

# Quadro<sup>®</sup>2xi

THE GLOBAL PHONE NETWORK IN A BOX



## Quadro2xi: The IP PBX with 1 ISDN Port, 2 FXS Ports and 16 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 one 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 16 fully-featured LAN IP phones 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.

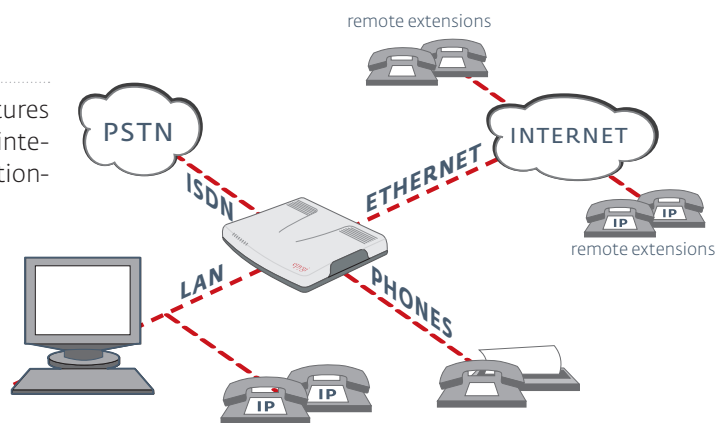
### Integrated Internet Access Router

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.729A, iLBC (13, 33 kbit/s, 15, 2 kbit/s); (ITU-T: G.711, G.723, Annex A, G.726, G.729 Annex A; RFC 3951; iLBC; 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.711A/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 blocking, Forwarding, Holding, Transferring  
Call relay, Call waiting, Caller ID Detection  
Voice mail  
Call park, Pickup, Paging, Intercom  
Multilevel auto attendant with Interactive Voice Response (IVR) and VoiceXMLv2 support  
Voice mail with SMS notification  
Distinctive ringing  
Speed dialing  
Many extension ringing  
Receptionist  
Call hunting, Hiding Caller ID  
Automated Call back from Auto Attendant  
Hold music  
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  
Directory assistance  
Dial plans (call routing)  
Time of day dialing  
Call Queue

### Call Signaling

SIP on the WAN and LAN side (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-rtsp-05),  
in band and out of band signaling support  
RTP Proxy  
Fax over IP (ITU-T: T.4, T.30, T.38, V.17, V.21, V.27ter, V.29)

### POTS Signaling

Loop start  
FSK and DTMF Caller ID support

### ISDN Signaling

ITU-T: Q.921, Q.931, Q.951; ETSI ETS300 102;  
NTT INS64 for Japan

## Connectivity

### Extensions

Up to 70 extensions including FXS phones LAN IP  
Phones remote and virtual extensions  
All extensions can be registered on several SIP servers

### LAN IP Phones

4 SIP phones by default  
16 additional SIP phones may be added with a feature key  
Remote IP extensions may be enabled for all SIP phones

### System Capacity

10 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  
Up to 4 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

STUN/NAT traversal (RFC 3489)  
IPSec VPN with DES, 3DES and AES encryption  
in tunnel mode (RFCs: 2402, 2406, 2409). Manual and automatic IKE key support

PPTP VPN

L2TP VPN

Firewall security via:

NAT (Network Address Translation)  
IDS  
Policy and service-based filtering  
Stateful inspection firewall

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  
Auto-provisioning  
VoIP Carrier Wizard  
Download/restore configuration  
Legible and editable configuration files  
Auto-configuration of IP phones via TFTP  
SNMP Monitoring  
Reset button with factory reset option  
Custom Language Pack

### 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; 0.5A  
Output 12.0 VDC; 1.5A

### Regulatory Compliance

Safety: EN 60950;  
EMC: FCC Part 15 Class B;  
EN55022 Class B, EN55024; EN 60950;  
Telecom: TBR3 (ISDN);