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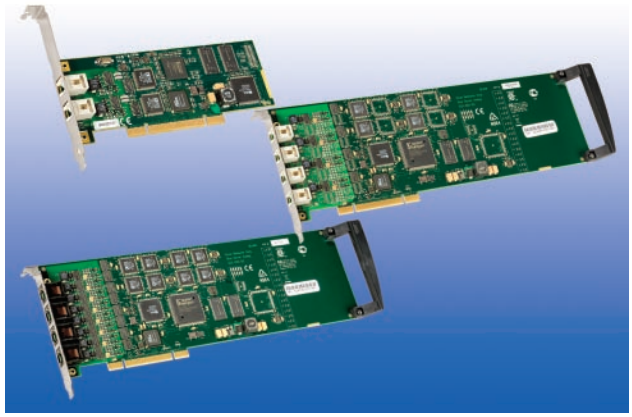
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Dialogic® Diva® Analog Media Boards

Datasheet
Diva Media Boards

The Dialogic® Diva® Analog Media Boards provide two, four, and eight ports and serve as an excellent communication platform, which scales from 2 to 64 channels (phone lines) per single server.



This datasheet discusses the following products:

- Dialogic® Diva® UM-Analog-2 Media Board (PCI and PCIe version)
- Dialogic® Diva® UM-Analog-4 Media Board (PCI and PCIe version)
- Dialogic® Diva® UM-Analog-8 Media Board (PCI and PCIe version)
- Dialogic® Diva® Analog-2 Media Board (PCI and PCIe version)
- Dialogic® Diva® Analog-4 Media Board (PCI and PCIe version)
- Dialogic® Diva® Analog-8 Media Board (PCI and PCIe version)

The Diva Analog Media Boards offer voice, speech, conferencing, VoIP, modem and fax features, and can serve as a base for many communication applications. The boards are supported by most standard applications, and are also suitable for new application development. Diva Analog Media Boards are available in Low Profile, Half Size, or Full Size form factors and are available in both PCI and PCI Express (PCIe) versions. Diva Analog can be seamlessly combined with other Dialogic® Diva® Media Boards, such as E1/T1, ISDN PRI/BRI, and VoIP.

Because both PCI and PCIe versions share the same feature sets, migration from a PCI server hardware to PCI Express server is easy. PCI and PCIe versions can also be used in the same server.

The Diva Analog Media Boards support the same set of programming interfaces as other Diva® Media Boards: the three Dialogic® Diva® APIs, CAPI, TAPI, COM port, WAN Miniport, TTY, Asterisk, and SIP/RTP. Because of consistent interface support, applications written for one Diva Media Board will normally work without modification with Diva Analog Media Boards.

Dialogic® Diva® Analog Media Boards

Features	Benefits
Onboard CPU with large RAM and powerful FPGA chip for fast data streaming between the host CPU, the DSPs, the phone line and the other active components onboard	Can remove performance bottlenecks by offloading key real-time tasks that would ordinarily place an excessive burden on the host server, allowing Quality of Service (for example, voice quality and connection speed) to be more consistent
One powerful DSP dedicated to each communications channel	Provides real-time processing of complex operations (such as V.90 data modem, V.34 fax receiver and transmitter, voice compression, or echo cancellation) without reducing overall system performance, which lowers implementation costs
Sophisticated hardware design	Operates with low power consumption
Conforms to plug-and-play standards	Easy installation and operation
Implements most supplementary services and many different analog signaling protocols	Allows application compatibility with major PBXs and can make a system based Dialogic® Diva® technology ready for worldwide use
Pulse and tone dialing	Handles enterprise voice, conferencing, fax, and remote access applications via any PBX offering analog trunk interfaces
Voice packetization into Real-time Transport Protocol (RTP), adaptive jitter buffer, voice compression (G.726, GSM), and Comfort Noise Generation (CNG)	Permits legacy voice, speech, and conferencing applications to be used with VoIP clients and IP phones
Supports the same programming interfaces as other Dialogic® Diva® Media Boards: CAPI, TAPI, Dialogic® Diva® APIs and others	Reduces porting efforts and time to market by making Diva Media Boards compatible with standard telephony and communications applications
Up to eight Diva Media Boards of the same or different types can operate concurrently in a single server	Easy scalability and flexibility to address an organization's communications needs in changing environments, such as VoIP

The Diva UM-Analog-2, UM-Analog-4, and UM-Analog-8 Media Boards support fax transmissions on half (50%) of their available channels. The feature set of the Diva Media Boards in the UM series has been designed to meet the needs of typical Unified Messaging applications.

