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Echo Audio Indigo DJx - The review

Echo Indigo DJX is an ExpressCard sound card for laptops which allows to use two independent stereo analogue outputs with support of resolution maintenance up to 24/96 bit and a potentiometer for volume control with an amplifier for headphones. Dual stereo output allows a Digital Jockey to be fully operational during the preview phase.

The contents of the box:

- Sound Card
- Plastic slot adaptor for computer with express card 54
- Adapter cable with gold-plated connectors Jack 1/8" stereo for dual RCA (red and white)
- 2 adaptors with gold-plated connectors Jack 1/4" for RCA
- Brief application guide
- Mini CD-Rom containing complete operation manual and driver



General hardware features:

- 2 gold-plated independent stereo analogue outputs 1/8"
- High-capacity and high-quality headphone output
- Analogue knob for headphones volume control
- High-quality digital-to-analogue converters
- Powered directly by ExpressCard slot
- ExpressCard slot (34 mm or 54 mm) required

Hardware features declared by the manufacturer:

- Digital signal processor (DSP) 24-bit Motorola

Frequency Response: 10Hz-20kHz, +-0.5dB
Dynamic range: 108dB A-weighted
THD+n at -3dbfs, 1kHz sine wave: <0.003% A-weighted
Nominal output level: -10dBV
Maximum output level: +7.3 dBu
Oversampling converters (128x)
24 bit data resolution maintained throughout signal path
Multiple sampling rates supported: 32k, 44.1k, 48k, 88.2k, 96k

Minimal System Requirements:

Windows XP o Vista (32-bit and 64-bit)
Macintosh OS X Tiger o Leopard
128 MB Ram (256 advisable)

Software features:

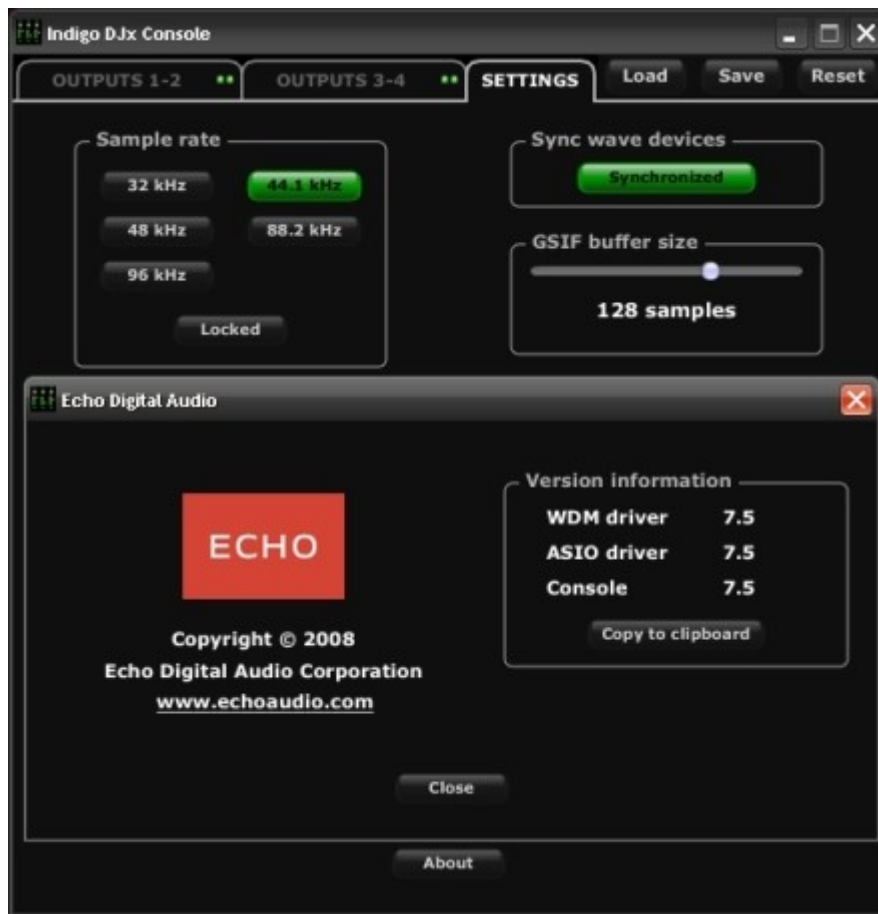
Software for console of measurements of levels
Supports pro Audio DJ and software - WDM Kernel Streaming, ASIO, GSIF (32-bit only)
8 "Virtual Outputs" – to run multiple applications simultaneously
Low-latency drivers



Each virtual output channel on the driver has the following features:

- Possibility of editing the name of the channel at one's discretion
- Pan for adjustment of the output in the right or in the left channel
- Indicator of the volume level in the right or on left channel
- Mute buttons to mute the channel
- Fader for volume adjustment
- Either graphic indication of the volume level or indication in decibels (dB)
- Gang button for linked adjustment of two channels - left and right.

The real analogue output channels also have volume control and mute buttons to mute channels.
The settings available for channels 1-2 shown on the picture above are the same for channels 3-4.



The last part of the panel allows you to adjust:

- Sample Rate

This is a measurement in Hertz of the number of times per second of an analogue signal being measured and saved in digital format (the default value is 44100 kHz).

- Sync Wave device

It is used basically by software developers who apply such tools as Visual Basic or Delphi and who would like the input and the output to be completely independent. If you do not have a good reason for shutting it down, it's better to leave this option enabled.

Besides, if you run many applications on a card and you cannot make it work, try to deselect this box.

- GSIF

This slide allows you to set the latency of GigaStudio in conditions of samples and to select the value that offers the best compromise between performance and reliability. These settings have no effect on other applications different from Giga Studio such as, for example, driver ASIO, WDM, and Core Audio.

