

User Manual

MH4 MediaHub

Audio-Video Switching and Distribution
Models Include: MH4-HD and MH4-HS



AscenticTM
RETAIL ENGINEERING
by Audio Authority®

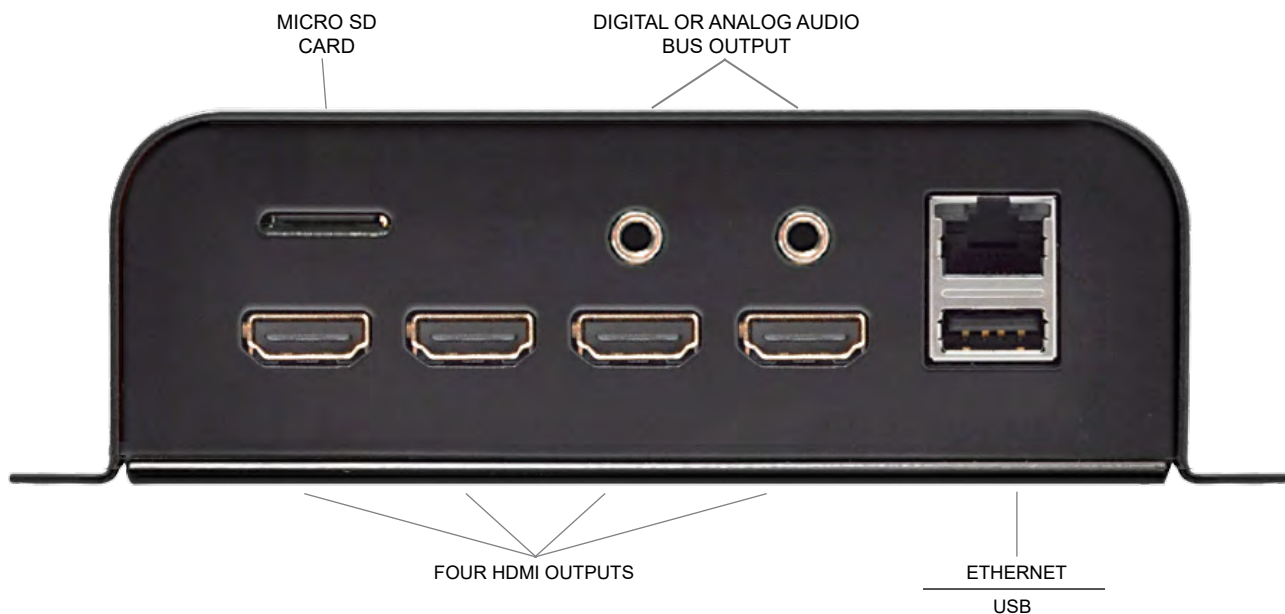
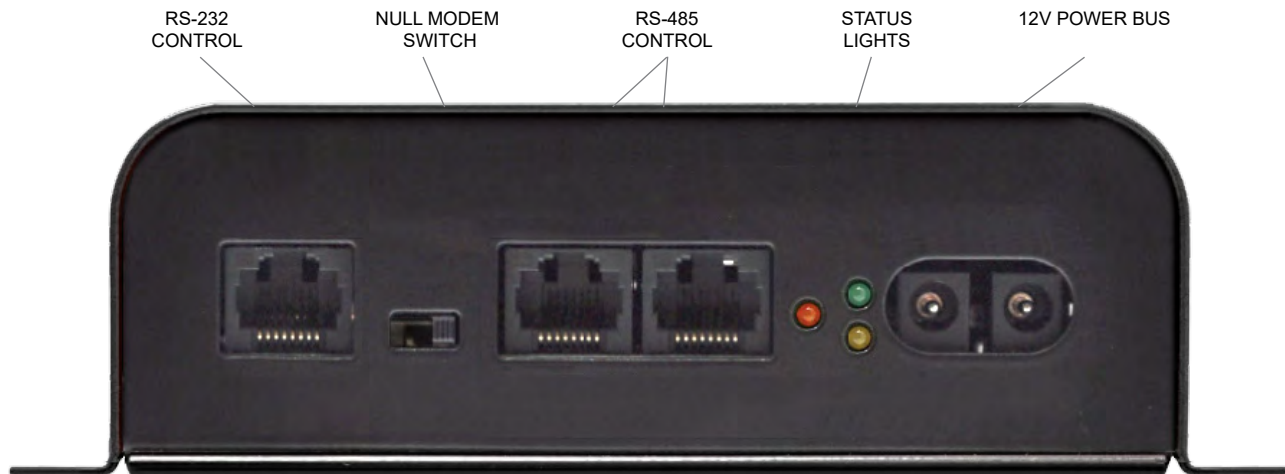
Introduction