The Diva Analog-2, Analog-4, and Analog-8 boards support V.34 fax transmissions on all available channels. The Diva Analog-2, Analog-4 and Analog-8 boards are normally referred to as part of the Universal series.

Technical Specifications

Quick Reference

Voice resources	2, 4, or 8
Fax resources	2, 4, or 8 (Universal-Series) and 1, 2 or 4 (UM-Series)
Conferencing resources	2, 4, or 8
Maximum boards/system	8 (tested by Dialogic); more than 8 are possible — depends on the application
CSP	Yes
Form factor	Low Profile: 2-port PCI/PCIe; Half Size: 4/8-port PCIe; Full Size: 4/8-port PCI
Resource bus	PCI rev 2.2 up to 66 MHz or PCI Express 1.0a x1 lane (3.3/12 V)
Connection	2, 4, or 8 RJ-11/14 connectors
Network interface	Analog
Signaling	Loopstart
Operating system	Windows® and Linux. Details at http://www.dialogic.com/systemreleases
Volts	PCI: 5; PCI Express: 3.3 and 12
Required accessories	None

Hardware

- 32-bit RISC CPU, 100 MHz, 131 MIPS
- 2, 4 or 8 DSPs (32.76 MHz and 65 MIPS)
- 16 MB onboard SDRAM Memory
- Telephony interface:
  - 2 x RJ-10 (2-port), RJ-10/RJ-11 cables supplied
  - 4 x RJ-10 (4-port), RJ-10/RJ-11 cables supplied
  - 4 x RJ-45 (8-port), RJ-10/RJ-11 cables and RJ-45/RJ-10 adapters supplied
  - POTS trunk interface
  - Loopstart signaling
- Physical dimensions:
  - 2-port PCI: 167.65 mm x 64.41 mm (PCB)
  - 2-port PCIe: 167.65 mm x 68.90 mm (PCB)
  - 2-port PCI/PCIe: 180.96 mm x 120.88 mm (with standard bracket)
  - 2-port PCI/PCIe: 180.96 mm x 80.06 mm (with low profile bracket)
  - 4/8-port PCIe: 167.65 mm x 111.15 mm (PCB)
  - 4/8-port PCIe: 180.96 mm x 126.31 mm (with bracket)
  - 4/8-port PCI: 312.00 mm x 106.68 mm (PCB)
  - 4/8-port PCI: 325.310 mm x 126.37 mm (with bracket)
  - 4/8-port PCI: 352.17 mm x 126.37 mm (with bracket and retainer)
- I/O addresses, memory and interrupt allocated automatically
- Plug-and-play interface
- PCI: PCI 2.2, up to 66 MHz, 32 bit (also supports 64 bit dual address cycle DMA), 5 V supply required, 3.3 V, or 5 V universal signaling, supported in backwards compatible PCI-X slots
- Production quality: ISO 9002

Technical Specifications *(continued)*

Power Consumption and Environmental

- Power consumption:
  - 2-port PCI: 0.34A @ +5 V (typical)
  - 2-port PCIe: 0.26A @ +3.3 V and 0.16A @ 12 V (typical)
  - 4-port PCI: 0.45A @ +5 V (typical)
  - 4-port PCIe: 0.26A @ +3.3 V and 0.18A @ 12 V (typical)
  - 8-port PCI: 0.5A @ +5 V (typical)
  - 8-port PCIe: 0.34A @ +3.3 V and 0.22A @ 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 respective PCI or PCI Express specification

Dialogic® Diva® System Release Software, Dialogic® Diva® SDK Software and Dialogic® Diva® SIPcontrol™ Software

- Supported operating systems: Windows® and Linux. Details at http://www.dialogic.com/systemreleases
- M-adapter feature (patent pending): Combined Virtual Adapter, Internal Call Transfer, Explicit Call Transfer Emulation
- SNMP support:
  - Windows®: v2c
  - Linux: Net-SNMP v1, v2c and v3
- Application interfaces (provided by Dialogic Diva System Release Software and Dialogic Diva SDK):
  - Microsoft®: Diva API, Diva API for .NET, Diva Component API (VB.NET), COM Port, WAN Miniport, TAPI, CAPI 2.0, extended CAPI, VoIP (SIP/RTP)
  - Linux: Diva API, TTY, CAPI 2.0, extended CAPI, VoIP (SIP/RTP)
- Dialogic Diva SIPcontrol Software: VoIP and FoIP (T.38) Gateway Software. For up to 2 channels per system, the licenses are free of charge. If more than 2 channels are required, licenses can be ordered from Dialogic. Diva SIPcontrol Software can be downloaded from http://www.dialogic.com.

