Reference Information Playing back DSD audio using foobar2000

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NOTICE

- "foobar2000" is not Yamaha product. Yamaha cannot be held responsible for any damages arising out of the use of the software.
- "foobar2000" is installable only on Windows computers. The procedures described in this documentation are based on Windows 7.
- The documentation is based on information as at May 2013 (We have no plans to offer updates).

Required components

foobar2000

"foobar2000" is an advanced freeware audio player for Windows. By installing foobar2000 and other components on your Windows computer, you can enjoy DSD (Direct Stream Digital) audio playback on the unit (via USB DAC).

Yamaha Steinberg USB Driver

Driver software required for connecting a device compatible with Yamaha Steinberg USB Driver to a computer.

ASIO support

A component required for DSD audio playback on foobar2000.

Super Audio CD Decoder

A decoder required for direct DSD playback of Super Audio CD ISO images, DSDIFF and DSF files on compatible devices.

Installing foobar2000

- Download the latest stable version of foobar2000 at the following website.
- 2 Double-click the downloaded file "foobar2000_v*.*.*.exe" to start installation.
- **3** Follow the on-screen instructions to install the software.

Installing Yamaha Steinberg USB Driver and configuring its settings

- Download "Yamaha Steinberg USB Driver" at the following Yamaha website.
- **2** Install "Yamaha Steinberg USB Driver" on your computer, connect the unit to your computer, then open its control panel.

For details on the installation and how to open the control panel of the driver, refer to the Installation Guide supplied with the driver software. For details on the connection, refer to the Owner's Manual of the unit.

3 Configure the following control panel settings.

"ASIO" setting
 Device: Yamaha CD player

🥶 Yamaha Steinberg USB I	Driver 🛛 🛛
Yamaha CD Player ASI	O About
Device :	Yamaha CD Player 💌
Buffer Size :	131072 Samples 🔻
Input Latency :	50.437 msec
Output Latency :	54.439 msec
	OK Cancel
🥶 Yamaha Steinberg USB [Driver 💌
Yamaha CD Player ASI	O About
Sample Rate :	176.4 kHz

• "Yamaha CD Player" setting Sample Rate: 176.4 kHz

4 Click [OK].

Installation and settings of "Yamaha Steinberg USB Driver" is now completed.

ОК

Cancel

Installing the "ASIO support" component

 Download the "ASIO support" component (foo_out_asio) at the following website.
 Run foobar2000, then select [File] → [Preferences].



? × Right-click a compor ent for additional opt Installed co ents Name Album List CD Audio Version Module foo_albu foo_cdda 4.5 3.0 1.5 0.9.5 1.0 1.2.6 2.2 1.2 1.0 rete Default User Interface foo_ui_st Equalizer foobar2000 core ReplayGain Scanne Standard DSP Array Standard Input Array Get more components Why are some compor Install... Copy report Get updates ints grayed out? Reset all Reset page OK Cancel Apply

Na	ime	Date modified	Туре	Size	
10	foo_out_asio.fb2k-component	2013/05/15 14:42	foobar2000 Comp	183 KI	в
mer	foo out ario fh2k-component			-	foobar2000 c
	roo_ou_asio.rozk-component				000000000
				. L	Upen

3 Click [Components] \rightarrow [Install].

4 Select the downloaded component "foo_out_asio.fb2k-component", then click [Open].

5 Click [Apply].

omponents	Installed components:	Ri	ght-click a component for additiona
isplay	Name	Version	Module
eyboard Shortcuts	Album List	4.5	foo albumlist
edia Library	CD Audio Decoder	3.0	foo cdda
etworking	Converter	1.5	foo_converter
aybook	Default User Interface	0.9.5	foo_ui_std
dvanced	Equalizer	1.0	foo_dsp_eq
	foobar 2000 core	1.2.6	Core
	ReplayGain Scanner	2.2	foo_rgscan
	Standard DSP Array	1.2	foo_dsp_std
	Standard Input Array	1.0	foo_input_std
	(unknown - please apply changes to load)	(unknown)	foo_out_asio
	Get more components Why are some components graved out?		install <u>C</u> opy report Get

6 In the dialog box, click [OK] to restart foolbar2000.

foobar2000 preferences	×
Applying these changes requires foobar2000 to be restarted. C	ontinue?

