

USB-Link™ 2 Installation and Setup Manual



USB-Link™ 2

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This device contains FCC-ID POOWML-C30XX.



Approved in accordance to R&TTE directive transmitter module marked by “CE product label”, manufactured by MITSUMI incorporated to OEM product.

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Chapter 1

Introducing the USB-Link™ 2



- ▼ *Component Checklist, page 2*
- ▼ *Product Specifications, page 3*
- ▼ *System Requirements, page 4*
- ▼ *Communication Options: Wired vs Wireless, page 5*

The USB-Link™ 2 is a hardware device that enables service bay personal computers (i.e., PCs and/or laptops) to retrieve vehicle information using either wireless Bluetooth® technology or a more traditional cable connection. Once configured, the USB-Link™ 2 interfaces with your PC, enabling you to use specific PC applications to perform vehicle diagnostics.

This chapter introduces the USB-Link™ 2 and provides details regarding the communication modes available to you to interface with your PC.

Component Checklist

The following components are included with your USB-Link™ 2. Be sure you have all of the following items before using the device:

- ✓ USB-Link™ 2 Vehicle Communication Interface (VCI)
- ✓ Automotive A to Mini-B USB Cable
- ✓ 6- and 9-pin “Y” Deutsch Adapter
- ✓ Carrying Case
- ✓ *USB-Link™ 2 Quick Start Guide*

Product Specifications

The USB-Link™ 2 is configured with the following specifications:

Feature	Data
Physical Dimensions	6.75" x 3.75" x 1.06" (171 mm x 95 mm x 27 mm)
Weight	8 oz. (0.22 kg)
Power Requirements	6 - 32 VDC @ 350 mA maximum
Operating Temperature	0 to +70 °C
API Driver	TMC RP1210A, RP1210B, and RP1210C compliant SAE J2534 compliant
Vehicle Protocols Supported	<ul style="list-style-type: none"> • J1708/J1587 • J1939 (250K, 500K, or 1 MB) • CAN (125K, 250K, 500K, 1 MB) (3 CAN channels supported) • J2284 CAN (125K, 250K, or 500K) • ATEC-160 Baud • ALDL Pass-through • ALDL 8192 • ALDL 9600 • OBDII • ISO 9141 • ISO 14230 (KWP2000) • ISO 15765 • J1850 (PWM, VPM, or Allison) • J1939 Auto Baud • IESCAN (required for Allison)
USB Communication	USB Device, version 1.1
Wireless Communication	Bluetooth® Class 1 adapter (up to 100 m range)
Wired Communication	Automotive A to Mini-B USB cable 15 ft. (5 m) maximum
Vehicle Connector	DB26F
USB Connector	Mini jack

System Requirements

Be aware of the following system requirements:

Component	Requirement
IBM PC-compatible computer	<ul style="list-style-type: none">• 1GHz processor or more• RAM: 256MB or more (512MB recommended)• USB port, version 1.1 or higher
Operating system	<ul style="list-style-type: none">• Windows® 7• Windows® 8 <p>Note: USB-Link™ 2 drivers support the Windows® 8 operating system. However, not all OEM PC applications work with Windows® 8.</p>
Bluetooth® adapter (sold separately)	<ul style="list-style-type: none">• Bluetooth® serial port capability

Communication Options: Wired vs Wireless

Prior to using the USB-Link™ 2, you need to decide how you want the unit to communicate with your PC. There are two options:

- A wired connection to the PC using a USB cable (pg. 5)
or
- A wireless connection to the PC using Bluetooth® (pg. 6)

Wired Connection

A wired connection provides the advantage of faster data throughput. For that reason, using a USB connection to the PC is *highly recommended* when diagnosing heavily-loaded CAN/J1939 buses. By nature, Bluetooth® has less bandwidth than USB, which can result in dropped messages in situations requiring high bandwidth.

IMPORTANT:



ECU reprogramming typically requires both high throughput and critical timing, and should *always* use a USB-to-PC wired connection.

Wired communication between the USB-Link™ 2 and your PC requires an automotive A to Mini-B USB cable (shipped with the USB-Link™ 2).



Figure 1.1 Automotive A to Mini-B USB Cable

NOTE:



For detailed instructions on making a wired connection, refer to *Step 4: Connect the USB-Link™ 2 to a Vehicle*, later in Chapter 3 of this manual.

Wireless Connection

Wireless connectivity provides untethered operation, and that's a bonus in a busy service bay. The USB-Link™ 2 uses Bluetooth® wireless technology to provide wireless communication between the USB-Link™ 2 and your PC.

The USB-Link™ 2 is intended for diagnostic use, for example, retrieving trouble codes. By nature, Bluetooth® wireless technology has limited bandwidth and latency when compared to wired solutions. This may result in dropped messages in situations requiring high bandwidth

NOTE:



The USB-Link™ 2 *does not* support Integrated Bluetooth. If your PC has Integrated Bluetooth, your system has Bluetooth® drivers installed and a built-in Bluetooth® transceiver. You must *uninstall* Integrated Bluetooth and its Bluetooth® drivers prior to proceeding with the USB-Link™ 2 installation process.

If your PC *does not* have Integrated Bluetooth, then you are clear to proceed with the USB-Link™ 2 installation process as documented in this manual:

- Install Bluetooth® drivers
- Install an external Bluetooth® adapter
- Pair the device

NOTE:



For detailed information on installing Bluetooth® drivers and configuring a basic Bluetooth® environment, refer to **Step 3: Install the Bluetooth® Drivers** in Chapter 2 of this manual.

For instructions on pairing the device, refer to **Step 5: Pair the Device**, in Chapter 3 of this manual.

Chapter 2

Installation and Bluetooth Configuration



- ▼ *Installation Process Outline, pg. 8*
- ▼ *Step 1: Install the Drivers and the Device Tester, pg. 9*
 - ▼ *Installing the Drivers, pg. 9*
 - ▼ *Installing the Device Tester, pg. 16*
- ▼ *Step 2: Choose Your Connection, pg. 24*
- ▼ *Step 3: Install the Bluetooth Drivers, pg. 25*
 - ▼ *Configure the Bluetooth Environment, pg. 26*

This chapter provides instructions for installing NEXIQ™ drivers and utilities, installing the required Bluetooth® drivers, installing a Bluetooth® adapter, and configuring a basic Bluetooth® environment.

Installation Process Outline

Step 1: Install the USB-Link™ 2 drivers and the Device Tester (pg. 9).

Step 2: Choose your connection (wired or wireless) (pg. 24).

If you chose a wired connection, move on to complete steps 4 and 6 only.

Step 3: Install the drivers for the Bluetooth® adapter you are using.

NOTE:



Depending on the Bluetooth® adapter you have selected, you may also need to configure the Bluetooth® environment (see *Configure the Bluetooth Environment* on page 26 of this chapter).

Step 4: Connect the USB-Link™ 2 to the vehicle.

NOTE:



Steps 4 through 6 are described in Chapter 3 of this manual.

Step 5: Pair the Device:

Step 6: Use the NEXIQ™ Device Tester to test the connection between the USB-Link™ 2 and the vehicle.

Step 1: Install the Drivers and the Device Tester

Prior to using the USB-Link™ 2, you have to install the necessary USB-Link™ 2 drivers and the NEXIQ™ Device Tester on your laptop or PC. The USB-Link™ 2 drivers are compatible with both Microsoft® Windows® 7 and Windows® 8.

