



PRODUCT USER GUIDE

LE FX User Guide Issue 1

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To the best of our endeavors, we believe the information contained in this user guide to be true and accurate but we do not assume responsibility for inaccuracies or omissions, and reserve the right to make any changes deemed necessary.

This product has been designed to comply with the applicable standards, regulations, and directives for the countries where the product is marketed.

NOTE: Changes or modifications to this product, or its associated power supply, could negatively impact compliance and the user's authority to operate it.

Designed and manufactured in the United Kingdom by:

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Limited One -Year Manufacturer's Warranty

Union Audio warrants the product and accessories contained in the original packaging against defects in materials and workmanship when used in accordance with this user manual for a period of One (1) YEAR from the date of original purchase by the end-user purchaser ("**Warranty Period**").

Repair or replacement under the terms of the warranty does not provide right to extension or renewal of the warranty period. Repair or direct replacement of the product under the terms of this warranty may be fulfilled with functionally equivalent service exchange units.

This warranty is not transferable. This warranty will be the purchaser's sole and exclusive remedy and neither **Union Audio** nor any approved service centres shall be liable for any incidental or consequential damages or breach of any express or implied warranty of this product.

Conditions of Warranty

The equipment has not been subject to misuse either intended or accidental, neglect, or alteration other than approved by **Union Audio**. The warranty does not cover potentiometer wear and tear, nor cosmetic damage to paint or screenprint. Any necessary adjustment, alteration or repair has only been carried out by **Union Audio** or distributor or appointed service agent.

The defective unit is to be returned to the place of purchase, an authorised **Union Audio** distributor or agent with proof of purchase. Please discuss this with the distributor or the agent before shipping. Units returned should be packed in the original carton to avoid transit damage.

Check with your **Union Audio** distributor or agent for any additional warranty information which may apply. If further assistance is required please contact **support@unionaudio.co.uk**

Any changes or modifications to the equipment not approved by **Union Audio** could void the compliance of the product and therefore the users authority to operate it.



Safety Instructions

Please read and retain these instructions

- Only use the product for the purposes it is intended and heed all warnings.
- **WARNING** - To prevent the risk of fire or electric shock do not use this apparatus near water, or in locations where it is likely to be exposed to rain or moisture.
- Always ensure that liquids cannot get spilt over the apparatus or its power supply, and keep all objects filled with liquids, such as vases, drinks glasses, etc. well away from the apparatus.
- Ensure adequate ventilation and ensure all ventilation openings are not blocked or restricted.
- Do not connect the output of amplifiers to this apparatus. Always use the correct, high quality cables to connect to the mixer, audio sources and power amplifier inputs.
- Do not install the apparatus or power supply near any heat sources such as radiators, stoves, amplifiers or other apparatus that generates heat.
- Do not place sharp or heavy objects onto the mixer or power supply as these could damage the controls or cosmetics. Avoid rough handling and protect both units from vibration. Retain the original packing in order to protect the unit during shipping or transit.
- Refer all servicing to qualified personnel. Servicing is required if liquids are split onto the apparatus or its power supply, objects have fallen into the apparatus, the unit has been dropped, or does not function normally.



Safety Instructions

- Do not remove any covers, either on the apparatus or the power supply.
- Install only in accordance with the manufacturer's instructions.
- Always use a power adaptor appropriate to your local mains supply, and ensure the power supply is correctly specified for the local mains voltage.
- Protect the DC lead from being walked on, pinched, or stretched.
- Unplug the power supply and apparatus during electrical storms.
- Do not leave the apparatus unattended for long periods when powered on.



To prevent the risk of electrical shock do not open the mixer or power supply or remove any covers. no user serviceable parts inside. Refer servicing to qualified service personnel only.

These symbols are internationally accepted symbols to warn of potential hazards with electrical products.



This symbol indicates that a dangerous voltage constituting a risk of electric shock is present within this unit.



This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this product.

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About LE FX

The Union Audio LE FX is a compact, affordable, easy to use, Analogue/DSP based effects unit, designed to perfectly integrate into any DJ setup.

