User Manual

4K UHD
Video Distribution Amplifier

Model 1398E

HDMI®

4K ULTRA HD

AudioAuthority®

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Video Distribution Amplifier
Model 1398E

HDMI®

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Introduction

Thanks for purchasing a 4K distribution amplifier from Audio Authority®. The 1398E with port-by-port EDID management is designed to distribute video signals to displays with mixed resolution capabilities in a retail environment. The latest chipsets allow 4K video signals to be scaled automatically to match each display's optimal resolution and video format. With this capability it is no longer necessary to divide TVs on display into separate distribution systems, according to their resolution. Link multiple distribution amplifiers to create a hub-and-spoke layout for large distribution systems.

Features

- Two HDMI inputs, eight HDMI outputs
- Port-by-port EDID management with independent HDCP management engine for each output ensures stable performance
- Support for eight internal EDIDs, eight external EDIDs copied from connected devices, and two user provided EDIDs
- 4K to 1080p down-scaling and color space conversion (4:4:4 to 4:2:0)
- Special "Group Mode" allows the 1398E to function as two independent 1×4 splitters (*see page 8*)
- Supports 4K resolutions up to 3840x2160@23/24/25/29/30/50/59/60Hz and 4096x2160@23/24/25/29/30/50/59/60Hz
- HDCP 2.2 compliant
- Clock Speed: 300MHz~600MHz
- Video bandwidth: 18Gbps
- Supports CEC "active source" commands to periodically reset the input selection on CEC-compatible connected displays
- Controllable via front-panel buttons, with OSD, and RS-232
- Supports all bitstream audio formats such as LPCM 7.1 Dolby Digital and DTS
- Mini-USB firmware update for expanding compatibility

Checking Package Contents

Please check the packaging and make certain the following items are contained in the shipping carton:

- Distribution amplifier
- 5VDC power adapter
- User manual

Getting the Best Results

Many factors influence the quality and reliability of HDMI signal distribution installations. The following are the main factors to consider, and basic precautions that will ensure the best possible performance.

- **Port-by-port EDID management -** 4K to 1080p down-scaling and color space conversion (4:4:4 to 4:2:0). Independent HDCP management engine for each output ensures stable performance so make sure port 1 is connected to a TV with the highest resolution capability. Enable HDR on the high resolution outputs using the OSD or RS-232.
- **Source resolution and video/sound quality -** Sources, such as satellite receivers or cable boxes can output at low resolutions or deliver compressed video material that may yield poor results. Consider the source when planning and troubleshooting your system.
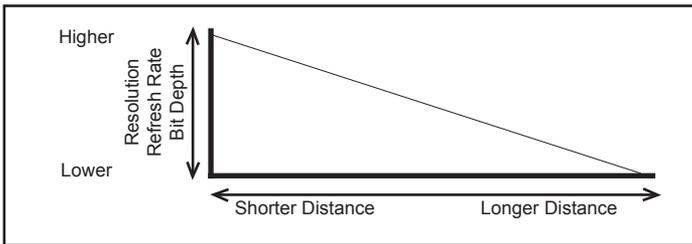
- **Distance between the DA source and the displays -** Use the shortest cables possible, but premium certified high speed cables and advanced HDMI extenders may be necessary for the longest runs.

- **Connection cables -** HDMI cable design and quality are extremely important in long cable runs where capacitance can severely degrade performance. Use premium certified high speed cables designed to handle 4K resolutions and 3D; low quality cables are susceptible to interference. Always use good strain relief methods to prevent cables from becoming loose over time.

- **Interference from nearby electrical devices -** RF emission can have an adverse effect on signal quality. For example, older computer monitors often emit very high electromagnetic fields that can interfere with the performance of nearby video equipment.

- Each display should be tested with the source(s) being used to ensure basic compatibility before connecting them to a distribution amp and/or switcher. *Not all HDMI components and displays are compatible with every feature and format.*

- Since HDMI connectors can sometimes become loose, mount the switcher or distribution amplifier to a flat surface and add strain relief tie-downs a few inches away from every HDMI cable connector.

