

D/A CONVERTER

USB Sound System DA5

Owner's Manual

Thank you for purchasing a DA5.

Please read through and refer to this Owner's Manual to use your DA5 safely and adequately.

It is recommended to keep the packaging available for future transportation needs.



C.E.C.

Contents

Features	2
Important Safety Instructions.....	3
Handling Precautions	4
Accessories	5
Specifications	5
Rear Panel Functions and Connections.....	6
Front Panel Functions	7
Remote Control unit.....	8
Digital Volume.....	9
Basic Operation	10
Digital Filter.....	11
Dimmer	11
Maintenance	11
Troubleshooting.....	12
Service Contact Preparation.....	12
USB Driver Installation and Setup for Windows	
Introduction.....	14
USB Driver Installation	15
1. BRABO-HD Installation	15
Installation and Setup for DSD Playback.....	17
2. ASIO Driver Installation on foobar2000	17
3. ASIO Proxy Installation on foobar2000.....	17
4. DSD Driver Installation on foobar2000.....	18
5. DSD Playback Setup on foobar2000.....	19
BRAVO-HD Control Panel	20

Features

- ❑ DA5 is a high fidelity digital to analog converter which precisely converts the signal and transmits the converted signal to the amplifier in high quality.
- ❑ Four digital inputs are available. Balanced ASE/EBU, standard COAXIAL and optical TOSLINK to be connected with digital audio players like CD transport support the PCM signal up to 24bits/192kHz. USB allows a PC-music player to playback high-resolution files up to DSD256/11.2MHz and PCM 32bits/384kHz.
- ❑ DA5 uses the ESS Hyperstream™ ES9018K2M DAC chip, which performs up to 32 bits. Highly qualified signal after digital to analog conversion backed up by superior engineering and performance realizes delicate and accurate music reproduction. The CEC's original full-balanced circuit design achieves the high quality signal path keeping the sound quality very natural and clear.
- ❑ DA5 has a digital volume function which changes the analog outputs level in the digital domain without any sound deterioration. It is possible to connect DA5 to a power amplifier directly and control the system volume through DA5.
- ❑ Headphone output enables listener to enjoy various music sources at high quality standard even without amplifier and speaker system.
- ❑ DIMMER function changes the display brightness in different 3 levels.

Important Safety Instructions



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to potential electric shock hazards within the product's enclosure.



The exclamation point within an equilateral triangle is intended to notify the user to the presence of important operating and maintenance (servicing) instructions in the accompanying documentation.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this appliance near water.
- 6) Clean only with a dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install this appliance near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) (For USA, Canada:) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades, with one blade wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet. (For European Countries:) Do not defeat the safety purpose of the grounding-type plug. This plug has two poles and a third grounding hole. The third hole is provided for your safety. If the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet.

10) Protect this appliance's power cord from being walked on or pinched, especially around the plugs, convenience receptacles, and where it exits from this appliance's casing.

11) Only use attachments/accessories specified by the manufacturer.

12) Only use this appliance with a cart, stand, tripod, bracket, or table specified by the manufacturer or sold with the appliance. If using a cart, exercise caution when moving the cart/appliance combination to avoid injury from it tipping over.



13) Unplug this appliance during lightning storms or when leaving it unused for extended periods of time.

14) Refer all servicing to qualified service personnel. Servicing is required when this appliance itself, its power-supply cord, or plug has been damaged in any way, when liquids have been spilled onto this appliance, when foreign objects have fallen into this appliance, when this appliance has been exposed to rain or moisture, when this appliance does not operate normally, or when this appliance has been dropped.

CAUTION:

- Do not expose this appliance to drips or splashes.
- Do not place any objects filled with liquids, such as vases, on this appliance.
- Do not install this appliance in a confined space, such as within a bookcase or similar piece of furniture.
- Plug the ac power cord into an easily accessible ac wall outlet, so it can be quickly unplugged in case of emergency.
- Do not remove the protective housing with a screwdriver.
- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- If this appliance seems to be malfunctioning, contact a qualified service station. discontinue use of any malfunctioning unit.

For CANADA

AC power cord connection

Caution:

To prevent electric shock, match the blade width of the plug to the slot width. the plug must be fully inserted to the slot.

Handling Precautions

❶ Connecting Other Devices

Unplug the AC power cord from the outlet before connecting or disconnecting other devices. Exercise caution when handling the AC power cord. When disconnecting the AC cord from a socket, make sure you pull the plug, and not the cord itself.

❷ Turning Power On/Off

Your system components should be turned on/off in the following order to avoid generating noise from your speakers and damaging the speakers themselves or other devices:

- Turning power on:** Turn on this appliance before turning on the amplifier connected to this appliance.
- Turning power off:** Turn off the amplifier first, before turning off this appliance.

❸ Handle With Care

Avoid exerting excessive force on the cabinet, the switch, the knob, the terminal and the CD-Turntable on this appliance.

❹ Installation

Use of an audio rack is recommended to maximize the sound quality and performance of this appliance. Installation and use of this appliance in the locations described below may cause deterioration in sound quality or malfunction:

- Locations exposed to direct sunlight, such as windowsills, and other exceptionally warm locations, such as near heating appliances (surrounding temperature higher than 35 °C), or exceptionally cold locations (surrounding temperature lower than 10 °C), may prevent this appliance from functioning adequately.
- Damp locations exceeding 90% humidity may cause this appliance's metal parts to rust, causing this appliance to malfunction.
- Dusty locations may cause this appliance to malfunction. The accumulation of dust inside the CD tray may lower the performance of music signal reading. It may also cause contact failure of the switches, and/or noise.
- Otherwise, avoid installing this appliance close to other transformers and electrical motors, so as to prevent the pickup of induction hum. Also, avoid mounting this appliance on surfaces that may be affected by vibration.

❺ Avoid lightning strikes

Disconnect the AC power cord from the AC outlet when there is a thunderstorm in your vicinity.

❻ Condensation

When this appliance is brought into a warm room when the exterior temperature is cold, or when the room temperature rises sharply from using a heater, condensation may form both inside and outside this appliance, hampering its performance. If this happens, leave this appliance unused in the room for 1 to 2 hours (depending on the amount of condensation), so as to bring the temperature of this appliance closer to the room temperature. The condensation should go away gradually.

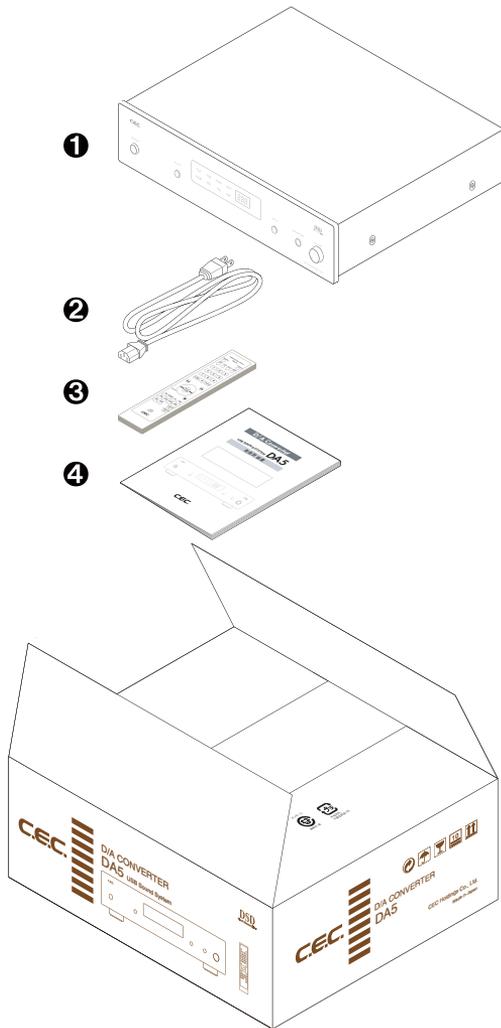
❼ Listening etiquette

Make sure your playback sound, ex. due to too big sound, does not disturb other people and your neighborhood.

