

User Manual

Model MH1-4K Demonstration Media Player



Ascentic[®]
RETAIL ENGINEERING
by Audio Authority[®]

Introduction

The MH1-4K plays a wide array of audio and video files for interactive 4K media demonstrations. It has a variety of interface methods including six illuminated push-buttons, serial communication, and IR. Load video and/or audio files on an SD card using a Microsoft Windows® PC. Audio output can be digital and/or analog.



Features

- HDMI audio-video output (2160p UHD)
- Digital coax and optical audio output (2-ch)
- Analog audio output
- Multiple video and audio file formats
- Autoplay at power-up
- Small footprint, 4" x 6" x 1.5" including flanges
- RS-232 serial control
- Button control
- Folder playback
- Seamless switching between videos
- 5GB internal storage; copy files from USB

Package Contents

Before installing this product, please check the packaging and make certain the following items are contained in the shipping carton:

- MH1-4K Media Player
- DC power adapter
- Remote control
- User manual

SD Card

The video and audio files are stored on an SD card as well as programming instructions for custom functionality. Acceptable formats include SD up to 4GB, SDHC up to 32 GB, but do not include SDXC. Because the player reads from the card continuously, an industrial grade card is highly recommended. Do not use a computer running Mac OS to put files on the SD card. Video, still images, and audio files placed on the root of the SD card will autoplay on power up. If the SD card is updated to add new video files, check to make sure the custom programming remains on the card.

Video Output

The MH1-4K video output connects via an HDMI cable to HDMI display screens. Composite Video is not supported.

- Audio output: Optical, HDMI, analog audio (3.5mm)
- Screen rotation: Supports horizontal screen and vertical screen display, video and menu can be rotated 90°/180°/270°.
- Video output: auto, 3840X2160p-30HZ, 1920X1080p-60HZ, 1920X1080p-50HZ, 1920X1080p-30HZ, 1920X1080p-25HZ
- Sound Output: Default is "Audio", "SPDIF", "HDMI" all output, you can define them in "autoplay.txt".

Formats Supported

- Video format: AVI, MXF, MP4, FLV, MKV, ASF, DAT, RM, RMVB, AMV, F4V, M4V, H.265MP4, VOB, ISO, M2TS, 3GP, 3G2, M2V, MOV, MPG, WMV, MTV, OGV, TS, WEBM, DV.
- Image format: JPG, BMP, JPEG, GIF
- Audio format: MP3, FLAC, APE, WAV, WMA, DTS, AAC, M4R, MKA, MP2, AMR, WV, M4A, AC3, AU, AIFF, M4B.

Note: Depending on differences in coding, size, production software, etc., it is not guaranteed that any file in the above formats are supported.

Audio Output

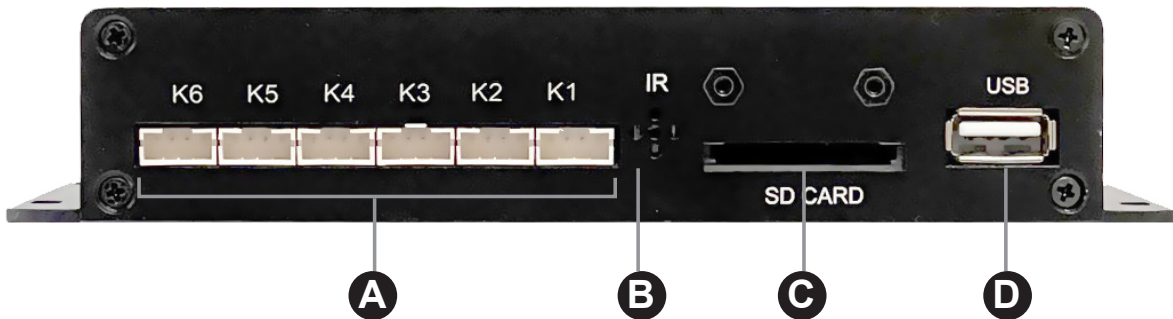
The MH1-4K connects to any device that can accept 2-channel PCM digital audio via an optical cable, or low-level analog audio through 3.5mm stereo connector.

RS-232

The MH1-4K can respond to external commands via RS-232, or it can issue commands to other devices. Basic commands are listed on page 8, custom programming is available from Audio Authority.

