

# UNiKA

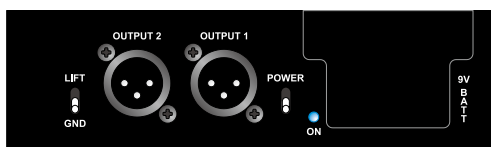
PROFESSIONAL AUDIO

# USER GUIDE

## Box Series

Made in Taiwan

# DI-USB



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## OVERVIEW

DI-USB is a high-resolution stereo signal converter, in addition to the input signal from the high-impedance general wired instrument's TRS (1/4", 1/8" and XLR); you can also use the USB to convert the digital audio file in the computer to analog signal then transmitted to the mixing console, active speaker or PA system.

DI-USB various signals obtained from the input, convert it to analog signals and directly sent to the amplifier circuit (Amplifier) to produce a low-impedance balanced stereo signal.

The volume control on the front panel can be used to adjust the volume of the output as well as the volume of the headset, and the level of the output can be adjusted to match the MIC or LINE level of the input device such as: Audio mixing console, recording system or active speaker and so on.

We recommend that you read carefully through the manual in order to familiarize yourself with the DI-USB Box features so you can get the most out of it.

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If you still need further clarification, please send email to us and we will do our very best to reply you in short order.

## FEATURES

- Stereo USB Laptop Direct Box.
- High impedance direct input for electronic musical instrument signal feed.
- High performance 24bit digital audio converter.
- Ready to use without the need of a driver.
- Standard USB type-B port for connection to computer.
- 3.5mm analog headphone output to check signal.
- Level control for outputs and headphone.
- The direct input signal will be mixed to the USB stereo signal at the output stage.
- A Mono-Sum switch to mix the left and right channel signals to form a monaural signal in both output channel.
- Selectable 3 steps attenuator for Hi-Z direct input.
- Accept power from 9V battery or 5V from USB.
- 2 channel XLR Balanced Low-Z output with isolation transformer.

The DI-USB is a high-resolution stereo digital audio converter (DAC) and direct box that is designed to connect to any computer system to seamlessly transfer digital audio to analog.

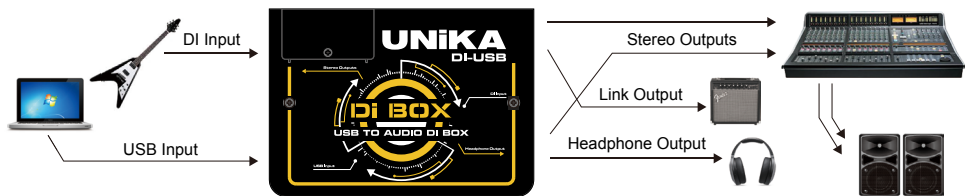
A professional Hi-Z direct input is also equipped, this is most commonly used with guitar pickups or keyboards, it also can be fed either from a line-level output from the head (pad set to -20dB) or from the amplifier power output. A stereo pair of balanced XLR audio outputs with adjustable level control then feeds the signal to a microphone preamplifier, PA system, mixing console or even a powered speaker!

Made for plug and play simplicity, the DI-USB will automatically be listed as an available sound card in the audio settings in all popular operating systems, including Windows 7/8, Windows 10 and Mac OSX.

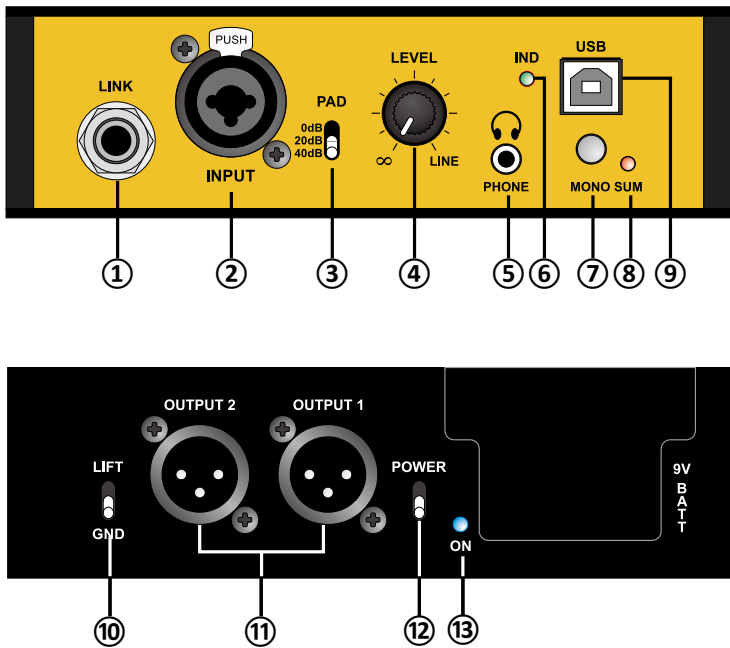
Connection to a computer is accomplished through a standard USB type-B port. Digital-to-analog conversion can be monitored on headphones through the 3.5mm analog output jack to check signal quality and level before connecting to a sound system. Two isolated output transformers are equipped to eliminate any hum or buzz caused by ground loops. To further reduce susceptibility to noise, this is augmented with a ground lift switch that lifts pin-1 on both XLR jacks.