You can save different configurations and reload them when you want owing to Load and Save buttons.

In addition to the buttons there are some quick keyboard commands:

- Ctrl + s – to save the current session
- Ctrl + o – to load the current session
- Ctrl + click on a volume fader - to adjust it to 0 dB
- Ctrl + click on the wheel – to set it in Pan Center
- Ctrl + click on one of the mute buttons - to mute or activate all channels together

You can also reset all faders of the panel to factory settings with help of the Reset button.

Installing the Drivers:

Follow the simple instructions in the manual enclosed, and everything will go smoothly. Install the driver, restart the computer and then connect the card which is ready to operate.

Remarks on Drivers:

A unique feature of Indigo DJX is the use of "virtual" exits. Actually the card has eight separate outputs, which are digitally mixed in the direction of four mono analogue outputs with help of the control panel of the card and its software on-board DSP.

On Windows, channels ASIO and WDM are mixed perfectly according to your wish, for example, you can use channels 1-2 and 3-4 in ASIO on software for DJs, such as Traktor, and use channels 5-6 for Winamp or Windows Media Player in WDM. You can also use, for example, channels 1-2 and 3-4 again with Traktor and channels 5-6 and 7-8 on Ableton Live, all in ASIO, thus maintaining a low latency.

On Mac, owing to Core Audio, you can use the same combinations owing to the native functions of systems OSX Tiger and Leopard.

Useful tips on possible connections:

Indigo DJX offers two independent stereo analogue outputs on connector Jack 1/8 "with 24-bit/96kHz converters of high quality.

With this soundcard the most common connections which a DJ could make are:

1) The first stereo output (1-2 equipped with potentiometer for adjusting the volume) will be connected to the headphones for preview, and another output (3-4) will be connected directly to an amplifier.

2) Two stereo outputs (1-2 and 3-4) will be connected to a DJ's common external mixer with two (or more) channels through two cables Jack-RCA (a cable is already included in the package).

With this type of connection the headphones will be connected to the mixer with help of which we then can do the preview.

Technical analysis:

1) Intermodulation distortion (IMD)

Declared by the manufacturer:

10kHz

Measured:

Second Protocol SMPTE 50Hz-7000Hz ratio 4:1

Load Impedance > 50KHOhm | IMD <0.005%

Load Impedance > 1KHOhm | IMD <0.02%

2) Dynamic Range

Declared by the manufacturer:

108dB A-weighted

Measured:

Due to environmental electromagnetic interference during the test we could not exceed 90dB.

3) Total harmonic distortion plus noise (THD + n) a-3dbfs, 1kHz with sine wave

Declared by the manufacturer:

<0.003% A-weighted (A-weighted)

Measured:

0.008% 10Hz-30kHz | 96kHz Sampling tab | Load 100KhOhm

0.0035% 400Hz-30KHz | 96kHz Sampling tab | Load 100KhOhmk

0.009% 10Hz-30kHz | 96kHz Sampling card | Load 1KhOhm

0.0045% 400Hz-30kHz | 96kHz Sampling card | Load 1KhOhm

Output impedance

120Ohm 1000Hz THD 0.012

4) Frequency response

Declared by the manufacturer:

10Hz-20kHz, +-0.5dB

Measured:

Bandwidth with 96kHz sampling card

-1dB <10Hz/46 kHz loaded 100KOhm

-1dB <10Hz/46 kHz loaded 10KOhm

-1dB 40Hz/46 kHz loaded 1KOhm

5) Maximum output level

Declared by the manufacturer:final

+7.3 dBu

Measured:

+7.9 dBV 1kHz with load 100KOhm

+6.8 dBV 1kHz with load 1KOhm

Instruments used for the analysis:

Apple - MacBook Pro (January 2006 series)

Packard bell PC - Easy note V7908

Oscilloscope Tektronix 7603 with plugins 7A26, 7A18, 7B53A

Frequency meter Schlumberger 2712 / 2

Harmonic distortion meter HP339A

Intermodulation distortion meter Crown IMA

Voltmeters HP 3400A RMS

Level meters Wandel & Goltermann PMP-20

Filter Barr & Stroud EF3

Multimeters HP 3478A, Goerz Unigor 6, Simpson 260.

Listening tests are performed with:

Power amplifiers: Crown DC-300A, Bryston 2B, Quad 303.

Speakers (Loudspeakers): B & W 801, Mordaunt Short MS 3.10, Yamaha NS 10, Tannoy I12 + Sub, Mackie HR824, Auratone 5C.

Headphones: AKG K340, AKG K270, AKG K240, AKG K140, AKG K55, Beyerdynamic 770M, Beyerdynamic 150, Pioneer HDJ-1000.

Conclusions:

DiJs can find this soundcard, which is a versatile and high-quality tool for all kinds of audio performance, very interesting.

Having analyzed the features of the soundcard, we can say that we obtained splendid results, and its performance proved to be excellent. Indigo DJx shows mostly good results in all tests and types of analysis.

We should mention that on the date of this review (see the date above), the drivers for Mac OS X are still in beta phase, and there is no official support for Linux operating system.

Windows users will not encounter any problems, and, as it mentioned above, the versatility of the drivers is proved by the presence of ASIO support for low latency playback and of specific control panel intended to flexibly manage WDM and ASIO signal routing, thus allowing to prepare a configuration most suitable for various types of software for digital mixing.

Echo Indigo DJX is distributed in Italy by MIDIWARE and is available at the best stores of musical instruments at a price of about 210.00 Euro (VAT included). A 24-month guarantee is given for the product.

Acknowledgments:

Echo Digital Audio Corporation - www.echoaudio.com

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