
A1C32	290-1267-00			CAP,FXD,ALUM:560UF,20%,50V,ESR=0.40 OHM (100KHZ,20C)	0H1N5	CEEFM1H561M7
A1C33	290-1310-00			CAP,FXD,ALUM:10UF,20%,160V,ESR=24.9 OHM (120HZ,20C),LS=0.200INCH,13X20MM,105C,5000HRS	0H1N5	CEJSM2C100M
A1C34	290-1310-00			CAP,FXD,ALUM:10UF,20%,160V,ESR=24.9 OHM (120HZ,20C),LS=0.200INCH,13X20MM,105C,5000HRS	0H1N5	CEJSM2C100M
A1C35	290-1267-00			CAP,FXD,ALUM:560UF,20%,50V,ESR=0.40 OHM (100KHZ,20C)	0H1N5	CEEFM1H561M7
A1C36	290-1267-00			CAP,FXD,ALUM:560UF,20%,50V,ESR=0.40 OHM (100KHZ,20C)	0H1N5	CEEFM1H561M7
A1C37	290-1267-00			CAP,FXD,ALUM:560UF,20%,50V,ESR=0.40 OHM (100KHZ,20C)	0H1N5	CEEFM1H561M7
A1C38	290-1267-00			CAP,FXD,ALUM:560UF,20%,50V,ESR=0.40 OHM (100KHZ,20C)	0H1N5	CEEFM1H561M7
A1C39	281-0775-01			CAP,FXD,CERAMIC:MCL:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A1C40	281-0772-00			CAP,FXD,CERAMIC:MLC:4700PF,10%,100V,0.100 X	04222	SA101C472KAA
A1C41	281-0563-00			CAP,FXD,CERAMIC:MLC:0.47UF,20%,50V,0.150 X 0.290	04222	SA305E474MAA
A1C42	290-1267-00			CAP,FXD,ALUM:560UF,20%,50V,ESR=0.40 OHM (100KHZ,20C)	0H1N5	CEEFM1H561M7
A1C43	281-0563-00			CAP,FXD,CERAMIC:MLC:0.47UF,20%,50V,0.150 X 0.290	04222	SA305E474MAA
A1C44	285-1331-00			CAP,FXD,MTLZD:0.47UF,5%,400V	TK1913	MKS4 .47/400/5
A1C45	281-0563-00			CAP,FXD,CERAMIC:MLC:0.47UF,20%,50V,0.150 X 0.290	04222	SA305E474MAA
A1C46	281-0773-00			CAP,FXD,CERAMIC:MLC:0.01UF,10%,100V	TK1743	CGB103KEX
A1C47	281-0563-00			CAP,FXD,CERAMIC:MLC:0.47UF,20%,50V,0.150 X 0.290	04222	SA305E474MAA
A1C48	281-0809-00			CAP,FXD,CERAMIC:MLC:200 PF,5%,100V,0.100 X 0.170	04222	SA101A201JAA
A1C49	281-0775-01			CAP,FXD,CERAMIC:MCL:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A1C50	281-0563-00			CAP,FXD,CERAMIC:MLC:0.47UF,20%,50V,0.150 X 0.290	04222	SA305E474MAA
A1C51	281-0773-00			CAP,FXD,CERAMIC:MLC:0.01UF,10%,100V	TK1743	CGB103KEX
A1C52	281-0773-00			CAP,FXD,CERAMIC:MLC:0.01UF,10%,100V	TK1743	CGB103KEX
A1C53	285-1437-00			CAP,FXD,PLSTC:100PF,5%,1600VDC/500VACSAFETY CONT	TK1913	FKP1/100/1600/5
A1C54	290-1275-00			CAP,FXD,ALUM:330UF,20%,400V,35X35MM,105C	55680	LGQ2G331MHSC
A1C56	285-1246-00			CAP,FXD,PPR DI:0.022UF,20%,250VAC	TK0515	PME 289 MB 5220
A1C57	285-1222-00			CAP,FXD,PLSTC:0.068UF,20%,250V	TK0515	PME 271 M 568
A1C58	281-0809-00			CAP,FXD,CERAMIC:MLC:200 PF,5%,100V,0.100 X 0.170	04222	SA101A201JAA
A1C59	281-0775-01			CAP,FXD,CERAMIC:MCL:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A1C60	281-0775-01			CAP,FXD,CERAMIC:MCL:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A1C61	281-0768-00			CAP,FXD,CER DI:470PF,20%,100V	04222	SA101A471KAA

Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A1C65	281-1301-01			CAP,FXD,CERAMIC:MCL:0.47UF,10%,50V	37942	185/0.47/K/50/AB/B
A1C66	290-1311-00			CAP,FXD,ALUM:10UF,20%,50V,ESR=1.4 OHM (100KHZ,20C),5X11MM,105C,5000HRS	55680	UPL1H100MDH1TD
A1CR1	152-0061-00			DIODE,SIG:200V,0.1A,700NS,4.0PF	12969	PV122
A1CR2	152-0061-00			DIODE,SIG:200V,0.1A,700NS,4.0PF	12969	PV122
A1CR3	152-0061-00			DIODE,SIG:200V,0.1A,700NS,4.0PF	12969	PV122
A1CR4	152-0409-00			DIODE,RECT:FAST RCVRY;12KV,10MA,250NS	83701	CRVT150
A1CR5	152-0061-00			DIODE,SIG:200V,0.1A,700NS,4.0PF	12969	PV122
A1CR6	152-0061-00			DIODE,SIG:200V,0.1A,700NS,4.0PF	12969	PV122
A1CR7	152-0400-00			DIODE,RECT:FAST RCVRY;400V,1A,200NS	0LUA3	1N4936
A1CR8	152-0400-00			DIODE,RECT:FAST RCVRY;400V,1A,200NS	0LUA3	1N4936
A1CR9	152-0400-00			DIODE,RECT:FAST RCVRY;400V,1A,200NS	0LUA3	1N4936
A1CR10	152-0400-00			DIODE,RECT:FAST RCVRY;400V,1A,200NS	0LUA3	1N4936
A1CR11	152-0400-00			DIODE,RECT:FAST RCVRY;400V,1A,200NS	0LUA3	1N4936
A1CR12	152-0400-00			DIODE,RECT:FAST RCVRY;400V,1A,200NS	0LUA3	1N4936
A1CR13	152-1191-00			DIODE,RECT:SCHTKY;100V,10A,150A IFSM,800MV AT 10A	04713	MBR10100
A1CR14	152-0400-00			DIODE,RECT:FAST RCVRY;400V,1A,200NS	0LUA3	1N4936
A1CR15	152-0400-00			DIODE,RECT:FAST RCVRY;400V,1A,200NS	0LUA3	1N4936
A1CR16	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A1CR17	152-0400-00			DIODE,RECT:FAST RCVRY;400V,1A,200NS	0LUA3	1N4936
A1CR19	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A1CR20	152-0897-00			DIODE,RECT:FAST RCVRY;1000V,1.5A,300NS,SOFT RCVRY	0LUA3	BYV96E
A1CR21	152-1165-00			DIODE,RECT:ULTRA FAST;600V,4A,50NS	04713	MUR460RL
A1CR22	152-1165-00			DIODE,RECT:ULTRA FAST;600V,4A,50NS	04713	MUR460RL
A1CR23	152-1165-00			DIODE,RECT:ULTRA FAST;600V,4A,50NS	04713	MUR460RL
A1CR24	152-1165-00			DIODE,RECT:ULTRA FAST;600V,4A,50NS	04713	MUR460RL
A1CR25	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A1CR26	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A1CR27	152-0400-00			DIODE,RECT:FAST RCVRY;400V,1A,200NS	0LUA3	1N4936
A1CR29	152-0400-00			DIODE,RECT:FAST RCVRY;400V,1A,200NS	0LUA3	1N4936
A1CR30	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A1CR31	152-0400-00			DIODE,RECT:FAST RCVRY;400V,1A,200NS	0LUA3	1N4936
A1DS1	150-0050-00			LAMP,GLOW:135V MAX,1.9MA,C2A-T,WIRE LEAD	0J9R2	NE-2Q-11R-T
A1DS2	150-0050-00			LAMP,GLOW:135V MAX,1.9MA,C2A-T,WIRE LEAD	0J9R2	NE-2Q-11R-T
A1DS3	150-0050-00			LAMP,GLOW:135V MAX,1.9MA,C2A-T,WIRE LEAD	0J9R2	NE-2Q-11R-T
A1DS4	150-0050-00			LAMP,GLOW:135V MAX,1.9MA,C2A-T,WIRE LEAD	0J9R2	NE-2Q-11R-T
A1F1	159-0021-00			FUSE,CARTRIDGE:3AG,2A,250V,FAST BLOW	71400	AGC-2
				*MOUNTING PARTS*		
	200-2264-00			CAP,FUSEHOLDER:3AG FUSES	61935	FEK 031 1666
	204-0906-00			BODY,FUSEHOLDER:3AG & 5 X 20MM FUSES	61935	TYPE FAU 031.35
				*END MOUNTING PARTS*		

Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A1J1	131-5338-00			CONN,HDR:PCB/WIREWRAP;MALE,STR,1 X 7,0.15CTR,0.230 MLG X 0.285 TAIL,30 GOLD,SIDE BYSIDE STACKABLE	22526	65561-107
A1J2	131-4794-00			CONN,HDR:PCB;MALE,STR,1 X 2,0.1 CTR,0.235MLG X 0.112 TAIL,30GOLD,0.035 DIA PCB,SAFETY CONTROLLED	53387	2402-6112 UB
A1J3	131-5337-00			CONN,HDR:PCB/WIREWRAP;MALE,STR,1 X 4,0.150	22526	65561-104
A1J4	131-3392-00			CONN,HDR:PCB;MALE,STR,1 X 10,0.1 CTR,0.230	00779	1-102844-1
A1J6	119-1946-00			FILTER,RFI:1A,250V,400HZ W/PC TERMINAL	0GV52	FX326-1/02-K-D-
A1L1	108-1412-00			INDUCTOR,FXD:POWER:4.7UH,20%,I<3.7A,RDC<0.017 OHM,Q>10,SRF>30MHZ,BOBBIN	TK2058	TSL0807-4R7M3R0
A1L2	108-1412-00			INDUCTOR,FXD:POWER:4.7UH,20%,I<3.7A,RDC<0.017 OHM,Q>10,SRF>30MHZ,BOBBIN	TK2058	TSL0807-4R7M3R0
A1L3	108-1412-00			INDUCTOR,FXD:POWER:4.7UH,20%,I<3.7A,RDC<0.017 OHM,Q>10,SRF>30MHZ,BOBBIN	TK2058	TSL0807-4R7M3R0
A1L4	108-0205-00			INDUCTOR,FXD:POWER:1MH,5%,IDC<400 MA,RDC<2.12 OHM,Q>47@0.25MHZ	76493	8209
A1Q1	151-0749-00			XSTR,SIG:BIPOLAR,PNP;400V,500MA,50MHZ,AMPL	04713	MPSA94
A1Q2	151-0190-00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPL	0JR04	2N3904
A1Q3	151-0350-03			XSTR,SIG:BIPOLAR,PNP;150V,600MA,100MHZ,AMPL	04713	2N5401RLRP
A1Q4	151-0347-02			XSTR,SIG:BIPOLAR,NPN;160V,600MA,100MHZ,AMPL	04713	2N5551RLRP
A1Q5	151-0350-03			XSTR,SIG:BIPOLAR,PNP;150V,600MA,100MHZ,AMPL	04713	2N5401RLRP
A1Q6	151-0476-00			XSTR,PWR:BIPOLAR,NPN;100V,3.0A,3.0MHZ,AMPL	04713	TIP31C
				*ATTACHED PARTS*		
	214-3848-00			HEAT SINK,SEMIC:XSTR,TO-220;ALUM,CLIP-ON,BLK ANDZ	13103	6043PB
				*END ATTACHED PARTS*		
A1Q7	151-0190-00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPL	0JR04	2N3904
A1Q8	151-0190-00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPL	0JR04	2N3904
A1Q9	151-1286-00			XSTR,PWR:MOS,N-CH;800V,4.0A,3.0 OHM	0LUA3	BUK456-800A
				*ATTACHED PARTS*		
	210-0406-00			NUT,PLAIN,HEX:4-40 X 0.188,BRS CD PL	73743	12161-50
	211-0008-00			SCREW,MACHINE:4-40 X 0.25,PNH,STL	TK0435	ORDER BY DESC
	214-3841-00			HEAT SINK,SEMIC:XSTR,TO-220;VERTICALMOUNT,(2)SOLDERABLE TABS,ALUM,BLACK ANODIZE	13103	6021PB
				*END ATTACHED PARTS*		
A1Q10	151-0350-03			XSTR,SIG:BIPOLAR,PNP;150V,600MA,100MHZ,AMPL	04713	2N5401RLRP
A1Q11	151-0528-00			THYRISTOR,PWR:BIPOLAR,SCR;50V,16A RMS,PHASE	04713	2N6400
A1R1	303-0155-00			RES,FXD,CMPSN:1.5M OHM,5%,1W	50139	GB1555
A1R2	301-0225-02			RES,FXD,CMPSN:2.2M OHM,5%,0.5W	50139	EB2255
A1R3	303-0155-00			RES,FXD,CMPSN:1.5M OHM,5%,1W	50139	GB1555
A1R4	303-0155-00			RES,FXD,CMPSN:1.5M OHM,5%,1W	50139	GB1555
A1R5	303-0155-00			RES,FXD,CMPSN:1.5M OHM,5%,1W	50139	GB1555
A1R7	322-3385-00			RES,FXD:METAL FILM;100K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10002F
A1R8	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A1R11	311-1256-00			RES,VAR,TRMR:CERMET;2.5M OHM,10%,0.5W,0.375	32997	3386F-1-255

## Replaceable Electrical Parts

### Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A1R12	315-0471-03			RES,FXD,CMPSN:470 OHM,5%,0.25W	50139	CB4715
A1R13	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A1R14	322-3001-00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A1R20	322-3248-00			RES,FXD,FILM:3.74K OHM,1%,0.2W,TC=TOTAPED &	91637	CCF50G37400F
A1R22	322-3329-00			RES,FXD,FILM:26.1K OHM,1%,0.2W,TC=TOMI,SMALL BODY	91637	CCF501G37401F
A1R24	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A1R25	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A1R26	322-3452-00			RES,FXD,FILM:499K OHM,1%,0.2W,TC=TOMI,SMALL	91637	CCF50-2-G4993FT
A1R27	322-3300-02			RES,FXD,FILM:13K OHM,0.5%,0.2W,TC=T2	91637	CCF501D13001D
A1R28	322-3344-00			RES,FXD,FILM:37.4K OHM,1%,0.2W,TC=TOMI,SMALL BODY	91637	CCF501G37401F
A1R29	315-0470-03			RES,FXD,CMPSN:47 OHM,5%,0.25W	50139	CB4705
A1R30	315-0103-03			RES,FXD,CMPSN:10K OHM,5%,0.25W	50139	CB1035
A1R31	322-3385-00			RES,FXD:METAL FILM;100K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10002F
A1R32	322-3452-00			RES,FXD,FILM:499K OHM,1%,0.2W,TC=TOMI,SMALL	91637	CCF50-2-G4993FT
A1R33	322-3300-02			RES,FXD,FILM:13K OHM,0.5%,0.2W,TC=T2	91637	CCF501D13001D
A1R34	322-3222-00			RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A1R35	322-3162-00			RES,FXD:METAL FILM;475 OHM,1%,0.2W,TC=100 PPM	91637	CCF50G475R0F
A1R36	322-3222-00			RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A1R37	322-3034-00			RES,FXD:METAL FILM;22.1 OHM,1%,0.2W,TC=100 PPM	91637	CCF50-2-G22R10F
A1R38	315-0226-01			RES,FXD,CMPSN:22 M OHM,5%,0.25W W ALLEN BRADLEY ONLY	50139	CB2265
A1R39	315-0471-03			RES,FXD,CMPSN:470 OHM,5%,0.25W	50139	CB4715
A1R40	315-0103-03			RES,FXD,CMPSN:10K OHM,5%,0.25W	50139	CB1035
A1R41	322-3121-00			RES,FXD:METAL FILM;178 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G178R0F
A1R42	322-3402-00			RES,FXD:METAL FILM;150K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G15002F
A1R43	315-0471-03			RES,FXD,CMPSN:470 OHM,5%,0.25W	50139	CB4715
A1R44	315-0471-03			RES,FXD,CMPSN:470 OHM,5%,0.25W	50139	CB4715
A1R45	311-2239-00			RES,VAR,TRMR:CERMET;100K OHM,20%,0.5W,0.197	TK2073	GF06UT2 104 M L
A1R46	322-3001-00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A1R47	322-3385-00			RES,FXD:METAL FILM;100K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10002F
A1R48	322-3239-00			RES,FXD,FILM:3.01K OHM,1%,0.2W,TC=TOMI,SMALL BODY	91637	CCF501G30100F
A1R49	311-2239-00			RES,VAR,TRMR:CERMET;20K OHM,20%,0.5W,0.197	TK2073	GF06UT2 203 M L20
A1R50	322-3001-00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A1R51	322-3260-00			RES,FXD,FILM:4.99K OHM,1%,0.2W,TC=TOTAPED &	91637	CCF501G49900F
A1R52	322-3001-00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A1R53	322-3001-00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A1R54	322-3260-00			RES,FXD,FILM:4.99K OHM,1%,0.2W,TC=TOTAPED &	91637	CCF501G49900F
A1R55	322-3322-00			RES,FXD:METAL FILM;22.1K OHM,1%,0.2W,TC=100	91637	CCF501G22101F
A1R56	322-3001-00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A1R57	322-3034-00			RES,FXD:METAL FILM;22.1 OHM,1%,0.2W,TC=100 PPM	91637	CCF50-2-G22R10F
A1R58	311-2239-00			RES,VAR,TRMR:CERMET;100K OHM,20%,0.5W,0.197	TK2073	GF06UT2 104 M L

Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A1R59	322-3485-07			RES,FXD,FILM:5K OHM,0.1%,0.2W,TC=T9,SMALL BODY	91637	CCF501C50000B
A1R60	322-3268-00			RES,FXD,FILM:6.04K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G60400F
A1R61	322-3034-00			RES,FXD:METAL FILM:22.1 OHM,1%,0.2W,TC=100 PPM	91637	CCF50-2-G22R10F
A1R62	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A1R63	322-3222-00			RES,FXD:METAL FILM:2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A1R64	322-3385-00			RES,FXD:METAL FILM;100K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10002F
A1R65	322-3385-00			RES,FXD:METAL FILM;100K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10002F
A1R66	322-3452-00			RES,FXD,FILM:499K OHM,1%,0.2W,TC=T0MI,SMALL	91637	CCF50-2-G4993FT
A1R67	322-3001-00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A1R68	322-3121-00			RES,FXD:METAL FILM;178 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G178R0F
A1R69	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A1R70	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A1R71	322-3418-00			RES,FXD:METAL FILM:221K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G22102F
A1R72	322-3001-00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A1R73	322-3001-00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A1R74	322-3260-00			RES,FXD,FILM:4.99K OHM,1%,0.2W,TC=T0TAPED &	91637	CCF501G49900F
A1R75	322-3260-00			RES,FXD,FILM:4.99K OHM,1%,0.2W,TC=T0TAPED &	91637	CCF501G49900F
A1R76	322-3248-00			RES,FXD,FILM:3.74K OHM,1%,0.2W,TC=T0TAPED &	91637	CCF50G37400F
A1R77	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A1R78	322-3248-00			RES,FXD,FILM:3.74K OHM,1%,0.2W,TC=T0TAPED &	91637	CCF50G37400F
A1R79	322-3356-00			RES,FXD,FILM:49.9K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G49901F
A1R80	322-3222-00			RES,FXD:METAL FILM:2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A1R81	322-3121-00			RES,FXD:METAL FILM;178 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G178R0F
A1R82	322-3260-00			RES,FXD,FILM:4.99K OHM,1%,0.2W,TC=T0TAPED &	91637	CCF501G49900F
A1R83	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A1R84	322-3315-00			RES,FXD,FILM:18.7K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G18701F
A1R85	322-3385-00			RES,FXD:METAL FILM;100K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10002F
A1R86	308-0793-00			RES,FXD:0.51 OHM,5%,1WTC=150PPM/DEG C,MI	75042	BW20 .51OHM 5PE
A1R87	322-3034-00			RES,FXD:METAL FILM:22.1 OHM,1%,0.2W,TC=100 PPM	91637	CCF50-2-G22R10F
A1R88	322-3222-00			RES,FXD:METAL FILM:2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A1R89	307-0746-00			RES,THERMAL:5 OHM,10%,7A/DEG C	15454	SG200-S STRAI
A1R90	305-0242-00			RES,FXD,CMPSN:2.4K OHM,5%,2W	11502	GF-3 OR GS-3 24
A1R91	306-0104-00			RES,FXD,CMPSN:100K OHM,10%,2W	24546	FP42 OR FP2 100
A1R92	306-0104-00			RES,FXD,CMPSN:100K OHM,10%,2W	24546	FP42 OR FP2 100
A1R93	322-3402-00			RES,FXD:METAL FILM;150K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G15002F
A1R94	322-3402-00			RES,FXD:METAL FILM;150K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G15002F
A1R95	322-3256-00			RES,FXD,FILM:4.53K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50-2-G4531FT
A1R96	322-3356-00			RES,FXD,FILM:49.9K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G49901F
A1R97	322-3222-00			RES,FXD:METAL FILM:2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A1R98	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B

Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A1R99	311-2239-00			RES,VAR,TRMR:CERMET;100K OHM,20%,0.5W,0.197	TK2073	GF06UT2 104 M L
A1R101	322-3068-00			RES,FXD:METAL FILM;49.9 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G49R90F
A1R102	308-0290-00			RES,FXD,WW:8 OHM,5%,5W	91637	CW52-8R000J T/R
A1R103	322-3452-00			RES,FXD,FILM:499K OHM,1%,0.2W,TC=TOMI,SMALL	91637	CCF50-2-G4993FT
A1T1	120-1695-00			TRANSFORMER,PWR:HIGH VOLTAGE,FEEDBACK 3V, RESONANT 231V, 100V 1MA,2750V 3.3MA, 6.3V 86MA	75498	120-1695-00
A1T2	120-1945-00			XFMR,RF:PRI 8UH,2:7,ON-OFF,VERTICALMOUNT,PC MT	0JR03	120-1945-00
A1T3	120-1944-00			TRANSFORMER,RF:PRI 88V,PRI 15V,SEC 40V AT0.385A,5V AT 2A,15V AT 0.80,IDED,PC MOUNT,1.45 X 1.7 X 1.17H	75498	129-2074-EC
A1TP1	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A1TP2	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A1U1	152-0900-00			MODULE,HV:7.5KVAC IN,15KVDC OUT,POTTED MODULE	51406	MSL2556
A1U2	156-0067-00			IC,LINEAR:BIPOLAR,OP-AMP;	01295	UA741CP
A1U3	156-1225-00			IC,LINEAR:BIPOLAR,COMPTR;DUAL,OPEN COLL,300NS	01295	LM393P
A1U4	156-0733-04			IC,DIGITAL:LSTTL,MULTIVIBRATOR	04713	SN74LS221N
A1U5	156-2524-00			IC,LINEAR:BIPOLAR,SW-REGULATOR CONTROLLER; PWM,CURRENT MODE,SINGLE TOTEM POLE OUTPUT	48726	UC3842N
A1VR1	156-1631-01			IC,LINEAR:BIPOLAR,VR:ADJUSTABLE,SHUNT,100MA,2.2%	01295	TL431CLPM
A1VR2	152-0195-00			DIODE,ZENER:5.1V,5%,0.4W	14552	CD332125
A1VR3	152-0195-00			DIODE,ZENER:5.1V,5%,0.4W	14552	CD332125
A1VR4	152-0149-00			DIODE,ZENER:10V,5%,0.4W	04713	1N961BRL
A1VR5	152-0287-00			DIODE,ZENER:110V,5%,0.4W;1N986B		
A1VR6	152-0287-00			DIODE,ZENER:110V,5%,0.4W;1N986B		
A1W1	131-0566-00			BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225L	24546	OMA0207
A1W2	131-0566-00			BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225L	24546	OMA0207
A1W3	131-0566-00			BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225L	24546	OMA0207
A1W4	131-0566-00			BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225L	24546	OMA0207
A2	670-9532-01			CIRCUIT BD ASSY:FRONT PANEL	80009	670953201
A2C355	281-0775-00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2DS115	150-1181-00			DIODE,OPTO:LED:RED,626NM,101 ELEMENTLINEAR	50434	QDSP-8838
A2DS115	131-5251-00			CONN,BOX:PCB:FEMALE,STR,1 X 37,0.1CTR,0.350 H X 0.125 TAIL,30 GOLD	00779	3-534237-5
A2DS215	150-1181-00			DIODE,OPTO:LED:RED,626NM,101 ELEMENTLINEAR	50434	QDSP-8838
A2DS215	131-5251-00			CONN,BOX:PCB:FEMALE,STR,1 X 37,0.1CTR,0.350 H X 0.125 TAIL,30 GOLD	00779	3-534237-5
A2DS315	150-1181-00			DIODE,OPTO:LED:RED,626NM,101 ELEMENTLINEAR	50434	QDSP-8838
A2DS315	131-5251-00			CONN,BOX:PCB:FEMALE,STR,1 X 37,0.1CTR,0.350 H X 0.125 TAIL,30 GOLD	00779	3-534237-5
A2DS412	150-1291-00			LED ASSEMBLY:DIRECTIONAL;3 IN 5 GREEN	TK1155	150-1291-00
A2DS416	-----			(PART OF A2DS412)		
A2DS418	-----			(PART OF A2DS412)		



Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A2DS432	150-1286-00			DIODE,OPTO:LED;ASSEMBLY,GRN,150-1109-00 IN	TK1155	150-1286-00
A2DS434	-----			(PART OF A2DS432)		
A2R423	315-0121-00			RES,FXD,FILM:120 OHM,5%,0.25W	TK1727	SFR25 2322-181-
A2R424	315-0121-00			RES,FXD,FILM:120 OHM,5%,0.25W	TK1727	SFR25 2322-181-
A2R425	315-0121-00			RES,FXD,FILM:120 OHM,5%,0.25W	TK1727	SFR25 2322-181-
A2R437	315-0121-00			RES,FXD,FILM:120 OHM,5%,0.25W	TK1727	SFR25 2322-181-
A2R438	315-0121-00			RES,FXD,FILM:120 OHM,5%,0.25W	TK1727	SFR25 2322-181-
A2R439	322-3258-00			RES,FXD:METAL FILM:4.75K OHM,1%,0.2W,TC=100	56845	CCF50-2-G4751FT
A2R451	321-0274-00			RES,FXD,FILM:6.98K OHM,1%,0.125W,TC=T0MI	TK1727	2322-151-6K98
A2R544	311-2332-00			RES,VAR,NONWW:SPST,DOUBLE DETENT,10K OHM,20%,0.25W	12697	CM45225
				*ATTACHED PARTS*		
	210-1435-00			WASHER,FLAT:0.254 X 0.311 X 0.016,SST	86928	5710-56-15P
	366-1146-00			KNOB:GY,0.127 ID X 0.392 OD X 0.466 H	OJR05	ORDER BY DESC
				*END ATTACHED PARTS*		
A2S516	260-2330-00			SWITCH,ROTARY:3 POSITION	09353	MA03L1NCG
				*ATTACHED PARTS*		
	366-1146-00			KNOB:GY,0.127 ID X 0.392 OD X 0.466 H	OJR05	ORDER BY DESC
	214-4725-00			SPRING:COMPRESSION SPRING,0.026,302 STAINLESS STEEL,0.313,+/-,0.0A0	8X345	214-4725-00
				*END ATTACHED PARTS*		
A2S525	260-2273-00			SWITCH,PUSH:SPST,LOW PROFILE,MOMENTARY	71590	ORDER BY DESC
A2S534	260-2273-00			SWITCH,PUSH:SPST,LOW PROFILE,MOMENTARY	71590	ORDER BY DESC
A2U320	156-0111-02			IC,DIGITAL:TTL,DEMUX/DECODER;BCD TO DECIMAL	01295	SN74145N
A2U332	156-0111-02			IC,DIGITAL:TTL,DEMUX/DECODER;BCD TO DECIMAL	01295	SN74145N
A2U347	156-0111-02			IC,DIGITAL:TTL,DEMUX/DECODER;BCD TO DECIMAL	01295	SN74145N
A3	671-2383-04	B050000	B052828	CIRCUIT BD ASSY:MAIN (760A ONLY)	80009	671238304
	671-2383-05	B052829		CIRCUIT BD ASSY:MAIN (760A ONLY)	80009	671238305
A3	671-1469-04	B030000	B030174	CIRCUIT BD ASSY:MAIN (760D ONLY)	80009	671146904
A3	671-1469-05	B030175		CIRCUIT BD ASSY:MAIN (760D ONLY)	80009	671146905
A3	671-1472-04	B030000	B030209	CIRCUIT BD ASSY:MAIN (760N ONLY)	80009	671147204
A3	671-1472-05	B030210		CIRCUIT BD ASSY:MAIN (760N ONLY)	80009	671147205
				*ATTACHED PARTS*		
	358-0723-00			STRAIN RLF,CA:1.9 L X 0.24 W X 0.56 HIGH,PLASTIC	53387	3448-3034
				*END ATTACHED PARTS*		
A3C125	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C127	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA

Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A3C132	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C145	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C148	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C149	283-0220-00			CAP,FXD,CERAMIC:MLC:0.01UF,20%,50V,X7R,0.20	04222	SR155C103MAA
A3C165	290-0782-00			CAP,FXD,ALUM:4.7UF,20%,35V,ESR=42.33 OHM (120HZ,20C)	55680	UVV1V4R7MAA
A3C172	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C179	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C187	281-0765-00			CAP,FXD,CER DI:100PF,5%,100V	04222	SA102A101JAA
A3C190	290-0990-01			CAP,FXD,ELCTLT:10UF,20%,50VTAPE & REEL	62643	511D296
A3C206	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C211	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C215	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C251	290-0183-00			CAP,FXD,TANT:DRY:1UF,10%,35V,TANT OXD,0.151 X 0.317	12954	AT513A105K035N
A3C254	290-0536-00			CAP,FXD,ELCTLT:10UF,20%,25V TANTALUM (760A ONLY)	D5243	ETP-3F 10UF 25V
A3C254	290-1311-00			CAP,FXD,ALUM:10UF,20%,50V,ESR=1.4 OHM (100KHZ,20C),5X11MM,105C,5000HRS (760D AND 760N ONLY)	55680	UPL1H100MDH1TD
A3C255	290-0267-00			CAP,FXD,TANT:DRY:1UF,20%,35V,TANT OXD,0.151 X 0.317	2N936	173D105X0035V
A3C258	290-0536-04			CAP,FXD,ELCTLT:10UF,20%,25V (760A ONLY)	2N936	199D106X0025CA1
A3C258	290-0536-00			CAP,FXD,ELCTLT:10UF,20%,25V TANTALUM (760D AND 760N ONLY)	D5243	ETP-3F 10UF 25V
A3C261	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C262	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C263	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C267	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C268	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C279	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C287	281-0765-00			CAP,FXD,CER DI:100PF,5%,100V	04222	SA102A101JAA
A3C290	290-0990-01			CAP,FXD,ELCTLT:10UF,20%,50VTAPE & REEL	62643	511D296
A3C324	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C328	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C332	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C333	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C338	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C343	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C344	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C349	290-0990-01			CAP,FXD,ELCTLT:10UF,20%,50VTAPE & REEL	62643	511D296
A3C361	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C368	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C369	283-0164-00			CAP,FXD,CERAMIC:MLC:2.2UF,20%,25V,Z5U,0.40X	04222	SR403E225MAA

Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A3C379	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C387	281-0765-00			CAP,FXD,CER DI:100PF,5%,100V	04222	SA102A101JAA
A3C390	290-0990-01			CAP,FXD,ELCTLT:10UF,20%,50VTAPE & REEL	62643	511D296
A3C406	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C411	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C415	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C436	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C445	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C448	285-0905-00			CAP,FXD,PLSTC:0.33UF,5%,50V	84411	TEK34 .33 5 50
A3C450	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C453	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C457	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C458	290-0782-00			CAP,FXD,ALUM:4.7UF,20%,35V,ESR=42.33 OHM (120HZ,20C)	55680	UVX1V4R7MAA
A3C459	290-0782-00			CAP,FXD,ALUM:4.7UF,20%,35V,ESR=42.33 OHM (120HZ,20C)	55680	UVX1V4R7MAA
A3C461	283-0164-00			CAP,FXD,CERAMIC:MLC:2.2UF,20%,25V,Z5U,0.40X	04222	SR403E225MAA
A3C462	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C468	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C469	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C479	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C487	281-0765-00			CAP,FXD,CER DI:100PF,5%,100V	04222	SA102A101JAA
A3C490	290-0990-01			CAP,FXD,ELCTLT:10UF,20%,50VTAPE & REEL	62643	511D296
A3C502	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C510	290-0973-00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A3C523	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C527	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C530	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C535	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C536	290-0297-00			CAP,FXD,ELCTLT:39UF,10%,10V	12954	D39B10K1
A3C538	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C543	290-0297-00			CAP,FXD,ELCTLT:39UF,10%,10V	12954	D39B10K1
A3C545	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C546	281-0810-00			CAP,FXD,CERAMIC:MLC:5.6PF,+/-0.5PF,100V,0.100 X 0.170 (760A ONLY)	04222	SA102A5R6DAA
A3C547	285-1349-00			CAP,FXD,MTLZD:0.1UF,5%,63VDC	TK1913	MKS2 .1/63/5
A3C547	285-0808-00			CAP,FXD,PLSTC:0.1UF,10%,50V (760A ONLY)	84411	TEK34-1049R5
A3C548	290-0990-01			CAP,FXD,ELCTLT:10UF,20%,50VTAPE & REEL	62643	511D296
A3C548	290-1313-00			CAP,FXD,ALUM:10UF,20%,50V,8 X 11MM;105 DEG,RDL,T&A	55680	UET1H100MPH1TA
A3C554	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C556	290-0974-03			CAP,FXD,ELCTLT:10UF,20%,60VDC	55680	UVX1H100MAA1TD
A3C557	290-0974-03			CAP,FXD,ELCTLT:10UF,20%,60VDC	55680	UVX1H100MAA1TD

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Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A3C562	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C570	290-0782-00			CAP,FXD,ALUM:4.7UF,20%,35V,ESR=42.33 OHM (120HZ,20C)	55680	UVX1V4R7MAA
A3C571	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C573	290-0488-00			CAP,FXD,ELCTLT:2.2UF,10%,20V	2N936	150D225X9020A2
A3C574	290-0488-00			CAP,FXD,ELCTLT:2.2UF,10%,20V	2N936	150D225X9020A2
A3C575	290-0183-00			CAP,FXD,TANT:DRY:1UF,10%,35V,TANT OXD,0.151 X 0.317	12954	AT513A105K035N
A3C578	290-0512-00			CAP,FXD,ELCTLT:2.2UF,20%,15V	2N936	199D226X0015DA1
A3C580	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C581	290-0512-00			CAP,FXD,ELCTLT:2.2UF,20%,15V	2N936	199D226X0015DA1
A3C584	290-0488-00			CAP,FXD,ELCTLT:2.2UF,10%,20V	2N936	150D225X9020A2
A3C586	290-0183-00			CAP,FXD,TANT:DRY:1UF,10%,35V,TANT OXD,0.151 X 0.317	12954	AT513A105K035N
A3C587	290-0488-00			CAP,FXD,ELCTLT:2.2UF,10%,20V	2N936	150D225X9020A2
A3C588	290-0782-00			CAP,FXD,ALUM:4.7UF,20%,35V,ESR=42.33 OHM (120HZ,20C)	55680	UVX1V4R7MAA
A3C589	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C612	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C616	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C618	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C646	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C649	285-1349-00			CAP,FXD,MTLZD:0.1UF,5%,63VDC	TK1913	MKS2.1/63/5
A3C650	285-0905-00			CAP,FXD,PLSTC:0.33UF,5%,50V	84411	TEK34.33 5 50
A3C660	281-0765-00			CAP,FXD,CER DI:100PF,5%,100V	04222	SA102A101JAA
A3C663	290-0990-01			CAP,FXD,ELCTLT:10UF,20%,50VTAPE & REEL	62643	511D296
A3C670	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C690	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C695	290-0488-00			CAP,FXD,ELCTLT:2.2UF,10%,20V	2N936	150D225X9020A2
A3C708	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C711	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C712	281-0812-00			CAP,FXD,CERAMIC:MLC:1000PF,10%,100V,0.100 X	04222	SA101C102KAA
A3C715	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C718	283-0142-00			CAP,FXD,CER DI:0.0027UF,5%,200V	TK2058	CK45YE2D272J-A
A3C724	290-0297-00			CAP,FXD,ELCTLT:39UF,10%,10V	12954	D39B10K1
A3C725	290-0297-00			CAP,FXD,ELCTLT:39UF,10%,10V	12954	D39B10K1
A3C728	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C731	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C735	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C738	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C744	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C745	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C746	281-0810-00			CAP,FXD,CERAMIC:MLC:5.6PF,+/-0.5PF,100V,0.100 X 0.170 (760A ONLY)	04222	SA102A5R6DAA
A3C748	281-0775-00			CAP,FXD,CERAMIC:MLC:0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA

Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A3C753	281-0775-00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C754	281-0775-00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C755	290-0990-01			CAP,FXD,ELCTLT:10UF,20%,50VTAPE & REEL	62643	511D296
A3C758	281-0765-00			CAP,FXD,CER DI:100PF,5%,100V	04222	SA102A101JAA
A3C764	290-0990-01			CAP,FXD,ELCTLT:10UF,20%,50VTAPE & REEL	62643	511D296
A3C768	290-0488-00			CAP,FXD,ELCTLT:2.2UF,10%,20V	2N936	150D225X9020A2
A3C772	290-0512-00			CAP,FXD,ELCTLT:22UF,20%,15V	2N936	199D226X0015DA1
A3C776	290-0944-01			CAP,FXD,ELCTLT:220UF,20%,10V,LEADSPACING 0.2	0H1N5	CEBSM1C221M-T4
A3C778	283-0623-00			CAP,FXD,MICA DI:1200PF,1%,100V	TK0891	RDM19FD122F03
A3C785	290-0512-00			CAP,FXD,ELCTLT:22UF,20%,15V	2N936	199D226X0015DA1
A3C794	281-0775-00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C815	283-0728-00			CAP,FXD,MICA DI:120PF,1%,500V	TK0891	RDM15FD121F03
A3C818	281-0775-00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C819	281-0773-00			CAP,FXD,CERAMIC:MLC;0.01UF,10%,100V	TK1743	CGB103KEX
A3C823	281-0775-00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C825	281-0775-00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C841	290-0297-00			CAP,FXD,ELCTLT:39UF,10%,10V	12954	D39B10K1
A3C853	281-0775-00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C854	281-0810-00			CAP,FXD,CERAMIC:MLC;5.6PF,+/-0.5PF,100V,0.100 X 0.170 (760A ONLY)	04222	SA102A5R6DAA
A3C855	285-1349-00			CAP,FXD,MTLZD:0.1UF,5%,63VDC (760A ONLY)	TK1913	MKS2.1/63/5
A3C858	285-0905-00			CAP,FXD,PLSTC:0.33UF,5%,50V	84411	TEK34.33 5 50
A3C870	283-0623-00			CAP,FXD,MICA DI:1200PF,1%,100V	TK0891	RDM19FD122F03
A3C872	283-0728-00			CAP,FXD,MICA DI:120PF,1%,500V	TK0891	RDM15FD121F03
A3C873	281-0775-00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C874	281-0775-00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C876	283-0789-00			CAP,FXD,MICA DI:600PF,1%,300V,0.41 X 0.48	TK0891	RDM15FC601F03
A3C880	281-0775-00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C881	281-0775-00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C890	283-0623-00			CAP,FXD,MICA DI:1200PF,1%,100V	TK0891	RDM19FD122F03
A3C891	283-0728-00			CAP,FXD,MICA DI:120PF,1%,500V	TK0891	RDM15FD121F03
A3C894	281-0775-00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C895	283-0789-00			CAP,FXD,MICA DI:600PF,1%,300V,0.41 X 0.48	TK0891	RDM15FC601F03
A3C897	283-0623-00			CAP,FXD,MICA DI:1200PF,1%,100V	TK0891	RDM19FD122F03
A3CR186	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR187	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR254	152-0066-00			DIODE,RECT:400V,1A,IFSM=30A,1.2VF,2US	0LUA3	1N5060
A3CR255	152-0066-00			DIODE,RECT:400V,1A,IFSM=30A,1.2VF,2US	0LUA3	1N5060
A3CR286	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR287	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427

Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A3CR356	152-0066-00			DIODE,RECT:400V,1A,IFSM=30A,1.2VF,2US	0LUA3	1N5060
A3CR386	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR387	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR442	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR443	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR456	152-0066-00			DIODE,RECT:400V,1A,IFSM=30A,1.2VF,2US	0LUA3	1N5060
A3CR458	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR459	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR486	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR487	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR536	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR542	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR543	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR545	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR546	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR558	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR559	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR563	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR564	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR565	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR566	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR616	152-0400-00			DIODE,RECT:FAST RCVR;400V,1A,200NS	0LUA3	1N4936
A3CR638	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR642	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR643	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR658	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR659	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR742	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR743	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR746	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR747	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR757	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR758	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR780	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR790	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR791	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR846	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR850	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR851	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR852	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427

Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A3CR853	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR854	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR855	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR876	152-0141-02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3J115	131-3363-00			CONN,HDR:PCB;MALE,RTANG,2 X 17,0.1CTR,0.33D	53387	2534-5002UB
A3J153	175-9797-00			CA ASSY,SP:FLAT FLEX;FLX,10,27 AWG,2.5 L,1X10,BOX X STR,SLDR TAB,CONN NON PLZ	TK2469	175-9797-00
A3J185	131-4750-00			CONN,HDR:PCB;MALE,STR,1 X 6,0.100 CTR,0.230 MLG X 0.110 TAIL,30 GOLD	53387	2406-6112TB
A3J186	131-4750-00			CONN,HDR:PCB;MALE,STR,1 X 6,0.100 CTR,0.230 MLG X 0.110 TAIL,30 GOLD	53387	2406-6112TB
A3J191	131-4530-00			CONN,HDR:PCB;MALE,STR,1 X 3,0.1 CTR,0.230MLG X 0.120 TAIL,30GOLD,BD RETENTION	00779	104344-1
A3J192	131-4530-00			CONN,HDR:PCB;MALE,STR,1 X 3,0.1 CTR,0.230MLG X 0.120 TAIL,30GOLD,BD RETENTION	00779	104344-1
A3J198	131-4530-00			CONN,HDR:PCB;MALE,STR,1 X 3,0.1 CTR,0.230MLG X 0.120 TAIL,30GOLD,BD RETENTION	00779	104344-1
A3J273	131-4530-00			CONN,HDR:PCB;MALE,STR,1 X 3,0.1 CTR,0.230 MLG X 0.120 TAIL,30GOLD,BD RETENTION	00779	104344-1
A3J373	131-4530-00			CONN,HDR:PCB;MALE,STR,1 X 3,0.1 CTR,0.230 MLG X 0.120 TAIL,30GOLD,BD RETENTION	00779	104344-1
A3J385	131-4750-00			CONN,HDR:PCB;MALE,STR,1 X 6,0.100 CTR,0.230 MLG X 0.110 TAIL,30 GOLD	53387	2406-6112TB
A3J386	131-4750-00			CONN,HDR:PCB;MALE,STR,1 X 6,0.100 CTR,0.230 MLG X 0.110 TAIL,30 GOLD	53387	2406-6112TB
A3J391	131-4530-00			CONN,HDR:PCB;MALE,STR,1 X 3,0.1 CTR,0.230 MLG X 0.120 TAIL,30GOLD,BD RETENTION	00779	104344-1
A3J392	131-4530-00			CONN,HDR:PCB;MALE,STR,1 X 3,0.1 CTR,0.230 MLG X 0.120 TAIL,30GOLD,BD RETENTION	00779	104344-1
A3J398	131-4530-00			CONN,HDR:PCB;MALE,STR,1 X 3,0.1 CTR,0.230 MLG X 0.120 TAIL,30GOLD,BD RETENTION	00779	104344-1
A3J413	131-4421-00			CONN,HDR:PCB;MALE,STR,2 X 10,0.1 CTR,0.235	53387	2420-6142TB
A3J419	131-3766-00			CONN,HDR:PCB;MALE,RTANG,1 X 2,0.1 CTR,0.235 MLG X 0.110 TAIL,30 GOLD,0.025 SQ	00779	87232-2
A3J657	131-4750-00			CONN,HDR:PCB;MALE,STR,1 X 6,0.100 CTR,0.230 MLG X 0.110 TAIL,30 GOLD	53387	2406-6112TB
A3J658	131-4750-00			CONN,HDR:PCB;MALE,STR,1 X 6,0.100 CTR,0.230 MLG X 0.110 TAIL,30 GOLD	53387	2406-6112TB
A3J663	131-4530-00			CONN,HDR:PCB;MALE,STR,1 X 3,0.1 CTR,0.230 MLG X 0.120 TAIL,30GOLD,BD RETENTION	00779	104344-1
A3J664	131-4530-00			CONN,HDR:PCB;MALE,STR,1 X 3,0.1 CTR,0.230 MLG X 0.120 TAIL,30GOLD,BD RETENTION	00779	104344-1
A3J668	131-4530-00			CONN,HDR:PCB;MALE,STR,1 X 3,0.1 CTR,0.230 MLG X 0.120 TAIL,30GOLD,BD RETENTION	00779	104344-1
A3L513	108-1262-00			INDUCTOR,FXD:POWER;100UH,10%,I<0.75A,RDC<0.23 OHM,Q>15,SRF>5.4MHZ,BOBBIN CORE	TK2058	TSL0807-101KR75
A3P185	131-3199-00			CONN,SHUNT,SHUNT;FEMALE,STR,1 X 2,0.1 CTR,0.2 H,LOW PROFILE,JUMPER	22526	68786-202

## Replaceable Electrical Parts

### Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A3P192	131-3199-00			CONN,SHUNT:SHUNT;FEMALE,STR,1 X 2,0.1 CTR, 0.2 H,LOW PROFILE,JUMPER	22526	68786-202
A3P273	131-3199-00			CONN,SHUNT:SHUNT;FEMALE,STR,1 X 2,0.1 CTR, 0.2 H,LOW PROFILE,JUMPER	22526	68786-202
A3P373	131-3199-00			CONN,SHUNT:SHUNT;FEMALE,STR,1 X 2,0.1 CTR, 0.2 H,LOW PROFILE,JUMPER	22526	68786-202
A3P385	131-3199-00			CONN,SHUNT:SHUNT;FEMALE,STR,1 X 2,0.1 CTR, 0.2 H,LOW PROFILE,JUMPER	22526	68786-202
A3P392	131-3199-00			CONN,SHUNT:SHUNT;FEMALE,STR,1 X 2,0.1 CTR, 0.2 H,LOW PROFILE,JUMPER	22526	68786-202
A3P657	131-3199-00			CONN,SHUNT:SHUNT;FEMALE,STR,1 X 2,0.1 CTR, 0.2 H,LOW PROFILE,JUMPER	22526	68786-202
A3P664	131-3199-00			CONN,SHUNT:SHUNT;FEMALE,STR,1 X 2,0.1 CTR, 0.2 H,LOW PROFILE,JUMPER	22526	68786-202
A3Q507	151-0190-00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,30MHZ,0AMPL	0JR04	2N3904
A3Q603	151-0190-00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPL	0JR04	2N3904
A3Q604	151-0188-00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,250MHZ,AMPL	0JR04	2N3906
A3Q620	151-0710-00			XSTR,SIG:BIPOLAR,NPN;40V,1.0A,50MHZ,AMPLIFIER	04713	MPSW01A
A3Q695	151-0190-00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPL	0JR04	2N3904
A3Q761	151-0190-00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPL	0JR04	2N3904
A3Q766	151-0190-00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPL	0JR04	2N3904
A3Q769	151-0190-00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPL	0JR04	2N3904
A3Q776	151-0190-00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPL	0JR04	2N3904
A3Q795	151-0190-00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPL	0JR04	2N3904
A3Q861	151-0347-00			XSTR,SIG:BIPOLAR,NPN;160V,600MA,10MHZ,0AMPL	0JR04	2N5551
A3Q864	151-0347-00			XSTR,SIG:BIPOLAR,NPN;160V,600MA,100MHZ,AMPL	0JR04	2N5551
A3Q865	151-0190-00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPL	0JR04	2N3904
A3Q883	151-0190-00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPL	0JR04	2N3904
A3Q884	151-0347-00			XSTR,SIG:BIPOLAR,NPN;160V,600MA,100MHZ,AMPL	0JR04	2N5551
A3Q885	151-0190-00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPL	0JR04	2N3904
A3Q886	151-0347-00			XSTR,SIG:BIPOLAR,NPN;160V,600MA,100MHZ,AMPL	0JR04	2N5551
A3R122	322-3001-00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A3R123	322-3001-00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A3R124	322-3001-00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A3R155	311-2230-00	B050000	B052828	RES,VAR,TRMR:CERMET;500 OHM,20%,0.5W,0.197 SQ, TOP ADJUST (760A ONLY)	TK2073	GF06UT2 501 M L
A3R155	311-2231-00	B052829		RES,VAR,TRMR:CERMET,1K OHM,20%,0.5W,0.197 SQ, TOP ADJUST, T&R (760A ONLY)	TK2073	GF06UT2 102 M L20
A3R155	311-2230-00	B030000	B030174	RES,VAR,TRMR:CERMET;500 OHM,20%,0.5W,0.197 SQ, TOP ADJUST (760D ONLY)	TK2073	GF06UT2 501 M L
A3R155	311-2231-00	B030175		RES,VAR,TRMR:CERMET,1K OHM,20%,0.5W,0.197 SQ, TOP ADJUST, T&R (760D ONLY)	TK2073	GF06UT2 102 M L20



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Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A3R155	311-2230-00	B030000	B030209	RES,VAR,TRMR:CERMET;500 OHM,20%,0.5W,0.197 SQ,TOP ADJUST (760N ONLY)	TK2073	GF06UT2 501 M L
A3R155	311-2231-00	B030210		RES,VAR,TRMR:CERMET,1K OHM,20%,0.5W,0.197 SQ,TOP ADJUST,T&R (760N ONLY)	TK2073	GF06UT2 102 M L20
A3R156	322-3258-00			RES,FXD:METAL FILM;4.75K OHM,1%,0.2W,TC=100	56845	CCF50-2-G4751FT
A3R157	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R158	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R168	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R169	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R170	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R174	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A3R175	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A3R176	321-0816-07			RES,FXD,FILM:5K OHM,0.1%,0.125W,TC=T9MI	TK1727	MPR24-2322-141-
A3R177	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A3R180	322-3373-00			RES,FXD,FILM:75K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G75001F
A3R181	321-0748-06			RES,FXD,FILM:4.95K OHM,0.25%,0.125W,TC=T9	19701	5033RE4K950C
A3R182	322-3237-00			RES,FXD,FILM:2.87K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G28700F
A3R183	322-3373-00			RES,FXD,FILM:75K OHM,1%,0.2W,TC=T0MI,SMALL BODY (760A ONLY)	91637	CCF501G75001F
A3R183	322-3254-00			RES,FXD,FILM:4.32K OHM,1%,0.2W,TC=T0MI,SMALL BODY (760D ONLY)	91637	CCF502G4321FT
A3R183	322-3286-00			RES,FXD,FILM:9.31K OHM,1%,0.2W,TC=T0MI,SMALL BODY (760N ONLY)	91637	CCF501G93100F
A3R187	321-1612-07			RES,FXD,FILM:4.455K OHM,0.1%,0.125W,TC=T9	19701	5033RE4K455B
A3R188	321-0603-07			RES,FXD,FILM:15K OHM,0.1%,0.125W,TC=T9MI	19701	5033RE15K00B
A3R195	323-0114-00			RES,FXD,FILM:150 OHM,1%,0.5W,TC=T0	91637	CMF65116G150R0F
A3R196	323-0172-00			RES,FXD,FILM:604 OHM,1%,0.5W,TC=T0	91637	CMF65116G604R0F
A3R247	315-0275-00			RES,FXD,FILM:2.7M OHM,5%,0.25W	TK1727	SFR25 2322-181-
A3R248	315-0755-00			RES,FXD,FILM:7.5M OHM,5%,0.25W	19701	5043CX7M500J
A3R252	311-2239-00			RES,VAR,TRMR:CERMET;100K OHM,20%,0.5W,0.197	TK2073	GF06UT2 104 M L
A3R253	311-2239-00			RES,VAR,TRMR:CERMET;100K OHM,20%,0.5W,0.197	TK2073	GF06UT2 104 M L
A3R255	322-3350-00			RES,FXD,FILM:43.2K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF502G4322FT
A3R262	311-2230-00			RES,VAR,TRMR:CERMET;500 OHM,20%,0.5W,0.197 SQ,TOP ADJUST	TK2073	GF06UT2 501 M L
A3R263	322-3265-00			RES,FXD:METAL FILM;5.62K OHM,1%,0.2W,TC=100	91637	CCF501G56200F
A3R264	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R265	315-0302-00			RES,FXD,FILM:3K OHM,5%,0.25W	TK1727	SFR25 2322-181-
A3R274	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A3R275	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A3R276	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A3R277	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F

Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A3R280	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A3R281	322-3318-00			RES,FXD,FILM:MET FILM;20K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20001F
A3R282	322-3373-00			RES,FXD,FILM:75K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G75001F
A3R287	321-1612-07			RES,FXD,FILM:4.455K OHM,0.1%,0.125W,TC=T9	19701	5033RE4K455B
A3R288	321-0603-07			RES,FXD,FILM:15K OHM,0.1%,0.125W,TC=T9MI	19701	5033RE15K00B
A3R306	322-3001-00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A3R311	322-3001-00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A3R315	322-3001-00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A3R319	322-3001-00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A3R320	322-3001-00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A3R321	322-3001-00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A3R336	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R337	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R344	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R347	311-2230-00			RES,VAR,TRMR:CERMET;500 OHM,20%,0.5W,0.197 SQ,TOP ADJUST	TK2073	GF06UT2 501 M L
A3R351	311-2236-00			RES,VAR,TRMR:CERMET;20K OHM,20%,0.5W,0.197 SQ,SIDE ADJUST	TK2073	GF06UT2 203 M L
A3R352	311-2236-00			RES,VAR,TRMR:CERMET;20K OHM,20%,0.5W,0.197 SQ,SIDE ADJUST	TK2073	GF06UT2 203 M L
A3R353	322-3481-00			RES,FXD,FILM:1M OHM.1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G10003F
A3R354	322-3481-00			RES,FXD,FILM:1M OHM.1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G10003F
A3R355	322-3222-00			RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R356	322-3350-00			RES,FXD,FILM:43.2K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF502G4322FT
A3R357	322-3172-00			RES,FXD,FILM:604 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G604ROF
A3R358	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R359	315-0205-00			RES,FXD,FILM:2M OHM,5%,0.25W	TK1727	SFR25 2322-181-
A3R362	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R363	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R364	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R366	322-3385-00			RES,FXD:METAL FILM;100K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10002F
A3R370	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R371	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R373	321-0816-07			RES,FXD,FILM:5K OHM,0.1%,0.125W,TC=T9MI	TK1727	MPR24-2322-141-
A3R374	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A3R375	321-0816-07			RES,FXD,FILM:5K OHM,0.1%,0.125W,TC=T9MI	TK1727	MPR24-2322-141-
A3R376	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A3R380	322-3373-00			RES,FXD,FILM:75K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G75001F
A3R381	321-0748-06			RES,FXD,FILM:4.95K OHM,0.25%,0.125W,TC=T9	19701	5033RE4K950C
A3R382	322-3237-00			RES,FXD,FILM:2.87K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G28700F
A3R383	322-3373-00			RES,FXD,FILM:75K OHM,1%,0.2W,TC=T0MI,SMALL BODY (760A ONLY)	91637	CCF501G75001F

Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A3R383	322-3254-00			RES,FXD,FILM:4.32K OHM,1%,0.2W,TC=T0MI,SMALL BODY (760D ONLY)	91637	CCF502G4321FT
A3R383	322-3286-00			RES,FXD,FILM:9.31K OHM,1%,0.2W,TC=T0MI,SMALL BODY (760N ONLY)	91637	CCF501G93100F
A3R387	321-1612-07			RES,FXD,FILM:4.455K OHM,0.1%,0.125W,TC=T9	19701	5033RE4K455B
A3R388	321-0603-07			RES,FXD,FILM:15K OHM,0.1%,0.125W,TC=T9MI	19701	5033RE15K00B
A3R400	311-2269-00			RES,VAR,NONWWW:TRMR,20K OHM,20%,0.5WLINEAR,MI	TK2073	GF06VT2 203 M L
A3R423	307-0446-00			RES NTWK,FXD,FI:10K OHM,20%,(9)RES	11236	750-101-R10K
A3R441	322-3289-00			RES,FXD:METAL FILM:10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R443	322-3289-00			RES,FXD:METAL FILM:10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R446	322-3258-00			RES,FXD:METAL FILM:4.75K OHM,1%,0.2W,TC=100	56845	CCF50-2-G4751FT
A3R447	321-1720-00			RES,FXD,FILM:3.24M OHM,1%,0.125W,TC=T0MI	64537	PME55 3.24 MEGO
A3R451	322-3222-00			RES,FXD:METAL FILM:2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R455	322-3258-00			RES,FXD:METAL FILM:4.75K OHM,1%,0.2W,TC=100	56845	CCF50-2-G4751FT
A3R456	322-3172-00			RES,FXD,FILM:604 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G604ROF
A3R458	322-3289-00			RES,FXD:METAL FILM:10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R460	322-3289-00			RES,FXD:METAL FILM:10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R463	311-2236-00			RES,VAR,TRMR:CERMET;20K OHM,20%,0.5W,0.197 SQ,SIDE ADJUST	TK2073	GF06UT2 203 M L
A3R466	322-3289-00			RES,FXD:METAL FILM:10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R467	322-3289-00			RES,FXD:METAL FILM:10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R469	322-3289-00			RES,FXD:METAL FILM:10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R470	322-3289-00			RES,FXD:METAL FILM:10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R471	322-3289-00			RES,FXD:METAL FILM:10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R472	322-3289-00			RES,FXD:METAL FILM:10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R473	322-3289-00			RES,FXD:METAL FILM:10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R474	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A3R475	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A3R476	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A3R477	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A3R478	322-3289-00			RES,FXD:METAL FILM:10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R480	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A3R481	322-3318-00			RES,FXD,FILM:MET FILM:20K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20001F
A3R482	322-3373-00			RES,FXD,FILM:75K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G75001F
A3R487	321-1612-07			RES,FXD,FILM:4.455K OHM,0.1%,0.125W,TC=T9	19701	5033RE4K455B
A3R488	321-0603-07			RES,FXD,FILM:15K OHM,0.1%,0.125W,TC=T9MI	19701	5033RE15K00B
A3R495	323-0114-00			RES,FXD,FILM:150 OHM,1%,0.5W,TC=T0	91637	CMF65116G150ROF
A3R496	323-0172-00			RES,FXD,FILM:604 OHM,1%,0.5W,TC=T0	91637	CMF65116G604ROF
A3R520	311-2212-01			RES,VAR,NONWWW:CKT BD,20K OHM,10%,0.25WLINEAR	12697	CM45228
A3R520	366-1701-01			KNOB:GY,0.127 ID X 0.392 OD X 0.4 H	80009	366170101
A3R541	321-0418-00			RES,FXD,FILM:221K OHM,1%,0.125W,TC=T0MI	19701	5043ED221K0F
A3R543	322-3289-00			RES,FXD:METAL FILM:10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F

## Replaceable Electrical Parts

### Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A3R546	311-2230-00			RES,VAR,TRMR:CERMET;500 OHM,20%,0.5W,0.197 SQ, TOP ADJUST	TK2073	GF06UT2 501 M L
A3R547	322-3282-00			RES,FXD,FILM:8.45K OHM,1%,0.2W,TC=TOMI,SMALL BODY	91637	CCF501G84500F
A3R548	322-3314-00			RES,FXD:METAL FILM;18.2K OHM,1%,0.2W,TC=100 (760A ONLY)	91637	CCF501G18201F
A3R550	322-3350-00			RES,FXD,FILM:43.2K OHM,1%,0.2W,TC=TOMI,SMALL BODY	91637	CCF502G4322FT
A3R551	322-3222-00			RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R553	311-2236-00			RES,VAR,TRMR:CERMET;20K OHM,20%,0.5W,0.197 SQ,SIDE ADJUST	TK2073	GF06UT2 203 M L
A3R554	322-3481-00			RES,FXD,FILM:1M OHM.1%,0.2W,TC=TOMI,SMALL BODY	91637	CCF501G10003F
A3R556	311-2230-00	B050000	B052828	RES,VAR,TRMR:CERMET;500 OHM,20%,0.5W,0.197 SQ, TOP ADJUST (760A ONLY)	TK2073	GF06UT2 501 M L
A3R556	311-2231-00	B052829		RES,VAR,TRMR:CERMET,1K OHM,20%,0.5W,0.197 SQ, TOP ADJUST,T&R (760A ONLY)	TK2073	GF06UT2 102 M L20
A3R556	311-2230-00	B030000	B030174	RES,VAR,TRMR:CERMET;500 OHM,20%,0.5W,0.197 SQ, TOP ADJUST (760D ONLY)	TK2073	GF06UT2 501 M L
A3R556	311-2231-00	B030175		RES,VAR,TRMR:CERMET,1K OHM,20%,0.5W,0.197 SQ, TOP ADJUST,T&R (760D ONLY)	TK2073	GF06UT2 102 M L20
A3R556	311-2230-00	B030000	B030209	RES,VAR,TRMR:CERMET;500 OHM,20%,0.5W,0.197 SQ, TOP ADJUST (760N ONLY)	TK2073	GF06UT2 501 M L
A3R556	311-2231-00	B030210		RES,VAR,TRMR:CERMET,1K OHM,20%,0.5W,0.197 SQ, TOP ADJUST,T&R (760N ONLY)	TK2073	GF06UT2 102 M L20
A3R558	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R560	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R562	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R563	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R564	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R565	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R566	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R568	322-3385-00			RES,FXD:METAL FILM;100K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10002F
A3R576	322-3469-00			RES,FXD,FILM:750K OHM,1%,0.2W,TC=TOMI,SMALL	91637	CCF501G75002F
A3R577	322-3306-00			RES,FXD:METAL FILM;15K OHM,1%,0.2W,TC=100 PPM	91637	CCF50-2-G1502F
A3R580	311-2232-00			RES,VAR,TRMR:CERMET;2K OHM,20%,0.5W,0.197 SQ, TOP ADJUST	TK2073	GF06UT2 202 M L
A3R582	322-3469-00			RES,FXD,FILM:750K OHM,1%,0.2W,TC=TOMI,SMALL	91637	CCF501G75002F
A3R583	321-0303-00			RES,FXD,FILM:14.0K OHM,1%,0.125W,TC=TOMI	19701	5043ED14K00F
A3R593	322-3385-00			RES,FXD:METAL FILM;100K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10002F
A3R594	322-3193-00			RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R600	311-2269-00			RES,VAR,NONWW:TRMR,20K OHM,20%,0.5WLINEAR,MI	TK2073	GF06VT2 203 M L
A3R601	311-2269-00			RES,VAR,NONWW:TRMR,20K OHM,20%,0.5WLINEAR,MI	TK2073	GF06VT2 203 M L

