![tellabs logo]

Tellabs® 1600-709GP
Desktop GPON Optical Network Terminal

Flexible, multi-port Fiber-to-the-Desktop (FTTD) provides a variety of service options.

Overview

Designed to deliver powerful business services to end users in Fiber-to-the-Desktop (FTTD) applications, the Tellabs® 1600-709GP Desktop GPON Optical Network Terminal (ONT) incorporates multiple Gigabit Ethernet ports in one compact, cost-efficient package.

Equipped with ITU-T G.984-compliant 2.5 Gbps downstream and 1.25 Gbps upstream GPON interfaces, the Tellabs 1600-709GP Desktop GPON ONT supports the full range of advanced services including voice, video and High-Speed Internet (HSI). Power-over-Ethernet (PoE) compliant with IEEE 802.3at is provided on all four ports providing up to 65 Watts of total power for VoIP phones, security cameras, and access points. Optional battery back-up is available separately, providing up to four (4) hours of back-up time.

Compliant with ITU standard ONT Management Control Interface (OMCI) definitions, the Tellabs 1600-709GP Desktop GPON ONT is manageable from the Tellabs® Panorama™ Integrated Network Manager. The ONT supports the full range of FCAPS functions including supervision, monitoring and maintenance. Optional mounting brackets may be purchased.
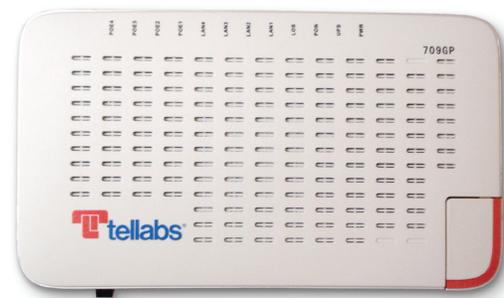
Services

Data
Four 10/100/1000 Base-T Ethernet data interfaces support: Auto-negotiation and MDI/MDIX auto-sensing Data transfer at wire speed Advanced data features such as VLAN tag manipulation, VLAN trunking, classification and filtering Power-over-Ethernet on all ports

VoIP
To enable VoIP access, the Tellabs 1600-709GP Desktop GPON ONT supports interfacing to an external VoIP desktop phone or other IAD device. Quality of service and security are maintained throughout the GPON network.

Video
The Tellabs 1600-709GP Desktop GPON ONT supports video content delivered in the form of Ethernet/IP data (by multicast or unicast). When multicast technology is used for delivering video content through the data channel, the Tellabs 1600-709GP

The Tellabs 1600-709GP ONT features PoE on each data port.

Desktop GPON ONT supports the dedicated multicast GEM port on the downstream. Thus, video content is received and processed by all the ONTs through the unified channel, significantly improving bandwidth efficiency.

In addition, the Tellabs 1600-709GP Desktop GPON ONT supports an Internet Group Management Protocol (IGMP) snooping function to be applied for further optimization. When IGMP snooping is enabled, the Tellabs 1600-709GP Desktop GPON ONT monitors the member joining and leaving activities at the Ethernet service port, and then selectively delivers up to 48 multicast streams. Multicast Quality of Service (QoS) is supported via the 802.1p bits.

Specifications

Dimensions

- 5.84 in H x 10.07 in W x 1.86 in D

Power Supply

- +48V (feed via external power adapter)
- AC adapter input 120/240 volts +/- 10% 50/60 Hz
- Optional battery back-up system
- Dying gasp support

Operating Environment

- Temperature: -5ºC to +55ºC
- Humidity: 5% to 85% relative humidity

Safety & EMI

- ETSI, FCC and UL/ETL certified

Installation

- Wall mounting & desktop mounting
- Optional wall mounting bracket available separately

Network Interface

- Compliant to ITU-T G.984 GPON standards
- SFF type laser, SC/APC connector
- 1.244 Gbps burst mode upstream transmitter
- 2.488 Gbps downstream receiver
- Compliant with ITU-T G.984.2 Amd1, Class B+
- APD receiver and DFB transmitter
- 0.5~+5dBm launch power, -27 dBm sensitivity, and -8dBm overload
- Wavelengths:
  - Upstream 1310nm, Downstream 1490nm
  - Laser compliant to FCC 47 CFR Part 15, Class B and FDA 21 CFR 1040.10 and 1040.11, Class I

GPON Quality of Service

- Fully ITU-T G.984-compliant framing
- Multiple T-CONTs per device
- Multiple GEM ports per device
- Supports single T-CONT and multiple T-CONTs modes
- Flexible mapping between GEM ports and T-CONT
- Activation with automatic discovered SN and password
- AES-128 Decryption with key generation and switching Forward Error Correction
- 802.1p mapper service profile on U/S
- Mapping of GEM Ports into a T-CONT with priority queues-based scheduling
- Support for multicast GEM port

Ethernet Interface

- 10/100/1000 Base-T interface with RJ-45 connectors
- Power-over-Ethernet compliant with IEEE 802.3at on all ports
- Total PoE Power = 62 Watts (when using wall power supply or direct 48Vdc feed)
- Total PoE Power = 38 Watts (when using battery back-up system)
- Link Layer Data Protocol for automated PoE power management
- Ethernet port auto negotiation or manual configuration
- MDI/MDIX automatic sensing
- Hardware priority queues on the downstream direction supporting Class of Service
- 802.1D bridging
- Virtual switch based on 802.1Q VLAN
- Up to 256 MAC address and 4 VLAN group

- VLAN tagging/detagging per Ethernet port
- VLAN stacking (Q-in-Q), VLAN translation, VLAN trunking
- IP ToS/DSCP to 802.1p mapping
- CoS based on VLAN-ID, 802.1p bit, ToS/DSCP
- Marking/remarking of 802.1p
- IGMP v2/v3 snooping
- MAC address limiting to prevent flooding overflow
- Upstream broadcast rate limiting and filtering for security control

LED Indicators

- Power
- Update
- Optical
- Alarm
- LAN

Operations, Administration and Maintenance

- Standards-compliant OMCI as defined by ITU-T G.984.4 and G.983.2
- Management Information Base manipulation over OMCI by Create, Delete, Set, Get and Get Next commands
- Provisioning of multiple services including Ethernet, VoIP, etc.
- Alarming and AVC report, performance monitoring
- Remote image download over OMCI, as well as activation and rebooting
- Holds two versions with image integrity checking and automatic rollback

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North America

Tellabs
1415 West Diehl Road
Naperville, IL 60563
U.S.A.
+1 630 798 8800
Fax: +1 630 798 2000

Asia Pacific

Tellabs
3 Anson Road
#14–01 Springleaf Tower
Singapore 079909
Republic of Singapore
+65 6215 6411
Fax: +65 6215 6422

Europe, Middle East & Africa

Tellabs
Abbey Place
24–28 Easton Street
High Wycombe, Bucks
HP11 1NT
United Kingdom
+44 871 574 7000
Fax: +44 871 574 7151

Latin America & Caribbean

Tellabs
Rua James Joule No. 92
EDIFÍCIO PLAZA I
São Paulo – SP
04576-080
Brasil
+55 11 3572 6200
Fax: +55 11 3572 6225