



# product modification

045-0157-00

M67268

## U800 REPLACEMENT

For the following TEKTRONIX<sup>®</sup> instruments:

11A71 Serial Numbers: B010100 - B011564

This kit contains parts and instructions to replace U800, EPROM, microcircuit. The new EPROM has the latest firmware version 3.6.

### NOTE

Instruments with serial numbers between B010100 to B011318 requires R214, to be moved on the Kernal circuit board A3. If modification kit 050-2361-XX, has already been installed, disregard and install U800 as an direct replacement.

**KIT PARTS LIST:**

Ckt. Number	Quantity	Part Number	Description
U800	1 ea	160-4065-06	Microckt. dtgl: CMOS. prgm. ver 3.6

**INSTRUCTIONS:**

**WARNING**

*Dangerous shock hazards may be exposed when the instrument covers are removed. Before proceeding, ensure the mainframe power switch is in the off position. Then, remove the plug-in from the mainframe. Disassembly should only be attempted by qualified service personnel.*

**CAUTION**

*Many components within the 11A71 Amplifier plug-in 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 strap.*

**The Following Instructions Are Divided Into Two Sections:**

**Section A.** EPROM microcircuit replacement.

**Section B.** Programming The Unit Identification.

**Section A.** EPROM microcircuit replacement.

- ( ) 1. Remove the plug-in's left electrical shield, as viewed from the front of the instrument. Take care not to bend or damage the electrical shield during removal.
- ( ) 2. Remove the P100, P110 and P930 Ribbon cable connectors from the Kernel circuit board A3. Note connector locations for later reassembly.
- ( ) 3. Remove the four (4) Torx drive machine screws, using a T-10 drive tip, from the Kernel circuit board, then remove the circuit board from the instrument.

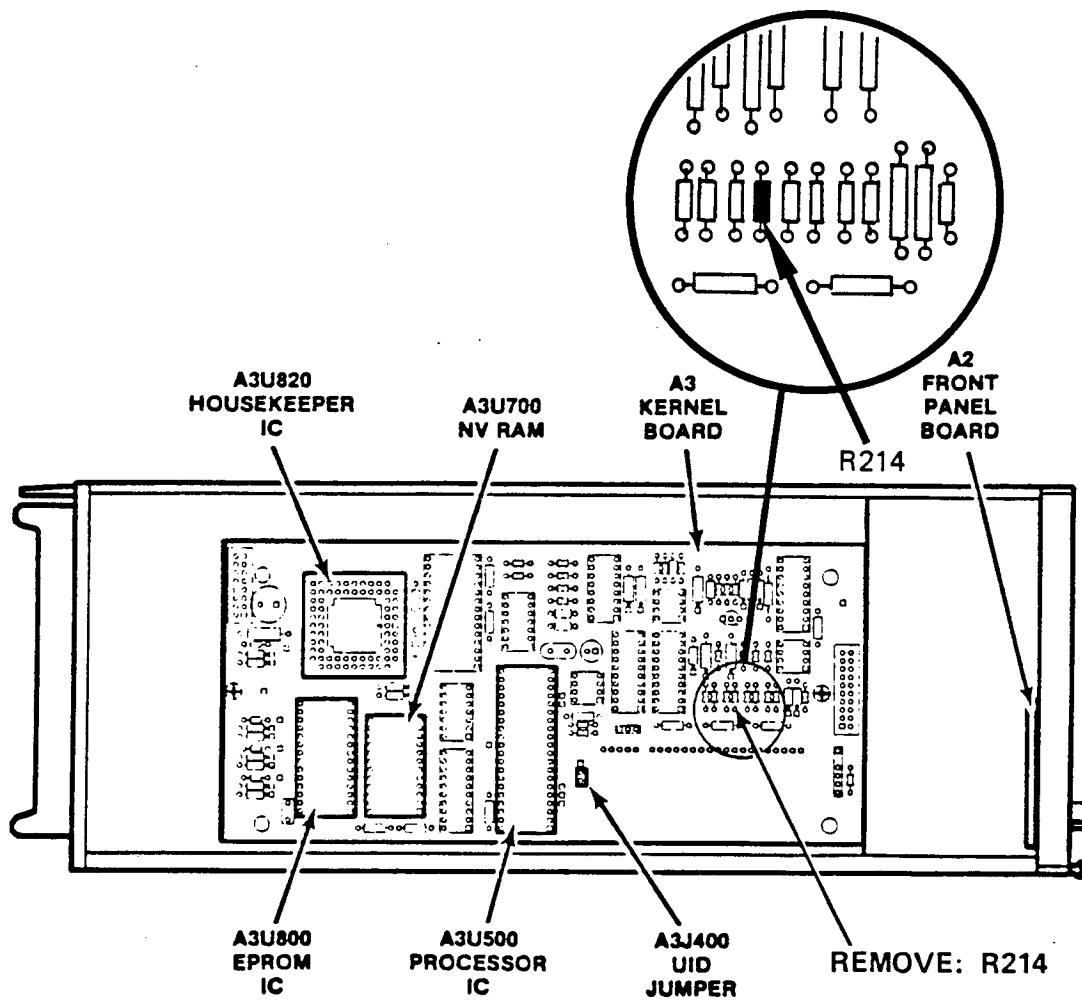


Figure 1. - Component locations Kernel ckt bd.

