Dialogic® 2000 Media Gateway Series

Datasheet
Media Gateway

The Dialogic® 2000 Media Gateway Series (DMG2000 Gateways) is a set of turnkey appliances that seamlessly merge traditional PSTN technology with IP networks. These economical gateways help consolidate typically separate voice and data networks and provide new and differentiated communication services. Without making radical, disruptive, and expensive upgrades to existing PBX equipment, service providers and enterprises can realize the benefits of a converged voice and data network with these gateways. The DMG2000 is fully certified as an enhanced gateway for Microsoft® Lync Server 2010.

Features	Benefits
Provides an interconnect between legacy PBXs and various IP endpoints	Enables communication between a circuit-switched telephony network and Session Initiated Protocol (SIP) compatible remote devices such as IP voice mail, unified messaging applications, and IP phones
Available in single, dual, and quad density T1/E1 rack mount appliances	Offers a range of product densities to fit the needs of a variety of applications and business sizes
Compatible with a variety of popular PBX manufacturers including Avaya, Mitel, NEC, Nortel, and Siemens	Protects investment in legacy telecommunications equipment and allows a phased migration to IP
Support for IP load balancing and IP fault tolerance	Allows the ability for inbound (TDM-to-IP) calls to round-robin between available media servers and automatically routes calls away from unresponsive media or proxy servers
Supports supplementary services on CAS, QSIG, Euro ISDN, NI2, DMS100, 5ESS protocols, enabling call transfer, call hold, MWI, and call party information	Helps retain key supplementary services in the new IP environment
Supports configuration via serial, telnet, and a web browser including context-sensitive Help	Easy to install, configure, debug, and maintain
IP security features include TLS, SRTP, and HTTPS	Enables secure communications for SIP messages via TLS, media streams via SRTP, and web interfaces via HTTPS
Support for TDM-to-TDM routing on dual- and quad-density "S" models with survivability capabilities	Allows flexible deployment and survivability; options include IP failover to TDM circuits and PSTN-to-PBX or PSTN-to-IP routing
Supports Any-to-Any call routing	Allows for routing of calls from TDM-to-SIP, SIP-to-TDM, TDM-to-TDM, and SIP-to-SIP

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Applications

- Centralized VoIP and FoIP applications servers, including IP-based voice mail and unified messaging
- Interactive voice response (IVR) and announcements
- IP PBX
- Voice over Internet Protocol (VoIP) extension to branch offices
- Contact centers

The DMG2000 Gateways can be installed and configured "plug and play," reducing the total cost of ownership. Operations, Administration, and Maintenance (OA&M) features such as network alarm events and remote management enabled by a user-friendly web interface, along with advanced diagnostics and administration tools, make the installation and maintenance of these appliances quick and easy.

The cost of the DMG2000 Gateways make them a unique and ideal solution for enterprises interested in deploying a variety of applications such as PBX extension, remote office connectivity, long-distance consolidation, call centers, and IP media servers. Available in a 19-inch standard rack mountable chassis, these appliances are also ideal for service providers offering hosted IP-PBX, IP Centrex, and enhanced messaging servers.

Save Time, Money — and Existing PBX Equipment

Many enterprises today have legacy PBX equipment installed on their premises. These enterprises want to cut their communications costs by implementing a VoIP solution, but wish to retain their investment in legacy equipment. Because these enterprises have a diverse base of PBX equipment, solution providers need a product that will help them address this wide customer base with a single, simple solution.

The DMG2000 Gateways have been tested for interoperability with legacy PBXs from vendors such as Alcatel, Avaya, Mitel, NEC, Nortel, and Siemens. This testing lets solution providers focus on customer applications rather than integration efforts with legacy PBXs.

In addition to providing IP connectivity, the DMG2000 Gateways support key supplementary services such as call transfer, call forwarding, call hold, message waiting indicator (MWI), and call party information on most T1/E1 protocols including CAS, QSIG, Euro ISDN, NI2, DMS100, and 5ESS, enabling customers to retain application-critical PBX functionality in the new VoIP environment.

