

t.c. electronic™

USER'S GUIDE



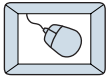
TC FX II™

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.

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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.



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

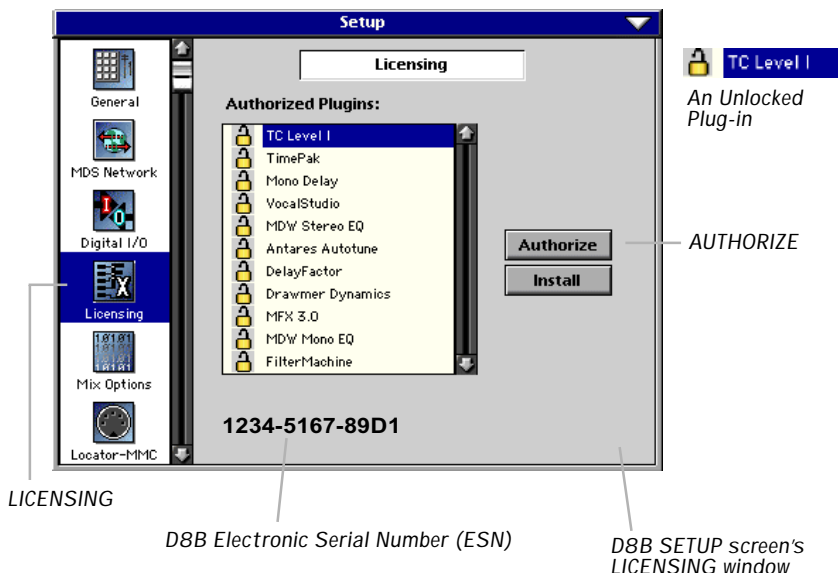
Requirements

- 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).

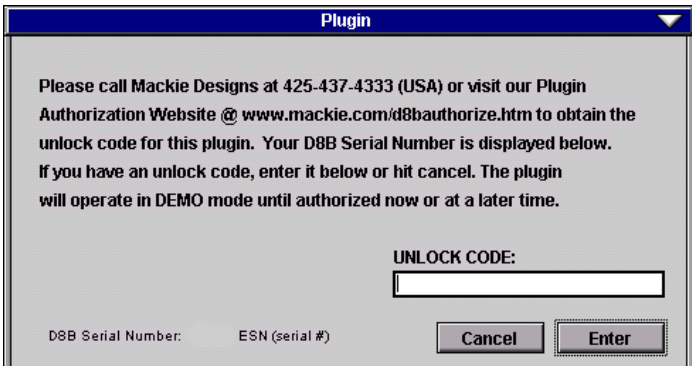
Authorizing the Plug-in

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.



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.



The image shows a dialog box titled "Plugin" with a blue header bar. The main text reads: "Please call Mackie Designs at 425-437-4333 (USA) or visit our Plugin Authorization Website @ www.mackie.com/d8bauthorize.htm to obtain the unlock code for this plugin. Your D8B Serial Number is displayed below. If you have an unlock code, enter it below or hit cancel. The plugin will operate in DEMO mode until authorized now or at a later time." Below the text is a label "UNLOCK CODE:" followed by a text input field. At the bottom left, there are labels "D8B Serial Number:" and "ESN (serial #)". At the bottom right, there are two buttons: "Cancel" and "Enter".

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.

Plugins	Windows
Plugins	Ctrl+P

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**.

Plugin Configuration			
SLOT	INPUT	PLUGIN	MODE
1	Aux 1	MFX 3.0	N/A
2	Aux 2		
3			
4			
5	Aux 3	MFX 3.0	N/A
6	Aux 4		
7			
8			
9	Aux 5	TC Level I	STEREO
10			
11		none	MONO
12		none	
13		none	STEREO
14			
15		none	MONO
16		none	

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

9	Aux 5	TC Level I
10		
11		none
12		TC Level I
13		FilterMachine
14		Drawmer Dynamics
15		DelayFactor



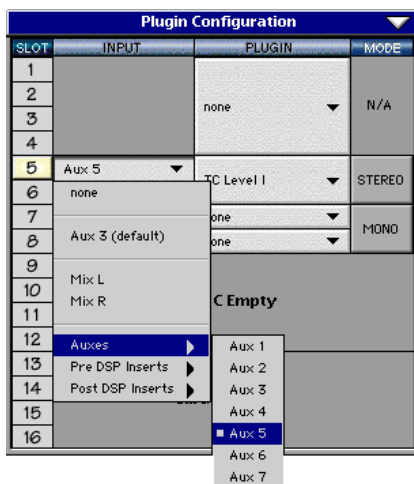
Note: A Plug-in can also be loaded from the Setup section on the console.

