

## OWNER'S MANUAL

### Before you connect this device

In order to use the **DS-DAC-10R on Windows (ASIO)**, you'll need to make driver settings. It is important that you do not connect the DS-DAC-10R to your computer before you have installed the driver.

Carefully read the section entitled "**Download and Install**," and download and install the Setup program before you connect the DS-DAC-10R to your computer.

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# Introduction

## Features

The DS-DAC-10R is a USB DAC/ADC that supports 1-bit DSD native playback/record\* on Windows (ASIO/WDM) or Mac (Core Audio).

By using it in conjunction with the AudioGate4 HIGH RESOLUTION MUSIC PLAYER application, you can enjoy native playback/record of high-quality 1-bit DSD sound.

\* Use AudioGate for DSD native playback/recording. On Windows, this may also be possible with applications that support ASIO 2.1 DSD.

### Supported input:

PCM 44.1 kHz–192 kHz, 1-bit DSD 2.8224 MHz, 5.6448 MHz, Analog signal

### Supported audio drivers:

ASIO, WDM, Core Audio

## Operating requirements

### Windows

#### Operating system:

Windows 7 Service Pack 1 (32 bit, 64 bit), Windows 8.1 (32 bit, 64 bit)

Windows 10 (32 bit, 64 bit)

**CPU:** Intel® Core™ Processors 2.6 GHz or higher (base or max)

\*Intel Core i3 or better recommended

\*DSD real-time conversion playback between 2.8 MHz and 5.6 MHz requires 3.1 GHz or higher.

**RAM:** 4 GB or more

### Mac OS

#### Operating system:

Mac OS X 10.8, 10.9, 10.10

**CPU:** Intel® Core™ Processors 2.6 GHz or higher (base or max)

\*Intel Core i3 or better recommended


\*DSD real-time conversion playback between 2.8 MHz and 5.6 MHz requires 3.1 GHz or higher.

**RAM:** 4 GB or more

# Download and Install

## Windows users

Use the KORG AudioGate and DS-DAC Setup program to install the ASIO driver and AudioGate.

 Do not connect the DS-DAC-10R to your computer before you've finished installing the driver. If you've already connected it, disconnect it; then reconnect it after you've finished installing the driver.

### Installing the ASIO driver/AudioGate

- 1** Access the following AudioGate 4 download page:  
<http://www.korg.com/products/audio/audiogate4/download.php>
- 2** Choose "AudioGate and DS-DAC Setup Download," and press the Windows version of download button to download the setup program.
- 3** Decompress the downloaded .zip file. In the "KORG AudioGate and DS-DAC Setup" folder, run Setup. The KORG AudioGate and DS-DAC Setup panel appears.
- 4** Click "Install DS-DAC-10R Driver" to install the ASIO driver. (refer to "• ASIO driver installation procedure" on page 4)
- 5** If you want to install AudioGate, click "Install AudioGate" in the KORG AudioGate and DS-DAC Setup panel.  
Carefully read "Activating AudioGate" which appears during installation, and then complete the installation.
- 6** Click "Finish" to exit the setup program.

**note** If you're recording with an application other than AudioGate, you'll need to use the "DS-DAC-10R Setting Tool" to set the input level. Click "Install the DS-DAC-10R Setting Tool" to install it.

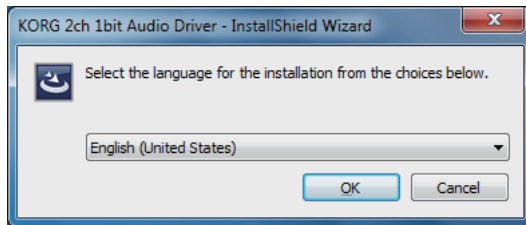
## • ASIO driver installation procedure

- ⚠ Do not connect the DS-DAC-10R to your computer before you've finished installing the driver. If you've already connected it, disconnect it; then reconnect it after you've finished installing the driver.

The installation screens shown on your computer may differ somewhat depending on your Windows version and system, but the procedure is the same. The explanation that follows will show typical screens in Windows 7.

