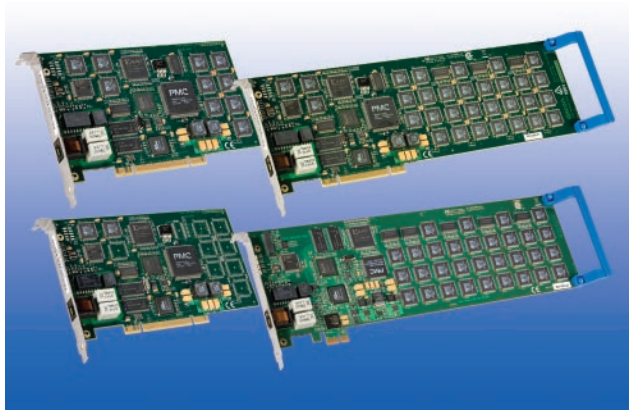
Dialogic® Diva® PRI Media Boards

Datasheet
Diva Media Boards

The Dialogic® Diva® PRI Media Boards provide a single E1, T1, or ISDN PRI port and can serve as an excellent communication platform, which scales from 24 to 240 channels (phone lines) per server.

This datasheet discusses the following products:

- Dialogic® Diva® PRI/E1/T1-CTI Media Board (PCI and PCIe versions)
- Dialogic® Diva® PRI/E1/T1-8 Media Board (PCI only)
- Dialogic® Diva® V-PRI/T1-24 Media Board (PCI and PCIe versions)
- Dialogic® Diva® V-PRI/E1-30 Media Board (PCI and PCIe versions)
- Dialogic® Diva® UM-PRI/T1-24 Media Board (PCI and PCIe versions)
- Dialogic® Diva® UM-PRI/E1-30 Media Board (PCI and PCIe versions)
- Dialogic® Diva® PRI/E1-30 Media Board (PCI and PCIe versions)



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

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

The Diva PRI 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. Although Diva Media Boards share the same interfaces, four types of Diva Media Boards are available (listed from lowest to highest functionality): CTI series, V-series, UM series, and Universal series.

Because of consistent interface support, applications written for one Diva Media Board with comparable functionality will normally work without modification with Diva PRI.

Dialogic® Diva® PRI 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 on the V-series, UM series, and PRI/E1-30 (applies to 8 channels on PRI/E1/T1-8)	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	Permits easy installation and operation
Implements most supplementary services, many signaling protocols, as well as all multinational ISDN protocols	Allows application compatibility with major PBXs and can make a system based on Dialogic® Diva® technology ready for worldwide use
Voice packetization into Real-time Transport Protocol (RTP), adaptive jitter buffer, voice compression (G.726, GSM), and Comfort Noise Generation (CNG) on the V-series, UM series, and PRI/E1-30 (applies to 8 channels on PRI/E1/T1-8)	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, including CAPI, TAPI, Dialogic® Diva® APIs, and others	Reduces porting efforts and time to market by making Diva Media Boards compatible with most 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

Because the Diva PRI/E1/T1-CTI do not have DSPs, they are unable to analyze or modify media such as voice. Their feature sets have been designed to meet the needs of basic voice applications (entry level IVR, call counting, call recording, telephone-voting, small conferencing, etc.).

The Diva V-PRI/E1-30 and Diva V-PRI/T1-24 do not support fax transmission, but offer voice features. Their common feature set has been designed to meet the needs of high-end voice applications (IVR, contact center, large high-quality conferencing, predictive dialing, etc).

The Diva UM-PRI/E1-30 and Diva UM-PRI/T1-24 support fax transmissions on half (50%) of their available channels, offer voice features, and modem connections up to V.90 speeds. Their common feature set has been designed to meet the needs of high-end Unified Messaging applications, which can meet the needs of most of the communication needs of an enterprise.

The Diva PRI/E1-30 supports V.34 fax transmission on all available channels, offer voice features, and modem connections up to V.90 speeds. The Diva PRI/E1-30 provides the most sophisticated communications platform of all the Diva PRI.

The Diva PRI/E1/T1-8 (PCI only) combines the functionality of Diva PRI/E1/T1-CTI and Diva PRI/E1-30. On eight channels it offers the feature set of a Diva PRI/E1-30, and on its remaining channels offers the feature set of a PRI/E1/T1-CTI. The Diva PRI/E1/T1-8 has been designed to meet the needs of applications that only need high performance on eight channels.

Technical Specifications

Quick Reference

Voice resources	0 (-CTI), 8 (-8), 24 (V-, UM-PRI/T1-24), 30 (V-, UM-, PRI/E1-30)
Fax resources	0 (-CTI), 8 (-8), 12/15 (UM-PRI/T1-24 / E1-30), 30 (PRI/E1-30)
Conferencing resources	0 (-CTI), 8 (-8), 24 (V-, UM-PRI/T1-24), 30 (V-, UM-, PRI/E1-30)
Maximum boards/system	8 (tested by Dialogic); more than 8 are possible — depends on the application
CSP	Yes
Form factor	Low Profile: -CTI PCIe; Half Size: -CTI, -8 PCI; Full Size: V-, UM-PRI/T1-24 / V-, UM-, PRI/E1-30 PCI/PCIe
Resource bus	PCI rev 2.2 up to 66 MHz or PCI Express 1.0a x1 lane (3.3/12 V)
Connection	1 RJ-45 connector
Network interface	E1/T1 and ISDN PRI (Primary Rate Interface) in TE and NT Mode
Signaling	ETSI, NI-1, 4ESS, 5ESS, and all major ISDN protocols; QSIG; and many more
Operating system	Windows® and Linux. Details at http://www.dialogic.com/systemreleases
Volts	PCI: 5; PCI Express: 3.3 and 12
Required accessories	1 shielded RJ-45/RJ-45 cable

