tailBeacon™ TSO

User and Installation Guide

1 Revision History

Revision	Date	Comments
A	7/3/2019	Initial release
B	8/28/2019	Update annual checks to include ADS-B version, and update TCAS limitation. Note installation kit.

2 Warnings / Disclaimers

All device operational procedures must be learned on the ground.

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 products are warranted to be free from defects in material and workmanship for two years from the installation of tailBeacon on the aircraft. 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.

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

Disclaimer of Warranty: 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. Proof of purchase for the product from uAvionix or authorized reseller is required to obtain and better expedite warranty service.

Please email or call uAvionix support with a description of the problem you are experiencing. Also, please provide the model, serial number, shipping address and a daytime contact number.

You will be promptly contacted with further troubleshooting steps or return instructions. It is recommended to use a shipping method with tracking and insurance.

4 Table of Contents

5 TSO and System Information

5.1 Certification

This installation manual provides mechanical and electrical information necessary to install tailBeacon. It is not equivalent to an approved airframe-specific maintenance manual, installation design drawing, or installation data package. The content of this manual assumes use by competent and qualified personnel using standard maintenance procedures in accordance with Title 14 of the Code of Federal Regulation and other related accepted procedures. The conditions and tests required for approval of this article are minimum performance standards. Those installing this article either on or within a specific type or class of aircraft must determine that the aircraft installation conditions are within the standards which include any accepted integrated functions not specified by the standards. TSO articles, articles approved with 14 CFR Part 21.8(d), and any accepted integrated function(s) not specified in the standard must have separate approval for installation in an aircraft. The article may be installed only according to 14 CFR Part 43 or the applicable airworthiness requirements. This is an incomplete system intended to provide the functions identified in, and when installed according to this installation manual.

5.2 TSO Authorization

Function	TSO/RTCA/SAE	Class/Type
Airborne Navigation Sensor Using the Global Positioning System (GPS) Augmented by the Satellite Based Augmentation System (SBAS)	TSO-C145e INCOMP RTCA/DO-229E	Beta 1
Universal Access Transmitter (UAT) Automatic Dependent Surveillance-Broadcast (ADS-B) Equipment Operating on Frequency of 978MHz	TSO-C154c RTCA/DO-260B	B1S
Position Light (White)	TSO-C30c SAE/AS8037	Type III
Automatic Pressure Altitude Reporting Code-Generating Equipment	TSO-C88b SAE/AS8003	

5.3 Applicable P/Ns

Description	P/Ns
skyBeacon PF007 Boot Program Firmware	UAV-1001758-( )
skyBeacon PF007 Operating Program Firmware	UAV-1001759-( )
skyBeacon GNSS Operating Program Firmware	UAV-1002029-( )
skyBeacon Wi-Fi Operating Program Firmware	UAV-1001761-( )
skyBeacon Transponder Monitor Firmware	UAV-1001762-( )

5.4 System Functions

System Function	DO-178C DAL	DO-254 DAL
GPS/SBAS	C	C
UAT Transmission	C	C
Transponder Monitor	C	C
Altitude Encoder	C	C
Wi-Fi [1]	E	E

[1] Wi-Fi not intended for and disabled during airborne operation

5.5 TSO Deviations and Incomplete

TSO	Deviation
C154c	uAvionix was granted a deviation from TSO-C154c paragraphs 3.e and 6.h to use DO-178C instead of DO-178B.
C154c	uAvionix was granted a deviation from RTCA/DO-282B section 2.2.4.5.2.5.1.e to allow an algorithm with multiple sources of data to determine the Vertical Status of light aircraft.
C154c	uAvionix was granted a deviation from RTCA/DO-282B section 2.2.4.5.4.15 to not provide installers with the configuration option to enable or disable Call Sign Identification Logic. CSID Logic is hardcoded to Enabled.
C154c	uAvionix was granted a deviation from RTCA/DO-282B section 2.2.12 to not provide a suppression bus output.
C154c	uAvionix was granted a deviation from RTCA/DO-282B section 2.2.7.1.a Table 2-63 Line 1 to not provide a Barometric Vertical Rate Input.
C154c	uAvionix was granted a deviation from RTCA/DO-282B section 2.2.7.1.a Table 2-63 Line 24 to not provide a SIL Supplement Flag input.
C154c	uAvionix was granted a deviation from RTCA/DO-282B section 2.2.7.1.a Table 2-63 Line 29 to not provide a TCAS/ACAS Operational Input.
C145e	uAvionix was granted a deviation from TSO-C145e Paragraph 3.g to use RTCA/DO-160G in place of RTCA/DO-160E.
C145e	uAvionix was granted a deviation from RTCA/DO-229E section 2.1.1.10 to use a GPS antenna that meets uAvionix minimum performance specifications instead of DO-301 qualified antennas.
C30c	uAvionix was granted a deviation from TSO-C30c Paragraph a.(2), TSO-C30c Paragraph c.(1).(viii), and SAE/AS8037 Section 4 to use RTCA/DO-160G in place of RTCA/DO-160B.
C88b	uAvionix was granted a deviation from TSO-C88b Paragraph a.(1) to use SAE/AS8017D in place of SAE/AS8017A.
C88b	uAvionix was granted a deviation from TSO-C88b Paragraph 3.d to use RTCA/DO-160G in place of RTCA/DO-160E.

TSO-C145e Class Beta 1 functionality is incomplete. tailBeacon does not implement LNAV approach mode, instead operating in En Route/Terminal mode only, as appropriate for ADS-B Out applications.

