USB-Link™ 2 Wi-Fi Edition
Vehicle Interface
Installation and Setup Manual

NEXIQ TECHNOLOGIES™

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Chapter **1**

Using
this Manual

This chapter provides an overview of this manual's organization and the conventions used throughout.

NOTE:

Screen shots used throughout this manual are for illustrative purposes only. All data shown is fictitious in nature.

Manual Overview

This manual provides basic and detailed information to support you during installation and setup of the USB-Link™ 2 Wi-Fi Edition.

This manual is composed of the following sections:

- *Table of Contents*—helps you to find the information you are looking for quickly and easily.

- *Chapter 1: Using this Manual*—provides an overview of this manual.

- Chapter 2: *Introducing the USB-Link™ 2 Wi-Fi Edition*—introduces the USB-Link™ 2 Wi-Fi Edition, and provides details regarding the communication modes available to you to interface with your PC

- *Chapter 3: Installing the Drivers and Setting Up the Device*—provides instructions for installing NEXIQ™ drivers and utilities, connecting the USB-Link™ 2 to a vehicle, connecting to a wireless network, and testing the connection. It also provides information on using the USB-Link™ 2 Explorer.

Each chapter begins with an "at-a-glance" list of the chapter contents, along with corresponding page numbers.

Conventions

This section provides descriptions of the conventions used throughout this guide.

Special Messages

Note

NOTE provides an explanation, comment, or tip related to the subject matter that is being discussed.

Example:

NOTE:

Refer to the page number provided for each described component for further details.

Important

IMPORTANT indicates a situation which, if not avoided, may result in damage to the test equipment or vehicle.

Example:

IMPORTANT:

All RP1210 adapters must be disconnected before proceeding with installation.

Caution

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor injury to the operator or to bystanders.

Example:

CAUTION:

Do not use the unit to perform tests on household or industrial sources.

Warning

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or bystanders.

Example:

WARNING:

⚠ *Keep all cables clear of moving or hot engine parts.*

Troubleshooting

Information intended to help you to address or anticipate potential issues are presented in the following manner:

◉ *If NEXIQ WVL2 drivers are installed, the WVL2 Explorer Utility must be exited before proceeding with installation.*

Specialized Text

The following specially formatted text is used to help you to differentiate certain elements discussed within this manual:

- *Emphasis:* Used to draw your attention to particularly important information.

- **FEATURE**: Used to highlight the name of a specific feature.

  Example: "Click on the **Finish** button to continue."

- **Field/Line:** Used to highlight the name of a field or a line of text from a display.

  Example: "A check mark is placed in the check box next to the **Total Fuel Used** parameter."

- Menu Items: Used to highlight a series of menu selections.

  Example: "From the Start menu, select **Programs ▶ NEXIQ ▶ Device Tester ▶ Device Tester**."

- Screen titles: Used to highlight the title of a screen displayed.

  Example: "The **Installation Complete** screen is displayed."

Chapter **2**

Introducing the USB-Link™ 2 Wi-Fi Edition

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 Wi-Fi 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	• 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	Dual band Wi-Fi (802.11 a/b/g/n)
Wired Communication	Automotive A to Mini-B USB cable 13 ft. (4 m) maximum
Vehicle Connector	High Density D-sub 26-pin Male (HD26M)
USB Connector	Latching Mini-B

System Requirements

Be aware of the following system requirements:

Component	Requirement
IBM PC-compatible computer	• 1GHz processor or more • RAM: 256MB or more (512MB recommended) • USB port, version 1.1 or higher • Wi-Fi card
Operating system	• Windows® 7 • Windows® 8 **Note:** USB-Link™ 2 drivers support the Windows® 8 operating system. However, not all OEM PC applications work with Windows® 8.
Wi-Fi wireless network	• Dual band Wi-Fi (802.11a, b, g, or n)

Device Features

The following illustration details the features of the USB-Link™ 2 device.

Figure 2.1 *USB-Link™ 2*

Legend

A—Vehicle Port	D—Wireless LED
B—Power LED	E—Fault LED
C—Data LED	F—USB Port

The following table outlines the features called out in Figure 2.1.

Feature	What It Does
Vehicle Port	Connects the USB-Link™ 2 to a vehicle.
Power LED	Illuminates when the device receives power.
Data LED	Illuminates when the device is receiving data from the vehicle.
Wireless LED	Mini Access Point Mode: • Illuminates solid when a client PC connects to the device. • Off when not connected. Infrastructure Mode: • Stays off when not associated with an Access Point. • Blinks every second when associated with a network but no IP address assigned. • Illuminates solid when successfully assigned an IP address.
Fault LED	Illuminates when a problem is detected.
USB Port	Connects the device to your PC (wired connection).

The Reset Button

If you *have* configured your USB-Link™ 2 device in Infrastructure Mode (using the USB-Link™ 2 Explorer), you can use the Reset button on the bottom of the device to switch from Infrastructure Mode *back* to Mini Access Point Mode (the factory default). Just push and hold the button until all the lights on the front of the device flash, about five (5) seconds.

NOTE:

For detailed information on the USB-Link™ 2 Explorer, see *Using the USB-Link™ 2 Explorer* in Chapter 3 of this manual.

Communication Options

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. 11)*

    or

- A wireless connection to the PC using Wi-Fi *(pg. 12)*

Wired Connection

A USB connection provides several advantages. It's easy to configure; you just plug it in. Also, there's no confusion about which USB-Link™ 2 is connected to the PC (just follow the cable). Finally, a USB connection is not susceptible to radio frequency interference and provides higher communication reliability.

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 2.2 *Automotive A to Mini-B USB Cable*

NOTE:

ℹ For detailed instructions on making a wired connection, refer to *Connect Using a USB Cable*, 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 Wi-Fi to provide wireless communication between the USB-Link™ 2 and your PC.

There are two network options:

- Mini Access Point *(pg. 13)*
- Infrastructure *(pg. 14)*

Wi-Fi performance can be affected by network congestion or radio frequency interference if there are too many other wireless devices in the vicinity.These conditions may result in dropped messages. For this reason, Wireless communication is not recommended for ECU reprogramming (i.e, reflashing).

