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.
**ARTM Multimode Telemetry Transmitter DTTS-480 Series**

**SPECIFICATIONS**

**RF Output**
- Frequency: 2200.5 to 2290.5 MHz or 2310.5 to 2390 MHz
- Carrier Stability: Within ±0.002% over temperature
- RF Power: 5 Watts (Nominal)
- 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)
- Random Vibration: 12 Gs (Acceptance), 10Hz to 2kHz, 3 axis
- Sinusoidal Vibration: 20 Gs (Acceptance), 10kHz to 2kHz, 3 axis
- Low Frequency Shock: 10Hz@41G, 23Hz@142G, 500Hz@142G
- High Frequency Shock: 10Hz@8G, 1020Hz@2408G

**MECHANICAL DETAIL**

**J1 Input Connector**

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

**Unique Customer Requirements Are Welcome**

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

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**Impedance:** 50 Ohms (Nominal)

**VSWR:** 1.5:1 (Maximum)

**RF Power:** 5 Watts

**Carrier Stability:** Within ±0.002% over temperature

**Input Voltage:** +28 VDC (± 6 Typical) Reverse Polarity Protected