Instructions

Tektronix

050-3540-00 and above
Controller Board Replacement
RFA300A

075-0760-00

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.

www.tektronix.com

075076000

Copyright © Tektronix, Inc. All rights reserved.

Tektronix products are covered by U.S. and foreign patents, issued and pending. Information in this publication supercedes that in all previously published material. Specifications and price change privileges reserved.

Tektronix, Inc., P.O. Box 500, Beaverton, OR 97077

TEKTRONIX and TEK are registered trademarks of Tektronix, Inc.

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.

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

Symbols and Terms

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.*

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:

CAUTION
Refer to Manual

WARNING
High Voltage

Kit Description

Due to design changes, when replacing the Controller board for your instrument you now must replace both the Controller and I/O boards at the same time. These instructions will guide you through this process.

This document supports Tektronix modification: ECO486

Products

RFA300A B010100 - B020000

Minimum Tool and Equipment List

Required tools and equipment	Part number
Anti-static wrist strap	Standard Tools
8 inch adjustable wrench or appropriate size open-end wrench	
Torque driver	
Screw driver	
T15 bit for Torque and Screw drivers	

Kit Parts List

Quantity	Part number	Description
1 each	672-6053-xx	CIRCUIT BD ASSY; PICMG PCI, CONTROLLER
1 each	671-5691-xx	CIRCUIT BD ASSY; PROCESSOR,IO
1 each	174-4823-xx	CABLE ASSY,SP;DISCRETE,DUAL ENDED, 2 X 20,
1 each	174-4825-xx	CABLE ASSEMBLY; EIDE TO PIO BOARD FROM CONTROLLER, 3.125 INCHES
1 each	343-1691-xx	RETAINER; CIRCUIT BOARD;RFA300A
1 each	063-3623-xx	SOFTWARE PKG; 8VSB SYSTEM & APPLICATIONS RESTORE MEDIA,V1.2,CD;RFA300A
1 each	075-0760-00	KIT INSTRUCTION; CONTROLLER BOARD REPLACE-MENT;050-3540-00;RFA300A

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.*

Remove the Controller and I/O Boards

Removing the Cabinet

The cabinet must be removed to access any of the RFA300A measurement set application modules and to access the mainframe modules and cable connectors to the controller board. Use the following procedure to remove the cabinet:

1. Be sure that you are wearing a static grounding wrist strap.
2. Before removing the cabinet, power down the RFA300A measurement set and unplug the power cord.
3. Disconnect any cables connected to the rear panel connectors of the measurement set. Note their locations for reinstallation.
4. Put the protective front cover on the measurement set and set the cabinet on the working surface with the rear panel up.
5. Remove the two screws from the handle on the left side of the cabinet (see Figure 1). These screws attach to posts mounted on the power supply module.
6. Remove the screws from the four rear-panel feet (see Figure 2).

