***T*media™**

TMG3200-DS3 1+1

1 to 3 DS3 VoIP Gateway

The TelcoBridges *T*media 1+1 solutions answer service providers' needs for high availability and redundancy. Our *T*media 1+1 solutions consist of three components:

- A standard *T*media Unit
- A *T*media +1 Unit
- And a *T*media 1+1 patch panel

How the solution works...

When properly installed and configured, the standard *T*media unit acts as the primary (active) VoIP gateway and the *T*media +1 unit acts as the secondary (standby). The two devices communicate with each other via the ETH ports and in the event of product malfunction; traffic is transferred from the active to the standby unit through the patch panel connection, without the need for human intervention.

*T*media 1+1 solutions ensure redundancy in terms of: power redundancy, packet network redundancy and facility protection.

The *T*media TMG3200-DS3+1 provides a highly available and redundant telecommunications system from 1 to 3 DS3. You can increase the capacity of your TMG3200-DS3+1 through a simple field upgrade available in increments of 1 DS3.

Product Characteristics:

- ✓ 2U VoIP gateway,
- ✓ 672 to 2016 VoIP channels
- ✓ SIP, SS7, ISDN PRI, E1 CAS R2, T1 CAS R1
- ✓ 1 to 3 DS3s
- ✓ Simple field upgrade by 1 DS3 and 672 VoIP channel increment
- ✓ Redundant AC or DC power supplies
- ✓ 1+1 Support

*T*media TMG3200-DS3, 2U VoIP gateway **(Front View)**

*T*media TMG3200-DS3 2U VoIP gateway **(Back View)**

*T*media TMG3200-DS3 1+1, Patch Panel DS3 **Front View Oblique**

*T*media TMG3200-DS3 1+1, Patch Panel DS3 **Front View**

Capacity and Voice Processing

672 to 2,016 VoIP channels (simple field upgrade)

PSTN interfaces

1 to 3 DS3 (simple field upgrade)
BNC connectors on rear of unit
Dual RJ48C for BITS or T1 / E1 for signalling

VoIP interfaces

Dual 100/1000Base-T, used separately or in bonding
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 RJ45 serial port with RS-232C adapter
Supports virtual IP

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, 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 supply option with dual power inputs
Maximum 167W power consumption

Physical characteristics (Dimensions & Weight)

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

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