# FX™ Mixer Series

## 16, 24 and 32 Channel • Four-Bus Mixing Consoles

Operating Manual

www.peavey.com

Intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

Intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

CAUTION: Risk of electrical shock — DO NOT OPEN!
CAUTION: To reduce the risk of electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

**WARNING: To prevent electrical shock or fire hazard, this apparatus should not be exposed to rain or moisture, and objects filled with liquids, such as vases, should not be placed on this apparatus. Before using this apparatus, read the operating guide for further warnings.**

Este símbolo tiene el propósito, de alertar al usuario de la presencia de “(voltaje) peligroso” sin aislamiento dentro de la caja del producto y que puede tener una magnitud suficiente como para constituir riesgo de descarga eléctrica.

Este símbolo tiene el propósito de alertar al usario de la presencia de instruccones importantes sobre la operación y mantenimiento en la información que viene con el producto.

PRECAUCION: Riesgo de descarga eléctrica ¡NO ABRIR!
PRECAUCION: Para disminuír el riesgo de descarga eléctrica, no abra la cubierta. No hay piezas útiles dentro. Deje todo mantenimiento en manos del personal técnico cualificado.

**ADVERTENCIA: Para prevenir choque electrico o riesgo de incendios, este aparato no se debe exponer a la lluvia o a la humedad. Los objetos llenos de liquidos, como los floreros, no se deben colocar encima de este aparato. Antes de usar este aparato, lea la guia de funcionamiento para otras advertencias.**

Ce symbole est utilisé dans ce manuel pour indiquer à l’utilisateur la présence d’une tension dangereuse pouvant être d’amplitude suffisante pour constituer un risque de choc électrique.

Ce symbole est utilisé dans ce manuel pour indiquer à l’utilisateur qu’il ou qu’elle trouvera d’importantes instructions concernant l’utilisation et l’entretien de l’appareil dans le paragraphe signalé.

ATTENTION: Risques de choc électrique — NE PAS OUVRIR!
ATTENTION: Afin de réduire le risque de choc électrique, ne pas enlever le couvercle. Il ne se trouve à l’intérieur aucune pièce pouvant être reparée par l’utilisateur. Confiez l’entretien et la réparation de l’appareil à un réparateur Peavey agréé.

**AVIS: Dans le but de reduire les risques d’incendie ou de decharge electrique, cet appareil ne doit pas etre expose a la pluie ou a l’humidite et aucun objet rempli de liquide, tel qu’un vase, ne doit etre pose sur celui-ci. Avant d’utiliser de cet appareil, lisez attentivement le guide fonctionnant pour avertissements supplémentaires.**

Dieses Symbol soll den Anwender vor unisolierten gefährlichen Spannungen innerhalb des Gehäuses warnen, die von Ausreichender Stärke sind, um einen elektrischen Schlag verursachen zu können.

Dieses Symbol soll den Benutzer auf wichtige Instruktionen in der Bedienungsanleitung aufmerksam machen, die Handhabung und Wartung des Produkts betreffen.

VORSICHT: Risiko — Elektrischer Schlag! Nicht öffnen!
VORSICHT: Um das Risiko eines elektrischen Schlages zu vermeiden, nicht die Abdeckung enfernen. Es befinden sich keine Teile darin, die vom Anwender repariert werden könnten. Reparaturen nur von qualifiziertem Fachpersonal durchführen lassen.

**WARNUNG: Um elektrischen Schlag oder Brandgefahr zu verhindern, sollte dieser Apparat nicht Regen oder Feuchtigkeit ausgesetzt werden und Gegenstände mit Flüssigkeiten gefuellt, wie Vasen, nicht auf diesen Apparat gesetzt werden. Bevor dieser Apparat verwendet wird, lesen Sie bitte den Funktionsführer für weitere Warnungen.**

# IMPORTANT SAFETY INSTRUCTIONS

**WARNING:** When using electrical products, basic cautions should always be followed, including the following:

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any of the ventilation openings. Install in accordance with manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding plug. The wide blade or third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point they exit from the apparatus.
11. Only use attachments/accessories provided by the manufacturer.
12. Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Never break off the ground pin. Write for our free booklet "Shock Hazard and Grounding." Connect only to a power supply of the type marked on the unit adjacent to the power supply cord.
16. If this product is to be mounted in an equipment rack, rear support should be provided.
17. Note for UK only: If the colors of the wires in the mains lead of this unit do not correspond with the terminals in your plug, proceed as follows:

    a) The wire that is colored green and yellow must be connected to the terminal that is marked by the letter E, the earth symbol, colored green or colored green and yellow.

    b) The wire that is colored blue must be connected to the terminal that is marked with the letter N or the color black.

    c) The wire that is colored brown must be connected to the terminal that is marked with the letter L or the color red.
18. This electrical apparatus should not be exposed to dripping or splashing and care should be taken not to place objects containing liquids, such as vases, upon the apparatus.
19. The on/off switch in this unit does not break both sides of the primary mains. Hazardous energy can be present inside the chassis when the on/off switch is in the off position. The mains plug or appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
20. Exposure to extremely high noise levels may cause a permanent hearing loss. Individuals vary considerably in susceptibility to noise-induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a sufficient time. The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the following permissible noise level exposures:

| Duration Per Day In Hours | Sound Level dBA, Slow Response |
|---|---|
| 8 | 90 |
| 6 | 92 |
| 4 | 95 |
| 3 | 97 |
| 2 | 100 |
| 1 1/2 | 102 |
| 1 | 105 |
| 1/2 | 110 |
| 1/4 or less | 115 |

According to OSHA, any exposure in excess of the above permissible limits could result in some hearing loss. Ear plugs or protectors to the ear canals or over the ears must be worn when operating this amplification system in order to prevent a permanent hearing loss, if exposure is in excess of the limits as set forth above. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels such as this amplification system be protected by hearing protectors while this unit is in operation.

