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The Source for Connectivity

1 8 NOV 1998

DataBond N*64
ISDN Terminal Adapter
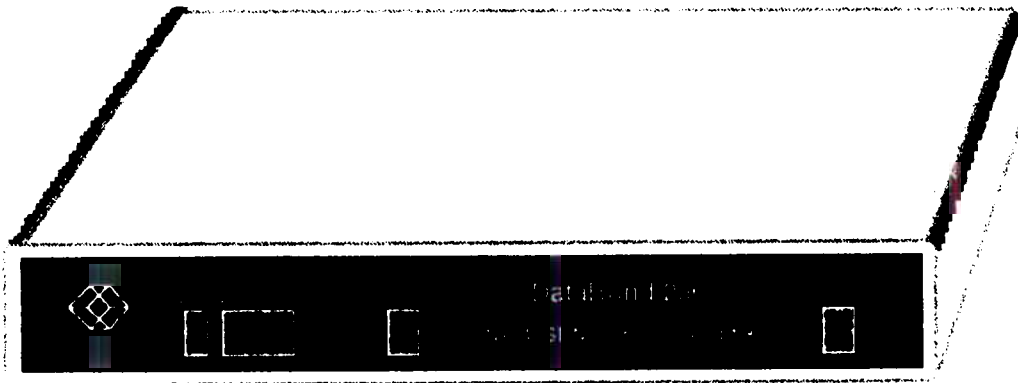
DataBond Terminal Adapter

Contents

1. NETWORK AND SAFETY STATEMENTS

1.1 Safety Warnings

Safety requirements are not fulfilled unless this equipment is connected to a wall socket outlet with a protective earth (PE) contact.

The power cord used to connect this equipment must be HAR marked and fitted with an IEC320 connector and an ASTA approved moulded plug.

There are no user serviceable parts in this machine. All servicing and repair tasks must be undertaken by qualified service personnel.

Isolation from mains power is achieved by the removal of the main power cord

1.2 Telecommunications Safety

The safety status of the ports on the DataBond Terminal Adapter system is according to EN60950.

Connections to these ports must be made such that the equipment continues to comply with the standard defined by EN60950 for SELV/TNV circuits, after such connections have been made.

When using this device to backup a leased circuit, connect only DTEs that have been approved for connection to line.

1.3 Port Safety Status

PORTS	SAFETY STATUS
ISDN Network Ports	TNV
Control/Alarm Port	SELV
DTE 1	SELV
DTE 2	SELV
LLB 1	SELV
LLB 2	SELV
PSU 1	SELV
PSU 2	SELV

2. CHECKLIST OF EQUIPMENT SUPPLIED

This manual has been designed to cover the complete DataBond Terminal Adapter range. Each individual unit's specification is identified by means of a part number which describes the configuration of the unit. This number can be found on the unit configuration label on the bottom of the machine. The element of the part number describing a particular unit's configuration begins with "ISUT" denoting DataBond Terminal Adapter, followed by a number (i.e. 1024/) indicating the maximum aggregation speed in Kbps; followed by either 1/ or 2/ showing the number of DTEs and finally a B and/or P showing whether Basic Rate/Primary Rate ISDN is populated.

The basic packing unit is designed to accommodate one Terminal Adapter with associated power supply unit(s) and documentation, specifically:-

• One DataBond Terminal Adapter Unit

• A maximum of two power supply units (PSU) with power lead/s appropriate for the country of intended use.

• This Manual

• One 3.5" diskette containing the Graphical User Interface software.

In addition, there may be a separate package containing any interface cables that have been ordered with the unit.

3. SYSTEM INSTALLATION.

3.1 Power

DataBond Terminal Adapters will have been supplied with one or two power supply units (PSU's). Each PSU is capable of powering a fully configured Terminal Adapter unit. Using two PSU's provides a load sharing facility, thus providing further protection from system outage.

Only the approved power supply from Black Box should be used to ensure continued compliance with the approval and safety status of the machine.

Power requirements: 110-240VAC, 50-60 Hz, 25 watts.

Connect the integral power supply lead to the DataBond Terminal Adapter port marked "PSU A" or "PSU B". Attach the supplied AC lead to the PSU and the mains power outlet (see safety statement in Section 1 before making this connection).

The DataBond Terminal Adapter will now power up and perform the boot-up tests.

3.2 Control/Alarm Port (Gui) Connection

All communications with the DataBond unit are performed using the Graphical User Interface (GUI). For details on GUI installation please see Section 4.

Connect the port marked "Control/Alarm" on the rear of the unit to the communications port on your PC. Additional serial cables are available from Black Box, please call on the normal sales line for information. Details of this cable can be found in Section 13.

3.3 ISDN Network Connections

Connect the DataBond Terminal Adapter unit to your ISDN BRA/PRA service provider's access point/s. The unit configuration label on the bottom of the machine will indicate the interface type installed on each of the four ISDN ports. Only approved cables should be used for this connection. Additional ISDN cables are available from Black Box, please call the sales line for information. Details of these cables can be found in Section 13.

3.4 DTE Connections

Attach your DTE device to the associated DataBond Terminal Adapter "DTE" port using the short stub cable provided with this unit and the DTE's own X.21 cable.

Additional X.21 and V.35 DTE cables are available from Black Box, please call on the normal sales line for information. For cable details see Section 13.

3.5 INSTALLING THE GRAPHICAL USER INTERFACE (GUI).

All configuration and operating procedures are performed using the GUI. Before you can communicate with the DataBond unit you must install the GUI on a PC with Windows or Windows 95.

1. Insert the GUI diskette in the A: drive.
2. From the FILE MANAGER (Windows 95 use EXPLORER) run the file called "setup.exe".
3. Follow the on-screen instructions during the installation programme.