The dual- and quad-density "S" models (DMG2060DTISQ and DMG2120DTISQ respectively) provide failover relays and expanded call routing options, allowing connectivity to, and flexible routing between, the PSTN, IP networks, and TDM PBX networks. Possible configurations include TDM-to-TDM and TDM-to-IP with survivability support.

Advanced Voice Features Provide Superior Caller Experience

The extensive features of the DMG2000 Gateways can help build a reliable, high-quality VoIP application. The DMG2000 Gateways support Any-to-Any call routing for maximum flexibility. The gateways provide the interoperability needed for high-quality media streaming with a wide variety of industry-standard IP endpoints by supporting advanced coders including:

- G.711 (packet size 10 ms, 20 ms, and 30 ms)
- G.723.1
- G.729ab

Echo cancellation is essential for packet-switched networks to carry voice traffic successfully. The DMG2000 Gateways conform to ITU G.168 echo cancellation with a tail length up to 128 ms. Voice quality is further enhanced with features such as comfort noise generation, silence detection, and adaptive jitter buffering.

The DMG2000 Gateways have QoS features, including type of service (TOS)/IP precedence, and DiffServ, providing a low-latency, high-reliability path for sensitive voice traffic through today's networks. In addition, the gateways support advanced call progress analysis on all channels.

Configurations

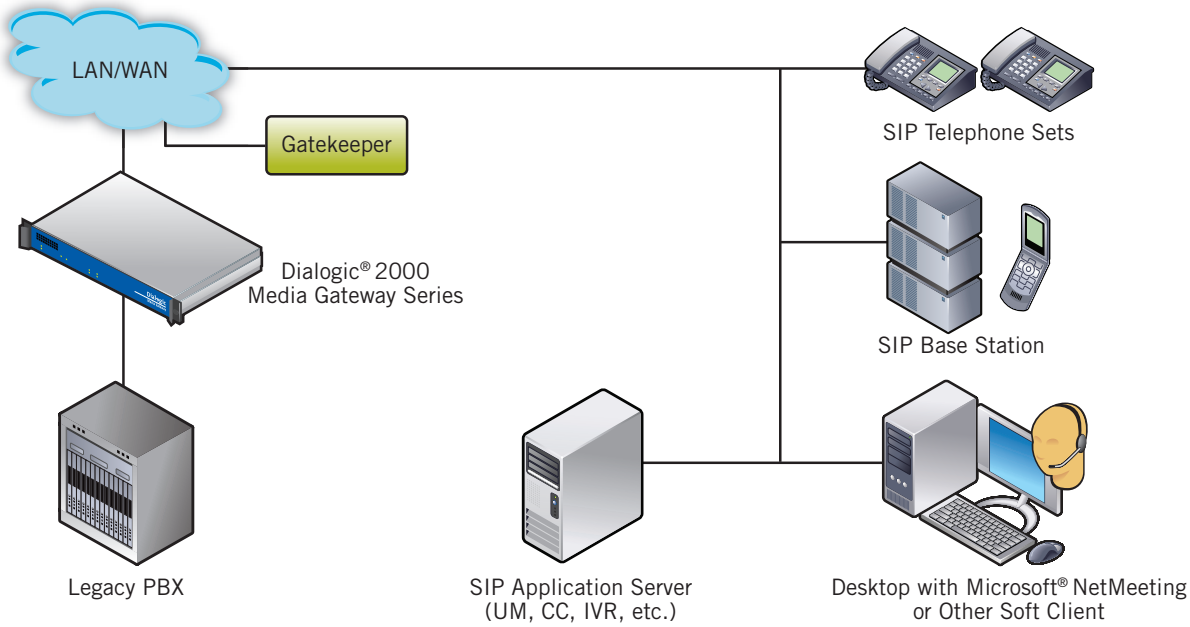

Figure 1. Bridge the Gap Between PSTN and IP End Points

The DMG2000 Gateways provide a cost-effective way to connect various IP end points to the circuit-switched network (see Figure 1), eliminating the need to swap out legacy PBXs and helping to protect telecom investment.

