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1. Introduction

Thanks for choosing an HT OMEGA audio solution!

eClaro's Xear3D^{TM} technology maximum supports for all kinds of applications. With this manual, users can quickly take advantage of these great features to enjoy amazing sound quality.

- **Support DS3D^{TM}**
- **Magic Voice^{TM}**

Games

- **7.1 Virtual SPEAKER SHIFTER**
- **2-Speaker Virtual Theater**
- **Headphone output for   Personal Theater**

DVD Movies

- **Environment Emulation**
- **Environment Sizes**
- **10-Band Equalizer**

music (MP3/CD)

- **Magic Voice^{TM}**
- **Microphone Echo Effect**

Messenger/ Karaoke/ VOIP

Xear3D Features for All Applications

What's in the box?

You should have received the following with your eClaro:

- **eClaro soundcard**
- **Drivers/Applications CD**
- **Fiber Optical Digital Cable**
- **Headphone extension cable**
- **Analog Input/Outputs D_SUB cable.**
- **Additional Bracket for low profile**
- **This manual**

Specifications

(1) Sound Processor

- C-Media CMI8788/PCI-8ch Chipset

- Integrated S/PDIF Optical and 2pin Digital Output

- 24-bit/192kHz Stereo ADC

- Full-duplex ultra high 24-bit/192kHz DACs

(2) Interface

- PCI Express x1

- Independent high performance headphone output connector.

- Enhanced design on microphone input level circuit.

- High quality Analog Inputs and Outputs by D_SUB cable..

- Onboard Optical and 2pin digital Output

- Front Panel Audio supports: 10pin connector (Intel AC97 Front Panel Audio Compliant) for Front Panel Audio of PC case. With the front panel audio enabled, users can connect a second microphone without any reduction of input signal level.

2. Features Overview

The following is an overview of the features of the eClaro. The eClaro driver supports recent generation multi-channel digital functions and the following key features:

- C-Media Xear 3D™ 7.1 Virtual Speaker Shifter technology

- C-Media FlexBass™ – configurable LFE channel crossover frequency (from 50 to 250Hz)

- C-Media Magic Voice™, For disguising voice in online chatting

- C-Media's unique Karaoke functions: Microphone Echo, 10-band EQ, 27 global reverberation environments

- Supports 3D sound for PC gaming by DirectSound™

- Support   up to 7.1 CH audio playback

System Requirements (Minimum)

- Genuine Intel® Pentium® III 800 MHz or equivalent AMD® processor

- 256 MB RAM

- Microsoft® Windows® XP Service Pack 1 (SP1)

- Available PCI Express X1 slot for the audio card

- A headphone or 2channel amplified speakers (available separately)

- 500 MB of free hard disk space

- CD-ROM or DVD-ROM drive required for software installation from CD

3. Installing H/W, S/W, and Speakers

3.1 eClaro Hardware

(1) Connectors
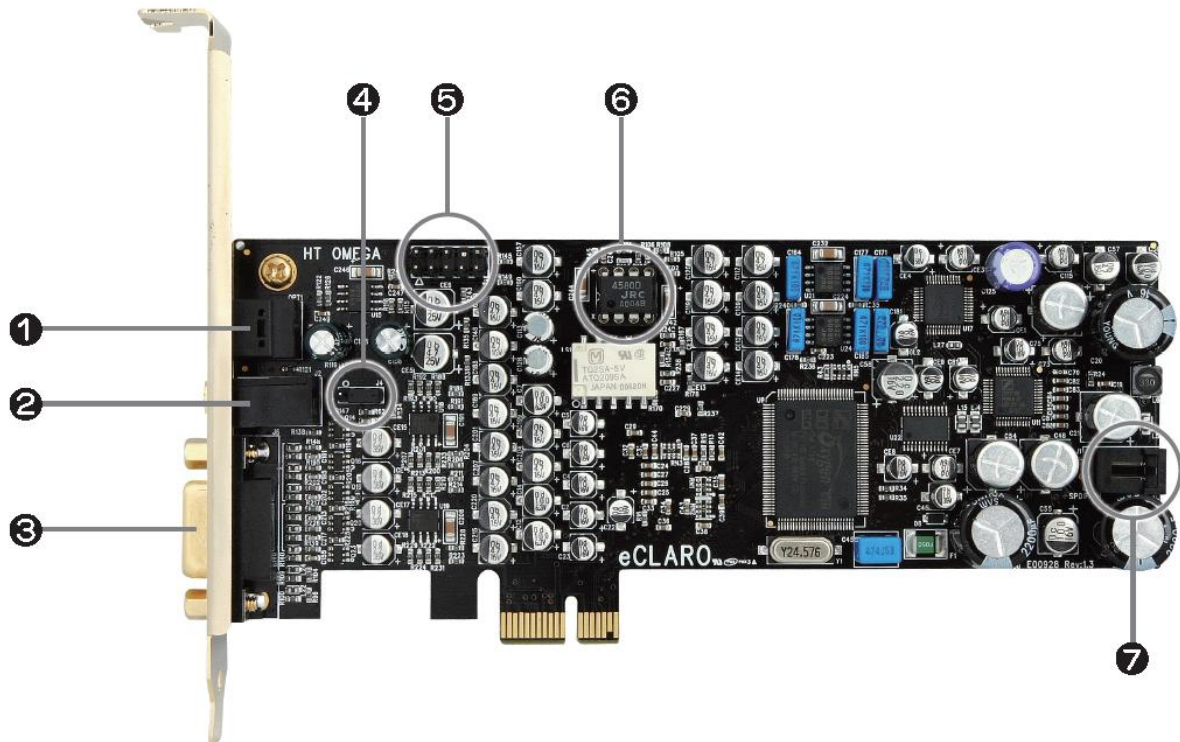
① **OPTICAL Digital Output connector**: Connects to external digital devices like AV receivers, decoders or digital speaker systems. High quality Optical S/PDIF output transmits PCM digital audio. Also allows pass-through of Non-PCM signal like Dolby® Digital and DTS® stream to external DD/DTS decoder and A/V receivers.

② **Headphone (3.5mm Stereo-jack):** Connects to a headphone only. This output is linked to Front channel.

NOTE: When user connects a headphone to the headphone output connector, all analog outputs can be muted automatically. This feature can be turned on or off through the front headphone detect jumper.

NOTE: Please DO NOT connect active speakers to the headphone output connector of sound card.

③ **Analog I/O multi-channel in/outputs connector:** D-SUB connector for Microphone Input, Line Input and 8 ch outputs.

④ **Front Panel detection**: When a headphone is inserted into the Front Panel Audio or headphone output connector of sound card, all analog outputs from D-SUB cable will be muted. If you need to enable/disable this feature, change jumper as below.

Turn off detection (Factory Default)

Turn on detection

Note: eClaro allows automatic muting of analog speakers when headphones are connected to the Front Panel Audio or headphone connector of the card itself. This feature can be turned on or off using the jumper settings. When enabled, it is possible that some electrical noise maybe heard briefly through the speakers if the headphones are removed during audio playback. For this reason, it is recommended that all audio playback be momentarily paused before removing headphones. (Only applicable if auto-mute function is enabled).

⑤ **Front Panel Audio (10 Pin Header):** Connects to the Front Panel Audio Cable of your PC case.
Pin 1 – MIC, Pin 2 – Ground, Pin 5 - Front Right, Pin 9 - Front Left.
Pin 3,4,6,7,8 and10 are not available

Note: When user connects headphones to the Front Panel Audio, all analog outputs can be muted automatically. This feature can be turned on or off through the front headphone detect jumper.

⑥ **Swappable OP amp connector**: eClaro provides swappable opamp socket for Front Channel and Headphone output. The socket uses dual DIP type.

⑦ **S/PDIF Output (2Pin digital out)**: Connects to external digital input device such as a digital receiver or HDMI VGA card which has 2pin digital input.

(2) D_SUB cable
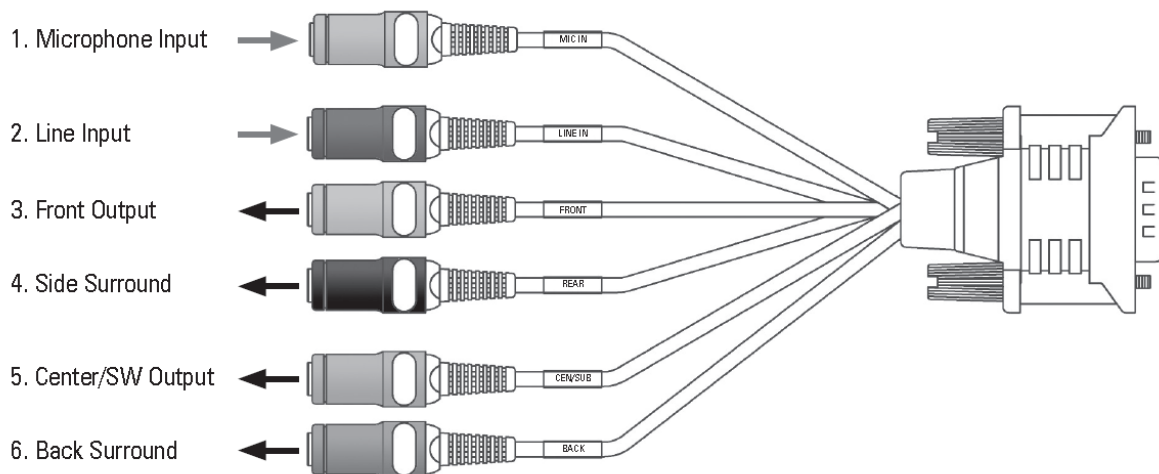
① **MIC IN (Pink colored):** Connects to external condenser or dynamic microphone for voice input. OPAMP controlled preamp circuits on board provide increased MIC input gain.