## SAVE THESE INSTRUCTIONS!

# ENGLISH

# 16FX™, 24FX™ and 32FX™

**4-Bus Console Mixer**

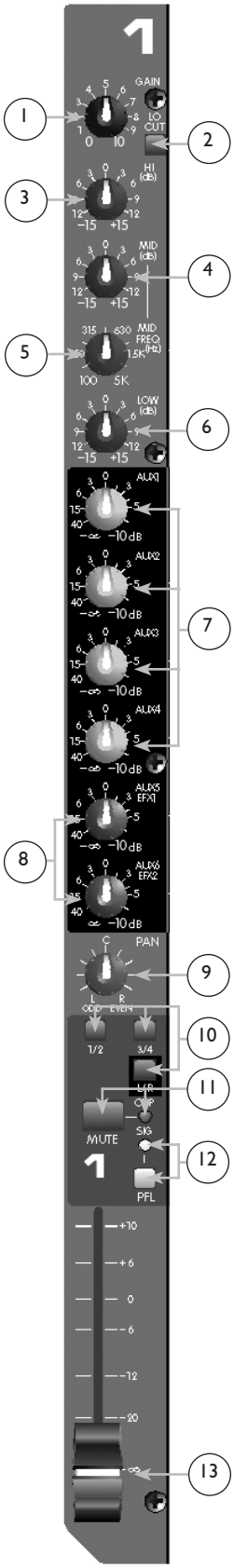
Congratulations on purchasing the Peavey 16FX™, 24FX™ or 32FX™ four-bus console mixer. The Peavey 16FX™, 24FX™ and 32FX™ are studio-quality mixing consoles designed to meet diverse needs. These consoles feature Peavey-exclusive technology that enhances live studio reproduction as well as project studio recording, making them perfect for every venue. FX™ Series mixers also feature built-in DSP effects that are useful in real-world recording and sound reinforcement, while parameter controls allow you to tailor each effect to meet your needs.

Please read this guide carefully to ensure your personal safety as well as the safety of your equipment.

**FEATURES:**

- Silencer™ mic preamps with current-source dual feedback design
- 12 XLR mic inputs on 16FX, 20 XLR mic inputs on 24FX, 28 XLR mic inputs on 32FX
- Two stereo channels with direct-to-L/R assignment capability
- Three-band channel EQ on all input channels
- Sweepable mid-frequency control on all mono input channels
- 75 Hz low-cut filter on all mono input channels
- Inserts on all mono channels
- Four-bus design with direct group outputs and L/R assignment
- Four monitor sends per channel, pre-fader
- Two effects sends per channel, post-fader
- Pan and PFL on each channel
- Clip LEDs for the entire signal path for clipping
- Signal presence LEDs on every input, group and return
- Mute switches with LED indicator on every input, group and return channel
- 48-volt phantom power switch
- Dual DSP engines for output processing, dual effects and digital I/O
- Output processing includes EQ, Delay and Compressor/Limiter
- Large LCD graphics user interface
- Dual USB ports
- Direct streaming of audio to and from your computer
- Built-in MP3 compression, direct recording and playback via USB removable data storage device
- Media inputs with level control assignable to L/R mix
- Headphone output with level control
- Two 12V BNC lamp jacks (24FX and 32FX mixers only)

## MONO INPUT CHANNELS




1 **Gain**
This control establishes the nominal operating level for the channel. The input gain can be adjusted over a wide range (0 dB – 60 dB) to compensate for soft voices or very loud drums. To maximize the signal-to-noise ratio, the gain should be set to the proper level, with the Channel Fader (13) set to 0. It can be set by pressing the PFL Switch (12) and adjusting for 0 dB on the output meter. If the clip LED comes on and remains lit, reduce the gain.

2 **Lo Cut**
The low-cut filter has a corner frequency of 75 Hz. When engaged, it can improve clarity by removing low frequencies that make a mix sound muddy. This filter reduces handling and stage noise, breathing noise, and unwanted low frequency energy that can rob your sound system of power. Engaging this switch will remove those frequencies from the system and restore power where needed. We recommend engaging it for all channels except those with the lowest bass tones such as Bass guitar and Kick drum.

3 **Hi EQ**
This shelving type tone control adjusts treble frequency levels (±15 dB at 10 KHz), resulting in less noise or more brilliance.

4 **Mid EQ**
This active tone control is a bandpass (peak/notch) type that varies mid-frequency response by ±15 dB in a range from 100 Hz to 5 kHz. The center frequency is controlled by the Mid Freq (5) control.

5 **Mid Freq**
This control determines the center frequency of the Mid EQ (4) control. Center frequency for the bandpass filter can be set from 100 Hz to 5 kHz.

6 **Low EQ**
This shelving-type tone control adjusts bass frequency levels (±15 dB at 70 Hz), adding depth to thin signals or clarity to overly thick signals.

**Caution: Excessive low frequency boost causes increased power consumption and increases the possibility of speaker damage.**

7 **AUX 1-4 Sends**
These controls send the channel's pre-fader, post-EQ signal to each of four aux buses. These buses are normally used for monitor sends or for feeding a separate mix to external equipment. There are internal jumpers that can be switched to change the send point to pre-EQ. Unity gain is at the center detent position with up to 10 dB of gain in the fully clockwise position.

8 **AUX 5-6/EFX 1-2 Sends**
These controls send the channel's post-fader signal to each of two aux (effects) buses. These buses are normally used for effects sends or for feeding the internal effects processors. Unity gain is at the center detent position with up to 10 dB of gain in the fully clockwise position.

9 **Pan**
This control determines the signal's position with respect to the assigned L/R and Group 1–4 buses. Rotating the control counterclockwise increases the amount of signal sent to L and odd-numbered groups; rotating clockwise increases the amount sent to R and even-numbered groups. For example, with the channel Bus Assign switch (10) in the 1/2 position, rotating the control counterclockwise increases the amount of signal sent to Group 1, while rotating clockwise increases the amount sent to Group 2. The C position sends equal amounts to each.

10 **1/2, 3/4, L/R Bus Assign Switches**
These post-fader switches determine where the channel signal is being sent. For example, to send a signal to Groups 1 & 2, depress the 1/2 button. The PAN control (9) determines the signal level that is sent to each signal bus.

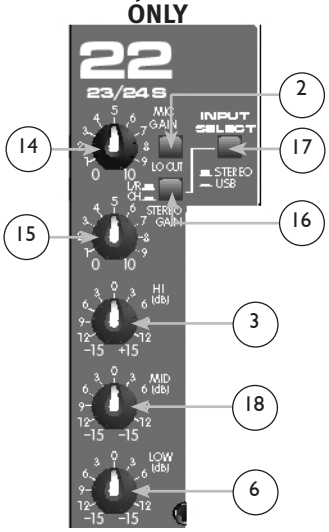
11 **Mute Switch/Mute-Clip LED**
This switch mutes all Aux, Group and L/R sends from the corresponding channel. This switch is equipped with a red LED that will illuminate when the channel is muted. When the MUTE button is *out*, the LED functions as a Clip indicator that will illuminate at 2 dB below clipping. Muting the channel does not prevent the PFL signal from being sent to the PFL/AFL mix when the PFL Switch (12) is *in*.

