



### Overview

truFYX EXT is a non-certified version of the world's first Technical Standard Order (TSO) certified SBAS Global Positioning System (GPS) position source designed specifically for Unmanned Aircraft Systems (UAS) autopilots and Automatic Dependent Surveillance – Broadcast (ADS-B) OUT solutions. The truFYX EXT incorporates the same GPS-SBAS receiver and antenna technology as the TSO-certified truFYX, adding a more robust enclosure, barometric pressure altimeter, and internal heater.

Simultaneous dual outputs are available in specific configurations to provide a high-integrity output as well as a precision Kalman filtered output. Reduce your onboard GPS count by leveraging truFYX EXT as the primary position source to your autopilot and ADS-B solution.

Meets performance of TSO-C145e, Class Beta-1 GPS with SBAS:

- Primary position source for ADS-B surveillance
- Primary position source for domestic en route and terminal navigation
- Integrity in the absence of the SBAS signal through the use of Fault Detection and Exclusion (FDE)
- Enhanced accuracy with processing of optional ionospheric corrections
- Meets worldwide requirements for controlled airspace access

### Technical Specification

Specification	Value
Part Number	UAV-1004957-001
<b>Position Source</b>	
GPS L1 C/A with SBAS	12 GPS Channels 3 SBAS Channels
HPA / VPA	5 m / 7 m
Velocity Accuracy	3 m/s
Time Accuracy	30 ns
Update Rate	5 Hz
SIL/SDA	3/2
<b>Sensitivity</b>	
Acquisition	-148 dBm
Tracking	-167 dBm
<b>Electrical Characteristics</b>	
Input Voltage / Power	5.5-31 V / 0.5 W
<b>Mechanical Characteristics</b>	
Size	55.85 x 46.85 x 15.50 mm
Weight	49 grams
<b>Interfaces</b>	
RS-232	115200 bps
Protocol	NMEA 0183 + RAIM, or MAVLink
Time Pulse	RS-232 level 1 PPS

### Conformity

#### Radio Technical Commission for Aeronautics (RTCA)

- DO-229E Class Beta-1
- DO-178C Level C
- DO-254 Level C
- DO-160G (see Environmental)

#### Federal Aviation Administration (FAA)

- Meets the performance of TSO-C145e Class Beta-1, TSO not currently authorized

### Electrical

Color	Signal
BLACK	Aircraft Ground
RED	Aircraft Power
GRAY	MAVLINK RS-232 TXD
BLUE	NMEA RS-232 TXD
ORANGE	NMEA RS-232 RXD
WHITE	PPS Time Pulse

### Protocol

NMEA	Sentence
GPRMC	GPS Data
GPGGA	Fix Data
GPGSA	DOP and active satellites
GPGSV	Satellites in View
GPGLL	Position and Time
GPVTG	Track and Ground Speed
GPZDA	Time and Date
RAIM	Protection Limits and Figures of Merit
PUAVVV	Vertical Velocity

### Environmental

Condition	DO-160G	Category
Temperature	4.0	B2 (-60C with internal heater)
Temperature Variation	5.0	A
Humidity	6.0	A
Operational Shock	7.0	B
Vibration	8.0	S (Curve M) Zone 2 – Type 5
Waterproofness	10.0	R
Magnetic Field	15.0	Y
Power Input	16.0	BX
Voltage Spike	17.0	B
AF Conducted	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

