SkyEcho 2
Installation and Pilot’s Guide
## 1 Revision History

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>8/8/18</td>
<td>Pre-transmit release of SE2. ADS-B only</td>
</tr>
<tr>
<td>B</td>
<td>8/28/18</td>
<td>Mode C/S Bearingless Targets, DoCC Approval</td>
</tr>
<tr>
<td>C</td>
<td>9/11/18</td>
<td>User feedback corrections</td>
</tr>
</tbody>
</table>
2 Warnings / Disclaimers

All device operational procedures must be learned on the ground.

Received traffic information is to be used as an aid to situational awareness and is merely supplemental and advisory in nature.

uAvionix is not liable for damages arising from the use or misuse of this product.

This equipment is classified by the United States Department of Commerce’s Bureau of Industry and Security (BIS) as Export Control Classification Number (ECCN) 7A994.

These items are controlled by the U.S. Government and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be resold, transferred, or otherwise disposed of, to any other country or to any person other than the authorized ultimate consignee or end-user(s), either in their original form or after being incorporated into other items, without first obtaining approval from the U.S. government or as otherwise authorized by U.S. law and regulations.
3 Limited Warranty

uAvionix SkyEcho products are warranted to be free from defects in material and workmanship for one year from purchase. For the duration of the warranty period, uAvionix, at its sole option, will repair or replace any product which fails in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labor, provided that the customer shall be responsible for any transportation cost.

This warranty does not apply to cosmetic damage, consumable parts, damage caused by accident, abuse, misuse, water, fire or flood, damage caused by unauthorized servicing, or product that has been modified or altered.

IN NO EVENT SHALL UAVIONIX BE LIABLE FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM THE USE, MISUSE OR INABILITY TO USE THE PRODUCT OR FROM DEFECTS IN THE PRODUCT. SOME STATES DO NOT ALLOW THE EXCLUSION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

Warranty Service

Warranty repair service shall be provided directly by uAvionix.
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5 Introduction

The SkyEcho 2 is a portable ADS-B transceiver. It incorporates dual ADS-B band 1090 MHz and 978 MHz UAT receivers and 1090 MHz Class A0 transmitter limited to 20W. The SkyEcho 2 includes a precision WAAS GPS meeting the performance requirements of TSO-C199 Class B, barometer, and Wi-Fi support for interface to EFB applications.

SkyEcho 2 is designed to meet the performance requirements of United Kingdom (UK) Civil Aviation Authority (CAA) Electronic Conspicuity (EC) CAP 1931, version 2, dated April 11, 2018.

EC devices are intended for voluntary carriage on registered and non-registered UK Annex II aircraft, non-complex EASA aircraft of <5700kg MTOM and for gliders and balloons (including those covered under ELA 1 and ELA 2) within uncontrolled UK airspace.

An EC device cannot be used at the same time as a Mode S transponder or ATCRBS beacon and it doesn’t replace the need for a transponder when required by airspace/flight rules. If your aircraft is fitted with a working transponder, you must switch off the transmitter function of your EC device.

An internal geofence prevents SkyEcho 2 from transmission within North America. Within North America, receive functionality is supported.
5.1 Features

The SkyEcho 2 performs the following functions:

- **1090ES reception (1090 MHz)**
  - Receives ADS-B In data from aircraft equipped with 1090 MHz Extended Squitter transmitters.

- **978 UAT reception (978 MHz)**
  - Receives ADS-B In data from aircraft equipped with 978 MHz UAT transmitters. Receives Flight Information Services (FIS) and Traffic Information Services (TIS) compliant with UAT where available.

- **Mode C/S Tranponder proximity detection (Beta)**
  - Leveraging the 1090 MHz receiver, the SkyEcho 2 is able to produce a bearingless proximity alert indicating the presence of a nearby aircraft with a Mode C or S (but not ADS-B) transponder.

- **FLARM® device integration**
  - 3rd party FLARM devices adhering to the standard FLARM ICD can connect via the optional uAvionix FLARMbridge to allow the SkyEcho 2 to bridge FLARM traffic to the EFB along with ADS-B traffic.

- **1090ES transmission (1090 MHz)**
  - Transmits ADS-B Out data on the 1090 MHz frequency.

- **WAAS GPS reception**
  - High precision SBAS GPS meeting performance requirements of TSO-C199, transmitting a Source Integrity Level (SIL) value of 1, ensuring ATC and airborne avionics can receive and trust the GPS position being transmitted.

