

User Manual

MH2 MediaHub

Audio-Video Switching and Distribution

Models Include: MH2-4K, MH2-HD and MH2-HS



AscenticTM
RETAIL ENGINEERING
by Audio Authority

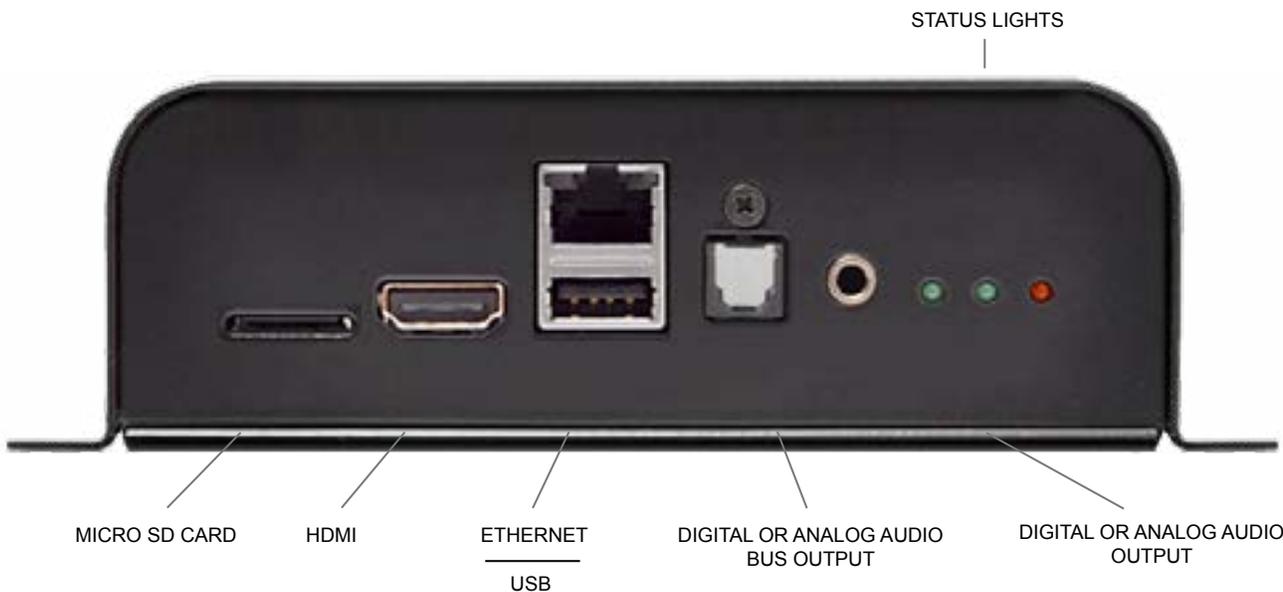
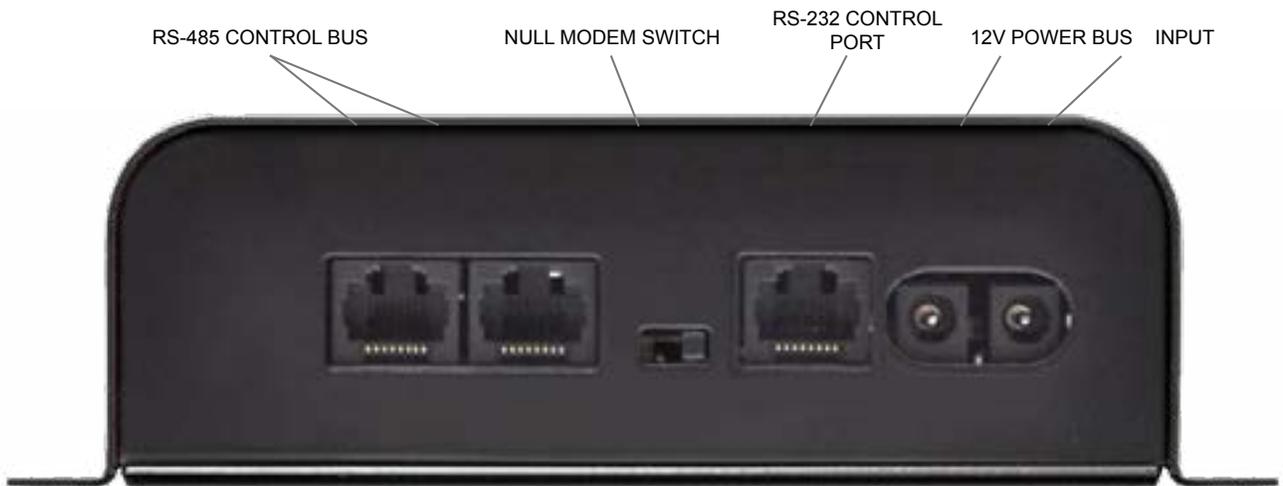
Introduction

The MH2-4K, HD, and HS MediaHubs combine interactivity with audio switching and distribution. In addition to video (with optional 4K resolution), this media player offers digital or analog signals through an audio output. Multiple ports on the MH2-4K link interactive peripherals like push-buttons and serial devices including touch screens and touch panels to serve a variety of demonstration designs. Update media content and BrightAuthor programming via Ethernet, or update the SD card locally.



