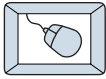# t.c. electronic™

TC FX II™

Renowned M2000 Reverb Algorithms

Plug-in for Mackie Digital Mixers

MACKIE®
Digital Systems™

Iconography

This icon identifies a description of how to perform an action with the mouse.

This icon identifies a description of how to perform an action from the console.

This icon will lead you to some further explanations of features and practical tips.

This icon marks information which is very important, so please make sure you have a read.

This icon does not appear in this guide.

Contents

Note: Any future revisions of this guide will be available for viewing and downloading from our website: www.mackie.com.

Introduction

TC Electronic's™ TC FX II™ is one of the exciting new family of 24-bit plug-ins for the D8B, specifically designed for the new Mackie Universal Effects (UFX) card.

The UFX comes bundled with Mackie Real Time OS 3.0, TC FX II (Level I), and Mackie's Mono Delay.

About TC Electronic

TC Electronic was founded in 1976 with the objective of developing, producing, and marketing first class audio products. Now they're the undisputed industry leader in digital effects and reverb technology.

TC's development team encompasses not only the R&D department at their main office in Risskov/Denmark, but also an increasing number of the very best audio software engineers around the world. Their Hamburg, Germany satellite company, TC/Works, is dedicated to creating quality products for computer workstations.

TC users include top artists, world class recording studios, TV and Radio stations, theaters, operas and other installations and public address companies. At the 1999 TEC Awards, TC Electronic was nominated for five, and walked away with three - including the M3000 Studio Reverb Processor in the category of "Signal Processing Hardware" and the TC/Works Master X in the "Signal Processing Software" category.

Twenty-four years after its inception, TC continues to produce some of the most precise and gloriously musical effects ever to come off a chip.

About the D8B UFX Card

The UFX card provides robust processing power for computation-heavy plug-ins. The UFX uses a 4-in/4-out architecture, which means it can support four mono, two mono and one stereo, or two stereo sends simultaneously. Up to four UFX cards can be installed in the D8B, allowing up to sixteen simultaneous single-channel effects, eight stereo plug-ins, or combinations thereof.

VERY IMPORTANT **Note: It is recommended that you increase the D8B's memory if you install more than one UFX card. Memory upgrade instructions are supplied with each card.**

About TC FX II

The new TC FX II Series for the Digital 8•Bus furthers TC's reputation for the finest effects in the world. It provides plug-in versions of many of their most popular effects algorithms, including the Reverb-1 and Reverb-2 algorithms from the renowned TC Electronic M2000, and many TC factory presets.

This version of TC FX II is TC Level I. It is for demonstration purposes, and we hope it will whet your appetite towards the higher TC FX II levels.
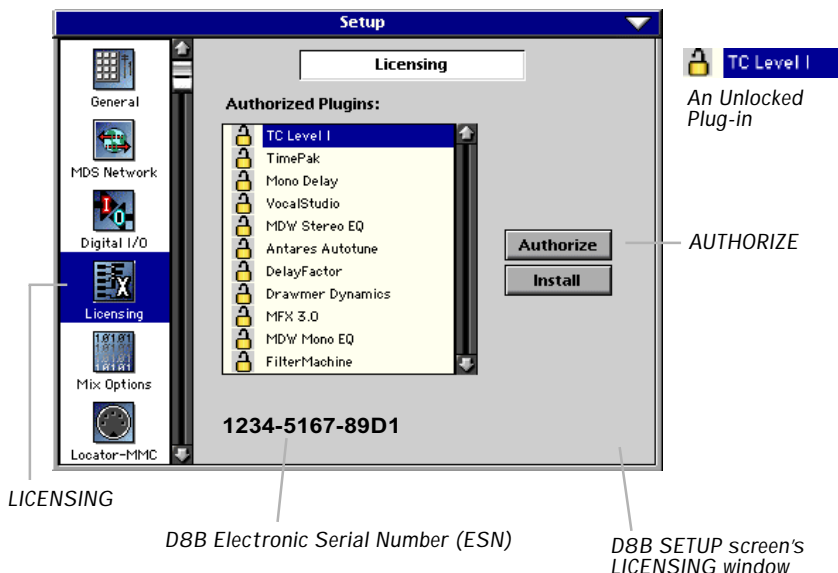
Let's Get Started

Requirements

- One or more Mackie UFX cards
- Mackie Real Time OS 3.0 Software
- Plug-in Software

We will assume you have successfully installed a Mackie UFX card and Mackie Real Time OS 3.0 software upgrade. If you have encountered problems with the installation of hardware or software please see their associated user guides or contact Mackie support (www.mackie.com).

