

# Instructions



## **050-3169-02** **HFS 9000 Series** **Firmware Replacement Kit**

**070-9493-02**

### **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 all safety summaries prior to performing service.



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## Kit Description

This kit includes parts and instructions to replace the firmware located on the CPU circuit board. This firmware must be installed to ensure compatibility with the HFS 9003 with part number of 672-1393-03 or later, Human Interface assembly or HFS 9009 with a part number of 672-0317-02 or later, Human Interface assembly.

This document supports Tektronix engineering change notices m83012 and m83960

## Instruments

**HFS 9003**      B010100 – B010448  
**HFS 9009**      B010100 – B030221

## Minimum Tool and Equipment List

Tool	Part number
Pozidriv® driver	n/a
Flat bladed screw driver	n/a

## Kit Parts List

Ckt number	Quantity	Part number	Description
U63	1 ea	160-8976-07	IC, Memory: CMOS, EPROM, Programmed
U64	1 ea	160-8977-07	IC, Memory: CMOS, EPROM, Programmed
	1 ea	070-9493-02	Instructions, Technical: Field Kit
	1 ea	_____	Label: 050-kit

## Service Safety Summary



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**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 appropriate HFS 9003 or HFS 9009 service manual before performing any service.*

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### **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 HFS 9003 or HFS 9009 Service Manual. For assistance to install this kit, please call your nearest Tektronix Service Center or Tektronix Factory Service.



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**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.*

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## HFS 9003 Front Panel Module

The front panel module, which contains the display and keypad, is a single field replaceable unit. Turn off instrument power when removing or installing the front panel module.

### Removal

1. Remove the two screws holding on the front panel, one is located underneath the front panel module on each side.
2. Swing the bottom of the front panel module away from the instrument, then lift the module off the two hooks.
3. Note cable location for later reassembly and disconnect the ribbon cable connecting the front panel module to the CPU card.

### Replacement

1. Connect the ribbon cable between the front panel module and the CPU card.
2. Hang the top of the front panel module from the hooks at the top corners of the mainframe, then swing the bottom of the front panel flush. Make sure all clock distribution cables are positioned in the channel in the back of the front panel module.
3. Install the two screws holding the bottom of the front panel module in place; one is located underneath the front panel module on each side.

## HFS 9003 CPU Card

Pulse or data generator cards are behind the small panels in the open area of the front panel. Turn off instrument power when removing or installing cards.

- Removal**
1. Remove the front panel module as described on page 3.
  2. CPU is located in the bottom card slot. See Figure 2, for card location.
  3. The CPU card is fastened with two screws, one on either end of the card front panel. Remove these screws, and pull the card straight forward. See Figure 1.

- Replacement**
1. Push the CPU card into the appropriate slot through in the mainframe. Refer to the block diagram (see Figure 2 on page 6) to identify the proper card position in the rack. Secure the card with two screws, one on either end of the card front panel.

## HFS 9009 Front Panel

The front panel must be removed to gain access to the keypad, display module, and bezel. Turn off instrument power when removing or replacing the front panel.

- Removal**
1. Remove the four screws holding on the front panel.
  2. Disconnect the ribbon cable connecting the front panel module to the CPU card. Mark it for proper reconnection.

- Replacement**
1. Connect the ribbon cable between the front panel module and the CPU card.
  2. Set the front panel into the instrument frame and replace the four screws.

## HFS 9009 CPU Card

- Removal**
1. Remove the front panel module (see Front Panel Removal).
  2. CPU is located in the first card slot on the left (as view from the front of the instrument). See Figure 3, for card location.
  3. The CPU card is fastened with two screws, one on either end of the card front panel. Remove these screws and pull the card straight forward. See Figure 1.

- Replacement**
1. Push the CPU card into the appropriate slot through in the mainframe. Refer to Figure 3 to identify the proper card position in the rack. Reattach the card with two screws, one on either end of the card front panel.



**CAUTION.** U63 and U64 EPROMs are extremely susceptible to static-discharge damage. Observe standard handling precautions for static-sensitive devices while installing this kit. Always wear a grounded wrist and foot strap while installing this kit.

## U63 and U64 Replacement

1. Remove U63 and U64 EPROMs from their sockets. Note pin-1 index marks for later reassembly of the new EPROMs. See Figure 4 for component locations.
2. Install the new U63 and U64 EPROMs (provided in this kit). Make sure all pins are straight and pin-1 index mark is aligns with pin-1 index mark on the socket.