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Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A3R602	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R603	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R604	301-0101-00			RES,FXD,FILM:100 OHM,5%,0.5W	TK1727	SFR30 2322-182-
A3R605	322-3193-00			RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R606	322-3385-00			RES,FXD:METAL FILM;100K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10002F
A3R607	322-3385-00			RES,FXD:METAL FILM;100K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10002F
A3R608	322-3385-00			RES,FXD:METAL FILM;100K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10002F
A3R609	322-3322-00			RES,FXD:METAL FILM;22.1K OHM,1%,0.2W,TC=100	91637	CCF501G22101F
A3R610	322-3354-00			RES,FXD:METAL FILM;47.5K OHM,1%,0.2W,TC=100	91637	CCF501G47501F
A3R613	322-3193-00			RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R615	308-0344-00			RES,FXD,WW:18.2 OHM,1%,3W	91637	RS2B-18R20F-TR
A3R617	322-3193-00			RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R632	321-0418-00			RES,FXD,FILM:221K OHM,1%,0.125W,TC=T0MI	19701	5043ED221K0F
A3R637	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R641	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R643	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R646	322-3258-00			RES,FXD:METAL FILM;4.75K OHM,1%,0.2W,TC=100	56845	CCF50-2-G4751FT
A3R647	321-1720-00			RES,FXD,FILM:3.24M OHM,1%,0.125W,TC=T0MI	64537	PME55 3.24 MEGO
A3R648	322-3282-00			RES,FXD,FILM:8.45K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G84500F
A3R649	322-3314-00			RES,FXD:METAL FILM;18.2K OHM,1%,0.2W,TC=100 (760A ONLY)	91637	CCF501G18201F
A3R652	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A3R653	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A3R655	322-3373-00			RES,FXD,FILM:75K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G75001F
A3R656	321-0748-06			RES,FXD,FILM:4.95K OHM,0.25%,0.125W,TC=T9	19701	5033RE4K950C
A3R657	322-3237-00			RES,FXD,FILM:2.87K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G28700F
A3R658	322-3373-00			RES,FXD,FILM:75K OHM,1%,0.2W,TC=T0MI,SMALL BODY (760A ONLY)	91637	CCF501G75001F
A3R658	322-3254-00			RES,FXD,FILM:4.32K OHM,1%,0.2W,TC=T0MI,SMALL BODY (760D ONLY)	91637	CCF502G4321FT
A3R658	322-3286-00			RES,FXD,FILM:9.31K OHM,1%,0.2W,TC=T0MI,SMALL BODY (760N ONLY)	91637	CCF501G93100F
A3R660	321-1612-07			RES,FXD,FILM:4.455K OHM,0.1%,0.125W,TC=T9	19701	5033RE4K455B
A3R661	321-0603-07			RES,FXD,FILM:15K OHM,0.1%,0.125W,TC=T9MI	19701	5033RE15K00B
A3R672	322-3258-00			RES,FXD:METAL FILM;4.75K OHM,1%,0.2W,TC=100	56845	CCF50-2-G4751FT
A3R673	322-3147-00			RES,FXD:METAL FILM;332 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G332R0F
A3R674	322-3193-00			RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R675	322-3385-00			RES,FXD:METAL FILM;100K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10002F
A3R676	321-0340-00			RES,FXD,FILM:34.0K OHM,1%,0.125W,TC=T0MI	TK1727	2322-151-34K0
A3R677	322-3450-00			RES,FXD,FILM:475K OHM,1%,0.2W,TC=T0MI,SMALL	91637	CCF50-2G47502F
A3R678	322-3481-00			RES,FXD,FILM:1M OHM.1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G10003F
A3R682	321-0340-00			RES,FXD,FILM:34.0K OHM,1%,0.125W,TC=T0MI	TK1727	2322-151-34K0

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Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A3R683	322-3450-00			RES,FXD,FILM:475K OHM,1%,0.2W,TC=T0MI,SMALL	91637	CCF50-2G47502F
A3R684	322-3193-00			RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R685	322-3385-00			RES,FXD:METAL FILM;100K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10002F
A3R686	322-3481-00			RES,FXD,FILM:1M OHM.1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G10003F
A3R687	322-3147-00			RES,FXD:METAL FILM;332 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G332R0F
A3R688	322-3258-00			RES,FXD:METAL FILM;4.75K OHM,1%,0.2W,TC=100	56845	CCF50-2-G4751FT
A3R693	322-3354-00			RES,FXD:METAL FILM;47.5K OHM,1%,0.2W,TC=100	91637	CCF501G47501F
A3R694	322-3222-00			RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R700	311-2262-00			RES,VAR,NONWW:TRMR,1M OHM,20%,0.5WLINEAR,MI	TK2073	GF06VT2 105 M L
A3R716	322-3158-00			RES,FXD,FILM:432 OHM,1%,0.2W,TC=T0MI,SMALL BODY	57668	CRB2D FXE 432
A3R717	322-3281-00			RES,FXD:METAL FILM;8.25K OHM,1%,0.2W,TC=100	91637	CCF501G82500F
A3R720	311-2212-01			RES,VAR,NONWW:CKT BD,20K OHM,10%,0.25WLINEAR	12697	CM45228
A3R720	366-1701-01			KNOB:GY,0.127 ID X 0.392 OD X 0.4 H	80009	366170101
A3R732	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R733	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R734	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R735	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R736	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R737	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R738	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R743	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R751	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A3R752	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A3R753	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R755	322-3289-07			RES,FXD,FILM:10K OHM,0.1%,0.2W,TC=T9,T&R,SM BODY	91637	CCF501C10001B
A3R756	322-3318-00			RES,FXD,FILM:MET FILM;20K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20001F
A3R757	322-3373-00			RES,FXD,FILM:75K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G75001F
A3R758	311-2230-00			RES,VAR,TRMR:CERMET;500 OHM,20%,0.5W,0.197 SQ, TOP ADJUST	TK2073	GF06UT2 501 M L
A3R759	311-2234-00			RES,VAR,TRMR:CERMET;5K OHM,20%,0.5W,0.197 SQ, TOP ADJUST	TK2073	GF06UT2 502 M L
A3R760	322-3246-00			RES,FXD,FILM:3.57K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G35700F
A3R761	322-3130-00			RES,FXD:METAL FILM;221 OHM,1%,0.2W,TC=100 PPM	57668	RB20FX221E
A3R762	321-1612-07			RES,FXD,FILM:4.455K OHM,0.1%,0.125W,TC=T9	19701	5033RE4K455B
A3R763	321-0603-07			RES,FXD,FILM:15K OHM,0.1%,0.125W,TC=T9MI	19701	5033RE15K00B
A3R764	323-0114-00			RES,FXD,FILM:150 OHM,1%,0.5W,TC=T0	91637	CMF65116G150R0F
A3R766	323-0172-00			RES,FXD,FILM:604 OHM,1%,0.5W,TC=T0	91637	CMF65116G604ROF
A3R767	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R769	322-3354-00			RES,FXD:METAL FILM;47.5K OHM,1%,0.2W,TC=100	91637	CCF501G47501F
A3R770	322-3222-00			RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R771	322-3193-00			RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F

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Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A3R772	322-3177-00			RES,FXD:METAL FILM;681 OHM,1%,0.2W,TC=100 PPM	91637	CCF50-2G681R0F
A3R773	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R774	322-3267-00			RES,FXD,FILM:5.9K OHM,1%,0.2W,TC=T0MI,SMALL	56845	CCF50-2-G5901FT
A3R775	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R776	322-3250-00			RES,FXD:METAL FILM;3.92K OHM,1%,0.2W,TC=100	91637	CCF50-2F39200F
A3R777	311-2236-00			RES,VAR,TRMR:CERMET;20K OHM,20%,0.5W,0.197 SQ,SIDE ADJUST	TK2073	GF06UT2 203 M L
A3R778	322-3269-00			RES,FXD,FILM:6.19K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G61900F
A3R779	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R780	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R781	322-3193-00			RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R782	311-2236-00			RES,VAR,TRMR:CERMET;20K OHM,20%,0.5W,0.197 SQ,SIDE ADJUST	TK2073	GF06UT2 203 M L
A3R783	322-3246-00			RES,FXD,FILM:3.57K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G35700F
A3R784	322-3130-00			RES,FXD:METAL FILM;221 OHM,1%,0.2W,TC=100 PPM	57668	RB20FX221E
A3R785	322-3218-00			RES,FXD:METAL FILM;1.82K OHM,1%,0.2W,TC=100	91637	CCF501G18200F
A3R786	311-2234-00			RES,VAR,TRMR:CERMET;5K OHM,20%,0.5W,0.197 SQ, TOP ADJUST	TK2073	GF06UT2 502 M L
A3R787	322-3230-00			RES,FXD,FILM:2.43K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50-2-G2431FT
A3R788	322-3218-00			RES,FXD:METAL FILM;1.82K OHM,1%,0.2W,TC=100	91637	CCF501G18200F
A3R789	311-2231-00			RES,VAR,TRMR:CERMET;1K OHM,20%,0.5W,0.197 SQ, TOP ADJUST	TK2073	GF06UT2 102 M L
A3R790	321-0263-00			RES,FXD,FILM:5.36K OHM,1%,0.125W,TC=T0MI	19701	5043ED5K360F
A3R794	322-3222-00			RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R797	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R798	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R815	321-0720-00			RES,FXD,FILM:60K OHM,1%,0.125W,TC=T0	91637	CMF55-116-G-600
A3R820	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R821	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R824	322-3001-00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A3R842	321-0418-00			RES,FXD,FILM:221K OHM,1%,0.125W,TC=T0MI	19701	5043ED221K0F
A3R843	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R844	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R845	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R846	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R847	321-1720-00			RES,FXD,FILM:3.24M OHM,1%,0.125W,TC=T0MI	64537	PME55 3.24 MEGO
A3R849	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R851	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R852	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R853	322-3314-00			RES,FXD:METAL FILM;18.2K OHM,1%,0.2W,TC=100 (760A ONLY)	91637	CCF501G18201F
A3R854	322-3258-00			RES,FXD:METAL FILM;4.75K OHM,1%,0.2W,TC=100	56845	CCF50-2-G4751FT

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Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A3R855	322-3282-00			RES,FXD,FILM:8.45K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G84500F
A3R856	322-3481-00			RES,FXD,FILM:1M OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G10003F
A3R858	308-0549-00			RES,FXD,WW:6.3K OHM,1%,3W	91637	RS2B-B63000F
A3R861	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R863	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R864	322-3178-00			RES,FXD,FILM:698 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50-2G698ROF
A3R865	322-3178-00			RES,FXD,FILM:698 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50-2G698ROF
A3R866	322-3210-00			RES,FXD:METAL FILM;1.5K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G15000F
A3R867	308-0549-00			RES,FXD,WW:6.3K OHM,1%,3W	91637	RS2B-B63000F
A3R868	322-3324-00			RES,FXD,FILM:23.2K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50-2F23201F
A3R875	322-3232-00			RES,FXD,FILM:2.55K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G25500F
A3R876	322-3296-00			RES,FXD,FILM:11.8K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G11801F
A3R877	322-3193-00			RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R878	322-3289-00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R881	322-3269-00			RES,FXD,FILM:6.19K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G61900F
A3R882	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R887	322-3097-00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R888	322-3269-00			RES,FXD,FILM:6.19K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G61900F
A3R889	322-3324-00			RES,FXD,FILM:23.2K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50-2F23201F
A3R895	322-3296-00			RES,FXD,FILM:11.8K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G11801F
A3R896	322-3232-00			RES,FXD,FILM:2.55K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G25500F
A3S340	260-2233-00			SWITCH,ROTARY:DIP;BCD,10 POSITION,30V,125MA,5 PIN,GOLD/NICKEL,GLASSREINFORCED NYLON	57856	KDS 10-312
A3TP151	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A3TP248	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A3TP255	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A3TP323	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A3TP351	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A3TP357	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A3TP454	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A3TP548	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A3TP551	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A3TP552	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A3TP554	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02



Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A3TP568	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A3TP621	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A3TP672	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A3TP688	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A3TP725	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A3TP745	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A3TP778	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A3TP866	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A3TP885	214-4085-00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104-01-02
A3U127	160-4232-01			IC,MEMORY:CMOS,EPROM;8K X 8 W/3-STATE OUT (760A ONLY)	80009	160423201
A3U127	160-6134-00			MICROCKT,DGTL:8192 X 8 EPROM,PRGM (760D ONLY)	80009	160613400
A3U127	160-6136-00			MICROCKT,DGTL:8192 X 8 EPROM,PRGM (760N ONLY)	80009	160613600
				*MOUNTING PARTS*		
	136-0755-00			SKT,DIP:PCB;FEMSTR,2 X 14,28 POS,0.1 X 0.6 CTR,0.175 H X0.130 TAIL,BECU,TIN,ACCOM 0.008-0.0015 X 0.014-0.022	00779	2-641605-3
				*END MOUNTING PARTS*		
A3U132	156-0913-00			IC,DIGITAL:LSTTL,FLIP FLOP;OCTAL D-TYPE, ENABLE	01295	SN74LS377N
A3U137	160-4233-01			IC,MEMORY:CMOS,EPROM;8K X 8 W/3-STATE OUT (760A ONLY)	80009	160423301
A3U137	160-6135-00			MICROCKT,DGTL:8192 X 8 EPROM,PRGM (760D ONLY)	80009	160613500
A3U137	160-6137-00			MICROCKT,DGTL:8192 X 8 EPROM,PRGM (760N ONLY)	80009	160613700
				*MOUNTING PARTS*		
	136-0755-00			SKT,DIP:PCB;FEM,STR,2 X 14,28 POS,0.1 X 0.6 CTR,0.175 H X0.130 TAIL,BECU,TIN,ACCOM 0.008-0.0015 X 0.014-0.022	00779	2-641605-3
				*END MOUNTING PARTS*		
A3U142	156-0913-00			IC,DIGITAL:LSTTL,FLIP FLOP;OCTAL D-TYPE, ENABLE	01295	SN74LS377N
A3U146	156-2819-00			IC,CONVERTER:BIPOLAR,D/A;12 BIT,VOLTAGE OUT,REF	13919	DAC80P-CBI-V
A3U158	156-0469-00			IC,DIGITAL:LSTTL,DEMUX/DECODER;3-TO-8DECODER	01295	SN74LS138N
A3U161	156-0480-02			IC,DIGITAL:LSTTL,GATES	01295	SN74LS08N
A3U167	156-0858-00			IC,MISC:CMOS,ANALOG SWITCH;QUAD SPST	1ES66	DG201AC/JC30248
A3U172	156-0858-00			IC,MISC:CMOS,ANALOG SWITCH;QUAD SPST	1ES66	DG201AC/JC30248
A3U179	156-2817-00			IC,LINEAR:BIFET,OP-AMP;QUAD	04713	MC34084P
A3U208	156-2818-00			IC,LINEAR:TTL,DRV;8-CHAN SCE DRV, LOW VOUT(SAT)	0CVK3	UDN2585A

Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A3U213	156-2818-00			IC,LINEAR:TTL,DRV:8-CHAN SCE DRV, LOW VOUT(SAT)	0CVK3	UDN2585A
A3U217	156-2818-00			IC,LINEAR:TTL,DRV:8-CHAN SCE DRV, LOW VOUT(SAT)	0CVK3	UDN2585A
A3U223	156-2818-00			IC,LINEAR:TTL,DRV:8-CHAN SCE DRV, LOW VOUT(SAT)	0CVK3	UDN2585A
A3U308	156-0736-02			IC,DIGITAL:LSSTL,DEMUX/DECODER	01295	SN74LS42N
A3U313	156-0736-02			IC,DIGITAL:LSSTL,DEMUX/DECODER	01295	SN74LS42N
A3U317	156-0736-02			IC,DIGITAL:LSSTL,DEMUX/DECODER	01295	SN74LS42N
A3U357	156-1451-00			IC,LINEAR:BIPOLAR,VR:NEGATIVE,ADJUSTABLE,1.5A,4%	01295	LM337KC
A3U361	156-1126-00			IC,LINEAR:BIPOLAR,COMPARATOR;OPEN COLL,200NS	01295	LM311P
A3U368	156-1149-00			IC,LINEAR:BIFET,OP-AMP;	27014	LF351N
A3U379	156-2817-00			IC,LINEAR:BIFET,OP-AMP;QUAD	04713	MC34084P
A3U424	156-0982-02			IC,DIGITAL:LSSTL,FLIP FLOP	01295	SN74LS374N
A3U428	156-0865-00			IC,DIGITAL:LSSTL,FLIP FLOP;OCTAL D-TYPE, CLEAR	01295	SN74LS273N
A3U432	156-2336-00			IC,DIGITAL:LSSTL,COMPARATOR;8-BIT MAGNITUDE	01295	SN74LS684N
A3U436	156-1600-00			IC,DIGITAL:LSSTL,MISC:DUAL RETRIG MNSTBMV	01295	SN74LS123N
A3U438	160-4234-00			IC,DIGITAL:STTL,PLD;PAL,16R6,28.5MHZ,180MA	80009	160423400
				*MOUNTING PARTS*		
	136-0752-00			SOCKET,DIP:PCB;FEMALE,STR,2 X 10,0.3 CTR,0.210 H X 0.128 TAIL,TIN,PHOS BRONZE	00779	2-641602-3
				*END MOUNTING PARTS*		
A3U445	156-2817-00			IC,LINEAR:BIFET,OP-AMP;QUAD	04713	MC34084P
A3U453	156-2817-00			IC,LINEAR:BIFET,OP-AMP;QUAD	04713	MC34084P
A3U456	156-1161-00			IC,LINEAR:BIPOLAR,VR:POSITIVE,ADJUSTABLE,1.5A,4%	04713	LM317T
				*MOUNTING PARTS*		
	210-0586-00			NUT,PL,ASSEM WA:4-40 X 0.25,STL CD PL	TK0435	ORDER BY DESC
	211-0008-00			SCREW,MACHINE:4-40 X 0.25,PNH,STL	TK0435	ORDER BY DESC
				*END MOUNTING PARTS*		
A3U462	156-2817-00			IC,LINEAR:BIFET,OP-AMP;QUAD	04713	MC34084P
A3U468	156-1149-00			IC,LINEAR:BIFET,OP-AMP;	27014	LF351N
A3U590	156-1156-01			IC,LINEAR:BIFET,OP-AMP;BURN-IN,NOT FOR NEW DSGN	27014	LF356N/A+ (D/C
A3U612	156-1225-00			IC,LINEAR:BIPOLAR,COMPTR:DUAL,OPEN COLL,300NS	01295	LM393P
A3U623	156-4440-00			IC,DIGITAL:HCTCMOS,COUNTER;4-BIT UP/DOWN DECADE,PRESETTABLE	1CH66	74HCT190N
A3U627	156-0865-00			IC,DIGITAL:LSSTL,FLIP FLOP;OCTAL D-TYPE, CLEAR	01295	SN74LS273N
A3U630	156-2336-00			IC,DIGITAL:LSSTL,COMPARATOR;8-BIT MAGNITUDE	01295	SN74LS684N
A3U635	156-2901-00			IC,LINEAR:BIPOLAR,COMPARATOR;DUAL,10US,LOW OFFSET,LOW POWER	64155	LT1018CN8
A3U638	160-4234-00			IC,DIGITAL:STTL,PLD;PAL,16R6,28.5MHZ,180MA	80009	160423400
				*MOUNTING PARTS*		
	136-0752-00			SOCKET,DIP:PCB;FEMALE,STR,2 X 10,0.3 CTR,0.210 H X 0.128 TAIL,TIN,PHOS BRONZE	00779	2-641602-3
				*END MOUNTING PARTS*		
A3U645	156-2817-00			IC,LINEAR:BIFET,OP-AMP;QUAD	04713	MC34084P

Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
A3U654	156-2817-00			IC,LINEAR:BIFET,OP-AMP;QUAD	04713	MC34084P
A3U670	156-1156-01			IC,LINEAR:BIFET,OP-AMP;BURN-IN,NOT FOR NEW DSGN	27014	LF356N/A+ (D/C
A3U680	156-2815-00			IC,MISC:BIPOLAR,MISC:ANALOG COMPANDOR	1CH66	NE572N
A3U708	156-0479-00			IC,DIGITAL:LSTTL,GATES:QUAD 2-INPUT OR	01295	SN74LS32N
A3U711	156-0479-00			IC,DIGITAL:LSTTL,GATES:QUAD 2-INPUT OR	01295	SN74LS32N
A3U715	156-0733-04			IC,DIGITAL:LSTTL,MULTIVIBRATOR	04713	SN74LS221N
A3U818	156-1408-00			IC,MISC:CMOS,TIMER	34371	ICM7555IPA
A3U823	156-0039-02			IC,DIGITAL:TTL,FLIP FLOP;DUAL J-K, W/CLEAR	27014	DM7473N
A3U825	156-0721-00			IC,DIGITAL:LSTTL,GATES:QUAD 2-INPUT NAND, W/SCHMITT TRIGGER	01295	SN74LS132N
A3U828	156-4440-00			IC,DIGITAL:HCTCMOS,COUNTER;4-BIT UP/DOWN DECADE,PRESETTABLE	1CH66	74HCT190N
A3U831	156-0865-00			IC,DIGITAL:LSTTL,FLIP FLOP;OCTAL D-TYPE, CLEAR	01295	SN74LS273N
A3U835	156-2336-00			IC,DIGITAL:LSTTL,COMPARATOR;8-BIT MAGNITUDE	01295	SN74LS684N
A3U838	156-1600-00			IC,DIGITAL:LSTTL,MISC:DUAL RETRIG MONOSTABLE MULTIVIBRATOR	01295	SN74LS123N
A3U844	156-2901-00			IC,LINEAR:BIPOLAR,COMPARATOR;DUAL,10US,LOW OFFSET,LOW POWER	64155	LT1018CN8
A3U848	160-4234-00			IC,DIGITAL:STTL,PLD;PAL,16R6,28.5MHZ,180MA *MOUNTING PARTS*	80009	160423400
	136-0752-00			SOCKET,DIP:PCB;FEMALE,STR,2 X 10,0.3 CTR,0.210 H X 0.128 TAIL,TIN,PHOS BRONZE *END MOUNTING PARTS*	00779	2-641602-3
A3U853	156-2817-00			IC,LINEAR:BIFET,OP-AMP;QUAD	04713	MC34084P
A3U873	156-1272-00			IC,LINEAR:BIPOLAR,OP-AMP;DUAL,HIGH OUTPUT DRIVE,LOW NOISE	01295	NE5532P
A3U880	156-0158-00			IC,LINEAR:BIPOLAR,OP-AMP;DUAL	01295	MC1458P
A3U894	156-1272-00			IC,LINEAR:BIPOLAR,OP-AMP;DUAL,HIGH OUTPUT DRIVE,LOW NOISE	01295	NE5532P
A10	671-3637-00			CIRCUIT BD ASSY:CRT SOCKET BOARD	80009	671363700
A10J1	131-5338-00			CONN,HDR:PCB/WIREWRAP;MALE,STR,1 X 7,0.15 CTR	22526	65561-107
A10J2	131-5337-00			CONN,HDR:PCB/WIREWRAP;MALE,STR,1 X 4,0.15 CTR	22526	65561-104
A10J3	131-5338-00			CONN,HDR:PCB/WIREWRAP;MALE,STR,1 X 7,0.15 CTR	22526	65561-107
A10SKT1	136-1289-00			SOCKET:CRT,TUBE;1730,SAFETY CONTROLLED	0LUA3	55595
J100	131-3208-00			CONN,CIRC:XLR,FEMALE,3 POS,SAFTEY CONTROLLED *MOUNTING PARTS*	82389	D3F
	211-0097-00			SCREW,MACHINE:4-40 X 0.312,PNH,STL (QUANTITY 2) *END MOUNTING PARTS*	TK0435	ORDER BY DESC

## Replaceable Electrical Parts

### Replaceable Electrical Parts List (Cont.)

Component Number	Tektronix Part Number	Serial no. effective	Serial No. Discont'd	Name & Description	Mfr. Code	Mfr. Part Number
J200	131-3208-00			CONN,CIRC:XLR,FEMALE,3 POS,SAFTEY CONTROLLED *MOUNTING PARTS*	82389	D3F
	211-0097-00			SCREW,MACHINE:4-40 X 0.312,PNH,STL (QUANTITY 2) *END MOUNTING PARTS*	TK0435	ORDER BY DESC
J300	131-3208-00			CONN,CIRC:XLR,FEMALE,3 POS,SAFTEY CONTROLLED *MOUNTING PARTS*	82389	D3F
	211-0097-00			SCREW,MACHINE:4-40 X 0.312,PNH,STL (QUANTITY 2) *END MOUNTING PARTS*	TK0435	ORDER BY DESC
P110	174-0455-00			CA ASSY,SP,ELEC:20,28 AWG,6.75 L,RIBBON	TK1547	TO BE ASSIGNED
P135	174-0456-00			CA ASSY,SP,ELEC:34,28 AWG,4.5 L,RIBBON	TK1547	TO BE ASSIGNED
P198	174-0485-00			CA ASSY,SP,ELEC:3,26 AWG,2.5 L,RIBBON	TK1352	TO BE ASSIGNED
P398	174-0485-00			CA ASSY,SP,ELEC:3,26 AWG,2.5 L,RIBBON	TK1352	TO BE ASSIGNED
P668	174-0405-00			CA ASSY,SP,ELEC:3,26 AWG,7.0 L,RIBBON	TK1352	TO BE ASSIGNED
S1	260-2465-00			SWITCH,PUSH:0.4A,125VAC,W/SOLDER LUG,BUTTON W/YELLOW INDICATOR *ATTACHED PARTS*	31918	602844
	174-2648-00			CA ASSY,SP: *END ATTACHED PARTS*	80009	174-2648-00
V1	154-0987-00			ELECTRON TUBE:CRT,D14-375GH/987 (STANDARD ONLY)	80009	154090800
V1	154-0987-16			ELECTRON TUBE:CRT,D14-375WA/987 (OPTION 74 ONLY)	80009	154090816
	131-6014-00			**V1 ATTACHED PARTS** CA ASSY,CRT:DISCRETE,ANODE LEAD;CRT,1,22AWG,30KV **END ATTACHED PARTS**		
W1	179-2997-00			WIRE HARNESS:DESCRETE,CRT ASSY,CPD,5,24 AWG,5,26 AWG,1X4,0.1CTR & 1X7,RCPT X 1X4 & 1X7,0.1 RC	80009	179299700
W3	174-3511-00			CA ASSY,SP:DESCRETE,CPD,4,26 AWG,8.0L,1X7,0.1CTR,RCPT X STRAIN RELIEF,PCB *ATTACHED PARTS*	9M860	174-3511-00
-	344-0111-00			INSUL,SPREADER:DEFL LEADS,POLYPROPYLENE *END ATTACHED PARTS*	TK1617	NA



# **Diagrams/Circuit Board Illustrations**

# Section 9

## Diagrams/Circuit Board Illustrations

### Symbols

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

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

Overline, parenthesis, or leading slash indicate a low asserting state.

Example:  $\overline{\text{ID CONTROL}}$ , (ID CONTROL), or /ID CONTROL.

Abbreviations are based on ANSI Y1.1–1972.

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

Y14.15, 1966 — Drafting Practices.

Y14.2, 1973 — Line Conventions and Lettering.

Y10.5, 1968 — Letter Symbols for Quantities Used in Electrical

Science and

Electrical Engineering.

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

### Component Values

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

Capacitors      Values one or greater are in picofarads (pF).  
                     Values less than one are in microfarads ( $\mu\text{F}$ ).

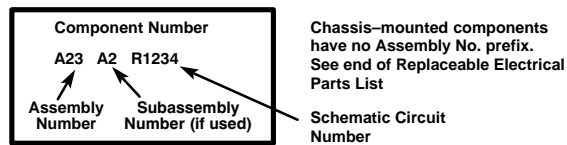
Resistors        Ohms ( $\Omega$ ).

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

## Assembly Numbers

Each assembly in the instrument is assigned an assembly number (e.g., A20). The assembly number appears on the diagram (in circuit board outline), circuit board illustration title, and lookup table for the schematic diagram.

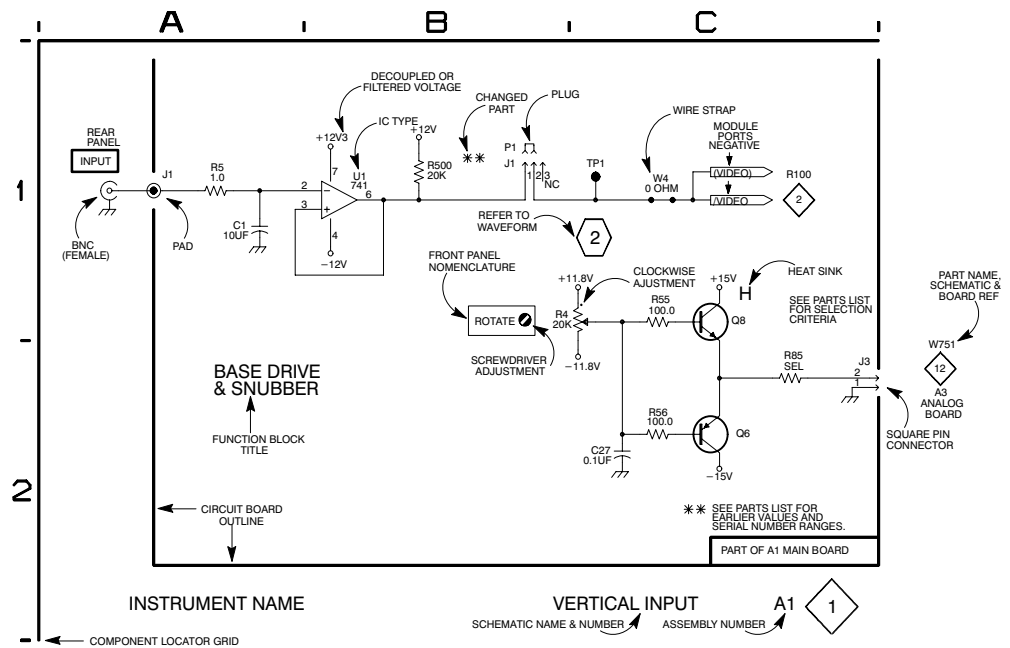
The Replaceable Electrical Parts List is arranged by assembly number in numerical sequence; the components are listed by component number. Example:



## Grid Coordinates

The schematic diagram and circuit board component location illustration have grids. A lookup table with the grid coordinates is provided for ease of locating the component. Only the components illustrated on the facing diagram are listed in the lookup table.

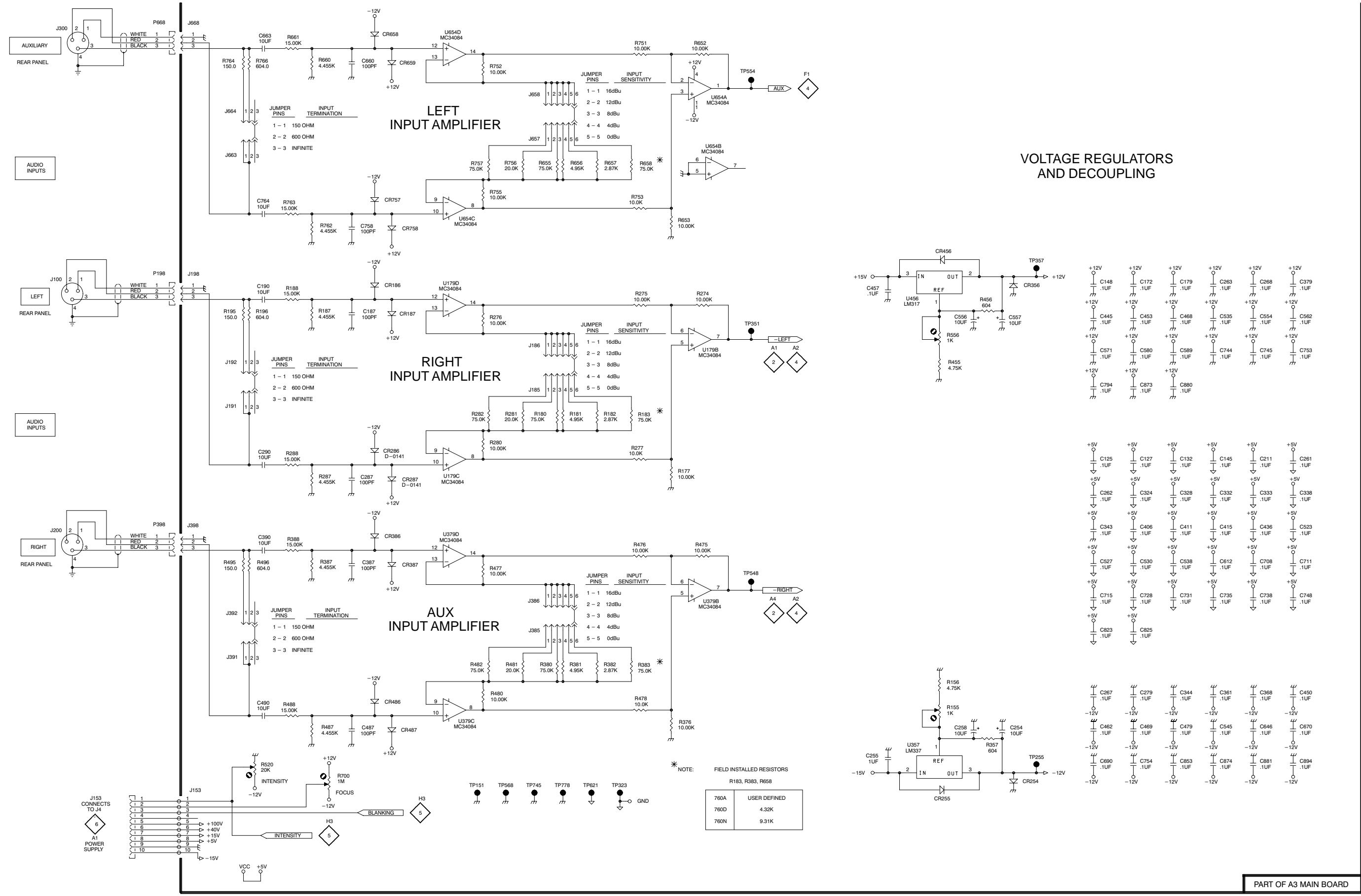
When more than one schematic diagram is used to illustrate the circuitry on a circuit board, the circuit board illustration will only appear opposite the first diagram; the lookup table will list the diagram number of other diagrams that the other circuitry appears on.











**LEFT INPUT AMPLIFIER**

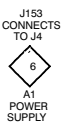
**RIGHT INPUT AMPLIFIER**

**AUX INPUT AMPLIFIER**

**VOLTAGE REGULATORS AND DECOUPLING**

\* NOTE: FIELD INSTALLED RESISTORS

RESISTOR	USER DEFINED
R183, R383, R688	
760A	4.32K
760D	4.32K
760N	9.31K



### Schematic Diagram <2> Component Locator Chart

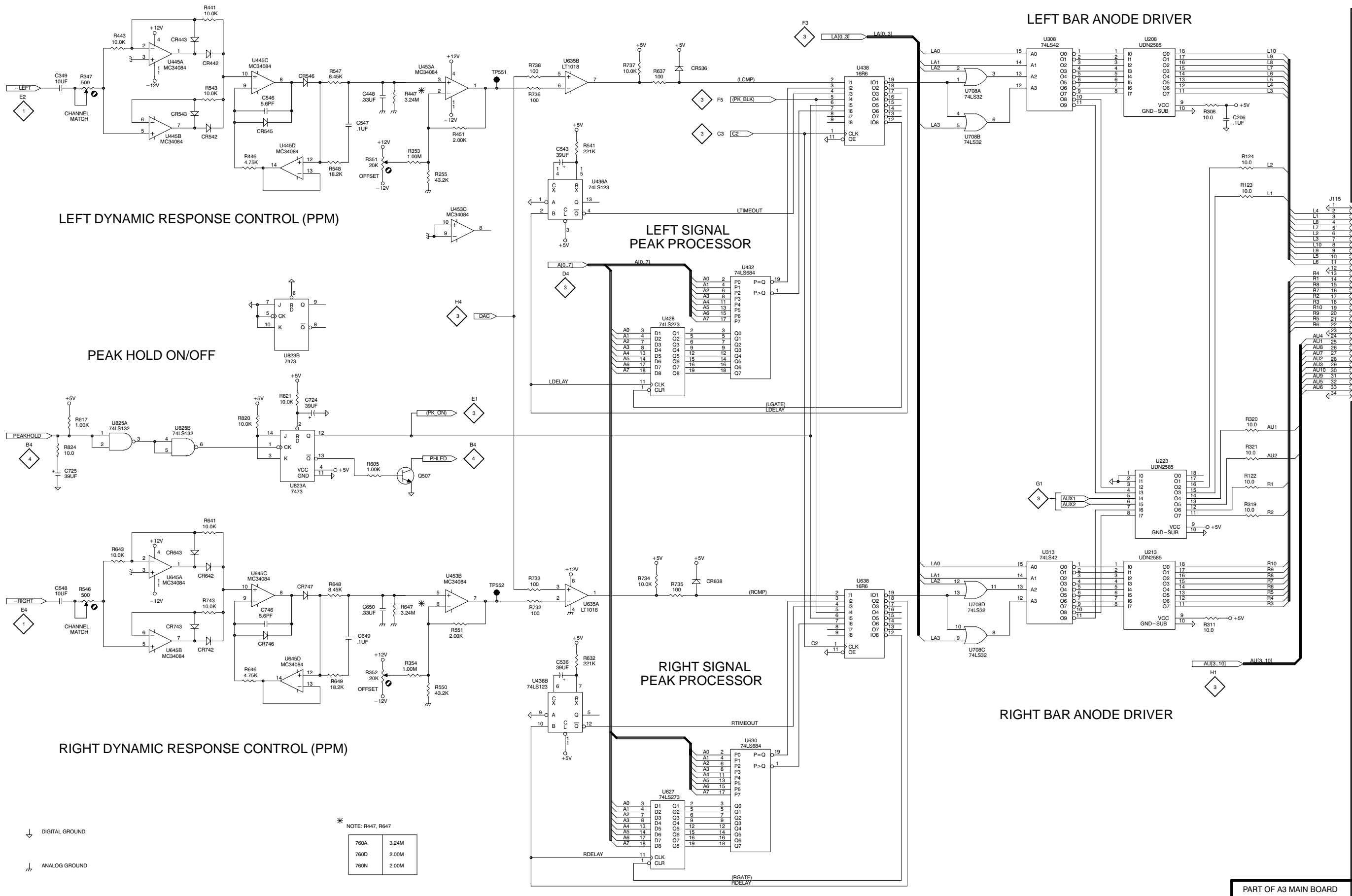
The schematic diagram has an alphanumeric grid to assist in locating parts within that diagram.