Authorizing the Plug-in
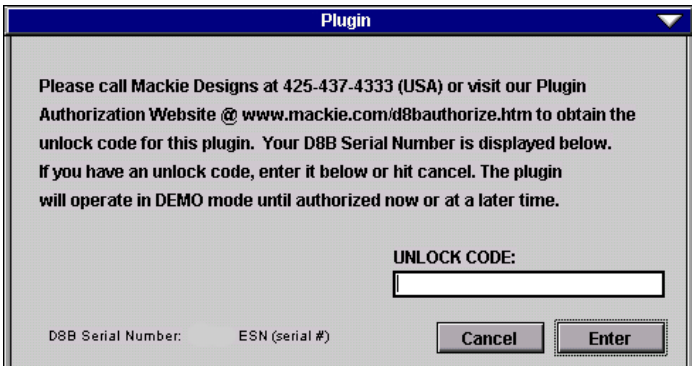
If you have D8B v 3.0 b186 or greater, the plug-in is already installed on the D8B hard drive, however an authorized unlock code must be entered to unlock the plug-in for normal operation. In the windows and menus, the plug-in is shown as TC Level I.

An Unlocked Plug-in

AUTHORIZE

1234-5167-89D1

LICENSING

D8B Electronic Serial Number (ESN)

D8B SETUP screen's LICENSING window

Unlock Procedure

1. Locate your D8B's Electronic Serial Number (ESN). This is displayed at the bottom of the Licensing window which is accessed from the Setup screen. The 12 digit ESN is made from numbers 0–9 and letters A–F. It is unique to the D8B processor, and is not the serial number label on the rear of the control surface or CPU chassis.

2. You will also need your plug-in's serial number which is 1111 1111 1111.

3. To obtain the unlock code, have the ESN and plug-in serial number ready. Then you have two options:
   • Log on to the Mackie plug-in authorization web page: (http://www.mackie.com/d8bauthorize.htm)
   or
   • Telephone Mackie Tech Support at 800-258-6883.

4. When you have obtained an unlock code, open the D8B Setup window, and click **Licensing**.

5. With your plug-in highlighted in the Licensing window, click **Authorize**, and enter your unlock code in the UNLOCK CODE box. Click **Enter**, and enjoy your newly expanded console.

Configuring the Plug-in

After booting the D8B you must assign the plug-in to a UFX card. See "FX Routing" on page 15 for more details.

Assign the Plug-in to a UFX card

1. Click the Plugins menu and select **Plugins**, or Ctrl+P on the keyboard.

2. In the Plugin Configuration window, locate the card slot that contains the UFX card you wish to assign to.

3. In the Mode column, click the Mono/Stereo toggle button and set it to **Stereo**.

4. In the Plugin column, select **TC Level I** from the stereo plug-in drop down menu.

Note: A Plug-in can also be loaded from the Setup section on the console.

Assign an Input Source to the Plug-in

• Click the plug-in's INPUT menu button to select an input source. In the example below, we have chosen the **Aux 5** Bus as the input to the plug-in installed in Slot 5.

When a plug-in is fed from an aux bus, its output appears on the FX Return channels (faders in the EFFECTS bank). The return channel is determined by the slot number and whether the effect output is mono or stereo. For example, a reverb with a mono input and stereo output that is installed in Slot 5 has its outputs on FX 5 and FX 6. **Note:** The default state for all FX channels is MUTE. You won't hear the effect until you unmute its FX return channel(s).
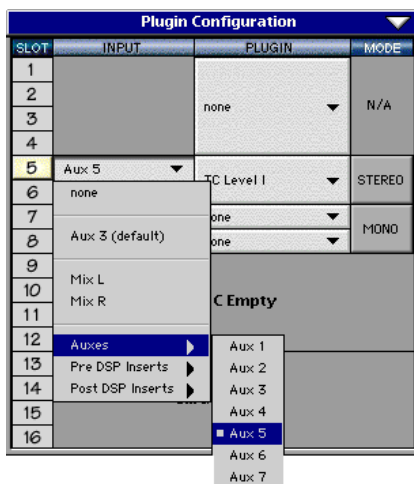
A plug-in can also receive its input from a channel pre- or post-DSP insert or the main stereo left and right Bus. When a plug-in is inserted "in line" in this manner, its output is routed directly back into the channel. See "FX Routing" on page 15 for more details.

