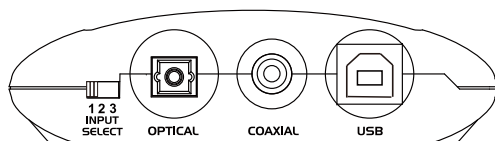


# DAC

## DIGITAL TO ANALOG CONVERTER with USB Audio Interface & Headphone Amplifier

### User's Guide

v1.0 Jan, 2010



#### INTRODUCTION

| 01

Thank you for purchasing this DAC (Digital-to-Analog Audio Converter) with USB connectivity & headphone amplifier. The DAC converts digital PCM (Pulse Code Modulation) audio to stereo analog audio signals.

With the advent of music in digital form, the DAC is the most affordable and effective way to upgrade any CD/DVD player, computer, game console or network music device to truly high end sound quality. Devices with an onboard DAC can also be enhanced by the increased resolution and sampling functionality of the DAC, and allows you to hear so much more from compressed material.

The DAC has all the inputs and outputs the everyday audiophile will need. One optical, one coaxial, and one USB inputs are enough for most applications. Up to 3 digital sources - Blu-ray player, cable box, CD player, computer, DVD player, HD game console, media player and set-top box etc. can be connected concurrently using S/PDIF coaxial, toslink optical inputs or USB port.

DAC is the ideal converter for music lovers seeking an excellent value upgrade to 24 bit advanced HD (High Definition) audio.

#### NOTICE:

This DAC accepts 2-channel digital audio only, and works with any PCM stream with Dolby Digital or DTS disabled. Dolby digital and other multichannel compressed audio formats are not compatible.

#### Technical Support:

visit: [www.vanco1.com](http://www.vanco1.com) call: 800.626.6445

#### FEATURES

| 02

- ⊕ Support up to 24 bit / 192 KHz
- ⊕ Listen to high definition downloads in the full resolution
- ⊕ Play music directly from your desktop or laptop computer via USB
- ⊕ Plug and play with Windows XP, Vista & Windows 7
- ⊕ Requires no additional software or drivers
- ⊕ Works with all audio formats, the higher bitrate the better
- ⊕ USB, S/PDIF coaxial and toslink optical inputs
- ⊕ Connect audio player or any device with a digital output
- ⊕ Connect stereo output to power amplifier for playback over speakers
- ⊕ Adjustable headphone output is provided for personal listening
- ⊕ Power supply (5 VDC) either USB or external USB power adapter
- ⊕ Appealing compact design

#### SPECIFICATIONS

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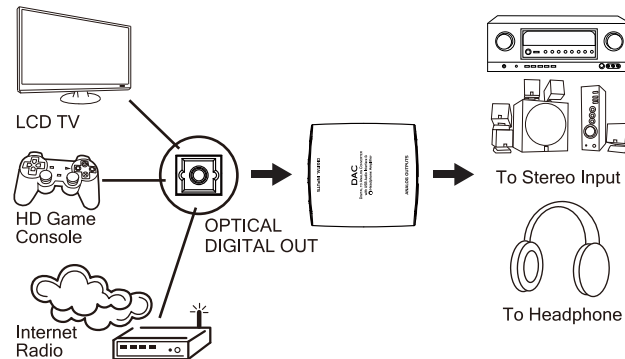
Word Length Supported	16 to 24-bits
Digital Audio Input	
Type	S/PDIF optical on toslink 44.1~192 KHz S/PDIF coaxial on RCA 44.1~192 KHz
Format	IEC-60958 S/PDIF compatible
Sample Rate	44.1 / 48 / 96 / 192 kHz
USB Audio Input	
Type	USB 1.1 interface (USB 2.0 compatible)
Sample Rate	44.1 / 48 / 96 KHz
OS Support	Windows XP, Vista & Windows 7
Stereo Line Out	
Type	Stereo line level (dual RCA jacks)
Impedance	10 K $\Omega$
Output Level	1.35 Vrms
Headphone Out	
Type	1/8-inch (3.5mm) stereo phone jack
Rated Output	60mW @ RL=16 $\Omega$ THD < 0.1% 30mW @ RL=32 $\Omega$ THD < 0.1%
Controls and Indicators	
	Digital source select switch Digital source select LED Color: red - toslink optical Color: orange - S/PDIF coaxial Color: green - USB
Power Supply	USB bus power or external USB power DC 5V / 500 mA ~ 1,000 mA
Power Consumption	90 mA
Casing	ABS Plastic
Dimensions (LxWxH)	Approx. 111 x 105 x 30 mm 4.4 x 4.1 x 1.2 inches
Weight	Approx. 174 grams 0.38 lbs

