Datasheet

The Dialogic[®] DSI Signaling Gateway (DSI SGW) is based on the Dialogic[®] DSI SS7G31 Signaling Server or Dialogic[®] DSI SS7G32 Signaling Server. These two servers, which are known collectively as the DSI SS7G3x Signaling Servers, offer developers an integrated standards-based signaling platform with carrier-grade qualities that include fault resiliency, scalability, and interoperability. The DSI SS7G3x Signaling Servers are suitable for a wide variety of solutions, notably those in which high throughput is required for signaling traffic.

The DSI SGW provides an interface between SS7 and IP networks or an interface between two disparate IP networks. The DSI SGW also allows signaling information to be carried over IP to IP-resident signaling points and applications, such as softswitches and mobile network elements, or carried to another signaling



server. The flexibility and control available with the DSI SGW makes it appropriate for a range of call control and transaction-based applications in wireless and intelligent networking systems, as well as for expanding SS7 bandwidth on existing networks.

The DSI SGW supports standard operations, administration, and maintenance (OA&M) interfaces via Simple Network Management Protocol (SNMP), allowing easy integration into automated, centralized management systems.

Features	Benefits
Enables an existing SS7 infrastructure to be used with an IP network	 Allows next-generation networks to use current circuit- switched and mobile network value-added services Allows SS7 signaling to be offloaded onto an IP network or offloaded directly to IP endpoints
Supports M2PA and M3UA SIGTRAN standards for transporting SS7 over IP	Enables different architectures, such as replacing SS7 links with IP, eliminating some SS7 network constraints (such as link bandwidth), or connecting IP nodes that use M2PA to IP nodes that use M3UA
Supports distributed, resilient, and scalable architectures along with multiple SS7 variants (ANSI, ETSI, Japan)	Provides the flexibility to build small- to large-scale configurations to address the varying needs of different deployments worldwide
Capable of high message rates on all configured SS7 links, supporting up to 58,000 MSUs per second	Can accommodate demanding, mobile, and intelligent networking transaction-intensive applications
Equipped with redundant hard drives	Provides data and system resilience to maintain application uptime



Dialogic[®] DSI Signaling Gateway Based on Datasheet Dialogic[®] DSI SS7G3x Signaling Servers **System Resilience Application Server Dialogic® DSI Signaling Gateways** Switched Based on Dialogic® DSI SS7G3x Circuit **IP Network** Signaling Servers Network ASP STP ASP STP SS7 Linkset ASP SIGTRAN Associations

Figure 1: System-Resilient Configuration Example

A pair of DSI SS7G3x Signaling Servers can be run in dual active/active operation, taking advantage of the resilient SS7 architecture. In the configuration example in Figure 1, each DSI SGW operates independently, cooperating with the other to maintain status awareness. Both DSI SGW units share the load and contribute actively to system throughput. If either DSI SGW unit fails, the other unit takes over the full load, maintaining service.

The client systems can act as discreet application server processes, working as a single distributed application server. This allows network nodes to be scaled as required and can also be used for load-sharing or failover capability.

A pair of DSI SGWs can also operate as one point code for high availability of an SS7 node. Each DSI SGW includes four Ethernet ports, which can be used for management, traffic, or a combination of both for resilience and flexibility. The integrated features of the DSI SGW provide a high level of availability without the need for complex application management.

A DSI SS7G3x Signaling Server can be configured with dual power supply units, allowing for a hot-swap redundant configuration.

Technical Specifications

Configurations	DSI SS7G31	DSI SS7G32
Form factor	10	20
Boards per server (may be configured without TDM boards for SIGTRAN-only operation)	1 Dialogic® DSI SPC14 Network Interface Board or	1 to 3 Dialogic® DSI SPC14 Network Interface Boards
	1 Dialogic [®] DSI SS7HDP Network Interface Board	or
		1 to 3 Dialogic® DSI SS7HDP Network Interface Boards
M2PA links	256	256
Low-speed TDM links	64	192
HSL Q.703 links	2	6
SS7 links per unit (including M2PA)	64 (256)	192 (256)
M3UA routing keys (indirect connections)	4,096	4,096
M3UA remote application server	256	256
Local point codes	4	4
SCTP associations	256	256
Adjacent switch routes (SS7 linksets)	64	64
Routing table (indirect connections via STPs)	512	512
Adjacent switch connections	64	64
SS7 interfaces (T1/E1)	4	12
IP interfaces (10/100/1000 BaseT Ethernet)	4	6
Max MSUs/sec	22,500	58,000
Power	AC or DC	AC or DC
NEBS-3 and ETSI Compliant	No	With 0 boards, DC power only
MTBF (hours) in Dual Power Supply	73,000	33,000

