ALLEN HEATH ZED-6 Live Recording Mixer User Guide

Contents

ALLEN&HEATH

ALLEN HEATH ZED-6 Live Recording Mixer

Specifications

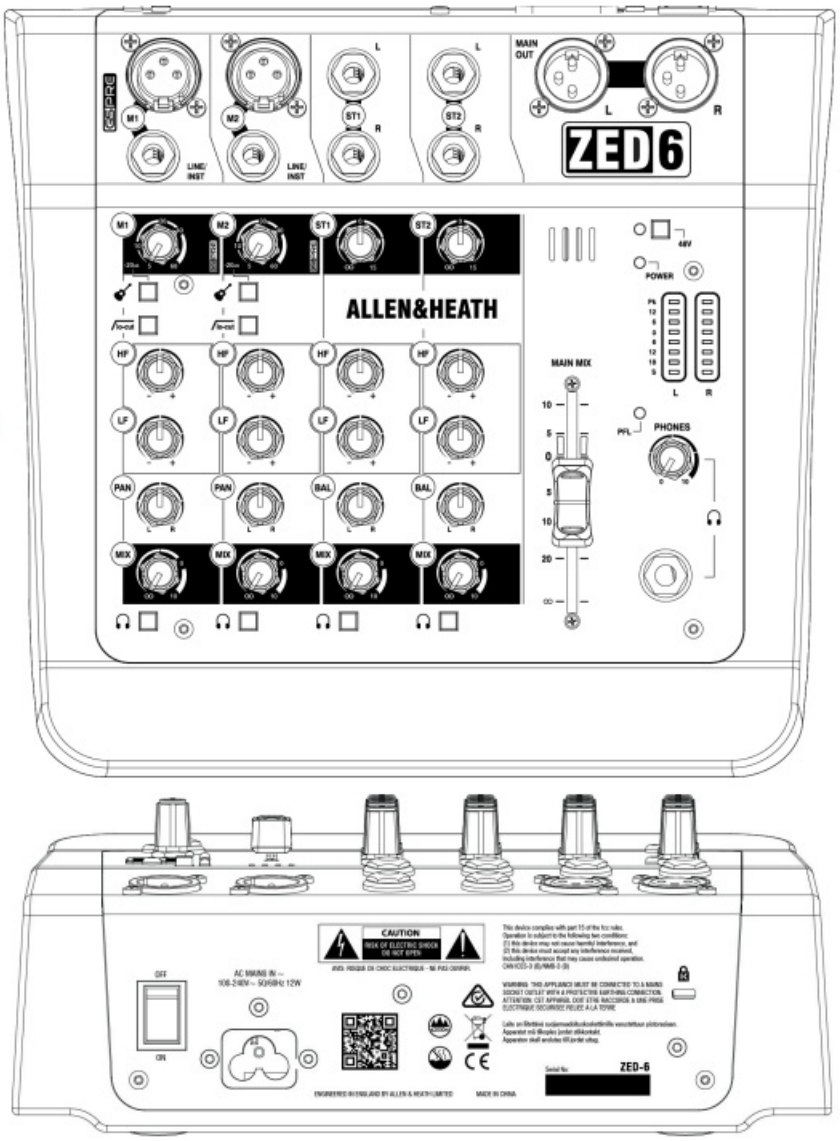
- **Model:** ZED-6
- **Number of Channels:** 6
- **Power Cable:** IEC C5 Mains Power Cable

ZED-6 6 Channel Live + Recording Mixer User Guide

Thank you for purchasing this Allen & Heath ZED-6.
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 is

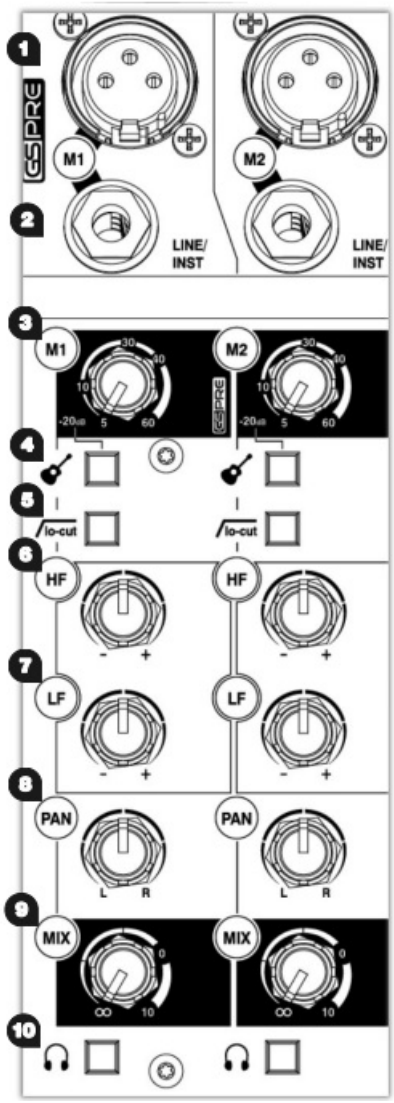
- ZED-6 Mixer
- IEC C5 Mains Power Cable. Please check correct mains plug is fitted for your country.
- This User Guide!



