

# Quadro<sup>®</sup>M32x



## QuadroM32x: The Enterprise IP PBX Solution

The QuadroM32x is designed to deliver greater IP Line capacity, reaching 192 registered extensions and 60 concurrent calls. Epygi's largest IP PBX continues to deliver all the features currently found on our existing Quadro line with the addition of some vital enterprise grade tools.

Conferencing and Automatic Call Distribution are a few of the unique features to this product. Third party integration with Unified Multimedia Communications platforms is another key solution for large businesses.

Expanding the digital and analog trunking capacity of the QuadroM32x is simple using Epygi Quadro Gateways. Epygi's FXO, ISDN, and E1/T1 Gateways with the Quadro and QuadroM IP PBX line. This flexibility will allow our customers to satisfy any configuration need.

### Integrated Conference Server

Conferencing is a common feature used by today's large organizations. The QuadroM32x features an optional 64 person conference bridge with the same features found on our standalone Quadro Conference Server. The presenter can mute participants, assign speakers and track overall activity. Regular participants can also view the active meeting and can indicate a request to speak during a muted session. This productivity enhancing tool is easily enabled using a software license key.

### Redundancy Options

The QuadroM32x also offers a built-in E1/T1 digital trunk interface. This link can be used as the primary interface or as a redundant link while utilizing an ITSP as the primary service. Redundant Ethernet links are also included for secondary failover networks or a voice DMZ.

## What are your VoIP BENEFITS?

- Large capacity
- Increased reliability & redundancy
- True Enterprise grade solution

## Telephony

### Voice Features

Voice Coding G.711, G.726 (16, 24, 32, 40 Kbps), G.729A, iLBC (13,33 kbit/s, 15.2 kbit/s);  
 (ITU-T: G711, G.726, G729 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):

G.711	20 msec	84 kbps
G.726-16	20 msec	37 kbps
G.726-24	20 msec	45 kbps
G.726-32	20 msec	52 kbps
G.726-40	20 msec	60 kbps
G.729a	20 msec	29 kbps
iLBC	30 msec	27 kbp

### 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 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  
 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  
 Voice Mail profile  
 Automatic Call Distribution  
 Conference Server

### Call Signaling

SIP (RFCs: 3261, 3263, 3265, 3311, 3323, 3324, 3325, 3428, 3515, 3578, 3581, 3725, 3842, 3856, 3863, 3891, 3892, 4028, 4235)  
 SDP (RFC 2327)  
 RTP (RFCs: 1889, 1890, 2833, 3389, 3550, 3551, 3555, draft-ietf-avt-rf-c2833bis-05, draft-ietf-avt-rtp-ilbc-05),  
 Fax over IP (ITU-T: T4, T30, T38, V17, V21, V27 ter, V29).

### POTS Signaling

Loop start

### CCS Signaling

ITU-T: Q.921, Q.931 (DSS1), Q.951;  
 ETSI ETS300 102 (NET5); ECMA-143- (QSIG); SR-NWT-002120 (NI2)  
 NTT INS1500 for Japan  
 PRI switch types: DSS1, NET5, QSIGg, 5ESS,  
 NTT ins1500 DMS 100

### CAS Signaling

CAS (MELCAS, ITU, ITU-T2, ITU-T: Q.400, Q.411, Q.421, Q.422, Q.440-Q.442, Q.450-Q.452, Q.454, Q.455, Q.457, Q.458, Q.460-Q.468, Q.470-Q.476  
 Types: Loop Start, Ground Start; E&M Delay Dial, E&M Wink Start, E&M Immediate Start, E&M FGD  
 R2 DTMF, R2 compelled, R2 non-compelled, R2 compelled with ANI, R2 non-compelled with ANI; R2 Parameters for Brazil and Mexico etc.)  
 ANSI T1.403.02-199, T1.403.02a-2001

### DTMF

In band & out of band signaling support.

## Connectivity

### Extensions

Up to 400 extensions including FXS phones LAN IP Phones remote and virtual extensions  
 All extensions can be registered on different SIP servers

### LAN IP Phones

32 SIP phones by default;  
 160 additional SIP phones may be added with feature keys  
 Remote IP extensions may be enabled for each SIP phone  
 Plug-and-Play with select IP Phone manufactures

### System Capacity

Maximum 64 concurrent VoIP calls with external parties  
 Unlimited station to station calling for IP phones

### Premise Connections

2 short-loop FXS ports (RJ11)  
 2 Ethernet 10/100 BASE T port (RJ45)

### Uplink Connection

1 Ethernet 10/100 BASE T (RJ45)

### External Storage

Compact Flash

### 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:

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  
 IP DIFFSERV for QoS  
 Virtual LAN (VLAN/IEEE 802.1Q)  
 Mail client to send voice and fax messages as e-mail attachments (.wav and .tif) 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  
 Reset button with factory reset option  
 Custom Language Pack

### Diagnostics/Testing

LEDs: Busy, Info, Fault, LAN, WAN, Line  
 E1/T1 diagnostics, Loop settings  
 Remote testing

## Environmental

### Physical Dimensions

Rack-mountable devices:  
 Measurements: 19" x 7.56" x 1.77"  
 (48.0 x 19.2 x 4.5 cm)  
 Weight: 2.47 lbs.(1090 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

### Regulatory Compliance

EMC: CFR 47, PART 15, SUBPART B CLASS A  
 Telecom: TBR12/TBR13; AS/ACIF

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