



SAGETECH CORPORATION XP FAMILY OF TRANSPONDERS



Product Information



SAGETECH CORPORATION

XP FAMILY OF TRANSPONDERS



Lighter than an iPhone.

Footprint of a business card.

The Sagetech XP family of transponders offers the lightest and smallest transponders in the world. Our transponders are ideal where size, weight and power are at a premium. The small and lightweight nature of our products gives you more fuel and payload carrying capability and provides greater flight endurance.

Features

Size and Weight - Sagetech XP transponders are light and small. With the footprint of a business card, Sagetech transponders measure just 3.5" x 1.8" x 0.75" and weigh only 105 grams.

Lowest Power Consumption - With the lowest power consumption of any transponder on the market, our transponders are a must for power conscious applications.

Integrated Altitude Encoder - All Sagetech XP transponders have an integrated altitude encoder, which is compliant to FAA TSO C88b up to 50,000 feet. The flight computer can read altitude data from the transponder providing backup altitude information.

Benefits

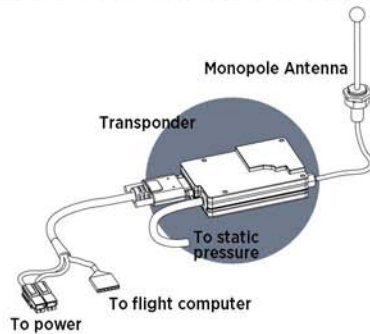
Increased Flight Time - Keep your aircraft in the air instead of on the ground -- small size and low power consumption mean decreased fuel requirements.

Situational Awareness - See and be seen. The Sagetech XPS-TRB Mode S Transponder with ADS-B In provides the capability to receive other aircraft's ADS-B data, increasing your situational awareness.

International Compatibility - Our Mode S transponder is internationally compliant allowing our transponders to fly in aircraft in more nations worldwide

Transponder Configurations

The Sagetech XP family of transponders are available in three configurations.

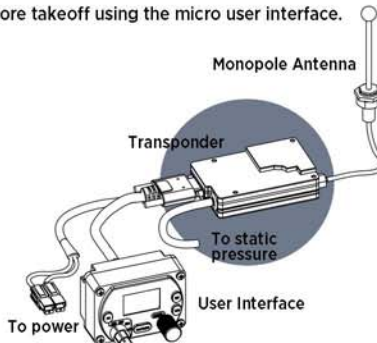
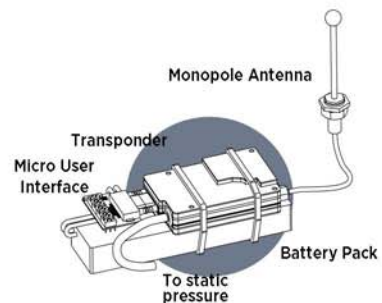


Flight Computer Configuration

The flight computer controls the transponder throughout the flight. Sagetech XP transponders are plug-and-play compatible with many standard flight computers.

Standalone Configuration

The battery pack powered standalone system is designed for installations that do not have a flight computer and do not have adequate room for a user interface. This configuration requires no other connections or controllers. The squawk code is set before takeoff using the micro user interface.



Conventional Configuration

The user interface allows pilot interaction with the transponder for conventional use.

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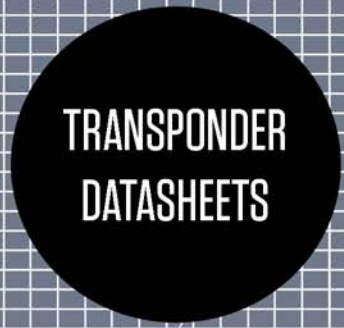
**GENERAL
ALL TRANSPONDERS**

Supply Voltage	10-32VDC
Protocol	RS-232 56.7k baud 8N1
Serial Ports	3
Operating Temperature	-20°C to +70°C
FCC	FCC part 87, Part 15 equipment approval
Software	DO-178B DAL C
Complex Hardware	DO-254 DAL C
Dimensions	89x46x19mm
Mass	105g
Environmental Testing	DO-160F
Altitude Encoder	
Operating Altitude	50,000 ft
Compliance	TSO-C88b & ETSO-C88a

