



echoUAT

EXP Service Bulletin

Software Upgrade for echoALT Support



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Patent uavionix.com/patents

1 Revision History

Revision	Date	Comments
A	4/4/2024	Initial release
B	5/10/2024	Added Background
C	5/24/2024	Updated Software Filenames

2 Warnings / Disclaimers

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.

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UAV-1007864-001 Rev C		

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5 Planning Information

5.1 Distribution / Eligibility

This service bulletin should only be performed by appropriately authorized personnel.

5.2 Description

This Service Bulletin provides instructions for loading updated software and wiring for compatibility with echoALT.

5.3 Background

Historically, most echoUAT installations reports pressure altitude from the aircraft's Mode C transponder replies. A limited number of installations receive reported pressure altitude through a serial interface directly from the aircraft's transponder or EFIS.

This service bulletin addresses two issues related to pressure altitude reporting in UAT ADS-B:

Issue 1: In rural areas without radar coverage, echoUAT may not provide timely altitude reporting due to a lack of Mode C interrogations.

Issue 2: Third party transponders may not properly annunciate when pressure altitude becomes unavailable through the serial interface.

To address both issues, uAvionix provides a plug-and-play altitude encoder called echoALT. echoALT always provides adequate pressure altitude data and annunciations. Like skyBeacon and tailBeacon, echoALT continuously calibrates to the aircraft transponder's altitude encoder, therefore, echoALT does not require bi-annual correspondence checks.

5.4 Time Required

For field software update, up to 15 minutes is required to perform this update procedure. An additional 30 minutes is required to mount the echoALT and connect with the provided echoALT wiring harness.

5.5 Weight and Balance

No change.

5.6 Electrical Load Data

No change.

5.7 Applicability

This Service Bulletin applies to all echoUAT installations utilizing an echoALT. The software identified in Table 5-1 should only be updated when an approved altitude encoder source (Table 5-2) is connected to the echoUAT.

Updating software without an approved altitude source (Table 5-2) will result in failing performance reports.

Use the tables below to determine applicability of the software update.

Figure 5-1 Applicability

Hardware Description	P/N	Applicability
echoUAT	UAV-1000957-001	Verify by procedure
echoALT	UAV-1007460-001	New with this SB
echoALT Wire Harness	UAV-1007532-001	New with this SB

Table 5-1 Current Software Versions

echoUAT Processor	Software Version
protocolConverter "Device 1"	0.4.6
pingTransceiver "Device 2"	2.4.66

Table 5-2 Approved Altitude Encoders

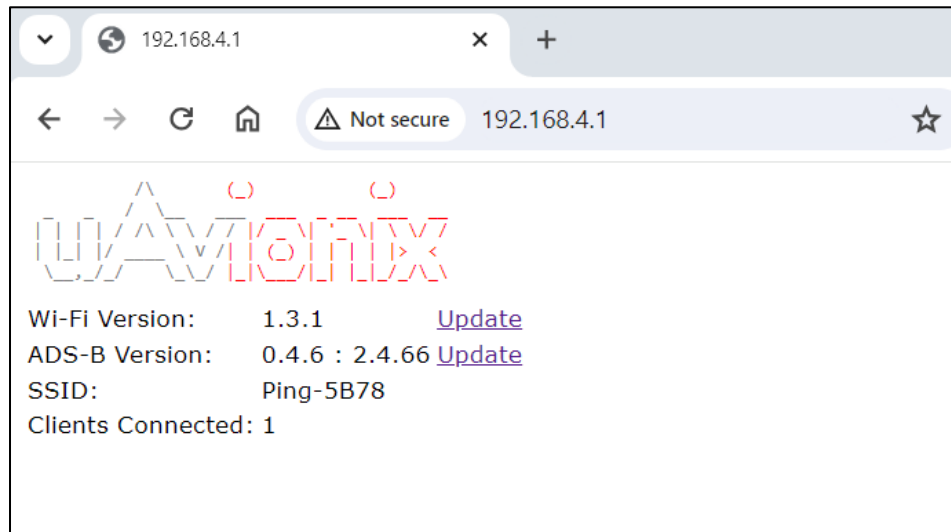
Approved Altitude Encoders	Software Version
echoALT	1.0.3+
Funke TRT800H	6.5

To determine software version information using a PC:

- A. echoUAT has two processors, protocolConverter and pingTransceiver, that may require software updates. Follow the steps

carefully below to update *both* processors with their respective software.

