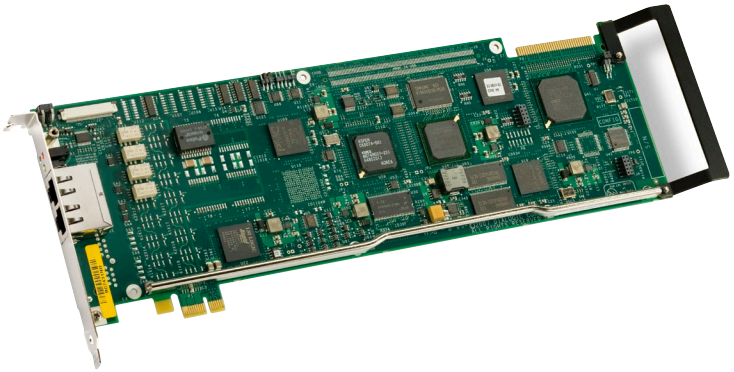
Sangoma

Sangoma HMP Interface Boards

Half-Length, Standard-Height PCI Express Format

Datasheet

The Sangoma HMP Interface Boards (DNI Boards) that are available in half-length, standard-height PCI Express format provide a native PSTN interface to Sangoma PowerMedia™ Host Media Processing (HMP) Software. These half-size DNI Boards can be used in place of full-size PCI Express format DNI Boards of equivalent density in applications using PowerMedia HMP without programming changes. DNI boards are compatible with the Sangoma DSI SS7 Protocol Stacks, allowing combining HMP media on the host, with SS7 signaling on board. DNI Boards enable efficient VoIP gateway functionality to be built into PowerMedia HMP telephony applications. They also break the traditional DSP-based media span paradigm by providing a digital network interface ready for use with virtually any configuration of host-based media resources, which complement the base gateway capability.



Applications

- Enhanced media gateway
- Converged contact center
- Converged IP-PBX
- IVR and voice portal
- Audio conferencing server
- Messaging
- Enhanced services
- Switching and call completion
- Prepaid/debit card
- 3G-324M video gateway

√ Interface to PowerMedia HMP

- Allows host-based video, voice, speech, conference, fax, and IP transcoding to be accessible from the PSTN interface; can be configured in a wide range of densities, scalable in individual port increments

√ 8, 4, 2 or 1 digital network interface(s)

- Provides four different densities to support a cost-effective range of solutions

√ Software-selectable trunks configure DNI boards for either T1 or E1

- Reduces the total cost of ownership by increasing flexibility, reducing inventory, and simplifying the purchasing process and test effort

√ Half length, standard height PCI Express form factor

- Permits the use of lower-cost rack-mount servers designed for small footprint peripherals

√ Support for a wide range of PSTN protocols

- Including SS7, ISDN and CAS signaling
- Allows a choice of PSTN protocols. Allows combined HMP media and signaling, including SS7 in conjunction with the Sangoma DSI SS7 Protocol Stack

√ Sangoma Global Call Software

- Provides a consistent programming interface for call control utilized by boards with Sangoma DM3 architecture and by PowerMedia HMP

√ Host streaming interface

- Enables a low-latency, 256-duplex channel interface to host-based media and IP networks

Technical Specifications

Digital Interfaces
- 8, 4, 2, 1 T1/E1

Form Factor
- PCI Express half length, standard height, single-slot width

Control Processor
- Height: 4.376 in (11.12 cm)
- Length (w/o edge connector): 6.6 in (16.76 cm)

Host Interface

Bus Type
- PCI Express

Link Width
- 1-lane

Bus Compatibility
- Two Single-function devices;
  - Ist device compliant with PCI Express Base Specification Version 1.0a
  - 2nd device compliant with PCI Express Base Specification 1.1

Interrupts
- Message Signaled Interrupt (MSI)0

Host Interface Memory
- 24MB

Bus Mode
- Target and DMA master mode operation

Network Connectors
- Four RJ-48C on front bracket

Platforms

Control Processor
- Freescale MPC8314 PowerQUICC II Pro @ 400 MHz

Control Processor Memory
- 104 MB DRAM

Echo Cancellation
- Sangoma® e256 EC Chip

Computer Telephony Bus
- Sangoma® SyncRoute cable connector with ability to connect to H.100 bus boards only for clock synchronization

