DATACOM

DM985

GPON ONU FAMILY

PRODUCT DATASHEET

DM985

GPON ONU – OPTICAL NETWORK UNIT

HIGH CAPACITY SOLUTION FOR FTTX GPON ACCESS NETWORKS

GPON (Gigabit Passive Optical Network) is a technology for optical access, offering high speed and cost-effective solutions for broadband and Triple Play services (voice, video and data). This technology allows fiber optic sharing among customers, reducing costs and maximizing bandwidth usage.

DM985 GPON ONU (Optical Network Unit) family offers access solution for high-speed fiber optic. It delivers data, voice and video over IP services for residential users. Ethernet data is transported transparently over a GPON link and delivered to an optical line termination unit (OLT) as the DM4610 OLT (4-GPON and 8-GPON) and the DM4615 (16-GPON).

DM985-424 unit has an advanced Wi-Fi interface to support applications that demand high data traffic. Four high-gain external antennas (two for 2.4 GHz and two for 5 GHz) provide superior coverage, which together with MIMO 2x2 and 5.8 GHz beamforming creates a fast and stable Wi-Fi connection.

It is fully compatible with ITU-T G.984 and ITU-T G.988.

- Product line with two ONU product versions, with and without Wi-Fi

- GPON class B+ Transceiver

- Low power consumption

- Designed for high availability

- Modern and stylish design

- Gigabit Ethernet interface

- Bridge / router

- Dual Band Wi-Fi

- MIMO 2x2

- High gain external antennas

- Beamforming in 5 GHz

FEATURE LIST

GPON

- Compliant with ITU-T G.984.
- SC/APC connector
- Supports burst mode of 1.244 Gbit/s Upstream
- Supports reception of 2.488 Gbit/s Downstream
- Laser type B+, according to ITU-T G.984.2 Amd1
    - Transmitter Power: +0.5dBm to +5dBm
    - Receiver Sensitivity: -27dBm
    - Reception overload: -8dBm
    - Wavelengths:
        - Upstream: 1310nm
        - Downstream: 1490nm
- Laser according to FCC 47 CFR Part 15, Class B, FDA 21 CFR 1040.10 and 1040.11, Class I
- Dying Gasp
- Activation by automatic Discovery of serial number and password as per ITU-T G.984.3
- VLAN 802.1p Upstream
- Flexible mapping between GEM Ports and TCONTs
- AES-128 decryption
- DBA support

MANAGEMENT

- IPv4 WEB management
- Allows remote firmware upgrade through OLT and Web interface.
- Web interface with two access security levels
- Factory reset
- Provisioning via OMCI protocol according to G.984.4 and G.988

ROUTER

- Multiple WAN connections
- Point-to-point Protocol over Ethernet (PPPoE client)
- Dynamic Host Configuration Protocol (DHCP client)

- Static IP assignment
- DHCP server for LAN interfaces
- NAT/NAPT
- IPv4 and IPv6 support
- DNS Relay
- SNTP

GIGABIT ETHERNET INTERFACE – LAN

- 10/100/1000 Base-T using RJ-45 connectors
    - DM985-100: 1 port
    - DM985-424: 4 ports
- Auto negotiation or manual configuration
- MDI/MDIX
- Bridging (802.1D)
- Virtual switch based on 802.1q

FXS (VOICE)

- 2 x RJ-11 Connectors
- DTMF dialing
- Multiple Voice CODECs
- Echo cancellation according to ITU-T G.168
- Packet Loss Concealment
- SIP (RFC3261)
- SDP (RFC2327)
- RTP (RFC3550/3551)

WIRELESS (WI-FI)

- 802.11 a/b/g/n/ac
- Dual band: 2,4 GHz and 5,8 GHz
- 2,4 GHz: MIMO 2x2 using two 5 dBi external antennas
- 5,8 GHz: Beamforming MIMO 2x2 using two 5 dBi external antennas

STANDARDS AND PROTOCOLS

ITU-T

G.984.1   Gigabit-capable Passive Optical Networks (GPON): General characteristics

G.984.2   Gigabit-capable Passive Optical Networks (GPON): Physical Media Dependent (PMD) layer specification

G.984.3   Gigabit-capable Passive Optical Networks (GPON): Transmission convergence layer specification

G.984.4   Gigabit-capable passive optical networks (GPON): ONT management and control interface specification

G.988   Gigabit-capable passive optical networks (GPON): ONU management and control interface (OMCI) specification

BROADBAND FORUM

TR-156   Using GPON Access in the context of TR-101

TR-247   GPON ONU Conformance Abstract Test Plan

TR-255   GPON Interoperability Test Plan

IEEE

802.1D   MAC bridges

802.1Q   Virtual Bridged LAN (VLAN)

