

Agilent PSA Update Program Troubleshooting

What Problem are you having?

Start troubleshooting by clicking on the bookmark in the left column.

To best use this troubleshooting help, click on the "[Next>](#)" links and bookmarks instead of the page navigation.

Identifies and resolves problems related to:

The PC Update Program not installing or running on a Windows PC.

The PC Update Program runs but displays errors on the PC.

The PC Update Program starts but then stops.

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Do you have Administrator privileges on the PC?

Administrator privileges are needed to execute the program. If your login name is set as a "Standard" user and is a member of the "Power Users Group" but is not designated as an Administrator, you will be able to load the program and the program will start but then will not be able to complete its tasks.

To check if you are an Administrator on the PC:

Windows 2000

1. Open Users and Passwords (Click **Start**, click **Settings**, click **Control Panel** and then double-click **Users and Passwords**).
2. Your login name's Group membership needs to be Administrators.

Windows XP

1. Click **Start**, then **User Accounts**.
2. Your login name needs to be listed as " Computer Administrator"

Windows NT

1. Open the User Manager (Click **Start**, click **Programs**, click **Administrative Tools** and then double-click **User Manager**).
2. In the Group window, click on **Administrators**.
3. You login name needs to be listed in the Administrators Group.

If you are not an Administrator on the PC, you will need to contact an Administrator for the PC to have your login name added to the Administrators Group.

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Are you using a PC with Windows NT?

Is JVM (Java Virtual Machine) loaded in your PC?

The JVM program is needed to install and run the PC Update Program. JVM is already included in Windows 2000 and Windows XP. If you are using a PC with Windows NT , you need to load JVM (Java Virtual Machine) on the PC. You only need to do this once for each NT PC.

To install JVM on a Windows NT PC

- Select "Yes" when asked by the installer if you want to install JVM.
- Reboot your PC to complete the installation.

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Does the update program stop after attempting to create backup configuration files?

Use the default directory for saving the configuration files. The program may not save the files correctly if a directory other than the default is used to save the files.

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Do you have previous versions of the PC Update Program on your PC?

The installation of the PC Update Program may become corrupted if more than one version is installed at a time.

To insure no other versions are installed

1. Click **Start**, select **Settings, Control Panel, Add/Remove Programs**
2. Look for any "PSA Series Update Program" entries and remove.
3. Reinstall the PSA Update program.

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Did you download the PC Update Program from the Agilent web site?

If you downloaded the PC Update Program from the Agilent web site, you need to check "Save this program to disk" to download the package into your PC. The installer cannot install the program correctly when "Run this program from its current location" is used.

Note: If you are using the CD-Rom version, "Run this program from its current location" will work correctly.

To download the PC Update Program from the Agilent web site

- Go to the http://www.agilent.com/find/psa_firmware web site.
- Follow the directions on the page, making sure you select "Save this program to disk" when prompted.

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Are other programs running on the PC?

You may not have enough RAM in your PC to allow the PC Update Program to install and run while running other programs.

To close running programs

1. Press and hold the **Alt key**, then press the **Tab key**.
2. Release the **Tab key** to activate a running program.
3. Close the program.
4. Repeat steps 1 - 3 until all programs are closed.

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Do you have enough Free Memory to install and run the program?

The PC Update Program requires about 120 MB to install and run.

To determine if the PC has enough memory

1. Click **My Computer**
2. Right click on the (C:) drive icon (or the drive icon you are using for the installation.)
3. Select **Properties**.

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Is the instrument having trouble booting from the PC?

When the instrument has trouble booting from the PC, the PC Update Program will connect to the instrument and the instrument will find the PC, but after entering **03** (or **bo p0** on an external keyboard) there is no activity for a very long time (>30 min), the progress bar never appears on the PC. Instrument error messages may occur, i.e., "Failed I/O Operation with ENTRY_IO" or "User Name" is displayed.

If the progress bar **does** appear before the process stops, see "[Update Process Crash](#)".

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Identifies and resolves problems related to:

The PC Update Program being interrupted or hanging (>30 min) when attempting to load the operating system and firmware.

The PC Update Program connects to the instrument, the instrument finds the PC, after entering **03** (or **bo p0** on an external keyboard) the progress bar appears, but then there is no activity for a very long time (>30 min) There may be error messages on the Instrument screen.

If the progress bar **does not** appear before the process stops, see "[Booting from the PC](#)".

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Identifies and resolves problems related to:

The Instrument booting from the PC to load the operating system and firmware.

The PC found the instrument and was able to save the configuration files but when the "*Operating System Version 3.01 and Core Firmware Version A.0X.X*" update box is checked, the update process does not continue after the "*Boot instrument from the PC using LAN*" screen.

If the problem is the instrument booting from the PC, the instrument will still be functional after the instrument's power is cycled.

Typical problems related to the instrument booting from the PC:

The PC is not listed as a bootable device after entering **02** (or **sea** on an external keyboard.)

The PC Update Program connects to the instrument and the instrument finds the PC, but after entering **03** (or **bo p0** on an external keyboard) there is no activity for a very long time (>30 min), the progress bar never appears on the PC. Instrument error messages may occur, i.e., "Failed I/O Operation with ENTRY_IO" or "User Name" is displayed.

If the progress bar **does** appear before the process stops, see "[Update Process Crash](#)".

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Is the PC listed as a bootable device after entering 02 (or sea on an external keyboard)?

Yes

No

The instrument searches for bootable devices after you enter **02** (or **sea** on the external keyboard). If it does not find the PC, the update process cannot continue.

Is there a personal firewall or security software installed in the PC?

The PC may not give the instrument permission to boot from the PC. The firewall / security software needs to be disabled to use the PC to update the analyzer.

Windows XP includes an Internet Connection Firewall (ICF).

To disable the Internet Connection Firewall in XP

1. Open Network Connections (Click **Start**, click **Control Panel**, and then double-click **Network Connections**.)
2. Click the LAN or High-Speed Internet connection, and then , under **Network Tasks**, click Change settings of this connection.
3. On the **Advanced tab**, under **Internet Connection Firewall**, clear the **Protect my computer and network by limiting or preventing access to this computer form the Internet** check box.

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Does your PC have more than one IP address?

