HawkEye (PT) Plus

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TABLE OF CONTENTS

INTRODUCTION

The HawkEye Portable Tracker Plus (HawkEye (PT) Plus, HEPT Plus) is a dual-mode, handheld satellite/cellular messaging and personal tracking device. It can be configured to operate single-mode with either the Iridium satellite network or any GSM cellular network, and can also be configured to report in Iridium/GSM dual-mode. It can transmit location information determined by a highly sensitive GPS receiver, inbound and outbound status, text messaging, and emergency/alert notifications.

The HawkEye (PT) Plus offers a variety of services including:

Tracking   The HEPT Plus can be programmed to automatically wake up and send a position report at a set interval ranging from once every minute to once every forty-five days.

QuickPosition   When the emergency 911 button is pushed, the HEPT Plus immediately sends QuickPosition alerts to SkyRouter.

Free-Text Messaging   The HEPT Plus allows users to send free-text; there are three different sets of touchscreen keyboards available.

Canned Messages   The HEPT Plus allows users to send canned (pre-defined) messages stored on the device. Canned Messages can be configured using the HEPT Plus Manager application.

Waypoints   The HEPT Plus lets users send waypoints to SkyRouter. When received by SkyRouter a new waypoint is added to the map.

Check-In   With the HEPT Plus a Check-In message can be sent to SkyRouter with the touch of a button.

Motion Sensor   The HEPT Plus has a built-in motion sensor; the device can be configured to send a position report based on a predefined type of motion.

GeoFencing   The HEPT Plus in conjunction with the HEPT Plus Manager Application allows the user to configure multiple GeoFences defined as polygons (50 GeoFences with up to 50 points each), position reporting can be activated based on conditions set by these GeoFences.

Data Logger   The HEPT Plus can be configured to store up to 4,000 positions for later retrieval.

DEVICE OVERVIEW

Iridium Antenna
GPS Antenna
GSM Antenna
Bluetooth Antenna
Touchscreen
Guard
Emergency Button
Micro USB Interface
GSM SIM Reader
LED Status Display
Power/Back Button

Use screw driver to remove SIM cover. Load any GSM SIM card including AT&T and T-Mobile.

Push small button to eject SIM tray

ACCESSORIES

The following accessories are included with the HawkEye PT Plus:

Manuals and Software   AC Wall Adapter   USB-to-micro USB Cable

CHARGING THE BATTERY

When you receive the HawkEye (PT) Plus, the internal battery is already partially charged, we recommend that users fully charge the HEPT Plus before use. The HEPT Plus can be charged using the supplied AC wall adapter or by using the supplied USB cable and a USB port on a computer.

WALL AC ADAPTER

Approximate charging time: 5 Hours

USB PORT

Approximate charging time: USB 1.0 ~1 Day

USB 2.0 ~12 hours

When the HEPT Plus is in the process of charging the battery status symbol will appear in the top right corner of the touchscreen, when charging is complete a message will be displayed on the screen. The device does not need to be turned off and can be used as normal whilst charging, however, the charging cycle will be faster when the device is powered off.

BELOW 20% POWER

When the remaining battery power reaches less than 20% the battery symbol will turn red, a warning message will display on the screen when the remaining power is less than 10%.

TOUCHSCREEN

The HawkEye (PT) Plus has a resistive touchscreen, since resistive touchscreens respond to pressure on the surface this means that you can use the HEPT Plus while wearing gloves and also with a stylus.

Resistive touchscreens are very durable, however, as with any touchscreen, users must be careful not to damage it with a sharp object. A resistive touchscreen requires moderate finger pressure and the screen may also need to be recalibrated from the Settings menu from time to time.

Either a stylus or gloved finger can be used to access features on the resistive touchscreen

POWER ON

To power on the HawkEye (PT) Plus press/hold down the power/back ⟲ button for approximately two seconds. When the screen turns on users may notice a "Date/Time Unavailable" message, this is normally observed whilst the HEPT Plus checks its internal clock against the data from the GPS receiver.

Once the device is powered on, touch any icon to access device features. Press the power/back ⟲ key briefly to go back to the previous screen.

POWER OFF/LOCK

The HawkEye (PT) Plus can be powered off at any time by holding down the power/back button for 3 seconds and then selecting "Turn Off" from the "Power Down or Lock" prompt.

If the HEPT Plus is unlocked it will automatically lock and go to into a "sleep" mode after 90 seconds of inactivity. To lock an unlocked HEPT Plus press and hold the power/back button for 3 seconds and then select "Lock" from the "Power Down or Lock" prompt.

KEYBOARDS

The HawkEye (PT) Plus keyboards are displayed in landscape mode, there are three different keyboard styles offered: lower case, upper case and number/special characters. Toggle between keyboards by pressing the designated keys next to the "Done" key.

The keyboard screen is divided into three sections as shown in the figure (right).
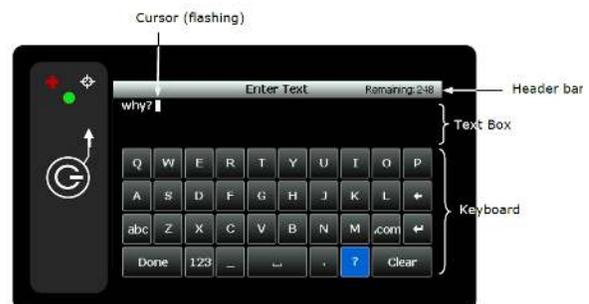
The right side of the header bar displays the remaining number of characters that can be typed into the Text Box, when the remaining characters reaches 0 an alert will sound since additional text cannot be entered.

Use the keyboard to enter text into the text box, the recommended hand position is show in the figure (below):

When typing, the position of the cursor in the text box is identified by the flashing white block; this block will turn red when the maximum character count has been reached (0 remaining).

Use the "Clear" button to erase the entire contents of the text box, press Unclear to undo the clear. When you are done typing; tap the "Done" button to return to the previous screen. Pressing the back key whilst typing will return to the previous screen and discard any changes.

