CDD-564/564L Quad Demodulator

INTRODUCTION

The CDD-564L and CDD-564 receive four, independent L-Band or 70/140 MHz channels and combine them into a single, network-ready, 10/100 Base-T Ethernet port. The four demodulators, integral router and IP Module are housed in a 1RU chassis. These products are designed to operate with Comtech EF Data's IP-enabled product line, including modems and performance enhancement proxies.

FEATURES FOR EACH DEMODULATOR

- CDD-564L, 950 to 1950 MHz each demodulator
- CDD-564, 50 to 90 or 100 to 180 MHz IF range
- 16 kbps to 5.0 Mbps data rate
- Fast acquisition demodulator
- QPSK modulation (8-PSK, 16-QAM optional)
- 2nd Generation Turbo Product Coding (TPC) forward error correction
- LNB support: 10 MHz reference and LNB power

STANDARD FEATURES

- Static IP routing for unicast and multicast
- Powerful network management via SNMP, Web or Telnet
- IGMP v1
- Point-to-Point or Point-to-Multi-Point configuration
- 10/100 Base-T Ethernet data interface (RJ-45)
- Reflash using FTP via Ethernet port
- FAST feature upgrades from factory or field
- Front Panel LEDs for Unit Status, Stored Event and the status of each of the four receive channels
- Interoperable with the CDM-570L with IP Module, CDM-IP 550 and CDM-IP 300L

QUALITY OF SERVICE (QoS)

The CDD-564/564L transparently passes through QoS prioritization established at the transmit end by the CDM-570/570L.

OPTIONAL FEATURES

- Header Decompression
- Payload Decompression
- 3xDES Decryption

HEADER DECOMPRESSION OPTION

Configurable on a per demodulator basis, header decompression reduces the required Voice over Internet Protocol (VoIP) bandwidth by as much as 60%. Example: A G.729 voice codec, operating at 8 kbps, will occupy 32 kbps once encapsulated into IP framing on a LAN. Using IP/UDP/RTP header compression, the same traffic needs only 10.8 kbps total WAN satellite bandwidth to cross the link. Normal Web/HTTP traffic can be reduced an additional 10% via IP/TCP header compression.

PAYLOAD DECOMPRESSION OPTION

Compressing payload reduces both the data frame size and satellite bandwidth required to transmit across the link. Configurable on a per demodulator basis, payload compression optimizes traffic and reduces bandwidth up to 40%.

DATA DECRYPTION OPTION

The CDD-564/564L supports 3xDES data decryption to prevent unauthorized access to data over the satellite link, and is configurable on a per demodulator basis.

NETWORK TOPOLOGIES

The CDD-564/564L simplifies hub site installations by reducing rack space and costs with four independent demodulators in a chassis. A bank of CDD-564/564L demodulators is ideal for a star network consisting of a single outbound carrier at the hub with multiple carriers returned from the remote sites.

At remote sites, the CDD-564/564L supports mesh connectivity between multiple sites. Operating in mesh topology with links directly between sites eliminates double-hops through the hub, conserving bandwidth and reducing latency.

Modems

CDD-564/564L Quad Demodulator

CDD-564

CDD-564L

SYSTEM SPECIFICATIONS

Frequency Range	CDD-564L: 950 to 1950 MHz, CDD-564: 50 to 90 or 100 to 180 MHz, 100 Hz frequency resolution
Inputs	CDD-564L: 4 separate Type N female CDD-564: 4 separate BNC Type
Input Impedance	CDD-564L: 50Ω, 17 dB minimum return loss CDD-564: 50 or 75Ω user selectable, 17 dB minimum return loss
Traffic & Management Interface	10/100 Base-T Ethernet, RJ-45
Command Line Interface (CLI)	RS-232, RJ-11
Factory Test Connector	DB-9 male
Frequency Reference	± 0.06 ppm, 32 to 122ºF (0 to 50ºC) internal External – none
Symbol Rate Range	16 ksps to 3.0 Msps

