

4 x **1**
SOURCES DISPLAYS

HD Switcher w/ Audio Decoding

GTV-AUDDEC-N

User Manual
Rev A4



GefenTV®

Important Safety Instructions

GENERAL SAFETY INFORMATION

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this product near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install or place this product near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. To reduce the risk of electric shock and/or damage to this product, never handle or touch this unit or power cord if your hands are wet or damp. Do not expose this product to rain or moisture.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Batteries that may be included with this product and/or accessories should never be exposed to open flame or excessive heat. Always dispose of used batteries according to the instructions.

Warranty Information

Gefen warrants the equipment it manufactures to be free from defects in material and workmanship.

If equipment fails because of such defects and Gefen is notified within two (2) years from the date of shipment, Gefen will, at its option, repair or replace the equipment, provided that the equipment has not been subjected to mechanical, electrical, or other abuse or modifications. Equipment that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for ninety (90) days from the day of reshipment to the Buyer.

This warranty is in lieu of all other warranties expressed or implied, including without limitation, any implied warranty or merchantability or fitness for any particular purpose, all of which are expressly disclaimed.

1. Proof of sale may be required in order to claim warranty.
2. Customers outside the US are responsible for shipping charges to and from Gefen.
3. Copper cables are limited to a 30 day warranty and cables must be in their original condition.

The information in this manual has been carefully checked and is believed to be accurate. However, Gefen assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Gefen be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. The technical information contained herein regarding the features and specifications is subject to change without notice.

For the latest warranty coverage information, refer to the Warranty and Return Policy under the Support section of the Gefen Web site at www.gefen.com.

PRODUCT REGISTRATION

Please register your product online by visiting the Register Product page under the Support section of the Gefen Web site.

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Important Notice

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HDMI, the HDMI logo, and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing in the United States and other countries.

Manufactured under license from Dolby Laboratories.
Dolby, Pro Logic, and the double-D symbol
are registered trademarks of Dolby Laboratories.

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Operating Notes

- The Digital Audio Decoder for HDMI has 8 RCA outputs, intended to be used with a separate amplifier, and supports a maximum of six discrete channels of audio. 2 additional connectors are available for bi-amping the front left and right channels.
- This product was intended for use with a separate audio amplifier. The RCA output connectors on the rear panel will require the use of an audio amplifier to produce adequate volume output.
- This unit will support the following audio formats:
 - LPCM
 - Dolby® Pro Logic
 - Dolby® Pro Logic II
 - Dolby® Digital
- This unit features multiple EDID (display information) modes which will determine what audio formats can be used. See [Setting the EDID Mode](#) for more information.
- This unit will accept sources that use Deep Color.

Features and Packing List

Features

- Supported HDMI Features:
 - ▶ Resolutions up to 1080p Full HD
 - ▶ HDCP compliant
 - ▶ 12-bit Deep Color
 - ▶ 3DTV pass-through
 - ▶ Lip Sync pass-through
- Supported audio formats: LPCM, Dolby® Pro Logic, Dolby® Pro Logic II, Dolby® Digital
- 7 channels of pre-amp output, including provision for optional front left / right bi-amp mode.
- Subwoofer pre-amp level output
- Test tone for speaker system set-up
- Front panel display
- Front panel buttons for power, volume, mute, source, and menu navigation
- Hand-held remote control
- IR control via front panel sensor and rear panel IR Extender input
- Serial (RS-232) control for automation
- Trigger Input for remotely powering on the Audio Processor
- Trigger Output for power on of outboard power amps and displays
- Field-upgradable firmware via RS-232 port
- External / Internal EDID management
- Locking power supply connector
- Compact size



Packing List

The *4x1 HD Switcher w/ Audio Decoding* ships with the items listed below. If any of these items are not present in your box when you first open it, immediately contact your dealer or Gefen.

- 1 x 4x1 HD Switcher w/ Audio Decoding
- 1 x 6 ft. Locking HDMI cables
- 1 x IR Remote Control
- 1 x 24V DC Power Supply
- 1 x AC Power Cord
- 1 x Quick-Start Guide

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4 x **1**
SOURCES DISPLAYS

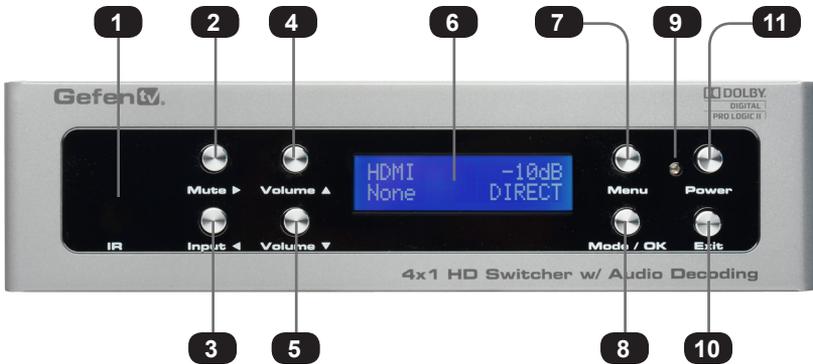
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Panel Layout

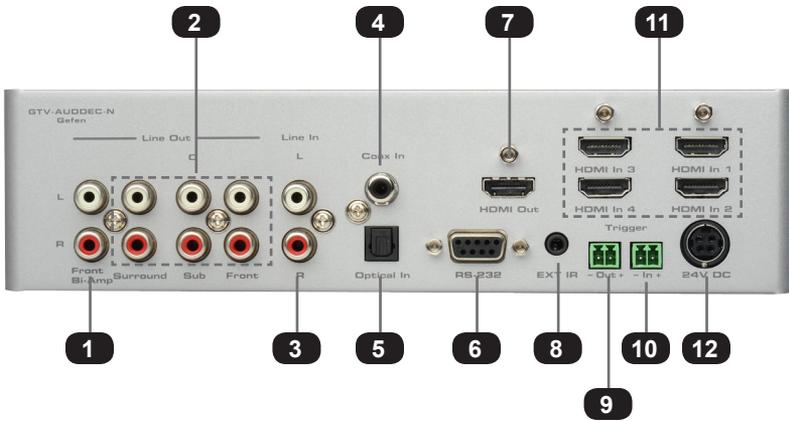
Front Panel



ID	Name	Description
1	IR	This IR sensor receives commands from the included IR Remote Control Unit.
2	Mute ►	This button will cycle between Mute-On and Mute-Off modes. When the Mute-On mode is enabled, all audio output will be muted. While in the Menu System this button will cycle through available options in the right direction when a feature has been selected for adjustment.
3	Input ◀	Consecutively press this button to cycle through each combination of video and audio inputs. For each video input, audio may be selected from the embedded HDMI audio, coax, optical, or L/R analog audio inputs.
4	Volume ▲	Press this button to <i>increase</i> the volume level of the audio outputs. While in the Menu System, this button is used to scroll up through the current menu options. See Using the Menu System for more information.

ID	Name	Description
5	Volume ▼	Press this button to <i>decrease</i> the volume level of the audio outputs. While in the Menu System, this button is used to scroll down through the current menu options. See Using the Menu System for more information.
6	Front Panel Display	The front-panel of the 4x1 HD Switcher w/ Audio Decoding contains a 16-character 2-line display which is used to provide feedback when performing various functions.
7	Menu	Press this button to enter the Menu System. See Using the Menu System for more information.
8	Mode / OK	Press this button to change the audio processing mode. See Setting the Audio Processing Mode for more information.
9	Power Indicator	This LED indicator will glow bright red when the unit is in <i>standby mode</i> . When the unit is powered-on, this LED indicator will glow bright green.
10	Exit	Press this button to exit the current menu and return to the previous menu. See Using the Menu System for more information.
11	Power	Press this button to power ON the 4x1 HD Switcher w/ Audio Decoding or place it in <i>standby mode</i> .

Back Panel

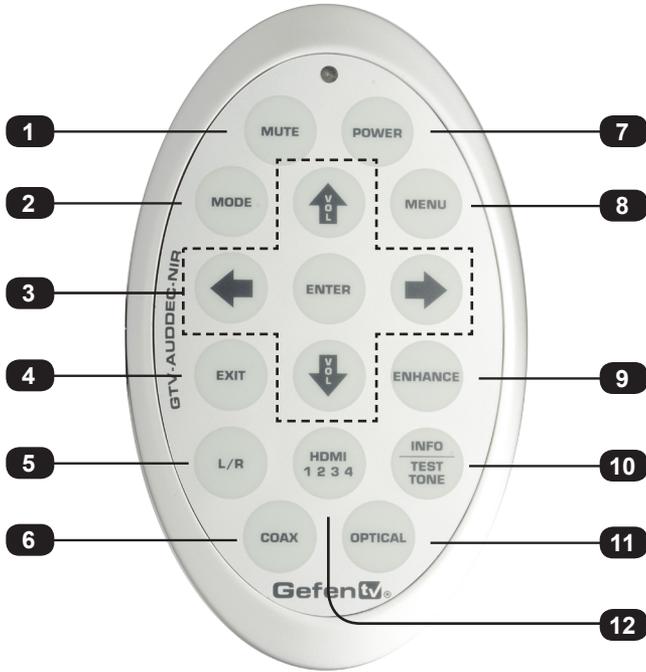


ID	Name	Description
1	Line Out (Front Bi-Amp)	These RCA connectors are only used in Bi-Amp mode.
2	Line Out (Surround, C, Sub, Front)	Use RCA cables to connect with an external amplifier.
3	Line In (L / R)	L/R RCA-type audio inputs for analog audio.
4	Coax In	Connect a coax audio cable between this S/PDIF connector and the S/PDIF connector of a digital audio source.
5	Optical In	Use an optical cable between this TOSLINK connector and the TOSLINK connector of a digital audio source.
6	RS-232	Connect a RS-232 cable between this DB-9 connector and the RS-232 controller. See RS-232 Configuration for more information.

ID	Name	Description
7	HDMI Out	Connect an HDMI cable between this connector and an HDTV display.
8	IR Ext	Connect an IR Extender (Gefen part no. EXT-RMT-IREXTN) to this port to extend the range of the IR remote control unit.
9	Trigger (Out +/-)	Provides 11.5 V DC when the Switch is powered ON. This trigger can be used to control an external power amplifier, lights, curtains, etc.
10	Trigger (In +/-)	Used to externally power the unit ON or OFF. This trigger will power ON the Switcher when a 3 V - 12 V DC voltage is applied. If the existing voltage is removed, then the Switcher is placed in Standby Mode (consumes less than < 1 W).
11	HDMI In (1 - 4)	Connect up to four Hi-Def sources to these HDMI inputs using HDMI cables.
12	24V DC	Connect the included the 24V DC power supply to this power receptacle. Only use the power supply that is included with this product.

IR Remote Control Unit

Top



ID	Name	Description
1	MUTE	Press this button to mute or unmute the audio output.
2	MODE	Press this button to cycle through each of the available audio modes.
3	←/↓/→/↑/ENTER	These buttons are the equivalent of the Input ◀, Volume ▼, Mute ▶, Volume ▲, and Mode / OK buttons on the front panel.
4	EXIT	This button functions the same as the Exit button on the front panel.
5	L / R	Press this button to select the analog L/R audio input source.

ID	Name	Description
6	COAX	Press this button to select the S/PDIF audio input source.
7	POWER	Press this button to toggle between power ON and <i>standby mode</i> . The Power LED indicator will indicate the current power state. See Standby Mode / Powering the Switcher for more information.
8	MENU	This button activates the Menu system.
9	ENHANCE	This button will cycle through each of the audio enhancement presets. See Audio Enhancement Modes for more information on this feature.
10	INFO / TEST TONE	This button will display a series of information messages on the LCD screen when pressed. When adjusting the Speaker Level, this button will activate a test tone that is useful for adjusting the volume level of each speaker.
11	OPTICAL	Press this button to select the TOSLINK audio input source. The current video source will not change.
12	HDMI 1 2 3 4	Consecutively press this button to cycle through each of the HDMI inputs.

Bottom

(shown with cover removed)



ID	Name	Description
1	DIP switch bank	Use these DIP switches to set the IR channel of the remote. See Setting the Remote IR Channel for details.
2	Primary battery slot (shown without battery)	Holds the battery for operating the remote. Use only 3V CR2032-type batteries. Make sure that the positive (+) side of the battery is facing up.
3	Alternate battery slot	Allows for the installation of secondary (backup) battery.



NOTE: An Activity Indicator that flashes quickly while holding down any one of the buttons indicates a low battery. Replace the battery as soon as possible.

Installing the Battery

The IR remote control unit ships with two batteries. Only one battery is required for operation. The second battery is a spare. Use only 3V CR2032-type batteries.

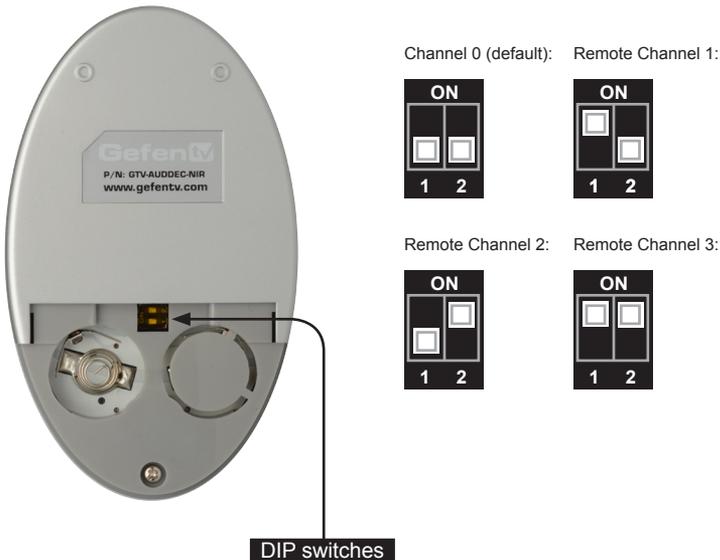
1. Remove the back cover the IR Remote Control unit.
2. Insert the included battery into the primary battery slot. The positive (+) side of the battery should be facing up.
3. Replace the back cover.



