Installing and Programming the Caller ID Feature

1.0   Introducing the Caller ID Feature

The caller ID feature supports an externally connected, customer-supplied caller ID device illustrated in Figure 1. Depending on the model you have, this hardware device supports either four or eight caller ID conditioned lines per unit. You can serially connect four- and eight-port devices to give larger systems the ability to support a maximum of 68 caller ID conditioned lines. The number of caller ID conditioned lines that can be used on a smaller system such as the DSU/DSU II depend on the system's line capacity (usually 24 lines with expansion added).

The caller ID unit interfaces with the common equipment cabinet through any undedicated serial data port. Any proprietary LCD speakerphone can receive and display caller ID information. The display conveys all available caller ID information from the time the call rings at the station, through all line transitions, until the line disconnects.

The communications system stores caller ID information in its SMDA storage and makes it available in the SMDA printout.

2.0   Installing The Caller ID Device

Installation Notice
The Underwriters Laboratories regulation 1459, 2nd edition, requires that you be made aware of the following precautions when installing a telephone that is to be directly connected to the telephone company network:

1. Never install telephone wiring during a lightning storm.
2. Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
3. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
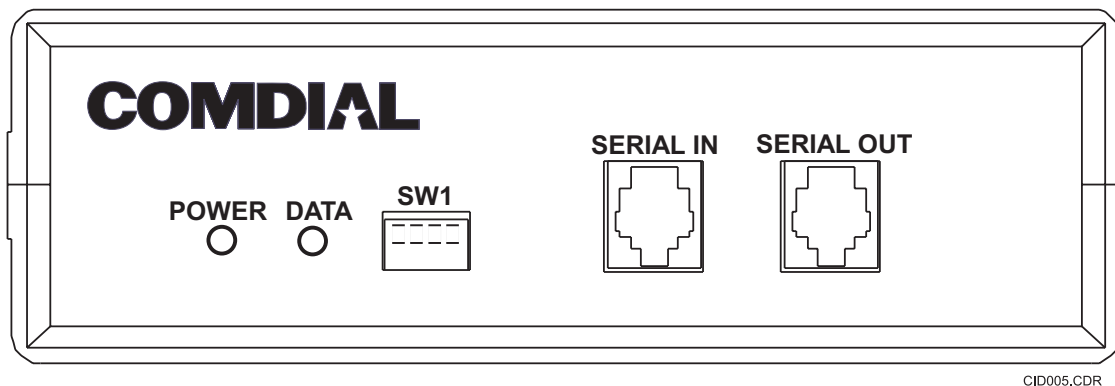4. Use caution when installing or modifying telephone lines.

Figure 1. Caller ID Device

2.1   Using the Systems' Installation Instructions

Install the caller ID device with the communications system. If necessary, refer to the following publications for additional information depending on which communications system you have: IMI66–001, *Installing the DXP Common Equipment Cabinet;* IMI66–105, *Installing the DXP Plus Common Equipment Cabinet; IMI66-134 or FX_CABNT.PDF, Installing the FX Series System Commn Equipment Cabinet*. For DSU and DSU II systems, refer to IMI66-107 and IMI66-132 respectively, *System Hardware and Software Instructions.* You can find the appropriate publication in your system hardware instructions binder.

2.2   Mounting the Caller ID

You can either surface-mount or wall-mount the caller ID. To surface-mount the device, set it on a flat, solid surface close to the communications system.

To wall-mount the caller ID, follow these steps:

1. Insert two #10 panhead screws (obtained locally) in the wall until their heads are within 1/8-inch of the wall surface. Use the spacing dimensions shown in the template provided in Figure 2. Use appropriate anchoring hardware when mounting the device on a hollow wall.
2. Position the keyhole-shaped holes in the bottom of the caller ID device over the screw heads. Slide the device down until a slight click is felt.
3. To remove the caller ID, lift it up to unsnap both screws from the bottom, and then lift it away from the wall.
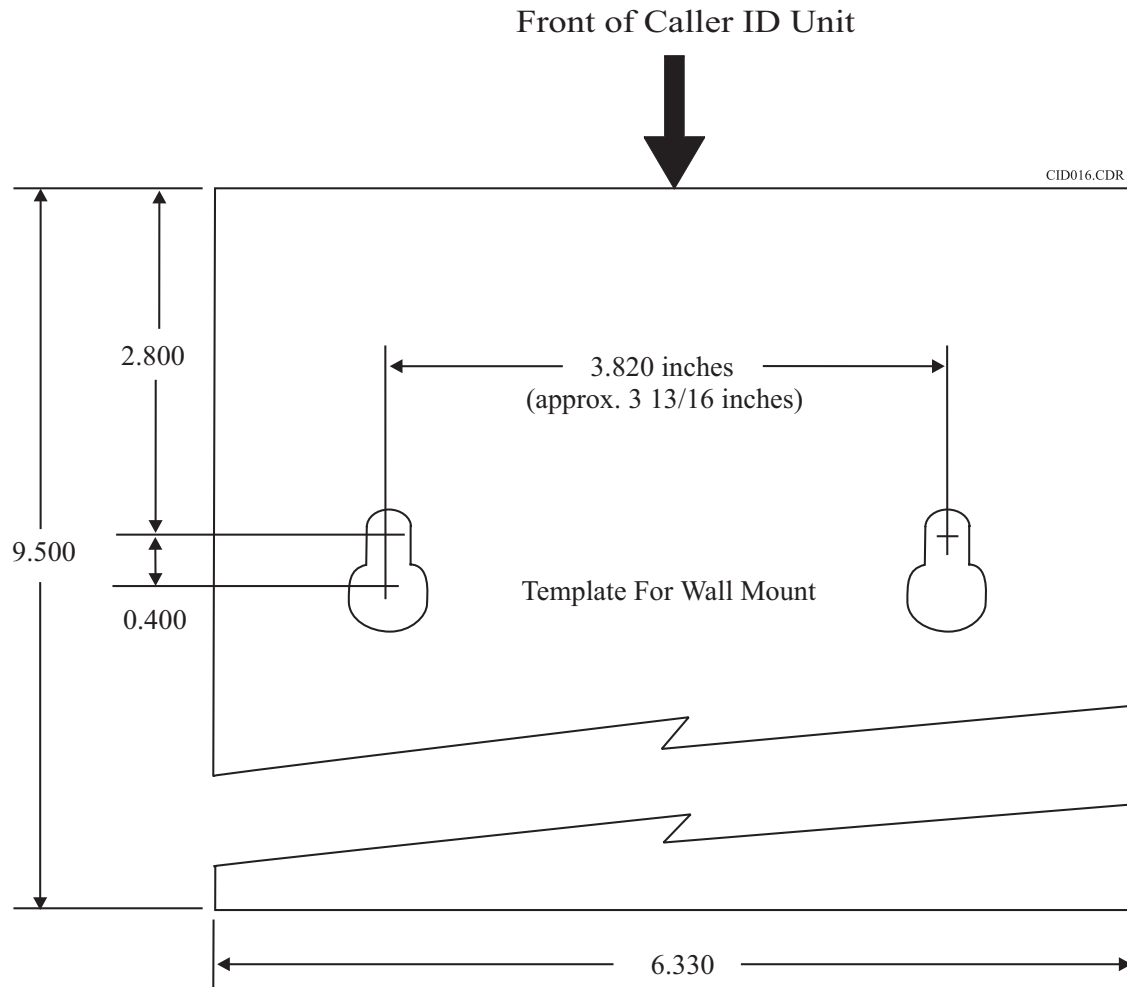
Front of Caller ID Unit

