050-3725-00
Display Assembly Replacement Instructions

www.tektronix.com

075-1004-00

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Contacting Tektronix

Tektronix, Inc.
14150 SW Karl Braun Drive
P.O. Box 500
Beaverton, OR 97077
USA

For product information, sales, service, and technical support:

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

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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 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.

Kit description

This kit provides parts and instructions to replace the display assembly in the following Tektronix products:

Product	Serial number range
MTX100B MPEG Recorder & Player	B049999 and below
RTX100B ISDB-T RF Signal Generator	B049999 and below
RTX130B QAM & VSB RF Signal Generator	B049999 and below
MTS400P MPEG Test System	B019999 and below

Minimum tool and equipment list

Required tools and equipment	Description
Torque driver handle	Accepts TORX driver bits
T10 TORX tip	TORX driver bit for T10 size screw heads
T15 TORX tip	TORX driver bit for T15 size screw heads
Wide, flat blade screwdriver or spudger tool	Dull edged tool used to prebend cable harnesses

Kit parts list

Quantity	Part number	Description
1 EA	075-1004-00	REPLACEMENT INSTRUCTIONS; DISPLAY ASSEMBLY; MTX100B/RTX1X0B/MTS400P (this document)
1 EA	174-5428-xx	CABLE ASSEMBLY, XGA DISPLAY
1 EA	174-5485-xx	CABLE ASSEMBLY DISPLAY INVERTER; 15 PIN; LED BACKLIGHT TO DISPLAY
1 EA	174-5493-xx	CABLE ASSY, SP; DISCRETE, BACKLIGHT, IDC
2 EA	211-0373-00	SCREW, MACHINE; 4-40 X 0.250, PNH, STEEL, ZINC FINISH, T10
4 EA	211-1117-00	SCREW, MACHINE; 4-40 X 0.187, PAN HEAD, STEEL, ZINC FINISH, T10, TORX DR
1 EA	407-5197-01	BRACKET; DISPLAY/FRONT PANEL, STL
1 EA	650-5325-xx	ASSEMBLY, LCD & DISPLAY SHIELD, SUB-ASSY
1 EA	878-0186-xx	CIRCUIT BOARD SUBASSY; LED BACKLIGHT DRIVER

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 service manual for your product as listed below:

Product	Service manual part number
MTX100B MPEG Recorder & Player	077-0191-xx
RTX100B ISDB-T RF Signal Generator	077-0194-xx
RTX130B QAM & VSB RF Signal Generator	077-0194-xx
MTS400P MPEG Test System	077-0201-xx

Preparation

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.*

WARNING. *Dangerous voltages may be present inside the instrument. Before performing the hardware procedures, disconnect the power cord from the line voltage source. Failure to do so could cause serious injury.*

Procedure

Perform the following procedure to install the replacement display assembly:

1. Remove the cabinet:
   a. Disconnect all external cables and the power cord from the instrument rear panel.
   b. Use a screwdriver with a T15 TORX tip to remove the two screws securing the cabinet to the instrument. (See Figure 1.)
   c. Slide the instrument forward to remove the instrument from the cabinet. (See Figure 1.)

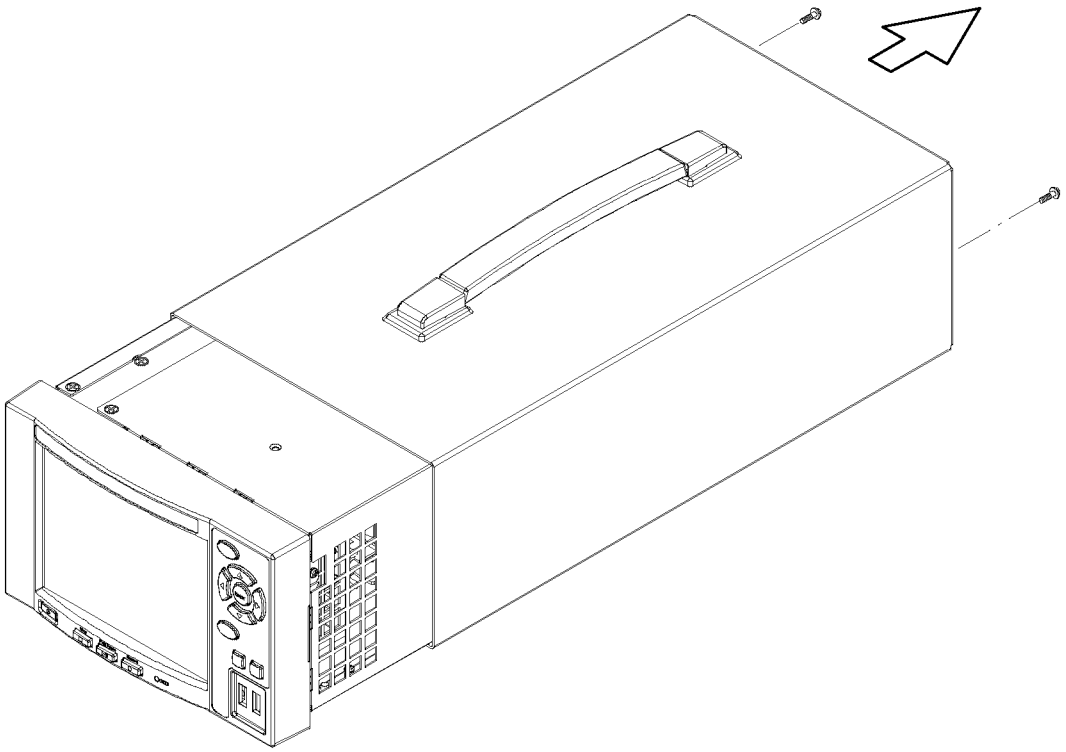


Figure 1: Removing the instrument cabinet

2. Remove the front-panel assembly:

   a. Use a screwdriver with a T10 TORX tip to remove the four screws securing the front-panel assembly to the chassis. (See Figure 2.)

   b. Grasp the front-panel assembly and pull it forward.

   c. Disconnect the cable from J100 on the Front-Panel Processor board.

   d. Disconnect the cable from J105 on the Front-Panel Processor board.

   e. Lift the front-panel assembly away from the instrument chassis.

