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PLD
USER GUIDE

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Revision history

Document Release	Date	Description
1.0	12 Nov 04	Initial release
1.1	10 Jan 05	Minor cosmetic changes. No technical change.
1.2	04 Feb 05	Revisions to changing battery and SIM card.
1.3	25 Feb 05	Revised technical support telephone numbers.
1.4	04 Mar 05	Included Appendix A (FCC information to PLD users)
1.5	07 Mar 05	Changed the word “mobile” to the word “portable” on page 5

1. Introduction

The PLD is a portable device that is worn or carried by an individual whose geographical location needs to be monitored. The PLD communicates with a PC-based Command and Control system via a wireless service provider's network. The Command and Control system constantly monitors all PLD units registered on the system to determine their current location. In addition, the system can also record a complete history of movement for each PLD and determine its operational status such as battery level, online/offline status, etc. without having to involve the individual possessing the unit.

The individual possessing a PLD can request help by pressing panic alert buttons. When an alert signal is detected by the Command and Control system, an alert message is automatically displayed for the system operator who will then take remedial action.

Each PLD can communicate with the Command and Control system only after a valid SIM (Subscriber Identity Module) card has been installed in the unit. The SIM card identifies the PLD unit to the wireless service provider so that the PLD can use the provider's communication network to speak with the Command and Control system. SIM cards are available from the wireless service provider.

Operating Conditions

The PLD uses two antennae for communication: the GPS antenna, and the GSM antenna.

The GPS antenna sends and receives data via GPS satellite signals. In order to communicate with the GPS satellites, the PLD unit must have a clear view of the sky.

The GSM antenna is internal to the PLD unit. This antenna operates under the same conditions as a cell phone does and, unlike the GPS antenna, it does not need a clear view of the sky.

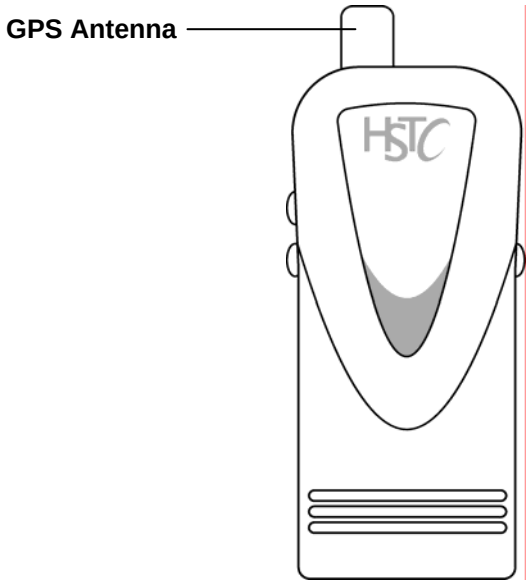

Figure 1. Front view showing GPS Antenna

2. Installing the SIM Card

A SIM card must be installed in the PLD to enable it to use the wireless service provider's network so that communication with the Command and Control system can be established.

To install a SIM card, do the following:

1. Be sure to ground yourself to discharge your body's static electricity.

2. Unscrew the holding screw on the back of the PLD with a Phillips No. 1 screwdriver.

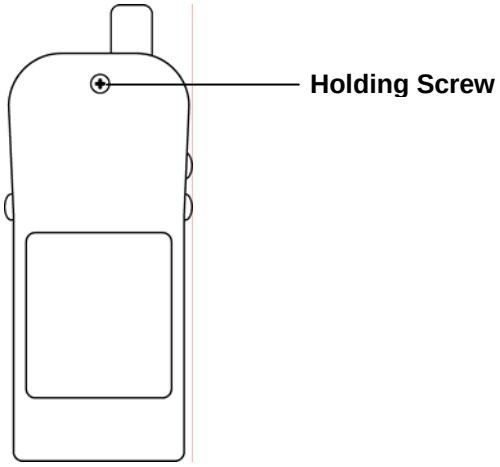

Figure 2. Back view

3. While holding the case intact, turn the PLD over and gently remove the front cover, taking care to pull the front cover free from the bottom tab on the back cover.

