

## Dialogic® Station Interface Boards

Dialogic® Station Interface Boards can be used in open-architecture platforms that integrate large-scale switching and voice processing resources under a single hardware and software architecture. This High-Density Station Interface (HDSI) solution is offered in PCI configuration, which provides the industry's highest density analog station connectivity in a single computer chassis slot.



### Products Discussed in This Datasheet

- Dialogic® HDSI/480 Station Interface Board
- Dialogic® HDSI/720 Station Interface Board
- Dialogic® HDSI/960 Station Interface Board
- Dialogic® HDSI/1200 Station Interface Board

The HDSI Boards consists of a PCI board with H.100 compliant CT Bus connectivity connected to a Station Interface Box (SIB). The CT Bus provides switching between trunks and stations and also allows expansion for additional Dialogic® network and resource boards. Utilizing just one computer chassis slot, this HDSI solution can support up to 120 stations with tone detection and generation, and FSK Caller ID transmission.

Each HDSI Station Interface Board connects an application-selectable time slot on the CT Bus to an analog station device. The RJ-21X telephone interface on the SIB enables easy connections to breakout boxes or punchdown blocks. For standard RJ-11 jack connections, Dialogic offers an optional SA/240 station adapter and a 50-pin cable.

Features	Benefits
<b>Programmable ringing with automatic ring trip</b>	Requires no additional external circuitry for 20 Hz, 25 Hz, 30 Hz, and 50 Hz ring frequencies
<b>Station status event detection</b>	Allows collection of call traffic statistics via the application for cost-effective management of call setup and call termination
<b>Programmable gain</b>	Provides station volume control from the application and enables matching line levels from different devices
<b>Onboard FSK generation</b>	Allows the transmission of Caller ID to CLASS, CLIP, and J-CLIP-type Caller ID phones, as well as the ability to activate and deactivate message waiting indicators
<b>Onboard DTMF detection</b>	Recognizes tones generated by phones connected to the stations

## Technical Specifications

### HDSI Board

Interfaces	4 (connects to one SIB)
Maximum boards per system	8 (application, call traffic, and CPU dependent)
Control processor	Up to 8 MB local to control processor
Digital signal processor	Motorola 5630x, 1 K word program cache
DSP memory	Up to 15 DSPs @ 100 MIPS each — 256 K word DRAM local to each DSP — 128 K word SRAM local to each DSP
Baseboard global memory	32-bit wide DRAM accessible to all signal processors and control processor
Supported operating systems	Windows®; Linux. Details at <a href="http://www.dialogic.com/systemreleases">http://www.dialogic.com/systemreleases</a>
CSP	No
Signaling	Analog loop start

### Host Interface

Host interior memory	512 KBr
Bus compatibility	Rev 2.1 of PCI Bus Specification
Bus mode	Target and DMS master mode operation
SIB connectors	4 RJ-48C on rear bracket
Computer telephony bus	ECTF H.100 compliant CT Bus, offering — Onboard switching access to 4096 bidirectional 64 kb/s DS0 time slots — SCbus interoperability through provided adapter — 68-pin ribbon cable connector

### Platform

Form factor	PCI long card, single-slot width 12.3 in. (31.24 cm) long (without edge retainer) or 13.3 in. (33.78 cm) long (with edge retainer) 0.79 in. (2 cm) wide (total envelope) 3.87 in. (9.83 cm) high (excluding edge connector)
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### Power Requirements

+5 VDC	3.85 A (maximum)
+12 VDC	30 mA (maximum)

## Technical Specifications (cont.)

### Environmental

Operating temperature	+32°F (0°C) to +122°F (+50°C) Cooling condition per maximum operating temperature 5 CFM
Storage temperature	-4°F (-20°C) to 158°F (+70°C)
Humidity	8% to 80% noncondensing

### Approvals and Compliance

Hazardous substances	RoHS Compliance Information at <a href="http://www.dialogic.com/rohs">http://www.dialogic.com/rohs</a>
<i>Safety and EMC Certifications</i>	
Canada	ICES-003 Class A ULc CSA 950 Listed File E96804
Europe	EN60950 EN55022 EN55024
Japan	VCCI Class A
United States	FCC Part 15 Class A UL 1950 UL Listed File E96804
International	IEC950 CISPR 22 CISPR 24
<i>Telecom Approvals</i>	
United States	EBZUSA-33951-CE-T
Canada	IC:885 10020 X
Country-specific approvals	See the Product Declarations & Global Approvals list at <a href="http://www.dialogic.com/declarations/">http://www.dialogic.com/declarations/</a> or contact your Authorized Distributor

### Reliability/Warranty

Estimated MTBF	Per Telcordia Method HDSI/480: 38,500 hours HDSI/720: 34,000 hours HDSI/960: 30,000 hours HDSI/1200: 27,000 hours
Warranty	Warranty information at <a href="http://www.dialogic.com/warranties">http://www.dialogic.com/warranties</a>

## Technical Specifications (cont.)

### Station Interface Box (SIB)

#### Programmable Tone Parameters

Frequency	300 Hz to 3400 Hz, 31.25 Hz increments
Level	-10 dBm0 to -40 dBm0, 3 dB increments
Duration	10 ms to 4 s, 10 ms increments
Interval between	2 s to 17 min (tariff tone only)

