ETX-220A

10GbE Carrier Ethernet Demarcation Device

10GbE demarcation point for SLA-based Ethernet business services and mobile backhaul

- Carrier-class 10 GbE Ethernet demarcation device optimized for high-speed access applications
- MEF compliant, supporting MEF applications Ethernet Private Line (EPL) and Ethernet Virtual Private Line (EVPL) with flexible mapping of user traffic into Ethernet flows
- Robust bandwidth control mechanism and Service Level Agreement (SLA) monitoring per Ethernet flow starting at customer premises
- Ethernet service performance statistics collection based on ITU-T Y.1731, viewable in RADview Performance Management portal
- Built-in RFC-2544 generator and analyzer

EtherAccess SyncToP

ETX-220A is a Carrier Ethernet demarcation device that provides end-to-end service control and performance management across packet backhaul.

The device delivers SLA-based business services to the customer premises over 10 GbE links in native Ethernet access networks.

ETX-220A can deliver IP VPN, VoIP, and dedicated Internet access over the same physical link as a Layer-2 LAN-to-LAN service, all with differentiated quality of service and end-to-end monitoring.

CARRIER ETHERNET MEF Certified Compliant

RAD data communications The Access Company

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MARKET SEGMENTS AND APPLICATIONS

ETX-220A can be used as follows:

- Ethernet 10 GbE demarcation device – ETX-220A is used in a wholesale Ethernet environment to separate the service provider network, the access provider network, and the customer network, providing proactive service monitoring and easy fault localization throughout the entire network
- 3G/4G mobile demarcation device – ETX-220A is placed in the concentration point and supports multiple services and concurrent OAM sessions
- Aggregation device – ETX-220A aggregates GbE traffic from up to four customer sites and bundles it into a 10GbE link. It can also be connected via the 10GbE link to an office and deliver the traffic over four GbE ports to the network.

ETHERNET

Services

ETX-220A provides the following services:

- Ethernet Private Line (EPL) –ETX-220A provides site-to-site connectivity over dedicated bandwidth without service multiplexing
- Ethernet Virtual Private Line (EVPL) – ETX-220A delivers site-to-site connectivity over shared bandwidth with service multiplexing.

Traffic Management/QoS

ETX-220A maps traffic to the Ethernet flows using very flexible classification criteria. Traffic policing is applied per flow or group of flows, with user-configurable CIR + CBS and EIR + EBS. Additionally, the VLAN priority bit in Ethernet frames can be modified at network ingress according to the frame 'color', allowing service consistency and QoS continuity across color-aware (Drop Eligible-enabled) as well as color-unaware networks.

OAM

ETX-220A provides these types of Ethernet OAM:

- Single-segment (link) OAM according to IEEE 802.3-2005 (formerly 802.3ah)
- End-to end connectivity OAM based on IEEE 802.1ag
- End-to-end service and performance monitoring based on ITU-T Y.1731.

Featuring ultra fast, hardware-powered processing, ETX-220A performs OAM and PM measurements in line rate with maximum precision, offering the following powerful benefits:

- Immediate detection of loss of continuity (LOC), ensuring under 50 ms protection switching
- Highly accurate frame loss measurements of live traffic
- Flow-level monitoring, enabling simultaneous processing of multiple OAM sessions.

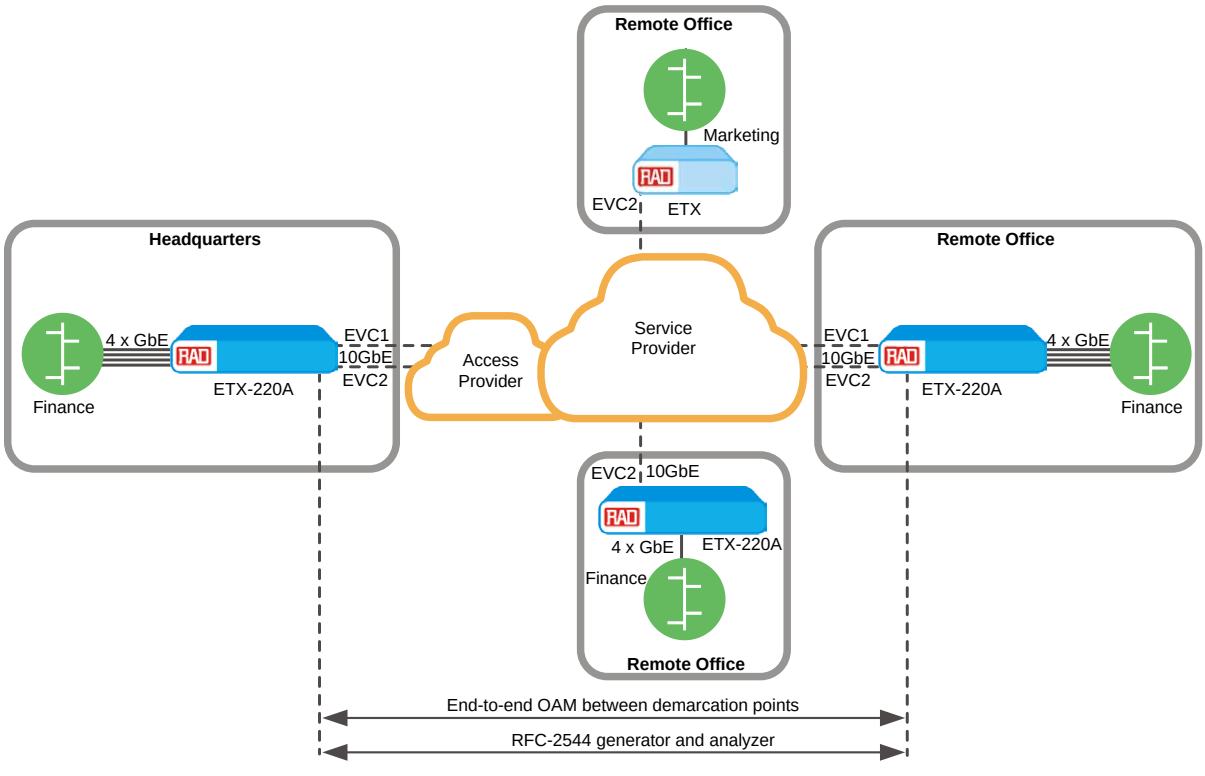

Figure 1. Ethernet Demarcation Device

RESILIENCY

ETX-220A provides the following types of resiliency:

