

# Quadro<sup>®</sup>4xa

THE GLOBAL PHONE NETWORK IN A BOX



## Quadro4xa: The ADSL IP PBX with 2 FXO Ports, 4 FXS Ports and up to 62 IP Phones

The Quadro4xa is the fully-featured IP PBX for small businesses that prefer ADSL as their uplink connectivity. Connected by two FXO lines to the PSTN and over ADSL to the Internet, the Quadro4xa allows to make up to 20 calls in parallel.

Besides four FXS phones, up to 62 fully-featured SIP phones may be attached to Quadro4xa's LAN port. 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 in your office.

### Fully-Featured IP PBX

The Quadro4xa offers a multitude of features including extensive PBX functionality, integrated voicemail, cost saving call routing functionality, IP routing, SIP call signaling and much more.

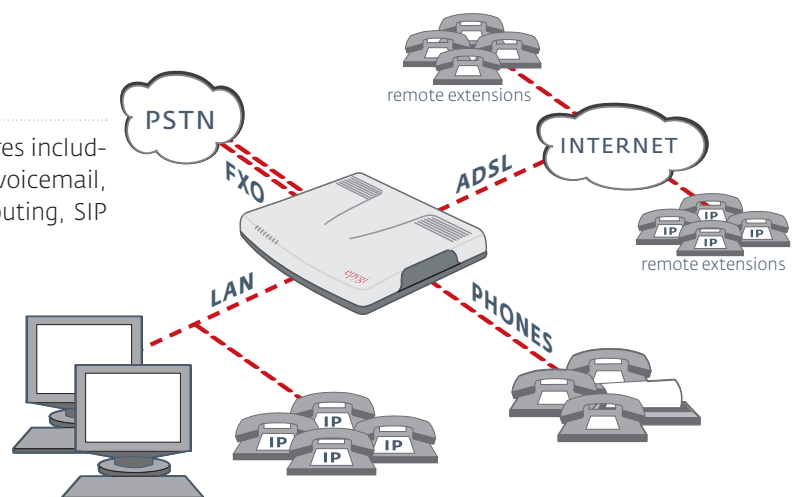
### Integrated Internet Access Router

The Quadro4xa IP PBX embodies a fully-fledged Internet access router with firewall security, including IDS, NAT, policy and service based filtering as well as stateful inspection. An extensive IPSec

VPN functionality with DES, 3DES and AES encryption makes an additional contribution to data security.

### VoIP Carriers

The Quadro4xa 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 Quadro4xa 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.723.1 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 Lifeline POTS (single line) on line 1

### 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 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-rtp-ilibc-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.27 ter, V.29)

### POTS Signaling

Loop start  
FSK and DTMF Caller ID support

## 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

30 SIP phones by default  
32 additional SIP phones may be added with feature keys  
Remote IP extensions may be enabled for all SIP-phones

### System Capacity

20 simultaneous VoIP calls with external parties  
Unlimited station to station calling for IP Phones  
Unlimited station to station calling for Analog Phones  
2 simultaneous PSTN calls with external parties  
Up to 4 simultaneous calls through a VPN

### Premise Connections

4 short-loop FXS ports (RJ11)  
1 Ethernet 10/100BASE-T port (RJ45)  
1 USB master connection

### Uplink Connection

2 FXO ports to the Central Office (RJ11)  
1 ADSL port (RJ11)  
DSL Layer: ITU: G.992.1 (G.dmt) Annex A, G.992.2 (G.lite) Annex A, G.994.1; ANSI T1.413 Issue 2;  
ATM Layer: VCI (0-2047) VPI 0-15 address range;  
Single VCI support; ATM Forum UNI3.1/4.0 PVC, AAL5, UBR  
Application Adaption Protocols: RFC 2684  
Connection Types: PPPoE, PPPoA, RFC 1483B  
Other Quadro IP PBX models offer also ISDN, Ethernet or C.SDSL uplink connectivity. Please refer to the corresponding Technical Data Sheets.

### USB Expansion

USB memory sticks for additional voice mail storage

### Billing

Radius Client (RFCs: 2865, 2866)

## 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 via TFTP  
SNMP Monitoring  
Third Party Call Control XML RPC  
Reset button with factory reset option  
Custom Language Pack

## 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:

Intrusion Detection System  
NAT (Network Address Translation)  
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, IETF RFC 2516

PPPoA, encapsulation RFC 2364

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

### Diagnostics/Testing

LEDs: Busy, Info, Fault, USB, LAN, WAN, Line 1, Line 2  
IP Call Quality Rating  
Remote testing and VoIP diagnostics  
Power-up diagnostics

## Environmental

### Physical Dimensions

Desktop devices, wall-mountable:  
Measurements: 10.04" x 8.27" x 1.77"  
(25.5 x 21.0 x 4.5 cm)  
Weight: 22.6 ounces (640 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

