

HawkEye 6300 Mk1 Manual

Manual for HawkEye 6300 Mk1 Devices

Firmware Versions 1.1.0 and above

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Using the Device, the Basics

This section outlines your device's capabilities and describes how to utilise them when in the field.



Orientation, Set-up and Key Features

User Interface

The HawkEye 6300 has no user interface as such. The device is designed to be used in conjunction with the app (available from the Google Play Store, or the Apple App Store) and either the YBlog system (for individual/consumer use) or the more comprehensive 'Core' management system (for corporate use).

The behaviour of many features of your device, including the alert features, are configured by changing settings in the management system or via the app.

Orientation

Your unit is equipped with both Iridium & GPS antennas located on the top 'domed' part of your casing. For the best results it is important to be mindful of the orientation of your device when in use. To ensure good satellite signal, the antennae should be clear of obstructions and have a clear view of the sky.

Examples of obstructions include a heavily wooded area or inside a vehicle or building.

Environments such as these offer very little, if any, view of the sky. In these instances, it would be best to reposition your device so that it can have a clear view of the sky, such as in a clearing, on the dashboard or rear window of a car or mounted on a pole or rail.

Once switched ON, your device will try to obtain a GPS signal. The time taken to obtain a signal will vary from few minutes when the device has never been used or not been used for a while to few seconds when the device is regularly used.

Powering the Unit

The device is designed to be attached to mains power for most of the time, via the cable. However, it does have an internal rechargeable battery which is used should the unit lose power. Depending on how you have the device configured (tracking frequency etc) the battery will last a variable amount of time. Please check the tables in the appendix for this data.

To attach the unit to mains power, simply wire the positive and negative cores of the cable into your power supply. The unit will run on any voltage between 9v and 32v. It will draw a maximum of about 700mA under normal operation.

If you intend to fuse the circuit we would suggest fitting a 2A fuse, which allows for extra power used by the GSM module (if you have that option installed).

Depending on the model of device you have, you may have a 2-core, 4-core or 8-core cable. Wiring should be carried out as per the following:

Standard 2-Wire

Red: Live (9-32v DC)
Black: Neutral (0v DC)

NMEA 4-Wire

Brown: Live (9-32v DC)
White: Neutral (0v DC)
Yellow: NMEA A
Green: NMEA B
Black: Screen/Ground

Special 8-Wire

Brown: Live (9-32v DC)
White: Neutral (0v DC)
Yellow: NMEA A
Green: NMEA B
Blue: Input A
Pink: Input B
Grey: Aux
Black: Screen/Ground

Features and Facilities

Operating Modes

Shipping Mode

When the device is in shipping mode, all radios are turned off, including Bluetooth. In this mode, the Device will not transmit or receive any position reports or messages. This is the equivalent of 'Flight Mode' and suitable for transport.

You can activate the unit by applying power to the cable. A few seconds after activation, the unit will beep quickly, and will then be activated and you should be able to connect to the device to configure using the app.

Activated

When turned on the device will automatically send position reports and messages as per its current settings. There is an LED indicator on the bottom of the unit. The LED has the following indicator modes:

- Intermittent green flash - running on external power
- Intermittent red flash - running on battery
- Red/Green alternating - booting up or updating firmware
- Off - in shipping mode, stealth mode, or battery has run out and no external power

You can obtain more details about the app, including a guide on how to use, from our website.

Tracking Options

Status on/off

Choosing this option allows you to turn the automatic position reporting on or off. When turned on, the device will automatically obtain a GPS fix and transmit it at a set frequency (see below).

Report Frequency

Using this option the frequency of automatic position reporting can be viewed and set. Options range from 'Continuous' which will obtain and send reports as quickly as possible, to 12-hours, allowing for 2 automatic reports per day. There is also a BURST mode.

Burst Settings

Burst mode allows the device to collect many GPS reports, in order to get more accurate tracking information, but to send them as a batch in order to keep airtime costs down. For example, the device can collect a GPS fix every 5 seconds, and then transmit those positions once per minute.

