

Agilent N5106A PXB Baseband Generator and Channel Emulator Firmware Upgrade Guide



Agilent Technologies

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Introduction

| | |
|--|--|
| Product Affected: | N5106A |
| Serial Numbers: | All |
| Options: | All |
| To Be Performed By: | (X) Agilent Technologies Service Center (X) Personnel Qualified by Agilent Technologies (X) Customer |
| Estimated Installation Time: | 30 minutes |
| Estimated Verification Time: | 5 minutes |

The instructions in this firmware upgrade guide enable you to upgrade firmware on an Agilent PXB baseband generator and channel emulator from the Agilent Technologies website.

| | |
|-------------|---|
| NOTE | <p>To perform the a firmware upgrade of the PXB, internet access is required. Either a PXB or a PC can be used to access to the internet and download the firmware.</p> <p>If the PXB is connected to the LAN with internet access, the firmware can be downloaded directly and the process will be slightly quicker. However, in many settings, the PXB will not have internet access to meet security requirements. In these cases, instructions for a PC with internet access are also provided.</p> |
|-------------|---|

Before using this guide, you should be familiar with the basic operation of the PXB. If you are not comfortable with using the PXB's menus, refer to the instrument's *Online Documentation* and familiarize yourself with the basic operation information.

Basic Upgrade Process

1. Confirm a firmware upgrade is required ([page 4](#)).
2. Confirm the required equipment ([page 5](#)).
3. Run the PXB self test ([page 6](#)).
4. Remove the old firmware from the PXB ([page 8](#)).
5. Download the firmware ([page 9](#)).
6. Move the firmware upgrade from the PC to the PXB ([page 10](#)).
(Only required when the firmware upgrade was downloaded to the PC instead of the PXB.)
7. Install the firmware upgrade on the PXB ([page 12](#)).

Step 1. Confirm a Firmware Upgrade is Available

The first step is to confirm that your PXB firmware has an available firmware upgrade. This is done by checking comparing the firmware version installed on your PXB with the firmware version available for download on the Agilent web site.

Determine the PXB Firmware Version

1. With the PXB turned on, ensure the PXB firmware is opened.
2. In the PXB, select About from the Help menu to open the About Agilent N5106A dialog box.
3. Note the firmware version number.

Determine the Latest PXB Firmware Version Available Online

This can be performed using either the PXB or a PC that has internet access.

1. In an Internet browser, enter *http://www.agilent.com/find/upgradeassistant* to open the **Signal Generator Firmware Upgrade Center** webpage.
2. In the **Document and downloads** table, identify the **Latest Firmware Revision** number for the **N5106A PXB**.
3. Compare this firmware revision number with the firmware version number noted above to determine if a firmware upgrade is available.

Step 2. Confirm Required Equipment

Use the following table to confirm that your PXB meets the following requirements. If your PXB does not have internet access, then a PC that has internet access is required and must meet the listed requirements.

| PXB Requirements |
|---|
| <ul style="list-style-type: none"> • Must be functioning and pass self-test • Must have a USB keyboard and mouse installed • Must have internet access or a PC that meets the following requirements: |
| PC Requirements (Only required if PXB Internet access is not available) |
| <ul style="list-style-type: none"> • Internet access • 450 MHz Pentium® II or higher • Operating System, Windows® XP or Windows 2000 (with Service Pack 4) • 512 MB RAM • 140 MB free disk space • Be able to download the firmware executable file from the internet and transfer that file to the PXB: <p>To download the firmware executable file from the internet, the PC must have an internet browser that is Java™ enabled with Java 1.02 or above, such as:</p> <ul style="list-style-type: none"> • Microsoft® Internet Explorer 4.01 or later • Netscape Navigator 4.0 or later <p>To transfer the firmware executable file to the PXB, the PC must be equipped for one of the following transfer methods:</p> <p>Using the USB (Preferred Method)</p> <p>The PC must have:</p> <ul style="list-style-type: none"> • An unused USB port • A USB memory device with 140 MB available <p>Using the LAN</p> <p>The PC must have an installed and configured LAN interface card and a LAN cable:</p> <ul style="list-style-type: none"> • To connect directly to the PC, use a LAN crossover cable. • To connect to the PC through the LAN, use a 100Base-T LAN cable. <p>If you encounter problems, contact your network administrator.</p> |