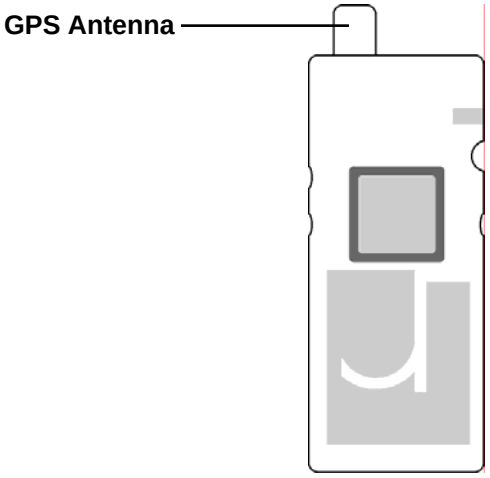

Figure 3. PLD with front cover removed (SIM card is not visible from this view.)

4. With the front cover off, remove the three push buttons and gently lift out the electronic assembly by supporting the GPS antenna from below, and raising it upwards. Be careful when disengaging the slider switch from its slot on the bottom of the case.

5. Turn over the electronic assembly and locate the SIM cardholder. Then, move the slider cover to the open position by sliding it to the right.

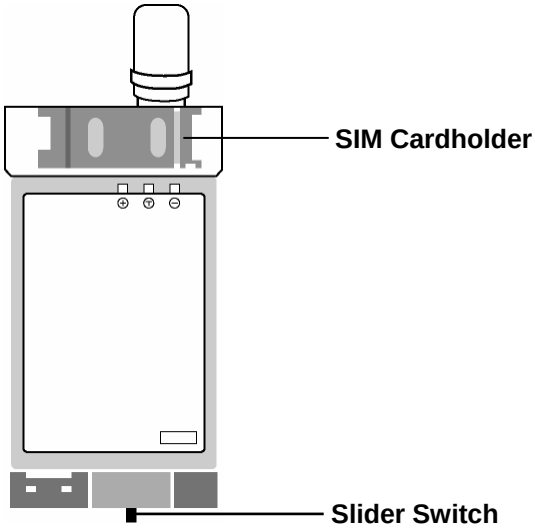

Figure 4. Electronic Assembly

6. Pivot the SIM cardholder outward and insert the SIM card as shown in Figure 5. Notice the position of the notched corner.

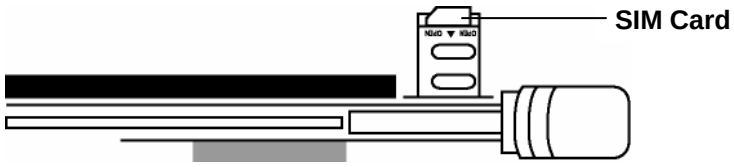

Figure 5. Inserting SIM Card

7. Pivot the SIM cardholder back into its original position and slide the SIM cardholder cover to the closed position.

8. Turn the electronic assembly over and place it into the back cover, with the battery side facing down. Insert the bottom of the assembly first, to ensure that the slider switch fits securely into the corresponding slot in the casing.

9. Replace the three push buttons and fit the front of the PLD case onto the back cover, guiding the bottom tab on the back cover into the slot.

10. Turn the PLD over and insert the holding screw into the back cover.

3. Turning the PLD and LEDs ON/OFF (Slider Switch)

The slider switch is located on the bottom side of the unit. You can slide the switch to one of three positions to turn the PLD and LEDs ON/OFF. The following diagram shows the function of each position.

