

## GETTING STARTED GUIDE

# NI USB-5680 RF Power Meter

This document explains how to install, configure, and set up the NI USB-5680 RF power meter (NI 5680). The NI 5680 ships with the NI-568x instrument driver.

For more information about the NI 5680, refer to the *NI USB-5680 RF Power Meter User Manual*, which is located at **Start»All Programs»National Instruments»NI-568x»Documentation**. Refer to the specifications document that ships with your device for detailed specifications.

For the most current versions of specifications and other documentation, visit [ni.com/manuals](http://ni.com/manuals). For the latest version of NI-568x, visit [ni.com/idnet](http://ni.com/idnet).

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# Conventions

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The following conventions are used in this guide:

» The » symbol leads you through nested menu items and dialog box options to a final action. The sequence **File»Page Setup»Options** directs you to pull down the **File** menu, select the **Page Setup** item, and select **Options** from the last dialog box.



This icon denotes a note, which alerts you to important information.



This icon denotes a caution, which advises you of precautions to take to avoid injury, data loss, or a system crash. When this symbol is marked on a product, refer to the *Read Me First: Safety and Radio-Frequency Interference* for information about precautions to take.

**bold** Bold text denotes items that you must select or click in the software, such as menu items and dialog box options. Bold text also denotes parameter names.

*italic* Italic text denotes variables, emphasis, a cross-reference, or an introduction to a key concept. Italic text also denotes text that is a placeholder for a word or value that you must supply.

monospace Text in this font denotes text or characters that you should enter from the keyboard, sections of code, programming examples, and syntax examples. This font is also used for the proper names of disk drives, paths, directories, programs, subprograms, subroutines, device names, functions, operations, variables, filenames, and extensions.

NI 5680 Refers to the NI USB-5680 RF power meter.

**Platform** Text in this font denotes a specific platform and indicates the text following it applies only to that platform.

## 1. Verifying the System Requirements

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To use NI-568x, your system must meet certain requirements. For more information about minimum system requirements, recommended system, and supported application development environments (ADEs), refer to the *NI-568x Readme*. Before installing NI-568x, you can access this file on your NI-568x software CD. After you install NI-568x, you can access this file at **Start»All Programs»National Instruments»NI-568x»Documentation**.

## 2. Unpacking

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Remove the NI 5680 from the package and inspect it for loose components or any sign of damage. Notify NI if the device appears damaged in any way. Do *not* install a damaged device.



**Caution** The NI 5680 is a static-sensitive device. Always properly ground yourself and the equipment when handling the NI 5680 or connecting to it.

## 3. Verifying the Kit Contents

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Verify the kit contains the following items required to set up and use the NI 5680:

- NI USB-5680 power meter with dust cap
- USB 2.0 A to Mini-B cable
- NI-568x instrument driver DVD-size case, containing the NI-568x driver software CD. The NI-568x CD also includes the *NI USB-5680 RF Power Meter User Manual* and the *NI-568x Readme*. After you install the NI-568x driver, you can find these documents at **Start» All Programs»National Instruments»NI-568x»Documentation**.
- Other included documents:
  - *NI USB-5680 RF Power Meter Getting Started Guide* (this document)
  - *NI USB-5680 RF Power Meter Specifications*
  - *Read Me First: Safety and Radio-Frequency Interference*

### Other Required Items

In addition to the kit contents, you need the following items:

- 1 N · m torque wrench
- Computer system in one of the following configurations:
  - Desktop or laptop computer with its documentation and one available USB 2.0 or 1.1 compliant slot
  - For PXI systems:
    - PXI/PXIe chassis, chassis documentation, and PXI/PXIe embedded controller with one available USB 2.0 or 1.1 compliant slot

## Optional Items

In addition to the required items, you may need the following item:

- A precision Type-N to SMA adapter

## 4. Installing the Software

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You must install the NI-568x software before installing the NI 5680 device. Complete the following steps to install the software:

1. (Optional) If you are developing an NI-568x application, install an ADE, such as LabVIEW or LabWindows™/CVI™.
2. Install the latest service packs for your operating system.
3. Insert the NI-568x CD into the CD drive. The NI-568x installer should open automatically. If the installation window does *not* appear, navigate to the CD drive, double-click the drive, and double-click `setup.exe`.
4. Follow the instructions in the installation prompts. For troubleshooting information, contact NI technical support or visit [ni.com/support](http://ni.com/support).  
**(Windows Vista)** Users may see access and security messages during installation. Accept the prompts to complete the installation.
5. When the installer completes, a dialog box asks if you want to restart, shut down, or restart later. Select **Restart**.