#### Station Interface

Connectors	RJ-21X female for connecting to SA-240 Station Adapter
Signaling type	Loop start originate
Telephone set connection	Two-wire loop start, balanced
Loop current	20 mA +3 mA
Default D-to-A signal level gain	-3 dB adjustable; ±6 dB in 1 dB steps (to telephone line, approximately)
Default A-to-D signal level gain	-3 dB
Impedance	600 Ohms ±7%
2-wire return loss	25.0 dB typical
Receive signal/noise ratio	36 dB + 3 dB (-1 dBm, 1004 Hz)
Noise-to-ground	32 dBrc +3 dB
Idle channel noise	15 dBrc +3 dB
Channel-to-channel crosstalk	-70 dB max. (0 dBm, 1004 Hz)
Open loop voltage	-20 VDC +1.5 VDC (with -24 volt supply)
Closed loop current	-20 mA ±3 mA
Clock rate	Expansion: 2.048 Mbs or 1.544 Mbs Independent: 1.544 Mbs
PCM algorithm	A-law or μ-law, software selectable
Ring voltage	54 Vrms @ 20 Hz, (balanced)
Ringer Equivalency Number (REN)	2 REN max. per station
Telephone ring frequency	20 Hz, 25 Hz, 30 Hz, 50 Hz
Loop length	5280 ft (1 mi/1.609 km), typical (24 gauge)

#### Dialogic® Analog Station Interface Usage WARNING

This Dialogic® analog station interface product is designed to support analog station equipment only within the walls of a single standalone building or structure (i.e., on-premise). It is not designed to sustain electrical overstress from external sources and factors such as severe weather conditions. Electrical overstress can be introduced on cables extending outside of the walls of a single standalone building or structure (i.e., off-premise) such as in a campus environment or other multibuilding facility. Severe electrical overstress caused by misuse of this interface product with cables extending outside of the walls of a single standalone building or structure could cause property damage and/or personal injury and/or death. Such misuse voids the warranty for this interface product.

#### SIB Power Requirements

100 V – 120 V	3.0 A maximum
200 V – 250 V	1.5 A maximum 50/60 Hz

#### SIB Interface Cable

Type	Standard shielded, RJ-48 male
Length	6 ft (1.828 m) provided Maximum distance the SIB can be from the HDSI/PCI is 660 ft (201.168 m)

## Technical Specifications (cont.)

### SA-240 Station Adapter Kit

Dialogic® Station Interface Boards use the SA-240 station adapter kit. The SA-240 station adapter kit ISA version includes a cable assembly and an RJ-11 breakout box. The cable has two RJ-21X connectors: one male and one female. The breakout box converts the RJ-21X connectors into 24 standard RJ-11 connectors for easy connection to standard telephone sets. The same SA-240 breakout box is used for both ISA and PCI products. The SA-240 can be wall-mounted. If RJ-11 connections are desired, five SA-240 kits are needed for one Dialogic® HDSI/1200 Station Interface Board.

Telephone set connection	RJ-11 standard connectors	
Number of RJ-11 connectors	24	
Front panel connector	RJ-21X jack	
Dimensions	Length	6.0 in. (15.4 cm)
	Width	3.8 in. (9.7 cm)
	Height	1.25 in. (3.2 cm) excluding RJ-21X connector
		1.50 in. (3.8 cm) including RJ-21X connector
Weight	24 oz. (.68 kg)	
Operating temperature	+32°F (0°C) to +122°F (+50°C)	
Storage temperature	-4°F (-20°C) to 158°F (+70°C)	
Humidity	8% to 80% noncondensing	

#### Cable

Length	Approx. 4.0 ft (1.2 m)
Connectors	RJ-21X, 50-pin male to HDSI/SC board RJ-21X, 50-pin female standard USOC to breakout box

The HDSI system is provided in four station densities:

- HDSI/480 (the base model) supports 48 stations
- HDSI/720 supports 72 stations
- HDSI/960 supports 96 stations
- HDSI/1200 supports 120 stations

Model	Stations	Interface	Form Factor	SIB	Resource Bus	OS Support
HDSI/480	48	RJ-21X, RJ-11	PCI	2U-19 in.	CT Bus, SCbus	Windows® NT, Windows® 2000, Linux
HDSI/720	72	RJ-21X, RJ-11	PCI	2U-19 in.	CT Bus, SCbus	Windows® NT, Windows® 2000, Linux
HDSI/960	96	RJ-21X, RJ-11	PCI	2U-19 in.	CT Bus, SCbus	Windows® NT, Windows® 2000, Linux
HDSI/1200	120	RJ-21X, RJ-11	PCI	2U-19 in.	CT Bus, SCbus	Windows® NT, Windows® 2000, Linux

\*\* With optional SA/240 Station Adapter and 50-pin cable

The SIB has an internal power supply that provides loop current (battery) and ring voltage to local telephony devices. The system can handle multiple stations going on- or off-hook and ringing simultaneously.

All HDSI models are capable of providing the AC voltage needed to ring standard 2500-type telephones and some other phones. The ring capability is contained within the SIB. The HDSI board defaults to a 33-percent duty cycle ring cadence and can ring 120 phones simultaneously.

Balanced lines ensure low noise and allow stations to be installed up to 5280 ft (1 mi/1.609 km) from the SIB. Built-in Electrostatic Discharge (ESD) protection lets agents insert and remove headset jacks without damaging HDSI board circuits.

Application-programmable channel gain controls the volume for each channel and matches line impedances from country-specific telephone sets and devices.

Station status event detection collects call traffic statistics and enables cost-effective management of call setup/call termination.

## Optional Components

- SA-240 station adapter kit for HDSI
- The following kit components can be ordered separately:
  - RJ-21X cable for SIB
  - RJ-21X to RJ-11 breakout box

## Ordering Information

Product Code	Order Code	Description
HDSI1200PCIW	884-313	120-port Analog Station, PCI
HDSI960PCIW	884-315	96-port Analog Station, PCI
HDSI720PCIW	884-314	72-port Analog Station, PCI
HDSI480PCIW	884-312	48-port Analog Station, PCI

To learn more, visit our site on the World Wide Web at <http://www.dialogic.com>

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