MERCURY
FUNCTIONAL TESTING™
FOR WIRELESS

VERSION 8.3

Installation Guide

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Mercury Functional Testing for Wireless

Installation Guide

Version 8.3

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Mercury Functional Testing for Wireless Installation Guide, Version 8.3

If you have any comments or suggestions regarding this document, please send them via e-mail to documentation@mercury.com.

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Contents

Introduction

This document describes how to:

1. Prepare a computer to run Mercury Functional Testing for Wireless and connect to Symbian OS and Windows Mobile Smartphone devices

2. Install Mercury Functional Testing for Wireless software on a computer

3. Install Mercury Functional Testing for Wireless software on Smartphone devices

Requirements

Computer Hardware and Software	Mercury Functional Testing for Wireless requires Microsoft Windows 2000 or Microsoft Windows XP Professional. Any previous version of this software must be removed from the system. This document includes procedures for removing this software. You must log in using an account with administrator rights to run the Mercury Functional Testing for Wireless installation. The computer needs 20Mb of available disk space for the Mercury Functional Testing for Wireless installation. Further disk space may be required for event logging and screen captures. The computer needs a 16Mb video adaptor, a minimum resolution of 1280x1084, and 32 bit color. Do not use large fonts.
Connectivity	Mercury Functional Testing for Wireless supports Bluetooth, Infrared, USB, and serial cable connections. Mercury recommends that you use Bluetooth. Mercury has tested extensively with TDK Systems Bluetooth, which uses the WIDCOMM stack.
Smartphone devices	Mercury Functional Testing for Wireless currently supports the following: **Symbian OS** • S60 2.6 – Nokia 6260, 6630, 6680, 6681, 6670, 3230, 7610 • S60 3.0 – Nokia E50 E60, E61, E62, E70 N80 N91 • UIQ 3.0 – Sony Ericsson P990, M600, W950 **Windows Mobile** • 2003 2nd Edition – Qtek 2020i • Mobile 5.0 – HP 6915 Other devices within the same families supported may be able to be configured to work. Extra effort is required in defining their layouts and identification information. This guide explains how to install agent software on a device so that Mercury Functional Testing for Wireless can control it, and how to remove any previous version. **For the purposes of this guide, please use a Series 60 device with Bluetooth enabled and visible to other devices.**

If you install Mercury QuickTest Professional to use in conjunction with Mercury Functional Testing for Wireless, then the resource requirements of the testing suite are additional to those of Mercury Functional Testing for Wireless.

If you want to test a Smartphone model that is not currently supported, contact your Mercury Functional Testing for Wireless representative for assistance.

Preparing a Computer

Before you install Mercury Functional Testing for Wireless software, Mercury recommends that you complete the following preparations:

1. Uninstall any previous version of this software. Previous versions could have been installed in two ways:

    a. As a standalone installation

    b. As part of a Smartphone computer suite that bundles this software

    Either way, you need to uninstall any previous version.

2. Set up one or more types of network connectivity to enable Mercury Functional Testing for Wireless to detect and control Smartphone devices.

The following sections describe these preparations.

Uninstalling Previous Versions of this Software

You must remove any previous version of this software from the computer that you want to use for the new version of Mercury Functional Testing for Wireless, as follows:

1. Login to an account with administrator rights.

2. Look for the m-Router icon ▦ on the desktop toolbar near the clock.

3. If the icon is present, right-click on it and select **Exit and Shutdown** from the popup menu.
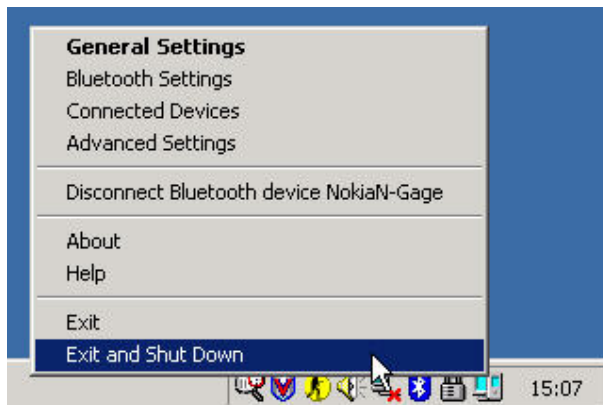
    A confirmation dialog box appears.

4. Select **Yes** to confirm that you want to stop m-Router.

5. Go to **Start** > **Settings** > **Control Panel** > **Add/Remove Programs** and look at the list of currently installed programs for computer suites from Smartphone manufacturers.

6. If there are any Smartphone computer suites on the computer, remove them all.

   The last computer suite that you remove should remove all the software automatically.

7. Look again at the list of currently installed programs to see whether any of the following programs remain:

   a. Mercury Functional Testing for Wireless

   b. mrix

   c. m-Router

8. Remove any of the above programs that remain.

9. If prompted to restart the computer, do so.

Setting Up Network Connectivity

Mercury Functional Testing for Wireless supports a range of network connectivity options to enable it to connect to Smartphone devices and test them. Mercury Functional Testing for Wireless can use multiple connectivity types simultaneously. You need to decide which connectivity option(s) you want to use, and prepare the chosen computer accordingly.

Mercury Functional Testing for Wireless supports Bluetooth, Infrared, USB, and Serial cable connectivity. The following sections provide guidance and recommendations for setting up network connectivity.

For all connectivity options, Mercury Functional Testing for Wireless uses the underlying m-Router software to detect devices and manage connections. If you have any problems connecting to devices, you can check the m-Router configuration to ensure that the relevant connectivity type is enabled, as follows:

1. Right-click on the m-Router icon in the taskbar.

2. Select **Advanced Settings** from the popup menu.

3. On the **Advanced Settings** tab, check that the appropriate connectivity methods are enabled, for example:
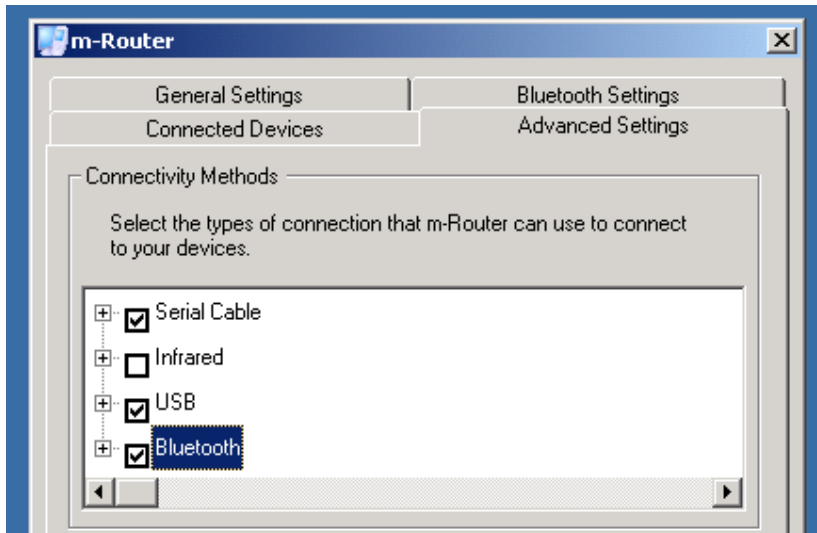
Note: The list of connectivity methods in the Advanced Settings tab is not always complete, depending on whether m-Router can detect supported implementations. For example, when you connect a device to Mercury Functional Testing for Wireless using USB for the first time, Windows prompts you to install drivers. If the USB drivers are not supported by m-Router, then the USB option does not appear in the Advanced Settings tab. Some Smartphone devices, such as the Nokia N-Gage, use unsupported USB implementations. When you install supported drivers, the USB option appears in the tab.

