comnet
Communication Networks

EoVDSL* Drop-and-Repeat/Point-to-Multipoint over Copper Cable Transmission System

VDSLMS-2

APPEARANCE

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DESCRIPTION

The ComNet™ VDSLMS-2 consists of one each 10/100TX 8-port managed switch, one each 2-channel EoVDSL uplink modem, and a mounting chassis, to easily and inexpensively aggregate Ethernet-enabled equipment at remote field locations back to a central or head-end location over existing copper infrastructure. The VDSLMS-2 is 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 VDSLMS-2 automatically selects the fastest usable data rate, depending upon the copper circuit transmission distance and cable quality. Utilizing the latest generation VDSL2 technology for the fastest data rate and greatest transmission distance, any standard telephone-grade twisted copper pair, legacy serial cabling, or standard 75Ω coaxial cable may be used, and transmission distances of up to 1.8 miles (3 km) between drops over twisted copper, or up to 1500 ft (457 m) between drops over coaxial cable are supported. The easily configured 10/100 Mbps 8-port managed switch accommodates up to six Ethernet-compatible devices, with the other two ports allocated to the 2-channel EoVDSL uplink modem. More than one EoVDSL channel may be created by connecting additional uplink modems to any of the managed switch 10/100TX ports. Plug-and-play operation, automatic learning, negotiation, and crossover detection are supported. Full network management, including IGMP snooping and Spanning Tree protocols are provided, and ensure the smooth flow of data traffic even when multiple video sources are added and dropped over the network. Designed for long-term reliable operation in harsh industrial environments, the VDSLMS-2 may be deployed in most out-of-plant installations, such as those found in intelligent transportation systems and factory automation/control applications. The chassis is provided for mounting the managed switch and uplink modem onto one common platform, creating a compact, easy to integrate, self-contained system. The managed switch and uplink modem may also DIN-rail mounted by the addition of a ComNet model DINBKT1 adaptor plate.

EoVDSL = Ethernet over Very High Speed Digital Subscriber Line

APPLICATIONS

› Industrial Security:
  › Any Ethernet-compatible equipment with a maximum data rate of 100 Mbps
  › Ethernet-compatible access control systems, intercom systems, and IP-compatible CCTV camera surveillance networks
  › VOIP (Voice over IP) telephony networks
› ITS/Transportation:
  › Connecting Ethernet-based traffic signal controller units onto an existing twisted copper pair or coaxial cable circuit
  › Video Detection Systems (VDS) for analyzing traffic flow patterns and disturbances

FEATURES

› Designed as a very low-cost and simple to implement solution for drop-and-repeat Ethernet-over-copper transmission circuits

› Provides greater flexibility and the same functionality as drop-and-repeat EoVDSL managed switches costing considerably more

› Latest generation VDSL2 technology for fastest data rate and greatest transmission distance

› Modular, Field-Expandable Design: Supports more than one EoVDSL channel by adding additional 2-channel EoVDSL uplink modems

› Uses telephone-grade twisted copper pair, legacy serial cabling, or standard 75Ω coaxial cable circuits to create a drop-and-repeat/point-to-multipoint Ethernet-based network

› Ideal for those applications where an existing installed base of copper wiring is available.

› Automatically selects fastest usable data rate, depending upon the copper circuit transmission distance and cable quality.

› Transmission Distances of up to 1.8 miles (3 km) between drops over twisted copper, or up to 1500 ft (457 m) between drops over coaxial cable

› Designed for installation in harsh out-of-plant/unconditioned industrial or roadside operating environments (-40º to +75º C ambient). Fully compliant with the environmental requirements of NEMA TS-2 for Traffic Signal Control Equipment

› Natural convection cooling; no fans or air filters for the highest level of reliability, and zero periodic maintenance

› 120/240 VAC power supply included. The VDSLMS-2 may also be operated from an external source of +12 to +27 VDC.