#### Assembly A3

Comp No	Diag Loc	Comp No	Diag Loc	Comp No	Diag Loc	Comp No	Diag Loc
C206	H1	Q507	C3	R632	D4	U436A	D2
C349	A1			R637	D1	U436B	D4
C448	C1	R122	H3			U438	F1
C536	D4	R123	H2	R641	B3		
C543	D1	R124	H1	R643	A4	U445A	A1
		R255	C1	R646	B4	U445B	A1
C546	B1	R306	H1	R647	C4	U445C	B1
C547	C1			R648	C4	U445D	B1
C548	A4	R311	H4			U453A	C1
C649	C4	R319	H3	R649	C4		
C650	C4	R320	H3	R732	D4	U453B	C4
		R321	H3	R733	D4	U453C	C2
C724	B3	R347	A1	R734	D4	U627	D5
C725	A3			R735	E4	U630	E5
C746	B4	R351	C1			U635A	D4
		R352	C4	R736	D1		
CR442	B1	R353	C1	R737	D1	U635B	D1
CR443	B1	R354	C4	R738	D1	U638	F4
CR536	E1	R441	B1	R743	B4	U645A	A4
CR542	B1			R820	B3	U645B	A4
CR543	B1	R443	A1			U645C	B4
		R446	B1	R821	B3		
CR545	B1	R447	C1	R824	A3	U645D	B4
CR546	B1	R451	C1			U708A	F1
CR638	E4	R541	D1	TP551	C1	U708B	F1
CR642	B4			TP552	C4	U708C	F4
CR643	B4	R543	B1			U708D	F4
		R546	A4	U208	G1		
CR742	B4	R547	C1	U213	G4	U823A	B3
CR743	B4	R548	C1	U223	G3	U823B	B2
CR746	B4	R550	C4	U308	G1	U825A	A3
CR747	B4			U313	G4	U825B	B3
		R551	C4				
J115	H2	R605	C3	U428	D2		
		R617	A3	U432	E2		

A B C D E F G H

1  
2  
3  
4  
5



LEFT DYNAMIC RESPONSE CONTROL (PPM)

PEAK HOLD ON/OFF

LEFT SIGNAL PEAK PROCESSOR

RIGHT SIGNAL PEAK PROCESSOR

LEFT BAR ANODE DRIVER

RIGHT BAR ANODE DRIVER

↓ DIGITAL GROUND  
⏏ ANALOG GROUND

\* NOTE: R447, R647

760A	3.24M
760D	2.00M
760N	2.00M

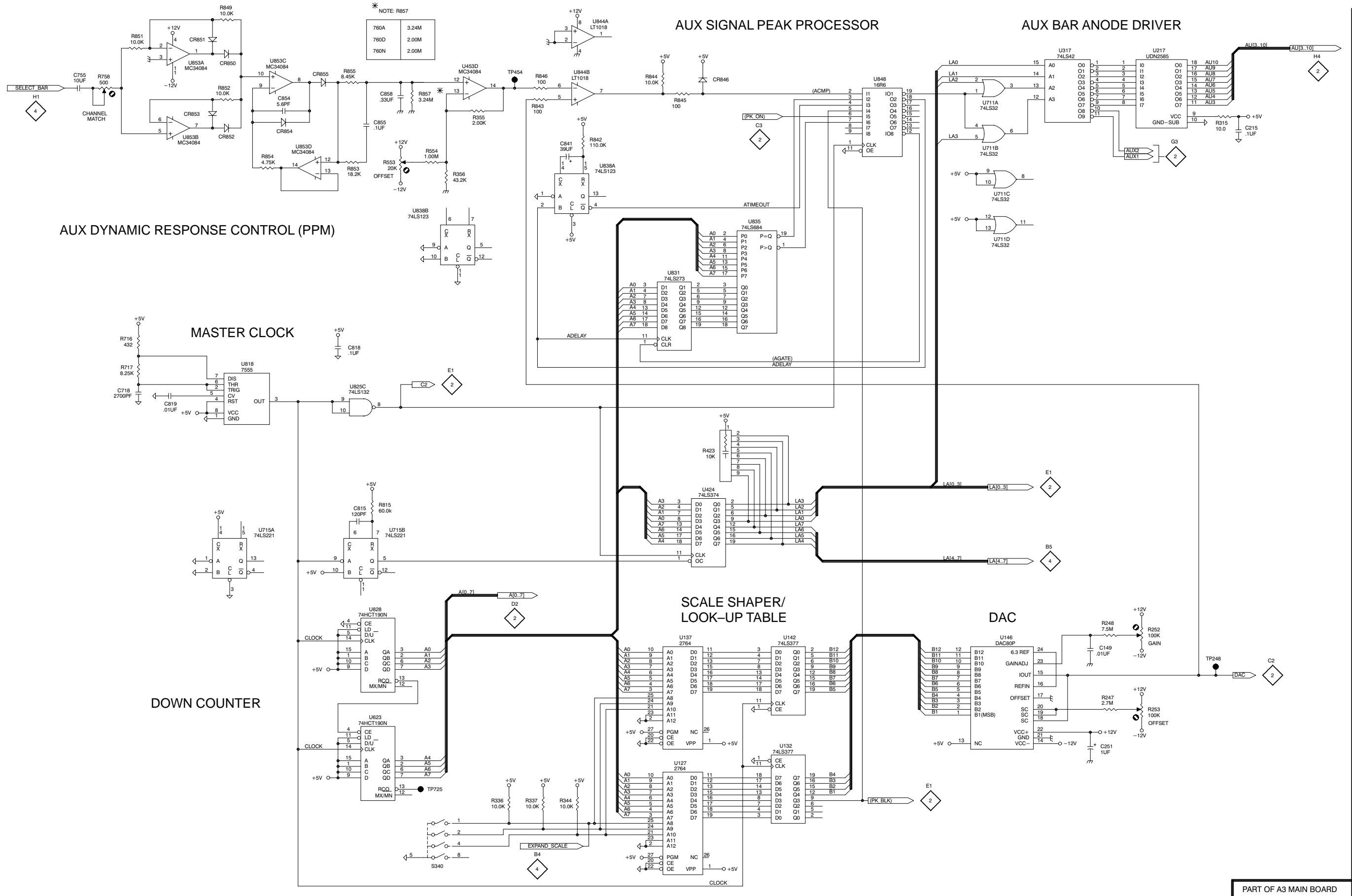
PART OF A3 MAIN BOARD

### Schematic Diagram <3> Component Locator Chart

The schematic diagram has an alphanumeric grid to assist in locating parts within that diagram.

#### Assembly A3.

Comp No	Diag Loc	Comp No	Diag Loc	Comp No	Diag Loc	Comp No	Diag Loc
C149	G4	R253	G4				
C215	H1	R315	H1	R852	B1	U711B	F1
C251	G5			R853	C1	U711C	F1
C718	A3	R336	D5	R854	B1	U711D	F2
C755	A1	R337	D5	R855	C1	U715A	B3
C815	C3	R344	D5	R857	C1	U715B	C3
		R355	C1				
C818	C2	R356	C1	S340	C5	U818	B3
C819	B3					U825C	C3
C841	D1	R423	E3	TP248	H4	U828	C4
C854	B1	R553	C1	TP454	D1	U831	D2
C855	C1	R554	C1	TP725	C5	U835	E2
C858	C1	R716	A2			U838A	D1
		R717	A3	U127	D5		
CR846	E1			U132	E5	U838B	C2
CR850	B1	R758	A1	U137	D4	U844A	D1
CR851	B1	R815	C3	U142	E4	U844B	D1
CR852	B1	R842	D1	U146	F4	U848	F1
		R843	D1			U853A	B1
CR853	B1			U217	G1		
CR854	B1	R844	D1	U317	G1	U853B	B1
CR855	B1	R845	E1	U424	E3	U853C	B1
		R846	D1	U453D	C1	U853D	B1
R247	G4	R849	B1	U623	C5		
R248	G4	R851	A1	U711A	F1		
R252	G4						



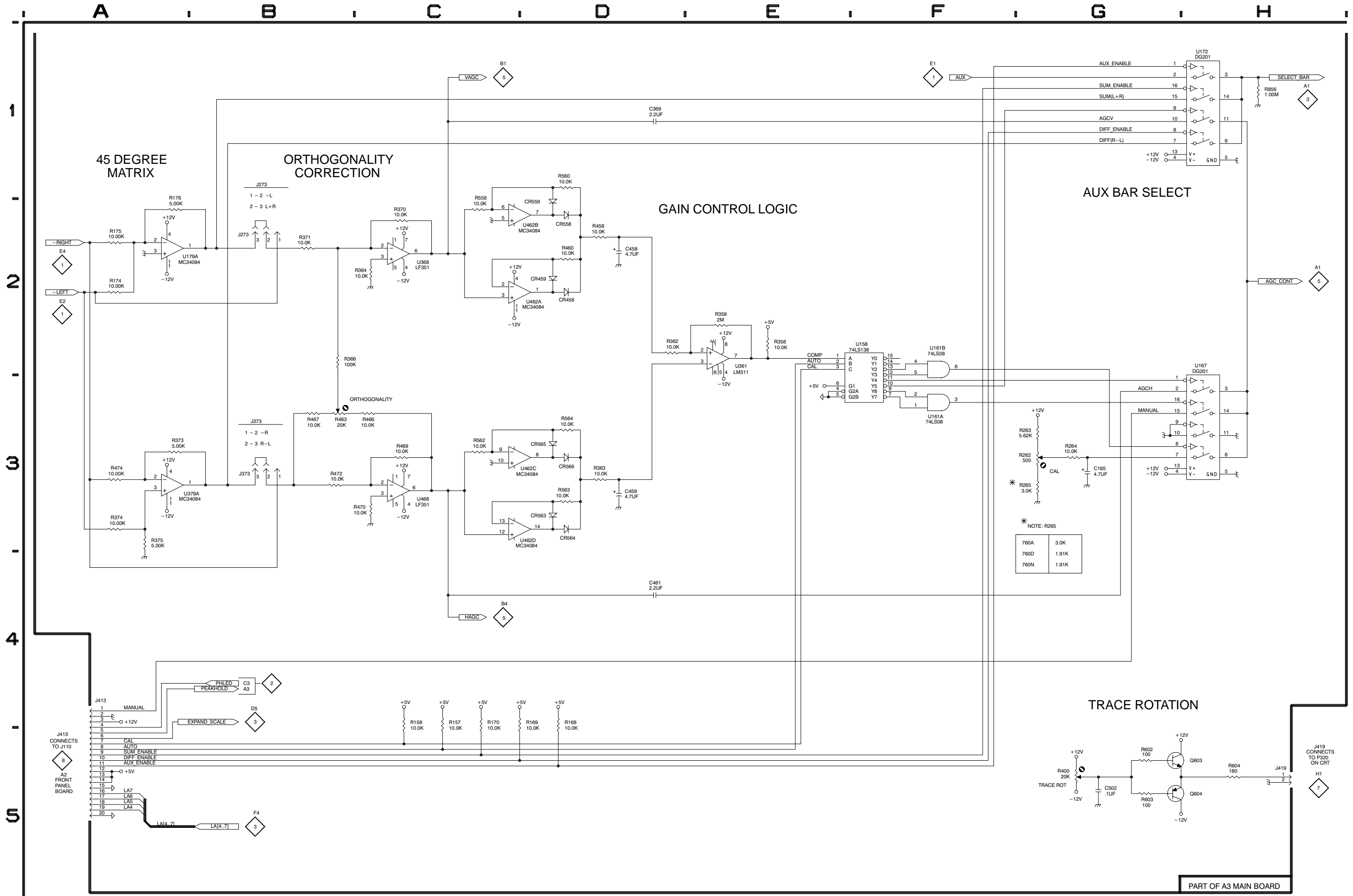
PART OF A3 MAIN BOARD

**Schematic Diagram <4> Component Locator Chart**

*The schematic diagram has an alphanumeric grid to assist in locating parts within that diagram.*

**Assembly A3.**

Comp No	Diag Loc	Comp No	Diag Loc	Comp No	Diag Loc	Comp No	Diag Loc
C165	G3			R371	B2	R602	G5
C369	D1	R157	C4			R603	G5
C458	D2	R158	C4	R373	A3	R604	H5
C459	D3	R168	D4	R374	A3	R856	H1
C461	D4	R169	C4	R375	A3		
C502	G5	R170	C4	R400	G5	U158	E2
				R458	D2	U161A	F3
CR458	D2	R174	A2			U161B	F2
CR459	D2	R175	A2	R460	D2	U167	H3
CR558	D2	R176	A2	R463	B3	U172	H1
CR559	D2	R262	G3	R466	C3		
CR563	D3	R263	G3	R467	B3	U179A	A2
CR564	D3			R469	C3	U361	E2
CR565	D3	R264	G3			U368	C2
CR566	D3	R265	G3	R470	C3	U379A	A3
		R358	E2	R472	B3	U462A	C2
J273	B2	R359	E2	R474	A3		
J373	B3	R362	D2	R558	C2	U462B	C2
J413	A4			R560	D1	U462C	C3
J419	H5	R363	D3			U462D	C3
		R364	C2	R562	C3	U468	C3
Q603	G5	R366	B2	R563	D3		
Q604	G5	R370	C2	R564	D3		



PART OF A3 MAIN BOARD

J413 CONNECTS TO J110

A2 FRONT PANEL BOARD

J419 CONNECTS TO P320 ON CRT

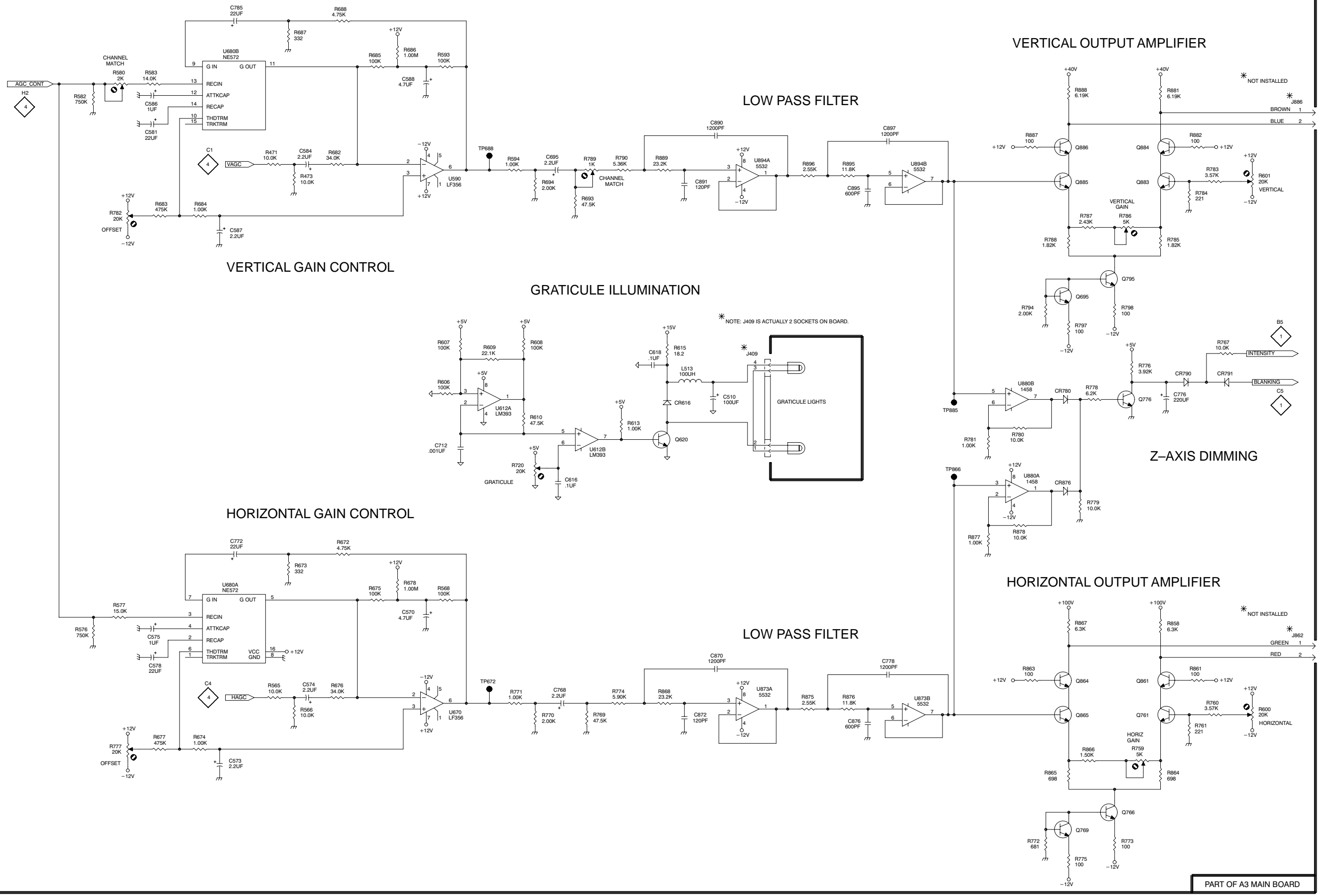


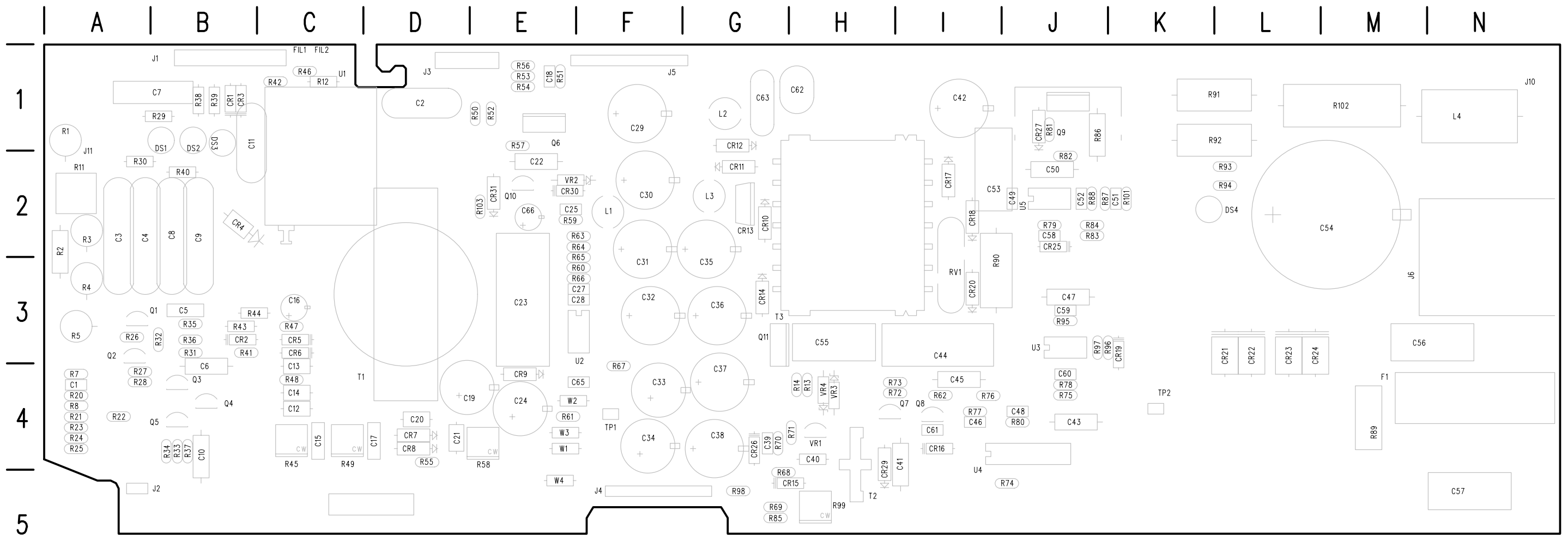
**Schematic Diagram <5> Component Locator Chart**

The schematic diagram has an alphanumeric grid to assist in locating parts within that diagram.

**Assembly A1.**

Comp No	Diag Loc	Comp No	Diag Loc	Comp No	Diag Loc	Comp No	Diag Loc
C510	E3	Q769	G5	R682	C1	R798	G2
C570	C4	Q776	G3	R683	A2	R858	G4
C573	B5					R861	H4
C574	B4	Q795	G2	R684	B2	R863	G4
C575	A4	Q861	G4	R685	C1		
		Q864	G4	R686	C1	R864	G5
C578	A4	Q865	G4	R687	B1	R865	G5
C581	A1	Q883	G2	R688	C1	R866	G5
C584	B1					R867	G4
C586	A1	Q884	G1	R693	D2	R868	D4
C587	B2	Q885	G2	R694	D2		
		Q886	G1	R720	D3	R875	E4
C588	C1			R759	G5	R876	E4
C616	D3	R471	B1	R760	H4	R877	F3
C618	D3	R473	B2			R878	F3
C695	D1	R565	B4	R761	G5	R881	G1
C712	C3	R566	B4	R767	H2		
		R568	C4	R769	D4	R882	H1
C768	D4			R770	D4	R887	G1
C772	B4	R576	A4	R771	D4	R888	G1
C776	G3	R577	A4			R889	D1
C778	F4	R580	A1	R772	G5	R895	E2
C785	B1	R582	A1	R773	G5	R896	E2
		R583	A1	R774	D4		
C870	E4			R775	G5	TP672	C4
C872	E4	R593	C1	R776	G3	TP688	C1
C876	F5	R594	D1			TP866	F3
C891	E2	R600	H4	R777	A5	TP885	F3
C895	F2	R601	H2	R778	G3		
C897	F1	R606	C3	R779	G3	U590	C1
				R780	F3	U612A	C3
CR616	D3	R607	C2	R781	F3	U612B	D3
CR780	G3	R608	D2			U670	C4
CR790	G3	R609	C3	R782	A2	U680A	B4
CR791	H3	R610	D3	R783	H2	U680B	B1
CR876	G3	R613	D3	R784	G2		
				R785	G2	U873A	E4
J409	E3	R615	D2	R786	G2	U873B	F4
J862	H4	R672	C4			U880A	F3
J886	H1	R673	B4	R787	G2	U880B	F3
		R674	B5	R788	G2	U894A	E1
L513	E3	R675	C4	R789	D1		
				R790	D1	U894B	F2
Q620	D3	R676	C4	R794	G2		
Q695	G2	R677	A5				
Q761	G4	R678	C4	R797	G2		
Q766	G5						





