

# Tellabs® 1000 Multiservice Access Platform: Gigabit Ethernet Transceiver 222 (GbE222) — BBDLC

Transport and uplink new high-bandwidth offerings without abandoning revenue from traditional services.

## Overview

The Tellabs® 1000 Multiservice Access Platform (MSAP) Gigabit Ethernet Transceiver (GbE222) is a high-bandwidth, cost-effective Gigabit Ethernet uplink and inter-terminal transport interface for the Tellabs 1000 MSAP Broadband Digital Loop Carrier (BBDLC) application. The GbE222 installs into the Tellabs 1000 MSAP to support voice transport (GR-303, GR-08, GR-57 and SIP), Ethernet traffic aggregation for High Speed Internet (HSI), IP Television (IPTV), business premises applications and cell site base station traffic backhaul. Furthermore, it provides point-to-point inter-terminal transport between Central Office (CO) based Local Exchange Terminals (LET) and Remote Subscriber Terminals (RST) located in non-environmentally controlled cabinets or huts. The GbE222 provides 2 Gigabit Ethernet ports equipped with optional configurations of 1000-Base-SX Small Form-factor Pluggable (SFP) and 1000-Base-LX SFP optics.

Network operators can use the GbE222 to transport and uplink new high-bandwidth services delivered across the Tellabs 1000 MSAP without abandoning revenue from TDM interfaces and legacy Special Services. Virtual Local Area Network (VLAN) tagging (IEEE 802.1q) and prioritization (IEEE 802.1p) provide the capability to easily segregate traffic by service, customer and priority. Data services such as Transparent LAN Service (TLS) and IPTV services are supported by VLAN stacking (IEEE 802.1ad) and Internet Group Management Protocol (IGMP) Version 2 and Version 3 Snooping and Proxy. Redundancy is supported with the implementation of Link Aggregation (IEEE 802.3ad LAG) at both card level and per port level.

## Feature and Benefits

- Supports the transport of GR-303, TR-08, TR-57 and SIP voice traffic
- Inter-terminal transport of Tellabs 1000 MSAP TDM and Special Services traffic
- 2 full duplexed Gigabit Ethernet ports on a single card
- SFP optics supporting 1000Base-SX, 1000Base-LX and 1000Base-ZX with LC connectors
- 2 Gbps bandwidth capable with Link Aggregation (IEEE 802.3ad)
- Card protection and port protection through hardware redundancy managed via Link Aggregation
- Dynamic MAC learning with support for up to 8,000 MAC addresses
- 4096 VLANs (802.1q) and stacked VLAN support (IEEE 802.1ad)
- Retain, add, modify and remove subscriber VLAN (C-Tag) & network VLAN (S-Tag)
- Queuing priority (IEEE 802.1p) and mapping to Asynchronous Transfer Mode (ATM) Quality of Service (QoS) traffic profiles



Figure 1. Tellabs 1000 MSAP Gigabit Ethernet Transceiver 222

- Traffic management on a per flow basis
- Multicast support with IGMP Snooping and Proxy for IGMPv2 and IGMPv3
- Dual memory for minimal service interruption during programming/software upgrades
- Fully managed through the Tellabs® Panorama™ Integrated Network Manager (INM)
- Supported in Tellabs 1000 MSAP Feature Package 14.0

## Configurations/Applications

- Inter-terminal Transport = LET ← GbE222 → RST ← GbE222 → RST ↔ Services
- Network Uplink = Upstream Router ← GbE222 → LET ← GbE222 → RST ↔ Services
- Direct Uplink of RST traffic = Upstream Router ← GbE222 → RST ↔ Services
- Uplink and Transport = High bandwidth traffic from third party DSLAMs, business premises, Multiple Dwelling Units (MDUs) and cell site base stations across the Tellabs 1000 MSAP
- Many different combinations of these configurations are also supported



## Specifications

### Physical

- Height: 5.125 in (13.018 cm)
- Width: 0.563 in (1.429 cm)
- Depth: 10.5 in (26.67cm)
- Weight: .5 lbs (0.23 kgs)

### Environmental

- Operating Temperature: -40° F to 185° F (-40° C to 85° C)
- Humidity: 5%–95% non-condensing

### Power

- 18.2 Watts average, 32W maximum
- Sourced directly from Tellabs 1000 MSAP broadband shelf 48V distributed power rail

### Interfaces

- SFP Optics
- Gigabit Ethernet 1000Base-SX, 1000Base-LX and 1000Base-ZX options
- 850nm (SX), 1310nm (LX) and 1550nm (ZX) laser transmitter
- LC optical connector
- Single Mode (SM) or Multimode (MM) optical fiber

### LEDs

- FAIL — Red LED if hardware or communications failure detected
- ACTV — Green LED if card is active and can carry traffic
- LINK 1 — Green LED if Link 1 is enabled and detects a valid 10/100 Ethernet link
- LINK 2 — Green LED if Link 2 is enabled and detects a valid 10/100 Ethernet link

### Compliance

- GR-63-Core
- GR-1089-Core
- RFC 2684 Multiprotocol Encapsulation over ATM
- RFC 2819 Ethernet Traffic Statistic
- RFC 3376 Managing Multicast Forwarding
- IEEE 802.3x Flow Control
- IEEE 802.3ah Carrier Sense Multiple Access Collision Detection (CSMA/CD)
- IEEE 802.3z Gigabit Ethernet Physical Layer
- IEEE 802.1p Priority Queues
- IEEE 802.1Q VLAN
- IEEE 802.3ad Link Aggregation
- TR-101 Migration to Ethernet-based DSL Aggregation
- Restriction of Hazardous Substances Directive (RoHS)
- This is a partial, non-exhaustive list of industry standards with which this product is in compliance

### TRANSPORT CARD

(SFPs ordered separately)

- 0410-0447 SX SFP ordered separately
- 0410-0448 LX SFP ordered separately
- 0410-044x ZX SFP ordered separately

For more information, please contact your local Tellabs sales representative or Tellabs sales office or visit [www.tellabs.com](http://www.tellabs.com).

## Ordering Information

- 0120-0162 2-port GBE222 UPLINK/

### North America

Tellabs  
One Tellabs Center  
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