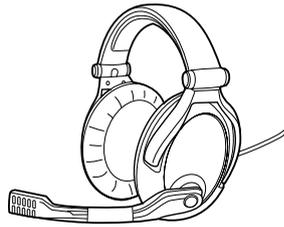
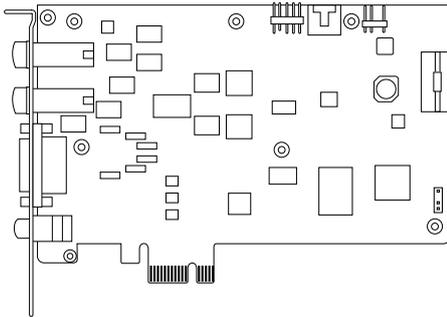




Xonar Xense

Premium Gaming Audio Set



User Manual

E7796
Second Edition
October 2012

Copyright © 2012 ASUSTeK COMPUTER INC. All Rights Reserved.

No part of this manual, including the products and software described in it, may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form or by any means, except documentation kept by the purchaser for backup purposes, without the express written permission of ASUSTeK COMPUTER INC. ("ASUS").

Product warranty or service will not be extended if: (1) the product is repaired, modified or altered, unless such repair, modification or alteration is authorized in writing by ASUS; or (2) the serial number of the product is defaced or missing.

ASUS PROVIDES THIS MANUAL "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL ASUS, ITS DIRECTORS, OFFICERS, EMPLOYEES OR AGENTS BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING DAMAGES FOR LOSS OF PROFITS, LOSS OF BUSINESS, LOSS OF USE OR DATA, INTERRUPTION OF BUSINESS AND THE LIKE), EVEN IF ASUS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES ARISING FROM ANY DEFECT OR ERROR IN THIS MANUAL OR PRODUCT.

SPECIFICATIONS AND INFORMATION CONTAINED IN THIS MANUAL ARE FURNISHED FOR INFORMATIONAL USE ONLY, AND ARE SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE, AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY ASUS. ASUS ASSUMES NO RESPONSIBILITY OR LIABILITY FOR ANY ERRORS OR INACCURACIES THAT MAY APPEAR IN THIS MANUAL, INCLUDING THE PRODUCTS AND SOFTWARE DESCRIBED IN IT.

Products and corporate names appearing in this manual may or may not be registered trademarks or copyrights of their respective companies, and are used only for identification or explanation and to the owners' benefit, without intent to infringe.

Contents

Contents	iii
Notices	v
Safety information	viii
Trademarks	viii
License	viii
About this guide	ix

Chapter 1 Product introduction

Package contents	1
System requirements	1
Specifications summary	2
Xonar Xense card layout	5
Gaming headset	6

Chapter 2 Getting started

Before you proceed	7
Installing the audio card	7
Connecting to a TV tuner card	9
Installing the audio card driver	10

Chapter 3 Connecting speakers and peripherals

Connecting analog speaker systems	11
Connecting the gaming headset	11
Connecting Line-in audio sources	12

Chapter 4 Xonar Xense Audio Center

Xonar Xense Audio Center	13
Main Setting	15
Mixer/Volume	23
Effects	26
FlexBass	28
Smart Volume Normalization	29
GX and DSP Modes	31

Appendices Troubleshooting and FAQs

Troubleshooting.....	33
Frequently Asked Questions (FAQs)	35
ASUS Contact information.....	38

Notices

REACH

Complying with the REACH (Registration, Evaluation, Authorisation, and Restriction of Chemicals) regulatory framework, we published the chemical substances in our products at ASUS REACH website at <http://green.asus.com/english/REACH.htm>.

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This class B digital apparatus complies with Canadian ICES-003.

Australia statement notice

From 1 January 2012, updated warranties apply to all ASUS products consistent with the Australian Consumer Law. For the latest product warranty details, please visit <http://support.asus.com>. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

If you require assistance, please call ASUS Customer Service at 1300 2787 88 or visit us at <http://support.asus.com>.

Prohibition of Co-location

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.



Important: Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. To maintain compliance with FCC RF exposure compliance requirements, please follow operation instruction as documented in this manual.

Safety Information

To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with minimum distance 20cm between the radiator and your body. Use on the supplied antenna.

Declaration of Conformity for R&TTE directive 1999/5/EC

Essential requirements – Article 3

Protection requirements for health and safety – Article 3.1a

Testing for electric safety according to EN 60950-1 has been conducted. These are considered relevant and sufficient.

Protection requirements for electromagnetic compatibility – Article 3.1b

Testing for electromagnetic compatibility according to EN 301 489-1 and EN 301 489-17 has been conducted. These are considered relevant and sufficient.

Effective use of the radio spectrum – Article 3.2

Testing for radio test suites according to EN 300 328- 2 has been conducted. These are considered relevant and sufficient.

CE Mark Warning

This is a Class B product, in a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Safety information

- Before installing the device on a motherboard, carefully read all the manuals that came with the package.
- To prevent electrical shock hazard or short circuits, switch off the power supply before installing the device on a motherboard or connecting any single cables to the device.
- If the device is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.
- Before using the product, make sure all cables are correctly connected. If you detect any damage, contact your dealer immediately.
- To avoid short circuit, keep paper clips, screws, and staples away from connectors, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.



This symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.

Trademarks

Xonar and ASUS logo are trademarks of ASUSTek Computer Inc. “Dolby” and “Dolby Digital Live”, “Dolby Pro Logic IIX”, “Dolby Virtual Speaker”, “Dolby Headphone” are trademarks of Dolby Laboratories. EAX and A3D are trademarks of Creative Technology Ltd. Microsoft, DirectSound3D, Windows are trademarks of Microsoft Corporation. Other company and product names may be trademarks of the respective companies with which they are associated. ASIO is a trademark and software of Steinberg Media Technologies GmbH

License

Dolby Master Studio driver is manufactured under license from Dolby Laboratories.

About this guide

This user guide contains the information you need when installing and configuring the motherboard.

How this guide is organized

This guide contains the following parts:

- **Chapter 1: Product introduction**
This chapter describes the features of the Xonar Essence ST.
- **Chapter 2: Getting started**
This chapter tells how to install the audio card and its driver.
- **Chapter 3: Connecting speakers and peripherals**
This chapter tells how to connect the speakers and peripherals to the audio card.
- **Chapter 4: Xonar Xense Audio Center**
This chapter provides information on the Xonar Audio Center, which is the graphics user interface (GUI) of the audio card driver.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. ASUS websites

The ASUS website provides updated information on ASUS hardware and software products. Refer to the ASUS contact information.

2. Optional documentation

Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

Conventions used in this guide

To ensure that you perform certain tasks properly, take note of the following symbols used throughout this manual.



DANGER/WARNING: Information to prevent injury to yourself when trying to complete a task.



CAUTION: Information to prevent damage to the components when trying to complete a task.



IMPORTANT: Instructions that you **MUST** follow to complete a task.



NOTE: Tips and additional information to help you complete a task.

Chapter 1

Product introduction

Package contents

- Xonar™ Xense Premium Gaming Audio Card x 1
- Sennheiser PC350-Xense Gaming Headset x 1
- 6.3mm to 3.5mm adapter x 1
- Audio splitter cable x 1
- Driver CD x 1
- S/PDIF TOSLINK optical adapter x 1
- Quick Start Guide x 1



If any of the above items is damaged or missing, contact your retailer.