If, during installation, a message appeared to confirm whether or not to continue the installation, click [Install].

- 1 In the KORG AudioGate and DS-DAC Setup panel that you downloaded, click "Install DS-DAC-10R Driver" to start the installer.
- 2 In the language selection menu, choose English; click [OK].

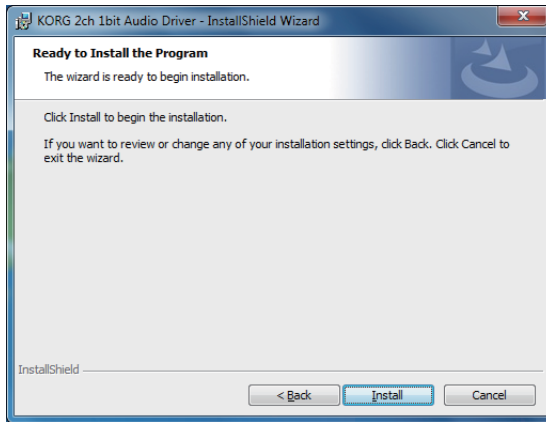


- 3 The dialog box will appear; click [Next >].



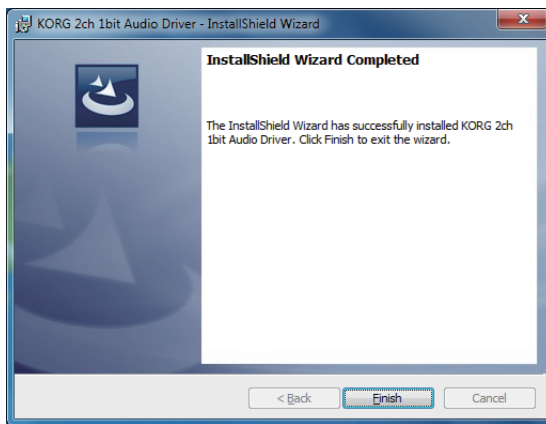
- 4 If you accept the license agreement, click [Next (N) >].

5 Click [Install] to begin installation.



6 If a security warning appears, click [Install].

7 Preparations for installation are now complete. Click [Finish] to exit the installer.



8 Connect the DS-DAC-10R to your computer.

Wait until Windows displays the message “The device driver software was installed correctly.”

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## Mac OS users


Use the KORG AudioGate and DS-DAC Setup program to install AudioGate. If you're using AudioGate, it is not necessary to install the driver.

### Installing the AudioGate

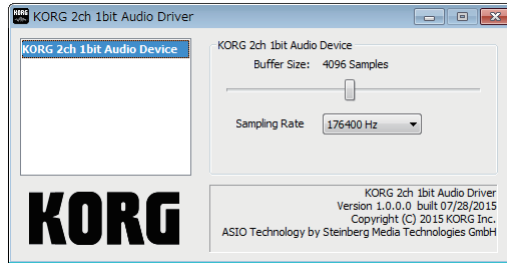
- 1** Access the following AudioGate 4 download page:  
<http://www.korg.com/products/audio/audiogate4/download.php>
- 2** Choose “AudioGate and DS-DAC Setup Download,” and press the Mac version of download button to download the setup program.
- 3** Open the .dmg file. In the “KORG AudioGate and DS-DAC Setup” folder, run Setup. The KORG AudioGate and DS-DAC Setup panel appears.
- 4** Click “Install AudioGate” in the KORG AudioGate and DS-DAC Setup panel. Carefully read “Activating AudioGate” which appears during installation, and then complete the installation.
- 5** Click “Finish” to exit the setup program.

**note** If you're recording with an application other than AudioGate, you'll need to use the “DS-DAC-10R Setting Tool” to set the input level. Click “Install the DS-DAC-10R Setting Tool” to install it.

# KORG 2ch 1bit Audio Driver Control Panel settings

 The Mac version of the control panel does not allow you to directly change the Sample Rate. You can make these changes via AudioGate or from the Audio MIDI settings of your Mac.