Once the above procedure has been completed the system is ready for configuration.

4. GRAPHICAL USER INTERFACE (GUI) OVERVIEW and INITIAL CONNECTION.

The DataBond Terminal Adapter unit is managed and configured using a Graphical User Interface (GUI) which runs on most PCs. The GUI offers logical and intuitive menus for configuration and management. It is possible to query the status of local and remote units from a local GUI and DataBond Terminal Adapter.

You are advised to make at least one back-up copy of your GUI disk for safe keeping. In the event of loss Black Box can supply a replacement.

4.1 How does the GUI work?

The DataBond Terminal Adapter GUI works on a similar principle to a text editor.

With a text editor, you:

- 1. Read the file from disc,
- 2. Make changes,
- 3. Save the file back to disc.

If you don't save the file, your changes will not be actioned and will be lost.

With the GUI, you:

- 1. Download the configuration from the DataBond Terminal Adapter (or read it from a PC disk file),
- 2. You make changes,
- 3. Upload the configuration back to the DataBond Terminal Adapter (or save it to a PC disk file).

If you don't save the configuration, your changes will not be actioned and will be lost. All configuration changes are performed in an "off-line" state. If you wish to inspect or update a configuration of a particular machine, it is necessary to download the config from the machine, make the changes and then upload the new configuration file.

4.2 Using the GUI

All configuration and management is performed using the Graphical User Interface (GUI).

If you have not yet installed the GUI programme on your PC see Section 3.

Start the GUI programme using the "Black Box" icon. In a standard installation this icon will be found in the program manager for Windows 3.1/NT or the Start menu for Windows 95.

You may be prompted to select a Comm Port

Once the GUI program is running, a window showing useful telephone numbers is displayed.

Click the OK button. At this point you will be presented with the login window shown below.
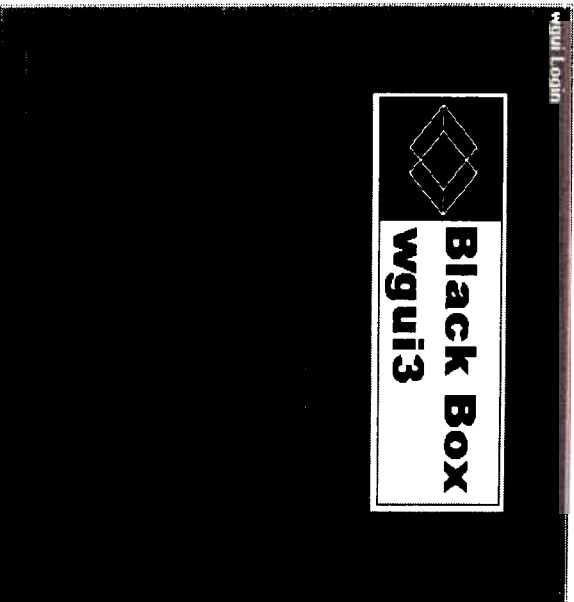
"Connect To DataBond"

Click this button to start the communication with the attached DataBond Terminal Adapter. See Section 4.3. See below if you wish to work offline and not connect to a DataBond Terminal Adapter at this time.

"Work With Files"

You do not have to be connected to a DataBond Terminal Adapter in order to build a configuration. Clicking the "Work With Files" button will start the GUI without connection to a DataBond Terminal Adapter and will enable you to build, modify and store configurations as text files on the PC disk. A default file is provided called DEMO-CFG.TXT. When the GUI is running in this mode, the Picture window will indicate an "Offline" state. Should you wish to connect to a DataBond Terminal Adapter from the Offline state you will need to use the connect to DataBond Terminal Adapter button in the toolbar or the option in the File menu. See Section 5.

Pressing the "Work with Files" button will prompt for a configuration file name from disk to be loaded. The GUI comes complete with a default configuration file called "DEMO-CFG.TXT. This default configuration relates to a fully populated unit with a full complement of BRI ISDN ports.

The Picture window is displayed once the GUI is running. Starting from this window it is possible to modify all parameters in the system and then save your new configuration to a disc file, or, if you prefer, you can connect to a DataBond Terminal Adapter and upload the configuration.

Your DataBond Terminal Adapter may not be fully populated with a full complement modules, yet until you connect to the unit, the GUI has no way of knowing this. When "Working with Files" you may be configuring modules that do not exist. In practice, this is not a problem since the DataBond Terminal Adapter will simply ignore any configuration commands that are not appropriate.

"Upgrade Information"

Clicking this button will show useful information regarding the upgrade path of your system.

4.3 Connecting To The DataBond Terminal Adapter

If you selected the "Connect to DataBond Terminal Adapter" button in the initial "Log-In" window (Section 4.2), you will automatically be presented with the dialog box shown below. If, on the other hand you opted to "Work With Files", you can gain access to this dialog box via the File/Connect to DataBond Terminal Adapter menu in the "WGUI WINDOW" or the "Connect to DataBond" tool bar button.

For connection to a local unit, you need only supply the password. New units do not have a password configured, simply press "enter" when prompted for the password. To change or configure the password. See Section 6.2.

Connect to the local DataBond
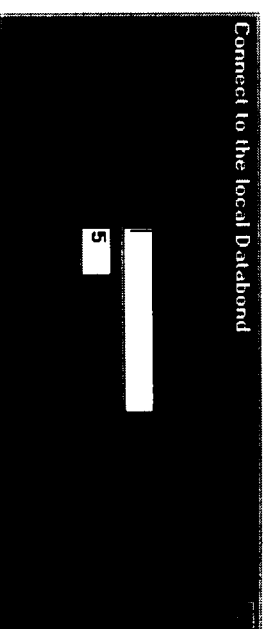
"Number to Dial"

This field is only used when connecting to a remote DataBond. See Section 11.

