comnet
Communication Networks

INSTALLATION AND OPERATION MANUAL

CNFE2CL2MC

2 ETHERNET CHANNELS OVER EITHER 2 TWISTED PAIR OR 2 COAXIAL CABLES USING VDSL2 (EOVDSL) TECHNOLOGY

The ComNet™ CNFE2CL2MC is an environmentally hardened modem that supports two Ethernet channels over either two twisted pair or two coaxial cables 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 this rugged unit 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. The CNFE2CL2MC may be deployed in most out-of-plant installations, such as those found in intelligent transportation systems and factory automation/control applications. LED status indicators are provided for rapidly ascertaining the operating status of the modem and the link.

See **Figures 1 – 6** for complete installation details.

The CNFE2CL2MC standard size unit may be directly plugged into the ComNet Rack (Part C1) or operated as a standalone module. See **Page 4** for mounting instructions.

FIGURE 1 – CNFE2CL2MC STANDARD SIZE UNIT

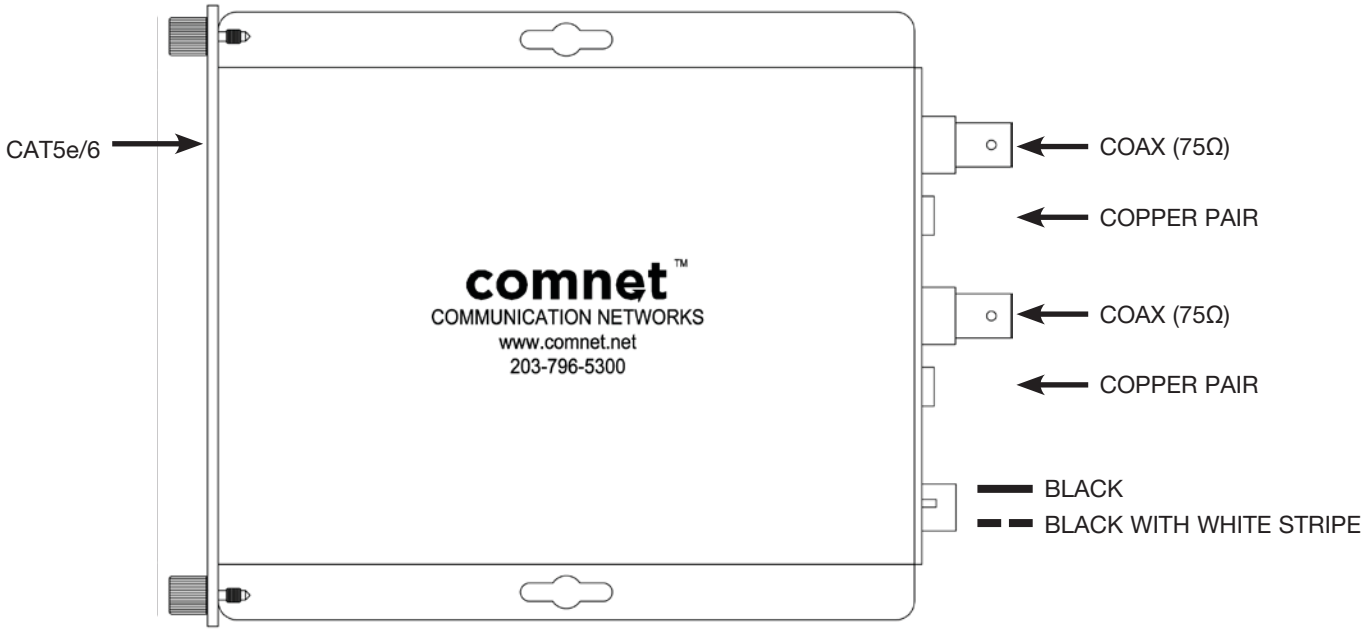


FIGURE 2 – CNFE2CL2MC STANDARD SIZE UNIT

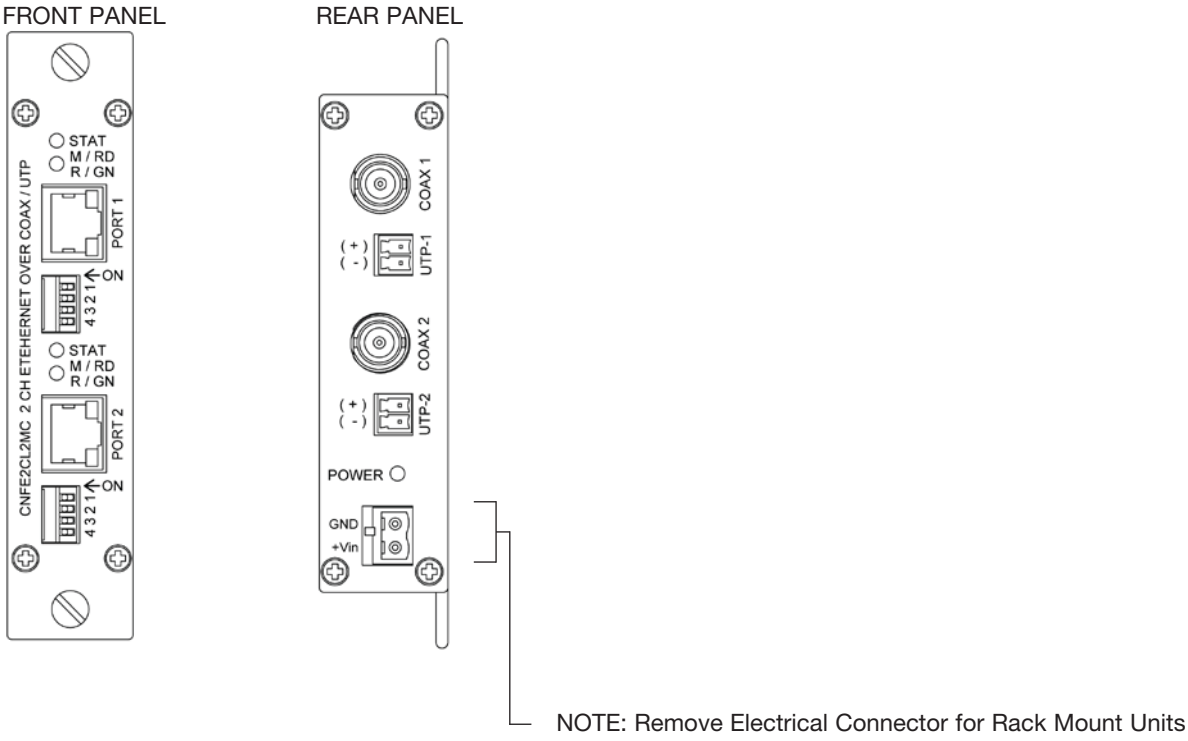
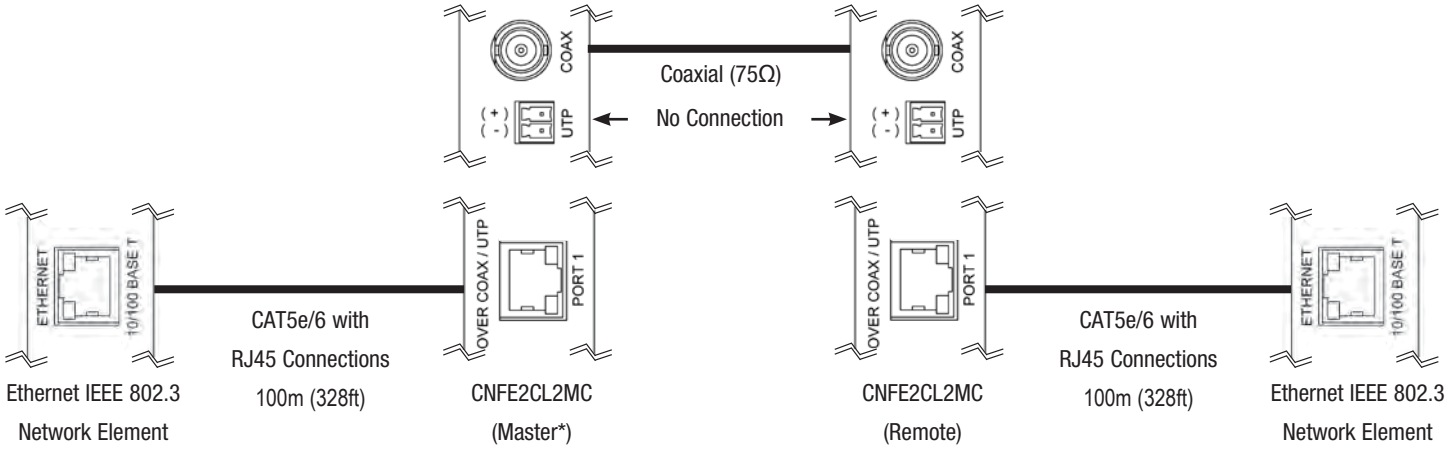
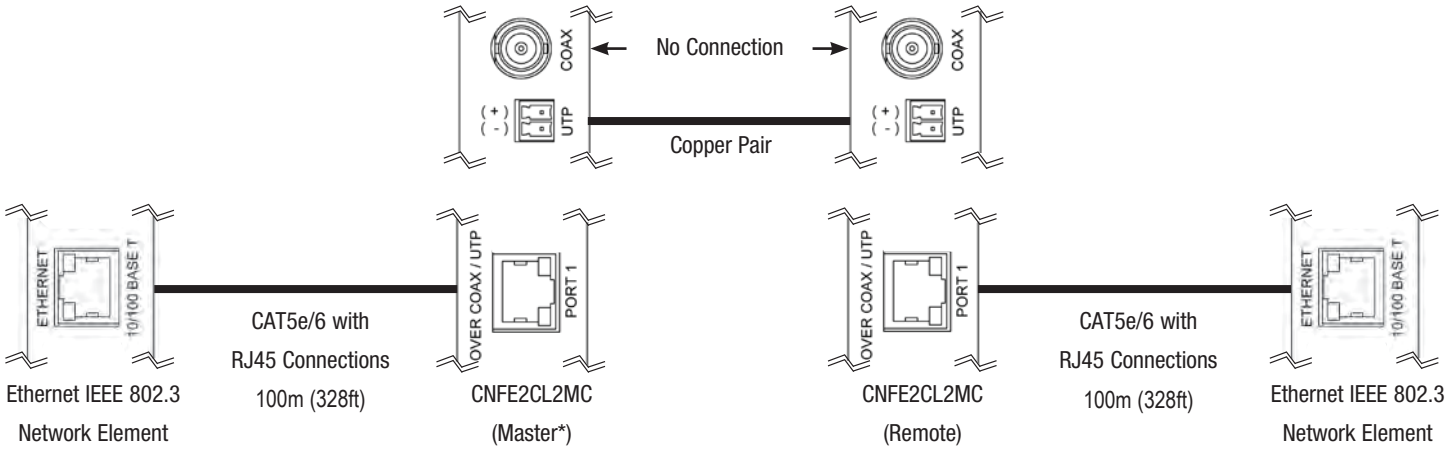