WARNING: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

Setting the Remote IR Channel

In order for the included IR remote control to communicate with the *4x1 HD Switcher w/ Audio Decoding*, the IR remote control must be set to the same channel as the processor. See the section [Setting the Switcher IR Channel](#) or use the `IR` command to set the IR channel of the *4x1 HD Switcher w/ Audio Decoding*.

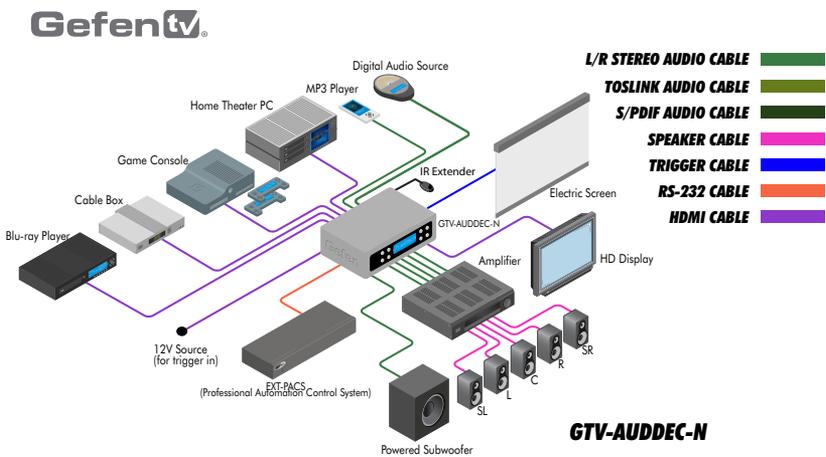


Installation

Connecting the 4x1 HD Switcher w/ Audio Decoding

1. Connect up to four Hi-Def sources to the **HDMI In** ports on the 4x1 HD Switcher w/ Audio Decoding.
2. Connect additional audio sources to the **Optical**, **Coax**, and/or analog inputs, as required.
3. Connect the Digital Audio Decoder to an amplifier using the RCA connectors on the rear panel. The following RCA connectors are available:
 - Front Left
 - Front Left (for bi-amping)
 - Front Right
 - Front Right (for bi-amping)
 - Center
 - Left Surround
 - Right Surround
 - Subwoofer
 -
4. Connect an HDMI cable from the **HDMI Out** to a Hi-Def display.
5. Connect the included 24 V DC power supply to the power receptacle on the switcher.
6. Connect the AC power cord to an available electrical outlet.

Sample Wiring Diagram





HD Switcher w/ Audio Decoding

02 Operating the 4x1 HD Switcher w/ Audio Decoding

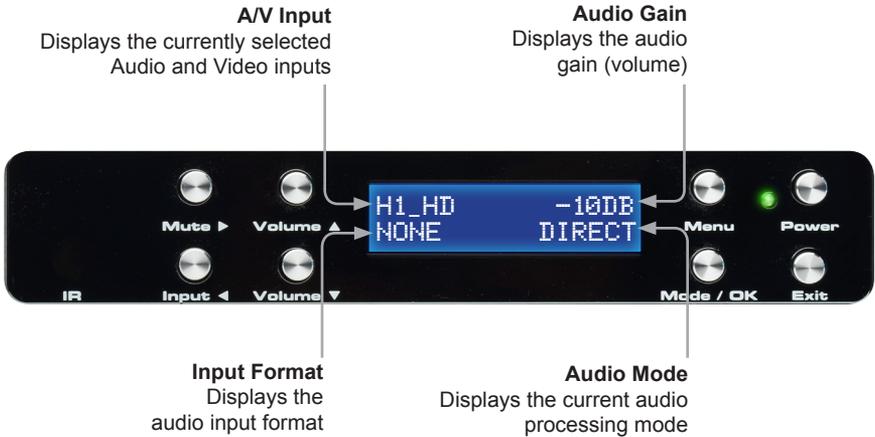
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Front Panel Controls

Home Screen

The Home Screen displays information regarding the current settings of the Switcher. The Home Screen is also used in conjunction with navigating the built-in Menu System.

After powering on the Switcher, the Home Screen will be displayed. The Home Screen indicates the currently selected A/V input, the current volume setting, the audio input format, and the audio processing mode:



Standby Mode / Powering the Switcher

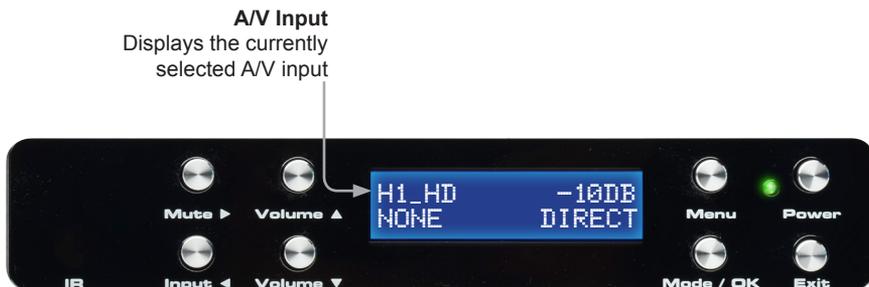
Once the power supply is connected and the AC power cord is connected to an available electrical outlet, the Power Indicator will glow bright red. When the Power Indicator is red, the Switcher is Standby Mode.

To power-on the Switcher, press the Power button on the front panel or use the Power button on the IR Remote Control. The power indicator, next to the Power button, will glow bright green.



Selecting the Input Source

Press the **Input** ◀ button to cycle through each input source. The table below lists which inputs are active for each selection.



The *4x1 HD Switcher w/ Audio Decoding* has four HDMI inputs (1 - 4) and three options for audio (coax, optical, and analog stereo). The following table lists the available video and audio inputs.

Display	Video	Audio	Display	Video	Audio
H1_HD	HDMI In 1	HDMI	H3_HD	HDMI In 3	HDMI
H1_CX		Coax	H3_CX		Coax
H1_OT		Optical	H3_OT		Optical
H1_LR		Analog L/R	H3_LR	Analog L/R	
H2_HD	HDMI In 2	HDMI	H4_HD	HDMI In 4	HDMI
H2_CX		Coax	H4_CX		Coax
H2_OT		Optical	H4_OT		Optical
H2_LR		Analog L/R	H4_LR		Analog L/R

The currently displayed A/V input is abbreviated in the *home screen*, as follows:

[HDMI Input_Audio Source], where:

HDMI Input:

H1, H2, H3, and H4 represents each **HD In** port input on the back panel of the *4x1 HD Switcher w/ Audio Decoding*.

Audio Source:

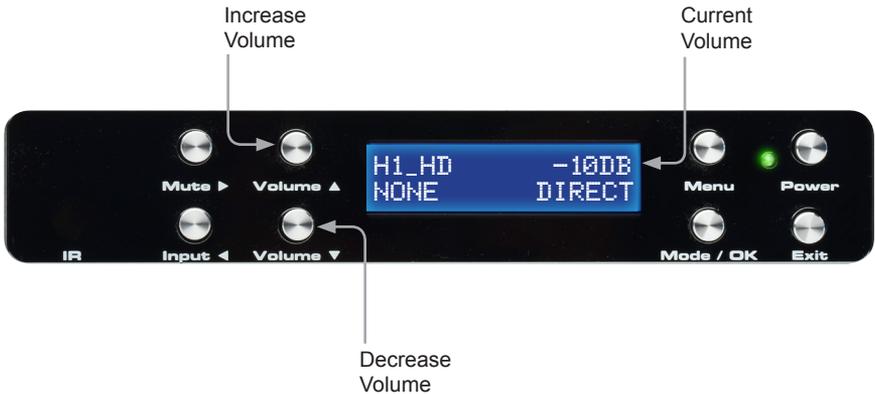
- HD = Embedded HDMI audio
- CX = Coax (S/PDIF)
- OT = Optical (TOSLINK)
- LR = Analog L/R

Adjusting the Volume

Use the **Volume ▲** and **Volume ▼** buttons to increase or decrease the audio output gain. The ▲ or ▼ buttons on the IR Remote Control can also be used to control the audio output gain. Audio gain can be reduced to a minimum of -60 dB and to a maximum of +10 dB. Each time these buttons are pressed, the volume is increased or decreased by 1 dB.

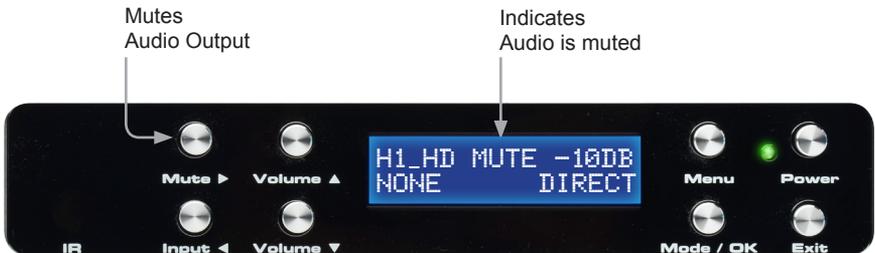


TIP: To increase or decrease the audio gain at a faster rate, press and hold down either the Volume ▲ or Volume ▼ button until the desired volume is achieved.



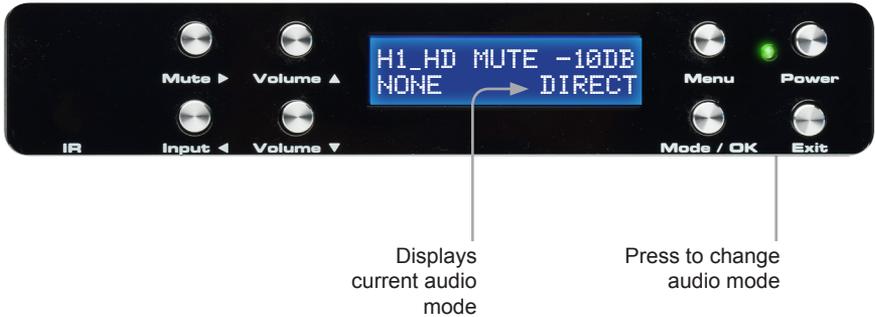
Muting the Audio Output

Use the **Mute** button on the front panel or on the IR Remote Control to mute the audio output. The display will indicate if the audio is muted. To disable the mute function, press the Mute button again. The **Volume ▲** and **Volume ▼** buttons can also be used to *disable* muting.



Changing the Audio Processing Mode

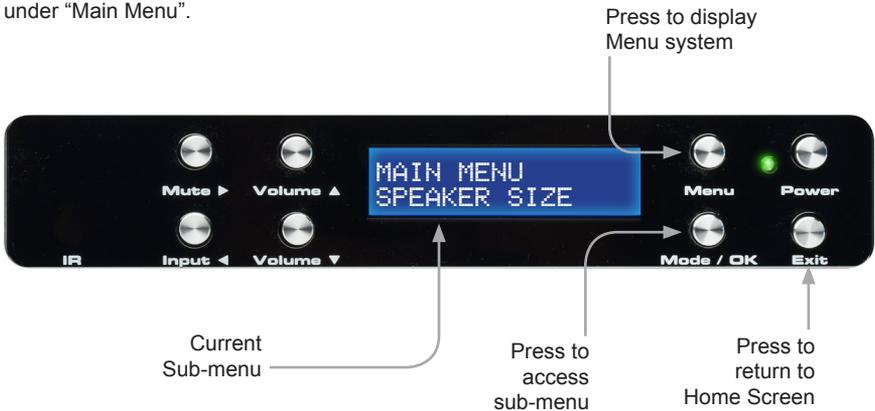
Successively press the **Mode / OK** button on the front panel to cycle through the different audio processing modes. The Mode button on the IR Remote Control can also be used to cycle through the audio modes.



See [Setting the Audio Processing Mode](#) for a description of each of the available audio processing modes.

Accessing the Main Menu

To access the Menu System, press the **Menu** button on the front panel. The front-panel display will indicate that the menu system is active. The current sub-menu will be displayed under "Main Menu".



Press the **Volume ▲** or **Volume ▼** button to cycle through the different sub-menus. Press the **Mode / OK** button to access the currently displayed sub-menu. Press the **Exit** button to return to the *home screen*.

Using the Menu System

The 4x1 HD Switcher w/ Audio Decoding comes with a built-in menu system which provides control over additional audio features. The following examples demonstrate some of the more common features of the 4x1 HD Switcher w/ Audio Decoding.

Setting the Speaker Size

Speaker size is determined by the ability of a speaker to reproduce low frequencies. When using a powered Subwoofer one should select speaker size to **SMALL**. If the Center, Surrounds, or Subwoofer speakers are not connected, then turn these channels 'off' (audio from these channels will be re-directed to the front speakers).