To set burst mode, in the Report Frequency you need to choose Burst. Then, in the Burst Settings menu you can choose how often you wish to take a fix (Burst fix) and how often you wish to transmit (Burst transmit).

Note: This mode will use power more quickly than other tracking modes, since GPS is kept on all of the time.

Although airtime costs are reduced using burst mode, depending on your settings you may use more than 1 credit per transmission. 1 credit will pay for up to 3 positions inside a single fix. So, for example, if you are taking a position every 5 minutes, and transmitting every 15 minutes (so 3 fixes transmitted), this will cost 1 credit per transmission. If you take a position every 5 minutes, and transmit every 30 minutes (so 6 fixes transmitted), this would cost 2 credits per transmission.

Activity Sense

Turning activity sense ON will mean that the tracker will switch between the normal 'report frequency' when stationary, and transmitting using the 'burst settings' when moving.

NOTE - THIS CAN COST SIGNIFICANT NUMBERS OF CREDITS, ONLY TURN THIS ON IF YOU KNOW WHAT YOU ARE DOING!

Activity sense can be particularly useful if you want to transmit whilst you are moving, and then transmit at a much slower rate when you are not moving. For instance, tracking vehicles or aircraft.

There are sensitivity levels inside the Activity Sense menu which are useful to tweak when the device thinks it is 'moving' - this will depend on your exact situation, but we have found that setting both options to '24' is a good start, and works for most situations.

Alert Options

Timer Alert

This option allows you to set an alert message to be sent after a pre-defined interval. This is useful if you would like to send an alert in the eventuality that you are not able to cancel the alert within a pre-defined time. Timers can be chosen between 5-minutes to 12-hours.

Temperature Alert

Should the temperature leave your defined range (e.g. 0 degrees to 40 degrees) then an automatic alert will be sent. This option allows you to turn this alert type on/off and set the temperature over which the alert will be sent.

Power Loss Alert

If this option is turned on, should the unit lose external power then an automatic alert will be sent.

Geo-fence Alert

This alert type allows you to set your current position, then set a distance. Should the device leave the pre-defined circular area, an automatic alert will be sent.

Collision Alert

This alert is somewhat experimental in nature, as a 'collision' can vary in force and strength, and so every situation is different. This alert can be used to notify you of a given shock being applied to the

device. There is a 'threshold' and a 'duration' setting. The threshold sets how many G-forces will set off the alert, and the duration sets how long that force needs to be constantly applied for, before the alert is set.

At its lowest settings, the alert will detect a simple 'tap' on the device. At the highest settings, it will not send an alert until a very strong impact is detected.

We suggest you experiment with the settings, if this is of interest, to find what works in your particular situation.

Settings / General Options

PIN Code

The default PIN is 1234. Here you can set a PIN code to access the device and configuration options using the app.

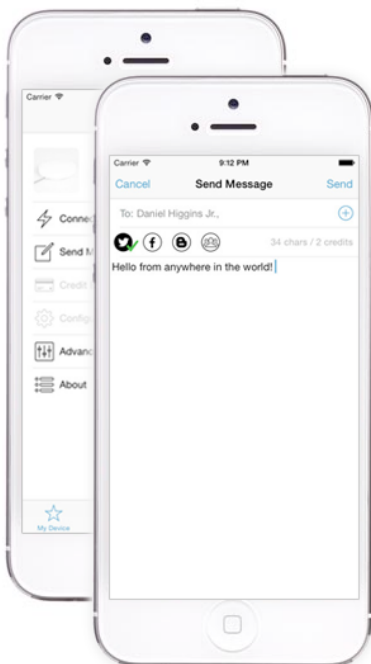
GPS Wakeup time (Early Wakeup)

By default the unit will wake up 20 seconds before the automatic position reporting time, in order to obtain a GPS fix before transmission. In challenging conditions, or where visibility of the sky is limited, it may be required to increase this wakeup time to allow the GPS more time to get a fix.

Options range from 20 seconds to 3 minutes. By increasing this time, battery life will be decreased.

Send Config Report

This menu option will prompt the device to send a configuration report detailing its current setup to our systems for support purposes. Your device will automatically do this every time it is activated, so you only really need to use this option if asked to by a support engineer.