If the PC has more than one IP address, the instrument does not know which IP address is the bootable device.

To check if the PC has more than one IP address

1. Click **Start**, then select **Run**.
2. Type **cmd** in the Run box.
3. type **ipconfig** at the prompt, then press [**Enter**]
4. There should be only one "IP Address" list.

If there is more than one IP address listed, you need to use a different PC to do the update or disable one of the network services. Usually, the second IP address is for a modem card install in the PC.

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Select the "Next>" link that best matches your setup.

I am using my Local Area Network to connect the PC to the instrument.

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I am using the cross-over cable procedure to connect the PC to the instrument.

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Is the PC on the same network subnet as the instrument?

The PC and the instrument must be on the same network and subnet to boot.

To determine your PC's network configuration

1. Click **Start**, then select **Run**.
2. Type **cmd** in the Run box.
3. type **ipconfig** at the prompt, then press [**Enter**]
4. Note the settings for the PC's network configuration.

To determine your instrument's network configuration

1. Set the line switch to ON and wait for the instrument to boot to the measurement screen.
2. Press the following keys:

System
Config I/O

3. Note the settings for the instrument's network configuration.

To compare the two settings

The following would indicate the PC and the instrument are on the same subnet:

- The first three fields of the IP Addresses are the same.
- The subnet masks are the same.
- The gateway addresses are the same.

If the third field of the IP address or the subnet mask and gateway addresses are different it doesn't necessarily mean the instrument is on a different subnet. Network system setups and configurations vary. Most likely you will need to ask your Network administrator if your PC and instrument are on the same network subnet and if the settings are correct.

To update the instrument when the PC and instrument are on different subnets

Use a cross-over cable or hub to update the instrument. See the "[Cross-Over Cable Procedure](#)" or "[Using a Hub to Connect](#)".

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Cross-Over Cable Procedure

Use these instructions when you do not have a LAN connection to the instrument you are updating or your PC is not on the same subnet as the instrument.

Alternate Procedure: Use a hub to connect! See "[Using a Hub to Connect](#)".

You must be designated as an "Administrator" on your PC to perform these tasks.

These directions will not work to connect to a Local Area Network!

These directions are for setting up a Private Network. The Local Area Network will not connect the PC and the instrument using the addresses in these directions.

Equipment Required

Cross-Over Cable (CAT5, RJ-45 cable with cross-pinning), Agilent part number 8121-0545

Step 1. Print instructions

Print these instructions so you can refer to them during the process.

Step 2. Setup PC to use the cross-over cable

- A. Cancel the update program.
- B. If the PC is connected to LAN, disconnect from all network drives by right clicking on **Network Neighborhood (My Network Places** for Windows 2000) and selecting **Disconnect network Drives...**
- C. Disconnect the LAN cable from the PC.
- D. Connect the cross-over cable from the PC to your instrument.
- E. Change the PC's IP address:

Record any changes you make so you can change the settings back when done.

Instructions for Windows 2000:

Right click on **My Network Places**. Click on **Properties**.

Double-click on the **Local Area Connection** icon. Click on **Properties**. Select **Internet Protocol (TCP/IP)**. Click on **Properties**.

Select "Use the following IP Address" and enter the following:

IP Address: 192.168.100.2

Subnet Mask: 255.255.0.0

Default Gateway: (Leave this field blank)

Click **Okay**

Instructions for Windows XP:

Click **Start**, click **Control Panel**, and then double-click **Network Connections**.

Click the local area connection you want to configure, and then, under **Network Tasks**, click **Change settings of this connection**.

On the **General** tab, in **This connection uses the following items**, click **Internet Protocol (TCP/IP)**, and then click **Properties**.

On the **Alternate Configuration** tab, click **User configured**.

Enter the following:

IP Address: 192.168.100.2

Subnet Mask: 255.255.0.0

Leave the other fields blank.

Click **Okay**

Instructions for NT Workstation:

Right click on **Network Neighborhood** and select **Properties**.

Select the **Protocols** tab and then select **TCP/IP Protocol**, click on **Properties**. Select the **IP Address** tab.

Select "Specify an IP address" and enter the following:

IP Address: 192.168.100.2

Subnet Mask: 255.255.0.0

Default Gateway: (Leave this field blank)

Click **Apply** and then **Okay**

Instructions for Windows 98 PC:

Right click on **Network Neighborhood** and select **Properties**.

Select the **Configuration** tab and then highlight **TCP/IP**, click on **Properties**. Select the **IP Address** tab.

Select "Specify an IP address" and enter the following:

IP Address: 192.168.100.2

Subnet Mask: 255.255.0.0

Select the **Gateway** tab and enter **0.0.0.0** as a New gateway address. Then click **Add**. Insure the new gateway address is at the top of the list.

Click **Apply** and then **Okay**

Step 3. Restart the PC

Restart the PC (Start, Shut Down, Restart, OK)

Step 4. Setup up your instrument to use the cross-over cable

A. Press the following keys on the instrument:

[**System**] [**Config I/O**]

B. Record the instrument's IP Address and subnet mask so you can change the settings back after completing the update.

C. Press the "IP Address" soft key and enter **192.168.100.3**

D. Press the "Subnet Mask" and enter **255.255.0.0**

Note: Early firmware does not support changing the Subnet Mask, it should already be the default value.

E. Cycle power on the instrument (set the power switch to OFF, then to ON.)

Step 5. Start the Update Program

Start the PSA Update Program and follow the directions to update the instrument. Select the Cross-Over Cable connection.

Step 6. Reset PC after completing the update

A. Disconnect the cross-over cable from the PC and the instrument.

B. Change the TCP/IP Protocol properties on the PC back to the settings you recorded in Step 2.

C. Shut down the PC.

D. Reconnect the PC's LAN cable to your system.

E. Start the PC to return to normal operation.

Step 7. Reset Instrument's IP Address

A. Reconnect the LAN cable.

B. Set the power switch to ON(1).

C. Re-enter the instrument's IP Address and subnet mask you recorded in Step 4 (if the instrument had a LAN configuration.)

D. Cycle power on the instrument (set the power switch to OFF, then to ON.)

Troubleshooting Cross-Over Cable Procedure

If the PSA Update Program does not connect to the instrument, try cycling the instrument's power (Off, then ON.) and try again. The LAN needs to be active when the instrument powers on or it will shut off the instrument's LAN connection.

