

MODIFICATION RECOMMENDED –
CORRECTS MANUFACTURING OR DESIGN DEFECTS

3488A-19

S E R V I C E N O T E

Supersedes:
NONE

3488A Switch Control Mainframe

Serial Numbers:

All US00000000 serial numbers
All 3488A shipped before April 1998

3488A Upgrade Instructions (Installing updated 3488A Control Board that supports 44470D and 44471D modules)

To Be Performed By: Agilent-Qualified Personnel or Customer

Parts Required:

P/N	Description	Qty.
03488-66541	3488A Control Board Assembly	1

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:		
MODIFICATION RECOMMENDED		
ACTION CATEGORY:	<input type="checkbox"/> IMMEDIATELY <input type="checkbox"/> ON SPECIFIED FAILURE <input type="checkbox"/> AGREEABLE TIME	STANDARDS: LABOR: 0.0 Hours
LOCATION CATEGORY:	<input type="checkbox"/> CUSTOMER INSTALLABLE <input type="checkbox"/> ON-SITE <input type="checkbox"/> SERVICE CENTER	SERVICE INVENTORY: <input type="checkbox"/> RETURN <input type="checkbox"/> SCRAP <input type="checkbox"/> SEE TEXT
AVAILABILITY:	PRODUCT'S SUPPORT LIFE	USED PARTS: <input type="checkbox"/> RETURN <input type="checkbox"/> SCRAP <input type="checkbox"/> SEE TEXT
AGILENT RESPONSIBLE UNTIL:		
AUTHOR: [initials] PRODUCT LINE: AR		
ADDITIONAL INFORMATION:		

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May 21, 2002

Situation:

All 3488A units manufactured before April 1998 include the old Control board, which does not support the 44470D and 44471D modules.

All 3488A units manufactured after April 1998 include the updated Control board that supports all modules, including 44470D and 44471D. Upgraded mainframes were sold as 3488A option 023.

Mainframes today can be upgraded by replacing the Control board:

- 44488A upgrade kit is no longer available, but by replacing the control board with 03488-66541 updated control board, as stated in this Service Note, you will get the same upgrade as offered by the kit.
- Today, order 03488-66541 updated Control board and follow this Service Note for installation instructions.

Solution/Action:

In order to use Agilent 44470D and/or 44471D modules, upgrade an existing Agilent 3488A with a 03488-66541 updated Control Board.

Replacement of the Control Module:

1. Customers can send unit to an Agilent Service Center for repair (control module replacement). Please call your local Contact Center for the Service Center nearest you
2. Customers can order an upgraded Control Module 03488-66541, and replace it themselves. Please call your local Agilent Contact Center to place your order.

Control Module Replacement Instructions:

Step 1. Install updated 03488-66541 Control Board – Follow 3488A Upgrade Instructions found below.

Step 2. Upgrade the serial number in the upgraded Control board --- Follow instructions listed at end of document.

If you have any questions, please send an E-mail to support_bi@agilent.com

Step 1. 3488A Upgrade Instructions

Introduction

Effective March 18, 1998, two new option cards, which must be used with an upgraded Agilent 3488A (Opt #023 ... obsoleted Oct, 2000), became available:

- 44470D 20-Channel Relay Multiplexer;
- 44471D 20-Channel GP Relay card.

To use the Agilent 44470D and/or 44471D, upgrade an existing 3488A with an Agilent part # 03488-66541 upgraded Control board (formerly available in the 44488A upgrade kit).

Safety Considerations

WARNING: The line power cable and all other interconnections must be removed before performing any disassembly procedures.

Caution: The Agilent 3488A mainframe, as well as the plug-in option cards, are susceptible to static discharges. Use the following anti-static procedures to prevent static damage.

Static Handling Static electricity is a familiar phenomenon which, except for an occasional shock, doesn't seem very serious. However, it has been proven that in the electronics industry electrostatics discharge (ESD) is a major cause of component failure. In many cases, the component damaged may not immediately fail, causing low instrument reliability and unnecessary repairs at a later time. ESD damage can occur at static levels too low for human perception. Additionally, it has been shown that ESD can affect both passive and active devices.

Caution: The HP 3488A mainframe, the plug-in cards, and any assembly or subassembly removed from the mainframe, must be handled in a static safe environment.

The following guidelines are the minimum requirements for a static safe service environment.