Setting Up Bluetooth Connectivity on Mercury Functional Testing for Wireless

Mercury recommends Bluetooth because it provides responsive connectivity, and does not require line-of-sight or physical connections between the Mercury Functional Testing for Wireless system and the devices it tests. Mercury has performed comprehensive testing with TDK Systems Bluetooth, which uses the WIDCOMM protocol stack.

To set up Bluetooth connectivity on Mercury Functional Testing for Wireless:

- Set up Bluetooth serial ports to enable testing.

- Pair the Mercury Functional Testing for Wireless system with the devices you want to test.

- Optionally, you can configure Bluetooth discovery so that Mercury Functional Testing for Wireless only displays the devices that you want to test.

Setting Up Bluetooth Serial Ports

Using TDK Systems Bluetooth, complete the following procedure. Procedures for other Bluetooth implementations will vary.

1. Right-click the Bluetooth icon on the desktop taskbar, and select **Advanced Configuration**.
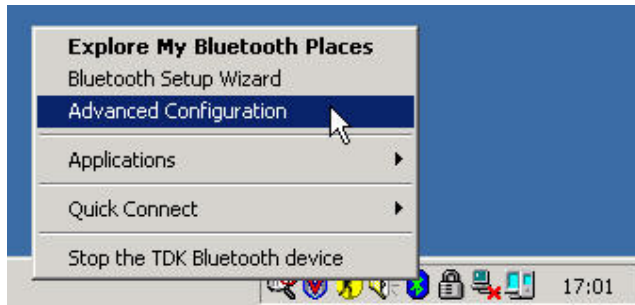
2. Go to the **Local Services** tab of the configuration dialog box.

3. Select **Bluetooth Serial Port** from the list of services, and click **Properties**....
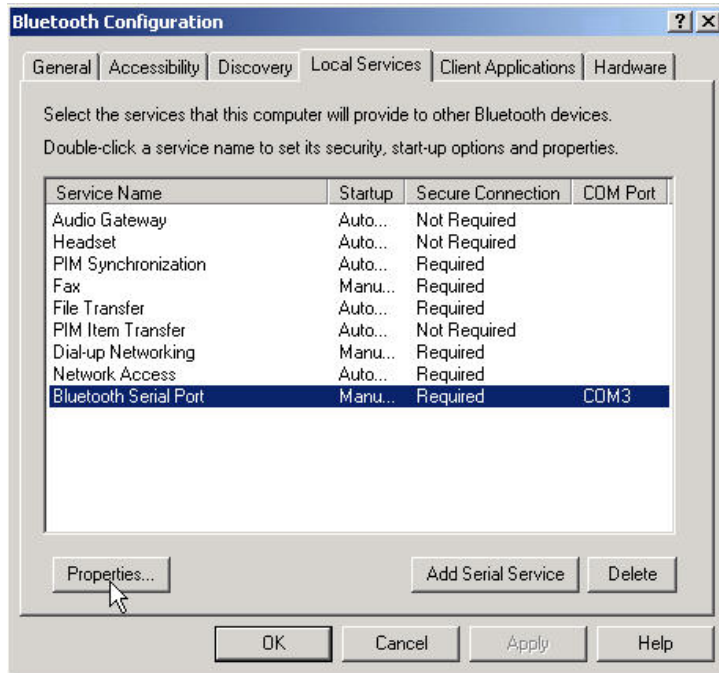
4. On the Properties dialog box, make sure that the **Startup Automatically** option is **not** selected.
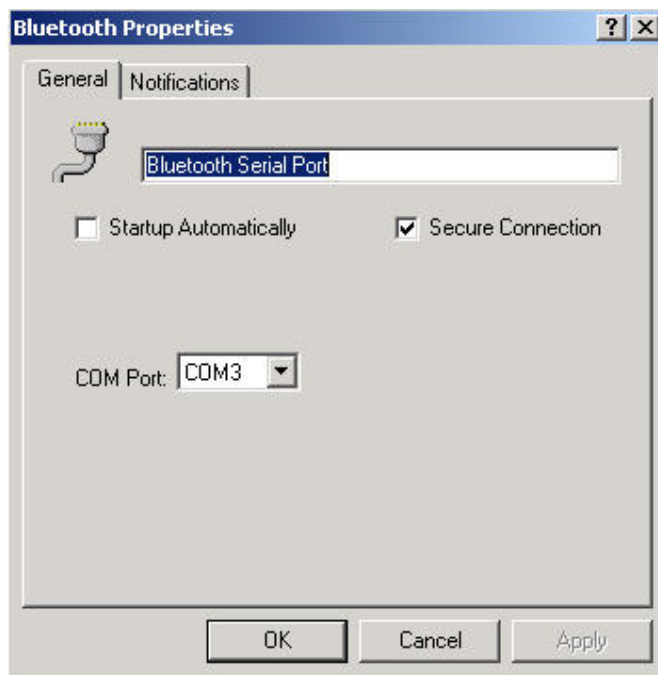
5. Click **OK** to save the properties.

6. Click **OK** on the Configuration dialog box.

If the **Startup Automatically** option is selected when Mercury Functional Testing for Wireless runs, Mercury Functional Testing for Wireless will prompt you for permission to change the setting to manual, and then ask you to reboot your computer. Mercury Functional Testing for Wireless cannot handle connections with devices correctly unless the **Startup Automatically** option is cleared.

To test multiple Bluetooth devices, set up multiple serial ports as follows:

1. Go to the Bluetooth **Local Services** tab.

2. Click **Add Serial Service**. Windows automatically installs some additional software.

3. The **Bluetooth Properties** dialog box appears, displaying the name of a new Bluetooth Serial Port.

4. Make sure that the **Startup Automatically** option is not selected, and click **OK**.

5. Go to the **Client Applications** tab.

   a. Click **Add COM Port**. Windows may take a few seconds to install some software.

   b. When the **Bluetooth Properties** dialog box appears, click **OK**.