If you are unable change the PC's IP Address or Subnet Mask using the method described, you may not have administrator rights to the PC. To use the cross-over cable method, you need to give your instrument an IP address that the PC will recognize.

Some PC's do not work well with the passive cross-over cable as a LAN connection (usually Laptops.) Try using an active hub to connect. See "[Using a Hub to Connect](#)".

Using a Hub to Connect

A LAN Hub can be used in place of a cross-over cable. An active LAN Hub amplifies the signal before sending it to the instrument. It also keeps the LAN cards in both the PC and instrument active. A passive LAN Hub is the same as using a cross-over cable.

If you have an IP Address for your PC or the PC connects to LAN using DHCP and the instrument has a valid IP Address for you network, you can use the Hub instead of changing your IP Addresses. This method will allow you to avoid the Local Area Network's switches and routers.

Equipment Required

LAN Hub which supports Ethernet Standard; an active hub is recommended.
Two CAT5, RJ-45 cables

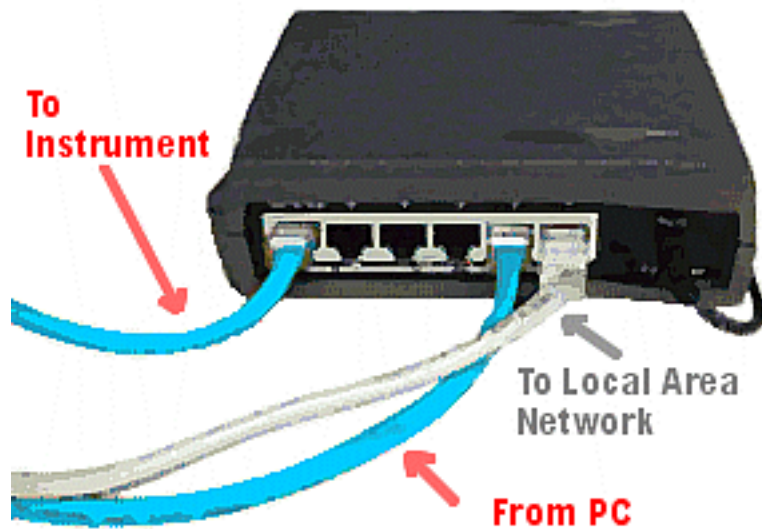
Step 1. Print instructions

Print these instructions so you can refer to them during the process.

Step 2. Connect the PC and instrument to the hub.

- A. Cancel the PC Update Program.
- B. If the PC is connected to LAN, disconnect from all network drives by right clicking on **Network Neighborhood (My Network Places** for Windows 2000) and selecting **Disconnect network Drives...**
- C. Disconnect the LAN cable from the PC.

Typical Hub Connection:



D. Plug in power to the hub.

E. Connect the PC to one of the hub device ports (usually numbered).

If your PC connects to LAN using DHCP, plug the LAN cable from the network into the "Cascade" port. A connection to the network is required to use DHCP.

F. Connect the instrument to one of the hub device ports.

G. If you are going to use the Local Network's IP Addresses for the PC and instrument, do the following:

(a) Restart the PC (Start, Shut Down, Restart, OK)

(b) Cycle the instrument's power (set the line switch to off then on.)

(c) Start the PSA Update Program and follow the directions to update the instrument. Select "*Connect with Local Area Network*".

(d) **Do not** perform steps 3 through 8.

Step 3. Setup PC to use Private IP Address

A. Change the PC's IP address:

Record any changes you make so you can change the settings back when done.

Instructions for Windows 2000:

Right click on **My Network Places**. Click on **Properties**.

Double-click on the **Local Area Connection** icon. Click on **Properties**. Select **Internet Protocol (TCP/IP)**. Click on **Properties**.

Select "Use the following IP Address" and enter the following:

IP Address: 192.168.100.2

Subnet Mask: 255.255.0.0

Default Gateway: (Leave this field blank)

Click **Okay**

Instructions for Windows XP:

Click **Start**, click **Control Panel**, and then double-click **Network Connections**.

Click the local area connection you want to configure, and then, under **Network Tasks**, click **Change settings of this connection**.

On the **General** tab, in **This connection uses the following items**, click **Internet Protocol (TCP/IP)**, and then click **Properties**.

On the **Alternate Configuration** tab, click **User configured**.

Enter the following:

IP Address: 192.168.100.2

Subnet Mask: 255.255.0.0

Leave the other fields blank.

Click **Okay**

Instructions for NT Workstation:

Right click on **Network Neighborhood** and select **Properties**.

Select the **Protocols** tab and then select **TCP/IP Protocol**, click on **Properties**. Select the **IP Address** tab.

Select "Specify an IP address" and enter the following:

IP Address: 192.168.100.2

Subnet Mask: 255.255.0.0

Default Gateway: (Leave this field blank)

Click **Apply** and then **Okay**

Instructions for Windows 98 PC:

Right click on **Network Neighborhood** and select **Properties**.

Select the **Configuration** tab and then highlight **TCP/IP**, click on **Properties**. Select the **IP**

Address tab.

Select "Specify an IP address" and enter the following:

IP Address: 192.168.100.2

Subnet Mask: 255.255.0.0

Select the **Gateway** tab and enter **0.0.0.0** as a New gateway address. Then click **Add**. Insure the new gateway address is at the top of the list.

Click **Apply** and then **Okay**

Step 4. Restart the PC

Restart the PC (Start, Shut Down, Restart, OK)

Step 5. Setup up your instrument to use Private IP Address

A. Press the following keys on the instrument:

[**System**] [**Config I/O**]

B. Record the instrument's IP Address and subnet mask so you can change the settings back after completing the update.

C. Press the "IP Address" soft key and enter **192.168.100.3**

D. Press the "Subnet Mask" and enter **255.255.0.0**

Note: Early firmware does not support changing the Subnet Mask, it should already be the default value.

E. Cycle power on the instrument (set the power switch to OFF, then to ON.)

Step 6. Start the Update Program

Start the PSA Update Program and follow the directions to update the instrument. Select the LAN connection.

