

Instructions



050-3596-00

**Power Supply Modification Kit
764 Digital Audio Monitor**

075-0847-00

Warning

The servicing instructions are for use by qualified personnel only. To avoid personal injury, do not perform any servicing unless you are qualified to do so. Refer to all safety summaries prior to performing service.

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- In North America, call 1-800-833-9200.
- Worldwide, visit www.tektronix.com to find contacts in your area.

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.

Use Proper Voltage Setting. Before applying power, ensure that the line selector is in the proper position for the source being used.

Connect and Disconnect Properly. Do not connect or disconnect probes or test leads while they are connected to a voltage source.

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.

Observe All Terminal Ratings. To avoid fire or shock hazard, observe all ratings and markings on the product. Consult the product manual for further ratings information before making connections to the product.

Do not apply a potential to any terminal, including the common terminal, that exceeds the maximum rating of that terminal.

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

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

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

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

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.

Terms in this Manual

These terms may appear in this manual:



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



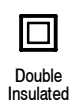
CAUTION. *Caution statements identify conditions or practices that could result in damage to this product or other property.*

Symbols and 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.

The following symbols may appear on the product:



Service Safety Summary

Only qualified personnel should perform service procedures. Read this *Service Safety Summary* and the *General Safety Summary* before performing any service procedures.

Do Not Service Alone. Do not perform internal service or adjustments of this product unless another person capable of rendering first aid and resuscitation is present.

Disconnect Power. To avoid electric shock, switch off the instrument power, then disconnect the power cord from the mains power.

Use Caution When Servicing the CRT. To avoid electric shock or injury, use extreme caution when handling the CRT. Only qualified personnel familiar with CRT servicing procedures and precautions should remove or install the CRT.

CRTs retain hazardous voltages for long periods of time after power is turned off. Before attempting any servicing, discharge the CRT by shorting the anode to chassis ground. When discharging the CRT, connect the discharge path to ground and then the anode. Rough handling may cause the CRT to implode. Do not nick or scratch the glass or subject it to undue pressure when removing or installing it. When handling the CRT, wear safety goggles and heavy gloves for protection.

Use Care When Servicing With Power On. Dangerous voltages or currents may exist in this product. Disconnect power, remove battery (if applicable), and disconnect test leads before removing protective panels, soldering, or replacing components.

To avoid electric shock, do not touch exposed connections.

X-Radiation. To avoid x-radiation exposure, do not modify or otherwise alter the high-voltage circuitry or the CRT enclosure. X-ray emissions generated within this product have been sufficiently shielded.

Kit Description

This kit includes parts and instructions to update the power supply board in the 764. After modifications, the power supply board is equivalent to the 671-3162-05 version of the power supply board.

This document supports Tektronix modification: ECO1260

Products

764 Digital Audio Monitor This kit modifies power supply boards part numbered 671-3162-04 to the equivalent part number 671-3162-05.

The affected serial numbers are between B020000 and B024716, excluding the following serial numbered products:

B024643, B024654, B024674, B024682, B024683, B024684, B024685, B024686, B024687, B024689, B024690, B024691, B024692, B024693

Minimum Tool and Equipment List

Required tools and equipment	Part number
Screwdriver handle Accepts Torx®-driver bits	General Tool: 620-440
T-15 Torx tip	General Tool: 640-247
Electric drill	
1/8 inch drill bit	
Soldering iron	
764 Digital Audio Monitor Service Manual (Serial Number B020000 and Above) (Recommended)	070-8810-05 Available for download from the Manual Finder at the Tektronix Web site www.tektronix.com