6. Repeat this procedure to create multiple Bluetooth serial ports.

Pairing Mercury Functional Testing for Wireless with Devices

Mercury Functional Testing for Wireless needs to be paired with the Bluetooth devices that you want to test. You can set up pairing at any time, as follows:

1. Use Windows Explorer to explore **My Bluetooth Places** to find and select the Smartphone with which you want to pair.
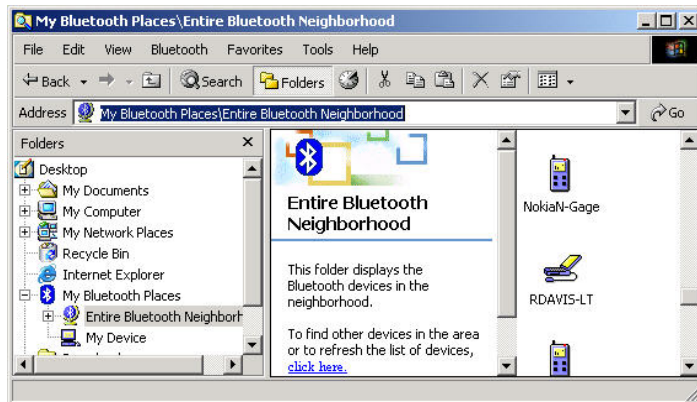
2. Right-click on the device, and select **Pair Device** from the popup menu.

3. The Bluetooth PIN Code Request dialog box appears. Specify a PIN code and click **OK**.

Bluetooth PIN Code Request

Device Name: NokiaN-Gage

Before a connection can be established, this computer and the device above must be "paired."
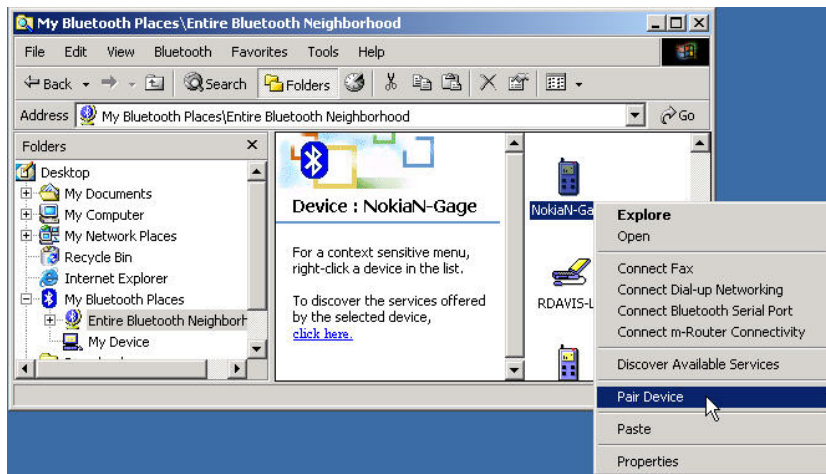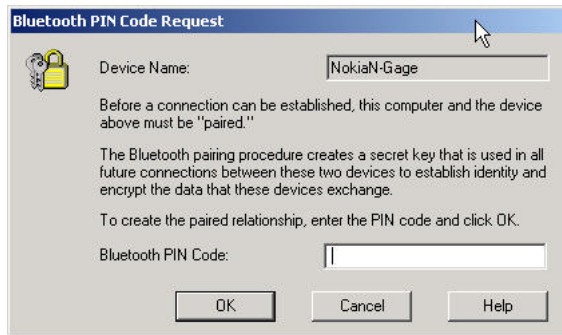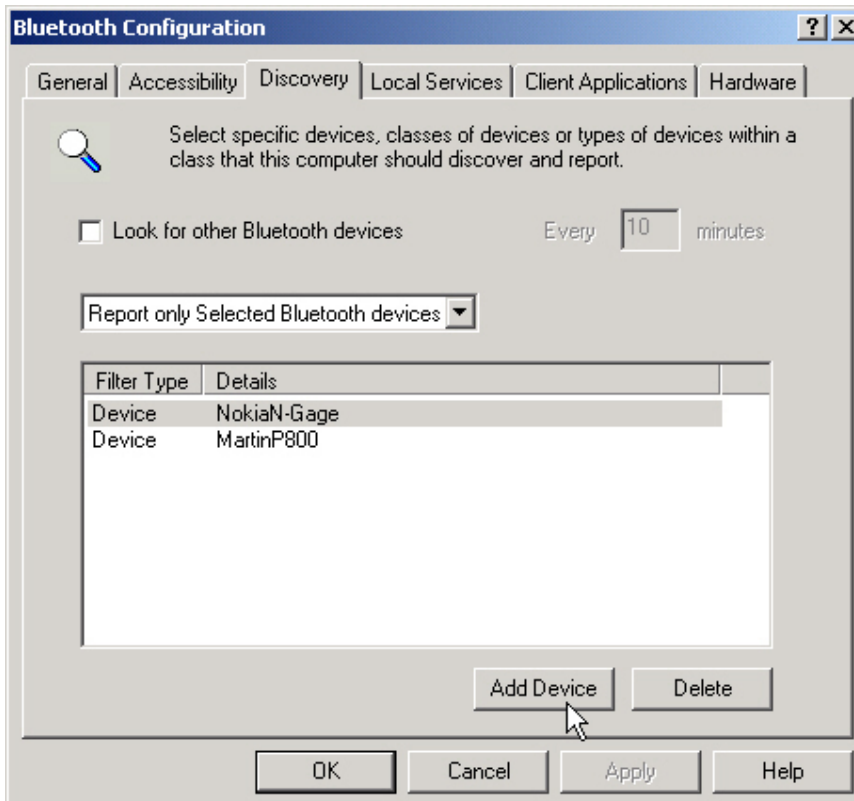
The Bluetooth pairing procedure creates a secret key that is used in all future connections between these two devices to establish identity and encrypt the data that these devices exchange.

To create the paired relationship, enter the PIN code and click OK.

Bluetooth PIN Code: [   ]

[OK] [Cancel] [Help]

4. The device prompts you to specify the PIN code too. Enter the same PIN code and select **OK**.

Bluetooth pairs Mercury Functional Testing for Wireless and the Smartphone device.

Configuring Bluetooth Discovery (Optional)

You can configure the Bluetooth discovery mechanism so that Mercury Functional Testing for Wireless displays only devices that you want to test, or the type of device you want to test, as follows:

1. Go to the Bluetooth **Discovery** tab on the **Advanced Configuration** dialog box.

Bluetooth Configuration

General | Accessibility | Discovery | Local Services | Client Applications | Hardware

Select specific devices, classes of devices or types of devices within a class that this computer should discover and report.

