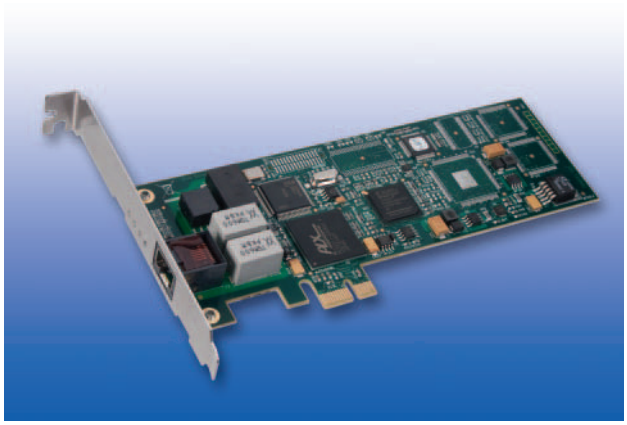
Dialogic® Blue™ Telephony Boards

One to Eight Span Telephony Boards for the Open Source Market

Preliminary Datasheet

This datasheet discusses the following products:

- Dialogic® Blue™ OneSpan-24/30-S-LP Telephony Board
- Dialogic® Blue™ OneSpan-24/30-H-HL Telephony Board
- Dialogic® Blue™ TwoSpan-48/60-H-HL Telephony Board
- Dialogic® Blue™ FourSpan-96/120-H-HL Telephony Board
- Dialogic® Blue™ EightSpan-192/240-H-HL Telephony Board



Dialogic® Blue™ Telephony Boards are efficient host-based call-processing boards for the open source market, and they scale from one to eight E1/T1 ports. Their main features are call transfer emulation, line interconnect, G.711 support, Automatic Gain Control (AGC), and echo cancellation.

The entry-level offering is a low-profile one-span telephony board with software echo cancellation. The other Dialogic Blue Telephony Boards in the series have hardware echo cancellation and are available in one-, two-, four-, and eight-port versions with a half-length form factor. The entry-level board is suitable for installations of up to 2 ports, while the other boards scale to eight or more spans per system.

Features	Benefits
Supports several APIs	Can be used in a variety of environments
Small PCIe form factors	Uses space efficiently
Supports most of the signaling stacks in use today	Provides compatibility with major PBXs and phone lines worldwide
Feature set well suited for use with the Asterisk telephony server	Brings Dialogic® technology to the Asterisk market
Software configurable	Easy to install and operate
Compatible with Dialogic® Diva® Media Boards	Facilitates upgrade to a more powerful media board for increased scalability or extended feature set

Because Dialogic Blue Telephony Boards support Linux and most of the features required for communications applications, they can be used in many Asterisk environments. Since they support many standard APIs, Dialogic Blue Telephony Boards are very useful when developing new applications.

Choosing a Host Processor

For most operations, Dialogic Blue Telephony Boards rely on the host CPU to provide computing power for the functionality that an application requires. For this reason, the host CPU must be carefully selected to provide an appropriate feature set and system load capabilities. A system with 3 MB L3 cache and 2.26 GHz processor speed and 4 GB of DDR3 memory, for example, should be sufficient for smaller applications. Higher density applications may require faster systems.

Generally Dialogic Blue Telephony Boards are suitable for applications such as IVR systems, mid-density conferencing servers, monitoring applications, and other telephony applications that use a moderate amount of host resources.

Applications such as large conferencing servers with echo cancellation can also be created with Dialogic Blue Telephony Boards, but more demanding solutions may require more powerful systems and possibly more powerful telephony boards. For help in choosing an appropriate host system and/or telephony boards for your application, contact Dialogic. Local Dialogic contact information is available online.

Great care has been taken to allow easy upgrade from Dialogic Blue Telephony Boards to Dialogic® Diva® Media Boards when increased scalability or an extended feature set is required. Information on Diva Media Boards is available on the Dialogic website.

Technical Specifications

Quick Reference

Voice resources	24 to 192 (T1), 30 to 240 (E1)
Max. boards per system	The number of boards that may be used is not fixed, but depends on the application and server hardware performance. In general, one board is suitable for a mid-level system and two for a higher-level system.
CSP	Yes
Form factor	Low Profile (OneSpan-24/30-S-LP), Half Length (OneSpan-24/30-H-HL to EightSpan-192/240-H-HL)
Resource bus	PCIe 1.0a x1 lane (3.3/12 V)
Connection	1 to 8 RJ-45 connectors, 8 connectors via Y-Adapter (“Dongle”)
Network interface	E1/T1 and ISDN PRI in TE and NT Mode
Signaling	ETSI, NI-1, 4ESS, 5ESS, and major ISDN protocols; QSIG; and many more
Operating system	Linux Details at www.dialogic.com/systemreleases
Volts	3.3 and 5
Required accessories	Shielded RJ-45/RJ-45 cables

