Landis+Gyr OptoWand+
Data Sheet

General

The OptoWand+ serves as the optical communication link between Landis+Gyr's Hand Held Programmer (HHP)-based Mobile Administration System (MAS) or PC-based Endpoint Administration System (EAS) and a TS1 or TS2 endpoint. The OptoWand+ can be connected to a PC via the included USB cable or can be paired and bonded with an HHP via Bluetooth. The OptoWand + requires four AA batteries. The OptoWand+ is compatible with Bluetooth Version 2.0.

Figure 1. The OptoWand+

Ordering

The OptoWand+ can be ordered through Emkat (Landis+Gyr's traditional HHP supplier):

Emkat Mobile Handheld Solutions Inc.
1-877-882-1024
http://www.emkat.com/
Part number: 26-0525

Compatibility

The OptoWand+ is backward-compatible to Landis+Gyr Command Center Ver. 3.2.1.x and newer and is compatible with Motorola models MC-9090 and MC-55 and the Dolphin model 9500. See Table 1 below.

Table 1. OptoWand+ HHP Compatibility

Manufacturer	Model	Mobile Operating System	Connectivity
Symbol	8100	Windows Mobile 2003	Serial (NOT OptoWand+ COMPATIBLE)
Symbol	MC-9060	Windows Mobile 2003 or later	Serial (NOT OptoWand+ COMPATIBLE)
Motorola	MC-9090	Windows Mobile 5 or later	Bluetooth (OptoWand+ Compatible)
Motorola	MC-55	Windows Mobile 6.1 or later	Bluetooth (OptoWand+ Compatible)
Dolphin	9500	Windows Mobile 2003 or later	Bluetooth (OptoWand+ Compatible)

Table 2. OptoWand+ Software Version Compatibility

If running this version of Command Center...	Use this version (or newer) of MAS...	Use this version (or newer) of EAS...
3.2.1	3.2.1.21	3.2.1.21
4.0.1	4.0.1.11	4.0.1.11
4.1.1	4.1.1.23	4.1.1.23

Batteries

The OptoWand+ can use any AA-sized cell marked between 1.2 and 1.5 VDC, with rechargeable NiMH type cells recommended. In USB mode, battery power is required to "kick-start" the OptoWand+ on many computers. When powering the OptoWand+ using the USB cable, no power is drawn from the AA batteries other than the initial connection negotiation and will switch power consumption to the host's low power USB port. The computer may suffer a port surge error if batteries are not installed or are depleted. It is important to note that the OptoWand+ has not been designed to use the USB power to recharge its batteries; allowing operation of multiple battery chemistries.

Batteries are always required to operate the OptoWand+ in Bluetooth mode. Typical battery life is 48 hours of continuous Bluetooth communication with 2000+ mAH rated batteries.

General Operation

The OptoWand+ user interface consists of three pairs of LEDs (two red, two green, and two blue; one of each color per side) and a single WAKE UP button.

Adhesive loop fastener material should be attached to the front just below the optics and to the back just below the barcode window. This will interface the hook fastener on the universal OptoWand holder (or any other OptoWand holder) to hold the OptoWand+ in place for communication.

WAKE UP Button

The WAKE UP button is pressed to power up the OptoWand+. The button functions as follows:

While the OptoWand is inactive: When the WAKE UP button pressed quickly (less than 3 seconds) the OptoWand+ powers-up and starts an internal 5-minute timer (the unit shuts down after 5 minutes of inactivity). This button must be pressed to activate the unit for Bluetooth pairing/ bonding, connecting to a PC via USB for installation, or connecting an endpoint via Bluetooth or USB. However, the OptoWand+ does not time out when operating in USB mode.

While the OptoWand+ is active: When the WAKE UP button is pressed quickly (held less than 3 seconds) the OptoWand+ performs an LED test (all six LEDs light up to verify operation). Pressing the button while the OptoWand+ is active also re-sets the internal timer which prolongs the unit's standby time an additional five minutes from the time the button is pressed.

Whether the OptoWand is either active or inactive: If the WAKE UP button is held down longer than 3 seconds, the unit is deactivated for 1 minute. The OptoWand+ will continue to cycle, powering up for 3 seconds out of each minute, until the button is released. This feature is designed to avoid battery drain if the button is inadvertently held down for a long period when packed in a toolbox or in similar situations.

LOW BATTERY Indicator LEDs (2) and MAS On-screen Indicator

The red LOW BATTERY indicator LED flashes when the OptoWand+'s batteries are becoming depleted. The frequency of the flashing increases as the batteries approach a fully-depleted state. The unit requires four AA batteries which can be accessed by removing the battery cover on the back side of the unit using a #2 Phillips or flat-bladed screwdriver.

There is also a battery life indicator bar in the upper right-hand corner of endpoint status screens in MAS when an endpoint is accessed. A green indicator indicates good batteries. A red indicator means the batteries should be replaced soon.
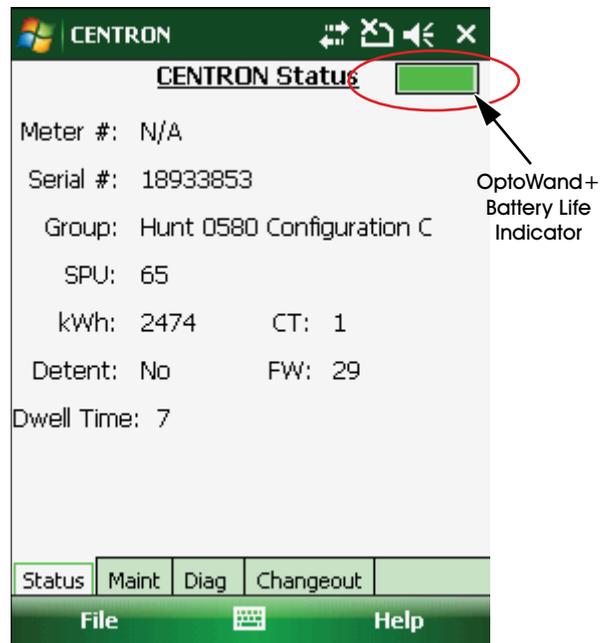

Figure 2. OptoWand+ Battery Life Indicator Bar in MAS

OPTICS CONNECTED Indicator LEDs (2)

The green OPTICS CONNECTED indicator LED will flash when the optics on the OptoWand+ are aligned with the optics on an endpoint and communication is taking place between the OptoWand+ and the endpoint.