ОК

Cancel

7 If foolbar2000 is restarted, click [File] → [Preferences] → [Components], then confirm "ASIO support" is listed in "Installed components".

Installation of the "ASIO support" component is now completed.

Components	Installed components:	Ri	ght-click a component for additional optic
Display	Name	Version	Module
Keyboard Shortcuts	Album List	4.5	foo albumist
Media Library Networking	ASIO support	2.1.2	foo_out_asio
Playback	Co Auto Decode	510	100_0000
Shell Integration	Converter	1.5	foo_converter
Advanced	Default User Interface	0.9.5	foo_ui_std
	Equalizer	1.0	foo_dsp_eq
	foobar2000 core	1.2.6	Core
	ReplayGain Scanner	2.2	foo_rgscan
	Standard DSP Array	1.2	foo_dsp_std
	Standard Input Array	1.0	foo_input_std
	Get more components Why are some components graved ou Reset all Reset name	t2	Install Copy report Get updat

Installing the "Super Audio CD Decoder" component

Download the latest version of "foo_input_sacd-0.*.*.zip" at the following website.

http://sourceforge.net/projects/sacddecoder/ files/foo_input_sacd/ Looking for the latest version? Download foo_input_sacd-0.6.4.zip (442.2 kB)

Home / foo_input_sacd				
Name +	Modified +	Size *	Downloads *	
↑ Parent folder				
foo_input_sacd-0.6.4.zip				0 🖿
foo_input_sacd-0.6.3.zip				0
foo_input_sacd-0.6.2.zip				0
foo_input_sacd-0.6.1.zip				0
foo_input_sacd-0.6.0.zip				0
foo_input_sacd-0.5.11.zip				0

- 2 Uncompress the downloaded file "foo_input_sacd-0.*.*.zip".
- **3** In the uncompressed folder, double-click "ASIOProxyInstall-0.*.*.exe" to start installation.



- **4** Follow the on-screen instructions to install the component.
- **5** Run foobar2000, then select [File] \rightarrow [Preferences].

🥺 foobar2000 v1.2.6			- 1
File dit View Play	/back Library	Help 🗆 🗅 🔟 🕅 🖓	
(Open	Ctrl+O		
Open audio CD		Track no Title / track artist	Durat
Add files			
Add folder			
Add location	Ctrl+U		
New playlist	Ctrl+N		
Load playlist			
Save playlist	Ctrl+S		
Preferences	Ctrl+P		
Exit			

6 Click [Components] \rightarrow [Install].



7 Select the downloaded component "foo_input_sacd-0.*.*.zip", then click [Open].



8 Click [Apply].

eferences: Components			<u>ତ – ×</u>
- Components	Installed components:	Ri	ght-click a component for additional option
⊳ Display	Name	Version	Module
Keyboard Shortcuts	Album List	4.5	foo_albumlist
Networking	ASIO support	2.1.2	foo_out_asio
- Rayback	CD Audio Decoder	3.0	foo_cdda
- Shell Integration	Converter	1.5	foo_converter
- Advanced	Default User Interface	0.9.5	foo_ui_std
	Equalizer	1.0	foo_dsp_eq
	foobar 2000 core	1.2.6	Core
	ReplayGain Scanner	2.2	foo rgscan
	Standard DSP Array	1.2	foo dsp std
	Standard Input Array	1.0	foo input std
	(unknown - please apply changes to load	i) (unknown)	foo input sacd
	Get more components Why are some components grayed out?	1	Install
	Reset all Reset page		OK Cancel Apply

9 In the dialog box, click [OK] to restart foolbar2000.



10 If foolbar2000 is restarted, click [File] → [Preferences] → [Components], then confirm "Super Audio CD Decoder" is listed in "Installed components".

Installation of the "Super Audio CD Decoder" component is now completed.