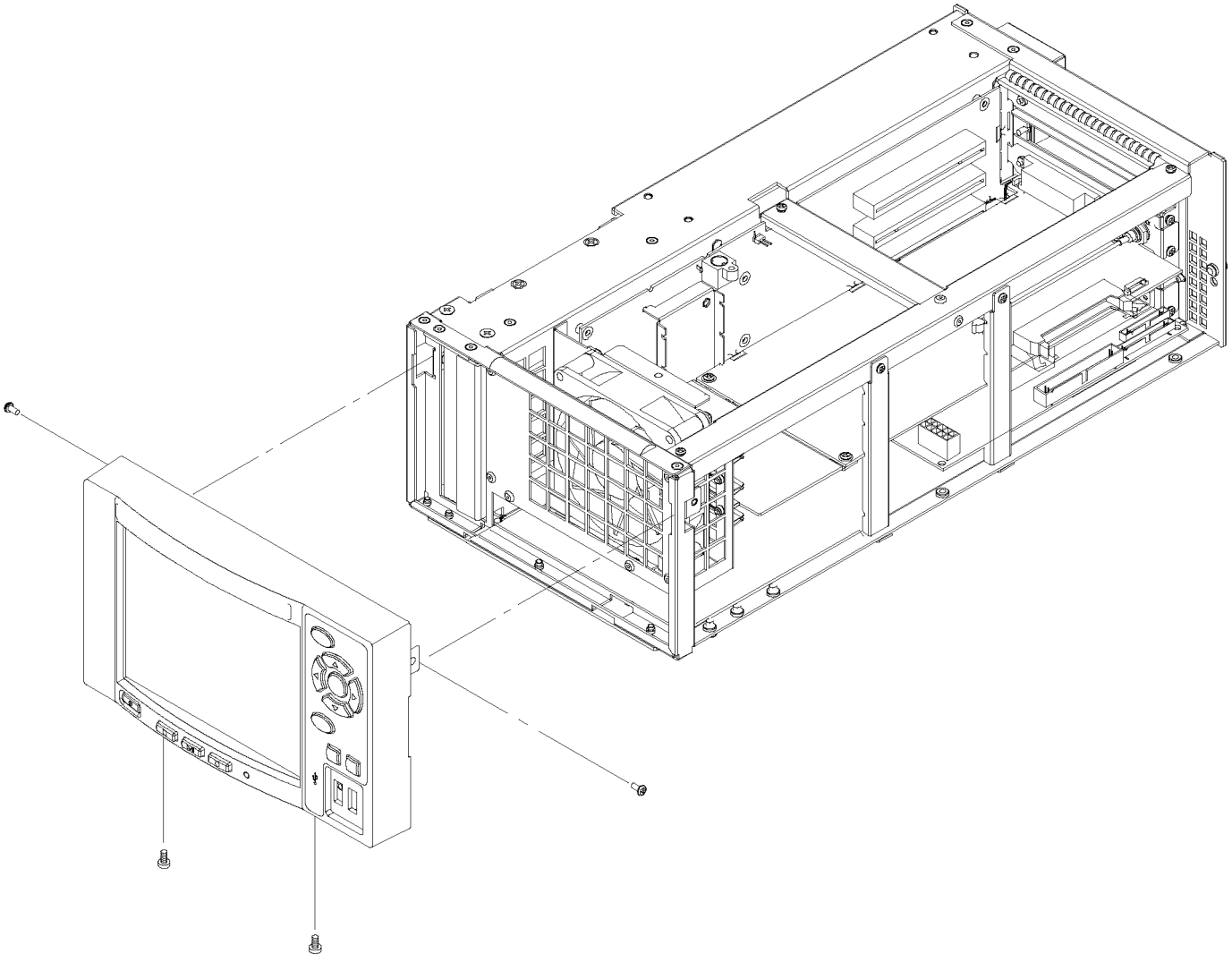


Figure 2: Removing the front-panel assembly

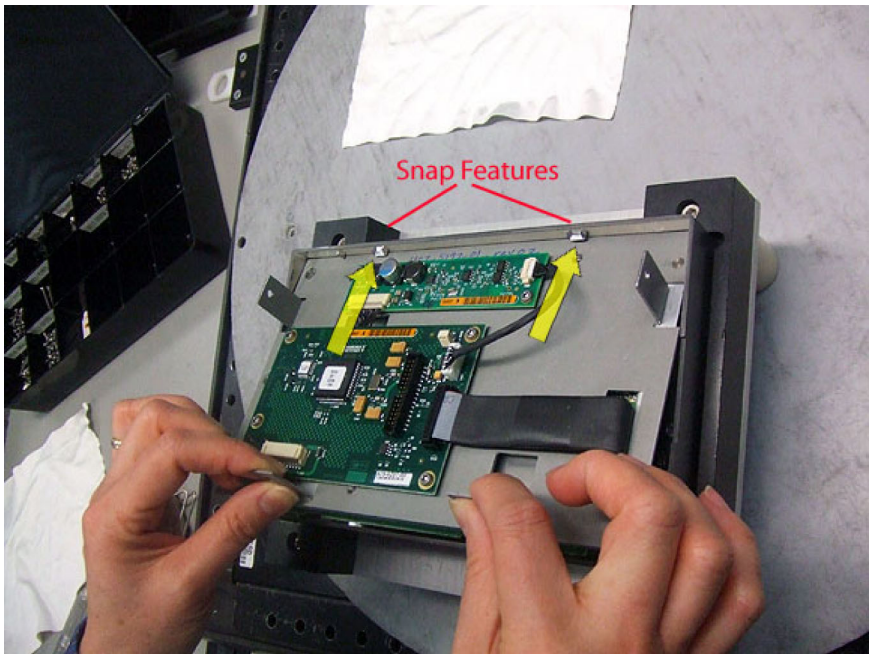
3. Remove the front cover from the front-panel assembly:

   a. Place the front-panel assembly face down on the work surface.

   b. Press the two latches (snap features) at the top of the front cover to release the cover from the front-cover bracket.

   c. Press the two latches at the bottom of the front cover to release the cover from the front-cover bracket.

   d. Lift the front-panel bracket of the display assembly away from the front cover as shown below.



