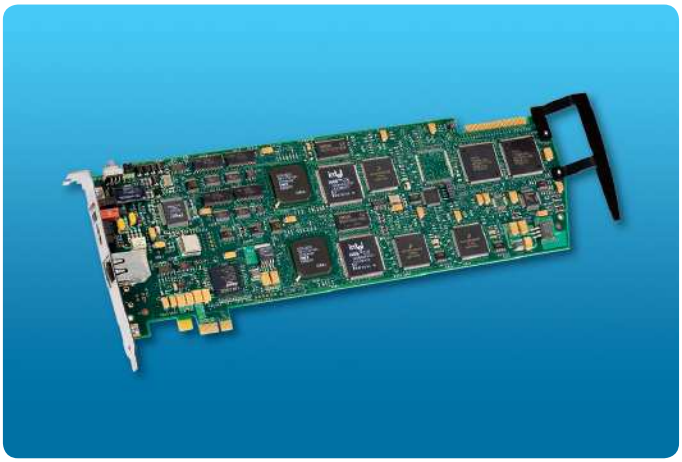
SANGOMA

Datasheet
JCT Media Boards

Dialogic® D/240JCT-T1 Media Board and Dialogic® D/300JCT-E1 Media Board by Sangoma



The Dialogic® D/240JCT-T1 Media Board is a 24-port Digital T1 PCI Express board and the Dialogic® D/300JCT-E1 Media Board is a 30-port Digital E1 PCI Express board. Both of these boards are well-suited for developing advanced communications applications requiring digital network interfaces as well as multimedia resources. These high performance, scalable products support voice, fax, and software-based speech recognition processing in a single PCI Express slot.

Dialogic® JCT Media Boards – including these models - can be used by developers to provide small- and medium-sized enterprise Computer Telephony (CT) applications that require high-performance voice and fax processing. Among the features and benefits of these boards, and other Dialogic® JCT Media Boards, are the following. They have On-board Digital Signal Processor (DSP) based voice processing technology and they are well-suited for server-based CT systems under Windows and Linux. They also provide a powerful platform for creating sophisticated Interactive Voice Response (IVR) applications for the small and medium-sized enterprise market segment. Features such as fax and software-based speech recognition processing enable unified messaging applications. They also provide Automatic Gain Control (AGC), so even a weak telephone signal can be recorded and replayed with clarity.

Features	Benefits
24 or 30 independent voice channels in a single PCI Express H.100 slot	Lower costs while creating larger high-density systems with fewer boards per chassis
Supports G.726 bit exact and GSM coders	Enables implementation of unified messaging applications that meet VPIM standards
Silence-compressed recording	Eliminates silence and preserves hard disk space
Unified call control access through Dialogic® Global Call Software interface	Provides worldwide application portability and shortens development time by using the same API for almost any network protocol
Available with PCI Express edge connector	PCI Express form factor compatible with x1 slot (x1 or higher compatible).
Supports DSP-based onboard fax and host-based speech recognition (fax and host-based speech recognition are mutually exclusive)	Maximizes the number of boards in the system

Technical Specifications

D/240JCT-T1

Number of ports	24
Maximum boards per system	16. Number may be limited by factors including application, system performance, and the number of CT Bus loads per board
CT Bus loads per board	1.5
Maximum CT Bus loads per system	20
Digital network interface	Onboard DSX-1 interface
Resource sharing bus	H.100 CT Bus
Control microprocessors	2 Intel486 GX processors
Digital signal processor	Freescale DSP56303 @ 100 MHz, with 128Kx24 private
Supported operating systems	Windows; Linux. Details at https://wiki.sangoma.com/display/DVC/Dialogic+Voice+Cards
CSP	Yes
Signaling	Digital ISDN PRI (CAS)