Get to know your mixer

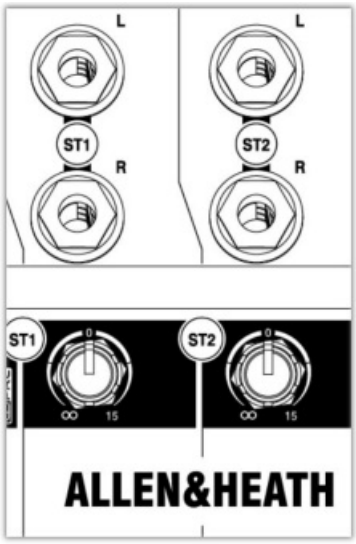
MONO INPUT CHANNELS (M)

1. The 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. PAN adjusts the signal from a mono input channel between the left and right busses and subsequently the main outputs.
9. MIX rotary fader controls the amount of signal to the left and right busses.
10. 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.



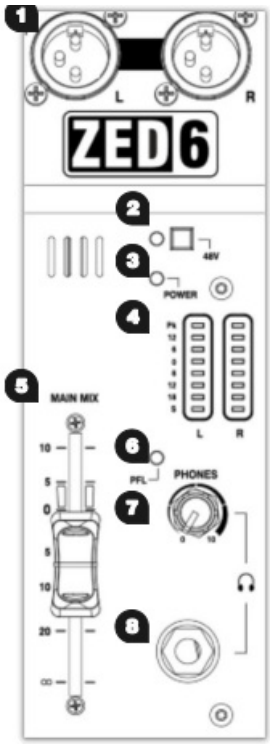
STEREO INPUT CHANNELS (ST)

- 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 machines and other pro audio equipment.
- ST1 and ST2 Gain Control adjust the input level to the channel.
- HF and LF EQ are the same for ST1 & ST2 as they are for M1 & M2 and are set at the same frequencies.
- 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!

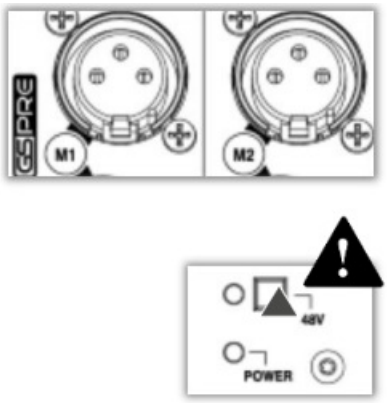
1. Make sure the power switch on the rear of the mixer is set to “OFF”
2. Connect the AC Mains Lead provided to the AC MAINS IN socket on the rear of the mixer.
   Check that the correct mains plug is fitted for your country and plug the AC Mains Lead into a standard household mains socket.
3. Turn channel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

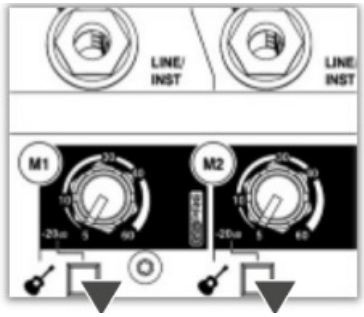


Avoid ‘hot plugging’ when connecting any equipment and make sure AUX MASTER and MAIN MIX controls are turned down before 48V is switched on as this as may cause loud thumps and bangs!

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 optimise signal quality and ensure that the signal to noise ratio remains as low as possible.