Accessories

DA5 should contain the following:

- ❶ DA5 unit
- ❷ AC Power Cord
- ❸ Remote Control unit RU-218
- ❹ Owner's Manual



- Keep the packaging available for future transportation needs.
- The delivered AC power cord should not be used for any other device than DA5.

Specifications

Digital input/ Sampling frequency	AES/EBU x 1: PCM up to 24bit/ 192kHz (2pin: hot)
	COAXIAL x 1: PCM up to 24bit/ 192kHz
	TOS x 1: PCM up to 24bit/192kHz
	USB2.0 x 1: PCM up to 32bit/384kHz, DSD up to 11.2896MHz
DAC	ESS ES9018K2M x 1
Digital filter	FLAT or PULSE (only FLAT during DSD playback)
Analog output (digital variable)	Balanced XLR (pin2=hot) x 1 / 4Vrms (-99dB to 0dB)
	Unbalanced RCA x 1 / 2Vrms (-99dB to 0dB)
Headphones output	6.3mm x 1 (to be adjusted by both of digital and analog volume controls)
Frequency response	20Hz to 20kHz, +/-0.1dB (CD playback in FLAT digital filter)
S/N ratio	105dB, 1kHz/0dB
Cross talk	105dB, 1kHz/0dB
THD	0.014%, 1kHz/0dB
Power supply	AC230V/120V, 50/60Hz (specified on the rear panel)
Power consumption	10W
Dimensions	Approx. 435(W) x 335(D) x 104(H)mm (Incl. buttons, terminals, legs,)
Weight	Approx. 7.6 kg
Accessory	AC power cord, Remote control unit RU-218 and Owner's manual
Color	Silver and Black

- Design and specifications are subject to change without notice.
- Illustrations in the Owner's Manual may deviate from the actual unit due to design improvements.

Rear Panel Functions and Connections

Analog output

Pressing D.VOL-UP/DN buttons on the remote control unit the analog outputs level changes between minimum -99(dB) and maximum 0(dB) in the digital domain. This volume function allows DA5 to connect to a power amplifier directly as well as a pre-amplifier with a volume control function.

❶ XLR(Balanced)

Balanced analog output using standard XLR terminals (1=GND, 2=Hot, 3=Cold). This should be the preferred connection since DA5 has been designed at fully balanced circuit.

❷ RCA(Unbalanced)

Standard RCA analog output terminals.

Digital input

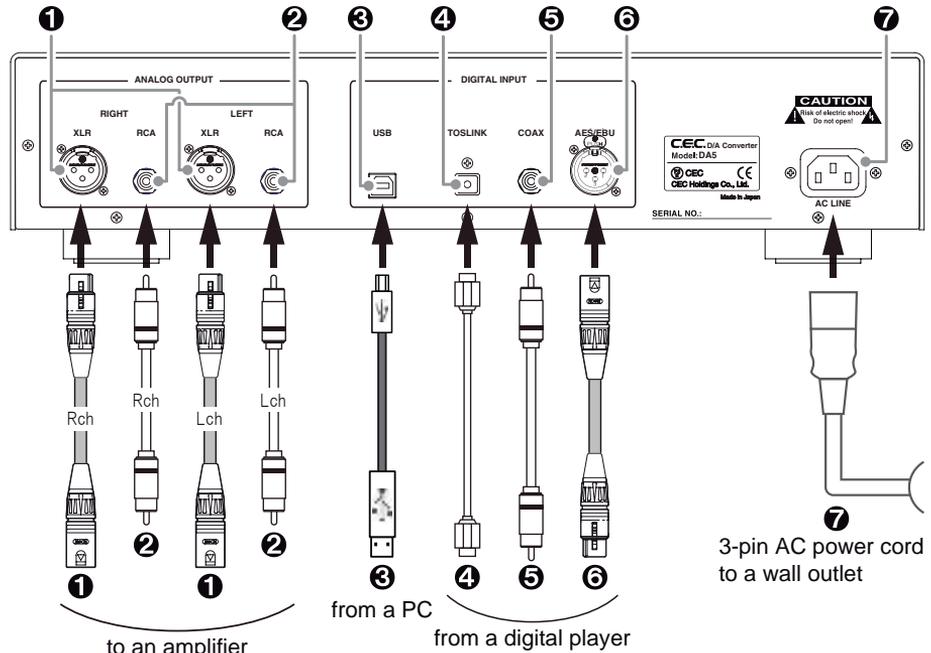
❸ USB

USB input to connect with a PC using a USB cable with a B-type plug. This input supports sampling frequencies up to PCM 32bit/384kHz and DSD256 11.2896MHz.

Note: Mac PC (X10.6.8 or newer) does not require any additional driver for USB 2.0 audio device but Windows PC (XP or newer) needs to install CEC specialized USB driver to recognize DA5 as USB audio device and play PCM music files. Compatible PC-Music player should be prepared yourself.

Installing ASIO and DSD drivers to a freeware PC-Music player foobar2000 for Windows, up to DSD256 11.2896MHz files can be reproduced as well.

Those drivers are appeared at the download site in CEC home page. Visit at www.cec-web.co.jp/service/download/driver/index_ex.html for the drivers. Refer to "USB driver installation and setup for Windows PC" from page 14.



❹ TOSLINK

Optical (SPDIF) digital signal input jack with a square TOSLINK connector. Connect with a digital audio player using an optical cable with a square TOSLINK plug. This input supports up to 24bit/192kHz.

❺ COAXIAL

Standard (SPDIF) digital signal input jack with a RCA type connector. Connect with a digital audio player using a 75Ω RCA cable. This input supports up to 24bit/192kHz.

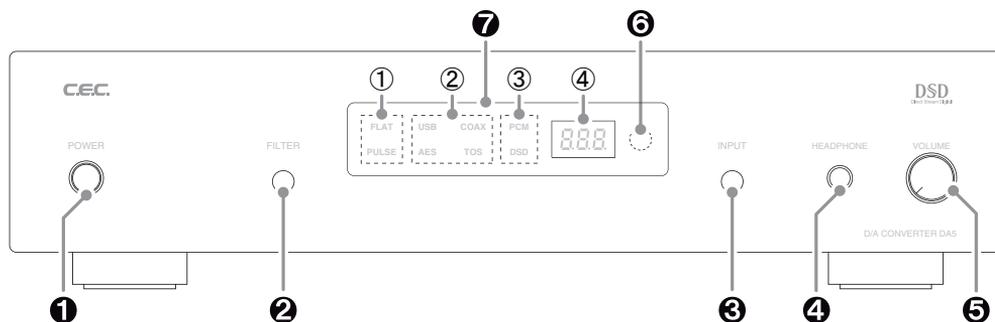
❻ AES/EBU

Balanced digital signal input jack with a XLR type connector. Connect with a digital audio player using a 110Ω balanced XLR cable (1=GND, 2=Hot, 3=Cold). This input supports up to 24bit/192kHz.

AC power

❼ AC LINE

Connect the supplied 3-pin AC power cord to the AC LINE inlet and the wall outlet.



