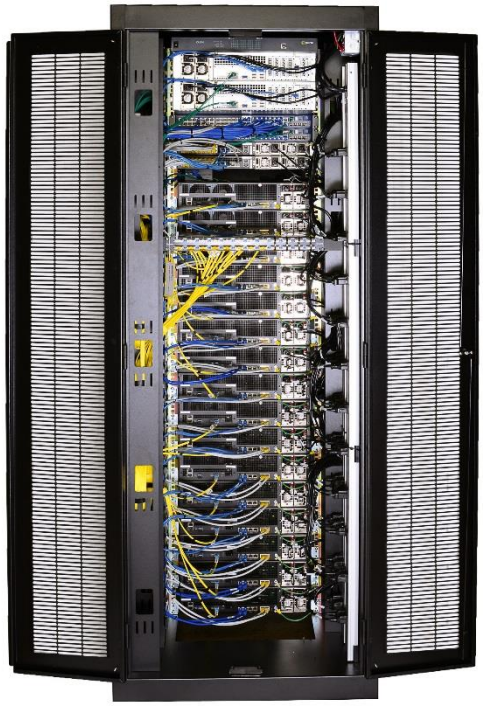
***T*media™**

TMG7800

VoIP Gateway



The TelcoBridges *T*media TMG7800 is our high-level VoIP gateway. This series of VoIP gateways is defined by the highest scalability in the entire *T*media family. Offering carriers from 16 to 1024 T1/E1s, or 1 to 48 DS3 or 1 to 16 OC3/STM1, the TMG7800 offers the redundancy required for carrier-grade networks.

A *T*media TMG7800 system consists of 1 or 2 TMG7800-CTRL (depending on the clients need for redundancy), which then control up to 16 TMG7800 telecom units.

Product Characteristics:

- ✓ 4U to 39U VoIP gateway
- ✓ 512 to 32,768 VoIP channels
- ✓ SIP, SS7, ISDN PRI, E1 CAS R2, T1 CAS R1
- ✓ 16 to 1024 T1/E1s or 1 to 48 DS3 or 1 to 16 OC3/STM1
- ✓ Redundant AC or DC power supplies
- ✓ N+1 support

Ordering information

Part #	*Description*
TMG7800-CTRL	Media Controller
TMG7800-TMS	Media Switch
TMG7800-TE-16	16 x T1/E1
TMG7800-TE-32	32 x T1/E1
TMG7800-TE-48	48 x T1/E1
TMG7800-TE-64	64 x T1/E1
TMG7800-DS3-1	1 x DS3
TMG7800-DS3-2	2 x DS3
TMG7800-DS3-3	3 x DS3
TMG7800-STM1	1 x STM1

Each configuration is available in redundant AC or DC power.

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Capacity and Voice Processing

512 to 32,768 VoIP channels (hardware and software upgrade)

PSTN interfaces

16 to 1024 T1/E1 (hardware and software upgradable) or
1 to 48 DS3 (hardware and software upgradable) or
1to 16 OC3/STM1 (with Automatic Protection Switching - APS)
Dual RJ48C for BITS or T1 / E1 for signalling on each DS3 & OC3/STM1 unit

VoIP interfaces

Dual 100/1000Base-T per unit
RJ45 connectors on rear of unit

Vocoding

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

Fax/Modem/Data

T.38 fax relay (V.17 and V.34)
Automatic G.711 fallback, modem and data pass-through
Clear mode (RFC 4040)

DTMF relay

RFC 2833, 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)

Management interfaces

Single 100/1000Base-T for OAMP+T
1 DB-9 serial port with RS-232C adapter
Supports virtual IP

Signaling (Simultaneous signalling support)

Simultaneously supports any combination or all of the 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, 5806
SIP-I/SIP-T

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 20 M3UA peer server processes

SS7

Up to 64 MTP2 links (56, 64, n x 56/64 kbps, HSL)
Multiple redundant MTP2 links
Up to 64 MTP3 originating point codes and linksets
ISUP variants: ITU 92, ITU 97, ANSI 88, ANSI 92, ANSI 95, Q.767, Telcordia 97, ETSIv2, ETSIv3, China, Singapore, UK, Brazil, SPIROU, Japan NTT
SCCP routing and global title transition

ISDN PRI

Q.931 ISDN PRI: NI-2, 4ESS, 5ESS, DMS-100, DMS-250, Euro ISDN, ETSI NET5 (France, Germany, UK, China, Hong Kong, Korea), NTT (Japan), Australia

CAS

MFC R1 (E&M, loop start user / network side)
MFC R2 (standard ITU, Brazil, Mexico)
Customizable protocol script files

TMG-CONTROL (Embedded gateway control and management software)

Embedded Call Control

Call routing based on: trunk group, calling/called numbers digit manipulation, call cause code mapping
Advance call routing: Priority, load sharing, route retry, Nature of Address (NOA) manipulation
Programmable call routing: Access and manipulation of call parameters
RADIUS AAA (supports multiple RADIUS servers)
NPA-NXX routing (over 100,000 table entries)

H.248 (MEGACO) Call Control

ITU-T H.248 versions 1 and 2
UDP, SCTP, IPSec transport
DTMF and fax tone 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 AAA and text file)
Integrated lawful intercept (ETSI ES 201 671 v.2.1.1)

OAMP+T (Web-based Interface)

Operation & Administration

Status, configuration and management GUI
Configuration change audit logging
Access and user management
SNMP V2, V3 GET, TRAPs and alarms

Maintenance

Automated system upgrade
System backup, restore and copy
Extensive system status display
Multiple software version archive

Provisioning

Dynamic configuration changes
Configuration validation
Multiple configuration archive

Troubleshooting (TB Analytics)

Call Trace
Test Call
TB Sigtrace – Live Signaling Capture
System Snapshot

Electrical characteristics (Power Input)

90 to 260 VAC, 47 to 63 Hz, -40 to -60 VDC
Redundant power supplies
From 507 to 3012W power consumption (depending on configuration)

Physical characteristics (Dimensions & Weight)

From 4U to 39U depending configuration
Each TMG7800-CTRL are 3.5” (88.9mm) H x 17.4” (442mm) W x 26 (660mm) D
Each TMG7800-TMS are 3.5” (88.9mm) H x 17.4” (442mm) W x 16” (406
From 70 lbs (31.8 kg) 516 lbs (234.0 kg) depending of configuration

Regulatory compliance (UL/CSA 60950, CSA C22.2)

EMC

FCC Part 15:2009, 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