IMPORTANT:



Remember, you *must* have Administrator security rights *and* be logged in as “Admin” to successfully complete the installation process outlined in this manual.

The following procedure assumes that you have Internet access.

Installing the Drivers

To install the drivers on your laptop or PC:

- 1 On your laptop or PC, navigate to the following website

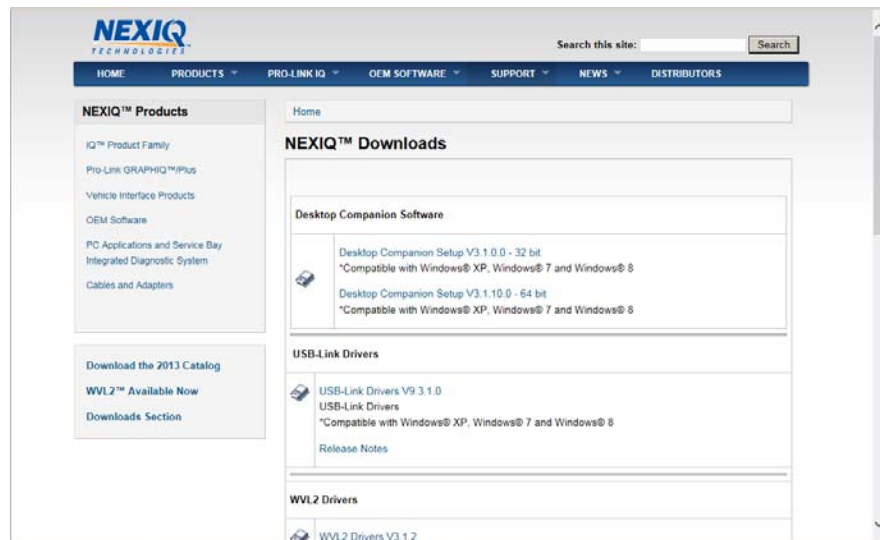



Figure 2.1 NEXIQ™ Downloads

- 2 From the USB-Link 2 Drivers section, select the latest version of the USB-Link 2 drivers.

- 3 Carefully read the **End User License Agreement**.
- 4 Scroll down to the bottom of the page and click on **Accept**.
- 5 Click on the software title to begin the download.
- 6 Click on **Run** (if your browser is Internet Explorer®).

NOTE:

-  Depending on your Internet browser (for example Google Chrome, or Firefox®), you may have to locate the file (i.e., **USB-Link2xxxx.exe**) from your Recent Downloads, and then double-click on it to run it.

The **Welcome to USB-Link 2 Setup** screen is displayed.

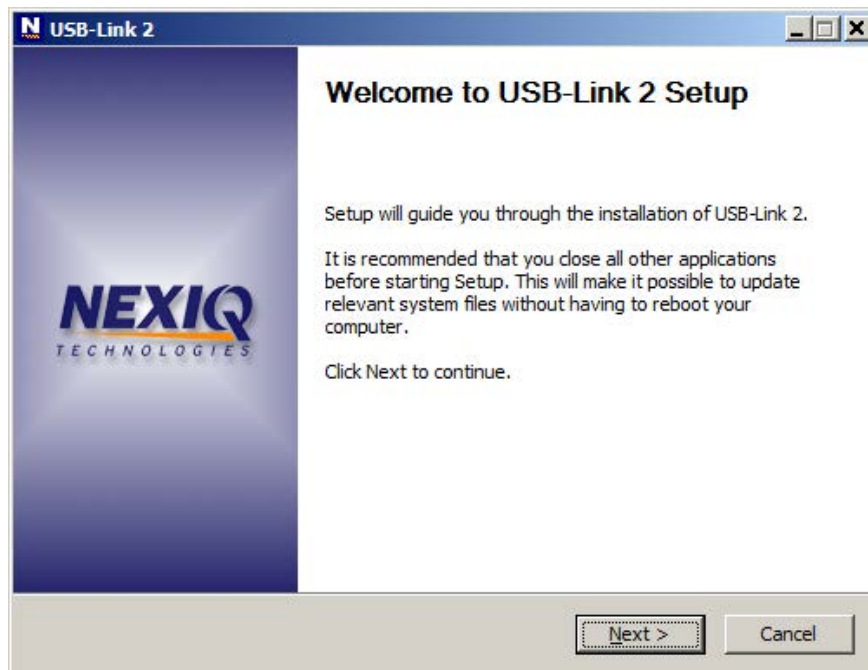


Figure 2.2 Welcome to USB-Link 2 Setup Screen

- 7 Read the information displayed on the screen, and click **Next**.

The **License Agreement** screen is displayed.

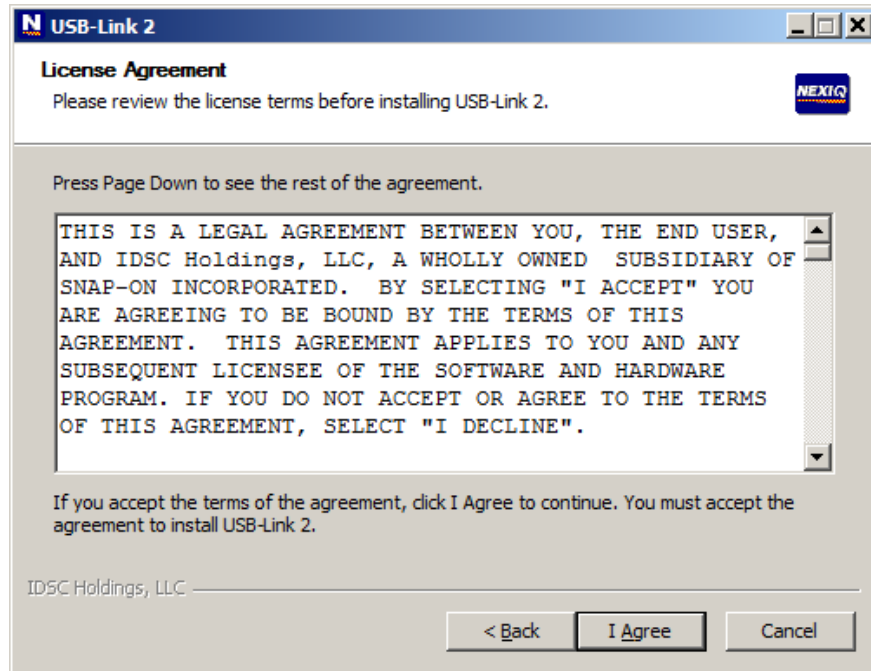



Figure 2.3 License Agreement Screen

- 8 Read all the information on this screen, then click **I Agree**.

NOTE:

-
-  If you do not agree to the terms, click **Cancel**. A message is displayed prompting you to confirm quitting USB-Link 2 Setup. Click **Yes** to quit.
-

The **Choose Components** screen is displayed.

