

# DB8/DB4 OPERATION - CONTENTS

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# BASIC OPERATION

## Introduction

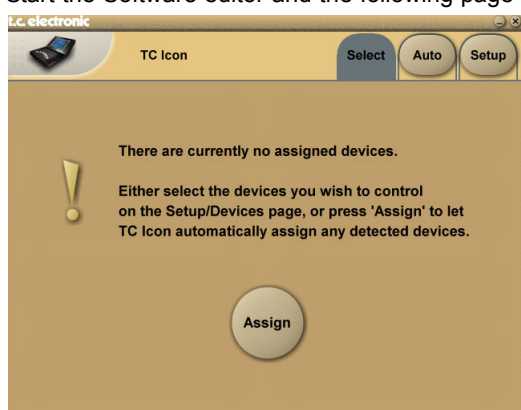
This section of the manual is a general introduction to operate DB8/DB4 via the Software Editor or the TC Icon. The basic DB8/DB4 consists of a Mainframe with a DSP card and up to three I/O cards, plus a PC Editor but the DB8/DB4 can also be controlled via a TC Icon hardware remote.

Several mainframes, Mac/PC's with installed Software Editor and TC Icons can be hooked up at the same time via a standard Local Area Network (LAN).

## Accessing a Mainframe

First time you connect the Mainframe to the PC with installed PC editor and network adapter:

- Power up your computer and your DB8/DB4.
- Start the Software editor and the following page appears:



- Press **Assign**
- All connected DB8/DB4 mainframes will be detected and assigned to one of the 8 locations (see fig. 1).
- Press the oval key with the DB8/DB4 icon to access the DB8/DB4.

## Scanning the system

The scenario described above covers the first time you boot up your system or when no connected units are assigned.

To scan the system for all connected units go to the **Setup** page and press **Detect** (see fig 2). The connected mainframes will appear in the left side of the display and you can assign them to any of the 8 location illustrated in the right side of the display by selecting the frames with the cursors followed by pressing one of the oval keys.

## Engine Structure

The core element of DB8/DB4 is the 4 Engine structure. This structure enables you to run up to four powerful algorithms/ presets simultaneously.

Each Engine is capable of utilizing up to 8 Inputs and 8 Outputs, depending on the selected algorithm/preset. Up to 16 physical Input and 16 physical Output channels can be routed in the most flexible way.

## Engine Resources

The powerful and flexible DSP distribution structure lets

you run up to 4 Engine presets at the same time using any available algorithms.

## Basic TC Icon operation

Navigation in the Software Editor or TC Icon display is easy as soon as a few basic elements are explained.

The Icon **Link** key in the upper left corner allows you to navigate between the two pages/modes illustrated below.

Generally :

- Press the top-tabs to do primary selections
- Press the side-tabs or elements to do secondary selections.

Fig 1



Via the "overall" **Select & Setup** pages you access overall settings and choices like:

- Selection of which mainframe to operate
- Enable devices to network
- Updates via disk
- TC Icon settings such as display appearance
- SMPTE Automation

Fig 2



The selection of mainframe is done in the Select page illustrated in "Fig 1". The page/pages illustrated in Fig. 2 are pages containing parameters on a specific mainframe. These are the Operating Pages and the page you will be working in once the system is up and running. Only when several mainframes are connected you will need to go to the "overall" Select and Setup pages to switch mainframe.

# BASIC OPERATION

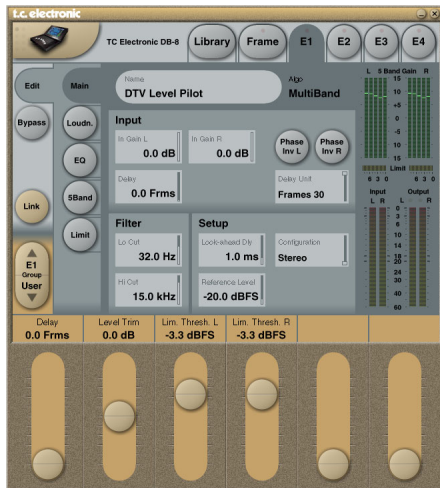
## UI - Icon Views

On the Icon Setup page two sub-pages are available for controlling the TC Icon appearance.

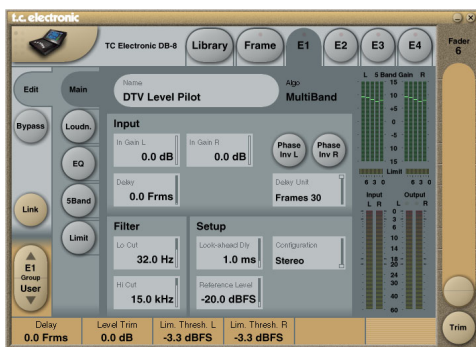
### Fader appearance

Three options are available. Changes will take place next time you open the TC Icon.

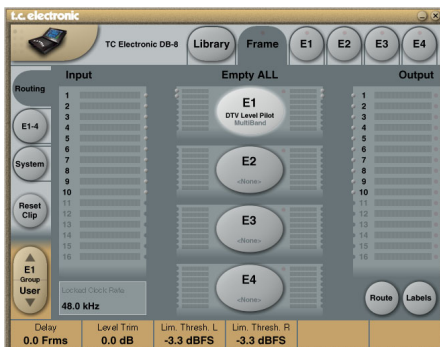
### Faders at bottom



### Fader at right side



### No faders



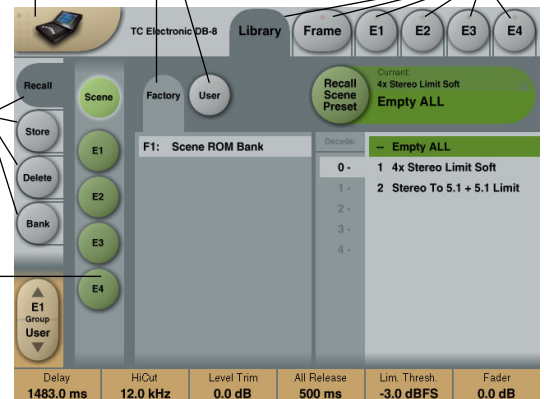
The Icon LINK key

Bank Select

Library, Frame & Engine select Tabs

Function Select Tabs

Fader Group Selector



## Operating Levels

The Library-Recall page illustrated in Fig.3 leads to explanation of the "operating levels" in the DB8/DB4. We differentiate between 2 levels of presets: Scene and Engine levels.

### • SCENE

This is the most extensive selection you can make. It includes all four Engine algorithms as well as physical and virtual Engine Routings. A Scene recall can be compared to a "total recall."

### • ENGINE

Handles the current algorithm in the selected Engine. A single preset can be loaded to each of the four Engines.

## Parameter Values and Fader Groups

In the bottom of the display, Fader assignments and values will always reflect the last modified Engine. Most parameters can be controlled via the 6 Faders. As some algorithms hold numerous parameters and we operate with 6 Faders the preset parameters are organized in Fader Groups. To scroll between the Fader Groups use the Fader Group selectors.

## Parameter value - Fine Adjust

Any parameter value can be adjusted in two accuracies. A Normal and a Fine Adjust - mode. To switch between the two modes press the Value Fields above the faders. As shown in the illustration the Fine Adjust mode will be indicated with two triangles in the value field.