Tapping anywhere inside the text box will move the cursor to that location. Slide a finger inside the text box to select multiple characters at once; the selection will be displayed in the header bar as shown in the figure to the right. The position of the cursor in that selection is displayed in red letter.

The space and enter keys will appear as ↵ and ↵.

USING THE SEARCH BOX

The Search box will appear when accessing some menus; the Search box allows users to search for specific keywords and terms. Search parameters can be managed from the Settings/Search menu. Tap inside the Search box to show the keyboard which can be used to input search items.

USING THE SLIDER BAR

A slider bar is used to provide access to menu options that appear off-screen, hold and slide the scroll bar to scroll through the menu options. Tap above/below the slider to page up/down:
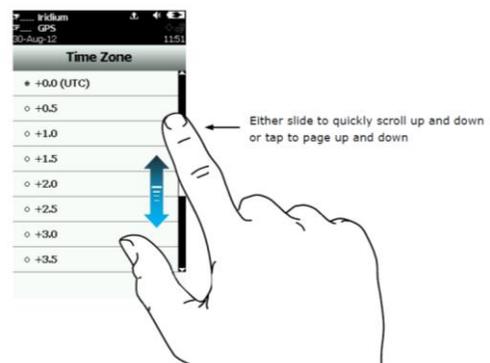
HOME SCREEN

UNLOCK

After the HawkEye (PT) Plus is powered up, unlock the device by pressing the "Press To Unlock" button at the bottom of the screen. If a PIN has been configured to protect the device, you will need to enter the PIN before the screen will be unlocked. The HEPT Plus is shipped without PIN protection; the default factory PIN is 1111.

Once the device is unlocked you are presented with the home screen. The top portion of the home screen shows the Device status symbols.

STATUS SYMBOLS

Denotes the primary link used to transport reports/messages (Iridium or GSM label will appear). The Iridium and GSM transceivers are turned off when they are not transmitting; a line is drawn over the symbol to indicate when the primary link down.

Denotes the primary link is enabled and shows the signal strength. The signal strength indicator ranges from 0-5 with 0 being the weakest and 5 being the greatest signal strength.

Denotes the GPS receiver is off. The GPS receiver powers down between reports to preserve battery life.

Denotes the GPS receiver is enabled and shows the signal strength:

> 1 bar - represents valid time and date fix
> 2 bars - represents a 2-D fix or dead reckoning
> 3 bars - represents a 3-D fix with HDOP higher than 2.0
> 4 bars - represents a 3-D fix with HDOP less than 2.0

Battery indicator

Denotes the battery is being charged

Denotes all audio alerts are muted

Denotes audio alert is on

Denotes there are unread message(s) present in the Inbox

Denotes message(s) is in the Outbox ready to be sent or message(s) in queue failed to send

✳ Bluetooth – when the symbol is blue Bluetooth is connected; when the symbol turns white, Bluetooth is on but disconnected.

▦ GeoFence – GeoFence is on when the symbol is white, when the symbol is gray this means that GeoFence tracking is turned off. If there are no defined GeoFence saved to the device the symbol will not appear.

⌖ Denotes Call Out, when the symbol is white Call Out is on, the symbol turns gray when Call Out is off. If there are no Call Out times defined the symbol will not appear.

✉ Mailbox check - when the symbol is white Mbox Check is on, when the symbol is gray Mbox Check is off.

✥ Tracking - When the device is tracking (standard tracking, GeoFence tracking, etc.) this symbol appears white. A countdown timer appears next to the tracking indicating how long is left until the next report. The symbol is gray when tracking is off.

DATE/TIME

Date/Time formats are set under the Settings>Time>Date option. The date and time are acquired from the GPS receiver, in order to acquire a valid date and time the GPS receiver must have at least 1 signal bar. When the GPS receiver is unable to get a valid GPS fix the message "Date/Time unavailable" is displayed.

HOME ICONS

There are four main icons displayed on the home screen of the HEPT Plus: Texting, Tracking, Utilities and Settings. See the next section for further details on each of these sections.

FAVORITE ICONS

The bottom portion of the home screen is a customizable Favorites bar, allowing rapid access to your most used options. Configure which icons will show here under Settings>Favorites, a maximum of four favorite icons are permitted.

TEXTING MENU

The Texting menu allows access for users to compose, save and view free-text messages, send canned messages, check mailbox for incoming messages and configure an automatic mailbox check interval.

INBOX

The Inbox folder contains read and unread messages which have been sent to the device (incoming); they are displayed in descending chronological order (newest first).

Messages which have been read are identified by an open envelope symbol ✉. Messages which are Unread are identified by an unopened envelope symbol ✉. When there are unread messages in the inbox an envelope symbol ✉ will appear on top of the screen.

The internal speaker will sound an audible alert when new messages are received, this can be enabled under the Settings>Audio menu.

DRAFTS

When messages created under the Compose menu are saved they are moved to Drafts. Messages in the Drafts folder are displayed in a chronological descending order (newest first). When selecting a draft message the user is taken back to the compose screen to finish the message. When the message is completed and has been sent a Confirm and Success screen will appear to indicate that the message has been moved to the Outbox. If include GPS option is enabled then GPS location will be attached to a message (NOTE: messages with include GPS may take longer to send since the HEPT Plus will need to check the GPS location first).

OUTBOX

When messages are waiting to be sent or have failed sending they are stored in the Outbox. Messages which are in the process of being sent are identified with a << symbol. Messages which have failed to send are identified by the **X** symbol with red label.   Messages which are queued for delivery do not show any symbol, HEPT Plus will try to send any queued message for 2 minutes; the message will be de-queued after 2 minutes to avoid using battery power.

Messages which have failed to send will remain in the Outbox. Outbox messages are sorted first in order of priority, and then by chronological descending order. When there are queued or de-queued messages in the Outbox the ⬆ symbol appears on top of the screen.