- **Barometric Altimeter for pressure altitude**

- **Traffic correlation**
  - Traffic information is correlated to provide a coherent view of nearby aircraft.
- GDL 90 output (via Wi-Fi)
  - Traffic, ownership GPS, barometric pressure, and FIS/TIS data are translated to standard GDL 90 format for WiFi transmission to compatible situational display applications.
  - Proximity Alerts for Mode C/S transponders (Beta) are available through extended GDL 90 messages. Not all EFB applications may incorporate the extended messages. Please see the SkyEcho 2 product page or contact support for the latest extended GDL 90 Interface Control Document (ICD). Note this feature may require a firmware update.
- Wi-Fi EFB connection
  - The GDL 90 data is transmitted over the built-in Wi-Fi interface for reception by standards compliant with Electronic Flight Bag (EFB) applications.
- Integrated rechargeable battery
  - The integrated rechargeable battery provides 12 hours of continuous use. The battery is recharged through USB-C connection, which can also provide power to SkyEcho 2 directly when connected to a USB power source.

5.2 Regulatory Compliance

The SkyEcho 2 meets the Minimum Operational Performance Standards of DO-260B Class A0 with the output power limited to 20W and the WAAS GNSS receiver meets the performance requirements of TSO-C199.

5.2.1 CAA CAP 1391 Declaration

An EC device that operates using ADS-B at 1090MHz must have a Declaration of Capability and Conformance (DoCC) from the manufacturer before you can legally use it on board an aircraft. The pilot in command of the aircraft is responsible for ensuring that the EC device has a valid declaration.
Please refer to the CAA EC Web page for more information:

https://www.caa.co.uk/General-aviation/Aircraft-ownership-and-maintenance/Electronic-Conspicuity-devices/

<table>
<thead>
<tr>
<th>Reference number</th>
<th>Issue number</th>
<th>Manufacturer</th>
<th>Type number</th>
<th>Category</th>
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<tr>
<td>UK.CAA.DoCC.000007</td>
<td>Issue 0</td>
<td>uAvionix Inc</td>
<td>SkyEcho 2</td>
<td>Intermediate</td>
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6 Specifications
<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Power</td>
<td>5V USB 500mW</td>
</tr>
<tr>
<td>Size</td>
<td>58x83x32mm</td>
</tr>
<tr>
<td>Weight</td>
<td>120grams</td>
</tr>
<tr>
<td>SIL/SDA</td>
<td>1/0 (CAP 1391 Requirement)</td>
</tr>
<tr>
<td>Operating Temp</td>
<td>-45 to 80°C</td>
</tr>
<tr>
<td><strong>Transmitter</strong></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>1090MHz ±1MHz</td>
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<tr>
<td>Transmit Power</td>
<td>20W Nominal</td>
</tr>
<tr>
<td>Spectral Performance</td>
<td>DO-260B</td>
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<tr>
<td><strong>Receiver</strong></td>
<td></td>
</tr>
<tr>
<td>MTL 1090MHz</td>
<td>-88dBm</td>
</tr>
<tr>
<td>1090 Dynamic Range</td>
<td>-87 to 0dBm</td>
</tr>
<tr>
<td>MTL 978MHz</td>
<td>-99dBm</td>
</tr>
<tr>
<td>978 Dynamic Range</td>
<td>-99 to 10dBm</td>
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<td><strong>SBAS GPS</strong></td>
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<td>Augmentation</td>
<td>SBAS</td>
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<tr>
<td>Sensitivity</td>
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<td><strong>Altimeter</strong></td>
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<tr>
<td>Range</td>
<td>-1000 to 60,000ft</td>
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<tr>
<td><strong>Interfaces</strong></td>
<td></td>
</tr>
<tr>
<td>WIFI</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>GDL 90</td>
</tr>
<tr>
<td>Ownership</td>
<td>GDL 90</td>
</tr>
<tr>
<td><strong>Battery</strong></td>
<td></td>
</tr>
<tr>
<td>Internal</td>
<td>12 hour operating life</td>
</tr>
</tbody>
</table>

### 7 Limitations

#### 7.1 Installation

SkyEcho 2 is a completely self contained portable device with no required installation for external antenna, power source, or physical installation into the aircraft.