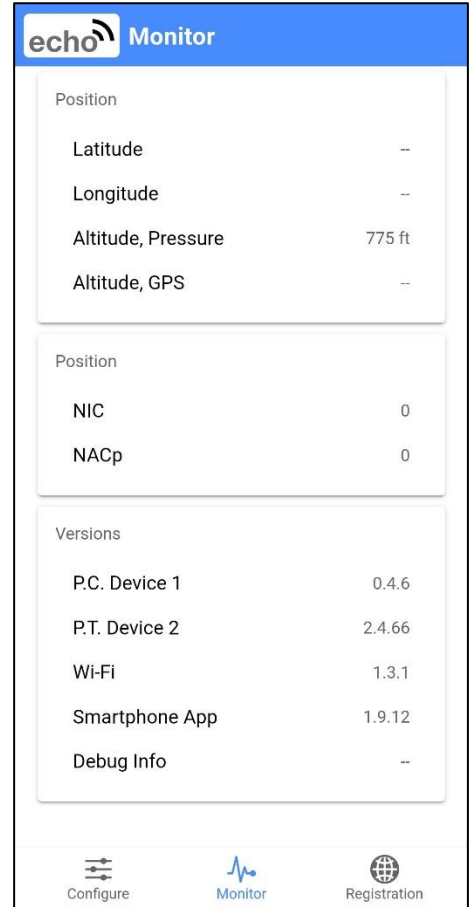
- B. Power echoUAT and connect to the ping-XXXX Wi-Fi with a Windows PC.
- C. From your PC web browser, navigate to <http://192.168.4.1>
- D. The “ADS-B Version:” displays the corresponding version information for *protocolConverter* : *pingTransceiver*. In the example below, protocolConverter (Device 1) version is 0.4.6 and pingTransceiver (Device 2) is 2.4.66.



- E. Table 5-1 If the software versions indicated on your echoUAT are less than those listed in Table 5-1, proceed to the software update procedure (Section 7).

To determine software version information using the echo Installer App:

- A. Ensure echo Installer App is version 1.9.12 or later. It is recommended to be in “airplane mode” when using the echo Installer App.
- B. Power echoUAT and connect to the ping-XXXX Wi-Fi with the Android or iOS device.
- C. Start the echo Installer App version 1.9.12+.
- D. Navigate to the bottom of the Monitor page to see version information.
- E. Check “P.C. Device 1” version is less than version information provided in Table 5-1. If so, proceed to Section 7.
- F. Check “P.T. Device 2” version is less than version information provided in Table 5-1. If so, proceed to Section 7.



5.8 Applicable Publications

The following documents are applicable to the software release.

Table 5-3 echoUAT Documents

Title	Part Number	Revision
echoUAT User and Installation Guide	UAV-1001006-001	P

6 Required Items

A PC with Wi-Fi is required to perform this software update.

Table 6-1 Software Update Files

Filename	Version	SHA1 Hash
Device-1-PC-ECHO_UAT_0_4_6-7f2a664.uav	0.4.6	5c2f316084908db6688430265b88c711ecda651a
Device-2-PT-ECHO_UAT_25W_2_4_66-d693d54.uav	2.4.66	b9dc410db12dce1b5f3cff970c0c7d6b6858fde6

