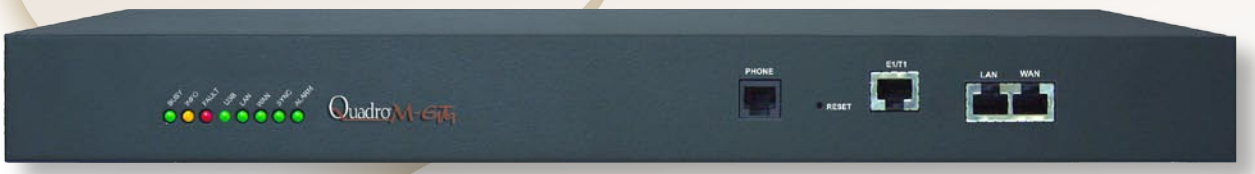
QuadroM E1/T1

THE VOICE OVER IP GATEWAY



QuadroM E1/T1: The Voice over IP Gateway

The QuadroM E1/T1 is the complete PSTN/VoIP gateway for growing small businesses that want to establish for example a corporate telephone network.

Connected over an E1/T1 voice trunk for up to 24 (T1) or 30 (E1) concurrent calls to a PBX or directly to the local PSTN and via Ethernet to the Internet, the QuadroM E1/T1 seamlessly combines the cost reducing benefits of IP technology with the ubiquity of the PSTN, which opens a multitude of scenarios for free phone calls all over the world.

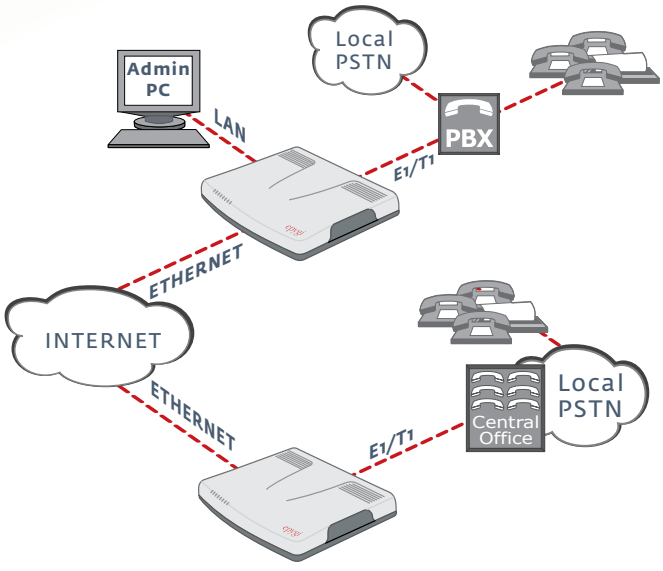
Integrated Internet Access

The QuadroM E1/T1 VoIP Gateway allows voice Internet access with firewall security, including NAT, policy and service based filtering .

The QuadroM E1/T1 shapes network traffic by prioritizing voice over data to ensure optimal voice quality at all times and is compatible with legacy equipment configurations like standard PBXs and routers.

Broad Mangement Features

The included RADIUS client functionality gives detailed information about every call and allows both acurate and easy billing. Further, statistic information about the current and former IP traffic is provided.



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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, μ-law coding)
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

1 E1/T1 port to the Central Office (RJ45)
1 Ethernet 10BASE T (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

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

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

Safety: UL 60950; CSA 22;
EMC: FCC Part 68, FCC Part 15 Class B; EN55022, EN55024;
Telecom: TBR12, TBR13

Certification:

For Australia, Brazil, Canada, European Community, Mexico, USA

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