Mini Access Point Mode (Peer-to-Peer)

The easiest and quickest way to connect your USB-Link™ 2 to your PC is Mini Access Point mode. In Mini Access Point mode (also known as Access Point Emulation mode), the PC communicates directly with the USB-Link™ 2. The USB-Link™ 2 emulates the function of an access point, allowing the PC to connect directly to the USB-Link™ 2, as if it were an access point. When the PC is connected to the USB-Link™ 2 in Mini Access Point mode, neither device is connected to the company network.
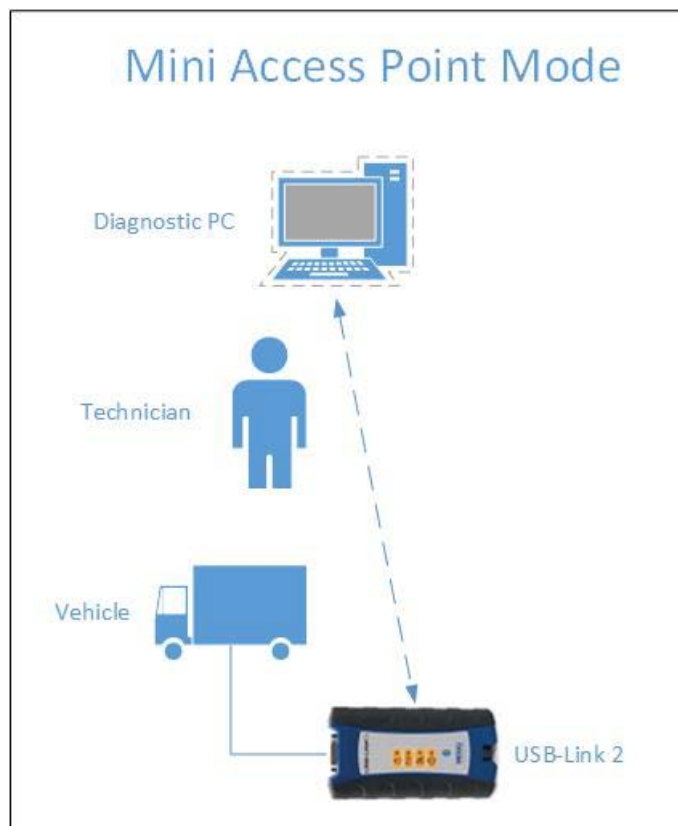
Figure 2.3 *Mini Access Mode*

If you use your PC's internal wireless network card to connect to your company's network and the Internet, you may want to obtain an additional wireless network card for use with the USB-Link™ 2. Otherwise when you connect the USB-Link 2 to your PC using Mini Access Point mode, you will not have access to the Internet until you have finished your session and reconnected to your company's network.

For instructions on connecting the USB-Link™ 2 and your PC using Mini Access Point Mode, see *Connect Using Wi-Fi,* in Chapter 3 of this manual.

Infrastructure Mode (Connecting to your Company's Network)

In Infrastructure mode, your PC communicates with your company computer network through a Wireless Access Point (not included), which acts as a bridge between the wireless network and the wired network. In this mode, the USB-Link™ 2 is configured to communicate with the same access point. All communication between the PC and the USB-Link™ 2 passes through the access point.
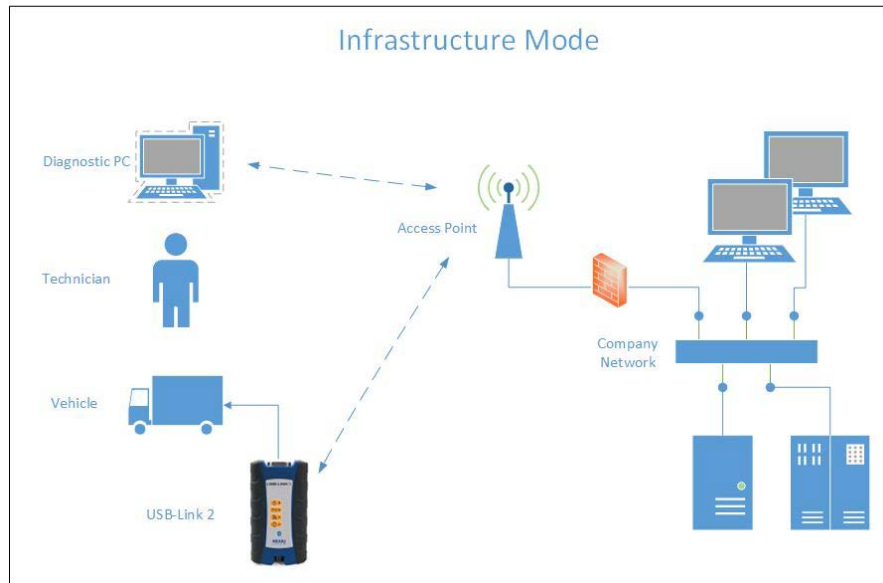
Figure 2.4 *Infrastructure Mode*

NOTE:

The settings for connecting to your company network may differ from one installation to another. To ensure network security, your Information Technology (IT) administrator will need to oversee the installation and specify the appropriate configuration parameters. Your IT administrator should be able to properly configure the USB-Link™ 2 for infrastructure mode, using the USB-Link™ 2 Explorer utility (see Chapter 3 of this manual).

Chapter **3**

Installing the Drivers and Setting Up the Device

This chapter provides instructions for installing NEXIQ™ drivers and utilities, connecting the USB-Link™ 2 to a vehicle, connecting to a wireless network, and testing the connection. It also provides information on using the USB-Link™ 2 Explorer.

Installation Process Outline

Step 1:   Install the USB-Link™ 2 drivers *(pg. 15)*.

Step 2:   Connect the USB-Link™ 2 to the vehicle *(pg. 24)*.

Perform one of the following:

- Connect your PC using a USB cable *(pg. 24)*
- Connect to your PC using Wi-Fi *(pg. 25)*

Step 3:   Test the connection between the USB-Link™ 2 and the vehicle using the NEXIQ™ Device Tester *(pg. 29)*

Step 1: Install the Drivers

Prior to using the USB-Link™ 2, you have to install the necessary USB-Link™ 2 drivers. 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.

To install the drivers on your laptop or PC:

  1 On your laptop or PC, navigate to the website:
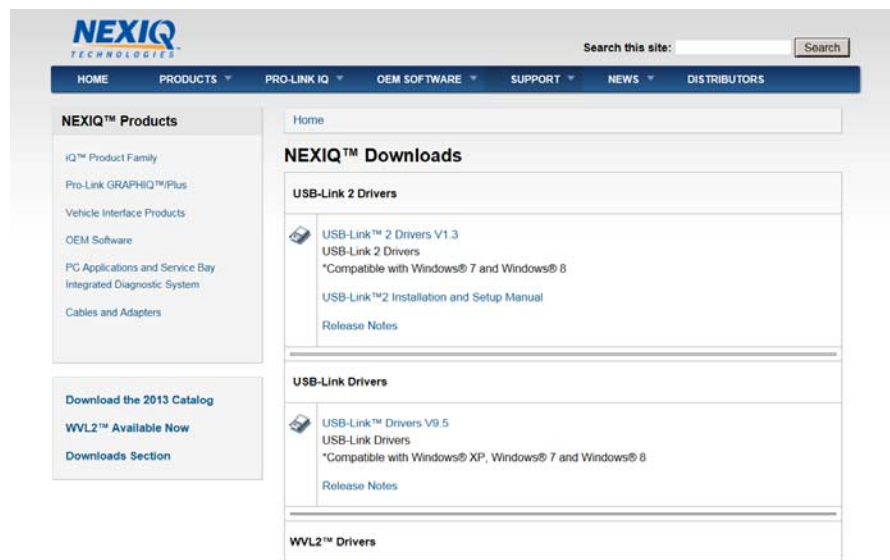
Figure 3.1 *NEXIQ™ Downloads*

  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:

ℹ️ 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.