CID016.CDR

2.800

3.820 inches
(approx. 3 13/16 inches)

9.500

Template For Wall Mount

0.400

6.330

Figure 2. Template For Caller ID Wall Mounting

2.3   Connecting the Caller ID to the System

See Figures 8 and 10 for the interconnection diagrams. Figures 9 and 11 illustrate the method for interconnecting multiple caller ID units.

1. Connect the line port modular jacks on the caller ID device to the CO line connections using the kit-supplied cable. See Figure 3 for connection details and Figures 6 and 7 for the modular jack locations on the caller ID. Also, connect these CO lines to the communications system's common equipment cabinet.

2. Connect the caller ID device's serial data out connector (labeled RS232 Out) to a serial data port on the common equipment cabinet of the communications system. See Figure 5. Use the kit-supplied 6-conductor modular line cord for this connection. Use a serial data port on the common equipment as follows: DXP system, use either the RS-232 port 1, port 2 or any undedicated serial data port provided by an installed communications card; DXP *Plus* system, use any undedicated serial data port provided by an installed communications card; FX Series system, use any serial data port labeled COM3 - COM 10; DSU system, use Data Port B; DSU II system, use COM2; Unisyn sytem, use Data Port B. See Figure 3 for the connection details.

3. Connect the caller ID device's power supply to an 120 VAC electrical outlet, and connect the power supply's output cable to the power connector on the rear of the caller ID device illustrated in Figure 7. Verify the POWER LED is constant ON.

4. Set the parameter switches SW1 (see section 2.4).

5. Verify operation by observing the DATA LED. This LED should light during an incoming call on a caller ID enabled line, usually after the first ring burst.
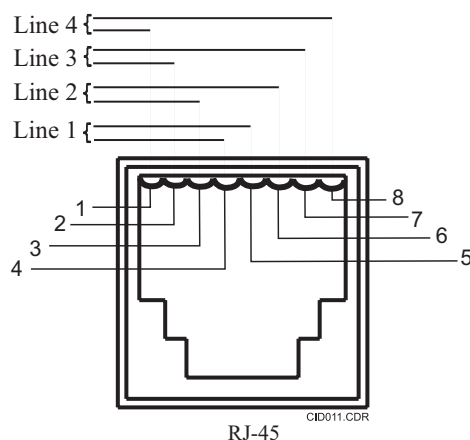

Figure 3. Detailing The Line Connections

Modular Jack	Serial Out Jack	Serial In Jack
Pin 1	N/C	RTS (out)
Pin 2	SG	CTS (in)
Pin 3	N/C	RD (in)
Pin 4	TD (out)	N/C
Pin 5	RTS (out)	SG
Pin 6	CTS (in)	N/C

Connect To Serial Data Port
On Common Equipment Cabinet
Using Kit-Supplied
6-Conductor Line Cord

RJ-11
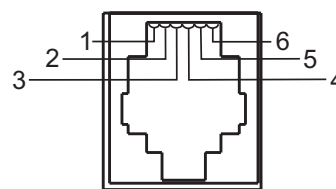
Modular Jack (Front View)

Figure 4. Detailing The Serial Data Connections

Modular RJ-11 Serial Data Connectors

COMDIAL

POWER   DATA   **SW1**   **SERIAL IN**   **SERIAL OUT**

CID006.CDR
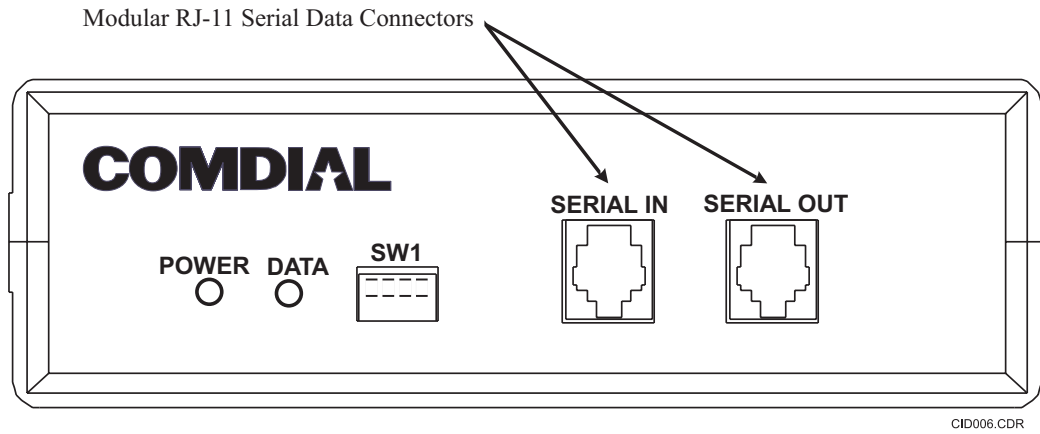
Figure 5. Locating The Caller ID Serial Connections (Front View)