## Reassembly

1. Reinstall the circuit boards and front panels. Refer to appropriate instrument replacement procedure.
2. Remove the protective backing from the 050-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.

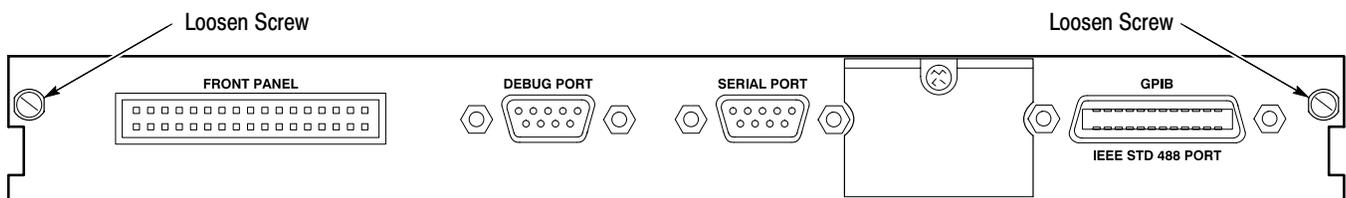
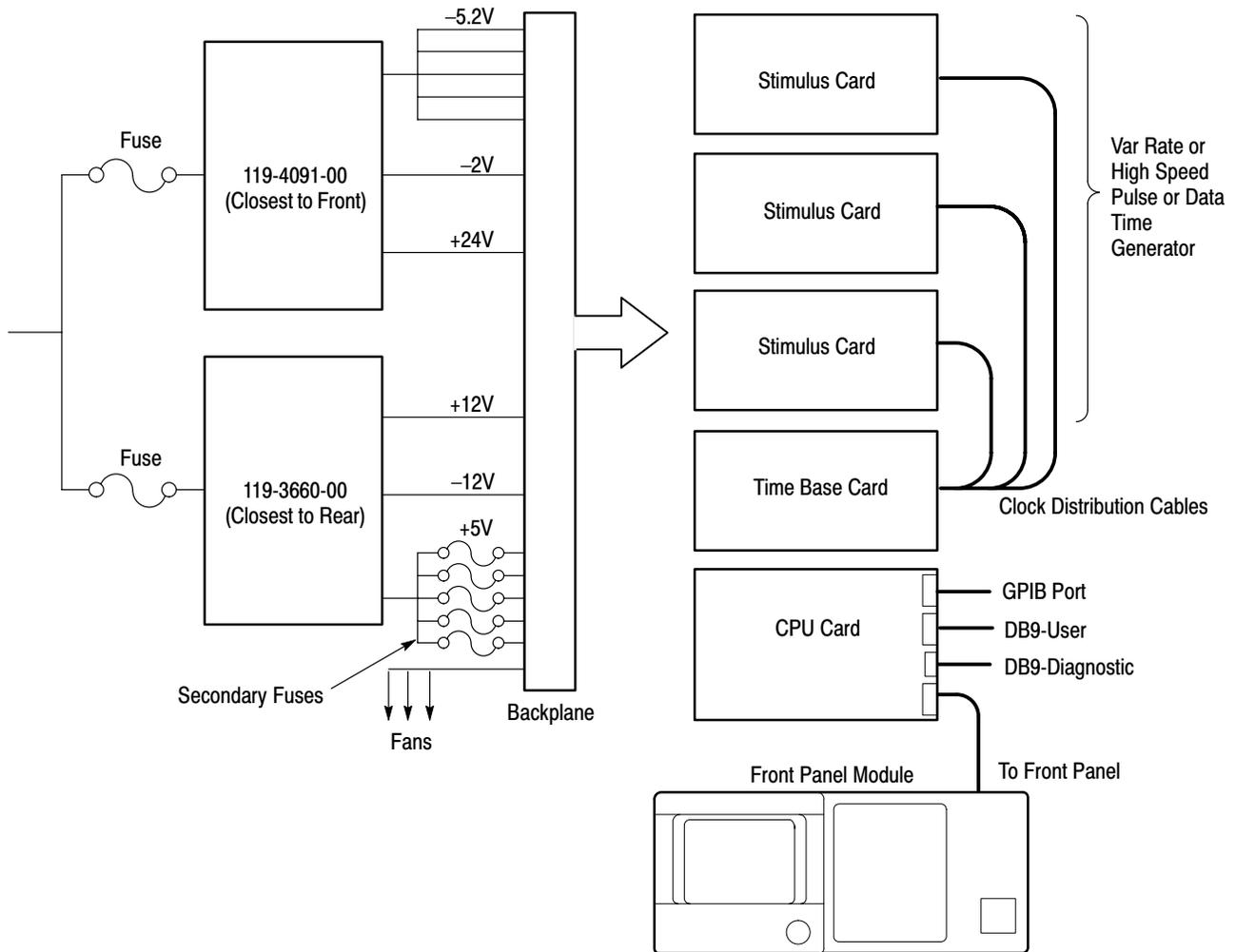
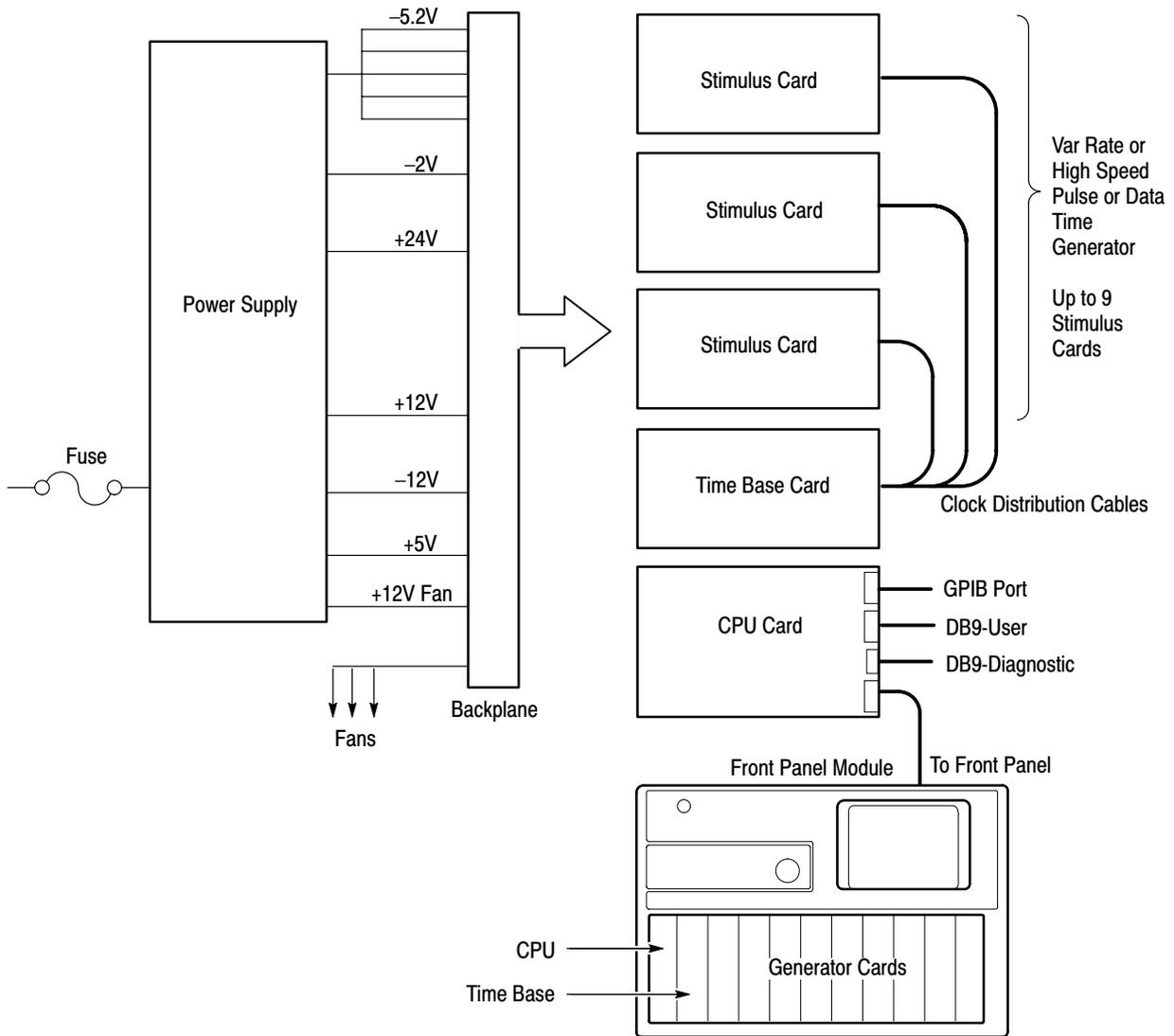


