# ALLEN HEATH ZED-6FX Compact Analog Mixer User Guide



Contents



ALLEN&HEATH

**ALLEN HEATH ZED-6FX Compact Analog Mixer**


## Product Information

The ZED-6FX is a 6-channel mixer designed for live performances and recording. It offers a range of features and controls to optimize your audio experience. Here are some key details about the product:

- MONO INPUT CHANNELS (M): These channels are used for connecting microphones and instruments.
- STEREO INPUT CHANNELS (ST): These channels are used for connecting line-level stereo sources.
- MASTER SECTION: Controls for the main stereo mix and microphone inputs.

### Included in the package

- ZED-6FX Mixer
- IEC C5 Mains Power Cable (Check the correct mains plug for your country)
- User Guide

### MONO INPUT CHANNELS (M)

- Mic Input Socket: Standard 3-Pin XLR socket for connecting dynamic or condenser microphones.
- Line / Inst Input Socket: Standard 1/4 (6.25mm) Jack socket for connecting balanced or unbalanced signals like guitars and other instruments.
- Gain Control: Adjusts the gain of the input preamplifier from 5dB to 60 dB.
- Instrument: Activates the Line / Inst input circuit for electro-acoustic and electric guitars, basses, and other Direct Input instruments.
- lo-cut (Hi-Pass Filter): Reduces low-frequency noise in microphone signals.
- HF EQ (High Frequency): Adjusts treble frequencies in the signal for adding brightness or reducing hiss and harshness.
- LF EQ (Low Frequency): Adjusts bass frequencies in the signal to cover boom and sub-bass frequencies.
- FX send Controls the amount of signal sent from the channel to the FX bus and FX OUT.
- PAN: Adjusts signal between the left and right busses and main outputs.
- MIX rotary fader: Controls the amount of signal to the left and right busses.

- Pre-Fade Listen (PFL): Switches the channel input signal to the headphones for checking before adding it to the mix.

**STEREO INPUT CHANNELS (ST):**

- ST1 and ST2 Inputs: Standard 1/4 (6.25mm) Jack sockets for balanced or unbalanced line-level stereo sources.
- ST1 and ST2 Gain Control: Adjust the input level to the channel.
- HF and LF EQ: Same as MONO channels, set at the same frequencies.
- BAL: Adjusts the relative level between the left and right stereo signals.

**MASTER SECTION**

- MAIN OUT L & R: Line level outputs for the main stereo mix using standard XLR output connectors.
- 48V: Switches industry-standard 48V (phantom power) to all microphone inputs for use with condenser microphones and active D.I. boxes requiring +48V.
- POWER LED: Indicates that the mixer is switched on.
- LR Meters: Display the level of the MAIN MIX or the mono PFL signal.

## Product Usage Instructions

Follow these instructions to use your ZED-6FX mixer effectively:

1. Make sure you have read the user guide provided and keep it for future reference.
2. Connect the appropriate mains power cable for your country to the mixer.
3. Get familiar with the layout of the mixer and its different sections (MONO INPUT CHANNELS, STEREO INPUT CHANNELS, and MASTER SECTION).
4. For MONO INPUT CHANNELS (M), choose the appropriate input socket (Mic or Line/Inst) and adjust the Gain Control to set the input level.
5. If using an instrument, activate the Instrument mode and disable the Mic Input Socket.
6. Use the lo-cut (Hi-Pass Filter) to reduce low-frequency noise in microphone signals.
7. Adjust the HF EQ (High Frequency) and LF EQ (Low Frequency) to shape the sound as desired.
8. Control the amount of signal sent to the FX buss and FX OUT using the FX send control.
9. Adjust the PAN control to position the signal between the left and right busses and main outputs.
10. Use the MIX rotary fader to control the amount of signal sent to the left and right busses.
11. Use the PFL switch to listen to the channel input signal through headphones before adding it to the mix.
12. For STEREO INPUT CHANNELS (ST), choose the appropriate input socket (ST1 or ST2) and adjust the Gain Control for the desired input level.
13. Adjust the BAL control to set the relative level between the left and right stereo signals.
14. In the MASTER SECTION, use the MAIN OUT L & R connectors for the main stereo mix.
15. If using condenser microphones or active D.I. boxes, activate the 48V switch for phantom power.
16. Monitor the audio levels using the LR Meters, which display either the MAIN MIX or the mono PFL signal.

