8310 Basic Unit
Installation Guide

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STATUTORY NOTICES

APPROVED for connection to telecommunication systems specified in the instructions for use subject to the conditions set out in them.

NS/1282/1/L/601989

WARNINGS

The 8310 basic unit has a removable dress panel fitted to the front of the unit and removable blanking plates fitted at the rear. These panels may only be removed by suitably qualified personnel for installation or maintenance purposes, and must be replaced afterwards. Removal under any other circumstance would invalidate the RFI (Radio Frequency Interference) and safety type approvals.

Please refer to Appendix B of this manual for KiloStream ports in the 8310 basic unit.

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when 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.

Czech Republic Safety Statement

Prístroj musí byt umístěn v blízkosti sít'ové zásuvky. K odpojení přístroje od sítě slouží vidlice sít'ového přívodu.

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Preface

This guide provides information for network controllers to install the 8310 Basic Unit.

Information is also provided on basic operation of the unit's control panel.

MORE STATUTORY NOTICES

IMPORTANT FOR UK USE

The wires in the mains lead of this apparatus are coloured in accordance with the following code:

Green & Yellow: Earth Blue: Neutral Brown: Live

As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured Green & Yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚, or coloured green, or green & yellow.

The wire which is coloured Blue must be connected to the terminal in the plug which is marked with the letter N or coloured black.

The wire which is coloured Brown must be connected to the terminal in the plug which is marked with the letter L or coloured red.

If the moulded mains plug is removed from the lead of this equipment, the plug must be disposed of immediately.

CE 168X

CaseCommunications Ltd declare that this product conforms with the protection requirements of Council Directive 89/336/EEC on the approximation of the laws of the member states relating to electromagnetic protection

Case Communications Ltd declare that this product conforms with the requirements of the European Communities Council directive of 73/23/EEC on the harmonisation of the laws of Member States to electrical equipment designed for use within certain voltage limits.

This equipment has been tested using shielded DTE cables supplied by Case Communications Ltd. These cables, or equivalents, must be used to ensure compliance with this declaration.

Case Communications Ltd declare that this product conforms with the requirements of the Council Directive of 91/263/EEC on the approximation of the laws of the Member States concerning telecommunications terminal equipment, including the mutual recognition of their conformity covering the following port types:

Port	Public Telecommunications Network(s)
Network Port, fitted with the appropriate cable as specified below:	Private Circuits using interfaces compatible X.25 (1984) using interfaces compatible with X.21 (V.11) or X.21*bis* (V.28) or X.21*bis* (V.35) or X.21*bis* (V.36). Private circuits using interfaces compatible at the physical layer with X.21 (V.11) or X.21*bis* (V.28) or X.21*bis* (V.35) or X.21*bis* (V.36).

Interface Type:	Cable Part Number:
X.21 (V.11)	X890-401011
X.21bis (V.28)	X818-401211
X.21bis (V.35)	X818-401311
X.21bis (V.36)	X890-406611

All PCB assemblies contain Electrostatic Sensitive Devices (ESDs) which may be permanently damaged if incorrectly handled. This equipment must be handled in accordance with BS5783 code of practice for the handling of electrostatic sensitive devices.

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1 The 8310 Basic Unit

1.1 Introduction

The 8310 is a generic name for a high-performance multi-protocol PAD. The functionality of the 8310 unit depends on the configuration and the software running on the Application card(s).

1.2 Physical Description

The 8310 basic unit consists of a chassis with a motherboard, power supply and fans. The display and control panel can be seen on the front of the unit (Figure 1-1).

