# Dialogic® Diva® PRI 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 (PCIe version only)
- Dialogic® Diva® V-PRI/T1-24 Media Board (PCIe version only)
- Dialogic® Diva® V-PRI/E1-30 Media Board (PCIe version only)
- Dialogic® Diva® UM-PRI/T1-24 Media Board (PCIe version only)
- Dialogic® Diva® UM-PRI/E1-30 Media Board (PCI and PCIe versions)
- Dialogic® Diva® PRI/E1-30 Media Board (PCI and PCIe versions)
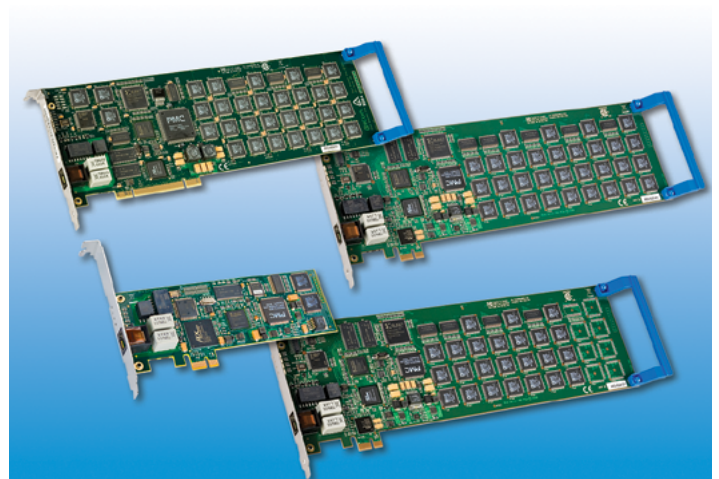
Features	Benefits
Onboard CPU with large RAM and powerful FPGA chip for fast data streaming between the host CPU, the DSPs, the phone line, and the other active components onboard	Can remove performance bottlenecks by offloading key real-time tasks that would ordinarily place an excessive burden on the 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	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 protocol	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	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, Dialogic® Diva® APIs, and others	Reduces porting efforts and time to market by making Diva Media Boards compatible with most conventional 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

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

Since both PCI and PCIe versions of the Diva PRI E1-30 Boards share the same feature sets, migration from a PCI server to a PCIe server for those models is easy. PCI and PCIe versions of those models can also be used in the same server.

The Diva PRI support the same set of application interfaces as other Diva Media Boards: the three Dialogic® Diva® APIs as well as CAPI, COM port, WAN Miniport and TTY. Although Diva Media Boards share the same interfaces, there are four different types/series of the boards that are available (listed from lowest to highest functionality): CTI series, V-series, UM series, and Universal Series.

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

Because the Diva PRI/E1/T1-CTI does not have DSPs, it is unable to analyze or modify media such as voice. It has feature sets to address 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. They have a common feature set to address 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; they also offer voice features and modem connections up to V.90 speeds. They have a common feature set to address the needs of Unified Messaging applications and, in turn, the communication needs of an enterprise.

The Diva PRI/E1-30 supports V.34 fax transmission on all available channels and offers voice features and modem connections up to V.90 speeds.

Technical Specifications

Quick Reference

Voice resources	0 (-CTI), 24 (V-, UM-PRI/T1-24), 30 (V-, UM-, PRI/E1-30)
Fax resources	0 (-CTI), 12/15 (UM-PRI/T1-24 / E1-30), 30 (PRI/E1-30)
Conferencing resources	0 (-CTI), 24 (V-, UM-PRI/T1-24), 30 (V-, UM-, PRI/E1-30)
Maximum boards/system	8 (tested by Dialogic); more than 8 are possible (application and server dependent)
CSP	Yes
Form factor	Low Profile: CTI PCIe;, Full Size: V-, UM-PRI/T1-24 / V-, UM-, PRI/E1-30 PCIe Full Size: UM-, PRI/E1-30 PCI
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; QSI; and 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 parentheses indicates 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)
  — UM-, PRI/E1-30 PCI: 312.00 mm x 106.68 mm (PCB)
  — UM-, PRI/E1-30 PCI: 325.31 mm x 126.31 mm (with standard bracket)
  — UM-, PRI/E1-30 PCI: 352.17 mm x 126.31 mm (with standard bracket and retainer)
  — V-, UM-, PRI/E1-30 / T1-24 PCIe: 312.00 mm x 111.15 mm (PCB)
  — V-, UM-, PRI/E1-30 / T1-24 PCIe: 325.31 mm x 126.31 mm (with standard bracket)
  — V-, UM-, PRI/E1-30 / T1-24 PCIe: 352.17 mm x 126.31 mm (with standard bracket and retainer)

- 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:
  — PRI/E1/T1-CTI PCIe: 0.96A @ +3.3 V and 0.04A @ 12 V (typical)
  — UM-, PRI/E1-30 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 applicable PCI or PCI Express specification

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

- Supported operating systems: Windows and Linux. Details at http://www.dialogic.com/systemreleases

- M-adapter feature (Dialogic patented technology): 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 Diva System Release Software and Diva SDK):
  — Microsoft: Diva API, Diva API for .NET, Diva Component API (VB.NET), COM Port, WAN Miniport, CAPI 2.0, extended CAPI, VoIP (SIP/RTP)
  — Linux: Diva API, TTY, CAPI 2.0, extended CAPI, VoIP (SIP/RTP)

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

Features – Media Processing

NOTE: Not for Dialogic® Diva® PRI/E1/T1-CTI 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)
- 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

Approvals, Compliance and Warranty

Environmental Information	http://www.dialogic.com/en/company/environmental-policy.aspx
Country-specific safety and telecom approvals	http://www.dialogic.com/declarations
Warranty Information	http://www.dialogic.com/warranties

Ordering Information

Please see the Ordering Information tab for these products at:

Dialogic® Diva® PRI/T1/E1-CTI

Dialogic® Diva® V-PRI/T1-24

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