# Tmedia™ TMG3200 Series
## MEDIA GATEWAY

The TelcoBridges Tmedia™ TMG3200 is a carrier-grade media gateway that meets the needs of service providers looking to drive convergence between TDM and IP networks, replacing multiple devices for signaling, connectivity and IVR with a single device. Offering the ability to add capacity and new functionality via field-upgradable modular hardware components and software license upgrades, the TMG3200 media gateway provides the reliability that leading-edge service providers require as they augment their convergence efforts. A single TMG3200 media gateway provides capacity of 2,048 voice ports and the flexibility to mix and match TDM and IP services such as SS7, ISDN, SIGTRAN, SIP and H.248 across T1/E1/J1, DS-3 and STM-1 interfaces.

**AVAILABLE CONFIGURATIONS**

- TMG3210 – 8 x T1/E1/J1
- TMG3212 – 16 x T1/E1/J1
- TMG3214 – 32 x T1/E1/J1
- TMG3216 – 48 x T1/E1/J1
- TMG3218 – 64 x T1/E1/J1
- TMG3220 – 1 x DS-3
- TMG3222 – 2 x DS-3
- TMG3224 – 3 x DS-3
- TMG3230 – 1 x STM-1

Each configuration is available with AC or DC power.

Whether sitting at the network core or at the edge, the TMG3200 provides essential media gateway functionality necessary to deliver seamless voice interoperability across TDM and IP networks. Leveraging its integrated media gateway controller or in conjunction with an H.248-compliant softswitch, the TMG3200 offers a low footprint approach to extending services such as media gateway, TDM switching, VOIP hairpinning, transcoding, advanced call routing and fax relay. With separate chipsets for media processing and IVR, and signaling performed in hardware, the TMG3200 media gateway provides full non-blocking capability of up to 2048 channels per device.

Offering the industry-leading highest port density and the lowest operating cost for a media gateway in a 1U form factor, the TMG3200 media gateway easily scales as service uptake increases, with expansion cards for VoIP and TDM. With an average 66% less power consumption than competing products of similar capacity, the TMG3200 media gateway supports the drive by service providers to reduce the environmental impact of their network footprint and increase their profitability and green credentials.

**FEATURES & BENEFITS**

**Density:** Supporting up to 64 T1/E1/J1, 3 DS-3 or 1 STM-1 interfaces in a single 1U appliance, the TMG3200 provides up to 2,048 IP voice ports at an industry-leading lowest cost per port. The TMG3200 enables consolidation of multiple devices for signaling, transcoding and IVR into a single device.

**Carrier-grade:** Architected to exacting industry standards such as NEBS Level 3, the TMG3200 media gateway is designed to meet the need for reliability that service providers and their customers demand.

**Flexibility:** A network-agnostic platform, the TMG3200 media gateway supports 'any-to-any' switching across multiple network interfaces and signaling protocols (SS7, ISDN, CAS R2, SIGTRAN, SIP and H.248) in a single device. It also supports transcoding for all major wireline, wireless and internet codecs.

For more information on how the Tmedia TMG3200 media gateway can help transform your offerings, please visit www.telcobridges.com.

> Tmedia **TMG3200**

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## TMG3200 SPECIFICATIONS

### NETWORK INTERFACES

***Telephony***

4 to 64 T1/E1/J1 TDM ports (hardware & software upgradeable); or
1 to 3 DS-3 TDM ports (hardware and software upgradeable) + 2 T1/E1/J1 ports for SS7 signaling or BITS synchronization; or
1 OC3/STM-1 TDM port (with Automatic Protection Switching (APS)) + 2 T1/E1/J1 ports for SS7 signaling or BITS synchronization

***Capacity***

TDM: 96 to 2048 channels

VoIP: 96 to 2,048 universal ports per device; even more using less complex codecs such as G.711