> The OPTICS CONNECTED LED will not light unless a laptop/HHP running MAS/EAS is currently employing the OptoWand+ to communicate with the endpoint (i.e. **the software must first be instructed to detect the endpoint**).

BLUETOOTH / USB Indicator LEDs (2)

The blue BLUETOOTH / USB indicator LED lights up when the WAKE UP button is initially pressed and flashes whenever Bluetooth or USB communication is taking place between the OptoWand+ and the HHP or PC.

Each time the BLUETOOTH/USB indicator flashes, the shut-down timer re-sets to five minutes (this applies to Bluetooth Mode operation only).

Using the OptoWand+ in USB Mode with a PC

Before the OptoWand+ can be used in USB mode, the FTDI serial port device driver must be installed on the PC. To simplify this process, the appropriate driver is included with Landis+Gyr's Endpoint Administration Software (EAS). Use the following procedure to install the serial device driver and enable the OptoWand+ for use:

> The serial port device driver can also be downloaded from the following location: http://www.ftdichip.com/Drivers/VCP.htm. Select the **FT232R** device support driver for your particular operating system.

1. Ensure that a version of EAS that supports the OptoWand+ (Ver. 4.1.1.23 or newer) has been installed prior to connecting it to the PC.

2. Press the **WAKE UP** button on the OptoWand+.

3. Connect the included USB cable between the OptoWand+ and the PC.

    The PC will discover the device automatically.

4. When prompted by the Found New Hardware Wizard, select the **Install the software automatically (Recommended)** radio button and click the **Next** button to continue.

Figure 3. Installing the Serial Device Driver for the OptoWand+

The PC will install the necessary driver software.

Figure 4. Installing the Serial Device Driver for the OptoWand+

5. When the PC is done, click the Finish button to exit.

Figure 5. OptoWand+ Serial Device Driver Installed

The OptoWand+ is now ready to use with EAS. When using it, **ensure that the WAKE UP button is pressed before attempting connection with an endpoint** to ensure that the device is powered up. Once pressed, the OptoWand+ will not time out when operating in USB mode.

> The driver software must be reinstalled each time a different OptoWand+ is used with a PC or laptop. For this reason, Landis+Gyr recommends that each OptoWand+ unit be labeled and paired with a particular PC or laptop in situations where several are used (as in a meter shop environment).

Pairing/Bonding the OptoWand+ with a Dolphin 9500

Use the following procedure to Pair and bond, Bluetooth-equipped Dolphin 9500 with the OptoWand+:

The procedure below details Bluetooth bonding between a Dolphin 9500 HHP and an OptoWand+. This procedure may vary depending on the HHP model and OS version. See your HHP manufacturer's user manual if more specific Bluetooth bonding information is necessary to bond your HHP with the OptoWand+.

1. From the HHP desktop, tap the Bluetooth Icon ( ) and then tap **Advance Features** > **Bluetooth Devices** to display the Bluetooth Devices window.

Figure 6. Displaying the Bluetooth Devices Window

2. Tap **Tools > Device Discovery** to start the Bluetooth Device Discovery Wizard.

Figure 7. The Bluetooth Device Discovery Wizard

3. Tap the **Next** button to begin the wizard.

4. Press the **WAKE UP** button on the OptoWand+ to set it to discoverable mode. The BLUETOOTH/USB LED will flash momentarily.