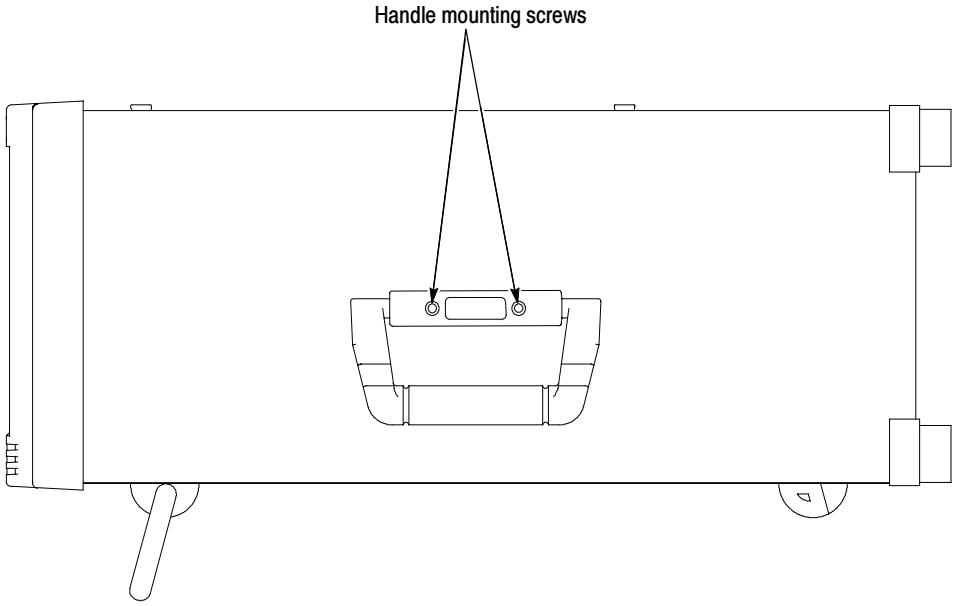

Figure 1: Right side handle screws

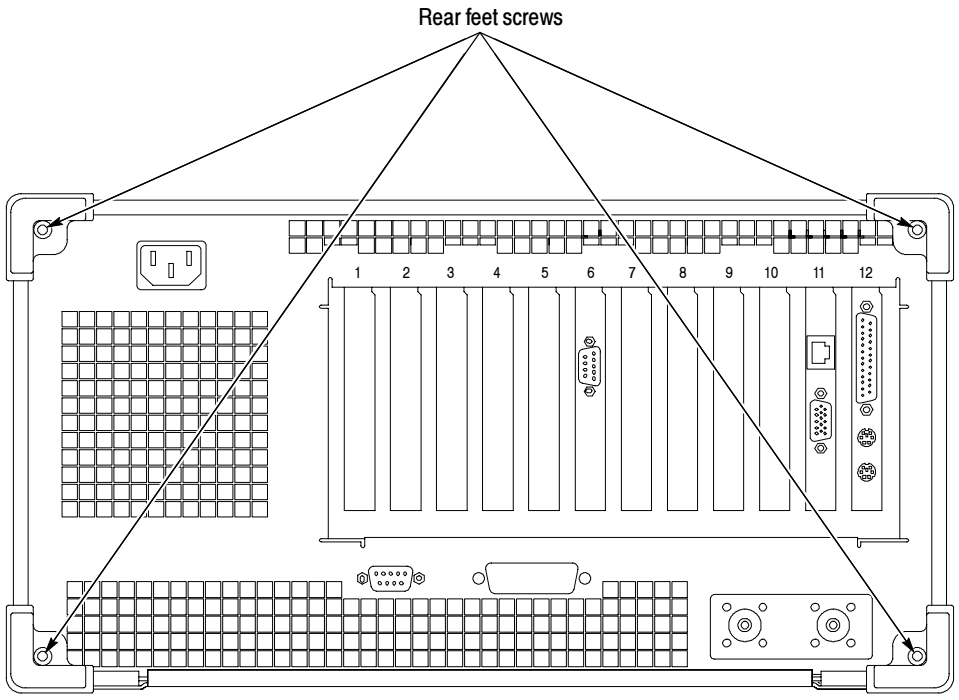

Figure 2: Rear-panel feet removal

7. Use either an adjustable wrench or appropriate size open end wrench as a lever to pry the cabinet loose from the chassis. Loosen each side alternately until the cabinet is released from the EMI gasketing.

8. Slide the cabinet up and off the chassis.

Controller Board Removal

1. Remove the nine T15 screws that secure the circuit board retaining plate (see Figure 3), and lift the retaining plate away.

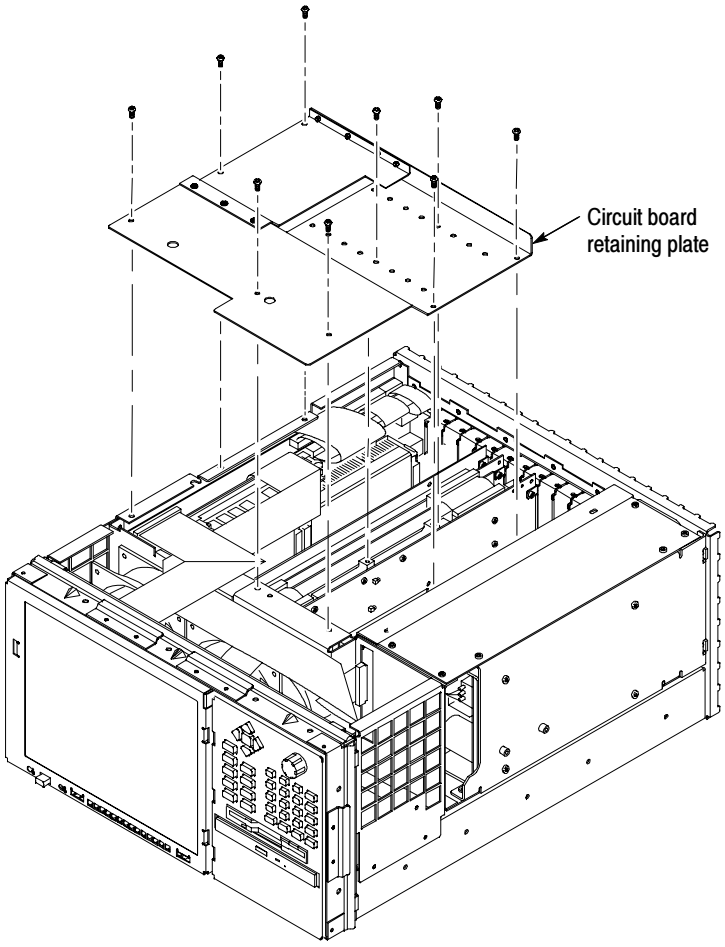

Figure 3: Circuit board retaining plate

2. Remove the two T15 screws that hold the controller board to the mainframe chassis (see Figure 4 for the screw locations).