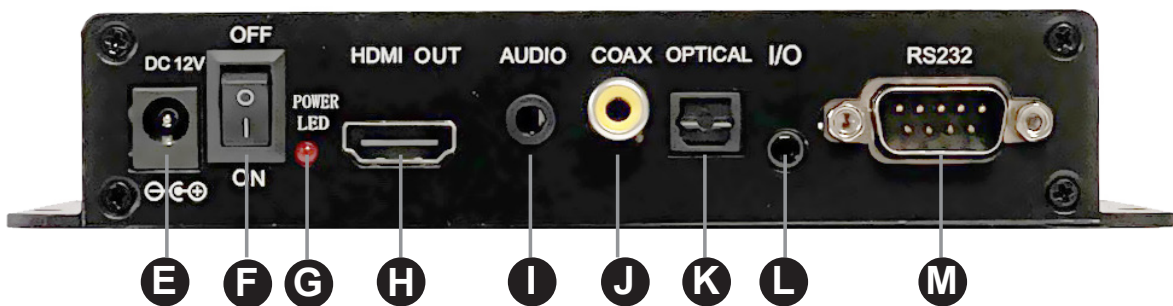
Panel Descriptions

Model MH1-4K (front panel)



- A** push-buttons 1-6 **B** IR receiver **C** SD card slot **D** USB (firmware updates)

Model MH1-4K (rear panel)



- E** 12V power input **F** Power switch **G** Power light **H** HDMI output
I Analog audio output 3.5mm **J** Coaxial digital audio **K** Optical digital output (Toslink®)
L I/O port (3.5mm) **M** Serial port (DB9 connector)

Control Interface Connections

The MH1-4K can be controlled using six push-buttons, RS-232, remote control, and/or via IR.

Push-Buttons

To control media using push-buttons, connect 4-wire momentary switches to each JST button port (Figure 3). Compatible push-buttons are commercially available, and Audio Authority is able to provide push-buttons with the JST harness given adequate lead time and for projects of sufficient volume.

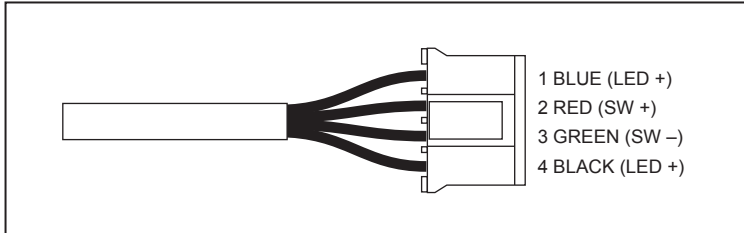


Figure 2. Push-button harness pinout.