Step 7. Reset PC after completing the update

A. Disconnect the hub cable from the PC and the instrument.

B. Change the TCP/IP Protocol properties on the PC back to the settings you recorded in Step 2.

- C. Shut down the PC.
- D. Reconnect the PC's LAN cable to your system.
- E. Start the PC to return to normal operation.

Step 8. Reset Instrument's IP Address

- A. Set the power switch to ON(1).
- B. Re-enter the instrument's IP Address and subnet mask you recorded in Step 4 (if the instrument had a LAN configuration.).
- C. Reconnect the LAN cable.

Troubleshooting the Hub Procedure

If the PSA Update Program does not connect to the instrument, try cycling the instrument's power (Off, then ON.) and try again.

If you are unable change the PC's IP Address or Subnet Mask using the method described, you may not have administrator rights to the PC.

To use the Hub to connect to a PC using DHCP, the instrument needs an IP address that the PC will recognize. Talk to your system administrator to get an IP address for the instrument that will work with your PC.

Is the instruments Boot ROM configuration correct?

To check the Boot ROM settings

1. Connect an external keyboard to the instrument. See "[Enable Keyboard](#)" procedure.
2. Set the instrument's power switch to On (1) while watching the display.
3. When you see "To discontinue, press any key within 2 seconds", press any key on the external keyboard to stop the boot-up process.
4. Enter the follow command at the menu prompt using the external keyboard:

co bin

5. Compare the boot information with the following default settings:

AutoBoot:	ON
Autosearch:	OFF
Autostart:	ON
Secure flag:	OFF
Fastboot:	ON
Primary boot Path:	FLASH
Alternate boot path:	SESCSI.5.0
Console path:	Graphics(0)
Keyboard path:	PS2

6. If the above settings to not match, set to the default. See "[Boot ROM Default](#)".
7. Check the LAN setting by entering the following command:

co

lse

The message "The LAN is set to the builtin 10BT" should be returned.

If the message is incorrect, enter the following commands:

lse builtin

reset

8. Cycle the instrument's power (set the line switch to off then on.)
9. Try the PC Update Procedure again.

If you are still unable to perform the update, try the [Non-Functional Instrument Procedure](#).

Enabling the PS2 Keyboard

Use these instructions when you need to connect an external PS2 Keyboard to a PSA.

1. Set the instrument's power switch to Standby (0).
2. Connect the external PS2 keyboard to the KYBD connector on the rear panel.
3. Set the instrument's power switch to On (1) while watching the display.

When you see "To discontinue, press any key within 2 seconds", press the space bar on the external keyboard.

4. If pressing the space bar on the external keyboard fails to stop the boot-up process, the PS2 keyboard needs to be enabled.

To Enable the External Keyboard

1. Cycle the power and press any number key on the front panel when the "To discontinue, press any key within 2 seconds" message appears.
2. Enter "52" at the "Main Menu: Enter command>" prompt. Backspace to delete any characters that you may have entered on the main menu line:

```
Main Menu: Enter command> 52
```

[Enter]

3. Enter "99" at the "Main Menu: Enter command>" prompt.

```
Main Menu: Enter command> 99
```

[Enter]

The instrument will now reboot, and the PS2 keyboard will be enable.

Boot ROM Default Procedure

Use these instructions when you need to reset the instrument's Boot ROM to its default values.

Enable the external keyboard and stop the boot process if needed

1. Connect an external keyboard to the instrument. See "[Enable Keyboard](#)" procedure.
2. Set the instrument's power switch to On (1) while watching the display.
3. When you see "To discontinue, press any key within 2 seconds", press any key on the external keyboard to stop the boot-up process.

Reset the Boot ROM

1. Enter the following commands:

```
ma
co
co de
au bo on
au st on
pa pri flash
lse builtin
co bin
```

2. Compare the boot information with the following default settings:

AutoBoot:	ON
Autosearch:	OFF
Autostart:	ON
Secure flag:	OFF
Fastboot:	ON
Primary boot Path:	FLASH
Alternate boot path:	SESCSI.5.0

3. If the above settings do not match, enter the command to set to default.

Item	Command
AutoBoot:	au bo on
Autosearch:	au sea off
Autostart:	au st on
Secure flag:	sec off
Fastboot:	fb on
Primary boot Path:	pa pri flash
Alternate boot path:	pa alt sescsi.5.0

4. Record the LAN Station Address for future use.

5. Enter the reset command to have the changes take effect.

reset

Non-Functional Instrument Procedure

If the operating system or core firmware are corrupt due to a PC Update Program Crash, you should be able to restore the instrument operation by re-installing the operating system, core firmware, and options.

If the program started the update before the crash, there is a good chance that the configuration files are saved in the PC.

The Non-Functional Instrument routine can also be used when other update methods are not working.

Important Notes:

- You may lose your configuration files if you use this routine. The configuration files contain the HP-IB address, LAN setup, saved state files, and license keys for the options. If possible, you should record this information before beginning the procedure.
 - You will not lose any calibration data since these values are saved in an assembly that is not accessed by the update process. The instrument's calibration is not effected by the updating the instrument's operating system, core firmware, or applications.
 - If the instrument has option 1DS (PreAmp), alignment errors will occur until the 1DS license key is restored.
 - If the instrument has option B7J (Digital demod hardware), Basic and the communication applications (cdma, GSM, etc.) will not load in the instrument until the B7J license key is restored.
-

To restore a non-functional instrument

1. Connect to the instrument using a cross-over cable or a hub. See "[Cross-over Cable Procedure](#)" or "[Using a Hub to Connect](#)".
2. Enable an external PS2 keyboard. See "[Enable Keyboard](#)".
3. Get the instrument's hardware address (also called the LAN Station Address). See "[Get Address](#)".
4. Record the location of the instrument's configuration files. See "[Configuration Files](#)".

Note: If you want to use the procedure on an instrument that is responding, power down the instrument before starting the PC Update Program. After the PC Update Program displays "*The program could not connect to the instrument!*" power-on the instrument stopping the boot process at the "Main Menu" screen.

5. Start the PC Update Program.
6. Enter the instrument's IP address when requested. The PC Update Program will load the IP address into the instrument later in the process.
7. Check the "*Non_Functional Instrument*" box when the PC Update Program displays "*The program could not connect to the instrument!*" screen.