☐ Look for other Bluetooth devices   Every [10] minutes

[Report only Selected Bluetooth devices ▼]

Filter Type	Details
Device	NokiaN-Gage
Device	MartinP800

[Add Device] [Delete]

[OK] [Cancel] [Apply] [Help]

2. Clear the **Look for other Bluetooth Devices** check box.

3. Select the option to **Report only Selected Bluetooth devices**.

4. Use the **Add Device** button access the **Discoverable Devices** dialog box and select the devices that you want to test. Alternatively, use the dialog box to specify that you want to detect all phones.

5. When you have made your selection, click **OK**.

Mercury Functional Testing for Wireless will only discover the devices or device type you selected. You can return to the **Discovery** tab at any time to amend the list of devices.

Note: You also need to do some Bluetooth preparation on the Smartphone device.

Setting Up Infrared Connectivity on Mercury Functional Testing for Wireless

Mercury Functional Testing for Wireless supports Infrared connectivity, but you might find it inconvenient that Infrared connections require a clear line of sight between Mercury Functional Testing for Wireless and each of the devices it tests.

You can enable Infrared connectivity, if appropriate, using the procedures provided with your system. Infrared connectivity requires no special configuration for Mercury Functional Testing for Wireless. By default, the underlying m-Router software is enabled for Infrared.

If Mercury Functional Testing for Wireless does not detect Infrared devices, right-click on the m-Router icon in the taskbar, select **Advanced Settings**, and ensure that the Infrared option is enabled. Then refresh the **Known Devices** list in Mercury Functional Testing for Wireless.

Setting Up USB Connectivity on Mercury Functional Testing for Wireless

Mercury Functional Testing for Wireless supports USB connectivity, but Mercury testing has found it to be less reliable and less responsive than Bluetooth. You also require cables that might not be available to you.

There are no special setup tasks for Mercury Functional Testing for Wireless, but when you connect a particular type of device for the first time using USB, Windows will prompt you to install the necessary drivers. This is described in Setting up USB Connectivity for a Device.

If a USB device does not appear in Mercury Functional Testing for Wireless automatically, right-click on the m-Router icon in the taskbar, select **Advanced Settings**, and ensure that the USB option is enabled. Then refresh the **Known Devices** list in Mercury Functional Testing for Wireless.

Note: It is advisable to right-click on the m-Router icon in the taskbar and select **Exit and Shutdown** before installing USB drivers, as m-Router will not detect them automatically if you install them while m-Router is running.

Setting Up Serial Cable Connectivity on Mercury Functional Testing for Wireless

Mercury Functional Testing for Wireless supports Serial cable connectivity, but Mercury testing has found it to be less responsive than Bluetooth. You also require cables that might not be available to you.

If you want to use a serial cable connection, you need to:

1. Right-click on the m-Router icon in the taskbar.

2. Select **Advanced Settings** from the popup menu.

3. On the **Advanced Settings** tab, make sure that the **Serial Cable** option is enabled.

4. Click + to expand the **Serial Cable** option, and select the physical COM port to which you will connect the device you want to test.

5. Click **OK** to save the changes.

If a device does not appear in Mercury Functional Testing for Wireless automatically, right-click on the m-Router icon 🖥 in the taskbar, select **Advanced Settings**, and ensure that the above configuration is enabled. Then refresh the **Known Devices** list in Mercury Functional Testing for Wireless.

Installing Mercury Functional Testing for Wireless Software on a Computer

This section describes how to install Mercury Functional Testing for Wireless software on a computer that meets its system requirements and has been correctly prepared.
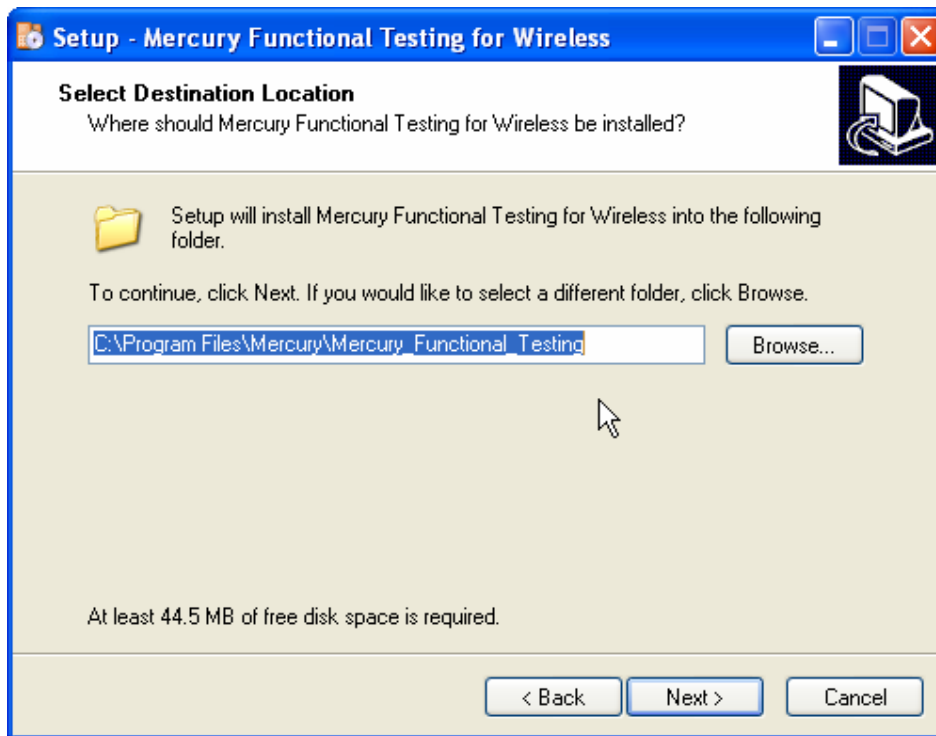
Mercury Functional Testing for Wireless software is delivered on CD or as a file that you can download from a site provided by your Mercury Functional Testing for Wireless representative.

