Dialogic® Vision™ 1000 Video Gateway

Datasheet

The Dialogic® Vision™ 1000 Video Gateway is a carrier-ready video gateway that can connect interactive SIP-based video and multimedia services to mobile, IP, and PSTN networks, in addition to IMS-based networks through support of BICC/Nb-Up. The Vision 1000 Video Gateway can also support real-time video and voice transcoding, allowing service providers and mobile operators to deliver enhanced video quality and interoperability for converged services, such as video portals, multimedia contact centers, and multi-terminal video conferencing.

Because of its ability to integrate ISDN and SS7/ISUP signaling in a single 1U unit and scale up to 5000 ports per SS7 point code, the Vision 1000 Video Gateway allows for extremely efficient deployment. It features web-based management with remote configuration, management, and monitoring, and easy scalability in carrier networks by permitting capacity upgrades through software licenses. Support of redundant SS7 links improves reliability by reducing service downtime.

Features	Benefits
3G-324M support that includes H.264	Enables the same video services to perform comparably on 3G wireless and IP networks
Real-time any-to-any video transcoding and rate adaptation on demand	Adapts codec, rate, and size dynamically as a video moves between mobile network devices and IP network devices to improve efficiency and the viewer experience
Video refresh	Reduces video corruption while maintaining a high frame rate
FastCall setup that includes MONA	Allows similar setup times for both video and voice calls
Simultaneous support of TDM voice calls	Supports seamless failover of video to voice calls with very low voice latency to eliminate complex routing schemes and multiple element management
Redundant SS7 link support	Improves reliability by reducing service downtime, which is important in a carrier environment
BICC/Nb-Up support	Can be deployed in both traditional mobile networks and next-generation IMS networks

Dialogic® Vision™ 1000 Video Gateway

Datasheet

Applications

Mobile Interactivity

- Personalization
  - — Video Ring Tones and CRBT
  - — Video, Voice, and Text SMS
  - — Video and Voice Chat
  - — Video Avatar Messaging
  - — Video and Voice Messaging
  - — Video Mail
- Entertainment
  - — Video Portal
  - — On-Demand Gaming
- Information
  - — Stock Quotes
  - — News
  - — Video Sharing
  - — Video-Based Training
  - — Video Blogging
  - — Video Portal

Network Services

- Business Productivity
  - — Multimedia Contact Center
  - — Self Service IVVR and IVR
  - — Video and Voice Conferencing

Network Infrastructure

- — Mobile-to-PC video telephony
- — Video Call Completion to Voice (VCCV)

Connections for a Wide Variety of Network Types

Figure 1 provides an example of how the Vision 1000 Video Gateway can connect voice and video endpoints to SIP-based multimedia platforms and services in carrier environments. With integrated PSTN-SIP audio and video, the Vision 1000 Gateway can provide a wide range of carrier signaling services, making it suitable for a variety of network types, including IP, Mobile, PSTN, 3G-324M, and IMS networks. With its ability to provide real-time bi-directional transcoding, the Vision 1000 Gateway enables dynamic and efficient deployment of 3G services, including SIP-based video applications, speech, and multimedia services, as well as emerging 3G-324M video solutions.