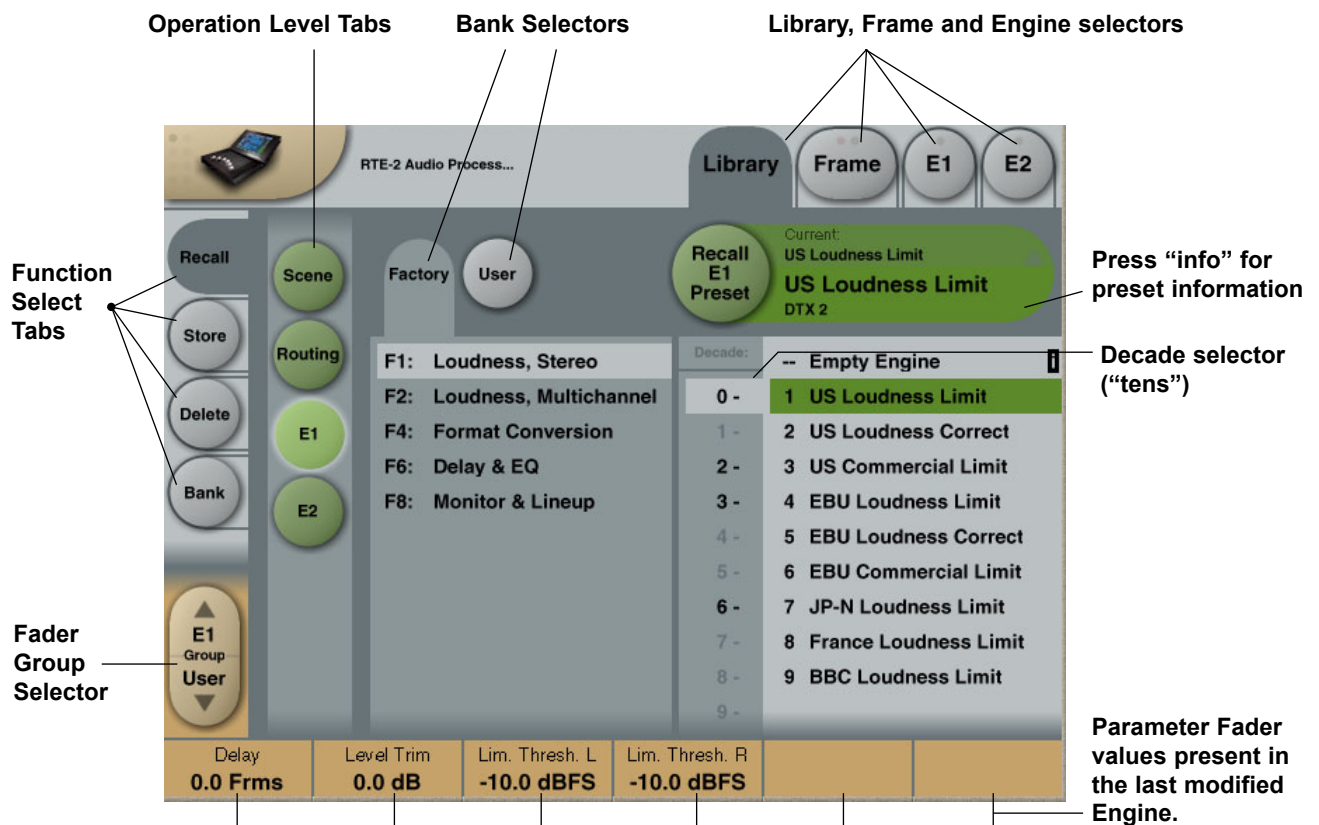
## Fader 6

Any parameter can always be assigned to Fader 6 by pressing the parameter. Detailed explanation will follow in the next sections.

## User Fader Group - Custom Group

A User Fader group where you can assign parameters to all 6 faders can also be created and saved along with the preset. The User Fader group is selected by pressing the Fader Group selectors.

# LIBRARY - RECALL



## Library Recall

On the Library Recall page the following banks are available for recall operations.

### Scene

Gives access to the following preset banks:

- Factory
- User
- Card (optional)

### Engine 1-4

Gives access to the following preset banks:

- Factory
- User
- Card (optional)

### Routing

Various standard routings can be selected.

F1: Routing ROM Bank	Decade:	-- Empty Routing
	0 -	1 E1: LR, E2: LR
	1 -	2 E1: 5.1, E2: 5.1
	2 -	3 E1: 5.1, E2: LR
	3 -	4 E1 & E2 Serial
	4 -	5 E1 & E2 Parallel

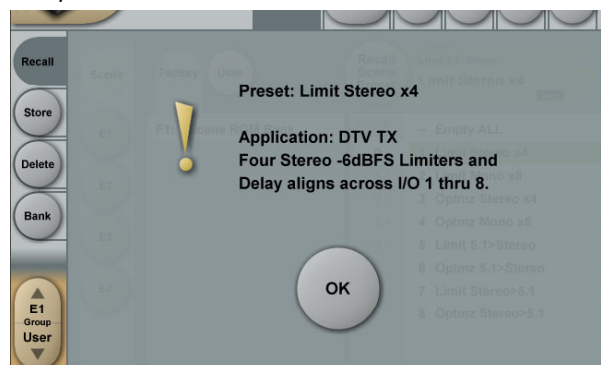
## Recalling a Scene or an Engine preset

- Press the RECALL tab to select the Recall page.
- Now select the level of: Scene or Engine 1-4.
- Select which bank you wish to recall from: Factory or User. If a DB8/DB4 formatted PCMCIA card is inserted in the Mainframe card-banks will be available and displayed below the User banks.
- Select presets pressing: Bank, Decade(tens) and preset number.  
(grayed out numbers indicates that the Decade is empty)
- Press the **Recall** key to recall/load the preset.

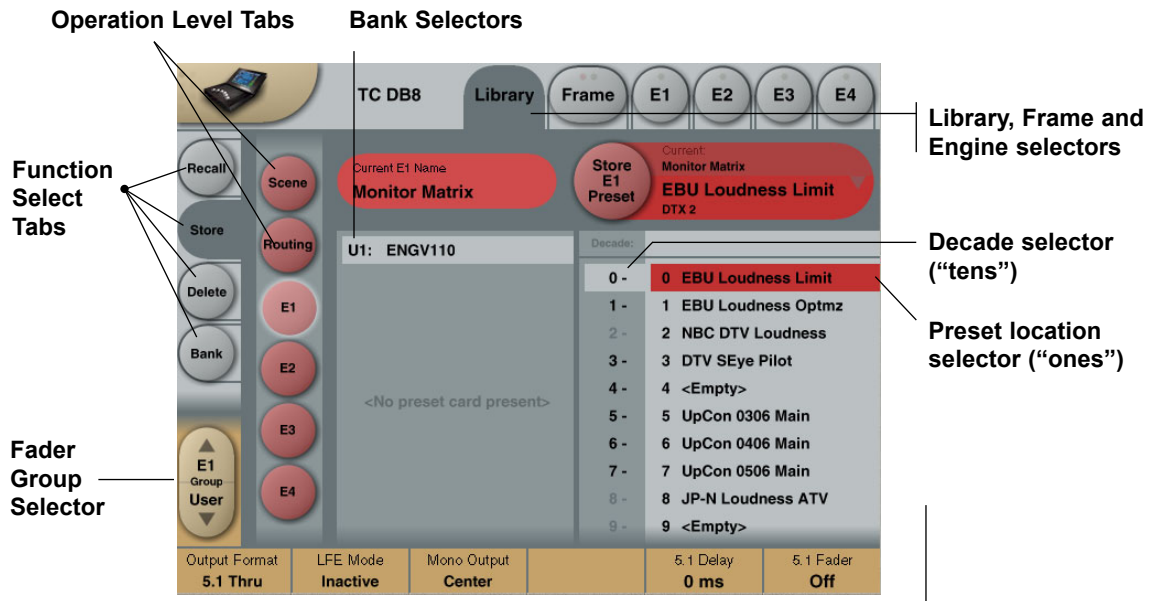
## Info

For presets carrying the "info" tag we have added relevant information for the specific preset. Press **Info** and a pop-up display will appear.

Example:



# LIBRARY - STORE



## Library Store

For storing operations the following banks are available.

### Scene

Allows you to store in the following banks.

- User
- Card (optional)

### Engine 1-4

Allows you to store in the following banks.

- User
- Card (optional)

### Storing a Preset

- Press the **Store** tab and select Scene or Engine level.
- Select bank (user or card) and location using Decade to select "tens" followed by location 1-9. (grayed out numbers indicates that the bank is empty)
- Press the **Store** key to store the preset.

## Naming Presets

All user preset types can be renamed.



### Basic operation

- Press the **Name** field. A keyboard will pop up.
- Type in the new name.
- Press **Enter**.



