

# Quadro<sup>®</sup>FXS 16



## QuadroFXS 16 the Voice over IP FXS Gateway

The QuadroFXS 16 port gateway is a modular approach to adding additional FXS lines (analog phones) to a corporate phone network that uses Epygi's Quadro IP PBXs. Multiple QuadroFXS 16 Gateways can be added to a Quadro IP PBX for additional analog phone support. Each device allows the use of 16 additional analog phones by converting the IP extensions of the IP PBX into analog ports without the complexity of using other FXS gateways resulting in a multi-vendor solution. An Epygi solution from end-to-end increases the overall reliability of a hybrid VoIP deployment and facilitates Plug-and-Play functionality.

### Integration with IP PBX

This solution simply connects to the existing Ethernet network and communicates directly with the LAN interface of a Quadro IP PBX. Therefore, minimal configuration is needed to continue to support the current analog phones installed. The Quadro IP PBX will automatically use the new FXS ports and display the new extensions in Quadro IP PBX management GUI. The new analog lines can then be managed from the IP PBX interface without a need to now support multiple Quadro devices.

## What are Your VoIP BENEFITS?

- Easy PnP installation
- Retain analog investment
- Reliable Epygi VoIP technology
- Single interface management



## Telephony

### Voice Features

Voice Coding G.711, G.726 (16, 24, 32, 40 Kbps), G.729, iLBC (13,33 kbit/s, 15,2 kbit/s);  
 (ITU-T: G711, 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;)  
 VAD, CNG, G.168 echo cancellation

### Bandwidth Requirements

Per call WAN bandwidth requirements for the following codecs (non-encrypted /VPN encrypted):

G.711a	20 msec	84 kbps/105 kbps
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

(Supported with Quadro IP PBX)

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 service  
 Unified messaging  
 3-way conferencing  
 Hotline service  
 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-o5), in band and out of band signaling support  
 RTP Proxy

## POTS Signaling

Loop start  
 FSK and DTMF Caller ID support

## Connectivity

### System Capacity

16 calls via Quadro IP PBX

### Premise Connections

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

### Uplink Connection

1 Ethernet 10BASE T (RJ45)

## 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 client on the WAN side  
 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  
 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  
 PnP with Quadro IP PBX  
 Download/restore configuration  
 Legible and editable configuration files  
 SNMP Monitoring and Configuration  
 Reset button with factory reset option  
 Custom Language Pack

### Diagnostics/Testing

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

## Environmental

### Physical Dimensions

Measurements: 19" x 7.56" x 1.77"  
 (48.0 x 19.2 x 4.5 cm)  
 Weight: 9.2 lbs. (4.18 kg)

### Conditions

41°F - 104°F (5°C - 35°C) operating temperature  
 41°F - 140°F (5°C - 60°C) storage temperature  
 5% - 90% non-condensing humidity

### Power Supply

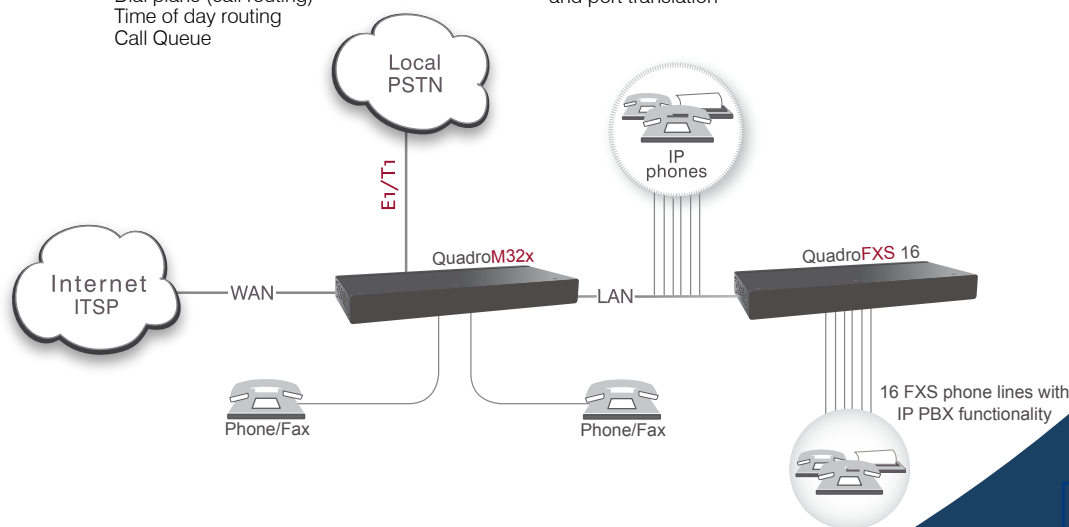
Input 100 - 240 VAC; 50/60 Hz; 0.5 A  
 Output 12.0 VDC; 3.5 A

### Regulatory Compliance

Safety: UL 60950; CSA 22;  
 EMC: FCC Part 15 Class A;  
 EN55022 Class A, EN55024;  
 Telecom: CTR21/TBR21

### Certification:

For Canada, European Community, USA



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