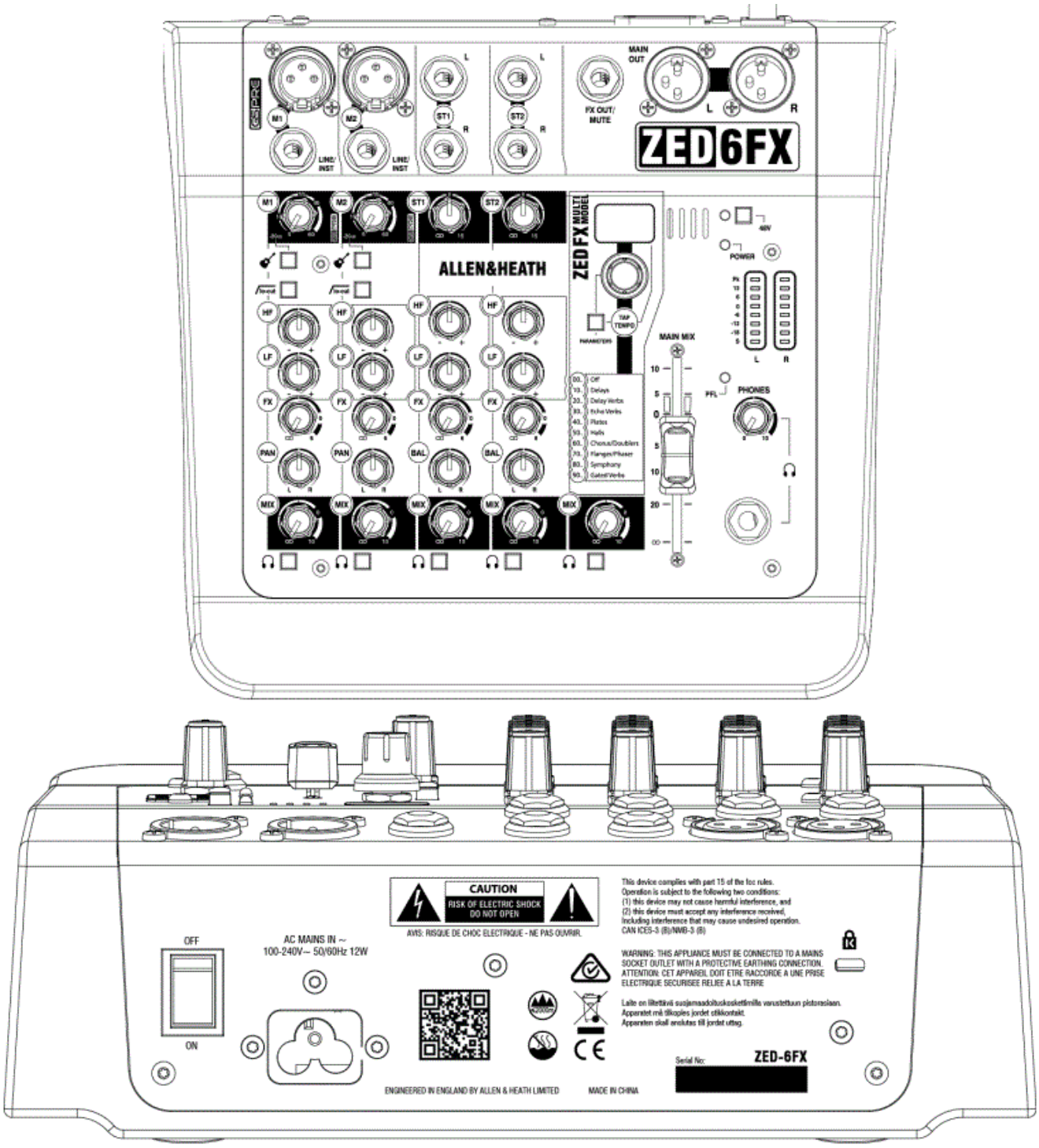
By following these instructions, you will be able to make the most of your Allen & Heath ZED-6FX mixer and

achieve optimal audio results.

Thank you for purchasing this Allen & Heath ZED-6FX.
We recommend that you read all of this user guide to get the best from your mixer and after reading, please keep this safe for future reference.

