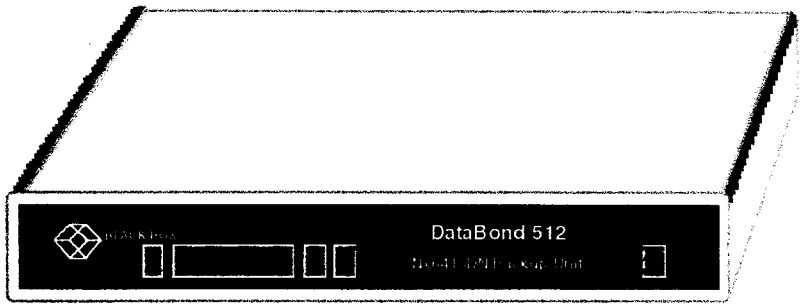
**BLACK BOX Catalogue Ltd**

*The Source for Connectivity*

PRODUCT CODES

ISUB641B
ISUB1281B
ISUB2561B
ISUB3841B
ISUB5121B
ISUB19201P
ISUB20481P

# DataBond N*64
# ISDN Backup Unit





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# Databond LLB

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 Backup 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 Backup 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 "ISUB" denoting Databond Backup, 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 backup unit with associated power supply unit(s) and documentation, specifically:-

- One Databond Backup Unit
- A maximum of two power supply units (PSU) with power lead/s appropriate for the country of intended use.
- One Operating 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 Backup units will have been supplied with one or two power supply units (PSU's). Each PSU is capable of powering a fully configured backup 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 Backup unit 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 Backup unit will now power up and perform the boot-up tests.

## 3.2 Control/Alarm Port (GUI) Connection

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

Connect the port marked CTRL/ALARM" on the rear of the Backup unit to the communications port on your PC. Serial cables are available from Black Box, please call on the sales line for information. Details of this cable can also be found in Section 13.

## 3.3 ISDN Network Connections

Connect the Databond Backup 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 Databond ISDN ports. Only approved cables should be used for this connection. Additional ISDN cables are available from Black Box, please call on the sales line for information. Details of these cables can be found in Section 13.

## 3.4 Leased Line Connections

***Before connecting any cables to the LLB ports please read the safety statements in Section 1.***

There are two pairs of high density "D" type connectors on the rear of the Backup unit, one pair being marked "LLBU 1", "DTE 1", the second marked as "LLBU 2", "DTE 2". These ports support concurrent backup for two leased lines or one leased line with an additional DTE for dial-up access. The unit configuration label on the bottom of the machine will indicate the interface types installed. Single port units can be upgraded to run an additional DTE port or to provide backup for another leased line.

Install a cable/s from the leased line Network Termination Unit (NTU) to the Databond "Leased Line" port/s. Only approved cables should be used for these connections.



## 3.5 DTE Connections

***Before connecting any cables to the DTE ports please read the safety statements in Section 1.***

Attach a cable from the associated Databond "DTE" port to your DTE device. The unit configuration label on the bottom of the machine will indicate the interface type installed on the two "DTE" ports.

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

## 3.6 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 (for 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 Backup 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 Backup unit.

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 LLB 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 Backup unit (or read it from a PC disk file),
- 2. You make changes,
- 3. Upload the configuration back to the Databond Backup unit (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 configuration from the machine, make the changes and then upload the new configuration file.**



## 4.2 Using the GUI

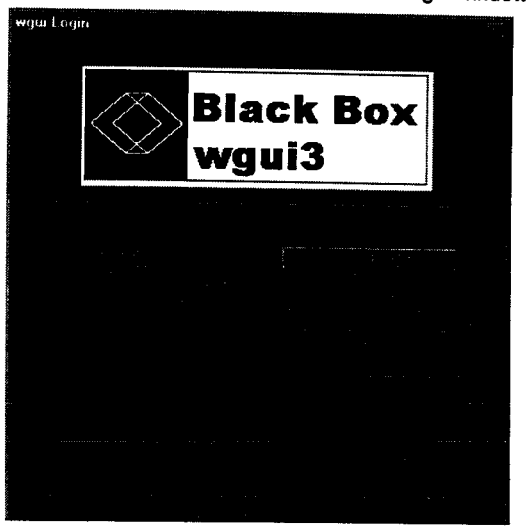
All configuration and management is performed using the Graphical User Interface (GUI).

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 LLB"***

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

***"Work With Files"***

You do not have to be connected to a Databond in order to build a configuration. Clicking the "Work With Files" button will start the GUI without connection to a Databond 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 from the Offline state you will need to use the connect to Databond LLB 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 and upload the configuration.

Your Databond Backup unit may not be fully populated with a full complement of 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 Databond will simply ignore any configuration commands that are not appropriate.

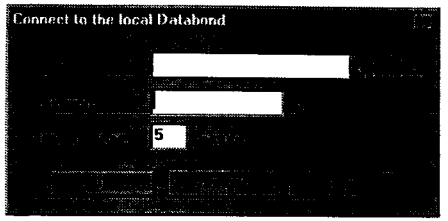
***"Upgrade Information"***

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

## 4.3 Connecting To The Databond Backup unit

If you selected the "Connect to Databond LLB" 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 LLB menu in the "WGUI WINDOW" or the "Connect to Databond LLB" 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.




