Optical Network Termination Unit BOTU

for ULAF+ access platform

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 multi-service 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 100 Mbit/s Ethernet traffic up to four 2 Mbit/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 100 Mbit/s Ethernet channel and up to four 2 Mbit/s E1 channels or one legacy data channel with bitrates up to 4.6 Mbit/s. Across legacy SDH/TDM networks the BOTU provides Ethernet services with bitrates of 2, 4, 6 or 8Mbit/s and link resiliency.
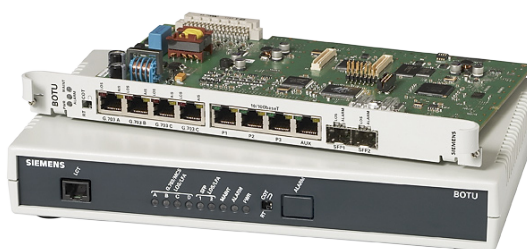
The BOTU increases the reliability of the transmission line by 1+1 line protection. The use of standard 155 Mbit/s SFP optical modules gives high flexibility:
- applications of one or two fibres
- maximum transmission distance
- optical wavelength
- connector type.

## 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.
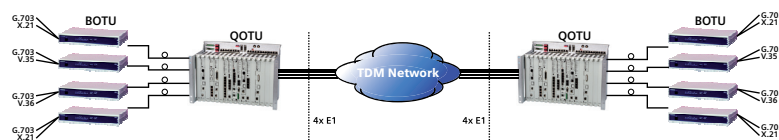
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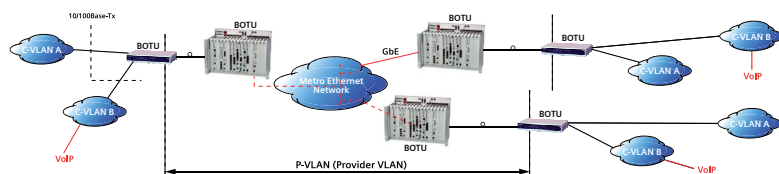
100 Mbit/s Connections via Metro Ethernet Network
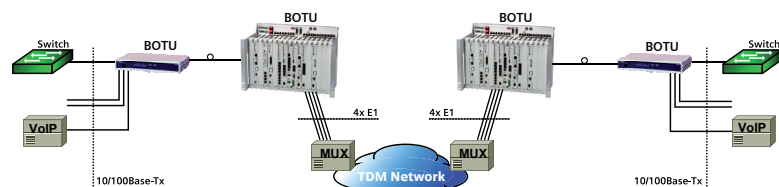
8 Mbit/s Ethernet Leased Lines over SDH/TDM Networks
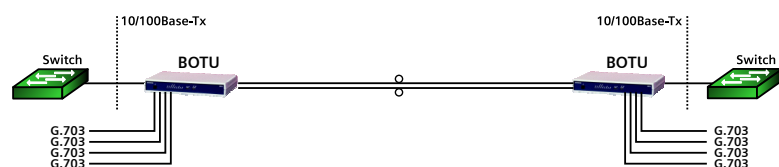
100 Mbit/s Ethernet & Legacy Access / Campus Network, 1+1 Protection

Legacy Access Network

Carrier Ethernet Cerftification

The BOTU meets the Metro Ethernet Forum (MEF) standards MEF9 and MEF14 for EPL (Ethernet Private Line), EVPL (Ethernet Virtual Private Line) and E-LAN (Ethernet LAN) services.

Technical data

Power Supply

Input Voltage	
Plug-in version	40 V_{DC} to 72 V_{DC}
Desktop version	40 V_{DC} to 72 V_{DC}
95 V_{AC} to 260 V_{AC}	
Power Consumption	< 6 W

Optical Transmission Unit

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)	1310nm, 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 adresses)
	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 (PG 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 Interfaces BOTU

Interfaces	1x X.21 or V.35 or V.36

Local Craft Terminal (LCT)

Serial RS232 interface	1x RJ45 (ISO 8877)

Physical and Environmen

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

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