4. National ISDN Product Information and Industry Contacts

Section 4 results from a survey of suppliers who claim to implement some or all of the functional aspects of the ISDN solutions of Section 3. Despite a good faith effort by the participants in this project, this survey may not have reached the majority of those suppliers who could assert such claims.

The NIUF, NIST and the organizations contributing to the development of this document, including the information from suppliers, make no representation or warranty, express or implied, with respect to the sufficiency, accuracy, adequacy, or use of any of the following supplier product information. The use of the supplier information, subsequent affairs with these suppliers, or subsequent investment in these products for achieving the solutions in Section 3 is solely at the risk and discretion of the user of such information.

This section is organized in three parts:

- Reference Guide - Section 4.1 provides a quick reference to the product information presented in Section 4.2.
- Product Information - Section 4.2 provides abstracts of product and service information as furnished by the suppliers.
- Contact Information - Section 4.3 tells how to reach these companies for more information. Contact information includes the suppliers, authorized agents, system integrators, and members of supplier-authorized developer's programs.

Trademarks and Service Marks

Trademarks and Service Marks shown were provided by the suppliers. All other brands and products are trademarks of their respective companies.

4.1 Reference Guide to Product Information

This section provides a quick reference to the product information presented in Section 4.2. Products are grouped in categories, and suppliers are listed alphabetically within those categories. The summary tables presented here list suppliers specific products, and sections and page numbers where the product information is presented in Section 4.2. This reference guide includes the following product categories:

- Basic rate terminal adapters (4.2.1)
- Basic rate interface cards for personal computers, workstations, and minicomputers; workstations with built-in ISDN (4.2.2)
- Attendant consoles (4.2.3)
- ISDN phones (4.2.4)
- Single port ISDN LAN bridges (4.2.5)
- Communications servers, routers, bridges, and multiport ISDN LAN bridges (4.2.6)
- Inverse multiplexers, multiplexers, and communications controllers (4.2.7)
- PRI adapters (4.2.8)
- Video conferencing systems and multipoint control units (4.2.9)
- Other products for special needs - these include repeaters and range extenders; integrated circuits, test sets, and development platforms (4.2.10)
- Network Terminations (NT-1's) (4.2.11)
- Power supplies (4.2.12)
- Software and services, which covers application software, communications software, toolkits and portable communications software for developers, and consulting (4.2.13)
- Private network solutions - including Private Branch Exchanges (PBXs) ISDN switches for satellite networks, and satellite network testbeds (4.2.14)
- Service provider information - contacts for Local Exchange Carriers (4.2.15)

Basic rate terminal adapters   Section: 4.2.1

TelePower	ITA-2020 Stand alone, dual port ISDN TA	4-43
TelePower	ITA-2031 Stand alone, dual port ISDN TA	4-44
TelePower	ITA-2032 Stand alone, dual port ISDN TA	4-45
TelePower	ITA-2035 Stand alone, dual port ISDN TA	4-46
TelePower	ITA-2050 Stand alone ISDN TA for automatic Leased line dial backup use	4-47
Telrad Telecommunications	TelradPac	4-48
Telrad Telecommunications	TIP 10	4-49
XANcomm, Inc.	PCU Model 2	4-50

Basic rate interface cards for personal computers, workstations, and minicomputers; workstations with built-in ISDN — Section: 4.2.2

Company	**Product Name**	**Page**
Connective Strategies, Inc. (CSI)	ISDNAccelerator ™ ISDN PC Card	4-51
Connective Strategies, Inc. (CSI)	ISDNAccelerator Plus™ ISDN PC Card	4-52
CoSystems, Inc.	CoISDN-BRI/S Bus ISDN Adapter for Sun Workstation	4-53
DGM&S, Inc.	ISDN DSP Card (IDC-31) Multimedia Development Card for PC/AT/X86	4-54
DigiBoard	PC IMAC - ISDN Network Interface Card for Ethernet Networks	4-55
Eicon Technology Corporation	EiconCard ISDN/PC	4-56
EuRoNiS	PLANET-ISDN Internal Board for Macintosh	4-57
Extension Technology Corp.	LD - LAN Adapter	4-58
Fujitsu Network Industries, Inc.	Desk Top Conferencing Data, Image and Voice System	4-59
Fujitsu Network Industries, Inc.	Desk Top Conferencing Data and Image System	4-60

