

Optical Network Termination Unit BOTU

Product Overview

The BOTU is the Optical Network Termination Unit of the ULAF+ product family designed to transmit broadband traffic over fibre.

With its high reliability the BOTU is the leading choice for delivering business class voice and data services. The built in Layer 2 switch with comprehensive VLAN support and flexible QoS prioritisation allows for carrier class multiservice applications.

The BOTU helps network operators with its modular design and wide range of interfaces to provide custom tailored services over optical lines. On top of 100MBit/s Ethernet traffic up to four 2MBit/s E1 channels or legacy data services can be transmitted.

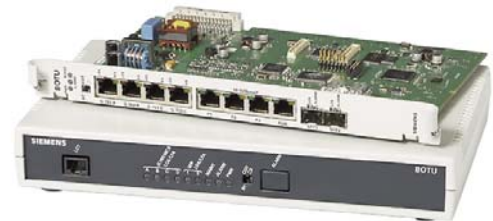
ULAF+: Future-proof with Ethernet & TDM

As bandwidth demands of telecom operators for data transmission services continually rise, the BOTU extends the existing ULAF+ product portfolio with a broadband optical transmission solution. The ULAF+ family features both legacy TDM as well as promising Ethernet solutions in a single system environment.

Since the BOTU is fully integrated into ULAF+, it is configured and managed just like any other ULAF+ product: either with the LCT (Local Craft Terminal) software or ULAF+'s network management software.

More Bandwidth - more efficiency

In back to back operation the BOTU transmits one 100MBit/s Ethernet channel and up to four 2MBit/s E1 channels or one legacy data channel with bitrates up to 4.6MBit/s. Across legacy SDH/TDM networks the BOTU provides Ethernet services with bitrates of 2, 4, 6 or 8Mbit/s and link resiliency.



The BOTU increases the reliability of the transmission line by 1+1 line protection. The use of standard 155MBit/s SFP optical modules gives high flexibility:

- applications of with one or two fibres
- maximum transmission distance
- optical wavelength
- connector type

Fast Ethernet Managed Switch

The BOTU incorporates a 4-port, self-learning Layer-2 switch with VLAN support (including Q-in-Q: IEEE 802.1ad) and Quality of Service (QoS: 4 priority queues).

Congestion Management

Weighted Round Robin (WRR) and Priority Queuing (PQ) are supported. PQ is the default queue scheduling mechanism for IEEE 802.1ad (Provided Bridge).

Q-in-Q VLAN Tagging

Q-in-Q adds an additional VLAN tag to each Ethernet frame. The technology is used in Metro Ethernet applications since it provides a very cost effective and secure solution to transport multiple customer VLANs totally isolated from each other.

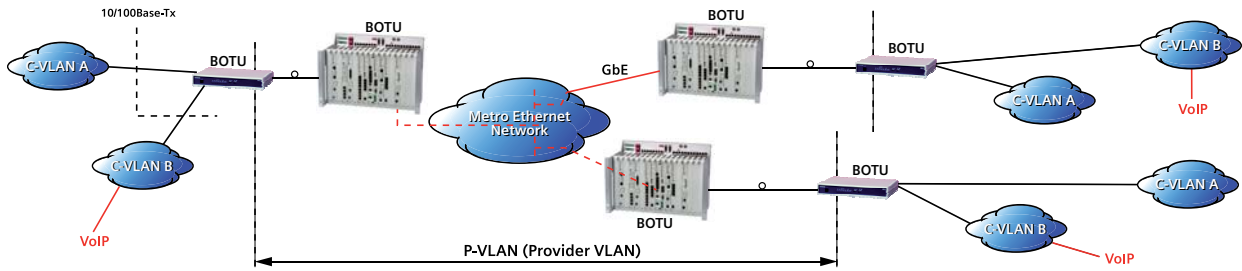
Carrier Ethernet Certification

The BOTU is designed to meet the Metro Ethernet Forum (MEF) standards MEF9 and MEF14 for EPL (Ethernet Private Line) services.

