

Quadro^{2x}

THE GLOBAL PHONE NETWORK IN A BOX



Quadro2x: The IP PBX with 1 FXO Port, 2 FXS Ports - up to 16 SIP Phones

The Quadro2x is a fully-featured IP PBX for home offices and teleworkers. Connected by one FXO line to the PSTN and over 10Base-T Ethernet to the Internet, the Quadro2x allows attaching two FXS phones and 8 fully-featured LAN IP phones. The 8 User Expansion increases the total number of LAN IP phones to 16. Additional virtual extension 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 in your office.

Fully-Featured IP PBX

The Quadro2x offers a multitude of features including extensive PBX functionality, integrated voicemail, cost saving call routing functionality, IP routing, SIP call signaling and much more.

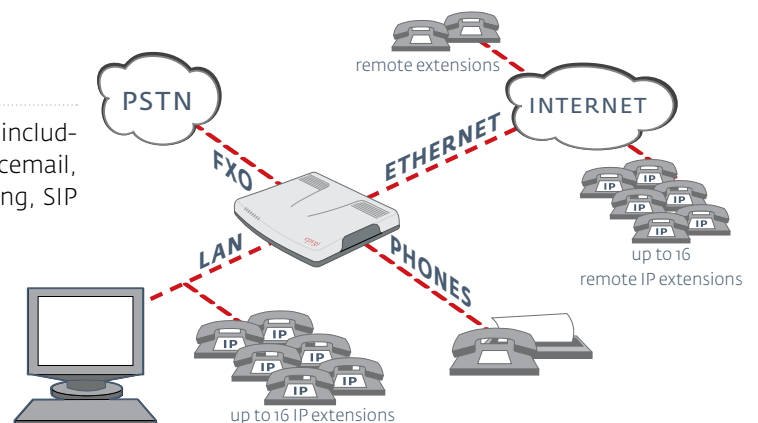
Integrated Internet Access Router

The Quadro2x 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 Quadro2x 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 Quadro2x to work according to individual requirements.



Telephony

Voice Features

Voice Coding G.711, G.726 (16, 24, 32, 40 Kbps), G.729A, iLBC (3, 33 kbit/s, 15, 2 kbit/s), (ITU-T: G.711, 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
iLBC	30 msec	27 kbps/41 kbps

PBX Features

Call blocking, Forwarding, Hold, Transfer
Call relay, Call waiting, Caller ID Detection
Voice mail
Call park, Pickup, Paging, Intercom
Multilevel auto attendant with Interactive Voice Response (IVR) and VoiceXML v2 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 routing
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-ilbc-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 90 extensions including FXS phones, IP Phones, remote and virtual extensions
All extensions can be registered on different SIP servers

LAN IP Phones

8 SIP phones by default
8 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
1 PSTN call 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 FXO port to the Central Office (RJ11)
1 Ethernet 10BASE T (RJ45)
(Other Quadro IP PBX models offer also ISDN 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 and fax messages (.wav and .tif) as e-mail attachments and system notifications
DNS (DYNDNS) support with third party
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 Carrier Wizard
Download/restore configuration
Legible and editable configuration files
Auto-configuration of IP phones via TFTP and HTTP
SNMP Monitoring and Configuration
Third Party Call Control XML RPC is available to order
Reset button with factory reset option
Custom Language Pack
Outlook Feature

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
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: UL 60950; CSA 22;
EMC: FCC Part 15 Class B;
EN 55022 Class B, EN 55024;
Telecom: CTR21/TBR21

Certification:

For Australia, Brazil, Canada, European Community, Mexico, Russia, USA



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