



Overview

Comtech EF Data's Advanced VSAT Solutions portfolio provides high-performance satellite-based communication solutions for a diverse range of applications, including mobile backhaul with RAN optimization, IP trunking and backhaul, maritime and offshore networks, corporate and enterprise networks, emergency and disaster recovery. Incorporating advanced technologies developed by Comtech EF Data, AHA Products Group, Memotec and Stampede, the solutions provide unmatched performance, industry-leading bandwidth efficiencies and network optimization – while minimizing Total Cost of Ownership.

Designed for use at the hub site, CDM-800 combines a wide range of advanced technologies in a 1RU platform enabling the most efficient Time Division Multiplexed (TDM) outbound for hub-spoke networks:

- DVB-S2 FEC
- Low overhead encapsulation
- Lossless Payload compression
- Header compression

Features

- Symbol rate: 1 Msps to 62 Msps
- DVB-S2 Forward Error Correction
 - Modulation: QPSK, 8PSK, 16APSK, 32APSK
 - Adaptive Coding and Modulation (ACM)
 - Variable Coding and Modulation (VCM)
 - Rolloff : 20%, 25%, 35%
- Integrated packet processor
 - Low overhead Enhanced Generic Stream Encapsulation (GSE)
 - Header compression
 - Lossless Payload compression
 - Advanced Quality of Service (QoS)
- Transmit Frequency: 50 to 180 MHz or 950 to 2150 MHz
- Traffic Interfaces: 2 x 10/100/1000Base-T Ethernet
- Management Interface: 10/100Base-T Ethernet for web and SNMP
- 1:1 Redundancy

Typical Users

- Mobile Operators
- Telecom Operators
- Offshore & Maritime
- Enterprise
- Internet Service Providers (ISPs)

Common Applications

- Mobile Backhaul with RAN Optimization
- IP Trunking & Internet Access
- Maritime & offshore communications



CDM-800 Back Panel

Specifications

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|--------------------------------------|--|----------------------|
| Transmit Data Rate (Pilots OffOn) | QPSK | 0.479 – 108.255 Mbps |
| | 8PSK | 1.740 – 160.0 Mbps |
| | 16APSK | 2.575 – 160.0 Mbps |
| | 32APSK | 3.623 – 160.0 Mbps |
| Transmit Symbol Rate | QPSK | 1 to 62 Msps |
| | 8PSK | 1 to 62 Msps |
| | 16APSK | 1 to 47 Msps |
| | 32APSK | 1 to 37 Msps |
| FEC | DVB-S2 Decoder (ACM, CCM and VCM modes) Short Frame, Normal frame | |
| Modulation & FEC | Data Rate Range (Normal FEC frame, pilots on) | |
| QPSK 1/4 | 0.479 – 29.672 Mbps | |
| QPSK 1/3 | 0.641 – 39.731 Mbps | |
| QPSK 2/5 | 0.771 – 47.779 Mbps | |
| QPSK 1/2 | 0.965 – 59.850 Mbps | |
| QPSK 3/5 | 1.160 – 71.922 Mbps | |
| QPSK 2/3 | 1.291 – 80.029 Mbps | |
| QPSK 3/4 | 1.452 – 90.029 Mbps | |
| QPSK 4/5 | 1.549 – 96.064 Mbps | |
| QPSK 5/6 | 1.615 – 100.148 Mbps | |
| QPSK 8/9 | 1.724 – 106.914 Mbps | |
| QPSK 9/10 | 1.746 – 108.255 Mbps | |
| 8PSK 3/5 | 1.740 – 107.853 Mbps | |
| 8PSK 2/3 | 1.936 – 120.011 Mbps | |
| 8PSK 3/4 | 2.178 – 135.007 Mbps | |
| 8PSK 5/6 | 2.422 – 150.181 Mbps | |
| 8PSK 8/9 | 2.586 – 160.000 Mbps | |
| 8PSK 9/10 | 2.618 – 160.000 Mbps | |
| 16APSK 2/3 | 2.575 – 121.007 Mbps | |
| 16APSK 3/4 | 2.896 – 136.127 Mbps | |
| 16APSK 4/5 | 3.090 – 145.253 Mbps | |
| 16APSK 5/6 | 3.222 – 151.428 Mbps | |
| 16APSK 8/9 | 3.440 – 160.000 Mbps | |
| 16APSK 9/10 | 3.483 – 160.000 Mbps | |
| 32APSK 3/4 | 3.623 – 134.063 Mbps | |
| 32APSK 4/5 | 3.866 – 143.051 Mbps | |
| 32APSK 5/6 | 4.031 – 149.132 Mbps | |
| 32APSK 8/9 | 4.303 – 159.207 Mbps | |
| 32APSK 9/10 | 4.357 – 160.000 Mbps | |
| Encapsulation | Low Overhead Enhanced GSE | |