The eight effects have been carefully designed to work with all types of electronic dance music, either adding subtly to the mix, or creating dramatic breakdowns, courtesy of the high level of audio manipulation this apparatus provides.

Control

The LE FX incorporates controls for effect selection, two parameter controls (their function is effect dependant), Wet/Dry signal mix, FX ON/OFF, and Tap Tempo.

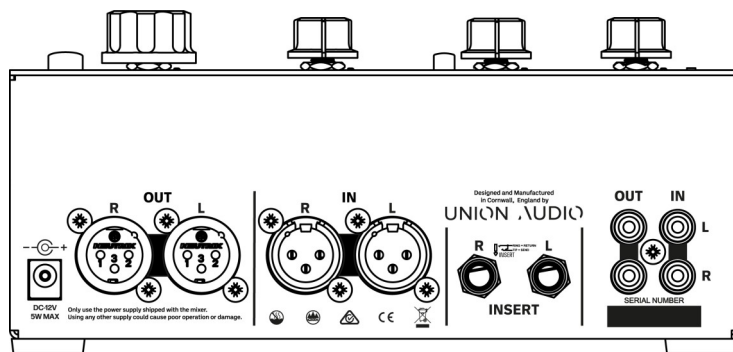
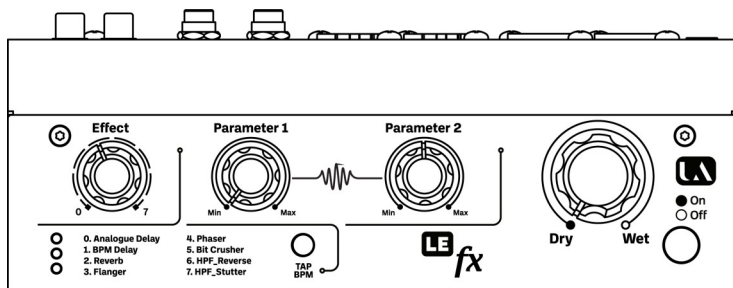
Connectivity

The LE FX has been designed to make it very easy to interface into any setup. In addition to the standard RCA IN/OUT there are two 1/4" TRS INSERT sockets, plus balanced inputs/outputs on XLR.

Power

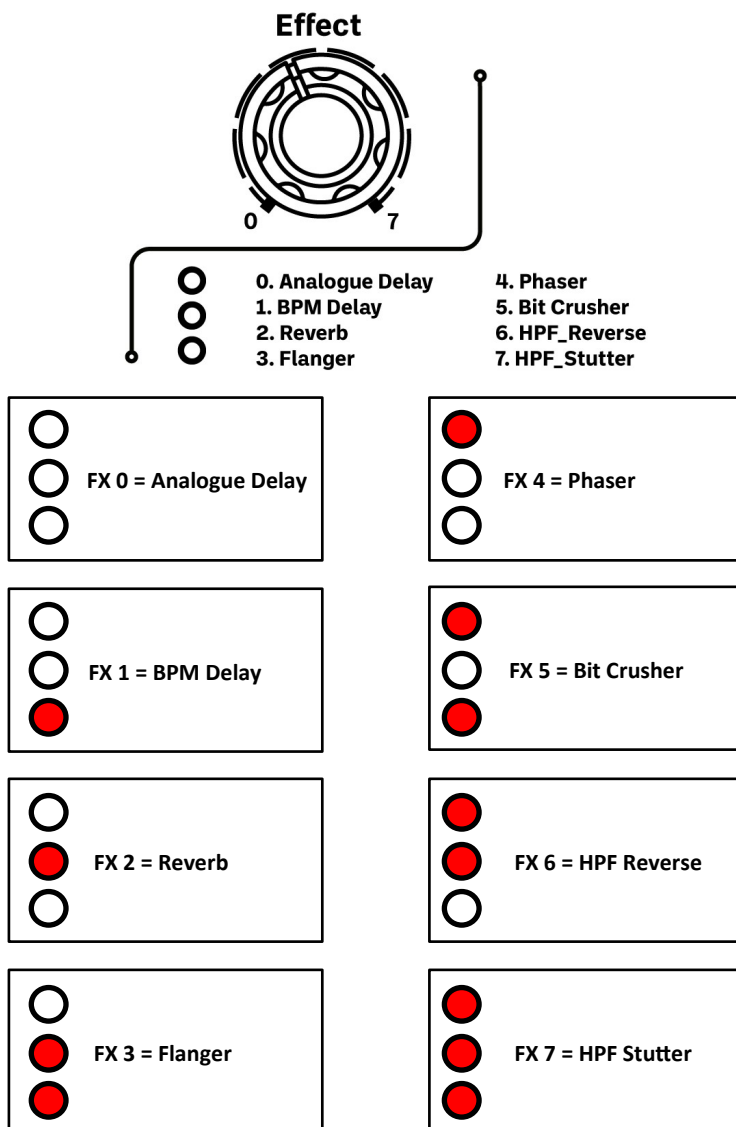
Included with the LE FX is an efficient 12V universal power supply, supplied with a range of socket adaptors making it compatible for use anywhere in the World.

