Tellabs® 1000 Multiservice Access Platform (MSAP)

Product Overview
The Tellabs® 1000 Multiservice Access Platform (MSAP) maximizes broadband capabilities in the access networks. The Tellabs 1000 MSAP provides Ethernet uplinks, Ethernet internodal transport and Ethernet service delivery while continuing to support revenue-generating Time Division Multiplexing (TDM) and Asynchronous Transfer Mode (ATM) services and transport. This rare combination in a Multi Service Access Platform (MSAP) affords the Tellabs 1000 the distinction of being the best low-cost choice for the migration of ATM and TDM to IP/Ethernet.

With simple in-service upgrades, service providers obtain the technology, capacity and Quality of Service (QoS) to support 100% of their service offerings and broadband initiatives. The Tellabs 1000 supports a vast number of technologies, including copper-based, optical-based, Ethernet, SONET/SDH, ATM and IMA transports across almost any network infrastructure. Using one or more Tellabs 1000 Channel Bank Assemblies (CBAs) [Figure 1], the platform is cost effective from one subscriber to over 2000 DSL (VDSL2 or ADSL2+, bonded or unbonded) and POTS subscribers. Furthermore, the Tellabs 1000 is compatible with current public voice switched network infrastructures (e.g., GR-303, GR-08 & GR-57), thus offering substantial savings per upgrade by maintaining existing voice switching system interface groups. These features push its capabilities beyond those of traditional MSAPs and DSLAMs.

System Components — Deliver carrier-class 99.999% reliability and redundancy
The Tellabs 1000 MSAP starts with the CBA. The Tellabs 1000 MSAP CBA has 26 slots that include four common control slots for processing and power plug-in cards, and 22 multipurpose slots that support any narrowband or broadband Tellabs 1000 plug-in. The system can be expanded quickly, inexpensively and easily by adding one or more Tellabs 1000 CBAs linked to the primary CBA by fiber optic cable. Consisting of a preformed cold rolled steel card cage, metal rear covers, printed circuit board backplane and mounting hardware, the Tellabs 1000 CBA includes all hardware necessary for installation.

Power plug-in cards (DC options and Charger/Rectifier for AC options) and common control plug-in cards (Dual-memory support for nonservice-affecting upgrade) can be deployed in redundant configurations for 99.999% reliability while delivering TDM, ATM or IP/Ethernet services. This level of resiliency for an access platform equipped with IP/Ethernet transport, uplink and service capability is superior throughout the broadband access industry.

Furthermore, the optional alarm, timing and testing interface choices are unparalleled. The Tellabs 1000 monitoring, testing, and provisioning can be accomplished through a user interface (UI) or through Tellabs® Panorama Manager. The deployed Tellabs 1000 systems can be configured in star, tree, drop-and-insert and mixed network configurations. And voice switch interfaces supported include GR-303, GR-08 and GR-57.

The Tellabs 1000 provides the access industry’s only upgradeable, carrier-class low-cost Ethernet transport and Ethernet services delivery with the Gigabit Ethernet Transceiver transport (and uplink) and Ethernet Service 10/100 Plug-in Cards. This means that Tellabs 1000 owners can offer bonded DSL, wireless traffic backhaul and business premises services delivery across an Ethernet MSAP without sacrificing carrier-class reliability and redundancy.
Transport and Uplink Options — Enables migration of ATM/TDM to IP/Ethernet

The Tellabs® 1000 MSAP supports a wide variety of interterminal transport and network uplinks, including copper, optical, Ethernet, SONET/SDH, ATM, IMA transports.

In particular, Tellabs 1000 MSAP GbE is a high-bandwidth, cost-effective Gigabit Ethernet uplink, and Ethernet interterminal transport [Figure 2]. The GbE supports voice transport, 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 interterminal transport between the central office (CO)-based Local Exchange Terminal (LET) and the Remote Subscriber Terminal (RST) located in the non-environmentally controlled cabinet or HUT. The GbE provides two full-duplexed Gigabit Ethernet ports equipped with optional configurations of SX, LX, ZX and single-fiber bidirectional small form-factor pluggable (SFP) optics.