12 **PFL Switch/Signal-PFL LED**
This switch connects the channel's pre-fader signal to the PFL/AFL mix. When the PFL button is *in*, the channel's signal can be monitored through the headphones and/or on the PFL/AFL display. A yellow LED in the Master section will blink to indicate that the signal on the Master LED display and at the headphone output is PFL. Selecting PFL allows the operator to monitor a channel even with the channel muted, and is especially useful for cuing CDs/tapes. When the PFL button is *out*, the yellow channel LED will function as a signal presence indicator (-30 dBu).

13 **Channel Fader**
This control varies the signal level from -∞ to +10 dB and sends the signal from the channel to the L/R and Group buses and to the Effects Sends. The optimum setting is the ø (unity gain) position.

## STEREO INPUT CHANNELS

**Stereo Input Channels ONLY**




14 **Mic Gain**
This control establishes the nominal operating level for the mic input (XLR) of the channel. The mic gain can be adjusted over a wide range (0 dB – 60 dB) to compensate for soft voices or very loud drums. To maximize the signal-to-noise ratio, the gain should be set to the proper level, with the Channel Fader (13) set to ø. The mic gain can be set by pressing the PFL button (12) and adjusting for ø dB on the output meter. If the clip LED comes on and remains lit, reduce the gain.

15 **Stereo Gain**
This control establishes the nominal operating level for the stereo line inputs (1/4" jacks) of the channel. The Stereo Gain can be adjusted over a sufficient range (-∞ to +20 dB) to accommodate almost any input level. It operates in conjunction with the L/R–CH Switch (16) to route the stereo signal directly to the L/R buses or through the channel strip.

16 **L/R–CH Switch**
This switch establishes the routing of the stereo line input (1/4" jacks) signal. When the switch is *out*, the stereo line input signal is routed directly to the L/R buses, bypassing the channel strip. In this mode, the mic input (XLR) signal is routed through the channel. When the switch is *in*, the stereo line input signal is routed through the channel and the mic input signal is disconnected. The signal level is controlled via the Stereo Gain control (15).

17 **Input Select Stereo-USB Switch**
This switch selects the input signal that will feed the stereo line input of the second stereo channel. When the switch is *out*, the signal from the stereo line inputs is routed to the Stereo Gain control (15). When the switch is *in*, the signal from the device connected to either USB port (60-61) is routed to the Stereo Gain control (15).

18 **Mid EQ**
In the Stereo Input channels, this active tone control is a bandpass (peak/notch) type that varies mid-frequency response by ±15 dB at a center frequency of 850 Hz.

## MASTER SECTION

19 **Auxiliary Masters 1-4**
This control sets the output level of the AUX 1-4 mixes and is adjustable from -∞ to +10 dB.

20 **Auxiliary Masters 5-6**
This control sets the output level of the various AUX 5-6 mixes and is adjustable from -∞ to +10 dB. These signals are also sent to the EFX1 and EFX2 internal effects processors, respectively.

21 **AFL Switch/AFL-Clip LED**
This switch directs the post-fader (AFL) signal to the Headphone output (37) and activates the PFL/AFL LED display. An adjacent red LED illuminates to signify this selection. If AFL is not selected, the LED functions as a Clip indicator. Selecting AFL allows monitoring of AUX Masters with the full PFL/AFL Level Display as well as allowing the operator to hear the output.

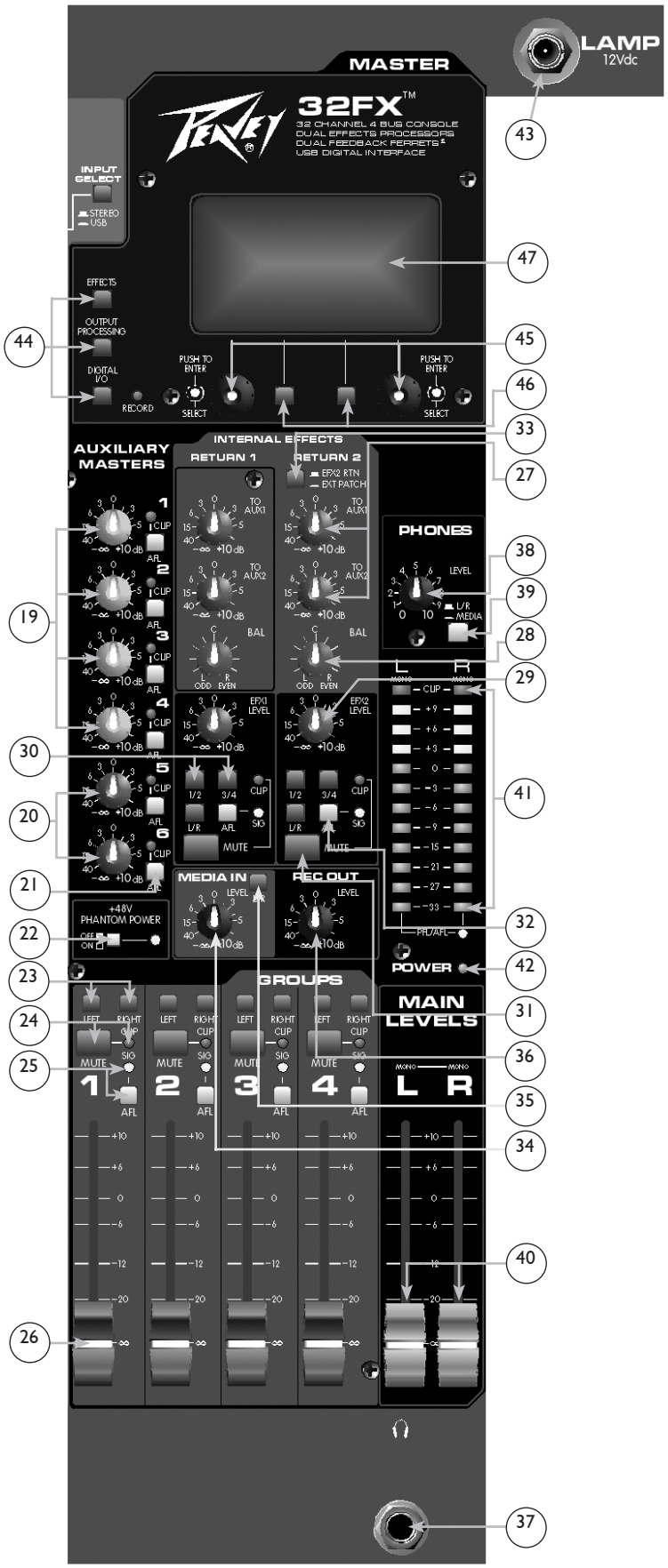
22 **Phantom Power Switch**
This switch applies +48 VDC voltage to the input XLR connectors to power condenser microphones requiring phantom power. This switch is recessed into the console and requires a small "tool" such as a pencil or pen tip to activate. A regular low impedance dynamic mic such as the PVM™ 22 will not be harmed. The Line inputs (49&50) are not connected to the +48 V supply and are safe for balanced or unbalanced inputs. An adjacent LED illuminates when Phantom Power is activated.