**A1 Power Supply Board**

**Static Sensitive Devices**  
See Maintenance Section

**A1 Board and Diagram <6> Component Locator**

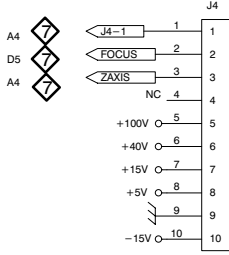
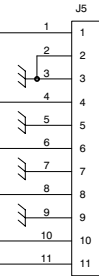
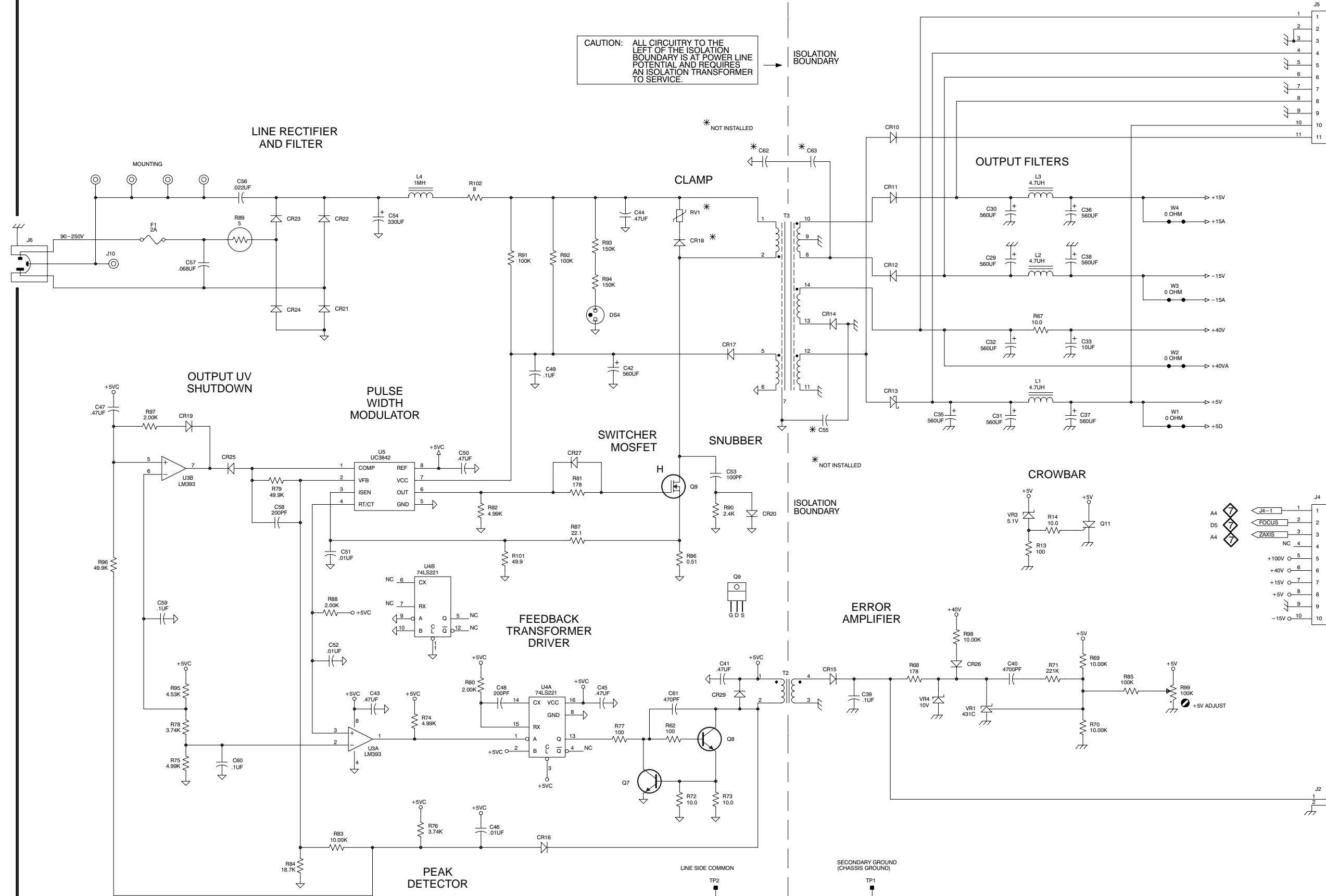
*(with cross-references to schematic diagrams 6 and 7).*

Comp No	Diag No	Diag Loc	Bd Loc	Comp No	Diag No	Diag Loc	Bd Loc	Comp No	Diag No	Diag Loc	Bd Loc	Comp No	Diag No	Diag Loc	Bd Loc	Comp No	Diag No	Diag Loc	Bd Loc	Comp No	Diag No	Diag Loc	Bd Loc	Comp No	Diag No	Diag Loc	Bd Loc	Comp No	Diag No	Diag Loc	Bd Loc	Comp No	Diag No	Diag Loc	Bd Loc																																																																																																																																																																																				
C1	7	C4	A4	C27	7	B1	E3	CR11	6	F2	G2	F1	6	B2	M4	Q9	6	D3	J1	R30	7	D2	A2	R54	7	F2	E1	R103	7	A2	E2	R79	6	B3	J2	RV1	6	D2	I3	R80	6	C4	J4	R81	6	D3	J1	R82	6	C3	J2	T1	7	B2	C4	R83	6	C5	J2	R84	6	B5	J2	T2	6	E4	H5	R85	6	G4	G5	TP1	6	F5	F4	R86	6	D3	J1	R87	6	D3	K2	TP2	6	E5	K4	R88	6	B4	J2	U1	7	D1	C1	R89	6	B2	M4	R90	6	E3	I3	U2	7	B1	F4	R91	6	D2	K1	U3A	6	C4	J3	R92	6	D2	K1	U3B	6	B3	J3	R93	6	D2	L2	U3C	6	F4	H4	R94	6	D2	L2	U3D	6	D5	H4	R95	6	B4	J3	U4A	6	D4	I5	R96	6	A4	K3	U4B	6	C4	I5	R97	6	A3	J3	U4C	6	F4	H4	R98	6	F4	G5	U5	6	C3	J2	R99	6	G4	H5	VR1	6	F4	H4	R101	6	C3	K2	VR2	7	A2	E2	R102	6	C2	M1	VR3	6	F3	H4	VR4	6	F4	H4	W1	6	G3	E4	W2	6	G3	E4	W3	6	G2	E4	W4	6	G2	E5

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CAUTION: ALL CIRCUITRY TO THE LEFT OF THE ISOLATION BOUNDARY IS AT POWER LINE POTENTIAL AND REQUIRES AN ISOLATION TRANSFORMER TO SERVICE.



J4 CONNECTS TO J153

A3 MAIN BOARD

FRONT PANEL

POWER (OPEN = ON)



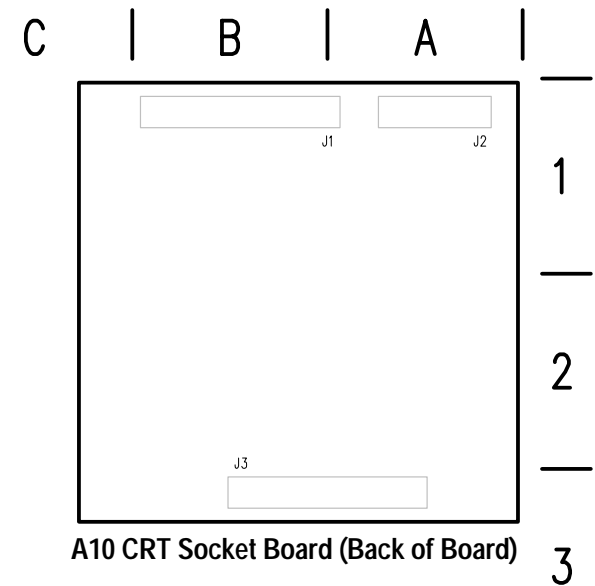
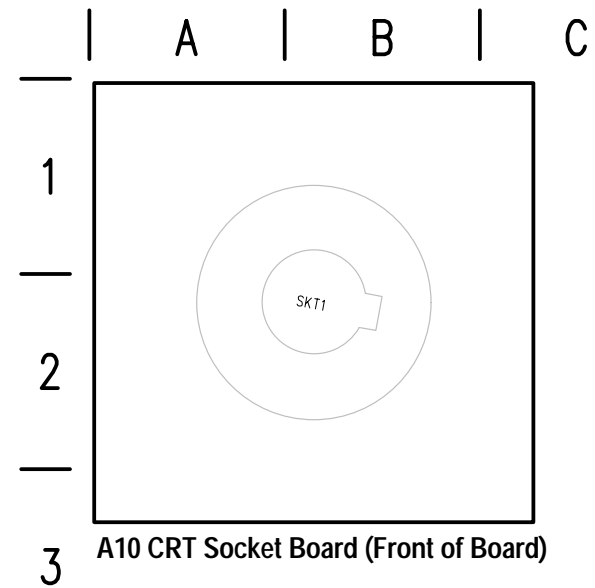
PART OF A1 POWER SUPPLY

**A Search Diagram (1214Sfr4i arim2 am**

The schematic diagram has an alphanumeric grid to assist in locating parts within that diagram.

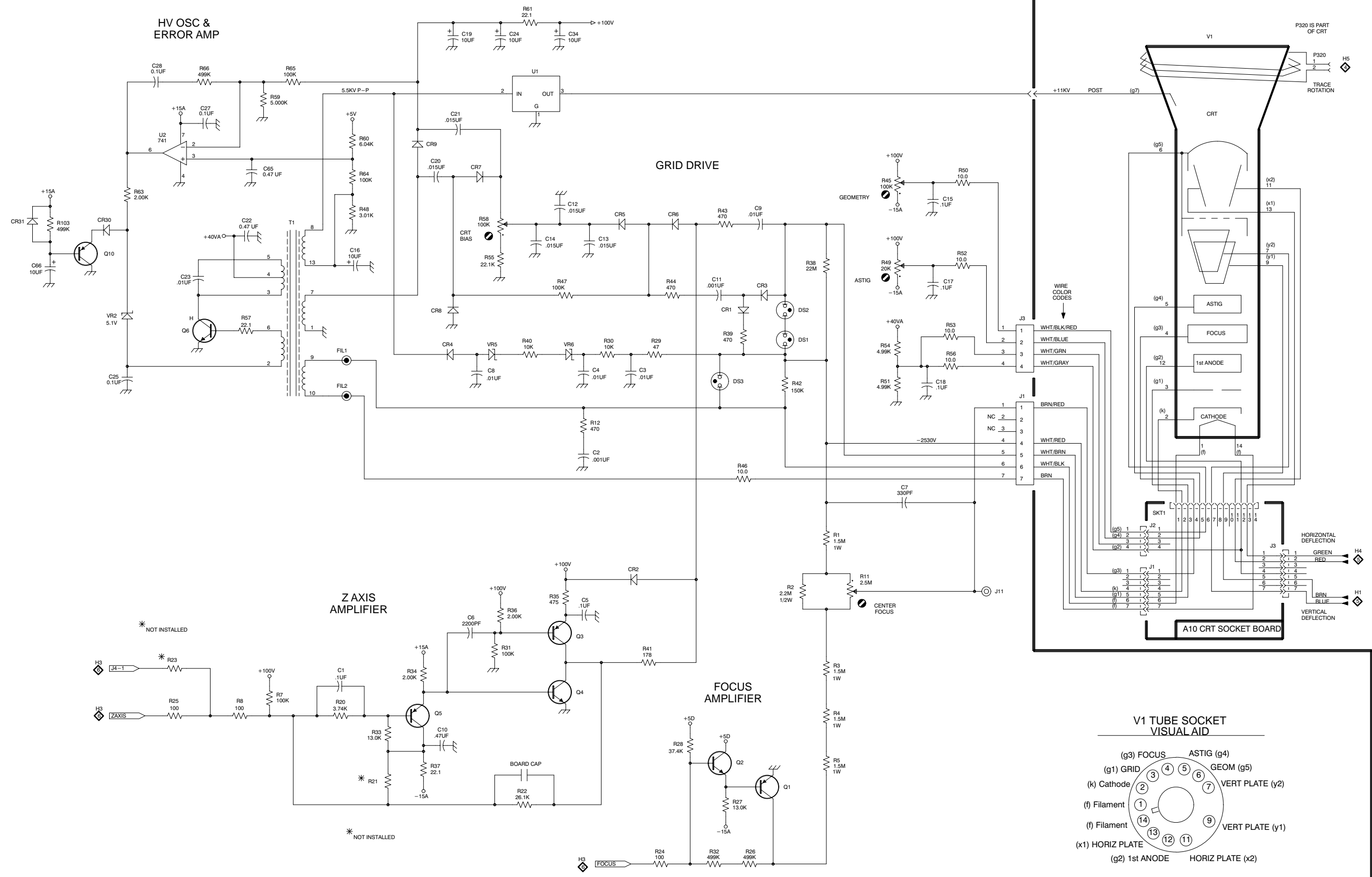
**Assembly A1.** Partial Assembly A1 also shown on Schematic 6.

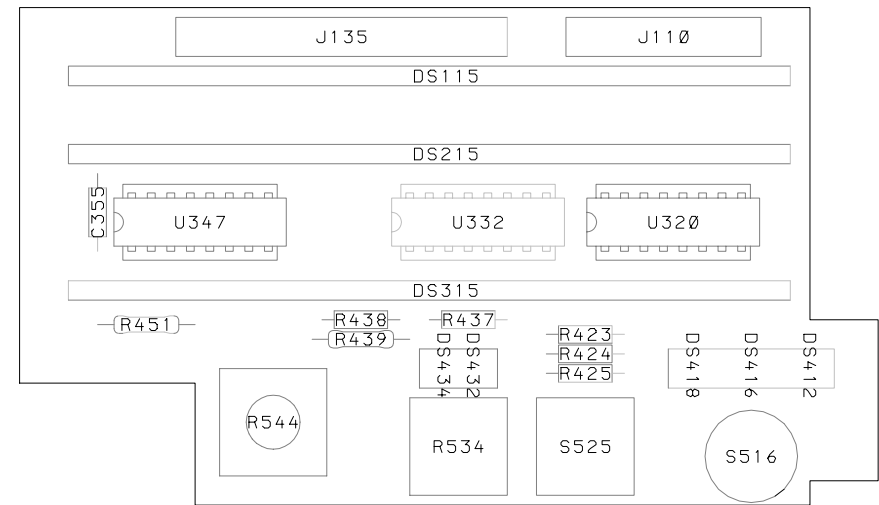
Comp No	Diag Loc	Bd Loc	Comp No	Diag Loc	Bd Loc	Comp No	Diag Loc	Bd Loc
C1	C4	A4	CR31	A2	E2	R33	C4	B4
C2	D3	D1				R34	C4	B4
C3	D3	A2	DS1	E2	B2	R35	D4	B3
C4	D3	A2	DS2	E2	B2			
C5	D4	B3	DS3	E3	B2	R36	D4	B3
						R37	C5	B4
C6	C4	B4	FIL1	C3	C1	R38	E2	B1
C7	F3	B1	FIL2	C3	C1	R39	E2	B1
C8	D3	B2				R40	D2	B2
C9	E2	B2	J1	F3	B1			
C10	C5	B4	J3	F2	D1	R41	D4	B3
			J11	F4	A2	R42	E3	C1
C11	E2	B1				R43	E2	B3
C12	D2	C4	Q1	E5	B3	R44	D2	B3
C13	D2	C4	Q2	E5	A3	R45	F2	C4
C14	D2	C4	Q3	D4	B4			
C15	F2	C4	Q4	D4	B4	R46	E3	C1
			Q5	C4	B4	R47	D2	C3
C16	C2	C3	Q6	B2	E1	R48	C2	C4
C17	F2	D4	Q10	A2	E2	R49	F2	C4
C18	F3	E1				R50	F2	E1
C19	C1	D4	R1	E3	A1			
C20	C2	D4	R2	E4	A2	R51	F3	E1
			R3	E4	A2	R52	F2	E1
C21	C1	D4	R4	E4	A3	R53	F2	E1
C22	B2	E2	R5	E5	A3	R54	F2	E1
C23	B2	E3				R55	D2	D4
C24	D1	E4	R7	B4	A4			
C25	A3	E2	R8	B4	A4	R56	F3	E1
			R11	F4	A2	R57	B2	E1
C27	B1	E3	R12	D3	C1	R58	D2	E4
C28	B1	E3	R20	C4	A4	R59	B1	E2
C34	D1	F4				R60	C1	E3
C65	B2	F4	R21	C5	A4			
C66	A2	E2	R22	D5	A4	R61	D1	E4
			R23	B4	A4	R63	A2	E2
CR1	E2	B1	R24	D5	A4	R64	C2	E2
CR2	D4	B3	R25	B4	A4	R65	B1	E3
CR3	E2	B1				R66	B1	E3
CR4	C2	B2	R26	E5	A3	R103	A2	E2
CR5	D2	C3	R27	E5	A4			
			R28	E5	A4	T1	B2	C4
CR6	E2	C3	R29	D2	B1			
CR7	C2	D4	R30	D2	A2	U1	D1	C1
CR8	C2	D4				U2	B1	F4
CR9	C1	E4	R31	D4	B3			
CR30	A2	E2	R32	E5	B3	VR2	A2	E2



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Static Sensitive Devices  
See Maintenance Section

**A2 Front Panel Board**

**Schematic Diagram <8> Component Locator Chart**

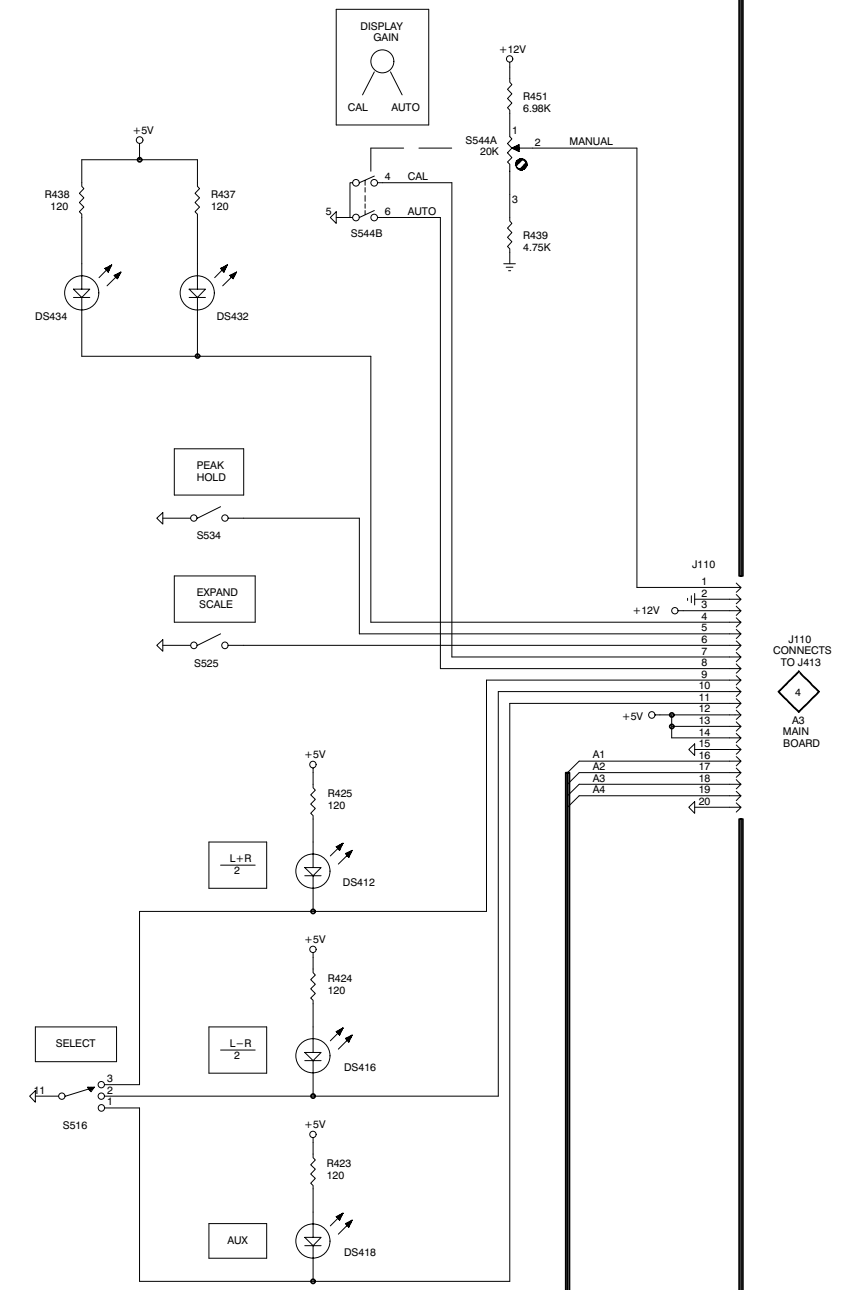
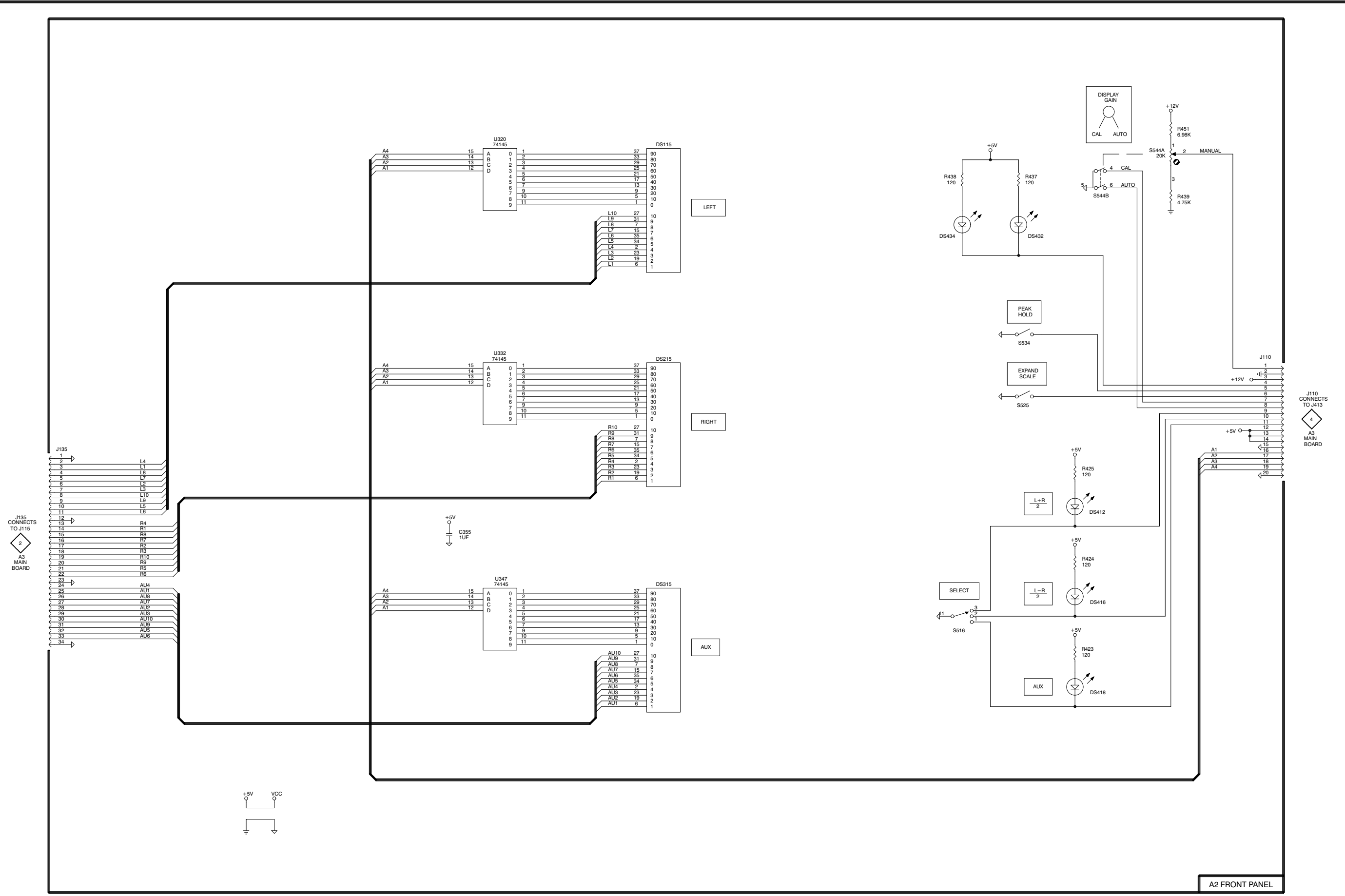
The schematic diagram has an alphanumeric grid to assist in locating parts within that diagram.

