Instructions

Tektronix

040-1709-00
Main Board Replacement Kit
MTX100 MPEG Recorder & Player

075-0855-00

www.tektronix.com

075085500

Kit Description

This kit provides parts and instructions to replace the Main board (A10) in a MTX100 MPEG Recorder & Player. The new Main board (A11) requires the firmware version 5.0.

Products

MTX100   J320100 and below

Minimum Tool and Equipment List

Required tools and equipment	Description
Screwdriver handle	Accepts Phillps-driver bits
Screwdriver handle	Accepts Torx®-driver bits
#2 Phillips tip	Phillips-driver bit for #2 size screw heads
T-15 Torx® tip	Torx®-driver bit for T-15 size screw heads

Kit Parts List

Circuit/figure number	Quantity	Part number	Description
– – –	1 ea	671-5771-00	CIRCUIT BD ASSY; A11 MAIN
– – –	1 ea	335-1242-00	MARKER, IDENT; 0 dBm
– – –	1 ea	062-A279-56	SOFTWARE PACKAGE; APPLICATION RECOVERY CD-ROM
– – –	1 ea	075-0855-00	INSTRUCTION SHEET; 040-1709-00 MAIN BOARD REPLACEMENT KIT
– – –	1 ea	070-A834-55	MANUAL,TECH; MTX100 USER

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 *MTX100 MPEG Recorder & Player Service Manual* (Tektronix, Inc. part number 070-A835-XX).

> ⚠ **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.*

These installation instruction consist of three main processes:

- Replacing the Main board
- Upgrading the firmware
- Verifying instrument performance

Replacing the Main Board

Perform the following procedure to replace the Main board.

Removing the Cabinet, Board Retainers, and Top Frame

1. Disconnect all external cables and the power cord from the MTX100 rear panel.

2. Use a screwdriver with a T-15 Torx tip to remove the two screws securing the cabinet to the instrument. See Figure 1.

3. Slide the instrument forward to remove the instrument from the cabinet. See Figure 1.
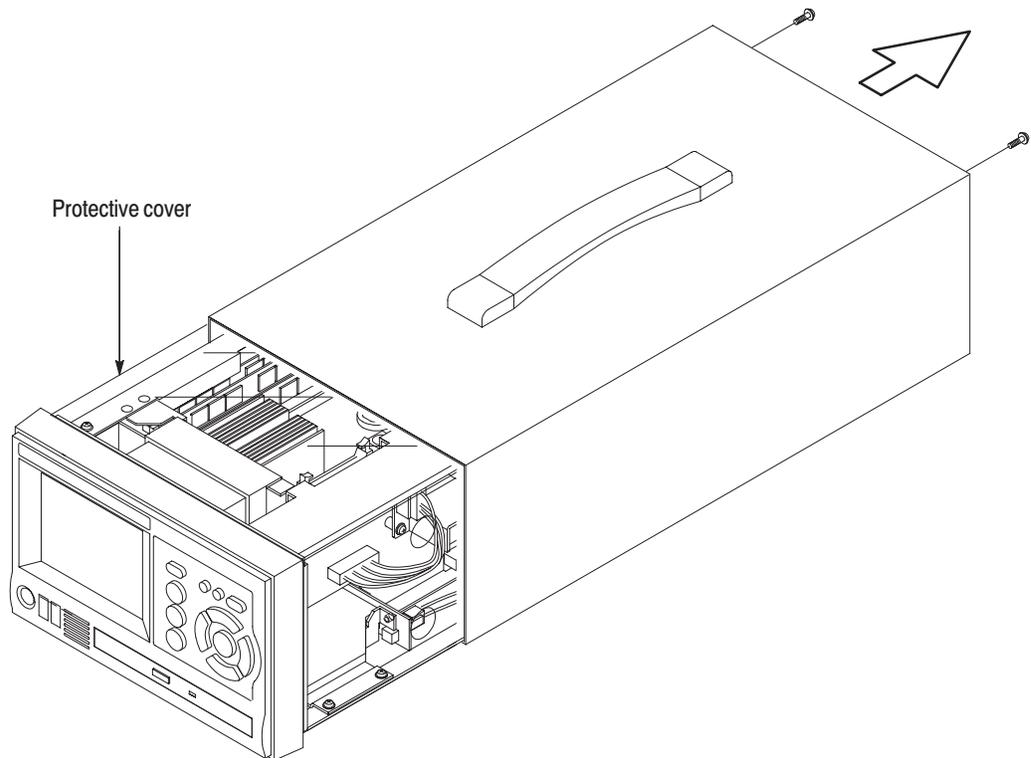
Figure 1: Removing the instrument cabinet

4. Pull the protective cover out and away from the instrument.

5. Set the instrument so its bottom is down on the work surface and its left side is facing you.

6. Use a screwdriver with a #2 Phillips tip to remove each screw securing the board retainers to the chassis. See Figure 2.