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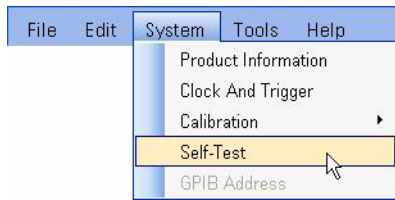
Step 3. Run the PXB Self Test

Before upgrading the PXB firmware, the PXB should be functioning and pass all of the self tests. Use the following procedure to confirm that the PXB passes the self tests.

Self test checks the power supply voltages, clocks, and data signals on the baseband cards, the I/O boards, and the midplane board. Depending on the number of baseband cards and I/O boards installed, the duration of the self tests may range from a few minutes up to 20 minutes. When self test is complete, the pass/fail status of each test is reported.

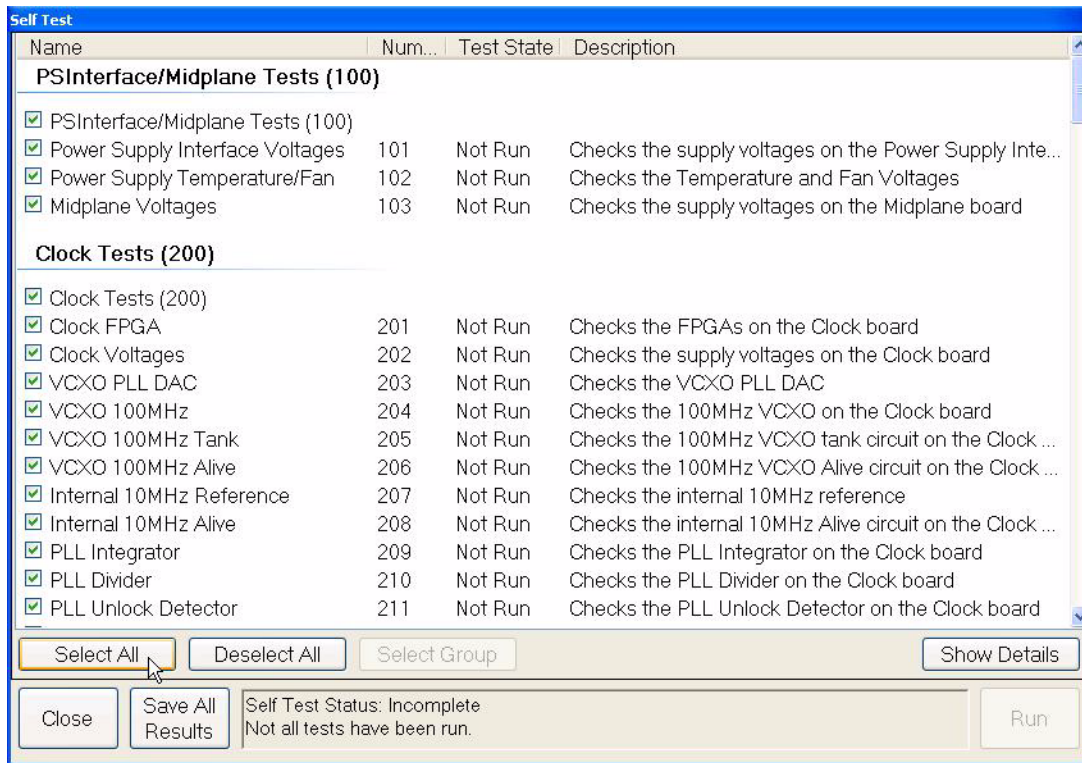
1. In the PXB user interface, select **Self Test** from the **System** menu to open the **Self Test** dialog box.