5. Select the radio button next to **Any Bluetooth device**.
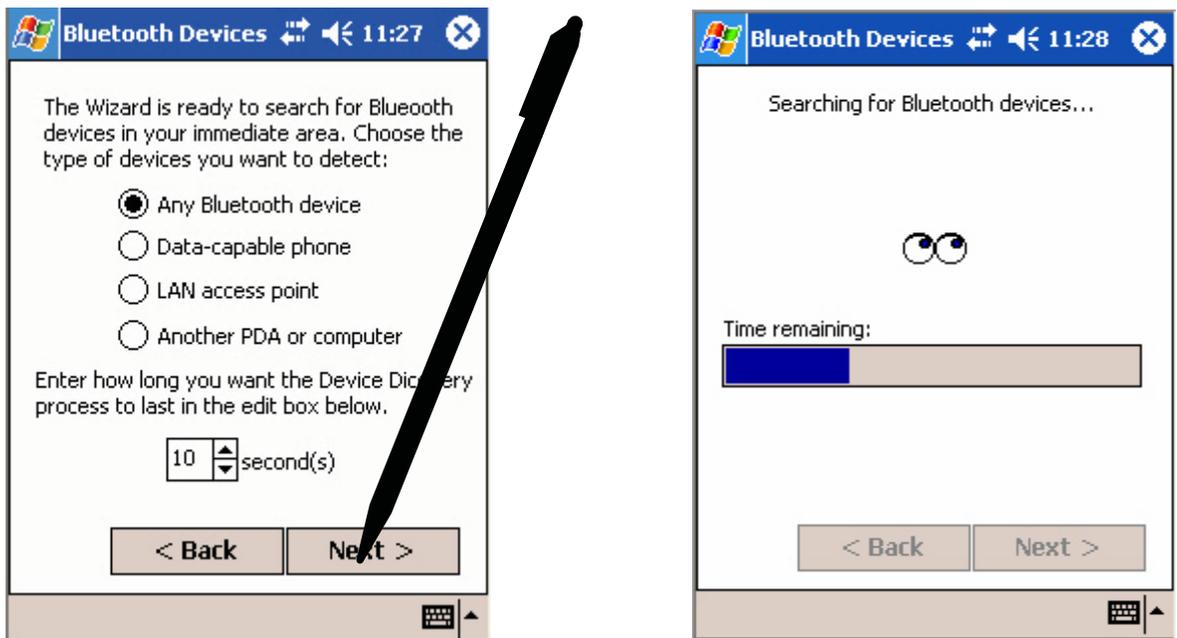
Figure 8. Scanning for Nearby Bluetooth Devices
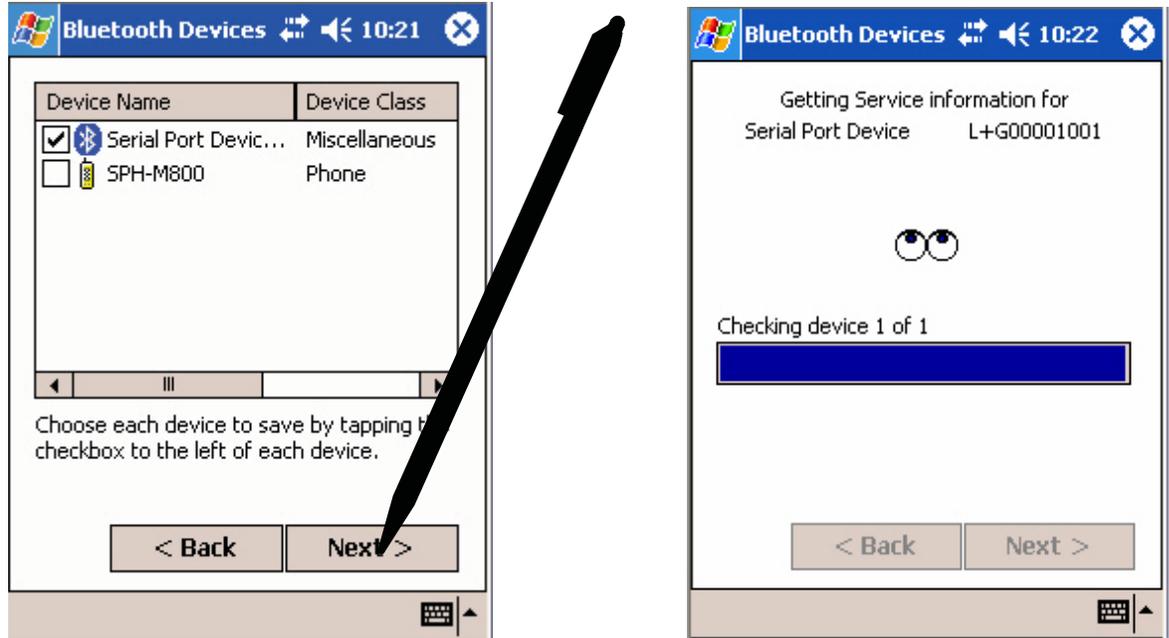
6. Tap the **Next** button to scan for Bluetooth devices nearby.

Figure 9. Receiving Service Information

7. Select the check box next to **Serial Port Device**. It may not be the only device available.

8. Tap the **Next** button to get service information from the OptoWand+.

9. Tap the Finish button to exit the Bluetooth Device Discovery Wizard.

Figure 10. Exiting the Bluetooth Device Discovery Wizard

10. In the Bluetooth Devices window, press and hold the stylus on the OptoWand+'s Bluetooth device icon until the menu pops up.
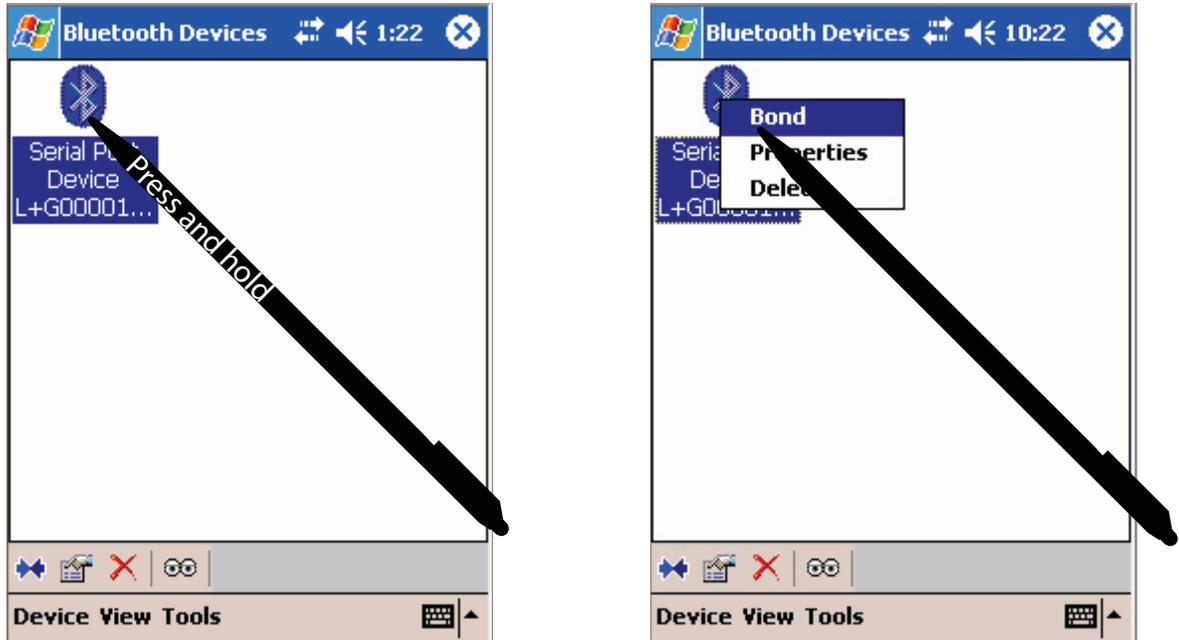
Figure 11. The Bluetooth Device Icon Menu