The DMG2000 Gateways along with Dialogic® HMP Software support the development of cost-effective IP media servers accessible from both PSTN and IP networks (see Figure 2). IP media servers can provide a central and efficient server in existing Time Division Multiplex (TDM) voice infrastructures by servicing remote locations via an IP network.

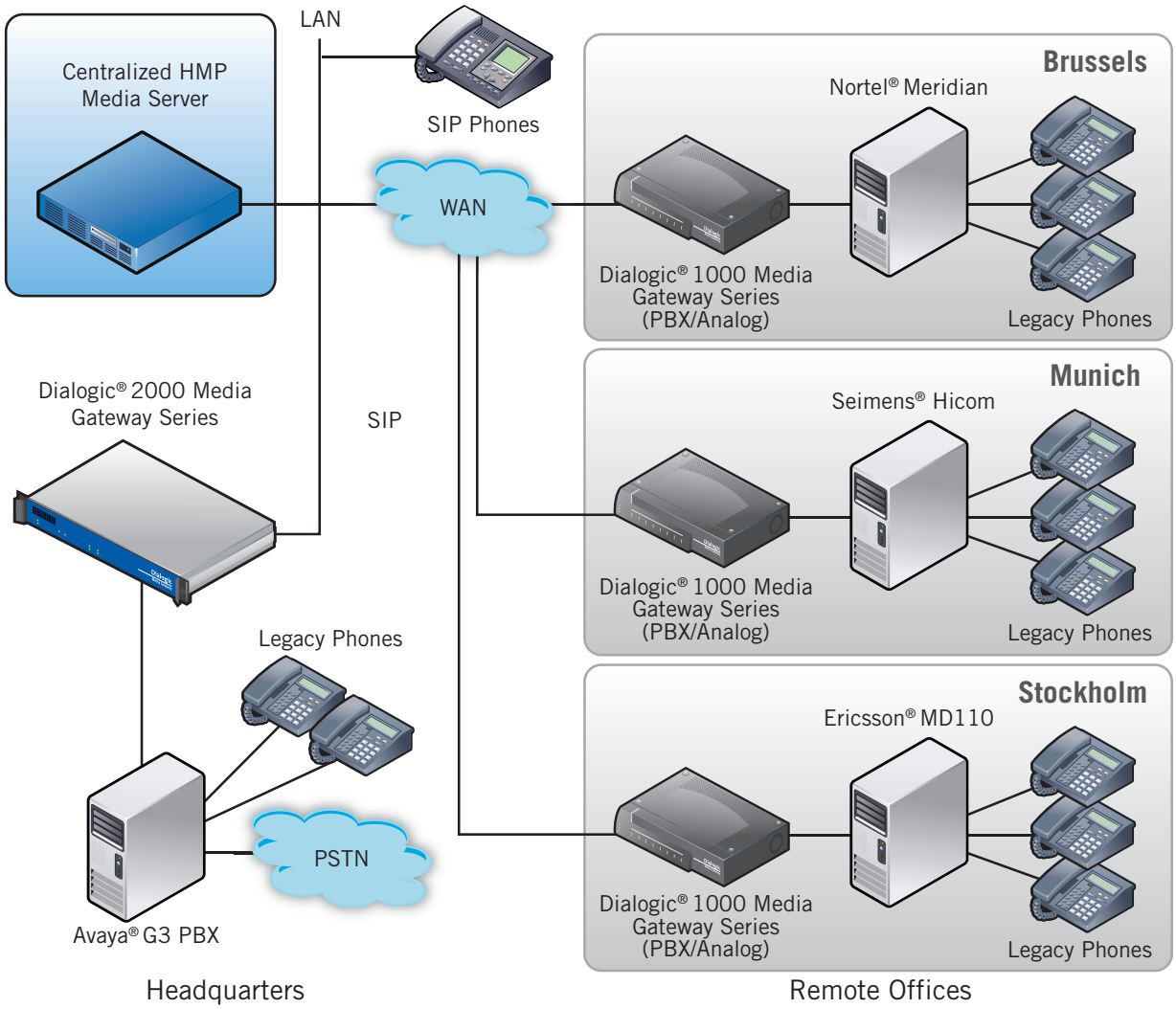

Figure 2. Converged IP Media Server Architecture

Media gateways help service providers and enterprises offer cost-saving voice, data, and multimedia convergence services. One such solution is an application for telecommuters.

