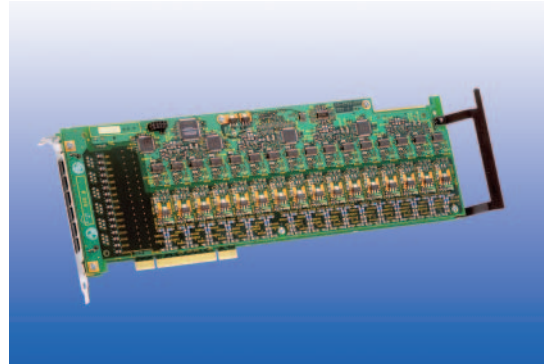


Dialogic® DM/V160-LP Media Board



The Dialogic® DM/V160-LP Media Board is a full-size 16-port, universal PCI-based voice processing and analog interface board for high-density analog voice processing solutions. Well-suited for advanced communications applications requiring multimedia resources including web-enabled contact centers, unified messaging, and speech-enabled Interactive Media Response (IMR) systems, this high-performance, scalable board offers a rich set of advanced features and support for Digital Signal Processor (DSP) technology and signal processing algorithms — ensuring a competitive edge for a variety of solutions.

With approvals in many countries across the world, the DM/V160-LP lets developers take solutions into the global marketplace. It supports Caller ID in the United States, Japan, and the United Kingdom, and a special version of the board is available for deployment in the European Union.

Support for the Dialogic® R4 Application Programming Interface (API) provides easy interoperability with other Dialogic® products such as CT Bus and SCbus boards. Applications can be ported to lower or higher density platforms with little effort and new features can be added with only minimal modification, protecting investment in hardware and application code.

Support for Continuous Speech Processing (CSP) technology enables friendly user interface and seamless integration of speech recognition software from the leading speech technology vendors. CSP reduces system latency, increases recognition accuracy, and improves overall system response time for high-density speech solutions.

Features

Benefits

16 independent loop start telephone interfaces and 16 channels of voice processing in a single PCI slot

Allows creation of larger high-density analog applications with fewer boards per chassis while lowering costs

Full support for Japanese Caller ID, including the ability to detect on-hook polarity reversals for accurate and reliable Customer Identification (CID) information

International approvals increase market segment opportunities by allowing deployment of solutions worldwide

Caller ID is also supported for the United States and the United Kingdom

Programmable AGC parameters

Offers developers greater flexibility for implementing and installing highly accurate, mission-critical voice processing systems

Four ports of onboard fax

Gives developers more resources without using additional chassis slots or hardware, which saves money

Universal 32-bit PCI edge connector

Ensures compatibility with 3.3 V and 5.0 V bus signals, enabling simpler deployment in a wide variety of PCI chassis from popular manufacturers

Technical Specifications

Analog interfaces	16
Maximum Boards per system	8 Number may be limited by application, system performance or memory, and number of calls
Control microprocessor	ARM7 RISC processor
Control microprocessor memory	Up to 8 MB local to control processors
Digital signal processors	Motorola 56311 @ 150 MHz
DSP memory	512 K word SDRAM local to each DSP ARM ASIC contains internal 1k x 32 bits 24-bit wide SRAM local to each DSP
Baseboard global memory	32-bit wide DRAM accessible to all signal processors and control processor
Supported operating systems	Linux; Windows®. Details at http://www.dialogic.com/systemreleases
CSP	Yes
Signaling	Analog loop start
Host Interface	
Bus compatibility	PCI Bus Specification, Rev. 2.2
Bus speed	33 MHz
Bus mode	Target and DMA master mode operation
Computer telephony bus	ECTF H.100 compliant CT Bus, offering — Onboard switching access to 4096 bidirectional 64 kb/s DS0 time slots — SCbus interoperability through provided adapter — 68-pin ribbon cable connector
Telephony bus connector	H.100-style 68-pin fine pitch card edge connector
Network connectors	Six RJ-25 on rear bracket
Host interface memory	512 KB shared with control processor
Platform	
Form factor	PCI long card, single-slot width 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)
Power Requirements	
+3.3 VDC	Not required
+5 VDC	7.5 W
+12 VDC	1.2 W
-12 VDC	1.2 W
Environmental Requirements	
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 (cont.)