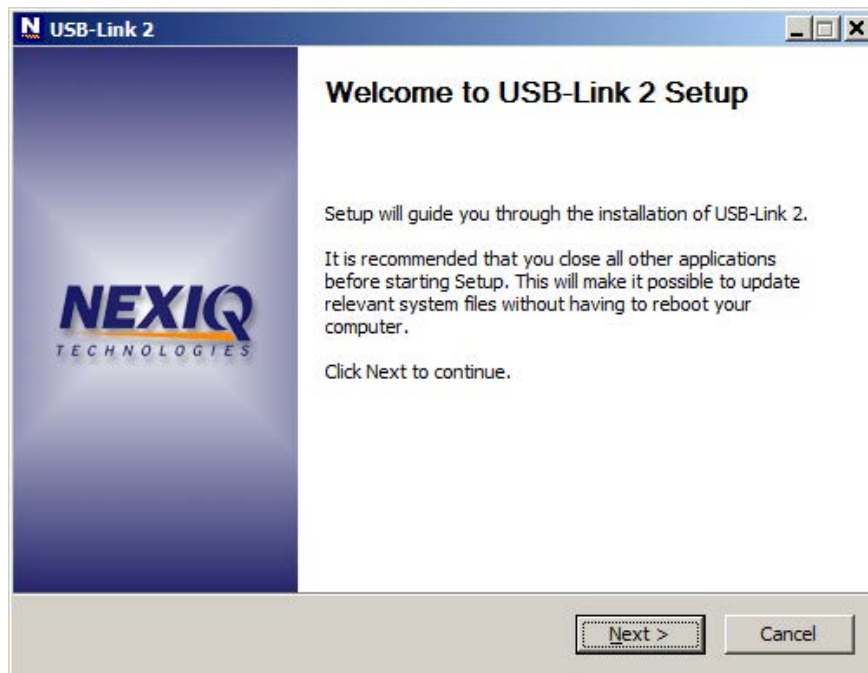The **Welcome to USB-Link 2 Setup** screen is displayed.

Figure 3.2 *Welcome to USB-Link 2 Setup Screen*

7 Carefully read the information displayed on the screen, and follow the recommendations.

8 Click **Next**.

The **License Agreement** screen is displayed.
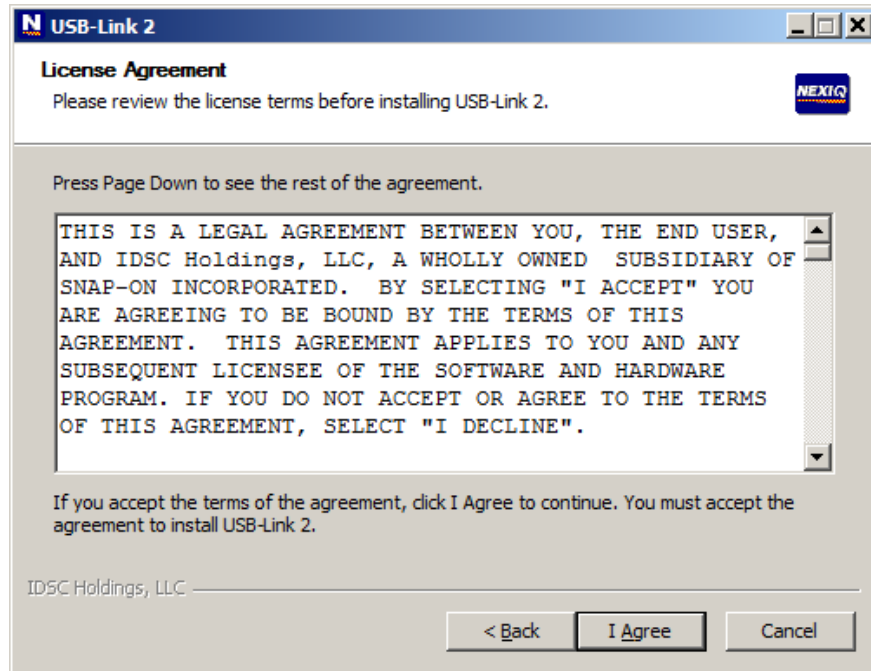
Figure 3.3 *License Agreement Screen*

9 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.

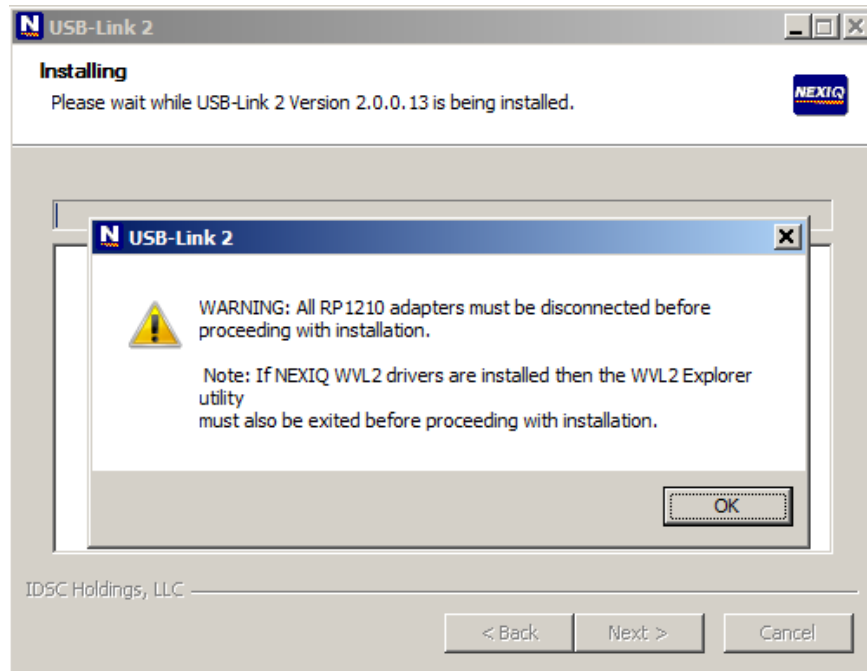The following warning message is displayed.

Figure 3.4 *Warning Message*

10 Carefully read the warning message, and disconnect all RP1210 adapters 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**.

