





#### **Overview**

truFYX is the world's first Technical Standard Orders (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 incorporates the GPS receiver and antenna into a single 24mm radius / 20g waterproof enclosure.

Reduce your onboard GPS count by leveraging truFYX as the primary position source to your autopilot and ADS-B solution.

#### **TSO Certification Pending**

TSO-C145e, Class Beta 1 GPS provides for:

- Primary position source for domestic en route, terminal, approach (LNAV), and departure 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
- Meeting worldwide compliance requirements for controlled airspace access pre- and post-2020 ADS-B mandates in the U.S. and E.U.

# **Conformity**

Radio Technical Commission for Aeronautics (RTCA):

- DO-229E Class Beta 1
- DO-178C Level C
- DO-254 Level C
- DO-160G

Federal Aviation Administration (FAA):

• TSO-C145e Class Beta 1 (Pending)

## **Technical Specifications**

Specification	Value		
Part Number	UAV-1002809-001		
Position Engine			
GPS L1C/A w. 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		
Approach Capability	LNAV		
Sensitivity			
Acquisition	-148 dBm		
Tracking	-167 dBm		
Electrical Characteristics			
Input Power	5.5-31V, 0.5 W		
Mechanical Characteristics			
Size	47.37x8.21 mm		
Weight	20 grams		
Interfaces			
RS-232	115200bps		
Protocol	NMEA 0183 + RAIM or		
	MAVLink		
Time Pulse	RS-232, 1pps		







**Electrical** 

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

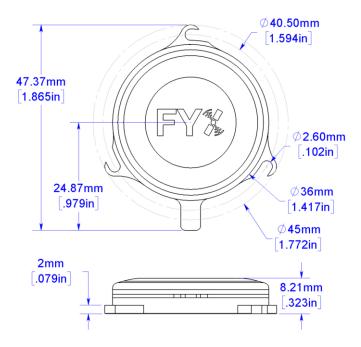
## **Protocol**

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
Temperature	5.0	В
Variation		
Humidity	6.0	Α
Operational	7.0	В
Shock		
Vibration	8.0	Type 5 level M
Waterproofness	10.0	S
Magnetic Field	15.0	Z
Power Input	16.0	BX
Voltage Spike	17.0	В
AF Conducted	18.0	В
Induced Signal	19.0	AC
Susceptibility		
RF Susceptibility	20.0	TT
RF Emissions	21.0	В
Lightning Induced	22.0	A2G2L2
Transient		
Susceptibility		
ESD	25.0	А

# **Mechanical Specification**



ECCN 7A994 UAV-1002854-001 Rev C