# 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.

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 1. OptoWand+ HHP Compatibility

#### 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.

	RON		# XD •	€ ×	
	CENTRO	DN Sta	tus		>
Meter #:	N/A				×
Serial #:	1893385	3		C	ptoWand+
Group:	Hunt 058	30 Confi	guration	C I	Battery Lite Indicator
SPU:	65				
kWh:	2474	CT:	1		
Detent:	No	FW:	29		
Dwell Time	e: 7				
Status M	aint Diag	Chapo	eout		
File			Hel	р	

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: <u>http://www.ftdichip.com/Drivers/VCP.htm</u>. 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.

Please wait while the wizard installs the software				
USB Serial Port				
Neera2 di Ta C-WRINDIWSSee	2 100072	D		
(***********	101011011			



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

Found New Hardy	ware Wizard
	Completing the Found New Hardware Wizard The wizard has finished initialing the software for.
	Click Finish to close the vicerd.

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+.

From the HHP desktop, tap the Bluetooth Icon (2) 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.

🎊 Bluetooth Devices 🖨 📢 11:27 🛛 😣		🎥 Bluetooth Devices 📰 📢 11:28 🛛 😣
The Wizard is ready to search for Blueooth devices in your immediate area. Choose the type of devices you want to detect:	1	Searching for Bluetooth devices
<ul> <li>Any Bluetooth device</li> <li>Data-capable phone</li> <li>LAN access point</li> </ul>		œ
Another PDA or computer Enter how long you want the Device Dice process to last in the edit box below.		Time remaining:
10 ↓ second(s)		< Back Next >
		<b>™</b>

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.

<i>ी</i> Bluetooth Devices 🚓 📢 11:29 😵				
Bluetooth Device ↔HHP <sup>™</sup> Discovery				
Congratulations!				
You have successfully added 1 new device to your Bluetooth Devices folder.				
Tap the Finish button to exit the Wiza				
< Back Finish				
<b>₩</b>				

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

🏂 Bluetooth Devices 📰 📢 10:24 🛛 😣	
🛞 Bluetooth Passkey	
The following device wants a passkey: Serial Port Device L+G00001001	
The same Bluetooth passkey is required on each device. Please enter the passkey below and tap Reply, or tap Cancel to only this request.	
Bluetooth passkey: 0000 Reply Cancel	
123 1 2 3 4 5 6 7 8 9 0 - = 🗲	
Tabqwertyuiop[]	
CAP a s d f g h j k l ; '	
Shift z x c v b n m , . / ↔	
Ctl áü ` \ ↓ ↑ ← →	

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.





**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

%+ ど ◀€ @ %→ 苎 ◀< Start Start Friday 11:13 AM Friday 7:24 AM March 19, 2010 March 19, 2010 No SIM 690 No SIM 😫 : On Wi-Fi: Network Card 😫 : On Wi-Fi: Network Card **Getting Started Getting Started** Tap here to set owner information Tap here to set owner information No unread messages No unread messages No tasks No tasks No upcoming appointments No upcoming appointments Sign in to Windows Live Sign in to Windows Live • Live Search Live Search P n Device unlocked n Device unlock tooth **Disable Blu** Show BTExplorer S 🕅 🔝 🖏 🕼 Contacts Phone Phone Contacts

**2.** Tap the Bluetooth Icon (**3**) 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:

🐉 BTExplorer 🛛 👷 🎦 📢				
🚯 Trusted Devices 👻				
Bluetooth Devices     Device     WM_jakeb     Discovering Devices				
Searching for Devices				
Cancel				
0 object(s)				
View 🖽 Menu				

Figure 19. Discovering Bluetooth Devices

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

🐉 BTExplorer	‰⊁≿⊐∢ ×			
🚯 Serial Port Device	L+G00001001			
🖻 🖆 Untrusted Dev	vices			
🕜 Dell Wirele				
	Device L+(	$\square$		
SPH-M800				
	290 🔻			
4				
COM1			Ð	
1 object(s)				
View 📖	Menu			

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:

🐉 BTExplorer	%ታ ሺጋ ◀€	ok
Remote Servi	ection	
	formation	
Addres 1000E	8ADCOCE	
Device Nar : Serial I	Port Device L	
Service Na e : COM1		
Service T le : Serial I	Port	•
Local De le Port Inform	mation - ()	
OM Port : C	OM5:	
aud Rate : 🔀	OM9:	
3rt Options :	OMII: Concros	
ок 📟	Cancel	

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:

🏂 BTExplorer	%→ <u>≻</u>	ù¶€ ok
PIN Code Reque	est	
Please Device Address : Device Name : PIN Code : 000 OK	e enter PIN Code 1000E8ADCOCE Serial Port Place 0 Cancel	
View	E M	enu

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**:

💦 BTExplorer	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	×
🚯 COM1 👻		
🖃 🔒 Trusted (	Devices	
🖃 🕐 Seri	al Port Device	
<b></b>	COM1	
🖻 📹 Untruste	d Devices	
🕐 Dell V	Wireless 370 Blueto	oth
🔄 🖪 SPH-	M800	<b>▼</b>
Ţ		
Serial Port		
0 object(s)		
View 🔛	🗄 Menu	

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.

🎊 MAS	at d€ 1:18 😵	🎊 Options	₩ ◀€ 1:32
Landis		General	Programming
Gyr <sup>+</sup> manage en	ergy better	Server URL	
		http://10.3.	7.247/mobileadmin_ts2/mo
		Storage Car	rd\Hunt Technologies\MAS
Number mansynd	ed records: 3	Organization:	1 Change Organization
Options Change Passwo	rd	Serial Port:	COM5 -
Remember Scre Finable Smart Sy	en t /nc		
<sub>Syn</sub> GPS File Settings Help	hove AL	Can	cel Apply
The Seconds Help			— I

Figure 24. Navigating to the Options Screen in MAS

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

🎊 Options			#‡ ◀€ 1:02	
General	Progr	ап	nming	
Server URL				
http://10.3.1	7.247/r	po	bileadmin_ts2/mo	
Database Loo	COM2 COM3	-		
\Storage Car	COM4 COM5		echnologies\M &	
Organization:	COM6 COM7 COM8	=	hange Orga zation	
Serial Port:	COM9 COM5	•		
Can	cel		Apply	

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.

🎊 MAS	# ◀€ 11:01 🛞	7	🌮 Bluetooth Devices	#≓ ◀€ 1:45
Landi  Gy  ma	is /r+ inage energy better		Device Name	L+G00001001
			Choose the desired serial Select.	I device and tap
Sy	yng fonize ect Endpoint		If the desired serial de tap Find to search for on range. Tap Cancel to seand to	e is not shown, e that may be in his operation.
Sync Work Order File Settings He	rs Log Remove Au ◀ ▶ Ip  ►	Ī	Select Find	Cancel

#### 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 colocated 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 <u>http://www.hc-sc.gc.ca/rpb</u>.

### **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.





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