

# Quadro<sup>®</sup>M-E1/T1



## QuadroM E1-T1 Dual Port Gateway

Expanding Call Capacities for an Expanding Business

The QuadroM E1-T1 Dual Port Gateway continues the Epygi tradition of "smart", affordable VoIP products geared to helping businesses bridge the gap between Internet Telephony and PSTN. Featuring double the call capacity of the QuadroM E1-T1, it helps businesses expand their phone systems with improved sound quality and performance. Thirty channels of compressed codec on the QuadroM E1-T1 30 and sixty channels on the QuadroM E1-T1 60 with new architecture to insure these improvements as well as offering better application integration.

The QuadroM includes call routing and auto attendant capabilities, as well as voice prioritization over data and sophisticated firewall and security elements. It is constructed with sturdy rack mountable housing that permits the inclusion of a built in power source and cooling fan for heavy duty operation and extended life span. In all, a powerful choice for growing companies seeking to maximize the benefits of VoIP.

### IP Enable your Legacy PBX

Epygi offers cost effective additions to an existing telephony network to bring the true benefits of VoIP to you. Integrating a QuadroM E1/T1 Gateway into an existing network will allow for inexpensive communication between multi-site locations.

### Flexible Call Routing

The QuadroM Gateway can make intelligent routing decision depending on the type of call and destination digits. This allows the gateway to make Least Cost Routing decisions on the fly. Allowing legacy or pure IP solution to take advantage of the VoIP savings and flexibility.

### The Power of the QuadroM

Increased call capacity  
Improved sound quality  
Cost effective system administration  
Longer life cycle

## What are Your VoIP BENEFITS?

- Simple Installation
- Cost Effective VoIP Migration
- Reliable Epygi VoIP Technology
- Cost Effective Call Routing

## 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: G.711, G.726, G.729 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, U-law coding)  
 NAT traversal (both manually and STUN)  
 VAD, CNG, G.168 echo cancellation  
 Voice Transcoding

### 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 statistics  
 Call routing  
 Auto Attendant  
 IVR system (custom AA, custom messages upload, create scenarios with EpygiXML)  
 T.38 fax relay and clear channel fax

### 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-rfc2833bis-05, draft-ietf-avt-rtcp-ilbc-05), H.323 (ITU-T: H.225.0, H.235, H.245, H.323, H.450.x)  
 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.932, Q.951; ETSI ETS300 102 (NET5); ECMA-143-(QSIG); SR-NWT-002120 (Ni2)  
 NTT INS1500 for Japan  
 PRI switch types: DSS1, NET5, QSIG, 5ESS, Ni2  
 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, Mexico etc.)  
 ANSI T1.403.02-199, T1.403.02a-2001

### DTMF

In band & out of band signaling supp

## Connectivity

### Premise Connections

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

### Uplink Connection

2 E1/T1 ports to the Central Office (RJ45)  
 1 Ethernet 10/100BASE TX (RJ45)

### Billing

Radius Client (RFCs: 2865, 2866)

## Internet

STUN/NAT traversal (RFC 3489)  
 Firewall security via:  
 NAT (Network Address Translation)  
 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/client for computer clock synchronization  
 PPPoE connection to the ISP with PAP/(MS)CHAP authentication  
 IP DIFFSERV for QoS  
 DNS support  
 Port forwarding  
 Port translation  
 VPN (IPSec/PPTP/L2TP) support

## System

### Management

WEB interface accessible from LAN and WAN (HTTP/HTTPS), the WAN management access can be switched off  
 User rights management service  
 Password control  
 SNMP Support  
 Remote diagnostics & software upgrade  
 Download/restore configuration  
 Reset button with factory reset option  
 Custom Language Pack  
 3PCC – API (ActiveX) for developing programs which will control and manage calls to/from Quadro (for hotels, medical/law offices, consulate etc.)

### Diagnostics/Testing

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

## Environmental

### Physical Dimensions

Desktop devices, wall-mountable:  
 Measurements: 10.04" x 8.27" x 1.77"  
 (25.5 x 21.0 x 4.5 cm)  
 Weight: 22.6 ounces (640 g)  
 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

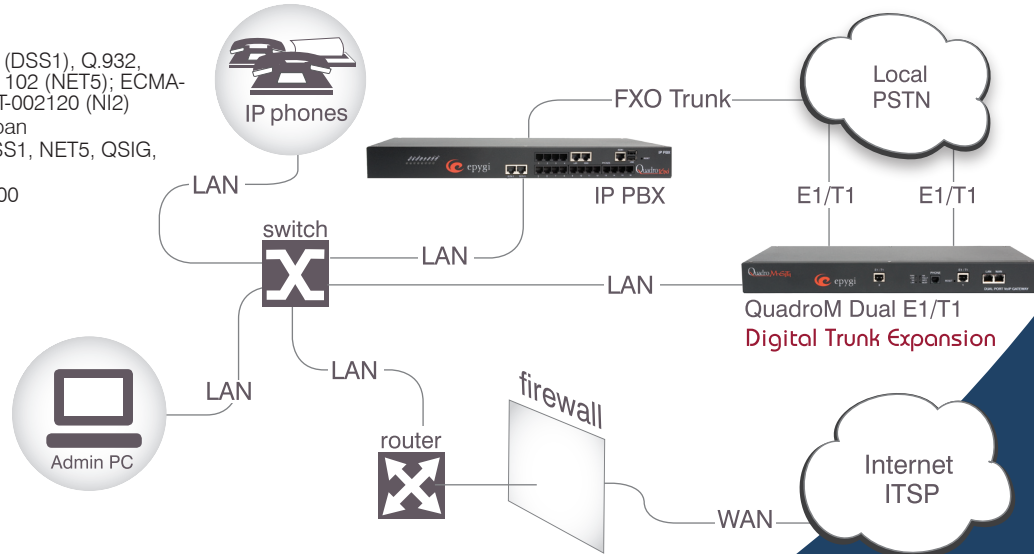
41°F - 104°F (5°C - 40°C) operating temperature  
 41°F - 140°F (5°C - 60°C) storage temperature  
 5% - 90% non-condensing humidity

### Power Supply

Input 100 - 240 VAC; 50/60 Hz; 0.5 A  
 Output 12.0 VDC; 1.5 A

### Regulatory Compliance

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



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