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IK MULTIMEDIA AXE I-O ONE USB Audio Interface User Manual

Contents

IK MULTIMEDIA AXE I-O ONE USB Audio Interface

Product Information: USB Audio Interface with Advanced Guitar Tone Shaping

The AXE I/O ONE is a USB audio interface that offers advanced guitar tone shaping features. It has a top panel with controls for input gain, peak meters, variable impedance control, preamp topology selector, and pick-up selector. The front panel features an XLR Combo type input socket for microphone or instrument connection, a headphone output for one pair of headphones, and a third 1/4 physical unbalanced, floating output with selectable ground lift that is independent from main Outputs 1-2 and designed to feed guitar amps or stomp pedals without any hum or buzzing noises. The interface also has MIDI in/out LEDs and a monitor knob for zero latency monitoring of input signals blended with playback streams from your computer.

Product Usage Instructions

Registering AXE I/O ONE:
To access technical support, activate your warranty, receive JamPointsTM for discounts on future IK purchases, and stay informed of software updates and IK products, register your AXE I/O ONE at
www.ikmultimedia.com/registration.

Installation and Setup:
Install the software and set up the AXE I/O ONE as per the instructions provided in the user manual.

Dedicated Guitar Features:
The AXE I/O ONE offers several dedicated guitar features such as direct amplifier output & re-amplification, JFET/PURE input (only for Instrument Input), pick-up selector (only for Instrument Input), and variable impedance (Z-TONETM) control (only for Instrument Input). These features allow for unique possibilities for tone shaping your instruments.

Connecting Microphone:
Connect a condenser microphone, dynamic microphone, or ribbon microphone to the XLR Combo type input socket on the front panel of the AXE I/O ONE.

Connecting Instrument:
Connect your instrument (e.g., guitar) to the XLR Combo type input socket on the front panel of the AXE I/O ONE.

Connecting Loudspeakers and Headphones:
Connect your loudspeakers and headphones to the main Outputs 1-2 and headphone output respectively.

Direct Monitoring:
Use the monitor knob to blend your input signals with the playback streams from your computer for zero latency monitoring.

Control Software:
Use the control software to adjust various settings and features of the AXE I/O ONE such as interface view, controller tab, and more.

Specifications:
Refer to the user manual for detailed specifications of the AXE I/O ONE.

Warranty
Activate your warranty by registering your AXE I/O ONE at **www.ikmultimedia.com/registration**.

Support and More Info:
For technical support and more information, refer to the user manual or visit **www.ikmultimedia.com/support**.

AXE I/O ONE
Thank you for purchasing AXE I/O ONE.
Your package contains:

- AXE I/O ONE
- USB-A to USB-C cable

IK Multimedia's award-winning AXE I/O premium audio interface sets a new standard for guitar-oriented recording, with powerful tone shaping and revolutionary ways to integrate with your real pedals and amps.
AXE I/O ONE delivers the same great features in a super-compact 1 in / 3 out audio interface. Track pristine vocals through the included PURE mic preamp, explore a massive range of electric guitar tones via IK's ground-breaking Z-TONE instrument input, and enjoy easy reamplification with the onboard AMP out.
AXE I/O ONE combined with the massive included software bundle, is a world-class studio that fits into your guitar case.

Register your AXE I/O ONE
By registering, you can access technical support, activate your warranty and receive free JamPoints™ which will be added to your account. JamPoints™ allow you to obtain discounts on future IK purchases! Registering also keeps you informed of all the latest software updates and IK products.
Register at: **www.ikmultimedia.com/registration**