The PC Update Program will ask you for the location of the Configuration Menu files. If you do not have the saved configuration files, leave the box blank.

8. Follow the PC Update Program directions, selecting to install the operating system.
9. Run the PC Update Program until the operating system and firmware are loaded.
10. The PC Update Program will ask you to cycle the power on your instrument after the operating system and firmware are loaded. At this point in the procedure, shut down the PC Update Program.

Do not shut down the PC.

11. Cycle power on the instrument and let the instrument boot to the measurement screen. There may be instrument errors, ignore the errors for now.
12. Enter the instrument's GPIB, IP, Host Name, and gateway addresses along with the Subnet Mask.

Defaults:

GPIB: 18

IP: 192.168.100.3

Host Name: psa

Subnet: 255.255.0.0

Gateway: 0.0.0.0

13. If you do not have configuration files, enter the license keys for the instrument's options.
14. Cycle power on the instrument.
15. Restart the PC Update Program (you do not need to restart the PC.)
16. Allow the PC Update Program to save the configuration in the default location.
Use the default location to restore the configuration files.
17. Do not load the operating system and core firmware again.
18. Follow the directions to load the options.

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Get Instrument Hardware Address

Use these instructions to get the instrument hardware address when the instrument is non-functional.

Stop the boot process if needed

1. Set the instrument's power switch to On (1) while watching the display.
2. When you see "To discontinue, press any key within 2 seconds", press any key on the external keyboard to stop the boot-up process.

Get LAN station address

1. At the main menu prompt, enter **co bin**
2. The address will be in the list displayed, for example:

LAN Station Address: 0060b0-d0cd0d

This is a Hex number so all the "0" are zeros.

Locating the Instrument Configuration Files

The PC Update Program saves the instruments configuration files before starting the update. The saved files can be restored to the instrument at a later time using the PC Update Program.

The configuration files contain the following information:

- License Key words for options
- GP-IB Address
- IP Address
- Host Name
- Subnet Mask
- Gateway Address
- Saved States

The configuration files are saved on the C drive in the \Model_Number\Serial_Number\Date_Time\Config file by default.

For example:

c:\E4440A\US40120000\07-Nov-00-11-35AM\Config

You may specify another file directory or name for the configuration files.

Is there a compatibility problem between the instrument and the PC?

Some PCs/LAN cards are not compatible with the instrument boot. In these cases the instrument will not find the PC when you type in "sea" on the keyboard or use "02" from the front panel.

Check there are no other programs running on the PC. Try the update process again. If you still can't complete the update, you will need to use a different PC.

To transfer the saved configuration files to another PC

1. Locate the configuration files.

The configuration files are saved on the C drive in the \Model_Number\Serial_Number\Date_Time file\Config by default.

For example:

c:\E4440A\US40120000\07-Nov-03-11-35AM\Config

2. Copy the Serial Number directory containing the saved configuration files to a floppy.
3. Install the PC Update program on the new PC.
4. Copy the configuration files to the same model number directory.
5. Run the PC Update program again, using the saved configuration files location.

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Does your instrument have a hardware failure?

The recovery procedure should be able to restore the instrument unless the Boot ROM has become corrupted or there is a hardware failure.

If you have not yet checked the Boot ROM, do the check and then attempt to do the recovery procedure again. See "[Boot ROM default](#)".

If you have checked the Boot ROM and the instrument still will not restore, please contact [Agilent Technologies](#) for assistance.

Boot ROM Default Procedure

Use these instructions to reset the instrument's Boot ROM to its default values.

Enable the external keyboard and stop the boot process if needed

1. Connect an external keyboard to the instrument. See "[Enable Keyboard](#)" procedure.
2. Set the instrument's power switch to On (1) while watching the display.
3. When you see "To discontinue, press any key within 2 seconds", press any key on the external keyboard to stop the boot-up process.

Reset the Boot ROM

1. Enter the following commands:

```
ma
co
co de
au bo on
au st on
pa pri flash
lse builtin
co bin
```

2. Compare the boot information with the following default settings:

AutoBoot:	ON
Autosearch:	OFF
Autostart:	ON
Secure flag:	OFF
Fastboot:	ON
Primary boot Path:	FLASH
Alternate boot path:	SESCSI.5.0

3. If the above settings do not match, enter the command to set to default.

Item	Command
AutoBoot:	au bo on
Autosearch:	au sea off
Autostart:	au st on
Secure flag:	sec off
Fastboot:	fb on
Primary boot Path:	pa pri flash
Alternate boot path:	pa alt sescsi.5.0

4. Record the LAN Station Address for future use.

5. Enter the reset command to have the changes take effect.

reset

[Next >](#)

Agilent Technologies Sales and Services Offices

<http://www.agilent.com/find/contactus>

Select the "Next>" link that best matches your setup.

I am using my Local Area Network to connect the PC to the instrument.

[Next >](#)

I am using the cross-over cable procedure to connect the PC to the instrument.

[Next >](#)

Are other programs running on the PC that could have interrupted the PC Update Program?

To close running programs

1. Press and hold the **Alt key**, then press the **Tab key**.
2. Release the **Tab key** to activate a running program.
3. Close the program.
4. Repeat steps 1 - 3 until all programs are closed.

[Next >](#)

Select the "Next>" link that best matches your setup.

I am using my Local Area Network to connect the PC to the instrument.

[Next >](#)

I am using the cross-over cable procedure to connect the PC to the instrument.

[Next >](#)

Was the PC Update Program interrupted before it could finish the process?

Possible causes

- The power was interrupted
- The cable connections are faulty
- The PC Update Program was closed
- The PC Update Program was interrupted by another program running on the PC
- If you are using a Local Area Network with a DHCP server, it is possible you lost the IP address during the update process.

To recovery from the program crash

We highly recommend you connect the PC to your instrument using the cross-over cable or Hub procedure. See "[Cross-Over Cable Procedure](#)" or "[Using a Hub to Connect](#)".

After connecting the PC to the instrument using the cross-over cable or Hub, use the non-functional instrument procedure to recover. See "[Non-Functional Instrument Procedure](#)".

Was the PC Update Program interrupted before it could finish the process?