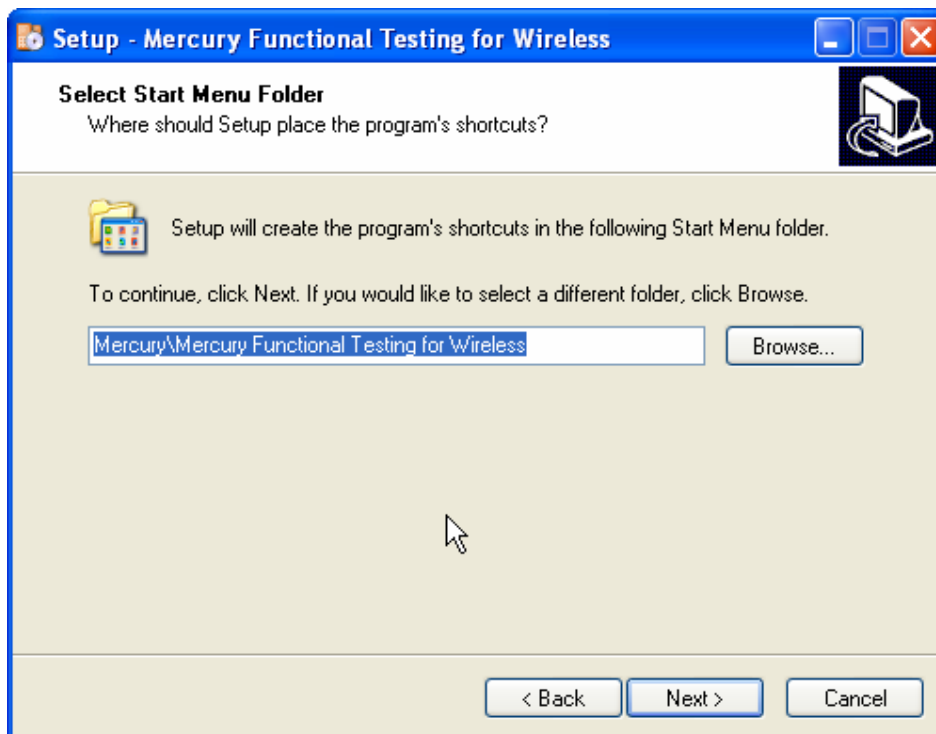Install Mercury Functional Testing for Wireless as follows:

1. Login to an account with administrator rights.

2. Run the Mercury Functional Testing for Wireless installation procedure.

    a. If you have a Mercury Functional Testing for Wireless software CD, put it into your CD drive and wait a few seconds for the Mercury Functional Testing for Wireless installation procedure to start automatically. If it does not, use Windows Explorer to browse the CD and run **setup.exe**.

    b. If your Mercury Functional Testing for Wireless representative provides a download site, browse to that site, download the Mercury Functional Testing for Wireless file, and then run it.

3. The Mercury Functional Testing for Wireless installation begins.

4. Click **Next**. The license agreement screen is displayed.
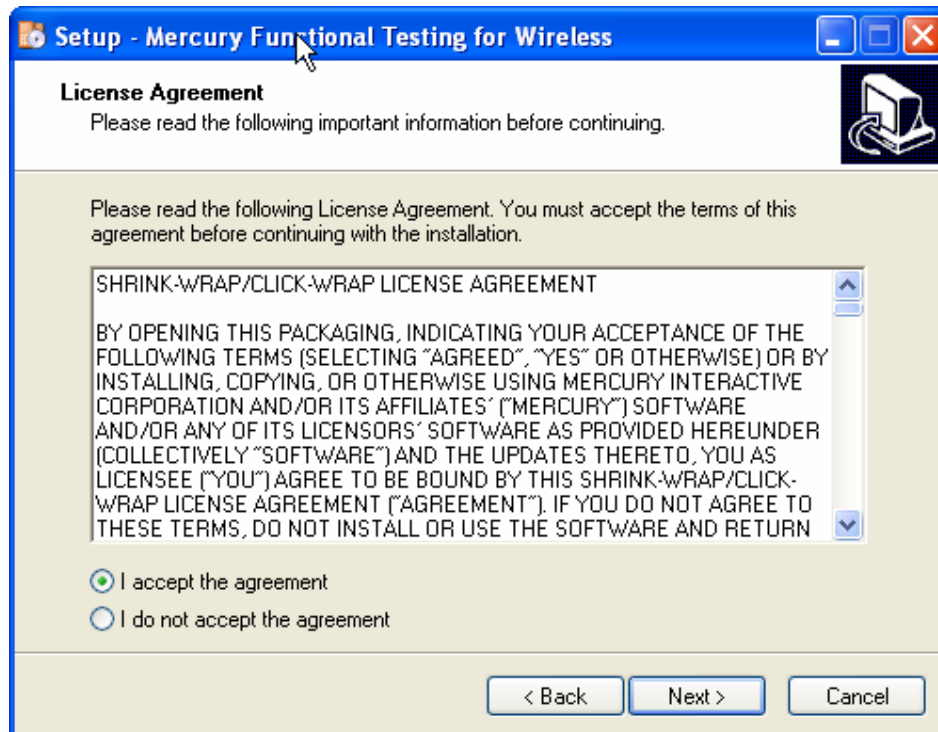
5. Select **I accept the agreement** and click **Next**. If you do not accept, the installation ends.

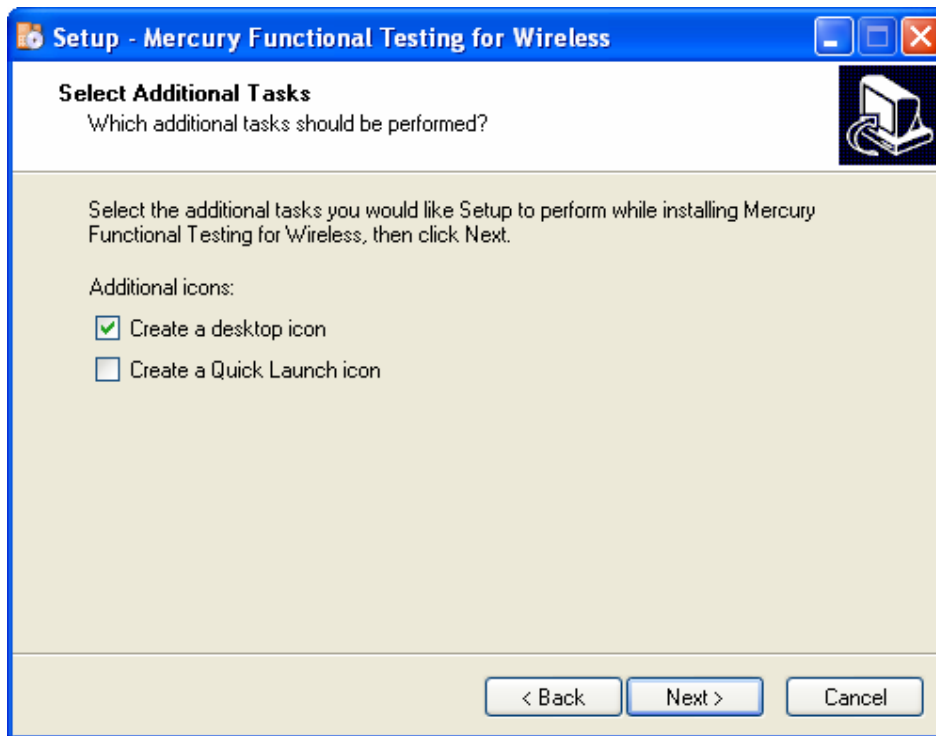   The destination location screen is displayed.

6. Select a folder, or accept the default, and click **Next**. The Start Menu screen is displayed.

7. Select a folder for the Mercury Functional Testing for Wireless shortcuts, or accept the default, and click **Next**. The additional tasks screen is displayed.