SOURCE

PREMIUM CERTIFIED
HIGH SPEED HDMI
CABLES

1398E

4K   1080p   4K   4K   1080p   4K   1080p   4K

OUTPUT A =
MAX RESOLUTION
+ HDR

EIGHT MIXED RESOLUTION TVS ON DISPLAY
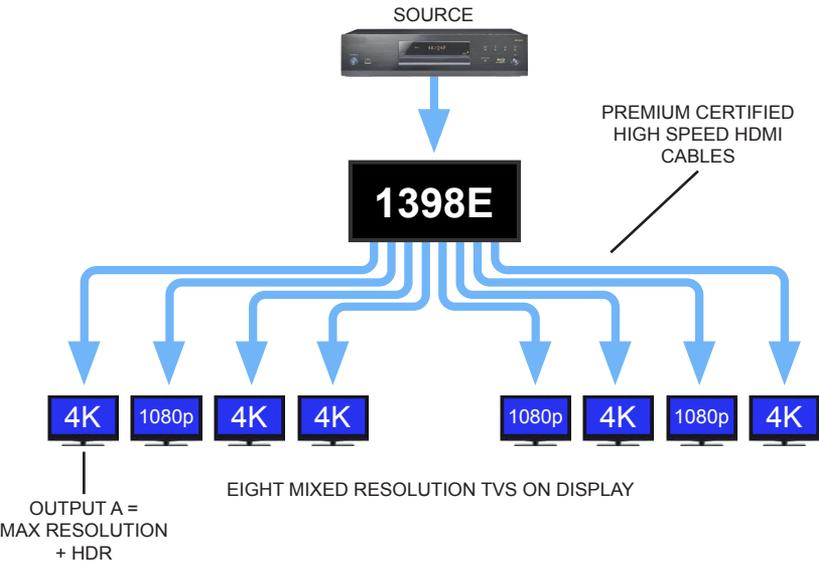
GROUP MODE: Press the Group switch to activate Group Mode; the Group LED lights up.

SOURCE

❶   1   1   1   1

1398E

PREMIUM CERTIFIED
HIGH SPEED HDMI
CABLES

❷   2   2   2   2

SOURCE

TWO SOURCES FEED SEPARATE GROUPS OF TVS ON DISPLAY

6
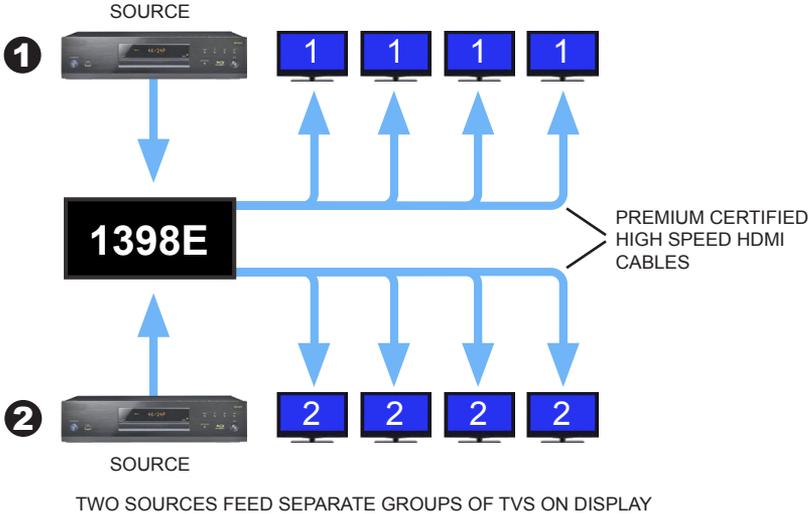
Installation

Study the picture below and become familiar with the controls, signal inputs, outputs, RS-232, and power input.

