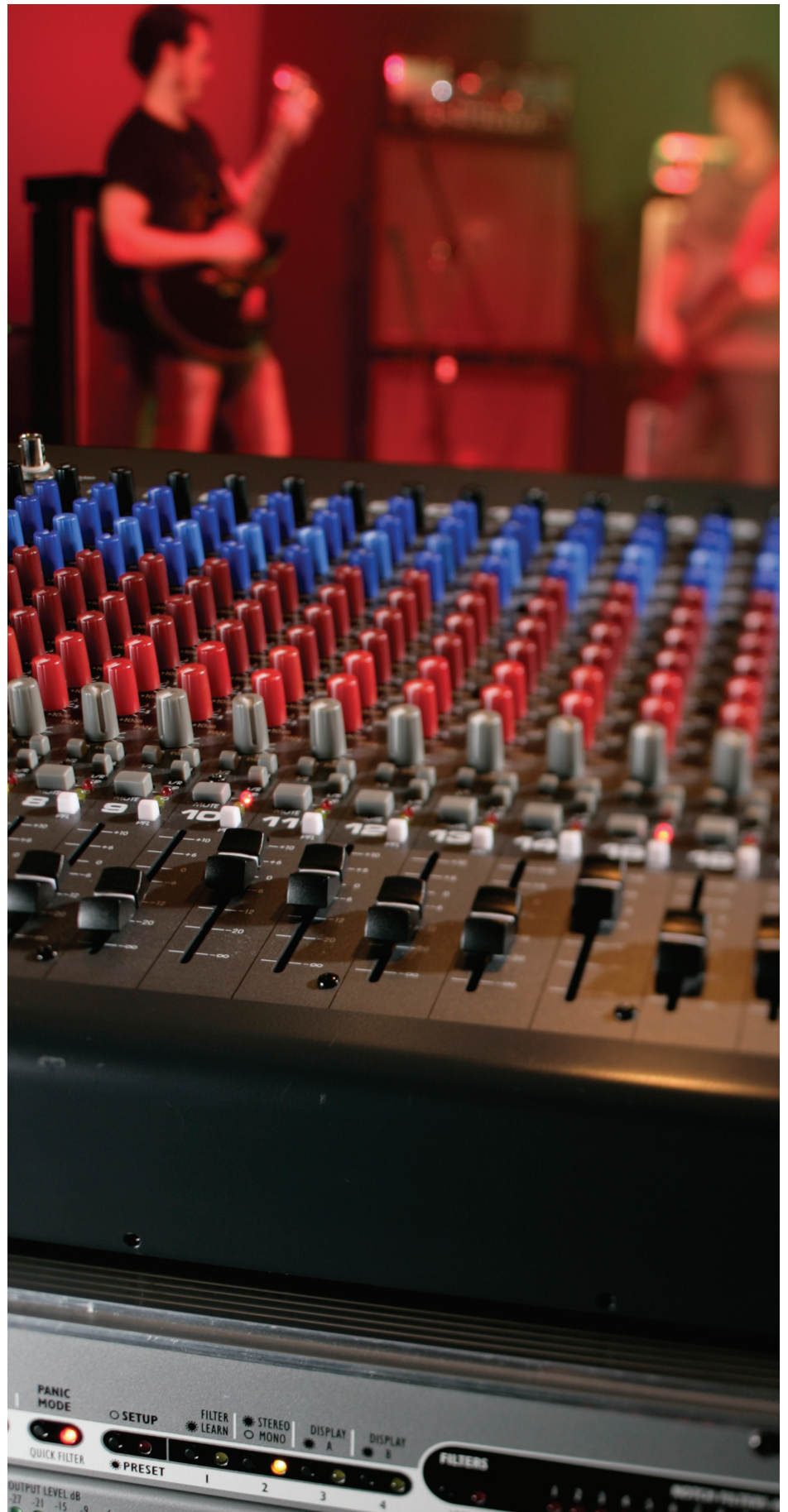


FX™ Mixer Manual Addendum



Effects:

The Effects section of the FX mixer provides two discrete effects processors, each capable of chaining three (3) different effects at the same time. EFX1 (left side of screen) is permanently routed to the Aux5/Efx1 send and return buss. EFX 2 (right side of screen) is routed to the Aux6/Efx2 buss, but can be routed from the Efx2 Patch Jack on the rear panel and routed to the insert of a single channel or inserted into a group/buss. Effects that modify amplitude such as compressors, limiters, gates, expander and de-essers, when used individually, work best when inserted into channels or busses.

