

Instructions

Tektronix

045-0247-00

THS710 & THS720

Backlight/Inverter Enhancement Kit

070-9458-00

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Kit Description

This kit provides instructions and parts to upgrade the THS710 or THS720 TekMeter with a more efficient backlight system. This modification includes a new Backlight/Inverter circuit board. The new Backlight/Inverter circuit board requires a modification on the Main circuit board. R178 resistor is removed and a 0 Ω resistor is installed in R179 circuit location.

NOTE. If this kit instruction is received as part of the Main Board exchange you may disregard the Main Circuit Board Modification section. The new Main Board part numbers: 671-3271-03 or 671-3670-03.

This document supports Tektronix mods: M82781

Instruments

THS710	B010100 – B019999
THS720	B010100 – B019999

Minimum Tool and Equipment List

Tool	Part Number
Torxdriv® driver with T-15 tips	n/a
1/8 inch flat-bladed screwdriver	n/a
Solder iron, pencil type 20-25 Watt	n/a
Solder, rosin-core, electronic-grade, 60/40	n/a

Kit Parts List

Ckt Number	Quantity	Part Number	Description
R179	1 ea	671-3673-00	Circuit Board Subassy: Backlight/Inverter
	1 ea	321-5415-00	Res, fxd, film: Jumper, 0 Ω , 100 V, 62 mW
	1 ea	070-9458-00	Manual, Tech: Kit Instructions
	1 ea	—————	Label: 045-kit, silver mylar

Service Safety Summary



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 the General Safety Summary in the THS710/720 service manual before performing any service.*

Do Not Service Alone

Do not perform internal service on this product unless another person capable of rendering first aid and resuscitation is present.

Avoid Exposed Circuitry

To avoid injury, remove jewelry such as rings, watches, and other metallic objects. Do not touch exposed connections and components when power is present.

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.

Installation Instructions

These instructions assume a certain familiarity with the instrument. If further details are required for disassembly or assembly, refer to the THS710/THS720 Service Manual part number 070-9246-02. For assistance to install this kit, please call your nearest Tektronix, Inc., Service Center or Tektronix Factory Service.



CAUTION. Many components within this instrument are extremely susceptible to static-discharge damage. Service the instrument only in a static-free environment. Observe standard handling precautions for static-sensitive devices while installing this kit. Always wear a grounded wrist and foot strap while installing this kit.

Removal

Front Cover

You will need a torque-limiting Torx® T-15 screwdriver, needle-nose pliers, and sharp knife to remove the front cover and other immediately accessible modules.



CAUTION. Attempting to remove the display shield from the front cover will likely destroy both pieces. If one or the other are defective, both must be replaced.

1. Disconnect all probes, cables, or meter leads from the instrument.
2. Disconnect the AC adapter, open the battery door, and remove the battery.
3. Place the TekScope instrument TekScope instrument face down on a soft surface (such as an anti-static mat).
4. Use the Torx® T-15 screwdriver to remove the four screws that hold the case together.
5. Holding the case together, pick it up and place it back side down on a soft surface.
6. To remove the handle, slip it off its guides.

7. To remove the switch mat, lift it off the switch flex-circuit assembly. Place it button-side down on a clean surface.



CAUTION. To avoid contamination of switch contacts, do not touch the carbon contacts on the switch flex-circuit assembly or on the back side of the switch mat.

Display Module

You will need a $\frac{1}{8}$ inch flat-bladed screwdriver to remove the display module and inverter board.

1. Fold the switch flex-circuit assembly toward you to expose the display module and inverter board.



CAUTION. To avoid scratching the surface of the display module, do not let it touch any hard object.

The display module surface may scratch easily. To clean it, first try pressurized air. If a soft cloth is required to clean it, use very light pressure.

2. To remove the backlight/inverter board, unplug the input and output connectors and then lift the inverter board off the two guideposts. You may want to use the $\frac{1}{8}$ inch flat-bladed screwdriver to help release the connectors from their sockets. Discard the backlight/inverter board. See Figure 3.
3. To remove the display module, follow these steps:
 - a. Disconnect the cable from the display module to the inverter board, if it is not already disconnected.
 - b. Lift the right side of the display module out of the chassis and fold the display module to the left, as shown in Figure 1.

