



Safety Warnings, Recommendations, and Tools Required

This chapter describes the safety warnings, recommendations, and tools required to install dial feature cards in the chassis. This chapter contains the following sections:

- [General Safety, page 1-1](#)
- [Maintaining Safety with Electricity, page 1-2](#)
- [Preventing Electrostatic Discharge, page 1-3](#)
- [Required Tools and Equipment, page 1-3](#)
- [Where to Go Next, page 1-4](#)

General Safety

Any device that uses electricity must be handled carefully; follow these guidelines to ensure general safety:

- Keep the chassis area clear and dust-free during and after installation.
- Put the removed chassis cover in a safe place.
- Keep tools away from walk areas where you and others could fall over them.
- Do not wear loose clothing that could get caught in the chassis. Fasten your tie or scarf and roll up your sleeves.
- Wear safety glasses if you are working under any conditions that might be hazardous to your eyes.
- Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.



Warning

Ultimate disposal of this product should be handled according to all national laws and regulations. To see translations of the warnings that appear in this publication, refer to the *Regulatory Compliance and Safety Information* document that accompanied this device.

Maintaining Safety with Electricity

**Warning**

Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or can weld the metal object to the terminals. To see translations of the warnings that appear in this publication, refer to the *Regulatory Compliance and Safety Information* document that accompanied this device.

Follow these guidelines when you work on equipment powered by electricity.

- Locate the emergency power-OFF switch for the room in which you are working. Then, if an electrical accident occurs, you can act quickly to turn OFF the power.
- Before working on the system, unplug the power cord.
- Disconnect all power before doing the following:
 - Installing or removing a dial feature card
 - Working near power supplies

**Warning**

When installing the unit, the ground connection must always be made first and disconnected last. To see translations of the warnings that appear in this publication, refer to the *Regulatory Compliance and Safety Information* document that accompanied this device.

- Do not work alone if potentially hazardous conditions exist.
- Never assume that power is disconnected from a circuit. Always check.

**Warning**

Read the installation instructions before you connect the system to its power source. To see translations of the warnings that appear in this publication, refer to the *Regulatory Compliance and Safety Information* document that accompanied this device.

- Look carefully for possible hazards in your work area, such as moist floors, ungrounded power extension cables, frayed power cords, and missing safety ground connections.
- If an electrical accident occurs, proceed as follows:
 - Use caution; do not become a victim yourself.
 - Turn OFF power to the system.
 - If possible, send another person to get medical aid. Otherwise, assess the condition of the victim and then call for help.
 - Determine if the person needs rescue breathing or external cardiac compressions; then take appropriate action.

**Warning**

This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that a fuse or circuit breaker no larger than 120 VAC, 15A U.S. (240 VAC, 10A international) is used on the phase conductors (all current-carrying conductors). To see translations of the warnings that appear in this publication, refer to the *Regulatory Compliance and Safety Information* document that accompanied this device.

Preventing Electrostatic Discharge

Electrostatic discharge (ESD) can damage equipment and impair electrical circuitry. ESD damage occurs when electronic components are improperly handled and can result in complete or intermittent failures.

Always follow ESD-prevention procedures when you remove and replace components. Ensure that the chassis is electrically connected to earth ground. Wear an ESD-preventive wrist strap, ensuring that it makes good skin contact. Connect the grounding clip to an unpainted surface of the chassis frame to safely ground unwanted ESD voltages. To guard against ESD damage and shocks, the wrist strap and cord must operate properly. If no wrist strap is available, ground yourself by touching the metal part of the chassis.

For safety, periodically check the resistance value of the antistatic strap, which should be between 1 and 10 megohm (Mohm).

Required Tools and Equipment

The following items are included with the universal gateway:

- RJ-45-to-DB-9 female DTE adapter (labeled TERMINAL)
- RJ-45-to-DB-25 female DTE adapter (labeled TERMINAL)
- RJ-45-to-DB-25 male DCE adapter (labeled MODEM)
- RJ-45-to-RJ-45 rollover console cable
- ESD-preventive wrist strap
- Nylon cable tie
- Cable tie holder
- Grounding lug
- Alarm connector

You might need the following equipment, which is not included:

- Straight-through RJ-45-to-RJ-45 cable for an Ethernet connection
- Ethernet hub or PC with a network interface card for Ethernet LAN connections
- One breakout cable consisting of a 36-pin connector connected to eight RJ-45 adaptors for CT1/CE1 connections
- Straight through RJ-45-to-RJ-45 cable for CT1/CE1 connections
- 75-ohm coaxial cable for a CT3 connection
- PC running terminal emulation software for local administrative access
- Modem for remote administrative access

- ESD-preventive mat
- Blank filler panel

Where to Go Next

The remaining chapters of this guide include information on installing and troubleshooting DFCs and creating cables.

- [Chapter 2, “Dial Feature Card and Carrier Card Guidelines”](#)
- [Chapter 3, “T1 and E1 Dial Feature Cards”](#)
- [Chapter 4, “T3 Dial Feature Card”](#)
- [Chapter 5, “Universal Port Dial Feature Card”](#)
- [Chapter 6, “Troubleshooting”](#)
- [Appendix A, “Cabling Specifications”](#)