5.6 FCC ID

Model	FCC ID
tailBeacon	2AFFTUAT016R
Contains	2AHMR-ESP12S

5.7 Device Marking

uAvionix Corporation
tailBeacon Certified
TSO-C154c B1S, TSO-C145e Beta 1 INCOMP,
TSO-C88b, TSO-C30c Type III
See IM for Configuration and Deviations
Max. Operating Altitude 18,000ft MSL, 14/28 VDC
DO-160G / DO-178C Level C / DO-254 Level C
FCC ID: 2AFFTUAT016R
Contains: FCC ID: 2AHMR-ESP12S

uAvionix.com
Bigfork, MT U.S.A.
UAV-1002182-001 (REV E)

P/N: UAV-1002183-001
MOD: 0
S/N: 1000001
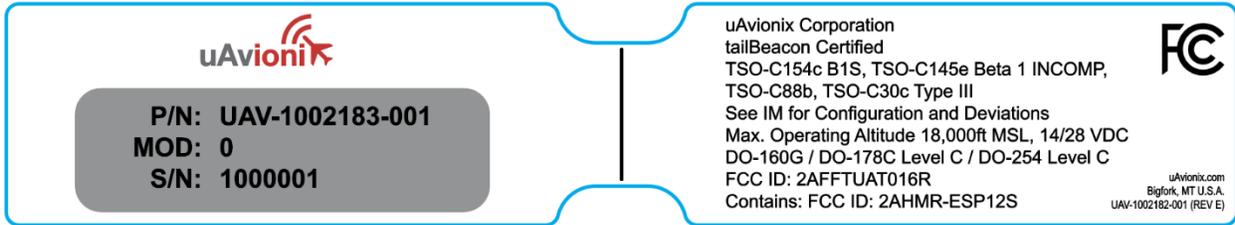
5.8 Environmental Qualification Form

Conditions	DO-160G Section	Description of Conducted Tests
Temperature and Altitude	4.0	Equipment tested to Category B2
Low temperature ground survival	4.5.1	-55°C
Low Temperature Short-Time Operating	4.5.1	-45°C
Low Temperature Operating	4.5.2	-45°C
High Temperature Operating	4.5.4	+70°C
High Temperature Short-Time Operating	4.5.3	+70°C
High Temperature Ground Survival	4.5.3	+85°C
Loss of Cooling	4.5.5	Cooling air not required (+70°C operating without cooling)
Altitude	4.6.1	25,000feet
Decompression	4.6.2	Equipment identified as Category B2 – no test
Overpressure	4.6.3	Equipment identified as Category B2 – no test
Temperature Variation	5.0	Equipment tested to Category A
Humidity	6.0	Equipment tested to Category C
Operation Shocks and Crash Safety	7.0	Equipment tested to Category A
Vibration	8.0	Aircraft type 5: zone 1 (Single Engine) to Category S level M Aircraft type 1: zone 7 (Helicopter) to Category R level J
Explosion	9.0	Equipment identified as Category H
Waterproofness	10.0	Equipment identified as Category S
Fluids Susceptibility	11.0	Equipment identified as Category F
Sand and Dust	12.0	Equipment identified as Category D
Fungus	13.0	Equipment identified as Category X – no test
Salt Spray	14.0	Equipment identified as Category S
Magnetic Field	15.0	Equipment identified as Category A
Power Input	16.0	Equipment identified as Category BX
Voltage Spike	17.0	Equipment identified as Category B
AF Conducted Susceptibility	18.0	Equipment identified as Category B
Induced Signal Susceptibility	19.0	Equipment identified as Category AC
RF Susceptibility	20.0	Equipment identified as Category T
RF Emissions	21.0	Equipment identified as Category H
Lightning Induced Transient Susceptibility	22.0	Equipment identified as Category A2G2L2 with no loss of function, A3G3L3 with no incorrect broadcasts
Lightning Direct Effects	23.0	Equipment identified as Category X – no test
Icing	24.0	Equipment identified as Category X – no test
Electrostatic Discharge	25.0	Equipment identified as Category A
Fire, Flammability	26.0	Equipment identified as Category C

5.9 Continued Airworthiness

Maintenance of the tailBeacon is "on condition" only. For regulatory periodic functional checks, refer to the approved aircraft maintenance manuals or manual supplements. The aircraft must be returned to service in a means acceptable to the appropriate aviation authority.

The rear position light is designed with 2 white LEDs. If any single LED fails, the unit must be repaired or replaced.

Note: Use dark glasses or cover the device to ensure eye safety during LED inspection.

5.10 System Limitations

Installation

This article meets the minimum performance and quality control standards required by a technical standard order (TSO). If you are installing this article on or in a specific type or class of aircraft, you must obtain separate approval for installation.

TCAS/ACAS System

tailBeacon does not support installation on aircraft with an active Airborne Collision Avoidance System (ACAS) with Resolution Advisory capability, such as TCAS II or ACAS X.

SatCom

The tailBeacon GPS has not been demonstrated as compatible with SatCom equipment and should not be installed on SatCom equipped aircraft.

Transponder

A companion altitude-reporting transponder is required to be installed for 14 CFR 91.225 and 91.227 compliance, unless installed on an aircraft excepted from the requirements of 14 CFR 91.215 and 91.225.

Location

tailBeacon must be installed at least 3 feet from any operating transponder antenna.

6 System Specifications

6.1 System Functionality

tailBeacon is a tail mounted unit that contains a 978 MHz transmitter, power line transponder monitor, GPS/SBAS receiver, barometric pressure sensor and altitude encoder, and LED position light. This device transmits ownship Automatic Dependent Surveillance-Broadcast (ADS-B) data through the UAT data link. It monitors an installed transponder, through the aircraft power wiring, for Mode A/C replies. tailBeacon includes an internal GPS/SBAS receiver. This receiver allows the unit to function as its own position source.