8. Select the Mercury Functional Testing for Wireless shortcuts you want and click **Next**.

   The installation settings summary screen is displayed.
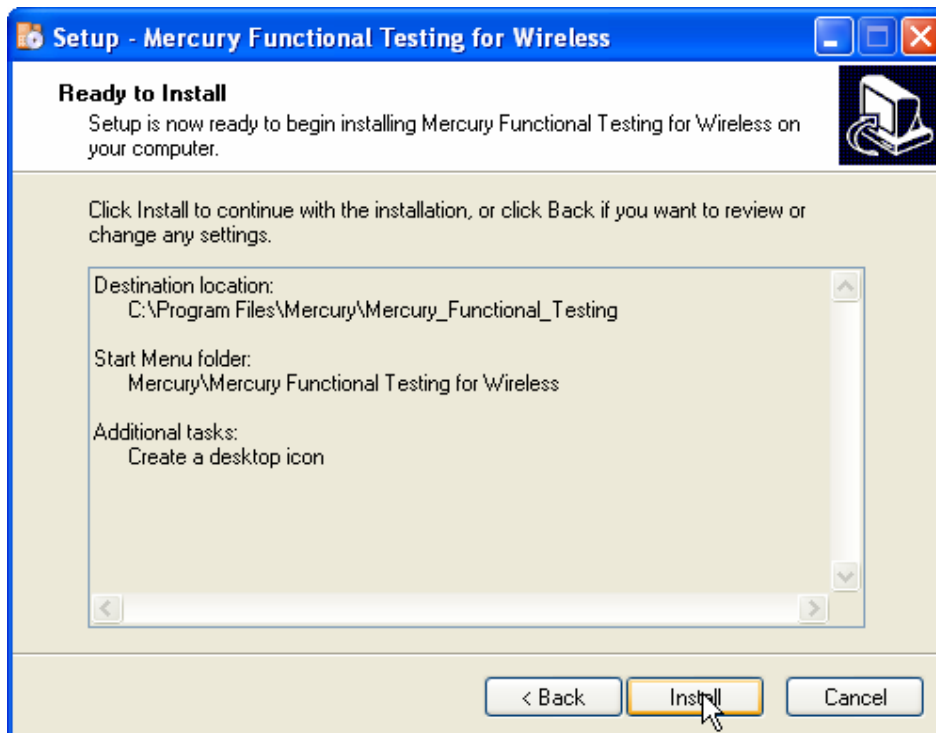
9. If you want to change any settings, click **Back** to return to the relevant screen and make the changes. If the settings are correct, click **Install**. The installation progress screen is displayed.
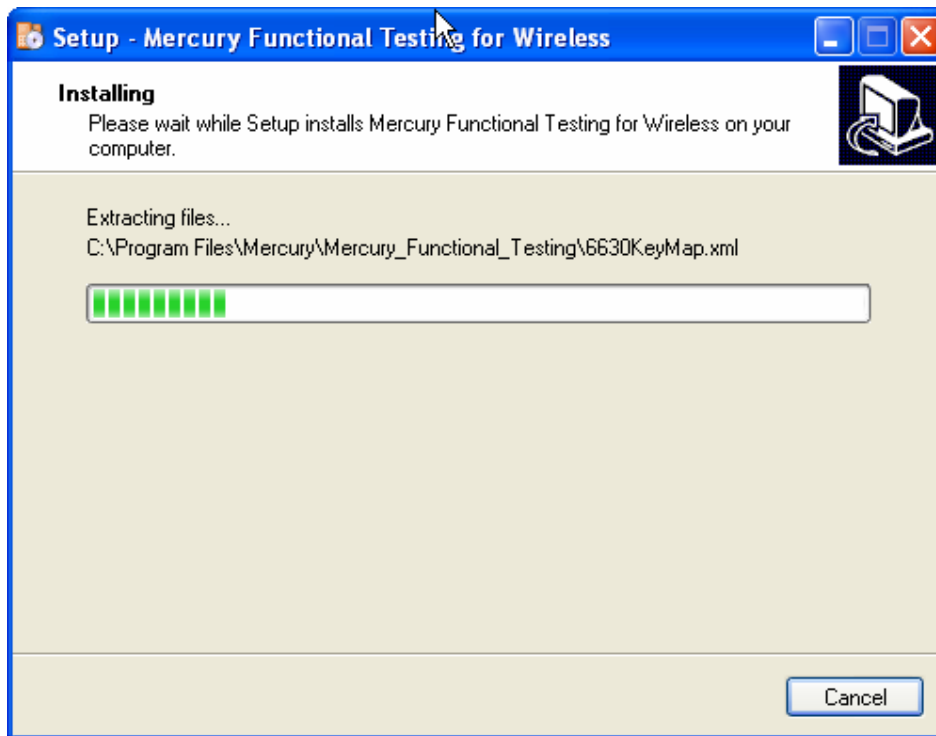
10. When the installation is complete, the Mercury Functional Testing for Wireless release notes screen is displayed.
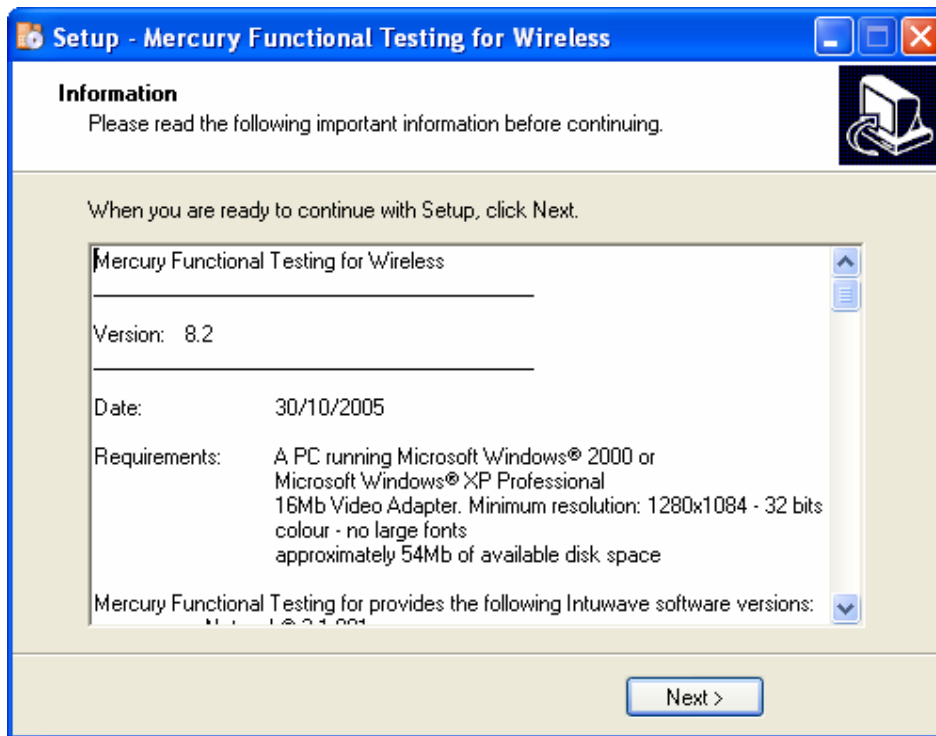
11. Read the release notes carefully for the latest information about this release.