Figure 1 Opening Self Test



2. Select the **Select All** button near the bottom of the dialog box to run all of the self tests.

Figure 2 Select All of the Self Tests



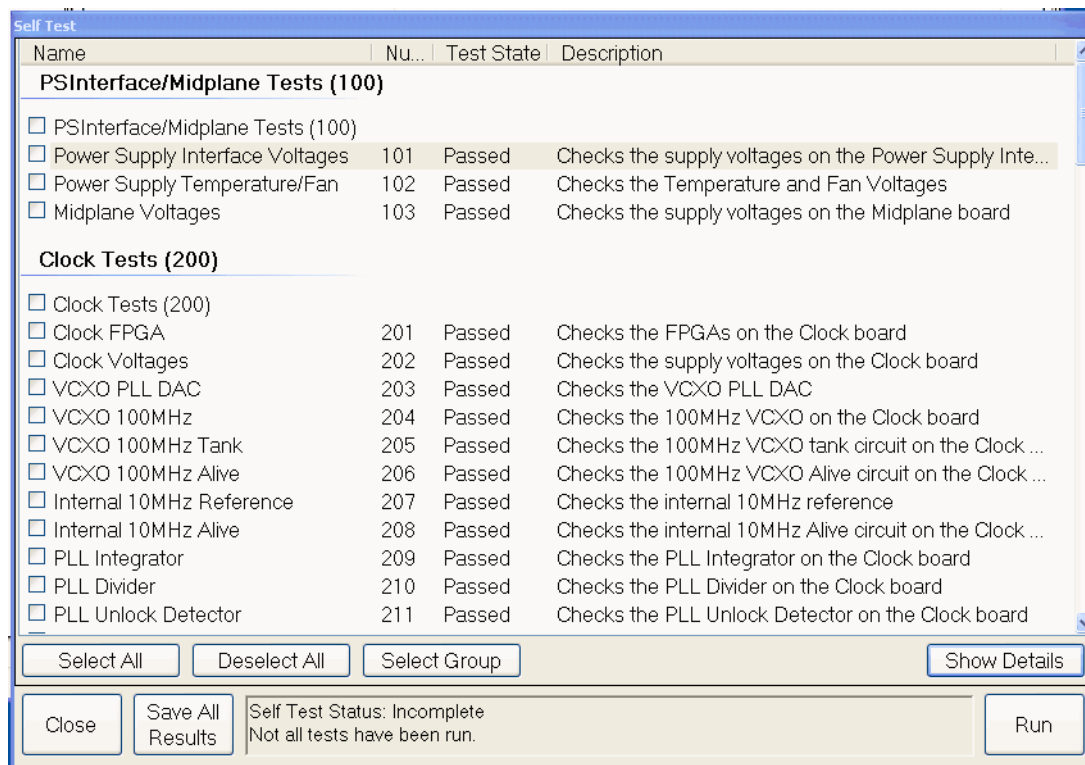
3. Select the **Run** button to start the self tests.

During the self tests, the test progress is displayed in a status box named **Running Self Test**.

- Upon completion, the self tests results are displayed. The **Test State** column displays the pass/fail status of each test.

The details of each self test (such as measured values, test limits, etc.) can be viewed by first selecting the test, then selecting the **Show Details** button.

Figure 3 Self Test Pass/Fail Test State



If self test has a failure, refer the PXB's guided service and support to correct the issue. This documentation is available on the internet at <http://www.agilent.com/find/pxb>.