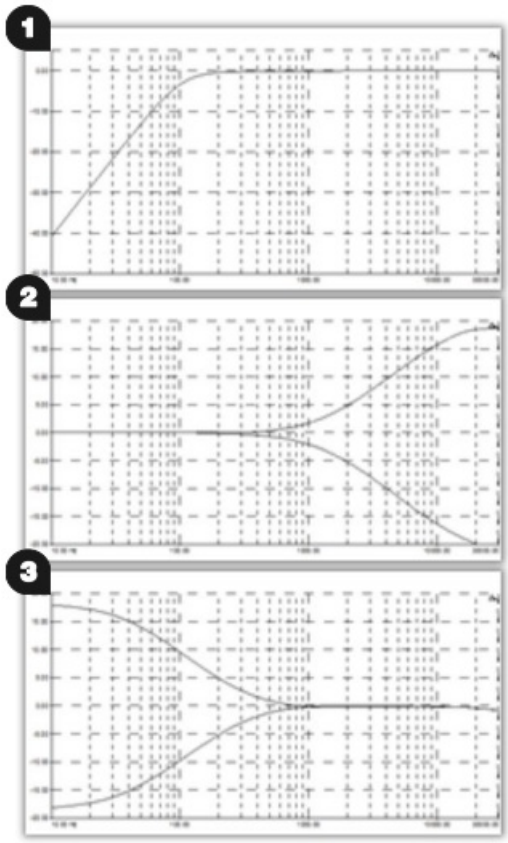
3. If you're using a microphone make sure the mic is placed at an appropriate distance to the sound source. (Close for quiet sources, further away for louder).
4. Press the PFL switch on the corresponding channel. This will allow you to hear the pre-fader input signal and will show the signal level on 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's output and turn up the PHONES 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

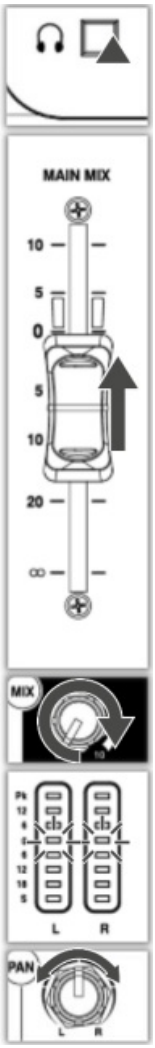
frequency is set at 100Hz.

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!

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 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.

   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)

7. 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.

Important Safety Precautions

- **Water and moisture:**
  - Do not expose the mixer to rain or moisture or use it in damp 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 fallen 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 by 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.

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. ZED-6 User Guide AP10000 Issue 3