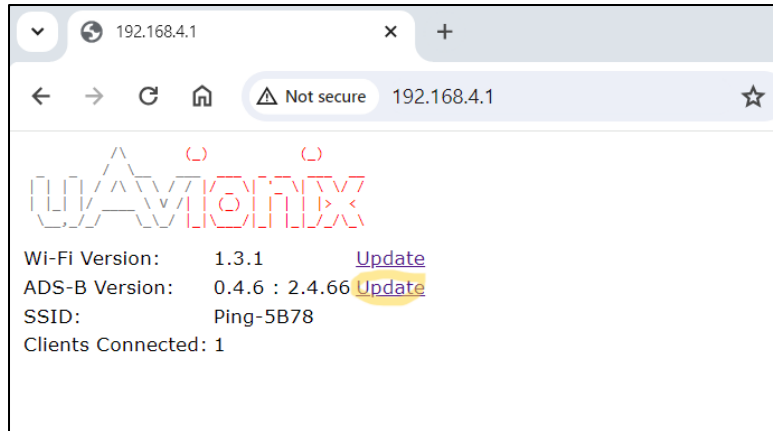
uAvionix software update files are available for download from the uAvionix Support website at no charge.

- A PC with Wi-Fi is required to perform the echoUAT software update.
- Ensure the Table 6-1 software files have been downloaded prior to visiting the aircraft. After files are downloaded to the PC, an internet connection is not required to perform the echoUAT software update.
- An approved altitude encoder is required to be paired with the echoUAT for this software release. See Table 5-2.
- echo Installer App for Android or iOS version 1.9.12 or later.

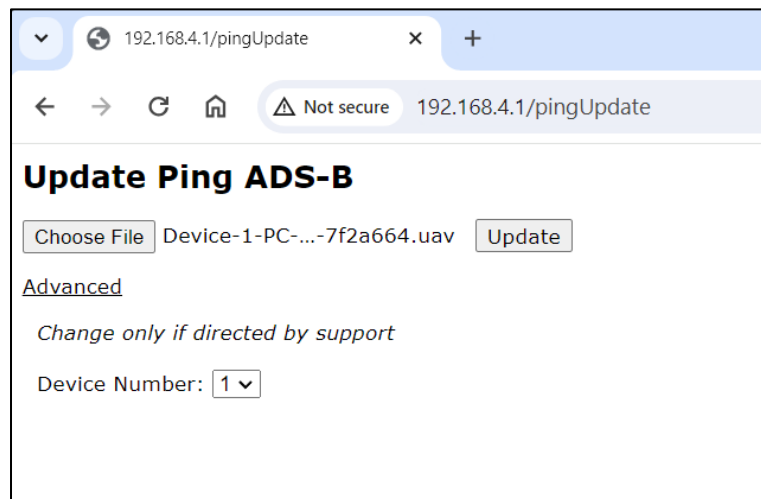
7 Installation/Update Instructions

7.1 echoUAT Software Update Instructions

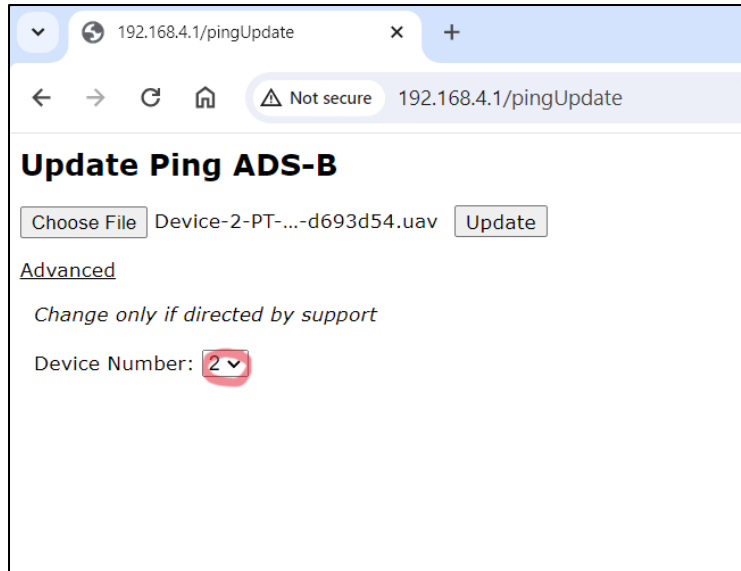
- A. Ensure the latest ProtocolConverter (Device 1) and PingTransceiver (Device 2) UAV files are downloaded to your Wi-Fi enabled PC available on the uAvionix support website [here](#).
- B. Power echoUAT and connect to the ping-XXXX Wi-Fi with a Windows PC.
- C. Ensure all other Wi-Fi devices including tablets and phones are disconnected from the echoUAT.
- D. From your PC web browser, navigate to <http://192.168.4.1>
- E. On the “ADS-B Version:” line, click the “Update” hyperlink shown with a yellow circle below.



