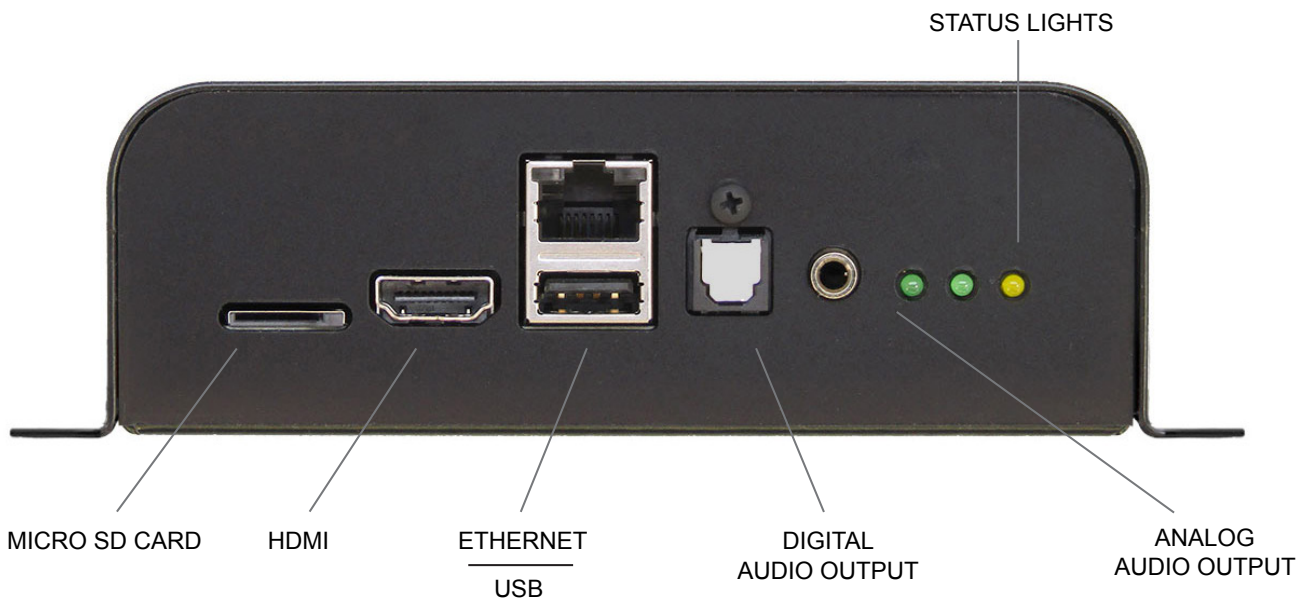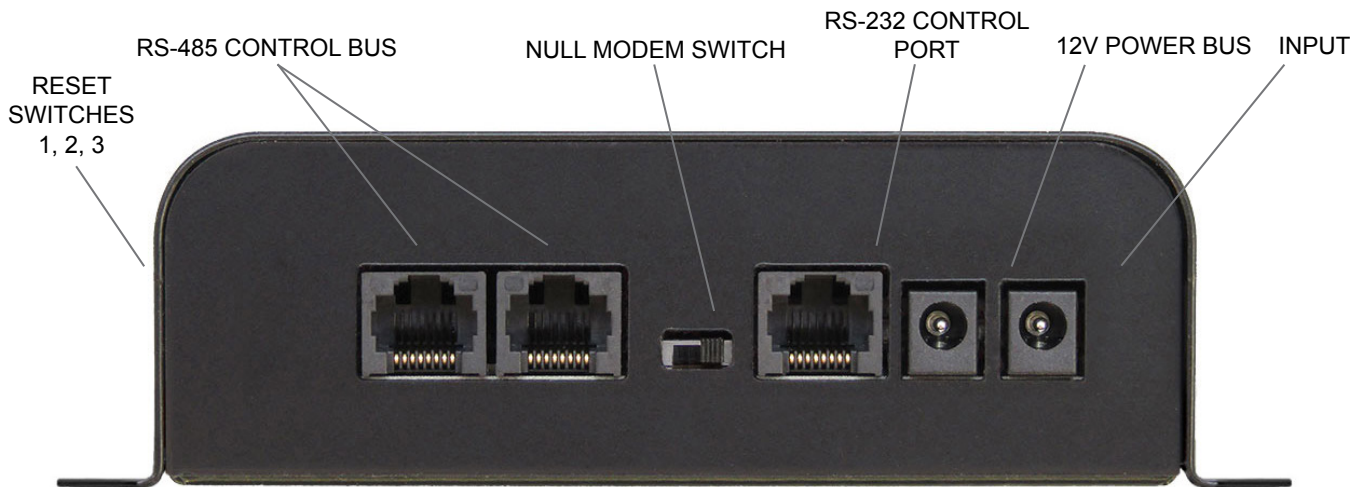# User Manual

Model MH3-S5
Multipurpose MediaHub

Ascentic®
RETAIL ENGINEERING
by Audio Authority®

Introduction

The Model MH3-S5 combines BrightSign's media-playing muscle with the interactivity you expect from Audio Authority®. With a BrightSign digital signage module built-in, the MH3-S5 produces flawless 4K@30 video and uncompressed audio, with all the custom capabilities made possible by BrightAuthor software. Media and BrightAuthor programming may be updated via network.