② **LINE IN (Blue colored):** Connects to external analog line-level sources, such as CD players, MP3 players, MD players, TV card's internal line output and other analog stereo output devices.

③ **FRONT (Green colored):** Connects to Front input on powered analog speakers or an external amplifier.

④ **SIDE SURROUND (Black colored)** Connects to Rear (or side surround) input on amplifier or powered multi-channel analog speakers.

⑤ **CENTER/S.WOOFER (Orange colored):** Connects to Center/Sub-Woofer inputs on amplifier or powered multi-channel analog speakers.

⑥ **BACK SOURROUND (Gray colored):** Connects back surround input on powered multi-channel analog speakers, an external multi-channel amplifier in 7.1 channel analog playback modes.
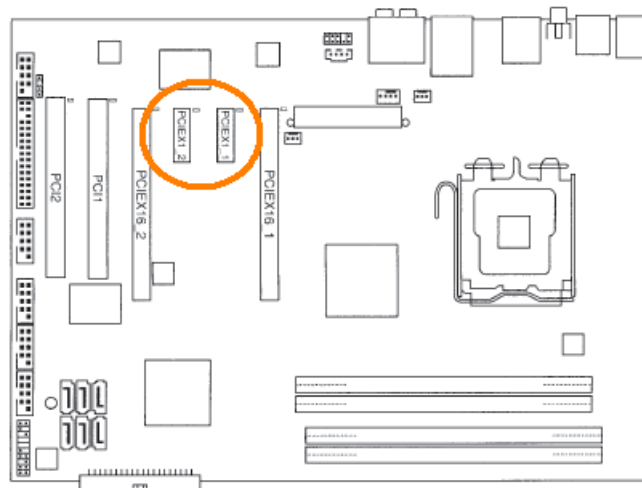
3.2 eClaro Installation and Speaker Setup.

(1) Installing eClaro to main board.

Before installing the eClaro card, we recommend that you disable onboard audio device in main board BIOS setting, and uninstall any other sound cards on PC to avoid conflicts.
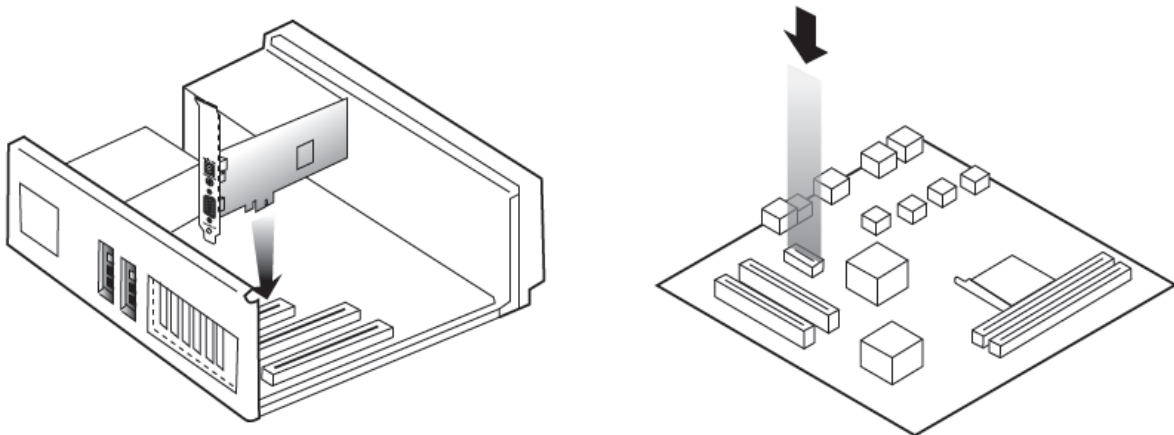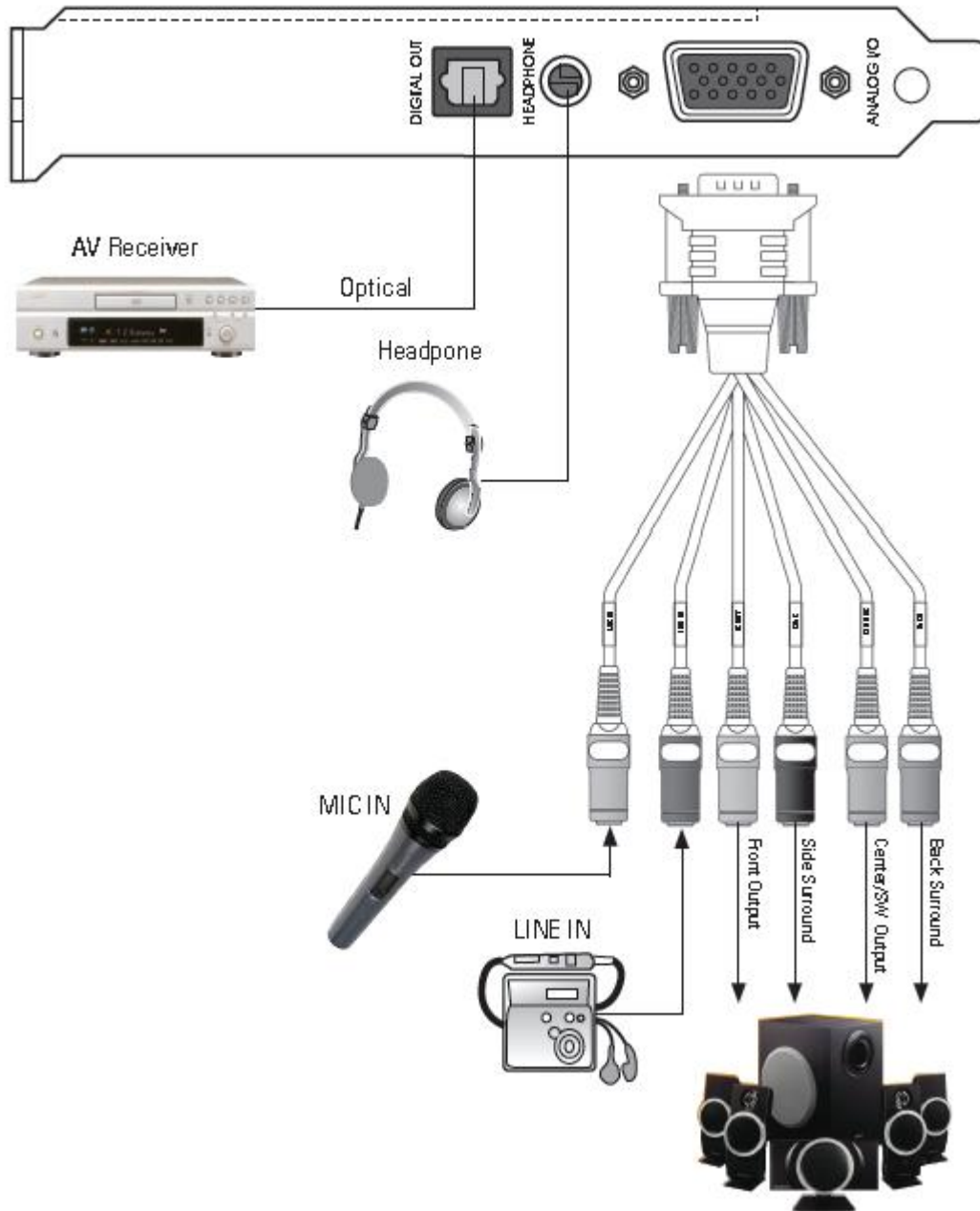

①   Turn off PC.
②   Open the PC case
③   Insert eClaro to empty PCI Expressx1 slot.

④   Secure sound card.

(2) Installing Speaker.

Note: Please do not touch sound card during operation. eClaro contains highly sensitive integrated circuit (IC) chips that protect against damage from static electricity. These circuits generate heat during operation.

3.3 eClaro Software

Please disable any existing PCI or onboard sound/audio devices (may need to disable in BIOS) and remove the associated software and drivers before installing "eClaro" to avoid potential device and/or driver conflicts. Drivers and applications can be removed through the "Add or Remove Programs" menu in Windows Control Panel.

(1) Installing the drivers and software

① Turn on PC. Windows will automatically detect **new hardware-Multimedia Audio Controller** and prompt the **Found New Hardware Wizard.** Click the **Cancel** button to end this process.