configuration*

* Mean Time Between Interruptions (MTBI) in hours is based on the assumption that a failed power supply module or hard drive is replaced within 24 hours. MTBF prediction for Telcordia Method @ +104°F (+40°C).

Technical Specifications (continued)

Interfaces

LAN interface	DSI SS7G31 Signaling Server: $4 \times 10/100/1000$ MBps Ethernet DSI SS7G32 Signaling Server: $6 \times 10/100/1000$ MBps Ethernet
Line interface: PCM	Up to 12 interfaces, each software-configurable as either T1 or E1 $$
Pulse mask	T1: TIA-968-A, CS-03, and AT&T TR62411 E1: ITU-T G.703
Data rate	T1: 1544 kbps \pm 50 ppm E1: 2048 kbps \pm 50 ppm
Frame format	T1: D4, ESF, and ESF-CRC6 E1: E1 and E1-CRC4
Line codes	HDB3 AMI (ZCS) AMI B8ZS
Connector type	RJ-45
Power	
SS7G31	
DC-powered products Supply voltage (range nominal) Input power (fully equipped) Range limits	-48 VDC to -60 VDC 230 W -38 VDC to -75 VDC
AC-powered products Supply voltage (auto ranging) Input power (fully equipped) Frequency	100 VAC to 127 VAC / 200 VAC to 240 VAC 230 W 50 Hz/60 Hz
SS7G32	
DC-powered products Supply voltage (range nominal) Input power (fully equipped) Range limits	-48 VDC to -60 VDC 300 W -38 VDC to -75 VDC
AC-powered products Supply voltage (auto ranging) Input power (fully equipped) Frequency	100 VAC to 127 VAC / 200 VAC to 240 VAC 300 W 50 Hz/60 Hz

Datasheet

Technical Specifications (continued)

Physical Dimensions

DSI SS7G31 Signaling Server

Height	1.7 in. (4.32 cm)
Width	17.11 in. (43.53 cm)
Depth	20 in. (50.8 cm)
Weight — fully equipped	24.2 lbs (11 kg)
DSI SS7G32 Signaling Server	
Height	3.45 in. (8.76 cm)
Width	17.11 in. (43.53 cm)
Depth	20 in. (50.8 cm)
Weight – fully equipped	40 lbs (18 kg)
Environmental	
DSI SS7G31 Signaling Server	
Operating temperature	+50°F (+10°C) to +95°F (+35°C)
Storage temperature	-40°F (-40°C) to +158°F (+70°C)
DSI SS7G32 Signaling Server	
Operating temperature	+41°F (+5°C) to +104°F (+40°C)
Storage temperature	-40°F (-40°C) to +158°F (+70°C)
Safety and EMC	
International	CB Certificate to IEC 60950-1. EN60950-1
	EN 300 386, EN55022, EN55024, CISPR 22
United States	UL 60950-1
	FCC Part 15 Class A
Canada	CAN/CSA-C22 No 60951-1
	ICES-003
Telecommunications	
International	TBR12, TBR13
United States	TIA-968-A
Canada	CS-03
Hazardous substances	RoHS compliance information at www.dialogic.com/rohs
Country-specific approvals	Gobal product approvals database at www.dialogic.com/declarations
Warranty	Warranty information at www.dialogic.com/warranties
Service plan	See service plan information at www.dialogic.com/products/services

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Host System Requirements

Operating systems: Linux, Solaris, Windows®

Ordering Information

Dialogic[®] DSI SS7G3x Signaling Servers are preconfigured with 0 to 3 low-density (4 link) Dialogic[®] DSI SPCI Network Interface Boards or high-density (64 link) Dialogic[®] DSI SS7HDP Network Interface Boards. A server software license from Dialogic is required for implementing a DSI SS7G3x Signaling Server as a Dialogic[®] DSI Signaling Gateway.

