



## **Using Dialogic® Boards to Enhance Contact Center Applications**



## Executive Summary

Customers expect far more today than they did just a few years ago, and the level of customer service must meet their growing expectations. Call centers are increasingly becoming the major point of contact for customer interactions. To remain competitive and to keep customers happy and loyal, many companies are looking to converged voice and data communications solutions to turn their call centers into contact centers by harnessing the power of the Internet. Dialogic® JCT Media Boards and Dialogic® PBX Integration Boards provide technology to support the features and functions of today's contact centers.



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## Introduction

Using Internet Protocol (IP) telephony, Voice over IP (VoIP), and coordinated web browsing, companies can turn their call centers into customer contact centers where customers can send email, participate in video conferences, or chat online — all from a web site. Contact centers can also deliver simultaneous voice and data services to customers, all over a single phone line.

Dialogic® JCT Media Boards and Dialogic® PBX Integration Boards provide multimedia processing and call control that are at the heart of today's flexible contact center solutions. Dialogic® development tools and professional services help enable developers, integrators, service providers, and end users to create customized applications and systems.

## Contact Center Applications

In a typical organization, contact centers either generate revenue or provide customer service via the telephone or Internet. Primarily either *inbound* or *outbound*, some contact centers perform both functions, making them the next generation leading edge call centers. Contact centers incorporate the following capabilities into the traditional call center:

- Instant Messaging (IM) capability between contact center agent and caller (referred to as the contact)
- *Push* and *pull* capability to display and view information on agent's and contact's PC screens

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

- Contact centers with Computer Telephone Integration (CTI) compatibility
- IP contact center
- Multimedia contact center
- Web-enabled contact center
- Outbound contact center
- Telemarketing groups
- Market research/survey groups
- Call distribution (inbound)
- Customer service departments
- Technical help desks
- Order entry/inside sales
- Reservation departments

## 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 Board
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>

\*\*PBX compatibility information, visit the Dialogic® PBX Integration Boards web site at [http://www.dialogic.com/products/tdm\\_boards/signaling/default.htm](http://www.dialogic.com/products/tdm_boards/signaling/default.htm)

## Features and Benefits

JCT Media Boards and PBX Integration Boards are well suited for developers and service providers interested in creating and deploying cost-effective, highly scalable, low-to high-density contact center applications that require multimedia resources including voice, software-based speech recognition, and fax. They enable system integrators and developers to lower costs by incorporating more ports per chassis, using less expensive desktop-style machines, while easing configuration and installation.

Most of the JCT Media 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 (touchtone) 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 Voice Profile for Internet Messaging [VPIM] applications) provide the capability to migrate legacy Interactive Voice Response (IVR) systems to enhanced contact center solutions.

Advanced features in the JCT Media Boards and PBX Integration Boards enable self-service options such as click-to-talk, voice portal services for information retrieval and v-Commerce capabilities, advanced call routing and call data handling, and more. These features are designed to provide customer satisfaction and a positive end-user experience.

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

- The single span JCT Media Boards, featuring the D/240JCT-T1 and D/300JCT-E1, provide the functionality and network connectivity to enable medium-to-large enterprises to implement and deploy contact centers. 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, provide the density, functionality, and network connectivity to enable telcos and service providers to offer contact center solutions.
- 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. Contact center applications built with the D/82JCT-U can enable small-to-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. Contact center 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 contact center applications in small-to-medium 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 contact center 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.

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

## Typical Configurations

In Figure 1, a caller initiates a call that is passed through the PSTN to the contact center. As the call enters the system, the JCT Media Boards and PBX Integration Boards with network interface answer the incoming call and play an alert message or on-hold music, as predetermined. If/when an agent is available, the JCT Media Boards and PBX Integration Boards route the call to the PBX, which then rings the agent's phone.

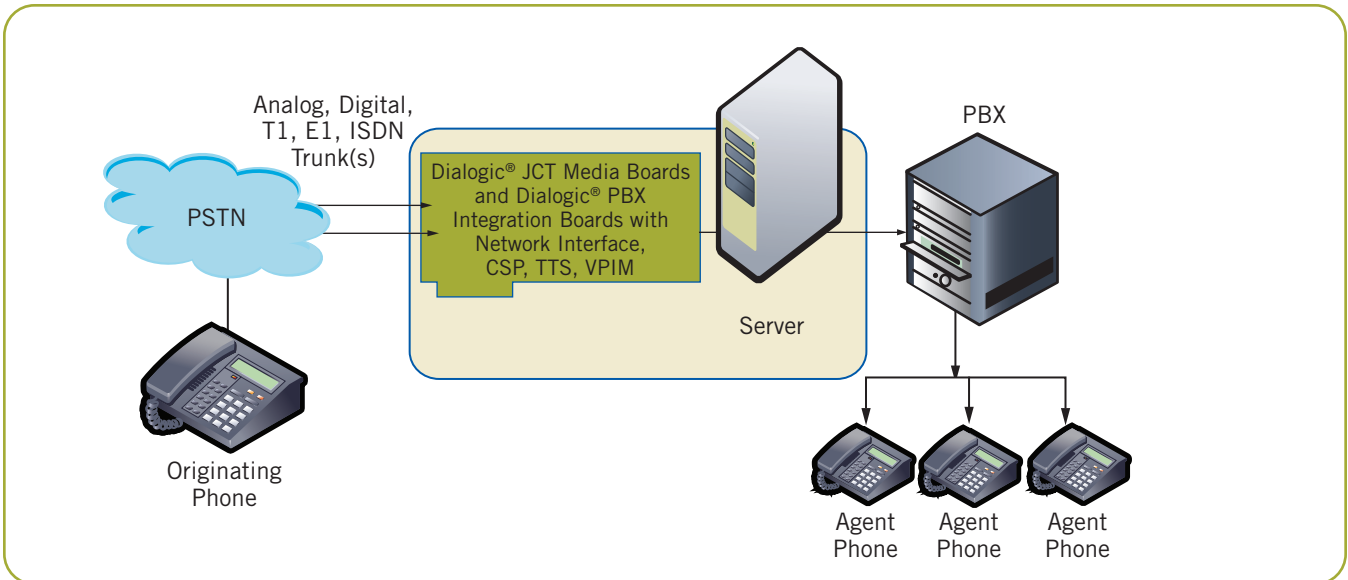


Figure 1. Inbound Contact Center Configuration

One enhancement that is present in many contact center configurations is Computer Telephony Integration (CTI). Among other capabilities, a CTI-enabled contact center provides screen *pops* — when the system delivers the call to the agent's phone, the caller's account profile is simultaneously *popped* on to the agent's monitor. Specialized software, connections to the LAN, and the database server that contains the account profiles enable this feature.

In addition, businesses with an existing contact center infrastructure (that is, those who have an Automatic Call Distributor [ACD], IVR, or call management system) can use an Internet telephony gateway as a front end to the ACD of a contact center switch. An Internet telephony application gateway acts as a bridge between the Public Switched Telephone Network (PSTN) and the Internet. Contact centers can thus deliver simultaneous voice and data services to customers and prospects, all over a single phone line. This protects existing investments in capital equipment, agent training, and call management practices.

## For More Information

Dialogic® JCT Media Boards —  
[http://www.dialogic.com/products/tdm\\_boards/media\\_processing/default.htm](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](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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