The MH4-HD, and HS MediaHubs combine interactivity with audio switching and distribution. In addition to audio, this video-oriented player offers multiple video sinks, and acts as its own 1:4 distribution amplifier. Connect up to four HDMI sinks (televisions, soundbars, A-V receivers, etc.) to the player; each output provides identical 1080p video signal, and individual CEC control of the sink. Update media content and BrightAuthor programming via Ethernet, or update the SD card locally.



Features

- BrightSign® Digital Signage Module
- HD and HS HDMI® output x4 (1920x1080@60Hz)
- Individual CEC control via HDMI
- Dual-purpose 3.5mm audio output jack (digital or analog)
- Customizable push-button ports (RJ9 x8)
- Control ports for peripherals (RJ45)
- USB port for touch screen or other peripherals
- Ethernet port for remote updates



HDMI Output

The MH4-HD HDMI output delivers 1920x1080@60 video via an HDMI cable to HDMI display screens, AVRs or sound bars. CEC commands can be used to control the sink device.

Video File Information

MPEG-4 encoded videos are supported with maximum video resolution up to 1920x1080@60. Test all files before deployment. See BrightSign specifications for details: www.brightsign.biz/application/files/

Four HDMI Outputs

The MH4-HD connects to any device via digital (Toslink®) and/or low-level analog audio via its 3.5mm dual-purpose audio outputs. The outputs are individually selectable, or can output audio simultaneously in digital and/or analog formats. The audio signals on the HDMI output may also be turned off and on via software.

Audio Bus Output

The MH4-HD audio bus output delivers optical digital (Toslink), or low-level analog audio via its 3.5mm dual-purpose audio jack, as directed by BrightAuthor settings. The Audio Bus may also be activated or deactivated on command using BrightAuthor.



The Easy Plug push-button has an RJ9 connector for easy installation and long term reliability.



Push-Buttons

To control media using push-buttons, connect Easy Plug push-buttons to each position. Compatible push-buttons are available in several colors; shown below is the button illuminated with blue LED ring.

MicroSD Card Slot

A microSD card contains BrightAuthor programming, plus the video and audio files. Media files placed on the root will autoplay on power up. If the SD card is updated to add new video files, make sure any custom programming remains on the card.

Serial Communication

Control Port (RS-232)

The MH4-HD can send and receive serial commands via RS-232 at any Baud rate selected via BrightAuthor. The port may be set for Null or Straight using the switch located beside the RS-232 port. The port is a modular RJ-45 jack; adapter cables are available for 3.5mm or DB-9 serial ports.

Control Bus (RS-485)

The RS-485 control bus allows the MH4-HD to interact with devices such as the Audio Authority TouchSelect panels or the 1895 Visual Volume knob. The MH4-HD can also control switch modules or amplifiers that are linked via the Control Bus.

The MH4-HD is unit ID 0, all on-board push-button positions respond to commands addressed to ID 0. All commands are echoed on the RS-232 control port and RS-485 control bus, regardless of ID.

External Settings (RS-232)

Baud rate may be changed via BrightAuthor.

Default Baud Rate	115200
Data Bits	8
Parity	None
Stop Bits	1

Control Bus Settings (RS-485)

Baud Rate	57600
Protocol	Control Bus (RS-485)

Internal Settings

Port	0
Baud Rate	115200
Data Bits	8
Parity	None
Stop Bits	1
Protocol	ASCII
Send EOL	CR
Receive EOL	CR

Changing the Baud Rate (RS-232)

In BrightAuthor, select the proper Baud rate to external serial devices. The MH4-HD is always ID 0.