11. Select **Bond** to start the Bluetooth Bonding Wizard.
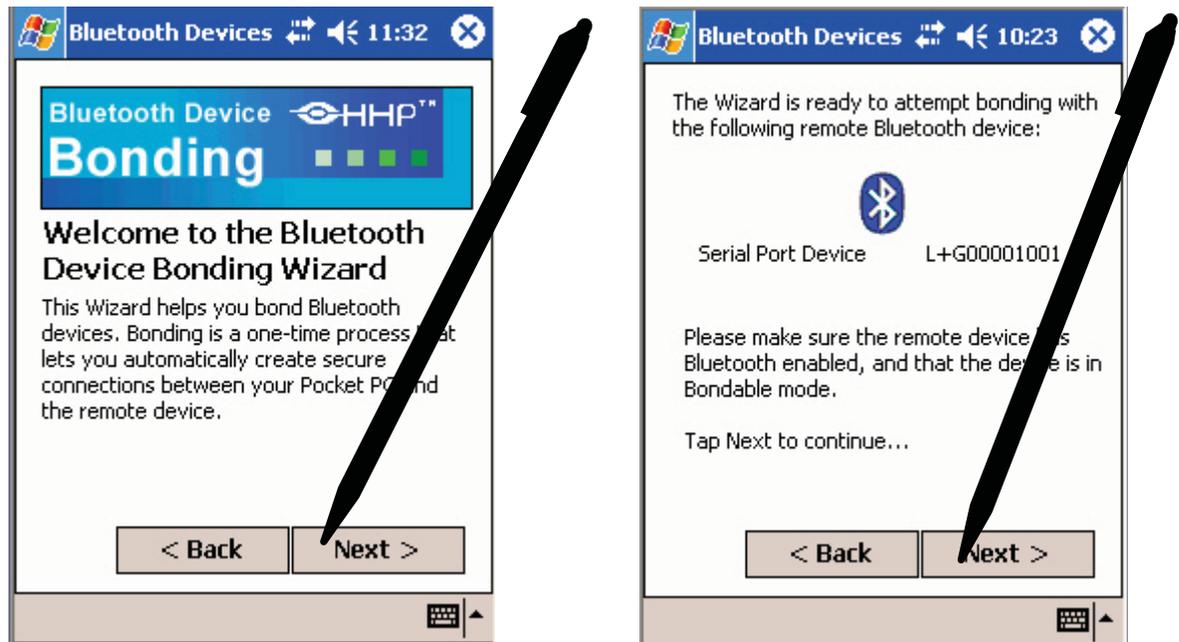
Figure 12. The Bluetooth Bonding Wizard

12. Tap the **Next** button to begin the wizard.

13. Enter the passkey for the OptoWand+ in the field provided. The passkey for the OptoWand+ is **0000**.

Figure 13. Bonding with a Bluetooth Device

14. Tap the **Reply** button to pair/bond with the OptoWand+.

If the pairing/bonding was successful, the screen will display **Congratulations**.

15. Exit the wizard by tapping the **Finish** button.
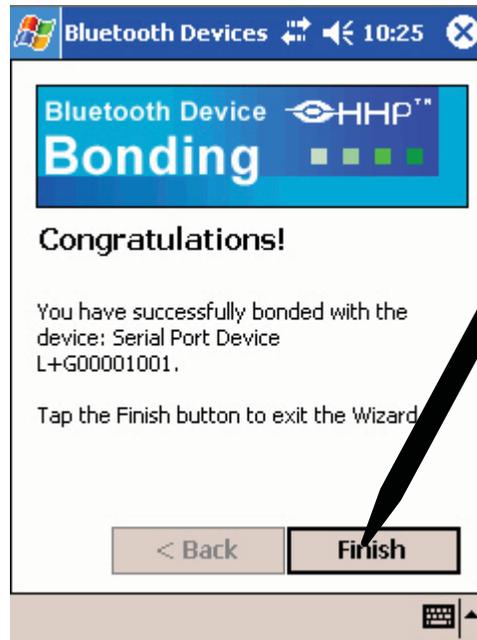
Figure 14. A Successful Bond between the Dolphin 9500 and the OptoWand+

16. See "Using the OptoWand+ in Bluetooth Mode with MAS" on page 17.

Discovering/Pairing the OptoWand+ with a Symbol/Motorola HHP

Use the following procedure to discover and pair a Symbol/Motorola MC 9090 or Motorola MC-55 with the OptoWand+:

The procedure below details Bluetooth bonding between a Motorola MC-55 HHP and an OptoWand+. This procedure may vary depending on the HHP model and OS version. See your HHP manufacturer's user manual if more specific Bluetooth bonding information is necessary to bond your HHP with the OptoWand+.