Mode C Transponder		
	Low Power	High Power
Part Number	XPC-TR-L	XPC-TR
Power Consumption	(ON & ALT): 3W (typical) 7W (max)	(ON & ALT): 4W (typical) 8W (max)
	STBY: Less than 1 W	
Operating Altitude	15,000 ft maximum	unrestricted
Cruising Speed	175 knots maximum	unrestricted
Compliance	TSO-C74d, DO-144A Class B	TSO-C74d, DO-144A Class A
RF Impedance	50Ω	

Min Radiated Power	48.5 dBm min (70 W) 2dB cable loss (Class B)	51 dBm min (125 W) 2dB cable loss (Class A)
Max Radiated Power	57dBm max (500W) (2dB cable loss)	
Transmitter Type	Solid State	
Frequency	1090MHz ± 1MHz	
Modulation	PAM	
Pulse Rise Time	75ns ± 25ns	
Pulse Decay Time	125ns ± 75ns	
Pulse Duration	450ns ± 100ns	
Duty Cycle	<1%	
Amplitude Variation	±1dB	
Unwanted	-50dBm @ 1090MHZ ± 3MHZ (inactive state)	

Frequency	1030MHz ± 0.2MHz
Min. Triggering Level	-74dBm ± 3dB
Dynamic Range	MTL+3dB to -21dBm
Selectivity	<-60dB @ ± 25MHz
Modulation	PAM





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Mode S Transponder with ADS-B Out

GENERAL		Low Power	High Power
	Part Number	XPS-TR-L	XPS-TR
	Power Consumption	(ON & ALT): 6W (typical) 14W (max)	(ON & ALT): 7W (typical) 15W (max)
		STBY: Less than 1 W	
	Operating Altitude	15,000 ft maximum	unrestricted
	Cruising Speed	175 knots maximum	unrestricted
	Compliance	TSO-C112c, DO-181D Class 2 Level 2 ELS	TSO-C112c, DO-181D Class 1 Level 2 ELS
		TSO-C166b Class B0 (ADS-B Out)	
	RF Impedance	50Ω	

TRANSMITTER	Min Radiated Power	48.5 dBm min (70 W) 2dB cable loss (Class 2)	51 dBm min (125 W) 2dB cable loss (Class 1)
	Max Radiated Power	57dBm max (500W) (2dB cable loss)	
	Transmitter Type	Solid State	
	Frequency	1090MHz ± 1MHz	
	Extended Squitter	Level 2 ELS	
	ADS-B	1090ES ADS-B Out	
	Modulation	PAM, PPM	
	Pulse Rise Time	75ns ± 25ns	
	Pulse Decay Time	125ns ± 75ns	
	Pulse Duration	500ns ± 50ns	
	Duty Cycle	<2%	
	Amplitude Variation	± 2dB	
	Unwanted	-50dBm @ 1090MHZ ± 3MHz (inactive state)	

RECEIVER	Frequency	1030MHz ± 0.2MHz
	Min. Triggering Level	-74dBm ± 3dB
	Dynamic Range	MTL+3dB to -21dBm
	Selectivity	<-60dB @ ± 25MHz
	Modulation	PAM, DPSK

TRANSPONDER DATASHEETS





Mode S Transponder with ADS-B In/Out

GENERAL

	Low Power	High Power
Part Number	XPS-TRB-L	XPS-TRB
Power Consumption	(ON & ALT): 7W (typical) 15W (max)	(ON & ALT): 8W (typical) 16W (max)
	STBY: Less than 1 W	
Operating Altitude	15,000 ft maximum	unrestricted
Cruising Speed	175 knots maximum	unrestricted
Compliance	TSO-C112c, DO-181D Class 2 Level 2 ELS	TSO-C112c, DO-181D Class 1 Level 2 ELS
	TSO-C166b Class A0 (ADS-B Out)	
RF Impedance	50Ω	

TRANSMITTER

Min Radiated Power	48.5 dBm min (70 W) 2dB cable loss (Class 2)	51 dBm min (125 W) 2dB cable loss (Class 1)
Max Radiated Power	57dBm max (500W) (2dB cable loss)	
Transmitter Type	Solid State	
Frequency	1090MHz ± 1MHz	
Extended Squitter	Level 2 ELS	
ADS-B	1090ES ADS-B Out	
Modulation	PAM, PPM	
Pulse Rise Time	75ns ± 25ns	
Pulse Decay Time	125ns ± 75ns	
Pulse Duration	500ns ± 50ns	
Duty Cycle	<2%	
Amplitude Variation	± 2dB	
Unwanted	-70dBm @ 1090MHZ ± 3MHz (inactive state)	