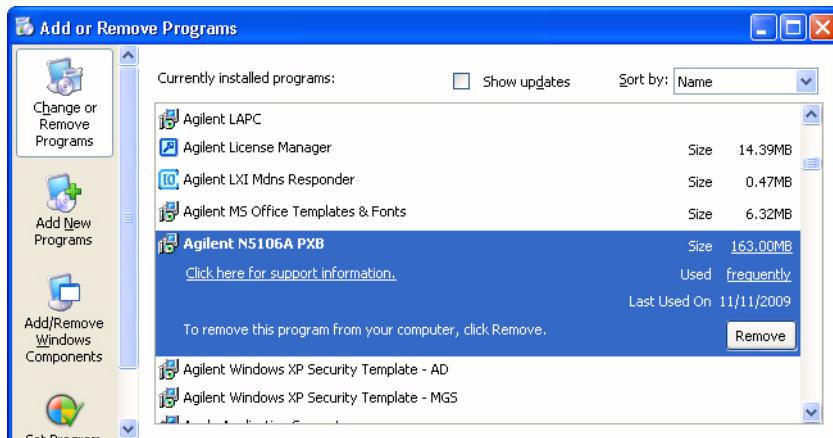
- Select the **Close** button to exit the **Self Test** dialog box.

Step 4. Remove the Old Firmware from the PXB

The old firmware must be removed from the PXB before the new firmware upgrade can be installed.

1. With the PXB running, ensure the PXB firmware is closed.
2. On the taskbar, click the **Start** button, then click **Control Panel** and select **Add or Remove Programs** to open the **Add or Remove Programs** dialog box.
3. Select **Agilent N5106A PXB** from the list of installed programs.
4. Select the **Remove** button to uninstall the firmware.

Figure 4 Program Removal



5. If asked, choose **Yes** to completely remove the PXB firmware application.
6. While the program is being removed, pop-up prompts are displayed. Select **OK** to follow the prompts. When the firmware removal is complete, select **Finish**.
7. When asked to reboot, select **Yes** to remove the appropriate software drivers from the PXB.
8. Wait for the PXB to restart.

Step 5. Download the Firmware Upgrade

The firmware is downloaded from the same Agilent Technologies webpage opened in “[Step 1. Confirm a Firmware Upgrade is Available.](#)”

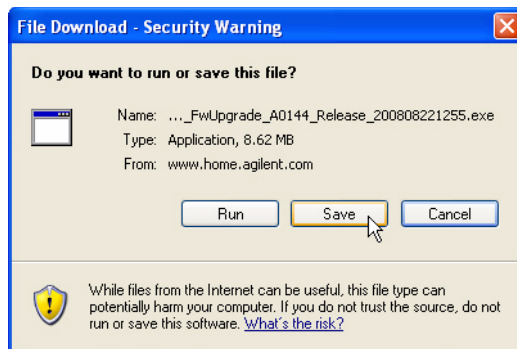
NOTE To download the firmware upgrade, internet access is required. Either a PXB or a PC can be used to access to the internet and download the firmware. **If the firmware is downloaded to a PC, you must transfer the installation file to the PXB’s desktop before installing the new firmware.**

If the PXB is connected to the LAN with internet access, the firmware can be downloaded directly and the process will be quicker and more direct. However, in many test environments, the PXB will not have internet access to meet security requirements. In this case, instructions for a PC with internet access are also provided.

1. **Only if you are using a PC for the download:**
Create a new folder on the C drive of your PC for the PXB firmware upgrade package file. This folder is referred to as the “Files for PXB” folder later in this process.
2. On the PC or the PXB, open the internet browser and enter <http://www.agilent.com/find/upgradeassistant> to open the “Signal Generator Firmware Upgrade Center” webpage.
3. In the **Document and downloads** table, select the **Latest Firmware Revision** for the N5106A PXB.
4. When the **File Download** dialog box is displayed, select **Save** to download the PXB firmware upgrade package file.

NOTE Do not select **Run** from the File Download dialog box. Before running the installer, you must first transfer the installation file to the PXB’s desktop.

Figure 0-5 File Download Dialog Box



5. When the **Save As** dialog box is displayed, if your are using a:
 - PC, select the “Files for PXB” folder to save the PXB firmware upgrade package file.
 - PXB, select the Desktop to save the PXB firmware upgrade package file.
6. If you downloaded the PXB firmware upgrade package file to your:
 - PC, continue with “[Step 6. Move the Firmware Upgrade from the PC to the PXB](#)” on page 10.
 - PXB, continue with “[Step 7. Install the Firmware Upgrade on the PXB](#)” on page 12.