IMPORTANT: If the FL/FR speakers are bi-amped, then the Speaker Size must be set to **LARGE**.

Using the front-panel buttons

1. Press the **Menu** button. The front-panel display will change to display the **Speaker Size** menu:

MAIN MENU
SPEAKER SIZE

2. Press the **Mode / OK** button. The front-panel display will show the Front L / Front R speaker size:

SPEAKER SIZE
FRONT L/R(LARGE)

3. Press the **Mute ►** or **Input ◀** button to select the speaker size.

SPEAKER SIZE
FRONT L/R(SMALL)

4. Use the **Volume ▲** or **Volume ▼** buttons to configure the Center, Surround L / R, and Subwoofer.

5. Press the **Exit** button to save the changes and return to the Speaker Size menu.
6. Press the **Exit** button a second time to return to the *home screen*.



H1_HD -30DB
NONE DIRECT

Using the IR Remote Control

1. Press the **MENU** button. The front-panel display will change to display the **Speaker Size** menu:



MAIN MENU
SPEAKER SIZE

2. Press the **ENTER** button. The front-panel display will show the Front Left / Front R speaker size:



SPEAKER SIZE
FRONT L/R(LARGE)

3. Press the ◀ or ▶ buttons to select the speaker size.



SPEAKER SIZE
FRONT L/R(SMALL)

4. Use the ▲ or ▼ buttons to configure the Center, Surround L / R, and Subwoofer.
5. Press the **EXIT** button to save the changes and return to the **Speaker Size** menu.
6. Press the **EXIT** button a second time to return to the *home screen*.

Setting the Speaker Levels

When using the IR Remote Control, the **INFO | TEST TONE** button is used to produce a test tone to adjust the output level of each channel. The test tone can also be enabled or disabled using the **TEST** command.

1. Press the **MENU** button. Press the **▼** button to navigate to the **Speaker Level** menu.



MAIN MENU
SPEAKER LEVEL

2. Press the **ENTER** button. The front-panel display will show the Front Left speaker level:



SPEAKER LEVEL
FRONT L (+00DB)

3. Press the **INFO | TEST TONE** button on the IR Remote Control to enable the test tone.
4. Press the **◀** or **▶** buttons to adjust the output level of the Front Left speaker.



SPEAKER LEVEL
FRONT L (+02DB)

5. Use the **▲** or **▼** buttons to cycle through the Center, Front Right, Surround Right, Surround Left, and Subwoofer and adjust the output level of each speaker as required. The test tone is automatically disabled when advancing to the next speaker and will need to be selected once again.
6. Press the **EXIT** button to save the changes and return to the **Speaker Level** menu.



MAIN MENU
SPEAKER LEVEL

7. Press the **Exit** button a second time to return to the *home screen*.



NOTE: The test tone will automatically be disabled when advancing to the next channel. Press the **INFO | TEST TONE** button on the IR Remote Control to enable the test tone.

Setting the Speaker Distance

Setting the correct speaker distance is required to make sure that the sounds from each speaker reach your ear at precisely the same time. The distance for each speaker can be set in 1.5 foot (0.5 meter) increments within a range of 0 feet - 33 feet (10 meters).

Speaker distance can be viewed in feet or meters. See [Setting the Unit of Measurement](#) for more information.

Using the front-panel buttons

1. From the *home screen*, press the Menu button. Use the **Volume ▲** or **Volume ▼** buttons to navigate to the **Speaker Distance** menu:



```
MAIN MENU
SPEAKER DISTANCE
```

2. Press the **Mode / OK** button. The front-panel display will show the current distance for the Front Left speaker:



```
SPEAKER DISTANCE
FRONT L (03.0M)
```

3. Press the **Mute ►** or **Input ◀** button to change the distance of the Front Left speaker.



```
SPEAKER DISTANCE
FRONT L (04.5)
```

4. Use the **Volume ▲** or **Volume ▼** buttons to cycle through the Center, Front Right, Surround Right, Surround Left, and Subwoofer and adjust the speaker distance as necessary.
5. Press the **Exit** button to save the changes and return to the **Speaker Distance** menu.



```
MAIN MENU
SPEAKER DISTANCE
```

6. Press the **Exit** button a second time to return to the *home screen*.



```
H1_HD      -30DB
NONE       DIRECT
```

Using the IR Remote Control

1. From the *home screen*, press the **MENU** button. Use the ▲ or ▼ buttons to navigate to the **Speaker Distance** menu:

```
MAIN MENU
SPEAKER DISTANCE
```

2. Press the **ENTER** button. The front-panel display will show the current distance for the Front Left speaker:

```
SPEAKER DISTANCE
FRONT L (03.0M)
```

3. Press the ◀ or ▶ buttons to change the distance of the Front Left speaker.

```
SPEAKER DISTANCE
FRONT L (04.5)
```

4. Use the ▲ or ▼ buttons to cycle through the Center, Front Right, Surround Right, Surround Left, and Subwoofer and adjust the speaker distance as necessary.
5. Press the **EXIT** button to save the changes and return to the **Speaker Distance** menu.

```
MAIN MENU
SPEAKER DISTANCE
```

6. Press the **Exit** button a second time to return to the *home screen*.

```
H1_HD          -30DB
NONE           DIRECT
```

Adjusting the Tone Control

The Tone Control menu provides the ability to adjust the bass and treble to personal preference. Treble and bass can be increased or decreased in 1 dB intervals, within a range of -12 dB to +12 dB.

Using the front-panel buttons

1. From the *home screen*, press the **Menu** button. Use the **Volume ▲** or **Volume ▼** buttons to select the **Tone Control** menu:

```
MAIN MENU
TONE CONTROL
```

2. Press the **Mode / OK** button. The front-panel display will show the current bass setting.

```
TONE CONTROL
BASS (+01DB)
```

3. Press the **Mute ►** or **Input ◀** button to change the bass setting.

```
TONE CONTROL
BASS (-02DB)
```

4. Use the **Volume ▲** or **Volume ▼** buttons to navigate to the Treble setting and adjust the level as necessary, using the **Mute ►** or **Input ◀** buttons.

```
TONE CONTROL
TREBLE (+05DB)
```

5. Press the **Exit** button to save the changes and return to the **Tone Control** menu.
6. Press the **Exit** button a second time to return to the *home screen*.

```
H1_HD -30DB
NONE DIRECT
```

Using the IR Remote Control

1. From the *home screen*, press the **MENU** button. Use the ▲ or ▼ buttons to select the **Tone Control** menu:



```
MAIN MENU
TONE CONTROL
```

2. Press the **ENTER** button. The front-panel display will show the current bass setting.



```
TONE CONTROL
BASS (+01DB)
```

3. Press the ◀ or ▶ button to change the bass setting.



```
TONE CONTROL
BASS (-02DB)
```

4. Use the ▲ or ▼ buttons to navigate to the Treble setting and adjust the level as necessary.



```
TONE CONTROL
TREBLE (+05DB)
```

5. Press the **EXIT** button to save the changes and return to the **Tone Control** menu.
6. Press the **Exit** button a second time to return to the *home screen*.



```
H1_HD -30DB
NONE DIRECT
```

Setting the Audio Processing Mode

The 4x1 HD Switcher w/ Audio Decoding, allows any of five audio processing modes to be associated with a selected input.

For example, you may want to select the Multichannel Stereo audio processing mode with the optical (TOSLINK) input. On the other hand, you may want to select the Dolby® Pro Logic II (PLII) audio processing mode when using the analog L/R inputs, in order to transform two-channel content into surround sound. These two examples will be illustrated.

Available Modes

Mode	Description
DIRECT	Audio playback without any processing (default setting). The input signal is the same as the output signal.
STEREO	Multichannel audio is down-mixed into two channels.
MCH STER	This mode will output unprocessed stereo sound equally from all your speakers.
MONO	2 or more channels are down-mixed into mono.
PLII	Transforms stereo content into 5-channel surround sound.



NOTE: PLII (Dolby Pro Logic II) Mode processes two-channel content into five separate full-frequency channels.

Using the front panel buttons

Example 1: Assigning the optical (TOSLINK) input with the Multichannel Stereo audio processing mode:

1. From the *home screen*, press the **Menu** button. Use the **Volume ▲** or **Volume ▼** buttons to navigate to the **Audio Setup** menu:



MAIN MENU
AUDIO SETUP

2. Press the **Mode / OK** button. The front-panel display will display the coaxial option:



AUDIO SETUP
COAXIAL FAV PROC

3. Use the **Volume ▼** button to navigate to the optical option:



AUDIO SETUP
OPTICAL FAV PROC

4. Press the **Mute ►** or **Input ◀** button to access the current setting for the optical (TOSLINK) input. In the illustration below, the optical input is set to use the Direct audio processing mode, by default:



OPTICAL FAV PROC
OPTIL (DIRECT)

5. Press the **Mute ►** or **Input ◀** button to change the current (favorite) setting. In the example below, we have set the optical input to use the Multichannel Stereo audio processing mode:



OPTICAL FAV PROC
OPTIL (MCH STER)

6. Press the **Exit** button to save the changes and return to the **Audio Setup** menu.

(continued on next page)

Example 2: Assigning the analog L/R inputs with the Dolby Pro Logic II audio processing mode:

1. Starting from Step 5, on the previous page, use the **Volume ▼** button to select the analog L/R option:

```
AUDIO SETUP
AUD LR  FAV PROC
```

2. Press the **Mute ►** or **Input ◀** button to access the current setting for the analog L/R input. In the illustration below, the analog L/R input is set to use the Stereo audio processing mode:

```
AUD LR  FAV PROC
AUD LR< STEREO >
```

3. Press the **Mute ►** or **Input ◀** button to change the current (favorite) setting from Stereo to PLII (Dolby Pro Logic II):

```
AUD LR  FAV PROC
AUD LR< PLII  >
```

4. Press the Exit button to save all changes and return to the Audio Setup menu.

```
MAIN MENU
AUDIO SETUP
```

5. Press the Exit button a second time to return to the *home screen*.

```
H1_HD      -30DB
NONE       DIRECT
```

Using the IR Remote Control

Example 1: Assigning the optical (TOSLINK) input with the Multichannel Stereo audio processing mode:

1. From the *home screen*, press the **MENU** button. Use the ▲ or ▼ buttons to select the **Audio Setup** menu:



```
MAIN MENU
AUDIO SETUP
```

2. Press the **ENTER** button. The front-panel display will display the coaxial option:



```
AUDIO SETUP
COAXIAL FAV PROC
```

3. Use the ▼ button to navigate to the optical option:



```
AUDIO SETUP
OPTICAL FAV PROC
```

4. Press the ► or ◀ button to access the current setting for the optical (TOSLINK) input. In the illustration below, the optical input is set to use the Direct audio processing mode, by default:



```
OPTICAL FAV PROC
OPTIL ( DIRECT )
```

5. Press the ► or ◀ button to change the current (favorite) setting. In the example below, we have set the optical input to use the Multichannel Stereo audio processing mode:



```
OPTICAL FAV PROC
OPTIL (MCH STER)
```

6. Press the **EXIT** button to save the changes and return to the **Audio Setup** menu.

(continued on next page)

Using the IR Remote Control (continued)

Example 2: Assigning the analog L/R inputs with the Dolby® Pro Logic II audio processing mode:

1. Starting from Step 5, on the previous page, use the ▼ button to select the analog L/R option:

```
AUDIO SETUP
AUD LR  FAV PROC
```

2. Press the ► or ◀ button to access the current setting for the analog L/R input. In the illustration below, the analog L/R input is set to use the Stereo audio processing mode:

```
AUD LR  FAV PROC
AUD LR< STEREO >
```

3. Press the ► or ◀ button to change the current (favorite) setting from Stereo to PLII (Dolby® Pro Logic II):

```
AUD LR  FAV PROC
AUD LR<  PLII  >
```

4. Press the **Exit** button to save all changes and return to the **Audio Setup** menu.

```
MAIN MENU
AUDIO SETUP
```

5. Press the **Exit** button a second time to return to the *home screen*.

```
H1_HD      -30DB
NONE       DIRECT
```

Dynamic Range Compression

Dynamic Range Compression (DRC) applies compression to the output signal, preventing the signal from becoming too loud. The default setting for Dynamic Range Compression is OFF.

Using the front-panel buttons

1. From the *home screen*, press the **Menu** button.
2. Use the **Volume ▲** or **Volume ▼** buttons to navigate to the Audio Setup menu.



```

MAIN MENU
AUDIO SETUP
  
```

3. Press the **Mode / OK** button.
4. Use the **Volume ▲** or **Volume ▼** buttons to select the DRC option:



```

AUDIO SETUP
DRC  ( OFF )
  
```

5. Press the ◀ or ▶ button to change to enable DRC.



```

AUDIO SETUP
DRC  ( ON  )
  
```

6. Press the **Exit** button to save the changes and return to the Audio Setup menu.



```

MAIN MENU
AUDIO SETUP
  
```

7. Press the **Exit** button a second time to return to the *home screen*.



```

H1_HD          -30DB
NONE           DIRECT
  
```

(continued on next page)

Using the IR Remote Control

1. From the *home screen*, press the **MENU** button.
2. Use the ▲ or ▼ buttons to navigate to the Audio Setup menu.



```
MAIN MENU
AUDIO SETUP
```

3. Press the **ENTER** button.
4. Use the ▲ or ▼ buttons to select the DRC option:



```
AUDIO SETUP
DRC ( OFF )
```

5. Press the ◀ or ▶ button to change to enable DRC.



```
AUDIO SETUP
DRC ( ON )
```

6. Press the **EXIT** button to save the changes and return to the **Audio Setup** menu.



```
MAIN MENU
AUDIO SETUP
```

7. Press the **Exit** button a second time to return to the *home screen*.



```
H1_HD          -30DB
NONE           DIRECT
```

Audio Enhancement Modes

The 4x1 HD Switcher w/ Audio Decoding provides four distinct audio enhancement modes. Each of these modes provide a different audio listening experience.