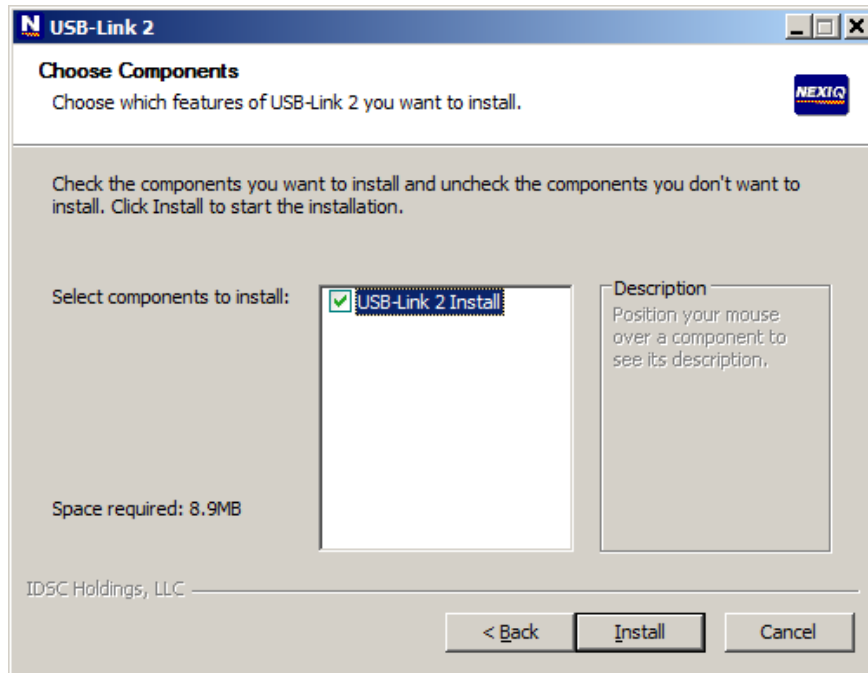


Figure 2.4 Choose Components Screen

You can position your mouse over the component (i.e., **USB-Link 2 Install**) to view its description.

- 9 Click **Install**.

The following warning message is displayed.

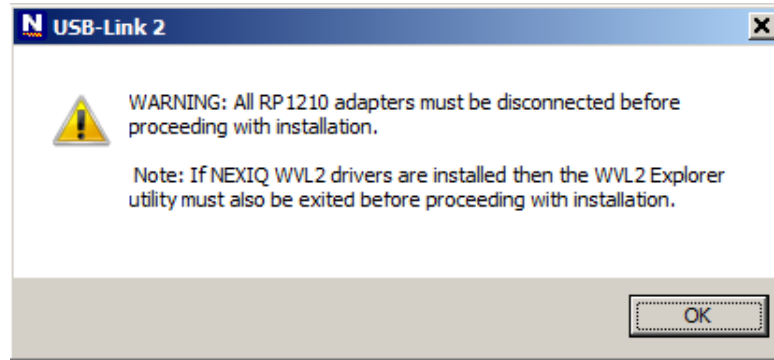



Figure 2.5 Warning Message

- 10 Carefully read the warning message, and disconnect all RP1210 adapters to which to which your laptop or PC might be connected prior to proceeding with the installation.

NOTE:

-
-  You must also exit the WVL2™ Explorer utility if NEXIQ™ WVL2™ drivers have been installed on your laptop or PC.
-

- 11 Once you have complied with the requirements of the warning message, click **OK**.

The following screen is displayed.

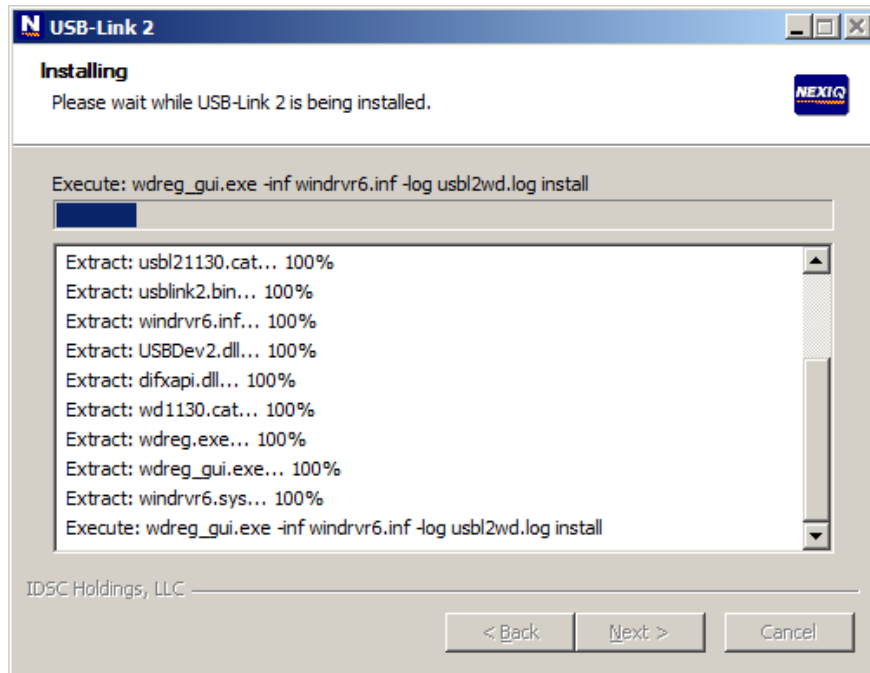


Figure 2.6

12 Wait briefly while the USB-Link™ 2 is installed.

If you are running Windows® 7 or Windows® 8, the following **Windows Security** dialogs may be displayed.



Figure 2.7 Windows Security Dialog

Click **Install** to continue.



Figure 2.8 Windows Security Dialog

Click **Install** to continue.

Once the drivers are installed, you are ready to install the Device Tester.

- 13 Move on to **Installing the Device Tester**, next in this chapter.

Installing the Device Tester

To install the Device Tester:

The **Welcome to Device Tester Setup** screen is displayed.



Figure 2.9 Welcome to Device Tester Setup Screen

- 1 Read the on-screen instructions, and click **Next**.

The **License Agreement** for the Device Tester is displayed.

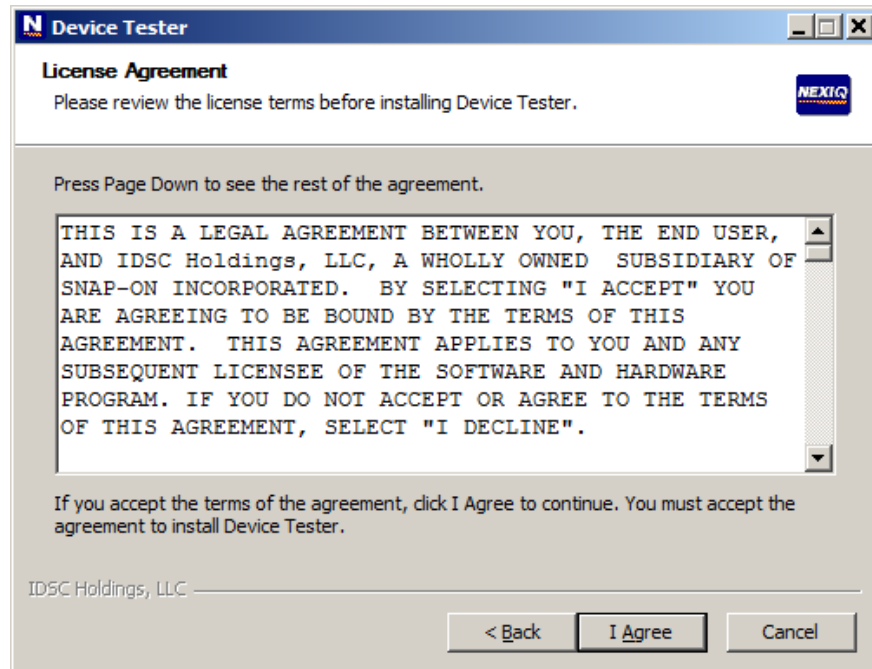


Figure 2.10 Device Tester License Agreement

- 2 Carefully read the **License Agreement**.
- 3 Click **I Agree** to continue.

