

# Quadro<sup>®</sup>2xi

THE GLOBAL PHONE NETWORK IN A BOX



## Quadro2xi: The IP PBX with 1 ISDN Port, 2 FXS Ports and 2 IP Phones

The Quadro2xi is an as fully-featured IP PBX for home offices and teleworkers as the Quadro2x is. The important difference: Quadro2xi offers you an ISDN line instead of FXO and connects you via two B-channels of 64 kbit/s each to the digital PSTN. A 10Base-T Ethernet line provides access to the Internet.

Alltogether, two standard phones and two fully-featured LAN IP phones (SIP/MGCP) may be attached. Additional virtual extensions allow e.g., registering at various SIP servers. In addition, all extensions assigned to a line may be mirrored and act as remote IP extensions. Wherever you are, calls will reach you, and you will be able to make calls as if you were at your home office.

### Fully-Featured IP PBX

The Quadro2xi offers the same multitude of features as the Quadro2x: extensive PBX functionality, integrated voicemail, cost saving call routing functionality, IP routing, SIP call signaling and much more.

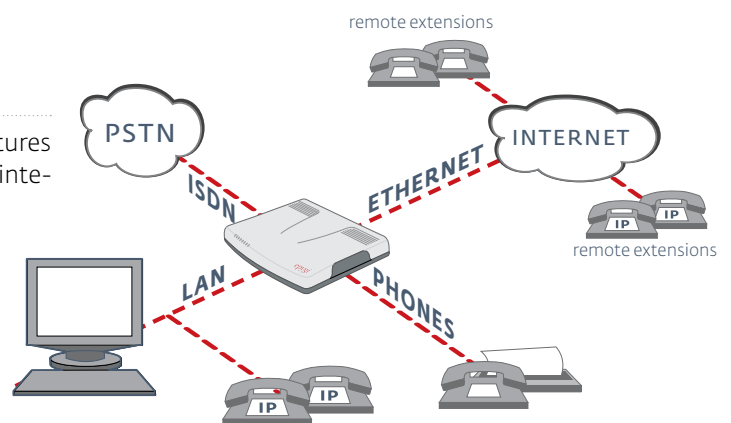
### Integrated Internet Access Router

The Quadro2xi IP PBX embodies a fully-fledged Internet access router with firewall

security, including NAT, policy and service based filtering. An extensive IPSec VPN functionality with DES, 3DES and AES encryption makes an additional contribution to data security.

### VoIP Carriers

The Quadro2xi IP PBX is easily applicable for VoIP Carriers as well as small businesses. For VoIP carriers, a special wizard has been implemented that facilitates the configuration of Quadro2xi to work according to individual requirements.



## Telephony

### Voice Features

Voice Coding G.711, G.723 (5.3, 6.3 kbit/s), 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.723, Annex A, G.726, G.729 Annex A; IETF; ITU-T Q.23, Q.24, Bellcore GR.506, GR.181; ITU-T G.168-2000, 2002; ETS\_300659\_1,2,3)

NAT traversal (both manually and STUN)

VAD, CNG, G.168 echo cancellation

### Bandwidth Requirements

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

G.711/G.711u	20 msec	84 kbps/105 kbps
G.726-16	20 msec	37 kbps/59 kbps
G.726-24	20 msec	45 kbps/65 kbps
G.726-32	20 msec	52 kbps/74 kbps
G.726-40	20 msec	60 kbps/80 kbps
G.729a	20 msec	29 kbps/49 kbps
G.723	30 msec	21 kbps/34 kbps
iLBC	30 msec	27 kbps/41 kbps

### PBX Features

Call block, forward, hold, ID, park, relay, transfer, wait

Voice mail

Multilevel auto attendant with Interactive Voice Response (IVR)

Distinctive ring, hold music, speed dialing

Many extensions ring

Call statistics

Do not disturb service

Unified messaging

3-way conferencing

Hotline service

T.38 fax, fax relay and clear channel fax

Unified Fax Messaging

Busy auto redial

Multiple user extensions (up to 32 physical/virtual/remote extensions)

### Call Signaling

SIP on the WAN and LAN side (RFCs: 3261, 3263, 3265, 3311, 3428, 3515, 3842, 3856, 3891, 3892, 3581, draft-ietf-sip-session-timer-15, draft-ietf-sipping-dialog-package-05; Presence: RFCs: 3842, 3856, 3863, draft-ietf-sipping-dialog-package-05)

SDP (RFC 2327)

RTP (RFCs: 1889, 1890, 2833, 3389, 3550, 3551, 3555, draft-ietf-avt-rfc2833bis-05, draft-ietf-avt-rtp-ilbc-05) in band and out of band signaling support

RTP Proxy

MGCP with support of the full MGCP business extensions and full screen and soft buttons control of the MGCP phones on the LAN side (RFCs: 3149, 3435, 3660, draft-foster-mgcp-returncodes-01, PKT-SP-EC-MGCP-10-040402)

Fax over IP (ITU-T: T.4, T.30, T.38, V.17, V.21, V.27 ter, V.29)

### POTS Signaling

Loop start

FSK and DTMF Caller ID support

### ISDN Signaling

ITU-T: Q.921, Q.931, Q.951; ETSI ETS300102; NTT INS64 for Japan

## Connectivity

### Extensions

Total 70 extensions including FXS phones (2), LAN IP phones (2), remote extensions (4) and virtual extensions

The virtual extensions allow e.g., registering on several SIP servers

4 remote extensions for any FXS extension and any LAN IP phone

### LAN IP Phones

2 SIP/MGCP phones

Remote IP extensions may be enabled for both SIP/MGCP phones

### System Capacity

8 simultaneous VoIP calls with external parties

Unlimited station to station calling for IP phones

Unlimited station to station calling for analog phones

2 simultaneous ISDN calls with external parties

2 simultaneous calls through a VPN

### Premise Connections

2 short-loop FXS ports (RJ11)

1 Ethernet 10/100BASE-T port (RJ45)

### Uplink Connection

1 ISDN port to the Central Office (RJ45)

1 Ethernet 10BASE-T (RJ45)

(Other Quadro IP PBX models offer also FXO, ADSL or G.SDSL uplink connectivity. Please refer to the corresponding Technical Data Sheets.)

### Billing

Radius Client (RFCs: 2865, 2866)

## Internet

NAT address translation

STUN/NAT traversal (RFC 3489)

IPSec VPN with DES, 3DES and AES encryption in tunnel mode (RFCs: 2402, 2406, 2409)

PPTP/VPN

L2TP/VPN

Manual and automatic IKE key support

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

Mail client to send voice messages as e-mail attachments (.wav) and system notifications

DNS (DYNDNS) support with third party

Port forwarding

Port translation

## System

### Management

Multilingual WEB interface accessible from LAN and WAN (HTTP/HTTPS), the WAN management access can be switched off

Password control

Remote diagnostics and software upgrade

VoIP Carriers wizard

Download/restore configuration

Legible and editable configuration files

Auto-configuration via TFTP

Reset button with factory reset option

### Diagnostics/Testing

LEDs: Busy, Info, Fault, LAN, WAN, Line 1, Line 2

IP Call Quality Rating

Remote testing and VoIP diagnostics

Power-up diagnostics

Loop-back testing

## 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: EN 60950;

EMC: FCC Part 15 Class B;

EN55022 Class B, EN55024; EN 60950;

Telecom: TBR3 (ISDN);