INPUT 1 LED

INPUT 2 LED

GROUP LED

MENU

INPUT 1 / – SWITCH

INPUT 2 / + SWITCH

GROUP / ENTER SWITCH

INPUT 1

OUTPUT A

OUTPUT B

OUTPUT C

OUTPUT D

POWER

POWER LED

RS-232

FIRMWARE UPDATE PORT

INPUT 2

OUTPUT E

OUTPUT F

OUTPUT G

OUTPUT H

FRONT PANEL

REAR PANEL
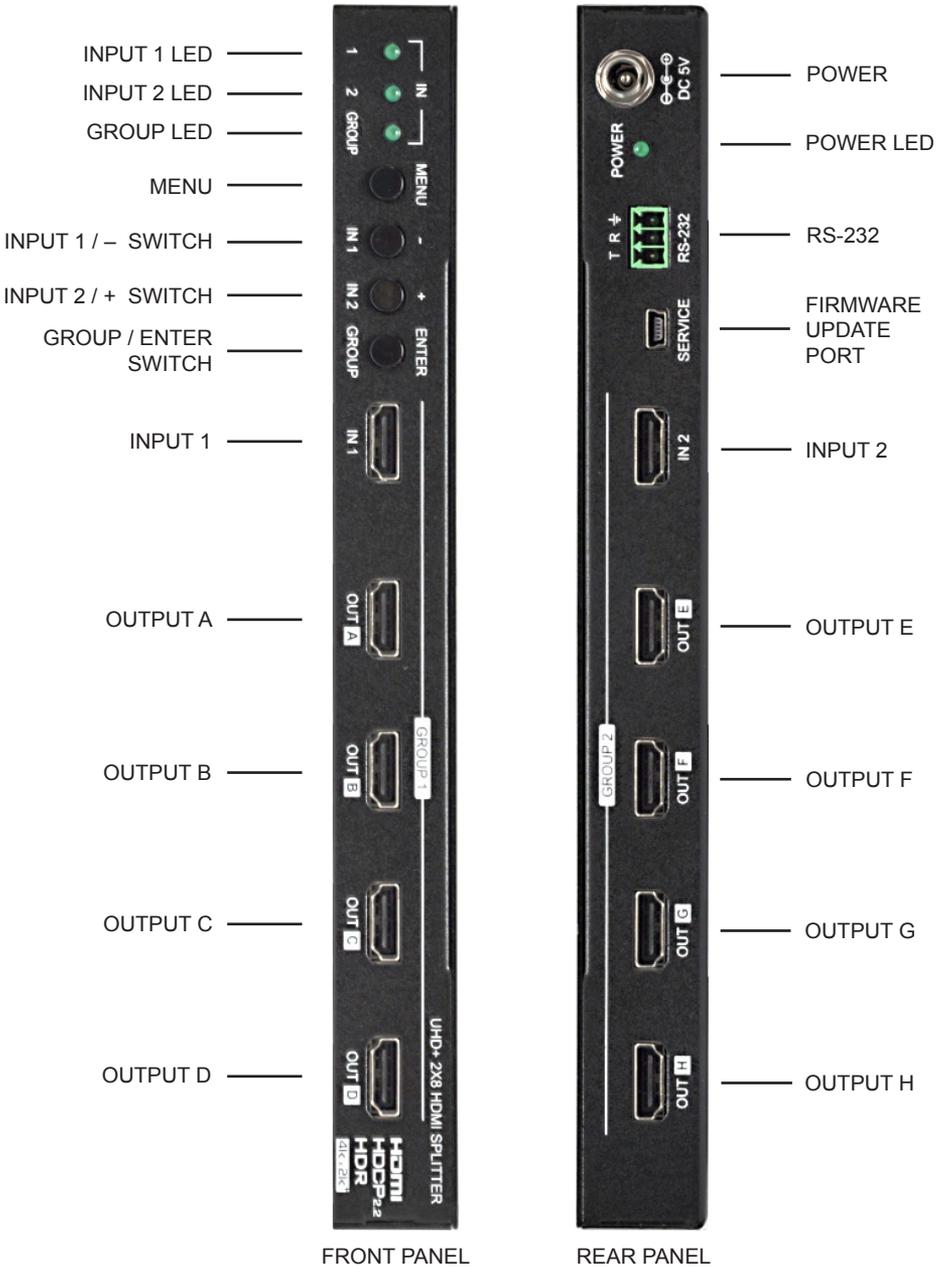
Wiring the System

- Switch off all devices, including monitors.
- Connect a premium certified high speed cable from the HDMI source to the input(s) of the 1398E. Cable lengths should be kept as short as possible.
- Connect the outputs of the 1398E to displays or other devices.
- Make certain that the HDMI cables are securely plugged into the source and display devices as well as the 1398E. Always use premium certified high speed cables, and the shortest length possible, for best results.
- Connect the power adapter to the AC source and then to the 1398E.
- The 1398E begins to function as soon as the AC adapter is connected to the 1398E and AC power. There is no power switch.
- Turn on the HDMI source and HDMI destination devices and observe the source signal on the inputs of all of the destination devices.

  Note: Proper operation of HDMI distribution amplifiers depends on the use of premium certified high speed HDMI cables with low loss, high bandwidth signal handling capabilities.

Switch Settings

The 1398E can be controlled by using the front panel switches or when viewed from the On Screen Display (OSD).

OSD	FRONT PANEL
*MENU: Press to enter the On Screen Display (OSD) menu, or to back out from menu items.	*Note*: *Press and hold the "MENU" button for 3 seconds while connecting the power adapter to reset all settings to the factory defaults.*
–: Press to move down or adjust selections within the OSD menus. *Note: Pressing "MENU" and "–" together will force Input 1 to use the internal "FHD, 2CH" EDID.*	INPUT 1: Press this button to switch to Input 1.
+: Press to move up or adjust selections within OSD menus. *Note: Pressing "MENU" and "+" together will force Input 2 to use the internal "FHD, 2CH" EDID.*	INPUT 2: Press this button to switch to Input 2.
*ENTER: Press to confirm a selection within the OSD or to go deeper into a menu item.	GROUP: Press this button to toggle Group Mode on and off.