The number of employees working from home on a permanent or periodic basis continues to rise. These employees need full access to company voice and data services. By installing a DMG2000 Gateway (see Figure 3), employees working from home can have the same telephony experience as their counterparts in the corporate office. They can make and receive calls and access other features such as unified messaging from home, just as if they were in the office. Their office extension can be "bridged" onto a gateway port so that their "phone" rings, no matter where they are working. This enhances productivity, reduces costs, and improves both customer and employee satisfaction.

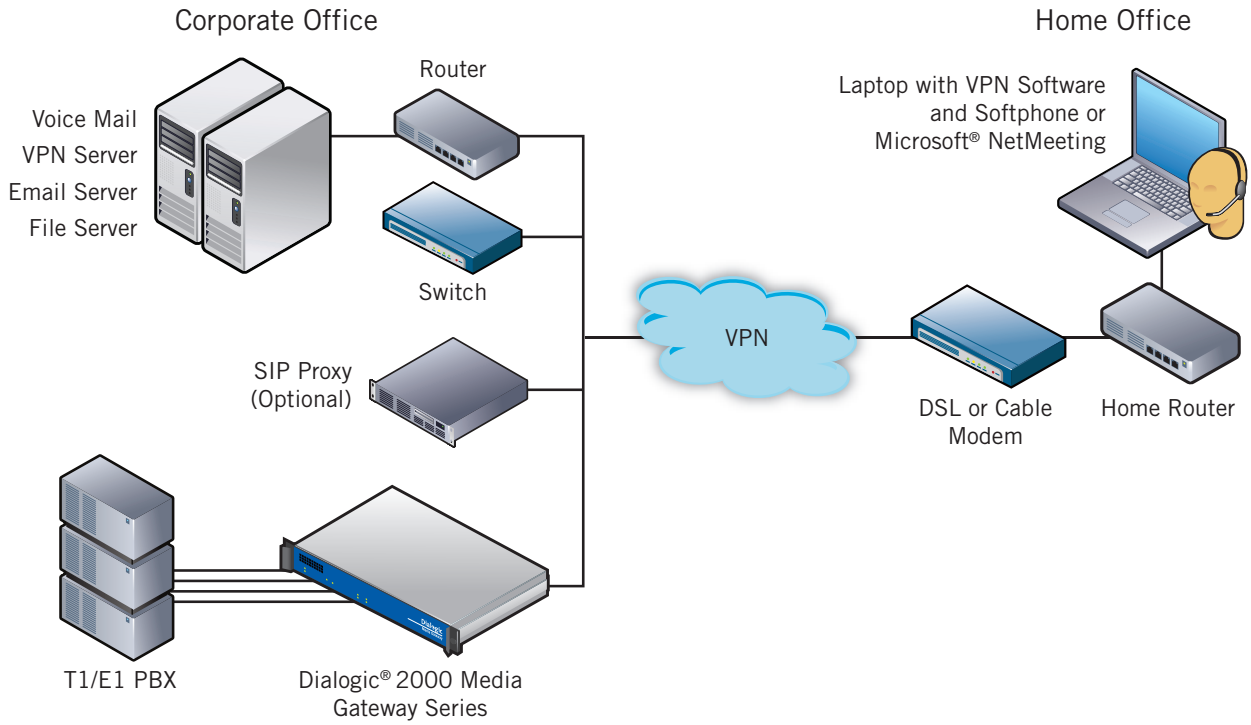

Figure 3. Next-generation Application Solutions — Telecommuting

The DMG2000 Gateway "S" models can be used for SIP trunking, PSTN toll bypass, and other access gateway applications because of their TDM-to-TDM routing capability, which is included along with traditional SIP-to-TDM and TDM-to-SIP routing. The addition of failover relays for direct TDM-to-TDM connectivity in case of power failures or IP network issues provides a survivable telephony connection as well. For a sample configuration, see Figure 4.