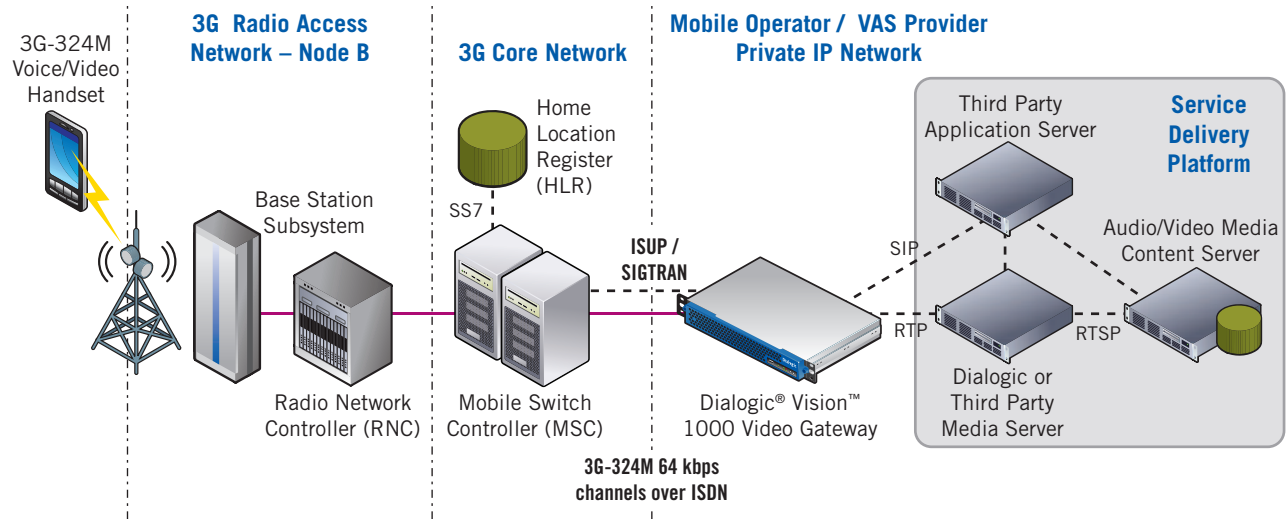

Figure 1: Dialogic® Vision™ 1000 Video Gateway in a Carrier Network Environment

One Gateway for Both Voice-Only and Video Calls

The Vision 1000 Video Gateway can simultaneously support voice-only calls and 3G-324M video calls, and can supply only the audio portion of a video call to a non-video enabled endpoint. This enables application developers, OEMs, and system integrators to quickly develop and deploy rich multimedia solutions without complex routing, and allows the Vision 1000 Gateway to work with both 2G and 3G mobile networks and endpoints.

Simultaneously supporting voice-only and video calls is also important for mobile providers, for whom a top priority is to satisfy their video subscribers by making sure that all attempted calls are completed, even if the destination handset type is voice-only. The Vision 1000 Video Gateway provides an advantage in these cases by handling both types of calls on a single gateway without requiring any conversion. The audio call remains in the TDM domain, eliminating potential latency and providing a high quality voice connection. This functionality is provided in a single 2U unit, a very small footprint for such rich functionality.

Real-Time Any-to-Any Video Transcoding

The Vision 1000 Video Gateway offers excellent efficiency and an enhanced viewer experience by providing real-time any-to-any video transcoding only when needed. Rate matching and size matching of video streams is available on demand, and video transcoding capabilities include H.264 to H.263/MPEG-4 for interoperability between web-based video content and mobile video handsets.

Table 1 lists the dynamic video transcoding available with the Vision 1000 Video Gateway.

		Video Service				
		3G-324M Mobile Video Handset (QCIF)	SIP Video Phone (QCIF/CIF)	3GPP Stored Content (QCIF)	IP Video Streaming (QCIF/CIF)	2G/3G Non-Video Handset (audio only)
3G-324M Mobile Video Handset	H.264	x	x	x	x	x
	MPEG-4	x	x	x	x	x
	H.263	x	x	x	x	x

Table 1. Video Transcoding Supported

The Vision 1000 Video Gateway also enables a high-quality 3G video experience by incorporating advanced standards in mobile video technology. The Vision 1000 Gateway supports H.264 for high-quality video as well as industry-standard fast call setup procedures such as MONA, WNSRP, and Packed245.

Signaling for the Carrier Network

With its support of ISDN, SS7/ISUP, SIGTRAN, and BICC signaling, the Vision 1000 Video Gateway is ready for deployment in a wide variety of carrier environments. Trial, test, or small-scale deployments can begin with only 1U of rack space,

The Vision 1000 Video Gateway can accommodate initial commercial deployments in carrier environments, which normally require fault-tolerance, because it can provide 1+1 redundancy through a single point code with two units for increased reliability. From such an initial deployment, the Vision 1000 Gateway scales easily to 10 units and 5000 ports — with redundancy. **Note:** Number of units and ports may differ depending on call flow and use case.

Figure 2 provides an example of a full-scale, high-density, redundant deployment using Vision 1000 Video Gateways.