1 POWER button

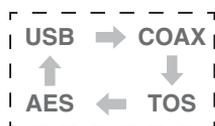
Press to turn the power ON or OFF. When DA5 is turned on, digital volume ex. "0" (initial setting = maximum 0 dB) will blink at 7 4 Sampling frequency indicator in the display. Approximately 5 seconds later the display will change to indicate the current function settings and now DA5 is ready for playback.

2 FILTER button

Press to select a digital filter type "FLAT" or "PULSE". The selected filter type will light up at 7 1 Digital Filter indicator. Refer to "Digital Filter" on page 11 for details.

3 INPUT button

Press to select an input from USB being connected with a personal computer, or COAX, TOS(optical) or AES(balanced AES/EBU)



being connected with a digital music player like CD Transport. Pressing the button will change the input in an order described in the right figure, and the relative input name will light up at 7 2 INPUT indicator.

The selected digital input signal is converted and transferred to the analog and headphone outputs.

The last input has been memorized after power off.

4 HEADPHONE jack

Headphone output jack for a standard 6.3mm plug.

For using a headphone with 3.5mm mini plug, purchase a 6.3mm conversion plug from a dealer.



Before using your headphones for listening, minimize the volume and then insert the headphones plug into the jack. Excessive sound pressure from the headphones may cause hearing loss to your ears.

5 VOLUME knob

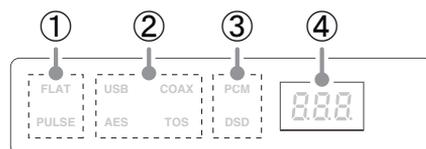
Turn clockwise to increase or counterclockwise to decrease the headphones volume.

For headphones listening, in addition to this analog volume operated by the knob, adjust the digital volume through the remote control unit as well. Refer to "Digital Volume" on page 9 for details.

6 Remote sensor

The remote sensor, which receives signals from the remote control unit, is located at the right side of the display window. Aim for the sensor when using the remote control unit. The remote control may malfunction if there are any obstacles between the remote control unit and the remote sensor.

7 Display



1 Digital Filter indicator

A selected digital filter type PULSE or FLAT lights up. Pressing the 2 FILTER button on the front panel or D.FILTER button on the remote control unit will change the filter.

2 INPUT indicator

A selected input USB, COAX, TOS or AES lights up. Pressing the 3 INPUT button on the front panel or the remote control, or direct input selector buttons on the remote control unit will change the input.

3 Digital Signal Format indicator

A digital signal format PCM or DSD is displayed. This depends on the input signal being played. When an input without signal or connection is selected,

Front Panel Functions - continued -

or any digital signal is not detected properly the indicator won't light up.

④ Sampling Frequency / Volume indicator

A sampling frequency of a selected input signal being played is displayed. When an input is selected without any connection or without any input signal, or when any input signal can not be detected properly, three bars " - - - " will be displayed instead of sampling frequency.

Pressing the D.VOL-UP/DN buttons on the remote control unit to adjust the volume (analog outputs level) will change to indicate the volume level. Refer to "Digital Volume" on page 9 for details. 5 seconds later the display will return to show a sampling frequency.

Remote Control unit

Buttons function

① to ⑤ buttons work for DA5 and the others are compatible with the other CEC products like CD Transport TL5, CD Player CD5, D/A Converter DA3N and so on. Here refers to DA5 function only.

① DIMMER button

Press to change the display brightness in different 3 levels. Refer to "DIMMER" on page 11 for details.

② D.FILTER button

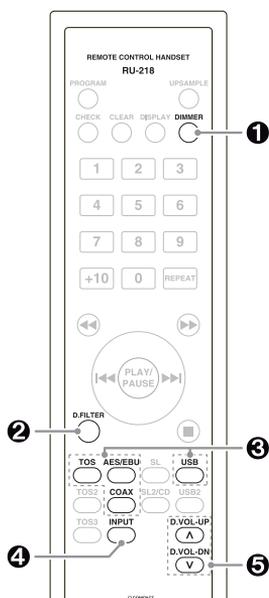
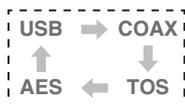
Press to select a digital filter type FLAT or PULSE. Refer to "Digital Filter" on page 11 for details.

③ Direct input selector buttons (TOS, AES/EBU, COAX, USB)

Press TOS, AES/EBU, COAX or USB to select an input directly.

④ INPUT button

Press to change the input in an order described right.



Remote Control unit - continued -

⑤ D.VOL-UP/DN button

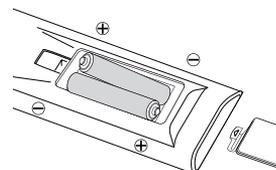
Press D.VOL-UP button to increase or D.VOL-DN button to decrease the digital volume. Pressing and holding the button allows fast changes. Refer to "Digital Volume" on page 9 for details.

Precaution on handling the remote control unit

- When operating the remote control, point it towards the remote sensor on the front panel.
- Make sure nothing is blocking the front panel where the remote sensor is located.
- Avoid exposing the remote sensor on the front panel to direct sunlight or other light sources, as such exposure can cause malfunction.
- The remote control unit may malfunction when its batteries are running low. Change the batteries to new ones of the same type if this seems to be the case.

Battery Installation

Remove the cover of the battery compartment. Insert two AAA batteries into the compartment. Make sure that the batteries are inserted with their positive (+) and negative (-) poles positioned correctly, and put the cover back on.



Battery Replacement Period

If the distance at which the remote control unit can be used to operate DA5 seems to be decreasing, replace both batteries with new ones.

Precaution on handling batteries

- Never use different types of batteries together. Both rechargeable and non-rechargeable batteries can be used, but the two should not be used together.
- If you will not be using the remote control unit for an extended period of time (more than a month), remove the batteries to prevent leakage.
- If the batteries leak, use a cloth to wipe away the liquid inside the battery compartment and replace the batteries with new ones.
- Do not heat or disassemble batteries, and never dispose of old batteries by throwing them in a fire. Dispose of batteries following laws in the local area.

Digital Volume

DA5 has a digital volume function which changes the analog outputs level at XLR, RCA and headphones in the digital domain.

Press the D.VOL-UP/DN buttons on the remote control unit to change the volume between minimum -99 (dB) and maximum 0 (dB).

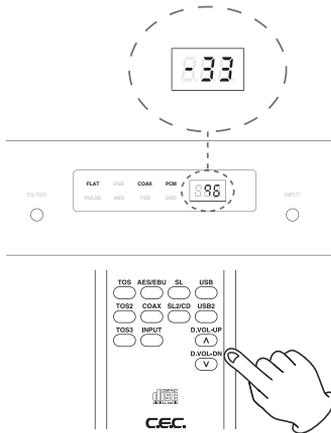
The last setting has been memorized after power off.

Level indicator

Pressing the D.VOL-UP/DN buttons the sampling frequency indicator will change to show the volume level.

Pressing once the button will just show the current volume setting. Press successively to change the volume. Press and hold the button for fast changes.

Approximately 5 seconds later the display will return to indicate the sampling frequency.



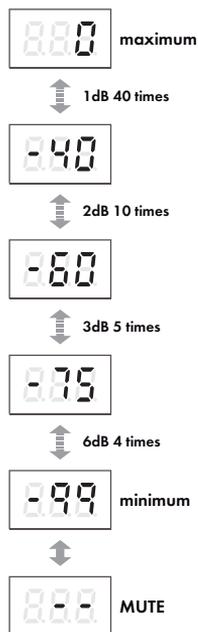
Change rate

The volume change rate varies by the volume level. 6dB changes between -99(dB) and -75(dB), 3dB between -75(dB) and -60(dB), 2dB between -60(dB) and -40(dB), and 1dB between -40(dB) and 0(dB).

