

MG3510 UNIVERSAL MEDIA GATEWAY



DESIGNED AND OPTIMIZED SPECIFICALLY FOR USE WITH METASPHERE APPLICATIONS, THE MG3510 UNIVERSAL MEDIA GATEWAY INCORPORATES ALL OF THE FUNCTIONS YOU REQUIRE TO SUPPORT TDM MEDIA AND SIGNALLING CONNECTIVITY ACROSS THE FULL SPECTRUM OF LEGACY TELEPHONY PROTOCOLS. THE MG3510 SCALES FROM 672 TO 24,192 FULLY PROTECTED CONCURRENT CALLS AND SHARES WITH ALL MEMBERS OF THE UNIVERSAL MEDIA GATEWAY FAMILY THE SAME TYPES OF COMMON EQUIPMENT AND SOFTWARE.



CLASS-LEADING SCALABILITY

Supporting 112,000 concurrent calls (168 DS3s) in a standard 19" rack, the MG3510 scales to meet the demands of the largest carrier networks. A non-blocking native packet switching fabric delivers dual gigabit links to each interface card, and avoids unnecessary VoIP decode/ encode operations for maximum voice quality.

The MG3510 is populated with up to 14 Universal Media Cards. Built onto each card is a powerful digital signal processor (DSP) farm sufficient to deliver echo cancellation, announcements, tone detection, silence suppression, and transcoding to every channel. This removes the need for dedicated DSP cards or media servers, simplifying configurations and reducing spares.

FLEXIBILITY FOR EVERY APPLICATION

The MG3510 supports the widest range of protocols of any media gateway on the market, with comprehensive next generation and legacy capabilities including SIP, MGCP, H.248, AIN, GR-303, CAS,

ISDN, MF and ISUP. In addition, the MG3510 can be deployed as a signaling gateway, enabling cost-effective termination of SS7 signaling links anywhere within the network and transport of ISDN signaling messages to the Gateway Control function of MetaSphere, over IP. It even provides a media server function for playing network and service announcements and for mixing multi-way calls.

FUTURE-PROOF OPEN ARCHITECTURE

Open standards and interoperability are the core of Metaswitch's philosophy – and of the MG3510. Support for H.248 (also known as Megaco) and SIGTRAN, which have been adopted by all key industry bodies and architectures such as IMS, ensures future-proof interoperability as networks continue to evolve.

CARRIER-GRADE RELIABILITY

The NEBS Level 3-certified MG3510 was designed from the outset for 99.999% ("five nines") system reliability. It achieves this goal through a fully redundant, hot-swappable hardware design, with a combination of 1:1 redundancy for common equipment cards and n:1 protection for all interface cards, power supplies and CPUs, as well as all TDM and IP interfaces. Even the internal packet bus is powered by two redundant switches. In addition, a sophisticated application-aware software fault tolerance scheme ensures that, in the event of a program logic error, the backup processor takes over control of the chassis ensuring uninterrupted service.

EMERGENCY STANDALONE

The MG3510 offers the option of Emergency Standalone operation, which preserves full switching and service capabilities to all subscribers served, in the event the MG3510 loses IP network connectivity with its controlling MetaSphere system.

MG3510 SPECIFICATIONS

PHYSICAL

- Height: 21" (533mm, 12U)
- Width: 17.2"W (436mm)
- Depth: 17" (431mm)
- Weight: 97.5 lbs (44.2kg)
- Mounting options: 19" or 23" racks, 4 chassis per 7' rack
- Operating temperatures: 41°F to 104°F (5°C to 40°C), 41°F to 122°F (5°C to 50°C) short-term (up to 96 hours)
- Operating humidity: 5% to 85%, 5% to 90% short-term
- Maximum operating altitude: 9800' (3000m)

POWER

- Dual feed -48V DC nominal (-40V DC to -56V DC)
- Fused 1500W (40A)

SYSTEM ARCHITECTURE

- Passive midplane design with 48Gbps nonblocking packet-switched bus
- Timing: BITS, external T1/E1 or internal clock source
- 2 half-height alarm card slots
- 2 SG1200 signaling gateway card slots
- 14 Universal Media Card (2 x 6:1 redundancy) populated by PB4000 (1xDS3) or PB4500/5000 (3xDS3)

NETWORK INTERFACES

- TDM: T1/E1, DS3
- VoIP: Auto-detecting Fast/Gigabit Ethernet
- Management: Ethernet and serial console access

SCALABILITY

- 42xDS3 (36xDS3 protected)
- 28,224 concurrent calls (24,192 protected)
- Up to 720,000 Busy Hour Call Attempts (BHCA)

CARRIER-CLASS RELIABILITY

- GR-512-CORE (99.999% availability)
- TDM and VoIP equipment protection switching
- Redundant, hot-swappable interface cards, alarm cards, power supplies, fans, and processor cards
- Fault-tolerant software architecture with calls preserved on CPU failover

NETWORK MANAGEMENT

- SNMP, CORBA and XML interfaces for alarms and system management
- Management of multiple chassis via MetaView NMS or integration with third-party OSS

PROTOCOLS

- Media Gateway Control: H.248 / Megaco, MGCP 1.0bis
- Session Initiation Protocol (SIP) v2
- PacketCable Network-based Call Signaling (NCS)
- GR-303
- ISDN PRI (ETSI, NI-2, Lucent and Nortel variants), NFAS
- T1 Channel Associated Signaling (CAS)
- SS7 Support: ANSI, ITU-T, ETSI and national variants
- Multi-Frequency (MF) trunks (1-way, 2-way)
- Ground start, loop start, E&M immediate/wink start

CODECS

- G.711 (64kbps PCM)
- G.726 (32kbps ADPCM)
- G.729AB (8kbps CS-ACELP)
- Automatic fallback to G.711 for fax/modem calls
- T.38 Fax Relay

MEDIA AND QUALITY OF SERVICE

- 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

- Bellcore NEBS: Level 3 (Bellcore SR-3580, GR-63-CORE, GR-1089-CORE) certified
- Safety: UL 1950, CSA C22.2.950, EN 60950, IEC 60950
- CALEA: TIA J-STD-025A implemented on-board
- Electro-magnetic compatibility: FCC Part 15 Class A, ICES-003 Class A, EN 55022 Class A, EN55024
- Network: FCC Part 68
- ILECs: SBC TP 76200MP, Verizon RNSA-NEB-95-003, Qwest TP 77351 § 11, BellSouth CG-COLH-001 § 5.1.2
- SS7: Verizon, BellSouth, Verisign, SBC, Qwest, Bell Canada, BT, INS
- MultiService Forum (MSF) Release 3 Architecture