ACCULINK® 3172 and 3174 E1 DSU/CSU

Quick Reference

Document No. 3170-A2-GL10-10

PARADYNE®

Copyright © 2001 Paradyne Corporation.
All rights reserved.
Printed in U.S.A.

Warranty, Sales, Service, and Training Information

Contact your local sales representative, service representative, or distributor directly for any help needed. For additional information concerning warranty, sales, service, repair, installation, documentation, training, distributor locations, or Paradyne worldwide office locations, use one of the following methods:

- **Internet:** Visit the Paradyne World Wide Web site at **www.paradyne.com**. (Be sure to register your warranty at **www.paradyne.com/warranty**.)
- **Telephone:** Call our automated system to receive current information by fax or to speak with a company representative.
  - — Within the U.S.A., call 1-800-870-2221
  - — Outside the U.S.A., call 1-727-530-2340

Document Feedback

We welcome your comments and suggestions about this document. Please mail them to Technical Publications, Paradyne Corporation, 8545 126th Ave. N., Largo, FL 33773, or send e-mail to **userdoc@paradyne.com**. Include the number and title of this document in your correspondence. Please include your name and phone number if you are willing to provide additional information.

Trademarks

ACCULINK is a registered trademark of Paradyne Corporation. All other products and services mentioned herein are the trademarks, service marks, registered trademarks, or registered service marks of their respective owners.

PARADYNE®

ACCULINK® 3172 and 3174 E1 DSU/CSU
Quick Reference

Document Number 3170-A2-GL10-10

July 2001

Product Documentation Online

Complete documentation for this product is available at **www.paradyne.com**. Select *Library* → *Technical Manuals* → *T1/E1 Digital Access Devices.*

Select the following document:

3170-A2-GB20
ACCULINK 3172 and 3174 E1 DSU/CSU Operator's Guide

To request a paper copy of a Paradyne document:

- Within the U.S.A., call 1-800-PARADYNE (1-800-727-2396)
- Outside the U.S.A., call 1-727-530-8623

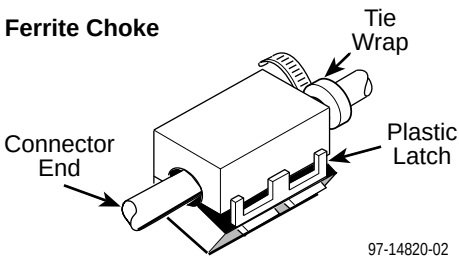
Before installing the DSU/CSU, read the *Important Safety Instructions* on page 16. Also, to ensure compliance with emissions requirements, install ferrite chokes as described in *Quick Start Procedure* on page 2.

Quick Start Procedure

The following procedure is for experienced DSU/CSU users who are familiar with the 317x DSU/CSU installation process and have no special requirements for their application. See the *ACCULINK 317x E1 Data Service Unit/Channel Service Unit Operator's Guide* for more information.

▶ Procedure

1. The DSU/CSU is shipped with a power cable appropriate to the country of installation. Attach the power module cord to the rear of the DSU/CSU and the other end to a grounded AC power outlet. If you intend instead to use a 24 or –48 VDC power supply, see the Operator's Guide.
2. Attach the DSU/CSU network connection to the E1 network using the appropriate cable. Attach the DSU/CSU to the customer premises equipment via the DTE and port connectors.
3. Install ferrite chokes on cables attached to Ports 1 and 2 (Model 3172) or Ports 1–4 (Model 3174):
   - — Pull up on the latch to open the ferrite choke.
   - — Place the ferrite choke on the cable as close to the DSU/CSU as possible.
   - — Close the choke around the cable and press down on the latch to fasten it.
   - — Secure the choke with a cable tie.



4. If you intend to use front panel emulation, connect the cable from the PC to the COM port on the rear panel of the DSU/CSU.
5. Power on the DSU/CSU to perform the power-up self-test.
6. During the power-up self-test, the **FAIL** LED flashes, then all LEDs blink twice. When the test is complete, verify that the DSU/CSU is functional by observing that the **OK**, **NETWORK SIG**, and **DTE SIG** LEDs are lit.
7. If you intend to manage the DSU/CSU with SNMP, cable either the COM or AUX port (as appropriate for your configuration). Then, configure the SNMP management link.
8. If you do not intend to use the DTE Drop/Insert E1 port, disable it using the configuration procedures in *Operation* and *Configuration Options* of the Operator's Guide. (The default setting for this port is **Enabled**.)
9. Configure the ports and channels you intend to use and assign channels to the network interface.

