

EPON-ONU

ETHERNET PASSIVE OPTICAL NETWORK
OPTICAL NETWORK UNIT



Description

The EPON-ONU is the complete customer premises, *Light Link® Direct*, Fibre to the Home (FTTH) solution which delivers point to multipoint (P₂MP) broadband access for “Triple Play” communication services to the home or business. CATV, Fast Ethernet and VoIP telephony are all supported in one easy to manage, highly sophisticated package that functions over only one single mode optical fibre.

The EPON-ONU is specifically designed to operate in a shared fibre environment with up to 32 nodes per Passive Optical Network (PON). The unit provides substantial savings in external cable plant costs plus the optional integrated fibre splice organiser negates the need for any extra boxes. The compact, design has been specifically customised with an easy installation both outdoors or in wiring closets in mind.

The EPON-ONU is powered from an external mains plug-pack or an external battery. There is a battery charging circuit within the unit. During mains failures, the CATV receiver shuts down to conserve power but the Ethernet transceiver and the telephony adapter operate from the external battery.

Each EPON-ONU boasts comprehensive remote management abilities including the ability to disable the CATV receiver. Full QoS services are also available for remote management along with an easy to use, stable software platform.

Features

- ✓ True “Triple Play” service access over IEEE802.3ah compliant PON, shared with up to 32 customers.
- ✓ High-performance optical CATV receiver delivering full bandwidth analog cable television 45 MHz to 870 MHz (110 NTSC or 91 PAL channels), as well as DVB-C and DVB-T digital television standards.
- ✓ Up to two auto-negotiating Fast Ethernet subscriber ports for 10/100 Mbps, half-duplex/full-duplex operation.
- ✓ Strict SLA enforcement for tiered services such as voice and video.
- ✓ Enhanced security with 128 bit AES.
- ✓ Network monitoring and management via 802.3ah OAM protocols and PBN NMS3 software, including bandwidth provisioning and status monitoring.
- ✓ Toll quality integrated VoIP based telephony adapter available as a customer option.
- ✓ Compact, lightweight indoor unit with optional panel mounting box with fibre splice organiser or environmentally friendly outdoor enclosure with integrated splice organiser.
- ✓ Integrated backup power management.

Specifications

Optical Interface

EPON Standard:	IEEE802.3ah
Operating wavelength	
CATV:	1550 nm ± 5 nm
Data RX:	1490 ± 10 nm
Data TX:	1310 ± 20 nm
CATV input	
Range:	-8 dBm to 0 dBm @ 1550 nm
Nominal:	-5 dBm @ 1550 nm
Data RX sensitivity:	< -24 dBm @ 1490 nm
Data RX saturation:	> -3 dBm @ 1490 nm
Data TX output:	-1 dBm to 4 dBm @ 1310 nm
Line speed	
Downstream:	1.25 Gbps
Upstream:	1.25 Gbps
Optical connector:	SC/APC, E2000/APC

Fast Ethernet Subscriber Ports

Interface:	Auto-negotiation, 10/100Mbps, full/half duplex
IEEE802.1D:	64 MAC addresses per Ethernet port
IEEE802.1Q:	VLAN mapping to LLID
IEEE802.1P:	7 priority queues with L2/L3/L4 classification
Frame size:	64 to 1522 bytes
Data security:	Supports 128-bit AES
Logical Link IDs:	3 x LLID
Connectors:	2 x RJ-45 ⁽¹⁾

VoIP Subscriber Port (Option)

VoIP:	SIPv2
Voice algorithms:	G.711, G.726, G.729A, 723.1, Dynamic payload
Features:	Call transfer, Call conferencing, Call forwarding, Caller ID, Call waiting, Do not disturb, DTMF, Echo cancellation, Fax-tone detection pass- through, Silence suppression, VAD
VoIP connectors:	2 x RJ-11 (POTS)

CATV Subscriber Port (Option)

RF output: ⁽²⁾	18 dBmV
RF frequency:	45 MHz to 870 MHz
RF flatness:	± 1 dB
RF connector:	SCTE F-type

CATV Link Performance ⁽²⁾

42 CENELEC channels (as per EN50083-3)

CNR:	> 48 dB
CSO:	> 55 dBc
CTB:	> 61 dBc

79 NTSC CW channels + Digital

CNR:	> 49 dB
CSO:	> 55 dBc
CTB:	> 61 dBc

General

Power input	
Mains:	16 Vac, 1.5 A
External battery:	11 Vdc to 15 Vdc
Power consumption:	
CATV receiver:	2.7 W
Fast Ethernet node:	3.4 W
Voice adapter:	4.0 W
External battery:	Sealed lead-acid 13.8 V, 7 Ah (8 hr uptime ⁽³⁾)
Operating temperature:	-10 °C to 40 °C
Storage temperature:	-20 °C to 70 °C
Dimensions (HxWxD)	
Indoor unit:	170 x 256 x 47 mm
Outdoor unit:	220 x 263 x 83 mm
Ship size (HxWxD)	
Indoor unit:	245 x 350 x 80 mm
Outdoor unit:	245 x 350 x 110 mm
Weight	
Indoor unit:	0.8 kg
Outdoor unit:	1.6 kg (excluding battery)
Ship weight	
Indoor unit:	1.2 kg
Outdoor unit:	2.0 kg (excluding battery)

- (1) If VoIP option is chosen, only one Fast Ethernet (RJ45) port is available.
- (2) Measured in a typical system with an LTM15 laser transmitter and an OLTM optical line terminal module, 5 km single mode fibre, -5 dBm input, 4% OMI.
- (3) Ethernet link uptime during battery operation, with the integrated telephone adapter in on-hook state. CATV receiver doesn't operate during power outages.

Order Details

Model code:

EPON-ONU-[W]-[X]-[Y]-[Z]

Optical Network Unit

Options:

W CATV options

0 Ethernet only, no CATV
TV with CATV overlay

X VoIP options

0 No VoIP telephony
V with 2 x FXS VoIP ports

Y Transmission distance

10 Up to 10 km
20 Up to 20 km ⁽⁴⁾

Z Optical connector options

SC SC/APC optical connector
E E2000/APC optical connector

(4) 20km transmitter uses high power FP laser.

Examples:

EPON-ONU-TV-0-10-SC

Indoor Optical Network Unit with 2 x Fast Ethernet interface, CATV interface, up to 10km transmission distance, and SC/APC optical connector.

EPON-ONU-TV-V-10-SC

Outdoor Optical Network Unit with 1 x Fast Ethernet interface, CATV interface, 2 x FXS VoIP interface, up to 10km transmission distance, and SC/APC optical connector.

Accessories

EPON-ONU-H5 Weatherproof enclosure with fibre organiser tray.

EPON-ONU-MB5 Indoor mounting panel with fibre organiser tray.

EPON-ONU-TM Termination board with insulation displacement connectors

PS16VAC 16 Vac power pack for Australia only. Call for other country specific models.

Companion Equipment

(refer to separate product datasheets for details)

OCMR 19" headend rack:

OLTM Optical line terminal module for 32 subscriber PON.

QOLTM Optical line terminal module for 4 x 32 subscriber PON

Standalone 19" 1RU subrack:

EPON-OLT Optical line terminal unit for 32 subscriber PON.

OSF-19 Optical splitter, up to 64 ports.

Other:

OSP-S Optical splitter, up to 32 ports.

Typical application