Pressing the D.VOL-DN button at -99(dB) the volume will go to MUTE " - -".

Connecting to pre-amplifier

When connecting with an amplifier with a volume control function, set the DA5 digital volume at maximum 0(dB) which is the same output level as standard CD players.



Connecting to power amplifier

When connecting with a power amplifier, the DA5 digital volume function controls the amplifier volume. Make sure that the DA5 digital volume is set to minimum or MUTE before the amplifier is turned on.



The last volume setting has been memorized after power off. It is recommended to always minimize the volume when DA5 is powered off.

Bigger volume setting would cause an unexpected huge sound. Danger!

Headphones Listening

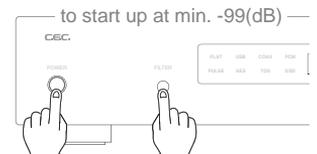
Adjust the headphones volume through the both of the digital volume operated by the remote control unit and the analog volume operated by the volume knob on the front panel.



In case that the XLR or RCA output is connecting to a power amplifier, after the headphones listening make sure to minimize the digital volume before turning on the power amplifier to avoid a sudden huge sound.

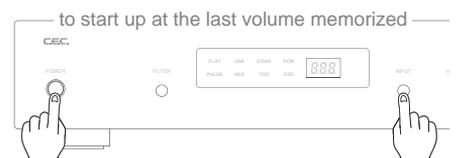
Changing not to memorize the last volume

You can change the starting up volume to the minimum -99(dB) regardless of the last volume setting. Turn on



DA5 pressing and holding the FILTER button on the front panel, and keep the FILTER button pressed for approx. 5 seconds until the blinking of the volume level ends. From the next time DA5 will be turned on at -99(dB).

To return to memorize the last volume, turn on DA5 pressing and holding the INPUT button on the front panel, and keep the INPUT button pressed for approx. 5 seconds until the blinking of the volume level ends. From the next time DA5 will be turned on at the last volume memorized.



Playback of a digital audio device at COAX, TOS or AES/EBU connection

- 1 Power on DA5 and CD transport or the other digital audio player connected to DA5. Current digital volume level ex. "0" blinks and 5 seconds later the other current settings are displayed.
- 2 Press the INPUT button on the front panel or remote control unit, or a direct input selector button to select the input connected with the digital audio player. A sampling frequency is displayed as soon as the input signal transferred from the digital audio player is detected.



Ex. PCM 44.1kHz through COAX connection in FLAT digital filter

Note: Connecting with a digital audio player which generates the signal for locking only under playback, the sampling frequency indicator may show three bars "- - -" during stopping or skipping. Even playing a music does not indicate any sampling frequency DA5 should be unlocking with the player. Check the connection and player condition carefully again.

- 3 Power on the amplifier after lower the volume on the amplifier or DA5.
- 4 Start the playback on the digital audio player, and adjust the volume on the amplifier or DA5.

Playback of PC music at USB connection

Mac PC (X10.6.8 or newer) does not require any additional driver for USB 2.0 audio device but Windows PC (XP or newer) needs to install CEC specialized USB driver to recognize DA5 as USB audio device and play PCM music files. Compatible PC-Music player should be prepared yourself.

Installing ASIO and DSD drivers to a freeware PC-Music player foobar2000 for Windows, DSD64/128/256 files can be reproduced as well. Those drivers are appeared at download site in CEC home page.

Visit at www.cec-web.co.jp/service/download/driver/index_ex.html to download the drivers and setup before connecting with a PC. Refer to "USB driver installation and setup for Windows PC" from page 14.

- 1 Ready PC connected via USB will recognize DA5 as CEC DA5 HS USB Audio.
- 2 Press the INPUT button on the front panel or the USB button on the remote control unit to select USB. USB indicator and a sampling frequency of the input signal will appear on the display.



Ex. PCM 48kHz through USB connection in PULSE digital filter

- 3 Start on the PC music player and adjust the volume at the amplifier or DA5.



Ex. DSD256 11.2MHz through USB connection in FLAT digital filter (PULSE filter is not available with DSD)

Digital Filter

Press the FILTER button on the front panel or D.FILTER button on the remote control unit to select a digital filter type FLAT or PULSE.



Click noise may happen from speakers or headphones when changing the digital filter. It is recommended to change the filter after volume down.

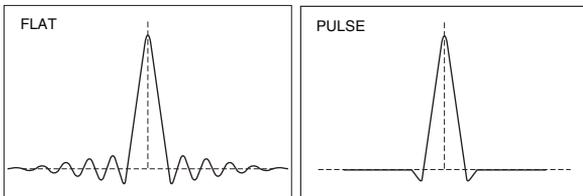
Note: Digital filter type is always FLAT when DSD signal is played, and PULSE is not available.

Note: When the display is "off" by dimmer setting pressing once the FILTER button will return the display brightness to the default "brighter" and show the current digital filter type. Press the button again to change the digital filter type.

FLAT digital Filter is very common in digital audio items. The frequency response is almost perfect, but such filter cause "ringing" in the time domain. Some energy of a pulse signal is distributed in the time domain, before and after the pulse centre. Any ringing before the signal does not exist in nature.

PULSE digital filter avoids the problems in the time domain and thus has a very good response in the time domain. The frequency response of the PULSE digital filter shows a soft roll-off at high frequencies. This results in about -2dB at 20kHz with an input sampling frequency of 44.1kHz. For higher sampling frequencies the roll-off is irrelevant and the "PULSE" filter is the best choice. For 44.1kHz and 48kHz the better result may depend on the whole system as well as personal preferences.

Differences in ringing of FLAT and PULSE

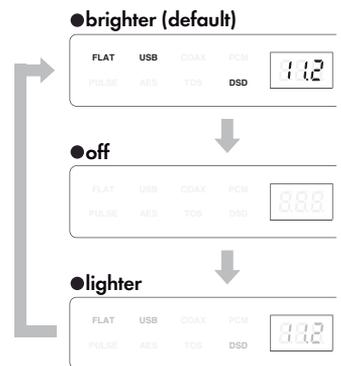


Wavy form of the digital signal passing through the circuit

Dimmer

Display brightness can be changed in different three levels.

Press the DIMM key on the remote control unit to dim the display. The display brightness will toggle through "brighter" (default), "off" and "lighter".



During "off" mode:

Pressing once a function button on the front panel or remote control unit relating to the input, digital filter or volume the display will return to "brighter" and show the current setting. Press the function button successively to change the setting. 5 seconds later the display brightness will return to "off" automatically.

Regardless of any DIMMER setting the brightness will return to the default whenever the power is turned on again.

Maintenance

- 1 If the surface of the DA5 case becomes soiled, wipe with a soft cloth or use diluted neutral cleaning liquid. Be sure to remove any fluid completely. Do not use thinner, benzene, alcohol, chemical cloths or bleaching agents as these may damage the surface of the CD5 case. Also avoid using aerosol insecticides near this appliance.
- 2 DA5 requires no periodic maintenance, and contains no user-serviceable parts. Contact your dealer or an authorized CEC service center for an inspection and repair in case of malfunction.

Troubleshooting

If you suspect a malfunction in this appliance, please check the following chart before calling your dealer.