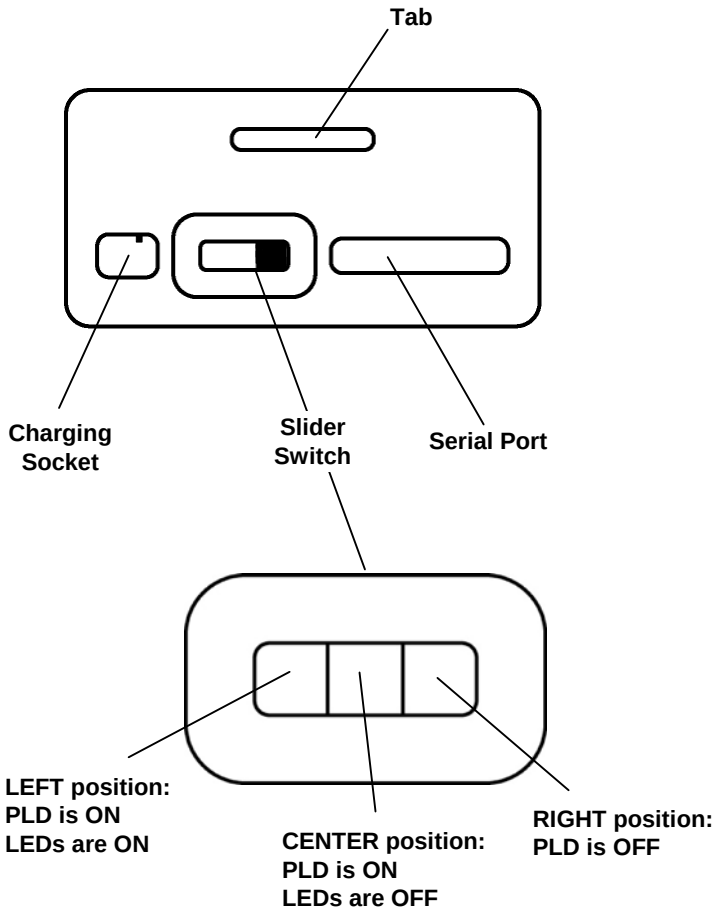

Figure 6. Bottom view and slider switch positions

4. LED Indicators

The PLD unit has four Light Emitting Diodes (LEDs). They are:

1. Panic LED (L1)
2. Cellular LED (L2)
3. GPS LED (L3)
4. Power LED (L4)

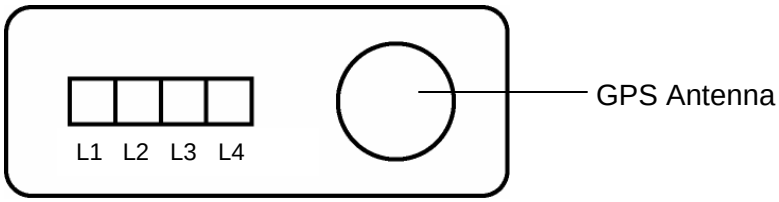

Figure 7. Top view showing LEDs and GPS antenna

Panic LED (L1) states

- SOLID GREEN – Unit Charging
- SOLID YELLOW – Unit Charging and Panic Alert Sent
- SOLID RED – Panic Alert Sent
- FLASHING RED – Panic Alert Acknowledged by Command & Control
- OFF – Unit Charged

Cellular LED (L2) states

- SOLID RED – SIM Fail
- FLASHING YELLOW – Network Registered/Roaming/Home
- FLASHING GREEN – Connection Established
- FLASHING RED – Initialization

GPS LED (L3) states

- FLASHING GREEN – Initialization / GPS FIX
- FLASHING YELLOW – No FIX

Power LED (L4) states

- FLASHING GREEN – Initialization / Battery O.K.
- FLASHING YELLOW – Low Battery

5. Troubleshooting and Configuration Using the Serial Port

The PLD is equipped with a serial port interface that lets you perform troubleshooting and configuration tasks. When your PC is connected to the PLD via the serial port, information can be sent to and retrieved from the PLD.

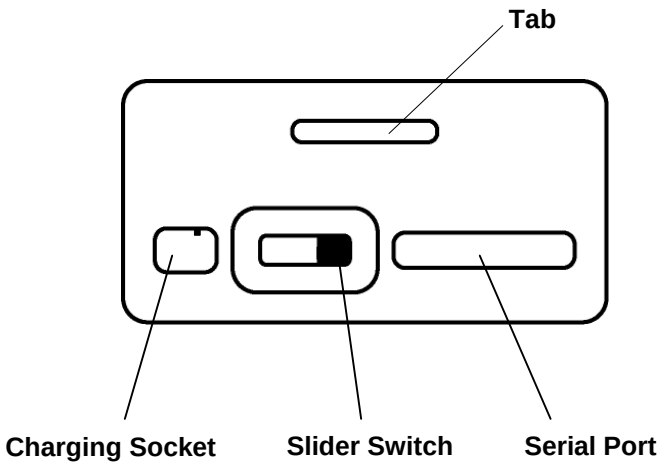

Figure 8. Bottom view showing serial port

1. Plug the PC end of the serial cable into a COM port on your PC.

2. Plug the PLD end of the cable into the PLD serial port. Note that the cable is keyed so that it fits into the port in one orientation only. Do NOT force the cable into the socket.

3. Turn on the PLD and invoke the PLD Configuration software. The **pld config** screen is displayed.

4. Notice the button **Using Com Port x** in the upper left corner. Be sure that the number corresponds with the number of the COM Port you chose in Step 1. To select a different COM Port, click on the button. You will be prompted for a new COM Port number.

5. Be sure that the IP Address and IP Port are set correctly for your tracker. To set the primary dispatcher IP Address, click on the drop-down menu, select **Set primary dispatcher IP Address**, and click on **Send Command**. To set the primary dispatcher IP Port, select **Set primary dispatcher IP Port**, and click on **Send Command**. Follow the above steps to set the secondary dispatcher IP Address and Port.