The preset is not stored when the keyboard **Enter** key is pressed. Only the name is entered.

To store you **MUST** press the red **Store** key on the Store page.

The previous accessed display will always be present beneath the keyboard. Current Fader values will be displayed and faders can be used to adjust parameter values. The preset is not stored when the keyboard **Enter** key is pressed. Only the name is entered.

To store you **MUST** press the red **Store** key.

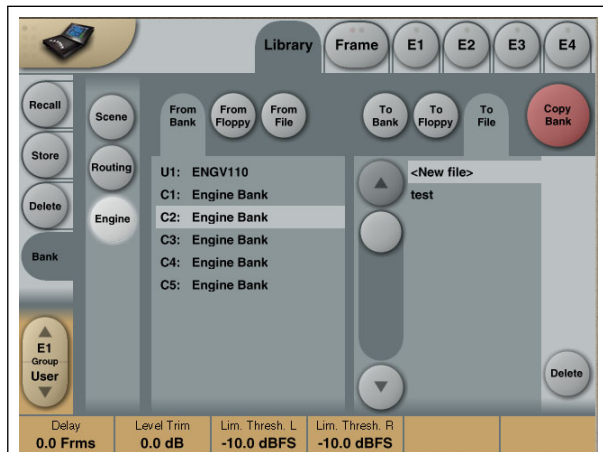


Fader assignments in the bottom of the display will always reflect the last modified Engine. The Engine Fader Group selector in the lower left corner indicates the Engine in use.

# THE LIBRARY BANK

## Library - Bank

From the Library Archive page you can copy Scene, Routing and Engine banks to and from a 3.5" disk or a PCMCIA card. If you are using the TC Icon software editor on an Mac or a PC, preset banks can also be copied to and from your hard disk.



### Basic Operation

Bank copying is handled as a complete User bank transferal.

- Press **Scene**, **Routing** or **Engine** to select preset bank type.
- Select "from" and "to" depending on your choice.
- Press **Copy Bank**.

### Scene/Routing/Engine Banks

#### To/From - Bank/Floppy/File

Scene, Routing or Engine banks can be backed up and retrieved from a 3.5" disk, a PCMCIA or a file location on a connected computer (when using the TC Icon software editor).

### Copy Bank

Press to activate copy function between the selected Banks.

### Rename

Press to rename selected bank via the Naming pop-up display.

### Delete

Press to clear the selected Bank. You will be asked to confirm your choice to avoid unintended deletion.

### Using PCMCIA cards

To use a PCMCIA card with DB8-DB4 the card must be properly formatted. This is done from the Frame/System/Card page.

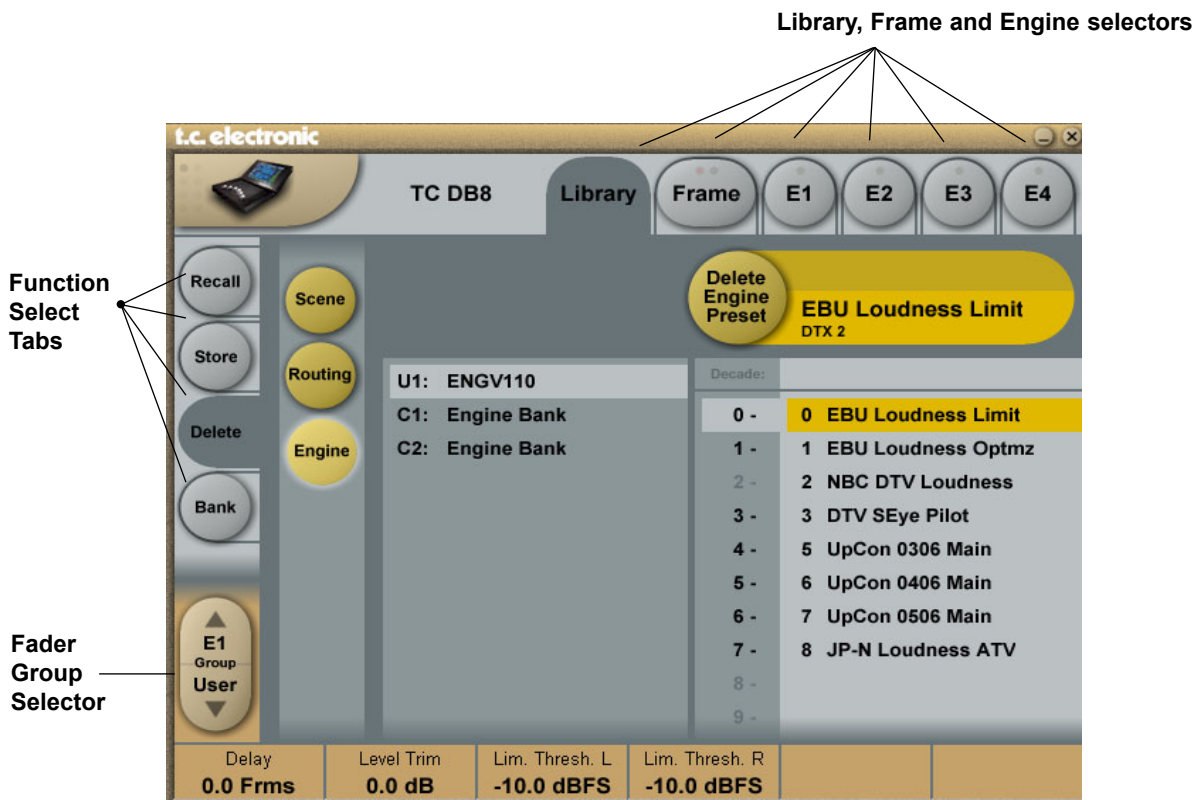
#### A 1MB PCMCIA card can hold:

1000 Engine presets in 10 banks of 100 presets  
500 Routing presets in 10 banks of 50 presets  
500 Scene presets in 10 banks of 50 presets

#### A 512kB PCMCIA card can hold:

500 Engine presets in 5 banks of 100 presets  
250 Routing presets in 5 banks of 50 presets  
250 Scene presets in 5 banks of 50 presets

# LIBRARY - DELETE



## Library - Delete

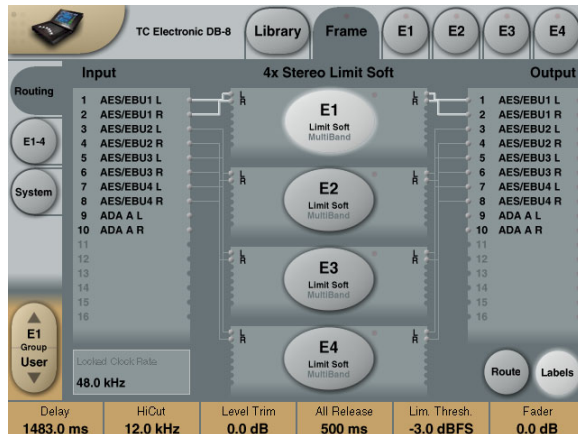
For convenience it is possible to “clean up” the User banks by deleting individual presets.

### Deleting a Preset

- Select **Delete** (side tab) and select level by pressing **Scene** or **Engine**.
- Select the preset to delete by pressing the actual Bank, Decade(to select tens) and the actual preset.
- Press the **Delete** key to delete the preset.

# FRAME - ROUTING

## Routing



### Introduction

The Routing page is the patch-bay of the DB8/DB4 Mainframe. All routings of physical Inputs/Outputs as well as internal routing between the Engines are setup here. The understanding of this page is therefore essential to operating the DB8/DB4.