Removing the Plug-in

1. Select **none** from the associated plug-in drop-down assignment menu.

2. Click **OK** in the Alert dialog box.
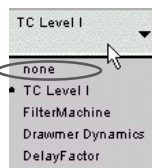
Note: A plug-in can also be deleted from the Setup section on the console.

Using the TC FX II
Front Panel Overview

Pre-Delay Control — Input Assignment and Dropdown Button — Pre-Delay Display (mouse active) — Preset Algorithm — Effect Bypass — Close Display

Meter Displays (In/Out) — High/Low Freq Decay (mouse active) — Preset Selection & Display — Memory A/B Buttons

Decay Time Control — Input/Output Meter Toggle Button — Menu Button — Decay Time Display (mouse active)

Pre-Delay Control and Display
Pre-Delay is the subtle delaying of the reverb itself so that the dry signal more easily stands out from the reverb. It can give the impression of a larger sound, especially with instruments such as percussion. The Pre-Delay parameter can also be controlled by the mouse in the Pre-Delay display. Ranges from 0ms to 200ms.

Note: When the input assignment is from a channel insert or L/R mix rather than an Aux, the Pre-Delay control changes to a Mix control, allowing adjustment of the amount of reverberation added to the direct channel signal. In this mode, pre-delay can be adjusted by dragging the mouse on the pre-delay value.
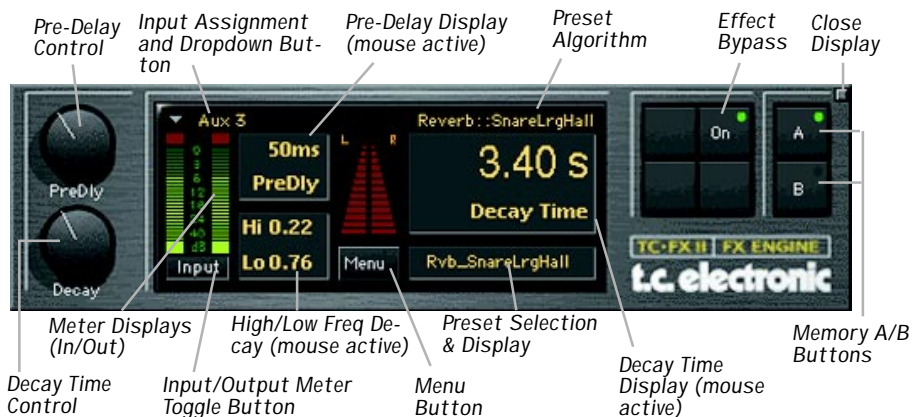
Decay Control and Display
The Reverb Decay determines how long the reverb will sound before it can no longer be heard. The Decay parameter can also be controlled by the mouse in the Decay display. Ranges from 200ms to 20S.

Input Assignment Button
Assign **TC FX II** inputs from any of the D8B's pre, post, mix L/R or auxiliary channels.

Note: The Input Source can be set from either the plug-in GUI or the Patch Configuration Window.
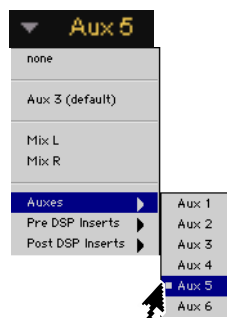
Input/Output Meter Display and Toggle Button
This button toggles from Input to Output. Meters range from
−40 dB to 0 dB. **Note:** The meters above the Menu button are
inactive in this version.

**Hi/Low Frequency Decay Control and Display**
These two parameters allow the decay time to be set separately
for both low and high frequencies as a multiplication factor
value. This means you have control over the tonal shape of the
reverb itself, being able to make the high frequencies dissipate
faster if the reverb is too bright, and make the lows dissipate
faster if the reverb is too boomy. This allows you to simulate
different surfaces of an acoustic environment with softer
surfaces having more high frequency decay and smaller
enclosures having more low frequency decay. The scale for these
controls is a multiplication factor ranging from 0.02 to 2.5 times
the nominal delay time.

