# QXFXS24

Designed to connect existing analog phones to an IP network, enabling their integration into a new VoIP system. This gateway can be easily stacked for increased capacity and is compatible with any SIP-compliant IP PBX. Additionally, it can be used as a plug-and-play solution with the Epygi QX IP PBX. What sets this gateway apart from standard FXS gateways are the numerous features it includes.

| Capabilities | |
|---|---|
| FXS ports | 24 |
| Ethernet LAN port | 1 |
| Ethernet WAN port | 1 |
| Call Routing capable of modifying caller ID or time of day routing | |
| Firewall, VPN Router, Stacking Options, Failover | |

# FEATURES

## Telephony

Basic PBX Features in stand-alone mode
- Call waiting
- Call history
- Hot Line
- Dial plans (call routing), time of day routing
- G3 fax support: T.38 and clear channel fax

**Please note**, that the full range of telephony features inherent to QX IP PBXs also applies to the QXFXS24 when used as an FXS expansion unit with a QX IP PBX.

PC-Based Applications
- QX-Quadro Configuration Console (QCC)

Voice Features
- Voice Coding:
  - G.711, G.726 (16, 24, 32, 40 Kbps), G.729A, iLBC (13,33 kbit/s, 15,2 kbit/s); VAD, CNG, G.168 echo cancellation
- VoIP Encryption:
  - SRTP
- VoIP Signaling:
  - SIP v2, SIP/TLS
- DTMF:
  - In band & out of band signaling support

VoIP Data and Signaling Protocols
- ITU-T G.711, G.726, G.729 Annex A, G.168-2000, 2002, Q.23, Q.24;
- IETF RFC 3951- iLBC;
- Telcordia (Bellcore) GR.506, GR.181;
- ETS_300 659_1,2,3;
- SIP, SIP/TLS (RFCs: 2246, 3261, 3263, 3265, 3311, 3323, 3428, 3515, 3578, 3581, 3842, 3856, 3863, 3891, 3892, 4028, 4235)
- SDP (RFC: 2327, 4568)
- RTP/SRTP (RFCs: 1889, 1890, 3389, 3550, 3551, 3555, 3711, 4733, 3952)
- Fax over IP (ITU-T: T4, T30, T38, V17, V21, V27 ter, V29)

POTS Signaling
- Loop start
- FSK and DTMF Caller ID support
- FSK message waiting indicator support

## Connectivity

Physical Interfaces
- Premise connections:
  - 24 FXS short-loop FXS ports (RJ-21)
  - 1 LAN Ethernet 10/100 BASE-T port (RJ-45)

- Uplink connections:
  - 1 WAN Ethernet 10/100 BASE-T port (RJ-45)

Phones
- 24 analog phones (or other analog devices) to connect via FXS ports

- Virtual extensions:
  - Up to 200 virtual extensions can be added*

System Capacity
- Up to 24 simultaneous VoIP calls with external parties

## Network

- STUN/Network Address Translation (NAT) traversal (RFC 3489)
- IPSec VPN with 3DES and AES encryption in tunnel mode (RFCs: 2402, 2406, 2409)
- Automatic Internet Key Exchange (IKE) keying support
- PPTP VPN, L2TP VPN
- Firewall security via:
  - Intrusion Detection System (IDS)
  - Network Address Translation (NAT)
  - Policy and service-based filtering
  - Stateful inspection firewall
- SIP Intrusion Detection System (SIP IDS)
- DHCP server on the LAN side
- DHCP client on the WAN side
- DNS server with forwarding functionality
- Simple Network Time Protocol (SNTP) server/client for computer clock synchronization
- PPPoE connection to the ISP with PAP/MS CHAP authentication
- IP DIFFSERV for QoS
- SIP tunneling
- DNS (DYNDNS) support with third party
- NAT with port forwarding and translation

## System

Management
- Operation modes: as stand-alone or FXS expansion device
- Easy auto configuration and Plug-and-Play (PnP) with QX IP PBXs
- Multilingual web interface accessible from LAN and WAN (HTTP/HTTPS)
- Password control
- User rights management
- Remote diagnostics and software upgrade
- Download/restore configuration
- Legible and editable configuration files
- FXS Lines Gain Control
- SNMP monitoring and configuration
- Reset button with factory reset option
- Custom language pack
- System event notification via SMS/email
- Emergency recovery

Diagnostics/Testing
- System status LED
- Loop settings
- Network diagnostics
- Security diagnostics
- FAN diagnostics
- Remote testing
- System logs, SIP IDS logs
- Call capture

Billing and Statistics
- Radius Client (RFCS: 2865, 2866), Call Detail Records (CDR)

## Environmental

Physical Dimensions
Rack-mountable devices:
- Measurements:
  - 8.3" x 7.9" x 1.6" (21.0 x 20.0 x 4.0 cm)
- Weight:
  - 2.67 lbs. (1.21kg)

Conditions
- Operating temperature:
  - 41°F - 104°F (5°C - 40°C)
- Storage temperature:
  - 41°F - 140°F (5°C - 60°C)
- Non-condensing humidity:
  - 5% - 90%

Powering Options
- Input: 85-264VAC, 47-63Hz, AC

Power Consumption
- 12.5W (idle), 32.25W (max)

\* The total number of extensions used for analog phones and virtual extensions in stand-alone mode can not exceed 200.