Hardware

- 32-bit RISC CPU, 300 MHz
- 2 (0)*, 10 (8)*, 24 (23/24)* or 31 (30/31)* DSPs (32.76 MHz and 65 MIPS)
  (*) The number in brackets states the number of available channels with DSP processing per board
- Onboard SDRAM Memory: 64 MB
- Telephony interface:
  — 1 x RJ-45, no RJ-45/RJ-45 cable supplied
- Physical dimensions:
  — PRI/E1/T1-CTI PCIe: 167.65 mm x 68.90 mm (PCB)
  — PRI/E1/T1-CTI PCIe: 181.38 mm x 80.06 mm (with low profile bracket)
  — PRI/E1/T1-CTI PCIe: 180.96 mm x 120.88 mm (with standard bracket)
  — PRI/E1/T1-CTI PCI, PRI/E1/T1-8 PCI: 174.63 mm x 106.68 mm (PCB)
  — PRI/E1/T1-CTI PCI, PRI/E1/T1-8 PCI: 187.84 mm x 126.37 mm (with bracket)
  — V-, UM-, PRI/E1-30 / T1-24 PCI/PCIe: 312.00 mm x 111.15 mm (PCB)
  — V-, UM-, PRI/E1-30 / T1-24 PCI/PCIe: 325.31 mm x 126.31 mm (with bracket)
  — V-, UM-, PRI/E1-30 / T1-24 PCI/PCIe: 352.17 mm x 126.31 mm (with bracket and retainer)
- High-impedance mode for passive monitoring
- 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:
  - PRI/E1/T1-CTI PCI: 0.58A @ +5 V (typical)
  - PRI/E1/T1-CTI PCIe: 0.96A @ +3.3 V and 0.04A @ 12 V (typical)
  - PRI/E1/T1-8 PCI: 0.65A @ +5 V (typical)
  - V-, UM-, PRI/E1-30 / T1-24 PCI: 0.97A @ +5 V (typical)
  - V-, UM-, PRI/E1-30 / T1-24 PCIe: 2.3A @ +3.3 V and 0.03A @ 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

- 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)*

Features – Media Processing

NOTE: Not for Dialogic® Diva® PRI/E1/T1-CTI Media Board, only on 8 channels for the Dialogic® Diva® PRI/E1/T1-8 Media Board

- 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 (UM- and Universal-Series only)
- Support for Fax Group 3, T.30 (UM- and Universal-Series only):
  - 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)

Technical Specifications *(continued)*

- Support for FoIP, T.38, when using Diva SIPcontrol Software (UM- and Universal-Series only):
  — Up to 33.6 kbps with each channel (send and receive)
- Data modem (Remote Access, POS and other Low Bit Rate (LBR) applications) (UM- and Universal-Series only):
  — 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
  — B-channel protocols: Transparent HDLC, Transparent Voice, Synchronous PPP and MLPPP, X.75 (LAPB), X.75/V.42bis, LAPD, T.90NL, T.70NL, X.25, X.31, Rate adaption (56 kbps), PIAFS 1.0 / 2.0, SDLC

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
PRI/E1/T1-CTI PCI	306-211
PRI/E1/T1-CTI PCI North America	306-212
PRI/E1/T1-CTI PCI China	306-244
PRI/E1/T1-CTI PCI Australia	306-228
PRI/E1/T1-CTI PCI Japan	306-278
PRI/E1/T1-CTI PCIe (with additional LP bracket)	306-320
PRI/E1/T1-8 PCI	306-206
PRI/E1/T1-8 PCI Australia	306-227
V-PRI/T1-24 PCI North America	306-213
V-PRI/T1-24 PCIe North America	306-316
V-PRI/T1-24 PCIe Japan	306-327
UM-PRI/T1-24 PCI North America	306-391
UM-PRI/T1-24 PCIe North America	306-392
V-PRI/E1-30 PCI	306-214
V-PRI/E1-30 PCI China	306-265
V-PRI/E1-30 PCI Australia	306-215
V-PRI/E1-30 PCI New Zealand	306-270
V-PRI/E1-30 PCIe	306-315
UM-PRI/E1-30 PCI	306-393
UM-PRI/E1-30 PCIe	306-394
PRI/E1-30 PCI	306-209
PRI/E1-30 PCI China	306-243
PRI/E1-30 PCI Australia	306-210
PRI/E1-30 PCI New Zealand	306-269
PRI/E1-30 PCIe	306-304
Diva G.729 24 CH SW license*	G04-029
Diva G.729 30 CH SW license*	G05-029

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

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Making Innovation Thrive™

www.dialogic.com

Dialogic Corporation
9800 Cavendish Blvd., 5th floor
Montreal, Quebec
CANADA H4M 2V9

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10/08 11233-01