6.2 Altitude Encoder with Continuous Calibration™

The integrated altitude encoder does not require connection to the aircraft static pressure system. Instead, tailBeacon benefits from being mounted in an ideal altitude sensing location, and contains Continuous Calibration™ technology. This patent pending technology automatically and continuously calibrates the integrated altitude encoder for correspondence with the aircraft transponder's altitude encoder, allowing compliant operations in remote and challenging environments.

6.3 Power Line Transponder Monitor

tailBeacon utilizes uAvionix's Power Transcoder to ensure proper synchronization of data elements between Secondary Surveillance Radar (SSR) replies and ADS-B transmissions. These elements include Mode A squawk and IDENT status. In remote areas where you may not be interrogated by SSR, these data elements may at times be unavailable. The Power Transcoder additionally serves to provide Continuous Calibration™ data to the altitude encoder.

6.4 Anonymous Mode

In anonymous mode, tailBeacon transmits a randomized temporary address instead of the aircraft's assigned ICAO address code, and a non-identifying Call Sign. The temporary address and Call Sign are disabled if the operator selects a non-1200 squawk code on the transponder. When enabled, the operator will not be eligible to receive ATC services.

Anonymous mode must not be enabled when tailBeacon is installed on an aircraft with a Mode S transponder. Doing so will present an ICAO code mismatch to ATC.

6.5 Wi-Fi

Wi-Fi is intended for on-ground configuration. It is disabled five minutes after startup, or when airborne, whichever occurs first. Connecting the skyBeacon Installer app to the device will prevent the five-minute shutdown from occurring.

To restore Wi-Fi functionality after flight, power to the device must be cycled.

6.6 Call Sign

Your call sign may be adjusted on the ground using the skyBeacon Installer app. It may not be adjusted in-flight. This allows your call sign to be configured to correspond with ATC communications and flight plans, for use during commercial, medical, or volunteer flight operations. When changing the call sign ensure no other installation parameters are adjusted. For typical operations, the call sign should be set to the aircraft registration (N-number), including the leading "N".

6.7 tailBeacon Specifications

6.7.1 Physical Specifications

Characteristics	Specifications
Width	1.71 in (44mm)
Height	2.63 in (67 mm)
Depth	3.82 in (97 mm)
Weight	3.0 oz (85 g)
Operating Temperature Range	-45°C to +70°C
Maximum Pressure Altitude [1]	18,000 ft
Input Voltage Range	9 to 33 VDC
14V Current	0.5A Max
28V Current	0.25A Max

[1] UAT usage is restricted to below 18,000 feet MSL (§91.225).
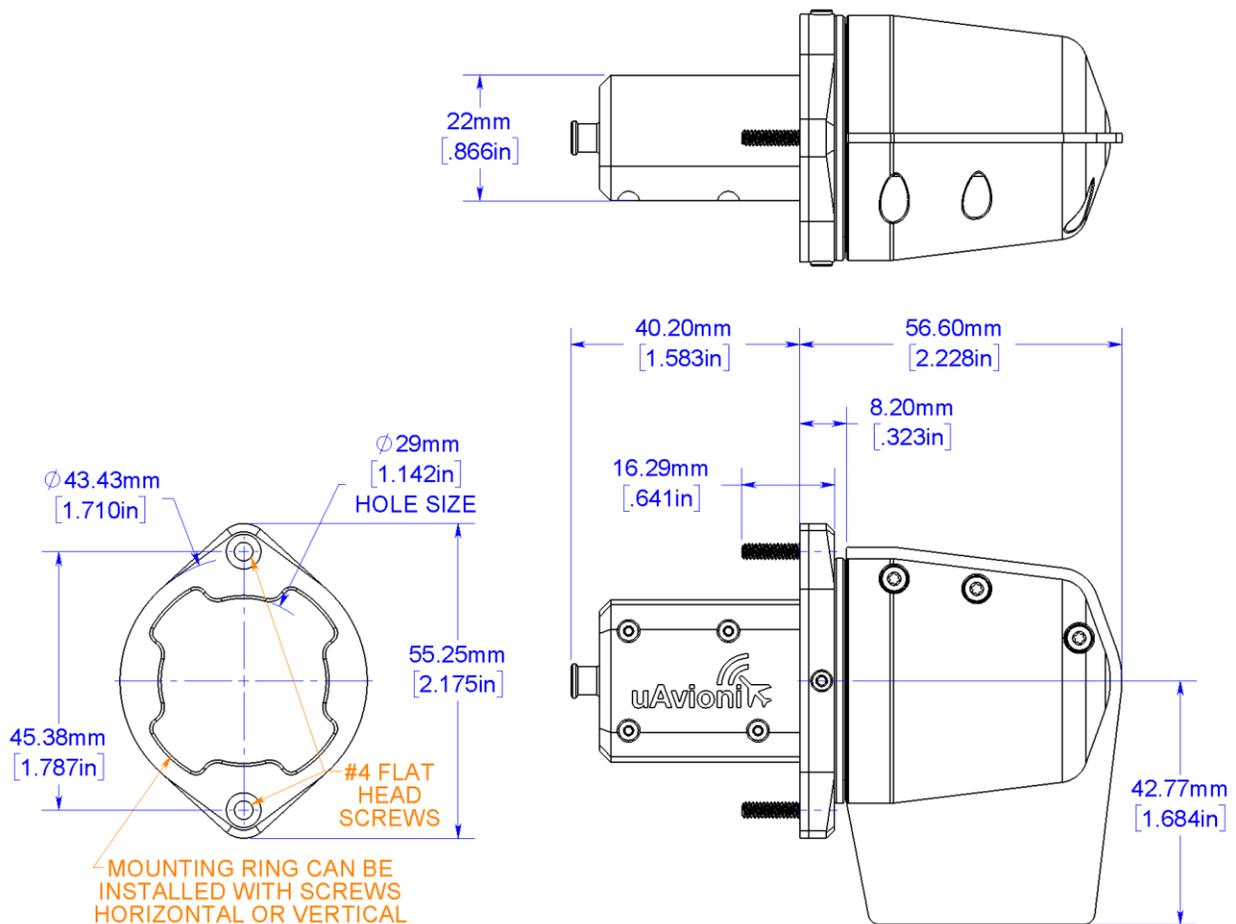
6.7.2 GPS/SBAS Specifications