*Note: Press and hold the "MENU" and "ENTER" buttons together for 3 seconds to lock or unlock the front panel.

On Screen Display Main Menu

All primary functions of the 1398E can be controlled by using the On Screen Display (OSD), which is activated by pressing the Menu button on the front panel. Use the + (PLUS), − (MINUS), and ENTER buttons to navigate the OSD menu. Press the Menu button to back out from any menu item, and press it again to close the menu.

Note: All screen display setting examples shown are the default setting.

```
Main Menu
Input Switch
Input Information
Output 4k Converter
Output Information
EDID Control
HDCP Control
CEC Control
Remote Control
OSD Setting
System Setting
```

Input Switch

- Switch to: Select the input to display when Group Mode is disabled.

  Note: Selecting an Input when Group Mode is turned on will disable Group Mode.

- Auto Switch: Enable or disable the auto switch function.

  Note: Auto Switch works when Group Mode is disabled.

- Group Mode: Enable or disable Group Mode.

```
Input Switch
Switch to       ►  Input 1
Auto Switch     ►  OFF
Group Mode      ►  OFF
```

Input Information

- Input 1 and Input 2: Current input's vendor name based on the source's info-frame data.

  Note: Some devices may not provide this information.

- Name: The current input's product name based on the source's info-frame data.

  Note: Some devices may not provide this information.

- Fmt: The video format of the current input.

- Reso: The resolution and framerate of the current input.

- Freq: The signal frequency of the current input.

- Depth: The color bit-depth of the current input.

- Color: The color space of the current input.

- HDCP: The HDCP status of the current input.

- Audio: The audio format of the current input.

- HDR: The HDR status of the current input.

```
Input Information
In 1   :  OPPO
Name   :  UDP-203
Fmt    :  HDMI
Reso   :  3840x2160p@59Hz
Freq   :  445.04MHz
Depth  :  12bit
Color  :  YUV420
HDCP   :  HDCP22 Active
Audio  :  LPCM 2Ch
HDR    :  No
```

Output 4K Converter

● All: Set the 4K conversion mode for all of the outputs. Setting this to bypass will disable the 4K conversion function.

Note: Making changes to this setting will overwrite the individual output's settings.

● Out A-H: Set the 4K conversion mode to use for each of the outputs individually.

Note: 4K conversion is only available with 4K sources. Due to a chipset limitation, 4K sources using the 4:2:2 color space may display with incorrect colors when scaled to 1080p. If this occurs, partitioning the 1398E into two 1x4 switchers may provide a solution in this case.

```
Output 4k Converter
All      ▶  Auto

OutA  ▶  Auto
OutB  ▶  Auto
OutC  ▶  Auto
OutD  ▶  Auto
OutE  ▶  Auto
OutF  ▶  Auto
OutG  ▶  Auto
OutH  ▶  Auto
```

MAIN MENU	LEVEL 2	LEVEL 3
Output 4K Converter	All	Bypass
		YUV420
		1080p
		AUTO
	Out A-H	Bypass
		YUV420
		1080p
		AUTO

Output Information

● Provides the connection status, resolution and framerate for each output.

Note: See page 19 for a chart of supported DVI and HDMI resolutions

```
Output Information
OutA  :  3840x2160p@59
OutB  :  3840x2160p@59
OutC  :  3840x2160p@59
OutD  :  3840x2160p@59
OutE  :  3840x2160p@59
OutF  :  3840x2160p@59
OutG  :  3840x2160p@59
OutH  :  3840x2160p@59
```

EDID Control

● Input 1: Assign the selected EDID to Input 1*.
● Input 2: Assign the selected EDID to Input 2*.

*Note: Changing the EDID may result in the source changing resolutions and blanking of the output for a couple seconds.

● Vndr: Provides the vendor name from the EDID used with the current Input.
● Name: Provides the monitor name from the EDID used with the current Input.

- Reso: The maximum supported resolution from the EDID used with the current Input.
- Freq: The maximum supported frequency from the EDID used with the current Input.
- Depth: The maximum supported bit-depth from the EDID used with the current Input.
- YCbCr: The color space supported by the EDID used with the current Input.
- HDR: Displays if HDR is supported by the EDID used with the current Input.