## AXE I/O ONE overview

Top panel
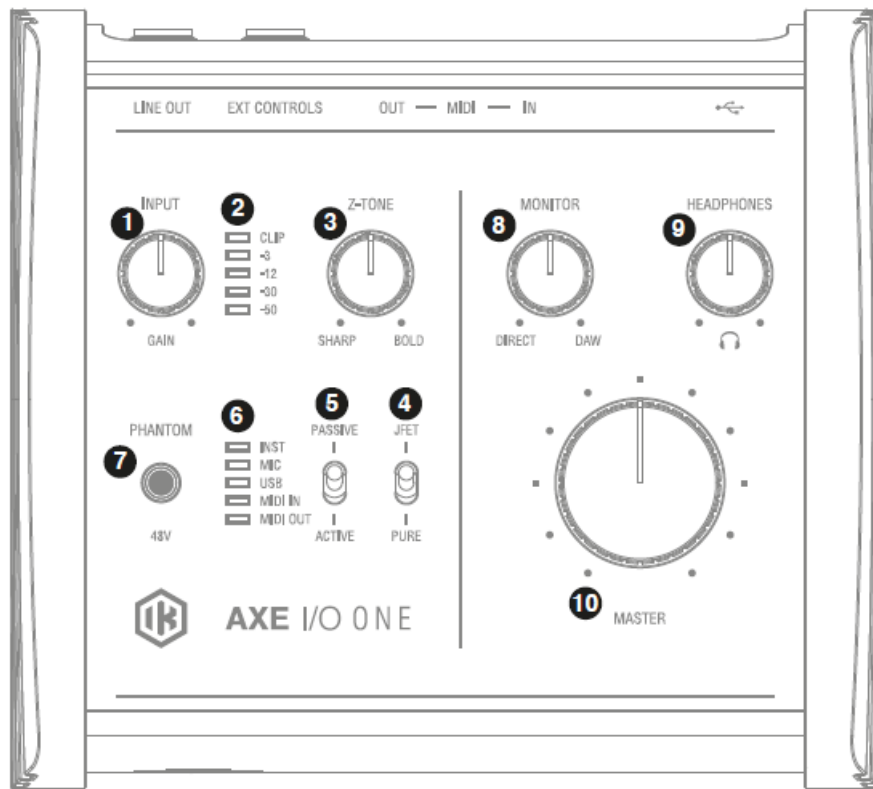
1. GAIN – adjusts the input gain for the signal at the input.
2. Peak Meters – the input has a dedicated 5-segment peak meter, with 1-second hold on CLIP, that indicates the level of the input signal.
3. Z-TONE™ – Variable impedance control – the front control named Z-TONE™ allows you to change the input impedance on the instrument input allowing for unique possibilities for tone shaping your instruments.
4. JFET/PURE – Preamp topology selector – this selector allows you to select two different preamp topologies for your connected instrument: JFET preamp type and Pure preamp type.
5. PASSIVE/ACTIVE – Pick-Up selector – this selector allows you to match the type of pick-up installed on the connected instrument.
6. MIDI IN/OUT LEDs – these LEDs illuminate when MIDI data is received from/transmitted to the MIDI port. USB LED – this LED illuminates when the unit is recognised by the computer to which it is connected. INST, MIC LEDs – active input indication with auto select. If no connection is made, or if an XLR is connected to the Combo input, the MIC input will be activated, and the corresponding LED will light up; if an instrument is connected to the Combo input, the INSTRUMENT input will be selected and the corresponding LED will light up.
7. 48V – This switch enables 48V phantom power for the XLR microphone input. The switch illuminates when phantom power is selected.
8. MONITOR – the Monitor knob allows you to blend your input signals with the playback streams from your computer. This allows you to monitor your input signal with zero latency. If the knob is positioned at 12 o'clock, the input signal and the playback stream will be equally balanced. Turning the knob to the left will increase the level of the direct signal; turning to the right will increase the level of the playback stream from the DAW. This control works both for Outputs 1-2 and Headphones.
9. HEADPHONES – allows you to control the headphone volume.
10. MASTER – main output level control – this control adjusts the level at Outputs 1 and 2 on the rear panel.

Front panel
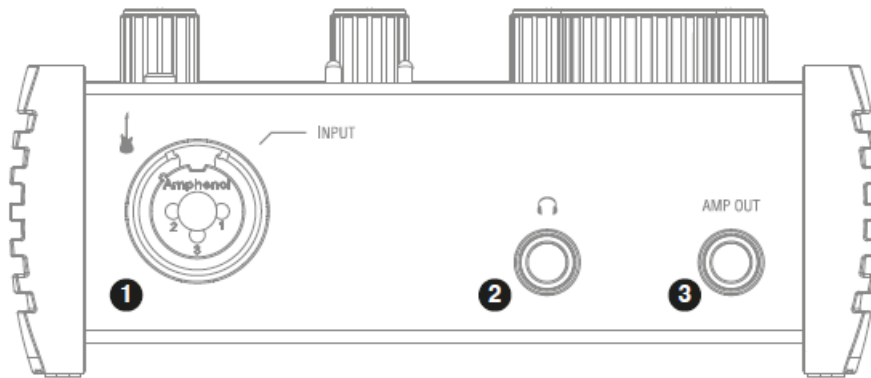
1. MIC/INST IN – XLR Combo type input socket – connect microphone or instrument (e.g., guitar).
2. HEADPHONE OUT – connect one pair of headphones to the 1⁄4" (6.35 mm) TRS jack sockets. The headphone outputs always carry the signals that are currently routed to outputs 1 & 2.
3. AMP OUT – this is a third 1/4" physical unbalanced, floating output with selectable ground lift (controlled with software). It is independent from main Outputs 1-2. This output is specifically designed to allow the interface to feed guitar amps or stomp pedals without the typically associated risk or hum or buzzing noises caused by ground loops or mismatched levels and impedances.