"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".

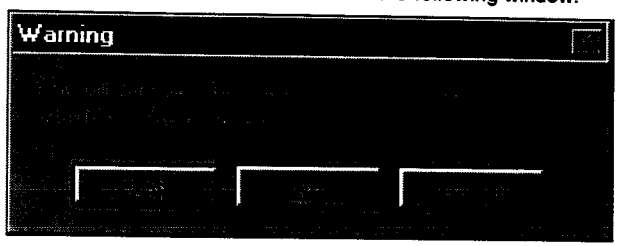
***"Timeout after"***

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 Backup 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 it's 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.

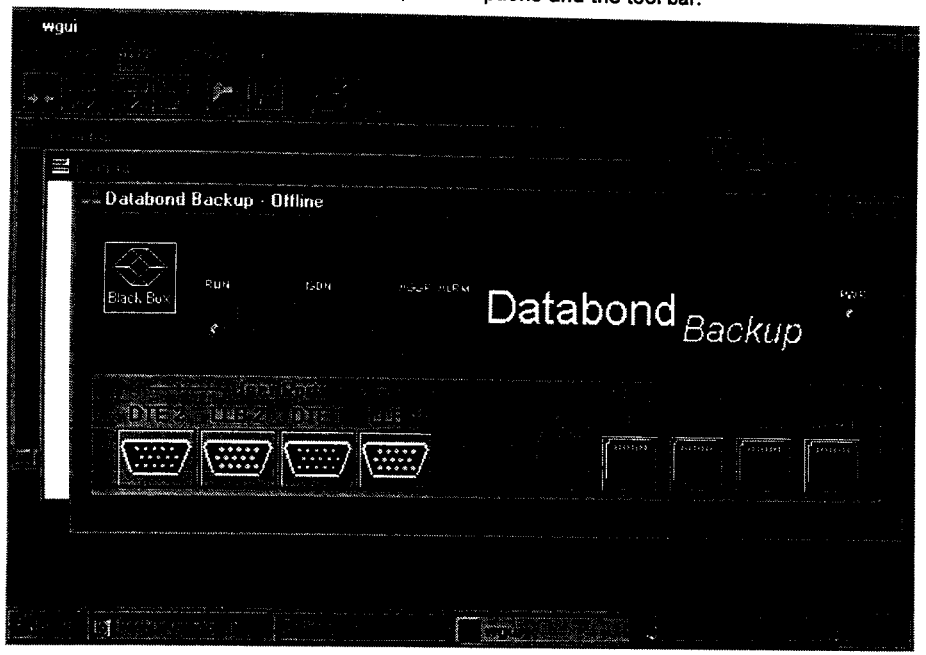



The configuration you have just downloaded has not been saved to disk. If you wish to save this configuration to disk click the Yes button - you will be prompted for a file name and location to save it.

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 two windows, menu options and the tool bar.




## 5.1 Event Window

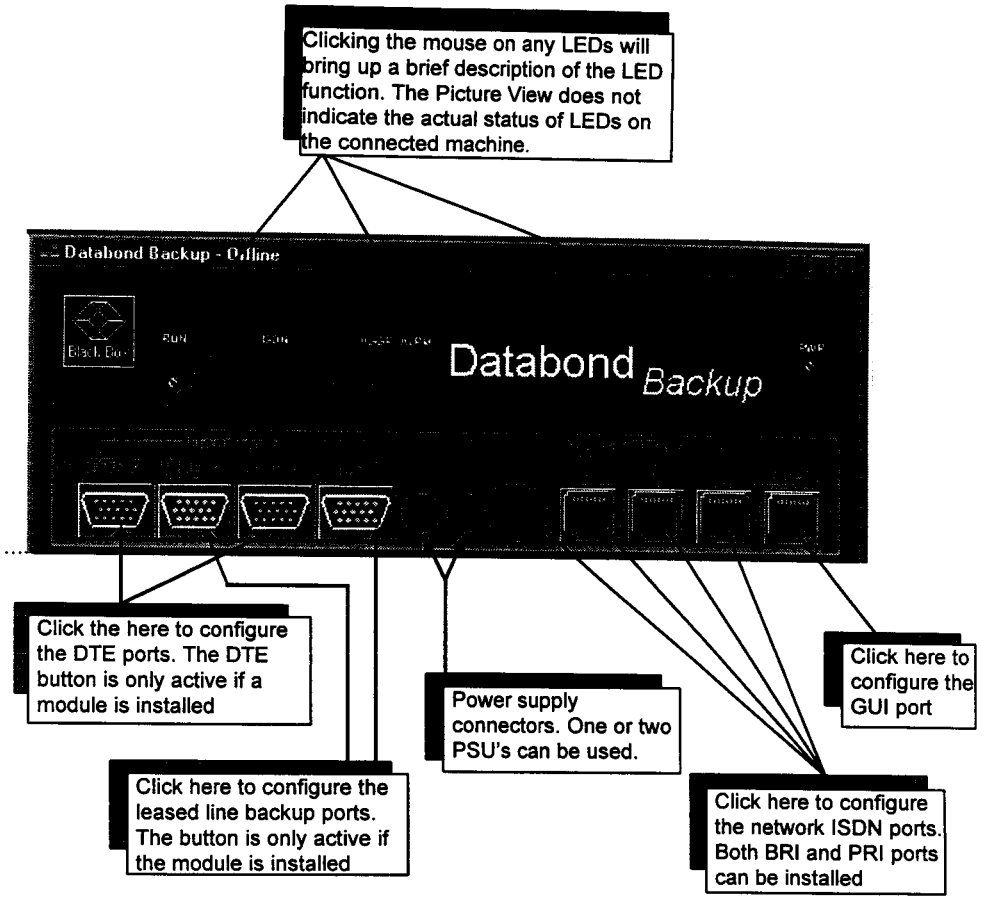
All system events will be displayed in this window. Events are colour coded for easy recognition. Level 1 "ALM" events will cause a large RED window to appear in the attached GUI and the PC to sound an alarm. To remove the alarm window, simply close it in the normal manner. If you wish to silence the alarm but keep the Red window visible, select the Action/Cancel Alarm menu option. For information on event codes see Section 12