Step 6. Move the Firmware Upgrade from the PC to the PXB

(This step is only required when the firmware upgrade is downloaded to a PC)

When the PXB firmware upgrade package file is downloaded to the PC, the firmware upgrade executable file must be transferred to the PXB for installation. This transfer can be done using a USB memory device or via the LAN.

Using a USB Memory Device

This is the easiest method to move the firmware upgrade package from the PC to the PXB. Essentially, it is just copying the firmware package from the PC to the USB memory device and then copying the firmware package from the USB memory device to the PXB desktop.

NOTE External memory devices can transfer computer viruses. Before connecting any memory device to the PXB, use an up-to-date virus-checking program to ensure the safety of the device.

1. Insert a USB memory device in the PC's USB port.
2. Open a Microsoft Windows Explorer window on the PC and copy the PXB firmware upgrade package file (PXBInstaller icon) from the "Files for PXB" folder (the location where you saved the firmware upgrade file in [Step 5. Download the Firmware Upgrade](#)) to the USB memory device.
3. Remove the USB memory device from the PC's USB port and insert it in one of the PXB's USB ports.
4. On the PXB, open the Windows Explorer window and navigate to the USB memory device folder.
5. From the USB memory device folder, copy the PXB firmware upgrade package file to the PXB's Desktop.
6. Remove the USB memory device from the PXB's USB port.
7. Continue with "[Step 7. Install the Firmware Upgrade on the PXB](#)" on page 12.

Using the LAN

This method uses the LAN to move the PXB firmware upgrade package file from the PC to the PXB. Essentially, it is just copying the firmware package from the PC to the PXB via the LAN.

Make the LAN Connections

Connect the PXB to the PC, either by:

- using a crossover cable to connect the PXB directly to the PC, or
- connecting the PC to the LAN and using a 100Base-T LAN cable to connect the PXB to the DHCP Server.

There are numerous ways to configure the PXB to connect to the LAN. Refer to Agilent Technologies IO Libraries USB/LAN/GPIB Interfaces Connectivity Guide (E2094-90009).

NOTE Depending on the PXB's current LAN settings and which procedure you choose, the PXB's LAN settings may be changed when the new firmware is installed. Even though these settings are persistent (that is, retained through presets and power cycles), it is recommended that you record the current LAN settings so you can restore the PXB to these settings after upgrading the firmware.

Move the Firmware Upgrade Package to the PXB

1. Ensure the PXB has remote desktop enabled:
 - a. Click **Start**, then right click **My Computer**.
 - b. Select **Properties > Remote** tab.
 - c. In the **Remote Desktop** area, ensure that the **Allow users to connect remotely to this computer** check box is checked and note the **Full Computer Name** for use in steps 2 and 3.

2. Start the remote desktop session on the PC:
 - a. Click **Start > All Programs > Accessories > Communications > Remote Desktop Connection**.
 - b. In the **Remote Desktop Connection** dialog box, click the **Options >>** button to display all of the tabs.
 - c. On the **General** tab, for **Computer:**, enter the *Full Computer Name* of the PXB noted in step 1c on [page 10](#).
 - d. On the **Local Resources** tab, ensure that the **Disk drives** checkbox is selected, then click the **Connect** button.
 - e. In the **Log On to Windows** dialog box, enter the PXB's user name and password. The default user name is "instrument" and the default password is "measure4u". Then click **OK**.

The PXB desktop should appear on your PC's display.

3. Copy the file from your PC to the PXB remote desktop:
 - a. In the remote desktop, open **Windows Explorer**, then open the **My Computer** folder.
 - b. In the **My Computer** folder, locate and open the drive labeled "C on *xxxxxx*", where *xxxxxx* is the *Full Computer Name* of your PC that you are using to remotely connect to the PXB.
 - c. In the drive labeled "C on *xxxxxx*", locate and open the "Files for PXB" folder where you saved the PXB firmware upgrade package file when it was downloaded in [Step 5. Download the Firmware Upgrade](#).
 - d. With the files in "Files for PXB" folder displayed, select the PXB firmware package file, then click and drag it to the remote desktop.