- F. Press the “Advanced” hyperlink.
- G. Ensure the “Device Number” is set to 1.



- H. Next, click the “Choose File” and select the Device-1-PC-ECHO UAT 0 4 6-7f2a664.uav.
- I. Press Update. Do NOT move or disconnect the PC’s Wi-Fi until it returns to the main version page. If the update results in an error, please contact support (Section 9).
- J. Once the ProtocolConverter (Device 1) has been successfully updated, you will be returned to the main version page. Click update again as shown in Step E.
- K. Press the “Advanced” hyperlink.
- L. Set the “Device Number” to 2 (red circle below).



M. Next, click the “Choose File” and select the Device-2-PT-ECHO UAT 25W 2 4 66-d693d54.uav.

N. Press Update. Do NOT move or disconnect the PC’s Wi-Fi until it returns to the main version page. If the update results in an error, please contact support (Section 9).

7.2 Approved Altitude Encoder Installation Instructions

The software update described in section 7.1, must be connected to an approved altitude encoder found in Table 5-2. Most installations will require an echoALT (UAV-1007460-001) as the approved altitude encoder. See echoUAT User and Installation Guide UAV-1001006-001 Revision O or later for installation details.

8 Post-Accomplishment Verification and Actions

8.1 Verify echoUAT Software Versions

- A. After software updates are complete, power cycle the echoUAT.
- B. Following steps in section 5.2, verify software versions match version information in Table 5-1.
- C. Using the echo Installer App, verify configuration settings, including ICAO, Call Sign and Emitter type are correct. Refer to echoUAT User and Installation Guide UAV-1001006-001 for additional configuration options.

- D. Ensure echoALT or compatible transponder is connected to the echoUAT. Refer to echoUAT User and Installation Guide UAV-1001006-001 for additional echoALT wiring details.
- E. Verify “Altitude, Pressure” is available on the Monitor page of the echo Installer app. Note, GPS position information may/may not be available depending on the sky view of the aircraft’s GPS receiver.
- F. Installers are encouraged to request a Public ADS-B Performance Report (PAPR) from the [FAA website](http://www.faa.gov), to verify installation.

9 Support

For additional questions or support please visit:

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

The screenshot shows the 'echo Monitor' app interface. It features a blue header with the 'echo Monitor' logo. Below the header, there are two main sections: 'Identification' and 'Position'. The 'Identification' section contains a table with the following data:

Identification	
Address	00000A
Call Sign	N12345
Flight Plan / Squawk	1200
Emitter Category	Light
Emergency	None

The 'Position' section contains a table with the following data:

Position	
Latitude	--
Longitude	--
Altitude, Pressure	875 ft
Altitude, GPS	--

The 'Altitude, Pressure' value of '875 ft' is highlighted with a yellow circle in the original image.

10 Maintenance Record

When post-accomplishment verification and system checkout is completed, make appropriate entries in the Aircraft Maintenance Log Book.

Maintenance Record



A copy of this form must be submitted by visiting:

<https://uavionix.com/logbook/>

Date:	By:
Aircraft Information	
Make:	Model:
Serial Number:	Registration Number:
echoUAT Information	
Serial Number:	
Hardware Part Number:	UAV-1000957-001
Customer Information	
Name:	
Email:	
Telephone:	