Possible causes

- The power was interrupted
- The cable connections are faulty
- The PC Update Program was closed
- The PC Update Program was interrupted by another program running on the PC

To recovery from the program crash

You need to use the non-functional instrument procedure. See "[Non-Functional Instrument Procedure](#)".

Identifies and resolves problems related to:

The PC or PSA Update Program connecting to the instrument or loosing the connection.

[Next >](#)

Select the "Next>" link that best matches your problem.

The PC Update Program never connects to the instrument.

After entering the IP Address, the PC Update Program displays the "The program could not connect to the instrument" screen.

[Next >](#)

The PC Update Program loads the operating system and firmware successfully but then loses communication when attempting to load the measurement personalities.

The PC Update Program displays a "connection lost" error message. There may be error messages on the instrument screen and no options installed in the instrument.

[Next >](#)

Does the instrument recognize a LAN cable is connected?

The instrument turns off the LAN port if it does not detect a LAN cable at power-up.

To insure the instrument recognizes a LAN cable is connected

1. Connect the LAN cable from the PC to the instrument.
2. Restart your PC.
3. Wait for the PC to fully boot.
4. Cycle the instrument's power (set the line switch to off then on.)

Cycling the instrument's power often fixes the problem!

[Next >](#)

Did you enter the instrument's IP address correctly?

Is the instrument's I/O configuration correct?

To verify the IP address and check the instrument's configuration

1. Click **Back** button in the PC Update Program
2. Press the following keys on the instrument:

[**S**ystem]
[**C**onfig I/O]

3. Compare the number under "IP Address" to the address in the PC Update Program.
4. Check you are using a valid IP address for your network system.

The default IP address is "10.10.10.10". If your instrument has this address, contact your network administrator for an IP address or use the [Cross-Over Cable Procedure](#) to connect your instrument to the PC.

5. Verify there is an entry for the subnet mask. If the field is blank, enter the default of 255.255.0.0
6. Verify there is an entry for the gateway address. If the field is blank, enter the default of 0.0.0.0
7. Cycle the instrument's power (set the line switch to off then on.)

Cycling the instrument's power often fixes the problem!

[Next >](#)

Is there a personal firewall installed in the PC?

The PC may not give the instrument permission to boot from the PC. The firewall needs to be disabled in order to use the PC to update the analyzer.

Windows XP includes an Internet Connection Firewall (ICF).

To disable the Internet Connection Firewall in XP

1. Open Network Connections (Click **Start**, click **Control Panel**, and then double-click **Network Connections**.)
2. Click the LAN or High-Speed Internet connection, and then , under **Network Tasks**, click Change settings of this connection.
3. On the **Advanced tab**, under **Internet Connection Firewall**, clear the **Protect my computer and network by limiting or preventing access to this computer form the Internet** check box.

[Next >](#)

Are the cables connecting the PC, Instrument, or LAN connected properly or defective?

To insure the cables are not the problem

1. Check the cables and replace if necessary.
2. If you are using a hub to connect your instrument to LAN, check the LAN cables are plugged into valid ports and the power to the hub is ON.
3. If you are using the cross-over cable procedure, check the cable is a CAT5, RJ-45 cable with **cross-pinning** (Agilent part number 8121-0545).

[Next >](#)

Are you attempting to use your Local Area Network to connect?

Does the network allow the PC to connect to the instrument?

To determine if the PC can connect to the instrument using your network system

1. On the PC, click **Start**, select **Run**
2. Type **cmd** in the Open: box.
3. Click **OK**.
4. At the C:\> prompt, type **ping *IP_Address***
where *IP_Address* is your instrument's IP address.
5. In a short time a reply message should be returned, for example:
"Reply from 130.12.3.76: bytes=32 time<10ms TTL=254"
6. If you only receive "Request timed out." messages, your PC is not able to connect to the analyzer using your network system. Contact your network administrator or use the [Cross-Over Cable Procedure](#) to perform the upgrade.

[Next >](#)

Are you attempting to connect using the cross-over cable procedure?

Is your PC's LAN card active enough to use the cross-over cable procedure?

Some PC's LAN cards are not continuously active enough to keep the instrument's LAN on. The instrument turns off the LAN port if it does not detect LAN activity. This is most likely to occur when using a laptop PC.

To continue with the update process here are some possible solutions

- Cycle the instrument's power (set the line switch to off then on.) Try the process again. The instrument may detect the LAN cable on the second try.
- Use the alternate Hub Procedure instead of the cross-over cable procedure. See "[Using a Hub to Connect](#)".

Is the instrument's I/O configuration correct?

The instrument's I/O configuration may change during the upgrade process when upgrading from firmware revision <A.04.0.0.

To check the instrument's configuration

1. Press the following keys on the instrument:

[**System**]
[**Config I/O**]

2. Verify there are entries for the GPIB Address, IP Address, Host Name, Subnet Mask, and Gateway Address.

Defaults:

GPIB: 18

IP: 192.168.100.3

Host Name: psa

Subnet: 255.255.0.0

Gateway: 0.0.0.0

3. Cycle the instrument's power (set the line switch to off then on.)
4. Run the update program again using the default settings for saving and restoring the configuration files. Do not load the operating system or core firmware again. Insure the Operating System and Core Firmware box is **not** checked.

DO NOT use old configuration files created with firmware revisions <A.04.00.

[Next >](#)

Was the PC Update Program interrupted before it could reconnect to the instrument?

To load the options after an interruption

1. Cycle the instrument's power (set the line switch to off then on.)
2. Restart the PC Update Program.
(You do not need to restart the PC.)
3. Use the default settings for the configuration files.
4. Insure the Operating System and Core Firmware box is **not** checked.
5. Follow the instructions on screen to continue with the upgrade.

If you are still unable to load the applications, try the [Non-Functional Instrument Procedure](#).

Identifies and resolves problems related to:

Stopping the instrument's boot process as instructed by the PC Update Program.

[Next >](#)

Did you miss stopping the boot process?

You have two seconds to stop the boot once the message "To discontinue, press any key within 2 seconds." appears.

To stop the boot process

1. Set the instrument's power switch to On (1) while watching the display.
2. When you see "To discontinue, press any key within 2 seconds", repeatably press any number key on the front panel of the instrument to stop the boot-up process.