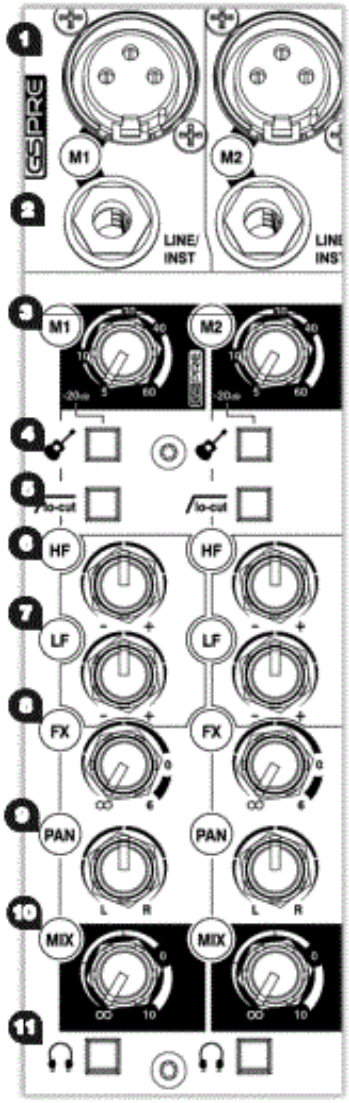
## Included in this package

- ZED-6FX Mixer
- IEC C5 Mains Power Cable. Please check correct mains plug is fitted for your country.
- This User Guide!




## Get to know your mixer

**MONO INPUT CHANNELS (M)**

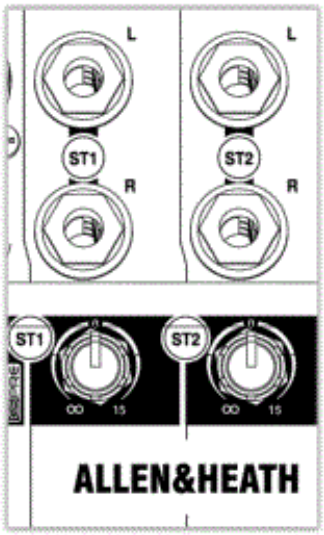



1. Mic Input Socket uses a standard 3-Pin XLR socket for connecting dynamic or condenser microphones.
2. Line / Inst Input Socket uses a standard 1/4” (6.25mm) Jack socket for connecting balanced or unbalanced signals such as guitars and other instruments.
3. Gain Control adjusts the gain of the input preamplifier to drive the source signal level. Gain ranges from 5dB to 60 dB.
4. The instrument activates the Line / Inst input circuit for electro-acoustic and electric guitars, basses, and other Direct Input instruments. When activated the Mic Input Socket is disabled.
5. lo-cut (Hi-Pass Filter) is used for reducing Low-Frequency noise such as handling noise, popping, rumble, and proximity effect in microphone signals.
6. HF EQ (High Frequency) equalizer affects treble frequencies in the signal for adding “brightness” and “definition” or for reducing “hiss” and “harshness”.
7. LF EQ (Low Frequency) equalizer affects bass frequencies in the signal to cover “boom” and “sub-bass” frequencies.
8. FX send controls the amount of signal sent from the channel to the FX bus and the FX OUT. The signal is post-fader (MIX) which means it’s affected by the channel MIX control so it stays in proportion to the signal going to the MAIN MIX.

   There is no master-level control for the FX OUT.
9. PAN adjusts the signal from a mono input channel between the left and right busses and subsequently the main outputs.

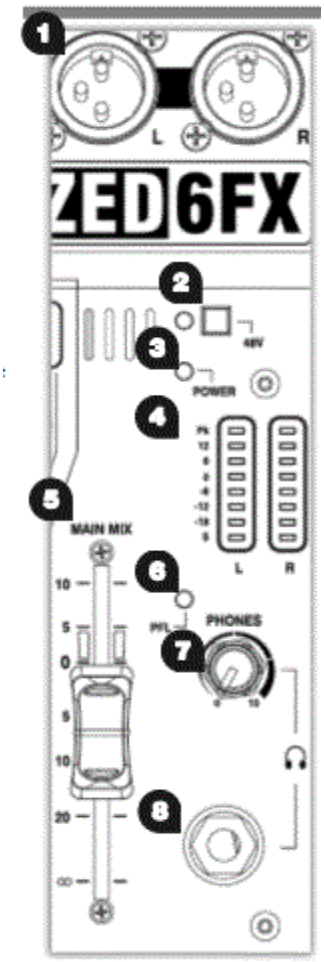
10. MIX rotary fader controls the amount of signal to the left and right buses.
11. Pre-Fade Listen (PFL) switches the channel input signal to the headphones for checking before adding it to Mix. The PFL signal is taken after the EQ but before the MIX control.
    The LR Meters display the channel input level when the PFL switch is activated.

