



Real World
Communications
Solutions



TAG1120 ASAP Pseudowire Aggregator

Telrad's TAG1120 is part of the PWE family of flexible, scalable, and compact Aggregation and access platforms that enable voice, video and data transport over Packet Switched Networks (PSN) including Ethernet, IP, and MPLS for deployment in BSC/RNC/C.O for the aggregator and cell-site or business environments for the CPE.

The TAG1120 is best in class PWE aggregator that aggregates any service on any ports using its high end internal engine of 84G bandwidth with it's unique FPGA technology.

It supports up to: 10GEx2 , GEx40, STM1x32/STM4x8 (PWE ASAP), STM16x2/STM4x32 (CEP) and E1/T1x96 all in 3U shelf and under 400W.

TAG1120 works with the TAG11 supports that multiple communication generations (2G/3G/4G) and utilizes a wide range of Pseudowire emulations including: MEF18 certified CEsSoPSN, SAToP, ATM-PW (including N x E1/T1 ATM IMA) and Ethernet-PW to provide voice, video and data convergence over PSN. (ASAP – Any Service Any Port)

The combination of multi service Pseudowire along with cutting edge Ethernet Demarcation Device (EDD) functionality with MEF 9 & 14 certified Ethernet Services enables the provisioning of a wide range of services over a single platform leading to increased revenue and OPEX savings.

TAG11 is equipped with a High Quality Timing Module (HQTM™) that complies with the stringent Jitter/Wander requirements (G.823/G.824 compliant). The HQTM™ manages up to 8 independent timing domains and allocates a dedicated clock for each timing domain using a wide range of timing/synchronization options including:

- BITS In and Out
- E1/T1 loopback timing
- IEEE 1588v2
- Synchronous Ethernet
- Adaptive timing synchronization over PSN



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TAG11 is based on a high capacity network processor technology and offers full Ethernet SLA Verification functionality enabling a future proof solution via remote software upgrade to address future market needs for long term investment protection.

The Ethernet SLA Verification includes OAM interworking between TDM and PSN networks, alarms, performance monitoring of UNI/NNI demarcation points, packet classification, rate limiting, QoS enforcement, and traffic management.

Telrad's TAG1120 is a cost-optimized, low power and small-footprint MPLS-based Carrier Ethernet + Transport (CE+T) switch, providing high service availability and scalability, together with end-to-end "point-and-click" management via its service and application-oriented TAG-View-NMS Network Management System (NMS).

TAG1120 provide solution for the following services:

- Application-aware delivery of content
- Rich Multi-Play residential services
- E-Line, E-LAN and E-Tree services with differentiated QoS, application classification and SLA assurance
- Network convergence of new Ethernet-based and legacy TDM services
- Varied TDM private-line services
- Non-blocking SONET/SDH low-order and high-order cross connections

Mechanical Specifications

- 1 or 2 MSM and up to 4 EIM modules
- Main Switching Modules (MSM)
 - 20 ports 1 Gigabit Ethernet (SFP)
 - 1 port 10 Gigabit Ethernet (SFP+)
 - SyncE Ethernet
 - 1588 Optional (future)
- Extension Interface Modules (EIM)
 - 1 port 10 Gigabit Ethernet (SFP+ / XFP)
 - 8 ports OC-3/STM-1, 2 ports OC-12/STM-4, CEP (SFP)
 - 8/4 ports SAToP (SFP) , 8 ports and CESoP future
 - 8/4 ports ATMoP CC/Ch (SFP) , 8 ports and Ch future
 - E1/T1 x 24 ports
 - EIM 1588 optional future
- Physical Structure
 - 5.25"(3RU) x 19" x 15" / 133 x 483 x 381 mm
 - Front Access modules
 - Front Access, hot insertion
- Redundancy and Resiliency
 - Two Main Switching Module (MSMs) working active/standby mode
 - The EIMs are switched to work with the active MSM
 - Full redundancy of MSM, extension cards and Power supplies
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 - GE redundancy on the main board through LAG/LACP
 - Power redundancy with any mix
 - FTM redundancy with Power and FANS
- Power Specification
 - Input Voltage (range) -40v to -72v DC
 - Power AC wide range 100v-240v AC
 - Power consumption(Max) up to 400w

