

SAGETECH CORPORATION

MODE S TRANSPONDER XPS-TR

FAA/TSO



**Lighter than an iPhone.
Smaller than a deck of cards.**

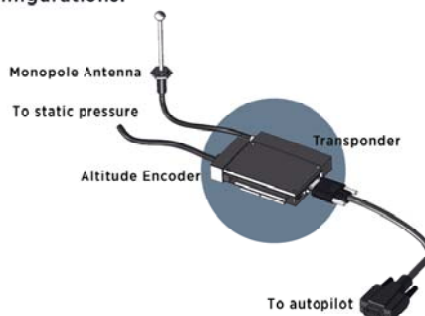
The Sagatech Transponder product family offers the lightest and smallest transponders in the world. Our Transponder is purpose built for UAV operation and carries FAA TSO, ETSO and FCC certification. It is ideal where size, weight and power are at a premium. The size, weight and power features of our products create more fuel and payload carrying capacity, providing greater flight endurance and mission capability.

Altitude Encoder

Typical operation includes the XP-AE Altitude Encoder which is FAA/TSO certified up to 35,000 feet and is required for Mode S and Mode C operation. XP-AE altitude data can be read from the Transponder by the autopilot, providing a backup altimeter function. Alternative altitude sensors can be used instead of the XP-AE by the autopilot to send the transponder altitude data, providing necessary Mode S and Mode C altitude reporting. However, most UAV autopilot altimeters are not TSO certified and lack required accuracy. On the other hand, the XP-AE Altitude Encoder offers easy plug and play compliance.

Transponder Configurations

The Sagatech Transponder and Altitude Encoder serve as the foundation for a variety of configurations.

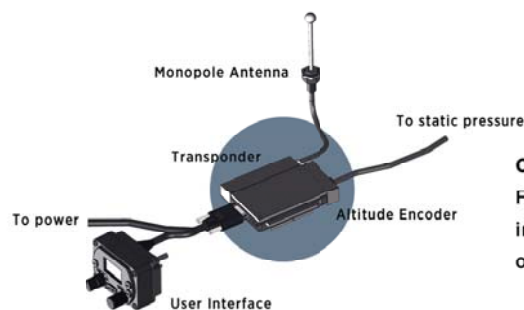
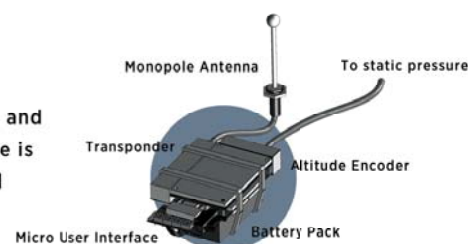


Conventional UAV Configuration

The autopilot controls the transponder throughout flight. Sagatech Transponders are plug and play compatible with the Cloud Cap Technology Piccolo Autopilot.

Standalone UAV Configuration

Requires no connection to other UAV systems, and is powered by a battery pack. The squawk code is set via the Micro User Interface on the ground before takeoff.



Conventional Manned Configuration

For use in manned aircraft and includes a user interface for pilot operation.



CONTACT SAGETECH CORPORATION

(509) 493-218

Transponder@SagatechCorp.com

www.SagatechCorp.com

1280 Alameda Rd, Hood River, OR 97031



GENERAL

Supply Voltage	10-35VDC
Power Consumption	<5W (typical, all modes, radar environment)
Operating Temperature	-25°C to +60°C
Operating Altitude	XPS-TR/XPC-TR Transponder: Over 15,000 feet (Class 1) XP-AE Altitude Encoder: 35,000 feet maximum
Cruising Speed	Over 175 Knots (Class 1)
Compliance	TSO-C112c TSO-C166b ETSO-2C112b EASA.210.322
FCC	FCC Part 87 Equipment Approval

TRANSMITTER

Transmitter Type	Solid State
Extended Squitter	Level 2 ES
ADS-B	1090ES ADS-B out
Frequency	1090MHz \pm 1MHz
Radiated Power	21dBW minimum (Class 1)
Modulation	PPK
Impedance	50 Ω (typical)
Pulse Rise Time	75ns \pm 25ns
Pulse Decay Time	125ns \pm 75ns
Pulse Duration	450ns \pm 100ns (P1, P2,P3), 500 \pm 50 (Mode S)
Duty Cycle	<2%
Amplitude Variation	\pm 2bB (Mode S)
Unwanted	-50dBm @ 1090 MHz \pm 3MHz (inactive state)

RECEIVER

Frequency	1030MHz \pm 0.2MHz
Min. Triggering Level	-74dBm \pm 3dB
Dynamic Range	MTL+3dB to -21 dBm
Impedance	50 Ω (typical)
Selectivity	<-60dB @ \pm 25 MHz
Modulation	PPK, DPSK