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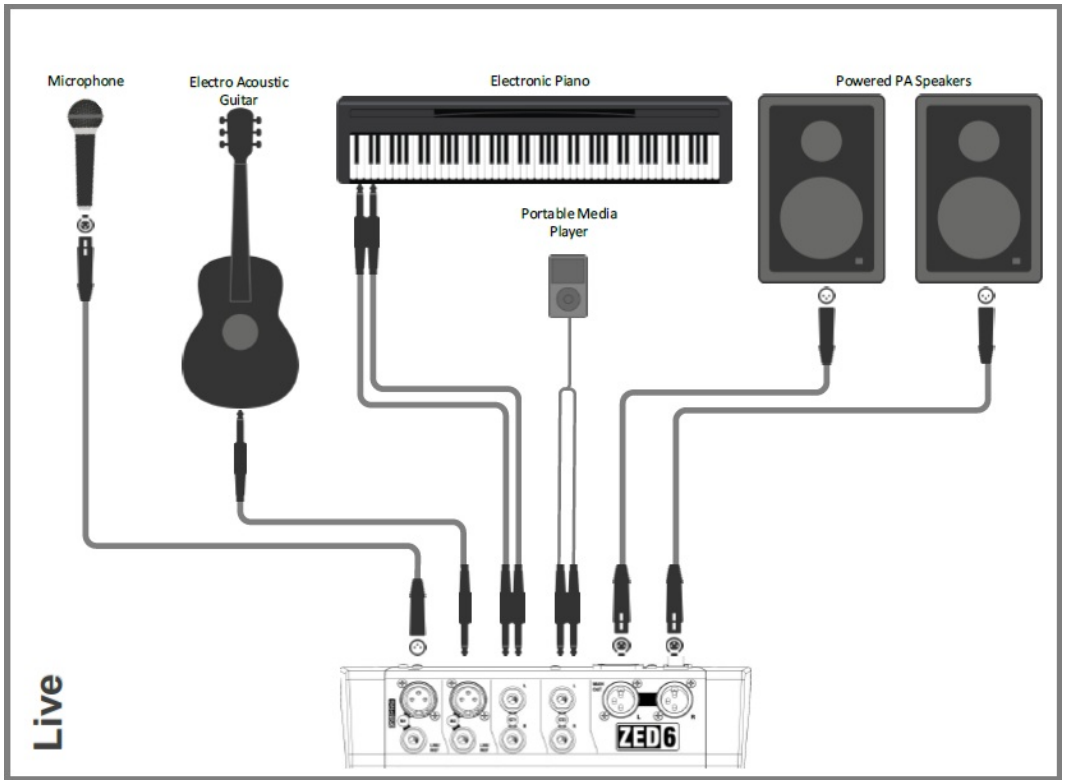
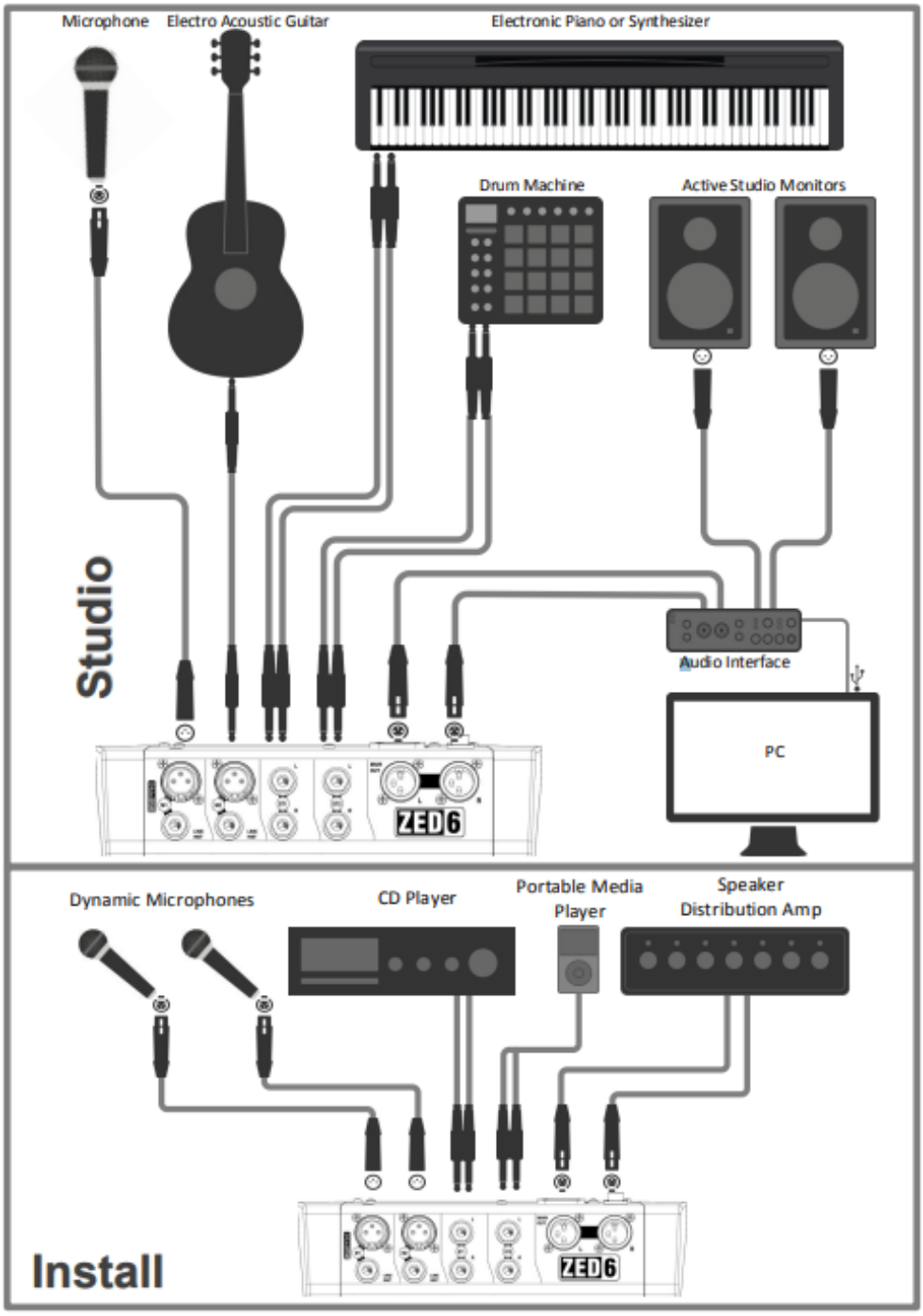
Application examples





Documents / Resources

	ALLEN HEATH ZED-6 Live Recording Mixer [pdf] User Guide ZED-6, ZED-6 Live Recording Mixer, Live Recording Mixer, Recording Mixer, Mixer

References

- & Allen & Heath - Heard Everywhere
- & Legal - Allen & Heath
- & Register a Product - Allen & Heath
- & Distributors - Allen & Heath
- User Manual