Host Interface

Bus compatibility	Complies with PCI-SIG PCI Express Base Specification, Rev. 1.0a; x1 or higher compatible
Bus speed	2.5 GHz maximum per direction
Shared memory	32 KB to 64 KB page
Interrupt	Legacy INTA emulation shared by Dialogic® JCT PCIe Media Boards
I/O ports	None

Physical Dimensions

Standard-height, full-length form factor
12.283 in. (31.200 cm) long
0.79 in. (2.007 cm) wide
3.87 in. (9.830 cm) high (excluding edge connector)

Power Requirements

+3.3 VDC	2.39 A maximum
+12 VDC	0.55 A maximum

Environmental Requirements

Operating temperature	+32°F (0°C) to +104°F (+40°C)
Storage temperature	-4°F (–20°C) to 158°F (+70°C)
Humidity	8% to 80% noncondensing

Telephone Interface

Clock rate	1.544 Mb/s ±32 ppm
Level	3.0 V (nominal)
Pulse width	323.85 ns (nominal)
Line impedance	100 Ohm ±10%
Other electrical characteristics	Complies with AT&T TR62411 and ANSI T1.403-1989
Framing	SF (D3/D4)
	ESF for ISDN
Line coding	AMI
	AMI with B7 stuffing
	B8ZS
Clock and data recovery	Complies with AT&T TR62411 and Telcordia TA-TSY-000170
Jitter tolerance	Complies with AT&T TR62411 and ANSI T1.403-1989

Connectors	RJ-48C
Telephony bus connector	H.100-style 68-pin fine pitch card edge connector
Loopback	Supports switch-selectable local analog loopback and software selectable local digital loopback

Reliability

Estimated MTBF	Per Telcordia Method 1
	150,000 hours

D/300JCT-E1

Number of ports	30
Maximum boards per system	16. Number may be limited by factors including application, system performance, and the number of CT Bus loads per board
CT Bus loads per board	1.5
Maximum CT Bus loads per system	20
Digital network interface	Onboard E-1 interface
Resource sharing bus	H.100 CT Bus
Control microprocessors	2 Intel486 GX processors
Digital signal processors	Freescale DSP56303 @ 100 MHz, with 128Kx24 private
Supported operating systems	Windows; Linux. Details at www.dialogic.com/systemreleases
CSP	No
Signaling	R2MF

Host Interface

Bus compatibility	Complies with PCI-SIG PCI Express Base Specification, Rev. 1.0a; x1 or higher compatible
Bus speed	2.5 GHz maximum per direction
Bus mode	x1 lane configuration (x1 or higher compatible)
Shared memory	32 KB to 64 KB page
Interrupt	Legacy INTA emulation shared by Dialogic® JCT PCIe Media Boards
I/O ports	None

Physical Dimensions

Standard-height, full-length form factor
12.283 in. (31.200 cm) long
0.79 in. (2.007 cm) wide
3.87 in. (9.830 cm) high (excluding edge connector)

Power Requirements

+3.3 VDC	2.73 A maximum
+12 VDC	0.55 A maximum

Environmental Requirements

Operating temperature	+32°F (0°C) to +104°F (+40°C)
Storage temperature	-4°F (–20°C) to 158°F (+70°C)
Humidity	8% to 80% noncondensing

Telephone Interface

Network clock rate	2.048 Mb/s ±50 ppm
Internal clock rate	2.048 Mb/s ±32 ppm
Level	2.37 V (nominal) for 75 Ohm lines
	3.0 V (nominal) for 120 Ohm lines
Pulse width	244 ns (nominal)
Line impedance	75 Ohm, unbalanced
	120 Ohm, balanced

Other electrical characteristics	Complies with ITU-T Rec. G.703
Framing	ITU-T G.704-1988 with CRC4
Line coding	HDB3
Clock and data recovery	Complies with ITU-T Rec. G.823-1988
Jitter tolerance	Complies with ITU-T Rec. G.823, G.737, G.739, G.742-1988
Connectors	BNC for 75 Ohm lines
	RJ-48C for 120 Ohm lines
Telephony bus connector	H.100-style 68-pin fine pitch card edge connector
Loopback	Supports switch-selectable local analog loopback and software selectable local digital loopback

Reliability

Estimated MTBF	Per Telcordia Method 1
	150,000 hours

Approvals, Compliance and Warranty

Country-specific safety and telecom approvals	https://portal.sangoma.com
Warranty information	https://www..sangoma.com/warranties.