Hayes Microcomputer Products, Inc.	ISDN PC Adapter	4-61
Hewlett Packard	HP ISDN Link 700 ISDN Adapter with TCP/IP client software (J2109A)	4-62
International Business Machines, Inc.	IBM AS/400 ISDN Basic Rate Interface Adapter Feature #2605	4-63
International Business Machines, Inc.	IBM ISDN Interface Coprocessor/2 Model 2	4-64
International Business Machines, Inc.	IBM ISDN Interface Coprocessor AT Bus Interface card	4-65
International Business Machines, Inc.	IBM Wave Runner Digital Modem AT Bus Interface card	4-66
International Business Machines, Inc.	IBM Wave Runner Digital Modem Microchannel Interface card	4-67
ISCOM, Inc.	Datavoice Express0 for PC	4-68
ISCOM, Inc.	Datavoice Express0 for Toshiba	4-69
ISCOM, Inc.	Datavoice S0 Mac II	4-70
ISCOM, Inc.	Datavoice S0 for PC	4-71
ISDN Systems Corporation	FX-BRI	4-72
Link Technology, Inc.	IAB-4	4-73
Mitel Corporation	S-Access Card	4-74
Mitel Corporation	S-Line Card	4-75
Motorola UDS	PCTA 120	4-76
MPR Teltech Ltd.	MI 300/310 ISDN Audio and Data Card	4-77
NCR Network Products Division	StarWAN ISDN PC Terminal Adapter PCTA - ISA Bus PCTA/MC-Microchannel Bus	4-78
NCR Network Products Division	StarWAN ISDN PC Terminal Adapter for DTA - ISA Bus and DTA/M-Microchannel Bus	4-79
OST, Inc.	PCSNET ISDN BRI Adapter Card for PC/AT and Compatibles	4-80
OST, Inc.	PSSNET ISDN BRI Adapter Card for MCA bus AIX machines	4-81
OST, Inc.	MacSneT ISDN BRI Adapter Card for Macintosh Nu Bus Systems	4-82

Primary Rate Incorporated	PRI-2™ Basic Rate ISDN VME Controller	4-83
Silicon Graphics	INDY Work Station	4-84
Sun Microsystems Computer Corp.	Sun ISDN-BRI/SBI Expansion Kit SunLink ISDN-BRI Enabling Kit SPARCstation 10 SPARCstation LX	4-85

Attendant consoles — Section: 4.2.3

Company	Product Name	Page
Tone Commander Systems	1030D 10 line/30 station ISDN Attendant Console	4-86
Tone Commander Systems	1560D 15 line/60 station ISDN Attendant Console	4-87
Tone Commander Systems	40D/120 Expandable ISDN Attendant Console with 240 station DSS/BLF	4-88

ISDN phones — Section: 4.2.4

Company	Product Name	Page
AT&T	7506	4-89
AT&T	7507	4-90
Cortelco, Inc.	Cortelco 30 Button ISDN Set	4-91
Cortelco, Inc.	Cortelco 18 Button ISDN Set	4-92
Fujitsu ISDN Division	SRS 1050	4-93
Fujitsu ISDN Division	SRS 2000	4-94
Lodestar Technology, Inc.	LT1-2002U	4-95
Lodestar Technology, Inc.	LT1-2002S	4-96
Lodestar Technology, Inc.	LT1-1501U	4-97
Lodestar Technology, Inc.	LT1-1501S	4-98
Lodestar Technology, Inc.	LT1-1001S	4-99

Lodestar Technology, Inc.	LT1-1001U	4-100
Motorola UDS	VDS 120	4-101
Northern Telecom, Inc.	M5317TDX	4-102
Northern Telecom, Inc.	M5209T	4-103
Siemens Stromberg-Carlson	SSC-ISDN SET 782 ACD ANSI & NI-1 Compatible Terminal	4-104
Siemens Stromberg-Carlson	SSC-ISDN SET 787 ANSI & NI-1 Compatible Terminal	4-105
Telrad Communications	IDS - 284/V	4-106
Telrad Communications	IDS - 284/P	4-107
Telrad Communications	IDS - 284/D1	4-108
Telrad Communications	IDS - 285/V	4-109
Telrad Communications	IDS - 285/P	4-110
Telrad Communications	IDS - 285/D1	4-111
Telrad Communications	IDS - 286/V	4-112
Telrad Communications	IDS - 286/P	4-113
Telrad Communications	IDS - 286/D1	4-114
Telrad Communications	IDS - 287/V	4-115
Telrad Communications	IDS - 287/P	4-116
Telrad Communications	IDS - 287/D1	4-117
Telrad Communications	IDS - 287/D2	4-118

