



G4S Justice Services, Inc.

PATROL SUITE™ RF Monitoring
Equipment Guide Supplement
Portable Monitoring Device (PMD)



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Patrol Suite RF Equipment Guide Supplement for Portable Monitoring Device (PMD)

Patrol Suite RF PMD, DCN 107

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Table of Contents

Chapter 1 Patrol Suite RF Portable Monitoring Device (PMD)	1
Accessories	1
Preparing the PocketPC	1
PMD Operating Modes	1
PMD LED Indicators	2
Pairing the PMD and PocketPC	3
PocketDTX Application	6
Chapter 2 Using the PMD and PocketPC	7
Chapter 3 Range Test with the PMD and PocketPC	9
Chapter 4 Caring for the PMD and PocketPC	11
Chapter 5 Troubleshooting Tips	12
Chapter 6 Regulatory Notices	14

Chapter 1 Patrol Suite RF Portable Monitoring Device (PMD)

The Portable Monitoring Device (PMD) is a hand-held receiver unit that detects Patrol Suite RF PTX signals that are within range and transmits this information to a PocketPC for viewing. This portable, battery operated device can be used to identify participants that are wearing Patrol Suite RF PTXs in a location away from the home and determine the condition of the PTX. The PMD provides a remote, discrete, and safe means of verifying the PTX presence without interfering with the participant. Additionally, the PMD operates as an Officer Personal Identification Device (OPID) and can be used to activate a PTX.

Accessories

The following accessories are available:

- Power Adaptor/Charger Cable
- Auto-Cigarette Lighter Charger Cable
- Pair of NiMH AA Batteries
- PocketPC Software Application
- PocketPC Application Installation

Preparing the PocketPC

To load the application onto the PocketPC:

1. Download and install the latest version of Microsoft ActiveSync on the workstation or laptop from Microsoft's web site: <http://www.microsoft.com/downloads/details.aspx?FamilyID=7269173a-28bf-4cac-a682-58d3233efb4c&displaylang=en>.
2. Ensure that Microsoft .NET Compact Framework 2.0 Redistributable is installed on the PocketPC 2003/Windows Mobile device. If not, it can be downloaded from Microsoft's web site: <http://www.microsoft.com/downloads/details.aspx?familyid=9655156b-356b-4a2c-857c-e62f50ae9a55&displaylang=en>.
3. Save the supplied PocketDTX_SmartDeviceCab.cab file to any location on the workstation or laptop.
4. Copy the above .cab file to any location on the Windows Mobile device using ActiveSync.
5. On your PocketPC/Windows Mobile device, run the above .cab file by clicking on it. This will install the G4S PocketDTX application on the device. A shortcut to the PocketDTX application is created under **Start=>Programs** (It uses the G4S icon).

PMD Operating Modes

The device has four operating modes controlled by a rotary switch:



- **Off Mode** – In Off mode the PMD is powered down.
- **Wake Mode** – Used to activate PTXs. In Wake mode the 433MHz Receiver and the Bluetooth Transceiver are disabled and the PMD LED flashes green. Periodically, the PMD also transmits wake-up commands using the



Figure 1: PocketPC Application

Figure 2: PMD

internal 13.56MHz transmit coil. To activate the PTX:

1. Place the PTX face down on the front of the PMD (over the image of the Personal Monitoring Device).
2. Listen for activation tones from PTX 1.0 or LED flashing from PTX 2.0.



- **Internal Antenna Mode** – In Internal Antenna mode the PMD listens for Patrol Suite RF messages using the internal 433MHz antenna. Any messages that are received are forwarded to the paired Bluetooth device using the Serial Port Profile. The PMD LED indicates the state of the Bluetooth link (i.e. the presence of a paired device).
- **External Antenna Mode** – External Antenna mode is exactly the same as Internal Antenna mode except that the PMD listens for Patrol Suite RF messages using the external antenna.

OPID functionality is enabled in Wake, Internal Antenna, and External Antenna modes. In these modes, the PMD regularly transmits OPID RF messages using the internal 433MHz antenna. An active and authorized OPID must be present for the user to access the PHMU Setup Menu with the PHMU Menu Key.

NOTE: PMD can be charged in any mode (including Off Mode) by connecting the USB power, the battery LED will indicate the charging status.

PMD LED Indicators

Status information is displayed using dual bi-color (red/green) LEDs.



The top LED, labeled with a Bluetooth symbol, displays **PMD status**.

The bottom LED, identified with a battery symbol, displays **Battery status**.

