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ACTIVEDGE 3180, 3181 MULTISERVICE DELIVERY SWITCHES

Features and Benefits

→ Enables transport flexibility in transitioning to converged Carrier Ethernet infrastructures

→ Delivers carrier-class QoS and OAM mechanisms to ensure enforceable SLAs

→ Maximizes service availability by supporting, G.8032, G.8031, PBB-TE and Link Aggregation protection mechanisms

→ Features TDM, ATM/IMA and Ethernet pseudowire encapsulation for multiservice traffic separation

→ Supports both Synchronous Ethernet and IEEE 1588v2 to ensure high-quality and reliable transport services

→ Supports Stratum 3E holdover accuracy option

→ Provides ideal 1RU form-factor for cell tower or customer premises deployment

→ Supports temperature-hardened options

→ Manageable by Ciena's Ethernet Services Manager, offering automated service creation, activation, and monitoring

Ciena's ActivEdge 3180 and 3181 Multiservice Delivery Switches provide Pseudowire Emulation (PWE) services for TDM, ATM, and Ethernet access traffic, offering legacy on-ramp services over Packet-Switched Networks (PSNs) for mobile backhaul and business services applications.

The 3180 has 8 T1/E1 ports and 8 Ethernet access ports with 2 Gigabit Ethernet (GbE) uplink ports. The 3181 has the same number of Ethernet access and uplink ports, but has 16 T1/E1 access ports.

The MEF-certified 3180 and 3181 feature flexible, programmable designs that enable sophisticated service classification; traffic management; prioritization; protection; Operations, Administration and Maintenance (OAM); and network synchronization. This synchronization includes both Synchronous Ethernet and IEEE 1588v2 over GbE trunk interfaces for cost-effective interworking with Ethernet switches and routers.
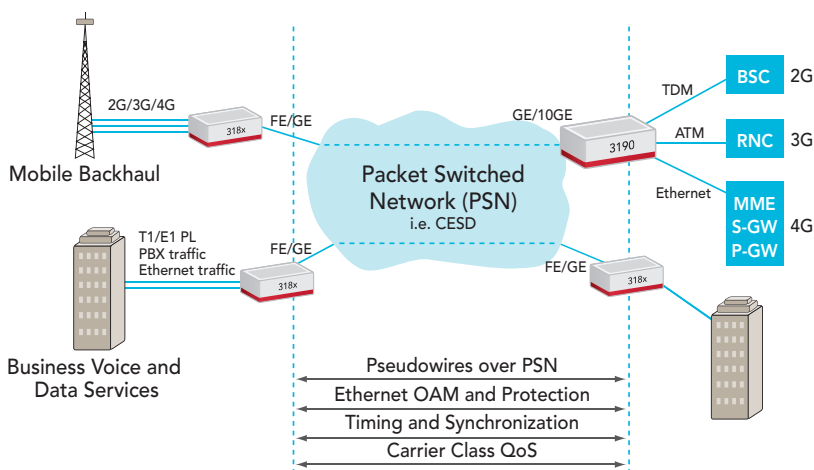

Figure 1. Key multiservice applications: mobile backhaul and business services

These switches provide Ethernet access (10/100 RJ-45), Structure Agnostic TDM access (T1/E1 - SAToP), Structure Aware TDM access (nxDS0/E0 – CESoPSN), or ATM/IMA access (nxT1/E1) with full support of the IETF's Pseudowire Emulation Edge-to-Edge (PWE3) architecture over Ethernet and MPLS networks. This allows traditional TDM, ATM, and native Ethernet traffic to be carried over metro backhaul and core data networks. These devices work seamlessly with Ciena's Carrier Ethernet Service Delivery (CESD) Portfolio to provide end-to-end multiservice transport across the metro Ethernet network.

The 3180 and 3181 are ideally suited for mobile backhaul networks where a single carrier-class access device is desired for combining 2G, 3G and 4G access onto a packet backhaul network. New mobile broadband services and technologies are driving dramatic increases in data traffic volumes. These carrier-class multiservice access platforms allow backhaul providers to converge all their services onto the same backhaul network, greatly reducing Capital Expenditures (CAPEX) and Operating Expenses (OPEX). These switches are also well suited for business services, encapsulating and transporting both legacy (T1/E1) and Ethernet over a converged packet network. They are typically located at customer premises to provide service demarcation between the customer and carrier networks for PBX trunking, router interconnect, and other T1/E1 applications.