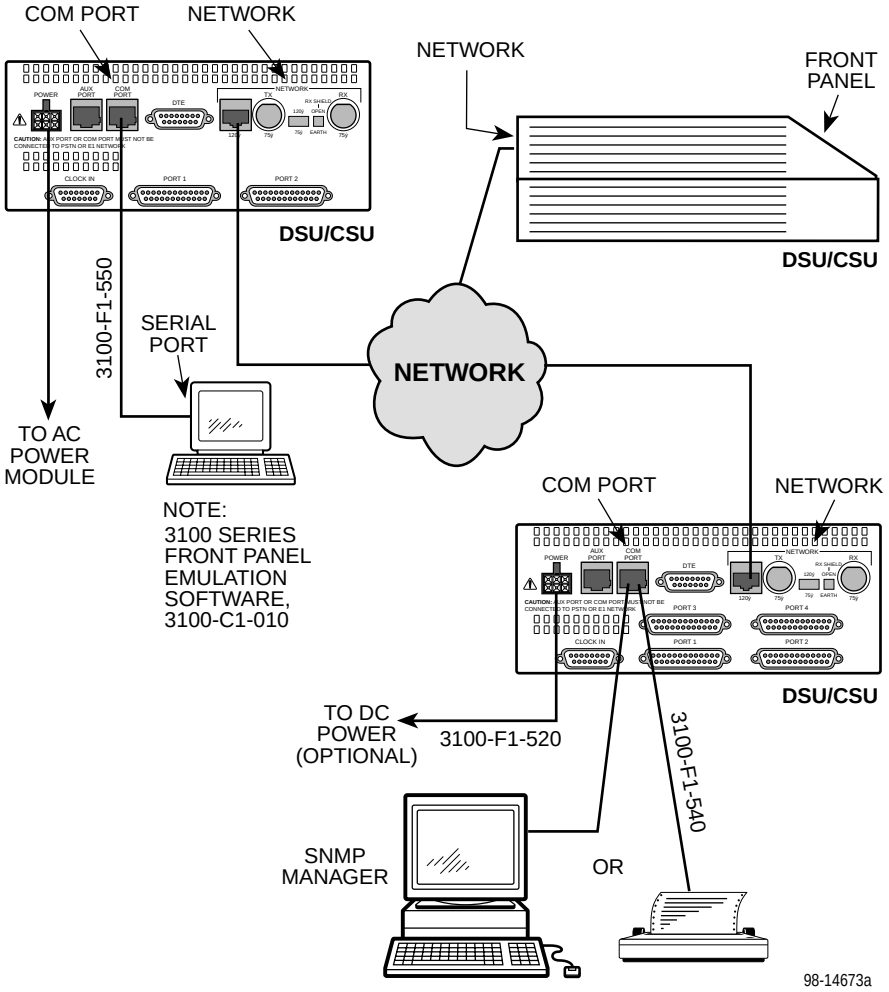
Cabling Examples

The DSU/CSU is supplied with an AC power module. You must provide the DTE and network cables.

Optional cables that you can order from the company are described in *Pin Assignments* in the Operator's Guide.