Data Rate Range – Each demodulator independently in 1 bps increments

Rate 3/4 QPSK TPC	16 kbps to 4.5 Mbps
Rate 7/8 QPSK TPC	16 kbps to 5.0 Mbps
Rate 0.95 QPSK TPC	16 kbps to 5.0 Mbps
Rate 3/4 8-PSK TPC	16 kbps to 5.0 Mbps
Rate 0.95 8-PSK TPC	16 kbps to 5.0 Mbps
Rate 3/4 16-QAM TPC	16 kbps to 5.0 Mbps
Rate 7/8 16-QAM TPC	16 kbps to 5.0 Mbps

(See the CDD-564/564L manual for details)

Descrambling	Comtech or IESS-315
FEC Turbo Product Decoding (Standard)	Rate 3/4, 0.95 QPSK, Rate 3/4, 0.95 8-PSK, Rate 3/4 16-QAM, Rate 7/8 8-PSK, 16-QAM

DEMODULATOR

Input Power Range	CDD-564L: -130 + 10 log(Symbol Rate) to -90 + 10 log(Symbol Rate) CDD-564: -30 to –60 dBm
Max Composite Level	+40 dBc, up to -10 dBm for CDD-564L +35 dBc, up to –5 dBm for 70/140
Acquisition Range	± 1 to ± 32 kHz (1 kHz steps) < 625 ksps ± 1 to ± 200 kHz ≥ 625 ksps (CDD-564L only)
Monitor Functions	E_b/N_o, Frequency Offset, BER, LNB current and voltage Rx receive signal level

LOW-NOISE BLOCK CONVERTER (LNB) SUPPORT

LNB Voltage	+13 volts, +18 volts and +24 volts DC or OFF at 500 mA max per Rx Input
10 MHz Reference Power Level	-3 dBm ± 3dB via Rx center conductor. Selectable ON or OFF per Rx Input

ENVIRONMENTAL AND PHYSICAL

Temperature	
Operating	32 to 122ºF (0 to 50ºC)
Storage	-13 to 185ºF (-25 to 85ºC)
Power Supply	100 to 240 volts AC, 50/60 Hz Optional 48 VDC Input (38 to 60)
Power Consumption	75 W typical (140 W max – powering 4 LNBs)
Physical Dimensions	1RU high, 16 inches deep (40.6 cm)
Weight	7 lbs (3.2 kg)
Agency Approvals	CE Mark FCC Part 15 Class B

NETWORK PROTOCOLS

RFC 768 – UDP	RFC 1812 – IPv4 Routers
RFC 791 – IP	RFC 2045 – MIME
RFC 792 – ICMP	RFC 2578 – SMI
RFC 793 – TCP	RFC 2616 – HTTP
RFC 826 – ARP	RFC 2821 – SMTP
RFC 856 – Telnet	RFC 3412 – SNMP
RFC 862 – Ping	RFC 3416 – SNMPv2
RFC 894 – IP	RFC 3418 – SNMP MIB
RFC 959 – FTP	
RFC 1112 – IP Multicast	
RFC 1213 – SNMP MIB II	

AVAILABLE OPTIONS

How Enabled	Option
Standard	Variable Rate to 512 kbps
FAST	Variable Rate to 2.048 Mbps
FAST	Variable Rate to 5.0 Mbps
FAST	8-PSK modulation
FAST	16-QAM modulation
FAST	Header Decompression
FAST	Payload Decompression
FAST	3xDES Data Decryption
Hardware	-48 VDC Prime Power Supply

L-/IF-Band Inputs — Demodulator 1, Demodulator 2, Demodulator 3, Demodulator 4 — Packet Processor & Monitor & Control — Front Panel LEDs (8), 10/100 BaseT Ethernet (RJ45), Command Line Interface (RJ11), DB-9 Factory Test Port

CDD-564/564L

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