Malfunction	Solution
No power	Connect completely the both ends of the AC power cord
No sound but Sampling frequency displayed	Correct the connection with amplifier
	Begin playback
	Increase the volume on DA5
	Increase the volume on PC or amplifier
No sound and no sampling frequency displayed	Correct the input on amplifier
	Correct the connection with player
	Turn on and begin playback on player
	Correct the input on DA5
Hum noise	Replace the digital cable
	Turn off and on all the devices probably due to interferences
	Connect the RCA plugs completely
Sound skipping	Place the player on stable board
	Clean up the disc
Interference on tuner	Install DA5 away or turn off the tuner
Unresponsive to remote control	Turn on DA5
	Install batteries in the RC unit
	Replace with new batteries

DA5 contains a microcomputer that can malfunction due to the external noise or interference. If this seems to be the case, turn the unit off and wait for a short while before turning it back on and trying again.

Service Contact Preparation

In case you need to contact a service center please prepare the following information.

Model name and serial number:

Purchase date:

Dealer name and contact information:

Description of the unit's problem:

USB driver installation and setup for Windows

Introduction

The USB Interface equipped with DA5 is compatible to USB 2.0 audio device.

It is necessary for **Windows PC** users to install special driver for PCM music files, which is possible to download from the CEC home page.

When ASIO and DSD drivers are installed to a freeware PC music player, foobar2000, DSD files may be reproduced. This is to explain on how to install and set up those drivers using foobar2000.

Compatible OS: Windows XP, Windows Vista, Windows 7, Windows 8, Windows 10

Mac PC (X10.6.8 or newer) are already equipped with a standard driver for USB 2.0 audio device, and it is not necessary to install CEC specific driver.

Download site

Windows users may access to download this specific driver at CEC home page.

http://www.cec-web.co.jp/service/download/driver/index_ex.html

Note: It is not abnormal to see SECURITY WARNING upon downloading and/or installation. You may continue to download and/or install according to the instructions by OS or Browser.

USB Driver (Your PC recognizes DA5 as a regular audio device.)

BRAVO-HD (is the USB driver specialized in DA5, supplied by SAVITEC, USB Audio IC manufacturer.)

Necessary components to reproduce DSD files at foobar2000

foo_out_asio_v2p1p2.fb2k-component (ASIO driver by foobar 2000)

ASIOProxyInstall-0.7.2.exe (driver for the reasonable connection between ASIO and DSD)

foo_input_sacd.fb2k-component (DSD driver by foobar 2000)

Note: The above are the possible components publicized on our internet. Updated version at DA5 might not be assured.

Note: Freeware PC-music player foobar2000 can be downloaded at: <http://www.foobar2000.org/>

USB Driver Installation

Install a USB driver, BRAVO-HD* on your Windows PC to recognize DA5 as USB audio device and playback PCM music files.

*BRAVO-HD is an exclusive USB driver that a USB Audio IC maker, SAVITEC company provides for DA5.

1. Installation for BRAVO-HD

1.1. Melt (open) the "DA5_usb_win.zip" file downloaded from CEC download site and save the melted folder at ex. desktop.

1.2. Double-click and open the saved "da5_usb_win" folder.

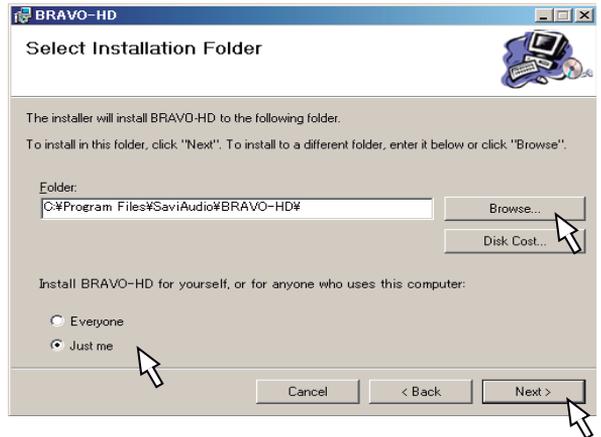
1.3. Double-click "setup.exe" in the folder to start the installation.



1.4. BRAVO-HD install wizard will start. Click "Next" to continue.



1.5. Select an install folder and Windows user.

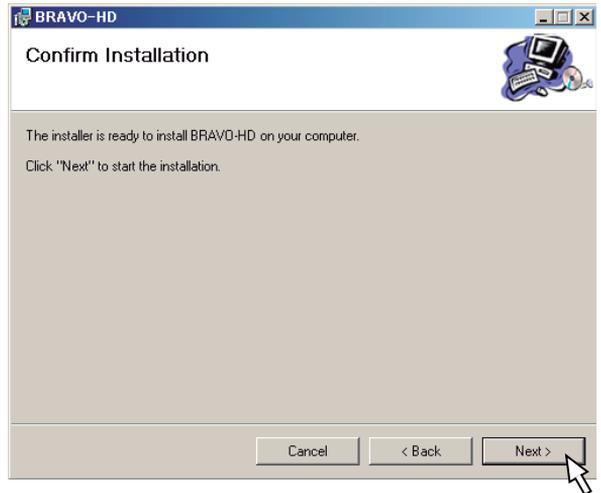


Click "Browse" to select an installation folder other than the default folder being showed.

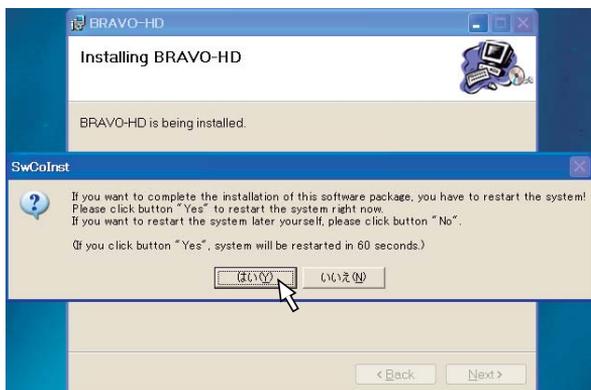
Select "Everyone" for all Windows users to use BRAVO-HD or "Just me" only for the user that is installing the driver now.

Click "Next" to continue.

1.6. Click "Next" to start the installation.



1.7. When the installation finishes a short-cut icon "BRAVO-HD Audio CPL" will be created on desktop and the restart wizard will appear. Click "Yes(Y)" to restart the computer.



1.8. After the computer restarted connect with DA5 via USB cable.

1.9. Turning on DA5 the computer will recognize DA5 as CEC DA5 HS USB Audio and automatically apply it to the output device. You can check the setting through control panel - sound and audio device property. If not select DA5 as output device.



Ex. Windows7

1.10. Starting a PC-music after selecting the USB input on DA5 you can listen to the playback music through the analog and/or headphones output on DA5.

DA5 USB input is compatible with up to 32bit/384kHz PCM signal but the sampling frequency may be limited by the PC system setting or PC-Music player.

Refer to "BRAVO-HD Control Panel" after completing "Installation and Setup for DSD playback".

Note: You can delete the downloaded "da5_usb_win.zip" file and the saved "da5_usb_win" folder with files after the installation finished.

Installation and Setup for DSD Playback

Installing ASIO and DSD drivers to a freeware PC-music player foobar2000 for Windows PC DSD64(2.8224MHz) to DSD256(11.2896MHz) files can be played through DA5.

Before starting these steps install foobar2000 to your Windows PC, which can be downloaded from <http://www.foobar2000.org/>.