Single port ISDN LAN bridges — Section: 4.2.5

Company	**Product Name**	**Page**
Combinet, Inc.	Everyware™ LC ISDN BRI LAN Bridge	4-119
Combinet, Inc.	Everyware™ 150 ISDN BRI LAN Bridge	4-120

Combinet, Inc.	Everyware™ 200 ISDN BRI LAN Bridge (Single User)	4-121
Combinet, Inc.	Everyware™ 400 ISDN BRI LAN Bridge	4-122
Develcon Electronics Limited	I-Gate Model 150 Ethernet MAC Layer learning bridge with integral ISDN	4-123
DigiBoard	IMAC Single Port ISDN LAN Bridge	4-124
Gandalf Systems Corp.	LANLINE 5240	4-125
Gandalf Systems Corp.	LANLINE 5510	4-126
ISCOM, Inc.	Translan, LAN to LAN interconnection	4-127

Communications servers, routers, bridges, and multiport ISDN LAN bridges — Section: 4.2.6

Company	Product Name	Page
Advanced Computer Communications	Nile; Standalone, Multiprotocol Remote Bridge/Router	4-128
Ascend Communications, Inc.	Pipeline Access Routers	4-129
Ascend Communications, Inc.	Pipeline MAX; Bandwidth manager	4-130
Cisco Systems, Inc.	Cisco 2500 - Models 2503 Multi-Protocol Router	4-131
Cisco Systems, Inc.	Cisco 2500 - Models 2504 Multi-Protocol Router	4-132
Cisco Systems, Inc.	Cisco 3000 - Models 3103 Multi-Protocol Router	4-133
Cisco Systems, Inc.	Cisco 3000 - Models 3104 Milti-Protocol Router	4-134
Cisco Systems, Inc.	Cisco 3000 - Models 3204 Multi-Protocol Router	4-135
Connective Strategies, Inc. (CSI)	PRI-MPG™, Primary Rate Interface Multi-Protocol Gateway	4-136

DigiBoard	DUAL IMAC Dual Port ISDN Ethernet Bridge	4-137
DigiBoard	PC IMAC/4 Multiport ISDN Network Interface Card/ Communications Hub	4-138
Engage Communications, Inc.	Express Router ISDN (Ethernet); Sync Router ISDN (Local Talk); Wide Area Networking for AppleTalk & TCP/IP for Protocols	4-139
Gandalf Systems Corp.	Xpressway; Remote LAN Access concentrator	4-140
Hewlett Packard, Inc.	HP ISDN SERVER Link to Router Upgrade TCP/IP Router	4-141
International Business Machines, Inc.	IBM 3174 Establishment Controller Basic Rate Adapter	4-142
ISDN Systems Corporation (ISC)	DYNA-BRIDGE	4-143
MPR Teltech Ltd	OB-100 Communications server	4-144
NCR Corporation Network Products Division	Primary Rate Interface for Comten Communications Processor; Data Communication Controller (IBM - compatible Front End Processor)	4-145
Network Express, Inc.	NE ISDN InterHub; Concentrator, Router, Bridge, Inverse Multiplexer	4-146
Network Express, Inc.	NE ISDN Router; Router, Bridge, Inverse Multiplexer	4-147
OST, Inc.	Magellan; Standalone TCP/IP Router	4-148
Racal-Datacom, Inc.	Excalibur Network Access Resource (ENAR) Communications server	4-149

Inverse multiplexers, multiplexers, and communications controllers

Section: 4.2.7

Company	Product Name	Page
Ascend Communications, Inc.	Multiband Plus; Inverse multiplexing	4-150
Ascend Communications, Inc.	Multiband MAX; Bandwidth manager	4-151