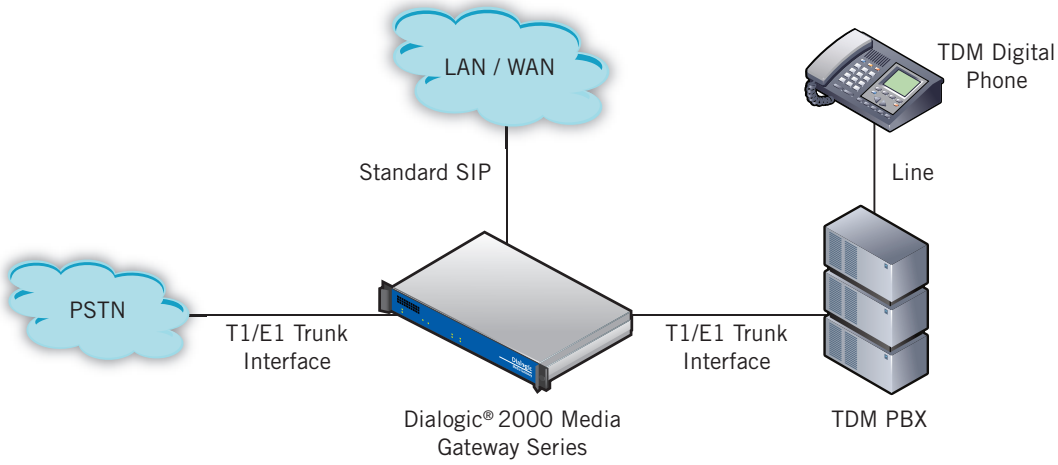

Figure 4. Access Gateway with Survivability Capabilities

Technical Specifications

TDM Port Density by Model

DMG2030DTI	1 T1 or 1 E1
DMG2060DTI	2 T1 or 2 E1
DMG2120DTI	4 T1 or 4 E1

IP Channel Density by Model

DMG2030DTI	30
DMG2060DTI	60
DMG2120DTI	120

Connectors

RJ-45 jacks

Network Interfaces

10/100 BaseT Ethernet LAN port
Connector 1 shielded female RJ-45 jack for LAN

Configuration and Management

Web browser with context-sensitive Help facility
Telnet
BOOTP client and TFTP client built-in
SNMP v2 read-only for alarm reporting

Call Routing

Any-to-Any call routing (TDM-to-SIP, SIP-to-TDM, TDM-to-TDM, and SIP-to-SIP)

IP Security

TLS for SIP messages
SRTP for media stream
HTTPS for web interface

Power Requirements

Line voltage	90VAC to 264VAC
Frequency	47 Hz to 63 Hz

Technical Specifications *(continued)*

Physical Dimensions

Height	1.68 in. (4.27 cm)
Width	19 in. (48.26 cm)
Length	14.2 in. (36.07 cm)
Weight	11.1 lbs (5.03 kg)

Environmental Requirements

Operating temperature	+32°F to +122°F (0°C to 40°C)
Storage temperature	–4°F to +158°F (–20°C to 70°C)

Protocol Support

Serial	MCI
	MD-110
	SMDI
T-1 ISDN	5ESS
	DMS100
	NI2
	QSIG
T-1 CAS	E&M
	GroundStart
	LoopStart
E-1	EuroISDN
	QSIG
VoIP	Call transfer/call hold/message waiting indicator
	SIP per RFC 3261
	RTP/RTCP for delivery of voice
FoIP	T.38 FoIP emulating units transcode fax from T.30 fax protocol, supporting V.21, V.27, V.29, and V.17 modulation schemes, to T.38 for transmission over a packet network
Security	SRTP
	HTTPS
	TLS

Technical Specifications *(continued)*

Voice Support

	G.711 µ-law and A-law
	G.723.1
	G.729ab
	Silence suppression with comfort noise
	Dynamic jitter buffer
	G.168 automatic echo cancellation
	Call Progress Analysis (CPA), including Positive Voice Detection, Positive Answering Machine Detection (PAMD), DTMF detection, and fax tone detection

