TMG3200-TE VoIP Gateway

The TelcoBridges *T*media **TMG3200** is our mid-range VoIP gateway. Recognised for its high performance, the TMG3200-TE is a 16 to 64 T1/E1 VoIP gateway that offers high density in a single box (2U) solution for service providers.

Product Characteristics:

- ✓ 2U VoIP gateway
- ✓ 512 to 2048 VoIP channels with universal codecs
- ✓ 16 to 64 T1/E1
- ✓ SIP, SIGTRAN, SS7 ISUP, ISDN PRI, E1 CAS R2, T1 CAS R1, H.248
- ✓ Simple field upgrade by 16 T1/E1 and 512 VoIP channel increment
- ✓ Dual feed redundant power supplies (AC or DC)
- ✓ *T*media 1+1 solution option

*T*media™

TMG3200-TE

Data Sheet

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*T*media TMG3200-TE, 2U VoIP gateway, front and rear view (dual AC power input shown)

Capacity and Voice Processing

512 to 2048 VoIP channels with universal codecs

PSTN interfaces

16 to 64 T1/E1 (simple field upgrade)
Independently configurable per port
SCSI connectors to RJ48C patch panel

VoIP interfaces

4 100/1000Base-T, used separately or in bonding
RJ45 connectors on rear of unit
Up to 16 IP addresses
Ethernet port bonding and 802.1q VLAN support

Vocoding

Universal codecs: G.711, G.723.1, G.726, G.729ab, T.38
V.17, clear mode (RFC 4040)
Other codecs: G.722, G.722.2 (AMR-WB), G.728, G.729eg,
iLBC, AMR, EVRC, GSM FR/EFR, QCELP, T.38 V.34

Fax/modem/data

T.38 fax relay (V.17 and V.34)
Automatic G.711 fallback, modem and data passthrough,
NSE, VBD support
Clear mode (RFC 4040)

DTMF relay

RFC 2833/4733, SIP INFO method, in-band

Echo cancellation

G.168 echo cancellation
128 ms echo tail on all channels simultaneously

Voice processing

Adaptive and programmable jitter buffer (20 to 200 ms)
Voice activity detection (VAD)
Comfort noise generation (CNG)

Voice recording and announcement playback (optional)

Up to 2048 optional channels

High Availability & Redundancy

Power supply redundancy
IP port redundancy
Self-recovery software
MTP2/SS7 link redundancy

Tmedia 1+1 solution (optional)

The Tmedia 1+1 solution extends the high-availability
and redundancy features of the TMG3200:

VoIP gateway redundancy (active/standby)
Full capacity protection (TDM and IP)
Configuration database redundancy
Seamless upgrades
Fault tolerant software
MTP2/MTP3/ISUP redundancy

Tmedia 1+1 solution consists of:
1 active Tmedia unit and 1 standby Tmedia unit
1 Tmedia 1+1 Patch Panel
1+1 Patch Panels are passive (no power required)

Tmedia 1+1 solution schematic

Signaling

Simultaneously supports any combination or all of the following signaling protocols:

SIP

Supported RFCs: 2327, 2833, 2976, 3204, 3261, 3262, 3263, 3264, 3311, 3323, 3325, 3326, 3372, 3389, 3398, 3515, 3551, 3555, 3578, 3581, 3665, 3666, 3764, 3891, 4028, 4694, 4733, 5806
SIP-I/SIP-T
Extensive SIP header manipulation

SS7

Up to 64 MTP2 links (56, 64, n x 56/64 kbps) or 2 x HSL
Multiple redundant MTP2 links
Up to 64 originating point codes and 256 linksets
Up to 256 destination point codes
ISUP variants: ITU 92, ITU 97, ANSI 88, ANSI 92, ANSI 95, Q.767, Telcordia 97, ETSIv2, ETSIv3, China, Singapore, UK, SPIROU, Japan NTT, Russia

SIGTRAN

M2PA, M2UA, M3UA (IPSP, ASP, SG), IUA
SCTP (raw IP and UDP)
SS7 termination and/or relay supported
Up to 64 M2UA/M2PA links
Up to 64 M3UA peer server processes

ISDN PRI

Q.931 ISDN PRI (user and network side)
ISDN variants: NI-2, 4ESS, 5ESS, DMS-100, DMS-250, Euro ISDN ETSI NET5 (France, Germany, UK, China, Hong Kong, Korea), Euro Numeris (VN6), NTT (Japan), Australia
ISDN NFAS

CAS

MF R1 (including E&M, loop start, ground start)
MF R2 (including standard ITU, Brazil, Mexico, Venezuela)
Customizable script files to implement any CAS variant

TMG-CONTROL (Call Control)

Embedded call control

Call routing based on: trunk group, calling/called numbers (with digit manipulation) and/or various other protocol information/headers
Customizable routing including priority-based, load-balancing, black listing, call limiting, route retries, etc.
Customizable call cause code mapping
Programmable call routing: Access and manipulation of call parameters (SIP, SS7 and ISDN), including Nature of Address (NOA)
RADIUS authentication and authorization (supports multiple RADIUS servers)
NPA-NXX routing (over 5 million records)
SIP-based local number portability and CNAM lookup

H.248 (MEGACO) call control

ITU-T H.248 versions 1 and 2
UDP, SCTP, IPSec transport
DTMF and fax detection
Call progress, DTMF and COT tone generation
Call quality and inactivity alerts
H.248 control port redundancy (supports virtual IP)

Session management and billing

SIP peer availability polling
RTP inactivity monitoring, RTCP
CDR generation (RADIUS and/or csv files)
Integrated lawful intercept (ETSI ES 201 671 v.2.1.1)

OAMP+T (web-based interface)
Operations & Administration

Configuration, management and status GUI
CLI and configuration file machine-to-machine interface
Configuration change audit logging
Access, user and privilege management
SNMP V2, V3 GET, TRAPs (alarms)
Extensive SNMP call statistics MIBs

Management

1 Ethernet port 100/1000Base-T
1 RJ RS-232 serial port
GUI-based and CLI system upgrade
GUI-based configuration copy, backup and restore
Storage for multiple software versions
Storage for multiple configuration files
Extensive system status display

Provisioning

Non-service affecting configuration change
Offline configuration validation
Multiple configuration files archive
Machine-to-machine configuration interface (RESTful JSON API)

Network Diagnostics (TB Analytics)

Live call trace with protocol information and ladder diagram
Live test call with media playback and recording
TB Sigtrace – Protocol signaling capture into pcap files
Media call recording (scriptable for calling and called numbers)

Electrical Characteristics

90 to 260 VAC, 47 to 63 Hz, -40 to -60 VDC
Dual feed redundant power supplies (AC or DC)
Maximum 170W power consumption

Dimensions & Weight

2U, 19" rack mount, 3.5" (88.9mm) H x 17.4" (442mm) W x 16" (406mm) D
20lbs (9.1kg)

1+1 patch panel (TE)

1U, 19" rack mount
1.75" (44.5 mm) H x 16.9" (429 mm) W x 5.25" (133 mm) D
3.4 lbs (1.6 kg)

Regulatory compliance

Safety

CAN.CSA C22.2
EN 60950-1:2005
EN 60950-1:2006

EMC

FCC Part 15:2013, Subpart B,
CE Mark (EN55022:2006, Class A, EM60950, EN61000, ETS 300 386)

Environmental

Operating temperature: 0 to +55 °C, 95% rel. hum. non-condensing
Storage temperature: -10 to +75 °C, 95% rel. hum. non-condensing
Designed to meet NEBS Level 3
RoHS compliant

*T*media TMG3200 TE 1+1 Patch Panel front view