Transmission and reception performance is affected by antenna placement within the aircraft and is subject to airframe shadowing. Best performance is achieved when the SkyEcho 2 is placed vertically orientated on the aircraft window mounted with the suction cup mount in a forward or side facing window with clear line of sight visibility in the direction of travel and clear visibility to the sky for GPS reception.

UAV-1002156-001

ECCN 7A994
Modifications and use outside of intended scope

This device has been designed and tested to conform to all applicable standards in the original form and when configured with the components shipped with the device. It is not permissible to modify the device, use the device for any use outside of the intended scope, or use the device with any antenna other than the one shipped with the device.

Important Pilot Advisory Note Regarding Safety of Radio Frequency Energy

Safe use of this device requires care as to the placement of the antenna. Place the antenna at least 4cm away from any part of your body or that of other cabin occupants. To stop all RF emissions, remove power from the equipment or configure the equipment for receive mode only. Retain these instructions with your maintenance logs/files and for future reference.

FCC RF Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits (Table 1 of 47Pt1 (i) 1.1310) set forth for a Public/Uncontrolled environment.

Mode-S or ATCRBS

According to CAP1391 regulations, if the aircraft has an operating Mode-S transponder or ATCRBS beacon, the transmitter must be deactivated. Receive functionality may still be used. Deactivation of the transmitter is accomplished by removing device power or disabling the transmit capability via the configuration settings. These regulations are subject to change. Please be informed of the most current regulations at:

https://www.caa.co.uk/General-aviation/Aircraft-ownership-and-maintenance/Electronic-Conspicuity-devices/

Proximity to other equipment

Mount the SkyEcho 2 so that it does not compromise the operation of any other proximate communication or navigation antenna or system. It may be possible to hear transmissions through installed audio equipment, such as headsets.
Altimeter Cross Check

The reported altitude must be cross-checked against the aircraft’s altimeter during pre-flight.

Harmful Interference

It is the responsibility of the pilot to ensure that the transceiver causes no harmful interference to other onboard equipment and systems.

Configurable Options

Accessing or altering configurable options not intended to be operated during flight by the pilot in command, as this may cause pilot distraction.

See and Avoid

The SkyEcho 2 is intended to be an aid to ‘see and avoid’. Maneuvers to regain adequate separation should not be based on alerts issued by this device or connected applications alone.

Approvals

Approvals do not cover adaptations to the aircraft necessary to accommodate ancillary equipment such as power provisions, mounting devices or external antennas, such items must still be approved under existing minor modification/change processes applicable to the aircraft.

Warning: This transceiver is to be used to improve pilot situational awareness only and as a navigational aid. It is not intended for use in IFR flight conditions. uAvionix is not responsible for the transceiver’s end use and will not be held liable for any events occurring from its use or misuse.

Usage Outside of the United Kingdom

Transmit functionality is currently approved for use only in the United Kingdom. If flying outside of the UK, configure the device for receive functionality only or consult your local regulator for approval.
8 Equipment Installation and Configuration

This section describes the installation and configuration of the SkyEcho 2 and related accessories in the aircraft, including mounting, wiring, and connections.

8.1 Mounting

SkyEcho 2 is approved as a portable ECD. SkyEcho 2 should be placed vertically orientated on an aircraft window with the optional suction cup mount with line of sight and visibility in the direction of travel and to the sky for the internal GPS.

8.2 Connections

1. Connect a USB-C cable to the USB-C port in order to provide direct power or to charge the battery. While the device is charging, a blue
BAT LED will remain lit. When the device has completed charging
the blue LED will extinguish.

2. Care should be taken to make sure all devices are secure and will not
interfere with pilot visibility or aircraft operation.

8.3 Installation Setup

Configuration of the SkyEcho 2 is accomplished by logging on to the device
directly from a computer or mobile device using the SkyEcho 2 internal Wi-
Fi hotspot. No additional application is necessary.

8.3.1 Connecting to the SkyEcho2 via Wi-Fi

1. To connect to the SkyEcho 2, power on SkyEcho 2 and join a device to
the wireless network SSID named SKYECHO-XXXX using the procedure
for your device. This procedure is identical to joining any other public or
private Wi-Fi on your chosen device.

2. If required, enter uavionix as the WPA password for the secure Wi-Fi
network, then tap join. Note: The No Internet Connection message is
normal when connected to SkyEcho 2.

4. Open any browser on your computer/mobile device that is connected to
your SkyEcho via the Wi-Fi link and type in 192.168.4.1

The following landing page should load:

This page will show the SkyEcho status.