Rear panel
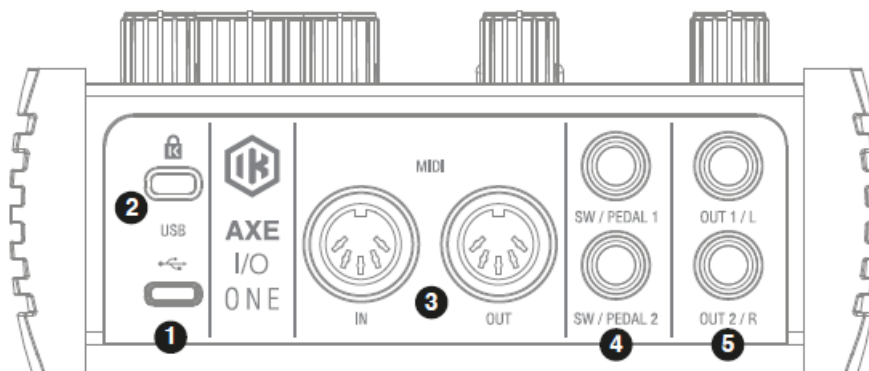
1. USB port – Type C connector – connect the AXE I/O ONE to your computer with the supplied cable
2. Kensington security lock – secure your AXE I/O ONE to a suitable structure if desired.
3. MIDI IN/OUT – standard 5-pin DIN sockets for connection to external MIDI equipment.
4. EXTERNAL CONTROL – use these 1/4" (6.35mm) jacks to connect external controller pedals (single or dual switches, continuous expression pedals). MIDI messages sent are freely assignable from the "Control Software".
5. LINE OUTPUTS 1/L and 2/R – Outputs 1/L and 2/R are balanced and floating analogue line outputs on 1⁄4" (6.35 mm) jack sockets; use TRS jacks for a balanced connection. Outputs 1/L and 2/R will normally be used to drive the primary monitoring system.

Installation and setup

Software installation

All software required by the AXE I/O ONE is available for download from the IK Multimedia website (**www.ikmultimedia.com/products/axeioone**). By downloading the "AXE I/O ONE Drivers and Control Software" you will find:

MAC users: the installer containing the AXE I/O ONE Control Software.

Windows users: the package includes the AXE I/O ONE Control Software and the necessary drivers for the interface.

1. Using your web browser, go to **www.ikmultimedia.com/products/axeioone** and go to the Downloads section.

2. You can now download the "AXE I/O ONE Drivers and Control Software" file (Mac and Windows versions available).

3. Download and install the "AXE I/O ONE Drivers and Control Software" version (Mac or Windows) appropriate for your computer and follow all on-screen instructions.
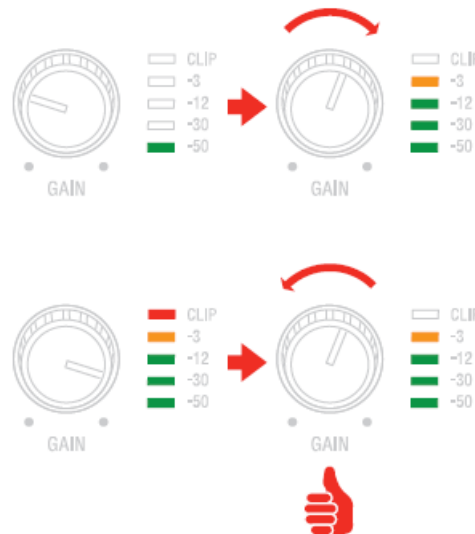


4. When the installation is complete, restart your computer.

5. After restart, connect the AXE I/O ONE to your computer with the supplied USB cable.

Setup

1. Download and install the AXE I/O ONE Drivers and Control Software as described above.

2. Connect the AXE I/O ONE to your computer with the supplied USB cable.

3. You can connect instrument or microphone to the Combo input and set its gain with the gain knob on the top of the interface.