System requirements

- One PCI Express 1.0 (or higher) compatible slot for the audio card
- One available 4-pin peripheral power cable connector from your computer's power supply unit
- Microsoft® Windows® Vista / Win 7(32/64bit) / XP(32/64bit) / MCE2005
- Intel® Pentium® 4 1.4GHz or AMD Athlon 1400 CPU or faster CPU
- 256 MB (or higher) DRAM system memory
- 60 MB (or higher) available HDD space for driver installation package
- CD-ROM drive (or DVD-ROM drive) for software installation
- High-quality headphones, powered analog speakers, or a Dolby Digital decoder, to enjoy the ultra-high fidelity sound

Specifications summary

ITEM	DESCRIPTION
Audio Performance	
Output Signal-to-Noise Ratio (A-Weighted)	118dB for Front channel of Line-out
	112dB for other channels of Line-out
	110dB for Headphone-out with 600ohm load
Input Signal-to-Noise Ratio (A-Weighted)	118dB
Output Total Harmonic Distortion + Noise at 1kHz (-3dB)	0.00039% (-108dB) for Front channel of Line-out
	0.00063% (-102dB) for other channels of Line-out
	0.0019% (-94dB) for Headphone-out with 600ohm load
Input Total Harmonic Distortion + Noise at 1kHz (-3dB)	0.0003% (-110dB) for Line-in
Frequency Response (-3dB, 24-bit/96kHz format)	<10Hz to 46KHz
Output/Input Full-Scale Voltage	2 Vrms (5.65 Vp-p)
Headphone Output Full-Scale Voltage	Up to 6.8Vrms (supports headphones with up to 600ohms impedance)
Bus Compatibility	
PCI Express	PCI Express Rev.1.0a specification compatible
	Maximum full 2.5Gbps bandwidth per direction and optimized latency for high-definition audio processing
	Compatible with X1, X4, X8, X16 PCI Express slots
Sample Rate and Resolution	
Analog Playback Sample Rate and Resolution	44.1K/48K/96K/192KHz @ 16/24bit
Analog Recording Sample Rate and Resolution	44.1K/48K/96K/192KHz @ 16/24bit
S/PDIF Digital Output	44.1K/48K/96K/192KHz @ 16/24bit, Dolby Digital
Main Chipset	
Audio Processor	ASUS AV100 High-Definition Sound Processor (Max. 192KHz/24bit)

(continued on the next page)

ITEM	DESCRIPTION
24-bit D-A Converter of Digital Sources	Texas Instruments PCM1796*1 for Front-Out (123dB SNR, Max. 192kHz/24bit)
	Cirrus-Logic CS4362A*1 for other 6 channels (114dB SNR, Max. 192kHz/24bit)
High Fidelity Headphone Amplifier	Texas Instruments 6120A2*1 (120dB SNR, -117dB THD+N @ Vcc±12V, RL=600Ω, f=1kHz)
24-bit A-D Converter for Analog Inputs	Cirrus-Logic CS5381 x 1 (120dB SNR, Max. 192kHz/24bit)
I/O Ports	
Analog Output Jack	6.30mm jack x 1 (Headphone out)
	7.1ch analog output (via bundled audio splitter cable)
Analog Input Jack	6.30mm jack x 1 (Shared by Line-In/Mic-In)
Digital S/PDIF Output	High-bandwidth Coaxial/TOS-Link combo port supports 192KHz/24bit
Other line-level analog input (for TV Tuner or CD-ROM)	Aux-In (4-pin header on the card)
Front Panel	Shared by Headphone out / 2 channels out / Microphone in
Driver Features	
Operating System	Windows® Vista/Win 7(32/64bit) / XP(32/64bit) / MCE2005
Dolby® Digital Live	Dolby Digital Live encodes any audio signal on PC in real-time to Dolby Digital (AC3) 5.1 surround sounds to your home theater environment through one single S/PDIF connection.
Dolby® Headphone	Dolby Headphone technology allows you to listen to music, watch movies, or play games with the dramatic 5.1-channel surround or realistic 3D spacious effects through any set of stereo headphones.
Dolby® Virtual Speaker	Dolby Virtual Speaker technology simulates a highly realistic 5.1-speaker surround sound listening environment from as few as two speakers.

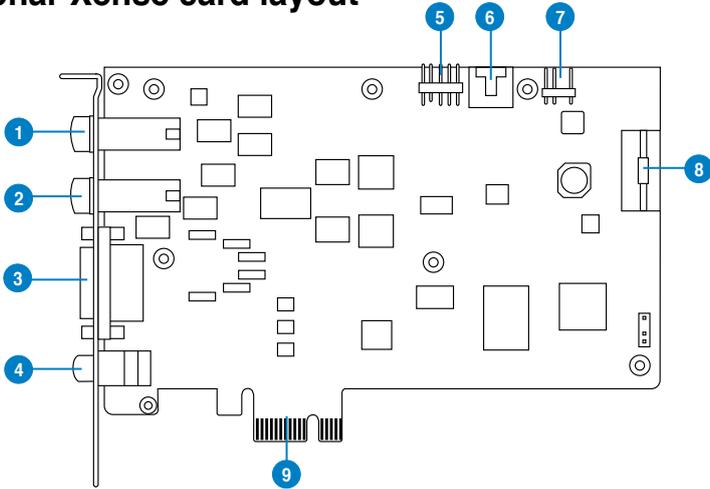
(continued on the next page)

ITEM	DESCRIPTION
Dolby® Pro-Logic IIx	Dolby Pro-Logic IIx is the well-known technology to process any native stereo or 5.1-channel audio into a 6.1- or 7.1- channel output, creating a seamless, natural surround soundfield.
DirectSound3D Game Extensions 2.0 & 1.0 (GX 2.5)	GX 2.5 supports EAX gaming sound effects and DirectSound 3D hardware enhanced functions for more games on Windows® XP/Vista/7. (DirectX/ DirectSound 3D compatible)
Smart Volume Normalizer™	Normalizes the volume of all audio sources into a constant level and also enhances your 3D sound listening range and advantages in gaming.
FlexBass	Professional Bass Management/Enhancement system
Xear 3D™ Virtual Speaker Shifter	Virtual 7.1 speaker positioning
Other Effects	10-band Equalizer/27 Environment Effects
3D Gaming Sound Engines/APIs	DirectSound3D® GX 2.0 & 1.0, EAX®2.0&1.0, DirectSound® HW, DirectSound SW, OpenAL generic modes, 128 3D sounds processing capability
ASIO 2.0 Driver Support	Supports 44.1K/48K/96K/192KHz @16/24bit with very low latency



Specifications are subject to change without prior notice.

Xonar Xense card layout



1

Microphone In port

Connect your headset's microphone cable to this port for voice input. It has a built-in high-quality Microphone pre-amplifier.

Line In port

Through an Ultra-high fidelity 118dB SNR A-D converter, connect analog devices like MP3 players, CD players, music synthesizers, and other line-level sound sources to this 6.3mm port for audio recording or processing.

2

Headphone Out port

Connect your headset's out cable to this port.



- DO NOT connect your speakers to the headphone out port. The possible high driving power may cause damage to your speakers.
- Before connecting your headphone, adjust the headphone impedance settings in the Xonar Xense Audio Center to match your headphone impedance. This is to prevent damage to your headphone.

3

7.1 ch Speaker Output

Connects to your speakers via 7.1 channel audio splitter cable.

4

SP/DIF Out port

Coaxial and optical TOSLINK combo digital output port. Connect to external digital decoder or digital speaker systems, Home Theater systems, AV receivers for outputting digital audio including PCM, Dolby Digital, DTS, and WMA-Pro.

5 Front panel audio header
Connect one end of the front panel audio cable to the front panel audio header on the audio card, with the other end to the chassis-mounted front panel audio I/O module.

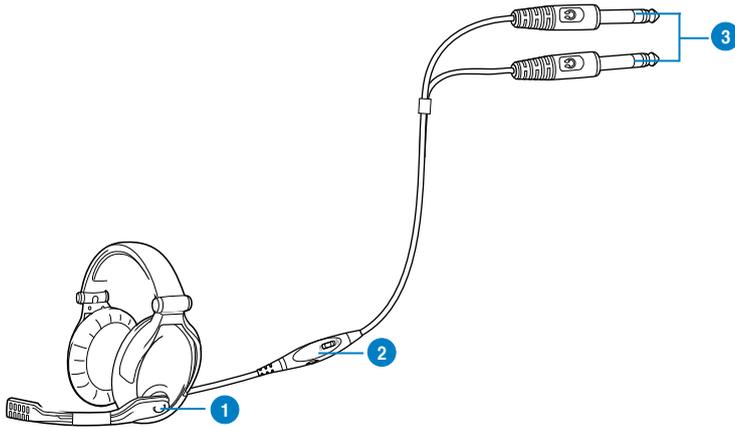
6 Aux Input Header
This 4-pin header usually connects to the Analog Audio output of a TV tuner card or another sound source inside your computer. To monitor your TV tuner card's audio from this Aux-In, you must enable the "monitor" function for Aux-In in the Xonar Xense Audio Center's recording mixer.

