

## GAODIMIC® Full Sound Range Audio DI Box ( AI180-DI )

- Two 6.35 interface inputs , and the input end can be selected as non-attenuation, or 20 dB or 40 dB attenuation.
- The output terminal has a Cannon interface and the circuit grounding is optional.
- Excellent performance in Frequency Response Characteristics of Full Range (20-24K Hz), without jumping.

### I. Product & Type

AI180-DI

1 CHANNELS



INPUT PORT ( 6.35mm )



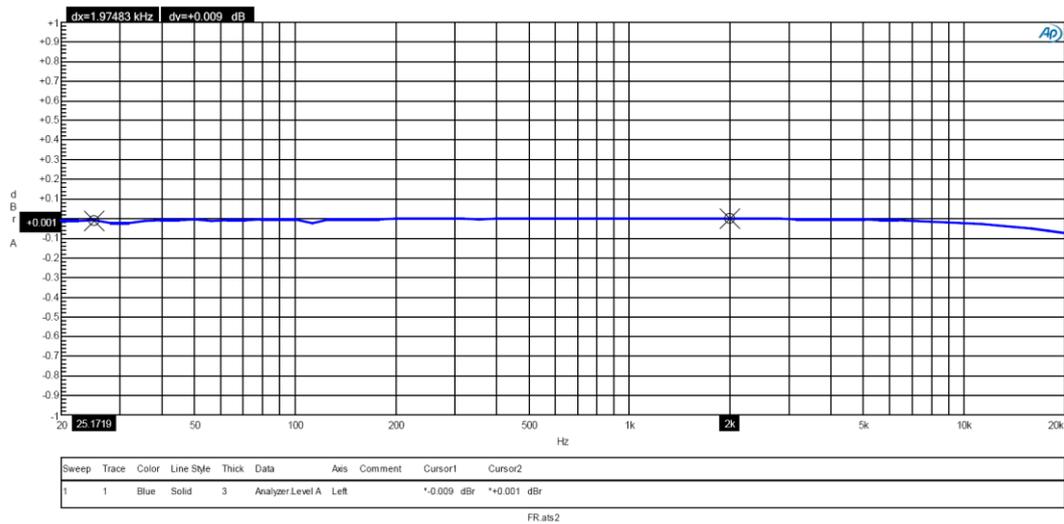
OUTPUT PORT ( 6.35mm & Cannon)

### II. Function

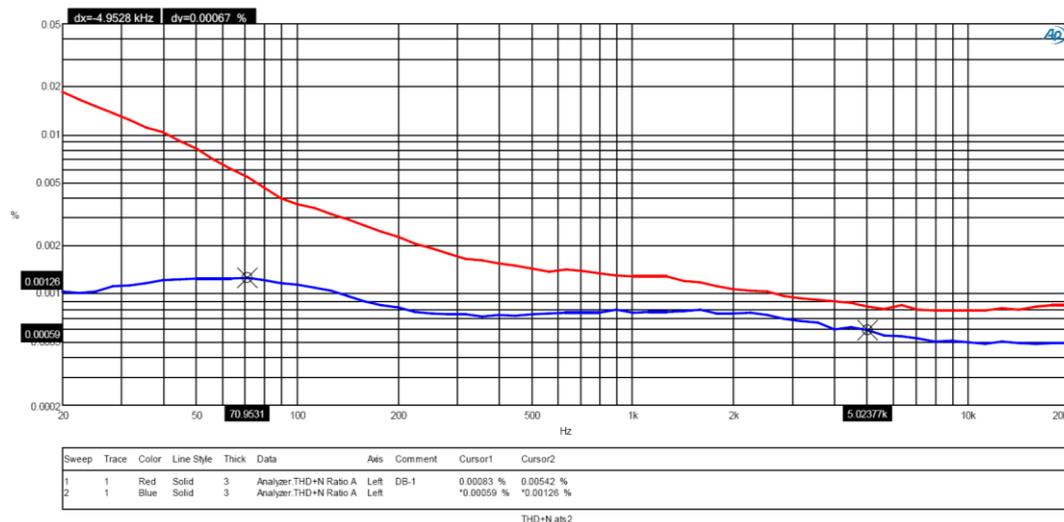
- DI box can convert unbalanced high impedance signals (such as guitar or keyboard output signals) into balanced low impedance signals (such as mixers) and obtain clearer tones with less noise.
- Converts the unbalanced signal to the balanced signal with the difference Kanodo Line, then, the signal transmission distance will be increased to 100M from 20M.
- Ground/lift switch: Noise can be eliminated by disconnecting the grounding wire between input and output.