Click on “SkyEcho Setup” to configure
SkyEcho with your aircraft information.
A configuration page similar to the following should load:

For proper operation the following parameters must be configured:

- 1090ES Transmit
- ICAO Address (hex)
- Mode C Threshold
- Call Sign
- Emitter Category
- VFR Squawk
- ADS-B In Capability
- Air/Ground Threshold Speed ($V_{S0}$)
- Aircraft Length
- Aircraft Width
- Lateral GPS Offset
- Longitudinal GPS Offset

After configuration of your parameters click on “Apply” to save.
8.3.2 1090ES Transmit
This setting configures SkyEcho 2 for transmission. Select the checkbox to enable transmission. (Note: Transmit functionality is currently approved for use only in the United Kingdom. If flying outside of the UK, configure the device for receive functionality only or consult your local regulator for approval.)

Deselect the checkbox to disable transmission.

8.3.3 Aircraft Address Programming (ICAO Address)
The ICAO address is a 24-bit number issued to the aircraft by the registration authority of the aircraft. These addresses are usually written as a 6-digit hexadecimal number, although you may also encounter one written as an 8-digit octal number. The SkyEcho 2 understands the hexadecimal format, so you must first convert an octal number to hexadecimal before entering. Sometimes this value is referred to as Mode S code.

Refer to UK CAA guidance for using 24-bit addresses with EC devices at the following URL:

https://www.caa.co.uk/General-aviation/Aircraft-ownership-and-maintenance/Electronic-Conspicuity-devices/

You can find an aircraft ICAO by searching your aircraft information at the following location and locating the ICAO entry and entering the hex value.

https://publicapps.caa.co.uk/modalapplication.aspx?appid=1

8.3.4 Mode C Threshold (Beta)
Mode C Detection is currently a beta functionality and may be subject to errors. While labeled “Mode C”, Mode S transponders also respond to Mode C interrogations. Therefore, this functionality detects aircraft with Mode C or Mode S transponders equipped. Additionally, the overall user experience is highly dependent on the EFB application implementation of
the data and alerts. If you are unsure of this functionality, it is recommended you disable it by setting the threshold value to zero (0).

SkyEcho 2 has the capability to receive and decode Mode C replies from nearby aircraft with a Mode C or Mode S transponder. The Mode C reply contains the squawk code and barometric altitude, but not aircraft position. For this reason, aircraft with only a Mode C or Mode S (not Extended Squitter ‘ES’) cannot be adequately placed on a map like other technologies such as ADS-B which are based on GNSS position. The Mode C/S detection therefore produces an alert based on a user defined sensitivity threshold in conjunction with relative altitude as received by the Mode C reply as compared to the internal SkyEcho 2 barometric pressure sensor.

This threshold establishes a signal strength at which you as the pilot would like to be alerted. Setting the threshold at a setting of high sensitivity will result in alerting on traffic at further distances. This will result in more alerts. Setting the threshold at a setting of low sensitivity will result in alerts on traffic in close proximity, resulting in less alerts.

Sensitivity cannot be definitively correlated to specific range values, as the output power of Mode C/S transponders in aircraft varies greatly.

It is recommended you experiment with this setting to determine what works best for you.

The threshold value input accepts an integer from 0-100. Using the extremes of this scale is not recommended. Recommended values are as follows:

<table>
<thead>
<tr>
<th>Value</th>
<th>Sensitivity</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>OFF</td>
<td>Setting the threshold to zero turns off this feature.</td>
</tr>
<tr>
<td>30</td>
<td>High</td>
<td>This setting will result in alerts of traffic at greater distances, resulting in more numerous alerts.</td>
</tr>
</tbody>
</table>
50  Moderate  This setting will result in alerts of traffic at medium distances, resulting in a moderate amount of alerts.

70  Low  This setting will result in alerts of traffic at shorter distances, resulting in the least amount of alerts.

### 8.3.5 Call Sign
CALL SIGN is an 8 digit code that corresponds to the tail number of the aircraft. (0-9, A-F). The value should be entered without dashes: G-ABCD should be entered as GABCD.

### 8.3.6 Emitter Category
To assist ATC tracking of aircraft, an aircraft category is transmitted. Select the aircraft category that most closely matches the aircraft. Note EC devices are not approved for all emitter categories. EC devices are intended for voluntary carriage on registered and non-registered UK Annex II aircraft, non-complex EASA aircraft of <5700kg MTOM and for gliders and balloons (including those covered under ELA 1 and ELA 2) within uncontrolled UK airspace.

