

TDS-TX-100 Series Programmable Telemetry Transmitter



The brand new TDS-TX-100 series of Telemetry Transmitters are designed using modern efficient components and are qualified for aerospace and similar applications.

The TDS-TX-100 range of transmitters utilise a crystal stabilised programmable frequency synthesizer linked to a voltage controlled oscillator with a modulator driving the power output sections. The transmitter is programmed through a Flash memory based microcontroller. The 10 and 15 Watt Transmitter characteristics are programmed, instead of the Flash memory, by an on-board microprocessor. The TDS-TX-100 series of transmitters can be supplied as fixed frequency or tuneable in 0.5 or 1 MHz steps over the tuning range.

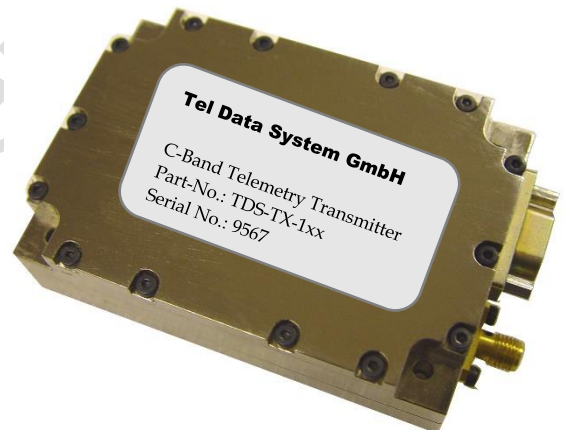
As an option a set of four programmed frequencies can be assigned for selection via binary coding on two of the input connector pins. Frequency and power can also be controlled through a serial programming port.

The transmitter housing is machined from solid aluminum sections using precision numerically controlled machining processes to provide a very high strength transmitter assembly.

The TDS-TX-100 Transmitter series can be supplied in several mechanical assembly configurations to meet new application specific requirements and they can also be supplied in configurations designed to match the mounting-hole locations of legacy transmitters for existing applications.

Main TDS-TX Transmitter Features:

- S-Band / L-Band and C-Band PCM or Video Transmitters
- SOQPSK and Multi-h CPM compatible modulation options
- RF Power from 1 Watt up to 5 Watts and 10 Watt up to 15 Watts and 20 Watt
- Power Output On /Off control option
- Programmable Centre Frequency Range of 200 MHz across the band
- Optional four Frequency pre-sets selectable through input connector pins
- Programmable Frequency through a Serial Data Port to a host PC
- 28 Volts \pm 4 Volts DC Power
- High Efficiency design minimises current consumption
- FM frequency response options up to and above 10 MHz
- 100 KHz/Volt to 6 MHz/Volt nominal carrier deviation sensitivity
- Nominal Input Impedance 75 Ohm Other values including 50 Ohms and 10K Ohms available
- Single Microminiature D-Type connector for Power Supply and Modulation Input as standard
- 50 Ohm SMA RF Output Connector. TNC option is also available



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STANDARD SPECIFICATIONS

General:

Standard Frequency Bands	Up to 200 MHz tuning range within L-Band, S-Band and C-Band up to 6 GHz centre frequency
Nominal Frequency Stability	± 0.002 %
Output Power	Can be supplied in configurations providing up to 10 Watts. 15 Watt up to 20 Watts is also available on special order.
VSWR	Protected against damage from any VSWR

Modulation:

Modulation Type	FM as standard. Other modulation and encryption support schemes are available including SOQPSK and Multi-h CPM for up to 5 Watt. 10 Watt and higher including CPM and Orthogonal schemes.
Input Signal Coupling	AC as standard. DC option available
Frequency Response	10 Hz to 7 MHz ± 1.5 dB as standard (other ranges available)
Carrier Deviation Range	Nominal 100 KHz to 6 MHz per Volt rms range – user or bit rate and modulation defined

Power Requirements:

Voltage	28V ±4 Volts DC (Other supply voltage and ranges available)
Current	Nominal 800 mA for 5 Watts output at 25° Centigrade Nominal 1.5A for 10 Watts output at 25° Centigrade
Isolation	Power and Modulation return are common to case ground. Isolated chassis options available

Mechanical:

Nominal Dimensions	Up to 5 Watt: Standard 55 x 80 x 25 mm (w/l/h) excluding connectors (35 mm height for SOQPSK and Multi-h CPM modulation configurations) 10 up to 20 Watt: Standard 63.5 x 89 and up to 35 mm (w/l/h) Optional for 10 Watt: 55 x 80 x 40 mm (w/l/h)
Power, Modulation and Programming Connector	15 way microminiature D-Type (SMA option for Modulation)
RF Output Connector	SMA as standard. SMB and SMC Options available, TNC option on 35 mm height package

Environmental:

Normal Operating Temperature	-30 ° Centigrade to +70 ° Centigrade baseplate temperature
Vibration	>20g sine, 0.1 g ² random, 20Hz to 2000Hz, in any axis
Shock	100g for 1 ms in three mutually perpendicular axes
Acceleration	100g in three mutually perpendicular axes

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