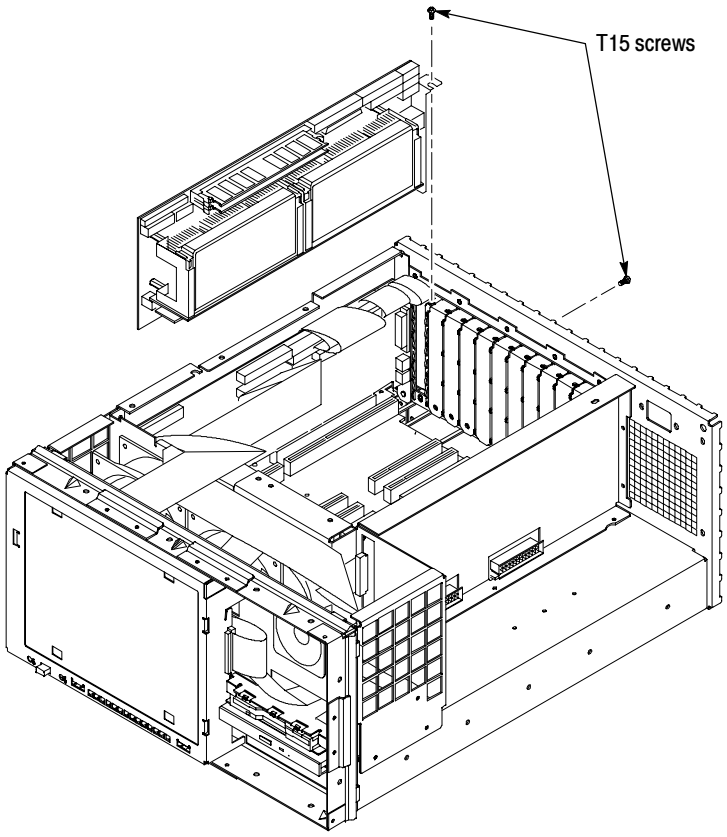

Figure 4: Controller board orientation and screw locations

3. Disconnect the controller board end of all six cables connecting the controller board with the I/O board.
4. Disconnect the 6-pin multi-colored cable from the controller board.
5. Carefully pull up on the controller board to loosen it from the backplane connectors.
6. When the board is loose from the backplane connectors, lift the assembly up and partially out of the module bay.
7. Disconnect the front-panel interface, CD-drive, and floppy drive cables.
8. Place the removed circuit board on a static-free surface or in a protective anti-static bag.

I/O Board Removal

1. Remove the two T15 screws that hold the I/O board to the mainframe chassis (one on top and the other in the rear panel, similar to the position shown for the controller board in Figure 4).
2. Carefully pull up on the I/O board to loosen it from the backplane connectors.
3. When the board is loose from the backplane connectors, lift the assembly up to gain access to the lower interconnection cables.
4. Disconnect the CD drive ribbon cable from J250 of the I/O circuit board. See Figure 6.
5. Disconnect the IDE hard drive ribbon cable from J150 on the I/O board. See Figure 5.
6. Disconnect the front panel ribbon cable from JR1 on the I/O board. See FIgure 6.