**Assembly A2.**

Comp No	Diag Loc	Comp No	Diag Loc
C355	C3	R437	G1
DS115	D1	R438	F1
DS215	D3	R439	G2
DS315	D4	R451	G1
DS412	G3	S516	F4
DS416	G4	S525	G3
DS418	G4	S534	G2
DS432	G2	S544A	G1
DS434	F2	S544B	G1
J110	H3	U320	C1
J135	A3	U332	C3
		U347	C4
R423	G4		
R424	G4		
R425	G3		

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# **Replaceable Mechanical Parts**

## Section 10

# Replaceable Mechanical Parts

This section contains a list of the replaceable mechanical components for the 760A, 760D, and 760N. Use this list to identify and order replacement parts.

### Parts Ordering Information

Replacement parts are available through your local Tektronix field office or representative.

Changes to Tektronix products are sometimes made to accommodate improved components as they become available and to give you the benefit of the latest improvements. Therefore, when ordering parts, it is important to include the following information in your order:

- Part number
- Instrument type or model number
- Instrument serial number
- Instrument modification number, if applicable

If you order a part that has been replaced with a different or improved part, your local Tektronix 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.

### Using the Replaceable Mechanical Parts List

The tabular information in the Replaceable Mechanical Parts List is arranged for quick retrieval. Understanding the structure and features of the list will help you find all of the information you need for ordering replacement parts. The following table describes the content of each column in the parts list.

**Parts List Column Descriptions**

Column	Column Name	Description
1	Figure & index number	Items in this section are referenced by figure and index numbers to the exploded view illustrations that follow.
2	Tektronix part number	Use this part number when ordering replacement parts from Tektronix.
3 and 4	Serial number	Column three indicates the serial number at which the part was first effective. Column four indicates the serial number at which the part was discontinued. No entry indicates the part is good for all serial numbers.
5	Qty	This indicates the quantity of parts used.
6	Name & description	An item name is separated from the description by a colon (:). Because of space limitations, an item name may sometimes appear as incomplete. Use the U.S. Federal Catalog handbook H6-1 for further item name identification.
7	Mfr. code	This indicates the code of the actual manufacturer of the part.
8	Mfr. part number	This indicates the actual manufacturer's or vendor's part number.

**Abbreviations**      Abbreviations conform to American National Standard ANSI Y1.1-1972.

**Chassis Parts**      Chassis-mounted parts and cable assemblies are located at the end of the Replaceable Electrical Parts List.

**Mfr. Code to Manufacturer Cross Index**      The table titled Manufacturers Cross Index shows codes, names, and addresses of manufacturers or vendors of components listed in the parts list.

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**Manufacturers Cross Index**


---

<b>Mfr. Code</b>	<b>Manufacturer</b>	<b>Address</b>	<b>City, State, Zip Code</b>
S3109	FELLER U.S. CORPORATION	72 Veronica Ave Unit 4	Summerset NJ 08873
TK0435	LEWIS SCREW CO	4300 S RACINE AVE	CHICAGO IL 60609-3320
OJR05	TRIQUEST CORP	3000 LEWIS AND CLARK HWY	VANCOUVER WA 98661-2999
0KB01	STAUFFER SUPPLY	810 SE SHERMAN	PORTLAND OR 97214
07416	NELSON NAME PLATE CO	3191 CASITAS	LOS ANGELES CA 90039-2410
2K262	BOYD CORP	6136 NE 87th AVE PO BOX 20038	PORTLAND OR 97220
22670	G M NAMEPLATE INC	2040 15TH AVE WEST	SEATTLE WA 98119-2728
3L462	QUALITY PLASTICS DIV. OF MOLL PLASTICRAFTERS L.P.	2101 CRESTVIEW DRIVE	NEWBERG, OR 97132-9518
34785	DEK INC	3480 SWENSON AVE	ST CHARLES IL 60174-3450
50434	HEWLETT-PACKARD CO OPTOELECTRONICS DIV	370 W TRIMBLE RD	SAN JOSE CA 95131-1008
73743	FISCHER SPECIAL MFG CO	111 INDUSTRIAL RD	COLD SPRING KY 41076-9749
80009	TEKTRONIX INC	14150 SW KARL BRAUN DR PO BOX 500	BEAVERTON OR 97077-0001
80126	PACIFIC ELECTRICORD CO	747 W REDONDO BEACH PO BOX 10	GARDENA CA 90247-4203
85471	BOYD CORP	13885 RAMOMA AVE	CHINO CA 91710
93907	TEXTRON INC CAMCAR DIV	600 18TH AVE	ROCKFORD IL 61108-5181

## Replaceable Mechanical Parts

### Replaceable mechanical parts list

Fig. & Index Number	Tektronix Part Number	Serial No. Effective	Serial No. Discont'd	Qty	Name & Description	Mfr. Code	Mfr. Part Number
1-1	426-2174-02			1	FRAME,CRT:BEZEL *MOUNTING PARTS*	80009	426217402
-2	211-0690-02			2	SCREW,MACHINE:6-32 X 0.875,PNH,SST *END MOUNTING PARTS*	93907	B20-70430
-3	361-1515-00			1	SPACER,RING:4.9 X3.35,POLYCARBONATE	3L462	361-1515-00
-4	333-3320-01			1	PANEL,FRONT:760	80009	333332001
-5	378-0258-00			1	FLTR,CONTRASTIN:GRAY,POLYCARBONATE	80009	378025800
-6	331-0495-00			1	SCALE,CRT:SOUND STAGE GRATICULE,760	0JR05	331-0495-00
-7	331-0245-01			1	MASK,CRT SCALE:760	2K262	ORDER BY DESC
-8	333-3986-00			1	PANEL,FRONT:760A (760A ONLY)	80009	333398600
	333-3787-00			1	PANEL,FRONT:760D (760D ONLY)	22670	333-3788-00
	333-3788-00			1	PANEL,FRONT:760N (760N ONLY) *MOUNTING PARTS*	22670	333-3788-00
-9	211-0721-00			2	SCREW,MACH:6-32 X 0.375,PNH,STL,CDPL,T-15 TORX DR *END MOUNTING PARTS*	0KB01	ORDER BY DESC
-10	-----			1	CIRCUIT BD ASSY:FRONT PANEL (SEE A2 REPL) *MOUNTING PARTS*		
-11	211-0721-00			4	SCREW,MACH:6-32 X 0.375,PNH,STL,CDPL,T-15 TORX DR *END MOUNTING PARTS*	0KB01	ORDER BY DESC
	426-2101-04			1	FRAME SECT,CAB:FRONT *MOUNTING PARTS*	3L462	ORDER BY DESC
-13	211-0721-00			3	SCREW,MACH:6-32 X 0.375,PNH,STL,CDPL,T-15 TORX DR *END MOUNTING PARTS*	0KB01	ORDER BY DESC
-14	-----			1	SWITCH,PUSH:0.4A,125VAC,W/SOLDER LUG,BUTTONW/ YELLOW INDICATOR (SEE S1 REPL) *MOUNTING PARTS*		
-15	210-0405-00			2	NUT,PLAIN,HEX:2-56 X 0.188,BRS CD PL	73743	12157-50
-16	211-0100-00			2	SCREW,MACHINE:2-56 X 0.750,PNH,STL *END MOUNTING PARTS*	TK0435	ORDER BY DESC
-17	-----			1	CIRCUIT BD ASSY:MAIN (SEE A3 REPL) *MOUNTING PARTS*		
-18	211-0721-00			8	SCREW,MACH:6-32 X 0.375,PNH,STL,CDPL,T-15 TORX DR *END MOUNTING PARTS*	0KB01	ORDER BY DESC
-19	337-3321-00			1	SHIELD,ELEC:CKT BD 1730	85471	337-3321-00
-20	-----			1	CIRCUIT BD ASSY:POWER SUPPLY (SEE A1 REPL)		
-21	211-0721-00	B050000	B052742	7	SCREW,MACH:6-32 X 0.375,PNH,STL,CDPL,T-15 TORX DR (760A ONLY)	0KB01	ORDER BY DESC
	211-0721-00	B052743		6	SCREW,MACH:6-32 X 0.375,PNH,STL,CDPL,T-15 TORX DR (760A ONLY)	0KB01	ORDER BY DESC
	211-0721-00	B030000	B030174	7	SCREW,MACH:6-32 X 0.375,PNH,STL,CDPL,T-15 TORX DR (760D ONLY)	0KB01	ORDER BY DESC
	211-0721-00	B030175		6	SCREW,MACH:6-32 X 0.375,PNH,STL,CDPL,T-15 TORX DR (760D ONLY)	0KB01	ORDER BY DESC

Replaceable mechanical parts list (Cont.)

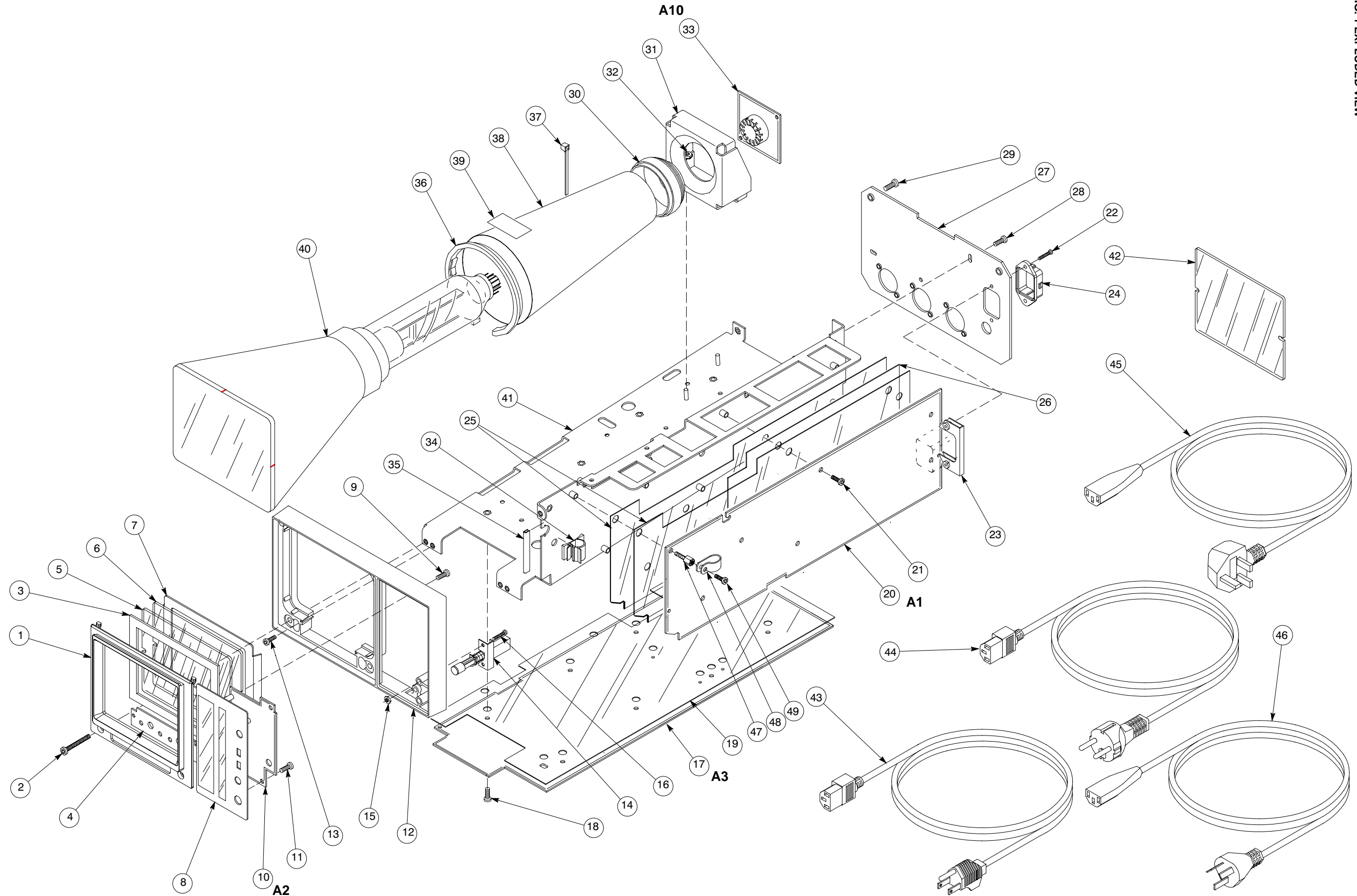
Fig. & Index Number	Tektronix Part Number	Serial No. Effective	Serial No. Discont'd	Qty	Name & Description	Mfr. Code	Mfr. Part Number
	211-0721-00	B030000	B030208	7	SCREW,MACH:6-32 X 0.375,PNH,STL,CDPL,T-15 TORX DR (760N ONLY)	0KB01	ORDER BY DESC
	211-0721-00	B030209		6	SCREW,MACH:6-32 X 0.375,PNH,STL,CDPL,T-15 TORX DR (760N ONLY)	0KB01	ORDER BY DESC
-22	211-0014-00			2	SCREW,MACHINE:4-40 X 0.5,PNH,STL	TK0435	ORDER BY DESC
-23	337-3796-01			1	SHIELD,ELEC:0.032 BRASS,C26000,0.5 HARD	80009	337379601
-24	131-3573-00			1	CONN,PLUG,ELEC:MALE,W/LOCKING ADAPTER	80126	B-0779
-25	337-3257-00			2	SHIELD,CKT BD:LV PWR SUPPLY	2K262	ORDER BY DESC
-26	337-3931-00			1	SHIELD,ELEC:ALUMINUM	80009	337393100
-27	333-3321-03			1	PANEL,REAR: *MOUNTING PARTS*	5Y400	ORDER BY DESC
-28	211-0721-00			3	SCREW,MACH:6-32 X 0.375,PNH,STL,CDPL,T-15 TORX DR *END MOUNTING PARTS*	0KB01	ORDER BY DESC
-29	211-0720-01			2	SCREW,MACH:6-32 X 0.50,PNH,STL,TORX T-15WITH SLOT	0KB01	211-0720-01
-30	348-1464-00			1	MANCHET:CRT,END RUBBER MANCHET,31.5MM THK X 63MM OD,50.5 ID	80009	348-1464-00
-31	407-4395-00			1	BRACKET,CRT:BACK,0.062,AL *MOUNTING PARTS*	80009	407439500
-32	210-0457-00			2	NUT,PL,ASSEM WA:6-32 X 0.312,STL CD PL *END MOUNTING PARTS*	TK0435	ORDER BY DESC
-33	-----			1	CIRCUIT BD ASSY:CRT SOCKET BD (SEE A10 760A REPL)		
-34	343-0916-00	B050000	B052742	1	CLAMP,LOOP:0.5 ID,NYLON (760A ONLY)	34785	029-500
	343-0916-00	B050000	B030174	1	CLAMP,LOOP:0.5 ID,NYLON (760D ONLY)	34785	029-500
	343-0916-00	B050000	B030208	1	CLAMP,LOOP:0.5 ID,NYLON (760N ONLY)	34785	029-500
-35	252-0571-00			1	NEOPRENE EXTR:CHAN,0.234 X 0.156	85471	ORDER BY DESC
-36	386-4443-00			1	SUPPORT,SHIELD:CRT,FRONT,PLASTIC	80009	386444300
-37	346-0133-00			1	STRAP,TIEDOWN,E:14.0 X 0.091,NYLON	59730	TY234M EURO DIR
-38	337-4064-00			1	SHIELD,ELEC:MU-METAL CRT SHIELD		337-4064-00
-39	334-1379-00			1	MARKER,IDENT:MKD HI VACUUM	07416	ORDER BY DESC
-40	-----			1	ELECTRON TUBE:CRT,FINISHED (SEE V1 REPL)		
-41	426-2103-07			1	FRAME,CHASSIS:ALUMINUM	80009	426210307
-42	331-0496-00			1	SCALE,CRT:X-Y GRATICULE,760	0JR05	331-0496-00
	070-5992-05			1	MANUAL,TECH:INST,760A,760D,760N	80009	070599203
	150-1181-00			3	DIODE,OPTO:LED;RED,626NM,101 ELEMENTLINEAR ARRAY,0.100" SIP,COM-CATH	50434	QDSP-8838
-43	161-0216-00			1	CABLE ASSY,PWR,:3,18 AWG,2.5M L,BLACK	80126	C7120-25M-BL
-44	161-0215-00			1	CABLE ASSY,PWR:3,0.75MU,2.5MML,GREY (EUROPEAN OPTION A1 ONLY)	80126	0-5335-008-GY

## Replaceable Mechanical Parts

### Replaceable mechanical parts list (Cont.)

Fig. & Index Number	Tektronix Part Number	Serial No. Effective	Serial No. Discont'd	Qty	Name & Description	Mfr. Code	Mfr. Part Number
-45	161-0066-10			1	CA ASSY,PWR:3.0.1MM SQ,250V/10A,2.5 METER,STR, IEC320,RCPT X 13A,FUSED UK PLUG(13A FUSE),UNITED KINGDOM,SAFTEY CONTROLLED (UNITED KINGDOM OPTION A2 ONLY)	S3109	BS/13-H05VVF3G0
-46	161-0066-11			1	CA ASSY,PWR:3.1.0MM SQ,250V/10A,2.5 METER,STR, IEC320,RCPT,AUSTRALIA,SAFTEY CONTROLLED (AUSTRALIAN OPTION A3 ONLY)	S3109	198-000
	-----			1	PLAIN CASE:1700F00		
	-----			1	PTD CASE ASSY:1700F02		
	-----			1	RACK ADAPTER,SIDE-BY-SIDE:1700F05		
	-----			1	FILLER PANEL:1700F06		
	-----			1	DRAWER,UTILITY:1700F07		
-47	129-1308-00	B052743		1	SPACER,POST:6-32 X 0.75,HEX,STL,CAD PL (760A ONLY)	55566	4538-632-S-3
	129-1308-00	B030175		1	SPACER,POST:6-32 X 0.75,HEX,STL,CAD PL (760D ONLY)	55566	4538-632-S-3
	129-1308-00	B030209		1	SPACER,POST:6-32 X 0.75,HEX,STL,CAD PL (760N ONLY)	55566	4538-632-S-3
-48	343-0013-00	B052743		1	CLAMP,LOOP:0.375 ID,PLASTIC (760A ONLY)	06915	E6 CLEAR ROUND CABLE CLAMP
	343-0013-00	B030175		1	CLAMP,LOOP:0.375 ID,PLASTIC (760D ONLY)	06915	E6 CLEAR ROUND CABLE CLAMP
	343-0013-00	B030209		1	CLAMP,LOOP:0.375 ID,PLASTIC (760N ONLY)	06915	E6 CLEAR ROUND CABLE CLAMP
-49	211-0720-01	B052743		1	SCREW,MACH:6-32 X 0.50,PNH,STL,TORX T-15WITH SLOT (760A ONLY)	0KB01	211-0720-01
	211-0720-01	B030175		1	SCREW,MACH:6-32 X 0.50,PNH,STL,TORX T-15WITH SLOT (760D ONLY)	0KB01	211-0720-01
	211-0720-01	B030209		1	SCREW,MACH:6-32 X 0.50,PNH,STL,TORX T-15WITH SLOT (760N ONLY)	0KB01	211-0720-01

FIG. 1 EXPLODED VIEW



760A/760D/760N