- The work bench should be equipped with a conductive table mat. The mat should be grounded to earth ground through a 1 megohm resistor. The mat should be equipped with at least one swivel connected to the swivel connector for connecting wrist straps.
- All service and handling personnel should wear a conductive wrist strap in contact with bare skin. This strap should be connected to the swivel connector on the conductive table mat through a 1 megohm resistor.
- All metal equipment at a work station must be grounded. This includes soldering irons, solder suckers, shelving, and equipment stands.
- Only one common ground should be provided at a workstation.
- The workstation must be kept free of nonconductors. No common plastics, polybags, cardboard, cigarette or candy wrappers should be allowed. There should not be rugs or carpet on the floor, shelving, or bench top.
- Only proper containers should be used for shipping, storing and transporting assemblies.

HP 3488A Upgrade Procedures

The following steps show you how to upgrade an old 3488A mainframe:

STEP 1: Cover Removal

It is necessary to remove the top cover to access any of the major assemblies within the 3488A mainframe. Six captive screws secure the cover. To remove the cover:

- Remove all power cables, interconnections, and plug-in option cards from the 3488A.
- Turn the 3488A upside down. Loosen the six screws in the bottom cover. The screws are captive in the bottom cover. Do not attempt to completely remove the screws.
- DO NOT ATTEMPT TO REMOVE THE BOTTOM COVER FIRST. When the screws are loosened, turn the entire unit upright. The top cover can now be lifted off.
- To reinstall the top cover, reverse the procedure.

STEP 2: Front Panel Removal

This procedure shows how to remove the front panel assembly from the mainframe.

- Depress the line power switch to the ON position.
- The front panel is now held captive in the slot in the bottom cover. Gently pry the right side of the bottom cover until the keyboard can be released from the slot. The keyboard assembly will then swing out and clear the line power switch knob.
- Lift the front panel up and out. The cable that attaches the front panel to the Controller Board has enough slack to allow the front to be removed. If it is desired to completely remove the front

panel, disconnect the gray cable at the Controller Board connection by pulling the white plastic tab installed on the connector. The cable removal is shown in Figure 1.

Caution: The two connectors attached to the front panel are delicate connectors. These connectors should only be removed if it is necessary to replace either the display assembly or the keyboard assembly.

- To reinstall the front panel, reverse the procedure.

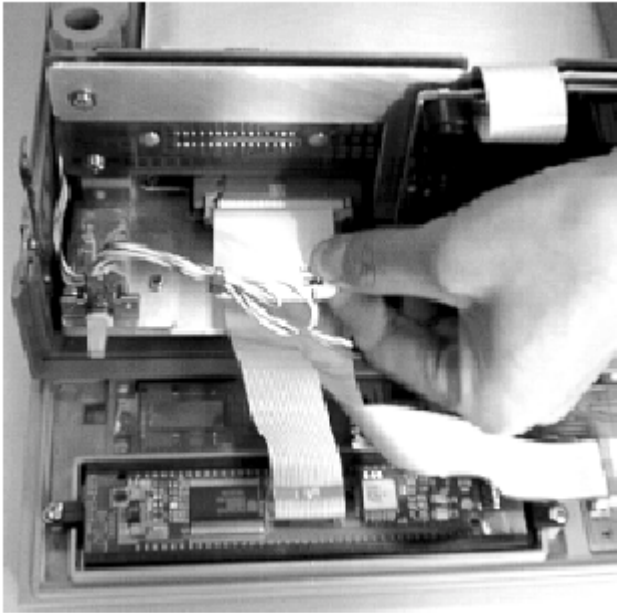


Figure 1. Cable Removal

STEP 3: Controller Board Access

To access the controller circuit board, remove the four screws in the shield over the board. The shield will lift up and off. The controller printed circuit board is now accessible for troubleshooting or testing or replacing. Shield removal is shown in Figure 2.



Figure 2. Shield Removal

STEP 4: Controller Board Replacing

To replace the old Controller Board with the provided new one (03488-66541), you need to:

- Remove the posi-drive screw located on the rear panel below the silver ground terminal.
- Gently pull the Controller Board up and toward the rear of the unit to disconnect the Controller Board from the backplane board. The GPIB connector and rear panel will be removed with the Controller Board assembly. Lift the Controller assembly up and out.
- To install the provided new Controller Board, reverse the procedure.