The external power supply feeds internal circuitry that boosts the analogue voltage rails to +/- 15V DC ensuring true pro audio headroom and signal level, often missing in typical guitar/instrument derived effects units.



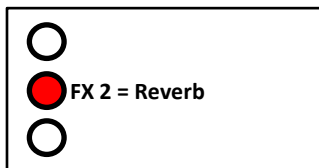
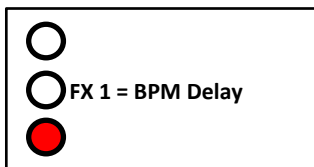
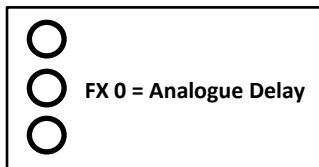
Effects Selection

The LE FX has eight built-in effects which are selected by turning the left side rotary control. The currently selected effect number is indicated by the 3-Bit Binary display as indicated in the diagrams below:

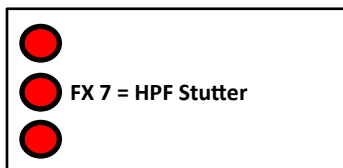
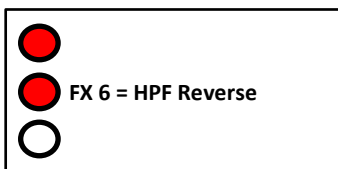
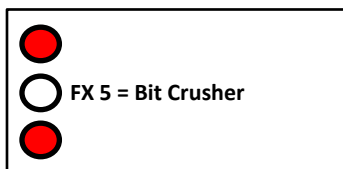
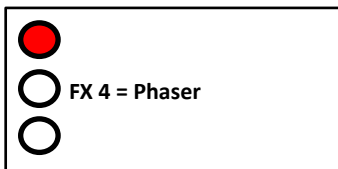
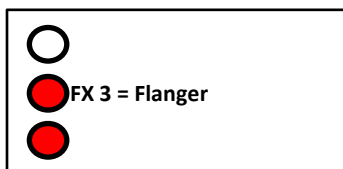


Effects Selection continued

SEND EFFECTS - The first three effects (Analogue Delay, BPM Delay, and Reverb) are known as “send” effects. These effects add to the “dry” (unaffected) sound. The Wet/Dry control automatically changes functionality, so that when fully anticlockwise only the Dry signal is heard. When the Wet/Dry is fully clockwise the effected (Wet) signal is **added** 100% to the Dry signal * See page 19 on how to set the LE FX to Aux Send Mode



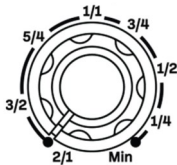
INSERT EFFECTS - The remaining five effects are known as “Insert” effects, meaning they affect the entire signal when the Wet/Dry control is fully clockwise



Delays

0. Analogue Delay: This effect emulates the sound of an analogue delay. It repeats the sound without being locked to a specific rhythm, and when you change the delay time, the pitch of the repeated sound shifts, adding a unique character. The parameter 1 control adjusts the delay timing, and Parameter 2 adjusts the feedback (repeats).

