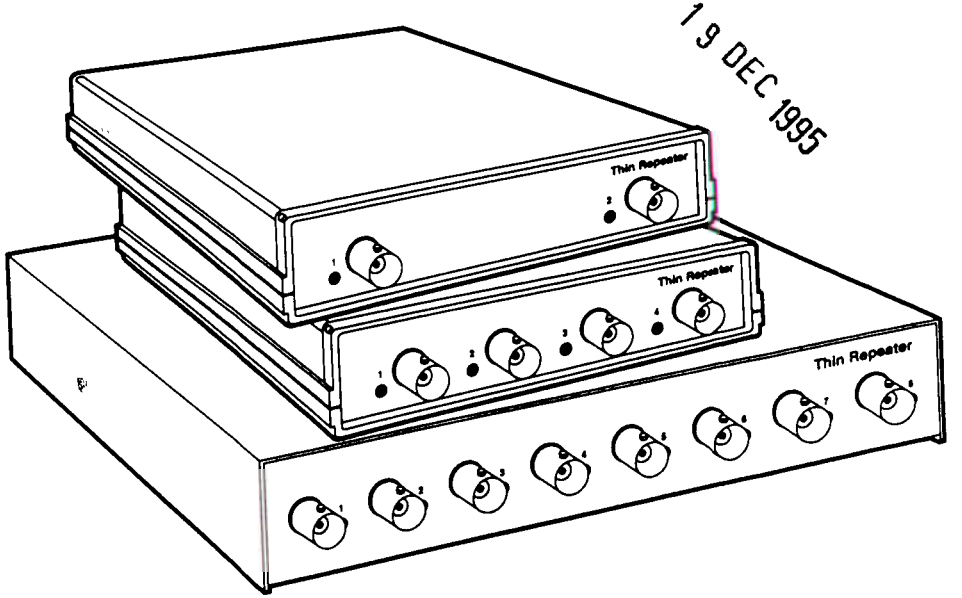
FAXABLE COPY

NOVEMBER 1995
LZ1202A
LZ1202AE
LZ1204A-R2
LZ1204AE-R2
LZ1208A-R2
LZ1208AE-R2

2-, 4-, and 8-Port Thin Ethernet Repeaters



19 DEC 1995

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 necessary 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 the Canadian Department of Communications.

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 brouillage radioélectrique édicté par le ministère des Communications du Canada.

2-, 4-, AND 8-PORT THIN ETHERNET REPEATERS

Contents

1. Specifications

Protocol—Protocol-independent (Ethernet)

Indicators—LZ1202A, LZ1202AE: (2) LEDs (1 per port) for port status; LZ1204A-R2, LZ1204AE-R2: (4) LEDs (1 per port) for port status; LZ1208A-R2, LZ1208AE-R2: (8) LEDs (1 per port) for port status

Connectors—LZ1202A, LZ1202AE: (2) BNC female (Ethernet), 5-pin DIN female (power); LZ1204A-R2, LZ1204AE-R2: (4) BNC female (Ethernet), (1) Female DB15 AUI, 5-pin DIN female (power); LZ1208A-R2, LZ1208AE-R2: (8) BNC female (Ethernet), (1) Female DB15 AUI, 5-pin DIN female (power)

Power—120 VAC, 60 Hz, 13 W (in-line transformer) *or* 220 VAC, 50 Hz, Output: +5 VDC @ 500 mA, +12 VDC @ 415 mA, -12 VDC @ 415 mA

Size—LZ1202A, LZ1202AE: 1.5"H x 4"W x 9.5"D (3.8 x 10.2 x 24.1 cm); LZ1204A-R2, LZ1204AE-R2: 1.5"H x 6.2"W x 9.5"D (3.8 x 15.7 x 24.1 cm); LZ1208A-R2, LZ1208AE-R2: 1.7"H x 9"W x 12.3"D (4.3 x 22.9 x 31.2 cm)

2. Introduction

The 2-, 4-, and 8-Port Thin Ethernet Repeaters are used in conjunction with RG58, 50-ohm coaxial cable segments commonly found in Ethernet systems. According to Ethernet rules, up to 4 repeaters may be connected together in a serial fashion with up to 186 meters (610 ft.) between each repeater.

The 4- and 8-port models have an AUI connector on the back for added connectivity. The AUI port follows the standard Ethernet specifications. It's used to connect any Ethernet transceiver providing a connection from any of the four Ethernet media types (10BASE-T, 10BASE2, 10BASE FL-FOIRL, 10BASE5).