② Insert installation CD into the CD/DVD drive. Installation CD will launch automatically only if the Auto-Insert Notification option is enabled for your CD/DVD drive. If the installation menu does not appear after inserting the installation CD into your CD/DVD drive, browse to the drive letter that contains the installation CD and double-click on the CD/DVD drive icon to explore it. Search for and run "**SETUP.EXE"** and proceed to the next step.
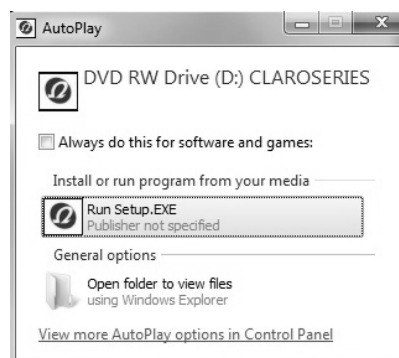
③ When the installation menu appears, select "**Next**"**.** Follow the instructions that appear during the installation selecting the options that best match your audio setup.
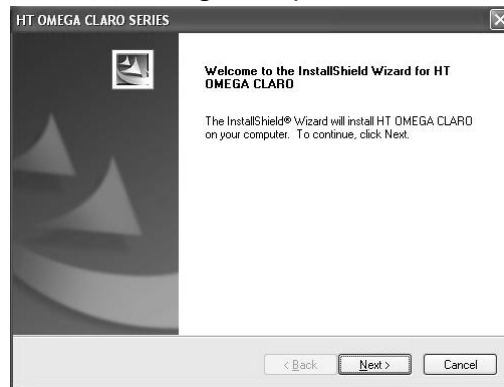
④ When prompted, reboot the system. Wait a few minutes for the installation to complete. The wait time will vary depending on the speed of your PC. Please wait for the system to reboot to properly complete the installation.
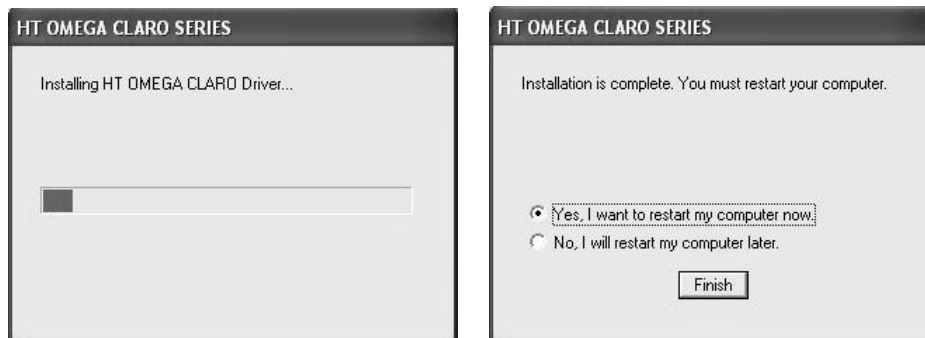
(4) TO UNINSTALL "eClaro" drivers and softwares

① Open the Windows Control Panel (Start => Settings => Control Panel).

② Open the Add/Remove Programs (or Programs & Features) applet. Select "HT OMEGA Claro" and click on the "Change/Remove" button to the lower right of the screen.

③ To complete the uninstall process, Windows needs to be restarted. Select **Yes, I want restart my computer now** then press **Finish**.   (Please do not skip restart now before installing updated driver)

4. Using Audio Driver

4.1 eClaro Software Control Panel

This is C-Media's 3D audio control panel that allows the user to manage all audio configurations. After finishing the installation of the driver and rebooting the system, the audio control panel will be available through two locations:

1.Left-Click the icon in the system tray in the bottom-right of your screen. You can also right click the icon to access the audio-related menu.
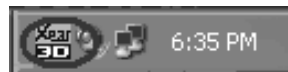
2. Double-click "HT OMEGA Claro" icon in Windows "Control Panel".
(Start=>Setting=>Control Panel)
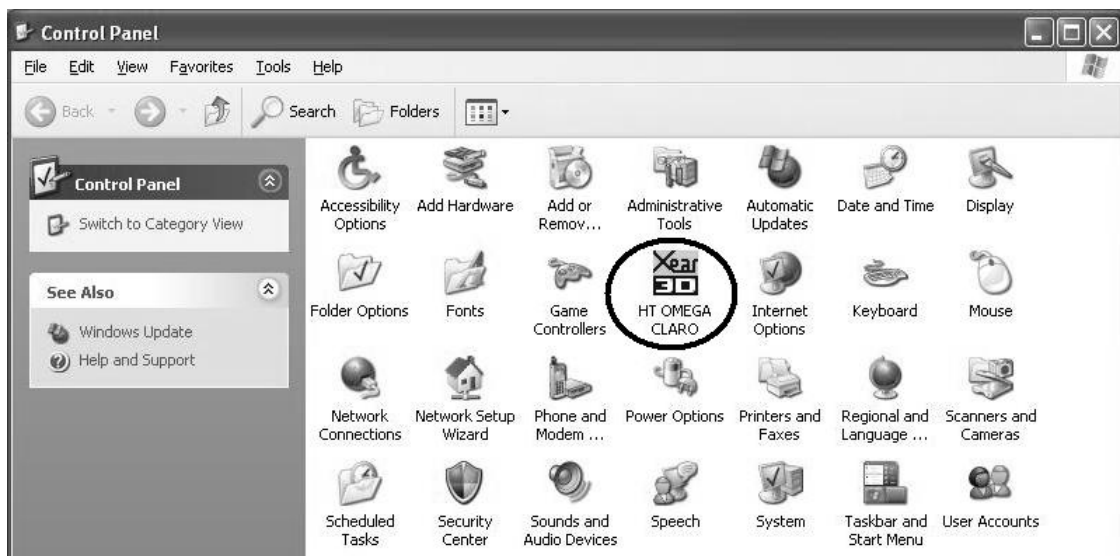
Main Control Program icon on Control Panel

Or you can find it in Control Panel > All Control Panel Items and View by Small Icons under VISTA and Windows7. There you can find HTO CLARO icon.

4.2 Main Setting

Xear3D Claro control panel is the graphic interface for eClaro driver. You can control all features of the eClaro on this control panel. The following pictures show a basic overview of the eClaro. The Xear3D control panel has Main Setting, Mixer, Effect, Karaoke/Magic Voice, FlexBass and Information tabs.
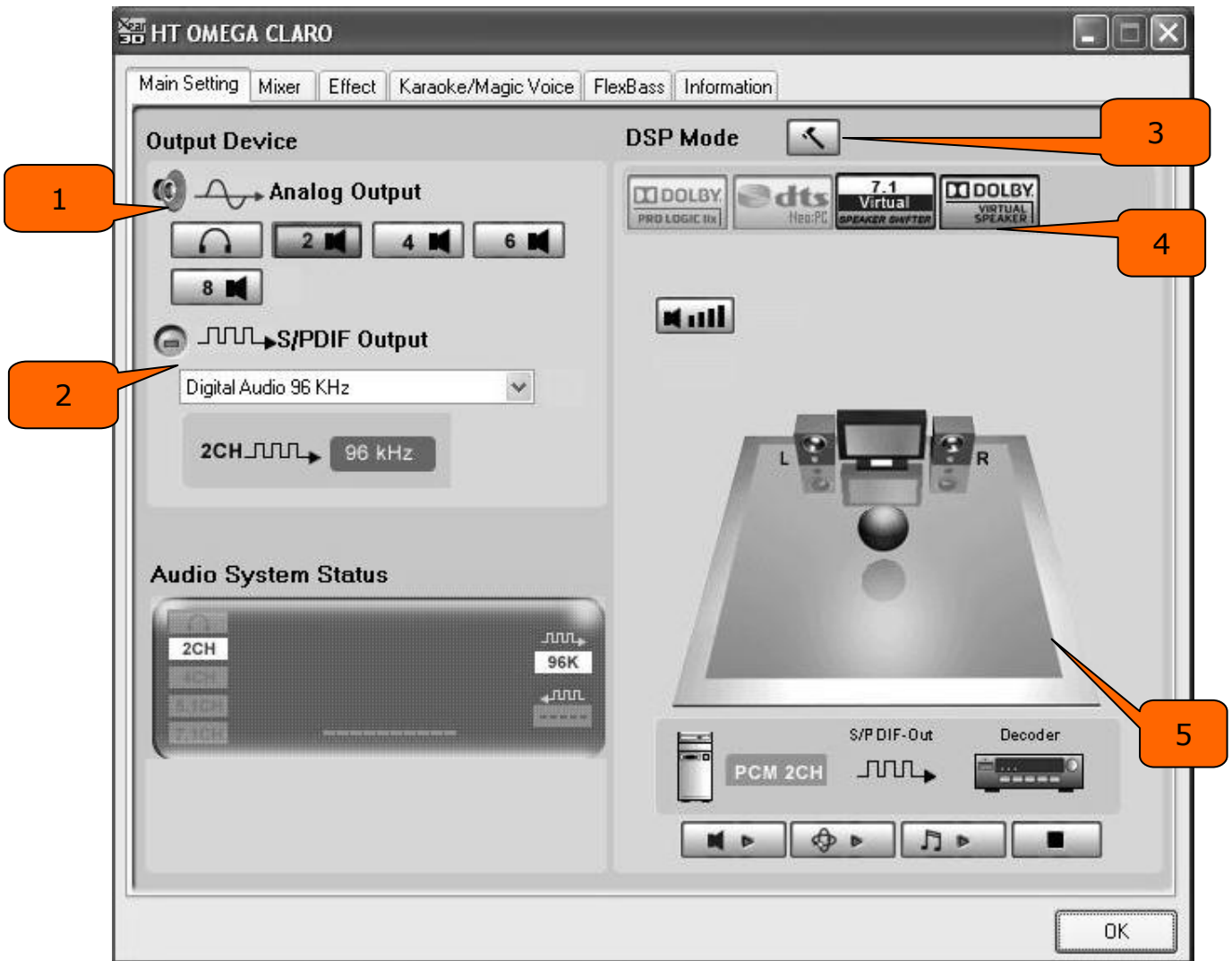
eClaro Main Setting for XP

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eClaro Main Setting for VISTA and Windows7

(1) Analog Output select mode

This part can let user to select analog and digital output mode. There are 5 types analog output modes: **Headphone, 2 / 4 / 5.1 / 7.1 Channel Output Mode**.