4. Connect speakers, amplifiers or other line devices to the balanced outputs on the rear panel of AXE I/O ONE.

5. If needed, you can connect external MIDI devices to the physical MIDI ports (Input/Output).

Dedicated guitar features

Direct amplifier output & Re-Amplification

in from MIC   RE-AMPLIFICATION
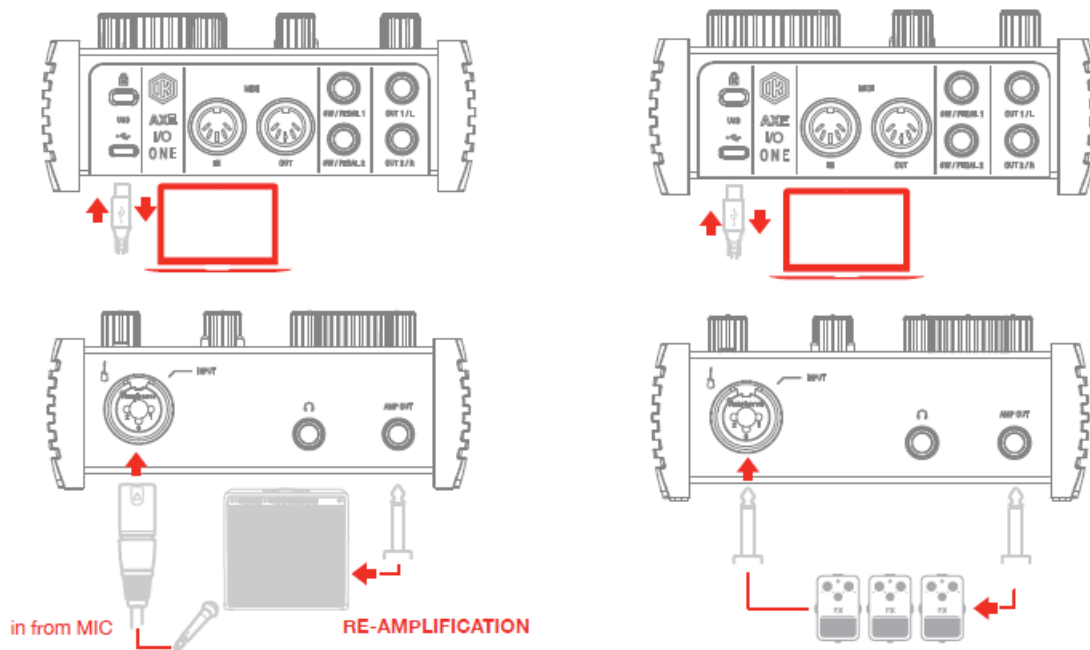
Among the features that make AXE I/O ONE the definitive guitarist interface is the re-amplification feature. The "AMP OUT" is a third physical output which is independent from main Output 1-2. With this output, you can feed a DI recorded guitar to external analogue stomps or a real amplifier, still being able to monitor the session from main Output (1-2). The external stomps (or the milked amplifier) will be connected back to Input to return into the DAW on a newly recorded track.

The AMP OUT is a floating unbalanced output topology specifically designed to properly interface with guitar or bass amplifiers of any kind for maximum signal fidelity and integrity. This ensures the immunity from noises caused by ground loops with the Amps, so actually allowing reamping without the typical associated noise/hum issues.

JFET / PURE input (only for Instrument Input)
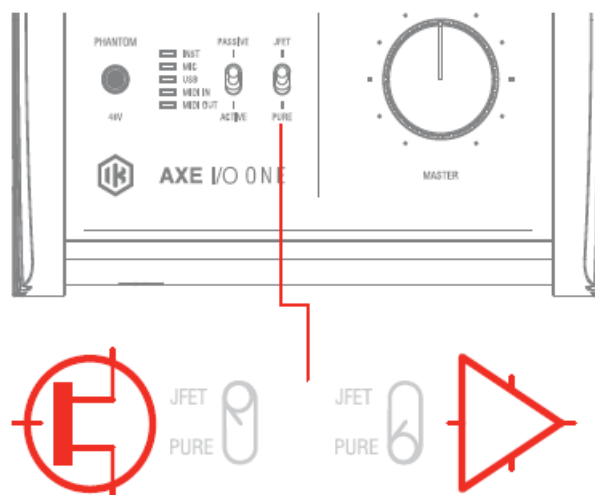
Thanks to the front panel selector it is possible to select two different preamp topologies for your connected instrument: JFET preamp type and Pure preamp type.

The discrete JFET (field-effect transistor) circuitry adds a tiny bit of color and harmonics to the signal, giving your instruments some added warmth.

Pure circuitry results in a more linear response featuring the absolutely cleanest signal path possible, for best transparency and clarity.

Each amplifier topology offers complimentary sonic performance to the other, and both are widely used in professional recording and stage work. Note: this control only works when the Pickup selector is in the Passive position.