Controlware Communications Systems, Inc.	TAXI System; Leased Line Backup, Switched Digital Networking,, Inverse Multiplexing	4-152
Newbridge Networks, Inc.	TAP System; Universal Access Multiplexer, Inverse Mux, Dedicated B/W Drop & Insert	4-153
Primary Rate Incorporated	PRI-48XP™ Dual T1/ISDN VME Controller with non-blocking DS0 Switching matrix	4-154
Primary Rate Incorporated	PRI-64™ Dual E1/ISDN VME Controller with non-blocking DS0 Switching matrix	4-155
Primary Rate Incorporated	PRI-ISA64™ Dual E1/ISDN Controller	4-156
Primary Rate Incorporated	Odyssey™; Video Hub, Integrated Access Point, Packet Concentration, Terminal and Router Adapter	4-157
Promptus Communications, Inc.	OASIS 200B; Inverse Multiplexer/Switched Bandwidth Controller	4-158
Promptus Communications, Inc.	OASIS 1000; Inverse Multiplexer/Bandwidth Manager	4-159
Promptus Communications, Inc.	OASIS 200T; Inverse Multiplexer/Switched Bandwidth Controller	4-160
Tylink Corporation	SNS 400; ISDN PRI Mux, Multirate ISDN TA, ISDN PRI CSU	4-161
Tylink Corporation	SNS 4000; Inverse Multiplexer, ISDN PRI Mux, Multirate ISDN TA, ISDN PRI CSU	4-162

PRI adapters — Section: 4.2.8

Company	Product Name	Page
DGM&S Inc.	Multi-Protocol Adapter DSP (MPAD); Full featured ISA or VMS Bus Platform for support of ISDN PRI and SS7 interface applications	4-163
Gandalf Systems Corp.	Access SDX; PRI channel bank and gateway	4-164
ISCOM, Inc.	Datavoice S2 PC Card	4-165
Mitel Corporation	Enhanced Dual T1/E1 Card; on-board processor for signalling, MVIP compatible	4-166

Mitel Corporation	Single T1/E1 Card	4-167
Mitel Corporation	Dual T1/E1 Card	4-168
Nitech, Inc.	NiteOwl 2230 PC Based Adapter Card	4-169
Primary Rate Incorporated	PRI-48™ Dual T1/ISDN VME Controller with non-blocking DS0 Switching matrix	4-170
Primary Rate Incorporated	PRI-ISA48™ Dual T1/ISDN Controller	4-171

Videoconferencing systems and multipoint control units Section: 4.2.9

Company	Product Name	Page
AT&T Visual Communications Market Group	Multipoint Control Unit (MCU)	4-172
AT&T/NCR	Telemedia Connection Model 70	4-173
Compression Labs, Inc.	Cameo Personal Video	4-174
Compression Labs, Inc.	eclipse	4-175
DataBeam Corporation	CT Series	4-176
EYETEL Communications, Inc.	EyeTel Communicator III	4-177
Hitachi America Ltd.	CA-200	4-178
Hitachi America Ltd.	DP-200	4-179
ISCOM	Videoconference for ISDN and SW56 based on a PC platform	4-180
VTEL	DeskMax	4-181
Zydacron, Inc.	INTERVu II Video Teleconferencing Codec	4-182

Network Communications Corp.	NP7050B	4-201
Network Communications Corp.	NP71001 ISDN Tester	4-202
Nitech, Inc.	NiteOwl Test Sets	4-203
Obertronics Software, Inc.	ISDN Message Desk	4-204
Siemens Stromberg-Carlson	ISDN Basic Rate Interface Channel Unit U Interface Distance Extender	4-205
Teloquent Communications Corp.	Distributed Call Center automatic call distribution (ACD) system	4-206
Trillium Digital Systems, Inc.	Q.930/Q.931 Portable Source Code	4-207
VeriFone	Omni POS Terminal, Tranz POS Terminal	4-208
VeriFone	Emerald Transaction Super System	4-209

Network Terminations (NT-1's) Section: 4.2.11

Company	Product Name	Page
Adtran, Inc.	NT1 ACE & PS2	4-210
Adtran, Inc.	NT1 T400	4-210
AT&T Network Systems	NT1	4-211
Siemens Stromberg-Carlson	NT-1 ISDN Network Terminator	4-211
Tone Commander Systems	NTIU-220TC	4-212

Power supplies Section: 4.2.12

Company	Product Name	Page
SEI Corporation	Family of Power Supplies	4-213
SEI Corporation	BP-8 Battery Pack	4-215

