

TMG3200-OC3/STM1 VoIP Gateway



The TelcoBridges **Tmedia TMG3200** is our mid-range VoIP gateway. Recognised for its high performance, the TMG3200-OC3/STM1 is a 1 OC3/STM-1 VoIP gateway that offers high density in a single box (2U) solution for service providers.

Product Characteristics:

- ✓ 2U VoIP gateway
- ✓ 2016 VoIP channels with universal codecs
- ✓ 1 OC3/STM-1 (partial OC3/STM-1 also available)
- ✓ SIP, SIGTRAN, SS7 ISUP, ISDN PRI, E1 CAS R2, T1 CAS R1, H.248
- ✓ Dual feed redundant power supplies (AC or DC)
- ✓ Tmedia 1+1 solution option

Tmedia™

TMG3200-OC3/STM1

Data Sheet

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Tmedia TMG3200-OC3/STM-1, 2U VoIP gateway, front and rear view (dual AC power input shown)

Capacity and Voice Processing

2016 VoIP channels with universal codecs

PSTN interfaces

1 OC3/STM-1 (with Automatic Protection Switching – APS or Multiplex Section Protection – MSP)
SFP hot pluggable transceiver
Dual RJ48C for BITS or T1/E1 for signaling

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
Automatic Protection Switching – APS or Multiplexing Section Protection – MSP
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 Panel is 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, RTPC

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)



Tmedia TMG3200 STM1 1+1 Patch Panel front view

1+1 patch panel (OC3/STM-1)

- 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

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