- Networks and topologies
 - MPLS, Dry-Martini and MEF8
 - PtP , Chain, Ring (RPR or G.8032 as non ERP)
- Services
 - Ethernet E-Line service
 - Ethernet E-LAN service
 - Ethernet E-Tree service
 - TDM CEP private line service
 - TDM PWE T1/E1 SAToP service
 - ATM PWE STM1/OC3 , STM4/OC12 ATMoP clear channel service
 - SONET/SDH HO/LO non-blocking cross-connect
- Applications
 - Wireless backhaul
 - Application-aware delivery of content-rich Multi-Play residential services
 - E-Line, E-LAN business services with differentiated QoS, application classification and SLA assurance
 - Network convergence of new packet based services with legacy TDM services
- Applications aware traffic management
 - Application-aware Call Admission Control (CAC) for multi-play applications
 - Classes of Service (CoS): 5 classes of services with strict priority (SP) and Weighted Fair Queuing (WFQ) scheduling algorithms, Supporting, Best Effort, Guaranteed bandwidth, delay/jitter Sensitive and TDM traffic
- TAG-View-NMS Network management System (NMS)
 - TL1 based CLI
 - SONET/SDH OAM&P
 - SNMPv3,CORBA,TMF 814

- Ethernet Functionality
 - Ethernet protocol (IEEE 802.3)
 - Ethernet MAC learning, forwarding and flooding
 - Unicast, Multicast, Broadcast forwarding
 - Ethernet static MAC configuration
 - VLAN Manipulations: no change (transparent) / change (translate) / trunk (stack)
 - Ethernet provider bridging (802.1Q / 802.1ad)
 - Link aggregation (802.3ad)
 - Ethernet OAM (IEEE 802.1ag and ITU-T Y.1731)
 - IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
 - Ethernet Traffic Classification based on:
 - Port, - Ethernet MAC, Ethernet VLAN, Ether Type, IEEE 802.1p or IPv4 TOS/DSCP
- SONET/SDH Functionality
 - LO and HO SONET/SDH Cross-connect functions
 - SONET/SDH OAM
- Multicast Functionality
 - IGMP proxy
 - MVR
- Routing
 - OSPF routing protocol
 - Static routing
 - IS-IS
- MPLS functionality
 - IETF PWE3 encapsulation
 - MPLS label swap, push, pop
 - MPLS DiffServ: E-LSP, L-LSP
 - RSVP-TE
 - LDP
 - MPLS OAM (LSP Ping, LSP Trace-route)
 - PWE3 OAM (VCCV)
 - Virtual Private LAN Services (VPLS)
 - Virtual Private Wire Services (VPWS)

- Protection
 - MPLS end-to-end LSP protection
 - MPLS dual-homed PW-protection
 - RPR over Ethernet protection (steer)
 - Ethernet network protection
 - IEEE 802.3ad Ethernet Link Aggregation (LAG)
 - SONET/SDH 1+1 linear protection
 - Equipment protection
 - Power, controller and fabric protection
 - Hot-swappable modules
- Security
 - TACACS+ support
- Environmental Specification
 - Operating temperature range: 23 to 131°F (-5c to +55c)
 - Operating humidity range: 5% to 85% RH (non-condensing) @ 104°F (40°C)
 - Altitude: 13125 feet (4000 meters) maximum
 - Storage temperature range: -40 to +158°F (-40c to +70c)
 - Storage humidity: 93% RH (non-condensing) maximum
- Regulatory approval
 - UL60950-1/CSA C22.2 No.60950-1
 - IEC 60950-1 and EN60950-1
 - CB TEST CERTIFICATE
 - VCCI V-3/2008.04 and V-4/2007.04 Class B
 - FCC Part15 Class B
 - ETSI 300 386
 - ETSI EN 300 019-2-3
 - NEBS Level 1 (GR1089 and GR63)
 - NEBS Level 3 compliant design
- ROHS compliance