Excelltech, Inc.	Excell/ICLID: caller identification software package for ISDN	4-232
Excelltech, Inc.	Excell/DIAL: automatic voice dialer software package for ISDN	4-233
Excelltech, Inc.	Excelltech NETBIOS applications programming interface	4-234
EYETEL Communications, Inc.	EyeTel Communicator I EyeTel Communicator II EyeTel Communicator III	4-235
Farallon Computing, Inc.	Timbuktu®. Timbuktu/Remote Macintosh screen sharing	4-236
Group Technologies, Inc.	Aspects Real time conferencing on the Macintosh	4-237
Hilgraeve	HyperACCESS/5 Communications software for DOS and OS/2	4-238
IEX Corporation	Developer of Telecommunications Solutions	4-239
International Business Machines, Inc.	IBM Communications Manager/2	4-240
International Business Machines, Inc.	IBM Person to Person/2 collaborative computing	4-241
ISCOM	Transfile II, file transfer	4-242
ManyLink Corporation	ManyLink for ISDN for DOS communications software package	4-243
ManyLink Corporation	ManyLink for ISDN for Windows communications software package	4-244
ManyLink Corporation	ManyLink Call-Pop memory resident utility that pops up with incoming caller ID	4-245
Microware Systems Corporation	ISDN File Manager (ISM)	4-246
National Aeronautical Space Administration	Advanced Communications Technology Satellite	4-247
Norton-Lambert Corp.	Close-Up 5.0 remote control program	4-248

Private network solutions and Private Branch Exchanges (PBXs)

Section: 4.2.14

Service Providers Section: 4.2.15

4.2 Product Information

This section presents information about specific products. Products are grouped in categories listed in Section 4.1, and organized alphabetically within those categories.

Key to Tables

The products are described using tables where the table headings have the following meanings.

Company Name	The manufacturer, developer, or provider; their address, contact person, and phone.
Product Name	What the company calls their product.
NI-1 Date	When the product will support the National ISDN 1 features and protocols.
NI-2 Date	When the product will support the National ISDN 2 features and protocols.
Price	List price for one unit.
FCC Class	FCC rating for electromagnetic interference. Class A is suitable for office use. Class B is suitable for home use.
Calls Supported	The types of calls that the product can make and receive.
Voice	The product can place voice calls.
Circuit-Data	The product can place circuit switched data calls.
B Channel Packet Data	The product can place and receive X.25 calls on the B channel.
D Channel Packet Data	The product can place and receive X.25 calls on the D channel.
Simultaneous Active Calls	The product can have these combinations of calls active at the same time. For example, if the answer is two, then the user can communicate over two channels at once.
Uses 1 circuit DN & SPID or 2 ?	Directory Numbers (DNs) (or telephone numbers) and Service Profile IDs are necessary to configure ISDN terminals. DNs are used to place and

receive calls. SPIDs are not dialed by humans, but terminals use them to shake hands with the switch. For terminals that use both B channels, two DNs and two SPIDs are needed for a terminal to work on all types of switches in NI-1. On some switch types, only one DN and SPID are needed. The DN & SPID entry shows whether the product can be configured with only 1 DN, 2 DNs, or either way.

Voice and Display Features

Display — Indicates whether the phone has a display, and its size. Speakerphone Indicates whether a speakerphone is built in.

Feature keys — Indicates whether special functions of the phone can be invoked with a special key assigned to that function, and how many function keys there are.

Circuit-Data

Async V.120 — States whether the device uses the V.120 standard technique to support asynchronous circuit-mode data communications at rates below 56/64 kbps, and gives the highest rate at which the product operates using V.120 asynchronously.

Async - Other Rate Adaptation — States whether other rate adaptation protocols are supported, and indicates the highest rate at which the product operates using this protocol asynchronously.

Sync V.120 — States whether the device uses the V.120 standard technique to support synchronous circuit-mode data communications at rates below 56/64 kbps, and gives the highest rate at which the product operates using V.120 synchronously.

Sync - Other Rate Adaptation — States whether other rate adaptation protocols are supported, and indicates the highest rate at which the product operates using this protocol synchronously.

56/64 kbps — Indicates that the product can operate at 56 or 64 kbps rates.