ADS-B RECEIVER

Frequency	1090MHz ± 0.2MHz
Min. Triggering Level	-84dBm ± 3dB
Dynamic Range	MTL+3dB to 0dBm (99% decode and detect rate)
Range	120 NM (per DO-242A)
Selectivity	<-3dB @ ± 5.5MHz; <-20dB @ ± 10MHz; <-40dB @ ± 15MHz; <-60dB @ ± 25MHz
Modulation	PAM, PPM

MODE S RECEIVER

Frequency	1030MHz ± 0.2MHz
Min. Triggering Level	-74dBm ± 3dB
Dynamic Range	MTL+3dB to -21dBm
Selectivity	<-60dB @ ± 25MHz
Modulation	PAM, DPSK

TRANSPONDER DATASHEETS

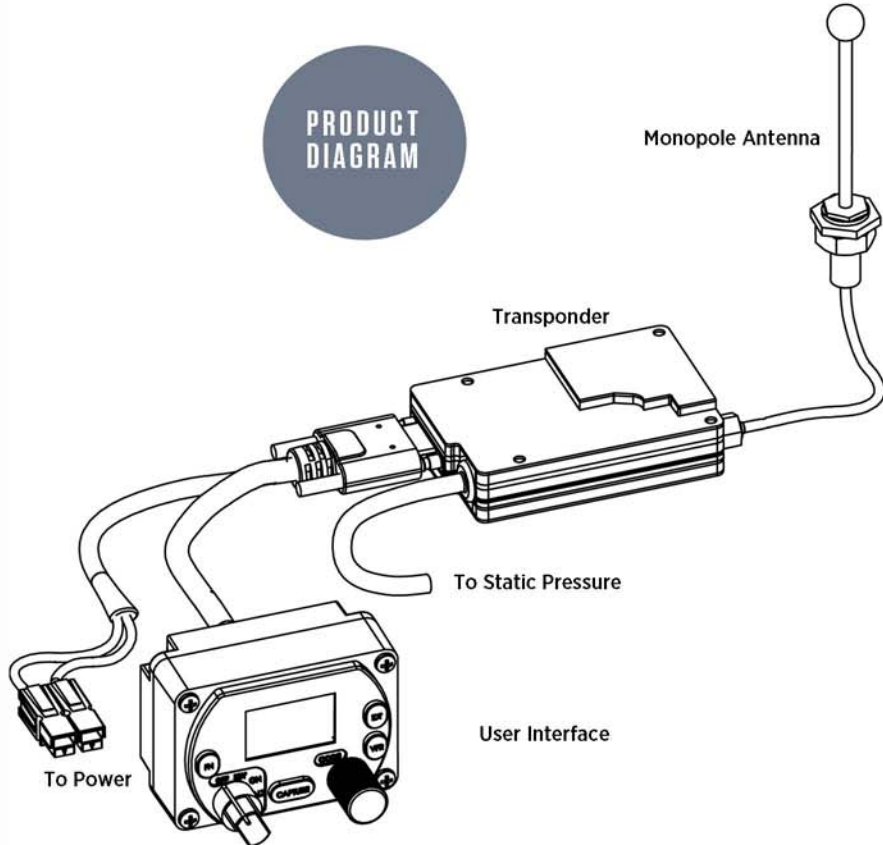




Overview

Sagotech XP family transponders are powerful, yet lightweight and compact. Mode C, Mode S, and ADS-B In/Out capabilities are all possible from the lowest power consuming transponder on the market. This means less compromise and more benefits for your aircraft.

Benefits include increased airtime due to our lightweight design. ADS-B In on our XPS-TRB provides increased situational awareness of local air traffic. Mode S allows for international implementation. All this makes the Sagotech family of transponders a clear choice for those who want small size without compromise.



Part Number	Product Name	Mode C	Modes S	ADS-B Out	ADS-B In	Altitude Encoder
XPC-TR	Mode C Transponder	✓				✓
XPS-TR	Mode S Transponder with ADS-B Out	✓	✓	✓		✓
XPS-TRB	Mode S Transponder with ADS-B In/Out	✓	✓	✓	✓	✓

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