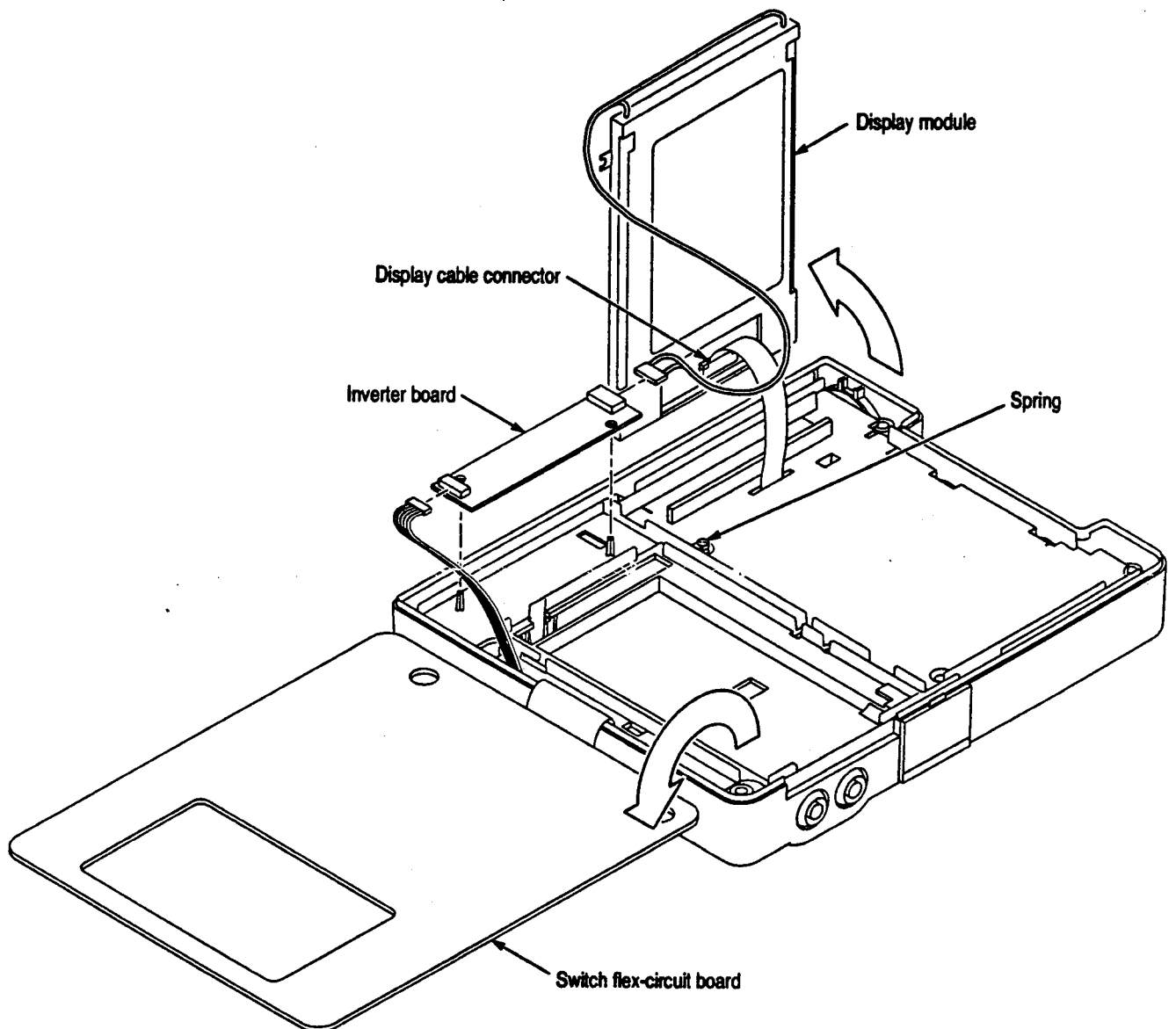


Figure 1: Removing the display module

- c. Using the $\frac{1}{8}$ inch flat-bladed screwdriver, carefully open the display-cable connector as shown in Figure 2.
- d. When the connector is open, slip the display cable out of the connector to free the display module.
- e. Remove the display tension spring. See Figure 1.