**Caution:**
**If phantom power is used, do not connect unbalanced dynamic microphones or other devices to the XLR inputs. (Some wireless receivers may be damaged. Consult their manuals.)**

**Note:**
**Make sure the Master Level Faders (40) are completely down when switching on the phantom power and when connecting microphones to the Mic inputs to prevent pops from affecting the loudspeakers.**

23 **Left, Right, Bus Assign Switches**
These post-fader switches determine where the Group mix signal is being sent. For example, if each individual drum mic is assigned to Group 1, depressing the Left button will send the drum mix to the Left bus and to the Left Out (54) on the rear panel.

24 **Mute Switch/Mute-Clip LED**
This switch mutes its respective Group send from the Group channel. This switch is equipped with a red LED that will illuminate when the Group is muted. When the Mute button is *out*, the LED functions as a Clip indicator that will illuminate at 2 dB below clipping.



25 **AFL Switch/Signal-AFL LED**
This switch connects the Group's post-fader signal to the PFL/AFL mix. When the AFL button is *in*, the Group's signal can be monitored through the headphones and/or on the PFL/AFL display. A yellow LED in the Master section will blink to indicate that the signal on the Master LED display and the Headphone Output is the PFL/AFL mix. When the AFL button is out, the yellow group LED will blink as an indication of signal presence (-30 dBu).

26 **Group Fader**
This control varies the signal level from -∞ to +10 dB and sends the signal from the Group to the Left and/or Right buses and to the Group Output jacks (53). The optimum setting is the ø (unity gain) position.

27 **TO AUX 1 & TO AUX 2 Controls**
These controls determine the level of the respective Effects Return signal that is sent to the respective AUX bus, allowing musicians/singers to hear internal and/or external effects in their monitors.
NOTE: Due to the creation of an electronic feedback loop, do not use AUX Sends 1 or 2 as the path to external equipment that is to be sent back to the corresponding AUX mix (1 or 2).

28 **BAL**
This control determines the placement of the Effects Return signal's position with respect to the assigned L/R and Group 1-4 buses. Rotating the control counterclockwise (L) sends more signal to the LEFT output and odd-numbered GROUPS; rotating clockwise (R) sends more signal to the RIGHT output and even-numbered GROUPS. The C position sends equal amounts to each.

29 **EFX LEVEL Control**
This control determines the level of the Effects Return signal being sent to its assigned buses. It functions similarly to the Channel Faders (13).

30 **1/2, 3/4, L/R Bus Assign Switches**
Like the channel assign switches, these buttons determine the bus assignment of the Effects Return signal. They determine where the signal is being sent.

31 **Mute Switch/Mute-Clip LED**
This switch mutes its respective Effects Return from being sent to the buses. This switch is equipped with a red LED that will illuminate when the Effects is muted. When the Mute button is *out*, the LED functions as a Clip indicator that will illuminate at 2 dB below clipping.

32 **AFL Switch/Signal-AFL LED**
This switch connects the Effects Return post-fader signal to the PFL/AFL mix. When the AFL button is *in*, the Effects Return signal can be monitored through the headphones and/or on the PFL/AFL display. A yellow LED in the Master section will blink to indicate that the signal on the Master LED display and the Headphone Output is the PFL/AFL mix. When the AFL button is *out*, the yellow Effects Return LED will blink as an indication of signal presence (-30 dBu).

33 **Effects 2 Patch Switch**
This switch determines whether the Effects 2 processor will be used in the Return 2 or will be patched to an Input Channel or Group insert point. This switch can also be used to perform the bypass function. When the effects processor is assigned to the EFX 2 Return, the I/O jack (56) is bypassed. Similarly, when the effects processor is being patched externally, only the external Stereo Return jacks (57) are used to return a signal.

34 **Media In Level Control**
Controls the level of the Media Input signal from the RCA jacks (58) to the Left and Right buses when the L/R switch (35) is *in*.

35 **Media In L/R Switch**
Routes the Media Input signal to the Left and Right buses.

36 **Record Out Control**
Controls the Record Output level of the pre-fader Left and Right main output signal to the RCA jacks (59).

Regardless of the position of the L/R–Media Switch (39), when any PFL/AFL switch on the mixer is activated, this display indicates the signal level being sent to the PFL/AFL bus. The PFL/AFL indicator flashes if either mode (PFL or AFL) is selected.

37 **Headphone Output Jack**
The Headphone Output is a 1/4" TRS (Tip= Left; Ring = Right; Sleeve = Ground) jack. The signal sent to this output is normally the Left/Right mix. When the L/R–Media Switch (39) is engaged, the Media Input signal is selected and is monitored through headphones. An activated PFL or AFL button (indicated by a yellow flashing LED) switches the headphone output jack monitor to the selcted signal.

38 **Headphone Level**
This control sets the Headphone Output level. To avoid damage to your hearing, make sure to turn the control fully counterclockwise before using headphones. Slowly turn the knob clockwise until you reach a comfortable listening level. Normally, the signal in the headphones is the Left/Right signal. If the L/R–Media Switch (39) is engaged, the Media Input signal is selected and monitored through headphones. An activated PFL or AFL button (indicated by a yellow flashing LED) switches the headphone level monitoring to the selcted signal.

39 **L/R–Media Switch**
This switch selects the signal that is monitored by the headphones. When *out*, the Main Left/Right post-fader signal is monitored. When *in*, the Media Input post-fader signal is monitored.

40 **Master Level Faders**
The Master Faders control the levels sent to the Main Left/Right outputs (54). Best results are obtained when these controls are set near the o point.

