

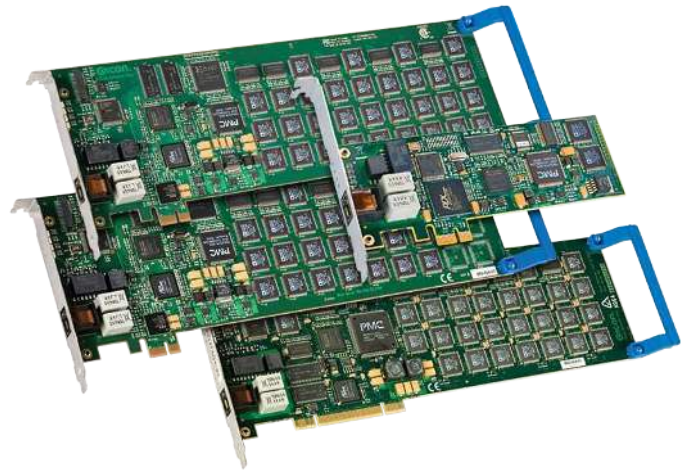


Sangoma Diva PRI

Media boards with
a single E1, T1, or
ISDN PRI port

Datasheet

Diva PRI Media Boards offer voice, speech, conferencing, VoIP, modem, and fax features, and can serve as a base for many applications. They support many conventional apps, and are also suitable for new 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 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 PCI to PCIe server is easy. PCI and PCIe versions of those models can also be used in the same server. Diva PRI supports the same set of interfaces as other Diva Media Boards: the three 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 (lowest to highest functionality): CTI series, V-series, UM series, and Universal series. Thanks to consistent interface support, apps written for one Diva board with comparable functionality will normally work without modification with Diva PRI boards. Because Diva PRI/E1/T1-CTI does not have DSPs, it is unable to analyze or modify voice. Its feature sets address the needs of basic voice applications (entry level IVR, call counting, call recording, telephone-voting, small conferencing, etc.).



✓ Onboard CPU with Large RAM & Powerful FPGA Chip

- For fast data streaming between the host CPU, the DSPs, the phone line, and the other active components onboard
- Remove performance bottlenecks by offloading key real-time tasks that would ordinarily place an excessive burden on the host server, allowing Quality of Service (e.g. voice quality and connection speed) to be more consistent

✓ One Powerful DSP Dedicated to Each Channel

- 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 HW Design; Plug-and-play Standards

- Operates with low power consumption
- Permits easy installation and operation

✓ Uses Supplementary Services, Signaling Protocols, Multinational ISDN Protocols

- Allows compatibility with major PBXs and can make a system based on Sangoma Diva technology ready for worldwide use

✓ Voice Packetization

- Real-time 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

✓ Up to 8 Diva Media Boards Operate in a Single Server

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

Technical Specifications

Quick Reference

Voice & Conferencing 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)

Maximum Boards Per System

- 8 (tested by Sangoma); 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

Supported Operating Systems

- Linux, Windows: Details at <https://wiki.sangoma.com/display/DVC/Sangoma+Voice+Cards>

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 (Typical)

- PRI/E1/T1-CTI PCIe: 0.96A @ +3.3 V and 0.04A @ 12 V
- UM-, PRI/E1-30 PCI: 0.97A @ +5 V
- V-, UM-, PRI/E1-30 / T1-24 PCIe: 2.3A @ +3.3 V and 0.03A @ 12 V

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

Sangoma Diva System Release Software and Sangoma Diva SDK Software

Supported Operating Systems

- Linux, Windows: Details at <https://wiki.sangoma.com/display/DVC/Sangoma+Voice+Cards>

M-adapter Feature (Sangoma 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 Sangoma Diva System Release Software and Sangoma 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 Sangoma 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)
- ⦿ Supports Fax classes 1 & 2 UM- & Universal-Series only
- ⦿ Supports Fax Group 3, T.30 UM- & 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 & 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- & 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

Country-specific Safety and Telecom Approvals

- ⦿ <https://portal.sangoma.com/>

Warranty Information

- ⦿ <https://www.sangoma.com/warranties>

Ordering Information

- ⦿ Please see the Models tab for this product