Failed messages can either be deleted or re-queued for sending. When the user re-queues and successfully sends an outbox message it will also attempt to resend other failed messages in the Outbox in the following order:

- Category 1: (Highest Priority)
    - Callout
    - Cancel Emergency
    - GeoFence Arrive/Depart
- Category 2:
    - Check-In
    - Queued Tracking Report

- Category 3:
    - Motion Report
    - Statistics Report
    - Test Report
- Category 4: (lowest priority)

- Remote Update Response
- Poll Report
- Text Message
- Waypoint

In the case where multiple items in the same category are present, the oldest item is sent first.

NOTE: The HEPT Plus will also automatically attempt to resend failed messages after a successful transmission by any option involved accessing the network such as Tracking, Test Report and Waypoint. To prevent this behavior from draining the battery, it is recommended that the user frequently maintain the Outbox and delete failed messages when they are no longer needed.

SENT

The sent folder stores a copy of every message that has been successfully sent from the HEPT Plus. Messages in the Sent folder are stored in chronological descending order (newest first). The option to resend, forward and delete a Sent message is offered.

Resend – moves the message to the Outbox and puts the message at the end of the queue.

Forward – puts the message back into Compose mode so that the user can add additional information to the message and send it.

Delete – Permanently deletes the message.

COMPOSE

The Compose menu provides facilities to enter, edit and send free-text messages, canned messages or a combination of canned and free-text messages to an email address.

When the Compose menu is selected a screen will appear, the screen is split into two sections. The first section covers the message destination options: "To: Server" and "Emails". "To Server" indicates that a copy of this message will be sent to SkyRouter. Press and hold "Emails" to show two options: Choose Contacts and Enter Emails. DO NOT lift the finger until the correct choice is selected. Pressing the back button cancels any selection.

If Choose Contacts is selected a list of contacts will appear, they are sorted in alphabetical order. Select a single or multiple contacts from the list and tap Add to confirm the recipients. To remove a contact go back to Choose Contact and unselect the contact from the list, then click Add again. Pressing the back button will cancel any selection.

If Enter Emails is selected the landscape keyboard will appear. Multiple email addresses must be separated with a comma; there is a 255 character maximum in this field.
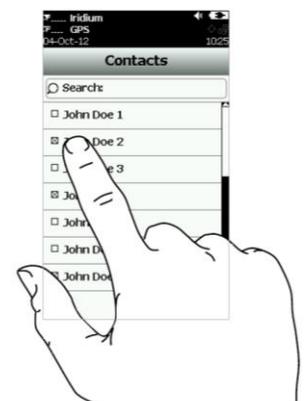
The maximum allowable length of free-messages is 309 characters, this includes the message body and also any email address recipients that are added to the message.

Canned Message - Pressing and holding Canned Message displays two options: Choose Can'd Msg and Enter Text:

> **Can'd Msg** – select this option to display a list of canned messages; tap on a canned message to display the entire message text; tap Select to select that message.
>
> To remove a chosen canned message press and hold inside the Canned Message field to show the Remove Can'd Msg option; select Remove Can'd Msg to remove the message.
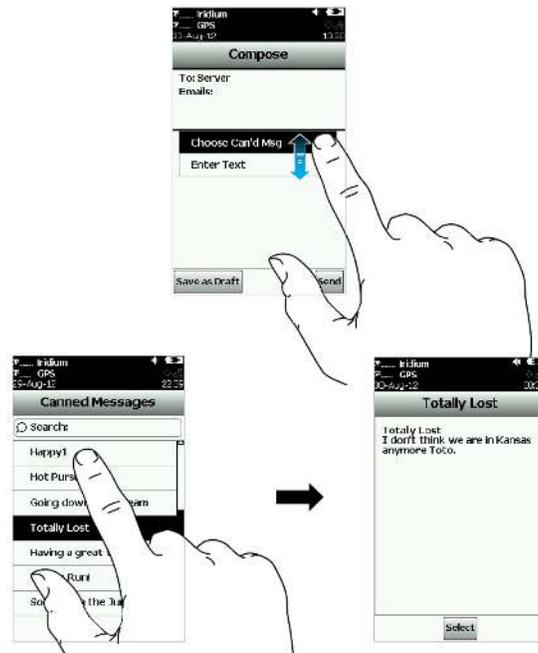
> NOTE: As with the contact list, the HawkEye (PT) Plus Manager Application can be used to enter Canned Message presets on the HEPT Plus, please consult the HawkEye (PT) Plus Manager application User Guide for further information on defining Canned Messages.
>
> **Enter Text** – select this option to enter free-text messages in the landscape keyboard. If you have already selected a canned message the free-text will be added to the end of the canned message content.

When the canned message and/or free-text message is complete press Send to send the message (the message is moved to the Outbox), or select Save as Draft (the message is moved to the Drafts folder).

NOTE: the HEPT Plus must have signal to send the message.

CONTACTS

The Contacts option is a list of contacts that are saved into the HEPT Plus memory. Contacts can store information such as name, email, phone number and location.

Contacts can be managed using the HawkEye (PT) Plus Manager Application (available for download from the secure documents section of New SkyRouter), please see the HawkEye (PT) Plus Manager Application User Guide for further information on managing contacts.