**STEREO INPUT CHANNELS (ST)**



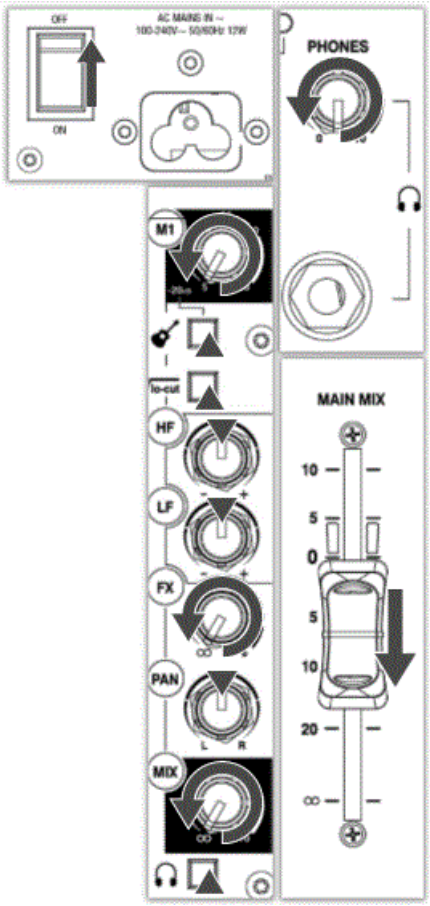

1. ST1 and ST2 Inputs use standard 1/4” (6.25mm) Jack sockets for balanced or unbalanced line level stereo sources such as professional keyboards, drum chines and other pro audio equipment.
2. ST1 and ST2 Gain Control adjusts the input level to the channel.
3. HF and LF EQ are the same for ST1 & ST2 as they are for M1 & M2 and are set at the same frequencies.
4. BAL adjusts the relative level between the left and right stereo signals as they are sent to the left and right busses and subsequently the main outputs.

**MASTER SECTION**




1. MAIN OUT L & R are line-level outputs for the main stereo mix using standard XLR output connectors and are impedance balanced for rejection of unwanted interference.
2. 48V switches industry-standard 48V (phantom power) to all the microphone inputs for use with condenser microphones and active D.I. boxes requiring +48V.
3. POWER LED indicates that the mixer is switched on.
4. LR Meters display the level of the MAIN MIX or the mono PFL signal if activated by any of the PFL switches.
5. MAIN MIX fader is the master volume control for the main stereo mix.
6. PFL (Pre-Fade Listen) LED indicates when a PFL switch has been pressed on one of the channels.
7. PHONES level controls the volume of signal to the PHONES output.
   **Warning**! To avoid damage to your hearing do not operate headphones or sound system at excessively high volume. Continued exposure to high-volume sound can cause frequency-selective or wide-range hearing loss!!
8. PHONES output uses a standard 1/4” (6.25mm) jack socket.

## Good practice



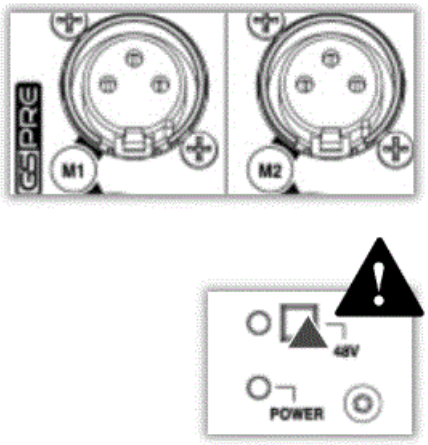

**“Zeroing”**
It’s good practice to “zero” your mixer and turn down relevant channels before connecting any devices as this prevents potential damage to speakers or other equipment.
Follow these steps to make sure you’re safe and you avoid thumps and bangs when plugging equipment in.
Speakers should always be switched ON LAST and OFF FIRST!

- Make sure the power switch on the rear of the mixer is set to “OFF”
- Connect the AC Mains Lead provided to the AC MAINS IN socket on the rear of the mixer.
  Check that the correct mains plug is fitted for your country and plug the AC Mains Lead into a standard household mains socket.
- Turn channel Gain controls all the way down (left).
- Make sure Instrument, HPF, PFL, and 48V switches are not pressed in.
- Set all channel EQ and PAN control to the center position marked “▼”
- Turn all FX send, AUX send and MIX controls all the way down (left).
- Lower the MAIN MIX fader to “∞”.
- Turn down the phone level.
- Double check speakers or amplifiers are switched off!
- Connect speakers, instruments, and other equipment.
- Switch on instruments and other equipment, then a mixer, than the speakers!

Speaker or amp volumes should be set according to manufacturer guidelines.