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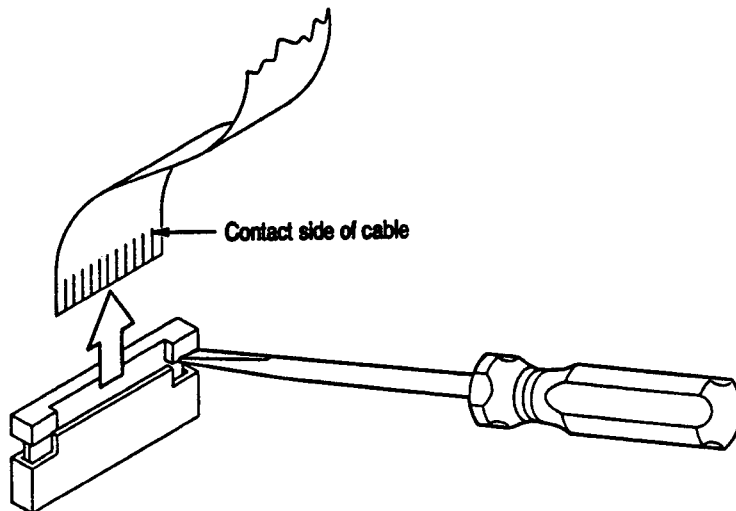


Figure 2: Opening the display cable connector

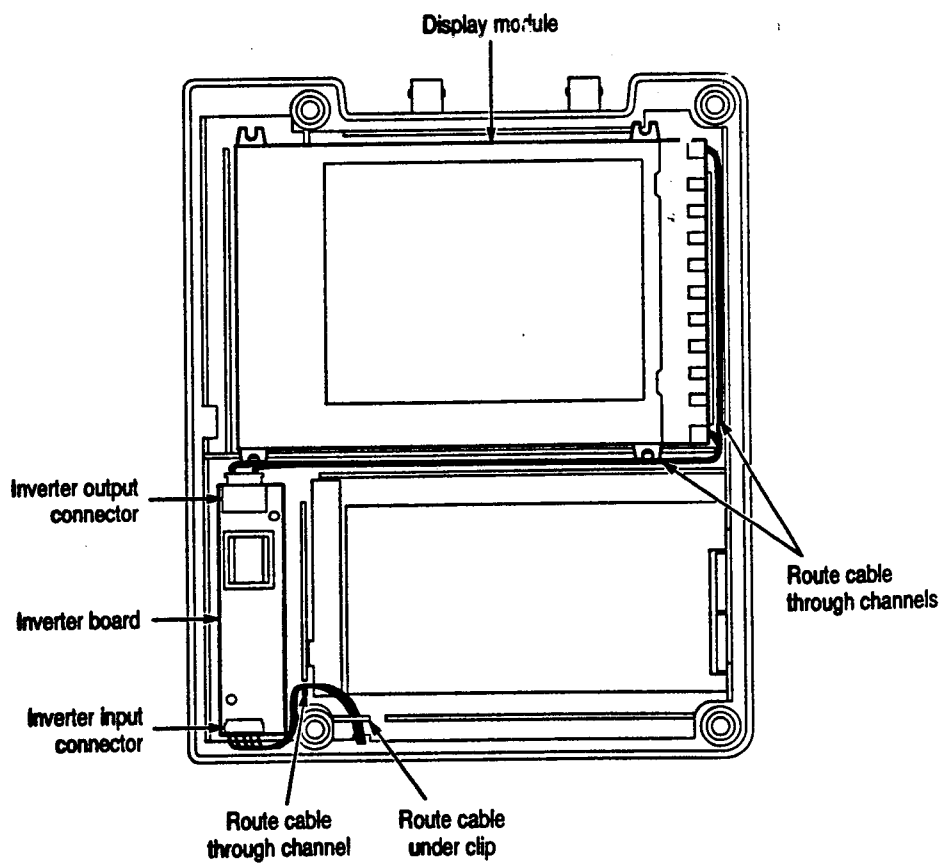


Figure 3: Routing cables to the inverter board

Main Circuit Board Modification

Soldering Use a 20-25 Watt solder iron to remove R178 and to install R179. See Figure 4 for component locations.