MBOX RATE – IRIDIUM LINK ONLY

Only applies only when the Iridium link is enabled. The Mbox Rate option provides configuration options for Mailbox Checks; this is an interval that the HEPT Plus will check to see if there are messages destined for the device waiting at SkyRouter. Mailbox Checks are done using the Iridium Network only. The HEPT Plus will also check for messages each time it reports to SkyRouter, so if your report rate is already set to a low value this option might not be required. It is possible to select either a pre-defined rate from the list or to enter a Custom Rate using the keyboard.
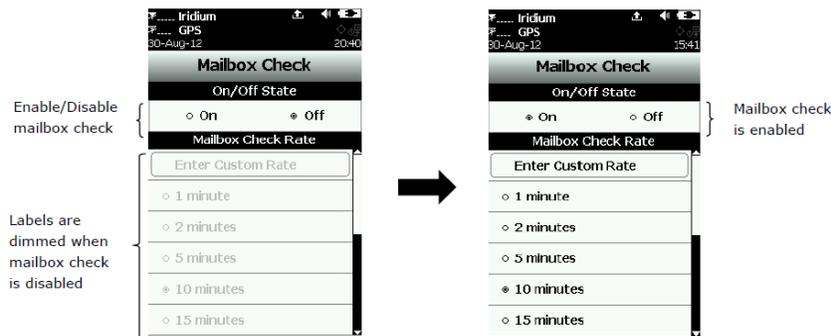
If mailbox check is enabled, the ✉ symbol appears white at the top of the screen. The HEPT Plus will then check SkyRouter for messages at the next scheduled interval. The HEPT Plus will sleep between mailbox check intervals in order to save battery life; the status LED will also flash once every 5 seconds. It is possible to disable the status LED under Settings > LED (this can reduce power consumption).

CHK MBOX – IRIDIUM LINK ONLY

Only applies when Iridium Link is enabled. Chk Mbox option allows the user to check the Iridium gateway for messages which are waiting to be sent the device. Press the "Check" button to begin checking for mail - as messages are downloaded the number of unread and queued messages is displayed.

MEMORY

Mailbox contents are stored in Memory; options are offered to clear the contents of individual mailboxes (Inbox, Outbox, Sent, Drafts), or all mailboxes at once.

TRACKING MENU

TRACKING

The Tracking menu provides access to options such as Report Rate and Network Link configurations. Some of the options such as GeoFences and Call Out require use of the HawkEye (PT) Plus Manager Application for setup and management; please refer to the HawkEye (PT) Plus Manager Application for further information on setup of those features.

RPT RATE

The Rpt Rate option allows users to configure the rate at which NormalPositionReports are sent from the HEPT Plus to SkyRouter, it also allows the user to enable Tracking or disable Tracking completely. There are options to configure a predefined rate from the list, or to configure a Custom Rate with the onscreen keyboard.

Use the On/Off radio buttons to enable/disable the HEPT Plus Tracking mode. When Tracking is set to ON the Tracking symbol ⊕ appears white at the top of the screen. When the HEPT Plus attempts to send a Position Report the GPS receiver is powered on to acquire a GPS fix for transmission with the report. NormalPositionReports are sent automatically at the configured interval (Rpt Rate). Between reports a countdown timer is displayed in parentheses next to the tracking symbol. The HEPT Plus will sleep between position reports and the status LED ⊕ will flash every five seconds (the LED can be disabled during sleep under Settings>LED).

The QPOS/Emergency 911 button activated at any time, whether Tracking is Enabled or Disabled. Messaging can also be used at any time regardless of the Tracking settings.

NOTE: When the Iridium link is being used and the device wakes up to send a position report. The antenna must have full view of the sky or it may fail to send. Failed reports are not queued to be resent in the default configuration. Under the Q Rpt menu, failed reports can be forced to stay in the Outbox until they are sent (see the Outbox section of this guide).

The Reporting process can take up to two minutes; this is dependent on Iridium satellite visibility and the validity of the current GPS ephemeris data. Ephemeris data stored on the GPS receiver is valid for two hours so that the can use a hot-start GPS fix. If the configured Position Report Rate is set to more than two hours, the GPS receiver will have to acquire a warm-start or cold-start GPS fix which can take ~29 seconds.

NOTE: The HEPT Plus will automatically attempt to resend any failed messages that remain in the Outbox after a successful position report is sent to SkyRouter. The user should frequently maintain the Outbox and delete failed messages which are no longer needed.

LINKS

The Links menu provides configuration options for which network(s) are used to transmit Position Reports and messages. There are three options: Iridium only, GSM only, or both (Dual-Mode).

If both networks are enabled (Dual-Mode), another menu will appear in the lower portion of the screen prompting the user to select a primary network. When both networks are available, the HEPT Plus will always use the primary link to send messages and Position Reports, the secondary network is only utilized when the primary network is not available. The transition between primary and secondary link is managed automatically by the HEPT Plus. The default link setting is GSM and Iridium, with Iridium as the primary link.
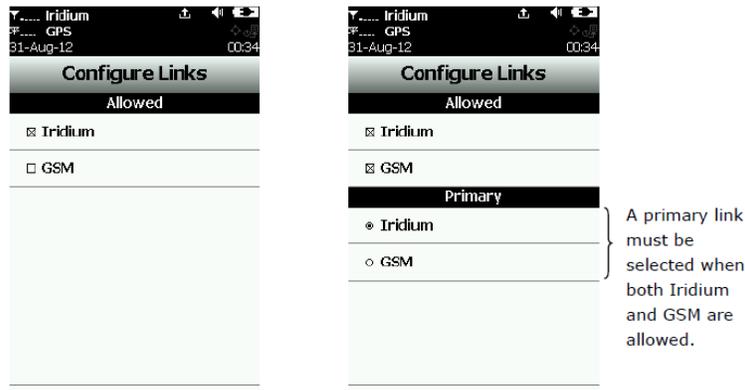
GEOFENCES

A GeoFence is a set of connected latitude and longitude coordinates that defines a region or zone of interest. GeoFences are a valuable tool that can help alert administrators and dispatcher to events that are based upon their geographical boundaries.

GeoFence offers another Tracking option which can be tailored for specific applications; GeoFence Tracking can work independently of the standard Tracking mode or can be implemented alongside standard Tracking. GeoFences can be managed using the HawkEye (PT) Plus Manager Application, please see the HawkEye (PT) Plus Manager Application User Guide for information on how to manage GeoFences.