PMD Status (Bluetooth Symbol)

Mode	Bluetooth	PMD Indicator
Off	None	Off
Wake	None	Flash Green (Green indicates that a wake-up command is being transmitted)
Internal Antenna	No Link	Blink Red and Orange
	Link	Blink Red and Green
External Antenna	No Link	Blink Orange
	Link	Blink Green

Battery Status (Battery Symbol)

USB	Battery	BAT Indicator
Powered	Charging	Orange
	Charged	Green
	Fault	Alternate Green and Orange

No Power	Good Low	Off Blink Red
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Pairing the PMD and PocketPC

NOTE: Steps may vary depending on the model of PocketPC used.

1. Ensure that the PocketPC / Windows Mobile device has a Bluetooth interface and that it is enabled.

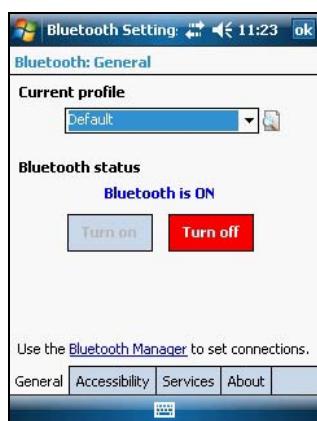
- a. From the **Start Menu**, select **Settings**



- b. Select **Connections** and **Bluetooth**

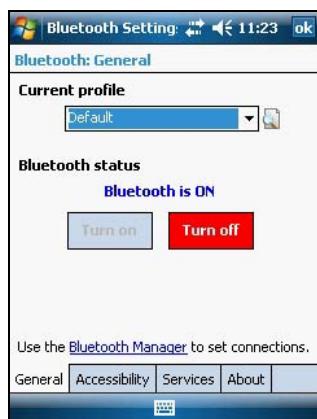


- c. Confirm **Bluetooth Status is On**

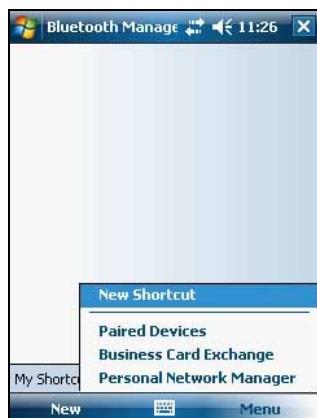


2. Be sure you have **Serial Port Service** enabled on your device in the **Bluetooth Settings Services** tab. Depending on the device model, the serial COM port used by the Bluetooth connection may be different. Each device usually uses a separate COM port for inbound and outbound connections. To determine the COM port used by your device for Bluetooth connections, select **Bluetooth Settings Services=> Serial Port Service=>Advanced....** Note the outbound COM port number. You will need to specify this COM port number in the PocketDTX application.
3. Explore and detect the DTX Bluetooth module using the **Bluetooth Manager** on your device. Ensure that the PMD is set to Internal or External Antenna Mode.

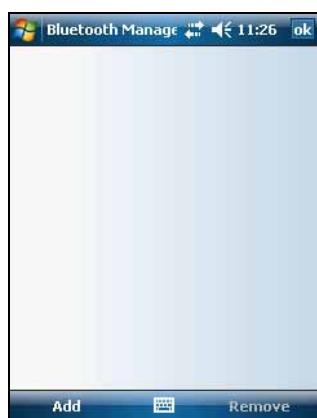
- a. From Bluetooth Settings, select **Bluetooth Manager**



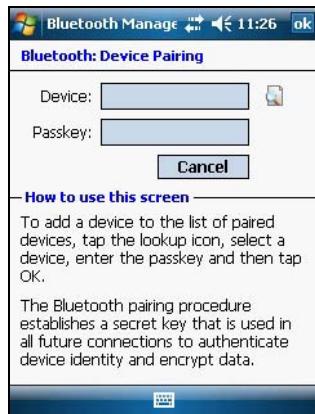
- b. Select **Menu** and **Paired Devices**



- c. From Paired Devices, select **Add**



d. From Bluetooth Device Pairing, select the **Search icon** (next to the Device field)



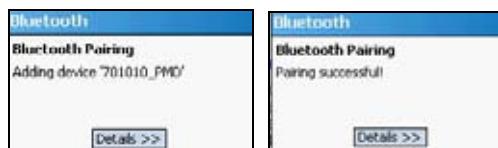
e. Select the **PMD serial number** from the list of Bluetooth devices. If the serial number is not displayed, reconfirm the serial number of the PMD, that the device is set to Internal or External Antenna Mode and select Refresh.



f. Enter the passkey (typically a sequence of zeros: **0000**) and **Enter**



g. The PocketPC provides an indication of pairing and success. If unsuccessful, retry,



4. If prompted to select which services should be enabled, select **Serial Port**. The DTX Bluetooth module should be added as a shortcut to your Bluetooth connection shortcuts.
5. You can now start the G4S PocketDTX application from the shortcut created under **Start => Programs** (It uses the G4S icon).