7. Lift the board retainers away to remove them.

8. Use a screwdriver with a #2 Phillips tip to remove the four screws securing the top frame with shield bracket. See Figure 2.

9. Lift the top frame with shield bracket away to remove it.
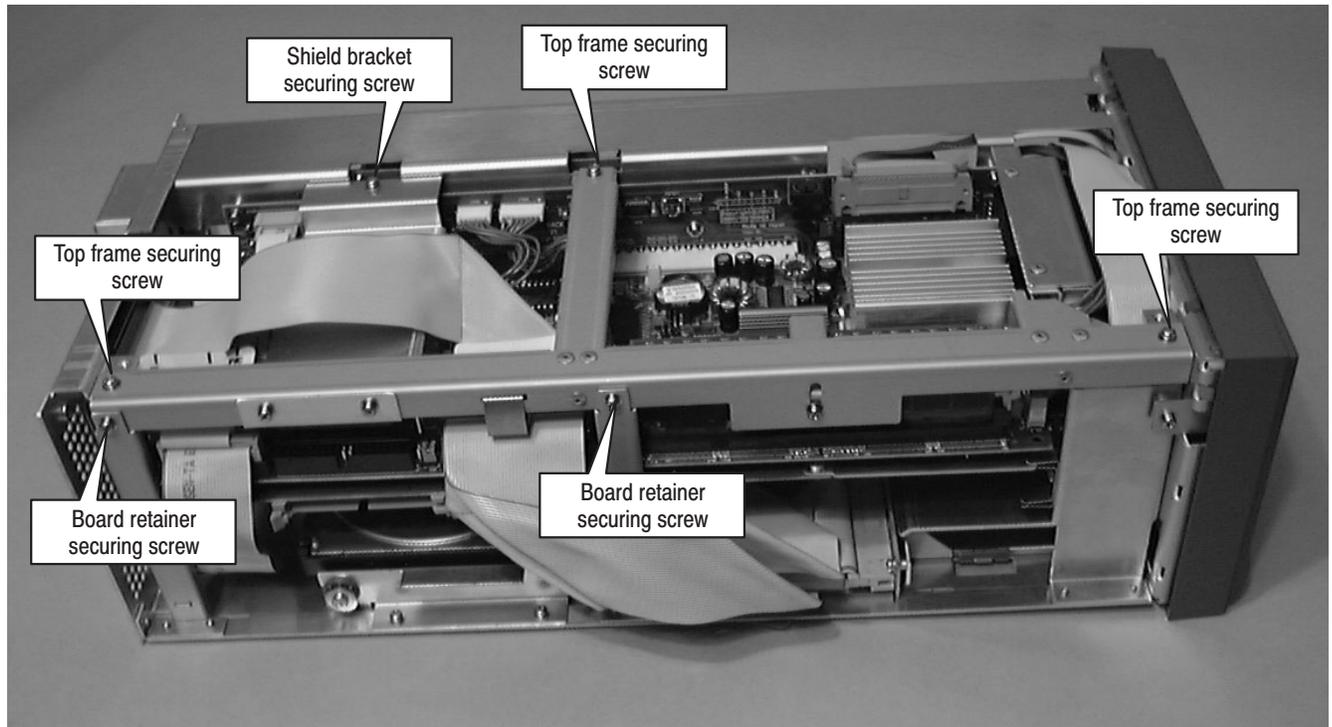
Figure 2: Board retainers and top frame with shield bracket

Removing the Main Board (A10)

1. Disconnect the cables at J3, J4, and J7 on the CPU board. See Figure 3.

Disconnect the cable at J4 on the CPU board.

Disconnect the cable at J7 on the CPU board.