All available effects modules may be used by EFX1 including the "Enhanced Reverbs" which may not be used when creating EFX2 presets. Presets 0-49 are factory presets. While they may be edited, the edited versions may not be saved in positions 0-49. Presets 50-99 are User presets and custom and/or edited presets can be named and saved in these slots. Edited but unsaved Efx have an "*" next to the preset number. In order to help you manage your CPU resources, the amount of CPU usage needed for each effect may be seen by pressing the "Digital I/O" button. Reverbs use the most computing power and the "Enhanced Reverbs" even more.

Selecting an Effects preset:

Press the "Effects" button to activate the Effects window. Turn the encoder knobs until the desired preset number is in the window and press the encoder knob to "select" it. The "Select" button will turn into a "Recall" button. Pressing it will recall the last used preset. You may press the "Edit" button to adjust any parameters of the selected preset. You must "Save" a preset to save the adjusted parameters.

Creating a preset:

Press the "Effects" button and turn either data knob to select any preset between 45-99. Press "select" (flashing) and then "edit #".

Press the "Type" button and the screen will display the DSP Library of available effects. You may scroll through the entire list by turning the left data knob.

Rotate the data knob and highlight the effect you wish and press "select" to add it.

Select a "style" from the available models. Press select to choose it and then "back" to return to the main page ... or ... cursor to another effect block and repeat the process.

Press "edit" to adjust the parameters of the effect types.

Scroll through the parameters with the left knob and adjust the values with the right knob. Rotate the left encored knob to view the entire list of parameters available as there may be more than shown on the screen. Press "back" when completed.



Scroll and select “title”. Press “save” to save the preset. Press “back” to return to the main menu.

User Tip: You can select up to three (3) of the internal effects and arrange them in series in any order using one instance of any effect in the chain. Since they are in series, the order will affect the sound “quality”. Adjustments to the Wet/Dry proportions can also make a big difference to the sound of the effect.

OUTPUT PROCESSING:

The Peavey FX series mixers are equipped with Digital output processing on the Left and Right mains outputs. The processing may not be switched to the aux busses.

Modes: The FX mixers can operate in any of three (3) output modes.

Stereo: This is the normal output mode. In this mode, the output processors are tied together so that what you edit is applied equally to both channels at the same time.

Dual Mono: This mode sums the left and right busses together after the Feedback Ferret into a single mono output. The L & R outputs get the same mono signal but are capable of processing each output separately so that an adjustment made to the L output will not make that same adjustment to the R output. This would be handy should the L & R outputs of your system be set up in an asymmetrical fashion (eg. one speaker stack is set up near a corner and the other centered along a wall). This would probably require different EQ for each speaker to be balanced. It is also appropriate where one output drives a main speaker cluster and the other output drives a remote speaker (or a different speaker configuration).

Subwoofer: This again combines the L & R busses and installs an electronic crossover in the output section. This crossover may be adjusted so that one output (Left main) drives the low or sub output and the other (Right main) drives the main or HF output. The Delays and the Limiters may be adjusted independently for the two different outputs. The crossover employs a 4th order set of filters (24 dB/oct) and Butterworth or Linkwitz-Riley filters may be selected. CD horn compensation is available for Constant Directivity horns.

Processor Modules

Feedback Ferret:

Press “output processing” button

Turn left data knob and highlight the “FBF” box.

Press “type” to select the mode: Dynamic, Mixed or Static.

Dynamic: is fully automatic, and it is also the factory default (defaults ON). You do not need to do anything ... it just works as needed, when needed and lets go when it is no longer needed. On the LCD screen, the four (4) dynamic filters indicate activity with numbers that count down from 10 to 0 when in use, that show the release time before the filter is returned to queue.

Mixed: employs two (2) Static filters and two (2) Dynamic filters. Press the “detect” button to start the process. Once two (2) filters are set, press the “back” button and the remaining two (2) filters will automatically be set as needed. They will automatically release when the condition that caused the feedback has stopped.

Static: These eight (8) filters will set themselves up when the “detect” button is pushed and stay locked in place until you switch them out. They can be saved in the library by name and recalled when you play the venue again (although it would be best to run them fresh for each setup as things will always change a little).



User Tip: Using the Feedback Ferret in “static” mode with the filters in the wide position will automatically set a “house curve” for your system with respect to the peaks in your system. You can then use the “Parametric” equalizers as “tone” controls to adjust your system to taste.