Menu Button
The drop-down menu button will enable familiar functions such
as undo, redo, load, save, reset, cut, copy, and paste.

Preset Selection and Display
Select from Factory or Users presets
by clicking in the preset name
display. The displayed Preset
Algorithm which makes up the
Factory preset is not editable, but can be used as a
base for making and saving your own User presets.
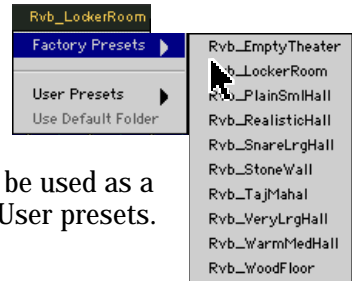
Effect Bypass
Enables or disables the TC FX II.

Close Display
Clicking this button will close the TC FX II display while still
keeping the plug-in enabled.

A/B Memory Buttons
Memory A and Memory B are two separate storage banks that
let you temporarily store set-ups. This is handy for quickly
referencing and comparing sounds while you are creating edits.

Saving, Loading and Resetting a Preset

TC FX II settings can be saved and recalled from the
hard drive. You can save and load files from either
Memory A or Memory B.

To Save a Preset:

1. Click and hold the **Menu** button.

2. Select **Save** to overwrite the file
   currently opened.

3. Select **Save TC Level I As** to save to
   a new file name. The Save Preset
   File As dialog box appears.

4. A default name for the preset is
   automatically displayed, such as
   Preset#1. If you want to rename it,
   simply type in the name you want,
   using up to 32 characters.
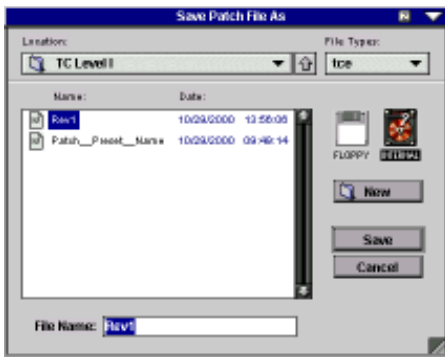
*A new sub folder can
be easily created to
help organize custom
patches.*

5. Select **INTERNAL** (default hard drive) or **FLOPPY**.

6. Click **Save** to complete the operation.

To Load a Preset:

1. Click Memory **A** or Memory **B** to choose the memory location from which to load the file.

2. Click and hold the **Menu** button.

3. Select **Load TC Level I** to open a file. The Load Preset File dialog box appears.
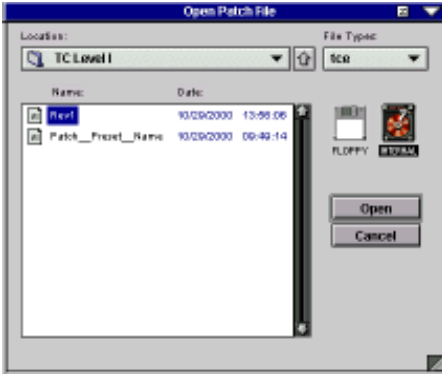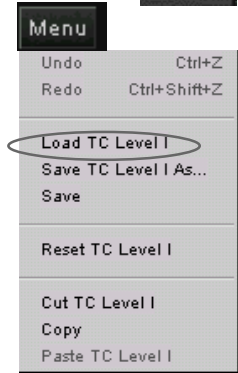
4. Click **INTERNAL** if the file is on the internal drive, or click **FLOPPY** if the file is on a floppy disk.

5. Select the preset you want to load.

6. Click **Open** to load the selected preset.

Other Menu Items:

Reset: Loads the previous patch.

Cut: The current settings are temporarily stored in the clipboard memory in case you want to paste them to a new preset. The plug-in also reverts to its default state (it is reset).

Copy: The current settings are temporarily stored in the clipboard memory in case you want to paste them to a new preset.

Paste: The current settings are replaced with the setting in the clipboard memory.

Automation and Snapshot Control

Dynamic Real Time

To write automation on a loaded Plug-in: *On The Console*

1. Engage AUTO TOUCH.

2. Engage ALL, disengage
   BYPASS, and send
   timecode to the console –
   the POSITION readout will change to show TC is being
   received.
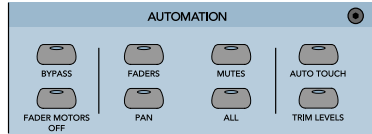
3. Move a parameter or recall a patch (user or factory
   preset).

