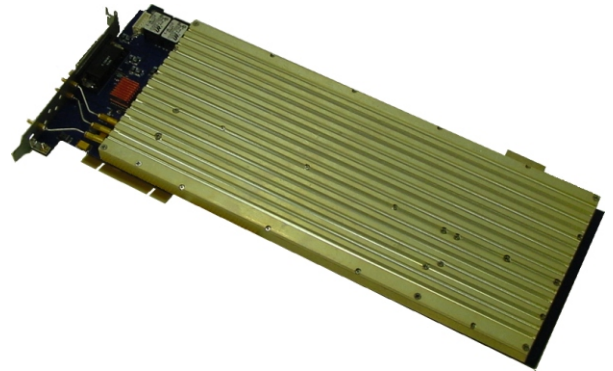


PCI DIGITAL IF RECEIVER

- 70 MHz IF input
- 16 SAW Filter Values (.3 to 30 MHz)
- Multi-Mode Trellis Demodulation
 - PCM/FM (Tier 0 20 Mbps)
 - SOQPSK (Tier I 20 Mbps)
 - CPM (Tier II 20 Mbps)
- Legacy Demodulation
 - Analog PCM/FM (30 Mbps)
 - NTSC Video (flat or de-emphasis)
 - Analog PM (10 Mbps)
 - Digital PM (10 Mbps)
 - BPSK (10 Mbps)
 - QPSK (20 Mbps)
 - AQPSK (I+Q >5 Mbps)
 - UQPSK (>10 dB I/Q Ratio)
- Embedded Bit Synchronizer Outputs



MODEL PCR616MP

- Four (4) Baseband Video Outputs
- 53 Baseband Filters (150 kHz to 30 MHz)

The PCR616MP Digital IF receiver PCI card is used in conjunction with SEMCO's family of telemetry receivers to provide for demodulation of ARTMS Tier 0, Tier I and Tier II waveforms, as well as legacy demodulation formats still widely used in telemetry applications. The PCR616MP provides for trellis detection of all 3 ARTMS demodulation waveforms. Its 2nd generation multi-symbol PCM/FM demodulation design improves BER performance by 3.5 dB over traditional single symbol demodulators, maintaining this superior performance even with modulation index deviations of up to +/- 15%. SOQPSK demodulation yields at least 2 dB improvement over single symbol demodulators. The PCR616MP provides for rapid synchronization up to 100 times faster than other ARTMS demodulators in the market, and maintains lock at lower signal-to-noise ratios. Other important features include:

- Multiple Signal Output Switching Matrix
- Signal Interface and Compatibility with Diversity Branch Selector (RF Networks Model 2241)
- Switched Analog I and Q outputs for interface with legacy Bit Synchronizers and Best Source Selectors

PCR616MP SPECIFICATIONS

Input:

IF Center Frequency	70 MHz
Input bandwidth Filters	16 selectable SAWs plus digital filtering
Bandwidth Filter Values	.3, .5, .75, 1, 1.5, 2.2, 3.3, 4, 6, 8, 10, 12 15, 20, 25, and 30 MHz
Dynamic Range	+10 dBm to threshold
Input Impedance	50 ohms
VSWR	< 1.5:1

ARTM Demodulation:

ARTM Tier 0	Trellis PCM/FM (30 kbps to 22 Mbps) 3.5 dB BER improvement to within 0.2 dB of theory +/- 15% Modulation index change
ARTM Tier I SOQPSK-TG	500 kbps to 44 Mbps data rate >2.0 dB better BER vs. single-symbol detection
ARTM Tier II CPM-h Synchronization Time	500 kbps to 44 Mbps Data Rate Tier 0: 250 bits @ 0 dB E_b/N_o Tier I : 5,000 bits @ 3 dB E_b/N_o Tier II: 10,000 bits @ 6 dB E_b/N_o
Acquisition Threshold	Tier 0: -2 dB E_b/N_o Tier I : 0 dB E_b/N_o Tier II: 2 dB E_b/N_o
Outputs	Software Selectable Bit Synchronized Clock and Data via BNC

Legacy Demodulation

PCM/FM	30 kbps to 30 Mbps data rate
Analog FM	Flat or NTSC with switched de-emphasis
PM & BPSK	10 Mbps maximum
QPSK	20 Mbps maximum
AQPSK	I data rate + Q data rate >5 Mbps
UQPSK	I/Q Power Ratio >10 dBm
Baseband Filters	53 selectable from 150 kHz to 30 MHz
Outputs	Software Selectable Multiple 0-2 Vp-p baseband video via BNC

External Best Source Select Interface

Diversity Branch Selector	Signal Degradation Indicator (SDI)
External Best Source Selectors	Software Selectable Analog (baseband) video outputs via BNC

Options

De-randomizer	15-stage LFSR, per IRIG 106
Forward Error Correction	Viterbi ($k=7$, $r=[m-1/m]$) or customer-specified
Adaptive Equalization	Customer-specified

Specifications subject to change without notice. Please verify the latest specifications at time of order.

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January 2006



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