## 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.



## 5.2 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.

## 5.3 Menus

### 5.3.1 File Menu

***"Connect to Databond LLB.."***

Allows connection to the local Databond Backup unit. If already connected to a local Databond you have 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.

***"Read 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.

### 5.3.2 Action Menu

***Cancel Alarm***

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

### 5.3.3 Setup Menu

***"Comm Port"***

Set up the PC serial port used to connect to the Databond unit. The Databond settings are 19200 baud, 8 data, 1 stop, no parity. See also Section 6.1.

***"System Settings"***

Set unit's 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 Databond units.

### 5.3.4 Window Menu

***"Terminal Window"***

This window shows the commands sent, and responses received from the attached Databond 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.

## 5.4 Tool Bar

*ICON ..... Equivalent menu option*

 ..... File/Connect to Databond Backup unit.

 ..... File/disconnect from Databond Backup unit.

 ..... File/Download Config (from Databond Backup to the PC)..

 ..... File/Upload Config (from the PC to Databond).

 ..... File/Open Config File

 ..... File/Save Config File

 ..... File/Print

 ..... File/Print Preview

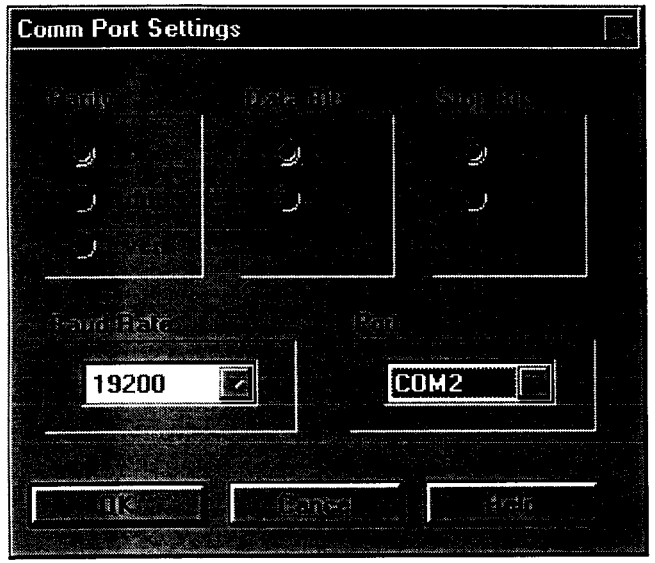
# 6. Global Configuration.

## 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 Backup unit.

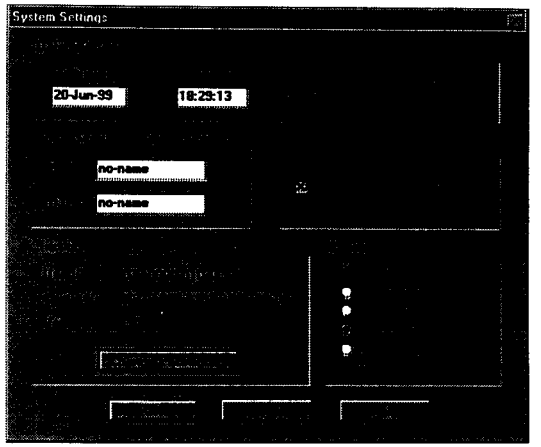
The Databond management values are: 19200 baud, 8 data bits, 1 stop bit, no parity.






## 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/LLB port. If configured this information is used by the called Databond for security purposes on incoming backup operations (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

***"Store Events "***

Use these fields to select which event types you wish to show in the event window. All events are also stored in a file called "events.csv". This file can be located in the same directory as the GUI. The file is in a standard "comma separated variable" format.