Available Modes

Mode (LCM display)	Description
NIGHT	Increases the volume of quiet passages, while decreasing the volume of loud passages. Similar to DRC but works with all audio signals.
VOICE	Detects speech audio patterns and separates them from the background sounds, making them more legible.
VOLUME	Real-time detection of the source audio gain, providing constant volume level between changing channels and commercial advertisements.
OFF	Disables audio enhancement mode.

Using the front-panel buttons

1. From the *home screen*, press the **Menu** button.
2. Use the **Volume ▲** or **Volume ▼** buttons to navigate to the Audio Setup menu.



3. Press the **Mode / OK** button.
4. Use the **Volume ▲** or **Volume ▼** buttons to select the Enhancement option:



(continued on next page)

5. Press the ◀ or ▶ button to change to change the audio enhancement mode. In the illustration below, the audio enhancement mode has been set to Night mode:

```
AUDIO SETUP
ENHA. ( NIGHT+ )
```

6. Press the **Exit** button to save the changes and return to the **Audio Setup** menu.
7. Press the Exit button a second time to return to the *home screen*.

```
H1 HD          -30DB
NONE           DIRECT
```

Using the IR Remote Control

1. From the *home screen*, press the **MENU** button.
2. Use the ▲ or ▼ buttons to navigate to the Audio Setup menu.

```
MAIN MENU
AUDIO SETUP
```

3. Press the **ENTER** button.
4. Use the ▲ or ▼ buttons to select the Enhancement option:

```
AUDIO SETUP
ENHA. ( OFF )
```

5. Press the ◀ or ▶ button to change to change the audio enhancement mode. In the illustration below, the audio enhancement mode has been set to Night mode:

```
AUDIO SETUP
ENHA. ( NIGHT+ )
```

6. Press the **EXIT** button to save the changes and return to the **Audio Setup** menu.
7. Press the **EXIT** button a second time to return to the *home screen*.

Setting the Unit of Measurement

When adjusting the speaker distance, either feet or meters can be specified.

Using the front-panel buttons

1. From the *home screen*, press the **Menu** button. Use the **Volume ▲** or **Volume ▼** buttons to navigate to the **Misc Setup** menu.



```
MAIN MENU
MISC SETUP
```

2. Press the **Mode / OK** button. The front-panel display will show the current distance for the Front Left speaker:

In the illustration below, the current unit of measure is currently set to meters.



```
MAIN MENU
DIST.UNIT(METER)
```

3. To change the unit of measure to feet, press the **Mute ►** or **Input ◀** button to change the unit of measure to feet.



```
MAIN MENU
DIST.UNIT(FEET)
```

4. Press the **Exit** button to save the changes and return to the **Misc Setup** menu.
5. Press the **Exit** button a second time to return to the *home screen*.



```
H1_HD          -30DB
NONE           DIRECT
```

(continued on next page)

Using the IR remote control

1. From the *home screen*, press the **MENU** button. Use the ▲ or ▼ buttons to select the **Misc Setup** menu.



```
MAIN MENU
MISC SETUP
```

2. Press the **ENTER** button. The front-panel display will show the current distance for the Front Left speaker:

In the illustration below, the current unit of measure is currently set to meters.



```
MAIN MENU
DIST. UNIT (METER)
```

3. To change the unit of measure to feet, press the ► or ◀ button to change the unit of measure to feet.



```
MAIN MENU
DIST. UNIT (FEET)
```

4. Press the **EXIT** button to save the changes and return to the **Misc Setup** menu.
5. Press the **EXIT** button a second time to return to the *home screen*.



```
H1_HD          -30DB
NONE           DIRECT
```

Setting the EDID Mode

The 4x1 HD Switcher w/ Audio Decoding has three EDID modes (INT, EXT, and MIX).

- **INT Mode**
The internal (local) EDID is used instead of the EDID from the display device. EDID features newer than HDMI 1.3 are removed from the EDID data structure when the display is read. This provides a general EDID which is compatible with more displays.
- **EXT Mode**
The external (downstream) EDID is used. In this mode, both DDC and HPD are passed through and the 4x1 HD Switcher w/ Audio Decoding uses the full video capabilities of the display. The HPD status will also be detected by the source device.
- **MIX Mode**
The display capabilities from the external EDID are combined with the audio capabilities of the internal EDID of the 4x1 HD Switcher w/ Audio Decoding.

Using the front-panel buttons

1. To set the EDID mode, press the **Menu** button from the *home screen*.
2. Use the **Volume ▲** or **Volume ▼** buttons to navigate to the **Misc Setup** menu.



```

MAIN MENU
MISC SETUP
  
```

3. Press the **Mode / OK** button.
4. Use the **Volume ▲** or **Volume ▼** buttons to select the **EDID Adjustment** menu.



```

MISC SETUP
EDID ADJ. ( INT )
  
```

5. Press the **Mute ►** or **Input ◀** buttons to the desired EDID mode.



```

MISC SETUP
EDID ADJ. ( MIX )
  
```

6. Press the **Exit** button to save the changes and return to the **Misc Setup** menu.
7. Press the **Exit** button a second time to return to the *home screen*.

(continued on next page)

Using the IR Remote Control

1. To set the EDID mode, press the **MENU** button from the *home screen*.
2. Use the ▲ or ▼ buttons to navigate to the **Misc Setup** menu.



```
MAIN MENU
MISC SETUP
```

3. Press the **ENTER** button.
4. Use the ▲ or ▼ button to select the EDID adjustment menu. In the example, below, the internal (INT) EDID is being used.



```
MISC SETUP
EDID ADJ. ( INT )
```

5. To change the EDID mode, press the ◀ or ▶ button to the desired EDID mode. In the example, below, the mixed-mode EDID has been selected.



```
MISC SETUP
EDID ADJ. ( MIX )
```

6. Press the **EXIT** button to save the changes and return to the **Misc Setup** menu.
7. Press the **EXIT** button a second time to return to the *home screen*.

Setting the Switcher IR Channel

When controlling the 4x1 HD Switcher w/ Audio Decoding using the IR Remote Control Unit, the IR channel on the 4x1 HD Switcher w/ Audio Decoding must be the same as the IR channel set on the IR Remote Control Unit. See [Setting the Remote IR Channel](#) for instructions on setting the IR channel on the IR Remote Control Unit.

Using the front-panel buttons

1. From the *home screen*, press the **Menu** button.
2. Use the **Volume ▲** or **Volume ▼** buttons to navigate to the **Misc Setup** menu.



```
MAIN MENU
MISC SETUP
```

3. Press the **Mode / OK** button.
4. Use the **Volume ▲** or **Volume ▼** buttons to select the IR channel menu. In the illustration below, the IR channel is set to 1.



```
MISC SETUP
IR CHANNEL ( 1 )
```

5. Press the **Mute ►** or **Input ◀** buttons to change to the required IR channel.



```
MISC SETUP
IR CHANNEL ( 3 )
```

6. Press the **Exit** button to save the changes and return to the **Misc Setup** menu.
7. Press the **Exit** button a second time to return to the *home screen*.

Resetting to Factory-Default Settings

If the 4x1 HD Switcher w/ Audio Decoding needs to be reset for any reason or if you need to set the unit to factory (default) settings, follow the instructions below.

Using the front-panel buttons

1. From the *home screen*, press the **Menu** button.
2. Use the **Volume ▲** or **Volume ▼** buttons to navigate to the Misc Setup menu.



MAIN MENU
MISC SETUP

3. Press the **Mode / OK** button.
4. Use the **Volume ▲** or **Volume ▼** buttons to select the Factory Defaults option.



MISC SETUP
FACTORY DEFAULT

5. Press the **Mode / OK** button. The unit will prompt you to confirm the selection.



OK TO F. DEFAULT
MENU TO CANCEL

- To Reset: Press the **Mode / OK** button to reset the unit to factory (default) settings. If the unit is reset, the 4x1 HD Switcher w/ Audio Decoding will power OFF and then automatically power ON after a few moments.
- To Cancel: Press the **Menu** button to cancel the reset process and return to the *home screen*.

Using the IR remote control

1. From the *home screen*, press the **MENU** button.
2. Use the **▲** or **▼** buttons to navigate to the **Misc Setup** menu.



```
MAIN MENU
MISC SETUP
```

3. Press the **Mode / OK** button.
4. Use the **Volume ▲** or **Volume ▼** buttons to select the Factory Default option.



```
MISC SETUP
FACTORY DEFAULT
```

5. Press the **ENTER** button. The unit will prompt you to confirm the selection.



```
OK TO F. DEFAULT
MENU TO CANCEL
```

- To Reset: Press the **Mode / OK** button to reset the unit to factory (default) settings. If the unit is reset, the 4x1 HD Switcher w/ Audio Decoding will power OFF and then automatically power ON after a few moments.
- To Cancel: Press the **Menu** button to cancel the reset process and return to the *home screen*.

HDCP Setup

The HDCP Setup submenu provides the option to disable HDCP detection on the selected input. Some sources (such as computers) will enable HDCP if an HDCP-compliant display is detected. Each HDMI input can be set to ON (enable) or OFF (disable). Set the input to ON to force the source device to ignore detection of an HDCP-compliant display.



NOTE: Forcing the source device to ignore the detection of an HDCP-compliant display does not decrypt HDCP content.

Using the front-panel buttons

1. From the *home screen*, press the **Menu** button.
2. Use the **Volume ▲** or **Volume ▼** buttons to navigate to the Misc Setup menu.

```

MAIN MENU
MISC SETUP
  
```

3. Press the **Mode / OK** button.
4. Use the **Volume ▲** or **Volume ▼** buttons to select the HDCP Setup option.

```

MISC SETUP
HDCP SETUP
  
```

5. Press the **Mode / OK** button. The current setting for Input 1 (HD In 1) will be displayed.

```

HDCP SETUP
INPUT-1 ( ON )
  
```

6. Press the **Mute ►** or **Input ◀** buttons to change to switch between ON or OFF.

```

HDCP SETUP
INPUT-1 ( OFF )
  
```

(continued on next page)

7. Use the **Volume ▲** or **Volume ▼** buttons to select the next input.
8. Repeat steps 6 - 7 as necessary.
9. Press the **Exit** button to save the changes and return to the **Misc Setup** menu.
10. Press the **Exit** button a second time to return to the *home screen*.

Using the IR remote control

1. From the *home screen*, press the **MENU** button.
2. Use the **▲** or **▼** buttons to navigate to the Misc Setup menu.



```
MAIN MENU
MISC SETUP
```

3. Press the **ENTER** button.
4. Use the **▲** or **▼** buttons to select the HDCP Setup option.



```
MISC SETUP
HDCP SETUP
```

5. Press the **ENTER** button. The current setting for Input 1 (HDMI In 1) will be displayed.



```
HDCP SETUP
INPUT-1 ( ON )
```

6. Press the **▶** or **◀** buttons to change to switch between ON or OFF.



```
HDCP SETUP
INPUT-1 ( OFF )
```

7. Use the **▲** or **▼** buttons to select the next input.
8. Repeat steps 6 - 7 as necessary.
9. Press the **EXIT** button to save the changes and return to the **Misc Setup** menu.
10. Press the **EXIT** button a second time to return to the *home screen*.

4 x **1**
SOURCES DISPLAYS

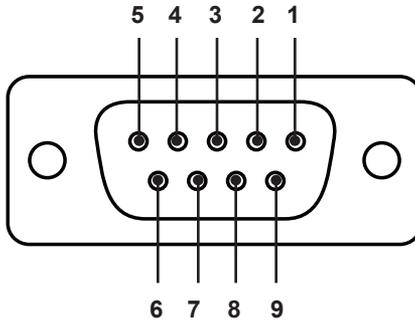
HD Switcher w/ Audio Decoding

03 Advanced Operation

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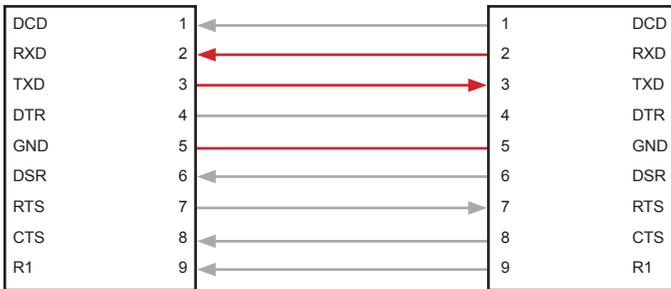
RS-232 Configuration

RS-232 Interface



RS-232 Controller

AV Processor



Only TXD, RXD, and GND pins are used.

RS-232 Settings

Description	Setting
Baud rate	19200
Data bits	8
Parity	None
Stop bits	1
Hardware flow control	None



IMPORTANT: When sending RS-232 commands, a carriage return must be included at the end of the command. A space *must* be included between the command and the parameter.