(2) Digital Output select mode

Digital output mode is configured to define which format will be out by S/PDIF interface. There are a total 7 digital output modes: **Dolby Digital Live/ DTS Interactive/ Digital audio 44.1K/ 48K/ 96K/ 192K/ SPDIF In Loopback**.

- **Dolby Digital Live**--- Audio data will be encoded to AC-3 5.1 format and output via S/PDIF out
- **DTS Interactive**--- Audio data will be encoded to DTS cinema 5.1 bit stream format and output via S/PDIF out
- **Digtal Audio 44.1 KHz**---S/PDIF out with 44.1KHz sample rate
- **Digtal Audio 48 KHz**---S/PDIF out with 48KHz sample rate
- **Digtal Audio 96 KHz**---S/PDIF out with 96KHz sample rate
- **Digtal Audio 192 KHz**---S/PDIF out with 192KHz sample rate

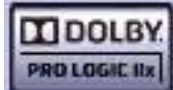NOTE: When Dolby Digital Live or DTS Interactive is enabled the analog outputs will be turned off automatically to prevent interference.

NOTE: Windows VISTA and Windows7 driver provides S/PDIF Output mode separately. You can choose PCM, Dolby Digital Live, DTS:Interactive on S/PDIF Output.

(3) DSP Mode

This button switches the DSP vision function on or off. When DSP mode us turned on the visual function menu will be displayed. When DSP is off, the standard speaker mode will be displayed.

There are a total 5 selectable DSP modes. **C-Media 7.1 Virtual Speaker Shifter** / **Dolby ProLogic IIx** / **Dolby Headphone** (only exist when Headphone on speaker mode setup) / **Dolby Virtual Speaker** (only exist when 2CH on speaker mode)/ **DTS NEO:PC** (exclusive with Dolby ProLogic IIx).

| C-Media 7.1Virtual Speaker shifter	Dolby ProLogic IIx	Dolby Headphone	Dolby Virtual Speaker	DTS NEO:PC
7.1 Virtual SPEAKER SHIFTER	DOLBY. PRO LOGIC IIx	🎧	DOLBY. VIRTUAL SPEAKER	dts Neo:PC

NOTE: Dolby Headphone will be shown at Headphone Mode of Analog Output under Windows VISTA and Windows7.

(4) Individual DSP control

Audio DSP allows adjustments to the settings of the corresponding DSP. The DSP can be divided into categories: Input Processor for stereo audio source and Output
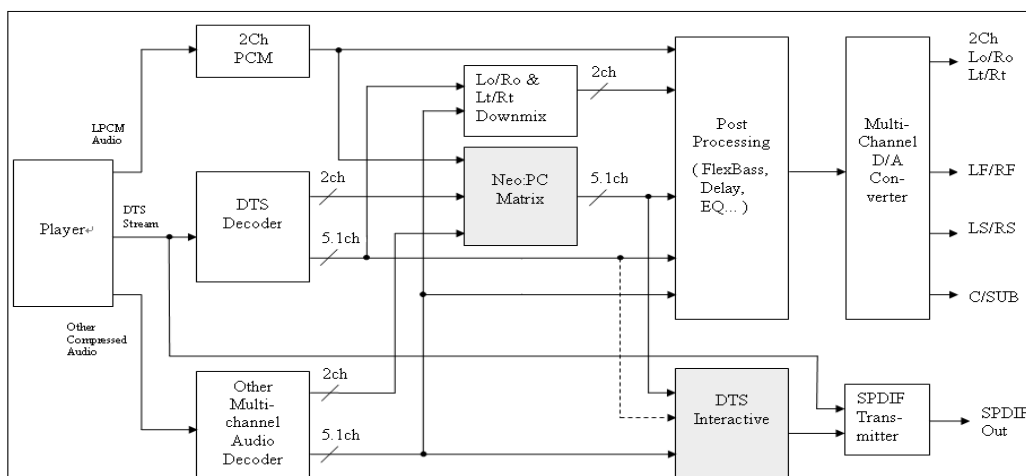
Processor.

1. Dolby feature process in C-Media driver:
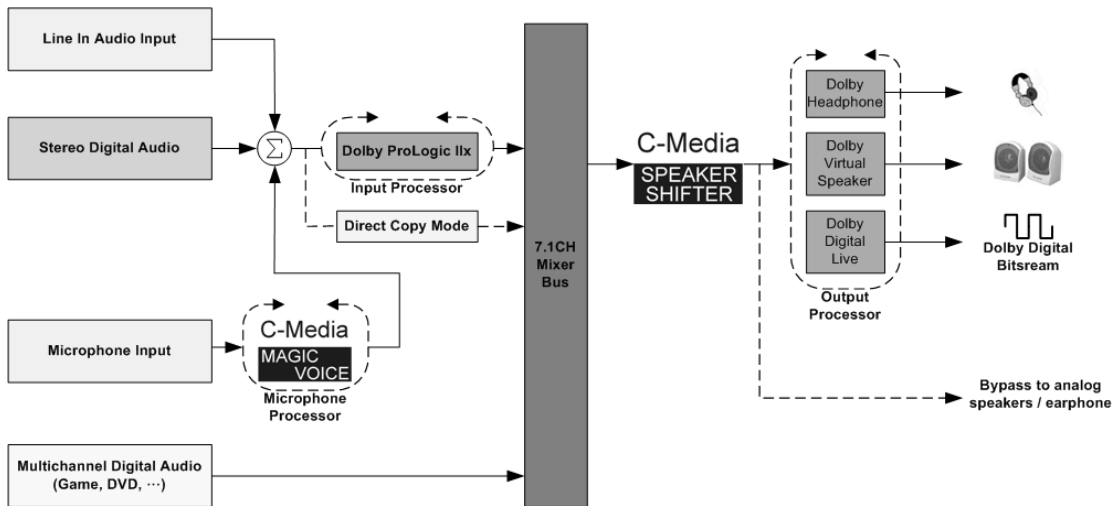
DOLBY FEATURE PROCESS

2. DTS feature process in C-Media driver:

The C-Media Oxygen HD driver allows a range of different processing options for stereo/ 5.1/ 7.1 channel audio.

DTS FEATURE PROCESS

3. Dolby Pro Logic IIx Mode
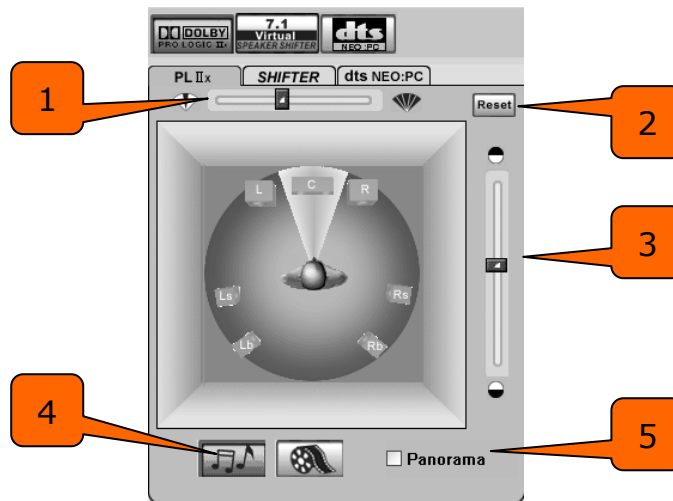
Dolby Pro Logic IIx

① Center Width Control

② Reset balance button

③ Dimension Control

④ Music mode / Cinema mode select, 1 and 2 only can be adjusted under Music mode

⑤ Panorama Control, this is tested by measuring the output levels of the Left / Right surround channel when turned on and off

