BT ISDN2e Service

Engineer's Installation Guide (NTE8D)

www.bt.com/isdn

1. Introduction

This document is a guide to the installation procedure for the BT ISDN2e NTE8D.

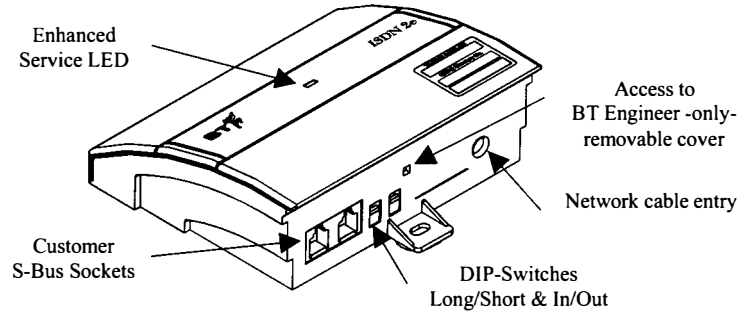

Figure A: ISDN Network Terminating Equipment 8D

2. Features & Facilities

- Suitable for internal use, at ambient temperatures between –5 °C and +40 °C.
- External overall dimensions of 137 mm wide x 125 mm high x 48 mm deep.
- Two S/T interface RJ45 type customer sockets wired in parallel.
- A Long / Short switch to provide adaptive timing on the S-Bus.
- An In/Out switch for the S-Bus terminating resistors.
- A write-on label for the customer's directory and fault reporting number.
- An enhanced customer service LED.
- Will provide a maximum of 420 mW emergency power to ONE dedicated customer terminal.
- A BT Engineer-only-removable cover.
- Supplied complete with fixing screws, wall plugs and a fixing template. (Fixing template now part of packaging.)

3. Installation

WARNING: When the engineer's cover is removed, please ***do not*** touch the circuit board unless you are wearing an anti-static strap.

This strap is not required for normal line installation.

3.1 Installing the ISDN NTE8

- The NTE8 can be mounted in most domestic and office environments, avoiding direct sunlight, sources of heat, sources of electromagnetic radiation, and areas which are subject to high humidity such as kitchens and laundry rooms etc.
- The NTE8 must be mounted with the customer sockets facing down.
- Use the template provided to mark the two fixing screw positions. Please note that a minimum of 200 mm clearance is required (marked by dashed lines) to enable the customer to insert and remove the extension cabling or terminal equipment plugs into the RJ45 sockets and to enable the installation engineer to open the cover.
- Drill and plug the wall for the two No. 8 cross-head screws provided. For a hollow wall, suitable proprietary fixings should be used. If fitting to wood, drill suitable pilot holes.
- Position the screw that will mate with the keyhole fixing, leaving just enough of the screw protruding to allow a snug fit in the keyhole slot such that the NTE lies flat against the mounting surface without any case distortion.
- Fit the second screw to secure the NTE to the wall. Ensure that the case fixings are sound and that there is no movement, but do not over-tighten the securing screws.
- Remove the BT Engineer-only-removable cover to gain access to the network wiring connectors. This cover is attached to the lower part of the NTE with a clip. To loosen the locking mechanism use a **No. 1 screwdriver** and push it slightly into the rectangular slot above the customer sockets (see Figure C).
- Strip approximately 100 mm of sheath from the network cable, feed the cable into the NTE and secure to the fixing post with the cable tie provided. Terminate the cable on the IDC, wiring polarity is unimportant. Replace the network access cover. Figure B shows an exploded view of the NTE8.
- The network cable should not be run within 100 mm of mains cables or fluorescent lights, and must be generally routed away from sources of electromagnetic interference such as TVs, monitors, domestic appliances etc.
- Write the customer directory and fault reporting number on the customer service label.

- If no customer extension wiring is being provided, check that the L/S switch is in the "S" position and the In/Out switch is in the IN position. (Default setting) (IN=50 ohms & OUT=100 ohms termination)
- For further information please refer to ISIS CSS/LNK/S030 and any local instructions.

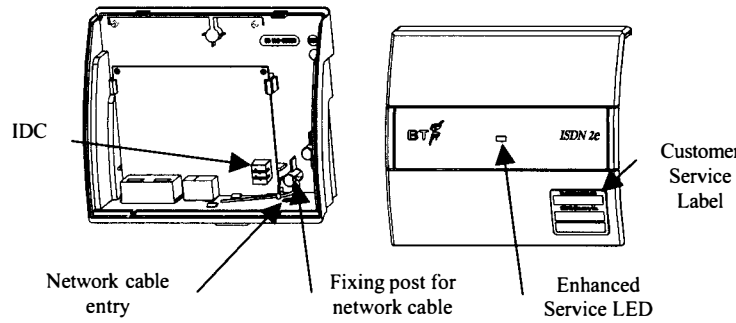

Figure B: Exploded View of NTE8

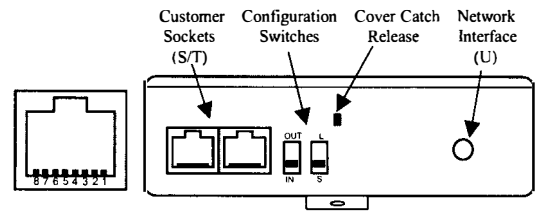

Figure C: View of customer sockets and switches

3.2 Connecting customer S-Bus extension wiring (Chargeable Option)

If fitting customer extension wiring, cable to category 5 specification should be used to complete the installation. Please refer to Table 1 for RJ45 wiring and Figure D for sample wiring configurations / switch settings. All extension wiring MUST have a Type 2 socket (which incorporates terminating resistors), as the last socket.
Further S-Bus wiring details can be found in BS EN 50098-1.

