

## TMG800 VoIP Gateway - 1 to 16 T1/E1



The TelcoBridges **Tmedia TMG800** is our low density carrier-grade VoIP gateway.

Software upgradeable from 1 to 16 T1/E1, the TMG800 is the most cost-effective VoIP gateway solution for service providers that is currently available on the market.

### Product Characteristics:

- ✓ 1U VoIP gateway
- ✓ 32 to 512 VoIP channels with universal codecs
- ✓ 1 to 16 T1/E1
- ✓ SIP, SIGTRAN, SS7 ISUP, ISDN PRI, E1 CAS R2, T1 CAS R1, H.248
- ✓ Software upgradeable by single T1/E1 and 32 VoIP channel increments
- ✓ Dual feed redundant power supplies (AC or DC)
- ✓ Tmedia 1+1 solution option

## Tmedia™ TMG800 Data Sheet

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Tmedia TMG800 1U VoIP gateway, front and rear view (dual AC power input shown)

## Capacity and Voice Processing

32 to 512 VoIP channels with universal codecs

### PSTN interfaces

1 to 16 T1/E1 (software upgradeable)  
Configurable per port for T1 or E1  
RJ48C connectors on rear of unit  
Port status LEDs

### VoIP interfaces

Up to 6 Ethernet ports 100/1000Base-T  
RJ45 connectors on rear of unit  
Up to 16 different 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 512 optional channels

## High Availability & Redundancy

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

### Tmedia 1+1 solution (optional)

The Tmedia 1+1 solution extends the high-availability and redundancy features of the TMG800

VoIP gateway redundancy (active/standby)  
Full capacity protection (TDM and IP)  
Configuration database redundancy  
Seamless software upgrade  
Fault tolerant software  
M3UA/MTP3/ISUP redundancy

### Tmedia 1+1 solution consists of:

1 active Tmedia unit and 1 standby Tmedia unit  
1 or 2 Tmedia 1+1 Patch Panel(s)  
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

- 2 Ethernet ports 100/1000Base-T
- 1 USB Type B 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 changes
- Offline configuration validation
- Multiple configuration files archive
- Machine-to-machine configuration interface

## Network Analytics (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)

## Maintenance

- Replaceable fan filters

## Dimensions & Weight

- 1U, 19" rackmount
- 1.75" (44.5 mm) H x 16.9" (429 mm) W x 16" (406 mm) D
- 14 lbs (6.4 kg)

### 1+1 patch panel (8 T1/E1)

- 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)

## Electrical Characteristics

- 90 to 260 VAC, 47 to 63 Hz or -36 to -72 VDC
- Dual feed redundant power supplies (AC or DC)
- Maximum 70W power consumption

## Regulatory Compliance

### Safety

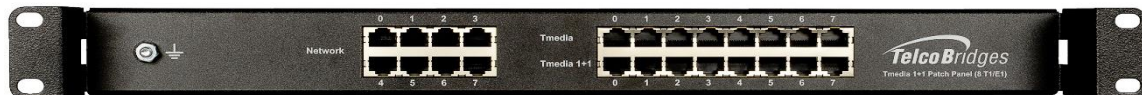
- CAN.CSA C22.2
- EN 60950-1:2005
- EN 60950-1:2006

### EMC

- FCC Part 15:2013, Subpart B,
- CE Mark (EN55022:2010, Class A, EN61000, ETSI EN 300 386)

## Environmental

- Operating temperature:  
0 to +70 °C, 95% rel. hum. non-condensing
- Storage temperature:  
-10 to +85 °C, 95% rel. hum. non-condensing
- Designed to meet NEBS Level 3
- RoHS compliant



Tmedia TMG800 1+1 Patch Panel, (front view)

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