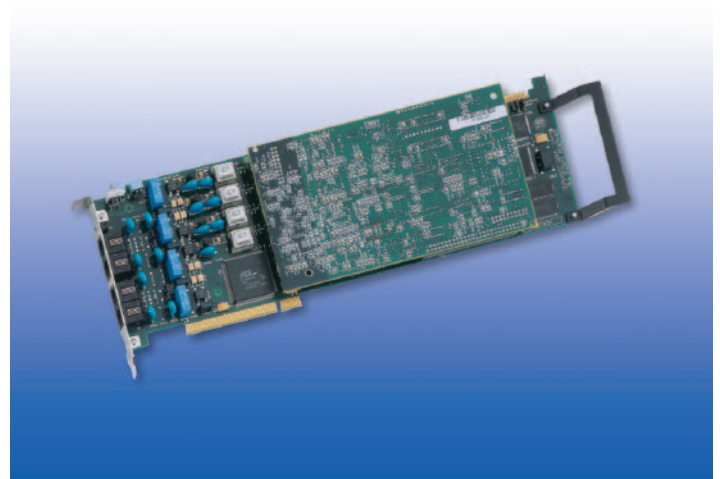


Dialogic® VFX/41JCT-LS Media Board

The Dialogic® VFX/41JCT-LS Media Board is a four-port analog converged communications board that can be used by developers to provide global enterprise applications, such as unified messaging, Interactive Voice Response (IVR), and contact centers. The VFX/41JCT-LS supports voice, fax, and software-based speech recognition processing in a single PCI or PCI Express slot, providing four analog telephone interface circuits for direct connection to analog loop start lines.



Features	Benefits
Supports up to four channels of enhanced onboard fax	Reduces the number of boards per system
Supports Continuous Speech Processing (CSP)	Provides a flexible speech processing technology, which when coupled with efficient drivers, offloads critical real-time signal processing in speech-enabled applications to onboard DSPs. Reduces system latency, increases recognition accuracy, and improves overall system response time for high-density speech solutions.
Separate models available with Universal PCI or PCI Express edge connector	Universal PCI form factor compatible with 3.3 V and 5.0 V bus signals, enabling deployment in a wide variety of PCI chassis from popular manufacturers; PCI Express form factor compatible with 1x slots (x1 or higher compatible) also available
A-law or μ-law voice coding at dynamically selectable data rates, 24 kb/s to 64 kb/s, selectable on a channel-by-channel basis	Allows for optimal tradeoff between disk storage and voice quality
Telcordia CLASS, UK CLI, Japanese Caller ID, and other international protocols	Supports an international Caller ID capability via on-hook audio path
Advanced outbound call progress analysis	Monitors outgoing call status quickly and accurately

Technical Specifications

Number of ports	4
Maximum boards per system	8
CT Bus loads per board	1
Maximum CT Bus loads per system	20
Analog network interface	4 onboard loop start interface circuits
Resource sharing bus	CT Bus H.100
Control processor	80C186 @ 34.8 MHz
Digital signal processor	Freescale DSP56303 @ 100 MHz, with 128Kx24 private SRAM
Supported operating systems	Linux: SR6.1 SU 232 or higher; Windows®: SR 6.0 SU 131 or higher. Details at www.dialogic.com/systemreleases
CSP	Yes
Signaling	Analog loop start

Host Interface — PCI and PCI Express

Bus compatibility	PCI and PCI Express
PCI Bus speed	33 MHz maximum
PCI Bus mode	Target mode operation only
Shared memory	32 KB page
I/O ports	None

Platform — PCI and PCI Express

Form factor	PCI Universal or PCI Express 12.3 in. (31.24 cm) long without edge retainer or 13.3 in. (33.78 cm) long with edge retainer 0.79 in. (2 cm) wide (total envelope) 3.87 in. (9.83 cm) high (excluding edge connector)
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Power Requirements — PCI

+5 VDC	750 mA maximum
+12 VDC	200 mA maximum
-12 VDC	100 mA maximum

Power Requirements — PCI Express

+12 VDC	450 mA maximum
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Environmental Requirements — PCI and PCI Express

Operating temperature	+32°F (0°C) to +122°F (+50°C)
Storage temperature	-4°F (-20°C) to +158°F (+70°C)
Humidity	8% to 80% noncondensing