PocketDTX Application

The screen is divided into two parts:

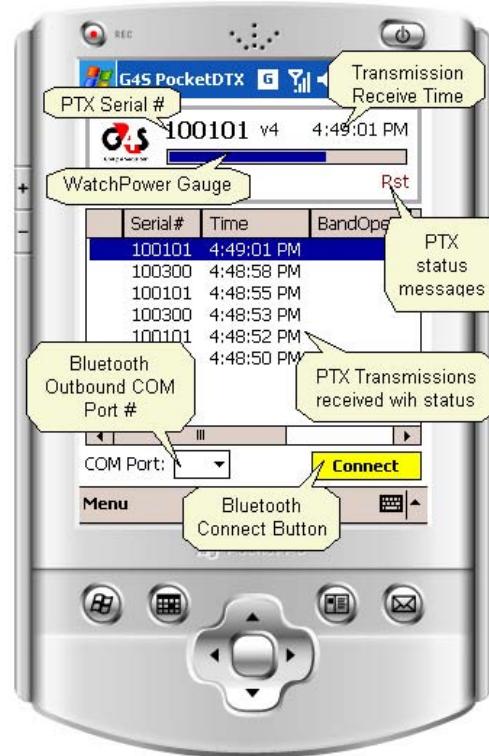
- The main display panel at the top of the screen
- A list view in the main body.

The main display panel contains information about the last PTX transmission received by the PMD. This includes the PTX serial number, its message version number, the time that the transmission was received, a gauge indicating the PTX power, and status messages (**Band Open**, **Tamper**, **Low battery**, and **Restart**).

The list view displays the last 100 PTX transmissions received with the most recent on top. Each row represents a separate transmission. The columns are **PTX serial number**, **Time of transmission**, **Band Open**, **Tamper**, **Battery Low**, **Restart**, **Message Version**, and **PTX Power (Range Setting)**.

To connect to the DTX Bluetooth module:

1. Select the appropriate outbound Bluetooth serial COM port number from the drop-down combo-box at the bottom left of the screen and then select **Connect**. The Bluetooth browser window should open (provided you have not previously selected to always connect to a specific Bluetooth device) prompting you to select the appropriate Bluetooth device to connect to.
2. Choose the DTX Bluetooth module. If the Bluetooth connection is successful, the **Connect** button changes color from yellow to light blue and the text displayed changes to **Disconnect**. If the PMD detects any PTX sending status messages, they will be displayed on the main display panel and in the list view.



Chapter 2 Using the PMD and PocketPC

1. Ensure that the PMD is set to Internal or External Antenna Mode.
2. You can now start the G4S PocketDTX application from the shortcut created under **Start => Programs** (It uses the G4S icon).

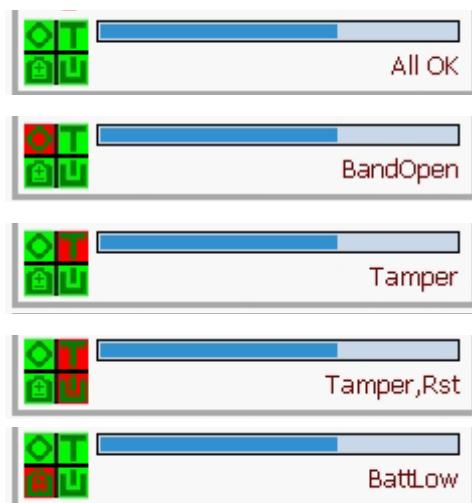


3. Select the appropriate **COM port** (typically Port 6), and **Connect**.



4. If the Bluetooth connection is successful, the **Connect** button changes color from yellow to light blue and the text displayed changes to **Disconnect**. If the Bluetooth connection is unsuccessful, attempt another COM port. If the PMD detects any PTX sending status messages, they will be displayed on the main display panel and in the list view.





All four quadrants Green indicates All OK.

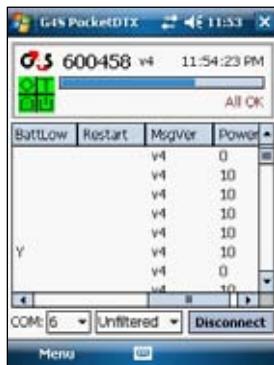
Top Left quadrant Red indicates Band Open at transmission.