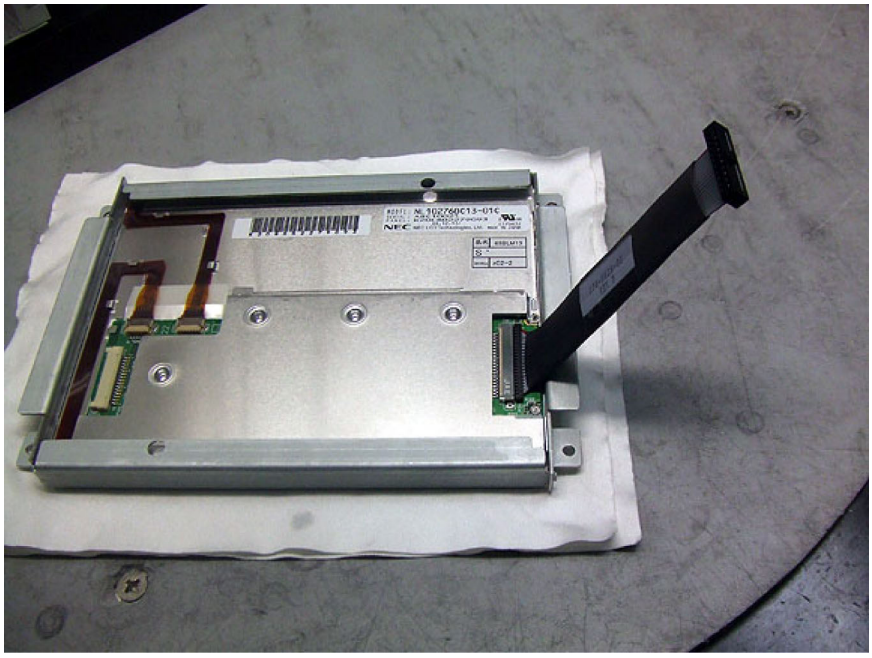
   e. Set the front cover aside, face down on the work surface so that the two emats for the front-panel buttons remain in place.

   f. Set the display assembly aside. You will remove some components from the old display assembly to install on the new display assembly later in this procedure.

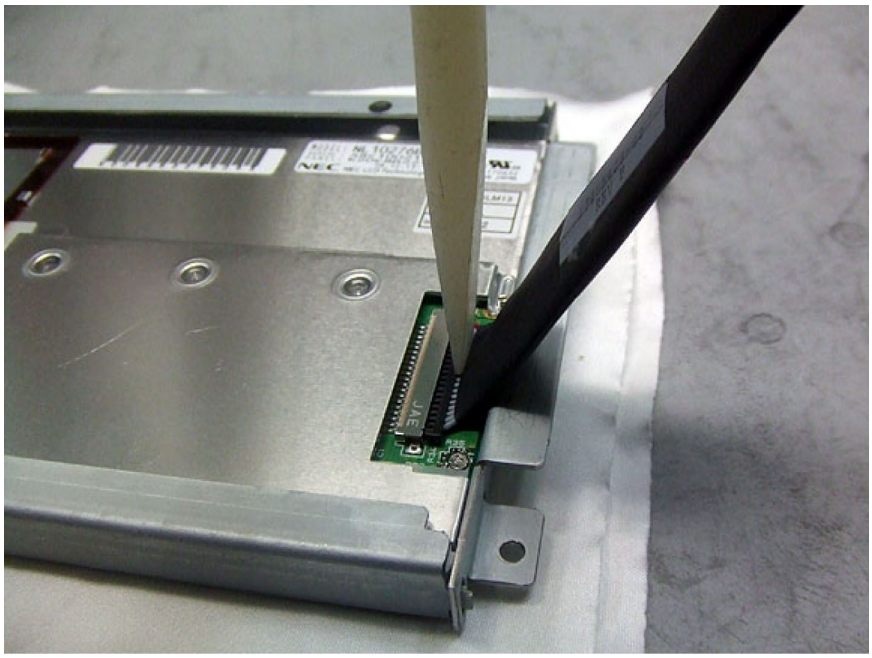
4. Install the new LCD display on the new front-panel bracket:

   a. Place the LCD display (650-5325-xx) provided with this kit face down on a conductive foam pad or soft cloth to prevent scratching of the display.

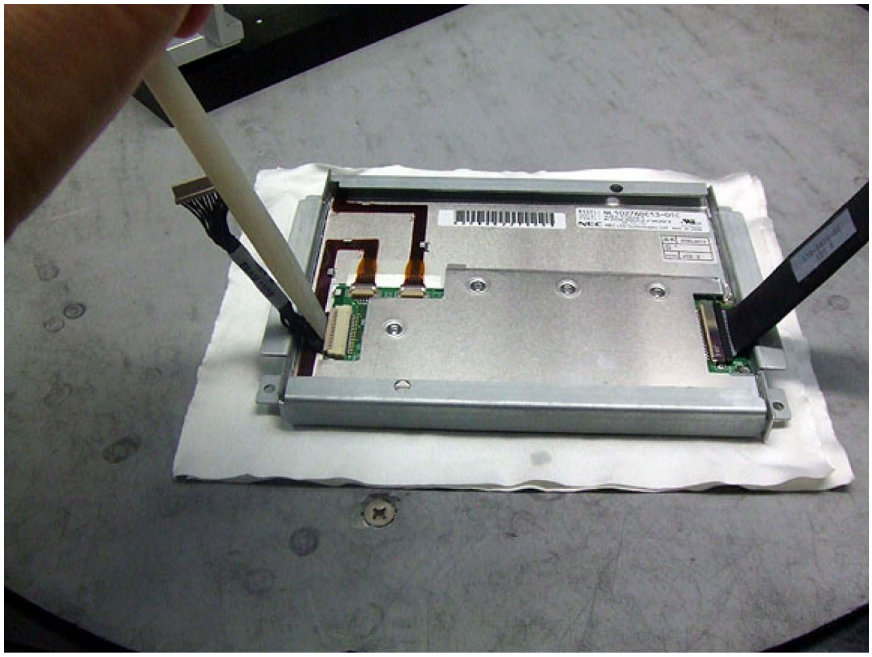
   b. Install the XGA display cable (174-5428-00) provided with this kit on the LCD connector as shown below.