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).

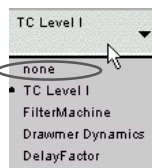


A plug-in can also receive its input from a channel pre- or post-DSP insert or the main stereo left and right Bus. When a plug-in is inserted “in line” in this manner, its output is routed directly back into the channel. See “FX Routing” on page 15 for more details.

Removing the Plug-in



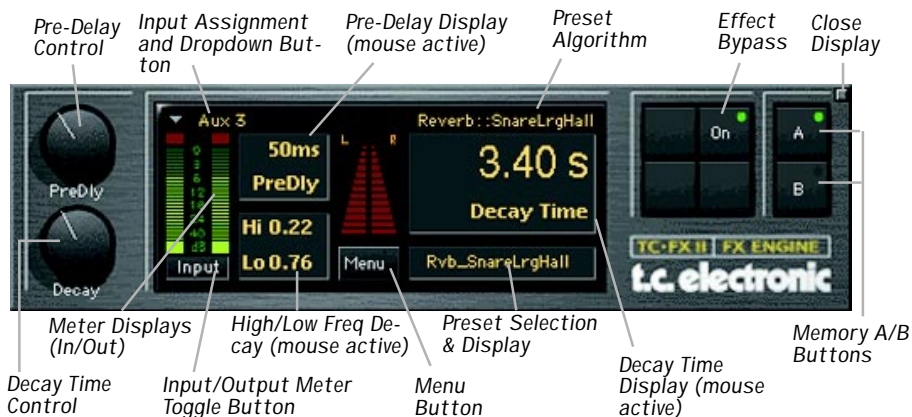
- Select **none** from the associated plug-in drop-down assignment menu.
- Click **OK** in the Alert dialog box.



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 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

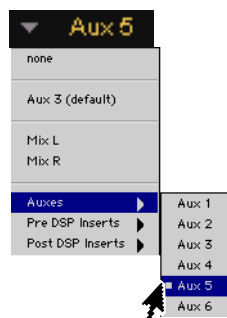
The Reverb Decay determines how long the reverb will sound before it can no longer be heard. The Decay parameter can also be controlled by the mouse in the Decay display. Ranges from 200ms to 20S.

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

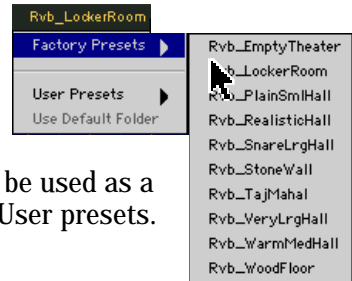
These two parameters allow the decay time to be set separately for both low and high frequencies as a multiplication factor value. This means you have control over the tonal shape of the reverb itself, being able to make the high frequencies dissipate faster if the reverb is too bright, and make the 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

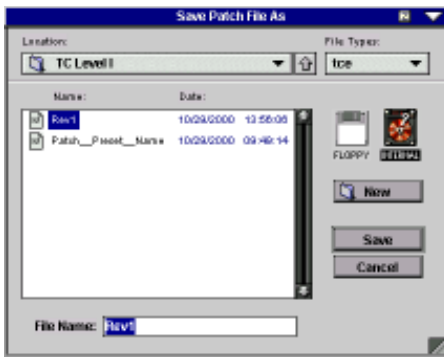
TC FX II settings can be saved and recalled from the hard drive. You can save and load files from either Memory A or Memory B.



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.



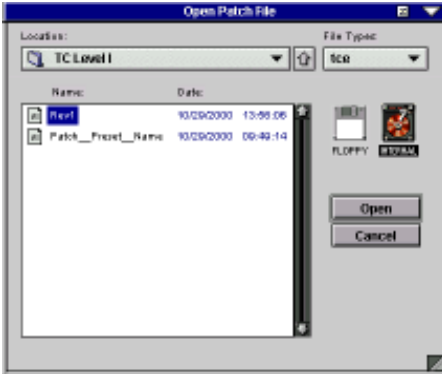
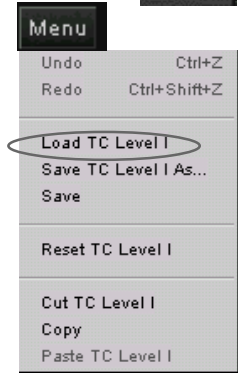
A new sub folder can be easily created to help organize custom patches.

