Vertex RSI™
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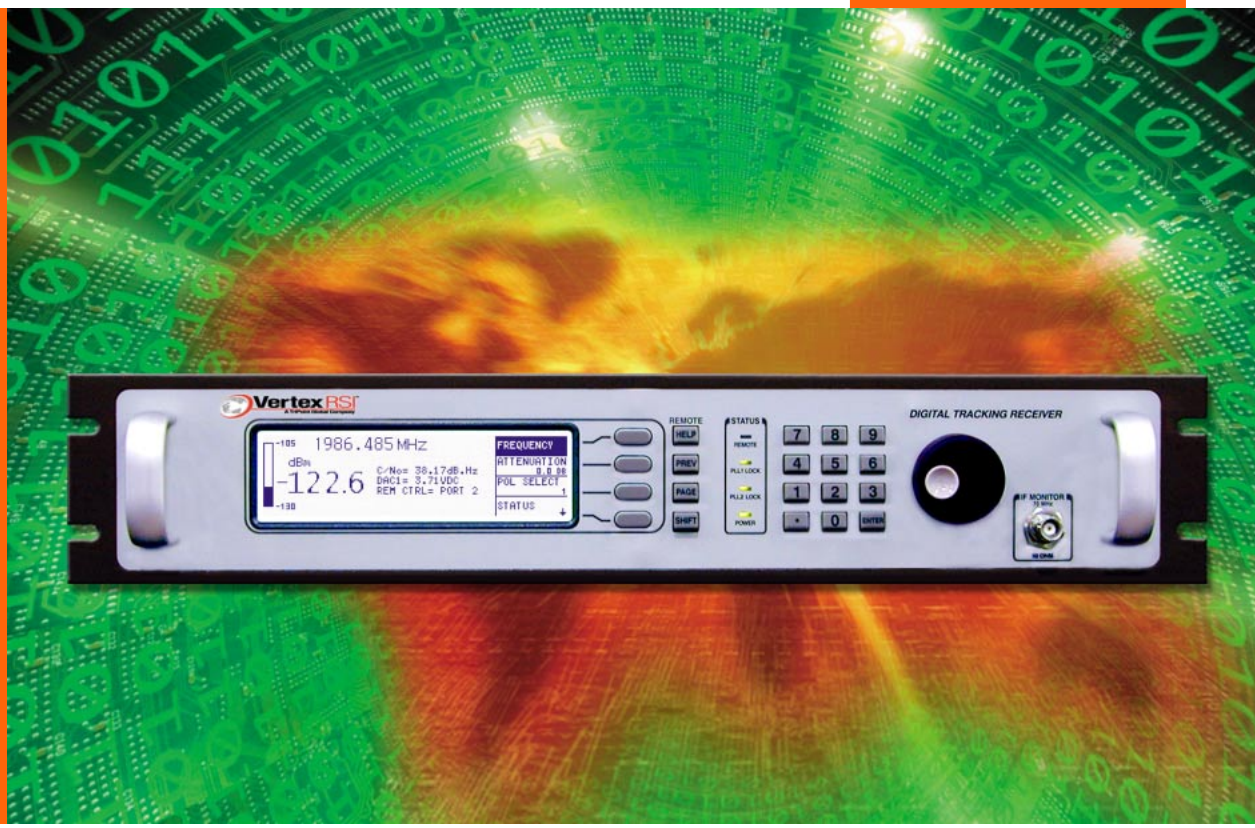
Controls
Products

DIGITAL TRACKING RECEIVER



The VertexRSI 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 1KHz 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

- **Input range of 950–2050 MHz for L-band configuration**
- **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/No is better than 35 dB-Hz)**
- **Fully synthesized tuning with 1kHz tuning steps**
- **User-selectable tracking slope**
- **Contextual menus, spin knob and keypad aid user interaction**
- **Monopulse capability**
- **Spectral display**

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Band	Frequency (GHz)	Input
L	.950–2.050	50Ω, Type N
S	2.2–2.4	50Ω, Type N
C	3.4–4.8[1]	50Ω, Type N
X	7.25–7.75	50Ω, Type N
Ku	10.7–13.0[1]	50Ω, Type N
Ka	17.0–22.3[1]	50Ω, SMA
Multi-band, 70 MHz	Please call	Please call

[1] Frequency band may require multiple downconverters to achieve full spectrum listed – please call.

RF Specifications

Tuning Resolution	1 KHz
Frequency Stability (0–50°C)	± 5 PPM
RF Signal Input Impedance	50 Ω
Input Signal Level Range	-40 to -110 dBm (nominal)
Minimum Signal Level Input C/No	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 (Tracking Slope)	User Adjustable (-1V/dB – +1V/dB)
Tracking Voltage Linearity (over a 50 dB input range)	± 0.25 dB
70 MHz IF Monitor Port Impedance	50 Ω

Physical Data

Dimensions (in.)	3.5H 19W 22D (2 EIA Rack Units)
Power	110–240 VAC 50/60 Hz
Operating Temperature Range	0 to 50°C
Storage Temperature Range	-15 to 50°C
Humidity	90%, Noncondensing
Weight	25 lbs.

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

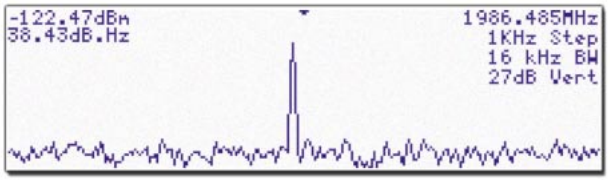
Ordering Information

Specify:

- Input frequency range(s)
- Single or Dual Pol Input
- Line Voltage
- One or two buffered DC outputs
- Optional Features
- System Specifics

Additional Features:

- **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)**



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.

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