c. Using a wide, flat bade screwdriver or spudger tool as a brace, prebend the cable near the connector as shown below. Verify that the cable sits properly in the connector.



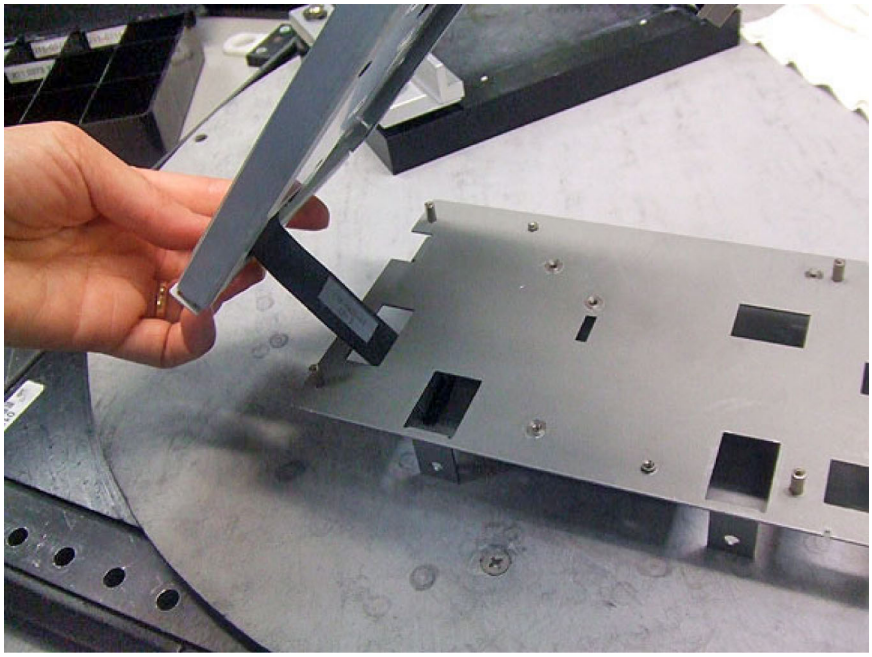
d. Install the backlight cable (174-5485-00) provided with this kit on the backlight connector as shown below.



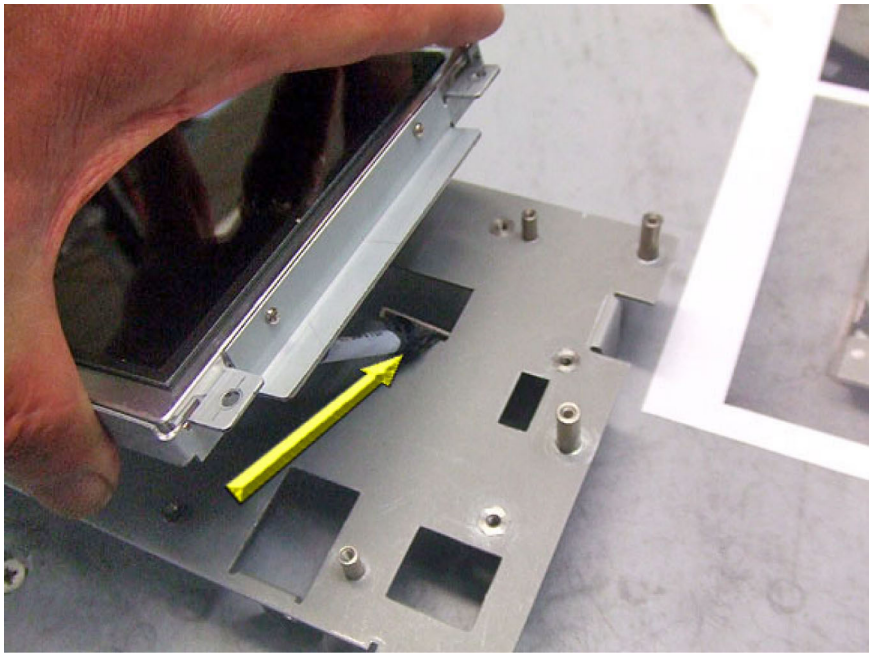
e. Using a wide, flat bade screwdriver or spudger tool as a brace, prebend the cable near the connector as shown above. Verify that the cable sits properly in the connector.

f. Position the front-panel bracket (407-5197-01) supplied with this kit on a flat surface so that the mounting flanges are pointing down.