Quality of Service

	Type of service (ToS)/IP precedence
	DiffServ

Approvals

Safety	
European Union	EN 60950
United States	ANSI/UL 60950, third edition
Canada	CAN/CSA 60950, third edition
EMC	
European Union	EN 55022-1998 Class B
United States	FCC Part 15 Class A
Canada	IC ES-003 Class B
Telecommunications	
European Union	EN 55024:1998
United States	FCC Part 68
Canada	IC CS03, Issue 7
Country-specific Approvals	See the global product approvals database at http://www.dialogic.com/declarations
Hazardous Substances	RoHS compliance information at http://www.dialogic.com/rohs

Reliability/Warranty

Estimated MTBF	Nine years
Warranty	Warranty information at http://www.dialogic.com/warranties

PBXs Interoperability

Any PBX that follows one of the protocol specifications listed in the Technical Specifications section will interoperate with the DMG2000 Gateways. The following is a list of PBXs that were specifically tested either in a Dialogic, or a third party, interoperability lab.

Manufacturer	Models	Software Version	Supplemental Service Support		
			Call Party ID	Transfer	MWI
Avaya	DEFINITY G3	Version 3 or greater	Yes	Yes	Yes
	S8500	Communications Manager SW V2.0 or greater	Yes	Yes	Yes
NEC	2400 IMX	Release 5200 Dec. 92 1b or greater	Yes[1]	Yes	Yes[1]
Nortel	Meridian 1 – Option 11c	Release 15 or greater and options 19 and 46 are required	No	No	No
Siemens	Hicom 300E CS	Release 9006.4 or greater (North American software load only)	Yes[2]	Yes	Yes

For explanation of notes, see Table 7.

Table 1. PBX Support — CAS

Manufacturer	Models	Software Version	Basic Call Control			Supplemental Service Support					
			Inbound	Outbound	CPID	Diversion		Call Transfer		Path Replacement	MWI
						Forward ID and Reason	Redirect	Join (Hairpin)	Re-Route (TBCT)	Route Optimization	
Alcatel	OmniPCX 4400	Version 3.2.712.5	Yes	Yes	Yes	Yes	No	Yes	N/A	Yes	N/A
Avaya	S8500	Communications Manager SW V2.0	Yes	Yes	Yes	Yes	No	Yes	N/A	Yes	Yes
Mitel	SX-2000 S, SX-2000 VS	LW 34	Yes	Yes	Yes	Yes	No	Yes	N/A	Yes	Yes
	3300	Version 5.1.4.8	Yes	Yes	Yes	Yes	No	Yes	N/A	Yes	Yes
NEC	2400 IPX	R17 Release 03.46.001	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes[1]
Nortel	Meridian 1 – Option 11c	Release 15 or greater and options 19 and 46 are required	Yes	Yes	Yes	Yes	No	Yes[3]	N/A	Yes	Yes
	Communications Server 1000	Version 2121, Release 4, Issue 00 T	Yes	Yes	Yes	Yes	No	Yes[3]	N/A	Yes	Yes
Siemens	HiPath 4000	V2 SMR 9 SMPO	Yes	Yes	Yes	Yes	No	Yes[3]	N/A	Yes	Yes

For explanation of notes, see Table 7.