The **Choose Components** screen is displayed.

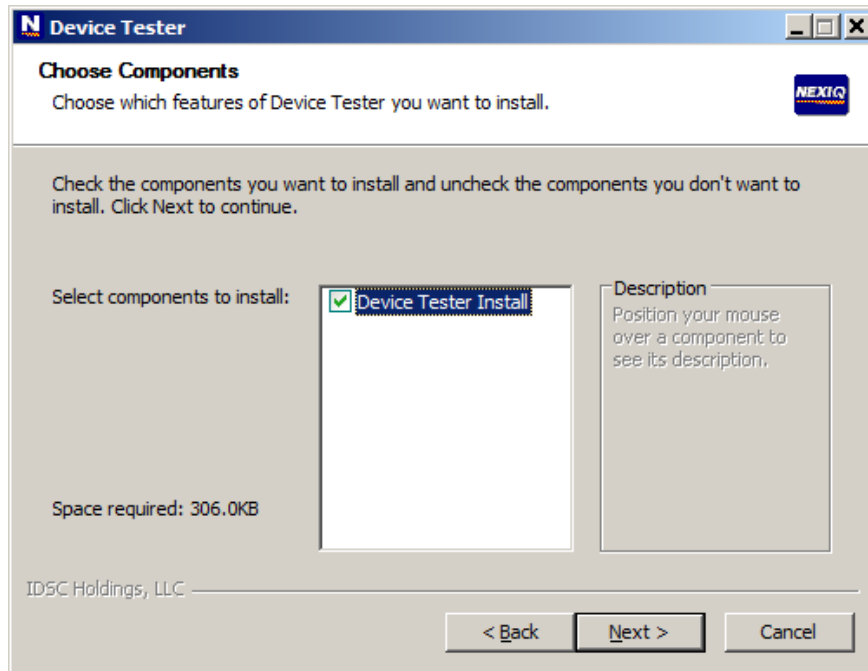


Figure 2.11 Choose Components Screen

You can position your mouse over the component (i.e., **Device Tester Install**) to view its description.

- 4 Click **Next**.

The **Choose Install Location** screen is displayed.

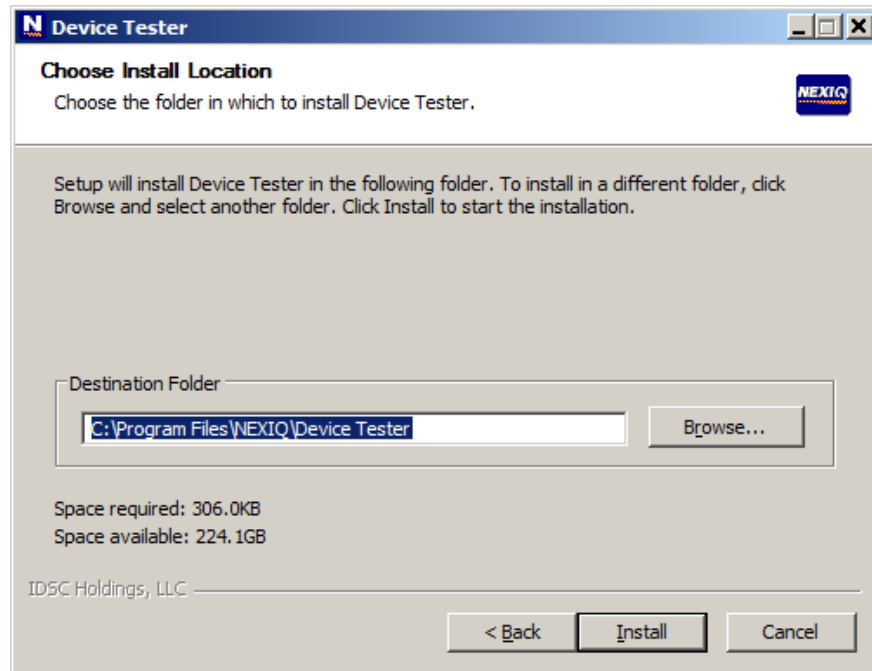


Figure 2.12 Choose Install Location Screen

5 Do *one* of the following:

—To accept the default directory, click **Install** (recommended).

or

—To select a different directory, click **Browse...**

At the bottom of the screen, select the desired drive letter from the drop-down list. Double-click each directory to add to the path. Click **OK** to proceed.

The program returns to the **Choose Install Location** screen. Confirm the destination, then click **Install**.

The **Installation Complete** screen is displayed.

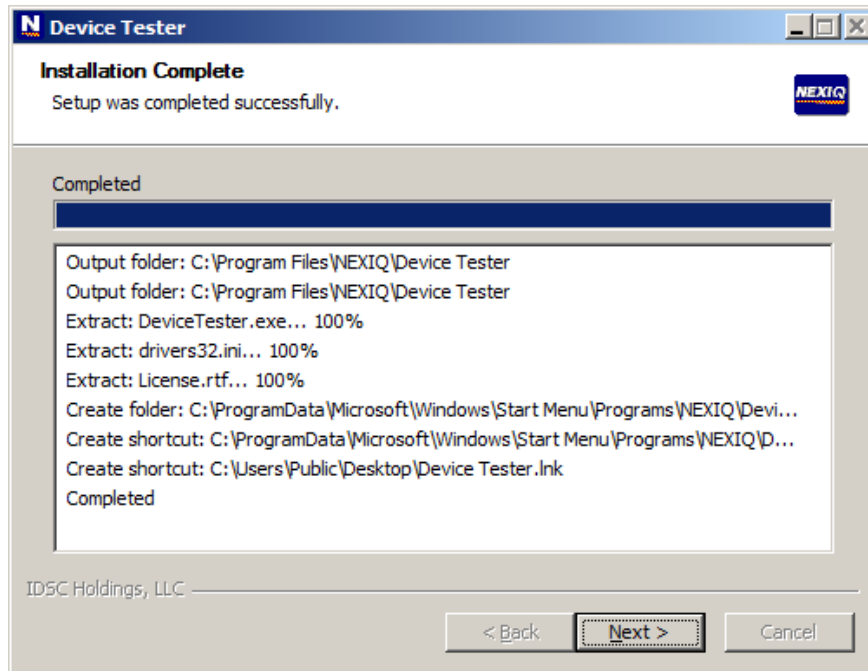


Figure 2.13 *Installation Complete Screen*

- 6 Click **Next**.

The **Completing Device Tester Setup** screen is displayed.



Figure 2.14

7 Click **Finish**.

The installation and setup of the Device Tester is complete (move on to **Step 8**, next in this manual).

The **USB-Link 2 Installation Complete** screen is displayed.