Technical Specifications *(continued)***Telephone Interface†**

Trunk type	Loop start
Loop current range	20 mA to 120 mA
Impedance	600 Ohms nominal
Ring detection	15 Vrms minimum, 13 Hz to 68 Hz, (configurable by parameter**)
Echo return loss	Configurable by software parameter
Crosstalk coupling	Less than -70 dB at 1 kHz channel to channel
Receive signal/noise ratio	70 dB referenced to -15 dBm
Frequency response	200 Hz to 3400 Hz \pm 3 dB (transmit and receive)
Connectors	4 RJ-11 type

Approvals and Compliance

Hazardous substances RoHS Compliance Information at <http://www.dialogic.com/rohs>

Safety and EMC

Canada ICES-003 Class A
ULc CSA 60950-1 File E96804

Europe EN60950
EN55022
EN55024

Japan VCCI Class A

United States FCC Part 15 Class A
UL 60950-1 File E96804

International IEC60950-1
CISPR 22
CISPR 24

Telecom Approvals

Canada IC:885 5542 A

European Union DoC

Japan A00-0796JP

United States US:EBZUSA-75385-VM-T

Country-specific approvals See the Product Declarations & Global Approvals list at <http://www.dialogic.com/declarations/> or contact your Authorized Distributor

Reliability/Warranty

Estimated MTBF Per Telcordia Method 1
PCI: 274,000 hours
PCI Express: 230,000 hours

Warranty Warranty Information at <http://www.dialogic.com/warranties>

Springware/JCT Technical Specifications

Facsimile

Fax compatibility	ITU-T T.4 (Group III), T.30 ETSI NET/30 compliant
Data rate	Transmission: 14,400 b/s (v.17) (maximum)
Variable speed selection	Automatic step-down to 12,000 b/s, 9600 b/s, and lower Reception: 9,600 b/s
Transmit data modes	API-selectable Modified Huffman (MH) Modified Read (MR) Modified Modified Read (MMR) with Error Correction Mode (ECM)
Receive data modes	API-selectable MH, MR, and MMR with ECM
File data formats	Tagged Image File Format-Fax (TIFF-F) for transmit/receive MH, MMR, and ASCII text transmit
ASCII-to-fax conversion	Performed on the host CPU rather than in the Dialogic firmware. Supports multiple fonts and language character sets, including all Windows® fonts
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 among any of the three supported widths
Polling modes	Normal Turnaround
Image resolution	Normal (203 pels/in. x 98 lines/in.; 203 pels/2.5 cm x 98 lines/2.5 cm) Fine (203 pels/in. x 196 lines/in.; 203 pels/2.5 cm x 196 lines/2.5 cm)
Fill minimization	Automatic fill bit insertion and stripping

Audio Signal

Receive range	-40 dBm to +2.5 dBm0 nominal, configurable by parameter**
Automatic gain control	Application can enable/disable Above -18 dBm0 results in full-scale recording, configurable by parameter**
Silence detection	-40 dBm nominal, software adjustable**
Transmit level (weighted average)	-9.5 dBm0 nominal, configurable by parameter**
Transmit volume control	40 dB adjustment range, with application-definable increments and legal limit cap

Frequency Response

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

Springware/JCT Technical Specifications *(continued)***Audio Digitizing**

13 kb/s	GSM @ 8 kHz sampling
24 kb/s	OKI ADPCM @ 6 kHz sampling
32 kb/s	OKI ADPCM @ 8 kHz sampling
32 kb/s	G.726 @ 8 kHz sampling
48 kb/s	μ-law PCM @ 6 kHz sampling
64 kb/s	μ-law PCM @ 8 kHz sampling
Digitization selection	Selectable by application on function call-by-call basis
Playback speed control	Pitch controlled Available for 24 kb/s and 32 kb/s data rates 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	−38 dBm to +3 dBm 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
Twist and frequency variation	Meets Telcordia LSSGR Sec 6 and EIA 464 requirements
Noise tolerance	Meets Telcordia LSSGR Sec 6 and EIA 464 requirements for Gaussian, impulse, and power line noise tolerance
Cut-through	Local echo cancellation permits 100% detection with a >4.5 dB return loss line
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	Programmable, default set at −6 dBm0 to +3 dBm0 per tone