## 5. Installing the Hardware

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Install the NI-568x software before installing the hardware.



**Note** If you connect the NI 5680 to a PC or chassis before installing the software, the PC or chassis will not recognize the NI 5680.

To install the NI 5680, connect the USB cable to the device and the PC or chassis. Refer to Figure 1 for an example of a completed installation.



**Note** The status LED next to the device USB connector lights green after the NI-568x software is installed.

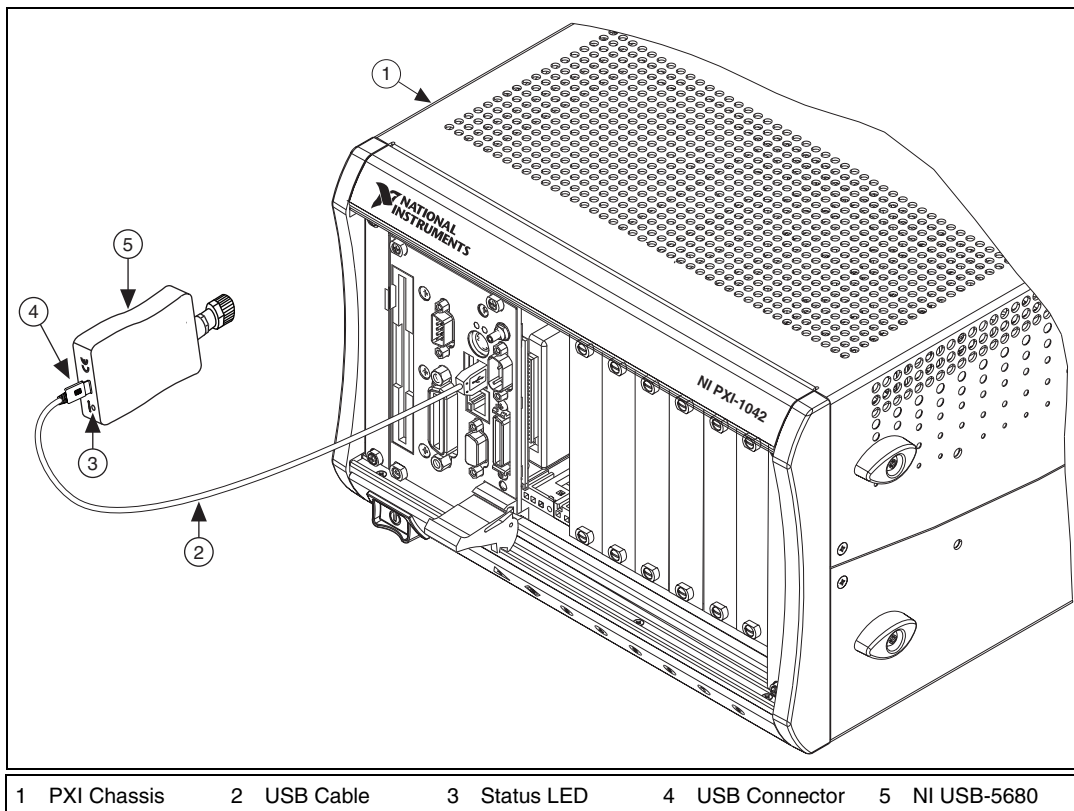


Figure 1. NI USB-5680 Installation

## 6. Windows Device Recognition

After you install the NI 5680, Windows recognizes a new device. Complete the following steps to complete the installation:

1. On some Windows systems, for every NI device installed, the Found New Hardware wizard opens with a dialog box.
  - When the Found New Hardware wizard prompts you to search for software, select **No, not this time**. Click **Next**.
2. Select **Install the software automatically**. Click **Next**.
3. Click **Finish** to close the wizard.

# 7. Connecting Signals

Connect signals to the NI 5680 hardware front panel Type-N connector to perform common power measurements.

The back panel LED indicates the status of the NI 5680. Refer to Table 1 for LED information.

**Table 1.** Status LED Indication

LED Color	Meaning
Green	The NI 5680 is connected to computer or chassis and is functioning properly.
Yellow	An error has occurred.
Off	The NI 5680 is not initialized.

