

G.hn 2.0 Gigabit Ethernet

1:1 Phone Line MDU Solution

Model MDF-2400



CPE-1100



Introduction

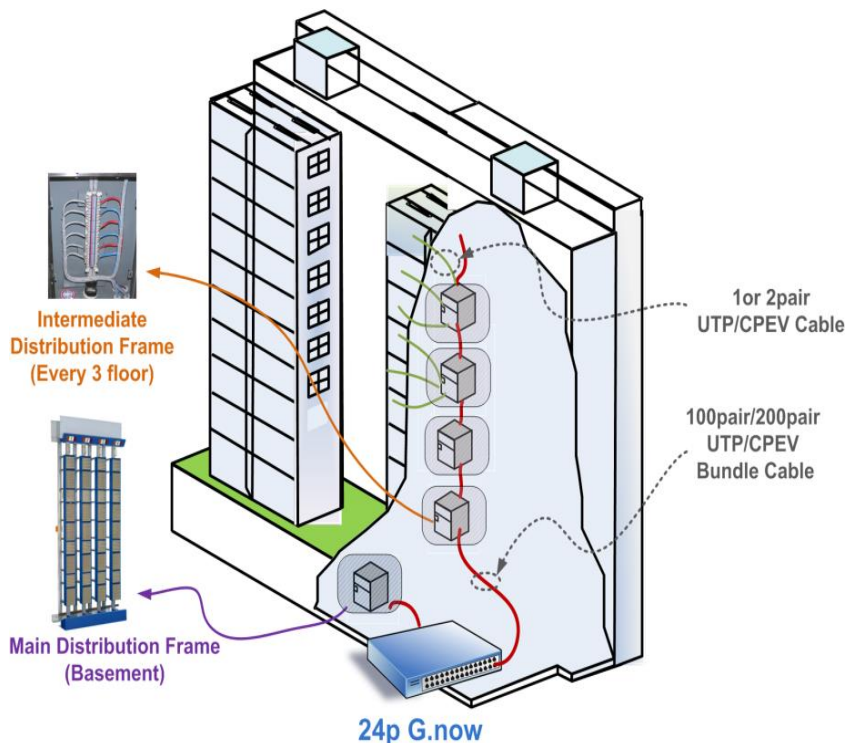
Opticonn model MDF-2400, G.hn 2.0 phone line solution enables high speed internet to be delivered at 1Gbps Up and Downstream service to subscribers using legacy 2 pair phone cable in MDU's. By using previously installed infrastructure (phone line or optional coax cable), installers and service providers can achieve significant reduction in CAPEX and OPEX while maximizing profit.

MDF-2400 main frame receives 10GE or PON input from OLT and delivers 1 GE to subscribers using legacy phone line. MDF-2400 has various uplink module options to accommodate a variety of network interfaces.

CPE-1100 is a customer premise unit located in the home supporting ITU-T G.hn Networking Standards.



Network Configuration



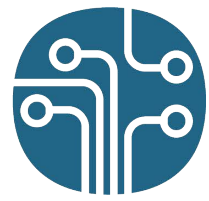
Benefits

- ✓ Provides Point-to-point connection via existing telephone line(1pair or 2pair)
- ✓ Up to 1000Mbps through CAT3 Riser/Bundle Cable
- ✓ Easy VDSL2 replacement for high-speed broadband service
- ✓ Scalable to max. 256 subscriber service
- ✓ Cost-effective and field proven solution

Features

- ITU-T G.9960 and G.9961 compliant
- 12/24Port G.hn Interface
- 1G/10G SFP/SFP+ optical modules
- 2 different uplink modules supported
- Marvell PonCAT3 High Performance Switch
- 88LX5153/2730, G.hn 2.0 Digital/AFE Processor
- Max. 1000Mbps Ethernet throughput
- Dynamic PSD, Power Mask Notching
- Priority Parameter based QoS
- IPv6 supported
- Provides 5-10 times speed than legacy VDSL
 - increased spectrum(up to 200MHz)
 - TDD with configurable uplink/downlink ratio
 - NDIM technology for interference mitigation
- Advanced energy-saving technology





Specifications (MDF-2400)

Hardware Specifications

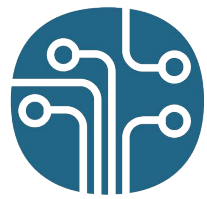
System Architecture & Console	2 x Uplink module slots 1G / 10G Optical Transceiver 12/24port RJ45 Console RJ11, RS232C(Baud Rate 115200)
Main Chipset	Marvell PonCAT3 High Performance Switch & Processor with Network Acceleration Hardware G.hn Chipset : 88LX5153/2730, G.hn Digital & AFE Processor
Memory	1GB, DDR3 SDRAM, 256MB Flash Memory
Physical Dimension(24port)	19" Rack Mount type, 1.5U 13.77"(D) x 17.32"(w) x 2.59"(H)
Switching Fabric	88Gbps
Management	Syslog, SNMPv2, RMON, SSH, TFTP, FTP Security by using password for log-in via Console and Telnet NTP, Port mirroring, TCP DUMP
FAN(12/24port)	3ea FAN Module, Max. 7,500rpm / 4ea FAN Module, Max. 7,500rpm
LED	Power, System Active, Management, G.hn Link

