



INTRODUCTION

The CDM-740 is Comtech EF Data's point to multi-point IP satellite modem that provides industry-leading performance with integrated DVB-S/S2 and Turbo Product Coding (TPC) technology in a 1 RU package at a very competitive price.

With the innovative high performance architecture, the CDM-740 allows efficient IP networking and transport over satellite links while supporting a wide range of applications and network topologies. The CDM-740 offers dual Gigabit Ethernet interfaces with industry leading packet per second (PPS) processing.

The unit transmits industry standard TPC interoperable with CDM-570/L, -562L, and -564/L modems up to 9.98 Mbps. The receive side supports DVB-S/S2 operation at L-Band up to 62 Msps. Available configurations include receive only and duplex.

The CDM-740 is the ideal platform for Internet Service Providers (ISPs), Satellite Service Providers, Enterprise, Offshore and Broadcasters for a wide range of applications – point to multi-point IP networks, rapid ISP market penetration, offshore communications, high speed content delivery (digital signage & digital cinema) and IPTV / business television.

The CDM-740 utilizes a high performance processor and a real-time operating system (RTOS) combined with multiple Field Programmable Gate Arrays (FPGAs) for optimal performance. All non-volatile memory is provided by both onboard and Compact Flash devices. Field upgrades are easily loaded via the Ethernet port.

The platform includes support for CCM and VCM operation. VCM allows operators to define groups of remotes that can have different modulation and coding parameters to improve efficiency on existing satellite capacity.

KEY FEATURES

- Transmit data rate: TPC 16 kbps to 9.98 Mbps
- Receive data rate: DVB-S/S2 up to 167 Mbps
- Transmit IF:
 - 950 to 2150 MHz or
 - 50 to 180 MHz
- Receive IF: 950 to 2150 MHz

- Data Interfaces:
 - 2 x 10/100/1000Base-T Ethernet
- Management: 10/100Base-T Ethernet for web and SNMP, EIA-232 and CLI
- Modulation types:
 - TPC QPSK, 8-QAM, 16-QAM
- Demodulation: DVB-S/S2 QPSK, 8-PSK, 16-APSK

MANAGEMENT

The modem supports SNMP, web-based and command line interfaces for satellite in-band or local management.

The modem can also be configured and monitored from the front panel, or through the remote M&C port. An event log stores alarm and status information in non volatile memory.

RELIABLE OPERATIONS

- No hard drive – All firmware boots from Flash resulting in no rotating storage media
- High availability product
- Embedded CPU and real time operating system

APPLICATIONS

- Point to multi-point IP networks
- Rapid ISP market penetration
- Offshore communications
- High speed content delivery
 - Digital signage
 - Digital cinema
- IPTV / business television

RECEIVER / DEMODULATION FEATURES

- Support for up to 256 PIDs
- MPE/IP Decapsulation (ETSI EN 301 192 Multi-Protocol Encapsulation)

EASE OF USE

| | |
|---------------------------------------|-----------------------------|
| Configure via Terminal, HTTP & Telnet | SNMP MIB II and Private MIB |
| Serial Remote control | Front Panel Interface |

DISPLAY/LEDs

| | |
|-------------------------|----------------------|
| Unit Status (Red-Green) | Stored Event (Amber) |
| Transmitter On (Green) | RX-1 Status (Green) |
| TX Status (Green) | Test Mode (Amber) |
| Online (Green) | |

CDM-740 Satellite Modem

RECEIVER / DEMODULATOR SPECIFICATIONS

| | |
|--------------------|---|
| L-Band Input | 950 to 2150 MHz, Type F female |
| L-Band Input Power | -25 to -55 dBm |
| DVB-S | ETSI EN 300 421 |
| 1-45 Msps | QPSK FEC: 1/2, 2/3, 3/4, 5/6, 7/8 |
| Alpha (Rolloff) | 35% |
| DVB-S2 | ETSI EN 302 307 |
| 1-62 Msps | QPSK FEC: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 8-PSK FEC: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10 |
| 1-47 Msps | 16-APSK FEC: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 |
| Alpha (Rolloff) | 20%, 25% 35% |
| LNB Support | Tuner: 13/18VDC @ 400 mA |