***"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.

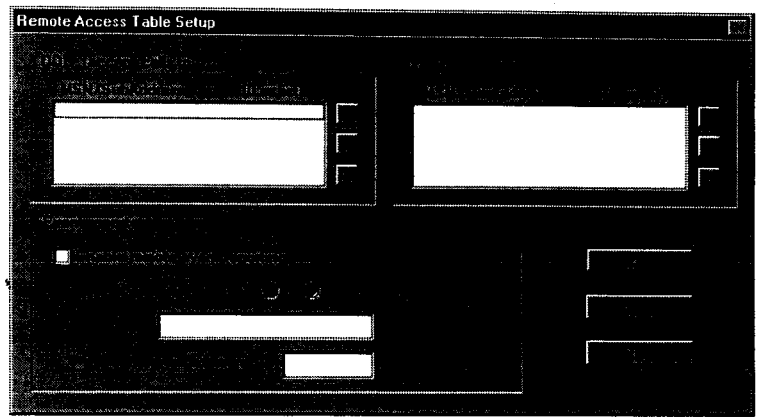
## 6.3 Remote Access

***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.

Care must be taken to ensure numbers that are used for normal backup 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 dialled 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 dialled 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 <u>all</u> incoming calls will be directed to the management module.

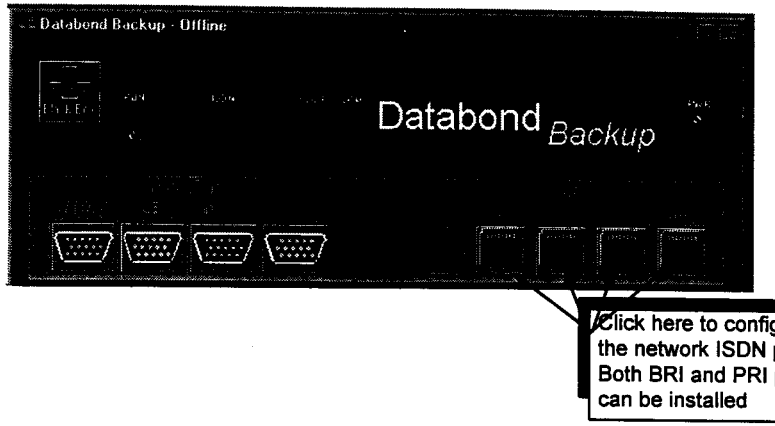
***CLI***

This is the list of calling numbers (i.e. the address of the remote site that is dialling) that are acceptable to this Databond. There is no significance in the order of the numbers in the list. Only calls dialled 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

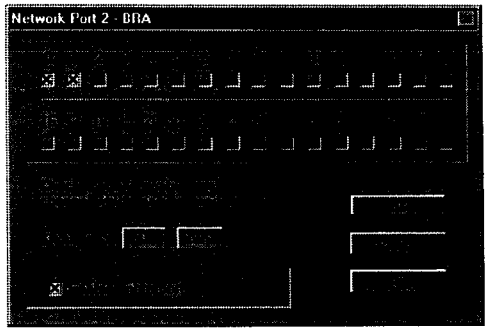


# 7. ISDN PORT CONFIGURATION.

To configure a network port, click on the appropriate port in the Picture View.




The ISDN Network Port configuration window below, allows you to selectively enable and disable individual bearer channels on each ISDN network interface. A disabled bearer channel cannot be used for incoming or outgoing calls. This example shows a PRA port. Only channels 1 and 2 are available for use with a BRA interface.




***"Boxes 0-31"***

Each box relates to the individual timeslot on the interface. Check a timeslot to enable it or clear the check to disable it. A disabled timeslot cannot be used for any incoming or outgoing calls.

***"Enable Entire Port"***

Check this box to enable the whole interface. If the interface is disabled, no bearer channels on the interface will be used.

***"All"***

A quick way of enabling all the timeslots.

***"None"***

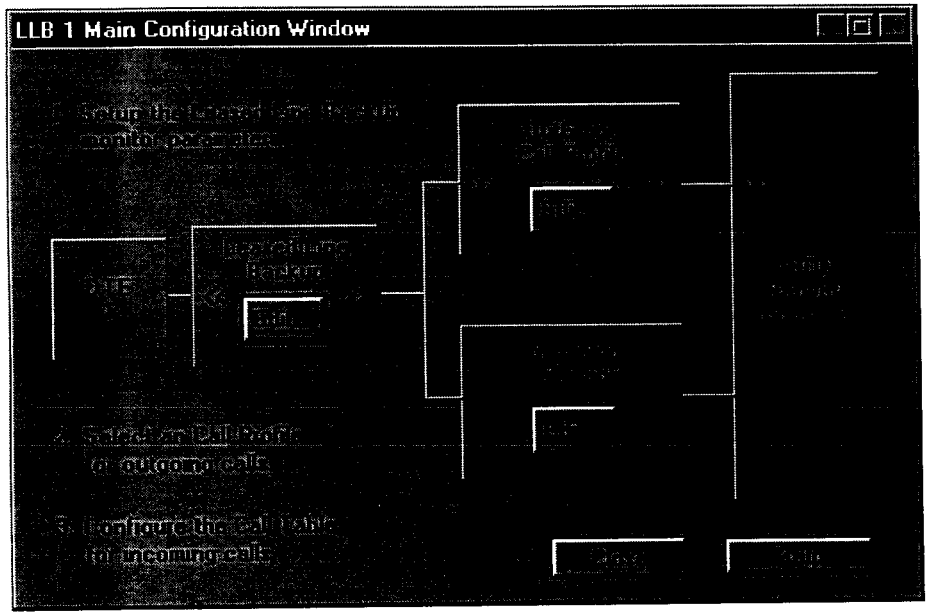
A quick way of disabling all the timeslots.