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## AUDIO CONNECTION



Audio connection of the UNiKA DI-USB Box



- ① ¼" TRS Link output socket, internally parallel wired to the input.
- ② Input:  
XLR-¼" TRS Combo jack, unbalanced Hi-Z input used to connect instruments.
- ③ Input PAD:  
0dB, -20dB & -40dB selectable 3 steps attenuator reduces the input sensitivity to prevent overload.
- ④ LEVEL Control:  
Used to set the overall output level also the headphone output level changes simultaneously.
- ⑤ HEADPHONE:  
Mini 3.5mm (1/8") TRS headphone output is used to check the output from the digital source for trouble shooting.  
Works with ear-buds and standard headphones.
- ⑥ USB Indicator:  
This indicator will illuminate when the USB communicate with the computer has established.
- ⑦ Mono Sum switch:  
When the switch is depressed, the left and right channel signal will be mixed to form a monaural signal in both output channels.
- ⑧ Mono Sum indicator:  
The LED light up show that the Mono-Sum mode is in use.
- ⑨ USB Port:  
Connects from the PC or Mac using a TYPE B cable. This port delivers the digital audio signal and power to the DI-USB Box which automatically recognizes the sample rate and bit depth.
- ⑩ GROUND LIFT:  
Used to help eliminate hum and buzz caused by ground loops, lifts pin-1 on both XLR output connectors.
- ⑪ 2 CHANNEL OUTPUTS:  
2 channel transformer balanced outputs, XLR-3 male connector, pin layout follows the AES format.
- ⑫ POWER switch:  
Used to switch the power ON/OFF.
- ⑬ POWER ON/OFF LED indicator.

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The DI-USB is designed to be plug and play for easy use. The following describes basic set-up procedures and connections.

## USB Connection

Before connecting, make sure all of the audio levels are turned down or system is turned off; this helps to prevent clicks and pops from damaging more sensitive equipment when connecting and powering up.

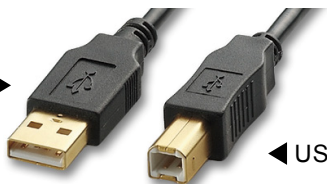
Turn on your computer; once initiated, connect a USB cable from your computer to the DI-USB Box. Note that the DI-USB employs a USB type-B connector which is standard for devices that are upstream from the computer; once connected, your computer will automatically recognize the DI-USB.

The DI-USB Box's IND LED will illuminate to let you know it is connected.

Go to your system settings/control panel and select the DI-USB in the Audio/Sound settings; save and close your system preferences, and open the audio playback program of your choice, select and play an audio file.

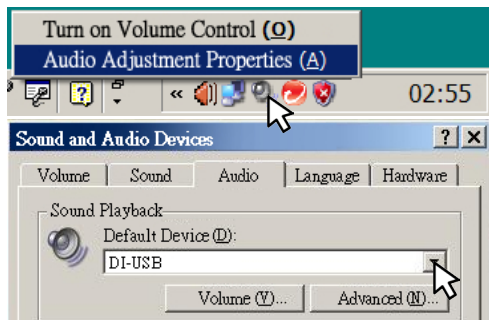
To check the audio, plug in a set of headphones or ear buds and listen. So set the level control to minimum (fully-counter-clockwise) and then increase slowly.

USB type A connect to  
the signal source computer ►



◀ USB type B connect to DI-USB

The generic drivers are compatible with most operating systems, including Mac OSX, Window XP, Windows 10 and Windows 7/8..

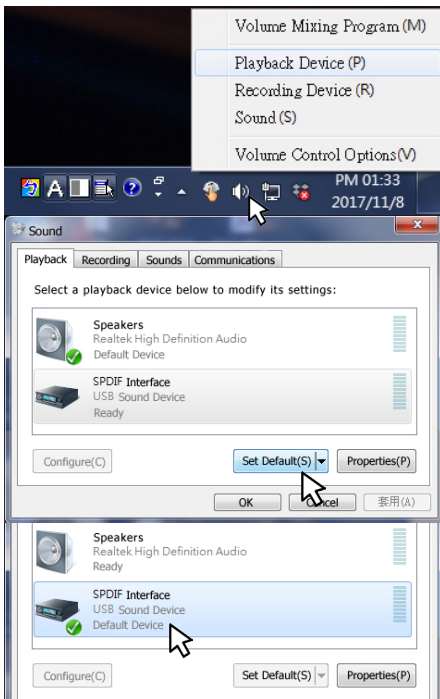


## WindowsXP

- ① Right click the speaker icon at the lower right of the task bar select [Volume Control Program].
- ② Select [Audio adjustment properties].
- ③ Select the "Audio" tap of [Sound and Audio Devices].
- ④ Select the [DI-USB] as the default sound playback device.