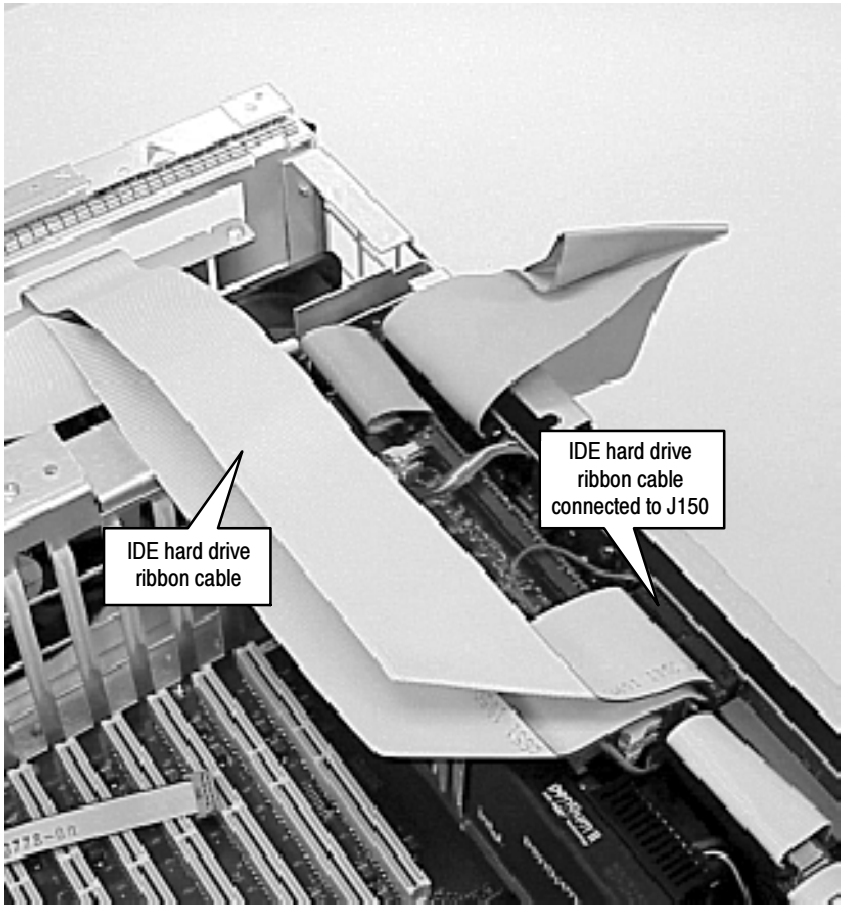

Figure 5: IDE hard drive ribbon cable connected to the I/O board.

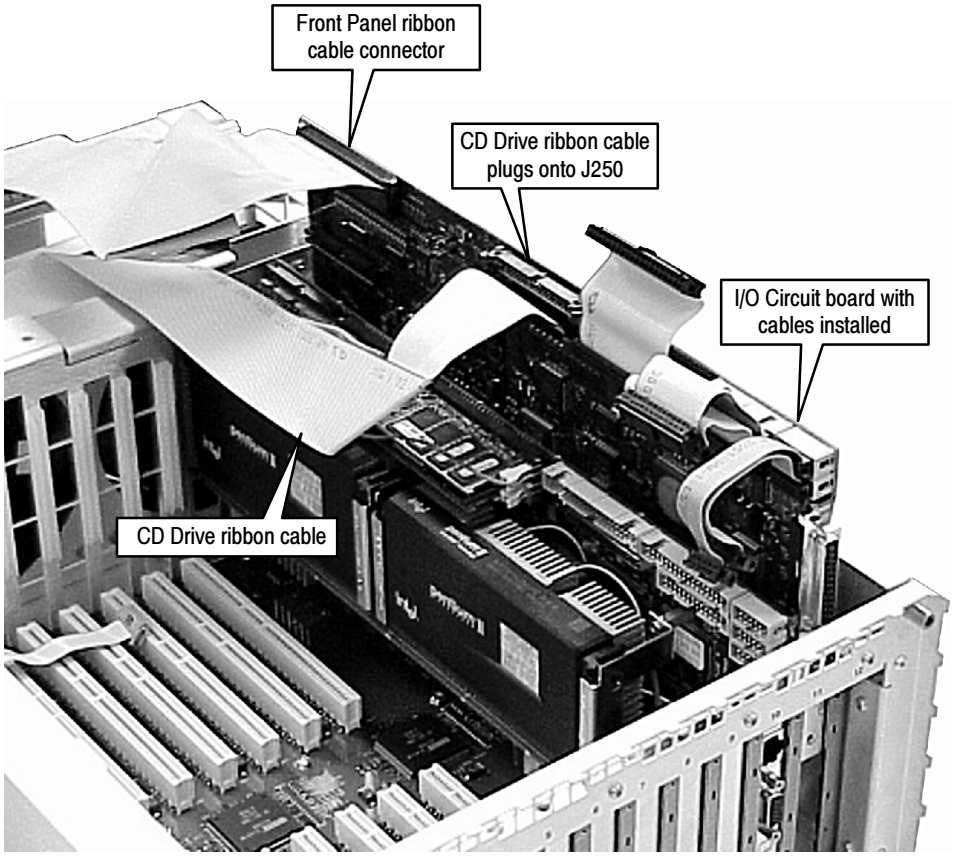

Figure 6: Removing the I/O board from slot 12

Install the new Controller and I/O Boards

Controller Board Installation

1. Install the new controller board from the kit (039-0147-00) into the backplane as shown in Figure 7, pressing down at the arrows directly above the backplane connectors.
2. Connect the 6-pin multi-colored cable to the controller board as shown in Figure 7. The enlarged inset shows the orientation of the cable, with the yellow wire towards the backplane.

