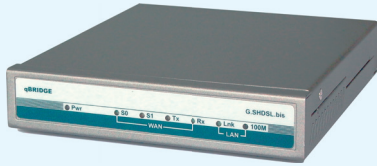# ETHERNET
everywhere

Ethernet over xDSL
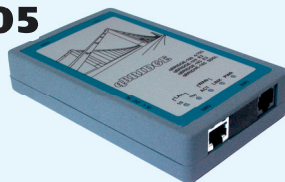## (G.SHDSL.bis, G.SHDSL, SDSL)

G.SHDSL.bis modem
qBRIDGE-206

qBRIDGE-206 is a G.SHDSL.bis (ITU-T G.991.2 Annex F&G and Annex A&B) modem operating in the "Bridge" mode. The modem is designated for optimized Ethernet delivery known as Ethernet in the First Mile (EFM). qBRIDGE-206 enables data transmission speed up to 5.7 Mbps on 2-wire line and up to 11.4 Mbps on 4-wire line. It supports TC-PAM32 line coding and achieves 11.4 Mbps throughputs within the range of up to 2,5 km with 0.4 mm wire diameter. The modem don't use ATM technology and it is transparent for "tagged VLAN" frames.

G.SHDSL modem
qBRIDGE-106

qBRIDGE-106 is a G.SHDSL (ITU-T G.991.2 Annex A&B) modem with TC-PAM16 line coding operating in the "Bridge" mode. qBRIDGE-106 can be used in point to point applications as well as in point to multipoint applications with mini-DSLAM. The modem is cost effective solution for connecting remote LANs that provides high performance and reliability. qBRIDGE-106 allows transfer data with speed up to 2.3 Mbps on 2-wire line. The modem is transparent for "tagged VLAN" packages and it don't use ATM technology to increase performance.

SDSL modem
qBRIDGE-105

qBRIDGE-105 is the cheapest and easy to use SDSL modem with 2B1Q line coding operating in the "Bridge" mode. qBRIDGE-105 can be used in point to point applications as well as in point to multipoint applications with 8 port SDSL mini-DSLAM NSG-800/maxS-8. The modem is cost effective solution for connecting remote LANs that provides high performance and reliability. qBRIDGE-105 allows transfer data with throughput up to 2.3 Mbps on 2-wire line. The modem is transparent for "tagged VLAN" packages and it don't use ATM technology to increase performance and eliminate additional overhead.

SHDSL router, NTU
NSGate-200/S

It is a large family of G.SHDSL NTU/modems that provides different services including routing, bridging and transparent transmission of different channels (Ethernet, E1, V.35) over G.SHDSL 2 or 4 wire line. Some members of the family provide extended routing bridging and QoS capabilities. Other members are designed for transparent transmission of Ethernet, E1 and V.35 channels over G.SHDSL line. The family includes G.SHDSL rege-nerator designed for using in industrial temperature range. Some devices support remote power feeding that allows to use up to two regenerators with no additional power sources.

Ethernet over FIBER (Media converters, Multiplexers PDH)

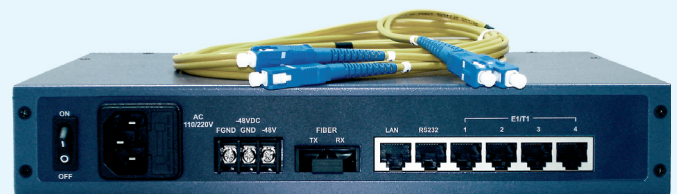### 1000Base-T to 1000Base-LX Media Converters
NSGate-FG

The Gigabit Ethernet media converter series is designed to convert 1000Base-T signal to/from 1000Base-LX signal. It is used to extend the connection distance between two Copper Gigabit Ethernet devices via fiber cable transparently with no performance degradation. The series supports a single mode fiber up to 120 km with SC connector types (LC and MT-RG optional). They are also available in dual fiber or single-fiber (WDM) options. The NSGate-FG series is an ideal solution to connect networks on different floors, separate buildings and to extend distances between servers and workgroups in a full-duplex networking environment.
FG-X10   dual fiber (1550 нм DFB, 100 km, SM, SC)
FG-X16   dual fiber (1550 нм DFB, 160 km, SM, SC)
FG-Wx8   single-fiber (WDM, 1510нм / 1590нм, 80 km, SM, SC).
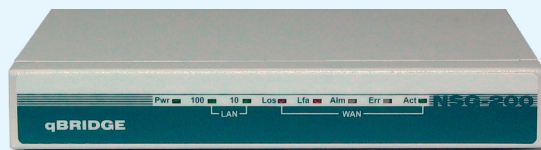
Fiber Optical Multiplexer
FoMUX

FoMUX is a low cost and high performance solution for transmitting E1 channels,100 Mbps Ethernet and asynchronous channels over fiber. It extends the transmission distance up to 160 km over dual fiber or single-fiber cable. All electrical characteristics of E1 interfaces are compliant with ITU-T standards and compatible with any E1 compliant equipment from different vendors. E1 ports are transparent in terms of data and synchro-nization so both E1 framed and unframed mode is supported. The 100Mbps Ethernet interface supports auto negotiation and can be full/half duplex. FoMUX provides multiple broadband transmission capacities over single mode fiber for point-to-point connectivity. The FoMUX shall be a stand-alone unit, which can be either placed on a desktop or mounted in a standard 19" rack.

