

Trust Office Smart Repeater

User's Manual

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Introduction

This manual is a guide to the installation and use of the Trust Office Smart Repeater.

The Smart Repeater performs both signal repeating and preamble regeneration and can connect network segments to expand the length of the network.

Chapter 1 gives a description of the Smart Repeater.

Chapter 2 describes how to install the Smart Repeater.

Chapter 3 gives solutions to problems.

Chapter 1 - Description of the Trust Office Smart Repeater

1.1 General description

The Smart Repeater is a two-port ethernet repeater which is fully compliant with IEEE 802.3, 10BASE-2 and 10BASE-T standards. By performing both signal repeating and preamble regeneration, the repeater can connect network segments to expand the length of your network. Each segment includes a BNC port for easy direct connection to LAN segments. With an additional UTP port, the repeater allows the connection of other compatible devices such as 16/8 port hubs to expand to a larger network.

1.2 Features

The Smart Repeater has the following features:

- complies with IEEE 802.3, 10BASE-2, 10BASE-T standards
- provides 2 BNC segments and a converter port (UTP port)
- provides two LEDs (PART.RX) for each BNC port
- provides eight traffic load LEDs to display the network traffic status
- signal repeating and preamble regeneration
- automatic partition of faulty segments (Jabber function)
- fragment extension function
- UL and TÜV approved

1.3 Description of the hardware

Figure 1 Smart Repeater - Top Panel

Figure 2 Smart Repeater - Rear Panel

1.4 LED indicators

POWER	The power indicator LED is red. It lights up when the Smart Repeater is connected to a power source.
COL	The collision indicator LED is yellow. This LED is normally off when the network is not active. It flashes when the repeater detects network collision. The LED flashes more rapid as the number of users and amount of traffic increase.
RX	This is a green LED. It flashes when data is transmitted through the BNC port. The LED flashes more rapidly as the port traffic increases.
LINK/RX	This is a green LED which indicates whether the UTP port link is connected. The LED is on when the port is linked with another hub; the LED flashes when the UTP port transmits data.
LINK/RX LED on	The port link with another node is normal
LINK/RX LED off	<ul style="list-style-type: none">• No twisted pair connection with other nodes.• No power connection to the repeater.• UTP cable is faulty.• Non-10BASE-T device connected at the other nodes.• A twisted pair wire exceeds the recommended length.
LINK/RX LED flashes	The port is transmitting data.
PART	The partition indicators are red LEDs that turn on when the repeater detects bad signals on a port and isolates that port. When the port has recovered, the corresponding LED turns off.
TRAFFIC LOAD	There are eight green traffic load LEDs. More LEDs will illuminate as the traffic load increases.

1.5 Repeater ports

UTP port (to hub)

The repeater provides a converter port (UTP port) for cascading another compatible device, such as a hub allowing network expansion.

BNC port

There is one BNC port for each segment. Each segment can be connected to one trunk segment.

Chapter 2 - Installation of the Trust Office Smart Repeater

2.1 Mounting the repeater

The repeater should be mounted on a flat surface, e.g. a wall or a table, by means of the mounting screw holes. The distance between the two screws should be 181 mm. See Figure 3.

Figure 3 Mounting the repeater

2.2 Installation of the repeater

2.2.1 Connecting the power cord to the repeater

Before connecting the power cord, make sure that you have the correct adapter type for your country. Connect the power cord to the repeater's power jack. The red power LED should light up.

2.2.2 Connecting the repeater to a thin coaxial ethernet cable

- A) Connect one T-type connector to the BNC port of the repeater and one to the BNC port of the workstation or file server.
- B) Connect one end of a thin coaxial cable to the T-type connector on the BNC port of one of the two trunk segments of the repeater.

- C) Connect the other end of the thin coaxial cable to the T-type connector on the BNC port of the workstation or file server.
- D) Repeat steps A, B and C for the other trunk segment of the repeater. Make sure that both ends of the thin coaxial cable are terminated by 50 Ohm terminators (see Figure 4).

Note

The UTP network can be connected by means of a coaxial cable segment. The connection is made by attaching an RG-58 thin coaxial cable to the repeater's UTP connector.

2.2.3 Expanding the repeater using the converter port (UTP port)

The repeater can be expanded using the UTP port (segment II). In Figure 4 the repeater is connected to another compatible device with a UTP cable such as 16/8 port hub. The hub can be connected to any other station or hub.

2.3 I/O configuration

There are various different I/O configurations possible:

1. BNC to BNC
Input to one BNC connector, output from the other BNC connector.
2. BNC to UTP and BNC
Input to one BNC connector, output from the other BNC connector and the UTP connector.
3. BNC to UTP
Input to either BNC connector, output from the UTP connector.

2.3.1 Capabilities

1. Maximum number of trunk segments: 5
2. Maximum length per trunk segment: 185 meters
3. Maximum length of network trunk cable: 925 meters
4. Maximum length of UTP cable for the middle converter: 100 meters

- | | | | |
|---|-------------------|---|--------------------|
| A | SMART REPEATER | B | TRUNK segment |
| C | T-type connector | D | thin coaxial cable |
| E | UTP cable | F | UTP hub |
| G | 50 Ohm terminator | | |

Figure 4 Connecting to thin coaxial ethernet cable and expanding the network using the middle converter port (UTP port)

Chapter 3 - Troubleshooting

The following list gives solutions to a number of problems that may occur.

Power LED does not light up

- Make sure that the power source is functioning.
- Check the power cord connection from the repeater to the power source.
- Call your supplier for assistance.

LINK/RX (Link up status) LED does not light up

- Make sure that the network station and repeater are powered on.
- Make sure that the existing UTP cable has no splices or cut ends and is intact.
- Ensure that the UTP cable length is less than 100 meters.
- Make sure that the wires to the data jack pins are connected correctly and that the connections are not faulty.

BNC port LED does not light up

- Make sure that the thin coaxial cable is not faulty.
- Make sure all T-type connectors on the coaxial cable segment are connected securely.
- Verify that the two 50 Ohm terminators (See paragraph 2.2.2, step D) are connected and are not faulty.