QX100

The QX100 IP PBX is designed for small to mid-sized businesses, supporting up to 256 users and 40 concurrent calls. SIP trunking allows the QX100 to connect directly to an ITSP with no additional equipment. The QX100 includes a firewall and SIP Intrusion Detection & Protection System for optimal security. E1, T1, FXO and FXS ports can easily be provided using the Epygi QX Gateways.

Capabilities

IP phones by default	32
Additional IP phones with keys	224
Total phones	256
Concurrent calls	40
Ethernet LAN port	2
Ethernet WAN port	1
Audio In port	1
Audio Out port	1
SD slot	1

Interconnection *with* QX Gateways

GATEWAYS	Recommended Number (max)
QXFXO4	10
QXE1T1	1 (E1 mode), 2 (T1 mode)
QXFXS24	5

FEATURES

Telephony (Default)

- Auto Attendant with standard and customizable scenarios and call history
- Call blocking, forwarding, hold, transfer, Call Relay and call waiting
- Caller ID detection and hiding caller ID
- Voicemail system
- Voicemail notification via SMS/email
- Caller ID-based voicemail profile
- Call park, call pickup, multicast paging, intercom
- Distinctive ringing
- Speed dial
- Many Extension Ringing, Call hunting
- Receptionist
- Call Park with Paging
- Call Park on Auto Attendant
- Call back from Auto Attendant
- Emergency Call Alert
- Hold music
- Call history with archiving
- Do Not Disturb
- Global speed dial
- Find Me / Follow Me
- Unified Messaging
- Three-way conferencing
- Hotline Service
- G3 fax support: T.38 and clear channel fax
- Universal Extension Recordings
- Busy auto redial
- Directory assistance, Dial by Name
- Phone Book
- Dial plans (call routing), time of day routing
- Scheduling, Day/Night Switching
- Alarm
- Dial & Announce (D&A)
- Class of Service
- Call queue
- Hot Desking
- Media Streamer
- Parent-Child extension configuration
- Local Authentication for making call
- PIN code Barring

Telephony (Key Required)

- Calling Cost Control
- Redundancy
- Automatic Call Distribution (ACD)
- Epygi ACD Console (EAC)
- Epygi Automatic Outbound Calling (AOC)
- AI Transcription
  - Voice Mail (VM)/Call Recording (CR) Transcription (with Diarization)
  - Voice-Enabled Auto Attendant (IVR)
  - Epygi Virtual Intelligent Assistant (EVIA)
- Text-to-Speech
- CRM Integration
- Call Recording (32 ports)
- Barge-In
- Conference Server
  - Audio (32 ports) / Video (16 ports)
- uQall Softphone
- uQall SMS/WhatsApp Messaging
- uQall Receptionist Console
- Third Party Call Control (3PCC) XML RPC

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

Voice/Video Protocols

<u>Voice Coding:</u>
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, G.722 and G.722.1 pass-through point-to-point HD call, OPUS

<u>Video Coding:</u>
H.263, H.263+ and H.264 pass-through point-to-point video call

<u>VoIP Encryption:</u>
SRTP

<u>VoIP Signaling:</u>
SIP v2, SIP/TLS

<u>DTMF:</u>
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)

Connectivity

Physical interfaces

<u>Premise connections:</u>
- 1 LAN Ethernet 10/100/1000 BASE-T port (RJ-45)
- 1 Ethernet 10/100 BASE-T port (RJ-45) for dedicated SIP trunk connection

<u>Uplink connections:</u>
- 1 WAN Ethernet 10/100/1000 BASE-T port (RJ-45)

<u>Audio port connections:</u>
- Line-in/line-out (line-in signal level - 0.5V RMS, Line-out R_{load} - 600Ohm to 10K Ohm)

<u>USB connections:</u>
- USB host, type A
- USB OTG, mini type AB

Phones

<u>IP phones:</u>
- 32 IP phones by default
- 224 additional IP phones may be added with feature keys
- All IP phones can be connected both from LAN or WAN side or as remote extensions
- Auto provisioning support for all IP phones from selected manufacturers
- PnP configuration support for the most of IP phones from selected manufacturers
- Auto configuration using OpenVPN service for some of selected IP phones
- IP phones Proxy Connection

Auto Attendants and virtual extensions

<u>Auto Attendants:</u>
Up to 400 Auto Attendants can be added*

<u>Virtual extensions:</u>
Up to 400 virtual extensions can be added*

System Capacity
- Up to 40 simultaneous VoIP calls with external parties
- Unlimited station-to-station calling for IP phones

Memory Storage
- microSD card

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 & Protection System (IDS/IPS)
  - 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
- Virtual LAN (VLAN/IEEE 802.1Q)
- Mail client to send voice and fax messages as email attachments (.wav and .tif/.pdf respectively) 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
- User rights management
- Remote diagnostics and software upgrade
- VoIP Carrier Wizard
- Monitoring via ecMON
- Download/restore configuration
- Legible and editable configuration files
- Auto configuration of IP phones via TFTP and HTTP
- 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
- Remote testing
- Security diagnostics
- 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:

<u>Measurements:</u>
8.0” x 4.0” x 1.6” (20.5 x 10.5 x 4.0 cm)

<u>Weight:</u>
1.26 lbs. (570 g)

Conditions

<u>Operating temperature:</u>
41°F - 104°F (5°C - 40°C)

<u>Storage temperature:</u>
41°F - 140°F (5°C - 60°C)

<u>Non-condensing humidity:</u>
5% - 90%

Powering Options
- Input: 85-264VAC, 47-63Hz, AC
- Input from type AB mini-USB,
- Input from 5VDC/2A adapter

Power Consumption
- 2.7W (idle), 6.5W (max)

* The total number of extensions used for IP phones, analog phones, Auto Attendants and virtual extensions can not exceed 400.

TD-QX100-Let-08

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