Advanced Options

The advanced options contain a number of features, dependent on your device model. These features are for advanced use only, and should only be adjusted under instruction from a member of support staff or following specific instructions. We will not be held responsible for any additional charges incurred or problems caused if you adjust these settings without advisement.

A few of the more important options in this category are:

GPS Hot

In some situations you may want to immediately mark a position with a manual report whilst travelling at speed. In this sort of situation you want to be able to rely on an instant GPS fix when you fire a manual report.

With GPS Hot turned ON, this means GPS is continually keeping track of your position so there is no delay between the time you fire a manual report and the time the position is marked. This mode will use power more quickly than other tracking modes, since GPS is kept on all of the time.

Mail Checking

This setting can be used to force the device to check for new messages every X minutes. It is set by default to Off.

WARNING: Be aware, inbox checking uses up credits just like normal position reports. A normal tracking report also checks for new messages, so you DO NOT need both Tracking and Inbox Checking set to ON. You will use up twice as much credit if you have both items turned on.

Device Maintenance

Replacing the Battery

Rechargeable batteries have a limited number of charge cycles and may eventually need to be replaced. The device battery is not user replaceable; it can only be replaced by your device service provider.

Having said this, the battery in the device should maintain its ability to charge to at least 90% of capacity through 1000 charge cycles. This means that if you charged the unit every day (unlikely) the battery would need to be replaced every 3 years. If you charged the device once a week, it would need the battery replacing once every 10 years. Realistically, you do not need to worry about this.

Cleaning

To clean your Device, unplug all cables and turn off. Then use a soft, slightly damp cloth to clean any dirt.

Do not use alcohol or abrasive substances to clean your device.

Fault Finding and Support

Troubleshooting

If something isn't working correctly, you should first ensure the unit is powered, and any in the circuit are good. You can also do a hardware reset the device by swiping the reset magnet all the way around the outside edge of the unit. The unit will beep after about 10 seconds, and will then be reset.

If neither of the above work, then please get in touch with the helpdesk, using the details below.

Helpdesk and Support Details

For assistance, please contact the Blue Sky Network support team by emailing support@blueskynetwork.com. It would greatly help us if you provided the following information:

- Name and contact number
- Serial number of the Device (see serial number label)
- Symptoms of the fault
- History of action taken to attempt to rectify the fault

Please remember that the more information you can give us, the better we'll be able to help you. A simple 'it doesn't work' isn't enough - please be as descriptive as you can, and we can then get you up and running again as quickly as possible.

Battery Life Expectations

Battery Life Expectations

Your device is designed to be run on mains power most of the time. However, it has an internal backup battery which will be used in the absence of external power. These battery life predictions assume the following:

- GPS Early-wake set to 20s
- Clear sky conditions

Interval	Transmissions	Hours	Days	Weeks
Continuous	1500	25	1	
5 minutes	900	75	3	
15 minutes	850	210	9	1.2
30 minutes	700	350	14	2
1 hour	600	600	25	3.5
4 hour	550	2200	90	12.8
8 hour	500	4000	165	23.5

As with all portable battery powered devices, battery life can be significantly shortened by extreme temperatures and some usage patterns. Key factors which will shorten the number of transmissions possible on a battery charge are:

- Use of GPS Hot Mode and Burst Mode
- Poor positioning, so poor view of the sky (most likely!)

Warranty & Notices

Warranty

A two-year warranty is provided with your device, starting on the purchase date. This does not affect your statutory rights. The first year is a full parts and labour warranty, the second year is labour only.

Should you encounter a problem with your device, we agree to remedy the defect either by repair or replacement (at our option). Please contact us directly in order to arrange this. An original receipt is required for any warranty claims.

The warranty is void if:

Any component has been subject to misuse or improper installation

The casing of the unit has been opened or tampered with in any way

Notices

- Apple is a trademark of Apple Computer Inc.
- Android is a trademark of Google Inc.
- Iridium and the Iridium logo are registered trademarks and service marks of Iridium Communications Inc.
- Other trademarks and trade names are those of their respective owners.

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.

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