1. Position the chassis assembly so the Main circuit board is facing the installer.
2. Unsolder and remove R178 located between U55 and the outer edge of the circuit board.
3. Solder R179, 0 Ω resistor (provided in this kit) to the empty circuit board pads located next to R178.

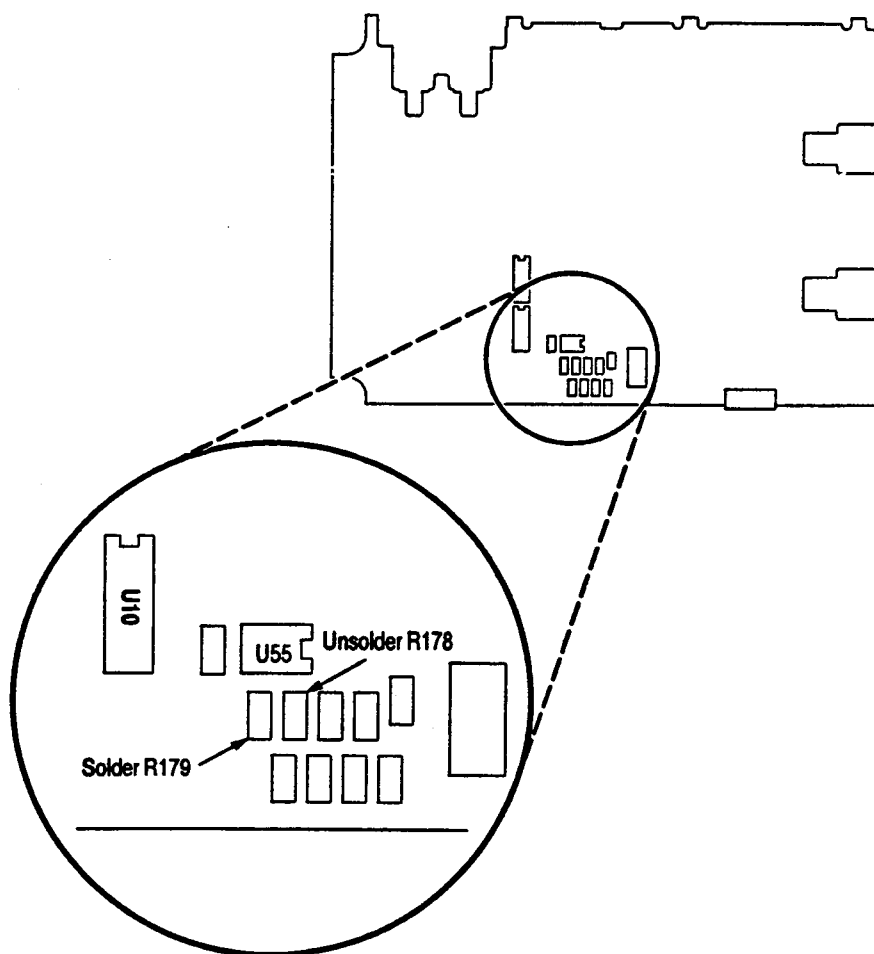


Figure 4: R178 and R179 locations on the Main circuit board

Reassembly

1. Open the display-cable connector on the back of the display module.
2. Hold the display module upright as shown in Figure 1.
3. Insert the display cable into its connector and then use the $\frac{1}{8}$ inch flat-bladed screwdriver to close the connector. Check that the display cable is fully inserted into the connector.
4. Reinstall the display tension spring.
5. Fold the display module back into the chassis and seat it between the foam pads.
6. Install the new Backlight/Inverter circuit board (provided in this kit) into its cavity over the guideposts in the chassis.
7. Plug the cable from the display module into the Backlight/Inverter board and then route the cable in the channels as shown in Figure 3.
8. Reconnect the connector to the bottom of the Backlight/Inverter board and route the wires as shown in Figure 3.
9. Fold the switch flex-circuit assembly back over the display module and Backlight/Inverter board.
10. Install the switch mat and front cover.
11. To install the switch mat, place it (contact side down) on the switch flex-circuit assembly. The five rubber guideposts fit into holes in the circuit board.
12. Place the TekScope instrument back side down on a soft surface (such as an anti-static mat).
13. Reconnect the battery wire connector and press it onto its retaining pins. Check that polarity of the connector is correct. Press the wires into the channel on the chassis as shown in Figure 5.
14. Slip the handle into the guides of the back cover.
15. Place the front cover assembly onto the instrument. Taking care not to pinch the handle, align it into the guides in the front cover. Align the buttons so they all protrude through the holes in the front cover.
16. Holding the case together, pick it up and place it front side down on a soft surface.