Components	Installed components:	Ri	ght-click a component for additional
Display	Name	Version	Module
-Keyboard Shortcuts	Album List	4.5	foo albumlist
Media Library	ASIO support	2.1.2	foo out asio
Deubealu	CD Audio Decoder	3.0	foo cdda
Shell Integration	Converter	1.5	foo_converter
Tools	Default User Interface	0.9.5	foo_ui_std
Advanced	Equalizer	1.0	foo_dsp_eq
	foobar2000 core	1.2.6	Core
	ReplayGain Scanner	2.2	foo_rgscan
	Standard DSP Array	1.2	foo_dsp_std
	Standard Input Array	1.0	foo input std
	Super Audio CD Decoder	0.6.4	foo_input_sacd
	Get more components Why are some components graved ou	112	[nstall] Copy report Get L

Configuring DSD playback settings of foobar2000

Click [File] → [Preferences] → [Playback] → [Output], then select "ASIO:foo_dsd_asio" from the "Device" pull-down list.

ponents	Device			
lay	DS : Primary Sound Driver			
board Shortcuts	And Content			
la Library	ASIO : foo dsd asio			
Playback DSP Manager OSP Manager Output Shell integration Tools Advanced	DS : Primary Sound Driver DS : Realtek Digital Output(Optical DS : Realtek Digital Output (Realte DS : Realtek Digital Output (Realte Warning: setting too low buffer	(Realtek High Definitio k High Definition Audio k High Definition Audio length may cause som	on Audio)) e visualization effect	s to stop working.
	Output format			
	Output format Output data format: Output data format will be chosen a	utomatically for the se	v Jected device.	Dither
	Output format Output data format: Output data format will be chosen a Fading	utomatically for the se	v lected device.	Dither
	Output format Output data format: Output data format: Fading Name	utomatically for the se Fade in	v lected device.	Dither
	Output format Output data format Output data format: Output data format will be chosen a Fading Name Pause and stop	utomatically for the se Fade in 100 ms	Fade out 100 ms	Dither
	Output format Output data format Output data format will be chosen a Fading Name Pause and stop Seek	Fade in 100 ms	Fade out 100 ms 100 ms	Dither
	Output format Output data format Output data format Output data format will be chosen a Fading Name Pause and stop Seek Manual track change	International provided in the set of the set	Fade out 100 ms 100 ms	Dither
	Output format Output data format Output data format will be chosen a Facting Name Pause and stop Seek Haruwa track change Automatic track change	Fade in 100 ms 100 ms 0 ms	Fade out 100 ms 100 ms 0 ms 0 ms	Dither

2 Click [Output] → [ASIO], then double-click "foo_dsd_asio" in "ASIO drivers".

Preferences: ASIO	8 ×
Preferences: ASIO Components Dagay Heppbard Shortats Heppbard Shortats Hepbard Shortats H	ASIO drivers ASIO drivers Ouble dick an entry to activate the driver's control panel. Duble dick an entry to activate the driver's control panel. Duble dick an entry to activate the driver's control panel. Duble dick an entry to activate the driver's control panel. Duble dick an entry to activate the driver's control panel. Duble dick an entry to activate the driver's control panel. Duble dick an entry to activate the driver's control panel. Duble dick an entry to activate the driver's control panel. Duble dick an entry to activate the driver's control panel. Add New Edit Remove This feature allows you to configure alternate channel mappings for your ASIO-enabled soundards. You may need to chose and access the forbuc 2000 maternates dialon for your scenario.
	You may need to dose and re-open the foobar2000 preferences datag for your newly added mappings to appear as output devices in the "output" page.



- Configure the following settings.
 ASIO Driver: Yamaha Steinberg USB ASIO
 DSD Playback Method: ASIO Native
 Fs: DSD64 (normal speed playback) or DSD128 (double speed playback)
- **4** Click [X] (close button) to close the window.
- 5 Click [Tools] → [SACD], configure the following setting.
 - ASIO Driver Mode: DSD

6 Click [OK].

DSD playback settings of foobar2000 is now completed. You are ready to enjoy DSD audio playback on the unit.