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

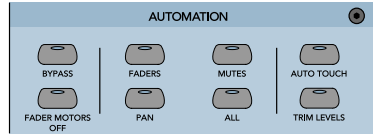


1. Engage AUTO TOUCH.



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.

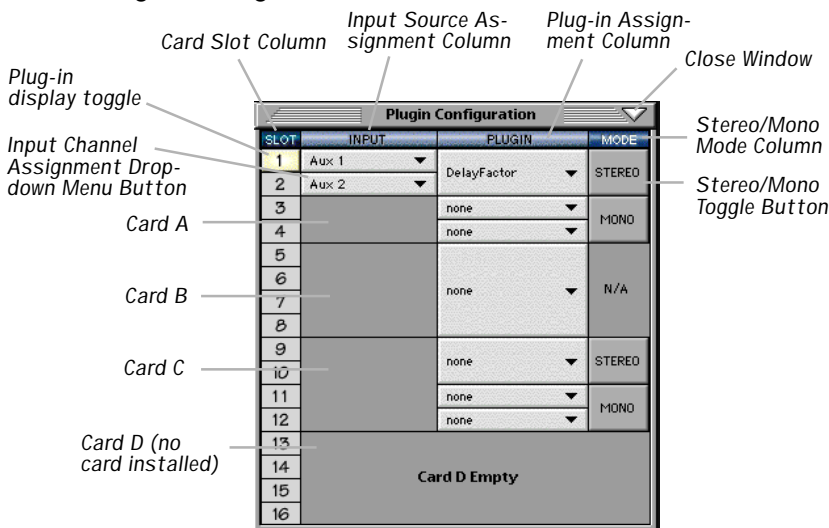


General Note:

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

FX Routing

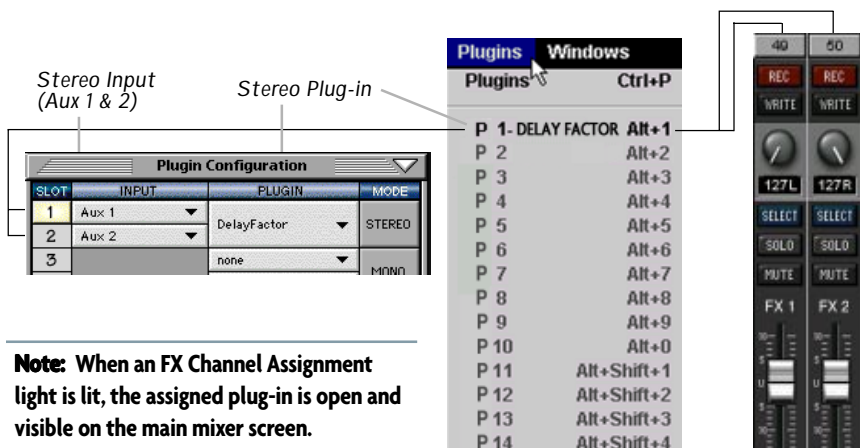
The Plug-in Configuration Window



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)



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.

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	MFX 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.

Plugin Configuration			
SLOT	INPUT	PLUGIN	MODE
1	Aux 5		
2	none	IFX 3.0	N/A
3			
4	Aux 1 (default)		
5	Mix L	one	STEREO
6	Mix R	one	
7		one	
8	Auxes	Aux 1	
9	Pre DSP Inserts	Aux 2	
10	Post DSP Inserts	Aux 3	
11		Aux 4	
12		Aux 5	
13		Aux 6	
14	Card	Aux 7	
15		Aux 8	
16		Aux 9	
		Aux 10	

Send the Input Signal to the Aux Bus



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



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

- 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



Fat Channel

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.

The FX Return Channel

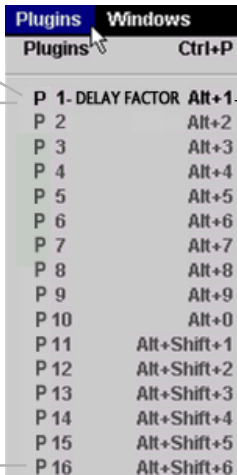


- Switch the D8B Bank Select to **EFFECTS (49-72)** and bring up faders one and two (channels 49 and 50). You will also see meter activity associated with these channels.



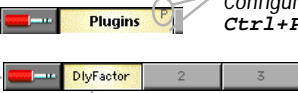
FX Channels 1&2
(channels 49&50)

Stereo Plug-in



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

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



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