Modular RJ-45 Line Jack

PORTS 1-4   **POWER IN**

Power Supply Connector

CID007.CDR
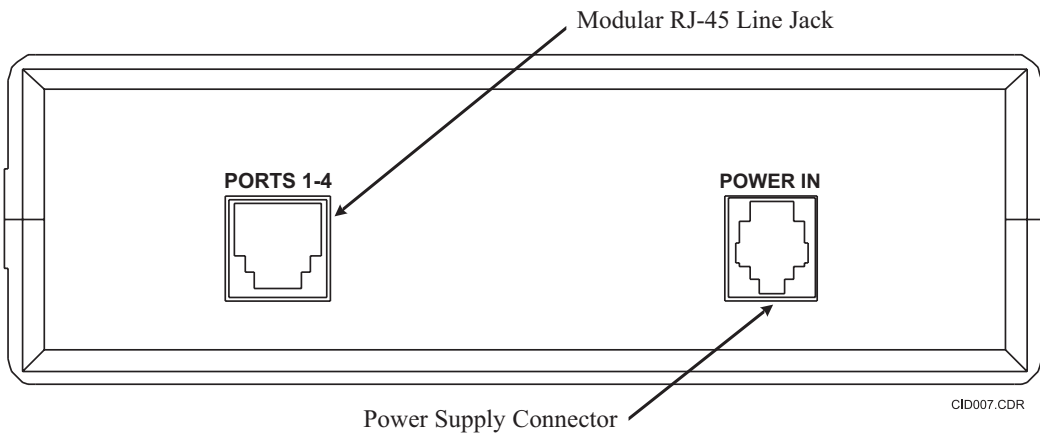
Figure 6. Locating The Four-Port Caller ID Connections (Rear View)

Modular RJ-45 Line Jacks

PORTS 1-4   **PORTS 5-8**   **POWER IN**

Power Supply Connector

CID008.CDR

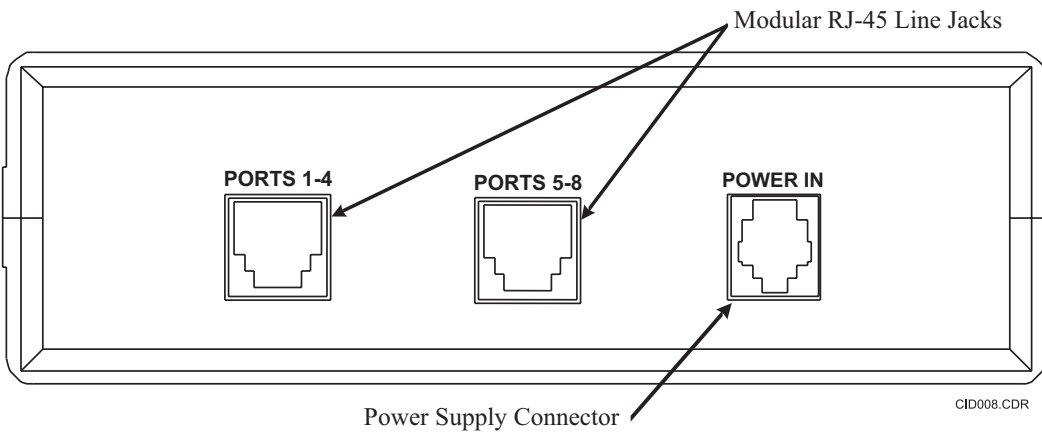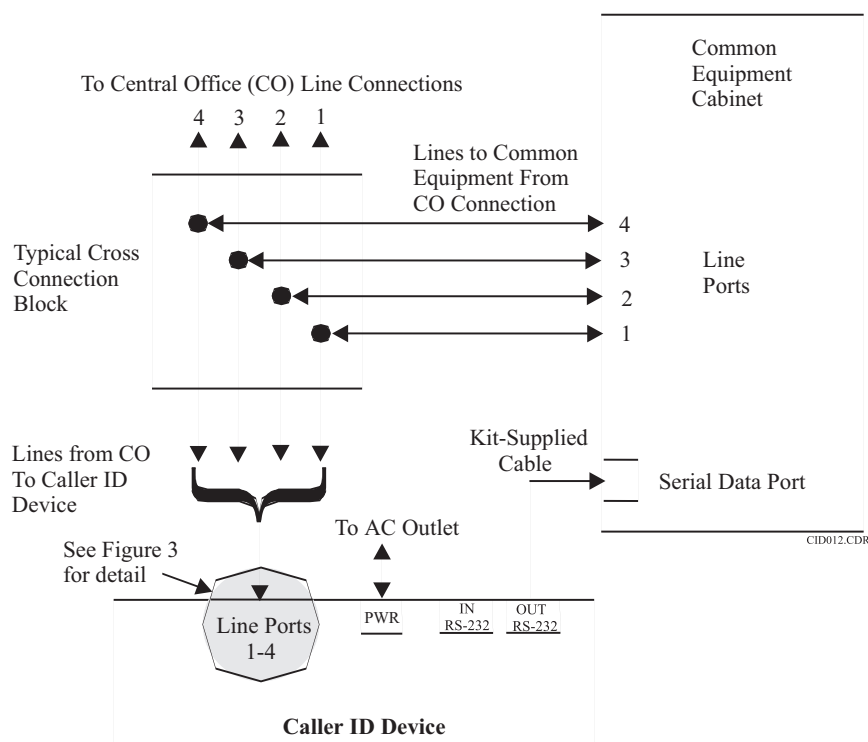*Figure 7. Locating The Eight-Port Caller ID Connections (Rear View)*

