

DATACOM



GPON OLT

OLT – OPTICAL LINE TERMINATOR

PRODUCT DATASHEET

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GPON OLT

OLT – Optical Line Terminator

COMPACT, HIGH CAPACITY OLT FAMILY FOR FTTX GPON ACCESS NETWORKS.

GPON (Gigabit Passive Optical Network) is a technology for optical access, offering high speed and cost effective solution for broadband applications and Triple Play services (voice, video and data). This technology allows the sharing of fiber optics among clients, reducing cost and maximizing bandwidth use.

The DM461x family comprises a complete portfolio of GPON OLTs for FTTx services, including models with 4, 8 or 16 GPON ports and a variety of GE and 10GE network interface options. All models support 1:128 split ratio, totaling capacities ranging from 512 to 2048 customers per OLT.

All OLTs are compliant with the ITU-T G.984 and ITU-T.988 standards. Each GPON link supports 2.488 Gbit/s downstream and 1.244 Gbit/s upstream rates and offers dynamic bandwidth allocation (DBA).

The configuration of the ONUs of the network is performed remotely by the OLTs through the OMCI protocol, according to the ITU-T standards. Also FXS ports to provide VoIP services to customers can be configured in this manner.

Using 4094 VLANs defined in standard IEEE 802.1Q simultaneously, in addition to providing Q-in-Q and VLAN translate features, allowing dual TAG, addition (Q-in-Q), removal or replacement of VLAN, the DM461x line meets a wide range of applications and GPON network concentration needs and interconnection with Metro Ethernet networks.

The traffic and service prioritization of different levels is achieved with the QoS (Quality of Service) features, such as the classification of traffic, SP and WFQ scaling, DSCP mapping for P-bit (PCP), among others.

The Spanning Tree Protocol (STP) and Rapid Spanning Tree Protocol (RSTP), and the ring operation through the EAPS or ERPS protocol, are supported, ensuring the protection of the Ethernet uplinks. In addition, the Link Aggregation (LAG / LACP) feature provides fast uplink expansions.

Through the IGMPv2/v3 protocols, the multicast traffic is distributed to all clients through a single instance of each stream, making it possible to offer video and IPTV services.

The entire line of Datacom OLTs is based on the DmOS operating system, allowing management via a command-line interface (CLI) accessible through SSHv2, Telnet and RS-232 Console. SNMP v1, v2c and v3 agents and an XML interface based on the NETCONF standard are also available. DmOS also allows commit and rollback operations, use of user authentication via RADIUS and TACACS, local and remote Syslog, facilitating equipment configuration, management and troubleshooting.

The equipment and network's security is ensured through protection mechanisms against IP Spoofing, user isolation and ACLs (Access Control List) with multiple comparison parameters.

- OLTs with compact design, 1U high for 19' Racks
- Options with 4, 8 or 16 GPON interfaces
- GE Electrical and Optical SFP and 10GE SFP+ Uplinks
- GPON class B+, C+ and C++
- DHCP option 82
- PPPoE Intermediate Agent
- Redundant AC or DC power supply
- High L2 switching capacity
- RSTP, EAPS and LAG / LACP
- Multicast - IGMP

DIGITAL CITIES

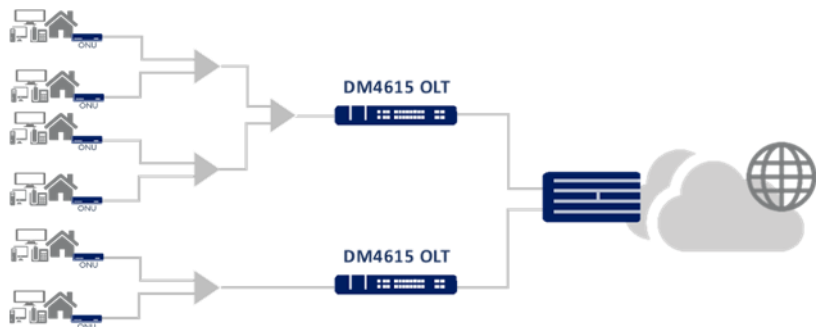
- Modernization of public administration
- Integration of all city institutions
- Presence in remote public administration districts
- Internet access for microbusinesses, creating business opportunities
- Interconnection with emergency services, such as Fire Department, Health and Civil Defense
- Educational laboratories with Internet access
- Remote surveillance
- Local or institutional news services through TV over the metropolitan network

APPLICATIONS

TRIPLE PLAY BROADBAND ACCESS

GPON technology, by means of optical access, provides users higher rates than copper and cable-based technologies, allowing voice (VoIP) and video (IPTV) convergence in a single access.

