

5W High-Reliability

4.8 cu in Design

S-Band Operation

2200.5 to 2290.5 MHz

2310.5 to 2390.5 MHz

Multimode

Tier 0—PCM/FM

Tier I—SOQPSK-TG

Tier II—Multi-H CPM



Description

Microwave Innovations offers its 5W S-Band Multimode Telemetry Transmitter for those needing high-reliability and proven performance. Serving in environments from ground, airborne, or space, this transmitter is designed to assure mission success.

The ARTM Telemetry Transmitter is a multimode (Tier 0, I, and II) compliant standard Commercial-Off-The-Shelf (COTS) product which supports a Fixed Rate Data Input or a Clock & Data Input for dynamic data rate requirements. The design features a high-efficiency DC Regulator, and a high-reliability RF power amplifier with an RF Isolator protected output as standard. An optional isolated DC Power Regulator is also available to support isolated power return interests.

Full ARTM spectral efficiency is supported even at Low Date Rates with Ultra-Low Phase Noise Performance in high shock and vibration

environments. An IRIG compatible Randomizer feature and an Appendix-N compliant user interface are also standard. Data & Clock inputs supported include: TTL/LVTLL 250 kbps to 40 Mbps, 100-ohm balanced RS422 and Balanced LVDS. Optional features include external switched modulation & frequency mode control , and RF enable/disable input.

The ARTM Multimode Transmitter is leveraging off of well established high-reliability designs that have been flown on the most demanding programs. The COTS design can be supplied with a high-reliability Parts Program for established reliability and performance meeting the most extreme mission performance requirements.

Microwave Innovations' high-reliability, high-shock, and extreme environmental performance heritage is broadly recognized for ground, air, sea, and space environments.



Part Number Builder

DTTS-480-5W + (Customer Requirements)

Example: DTTS-100-5W- D(r)-FS(Fc)-R(x)
Digital Telemetry Transmitter, S-Band, 5W, Standard

Short Option List

D(r) - Data Rate and Clock Tracking (D&C)
S—2200.5—2290.5 MHz Operation (Factory Set Frequency)-Fc
US—2310.5— 2390.5 MHz Operation (Factory Set Frequency)-Fc
ISO—Isolated +28VDC Regulator

SPECIFICATIONS

RF Output

Frequency: 2200.5 to 2290.5 or 2310.5 to 2390 MHz
(Frequency Step Size 0.5 or 1.0 MHz)
Carrier Stability: Within $\pm 0.002\%$ over temperature
RF Power: 5 Watts (Minimum)
VSWR: 1.5:1 (Maximum)
Impedance: 50 Ohms (Nominal)
Loading: Normal operation into any Load VSWR and any Phase Angle

Open/Short Protection: No damage due to Open or Short of unlimited duration

Harmonic & Spurious Level: In accordance with IRIG 106-96

Modulation Input

Input Data Rates: 250 kbps to 40 Mbps (ARTM Mode 0, I, or II)
FM Peak Deviation: Factory set (0.35 x bit rate) NRZ-L
Incidental AM: 2% (Maximum)
Incidental FM: 5 kHz (Maximum)

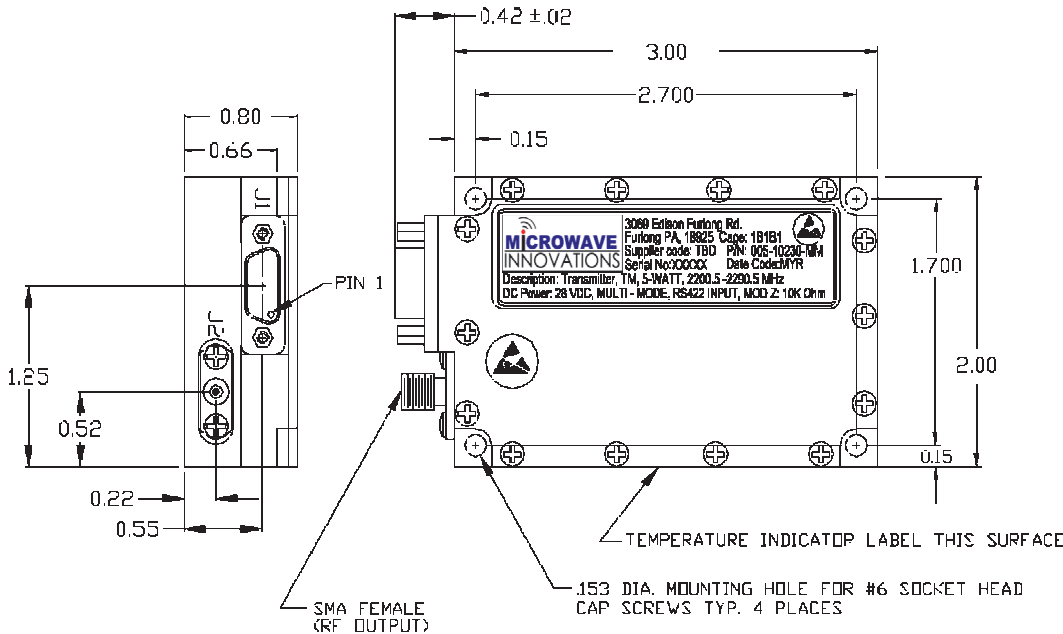
Power Requirements

Input Voltage: +28 VDC (± 6 Typical) Reverse Polarity Protected
Input Power: Constant power of less than 25 Watts (Typical)

Environmental Specification

Temperature: -20°C to +70°C (Typical)
-40°C to +85°C (Extended Range Option)
Random Vibration: 12 Grms (Acceptance), 10Hz to 2kHz, 3 axis
Sinusoidal Vibration: 20 Grms (Acceptance), 10kHz to 2kHz, 3 axis
Low Frequency Shock: 10Hz@41G, 23Hz@142G, 500Hz@142G
High Frequency Shock: 10Hz@8G, 1020Hz@2408G, 10KHz@2408G

MECHANICAL DETAIL



J1 Input Connector

Pin	Function
1	Serial Control Reply (TXD)
2	Serial Control Input (RXD)
3	Serial Control Ground
4	Data-In (+) RS422
5	Clock-In (+) RS422
7	+28VDC Power (A) RTN
8	+28VDC Power (A) Input
10	Data-In (-) RS422
11	Clock-In (-) RS422
12	RF Enable / Disable
14	+28VDC Power (B) RTN
15	+28VDC Power (B) Input

Unique Customer Requirements Are Welcome

Connectors Types, PWR Non-Isolated, Isolated, Enclosure Size, Data Rates, RF Center Frequency & Power