Figure 8. Interconnecting The Four-Port Caller ID Device And The Communications System
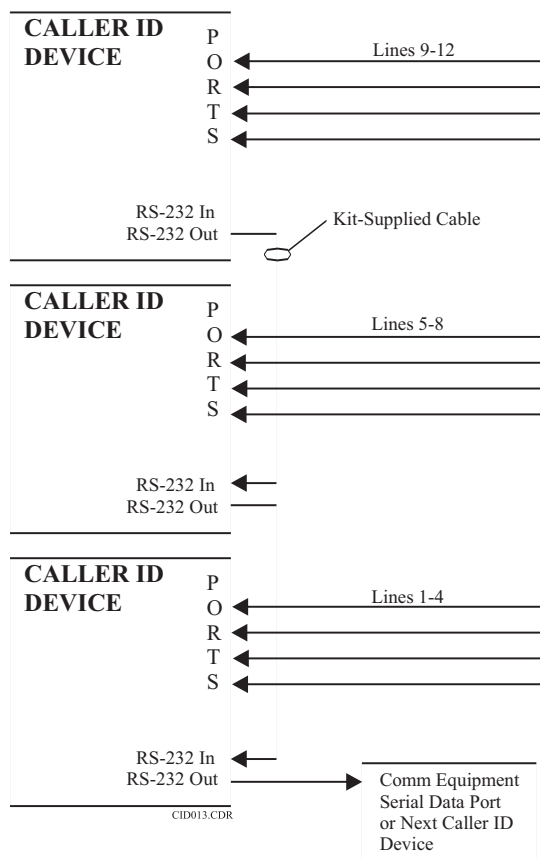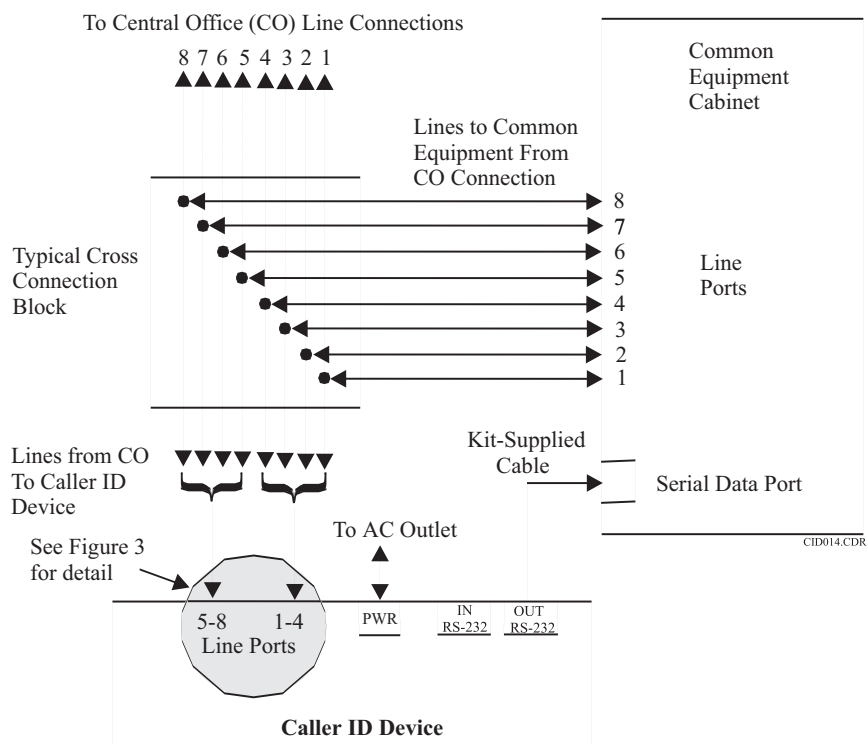

Figure 9. Stacking Four-Port Caller ID Devices

Figure 10. Interconnecting The Eight-Port Caller ID Device And The Communications System
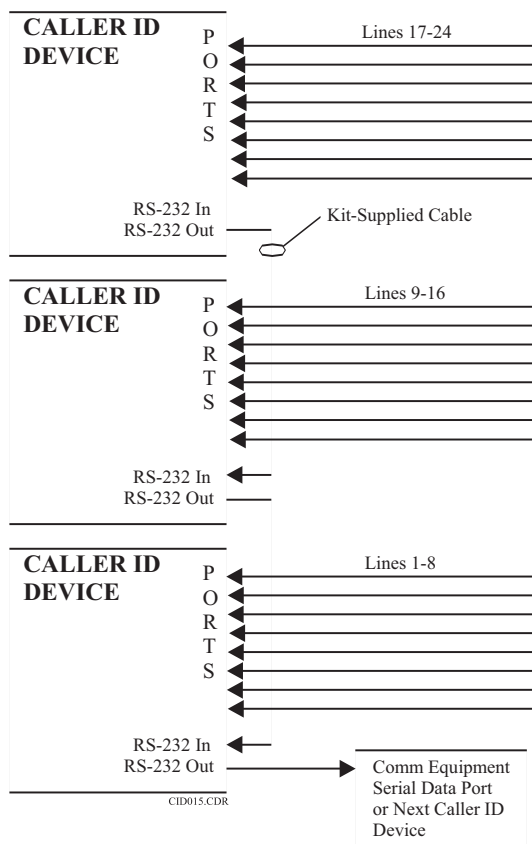

Figure 11. Stacking Eight-Port Caller ID Devices

2.4   Setting the Parameter Switches

The caller ID device has one bank of parameter-controlling Dual In-Line Pin (DIP) switches located on its front panel. This bank of switches illustrated in Figure 12 is labeled SW1.

On this Caller ID model, there are no DIP switches for setting baud rate, data bits, parity, and stop bits. These parameters are fixed at 9600 baud, 8 data bits, no parity bits, and 1 stop bit (9600, 8, N, 1).

When you are installing multiple caller ID devices, set switches SW1-1 through SW1-4 to the settings detailed in the chart shown below.

A DIP switch is ON when it is in the UP position.

Switch SW1-1	Switch SW1-2	Switch SW1-3	Switch SW1-4	Box ID
OFF	OFF	OFF	OFF	1
ON	OFF	OFF	OFF	2
OFF	ON	OFF	OFF	3
ON	ON	OFF	OFF	4
OFF	OFF	ON	OFF	5
ON	OFF	ON	OFF	6
OFF	ON	ON	OFF	7
ON	ON	ON	OFF	8
OFF	OFF	OFF	ON	9
ON	OFF	OFF	ON	10
OFF	ON	OFF	ON	11
ON	ON	OFF	ON	12
OFF	OFF	ON	ON	13
ON	OFF	ON	ON	14
OFF	ON	ON	ON	15
ON	ON	ON	ON	16

Note: It is possible to mix 4-port and 8-port boxes in any combination desired for a total number of lines up to 68 if the last box added is a 8-port box. If the last box added is a 4-port box, the maximum number of lines is 64.