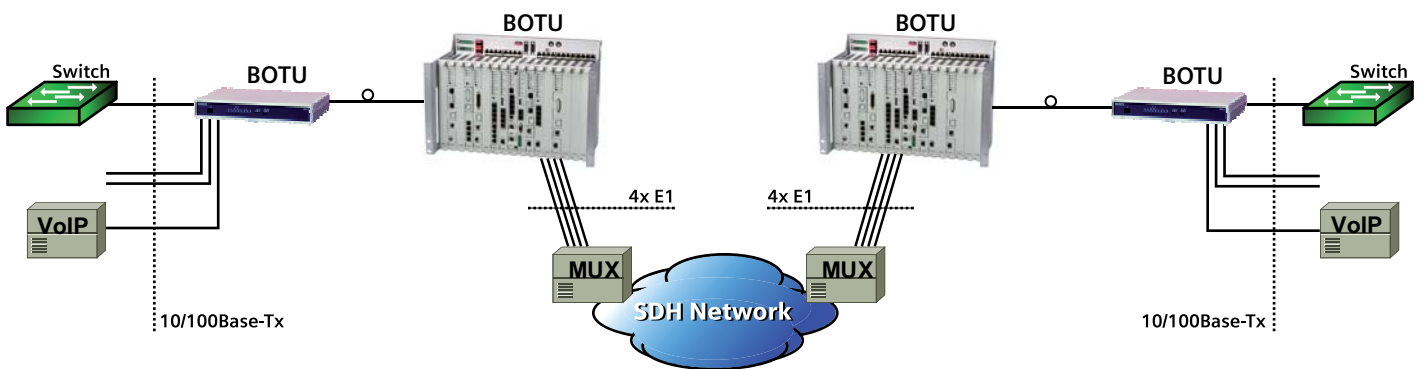
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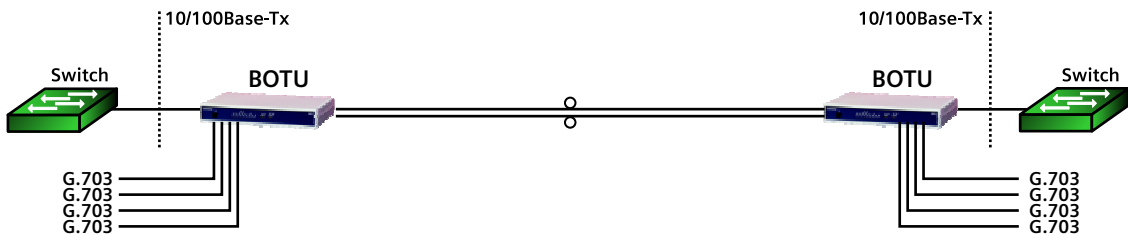
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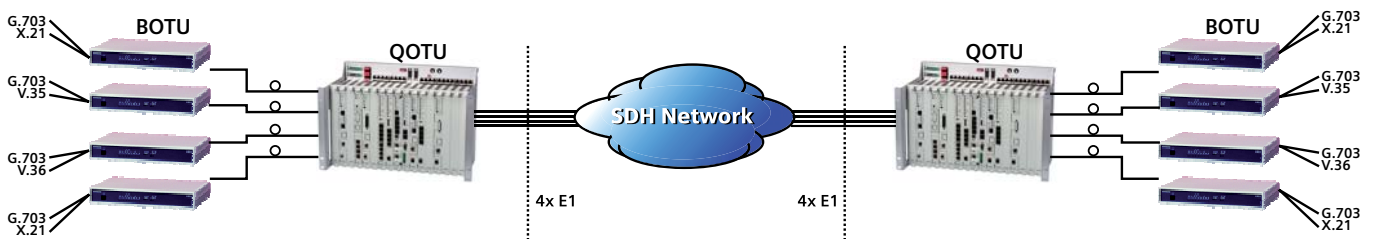
100 Mbit/s Connections via Metro Ethernet Network



8 Mbit/s Ethernet Leased Lines over SDH/TDM Networks



100 Mbit/s Ethernet & Legacy Access / Campus Network, 1+1 Protection



Legacy Access Network



Technical Data

Power Supply

Input Voltage	
Plug-in version	.40 VDC to 72 VDC
Desktop version	.40 VDC to 72 VDC
	.95 VAC to 260 VAC
Power Consumption (max.)	.<9 W

Optical Transmission Interfaces

Connector (BOTU)	.2 SFP slots
Connector (QOTU)	.4 SFP slots
SFP Modules	.OC-3/155 Mbit/s
Line Protection (BOTU)	.1+1
Max. Distance (depending on SFP)	.15, 40 km
Optical Connector (depending on SFP)	.SC, LC
Fibres (depending on SFP)	.single or dual
Wavelength (depending on SFP)	.1310 nm, 1550 nm

Ethernet Interfaces BOTU

Connector	.4x RJ45
10Base-T/100Base-Tx ports	.IEEE 802.3
Full / Half Duplex, Flow Control, Auto neg., Auto MDI-X	
Switch	.self learning (1024 MAC addresses)
	.frame size up to 2040 bytes
	.VLAN support (IEEE 802.1Q)
	.Double Tag VLAN Tunneling (Q-in-Q: IEEE 802.1ad)
	.4 priority queues
	.Priority Queuing (PQ or WRR)
Traffic prioritisation: 802.1p, DSCP, Port based, VLAN based	

2 Mbit/s Interfaces

Connector	.4x RJ45
Technology	.G.703 (120 Ω / 75 Ω)

Data Interface BOTU

Interfaces	.1x X.21 or V.35 or V.36
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Local Craft Terminal (LCT)

Serial RS232 interface	.1x RJ45 (ISO 8877)
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Physical and environment

Plug-in version	.Double Eurocard size
Desktop version (W x H x D)	.272 x 47,5 175 mm
	.(wall-mounting possible)
Temperature (in operation)	.-5° – +55°
	.at 5 – 95% rel. humidity

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