MAIN MENU	LEVEL 2	LEVEL 3
EDID Control	Input 1 or Input 2	**INT FHD 2CH**
		Int FHD MCH
		Int UHD 2CH
		Int UHD MCH
		Int UHD+ 2CH
		Int UHD+ MCH
		Int HDR 2CH

MAIN MENU	LEVEL 2	LEVEL 3
EDID Control	Input 1 or Input 2	**Int HDR MCH**
		User 1
		User 2
		Copy Out A
		Copy Out B
		Copy Out C
		Copy Out D
		Copy Out E
		Copy Out F
		Copy Out G
		Copy Out H

MAIN MENU	LEVEL 2	LEVEL 3
EDID Control	Vndr	Detailed EDID Information
	Name	
	Reso	
	Freq	
	Depth	
	YCbCr	
	HDR	

HDCP Control

- Input 1: Set the HDCP mode for Input 1.
- Input 2: Set the HDCP mode for Input 2.
- Out A-H: Show the current HDCP status of each Output (A-H).

```
HDCP Control
In1    ▶  Refer Sink
In2    ▶  Refer Sink
OutA  :  HDCP22 Active
OutB  :  HDCP22 Active
OutC  :  HDCP22 Active
OutD  :  HDCP22 Active
OutE  :  HDCP22 Active
OutF  :  HDCP22 Active
OutG  :  HDCP22 Active
OutH  :  HDCP22 Active
```

MAIN MENU	LEVEL 2	LEVEL 3
EDID Control	Input 1 or Input 2	Apple Mode
		Refer Source
		REFER SINK
	Out A-H	HDCP Status Information

CEC Control

- Auto Active: Enable or disable sending the CEC "active source" command to connected displays every 10 minutes*.
- Auto Standby: Enable or disable sending the CEC "standby" command to connected displays, if there has been no live input source detected for more than 10 minutes*.
- Out A-H: Display the CEC address of each connected display.

```
CEC Control
Auto Active     ▶   Off
Auto Standby  ▶   Off
OutA  :   Address 3000
OutB  :   Address 1000
OutC  :   Address 1000
OutD  :   Address 1000
OutE  :   Address 1000
OutF  :   Address 1000
OutG  :   Address 2000
OutH  :   Address 2000
```

MAIN MENU	LEVEL 2	LEVEL 3
CEC Control	Auto Active	On
		OFF
	Auto Standby	On
		OFF
	Out A-H	CEC Address

Note: The connected display must support CEC "active source" command.

Remote Control

- Link With: Choose the display to accept CEC remote control commands from the 1398E or disable the functionality. The selected display's remote control can be used to navigate the 1398's OSD menu using the remote's red, green, yellow and blue buttons by assigning them to the functions of the 1398E's front panel MENU, MINUS, PLUS, and ENTER buttons.

  Note: Requires a compatible remote control and display.

- Hot Key: Enables or disables support for the additional front panel hot key functionality that is used when not in the OSD (INPUT 1, INPUT 2, and GROUP).

- Button and Hot Key Assignment: Lists how each of the colored buttons on the TV's remote will be assigned if the Remote Control function is enabled.

Remote Control		
Link With ▶		Out A
Hot Key ▶		Off
Button	:	Menu
Button	:	Minus (–)
Button	:	Plus (+)
Button	:	Enter
Button	:	Input 1
Button	:	Input 2
Button	:	Group

MAIN MENU	LEVEL 2	LEVEL 3
Remote Control	Link with	Off
		Out A-H [OUT A]
	Hot Key	On
		OFF
	Button and Hot Key Assignment	

OSD Settings

- Timeout: Set the OSD menu timeout in seconds or disable the timeout.

- Horizontal: Set the OSD menu's horizontal position.

- Vertical: Set the OSD menu's vertical position.

- Transparency: Set the OSD menu's transparency level.

- Contrast: Set the OSD menu contrast mode.

- Panel Color: Set the OSD menu's panel color.

- Font Color: Set the OSD menu's font color.

- Free Run: Set the Free Run color to display when no source is detected. Selecting "Color" will show a color bar pattern. Selecting "No" will disable the Free Run function.

- Default: Reset the OSD configuration settings to their factory defaults.

MAIN MENU	LEVEL 2	LEVEL 3
OSD Setting	Timeout	Never
		1-60 [30]
	Horizontal	0-100 [2]
	Vertical	0-100 [3]
	Transparency	0-7 [3]
	Contrast	0-1 [0]
	Panel Color	Red
		Green
		Blue
		GRAY
	Font Color	Black
		White
		Red
		Green
		BLUE
		Yellow
		Cyan
		Magenta
	Free Run	No
		Red
		Green
		BLUE
		Black
		Color
	Default	**NO**
		Yes

System Settings

- VID: Display the 1398E's Vendor ID.
- PID: Display the 1398E's Product ID.
- SN: Display the 1398E's Serial Number.
- FW Ver: Display the 1398E's current firmware version.
- Factory Reset: Reset the 1398E's configuration to factory default.
- Software Control: Enable or disable RS-232 support for the EDID Management Software.