MECHANICAL

Dimensions	XPS-TR/XPC-TR Transponder only: 58x17x78 mm XP-AE Altitude Encoder: 45x16x12 mm XPS-TR/XPC-TR with XP-AE: 58x17x90 mm
Mass	XPS-TR/XPC-TR Transponder: <125 grams XP-AE Altitude Encoder: 15 grams XPS-TR/XPC-TR with XP-AE: <140 grams
Shock and Vibration	MIL-STD-202G (Random + Swept Sine) Shock 100 g, 1msec

TRANSPONDER DATASHEET

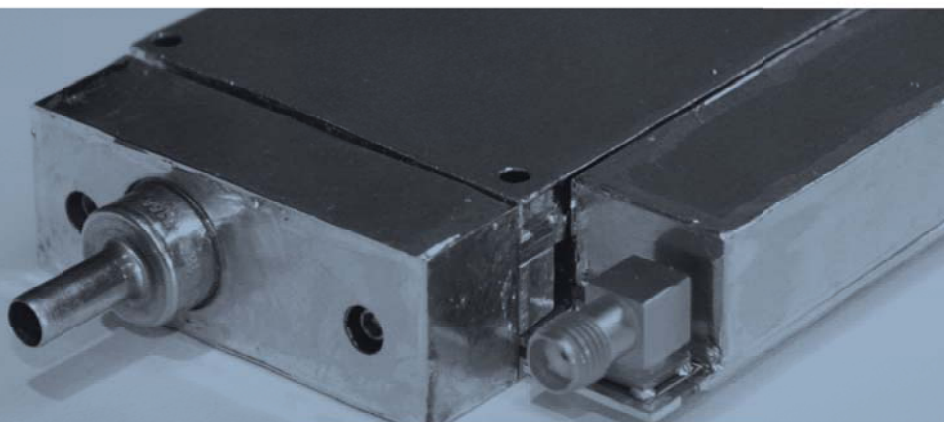




Sagetech

TRANSPONDER & ALTITUDE ENCODER

MAJOR COMPONENT PRICE LIST



OVERVIEW

The world's smallest transponders are available beginning March 2011. Note that as of this printing the product is under development and details are subject to change, though we expect any changes to be minimal. Functional prototypes are available December 2010 by special arrangement. Stock items are shipped 5 days after receipt of order.

Prices listed are for part numbers shown and do not include cables, antennas, and other hardware.

AVAILABILITY

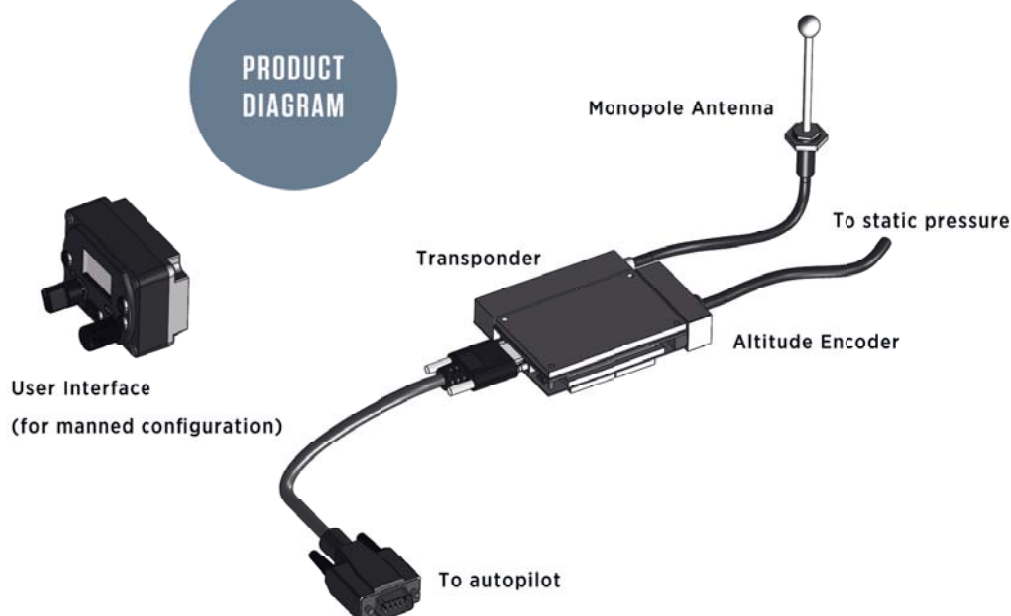
March 2011

+Certified Units

December 2010

+Functional Prototypes
(available by special arrangement)

PRODUCT DIAGRAM



Product		Quantity / Price Per Unit			
Part Description	Part No.	1	10	50	100
Transponder Mode S	XPS-TR	\$3,587	\$3,228	\$2,870	\$2,511
Transponder Mode C	XPC-TR	\$2,913	\$2,622	\$2,331	\$2,039
Altitude Encoder	XP-AE	\$527	\$527	\$422	\$369
User Interface	XP-UI	\$508	\$508	\$406	\$356

CONTACT SAGETECH CORPORATION
 (509) 493-2185
Transponder@SagetechCorp.com
www.SagetechCorp.com
 1280 Alameda Rd, Hood River, OR 97031