#### APPLICATION - CONNECTION EXAMPLES

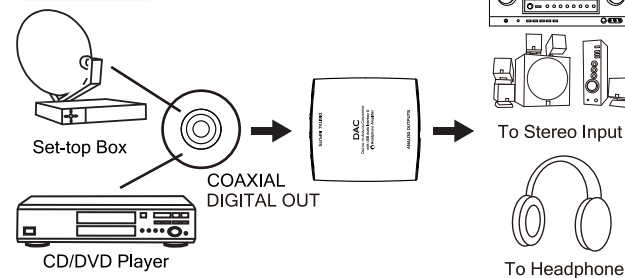
| 04

##### Example 1

Ideal for music lovers seeking an excellent value upgrade to advanced HD (High Definition) audio, and saves money otherwise spent on stereo equipment upgrades on legacy analog sound systems.

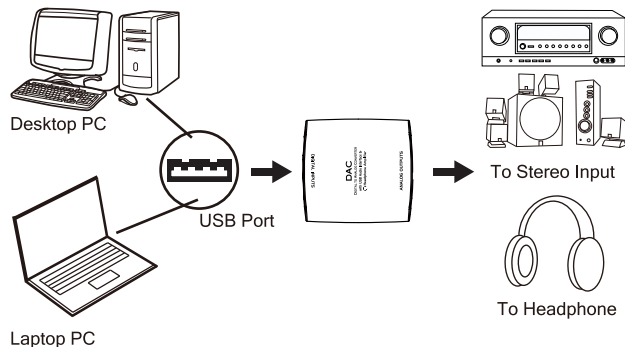


##### Example 2



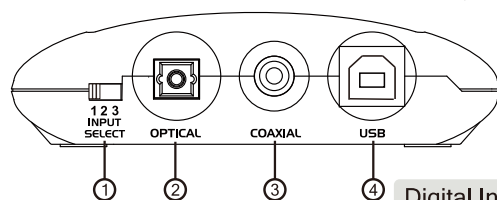
##### Example 3

Ideal for computer audiophile seeking sound quality normally found only in the audiophile world to your computer, with plug and play simplicity.

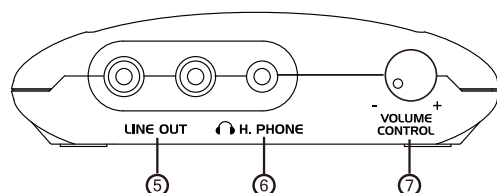
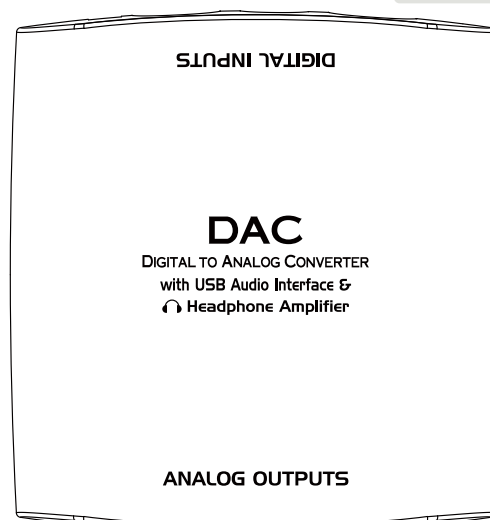


## COMPONENTS DESCRIPTION

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Digital Input Panel



Analog Output Panel

- ① **DIGITAL INPUT SELECT SWITCH**  
Select one of three digital inputs (OPTICAL, COAXIAL or USB) at a time by setting the slide switch to the position "1", "2" or "3".

Position	Input Mode	LED Color
1	OPTICAL	Red
2	COAXIAL	Orange
3	USB	Green

- ② **OPTICAL INPUT**  
Connect the source devices that provide toslink optical digital input - such as Blu-ray player, cable box, CD player, computer, DVD player, HD game console, media player and set-top box. A hi-end 24 bit 192 KHz DAC allows listening to high definition downloads in the full resolution.