Pick-Up selector (only for Instrument Input)
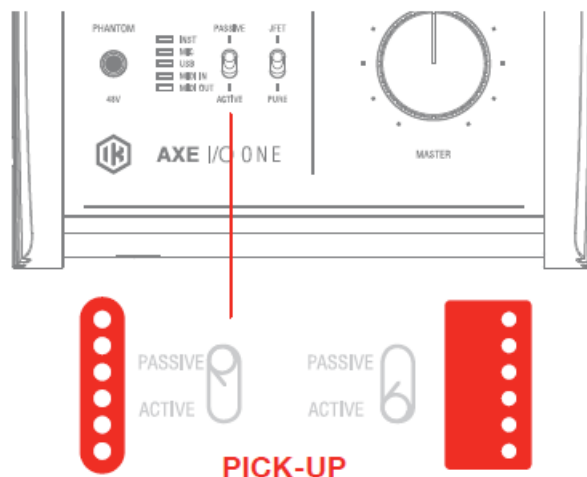
AXE I/O ONE works perfectly with both Passive and Active guitar or bass pickups, having independent circuitry that suits perfectly both topologies. Passive electric guitar pickups exhibit significantly higher output impedance than the active counterpart, among other significant tone differences, but neither of the two is "better" or "worse" than the other: indeed they have different behaviors. To properly couple this diversity of guitar pickups in the most musically pleasing manner, AXE I/O ONE offers a pickup selector that allows the artist to select between Active (when using an active pickup) and Passive (when using a passive pickup).

Variable impedance (Z-TONE™) control (only for Instrument Input)
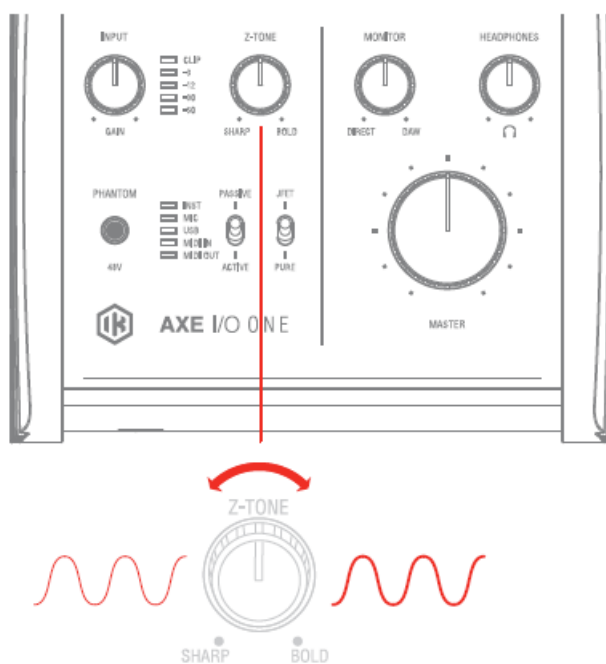
All passive pickups (being them single coil, humbucker, split, etc..) have a certain sound character that is also determined by the loading impedance. The Z-TONE™ control allows you to change the input impedance on the instrument input therefore providing a very creative way of shaping the tone of your instruments.

The beauty of this system is that it allows you to discover tonal shades from your instruments that you have never heard before, by shaping the tone right at the source, within the pickups, instead of what is normally done by using post-processing tools of any kind.

Feel free to experiment without rules with this knob! You will find your tone becomes generally more thick and bold by reducing the impedance (control is moved clockwise) and, on the other hand, more crisp and sharp when rotated counter-clockwise.

For example if you find your high gain tones to be too harsh, try setting this control at mid position, and you'll experience what the Z-TONE™ can magically do.

If you're recording a bass (with passive pickups) and find it sounds a bit thin, try the same. The sound will immediately feel more bold, solid and bigger.

The key here is experimentation! Feel free to check it out on your instruments, on various configurations, the possibilities are really endless.

Settings start from the highest impedance value (named "Sharp") to the lowest impedance value (named "Bold")

The Z-TONE™ circuit only works with passive pickups of any kind.

Using it on active pickups will not provide any significant useful change to the sonics of the instrument.

Note: AXE I/O ONE is very useful for feeding analogue stomp boxes from DAW tracks using the AMP output. The best way to get the Stomp signal back into the DAW is by using the Instrument input. This way the Z-TONE™ circuit will also be very useful because most vintage stomps can actually change the way they sound depending on the load impedance, so experimentation in this usage is very welcome as well.

External control

Connect up to two external controllers here to send MIDI control messages. You can use any available "momentary" or "sustain pedal" type foot switch that includes a 1/4 inch connector. Both normally open and normally closed switches are supported. AXE I/O ONE also support continuous expression pedals for controlling real time parameters like Wah, Volume, FX depth etc. Any 1/4" TRS connector expression pedal will work with AXE I/O ONE. MIDI messages associated with these controllers are freely assignable from the "Control Software".

Setup your DAW

The AXE I/O ONE is compatible with any Windows-based DAW that supports ASIO or any Mac-based DAW that uses Core Audio. After installing AXE I/O ONE Control Software and connecting the hardware, you can start using your AXE I/O ONE with your DAW.