2. ASIO driver Installation on foobar2000

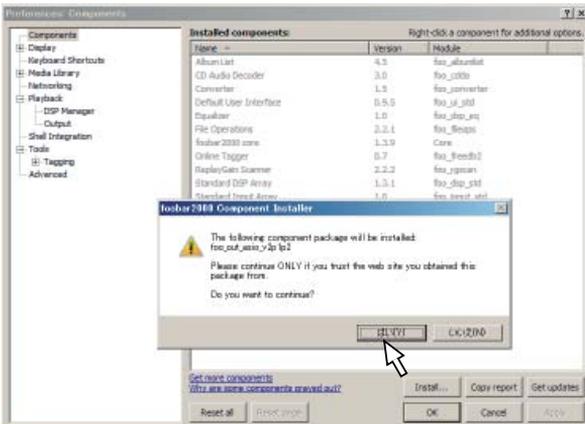
2.1. Melt (open) the downloaded "da5_dsd-plugin_fb2k.zip" file and save the melted folder at ex. desktop.

2.2. Double-click and open the saved "da5_dsd-plugin_fb2k" folder.

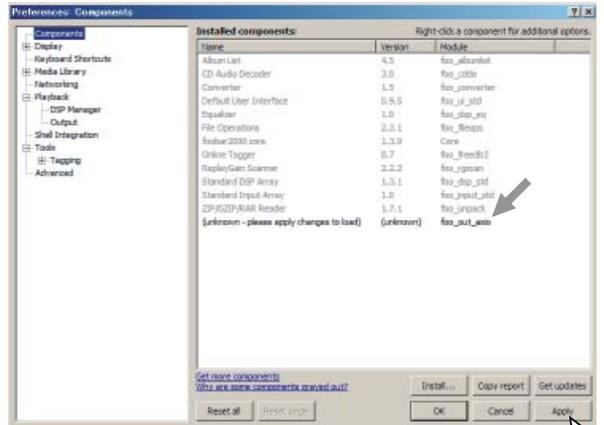
2.3. Double-click "foo_out_asio_v2p1p2.fb2k-component" in the folder.



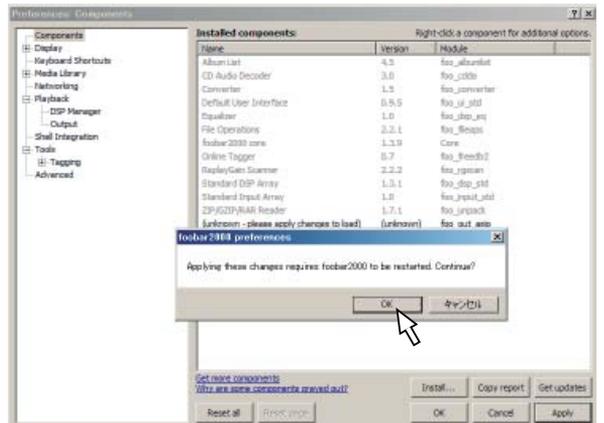
2.4. foobar2000 Components Installer will start. Click "Yes(Y)" to continue.



2.5. The installing component "foo_out_asio" will be listed up marked with (unknown). Click "Apply" to continue the installation.



2.6. Click "OK" to complete the installation and change. foobar2000 will restart.



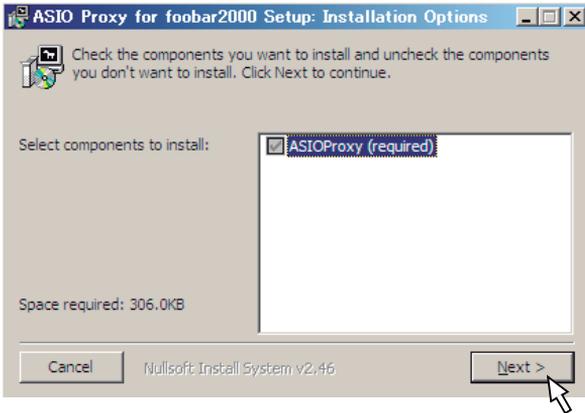
3. ASIO Proxy Installation on foobar2000

3.1. Double-click "ASIOProxyInstall-0.7.2.exe" in the "da5_dsd-plugin_fb2k" folder.

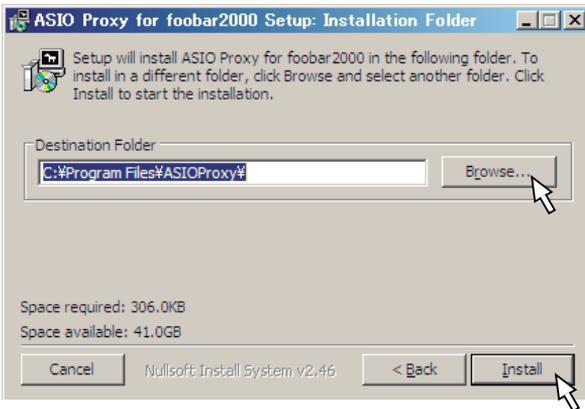


Installation and Setup for DSD Playback - continued -

3.2. Click "Next" on ASIO Proxy for foobar2000 Setup wizard to continue.



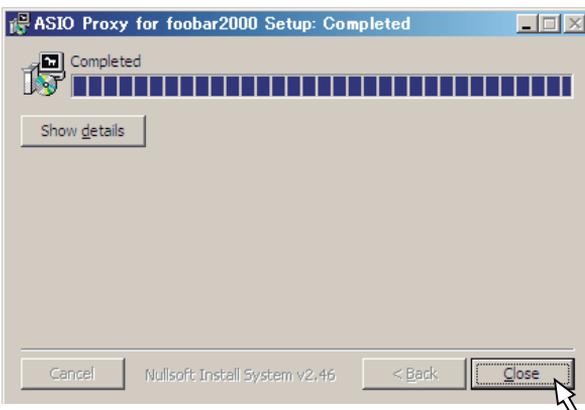
3.3. Select an install folder.



Click "Browse" to select a folder other than the default folder being showed.

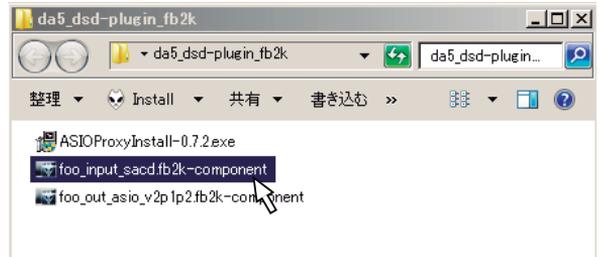
Click "Install" to start the installation.

3.4. Install will finish soon and click "Close" to complete the installation.

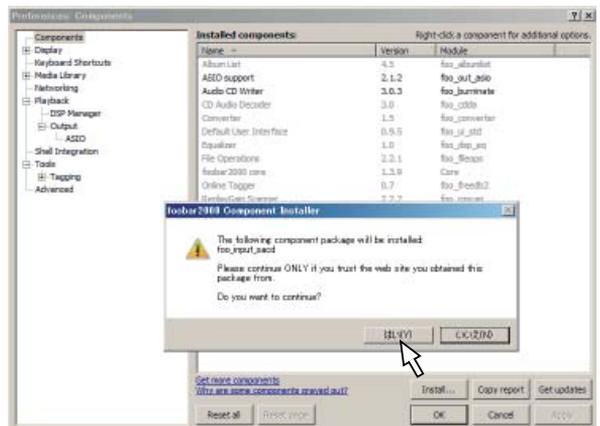


4. DSD Driver Installation on foobar2000

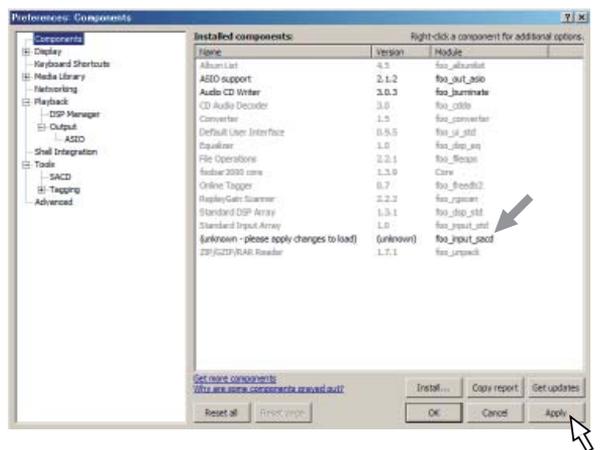
4.1. Double-click "foo_input_sacd.fb2k-component" in the "da5_dsd-plugin_fb2k" folder.