[Next >](#)

Do you have an external keyboard connected to the instrument?

The instrument expects input from the external keyboard when one is attached.

To activate the front panel keypad

1. Disconnect the external keyboard.
2. Cycle power on the instrument to restore input from the front panel keypad.

[Next >](#)

Is the display blank (black) until the gray screen appears?

Are you unable to stop the boot process using an external keyboard or the instrument's keypad?

The normal power-up process is as follows:

Black screen

Boot information scrolls by on the screen

Grey screen appears

Instrument measurement screen appears

The instrument is most likely in manufacturing mode.

Equipment Required

Serial Cable

PC with serial port

To reset the instrument to normal boot-up mode

1. Connect a serial cable from the instrument to a PC's serial port.
2. Power down the instrument.
3. On the PC select the following:

START

Programs

Accessories

HyperTerminal (Win2000: Communications)

HyperTerminal

The program may ask you to enter phone number information. If it does ask, click No (Win2000: Cancel, yes, OK).

Enter a name in the Connection Description form (any name will do):

Name: Analyzer

Choose a COM port, usually COM1. Choose the port on the PC that is connected to the instrument.

A form will now appear. Enter/select the following:

Bits per second: **9600**

Data Bits: **8**

Parity: None

Stop Bits: **1**

Flow Control: Hardware (This setting is a don't care.)

Click **OK**

A blank term window will now appear.

4. Power-up the analyzer while pressing the space bar on the PC to stop the boot-up process.
5. You can now enter commands in the term window. Enter the following commands:

Main Menu: Enter Command> **mfg fpt vma**

Main Menu: Enter Command> **mfg md no**

Main Menu: Enter Command> **co mo graphics(0) 17**

Configuration Menu: Enter Command> **path con graphics(0)**

Configuration Menu: Enter Command> **reset**

The power-up display should show the boot process and the keyboard/keypad should now work normally.

Identifies and resolves problems related to:

"Undefined Header" or "File Not Found" errors displayed on the instrument during the update process.

[Next >](#)

"Undefined Header" or "File Not Found" Errors

The "Undefined Header" or "File Not Found" errors may occur when upgrading from older firmware revisions. In most cases, the PSA Update Program can supply the missing information and files. If these errors should occur, just proceed with the upgrade.

Identifies and resolves problems related to:

The instrument not being functional after installing the upgrade.

[Next >](#)

Select the "Next>" link that best matches your problem.

The PC Update Program was interrupted.

Please remove the cause of the interruption before attempting to restore the instrument. See "[Update Process Crash](#)".

[Next >](#)

The PC Update Program finished the installation but the instrument won't boot.

The PC Update Program completed the installation of the operating system and firmware but when asked to cycle the instrument's power, the instrument won't boot.

[Next >](#)

I have more than one version of the PC Update Program on my PC. I attempted to install one of them. Now the instrument is not functional.

The instrument may display "not found" errors or the "Build Flash File System" is displayed for a long time

[Next >](#)

I attempted the recovery process, but the instrument is still non-functional.

The instrument may display "not found" errors or the "Build Flash File System" is displayed for a long time.

[Next >](#)

The PC Update Program may become corrupted if more than one version is installed in the PC at the same time.

To insure no other versions are installed

1. Click **Start**, select **Settings, Control Panel, Add/Remove Programs**
2. Look for any "PSA Series Update Program" entries and remove.
3. Re-install the PC Update Program.
4. Try to run the PC Update Program again. Select the operating system and core firmware to install along with the measurement personalities.

If the flash was corrupted, the Boot ROM may need to be reset.

[Next >](#)

Identifies and resolves problems related to:

The instrument boots to the measurement screen but has errors after doing the update.

[Next >](#)

Did any measurement personalities load in the instrument?

If no personalities loaded there will most likely be calibration errors.

If you selected no personalities to load, the Power Suite Utilities still should have loaded.

To determine if any personalities or PS2 loaded

Press the following keys on the instrument:

System

More 1 of 3

More 2 of 3

Personality

"Power Suite Utilities" (PS2) should be listed under the Name column along with Version and Size information.

If PS2 did not load, the problem could be a connection problem that occurred after loading the operating system and firmware. See [Connection Problems](#).

[Next >](#)

Select the "Next>" link that best matches your problem.

Align errors with "EEPROM", or NRAM" errors

[Next >](#)

Auto Align Errors:

Align RF Gains
Atten steps
321.4 MHz Ampl Curve
IF Gain Curve
Align Rough Cal Gains

[Next >](#)

Issues by Serial Number

<=US40420306

[Next >](#)

Align errors, "EEPROM", or "NRAM" errors

Alignment and the associated working memory errors may occur when upgrading from firmware revisions <A.03.00. In most cases, the errors can be cleared by restoring the alignment defaults and running the alignments. This does not effect the calibration files stored on the front end assemblies.

To reset the alignment defaults

1. Press the following keys on the instrument:

System
Alignments
Restore Align Defaults

2. When the instrument is finished restoring the defaults, press the following keys:

System
Alignments
Align All Now

3. When the alignments are finished, press the following keys:

System
Show Errors
Clear Error Queue

4. Cycle the power on the instrument.

There should now be no alignment errors.

If this procedure did not solve the problem, please contact [Agilent Technologies](#).

Does your Instrument have option 1DS (Preamp) and you lost the license?

The instrument cannot determine if the Preamp is installed without the license key.

If you lost the instrument's configuration files during the update and the instrument has option 1DS, align errors will occur .

To determine if the instrument has a Preamp

1. Look on the back of the instrument.

If there is a option 1DS sticker, the instrument has the Preamp option.

Note: Not all instruments with the 1DS option have the sticker.

2. To check for any licenses in the instrument, press the following keys:

System

More 1 of 3

More 2 of 3

Licensing

Show License

If no licenses are listed, the licenses were most likely lost during the update process.

If the instrument had no align errors before the update and there are no licenses installed in the instrument, the most likely cause of the problem is that option 1DS lost its license.

If the instrument had option 1DS, it probably had option B7J (Demod Hardware) also. If B7J loses its license, none of the coms personalities will load in the analyzer. To enter the license keys for 1DS and B7J, see "[License Key Installation](#)".