***NOTE**. This cable comes with the controller board assembly; it has no Tektronix part number.*

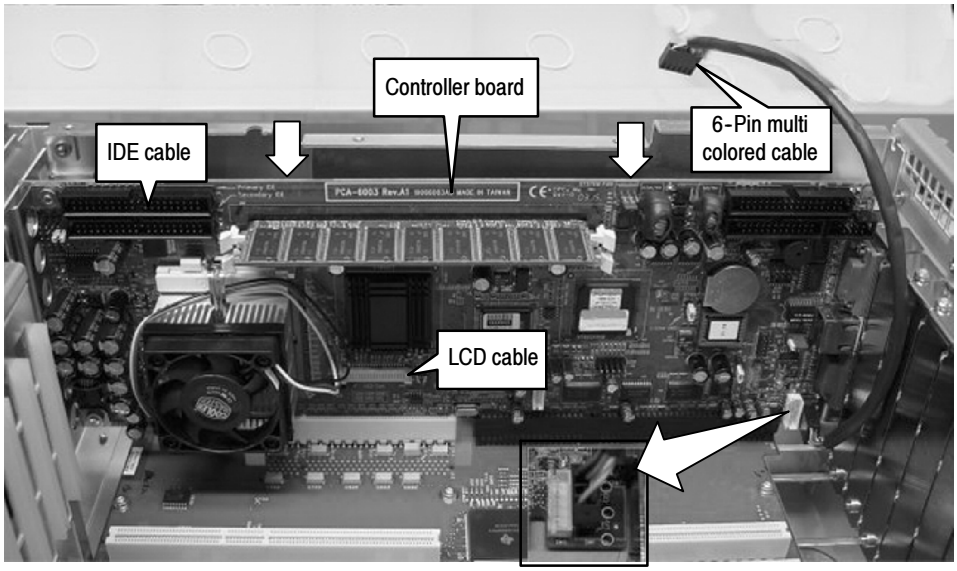

Figure 7: Installing the Controller board

I/O Board Installation

1. Connect new IDE Cable (174-4825-xx) from the kit to J320 “IDE IN” on the new I/O board supplied in the kit, as shown in Figure 8.
2. Connect the new LCD Cable (174-4823-xx) from the kit to J130 “LCD IN” on the new I/O board, as shown in Figure 8.

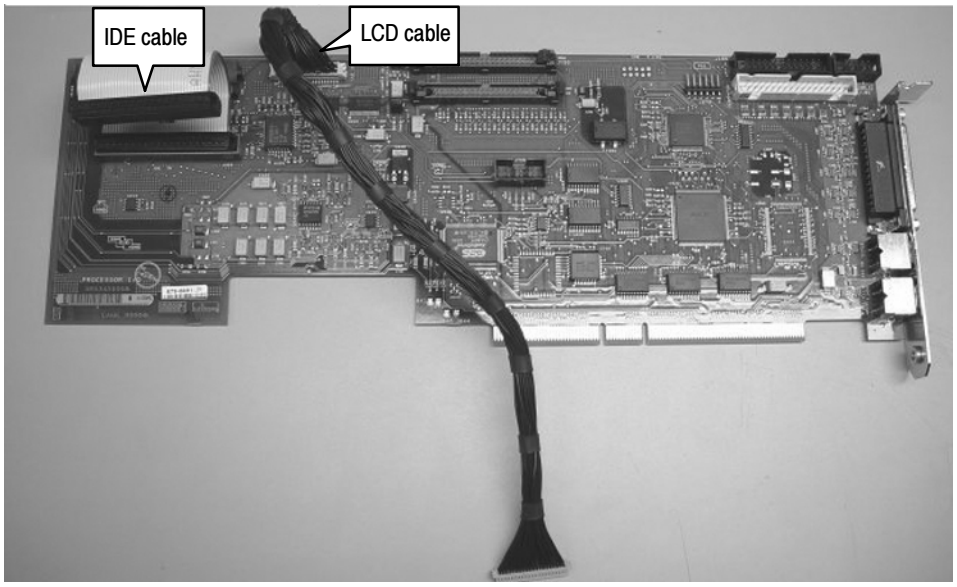

Figure 8: Connecting IDE and LCD cables to the I/O board

3. Align the I/O board in the slot behind the controller board and slide it down into positon without pressing it into the PCI connector. Hold the cables up so that they lay over the controller board.