7 S/PDIF Header
Connects to supported graphics card.

8 Power connector
Connects to the power cable of your power supply unit.

9 PCI Bus golden fingers
Connects to the PCI Express slot on your motherboard.

Gaming headset



1 Microphone boom arm
Allows you to move your headset's microphone comfortably close to your mouth.

2 Volume control and mute box
Allows you to increase/decrease the volume of your headset's audio output and to put it on mute mode.

3 6.3mm connectors
Connects your headset to the audio card's Mic In/Line-In and Headphone Out ports.

Chapter 2

Getting started

Before you proceed



-
- Disable the onboard audio device in the BIOS settings or uninstall any other sound cards on your computer.
 - For BIOS setting or uninstallation of other sound cards, refer to the user manuals of your motherboard and sound cards.
-

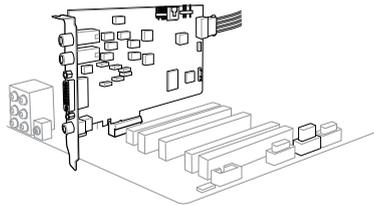


-
- Turn off your computer and disconnect all peripherals connected to it.
 - Unplug the computer's power cord from the power outlet.
 - To avoid static electricity, use a grounded wrist strap or touch a safely grounded object such as the metal part or the rear panel of your computer.
-

Installing the audio card

To install the audio card:

1. Remove the chassis cover of your computer.
2. Remove the metal bracket of a PCI Express slot at the rear panel of your computer.
3. Carefully insert the audio card into the PCI Express slot. Ensure that the audio card sits properly in place.



DO NOT force the audio card into the slot.

4. Secure the audio card with the screw you removed from the PCI Express slot's metal bracket.
5. Connect the power cable of your power supply unit (PSU) to the power connector of the audio card.



Ensure that the power cable is connected properly. Otherwise, the audio card will not work.

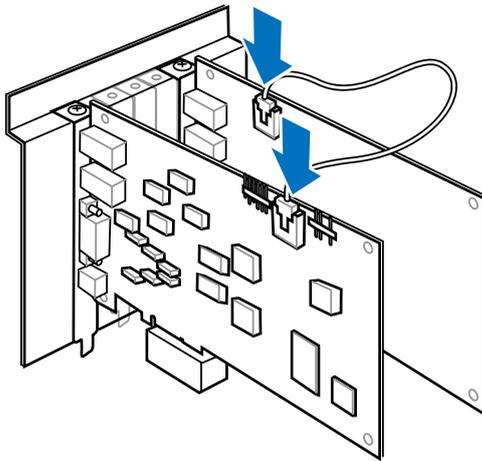
6. Replace the chassis cover.
7. Plug the computer's power cord into a power outlet.
8. Turn on your computer.

Connecting to a TV tuner card

If you have a traditional PCI/PCI Express TV tuner card on your computer, you may need to connect it to the audio card to send the tuner card's sound to your PC speakers.

To connect to a TV tuner card:

1. Secure the PCI/PCI Express TV tuner card into the rear panel with a screw.
2. Connect the audio output header from the TV tuner card to the Aux-In header of the audio card.



For optimum TV audio quality, Xonar uses ADC recording to digitize the signal and loops it back to DAC playback. Select Aux-In as the recording source in the Xonar Audio Center's recording mixer and enable the monitoring button to pass this signal to the audio output. Using this setup, you can even turn on sound effects such as Pro-Logic IIx to expand the stereo TV audio to 5.1 or 7.1 channel surround sound. This gives you a better TV audio quality on your computer compared to that of your TV.

Installing the audio card driver



Ensure that you have installed the VGA card driver before installing the audio card driver. Otherwise, driver installation error may occur.

To install the audio card driver:

1. After installing the audio card, turn on your computer. Windows® automatically detects your audio card and searches for device drivers. When prompted for the drivers, click **Cancel**.
2. Insert the support CD into the optical drive. If **Autorun** is enabled in your system, the setup starts automatically. If not, run **setup.exe** from the support CD.
3. Follow the onscreen instructions to complete the installation.
4. When the installation is completed, you are prompted to restart your computer. Select **Yes, I want to restart my computer now** or **No, I will restart my computer later**.
5. Click **Finish**.



The contents of the support CD are subject to change without notice.

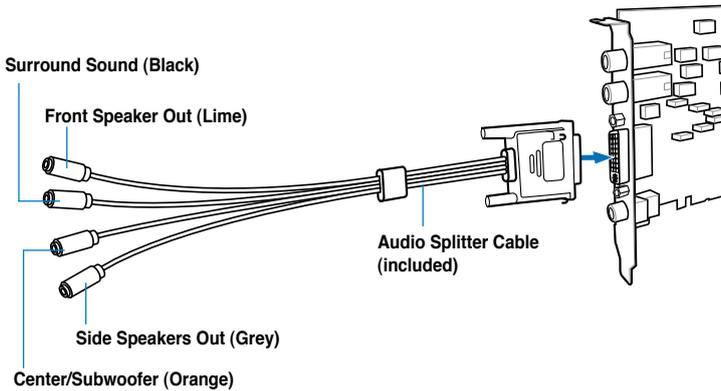
To uninstall the audio card driver:

1. From the Windows® desktop, click **Start > Control Panel**.
2. Double-click **Add or Remove Programs**.
3. Click **Change or Remove Programs**.
4. Select the audio card driver.
5. Click **Remove** to uninstall the audio card driver. If you are prompted, restart your computer.