### III. Characteristics

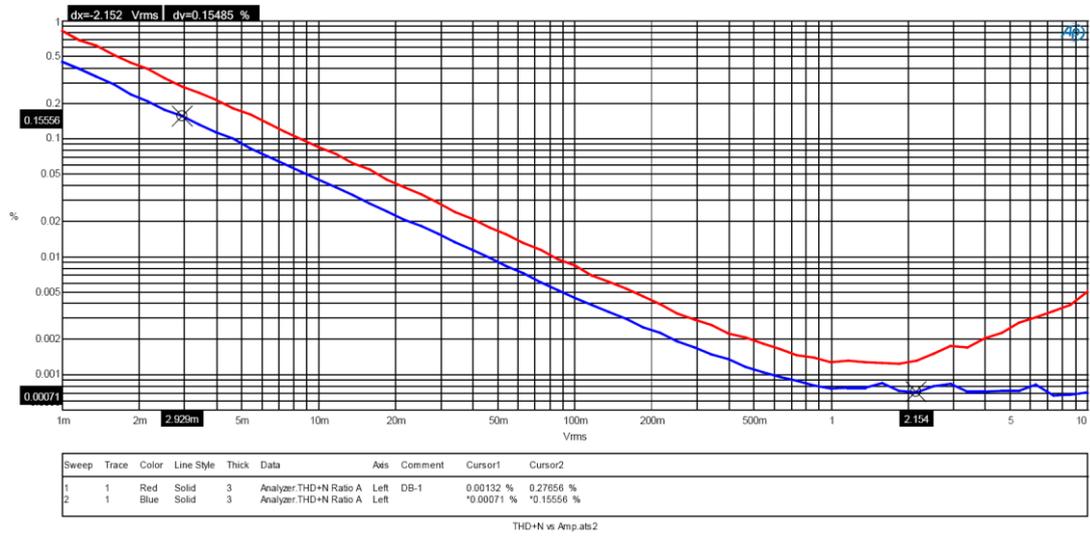
Frequency Response



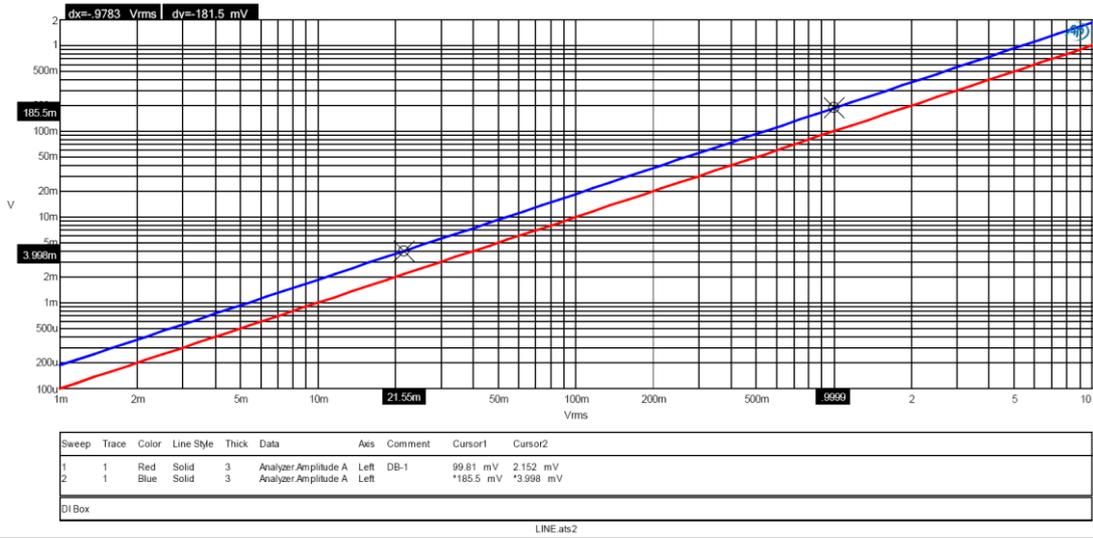
THD+N vs Frequency ( the line with mark of "X" is standard, the other one is for comparing )