The auto-partitioning feature is very important in Thin Ethernets. Whenever a segment is properly connected to a repeater and terminated at the far end, the repeater will connect that segment to any others already attached to the repeater. When a segment that has a terminator at its far end is properly attached, the red LED for the segment will be turned on steadily. If a segment connects to another repeater, the red LED will turn on steadily on one repeater and the green LED on the other (the repeaters make this selection internally and automatically).

If a repeater detects a segment problem, it isolates the faulty segment, preventing it from disabling the entire network. If a segment is faulty, the red and green LEDs associated with that segment will flash alternately. Whenever a fault is corrected, the repeater will automatically reconnect the segment.

NOTE

The Repeater has been designed so that each port includes a 50-ohm terminator. "T" connectors and terminators should not be attached to the connectors on the front of the repeater. The Ethernet segment should be attached to the repeater just as if it were connecting to a terminator. The repeaters are to be at the end of the coaxial cable runs, not attached in the middle with "T" connectors.

3. Installation

Follow these steps to install your Repeater:

1. Find or create a site plan.
2. On the plan, mark the location of all the Ethernet nodes (file servers, print servers, workstations, etc.) to be networked.
3. Where convenient, plan to link easily connected nodes with RG58A/U coaxial cable just as if they were on a standalone thin Ethernet (IEEE 802.3 10BASE2). Make sure that one end of the coax segment is available to connect to the repeater.

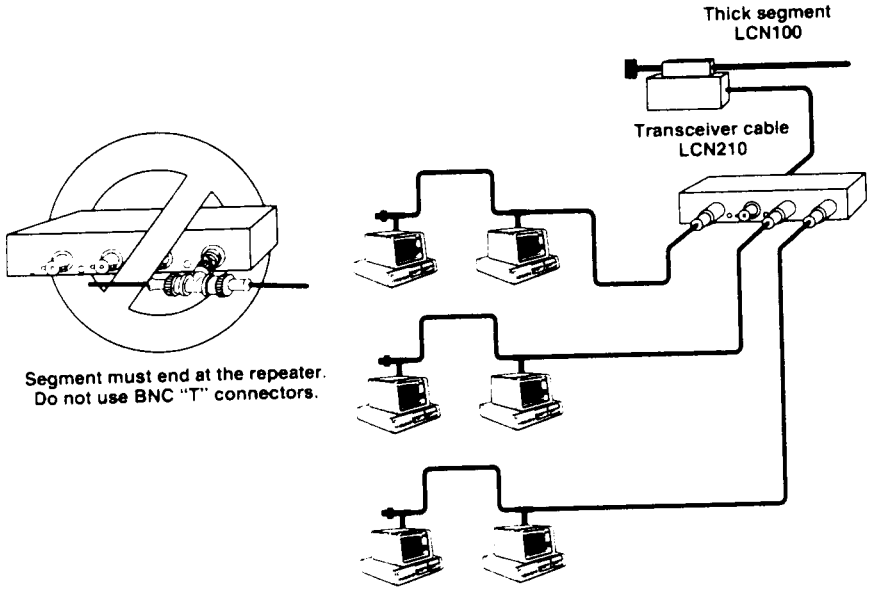


Fig. 3-1. Typical Installation.

4. Find a central location for the repeater. Connect each of the Ethernet segments to the repeater as if each port is a 50-ohm terminator.
5. When a segment is properly attached and the far end of the segment is properly terminated, the LED for that port will cease alternating between red and green.
6. Be sure to connect the shield of one (only one) of the segments to an earth ground. See the note below for details. The Ethernet is now ready for use.

NOTE

For safety, IEEE 802.3 10BASE2 Ethernet specifications call for each segment to be connected at one point to an earth ground such as a cold water pipe. To simplify your system installation, we have internally connected the ports' grounds in our repeaters together and recommend that the earth-ground connection be made from only one of the ports on the repeater. Grounding one segment in this manner will properly ground all the segments connected to the repeater.

4. Troubleshooting

Each port of the repeater acts like one terminator on the ThinNet segment it is connected to. Therefore, each segment must have one (and only one) additional terminator at the far end of the run. If the terminator is not attached or there are two or more terminators in addition to the termination provided by the repeater, that segment of the network will not operate properly.

Some Network Interface Cards (NICs) have terminators built in that may be enabled or disabled via jumpers. Make sure that only the NIC at the end of the segment farthest from the repeater has its termination enabled and that all the rest are disabled. (If an external terminator is used, then all the cards should have their termination disabled.)

NOTE

Make sure SQE is disabled on any transceiver connected directly to the unit's AUI port..