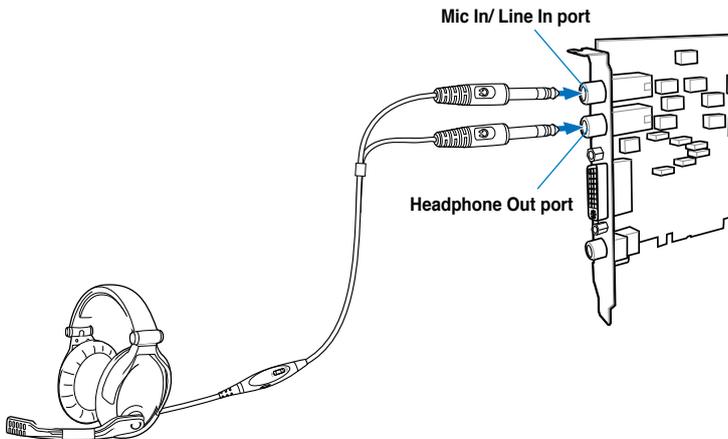
Chapter 3

Connecting speakers and peripherals

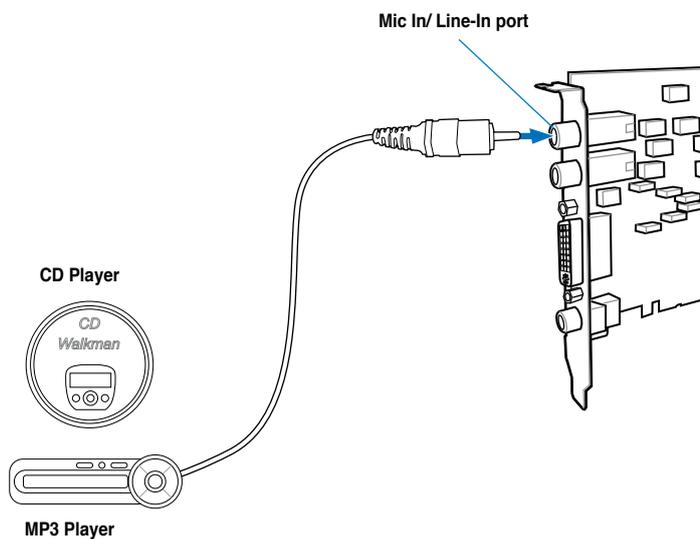
Connecting analog speaker systems



Connecting the gaming headset



Connecting Line-in audio sources



Chapter 4

Xonar Xense Audio Center

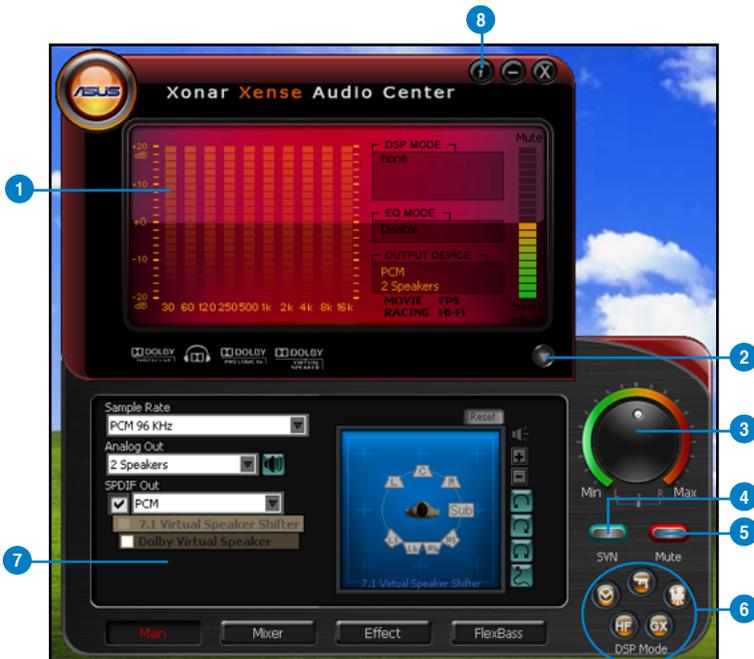
Xonar Xense Audio Center

The Xonar Xense Audio Center, the graphical user interface (GUI) of Xonar Xense, allows you to control the functions and features of Xonar Xense.

To launch the Xonar Xense Audio Center, double-click the Xonar Audio Center icon on the taskbar.



If the icon is not shown on the taskbar, go to the Windows® Control Panel and double-click the **Xonar Xense Audio Center** icon.



1

Display Area

This display area shows the 10-band signal meter, volume level, and the status of the Dolby technologies, EQ, and DSP modes.



This area just displays information, but is not used to alter settings.

2

Menu Open/Close

Click this button to display more settings.

3

Master Volume

This rotary knob controls the master playback volume. Drag the small circle inside it to change the volume level.

4

SVN Button

Click this button to enable the “Smart Volume Normalization” feature for constant volume from all playback sources. It displays a blue light when enabled.

5

Mute Button

Click this button to mute audio playback. It displays a red light when playback is muted.

6

DSP Mode

These five buttons give access to quick sound effects combinations for Movie, GX, Hifi, Racing and FPS modes.

7

Setting Menu Panel

This panel gives access to setting tabs, including Main Settings, Mixer/volume, Effects, Karaoke, FlexBass, and VocalFX.

8

Information icon

Click this icon to launch the driver’s information window.

Main Setting

Sample Rate

The Sample rate determines the number of audio samples per second that the Digital-to-Analog Converters (DAC) and S/PDIF digital interface will output. The Xonar Xense audio card can support sample rates up to 192KHz (44.1K, 48K, 96K, 192KHz). Usually audio CDs and MP3 files are 44.1KHz; DVD-Video uses 48KHz; DVD-Audio or other HD media may contain 96KHz or 192KHz high-definition audio content. Select the corresponding sample rate for your playback sources to get the best audio fidelity. Even if your setting differs from the audio source's sample rate, the Xonar Xense engine will do super high fidelity sample-rate-conversion with a double floating-point filter, which can reduce total harmonic distortion (THD+N) by -140dB.



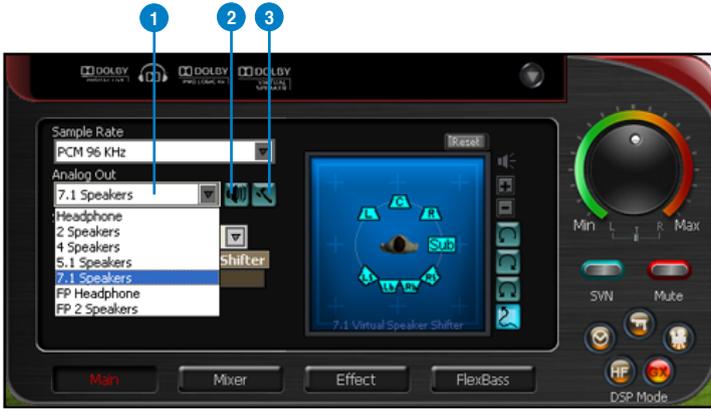
1

Sample Rate

Select the sample rate that corresponds to (or exceeds that of) your playback sources, for optimal audio fidelity. Your audio card supports sample rates up to 192KHz (44.1K, 48K, 96K, 192KHz). Typical values are:

- Audio CD, MP3, WMA, Wave files are 44.1KHz.
- The audio of DVD-Video is 48KHz.
- DVD-Audio or other HD media may contain 96KHz or 192KHz high-definition audio content.

Analog Out/Speaker Test



1

Analog Out

The Analog Out setting is used to adjust audio to match your actual speaker setting such as headphones and 2/2.1 speakers. Your audio card will play the channels and process the proper 3D/Dolby sound accordingly. Select the correct speaker type for your connected speakers.

2

Speaker Test

Click this button to show the speaker test window in the right pane. Click **Play** to test each speaker one by one or click each speaker to test them individually.

3

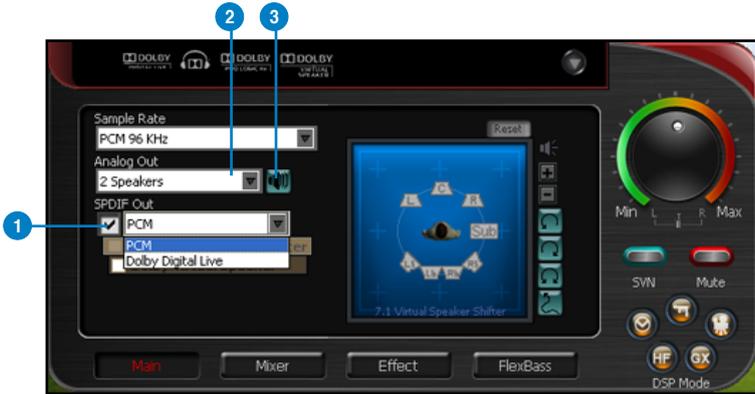
Headphone Advanced Setting

Click this button to select the appropriate headphone impedance. Select **High Grain** when you are using the bundled Sennheiser headset.



S/PDIF Out/DDL

Xonar Xense is capable of outputting Dolby Digital Live audio, which is audio transcoded real-time into industry-standard Dolby Digital bit-streams on-the-fly. This is ideal for playback through a home theater system, creating an immersive and impressive cinema surround sound experience. This technology enables a single digital connection to carry high quality Dolby Digital surround audio from your PC to digital speakers and AV Receivers.



1

S/PDIF Out enable/disable

Tick this checkbox to enable S/PDIF output.

2

S/PDIF Output Formats/Functions

From the dropdown list, select one of these formats:

- PCM (Pulse Code Modulation, which is a typical raw audio data format.)
- Dolby Digital Live real-time 5.1ch encoding
- S/PDIF Loopback

3

Dolby Digital Live advanced upmixing option

This advanced setting automatically upmixes stereo (2ch) content to 5.1 channel surround with Dolby Pro-Logic IIx when using Dolby Digital Live output.



Audio Channels (For Windows® Vista / Windows® 7 only)

This setting only appears in Windows® Vista / Windows® 7. Windows® Vista / Windows® 7 delivers the audio channels to the audio driver according to this setting, no matter what the original audio content is or how many channels they have. Hence, you need to set this in accordance with your audio content before audio playback. This setting is synchronized with Windows® Vista/7's system speaker configuration and changing this setting during playback stops the audio playback program. You may have to restart the program after changing this setting.