CAUTION. To avoid cross-threading or cutting new threads with the screws, carefully follow the procedure in the next step.

17. To install the four screws, follow these steps:

- a. Place the screws into their holes in the back cover.
- b. Using the torque-limiting Torx® T-15 screwdriver, slowly turn each screw backward (counterclockwise) until you feel the thread drop and then gently tighten the screw (turn clockwise) into the existing thread.
- c. When all four all screws are in, hold a corner of the case together firmly to compress the gasket while tightening its screw until snug. Repeat for the other corners. Do not over tighten the screws (12 in · lbs or 1.6 N · m maximum torque).

18. Remove the protective backing from the 045-kit label, provided in this kit, and apply it to a clean area on the rear cover of the instrument. This label indicates that this kit has been installed.

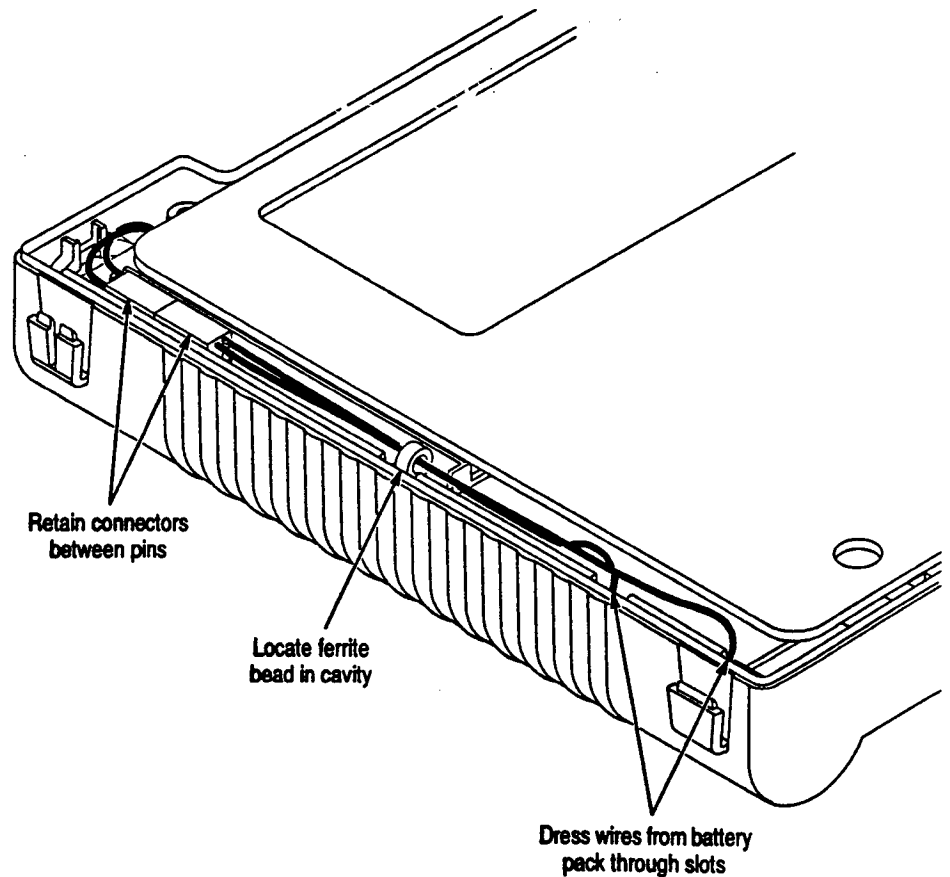


Figure 5: Routing the battery wires

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