In the Windows start menu Control Panel, view all control panel items, and click “KORG 2ch 1bit Audio Driver” DS-DAC Audio I/O Driver Control Panel to open it; the following control panel appears:



## Buffer Size

Selects the buffer size. Moving the slider toward the left decreases the buffer size, and moving it toward the right increases the size.

- \* Increasing the buffer size increases the time difference (latency) between the direct sound and the monitored sound, but allows you to record safely without noise occurring.

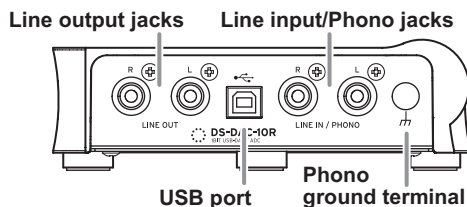
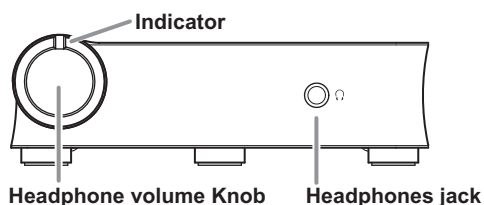
Normally, including while recording vinyl records, you should leave this at the maximum setting. Only if you are bothered by latency, such as when making a live recording, adjust the buffer size without allowing noise to occur.

## Sampling Rate

Specifies the sampling rate. Choose from 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz. If you're using the DS-DAC-10R with WDM (WASAPI/Direct Sound), make the setting here.

# Operation

## Front and rear panels




## Preparations

When driver installation is completed, use a USB cable to connect the DS-DAC-10R to your computer, and make preparations for listening to an audio file on your computer. After connecting the USB cable and until the DS-DAC-10R's system setup has completed, the indicator alternately blinks green and blue. When the indicator changes to being steadily lit, start AudioGate.

 Use the included USB cable to connect the unit to your computer and to verify that it's working.

**The DS-DAC-10R operates on USB bus power. It does not need an AC adaptor or any other external power supply.**

 Whenever possible, connect this unit directly to a USB port on your computer. If you cannot avoid using a USB hub, you should use a USB hub that has its own power supply. A bus-powered USB hub may be unable to supply enough power.

- 1** If you want to listen through headphones, connect your headphones to the headphone jack.
- 2** If you want to connect an amp and speakers for listening, connect the line out jacks of the DS-DAC-10R to your system using the appropriate cables.
- 3** If you want to record, connect the output cable of your analog device to the line input/phono jacks.



**4** Check the USB port connection. The indicator is lit green if the connection from your computer to the DS-DAC-10R is enabled.

The color of the indicator changes depending on the system and application settings, and on the sampling rate of the audio file that you're playing back.

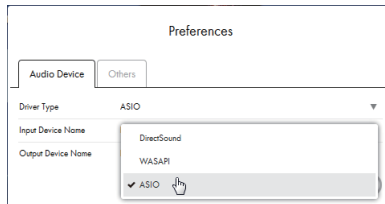
Sampling rate	44.1 kHz 48 kHz	88.2 kHz 96 kHz	176.4 kHz 192 kHz	2.8 MHz	5.6 MHz
Indicator	Green	Purple	White	Light blue	Dark blue

When in record-standby mode, the sampling rate and the red indicator are lit alternately, and during recording the indicator is lit red.