"Password"

Enter the Password for the local unit. New units do not have a Password configured - simply press "Enter".

"Timeout after"

The GUI will timeout and disconnect from the DataBond if no activity is sensed for this time period. This can be disabled by entering "0".

Having connected to a DataBond unit you will be presented with a Dialog box

This box is a reminder that although you are connected to the machine you have not yet downloaded its configuration to the PC. Click the yes button to download the attached DataBond configuration data. If you do not wish to download the configuration file simply click "No" (remembering that the config file you are working with is NOT the current config of the attached machine).

Downloading the DataBond config file will overwrite the active file on your PC. If you have not saved the active file the GUI will issue the following window.
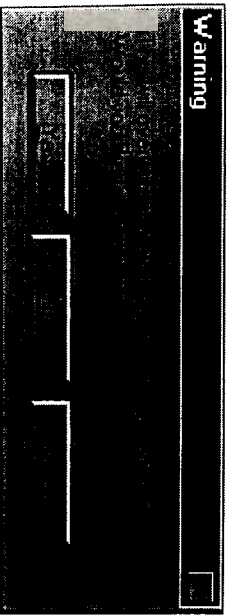

The configuration you have just downloaded has not been not saved to disk. If you wish to save this configuration to disk click the Yes button - you will be prompted for a file name and location to save it.

Once you are connected to the local DataBond it can be used to connect and configure a remote unit. See Section 11 for details on Remote Access.

5 GUI WINDOWS, MENUS AND TOOLBAR

The main screen shows the three windows, menu options and the tool bar.
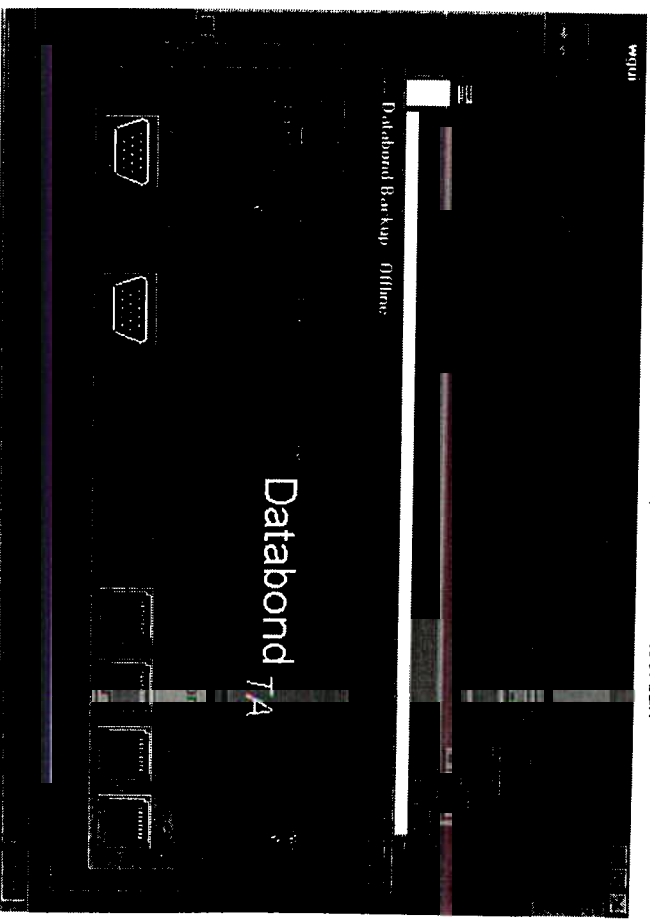
## 5.1 Event Window

All system events will be displayed in this window. Events are colour coded for easy recognition. Level 1 "ALM" events will cause a large RED window to appear in the attached GUI and the PC to sound an alarm. To remove the alarm window, simply close it in the normal manner. If you wish to silence the alarm but keep the Red window visible, select the Action/Cancel Alarm menu option. For information on event codes see Section 11

5.2 Terminal Window

All communication with the attached DataBond will be displayed here. This window is primarily for debug purposes and can be hidden from view by clicking the option in the "View" menu.

5.3 Picture Window
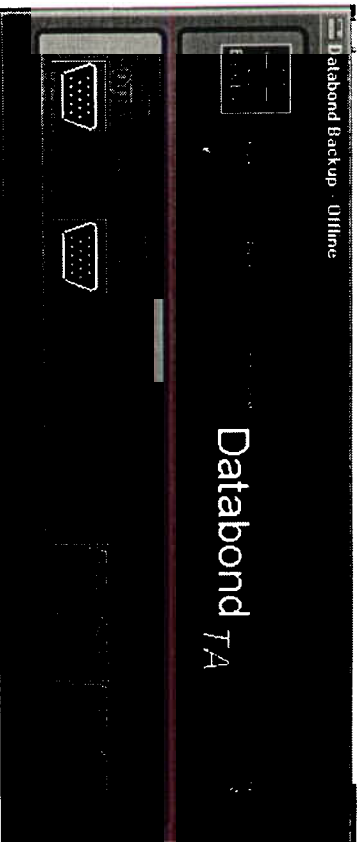
This window provides the main access for all configuration and management operations.
Clicking the left mouse button on any of the LED's will provide information as to their function.
Clicking the left mouse button on any of the ports will take you in to the configuration areas for the specific port.

5.4 Menus

5.4.1 File Menu

"Connect to DataBond"
Allows connection to the local DataBond unit. If already connected to a local DataBond, you will be given the option to connect to a remote unit.

"Disconnect"
Disconnects from whatever unit you are currently connected to.

"Download Config"
Reads the configuration from the connected DataBond (this could be a remote unit). The configuration may then be changed, either uploaded or saved as a file.