Subsequent edits to any recorded automation moves may be
performed in the Mix Editor. Enable the channel view by clicking
the Channel View button, then choose the plug-in you wish to
view from the page drop-down
menu. This displays a list of
available channel and plug-in
automation tracks on a
parameter basis.

Note: **Parameters can be controlled from either the GUI Plug-in graphic parameters (using a mouse to modify the parameters) or via the VFD V-Pots and SELECT buttons (with the Plug-in parameters called up on the VFD readout).**

Dynamic Off-line

To write a snapshot on a loaded plug-in:

• Use the Event Automation Track, available under the
  Window Menu as 'Event Track', to load plug-in user
  (previously stored) or factory preset patches, at a
  specific time during automation playback.

General Note:
Plug-in settings are recalled as part of a console Snapshot, but may also be re-called as Presets (patches). If you are recalling snapshots and presets, be aware that one may override the other.

14   TC FX II

FX Routing

The Plug-in Configuration Window

Card Slot Column

Input Source Assignment Column

Plug-in Assignment Column

Close Window

Plug-in display toggle

Input Channel Assignment Drop-down Menu Button

Card A

Card B

Card C

Card D (no card installed)

Stereo/Mono Mode Column

Stereo/Mono Toggle Button

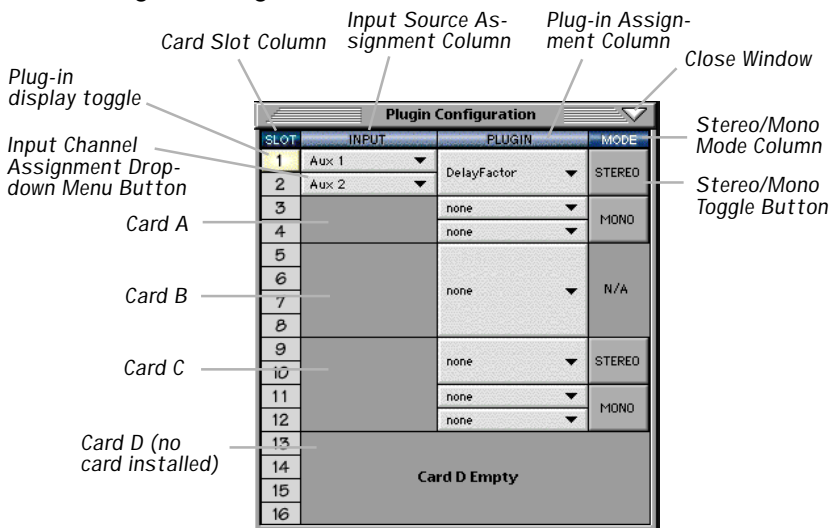| SLOT	INPUT	PLUGIN	MODE
1	Aux 1 ▼	DelayFactor ▼	STEREO
2	Aux 2 ▼		
3		none ▼	MONO
4		none ▼	
5			
6		none ▼	N/A
7			
8			
9		none ▼	STEREO
10			
11		none ▼	MONO
12		none ▼	
13			
14		**Card D Empty**	
15			
16			

Stereo Plug-in Routing

If the plug-in has a stereo input as well as stereo output, typically it will be fed from two aux buses and returned to a pair of FX return channels. In the diagram below, Aux 1 and Aux 2 feed the plug-in in stereo, and its output is returned to FX 1 and FX 2. If the plug-in has a stereo input, it is permissible to send the same aux to both inputs.

FX Channels 1&2 (channels 49&50)

Stereo Input (Aux 1 & 2)

