Tellabs® 1600-611 Single Family Unit ONT

Overview

The Tellabs® 1600-611 Single Family Unit Optical Network Terminal (ONT) supports residential voice, Ethernet, IPTV and RF video overlay services all over a single optical fiber in one cost-effective, easy-to-install unit.

Features

- ITU-G.983 compliant
- Supports 622/155 Mbps asymmetrically on the PON
- Utilizes the 1490 nm wavelength for downstream PON traffic from the Optical Line Terminal (OLT) and 1310 nm wavelength for upstream traffic to the OLT
- Environmentally hardened enclosure
- NEBS Level 3 compliant
- Install either indoors or outdoors
- Powered by a 12V DC power adaptor and supports battery backup

Support

Voice Support

The Tellabs 1600-611 SFU ONT includes four POTS ports for carrier-grade voice services. The POTS ports:

- Provide all System Level Integrated Circuit (SLIC), Codec, Dual Tone Multi-Frequency (DMTF) and dial-pulse detection/decoding functions needed for a complete analog telephone service
- Support Frequency Shift Keying (FSK) Caller ID generation
- Provide Message Waiting Indication (MWI) functions for visual and audible alerts
- Provide balanced five Ringer Equivalency Number (REN) ringing
- Support DTMF generation and decoding, tone generation and modem/fax tone detection
- Support GR-909/metallic loop test functionality

The POTS ports perform all Battery, Over-voltage, Ringing, Supervision, Codec, Hybrid and Test (BORSCHT) functions. The internal line-feed circuitry provides:

- Reverse battery operation
- Loop-start operation
- On-hook transmission

Data Support

The Tellabs 1600-611 SFU ONT supports one 10/100BaseT Ethernet port. The Ethernet service is an IEEE 802.1d transparent bridge based on RFC-2684. Class of service as well as bandwidth is controlled through provider provisionable options. Bandwidth is allocated on a per PVC basis based on peak and sustained cell rates as defined by the ITU. The Ethernet port supports streaming IP video and IPTV content delivery and meets ITU 802.1p QoS standards at the MAC level.

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Video Support

The Tellabs 1600-611 SFU ONT provides a 55–870 MHz RF video overlay AM-VSB service over the 1550 nm optical wavelength on the PON in compliance with the G.983.3 and can handle a variety of digital and analog channels. The ONT functions as an addressable tap and can be enabled or disabled remotely to control theft.

Management

The Tellabs 611 ONT supports management via the ITU G.983.2 OMCI interface to the OLT. When deployed with the Tellabs® 1000 Multi-service Access Series OLT, the 611 ONT can be managed by the Tellabs® 1090 Network Management System.

Specifications

- *ITU-T G.983.1* — Broadband optical access systems based on PON
- *ITU-T G.983.2* — ONT management and control interface specifications for BPON
- *ITU-T G.983.3* — Broadband Optical system with increased service capability by wavelength allocation
- *ITU-T I.363.1* — B-ISDN ATM Adaptation Layer specification: Type AAL1
- *ITU-T I.363.2* — B-ISDN ATM Adaptation Layer specification: Type AAL2
- *ITU-T I.363.5* — B-ISDN ATM Adaptation Layer specification: Type AAL5
- *ATM Forum — af-vmoa-0145.00* AAL2 Loop Emulation Service
- *RFC 3261* — Session Initiation Protocol (SIP)
- *RFC 3265* — Session Initiation Protocol (SIP)

Network Interfaces

- *Downstream* — 622 Mbps @ 1490 nm received optical power levels -8 to -28 dBm
- *Upstream* — 155 Mbps @ 1310 nm transmitted optical power levels 0 to +4 dBm
- *Video* — AM-VSB RF video overlay Distribution @ 1550 nm received optical power levels, +1 dBm to -5 dBm

Subscriber Interfaces
- Four IDC ports for voice connections
- One RJ-45 port for Ethernet
- One type F coax connector for video

POTS Voice Specifications
- Four POTS ports
- Performs all BORSCHT functions
- Up to five REN per line
- Supports loop lengths up to 500 ft
- Loop-start operation with modem/fax tone detection
- DTMF and dial pulse generation/decoding
- Dual tone generators
- A-Law*/μ-Law, linear PCM companding
- GR-909 loop diagnostics
- Draw and Break Dial Tone (DBDT)
- FSK caller ID generation
- Audible/visual MWI indicator support
- AAL1 CES and LES
- AAL2 LES
- SIP-based VoIP

Ethernet Specifications
- Multiple PVC support
- 10/100BaseT auto sensing support with MDIX
- 100 m cable length
- Transparent bridging
- Switched Digital Video (SDV)

External Alarm Interfaces
Five provisionable 24AWG stranded or solid wire pair external alarm contacts enable remote alarm sensing over the OMCI to the Management Center.
- Contact closed: < 25 ohm
- Contact open: > 1 M ohm
- Loop current
  - Contact closed: 2 mA to 21 mA
  - Contact open: 0 mA
- Line voltage
  - Contact closed: 50 mV to 0.5 mV
  - Contact open: -21V DC

LED Panel
LEDs indicate status of general system health and specifc services:
- Power
- Battery
- Fail
- Data
- Video
- Network
- OMCI
- POTS

Video Port Specifications
- 75 Ohm type F
- Coaxial connector
- RF output level: 18 dBmV / channel supports up to eight RF devices
- 55–870 Mhz forward path

Power Specifications
- 12V DC 2.0 max input

Physical Specifications
- Tellabs 1600-611 SFU ONT electronics: 11 in x 11 in
- Optional outdoor enclosure: 13 in x 13 in x 3.5 in with integral 60 ft fiber slack storage
- Total combined weight: 6.25 lbs

Slack Storage Unit
- 60 ft storage
- ~1 in depth, 0 in added depth to enclosure
- Included with enclosure
- 13x13 enclosure
- Low profile — ~3.5 in deep with SSU
- Security screw
- Pad lock support
- Drop-in NID for easy installation and replacement

Environmental Specifications
- Temperature: -40° C to +46° C with solar loading

Certifications
- FCC Part 15 Subpart B, GR-1089, GR-63, GR-487

** Future Release*

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