4.2. foobar2000 Component Installer will start. Click "Yes(Y)" to continue.

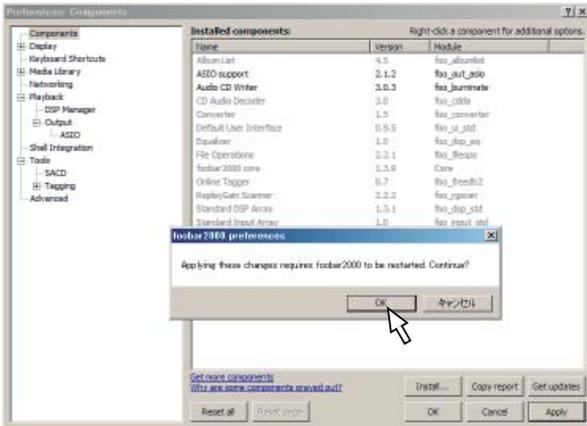


4.3. The installing component "foo_input_sacd" will be listed up marked with (unknown). Click "Apply" to continue the installation.



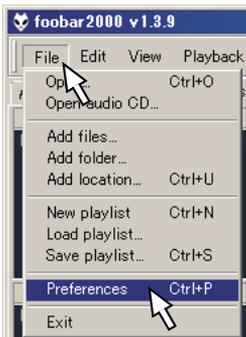
Installation and Setup for DSD Playback - continued -

4.4. Click "OK" to complete the installation and change. foobar2000 will restart.

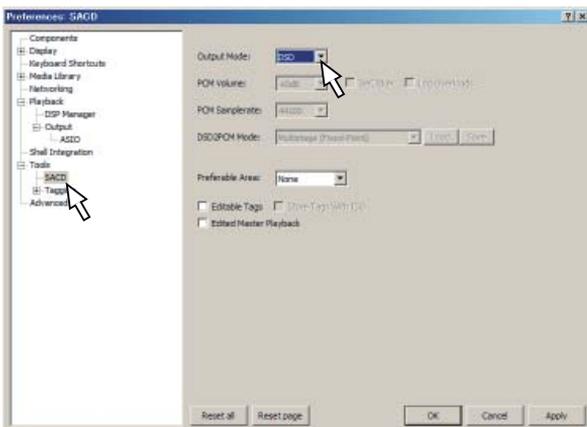


5. DSD Playback Setup on foobar2000

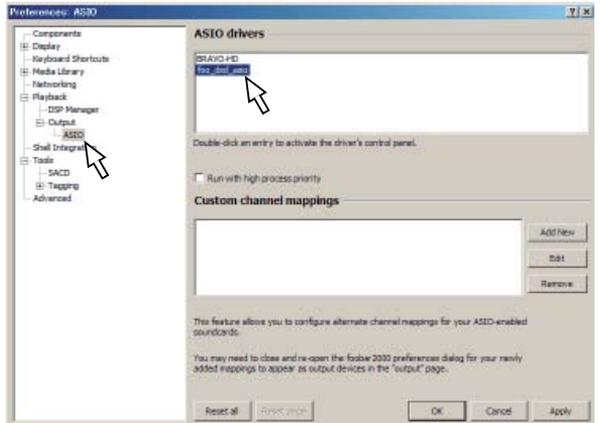
5.1. Click "File" on foobar2000 to open "Preferences".



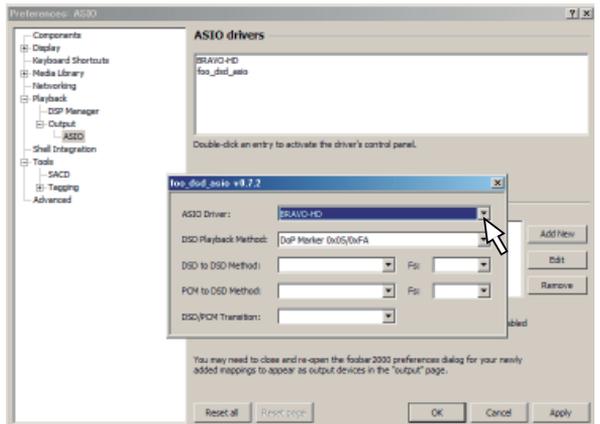
5.2. Click "Tools - SACD" on the left side tree and select "DSD" at Output Mode.



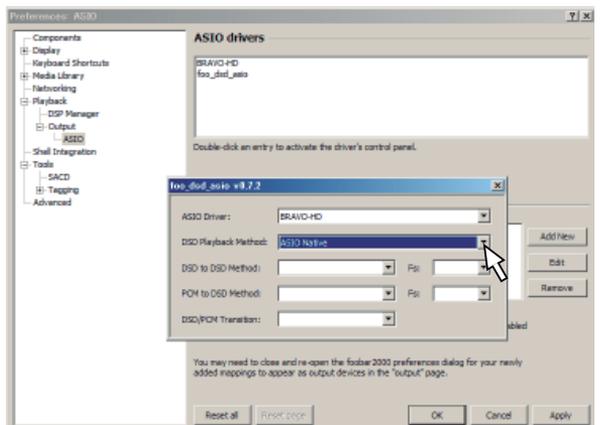
5.3. Click "Playback - Output - ASIO" on the left side tree, and double-click "foo_dsd_asio" listed at ASIO drivers.



5.4. Dialog for foo_dsd_asio v0.7.2 setting will appear. Select "BRAVO-HD" at ASIO Driver.

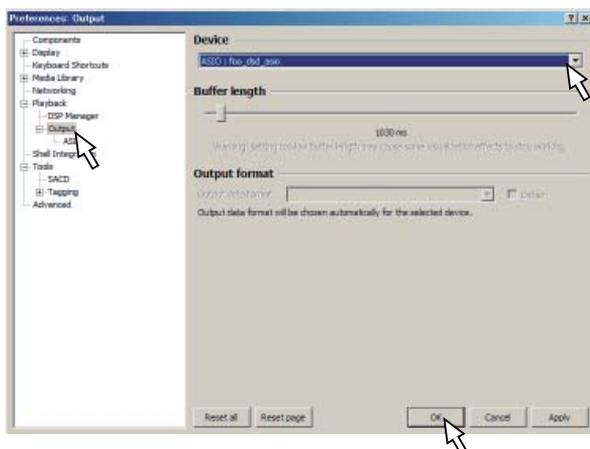


And select "ASIO Native" at DSD Playback Method. Any others are not compatible with DSD256.



Installation and Setup for DSD Playback - continued -

5.5. Click "Playback - Output" at the left side tree and select "ASIO:foo_dsd_asio" at Device. And click "OK" to finish the setup.



All the installation and setup have completed.

Now foobar2000 is compatible with DSD up to 256 (11.2896MHz) and PCM up to 32bit/384kHz through DA5-USB.