### To access the Routing Page:

- Press **Frame** (upper tab)
- Press **Routing** (side tab)
- Press **Route** to enable routing facilities

### This is the page where you:

- Have the overall view of all I/O's
- Route physical Inputs to Engine Inputs
- Route Engine Outputs to physical Outputs
- Access Input and Output meters

### Routing Inputs

- Press the **Route** key to select route operation.
- Press **ENGINE 1 to 4** to select the Engine you wish to route
- Select a physical Input or another Engine's Output using **Fader 1**
- Select Engine Input using **Fader 2**

### Routing Outputs

- Press the **Route** key to select Route operation
- Press **Engine 1 to 4** to select the Engine you wish to route
- Select an Engine Output using **Fader 5**
- Select Physical Output using **Fader 6**

### The I/O possibilities are as follows

- It is possible to connect any physical Input to several Engine Inputs (up to 32), however, it is not possible to connect more than one physical Input to the same Engine Input.
- It is possible to connect all Engine Outputs (up to 32) to one single physical Output.
- It is possible to connect an Engine Output to the Inputs of the three other Engines.



### Engine Processing Delay

Processing delay between the routed Engines behaves as if they were external devices.

## Labels

The Input/Output fields can show either meters or the Labels/names on the Input/Output channels. To switch between the two modes press "Labels".

### Renaming Physical Inputs and Outputs

Input and Output channels can be labeled individually. This is a global renaming process and is accessed by pressing **System** (side tab) followed by **I/O** and **Labels**. After that follow the naming procedure described on page 6.

## Meters

### Engine I/O Meters

Engine I/O meters are shown at the left and right of the large E 1-4 buttons in the middle of the display. The number of meters shown will always reflect the number of I/O channels in the loaded algorithm.

## Frame - E1 to E4/E2 (DB8/DB4)

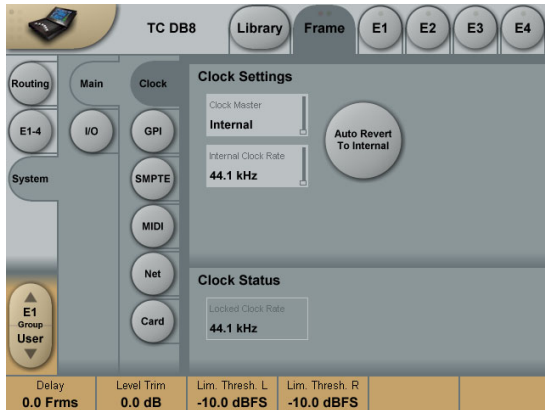


This page holds the User group parameters for all four Engines. Selecting User group parameters is done from the Engine pages. Values can be altered from both the Engine Edit pages and the page displayed above. Press the parameter you wish to assign to the Fader located below.



# FRAME - SYSTEM - MAIN

## Clock



### Detected Sample Rate

This is a read-only parameter indicating the actual incoming Sample Rate. The tolerance of this detection is +/- 10Hz.

*Example:* An incoming Sample Rate of 44.056kHz will be detected as approx. 44.06kHz and the system indicates the Locked Clock Rate 44.100kHz.

The system will lock to and reject jitter at any Sample Rate between:

- 30 - 34kHz
- 42.5 - 45.5kHz
- 46.5 - 48.5kHz

## Clock Settings

### Clock Master

Select the clock source for the complete Mainframe, including all Engines and all I/O's.

Select between:

Internal, Wordclock, AES 1-2, 3-4, 5-6 or 7-8.

Locking to an external source will take approx.. 7 sec.



It is not necessary to have the physical Input routed to an Engine Input to have the clock accepted.

### Internal Clock Rate

The internal Clock Rate can be set to 44.1 or 48kHz.

As it is considered "unconventional" to use the DB8 internal clock in broadcast setups, a yellow indication will appear on the frame select page when internal is selected.

### Auto Revert to Internal

Press to activate. If an external clock source is selected and this clock is lost, DB8 will automatically switch to the selected internal clock-rate with this function active.



Notice that "auto revert to internal" will work only if a valid clock on the selected Clock Master, has been present at one point and then lost. If DB8 at no point has been locked to a valid clock on the selected Clock master input the "Locked Clock Rate" field will be red. Red means: no output.

## Clock Status

### Locked Clock Rate

The Clock Rate to which the Mainframe is currently locked.

### Color indications

The yellow color indicates that:

- Auto Revert to Internal is selected and...
- the selected Clock Master has been present at one point but is now lost and...
- the frame has switched to the selected internal clock rate.

The red color indicates "no lock" - check cables and clock source.

## SMPTE



### Reader Enabled

On/Off switch for the DB8/DB4 SMPTE Reader.

### Frame Rate

Range: 24 FPS, 25 FPS, 29.97 FPS, 30 Drop FPS, 30 FPS.

### Running Status

The small field in the top left corner of the numeric display will state "Running" when SMPTE clock is running.

# FRAME - SYSTEM - MAIN - GPI

## DB4 and DB8 GPI Specification

DB4 and DB8 offers a GPI input for remote switching between Scenes (all Engine Presets plus Routing). The input can be used for daily operation, or for backup and redundancy purposes. It allows change between 2, 4 or 8 presets using just one connection.

## Basic operation

GPI functions are accessed from the System/Main/GPI page in TC Icon.



The Enable Recall parameter can be set to Off (GPI recall disabled), 2, 3, 4, 7 and 8 presets. Presets are selected as a state condition, i.e. presenting the GPI input a permanent voltage signifying a specific preset.

Enable Recall	Select between Scenes	Notes
Off	GPI Recall disabled	Make sure this state is selected, if GPI recall is not being used.
2 Presets	User Scene 0-1	User Scene 0 or 1 is permanently recalled. Note: Switching to this mode will instantly perform a Scene Recall, even if no connections are made to the GPI input.
3 Presets	User Scene 1-3	As long as the GPI input is idle (+5V), GPI recall is inactive. In idle mode, the machine can be normally controlled from Icon, or using the serial data input. If active GPI windows 1, 2 or 3 are selected, the corresponding Scene is recalled, and the serial data control input is disabled. This GPI mode is suitable for Backup and Alarm messaging operation.
4 Presets	User Scene 0-3	User Scene 0, 1, 2 or 3 is permanently recalled. OBS: Switching to this mode will instantly perform a Scene Recall, even if no connections are made to the GPI input.
7 Presets	User Scene 1-7	As long as the GPI input is idle (+5V), GPI recall is inactive. In idle mode, the machine can be normally controlled from Icon, or using the serial data input. If active GPI windows 1-7 are selected, the corresponding Scene is recalled, and the serial data control input is disabled. This GPI mode is suitable for Backup and Alarm messaging operation.
8 Presets	User Scene 0-7	User Scene 0, 1, 2, 3, 4, 5, 6 or 7 is permanently recalled. OBS: Switching to this mode will instantly perform a Scene Recall, even if no connections are made to the GPI input.

# FRAME - SYSTEM - MAIN - GPI

## Installation

Selection between up to 8 presets is achieved by feeding the processor a DC voltage to the 1/4" jack input labeled "Pedal". The input voltage is compared against voltage windows that correspond to certain presets.

Between the valid voltage windows, invalid windows have been inserted to protect against erratic operation. The processor constantly monitors the GPI input, and only if several consecutive measurements point to the same, valid voltage window, a recall is performed.

The voltage windows chosen enable easy "binary relay encoding" as shown in fig. 1. If long cable runs are required, HF decoupling using a ceramic capacitor across the Tip and Sleeve terminals inside the jack plug may be indicated.