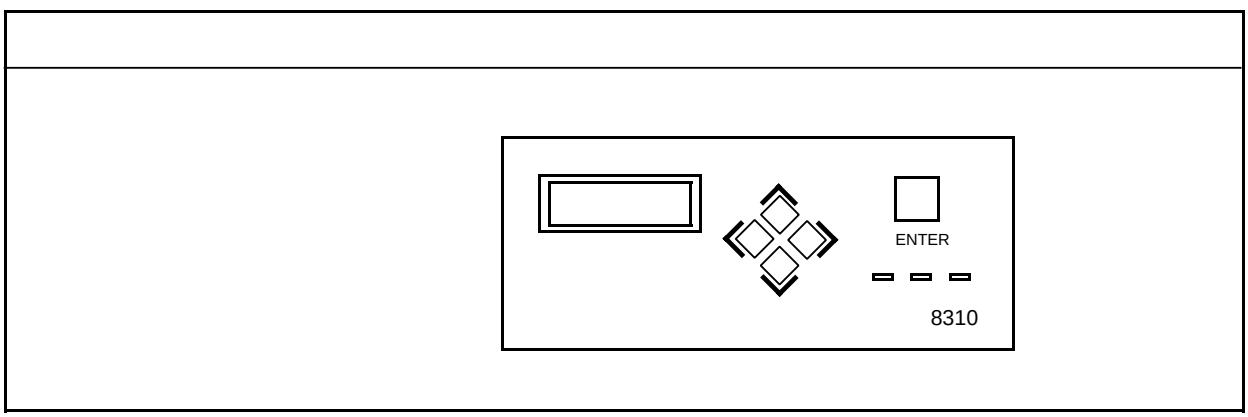

Figure 1-1 The 8310 Basic Unit Chassis Front View

The rear of the unit has mains connectors, fuse housings and application card connectors. Blanking plates cover the slots where cards are not fitted (Figure 1-2).

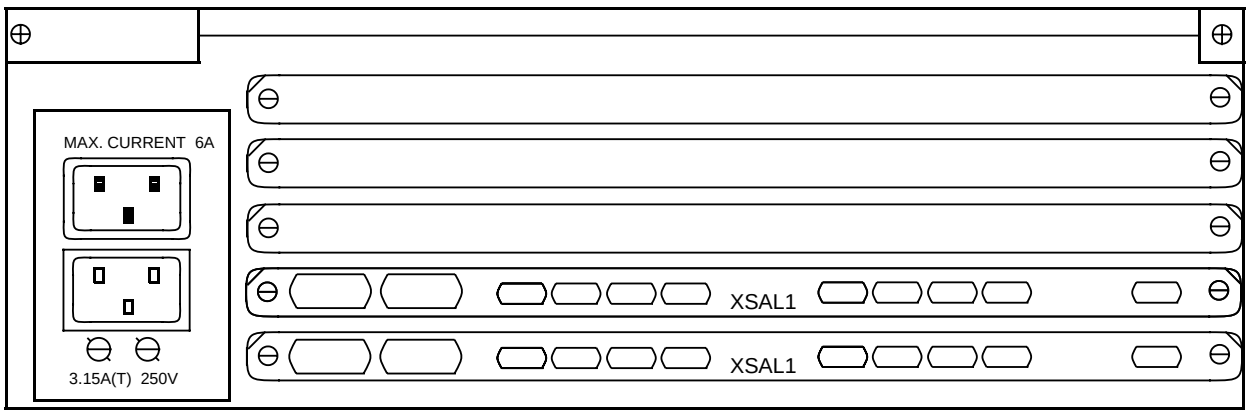

Figure 1-2 Example 8310 RearView

2 Installation

2.1 The 8310 Site

The installation area should be clean, and free from environmental extremes. One unit may be stacked on top of another provided they are in free air which does not exceed 40°C. The units should be sited so that the indicator lights and the display can be seen. (The display is best viewed from slightly above its centre line.)

2.2 Mains Connection

Connection to the mains supply is by one of two options:

- A three-core cable with approximately 2 metres free length, terminating (in UK) in a standard 13 amp plug fused at 10 amps.
- A three-core cable 1m in length, with a male IEC connector on one end and a female IEC connector on the other. This cable is used to supply mains power to or from another 8310 basic unit without the use of multiple mains plugs.

The 8310 basic unit is dual-fused: both the LIVE and NEUTRAL connections are fused.

Fuses must only be replaced with the correct type and value, and must not be short circuited.

To replace a fuse, firstly disconnect the mains supply, withdraw the IEC socket from the unit, and use a screwdriver to withdraw the fuse.