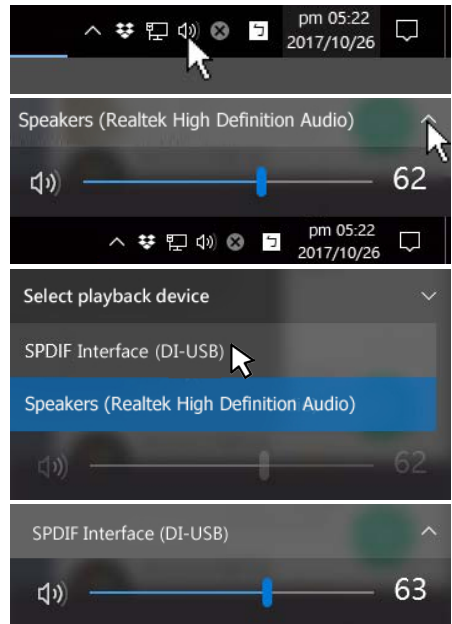
## Windows7

- ① Right click the speaker icon at the lower right of the task bar, Select the [Volume Control Program].
- ② Select [Playback Device]
- ③ In the [Playback] tab select the [Sound settings]
- ④ Select the [SPDIF] interface (DI-USB) as the default output device.



## Windows10

- ① At the lower right of the task bar, right click the speaker icon and select [Playback Device].
- ② In the [Playback] popup manual, select [DI-USB] as the default audio output device.



The DI-USB Box's IND LED will illuminate to let you know it is connected.

To check the audio, plug in a set of headphones or ear buds and listen.

So set the level control to minimum (fully-counter-clockwise) and then increase slowly.

### Instrument direct input & Parallel link connection

The most common use of the direct input is with guitar pick-ups or keyboards. The optimal setting for this is most likely with the pad switch set to 0dB, although with some high-output pick-ups the performance of the direct input may be improved if the pad switch is set to -20dB to prevent possible clipping of the input signal.

The instrument is connected to the XLR-1/4" Combo jack socket, and a parallel link feed taken from the other jack socket to the instruments' own amplifier.

The direct input can also be fed either from a line-level output from the head (pad set to -20dB) or from the amplifier power output (speaker output, pad set to -40dB).

### Eliminating hum and buzz

The DI-USB Box is equipped with isolation transformers to eliminate hum and buzz caused by stray DC voltage and ground loops.

Computers, optical projectors and other consumer equipment can be particularly noisy, anyone that has incorporated audio with a projector knows that noise can be a serious problem, so transformers can be incredibly useful when combating system noise.

A ground lift switch on the outputs takes this one step further by lifting pin-1 on the XLRs. Computers are often the source for noise problems in audio systems, so greater care is certainly needed to keep things quiet.



## Using the headphone output

The Unika DI-USB is also equipped with a stereo headphone output. This headphone amplifier is controlled by the master output level control, and is designed to be used to check signal before plugging into a PA system.

Adjusting the level control on the DI-USB will affect both the XLR and the headphone output. The 3.5mm (1/8") output is designed for both ear buds and standard TRS stereo headphones where tip-left, ring-right and the sleeve is ground.

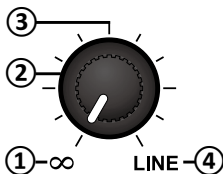


Be careful! The headphone output is set as loud as possible so that it can be monitored in a live concert environment. If you push the level too hard it may distort or cause hearing damage!

The UNIKA DI-USB Box is intended for use by professional audio engineers who are aware of the importance of listening at safe levels.

