ISDN Configuration 2

This chapter covers the Dual Basic Rate Interface (DBRI) architecture and the basic hardware configuration for voice communication.

SPARCstation ISDN Interface

ISDN on the SPARCstation system is available either as a standard feature on the system main logic board or as an optional SBus board. In both cases, the Sun SPARCstation ISDN interface uses a custom chip known as the Dual Basic Rate Interface (DBRI) chip, which provides support for TE and NT connections. This chip provides an optimized, low-cost ISDN interface that can be used on future SPARC®-based systems. SPARCstation systems can support multiple ISDN interface boards via the SBus. A dual interface enables the chip to support additional ISDN devices connected to the NT port, such as an ISDN telephone or terminal.

SunISDN implementation supports CCITT I.430, ETS30-012, CTS2, JATE specifications and ANSI T1.605 standards for four-wire 2B+D ISDN Basic Access.

Audio/ISDN Integration

The SpeakerBox interface (SBI) integrates audio capability on the Sun SPARCstation system with ISDN using the multimedia (MMCodec) chip. This is an audio coder-decoder that handles the digital-to-analog and analog-to-digital conversions. Although audio can be routed through the ISDN interface,

it requires no CPU cycles for audio processing. Therefore, conferencing applications can take advantage of the MMCodec real-time processing of audio data.

The Sun audio interface in the SPARCstation 10 and SPARCstation LX provides output to an attached Sun SpeakerBox device.

This audio MMCodec architecture provides support on the SPARCstation system by permitting a microphone and SpeakerBox device to be used as a substitute for a telephone in some countries. This approach depends on local regulations regarding telephone equipment, so the additional use of headphones attached to the SpeakerBox is advised.

Integration with ISDN through the telephony application programming interface (API) enables the application to take full advantage of the environment, including call control and handling, interaction with other audio and multimedia applications, and networking.

ISDN External Ports

The SPARCstation system supports the Basic Rate Interface (BRI) through a pair of ISDN RJ-45 ports on the back of each system. These ports are labeled NT and TE, as shown in Figure 2-1 for SPARCstation 10, Figure 2-2 for the SunISDN SBus board, Figure 2-3 for SPARCstation LX, and Figure 2-4 for SPARCstation Voyager. Each RJ-45 modular connector supports full ISDN communications. When an ISDN signal is operating over a line, RJ-45 becomes RJ-48.

Initial software support for ISDN on SPARC systems addresses the TE interface only.

Note – Please consult country-specific ISDN documentation for details on connecting ISDN in your area.

With certification, the NT connection could enable an ISDN telephone to be attached to the workstation and configured through software to provide integrated telephony. This may be required for robust support of basic telephony in the event the attached workstation is turned OFF. When the workstation power is OFF, the ISDN signal is routed directly between the NT and TE port.

