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**FEDERAL COMMUNICATIONS COMMISSION
RADIO FREQUENCY INTERFERENCE STATEMENT**

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for Radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques (de la classe A) prescrites dans le Règlement sur le broilage radioélectrique édicté par Industrie Canada.

3. Installation

Before installation, check to make sure your Repeater was not damaged during shipping. If there is any damage, call your supplier.

When you install your Repeater, shut off your workstation, controller, and all other devices before you begin.

Place the Repeater on a flat, dry, stable site with enough clearance for all connections. It should be installed within 6 feet (1.8 m) of an AC outlet.

3.1 Pre-Installation Check

Check the following before installing your repeater:

- Your cable must not have any bridge taps. The wires of the twisted pairs must not be separated. Avoid using flat silver satin cable, as this type of cable is highly susceptible to external interference, and may create problems.

If you are using multipair cable, avoid connecting multiple services under the same sheath. Use bulk cable 100 feet (30.5 m) or longer.

- Verify that the wiring polarity is straight-through between the host and the workstations.

- Some brands of controllers and terminals may require DC-continuity between the host and the workstation. The 3270 Repeaters have DC isolation and might not work with this type of equipment. Check with your computer dealer for more information.
- Avoid nearby sources of electromagnetic interference such as motors, transformers, and fluorescent lighting.

3.2 Installing the 3270 Repeater-Fiber

Follow these steps to install the 3270 Repeater-Fiber:

1. The 3270 Repeater-Fiber is designed to operate in pairs. One Repeater is installed at the host side; the second is installed at the station side. To protect the connectors, do not remove the fiberoptic covers until you are ready to make the fiber connections.
2. Connect the twisted-pair segments as explained in Steps 1-10 in Section 3.3. Make sure that straight-through polarity is maintained.

2. Introduction

The 3270 Repeater-Fiber and 3270 Repeater-UTP are cascable repeaters which extend your fiber-optic or unshielded twisted-pair cabling distance. The Repeaters can be cascaded with other Repeaters and other equipment. The 3270 Repeater-Fiber must be installed in pairs.

The 3270 Repeater-Fiber lets data be transmitted at distances up to 8200 feet (2499.4 m) over dual fiberoptic cable. It also gives you an extra 3000 feet (914.4 m) when using unshielded twisted-pair cable.

The 3270 Repeater-UTP lets data be transmitted at distances up to 3000 feet (914.4 m) between the controller and the workstation via unshielded twisted-pair cable.

Both models resynchronize and reformat the data signal to provide greater transmission distances. They provide improved performance in harsh electrical environments. Both repeaters also come with optional RJ-12 or RJ-45 pin configurations.

4. Operation and Troubleshooting

4.1 Normal Operation

The LEDs indicate normal operation. The green POWER LED should glow, and the two red SYNC LEDs should flash to indicate packet transfers. The Repeater requires little in the way of maintenance, and can be expected to transfer data for months, if not years, with little or no attention.

4.2 Problem-Solving Checklist

You may notice a change in the performance of the Repeater for a number of reasons. The checklist below can eliminate some of the common causes of trouble. When you have tried all these solutions, call your supplier.

CAUTION

Don't try to repair the 3270 Repeater yourself. There are no user-serviceable parts within the Repeater. If you open the case, you may harm yourself, damage your equipment, or compound the problem with your Repeater, and you will also void the warranty.

Problem: All LEDs remain dim.

- Check your AC plug and power supply.

Problem: SYNC LEDs won't flash.

- Check your cable connections.
- Tighten any loose wiring on your Repeater, your controller, and your workstation.
- Make sure your baluns are in working order.
- Check the polarity of your lines. The Repeater is sensitive to reversed polarities.

Problem: Noisy or corrupted data.

- Replace any bridged cables.
- If possible, replace any flat silver satin cable with unshielded twisted-pair cable. Flat silver satin cable is vulnerable to interference.

1. Specifications

Data Rate —	2.358 Mbps
Connectors —	IC051: (1) RJ-11 6-wire modular jack, (1) pair of screw-type terminals; (2) AT&T ST-type connectors IC056: (2) RJ-11 6-wire modular jacks, (2) pairs of screw-type terminals IC077A: (2) RJ-45 8-wire modular jacks set for Pins 1 and 2; (2) pairs screw terminals IC078A: (1) RJ-45 8-wire modular jack, (1) pair of screw-type terminals; (2) AT&T ST-type connectors
Transmission —	Transparent to the user
Indicators —	(3) LEDs: (1) Power (green), (2) Line Sync (red)
Maximum Distances —	IC051: Controller to Repeater, 1500 ft. (457.2 m), Repeater to Repeater, 8200 ft. (2499.4 m), Repeater to Workstation, 1500 ft. (457.2 m); IC056: Controller to Repeater, 1500 ft. (457.2 m), Repeater to Repeater, 2000 ft. (61 m), Repeater to Workstation, 1500 ft. (457.2 m)
System Requirements —	IBM® 3178, 3278, 3179, 3180-1, 3279, 3287, 3299, and compatible terminals supported by IBM 3270
Power —	110-VAC or 220-VAC power supply
Size —	1.3"H x 8.5"W x 4"D (3.3 x 21.6 x 10.2 cm)
Weight —	2 lb. (0.9 kg)

- Remove the fiberoptic covers from the 3270 Repeater Fiber and connect the ST fiber connectors as indicated in **Figure 3-1**, ensuring that TX goes to TX and RX goes to RX. Take care not to damage or get dust on the exposed ends of the fibers.