Kit Parts List

Circuit/figure number	Quantity	Part number	Description
Q5	1 ea.	151-1323-00	TRANSISTOR,PWR; MOS,N-CH;900V,7.2A,0.96 OHM;FAIRCHILD FQAF11N90,TO-3PF ISOLATED FULL PACK,SAFETY CONTROLLED
CR6	1 ea.	152-1085-00	DIODE,RECT; ULTRA FAST;1000V,1A,30A IFSM,75NS SOFT RECOVERY,MATTE TIN OR SNAG3 (VISHAY);BYV26E,SOD-57
C23	1 ea.	285-1413-00	CAP,FXD,FILM; METALIZED POLYPROPYLENE FILM AND FOIL;5600PF,10%,1250V;RA- DIAL BOX STYLE,18MM L X 15MM H X 8MM W,15MM LS
R60	1 ea.	305-0203-00	RES,FXD,METAL OXIDE; 20K OHM,5%,2W,FLAME PROOF;AXIAL,0.3 IN DIA X 0.687 IN L,0.032 IN LEAD DIA
C21	1 ea.	281-0772-00	CAP,FXD,CERAMIC; MLC;4700PF,10%,100V,0.100 X 0.170;AXIAL,MI
R13	1 ea.	322-3235-00	RES,FXD; METAL FILM;2.74K OHM,1%,0.2W,TC=100 PPM;AX- IAL,T&R,SMALL BODY
	1 ea.	075-0847-00	KIT INSTRUCTION;PWR SUPPLY FET REPLACEMENT, 050-3596-00

Installation Instructions

These instructions are for personnel who are familiar with servicing the product. If you need further details for disassembling or reassembling the product, refer to the appropriate product manual. Contact your nearest Tektronix, Inc., Service Center or Tektronix Factory Service for installation assistance.



CAUTION. To prevent static discharge damage, service the product only in a static-free environment. Observe standard handling precautions for static-sensitive devices while installing this kit. Always wear a grounded wrist strap, grounded foot strap, and static resistant apparel while installing this kit.

Disassemble the Instrument

Removing the Enclosure (Cabinet)

Disconnect all cables from the 764 Digital Audio Monitor and remove the two cabinet mounting screws shown in Figure 1. Slide the instrument forward out of the enclosure.

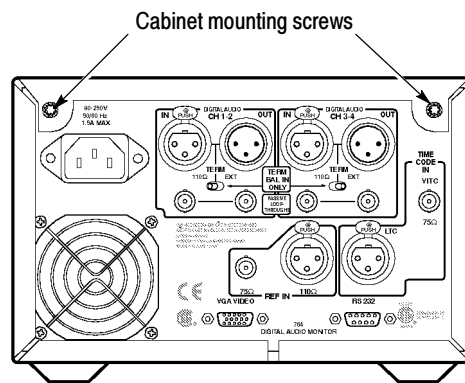


Figure 1: Rear view of the 764 Digital Audio Monitor in a Tektronix enclosure

Power Supply (A4)

To avoid electrical shock, wait approximately two minutes after unplugging the AC power cord from the main power supply before beginning this procedure.

Use figure 2 as a guide while disassembling the instrument.

Removal. Do the following steps:

1. Remove the five Torx-head screws that retain the clear plastic power supply shield.
2. Desolder the two wires from J2; note the relative positions of the gray/brown (hot) and gray/blue (neutral) wires for correct reassembly.
3. Carefully disconnect the cables from Power Supply assembly connectors J4 (power switch), J6 (display board), J7 (AES board), J8 (Main board), and J9 (cooling fan).
4. Remove the five spacer posts and two Torx-head screws that fasten the Power Supply to the chassis.
5. Lift the assembly away from the chassis.

Replacement. Reverse the removal procedure. Be sure to solder the gray/brown (hot) wire to the circuit board run that leads from J2 to the fuse (F1). Be careful not to over-tighten the mounting screws. Be sure to replace the plastic shield; *do not* operate the instrument when the shield is not in place.

