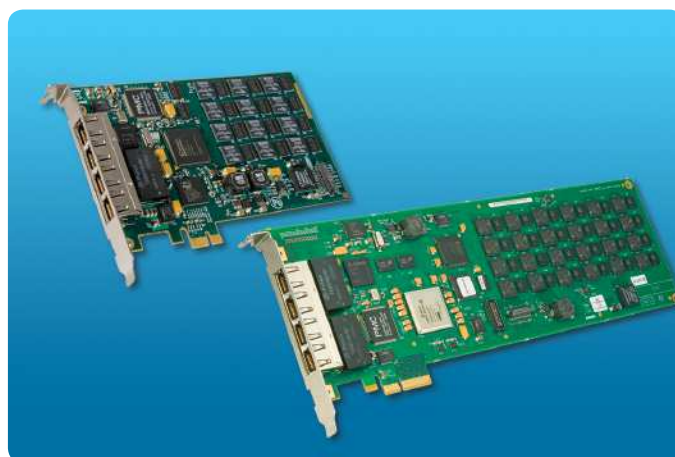


## Dialogic® Diva® V-xPRI Media Boards

The Dialogic® Diva® V-xPRI Media Boards provide one/two/four/eight E1, T1, J1 or ISDN PRI ports (trunks) and can serve as an excellent communication platform, which scales from 24 to 960 channels (phone lines) per single server.

### This datasheet discusses the following products:

- Dialogic® Diva® V-1PRI/E1/T1-30 HS Media Board (PCIe version)
- Dialogic® Diva® V-2PRI/E1/T1-60 HS Media Board (PCIe version)
- Dialogic® Diva® V-4PRI/E1/T1-120 HS Media Board (PCIe version)
- Dialogic® Diva® V-4PRI/E1/T1-120 FS Media Board (PCIe version)
- Dialogic® Diva® V-8PRI/E1/T1-240 FS Media Board (PCIe version)



### Features

**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**

**Depending on the version of the Diva V-xPRI Media Board, 3, 5, 6 or 12 powerful DSPs are available per trunk (E1/T1/J1/ISDN PRI)**

**Sophisticated hardware design**

**Conforms to plug-and-play standards**

**Implements most supplementary services, many signaling protocols, as well as all multinational ISDN protocols**

**Voice packetization into Real-time Transport Protocol (RTP), adaptive jitter buffer, voice compression (AMR-NB, G.726, RTAudio, GSM), and Comfort Noise Generation (CNG) available**

**Supports the same programming interfaces as other Dialogic® Diva® Media Boards, including Dialogic® Diva® APIs, CAPI, TTY, COM port, and others**

**Four Diva Media Boards of the same or different types can operate concurrently in a single server, depending on slot availability**

**Upgrades available via additional licenses**

### Benefits

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

Provides real-time processing of complex operations (such as V.90 data modem, V.34 fax receiver and transmitter, voice compression, or 256 ms echo cancellation) without reducing overall system performance, which lowers implementation costs

Operates with low power consumption

Permits easy installation and operation

Allows application compatibility with major PBXs and can make a system based on Dialogic® Diva® technology ready for worldwide use

Permits legacy voice, speech, and conferencing applications to be used with VoIP clients and IP phones

Reduces porting efforts and time to market by making Diva Media Boards compatible with most standard telephony and communications applications

Easy scalability and flexibility to address an organization's communications needs in changing environments, such as VoIP

Can be upgraded to support modem, fax, and VoIP coders

The Diva V-xPRI offer voice, speech, conferencing, VoIP, modem and fax features and can serve as a base for many communication applications. The boards support many standard applications, and are also suitable for new application development. The Diva V-xPRI are available in half length and full length PCI Express form factor. The half length version has 12 DSPs and comes in versions for 1, 2, and 4 trunks. The full length version has 24 DSPs and comes in versions for 4 and 8 trunks. The Diva V-xPRI can be seamlessly combined with other Dialogic® Diva® Media Boards, such as those supporting Analog, ISDN BRI, and VoIP.

PCI and PCIe versions can be used in the same server providing both can be physically supported by the server.

The Diva V-xPRI 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, the Diva V-xPRI are the only ones that have the flexibility to allow a customer to upgrade the initial "V-series" voice feature set with four additional software licenses at any time:

- Modem — Offering modem connections up to V.90 speeds
- VoIP — Offering VoIP CODECs (AMR-NB, G.729, RTaudio)
- G.723 — Offering the G.723 CODEC
- Fax — Offering V.34 fax up to 33.6 kbps speeds

Because of consistent interface support, applications written for another Diva Media Board with comparable functionality will normally work without modification with the Diva V-xPRI Media Boards.