The 8310 unit itself requires 1 amp (1.5 amps for 115v version). However, a maximum of 6 amps is available via the female IEC connector at the rear of the unit. This means that a 8310 unit can draw a maximum of 7 amps from the mains (7.5 amps for 115v version).

2.3 Installing the Application Cards

Details on installing the application cards are given in the Series 8000 Application Card Installation Guide (X890-303351).

Note: Any unoccupied card slot must be fitted with a blanking plate. See statutory notice on page 0-2.

3 The Control Panel

The 8310 Basic Unit can perform a number of useful operations via the control panel on the front of the unit.

3.1 Description

The control panel is shown in Figure 3-1. It has three LEDs, a two-line LCD dot matrix display, **Up**, **Down**, **Left** and **Right** cursor keys, an **Enter** key and a buzzer.

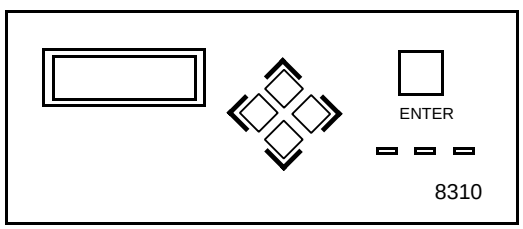

Figure 3-1 The 8310 Control Panel

The LEDs have the following meanings:

Green	ON:	Normal Operation
	OFF:	Power failure
Red	ON:	Power up Diagnostics Failure
	FLASHING:	Alarm Activated*
	OFF:	Normal
Yellow	ON:	Eprom Checksum Error
	FLASHING:	LCD Display Failure
	OFF:	Normal

* The 8310 buzzer will sound if the alarm is activated.

The 8310 has two modes of operation: Normal and Menu.

3.2 Normal Mode

This mode is entered automatically after the 8310 is powered on and power-up diagnostics are completed, or after a system reset (see below).

In this mode the LCD displays the types of cards and the status of each card in the 8310 unit. A minus sign (-) is displayed if no card is present in a particular slot. Pressing the **Enter** key will display the card numbers (1 to 5).

3.2.1 Resets

Pressing the **Up** and **Down** cursor keys simultaneously for about 5 seconds will cause the 8310 control panel to be reset with no cards being affected.

Pressing the **Left** and **Right** cursor keys simultaneously for about 5 seconds will cause the 8310 and all cards to be reset.

3.3 Menu Mode

This mode is entered from Normal mode by pressing **Left**, **Right**, **Up**, **Up** and then **Enter**. The LCD will display **MENU mode:** and the option: **Functions ?**.

3.3.1 Operating the Menus

The menus are operated by using the cursor keys and the **Enter** key. All available options in each menu can be scrolled through by the use of the **Up** and **Down** cursor keys, and options are selected by pressing the **Enter** key.

For example, the top menu has three options:

Functions ?
Status ?
Quit ?

The **Up** key will cause the options to scroll up, and the **Down** key will cause them to scroll down. Pressing the **Enter** key when:

Functions ? is displayed will put the user into the Functions menu.

Status ? is displayed will put the user into the Status menu.

Quit ? is displayed will exit from Menu mode and put the user back into Normal mode.

If nothing is pressed for 30 seconds then the 8310 will automatically exit menu mode without performing any action.

3.3.2 The Functions Menu

In this menu the following operations can be performed:

Card Reset

This option is used to perform a hardware reset on any of the cards in the 8310 unit. Each card is number 1 to 5, which corresponds to its slot number.

The card to be reset is selected by moving the cursor to the required card number using the **Left** and **Right** keys and then pressing the **Up** key. This will cause the card number to flash, i.e. it has been selected. The **Down** key can be used to de-select the card. More than one card may be selected if required by repeating this operation.

After selecting all the cards that are to be reset, press the **Enter** key. The 8310 then summarises the cards that are to be reset (just in case you made a mistake!) and prompts for verification. Once verified, the selected cards are reset and the 8310 goes back to Normal mode.

Card S/W Abort

This option is used to perform a software special function in any of the cards in the 8310. The cards are selected in a similar manner to the card reset procedure described above.