41 **Left/Right – PFL/AFL Level Displays**
These indicators graphically display the level of the signal selected by the L/R–Media Switch (38). When the switch is *in*, these indicators show the level of the post-fader level of the Media Input. When the switch is *out*, these indicators show the level of the Main Left and Right outputs. Signal is sampled at the summing amp and post-master faders to monitor clipping throughout the Left/Right section. The Clip LED indicator will illuminate when any level in the signal chain approaches (-2 dB) clipping.
NOTE: Clip LED can illuminate before the rest of the array indicating the summing amp reaches clipping.

42 **Power LED**
This LED indicates that AC power is supplied to the unit, the power switch is *on*, and the unit is functioning properly.

43 **Lamp 12Vdc (24FX™ and 32FX™ mixers only)**
These outputs are designed to power gooseneck lamps such as the Peavey ML-1.

## DIGITAL PROCESSOR

(44) **Page Select Switches (A-B-C)**
Use these three switches to select the desired digital processor page that is shown in the LCD Graphics User interface (47) and controlled by the encoders (45) and the soft switches (46).

(45) **Software Encoders**
These encoders allow you to edit the selected parameters as indicated on the LCD (47).

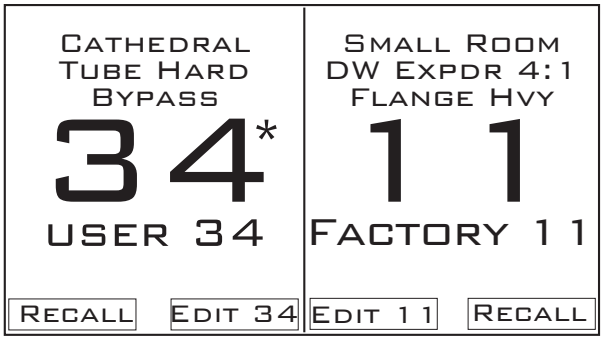
(46) **Software Switches**
These switches select the functions that are indicated on the LCD (47).

(47) **LCD**
The Liquid Crystal Display reveals all of the menus available for editing.

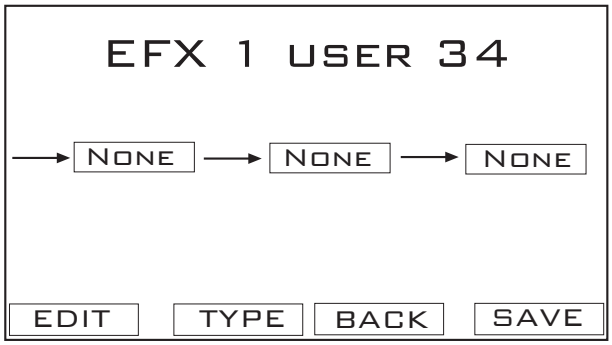
## DIGITAL PROCESSING ARENA

This is a brief overview of the digital processing capabilities of your new FX™ mixer. While you can expect incredible results following this guide, mastering the art of digital processing will be achieved through experimentation. Keep in mind that until you confirm your changes by pressing "save", no alterations have been made to the presets. Peavey engineers programmed your mixer with a variety of the most commonly used presets, which are ready to use right out of the box. However, your FX mixer will only reach its full digital processing potential through your acquired expertise. Review the process below and begin exploring the digital mixing world beyond factory presets.

**44A Effects Screen**
When you power up your FX Mixer, the Peavey logo will briefly appear on the LCD (47). In a few seconds, once the mixer software is fully loaded, the effects screen will appear on the LCD (47). Your FX Mixer features a variety of commonly used factory presets and plenty of user-defined, customizable presets. Each preset effect may contain 1-3 effects. The split screen display (EFX 1 and EFX 2) contains information for the current, active presets. The two active presets shown on the LCD (47) are independent and can be assigned to any channel(s) using EFX 1-2 Sends (8) . The screen displays the preset number (effects 1-99), the title for that individual effect (Church Choir, for example), and which effects are included in that preset (compressor, reverb, delay, etc.). To change the preset for EFX 1 or EFX 2, use the corresponding Software Encoder knob (45) . When you reach the desired preset, you will be prompted to select the new preset by pressing the Effects switch (44). An asterisk will appear beside any preset number that has been edited but not saved. Once a new preset has been selected, you may return to the previous preset by pressing the software encoder (Recall). To edit a preset, press the software switch labeled Edit and follow the on-screen directions, which allow individual parameter changes. For example, you may wish to increase the bass and decrease the amount of reverb on the "Joe's Bar" preset(preset 37). The "lib" (library) is a helpful place to start. Peavey has pre-programmed your FX mixer with a library of commonly used effects settings (Delay, Reverb, Deesser, etc.). You may choose to use the library effect as programmed or tweak the parameters to your own personal preference.



**IMPORTANT:** When a signal passes through a digital effects processor, a short delay results. When this same signal returns to the mixer and combines with the main output, the small delay difference results in a comb filter. (Short changing delays are the basis of wah-wah effects.) To prevent the comb-filter effect, increase the delay time simply by including an effect block such as reverb or delay.



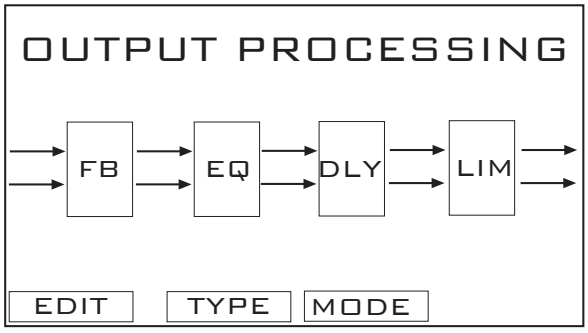

Note that many effects like compressor, limiter, gate, chorus, etc., do not work well when used alone on an effects send. Fortunately, the EFX 2 Patch Jack (56) can be patched directly into an Insert (48) on any channel or subgroup (Group Inserts (54)). Press the EFX 2 Patch Switch (33) to activate the patch. In this configuration, comb filtering is eliminated because the only signal path is through the processor.

If you make a mistake, you do not have to start over. The “undo” button will revert the last change to its original setting, much like the undo command in a word processor. To make further refinements to any user-defined preset, you have two choices: press the "back" button and start completely over, or simply use the soft knobs (45-46) to return to the individual effect within a preset. Remember, factory presets cannot be altered by the user. If you choose to adjust or build on a factory preset (which we encourage you to do), your saved settings will be automatically directed to the next, unused, customized preset.

**WARNING:** When user-defined, customizable presets are saved, they will automatically replace the current settings for that preset UNLESS you assign a new preset number. If you overwrite the originally saved preset settings, the old settings are no longer retrievable.