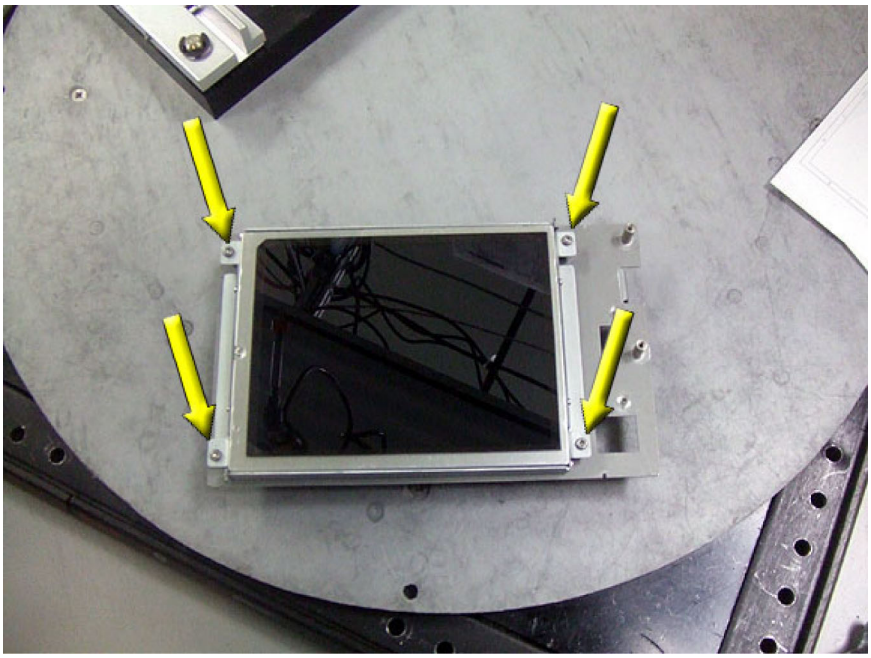
g. Dress the LCD cable from the LCD display through the slot in the front-panel bracket as shown below.



h. Lower the LCD display and dress the backlight cable through the slot in the front-panel bracket as shown below.



i. Carefully align the holes on the LCD display brackets with the mounting standoffs on the front-panel bracket as shown below. Secure the LCD display to the front-panel bracket using the four screws (211-1117-00) supplied with this kit. Use a screwdriver with a T10 TORX tip to torque the screws to 5.5 in.-lbs.



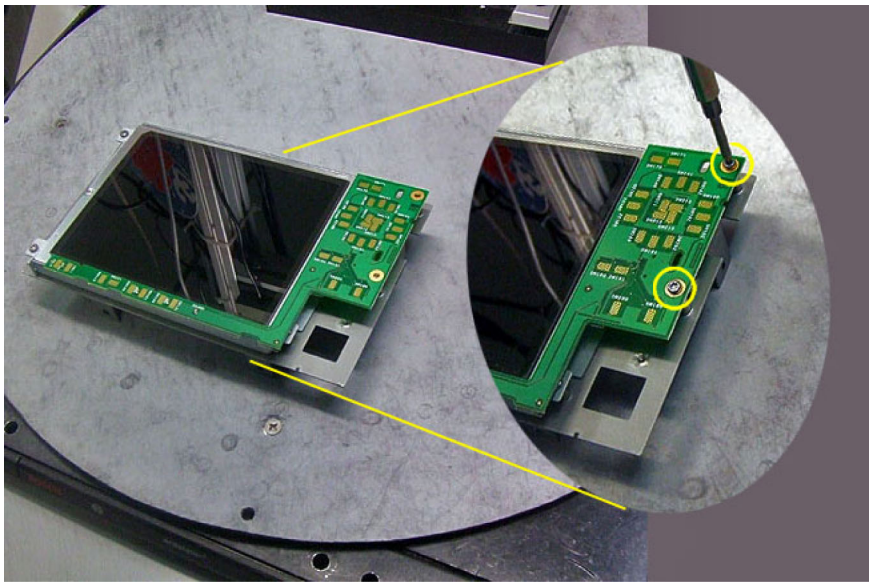
5. Install the old Keypad board on the new front-panel bracket:

   a. On the old display assembly, use a screwdriver with a T10 TORX tip to remove the two screws securing the Keypad board to the front-panel chassis. Retain the screws as you will use them to attach the board to the new front-panel bracket.

   b. Carefully lift the board away from the front-panel bracket so that you do not damage the connector on the bottom side of the board.

   c. Carefully position the Keypad board on the new front-panel bracket so that the mounting holes in the board align with the mounting standoffs on the front-panel bracket and so that the edge of the board aligns with the bottom edge of the LCD display.

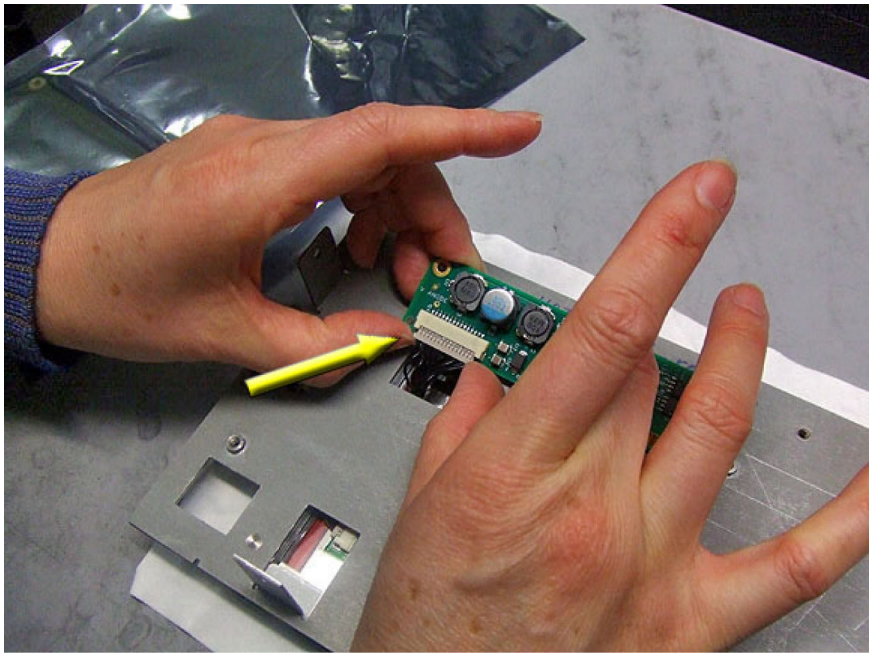
   d. Secure the Keypad board to the front-panel bracket using the two screws you removed in step a. Use a screwdriver with a T10 TORX tip to torque the screws to 4.0 in.-lbs.