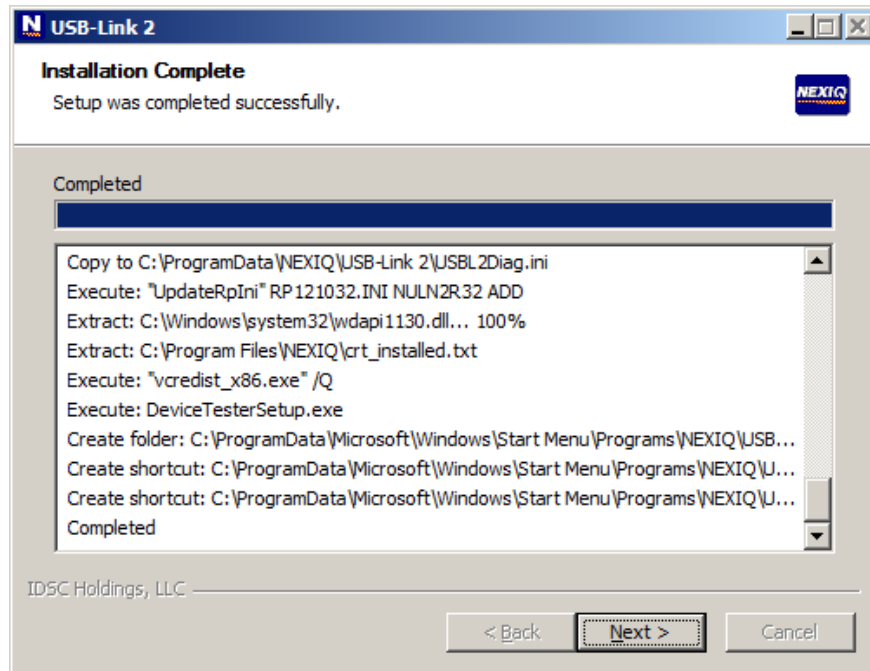


Figure 2.15 *USB-Link 2 Installation Complete Screen*

- 8 Click **Next**.

The **Completing USB-Link 2 Setup** screen is displayed.

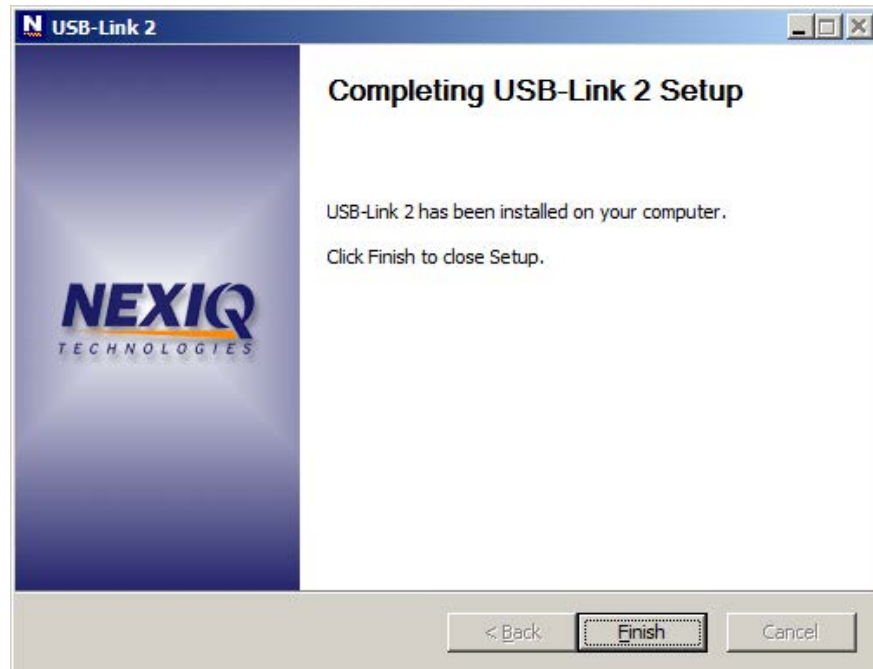


Figure 2.16 *Completing USB-Link 2 Setup Screen*

- 9 Click **Finish**.
- 10 Move on to “**Choose Your Connection**,” next in this manual.

Step 2: Choose Your Connection

You have two options for connecting the USB-Link™ to your laptop or PC.

- Wired connection using a 15 ft. automotive A to Mini-B USB cable
- Wireless connection using Bluetooth®

Choose **one** of the following options. Both have advantages.

Wired Connection

The advantage of a wired connection is faster throughput (e.g., you want to use the USB-Link™ for ECU reprogramming).

NOTE:



If you are connecting the USB-Link™ by means of a USB cable, you *do not need to read the rest of this chapter*. Instead, move on to “Connect the USB-Link™ to a Vehicle” in Chapter 3 of this manual.

If you choose a wired connection, you may still want to install the Bluetooth® drivers *now* rather than later. This will give you the flexibility of *wireless* connectivity at some time in the future. To install the Bluetooth drivers now, continue reading the remainder of this chapter. Otherwise, move on to Chapter 3.

Wireless Connection

The advantage of a wireless connection is, of course, untethered operation. For a wireless connection using Bluetooth® technology, you must:

- Insert the USB Bluetooth Adapter CD into your PC's CD-ROM drive.
- Install the necessary Bluetooth® drivers.
- Plug the Bluetooth® adapter (i.e., the dongle) into an available USB port on your laptop.

To set up your laptop or PC for wireless connection, move on to “**Step 3: Install the Bluetooth Drivers**” next in this manual.

Step 3: Install the Bluetooth Drivers

Depending on the Bluetooth® adapter you are using for your wireless connection, you may need to install the necessary Bluetooth® drivers. For some adapters the drivers will install automatically.

NOTE:



For best results, Class 1 (100 m range) Bluetooth® USB adapters are recommended. Class 1 adapters are recommended because of their greater operating range.

To install the Bluetooth® drivers:

- 1 Plug the **Bluetooth® adapter** you have selected into an available USB port on your laptop, and wait while Windows® installs the required drivers.

The following message is displayed:

Installing device driver software.

When the installation is complete, the following message is displayed:

Your device is ready to use.

- 2 Move on to “**Step 4: Connect the USB-Link™ to a Vehicle**” in Chapter 3.

NOTE:



Some Bluetooth® adapters may require you to configure a Bluetooth environment. If this is necessary, an Initial Bluetooth Configuration Wizard screen will display at the conclusion of the adapter installation process.

If this happens, move on to “**Configure the Bluetooth Environment**” (pg. 26).

Configure the Bluetooth Environment

IMPORTANT:



Depending on the Bluetooth® adapter you have selected, you may not need to perform this procedure. If the Initial Bluetooth Configuration Wizard Instead does not display, move on to “Step 4: Connect the USB-Link™ to a Vehicle” in Chapter 3 of this manual.

Once you have installed the Bluetooth® adapter, the **Initial Bluetooth Configuration Wizard** is displayed.



Figure 2.17 Initial Bluetooth Configuration Wizard

If the Configuration Wizard does not start up, double-click the **My Bluetooth Places** shortcut on the Windows desktop

To configure a basic Bluetooth® environment:

1 Click **Next**.

Follow the prompts throughout the configuration process.

During the process the following screen is displayed.