RS-232 Commands

Command	Description
AUDIO	Selects between S/PDIF, TOSLINK, or Analog audio input
BASS	Increases or decreases the bass
CT	Sets the size of the Center speaker
DC	Sets the distance for the Center speaker
DFL	Sets the distance for the Front Left speaker
DFLT	Sets the 4x1 HD Switcher w/ Audio Decoding to factory (default) settings
DFR	Sets the distance for the Front Right speaker
DRC	Adjusts the Dynamic Range Control
DSB	Sets the distance for the Subwoofer
DSL	Sets the distance of the Left Surround speaker
DSR	Sets the distance of the Right Surround speaker
EDID	Sets the EDID mode
ENH	Sets the audio enhancement mode
FLR	Sets the size of the Front Left / Front Right speakers
HDMI	Set the HDMI input
HELP	Lists these RS-232 commands
INFO	Returns hardware and firmware version
INTYPE	Returns the input audio format
IR	Sets the IR channel for the 4x1 HD Switcher w/ Audio Decoding
MD	Sets the audio mode
MUTE	Enables / disables audio muting
PWR	Powers the 4x1 HD Switcher w/ Audio Decoding ON or OFF
SLR	Sets the size of the Surround Left and Surround Right speakers
STAT	Enables or disables auto status feedback
SUB	Enables / disables the subwoofer
SUBV	Adjusts the subwoofer volume
TEST	Plays a test tone to specified speaker zone
TREB	Increases / decreases the treble
TVTYPE	Sets the video broadcast format
VOL	Increases / decreases the overall output volume



NOTE: RS-232 commands are *case-sensitive* and must be entered in all capital letters.

AUDIO

The `AUDIO` command selects between S/PDIF, TOSLINK, or analog audio inputs. The currently selected video input is unaffected.

Syntax:

```
AUDIO param1
```

Parameters:

param1 Value [0 ... 3]

Value	Description
0	HDMI
1	S/PDIF (coax)
2	TOSLINK (optical)
3	Analog L/R

To return the current audio input, use the following command syntax:

```
AUDIO ?
```

Note:

When the `AUDIO` command is executed, the return value will be a two-digit value. The first number represents the current video input. The second number represents the audio input. In the example below, the return value is `HDMI 11`. This value indicates that HDMI 1 is the current video input and that S/PDIF is the selected audio input. The query value will always be a two-digit value but only returns the current audio input.

Examples:

```
AUDIO 1
> HDMI 11

AUDIO ?
> AUDIO +01
```

BASS

The `BASS` command sets the bass level.

Syntax:

```
BASS param1
```

Parameters:

<i>param1</i>	Value (dB)	[-12 ... 12]
---------------	------------	--------------

To return the current audio input, use the following command syntax:

```
BASS ?
```

Note:

The + or - character can also be used, instead of specifying a value, in order to increase or decrease the bass level by 1 dB.

Examples:

```
BASS 5
```

```
> BASS +05
```

```
BASS ?
```

```
> BASS +05
```

```
BASS +
```

```
> BASS +06
```

```
BASS -
```

```
> BASS +05
```

CT

The CT command sets the size of the Center speaker.

Syntax:

```
CT param1
```

Parameters:

param1 Value [0 ... 2]

Value	Description
0	Small
1	Large
2	Off (disable Center speaker)

To return the current size setting for the Center speaker, use the following command syntax:

```
CT ?
```

Examples:

```
CT 1
```

```
> CT +01
```

```
CT ?
```

```
> CT +01
```

DC

The `DC` command sets the distance of the Center speaker.

Syntax:

```
DC param1
```

Parameters:

<i>param1</i>	Distance (feet)	[0 ... 20]
---------------	-----------------	------------

To return the current distance setting of the Center speaker, use the following command syntax:

```
DC ?
```

Examples:

```
DC 5
```

```
> DC 5
```

```
DC ?
```

```
> DC 5
```

DFL

The `DFL` command sets the distance of the Front Left speaker.

Syntax:

```
DFL param1
```

Parameters:

<i>param1</i>	Distance (feet)	[0 ... 20]
---------------	-----------------	------------

To return the current distance setting of the Front Left speaker, use the following command syntax:

```
DFL ?
```

Examples:

```
DFL 10
```

```
> DC 10
```

```
DFL ?
```

```
> DFL 10
```

DFLT

The `DFLT` command sets the 4x1 HD Switcher w/ Audio Decoding to the factory-default settings.

Syntax:

```
DFLT 1
```

Parameters:

The value of 1 must be specified as part of this command.

No return value is available.

Example:

```
DFLT 1
> DFLT 1> PWR +00
> PWR +01
```

DFR

The `DFR` command sets the distance of the Front Right speaker.

Syntax:

```
DFR param1
```

Parameters:

<i>param1</i>	Distance (feet)	[0 ... 20]
---------------	-----------------	------------

To return the current distance setting of the Front Right speaker, use the following command syntax:

```
DFR ?
```

Examples:

```
DFR 10
```

```
> DFR 10
```

```
DFR ?
```

```
> DFR 10
```

DRC

The `DRC` command enables / disables Dynamic Range Control.

Syntax:

```
DRC param1
```

Parameters:

param1 Value [0 ... 1]

Value	Description
0	DRC Off
1	DRC On

To return the current DRC state, use the following command syntax:

```
DRC ?
```

Example:

```
DRC 0  
> DRC +00
```

DSB

The `DSB` command sets the distance of the Subwoofer.

Syntax:

```
DSB param1
```

Parameters:

<i>param1</i>	Distance (feet)	[0 ... 20]
---------------	-----------------	------------

To return the current distance setting of the Subwoofer, use the following command syntax:

```
DSB ?
```

Examples:

```
DSB 6
```

```
> DSB 6
```

```
DSB ?
```

```
> DSB 6
```

DSL

The `DSL` command set the distance of the Surround Left speaker.

Syntax:

```
DSL param1
```

Parameters:

<i>param1</i>	Distance (feet)	[0 ... 20]
---------------	-----------------	------------

To return the current distance setting of the Surround Left speaker, use the following command syntax:

```
DSL ?
```

Examples:

```
DSL 2
```

```
> DSL 2
```

```
DSL ?
```

```
> DSL 2
```

DSR

The `DSR` command set the distance of the Surround Right speaker.

Syntax:

```
DSR param1
```

Parameters:

<i>param1</i>	Distance (feet)	[0 ... 20]
---------------	-----------------	------------

To return the current distance setting of the Surround Right speaker, use the following command syntax:

```
DSR ?
```

Examples:

```
DSR 2
```

```
> DSR 2
```

```
DSR ?
```

```
> DSR 2
```


ENH

The `ENH` command set the audio enhancement mode. See [Audio Enhancement Modes](#) for more information on this feature.

Syntax:

```
ENH param1
```

Parameters:

param1 Mode [0 ... 3]

Value	Description
0	Night Mode
1	Voice Mode
2	Volume Mode
3	Off

To return the current audio enhancement mode setting, use the following command syntax:

```
ENH ?
```

Examples:

```
ENH 3  
> ENH +03
```

```
ENH ?  
> ENH +03
```

FLR

The `FLR` command sets the size of the Front Left / Front Right speakers.

Syntax:

```
FLR param1
```

Parameters:

param1 Value [0 ... 1]

Value	Description
0	Small
1	Large

To return the current size setting for the Front Left / Front Right speakers, use the following command syntax:

```
FLR ?
```

Examples:

```
FLR 1
```

```
> FLR +01
```

```
FLR ?
```

```
> FLR +01
```

HDMI

The `HDMI` command sets the active HDMI input. This command does not affect the current audio input.

Syntax:

```
HDMI param1
```

Parameters:

param1 Value [1 ... 4]

Value	Description
0	HDMI In 1
1	HDMI In 2
2	HDMI In 3
3	HDMI In 4

To return the current video input, use the following command syntax:

```
HDMI ?
```

Note:

When the `HDMI` command is executed, the return value will be a two-digit value. The first number represents the current video input. The second number represents the audio input. In the example below, the return value is `HDMI 21`. This value indicates that HDMI In 2 is the current video input and that S/PDIF is the selected audio input. The query value will always be a two-digit value but only returns the current video input.

Examples:

```
HDMI 2
> HDMI 21

HDMI ?
> HDMI +02
```

HELP

The `HELP` command displays a list of the available RS-232 commands.

Syntax:

```
HELP ?
```

Parameters:

The ? character must be specified as part of this command.

Example:

```
HELP ?
> COMMAND LIST :PWR
AUDIO
BASS
CT
DC
DFL
DFLT
DFR
DRC
DSB
DSL
DSR
EDID
ENH
FLR
HDMI
INFO
INTYPE
IR
MD
MUTE
SLR
SUB
SUBV
TEST
TREE
TVTYPE
VOL
```

INFO

The `INFO` command returns the current hardware and firmware version.

Syntax:

```
INFO ?
```

Parameters:

The ? character must be specified as part of this command.

Example:

```
INFO ?  
> FW 2.1D
```

INTYPE

The `INTYPE` command returns the current audio input format.

Syntax:

```
INTYPE ?
```

Parameters:

The `?` character must be specified as part of this command.

Return values:

Value	Description
+00	None (no signal)
+01	Linear PCM 2.1
+02	Linear PCM 5.1
+03	Dolby® Digital 2.1
+04	Dolby® Digital 5.1

Example:

```
INTYPE ?
```

```
> INTYPE +02
```

IR

The `IR` command sets the IR channel for the 4x1 HD Switcher w/ Audio Decoding.

Syntax:

```
IR param1
```

Parameters:

param1 Value [0 ... 3]

Value	Description
0	IR channel 1
1	IR channel 2
2	IR channel 3
3	IR channel 4

To return the current IR channel, use the following command syntax:

```
IR ?
```

Examples:

```
IR 1  
> IR +01
```

```
IR ?  
> IR +01
```

MD

The MD command sets the audio mode. See [Setting the Audio Processing Mode](#) for more information on this feature.

Syntax:

```
MD param1
```

Parameters:

param1 Value [0 ... 4]

Value	Description
0	Dolby® Pro Logic Surround
1	Direct Input
2	Downmix to Stereo L/R
3	Multichannel Surround
4	Downmix to Mono

To return the current audio mode, use the following command syntax:

```
MD ?
```

Examples:

```
MD 2
```

```
> MD +02
```

```
MD ?
```

```
> MD +02
```

MUTE

The `MUTE` command mutes / un-mutes the audio output. This command also

Syntax:

```
MUTE param1
```

Parameters:

param1 Value [0 ... 2]

Value	Description
0	Disable muting
1	Enabling muting
2	Mute toggle (from previous state)

To return the current muting state, use the following command syntax:

```
MUTE ?
```

Examples:

```
MUTE 1  
> MD +01
```

```
MUTE ?  
> MD +01
```

```
MUTE 0  
> MD +00
```

```
MUTE 2  
> MD +01
```

PWR

The `PWR` command is used to power-on or place the 4x1 HD Switcher w/ Audio Decoding in *standby mode*.

Syntax:

```
PWR param1
```

Parameters:

param1 Value [0 ... 2]

Value	Description
0	Standby mode
1	Power On
2	Toggle power (from previous state)

To return the current power state, use the following command syntax:

```
PWR ?
```

Note:

Even if the 4x1 HD Switcher w/ Audio Decoding is placed in *standby mode*, the current power state can be retrieved using the `PWR ?` command.

Examples:

```
PWR 0
> PWR +00
```

```
PWR ?
> PWR +00
```

```
PWR 1
> PWR +01
```

```
PWR 2
> PWR +00
```

SLR

The `SLR` command sets the size of the Surround Left / Surround Right speakers.

Syntax:

```
SLR param1
```

Parameters:

param1 Value [0 ... 2]

Value	Description
0	Small
1	Large
2	Off (disable Surround speakers)

To return the current size setting for the Surround Left / Surround Right speakers, use the following command syntax:

```
SLR ?
```

Examples:

```
SLR 1  
> SLR +01
```

```
SLR ?  
> SLR +01
```

STAT

The `STAT` command enables / disables the feedback when using RS-232 commands.

Syntax:

```
STAT param1
```

Parameters:

param1 Value [0 ... 1]

Value	Description
0	Disable feedback
1	Enable feedback

To return the current feedback state, use the following command syntax:

```
STAT ?
```

Examples:

```
STAT 0
```

```
SLR 1
```

```
IR 0
```

```
STAT 1
```

```
SLR 1
```

```
> SLR +01
```

```
IR 0
```

```
> IR +00
```

SUB

The SUB command enables / disables the Subwoofer.

Syntax:

```
SUB param1
```

Parameters:

param1 Value [0 ... 1]

Value	Description
0	Disable Subwoofer
1	Enable Subwoofer

To return the current state of the Subwoofer, use the following command syntax:

```
SUB ?
```

Examples:

```
SUB 0
```

```
> SUB +00
```

```
SUB ?
```

```
> SUB +00
```

SUBV

The SUBV command sets the audio gain of the Subwoofer.

Syntax:

```
SUBV param1
```

Parameters:

<i>param1</i>	Value (dB)	[-12 ... 12]
---------------	------------	--------------

To return the current audio gain of the Subwoofer, use the following command syntax:

```
SUBV ?
```

Examples:

```
SUBV 4
```

```
> SUB +04
```

```
SUB ?
```

```
> SUB +04
```

TEST

The `TEST` command sends a test tone to the specified speaker. Only one speaker can play the test tone at a time.

Syntax:

```
TEST param1
```

Parameters:

param1

Value

[0 ... 6]

Value	Description
0	Front Left
1	Center
2	Front Right
3	Surround Right
4	Surround Left
5	Subwoofer
6	Test tone Off

No return-value command is available.