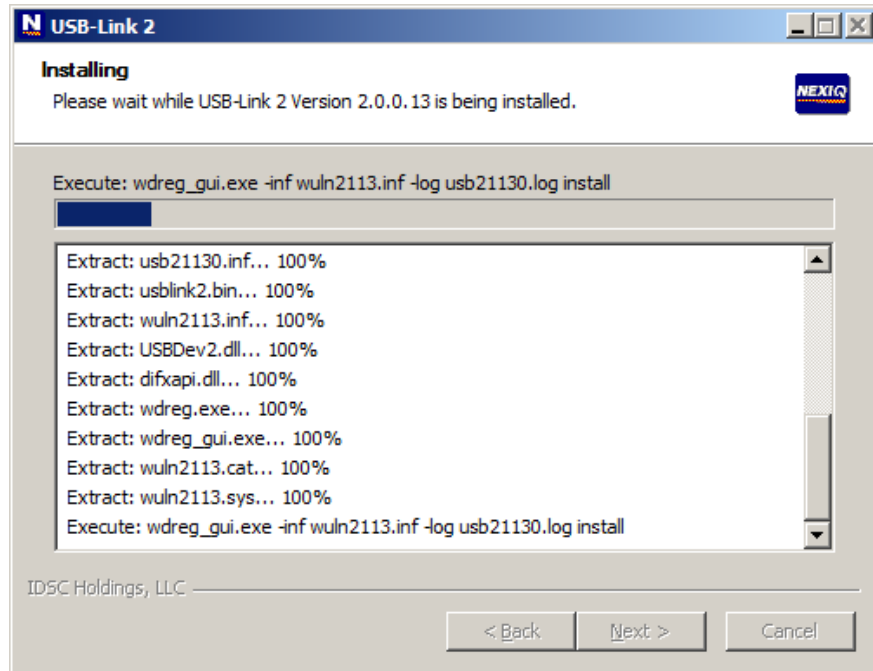The installation begins and the following screen is displayed.

Figure 3.5 *Installation Screen*

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

Figure 3.6 *Windows Security Dialog*

NOTE:

You may want to place a check mark in the **Always trust software from "Jungo LTD"** check box. If you leave it unchecked, this dialog may be displayed more than once.

12 Click **Install** to continue.

13 Wait briefly while the installation continues.
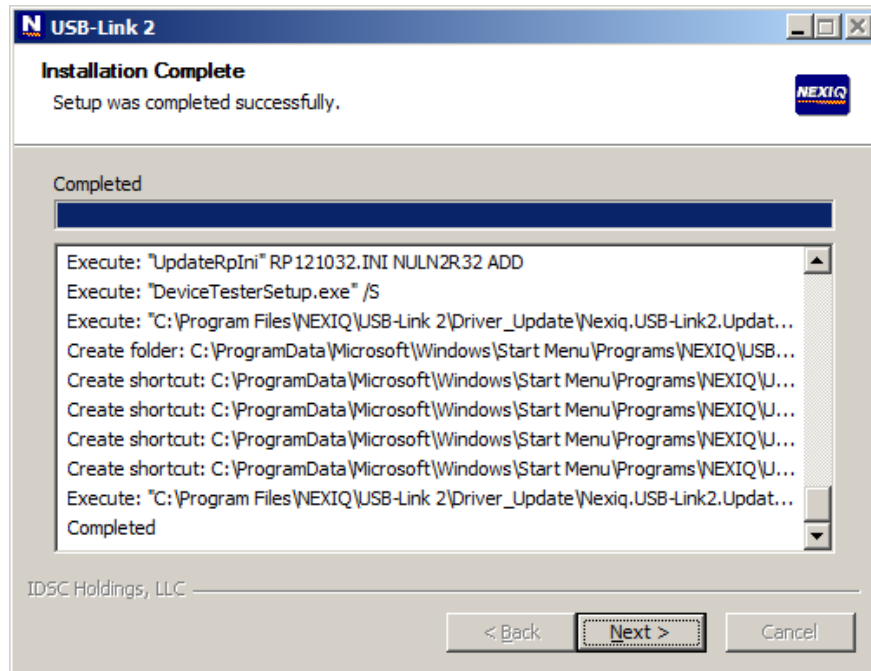
The **Installation Complete** screen is displayed.

Figure 3.7 *Installation Complete Screen*

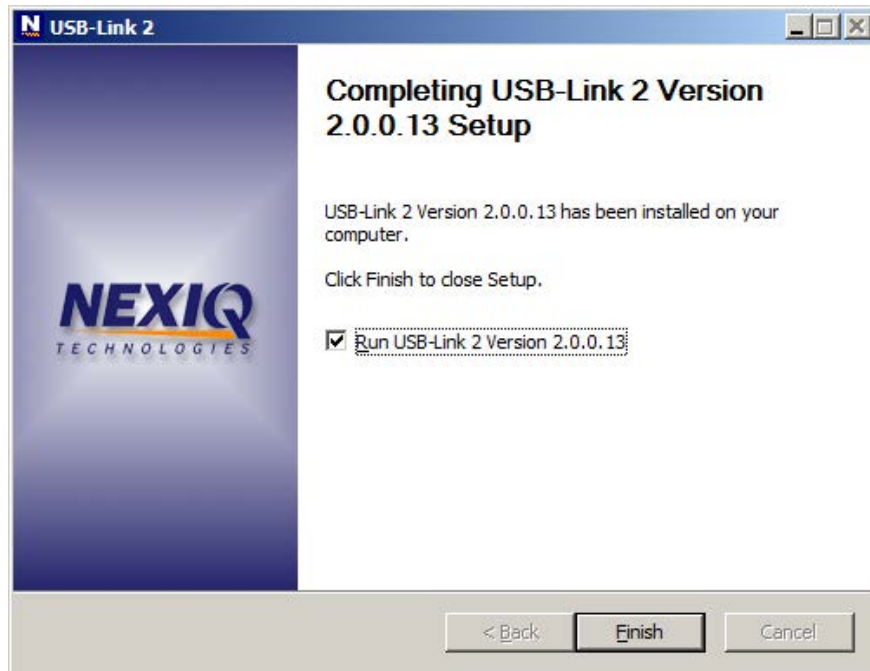**14** Click **Next**.

The following completion screen is displayed.