Stereo Plug-in

SLOT	INPUT	PLUGIN	MODE
1	Aux 1 ▼	DelayFactor ▼	STEREO
2	Aux 2 ▼		
3		none ▼	MONO

Plugins   Windows

Plugins	Ctrl+P
P 1- DELAY FACTOR	Alt+1
P 2	Alt+2
P 3	Alt+3
P 4	Alt+4
P 5	Alt+5
P 6	Alt+6
P 7	Alt+7
P 8	Alt+8
P 9	Alt+9
P 10	Alt+0
P 11	Alt+Shift+1
P 12	Alt+Shift+2
P 13	Alt+Shift+3
P 14	Alt+Shift+4
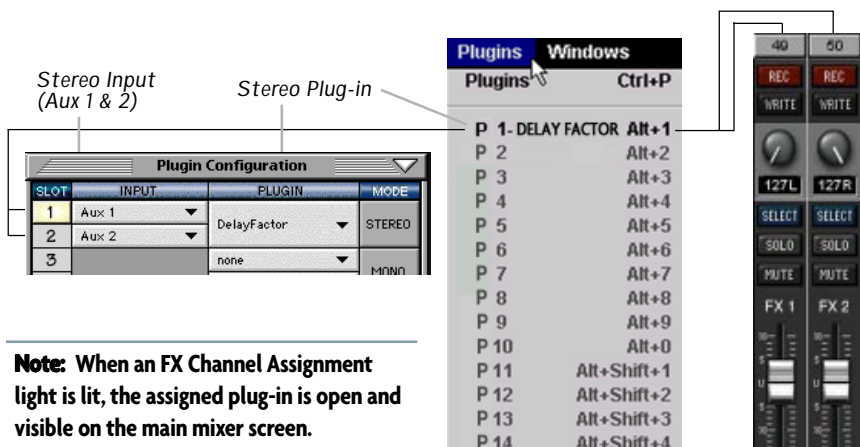
Note: **When an FX Channel Assignment light is lit, the assigned plug-in is open and visible on the main mixer screen.**

Inserting a Plug-in into a Channel
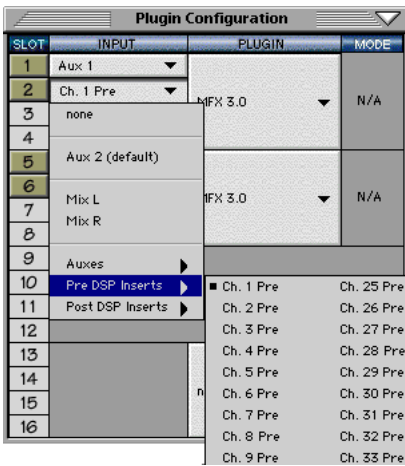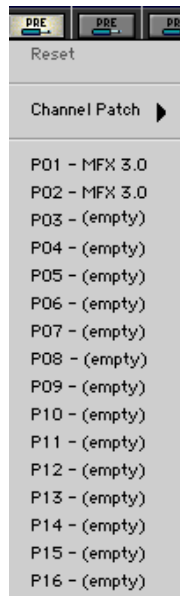
A pre- or post-DSP channel insert can also be used as the input source for a plug-in. When a channel insert point is selected, the plug-in output returns to the channel. The FX return path is disconnected, although the plug-in output is still displayed on the FX return channel meter.
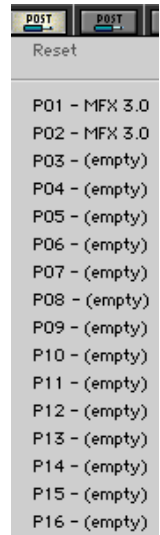
A plug-in channel insert assignment can be made from the Plugin Configuration window, or from a drop-down menu from the mixer screen.

	Plugin Configuration		
SLOT	INPUT	PLUGIN	MODE
1	Aux 1 ▼		
2	Ch. 1 Pre ▼	MFX 3.0 ▼	N/A
3	none		
4			
5	Aux 2 (default)		
6			
7	Mix L	1FX 3.0 ▼	N/A
8	Mix R		
9	Auxes ▶		
10	Pre DSP Inserts ▶	■ Ch. 1 Pre	Ch. 25 Pre
11	Post DSP Inserts ▶	Ch. 2 Pre	Ch. 26 Pre
12		Ch. 3 Pre	Ch. 27 Pre
13		Ch. 4 Pre	Ch. 28 Pre
14		Ch. 5 Pre	Ch. 29 Pre
15		Ch. 6 Pre	Ch. 30 Pre
16		Ch. 7 Pre	Ch. 31 Pre
		Ch. 8 Pre	Ch. 32 Pre
		Ch. 9 Pre	Ch. 33 Pre

Plug-in Configuration Window

PRE | **PRE** | **PRE**

Reset

Channel Patch ▶

P01 – MFX 3.0
P02 – MFX 3.0
P03 – (empty)
P04 – (empty)
P05 – (empty)
P06 – (empty)
P07 – (empty)
P08 – (empty)
P09 – (empty)
P10 – (empty)
P11 – (empty)
P12 – (empty)
P13 – (empty)
P14 – (empty)
P15 – (empty)
P16 – (empty)

