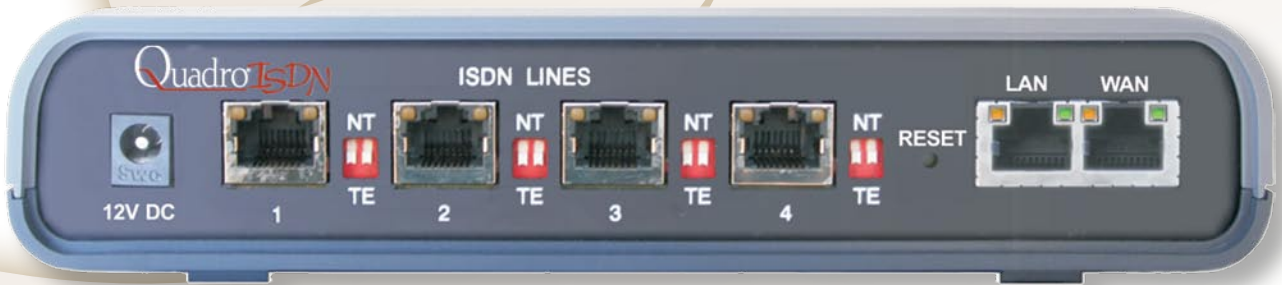


Quadro[®] ISDN

THE VOICE OVER IP GATEWAY



The Quadro Gateway to PSTN, ISDN BRI Extension and/or Mini POP

Gateway to the PSTN

The Quadro Gateway is a modular approach to adding additional outside PSTN lines (ISDN BRI) to a corporate phone network that uses Epygi's Quadro IP PBXs. Each Quadro Gateway is a stand-alone SIP gateway device with 4 outside ISDN BRI lines. Multiple Quadro Gateways can be added to a Quadro IP PBX depending on how many additional lines are required. Uses include the addition of inbound lines, the balancing of outbound call volumes from a combination of analog and IP phones, fax lines, emergency lines and individual direct dial numbers for each member of staff.

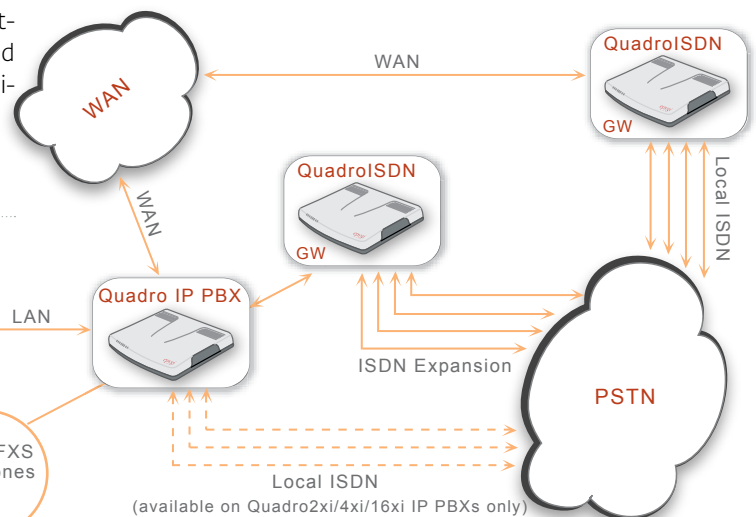
ISDN BRI Extension for Quadro IP PBX

Connected via Ethernet to the LAN interface of a Quadro IP PBX, the Quadro Gateway delivers four additional ISDN lines for PSTN calls. Minimal configuration is needed, the Quadro IP PBX will automatically use the new ISDN ports and present them within its management system as additional ISDN lines. These lines may be co-located with the IP PBX or located remotely as an "extension cord" to another office in another city or even another country.



Mini Point of Presence (POP)

The Quadro Gateway can be used as a low cost, mini Point of Presence (POP). In this configuration you remove the IP PBX altogether by assigning VoIP network DID numbers from an ITSP directly to the Quadro Gateway lines. It truly is the lowest cost for creating a local presence anywhere on the globe.