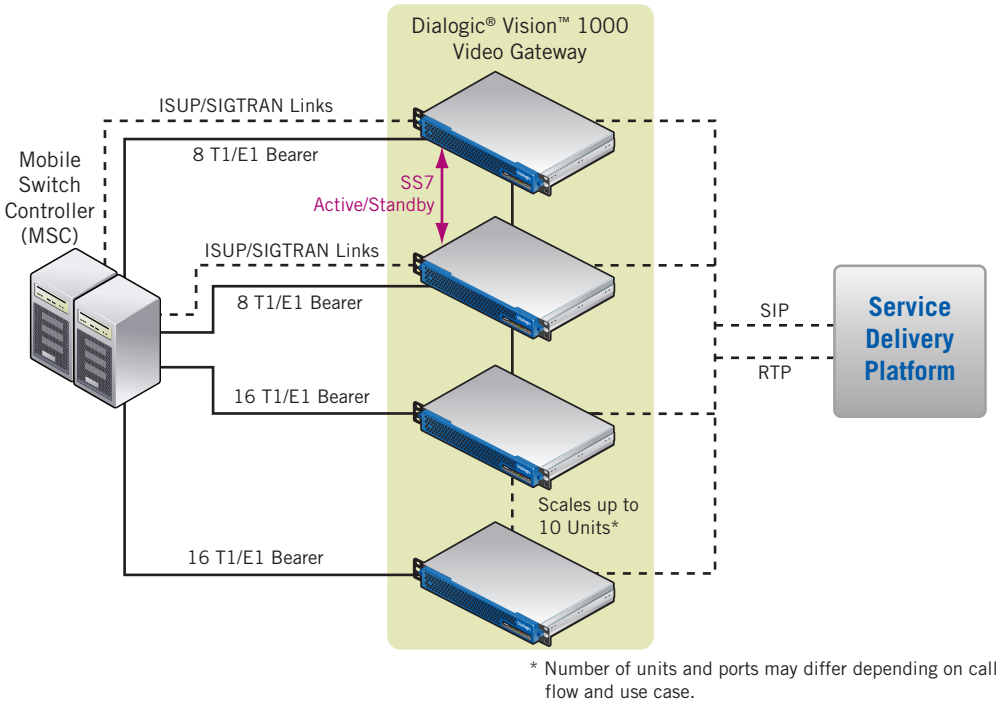

Figure 2. Full-Scale SS7 Deployment

Technical Specifications

Video Gateway Support

3GPP-324M	H.223, Annex B (Level 2) H.245 ver 11 H.263, H.263+ MPEG-4 part 2 H.264 (MPEG-4 part 10)
Fastcall Setup	H.324 Annex A, C (CCSRL/NSRP/WNSRP) H.324 Annex K (MONA APC & MPC)
Audio processing	Passthrough and transcoded AMR-NB, G.711 transcoding for video calls
User Indications	H.245 UII RFC 2833 In-band DTMF
Video Transcoding	H.263, H.263+, MPEG-4 part 2, H.264
Video Rate adaptation	42Kb to 384Kb, 6fps to 30 fps
Video Size adaptation	QCIF, CIF
Video Refresh	RFC 5168

Audio Gateway Support

Audio Processing	Passthrough and transcoded AMR-NB, G.711, G.723.1, G.729a transcoding
User indications	RFC 2833 In-band DTMF
Fax support	Incoming fax detection on CNG, T.38 transport

Call Routing

DNIS to URI mapping
Configurable route table
CCXML 1.0 W D June 29, 2005 compliant
Call transfer (REFER)
Call bridging between audio and/or video calls
Video call tromboning
Early Media (3G-324M requires switch support)

Technical Specifications *(continued)*

Media Transport
RFC 1889 (RTP/RTCP)
RFC 1890 (RTP profiles)
RFC 3550/3551 (RTP)
RFC 2833 (DTMF)
RFC 2429, RFC 2190 (H.263)
RFC 3267/IF2 (AMR)
RFC 3016 (MPEG-4)
RFC 3984 (H.264)
Nb-Up (for BICC/IP-324M)

Network Protocols
ISDN
ISUP/SS7
ISUP/SIGTRAN
BICC
SIP (interworking with ISDN/ISUP/BICC)