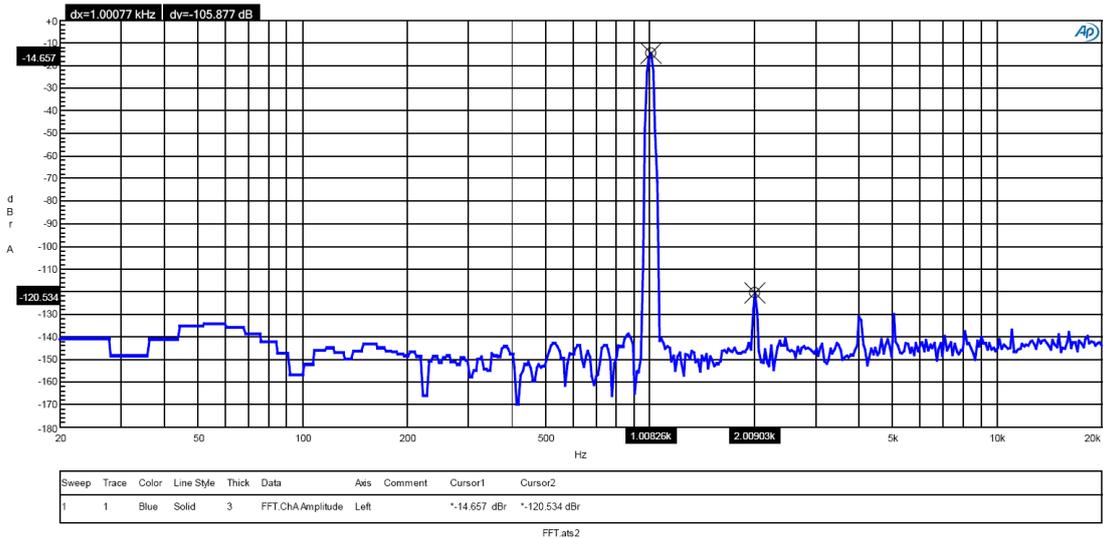
THD+N vs Voltage ( the line with mark of "X" is standard, the other one is for comparing )



Linearity (the line with mark of "X" is standard, the other one is for comparing)



FFT



#### IV. Parameters

<b>TYPE</b>	AI180-DI
<b>Channels</b>	1
<b>Frequency Response</b>	20Hz-20KH
<b>Primary</b>	<b>Secondary</b>
	600:600 (@1kHz)
<b>Proportion</b>	

<b>Transmission Gain</b>	0 / -20dB / -40dB
<b>Distortion</b>	0.00126%(@1V input); 0.0005%(@10Vinput)
<b>Frequency Response Deviation</b>	-0.075dB(@20Hz); 0.045dB(@20K Hz)
<b>Input Signal Selection</b>	N/A
<b>Shielding Ground Mode</b>	TSelection switch
<b>Call Mode Key</b>	N/A
<b>Core Transformer Components</b>	High Precision Transformer

**V. Usage Scenario**

**Scenario 1 - Between Mixer and Video Camera**



When the video camera and the mixer use external power supply, there is a potential between the difference power supply. It is necessary to use Audio isolator to eliminate noise and protect the mixer from burning out.