Top Right quadrant Red indicates PTX is in Band Tamper.

Multiple quadrants can be red simultaneously. Bottom Right quadrant Red indicates PTX recently reset.

Bottom Left quadrant Red indicates PTX Low Battery.

The Blue Bar indicates Power Level which represents PTX range setting. A corresponding numeric value is visible if you scroll the list view in the main body to the right.



- 0 – PTX is set to Low range
- 5 – PTX is set to Med range
- 10 – PTX is set to High range or serial number represents another PMD/OPID

5. To end, select **Disconnect**, once disconnected the box will turn yellow and read **Connect**.
6. Turn Off the PMD.

Chapter 3 Range Test with the PMD and PocketPC

To conduct a range test using the PMD:

1. Ensure that the PMD is set to Internal or External Antenna Mode.
2. Start up the PocketPC.
3. From the **Start Menu**, open the G4S PocketDTX.exe application.
4. Select COM port and **Connect**. Once connected, the box will turn gray and read **Disconnect**.
5. Select the PTX serial number to be range tested from the dropdown.



6. Select **Menu** then **Range Test**.



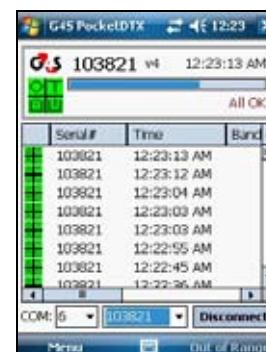
7. Perform the **Range Test**. The PocketPC beeps will correspond to the PTX beeps and the status will display on the PDA (lower right corner).



Excellent Range



Good Range



Out of Range

8. To complete the range test, select **Menu** then **Range Test**.

9. Select **Unfiltered** from the drop-down menu.
10. Select **Disconnect**; once disconnected the box will turn yellow and read **Connect**.
11. Reinsert the Menu Key in the back of the HMU and select the red button to end.

Chapter 4 Caring for the PMD and PocketPC

The PMD should be turned off when not in use.

- Battery Life is 22-28 hours (depending on operational mode)
- Low battery indicator provides approximately 5 hours low battery warning.
- Total time taken to fully charge the batteries from a complete discharge state is approximately 6.5 hours.

Keep the PMD and PocketPC away from water as it may damage the devices.

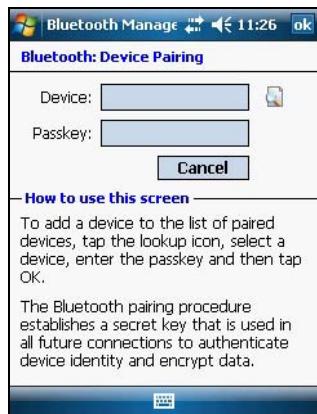
Chapter 5 Troubleshooting Tips

If you encounter an Error establishing Bluetooth connection:

1. Ensure the PMD is set to Internal or External Antenna mode.
2. Attempt all other COM ports.
3. Confirm Bluetooth Status is On.
 - a. From the Start Menu, select Settings
 - b. Select Connections and Bluetooth
4. Confirm PMD serial number is paired with PocketPC device.
 - a. From Bluetooth Settings, select Bluetooth Manager
 - b. Select Menu and Paired Devices
 - c. If the PMD serial number is displayed and/or incorrect, select the serial number, Remove, and Yes.



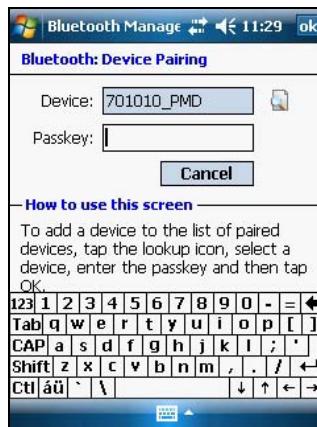
- d. If the PMD serial number is not displayed, or if you have removed the serial number, select Add.
- e. From Bluetooth Device Pairing, select the Search icon (next to the Device field)



f. Select the PMD serial number from the list of Bluetooth devices. If the serial number is not displayed, reconfirm the serial number of the PMD, that the device is set to Internal or External Antenna Mode and select Refresh.



g. Enter the passkey (typically a sequence of zeros: 0000) and Enter



h. The PocketPC provides an indication of pairing and success. If unsuccessful, retry,



Chapter 6 Regulatory Notices

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation."

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the 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 and, if not installed and used in accordance with the instructions, 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 to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION: Changes or modifications to this device, not expressly approved by G4S, could void your authority to operate this device under FCC regulations.