A GeoFence must consist of a minimum 3 coordinates, the maximum coordinate count is 50. Each GeoFence has its own tracking profile that causes the HEPT Plus to change tracking configurations while inside the GeoFence boundaries. For example, allowing only the use of Iridium link or turning off all radio links for regions that require radio silence. GeoFences can be configured to send "Enter GeoFence" and "Exit GeoFence" events upon entering and/or exiting GeoFence boundaries.

The GeoFence menu on the HEPT Plus device only provides the following capabilities:

- Browse a list of GeoFences loaded into the device through the HawkEye (PT) Plus Manager Application
- View the map showing boundaries for each GeoFence and configured notifications/events
- Enable/Disable a GeoFence

All other GeoFence options must be managed through the Manager Application.
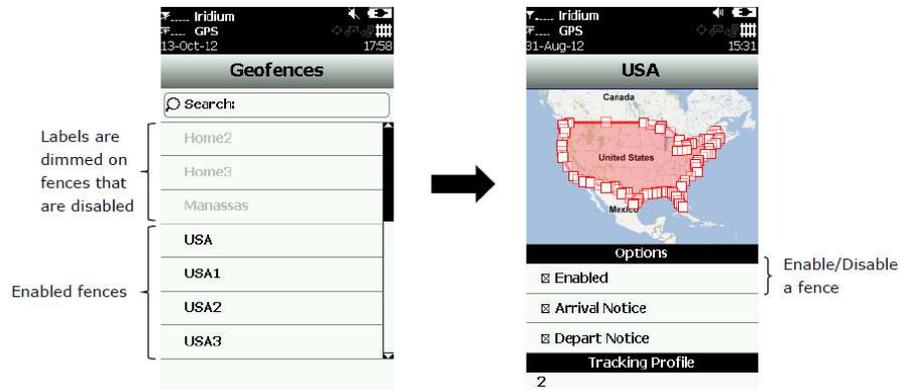
When GeoFences have been enabled, the GeoFence symbol ⊞ on top of the screen appears white. The HEPT Plus will immediately check the GPS receiver data to determine if the device is inside the boundaries of an enabled GeoFence. If the HEPT Plus is inside an enabled GeoFence, the GeoFence symbol will turn green. The GeoFence label will also turn green and "Active" will appear in parenthesis next to the label. When a GeoFence(s) is enabled and the device is in sleep mode, the status LED ✛ will flash once every five seconds (the LED can be disabled under Settings>LED).
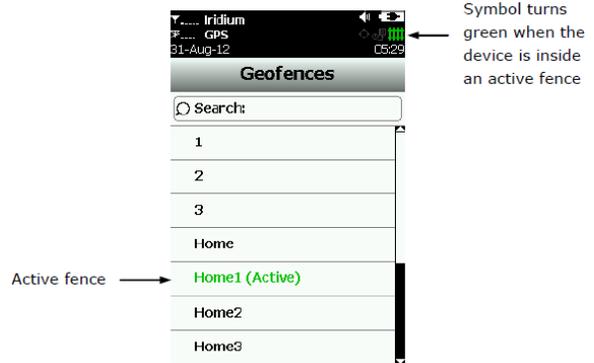
MOTION

DISCLAIMER: Except for those express warranties set forth in the Equipment purchase & Service Agreement for this product; all warranties relating to this product are expressly disclaimed, including, without limitation, warranties of merchantability and fitness for a particular purpose. Any liability shall be limited exclusively to repair or replacement of this Product. Under no circumstances shall liability exist for incidental, consequential, or special damages related to the handling or use of this Product. This Product should be handled and used in strict accordance with the User Manual accompanying this Product.

This Product includes a "non-movement" feature which may be used to alert parties monitoring a user's location as to whether a user has changed position after a certain amount of time (please see User Manual for specific details and instructions on use). The non-movement feature may be subject to malfunction due to user error, product defects, interrupted service or force majeure and therefore should be used in addition to, and not instead of, other reasonable safety precautions. The use of, and reliance on, the non-movement feature is at your own risk.

MANDOWN

The HawkEye (PT) Plus has a built-in Motion sensor which is used for the Mandown feature.

Mandown is a Motion feature that detects if the user has stopped moving and responds to SkyRouter when movement has not occurred for a configured amount of time.

NOTE: Motion events must be enabled for the active tracking Profile (see "Profiles" section) in order to utilize Motion features.

The Mandown icon is not visible on the HawkEye (PT) Plus by default, the Mandown icon must be enabled using the HawkEye (PT) Plus Manager Application.

HOW IT WORKS: MANDOWN

- Once Mandown is enabled the Mandown "Time Down Duration" starts to count down.
  - If movement occurs before the "Time Down Duration" expires; the "Time Down Duration" is reset.
  - If movement does not occur before the "Time Down Duration" expires; the device will enter the "Count Down Duration" state.
- Once the device enters the "Count Down Duration" state the device will show a prompt on the screen asking "Are You OK?" and an audible beep is heard.
  - If the user responds indicating that they are OK the "Time Down Duration" is reset.
  - If the user does not respond the device will enter the Mandown state.
- Once the Mandown state is reached the device will emit a siren noise continuously, the device will also enter Quick Position Mode.
  - Mandown state must be manually cancelled.

ENABLE/DISABLE MANDOWN FEATURE

The default configuration for Man Down is disabled; enable Mandown from the Mandown menu by selecting the "On" radio button under "On/Off State".

When Mandown is enabled the Mandown icon will appear in the top right portion of the screen. Additional options for the Mandown feature can be configured using the Manager application.

TIME DOWN DURATION

The length of time which motion does not occur; the device will enter Count Down state if the device does not move for this amount of time. The Time Down Duration can be set at any time, even if the Man Down feature is disabled, tap in the "Time Down Duration" field and use the numeric keypad to enter the duration value, acceptable values are between 1-65535 seconds. Press the back button at any time to cancel.

COUNT DOWN DURATION

Once the "Time Down Duration" has been satisfied (without any movement); the device will display a prompt on the screen "Are You OK?" and an audible beep is heard, if the user selects "Yes" the Mandown "trigger timer" is reset; if the user does not select "Yes" or selects "No" the Mandown state is triggered.

