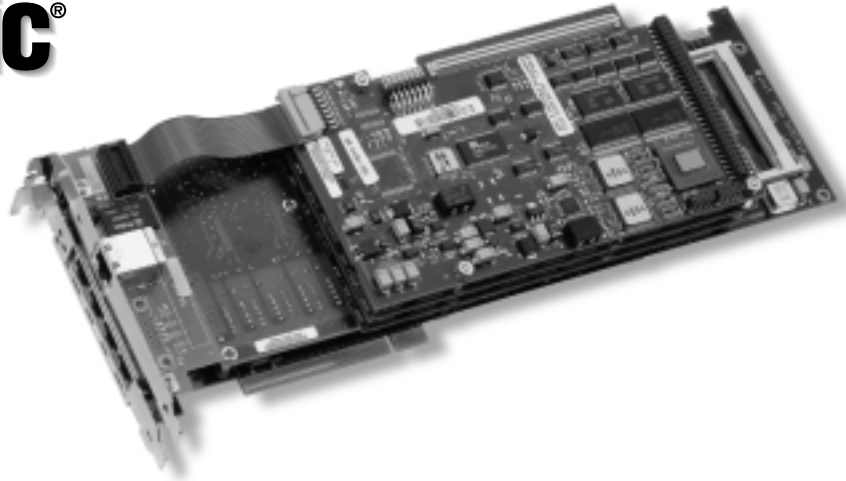




an Intel company



SCSA Hardware Model

PEB Hardware Model

CT Bus/SCbus

DM3 IPLink Release 4

The ability to make telephone calls over the Internet is driving corporate telephone and data networks together to form a single communications network. To create solutions that make the most of this business opportunity, you need Dialogic DM3™ IPLink™, a proven, high-performance, open development platform. DM3 IPLink supports the H.323, MGCP, H.248, and SIP standards for communication across IP networks and a wide variety of vocoder algorithms, for complete IP compliance.

Based on the modular DM3 mediastream architecture, a powerful and scalable hardware and software development environment, DM3 IPLink lets you add more processing power and ports on a single board, as your needs dictate. DM3 IPLink features a standard Intel® control processor and operates under Windows NT, Windows 2000, UnixWare 7, and Solaris UltraSparc.

The combination of extensive IP standards support and open architecture gives you the utmost flexibility for building IP gateways and enabling IP-enhanced services.

Standards-Based IP Development Platform

DM3 IPLink is a comprehensive standards-based software and hardware development platform for IP telephony servers. Its optimized design incorporates all the necessary IP-related features on a single board. DM3 IPLink includes an IP protocol stack that complies with the International Telecommunications Union ITU-T H.323 specification (including H.245 and H.225 protocols). H.323 sets standards for audio, video, and data communications across IP networks not providing guaranteed Quality of Service (QoS). Gatekeeper functions are also supported for address translation and bandwidth management.

DM3 IPLink supports a wide range of popular H.323 conferencing software, including Microsoft NetMeeting, the VocalTec iPhone, and the Intel Video Phone. DM3 IPLink works with H.323-, MGCP-, H.248- and SIP-compliant terminals.

Support for standard transport mechanisms such as Transmission Control Protocol/Internet Protocol (TCP/IP), User Datagram Protocol (UDP), and Real Time Protocol/Real Time Control Protocol (RTP/RTCP) is embedded in DM3 IPLink firmware.

Features and Benefits

- Industry's first single-board solution for voice and fax over Public Switched Telephone Network (PSTN) and Internet Protocol (IP)
 - Provides a PSTN interface (T-1 or E-1), Ethernet connection, and mediastream processing capability on a single card
 - Reduces time to market and cost by eliminating complexities associated with multiple resources
- Compliant with ITU-T H.323 specification, TCP/IP, UDP, and RTP/RTCP
 - Provides easy interoperability with a wide range of gateways and gatekeepers
 - Supports H.323 Revision 2.0 (Fast Connect) improving call throughput by reducing connection time
 - Split Call Control allows any IP call-control stack such as MGCP, H.248, and SIP to run on IPLink allowing more flexibility and greater interoperability
- Supports ITU T.38 real-time fax over IP (FOIP)
 - Enables dynamic switching to fax over IP to support applications such as debit/calling card and fax servers
- Dynamically selectable vocoder algorithm support per DSP including G.723.1, G.711, G.729a, and ITU GSM
 - Improves compatibility with existing systems, supports more applications, and improves interoperability

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Features and Benefits (cont.)