"Upload Config"
Writes the current configuration in the PC to the DataBond. This configuration file may have come from a disk, been created from scratch or previously downloaded.

"Open Config file"
Reads a configuration file from disk. The configuration may then be uploaded to a DataBond unit, modified and uploaded or saved back to the file.

"Save Config file"
Saves the current configuration to PC disk

"Save Config file as"
Saves the current configuration to a new file.

"Print Preview"
Displays the currently active window exactly as it will appear on the printer

"Print"
Prints the currently active window.

"Print Setup"
Select and configure a printer.

"Exit"
Closes the GUI.

5.4.2 Setup Menu

"Comm Port"
Set up the PC serial port used to connect to the DataBond Terminal Adapter. The DataBond Terminal Adapter's settings are 19200 baud, 8 data, 1 stop, no parity. See also Section 6.1.

"System Settings"
Set the time of day clock, local site identifiers, password and event reporting options. This area also contains the unique security numbers. See also Section 6.2

"Remote Access"

Set up the incoming call handling for remote access to the DataBond Terminal Adapter.

5.4.3 Action Menu

"Cancel Alarm"

Cancels the audible alarm associated with a Level 1 event message.

5.4.4 Window Menu

"Terminal Window"

This window shows the commands sent, and responses received from the attached DataBond unit and is primarily used for debug purposes.

"Cascade"

Arrange the open windows in a cascade.

"Tile Horizontally"

Arrange the open windows one above the other.

"Tile Vertically"

Arrange the open windows one beside the other.

"Arrange Icons"

Arrange the minimised windows along the bottom of the screen.

5.5 Tool Bar

ICON .... *Equivalent menu option*

[icon] .... File/Connect to DataBond

[icon] .... File/disconnect from DataBond

[icon] .... File/Download Config (from DataBond to the PC)

[icon] .... File/Upload Config (from the PC to DataBond)

[icon] .... File/Open Config File

[icon] .... File/Save Config File

[icon] .... File/Print

[icon] .... File/Print Preview

6. Global Configuration.

6.1 Comm Port Setup

To configure the PC Comm port, select the Setup/Comm Port menu or click on the Local Port in the Picture View

This screen sets connectivity parameters for communication with local DataBond.

The DataBond management values are: 19200 baud, 8 data bits, 1 stop bit, no parity.

Comm Port Settings
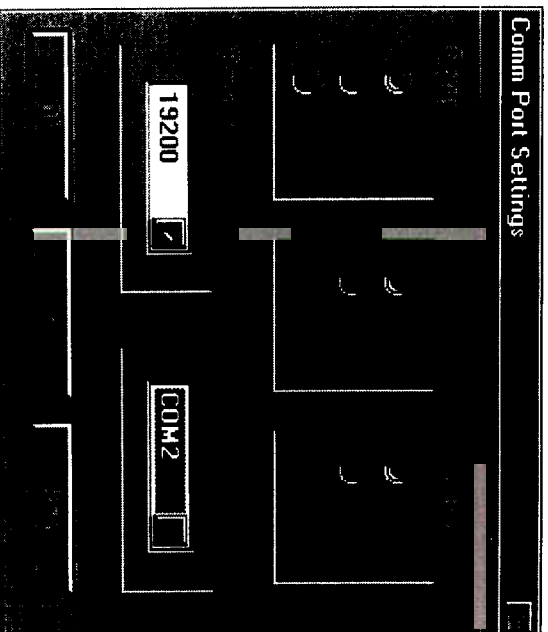
6.2 System Settings

Access to the System Settings area is via the Setup/System Settings menu. This window allows you to configure all system level parameters including date/time, Password and Event priorities.

"Date/Time"

Enter the date and time in the format shown above the boxes.

"Local Site ID"

These two fields give the option to define a 15 character name for each DTE port. If configured this information is used by the called DataBond for security purposes on incoming calls (see Section 10.2), and for identifying event sources. It is recommended that a recognisable circuit identifier be programmed in these fields for example "LDN-HK 256k" (London to Hong Kong at 256kbps).
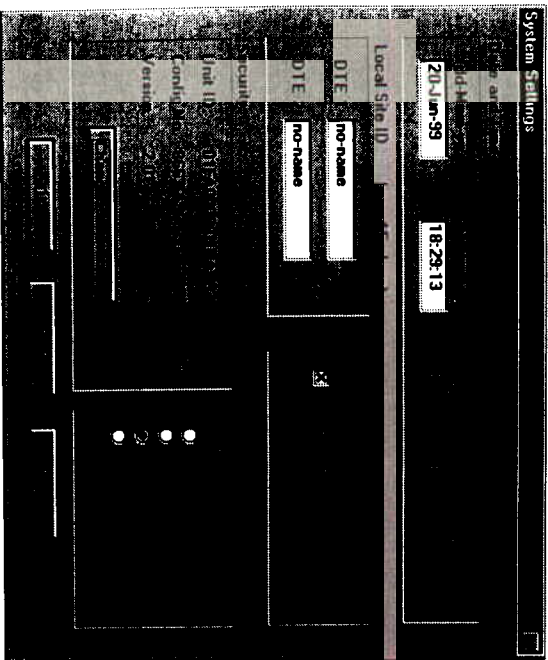
"Splash Screen"

Check this box to bring up a red alarm panel on the attached GUI screen in the event of a Level 1 alarm message being received

"Password"