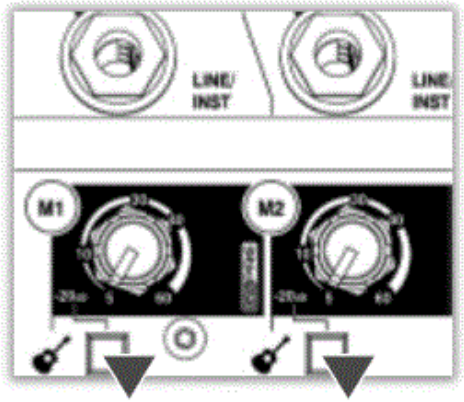
## Connect mics, instruments, and other equipment

**Connecting Microphones**




- Dynamic or condenser microphones and DI boxes should be connected to the Mic Input Socket using a balanced XLR Microphone cable.
- If you‘re using a condenser microphone, it will require 48V Phantom Power to work.
- Some active DI boxes may also require phantom power.
- Avoid ‘hot plugging’ when connecting any equipment and make sure AUX MASTER and MAIN MIX controls are turned down before 48V is switched on as this as may cause loud thumps and bangs!

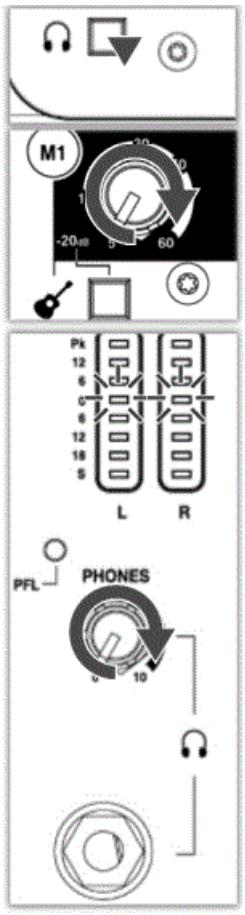
**Connecting Instruments and Line-Level Equipment**




- High-impedance (Hi-Z) instruments such as electro-acoustic guitars, basses, and other Direct Input instruments should be connected to Line / Inst Inputs on channels M1 & M2 using a jack-to-jack instrument cable, and do not require an additional DI box or preamp.
- The Instrument switch must be activated to match extremely high impedance signals (10MΩ) from instrument pickups.
- Line-level instruments such as keyboards, synthesizers, drum machines, or equipment such as external effect processors can be connected to Line / Inst Inputs on channels M1 & M2, and LINE inputs on M3 & M4 for mono sources or ST1 & ST2  for stereo sources.
- For channels M3 & M4 the LINE/PAD switch must be activated.
- Follow the application examples in Section 7. for connecting devices to relevant inputs and outputs.

## Get the best sound

**Gain Structure**



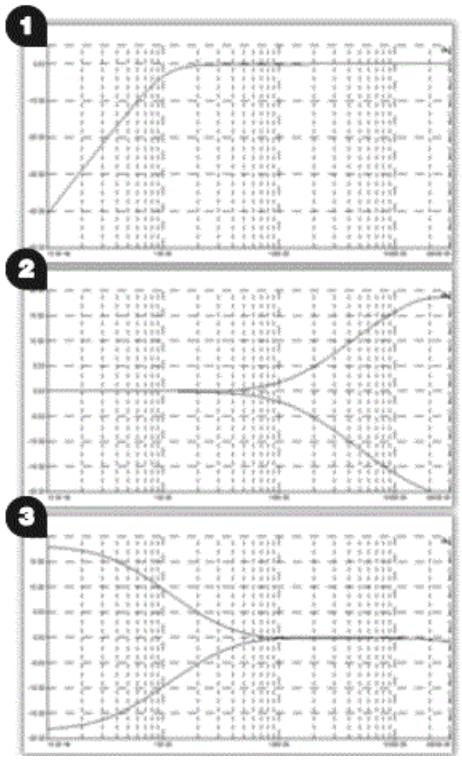

1. Once you've connected your instruments and equipment you will need to set input levels before you can mix the signals together.
2. Gain structure is important to get the maximum signal level without undesirable distortion. Setting gain properly helps to optimize signal quality and ensure that the signal-to-noise ratio remains as low as possible.
3. If you're using a microphone make sure the mic is placed at an appropriate distance to the sound source. (Close for quiet sources, further away for louder).
4. Press the PFL switch on the corresponding channel. This will allow you to hear the pre-fader input signal and will show the signal level on the LR Meters.
5. Sing, talk or play your instrument at a typical level of loudness.
6. Slowly raise the Gain Control on the corresponding channel until you see a good signal level in the LR Meters. Maximum peaks between "0" and "+6" on the meters are a good indicator.
7. Connect professional monitoring headphones to the Phone output and turn up the phone level to a safe listening volume
8. If the signal sounds undesirably distorted at a low signal level, enable any pad switch on the microphone, or move the microphone further away from the source and repeat the process.