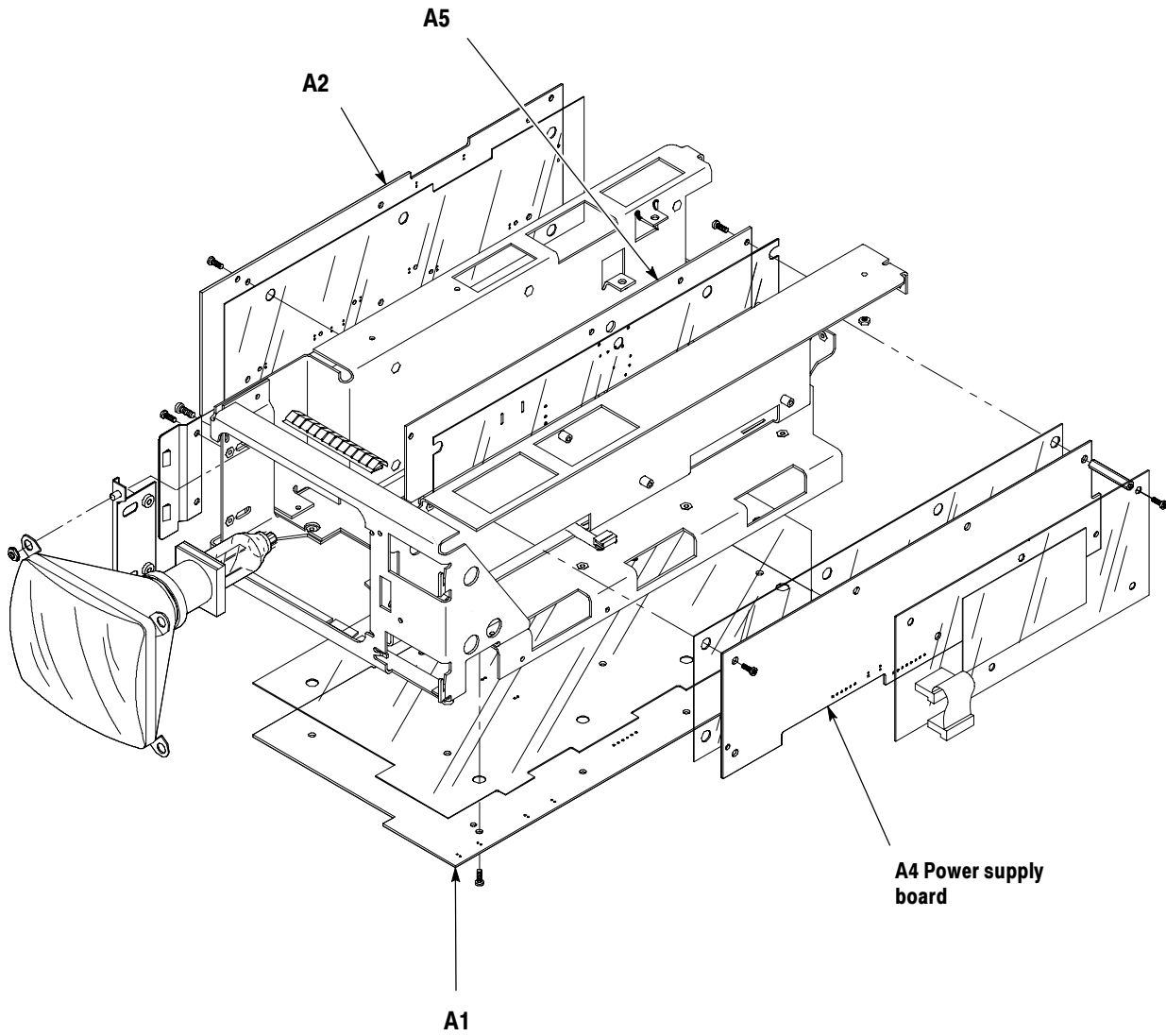


Figure 2: Chassis parts

Modify the Power Supply Board

Use this procedure to modify the power supply board using the parts contained in this kit.

STOP. Before proceeding with these modifications, ensure that the part number of the power supply board is 671-3162-04. Newer or older versions of this board do not require this modification.

1. Remove the FET from location Q5 by unsoldering the FET and removing the screw and nut securing it to the heatsink. Do not unsolder the heat sink.

NOTE. Retain the screw and nut for installing the new FET to the heatsink.

2. Modify the heatsink by drilling a new mounting hole, matching the location of the mounting hole in the new FET.
3. Install FET 151-1323-00 to modified heatsink with the screw and nut saved from step 1. See Figures 3 and 4.

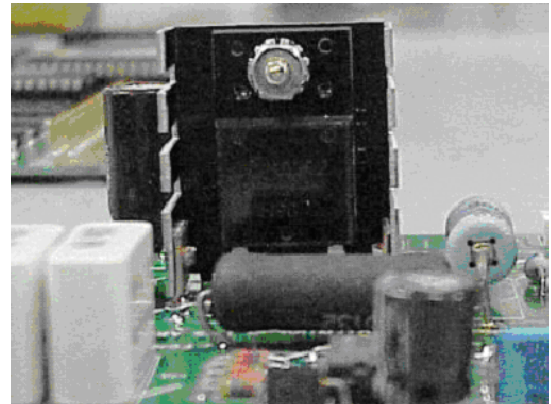
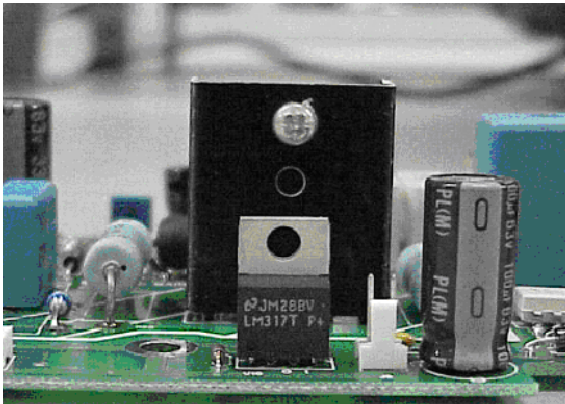