Modulator Specifications

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|------------------------------------|---|
| Operating Frequency | 50 to 180 MHz |
| | 950 to 2150 MHz (L-Band) |
| | 100 Hz frequency resolution |
| Frequency Stability | ± 0.06 ppm (± 6 x 10 ⁻⁶), 0° to 50°C (32° to 122° F) |
| Scrambling | PL Scrambling (Gold Codes), disabled |
| Spectral Inversion | Normal or inverted |
| Transmit Filtering | Per ETSI EN 302-207 |
| Transmit Filter Rolloff (Alpha) | 20%, 25% and 35% |
| Pilot Insertion | User Selectable – on/off |
| Output Power | -5 to -25 dBm, in 0.1 dB steps (50 – 180 MHz) |
| | -5 to -40 dBm, in 0.1 dB steps (950 – 2150 MHz) |
| Output Power Accuracy | ± 1.0 dB over frequency, data rate, modulation type and temperature range of 0 to 50° C |
| Transmit On/Off Ratio | -60 dBc minimum |
| Harmonics and Spurious | Better than -60 dBc/4 kHz (typically < 65 dBc/4 kHz) Measured from 1 to 500 MHz (50 - 180 MHz) Measured from F _o +/- 500 MHz (950 - 2150 MHz) |

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| Output Phase Noise | < 1° rms double sided, 100 Hz to 1 MHz (minimum of 6 dB better overall than the Intelsat IESS-308/309 requirement) dB/Hz Frequency Offset -66.0 100 Hz -76.0 1 kHz -86.0 10 kHz -96.0 100 kHz Fundamental AC line spurious is -42 dBc or lower The sum of all other single sideband spurious, from 0 to 0.75 x symbol rate, is 48 dBc or lower |
| Impedance | 50 Ω /75 Ω (50 – 180 MHz) 50 Ω (950 – 2150 MHz) |
| Return Loss | 15 dB, minimum (50 – 180 MHz) 12 dB, minimum (15 dB typical) (950 – 2150 MHz) |
| External TX Carrier Off | By TTL 'low' signal |
| Test Modes | CW, 1/0 pattern, 2 ^{N-3} -1 and 2047 patterns |

Packet Processor Supported Protocols

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|-------------------------|--------------------------------------|
| RFC 768 – UDP | RFC 1812 – IPv4 Routers |
| RFC 791 – IP | RFC 2045 – MIME |
| RFC 792 – ICMP | RFC 2474 – Diffserv |
| RFC 793 – TCP | RFC 2475 – Diffserv |
| RFC 826 – ARP | RFC 2578 – SMI |
| RFC 856 – Telnet | RFC 2597 – AF PHB |
| RFC 862 – Ping | RFC 2598 – Expedite Forwarding |
| RFC 894 – IP | RFC 2616 – HTTP |
| RFC 959 – FTP | RFC 3412 – SNMP |
| RFC 1112 – IP Multicast | RFC 3416 – SNMPv2 |
| RFC 1213 – SNMP MIB II | RFC 3418 – SNMP MIB |
| Statistics | Detailed packet and throughput stats |

Connectors

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| 70/140 MHz Transmit | BNC (female) |
| L-Band Transmit | N-type (female) |
| External Reference | BNC (female) |
| 10/100Base-T Ethernet interface (IEEE 802.3u) | 1 x RJ-45 |
| 10/100/1000Base-T Ethernet interface (IEEE 802.3ab) | 2 x RJ-45 |
| Remote Control / Console Port | 9-pin D-sub (male) |

Available Options

| Option | Type |
|-------------------------------|----------|
| -48 VDC, Primary Power Supply | Hardware |
| Transmit Symbol Rate | FAST |
| G.703 Clock Extension | FAST |

Physical, Power & Environmental

| | |
|--|---|
| Dimensions (1RU) (height x width x depth) | 1.75" x 19.0" x 17.7" (4.4 x 48 x 44.8 cm) approximate |
| Power Supply | 100-240 VAC, 47 Hz-63 Hz IEC 320 input -48 VDC (HW option) |
| Operating Temperature | 0° to 50°C |
| Storage temperature | -20° to 70°C |
| Humidity | 95% maximum, non-condensing |

Accessories

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| CRS-170A | 1:1 Modem Redundancy Switch (L-Band) |
| CRS-180 | 1:1 Modem Redundancy Switch (70/140 MHz) |

Regulatory

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|---------|---|
| CE Mark | EN 301 489-1 (ERM) EN55022 (Emissions) EN55024 (Immunity) EN 61000-3-2 EN 61000-3-3 EN60950 (Safety) |
| FCC | FCC Part 15, Subpart B |



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