Buzzer

This option is used to enable or disable the internal buzzer which is automatically activated in the event of an alarm becoming active.

Panel Cold Start

This option is used to set the control panel back to its default values.

Diagnostics

This is a sub-menu where a number of diagnostic operations can be performed. This facility should only be used by suitably qualified personnel.

3.3.3 The Status Menu

This menu has available the following options:

S/W Versions

This is a sub-menu which can be selected to display the firmware version of the 8310 display card and the version of the loaded software on the display card if present.

Alarms

Selecting this option displays any current active alarm. Currently there is only one possible alarm: **Fan Fail**.

Appendix A Specification Summary

Mains Supply

Power	220-240 VAC @ 1 amp or 110-120 VAC @ 1.5 amps 47-63 Hz, single phase 150 VA max.
Fuse Rating	3.15 AT 20mm (2 off)
Power Outlet	6 amps max may be drawn from the supplied female IEC connector.
Cable	Approx. 2 metres (with 13A plug in UK)
Leakage Current	<0.6 mA
Dissipation	< 120 watts
Power Factor	0.6 @ 230 V 0.72 @ 115 V

Unit Dimensions (approx) 131 mm (5.12 ins) high
432 mm (16.93 ins) wide
442 mm (17.32 ins) deep

Weight <20 kg (44 lbs) (less external cables)

Environment

Ambient temperature	Operating: +5°C to +40°C Storage: –25°C to +55°C
Relative Humidity	0% to 95% non-condensing at +40°C
Altitude	Up to 40,000 feet
Atmospheric Pressure	800-1100 mb.

Appendix B UK PSS and KiloStream

B.1 General

Ports labelled '**SAFETY WARNING See Instructions for Use**' do not provide isolation sufficient to satisfy the requirements of the relevant parts of BS 6301. Apparatus connected to these ports must itself either be approved to the relevant parts of BS 6301 or have previously been evaluated against British Telecom (Post Office) Technical Guide 2 or 26 and been granted permission for attachment. Other usage will invalidate any approval given to this apparatus.

In order to meet the safety requirements of PSS/KiloStream approval it is important to make sure that the equipment is correctly installed and maintained.

When delivered from the factory for use in the UK the physical interfaces of ports which can be connected to PSS and KiloStream are given in Table B-1.

INTERFACE TYPE	CONNECTOR TYPE	CABLE PART NUMBER
V.24 up to 19K2 bps	25-way D-type male (tooled)	X818-401211
V.24 up to 19K2 bps	15-way micro-D to 25-way D-male (tooled)	X890-410511
X.21 up to 64K bps	15-way D-type male	X890-408411

Table B-1 Permissible UK PSS/KiloStream Connections

If any connections on the 8310 are connected to PSS or KiloStream then all other connections on that 8310 must be to apparatus that has either been approved to the relevant parts of BS 6301 or has previously been evaluated against British Telecom (Post Office) Technical Guide 2 or 26 and been granted permission for attachment. Other usage will invalidate any approval given to this apparatus. If there is any doubt as to the suitability

of the equipment, then the advice of a competent engineer should be sought.

Connection to PSS and KiloStream NTUs must be made with the cables specified in Table B-1, and they must be installed by a competent engineer.

The V.24 composite and channel interfaces are for connection to PTO Service Category 1.

To comply with NET 1 this product provides DTE Uncontrolled Not Ready protocol on the X.21 interface. This protocol may fail to operate satisfactorily at line speeds below 4800 bps.

The V.24 interface on channels 1 to 9 is approved for connection only to a relevant branch system. For the purposes of approval the interface cable X890-410511 constitutes the relevant branch system.

The V.24 composite and X.21 composite interfaces are approved for direct connection to digital networks using cables X818-401211 and X890-408411 respectively.

The V.24 composite and channel interfaces can only operate up to 9600 bps for PSS connection, but up to 19K2 bps for KiloStream connection.

B.2 NTU Pin Assignments

The pinout tables B-2 and B-3 show the V.24 and X.21 interface pin assignments presented to a PSS/KiloStream NTU at the NTU end of the cables specified in Table B-1. For the pinouts at the 8310 end of the cables refer to Appendix B.3.