4. Install the LCD cable into the controller board at connector marked “LCD Con” (see Figure 9).

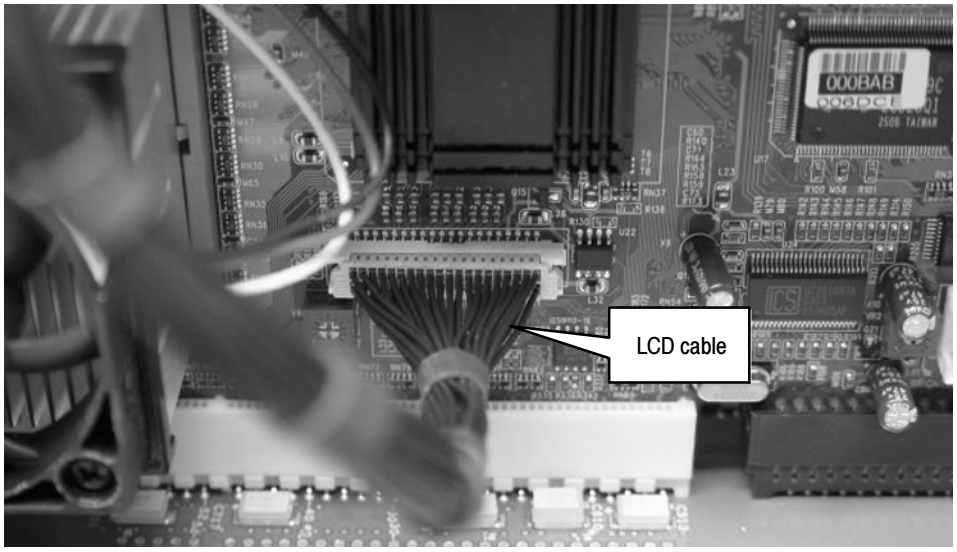

Figure 9: Connecting the LCD cable to the Controller board

5. Install the IDE cable from the I/O board to the controller board at connector marked “Primary IDE” (see Figure 10).

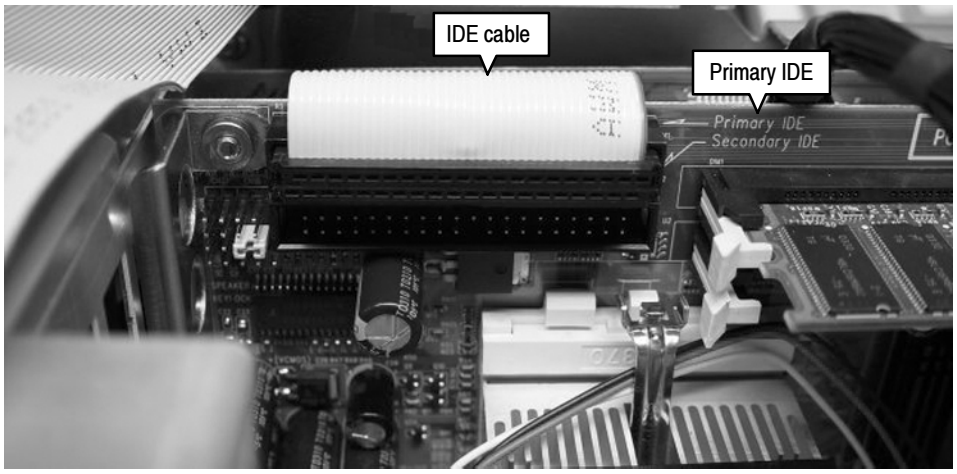

Figure 10: Connecting the IDE cable to the Controller board

6. Install the 6-pin multi-colored (KB MS) cable from the controller board to the I/O board connector marked “PS2” (see Figure 11).