Close all running applications before changing this setting.



1

Audio Channels

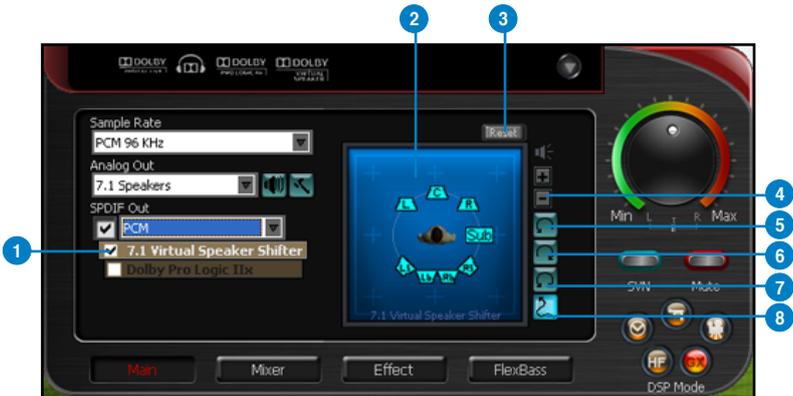
Recommended settings:

- MP3, WMA, AAC, CD, VCD, 2D games => 2 channels
- DVD-Video with Dolby Digital or DTS 5.1 => 6 channels
- DVD-Video with Dolby Digital EX or DTS ES => 8 channels
- 3D games => 8 channels

7.1 Virtual Speaker Shifter

The 7.1 Virtual Speaker Shifter has the following major features:

- Expanding/upmixing audio to 7.1-channel surround sound
- Virtualizing 7.1 surround sound over any set of speakers
- Shiftable virtual speaker positioning allows you to adjust the best sound field easily without moving physical speakers and wires



1

Shifter enable/disable

Tick this checkbox to enable the 7.1 Virtual Speaker Shifter. Clicking the textbox will switch the right window to the Speaker Shifter page for manual adjustments.



Settings will be retained even when a different Analog Output is selected.

2

Drag speaker or listener

You can drag each speaker or listener to a different position “virtually” using only your mouse. The Xonar Xense card will process the sound and reposition the virtual speakers real-time. The Subwoofer has no directional sounds, and hence can be moved only closer to or further away from the listener.

3

Reset

This resets all Speaker Shifter settings to the default settings.

4

Increase/decrease volume

Click + to increase volume (moves speakers closer). Click – to decrease volume (moves speakers further away)

5

Counterclockwise

Click to rotate all speakers, except Subwoofer, counterclockwise.

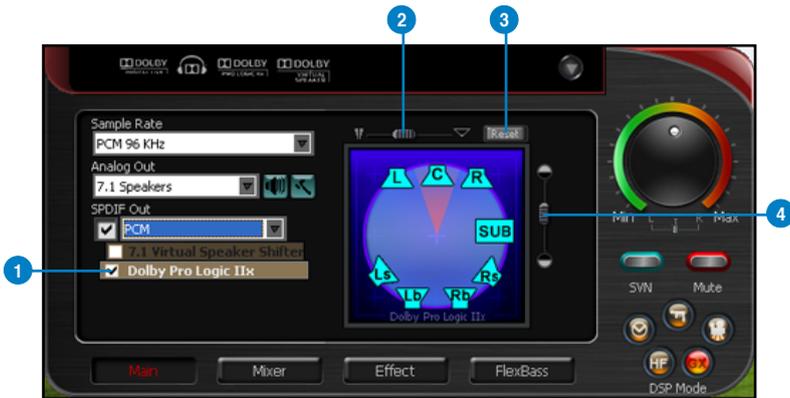
-
- 6 **Clockwise**
Click to rotate all speakers, except Subwoofer, clockwise.

 - 7 **Manual Rotation**
Manually drag and rotate all speakers, except Subwoofer.

 - 8 **Manual Drag Mode**
This is the default mode that allows you to manually drag each speaker or the listener with your mouse.
-

Dolby Pro-Logic IIx

Dolby Pro-Logic IIx is a 7.1 surround upmixing technology and is widely used in home theater systems, TVs, game consoles, and car audio systems. It can expand stereo audio, such as MP3, CD, and TV programs into immersive 5.1 or 7.1-channel surround.



-
- 1 **Dolby Pro-Logic IIx enable/disable**
Tick this checkbox to enable Dolby Pro-Logic IIx. Click the textbar to switch the right window to the Pro-Logic IIx page for manual adjustments.

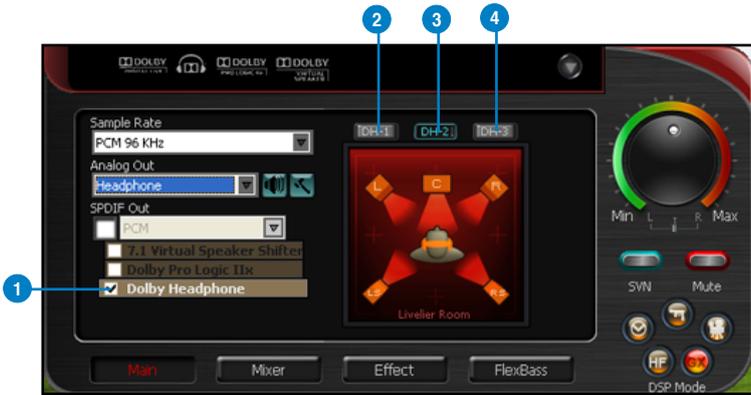
 - 2 **Center Width**
This parameter is used to set the spread of the center, mainly for the vocal signals of songs/music. Drag the scroll bar to the left to centralize the vocal signal. Drag to the right side to widen the vocal sound range.

 - 3 **Reset**
This resets all settings to the default settings.

 - 4 **Dimension**
The dimension parameter fades sounds to the front or rear of the listener.
-

Dolby Headphone

Dolby Headphone creates a stunning multi-channel surround experience over ordinary stereo headphones for playing 3D games, watching 5.1 DVD movies, and listening to music. Dolby Headphone produces surround sound cues so realistic that you will believe you are listening over speakers in a well-controlled studio. Dolby Headphone can also improve listening comfort and reduce "listener fatigue" from long listening over headphones.



- 1 Dolby Headphone enable/disable**
Tick this checkbox to enable Dolby Headphone. Click the textbar to switch the right window to Dolby Headphone page for manual adjusting.

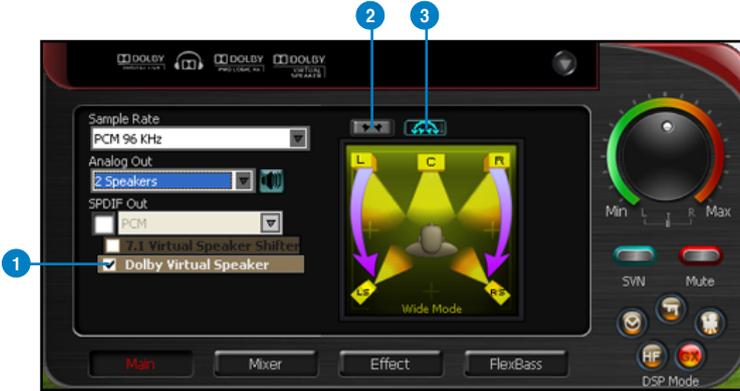


7.1 Virtual Speaker Shifter and Dolby Pro-Logic IIx can be selected only when Dolby Headphone is enabled.

- 2 DH1**
Dolby Headphone (DH) provides three room filters that may be used with any type of audio. They differ in the sense of the "spatial dimension" they impart.
DH1—Reference Room: Small, acoustically damped room.
- 3 DH2**
DH2—Livelier Room: More acoustically live than DH1
- 4 DH3**
DH3—Larger Room: Larger room than DH1; more distant and diffused effect.