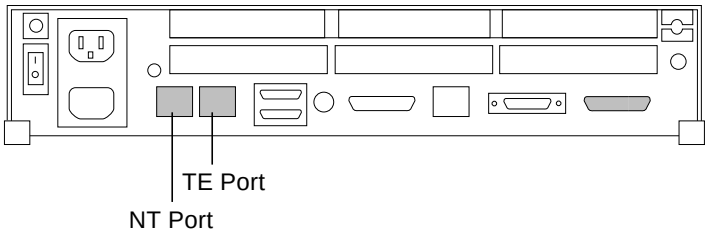

Figure 2-1 SPARCstation 10 ISDN Back Panel Connections

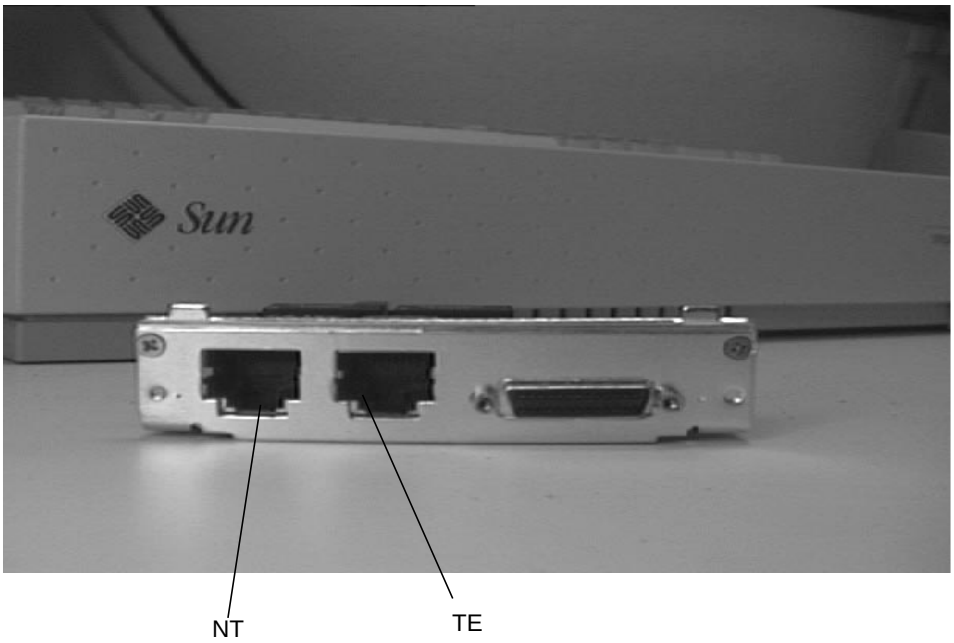

Figure 2-2 SunISDN SBus Board Back Panel

Figure 2-3 SPARCstation LX ISDN Back Panel

Each port has a preinstalled plug to prevent unauthorized ISDN usage.

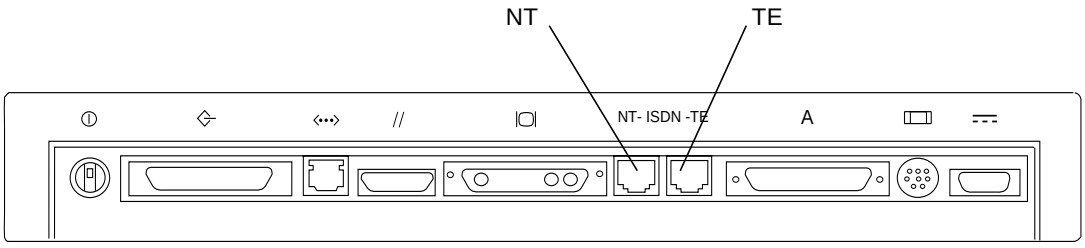

Figure 2-4 SPARCstation Voyager ISDN Back Panel

Caution – The ISDN ports on the back panel of your SunISDN hardware are equipped with plastic plugs. Removal of the plastic plug and insertion of improper cables into the ISDN ports can cause possible damage to your system and / or the network.

Protection Plug Removal

The following procedure shows how to remove the protection plug from a SPARCstation 10. This procedure also applies to the SunISDN SBus board, the SPARCstation LX system, and the SPARCstation Voyager.

To remove the protection plug from the port

1. **Use a Phillips head screwdriver to rotate the TE plug counterclockwise until it releases.**
   The protection plug should spring outward.
2. **With your fingers, remove the plug from the port.**
   Figure 2-5 and Figure 2-6 illustrate removing the TE protection plug.