Figure 3.8 *Completion Screen*

15 Click **Finish**.

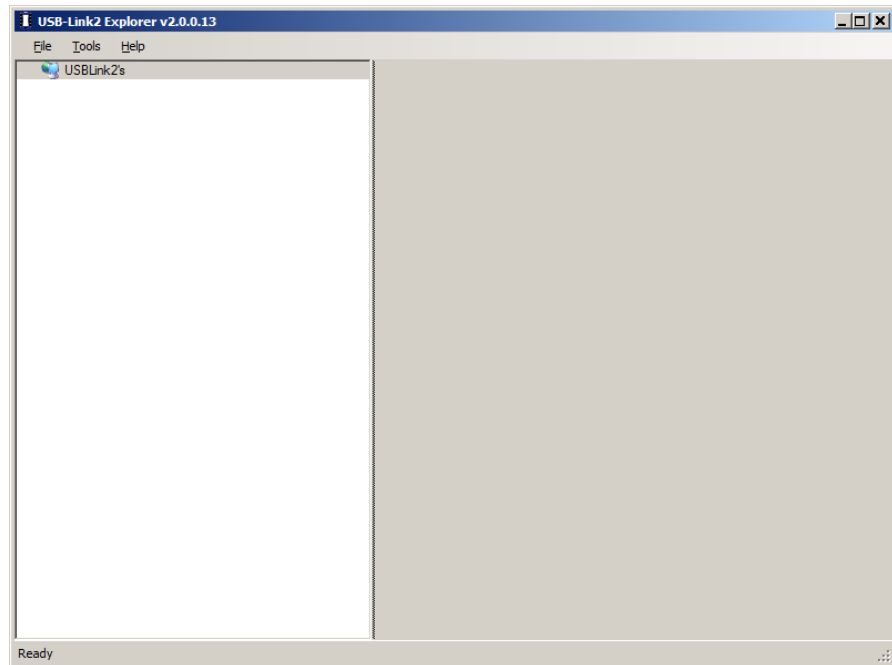The **USB-Link™ 2 Explorer** utility opens.

Figure 3.9 *USB-Link™ 2 Explorer Utility*

16 Move on to ***Step 2: Connect the USB-Link™ 2 to a Vehicle***, next in this manual.

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

Once you have installed the USB-Link™ 2 drivers, you are ready to connect the USB-Link™ 2 to a vehicle using an adapter cable. Any of the following adapters can provide the interface:

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

Next, you connect the USB-Link™ 2 to your PC using one of the following options:

- Using a USB cable *(pg. 24)*
- Using Wi-Fi—a wireless local area network *(pg. 25)*

Connect Using a USB Cable

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

1 Connect the USB cable (i.e., an automotive A to Mini-B 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 If you are making a wired connection, you can move on to ***Step 3: Test the Connection*** *(pg. 29).*

Connect Using Wi-Fi

There are two methods for connecting the USB-Link™ 2 to your PC using Wi-Fi:

- Infrastructure Mode

- Mini Access Point Mode (peer-to-peer)

NOTE:

Because of the numerous configuration variables involved in setting up your network in Infrastructure Mode, please contact your local IT administrator. Our Customer Support specialists cannot assist you in this endeavor.

Mini Access Point Mode

If you use your PC's internal wireless network card to connect to your company's network and the Internet, you may want to obtain an additional wireless network card for use with the USB-Link™ 2. Otherwise when you connect the USB-Link 2 to your PC using Mini Access Point mode, you will not have access to the Internet until you have finished your session and reconnected to your company's network.

To connect the USB-Link™ 2 to your PC using Mini Access Point Mode:

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).

3 If the **Power** LED is not illuminated, turn the vehicle's key to the ON position, leaving the engine Off.

4 Navigate to the **System Tray** on your PC.

Figure 3.10 *Windows® System Tray*

5 Click on the **Network** icon in the System Tray.

Figure 3.11 *Network Selection Screen*

6 Select the **USBLink2_xxx** from the list.

NOTE:

If the USBLink2 is not displayed, make sure you are connected to the vehicle. Also, make sure you are within range (i.e., within 100 ft.). You may need to move your PC closer to the vehicle.
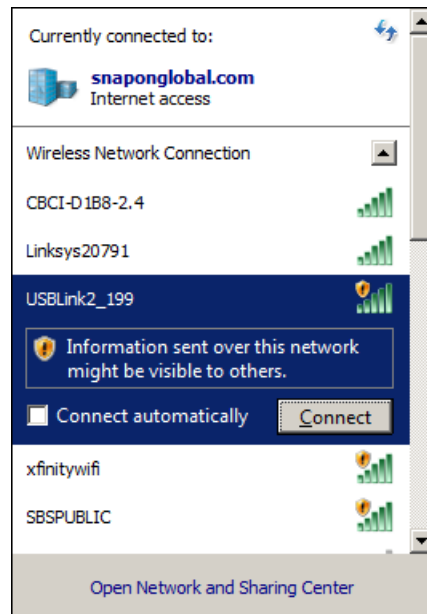
The **USBLink2.xxx** is highlighted.

Figure 3.12 *Selection Highlighted*

7 Click **Connect**.

The connection is made and the device selected is displayed in the **USB-Link™ 2 Explore**r.
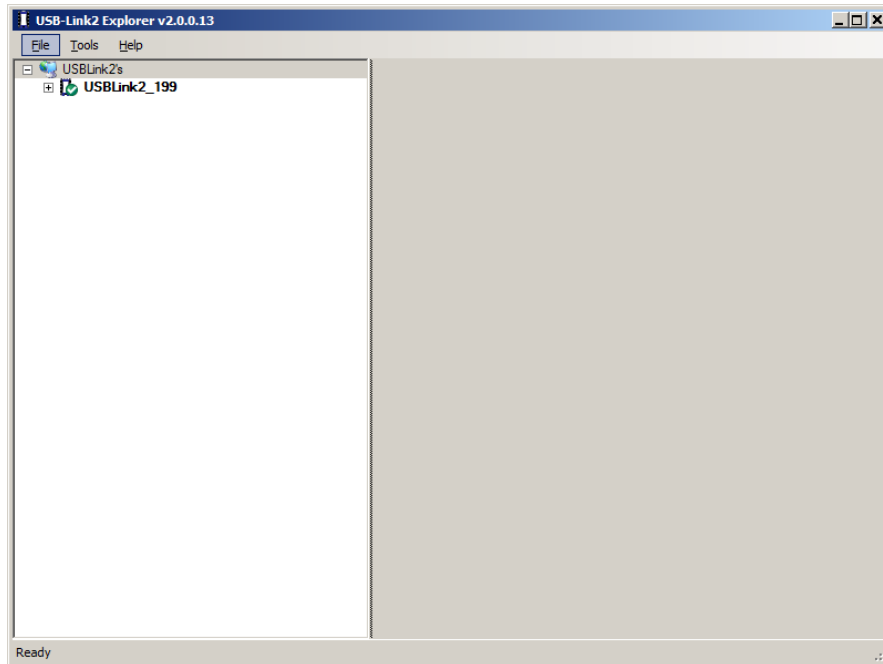

Figure 3.13 *USB-Link™ 2 Explorer*

NOTE:

The USB-Link™ 2 Explorer opened automatically when you installed the USB-Link™ 2 drivers and utilities (see Figure 3.9, on page 23).

For more detailed information on using the USB-Link™ 2 Explorer, see *Using the USB-Link™ 2 Explorer* on page 32 of this chapter.

You now have a wireless connection to the USB-Link™ 2 and the device is ready for use.

Step 3: Test the Connection

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 **All Programs ▶ NEXIQ ▶ Device Tester ▶ Device Tester**.