Springware/JCT Technical Specifications

Facsimile

Fax compatibility	ITU-T G3 compliant (T.4, T.30)
	ETSI NET/30 compliant
Data rate	14,400 b/s (v.17) send
	9600 b/s receive
Variable speed selection	Automatic step-down to 12,000 b/s, 9600 b/s, 7200 b/s, 4800 b/s, and lower
Transmit data modes	Modified Huffman (MH)
	Modified Read (MR)
Receive data modes	MH, MR
File data formats	Tagged Image File Format-Fax (TIFF-F) for transmit/receive MH and MR
ASCII-to-fax conversion	Host-PC-based conversion
	Direct transmission of text files
	Windows fonts supported
	Page headers generated automatically
Error correction	Detection, reporting, and correction of faulty scan lines
Image widths	1728 pixels
	2048 pixels
	2432 pixels
Image scaling	Automatic horizontal and vertical scaling between page sizes
Polling modes	Normal
	Turnaround
Image resolution	Normal (203 pels/in. x 98 lines/in.; 203 pels/2.54 cm x 98 lines/2.54 cm)
	Fine (203 pels/in. x 196 lines/in.; 203 pels/2.54 cm x 196 lines/2.54 cm)
Fill minimization	Automatic fill bit insertion and stripping

Audio Signal

Receive range	(T-1) –40 to +2.5 dBm0 nominal, configurable by parameter**
	(E-1) –43 to +2.5 dBm0 nominal, configurable by parameter**
Automatic gain control	Application can enable/disable
	Above –18 dBm0 (T-1) or –21 dBm0 (E-1) results in full-scale recording, configurable by parameter**
Silence detection	–38 dBm0 nominal, software adjustable**
Transmit level (weighted average)	(T-1) –9 dBm0 nominal, configurable by parameter**

	(E-1) –12.5 dBm0 nominal, configurable by parameter**
Transmit volume control	40 dB adjustment range, with application-definable increments and legal limit cap

Frequency Response

24 kbit/s	300 Hz to 2600 Hz ±3 dB
32 kbit/s	300 Hz to 3400 Hz ±3 dB
48 kbit/s	300 Hz to 2600 Hz ±3 dB
64 kbit/s	300 Hz to 3400 Hz ±3 dB

Audio Digitizing

13 kbit/s	GSM @ 8 kHz sampling
24 kbit/s	OKI ADPCM @ 6 kHz sampling
32 kbit/s	OKI ADPCM @ 8 kHz sampling
32 kbit/s	G.726 @ 8 kHz sampling
48 kbit/s	A-law G.711 PCM @ 6 kHz sampling
48 kbit/s	µ-law G.711 PCM @ 6 kHz sampling
64 kbit/s	A-law G.711 PCM @ 8 kHz sampling
64 kbit/s	µ-law G.711 PCM @ 8 kHz sampling
Digitization selection	Selectable by application on function call-by-call basis
Playback speed control	Pitch controlled
	Available on OKI ADPCM and G.711 PCM
	Adjustment range: ±50%
	Adjustable through application or programmable DTMF control