Once you're happy with the input signal level, you may wish to use lo-cut (Hi-pass Filter) and the EQ to enhance intelligibility or to remove unwanted frequencies, and improve the tonal balance of the source sound, so keep the channel PFL switch enabled for now!

**Section 4. continued overleaf.**
**Shaping Sound**

EQ filters audio passing through it and allows you to 'cut' (turn down) or 'boost' (turn up) selected frequencies. 'Boosting' a frequency too much may cause the signal to clip or distort. 'Cutting' a frequency will cause a

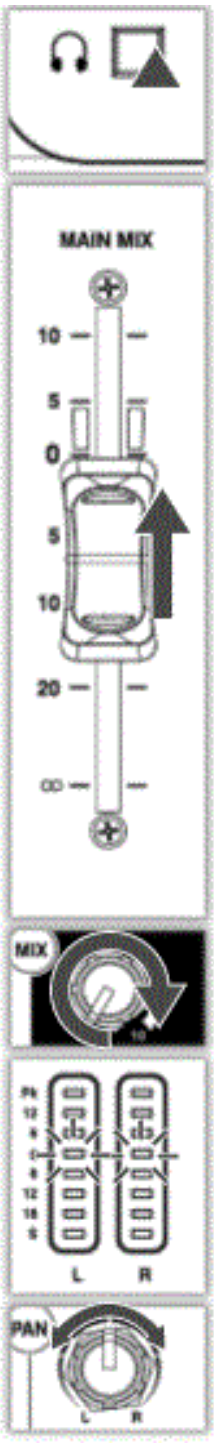
reduction in signal level.
Overuse of EQ may cause the sound to be unnatural. Understanding the frequency responses of different instruments and how they might overlap will help you make good decisions on how to EQ musically.




1. lo-cut (Hi-pass Filter) removes unwanted low-frequency noise such as rumble, handling noise, thumps, and proximity effect and helps maintain clarity in the signal. lo-cut affects both Mic and Line/Inst inputs. The corner frequency is set at 100Hz.
2. HF EQ (High Frequency) affects treble frequencies in the signal. The corner frequency is at 12kHz for adding “brightness” and “definition” to guitars or for reducing “hiss” in vocals and “harshness” in cymbals.
3. LF EQ (Low Frequency) equalizer affects bass frequencies in the signal. The corner frequency is 80Hz for adding “roundness” and “sub-bass” to bass guitar or kick drum, or to remove “boom” from toms.

When you’re happy with the input signal level and tone you can disable the channel’s PFL switch and think about how to mix all these sounds together!

**Balancing the Mix**
Once you have set input gain levels and applied EQ to source signals, you can start to mix all of your channels to the outputs. Consider the importance of each instrument and how they should be heard in the mix.




1. Make sure all PFL switches on your mixer are disabled to show MAIN MIX metering in LR Meters.
2. Slowly raise the MAIN MIX fader to around “0”.
3. Turn up channel MIX controls to send their signal to the main mix.
4. You will see the signal level displayed in the LR Meters.
5. As you mix the signals together you will see the combined level getting higher in the meters.
6. Avoid clipping and leave headroom for any louder moments in the program material.
   Average peaks around “ 0” on the meters are a good indicator.
   Maintain a natural sounding balance and relationship between voices and instruments.
   i.e. which instruments should be heard more clearly over others.
7. If you find that MIX controls are turned up very high and the signal is still low, or MIX control is very low but the signal is too high, readjust channel Gain and EQ controls to improve the gain structure and tone (see section 6.1)

8. Use PAN and balance to separate sounds and give instruments space in the mix or a realistic impression of where they might sit in the stereo image.
   Ideally, high-energy LF sounds such as kick drums should be kept centered to distribute them evenly and share the load between speakers.

## ZED FX Multi Model Processor


**EFFECTS SECTION**

Effects such as reverb and delay are generally used to add “natural sounding” acoustics and a sense of space to the mix, but can also be used to add interesting repetitions in time with the music. Modulation effects can be used to enhance a sound harmonically or to add depth and motion.

1. FX OUT/MUTE is a line-level output from the FX bus and uses a standard 1/4”(6.25mm) jack socket.
   The stereo signal from the outputs of external effects processors should be returned to ST1 or ST2 Inputs.
   A latching footswitch can be connected to the FX OUT instead and used to mute the output from the ZED FX Multi-Model processor. The footswitch must be wired between the Tip and the Sleeve.
   It is possible to connect the FX OUT to the input of a powered speaker for monitoring purposes however the signal is post-fader (MIX) which means will be affected by the changes to both the channel FX send and MIX level.
2. The ZED FX Multi-Model processor is a high-quality built-in effects unit that is fed with a mono signal from the FX bus. The output signal from the processor to the MAIN MIX is stereo.
3. FX Select / Parameter control is used to scroll through effects presets and make changes to editable parameters.
4. TAP TEMPO Button can be used to adjust the frequency or tempo of delay effects that include a Tap Tempo parameter. If a delay effect is selected then you will see a flashing decimal point on the right-hand side of the preset display.