- Improved Quality of Service (QOS)
 - Threshold alarms
 - IP precedence
- Fax spoofing
 - Non-standard Remote Access Server (RAS): Gatekeeper control with non-standard RAS messages
 - Simple Network Management Protocol (SNMP) support for remote maintenance
- Compliance with RFC 2198 data packet redundancy
 - Improves QOS by compensating for lost packets
- Comprehensive support for industry-standard H.323 clients including Microsoft NetMeeting, VocalTec IPhone, Intel Video Phone, and other compliant terminals
- Greater flexibility in exchanging proprietary information between gateways/servers through facility message over Q.931 port and Detecting Object ID/User Input Indication (UII) messages over H.245 port
 - Provides tight integration and increased efficiency of communication between gateways that belong to the same vendor
- FCD file-generation utility simplifies the task of changing default parameters for hardware, making it easier to configure PSTN protocols
- Supports T-1 robbed bit signaling, 4ESS/5ESS, DMS100 (DMS250), Euro-ISDN, and INS1500 (NTT)
 - Increased coverage for global deployment of solutions
- Advanced features include voice activity detection (VAD) for maximum bandwidth utilization, embedded high-performance echo cancellation, and out-of-band DTMF processing compliant with the International Multimedia Teleconferencing Consortium Interoperability Agreement 1.0
- Optimized call control API offloads host CPU application processing to minimize system latency, achieve maximum scalability, and optimize resource usage
- Supports call processing, including call progress, voice record and play, DTMF detection, tone generation, volume control, noise tolerance, cut through, and talk off from both PSTN and IP interfaces
- CT Bus™ interoperability for PCI (H.100) and cPCI (H.110) systems
- ANSI SCbus™ for integration with other standards-based CT resource platforms

DM3 IPLink also has a sophisticated packet recovery algorithm.

Dialogic remains committed to building standards-based products that simplify development and reduce your time to market. As a founding member of the Voice Over Internet Protocol (VOIP) Forum — now part of the International Multimedia Teleconferencing Consortium (IMTC) — Dialogic continues to be an active participant in the IMTC, the Internet Engineering Task Force (IETF) and other IP-related standards bodies. The DM3 IPLink product is compliant with IMTC/VOIP enhancements and refinements to H.323.

DM3 IPLink design also supports important CT open industry standards. The PCI baseboard supports both the SCSA™ SCbus™ and H.100 CT Bus™ specifications. DM3 IPLink API software is compatible with S.100 Enterprise Computer Telephony Forum (ECTF) call processing standards.

Multiple Vocoder Support

DM3 IPLink offers many optimized, low-bandwidth vocoder algorithms for transmitting audio over an IP network, including the ITU-T G.711, G.723.1, G.729a, ITU GSM, and real-time fax over IP (ITU T.38). These algorithms use a variety of coding techniques, bit rates, and frame sizes to compress audio for managing data network bandwidth. The wide algorithm support of DM3 IPLink gives you the ability to deploy IP-based applications throughout the world. The scalable DM3 signal processor architecture makes it easy to support new algorithms as they become widely accepted and adopted as standards.

Advanced features include voice activity detection (VAD) for maximum bandwidth utilization, as well as embedded high-performance echo cancellation, and out-of-band DTMF processing optimized for the IP network. The DM3 IPLink jitter buffers can be fine-tuned for optimal performance.

Improved Quality of Service

DM3 IPLink Release 4 offers improved Quality of Service (QOS) performance over IP networks.

Threshold alarms alert an application when network QOS parameters (jitter, latency, and packet loss) deteriorate below user-administered levels. Threshold alarms help to improve traffic engineering for more efficient use of IP networks. They also enable dynamic decision making which allows IP calls to be rerouted onto the PSTN in the event of network congestion.

The network QOS is further improved with IP Precedence. IP packets carrying real-time voice and fax can be routed with higher priority by setting the IP Precedence bits. Precedence bits can be set to a required value on a call-by-call basis. It is also possible to define default IP Precedence bits for voice and fax calls when they are set to different priorities.

Lastly, Fax Spoofing improves the reliability of real-time fax over IP by compensating for latency introduced by the network.

Powerful, Scalable DM3 Mediatream Architecture

The DM3 architecture provides access to independent, high-performance, firmware-based network protocol and media processing resources that can be operated and integrated on compatible hardware platforms. The DM3 open resource architecture also gives you the flexibility to easily scale processing and interface resources as needed for future application upgrades or IP telephony server enhancements. Support for standard SCbus and CT Bus connectivity gives you a growth path for incorporating other Dialogic and third-party media and network resources.

DM3 IPLink is available in several models and supports dynamically selectable vocoders including G.711, G.723.1, G.729a, ITU GSM, and real-time fax over IP (ITU T.38).

Model Number	Number of Channels
DM/IP040-LSI (PCI)	4
DM/IP0821A-T1 (PCI)	8
DM/IP0821A-E1-120 (PCI)	8
DM/IP241-1T1 (PCI)	24
DM/IP301-1E1 (PCI)	30
DM/IP241-1T1c (cPCI)	24
DM/IP301-1E1c (cPCI)	30
DM/IP2431A-T1 (PCI)	24
DM/IP3031A-E1-120 (PCI)	30

Configurations

Use DM3 IPLink to build a variety of IP-based solutions including complete gateway platforms that bridge the public switched telephone network (PSTN) and IP networks, IP-enabled enhanced services platforms like unified messaging, contact center, follow-me, and voice activated dialing. The DM3 IPLink product family provides all of the required IP resources — data network interface, telephone network interface, IP and H.323 stacks — as well as mediastream processing resources on a single board. Additional Dialogic and third-party resources can be accessed through DM3 IPLink CT Bus/SCbus connections. Optionally, the DM3 IPLink board can use any telephone network interface with CT Bus/SCbus connections. An on-board Ethernet interface is also available. IP telephony servers using the basic DM3 IPLink can be deployed in a wide range of markets including enterprise, public telephone network, and call center applications.