Features

- Audio-video MediaHub with integral HS145 BrightSign® engine
- Video output: 4096x2160@30Hz and digital audio (HDMI)
- Discrete digital and analog audio outputs (optical and 3.5mm)
- CEC control (HDMI port)
- Compatible with most Ascentic products

RESET SWITCHES 1, 2, 3

RS-485 CONTROL BUS

NULL MODEM SWITCH

RS-232 CONTROL PORT

12V POWER BUS   INPUT

STATUS LIGHTS

MICRO SD CARD   HDMI   ETHERNET
                              USB

DIGITAL AUDIO OUTPUT

ANALOG AUDIO OUTPUT

HDMI Output

The MH3-S5 HDMI output delivers 4K@30 video via an HDMI cable to HDMI display screens, AVRs or sound bars. CEC commands can be used to control the sync device.

Video File Information

MPEG-4 encoded videos are supported with maximum video resolution up to 4K@30. Test all files before deployment. See BrightSign specifications for details: www.brightsign.biz/application/files/7715/5111/4033/HS4-02252019.pdf

Digital or Analog Audio Output

The MH3-S5 connects to any device via digital (Toslink®) and/or low-level analog audio via its 3.5mm or optical 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.
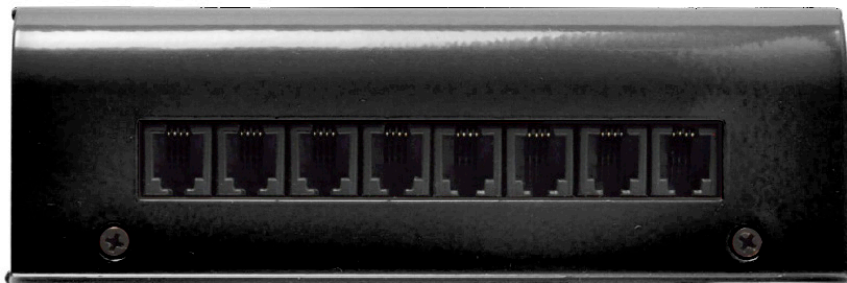
Push-Buttons

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.

Compatibility

The MH3-S5 MediaHub is compatible with most current Ascentic Retail Engineering products.
For legacy support, such as with 1700 and 1800 series products, reference the MH2-4K. Some products are compatible with both models. Contact your Ascentic sales representative for details.

Communication

The Model MH3-S5 Multipurpose MediaHub has the default device ID 253. It can send and receive serial commands via RS-485 at 57600 Baud, 8-N-1, and half-duplex; and via RS-232 at 115200 Baud, 8-N-1, and full-duplex. Both configuration ports utilize a modular RJ-45 jack with the following pinouts:

RS-485 Pinout:

Pin #	Function	Pin #	Function
P1	Orange White - Ground	P5	Blue White - Power Bus (12V Devices Only)
P2	Orange - Ground	P6	Green - Data B Negative
P3	Green White - Data A Positive	P7	Brown White - Ground
P4	Blue - Power Bus (12V Devices Only)	P8	Brown - Ground

RS-232 Pinout:

Pin #	Function	Pin #	Function
P1	Orange White - Ground	P5	Not Connected
P2	Orange - Ground	P6	Green - RX or TX
P3	Green White - TX or RX	P7	Brown White - Ground
P4	Not Connected	P8	Brown - Ground

Command List:

Commands	Format	Response
REBOOT	[DEV=253;REBOOT]	
RESET DEFAULTS	[DEV=253;RESET;DEFAULT]	
BUTTON LED ON	[DEV=253;LED=#;ON]	
BUTTON LED OFF	[DEV=253;LED=#;OFF]	
BUTTON LED BLINK	[DEV=253;LED=#;BLNK]	
BUTTON PRESS		(DEV=253;BTN=#;PRESS)
BUTTON RELEASE		(DEV=253;BTN=#;RELEASE)
APP VERSION	[DEV=253;APP;VERSION?]	(DEV=253;APP;VERSION=$)
BOOTLOADER VER	[DEV=253;BOOT;VERSION?]	(DEV=253;BOOT;VERSION=$)

Quick Start Instructions

1. Create a new BrightAuthor experience for the HS123/124/144/145 (depending on the module installed in the MediaHub).

2. In BrightAuthor's Presentation Properties on the Interactive tab, ensure "Port 0" is configured to a Baud rate 115200 8-N-1, ASCII, with "CR" for Send and Receive EOL.

3. Create your presentation. Note that any built-in serial or GPIO port is treated as a serial device, following the applicable MediaHub serial protocol.

4. Export your presentation to a USB or microSD card and insert it into the MediaHub Content port.

5. Connect any peripheral devices, followed by the power supply. Note that HDMI Port 1 will set the EDID information for all other connected HDMI devices.

Troubleshooting

No RS-232 Communication

- Ensure connections are fully seated.
- Ensure devices are using the correct protocol settings.
- Ensure the Null/Straight selector is set correctly.

No Ethernet Connectivity

- Ensure connections are fully seated.
- Ensure the end device is powered on with Ethernet enabled.
- Power cycle all devices to clear out previous TCP connections.

Reset Switches

A series of three holes along the left side of the case allow access to three switches. Use a paperclip to press.
The functions are as follows: 1 = Hard Reset, 2 = Service, 3 = Soft Reset. Call technical support for guidance on using these switches.

Firmware Update Process

The **M**odel MH3-S5 is updatable through the microSD port. Below are the steps outlining the firmware update process:

1. Copy new firmware ".FWU" file onto a blank microSD card (Fat32 format preferred)
2. Insert firmware update SD into the device with device power disconnected
3. Apply power to device, monitoring the (green) power light
4. When power light returns to a heartbeat (slow blink), update is complete
5. To verify the firmware update, send the firmware version query listed in the commands list; the response should match the firmware version expected

Example System: Digital and Analog Headphones with Video

This display leverages the MH3-S5 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 interfaces with a 4K TV that informs the customer about each product. Eight AirSelect touchless sensors provide an intuitve and inviting way to select each product.