Hardware

- FPGA for fast streaming of TDM packets
- Physical dimensions:
  - OneSpan-24/30-S-LP: 167.65 mm x 68.90 mm (PCB), 181.38 mm x 80.06 mm (with LP bracket), 180.96 mm x 120.88 mm (with standard bracket)
  - All others (Half Length): 167.65 mm x 111.15 mm (PCB), 180.96 mm x 126.31 mm (with standard bracket)
- High-impedance mode for passive monitoring
- I/O addresses, memory, and interrupt allocated automatically
- Plug-and-play interface
- Production quality: ISO 9002

Power Consumption and Environmental

- Power consumption:
  - OneSpan-24/30-S-LP: 0.58 A @ 3.3 V (typical), 0.04 A @ 12 V (typical)
  - OneSpan, TwoSpan, FourSpan (Half Length): 0.57 A @ 3.3 V (typical), 0.25 A @ 12 V (typical)
  - EightSpan (Half Length): 0.76 A @ 3.3 V (typical), 0.25 A @ 12 V (typical)
- Operating temperature: 10°C to 50°C
- Storage temperature: 0°C to 70°C
- Maximum tolerance in voltage fluctuation: According to the PCI Express specification

Technical Specifications *(continued)*

Dialogic® Diva® System Release Software and Dialogic® Diva® SDK Software

To allow an easy upgrade from Dialogic® Blue™ Telephony Boards to Dialogic® Diva® Media Boards, which is a more powerful product line with a richer feature set, the Dialogic Blue Telephony Boards use the Dialogic® Diva® System Release and Dialogic® Diva® SDK Software. Capabilities of the Diva System Release and Diva SDK include:

- Operating system: Linux
- M-adapter feature (patent pending): Combined Virtual Adapter, Internal Call Transfer, Explicit Call Transfer Emulation
- SNMP support
  - Linux: Net-SNMP v1, v2c and v3
- Application interfaces
  - Linux: Diva API, TTY, CAPI 2.0, extended CAPI, VoIP (SIP/RTP), Asterisk support via Chan_capi driver

Signaling

- DSS1 (Euro-ISDN), NI-1 (North America National ISDN 1), 5ESS (North America), 1TR6 (Germany), INS Net 64 (Japan), VN3 (France), CT1 (Belgium), QSIG
- Call progress analysis:
  - Busy tone detection
  - Ring back tone detection
  - Special Information Tone (SIT) detection
  - Fax/modem detection
  - Dial tone detection
- ISDN supplementary services:
  - Number identification services (CLIP, CLIR, COLP, COLR, KEY, MSN, DDI, SUB)
  - Call offering services (TP, CFU, CFB, CFNR)
  - Call completion services (CW, HOLD, ECT)
  - Charging services (AoC)
  - Three-party conference
  - Large conference

Technical Specifications *(continued)*

Media Processing

Because the Blue Telephony Boards are not full DSP boards, most of the tasks required for the features listed below are executed on the host CPU. For information about the level of performance of the host CPU needed for various feature sets, contact Dialogic. Local Dialogic contact information is available online.

- Fax tone detection
- DTMF tone detection and transmission
- Collection of DTMF post-dial digits
- Host-based switching and conferencing (line Interconnect)
- Host-based cross-board switching (line Interconnect on multiple boards)
- Automatic Gain Control (AGC) for conferencing
- G.168 echo cancellation (128ms in hardware and up to 256ms, depending on host CPU performance)
- Real-time Transport Protocol/ Real-time Transport Control Protocol (RTP/RTCP)
- Comfort Noise Generation (CNG) (voice codecs only)
- Voice Activity Detection (VAD) (voice codecs only)
- Dynamic anti-jitter buffer (reduces required buffer space)
- Audio Tap
- Full-duplex voice, barge-in
- G.711 coding (a-Law and μ-Law)
- Call transfer emulation
- Clear Channel Data (transparent), HDLC, X.75/V.42bis, ISO8208, X.25
- SS7 MTP1/MTP2
- International protocol code support (ISDN, R2, T.1 RBS, Line Side E.1)

If you require features that are not available with the Dialogic® Blue™ Telephony Boards (for example, high-density fax or high-density modem support or high voice quality), you may want to use a Dialogic® Diva® Media Board. Information about Diva Media Boards is available on the Dialogic website.

Safety and EMC

Canada: ICES-003 Class B, CSA 60950-1

Europe: EN60950-1, EN55022, EN55024

United States: FCC Part 15 Class B, UL60950-1

Telecommunications

United States: TIA-968

Canada: CS03

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

Ordering Information

Dialogic® Blue™ Telephony Board	Order Code	Description
OneSpan-24/30-S-LP	306-420	PCI Express, with SW EC
OneSpan-24/30-H-HL	306-452	PCI Express, with HW EC
TwoSpan-48/60-H-HL	306-453	PCI Express, with HW EC
FourSpan-96/120-H-HL	306-454	PCI Express, with HW EC
EightSpan-192/240-H-HL	306-455	PCI Express, with HW EC

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05/11 12008-02