*Note: The ring terminal of the 1/4" jack is not used.*

## GPI Implementation

### Three modes...

- 1 of 2: Select between 2 presets
- 1 of 4: Select between 4 presets
- 1 of 8: Select between 8 presets

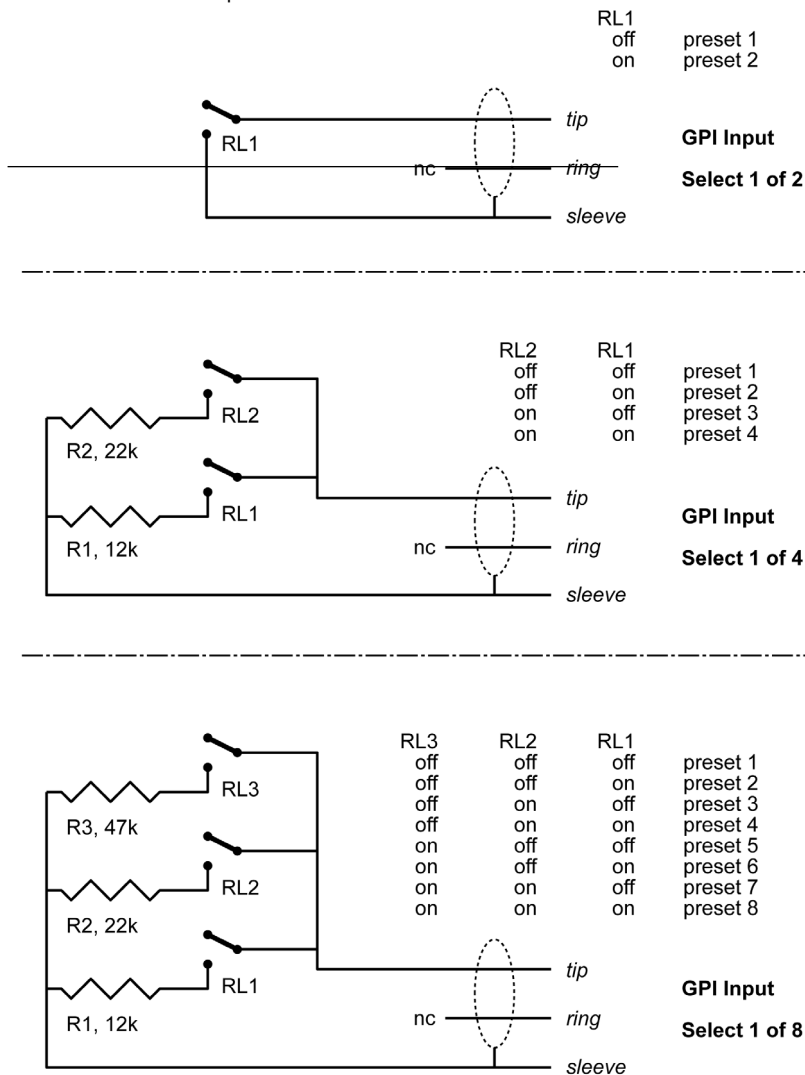


Fig 1, Relay coding of 2, 4 and 8 preset GPI configurations

# FRAME - SYSTEM - MAIN - GPI

## GPI Technical specifications

Inside the processor, a 10kohm resistor connects the Tip terminal to a +5V power supply. When nothing is connected to the GPI input, the input voltage therefore is +5V. Resistors can be used to pull down the voltage as suggested in Fig 1. In Table 1, voltages outside the limits mentioned are to be considered invalid. No action is taken if invalid measurements are made. GPI recall action resumes when a stable, valid measurement again is detected.

Mode	Preset No	Target / Vs	Min typ / V	Target typ / V	Max typ / V
1 of 2	0	1.000 (idle)	2.67	5.00	5.00
	1	0.000	0.00	0.00	0.51
1 of 4	0	1.000 (idle)	4.16	5.00	5.00
	1	0.687	3.38	3.44	3.50
	2	0.545	2.67	2.73	2.79
	3	0.438	0.00	2.19	2.25
1 of 8	0	1.000 (idle)	4.50	5.00	5.00
	1	0.824	4.06	4.12	4.18
	2	0.687	3.38	3.44	3.50
	3	0.600	2.94	3.00	3.06
	4	0.545	2.67	2.73	2.79
	5	0.489	2.38	2.44	2.50
	6	0.437	2.13	2.19	2.25
		0.400	0.00	2.00	2.06

### Tech Notes:

"Idle" refers to the state when no input is connected, or when the input is left floating.

Rather than absolute voltage measurements, the windows are defined as a fraction of the supply voltage, Vs. This voltage can be measured with a high impedance DMM on the Tip terminal when no pull down resistors are applied.

The table shows values as a fraction of Vs, and, as a guideline, typical voltages when Vs=5.000V. (If the Supply voltage is e.g. 5.015V, the table should be corrected by multiplying these values by 5.015/5).

# FRAME - SYSTEM - MAIN

## MIDI Setup Page



## Introduction

### MIDI Channels

To recall presets for Scene, Routing and Engines 1 to 4 you must first setup individual MIDI channels for these categories.

In the example above we have setup MIDI channels 1 to 4 for Engines 1 to 4 respectively; channel 5 to access Scene presets and channel 6 to access Routing presets.

### Bank Mode

The Bank mode settings determine the destination bank of the received program change on the specified MIDI channels.

### Normal mode:

This mode requires that the external sending MIDI device can send both Controller 0 and 32 in addition to MIDI program changes. This is an essential feature to recall presets from a device holding more than 128 preset location. (see table in next column for details)

### Factory and User mode:

These modes will force any incoming program change to access either Factory or User banks directly and are typically used if your sending MIDI device cannot send Controllers 0 and 32 as described above.

### Normal mode

In Normal mode all banks can be accessed for program changes. Bank selection is done via Ctrl 0 (MSB) and Ctrl 32 (LSB):

- Controller 0 must be set to 0 in all cases.
- Controller 32 value must match the bank number you wish to address according to the table below.

Ctrl 32 value 0	- F1:	<b>Loudness, Stereo</b>
Ctrl 32 value 1	- F2:	<b>Loudness, Multichannel</b>
Ctrl 32 value 2	- F3:	Reserved
Ctrl 32 value 3	- F4:	<b>Format Conversion</b>
Ctrl 32 value 4	- F5:	Reserved
Ctrl 32 value 5	- F6:	<b>Delay and EQ</b>
Ctrl 32 value 6	- F7:	Reserved
Ctrl 32 value 7	- F8:	<b>Monitor and Lineup</b>
Ctrl 32 value 8	- F9:	Reserved
Ctrl 32 value 9	- F10:	Reserved
Ctrl 32 value 10	- F11:	Reserved
Ctrl 32 value 11	- F12:	Reserved
Ctrl 32 value 12	- F13:	Reserved
Ctrl 32 value 13	- F14:	Reserved
Ctrl 32 value 32	-	User bank
Ctrl 32 value 64	-	Card Bank 1
Ctrl 32 value 65	-	Card Bank 2
Ctrl 32 value 66	-	Card Bank 3
-	-	-
Ctrl 32 value 73	-	Card Bank 10

### Example:

You wish to recall preset 10 from the Reverb (Music Surround) bank. According to the table above:

- Set Ctrl 0 to "0" and Ctrl 32 to "2" and send program change no 10.

### SysEx Device ID

Range: 0 to 126

Select SysEx ID for the Mainframe.

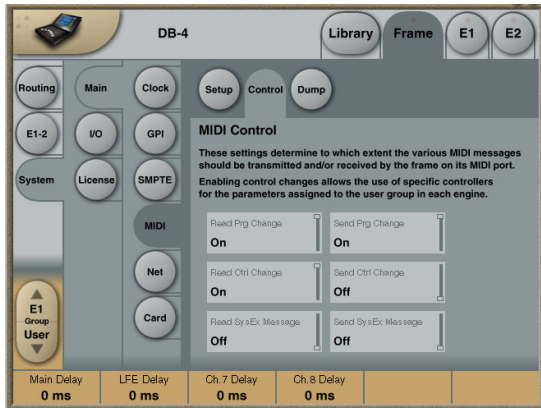
### MIDI Rate

Range: Normal or 19.2

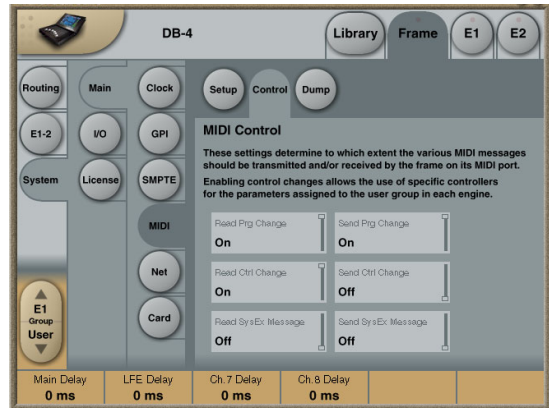
This parameter sets the Baud Rate / MIDI transfer rate. The default setting is "Normal". However, "19.2" may be better suited for external master control programs as found in broadcast stations.

