

SHDSL LT / NT Device

QuFast SHDSL 600

The QuFast SHDSL 600 is a compact Ethernet in the First Mile (EFM) platform, delivering up to 45 Mbps of symmetrical Ethernet services over up to 8 copper pairs. The system can be deployed in a Point-to-Point or as the CPE in a Point-to-Multi-Point configuration.



Highlights

- ◆ *IEEE 802.3ah Ethernet in the First Mile (EFM) 2 Base-TL Solution*
- ◆ *Up to 45 Mbps with up to 8 copper pairs*
- ◆ *Fiber Quality*
- ◆ *MEF compliant Carrier Ethernet Switching Features*
- ◆ *High Performance, Resilient Fiber-Like Experience*
- ◆ *Hard Quality of Service*
- ◆ *Rapid Service Deployment*
- ◆ *Superior Rate and Reach*
- ◆ *Low Delay and Jitter for Voice and Video Transmission*
- ◆ *Worldwide Spectral Compliance*
- ◆ *Environmentally Hardened*

Applications

- ◆ *Metro Ethernet Extension*
- ◆ *Transparent LAN Service*
- ◆ *Fast Internet Access*
- ◆ *Private Campus Network Intra-Connection*
- ◆ *DSLAM, MDU/MTU Backhaul*
- ◆ *WiFi, WiMAX, Cellular Backhaul*
- ◆ *Leased Lines Replacement*

Overview

The Ethernet Access Devices (EADs) enables delivery of high-speed Carrier Ethernet services over the existing copper and fiber infrastructure. The QuFast SHDSL 600 platform is a compact, cost-effective Ethernet in the First Mile (EFM) EAD that deliver up to 45 Mbps symmetrical Ethernet traffic at fiber quality over existing copper pairs.

Available in 1 to 8 copper pairs and fiber configurations, the QuFast SHDSL 600 EAD can be deployed in a Point-to-Point configuration, optional copper add-drop chain, or as the CPE in a Point-to-Multi-Point configuration with the corresponding EFM switches.

With its superior performance, extensive functionality and low cost, the QuFast SHDSL 600 EAD platform offers rapid service delivery and allow for complete utilization of the existing network infrastructure.

The QuFast SHDSL 600 EADs are interoperable with any standard Ethernet switch, router or hub. Compliant with Metro Ethernet Forum (MEF) specifications, QuFast SHDSL 600 EAD systems seamlessly integrate into Carrier Ethernet Networks.

Interfaces

Equipped with four 10/100Base-T Ethernet interfaces and an optional 100Base-FX or 1000Base-FX Small Form Factor (SFP) port, the QuFast SHDSL 600 EAD platform allows assignment of a service or a customer per port. A DS3/E3 uplink can be used to connect to legacy networks in the 100Base-FX SFP version.

Implementing the standard IEEE 802.3ah-2004 (EFM) long reach Ethernet-over-copper specification, the QuFast SHDSL 600 EAD platform bonds up to 8 copper pairs together to create a 2Base-TL aggregated link. The systems support current and evolving Ethernet Quality of Service (QoS) requirements, and has the highest available packet throughput efficiency.

Technology

Powered by Actelis Networks' field-proven EFMplus™ technology, the rate and reach are increased significantly, using advanced Dynamic Spectrum Management (DSM) techniques. This technology ensures the best rate/reach performance and most resilient fiber-quality transmission ensuring carrier class service availability.

Ethernet Features

All QuFast SHDSL 600 EAD models provide 802.1q VLAN-aware wire-speed bridging, double tagging (VLAN stacking) for end-user VLAN transparency, L2 (Ethernet priority) and L3 (ToS/DiffServ) classification with four traffic classes, RSTP/STP, bandwidth monitoring and Multicast/Broadcast limiting.

Management

The QuFast SHDSL 600 EAD platforms can be managed In- and Out-of-Band, by the MetaASSIST™ View graphical Management System,

MetaASSIST extensive functionality and low cost, EMS.

The management protocols include the standard TL1 command line interface and SNMP, using standard MIBs for seamless integration with 3rd party Network Management Systems (NMS).

Optical Interfaces

Choice of optical interfaces accommodate short and long distances as needed with speeds of 100 Mbps or 1000 Mbps with connections over the existing copper and fiber infrastructure. These optical interfaces provide an evergreen investment by allowing a smooth migration to higher service speeds over

fiber without changing the EADs at the customer premises.

