

# 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.

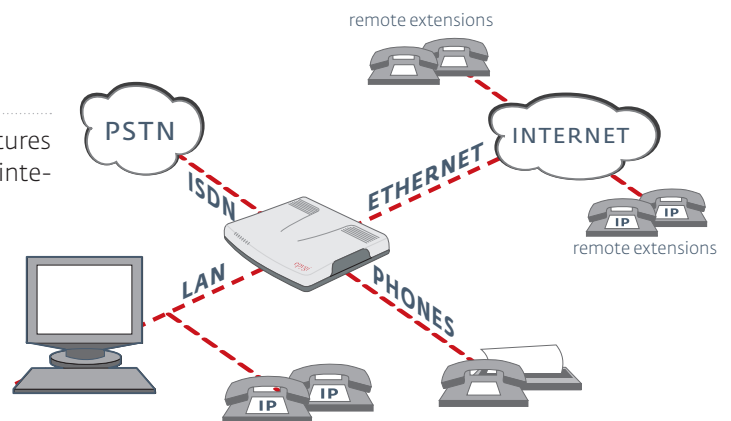
### Integrated Internet Access Router

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: 741" 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);

