QuadroM-E1/T1

THE VOICE OVER IP GATEWAY

VoIP Gateways

epygi

Models QuadroM-E1, E2-30 and E2-60

To learn more about our VoIP range **freecall 1800 817 807** or visit **www.voip.alloy.com.au**

Your business already owns its own PBX, but now you want to move into the World of IP telephony for its higher performance and lower cost. Look to the QuadroM-E1/T1 and move quickly to Voice over IP.

The QuadroM-E1/T1 VoIP gateway completely unites both PSTN and VoIP technologies, even in legacy equipment configurations. Just install the QuadroM-E1/T1 gateway between your Internet access router and your existing PBX to start making IP phone calls anywhere in the world. In addition, the QuadroM-E1/T1 can connect to a PSTN service provider via E1/T1 to provide access and virtual local phone numbers to foreign users. Of course, the QuadroM-E1/T1 may be connected directly either to the Main Office via E1/T1 trunk and to the Internet using its integrated access router.

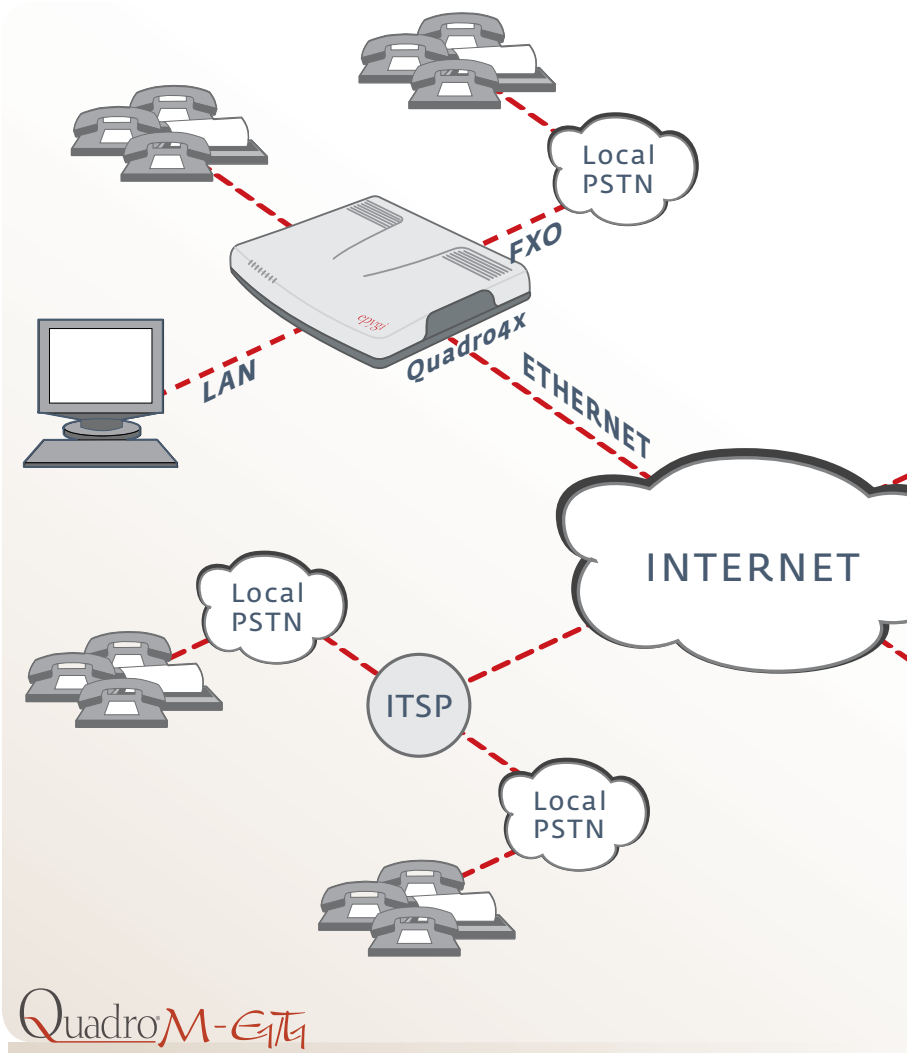
It's Flexible

If the QuadroM-E1/T1 is communicating with another Quadro device or IP phone on the far-end, the calls will be nearly free. If you connect to a VoIP service provider, you can make long-distance calls to any phone number on the public phone network for a fraction of the regular cost.

The QuadroM-E1/T1 combines the cost-reducing benefits of IP telephony with the ubiquity of the PSTN, which opens many scenarios for free phone calls. Connect PBXs of geographically dispersed departments of a company wherever they are in the world over IP. Free calls between the departments can quickly increase communication and effectiveness.

