

Dialogic® DSI SS7MDL4 Network Interface Board

Datasheet
Dialogic® DSI Network
Interface Boards

The Dialogic® DSI SS7MDL4 Network Interface Board offers multiple levels of signaling link density for SS7 and ATM networks in rack-mount servers with low-profile or full-height PCI Express peripheral slots. Flexible capacity licensing enables message processing from 16 to 124 low-speed links or 2 or 4 high-speed MTP or ATM links.

Features	Benefits
16 to 124 low-speed MTP links; 2 or 4 high-speed (2 Mbps) MTP links	Applies the same technology to large and small volume nodes
2 or 4 ATM links with IMA capability	Expands service deployment opportunities to ATM networks, including those using the cost-effective technology (IMA) for cell transmission
Message rates of 30,000 MSU/second	Delivers performance capacity to meet high call volumes and demanding transaction-intensive services
High-impedance (HiZ) connectivity	Enables passive MTP or ATM traffic monitoring
Low-profile, PCI Express form factor with alternate full-height bracket	Supports rack-mount servers designed for small footprint peripherals

The DSI SS7MDL4 supports the Dialogic® Distributed Signaling Interface (DSI) SS7 Protocol Stack, allowing API-level compatibility with applications developed for other DSI network interface boards including Dialogic® DSI SS7HD and Dialogic® DSI SPCI Network Interface Boards. Application development for the DSI SS7MDL4 is accelerated by a comprehensive suite of test utilities, sample code, and user-part programming guides.

The DSI SS7MDL4 delivers the high-capacity message-signaling-units-per-second performance required for demanding value-added services such as messaging, call completion/prepaid calling, roaming, and intelligent network applications.

Flexible Licensing

The DSI SS7MDL4 can be licensed and deployed with a number of different link capacities and network protocols to allow scaled pricing to match the levels of throughput required. See the table of order codes at the end of this datasheet for a list of options.

Easy Migration for Existing Signaling Applications

Existing signaling-only applications using Dialogic® DSI APIs or the Dialogic® Global Call API for SS7 and currently deployed with DSI SS7HDP or DSI SPCI Network Interface Boards can be executed on systems configured with the DSI SS7MDL4 without programming changes in the service logic. Applications using the CT bus functionality of the DSI SS7HD or DSI SPCI Boards will require modification to use the drop-and-insert feature of the DSI SS7MDL4. Alternatively, other Dialogic® products that support the CT bus or combined signaling and media may be used. Contact your Dialogic sales representative for information on other Dialogic products and capabilities.

Technical Specifications

Digital interfaces	4 T1, E1, J1 (software selectable on a per trunk basis) High impedance selectable for monitoring Selectable synchronization source from any line interface
Telecom clock management	Configurable LT (clock slave) or NT (clock master) mode Internal and external loop back capability
Pulse mask	T-1 ANSI T1.403 E-1 ITU-T G.703
Data rate	T-1 1544 Kb/s \pm 50 ppm E-1 2048 Kb/s \pm 50 ppm
Frame format	T-1 D4, ESF, and ESF-CRC6 E-1 E1 and E1-CRC4
Line codes	HDB3, B8ZS
Connector type	RJ-48C
Maximum boards/system	4
Host interface	PCI Express compatible as a 4-lane (x4) physical form factor with a single lane connected that can be installed in 4, 8, or 16 lane PCI Express slots Bus speed 1 x PCI-Express lane (2.5 Gb/s, full-duplex)

Capacity

Channelized links	16 to 124 channelized 64 Kb/s MTP low-speed links (LSL)
High-speed links	2 or 4 high-speed, Q.703 Annex A links (HSL), framed T1/E1 2 or 4 ATM links, AAL5 with IMA capability
Link configuration	Selection between low-speed links and high-speed links is made via software on a per trunk basis
Protocol execution	MTP2 on board, higher levels on host
Network protocol execution	Q.SAAL/GR-2878 SS7 (MTP1 & MTP2)
HDLC monitoring	Passive monitoring of HDLC format data links including, SS7, LAPB, LAPD, ISDN, and DPNSS