Telephony

Voice Features

Voice Coding G.711, G.726 (16, 24, 32, 40 Kbps), G.729, iLBC (13, 33 kbit/s, 15, 2 kbit/s); (RFC 3951, ITU-T: G.711, G.726, G.729 Annex A; IETF; GR.181; A-law, μ -law coding)
NAT traversal (both manually and STUN)
VAD, CNG, G.168 echo cancellation;
Reduced simultaneous channel capacity;
Supported Called ID standard ETS_300659_1,2,3

Bandwidth Requirements

Per call WAN bandwidth requirements for the following codecs (non-encrypted):

G.711a/G.711u	20 msec	84 kbps
G.726-16	20 msec	37 kbps
G.726-24	20 msec	45 kbps
G.726-32	20 msec	52 kbps
G.726-40	20 msec	60 kbps
G.729a	20 msec	29 kbps
iLBC	30 msec	27 kbps

PBX Features

Multilevel auto attendant with Interactive Voice Response (IVR) and VoiceXMLv2 support
Voice mail with SMS notification
Directory assistance
Call hunting, call blocking
Call statistics
Unified messaging
T.38 fax, fax relay and clear channel fax
Unified Fax Messaging
Dial plans (call routing)
Time of day routing
Multiple user extensions (up to 70 physical/virtual extensions)

ISDN Features

NT mode support
TA mode support
BRI expansion for Quadro IP PBXs

Call Signaling

SIP (RFCs: 3261, 3263, 3265, 3311, 3323, 3324, 3325, 3428, 3515, 3578, 3581, 3725, 3891, 3892, 3842, 3856, 3863, 4028, 4235)
SDP (RFC 2327)
RTP (RFCs: 1889, 1890, 2833, 3389, 3550, 3551, 3555, draft-ietf-avt-rfc2833bis-05, draft-ietf-avt-rtcp-llbc-05)
Fax protocols (ITU-T: T.4, T.30, T.38, V.17, V.21, V.27 ter, V.29)

ISDN Signaling

ITU-T: Q.921, Q.931 (DSS1), Q.951; ETSI ETS300 102 (NET5); NTT INS1500 for Japan

DTMF

In band and out of band signaling support

Connectivity

Premise Connections

1 Ethernet 10/100BASE-T port to connect a PC for configuration purposes (RJ45)

Uplink Connections

1 Ethernet 10BASE-T (RJ45)

ISDN Connection

4 ISDN ports to the Central Office or local PBX (RJ45)

Billing

Radius Client (RFCs: 2865, 2866)

Internet

STUN/NAT traversal (RFC 3489)
IPSec VPN with DES, 3DES and AES encryption in tunnel mode (RFCs: 2402, 2406, 2409)
PPTPVPN
L2TPVPN
Firewall security via:
NAT (Network Address Translation)
Policy and service-based filtering
DHCP server on the LAN side
DHCP client on the WAN side
DNS server with forwarding functionality
SNTP (Simple Network Time Protocol) server/client for computer clock synchronization
PPPoE connection to the ISP with PAP/(MS)CHAP authentication
IP DIFFSERV for QoS
DNS support
NAT/Router with port forwarding and port translation

System

Management

Multilingual WEB interface accessible from LAN and WAN (HTTP/HTTPS)
Password control
Remote diagnostics and software upgrade
Auto-provisioning
VoIP Carriers wizard
Download/restore configuration
Legible and editable configuration files
SNMP Monitoring and Configuration
Reset button with factory reset option

Diagnostics/Testing

LEDs: Busy, Info, Fault, PWR, Line 1, Line 2, Line 3, Line 4
ISDN diagnostics, Remote testing
Power-up diagnostics

Environmental

Physical Dimensions

Desktop devices, wall-mountable:
Measurements: 7.41" x 6.24" x 1.77"
(19 x 16 x 4.5 cm)
Weight: 13 ounces (360 g)

Conditions

41°F - 104°F (5°C - 40°C) operating temperature
41°F - 140°F (5°C - 60°C) storage temperature
5% - 90% non-condensing humidity

Power Supply

Input 100 - 240 VAC; 50/60 Hz; 0.5 A
Output 12.0 VDC; 1.5 A

Regulatory Compliance

Safety: EN60950;
EMC: EN55022, EN55024;
Telecom: TBR3 (ISDN)

Certification:

For European Community, Australia, South Africa

