FIRMWARE UPDATE AND ROM RELIABILITY IMPROVEMENT

For TEKTRONIX® 7854 Oscilloscopes

Serial Numbers B010100 – B063172

This kit contains parts and instructions to update the firmware (U120, U400, and U410) to version 1.03. The new firmware ensures the GPIB commands, Serial Poll Disable (SPD) and Group Execute Trigger (GET), operate correctly. Also, the four ROM microcircuits, U100, U110, U200 and U210, are replaced with more reliable microcircuits.

This kit is also used to replace any one of the microcircuits mentioned above. All seven microcircuits should be replaced simultaneously.

CAUTION

The microcircuits provided in this kit are susceptible to static discharge damage. When handling these devices, observe the precautions for static sensitivy devices described within.

PARTS INCLUDED IN MODIFICATION KIT:

Ckt. No.	Quantity	Part Number	Description
U100	1 ea	160-0408-01	Microcircuit, dgtl, 8192 x 8, ROM
U110	1 ea	160-0409-01	Microcircuit, dgtl, 8192 x 8, ROM
U200	1 ea	160-0410-01	Microcircuit, dgtl, 8192 x 8, ROM
U210	1 ea	160-0411-01	Microcircuit, dgtl, 8192 x 8, ROM
U120	1 ea	160-0445-02	Microcircuit, dgtl, FLPA, w/3 state out
U400	1 ea	160-0466-02	Microcircuit, dgtl, 2048 x 8, EPROM, prgm
U410	1 ea	160-0467-02	Microcircuit, dgtl, 2048 x 8, EPROM, prgm
	1 ea		Marker, Service Identification
	1 ea		Label, 045-kit

CAUTION

STATIC SENSITIVE DEVICES

1. Minimize the handling of static-sensitive parts.

2. Transport and store static-sensitive parts in their original containers, on a metal rail, or on conductive foam. Label any container having a static-sensitive assemby or device.

3. Discharge the static charge on yourself by using a wrist strap before handling these devices. It is recommended that servicing of static sensitive assemblies or devices be performed only at a static-free work station by qualified personnel.

4. Nothing capable of generating or holding a static charge should be allowed on the work station surface.

5. Keep the leads shorted together whenever possible.

6. Pick up the part by the body, never by the leads.

7. Do not subject the part to sliding movements over any surface.

8. Avoid handling parts in areas having a floor or work surface covering that contributes to the generation of static charge.

9. Use a soldering iron that has a connection to earth ground.

10. Use a special anti-static suction type desoldering tool, such as a Silverstat Soldapulit.

INSTRUCTIONS:

WARNING

Before proceeding, ensure the POWER switch is off, then disconnect the instrument from the power source.

NOTE

If memory back-up power is being used, disconnect the female banana jacks from the MEMORY BACK-UP POWER INPUT on the rear panel.

( )   1.   Turn the four slotted fasteners in the right cabinet side one-quarter turn counterclockwise. Remove the cabinet side by lifting the panel away from the instrument.

( )   2.   Remove the five screws securing the circuit board support and remove the support.

( )   3.   To gain access to the ROM circuit board, first remove the GPIB circuit board (A30) by lifting up simultaneously on the two plastic circuit board ejectors located on each end of the circuit board. Position the circuit board and attached cable so the ROM circuit board (A31) can be removed.

( )   4.   Remove the ROM circuit board.

( ) 5. Replace U100, U110, U120, U200, U210, U400, and U410 with the microcircuits provided in the kit. (Refer to Fig. 1 for locations of the microcircuits.)
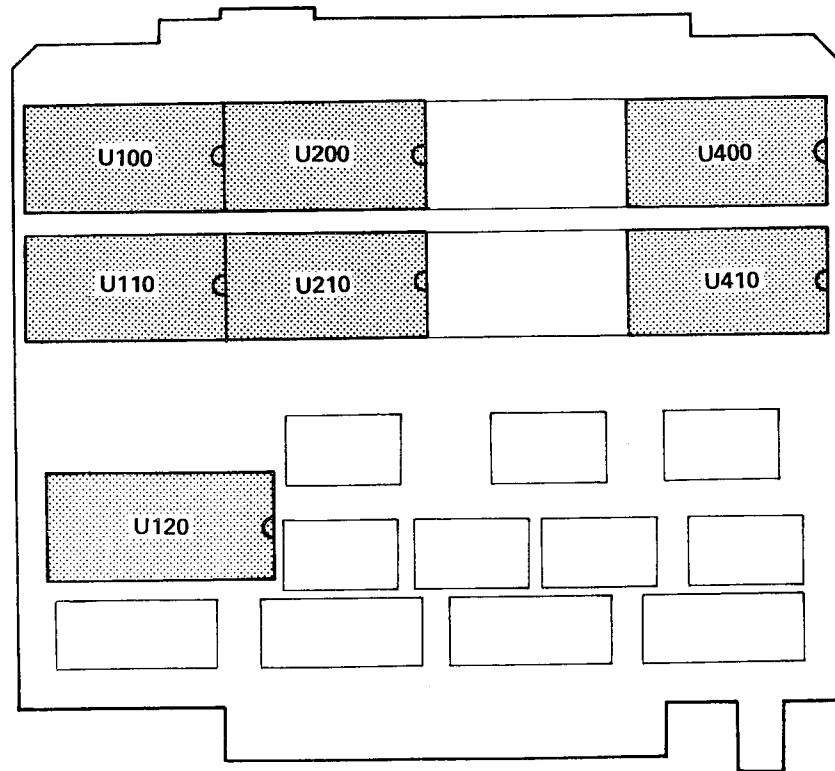

Fig. 1. Locations of Microcircuits on ROM Circuit Board (A31).

( ) 6. Reinstall the ROM and GPIB circuit boards in the following manner (install ROM circuit board first):

( ) a. Install the circuit board in its circuit board guides. Make sure the circuit board ejectors are in the horizontal position.

( ) b. Slide the circuit board down until the circuit board edge pins mate with the receptacle, then press firmly and evenly until the board edge pins bottom in the receptacle.

( ) 7. Reinstall the circuit board support, ensuring the tabs along the top edges of the circuit boards are inserted in the slots in the support.

( ) 8. Secure the circuit board support with the five screws removed in step 2.

( ) 9. Reinstall the right cabinet side.

( ) 10. If disconnected previously, reconnect the female banana jacks to the MEMORY BACK-UP POWER INPUT on the rear panel.

( ) 11. Replace the Service Identification marker on the rear panel of the instrument with the new Service Identification marker provided in the kit. This marker informs service personnel of the applicable version of diagnostic firmware and signature tables.

( ) 12. Remove the protective backing from the 045-kit label, provided in the kit, and apply it to a clean, dry area on the rear panel. The label indicates this kit has been installed.

( ) 13. For future reference, fasten the two attached Manual Modification Inserts into the appropriate Service Manuals.

DH:pa