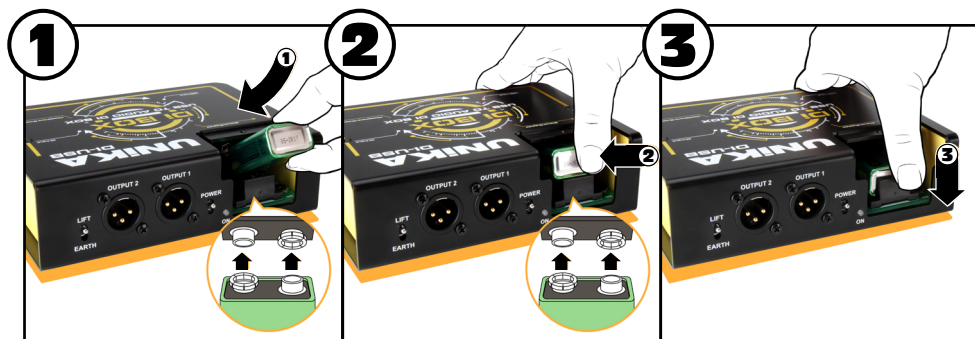
This same audio level control sets the output going to your PA or recording system. Once you have determined that the signal from the computer is OK, reset the level to 7 o'clock. Plug the XLR outputs to your audio system using standard balanced mic cables. Turn on the audio system, bring up the level and then turn up the level on the DI-USB Box.

To prevent mishap, always test at a low level.



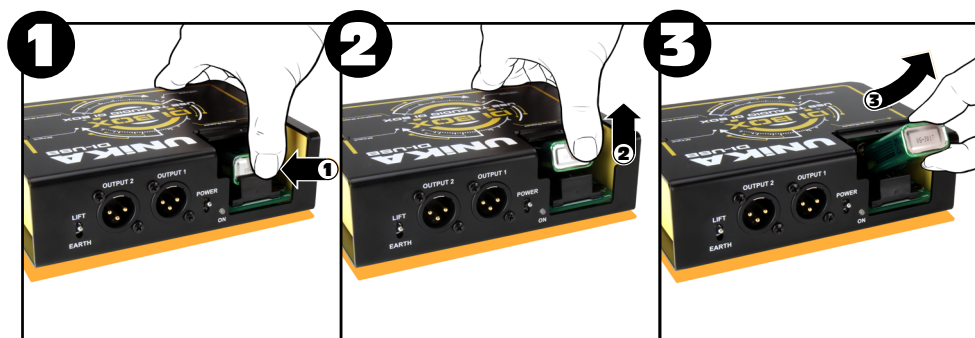
- ① 7 o'clock (marked  $\infty$  position) - Turn OFF
- ② 9 to 10 o'clock - MIC LEVEL (Direct box)
- ③ 12 o'clock – Instrument Level
- ④ 5 o'clock (fully clockwise) - LINE LEVEL

## HOW TO REPLACE DI-BOX BATTERY



Battery installation:

- ① Put the battery into the slot.
- ② Verify the battery polarity is correct and snap it in.
- ③ Press it down into the battery holder.



Battery removal:

- ① Press and hold the battery on its bottom end.
- ② Then pull to lift it up from the battery holder.
- ③ Lift off the battery.

## SPECIFICATIONS

(Specifications are subject to change without notice.)

USB compliance	USB 2.0 full speed, type B connector		
Bit depth	24bit / 16bit		
Sampling rate	44.1KHz / 48KHz auto sensing		
Sound file compatibility	WDM, MME, Core-Audio, ASIO and DirectSound		
Software compatibility	Vista/WinXP/Win7/Win8/Win10 and Mac OSX		
Frequency response	20Hz to 20KHz , +1/-1 dB		
Dynamic range	>90dB		
Noise floor	<-90dBu, unweighted 20Hz to 20KHz.		
Maximum output	+9dBu		
Total harmonic distortion	Less than 0.008% at 1KHz, 0dBu output		
Hi-Z Direct Input	Unbalanced, XLR/¼"TRS combo jack. (Pin-2 Hot, Pin-3&1 Ground).		
Link Output	Unbalanced, Parallel link output ¼"TRS jack for feeding to other equipment.		
Direct Input Attenuator	At 0dB	At -20dB	At -40dB
Direct Input Impedance	1 MΩ	47KΩ	47KΩ
Max. input level before Clip	+9dBu	+29dBu	+49dBu

SPECIFICATIONS

(Specifications are subject to change without notice.)

Output impedance	200Ω nominal, Transformer Balanced.
Analog output	Balanced transformer isolated ( XLR-M, Pin-1 Ground, Pin-2 Hot, Pin-3 Cold )
Headphone output	3.5mm TRS, (Tip-Left Ch. Ring-Right Ch., Sleeve-Ground)
Level control	Variable, works on headphone and XLR outputs
Ground lift:	Lifts pin-1 on both XLR outputs
DC Power:	derives power from USB, plug-in 9V battery or +20V to +48V Phantom power
Finish:	Durable powder coat
Size:	158mm (W) x 112mm (D) x 46mm (H)
Weight:	1.2Kg, 2.6lbs.
Construction:	14 gauge steel cabinet & chassis