12. When you have read the release notes, click **Next**. The restart screen is displayed.

13. Mercury recommends that you click **Finish** so that the computer restarts immediately. However, if you want to delay the restart, select **No, I will restart the computer later** and click **Finish**.

After the computer restarts, Mercury Functional Testing for Wireless is ready to use for testing Smartphone devices.

Preparing Smartphone Devices

You need to prepare Smartphone devices to accept Mercury Functional Testing for Wireless control.

1. Set up network connectivity so that the device can accept Mercury Functional Testing for Wireless connections.

2. Uninstall any previous version of this software from the device.

3. Install and run the latest software, which is included in the Mercury Functional Testing for Wireless installation.

The following sections provide procedures for these tasks, and explain which installation files are for which Smartphone devices.

Setting Up Network Connectivity

You need to set up Smartphone devices so that Mercury Functional Testing for Wireless can connect to them using Bluetooth, Infrared, USB, or Serial cable connectivity, as described in the following sections.

Setting Up Bluetooth Connectivity for a Device

Bluetooth is Mercury's preferred method of connectivity.

Make sure that the Smartphone device you want to test has Bluetooth enabled, and Bluetooth visibility enabled so that Mercury Functional Testing for Wireless can detect the device. The device needs to be paired with Mercury Functional Testing for Wireless.

You can also set the device to authorize Bluetooth connections from Mercury Functional Testing for Wireless automatically, rather than prompt for manual authorization for each connection. Enabling automatic authorization is optional, but removes a manual step from your tests, making it easier to create fully automated tests.

The following procedures show:

1. How to ensure that a Smartphone device is Bluetooth-enabled and visible.

2. How to set a Smartphone device to authorize Bluetooth connections automatically.

The procedures use a Nokia 6680 to illustrate steps. Procedures for other Smartphone models will vary slightly.

Ensuring that a Smartphone Device is Bluetooth Enabled and Visible

Enable Bluetooth and set Bluetooth visibility, as follows. This procedure uses a Nokia N-Gage for illustration purposes. Procedures for other devices will vary slightly.

1. Click the **Applications** button to access the Applications menu.

2. Select and open the **Connect** folder.


3. Select the **Bluetooth** icon

4. Check that Bluetooth is **On** and visibility is **Shown to all**. Change the settings, if required.

Setting Up Automatic Bluetooth Connection Authorization

Optionally, set up automatic authorization, as follows. Automatic authorization removes a manual step from your testing, making it easier to create completely automated tests.

This procedure uses a Series 60 device for illustration purposes. Procedures for other devices will vary slightly.

1. Click the **Applications** button to access the Applications menu.
2. Select and open the **Connect** folder.

3. Select and open the **Bluetooth** tools.

4. The main Bluetooth options tab is displayed.

5. Click the right arrow key to move to the **Paired Devices** tab.

6. One or more paired devices are listed. Select Mercury Functional Testing for Wireless computer and select **Options**.

7. On the **Options** menu, select **Set as authorised**.

8. A confirmation screen is displayed. Select **Yes**.

The device will now accept Bluetooth connections from Mercury Functional Testing for Wireless without prompting you to manually authorize them.

Setting up Infrared Connectivity for a Device

Infrared connectivity requires no special setup, other than to enable the Infrared option on the device and move it into the line-of-sight of Mercury Functional Testing for Wireless.

Setting up USB Connectivity for a Device

The first time you use USB to connect a particular type of device to Mercury Functional Testing for Wireless, Windows automatically displays the new hardware wizard and helps you install the necessary drivers. When the drivers are installed, Mercury Functional Testing for Wireless will be able to detect the device.

Note: It is advisable to right-click on the m-Router icon and select **Exit and Shutdown** while installing the new drivers. m-Router does not detect newly configured USB connections while it is running.

Note: m-Router does not support the USB implementation used by the Nokia N-Gage.

Setting Up Serial Cable Connectivity for a Device

Serial cable connectivity requires no special set up on a device, other than to use the relevant cables to connect the device to the port selected in [Setting Up Serial Cable Connectivity on Mercury Functional Testing for Wireless](#).

Uninstalling Previous Versions of This Software

If you want to test a Smartphone device that is running a previous version of this software, you need to remove that software before installing the latest version. For example, you can remove this software from a Nokia 6680, as follows. Procedures for other devices will vary slightly.

1. Click the **Applications** button ![icon] to access the Applications menu.

2. Select and open the **Tools** folder.
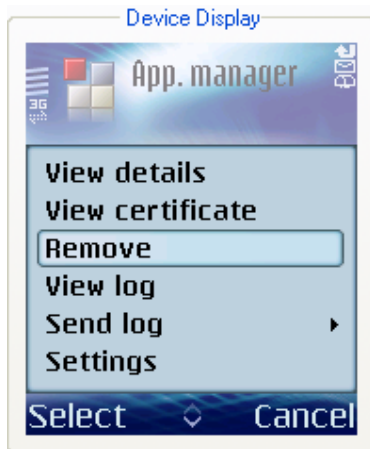

3. Select and open the **Manager** item.

The Applications Manager displays a list of installed applications.

4. Select the **m-TestAll** application.

5. Select **Options** > **Remove**.

The Applications Manager prompts you for confirmation that you want to remove m-TestAll.

6. Select **Yes**.

The software is removed from the device.

7. Reboot the device.

You can now install the latest version of the device software.

Installing Agent Software on a Smartphone Device

You can install agent software on a device as follows, using a Series 60 device and Bluetooth as an example. See the SIS and CAB files list for details of which file to select for a particular Smartphone device.

1. Use Windows Explorer to browse to the **Mercury_Functional_Testing/Install** folder that is created by default during Mercury Functional Testing for Wireless installation in **C:\Program Files\Mercury\Mercury_Functional_Testing\Install**.

    The folder contains a set of files to support different models of Smartphone device.