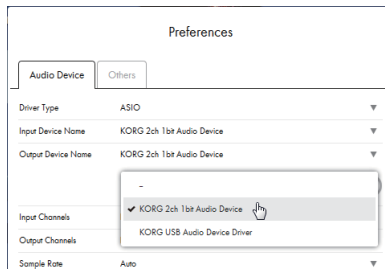
# Basic operation

## DSD native playback via Windows (ASIO)

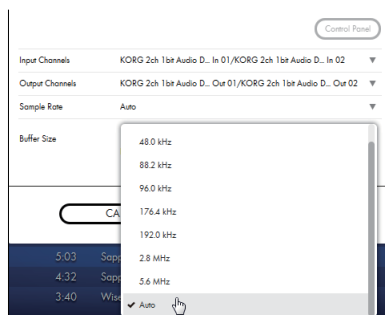
- 1 Use the AudioGate and DS-DAC Setup program to install AudioGate (refer to “Installing the ASIO driver/AudioGate” on page 3).
- 2 Connect the DS-DAC-10R to your computer, and then start AudioGate.  
If you start AudioGate without the DS-DAC-10R connected, license verification will be completed when you connect the DS-DAC-10R.
- 3 From the menu, choose [Edit]-[Preferences...], and click the [Audio Devices] tab.
- 4 In [Driver Type], choose “ASIO.”



- 5 In [Output Device Name], choose “KORG 2ch 1bit Audio Device.”



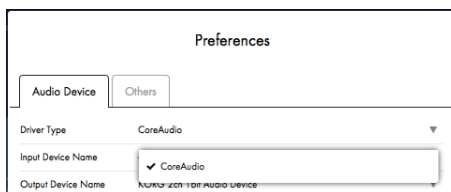
- 6 Set [Sample Rate] to “Auto” or to “5.6 MHz” or “2.8 MHz.”



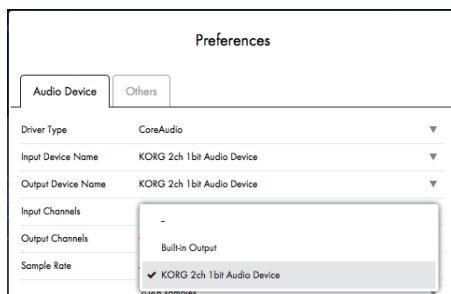
- 7** Add DSDIFF, DSF, or WSD files to the song list by dragging them in.  
If you added WAV or FLAC files to the song list, they will be converted for playback to the sample rate that you selected in step 6.
- 8** Click the play button in AudioGate to play the audio.
- 9** If you're listening through headphones, you can adjust the volume by turning the headphone volume knob of the DS-DAC-10R.

## DSD native playback via Mac (Core Audio)

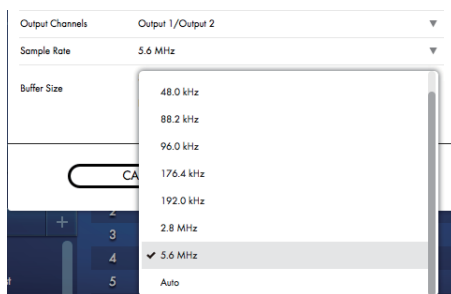
- 1 Use the AudioGate and DS-DAC Setup program to install AudioGate (refer to “Installing the AudioGate” on page 6).
- 2 Connect the DS-DAC-10R to your computer, and then start AudioGate.  
If you start AudioGate without the DS-DAC-10 Rconnected, license verification will be completed when you connect the DS-DAC-10R.
- 3 From the menu, choose Mac, [AudioGate]-[Preferences...], and click the [Audio Devices] tab.
- 4 In [Driver Type], make sure that “Core Audio” is selected.



- 5 Choose “KORG 2ch 1bit Audio Device” for both the [Output Device Name] and [Input Device Name]. Playback is not affected even if you leave [Input Device Name] blank.



- 6 Set [Sample Rate] to “Auto” or to “5.6 MHz” or “2.8 MHz.”



- 7 Add DSDIFF, DSF, or WSD files to the song list by dragging them in.  
If you added WAV or FLAC files to the song list, they will be converted for playback to the sample rate that you selected in step 6.
- 8 Click the play button in AudioGate to play the audio.
- 9 If you're listening through headphones, you can adjust the volume by turning the headphone volume knob of the DS-DAC-10R.

## DSD recording (Recording using AudioGate)

### Preparations

Here's how to make settings for DSD native playback. If you're using a Mac, choose "KORG 2ch 1bit Audio Device" as the "Input Device Name" (refer to step 5 of "DSD native playback via Mac (Core Audio)" on page 12).