Access to the DataBond system is protected by a password. For system interrogation, management or configuration the correct password will be required when logging in. Once you are connected to a local DataBond it is possible to access and configure remote units. See Section 11.
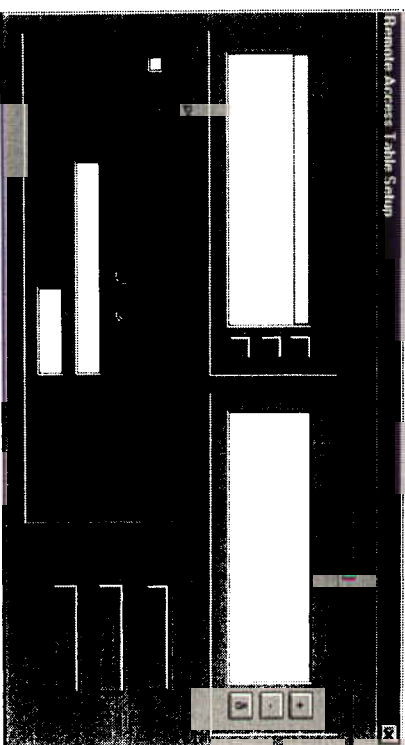
6.3 Remote Access

In order to utilise the Remote Access facility you must have either MSN/DDI or Sub Addressing available on the ISDN service.

Access to this window is via the Setup/System Settings Menu on the main menu.

All incoming calls are checked by the Remote Access Routing system at call set-up time. If the DDI or CLI match any of the numbers in the list, the call is assumed to be a maintenance call and is routed to the control module of the DataBond Terminal Adapter.

Care must be taken to ensure numbers that are used for normal call purposes are not configured in this dialog box.

DDI

This is the list of local numbers (i.e. the address of the local site as dialled by the remote site) that when called will be routed to the Remote Access module. There is no significance in the order of the numbers in the list and normally only one number is used. Enter here the numbers that will be called from remote locations to access this device. If you want to modify a number, just double-click on it or hit the delta (δ) button. The "*" character can be used as a "wild" card entry, ie "*/999" will allow calls to any number with a sub address of 999 to be routed to the Remote Management system.

It is important that the actual MSN/DDI or sub addressing number is entered here. Please note that "/*" should not be used as all incoming calls will be directed to the management module.

CLI

This is the list of calling numbers (i.e. the address of the remote site that is dialling) that are acceptable to this DataBond Terminal Adapter. There is no significance in the order of the numbers in the list. Only calls to from the numbers in this field will be permitted access to the Remote Access Module. If you want to modify a number, just double-click on it or hit the delta (δ) button. The "*" character can be used as a "wild" card entry, ie "01420488818/*" will allow calls from this number with any sub address to be routed to the Remote Management system

8.2 DTE Port Control Window

The DTE port utilises the Control and Indicate signals to establish calls and to decide if incoming call should be answered.
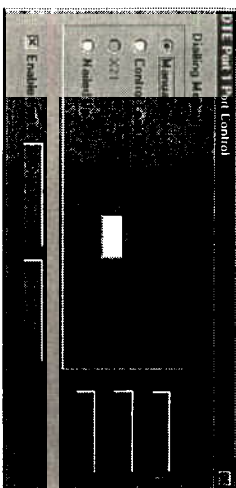
"Manual"

When this option is checked, the DataBond will perform in a fully manual mode. Out going calls must be established manually using the "Dial Now" button (see below for details), and all incoming calls will be accepted by the port regardless of the DTE state.

"Control Lead"

This option places the DataBond DTE port under full control of the attached DTE using the "control" and "indicate" signals as per the V.11/X.21 specification. Out going calls will be actioned when requested by the DTE raising the "control" lead. Incoming calls will be notified to the DTE by the DataBond raising the "indicate" lead, to accept the call the DTE must respond with by raising the "control" lead.

On seeing the DTE raise the "Control" lead, DataBond will attempt to establish the call profile selected in the "Outgoing Call Profile" window -see Section 9 for details.

"X.21"

reserved for future use.

Nailed Up

This selection will instruct this port to make a permanent connection according to the selected call profile selected in the "Outgoing Call Profile" window -see Section 9 for details. If the call is cleared through power failure or network failure, DataBond will attempt to re-connect. To close the call or stop dialling attempts you must un-check this option.

"Enable Port"

Enables the DTE port. If the port is not enabled it will not make or receive calls.

"Terminal Adapter Now"

This button is only enabled when the "Manual" selection above is made. Clicking this button will cause this DTE port to dial the call profile selected.

"Break Now"

This button will attempt to clear down any call profile active on this DTE port. This selection is primarily for use with the "Manual" option, however, if clicked when a "Nailed" or Control Lead" call is in place, DataBond will attempt to clear the call. If the call is a "Nailed" type or a "Lead Control" type and the DTE is requesting a call it will be re-established immediately.

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9. Outgoing Call Parameters.

To configure call profiles click the DTE port in the main Picture window followed by the outgoing call profile button in the DTE Main Configuration window.

This dialog allows you to configure the call profiles that will be setup for Manual, Nailed and Lead Control type calls. Aggregation parameters apply only to outgoing calls. For incoming calls, all the necessary parameters are passed from the remote DataBond Terminal Adapter via the ISDN.

9.1 Call Profiles

This window identifies the call profile to be used for Manual, Nailed and Lead Control calls on the specified DTE. The example shown below relates to DTE port 1.
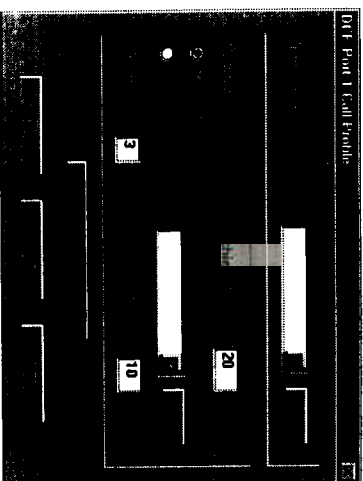
"Call Profile"

This drop-down menu allows the selection of the required call profile from a list of up to 20 individual profiles.