1. BPM Delay: This effect automatically syncs the delay time to the tracks BPM (either automatically or manually). Parameter 1 sets the delay repeat divisions (see diagram below) and Parameter 2 adjusts the feedback (repeats).



Approximate Beat Time divisions for Parameter 1 scale

Auto BPM - The auto BPM detection system uses sophisticated algorithms to analyse and detect BPM, though heavy, percussive, bass lines and odd rhythmic structure will affect the speed and accuracy of analyses. Realtime beat detection is displayed by the three LEDs on the binary display. The top LED briefly flashes when a tempo change is detected. The middle LED will illuminate to show beat detection is underway, but no regular beat pattern detected. The lower LED will start to flash when a regular beat pattern is found, and the middle LED will go OFF when a consistent repeating beat has been detected, and the “Tap Tempo” button will flash Blue in time with the beat. If the musical beat stops, for instance, during a breakdown, the Tap Tempo button will flash Red at the last detected tempo until the beat kicks in again, when it will change back to Blue.

If the BPM of a track cannot be accurately detected, for instance tracks with a heavily syncopated or sparse rhythm, the detection circuit will make a “best guess” and this will be displayed by the middle LED remaining ON, and the Tap Tempo button illuminating both Blue and Red. In most instances the BPM detection will be close enough for delays, but if needed the auto BPM can be overridden by using the Tap Temp button to manually tap in the beat, and the button will flash Red to indicate a manual beat entry. To switch back to Auto BPM, press the Tap Tempo button once.

Understanding the AutoBPM three LED display



Top LED = Flashes when a BPM change is detected

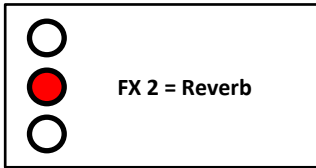


Middle LED = ON when beat detection underway, but not enough beat matches found to stabilize BPM. Will go OFF when repeated matches detected.

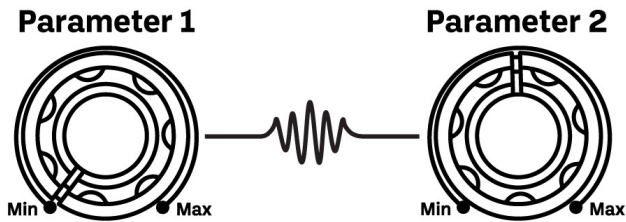


Lower LED = Flashes to show regular synchronisation with Beat

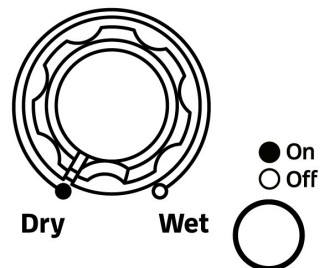
Reverb



Reverb : This effect simulates the sound of a classic hall reverb, making your audio sound like it's in a large space. The Parameter 1 control adjusts the size of the room, while the Parameter 2 adjusts both the Pre-Delay and High Frequency content of the reverb tail.

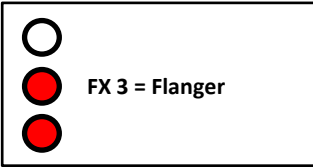


Wet/dry on/off : The Wet/Dry control adjusts the level of reverb (Wet) that is added to the original audio (Dry). This control can add a subtle ambience to the audio when used sparingly, or when fully clockwise will swamp the original sound in a dense reverb for a dramatic effect.



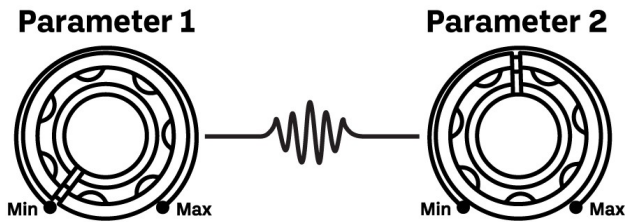
The On/Off button will illuminate Green when the effect is active. Turning the effect Off will allow the reverb tail to die away naturally, rather than by abruptly muting it.