Change effects parameters by pressing and holding down the TAP TEMPO button and turning the effects FX Select / Parameter control. The display will show a parameter value of P0 to P9.

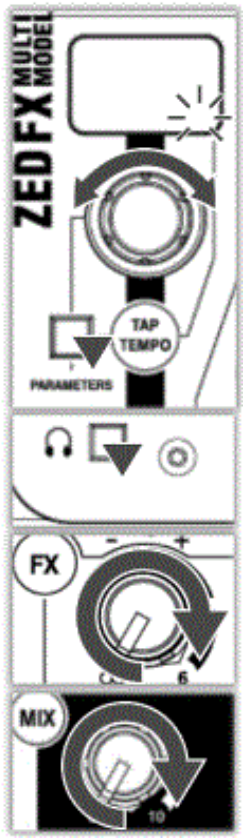
Turn off the internal effects by setting the ZED FX Multi-Model preset to “ 00”.

Reset the editable effects parameters to factory defaults, by holding down FX Select / Parameter control and TAP TEMPO Button at the same time whilst switching on the power.

5. MIX rotary fader controls the volume of the (wet) effects signal into the MAIN MIX.

**Applying Effects to the Mix (ZEDi-10FX only)**

- Before adding effects think about whether you want it to sound as though the voice or instruments are in a certain performance space, if you want to add repetition effects such as echo (delay) or if you want them to sound like they do on that classic album.
- Using too much of an effect may mean losing the definition or intelligibility of the original sound!




1. Select the desired effect preset and turn the FX Select / Parameter control to that number.
2. Press PFL on the channel and on the effects section to monitor (dry) channel signal and (wet) effect return via the PHONES output before adding to the MAIN MIX.
3. If you have selected a delay effect and there’s a flashing decimal point on the preset display, use the TAP TEMPO Button to bring the effect in time with program material.
4. Turn up the FX send on the channel until you hear the desired amount of effect.

The channel MIX control must be turned up because the FX send is post-fader.

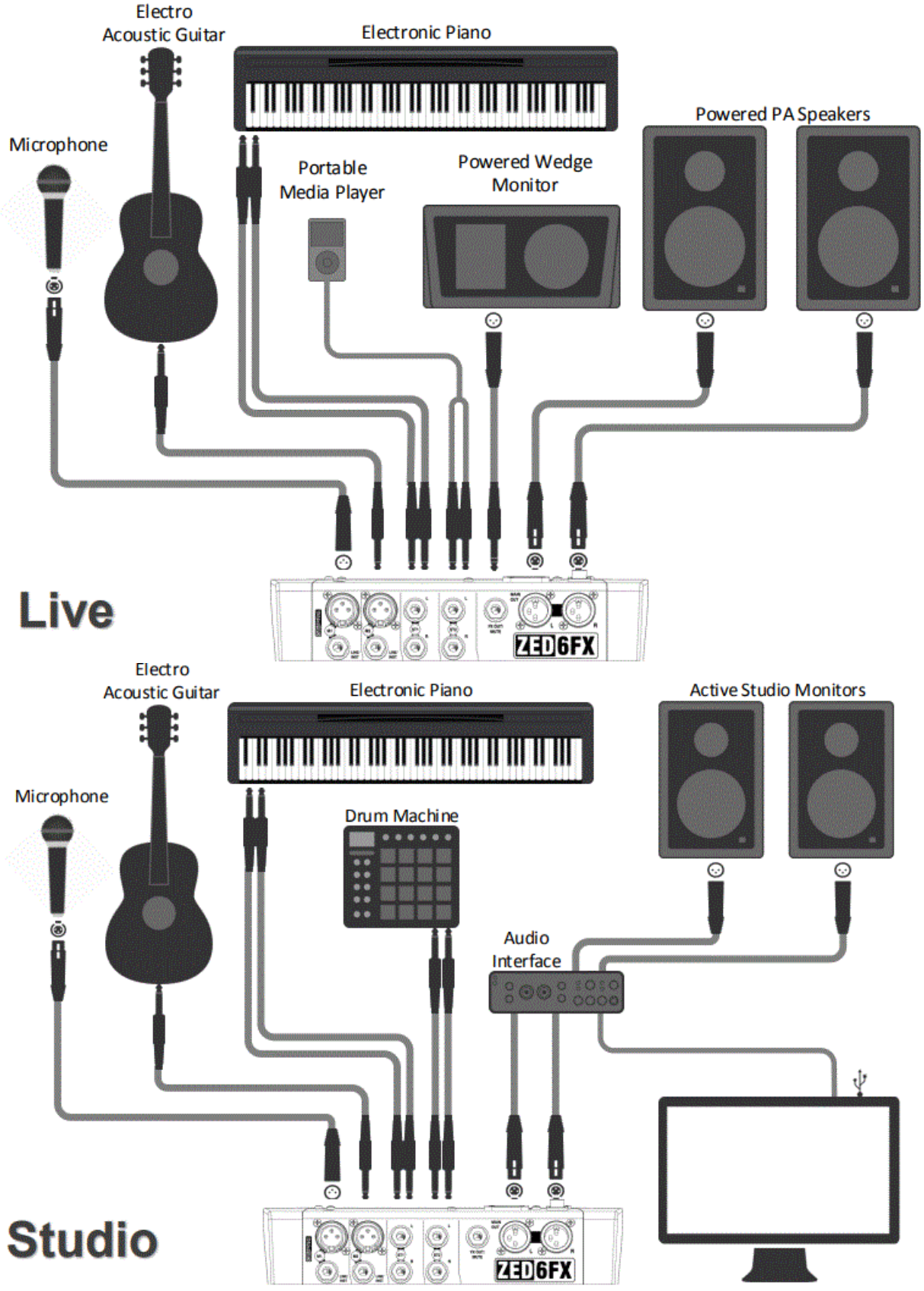
1. Repeat this for any additional channels.
2. Once you’re happy with the sound disable all PFL switches.