802.1P   VLAN Priority

802.3i   10BASE-T 10Mbit/s (1.25 MB/s) over twisted pair

802.3u   100BASE-TX Fast Ethernet at 100 Mbit/s (12.5 MB/s) w/auto negotiation

802.3ab   1000BASE-T Gbit/s Ethernet over twisted pair at 1 Gbit/s (125 MB/s)

802.3x   Flow Control

ELECTROMAGNETIC COMPATIBILITY

ANATEL – Act 1120 - Technical Requirements for Electromagnetic Compatibility for the Evaluation of Telecommunication Product Conformity

SAFETY

ANATEL – Act 950 - Requirements for the Evaluation of the Conformity of Telecommunications Equipment with respect to the Aspects of Electrical Safety

TECHNICAL SPECIFICATIONS

		DM985-100[2]	DM985-100 HW2 DM985-100 HW3	DM985-424[2]	DM985-424 HW2
Dimensions	Height	29 mm	28 mm	45 mm	33 mm
	Width	130 mm	72 mm	149 mm	149 mm
	Depth	105 mm	90 mm	210 mm	210 mm
Operating Conditions	Temperature Range	0ºC to 50ºC		0ºC to 50ºC	
	Relative Humidity	5% to 95%, non-condensing		5% to 95%, non-condensing	
Power Supply	Input	100 Vac to 240 Vac Full Range, 50 to 60Hz		100 Vac to 240 Vac Full Range, 50 to 60Hz	
	Output	12 Vdc, 500mA		12 Vdc, 1500mA	
	Average power consumption	< 4 W		< 15 W	
	Polarity	⊖—●—⊕		⊖—●—⊕	
Interfaces	LAN 10/100/1000 Base-T	1		4	
	FXS[2]	-		2	
	WLAN	-		802.11 b/g/n/ac	
	WLAN antennas	-		4 antennas in 4 physical stems	4 antennas in 2 physical stems
	Wi-Fi Transmission Power (TX)	-		for 2.4 GHz 19,5dBm , +-90mW (802.1b) 23,0dBm , +-215mW (802.1g) 21,6dBm , +-144mW (802.1n) -------------------------------- for 5.8G GHz 28,0dBm - 630mW (a) 26,6dBm - 463mW (N) 27,3dBm - 535mW(ac)	
	Wi-Fi Receiver Sensitivity (RX)	-		for 2.4GHz: 11g 54M: -72dBm 11n HT20 MCS0: -70dBm 11n HT40 MCS0: -64dBm -------------------------------- for 5.8GHz: 11a 54Mbps:-68dBm 11ac HT20 MCS7: -67dBm 11ac HT40 MCS7: -64dBm 11ac HT80 MCS9: -54dBm	
	USB	-		1 (USB 2.0)	
Features	Router	No limit		-	
Scalability	MAC table (router)	253 addresses		8k addresses	
	Maximum number of WANs	2		2	
	Jumbo frames (Ethernet)	1500 bytes		1500 bytes	
	Jumbo frames (GPON)	1500 bytes		1500 bytes	
	GEM Ports per T-CONT	8		8	
	Maximum number of GEM Ports	8		8	
	Maximum number of T-CONTs	8		8	

	Maximum Wi-fi Connected Devices	-	32
	Maximum throughput (bridge)	980 Mbps up/down	-
	Maximum throughput (router)	970 Mbps up/down[1]	970 Mbps up/down[1]

(1)   Valid for L4 (UDP / TCP) traffic / connections.
(2)   Not available for new purchases

ORDERING INFORMATION

Model	Description	
DM985 – 100 [3] *825.8005.xx*	GPON ONU with one LAN 10/100/1000Base-T (RJ45). Bridge and router operation. WAN-PPPoE or WAN-IP. Plastic cabinet. External AC power supply.	
DM985 – 100 HW2 *825.8011.xx* **DM985 – 100 HW3** *825.8013.xx*	GPON ONU with one LAN 10/100/1000Base-T (RJ45). Bridge and router operation. WAN-PPPoE or WAN-IP. Plastic cabinet. External AC power supply.	
DM985 - 424 [3] *825.8006.xx*	GPON ONU with four LAN 10/100/1000Base-T (RJ45), two FXS (RJ11) and one USB port. Router operation. WAN-PPPoE or WAN-IP. Plastic cabinet with four external antennas. External AC power supply.	
DM985 - 424 HW2 *825.8012.xx*	GPON ONU with four LAN 10/100/1000Base-T (RJ45), two FXS (RJ11) and one USB port. Router operation. WAN-PPPoE or WAN-IP. Plastic cabinet with four external antennas in 2 physical stems. External AC power supply.	

(3) Not available for new purchases.

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