For example, any of the following combinations would be acceptable for a 16-line installation:

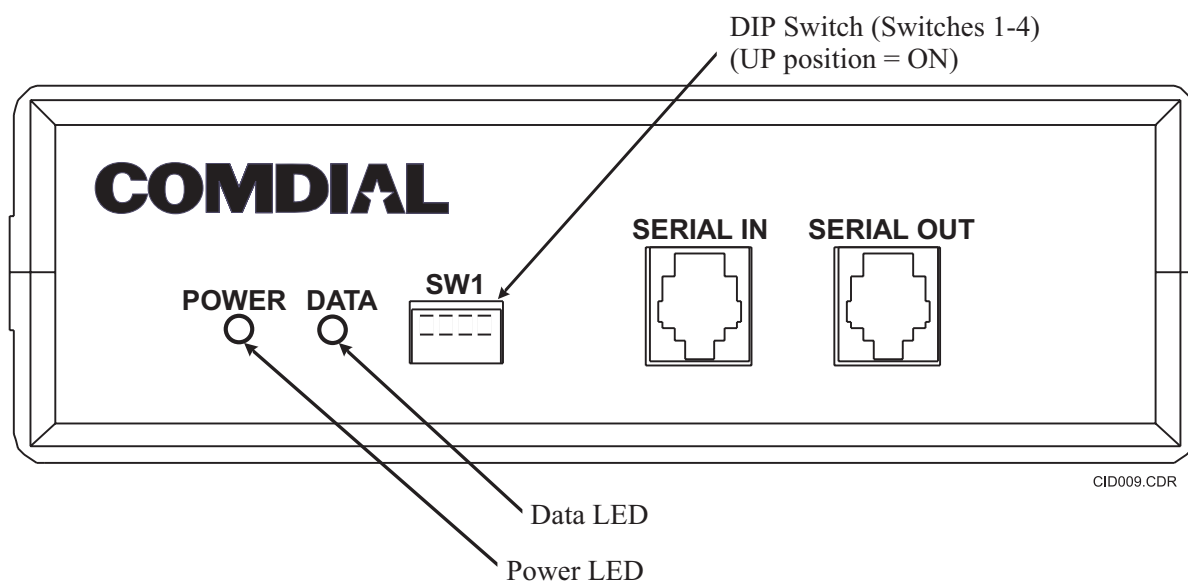| Box ID	Combination 1	Combination 2	Combination 3
1	8-port box lines 1-8	8-port box lines 1-8	4-port box lines 1-4
2	8-port box Lines 9-16	4-port box lines 9-12	4-port box lines 5-8
3		4-port box lines 13-16	4-port box lines 9-12
4			4-port box lines 13-16

Figure 12. Locating The DIP Switches

3.0 Programming The DXP, DXP Plus, And FX Series For The Caller ID Feature

In programming the common equipment for caller ID support, you must match the data baud rate with that of the caller ID device (9600, 8, N, 1), you must enable the caller ID lines, and you must assign them to ring on the telephones. Calls will ring on the assigned telephones as well as on telephones to which a call is transferred. In addition, caller ID programming options allow you to set the absorb ring time (amount of time the system waits while it generates caller ID information before it generates system ringing); enable the deleting of the viewed RNA records when viewed by any user; and enter the local area codes and local exchange codes that you want the system to skip when it automatically dials a return call. You can also assign caller ID ring no-answer (RNA) capability to the telephones that are on caller ID lines. Users of these telephones have the ability to review this caller ID RNA information and return the call. They can also note if anyone else has already viewed a record thus preventing redundant returns.

A station user may automatically retrieve and dial the last, first, or any in between Caller ID number displayed at his or her station by using a "SAVE" button assigned to the station.

Also, a station user may transfer calls to another station causing that station to ring. If the other station has caller ID capability, the caller information will also transfer.

3.1 Making Caller ID Active

When caller identification (ID) information is available from the central office, you must take the following programming actions in VMMI to make Caller ID active in the system:

1. Match the line ports to the caller ID feature.
    LINES│LINE PROGRAMMING│LINE TYPE SPECIFIC│. . .
2. Assign the caller ID lines to the stations as delayed or directed ringing lines.
    STATIONS│STATION PROGRAMMING│RINGING ASSIGNMENTS│. . .
3. Enable line answer and line originate in a class of service.
    STATIONS│CLASS OF SERVICE│PAGE 5│. . .
4. Assign the line answer and line originate class of service to the stations (as day COS and/or night COS).
    STATIONS│STATION PROGRAMMING│GENERAL│. . .
5. Assign special-purpose station buttons to control the feature.
    STATIONS│STATION PROGRAMMING│BUTTON MAPPING│. . .

3.2 Setting Baud Rate For Caller ID

You must program the parameters of the serial data port where you have connected the caller ID device. The serial data port parameters must match the data parameters of the caller ID device which are 9600 baud, eight data bits, no parity bit, and one stop bit. Flow control or handshaking is "None." Program the serial data port parameters from the following VMMI programming screen:

SYSTEM│SERIAL PORTS. . .

3.3   Setting the Absorb Ring Time

You must specify the amount of time the system waits while it generates caller ID information before it generates system ringing. Do this from the following VMMI programming screen:

PERIPHERALS │ CALLER ID │ OPTIONS │ . . .

3.4   Reviewing Caller ID Ring No-Answer (RNA) Calls

This feature offers telephone users the ability to use their telephone's display to review calls that ring at their stations while they are away. The system stores caller ID RNA records and allows users to review them and use one-button dialing to return those calls that need returning. The feature also displays the identification of the last station that reviewed the records thus helping to prevent multiple call backs to the same number. After users review the caller ID RNA records, the system deletes the records from their telephones yet retains the records in the SMDA storage so that the users can look at the records later if they must. Activate this feature with action taken on the following VMMI programming screen:

STATIONS │ STATION PROGRAMMING │ RINGING ASSIGNMENTS │ . . .

3.5   Deleting the Viewed RNA Record

When the system makes caller ID RNA information available to a group of stations, any station user in the group can review the information by pressing the telephone's CID button. When he or she does this, the system removes the record from that telephone but continues to flash the CID button status light for other stations in the group. If you enable this feature, the system will remove the caller ID record from all telephones if any user in the group views a record. Enable this feature from the following VMMI programming screen:

PERIPHERALS │ CALLER ID │ OPTIONS │ . . .