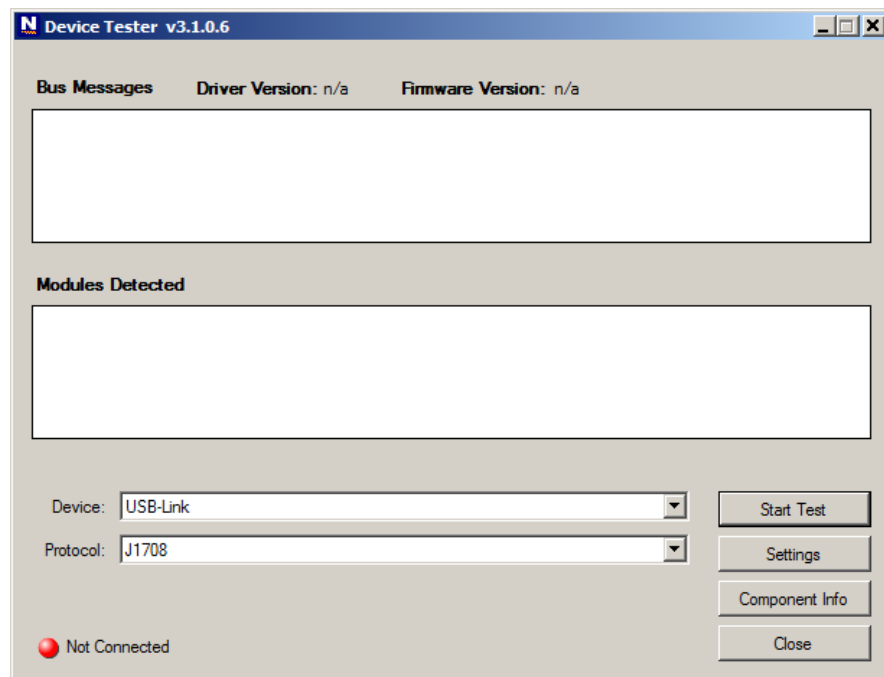   The application is started and the **Device Tester** screen is displayed.

Figure 3.14 *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 WiFi).

   —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, OBDII, etc.).

   —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.
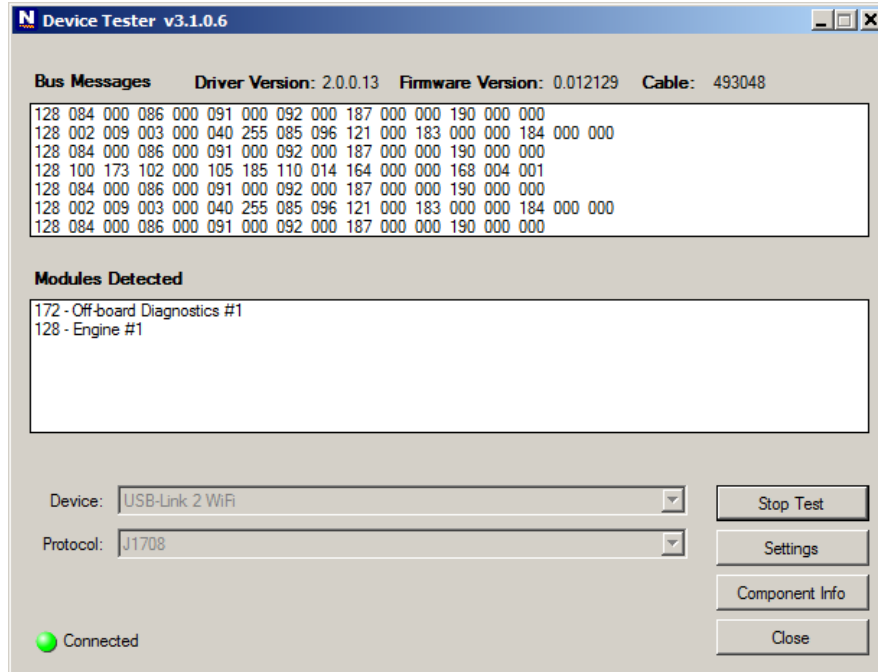

Figure 3.15 *Device Tester Screen, Showing a Status of Connected*

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 Wi-Fi:

- In the **Device** list, make sure that the heading is **USB-Link 2 WiFi** (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.

—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 24 of this manual.

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

Using the USB-Link™ 2 Explorer

The USB-Link™ 2 Explorer utility opened automatically when you installed the USB-Link™ 2 drivers and utilities (see Figure 3.9, on page 23).

To re-open the USB-Link™ 2 Explorer once it has been closed, click on the **Show Hidden Icons** arrow in your PC's System Tray.
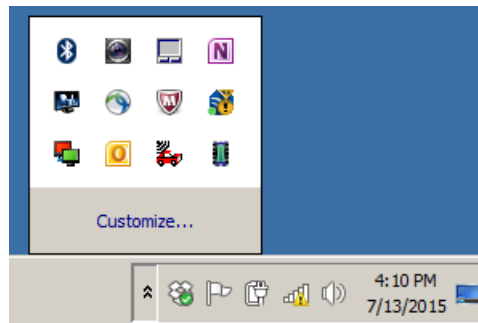

Figure 3.16 *Hidden Icons*

Then, double-click on the USB-Link™ 2 icon ▮ .

NOTE:

ⓘ You can also access the USB-Link™ 2 Explorer from your PC's Start menu. Click **Start** and then select **All Programs** ▶ **NEXIQ** ▶ **USB-Link 2** ▶ **USB-Link 2 Explorer**.
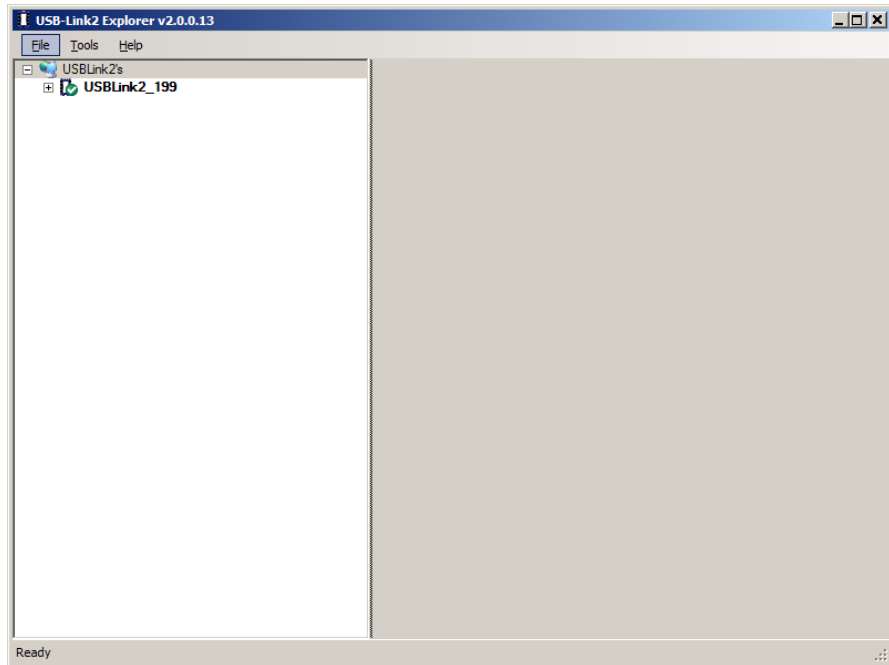
The **USB-Link™ 2 Explorer** opens.