# 8. LEASED LINE BACKUP PARAMETERS

The Leased-Line (LLB) module is responsible for monitoring the leased line and applying the failure criteria.

To configure a Leased Line Backup port and associated DTE, click on the appropriate LLB port in the Picture View. Each installed LLB module has it's own independent configuration window. Similarly there is one dedicated Incoming Routing table for each LLB.

## 8.1 Main Configuration Window




***"Outgoing Call Profile"***

This button leads you to the menu area which configures the profile of the backup call to be dialled on leased-line failure. See Section 9 for details.

***"Incoming Routing"***

This button leads to the menu area for configuring incoming calls and their routing. See Section 10 for details.

***"Leased-Line-Backup"***

This button leads to the "Leased Line Backup" dialog window for the selected LLB/DTE. See Section 8.2 for details. If you have two leased lines installed you must configure both ports individually form the Picture View window.

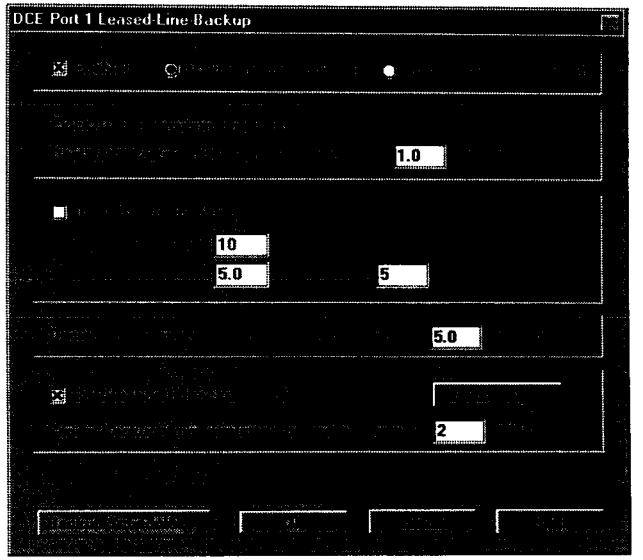


## 8.2 Leased Line Backup Window

The leased line backup dialog allows you to configure the parameters used to declare leased line failure. The Databond Backup unit continually monitors the leased line for loss of clock, loss of data transitions and optionally, for CRC errors. If user defined error thresholds are exceeded, ISDN bandwidth will be dialled to replace the leased line.

Whilst the system is in backup, Databond continually attempts to transmit a known data pattern over the leased-line. The local and remote Databond Backup units use this pattern to detect when the leased line has recovered. Once a correct, error free pattern is received by both units for greater than the recovery time, user data is transferred back to the leased line.

The Databond system will not take backup action if the DTE fails or is switched off. If this facility were not available and the DTE was unplugged, the remote Databond would not receive any data transitions, would flag the leased line as failed and automatically take back-up action. This action would be unnecessary as there is no DTE connection.




***"Enabled"***

Check this box to enable Leased-Line monitoring and backup.

***"Master/Slave"***

Select master if you want the Databond to initiate the leased line backup calls, or select slave if you want to wait for the remote Databond to call this unit.

***"Clock/Data Transition Checking"***

Set the number of seconds for which Databond must detect no transitions before instigating backup action

***"Use CRC-16 Checking"***

The Databond Backup system has the ability to monitor HDLC-16 traffic for CRC errors. If your data is in HDLC format, Databond units can base the backup criteria on the number of CRC errors counted over a defined time period.

The system ascertains the quality of the circuit by utilising three user defined parameters - Errors Occurring, Period and number of Consecutive Periods. The system counts errors within the time period defined. If the threshold is exceeded the Period is flagged as "having errored" If the number of consecutive "errored" Periods exceeds that configured, backup action will be taken.

Consider the following example:

"Errors" = 10 "Period" = 5 "Consecutive Periods" = 5

In this example, Databond units will continually count CRC errors that occur within any 5 second period). If the error count exceeds 10, the current Period will be defined as having exceeded the failure criteria. This process runs on a continuous basis and if 5 consecutive period fail) the criteria for backup action will have been met.

This system is specifically designed to allow users a greater degree of flexibility and visibility of the leased line.

If the failure parameters for Clock/Data Transitions Checking are met, backup action will be taken irrespective of the CRC count.

***"Declare Lease Line Recovery"***

Enter the number of seconds that the leased line must have recovered for prior to re-routing user data back to this path.