TRANSMIT / MODULATOR SPECIFICATIONS

| | |
|-----------------|--|
| Frequency Range | 50 to 180 MHz IF, 950 to 2150 MHz L-Band, 100 Hz frequency resolution |
| Data Rate Range | Programmable in 1 bps step |

| Modulation & FEC | Data Rate Range |
|------------------|---|
| 21/44 QPSK TPC | 16 kbps to 2.860 Mbps |
| 3/4 QPSK TPC | 16 kbps to 4.500 Mbps |
| 7/8 QPSK TPC | 16 kbps to 5.250 Mbps |
| 0.95 QPSK TPC | 16 kbps to 5.666 Mbps |
| 3/4 8-QAM TPC | 16 kbps to 6.750 Mbps |
| 7/8 8-QAM TPC | 16 kbps to 7.875 Mbps |
| 0.95 8-QAM TPC | 16 kbps to 8.500 Mbps |
| 3/4 16-QAM TPC | 16 kbps to 9.000 Mbps |
| 7/8 16-QAM TPC | 16.8 kbps to 9.980 Mbps |
| Scrambling | Comtech, IESS-315 per ITU V.35 (Intelsat variant), Disabled |

CONNECTORS

| | |
|----------|---|
| 1 RJ-45 | 10/100Base-T Ethernet interface (IEEE 802.3u) Maximum Ethernet packet size 1522 bytes including Ethernet headers & CRC |
| 2 RJ-45 | 10/100/1000Base-T Ethernet interfaces (IEEE 802.3ab) Maximum Ethernet packet size 1522 bytes including Ethernet headers & CRC |
| 1 RJ-12 | Terminal (RS-232) Interface |
| 1 DB-9 | Redundancy Interface TX, RX traffic alarms and unit faults |
| 3 F-Type | (2) L-Band Input (1) L-Band Monitor Output |
| 1 BNC | IF Transmit Output |
| 1 N-Type | L-Band Transmit Output |
| 1 BNC | Reference: External Input / Internal Output |

| | | |
|------------------------|--|---|
| Frequency Stability | ±0.06 ppm, 0° to 50°C (32° to 122°F) | ±0.06 ppm, 0° to 50°C (32° to 122°F) |
| Output Power | -5 to -25 dBm, 0.1 dB steps | -5 to -40 dBm, 0.1 dB steps |
| Power Accuracy | ± 1.0 dB over frequency and temperature | ± 1.0 dB at 25 C over frequency and temperature |
| Phase Noise | < 1 degree RMS double-sided, 100 Hz to 1 MHz | < 1 degrees RMS double-sided, 100 Hz to 1 MHz |
| Transmit Filtering | IESS-308/-309 spectral mask | |
| Alpha (Rolloff) | 35% | |
| Harmonics and Spurious | < -60 dBc/4 kHz over operating frequency range (Typically < -65 dBc/4 kHz) | |
| BUC Reference (10 MHz) | Via Tx IF center conductor, 10 MHz per reference, selectable ON/OFF, 0 dBm ±3 dB | |

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, 47Hz-63Hz IEC 320 input |
| Power Consumption | 80 W maximum, no BUC supply 300 W maximum, 24 VDC BUC supply 300 W maximum, 48 VDC BUC supply |
| Operating Temperature | 0° to 50°C |
| Storage temperature | -20° to 70°C |
| Humidity | 95% maximum, non-condensing |
| Weight | 8 lbs (3.63 kg) without BUC supply 12 lbs (5.44 kg) with 48 VDC BUC supply |
| Agency | CE and FCC Part 15 Class B |

AVAILABLE OPTIONS

| | How Enabled | | How Option | |
|--|-------------|--------|------------|--------------------------------|
| | Enabled | Option | Enabled | Option |
| FAST TX TPC Data Rate | FAST | | Hardware | Modulator TPC |
| FAST RX Symbol Rate | FAST | | | |
| FAST RX DVB-S/S2 16-APSK | FAST | | Hardware | 24 VDC BUC PS 48 VDC BUC PS |
| FAST TX 70/140 MHz and L-Band 950-2150 | FAST | | | |