Springware/JCT Technical Specifications *(continued)***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	-43 dBm0 to -3 dBm0 per tone, programmable

MF Signaling

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 freq. variation	Less than ± 1 Hz

Call Progress Analysis

Busy tone detection	Default setting designed to detect 74 out of 76 unique busy/congestion tones used in 97 countries as specified by ITU-T Rec. E., Suppl. #2
	Default uses both frequency and cadence detection
	Application can select frequency only for faster detection in specific environments
Ring back detection	Default setting designed to detect 83 out of 87 unique ring back tones used in 96 countries as specified by ITU-T Rec. E., Suppl. #2
	Uses both frequency and cadence detection
Positive voice detection accuracy	>99% based on tests on a database of real world calls in North America Performance in other markets may vary
Positive voice detection speed	Detects voice in as little as 1/10th of a second
Positive answering machine detection accuracy	>85% based on application and environment
Fax/modem detection	Preprogrammed
Intercept detection	Detects entire sequence of the North American tri-tone
	Other intercept tones sequences can be programmed
Dial tone detection before dialing	Application enable/disable
	Supports up to three different user-definable dial tones
	Programmable dial tone drop out debouncing

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 maximum, configurable by parameter**
Level	-4.0 dBm0 per tone, nominal, configurable by parameter**

Springware/JCT Technical Specifications *(continued)***Pulse Dialing**

10 digits	0 to 9
Pulsing rate	10 pulses/s, nominal 20 pulses/s for Japan, configurable by parameter**
Break ratio	60% nominal, configurable by parameter**

Analog Caller Identification

Applicable standards	Telcordia TR-TSY-000030 Telcordia TR-TSY-000031 TAS T5 PSTN1 ACLIP: 1994 (Singapore)
Modem standard	Bell 202 or V.23, serial 1200 bits/sec (simplex FSK signaling)
Receive sensitivity	-48 dBm (-50 dBv) to -1 dBm
Noise tolerance	Minimum 18 dB SNR over 0 to -48 dBm dynamic range for error-free performance
Data formats	Single Data Message (SDM) and Multiple Data Message (MDM) formats via API calls and commands
Line impedance	AC coupled 600 Ohm (@ 1.8 kHz) termination during Caller ID on-hook detection interval
Message formats	ASCII or binary SDM, MDM message content

Analog Display Services Interface (ADSI)

FSK generation per Telcordia TR-NWT-000030
CAS tone generation and DTMF detection per Telcordia TR-NWT-001273

Hardware System Requirements

- Intel386, Intel486, or Pentium microprocessor PCI or PCI Express computer
- Operating system hardware requirements vary according to the number of channels being used

Additional Components

- Multidrop CT Bus cables (CBLCTB68C3DROP, CBLCTB68C4DROP, CBLCTB68C8DROP, CBLCTB68C12DROP, CBLCTB68C16DROP)
- CT Bus/SCbus adapter (CTBUSTOSCBUSADP)
- SCbus terminator kits (1SCBUS1TERMKIT, 2SCBUS1TERMKIT, 3SCBUS1TERMKIT)

Ordering Information

Product Code	Order Code	Description
VFX41JCTLSW	881-793	4-port Analog, Loop-Start, PCI
VFX41JCTLSWEU	881-794	4-port Analog, Loop-Start, PCI, Europe
VFX41JCTLSEW	887-492	4-port Analog, Loop-Start, PCIe
VFX41JCTLSEWEU	887-493	4-port Analog, Loop-Start, PCIe, Europe



www.dialogic.com

Dialogic Inc
1504 McCarthy Boulevard
Milpitas, California 95035-7405
USA

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Positive Answering Machine Detection/Positive Voice Detection

These performance results were measured using specific computer systems and/or components within specific lab environments and under specific system configurations. Any difference in system hardware, software design, or configuration may affect actual performance. The results are furnished for informational use only and should not be construed as a commitment by Dialogic. Dialogic assumes no responsibility or liability for any errors or inaccuracies.

Outbound Dialing/Telemarketing

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** Analog levels: 0 dBm0 corresponds to a level of +3 dBm at tip-ring analog point. Values vary depending on country requirements; contact your account manager.

† Average speech mandates +16 dB peaks above average and preserves -13 dB valleys below average.