

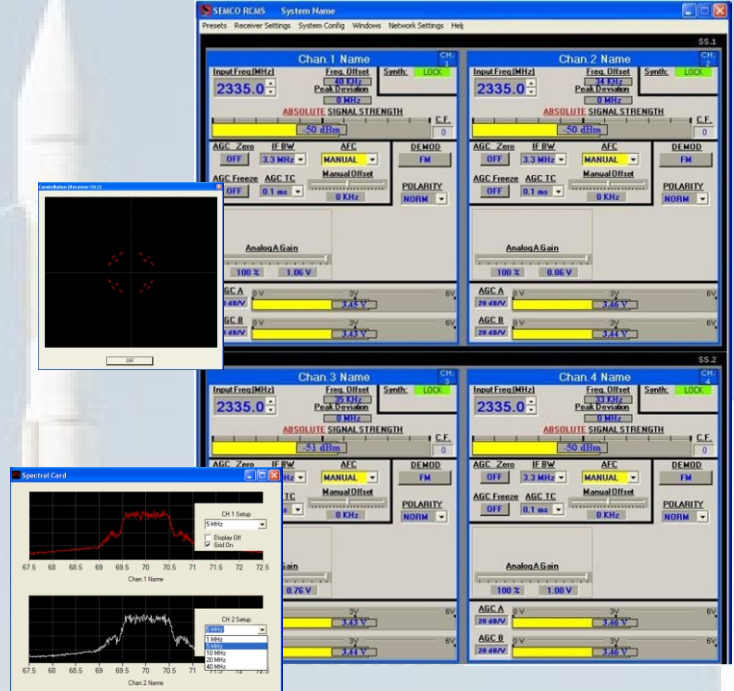
R400-4 TELEMETRY RECEIVER



Touch Screen Controls



RCMS Network Software



SEMCO's R400-4 is a PC-based 4U four channel receiver designed for ground-based, shipboard and airborne telemetry data reception and antenna tracking applications. The receiver is IRIG 106-09 Tier II phase noise compliant and offers state-of-the-art demodulation capabilities in RF tuning bands from 70 MHz to 5250 MHz.

Standard Configuration

- Independent CH1, CH2, Ch3, and CH3 Outputs
- 4.3" Touch Screen Display
- Embedded Bit Synchronizer with De-randomizer
- 1415-1585, 1650-1850 or 2185-2485 MHz Tuning
- PCM/FM and NTSC Video Demodulation
- Eye Pattern and Constellation Display
- 4 User-Configurable Analog/Digital Outputs per Channel
- AM/AGC Antenna Tracking Outputs
- Removable Solid State Drive
- Front Panel USB Ports
- RCMS Network Software

Options

Some options may not be available based upon desired system configuration. Please contact the factory for details.

- Multi-Band RF Tuning (1415-1585, 1650-1850 and 2185-2485 MHz)
- 70 MHz, 200-1150 MHz and/or 4400-5250 MHz *
- Continuous RF Tuning (1415 to 2485 MHz)
- Multi-Channel Spectral Sweep Displays
- Pre-d Recording and Playback (75 KHz to 15 MHz)
- Multi-Mode Demodulation
 - Legacy: PM, BPSK, O/S/A/U/QPSK
 - IRIG 106-09 Tier 0 Trellis PCM/FM, Tier I SOQPSK-TG and Tier II Multi-h CPM
 - PM/PSK Sub-Carrier
 - Coherent AM

* 4940-5090 MHz not applicable per IRIG

Consult Factory for specific models and HW/SW configurations, including custom multi-channel system requirements

