

## FM TELEMETRY TRANSMITTER

## TXW

### APPLICATIONS

- Telemetry and Data Links
- Avionics and Marine applications

### KEY FEATURES

- wide frequency range: VHF, P-Band, UHF and L/S-Band versions available
- output power versions 10mW to 5W
- fully programmable via serial interface
- 10 to 36 Vdc isolated power supply
- baseband response includes DC (Version D)
- industrial temperature range / altitude unlimited
- ruggedized / shock proof design for harsh environments
- 10<sup>th</sup> order premodulation filter programmable from 500Hz to 500kHz [up to 1MBit/s NRZ]
- software selectable data input: analog single ended / analog differential / TTL / RS232 / RS422



**Dimensions**  
120mm x 60mm x 20mm

### SPECIFICATIONS

#### GENERAL

Description	FM Telemetry Transmitter
Device Type	TXW

#### RF SECTION

Frequency Range	(version U)	380 to 480MHz
	(version V)	220 to 400MHz
	(version V1)	220 to 280MHz
	(version K)	100 to 200MHz
Synthesizer Step Width		25kHz
Antenna Output Impedance		50Ω (max.VSWR = 2:1)
Reference Oscillator Stability		5ppm (1ppm typ.)
	(version N)	2ppm (0.5ppm typ.)
RF power output	(version P1)	10mW (for BSU Amplifier)
	(version P3)	2W (220 to 280MHz)
	(version P4)	500mW
	(version P5)	5W (380 to 480MHz)
Harmonic & Spurious Rejection		60 dBc (minimum)

#### MODULATION

Modulation Type		true FM
Modulation Sensitivity		adjustable
FM Deviation	(version H)	±50kHz to ±500kHz
	(version M)	±10kHz to ±100kHz
	(version N)	±2kHz to ±10kHz (±5kHz Vers.D)
Freq.Response	(version H)	500kHz (-0.5dB)
	(version M)	100kHz (-0.5dB)
	(version N)	10kHz (-0.5dB)
low-end Freq.Response (vers.A)		10 Hz (-1dB)
	(version D)	DC

#### SYSTEM CHARACTERISTICS

Tuning Method	PLL Synthesizer
Temperature Compensation	digital
Isolation	isolated power supply inp (RF ground & signal return connected to case)

#### OUTPUTS

Status Output	H=O.K. / L=warning/error
RF Level Monitor Output	50mV/dB (4.0V=normal)

#### INPUTS

Multi Function I/O	default = ON / STANDBY
Digital Modulation Input	TTL / RS422 / RS232
Analog Input Range (differential)	1-10Vpp (programmable)
Analog Input Range (single ended)	0.5-5Vpp (programmable)
Analog Input Impedance	20kΩ (40kΩ differential)
Modulation Sense	polarity programmable

#### POWER SUPPLY

Supply Voltage	10 to 36 Vdc (isolated)
Supply Current (10mW version)	280mA @ 12V / 130mA @ 28V
Reverse Polarity Protection	max. 47 Vdc (no time limit)

#### ESD PROTECTION

Peak Voltage (IEC 1000-4-2)	± 8kV (contact discharge)
Peak Voltage (MIL 883C-3015.7)	± 15kV
Peak Current (Supply Voltage)	100A (8/20μs)
Peak Current (all other I/O pins)	20A (8/20μs)

#### ENVIRONMENTAL

Operational Temperature	-40°C to +85°C (case temp.)
Humidity	≤ 95% RH
Altitude	unlimited
Vibration (random)	0.1g <sup>2</sup> /Hz (20Hz-2kHz)
Vibration (sine)	20g (20Hz-2kHz)
Shock (½ sine)	100g peak (11ms)

#### PHYSICAL CHARACTERISTICS

Dimensions (excluding connectors)	120 x 60 x 20 mm
Weight	205g
Supply/Signal Connector (J1)	DSUB-15-HighDensity male AMP/TYCO AMPLIMITE HD-20
Antenna Connector (J2)	SMA femal optional BNC or TNC

Ordering Code Example: TXW-U-P1-M-D = Transmitter 380..480MHz / 10mW / FM Deviation up to ±100kHz / Modulation from DC to 100kHz

## INTERFACE CONNECTIONS

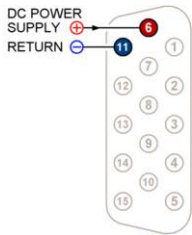


Fig.1  
Power Supply  
Connection

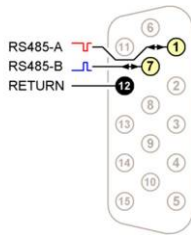


Fig.2  
Control Interface  
using RS485

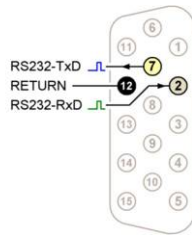


Fig.3  
Control Interface  
using RS232

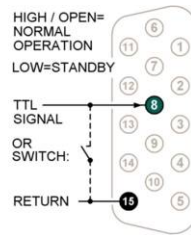


Fig.4  
Standby Input  
(internal Pullup)

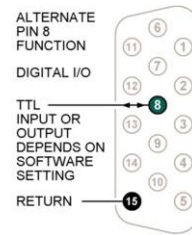


Fig.5  
optional  
Digital I/O Port

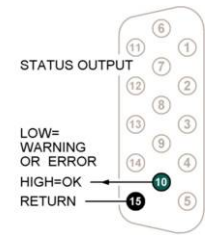


Fig.6  
Status Output  
(HIGH = O.K.)