- 802.3ad link aggregation (LAG), providing 1:1 link protection with Link Aggregation Control Protocol (LACP) support
- Dual homing (1:1), allowing ETX-220A units to be connected to two different upstream devices
- EPS Ethernet path protection according to ITU-T G.8031.

TIMING AND SYNCHRONIZATION

ETX-220A supports SyncE, delivering synchronization and timing-over-packet capabilities.

MANAGEMENT AND SECURITY

The following security protocols are provided by ETX 220A to ensure client server communication privacy and correct user authentication:

- SNMPv3
- RADIUS (client authentication)
- TACACS+ (client authentication and accounting)
- SSH for Secure Shell communication session
- SFTP – Secure File Transfer Protocol.

Ports
The unit can be managed using the following ports and applications:

- Local management via an ASCII terminal connected to the RS-232 port
- Remote inband management via Ethernet port routed via separate VLANs, Telnet, or an SNMP-based management system
- Out-of-band management via a dedicated management port.

Zero Touch Provisioning
IP address and mask, default gateway, and software and configuration files can be automatically obtained using standard DHCP client functionality.

MONITORING AND DIAGNOSTICS

RFC-2544
The device provides a built-in RFC-2544 wirespeed traffic generator and analyzer for unidirectional and bidirectional testing of throughput, latency, and frame loss. The tests are performed over Layer-2, based on standard OAM messages, and can be performed for multiple flows.

Enhanced RFC-2544 functionality provides service-oriented KPI analysis. SLA conformance is measured per service bandwidth and packet size, within a user-defined amount of time, for faster service introduction.

Specifications

ETHERNET NETWORK INTERFACES

Number of Ports
2 in 1:1 protection mode

Type
Fiber optic, XFP-based
10-Gigabit Ethernet (10GBaseSR, 10GBaseER)

Connector
XFP slot

XFP Transceivers
For full details, see the SFP/XFP Transceivers data sheet at www.rad.com

ETHERNET USER INTERFACES

Number of Ports
5 (ports 3, 5–8)

Type
Port 3:
10-Gigabit Ethernet (10GBaseSR, 10GBaseER), XFP-based

***Note**: Port 4 is nonoperational.*

Ports 5–8:
Gigabit Ethernet (1000BaseFX), SFP-based

Connector
XFP slot (port 3)
SFP slot (ports 5–8)

MANAGEMENT

Ethernet Management Port
Type: 10/100BaseT
Connector: RJ-45

Control Port
Interface: V.24/RS-232 DCE
Connector: 9-pin D-type, female
Format: Asynchronous
Data rate: 9.6, 19.2, or 115.2 kbps

GENERAL

Compliance
MEF 9, MEF 14: EPL and EVPL
MEF 6 (E-Line – EPL and EVPL), MEF 10, IEEE 802.3, 802.3u, 802.1q, 802.1p, 802.3ad, 802.3-2005, 802.1ag, ITU-T Y.1731, G.8031, G.8262, RFC-2544

Power
AC power supply:
100–240 VAC, 50/60 Hz
DC power supply:
48 VDC nominal (40 to 70 VDC)
Power consumption: 55W max

Physical
Height: 43.7 mm (1.7 in)
Width: 440 mm (17.4 in)
Depth: 240 mm (9.5 in)
Weight:
3.6 kg (7.9 lb) with 1 power supply
4.0 kg (8.8 lb) with 2 power supplies

Environment
Temperature:
ETX-220A: 0–50°C (32–122°F)
Humidity: Up to 90%, non-condensing

TIMING

Station Clock
Type: Balanced E1, unbalanced E1 (via an adapter cable),

Connector: RJ-45

Data Sheet

ETX-220A

10GbE Carrier Ethernet Demarcation Device

Ordering

RECOMMENDED CONFIGURATIONS

ETX-220A/AC/2x10GE/4xGE
10GbE NTU Carrier Ethernet Demarcation Device, AC, two 10GbE ports, 4 GbE SFP ports

ETX-220A/ACR/2x10GE/4xGE
10GbE NTU Carrier Ethernet Demarcation Device, ACR, two 10GbE ports, 4 GbE SFP ports

ETX-220A/DC/2x10GE/4xGE
10GbE NTU Carrier Ethernet Demarcation Device, DC, two 10GbE ports, 4 GbE SFP ports

ETX-220A/DCR/2x10GE/4xGE
10GbE NTU Carrier Ethernet Demarcation Device, DCR, two 10GbE ports, 4 GbE SFP ports

SPECIAL CONFIGURATIONS

Please contact your local RAD partner for additional configuration options

SUPPLIED ACCESSORIES

AC power cord (if AC power supply is ordered)
DC power cord (if DC power supply is ordered)

RM-34
Hardware kit for mounting one ETX-220A unit in a 19" rack

OPTIONAL ACCESSORIES

WM-34
Hardware kit for mounting one ETX-220A unit on a wall

ETX-220A_PS/!

! Power supply:

AC	Single AC power supply
DC	Single DC power supply

CBL-DB9F-DB9M-STR
Control port cable

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