

PCI Diversity Combiner w/ Demodulator, 70 MHz PDCD-1022

Features

- Pre- and Post-Detection Modes
- FM/PM/BPSK Demodulator
- Supports ARTM Tiers I and II
- Selectable AGC Output Ranges
- AM Demodulator
- Integrated Spectral Analysis Display
- Dual 70 MHz Demodulator Option
- Bit Synchronizer Option
- Programmable IF to Tape Output Option



Digital Combiner Design

Wyle Telemetry and Data Systems' digital PCI Diversity Combiner with Demodulator is ideally suited for embedded telemetry applications that require diversity combining. PDCD-1022 supports frequency, space, and polar diversity applications. As a full-length PCI card, it presents a complete predetection Diversity Combiner that employs contemporary high-speed FPGA technology to combine two 70 MHz IF signals through high-speed A/D converters and uses digital maximal ratio combining to produce a phase-locked combined signal. This combined signal is band-pass filtered, digitally demodulated, and followed by analog reconstruction of the demodulated combined signal. The PCI Diversity Combiner with Demodulator provides combined AGC, AM, and demodulated video data outputs. Optional bit synchronizer output is also available as an option.

Digital Filters

Twenty-five digital IF filters ranging from 50 kHz to 30 MHz minimize signal insertion loss. Included are 12 standard IRIG IF filter bandwidths and 23 video low-pass filter bandwidths. User-defined filters are also available.

AGC

The PDCD-1022 supports 0 to -5 volt or 0 to +5 volt (20 dB per volt) or 0 to +4 volt (25 dB per volt) AGC inputs.

Multimode Demodulator

The multimode Demodulator provides user-selectable AM, FM, PM, BPSK, QPSK, SOQPSK, and CPM Waveform Demodulation modes. Standard models include FM/PM/BPSK/AM Demodulation modes with options available for QPSK, SOQPSK, and CPM modes. All models include dual independent video outputs.

Spectral and Data Displays

Support is included for an integrated IF spectral display and for a baseband Demodulator data display. The included Windows GUI provides receiver controls and indicators and includes the IF spectral and baseband data displays.

Software Control

A Windows GUI enables users to control receiver functions and to display receiver status and integrated IF spectrum and time base data. The GUI can operate as either local or remote control over a TCP/IP network. The TCP/IP remote control interface includes a Receiver TCP/IP Server and Application Programming Interface (API) with programming examples for creating custom embedded remote control applications.

Additional Options*

Options for Multi-Band and Single-Band tuners, QPSK, SOQPSK, CPM Demodulators, Internal Programmable Bit Synchronizer, and Programmable IF to Tape options are available. *

Input	IF Input Frequency	70 MHz
	Level	Threshold to -10 dBm
	Impedance	50-ohm
	AGC Input	0 to -5V, 0 to +5 VDC(1V/20 dB), or 0 to +4 VDC (1V/ 25 dB)
Combiner	Modes of Operation	Manual selection, CH1 or CH2 input Automatic selection, Best Source CH1 or CH2 input Predetection optimal ratio of CH1 and CH2
Demodulator	Types	FM, PM, BPSK, and AM standard QPSK, ARTM Tiers I and II options available
	Data Rates	PCM/FM performance 20 Mbps BPSK/QPSK performance 20 Mbps PM performance 20 MHz
	IF Filter Bandwidth	Presets provided for 25 IF filter settings: 50 kHz, 100 kHz, 150 kHz, 300 kHz, 375 kHz, 500 kHz, 750 kHz, 1 MHz, 1.3 MHz, 1.5 MHz, 2 MHz, 2.4 MHz, 3 MHz, 3.3 MHz, 4 MHz, 5 MHz, 6 MHz, 7.5 MHz, 10 MHz, 12 MHz, 15 MHz, 20 MHz, 22 MHz, 25 MHz, and 30 MHz <i>Others are available.*</i>
	Output Filter Range	Presets provided for 24 video filters: 25 kHz, 50 kHz, 75 kHz, 150 kHz, 187.5 kHz, 250 kHz, 375 kHz, 500 kHz, 650 kHz, 750 kHz, 1 MHz, 1.2 MHz, 1.5 MHz, 1.65 MHz, 2 MHz, 2.5 MHz, 3 MHz, 3.75 MHz, 5 MHz, 6 MHz, 7.5 MHz, 10 MHz, 12.5 MHz and 15 MHz <i>Others are available.*</i>
Outputs	Demodulator Output	Dual independent video outputs
	AM	AC coupled AGC detector output
Connectors	Down Converted IF	Buffered 70 MHz
	70 MHz Inputs	SMA
	IF Output	SMA
	Video Output (2)	MDM-Series to BNC cable
	AGC Output	MDM-Series to BNC cable
	AM Output	MDM-Series to BNC cable
Environmental	Bit Sync	MDM-Series to BNC cable
	Temperature	0 to + 50 °C, operating
	Humidity	-20 to +60 °C, nonoperating 0-90%, noncondensing, operating
Software	Windows	XP compatible DLL and Microsoft foundation class application TCP/IP API

*Please contact Wyle Telemetry and Data Systems for more information.

Ordering Codes	PDCD-1022-100	PCI Diversity Combiner, 70 MHz, FM/PM/AM Demodulator
	PDCD-1022-201	PCI Diversity Combiner, 70 MHz ,FM/PM/BPSK/QPSK/AM
	PDCD-1022M-101	PCI Dual Channel Multimode 70 MHz Digital Demodulator, FM/PM/BPSK/QPSK/AM