Emitter Category can be set as follows:

<table>
<thead>
<tr>
<th>Emitter Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light Airplane</td>
<td>Any airplane with a maximum takeoff weight less than 15,500 pounds. This includes very light aircraft (light sport aircraft) that do not meet the requirements of US 14 CFR Section 103.1.</td>
</tr>
<tr>
<td>Small Airplane</td>
<td>Any airplane with a maximum takeoff weight greater than or equal to 15,500 pounds but less than 75,000 pounds.</td>
</tr>
<tr>
<td>Large Airplane</td>
<td>Any airplane with a maximum takeoff weight greater than or equal to 75,000 pounds but</td>
</tr>
<tr>
<td>Aircraft Type</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Large Airplane with High Vortex</td>
<td>Any airplane with a maximum takeoff weight greater than or equal to 75,000 pounds but less than 300,000 pounds that has been determined to generate a high wake vortex. Currently, the Boeing 757 is the only example.</td>
</tr>
<tr>
<td>Heavy Airplane</td>
<td>Any airplane with a maximum takeoff weight greater than or equal to 300,000 pounds.</td>
</tr>
<tr>
<td>Highly Maneuverable Airplane</td>
<td>Any airplane, regardless of weight, which can maneuver in excess of 5 G’s and maintain true airspeed above 400 knots.</td>
</tr>
<tr>
<td>Rotorcraft</td>
<td>Any rotorcraft regardless of weight.</td>
</tr>
<tr>
<td>Glider / Sailplane</td>
<td>Any glider or sailplane regardless of weight.</td>
</tr>
<tr>
<td>Lighter than Air</td>
<td>Any lighter than air (airship or balloon) regardless of weight.</td>
</tr>
<tr>
<td>Parachute</td>
<td>Any parachute / skydiver.</td>
</tr>
<tr>
<td>Ultralight Vehicle</td>
<td>A vehicle that meets the requirements of US 14 CFR Section 103.1. Light sport aircraft should not use the ultralight emitter category unless they meet US 14 CFR Section 103.1.</td>
</tr>
<tr>
<td>UAV</td>
<td>Any unmanned aerial vehicle or unmanned aircraft system regardless of weight.</td>
</tr>
<tr>
<td>Space</td>
<td>Any spacecraft or trans-atmospheric vehicle.</td>
</tr>
<tr>
<td>Surface Vehicle - Emergency</td>
<td>Any ground vehicle in operation at an airport providing emergency services.</td>
</tr>
<tr>
<td>Surface Vehicle - Service</td>
<td>Any ground vehicle in operation at an airport NOT providing emergency services.</td>
</tr>
<tr>
<td>Point Obstacle</td>
<td>Point obstacle including tethered balloons.</td>
</tr>
<tr>
<td>Cluster Obstacle</td>
<td>Cluster obstacle.</td>
</tr>
<tr>
<td>Line Obstacle</td>
<td>Line obstacle.</td>
</tr>
</tbody>
</table>
8.3.7 VFR Squawk
The SkyEcho 2 transmits a squawk code. Enter the standard VFR squawk code (7000).

8.3.8 ADS-B IN Capability
Select the appropriate checkbox(es) to enable ADS-B receive capability.

- Selecting 1090 ES will enable SkyEcho 2 to receive ADS-B traffic on 1090MHz.
- Selecting UAT will enable SkyEcho 2 to receive ADS-B traffic and Flight Information Services – Broadcast (FIS-B) such as weather data on 978MHz.

8.3.9 Air/Ground Threshold Speed VSO (knots)
This parameter allows the SkyEcho 2 to automatically switch between airborne and ground modes. Enter the stall airspeed (in kts) of the aircraft in landing configuration. (0-999 knots).

8.3.10 Aircraft Length and Width in Meters
Note that air/ground behavior for ADS-B is established per RTCA DO-260B and is dependent upon the emitter category selected.

On the ground, ADS-B transmits encoded aircraft size information which is used by ATC to identify taxiing routes and potential conflicts. Enter the length and width (wingspan) (meters) fields and the appropriate size codes will be calculated for transmission.