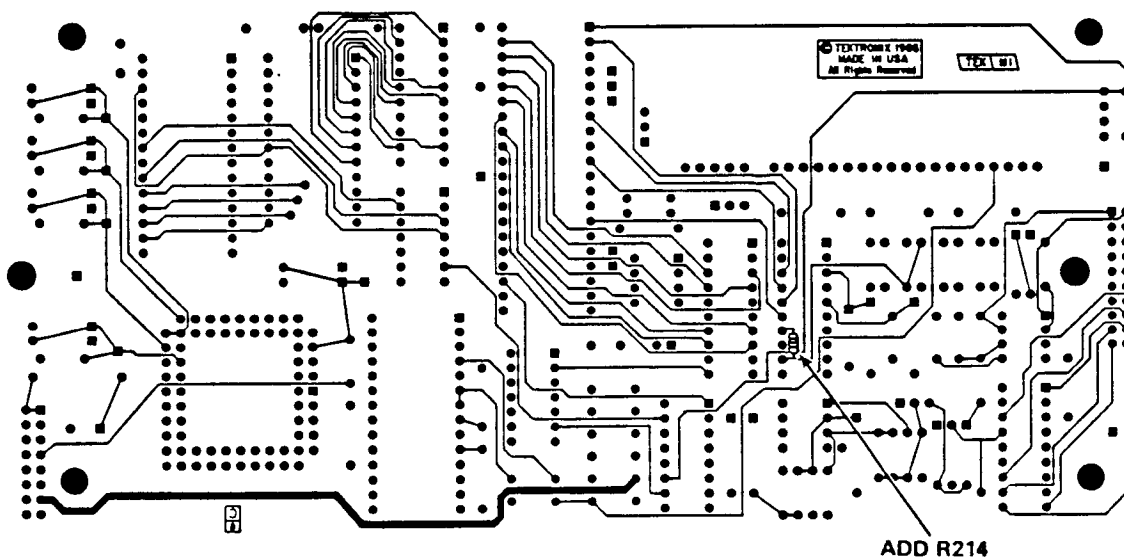


Figure 2. - Backside (solder) side of the Kernel ckt bd.

- ( ) 4. Unsolder R214, and 20k $\Omega$ , resistor from the circuit board, refer to Figure 1, for R214 location. Set the resistor aside for later assembly.
- ( ) 5. Position the Kernel circuit board with the back (solder) side facing up. Solder one lead of R214, 20k $\Omega$ , resistor to the circuit board pad common to U310, pin 12. Solder the remaining lead of R214 to the circuit board pad common to U310, pin 14. Refer to Figure 2, for R214, new location.
- ( ) 6. Replace the Kernel circuit board into the instrument using the hardware removed in the previous step 3.
- ( ) 7. Reconnect cable connectors removed in step 2.

### CAUTION

*Do not remove the label affixed to the top of the EPROMs. Removing this label will allow light into the chip, and may cause partial erasure of its data. Avoid touching the microcircuits pins or socket contacts. Finger oils can lessen contact reliability.*

- ( ) 8. Remove A3U800, EPROM microcircuit, using an Insertion - Extraction Pliers (such as General Tool's pn U505BG, a 28-pin type). Position the pliers around the outside of the EPROM microcircuit. Squeeze the handles to grasp the EPROM and slowly pull it from the socket. Refer to Figure 1, for component location.

### NOTE

*Do not remove th label affixed to the top of the EPROM. Removing this label will allow light into the chip, and may cause partial erasure of its data. Avoid touching the microcircuits pins or socket contacts. Finger oils can lessen contact reliability.*

### NOTE

*When installing the new EPROM microcircuit be certain pin 1 is position correctly and all component pins are properly seated.*

- ( ) 9. Install the new EPROM microcircuit into the socket (slowly seat the EPROM into the socket) using the same tool used in step 2. Check that all the microcircuit pins are straight and evenly spaced to ensure proper installation.
- ( ) 10. Replace the electrical shield removed in step 1

## Section B. Programming The Unit Identification.

### NOTE

The Unit Identification (UID) is identical to the plug-in's serial number and is stored in NV RAM. It is necessary to enter this number if the firmware or Main circuit board A1 are replaced.