# FRAME - SYSTEM - MAIN

## MIDI Control Page



## MIDI MIDI Page



On MIDI Control Page the following options are available:

### Read Program Change

Select whether the Frame should read incoming program changes or not.

### Send Program Change

Select whether the Frame should send program changes to MIDI out when presets are recalled via TC Icon or the TC Icon Software editor.

### Read Control Change

Select whether the Frame should Read Control Changes messages.

### Send Control Change

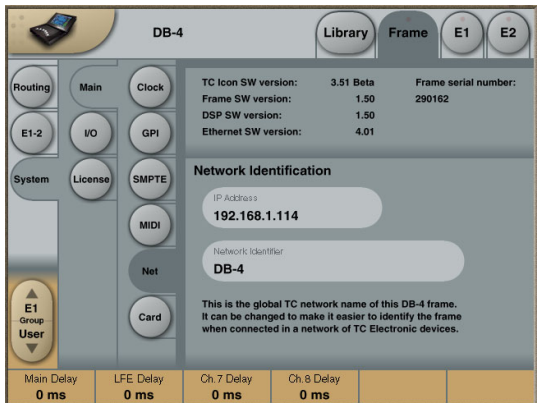
Options here are Single (7 bit) or Double (14 bit) precision.

### Read SysEx - Send SysEx

These two parameters determine whether the Frame should read and send SysEx.

# FRAME SYSTEM MAIN

## Net



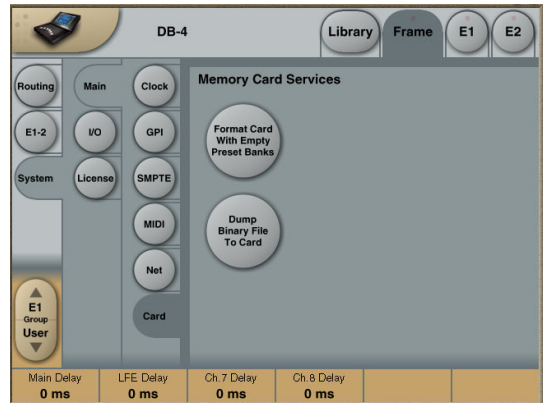
### Software versions

Current installed software versions.

### Network Identifier

Press the field "Network Identifier" to enter a name for the Mainframe. This is the global TC network name for the frame. By giving the frame a specific name it will be easier to identify the frame when hooked up in a network with several frames.

## Card



### Format card with empty preset banks

This function will format a PCMCIA card with DB8/DB4 preset banks. A formatted 1Mb card will hold:

- 10 Engine user card banks of 100 presets
- 10 Routing user banks of 50 presets
- 10 Scene user banks of 50 presets

### Dump Binary File to Card

This function enables you to dump a binary file to a PCMCIA card. Follow the steps below:



This is for service purposes only!

- Rename the xxx.bin file to "dumpfile.bin"
- Copy the file to a 3.5" disk
- Insert the disk in the DB8/DB4 3.5" disk drive
- Insert a memory card in the DB8/DB4
- Press **Dump Binary File to Card** and confirm to proceed.

# FRAME - SYSTEM - I/O

Via the I/O page the following operations are handled:

- Settings for the DSP card
- Settings for up to three I/O cards
- Labeling of all physical Input and Output channels

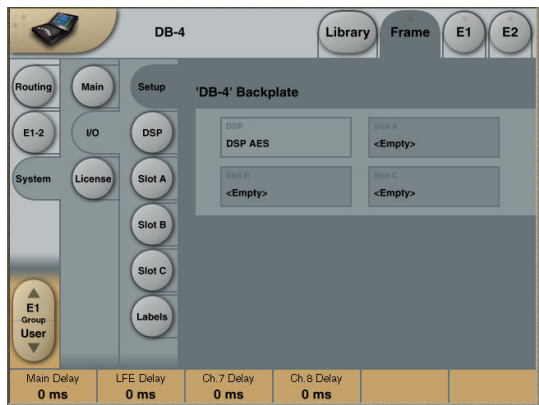
## Basic operation

If more than one mainframe is connected:

- Press the Icon symbol in the upper left corner to enter the **Select & Setup** pages
- Select which mainframe you wish to setup
- Press the Icon symbol once again and select System - I/O as illustrated above

## I/O - SETUP

With this page you can monitor the Mainframe configuration



### Analog Input - Digital Input

With an AES-8 card installed in a Mainframe, you must select whether Input channels 9 through 16 should be digital or analog.

When Digital Input is selected:

Input channels 9-16 will be the AES-8 card.

When Analog Input is selected:

Only analog Inputs are available!

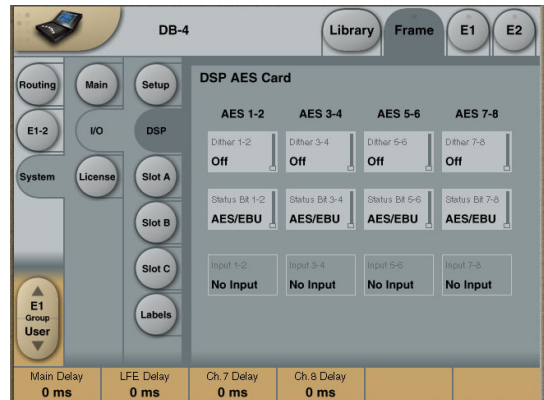
If an ADA-24/96 card is installed in slot A analog Input channels 9-10 are available.

If ADA 24/96 cards are installed in both slot A and C, analog Input channels 9-10 and 13-14 are available.

Please note the following:

- No Inputs on the AES-8 card are available when analog Input is selected.
- Digital Input must be selected to activate AES-8 card Input channels 9-16 even if no ADA 24/96 cards are present.
- Outputs 9-16 are always available. If ADA-24/96 cards are installed, they will output simultaneously with the AES-8 Outputs on channel 9-10 (Slot A) and 13-14 (Slot C).

## I/O - DSP



### Status Bit

Status bit information can be set separately for each of the AES Outputs.

Options are:

AES/EBU : Professional usage of Status bits.

S/PDIF : Consumer usage of Status bits.

### Clock Status - Sample Slip Detection

**Input 1-2, Input 3-4, Input 5-6, Input 7-8**

**Input 9-10, Input 11-12, Input 13-14, Input 15-16**

Monitors the Clock status of the incoming AES/EBU Inputs and indicates whether the incoming Clock is in sync with the mainframe Clock settings. Three states of incoming clock can be indicated.

### Locked

The Input is in sync with the Mainframe.

### Sync Error (Red)

The Input is or has been out of sync with the mainframe.

Press the **Reset** key to see if Sample Slips are still occurring. - If so - Check that there is only one Master Clock source in your setup. This monitoring function is excellent when trying to determine which connected device is out of sync.

### No Input

Indicates no connection available.



# FRAME - SYSTEM - I/O

## I/O - Slot A, B & C

This is where you setup card specific parameters. Parameters are only available when a I/O Card is detected.

### ADA 24/96 card



#### Level In

Changes the analog nominal Input level between +6dBu and +30dBu in 6dB increments. The analog Input level enables you to match the DB8/DB4 Input to the Output of e.g. your mixer. If the nominal operating level on your mixer is e.g. +4dBu and you select +12dBu on the Level In parameter you will have a headroom of 8dB. If you select +16dBu in the Level In the headroom will be +12dB, and so forth.

#### Level Out

Changes the analog output level between +6dBu and +24dBu in 6dB increments.

#### Output Connection

Select the type of connection you are using on the Output of the card. Select between:  
Balanced or unbalanced (with signal on pin 2 or pin 3).



**If you are connecting unbalanced cables to the Outputs when Outmode set to "Balanced", the Outputs will be muted/un-muted sequentially via a goldplated short circuit protection relay. This is intentional and will not cause damage to any device.**

## Balanced/Unbalanced Operation

### Unbalanced operation

Some mastering studios prefer unbalanced wiring. Please read these notes for optimum performance. Preferably, balanced cables should be used on Inputs and Outputs even for unbalanced setups.