"Edit"

This button gives access to the detailed parameters of the selected call profile see Section 9.2 for details.

"Try Alternative Profile"

If required, an alternative site can be dialled. This is implemented if the Minimum Data Rate (see Section 9.2) is not established within the number of retries programmed in the field "Repeat this" field below, or immediately if no calls can be established to the primary site.

"Repeat this"

DataBond will attempt to establish capacity by dialling the selected call profile according to the numbers entered in these fields. If an alternative profile is configured the primary and alternative profiles are dialled in turn.

"Aggregation Testing"

This enables periodic testing of the connection to the remote unit. See Section 9.3 for further details.

9.2 Edit Call Profiles

This screen allows the configuration of outgoing call profiles. Up to 20 individual profiles may be configured, but only one (plus one alternative) is assigned to any one DTE at any one time. Call profiles apply only to outgoing calls. For incoming calls, all the necessary parameters are passed from the remote site during the initial call set-up.
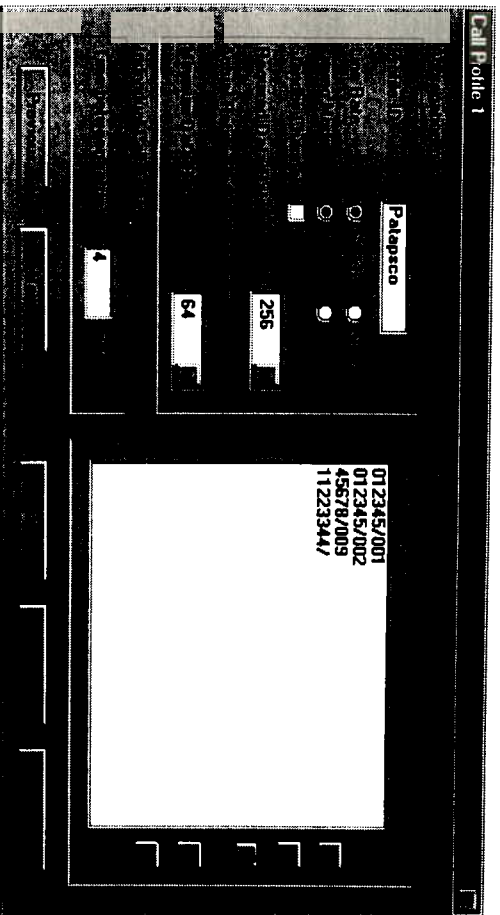
"Profile ID"

A user defined name to identify the profile.

"Line Rate"

The data rate of the individual bearer channels of the ISDN. Most countries use 64kbps.

"Timing Mode"

Defines clocking mechanism to the DTE. In Max. mode, the management and synchronisation overhead is included within the required data rate. DataBond therefore supplies a clock rate which is 0.78% below the cumulative ISDN rate. In Exact mode an extra ISDN channel is required to enable DataBond to provide service at an exact multiple of 56/64kbps. This option is normally only used by TDMs and some very specialised applications. The clock Speed supplied to the DTE is shown on this screen.

"Standby Channel"

Check this box to dial up an extra "standby" channel at the start of the call. This channel will be used to maintain the clock rate should an ISDN bearer fail.

"Required Data Rate"

Select the data rate at which this profile is to run.

"Minimum Data Rate"

This button fulfils two roles

1. As soon as enough channels are established to meet the Minimum Data Rate when dialling ISDN for backup purposes, DataBond will pass the replacement trunk to the DTE. As additional ISDN channels are established the data rate to the DTE will be increased.

2. If the minimum data rate cannot be met within the period defined in Section 9.1, calls will be cleared and all calls re-attempted using the timers and frequencies programmed in Section 9.2.

"Time between Retries"

This refers to the individual 56/64kbps ISDN channel only. Providing at least one channel is established all other channels will be dialled continually every X seconds

"MSN/SubAddress"

Defines the numbers to be dialled. There must be at least one number for each ISDN channel required. DataBond dials the appropriate number of ISDN channels starting from the top of the list. Up to 40 numbers can be specified. If calls fails to connect, DataBond will move on to the next number in the list. If at the end of the list there are still unconnected calls, DataBond will commence retries. To modify a number, just double-click on it or press the delta (δ) button. Use the "+/-" buttons to add/ delete and the up and down arrow buttons to promote/demote numbers in the list.

9.3 Aggregation Testing

Allows you to set up and execute a scheduled or immediate profile test. This helps to ensure that all ISDN connections will be available when you need them, and that the remote site is operating correctly.

DTE Port 1 Aggregation Testing
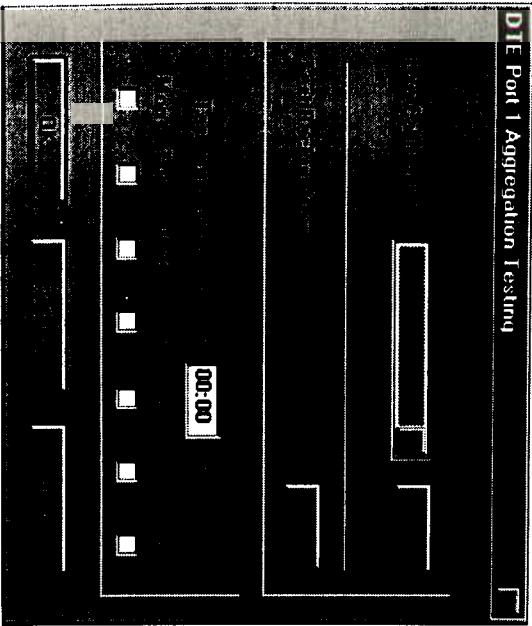
The testing can either be pre-scheduled or performed on demand.