- ( ) 1. 11401 and 11402, remove the bottom cover of the mainframe and install a Term Conn Link (shorting strap) on the CAL-LOCK terminals located on the Time Base circuit board A6. Refer to Figure 3, for pin locations.

### NOTE

No special set-up needed with the 11301/11302 mainframes.

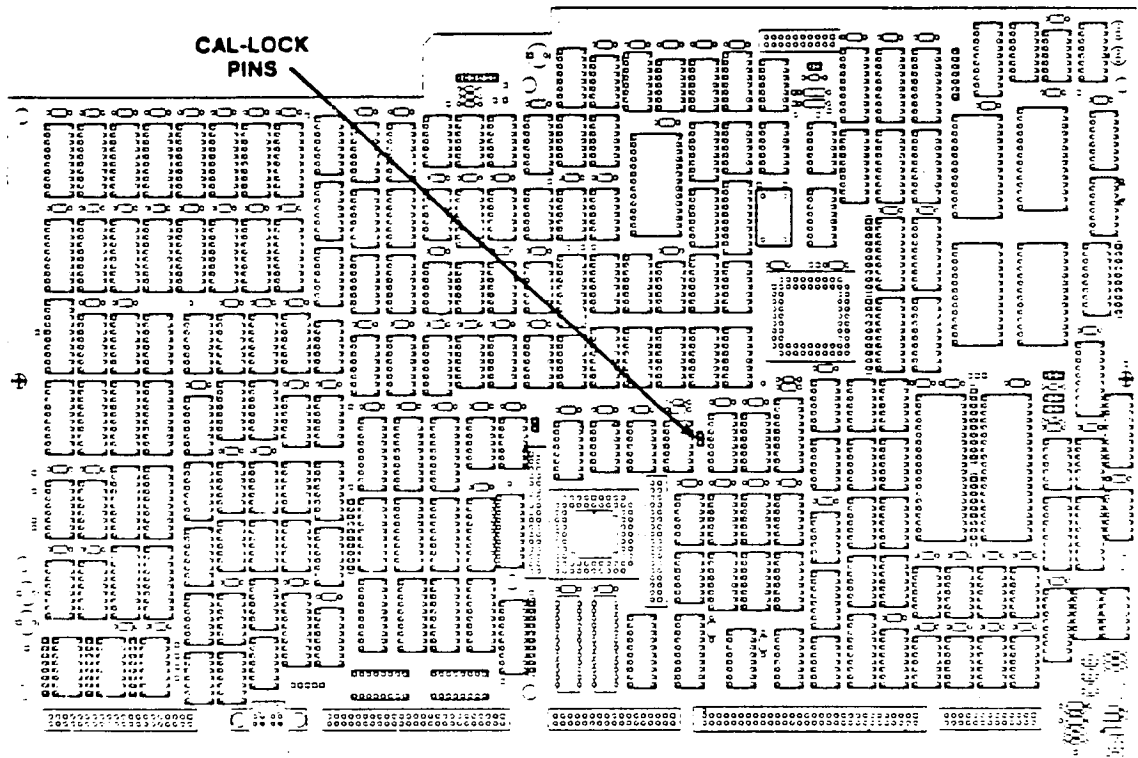


Figure 3. - 11401/11402 Time base ckt bd A6

**To Enter the UID, use this procedure:**

- ( ) 2. Connect the Terminal to the mainframe's RS-232-C port. (Refer to the mainframe User's Reference Manual for instructions on setting up the RS-232-C parameters).
- ( ) 3. Move the UID Term Conn Link (jumper) J611 on the Main circuit board A1. The jumper should be vertical in its normal position. Remove the jumper and install it horizontally.
- ( ) 4. Install the plug-in into center compartment. Turn the power on. Wait until Diagnostics checks are completed. **Serial Sum** error messages will be displayed.
- ( ) 5. At the Terminal, type the command:  
  
UID [Center]: "<Serial Number>"  
  
• Center refers to the name of the compartment.
- ( ) 6. At the Terminal, type the query:  
  
UID? [Center]  
  
Observe that the correct UID is reported.
- ( ) 7. Push the ENHANCED ACCURACY button on the mainframe front panel.
- ( ) 8. Move the ON/STANDBY switch to STANDBY.
- ( ) 9. Remove the plug-in from the mainframe.
- ( ) 10. Return the jumper J611 on the Main circuit board A1 to its normal vertical position.
- ( ) 11. Replace the plug-in's right and left electrical shields.
- ( ) 12. **11401 and 11402.** Remove the Term Conn Link (shorting strap) on the CAL-LOCK terminals located on the Time Base circuit board A6. Replace the bottom cover on the mainframe.