  Note: Enabling this function will disable normal RS-232 control of the 1398E.

```
System Setting

VID        :    5000
PID        :    6002
SN         :    000000000
FW Ver     :    v2.13

Factory Reset
Software Control
```

MAIN MENU	LEVEL 2	LEVEL 3
System Settings	VID	Vendor ID
	PID	Product ID
	SN	Serial number
	FW Ver	Firmware version
	Factory Reset	**NO**
		Yes
	Software Control	**OFF**
		ON

RS-232 Port

Connect an RS-232 cable to the 3-pin terminal block *(see pinout below)*.

RS-232	
Baud Rate	19200
Data Bits	8
Parity Bit	None
Stop Bits	1
Flow Control	None

PIN	
1	TX
2	RX
3	GND

Serial Commands

The RS-232 ports pass-thru communications to other serial devices at 19200 Baud rate. Serial command examples are shown in the following tables; commands should be appended with a carriage return <CR>.

SYSTEM COMMANDS	
EXAMPLE	RESULT
[?]	Display system command list
[HELP]	Display system command list
[HELP GET KEYLOCK]	Display details about specific command
[GET MODEL NAME]	Display model name
[GET FW VER]	Display firmware version

SYSTEM COMMANDS *Cont.*	
EXAMPLE	RESULT
[SET SYSTEM REBOOT]	Reboot the 1398E
[GET DESCRIPTION]	Display the 1398Es current description/name
[SET DESCRIPTION #]	Set the 1398Es name/description
[SET KEYLOCK #]	# = ON/OFF; lock/unlock front display keys
[GET KEYLOCK]	Display keylock status
[SET OSD DEFAULT]	Factory default OSD configuration
[SET FACTORY DEFAULT]	Factory default the 1398E
INPUT COMMANDS	
[GET IN PORT NUMBER]	Display the number of inputs supported
[GET IN TYPE LIST]	List video format supported by each input
[GET IN # FORMAT]	# = 1/2; display inputs video format
[GET IN # COLOR SPACE]	# = 1/2; display inputs color space
[GET IN # COLOR DEPTH]	# = 1/2; display inputs color depth
[GET IN # TIMING]	# = 1/2; display inputs resolution and timing
[GET IN # HDCP MODE]	# = 1/2; display inputs HDCP mode
[GET IN # HDCP STATUS]	# = 1/2; display inputs HDCP status
[SET IN # HDCP MODE #]	# = 0/1/2; set input HDCP mode to #: (0 = Apple mode, 1 = Source, 2 = Sink)
[GET IN # EDID]	# = 1/2; display inputs current EDID
[GET IN # EDID DATA]	# = 1/2; display the raw hex data for input
[GET IN # EDID INFORMATION]	# = 1/2; display the EDID assigned
OUTPUT COMMANDS	
[GET OUT PORT NUMBER]	Display the number of outputs supported
[GET OUT TYPE LIST]	List video format supported by each output
[SET OUT ROUTE #]	# = 1/2; route input to all outputs
[GET OUT ROUTE]	Display the current video routing source
[SET OUT AUTO SWITCH #]	# = ON/OFF; enable or disable automatic input source switching
[GET OUT GROUP MODE]	Display current group mode setting
[SET OUT GROUP MODE #]	# = ON/OFF; enable or disable group mode
[GET OUT # CONVERT]	# = A-H; display the 4K source conversion mode used by the output
[SET OUT # CONVERT #]	# = A-H; set the 4K source conversion mode used by the output #: (0 = Bypass, 1 = YUV 4:2:0, 2 = 1080p, 3 = Auto Conversion)

Note: 4K conversion is only available with 4K sources.