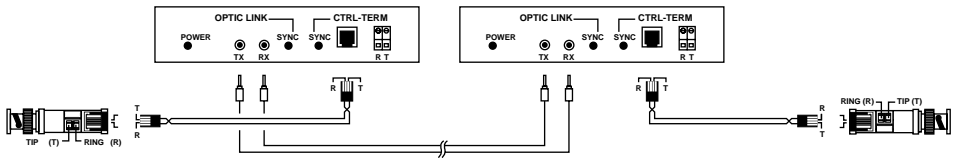


Figure 3-1. Installing the 3270 Repeater-Fiber.

3.3 Installation of the 3270 Repeater-UTP

Follow these steps to install the 3270 Repeater-UTP:

- Select a location for the Repeater. It may be placed up to 1500 feet from the controller and up to 1500 feet from the terminal.
- Distinguish between the tip and ring leads on the balun leading to your controller.
- Plug the Repeater into the nearest AC power outlet. The green Power LED should light.
- If you are using screw-type terminals, strip 1/4 inch of insulation from the end of the twisted pair.
- Connect the wires coming from the controller to the block marked CTRL, and tighten the locking screws.

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6. Connect the wires coming from the terminal block marked TERM, and tighten the locking screws.

7. OR, if you are using modular phone jacks, connect the cable as shown in **Figure 3-2**. Use 24- or 22-gauge unshielded twisted-pair cable.

8. In both cases:

Check that the tip and ring leads of the balun near the controller are connected to the tip and ring, respectively, at the CTRL block of the 3270 Repeater.

Check that the tip and ring leads of the balun near the workstation are connected to the tip and ring, respectively, at the TERM block of the 3270 Repeater.

The 3270 Repeater is reverse-polarity-sensitive.

9. Turn on the workstation and the controller.

10. When the 3270 Repeater is properly connected, the CTRL-SYNC and TERM-SYNC lights will be on and flashing.

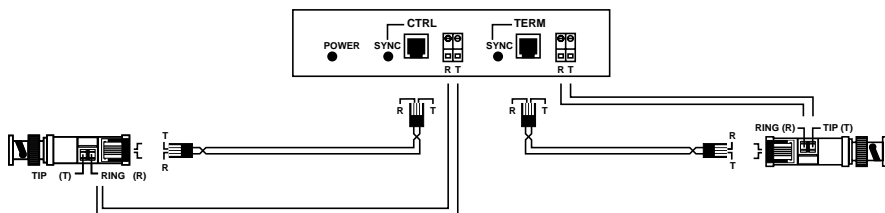


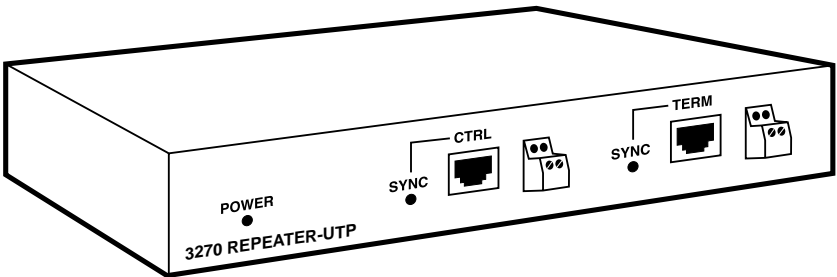
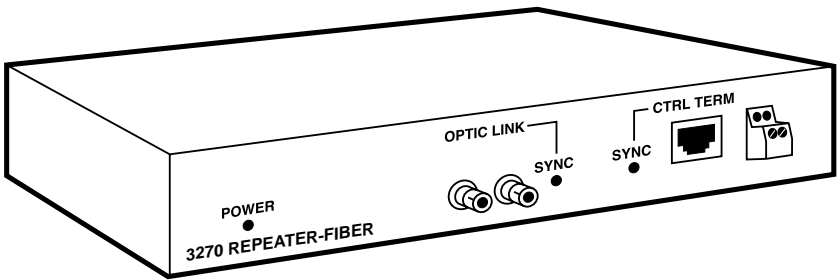
Figure 3-2. Installing the 3270 Repeater-UTP

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3270 Repeater — Fiber
3270 Repeater — UTP
3270 Repeater — Fiber RJ45
3270 Repeater — UTP RJ45



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