3. Slowly turn up the effects MIX control to “0” to add the effects signal to the MAIN MIX.
4. Readjust channel FX and send controls, if necessary!
   Sending too much signal to a regenerative delay or using too much regeneration can cause sound to build up very quickly, caution is advised!

## Important Safety Precautions

- **Water and moisture:**
  Do not expose the mixer to rain or moisture or use it in damp or wet conditions.
  Do not place containers of liquids on it which might spill into any openings.
- **Ventilation:**
  Do not obstruct the ventilation slots or position the mixer where the airflow required for ventilation is impeded.
  If the mixer is to be placed in a rack unit or flight case ensure that it is well ventilated.
- **Heat and vibration:**
  Do not place the mixer where it is subject to excessive heat or direct sunlight.
  Keep the mixer away from any equipment which produces excessive heat or vibration.
- **Servicing:**
  Switch off equipment and unplug the power cord immediately if it is exposed to moisture, spilled liquid, or objects falling into the openings, if the power cord or plug has become damaged, during lightning storms, or if smoke, odor or abnormal noise is noticed.
  Refer servicing to qualified technical personnel only.
- **Installation:**
  Install the mixer in accordance with the instructions printed in this User Guide.
  Do not connect the output of power amplifiers directly to the mixer.
  Only use audio connectors and plugs for their intended purpose.
- **Read instructions:**
  Retain these safety and operating instructions for future reference.
  Adhere to all warnings printed here and on the mixer and follow the operating instructions printed in this User Guide.
- **Do not remove the cover:**
  Never operate the mixer if the cover is not correctly fitted.
- **Power sources:**
  Only connect the console to the main power of the type described in this User Guide and marked on the rear panel.
  Use a power cord with a sealed mains plug appropriate for your local mains supply as provided with the mixer.
  If the provided plug does not fit into the mains of your outlet consult your service agent for assistance.
- **Power cord routing:**
  Run the power cord so that it is out of the way and not likely to be walked on, stretched or pinched by items placed upon or against it.
- **Grounding:**
  Never remove or tamper with the ground connection or polarity in the power cord.

## Application examples




## Additional Information

For all additional information such as hardware specification, product information or technical support please go to **http://www.allen-heath.com**
A limited one-year manufacturer's warranty applies to this product, the conditions of the warranty can be found at **http://www.allen-heath.com/legal**
For service or support in your local area please go to **http://www.allen-heath.com/where-to-buy** and search for the country you are in.

Please register this product at http://www.allen-heath.com/register to receive useful information from time to time.



## Documents / Resources

| | |
|---|---|
|  | ALLEN HEATH ZED-6FX Compact Analog Mixer [pdf] User Guide<br>01, ZED-6FX, ZED-6FX Compact Analog Mixer, Compact Analog Mixer, Analog Mixer, Mixer |

## References

- MH Search - Manual-Hub.com
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