3.6   Constructing The Local Call Table

When telephone users review caller ID RNA calls, they press their SAVE button to return the call, and the system automatically dials the number. If the area code or office code part of the stored number matches the entries that you program with this procedure, the system will skip that part of the number as it dials. Take programming action on the following VMMI programming screen to choose those area and office codes that you want the system to skip:

PERIPHERALS │ CALLER ID │ LOCAL CALL TABLE │ . . .

4.0   Programming The DSU, And The DSUII For The Caller ID Feature

4.1   Caller ID Service Support

You must program lines and stations for Caller ID service per the instructions in this section.

NOTE: When programming using the telephone, a lighted LED next to the programming button for the selection indicates the current status. When a single button provides a toggle (on/off) action, the lighted LED indicates the active feature.

Since the station receives Caller ID data between the first and second rings, you can arrange for the first ring on Caller ID lines to be either audible or silent. Selecting the silent option ensures that the Caller ID data is displayed prior to ringing, eliminating the loss of Caller ID data because of premature answering.

A station user may automatically retrieve and dial the last Caller ID number displayed at his or her station by using a "SAVE" button assigned to the station.

CAUTION

Seven-, eight-, and 11-digit numbers are always dialable while 10-digit numbers must be transformed by the system before they are dialable. To arrange for the system to transform a 10-digit number into dialable format, you must use the VDT programming method to program the local area code and 6-digit area/office codes into the system's memory. You cannot do this from station 10 or 12.

All Caller ID features require that the customer-supplied Caller ID interface deliver its data to the system's RS232 data port, data port B/COM2. You must configure this port to match the output of the decoder device. The recommended configuration is 9600 baud, with eight data bits and one stop bit.

The system provides Caller ID information as part of the SMDR printout. An example of this appears below.

Caller ID Information On SMDR Printout

Call #	Station #	Line #	Date	Time	Call length	Answer Time	Called or Calling #	Call Cost
1	1000	12	10/15/92	04:38	0.1		123456789 0123456	$ 0.51
2	12	3	10/15/92	00:56	0.2		5551212	
3		1	10/15/92	00:56	NOANS	.2	/5551234	
4	10	1	10/15/92	00:56	0.1	.1	/5551234	
5		4	10/15/92	01:00	NOANS	.2		
6	10	4	10/15/92	01:00	0.1	.0		
7	10	1(D)	10/15/92	04:23	0.2	.1	/5556789	$ 0.00
8	10	1(D)	10/15/92	04:19	0.2	.1		$ 0.00

(1) outgoing call
(2) outgoing call
(3) unanswered incoming call, with Caller ID
(4) answered incoming call, with Caller ID

(5) unanswered incoming call, without Caller ID
(6) answered incoming call, without Caller ID
(7) answered incoming DISD call, with Caller ID
(8) unanswered incoming DISD call, without Caller ID

If SMDR printout is not already turned on (default), turn it on as follows:

1. Press **ITCM** and dial ✻#**746**✻.

2. Dial **772**.   *"SMDR PRINT XXX"*

3. Dial **1** to enable printout.   *"SMDR PRINT ON"*

4. Dial ✻✻ for configuration mode or **SPEAKER** to quit.

As an option, you can arrange for the system to provide Caller ID data distribution through the RS232 data port B/COM 2 to a personal computer (PC) just as it supplies SMDA data to a data printer. This data consists of four special-purpose messages and is in the ASCII format suitable for use with PC-based application programs. The messages are as follows:

Typical Message 1—sent out as soon as Caller ID data arrives from the CO

Message ID and Identifier (3 bytes)			Line No. (2 bytes)		Caller ID Data (15 bytes)																End of Message (2 bytes)	
3E	3C	31	30	35	31	2D	38	30	34	2D	39	37	38	2D	32	32	30	30	20		0D	0A
>	<	1	0	1	1	—	8	0	4	—	9	7	8	—	2	2	0	0			CR	LF

Typical Message 2—sent when a ringing line with CID is answered or retrieved from hold.

Message ID and Identifier (3 bytes)			Line No. (2 bytes)		Station No. (2 bytes)		End of Message (2 bytes)	
3E	3C	32	31	32	31	30	0D	0A
>	<	2	1	2	1	0	CR	LF

Typical Message 3—sent when CID data is not received from answered line or when a line is taken off-hook

Message ID and Identifier (3 bytes)			Line No. (2 bytes)		Station No. (2 bytes)		End of Message (2 bytes)	
3E	3C	33	31	35	31	32	0D	0A
>	<	3	1	5	1	2	CR	LF

Typical Message 4—sent when line is made idle

Message ID and Identifier (3 bytes)			Line No. (2 bytes)		End of Message (2 bytes)	
3E	3C	34	30	35	0D	0A
>	<	4	0	5	CR	LF

4.1.1 Assigning Caller ID Lines *(required programming)*

Description: Programs lines to receive Caller ID service.

To Program: 1.   Dial **47**.   *"CALLER ID LINES"*

                      2.   Select line ports (LED On = Selected)
Line Port 1–14 = Dial **01–14** or **A1–A14**
Line Port 15, 16 = Dial **15**, **16** or press **B1**, **B2**
Line Port 17–24 = Dial **17–24** or press **HOLD**
and then press **A1–A8**.

                      3.   Press ✳ for configuration mode.

4.1.2 Assigning Caller ID Stations *(required programming)*

Description: Programs stations to receive Caller ID information.

To Program: 1.   Dial **53**.   *"STATION FEATURES"*

                      2.   Dial **36**.   *"CALLER ID STA."*

                      3.   Select station ports. (LED On = Selected)
—Station 10–57 = Dial **10–57** or press **C10–C57**.

                      4.   Press ✳✳ for configuration mode.

4.1.3 Configuring Data Port B/COM 2 Serial Data Port *(required programming)*

Description: If the data port B/COM 2 serial data port is not currrently set at its default values (9600 baud, 8 data bits, and 1 stop bit) program that port to have those values so that it will receive Caller ID data.

To Program: 1.   Dial **15**.   *"BAUD RATE"*

                      2.   Dial **2** for data port B or COM 2.

                      3.   Press **A10** for 9600 baud.   *"W nD nS 9600"*

                      4.   Dial **11** or press **A14** for 8 data bits
and 1 stop bit.   *"W 8D 1S ZZZZZ"*

                      5.   Dial ✳✳ for configuration mode.

4.1.4 Setting The Audible First Ring Feature *(optional programming)*

Description: Turns on the Audible First Ring feature for the system.

