

# MG6010 Universal Media Gateway

The MG6010 provides a range of mid-density access and trunking media gateways uniquely architected to serve as a critical component in integrated Class 5 migration strategies while acting as a vital circuit to packet switched transitional network element in NGN and IMS carrier infrastructures.

- » Small to medium media gateway applications
- » Built on a compact COTS ATCA platform
- » Enables migration to IMS core networks
- » Scales to 48xT1/E1, 24xDS3 or 8xOC-3/STM-1
- » Supports high definition and wireless codecs
- » Emergency Standalone mode for survivability

## Integrated Class 5 Migration Solutions

Network operators are striving to modernize their core switch and services infrastructure while maintaining their investment in TDM control and transport equipment. The MG6010 enables you to migrate smoothly to a feature-rich next generation network while preserving TDM connectivity.

When combined with the MetaSphere MTAS or a third-party MGCF, the MG6010 provides a complete softswitch solution for wireline service providers.

## Access Gateway Emergency Standalone

The Emergency Standalone (ESA) function preserves your service with basic call control functions during critical network outages between the MG6010 and its controlling MetaSphere MTAS. In ESA mode, the MG6010 can also assume control of third-party media gateways, along with customer premises equipment such as MTAs, that have been disconnected from the MetaSphere MTAS.

A fully redundant system architecture allows the MG6010 to retain full operational capability in the event of an individual component fault.

## VoIP in PacketCable

Fully compatible with VoIP over cable in a PacketCable environment, and with support for Network Call Signaling (NCS) to Multimedia Terminal Adaptors (MTAs), the MG6010 makes the latest VoIP features available to Cable MSOs in all stages of network migration.

## Multi-Service Signaling Gateway

Featuring an integrated signaling gateway, designed to transform circuit switched SS7 and ISDN messages for IP networks, the MG6010 eliminates the need for a distinct signaling gateway component. Exposing a standardized media gateway control protocol, the MG6010 can interact with the MetaSphere MTAS or any third-party MGCF.

## IMS Trunking Media Gateway

The MG6010 is equipped to help you migrate rapidly to IMS networks without compromising on legacy interconnection and peering demands. Based on the IMS reference architecture and controlled using H.248, it provides trunking media gateway functionality between classic TDM/PSTN and IMS networks.

## Specifications

### Physical

- Height: 5.2" (132mm, 3U)
- Width: 19" (483mm)
- Depth: 16.5" (420mm)
- Weight: 44 lbs (20kg)
- Mounting options: 19" or 23" racks, 14 chassis per 7' rack
- Operating temperatures: 41°F to 104°F (5°C to 40°C), 23°F to 131°F (-5°C to 55°C) short-term (up to 96 hours)
- Operating humidity: 5% to 90%
- Maximum operating altitude: 9800' (3000m)

### Power

- DC: dual feed -48V DC nominal (-40V DC to -60V DC), 950W, fused to 20A
- AC: dual feed 110V to 250V AC, 950W

### System Architecture

- 2 Universal Media Gateway Resource blades (1:1 redundancy): one of DX6705, DX6710, DX6720 or DX6730 depending on capacity requirements
- 2 rear transition modules: one of RT6701, RT6703 or RT6705, depending on connectivity requirements
- CB1000 and CB3000 breakout panels for connecting T1/E1 and DS3 connections on the MG6010 to the network
- 2 SMC6010 chassis shelf managers
- 2 IO6010 User Cards for dry alarm connections
- Timing: BITS, TDM carrier (T1/E1, DS3 or SDH/SONET) or internal clock source (stratum 3)
- Also deployable in lower-cost non-redundant single-blade mode with reduced availability

### Network Interfaces

- TDM: T1/E1, DS3, OC-3/STM-1, OC-12/STM-4
- VoIP: Auto-detecting Fast/Gigabit Ethernet
- Management: Ethernet and serial console access

### Scalability

- RT6701 RTMs and 1xCB1000: 48xT1/E1
- RT6703 RTMs and 1xCB1000 + 2xCB3000: 16xT1/E1 and 24xDS3
- RT6705 RTMs and 1xCB1000: 16xT1/E1 and 8xOC-3/STM-1 or 2xOC-12/STM-4
- 15,000 concurrent calls
- Up to 1,000,000 Busy Hour Call Attempts (BHCA)

### Carrier-Class Reliability

- GR-512-CORE (99.999% availability)
- Redundant resource blades and shelf managers
- Redundant, hot-swappable user cards, power supplies and fans
- Fault-tolerant software architecture with calls preserved on
- Resource blade failover
- 1+1 APS for optical TDM
- CB1000/CB3000 breakout panels provide passive Y-junction for copper TDM

### Network Management

- SNMP for alarms
- CORBA for provisioning
- SQL database for statistics and reporting
- Management of multiple chassis via MetaView NMS or integration with third-party OSS

### Protocols

- Media Gateway Control: H.248 v1 and v2 / Megaco, MGCP 1.0bis
- Internet Protocol version 6 (IPv6) and Internet Protocol version 4 (IPv4)
- Session Initiation Protocol (SIP) v2
- T1 Channel Associated Signaling (CAS)
- SS7 Support: ANSI, ITU-T, ETSI and national variants
- ISDN PRI (ETSI, NI-2, Lucent and Nortel variants), NFAS
- PacketCable Network-based Call Signaling (NCS)
- GR-303
- TR-08 \*
- Multi-Frequency (MF) trunks (1-way, 2-way)
- Ground start, loop start, E&M immediate/wink start
- V5.2 signaling \*
- SIGTRAN (M2UA, M3UA and IUA) backhaul to gateway controller

### Codecs

- G.711 (64kbps PCM)
- G.726 (32kbps ADPCM)
- G.729AB (8kbps CS-ACELP)
- G.722 (WB)
- G.722.2 (AMR-WB)
- AMR
- EVRC
- EVRC-B
- GSM-HR
- GSM-FR
- GSM-EFR
- iLBC
- Automatic fallback to G.711 for fax/modem calls
- Clearmode pseudo-co-dec for 64kbps data calls
- T.38 Fax Relay

## Media and Quality of Service

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- QoS: IP Differentiated Services (DiffServ) with 802.1p prioritized weighted fair queuing
- Echo cancellation: G.165, G.168 (up to 128ms)
- Idle channel suppression
- Silence suppression and comfort noise generation
- Tone generation / detection (DTMF, MF, FSK)
- Onboard mixing and announcement server

## Compliance and Approvals

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- Bellcore NEBS Level 3: Standard (GR-63-CORE), Verizon TEEER VZ.TPR.9205, ATIS 0600015, AT&T TP.76200
- Environmental: ETSI EN 300 132, EN6100-4-5, EN 300 753, EN 300 019
- Safety: UL 1950-1, IEC 60950-1, ETSI EN 60950-1, CAN/CSA C22.2 60950-1-07, IEC 62368-1, UL/CSA 62368-1, EN 62368-1
- Electro-magnetic compatibility: FCC Part 15 Class A, ICES-003, EN 55022, ETSI EN 300 386, VCCI V3, CISPR22, AS/NZS CISPR22
- Lawful intercept: CALEA TIA J-STD-025A / T1.678, ETSI TS 101 331, ES 201 158, TS 101 671

\* Full support to be delivered in a future release