112/128 kbps — Shows whether the device can take input on a single data port (at 112/128 kbps) and send the stream of bytes out over two 56/64 kbps B channels. This function is often referred to as inverse multiplexing.

Bonding?	States whether the product supports the Bonding standard for inverse multiplexing, and which "modes" of the standard it supports.
D-Channel Packet	
X.25 Terminal Support	Indicates whether the product can operate as an X.25 terminal for D-channel packet, and the highest rate at which it can operate.
Async PAD, Sync PAD	Indicates whether the product can operate as an Async. or Sync. PAD for D-channel packet, and the highest rate at which it can operate.
Logical Channels	Indicates the number of logical channels, or simultaneous packet calls, the product can support. for D-channel packet.
B-Channel Packet	
X.25 Terminal Support	Indicates whether the product can operate as an X.25 terminal for B-channel packet, and the highest rate at which it can operate.
Async PAD, Sync PAD	Indicates whether the product can operate as an Async. or Sync. PAD for B-channel packet, and the highest rate at which it can operate.
Logical Channels	Indicates the number of logical channels, or simultaneous packet calls, the product can support. for B-channel packet.
ISDN Interfaces	The kind of connection to the network that the device supports (e.g., S/T or U)
Analog Interfaces	The kind of connection to analog phones, fax machines, or modems that the device supports (e.g., RJ-11).
Data Interfaces	The connections for data (or digital) communications that are supported (e.g., V.35, ethernet).
Self Initializing?	After its initial configuration, a terminal which is self initializing can be turned off (unplugged), then turned on again and operate without being reconfigured.
Power Interfaces	How the device is powered.

APIs supported	Application Programming Interfaces permit programs running on a computer to use the services of ISDN in a non-proprietary way. This field lists the APIs that are supported by the product.
Dialing Modes Supported	Indicates the ways in which a user, or computer, can dial-out or receive calls over ISDN.
NIIGs:	NIUF ISDN Interface Groups (NIIGs) provide a means of specifying the call types that can be used with a BRI. For example, if a terminal can place circuit-data calls on two B channels, then the NIIGs supported are 3 (circuit-data on one B channel), and 14 (circuit data on two B channels). NIIGs are defined in Section 5.
NIPGs:	NIUF ISDN Parameter Groups (NIPGs) provide a simple means of ordering features/capabilities for National ISDN. They are a flexible set of building blocks, containing ISDN subscription parameters and their settings, from which services/applications can be constructed. NIPGs are defined in Section 5.
Stores Calling Number Information?	Tells whether the product takes advantage of calling number information services, for example, by displaying the number, logging calls, or using the calling number for screening of voice or data calls.
Additional Features	Extra information to describe the product.
Software/Operating Systems:	States which operating systems and common communications protocols that the product works with.
Data Security Features?	Whether the device supports screening or access control procedures using either the calling number or Media Access Control (i.e., LAN) address of the sender. This is used for "ISDN LAN Bridges and Routers".
Data Over Speech Bearer	The product can send data over an ISDN voice call.
Data Compression	The product can compress data, sending it at rates that are effectively higher than the line speed.
Calls on Demand	A feature of some ISDN LAN Bridges, the product can sense when there is information to send, and automatically place an ISDN call to its peer. When there is no activity, the product hangs up.

Function:	Some multiport and PRI devices provide a variety of functions. Functions are listed here, together with the types of calls that are supported.
Ports?	For multiport devices, lists the number of ISDN interfaces that can be connected to the product.
Split and Combine B channels?	For multiport and PRI devices, states what kinds of higher rate channels are available.
Video/Audio Coding	Lists types of signals that a video conferencing system supports.
Bandwidth Options	For Video Conferencing Systems, lists the bandwith of the video signals supported.
Notes	Used for software, services, and other products, this field describes the product.
Size Range	For PBXs, indicates the number of interfaces that the product can support.
Packet Data Features	For PBXs, describes the support for packet-data available on the system. For example, PAD support, throughput, etc.
Voice Features	For PBXs, indicates the voice features that are available.
Data Bridge	Indicates whether the PBX has built in multipoint data bridging.
BRI Interfaces	For PBXs, indicates which types of BRI are supported.
PRI Interfaces	For PBXs, lists which types of PRIs are supported, i.e., which switch generics