Flanger



Flanger: This effect creates a harsh metallic, resonant sweeping sound.

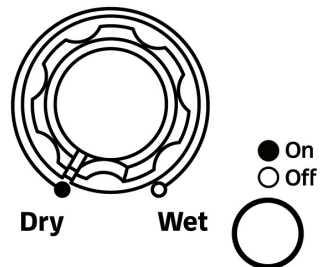
Parameter 1 controls the LFO sweep frequency, while Parameter 2 controls the depth of the effect.



Wet dry on/off : The Wet/Dry control adjusts the balance between the dry signal and the effected sound.

When fully anticlockwise no effect will be heard, but rotating clockwise will gradually increase the ratio of processed audio until fully clockwise when only the processed sound will be heard.

The On/Off button will illuminate Green when the effect is active.



Phaser

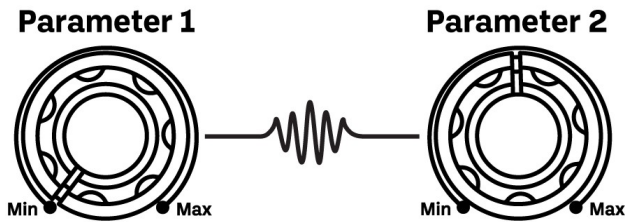


FX 4 = Phaser



Phaser: This effect creates a smooth, filtered sweeping sound.

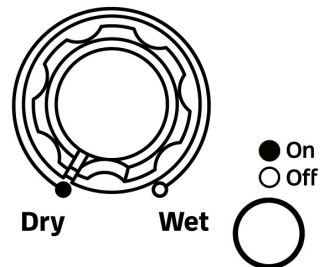
Parameter 1 control adjusts the filter sweep speed, while the Parameter 2 changes the filter depth, affecting how strong the effect is.



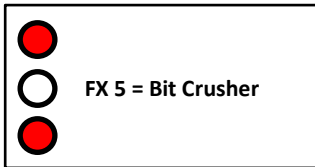
Wet dry on/off : The Wet/Dry control adjusts the balance between the dry signal and the effected sound.

When fully anticlockwise no effect will be heard, but rotating clockwise will gradually increase the amount of audio that is processed, and when fully clockwise only the fully processed sound will be heard.

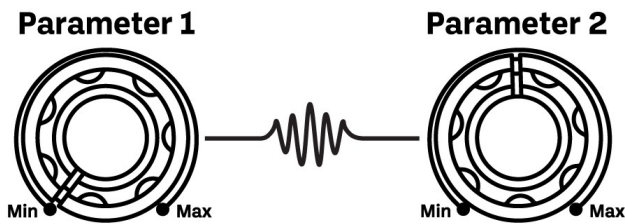
The On/Off button will illuminate Green when the effect is active.



Bit Crusher



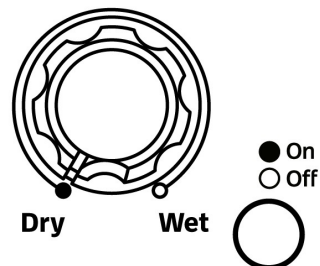
Bit Crusher: This effect simulates digital distortion, giving your audio a gritty, lo-fi sound. The Parameter 1 controls the bit depth, while Parameter 2 varies the dry/wet ratio.



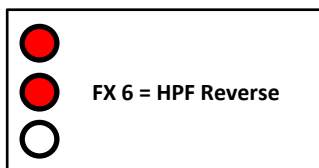
Wet dry on/off : The Wet/Dry control adjusts the balance between the dry signal and the effected sound.

When fully anticlockwise no effect will be heard, but rotating clockwise will gradually increase the amount of audio that is processed, and when fully clockwise only the fully processed sound will be heard.