Dolby Virtual Speaker

Dolby Virtual Speaker technology simulates a 5.1-speaker surround sound listening environment from as few as two speakers. Dolby Virtual Speaker also creates a wider two-channel environment during playback of stereo CDs and MP3 content, and when combined with Dolby Pro Logic® II processing, delivers a virtual 5.1-channel surround listening experience from any high-quality stereo source.



- 1** **Dolby Virtual Speaker enable/disable**
Tick this checkbox to enable Dolby Virtual Speaker. Click the text bar to switch the right window to a Dolby Virtual Speaker page for manual adjustment.

- 2** **Reference Mode**
Dolby Virtual Speaker provides two modes of virtualization: **Reference Mode** and **Wide Mode**.
Reference mode virtualizes the missing speakers.



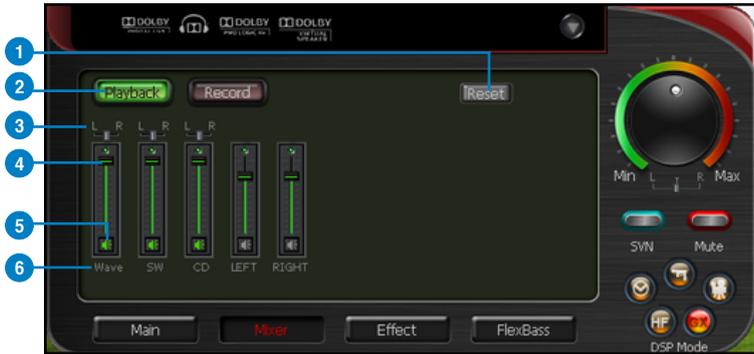
- 3** **Wide Mode**
Wide mode virtualizes the necessary speakers and enhances the surround experience.



Mixer/Volume

The Mixer feature is designed to control the volume for playback and recording using the Xonar Xense. In addition, Xonar Xense also provides a high-quality digital monitoring function for hearing the recorded audio from the speakers. You can also process the input signals with all playback sound effects such as Dolby and DTS technologies.

Playback Volume



1 Reset
This resets all volume controls to the default settings.

2 Playback volume tab
Click this button to show the playback volume page.

3 Left / Right balance
The horizontal slider controls the volume between the left and right channels.



Only available in Windows® XP.

4 Volume slider
Drag this slider down to decrease the volume. Drag it up to increase the volume. The tool-tip reveals the percentage number from 1 to 100 in terms of the full scale level.

5 Mute/unmute button
Click this button to mute/unmute the audio channel.

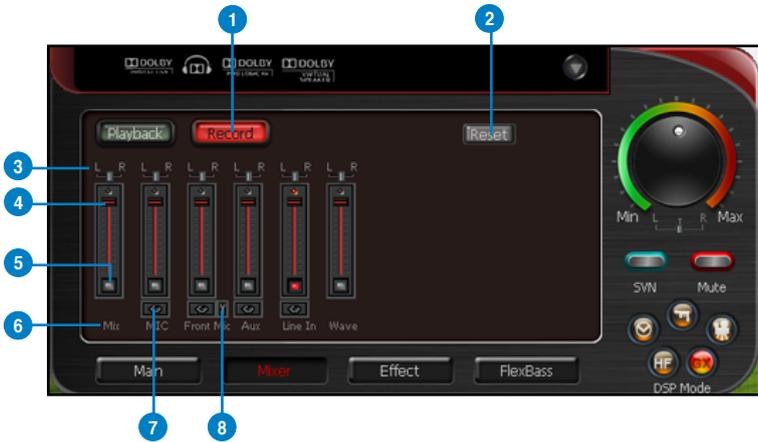
6 Source / path name including:

- **WAVE**: All digital audio sources except MIDI files
- **SW**: Software Synthesizer. Controls the playback volume of the MIDI files
- **CD**: CD-ROM digital playback (CD-DA) volume control
- **LEFT, RIGHT**: The volume control for each speaker/channel



Windows® Vista / Windows®7 does not support WAVE, Synthesizer, and CD-In volume controls.

Recording/Monitoring Volume



1 Recording Volume Tab
Click this button to show the recording volume page.

2 Reset
Click to reset all volume controls to the default settings.

3 Left/Right balance
This horizontal slider controls the volume between the left and right channels.



Only available in Windows® XP.

4 Recording volume slider
Drag this slider down to decrease the recording volume. Drag up to increase the recording volume. The tool-tip reveals the percentage number from 1 to 100 in terms of the full scale level.

5 Recording Selector button
Click this button to select the path/source you are going to record. The recording function on Windows is a one-path selector. Hence, you can select only one default recording source at a time. You may have to restart the recorder program if you switch to a different source.



On Windows® Vista / Windows® 7, some programs may allow you to select the recording device/path in the recording programs themselves.

6

Source / path name

This shows the source name for each volume control slider, including:

- **MIC:** Recording from MIC jack.
- **Line-In:** Recording from Line-in jack for external audio devices.
- **Aux:** Recording from Aux-In for typical TV-tuner card audio or other sound sources.
- **WAVE:** Recording from digital wave audio that you are playing on your PC.
- **Mix:** Stereo Mix which will record MIC, AUX, and digital WAVE audio you are playing on your PC.

7

Monitoring button

Click this button to monitor and loopback recording audio to outputs (PC speakers). Hence, the recording volume influences the monitoring signals from the speaker outputs. The audio is mixed into the streams you are playing out from your PC and all DSP effects is applied to the source, too. A typical benefit is to apply Dolby Pro-Logic IIx 7.1-ch spreading for your TV audio, CD, MP3, or stereo game console audio from Wii, XBOX360, and PS2/PS3/PSP. To apply Dolby Virtual Speaker is suitable for a two-speaker environment.

8

Microphone-In Advanced Setting

Click this button  to open the advanced settings for Microphone-In.

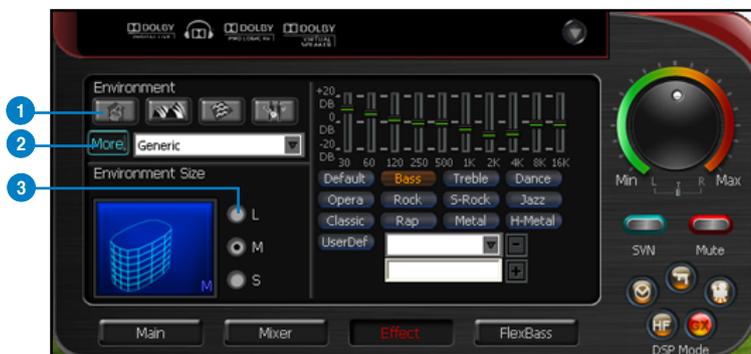


Enabling “Microphone Boost” increases the volume gain to boost the microphone input signals. If you connect your microphone to the front panel audio module, enable “Front Panel Microphone”. For typical low-cost PC microphone, we recommend that you enable this function.

Effects

Environment Effects

Use environment effects to create realistic listening experiences that mimic different environments. There are a total of 27 environment options that can be applied to all 2D sound sources such as music.



- 1 Default environments**

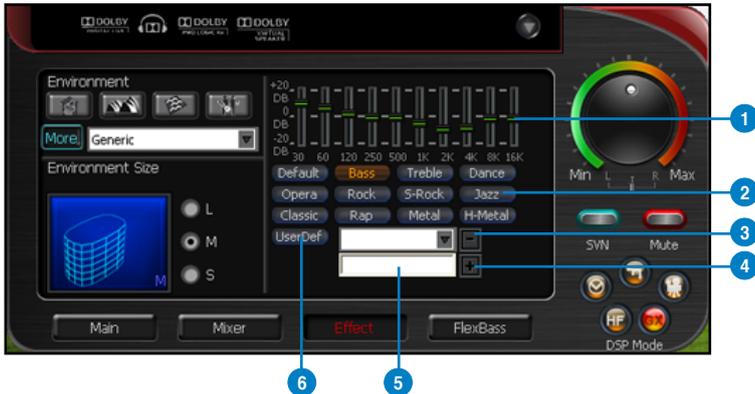
These four buttons activate **Bathroom**, **Concert hall**, **Underwater**, and **Music Pub** environments.
- 2 More**

Click this button to view more environment effects in the dropdown list, which contains 23 more options.
- 3 Environment size**

There are three size settings for each environment: **Large**, **Medium**, and **Small**.