4. Dolby Headphone Mode
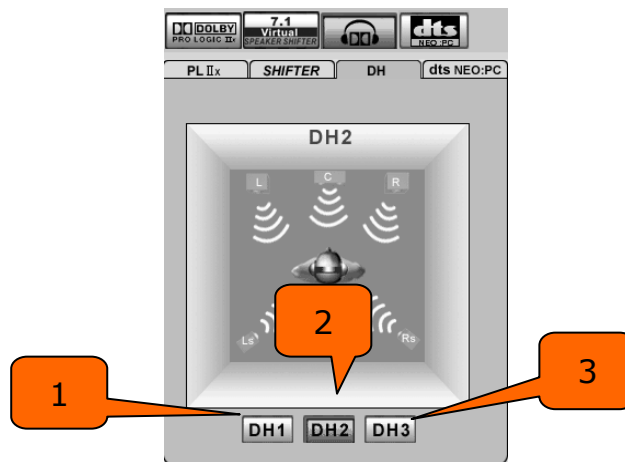
Dolby Headphone

① Reference Room Emulation

② Livelier Room Emulation

③ Larger Room Emulation

5. Dolby Virtual Speaker

Dolby Virtual Speaker

① Reference Room Mode

② Wide Mode

6. DTS NEO:PC

DTS NEO:PC
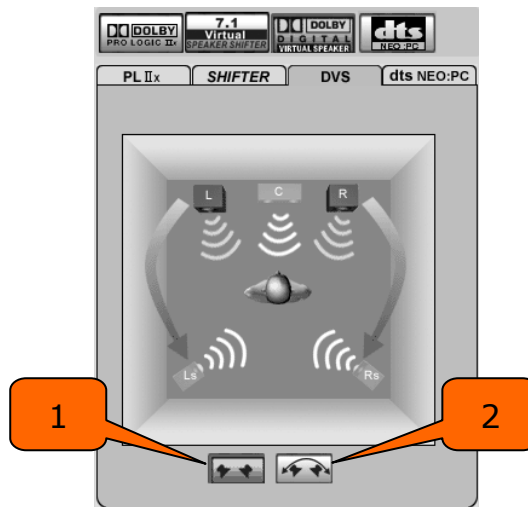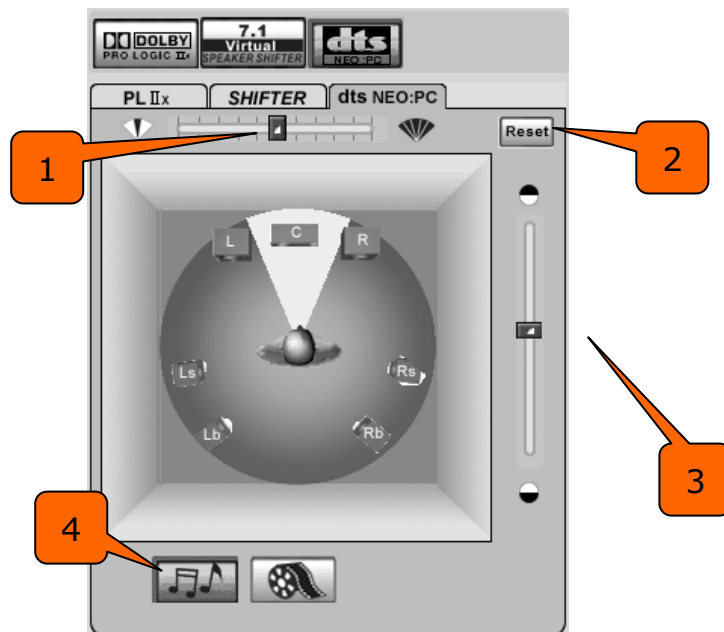
① 10 degrees Center Width Control

② Reset balance button

③ Dimension Control

④ Music mode / Cinema mode select, 1 and 2 only can be adjusted under Music mode

7. C-Media SPEAKER SHIFTER
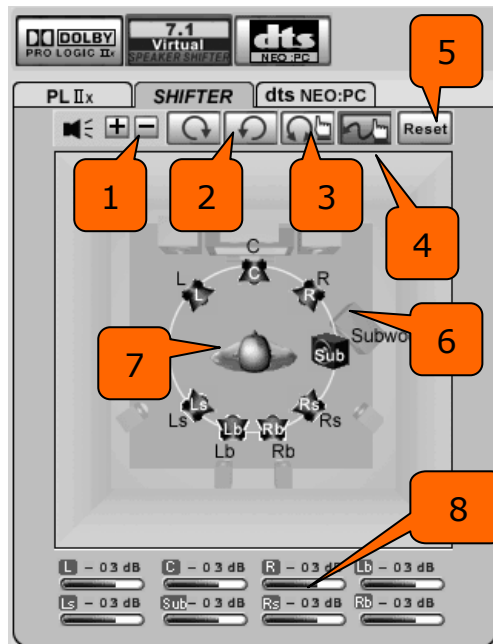
SPEAKER SHIFTER

① Volume Control: Increase / decrease the volume of all channels by 1 dB.

② Auto Rotation Mode: The virtual speakers will rotate clockwise or counterclockwise slowly. For example, if clockwise is selected:

| T=0 | T=0.25 sec | T= 1 sec |
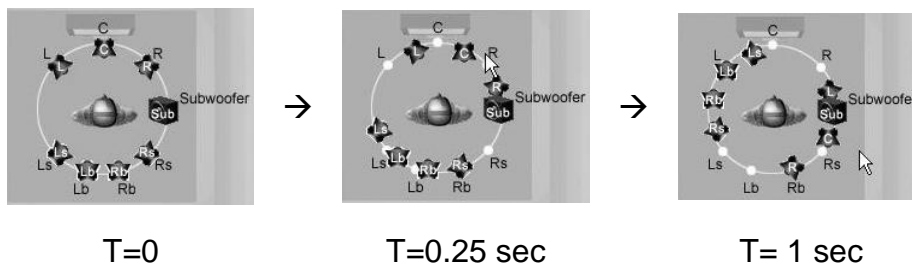
③ Manually Rotation Mode: Use mouse to rotate the virtual speakers on the screen manually.

④ Free Moving Mode: Use pointer and click-and-drag to move the location of individual virtual speakers / virtual listener.

⑤ Reset: Reset the location of virtual speakers / virtual listener to default.

⑥ Virtual Speaker: Each virtual speaker virtualizes one channel of the 7.1 channel speakers in the real world.

⑦ Virtual Listener: The virtual listener virtualizes your position in the real world.

⑧ Volume indicator for each channel.

(5) Speaker volume adjustment.

Speaker Tester is used to aid users with speakers placements.
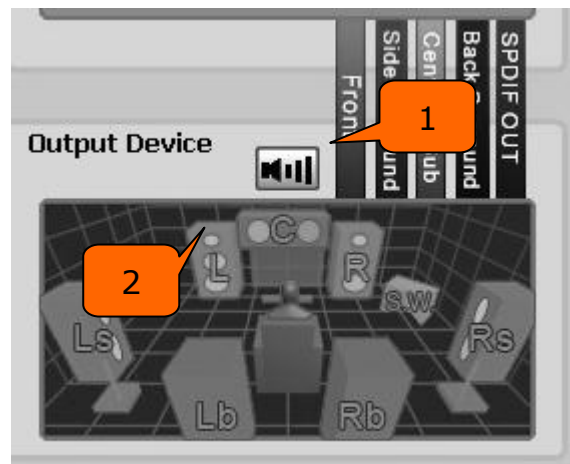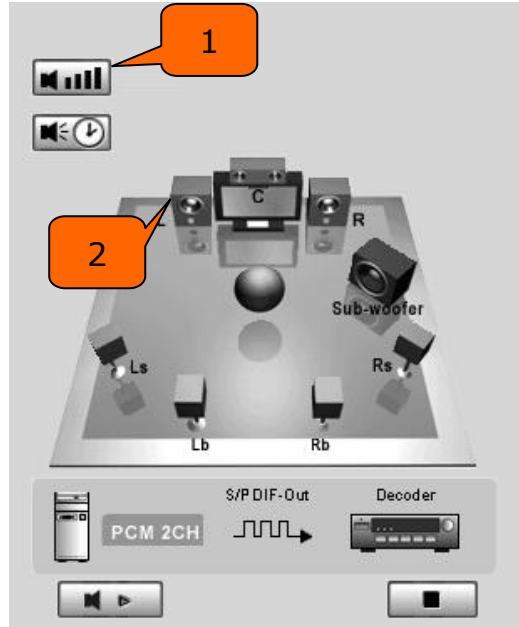
Speaker Test

① Volume Control: You can adjust each speaker output volume level by 1 dB.
② Test each speaker output.

(6) System Input

In VISTA and Windows7, the System Input is different from XP driver. XP provides DirectX for multiple audio outputs but VISTA does not. C-media provides System Input for this feature. User must select System Input channel depending on sound source.

If you play 2ch stereo files such as MP3, AVI and games then set to 2ch for System Input no matter what type of multi-channels speaker system you have. For playback of multi-channel data such as DVDs, please set to 6ch in System Input.