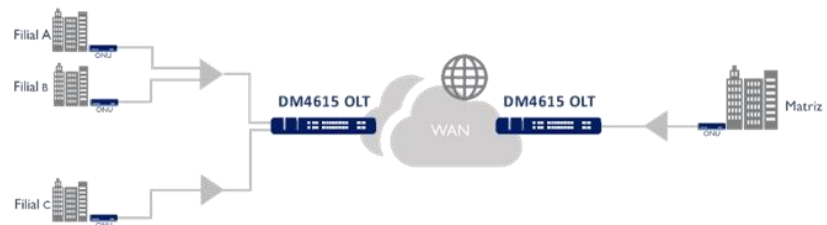
In addition, the feature of point-multipoint network and of passive elements between the central and users reduce the CAPEX and OPEX to offer these services.



CORPORATE SERVICES

DATAKOM OLTs provide various features, enabling data, voice and video services for small, medium and large companies.

The TLS (Transparent LAN Service) function, together with the hairpin, provides LAN-to-LAN services without the need of additional equipment, as for example, routers.



FTTD - FIBER TO THE DESK

The traditional design of LAN networks consists of a structure with copper cables connecting each user's equipment to an access switch, typically installed in a communications room. These access switches are connected to aggregation switches through point-to-point cables or fiber optics. The GPON, through FTTD, simplifies this network by replacing the switches typically by a central OLT central and ONUs on the user's site, reducing the network infrastructure by using passive elements, fiber optics and point-multipoint topology.

DM461x OLTs provide features that allow the implementation of LAN GPON networks for companies of various sizes and needs.

DIGITAL CITIES

Cities are the center of modern society and are becoming more complex every day. Technology can make life better and easier. In this context, universal public services are needed. However, the government shouldn't pay attention only to a digital inclusion network, but must also implement a high-performance network that fosters the city's development.

The implementation of the DM461x OLTs, associated with GPON equipment and DATAKOM Ethernet switches, is a valuable and cost-effective solution for smart cities. Through the numerous features available, it is possible to connect public departments, provide fast, reliable and completely secure internet access to the population and enterprises.

OLT MODELS

DM4611 OLT 4GPON+2GT+2XS

GPON OLT for desktop or 19" rack installation, containing 4 GPON interfaces, 2 electrical GE RJ45 interfaces and 2 10GE/GE SFP+ interfaces. Internal full range AC/DC power supply and power redundancy option through 12V auxiliary input.



DM4612 OLT 8GPON+2GT+2XS

GPON OLT for 19" rack installation, containing 8 GPON interfaces, 2 RJ45 electrical GE interfaces and 2 10GE/GE SFP+ interfaces. Contains two slots for full range AC/DC redundant and hot swappable power supplies.



DM4610 OLT 8GPON+8GX+4GT+2XS

GPON OLT for 19" rack installation, containing 8 GPON interfaces, 8 optical GE SFP interfaces, 4 electrical GE RJ45 interfaces and 2 10GE/GE SFP+ interfaces. Removable ventilation system and two slots for redundant and hot swappable AC or DC power supplies.



DM4615 OLT 16GPON+4GT+4XS

GPON OLT for installation in a 19" rack, containing 16 GPON interfaces, 4 electrical GE RJ45 interfaces and 4 10GE/GE SFP+ interfaces. Removable ventilation system and two slots for redundant and hot swappable AC or DC power supplies.



FEATURE LIST

GPON

- GPON Laser Class B+, C+ or C++
- Maximum range 60km
- AES (Advanced Encryption Standard) 128 bits downstream
- DBA (Dynamic Bandwidth Allocation) and SBA (Static Bandwidth Allocation)
- FEC (Forward Error Correction) upstream and downstream
- ONU activation by serial number, password and serial number + password
- Remote ONU firmware upgrade
- Supports ONU pre-provisioning
- Automatic ONU discovery
- Auto-provisioning of ONU, including the application of profiles for ONUs router
- Hairpin turn
- ONU rogue isolation
- Supports N:1, 1:1 and TLS services
- User isolation
- DHCP option 82
- PPPoE Intermediate Agent
- Static Access List IPv4
- Remote provisioning of FXS ports in ONU via OMCI
- ONU traffic monitoring
- GPON link monitoring

SWITCHING

- Configuration of auto-negotiation by interface
- Auto MDI/MDIX
- Configuration of Duplex by Ethernet interface
- Configuration of L2 Global Aging
- Spanning Tree (STP) and Rapid Spanning Tree (RSTP) Protocols
- EAPS
- Static and dynamics Link Aggregation (LACP)
- Selective Q-in-Q
- VLAN dual mode