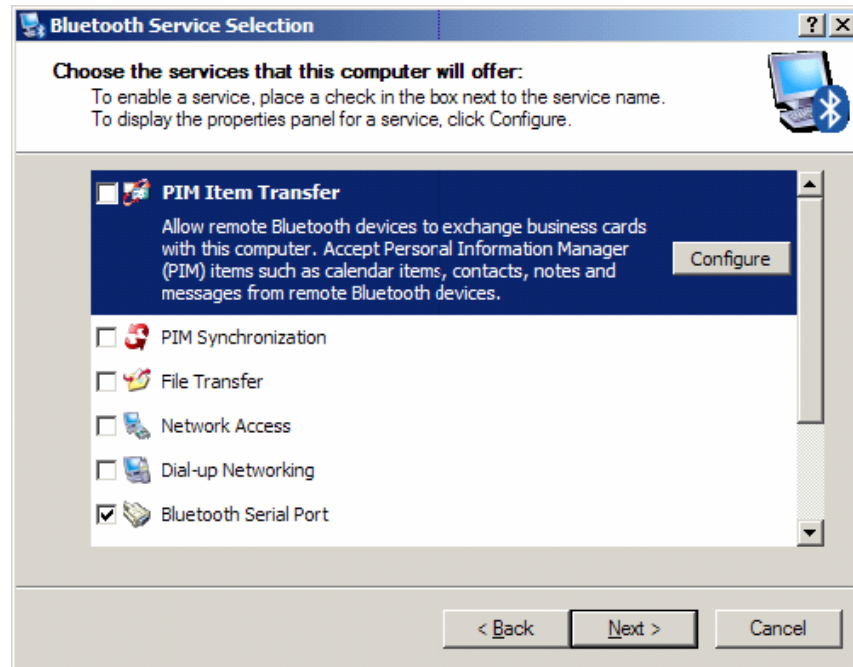



Figure 2.18 Bluetooth Service Selection

- 2 Clear all of the check boxes *except* the **Bluetooth Serial Port** check box.

NOTE:

 You need to use the scroll bar on the right side of the screen to view all of the check boxes.

- 3 Click **Next**.



Figure 2.19 Skip to Continue Without Configuring Another Device

- 4 Click **Skip**.

The **Initial Bluetooth Configuration Wizard Congratulations** screen is displayed.

- 5 Click **Finish**.

- 6 Move on to **Chapter 3, *Preparing to Use the USB-Link™***, next in this manual.

Chapter 3

Preparing to Use the USB-Link™ 2



- ▼ *Step 4: Connect the USB-Link™ 2 to a Vehicle, page 30*
 - ▼ *Wired Connection Using a USB Cable, page 30*
 - ▼ *Wireless Connection, page 31*
- ▼ *Step 5: Pair the Device, page 32*
- ▼ *Step 6: Test the Connection to the Vehicle, page 39*

This chapter provides instructions for connecting the USB-Link™ 2 to a vehicle, pairing the device, and testing the connection. It also includes instructions on setting up the diagnostic personal computer (PC) applications supported by the USB-Link™ 2.

Step 4: Connect the USB-Link™ 2 to a Vehicle

The USB-Link™ 2 interfaces with the vehicle by means of any one of the following connectors:

- 6-pin Deutsch
- 9-pin Deutsch
- 9-pin Deutsch - 1 meter
- 6- and 9-pin Deutsch Y
- 16-pin J1962 for OBD II

Making the Connection

There are two connection options:

- Wired connection using an automotive A to Mini-B USB cable (pg. 30)
- Wireless connection using a Bluetooth® connection (pg. 31)

Wired Connection Using a USB Cable

To connect the USB-Link™ 2 to a PC or laptop using a USB cable:

- 1 Connect the USB cable to the USB port of the PC or laptop.
- 2 Connect the other end of the cable to the port on the bottom of the device.
- 3 Connect the DB26 female end of the appropriate adapter cable to the USB-Link™ 2.
- 4 Attach the other end of the adapter cable (i.e., the Deutsch connector end) to the vehicle's diagnostic connector.

NOTE:



The vehicle's diagnostic connector is typically located under the dashboard on the driver's side, or beside the driver's seat. It can also be located in the engine compartment, near the electronic control unit (ECU).

- 5 Move on to "**Step 6: Test the Connection to the Vehicle**" (pg. 39).

Wireless Connection

When the USB-Link™ 2 is out of range (more than 100 ft.) of the laptop or PC while the application is running, the fault LED will flash until the USB-Link™ 2 is back in range. Plugging the USB cable into the USB-Link™ 2 will turn off the flashing fault LED.

To connect the USB-Link™ 2 to the vehicle:

- 1 Connect the DB26 female end of the appropriate adapter cable to the connector on the top of the USB-Link™ 2.
- 2 Attach the other end of the adapter cable (i.e., the Deutsch connector end) to the vehicle's diagnostic connector.

NOTE:



The vehicle's diagnostic connector is typically located under the dashboard on the driver's side, or beside the driver's seat. It can also be located in the engine compartment, near the electronic control unit (ECU).

- At this point, the **Power** (green) LED on the USB-Link™ 2 should be illuminated (on).
 - If the **Power** LED is not illuminated, turn the vehicle's key to the ON position, leaving the engine off.
- 3 Move on to "**Step 5: Pair the Device,**" next in this manual.

Step 5: Pair the Device

If you are running Windows® 7 or Windows® 8, you use the Windows® utility to pair the device (assuming that you chose a wireless connection using Bluetooth).

NOTE:

i You may be prompted to enter a pairing code for the device. If you are prompted to enter a PIN or pairing code, enter **NEXIQ** (all uppercase). See Step 7 on page 36 of this chapter.

To pair the device:

- 1 Locate the Bluetooth icon from the system tray on your laptop's desktop.

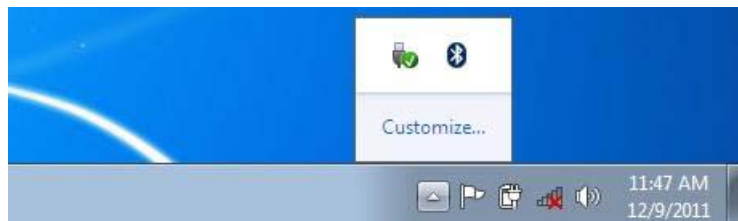


Figure 3.1 Windows 7 System Tray

- 2 Click on the **Bluetooth icon**.

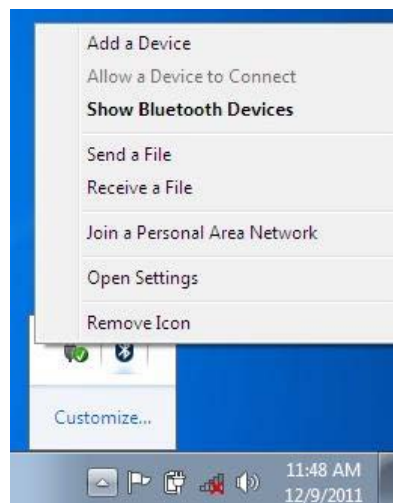


Figure 3.2 Bluetooth Icon Pop-up

- 3 Click **Add a Device**.

The **Add a device** screen is displayed.