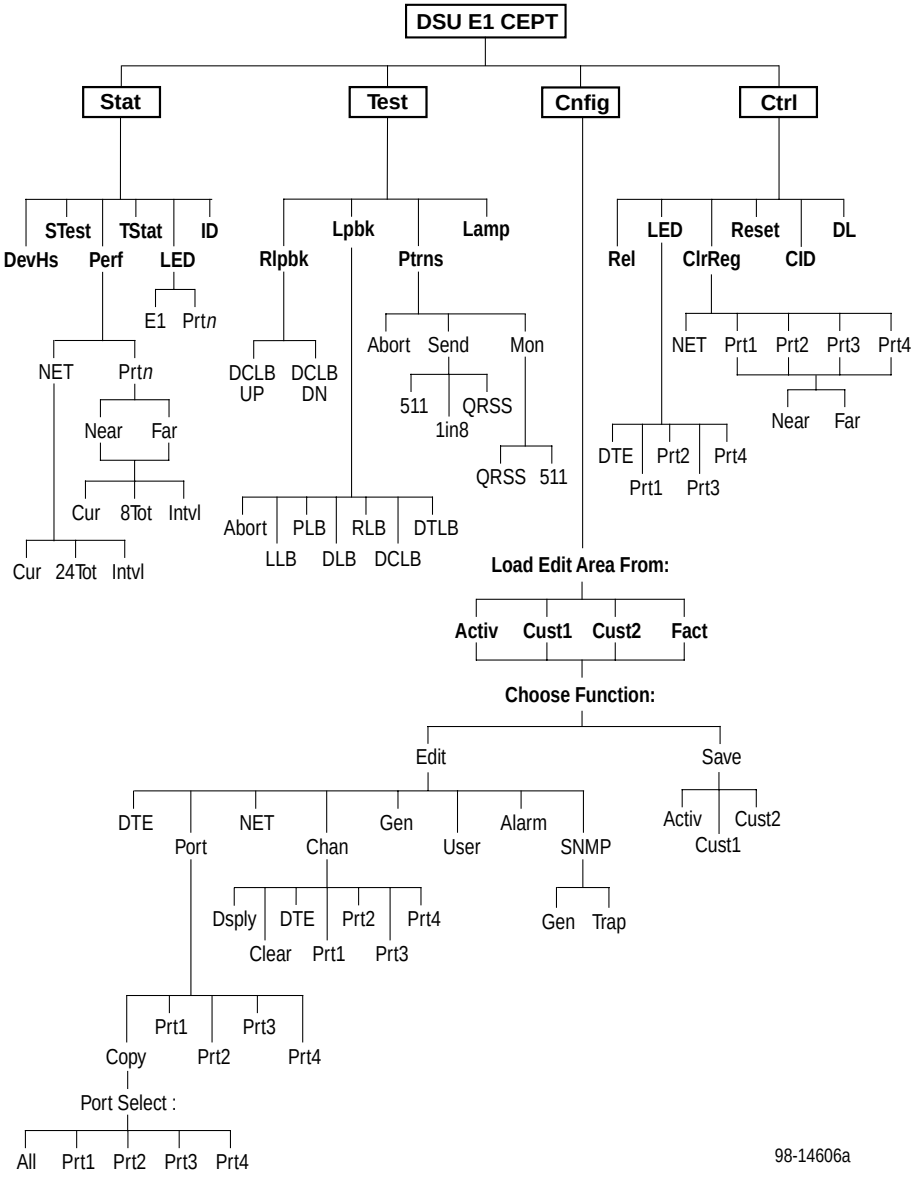
NOTE:

The 120Ω/75Ω switch selects either the 120-ohm balanced network interface or the 75-ohm unbalanced network interface. The RX SHIELD switch selects either an "open" or "earth" shield connection for the 75-ohm RX interface. (This switch must be set to "open" when using the 120-ohm interface.)



Configuration Options

Configuration options are accessed from the Cnfig branch of the front panel menu.



Factory default configuration options are shown in **boldface** type in the following tables.

Table 1. DTE Interface Configuration Options

Option	Factory	Comments/Description
DTE Port:	**Enab**	Enables the use of the DTE Drop/Insert port.
	Disab	
DTE Frame:	CRC4	Selects framing format.
	noCRC	
DTE Coding:	AMI	Selects line coding format.
	HDB3	
Extrn DLB: (External DTE Loopback)	Enab	Allows control of DLB on external contact closure.
	Disab	
Send Ones:	**Enab**	Sends all ones on channels allocated to the network E1 on LOS, LOF, or AIS.
	Disab	

Table 2. Port Configuration Options (1 of 3)

Option	Factory	Comments/Description
Port Type:	**E530**	Selects the port type: EIA-530A, V.35, RS449, or X.21.
	V.35	
	RS449	
	X.21	
Base Rate:	**Nx64**	Enables the port to either Nx56 or Nx64 rates.
	Nx56	
Net DCLB:	Enab	Network-initiated DCLB, allows DCLB to be controlled by inband V.54 codes.
	Disab	

Table 2. Port Configuration Options (2 of 3)