When outputting 2ch data through 5.1ch analog speaker system, please set to 2ch on System Input and 6ch on Analog Output.
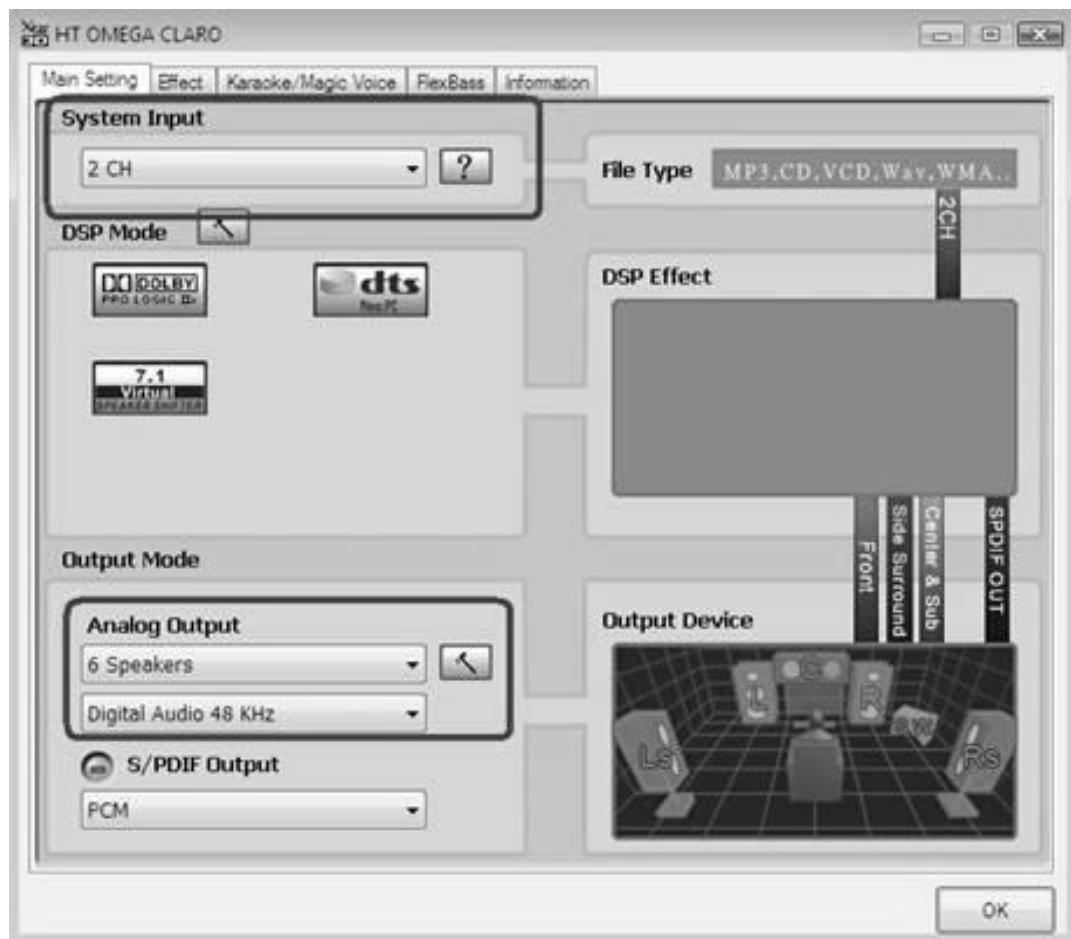
4.3 Mixer/Volume
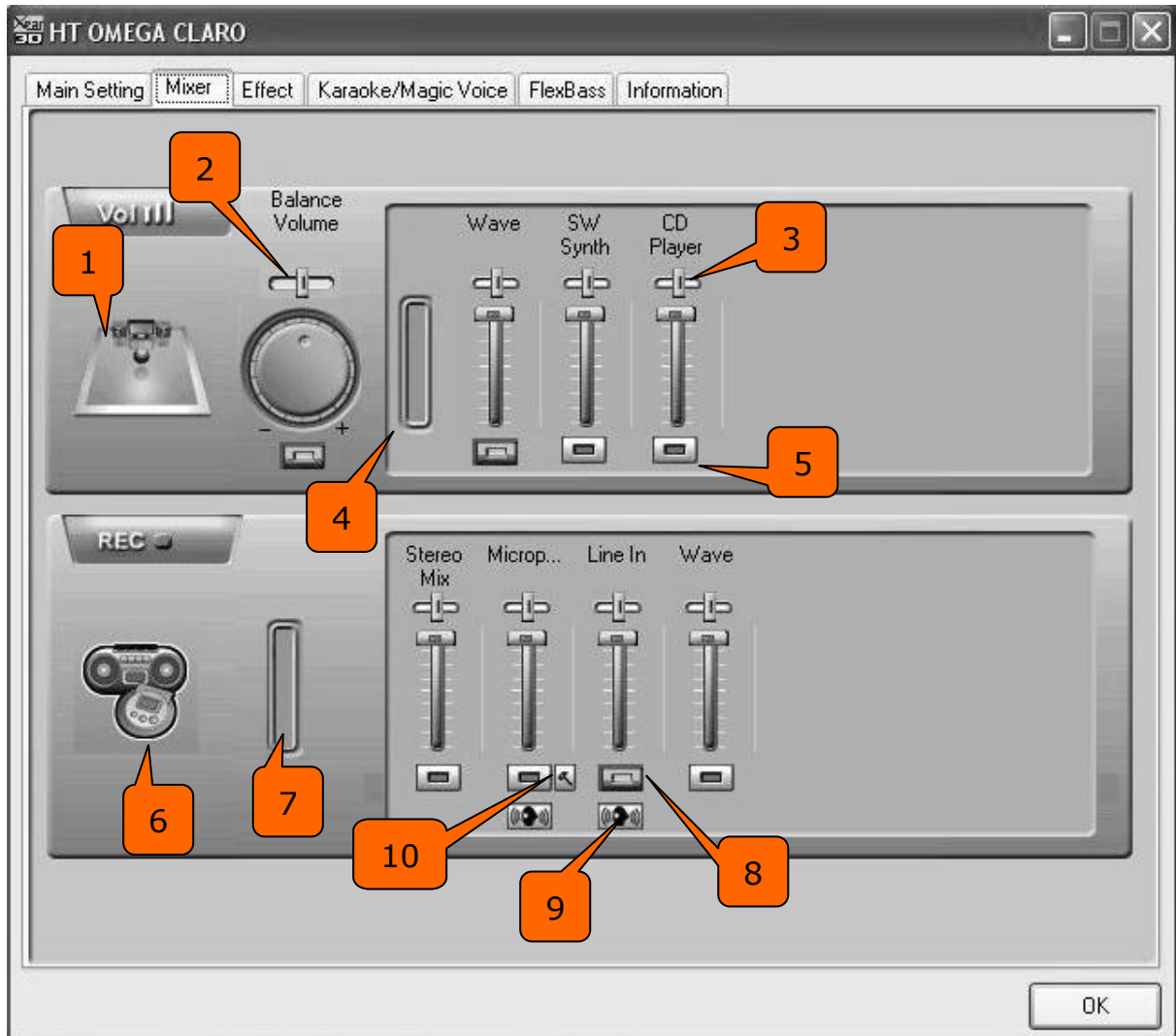
Main Mixer

1. Audio System Status: Displays the output channel mode of the system.

2. Panning of Master Volume: Use to adjust the balance of left / right channel globally.

3. Volume Control of Digital Audio Source: Use to adjust the volume of each digital audio source on the system.

4. Volume Indication Meter of Playback: Displays the playback volume in real-time.

5. Mute / Un-mute Button: An unlit button indicates that the audio source is muted.

6. Graph of Selected Recording Device: The icon represents the selected recording device.

7. Volume Indication Meter of Recording: Displays the recording volume in real-time.

8. Recording Source Selection: Only one recording source is allowed to be selected at one time.

9. Monitoring : Monitoring of recording source is enabled here

10. Advanced Setting: There are two advanced setting options for Microphone

Microphone Setting
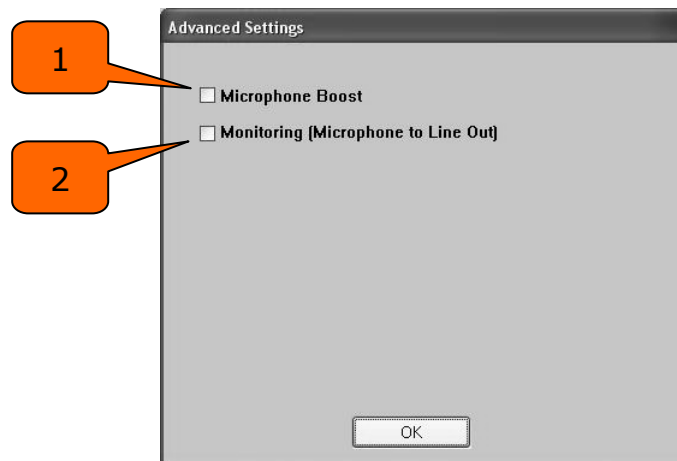
Microphone Advanced Settings

① Microphone Boost: If you feel that the mic volume is too low there is an option to boost +20dB. Check the "Boost" box to enable it. Keep in mind that background noise will also increase.

NOTE: The eClaro uses a sensitive microphone preamp. To avoid damage to your speakers, do not use maximum volume level when plugging in a microphone. We recommend that volume be set at half or less. Volume level can be safely adjusted once the microphone has been connected.

② Monitoring: Select to hear microphone input played back through speakers.

4.4 Sound Effects

(1) Environment Emulation

1: Select an Environment effect to emulate multiple environments.

2: Environment Size can be adjusted from large to small (default setting is medium). Changing the size will alter the virtual space in which the sound is reproduced.

(2) 10-Band Equalizer

3: There are 12 preset modes such as Bass, Treble, Live, Rock, Jazz, etc.