It is possible to disconnect mixer from the municipal power supply, but if the mixer connect to the video camera or other equipment, the audio isolator (protector) should be applied to protect the mixer’s safety.

**Scenario 2 - Between Mixer and Broadcast Vehicle**



On-site broadcast vehicle’s electricity is generated by diesel engines usually, and the power supply is virtual ground potential. On the other side, the mixer always be supplied by municipal electricity. There may be a huge ground potential pressure difference between the mixer and broadcast vehicle, which will produce current noise, even will cause impulse potential to destroy equipment.

Audio isolator (protector) should be applied to prevent current noise and to protect the mixers at both ends from burning out.

**Scenario 3 - Between Mixer and Musical Instruments**



During the performance of the band, the distance between the electric guitar and the mixer is longer (the cable is more than 10 meters), and the disturbance factor on the spot is uncontrollable. At this time, DI (isolator can be used for emergency response) is needed.

DI (Isolator) has three uses in this scenario:

- a. The unbalanced high impedance interface of the electric guitar is converted to the balanced low impedance interface. The matched impedance avoids the loss of bass signal and is more suitable for access to the mixer.
- b. Non-balanced transmission avoids the audio noise problem caused by long cables.
- c. With the audio isolator (protector), there is no current impact of ground potential difference between front and rear equipment, which prevents the impulse signal produced by the inserting or pulling out of the electronic instruments.

**Scenario 4 - Between Mixer and Computer ( Computer Connect with Large Screen)**



The switching power supply is used in the large screen. When the switching power supply is working, the high frequency eddy current (it usually be called as induction current) always be generated by the electromagnetic field in the metal of the wire. Because the large screen is connected with the computer video line, then, it leads to the accumulation of induced potential on the computer side, which is connected with the mixer through the computer audio line, thus releasing the physical conditions for the potential difference, which is expressed as current sound and even burn down the computer seriously.

Why does it usually burn down computers? Because we always like to insert the connector into the mixer first and then the computer, then, the fire shock will occurs at the side of the computer, and cause to burns down the computer . At this time, audio isolator (protector) is needed to protect the mixer and computer from breakdown and prevent the audio current noise.

**Scenario 5 - Long-Distance Transmission Between Mixer and Computer**



The 3.5mm audio output interface of the computer adopts unbalanced transmission, which is vulnerable to external electronic equipment and radio interference. The most common source is power lines, which produce buzzing noise if they are close to unbalanced cables. The second, old-fashioned non-LED stage lights (e.g. spotlights and dimmers) may also increase signal interference.

In those scenarios, it is necessary to add an audio isolator (protector) on the computer’s output side to convert the unbalanced signal into the balanced signal, so as to ensure that the long-distance transmission will not be disturbed.

**Scenario 6 - Between Mixer and Big Screen in KTV Room**



Large screen or projector display always be applied in some karaoke systems, and large screen and projector also be supplied by switching power supply, then, eddy current generates inductive potential, which forms inductive current after the connection of audio lines. Audio isolator (protector) is used to make the front stage and singing machine do not produce current noise.

Sometimes the current noise appears after the wireless microphone is inserted. The audio isolator (protecot) is necessary to insulate the receiver from the cabinet to eliminate the current noise.

**VI. Instructions**

- The equipment can be installed between the instrument and the mixer.
- This equipment adopts passive working mode and can be directly plugged in.
- It is mainly used for impedance matching, conversion between unbalanced signal and balanced signal. Its advantage is that it can reduce grounding noise from different DC offsets, and it is very helpful in solving the current sound and the “Buzz-Buzz” sound, which caused by different reference voltage between instrument and tuner or pre-amplifier. Passive DI box is the best choice for active instruments, such as electric guitar, keyboard, drum machine, etc.