Option	Factory	Comments/Description
Port LB:	**Disab**	Port-initiated Loopbacks, allows Loopbacks to be initiated through the port by the external DTE.
	DTLB	
	DCLB	
	Both	
All Ones:	Disab	All ones sent to network (DTE) E1 when DTR or RTS interrupted.
	DTR	
	RTS	
	Both	
Rcv RAI: (Action on Received Remote Alarm Indication)	None	Data port remains enabled, or is disabled, on receiving RAI on the network interface.
	Halt	
Tx Clock:	**Int**	Selects whether the transmitted data clock is internal (TXC) or external (XTXC).
	Ext	
InvertTxC: (Invert Tx Clock)	Enab	Selects phase inversion of the transmit clock (TXC).
	Disab	
InvertData:	Enab	Allows the data on the port to be inverted.
	Disab	
EDL:	Enab	Specifies whether the Embedded Data Link is enabled.
	Disab	
Err Rate: (Excessive Error Rate)	**10E-4**	Selects the error rate threshold for Excessive Error Rate Alarm.
	10E-5	
	10E-6	
	10E-7	
	10E-8	
	10E-9	

Table 2. Port Configuration Options (3 of 3)

Option	Factory	Comments/Description
Near-end:	**Disab**	Specifies whether the device will maintain near-end performance statistics.
	Maint	
	Send	
	Both	
Far-end:	**Disab**	Specifies whether the device will maintain far-end performance statistics.
	Maint	
Mgmt Link:	Enab	Specifies whether the EDL Management Link is enabled.
	Disab	

Table 3. Network Interface Configuration Options

Option	Factory	Comments/Description
NET Frame:	CRC4	Selects framing format.
	noCRC	
Mgmt Link:	**Disab**	Specifies whether the FDL's Management Link is enabled.
	SNMP	
Circuit Ident:	Edit	Specifies the transmission vendor's circuit identifier.
	Clear	

Table 4. DTE Channel Configuration Options

Option	**Factory**		**Comments/Description**
DTE Channels:	TS16		Selects TS16 for signaling or assigns DS0 channels on the DTE Drop/Insert interface to DS0 channels on the network interface.
	Assign		
TS16:	Data		Specifies whether time slot 16 is reserved for signaling information or available for data.
	Rsvd		
Line 1 Displays:	**Line 2 Displays:**	**Meaning**	**Comments/Description**
N1 N2 N3 ..... N24:	—	**Unassigned**	Function key under the channel (N1, N2, etc.) selects the DTE channel to assign (D1 through D24, or –).
	D1, D2 ... D24	Channel assigned to this DTE channel	
	Prt1 Prt2 Prt3 Prt4	Channel assigned to port 1, 2, 3, or 4	

Table 5. Data Port Channel Configuration Options (1 of 2)

Option	Factory	Comments/Description
Assign To:	**NET**	Assigns this port to channels on the Network or DTE Drop/Insert interface, or to another port.
	DTE	
	Prt*n*	
Assign By:	**Block**	Determines how channels are assigned: contiguous blocks or individual channels.
	Chan	
Port Rate:	64 (56) 128 (112) 192 (168) 256 (224) 320 (280) **384 (336)** 448 (392) 512 (448) 576 (504) 640 (560) 704 (616) 768 (672) 832 (728) 896 (784) 960 (840) 1024 (896) 1088 (952) 1152 (1008) 1216 (1064) 1280 (1120) 1344 (1176) 1408 (1232) 1472 (1288) 1536 (1344) 1600 (1400) 1664 (1456) 1728 (1512) 1792 (1568) 1856 (1624) 1920 (1680) 1984 (1736)	Selects the data rate for the port. The possible rates depend on whether the port is configured for Nx56 or Nx64. This configuration option only appears if the "Assigned By" configuration option is Block.
NOTE: Configuration options in this table are made available after Prt*n* (where *n* is 1 or 2 for the Model 3172 and 1, 2, 3, or 4 for the Model 3174) is selected from the Channel Config screen.		

Table 5. Data Port Channel Configuration Options (2 of 2)

Option	Factory	Comments/Description
Start At:	Clear	Clears (unassigns) channels for this port.
	N1 (D1) N2 (D2) N3 (D3) • • • N31 (D31)	This configuration option appears if the "Assigned By" configuration option is Block or ACAMI.
Line 1 Displays:	**Line 2 Displays:**	**Comments/Description**
N1 N2 N3... N31: (If assigned to NET) D1 D2 D3... D31: (If assigned to DTE)	—	This configuration option appears if the "Assigned By" configuration option is individual channels (Chan). Function key under the channel (N1, N2 etc.) assigns (unassigns) port (1, 2, 3, or 4) to that channel.
	Prt1, Prt2, Prt3, Prt4	
	D1, D2... D31	
	N1, N2... N31	
NOTE: Configuration options in this table are made available after Prt*n* (where *n* is 1 or 2 for the Model 3172 and 1, 2, 3, or 4 for the Model 3174) is selected from the Channel Config screen.		