Trunk Interface

Trunk type	Analog loop start (EIA/TIA 464B)
Loop current range	20 mA to 120 mA
Ring detection	40 Vrms to 130 Vrms 15.3 Hz to 68 Hz
Ringer Equivalence Number (REN)	0.8B
Battery reversal detection	Yes
Connector	Six RJ-25s

Approvals and Compliance

Hazardous substances	RoHS Compliance Information at http://www.dialogic.com/rohs
<i>Safety and EMC</i>	
Canada	ICES-003 Class A ULc 60950 File E96804
Europe	EN60950 EN55022 EN55024
Japan	VCCI Class A
United States	FCC Part 15 Class A UL 60950 File E96804
International	IEC60950 CISPR 22 CISPR 24
<i>Telecom Approvals</i>	
United States	US: EBZVM08BDMV160LP
Canada	IC: 885A-DMV160LP
Japan	A03-0045JPA
European Union	DoC 06/06/2003
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 I PCI: 87,000 hours
Warranty	Warranty information at http://www.dialogic.com/warranties

Audio Signal

Usable receive range	-40 dBm0 to 0 dBm0 nominal, configurable by parameter**
Automatic gain control	Application can enable/disable Above -21 dBm results in full scale recording, configurable by parameter
Silence detection	-40 dBm nominal, software adjustable**
Transmit level (weighted average)	-9.5 dBm nominal, configurable by parameter**
Transmit volume control	20 dB adjustment range, with application-definable increments and legal limit cap
File data formats	Tagged Image File Format-Fax (TIFF-F) for transmit/receive MH, MR, and MMR w/ECM

Frequency Response

24 kb/s	300 Hz to 2600 Hz \pm 3 dB
32 kb/s	300 Hz to 3400 Hz \pm 3 dB
64 kb/s	300 Hz to 3400 Hz \pm 1 dB

G.711 PCM Encoding

Technical Specifications (cont.)

Audio Digitizing

8.5 kb/s	TrueSpeech
16 kb/s	G.726 bit exact @ 8 kHz sampling rate, 2-bit samples
24 kb/s	G.726 bit exact @ 8 kHz sampling rate, 3-bit samples
32 kb/s	G.726 bit exact @ 8 kHz sampling rate, 4-bit samples
40 kb/s	G.726 bit exact @ 8 kHz sampling rate, 5-bit samples
13 kb/s	GSM full rate 6.10 and RTP (Microsoft® format and TIPHON format)
24 kb/s	OKI ADPCM @ 6 kHz sampling rate, 4-bit samples
32 kb/s	OKI ADPCM @ 8 kHz sampling rate, 4-bit samples
48 kb/s	μ-law G.711 PCM @ 6 kHz sampling rate, 8-bit samples
48 kb/s	A-law G.711 PCM @ 6 kHz sampling rate, 8-bit samples
64 kb/s	μ-law G.711 PCM @ 8 kHz sampling rate, 8-bit samples
64 kb/s	A-law G.711 PCM @ 8 kHz sampling rate, 8-bit samples
88 kb/s	Linear PCM @ 11 kHz with 8-bit linear samples
176 kb/s	Linear PCM @ 11 kHz with 16-bit linear samples
Digitization selection	Selectable by application on function call-by-call basis Pitch controlled
Playback speed control	Available for 8 kHz coders 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	–36 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 >45 ms interdigit delay Detects different digits with a 0 ms interdigit delay
Acceptable twist	Meets Telcordia LSSGR Sec 6 and EIA 464B requirements
Noise tolerance	Meets Telcordia LSSGR Sec 6 and EIA 464B 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 10 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	Default: –38 dBm to –3 dBm, adjustable by parameter file

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	0 dBm to –40 dBm

Technical Specifications (cont.)

MF Signaling (T-1)

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

R1

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	>98% based on tests on a database of real world calls. Performance in other markets may vary
Positive voice detection speed	Detects voice in as little as 1/10 of a second
Positive answering machine detection	>85% based on application and environment accuracy
Fax/modem detection	Preprogrammed
Intercept detection	Detects entire sequence of the North American tri-tone Other intercept tone 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 (when not part of regulatory approval)

Tone Dialing

DTMF digits	0 to 9, *, #, A, B, C, D per Telcordia LSSGR Sec. 6, TR-NWT-000506, ITU-T Q.23
Frequency variation	Less than ± 1 Hz
Rate	10 digits/s, configurable by parameter**
Level	-4.0 dBm per tone, nominal, configurable by parameter**
Pulse dialing	10 PPS standard, 63% break-ratio, configurable by country parameter

Protocols

Analog	Loop start
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Facsimile

Number of ports	4
Compatibility	Group III SoftFax ETSI NET30 and ITU-T T.30, T.4, and T.6 compliant
Compression	MH, MR, MMR and ECM support
Speed	14.4 kb/s or greater, transmit and receive
Fax resource management	Not required

Ordering Information

Product Code	Order Code	Description
DMV160LPW	884-442	16-port Analog, Loop-Start, PCI
DMV160LPWEU	884-443	16-port Analog, Loop-Start, PCI, Europe

To learn more, visit our site on the World Wide Web at <http://www.dialogic.com>

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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

Outbound dialing systems may be subject to certain laws or regulations. Dialogic makes no representation that Dialogic® products will satisfy the requirements of any such laws or regulations (including, without limitation, any regulations dealing with telemarketing).

** Configurable to meet country specific PTT requirements. Actual specification may vary from country to country for approved products.