***"Confirmation of backup"***

If this option is enabled the Databond will clear any ISDN backup calls after the programmed number of minutes unless the user acknowledges that the unit is in backup mode. This facility ensures that the unit cannot use ISDN services for a period longer than that configured without the user's authorisation. If the timer expires without confirmation being received, Databond will clear down the backup service. If you wish to re-establish the backup after the timer expires and the backup is cleared, simply click the "Confirm Now" button.

This menu option is available in Version 2.64 and above.

***"Cancel Backup Timer"***

Sets the time period Databond will wait for the confirmation acknowledgement. If this timer expires without operator confirmation the system will clear down the backup calls If you wish to re-establish the backup after the timer expires and the backup is cleared, simply click the "Confirm Now" button.

***"Confirm Now"***

Use this button to confirm Backup action is OK to proceed. If confirmation is not made before the "Confirmation Backup Timer" has expired, the backup action will be stopped regardless of the leased line condition.

***"Backup Schedule"***

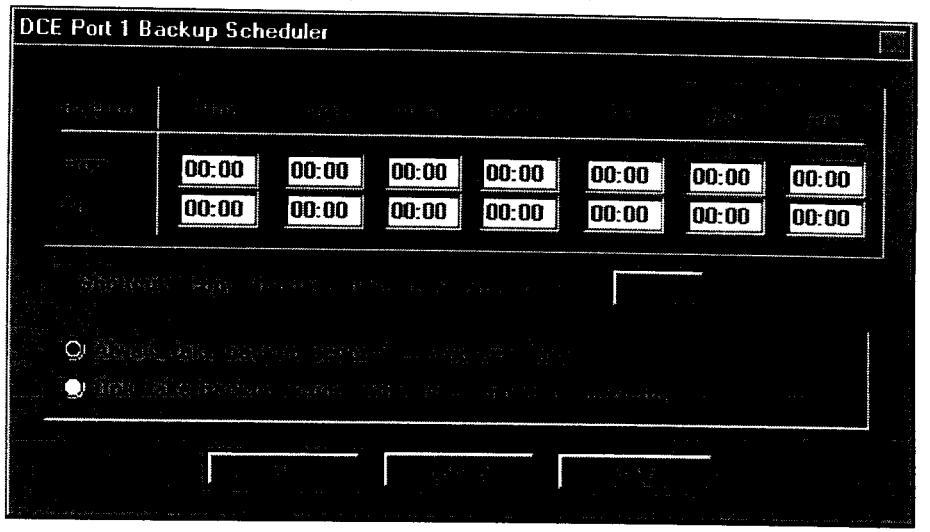
This button leads to the leased line Backup Windows dialog box for this leased line port. See Section 8.3 for details.



## 8.3 Leased-Line-Backup Scheduler

The scheduler defines the times during the week when leased line backup action is permitted.

The backup windows are only configured on the "Master" unit.




***"From/To"***

Enter a time in the format "HH:MM" into each of these boxes. The "From" time must be earlier than the "To" time. Backup action is then enabled between the times shown. To disable backup on a particular day set the "From" and "To" times to the same value.

***"Copy"***

This button copies the time entered for Monday to all the other days of the week.

***"Always take backup action..."***

or

***"Only take backup action..."***

Select preference

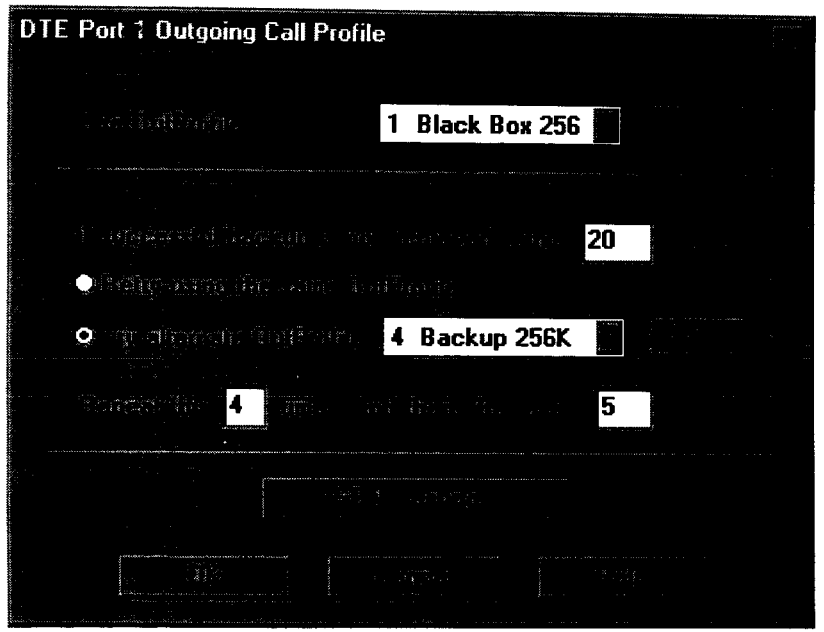
# 9. Outgoing Call Parameters.

To configure call profiles click the LLB port in the main Picture window followed by the outgoing call profile button in the LLB main config window.