10-Band Equalizer

The equalizer modifies the audio output for different frequencies, and is used to compensate for deficiencies in your speakers/systems. There are 12 default patterns and you can also customize your own settings.



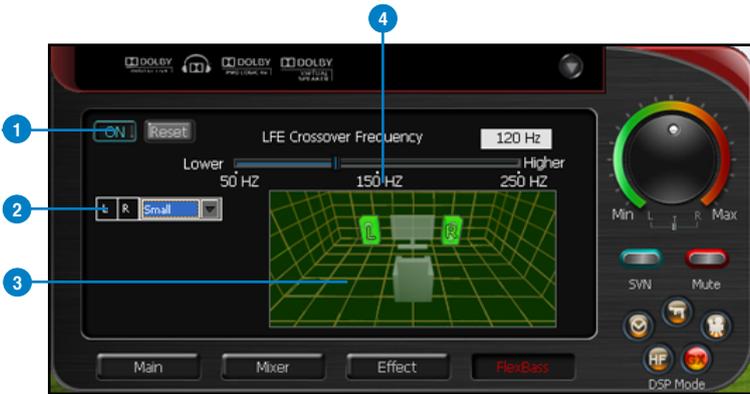
- 1 **Equalizer slider**
Adjust the gain for each band (30~16KHz)
- 2 **Default equalizer options**
Click an equalizer pattern from the 12 available equalizer patterns.
- 3 **Delete**
Click this “-” button to delete a customized setting from the list.
- 4 **Add / save**
Click this “+” button to save your customized equalizer setting.
- 5 **Save name**
Key in a name for your own “User Defined” equalizer setting.
- 6 **User Defined**
Click this button to view your existing customized equalizer setting.

FlexBass

FlexBass, an advanced bass management and enhancement mechanism, allows you to select each satellite speaker's type for optimal sound performance from the speakers. The Speaker types are:

- **Small:** common speaker that cannot produce low frequencies.
- **Large:** wide-band speakers that can produce low frequencies well.

FlexBass comes with an adjustable crossover frequency for the boundary of the bass signals. It filters out the bass signals from small speaker channels and redirects them all to the subwoofer or Large speakers.



1 On/Off
Click this switch to turn on or off all FlexBass functions.

2 Small / Large speaker option
Select the speaker type that you connected. If your speaker type cannot perform low-frequency signals (bass), select "Small" speaker type and Xonar Xense filters out the bass signals and sends them to the subwoofer channel. If those speakers are full-range, you can select the "Large" speaker type.



Usually, low-cost computer's 2-channel speakers are small-type speakers. Common 2.1 speakers with a subwoofer are categorized as Large speakers because the subwoofer redirects the bass signals inside the two channels to the subwoofer speaker automatically.

3

Picture for Small/Large speaker

Colors for small/large speakers are different.

- **Orange:** large speakers
- **Green:** small speakers

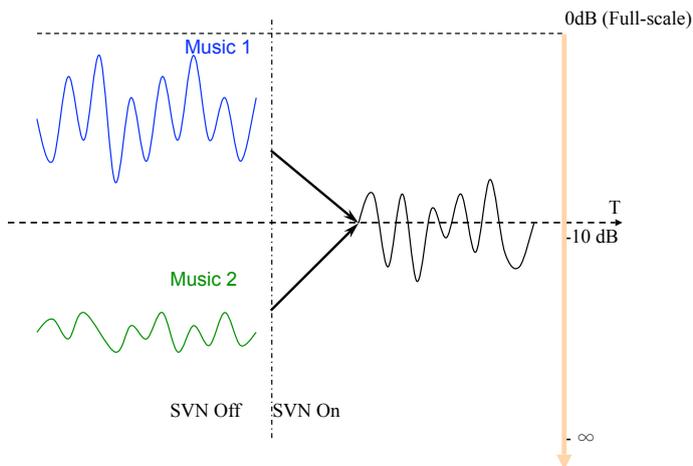
4

LFE Crossover Frequency

Adjusts the cut-off frequency (20~250Hz) for LFE (low-frequency effects) signals. Xonar Xense filters out the bass signals below the crossover frequency from small speaker channels and forwards them to the subwoofer. The higher the crossover frequency, the more bass signals are subtracted.

Smart Volume Normalization

Smart Volume Normalization™ (SVN) automatically keeps all music or video/TV audio output at a constant level to reduce manual adjustment hassles inherent with sound sources of different loudness. It allows you to listen to various content, like MP3, TV program, DVD video and even games with consistent sound level. The following graph shows how different signals 1 & 2 achieve the same level (for example, 10dB below full scale) after you turn on SVN. For lower volume music 2, it becomes louder when you turn on SVN. For higher volume music 1, it becomes quieter.





1 SVN display

When SVN is enabled, “Smart Volume” lights up to display the volume level.

2 SVN blue light

When SVN is enabled, the master volume knob is illuminated by a blue light. It is illuminated by a red light if the volume is muted.

3 SVN On/Off

Click this button to enable SVN. When enabled, this button is illuminated by a blue light.

GX and DSP Modes

DirectSound 3D Game Extensions v1.0 (GX 1.0) is an innovative technology that restores DirectSound 3D Hardware acceleration mode and its subsidiary EAX effects on Windows® Vista/Win 7 for 3D games. Unlike some proprietary API like OpenAL, GX does not require games to support OpenAL API. All existing games compatible with Microsoft® DirectX and DirectSound 2D/3D will be supported with GX technology. Before you start EAX and DS3D HW games, please enable GX on the Xonar Xense audio center, and disable the function after the games.

Supports latest GX 2.5 for gaming on Vista/Win 7 & XP

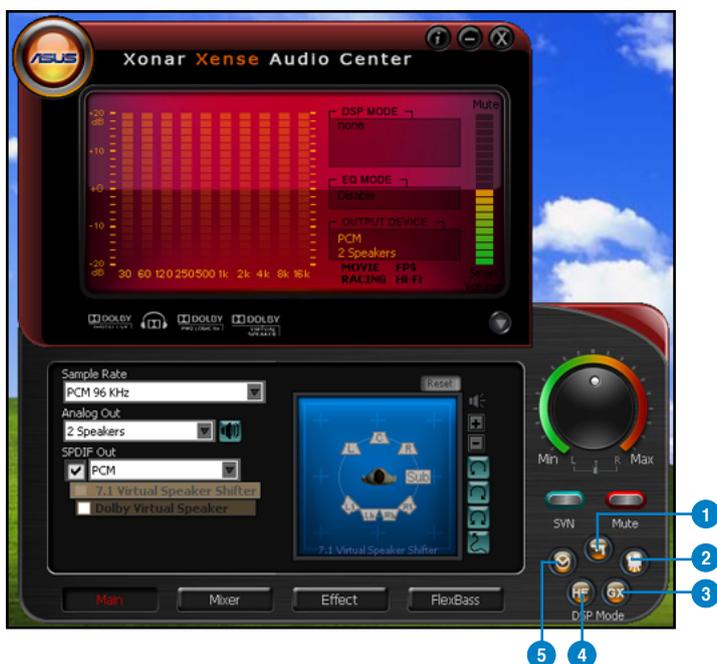


GX 2.5 not only revives EAX and DirectSound HW effects, but also allows you to run EAX HD 5.0 games on both XP and Vista/Win 7. It provides the best compatibility with existing DirectX games.

Besides the abundant sound effects described above, Xonar Xense also provides quick Digital Sound Processing modes which are configured for typical applications including Music, Movies, and Games over different output speaker types. In addition, Xonar Xense also offers a Hi-Fi mode for hi-fidelity playback without affecting the original audio fidelity. Every time you turn on Hi-Fi mode, Xonar Xense will clear all sound effects. Use the Hi-Fi mode for audio quality tests (using RMAA software or another machine-based measurement). Use the DSP mode button for a quick setup if you do not wish to know the details of the effect setup.