Table 2. PBX Support — T1 QSIG

Manufacturer	Models	Software Version	Basic Call Control			Supplemental Service Support					
						Diversion		Call Transfer		Path Replacement	MWI
			Inbound	Outbound	CPID	Forward ID and Reason	Redirect	Join (Hairpin)	Re-Route (TBCT)	Route Optimization	
Alcatel	Omni PCX 4400	Version 3.2.712.5	Yes	Yes	Yes	Yes	No	Yes	N/A	Yes	N/A
Avaya	S8500	Communications Manager SW V2.0 or greater	Yes	Yes	Yes	Yes	No	Yes	N/A	No	No
Mitel	SX-2000 S, SX-2000 VS	LW 34	Yes	Yes	Yes	Yes	No	Yes	N/A	Yes	Yes
	3300	Version 5.1.4.8	Yes	Yes	Yes	Yes	No	Yes	N/A	Yes	Yes
Nortel	Meridian 1 – Option 11c	Release 15 or greater and options 19 and 46 are required	Yes	Yes	Yes	Yes	No	Yes[3]	N/A	Yes	Yes
	Communications Server 1000	Version 2121, Release 4, Issue 00 T	Yes	Yes	Yes	Yes	No	Yes[3]	N/A	Yes	No
Siemens	HiPath 4000	V2 SMR 9 SMPO	Yes	Yes	Yes	Yes	No	Yes[3]	No	Yes	Yes
Ericsson	MD110	Release MX1 TSW R2A (BC13)	Yes	Yes	Yes	Yes	No	Yes[3]	N/A	Yes	Yes
Philips	Sophos (iS3030-288)	Version 6810.34	Yes	Yes	Yes	Yes	No	Yes[3]	N/A	Yes	Yes
Tenovis	Integral 3	E062 V01.0.0.2	Yes	Yes	Yes	Yes	No	Yes	N/A	Yes	Yes

For explanation of notes, see Table 7.

Table 3. PBX Validation — E1 QSIG

Manufacturer	Models	Software Version	Basic Call Control			Supplemental Service Support					
						Diversion (ECMA-174)		Call Transfer (ECMA-178)		Path Replacement	MWI
			Inbound	Outbound	CPID	Forward ID and Reason	Redirect	Join (Hairpin)	Re-Route (TBCT)	Route Optimization	
Avaya	5ESS	Version 5e16(2)02.00	Yes	Yes	Yes	Yes	No	N/A	Yes	N/A	Yes[4]
Mitel	SX-2000 S, SX-2000 VS	LW 34	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A
	3300	Version 5.1.4.8	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A
NEC	All models	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nortel	DMS100	Version SN000.007	Yes	Yes	Yes	Yes	No	N/A	Yes	N/A	Yes
	Meridian - Option 11c	Release 15 or greater and options 19 and 46 are required	Yes	Yes	Yes	No	No	No	No	No	No
Siemens	HiPath 4000	V2 SMR 9 SMPO	Yes	Yes	Yes	No	No	No	No	No	No

For explanation of notes, see Table 7.

Table 4. PBX Validation — T1 NI2

Manufacturer	Models	Software Version	Basic Call Control			Supplemental Service Support					
						Diversion		Call Transfer		Path Replacement	MWI
			Inbound	Outbound	CPID	Forward ID and Reason	Redirect	Join (Hairpin)	Re-Route (TBCT)	Route Optimization	
Avaya	5ESS	Version 5e16(2)02.00	Yes	Yes	Yes	Yes	No	N/A	Yes	N/A	Yes[4]

For explanation of notes, see Table 7.

Table 5. PBX Validation — T1 5ESS

Manufacturer	Models	Software Version	Basic Call Control			Supplemental Service Support					
						Diversion		Call Transfer		Path Replacement	MWI
			Inbound	Outbound	CPID	Forward ID and Reason	Redirect	Join (Hairpin)	Re-Route (TBCT)	Route Optimization	
Nortel	DMS100	Version SN000.007	Yes	Yes	Yes	Yes	No	N/A	Yes	N/A	Yes[4]

For explanation of notes, see Table 7.

Table 6. PBX Validation — T1 DMS100

Note	Explanation
1	Supported via the MCI serial protocol
2	PBX does not send the Calling Party on inbound calls. However, the Called Party and the Call Reason Code fields are supported.
3	Display on the called party phone does not update after the Join transfer completes
4	Supported via the SMDI serial protocol

Table 7. Explanation of Notes

Ordering Information

Dialogic® Product	Order Code	Description
DMG2030DTIQ	886-427	
DMG2060DTISQ	310-891	Dual-density “S” model with TDM-to-TDM routing; replaces 886-418
DMG2120DTISQ	310-892	Quad-density “S” model with TDM-to-TDM routing; replaces 886-426

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