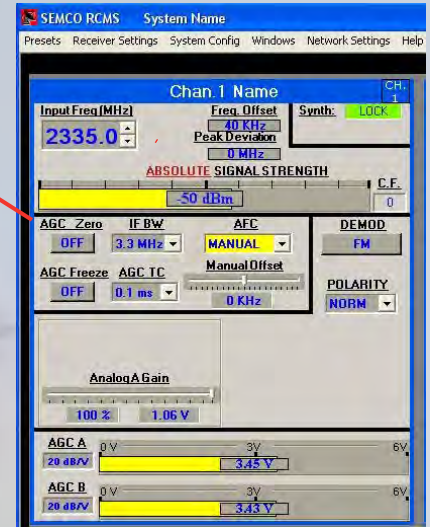




PCI TELEMETRY RECEIVER CARD SET



RCMS Network Software



DESCRIPTION - SEMCO's PCI Telemetry Card Set is designed for low cost telemetry data reception and antenna tracking applications as an embedded receiver channel in a customer PC chassis. The card set is IRIG 106-15 Tier II phase noise compliant and offers state-of the art demodulation capabilities as well as single and multi-band RF tuning (1415-1585 MHz, 1650-1850 MHz and 2185-2485 MHz). AM and scalable AGC outputs for antenna tracking and other applications are standard features.

The PCR616SD IF Receiver/Digital Demodulator design optimizes data demodulation performance with both user-selectable SAW IF filters and FIR filters that are provided as a function of data rate input + and Auto-Select feature based on data rate input. This feature is also provided for baseband video filtering, as well as user-selectable AC-DC coupling. The FPGA-based digital demodulator provides state-of-art performance supporting all Legacy and IRIG 106-15 Tier 0, Tier I and Tier II demodulation formats. An embedded Bit Synchronizer with De-randomizer provides for 4 user-configurable analog and digital clock and data outputs.

The Adaptive Equalization (AE) option dramatically improves receiver performance in Selective Multi-Path environments. The Data Quality Encapsulation/Data Quality (DQE) option supports Best Source Selection by embedding data quality information within the PCM/FM and SOQPSK-TG formats.

An adapter cable set is provided to facilitate installation and integration into customer PC chassis.

STANDARD CONFIGURATION

- Single Channel Receiver
- 1415-1585, 1650-1850 or 2185-2485 MHz Tuning
- PCM/FM and NTSC Video Demodulation
- Embedded Bit Syncs /De-randomizer
- 4 User-Configurable Analog/Digital Outputs
- AM and scalable AGC Antenna Tracking Outputs
- RCMS Network Software

OPTIONS

- 1415-1585, 1650-1850 and 2185-2485 MHz Tuning

OPTIONS (continued)

- PM, BPSK & A/U/S/O/QPSK Demodulation
- Viterbi Decoder (k=7 rate ½)
- Selective Turbo Coding
- IRIG 106-15 Trellis FM, SOQPSK-TG & Multi-h CPM
- PM/PSK (SGLS) and FM/FM S/C Demodulation
- Coherent AM Demodulation
- Adaptive Equalization
- DQE/DQM for Best Source Selector Applications
- CCSDS Spread Spectrum

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PCI Telemetry Receiver Card Set Specifications

PERFORMANCE

Frequency Bands	1415-1585 MHz, 1650-1850 MHz and 2185-2485 MHz
Operating Environment and Controls	SEMCO RCMS Network SW in Windows 7/10 Operating System
Dynamic Range	-10 dBm to Threshold
Noise Figure	<8 dB
Phase Noise	IRIG 106-15 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 SAW Filters	16 from 0.3 to 40 MHz
IF FIR Filters	15 user-selectable per data rate entered + Auto-Set based on data rate; 4 kHz to 37.3 MHz
AGC Time Constants	5 software selectable (.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 & Data; user-selectable AC-DC Coupling; 4 user-configurable analog and digital outputs per channel
FIR Filtering	15 user-selectable per data rate entered + Auto-Set based on data rate; 2 kHz to 18.7 MHz + Bypass
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 106-11 Trellis PCM/FM (Tier 0), SOQPSK-TG (Tier I) and Multi-h CPM (Tier II), PM/PSK Sub-Carrier, Coherent AM & Spread Spectrum
Maximum Data Rates	23 Mbps FM, 20 Mbps PM/PSK, 40 Mbps S/O/QPSK, 23 Mbps Tier 0 PCM/FM, 40 Mbps Tier I SOQPSK-TG, 37 Mbps Tier II Multi-h CPM
Minimum Data Rates	10 Kbps 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); two outputs per channel
Reference Clock	External 10 MHz

POWERREQUIREMENTS

PCI Backplane Power (+/-12 VDC, +5 VDC)

PHYSICAL and ENVIRONMENTAL

Operating Temperature	0° to 50° C
Storage Temperature	-20° to +70° C
Humidity	Up to 95% (non-condensing)
Altitude	Up to 30,000'
EMI	Designed to meet MIL-STD 461

ADDITIONALFEATURES

Optional Internal 10 MHz Reference	Time-Tagged AGC/System Data Logging	One Touch Mission Presets
Channel Naming	Serial Port Programming	On-Screen System Calibration
Channel Slaving	Adaptive Equalization	DQE/DQM
		Viterbi FEC

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