

DIGITAL TRACKING RECEIVER



Key Features

L-band range of 950 - 2050 MHz

L,S,C,X,Ku, and Ka-band single and multi-band configurations available

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

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.

DTR Technical Specifications

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)

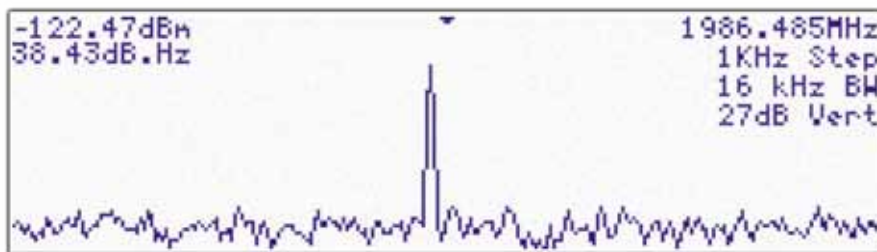
Front Panel 70 MHz monitor port (50 Ω BNC female)

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

Band	Frequency (GHz)	Input	Physical Data	
L	.950 - 2.050	50Ω, Type N	Dimensions (in.)	3.5H 19W 22D
S	2.0-2.8	50Ω, Type N		(2 EIA Rack Units)
C	3.4 - 4.8 ¹	50Ω, Type N	Power	110-240 VAC 50/60 Hz
X	7.25 - 7.75	50Ω, Type N	Operating Temperature Range	0 to 50°C
Ku	10.7 - 13.0 ¹	50Ω, Type N	Storage Temperature Range	-15 to 50°C
Ka	17.0 - 22.3 ¹	50Ω, SMA	Humidity	90%, Noncondensing
Multi-band	Please Call	Please Call	Weight	25 lbs.
¹ Frequency band may require multiple downconverters to achieve full spectrum listed - please call.			L-band Max Power Consumption	45W
RF Specifications			Optional Features	
Tuning Resolution	1 kHz		Additional buffered DC Tracking Signal Output	
Frequency Stability (0-50°C)	± 5 PPM		Dual Channel Configuration for Monopulse Tracking	
RF Signal Input Impedance	50 Ω		Communication Carrier Tracking Capability	
Input Total Power Level	-10 dBm max		Additional RF Inputs for Dual Pol/Multi-Band Applications	
Input Signal Level Range	-40 to -110 dBm (nominal)		Bandwidth filters up to 16 MHz	
Minimum Signal Level Input C/N ₀	35 dB-Hz		Monopulse Capability	
Detection Type	FFT-Based, Non-Coherent Integration		Ordering Information	
Serial Data Interface	RS-232, RS-422		Specify:	
Serial Data Rates	1200, 9600, 19.2k, 38.4k, 56k bps		Input Frequency range(s)	
Analog Tracking Voltage Outputs	-10 to +10 VDC (Configurable)		Single or Dual Pol Input	
	14-bit Resolution		Line Voltage	
Tracking Voltage Sensitivity (Tracking Slope)	User Adjustable (-1V/dB - +1V/dB)		One or two buffered DC outputs	
Tracking Voltage Linearity (over a 50 dB input range)	± 0.5 dB		Optional Features	
70 MHz IF Monitor Port Impedance	50 Ω		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.

GENERAL DYNAMICS
SATCOM Technologies

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CG-2022 Rev E • 1/14