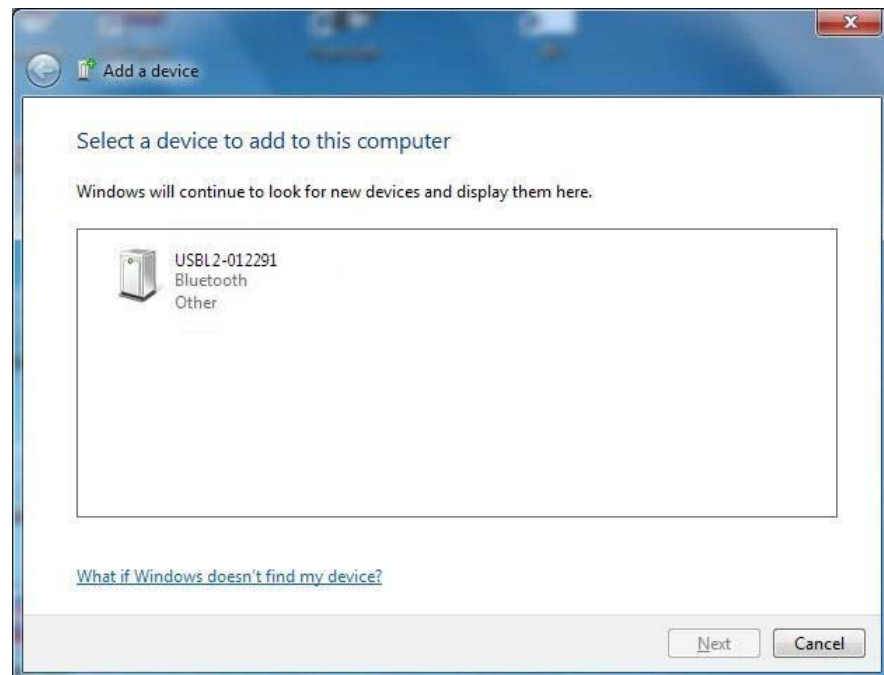


Figure 3.3 Add a Device Screen

- 4 Select the device displayed that matches the serial number on the back of your USB-Link™ 2 (e.g., **USBL2-012291**).

Your selection is highlighted.



Figure 3.4 Add a Device Screen Refreshed

- 5 Click **Next**.

The **Select a pairing option** screen is displayed.



Figure 3.5 Select a Pairing Option Screen

6 Select **Enter the device's pairing code**.

The **Enter the pairing code for the device** screen is displayed.

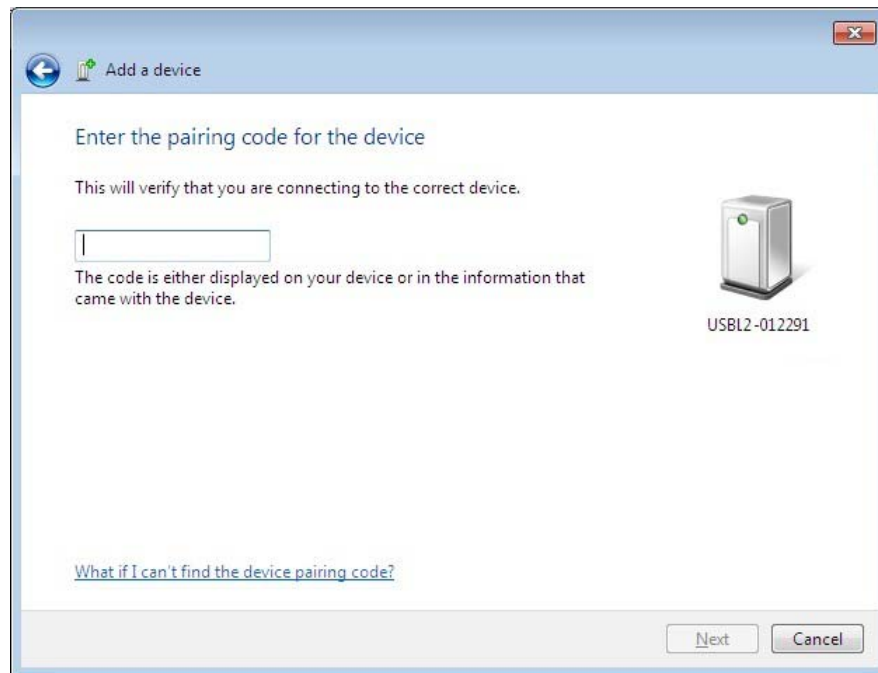


Figure 3.6 Enter the Pairing Code for the Device Screen

7 Enter **NEXIQ**.

Be sure to enter the code in ALL CAPS.