Systems Engineering & Management Co.
1430 Vantage Court
Vista, CA 92081-8596



Technology & Innovation For A Safer World

(800) 995-0636, Ext.1125
FAX (760) 727-5200
Www.semco.com

R400-4 System Specifications

PERFORMANCE

Frequency Bands	1415-1585, 1650-1850, and 2185-2485 MHz Optional 70 MHz, 200-1150 MHz, or 4400-5250 MHz *
Operating Environment and Controls	SEMCO RCMS Network Software; Windows XP; Integrated Display/KB
Dynamic Range	-10 dBm to Threshold
Noise Figure	<8 dB
Phase Noise	IRIG 106-109 Tier II Phase Mask Compliant
Maximum Safe Input Level	+10 dBm
Image and Spurious Signal Rejection	>60 dB
IF Rejection	70 dB minimum; 80 dB typical
Tuner LO Tuning Resolution	100 kHz (adjustable in 1 kHz increments in AFC Manual Mode)
IF Filters	0.3 to 40 MHz SAWs plus FIRs auto-set as a function of data rate
AGC Time Constants	5 software selectable (0.1 ms, 1 ms, 10 ms, 100 ms, and 1000 ms)
AGC Outputs	2 scalable AGC outputs per channel (+/- 10, 20, and 50 dB/V)
Baseband (Video) Output	Analog – 0 to > 4 Vp-p into 75 ohms; TTL Clock and Data; user-selectable AC-DC coupling; 4 user-configurable analog and digital outputs per channel
Baseband Video Filters	FIRs auto-set as a function of data rate per IRIG
AM Output	2 Vp-p into 75 ohms @ 50% AM Modulation
Acquisition Tracking	+/- 250 kHz
Automatic Frequency Control	+/- 250 kHz with 5 user-selectable AFC Loop Speeds
Demodulator Operating Modes	FM, NTSC Video with switched de-emphasis, PM, BPSK, QPSK, OQPSK, SQPSK, A/UQPSK, IRIG 106-09 Trellis PCM/FM (Tier 0), SOQPSK SK-TG (Tier I), and Multi-h CPM (Tier II), PM/PSK Subcarrier, and Coherent AM
Maximum Data Rates	23 Mbps FM, 20 Mbps PM/PSK, 40 Mbps S/O/QPSK, 23 Mbps Tier 0 PCM/FM, 46 Mbps, Tier I SOQPSK-TG, 32 Mbps Tier II Multi-h CPM
Minimum Data Rates	20Kbps FM, 2 Kbps PM/PSK, 30 Kbps S/O/QPSK, 20 Kbps Tier 0 PCM/FM, 20 Kbps Tier I, SOQPSK-TG, 20 Kbps Tier II Multi-h CPM
Embedded Bit Synchronizer	NRZ-L/S/M and Bi-Phase; de-randomizer; manual and auto-select loop bandwidths; user-selectable clock and data polarity
Pre-d (70 MHz) Outputs	Linear (-10 +/- 2 dBm)
Pre-d Recording and Tape Playback	Optional User-selectable 75 kHz to 15 MHz in 1 kHz increments

Power Requirements

90-265 VAC, 50-60 Hz; Auto-Ranging

Physical and Environmental

17" W x 7" H x 20" D; 19" Rack Mount Configuration

Operating Temperature	0° to 50° C
Storage Temperature	-20° to +70° C
Humidity	Up to 95% non-condensing
Altitude	Designed to meet MIL-STD 461

Additional Features

Dual and Quad Channel Configurations	One-Touch Mission Presets	Time Tagged AGC/System Data Logging
"Combined/Best Source Select" Feature	Eye Pattern and Constellation Displays	Multi-Channel Spectral Sweep Display
Internal/External 10 MHz Reference	Serial Port Programming	On-Screen Calibration
850 Watt Power Supply	Channel Slaving	Channel Naming

* 4940-5090 MHz not applicable per IRIG

Contact the Factory for detailed specifications applicable to specific model numbers and configurations

Systems Engineering & Management Co.
1430 Vantage Court
Vista, CA 92081-8596



Technology & Innovation For A Safer World

(800) 995-0636, Ext.1125
FAX (760) 727-5200
www.semco.com