This dialog allows you to configure the call profiles that will be setup on leased-line failure. Aggregation parameters apply only to outgoing calls. For incoming calls, all the necessary parameters are passed from the remote site via the ISDN.

## 9.1 Call Profiles

This window identifies the call profile to be used when the selected DTE/leased line fails.




***"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 backup site.

***"Repeat this"***

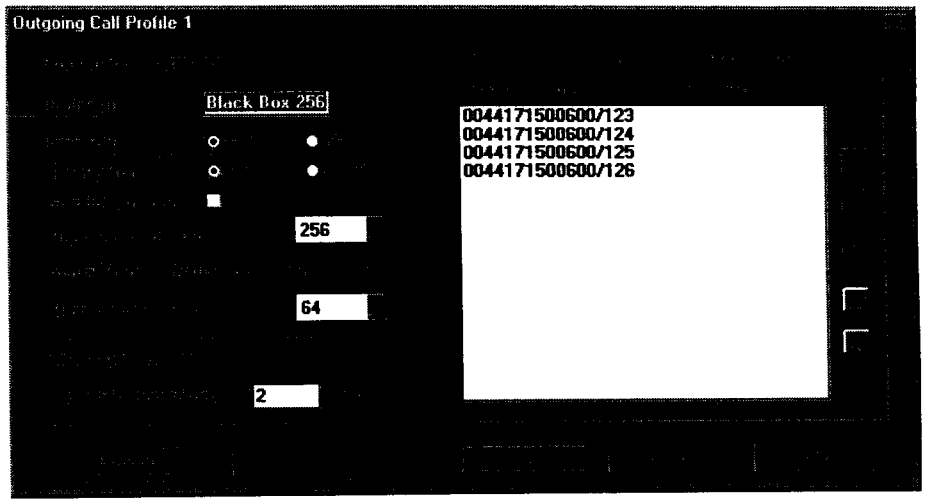
Databond will attempt to establish backup capacity by dialling the selected call profile according to the numbers entered in these fields. If an alternative profile is configured the primary and alternative profiles are dialled in turn.

***"Backup 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 LLB/DTE system 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 channel 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

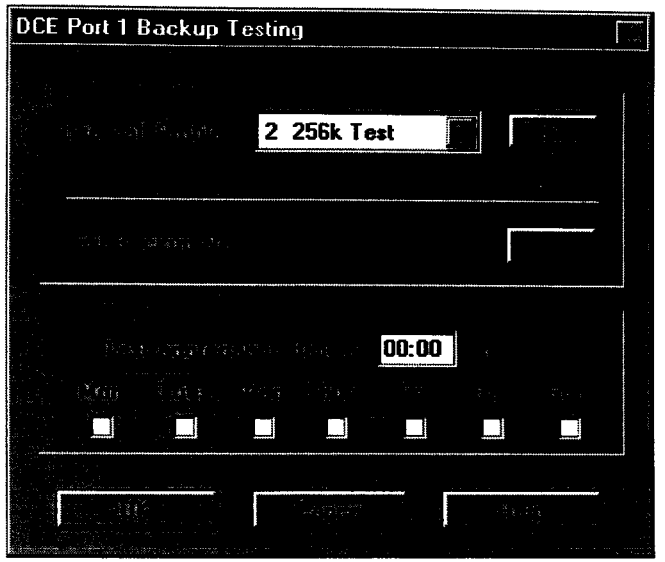
*"MSN/SubAddress"*

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 Backup Testing

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




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.

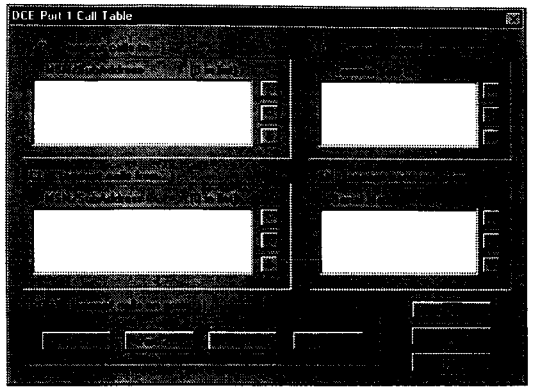
**The normal operation of the system is not affected whilst running a Back-up test.**

# 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.

## 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/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 allow calls to any number to be accepted.

*"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 allow calls from any number to be accepted.

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



*"Remote Site ID"*

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

If the Site ID does not match any in the list, the data will not be passed 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.

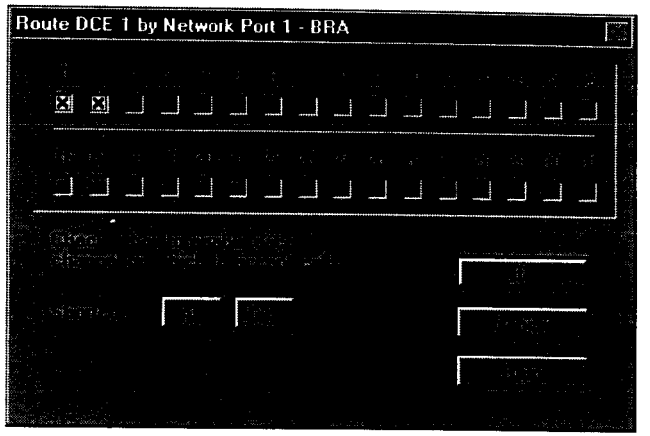
*"Unit ID"*

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 dial in enter a single "*"

The unit ID number is displayed in the "System Settings" see Section 6.2 for further details.