Order Code	Model	Description
Signaling Servers		
310-893	SS7G310A0W	SS7G31, AC powered, 0 SS7 links, 0 T1/E1 ports
310-897	SS7G31QA1W	SS7G31, AC powered, 4 SS7 links, 4 T1/E1 ports
310-895	SS7G31HA1W	SS7G31, AC powered, 64 SS7 links, 4 T1/E1 ports
310-894	SS7G310D0W	SS7G31, DC powered, 0 SS7 links, 0 T1/E1 ports
310-900	SS7G31QD1W	SS7G31, DC powered, 4 SS7 links, 4 T1/E1 ports
310-896	SS7G31HD1W	SS7G31, DC powered, 64 SS7 links, 4 T1/E1 ports
310-901	SS7G320A0W	SS7G32, AC powered, 0 SS7 links, 0 T1/E1 ports
310-910	SS7G32QA1W	SS7G32, AC powered, 4 SS7 links, 4 T1/E1 ports
310-905	SS7G32QA2W	SS7G32, AC powered, 8 SS7 links, 8 T1/E1 ports
310-902	SS7G32QA3W	SS7G32, AC powered, 12 SS7 links, 12 T1/E1 ports
310-912	SS7G32HA1W	SS7G32, AC powered, 64 SS7 links, 4 T1/E1 ports
310-903	SS7G32HA2W	SS7G32, AC powered, 128 SS7 links, 8 T1/E1 ports
310-904	SS7G32HA3W	SS7G32, AC powered, 192 SS7 links, 12 T1/E1 ports
310-906	SS7G320D0W	SS7G32, DC powered, 0 SS7 links, 0 T1/E1 ports
310-909	SS7G32QD1W	SS7G32, DC powered, 4 SS7 links, 4 T1/E1 ports
310-899	SS7G32QD2W	SS7G32, DC powered, 8 SS7 links, 8 T1/E1 ports
310-907	SS7G32QD3W	SS7G32, DC powered, 12 SS7 links, 12 T1/E1 ports
310-911	SS7G32HD1W	SS7G32, DC powered, 64 SS7 links, 4 T1/E1 ports
310-908	SS7G32HD2W	SS7G32, DC powered, 128 SS7 links, 8 T1/E1 ports
310-898	SS7G32HD3W	SS7G32, DC powered, 192 SS7 links, 12 T1/E1 ports
Server Software		
G17-035	SS7SBG30SGWU	Signaling Gateway license for Signaling Server, 16 MTP links, 16 M3UA/ M2PA link eq/assoc, SNMP
G16-035	SS7SBG30SGWL	Signaling Gateway license for Signaling Server, 64 MTP links, 64 M3UA/ M2PA link eq/assoc, SNMP
G15-035	SS7SBG30SGWJ	Signaling Gateway license for Signaling Server, 192 MTP links, 256 M3UA/M2PA link eq/assoc, SNMP

Ordering Information (continued)

Order Code	Model	Description
Accessories		
300-388	SS7G31SACPSU	SS7G31 450W AC power supply
300-392	SS7G31SDCPSU	SS7G31 450W DC power supply
300-387	SS7G31BHDD	SS7G31 spare hard drive
300-389	SS7G32SACPSU	SS7G32 600W AC power supply
300-391	SS7G32SDCPSU	SS7G32 600W DC power supply
300-390	SS7G32BHDD	SS7G32 spare hard drive
310-869	SS7G30R19LBR	2-post 19" rack mount "L" bracket kit
310-870	SS7G30R19MNT	2/4-post 19" rack mount
310-871	SS7G30R23MNT	2/4-post 23" rack mount
310-872	SS7G30RSLKIT	Enabling kit for use with slide rails

Optional Dialogic[®] Pro[™] Premium Per Unit Plan and Dialogic[®] Pro[™] Premium Service Agreement

Support and service plans are available for the Dialogic® DSI SS7G3x Signaling Servers as a separately ordered item.



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