The Count Down Duration can be set at any time, even if the Man Down feature is disabled, tap in the "Count Down Duration" field and use the numeric keypad to enter the duration value, acceptable values are between 1-65535 seconds. Press the back button at any time to cancel.

ALERTS

Alert types can be set at any time, even if the man down feature is disabled. Tap the checkbox next to the alert type to enable that alert, tap again to disable the alert type.

Locator Alert: The Locator Alert sounds an audible siren tone from the device once the Man Down timers have expired.

Start Emergency: Start Emergency, when enabled, causes the HEPT Plus to enter emergency mode once the Man Down timers have expired.

Send Message: This feature is not supported.

CANCEL MANDOWN STATE

Cancel Man Down by selecting the "Cancel 911" option from the Tracking Menu.

CALL OUT

NOTE: Call Out options can only be configured via the HawkEye (PT) Plus Manager Application.

The Call Out feature allows users to configure the HEPT Plus to send a Position Report on a specific daily schedule via a specific Link, Call Out times are defined in UTC/GMT. When a Call Out time is enabled the symbol will appear white at top of the screen.

For more information on managing Call Out options please see the HawkEye (PT) Plus Manager Application User Guide.

DATA LOG

By default the HawkEye (PT) Plus will record all Position Report data in circular memory. It is possible to enable and disable this feature under the Data Log menu. When the circular memory becomes full the oldest reports are replaced with the newest reports. Use the HawkEye (PT) Plus Manager Application to access the data log memory.

STATS

The Stats menu provides access to a more granular countdown timer showing the "Time to Next" Position Report. The timer will display "Off" when Tracking is disabled. The lower portion of the screen displays the last successful report sent by Tracking or QuickPosition/911 mode. Check-In, Way Point, Free-text and Canned Messages are not considered Reports, and will not be displayed in Stats even if a message was sent successfully.

CANCEL QUICKPOSITION/911

If the QuickPosition (QPos)/911 mode has been enabled by pressing the ● button on the back of the HawkEye (PT) Plus, disable it with the "Cancel 911" option. A QPos cancellation event is queued in the Outbox and will be transmitted when the device has signal. The emergency mode ends immediately after the Cancel 911 option is selected and confirmed. The emergency LED ✚ is turned off and the top portion of the screen turns from red to black.

You cannot cancel the QuickPosition mode by powering off the HEPT Plus. The Cancel 911 option must be used to cancel the QuickPosition mode.

UTILITIES MENU

UTILITIES

The Utilities menu provides access to options that allow the user to check GPS and network signal strengths. It is also possible to send Test Reports, Check-Ins, and send Waypoints from this menu.

CHK GPS

Chk GPS is a diagnostic tool which can be used to ensure proper operation of the GPS receiver.

Enabling the Chk GPS option enables the HawkEye (PT) Plus built-in GPS receiver to check and display GPS data in real-time. The GPS receiver will remain on until the user exits the Chk GPS option by pressing the back button. The Reset Ephemeris button will erase saved ephemeris data from memory and download a new set of ephemeris data; this is usually used when the device has not been powered on for a long time or has travelled a large distance while powered off.

GPS fix accuracy can be determined by the HACC (horizontal accuracy in meters) value, higher HACC values indicate a less accurate GPS fix. The HACC value indicates a radius up to which the GPS fix can possibly be inaccurate by. A good and stable fix is usually represented by a HACC of less than 30 meters, when the GPS receiver is not able to acquire a fix HACC will gradually increase with a maximum value of 4294967.500. HACC can be monitored in real-time, however, prolonged use of this feature will significantly deplete battery power.

CHK IRIDIUM

Chk Iridium is a diagnostic tool which can be used to ensure proper operation of the Iridium transceiver.

Enabling the Chk Iridium option immediately powers on the HEPT Plus Iridium transceiver and displays the Iridium signal strength in real-time. The Iridium transceiver will remain powered on and continue to update signal strength until the user closes the Chk Iridium screen by pressing the back button. Prolonged use of this feature will significantly deplete battery power.

CHK GSM

Chk GSM is a diagnostic tool which can be used to ensure proper operation of the GSM transceiver.

Enabling the Chk GSM option immediately powers on the HEPT Plus GSM transceiver and displays GSM signal strength in real-time; the device must have an active GSM SIM installed. The GSM transceiver will remain powered on and continue to update until the user closes the Chk GSM screen by pressing the back button. Prolonged use of this feature will significantly deplete battery power.

TEST RPT

Test Rpt is a diagnostic tool which can be used to ensure proper operation of the GPS receiver and both the GSM and Iridium transceivers. This option can also be used as a manual tracking mode where the user will strategically enable Test Rpt and Send NormalPositionReports to SkyRouter on demand.

Enabling Test Rpt causes the HawkEye (PT) Plus to immediately power on the GPS receiver on and update the GPS fix. The GPS information is updated continuously and displayed in real-time even if there is not a valid fix. As with the Chk GPS option, it is possible to monitor HACC to determine if a valid fix is possible, except, once a valid fix is obtained the GPS receiver will be powered off and fix information is displayed on the screen. Send the GPS fix information to SkyRouter by pressing "Send".

The test report is actually a NormalPositionReport and will be displayed in SkyRouter as such. Sending a test reports noes not disrupt the configured Tracking interval/rate.

CHK-IN

Selecting the Chk-In option causes the HawkEye (PT) Plus to immediately send a "Check-In" event to SkyRouter with a single press of a button.

When the Chk-In button is pressed a confirmation message will appear. Once the user confirms, the HEPT Plus immediately sends a Check-In event to SkyRouter; GPS location is automatically attached to this event.

