



Overview

Now available is a new product in the 500 Series Satellite Modem product family, the CDM-570. Capable of optimizing satellite communications, this low cost modem features data rates from 2.4 kbps to 5 Mbps, fast acquisition, second generation Turbo Product Coding and a variety of modulation techniques. Additionally, with an IF range of 50 to 90 MHz or 100 to 180 MHz, it is the ideal solution when connecting to conventional up and down converters with 70/140 MHz interfaces.

The CDM-570 provides the same feature set as the CDM-570L L-Band Satellite Modem with the exception of frequency range, with interfaces and options to meet virtually any network environment. Available interfaces include synchronous EIA422/530, V.35, EIA232 and G.703 T1/E1. A range of forward error correction is available in the CDM-570, including: 2nd Generation Turbo Product Coding (TPC), Viterbi, Reed-Solomon and Pragmatic Trellis Coding Modulation (TCM). Featured modulation techniques are Phase Shift Keying (PSK) and Quadrature Amplitude Modulation (QAM), specifically, 8-PSK, BPSK, QPSK, OQPSK and 16-QAM, with code rates spanning from Rate 5/16 through Rate 0.95 depending on modulation type.

The CDM-570 enables both local and remote configuration and management, offers a built-in redundancy controller plus supports a special feature to control the distant end of a satellite link using Comtech EF Data's proprietary overhead channel, called Embedded Distant-End Monitor and Control (EDMAC). The EDMAC mode is transparent to the user and requires no additional equipment or cabling. The Automatic Uplink Power Control (AUPC) feature can be used in conjunction with EDMAC, enabling the modem to automatically adjust its output power to maintain the Eb/No of the remote end of the satellite link constant for protection against rain fading.

Packaged in a rack-mountable 1U enclosure, the advanced architecture is based on Field Programmable Gate Array (FPGA), with internal Flash memory for simplified field updates. The CDM-570 is also compatible with a number of Comtech EF Data modems, making it possible for existing customers to seamlessly add this powerful platform into their installed networks.

For additional bandwidth optimization plus network and capacity management, there are two optional modules for the CDM-570 – the IP Module and Integration with the Vipersat Management System (VMS).

IP Module

The optional IP Module can be included at initial purchase or added as an upgrade to units already in the field. The IP Module entails both hardware and software components, and provides the same robust, IP-centric features as the CDM-570L, CDM-IP 550 and CDM-IP 300L. Standard features are:

- easyConnect™ for set up with minimal configuration
- Static IP routing for unicast and multicast
- Powerful network management via SNMP, Web or Telnet
- IGMP v1 and v2 for management of multicast groups
- Symmetric as well as asymmetric operation for maximum bandwidth efficiency
- Point-to-Point or Point-to-Multi-Point configuration

Also available as options to the IP Module are a number of advanced features that provide additional bandwidth efficiencies. These features can be enabled at initial purchase or after installation, and include Header Compression, Payload Compression, Quality of Service and 3XDES Encryption.

Header Compression

Header Compression is an optional feature of the IP Module that can be activated via the purchase of the FAST feature. Deploying this feature is simple and operation is independent of Quality of Service, with configuration on a per route basis, as well as enabled/disabled for the overall system. By utilizing this functionality, the bandwidth required for Voice over IP (VoIP) applications can be reduced by up to 60%. The user interface also

provides statistics to display the total bytes of the pre-compressed and post-compressed traffic and effective compression ratio.

Payload Compression

Compressing the payload (data) condenses the size of data frames, reducing the satellite bandwidth required to transmit across the link. The IP Module supports Payload Compression, which can provide bandwidth savings in excess of 40%.

Payload Compression can be activated via the purchase of the FAST feature. Depending on the network, Payload Compression can be configured on a per route basis, as well as enabled/disabled for the overall system. And, there are statistics that report the level of compression that has been achieved.

The CDM-570 with IP Module applies Header Compression first, followed by Payload Compression. So, for maximum bandwidth optimization, we recommend that customers enable both of these FAST software features, Header Compression and Payload Compression.

Quality of Service

The IP Module supports multi-level Quality of Service that minimizes jitter and latency for real time traffic, such as VoIP or video, provides priority treatment to mission critical applications and still allows non-critical traffic to use the remaining bandwidth for maximum utilization. Three modes of QoS are available in the IP Module. When setting QoS, only one of the three modes can be used at a time.

Max/Priority

QoS could be enabled to assign a maximum bandwidth that any traffic flow could utilize combined with the prioritization from level one through eight for each flow.