No sound effects are applied to high-definition 96KHz/192KHz content.



-
- 1 FPS Mode**
This mode is set for First Player Shooting Games.

 - 2 Movie Mode**
This mode is set for DVD Movie playback.

 - 3 GX Mode**
DirectSound 3D Game Extensions mode to support EAX and DirectSound 3D Hardware extensions for many DirectX/DirectSound3D games on Windows® XP/Vista/7.

 - 4 Hi-Fi Mode**
This mode is set for Hi-Fidelity playback, where all effects are cleared to keep the original digital data and analog output quality as high as possible.

 - 5 Racing Mode**
This mode is set for Racing Games.

Appendices

Troubleshooting and FAQs

Troubleshooting

I cannot install the audio card driver on my computer.

- Ensure that you have properly plugged the audio card in the PCI Express slot on your motherboard.
- Check that the Windows hardware device manager has discovered a multimedia audio device. If no device is found, please try scanning for new hardware.
- Try rebooting your computer.
- Remove the card, plug it into another PCI Express slot, and try again.

I cannot find the Xonar Xense Audio Center.

- Ensure that you have installed the driver.
- Locate the Xonar Xense Audio Center icon on the taskbar, then, double-click the icon to launch the Xonar Xense Audio Center utility.



- If the icon is not shown on the taskbar, go the Windows® Control Panel and double-click the **Xonar Xense Audio Center** icon.
- Try installing the driver again.

I cannot hear any sound from my analog speakers.

- Ensure that the power cable of your power supply unit is properly connected to the power connector of the audio card.
- Ensure that you have connected the speakers properly and that the speakers are turned on.
- Ensure that the device master volume or that the software player is not on mute mode on the Xonar Xense Audio Center.

- Check if you are using a Dolby Digital Live encoder through the S/PDIF output. If this is the case, the analog output is muted to get rid of any interference between your digital speaker system and analog speakers or headphones.
- Try rebooting your computer.

I cannot hear any sound from the S/PDIF output.

- Ensure that you have enabled S/PDIF output in the Xonar Xense Audio Center.
- Ensure that you have connected the correct S/PDIF output jack on the card to the decoder's (AV receiver) S/PDIF input jack.
- You may need to select the correct input and mode of your decoder or AV receiver. For Dolby Digital output, double-check that the AV receiver is in that decoding mode.
- If you are using 192KHz PCM output, ensure your decoder can support 192KHz decoding. Try changing it to 44.1K or 48KHz first.

I cannot hear audio input (Mic, Line-in, or AUX) from my speakers.

- Go to the Mixer recording page in the Xonar Xense Audio Center and select the correct input as the recording source. If you are using Windows® Vista, go to the system audio control panel to ensure that the current default recording/input device is correct.
- Remember to turn on the digital monitoring button for that recording source.

I cannot hear the TV tuner audio from my speakers.

- If you are using a traditional TV tuner card that has an analog audio output, connect it to the Aux-In header on the audio card.
- Select Aux-In as the recording source and remember to turn on the digital monitoring button on the recording mixer page.
- If you are using a TV tuner card which has a digital audio output instead of an analog output, check that the sound is not muted and whether other applications can play sound out. If you still have problems, read the TV tuner card's software user manual.

I found no sound effects when playing 96K or 192KHz sound sources.

- Currently Xonar Xense effects including Dolby supports common 44.1K, 48KHz sound sources processing and provides high-definition audio (96K/192KHz) in hi-fidelity playback. This is also usually the behavior that professional audiophiles and musicians prefer.
 - If you still want to have the effects, you can use editing software such as Ableton Live, Cakewalk, CoolEdit, or Soundforge to convert the sounds into 48KHz files.
3. Note that the frequency meter on Xonar Xense Audio Center panel will not take effect either when the playback source is 96KHz or 192KHz sample rate to prevent any processing distortion.

Frequently Asked Questions (FAQs)

Does the Xonar Xense card support Windows® Vista?

Yes, the Xonar Xense driver package supports Windows® Vista 32/64 bit and most key features are available. In addition, Xonar Xense supports unique DS3D GX on Windows® Vista, which can recover DirectSound 3D hardware and EAX gaming sound effects on Windows® Vista for many existing DirectX games.

Why does the Xonar Xense support Dolby technology?

Dolby is the ONLY brand and technology recognized by the CE industry and available on a wide range of audio equipment. Xonar includes these features to make your PC a powerful media and entertainment center.

Why do I need Dolby for PC games?

- Dolby Digital and Pro-Logic IIx are available on the latest game consoles, like XBOX360, PS3, and Wii. Dolby provides the best gaming sound experience and compatibility with home theater or TV systems.
- Dolby Headphone and Dolby Virtual Speaker are the best 3D sound positioning, spatial modeling, and 5.1-channel virtualization technology for regular stereo headphones, speaker headphones, and speakers.

What are the most important benefits of the Xonar Xense for musicians?

- **Ultimate Fidelity:** Xonar Xense has the highest quality of audio in/out for the cleanest sound production.
- **Duplex HD:** Supports audio sampling rates up to 24bit/192KHz for all inputs and outputs.
- **ASIO 2.0:** Xonar Xense includes an ASIO 2.0 driver for low-latency, low-distortion music creation application.

Will PCM sound output through S/PDIF be just 2 channels even with different analog output channels?

The S/PDIF protocol specification (IEC-60958) only carries the 2-channel PCM data or non-PCM AC3/DTS data. Hence, when you select PCM output for S/PDIF, the Xonar sound card always deliver a 2-channel PCM data through the S/PDIF output port. For attaining 5.1 channel surround sounds, you can select Dolby Digital Live encoding output from the S/PDIF out menu, which allows the Xonar Xense to deliver 5.1 surround sound for DVD movies, and even stereo music.

When I selected “Digital Output device” as the default audio playback device on Windows® Vista, the sound effects and UI controls do not work.

For Xonar sound cards on Windows® Vista, there are usually two audio devices: **Speakers** and **Digital Out Device** such as S/PDIF.

Speakers is the default device. Use this device to fully control the sound effects on the Xonar Audio Center, the driver’s GUI.

Digital Out Device is designed as a pass-through audio path to play stereo Hi-Fidelity audio content or encoded audio formats such as Dolby Digital and DTS Digital Surround bit-stream from DVD or Blu-ray disc titles. The driver does not process all the audio data that passes through this digital device.

In most software DVD players’ audio settings, you could choose “Use S/PDIF output” or “HDMI” for HDMI output, such as on HDAV1.3. The player then passes the audio through the “Digital Output Device” automatically. Some devices require onboard audio to be disabled first. In this case, you do not even need to change the system default audio device. In most scenarios, we suggest that you keep the settings in “Speakers” to enjoy the complete features of the Xonar sound card. You could actually still get LPCM audio data monitoring from S/PDIF-Out port as analog Front channel output in this situation.

ASUS Contact information

ASUSTeK COMPUTER INC. (Asia Pacific)

Address 4F, No. 150, Li-Te Road, Peitou, Taipei, Taiwan 11259
Telephone +886-2-2894-3447
Fax +886-2-2890-7798
E-mail info@asus.com.tw
Website www.asus.com.tw

Technical Support

Telephone +86-21-38429911
Online support support.asus.com

ASUS COMPUTER INTERNATIONAL (America)

Address 800 Corporate Way, Fremont, CA 94539, USA
Telephone +1-510-739-3777
Fax +1-510-608-4555
Website usa.asus.com

Technical Support

Telephone +1-812-282-2787
Support Fax +1-812-284-0883
Online support support.asus.com

ASUS COMPUTER GmbH (Germany and Austria)

Address Harkort Str. 21-23, D-40880 Ratingen, Germany
Fax +49-2102-959911
Website www.asus.de
Online contact www.asus.de/sales

Technical Support

Telephone (Component) +49-1805-010923*
Telephone (System/
Notebook/Eee/LCD) +49-1805-010920*
Support Fax +49-2102-959911
Online support support.asus.com

* EUR 0.14/minute from a German fixed landline; EUR 0.42/minute from a mobile phone.