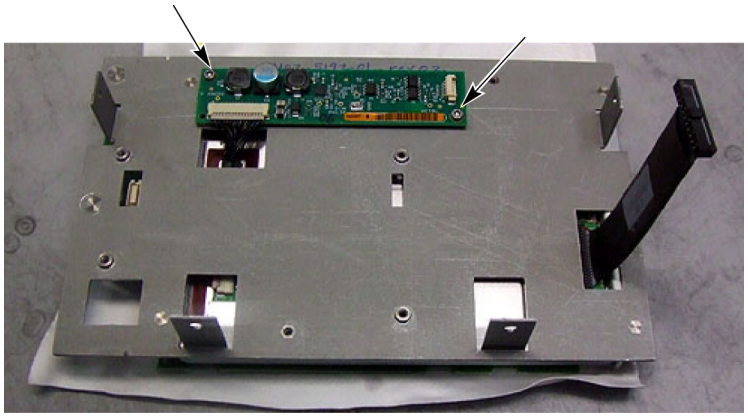
6. Install the new LCD Backlight board on the new front-panel bracket:

   a. Turn the new front-panel bracket over so that the LCD display is face down on a conductive foam pad or soft cloth to prevent scratching of the display.

   b. Position the new LCD Backlight board (878-0186-xx) supplied with this kit so that you can attach the Backlight cable as shown below.



   c. Align the LCD Backlight board with the mounting holes and secure the board to the front-panel bracket using the two screws (211-0373-00) supplied with this kit. Use a screwdriver with a T10 TORX tip to torque the screws to 8.0 in.-lbs.



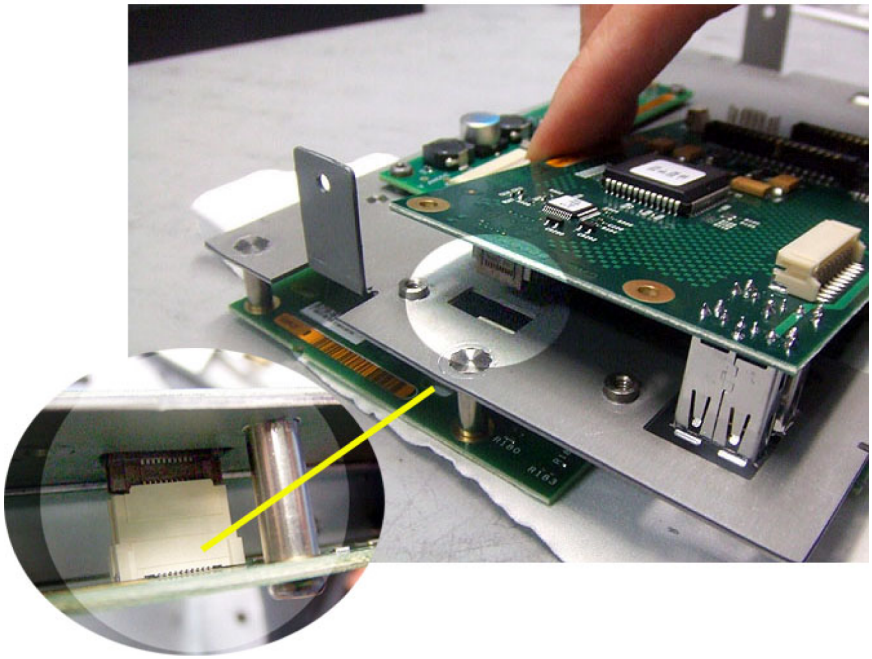
7. Install the old Front-Panel Processor board on the new front-panel bracket:

   a. On the old display assembly, disconnect the cables from the Front-Panel Processor board at J301 and J321.

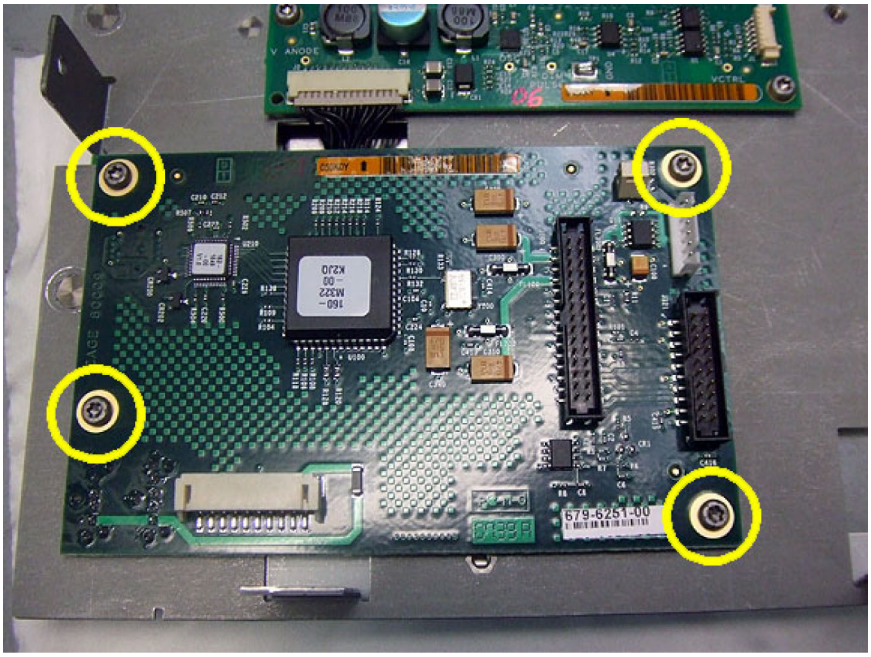
   b. Use a screwdriver with a T10 TORX tip to remove the four screws securing the Front-Panel Processor board to the front-panel chassis. Retain the screws as you will use them to attach the board to the new front-panel bracket.

   c. Carefully position the Front-Panel Processor board on the new front-panel bracket so that the mounting holes in the board align with the mounting holes on the front-panel bracket and with the connector on the Keypad board.

   d. Press the connectors on the two boards together. Inspect the connection between the boards to make sure the connectors are fully seated as shown below.