**QUICK TIP:** From anywhere within the digital arena, you can return to the main effects screen simply by pressing the Effects Button (44A).

**44B Output Processing**
Pressing the Output Processing button (44B) allows users to adjust the main (L-R) signal output from the FX™ mixer, in your choice of stereo output, dual mono output, or subwoofer output modes. Users can create and save presets for all three effects combined. Your mixer is also equipped with one “neutral” preset, allowing an unadjusted (zero) starting place for creating a new preset.




By default, the stereo output menu appears when the Output Processing button (44B) is pressed. If you prefer to work in dual-mono-output or
subwoofer mode, return to the main output processing screen by pressing the “mode” soft knob choice.

**Stereo Output Mode**
The stereo output option features four customizable output effects: Feedback Ferret®, EQ, Delay, and Limiter. To edit an effect, press the Soft Encoder button (45) and then enter the edit mode using Soft Switches (46). To save a new preset (save current) or to use a previously saved setting (load saved), enter the “lib” (library) mode using the soft knobs (45-46).

Remember, in stereo mode these parameter adjustments are made to both the left and right channels equally.

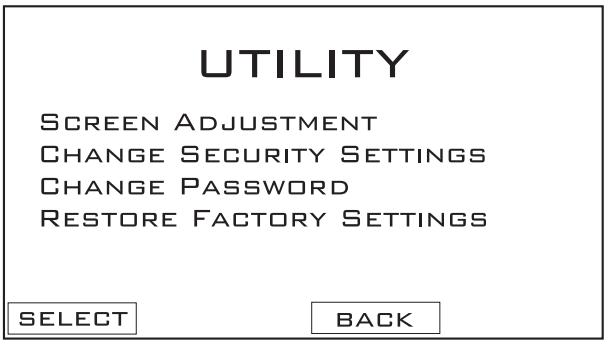
**Dual Mono Output Mode**
The dual mono output mode functions exactly like the stereo mode except that parameters may be adjusted independently for left and right channels. To save a new preset (save current) or to use a previously saved setting (load saved), enter the “lib” (library) mode using the soft knobs (45-46).

**Subwoofer Output Mode**
This mode features an internal crossover filter that allows you to adjust parameters of frequency levels (high frequencies feed to the left channel and low frequencies feed to the right). To save a new preset (save current) or to use a previously saved setting (load saved), enter the “lib” (library) mode using the soft knobs (45-46).

**44C Digital I/O**
Pressing the Digital I/O (44C) allows user access to the utility or USB menu options.

**Utility Menu Options**
Entering the utility function allows users to adjust screen contrast, assign two levels of user accessibility (security), change or access password, or restore the unit to the original factory presets.

To accommodate lighting, LCD (47) viewing may be adjusted simply by entering the "view angle" option from the main utility screen using soft knobs (45-46) to make all adjustments.




To accommodate varying users, your FX™ mixer is equipped with a two-level security system. The main mixer operator user controls who can do what with the digital effects board, granting passwords to people for specific processing rights such as disabling effects edit, disabling output edit, etc. Security settings can be adjusted simply by entering the security choice option from the main utility screen using the soft knobs (45-46) to make all adjustments.

MASTER USER TIP: Peavey highly recommends that you set a security password. Allowing someone else to operate your unsecured FX mixer grants that user complete access to change all of your settings. Security passwords protect the time you spent to get your presets just right while allowing you to safely provide digital processing access for even the most inexperienced users.

In the event you wish to change your password, press the "change password" button from the main Digital I/O menu (44C), and follow on-screen directions.

IMPORTANT: Write and store your password in a safe place. No one other than you should have access to this password; loss of your password could result in your inability to change settings.

CAUTION: Restoring the factory settings option resets your mixer’s presets, reformatting factory presets and erasing all other user presets. (This option is handy when your venue has permanently changed and all-new presets are required.) Once confirmed, the presets are not retrievable and will be permanently lost. Should you select this option in error, a warning screen allows you to cancel the procedure.

**USB Menu Options**
Entering the USB function allows users to play or record .mp3, .aiff and .wav files using a USB drive (purchased separately).

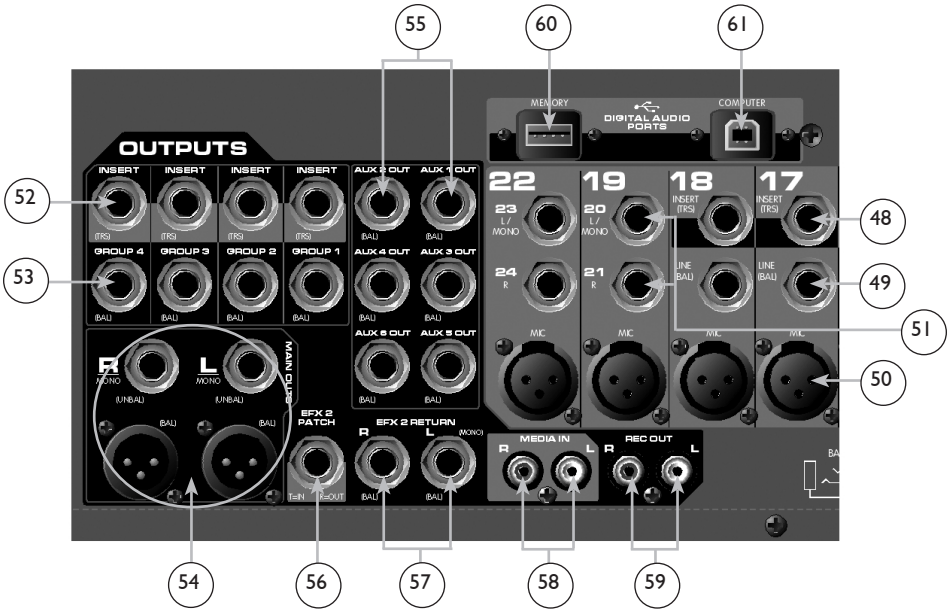
This feature is perfect for playing a pre-recorded musical piece through assigned channels of your mixer. USB drives also allow you to record specific segments of your work or an entire gig up to the amount of free memory available on your USB drive. After connecting a USB drive to the USB port (60), enter the USB menu. Follow on-screen instructions to select files available for playback or to name files for recording, again using soft knobs (45-46) to make all selections.

**Firmware Updates**
To install a firmware update, hold down the left Software Encoder (45) while powering up your mixer. Follow on-screen prompts to complete your process. Necessary files can be downloaded from the Internet and installed using your computer or an optional USB drive. If the installation is successful, your mixer will automatically restart. If unsuccessful, or to exit the update mode, press the power button to restart.

