**Product Description**

The General Dynamics SATCOM Technologies Digital Tracking Receiver (DTR) is a fully synthesized tracking receiver developed for satellite tracking and uplink power control applications. This DSP-based receiver accepts wideband RF inputs, performs frequency selection, and digitally processes the selected signal.

The DTR can be configured for numerous input frequency ranges from L-band to Ka-band. Multi-band applications are also readily accommodated. DDS techniques facilitate 1 kHz frequency resolution for any input frequency range.

The use of DSP technology, rather than conventional analog radio techniques, provides outstanding linearity and operational flexibility. Software controlled signal detection can accommodate virtually any modulation scheme.

A powerful and intuitive user interface provides the ability to custom configure specific applications in a very straightforward manner. The user settings provide easy configuration of tracking signal slope to match a wide range of next-level system components. A “Spectral Display” function allows the user to view real time amplitude vs. frequency data.

The flexibility and unparalleled attributes, resulting from state-of-the-art concepts and components, places the DTR at the forefront of receiver technology.

---

**Key Features**

- L-band range of 950 - 2050 MHz
- Single/Dual direct-connect polarization inputs
- Wide input signal dynamic range (70 dBm nominal)
- Outstanding sensitivity (minimum C/N_0_ is better than 35 dB-Hz)
- Fully synthesized tuning with 1 kHz tuning steps
- User-selectable tracking slope
- Spectral Display
Additional Features

- Contextual menus, spin knob and keypad aid user interaction
- Monopulse capability (optional)
- Excellent tracking signal linearity
- Absolute input power level display
- Serial and parallel remote control capability (contact closure; RS-232, RS-422)
- Front Panel 70 MHz monitor port (50 Ω BNC female)
- Bandwidth filter options as low as 16 kHz to maximize C/No
- Bandwidth filter options for standard configurations as wide as 500 kHz to supported modulated carriers

RF Specifications

<table>
<thead>
<tr>
<th>Band</th>
<th>Frequency (GHz)</th>
<th>Input</th>
<th>Physical Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>1.950 - 2.050</td>
<td>500, Type N</td>
<td>Dimensions (in.) 3.5H 19W 22D</td>
</tr>
<tr>
<td>S</td>
<td>2.0 - 2.8</td>
<td>500, Type N</td>
<td>Power 110-240 VAC 50/60 Hz</td>
</tr>
<tr>
<td>C</td>
<td>3.4 - 4.8</td>
<td>500, Type N</td>
<td>Operating Temperature Range 0 to 50˚C</td>
</tr>
<tr>
<td>X</td>
<td>7.25 - 7.75</td>
<td>500, Type N</td>
<td>Storage Temperature Range -15 to 50˚C</td>
</tr>
<tr>
<td>Ku</td>
<td>10.7 - 13.0</td>
<td>500, Type N</td>
<td>Humidity 90%, Noncondensing</td>
</tr>
<tr>
<td>Ka</td>
<td>17.0 - 22.3</td>
<td>500, SMA</td>
<td>Weight 25 lbs.</td>
</tr>
<tr>
<td>Multiband</td>
<td>Please Call</td>
<td>Please Call</td>
<td></td>
</tr>
</tbody>
</table>

Optional Features

- Additional buffered DC Tracking Signal Output
- Dual Channel Configuration for Monopulse Tracking
- Communication Carrier Tracking Capability
- Additional RF Inputs for Dual Pol/Multi-Band Applications
- Bandwidth filters up to 16 MHz
- Monopulse Capability
- System Specifics

Band Frequency (GHz) Input Physical Data
<table>
<thead>
<tr>
<th>Band</th>
<th>Frequency (GHz)</th>
<th>Input</th>
<th>Physical Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>1.950 - 2.050</td>
<td>500, Type N</td>
<td>Dimensions (in.) 3.5H 19W 22D</td>
</tr>
<tr>
<td>S</td>
<td>2.0 - 2.8</td>
<td>500, Type N</td>
<td>Power 110-240 VAC 50/60 Hz</td>
</tr>
<tr>
<td>C</td>
<td>3.4 - 4.8</td>
<td>500, Type N</td>
<td>Operating Temperature Range 0 to 50˚C</td>
</tr>
<tr>
<td>X</td>
<td>7.25 - 7.75</td>
<td>500, Type N</td>
<td>Storage Temperature Range -15 to 50˚C</td>
</tr>
<tr>
<td>Ku</td>
<td>10.7 - 13.0</td>
<td>500, Type N</td>
<td>Humidity 90%, Noncondensing</td>
</tr>
<tr>
<td>Ka</td>
<td>17.0 - 22.3</td>
<td>500, SMA</td>
<td>Weight 25 lbs.</td>
</tr>
<tr>
<td>Multi-band</td>
<td>Please Call</td>
<td>Please Call</td>
<td></td>
</tr>
</tbody>
</table>

- Frequency band may require multiple downconverters to achieve full spectrum listed - please call.

L-band Max Power Consumption 45W

RFSpecifications

- Tuning Resolution 1 kHz
- Frequency Stability (0-50 ˚C) ± 5 PPM
- RF Signal Input Impedance 50 Ω
- Input Total Power Level -10 dBm max
- Input Signal Level Range -40 to -110 dBm (nominal)
- Minimum Signal Level Input C/N₀ 35 dB-Hz
- Detection Type FFT-Based, Non-Coherent Integration
- Serial Data Interface RS-232, RS-422
- Serial Data Rates 1200, 9600, 19.2k, 38.4k, 56k bps
- Analog Tracking Voltage Outputs -10 to +10 VDC (Configurable)
- 14-bit Resolution
- Tracking Voltage Sensitivity User Adjustable (-1V/dB - +1V/db)
- Tracking Voltage Linearity ± 0.5 dB (over a 50 dB input range)
- 70 MHz IF Monitor Port Impedance 50 Ω

Optional Features

- Additional buffered DC Tracking Signal Output
- Dual Channel Configuration for Monopulse Tracking
- Communication Carrier Tracking Capability
- Additional RF Inputs for Dual Pol/Multi-Band Applications
- Monopulse Capability
- System Specifics

Ordering Information

Specify:
- Serial Data Rates
- Serial Data Interfaces
- Analog Tracking Voltage Outputs
- Line Voltage
- One or two buffered DC outputs
- Optional Features
- System Specifics

Shown below is the DTR rear panel:

The Spectral Display offers a convenient amplitude vs. frequency display of the received signal. The display is useful for system fault isolation, for routine maintenance and is also cost effective when a full function spectrum analyzer is not available or necessary.