It's Secure

Like all the other Quadro devices, the QuadroM-E1/T1 is packed with an array of network security features including a stateful inspection firewall. The STUN feature allows the QuadroM-E1/T1 to be connected directly to the Internet or behind a NAT router.

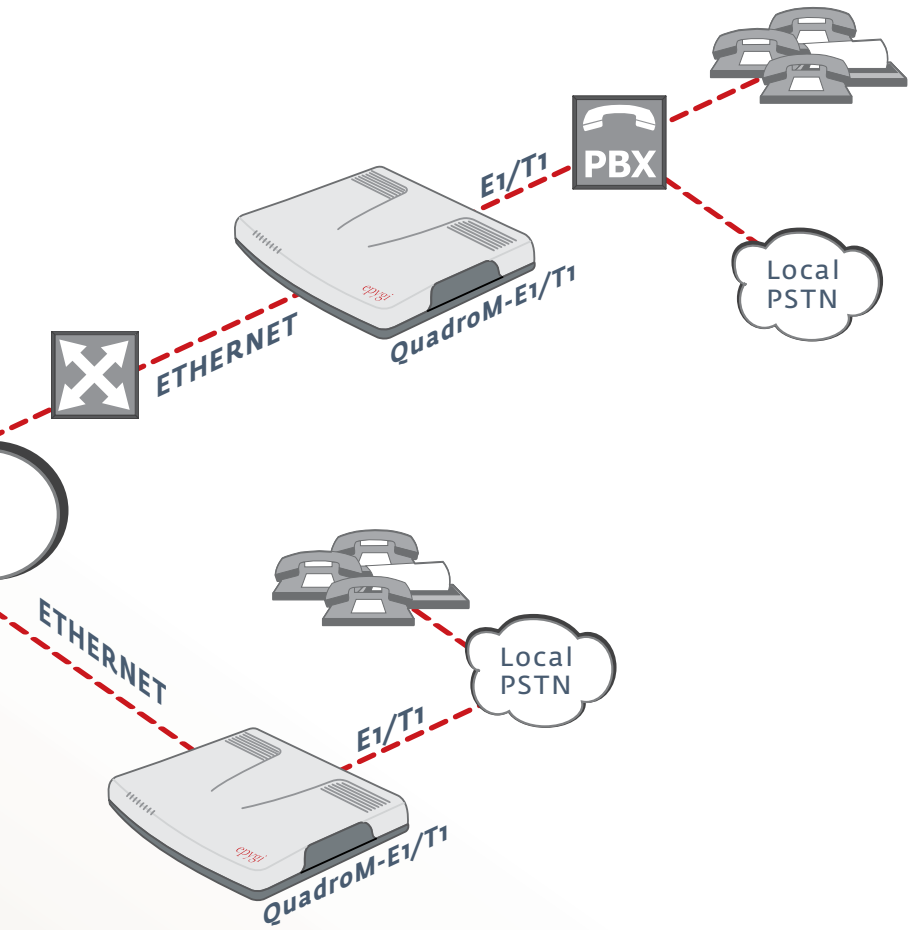


Legacy PBXs use the QuadroM-E1/T1 VoIP gateway.

Phones in the local PSTN connect both inbound and outbound to the QuadroM-E1/T1.

Quadro solutions connect your office, the local PSTN and the Internet into a single voice network.

Calls between Quadro locations are free.



It's Inexpensive

The purchase price of the Quadro is more than justified by the quantifiable long-distance cost savings on calls made through the Quadro. You will realize a quick payback on your initial investment and enjoy recurring cost savings every time you use your Quadro. No obsolescence. No upgrades. No maintenance fees. No license fees. The further you dig into this, the more sense it makes. All Quadro products deliver superior voice quality with Epygi SIPVoice DSP Technology. Quadro supports existing legacy telephone and fax equipment. The products are feature rich delivering a web based GUI interface, firewall, SIP server support ... and much more.

Interfaces

The QuadroM Gateway Series comprises three models. The QuadroM-E1 has a single E1/T1 ISDN port, and can support up to 30 simultaneous calls (E1). Both The QuadroM-E2-30 and QuadroM-E1-60 have dual E1/T1 ISDN ports, and both support up tp 60 (E1) concurrent calls. The latter models will support 60 concurrent calls utilising the G.729 codec, whilst the former will support 30 G.729 calls.

Ei/T1 ports on QuadroM Gateways may be connected to a PBX or directly to the local PSTN. An Ethernet 10/100Base-T port connects the QuadroM-E1/T1 to your local area network, and a 10Base-T port connects to your wide area network (WAN). A FXS port is included to facilitate testing and setup.

How Does the Quadro Do It?