In all three (3) modes, you can change two (2) parameters: on/off and Wide on/off (“Wide” widens the cancellation filters by a factor of 5).

When selecting mixed or static mode, you must do an analyze stage by pressing the Detect button. Detected feedback is indicated by an * on the screen. Static mode can use up to eight (8) filters instead of only four (4) (Dynamic and Mixed), and it actually uses less CPU than both mixed and dynamic mode. Remember, you control the total CPU usage of the mixer and may have to make adjustments to run all of the features that you choose. Once 100% CPU usage is reached, you will not be able to switch on more modules.

Static detected filters can be saved to library; dynamic filters have no library possible.

To turn “Off” the Feedback Ferret and remove it from the CPU load, highlight the FBF box on the display and select “Type”. Highlight “None” and press the “Select” left encoder knob. You will be returned to the screen where the “FBF” in the first box will change to an arrow. You have now removed the Feedback Ferret from the CPU and can now switch on the GEQ if required.

PEQ: Highlight the “PEQ” box in the window and press “edit”. You can press the “Lib” button to select a saved setting or can edit the existing setting by navigating around the screen.

The left encoder knob selects the band (1-5) to edit. Once you have selected that band pressing the left knob will allow you to adjust the center frequency of the filter selected. The right encoder knob toggles between “bandwidth” and “gain”. Bandwidths between 0.3 octave and 2.0 octaves may be selected as well as gain levels from -12 dB to +12dB. When you have made your adjustments, you may save them to the Library by pressing the “Lib” button and selecting “Save current settings”. You can title your settings by selecting the name button and assigning a name or you can save it over an existing setting. Select a name or a “free” setting and press “save”.

GEQ: Highlight the second box from the left and select “type”. Scroll to “Graphic EQ” and select by pressing the left encoder knob. *Feedback Ferret **must** be de-selected for this to be an option.*

The left encoder knob controls the selection of the frequency to be modified and the right encoder knob selects the gain, +/- 12 dB. The left encoder knob can also select the left most slider for gain adjustment of the GEQ as a whole. Selecting the “Lib” button will allow you to save or recall your settings.

Delay: Highlight the third box from the left to select the “Delay” and press the “edit” knob down to adjust the amount of delay desired. You can select the “type” button to save the current adjustments to the library or the library or to load from the library.

The delay is most often used when remote speakers are setup away from the regular Main speakers. The number of *ms* of delay needed is close to the distance in feet plus 20 ms (so that a remote speaker located away from the Mains by 100 feet will need a delay of approximately 120 ms). This should normally be done in the “Dual Mono” output mode.



This delay is very useful in the “Stereo” mode for adding delay to compensate for the distance between the backline amplifiers and the front Main speakers. It is probably best to set this in relationship to the loudest (peak) sound coming from the backline (usually the snare drum). If the snare drum is 12 feet from the front of the stage, start with about 12 ms of delay plus 10 - 30 ms for the Hass effect (so between 22 and 42 ms or to taste). By adjusting the backline to the FOH Main speakers, a sort of focus will take place. The audience will hear the sound as though it is coming from the band itself and not so much coming from the PA ... a good thing to do!

Dynamics: Selecting this function sets a limiter on the L/R outputs of your FX mixer. This helps to prevent the mixer from clipping as well as overdriving the rest of the output chain. Press “edit” to adjust the parameters of the output limiter. The threshold should probably be adjusted to max (+18 dB) and the mode adjusted to “soft knee” in most cases. 50 ms of Attack and 500 ms of Release time are good starting points but may be adjusted as necessary. If you are “hearing” this limiter actually work, then you are probably driving too hard and should back off. This limiter is not intended to be a “sonic shaper” (use the “compressor” function if the “Effects” processors”). You may “save” or “load” from the library as necessary.

Remove Process from the CPU: All processes use some CPU resources even when the parameters are set to zero. To remove them and regain their CPU power, select “type” from the main output diagram and select “none” from the respective Library.

Digital I/O:

The digital I/O section of the FX mixer consists of the Utility and USB functions.

The CPU meter displays the approximate percent of the CPU’s total power being consumed by the current setup. the meter cannot reach 100% full. As the CPU demands increase, the number of options available to the user decrease and additional modules will not be able to be switched in/on. For example, once you exceed about 65% on the CPU meter, you will not be able to activate MP3 recording. A flashing message will appear next to the record or playback buttons telling the user what percentage of CPU power will need to be freed up before continuing. The processes that consume the largest amounts of CPU include Enhanced Reverbs, Feedback Ferretand MP3 recording/playback.