Disconnect the cable at J3 on the CPU board.
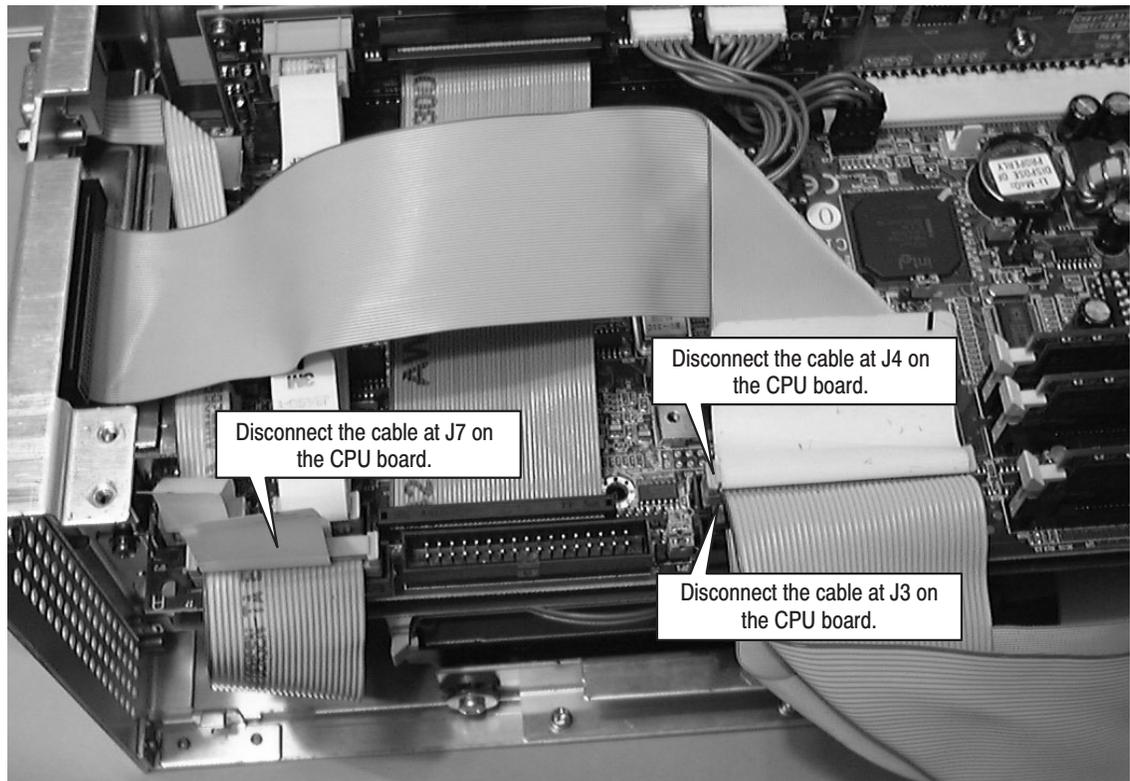
Figure 3: Disconnecting the cables at J3, J4, and J7 on the CPU board

2. If an optional interface module is installed, disconnect the interface cable from the Main board.

3. Use a screwdriver with a #2 Phillips tip to remove the two screws securing the Main board to the side and rear of the chassis. See Figure 4 and 5.

Remove the screw on the side of the chassis.
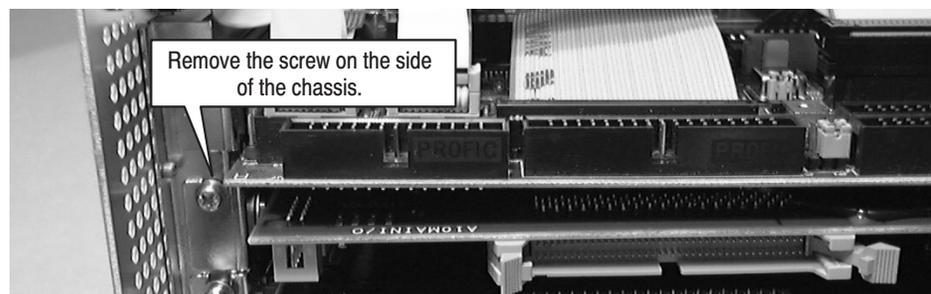
Figure 4: Removing the screw on the side of the chassis

MTX100 Main Board Replacement Kit

Figure 5: Removing the screw on the rear of the chassis

4. Grasp the Main board and slide it out.

⚠️ *CAUTION. Be careful not to damage the parts and cables of the A11 Main board when you insert it into the instrument.*

Installing the Replacement Main Board (A11)

1. Remove the replacement Main board (A11) provided in this kit from the antistatic bag and place it on the bag.

2. Slide the extension plate of the Main board into the board clip, and then push it in until the connector is firmly engaged with the A20 PCI Back Plane board.

3. Use a screwdriver with a #2 Phillips tip to install the two screws securing the Main board to the side and rear of the chassis.

4. If an optional interface module is installed, reconnect the interface cable to the Main board.

5. Reconnect the cables at J3, J4, and J7 on the CPU board.

Installing the Cabinet, Board Retainers, and Top Frame

1. Use a screwdriver with a #2 Phillips tip to install the four screws securing the top frame with shield bracket to the chassis.