A majority of Dialogic SCbus network interface boards have been tested for interoperability with this release. The Dialogic Configuration Manager (DCM) also provides the option to install additional boards that have not been tested for interoperability with the IPLink platform.

The following Dialogic boards have been tested for interoperability with DM3 IPLink:

Antares 6000/50	D/320SC	DTI/601SC-120
D/41E-PCI	D/480SC-2T1	LSI/81SC
D/41ESC	D/600SC-2E1	LSI/161SC
D/80SC	DCB/320SC	MSI/80SC
D/160SC	DCB/640SC	MSI/80SC-R
D/160SC-LS	DCB/960SC	MSI/160SC
D/240PCI-T1	DM/V480-T1	MSI/160SC-R
D/240SC	DM/V600-E1	MSI/240SC
D/240SC-T1	DM/V960-T1	MSI/240SC-R
D/240SC-2T1	DM/V1200-E1	VFX/PCI
D/300PCI-E1	DTI/241SC	VFX/40ESC
D/300SC-E1	DTI/301SC	VFX/40ESC Plus
D/300SC-2E1	DTI/481SC	

Applications

- IP-based unified messaging and conferencing
- Corporate WAN telephony traffic consolidation
- Web-enabled contact centers and help desks
- Debit/calling card
- Internet gateways for toll bypass (voice/fax over IP)
- Internet call waiting
- Fax over IP
- Personal Assistant (PA)
- Advanced Intelligent Network (AIN) applications on scalable intelligent peripherals
- PBX extenders

Software Support

DM3 IPLink runs under the Windows NT, Windows 2000, UnixWare 7, and Solaris UltraSparc operating systems and comes with a software package containing the Dialogic software architecture, DM3 Core Software, Dialogic IPT Software, complete documentation, and gateway demonstration code. † Standard Dialogic Release 4 resource APIs and DM3 Direct Interface APIs are also included. Dialogic high-level APIs provide a standards-based method for developing IP gateway applications. The DM3 Direct Interface gives developers flexibility for customizing and controlling the low-level application details.

† Customers should specify the desired operating system when ordering. Software package content varies with operating system.

Technical Specifications*

HARDWARE SPECIFICATIONS:

Control processor	Intel® i960CF at 33 MHz, 60 MIPs
Control processor memory	Up to 8 MB local to control processor
Signal processors	Motorola 5630x, 1 K word program cache, 100 MIPS
	PowerPC on 1 daughterboard: Motorola 603e at 166/200 MHz, 32 KB built-in cache
Signal processor memory	DSP: 256 K or 1 M word DRAM local to each DSP; 128 K word SRAM local to each DSP. PowerPC: 8 or 32 MB SDRAM local to each 603e.
Baseboard global memory	4, 8, or 16 MB of 32-bit-wide DRAM accessible to all signal processors, control processor, and host. 72-pin SO DIMM modules for easy upgradability.
Real-time media bus	Up to 256 full-duplex channels at 64 Kb/s onto ANSI SCbus. Supports SCSA time slot bundling (N x 64 K channels) for high-bandwidth requirements ECTF H.100 CT Bus interoperability.
CT Bus speed	Up to 8 MHz/256 Mb/s, SCbus and MVIP+ bus mode supported

HOST INTERFACE:

Host Interface Memory	512 KB
Bus compatibility	Rev 2.1 of PCI Bus Specification
Bus mode	Target and DMA master mode operation
Form factor	PCI long card, cPCI

POWER REQUIREMENTS:

Model Number	Power requirements
DM/IP040-LSI	16 watts
DM/IP0821A-T1	25.5 watts
DM/IP0821A-E1-120	25.5 watts
DM/IP241-1T1	22.7 watts
DM/IP301-1E1	22.7 watts
DM/IP241-1T1c	19 watts @ 5 V; 9.8 watts 3.3 V.
DM/IP301-1E1c	19 watts @ 5 V; 9.8 watts 3.3 V.
DM/IP2431A-T1	35 Watts
DM/IP3031A-E1-120	35 Watts

COOLING REQUIREMENTS:

Operating temperature	0° C to +50° C
Cooling condition per max. operating temperature	50° C 3.1 CFM per board 40° C 2.1 CFM per board 30° C 1.6 CFM per board
Storage temperature	-20° C to +70° C
Humidity	8% to 80% non condensing

* All specifications are subject to change without notice.

Software Specifications

- Downloaders, drivers, and libraries are provided for each host operating system (OS)
- Control processor operating system: VxWorks from Wind River Systems, Inc.
- Signal processor operating system: SPOX from Spectron Microsystems

Host System Requirements

- Operating system: Windows NT for Intel CPUs, Windows 2000, UnixWare 7, and Solaris UltraSparc