NOTE:

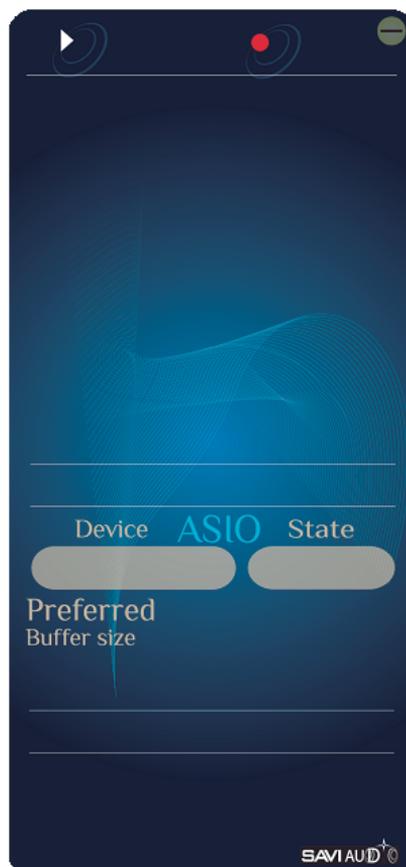
□ In order to avoid any interruption or affection from PC upon listening to your desired music through ASIO at foobar2000, set the output of reproduction to the other than CEC DA5 HS USB Audio at Sound and Audio Device property at your PC (refer to page 16). The volume control and/or mute function can be operated by foobar 2000, DA5 and/or amplifier.

□ When you listen to the music through the other sound/playback device than ASIO at foobar 2000 like Windows Media Player and/or iTunes, set the output of reproduction to CEC DA5 HS USB Audio at Sound and Audio Device property at your PC.

BRAVO-HD Control Panel

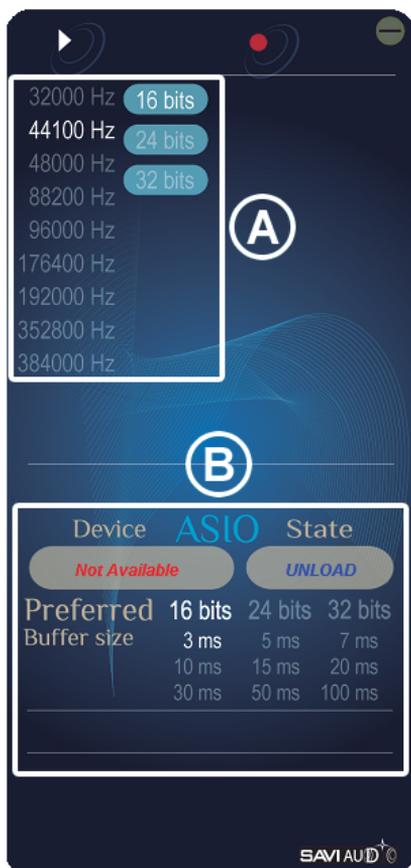
To start "BRAVO-HD Audio CPL"

Click the short-cut on desktop or in the programs menu. BRAVO-HD control panel will appear.



Turning on DA5

Turning on DA5 connected via USB cable the BRAVO-HD control panel will change to show a current setting.



In the area marked with **A** click to change the sample rate and/or bit rate to be used on Windows sharing mode.

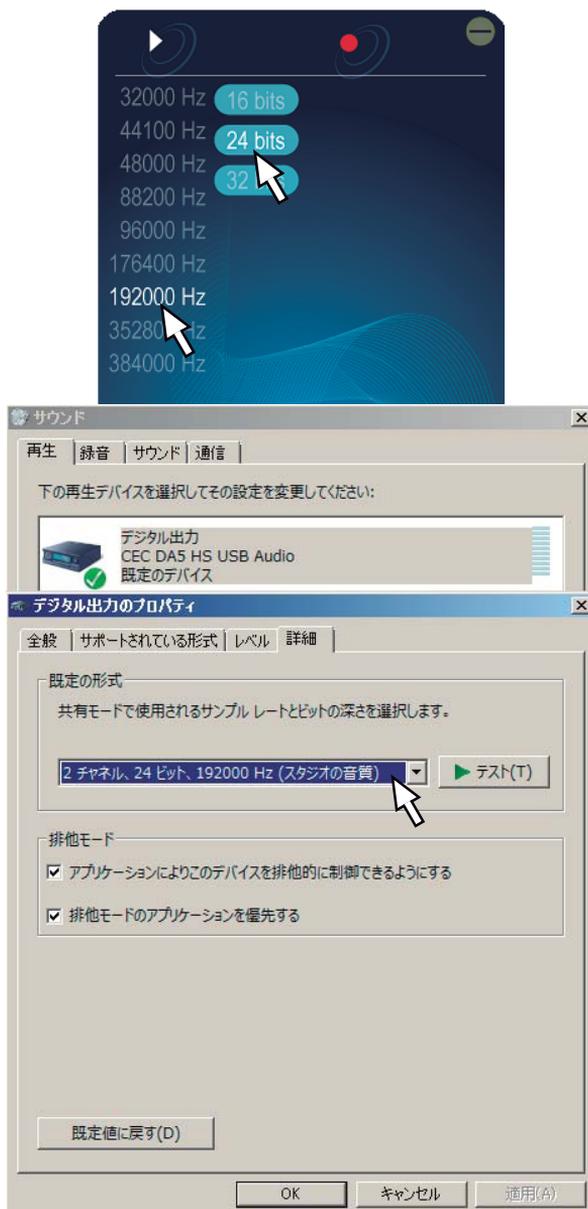
Note: WindowsXP does not have the sample rate and bit rate settings for sharing mode, thus **A** is not showed.

In the area marked with **B** the current setting and playback via foobar2000 ASIO output are displayed. And click to change the bit rate and buffer size.

Note: **B** does not work on playback via other than ASIO.

Setting for sharing mode

Changing the sample rate and bits per sample on BRAVO-HD control panel the Windows system setting on "sound - digital output property" will change accordingly, and vice versa.



Note: Setting 352.8kHz or 384kHz the sound from ex. an internet browser may be unstable and noisy. In that case set the sample rate 192kHz or lower and restart.

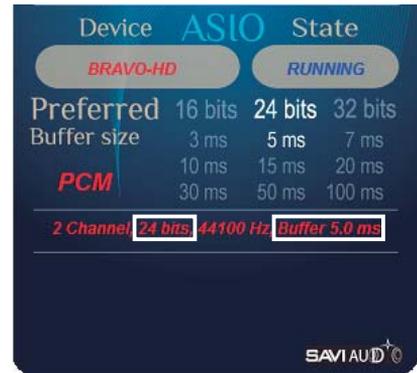
Playing a PCM file

PCM, bit rate, sampling frequency and buffer size of a current PCM playback via ASIO like a foobar2000 output setting are displayed.



Changing the bit rate and buffer size

Ex. Playback after changing the bit rate and buffer size during stop will show the new settings.



Note: Bit rate setting should be the same as or more than playback file. Otherwise the bit rate for output is less than the original.

Note: By smaller buffer size setting against a higher resolution music file a continuous noise on music from the beginning, pop noise or interruption may happen. In that case set the buffer size bigger and restart.

Playing a DSD file

Ex. Displaying a DSD64/2.8MHz playback.



Note: Selecting ASIO Native at DSD Playback Method (refer to page 19), the bit rate and buffer size during DSD playback are fixed at 32 bits and 10.0 ms.

Ex. Displaying a DSD128/5.6MHz playback.



Ex. Displaying a DSD256/11.2MHz playback.



Note: Start BRAVO-HD Audio CPL to see a current playback or change the settings. You don't need to start it every playback.



CEC Holdings Co., Ltd., Japan