License Key Installation

Use these instructions to install a license key in your instrument for a measurement personality or hardware option .

If you do not have a license key for an option and want one, or have lost your license, please contact [Agilent Technologies](#).

1. Press the following keys to enter your license key number for the option:

System
More 1 of 3
More 2 of 3
Licensing
Option

The alpha editor will now appear.

2. Use the alpha editor to enter the letters (upper-case) and the front-panel numeric keys to enter the option number of the personality.

Your entry will appear in the active function area of the display. If you made a typing error, use the backspace key to correct the mistake.

Press **Enter** when finished.

3. Press **License Key** and enter the license key number.

Use the alpha editor and the front-panel numeric keys to enter the hexadecimal license key number listed on the license key certificate.

Check the license key number you have entered.

Press **Enter**

Press **Activate License**

A firmware update from A.01.08 or A.01.09 may cause an alignment failure.

To determine if the instrument has this problem

1. Press the following keys on the instrument:

System

More 1 of 3

Show Hdwr

2. If the `Second LO Rev.` is an "a", the instrument needs to have the Soncond LO Assembly's header information corrected as described in Service Note E4440A-01.

You may either perform the procedure or return your analyzer to Agilent Technologies for the update. See http://www.agilent.com/find/tm_servicenotes

[Next >](#)

Identifies and resolves problems related to:

Measurement Personalities not loading, deleting, or errors.

[Next >](#)

Select the "Next>" link that best matches your problem.

A measurement personality does not load or is not listed under the instrument's mode key.

You selected one or more measurement personalities to load in the PC Update Program and one or more did not load or are not available to run.

[Next >](#)

Errors are displayed or the instrument hangs when the measurement personality is selected under the mode key.

[Next >](#)

A measurement personality won't delete from the instrument.

An option won't delete even when you run the PC Update Program to change the option configuration.

[Next >](#)

Did any measurement personalities load in the instrument?

To determine if any personalities loaded

Press the following keys on the instrument:

System

More 1 of 3

More 2 of 3

Personality

"Power Suite Utilities" (PS2) should be listed under the Name column along with Version and Size information.

If PS2 did **not** load and there are no other options listed, the problem could be a connection problem that occurred after loading the operating system and firmware. See [Connection Problems](#).

[Next >](#)

Is the measurement personality of interest listed?

The measurement personality should be listed under the Name column along with Version and Size information with a "yes" in the license key column.

If the option is listed but has no license, you need to enter the license key for the measurement personality to function. See "[License Keys](#)".

[Next >](#)

Are none of the coms measurement personalities you selected loading?

The coms measurement personalities are options 202, 204, B78, BAC, BAE, and BAF.

Option B7J (Digital Demod Hardware) is required for the installation of the coms measurement personalities. The instrument cannot determine if B7J is installed without the license key. If you lost the instrument's configuration files during the update and the instrument has option B7J, the coms measurement personalities will not load.

To determine if the instrument has B7J

1. Look on the back of the instrument.

If there is a option B7J sticker, the instrument has the option.

Note: Not all instruments with the B7J option have the sticker.

2. To check for any licenses in the instrument, press the following keys:

System

More 1 of 3

More 2 of 3

Licensing

Show License

If no licenses are listed, the licenses were most likely lost during the update process.

If the instrument had coms measurement personalities loaded before the update and now they won't install, the most likely cause of the problem is that option B7J lost its license.

To enter the license key B7J, see "[License Key Installation](#)".

[Next >](#)

Do you have enough memory for the measurement personalities you want?

There are more measurement personality options available than will fit in the instrument memory. To load a new personality, you may need to delete an existing personality from memory and then load the one you want.

To determine if this is the cause of the problem

1. Press the following keys:

File
Catalog
Dir Select

Use arrow keys to select the [-I] drive

Dir Select

The amount of "Free" memory is approximately the amount of memory left for measurement personalities.

If the amount of "Free" memory is <5000kB, this is most likely the cause of your problem. See "[PSA Version List](#)" to determine which options you can load in your instrument.

[Next >](#)

Did the measurement personality get installed with the firmware update?

If the measurement personality is not listed and you have enough memory for the option, it is possible the option did not get installed with the firmware update.

To insure the options you want are loaded

1. Run the PC Update Program again.

If the operating system and firmware update installed correctly, you do not need to install them again.

2. Insure that the check boxes for the options you want are checked and the boxes for the options you do not want are not checked.

Select the "Next>" link that best matches your situation.

You have more than one version of the PC Update Program on your PC.

[Next >](#)

You installed the measurement personalities without installing the operating system and firmware.

[Next >](#)

The PC Update Program files may become corrupted if more than one version is installed in the PC at the same time.

To insure no other versions are installed

1. Click **Start**, select **Settings, Control Panel, Add/Remove Programs**
2. Look for any "PSA Series Update Program" entries and remove.
3. Re-install the PC Update Program.
4. Run the PC Update Program selecting the operating system and firmware to install along with the measurement personalities.

The operating system, firmware, and measurement personalities are a matched set.

The operating system must be installed if the current version installed in your instrument does not match the operating system or firmware version in the PC Update Program.

The operating system, core firmware, and option firmware are a matched set. If you change one element, all elements must be changed so they will work together.

To insure the measurement personalities are installed correctly

Run the PC Update Program selecting the operating system and firmware to install along with the measurement personalities.

Does the measurement personality you are trying to delete licensed?

The PC Update Program may not recognize that a measurement personality is installed if it is not licensed.

To check if the option is licensed

1. Press the following keys on the analyzer:

System

More 1 of 3

More 2 of 3

Personality

2. If a "no" appears in the Licensed column, enter the license for the option. See "[License Keys](#)".

Reinstall the PC Update Program selecting the options you want installed. The operating system and firmware do not need to be installed again.

3. If a "yes" appears in the Licensed column, try running the PC Update Program again, insuring the box for the option you want to delete is not checked. The operating system and firmware do not need to be installed again.

Note: "Personalities" marked with an n/a in the Licensed column cannot be deleted.

4. If you do not have a license for the option you are trying to uninstall, you need to run the PC Update Program again and select the operating system and firmware to be loaded along with the measurement personalities you want. This process clears the flash memory.