

**uAvionix**  
**tailBeacon X Initial Configuration Test**



REV A

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## 1 Introduction

The purpose of this document is to outline the process and procedures to verify correct device configuration, check for any electromagnetic interference (EMI), and perform an initial flight test of the installed tailBeacon X. This procedure document accompanies the installation process of the tailBeacon X. See doc (UAV-1003387-001). The tailBeacon X must be installed and configured according to the specifications and instructions released by uAvionix. Follow the procedures on this document once the correct mechanical installation and device configuration is complete. Follow installation steps in (UAV-1003387-001).

## 2 TailBeacon X Configuration Verification

Using the Configuration Screen on the SkyBeacon App, input the following parameters for the flight test aircraft:

- Call Sign- matches the aircraft registration number
- ICAO Number- matches the FAA registration 24-bit hexadecimal number
- Max aircraft speed- Set to the flight test aircraft max speed in knots
- Vso- Set to the flight test aircraft stall speed in knots
- ADS-B In- Set to reflect the flight test aircraft equipment capability to receive ADS-B In
- Emitter Type- Set to the flight test aircraft type
- Aircraft Length- Set to the aircraft length
- Aircraft Width- Set to the aircraft width
- GPS Antenna Offset (Lateral)
- GPS Antenna Offset (Longitudinal)

Verify on the “Monitor” screen that all the configuration details have successfully been uploaded and are correct. Take a screen shot of the “Monitor” screen to submit to uAvionix along with the “Initial Flight Submission” form.

## 3 EMI Ground Test

The EMI ground test will verify that the tailBeacon X does not affect any of the victim equipment onboard the aircraft. The existing equipment on the flight test aircraft that could be affected by the tailBeacon X includes but is not limited to the following:

- Radio Communications (Comms)
- Audio Panels
- VOR, LOC, DME, or ADF Navigation equipment
- GPS navigation equipment
- Electronic engine monitoring systems
- Emergency Locator Transmitter (ELT)
- Gyro or Accelerometer driven instruments (AI or DG)
- Digital displays
- External aircraft lights
- Cockpit display lights

The EMI test should be completed while on ground and away from any structures. The testing cannot be conducted inside a hangar.

- Power on the tailBeacon X and enable the transmit function by changing the device mode to “ALT” on the control head.
- Verify that in a standard flight configuration that the victim equipment on board remains in full operation with the tailBeacon X in full operation.

- Record the results and submit them in the “Initial Flight Submission” form on the tailBeacon X beta tester page.

If any EMI is observed DO NOT proceed to the next section and contact uAvionix immediately with your observations.

## 4 Configuration Flight Test

Follow the instructions on the “TBX Flight Test Process” document for any flight performed for uAvionix. A 1090 Sentry data logger must be recording data for all flights.

**\*\*The existing transponder in the aircraft must be powered off, disabled, or inoperative\*\*  
\*\*before proceeding with TailBeacon X flight testing\*\***

This flight test is structured to simulate standard flight operations and maneuvers

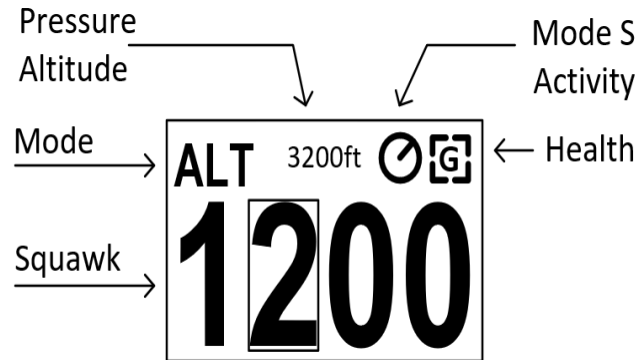
The following steps provide general procedures to follow during the test.

- During all phases of flight, survey the flight deck for EMI of previously installed equipment. Record any observations and include them on the “Initial Flight Submission” form. If any EMI is observed abort flight test and contact uAvionix.
- Taxi for take-off below the Air/Ground speed setting to ensure the switch from ground to air is not recorded.
- Verify the tailBeacon X is functioning properly by observing the flashing “G” status indicator on the control head. See tailBeacon X install manual UAV-1003387-001 or image below. Monitor the tailBeacon X status during the entire flight and submit any observations.
- Record the time and location of departure in Zulu 24-hour format.
- Take off and climb as directed by ATC. Verify the tailBeacon X is being interrogated by observing the “Mode S Activity” indicator on the control head. See tailBeacon X install manual UAV-1003387-001 or image below. Monitor the tailBeacon X status during the entire flight and submit any observations.
- Perform a climb for a minimum of 1 minute at the aircraft Vx speed.
- Perform a climb for a minimum of 1 minute at the aircraft Vy speed.
- Perform the maneuvers at the specified altitudes outline in the table below. **All turning maneuvers must not exceed 30 degrees of bank angle.** Perform climbs between altitudes at a standard rate for the test aircraft.

Altitude	Maneuver	Duration/quantity
4000 feet MSL	Straight and Level Flight	5 minutes
4000 feet MSL	Left hand 360-degree turn	2 full turns
4000 feet MSL	Right hand 360-degree turn	2 full turns
7000 feet MSL	Straight and Level Flight	5 minutes
7000 feet MSL	Left hand 360-degree turn	2 full turns
7000 feet MSL	Right hand 360-degree turn	2 full turns
10000 feet MSL	Straight and Level Flight	5 minutes
10000 feet MSL	Left hand 360-degree turn	2 full turns

10000 feet MSL	Right hand 360-degree turn	2 full turns
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9. Descend at a standard rate back to 4000 feet MSL. Repeat steps 8 and 9 until a minimum of 1 hour of flight time has surpassed.
10. Return to land and record the time and location of arrival in Zulu 24-hour format.



## 5 Post Flight Check

Any devices used for recording data during the flight should be stopped and powered off at this time. **The time and location of arrival must be recorded.** The configuration and the installation of the test article must be checked upon return to verify no unprompted changes were made during the test flight.

## 6 Data Procurement

All data, photos, and notes from the flight must be gathered and promptly submitted to uAvionix. Complete and submit the online “Initial Flight Submission” form with all the required information from the flight. This includes installation and configuration photos and 1090 Sentry Logger files along with the form. Submit flight data, results, and observations through the tailBeaconX Beta Program Portal <https://uavionix.com/test-pilot/>.

### 6.1 Photos

Photos must be taken to document and show the following.

- Test article installation
- Test article configuration
- Test vehicle configuration

Ensure that photographs are saved on a reliable device before proceeding. Submit these photos on the “Initial Flight Submission” form.

### 6.2 1090 Sentry Logger

Submit the corresponding 1090 Sentry logger data to uAvionix with the “Initial Flight Submission” form. See section 2.2.1 of the “TBX Flight Test Process” document for instructions on how to obtain the data files.

For additional support contact [betateam@uAvionix.com](mailto:betateam@uAvionix.com)