***NOTE**. This cable comes with the controller board assembly; it has no Tektronix part number.*

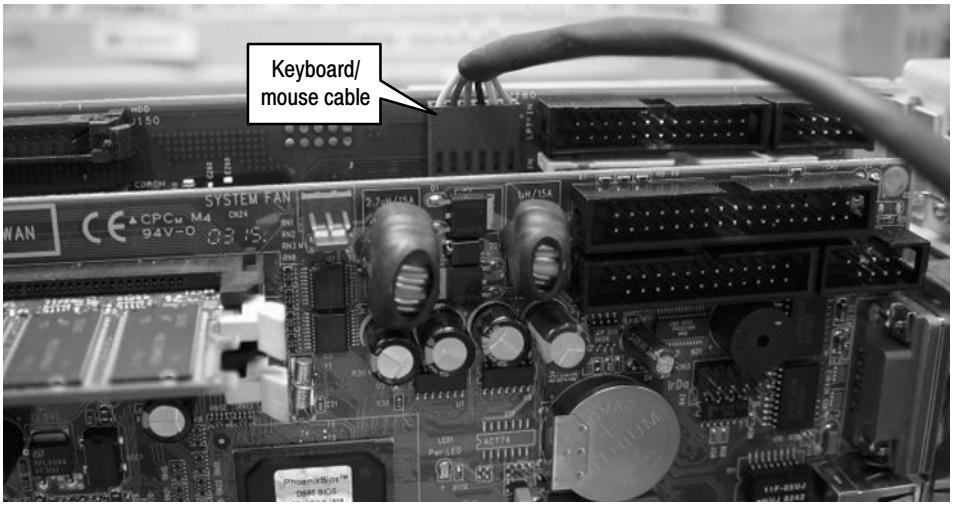

Figure 11: Connecting the Keyboard/Mouse cable

7. Connect the CD-ROM cable to the I/O board at J250, marked “CD-ROM”. Be sure the cable retainer latches on both sides of the connector (see Figure 12).