#### Input

Pin 2 hot, pin 3 connected to reference (shield) at the Output of upstream device.

#### Output, pin 2 selected

Pin 2 hot, pin 3 connected to reference (shield) at the Input of downstream device. In this mode pin 3 acts as a reference Input for the ADA24/96 Output stage and should not be left unterminated.



This mode will not work properly with balanced inputs unless wiring is compensated as described. If wired properly, this is the optimum output mode for feeding unbalanced devices.

#### Output, pin 3 selected

Pin 3 hot, pin 2 not needed. In this mode pin 2 and pin 1 carry the same output reference.



This works with balanced inputs using 1:1 wiring, but balanced mode should be selected if driving a balanced input.

## Filters

When operating the mainframe in normal Sample Rates (32 - 48kHz) you can select different down- and up-sampling filter types. The AD and DA conversions are always performed in high-sample domain (88.2 to 96kHz). Afterwards the digital down- and up-sampling is performed in the digital domain using a local DSP on the ADA24/96 card. Select filter type according to the source material you are working on.

### Filters

Chose between - Linear, Natural, Vintage, Bright and Standard (Std).

#### "Linear" filter

These filters are linear-phase and non-aliasing (the stop-band starts below the Nyquist frequency). The pass-band response is extremely smooth and non-equiripple, extending beyond 20kHz. With the "Linear" filters you'll have a hard time discriminating between the sound of the conversion chain and direct analog, even at 44.1kHz!

#### "Natural" filter

Based on the "Linear" filter class, but with a carefully adjusted non-linear phase response, these filters obtain an almost "better-than-live" reproduction of space while retaining crystal-clear imaging and absolute tonal neutrality. The "Natural" filters too are non-aliasing.

#### "Vintage" filter

Based on the "Natural" filters, here we've added a bit of warmth and roundness to the treble by introducing a smoother "tube like" roll-off. This filter would be an exceptionally good choice when mastering material that seems too hard in the high-end frequencies. These filters too are non-aliasing and non-linear phase.

# FRAME - SYSTEM - I/O

## "Bright" filter

These filters are something entirely different: Ultra-short impulse response, linear phase and quite a bit of deliberate aliasing produces a "digital" and slightly aggressive sound adding plenty of top-end life to e.g. Rock and Techno recordings, or giving you the feeling of air you need when you are mastering a somewhat dark sounding source material.

## "Standard" filter

This filter emulates the response of typical mid-end converters: Equiripple half-band filters that are precisely 6dB down at the Nyquist frequency.

## Softclip

The Softclip algorithm runs in the 96kHz domain right after the AD conversion before the down-sampling filter.

## AES-8 Card

### Slot B with an AES-8 card installed

The following Setup page will appear in: Frame/System/I/O/Setup when an AES-8 card is installed.

### Analog Input - Digital Input

With an AES-8 card installed in a Mainframe, you must select whether Input channels 9 through 16 should be digital or analog.

#### When Digital Input is selected:

Input channels 9-16 will be the AES-8 card.

#### When Analog Input is selected:

Only analog Inputs are available!

If an ADA-24/96 card is installed in slot A analog Input channels 9-10 are available.

If ADA 24/96 cards are installed in both slot A and C, analog Input channels 9-10 and 13-14 are available.

#### Please note the following:

- No Inputs on the AES-8 card are available when analog Input is selected.
- Digital Input must be selected to activate AES-8 card Input channels 9-16 even if no ADA 24/96 cards are present.
- Outputs 9-16 are always available. If ADA-24/96 cards are installed, they will output simultaneously with the AES-8 Outputs on channel 9-10 (Slot A) and 13-14 (Slot C).

## I/O - Labels

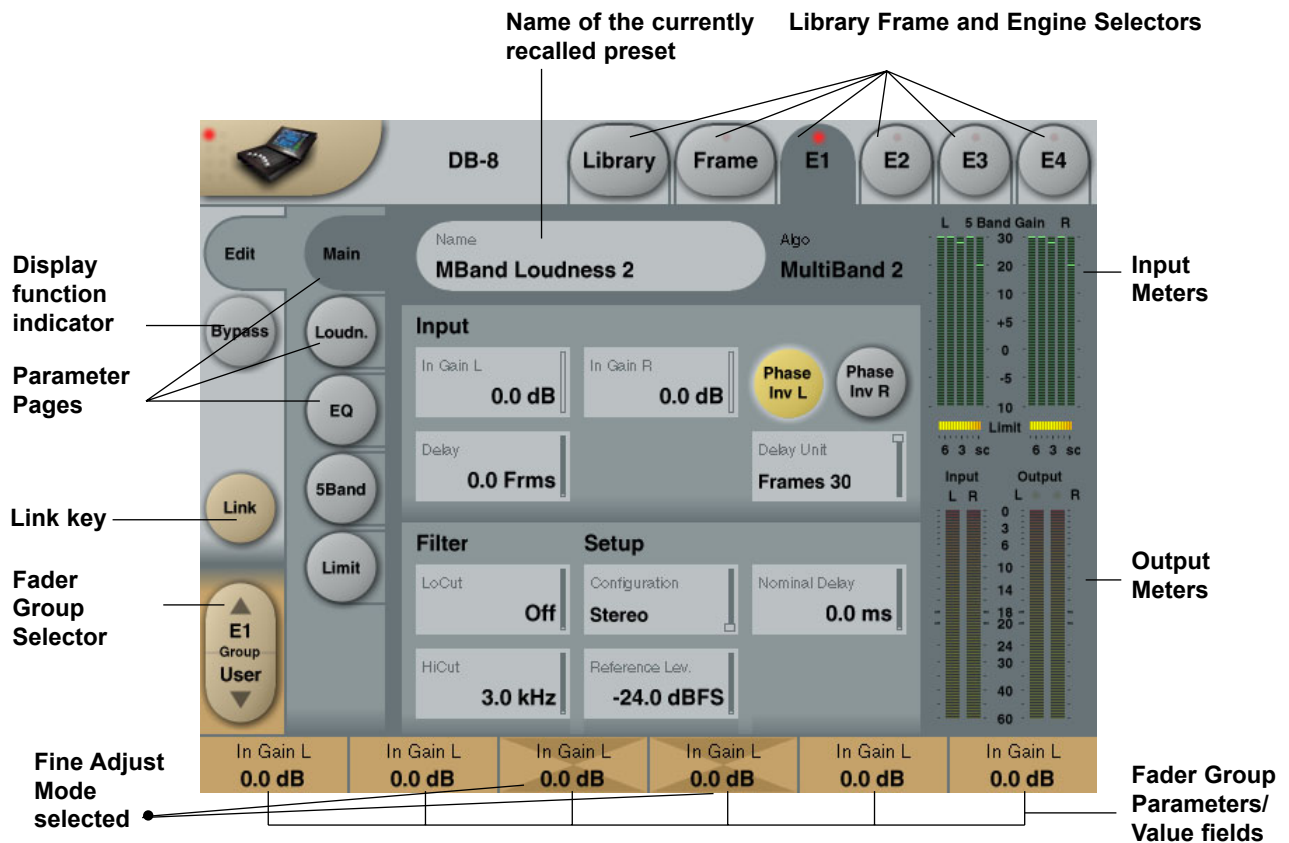


All physical Inputs and Outputs can be named/renamed. Enter the Titles page by pressing the tabs System and Titles. Press any of the 16 Inputs/Outputs and the Naming display will pop up. Enter adequate name for the Input/Output and press **Enter**. The names will be displayed on the Frame-Routing page.



The I/O Labels are global and are not affected by preset changes.

# ENGINE - EDIT PAGE



## The Engine 1-4 Edit Pages

This is where you edit algorithm parameters. Parameters in several algorithms are distributed on different pages. As illustrated above the Multiband-2 has 5 pages: Main, Loudness, EQ, 5 band and Limiter. Depending of the quantity of parameters represented in the groups one or more groups will be displayed.