NSGate
+7 495 3636317   www.nsgate.ru

Ethernet over PDH/SDH (E1, E2, E3)
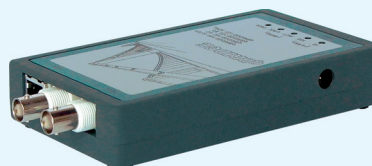
Ethernet to E1 converter
qBRIDGE-100, qBRIDGE-101

qBRIDGE-100/101 is a high performance converter/bridge that is suitable to connect remote segments of 10/100Base-TX Ethernet networks over standard E1 channels (SDH or PDH network). qBRIDGE-100 can be connected to ITU G.703 unframed links only. qBRIDGE-101 can be connected to ITU G.703/G.704 framed as well as to ITU G.703 unframed links. It enables connection of two LANs through E1 line using whole E1 stream or selected timeslots only. qBRIDGE-101 supports all functionality of the qBRIDGE-100 but has selected data transfer speed 64-1984 Kbps with 64 Kbps steps and supports fractional E1 mode.
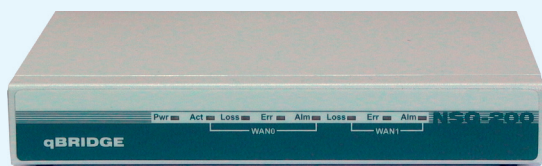
Ethernet to E2/E3 converter
qBRIDGE-102, qBRIDGE-103

qBRIDGE-102/103 is a converter/ bridge that can be used for connection of remote segments of 10/100Base-TX Ethernet networks over an SDH or PDH telecommunication network using unframed E2 (E3) channels with fixed bandwidth of 8448 Kbps (E2) or 34368 Kbps (E3). G.703 interface is applied. This allows the provision of convergent services (VoIP, video, data). Furthermore this bridge can also operate as a modem in "point-to-point" application using two coaxial cables. The maximum cable length is up to 400 m.

Dual E1 access unit/ "Drop-Insert" Multiplexer
qBRIDGE-201

It is a high performance dual E1 access unit with an opportunity of allocation of a part of E1 bandwidth (timeslots) for Ethernet traffic. The device has one port 10/100Base-TX Ethernet and two ports E1. It can be used in a standard mode of interface converter (like qBRIDGE-101 with redundant E1 channel) as well as in a mode "Drop-Insert" (Add-Drop) Multiplexer with transparent transfer of unused timeslots from one E1 port to another one.

Inverse multiplexer: Ethernet over 4 x E1
qBRIDGE-401

qBRIDGE-401 is a very reliable, high performance and cost effective converter/inverse multiplexer suitable to connect Fast Ethernet LANs over up to four bonded E1 channels. The qBRIDGE-401 devices support four framed E1 ports. It also has embedded four ports 10/100Base-TX Ethernet switch with enhanced QoS and traffic prioritization support. Device can be used in Ethernet over PDH/SDH or point-to-point applications.

VoIP Gateways
NSGate-3000

The NSGate-3000 Series VoIP Gateways are multiprotocol-enabled to support SIP and H323 protocols gateways. NSGate 3000 is easy-to-install VoIP Gateway that supports various types of Internet connection and in addition to transparent bridge mode provides NAT, Virtual Server and DHCP server functions for LAN. Gateway supports two different operation modes: server registration mode (H323 Gatekeeper or SIP Proxy server) and peer-to-peer mode with "hotline" support. NSGate 3000 provides high voice quality and optimized packet voice streaming (VAD, CNG, Echo Cancellation, Dynamic Jitter Buffer), supports all standart VoIP codecs (G.711a/µ, G.723.1, G.729AB), provides a wide range of adjustment options and compatibility with various hardware and software. These devices provide FAX transmission over T.30 and T.38 protocols. The special feature of this series is implementation of Anti-Seized Line algorithm which helps to obtain high-quality interconnection between PBX and FXO-ports of NSGate-3000. Also devices implement Smart-QoS and ToS (quality of service management) and therefore usage of these devices in high usage channels simultaneously with a lot of other equipments is possible.