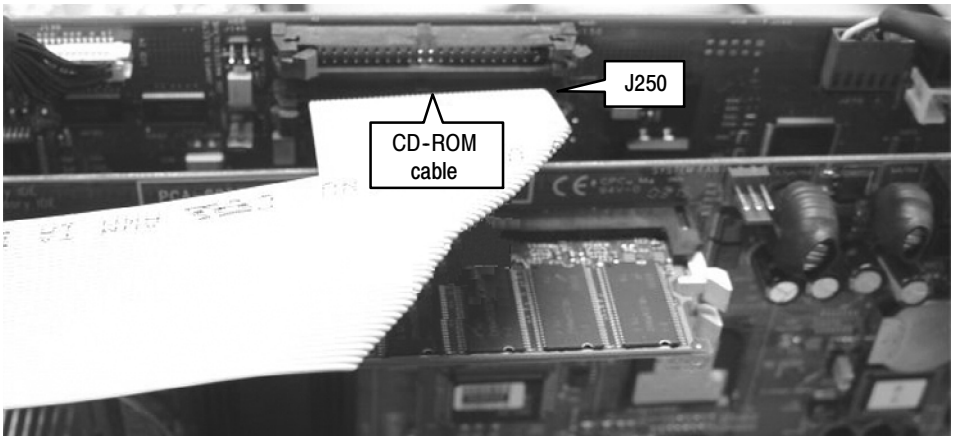

Figure 12: Connecting the CD-ROM cable

8. Connect the hard disk cable to J150 on the I/O board, marked “HDD” (see Figure 13).

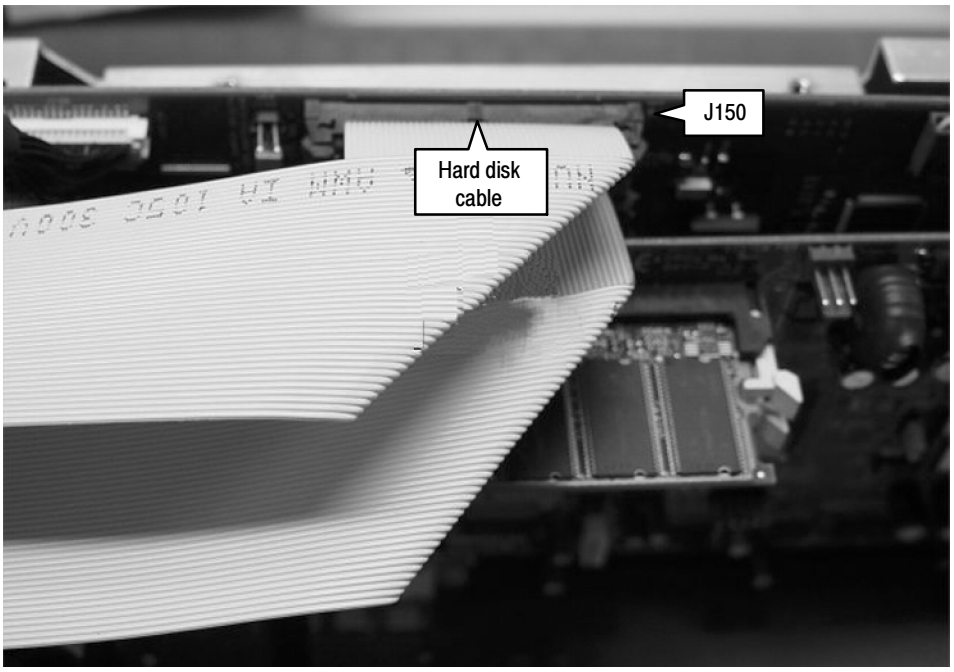

Figure 13: Connecting the hard drive cable

9. Press the I/O board firmly into the PCI connector.
10. Attach the controller board brackets to the mainframe chassis with two T15 screws each (see Figure 4). Torque the screws to 8 in-lbs.
11. Attach the I/O board bracket to the mainframe chassis with two T15 screws (one on top and the other in the rear panel, similar to the position shown for the controller board in Figure 4). Torque the screws to 8 in-lbs.
12. Place the new circuit board retaining plate, supplied in the kit, in position and secure with eight of the nine T15 screws from the old circuit board retaining plate (see Figure 14). Torque the screws to 8 in-lbs.

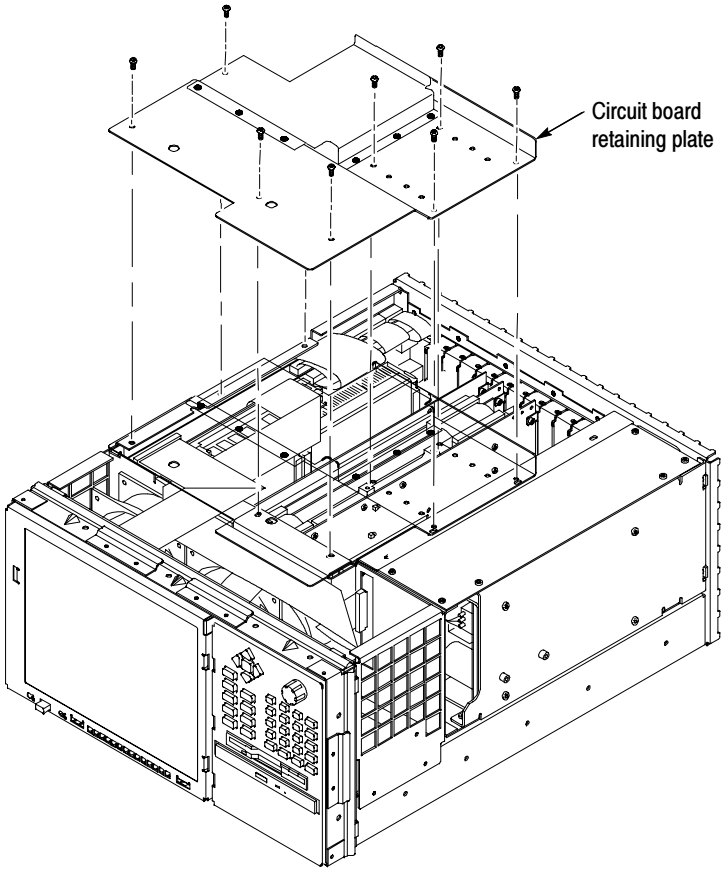

Figure 14: Install the new circuit board retaining plate

Replace the Cabinet

1. Place the protective front cover on the face of the measurement set.
2. Position the measurement set face down on a stable working surface with enough head room to install the cabinet.
3. Position the cabinet correctly to install it, and slide the cabinet over the end of the mainframe chassis.
4. Slide the cabinet evenly down on the chassis making sure that all of the internal cables are clear and do not catch.
5. When the front of the cabinet comes in contact with the cabinet retaining tabs around the front of the chassis, make sure the edges of the cabinet go under the tabs. You may have to push on the sides of the cabinet to get all of the edges over the EMI strips and under the tabs around the front of the chassis.

6. At the rear of the chassis, you may have to push on the sides of the cabinet to get the rear of the cabinet to fit over the edges of the chassis and EMI gasketing.
7. When the cabinet is completely in place on the chassis, install the four rear feet.
8. Position the handle on the left side of the chassis and replace the two screws that attach the handle to the chassis (see Figure 1).

Verify Operation

In order to return your RFA300A measurement set to operating status, you must now perform two procedures.

1. Perform the System Recovery procedure, as described in Appendix C of the *RFA300A User Manual* (B020000 and above). Use the new *RFA300A System and Application Restore Media* CD-ROM, supplied in this kit, for the procedure.
2. Perform the Performance Verification procedure, as described in Section 4 of the *RFA300A Service Manual*.

Both of these manuals are available on the web, at WWW.Tek.com.

End of document