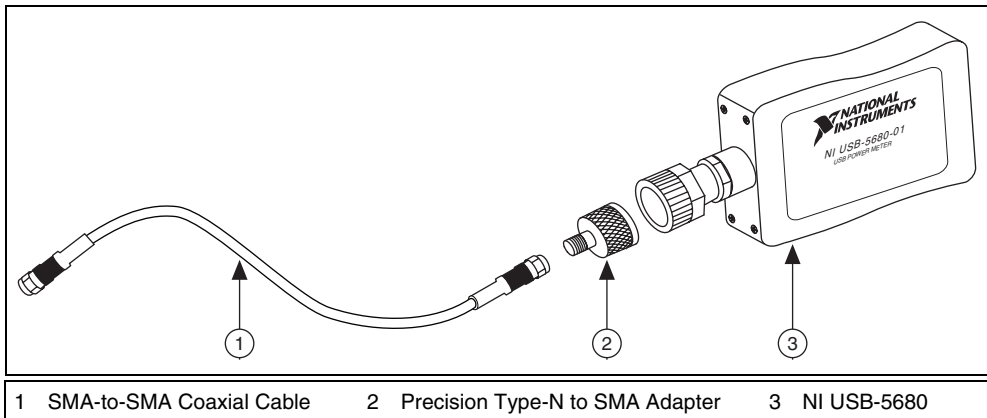
For more information about these common measurements, refer to Chapter 1, *Using the NI 5680*, of the *NI USB-5680 RF Power Meter User Manual*.



**Caution** Always refer to the specifications document included with the NI 5680 device *before* connecting signals. Failure to observe the specified maximum signal ratings can cause shock, a fire hazard, or damage to the devices connected to the NI 5680. NI is *not* liable for any damage or injuries resulting from incorrect signal connections.



**Caution** Do not overtorque the connectors. Always use the specified torque wrench.



**Figure 2.** Connecting the NI USB-5680 to an SMA Cable

## 8. Programming the NI 5680

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You can acquire data with the NI 5680 by using the NI-568x soft front panel (SFP), or you can control the NI 5680 programmatically with an ADE using the NI-568x instrument driver. In addition, you can run the NI-568x examples to demonstrate the functionality of the device.

### NI-568x SFP

The NI-568x SFP is a software representation of a traditional benchtop power meter. Launch the NI-568x SFP to use the NI 5680 device interactively. You can launch the NI-568x SFP from **Start»All Programs»National Instruments»NI-568x»NI-568x Soft Front Panel**.

### NI-568x Instrument Driver

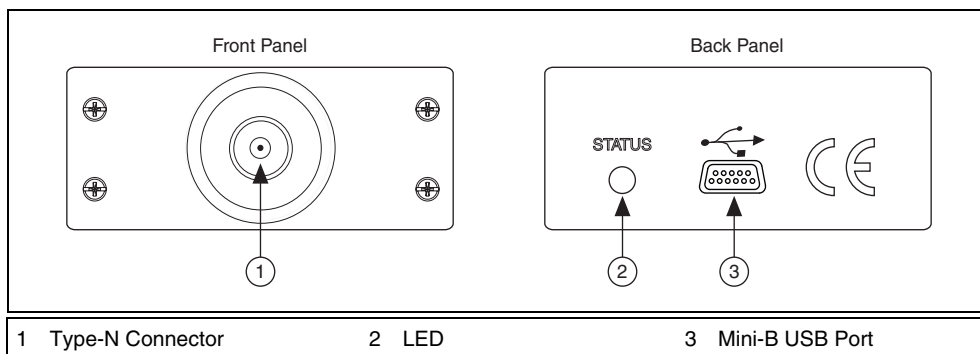
NI-568x features a set of operations and attributes that exercise all the functionality of the NI 5680, including configuration, control, and other device-specific functions. Refer to Chapter 1, *Using the NI 5680*, of the *NI USB-5680 RF Power Meter User Manual* for information about using NI-568x in your applications.

### NI-568x Examples

The NI-568x examples are instructional tools that demonstrate some of the functionality of the NI 5680 device that you can use separately or integrate into your systems. NI-568x includes examples for getting started and averaging. You can access NI-568x examples at **Start»All Programs»National Instruments»NI-568x»Examples**.

# Appendix A: Front and Back Panel

The NI 5680 front panel has one connector. The NI 5680 back panel has one USB port and the status LED. Refer to Figure 3 for both panels of the device.



**Figure 3.** NI USB-5680 Front and Back Panel

# Appendix B: Where to Go for Support

The National Instruments Web site is your complete resource for technical support. At [ni.com/support](http://ni.com/support) you have access to everything from troubleshooting and application development self-help resources to email and phone assistance from NI Application Engineers.

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Italy 39 02 41309277, Japan 0120-527196, Korea 82 02 3451 3400,  
Lebanon 961 (0) 1 33 28 28, Malaysia 1800 887710,  
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