The recorded file will be stereo, and the sampling rate will be the value shown in the upper part of AudioGate.

**1** Using an audio cable, connect the line output of your audio device or your record player to the line/phono input jacks of the DS-DAC-10R.

If necessary, connect the ground terminal of your record player to the phono ground terminal of the DS-DAC-10R.

**2** In AudioGate, click the Rec Setting button to access the recording file settings.

Rec Setting	
Destination	D:\Private\Audio\AudioGate
DSD Recording File Format	DSDIFF
PCM Recording File Format	WAV
PCM Recording Bit Depth	24 bit
Recording Phono Equalizer Type	RIAA
Total Recording Time	06:00:00.000
Input Type	Phono

CANCEL OK

**3** Click "Input Type," and select "Line" or "Phono."

**4** If you're recording an LP record and want to apply the equalizer during playback, click "Recording Phono Equalizer Type" and turn it "Off." If you want to apply the equalizer during recording, select the appropriate curve.

**5** Click "DSD Recording File Format" and select "DSDIFF," "DSF," or "WSD."

**6** Click the OK button to close the recording settings.

**7** Click AudioGate's input monitor settings button (Input Monitor).

**8** Play back your audio device, and drag the input level slider so that the clip indicator of AudioGate's level meter does not light.

**9** To start recording, click AudioGate's record button [●].

**10** Click the stop button [■] to stop recording.

 For details, refer to the AudioGate4 owner's manual.

## **DS-DAC-10R Setting Tool**

If you're not using AudioGate, use this application to adjust the input level.

This application also lets you check the firmware version and the Line input/Phono jacks type.

### **Windows:**

Open the Windows Start menu → All Programs → Korg → USB Audio Device → DS-DAC-10R Setting Tool.

### **Mac:**

Open Applications → DS-DAC-10R Setting Tool.app.

### **Firmware Version**

Indicates the version of the DS-DAC-10R's firmware.

### **Input Level**

Adjusts the input level of the DS-DAC-10R's Line input/Phono jacks.

### **Current Input**

Indicates the DS-DAC-10R's Line input/Phono jacks type (LINE, PHONO) specified in AudioGate.

# Troubleshooting

The latest information is provided on the Web:

[http://www.korg.com/products/audio/ds\\_dac\\_10r/](http://www.korg.com/products/audio/ds_dac_10r/)

**The power won't turn on, the device is not recognized by computer, or the operation is unstable.**

- Which USB cable are you using?  
Use the included USB cable.  
Some commercially available USB cables only support Full Speed. If you provide your own cable, be sure that it supports USB 2.0 High Speed.
- Are you using a USB hub?  
If the DS-DAC-10R is connected via a bus-powered USB hub, there might be insufficient power for the DS-DAC-10R to power-on, or operation might be unstable.  
In this case, connect the DS-DAC-10R directly to a USB port on the computer itself without going through a USB hub, or use a self-powered hub that supports USB 2.0 High Speed.
- Could the USB cable be broken?
- Is your computer's USB port working correctly?

**No sound is coming from the DS-DAC-10R**

- Check whether the DS-DAC-10R is correctly recognized in the DS-DAC-10R Setting Tool.

## **Windows users**

Open the Windows Start menu → All Programs → Korg → USB Audio Device → DS-DAC-10R Setting Tool.

If the Driver and Firmware versions are displayed as "Disconnected", the DS-DAC-10R has not been correctly recognized. Disconnect the USB cable, then reconnect it and check this indication again.

## **Mac OS X users**

Open Applications → DS-DAC-10R Setting Tool.app.

If the Driver and Firmware versions are displayed as "Disconnected", the DS-DAC-10R has not been correctly recognized. Disconnect the USB cable, then reconnect it and check this indication again.

- In some cases, the indicators of the DS-DAC-10R will indicate an error.  
→ refer to "Indicator is blinking" on page 17.

**Can't select DSD**

- In some cases, the indicators of the DS-DAC-10R will indicate an error.  
→ refer to "Indicator is blinking" on page 17.