It is possible that your DAW may not automatically select the AXE I/O ONE as its default I/O device. In this case, you must manually select the AXE I/O ONE as the audio hardware on your DAW's Audio Setup page. Please refer to your DAW's documentation (or Help files) if you are unsure where to select the ASIO/Core Audio driver.

Once the AXE I/O ONE is set as the preferred Audio Device in your DAW, the single input and the 3 outputs will appear in your DAW's Audio I/O preferences.

Connecting microphone

Always connect microphones to AXE I/O ONE with XLR-to-XLR balanced cables. This will ensure a pristine and clean performance from your microphone with AXE I/O ONE.

NOTE: In your audio software, select the AXE I/O ONE as the input source of the track you will be recording to. Adjust the channel gain knob until you have a sufficient audio signal without clipping.

Condenser microphone

Most condenser microphones require external 48V phantom power. If phantom power is ON, switch it OFF, and then connect your microphone. Turn phantom power ON only after the microphone is connected. Once it's turned ON, check that the phantom power LED has become red.

Dynamic microphone

Before connecting dynamic microphones make sure that phantom power is turned OFF. Check that the Phantom LED is turned off.

Ribbon microphone
Before connecting a ribbon microphone, turn OFF phantom power and check the microphone's operating instruction manual to see if it requires it. Most ribbon microphones don't require phantom power, and some can even be damaged by it. If you're in doubt just leave it OFF. If the microphone won't work, check its user manual, it may need phantom power.

Connecting instrument

Connect your guitar, bass or any other mono instrument to the instrument input on AXE I/O ONE using a 1⁄4" plug unbalanced (TS or "mono") guitar cable.
Please refer to Section 3 of this manual for the complete description of features dedicated to the instrument input.
NOTE: In your audio software, select the AXE I/O ONE as the input source of the track you will be recording to. Adjust the channel gain knob until you have a sufficient audio signal without clipping.

Connecting loudspeakers and headphones
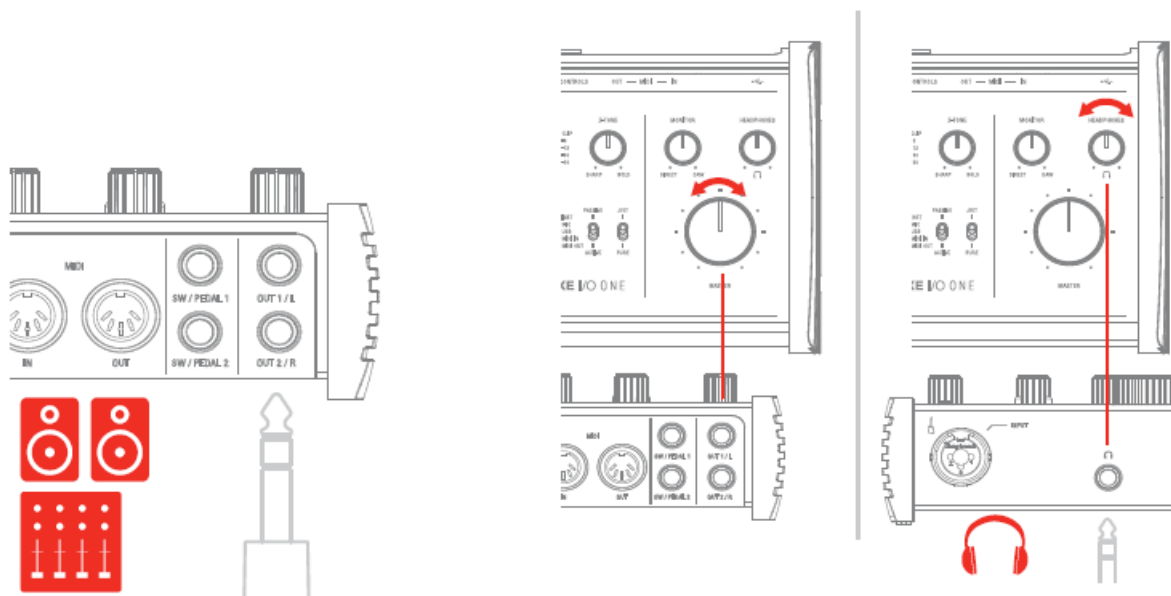
The 1/4" jack outputs 1/L and 2/R on the rear panel will normally be used to drive monitor speakers. Self-powered (active) monitors incorporate internal amplifiers, and may be connected directly. Passive loudspeakers will require a separate stereo amplifier; in this case, the rear panel outputs should be connected to the amplifier's inputs.
Line outputs 1/L and 2R are electronically balanced and floating and will automatically compensate the level when connection is balanced or unbalanced.
On the front panel of AXE I/O ONE is present one 1/4" (6.35mm) jack socket where you connect a pair of headphones whose level can be controlled with the headphone knob.