To perform the test the DataBond dials up the remote site as specified in the selected call profile and transmits a test pattern via all the ISDN connections. Once satisfied that the system is working normally, the calls are dropped. The test result will be displayed to the left of the "Test Now" button and in the event log see page 12 for details of the event log.

Normal operation of the system is not affected whilst running a Back-up test.

10. Incoming Call Handling.

This area of the GUI defines where incoming calls are routed and any security options are set. The Call Routing software is responsible for filtering all incoming calls to decide if they should be accepted. This window allows you to set up the DDI and CLI numbers (i.e. called number and calling number respectively) and also the Site ID of any remote DataBond Terminal Adapter.

10.1 Incoming Call Table

"DDI"
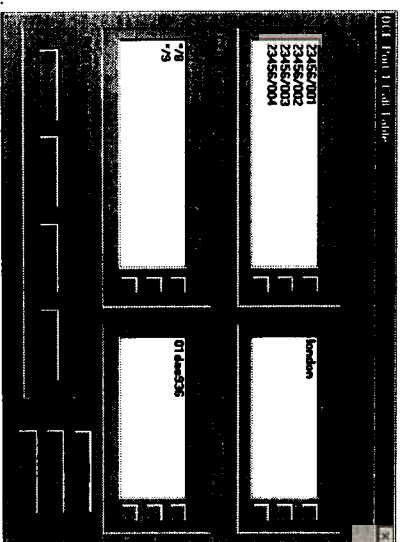
This is the list of called numbers (i.e. the address of the local site as dialled by the remote site) that will be accepted for delivery to this DTE. There should be at least as many numbers as the maximum number of bearer channels required by any aggregation profile. You can specify up to 40 numbers. There is no significance in the order of the numbers in the list. If you want to modify add or delete numbers use the buttons to the right. The "*" character can be used as a "wild" card entry, ie "*" will accept calls to any number.

"CLI"

This is the list of calling numbers (i.e. the address of the remote) that will be accepted for delivery to this DTE/LLB. There should be at least as many numbers as the maximum number of bearer channels required by any aggregation profile. You can specify up to 40 numbers. There is no significance in the order of the numbers in the list. If you want to modify add or delete numbers use the buttons to the right. The "*" character can be used as a "wild" card entry, ie "*/*"will accept calls from any number.

"Remote Site ID"

This is the list of remote Site IDs (i.e. the Site IDs of the DataBond Terminal Adapter(s) at any remote site that is dialling) from which incoming calls will be accepted See Section 6.2 for configuring Site Ids.

DDI and CLI are checked at call setup time. If the DDI or CLI do not match any numbers in the list for DTE Port 1 or Port 2, the call will be rejected.

If the Site ID does not match any in the lists for Port 1 or Port 2, the data path will not be established to the DTE and the calls will be cleared.

"Port 1-4"

The menu behind these buttons is used to provide restrictions on which individual incoming ISDN channels have access to this DTE port. The port number on the button refers to the individual ISDN port on the rear of the DataBond unit .See Section 10.2.
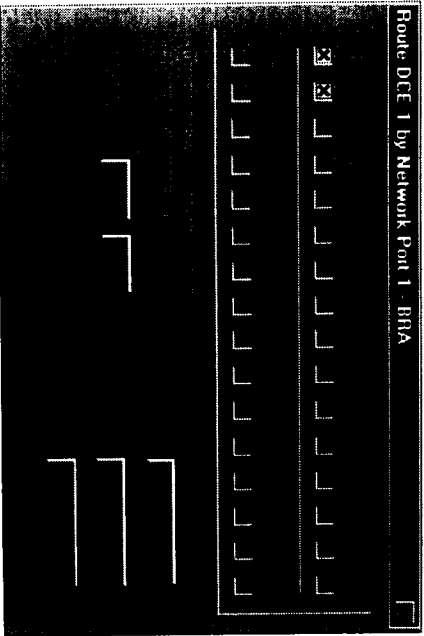
"Unit ID"

This is the list of remote DataBond unit ID numbers that will be permitted access to this device.

The calling units' ID number will be passed as part of the call set-up message. The called unit will reject any calls which do not contain a serial number shown in this list. To allow any unit to Terminal Adapter in enter a single "*"

The eight digit serial number is displayed as the last eight digits of the Unit ID number in the "System Settings" menu - see Section 6.2 for further details.

10.2 Restricting ISDN Access.

Route DCE 1 by Network Port 1 - BRA

The Bar at the top of the window indicates which of the two DTE ports and four ISDN ports this window applies to. In this example the unit in question has a BRI interface configured in ISDN port 1, hence only two channels are available for selection. If this machine had a PRI interface on ISDN port 1, the window would allow selection of all 30 channels.

Selecting channel 1 will enable this DTE port (DTE 1) to receive calls from ISDN port 1 channel 1. If the ISDN channel is not selected, this DTE will not be allowed to accept any calls coming in on the channel in question. The factory default configuration has all ports enabled.

11 Remote Access

DataBond provides the ability to connect with remote units for management and configuration purposes.

Before connecting to a remote DataBond you must first be connected to your local unit, see Section 4.3. Once connected, select the File/Connect to DataBond menu or use the connect to DataBond button in the tool bar. This will display the Remote Connection dialog box. Units must be configured to allow remote access, see Section 6.3 for details

Once you are connected, you can configure the remote DataBond Terminal Adapter just as if it were a local machine. The background will change to red for remote connection (instead of blue/grey for a local one).To disconnect from the remote unit, select the File/Disconnect menu.