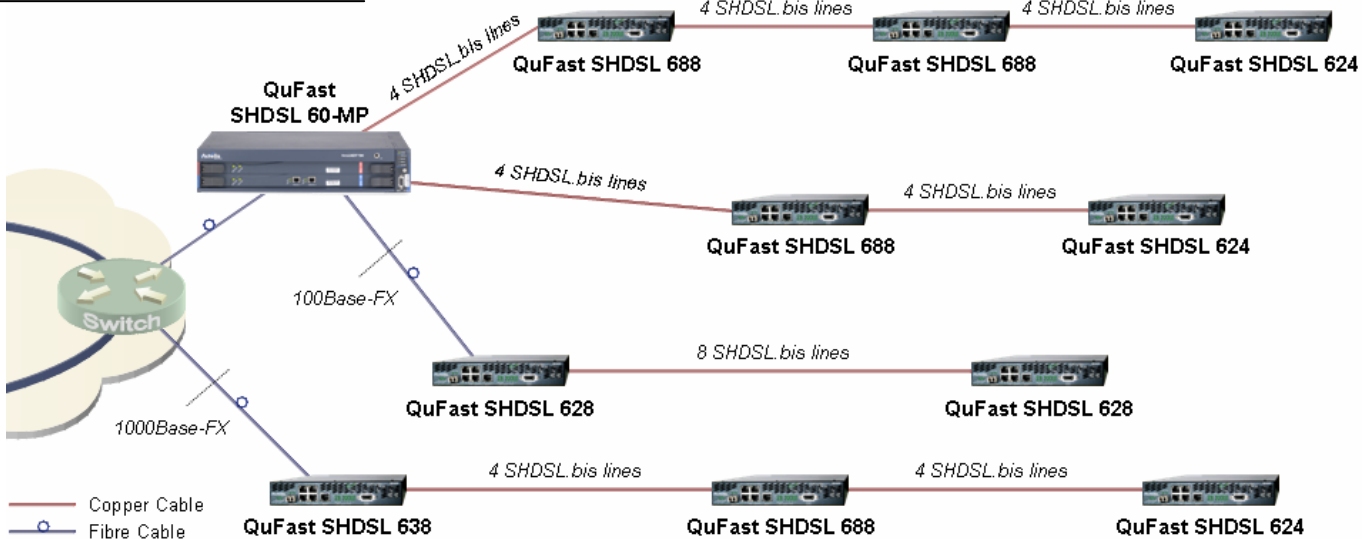
Copper Add-Drop EADs

The Copper Add-Drop EADs allow multiple nodes to be connected to each other over copper, in a linear chain or ring configuration. Each node has the full switching capabilities of the QuFast SHDSL 600 EAD and can drop and add Ethernet traffic at each location, while transferring the rest of the traffic through. With up to 22.8 Mbps aggregated traffic, the copper Add-Drop EAD is a powerful tool for distribution of Ethernet traffic across linear/ring copper networks.