Service Delivery Options — Reduced power usage by 70% compared to overlay

Targeted at both DSL subscribers within the reach of the CO and outside the reach of the CO, the Tellabs 1000 MSAP can serve 100% of potential DSL (VDSL2 or ADSL2+, bonded or un-bonded) subscribers in urban, suburban and rural markets while utilizing existing backhaul facilities, including ATM, T1 or HDSL, copper plant and fiber plant or upgrading internode transport with Gigabit Ethernet interfaces.

When Tellabs 1000 MSAP integrated IP/Ethernet solutions are coupled with its ADSL2+ service delivery capabilities, there exists the added benefit of saving power relative to 1 RU “pizza box” DSLAM overlay options. In fact, in a direct comparison between upgrade versus overlay, service providers deploying the Tellabs 1000 can experience as much as 70% less power consumption by upgrading versus overlaying.

Of special interest is the Tellabs 1000 MSAP ES 10/100 plug-in card, which can deliver Ethernet services to business premises, multidwelling premises and cell site base stations [Figure 3]. ES 10/100 can be located in any of the multipurpose shelf slots. Used in conjunction with the GbE plug-in card in transport and/or network uplink configurations, the Tellabs 1000 MSAP can deliver end-to-end Ethernet interfaces. In addition, these Ethernet-based interfaces can be deployed without abandoning revenue-generating legacy TDM and analog special services, which are delivered simultaneously from within the same Tellabs 1000 shelf. Both optical and copper-based SFPs can be utilized with the ES 10/100 plug-in card.

Deploying Ethernet-centric services from a service providers’ embedded base of access equipment affords the opportunity to capture additional revenues from Ethernet business services and the wireless traffic backhaul from subtended cell tower base stations. However, do not lose sight that the Tellabs 1000 MSAP accomplishes this feat simultaneously as it supports legacy services, such as ISDN, FAX, DID/DOD, 2-Wire/4-Wire, Pay Phone, E&M, TO and EBS. Thus, the Tellabs 1000 MSAP is unique in that it can support these next-generation IP/Ethernet initiatives without cannibalizing traditional TDM revenue sources.

See Tellabs.com for more information about Tellabs Solutions
Integrated Network Management — Take advantage of the simplicity of Ethernet

The Tellabs 1000 can be provisioned, tested and monitored using a UI and/or from a menu-driven software provisioning system accessible from any LET, RST or remote Telnet session. To further simplify provisioning and monitoring, the Tellabs® Panorama Manager can be used. The Tellabs Panorama Manager offers a complete management solution for the Tellabs 1000 MSAP, the Tellabs® 1100 Multiservice Access Platform and the Tellabs® 1000 Voice Gateway (VGW). Tellabs Panorama is available in both Solaris™ and Windows® operating environments, and offers a full suite of management capabilities — user management, configuration management, performance management and security management. It also supports remote upgrades, service fulfillment, service assurance, remote back-up, remote capacity and inventory reporting, and a variety of additional functions.

The Tellabs 1000 being a true multiservice access platform and supporting all technologies such as Ethernet, DSL, TDM and ATM, is a perfect network element for internal technical staff to gain a greater comfort level for IP/Ethernet on a network element that they are familiar with and have worked with for many years. The Tellabs 1000 MSAP continues to support T1, T1 IMA, DS-3c, OC-3c and OC-12c ATM plug-in cards, along with POTS, DS-1, xDSL and a comprehensive list of analog special services plug-in cards. But what makes this Multi Service Access Platform (MSAP) special is the addition of Gigabit Ethernet transport, Gigabit Ethernet uplink and 10/100 Ethernet services plug-in card. From a Panorama Manager provisioning standpoint, the system identifies “end-points” whether they are network end-points or customer premises end-points, and all the complexity, protocol adaptations, and mixed technology aggregation that take place in between end-points, are transparent to the operator.

