

Overview

ping200X is a complete system designed to meet the Transponder and Automatic Dependent Surveillance – Broadcast (ADS-B) surveillance requirements for operating an Unmanned Aircraft (UA) in controlled airspace.

The system replies to Mode A, Mode C, and Mode S interrogations and squitters ADS-B messages, all in accordance with RTCA performance standards for Mode S transponders and Extended Squitter ADS-B. Together, they provide ATC and nearby aircraft equipped with a TCAS or ADS-B receiver full knowledge of the UA’s 3-D whereabouts. Heightened situational awareness leads to timely maneuvering, adequate separation, and enhanced airspace safety that benefits everyone.

Also integrated into ping200X is a certified pressure altitude sensor and encoder that complies with SAE aviation standard AS 8003.



TSO Authorized Equipment

- TSO-C88b internal altitude sensor/encoder
- TSO-C112e Level 2els, Class 1 Mode S transponder
- TSO-C166b Class B1S Extended Squitter transmitter
- Configurable, non-TSO variant available as Modes A/C only, Mode S only, ES only, Modes A/C + ES, Mode S + ES, and Modes A/C, S + ES
- Meets the U.S. ADS-B Out equipment performance requirements of 14 CFR 91.227
- Static pressure with TSO accuracy to 35,000 ft.
- GDL90+ ownship and altitude packets
- SMA 1030/1090 MHz Antenna Connector

Conformity

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

Regulatory

- FAA transmit license - manned aircraft and unmanned aircraft operating above 500ft AGL
- FCC 47 CFR Part 87 ID 2AFFTP200S

Technical Specifications

Specification	Value
Input Power	11-34V (3S-8S LiPo) 1.5W Continuous On/Alt. 4W Peak (8ms maximum)
Size	47 x 54 x 9 mm
Weight	50 grams
SIL/SDA	3/2
Operating Temperature	-45 to 70°C
Transponder	
MTL 1030MHz	-74dBm ±3dB
1090MHz Transmit Power	250W Nominal
Altimeter	
Range	-1000 to 35,000ft – TSO-C88b compliant 35,000 to 60,000ft – ±1% accuracy
Interfaces	
Control	
Baudrate	1200-2Mbps
Protocol	GDL90+
Position	
Baudrate	115200bps
Protocol	uAvionix OEM Protocol
Options	
1030/1090MHz Transponder Antenna DoD AIMS Certification (applied for; pending)	

Electrical Specification

Interface

Pin	Type	Physical	Protocol
Black	24AWG	Aircraft Ground	
Red	24AWG	Aircraft Power	
Orange	24AWG	AP RXD	UCP
Gray	24AWG	AP TXD	UCP
White	24AWG	RXD	uAvionix OEM Protocol

Environmental

Condition	DO-160G	Category
Temperature	4.0	B2
Temperature Variation	5.0	B
Humidity	6.0	A
Operational Shock	7.0	B
Vibration	8.0	S (Curve M)
Magnetic Field	15.0	Z
Power Input	16.0	BX
Voltage Spike	17.0	B
AF Conducted Susceptibility	18.0	B
Induced Signal Susceptibility	19.0	AC
RF Susceptibility	20.0	TT
RF Emissions	21.0	B
Lightning Induced Transient Susceptibility	22.0	A2XXXX
ESD	25.0	A

Mechanical Specification (mm)