Enter the Aircraft Length in Meters

<table>
<thead>
<tr>
<th>L ≤ 15</th>
<th>35 &lt; L ≤ 45</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 &lt; L ≤ 25</td>
<td>45 &lt; L ≤ 55</td>
</tr>
<tr>
<td>25 &lt; L ≤ 35</td>
<td>55 &lt; L ≤ 65</td>
</tr>
</tbody>
</table>
65 < L ≤ 75
75 < L ≤ 85
L > 85

Enter the Aircraft Width (wing span) in Meters
W ≤ 72.5
72.5 < W ≤ 80

8.3.11 GPS Antenna Offsets
The GPS antenna offset is used in conjunction with the length and width to manage taxiway conflicts. A typical GPS does not report the geographic position of the center of the aircraft, or even the tip of the nose of the aircraft; instead, it usually reports the location of the actual GPS antenna (not the GPS receiver). In normal flight operation this distinction is of no importance at all, but if ADS-B is used to manage taxiway conflicts, a significant offset in antenna position could mean that the aircraft footprint is not in the same place as the ADS-B reported position. Although the GPS Antenna Offset is primarily intended for position correction on large transport aircraft, General Aviation aircraft can also have a significant offset. For example, if the aircraft has a long tail boom and the GPS antenna is on top of the tail, the GPS position could be 4 meters or more from the nose of the aircraft.

Enter the GPS Antenna Offset Lateral from Roll axis (Meters)

<table>
<thead>
<tr>
<th>Offset</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Right 2</td>
</tr>
<tr>
<td>Left 2</td>
<td>Right 4</td>
</tr>
<tr>
<td>Left 4</td>
<td>Right 6</td>
</tr>
<tr>
<td>Left 6</td>
<td></td>
</tr>
</tbody>
</table>

Enter the GPS Antenna Offset Longitudinal from Aircraft nose (Meters)

0 to 60 Meters in 2 Meter increments
8.4 Update and Confirm Configuration

1. After entering the correct information for all fields press Apply. You should receive a message confirming the configuration at the top of the screen.
2. Programming of the SkyEcho 2 is complete. You can disconnect your computer or mobile device from the Wi-Fi hotspot.

9 Normal Operation

9.1 Battery Pack / Charging

The integrated battery pack needs to be fully charged before use.

Connect the USB-C cable to the connector on the bottom of the SkyEcho 2 in order to charge the battery. The BLUE LED will remain lit during charging, and will extinguish when the battery is fully charged.

9.2 Power On/Off

Press and hold the momentary power switch for approximately 3 seconds to power the SkyEcho 2 on.

Press and hold the momentary power switch for approximately 3 seconds to power the SkyEcho 2 off.

9.3 Indicators

There are a 3 LEDs visible through the top cover of SkyEcho 2.

<table>
<thead>
<tr>
<th>LED</th>
<th>Color</th>
<th>On</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAT</td>
<td>Blue</td>
<td>Battery Charging</td>
</tr>
<tr>
<td>BAT</td>
<td>Red</td>
<td>Battery Low (&lt;33%)</td>
</tr>
<tr>
<td>BAT</td>
<td>Yellow</td>
<td>Battery 33%-66%</td>
</tr>
<tr>
<td>BAT</td>
<td>Green</td>
<td>Battery &gt; 66%</td>
</tr>
<tr>
<td>ADS-B</td>
<td>Off</td>
<td>ADS-B receive only</td>
</tr>
<tr>
<td>ADS-B</td>
<td>Green (blinking)</td>
<td>ADS-B transmit/receive</td>
</tr>
</tbody>
</table>
Launch your GDL 90 compatible Electronic Flight Bag (EFB) application. Not all EFB applications support the extended GDL 90 messages for Mode C/S proximity detection.

Configure your EFB as necessary to access the device. Refer to your EFB instructions or EFB support team for configuration instructions.

Traffic and flight information should begin streaming to the application when in range.

Illustration: ForeFlight and SkyDemon displaying ADS-B traffic and weather from SkyEcho 2 is shown below.
Altitude must be pre-flight cross-checked by comparing the aircraft’s altimeter with the GPS altitude displayed on the EFB application.

9.5 Transmit Control

According to UK CAP1391 regulations, transmission must be deactivated when used on an aircraft with an air traffic control radar beacon system (ATCRBS) Mode-S transponder.

10 Contact uAvionix

For additional questions or support please visit [http://uavionix.com/support](http://uavionix.com/support)