Table 6. General Configuration Options

Option	Factory	Comments/Description
Pri Clk Src:	**NET**	Selects the primary clock source for the DSU/CSU.
	DTE	
	Prt*n*	
	Int	
	Ext	
Sec Clk Src:	**NET**	Selects the secondary clock source for the DSU/CSU, used in the event of failure of the primary source.
	DTE	
	Prt*n*	
	Int	
	Ext	
Clock Rate:	**2048**	Selects the clock rate of the source if external.
	8	

Table 7. User Configuration Options (1 of 2)

Option	Factory	Comments/Description
Self-Test:	**Enab**	Allows bypass of self-test on initialization.
	Disab	
Com Use:	SNMP	Controls how the COM port is used.
	ASCII	
	Daisy	
Com Type:	**Async**	Controls whether the COM port is synchronous or asynchronous.
	Sync	
Com Clk:	**Int**	Controls whether the COM port uses an internal or external clock.
	Ext	

Table 7. User Configuration Options (2 of 2)

Option	Factory	Comments/Description
Com Rate: (Communication Port Rate)	1.2	Selects the bit rate for the COM port.
	2.4	
	4.8	
	9.6	
	14.4	
	19.2	
	38.4	
Char Length:	7	Selects the character length for the COM port.
	8	
CParity: (Communication Port Parity)	**None**	Selects the parity for the COM port.
	Even	
	Odd	
CStop Bits: (Communication Port Stop Bits)	**1**	Selects the number of stop bits for the COM port.
	1.5	
	2	
Ignore DTR:	Yes	Specifies whether the COM port ignores DTR.
	No	
Aux Use:	**None**	Controls how the auxiliary port is used.
	SNMP	
	Daisy	
Aux Rate:	9.6	Configures the bit rate for the auxiliary port.
	14.4	
	19.2	
	38.4	

Table 8. Alarm Configuration Options

Option	Factory 1	Comments/Description
Alrm Msg:	Enab	Determines whether alarm messages are routed to the ASCII terminal or printer attached to the COM port.
	Disab	
SNMP Trap:	Enab	Sends SNMP traps.
	Disab	

Table 9. General SNMP Configuration Options (1 of 2)

Option	Factory	Comments/Description
System Name:	Edit	The SNMP system name for this device.
	Clear	
System Location:	Edit	The SNMP system location for this device.
	Clear	
System Contact:	Edit	The SNMP system contact name for this device.
	Clear	
CommunityName1:	Edit	A community name that is allowed access to this device. Defaults to *public*.
	Clear	
Access 1:	**Read**	The type of access allowed for community name 1.
	R/W	
CommunityName2:	Edit	A community name that is allowed access to this device.
	Clear	
Access 2:	**Read**	The type of access allowed for community name 2.
	R/W	
IP Adr:	Edit	The IP address needed to access the device.
	Clear	
NetMask:	Edit	The Subnet Mask needed to access the device.
	Clear	

Table 9. General SNMP Configuration Options (2 of 2)

Option	Factory	Comments/Description
Com IP Adr:	Edit	The IP address for the COM port when the COM port is configured for SNMP.
	Clear	
Com NetMask:	Edit	The Subnet Mask needed to access the device when the COM port is configured for SNMP.
	Clear	
Com Link:	**PPP**	The link layer protocol for the COM port when the COM port is configured for SNMP.
	SLIP	
Aux IP Adr:	Edit	Specifies the IP address of the AUX port when the AUX port is configured for SNMP.
	Clear	
Aux NetMask:	Edit	Specifies the Subnet Mask needed to access the device when the AUX port is configured for SNMP.
	Clear	
Def Netwk:	**None**	Specifies the default network destination.
	Com	
	Aux	
	FDL	
	EDL*n*	

