



Using Dialogic® Boards to Enhance Voice Mail/Messaging Applications

Executive Summary

Voice mail, voice messaging, and the expansion into Text-To-Speech (TTS) and Automatic Speech Recognition (ASR) have become indispensable business tools that let end users access and retrieve voice messages in the format most suitable to their needs. Dialogic® JCT Media Boards and Dialogic® PBX Integration Boards provide technology to support the features and functions of today's voice mail/messaging solutions.



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Introduction

Voice mail and voice messaging refer to the basic ability to record, store, and manipulate spoken messages. Advanced technologies, such as Text-To-Speech (TTS) and Automatic Speech Recognition (ASR), allow developers to expand their voice messaging offerings and let end users access and retrieve voice messages in the format deemed most suitable for the time, place, or device.

Dialogic® JCT Media Boards and Dialogic® PBX Integration Boards provide multimedia processing and call control that can enable today's flexible voice mail/messaging solutions and provide the integrated collection and retrieval of messages in different media formats. Dialogic® development tools and professional services enable developers, integrators, service providers, and end users to create customized applications and systems.

Voice Mail/Messaging Applications

Voice messaging applications provide the basic ability to record, playback, store, and manipulate spoken messages. An automated attendant function is commonly packaged with voice mail in a Voice Messaging system to perform the duties of an operator/receptionist. It supervises transfers, screens calls, and offers the caller directory assistance to the proper extension. The automated attendant asks the originating caller to steer or direct themselves to an extension, department, or voice mailbox by pressing keys on the phone or by speaking the extension number or name.

The following list is a sample of messaging applications that can be enabled by the JCT Media Boards and PBX Integration Boards:

- Automated attendant; tone or speech activated
- Message storage and retrieval, including Voice Profile for Internet Messaging (VPIM) for Internet message transfer
- Call screening
- Call forwarding
- Find me/follow me
- Fax
- Caller ID
- Unified messaging

JCT Media Boards and PBX Integration Boards

The JCT Media Boards and PBX Integration Boards are suitable for developing applications that require multimedia functionality in a single PCI slot. The consistent features, application programming interface, and installation requirements of the JCT Media Boards and PBX Integration Boards enable scaling of applications from four analog lines to two E1 trunks (60 voice channels) using a single PCI slot with little or no changes to existing software. When additional PCI slots are available, more boards can be added to further increase system density.

The following table shows the various environments and applications that the JCT Media Boards and PBX Integration Boards support:

Environment	Dialogic Boards
Telco or service provider (xSP) with E1/T1 trunks (SS7*, ISDN, or CAS signaling)	Dialogic® D/600JCT-2E1 JCT Media Board Dialogic® D/600JCT-1E1 JCT Media Board Dialogic® D/480JCT-2T1 JCT Media Board Dialogic® D/480JCT-1T1 JCT Media Board
Medium-to-large enterprise with E1/T1 trunks (ISDN or CAS signaling)	Dialogic® D/300JCT-E1 JCT Media Board Dialogic® D/600JCT-1E1 JCT Media Board Dialogic® D/240JCT-T1 JCT Media Board Dialogic® D/480JCT-1T1 JCT Media Board
Medium-to-large enterprise with analog trunks or analog PBX extensions	Dialogic® D/120JCT-LS JCT Media Boards
Small-medium-large enterprise with compatible** digital PABX ports	Dialogic® D/82JCT-U PBX Integration Board Dialogic® D/42JCT-U PBX Integration Board
Small-to-medium enterprise with analog trunks or analog PABX extensions	Dialogic® D/41JCT-LS JCT Media Board Dialogic® VFX/41JCT-LS JCT Media Board

* SS7 signaling requires additional hardware. For more information, visit the Dialogic® Signaling Boards and SS7 Products web site at <http://www.dialogic.com/support/helpweb/signaling/default.htm>

**For PBX compatibility information, visit the Dialogic® PBX Integration Boards web site at http://www.dialogic.com/products/tdm_boards/signaling/default.htm

Features and Benefits

The JCT Media Boards and PBX Integration Boards are well suited for developers and service providers interested in creating or deploying cost-effective, highly scalable, low- to high-density messaging applications that require multimedia resources including voice, software-based speech recognition, TTS, and fax.

JCT Media Boards and PBX Integration Boards can reduce the cost of ownership for systems requiring multimedia functionality by featuring programmable ports capable of supporting voice, fax, call handling, and host-based speech technologies. They enable system integrators and developers to lower costs by incorporating more ports per chassis, using less expensive desktop-style machines, and simplifying configuration and installation.

Most of the JCT Media Boards and PBX Integration Boards feature Continuous Speech Processing (CSP) support for host-based Automatic Speech Recognition (ASR) and come pre-loaded with DSP-based Softfax fax capability. The CSP barge-in capability, coupled with perfect digit DTMF (touch-tone) functionality, lets users get to their messages quickly by speaking or keying ahead through the menu options.

The following JCT Media Boards have CSP capability:

D/600JCT-1E1	ISDN or CAS = 30 ports CSP
D/480JCT-2T1	CAS = 48 ports CSP
D/480JCT-1T1	ISDN=24 ports CSP
D/240JCT-T1	CAS = 24 ports CSP
D/120JCT-LS	12 ports CSP
D/41JCT-LS	4 ports CSP
VFX/41JCT-LS	4 ports CSP

Low bit rate coders such as GSM and G.726 (the de facto standard when complying with VPIM applications) provide the capability to migrate legacy Interactive Voice Response (IVR) systems to enhanced messaging solutions.