Examples:

```
TEST 0
```

```
> TEST +00
```

```
TEST 6
```

```
> TEST +06
```

TREB

The TREB command sets the treble level.

Syntax:

```
TREB param1
```

Parameters:

<i>param1</i>	Value	[-12 ... 12]
---------------	-------	--------------

To return the current audio input, use the following command syntax:

```
TREB ?
```

Note:

The + or - character can also be used, instead of specifying a value, in order to increase or decrease the treble level by 1.

Examples:

```
TREB 6
```

```
> TREB +06
```

```
TREB ?
```

```
> TREB +06
```

```
TREB +
```

```
> TREB +07
```

```
TREB -
```

```
> TREB +06
```

TVTYPE

The TVTYPE command sets the video broadcast format.

Syntax:

```
TVTYPE param1
```

Parameters:

param1 Value [0 ... 1]

Value	Description
0	NTSC
1	PAL

To return the current format setting, use the following command syntax:

```
TVTYPE ?
```

Examples:

```
TVTYPE 0
```

```
> TVTYPE +00
```

```
TVTYPE ?
```

```
> TVTYPE +00
```

VOL

The VOL command sets the audio output volume.

Syntax:

```
VOL param1
```

Parameters:

<i>param1</i>	Value (dB)	[-60 ... 12]
---------------	------------	--------------

To return the current volume setting, use the following command syntax:

```
VOL ?
```

Note:

The + or - character can also be used, instead of specifying a value, in order to increase or decrease the volume level by 1 dB.

Examples:

```
VOL -8
```

```
> VOL -08
```

```
VOL ?
```

```
> VOL +00
```

```
VOL +
```

```
> VOL -07
```

```
VOL -
```

```
> VOL -08
```


4 x **1**
SOURCES DISPLAYS

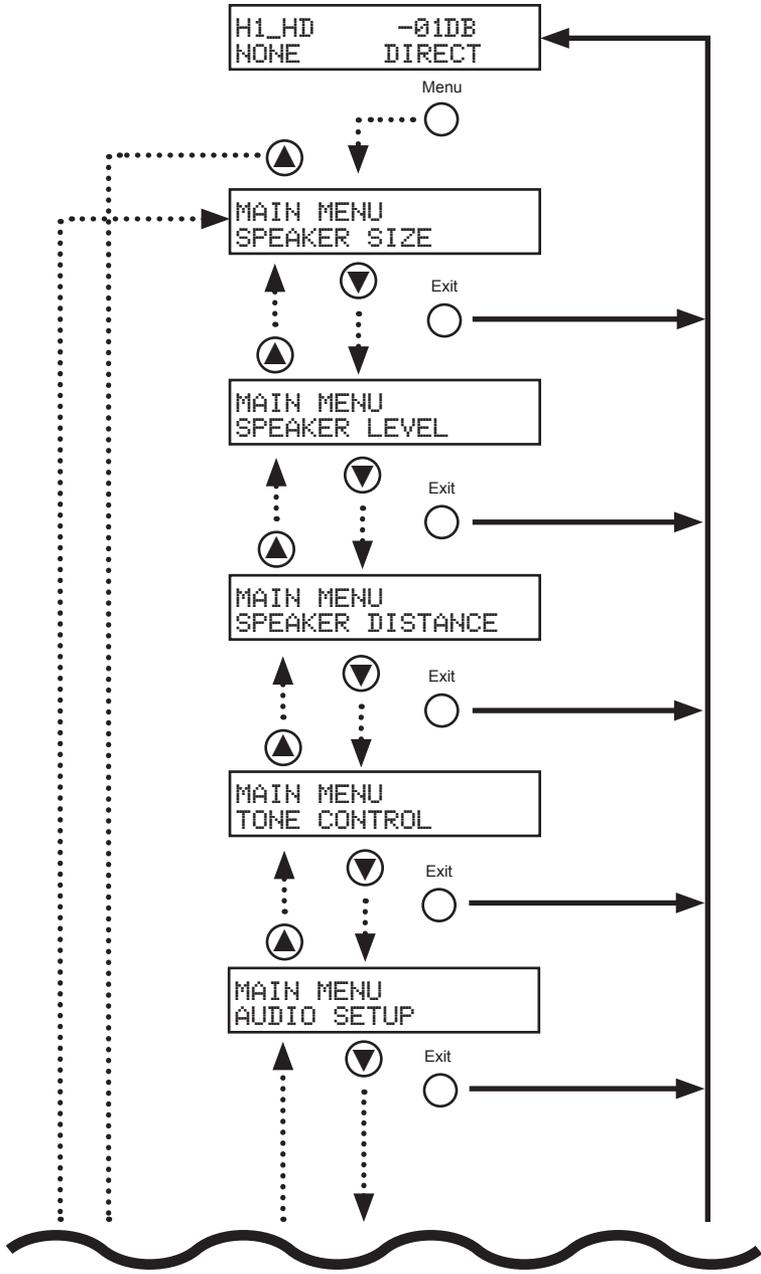
HD Switcher w/ Audio Decoding

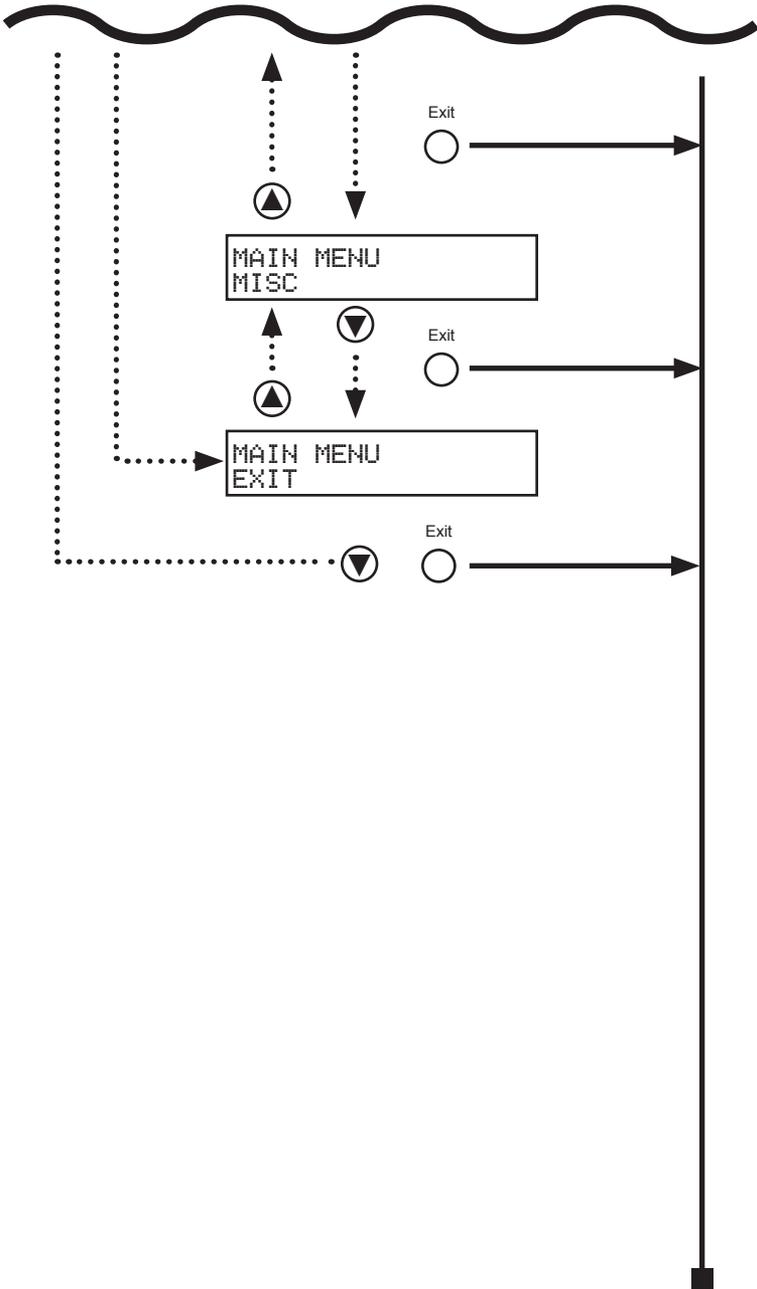
04 Appendix

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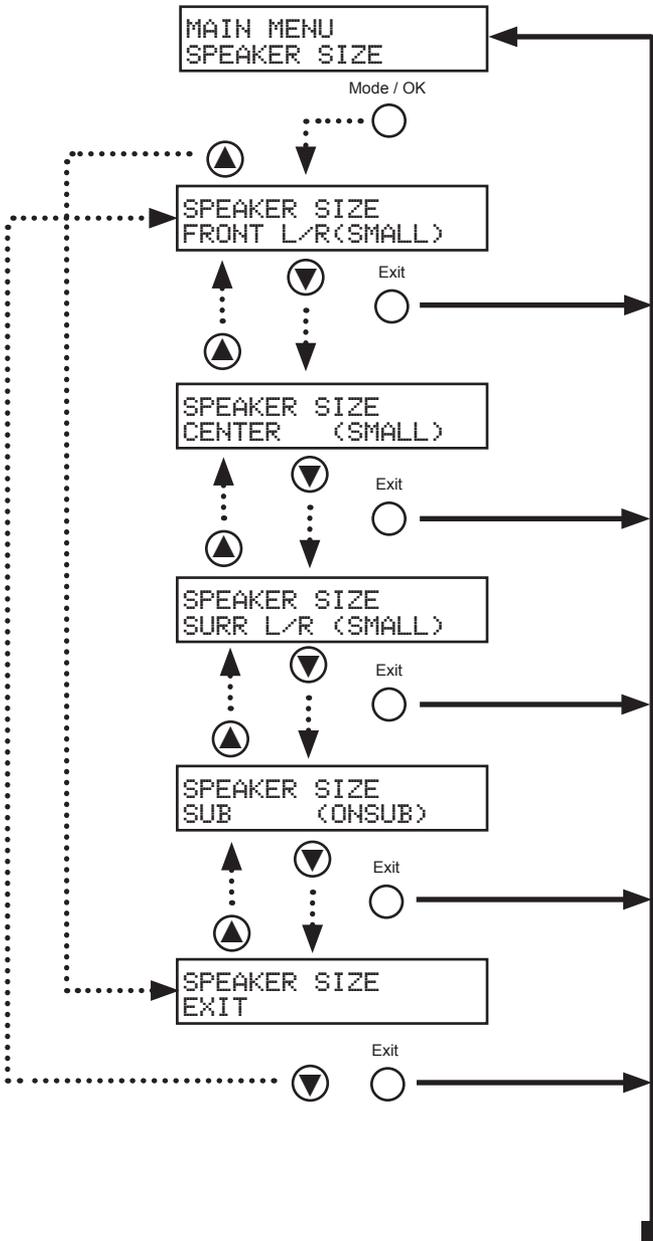
Menu System Summary