Pre-DSP Drop-down

POST | **POST**

Reset

P01 – MFX 3.0
P02 – MFX 3.0
P03 – (empty)
P04 – (empty)
P05 – (empty)
P06 – (empty)
P07 – (empty)
P08 – (empty)
P09 – (empty)
P10 – (empty)
P11 – (empty)
P12 – (empty)
P13 – (empty)
P14 – (empty)
P15 – (empty)
P16 – (empty)

Post-DSP Drop-down

This assignment can also be made from the control surface and VFD by holding in the desired channel's SELECT button for two seconds, then paging over to Plug Pre or Plug Post, selecting the input source, then selecting the desired plug-in slot from the follow-on menu.

Using an Aux Send with a Plug-in

• Click on the associated INPUT menu button and select an aux input source. In the example below, we have chosen the **Aux 5** Bus.

Send the Input Signal to the Aux Bus

1. Send a signal to a D8B mixer input channel (MIC/LINE or TAPE IN).

2. Assign the input channel V-Pot/GUI Control Pot to an aux send. We have chosen **AUX 5** according to the example above.

3. Use the **AUX 5** control to adjust the input level to the plug-in.
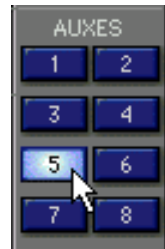
GUI Control Pot Assigned to AUX 5

Remember to select an aux send before using the V-pot or GUI Control Pot on the mixer input channel (MIC/LINE or TAPE IN).

You will see the plug-in's input meter become active as you raise the mixer input channel's aux send.

Set the plug-in input/output signal levels as you would with any effect, so the meter reaches its upper-most range every so often (always trust your ears first). This can be accomplished from the console or GUI.

Pre-Fader and Post-Fader Auxiliary Sends

Normally, effect sends are post-fader, so the signal sent to the effect follows the program level in the mix. Occasionally you may wish to feed an effect from a pre-fader source so that the signal level from the Aux control is independent of the channel fader position. Aux sends are selectable pre- or post-fader globally (all Aux 1's for instance) from the Mix Options screen in the Setup window, or individually on a channel-by-channel basis either from the channel strip or the Fat Channel.

In the channel strip, Alt-click the Aux Send level indicator to toggle between pre-and post-fader operation. Post-fader is indicated by a red bar, pre-fader is indicated by a yellow bar.

Channel Strip

In the Fat Channel, clicking on the small indicators below the Aux knobs toggles between pre- and post-fader operation. Yellow indicates pre-fader, post-fader is indicated by the background color.

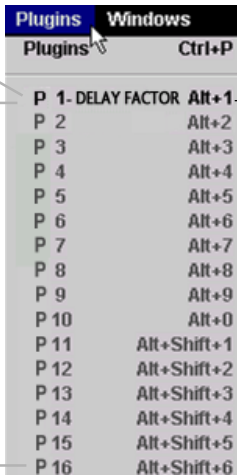*Fat Channel*

The FX Return Channel

- Switch the D8B Bank Select to **EFFECTS (49-72)** and bring up faders one and two (channels 49 and 50). You will also see meter activity associated with these channels.


FX Channels 1&2 (channels 49&50)

Stereo Plug-in

Plugins **Windows**

Plugins Ctrl+P

P **1- DELAY FACTOR**	**Alt+1**
P 2	Alt+2
P 3	Alt+3
P 4	Alt+4
P 5	Alt+5
P 6	Alt+6
P 7	Alt+7
P 8	Alt+8
P 9	Alt+9
P 10	Alt+0
P 11	Alt+Shift+1
P 12	Alt+Shift+2
P 13	Alt+Shift+3
P 14	Alt+Shift+4
P 15	Alt+Shift+5
P 16	Alt+Shift+6

The Plug button toggles between Windows menu buttons and FX buttons (lower left on the D8B mixer screen).

Plugins

Plug-ins button opens the Patch Configuration window (or `Ctrl+P` *on the keyboard)*

DlyFactor   2   3
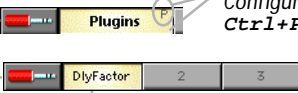
Here the Delay Factor plug-in is selected for display.

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