Characteristics	Specifications
Number of Channels	15 (12 GPS and 3 GPS/SBAS)
Frequency	1575.42 MHz L1, C/A code
Sensitivity	
Tracking	-166dBm
Reacquisition	-160dBm
Cold Start	-148dBm
Hot Start	-160dBm
Horizontal position accuracy	6 m RMS with SBAS
Velocity accuracy	0.05 m/s
Heading accuracy	0.3 degrees
TTFF (Time to First Fix)	58 seconds typical with current almanac and position
Reacquisition	1 second typical
Position update interval	0.2 second (5Hz)
Time Mark	±20 nSec of UTC
Datum	WGS-84

6.7.3 Altitude Encoder Specifications

Characteristics	Specifications
Altitude Range [1]	-1,000 to 18,500 feet

[1] UAT usage is restricted to below 18,000 feet MSL (§91.225).

6.7.4 978MHz UAT Specifications

Characteristics	Specifications
Frequency	978.00 MHz
Transmit Power	44dBm (25 W)
Frequency Tolerance	±10 PPM
Modulation	Continuous phase FSK, h = 0.6, raised cosine, a = 0.5
Data Rate	1.041667 Mbps
99% Power Bandwidth	1.3 MHz
60dB bandwidth	3.3 MHz

6.7.5 System Interfaces

Aircraft Power

Transponder

Position Light Breaker

RED

Wi-Fi

iOS/ Android Device

BLACK

Aircraft Ground
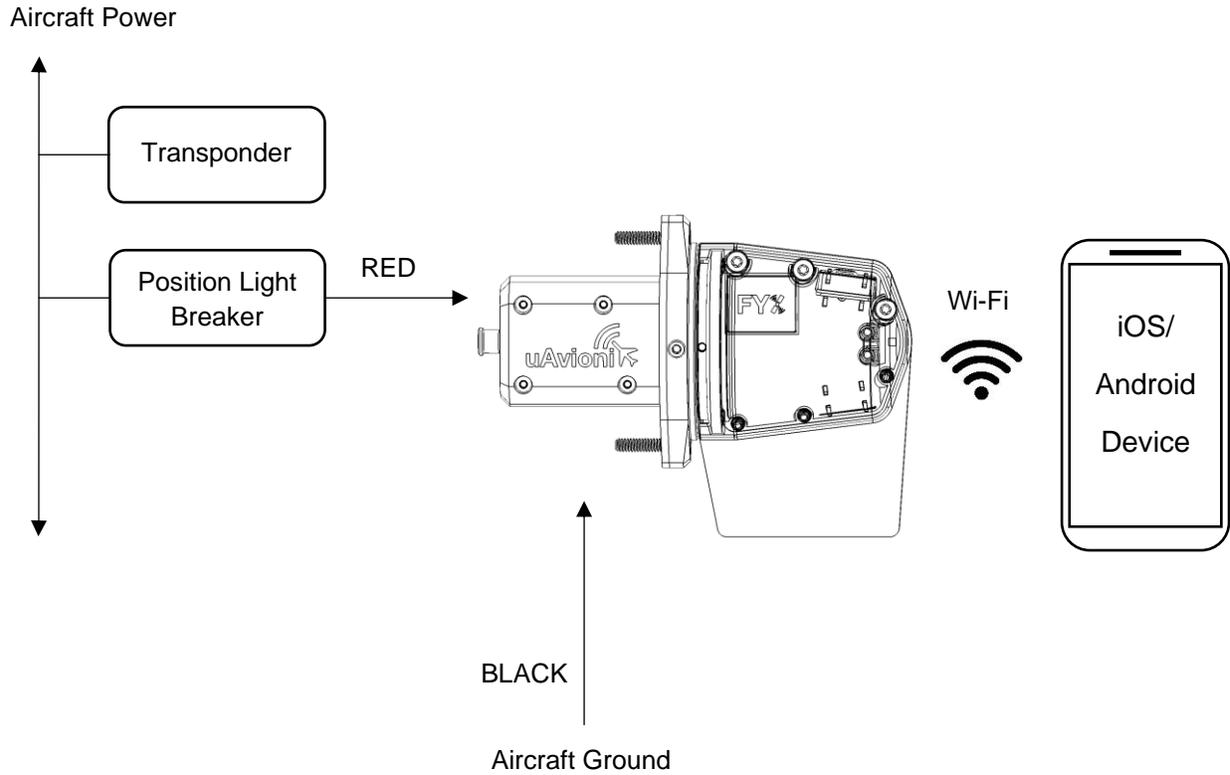
⚠ WARNING: Do not connect the power wire to a Xenon strobe power pack. This can damage the light and voids the warranty.

7 Installation

7.1 Part Numbers

Item	P/N
tailBeacon	UAV-1002183-( )

tailBeacon TSO Installation Kit UAV-1003202-001:

Item	P/N
tailBeacon Mounting Plate	UAV-1001383-001
tailBeacon Mounting Gasket	UAV-1001756-001
#4 1" Screw (2)	UAV-1002184-001
M2 x 4mm Cap Head Screw (2)	UAV-1002820-001
Wire Splice (2)	UAV-1001487-001
Hex L Wrench, 1.5mm	UAV-1002817-001

7.2 Unpacking and Inspecting

Carefully unpack the device and make a visual inspection of the unit for evidence of any damage incurred during shipment. If the unit is damaged, notify the shipping company to file a claim for the damage. To justify your claim, save the original shipping container and all packing materials.