***WAN IP***

Dual 100/1000 Base-T for VoIP traffic

***LAN***

Single 100/1000 Base-T access for OAM&P

### MEDIA PROCESSING

| | |
|---|---|
| ***PCM Coding*** | A-law to μ-law encoding and conversion |
| ***Universal Codecs*** | G.711, G723.1, G.726, G.729ab, T.38 (2048 channels) |
| ***DTMF Relay*** | RFC2833, SIP INFO method, in-band<br>> DTMF detection, generation, suppression |
| ***Echo Cancellation*** | G.168 – 128ms tail length on all channels simultaneously |
| ***Fax Support*** | T.38 fax relay, Group 3, Fax/modem bypass,<br>G.711 fax fallback |
| ***Optional Codecs**** | AMR, AMR-WB (G.722.2), GSM-FR/GSM-EFR,<br>EVRC/QCELP, G.728, G729eg, iLBC |

>Independent dynamic codec selection per channel

### APPLICATION SOFTWARE

**TB Media Gateway™ application**

> TDM-to-TDM switching, TDM-to-IP-to-TDM gateway, IP-to-IP hairpinning
>Transcoding, trunking, call routing, fax relay and other functions
> Call Detail Records (CDR): user-definable text files and RADIUS
>High availability

### CALL ROUTING FEATURES

> Fully scriptable, Ruby-based call routing engine
> CLI (ANI)-based routing and translation
> DID (DNIS)-based routing and translation
> Least cost routing (with time of day/week/year scheduling and other criteria)
> Routing based on Nature of Address (NOA), Numbering Plan Indicator (NPI), and others
> Pre-and post-routing digit translation

** Additional licenses required.*

### SIGNALING

*ISDN PRI* (14+ variants), National ISDN-2, Euro ISDN, DMS100, DMS250, 4ESS, 5ESS, Japan INS-NET1500
*SIP:* RFC 3261 User Agent, SIP Authentication
*CAS R2:* scriptable state machine enables user-generated variants

*SS7*:* (20+ variants) MTP2, MTP3, SCCP, and ISUP
> Up to 64 SS7 links, up to 2048 CICs, HSL, redundant SS7, single or multiple point codes per device
*SIGTRAN*:* SCTP, M2PA, M2UA, M3UA
*H.248*: ITU-T H.248.1

### QUALITY OF SERVICE (VoIP)

Dynamic jitter buffer (adaptive and fixed), Packet loss concealment, Silence Suppression; Denial of Service (DoS) protection for VoIP media

### MANAGEMENT & CONTROL

**TelcoBridges Element Management System**

> Live configuration and software upgrades via HTTP
> Monitoring via HTTP

### HARDWARE SPECIFICATIONS

***Physical Interfaces***

*PSTN*: 4 to 64 T1/E1/J1 via RJ-48, 1 to 3 dual BNC DS-3, 1 STM-1 optical or electrical link (with APS). Interface or BITS synchronization
*IP*: Dual 100/1000 Base-T Ethernet VoIP ports
*OAM & Control*: 100/1000 Base-T Ethernet port

***Dimensions***

1U with single power supply
> 1.75" H (44,5 mm) x 17.4" W (442 mm) x 16" D (406 mm)
2U with dual power supplies
> 3.5" H (88.9 mm) x 17.4" W (442 mm) x 16" D (406 mm)
Weight: 1U model @ 15lbs (6.8kg); 2U model @ 20 lbs (9.1 kg)

***Environmentals***

AC Power: 90 to 260 Volts AC, 47/63 Hz
DC Power: -40 to -60 Volts DC
Power Consumption: 138 W fully loaded
Operating temperature range: 0 to +55 °C, 95% rel. hum. non-condensing
Storage temperature range: -10 to +75 °C, 95% rel. hum. non-condensing

### REGULATORY COMPLIANCE

| | |
|---|---|
| EMC | FCC Part 15, EN55022, EN61000, ENV50204 |
| NEBS | Designed to meet Level 3 |
| Safety | CE, UL60950, CSA C22.2 No.60950-1-03 |

STM-1 connection and DC power option shown;
AC power option and T1/E1/J1 and DS-3 interfaces also available

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