## Rear Panel

**CONNECTIONS**

48 **Inserts**
These jacks are 1/4" Tip/Ring/Sleeve (TRS) connectors that allow external signal processors to be inserted into the Input Channel signal path. Tip=Send; Ring=Return; Sleeve=Ground. One of the on-board effects processors can be patched to any channel with an Insert.




49 **Line (1/4") Inputs**
These jacks are 1/4" balanced (TRS) high-impedance inputs. The tip is the positive input and should be used for unbalanced inputs. It has 20 dB less gain than the XLR input and does not have phantom power available. The Mic and Line inputs should not be used simultaneously.

50 **Mic (XLR) Inputs**
XLR balanced inputs optimized for a microphone or other low impedance source. Pin 2 is the positive input. Because of the wide range of gain adjustment, signal levels up to +14 dBu can be accommodated.

51 **Stereo (1/4") Inputs**
These 1/4" unbalanced inputs work as a stereo line input using both jacks or as a mono input if the connection is made to the L/Mono input only.

52 **Group Inserts**
These jacks are 1/4" TRS connectors that allow external signal processors to be inserted into the Group signal path. Tip=Send; Ring=Return; Sleeve=Ground. One of the on-board effects processors can be patched to any Group Insert.

53 **Group Outputs**
These Group Outputs feature 1/4" TRS balanced jacks and provide output signal from the Groups. The output level is set by the Group Level faders (26).

54 **Left/Right Outputs**
The Left/Right Outputs feature two 1/4" TRS Z-balanced jacks and two fully balanced XLR outputs. The 1/4" outputs can be used with Tip, Ring, Sleeve (TRS) balanced or Tip, Sleeve (TS) unbalanced connectors. The output level is set by the Master Level faders (40). Both outputs can be used simultaneously.

55 **AUX 1 - 6 Outputs**
These AUX Outputs feature 1/4" TRS balanced jacks and provide signal from the Auxiliary Outputs. The output level is set by the AUX Level controls (19, 20).

56 **Effects 2 Patch Jack**
This 1/4" TRS jack allows the internal Effects 2 processor to be patched to an Input or Group Insert or to an external device. The tip carries the input (return) signal to the compressor and the ring carries the output (send).

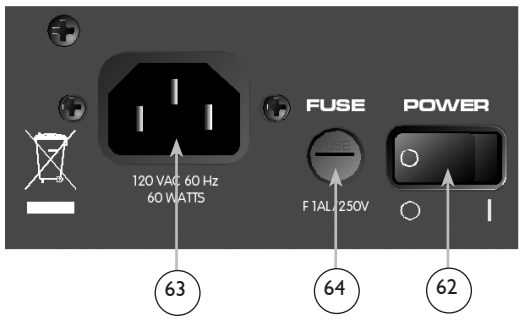
57 **EFX 2 Return Jacks**
These 1/4" high-impedance balanced inputs can be used as stereo or individual returns. Designed for effects return, they can also be used as additional stereo inputs. The L/Mono input provides signal to both inputs if no connector is attached to the Right jack. The tip is the positive input for both balanced and unbalanced use.

58 **Media In Jacks**
The Media Input jacks are set up for a +4 dBu input from a stereo audio media source. The signal feeds the Media In level control (34).

59 **Record Output Jacks**
The output jacks can provide a +4 dBu output signal to a stereo recording device. The output level is controlled by the Record Output level control (36).

60 **USB Memory Connector**
Use this A-type USB connector to plug in a removable data storage device to read or write MP3-formatted files.

61 **USB Computer Connector**
Use this B-type USB connector to connect with a computer.




62 **Power Switch**
Pressing the power switch supplies power to the unit.

63 **Removable Power Cord**
This receptacle is for the IEC line cord (included) that provides AC power to the unit. Connect the line cord to this connector and to a properly grounded AC supply. Damage to the equipment may occur if an improper line voltage is used (see voltage marking on unit).

**Never remove or cut the ground pin of the line cord plug. The console is supplied with a properly rated line cord. If lost or damaged, replace this cord with one of the proper rating.**

**NOTE FOR UK ONLY:**
If the colors of the wires in the mains lead of this unit do not correspond with the colored markings identifying terminals in your plug, proceed as follows: (1) The wire that is colored green and yellow must be connected to the terminal marked by the letter E, or by the Earth symbol, or colored green or green and yellow. (2) The wire that is colored blue must be connected to the terminal that is marked with the letter N, or colored black. (3) The wire that is colored brown must be connected to the terminal that is marked with the letter L or colored red.

64 **Line Fuse (16FX™ mixer only)**
The fuse is located within the cap of the fuse holder. If the fuse fails, THE FUSE MUST BE REPLACED WITH THE SAME TYPE AND VALUE IN ORDER TO AVOID DAMAGE TO THE EQUIPMENT AND TO PREVENT VOIDING THE WARRANTY. If the mixer repeatedly blows the fuse, it should be taken to a qualified service center for repair.

**WARNING: The fuse should only be replaced when the power cord has been disconnected from its power source!**

# FX™ Series Specifications

## Inputs

| Function | Input Z (Ohms min) | Input Gain Setting | Input Levels Min* | Nominal** | Max | Bal/ Unbal | Connector |
|---|---|---|---|---|---|---|---|
| Microphone (150 Ohms) | 2.2k | Max Gain (60 dB)<br>Min Gain (0 dB) | -76 dBu<br>-16 dBu | -56 dBu<br>+4 dBu | -40 dBu<br>+20 dBu | Bal | XLR Pin 1 Gnd<br>Pin 2 (+)<br>Pin 3 (-) |
| Line (10 k Ohms) | 20k | Max Gain (40 dB)<br>Min Gain (-20 dB) | -56 dBu<br>+4 dBu | -36 dBu<br>+24 dBu | -20 dBu<br>+40 dBu | Bal | 1/4" TRS;<br>Tip (+)<br>Ring (-)<br>Sleeve Ground |
| Stereo Line (direct to L/R) | 10k | Max Gain (20 dB)<br>Nominal Gain (0dB) | -26 dBu<br>-6 dBu | -16 dBu<br>+4 dBu | +2 dBu<br>+22 dBu | Unbal | 1/4" TS;<br>Tip (+)<br>Sleeve Ground |
| Stereo Line (via channel) | 10k | Max Gain (20 dB)<br>Nom Gain (0dB) | -36 dBu<br>-16 dBu | -16 dBu<br>+4 dBu | +2 dBu<br>+22 dBu | Unbal | 1/4" TS;<br>Tip (+)<br>Sleeve Ground |
| Channel and Group Insert Return | 22k | N/A (0dB) | -16 dBu | +4 dBu | +22 dBu | Unbal | 1/4" TRS; Tip (send)<br>Ring (return)<br>Sleeve Ground |
| EFX2 Return | 20k | Max Gain (10 dB)<br>Nom gain (0dB) | -16 dBu<br>-6 dBu | -6 dBu<br>+4 dBu | +12 dBu<br>+22 dBu | Bal | 1/4" TRS; Tip (+)<br>Ring (-)<br>Sleeve Ground |
| Media In | 10k | Max Gain (10dB)<br>Nom Gain (0db) | -16 dBu<br>-6 dBu | -6 dBu<br>+4 dBu | +10 dBu<br>+20 dBu | Unbal | RCA Jacks |