Features

- BrightSign® Digital Signage Module
- 4K HDMI® output (4096x2160@60Hz)
- HD and HS HDMI® output (1920x1080@60Hz)
- Digital & analog audio (dual-purpose 3.5mm jacks x1)
- Customizable push-button ports (RJ9 x8)
- Control ports for peripherals (RJ45 x3)
- USB port for touchscreen or other peripherals
- Ethernet port for remote updates



HDMI Output

The MH2-4K HDMI output delivers 4K@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 4K@60. Test all files before deployment. See BrightSign specifications for details: www.brightsign.biz/application/files/

Digital or Analog Audio Output

The MH2-4K supports 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 MH2-4K audio bus output delivers optical digital (Toslink®), and/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 to the right 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 MH2-4K 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 MH2-4K to interact with devices such as the Audio Authority TouchSelect panels or the 1895 Visual Volume knob. The MH2-4K can also control switch modules or amplifiers that are linked via the Control Bus.

The MH2-4K 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 MH2-4K is always ID 0.

STRUCTURE	EXAMPLE	RESULT
[BAUD#_#]	[BAUD0_9600]	MH2-4K ID 0 BAUD RATE SET TO 9600
[BAUD#_#]	[BAUD0_115200]	MH2-4K ID 0 BAUD RATE SET TO 115200
[BAUD#_#]	[BAUD0_19200]	MH2-4K ID 0 BAUD RATE SET TO 19200
[BAUD#_#]	[BAUD0_57600]	MH2-4K ID 0 BAUD RATE SET TO 57600
[BAUD#_#]	[BAUD0_38400]	MH2-4K ID 0 BAUD RATE SET TO 38400

Sample Button Commands

STRUCTURE	EXAMPLE	RESULT
[PRESS#=#]	[PRESS0_2]	MH2-4K Push button 2 PRESS SENT
[RELEASE#]	[RELEASE0_2]	MH2-4K Push button 2 RELEASE SENT
[BLINK#_#]	[BLINK0_4]	MH2-4K Push button 4 LED BLINKS
[BLINK#_#,#,#,#]	[BLINK0_1,2,3,4]	MH2-4K Push button 1,2,3,4 LEDS BLINK
[LEDON#_#]	[LEDON0_6]	MH2-4K Push button 6 LED ACTIVATES
[LEDON#_#,#,#,#]	[LEDON0_3,4,5,6]	MH2-4K Push button 3,4,5,6 LEDS ACTIVATE
[LEDOFF#_#]	[LEDOFF0_6]	MH2-4K Push button 6 LED DEACTIVATES
[LEDALLOFF]	[LEDALLOFF]	DEACTIVATES ALL LEDS ON ALL DEVICES
[ANALOG_ON#]	[ANALOG_ON0]	MH2-4K ID 0 ANALOG OUTPUTS ACTIVATE
[ANALOG_OFF#]	[ANALOG_OFF0]	MH2-4K ID 0 ANALOG OUTPUTS DEACTIVATE
[ANALOG_ON#_#]	[ANALOG_ON0_2]	MH2-4K ID 0 ANALOG OUTPUT 2 ACTIVATES
[ANALOG_OFF#_#]	[ANALOG_OFF0_2]	MH2-4K ID 0 ANALOG OUTPUT 2 DEACTIVATES
[OPTICAL_ON#]	[OPTICAL_ON0]	MH2-4K ID 0 OPTICAL OUTPUTS ACTIVATE
[OPTICAL_OFF#]	[OPTICAL_OFF0]	MH2-4K ID 0 OPTICAL OUTPUTS DEACTIVATE
[OPTICAL_ON#_#]	[OPTICAL_ON0_4]	MH2-4K ID 0 OPTICAL OUTPUT 4 ACTIVATES
[OPTICAL_OFF#_#]	[OPTICAL_OFF0_4]	MH2-4K ID 0 OPTICAL OUTPUT 4 DEACTIVATES