7.3 Mounting

tailBeacon is a rear, aft position light. Ensure that when mounted, the fin and top of the assembly are free from obstructions. tailBeacon requires a clear view of the sky for optimal GPS performance. It may not be suitable for installation on aircraft where aircraft elevators or other structures would block visibility to the sky.

7.4 Mounting Dimensions

R21.72mm
[.855in]

⌀29mm
[1.142in]
HOLE SIZE

45.38mm
[1.787in]

#4 FLAT
HEAD
SCREWS

MOUNTING RING CAN BE
INSTALLED WITH SCREWS
HORIZONTAL OR VERTICAL
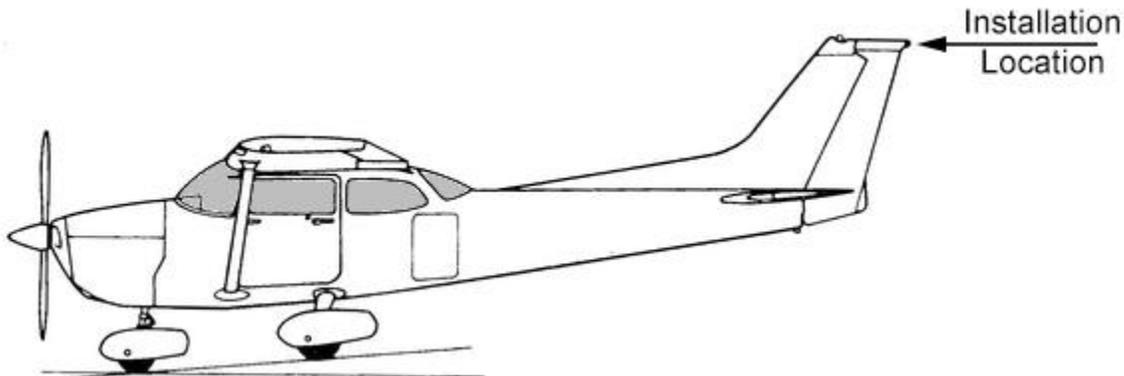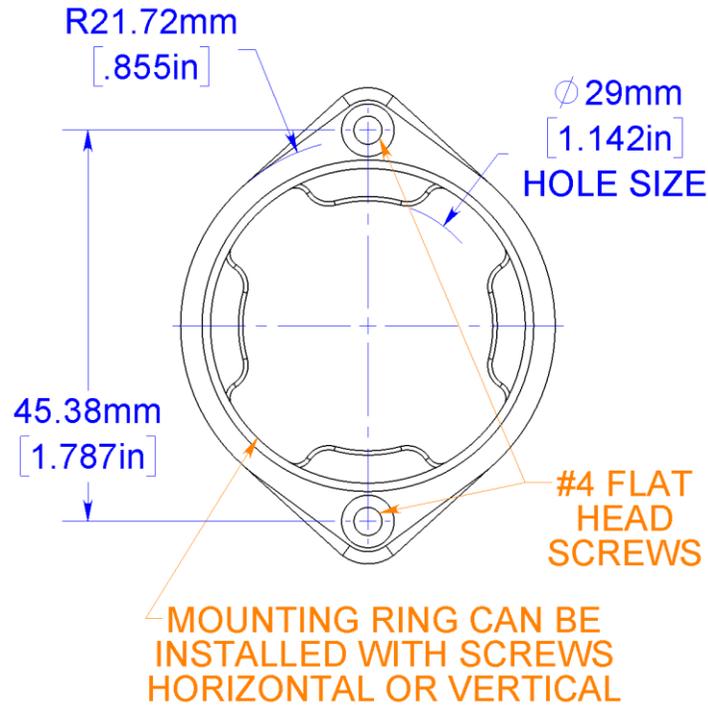
7.5 Wiring

tailBeacon is designed to use existing position light wiring. If new wiring is required, refer to AC 43.13-1B Chapter 11 for guidance. The wiring should present an impedance of less than 0.5ohm. The following table provides guidance for typical aircraft hook-up wire.

Gauge	ohm/km	Maximum Length for 0.5ohm
20 AWG	35	14.2m
22 AWG	64	7.8m

Changes to the existing position light circuit breaker rating are not required.