## Technical Specifications

### Quick Reference

Voice resources	All channels
Fax resources (Fax)	All channels via Fax licenses (V.34 speeds are only possible on part of the channels when using the Diva V-4PRI/E1/T1-120 HS or the Diva V-8PRI/E1/T1-240 FS, because these boards have only 3 DSPs per trunk.)
Conferencing resources	All channels
Max. boards per server	4 (QA tested by Dialogic); up to 8 may be possible — application and server-dependent
CSP	Yes
Form factor	PCIe: half length (1, 2, 4 trunks); full length (4, 8 trunks)
Resource bus	PCIe: half length 1.0a x1 lane (3.3/12 V); full length 1.0a x4 lane (3.3/12 V)
Connection	4 RJ-45 connectors
Network interface	E1/T1/J1 and ISDN PRI (Primary Rate Interface) in TE and NT Mode
Signaling	ETSI, NI-1, 4ESS, 5ESS, and all major ISDN protocols; QSIG; and more
Operating system	Windows and Linux. Details at <a href="https://wiki.sangoma.com/display/DVC/Dialogic+Voice+Cards">https://wiki.sangoma.com/display/DVC/Dialogic+Voice+Cards</a>
Volts	3.3 and 5
Required accessories	1, 2, 4, or 8 shielded RJ-45/RJ-45 cables; V-8PRI requires 4 RJ45 Y-Cables

### Hardware

- 64-bit RISC CPU, 466 MHz, 1070 MIPS with 64 MB SDRAM
- 16/32-bit DSPs, 600 MHz, 1200 MIPS with 32 MB SDRAM per installed DSP
- Half length: 12 DSPs (Diva V-1PRI, Diva V-2PRI, Diva V-4PRI)
- Full length: 24 DSPs (Diva V-4PRI, Diva V-8PRI)
- 384, 448, 704, or 896 MB onboard SDRAM
- Physical dimensions:
  - Full height, half length: 167.65 mm x 111.15 mm (PCB); 180.96 mm x 126.31 mm (including bracket)
  - Full height, full length: 311.81 mm x 111.15 mm (PCB); 352.17 mm x 126.31 mm (including bracket and retainer)
- High-impedance mode for passive monitoring ("line tapping via HiZ mode")
- I/O addresses, memory, and interrupt allocated automatically
- Plug-and-play interface
- Production quality: ISO 9002

## Power Consumption and Environmental

- Power consumption:
  - Half length: V-1PRI, V-2PRI, V-4PRI: 0.91 A @ 3.3 V (maximum), 1.00 A @ 12 V (maximum)
  - Full length: V-4PRI, V-8PRI: 1.38 A @ 3.3 V (maximum), 1.57 A @ 12 V (maximum)
- 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

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

- Supported operating systems: Windows and Linux. Details at [www.dialogic.com/systemreleases](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 Software):
  - 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:** The activation of some features requires the installation of chargeable software licenses. Depending on the selection of features and on the selected Diva Media Board, it may be possible that not all features are available at the same time on all channels. Please consult more detailed information available as a Technical Brief on this topic, or contact your Dialogic sales representative.

- Voice and speech:
  - G.711 coding (A-law,  $\mu$ -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 256 ms tail length

- Voice over IP (VoIP):
  - AMR-NB voice coder (VoIP licenses required) \*
  - G.729 voice coder (VoIP licenses required)
  - G.723 voice coder (G.723 licenses required)
  - RTAudio voice coder (VoIP licenses required)
  - iLBC voice coder (free)
  - G.711 voice coder (64 kbps,  $\mu$ -law, A-law)
  - G.726 voice coder (32 kbps)
  - 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 256 ms tail length

\* Using the AMR-NB resource in connection with a Diva product does not grant the right to practice the AMR-NB standard. To seek a patent license agreement to practice the standard in connection with a Diva product, contact the VoiceAge Corporation at [licensing@voiceage.com](mailto:licensing@voiceage.com).

- 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 (fax licenses required)
- Support for Fax Group 3, T.30 (fax licenses required):
  - 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 (RAS, POS and other Low Bit Rate (LBR) applications) (modem licenses required):
  - V.21, V.22, V.22bis, Bell 103, Bell 212A, V.32, V.32bis, V.34, V.42, V.42bis, V.90, MNP4, MNP5, V.110, V.120
  - 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

Country-specific safety and telecom approvals <https://portal.sangoma.com>

Warranty Information <https://www.sangoma.com/warranties>

The half length Diva Media Boards V-1PRI, V-2PRI and V-4PRI may be approved as VPRIHS.

The full length Diva Media Boards V-4PRI and V-8PRI may be approved as VPRIFS.

## Ordering Information

Please see the [Models](#) tab for these products.

# ABOUT SANGOMA

---

Sangoma Technologies Corporation is a trusted leader in delivering globally scalable Voice-Over-IP telephony systems, both on-site and cloud-based. As the communication landscape evolves and businesses invest in new strategies to provide effective communications, Sangoma Technologies is your trusted partner; delivering Unified Communications solutions for SMBs, Enterprises, OEMs, Carriers, and service providers.

Founded in 1984, Sangoma Technologies Corporation is publicly traded on the TSX Venture Exchange (TSX VENTURE: STC).



## **Sangoma Technologies**

100 Renfrew Drive, Suite 100 Markham ON L3R 9R6 CANADA

**1 800 388 2475** toll free in N. America

**+1 905 474 1990** international direct

[www.sangoma.com](http://www.sangoma.com)

[sales@sangoma.com](mailto:sales@sangoma.com)