The JCT Media Boards and PBX Integration Boards offer specialized features to help satisfy the needs of their target markets:

- The single span JCT Media Boards, featuring the D/240JCT-T1 and D/300JCT-E1, provides the functionality and network connectivity to enable medium-to-large enterprises to deploy messaging applications. The digital signaling capability of E1 and T1 trunks provides the network connectivity method of choice for larger enterprises.
- The dual span JCT Media Boards, featuring the D/600JCT-2E1 and D/480JCT-2T1, provides the density, functionality, and network connectivity to enable telcos and service providers to offer large messaging applications.
- The D/120JCT-LS is a core building block for global multimedia solutions in medium-to-large enterprises. With 12 analog loop-start telephony ports, this high-density PCI voice processing board features a unique dual-processor architecture that handles telephony signaling and performs DTMF and audio/voice signal-processing tasks on-board, which reduces host CPU overhead.
- The D/82JCT-U offers eight digital interfaces connecting to some of the most widely used PBXs on the market. Messaging applications built with the D/82JCT-U can enable medium-to-large enterprises to increase the value of their PBX investment and reap the benefits of digital signaling for call control.
- The D/42JCT-U offers four digital interfaces connecting to some of the most widely used PBXs on the market. Messaging applications built with the D/42JCT-U can enable small-to-medium enterprises to increase the value of their PBX investment and reap the benefits of digital signaling for call control.
- The D/41JCT-LS is the entry-level, high-performance four-port analog voice and fax processing board for messaging applications in small-to-medium-sized enterprises. Capable of supporting fax on all four ports simultaneously, this board offers the most features per channel of any of the JCT Media Boards.
- The VFX/41JCT-LS is the entry-level, high-performance, four-port analog voice and fax processing board for messaging applications in small-to-medium enterprises. This board has the same features as the D/41JCT-LS, but offers four channels of an enhanced version of fax.

JCT Media Boards and PBX Integration Boards enable developers, system integrators, and end users to lower costs and rapidly scale their Voice Mail and Voice Messaging systems by installing multiple boards in industry standard PCI computers and servers.

Typical Configurations

In Figure 1, the voice mail/messaging/auto attendant system features a server with the JCT Media Boards and PBX Integration Boards, which are located behind the PBX. The JCT Media Boards and PBX Integration Boards provide analog, T1/E1, or digital interfaces to the PBX.

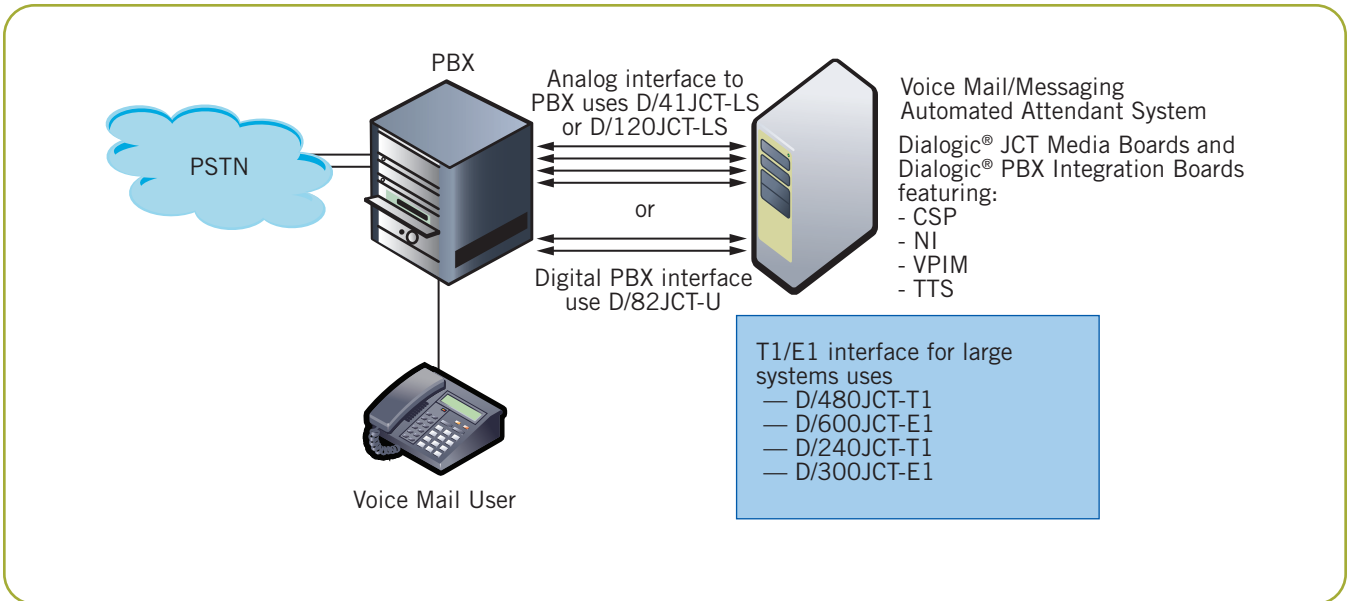


Figure 1. Voice Messaging Configuration

A caller initiates a call that is routed over the PSTN to the PBX, which can be programmed to send the call to a live operator, route the call to an automated attendant, or transfer the caller directly to the desired extension. The JCT Media Boards and PBX Integration Boards supply voice-processing resources to play prerecorded prompts to the caller and to identify DTMF digits.

Users with a voice mail box in the system can check messages, send messages to individuals or groups, and administer their own mail boxes — change password, greetings, and more — either from an internal extension or remotely via a central office trunk connected to the PBX.

For More Information

Dialogic® JCT Media Boards — http://www.dialogic.com/products/tdm_boards/media_processing/default.htm

Dialogic® PBX Integration Boards — http://www.dialogic.com/products/tdm_boards/signaling/default.htm

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

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