

» Network Termination Unit BSTU4 «

Product Overview

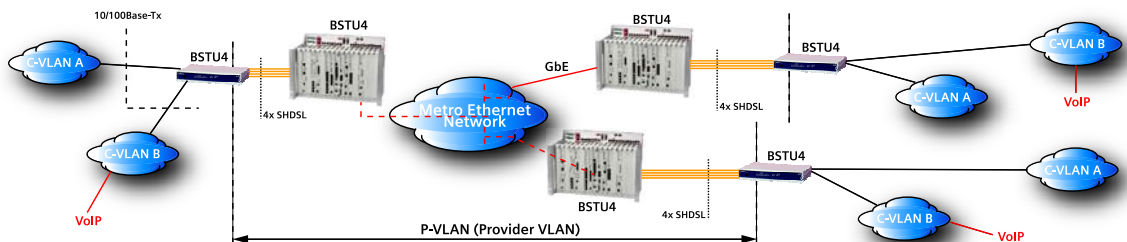
The BSTU4 is an Ethernet Network Termination Unit of the ULAF+ SHDSL product family designed to transmit broadband traffic over multiple copper wire-pairs.

The BSTU4 is the leading choice for delivering business class service levels over Ethernet Networks with its high reliability. The built in Layer 2 switch with comprehensive VLAN support and flexible QoS prioritisation allows for carrier class multiservice applications.

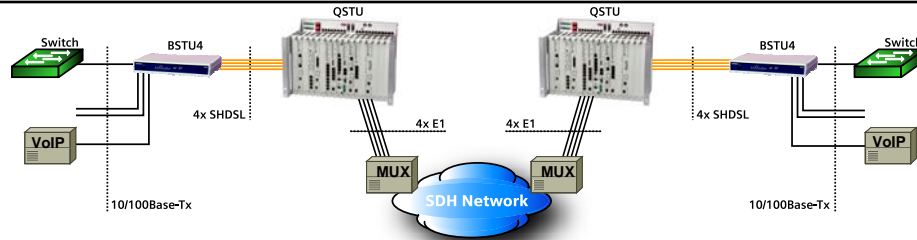
The BSTU4 helps network operators bridging the existing bandwidth gap between E1 and E3/STM-1 services by bundling up to 4 E1 channels, over legacy SDH/TDM networks. In campus back-to-back applications, the BSTU4 transmits up to 22,8 Mbit/s.



Connections via Metro Ethernet Network



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



22,8 Mbit/s Ethernet Access/Campus Networks



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As bandwidth demands of telecom operators for data transmission services continually rise, the BSTU4 extends the existing ULAF+ product portfolio with a broadband Ethernet transmission solution. The ULAF+ family now features both legacy TDM as well as promising Ethernet solutions in a single system environment.

Since the BSTU4 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

With its patent-pending technology the BSTU4 bundles up to four SHDSL links in order to transmit Ethernet traffic from its 10Base-T/100BaseTX ports. Together with ULAF+'s QSTU the BSTU4 provides 2, 4, 6 or 8Mbit/s Ethernet services across legacy SDH/TDM networks. In back-to-back operation the BSTU4 provides up to 22,8 Mbit/s over four wire-pairs.

Its channel bundling algorithm combines bandwidth efficiency and link resiliency: the BSTU4 dynamically adjusts the bundling algorithm in case of one or more failures of E1 or SHDSL links. Even with three links down, the BSTU4 link doesn't fail.

Compared to other bundling algorithms, the BSTU4's bandwidth efficiency is unmatched: while IMA (Inverse Multiplexing over ATM) reaches an approx. 79% of payload efficiency, BSTU4 boasts an average of 96%.

Fast Ethernet Managed Switch

The BSTU4 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 BSTU4 meets the Metro Ethernet Forum (MEF) standards MEF9 and MEF14 for EPL (Ethernet Private Line) services.

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
Remote Power Supply	
Voltage	120 VDC
Current	50 / 60 mA
Power Consumption (max.)	<9 W
providing remote power 4x 120V/50mA	<37 W
providing remote power 4x 120V/60mA	<45 W

Interfaces

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

Local Craft Terminal (LCT)

Serial V.24 interface	1x RJ45 (ISO 8877)
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Transmission

SHDSL over 1...4 copper wire pairs	1 RJ45 (ISO 8877)
Line code	TC-PAM 16/32
Technology	ETSI TS 101 524, ITU-T G.991.2
Payload Bitrates	192 kbit/s to 5696 kbit/s per wire-pair
	1 to 4 wire-pairs (up to 22,8 Mbit/s with 4 wire pairs)
Repeater	1 to 4 wire-pairs with BSRU support (4 stages)

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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