## 10.2 Restricting ISDN Access.




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

The Databond Backup unit provides the ability to connect with remote units for management and configuration purposes.

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

Once you are connected, you can configure the remote Databond 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 LLB (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 15 for details.

## 12.2 Level 1 Event Messages (Alarm)

| 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. |
| Leased Line Failure [cause] | The Leased Line has failed due to the issued cause code. |
| Leased Line Recovered | The Leased Line has recovered |
| PRI running [interface number] | The Primary Rate ISDN interface is running. |
| PRI failed [interface number] | The Primary Rate ISDN interface has failed. |
| Backup confirmation required | Manual confirmation that unit is in backup required or system will clear ISDN after timeout. |

### 12.2 Level 2 Event Messages (Warning)

| | |
|---|---|
| Configuration Change | A new configuration has been uploaded to the system. |
| Battery Low | The on-board battery is running low. Contact Patapsco for details on replacement. If the battery is allowed to deteriorate the system will be unable to retain configuration information after power up. |
| No Back-up out of window | The leased line has been seen to fail but back-up action has been prevented by the backup window system. |
| Entering Back-up Window | The system has entered a Back-up time window where backup action is permitted. |
| Backup confirm | Manual acknowledgement that unit is using ISDN has been received and backup will continue until leased line restored. |
| Leaving Back-up Window | The system has left a Back-up time window. Back-up will now be inhibited. |
| Aggregation Cleared [cause] | A backup call was running and has now been cleared. |
| Aggregation Test Failed | A requested backup test has failed. |
| Aggregation Established [speed] | A call profile has been successfully set up. |

### 12.3 Level 3 Event Messages - (Event)

| | |
|---|---|
| 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 Test [speed] | A backup test at the indicated speed was made. |
| Aggregation Tested | Backup test passed. |

### 12.4 Level 4 Event Messages (Message)

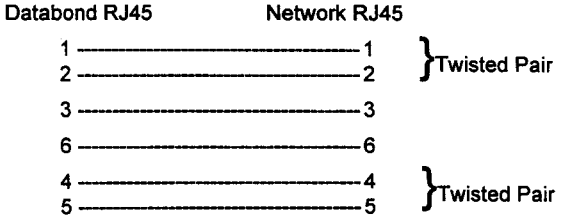
| | |
|---|---|
| Reaggregating [instigating unit] | A call profile that was running successfully has encountered some errors. The system has recovered form the errors and re-established the call profile. |
| CRC errors | Whilst monitoring the lease line CRC errors have been detected. |



# 13.Cables.

### 13.1 ISDN Primary Rate Cables

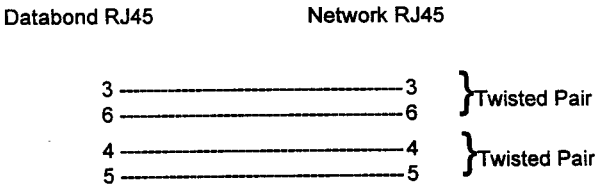
A range of standard length approved ISDN cables for use with the Databond Backup system are available from Black Box, please call our sales line for further details




### 13.2 ISDN Basic Rate Cables

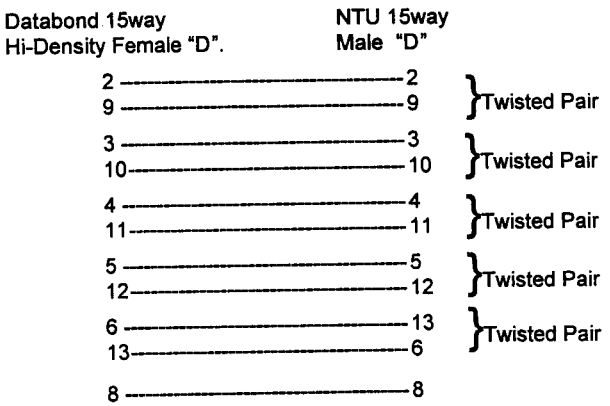
A range of standard length approved ISDN cables for use with the Databond system are available from Patapsco, please call our sales line for further details

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




### 13.3 Leased Line NTU - Databond Backup Cables

This cable MUST be fitted with M3 securing screws on the NTU end.



## 13.4 Databond - DTE Cables

| Databond 15way Hi-Density Male "D". | Signal Name | |
|---|---|---|
| 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 Access Cable

| Databond RJ12 | Signal Name |
|---|---|
| 1 | Rx Input |
| 2 | Tx Output |
| 3 | Signal Ground |
| 4 | Alarm Relay (NOP) |
| 5 | Alarm Relay Common |
| 6 | Alarm Relay (NC) |