### Basic operation

- Press E1 to E4 to select Engine. Parameters for the recalled algorithms are instantly available for editing.
- Select a parameter group. In the example above - a Multiband-2 algorithm - the groups are Main, Setup, Expander, Compressor, Limiter and Output.
- All parameters are assigned to the Fader Groups. Select Fader Group using the **Fader Group** selector.
- Press any parameter and it is assigned to Fader 6.

## Fader User Group - Assign key

By pressing the **Fader Group Selector Up** key you enter the User group. In this group you can assign any parameter to any Fader. The User Fader group is stored with a preset.

- Press the **Link** key.
- Select the Fader you wish to link a parameter to, by pressing the field just above the fader.
- Press the parameter you wish to link to the selected fader.

### Bypass

The **Bypass** key will respond in different ways depending on the recalled algorithm. See specific algorithm description. In some algorithms the **Bypass** will work as a mute function.

### Naming a Preset

- Press the Name field. A keyboard will pop up. (See the "Naming display" section).
- Type in the new name.
- Press **Enter**.

## Parameter value - Fine Adjust

Any parameter value can be adjusted in two accuracies. A Normal and a Fine Adjust - mode. To switch between the two modes press the Value Fields above the faders. As shown in the illustration the Fine Adjust mode will be indicated with two triangles in the value field. (fader 3+4 in the illustration).

# ICON SETUP

## Software Editor Setup menu

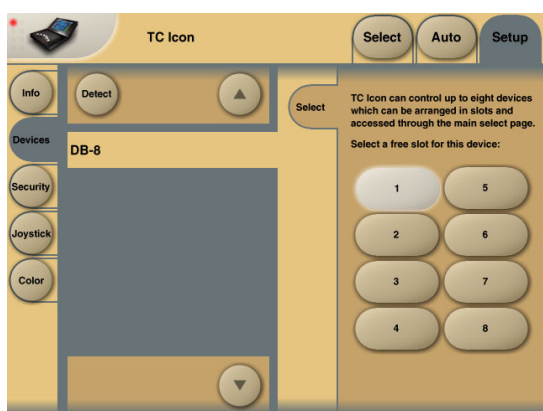
### Info

On this page the current Software Editor version number is listed.

### Devices

In this page you control and assign the devices in the setup.

- Press **Detect** to scan the network for connected devices. All devices will appear in the list.
- Now assign the devices one at a time by selecting the device using the **Cursor up/down** followed by pressing one of the eight oval keys in the right side of the display.



### Security

In the security page you can activate/deactivate the “sticky clip” function.

When this function is set to “on” the Overload LEDs on the Routing page will stay lit once activated, until the **Reset Clip** key is pressed.

### Color

Select the Color scheme of your choice. Depending on the surrounding light conditions different schemes may be more appropriate than others.

## Icon User Interface

(only available on the Hardware version of the TC Icon)

**Go to the Select & Setup pages pressing the TC Icon key in the upper left corner.**

**Press SETUP (upper tab) and UI (side tab) to enter the setup page for the TC Icon display.**

### TC Icon Display Parameters

In this display you setup various parameters regarding the appearance of the display as well as the Fader Touch Sensitivity.

### Display Brightness

Adjust the brightness of the display using either the **Arrow** cursors or simply drag the “**Adjust handle**”.

### Show Mouse Cursor

Press to show mouse/pointer position.

### Calibrate Display Touch

For optimal performance the Touch Screen will at times need to be calibrated. Press and follow instructions to Calibrate the Touch Screen.

### Fader Sensitivity

To avoid accidental movement of the faders they are sensitive to humidity and will only respond when touched by your skin.

### Enable Fader Touch

Enables touch sensitivity of the Faders.

### AC/DC Sensitivity

Sets the Faders sensitivity to AC and DC. Adjust these handles to achieve optimal performance in your environment.

## Auto Edit Page



In the Auto Edit page all automation Events are listed and handled.

### Keep

Press to save the Event List locally on the Icon. It is possible to save one Event List on the Icon. Additional cue-lists can be stored and recalled on floppy disks on the Mainframe. The **Keep** key will turn red as soon as any editing of the list has taken place, indicating that you must press to save the list.

This key corresponds/is the same, as the **Keep** key located on the File page. (see following page)

### Write

When enabled any program change is written to the SMPTE Event List. This can be. e.g Engine, Routing or Scene recalls.

### Read

When enabled the Event list will be executed according to incoming SMPTE clock. Read and Write functions can be activated simultaneously.



General Read and Write status is given in the **Icon Tab** in the left corner.

### Follow

When follow is selected the list will scroll and the current event/song position will always be in the top line. When follow is de-selected the list will NOT scroll but the cursor position will move according to song-position.

### Save

Press to save the Event list. The **Save** key will turn red as soon as any editing of the list has taken place, indicating that you must press to save the list.

This key corresponds/is the same, as the **Save** key located on the file page. (see next page)



Be aware that until **Save** is pressed Edited SMPTE information is not yet stored in the Event list. For convenient indication the **Save** key will be red as soon as any alteration of the current Event list is present.

### Cursor

The white triangular cursor always indicates the current clock position in relation to the Event List.

### Event Parameters

For each Event the following parameters are available.

- Time - indicates the SMPTE time at which the Event takes place.
- Device - indicating on which Device Mainframe the Event is taking place. Device numbers 1-8, corresponds to the Device position at the Select page.
- Event - states the occurring Event at the given time.

### Modify

Press this key to access Event parameters for the currently selected Event. (see further description below)

### Delete

Press to delete the selected Event.

### Insert New Event

Press to insert an Event (see further description below)

## Modify/Insert - Edit



## Event Settings

### Operation

- To access Event settings press **Modify** in the Edit page.
- Setup all parameters for the Event you are about to Modify or Insert.
- Press OK to confirm.

### Time

The time where the Event being Modified or Inserted is taking place.

### Step/Adjust

Range: Frame, 1 Second, 10 Seconds, 1 min., 10 min. or 1 hour.

Use the Step parameter to select Adjust range and the Adjust parameter to increase/decrease the time.

# SMPTE

## Device

This parameter selects which Mainframe connected to the LAN you are working on. Device numbers 1-8, corresponds to the Device position at the Select page.

## Preset Type

Selects whether the preset Event you are working on is a Scene, Routing, Engine or a System preset.

## Bank

Select the bank related to the preset you are about to setup/recall via SMPTE.

## Preset

Select the preset from the selected bank

## File



## Current List

### Keep

Press to save the Event List locally on the Icon. It is possible to save one Event List on the Icon. Additional cue-lists can be stored and recalled on floppy disks on the Mainframe. The **Keep** key will turn red as soon as any editing of the list has taken place, indicating that you must press to save the list.

This key corresponds/is the same, as the **Keep** key located on the Edit page. (see previous page)

### Revert

This "Undo" function allows you to revert the to the last saved SMPTE Event list. This is the List that is stored locally on the TC Icon.

### Clear

Press **Clear** to delete the entire SMPTE Event list present in the TC Icon.

## Remote device disk drive

Event lists can easily be organized and saved to a Floppy disk in the Mainframe.

Mainframe selection is done in the Auto Edit page.

## Get List

Press to get a list of all SMPTE Event lists stored on the floppy disk located in the Mainframe.

## New

Press **New** to create and name a new Event list in the floppy disk in the Mainframe.

## Save

Press to save the current Event list to the disk.

## Load

Press to load Event list from disk.

## Delete

Press to delete selected Event preset from the Event Preset list.

## Options



## Automation Timecode Options

### Master Sync Device

Select which of the Mainframes connected on the LAN you wish to act as Master Clock.

### Start Of Daytime

Range: 23:00:00:00 or 00:00:00:00

If the SMPTE time code present on your tape media or film does not start exactly at the beginning of the tape the 23:00:00:00 setting would be a good choice to keep chronological order in the Event List.

## Support of SNMP

Multiple DB8 and/or DB4 units can be monitored using industry standard SNMP trapping. SNMP includes monitoring of sync status, overload, silent outputs and more. - Look on [www.tcelectronic.com](http://www.tcelectronic.com) under "Products - DB8/DB4" for details.