Min/Max

The QoS parameters are expanded to address minimum bandwidth requirements. From a configuration standpoint, setting the minimum specification for user-defined classes of traffic ensures that a certain level of bandwidth is always applied to given flows. Conversely, in this mode, the user can also configure the maximum bandwidth allowed for specific classes of traffic.

DiffServ

Differentiated Services (DiffServ) is an industry-standard method of adding QoS to IP networks. It offers the capability to prioritize certain types of traffic and various methods of traffic handling based on the class of a particular stream. This approach is based on the premise that it is acceptable to provide one application with higher QoS over another application. The IP Module supports DiffServ. For example, the DiffServ can be configured to provide interactive traffic, such as voice and video, with higher priority than non-real-time traffic, such as e-mail. And, as a standards-based approach to QoS, the CDM-570 with IP Module is able to seamlessly co-exist in networks that already have DiffServ deployed.

Data Encryption

The IP Module provides optional 3xDES data encryption to prevent unauthorized access to data over the satellite link, and is configurable on a per route basis. Each unit supports eight encryption keys and eight decryption keys, all user-configurable. Each route can be configured for encryption by any of the eight available keys, random key method, or transmitted in clear.

Integration with Vipersat Management System

When configured with the IP Module, another option for the CDM-570 is integration with the Vipersat Management System to provide a fully automated network and capacity management tool designed specifically for satellite networks. VMS provides traditional monitor and control functions more efficiently than other M & C protocols. It gives satellite service providers and enterprise operators the ability to dynamically adjust bandwidth utilization based on application, load or schedule.

VMS also allows the CDM-570 Satellite Modem to switch from shared to dedicated mode. Inbound transmissions from remotes can be switched from a shared Selective Time Division Multiple Access (STDMA) mode to a dedicated Single Carrier Per Channel (SCPC) connection manually or automatically, triggered by application or load, or on a scheduled basis. This enables the network to more effectively handle connection-

oriented applications and reduces both latency and network congestion. Through VMS, dynamic point-to-point mesh connections can be established between remotes. The result is an economical and flexible network, enabling bandwidth to be shared and directed where it is needed for any mix of IP voice, video or data traffic.

Compatibility

The CDM-570 is backwards compatible with a number of Comtech EF Data modems, including CDM-IP 300L, CDM-500, CDM-550, CDM-550T, CDM-IP 550, CDM-570L, CDM-600 and CDM-600L. Additionally, it is interoperable with the SDM-300A and SDM-300L3 modems.

The CDM-570 is compatible with the CRS-300 1:N Redundancy Switch. For more information on the CRS-300, please refer to the datasheet available on our web site.

Replacement for CDM-550

The CDM-550 product has been an integral component of satellite communications networks around the globe for several years. We will continue to build the CDM-550 units as long as there is sufficient market demand to do so. However, with the introduction of the CDM-570, we are now offering a more feature rich 70/140 MHz satellite modem that can be easily integrated into existing networks with CDM-550s or deployed as replacements. Additionally, for new networks, Comtech EF Data recommends that our customers utilize the CDM-570 instead of the CDM-550 due to its more robust and advanced feature set – key differences are summarized below:

	CDM-570	CDM-550 / CDM-550T
Data Rate	2.4 kbps to 5 Mbps	2.4 kbps to 2.048 Mbps
Forward Error Correction	Turbo Product Coding (2 nd Generation) Viterbi Reed-Solomon Pragmatic Trellis Coding Modulation	Turbo Product Coding (1 st Generation only) Viterbi Reed Solomon Sequential
Modulation	8-PSK BPSK QPSK OQPSK 16-QAM	BPSK QPSK OQPSK
Interfaces	G.703 T1 G.703 E1 Balanced or Unbalanced EIA-422/EIA-530 V.35 Synchronous EIA-232	EIA-422/EIA-530 V.35 X.21 Synchronous/Asynchronous EIA-232
Frequency Range	50 to 90 MHz 100 to 180 MHz	52 to 88 MHz 104 to 176 MHz
IP Module	Available at initial purchase or as an upgrade	Available only with CDM-IP 550 model at initial purchase
VMS Integration	Available at initial purchase or as an upgrade	Not available

Benefits of CDM-570 Satellite Modem

Designed for enterprise applications, the CDM-570 optimizes satellite communications and provides an advanced feature set. Flexibility and cost-effective performance are integral to the CDM-570, with interfaces and options to meet virtually any network environment. The benefits of this offering are countless, including reducing costs associated with satellite communications, optimizing communications, allowing seamless integration into existing networks of Comtech EF Data modems, enabling priority treatment of real-time applications and reducing configuration complexity. For more detail, please refer to the product datasheet and user manual.

If you have any questions about this announcement, please contact your Comtech EF Data sales associate.

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