2. Right-click on the file appropriate to your device, and use the **Send To – Bluetooth** option to send the file to the device.
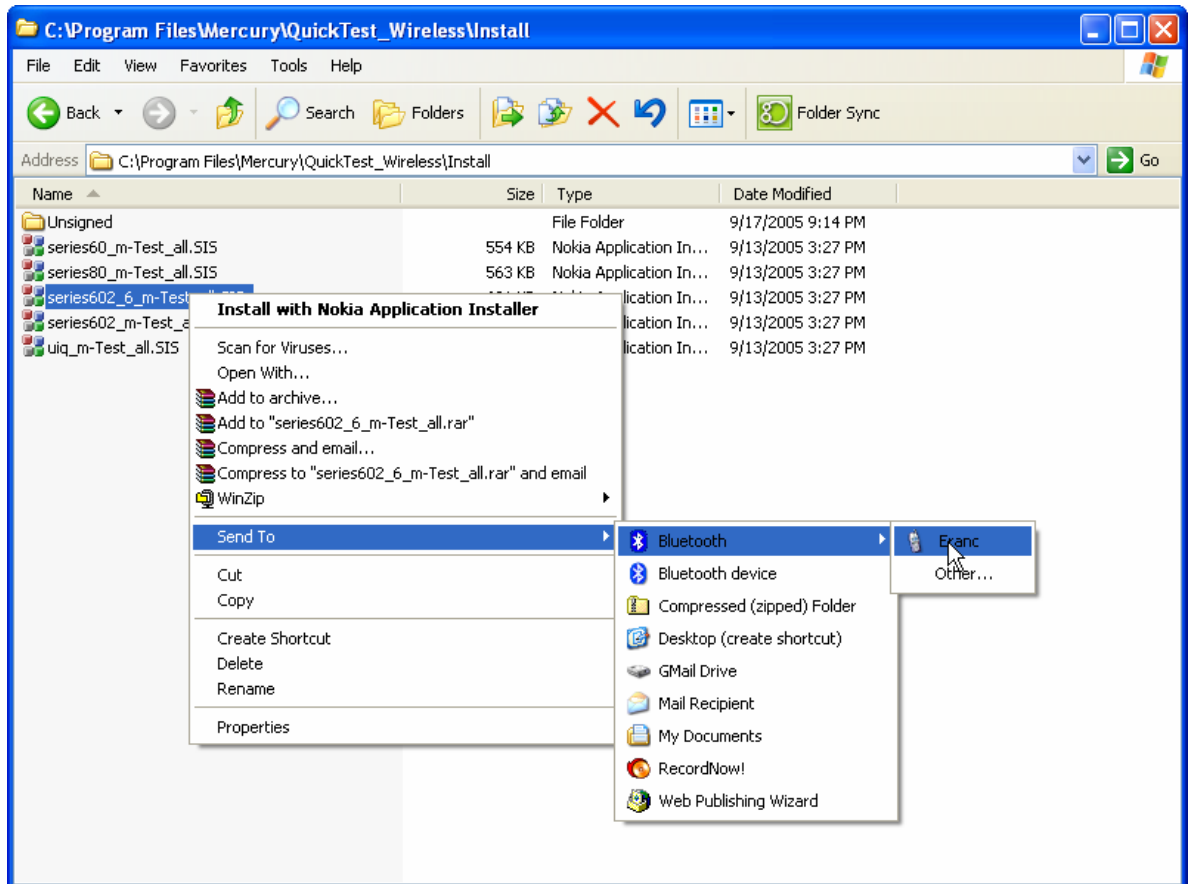
The process of sending the file to the device begins. The device prompts you to accept the incoming connection from your computer if the device has not been set to automatically authorize connections from Mercury Functional Testing for Wireless.

3. On the device, select **Yes** to accept the connection.

    The file is copied into the device's Inbox, and the device prompts you to show the new item.
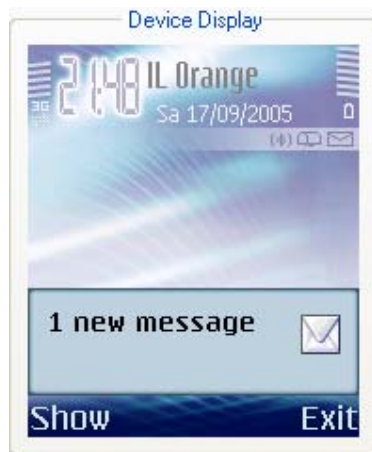
4. Select **Show** to open the file.

    The device asks whether to proceed with an installation from an unknown supplier

5. Select **Yes** to continue.

The device asks whether to install **m-TestAll**.

6. Select **Yes** to start the installation.

   The installation begins, and the device displays a progress bar and then confirms that the installation is complete.

7. Reboot the device.

When the device reboots, run the agent software manually, as described in the following section.

Running Agent Software on a Smartphone Device

After installation and reboot, run the agent software manually, as follows.

1. Click the **Applications** button to access the Applications menu.

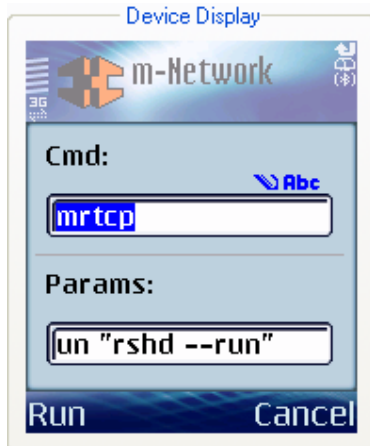2. Select the **m-Network** application.

3. Launch **m-Network**.

   The mrtcp accept option is highlighted, as illustrated.

4. Select **Options** > **Run** for the highlighted option.

   The following screen appears.

5. Select **Run**.

   The agent software runs on the device, making it ready to accept commands from Mercury Functional Testing for Wireless.

Note: You only need to start the agent software manually once. The Smartphone starts it automatically in future.

Note: On Nokia 9500 devices, it is also necessary to launch the **PC Connect** application, and select the **Start Listener** option. On most devices, the listener starts automatically, but the Nokia 9500requires a manual start.

SIS and CAB Files List

The Mercury Functional Testing for Wireless installation creates a folder containing a set of SIS and CAB files that enable you to install agent software on various models of Smartphone. This section documents which file to use for a particular supported Smartphone device.

Mercury Functional Testing for Wireless installation contains shortcuts in the Start Menu to the place where Symbian SIS file and Windows Mobile CAB files are installed.

Smartphone model	SIS file
Nokia 6260, 6630, 6680, 6681, 6670, 3230, 7610	series602_6_m-Test_all.SIS
Nokia E50 E60, E61, E62, E70 N80 N91	m-Test_series60_3.sis
Sony Ericsson P990i, M600i, W950	m-Test_uiq_3.SIS
HP 6915	LoadPPC2005.bat (installs required CAB file)
Qtek 2020i	LoadPPC.bat (installs required CAB file)

Contact your Mercury Functional Testing for Wireless representative if you want to use Mercury Functional Testing for Wireless to test an unsupported device, for example, a pre-release version of a new model.

Next Steps

After you complete all of the tasks described in this Installation Guide, you are ready to use Mercury Functional Testing for Wireless to test Smartphone devices.

See the Mercury Functional Testing for Wireless online help for information about using Mercury Functional Testing for Wireless.