Power Requirements

DNI2410TEPE2HMP
- 1.9 A max @ 3.3 V
- 0.33 A max @ 12.0 VDC

DNI1210TEPE2HMP
- 1.9 A max @ 3.3 V
- 0.25 A max @ 12.0 VDC

DNI610TEPE2HMP
- 1.9 A max @ 3.3 V
- 0.25 A max @ 12.0 VDC

DNI310TEPE2HMP
- 1.9 A max @ 3.3 V
- 0.25 A max @ 12.0 VDC

Cooling Requirements

Operating Temperature
- 0 °C to +50 °C

Storage Temperature
- 20 °C to +70 °C

Humidity
- 8% to 80%, non-condensing

Telephony Interface DSX-1 T1

Clock Rate
- 1.544 Mb/s ±32 ppm

Level
- 3.0 V (nominal)

Pulse Width
- 323.85 ns (nominal)

Line Impedance
- 100 Ohm ±10%

Other Electrical Characteristics
- Complies with AT&T TR62411 and ANSI T1.403-1989

Framing
- SF (D3/D4)
- ESF for ISDN

Line Coding
- AMI
- AMI with B7 stuffing
- B8ZS

Clock and Data Recovery
- Complies with AT&T TR62411 and Telcordia TA-TSY-000170

Jitter Tolerance
- Complies with AT&T TR62411 and ANSI T1.403-1989

Zero Code Suppression
- Bell ZCS (Jam bit 7)
- GTE ZCS (Jam bit 8)
- Digital Data Service ZCS
- No zero code suppression

Telephony Interface CEPT E1

Network Clock Rate
- 2.048 Mb/s ±50 ppm

Internal Clock Rate
- 2.048 Mb/s ±32 ppm

Level
- 3.0 V (nominal) for 120 Ohm lines

Pulse width
- 244 ns (nominal)

Line Impedance
- 120 Ohm, balanced

Other Electrical Characteristics
- Complies with ITU-T Rec. G.703

Framing
- ITU-T G.704-1988 with CRC4

Line Coding
- HDB3

Clock and Data Recovery
- Complies with ITU-T Rec. G.823-1988

Jitter Tolerance
- Complies with ITU-T Rec. G.823, G.737, G.739, G.742-1988

Loopback
- Supports software-selectable local digital loopback

SS7 Interface

Signaling Links
- Up to 16 links (using a single board or spread across multiple boards)

Signaling Data Link
- 48, 56 or 64kb/s

Throughput
- Up to 1,500 MSU/s per board or 3,000 MSU/s per server

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Audio Processing

- Sangoma® PowerMedia™ Host Media

Processing Software provides application or program control for audio levels, automatic gain control, audio digitizing and playback features

Approvals, Compliance and Warranty

Country-specific Safety and Telecom Approvals

- https://portal.sangoma.com/

Warranty Information

- https://www.sangoma.com/warranties

Safety and Telecom Certifications

- DNI2410TEPE2HMP can be approved as GEMP or GEMP8.
- DNI1210TEPE2HMP, DNI610TEPE2HMP and DNI310TEPE2HMP can be approved as GEMP or GEMP4.

Estimated MTBF Per Telcordia Method I

- DNI2410TEPE2HMP: 336,000 hours
- DNI1210TEPE2HMP: 343,000 hours
- DNI610TEPE2HMP: 343,000 hours
- DNI310TEPE2HMP: 343,000 hours

Ordering Information

- Please see the Models tab for this product

SS7 features include

Support for up to 16 SS7 Links

Flexible run-time licensing allows the user to provision the appropriate density for the application

Multiple protocol variants

Supports ITU-T, ANSI, China and Japan protocol variants

Integrated media and signaling on a single board

Removes the need for external cross connects or inter-board PCM highways

Common GlobalCall API for Call Control

Allows applications to work in a common manner irrespective of the underlying signaling protocol

Fully compatible with Sangoma DSI SS7 Protocol Stack

Allows support of call control (ISUP, TUP), in addition to transaction based protocols including SCCP, TCAP, MAP, IS41 and INAP

Current information on the protocols supported by each DNI Board can be found in the Configuration Guides and Release Updates for PowerMedia HMP accessible from http://www.Sangoma com/manuals.

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