Firmware Update

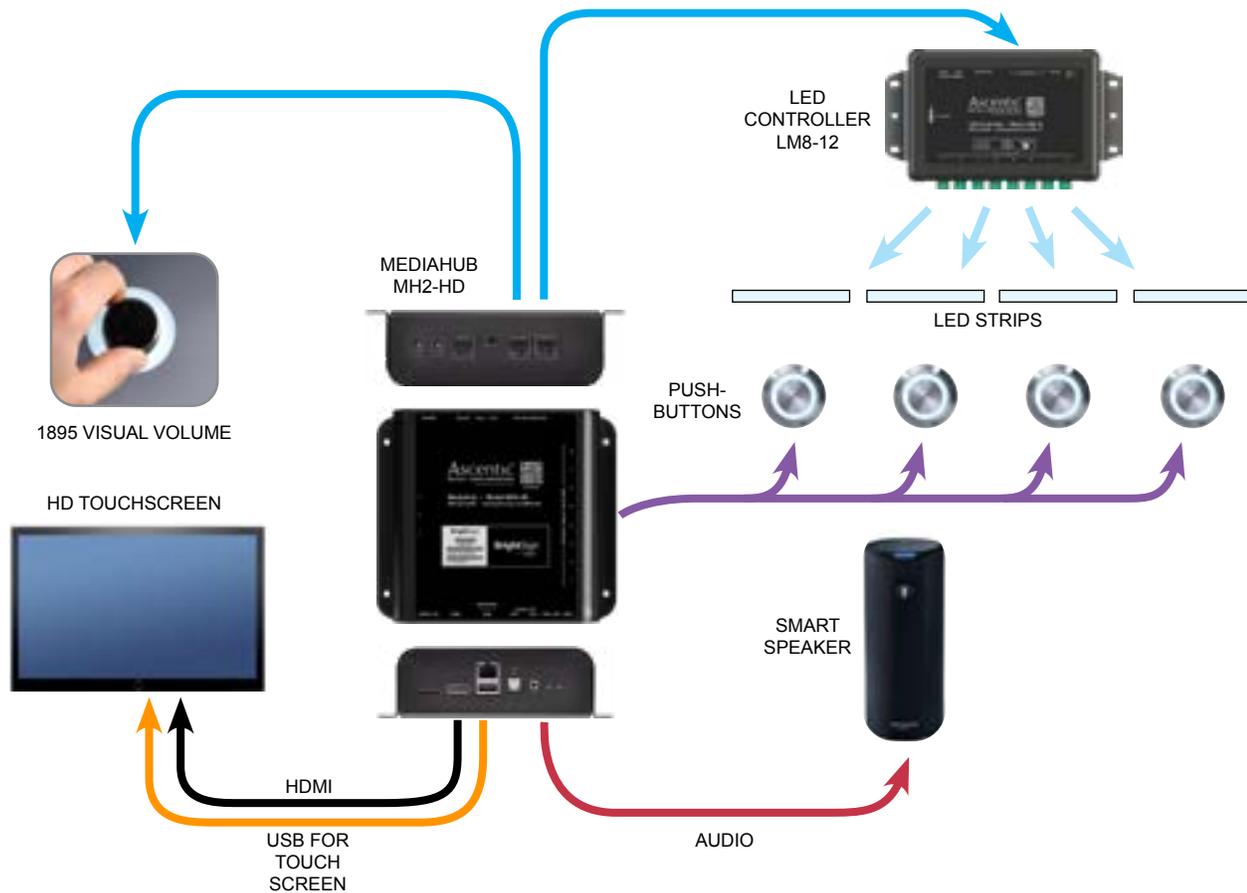
Visit www.audioauthority.com/MH2-4K for firmware update instructions.

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 Easy Plug push-buttons, touch panels or touch screen.
- Connect power adapter to AC power, then to the MH2-4K power port.
- Connect audio output(s) to amplifiers, sound bars, or smart docks if desired.
- Connect HDMI cable from display device to MH2-4K HDMI port.
- For more information check our website: www.audioauthority.com/MH2-4K.

Example System: Smart Speaker with Video

This display uses light to attract and communicate, and leverages the MH2-4K Media Hub's multiple audio output options to demonstrate a variety of products. The audio output jacks can play either digital or analog audio, depending on the requirements of the device. The HDMI output and USB jack interface with a touch screen LCD that informs the customer about each product. The 1895 Visual Volume knob is an intuitive and inviting way to present volume control. It connects directly to an RS-485 port. Each product is visually highlighted by a lit platform, managed serially by a light controller.



Product Specifications

- 4K BrightSign® digital signage module HS144
- Dual purpose audio jack optical + analog (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/MH2-4k or click this link.