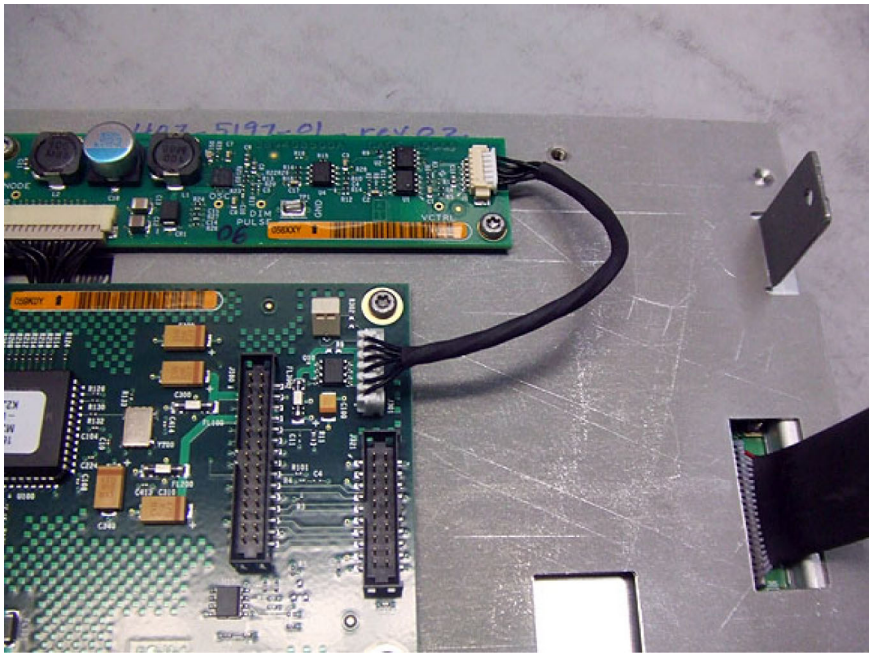


e. Secure the Front-Panel Processor board to the front-panel bracket using the four screws you removed in step b. Use a screwdriver with a T10 TORX tip to torque the screws to 8.0 in.-lbs.

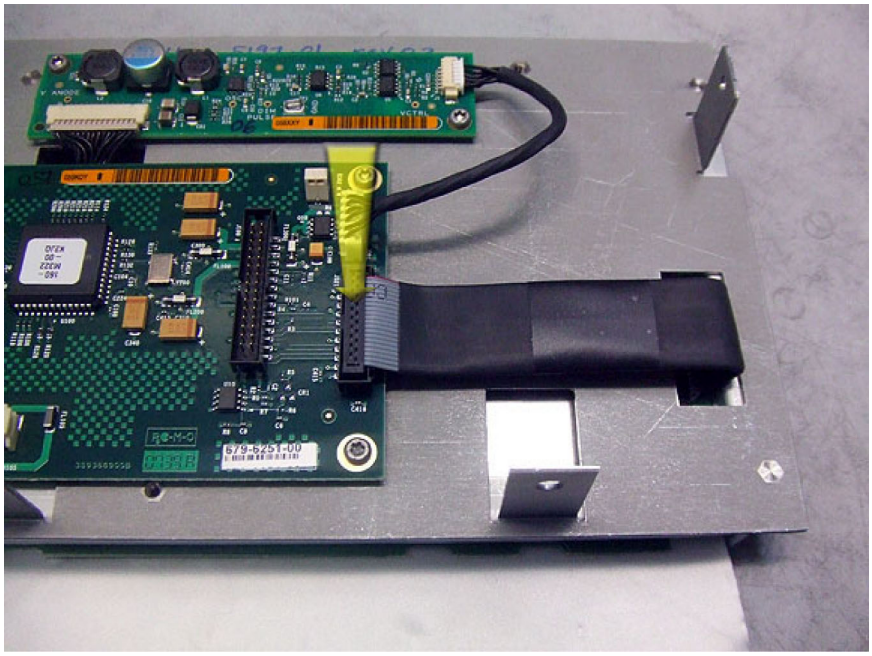


8. Install the remaining Backlight cable:

   a. Connect the Backlight cable (174-5493-00) supplied with this kit between the connector at J1 on the LCD Backlight board and the connector at J301 on the Front-Panel Processor board as shown below.



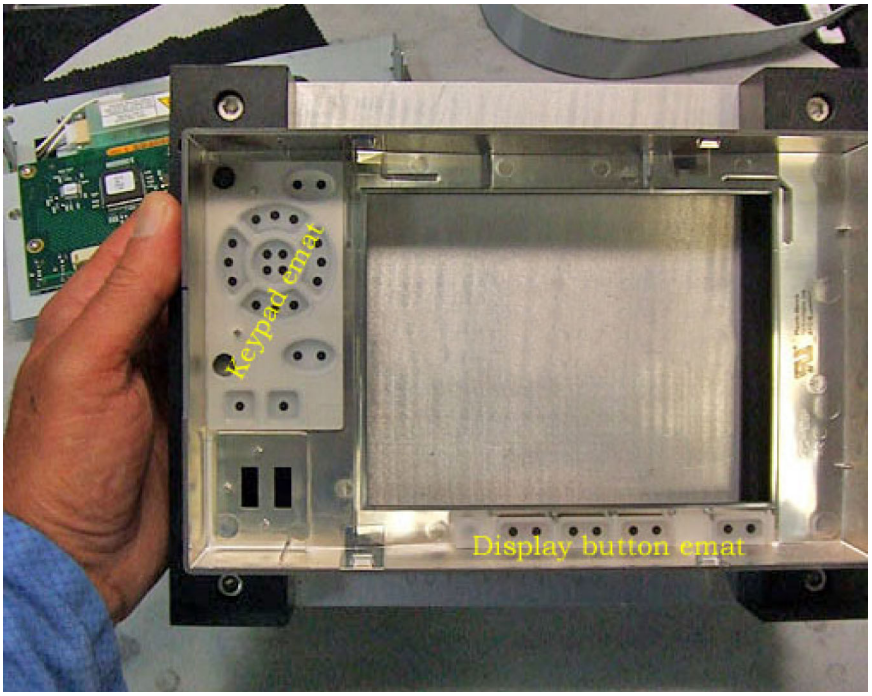
   b. Connect the loose end of the XGA display cable to the connector at J321 on the Front-Panel Processor board and dress the cable flat as shown below.