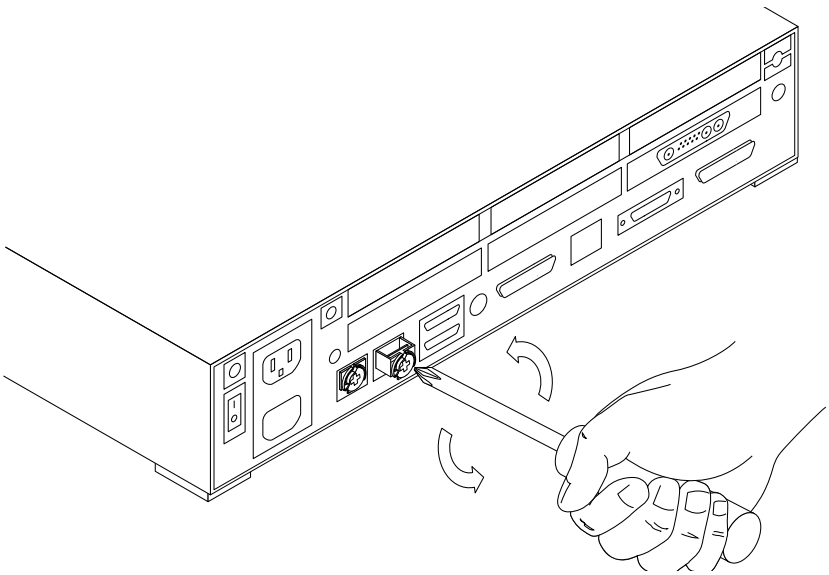

Figure 2-5 Plug Removal View 1

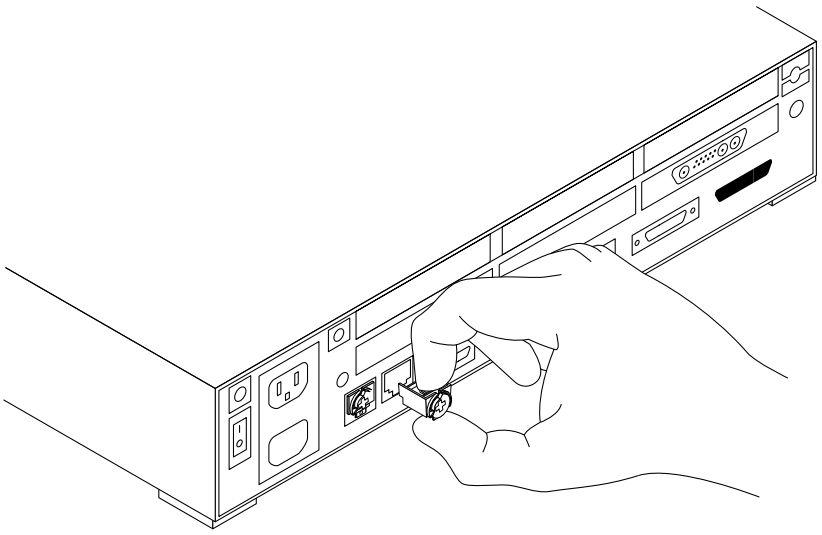

Figure 2-6 Plug Removal View 2

Cable Configuration

The connection between TE and NT for the basic access interface is defined by ISO 8877 as an eight-pin physical connector, also known as an RJ-45. Two pins in the connector are required for transmission in each direction (for a total of four), and are used to connect two twisted-pair leads coming from TE and NT devices.

The CCITT I.430 recommendation also provides for power to be supplied across the interface, such as might be required for robust support of basic telephony in the event of loss of local power. However, SunISDN NT does not supply power.

The cable packaged with your system consists of two RJ-45 connectors, one on each end of the cable. As shown in Figure 2-7, one RJ-45 connector is plugged into the TE port and the other into an ISDN port.

Note – Cable connection to the voice port varies by countries; therefore, you need to check with your local telephone company for specific cabling instructions.

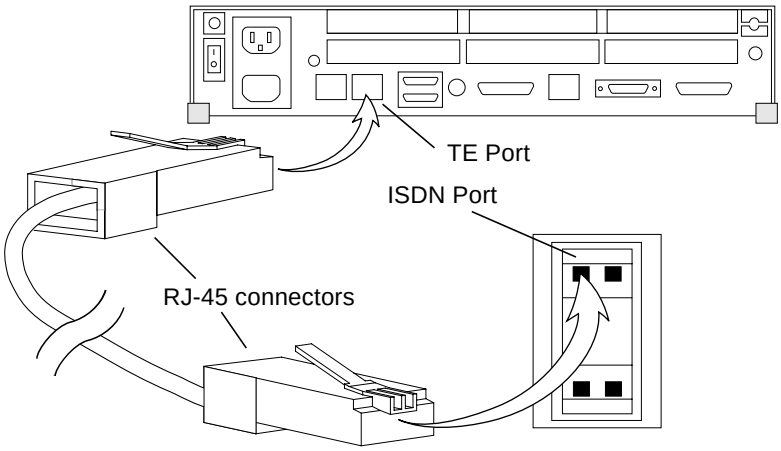

Figure 2-7 Basic Cable Configuration

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