DTMF Tone Detection

DTMF digits	0 to 9, *, #, A, B, C, D per Telcordia LSSGR Sec 6
Dynamic range	(T-1) –36 dBm0 to –3 dBm0 per tone, configurable by parameter**
	(E-1) –39 dBm0 to 0 dBm0 per tone, configurable by parameter**
Minimum tone duration	40 ms, can be increased with software configuration
Interdigit timing	Detects like digits with a >40 ms interdigit delay
	Detects different digits with a 0 ms interdigit delay
Acceptable twist and frequency variation	(T-1) Meets Telcordia LSSGR Sec 6 and EIA 464 requirements
	(E-1) Meets appropriate ITU-T specifications**
Noise tolerance	Meets Telcordia LSSGR Sec 6 and EIA 464 requirements for Gaussian, impulse, and power line noise tolerance
Cut-through	(T-1) Local echo cancellation permits 100% detection with a >4.5 dB return loss line
	(E-1) Digital trunks use separate transmit and receive paths to network
	Performance dependent on far-end handset's match to local analog loop
Talk-off	Detects less than 20 digits while monitoring Telcordia TR-TSY-000763 standard speech tapes (LSSGR requirements specify detecting no more than 470 total digits)
	Detects 0 digits while monitoring MITEL speech tape #CM 7291

Global Tone Detection

Tone type	Programmable for single or dual
Maximum number of tones	Application-dependent
Frequency range	Programmable within 300 Hz to 3500 Hz
Maximum frequency deviation	Programmable in 5 Hz increments
Frequency resolution	±5 Hz. Separation of dual frequency tones is limited to 62.5 Hz at a signal-to-noise ratio of 20 dB
Timing	Programmable cadence qualifier, in 10 ms increments
Dynamic range	(T-1) Programmable, default set at –36 dBm0 to –0 dBm0 (single tone), –3 dBm0 (dual tone)
	(E-1) Programmable, default set at –39 dBm0 to +0 dBm0 per tone

Global Tone Generation	
Tone type	Generate single or dual tones
Frequency range	Programmable within 200 Hz to 4000 Hz
Frequency resolution	1 Hz
Duration	10 ms increments
Amplitude	(T-1) –43 dBm0 to –3 dBm0 per tone nominal, programmable
	(E-1) –40 dBm0 to +0 dBm0 per tone nominal, programmable
MF Signaling (T-1)	**R1**
MF digits	0 to 9, KP, ST, ST1, ST2, ST3 per Telcordia LSSGR Sec 6, TR-NWT-000506 and ITU-T Q.321
Transmit level	Complies with Telcordia LSSGR Sec 6, TR-NWT-000506
Signaling mechanism	Complies with Telcordia LSSGR Sec 6, TR-NWT-000506
Dynamic range for detection	–25 dBm0 to –3 dBm0 per tone
Acceptable twist	6 dB
Acceptable frequency variation	Less than ±1 Hz
MF Signaling (E-1)	**R2**
MF digits	All 15 forward and backward signal tones per ITU-T Q.441
Transmit level	–8 dBm0 per tone, nominal, per ITU-T Q.454; programmable
Signaling mechanism	Supports the R2 compelled signaling cycle and non-compelled pulse requirements per ITU-T Q.457 and Q.442
Dynamic range for detection	–35 dBm0 to –5 dBm0 per tone
Acceptable twist	6 dB
Acceptable frequency variation	Less than ±1 Hz
Call Progress Analysis	
Busy tone detection	
Ring back tone detection	
Positive voice detection	
Positive answering machine detection	
Fax/modem detection	
Intercept detection	
Dial tone detection before dialing	
Tone Dialing	
DTMF digits	0 to 9, *, #, A, B, C, D per Telcordia LSSGR Sec 6, TR-NWT-000506
Frequency variation	Less than ±1 Hz
Rate	10 digits/s, configurable by parameter**
Level	–7.5 dBm0 per tone, nominal, configurable by parameter**
Pulse Dialing	
10 digits	0 to 9
Pulsing rate	10 pulses/s, nominal, configurable by parameter**
Break ratio	60% nominal, configurable by parameter**

Analog Display Services Interface (ADSI)

FSK generation per Telcordia TR-NWT-000030

CAS tone generation and DTMF detection per Telcordia TR-NWT-001273

Ordering Information

Please see the Models tab for this product

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).

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