6. The GPS and PLD status is constantly displayed line-by-line. If you enter a command, it will be echoed in this window as well.

7. You can enter any of the following commands from the drop-down menu:

(VER) – Print FW Version	Displays the version of firmware/hardware in use on the PLD
(INP) – Print Init info (including IMSI, IMEI)	Displays initialization details, such as IMSI number, IMEI number, primary Dispatcher IP address, secondary Dispatcher IP address and default Dispatcher
(GPS0) – Stop printing the Gps Message to screen	Terminates display of GPS status
(GPS1) – Restart printing Gps message to screen	Restarts display of GPS status
(DSP1) – Use primary dispatcher	Allows you to select primary MX Dispatcher. The MX Dispatcher is used to establish communication with Command & Control.
(DSP2) – Use secondary dispatcher	Allows you to select secondary MX Dispatcher
(DSPx1:xxx.xxx.xxx.xxx) – Set primary dispatcher IP Address	Allows you to set the IP address for the primary MX Dispatcher
(DSPx2:xxx.xxx.xxx.xxx) – Set secondary dispatcher IP Address	Allows you to set the IP address for the secondary MX Dispatcher
(DSPp1:xxxx) – Set primary dispatcher IP port	Allows you to set the IP port for the primary MX Dispatcher
(DSPp2:xxxx) – Set secondary dispatcher IP port	Allows you to set the IP port for the secondary MX Dispatcher
(GPS_SW) – Get Gps SW version	Displays the version of GPS software in use on the PLD, which could be used for diagnostic purposes
(PNR) – Print Phone Numbers	Displays complete list of stored phone numbers to be used for voice calls, as described in Section 6 “Making Voice Calls”
(PN0) – Set phone number 0 - 9	Allows you to store up to 10 phone numbers to be used for voice calls, as described in Section 6 “Making Voice Calls”

Table 1. List of Troubleshooting and Configuration Commands

6. Making Voice Calls

The PLD can automatically dial one of 10 pre-stored telephone numbers that lets you engage in a voice conversation with someone. You need to plug a standard cellphone headset into the PLD and depress certain buttons.

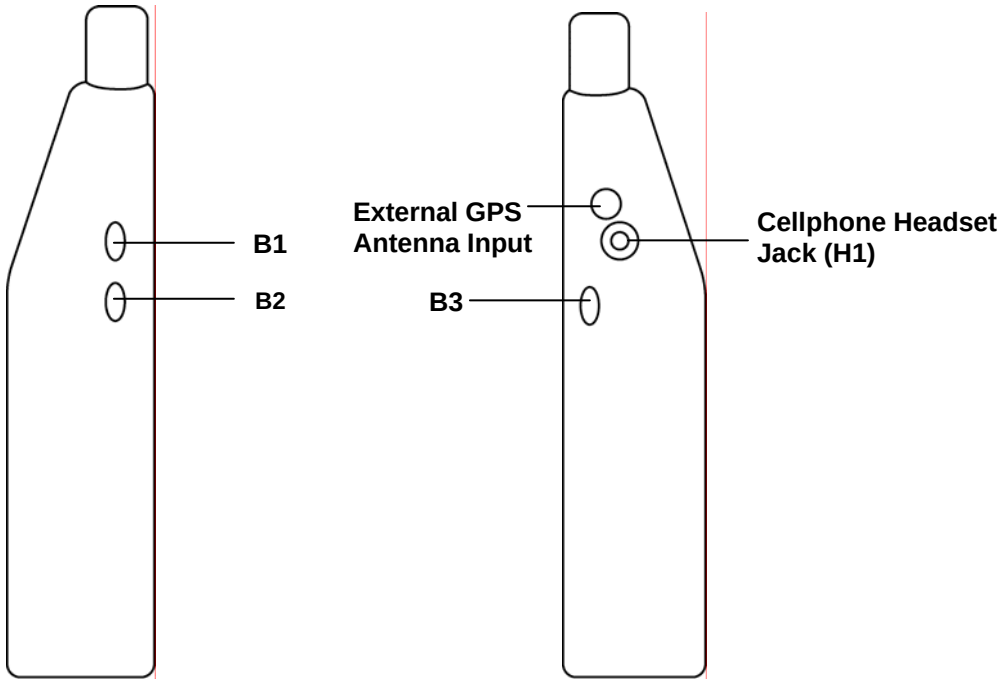

Figure 9. Side views

1. Plug a standard cellphone headset into the headset jack (H1).

2. Press **B1** and **B3** simultaneously to activate **Voicecall**. Voicecall automatically dials a predefined telephone number and lets you conduct a voice conversation via the headset.

