

SoC Standalone Boards

- GIGe Broadband Performance
- Highly Integrated 2 Chip Systems Solution
- Supports Multiple QAM Modulation Types/Rates
- Modulator/Demodulator with FEC
- Control Processor
- QoS Optimal Performance Features
- Fast-track to Product
- FCC and ETSI Compliant



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Point-to-Point Packet Modem Chipset WSC-PTP-CS



**WSC-PTP-MD
(Modem + FEC)**



**WSC-PTP-NP
(Network Processor)**

- 1 Gbps Interface for all packet types
- 1M packet/sec processing rate
- Low power and cost
- Quality of Service (QoS) Built in

The WSC-CS-PTP is a two-chip GIGe packet modem solution, comprised of the WSC-MD-PTP wireless modem and the WSC-NP-PTP network processor. This solution is suitable for use in cellular backhaul network, fixed wireless transmission and private/enterprise network and similar applications.

These tightly integrated components are designed to provide a cost-effective fast-track to competitive high-performance broadband point-to-point packet-based radios. Together, they provide a complete systems solution consisting of all analog IF interfaces, a multi-rate/multi-modulation QAM modem with FEC, an Ethernet packet processor with QoS (Quality of Service) features and a management processor for configuration, status and reporting.

The WSC-CS-PTP complies with all FCC and ETSI requirements, including spectral masks, spectrum density, scrambling, frequency stability, and out-of-band emissions.

WSC-PTP-CS Specifications

Performance

Topology.....	Capable of operation in PTP last mile and backhaul configurations
Supported Modes	FDD
Modulation	QPSK, 16QAM, 32QAM, 64QAM, 128QAM, 256QAM
Symbol Rates	Up to 40Msymb/sec
Data Rates.....	Up to 320 Mbits/sec
Bandwidth Efficiency.....	For typical factor of $\alpha=.20$; from .83 to 6.66 bits/Hz
FEC.....	Reed Solomon providing $<10^{-12}$ BER at a threshold of 10^{-4}
Equalizer.....	Convolutional interleaving
Equalizer.....	Fast-acting two-stage for robust operation in degraded signal environments

Compliance

Regulatory.....	FCC and ETSI spectral masks, spectrum density, scrambling, frequency stability, and out-of-band emissions
Standards.....	IEEE 802.3, 802.3u, 802.3z, 802.3af

IF Operation

Modes.....	Baseband and Passband(mod & demod)
Bandwidth.....	50 MHz (mod & demod)
Input Agility.....	Tunable to fs/2 from center in digital domain.
Output Agility.....	Tunable to $\pm fs/2$ from center in digital domain.
Clock Rate.....	170 Mhz

Monitors

Power Amplifier.....	Demodulator accepts an analog voltage from the PA representing output level.
IDU Enclosure.....	Temperature sensing

Interfaces

Network Processor.....	10/100/1000 Ethernet with RJ-45 connector implementing Power Over Ethernet at 48 VDC with polarity reversal protection
Modem.....	GPIO for external device control including RF cards Two dual-channel 12 bit ADC 100 MSPS for baseband or passband receive IF Two dual-channel 12 bit DAC 100MSPS for baseband or passband transmit IF TX Power controlland RX AGC interfaces

Environmental

Temperature.....	-40 to +55 deg C
Altitude.....	4500 meters
Humidity.....	95% without condensation

Power

Total Power Consumption.....	4 Watts using regulated LDO linear supplies
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