OUTPUT COMMANDS *Cont.*	
EXAMPLE	RESULT
[GET OUT # HPD]	# = A-H; display the the current hot-plug status of the output
[GET OUT # RSENSE]	# = A-H; display the current receiver sense status of the output
[GET OUT # HDCP STATUS]	# = A-H; display the current HDCP status of the output: 0 = No HDCP, 1 = HDCP 1.4 Active, 2 = HDCP 2.2 Active, 3 = HDCP 1.4 Retrying, 4 = HDCP 2.2 Retrying
[GET OUT # EDID DATA]	# = A-H; display the raw hex data of the EDID read from the output
[GET OUT # EDID INFORMATION]	# = A-H; display the description of the EDID read from Output
EDID USER COMMANDS	
[GET USER EDID NUMBER]	Display the number of User EDIDs supported by the 1398E
[SET USER # EDID DATA #]	# = 1/2; Update the contents of user EDID with new (# = raw hex data)
[GET USER # EDID DATA]	# = 1/2; display the description of the EDID stored in user EDID
OSD COMMANDS	
[GET OSD TIMEOUT #]	Display the current OSD timeout value
[SET OSD TIMEOUT #]	(# =) : 0 = no timeout, 1 - 60 = timeout in seconds; Set the OSD timeout value
[GET OSD HORIZONTAL]	Display the OSD menu's horizontal position
[SET OSD HORIZONTAL #]	# = 0 - 100 = horizontal position; Set the OSD menu's horizontal position
[GET OSD VERTICAL]	Display the OSD menu's vertical position
[SET OSD VERTICAL #]	# = 0 - 100 = vertical position; Set the OSD menu's vertical position
[SET OSD TRANSPARENCY #]	(# =) 0 = Fully Opaque, 1 - 6 = Levels of Transparency, 7 = Fully Transparent; Set the OSD menu's transparency level
[GET OSD CONTRAST]	Display the OSD menu's contrast level
[SET OSD CONTRAST #]	# = 0/1; Set the OSD menu's contrast level (0 = high, 1 = low)
[GET OSD PANEL COLOR]	Display the OSD menu's background color
[SET OSD PANEL COLOR #]	(# =) 1 Red, 2 Green, 3 Blue, 4 Gray; Set the OSD menu's background color
[GET OSD FONT COLOR]	Display the OSD menu's current font color

OSD COMMANDS *Cont.*	
EXAMPLE	RESULT
[SET OSD FONT COLOR #]	(# =) 1 Black, 2 White, 3 Red, 4 Green; set the OSD menu's font color
[GET OSD FREERUN COLOR]	Display the Free Run color setting
[SET OSD FREERUN COLOR #]	(# =) 0 Free Run Disabled, 1 Red, 2 Green, 3 Blue, 4 Black, 5 Color Bars; set the Free Run mode and the color used when the input signal is lost and Free Run is active
CEC COMMANDS	
[GET CEC AUTO ACTIVE]	Display the CEC Active Source setting
[SET CEC AUTO ACTIVE #]	# = ON/OFF; Enable (ON) or disable (OFF) sending the CEC "active source" command to connected displays every 10 minutes
[GET CEC AUTO STANDBY]	Display the CEC Auto Standby setting
[SET CEC AUTO STANDBY #]	# = ON/OFF; Enable (ON) or disable (OFF) sending the CEC "standby" command to connected displays if there has been no live input source detected for more than 10 minutes
[GET CEC REMOTE LINK]	Display the CEC Remote Link setting
[SET CEC REMOTE LINK #]	# =: OFF disable feature, A - H enabled output port; select the display/output to accept CEC remote control commands from to control the 1398E, or disable the feature *Note: Requires a compatible remote control and display.*

Note: Serial commands are not case-sensitive and will not be executed unless followed by a carriage return.

Supported Resolutions

DVI and HDMI Resolutions	Input	Output
640×480@60/72/75/85	✓	✓
720×400@85	✓	✓
800×600@56/60/72/75/85	✓	✓
1024×768@60/70/75/85	✓	✓
1152×864@75	✓	✓
1280×720@60	✓	✓
1280×768@60/75/85	✓	✓
1280×800@60	✓	✓
1280×960@60	✓	✓
1280×1024@60	✓	✓
1360×768@60	✓	✓
1366×768@60	✓	✓
1400×1050@60	✓	✓
1440×900@60	✓	✓
1600×900@60	✓	✓
1600×1200@60	✓	✓
1680×1050@60	✓	✓
1920×1080@60	✓	✓
1920×1200@60	✓	✓
1920×1440@60	✓	✓
2560×1600@60	✓	✓
1440×576i@50	✓	✓
1440×480i@59.94/60	✓	✓
720×480p@59.94/60	✓	✓
720×576p@50	✓	✓
1280×720p@50/59.94/60	✓	✓
1920×1080i@50/59.94/60	✓	✓

Firmware Updates

Contact Audio Authority Technical Support at 800-322-8346 for information regarding firmware updates.