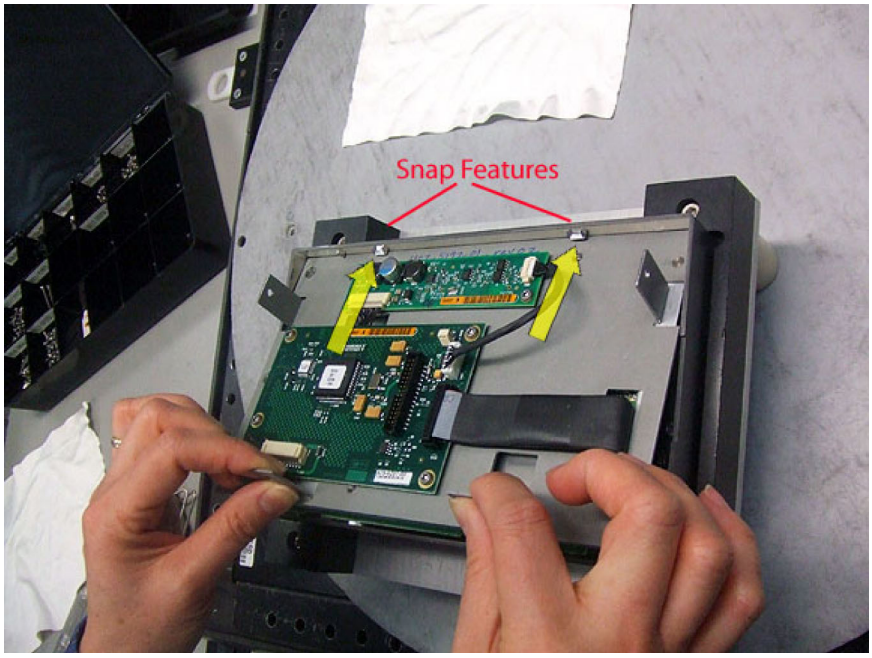
9. Install the front cover on the display assembly:

   a. Locate the front cover you removed in step 3.

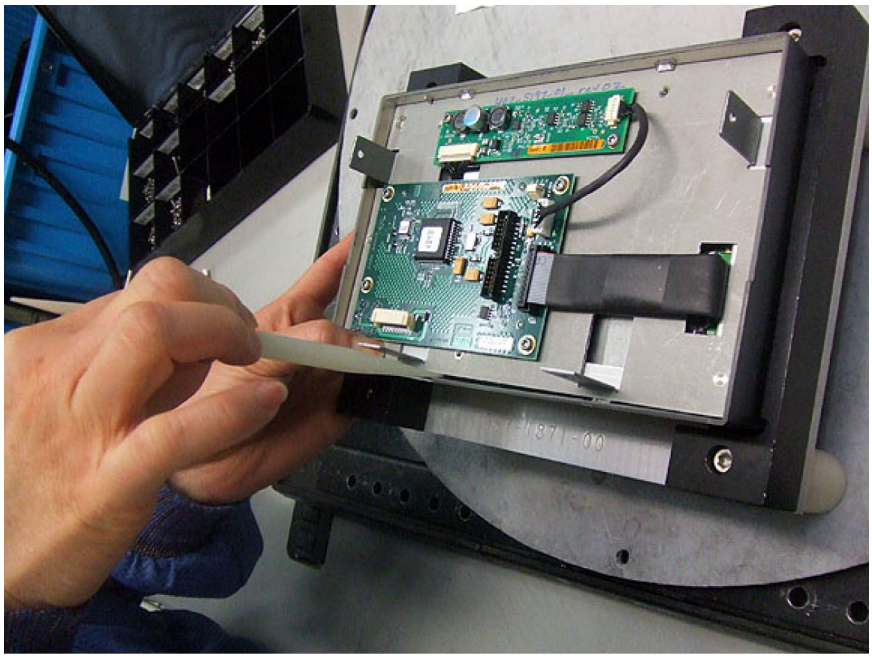
   b. With the front cover face down on the work surface, verify that the keypad and display button emats are in their proper positions as shown below.



c. Carefully position the new display assembly into the front cover so the top of the front-panel bracket slips under the latches (snap features) in the cover as shown below.



d. Carefully lower the display assembly into the front cover and press the front-panel bracket into the lower latches as shown below. A spudger tool or wide, flat blade screwdriver may aid in positioning the front-panel bracket under the latches.



e. Turn over the completed front-panel assembly and check for a minimal gap between the LCD and bezel on all four sides.

10. Install the completed front-panel assembly on the instrument chassis by performing step 2 in reverse order.

11. Install the instrument cabinet by performing step 1 in reverse order.

Verify instrument operation

After you have installed the replacement display assembly in this kit, verify the instrument operation as described in the performance verification manual for your product as listed below:

Product	Performance verification manual part number
MTX100B MPEG Recorder & Player	077-0190-xx
RTX100B ISDB-T RF Signal Generator	077-0193-xx
RTX130B QAM & VSB RF Signal Generator	077-0193-xx
MTS400P MPEG Test System	077-0202-xx

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