Performance

MSUs per second:	30,000
MTP calls per second:	7,800
MTP transactions per second:	5,600
ATM calls per second:	4,100
ATM transactions per second:	5,200
Stated performance achieved using a single board in a multi-core computer (8 x 1.6 GHz)	

Technical Specifications *(continued)*

Platform

Form factor	Low-profile
Dimensions	2.7 in. (6.89 cm) long 6.6 in. (16.76 cm) high

Power Requirements

Power	+12 VDC, 1.1 A typical, 1.4 A max
Power dissipation	17 W max

Environmental Requirements

Operating temperature	0° C to +55° C
Air flow	1.5 m/s min (300 LFM) (See Hardware System Requirements below)
Storage temperature	-20° C to +70° C
Relative humidity	5% to 95% non-condensing
Altitude	0 to 15,000 ft

Safety and EMC

Canada: ICES-003 Class A, CSA 60950-1 1st Ed.

Europe: EN60950-1 1st Ed., Cisprr 22: 2006 Class A, EN55022:2006 Class A, EN55024: 1998 w/A1:2001, A2:2003, EN300386:V1.4.1

United States: FCC Part 15 Class A, CSA 60950-1 1st Ed.

CB Scheme: IEC 60950-1 1st Ed.

Telecommunications

United States: TIA-968-A

Canada: CS-03 Issue 9

Europe: TBR 12 and 13

Approvals, Compliance, and Warranty

Hazardous substances: RoHS compliance information at www.dialogic.com/rohs

Country-specific approvals: Global product approvals at www.dialogic.com/declarations

Warranty: Warranty information at www.dialogic.com/warranties

System Software Requirements

The DSI SS7MDL4 board is supported by the SS7 Development Package (DevPak) for Linux and Solaris for SPARC. Contact your Dialogic sales representative for status of Windows® support. See the application note at www.dialogic.com/systemreleases for details about the operating systems currently supported. DevPaks contain device drivers and the tools necessary for developing complex multichannel applications, including a native SS7 API that allows full access to the SS7 messages.

Hardware System Requirements

The DSI SS7MDL4 can be installed in workstations or rack-mount servers with low-profile or full-height PCI Express 4, 8, or 16 lane slots. The DSI SS7MDL4 is a high performance board capable of delivering over 30,000 MTP2 packets per second. To achieve this level of performance, state-of-the-art processors operating at high clock frequencies are used. At the same time, to address the requirements of current server designs, the board is presented in a low profile, PCI Express form factor, with less than 1/3 of the surface area of a full PCI or PCI Express board. When high power components are combined in a board with a small area, heat dissipation becomes an important design consideration. For information about the cooling recommendations, see the *Dialogic® DSI SS7MD Network Interface Boards Programmer's Manual* at www.dialogic.com/manuals/ss7/cd/ProductSpecific/SS7MD/Programmers_Manual/SS7MD-PM.pdf.

Additional Components

Documentation, test utilities, and example code can be downloaded from the Dialogic web site at www.dialogic.com/products/signalingip_ss7components/download/dsi-network-interface-boards.htm.

SS7 protocol stack layers compatible with the DSI SS7MDL4 are available at www.dialogic.com/products/signalingip_ss7components/download/dsi-interface-protocol-stacks.htm.

Ordering Information

Dialogic® Product	Order Code	Description
SS7MDL440Q	310-918	PCIe, low profile, 4 ports
SS7SBMDM16	G01-037	16 LSL
SS7SBMDM32	G02-037	32 LSL
SS7SBMDM64	G03-037	64 LSL, 2 MTP or ATM HSL
SS7SBMDM128	G04-037	128 LSL, 4 MTP or ATM HSL
SS7SBMDM256	G05-037	256 LSL, 8 MTP or ATM HSL

Ordering Notes

- MTP and ATM HSL may be configured per port.
- LSL may be configured per channel.
- Monitoring is enabled with all licenses at twice the number of links indicated.
- Licensed capacity applies to all SS7MDL4 boards installed in a system. The maximum capacity of any one board is 124 low-speed links, 4 MTP high-speed links, or 4 ATM links.

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