2. Use a screwdriver with a #2 Phillips tip to install each screw securing the board retainers to the chassis.

3. Return the protective cover to the original position.

4. Slide the instrument into the cabinet.

5. Use a screwdriver with a T-15 Torx tip to install the two screws securing the cabinet to the instrument.

6. Remove the protective backing from the label marked "0 dBm", and then apply it to the rear panel, just below the CLK/REF IN connector.

Upgrading the Firmware

After you have replaced the Main board, you need to upgrade the firmware that support the new Main board. Perform the following procedure to upgrade the firmware:

Removing the Existing MTX100 Application

1. Power on the instrument.

2. Connect the key board and mouse provided with the instrument to the front-panel USB connectors.

3. Select **Settings** → **Control Panel** from the **Start** menu. The **Control Panel** window appears.

4. Double-click the **Add/Remove Programs** icon. The **Add/Remove Programs Properties** dialog box appears.

5. Select the **MTX100,RTX100** in the list, and then click the **Remove** button.

Installing the MTX100 Application

6. Insert the **MTX100 & RTX100 Application Software Recovery Version 5.0** CD provided in this kit into the CD-ROM drive.

7. Double-click the **My Computer** icon and the **CD-ROM drive** icon.

8. Double-click the **Application_Software** folder.

9. Double-click the **setup.exe** icon in the folder.

10. Follow the on-screen instructions.

11. When the following dialog box is displayed, click the **Yes** button. This dialog box appears more than once.
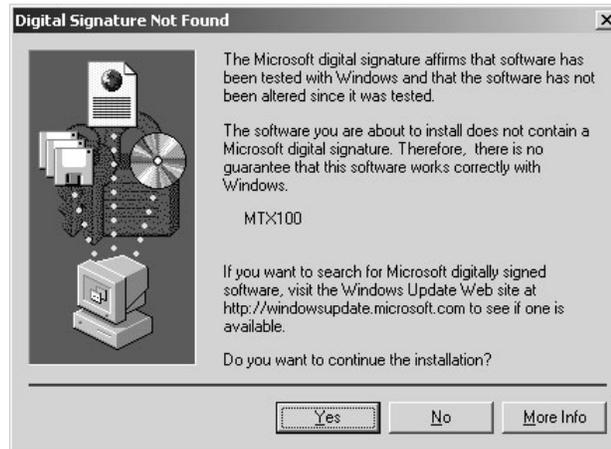
When the following dialog box is displayed, click the **OK** button, and then click the **Finish** button to complete the setup.

12. Restart Windows 2000. The **Play** screen appears.

Upgrading the Internal FPGA Code

13. Select **Status** from the Utility menu. The **STATUS** dialog box appears.

14. Check the **Code** numbers of the **Main** module and optional interface module (if installed).

⚠ **CAUTION.** *While checking the Code numbers, do not operate the instrument. Doing so will cause trouble in operation.*

If the displayed code number(s) is(are) different from the following, upgrade the corresponding FPGA code(s).

- Main: 03

- ASI: 03

- Univ I/F: 05

- BNC I/F: 01

- DHEI: 01

- IEEE1394: 02

- SMPTE310M: 01

If the Code numbers of the Main and optional interface modules are different from the above numbers, you need to upgrade the FPGA codes of both modules.

15. Select **Exit** from the **File** menu to exit the MTX100 application.

16. Double-click the **My Computer** icon and the **CD-ROM drive** icon.

17. Double-click the **Upgrade_V5_0_FPGA** folder.

18. Double-click one of the folder corresponding to the FPGA code that you want to upgrade (for example, **ASI**).

19. Double-click the **.bat** icon in the folder.

⚠ **CAUTION.** *Do not power off the instrument until the upgrade is complete. Doing so will cause the instrument to not start up normally.*

The upgrade process is completed in about 2 minutes. When the process is complete normally, the message "Success" appears on the screen. When an error message appears on the screen, repeat steps 13 through 19 again.

20. If there is another FPGA code to upgrade, open the appropriate folder and double–click the **.bat** icon in it.

21. Power off the instrument and then power it on again.

22. Check whether the new version of the firmware is properly installed:

    a. Select **Status** from the **File** menu. The **STATUS** dialog box appears.

    b. In the dialog box, check that the MTX100 Version and Main code numbers are as follows:

        MTX100 Version: **5.0**
        Main and optional module Code: the same number as listed on the previous page

This complete the firmware upgrade procedure.

Verifying Instrument Performance

After you have replaced the Main board and upgraded the MTX100, do the performance verification procedure for the MTX100 as described in the *MTX100 MPEG Recorder & Player Service Manual* (Tektronix, Inc. part number 070-A835-XX).

    ▪▪   **End of document**   ▪▪