1. From the HHP desktop, tap the Bluetooth Icon ( ) and then tap **Enable Bluetooth**.
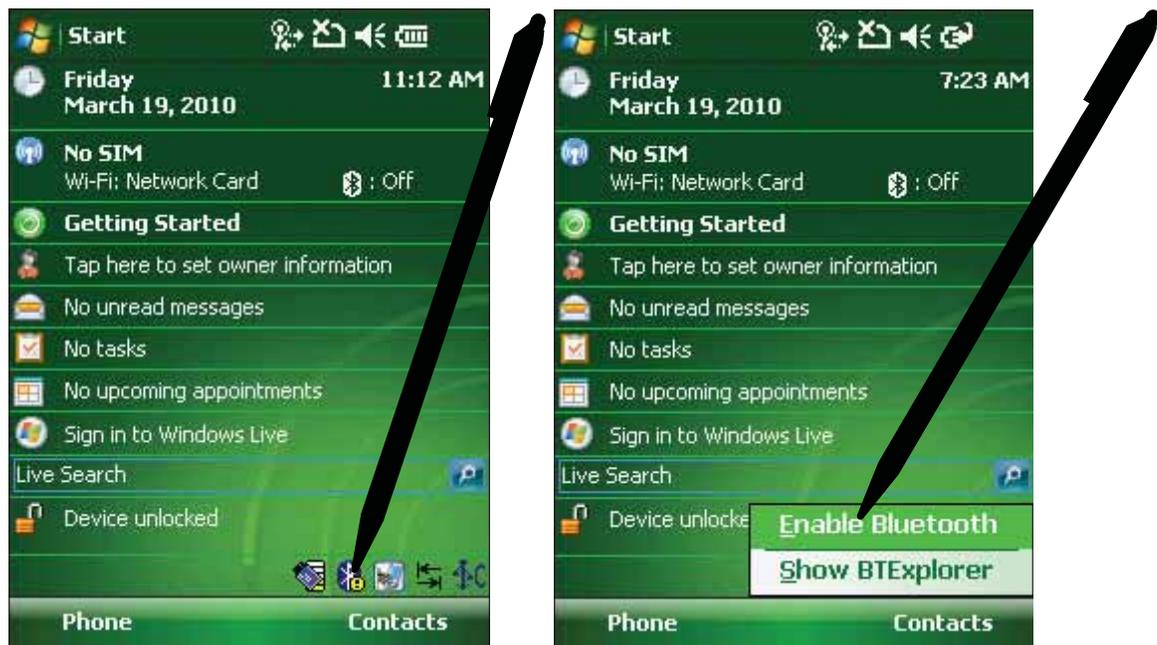
Figure 15. Enabling Bluetooth Functionality

2. Tap the Bluetooth Icon ( ) again and then tap **Show BTExplorer** to display the Bluetooth Explorer.
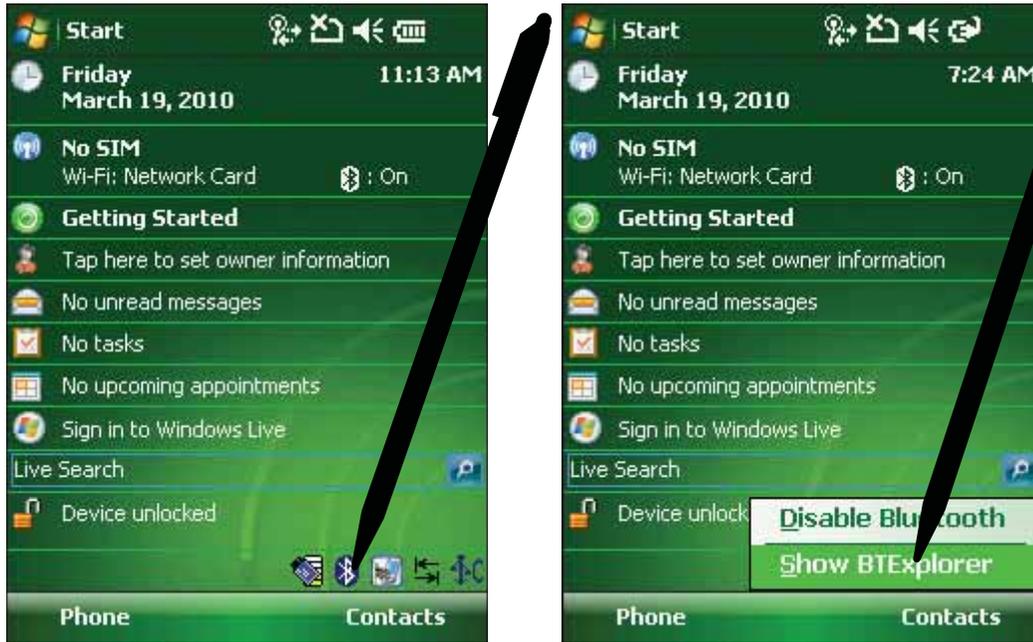

Figure 16. Accessing Bluetooth Explorer

3. In Bluetooth Explorer, Tap **View,** then **Both** to display all Bluetooth device elements.
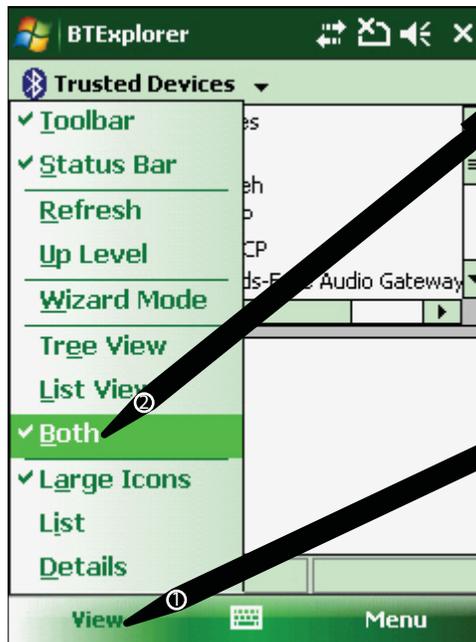