SECURITY

- Local and remote Syslog
- User authentication through RADIUS and TACACS+
- Unauthorized access blocking
- ACL (Access Control List) L2 and L3
- IP spoofing protection mechanisms

- Protection mechanisms for Broadcast, Multicast or DLF counterattacks

SERVICE QUALITY

- Classification of packets based on the Ethernet port, MAC, VLAN, DSCP and source / destination IP address
- P-bit (PCP) markdown
- Queue scheduling (Strict Priority and WFQ)
- DSCP mapping for COS
- 8 priority queues per port

MANAGEMENT

- IPv4 management
- In-band and Out-of-Band management
- Statistics per GPON port and per Ethernet port
- Supports commit e rollback operations
- Command Line Interface (CLI) via SSHv2, Telnet and RS-232 console
- Digital diagnostics according to SFF 8472
- Firmware rollback
- Firmware upgrade via TFTP, SCP or HTTP
- Inventory information
- SNMPv1, v2c, v3
- Supports configuration via XML (NETCONF)
- Alarm LED
- Supports storage of up to 2 firmware
- CPU usage monitoring
- SNMP support
- Storage of up to 64 configurations in Flash memory
- CPU and system memory status available through SNMP

MULTICAST

- IGMP snooping with proxy report
- IGMPv2/v3

TECHNICAL SPECIFICATIONS

		DM4611	DM4612	DM4610	DM4615
INTERFACES	GPON	4	8	8	16
	GE (RJ45)	2	2	4	4
	Optical GE (SFP)	-	-	8	-
	Optical 10GE/1GE SFP+	2	2	2	4
	GE Out of band Management (RJ45)	1	1	1	1
	Console (RJ45)	1	1	1	1
	USB Console	-	-	-	1
	Alarms	-	-	-	1 out / 2 in (*)
HARDWARE	Dimensions (H x W x D - mm)	43 x 302 x 231	44 x 445 x 228	44 x 442 x 312	44 x 446 x 271
	Power Supplies	Internal AC/DC Full Range PSU	2 slots for PSU 85 (AC/DC Full Range)	2 slots for PSU 120 AC or PSU 120 DC	2 slots for PSU 125 AC or PSU 125 DC
	Rated voltage	AC: 100 to 240Vac 50/60HZ DC: -48 to -60Vdc (+/-20%)			
	Auxiliary power input	12Vdc	-	-	-
	Max consumption	45W	70W	120W	125W
	Operational temperature	0°C to 65°C / humidity 0% to 95% non-condensed			
	Storage temperature	-10°C to 70°C / humidity 0% to 95% non-condensed			
SCALABILITY	Switching	59 Gbps	74Gbps	94Gbps	148Gbps
	MAC Table	32k	32k	64k	64k
	ONUs per PON link	128	128	128	128
	GEM Ports per PON link	2048	2048	2048	2048
	Service-ports	4096	4096	4096	4096
	DHCP Relay L2	256	256	1024	1024
	CFM (MEPs)	32	32	41	41
SOFTWARE (**)	MPLS	-	-	Yes (Roadmap)	Yes (Roadmap)
	PBR	-	-	Yes (IPv4)	Yes (IPv4)
	VLAN Translate (Ethernet ports)	-	-	Yes	Yes
	VLAN Counters	Only Egress	Only Egress	Ingress/Egress	Ingress/Egress

(*) Functionality in Roadmap. Contact Datacom for availability information.

(**) Only features with differences between OLT models are listed. Other features common to all OLTs are presented in detail in the DmOS Datasheet.

ORDERING INFORMATION

DM4611



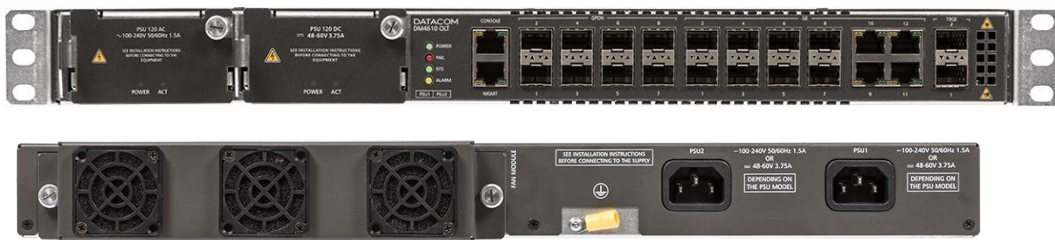
Part No.	Description
DM4611 OLT 4GPON+2GT+2XS 800.5283.xx	GPON OLT for desktop or 19" rack installation, containing 4 GPON interfaces, 2 electrical GE RJ45 interfaces and 2 10GE/GE SFP+ interfaces. Internal full range AC/DC power supply and power redundancy option through 12V auxiliary input.
External PSU 12V/8,5A 820.8013.xx	Optional external power source with 127/220Vac input and 12Vdc/8.5A output to operate as a redundant source for OLT DM4611.