> This feature uses phone numbers that are stored on the PLD. See Section 5 "Troubleshooting and Configuration Using the Serial Port" for a description of the command that allows you to store phone numbers.

7. Sending a Panic Alert

You can request help by pressing certain buttons on the PLD. The PLD then issues a **Panic Alert** signal, which is detected by the Command and Control system. The Panic Alert function uses the PLD's GPS antenna. Therefore, the PLD unit needs a clear view of the sky when a Panic Alert message is sent.

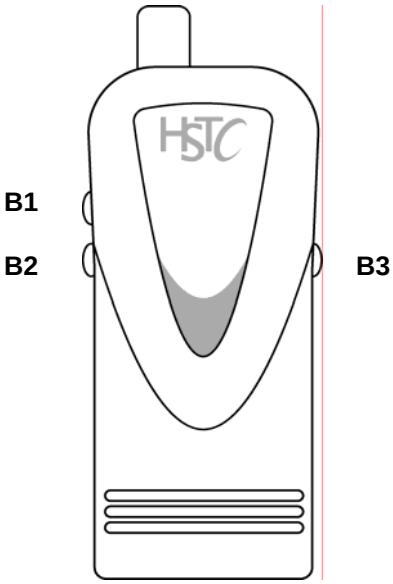

Figure 10. Push buttons B1, B2, B3

1. To send a **Panic Alert**, press **B2** and **B3** simultaneously.

2. To confirm that a Panic Alert was sent, check the LED indicators at the top of the PLD. The L1 LED illuminates solid red or solid yellow when a Panic Alert is sent. For more information about the LED indicators, see Section 4 LED Indicators.

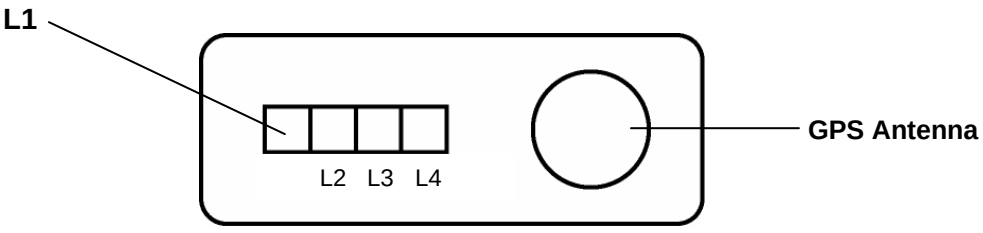

Figure 11. Top view showing LED L1

8. Recharging the Unit

The PLD unit comes equipped with a rechargeable battery. Under typical use, the battery charge will last for 11 to 12 hours. When the battery charge is low, recharge the battery using the cable and power adapter provided. A full recharge typically takes between 3 and 4 hours.

1. Plug the power adapter into a standard 120V AC socket.
2. Plug the cable into the charging socket located on the bottom of the unit.

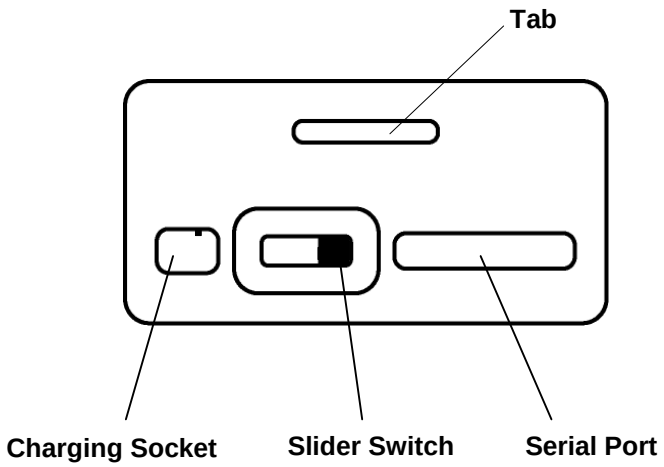

Figure 12 Bottom view

3. We recommend that you slide the switch to the OFF position during charging to reduce the charging time.

9. Replacing the Battery

The PLD unit comes equipped with a rechargeable lithium battery. After the normal life span of the battery has been reached, the battery must be replaced. Obtain replacement batteries only from HSTC. The part number of the replacement battery is PL900-073-00. If you insert into the PLD any battery other than the HSTC-approved replacement, you will void the warranty.