STRUCTURE	EXAMPLE	RESULT
[BAUD#_#]	[BAUD0_9600]	MH4-HD ID 0 BAUD RATE SET TO 9600
[BAUD#_#]	[BAUD0_115200]	MH4-HD ID 0 BAUD RATE SET TO 115200
[BAUD#_#]	[BAUD0_19200]	MH4-HD ID 0 BAUD RATE SET TO 19200
[BAUD#_#]	[BAUD0_57600]	MH4-HD ID 0 BAUD RATE SET TO 57600
[BAUD#_#]	[BAUD0_38400]	MH4-HD ID 0 BAUD RATE SET TO 38400

Sample Button Commands

STRUCTURE	EXAMPLE	RESULT
[PRESS#=#]	[PRESS0_2]	MH4-HD Push button 2 PRESS SENT
[RELEASE#]	[RELEASE0_2]	MH4-HD Push button 2 RELEASE SENT
[BLINK#_#]	[BLINK0_4]	MH4-HD Push button 4 LED BLINKS
[BLINK#_#,#,#,#]	[BLINK0_1,2,3,4]	MH4-HD Push button 1,2,3,4 LEDS BLINK
[LEDON#_#]	[LEDON0_6]	MH4-HD Push button 6 LED ACTIVATES
[LEDON#_#,#,#,#]	[LEDON0_3,4,5,6]	MH4-HD Push button 3,4,5,6 LEDS ACTIVATE
[LEDOFF#_#]	[LEDOFF0_6]	MH4-HD Push button 6 LED DEACTIVATES
[LEDALLOFF]	[LEDALLOFF]	DEACTIVATES ALL LEDS ON ALL DEVICES
[ANALOG_ON#]	[ANALOG_ON0]	MH4-HD ID 0 ANALOG OUTPUTS ACTIVATE
[ANALOG_OFF#]	[ANALOG_OFF0]	MH4-HD ID 0 ANALOG OUTPUTS DEACTIVATE
[ANALOG_ON#_#]	[ANALOG_ON0_2]	MH4-HD ID 0 ANALOG OUTPUT 2 ACTIVATES
[ANALOG_OFF#_#]	[ANALOG_OFF0_2]	MH4-HD ID 0 ANALOG OUTPUT 2 DEACTIVATES
[OPTICAL_ON#]	[OPTICAL_ON0]	MH4-HD ID 0 OPTICAL OUTPUTS ACTIVATE
[OPTICAL_OFF#]	[OPTICAL_OFF0]	MH4-HD ID 0 OPTICAL OUTPUTS DEACTIVATE
[OPTICAL_ON#_#]	[OPTICAL_ON0_4]	MH4-HD ID 0 OPTICAL OUTPUT 4 ACTIVATES
[OPTICAL_OFF#_#]	[OPTICAL_OFF0_4]	MH4-HD ID 0 OPTICAL OUTPUT 4 DEACTIVATES