Main Menu

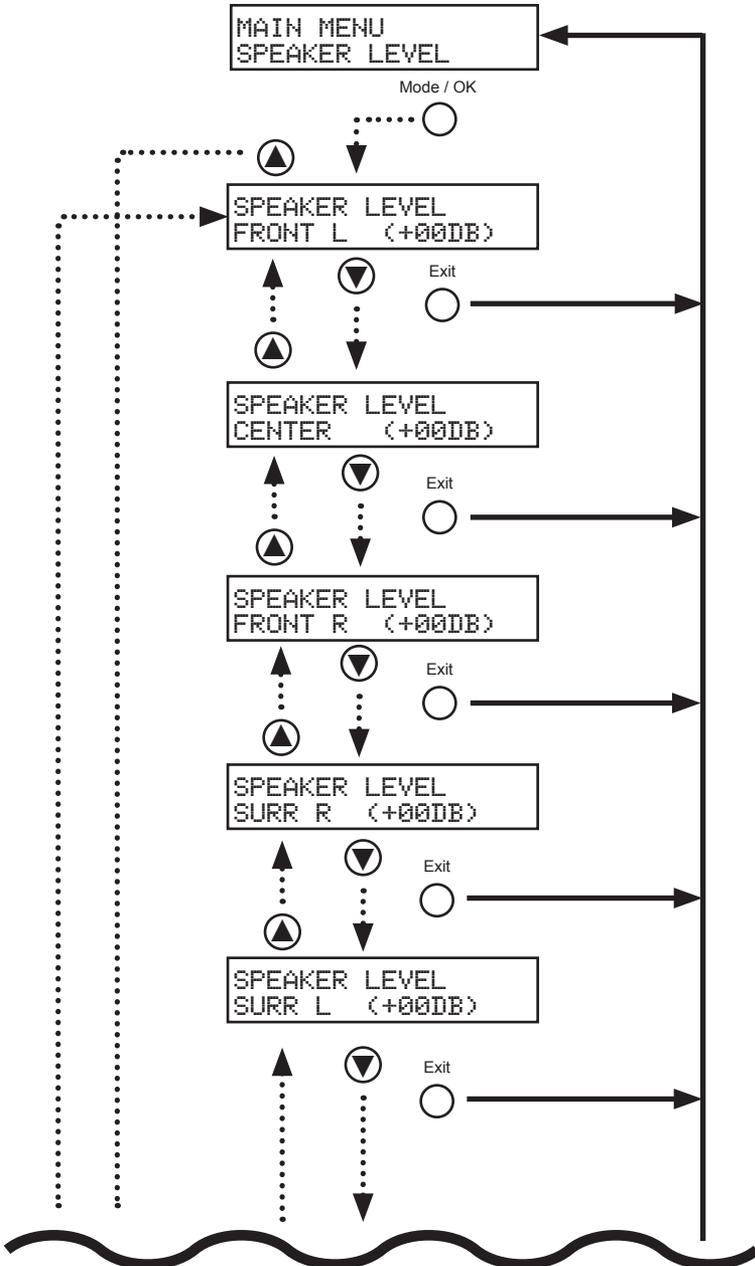


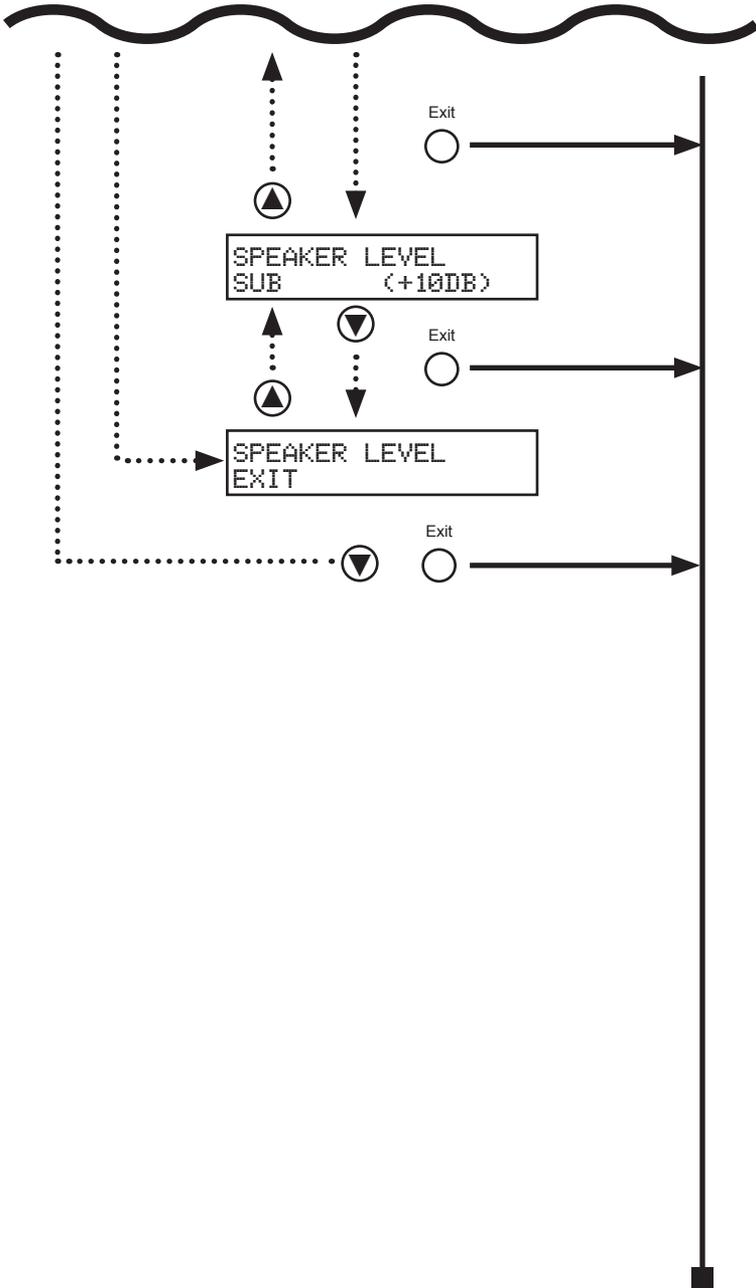


Speaker Size Menu

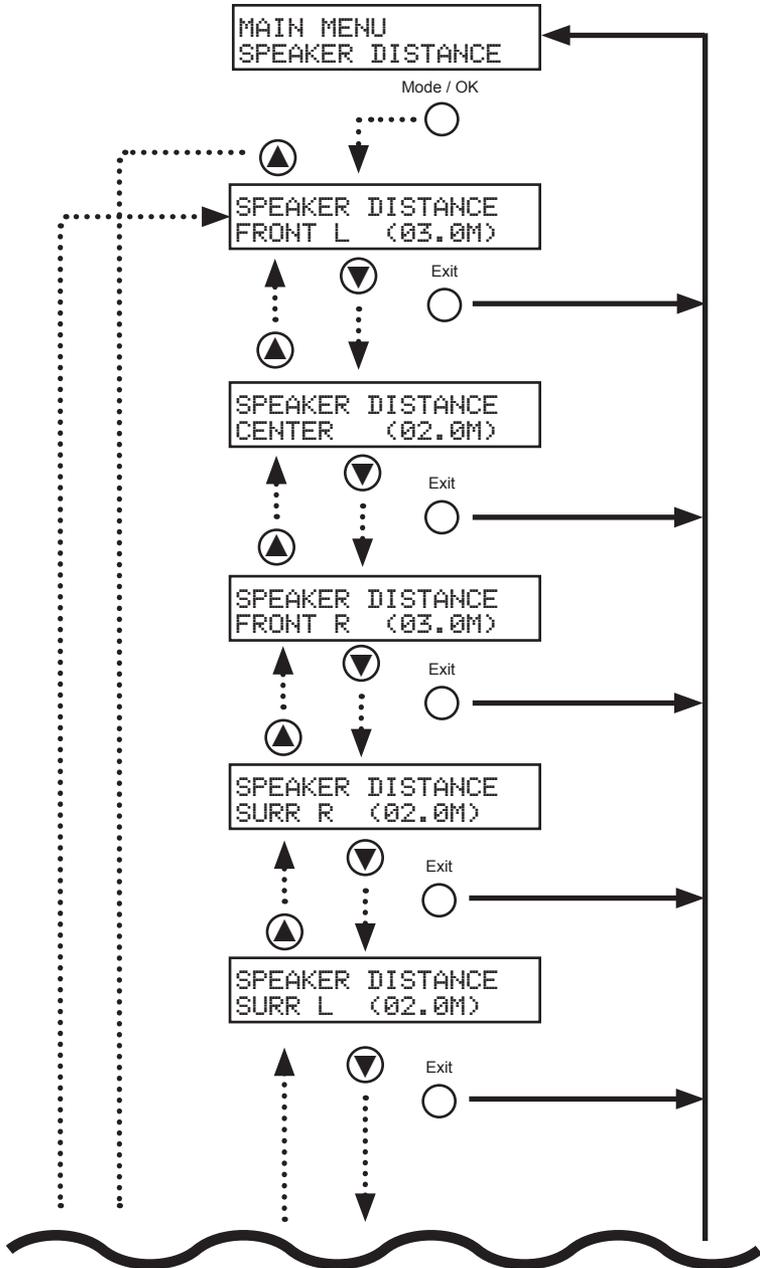


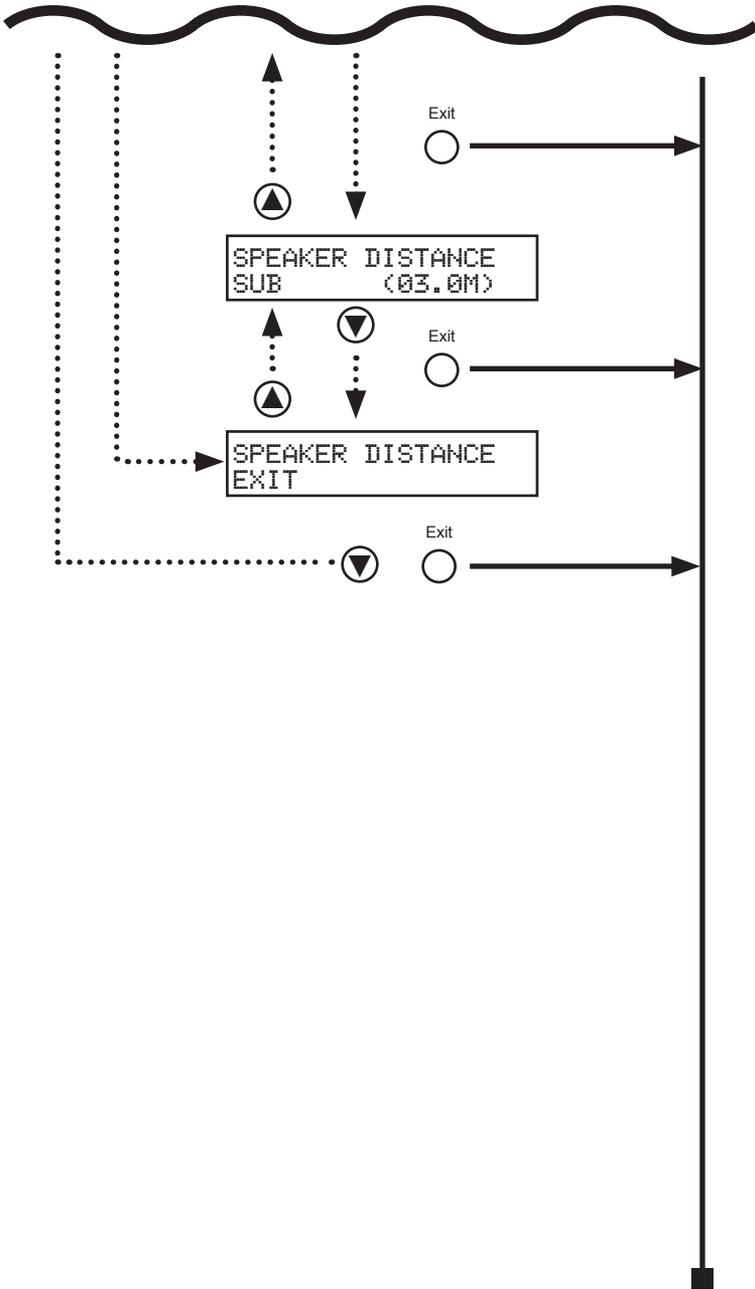
Speaker Level Menu



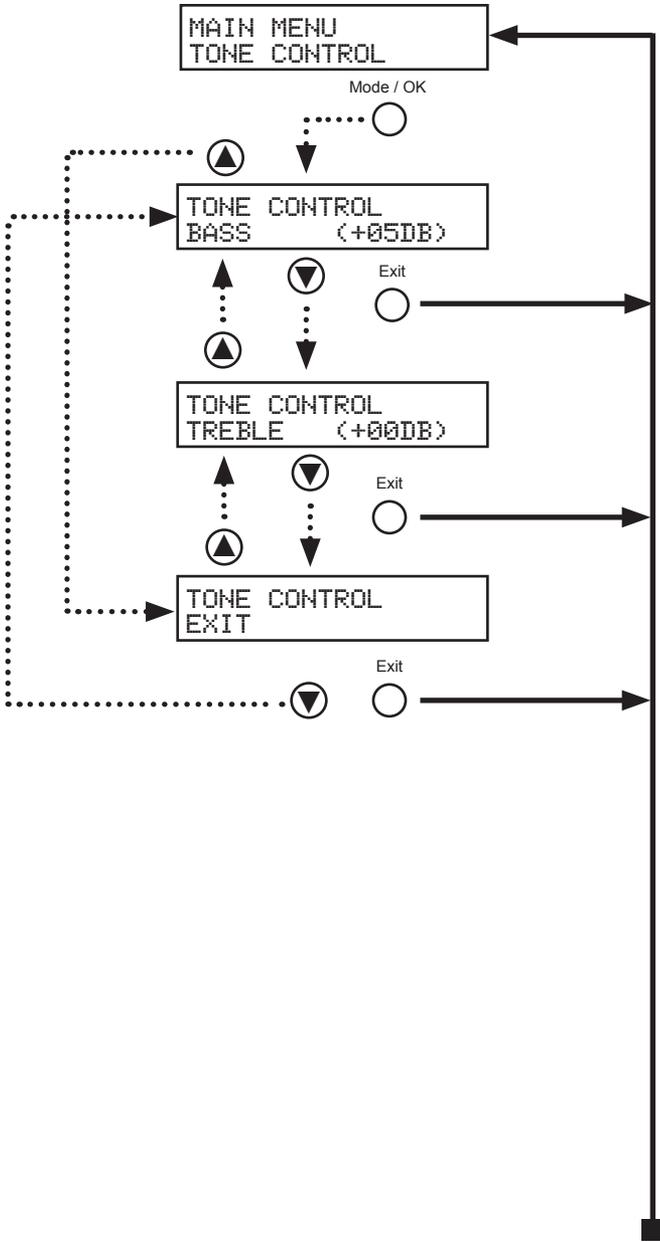


Speaker Distance Menu

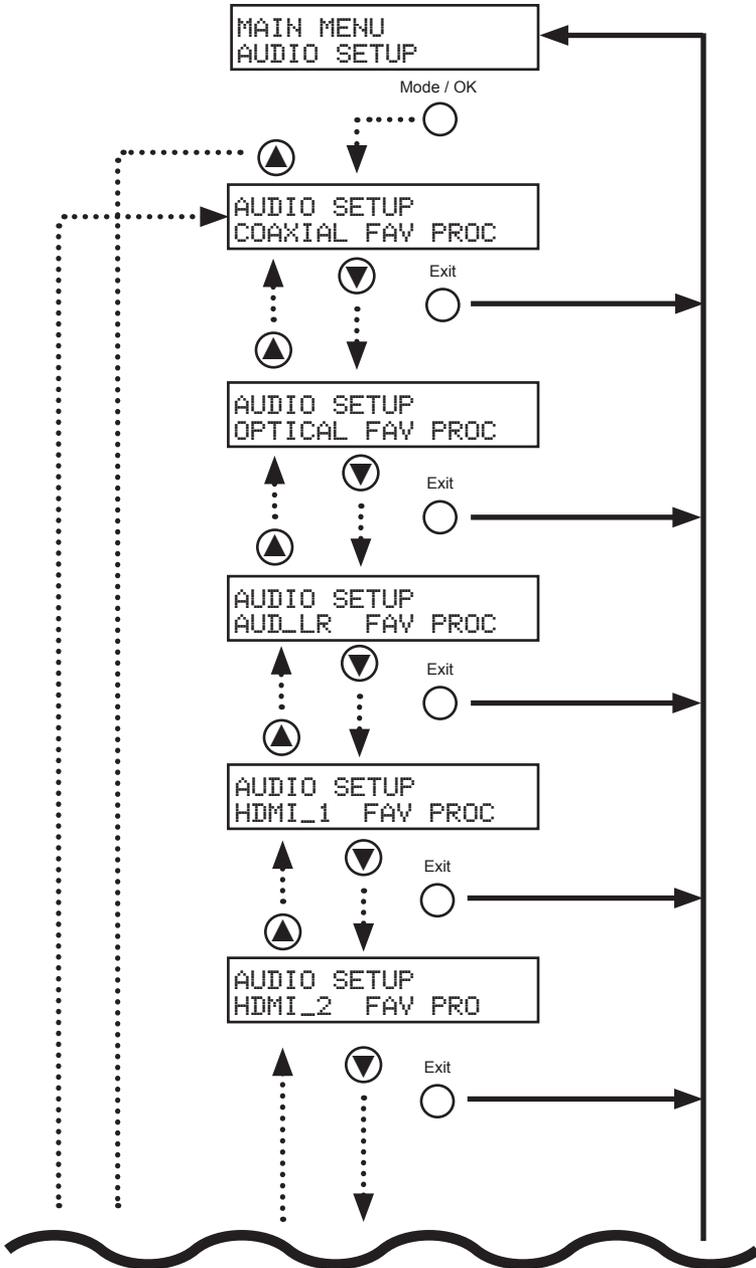


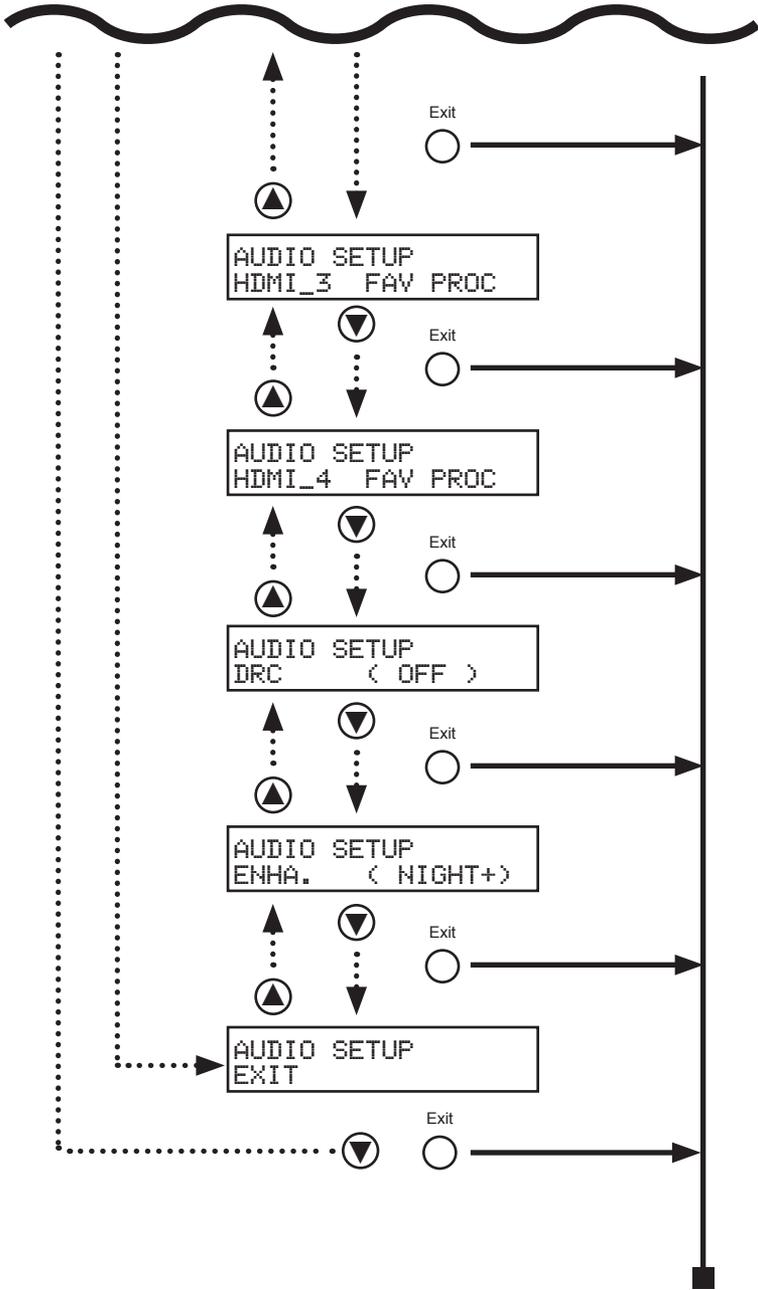


Tone Control Menu

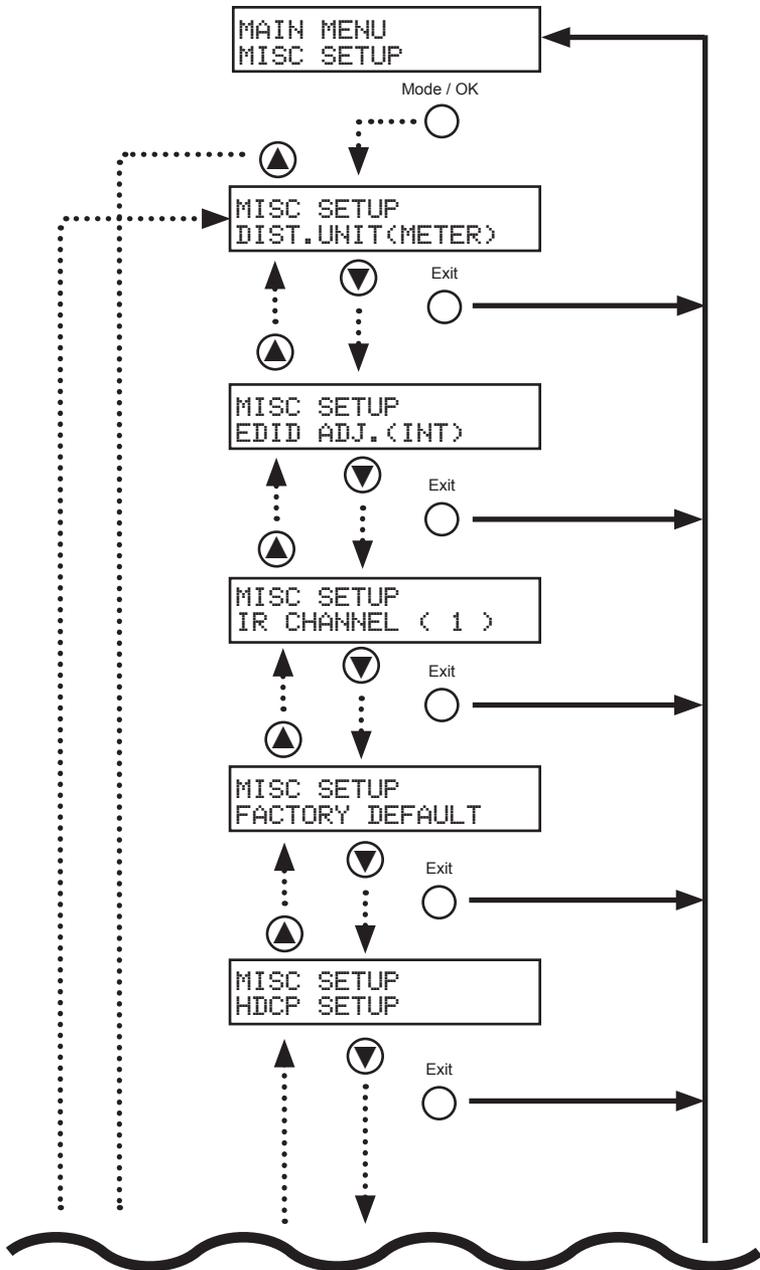


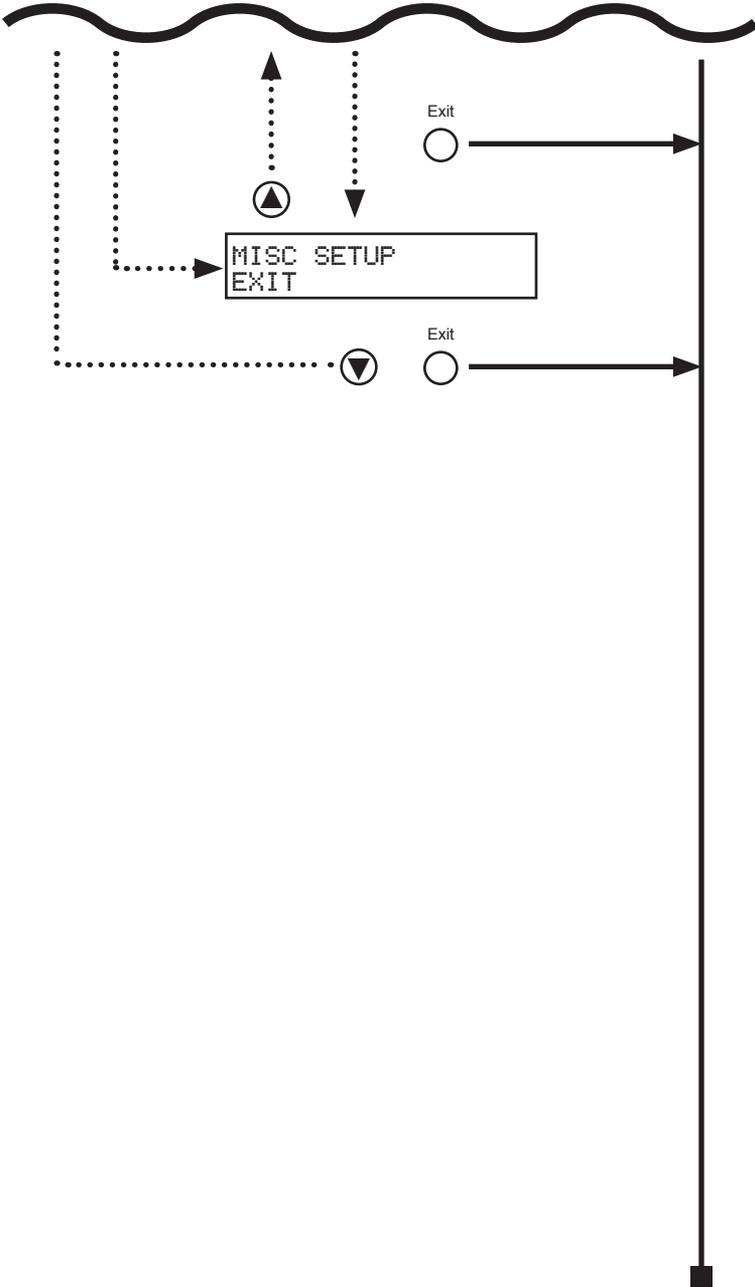
Audio Setup Menu





Misc Setup Menu





Specifications

Supported Formats

Audio (5.1 channels max.)

- Dolby® Digital
- Dolby® Pro Logic
- Dolby® Pro Logic II
- LPCM

Electrical

Maximum Pixel Clock

- 225 MHz

Connectors

Video Inputs

- 4 x HDMI Type A, 19-pin, female

Video Output

- 1 x HDMI Type A, 19-pin, female

IR

- 1 x 3.5mm mini-stereo

Audio Inputs

- 1 x S/PDIF (coax)
- 1 x TOSLINK® (optical)
- 2 x L/R RCA (analog)

Analog Audio Outputs

- 7 x RCA type, pre-amp level

Subwoofer Output

- 1 x RCA type, pre-amp level (subwoofer)

Trigger Input

- 1 x Phoenix-type terminal block (+3 to +12 V DC, 100 mA max.)

Trigger Output

- 1 x Phoenix-type terminal block (+12 V DC, 100 mA max.)

RS-232

- 1 x DB-9, female

Operational

Subwoofer Crossover Freq. / Slope

- 100 Hz, 12 dB per octave

Signal-to-Noise Ratio

- > 90 dBA

Total Harmonic Distortion (THD) + N

- < 0.1% 1 kHz

Frequency Response

- 20 Hz to 20 kHz (± 0.5 dB)

Power Input

- 24V DC / 6.25A

Physical

Dimensions (W x H x D)

- 6.9" x 2.1" x 6.9"
(175mm x 53mm x 175mm)

Unit Weight

- 3 lbs (1.36 kg)



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This product uses UL listed power supplies.