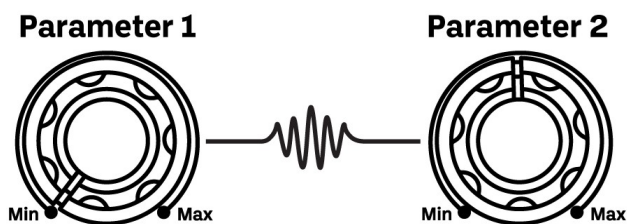
The On/Off button will illuminate Green when the effect is active.



HPF Reverse



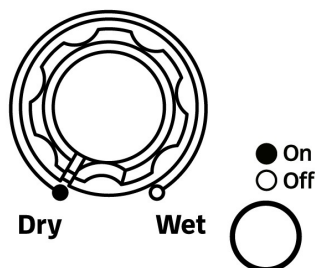
HPF Reverse: This is a unique effect that combines a High-Pass Filter (HPF) with sampler that reverses one beat of the audio. The Parameter 1 controls the cut-off frequency of the filter, while Parameter 2 mixes the filtered audio with the reverse sample. If Parameter is fully clockwise only the reverse sample will be heard. This is a great affect to cut into before a breakdown.



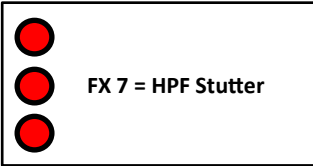
Wet dry on/off : The Wet/Dry control adjusts the balance between the dry signal and the effected sound.

The HPF Reverse effect works best by turning on the FX with the Dry/Wet control fully dry, and then briefly turning the control to fully Wet and back to Dry again.

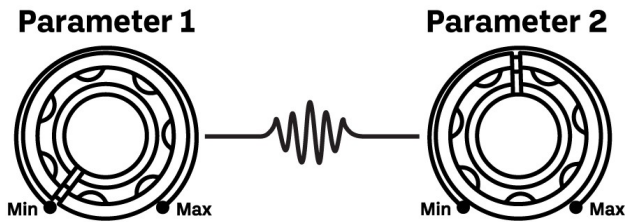
The On/Off button will illuminate Green when the effect is active.



HPF Stutter



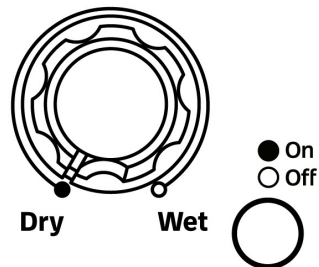
HPF Stutter: This effect combines a High-Pass Filter (HPF) with sampler that repeats one beat of the audio. The Parameter 1 controls the cut-off frequency of the filter, while Parameter 2 mixes the dry audio with the one-beat sample. If Parameter 2 is fully clockwise only the repeated sample will be heard. This is a great affect to cut into before a breakdown.



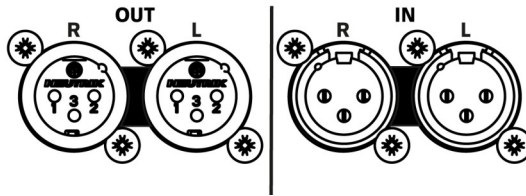
Wet dry on/off : The Wet/Dry control adjusts the balance between the dry signal and the effected sound.

The HPF Stutter effect works best by turning on the FX with the Dry/Wet control fully wet.

The On/Off button will illuminate Green when the effect is active. If the On/Off button is pressed and held for more than one second it will automatically turn off on release, making this a great effect to drop in during a track.

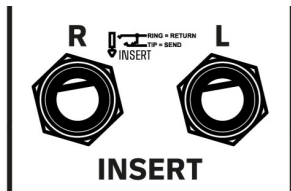


Rear Panel Connections



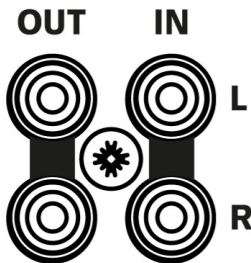
XLR IN/OUT — For best signal quality use the balanced XLR connections to interface the LE FX between your mixer and main Amplifier

Connections are: Pin1 = Ground, Pin 2 = + Hot, Pin 3 = - Cold



INSERT — The Insert Jacks allows for easy connection to any mixer incorporating this feature. Use good quality 1/4" TRS leads, or a TRS splitter lead if your mixer has separate Insert input and output connections.