Contact	Wire colour code	TE	NT
1	White/orange band	Power source 3	Power sink 3
2	Orange/white band	Power source 3	Power sink 3
3	White/green band	Transmit	Receive
4	Blue/white band	Receive	Transmit
5	White/blue band	Receive	Transmit
6	Green/white band	Transmit	Receive
7	White/brown band	Power sink 2	Power source 2
8	Brown/white band	Power sink 2	Power source 2

Table 1: RJ45 wiring

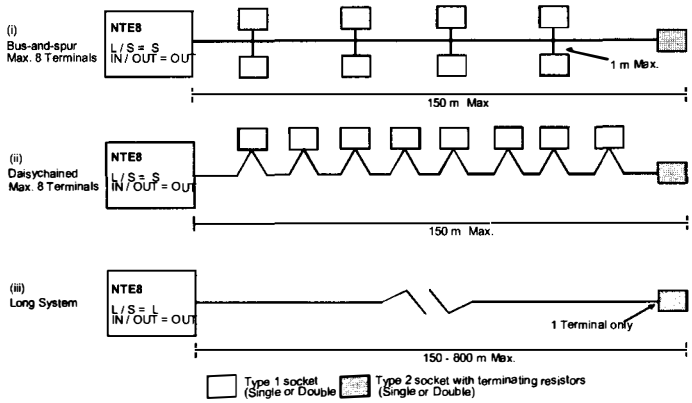

Figure D: Basic S-Bus Wiring Schematic

The Product must be tested and demonstrated to the customer at handover.

This guide should be retained for future reference.

5. Returns

If the NTE is proved to be faulty on installation, please return it using the BT return procedure.

If you have any comments to make about this documentation, or the ISDN NTE please email: dave.j.allen@bt.com

The information contained in this guide is correct at the time of going to press, but it is not comprehensive and shall not form any part of a contract. Some products and services may not be available in all areas. Whilst we do our best to supply customers with the products and services that they ask for, we reserve the right to supply products and services which do not accord exactly with the descriptions and illustrations in this guide.

3.3 Protection

Lightning protection shall be provided as for standard PSTN lines. Where the service is provided via aerial cable either over more than three spans, or in areas with a high risk of electric storms, the circuit may require additional protection.
Please refer to the Lightning Protection Handbook ISIS/EPT/PPS/B055.

3.4 Environmental

Installation	ETS 300 019-1-3, Class 3.2
Transportation	ETS 300 019-1-2, Class 2.3
Storage	ETS 300 019-1-1, Class 1.1

4. Testing and fault locating

A green LED in the centre indicates the status of the NTE.

Indicator LED	
OFF	No Service – Line voltage from exchange <18 volts
ON (dim)	Exchange Line Voltage >28 volts but line side deactivated, no layer 1
Flashing 8 Hz	network connection activating
Flashing 1 Hz	network line side connection activated but customer side S-Bus deactivated (or activating) NO customer terminal equipment (CPE) connected
ON (bright)	Normal active service at layer 1

If the LED is ON (bright) or slow flashing, then voice and data testing should be completed by using an ISDN Basic Access tester, Digital CPE Simulator, laptop or similar device. Use the tester to confirm "Power Source 1 restricted".
A brightly lit LED will confirm layer 1 activated but not the presence of a TEI.
On System X exchanges a **double slow flash** may be observed every 15 seconds, this is caused by the System X line card toggling between info state 2 and info state 0 and back to info state 2. This is typical of all embedded System X lines (ETSI or Non ETSI) when there is no CPE connected on the S/T bus or the CPE is connected but not in the correct info state.
The LED not lit or permanently **fast** flashing indicates a problem with the network connection.
A permanently slow flashing LED could indicate a problem with the customer wiring or CPE.
BT Engineers Assistance website - http://customerservice.intra.bt.com/ea/index.htm.

6. Safety

CE	This equipment complies with the European directives 89/336/EEC "Electromagnetic Compatibility" (EMC) and 73/23/EEC "Low Voltage Directive".
	Do not work on the NT1 and its wiring, e.g. connect or disconnect cables, during periods of lightning activity.
	**Hazardous Voltages !** Remote Power Feeding / ISDN connection (Line) The ISDN connection is regarded as a source of voltage that should be inaccessible to user contact. Do not attempt to tamper with or open the NT1 or the connection hardware ! Maintenance must be made only by suitably trained engineers.
	**ESD Protection (for service personnel)** When handling the unit with the cover opened, please use ESD protection methods acc. to EN 100 015.

Safety status of interfaces

Port	Type of circuit
S/T interface	TNV1 (Telecommunication Network Voltage)
U interface	TNV3 (Telecommunication Network Voltage)

The ISDN 2e Network Terminating Equipment 8D is manufactured for BT by

3M Quante® Telecommunications