



### Overview

echoESX EXP is a complete remote mount system designed to meet the Transponder and Automatic Dependent Surveillance – Broadcast (ADS-B) requirements for operating in controlled airspace.

The system is fully configurable as any combination of Mode A, Mode C, Mode S transponder (DO-181e Level 2els, Class 1) and 1090MHz Extended Squitter ADS-B (DO-166b Class B1S) transmitter. The echoESX also includes an SBAS Global Positioning System (GPS) position source receiver (DO-229e Beta 1).



### Features

- Multiple control head options include:
  - uAvionix AV-30-C
  - uAvionix AV-30-E
  - uAvionix AV-20-E
- Meets the U.S. ADS-B Out equipment performance requirements of 14 CFR 91.227
- BNC 1030/1090MHz Antenna Connector
- TNC GPS Antenna Connector

### Conformity

- DO-181E Level 2els, Class 1
- DO-260B Class B1S
- DO-229E Class Beta-1
- DO-178C Level C
- DO-254 Level C
- DO-160G

### Regulatory

- FCC 47 CFR Part 87 ID 2AFFTP200S

### Electrical Specification (DB9)

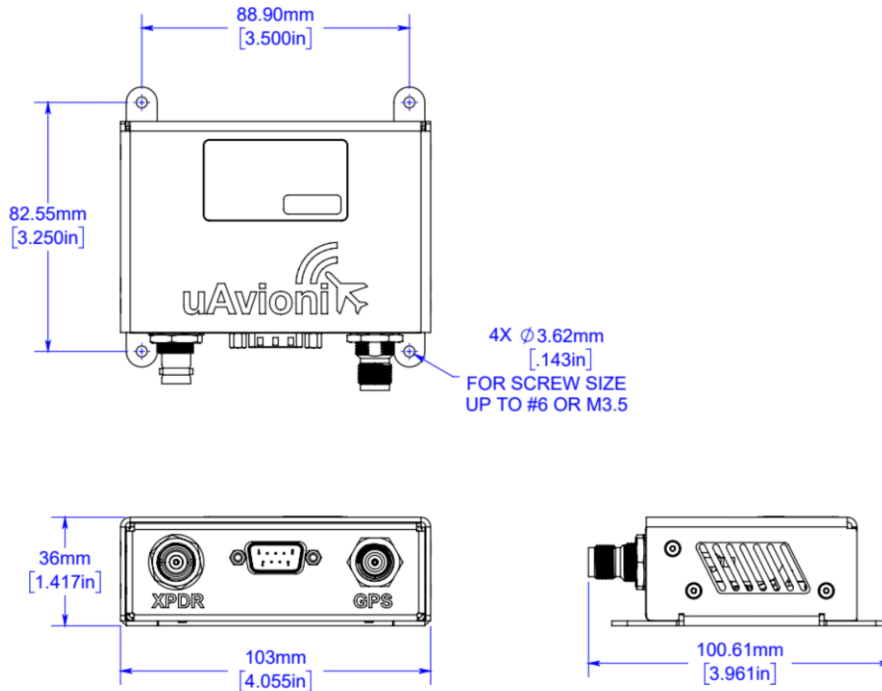
Pin	Type	Physical
1	24AWG	Aircraft Power
3	24AWG	RX
4	24AWG	TX
9	24AWG	Aircraft Ground

### Technical Specifications

Specification	Value
Input Power	9-30.3VDC 1.5W Continuous On/Alt. 4W Peak (8ms maximum)
Size	36x101x103mm
Weight	175 grams
SIL/SDA	3/2
Operating Temp	-35 to 70°C
Hardware P/N	UAV-1008885-()
Software P/N	UAV-1002393-()
<b>Transponder</b>	
MTL 1030MHz	-74dBm ±3dB
1090 Transmit Power	250W Nominal
<b>Position Source</b>	
GPS L1C/A w. SBAS	12 GPS Channel 3 SBAS Channels
HPA / VPA	5m / 7m
Velocity Accuracy	3 m/s
Time Accuracy	30 ns
Update Rate	5 Hz
SIL/SDA	3/2
Acquisition Sensitivity	-148 dBm
Tracking Sensitivity	-167 dBm
<b>Altimeter</b>	
Altitude Source	Requires AV-20-E, AV-30-E or AV-30-C
<b>Interfaces</b>	
Baudrate	1,200-115,200 bps
<b>Options</b>	
<ul style="list-style-type: none"> <li>• 1030/1090MHz Transponder Antenna</li> <li>• BNC GPS Antenna</li> </ul>	



### Mechanical Specification



### DO-160 Environmental Specifications

Conditions	DO-160G Section	Description of Conducted Tests
Temperature and Altitude	4.0	Equipment tested to Categories B2,C4
Low temperature ground survival	4.5.1	-55°C
Low Temperature Short-Time Operating	4.5.1	-35°C
Low Temperature Operating	4.5.2	-35°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
Altitude	4.6.1	24,000 ft
Temperature Variation	5.0	Equipment tested to Category B
Humidity	6.0	Equipment tested to Category A
Operation Shocks	7.0	Equipment tested to Category B
Crash Safety	7.0	Equipment tested to Category B Type 5
Vibration	8.0	Aircraft zone 2: type 5 Category S level M
Magnetic Field	15.0	Equipment tested to Category Z
Power Input	16.0	Equipment tested to Category BX
Voltage Spike	17.0	Equipment tested to Category B
AF Conducted Susceptibility	18.0	Equipment tested to Category B



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Induced Signal Susceptibility	19.0	Equipment tested to Category AC
RF Susceptibility	20.0	Equipment tested to Category TT
RF Emissions	21.0	Equipment tested to Category B
Lightning Induced Transient Susceptibility	22.0	Equipment tested to Category A2XXXX (see Note 1)
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 tested to Category A
Fire, Flammability	26.0	Equipment identified as Category X – no test
Notes:		
1. 4-wire serial/power conductors tested to A2XXXX, MMCX GPS conductors tested to A1XXXX		