PIN NO.	DIRECTION	ASSIGNMENT
2	output	Transmit Data (TxD)
3	input	Receive Data (RxD)
4	output	Request To Send (RTS)
5	input	Clear To Send (CTS)
6	input	Data Set Ready (DSR)
7	-	Signal Ground (SGND)
8	input	Data Carrier Detect (DCD)
15	input	Transmit Clock (TxC)
17	input	Receive Clock (RxC)
20	output	Data Terminal Ready (DTR)

Table B-2 V.24 Interface Pin Assignments (At NTU End of Cable X818-401211 and X890-410511)

PIN NO.	DIRECTION	ASSIGNMENT
3	output	Control (CA)
10	output	Control (CB)
6	input	Signal Element Timing (SA)
13	input	Signal Element Timing (SB)
2	output	Transmit Data (TA)
9	output	Transmit Data (TB)
4	input	Receive Data (TA)
11	input	Receive Data (TB)
5	input	Indication (IA)
12	input	Indication (IB)
8	-	Signal Ground (G)

Table B-3 X.21 Interface Pin Assignments (At NTU End of Cable X890-408411)

B.3 Cable Pinouts

Figures B-1 to B-3 give the pinouts of the three available PSS/KiloStream cables.

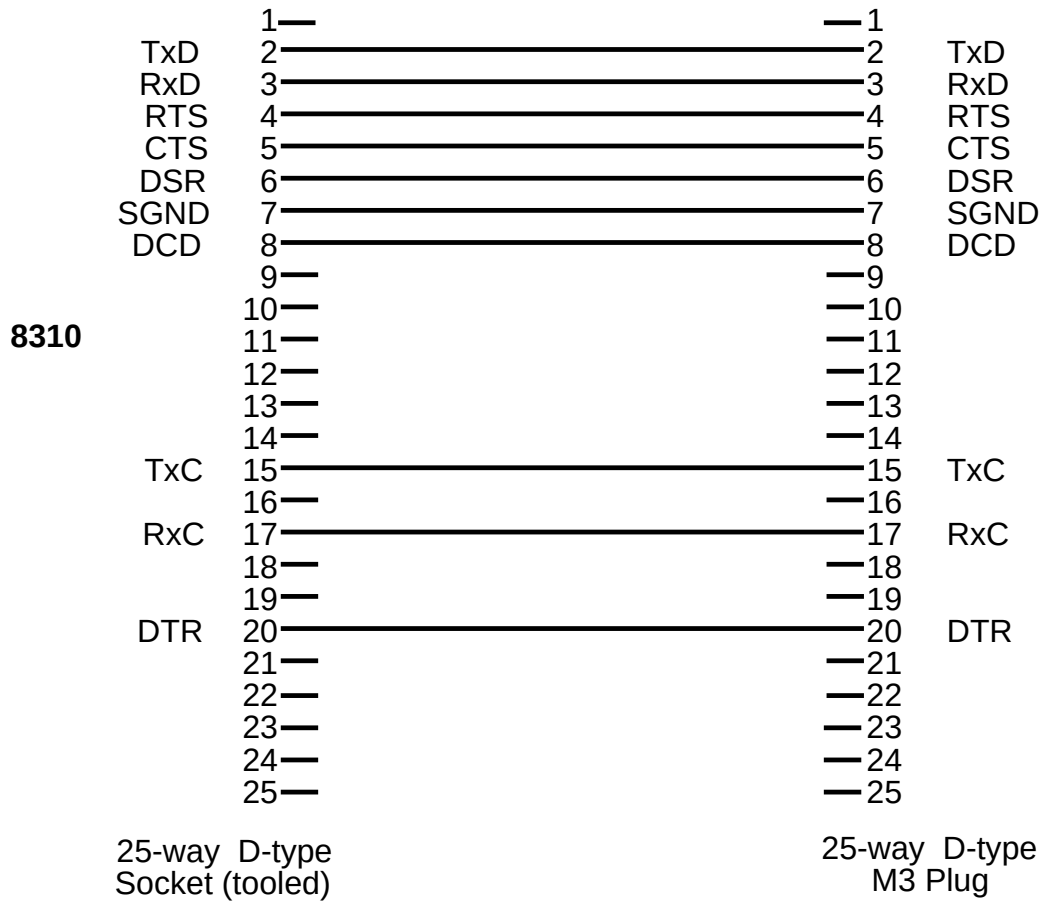

Figure B-1 V.24 PSS/KiloStream Cable Part Number X818-401211

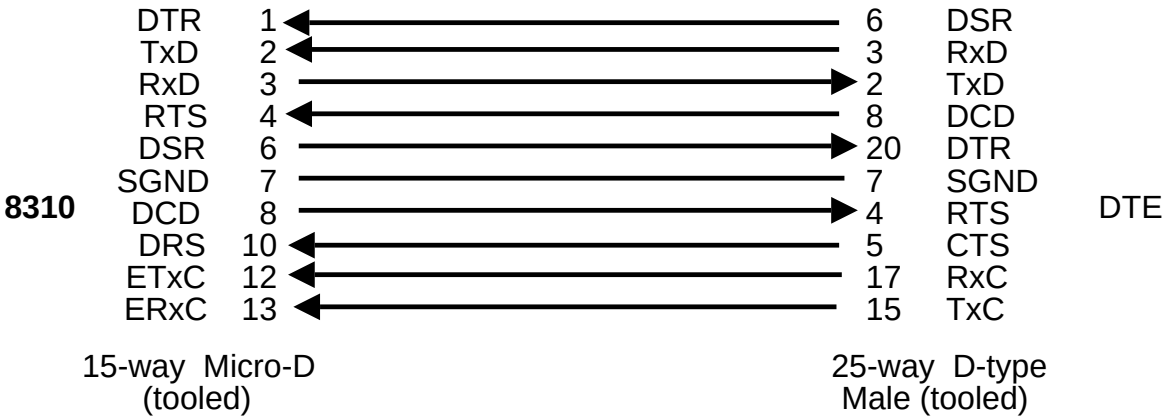

Figure B-2 V.24 PSS/KiloStream Cable Part Number X890-410511

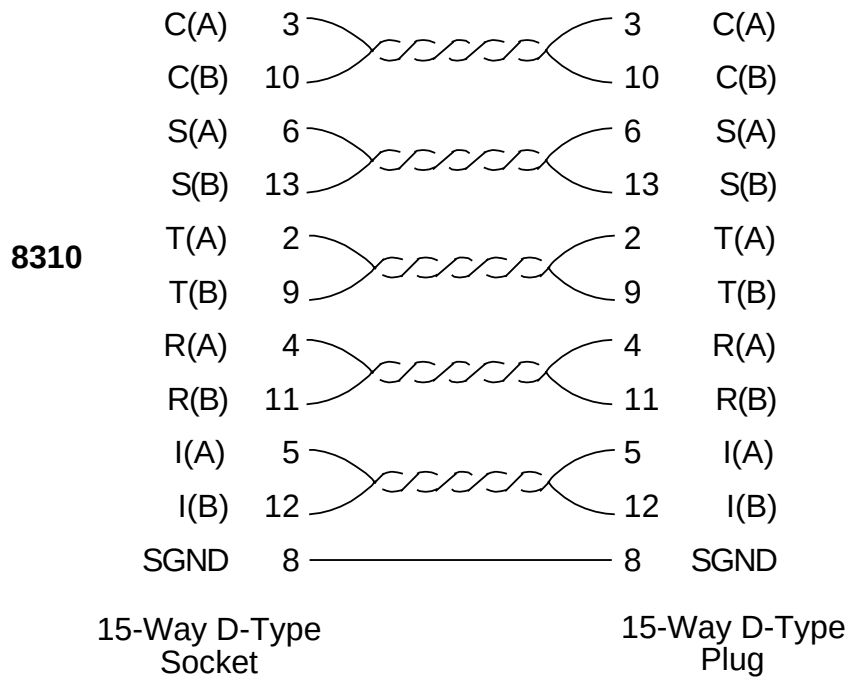

Figure B-3 X.21 PSS/KiloStream Cable Part Number X890-408411