Direct monitoring

When recording an audio signal into your audio software, there is often a slight delay before it reaches the outputs. This delay, called latency, is caused by the computer processing time required to process the audio. Since this delay can be distracting, AXE I/O ONE provides a direct monitoring path from the inputs to the outputs, and this is controlled by the Monitor knob. The Monitor knob allows you to blend your input signals with the playback streams from your computer. This allows you to monitor your input signal with zero latency. If the knob is positioned at 12 o'clock, the input signal and the playback stream will be equally balanced. Turning the knob to the left will increase the level of the direct signal; turning to the right will increase the level of the playback stream from the DAW.
When Monitor is set to DIRECT, make sure that any software monitoring option for direct (or "low latency") monitoring is disabled. Disabling low latency monitoring prevents "double-monitoring" of input audio signals when using the Direct Monitoring feature. When "double-monitoring" occurs, there will be an increase in volume and an undesirable "phasing" sound. For more details about its monitoring function, refer to the documentation for your

audio software.

IMPORTANT: Always makes sure MONITOR knob is set fully clockwise (DAW) when connecting microphones. This is because even if your DAW is not running or does not have an active recording track, loud feedback could occur if your monitoring level is high and the MONITOR knob is set on DIRECT.

Control software

This is a macOS and Windows software program that controls all the functions of the AXE I/O ONE, also providing additional information about the status of AXE I/O ONE. From this software you will have extended and comprehensive metering, have control over output levels, sample rate, MIDI setup, and other important AXE I/O ONE options.
To open the Control software:
After installing the Control software on your computer (refer to Section 2.1 of this manual for more information) click the icon on your desktop to launch it.
Assuming that your AXE I/O ONE interface is connected to your computer with the USB cable, the Control software GUI (Graphical User Interface) will appear as shown on the sections below. The green State 'LED' at the screen top left should be illuminated; this confirms that the AXE I/O ONE interface is connected and properly working.

Interface view

State. This LED shows when an AXE I/O ONE unit is connected and active.
MIDI In/Out. these LEDs shows when there is MIDI activity on the AXE I/O ONE physical MIDI ports.
Sample Rate. Here you can set the working sample rate for the AXE I/O ONE unit, from 44.1 kHz to 192 kHz. Remember that in most cases, DAWS and host applications will likely control this value by their end, not allowing it to be forced differently. For this reason, you might see this value return to its previous state when you attempt changing it.
To Amp Out. When activated, this button routes the Instrument Input directly to the Amp Out with zero latency.
Audio Input section. Here you can see the input channel active source (Instruments or Mic) and monitor the level on high precision peak meters. You can also switch 48V phantom power on and off. Remember that phantom power will only be applied to the XLR input.
Audio Output section. Here you can see the output channels levels on precision peak meters, you can adjust the output levels of all outputs with the large sliders, or you can quickly mute each output individually.
GND LIFT. The Amp Output is a specially designed floating output made to drive amplifiers and sensitive vintage stomps without the typically associated ground loop noises, hum and buzzes. Depending on what else is

connected to the AXE I/O ONE and what grounding scheme is implemented in the setup the amp connection can be cleaner with GND LIFT active or not active. The default position is GND LIFT, with lift active, but if you hear some buzz or noise when connecting an high gain guitar amp, try switching off the GND LIFT.

