

Ethernet over twisted pair or coaxial cable
using VDSL2 (EoVDSL) technology



Description

The ComNet™ CNFECL1MC and CNFE1CL1MC-M are environmentally hardened modems that support Ethernet over twisted pair or coaxial cable using VDSL2 technology at data rates of up to 90 Mbps. Ethernet data may be transmitted over a telephone-grade twisted copper pair, legacy serial cabling, or standard 75 ohm coaxial cable circuits, making these rugged units ideal for those applications where it is desired to utilize an existing installed base of copper wiring for Ethernet transmission. These modems are the perfect solution for upgrading a legacy twisted copper or coaxial cable plant for use with Ethernet, when compared to the significant costs of installing new network cabling. The fastest usable data rate is automatically selected, depending upon the transmission distance and cable quality. Designed for long-term reliable operation in harsh industrial environments, the CNFECL1MC-M may be deployed in most out-of-plant installations, such as those found in intelligent transportation systems and factory automation/control applications. Two different package sizes (small and standard) are available; the unique ComFit package configuration provides either stand-alone or card cage mounting, and the small-package size of the CNFECL1MC-M allows the unit to be installed in those locations where space is at a premium, while the CNFE1CL1MC can be stand-alone or rack mounted. LED status indicators are provided

Applications

- Ethernet transmission over existing copper telephone-grade, serial or 75Ω coaxial cable

Features

- **Utilizes latest VDSL2 technology for fastest data rate transmission and greatest transmission distance**
- Supports transmission distances of up to 10,000 ft (3 km) over twisted copper, or up to 1500 ft (457 m) over coaxial cable
- Symmetric line rates of over 91 Mbps
- Automatically sets fastest possible data rate vs. cable quality and transmission distance
- User-configurable master/remote, forward error correction, asymmetrical/symmetrical data, and long-reach/short-reach selection
- IEEE 802.3 Compliant. 10/100 BASE-T/TX Ethernet port with automatic MDI/MDI-X crossover
- Screw Terminals for twisted copper circuits, or BNC connector for coaxial cable
- Fully compliant with the environmental requirements (ambient operating temperature, mechanical shock, vibration, humidity with condensation, high-line/low-line voltage conditions, and voltage transient protection) of NEMA TS-1/TS-2 for Traffic Signal Control Equipment
- Voltage transient protection on all power and signal input/output lines provides protection from power surges and other voltage transient events.
- Model CNFE1CL1MC-M is a smaller-sized package for stand-alone mounting only, for use in those applications where space may be limited
- Model CNFE1CL1MC may be utilized as a stand-alone package, or may be mounted within the ComNet C1 Card Cage, and is fully hot-swappable
- Lifetime warranty



specifications

INTERFACE

Ethernet Port:

Ethernet connector: RJ45
Cable: Cat 5, Cat 5e, Cat 6
Data Rate: 10/100Mbps
Distance: 100m (328ft)

Line Side Port 1 (Twisted Pair):

UTP connector: Screw Terminal Block
Cable: Telephone-grade 19 to 26 AWG (one twisted pair)

Throughput:

	(Downstream	/	Upstream)
1000 ft (305 m)	70 Mbps	/	68 Mbps
2500 ft (762 m)	26 Mbps	/	17 Mbps
5000 ft (1524 m)	16 Mbps	/	1 Mbps
7500 ft (2286 m)	5 Mbps	/	0.5 Mbps
10,000 ft (3048 m)	1 Mbps	/	0.25 Mbps

Line Side Port 2 (75Ω Coax):

Coaxial connector: BNC
Impedance: 75 ohm coax

Throughput:

	(Downstream	/	Upstream)
200 ft (61 m)	88 Mbps	/	95 Mbps
500 ft (152 m)	85 Mbps	/	93 Mbps
1000 ft (305 m)	83 Mbps	/	89 Mbps
1500 ft (457 m)	76 Mbps	/	83 Mbps

Faster data rates and greater transmission distances thru coaxial cable are possible, depending upon the type and quality of the coaxial cable utilized

USER-CONFIGURABLE SELECTION OF:

- Master/Remote Operation
- Symmetrical/Asymmetrical Data
- Forward Error Correction
- Long or Short Range operation for optimal BER (Bit Error Rate) performance

ELECTRICAL & MECHANICAL

Power:

Stand Alone: 12–27 VAC @ < 320 mA or
12–27 VDC @ < 320 mA

Rack Mount (CNFE1CL1MC):

From Rack
Number of Rack Slots: 1 (CNFE1CL1MC)
Overload Protection: Automatic Resettable
Solid-State Current Limiters
Meets IPC Standard

Circuit Board:

SIZE (L×W×H)

Small (CNFE1CL1MC-M): 4.1 × 3.7 × 1.1 in.,
(10.4 × 9.4 × 2.8 cm)
Standard Size (CNFE1CL1MC): 6.1 × 5.3 × 1.1 in.,
(15.5 × 13.5 × 2.8 cm)
Shipping Weight: <2 lbs./0.9 kg

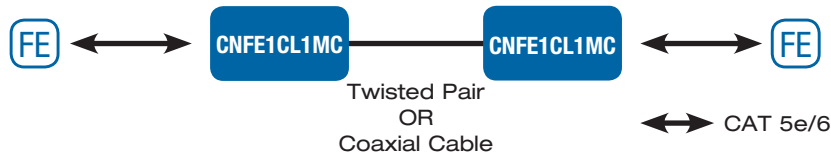
ENVIRONMENTAL

MTBF: >100,000 hours
Operating Temp: -40° C to +75° C
Storage Temp: -40° C to +85° C
Relative Humidity: 0% to 95% (non-condensing)*

* May be extended to humidity with condensation conditions by adding suffix '/C'



PART NUMBER	DESCRIPTION	MEDIA REQUIRED	MAX. DISTANCE	# RACK SLOTS
CNFE1CL1MC-M	Ethernet over Twisted Pair or Coax	See "Interface" Above	See "Interface" Above	N/A
CNFE1CL1MC	Ethernet over Twisted Pair or Coax	See "Interface" Above	See "Interface" Above	1



3 CORPORATE DRIVE | DANBURY, CT 06810 | USA
T: 203.796.5300 | F: 203.796.5303 | TECH SUPPORT: 1.888.678.9427 | INFO@COMNET.NET
8 TURNBERRY PARK ROAD | GILDERSOME | MORLEY | LEEDS, UK LS27 7LE
T: +44 (0)113 307 6400 | F: +44 (0)113 253 7462 | INFO-EUROPE@COMNET.NET