Table 10. SNMP Trap Configuration Options

Option	Factory 1	Comments/Description
Num Trap Mgrs:	**1** 2–6	The number of trap managers supported by the device.
Trap*n* IP Adr:	Edit	Specifies the IP address for each trap manager. This configuration option is repeated for all *n* managers.
	Clear	
Trap*n* Dst:	**None**	Specifies the network destination for Trap Manager *n*.
	Com	
	Aux	
	FDL	
	EDL*n*	
Gen Trap:	Disab	Specifies the general trap types to enable: WarmStart, Authentication Failure or both.
	Warm	
	Auth	
	Both	
Entp Trap:	**Enab**	Specifies whether the EnterpriseSpecific trap type is enabled.
	Disab	
Link Trap:	Disab	Specifies the link trap type to enable: Trap on Link Up, Link Down, or both.
	Up	
	Down	
	Both	
Trap I/F:	NET	When any link trap types are enabled, specifies which links to send traps for.
	DTE	
	E1s	
	Ports	
	All	

⚠ Important Safety Instructions

1. Read and follow all warning notices and instructions marked on the product or included in the manual.
2. This product is intended to be used with a 3-wire grounding type plug – a plug which has a grounding pin. This is a safety feature. Equipment grounding is vital to ensure safe operation. Do not defeat the purpose of the grounding type plug by modifying the plug or using an adapter.

   Prior to installation, use an outlet tester or a voltmeter to check the AC receptacle for the presence of earth ground. If the receptacle is not properly grounded, the installation must not continue until a qualified electrician has corrected the problem.

   If a 3-wire grounding type power source is not available, consult a qualified electrician to determine another method of grounding the equipment.
3. Slots and openings in the cabinet are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, these slots and openings must not be blocked or covered.
4. Do not allow anything to rest on the power cord and do not locate the product where persons will walk on the power cord.
5. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous high voltage points or other risks. Refer all servicing to qualified service personnel.
6. General purpose cables are provided with this product. Special cables, which may be required by the regulatory inspection authority for the installation site, are the responsibility of the customer.
7. When installed in the final configuration, the product must comply with the applicable Safety Standards and regulatory requirements of the country in which it is installed. If necessary, consult with the appropriate regulatory agencies and inspection authorities to ensure compliance.
8. A rare phenomenon can create a voltage potential between the earth grounds of two or more buildings. If products installed in separate buildings are **interconnected**, the voltage potential may cause a hazardous condition. Consult a qualified electrical consultant to determine whether or not this phenomenon exists and, if necessary, implement corrective action prior to interconnecting the products.
9. Input power to the AC voltage configuration of this product must be provided by one of the following: (1) a UL Listed/CSA certified power source with a Class 2 or Limited Power Source (LPS) output for use in North America, or (2) a certified power source with a Safety Extra Low Voltage (SELV) output for use in the country of installation.

   Input power to the DC voltage configurations of this product must be provided by one of the following: (1) a National Electric Code (NEC)/Canadian Electric Code (CEC) Class 2 circuit for use in North America, or (2) a certified Safety Extra Low Voltage (SELV) circuit input for use in the country of installation.

10. In addition, if the equipment is to be used with telecommunications circuits, take the following precautions:

- — Never install telephone wiring during a lightning storm.
- — Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- — Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- — Use caution when installing or modifying telephone lines.
- — Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
- — Do not use the telephone to report a gas leak in the vicinity of the leak.

EMI Notices

⚠ UNITED STATES – EMI NOTICE:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

The authority to operate this equipment is conditioned by the requirements that no modifications will be made to the equipment unless the changes or modifications are expressly approved by Paradyne Corporation.

⚠ CANADA – EMI NOTICE:

This Class A digital apparatus meets all requirements of the Canadian interference-causing equipment regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du règlement sur le matérial brouilleur du Canada.

CE Marking

Models 3172-A1-410 and 3174-A1-410 of this product are marked with the CE mark. This mark has been affixed to demonstrate full compliance with the following European Directives:

- **Directive 73/23/EEC –** Council Directive of 19 February 1973 on the harmonization of the laws of the member states relating to electrical equipment designed for use within certain voltage limits, as amended by Directive 93/68/EEC.
- **Directive 89/336/EEC** – Council Directive of 3 May 1989 on the approximation of the laws of the member states relating to Electro-Magnetic Compatibility (EMC), as amended by Directive 93/68/EEC**.**
- **Directive 91/263/EEC** – Council Directive of 29 April 1991 on the approximation of the laws of the member states concerning telecommunication terminal equipment, including the mutual recognition of their conformity, as amended by Directive 93/68/EEC. The application of this directive is in relation only to network connection via the 120-ohm G.703 interface as specified in CTR12.

3170-A2-GL10-10