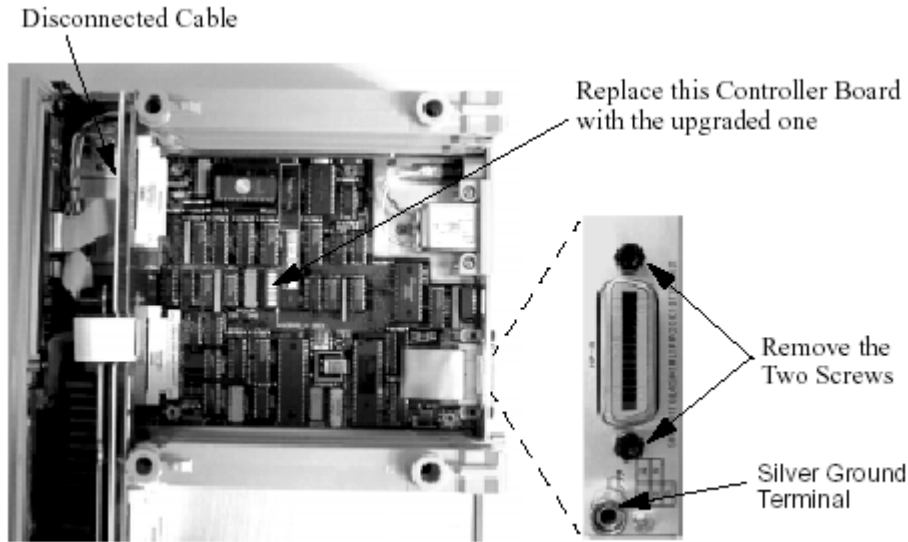


Figure 3. Replace the Controller Board

STEP 5: Verifying and Testing the Agilent 3488A Mainframe

After replacing the Controller Board, you need to verify and test the 3488A mainframe according to the following procedure:

- Make certain that the provided new Controller Board, the shield, the front panel, the top cover, etc. have been installed into the Agilent 3488A properly.
- Connect the power cable and power up the Agilent 3488A, press the TEST key just below the display window. The display “**3488A 1998**” identifies that this Agilent 3488A mainframe has been upgraded successfully (the existing 3488A just displays “3488A”).

See Figure 4. for Agilent 3488A Identifications.

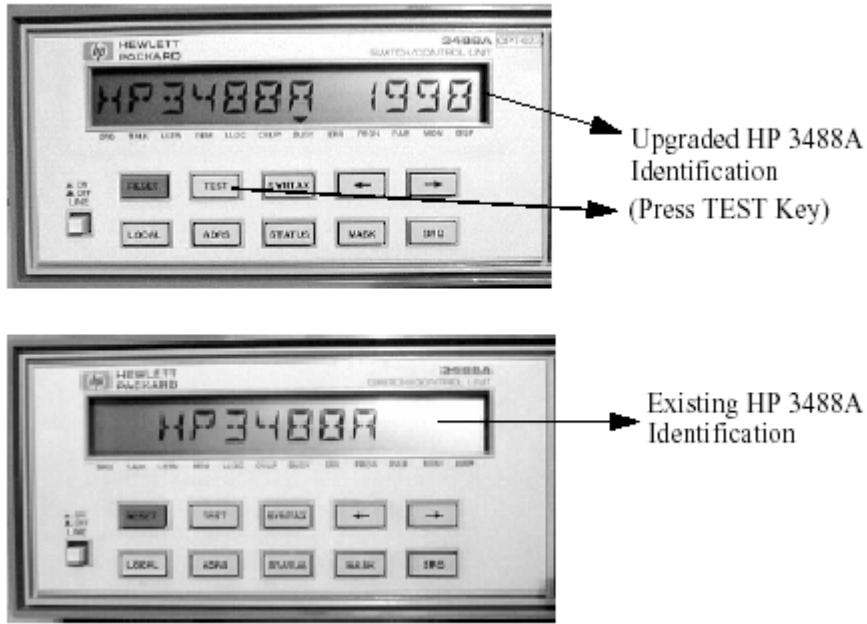


Figure 4. Agilent 3488A Identifications

Upgraded Control Board will now allow use of all 3488A modules, including 44470D and 44471D.

Step 2. Upgrade Serial number in newly installed Control Board

Follow this procedure to program the 3488A's Serial Number in the upgraded Control Board you have just installed:

1. Send the following SCPI commands to the 3488A to download the serial number. Enter the serial number of the 3488A you have upgraded.

```
DIAG:INT ON
DIAG:SERIALNUMBER 'CN12345678'
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2. Then cycle power.

This will write CN12345678 to 3488A upgraded control board.