The PXB firmware upgrade package file is now displayed on the remote desktop.

4. Shutdown the remote desktop computer connection.
5. Continue with "[Step 7. Install the Firmware Upgrade on the PXB](#)" on page 12.

Step 7. Install the Firmware Upgrade on the PXB

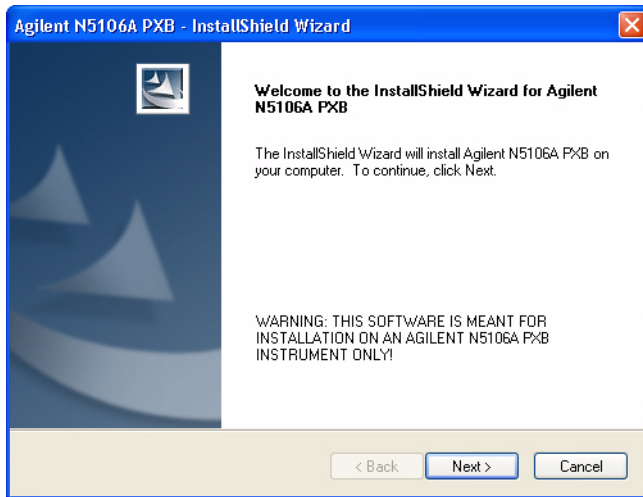
On your PXB, follow these steps to install the PXB firmware upgrade.

1. Double click the **PXBInstaller** icon on the PXB's Desktop to start the PXB firmware package installation process.

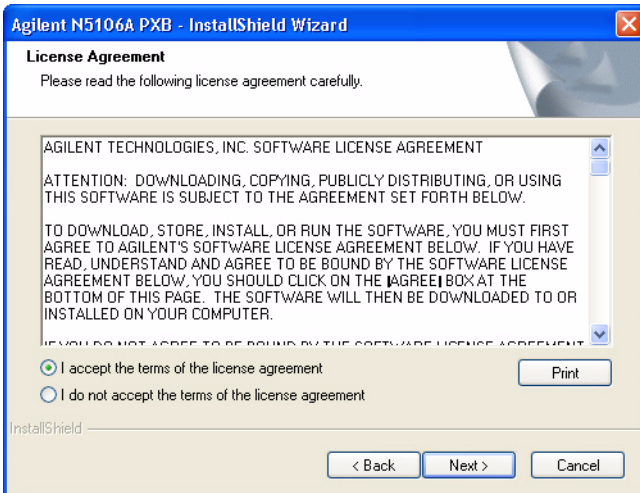


The installer initialization begins and it takes a few seconds for the installer to display the “Welcome” message.

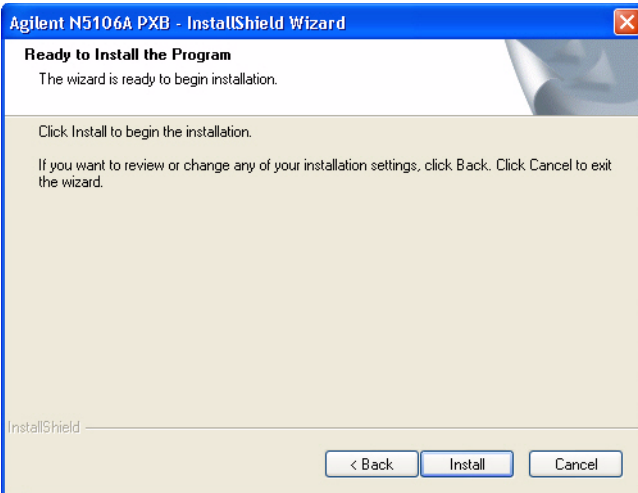
2. When you receive the “Welcome” message, select the **Next >** button to continue.