QuFast SHDSL 600 Variants

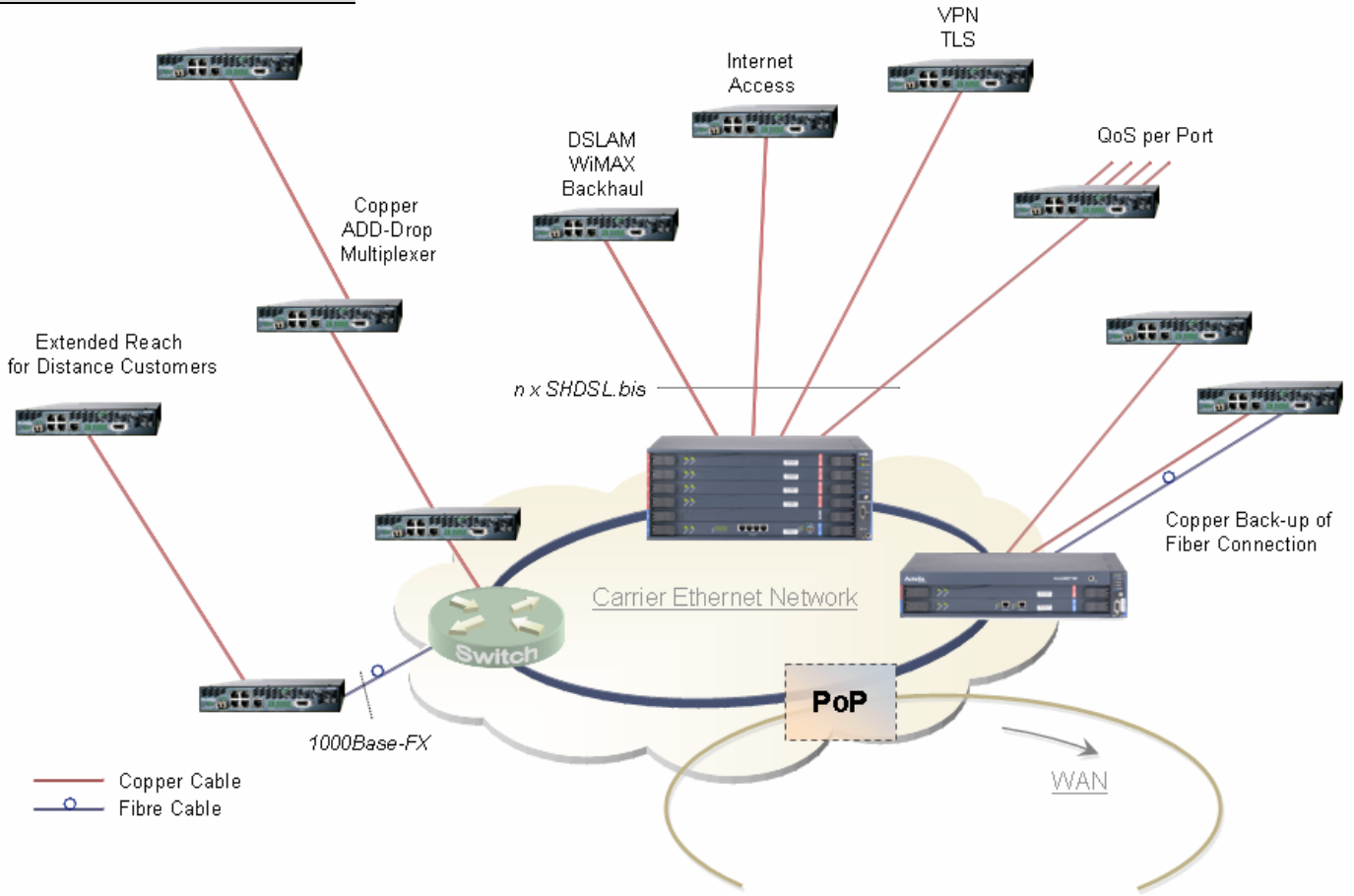
Product Category	Product Group	Product Name	Number of Pairs	Interfaces
Ethernet Access Device (EAD)	QuFast SHDSL 620	QuFast SHDSL 621	1	4 x 10/100Base-T
		QuFast SHDSL 622	2	
		QuFast SHDSL 624	4	4 x 10/100Base-T, 1 x SFP port - 100Base-FX SFP or - DS3/E3 SFP
		QuFast SHDSL 628	8	
	QuFast SHDSL 630	QuFast SHDSL 638	8	4 x 10/100Base-T, 1 x SFP port - 1000Base-FX SFP
Copper Add-Drop Multiplexer (CADM)	QuFast SHDSL 680	QuFast SHDSL 688	8	4 x 10/100Base-T, 1 x SFP port - 100Base-FX SFP or - DS3/E3 SFP