Specifications

Model 1398E	2x8 Distribution Amplifier* (Splitter)
HDMI Features	HDMI with HDR, 3D
DVI Compliance	DVI 1.0
HDCP Compliance	HDCP 2.2
Video Bandwidth	Single-link 600MHz (18Gbps)
Maximum Video Resolution and Formats	480i~1080p@24/50/60 4K2K@24/25/30/50/60
Audio Support	DTS-HD Master Audio, Dolby TrueHD, Dolby Atmos, Dolby Digital, DTS, DVD-Audio, LPCM, SACD, MPCM
ESD Protection	Human body model — ±8kV (air-gap discharge) & ±4kV (contact discharge)
Firmware Update	via Mini-USB port
Input/Output 1398E	1x HDMI/8x HDMI / (2)* 1x HDMI/4x HDMI
HDMI Connector	Type A (19-pin female)
Control Switch	EDID mode selection
Dimensions (L x W x H)	240 x 103 x 25mm
Weight	690 g
Power Supply	5V DC 3A
Power Consumption	9.5 watts (max)
Regulatory Approvals	US/EU standards, CE, FCC/UL certified
Operation Temperature	0~40°C (32~104°F)
Storage Temperature	-20~60°C (-4~140°F)
Relative Humidity	20~90% RH (no condensation)

Troubleshooting

● For 4K resolution, use premium certified high speed HDMI cables and a high speed HDMI Extender (if needed) that supports 4K. Make certain that the input cable is as short as possible. HDMI cable design and quality are extremely important in long cable runs where capacitance can severely impact performance.

● Make certain that the distribution amplifier's power LED is illuminated and not flickering on and off. Intermittent operation generally means a problem with the DC power adapter or low AC voltage being supplied to the DC adapter's input.

● Due to a chipset limitation, 4K sources using the 4:2:2 color space may display with incorrect colors when scaled to 1080p. If this occurs, partitioning the 1398E into two 1x4 switchers may provide a solution in this case.

- If some displays are not receiving video signal, or lose signal, check to see if they are on the wrong input.
- If you still experience problems using the distribution amplifier, troubleshoot by first attaching the source device directly to each of the destination devices in turn using the same cables you are using with the expanded system. This is a way of determining if the problem is due to bad cables or a problem with the other devices. If you are unable to obtain a signal using this simplified path, suspect the cables, the source device or the destination device.

If a problem still persists after trying the above suggestions, contact the Audio Authority Technical Service department via email: support@audioauthority.com, or call 800-322-8346 or 859-233-4599.

Limited Warranty

If this Audio Authority® product fails due to defects in materials or workmanship within one year from the date of the original sale to the end-user, Audio Authority will replace or repair the defective product at no cost. Freight charges for the replacement unit will be paid by Audio Authority (Ground service only). A copy of the invoice showing the item number and date of purchase (proof-of-purchase) must be submitted with the defective unit to constitute a valid in-warranty claim.

Units that fail after the warranty period has expired may be returned to the factory for repair at a nominal charge, if not damaged beyond the point of repair. All freight charges for out-of-warranty returns for repair are the responsibility of the customer. Units returned for repair must have a Return Authorization Number assigned by the factory.

This is a limited warranty and is not applicable for products which, in our opinion, have been damaged, altered, abused, misused, or improperly installed. Audio Authority makes no other warranties either expressed or implied, including limitation warranties as to merchantability or fitness for a particular purpose. Additionally, there are no allowances or credits available for service work or installation performed in the field by the end user.

Warranty Service Procedures

If you suspect a product defect, contact Audio Authority's Technical Service Department at 800-322-8346 or 859-233-4599 for assistance in verifying the problem. If a defect or potential defect is suspected, a replacement unit will be shipped immediately on a defect-exchange basis and a Return Authorization Number will be issued for the return of the defective product. Replacement units are sent out at the Manufacturer's Suggested Retail Price which is charged to the Customer's Credit Card at the time of shipment. Once we receive the defective unit back at the factory, it will be evaluated under the conditions of this warranty and if found to be in-warranty, a full credit will be issued to the Customer's Credit Card. Return freight charges for the defective unit are the customer's responsibility. Please contact our Technical Service Department for complete details concerning all in and out of warranty service matters.

Regulatory Compliance

Model 1398E distribution amplifiers have been tested for compliance with appropriate FCC and CE rules and regulations and are also RoHS compliant.

The power adaptor has been tested for compliance with UL, CE and CSA rules and regulations and is also RoHS compliant.

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Warnings

Please read all instructions before attempting to unpack or install or operate this equipment, and before connecting the power supply. Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water
- Never spill liquid of any kind on or into this product
- Never push an object of any kind into this product through module openings or empty slots, as you may damage parts
- Do not attach the power supply cabling to building surfaces
- Do not allow anything to rest on the power cabling or allow it to be abused by persons walking on it
- To protect the equipment from overheating, do not block the slots and openings in the module housing that provide ventilation

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