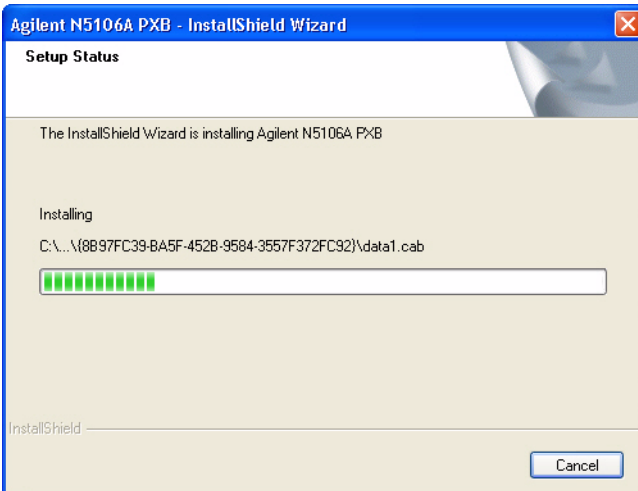
3. When the license agreement is displayed, please read it carefully. Click the **I accept the terms of the license agreement** selection, then select the **Next >** button to proceed.



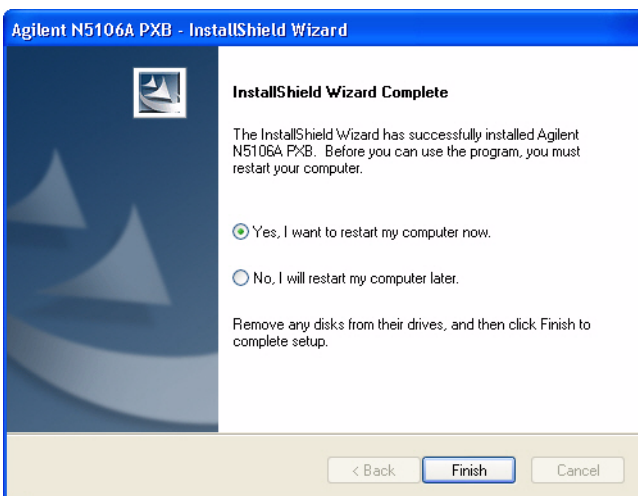
4. When the following screen is displayed, click the **Install** button to start the installation.



5. Note that as the installation is proceeding, a status bar is displayed showing the progress.



6. When the installation is complete, you are asked if you want to restart the PXB. The PXB must be restarted before the firmware upgrade may be used. Select the **Finish** button to complete the installation.



Step 7. Install the Firmware Upgrade on the PXB

7. Note that the two PXB firmware icons are now displayed along with the **PXBInstaller** icon. The firmware upgrade is complete.



If you want, you can delete the PXB firmware upgrade package file and its **PXBInstaller** icon from the PXB's Desktop.

8. Start the PXB firmware and run the self test to verify the PXB still operates correctly.
Refer to [“Step 3. Run the PXB Self Test”](#) on page 6.

Contacting Agilent Technologies

Use the following internet addresses for quick access to contact Agilent and specific PXB information:

- assistance with test and measurements needs, and information on finding a local Agilent office:
<http://www.agilent.com/find/assist>
- accessories or documentation: *<http://www.agilent.com/find/pxb>*
- new firmware releases: *<http://www.agilent.com/find/upgradeassistant>*

If you do not have access to the Internet, please contact your field engineer.

NOTE In any correspondence or telephone conversation, refer to the PXB by its model number and full serial number. With this information, the Agilent representative can determine whether your instrument is still within its warranty period.

Returning the PXB to Agilent

Use the following steps to return a PXB baseband generator and channel emulator to Agilent Technologies for servicing:

1. Gather as much information as possible regarding the PXB's problem.
2. Call the phone number listed on the Internet (*<http://www.agilent.com/find/assist>*) that is specific to your geographic location. If you do not have access to the Internet, contact your Agilent field engineer.
After sharing information regarding the PXB and its condition, you will receive information regarding where to ship your PXB for repair.
3. Ship the PXB in the original factory packaging materials, if available, or use similar packaging to properly protect the instrument.