Firmware Update

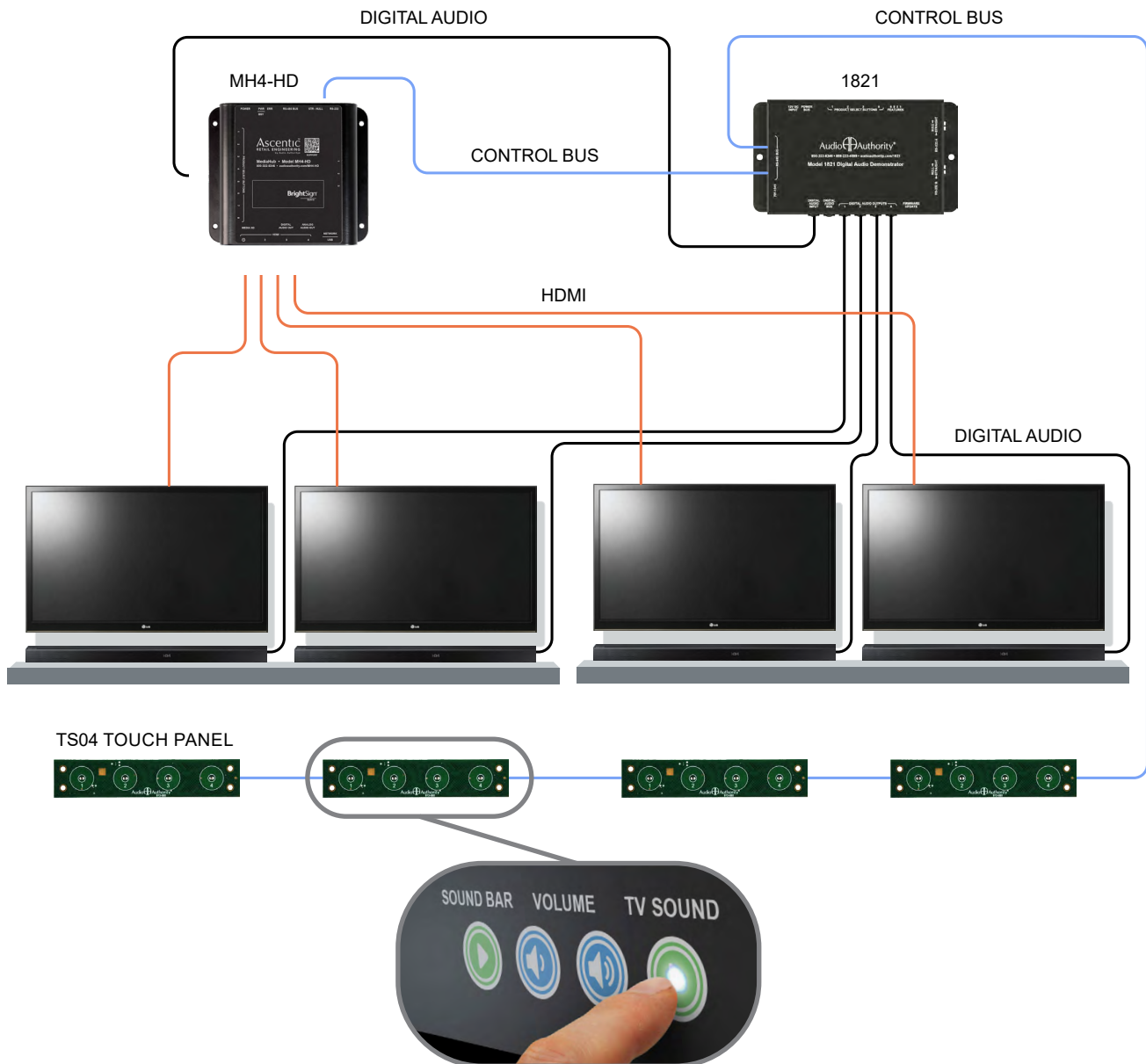
Visit www.audioauthority.com/MH4-HD for firmware update instructions.

Installation

- Attach the player to a flat surface with the screws provided.
- Load programming and media files onto a compatible and properly formatted microSD card.
- Connect EasyPlug push-buttons, touch panels or touch screen.
- Connect power adapter to AC power, then to the MH4-HD power port.
- Connect audio output(s) to an amplifier, headphone amplifier or switching system if desired.
- Connect HDMI cables from the display sinks to the four MH4-HD HDMI ports.
- For more information check our website: www.audioauthority.com/MH4-HD.

Example System: Sound Bar vs TV Sound Comparison

The MH4-HD distributes video to four HDMI sink devices, while the 1821 switcher handles audio for sound bars. A TouchSelect panel by each sound bar allows the customer to activate the sound bar, adjust volume, and toggle the audio from sound bar to TV speakers. Since the TVs receive audio via HDMI, the TV sound toggle function is performed by muting the TV using CEC control signals via the HDMI connection – a function not available on standard HDMI distribution amps. At the same instant, the 1821 switcher activates the sound bar via optical signals. The whole experience is orchestrated by a BrightAuthor program on the MH4-HD MediaHub.



Product Specifications

- HD BrightSign® digital signage module HS124
- HDMI outputs (HDMI x 4)
- CEC control via HDMI port 1
- Discrete digital audio (3.5mm optical x 1)
- Discrete analog audio (3.5mm x 1)
- CEC control via HDMI port
- Recommended Audio Formats:
MP3 (mono or stereo) @ 44.4kHz or 48kHz
WAV (mono or stereo) @ 96kHz, 48kHz, or 44.1kHz
- External sensor or push-button ports (RJ9 x 8)
- USB 2.0 (USB-A x 1)
- RS-485 control ports (RJ-45 x 2) for control including touch panels and volume knob
- RS-232 port (RJ-45 x 1, Baud rate is software selected)
- Ethernet Network port for updates and control (RJ-45 x 1)
- Media storage: microSD or SDHC media card slot
- LED indicators: Power, Error, Busy
- Dimensions (HxWxD, inches): 5.4 x 5.2 x 1.8
- Power Supply: external 12V DC, 5A

For a complete list of product specifications and compatible devices please visit www.audioauthority.com/MH4-HD or click this link.

