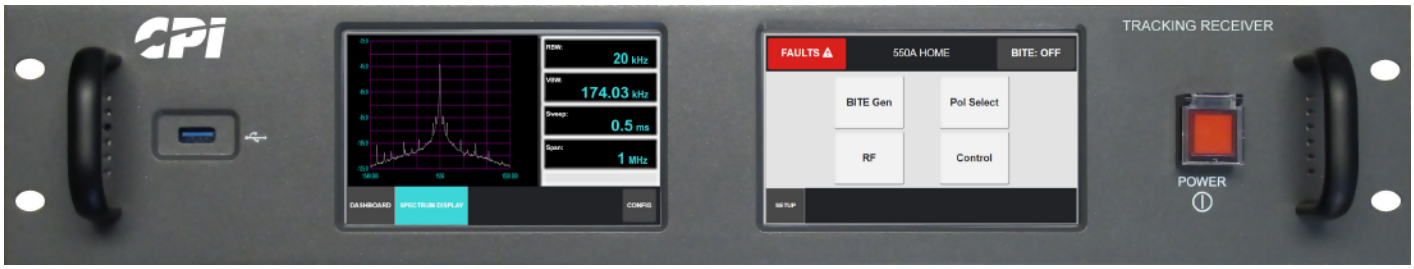
500 Series Tracking Receiver

Antenna Technologies



Overview

For over 50 years, CPI Antenna Technologies experienced engineering staff has been developing high-precision, economical satellite tracking and control systems. The Model 500 series of tracking receivers provides a high quality, cost effective solution as a beacon receiver for satellite tracking, spectrum display, and Uplink Power Control (UPC) receiver source.

The Receiver is an integrated rack mounted (2RU) chassis that includes:

- Dual touch screen display system with intuitive user interface
- Embedded control and DSP processors
- Digital or analog receiver
- Up to 4 internal block down converters for any frequency band combination from L through Ka
- Ethernet, EIA-232/422 serial ports, and analog tracking signal output
- Internal L-Band test signal generator

The receiver effortlessly connects with CPI antenna control systems through standard Ethernet, while supporting third party systems through a configurable analog tracking output.

A short depth (17" W x 15" D; 432 x 381 mm) 4RU no display chassis is also available. This chassis provides the same performance while providing mounting behind large touch-screen ACUs.

MODELS:

- Model 520A - Analog receiver with optional internal BDCs
- Model 550A – Digital receiver with spectrum display and optional internal BDCs

FEATURES:

- Extended L-Band 890-2450 MHz
- Single, dual or more (custom) polarization inputs
- Ethernet Connectivity
- Monopulse capability (with optional RF plate)
- HTML5 remote GUI
- Support for single or multi-band down conversion for L/S/C/X/Ku/Ka/Q/V
- Acquire C/No 35 dB-Hz Digital, 40 dB-Hz Analog
- Dynamic range > 90 dB
- Quick-Lock acquisition (<1 second)
- Spectrum Display (Digital)

BENEFITS:

- High performance tracking and acquisition

APPLICATIONS:

- Beacon receiver for satellite tracking
- Uplink Power Control (UPC) receiver source

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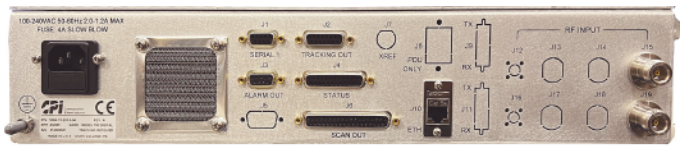
Technical Specifications

RF Options						
Options	Band(s)	Input	Frequency - GHz	VSWR	Image Rejection	Stablity
L1	L	50Ω, Type N	0.89-2.45	2:1	40 dB	± 5kHz
S1	S	50Ω, Type N	2.0-2.8	1.5:1	40 dB	± 25kHz
C1	C	50Ω, Type N	3.4-4.2	1.5:1	40 dB	± 15kHz
C2	C	50Ω, Type N	3.4-4.8	1.5:1	40 dB	± 15kHz
C3	C	50Ω, Type N	4.0-4.8	1.5:1	40 dB	± 15kHz
X1	X	50Ω, Type N	7.25-7.75	1.5:1	40 dB	± 25kHz
X2	X	50Ω, Type N	7.6-8.5	1.5:1	40 dB	± 25kHz
Ku1	Ku	50Ω, Type N	10.7-11.9	1.5:1	40 dB	± 25kHz
Ku2	Ku	50Ω, Type N	11.8-13.0	1.5:1	40 dB	± 25kHz
Ku3	Ku	50Ω, Type N	10.7-13.0	1.5:1	40 dB	± 25kHz
Ka1*	Ka	50Ω, SMA	17.0-18.1	1.5:1	40 dB	± 50kHz
Ka2*	Ka	50Ω, SMA	18.1-19.2	1.5:1	40 dB	± 50kHz
Ka3*	Ka	50Ω, SMA	19.2-20.3	1.5:1	40 dB	± 50kHz
Ka4*	Ka	50Ω, SMA	20.2-21.3	1.5:1	40 dB	± 50kHz
Ka5*	Ka	50Ω, SMA	21.2-22.3	1.5:1	40 dB	± 50kHz

Note – some BDC configurations available with external 10 MHz reference input, please consult the factory.
*Typically externally mounted down conversion.

Receiver Specifications	Analog (Model 520A)	Digital (Model 550A)
Standard Input Frequency Range	890-2450 MHz	890-2450 MHz
Total Input Power Level (no damage)	+10 dBm max	+10 dBm max
Input Beacon Level Range	0 to -96 dBm	0 to -96 dBm
Beacon Tuning Step Size	1 kHz	1 kHz
Predetection Bandwidth	280, 6 kHz	250, 4, 1 kHz
Signal Strength Linearity Error	+/-2 dB	+/- 2 dB
C/No for Narrowband Acquisition	40 dB-Hz (6 kHz)	35 dB-Hz (1kHz BW)
Detection Type	PLL	FFT-Based, No Integration
Sweep Width	+ / - 40 to +/ - 300 kHz	+/- 16 to +/- 300 KHz
Acquisition Time	1 sec (6 kHz BW, 120 kHz sweep)	300 ms (4 kHz BW, 150 kHz Span)

Physical Data			
Dimensions (In.)	3.5H x 19W x 20D	Humidity	95%, non-condensing
Weight (shipping)	23.5 Lbs (28Lbs)	Data Interfaces	Serial RS-232/RS-422, DB-9 Ethernet, RJ45 Front Panel, USB
Power	100 - 240 VAC~, 47-63 Hz, 200VA	Track Signal Outputs	Analog and streaming digital (serial or Ethernet)
Temperature, Operating	0° to 50° C	Compliance	FCC, CE, REACH
Temperature, Storage	-20° to +70°C		



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The data should be used for basic information only. Formal, controlled specifications may be obtained from CPI for use in equipment design.

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