Although using the QuadroM-E1/T1 is easy, it is built on a very sophisticated and complex system. Inside the QuadroM-E1/T1 device, two communications infrastructures come together - the tradi-tional telephone network and the Internet. At the core of the Quadro is the Call Manager running on Linux software. The Call Manager sends voice streams through the digital signal processor for voice processing. All this occurs in a 1.77" tall box no larger than an 8.5 x 11 sheet of paper.

The Company

Epygi Technologies' headquarters is in Plano, Texas (North Dallas). Epygi products benefit from extensive knowledge in telecommunications, DSP voice processing and data networking. Epygi Sales and Development offices are in the United States, Canada, Spain, France, Italy, Germany, United Kingdom, Armenia and Japan. The company utilizes a sales organization of distributors and resellers. Our expanding product line includes IP PBXs, conference servers and gateways.

QuadroM-E1/T1 Feature Overview

		QuadroM-E1/T1
Connectivity		
FXS		1 port
WAN: Ethernet RJ45		1 port
E1/T1	QuadroM-E1: QuadroM-E1-30: QuadroM-E1-60:	1 ports 2 ports 2 ports
PBX extensions		29
Call signaling		SIP, SDP, RTP, H323, Fax over IP, E1-CAS (including R2 support), T1-CAS, PRI, Loop Start
LAN: Ethernet RJ45		1 port
Voice coding		G.711, G.726, G.729, iLBC
External connectivity: Radius client for billing		●
PBX Features		
Auto attendant		●
Call statistics		●
Caller ID		●
T.38 fax, fax relay and clear channel fax		●
Call Reporting (Authentication, Authorization, Accounting)		●

PBX Features	
Auto attendant	●
Call statistics	●
Caller ID	●
T.38 fax, fax relay and clear channel fax	●
Call Reporting (Authentication, Authorization, Accounting)	●
Internet	
Browser configuration	●
Remote diagnostics and software upgrade	●
Remote system log analysis and download	●
STUN/NAT traversal	●
DIFFSERV QoS	●
Policy and service filtering	●
Stateful inspection firewall	●
LAN DHCP server/WAN DHCP client	●
DNS server	●
SNTP	●
SNMP	●
PAP/(MS)CHAP	●
PPPoE	●

QuadroM-E1/T1 Specifications

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); (RFC 3951, ITU-T: G711, G.726, G729 Annex A;
IETF; ITU-T Q.23, Q.24, Bellcore GR.506, GR.181; ITU-T G.168-2000, 2002; ETS_300659_1,2,3; A-law, m-law coding)
G.729 Codec support:
- QuadroM-E1: 30 concurrent calls utilising G.729
- QuadroM-E2-30: 30 concurrent calls utilising G.729
- QuadroM-E2-60: 60 concurrent calls utilising G.729

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.711a/G.711u 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 statistics
Call routing
Auto Attendant
T.38 fax relay and clear channel fax

Call Signaling

SIP (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),H.323 (ITU-T: H.225.0, H.235, H.245,H.323, H.450.x, Q.931, Q.932)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, IUT-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,
R2 DTMF, R2 compelled, R2 non-compelled, R2 compelled with ANI, R2 non-compelled with ANI; R2 Parameters for Brazil, Guatemala and Mexico etc.)
ANSI T1.403.02-199, T1.403.02a-2001

DTMF

In band and out of band signaling support

Connectivity

Premise Connections

1 short-loop FXS port (RJ11)
1 Ethernet 10/100BASE T port to connect a PC for configuration purposes (RJ45)

Uplink Connection

- QuadroM-E1: 1 E1/T1 ISDN port
- QuadroM-E2-30: 2 E1/T1 ISDN ports
- QuadroM-E2-60: 2 E1/T1 ISDN ports
- All models: 1 Ethernet 10Base-T port

Billing

Radius Client (RFCS: 2865, 2866)

Internet

STUN/NAT traversal (RFC 3489)
Firewall security via:
Policy and service-based filtering
DHCP server on the LAN side
DHCP client on the WAN side
DNS server with forwarding functionality
SNTP (Simple Network Time Protocol) server/cli-ent for computer clock synchronization
PPPoE connection to the ISP with PAP/(MS)CHAP authentication
IP DIFFSERV for QoS
DNS support
Port forwarding
Port translation

System

Management

WEB interface accessible from LAN and WAN (HTTP/HTTPS), the WAN management access can be switched off
Password control
Remote diagnostics and software upgrade
Download/restore configuration
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
Power-up diagnostics

Environmental

Physical Dimensions

Rackmount:
Measurements: 19" x 7.56" x 1.77" (48.0 x 19.2 x 4.5 cm)
Weight: 4.85lbs (2200g)

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; 0.5A
Output 12.0 VDC; 1.5A

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