Insert connections are: Tip = Input, Ring = Output, Sleeve = Ground



RCA IN/OUT — For maximum connection flexibility the LE FX also comes equipped with input and output RCA connectors for connecting directly with media players, drum machines, and other sound sources.

The RCA output can also be used as a recording output if the signal is being run through the XLR connections or the Insert Jacks. Note that this will be at Line level so might need to be attenuated for some recording devices.



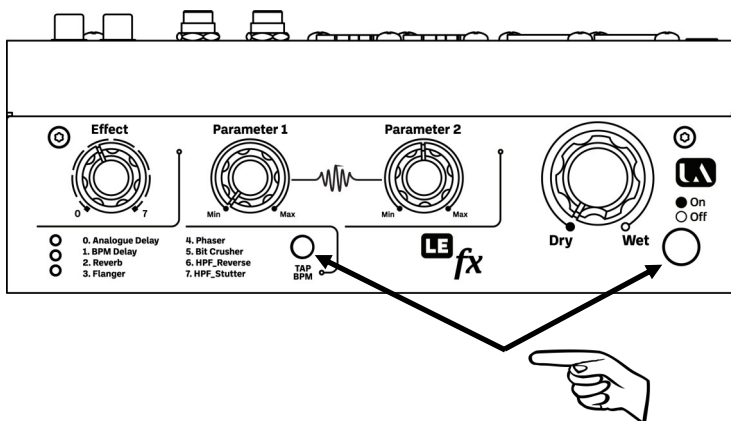
DC-12V
5W MAX

Only use the power supply shipped with the mixer.
Using any other supply could cause poor operation or damage.

DC INPUT — To prevent damage to the LE FX unit, only use the 12V DC power adaptor supplied with the apparatus.

AUX Send Mode

The LE FX has been primarily designed as a stand alone effects unit with all the controls needed incorporated into the front panel. However, you can also use the LE FX with your mixer's Aux Send/Return system. For this to work properly you will need to set the LE FX into "SEND MODE" each time you power it on. Send Mode changes the way the WET/DRY control works when either the Delays or Reverb are selected, by only feeding the "wet" signal to the output when fully clockwise.



To Select SEND MODE - Before powering ON the LE FX, press and hold down both the ON/OFF and TAP TEMPO Buttons.

Apply power to the unit and wait for the TAP TEMPO button to illuminate, then release both buttons.

NOTE, SEND Mode is not stored in memory, so you will need to do this every time you power on the LE FX

BPM Delay - NOTE For the BPM delay to work, the LE FX has to receive an audio signal, therefore we recommend pre-setting the Mixer Aux send level and controlling the amount of effected signal feeding the mix with the Aux Return.

Alternatively, use the Tap Tempo button to override the Auto BPM and set the effect level using the mixer Sends.

Specification

Distortion plus Noise (THD+N) un-weighted

0dBu, 20Hz to 20kHz	0.005%
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Frequency Response

FX by-passed	+/-0dB 20Hz - 30kHz
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Noise 22Hz to 22kHz Un-Weighted

FX bypassed	<-80dBu
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Maximum Output Level Mix Out 0.5% THD

	+20dBu
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Impedance

Inputs	10K OHMS
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Output	100 OHMS
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Headphone Amplifier

Power Supply

Type	External SMPSU
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Mains Voltage range	90-260VAC
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Output	12V DC 6W
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Efficiency	LEVEL VI
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Dimensions

LE FX

Height	81.5mm
Width	210mm
Depth	72mm
Weight	1kg

Packed Dimensions

Size L x W x H	29cm x 19cm x 15cm
Weight	1.7kg (3.75lb)