7.6 Unit Installation

tailBeacon is mounted with two #4 screws to the existing holes and nut plates.
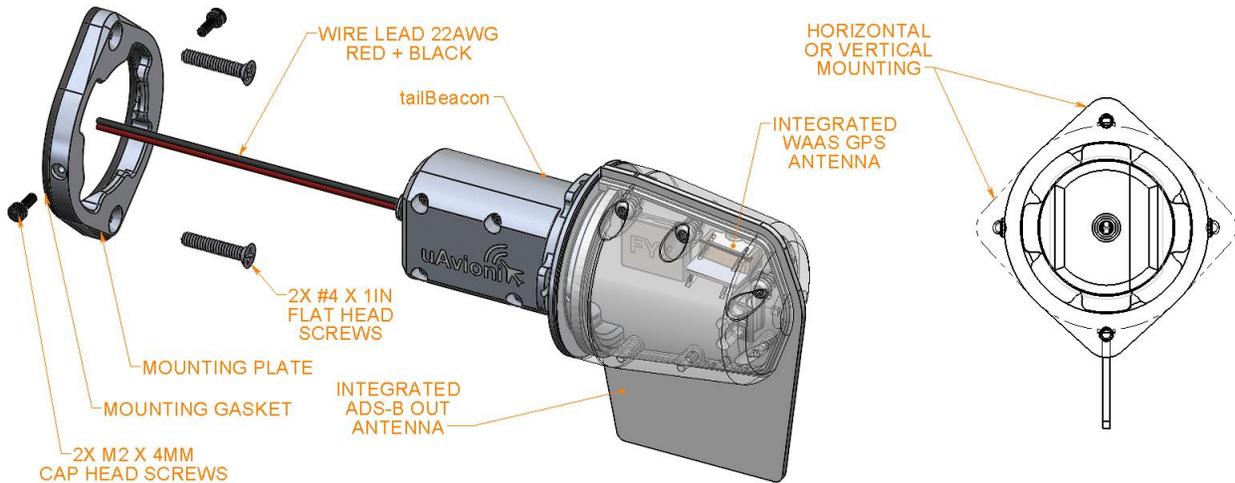
1. Remove the existing aft position light.
2. Detach the power wire(s).
3. Peel the backing from the Mounting Gasket and affix to the Mounting Plate.
4. Install the Mounting Plate, in the appropriate orientation for your aircraft, using the two supplied #4 screws.
5. Connect the red wire to the switched position light power wire using environmental splices or equivalent.
6. tailBeacon may be grounded to the aircraft structure via the mounting screws. However, it is recommended to connect the black wire to the battery ground.
7. Insert tailBeacon into the Mounting Plate and twist to lock, ensuring that the tailBeacon is oriented with the fin facing directly downward.
8. Secure the tailBeacon to the Mounting Plate using the two supplied M2 screws and a 1.5mm hex driver.

⚠ To ensure performance of the integrated altitude encoder, the wire bundle exiting the tailBeacon enclosure must not be sealed. This area functions as the static pressure sensing port.

Note: Installation of the tailBeacon must be in accordance with AC43.13-2B, Chapter 1.

8 Maintenance

The tailBeacon is not a user serviceable product. All service must be performed either by uAvionix or an authorized uAvionix repair center.

9 Care and Cautions

The tailBeacon should be regularly cleaned with warm soapy water and a soft cloth micro-fiber rag. Use of chemical cleaners and degreasers should be avoided. If the tailBeacon is exposed to cleaning chemicals, you should promptly wash off all residue.

DO NOT wax, buff, paint or attempt to polish any part of the tailBeacon assembly. Doing so may damage the housing. Avoid any contact with abrasive materials including scrubbing pads.

Never hit, tap on or flex the fin portion of a properly mounted tailBeacon assembly. Doing so will cause undue stress on the assembly and could void your warranty.

10 System Configuration

Download the "uAvionix skyBeacon Installer" app from the iOS App Store or Google Play Store. Note: DO NOT use the "uAvionix Ping Installer" or "uAvionix Echo Installer" apps. The app will guide you through the configuration process.

10.1 Connect to tailBeacon Wi-Fi

Launch the "skyBeacon Installer" app and follow instructions to connect to the tailBeacon for configuration.

The SSID of the tailBeacon is in the form Beacon-xxxx, for example Beacon-7782.

The tailBeacon Wi-Fi connection is secure. The WPA2 passphrase is written on an inclusion in your package, and should be entered exactly as printed. WPA2 passphrases are case sensitive.

Keep the inclusion containing Wi-Fi information in a safe place, preferably with your aircraft records.

2:13

Connect to skyBeacon

Turn on power to your skyBeacon

Connect to the skyBeacon Wi-Fi network

1. Open iOS Settings
2. Select Wi-Fi
3. Select Beacon-xxxx and enter passphrase included with device
4. Wait for a check mark to appear next to Beacon Wi-Fi

Wi-Fi

✓ Beacon-3559
No Internet Connection

Note: iOS may indicate "No Internet Connection". This is normal.

Return to this app to continue

10.2 Configuration

10.2.1   Configure
The configure screen provides all configuration options.

Anonymous Mode:
When checked, this enables the tailBeacon to transmit a self-assigned (random) ICAO and non-identifying Call Sign when the squawk code matches the defined VFR squawk code (1200). When enabled, the operator will not be eligible to receive ATC services.

Call Sign:
The CALL SIGN can be up to an 8-digit code that corresponds to the tail number of the aircraft. (0-9, A-Z). Note: This is typically your aircraft N-number (e.g. N8644B), unless otherwise advised by the FAA or ATC.

ICAO Number:
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.

Vso (knots):
This parameter allows tailBeacon to automatically switch between airborne and ground modes and should be set to the aircraft stall speed.

ADS-B In Capability:
Sets the ADS-B In equipment capability reporting. This is used to indicate the existing aircraft configuration.

Tap "Update" when complete.