"Number to Dial"

Enter the telephone number to access the remote sites maintenance module. This number must be contained within the "Remote Access DDI" list of the remote DataBond (see Section 6.3), otherwise maintenance access will be denied

"Password"

Enter the password for the remote unit. See Section 6.2.

"Timeout after"

The GUI will timeout and disconnect from the remote DataBond if no activity is sensed for the time period configured here.

12. EVENTS

The DataBond system is capable of storing Events in NV RAM for examination via the GUI. When you connect to a DataBond using the GUI, the Event window will display any stored events. If you are connected when an Event occurs it will be displayed immediately.

Events are grouped in a priority system, Level 1 being the highest and Level 4 the lowest. It is possible to configure what level of Events that are to be recorded. See System Settings on page 14 for details.

LEVEL 1 Event Messages (ALM - Shown in Red)

EVENT MESSAGE	EXPLAINATION
Aggregation Failed [cause]	An outgoing call profile has failed to connect successfully.
Reboot	The system has been rebooted.
Event Log Cleared	The Event Log has been downloaded to the GUI and the memory cleared.
Serial Number Failure	The unit ID number has been entered incorrectly.
PSU "A" Fitted	Power Supply "A" is operational.
PSU "B" Fitted	Power Supply "B" is operational.
PSU "A" Failed	Power Supply "A" has failed.
PSU "B" Failed	Power Supply "B" has failed.
PRI running [interface number]	The Primary Rate ISDN interface is running.
PRI failed [interface number]	The Primary Rate ISDN interface has failed.

LEVEL 2 Event Messages (WRN - Shown in Blue)

Configuration Change	A new configuration has been uploaded to the system.
Battery Low	The on-board battery is running low. Contact Black Box for details on replacement. If the battery is allowed to deteriorate the system will be unable to retain configuration information after power up.
Aggregation Test Failed	A requested aggregation test has failed.
Aggregation Established [speed]	A call profile has been successfully set up.
Aggregation Test [speed]	An aggregation test at the indicated speed was made.

LEVEL 3 Event Messages (EVT - Shown in Black))

Outgoing Aggregation [profile number]	The unit has attempted to action an outgoing call profile.
Incoming Aggregation	The system has detected an incoming call profile.
Aggregation Cleared [cause]	A call was running and has now been cleared.
Aggregation Tested	Aggregation test passed.

Level 4 Event Messages (MSG - Shown in Grey)

Reaggregating [instigating unit]	A call profile that was running successfully has encountered some errors. The system has recovered form the errors and re-established the call profile.
CRC errors	Whilst monitoring the lease line CRC errors have been detected.

13.Cables.

13.1 ISDN Primary Rate Cables

A range of standard length approved ISDN cables for use with the DataBond system are available from Black Box, please call our sales line for further details

DataBond RJ45   Network RJ45

```
1 ———————————— 1  } Twisted Pair
2 ———————————— 2
3 ———————————— 3
6 ———————————— 6
4 ———————————— 4  } Twisted Pair
5 ———————————— 5
```
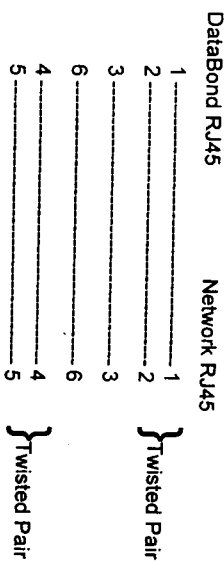
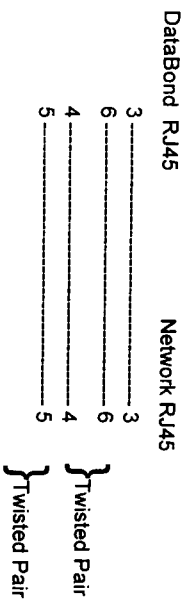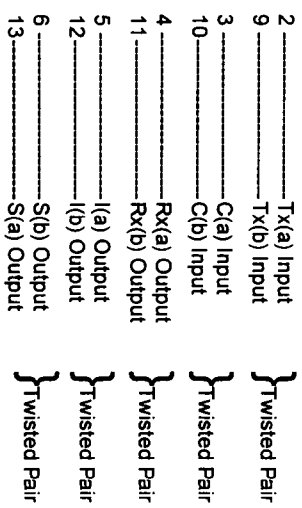## 13.2 ISDN Basic Rate Cables

A range of standard length approved ISDN cables for use with the DataBond system are available from Black Box, please call our sales line for further details

Should you wish to use cable other than those supplied by Black Box the connection criteria below must be followed.

DataBond RJ45   Network RJ45

```
3 ———————————— 3
6 ———————————— 6  } Twisted Pair
4 ———————————— 4
5 ———————————— 5  } Twisted Pair
```

13.4 DataBond Terminal Adapter - DTE Cables

DataBond 15way   Signal Name
Hi-Density Male "D".

```
2 ———————————— Tx(a) Input   } Twisted Pair
9 ———————————— Tx(b) Input
3 ———————————— C(a) Input    } Twisted Pair
10 ——————————— C(b) Input
4 ———————————— Rx(a) Output  } Twisted Pair
11 ——————————— Rx(b) Output
5 ———————————— I(a) Output   } Twisted Pair
12 ——————————— I(b) Output
6 ———————————— S(b) Output   } Twisted Pair
13 ——————————— S(a) Output
8 ———————————— Signal Ground
```

13.5 DataBond Terminal Adapter Terminal Access Cable

DataBond Terminal Adapter RJ12 Signal Name

```
1 ———————————— Rx Input
2 ———————————— Tx Output
3 ———————————— Signal Ground
4 ———————————— Alarm Relay (NOP)
5 ———————————— Alarm Relay Common
6 ———————————— Alarm Relay (NC)
```