4: Custom equalizer settings can be saved. Enter a name into the blank space and click "+" to add your personal setting into the "User Defined" list. Click "−" to delete the currently selected user defined setting from the list.
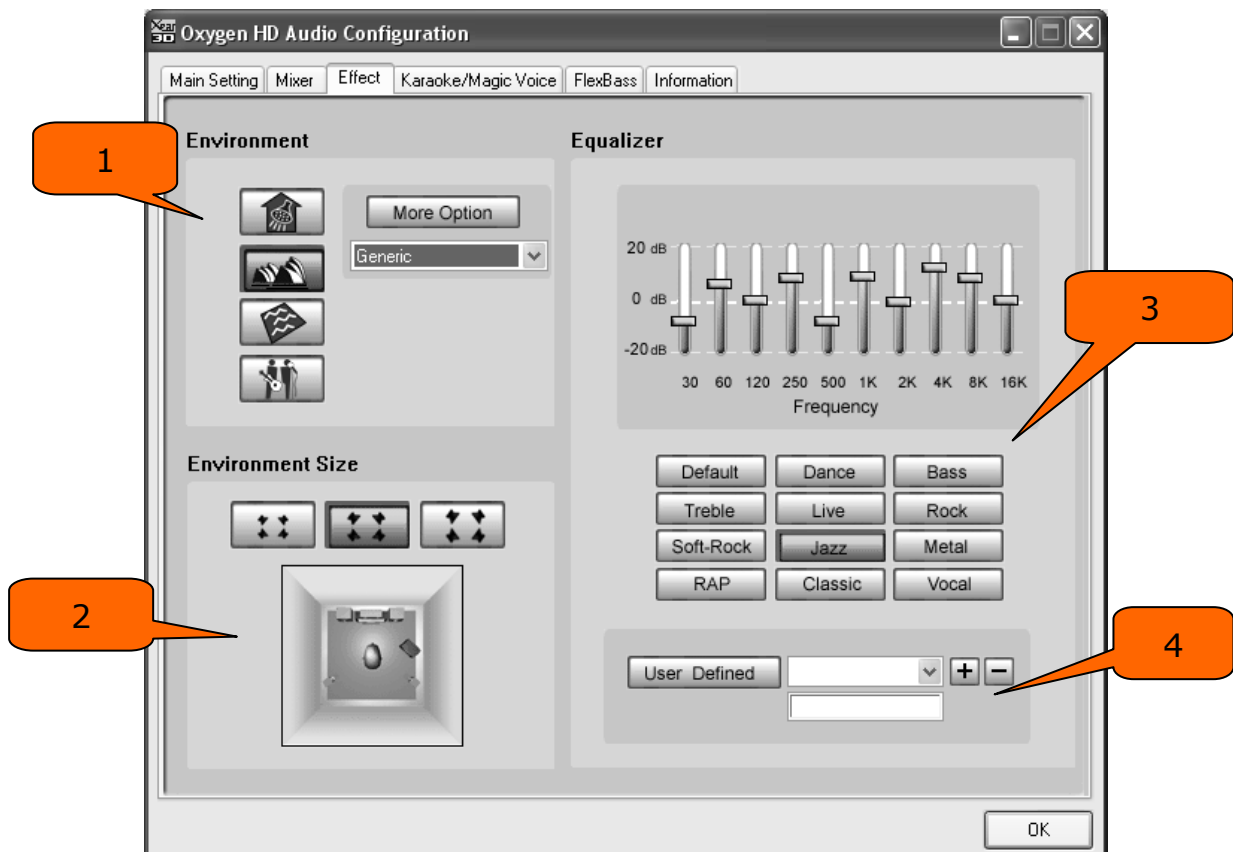
Effect Setting

4.5 Magic Voice^{TM} and Karaoke

1: Click "On" to turn on the Karaoke function (button should be blue).

NOTE: First time you turn on Magic Voice, the driver will default select the microphone input as the recording source. Click "OK" to close this window.

2: Reset all settings to default values.

3: "Microphone Echo" will add an echo effect. The volume and amount of echo can be adjusted according to user's preference. Magic Voice^{TM} is a special effects tool that will change the sound of your voice. To use it, select Magic Voice from the pull-down menu and choose one of the five effects buttons. The special effects can be used when talking to other people over the network, such as messenger applications, VOIP and online games. Because these two features require real-time microphone recording, you should suspend other recording applications while using Microphone Echo or Magic Voice.

4: You can enable Key-Shifting for the Karaoke VCD or the music to suit your voice pitch. The range is adjustable from -4b to +4#.

5: If the music source includes the original vocals, you may try the "Vocal Cancellation" function to cancel it (0~100). The success of the effect depends on the recording method used to create the audio source. Karaoke VCD or CD, typically do not include vocals and should not require "Vocal Cancellation."
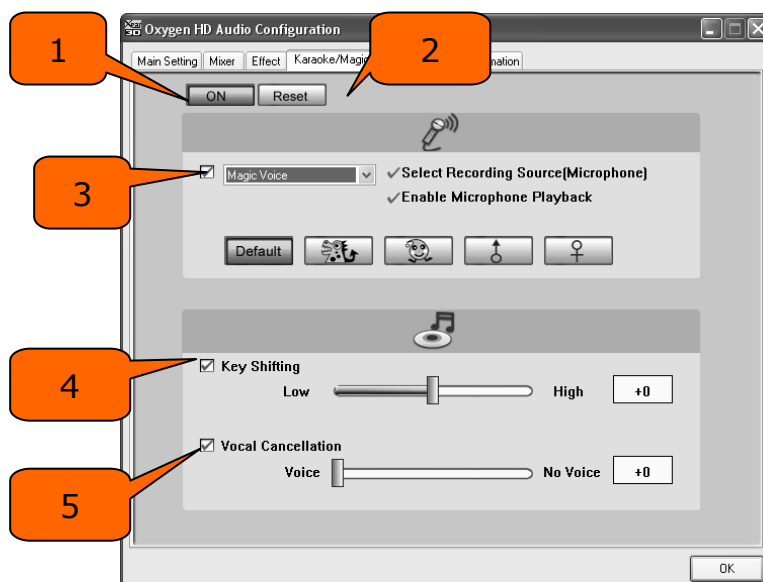
Karaoke/ Magic Voice Setting

4.6 FlexBass^{TM}

"FlexBass" is a driver feature that incorporates Bass Management technology. Bass Management is a necessary feature of Dolby Digital technology. A bass management feature allows management of the low-frequency content of your audio. In general, humans cannot tell which direction frequencies below 100 Hz come from. If speaker cannot output low frequencies, it is better to send them to another speaker such as a subwoofer, or the full range speaker (Large Speaker).
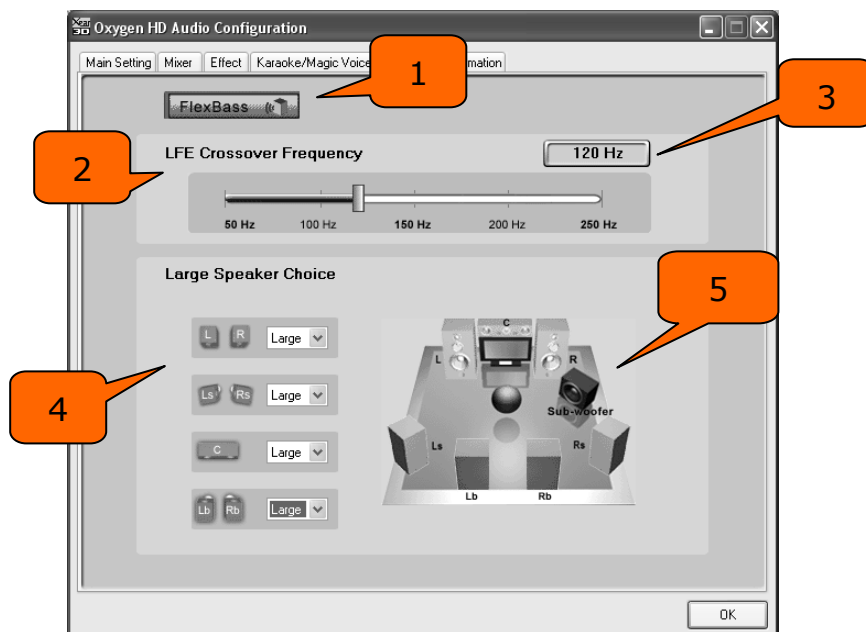
FlexBass Setting

1. **FlexBass On/Off switch button**. Turn on to start FlexBass function.
2. **Crossover frequency adjustment**. To define low frequency signal threshold in numerical hz range from 50-250 Hz.
3. **Frequency Meter**. Displays your selection.
4. **Large/Small speaker select**. By default, all speakers other than the subwoofer are set to "small". The low frequency audio content is extracted and sent to the subwoofer out. Individual speaker (or pairs) can be defined as "large" allowing playback of low frequency signals.
5. **Speaker configuration status**. Graphic representation of speaker setting.