2:07		.ll 5G E

Configure

Basic	Advanced

Transmit Enabled ⬤

Anonymous Mode ◯

Call Sign
N8644B

ICAO Number (hex)
ABE099

V_{S0} (knots)
40

ADS-B In Capability
978MHz ▾

Update

Configure	Monitor
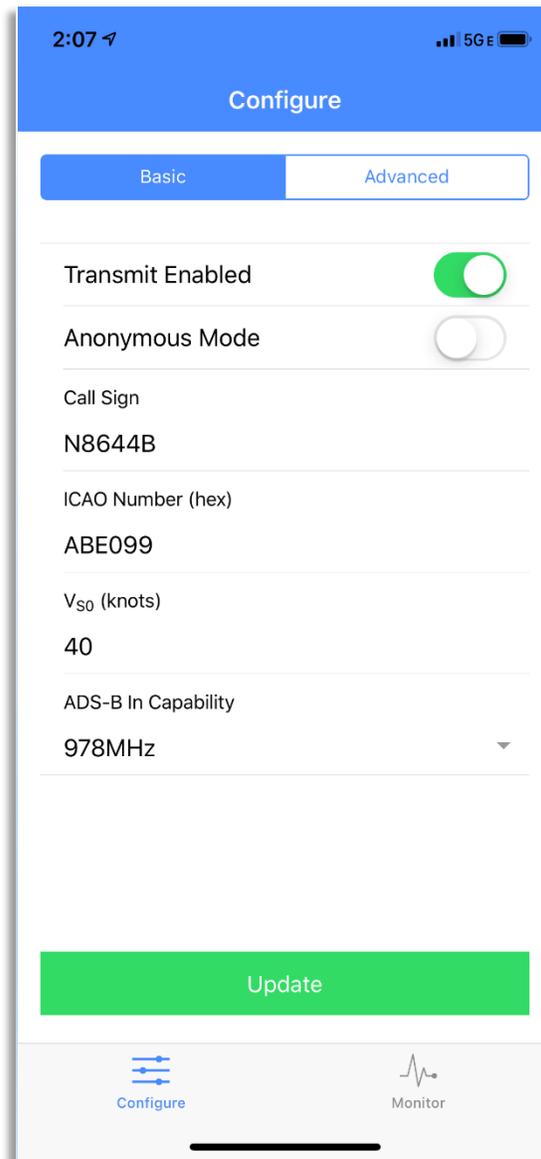
Position Light:
Sets the position light on or off.

Emitter Type:
To assist ATC tracking of aircraft, an aircraft category can be transmitted. Select the aircraft category that most closely matches the aircraft.

Aircraft Length:
Enter the aircraft Length in Meters.

Aircraft Width:
Enter the aircraft width in Meters.

GPS Antenna Offset (Lateral):
Enter the position of tailBeacon relative to the center of the aircraft Roll axis in Meters.

**GPS Antenna Offset (Longitudinal):**
Enter the position of tailBeacon relative to the nose of the aircraft in Meters.

Transponder Monitor Threshold:
Adjust this value only if experiencing difficulties with the transponder monitor (squawk and barometric altitude) function, and at the direction of uAvionix Support.

Tap "Update" when complete.
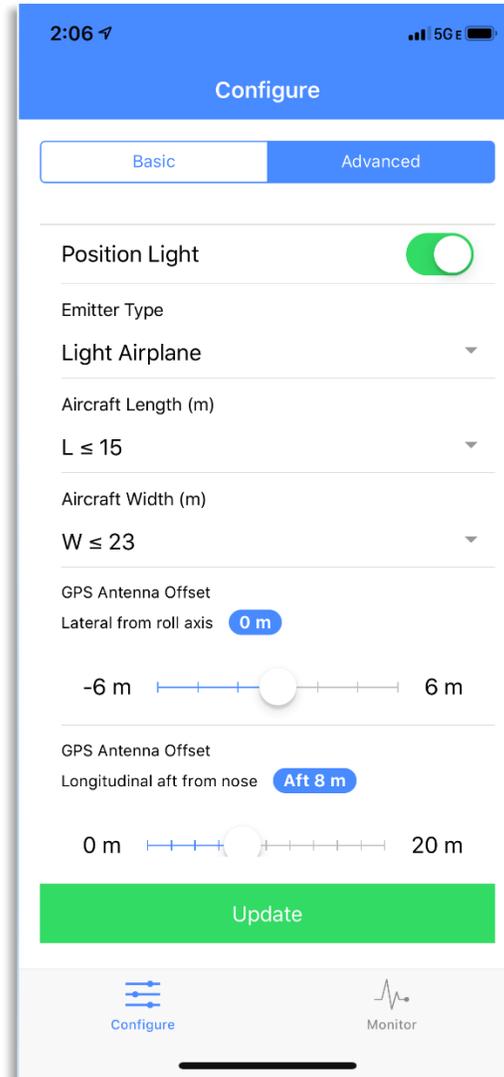
10.3 Post Installation Checks

Configure tailBeacon before performing system checkouts.

Tab to the "Monitor" ⎍⌇ screen on the Installer App.

