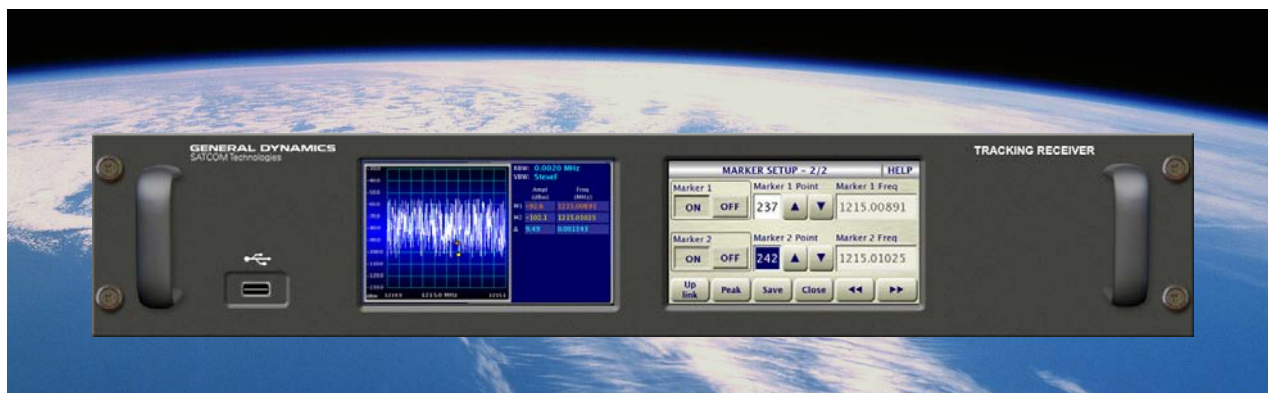


Tracking Receiver – Model 500 Series

High performance tracking and acquisition

Key Features

- Configurable for tracking receiver, spectrum display or uplink power control
- Single or dual polarization inputs
- Ethernet Connectivity
- Monopulse capability (with optional RF plate)
- Inputs for 950-2150 MHz L-Band, single or multi-band with converters for S/C/X/Ku/Ka
- Acquire C/No 35 dB-Hz Digital, 40 dB-Hz Analog
- Dynamic range > 90 dB
- Quick-Lock acquisition (<1 second)



System

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
- Dual 100MB Ethernet and EIA-422 serial ports
- Internal L-Band test signal generator

The RF front end is a three stage conversion system for enhanced sensitivity and selectivity. The analog to digital converter (ADC) inputs are digitized at 16 MHz and are transferred to a 500 MHz, 32-bit Digital Signal Processor for real-time analysis.

Models

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

Technical Specifications

RF Options							
Option	Band(s)	Input	Frequency - GHz	VSWR	Image Rejection	Stability	
L1	L	50 Ω, Type N	0.95-2.150	2:1	40 dB	± 5kHz	
S1	S	50 Ω, Type N	2.0-2.8	1.5:1	40 dB	± 25kHz	
C1	C	50 Ω, Type N	3.4-4.2	1.5:1	40 dB	± 15kHz	
C2	C	50 Ω, Type N	3.4-4.8	1.5:1	40 dB	± 15kHz	
C3	C	50 Ω, Type N	4.0-4.8	1.5:1	40 dB	± 15kHz	
X1	X	50 Ω, Type N	7.25-7.75	1.5:1	40 dB	± 25kHz	
X2	X	50 Ω, Type N	7.6-8.5	1.5:1	40 dB	± 25kHz	
Ku1	Ku	50 Ω, Type N	10.7-11.9	1.5:1	40 dB	± 25kHz	
Ku2	Ku	50 Ω, Type N	11.8-13.0	1.5:1	40 dB	± 25kHz	
Ku3	Ku	50 Ω, Type N	10.7-13.0	1.5:1	40 dB	± 25kHz	
Ka1*	Ka	50 Ω, SMA	17.0-18.1	1.5:1	40 dB	± 50kHz	
Ka2*	Ka	50 Ω, SMA	18.1-19.2	1.5:1	40 dB	± 50kHz	
Ka3*	Ka	50 Ω, SMA	19.2-20.3	1.5:1	40 dB	± 50kHz	
Ka4*	Ka	50 Ω, SMA	20.2-21.3	1.5:1	40 dB	± 50kHz	
Ka5*	Ka	50 Ω, SMA	21.2-22.3	1.5:1	40 dB	± 50kHz	

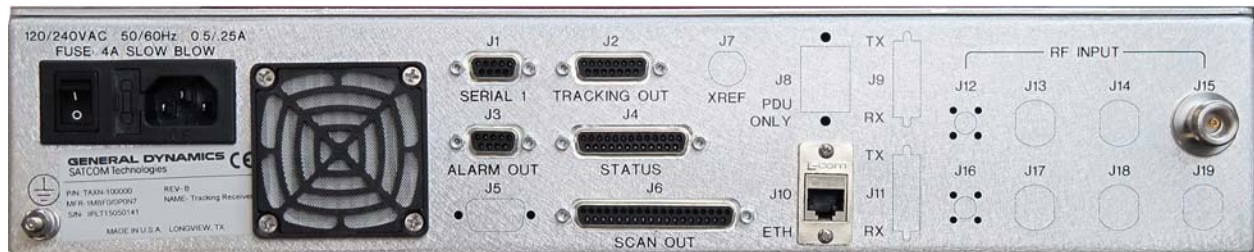
Note – some BDC configurations available with external 10 MHz reference input, please consult factory.
 *Typically externally mounted down conversion.

Receiver Specifications	Analog (Model 520)	Digital (Model 550)
Input Frequency Range	950-2150 MHz	950-2150 MHz
Total Input Power Level (no damage)	+10 dBm max	+10 dBm max
Input Beacon Level Range	0 to -96 dBm	0 to -94 dBm
Beacon Tuning Step Size	1 kHz	1 kHz
Predetection Bandwidth	280, 25, 6, 2.5 kHz	250, 4, 1 kHz
Signal Strength Linearity Error	+/- 2 dB	+/- 1 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 ± 150 kHz	16 to 300 kHz
Acquisition Time	1 sec (6 kHz BW, 120 kHz sweep)	300 ms (4 kHz BW, 150 kHz Span)

Spectrum Display	
Span Range	0.1 MHz to 1.0 GHz
Signal Level Error	3 dB Max
Dynamic Range	85 dB
Spurious Free Dynamic Range	55 dB
Resolution Bandwidth	1 to 2 % of Span
Sweep Rate	3 to 8 Sweeps Per Second

Physical Data	
Dimensions (In.)	3.5H x 19W x 20D
Weight (shipping) *	23.5 Lbs (28Lbs)
Power	90-264 VAC, 47-63 Hz, 200VA
Temperature, Operating	0° to 50° C
Temperature, Storage	-30° to +70°C
Humidity	0 to 95%, non-condensing
Data Interfaces	Serial RS-422, DB-9 Ethernet, RJ45 x2 Front Panel Universal Serial Bus (USB) x1
Track Signal Outputs	Analog (2) and streaming digital (serial or Ethernet)

Units comply with CE, FCC Class A, REACH, WEEE



GENERAL DYNAMICS SATCOM Technologies