FIGURE 3 – POSSIBLE ETHERNET CONFIGURATIONS

Ethernet IEEE 802.3 Network Element determined by user.



OR



** To optimize the bandwidth usage, master unit should be located at video source if asymmetrical mode is selected.*

FIGURE 4 – DISTANCE VS. SPEED

Line Side Port 1:			
UTP connector:	Screw Terminal Block		
Cable:	Telephone grade 19 to 26 AWG (one twisted pair)		
Throughput:	(Down Stream	/	Up Stream)
1000 ft (305 m)	70 Mbps	/	65 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:			
Coax connector:	BNC		
Impedance:	75 ohm coax		
Throughput:	(Down Stream	/	Up Stream)
250 ft (76 m)	91 Mbps	/	84 Mbps
500 ft (152 m)	86 Mbps	/	82 Mbps
1000 ft (305 m)	65 Mbps	/	69 Mbps
1500 ft (457 m)	40 Mbps	/	52 Mbps

FIGURE 5 – LED INDICATORS

	LINE STATUS (STAT)	RED MASTER (M/RD) or GRN REMOTE (R/GN)	POWER
GREEN	Line side activity	Remote Configuration	Unit powered up
RED	–	Master Configuration	–
OFF	No activity		Unit powered down

LED STATUS	Low Constant Flashing	Fast Constant Flashing	On	Intermittent Flashing
UNIT STATUS	Idle (Line Is Not Connected)	Master/Remote Negotiating	Idle (Line Is Connected)	Data Flow

FIGURE 6 – SWITCH SETTINGS

SWITCH	DOWN (ON)	UP (OFF)	DEFAULT SETTING
1	Remote	Master	One ON, one OFF as a pair
2	Forward Error Correction Off	Forward Error Correction On	ON
3	Asymmetrical Data	Symmetrical Data	ON
4	Long Reach > 1000ft (305m)	Short Reach < 1000ft (305m)	ON

MECHANICAL INSTALLATION INSTRUCTIONS

INSTALLATION CONSIDERATIONS

This EoVDSL link is supplied as a Standalone/Rack module. Units should be installed in dry locations protected from extremes of temperature and humidity.

C1-US, C1-EU, C1-AU OR C1-CH CARD CAGE RACKS

CAUTION: Although the units are hot-swappable and may be installed without turning power off to the rack, ComNet recommends that the power supply be turned off and that the rack power supply is disconnected from any power source. **Note:** Remove electrical connector before installing in card cage rack.

1. Make sure that the card is oriented right side up, and slide it into the card guides in the rack until the edge connector at the back of the card seats in the corresponding slot in the rack's connector panel. Seating may require thumb pressure on the top and bottom of the card's front panel.

CAUTION: Take care not to press on any of the LEDs.

2. Tighten the two thumb screws on the card until the front panel of the card is seated against the front of the rack.

WARNING: Unit is to be used with a Listed Class 2 or LPS power supply rated 12–24VDC/AC@1A VDC @ 1A.

IMPORTANT SAFEGUARDS:

A) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

B) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

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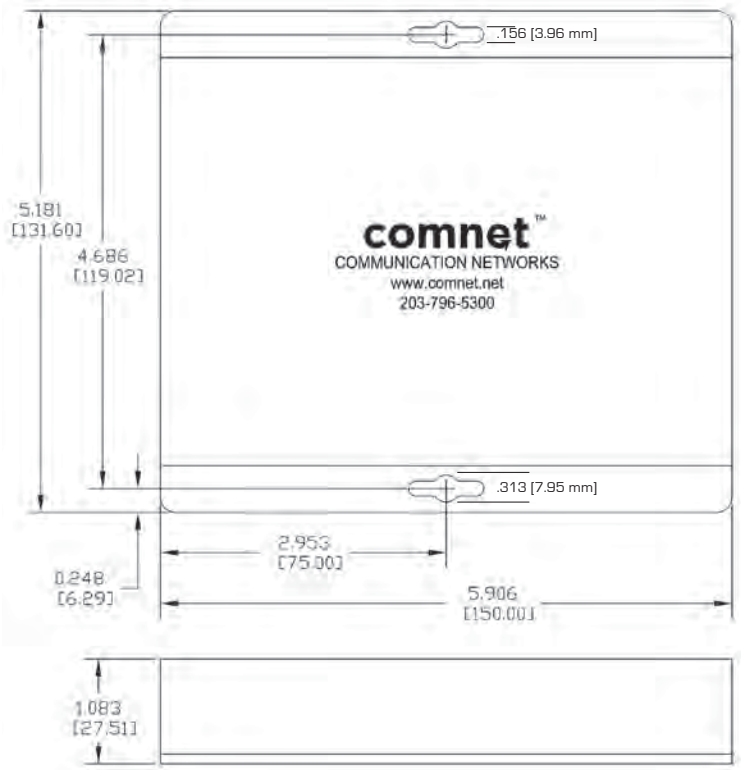
FIGURE A

Dimensions are for a standard ComNet™ one slot module



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