› 5 Year Warranty

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ORDERING INFORMATION

Part Number	Description
VDSLMS-2	1 × 8-port managed Ethernet switch with (8) 10/100TX ports + 1 × 2-Port Ethernet over Twisted Pair or Coax VDSL modem
Options	Plug-in Power Supply (Included)
	Add '/C' for Conformally Coated Circuit Boards (Extra charge, consult factory)
	DIN-Rail Mounting Adaptor Plate Kit – With mounting hardware (Optional, order model DINBKT1)

MANAGED SWITCH SPECIFICATIONS

Connector	8 RJ-45 for 10/100Mbps
Technology	Store-and-Forward switching architecture
Transfer Rate	14880 packets per second for 10Mbps 148,800 packets per second for 100Mbps
Network Cables	UTP/STP Cable: 100Meters
MAC Address	8K MAC address Table
Data Buffer	2Mbits
Switch Technology	Non-blocking Store-and-Forward w/ 1.6Gbps Switch Fabric
LED	Per unit: Power Per RJ-45 port: Link/Activity, 100Mbps, Full duplex/Collision
EMI & Safety	FCC Class A, CE, UL, cUL
IEEE Standards	IEEE802.3, 802.3u IEEE802.3x Flow control and Back Pressure IEEE802.1D Spanning Tree protocol (Rapid Spanning Tree Not Supported) IEEE802.1Q VLAN Tagging IEEE802.1p Class of Service IEEE802.3ad Link Aggregation
Voltage Regulation	Solid-State
Circuit Board	Meets IPC Standard
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)†

SOFTWARE FEATURES SPECIFICATIONS

Management	1. Web management (IE) 2. RS-232 console management 3. Telnet
Trunk	IEEE 802.3ad Trunk with LACP for load distribution control and fail over recover Up to 4 ports per group, max 4 Groups
Class of Service	Global system supports 2 queues for Hi and Low priority.
QoS	Global System support 8 levels of priority and mapping to Hi/Low priority queue for Class of Service
VLAN	Port based VLAN, 802.1Q Tag VLAN, Protocol Type VLAN, GVRP support VLAN ID up to 4094, VLANs up to 256 groups
DHCP	Support DHCP client
IP Multicast	Support IGMP Snooping, supports 256 groups. Support 2 types of Query mode for Enable/Disable or Auto Query
Filter Database	Support port static MAC address lock, MAC Filter, Port Security.
Port Mirror	Online traffic monitoring on up to eight ports.
Broadcast Control	None, 5%, 10%, 15%, 20%, 25%
Spanning Tree	IEEE802.1d support RFC Standard RFC 768 UDP, RFC 783 TFTP, RFC 791 IP, RFC792 ICMP, RFC 854 TELNET Server/Client, RFC 1112 IGMP, RFC 2068 HTTP, RFC 2674 VLAN MIB, RFC 1493 Bridge MIB, RFC 1157 SNMP, RFC 1213 MIB II, Bridge MIB, RFC 1643 Ethernet Like, RFC 1757 RMON1, LANTECH Enterprise MIB, RFC 1215 Trap.
Protocol	CSMA/CD

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EoVDSL UPLINK MODEM SPECIFICATIONS

Ethernet Port
Ethernet connector: (2) RJ-45
Cable: Cat 5, Cat 5e, Cat 6
Data Rate: 10/100Mbps
Distance: 100m (328ft)

Line Side Port 1 (Twisted Pair)

UTP connector: (2) 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)

Coax Connector: (2) BNC
Impedance: 75 ohm

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 (500 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

Overload Protection
Automatic Resettable Solid-State Current Limiters

Circuit Board
Meets IPC Standard

System Outline Dimensions
(L×W×H) 6.8 × 4.4 ×8.5 in.
(17.7 × 11.2 × 21.6 cm)

Shipping Weight:
<5 lbs./2.25 kg

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)†

VDSLMS-2 Power Requirements:
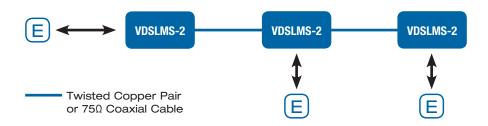A 100-264 VAC wall-mount power supply is provided.

System Power (switch & uplink modem) Requirements for Operation from External Low-voltage DC Sources
+12 – +27 VDC @ < 1 A

AGENCY COMPLIANCE

FC CE cULus RoHS C

† May be extended to humidity with condensation conditions by adding suffix '/C'
NOTE: In a continuing effort to improve and advance technology, product specifications are subject to change without notice.

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── Twisted Copper Pair or 75Ω Coaxial Cable