ANYMUX–E1/G.SHDSL

Modem E1 (G.703/G.704) to G.SHDSL with built-in 4-port 100 Mbps Ethernet switch

- Providing transmission E1 G.703/G.704 through G.SHDSL connection over single pair copper line for point-to-point E1 connectivity between two sites
- Built-in local Ethernet switch with an array of 1000 MAC addresses
- IEEE 802.1q support. Possibility of defining up to 15 VLAN networks (full range VID) in order to create independent transmission channels
- Possibility of limiting bandwidth of the Ethernet ports
- SNMP, WWW, SMTP, TELNET, SNTP local item management
- Local software update - both firmware and GUI
- Power range 12 to 60V DC

Description of the device

Functionality

ANYMUX-E1/G.SHDSL is able to transport E1 2.048Mbps according to G.703/G.704 standard through G.SHDSL connection at maximum data rate of 2.048Mbps over one copper pair wires. ANYMUX-E1/G.SHDSL transmits E1 data signal to the *range* of up to 4 *km* over *0.4mm²* copper wires.

ANYMUX-E1/G.SHDS is equipped with 4 ports Ethernet switch for local side use. Each port supports programmable rate limiting from 64kbps to 4608kbps.

Ethernet transmission channel may be divided into independent transmission channels through the virtual VLAN mechanism. Up to 16 independent VLANs are supported (full range VID: 0-4095). VLAN tag/untag options, per-port basis. Embedded HTTP server, TELNET server and SNMP agent allows free configuration of the device performance by standard Web browser and continuous monitoring from any management platforms equipped with SNMP client. In addition, built-in SMTP service daemon allows to notify the operator in case of system failure.

A standard application is presented in the drawing below.
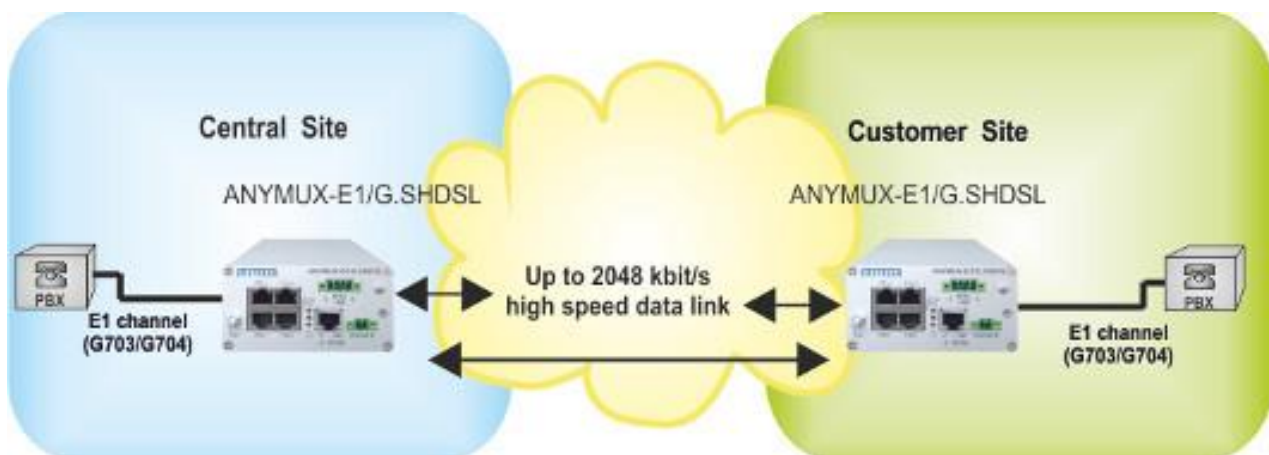
Rys. 1. Fig. 1. Example application connecting two PBXs using modems.

Technical specifications

Supported transmission standards

- IEEE 802.3 10Base-T Ethernet
- IEEE 802.3u 100Base-TX Fast Ethernet
- IEEE 802.1q VLAN

Supported protocols

- Function „autocrossover" MDI/MDIX
- Full/half duplex
- Flow control function

Supported standards, recommendations and directives EMC Security*:

- PN-EN 55011:2012 - - Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement
- *PN-EN 55022:2010/AC:2011 - Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement*
- *PN-EN 55024:2011/A1:2015-08* – Electromagnetic compatibility (EMC) - Information technology equipment immunity characteristics - Limits and methods of measurement
- *PN-EN 60950-1:2007/A2:2014-05- Information technology equipment*–Safety– Part 1: General requirements
- *EMC 2004/108/WE* – Electromagnetic Compatibility Directive
- *LVD 2006/95/WE* – Low Voltage Directive
- IEC 61000-4-2 Electromagnetic compatibility (EMC)- Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test
- IEC 61000-4-3 Electromagnetic compatibility (EMC)- Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test
- IEC 61000-4-4 Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test
- IEC 61000-4-5 Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test
- IEC 61000-4-6 Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields
- IEC 61000-4-8 Electromagnetic compatibility (EMC) – Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test
- IEC 61000-4-11 Electromagnetic compatibility (EMC) – Part 4-11: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests
- IEC 61000-4-12 Electromagnetic compatibility (EMC) – Part 4-12: Testing and measurement techniques – Ring wave immunity test
- IEC 61000-4-29 Electromagnetic compatibility (EMC) – Part 4-29: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations on d.c. input power port immunity tests

*- list of supported standards may vary with the development of the device

Line G.SHDSL interface

- Rated bitrate: n x 64kbps (n=1-32) 2048kbps
- Line coding: TC PAM
- Screw-type connector
- Maximum range of transmission 4 km over *0.4mm2* coper wires

Local Ethernet ports

- Baud rate 100/10Mbps
- Flow control function
- Autocrossover function MDI, MDI-X
- Support for VLAN, IEEE 802.1q
- Connection state signalling
- 4xRJ-45 connector

Local E1 interface 2048kbit/s

- 2048 kbps ± 50 ppm binary throughput
- *Framed* and unframed (G.703/*G.704) compliance*
- 120 Ohm E1 impedance
- Line code HDB-3
- Types of connector: RJ-45

Management

- SNMP v.1
- HTTP protocol and web browser as a
- management application
- SMTP - send e-mail message in case of failure
- Through the dedicated terminal port RJ-45 (9600, N,8,1) preliminary configuration

Dimension

- Housing 103x230x53mm
- Weight to 1kg

Environmental requirements

- Operating temperatures: +5° do +45°C

Power supply

- Supply voltage range 12 to 60V DC
- External power supply included as optional 230VAC/48VDC
- Up to 6W power consumption

Additional accessories:

- **ZAS-ANYMUX-01** Zasilacz wtyczkowy 230V AC(DC) / 48V DC 0,5A, 0+50°C
- **ZAS-ANYMUX-03** Zasilacz 230VAC, 220VDC / 48VDC, 30W, -20+70°C, montaż na szynę DIN

BITSTREAM

We create reality, but look into the future.