0 dBu=0.775 V (RMS)

* Min Input Level (sensitivity) is the smallest signal that will produce nominal output (+4 dBu) with channel and master faders set for maximum gain.

** Nominal settings are defined as all controls set at 0 dB (or 50% rotation for rotary controls) for nominal output. Microphone gain control is as specified.

## 16FX™, 24FX™ and 32FX™ Specifications

### Outputs

| Function | Min Load Z (Ω) | Output Levels Nominal | Output Levels Max | Bal/ Unbal | Connector |
|---|---|---|---|---|---|
| Master Left/Right | 600 | +4 dBu<br>+4 dBu | +22 dBu<br>+22 dBu | Bal | XLR Pin 1 Gnd<br>Pin 2 (+), Pin 3 (-)<br>1/4" TRS; Tip (+), Ring (-)<br>Sleeve Ground |
| Groups 1-4 and Aux 1-6 | 600 | +4 dBu | +22 dBu | Bal | 1/4" TRS: Tip (+), Ring (-)<br>Sleeve Ground |
| Record Out | 2k | +4 dBu | +22 dBu | Unbal | RCA Jacks |
| Channel and Group Insert Send | 600 | +4 dBu | +22 dBu | Unbal | 1/4" TRS; Tip (send), Ring (return)<br>Sleeve Ground |
| Headphone | 8 | +4 dBu | +22 dBu | Unbal | 1/4" TRS; Tip (left), Ring (right)<br>Sleeve Ground |

0 dBu=0.775 V (RMS)

### Gain

| | |
|---|---|
| Mic Input Gain Adjustment Range: | 0 dB to +60 dB |
| Mic Input to Left/Right Balanced Output | 80 dB (max gain) |
| Line Input Gain Range: | -20 dB to +40 dB |
| Line Input to Left/Right Balanced Output | 60 dB (max gain) |
| Stereo Line Input Gain Range: | -∞ to +20 dB |
| Stereo Line Input to Left/Right Balanced Output | +30 dB direct to L/R output - +40 dB via channel (max gain) |

### Frequency Response

| | |
|---|---|
| Mic Input to Left/Right Output | 20 Hz to 20 kHz 0 dB/-1 dB |

### Total Harmonic Distortion & Noise

| | |
|---|---|
| 0.01% 20 Hz to 20 kHz Mic to Left/Right Output | (22 Hz to 22 kHz BW) |
| 0.005% Mic Pre-amp | (22 Hz to 22 kHz BW) |

### Hum and Noise

| Output | Residual Noise | S/N Ratio (Ref: +4dBu) | Test Conditions |
|---|---|---|---|
| Master Left/Right | -100 dBu | 104 dB | Master Fader Down, Channel Levels Down |
| | -82 dBu | 86 dB | Master Fader Nominal, Channel Levels Down |
| | -80 dBu | 84 dB | Master Fader Nominal, Channel Faders Nominal, Panned Odd Channels (left), Even Channels (right) |
| Groups 1-4 | -98 dBu | 102 dB | Master Fader Down, Channel Levels Down |
| | -90 dBu | 94 dB | Master Fader Nominal, Channel Levels Down |
| | -83 dBu | 87 dB | Master Fader Nominal, Channel Faders Nominal Panned Odd Channels (left), Even Channels (right) |
| Aux 1-6 | -101 dBu | 105 dB | All controls off |
| | -81 dBu | 85 dB | All channel sends nominal, masters nominal |

(Hum and noise measurements: 22 Hz to 22 kHz BW)

## 16FX™, 24FX™ and 32FX™ Specifications

### Equivalent Input Noise (EIN)

-129 dBu (Mic input terminated with 150 Ohms)

### Crosstalk/Attenuation

| | |
|---|---|
| Adjacent Input Channels (1 kHz) -70 dB typical | Mute Button Attenuation (1 kHz) -80 dB typical |
| Left to Right Outputs (1 kHz) -70 dB typical | Channel Fader Kill (1 kHz) -80 dB typical |

### Common Mode Rejection Ratio (Mic Input)

-50 dB minimum (20 Hz to 20 kHz)

-60 dB typical @ 1 kHz

### Phantom Power

+48 volts

### Signal/Clip Indicators

Yellow: -30 dBu Red: 2 dB below clipping

### Dimensions

**16FX**: 7.25"h x 19.0"w x 18.0"d on table top
16.7" wide without rack ears
(18.4cm x 48.3cm x 45.7cm on table top)
(42.4cm wide without rack ears)
10RU (17.44") x 19.0" x 7.25" in equipment rack;
6.75" behind rack
(44.3cm x 48.3cm x 18.4cm in equipment rack)
(17.1cm behind rack)

**24FX**: 7.75" high x 24.4" wide x 18.8" deep
(19.7cm x 619cm x 47.7cm)

**32FX**: 7.75" high x 32.5" wide x 18.8" deep
(19.7cm x 82.6cm x 47.7cm)

**Installation Note, Ventilation:**
**This unit must have the following clearances from any combustible surface: top: 8", sides: 12", back: 12"**

### Weight

16FX: 22 lbs. (10.0 kg)
24FX: 25 lbs (11.4 kg)
32FX: 30 lbs. (30.0 kg)

### Power Requirements

16FX dosmetic: 120 VAC 60 Hz 50 watts nominal
16FX export: 230 VAC 50/60 Hz 50 watts nominal
24FX: 100-240 VAC 50/60 Hz 60 watts nominal
32FX: 100-240 VAC 50/60 Hz 70 watts nominal

Test Conditions: 120 VAC 60 Hz maintained throughout testing