The “Version” reading will let the user know the firmware version currently loaded in the FX mixer. Please check the Peavey website for the latest version.

Utility:

Screen Adjustment: Turn knob to adjust the contrast of the screen. You may also choose to invert the screen colors. Press the “save” button to keep your adjustment or “back” to ignore.

Change Security Settings: The user can lock out others from changing effect, output or digital I/O presets by selecting the appropriate check boxes. Once a box is checked, a password will be required to make a change to that setting.

Change Password: A password may be set by turning the left encoder knob to select a character for each of the four placeholders. Once you have selected the characters, press the “enter” button and validate your choice. This password will now be necessary for making changes to any of the settings that have been selected in the “Security Settings” above. This password will also be necessary to do a factory reset.

Restore Factory Settings: Resets all parameters to factory settings and will erase all user presets and passwords.



USB:

Selecting this menu allows the user to record or playback MP3's directly to a thumb drive placed in the USB "A" slot. Note the USB "B" slot directly streams audio in or out and is treated as a "sound card" by the computer. How you treat this output will depend on the computer you use and the software you are running to control it. **Only one USB output may be used at a time.**

MP3 Recording:

The FX mixer supports a MP3 sample rate of 48K (directly compatible with avi video) and bit rates to 192Kbs and can be ported directly to video usually without conversion. MP3's recorded outside the FX mixer must be converted to 48k sample rate in order to play at the correct speed on the FX mixer.

Record: Select "record" from the USB menu

MP3 recording page appears. Capacity shows time available on USB memory stick. CPU shows processor percentage used. User cannot exceed 100% or Recording will not start. Press the "Name" button to title your recording. *You must select a name prior to recording.*

Press "Cfg" to select stereo or mono recording. By selecting mono recording, you will double the capacity of the memory stick and reduce the CPU load. Press "back" to return to the recording screen.

Press "Start" to begin the recording process. If you haven't assigned a new name, you will receive a prompt to "overwrite existing file". The FX mixer will create the proper file, reset pointers and start the recording. This normally takes about 10 to 30 seconds (depending on how full your USB stick is). The recording LED will flash once recording is taking place.

Press "stop" to conclude the recording process.

Please allow the FX mixer ample time to finish writing to your memory stick before removing it. The time this takes will depend on the length of your recording, the size of your memory stick and the number of other files you have on that stick. Wait for the "record" light to go out and for the lights to stop on the memory stick.

USB memory sticks/Jump Drives: The FX mixer uses standard USB Jump drives of the type 2.0. It is advisable to re-format a new memory stick before using it to remove any "protected" advertising or "free programs" that might have been included with it.

MP3 Playback:

Make sure your jump drive is inserted into the USB "A" port. Select "USB" from the Digital I/O main screen. From the "USB Menu", select "Memstick Playback". That will take you to the "USB Playback" menu. The title of the selected file will be displayed in the top line. If "None", then press the "select" knob. the display will read the contents of your jump drive. You may scroll and select any file with the extension .MP3. The FX mixer will find and load the selected file and return to the playback screen. Press "Play" to start playback. Once playback begins, two new buttons appear: "Pause" and "Set Pos". The "Set Pos" button can scroll through the length of your song and start the playback from that point. This is very handy if you have recorded an hour set of songs but want to hear the playback from somewhere other than the beginning.

User Tip: If you are importing MP3's that have been created outside the FX mixer, you must convert them to 48k sample rate for proper playback. MP3's that have been created at 44.1k will play a little fast if not converted.

Audio I/O on USB "B" port:


The USB "B" port streams 48k sample rate, 24 bit wavefiles to an external computer or other recording device. A convenient "Record Gain" control that can provide up to 16 dB of gain can be adjusted from the "USB Menu".



Playback through this port may be assigned to the last stereo channel by pushing the “Input Select” button to the “USB” position. It then may be routed anywhere throughout the console by using the Aux Sends or Buss assignment buttons on that channel strip.





 Logo referenced in Directive 2002/96/EC Annex IV (OJL37/98, 13.02.03 and defined in EN 50419: 2005
The bar is the symbol for marking of new waste and is applied only to equipment manufactured after 13 August 2005

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