Figure 17. Bluetooth Explorer

4. Tap **Menu,** then **Discover Devices** to display all Bluetooth device elements.

Figure 18. Discovering Bluetooth Devices

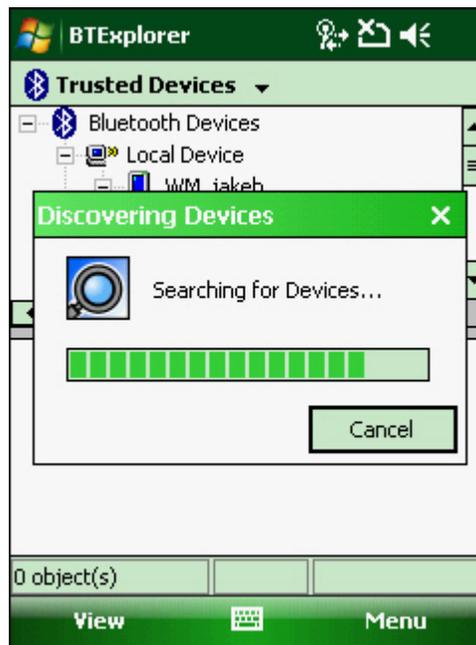The HHP will search for nearby Bluetooth devices:

Figure 19. Discovering Bluetooth Devices

5. Drag the vertical scroll bar in the top window down to display **Untrusted Devices**.
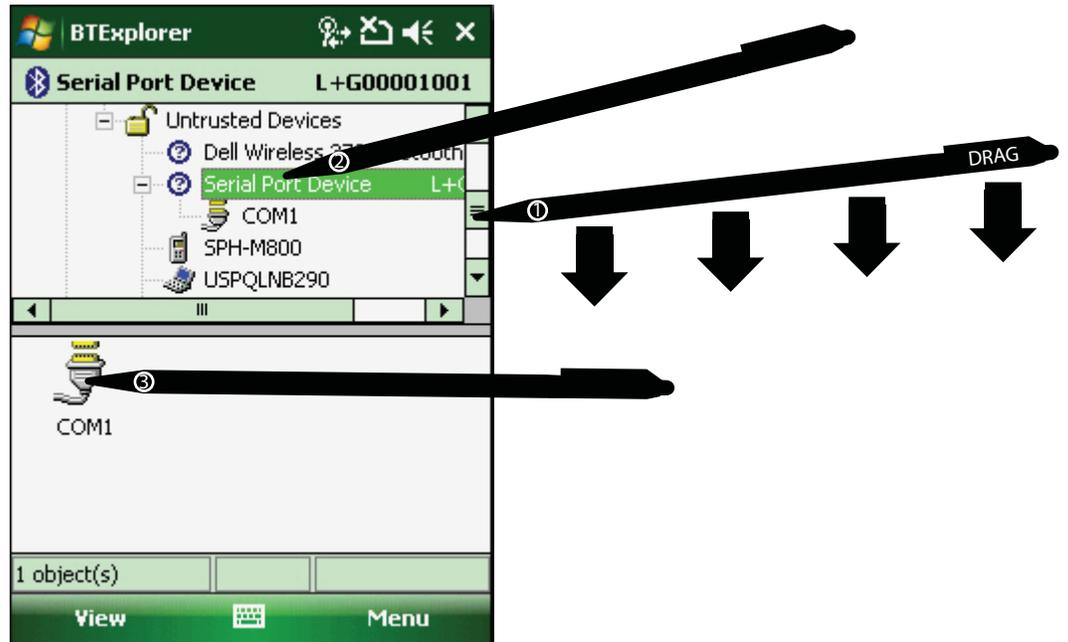

Figure 20. Navigating in Bluetooth Explorer

6. Tap the device entry for the OptoWand+. It will be shown as **Serial Port Device (L+G*[Serial Number]*)**.

7. Tap the **COM1** icon in the lower window of Bluetooth Explorer.
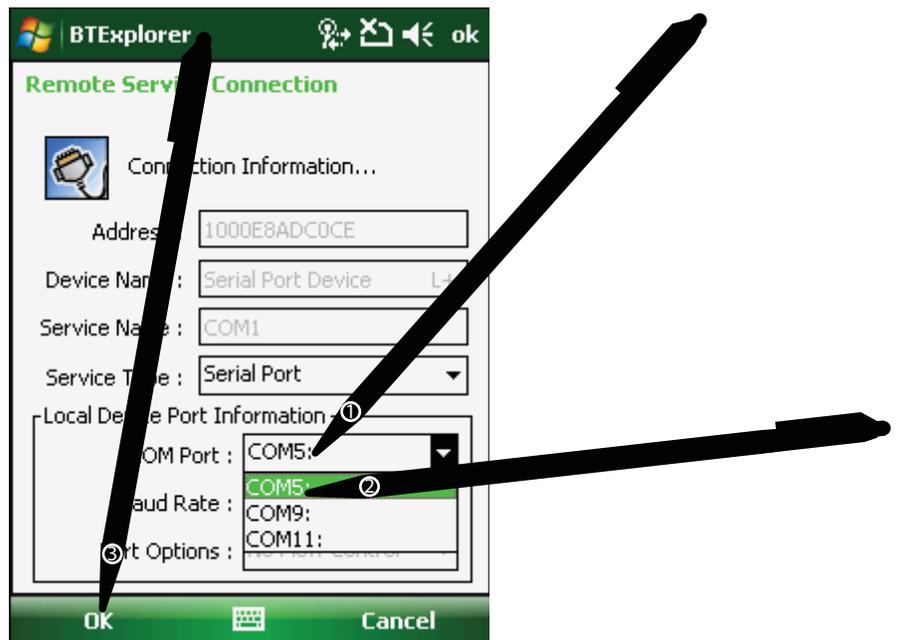
The Remote Service Connection screen will appear:

Figure 21. Choosing a COM Port

8. Select **COM5** from the **COM Port** drop-down list.

9. Tap OK to register the new COM port setting and pair the HHP with the OptoWand+.
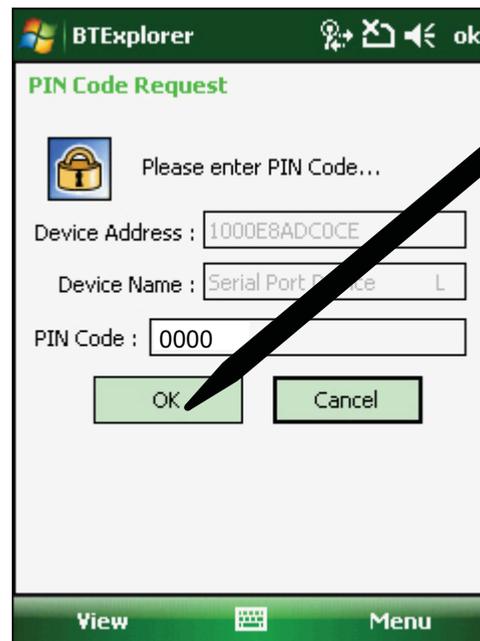
The PIN Code Request screen will appear:

Figure 22. Entering the Bluetooth PIN Code

10. Enter the **PIN Code** for the OptoWand+ in the field provided. The PIN code for the OptoWand+ is **0000**.

11. Tap the **OK** button to Pair the HHP with the OptoWand+ and display Bluetooth Explorer again.

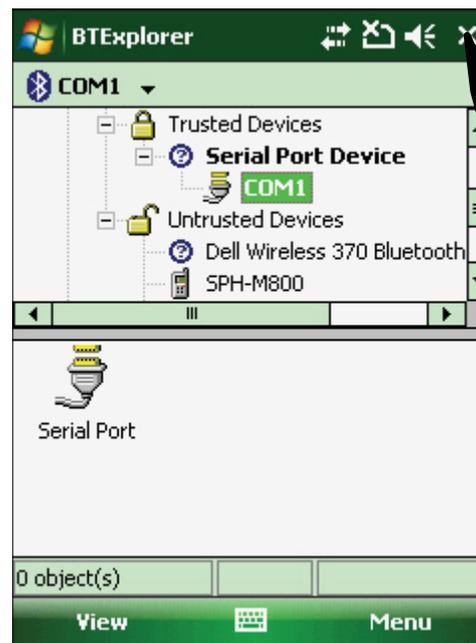The OptoWand+ should now appear under **Trusted Devices**:

Figure 23. A Successfully Paired OptoWand+

12. Tap the **X** in the upper right-hand corner of the screen to close Bluetooth Explorer.

13. See "Using the OptoWand+ in Bluetooth Mode with MAS" on page 17.

Using the OptoWand+ in Bluetooth Mode with MAS

Use the following procedure to use the OptoWand+ for connecting MAS to an endpoint.

1. If the OptoWand+ is not already activated, press the **WAKE UP** button.

After the OptoWand+ has been paired and bonded with the HHP, the OptoWand+ is ready to use with MAS. When using it, **ensure that the WAKE UP button is pressed before attempting connection with an endpoint** to ensure that the device is powered up.