Technical Information

Model Details

Model	UNI - PDH	UNI FE	NNI/UNI - SFP	Operating Temperature
3180	8 x DS1/E1	8 x FE (RJ-45)	2 x FE/GE (SFP)	Commercial or Hardened
3181	16 x DS1/E1	8 x FE (RJ-45)	2 x FE/GE (SFP)	Commercial or Hardened

Interfaces	10/100BaseT RJ-45 100/1000M SFP T1/E1 (ANSI T1.403/ITU-T G.704) Craft Access RS232c, RJ-45 OOB Mgt 10/100BaseT RJ-45 Alarm relay dry-contacts RJ-45 External clock sync RJ45 unbalanced
Carrier Ethernet Transport	VLAN per IEEE 802.1p/q Q-in-Q per 802.1ad PBB-TE per 802.1Qay Carrier Ethernet Service Attributes per MEF 6 & MEF 10 MEF 9, 14 and 18 certification
Class of Service (CoS) Support	Committed and Excess Information Rate (CIR/CBS and EIR/EBS) Bandwidth limiter per Port/flow/CoS Policing TrTCM (Two rate Three Color Marker) per RFC2698 8 x CoS per port/EVC Service Priority per 802.1p & q , DSCP/TOS Service Priority mapping to PSN SP and/or WRR and/or DWRR with configurable weights WRED queue management ATM QoS : CBR , VBR*, UBR
Timing and Synchronization	Synchronous Ethernet (G.8262/G.8264) IEEE 1588v2-2008 PTP Adaptive Clock Recovery (ACR) with multi time domain BITS timing I/O T1/E1 Line Derived timing Jitter performance per G.8261/G.823/G.824 Stratum 3 and Stratum 3E timing options

* Denotes feature available in a future release

Technical Information continued

Protocol Support	SAToP (RFC4553) CESoPSN (RFC 5086) ETHoP PWE (RFC4448) CES over Ethernet per MEF8 PWE3 Control Word (RFC 4385) Dry-Martini Support ATMoP (RFC4717) T1/E1 ATM/IMA 1.0/1.1 ATM UNI 4.1
Ethernet Protection Switching	G.8032 Ethernet Ring Protection CCM-based Linear Port Protection 802.1Qay PBB-TE Path Protection 802.1AX Link Aggregation/LACP (formerly known as 802.3ad)
Network Management	Ethernet Services Manager 3100 Manager In-band and out-of-band management for remote Telnet SNMP support
Security	Secure Shell Support (SSH) In-band/OOB port lock User management access profiles Radius client ACL rules
Agency Approvals Safety Laser Safety EMC Environmental	 UL 60950-1 (2000); CSA C22.2 No. 60950-1; IEC 60950-1 CB/2001 CE Marking; EN60950-1: 2000+A11: 2004 FCC 21 CFR subpart (J); Europe: EN60825-1:1994+A2:2001 +A1:2002 FCC 47CFR Part15B CLASS A; ICES-003 Class A;EN55022: 1998 CLASS A; CISPR22: 1997; ETSI/EN 300 386 V1.3.2;EN 55024; EN 61000-3-2: EN 61000-3-3 RoHS DIRECTIVE 2002/95/EC; WEEE 2002/96 EC NEBs Compliant Design
Environmental Characteristics Standard Operating Temperature Hardening Operating Temperature Storage Temperature Relative Humidity	 0° C to +50°C (+32° F to +122°F) -40°C to +65°C (-40°F to +149°F) -40°C to +70°C (-40°F to +158°F) 5% to 90% non-condensing
Physical Characteristics Dimensions Rack Mount Options Weight	 1.73" (H) x 17.4" (W) x 8.6" (D); 44 mm (H) x 444 mm (W) x 220 mm (D) ETSI, 19" or 23" 4 kg (8.8 lbs)

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