To Program: 1. Dial **17**.   *"SYSTEM FEATURES"*

2. Dial **01**.   *"CID FIRST RING"*

3. Dial **1** to enable the audible first ring (LED on)
    —OR—
    Dial **2** to silence the first ring on Caller ID lines.

4. Press ✳✳ for configuration mode.

4.1.5 Setting The Caller ID Distribution *(optional programming)*

Description: Sends Caller ID information to data port B for access by a PC.

To Program: 1. Dial **17**.   *"SYSTEM FEATURES"*

2. Dial **02**.   *"CID DISTRIBUTION"*

3. Dial **1** to enable Caller ID distribution (LED on)
    —OR—
    Dial **2** to disable Caller ID distribution.

4. Press ✳✳ for configuration mode.

4.1.6 Assigning A "SAVE" Button *(optional programming)*

Description: Selects a "SAVE" button to display and redial the most recent Caller ID number received at a station.

To Program: 1. Dial **56**.   *"BUTTON MAPPING"*

2. Dial **08**.   *"ASSIGN SAVE"*

3. Select button to be programmed
    —press **A1–A14**, **B1–B10**.

4. Select station ports to have SAVE button (LED On = Assigned)
    —station 10–57 = Dial **10–57** or press **C10–C57**.

5. Press ✳✳✳ for configuration mode.

5.0   Programming The Unisyn For The Caller ID Feature

5.1   Caller ID Service Support

You must program lines and stations for Caller ID service per the instructions in this section.

NOTE: *When programming using the telephone, a lighted LED next to the programming button for the selection indicates the current status. When a single button provides a toggle (on/off) action, the lighted LED indicates the active status.*

Since the station receives Caller ID data between the first and second rings, you can arrange for the first ring on Caller ID lines to be either audible or silent. Selecting the silent option ensures that the Caller ID data is displayed prior to ringing, eliminating the loss of Caller ID data to premature answering.

All Caller ID features require that the customer-supplied Caller ID interface deliver its data to the system's RS232 data port B. You must configure this port to match the output of the decoder device. The recommended configuration is 9600 baud, with eight data bits and one stop bit.

The system provides Caller ID information as part of the SMDR printout. An example of this appears below.

Caller ID Information On SMDR Printout

Call #	Station #	Line #	Date	Time	Call length	Answer Time	Called or Calling #
1	1000	6	10/15/92	04:38	0.1		1234567890 123456
2	12	3	10/15/92	00:56	0.2		5551212
3		1	10/15/92	00:56	NOANS	.2	/5551234
4	10	1	10/15/92	00:56	0.1	.1	/5551234
5		4	10/15/92	01:00	NOANS	.2	
6	10	4	10/15/92	01:00	0.1	.0	

(1) outgoing call
(2) outgoing call
(3) unanswered incoming call, with Caller ID
(4) answered incoming call, with Caller ID

(5) unanswered incoming call, without Caller ID
(6) answered incoming call, without Caller ID

If SMDR printout is not already turned on (default), turn it on as follows:

1. Press **ITCM** and dial **✳#746✳**.

2. Dial **772**.   *"SMDR PRINT XXX"*

3. Dial **1** to enable printout.   *"SMDR PRINT ON"*

4. Dial **✳✳** for configuration mode or **SPEAKER** to quit.

5.1.1 Assigning Caller ID Lines *(required programming)*

Description: Programs lines to receive Caller ID service.

To Program: 1. Dial **47**.   *"CALLER ID LINES"*

2. Select line ports (LED On = Selected)
   Line Port 1–6 = Dial **01–06** or press **B1–B6**.

3. Press ✳ for configuration mode.

5.1.2 Assigning Caller ID Stations *(required programming)*

Description: Programs stations to receive Caller ID information.

To Program: 1. Dial **53**.   *"STATION FEATURES"*

2. Dial **36**.   *"CALLER ID STA."*

3. Select station ports. (LED On = Selected)
   —Station 10–25 = Dial **10–25** or press **A1–A16**.

4. Press ✳✳ for configuration mode.

5.1.3 Configuring Data Port B Serial Data Port *(required programming)*

Description: If serial data port B (labeled RS232 #2) is not currrently set at its default values (9600 baud, 8 data bits, and 1 stop bit) program that port to have those values so that it will receive Caller ID data.

To Program: 1. Dial **15**.   *"BAUD RATE"*

2. Dial **2** for Data Port B.

3. Press **A11** for 9600 baud.   *"W nD nS 9600"*

4. Dial **11** or press **A16** for 8 data bits
   and 1 stop bit.   *"W 8D 1S ZZZZZ"*

5. Dial ✳✳ for configuration mode.

5.1.4 Setting The Audible First Ring Feature *(optional programming)*

Description: Turns on the Audible First Ring feature for the system.

To Program: 1. Dial **17**.   *"SYSTEM FEATURES"*

2. Dial **01**.   *"CID FIRST RING"*

3. Dial **1** to enable the audible first ring (LED on)
   —OR—
   Dial **2** to silence the first ring on Caller ID lines.

4. Press ✳✳ for configuration mode.

6.0   Regulatory Rules And Regulations

6.1   Federal Communications Commission (FCC) And Industry Canada (IC) Rules And Regulations

6.1.1   FCC Part 15 RF Emission Information

This equipment contains incidental radio frequency generating circuitry and, if not installed and used properly, may cause interference to radio and television reception. This equipment has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area may cause interference to radio and television reception; in which case the user is encouraged to take whatever measures may be required to correct the interference. If this equipment does cause interference to radio and television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: reorient the television or radio receiving antenna, and/or relocate the system, the individual telephone stations, and the radio or television with respect to each other. If necessary, the user should consult the manufacturer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the Government Printing Office, Washington, DC, 20402. Stock No. 004-000-00345-4.

6.1.2   FCC Part 68 Information

This equipment complies with Part 68 of the FCC Rules. A label, located on the exterior lower left side of the cabinet, contains the FCC Registration Number(s) and Ringer Equivalence Number (REN).