- ③ **COAXIAL INPUT**  
Connect the source devices that provide S/PDIF coaxial digital input - such as Blu-ray player, cable box, CD player, computer, DVD player, HD game console, media player and set-top box. A hi-end 24 bit 192 KHz DAC allows listening to high definition downloads in the full resolution.
- ④ **USB PORT**  
Connect a free USB Series A port of your desktop or laptop computer, then use the DAC as an external sound card. Play and listen to high definition downloads directly from your computer via USB. Requires no additional drivers or software. The USB port is also doubles as a DC 5V power supply.
- ⑤ **LINE OUTPUT**  
Connect a power amplifier or a pair of active speakers to the 2-RCA stereo output for playback over speakers.
- ⑥ **HEADPHONE OUTPUT**  
This is where you connect your favorite headphone.
- ⑦ **VOLUME CONTROL**  
Turning the volume control knob clockwise adjusts the volume higher. And, turning the volume control knob counterclockwise adjusts the volume lower.

**Warning:** Always start the volume at the minimal setting before plugging a headphone. This will help ensure you don't get unexpected high volume levels that could damage your hearing.

## INSTALLATION

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- ① **Turn off associated components**  
This minimizes the potential damage any other components when connecting your DAC into the system.
- ② **Connect digital audio device to DAC via OPTICAL**  
Connect the optical output from your digital audio device to the OPTICAL input at the DIGITAL INPUT side of the DAC.
- ③ **Connect digital audio device to DAC via COAXIAL**  
Connect the coaxial output from your digital audio device to the COAXIAL input at the DIGITAL INPUT side of the DAC.
- ④ **Connect DAC output to power amplifier**  
Connect the LINE OUT at ANALOG INPUT side of the DAC to the 2-RCA stereo input of your power amplifier or powered speakers.
- ⑤ **Connect headphone to DAC**  
Connect a headphone to the 3.5mm (1/8") stereo phone jack at the ANALOG INPUT side of the DAC.
- ⑥ **Connect computer to DAC via USB**  
Connect the USB output from your computer to the USB input at the DIGITAL INPUT side of the DAC (the computer will automatically detect and install the necessary drivers).
- ⑦ **Select USB Input on DAC**  
Set the slide switch at the DIGITAL INPUT side of the DAC to select USB input. Refer to COMPONENTS DESCRIPTION.

- ⑧ **Play your favorite music files**

Open your preferred application software (eg. iTunes, WinAmp, Windows Media Player, etc) and play your favorite play your favorite music file.

- ⑨ **USB or external power on DAC**

The DAC can make use of either USB bus power or powered via the external DC 5V USB power adaptor. DAC can work without computer as a standalone DAC, if users want to use optical and coaxial inputs only.

**Prior to connecting the external DC power , please check and ensure that your external USB power adaptor outputs DC 5V / 500 mA ~1,000 mA and conforms to the power supply in your area. Never attempt to connect the DAC to the incorrect voltage**

## TROUBLESHOOTING

| 07

### DAC not powered on...

- Check and see if the USB cable is properly plugged into both the computer and the DAC.

### No sound come out the system...

- Check and see if the interconnect cables are properly connected to the respective sockets of the DAC.
- Check and see if the correct input mode (OPTICAL, COAXIAL or USB) is properly selected.
- Check and see if the source is switched on.
- Check and see if the equipment following the DAC is switched on and correctly set up.
- Check and see if the application software is configured to use DAC as its audio output.

### Windows 98SE...

- Windows 98SE does not have USB audio system files. These files are not a part of the core installation of the Windows 98SE. The necessary system files are on Windows 98SE CD-ROM. They need to be added.

### Incompatible Dolby Digital or DTS audio format...

- This DAC is not compatible with Dolby Digital or DTS formats, which are both forms of compressed audio. Extreme caution should be exercised when you play back CDs or DVDs encoded in Dolby Digital or DTS. If you play back them, you will only hear some unwanted noise that may damage your speakers.
- You need to get into the menu settings of the device and adjust Dolby Digital or DTS to PCM. This DAC works with any PCM stream from CD players, DVD players, game consoles and set-top boxes.

### Note:

**Do not plug out while application programs were playing music files. Otherwise, incorrect plug out will cause application program or system crash. The right way to plug out any USB Audio device is stop playback function first. Please always stop playback before plug out USB cable.**