SS7/ISUP Compliance
Embedded SS7 support per server
Redundant support through external SS7 signaling server
Technology deployed in over 50 countries
China ISUP
EN 300-356-1, ETSI ISUP V.3, 1998
ETS 300-121, ETSI ISUP V.1, 1992
ETS 300-356-1, ETSI ISUP V.2, 1995
ETS 300-356-33, ETSI
Q.730-737, ITU-T, 1992
Q.761-764, ITU-T, 1997
Q.767, ITU-T, 1992
Q.784, ITU-T, 1996-1997
T1.113, 236, ANSI, 1995
NTT Q.761-764

SIGTRAN Compliance
M3UA (RFC 4666, ETSI TS 102 381 v1.1.1)
SCTP (RFC 2960, RFC 3309)

BICC Compliance
ITU-T Q.1902.1 – Q.1902.6, 07/2001
ANSI T1.673-2000
ANSI T1.673-2002 (CS1+)
Paired with media supported: Nb-Up (IP-324M)

Technical Specifications *(continued)*

ISDN Compliance
AT&T 5ESS10
Nortel DMS-100
Bellcore National 2
Euro ISDN and Euro Numbers
NTT INS 1500
QSIG
ANSI T1.607

SIP Compliance
RFC 3261 (SIP core)
RFC 3263 (Locating SIP Servers)
RFC 3264 (SDP Offer/Answer)
RFC 3515 (REFER)
RFC 3398 (ISUP/SIP mapping)
RFC 2327 (SDP)
RFC 2976 (INFO)
RFC 5168 (Video Refresh)

PSTN Physical Interfaces
8 or 16 T1/E1 trunks
T1: ANSI T1.102, T1.403
E1: G.703 2,048 kbps
MDO mini-RJ21 connector (per 8 trunks)
120 ohm termination or 75 ohm (optional)

SS7 Physical Interfaces (optional)
4 T1/E1 trunks, with or with voice channels
RJ-48C connectors, each with 2 T1/E1 trunks
4, 16, or 32 low speed links, or 4 high speed links (DS1)
120 ohm termination or 75 ohm (optional)

IP Media Physical Interfaces
Dual Gigabit Ethernet per 8 T1/E1 trunks
Dual Gigabit Ethernet per SS7 signaling card
Quad Gigabit Ethernet per server motherboard
Configurable for failover or load balanced

Management
Web management console
Usage indication: CDR reporting
Front panel visual, info/minor/major/critical
SNMP v1/v2/v3
Lights out management, IPMI 2.0 compliant
Detailed event logging with configurable levels

Technical Specifications *(continued)*

Physical Specifications

Height	1.74 in (44 mm)
Width	19 in (485 mm) ear-to-ear
Depth	20.75 in (527.05 mm)
Weight	26.80 lbs (12.16 kg)
Environmental	0ºC to 40ºC operating
	-40ºC to 70ºC non-operating

Mounting

1U, 19" rack mount (600 mm standard telcom rack)
Optional rack mount kit available (22" – 30.5", 4-post rack only)

Optional SEP (Signal Entry Panel)

Passive convertor from mini-RJ21 to RJ-48C
For PSTN interfaces, up to 16 T1/E1 trunks
Height: 1.74 in (44 mm)
Width: 19 in (485 mm) ear-to-ear
Depth: 1.91 in (48.5 mm)
Weight: 2.6 lbs (1.18 kg)
Environmental: 0ºC to 40ºC operating
-40ºC to 70ºC non-operating

Hardware Availability

Dual RAID 1 disks, hot swappable, front accessible
Dual 1+1 power supply, with dedicated fans, hot swappable, rear accessible
Quad fan subsystem for CPU and network cards, hot swappable, front accessible
Redundant network connections

Power

Dual 650 W AC
Dual 650 W DC

Capacity

VoIP gateway ports	480 (may be fewer depending on the number of 324M ports)
324M video gateway ports	240
Video transcoding ports	Up to 240 full-duplex, any-to-any (capacity depends on codec, frame rate, bit rate, and size)

Capacity upgrade through software license

Approvals, Standards, and Compliance

Hazardous substances: RoHS Compliance Information at http://www.dialogic.com/rohs

Compliance

Safety, EMC, Telco, NEBS-3/ETSI-designed
May be approved as AQR1U, AQR1UA or AQR1UB

Dialogic®
Making Innovation Thrive™

www.dialogic.com

Dialogic Corporation
9800 Cavendish Blvd., 5th floor
Montreal, Quebec
CANADA H4M 2V9

09/10 11279-05