WAYPTS

Waypoints (also known as "Locations") are GPS locations that identify and mark a specific geographical point on the map, this point can be named for future reference. Selecting "New" causes the HEPT Plus to turn on the GPS receiver and acquire a fix, several options are then offered: go back without further action, re-acquire a new GPS fix, label/name the point, or save the waypoint. After the waypoint is saved, the user can also send it to SkyRouter. The waypoint will appear on the SkyRouter map as "Locations".

SETTINGS MENU

SETTINGS

Configure HawkEye (PT) Plus hardware settings under the Settings menu.

AUDIO

The Audio option allows the user to change alert frequency and tones; it is also possible to mute message alerts and mute audio altogether. The ◀ icon appears at the top of the screen if Mute All is enabled. Test audio before implementing by pressing "Preview".

BACKLIGHT

Use the Backlight option to configure the inactive period that is required for the HawkEye (PT) Plus backlight to turn off. We recommend setting this option to "Always on" for nighttime use.

BLUETOOTH

The Bluetooth option is used to enable and disable the Bluetooth adapter, it is also possible to set the Bluetooth PIN and change the Bluetooth broadcast name.

The Power menu allows the user to enable and disable the Bluetooth adapter; once the Bluetooth adapter is enabled the Visible and Connectable options will become available. Any changes to Bluetooth options take several seconds to implement. Selecting Visible causes the Bluetooth module to enter discoverable mode, this means that other devices can discover the HEPT Plus Bluetooth adapter when searching for other devices. Enable the Connectable option so that the HEPT Plus will accept incoming Bluetooth connections, if Connectable is disabled the device will reject incoming connections.

The Security menu provides management for Bluetooth PIN and Authentication settings. PINs are used during the pairing process when Authentication is enabled; the default PIN is '0000'. PINs must be a numeric value consisting of less than or equal to 16 digits. The Authentication setting must be enabled in order to use PINs.

NOTE: If Authentication is disabled ANY device can connect to the HEPT Plus.

There are two options under the Device Information menu: Set Device Name and Summary Information.

Set Device Name – This is the name which the Bluetooth adapter will broadcast. The Device Name must be less than or equal to 18 characters. If spaces are used any spaces used within the name they are converted to an underscore "_". The default Device Name is "SHOUT"

Summary Information – Displays the current Bluetooth device name, the Bluetooth MAC address, and the Bluetooth firmware version.
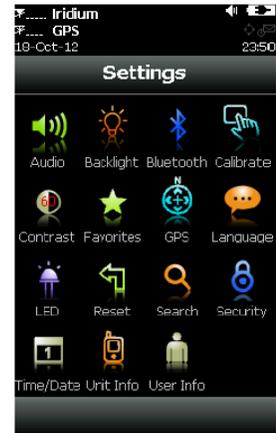
To pair your Bluetooth device with the HEPT Plus:

1. On the HEPT Plus - Turn on Bluetooth.
2. On the HEPT Plus - Enable the Connectable setting.
3. On the HEPT Plus - Enable the Visible setting.
4. On the HEPT Plus - Set the Bluetooth name.
5. On the HEPT Plus - Set the Bluetooth PIN.
6. On the HEPT Plus - Enable Bluetooth Authentication.
7. On the device you wish to connect from (laptop/desktop computer) – Start the Bluetooth pairing process:
   a. In the list of discovered devices select the Device Name of the HEPT Plus.
   b. Enter the PIN you defined on the HEPT Plus.
   c. The devices are paired.

CALIBRATE

The HawkEye (PT) Plus has a resistive touchscreen which must be calibrated from time to time to ensure accurate operation of the touchscreen. From the calibrate option it is possible to reset calibration back to factory settings or alternatively manually calibrate. If the HEPT Plus is accidently recalibrated with bad settings and the touchscreen is unresponsive, hold the power button for 8 seconds until a reset calibration message appears on the screen.

CONTRAST

The Contrast option is used to change the HawkEye (PT) Plus LCD brightness. Move the contrast slider-bar to the desired level and press back to apply.

FAVORITES

The Favorites option allows users to customize shortcuts to menu options which will appear at the bottom of the home screen. Adding shortcuts to the home screen allows quick and easy access to your most frequently used options.   Up to four customizable favorite icons may be utilized at one time.

LANGUAGE

The only language available at this time is English.

LED

The HawkEye (PT) Plus status LED ⊕ alerts users when the device is in emergency mode, tracking mode, GeoFence tracking, mailbox check or call out. When QPOS/911 Emergency Mode is enabled the LED is lit solid green, at all other times (including during sleep mode) the LED flashes once every 5 seconds. LED features The LED can be turned off for either of these two cases to save battery power using the LED option.

SEARCH

The Search option allows user to set the search parameters for canned messages, contact list and mailboxes.

SECURITY

The Security option is used to enable or disable PIN code authentication. PIN codes are up to 4 numbers. If security is enabled the configured PIN must be entered to unlock the HEPT Plus after it is powered up.

TIME/DATE

Define Time/Date option here, such as UTC time and date formats (for display on the LCD screen). It is also possible to set the local time zone here.

UNIT INFO

The Unit Info option displays the HawkEye (PT) Plus model number, Iridium module IMEI number, Iridium FCC ID, Iridium IC ID, GSM FCC ID, GSM IC ID, HEPT Plus firmware version and HEPT Plus bootloader version.

USER INFO

The User Info option provides access to read user information entered using HawkEye (PT) Plus Manager Application.
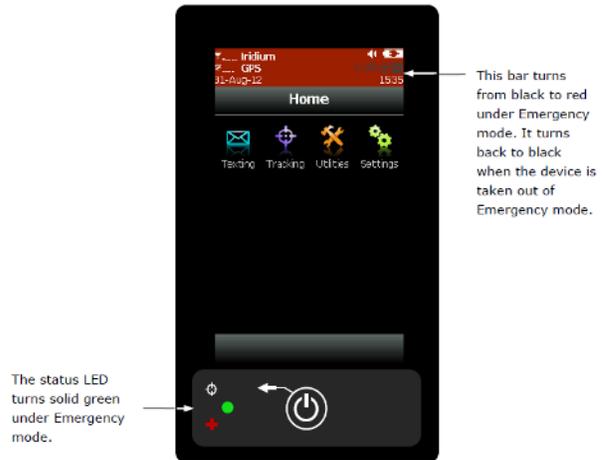
ADDITIONAL FEATURES

EMERGENCY (911/QUICK POSITION) BUTTON

The emergency/911/QuickPosition button ● is located underneath the red trigger guard on the back of the HawkEye (PT) Plus.