Figure 3.17 *USB-Link™ 2 Explorer*

The following menu options are provided:

- File *(pg. 35)*

- Tools *(pg. 36)*

- Help *(pg. 39)*

Each menu option includes a number of features. Each of the menu options are discussed in the following sub-sections.

When you click on a USB-Link™ 2 in the list in the left pane, the Configuration tab is displayed (Figure 3.18).

The Configuration Tab

The **Configuration** tab provides the following information:

- Device Name and MAC Address

- Wireless Settings

- Internet Protocol (TCP/IP) Settings

This information can be useful when troubleshooting network connection problems. You also use the Configuration tab when switching between the two wireless communication modes:

- Mini Access Point

- Infrastructure

To access the Configuration tab:

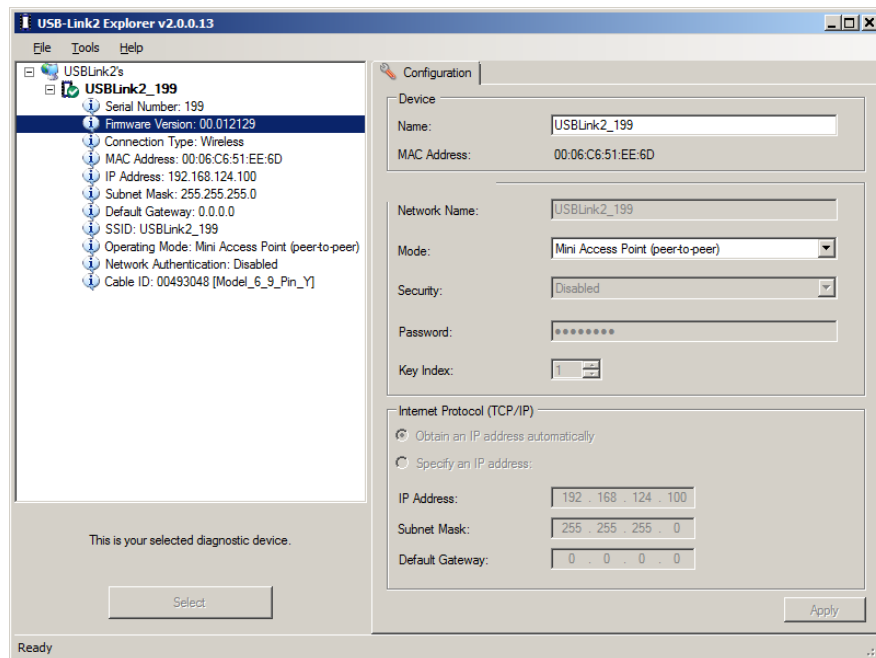**1** Click on a **USB-Link2.xxx** in the list in the left pane of the Explorer.

Figure 3.18 *Configuration Tab*

Click on the **Mode** drop-down menu to switch between Mini Access Point and Infrastructure modes.

You can also use the Reset button on the bottom of the USB-Link™ 2 to switch from Infrastructure Mode *back* to Mini Access Point Mode (the factory default). Just push and hold the button until all the lights on the front of the device flash, about five (5) seconds.

NOTE:

Because of the numerous configuration variables involved in setting up your network in Infrastructure Mode, please contact your local IT administrator.

The File Menu

The File menu has one feature, Exit. You use the Exit feature to close the USB-Link™ 2 Explorer.

To exit the USB-Link™ 2 Explorer:

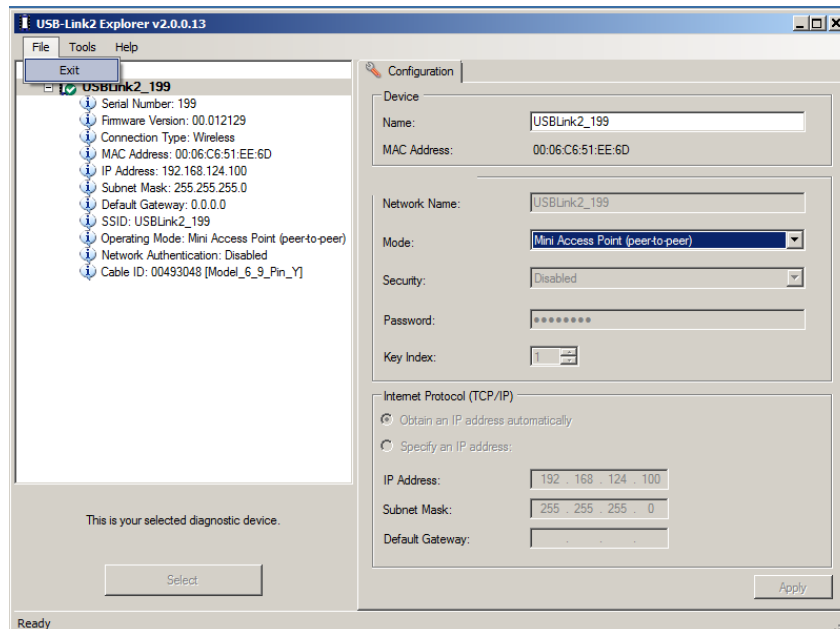**1** Select **File** from the USB-Link™ 2 Explorer menu bar.

Figure 3.19 *Exit Selected*

2 Select **Exit**.

The **USB-Link™ 2 Explorer** closes.

The Tools Menu

The Tools menu provides the following features:

- Ping
- Options

Ping

The Ping feature uses the PING protocol to check for the presence of a device on the network.

To check for a device:

1 Select **Tools** from the USB-Link™ 2 Explorer menu bar.
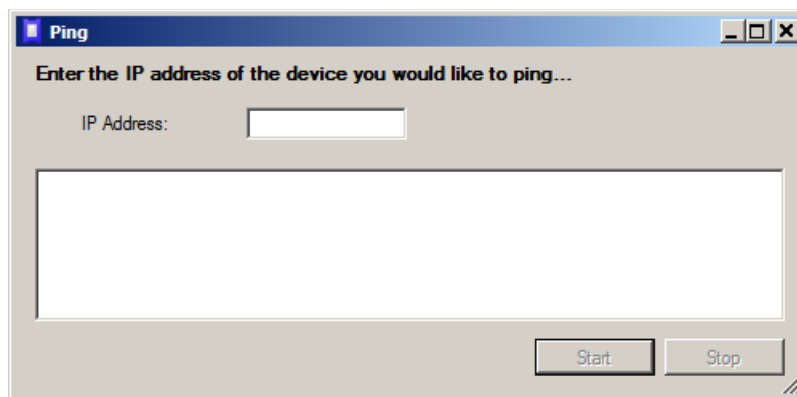
2 Select **Ping**.

Figure 3.20 *Ping Dialog Box*

3 Enter the IP address of the device you want to locate (e.g., 192.168.123.107).

4 Click **Start**.

The USB-Link™ 2 Explorer searches for the device and, if found, displays the reply.