Environmental Specifications

Input power & frequency	110~220V AC and 50/60Hz
Power Consumption	Max 80W
Operating temperature/ humidity	-10 °C ~ 60 °C / 0 ~ 90% non-condensing
Storage temperature	-20 °C ~ 70 °C

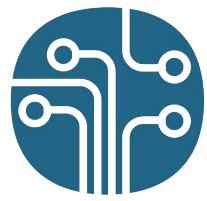
G.hn Standards and Certifications

Modulation	OFDM(Orthogonal Frequency Division Multiplexing)
G.hn Framing	IUT-T Standard-based G.hn G.9960/61
Standard/ Certifications	ITU-T G.9960 Support(G.hn PHY) ITU-T G.9961 Support(G.hn MAC) ITU-T G.9962 Support(Management Plane) ITU-T G.9954 Support(Phoneline networking transceivers) ITU-T G.9980 (TR-069 Remote management) IEEE 802.3z for 1000Base-X IEEE 802.3x for Flow control IEEE 802.1p for CoS (Class of Service) IEEE 802.1Q for VLAN Tagging Certifications: Complies with UL, CE, CUL, FCC Part 15 Class B, EMC 89/336/E EC, ICES-003



Features and Services

Mac Address numbers	16K
VLAN Number	4K VLAN
Layer 2	802.1W STP, RSTP, PVSTP 802.1D Spanning Tree Protocol 802.1Q VLAN(4K) and VLAN Trunking 802.3ad Link Aggregation(MAX 32 Groups & 8members for each group) Jumbo Frame up to 9K
Management	Syslog, SNMPv2, RMON, TFTP FTP, NTP, TCP DUMP, Port Mirroring Security by using password for log-in via Console and Telnet
Remote Reset	Remote H/W Reset Dying Gasp Watch dog
Multicast	IGMPv1/V2/V3 IGMP Snooping IGMP Snooping Proxy Reporting Multicast Group up to 4K Multicast Traffic Block / Filtering Protection of malicious multicast traffic from subscriber port
DHCP	DHCP Relay DHCP Sever DHCP message Filtering DHCP Request Flooding protection(DHCP Snooping rate-limiting) DHCP Option 82
Security	DLF, Broadcast, TCP-SYN, IGMP Attack protection DHCP Filtering, Mac Filtering, NetBEUI, NetBIOS Filtering, NBT Packet filtering based on IP address and TCP, UDP port Packet control to well-known port no MAC Spoofing, flooding protection(static MAC, MAC count) Multicast/Broadcast flooding protection Service classifying for the Control Packet(Ping, Telnet, SNMP, FTP, TFTP etc.) 8 CPU queue, Rate-limit to CPU traffic
QoS / ACL	Layer 2(Source/Destination MAC Address, VLAN ID, COS Field) Layer 3(Source/Destination IP Address, DSCP Field) Priority/Parameter based QoS 8 queue per port SPQ, WRR, SPQ + SDWRR Egress Rate-shaping : port , queue DSCP marking/remarking Ingress ACL : 128



Specifications (CPE-1100)

1Port/4Port Specifications

System Architecture	G.hn Modem G.hn Line 1PORT(RJ45 connector), GE LAN 1 / 4 PORT(RJ45 connector)
Memory	64MB, DDR2 SDRAM
Physical Dimension	4 port: 5.7" X 3.93" x 1.1" 1 port: 3.58" X 2.32 X 1.1" (W x D x H)
Max. Transfer Rate	Up to 1000Mbps
Modulation	OFDM(Orthogonal Frequency Division Multiplexing)
Management	HTTP Web-based; Firmware upgrade via TFTP
Networking Protocols	802.1D Ethernet Bridge, 802.1Q VLAN, QoS, IGMP Snooping

Environmental Specifications

Power Consumption	Max. 6W
Operating Temperature/ Humidity	0 °C ~ 50 °C / 10 ~ 90%
EMC	EMI Class B

Media Interface Specifications

Interface Type	RJ11, 1Port G.hn Interface RJ11, 1 Port Phone Interface RJ45, 1 Port / 4 Port Ethernet Interface
Power Switch / Input	On/Off Switch / DC5V/2A

G.hn 2.0 Specifications

Standard/Certification	ITU-T G.9960 Support(G.hn PHY) ITU-T G.9961 Support(G.hn MAC) ITU-T G.9962 Support(Management Plane) ITU-T G.9954 Support(Phoneline networking transceivers) ITU-T G.9980 (TR-069 Remote management) IEEE 802.3z for 1000Base-X IEEE 802.3x for Flow control IEEE 802.1p for CoS (Class of Service) IEEE 802.1Q for VLAN Tagging Certifications: Complies with UL, CE, CUL, FCC Part 15 Class B, EMC 89/336 / EEC, ICES-003
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