It is possible to use the emergency button to enable QuickPosition at any time, even if the Tracking is disabled or power is off. When the emergency button is pressed and QuickPosition is enabled the emergency LED ✚ illuminates solid green. The HEPT Plus then tries to send three consecutive reports. After the initial three reports have been sent the HEPT Plus resumes emergency tracking at the defined Time Between Reports of the emergency profile.

It is possible to deactivate the LED in the Settings/LED menu to save battery. When the Emergency/QuickPosition feature is activated the black bar across the top of the screen turns red.

This bar turns from black to red under Emergency mode. It turns back to black when the device is taken out of Emergency mode.

The status LED turns solid green under Emergency mode.

STATUS LED

The status LED located at the bottom left of the HawkEye (PT) Plus turns solid green when Emergency/QuickPosition mode is enabled. The LED can be turned off to save power from the Settings > LED menu. During normal Tracking mode, the LED flashes once every five seconds when the HEPT Plus is on sleep mode; the LED can be turned off from the Settings > LED menu.

POWERING DOWN

The HawkEye (PT) Plus is powered off by pressing and holding the On/Off ⭕ button for two seconds. A "Powering Down" message will appear on the screen indicating Tracking and messaging will be disabled (during the off state). The Powering Down message appears for 10 seconds before the device is shut down automatically; pressing the "Turn Off" button will power off the HEPT Plus immediately; pressing the "Lock" button will lock the screen; pressing "Cancel" will stop the power down process and return to the previous screen.

APPENDIX A – SPECIFICATIONS

MECHANICAL SPECIFICATIONS

Dimensions:	4.0" x 2.3" x 0.9" (102 mm x 58 mm x 23 mm)
Weight:	~7.8 oz (221 g)
Enclosure:	Hard anodized aluminum housing/EMI shielding
Connector:	Micro USB, SIM reader
Antennas:	Iridium, GSM, GPS and Bluetooth
Key:	One button power button
Emergency:	Guarded button
LED:	One status LED
Screen:	3.0" TFT 400 x 240

ELECTRICAL SPECIFICATIONS

Main Input Voltage:	5.0VDC
Peak Current:	1.5A @ 5.0VDC
Battery Type:	Lithium-Ion
Battery Capacity:	1.95 A-Hr
Charging Voltage:	USB 1.0, USB 2.0 or 5VDC
Rechargeable Cycles:	500 times

IRIDIUM TRANSCIEVER

Operating Frequency:	1616 to 1626 MHz Duplexing Method: TDD
Multiplexing Method:	TDMA/FDMA
Link Margin Downlink:	13 dB avg (free space) Link Margin Uplink: 7 dB avg (free space)

GSM TRANSCEIVER

Operating Frequency:	LEON Quad-Band 850/900/1800/1900 MHz
Sensitivity:	−110 dBm @850/900 MHz, −109 dBm @1800/1900 MHz
Power Class:	Class 4 (33 dBm) for GSM/EGSM (850/900 MHz)
	Class 1 (30 dBm) for DCS/PCS (1800/1900 MHz)

GPS RECEIVER

GPS Receiver:	MAX-6Q
Receiver Type:	L1, C/A, 50-channel
Update Rate:	5 Hz
Accuracy:	2.5 m CEP (position)
	2.0 m CEP (SBAS)
Acquisition:	27 seconds cold-start
	<1 second hot-start
Sensitivity:	−162 dBm (tracking)
	−160 dBm (hot-starts)
	−148 dBm (cold-starts)

ENVIRONMENTAL SPECIFICATIONS (ELECTRONICS)

Operating Temperature:	–22oF to +158oF (–30oC to +70oC)
Operating Humidity:	≤ 75% RH
Storage Temperature:	–40oF to +185oF (–40oC to +85oC)
Storage Humidity:	≤ 93% RH

ENVIRONMENTAL SPECIFICATIONS (BATTERY)

Operating Temperature:	–4oF to +140oF (–20oC to +60oC)
Operating Humidity:	≤ 90% RH
Storage Temperature:	–4oF to +95oF (–20oC to +35oC)
Storage Humidity:	≤ 95% RH
Charge Temperature:	32oF to +113oF (0oC to +45oC)

ENVIRONMENTAL SPECIFICATIONS (LCD)

Operating Temperature:	–4oF to +131oF (–20oC to +55oC)
Operating Humidity Range:	≤ 90% RH
Storage Temperature Range:	–4oF to +131oF (–20oC to +55oC)
Storage Humidity Range:	≤ 95% RH

APPENDIX B – REVISION HISTORY

Date	Revision	By	Description
06/20/2013	1.0	MP	HawkEye (PT) Plus User Guide
11/07/2013	1.1	MP	Updated Bluetooth and removed Man Down section
02/06/2014	1.2	MP	Added Man Down disclaimer; added Man Down feature; changed branding from + to Plus
03/21/17	1.3	AN	Updated address

SERVICE ACTIVATIONS

Blue Sky Network handles all activation requests. An activation request can be submitted through our website, the link is shown below. You should receive an immediate email confirmation that your request has been submitted and another email once the requested services have been activated. Please make sure your contact details are accurate, this is how we contact you if there are any problems processing your request.

http://www.blueskynetwork.com/Support/ActivationForm.php

SUPPORT

Please do not hesitate to contact us either via email, phone or by clicking the Support link in the upper right hand corner. Thank you for using Blue Sky Network.

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