

MODEL  
TRL-1S  
TRACKING  
RECEIVER



The TRL tracking receiver is a fully synthesized unit that provides a proportional DC tracking signal from any beacon frequency in the 950 to 1750 MHz band for use with antenna control systems in satellite communications earth stations.

The L-Band input range offers a popular and efficient “lowest common denominator” for a wide range of system architectures, including L-, C-, X-, and Ku-Band applications. A stabilized Low-Noise Block downconverter (LNB) or Block Downconverter (BDC), available from VertexRSI (or customer furnished), is used to translate C-, X-, or Ku-Band frequency “blocks” to the 950 to 1750 MHz range for use by the receiver.

The TRL-1S performs “conventional” noncoherent envelope detection in a 185 KHz bandwidth, and offers 57 dB-Hz sensitivity, which is sufficient for most applications.

## Key Features

- Fully synthesized downconverter, using Direct Digital Synthesis (DDS) techniques, allows selection of any frequency in the 950 to 1750 MHz band, with 1 KHz resolution
- C-, X-, and Ku-Band applications are readily accommodated by way of an external (high stability) LNB or BDC
- Envelope detection version fits a wide range of sensitivity requirements
- Remote control and status monitoring are provided via dry contact closure and/or RS-232/RS-422 serial

## MODEL TRL-1S TRACKING RECEIVER

### Specifications

Input Frequency Range	950 to 1750 MHz (Custom variations available)
Frequency Selection	Fully synthesized; Programmable via front panel/ remote interface to 1 KHz resolution
RF Signal Input Impedance	50 $\Omega$
Input Connector	Type BNC-Female
Input Signal Level Range	-90 to -50 dBm, Nominal
Downconverter Stability	$\pm 5$ PPM (LO's use common TCXO reference)
LNB/BDC Bias	+24 VDC @ 1.2 Amps, supplied via input connector center conductor, rear panel switchable
Minimum Input C/No	57 dB-Hz
Minimum Detection Type	Noncoherent envelope detector
Predetection Bandwidth	185 KHz, Nominal
AFC Capture Range	300 KHz, Nominal
Output Voltage Range	0 to 10 VDC
Output Voltage Slope*	0.5 Volts/dB, Nominal

\* Contact manufacturer for other slope settings

### Physical Data

Dimensions (in.)	3.5H 19W 19D (2 EIA Rack Units)
Power	120/220/240 VAC $\pm 10\%$ , 50/60 Hz, 50 VA
Operating Temp. Range	0 to 50°C
Storage Temp. Range	-15 to 50°C
Humidity	90%, Noncondensing
Weight	21 lbs.

### Ordering Information

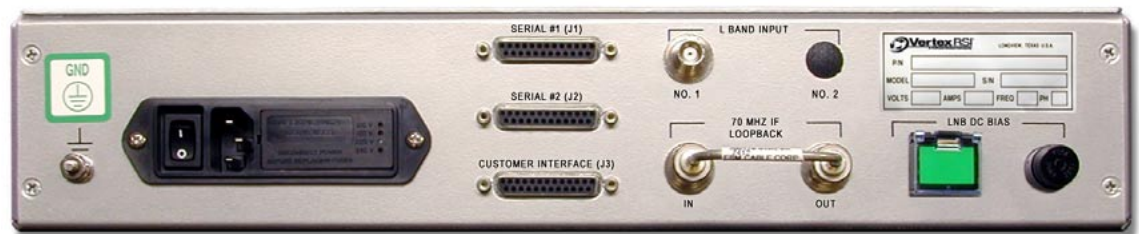
Specify:

Applicable Beacon modulation characteristics

Line Voltage

System Specifics

- Operation is menu-driven, with front panel controls and graphics display
- Frequency is easily entered via direct data keys or variable frequency adjust knob
- Frequency, level, and status/fault information are prominently displayed
- L-Band synthesized downconverter and IF beacon receiver housed in a single, 3.5-inch rack-mountable chassis



In the VertexRSI tradition, user-friendly operation is provided through a graphics display and a useful set of front panel controls.

Remote control and status are provided via contact closure and/or serial communications interface(s).



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