Application

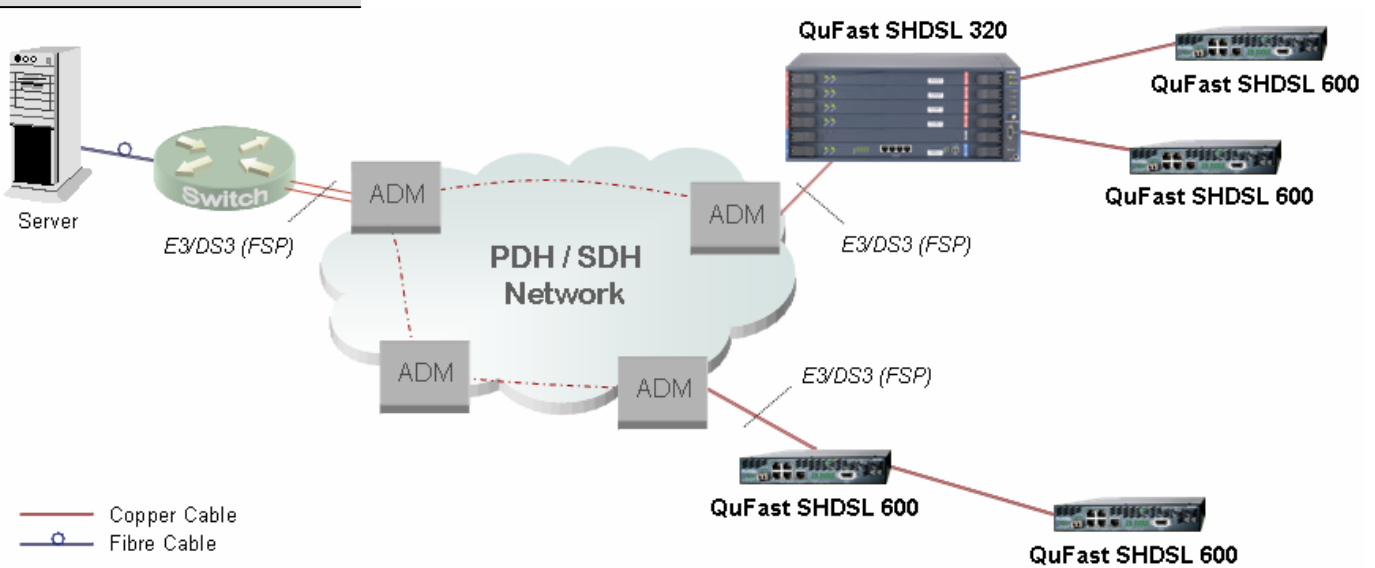


Ethernet Access Device

Application

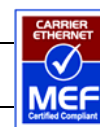


Application



Technical Specifications

Technical Specifications			
Interfaces	<i>Ethernet (Network/User)</i>	10/100Base-T 100Base-FX/1000Base-FX	4 ports / Connector: RJ45, Auto-MDIX 1 port (option) / Connector: SFP based, MSA compliant For details see "QuFast SHDSL 600 Variants"
	<i>High Speed Link (Bonded Copper Pairs)</i>	Protocol Line code Bandwidth Number of Copper Pairs Connector End-to-end Delay Spectral Compliance Sealing Current	IEEE 802.3ah 2Base-TL ITU-T G.991.2 rev. 2 1-45 Mbps (symmetrical) 1- 8 RJ45 (per modem/pair) 2-4 ms (typical) ITU-T G.991.2 (Annex A, B, F) ETSI TS 101 524 (Annex E) ANSI T1.417, T1.426 NICC ND1602 (ANFP) BIPT BRUO 2005 48 VDC / 4 mA nominal
	<i>Management</i>	Ethernet Serial	10/100Base-T / RJ45, Auto-MDIX EIA RS-232 (DCE) / DB9
LAN Protocols		Dynamic Bridging VLAN Tagging Double Tagging RSTP, STP OAM, CFM	IEEE 802.1, 8K MAC addr. IEEE 802.1Q Q-in-Q, VMAN IEEE 802.1w, 802.1d IEEE 802.3ah, 802.1ag (Connectivity Fault Management)
Quality of Service		Classes of Service Scheduler Classification	4 WFQ, SP L2 802.1p/Q priorities / L3 ToS/DiffServ
Management	<i>Protocols</i>	SNMP Command Line Interface Remote Access Secure Access (option) Time Synchronization Web Access File transfer	SNMP v1 and v2c TL1 Telnet SSH v2 SNTP v3 HTTP FTP, TFTP
	<i>Applications</i>	EMS Craft GUI	MetaASSIST EMS MetaASSIST View
Front Panel Indicators (LEDs)		Power / Status / Alarm / MLP per modem/pair / ACT (Activity) / LNK (Link) per Ethernet/HSL port	
Alarm Contacts		Terminal Block	2 Input, 1 Output
Physical	<i>Mounting Dimensions Weight Power</i>	Desktop Mount / Wall Mount / Rack Mount, 2 units in 19", 23" or ETSI racks Height 1.6" (40 mm / 1U) / Depth: 11.0" (280 mm) / Width: 8.4" (213 mm) 3.75 lbs (1.7 kg) DC: -48/-60 VDC nominal, 14-26 Watt (per model) AC: 90-264 VAC, 47-63 Hz, 17-30 Watt (per model)	
Environmental		Temp.: Operating / Storage Relative humidity	-40° to +65°C / -40° to +70°C Up to 95%, non-condensing
Regulatory Approval/Certifications		Metro Ethernet Forum Safety EMC NEBS CE Environmental	MEF 9 Compliant UL 60950, CSA C22.2 60950 / ETSI EN 60950, IEC 60950 FCC Part 15 Class B / ICES-003 Class B ETSI EN 300 386 Class B / ETSI ETS 300 132-2 ITU-T K.21 Level III (GR-1089-CORE, GR-63-CORE) EMC and Safety GR-63-CORE / ETSI ETS 300 019
Supplier		Quante Netzwerke GmbH Ahrensburger Straße 8 D-30659 Hannover Tel: +49 (0)511 / 74 01 92-0 Fax: +49 (0)511 / 74 01 92-100 Internet: www.quante-netzwerke.de	



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