Temperature Hardened DOCSIS®2.0 and EuroDOCSIS Cable Modem

Transponder

Description

A DOCSIS® and EuroDOCSIS Rugged Cable Modem (DRM Series) is a cable modem that is specially designed for installations where the temperature can be extreme, uncontrolled, and typical of the outside plant in an HFC cable television network. It is designed to meet DOCSIS® and EuroDOCSIS cable modem specifications and can be used for data communications between computers and/or other Customer Premise Equipment (CPE) or applications just like any other cable modem. There is one major difference: it can be installed both in the outside or inside plant since it is designed with components rated for extreme temperatures.

Devices that are connected in the outside plant also must be more resistant to electrical over-voltages and surges. All Electroline DRM products have been designed to pass stringent surge tests specified by the Institute of Electrical and Electronics Engineers.

DRM Series

Applications

There are many applications requiring data communication from sites where the environment would cause a consumer-grade cable modem to fail or perform poorly. An Electroline DRM can be used in these applications to generate incremental revenue and provide service that would otherwise go unrealized or be provided by a competing communications provider. Typical consumer-grade cable modems are not designed to operate at extreme temperatures common in the outside plant of an HFC network. Because they are not designed and tested for extreme temperatures, they could perform outside of the limits of acceptable RF performance or even stop working altogether. The uncertainty of possible interference with other services is a risk for the cable operator if a consumer-grade cable modem is used. The Electroline DRM Series is tested in extreme environments and is a "good neighbor" to all the services that are carried by HFC networks.

The Electroline Advantage

The Rugged Cable Modem (DRM Series) is one of Electroline's DOCSIS® and EuroDOCSIS based products that are designed to operate in the outdoor network environment. This product line also includes the DHT Series of status monitoring transponders. All of these offerings provide network operators with robust, affordable options to maximize network reliability and Minimize down time.

Features

- Proven technology with millions of DOCSIS® and EuroDOCSIS® integrated circuits deployed.
- DOCSIS® 2.0 and Euro-DOCSIS 2.0 Compliant
- Can Monitor Network and VoIP Service with Optional EnetMonitor™ Firmware
- Downloadable VoIP testing functions
- Embedded Web Server for Status indications
- 10/100 BASE-T Ethernet CPE interface
- USB for Windows 2000//XP
- Various Power options
- Surge Protection
- Operating Temperature Range –40 to +75°C

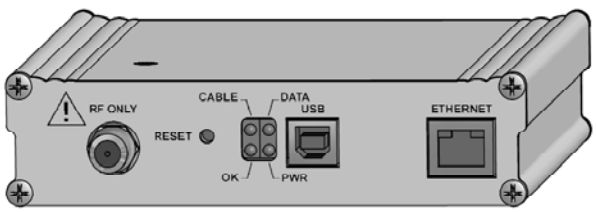
Specifications - Cable Modem

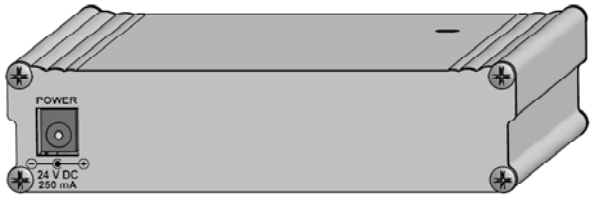
Upstream (Transmitter)		
Compliance	**EuroDOCSIS 2.0**	**DOCSIS® 2.0**
Model	DRM-GP-NA-09	DHT-GP-NA-08
Frequency Band	5 to 65 MHz	5 to 42 MHz
Level Range	TDMA +68 to +114 dBuV (32QAM, 64QAM) +68 to +115 dBuV (8QAM, 16QAM) +68 to +118 dBuV (QPSK) S-CDMA +68 to +113 dBuV (all modulations of S-CDMA)	TDMA +8 to +54 dBmV (32QAM, 64QAM) +8 to +55 dBmV (8QAM, 16QAM) +8 to +58 dBmV (QPSK) S-CDMA +8 to +53 dBmV (all modulations of S-CDMA)
Modulation Type	QPSK, 8QAM, 16QAM, 32QAM, 64QAM and 128QAM	
Modulation Rate (nominal)	TDMA: 160, 320, 640, 1280, 2560 and 5120 KHz S-CDMA: 1280, 2560 and 5120 KHz	
Bandwidth	TDMA: 200, 400, 800, 1600, 3200 and 6400 KHz S-CDMA: 1600, 3200 and 6400 KHz	
Output Impedance	75 Ω	
Output Return Loss	> 6 dB	
Downstream (Receiver)		
Center Frequency	112 to 858 MHz ± 30 KHz	91 to 857 MHz ± 30 KHz
Level Range (one channel)	43 to 73 dBuV for 64QAM 47 to 77 dBuV for 256QAM	-15 dBmV to +15 dBmV
Modulation Type	64QAM and 256QAM	
Symbol rate (Nominal)	6.952 Msym/sec (64QAM) and 6.952 Msym/sec (256QAM)	5.056941 Msym/sec (64QAM) and 5.360537 Msym/sec (256QAM)
Bandwidth	8 MHz	6 MHz
Total Input Power (40 to 900 MHz)	< 30 dBmV	
Input (load) Impedance	75Ω	
Input Return Loss	> 6 dB (88 to 860 MHz)	
Ports and Connectors		
CPE Interface Power	RJ45 10/100BASE-T auto-detect and USB 1.1 type B 5MM	
HFC Network Side Interface Connector	Coaxial “F”-type per ISO 169-24	
Surge Protection (F-connector) Ring Wave Combination Wave	 IEC 61000-4-12, Level 4 (4KV/133A) IEC 61000-4-5, Level 4 (4KV/2KA)	 IEEE C62.41-1991, cat A3 6KV 200A IEEE C62.41-1991, cat B3 6KV 3KA
Environmental Specifications		
Operating Temperature Range	-40°C to +75°C (-40°F to 167°F)	
Storage Temperature Range	-45°C to +85°C (-49°F to 185°F)	
Humidity	0 to 90%, non-condensing	
Mechanical Specifications		
Dimensions	17.14cm X 12.95cm X 3.32CM	

Note: Specifications are subject to change without notice.

Model Options

DRM-GP-NA-08-00	DOCSIS 2.0 Industrial Cable Modem, with USB and Ethernet connections, 24 volt Power
DRM-GP-NA-08-E1	DOCSIS 2.0 Industrial Cable Modem, with USB and Ethernet connections, 240 volt Power
DRM-GP-NA-08-T1	DOCSIS 2.0 Industrial Cable Modem, with USB and Ethernet connections, 120 volt Power
DRM-GP-NA-09-00	EuroDOCSIS 2.0 Industrial Cable Modem, with USB and Ethernet connections, 24 volt Power
DRM-GP-NA-09-E1	EuroDOCSIS 2.0 Industrial Cable Modem, with USB and Ethernet connections, 240 volt Power





For more information on our products, please visit: www.electroline.com or call: 800-461-3344