Features - Signaling

- Pulse dialing
- Analog caller identification (via FSK and DTMF signaling)
- Tone (DTMF/MF) dialing
- Hold/retrieve (via hookflash)
- Collection of post dial DTMF digits
- Call progress analysis:
  - Busy tone detection
  - Ring back tone detection
  - Special Information Tone (SIT) detection
  - Fax/modem detection
  - Dial tone detection

Technical Specifications *(continued)*

Features – Media Processing

- Voice and speech:
  - G.711 coding (A-law, µ-law selectable)
  - DTMF detection, generation, clamping and filtering
  - Generic tone detection and generation
  - Pulse tone detection
  - Full-duplex voice, barge-in
  - Voice Activity Detection (VAD)
  - Silence detection
  - Human talker detection
  - Recording Automatic Gain Control (AGC)
  - Pitch control
  - Audio tap
  - G.168 echo cancellation, up to 128 ms tail length
- Voice over IP (VoIP):
  - G.711 voice coder (64 kbps, µ-law, A-law)
  - G.726 voice coder (32 kbps)
  - G.729 voice coder (VoIP licenses required)
  - GSM voice coder (13 kbps)
  - Adaptive jitter buffer
  - Voice Activity Detection (VAD)
  - Comfort Noise Generation (CNG)
  - Real-time Transport Protocol (RTP) framing
  - G.168 echo cancellation, up to 128 ms tail length
- Switching and conferencing:
  - Onboard and cross-board switching and (large) conferencing via line interconnect (call tromboning)
  - Automatic Gain Control (AGC)
- Support for Fax Class 1 and 2
- Support for Fax Group 3, T.30:
  - V.17, V.29, V.27ter, V.21, V.34 modulation
  - Fax polling/ fax on demand
  - Up to 33.6 kbps with each channel (send and receive)
  - Page formats: ISO A4, B4, A3
  - Fax compression MH, MR, MMR
  - Error Correction Mode (ECM)
  - Standard, fine, super-fine and ultra-fine resolution
  - Color fax (JPEG-format)
- Support for FoIP, T.38 (when using Diva SIPcontrol Software):
  - Up to 33.6 kbps with each channel (send and receive)
- Data modem (Remote Access, POS and other Low Bit Rate (LBR) applications):
  - V.21, V.22, V.22bis, Bell 103, Bell 212A, V.32, V.32bis, V.34, V.42, V.42bis, V.90, MNP4, MNP5
  - Modem with extension: V.18, V.21, Bell 103, V.23, EDT, Baudot45/47/50 incl. DTMF, V.42, V.42bis

Technical Specifications *(continued)*

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 http://www.dialogic.com/rohs
Country-specific approvals: Global product approvals at http://www.dialogic.com/declarations
Warranty: Warranty information at http://www.dialogic.com/warranties

Ordering Information

Dialogic® Diva® Product	Order Code
Analog-2 PCI (with additional LP bracket)	306-302
Analog-2 PCIe (with additional LP bracket)	306-386
UM-Analog-2 PCI (with additional LP bracket)	306-385
UM-Analog-2 PCIe (with additional LP bracket)	306-387
Analog-4 PCI	306-232
Analog-4 PCI China	306-260
Analog-4 PCIe	306-389
UM-Analog-4 PCI	306-384
UM-Analog-4 PCIe	306-388
Analog-8 PCI	306-233
Analog-8 PCI China	306-259
Analog-8 PCIe	306-395
UM-Analog-8 PCI	306-383
UM-Analog-8 PCIe	306-390
Diva G.729 2 CH SW License*	G01-029
Diva G.729 4 CH SW License*	G02-029
Diva G.729 8 CH SW License*	G03-029

* To be used when VoIP applications like Diva SIPcontrol Software need to support the G.729 coder.

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