## Indicator is blinking

- **Blinking slowly:**  
The computer is in sleep mode. When the computer returns from sleep mode, the indicator returns to being solidly lit.
- **Rapidly blinking red:**  
A system error has occurred. Disconnect the USB cable, and then reconnect it to turn the power on again. If doing this several times does not solve the problem, contact your local Korg distributor.

## Sound is interrupted/Noise is heard

- **During realtime conversion playback using AudioGate:**  
Performing realtime conversion to DSD at “High Quality” places a greater processing load on the CPU. In this case, choose the “Low Load” setting, or use EXPORT to create the DSD file before playing it back.
- **When using a laptop computer:**  
Even if the CPU performance is high, noise may occur if power-saving settings are enabled. Change the power scheme in “Power Options” of the “Control Panel,” and also turn off any other power saving plan that is specific to your computer.
- **When playing back in Windows**  
Click Start menu → Control Panel → KORG 2ch 1bit Audio Driver to open the KORG 2ch 1bit Audio Driver Control Panel. Adjust the Buffer Size (refer to “Buffer Size” on page 7).  
\* If you're using a computer with limited processing capability, you should generally increase the Buffer Size.
- **When using Core Audio playback on Mac:**  
You should adjust the buffer size in the audio device tab of AudioGate preferences.
- **The sample rate of the audio device is set to Auto.**  
You may hear a slight click if the sample rate of the audio device is set to Auto, or when you change the sample rate manually, but this is not a malfunction.
- **The DS-DAC-10R is connected to a USB 3.0 port.**  
We recommend that you connect the DS-DAC-10R to a USB 2.0 port.
- **Could you be using or running a large number of software programs simultaneously?**
- **Hiss is heard from the headphone output.**  
Are you using headphones whose output impedance is 16 ohms or greater?  
You might hear a faint hiss when using some high-efficiency low-impedance ear-phones.

# Specifications

Audio interface	Number of channels	2 channels
	Input formats (USB)	DSD: 2.8224 MHz/5.6448 MHz, 1 bit PCM: 44.1 kHz/48 kHz/88.2 kHz/96 kHz/176.4 kHz/192 kHz, 16 bit/24 bit
	Host interface	USB2.0 (High Speed)
	Audio drivers	ASIO2.1, WDM, Core Audio
General	Indicator	Power, Sample Rate, Rec Status combined
	Power supply/ Power consumption	USB bus power (5 V 500 mA)/ 2.5 W
	Dimensions (W x D x H)	155 x 184 x 49 mm/6.10 x 7.24 x 1.93 inches (including protrusions)
	Weight	1.1 kg/2.43 lbs.
Main spec.	Frequency response	10 Hz–20 kHz $\pm$ 1 dB (fs=44.1 kHz/48 kHz) 10 Hz–40 kHz $\pm$ 1 dB
	S/N	105 dB (LINE/TYP.) 20 Hz–20 kHz, IHF-A
	THD+N	0.005% (LINE/TYP.) 20 Hz–20 kHz
Connectors	LINE OUT L/R	
	Form	RCA
	Load impedance	10 k ohms or greater
	Rated/Maximum level	-6 dBV/+6 dBV
	PHONES	
	Form	6.3 mm stereo phone jack
	Load impedance	16 ohms or greater
	Maximum output	70 mW + 70 mW (PEAK) @32 $\Omega$
	LINE IN L/R (PHONO L/R combination)	
	Form	RCA
	Input impedance	47 k ohms (LINE), 50 k ohms (PHONO)
	Rated/Maximum level	5 mV rms/100 mV rms (PHONO at 1 kHz) -6 dBV/+6 dBV (LINE)
	USB (device)	
	Form/Format	Type B/USB 2.0 compliant High Speed
	Supported OS	Windows 7 Service Pack 1 (32bit, 64bit), Windows 8.1 (32bit, 64bit), Windows 10 (32bit, 64bit) Mac OS X 10.8, 10.9, 10.10
	Included items	USB cable

• Specifications and appearance are subject to change without notice for improvement.

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