Notify the local telephone company when you connect the equipment to the network and provide the information shown in the following table:

Line Type	Service Order Code*	Facilities Interface Code*	Ringer Equivalence Number*	Universal Service Order Code Connector
Loop Start	9.0F	02LS2	See Equipment Specification Sheet	RJ21X
Ground Start (See note)	9.0F	02GS2	See Equipment Specification Sheet	RJ21X
DID Lines	9.0F–AS.2	02RV2–T	Not Applicable	RJ21X
E&M Lines	9.0F	TL11M	See Equipment Specification Sheet	RJ2EX
T1 Line	6.0Y	04DU9–1SN	Not Applicable	RJ48C
T1/PRI (ISDN) Line	6.0Y	04DU9–1SN	Not Applicable	RJ48C
NOTE: State tariffs do not permit ground start operation for KF registered equipment (key system operation). Ground start operation is only permitted for MF registered equipment (KTS/PBX hybrids with both manual and pooled outgoing and incoming access to the network). The system <u>must</u> be configured for MF operation when using ground start operation				
* Refer to the paragraph titled Terms and Definitions for detailed explanations.				

This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

Should the equipment cause harm to the telephone network, the telephone company may disconnect your service temporarily. If possible, they will notify you in advance. If advanced notice is not practical, they will notify you as soon as possible. You will be informed of your right to file a complaint with the FCC. The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the proper functioning of your equipment. If they do so, they will notify you in advance to give you an opportunity to maintain uninterrupted telephone service. In addition, the telephone company may ask that you disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning.

If you experience trouble with this equipment, please contact:

> Comdial Corporation
> P.O. Box 7266
> Charlottesville, VA 22906–7266
> Telephone: 1–804– 978–2200

6.1.3   Terms and Definitions

Service Order Code (SOC) defines type of service and system protection.
9.0F = analog service, full protection to the network from systems using live voice.
      Only registered terminal equipment can be connected to station ports.
9.0F-AS.2 = analog service, same as 9.0F above but with system ports which provide answer
          supervision (for system types such as CD, KF, MF, PF, VM, etc.).
6.0Y =   digital service, provides total protection, including billing protection and
              encoded analog content.

Facilities Interface Code (FIC) is a tariff reference used by customers to order correct facilities to be provided by the telco.
02LS2 = analog service, 2-wire, local switched access, loop-start
02GS2 = analog service, 2-wire, local switched access, ground-start
02RV2-T = analog service, 2-wire, local switched access, reverse-battery
TL11M = analog service, tie line, lossless interface, type 1 transmission-2 wire,
              type 1 E&M interface, provides battery on M lead to originate
04DU9-1SN = digital service, 1.544 Mbps ANSI ESF and B8ZS without line power

Ringer Equivalence Number (REN) is useful to determine the quantity of devices that may be connected to the telephone line and still have all of those devices ring when the telephone number is called. In most, but not all areas, the sum of the REN's of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices that you may connect to your line, you may want to contact your local telephone company to determine the maximum REN for your calling area.

Universal Service Order Code Connector (USOC Con) defines the FCC Part 68 approved telco provided connector, electrically and mechanically, required to interface with the customer equipment. To avoid legal, warranty, insurance, and casualty problems, do not pass anything through the network connector other than those permitted in the FCC Part 68 RJ series connectors. Definitions of connectors listed above is as follows:
RJ21X is a 25 line, 2-wire, T/R, 50 position connector
RJ2EX is a 12 Tie trunks, 2-wire, T/R, E&M Type 1, 50 position connector
RJ48C is a single line, 4-wire,T/R, T1/R1, 1.544 Mbps, 8 position connector

6.1.4   Industry Canada RF Emission Information

This digital device does not exceed the Class A limits for radio noise emissions from digital apparatus set out in Radio Interference Regulations of Industry Canada.

Le pre'sent appareil nume'rique n'emet pes de bruits radioe'lectriques de'passant les limits applicables aux appareils nume'riques de la class A prescrites dans le Re'glement sur le brouillage radioe'lectrique e'dicte' par le ministe're des Industry Canada.

6.1.5   Industry Canada TELCO Information

NOTICE: The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. Industry Canada does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above condition may not prevent degradation of service in some situations.

 Repairs to some certified equipment should be made by an authorized maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

$\boxed{\textit{CAUTION}}$

Users should not attempt to make such connections themselves, but should contact the appropriate electrical inspection authority, or electrician, as appropriate.

NOTICE: The ringer equivalence number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to the telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the ringer equivalence numbers of all the devices does not exceed 5.

AVIS: L'etiquette de Industrie Canada identifie le materiel homologue. Cette etiquette certifie que le materiel est conforme a certaines normes de protection, d'exploitation et de securite des reseaux de telecommunications. Le Ministere n'assure toutefois pas que le materiel functionnera a la satisfaction de l'utilisateur. Avant d'installer ce materiel, l'utilisateur doit s'assurer quil est permis de le raccorder aux installations de l'entreprise locale de telecommunication. Le materiel doit eqalement etre installe en suivant une methode acceptee de raccordement. L'abonne ne doit pas oublier qu'il est possible que la conformite aux conditions enoncees ci-dessus n'empeche pas le degradation du service dans certaines situations. Les reparations de materiel homologue doivent etre effectuees par un centre d'entretien canadien autorise designe par le fournissuer. La compagnie de telecommunications peut demander a l'utilisateur de debrancher un appareil a la suite de reparations ou de modifications effectuees par l'utilisateur ou a cause de mauvais fonctionnement. Pour sa propre protection, l'utilisateur doit s'assurer que tous les fils de mise a la terre de la source d'energie electrique, des lignes telephoniques et des canalisations d'eau metalliques, s'il y en a, sont raccorde ensemble. Cette precaution est particulierement importante dans les regions ruales.

$\boxed{\textit{AVERTISSEMENT}}$

L'utilisateur ne doit pas tenter de faire ces raccordements luimeme; il doit avoir recours a un service d'inspection des installations d'inspection des installations electriques, ou a un electricien, selon le cas.

AVIS: L'indice d'equivalence de la sonnerie (IES) asssigne a chaque dispositif terminal indique le norbre maximal de terminaux qui peuvent etre raccordes a une interface. La terminaison d'une interface telephonique peut consister en une combinaison de quelques dispositifs, a la seule condition que la somme d'indices d'equivalence de la sonnerie de tous les dispositifs n'excede pas 5.