2. In MAS, tap **Settings > Options** to display the Options screen.
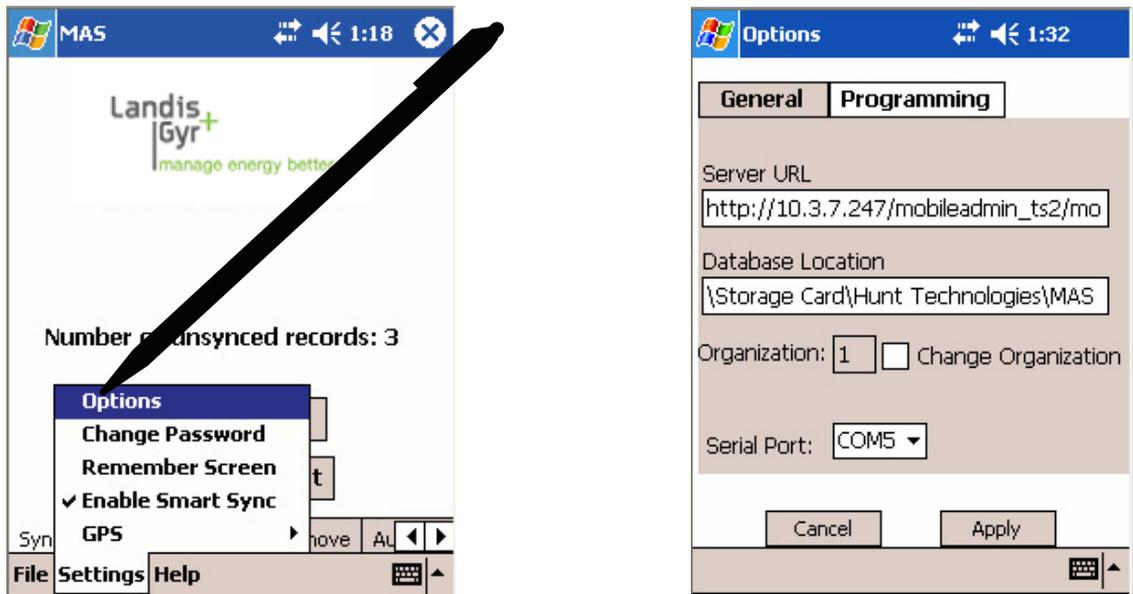

Figure 24. Navigating to the Options Screen in MAS

3. On the **General** tab, select port **COM5** from the **Serial Port** drop-down list.
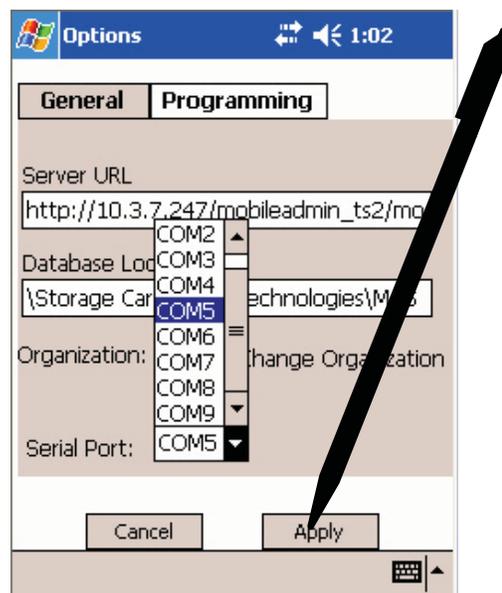

Figure 25. Selecting a COM Serial Port

4. Align the OptoWand+ optics with the endpoint optics

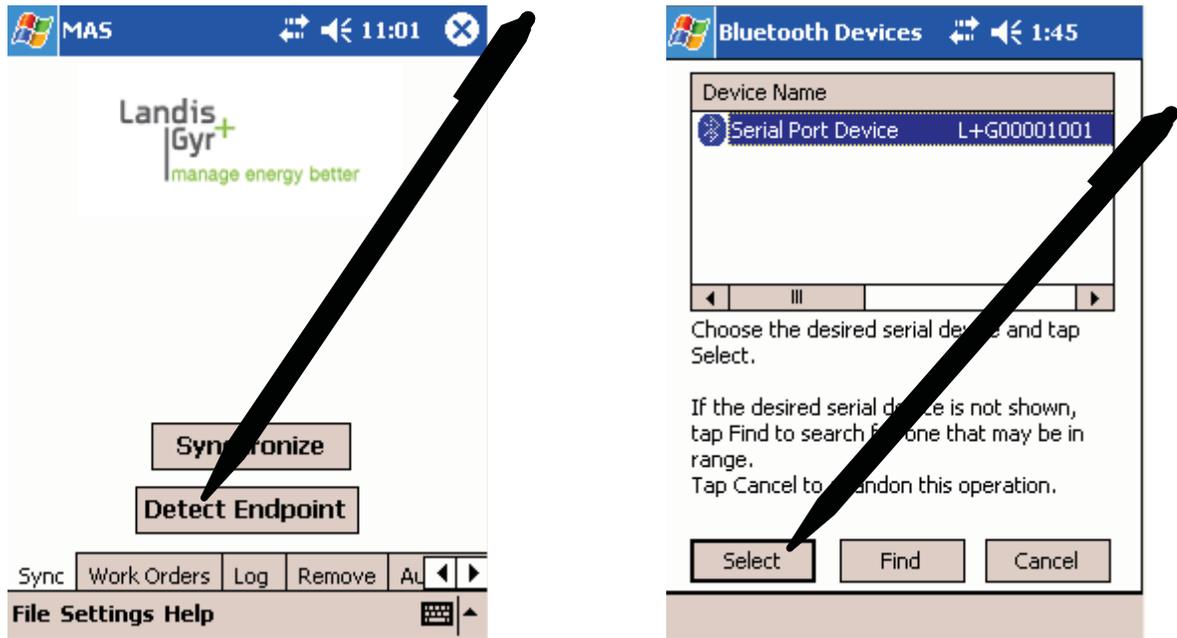5. With the OptoWand+ powered up, select **Detect Endpoint** in MAS.

Figure 26. Using the OptoWand+ to Communicate with an Endpoint in MAS

6. (Dolphin 9500 only) Select the OptoWand+ Bluetooth serial port device and tap the **Select** button to connect to the endpoint.
The green OPTICS CONNECTED indicator LEDs will flash when the optics are properly aligned and the HHP and endpoint are communicating.

USA-Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the distance between the equipment and the receiver.

• Connect the equipment to outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Caution! Exposure to Radio Frequency Radiation: This device must not be co-located or operating in conjunction with any other antenna or transmitter.

Canada - Industry Canada (IC)

This device complies with RSS 210 of Industry Canada. Operationis subject to the following two conditions:

1. this device may not cause interference, and

2. this device must accept any interference, including interference that may cause undesired operation of this device."

L ' utilisation de ce dispositif est autorisée seulement aux conditions suivantes :

1. il ne doit pas produire d'interference et

2. l' utilisateur du dispositif doit étre pr?t ? accepter toute interference radioélectrique reçu, m?me si celle-ci est susceptible de compromettre le fonctionnement du dispositif.

Caution! Exposure to Radio Frequency Radiation: The installer of this radio equipment must ensure that the antenna is located or pointed so that it does not emit RF field in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's website http://www.hc-sc.gc.ca/rpb.

Spectral Emmissions

Testing has shown that the spectral emissions do not exceed any risk-group limit. In general, this classification indicates that the source does not pose a hazard.

EXEMPT

RG-1 ANSI/IESNA RP-27.3-07

Contact Information:	Technical Support:	Internet:	Fax	E-mail:
	1-888-390-5733	www.landisgyr.com	1-218-562-5530	solutionsupport.na@landisgyr.com