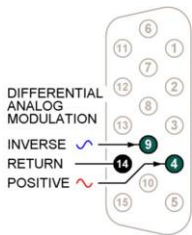


Fig.7  
Analog Modulation  
Differential Input

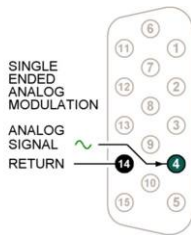


Fig.8  
Analog Modulation  
Single Ended Input

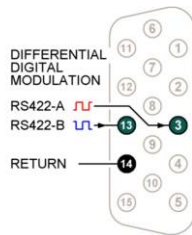


Fig.9  
Digital Modulation  
RS422 Input

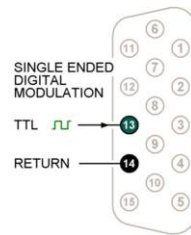


Fig.10  
Digital Modulation  
TTL Input

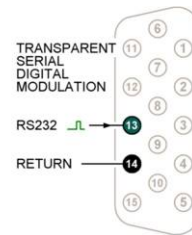


Fig.11  
Digital Modulation  
RS232 Input

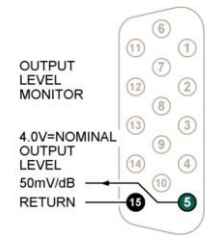
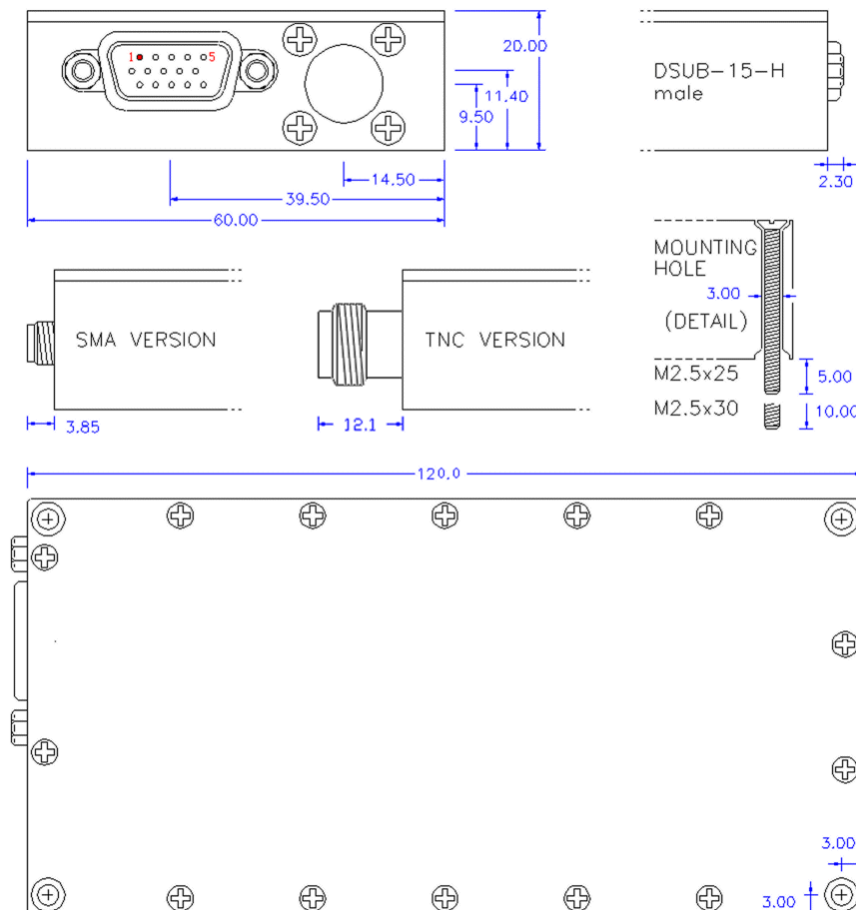


Fig.12  
Output Level  
Monitor

## OUTLINE DRAWING

Sizes in mm



### DSUB Connector Pin Description

SIGNAL	PIN	FUNCTION
PINP	06	DC Power Input (+)
PRET	11	DC Power Return
SERA	01	Serial Port RS485-A
SERB	07	Serial Port RS485-B & Serial Port TxD
SRET	12	Serial Port Return
R232	02	Serial Port RxD
MFIO	08	Multi Function I/O Default=Standby
422B	13	Digital Data (RS422-B) & TTL/RS232 Input
422A	03	Digital Data (RS422-A)
ANAB	09	Analog Data (inverse)
DRET	14	Data Signal Return
ANAA	04	Analog Data Input
XSTA	10	Status Output
XRET	15	Pin10/05 Return
XSIG	05	Power Level Output