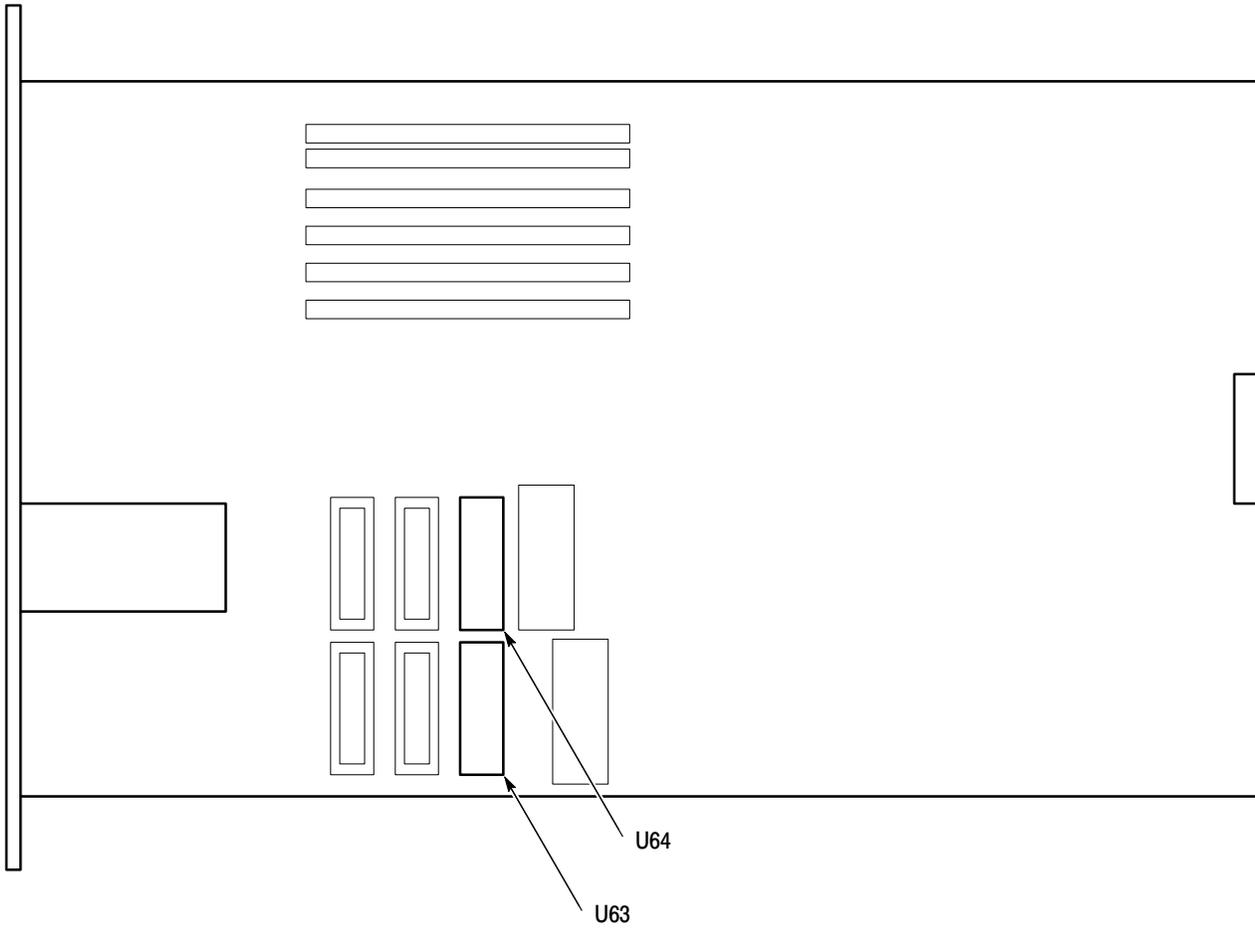
Figure 1: The CPU card



**Figure 2: Module block and interconnection diagram**



**Figure 3: Module block and interconnection diagram**



**Figure 4: Partial view – CPU circuit board, U63 and U64 EPROM locations**

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