|	
Verify that Status is listed as "OK". Information on status annunciations described in Section 11can be found here. Verify that the Call Sign matches your aircraft's N-number (including the 'N'). Verify that the ICAO number is correct as entered. Select ALT mode on the Aircraft's transponder. In an area of known radar activity or using a ramp tester interrogate the transponder and verify that the Squawk and Pressure Altitude agree with the transponder or known pressure altitude. With the tailBeacon having a clear view of the sky, allow enough time for the GPS to acquire a fix (typically less than 2 minutes). Verify that the Latitude/Longitude and GPS Altitude agree with the known reference position.	**2:14** ⑁　　　　　.ıl LTE ▭) 　　　　　**Monitor**　　**Quick Setup** Status　　　　　　　　　　OK Identification 　Call Sign　　　　　　N8644B 　ICAO Number　　　　ABE099 　Squawk　　　　　　　1200 　Emergency　　　　　None Position 　Latitude　　　41° 58' 22.68" 　Longitude　　-87° 41' 22.90" 　Altitude, Pressure　　625 ft 　Altitude, GPS　　　490 ft Quality 　　Configure　　　　Monitor
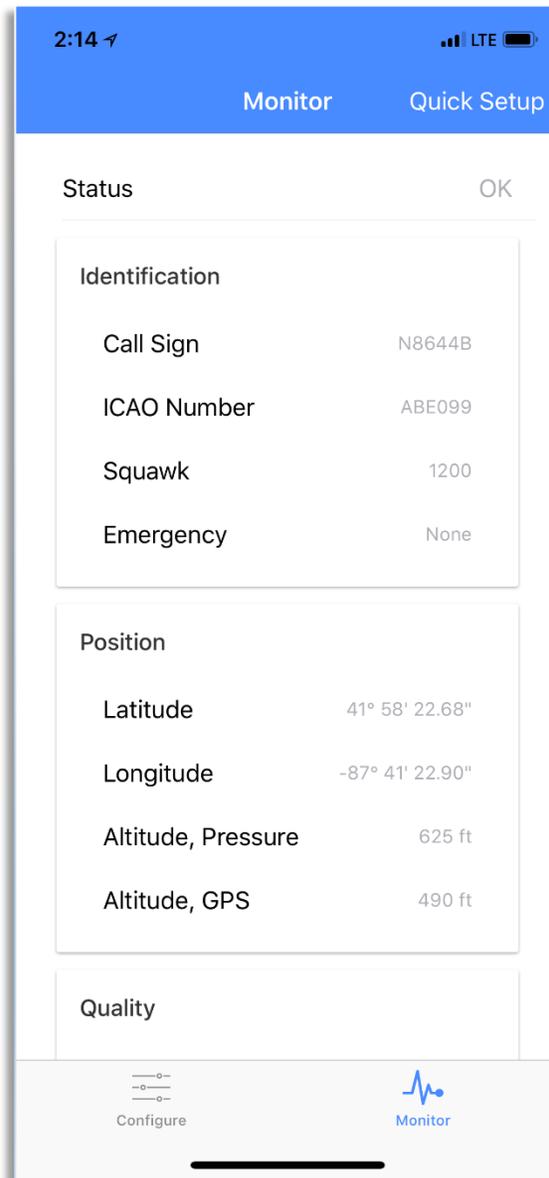
10.4 Post-Flight and Annual Checks

After your first flight with tailBeacon, and every 12 calendar months, perform the following checks.

Tab to the "Monitor" ⎍⎍• screen on the Installer App.

|	
Ensure that the "Last Calibration" field has the UTC date and time of a recent flight recorded. This indicates that Continuous Calibration™ information has updated, and that the integrated altitude encoder is synchronized with your transponder altitude encoder. If no "Last Calibration" date is listed, or does not match that of a recent flight of significant duration, your Transponder Monitor Threshold may need to be adjusted, or your transponder serviced. Annually, confirm the displayed "ADS-B Version" is current per Service Bulletins listed at: https://uavionix.com/support/tailbeacon/	
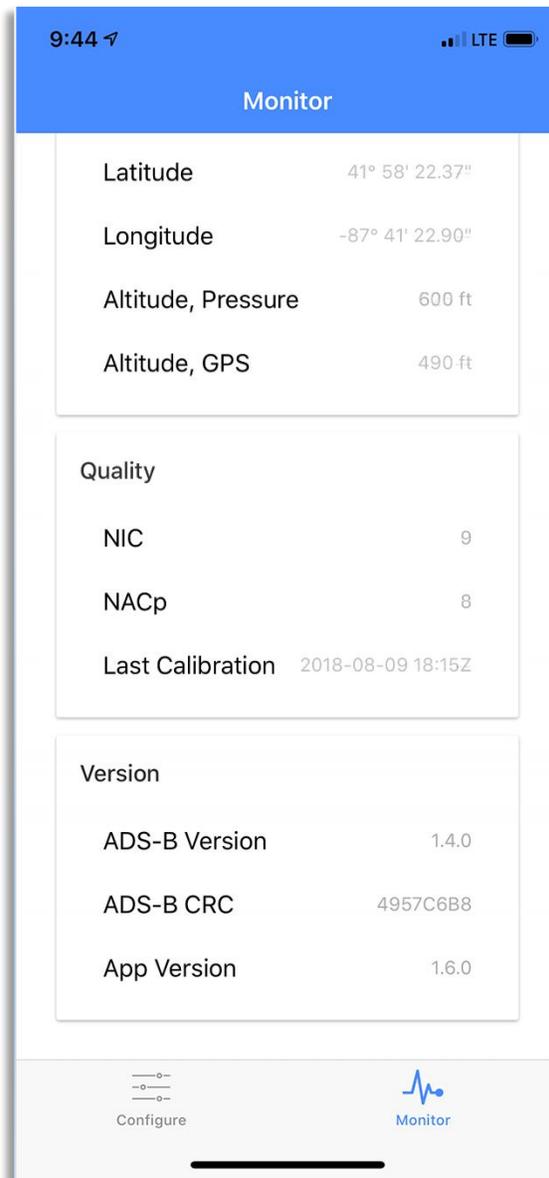
11 Normal Operation

tailBeacon must be enabled (turned ON) during all phases of flight including surface movement operations. To ensure tailBeacon is enabled, aircraft power to the position light must remain on.

A red LED annunciator is visible beneath the lens cover on the starboard (when installed) side of the device, as shown below. It indicates the operating status of the tailBeacon.
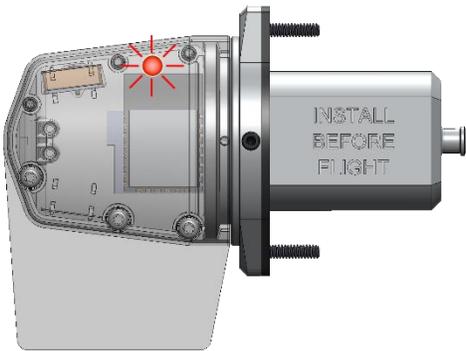
LED Indication	Meaning

On (Constant)	Device Failure
	  Internal self-test failure
	  Invalid ICAO configured

Blinking (On/off every second)	Function Failure
	  No GPS fix
	  ADS-B broadcast failure

Off	No Failure

12 Support

For additional questions or support please visit:

http://www.uavionix.com/support/