Figure 3: New FET installed with modified heatsink

4. Install the resistor 305-0203-00 (20 k Ω) at location R60. See Figure 4.



CAUTION. Raise the resistor approximately 1/8 inch off the circuit board to allow for heat dissipation.

5. Install the diode 152-1085-00 at location CR6. See Figure 4.
6. Install the capacitor 285-1413-00 at location C23. See Figure 4.

7. Replace resistor R13. See Figure 5.
 - a. Remove the existing resistor at R13 (3.74 k Ω).
 - b. Install resistor 322-3235-00 (2.74 k Ω) at R13.
8. Replace C21. See Figure 5.
 - a. Remove the existing capacitor at C21 (2200 pF).
 - b. Install capacitor 281-0772-00 (4700 pF) at C21.

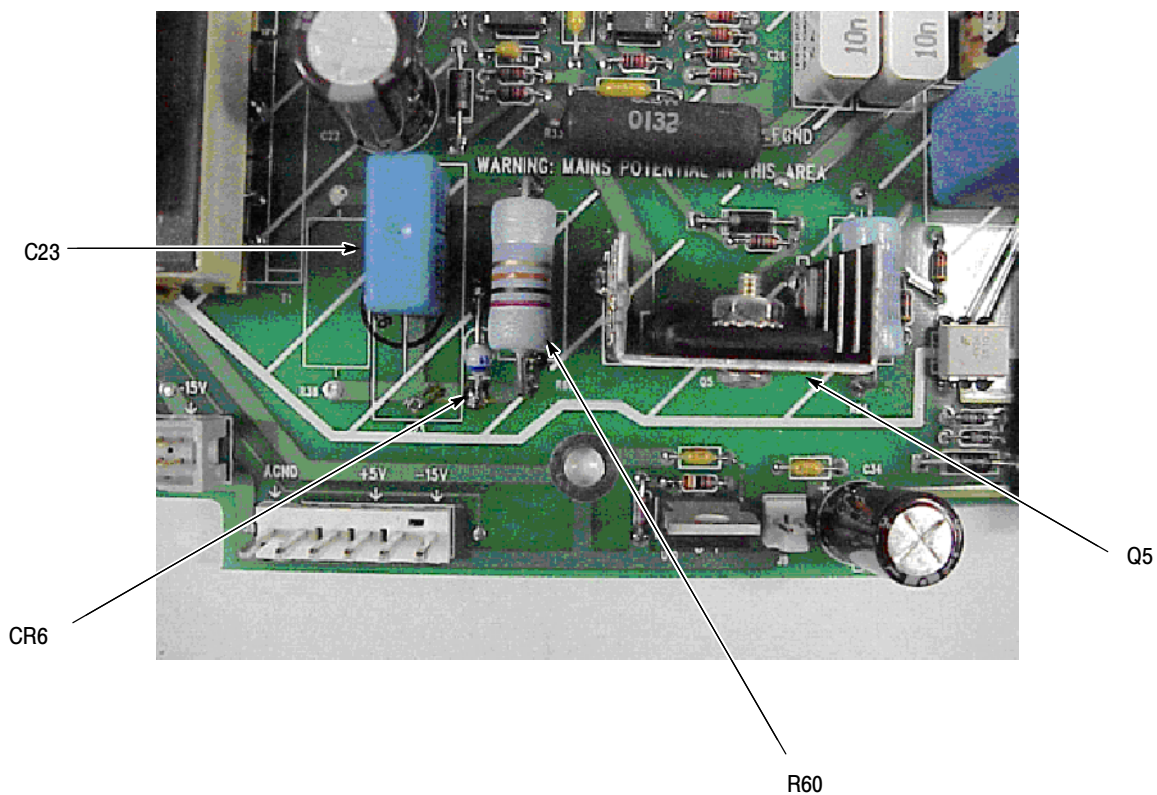


Figure 4: Location of parts on circuit board

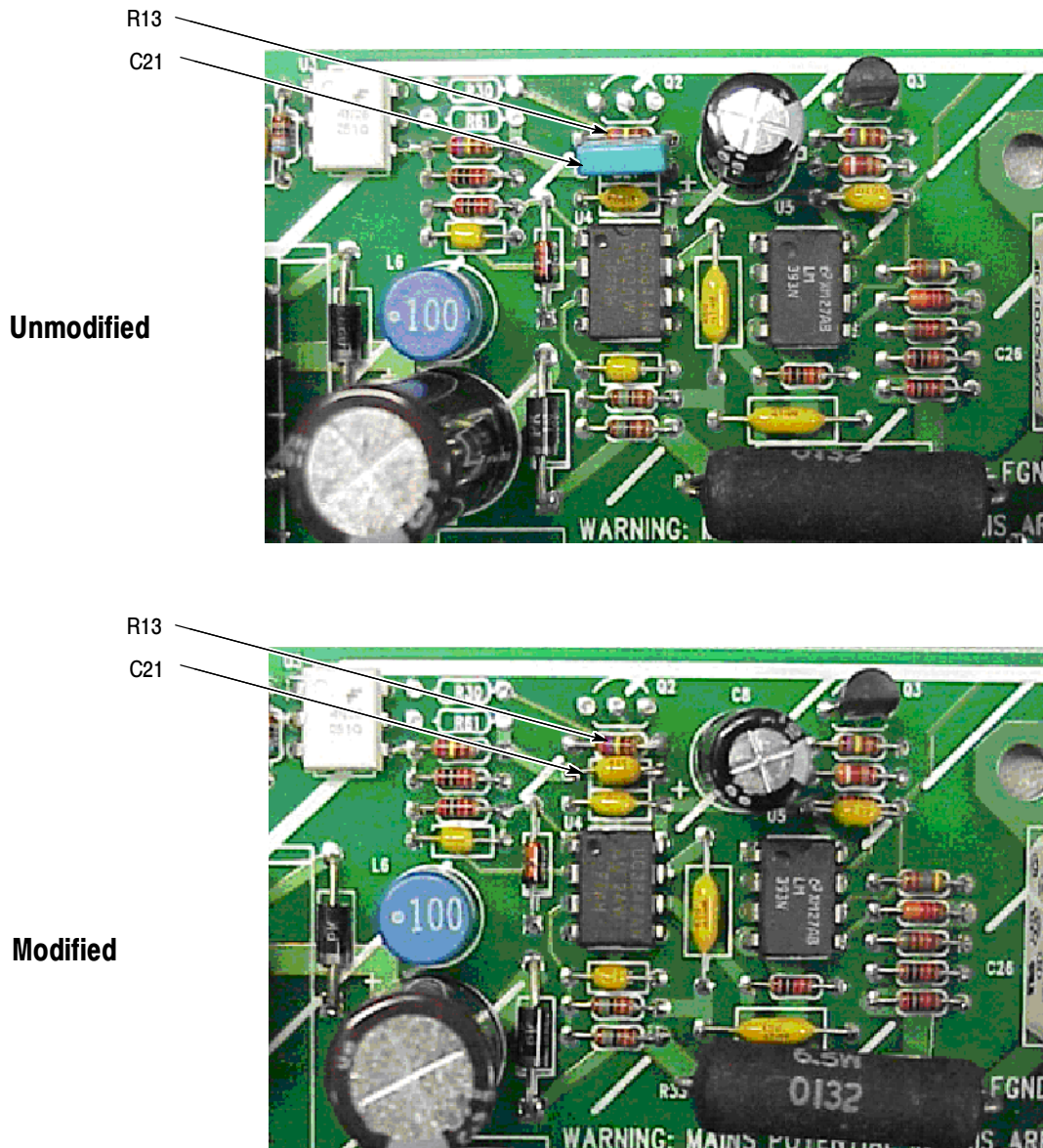


Figure 5: Replacing R13 and C21

Reassemble

Reinstall the power supply board and reassemble the instrument in reverse order of the disassembly procedure.

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