DM4612



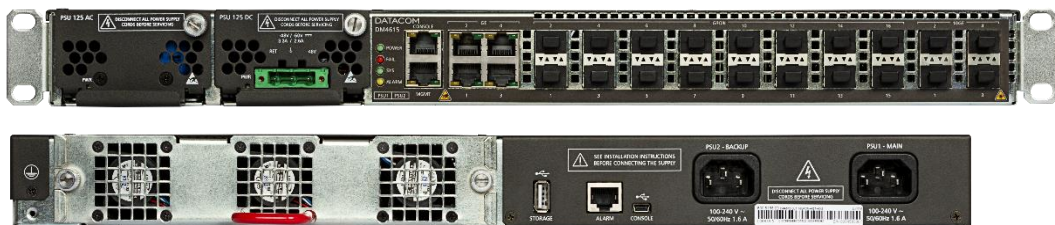
Part No	Description
DM4612 OLT 8GPON+2GT+2XS 800.5285.xx	GPON OLT for 19" rack installation, containing 8 GPON interfaces, 2 RJ45 electrical GE interfaces and 2 10GE/GE SFP+ interfaces. Two slots for PSU85 full range AC/DC redundant and hot swappable power supplies.
PSU 85 800.0830.xx	Power supply with input voltage 127/220Vac or 40 to 72 Vdc, with automatic selection and hot-swap support.

DM4610



Part No.	Description
DM4610 OLT 8GPON+8GX+4GT+2XS (HW2) 800.5165.51 800.5165.60 (FAN included)	GPON OLT for 19" rack installation, containing 8 GPON interfaces, 8 optical GE SFP interfaces, 4 electrical GE RJ45 interfaces and 2 10GE/GE SFP+ interfaces. Removable ventilation system and two slots for redundant and hot swappable AC or DC power supplies
DM4610 FAN 800.5096.xx	Fan module for OLT DM4610. Required for DM4610 on revisions .51 or less. For revisions .60 or greater, this item is only used as a spare fan.
PSU 120 AC 800.5079.xx	120W power supply with 100-240VAC and 50/60Hz input compatible with OLT DM4610. Allows operation as a redundant and hot-swappable source.
PSU 120 DC 800.5080.xx	120W power supply with -48VDC input compatible with OLT DM4610. Allows operation as a redundant and hot-swappable source.

DM4615



Part No.	Description
DM4615 OLT 16GPON+4GT+4XS 800.5198.51 800.5198.60 (FAN included)	GPON OLT for installation in a 19' rack, containing 16 GPON interfaces, 4 electrical GE RJ45 interfaces and 4 10GE/GE SFP+ interfaces. Removable ventilation system and two slots for redundant and hot swappable AC or DC power supplies.
DM4615 FAN 800.5214.xx	Fan module for OLT DM4610. Required for DM4610 on revisions .51 or less. For revisions .60 or greater, this item is only used as a spare fan.
PSU 125 AC 800.5187.xx	125W power supply with 100-240VAC and 50/60Hz input compatible with OLT DM4615. Allows operation as a redundant and hot-swappable source.
PSU 125 DC 800.5188.xx	125W power supply with -48VDC input compatible with OLT DM4615. Allows operation as a redundant and hot-swappable source.

ACCESSORIES

Accessory	Description
SFP GPON B+ PN: Inquire	Optical SFP module, single fiber, singlemode, 1490 nm, compatible with Digital Diagnostics, DFB, minimum output power 1.5 dbm and sensitivity -28 dbm.
SFP GPON C+ PN: Inquire	Optical SFP module, single fiber, singlemode, 1490 nm, compatible with Digital Diagnostics, DFB, minimum output power 3 dbm and sensitivity -30 dbm.
SFP GPON C++ PN: Inquire	Optical SFP module, single fiber, singlemode, 1490 nm, compatible with Digital Diagnostics, DFB, minimum output power 6 dbm and sensitivity -32 dbm.
SFP 1GBE Optical PN: Inquire	Optical SFP module for Gigabit Ethernet applications.
SFP 1GBE Electrical PN: Inquire	Electrical SFP module for Gigabit Ethernet applications.
SFP+ 10GBE PN: Inquire	Optical SFP+ module for 10 Gigabit Ethernet applications.

DATACOM

Rua América, 1000 | 92990-000 | Eldorado do Sul | RS | Brazil

+55 51 3933 3000

sales@datacom.com.br