4.7 Look for Information

The Information tab displays details about the eClaro's audio-related properties including the audio chip, driver version, 3D Audio Engine and Microsoft DirectX Version. The Audio Configuration icon can be shown in the system tray by checking the box.
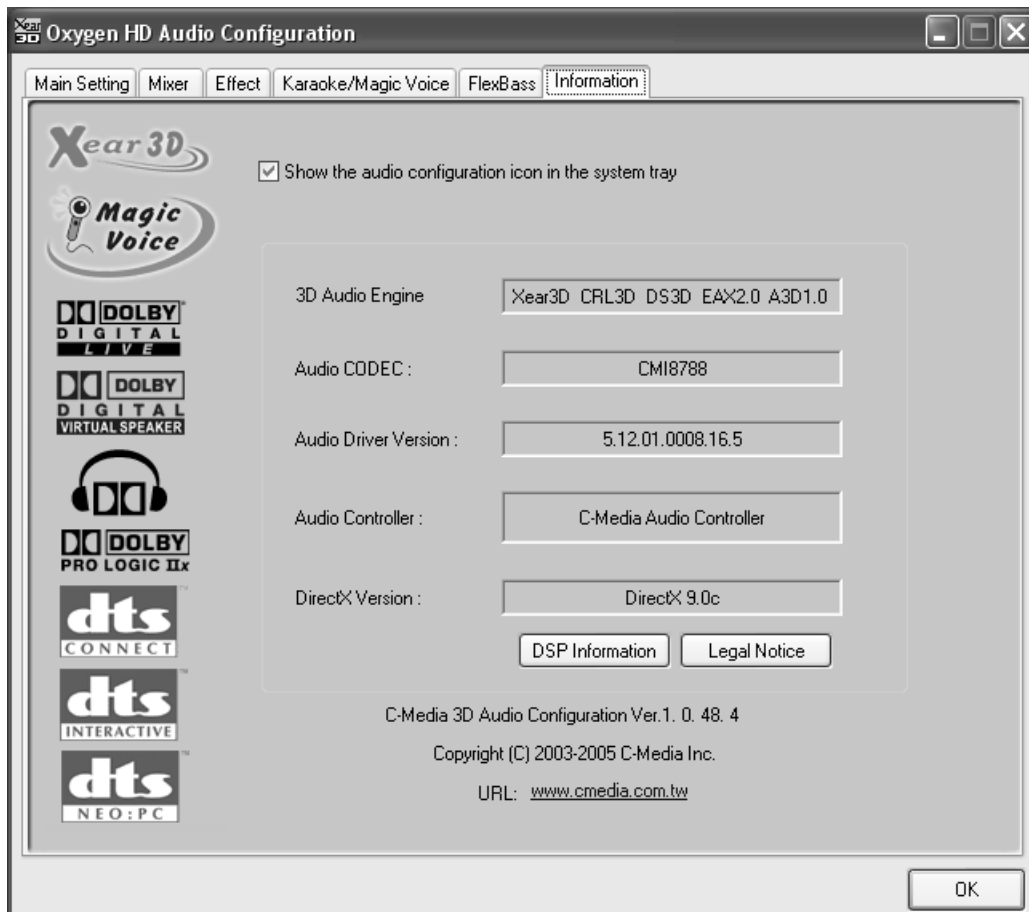
Driver Information

5. FAQ & Troubleshooting

Q1：What is a 7.1CH listening environment and how it is different from 5.1CH.

1. The 7.1 channel mode is the latest multi-channel audio format and technology on the market. It includes center, subwoofer, front left, front right, left surround, right surround, left back surround, and right back surround according to Dolby Digital and DTS ES standards.

2. The 7.1CH content is referred to as Dolby Digital EX by Dolby Lab and DTS-ES (Extended Surround) by DTS.

3. The difference between 5.1CH and 7.1CH is the addition of 2CH. The two extra speakers were placed in the rear side(s) to enhance the immersive experience of surround sound.

5.1CH Environment   7.1CH Environment

29
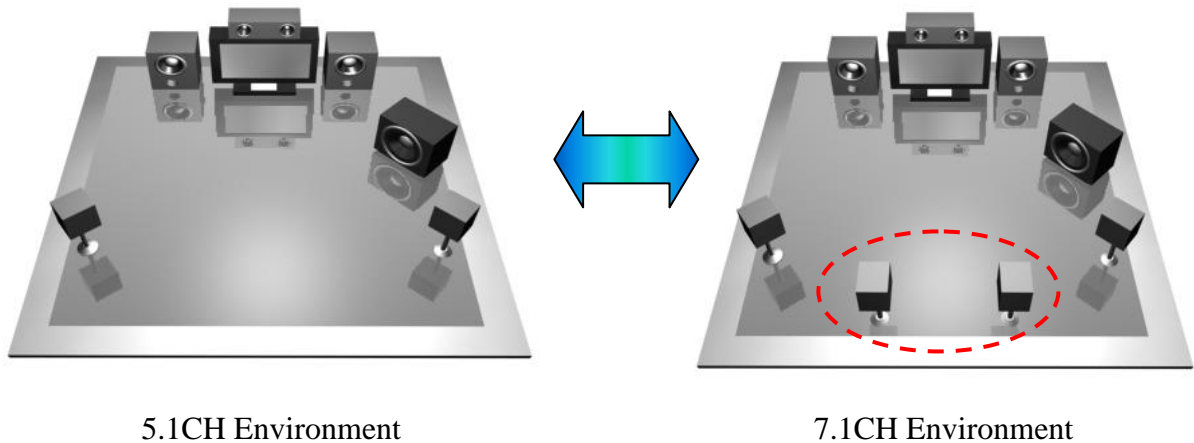
Q2：How can I use eClaro in a slim PC case?

eClaro includes a Low Profile bracket. Please loosen the three bolts pictured below.
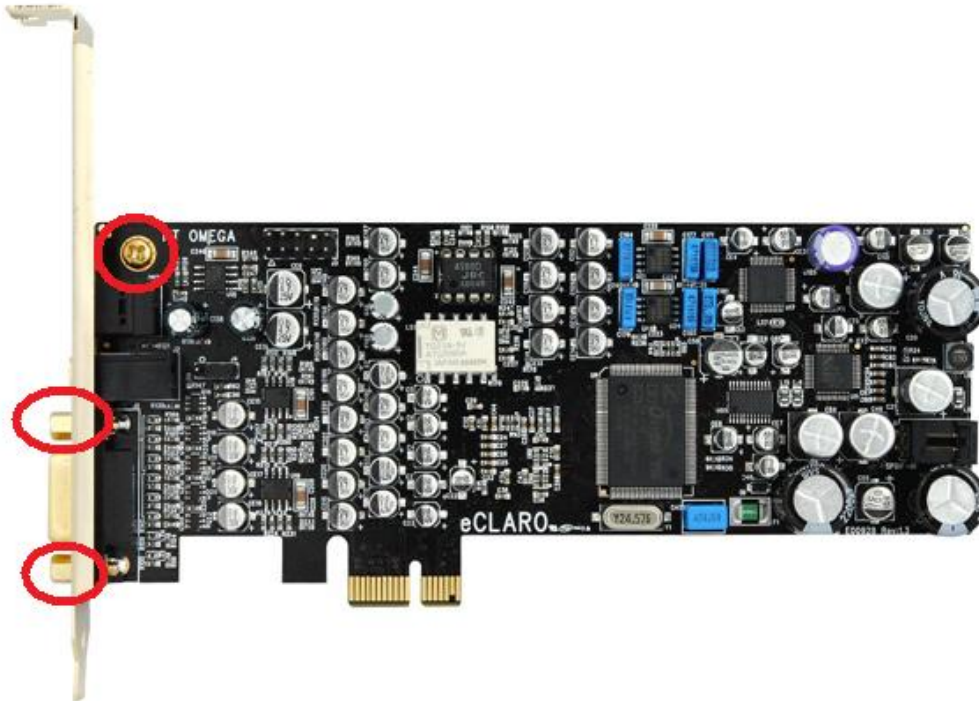
Remove the original bracket and replace with the Low Profile bracket. Re-secure the three bolts.

6. Support / Contact

HT OMEGA offers various resources to provide customer support. Please visit our website http://www.htomega.com to access our customer service section. The latest FAQ's, drivers, product documentation and applications can be found on the website, along with any new product development and information.

Thank you for choosing an HT OMEGA product. We look forward to providing you with the highest quality products and service.

NOTE: 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 the 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 into 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 : Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

LIMITED WARRANTY

HT OMEGA, Inc. warrants to the original purchaser only that the hardware product will be free of defects in materials and workmanship for a period of twelve (12) months from the date of purchase. HT OMEGA, Inc. will, at its sole discretion, repair or replace the product if it is found to be defective. This warranty does not cover a product failure that is the result of misuse, abuse, modification, misapplication, or normal wear and tear. No claim is made for merchantability or fitness for any purpose. In no event will HT OMEGA, Inc. be liable for any direct, indirect, consequential, or incidental damages arising out of the use of this product. In no event will HT OMEGA's liability exceed the purchase price you paid for the product.

The purchaser must contact HT OMEGA, Inc or its regional representative to receive prior approval before returning a faulty unit. All such returns must be shipped to HT OMEGA, Inc in the original packaging including all accessories (documents, cables, software, etc.) along with the original sales receipt. Any costs associated with the return/shipping/insuring the package are the sole responsibility of the end-user. Shipments without freight prepaid will not be accepted. If the returned product is deemed to be defective, the repaired or replacement product will be returned at no extra charge via the carrier chosen by HT OMEGA, Inc.