To replace the PLD battery, do the following:

1. Be sure to ground yourself to discharge your body's static electricity.

2. Unscrew the holding screw on the back of the PLD with a Phillips No. 1 screwdriver.

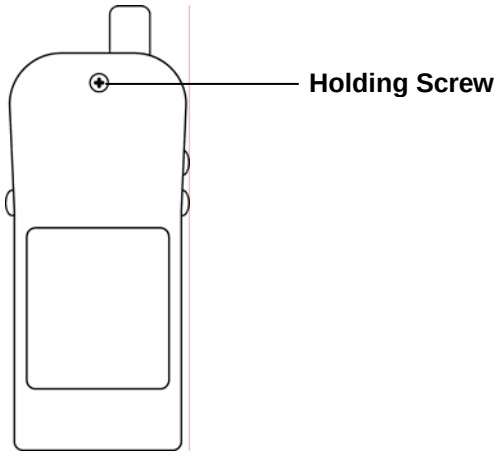

Figure 13. Back view

3. While holding the case intact, turn the PLD over and gently remove the front cover, taking care to pull the front cover free from the bottom tab on the back cover.

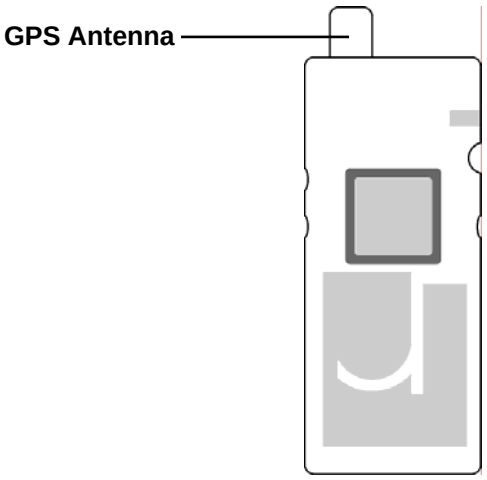

Figure 14. PLD with front cover removed (Battery is not visible from this view.)

4. With the front cover off, remove the three push buttons and gently lift out the electronic assembly by supporting the GPS antenna from below, and raising it upwards. Be careful when disengaging the slider switch from its slot on the bottom of the case.

5. Turn over the electronic assembly and locate the battery.

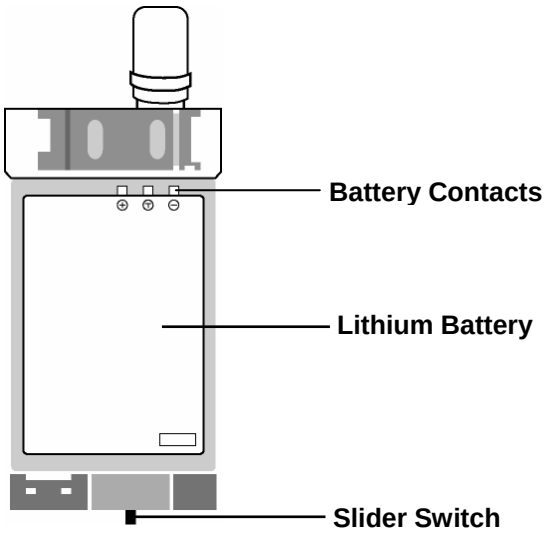

Figure 15. Electronic Assembly

6. Gently slide the battery towards the spring-loaded contacts, and lift the battery out from the bottom.

7. Insert the contact side of the replacement battery first, pressing towards the spring-loaded contacts. Then press in the bottom of the battery, making sure that the battery contacts are lined up with the contacts on the holder.

8. Turn the electronic assembly over and place it into the back cover, with the battery side facing down. Insert the bottom of the assembly first, to ensure that the slider switch fits securely into the corresponding slot in the casing.

9. Replace the three push buttons and fit the front of the PLD case onto the back cover, guiding the bottom tab on the back cover into the slot.

10. Turn the PLD over and insert the holding screw into the back cover.

10. Getting Help

For technical support for your PLD, contact **HSTC** technical support at:

Telephone: 1-866-798-0905 (toll free) or 905-764-3701

email: mailto:support@hstcglobal.com

Appendix - FCC Information to PLD Users

For Class A Unintentional Radiators:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warning: Changes or modifications not expressly approved by Homeland Security Technology Corporation (Canada) could void the user's authority to operate the equipment

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.