5 Click **Stop**.

6 Click the **Close** button on the dialog box.

Options

The Options feature provides the following features, which are presented as check boxes:

- Start USBLink2 Explorer when Windows starts *(pg. 37)*
- Show New USBLink2 Notification *(pg. 38)*

Start USBLink2 Explorer when Windows Starts

You use this feature to manage when the USB-Link™ 2 Explorer opens.

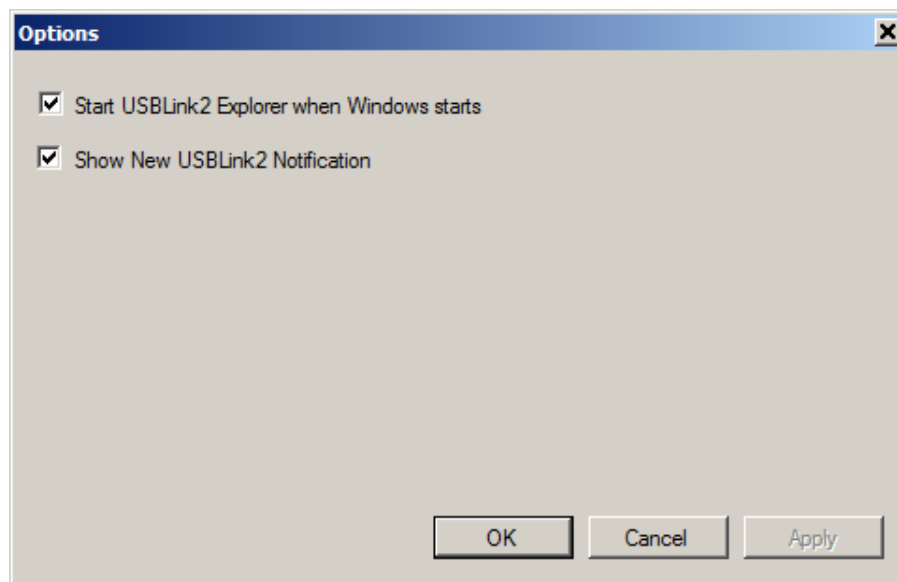The default is to automatically open the USB-Link™ 2 Explorer when Windows starts.

Figure 3.21 *Options Menu*

To change the default, click on the check box to remove the check mark. Then click **OK**.

Show New USBLink2 Notification

You use this feature to manage when to display the New USBLink2 notification message box.

Figure 3.22 *Notification Box*

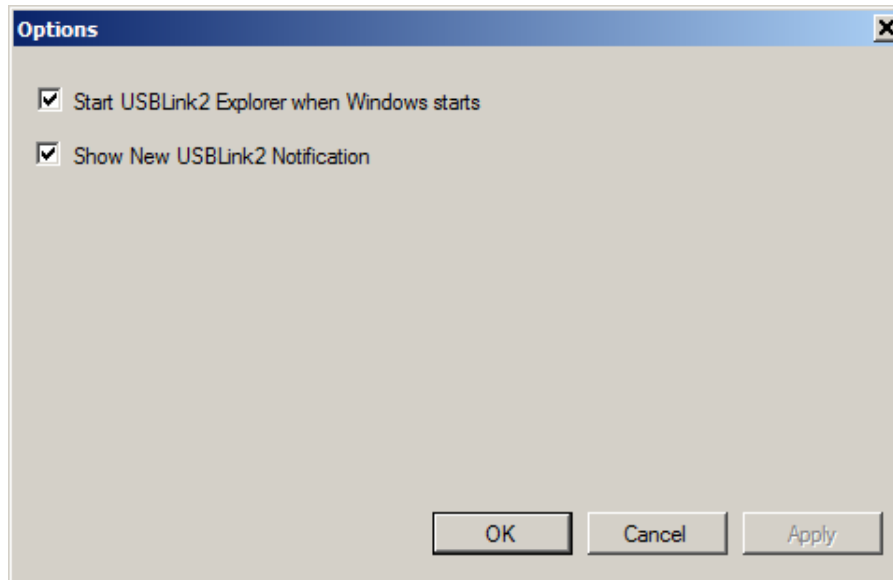The default is to display the notification message box whenever a new USB-Link™ 2 is detected.

Figure 3.23 *Options Menu*

To change the default, click the box to remove the check mark. Then click **OK**.

The Help Menu

The Help menu has one feature, About. You use the About feature to display information about the USB-Link™ 2 Explorer.

To access the Help menu:

1 Select **Help** from the USB-Link™ 2 Explorer menu bar.
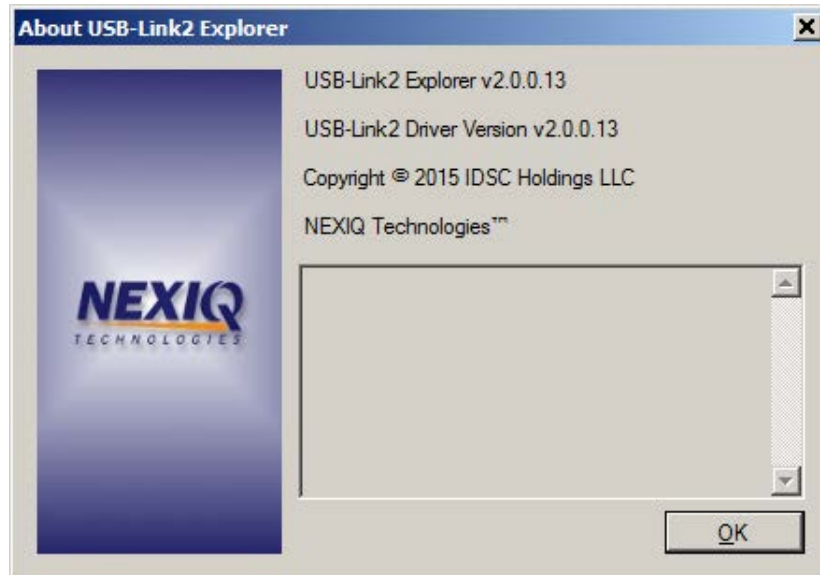
2 Select **About**.

Figure 3.24 *About USB-Link 2 Explorer*

3 When you have finished reviewing the information, click **OK** to close the dialog box.