Integrate Gateway & Cellsite backhaul options — Enable SIP and 2G/3G interfaces

The Tellabs 1000 MSAP is the network services providers’ access gateway to satisfy end-to-end Tellabs solutions from the customer premises through the core transport network. [Figure 4].

The Tellabs 1000 MSAP Integrated Gateway Processing Engine (IGPE) plug-in card provides VGW functionality to any Tellabs 1000 MSAP configured as a VGW. It provides protocol conversion of VoIP (SIP) voice calls that are destined to a legacy Class 5 TDM switch utilizing existing switch interfaces (e.g., GR-303 and GR-08).

Service providers are under constant pressure to increase bandwidth capacity to cell site base stations. This means increasing traffic backhaul capabilities of the 2G interfaces (e.g., DS-1, IMA, xDSL and DS-3), which the Tellabs 1000 has always supported. It also means migrating for cell site traffic backhaul of the 3G interface (i.e., GbE-221/222 and ES 10/100 and xDSL) as well.

Figure 4: Tellabs® 1000 MSAP deployed with other Tellabs equipment
Targeted Applications — Graceful migration to secure new IP/Ethernet services revenue without abandoning traditional revenue streams

The Tellabs® 1000 MSAP is a powerful tool for service providers to combat business threats from competitive service providers. Furthermore, there are significant revenue opportunities associated with adopting IP/Ethernet interface that can be captured on the Tellabs 1000 embedded base without abandoning the revenue-generating ISDN, Special, DS-1 and DS-1 IMA type TDM services. Thus, the Tellabs 1000 is a true multiservice access platform with sufficient bandwidth capacity to support the following target applications (Figure 5):

- Enables ATM to IP Migration
- Growing the quantity of broadband customers served
- Increasing HSI speeds packages and associated revenues
- Federal Broadband Connect America, RUS & NTIA projects
- Supports IPTV/VoD initiatives
- Cell site traffic backhaul
- Business services
- Hi-Cap transport
- M13 Mux and 0/1 DACS capabilities
- AFC cabinet retrofit and 3rd-party cabinet retrofit

![Figure 5: True MSAP capabilities to provide graceful migration for TDM/ATM to IP/Ethernet](image-url)
Specifications

Partial list of Transport and Uplink plug-in card options
- Gigabit Ethernet
- OC-12c, OC-3 and OC-3c
- DS-3 and DS-3c
- T1 and HDSL2 and HDSL4
- IMA (Service and Uplink)

Partial list of Service plug-in card options
- 10/100 Ethernet Service
- POTS
- DS-1
- ADSL2+ with and without integrated POTS
- VDSL2/ADSL2+ with integrated POTS
- TDM/Special Services

Voice Switch Interface options
- GR-303
- GR-08
- GR-57

Channel Bank Assembly (CBA) Compliance
- NEBS Level 3 compliant

CBA Materials
- Cold rolled steel — Zinc plated per ASTM-B633 Type II (Gold) SC2

CBA Powering
- -42 V to 60 VDC @ 10 A maximum

CBA Environmental
- Operating temperature: -40° C to +65° C (-40°F to +149°F)
- Storage temperature: -40° C to +70° C (-40°F to +158°F)
- Relative humidity: 5%–95%, noncondensing

CBA Mounting (Stacked configuration)
- Environmentally hardened enclosure with 7 vertical in (17.8 cm) of 19- or 23-in (48.260 cm or 58.420 cm)-wide rack mount space

CBA Dimensions
- Height: 7 in (17.8 cm)
- Width: 19 in (48.2 cm)
- Depth: 12 in (30.5 cm) (with connectorized CBA 12.875 in/31.4 cm)

CBA Physical
- 14.4 lb (6.5 kg) connectorized
- 26 total slots — 4 common control, 22 general purpose

CBA Backplane Options
- Wire-wrapped or connectorized for RJ21, MS2 or 710

Ordering Information
For more information, please contact your local Tellabs sales representative or local Tellabs sales office at the phone numbers provided below, or visit www.tellabs.com.

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