Controller tab
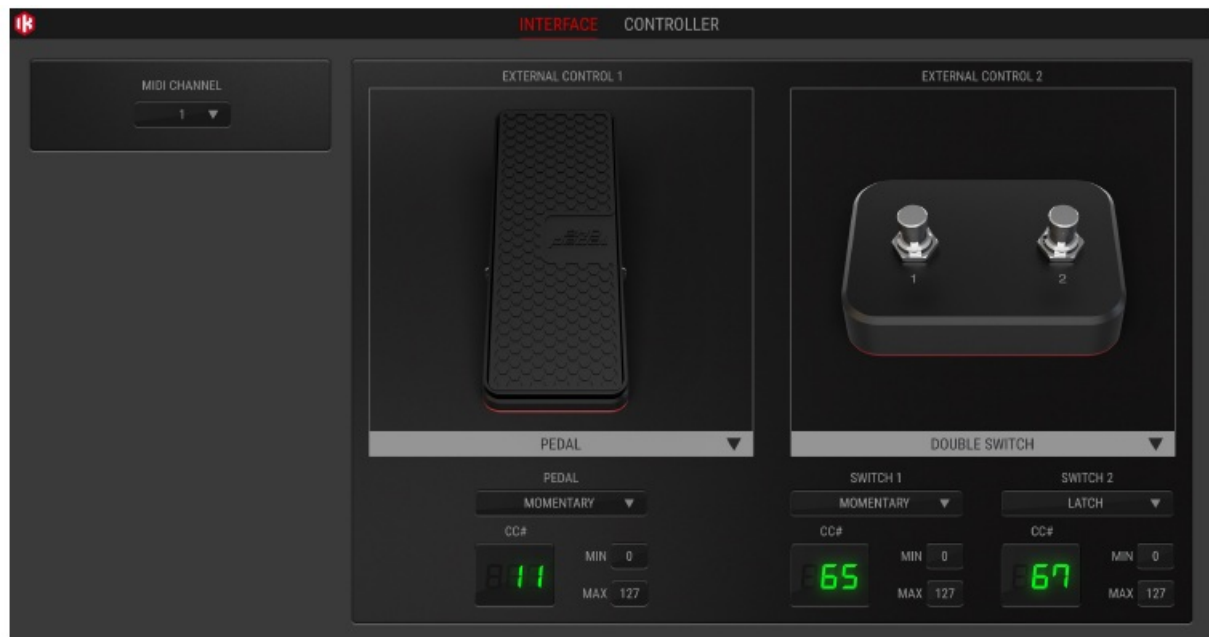
The Controller tab gives you control over the 2 controller inputs. Set behavior, MIDI channel, MIDI CC#, minimum and maximum values, and more, to dial in the best settings for whatever application you want to control.

Specifications

Common

- AD and DA resolution: 24-bit
- Sampling rate: 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz and 192 kHz
- Host connection: USB Type-C socket

Mic Input

- Configuration: Class-A discrete differential microphone preamp, pin 2 hot
- Input impedance: 4 kOhms differential
- Input level, min gain: 0 dBFS is obtained with a +7 dBu signal at the XLR input
- Input level, max gain: 0 dBFS is obtained with a -42 dBu signal at the XLR input
- Frequency response: From 9 Hz to 45 kHz within 0.5 dB (96 kHz sample rate)
- Dynamic range: 108 dB(A)
  THD+N: -104 dB(A) at -10 dBFS

Instrument Input

- Configuration: Multiple topology instrument preamp
- Input impedance, PASSIVE mode: Variable from 1 MOhms down to 2.2 kOhms

- Input impedance, ACTIVE mode: 10 kOhms
- Input level, min gain: 0 dBFS is obtained with a +10.5 dBu signal at the TS input
- Input level, max gain: 0 dBFS is obtained with a -19 dBu signal at the TS input
- Frequency response: From 11 Hz to 45 kHz within 0.5 dB (96 kHz sample rate)
- Dynamic range: 108 dB(A)
- THD, PURE mode: 0.0018 % (-1 dBFS input)
- THD, JFET mode: 0.42 %

Line Outputs 1-2 (Monitor)

- Configuration: Electronically balanced
- Output impedance: 150 Ohms balanced, 75 Ohms unbalanced
- Output level: 0 dBFS corresponds to +12.8 dBu
- Frequency response: From 10 Hz to 42 kHz within 0.5 dB (96 kHz sample rate) Dynamic range: 108 dB(A)
- THD @ -1 dBFS: 0.0015%
- THD+N: -95 dB(A) at -1 dBFS
- Channels 1-2 crosstalk: 109 dB(A)

Output 3 (Amp output)

- Configuration: Unbalanced, floating, with selectable ground lift
- Output impedance: 75 Ohms
- Output level: 0 dBFS corresponds to -3.5 dBu
- Frequency response: From 20 Hz to 44 kHz within 1 dB (96 kHz sample rate) Dynamic range: 108 dB(A)
- THD+N: -93 dB(A)

Headphone Output

- Output impedance: Virtually ideal source (zero Ohms) until clipping
- Maximum output level: +5 dBu into 50 Ohms load (approx 40 mW)
- Frequency response: From 1 Hz to 44 kHz within 1 dB (96 kHz sample rate)
- Dynamic range: 108 dB(A)

Warranty

Please visit: **www.ikmultimedia.com/warranty** for the complete warranty policy.
Support and more info **www.ikmultimedia.com/support**
https://www.ikmultimedia.com/products/axeioone

Regulatory

www.ikmultimedia.com
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Documents / Resources

AXE I/O ONE USB audio interface with advanced guitar tone shaping USER MANUAL ◉	**IK MULTIMEDIA AXE I-O ONE USB Audio Interface** [pdf] User Manual AXE I-O ONE, AXE I-O ONE USB Audio Interface, USB Audio Interface, Audio Interface, Interface

References

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