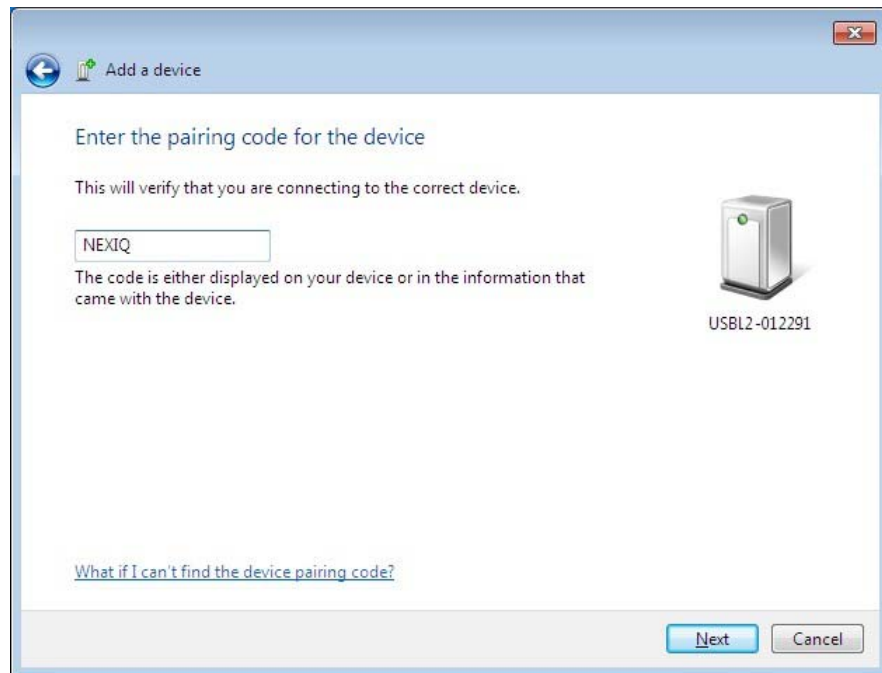


Figure 3.7 Pairing Code Entered

8 Click **Next**.

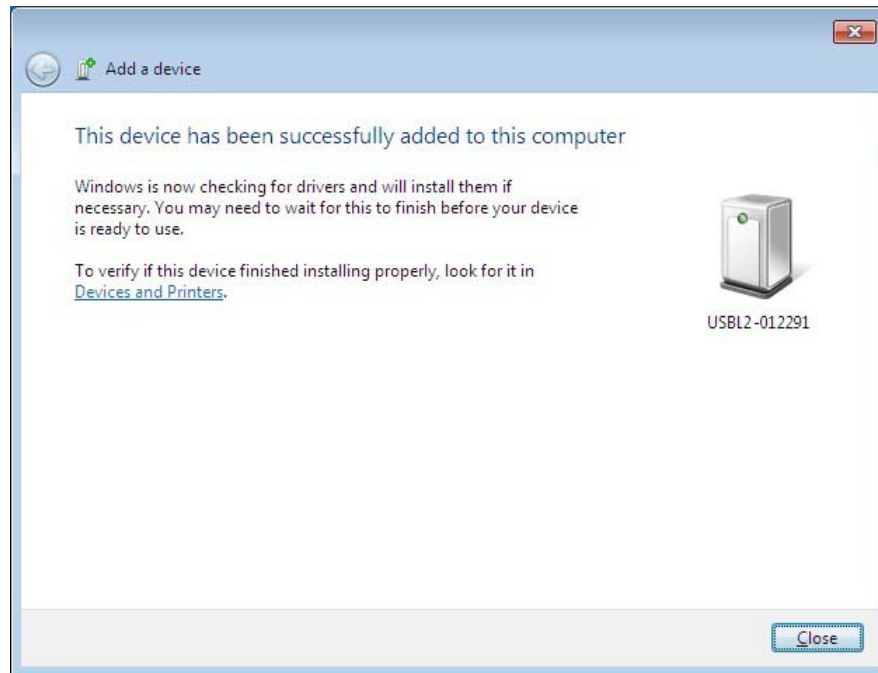


Figure 3.8 Device Successfully Added Screen

The following System Tray message is displayed.

Your device is ready to use.

- 9 Click **Close**.
- 10 Move on to “**Step 6: Test the Connection to the Vehicle,**” next in this manual.

Step 6: Test the Connection to the Vehicle

You use the **Device Tester** to test the connection between the USB-Link™ 2 and the vehicle. At startup, the Device Tester checks for any NEXIQ™ drivers installed on the PC.

To test the connection between the USB-Link™ 2 and the vehicle:

- 1 Click **Start** and then select **Programs** ▶ **NEXIQ** ▶ **Device Tester** ▶ **Device Tester**.

The application is started and the **Device Tester** screen is displayed.

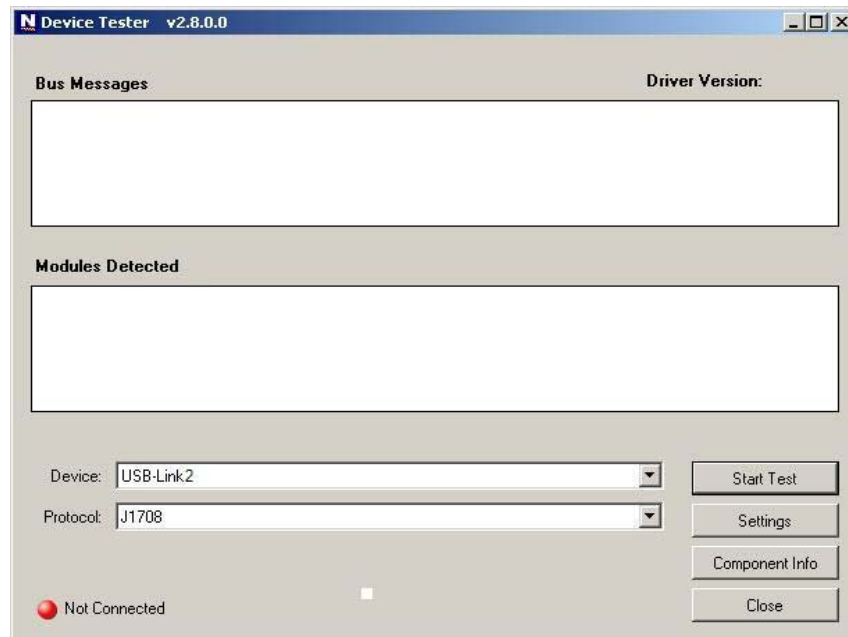




Figure 3.9 Device Tester Screen, Showing a Status of Not Connected

- 2 Use the  button in the **Device** box to select the appropriate device (for example, USB-Link2).
—The **Device** box lists all the devices supported by the NEXIQ drivers installed on the PC.
- 3 Use the  button in the **Protocol** box to select the appropriate protocol (e.g., J1708, J1939, or CAN).
—The **Protocol** box lists only the protocols supported by the device selected in the **Device** box.

- 4 Press the **Start Test** button.

The **Device Tester** screen is refreshed, and data received from the vehicle bus is displayed in the **Bus Messages** window.

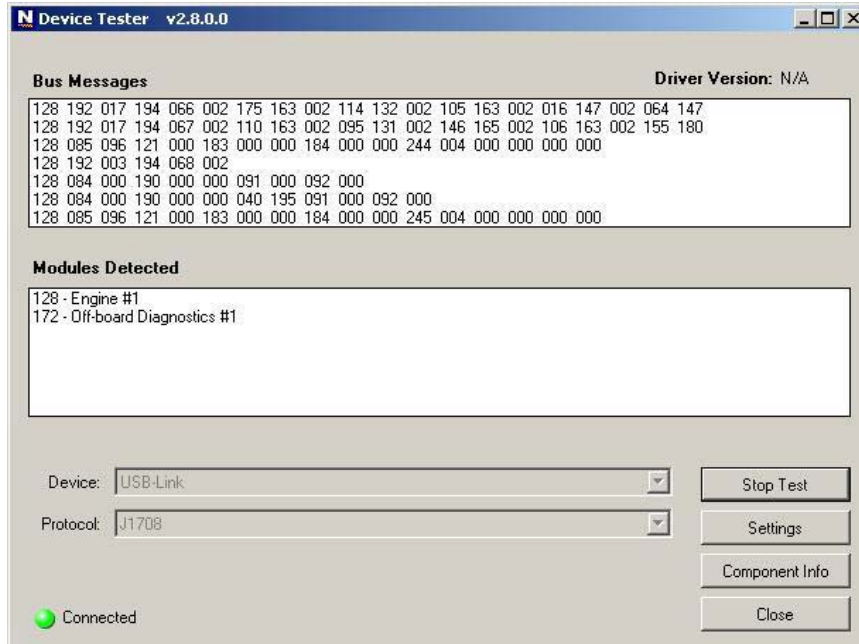


Figure 3.10 Device Tester Screen, Showing a Status of Connected

NOTE:



The **Modules Detected** window in the lower portion of the screen displays a list of all systems seen on the bus. It is used for J1708 and J1939 only. For all other protocols this window will be unavailable (i.e., NOT USED).

If the Connection Indicator button is red (i.e., **Not Connected**), do *one* of the following:

—For wireless connection using *Bluetooth* technology:

- In the **Device** list, make sure that the heading is **BLUETOOTH USB-Link** (Protocol desired).
- Check to ensure that the connections between the USB-Link™ and the vehicle are secure (i.e., the Diagnostic Connector).
- Check to make certain that the Power LED on the USB-Link™ is illuminated.
- Check to make sure you are “paired” with devices.

—For wired connection using a USB cable:

- In the **Device** list, make sure that the heading is **USB-Link2** (Protocol desired).
- Check to ensure that the connections between the USB-Link™ 2 and the PC are secure (i.e., the USB cable).
- Check the connections between the USB-Link™ 2 and the vehicle (i.e., the Diagnostic Connector).
- Check to make certain that the Power LED on the USB-Link™ 2 is illuminated.

NOTE:



For additional information, refer to “Connect the USB-Link™ to a Vehicle” on page 30 of this manual

- 5 Click **Stop Test** to end the test, or select another device to test.