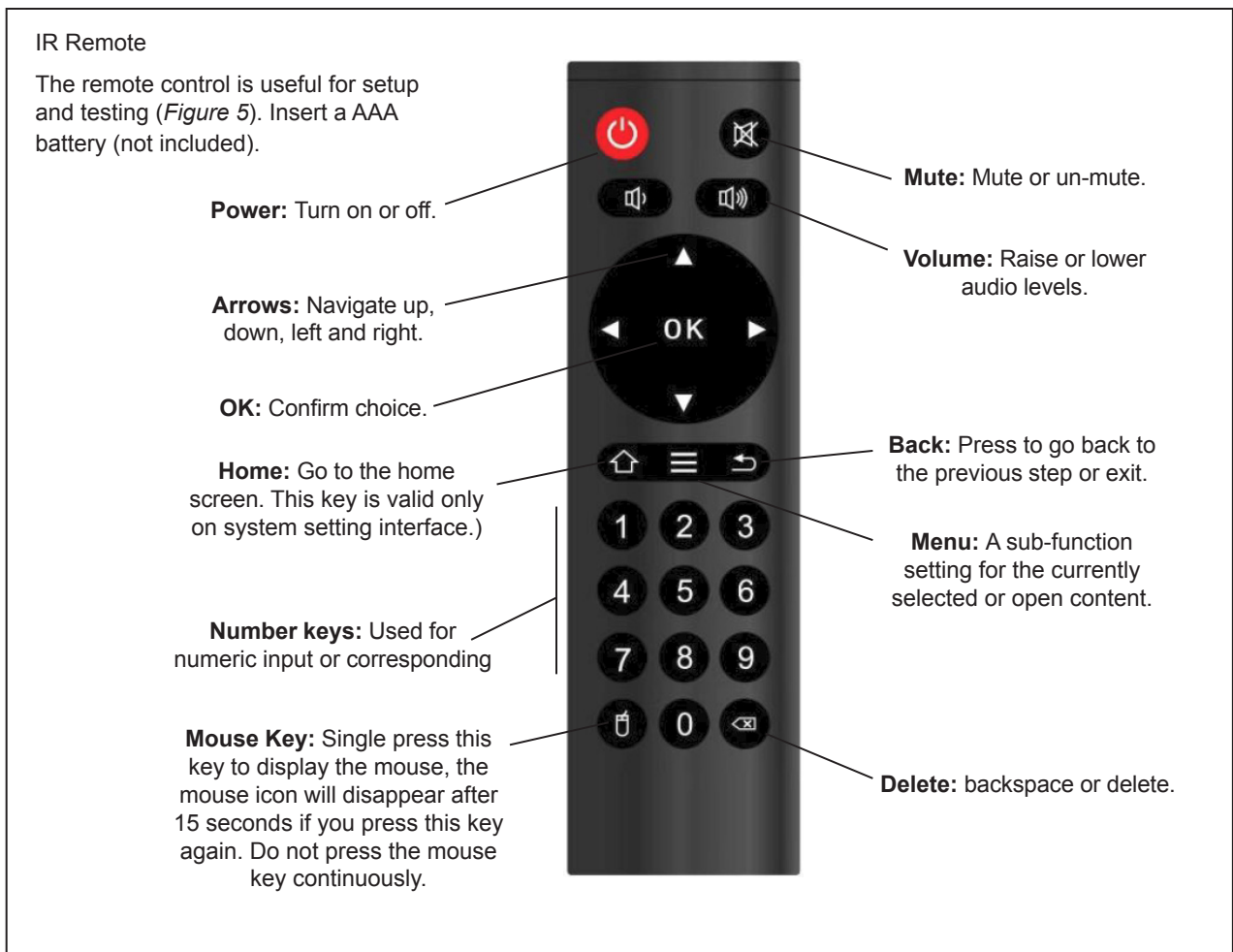


Figure 5. Remote Control

Using Control Interfaces

The player can be controlled by six push-buttons, IR commands (including remote control), and RS-232 commands. All player interaction depends on how files are named and arranged on the SD card (*PC setup only, not Macintosh compatible*). Video, still images, or audio files placed on the root of the SD card will autoplay on power up. To use playlists, put media files in separate playlist folders. The folders can be any name but must be linked by name to a playlist number within the autoplay.txt file, as shown in Example 2.

Note: If you need more than six “buttons” you can use the number keys on the IR remote, or RS232 commands such as @00:05\$, to trigger the corresponding playlist. For example, the 1726 demonstrator allows eight buttons via RS-232; see page 11.

Using Push-buttons

Push-buttons can be used for transport controls like Play and Next Track, or they can be used to start a media file

www.audioauthority.com/downloads/videos/MH1-4Ktransport.zip

www.audioauthority.com/downloads/videos/MH1-4Kplaylists.zip

To test the functionality of each mode, copy the contents of a demo folder into the root folder of an empty SD card and then insert it in the MH1-4K SD card slot. Program the buttons using the example text file contents below.

NEXT
PREV
STOP
RETURN
PLAY
UP
DOWN
LEFT
RIGHT
SETUP
MENU
VOL_PLUS
VOL_MINUS
MUTE

Example 1: Push-buttons for Transport Control

This example shows how to use push-buttons to trigger basic media player functionality. The player refers to the commands in a text file on the SD card.

Inside the autoplay.txt file:

PLAY=1	assigns “Play” to push button 1
STOP=2	assigns “Stop” to push button 2
NEXT=3	assigns “Next” to push button 3
PREV=4	assigns “Previous” to push button 4

Example 2: Push-buttons Trigger Video Playlists

This example shows how to use push-buttons to trigger specific video playlists (folders).

Inside the autoplay.txt file:

01=Playlist1/	press button 1 = play files in “Playlist1”
02=Playlist2/	press button 2 = play files in “Playlist2”
03=Playlist3/	press button 3 = play files in “Playlist3”
04=Playlist4/	press button 4 = play files in “Playlist4”

Creating a Slideshow with Audio

The push-buttons can be used for transport control of each slideshow. Place still images in folders of the root directory and label the folder *photo1/*. Create a corresponding audio folder named *photo1_audio* and place the background audio files that folder. Place the autoplay.txt file in the root folder. Inside the text files slideshow parameters can be adjusted such as playing time (parameter range 1-13 seconds), transition time (parameter range 1-13 seconds) and volume (parameter range 1-31).

Inside the autoplay.txt file:

Transition=9 Slide time=13 Volume=30 01=photo1/	assigns transition from image to image in folder. assigns length of screen time per image. assigns custom volume level for audio playback. play files in the “photo1/” folder when push-button 1 is pressed
Transition=9 Slide time=13 Volume=30 02=photo2/	assigns transition from image to image in folder. assigns length of screen time per image. assigns custom volume level for audio playback. play files in the “photo1/” folder when push-button 2 is pressed
Transition=9 Slide time=13 Volume=30 03=photo3/	assigns transition from image to image in folder. assigns length of screen time per image. assigns custom volume level for audio playback. play files in the “photo1/” folder when push-button 3 is pressed
Transition=9 Slide time=13 Volume=30 04=photo4/	assigns transition from image to image in folder. assigns length of screen time per image. assigns custom volume level for audio playback. play files in the “photo1/” folder when push-button 4 is pressed

Using RS-232 Commands

Use the command format shown in the command list, and make sure the files and folders are arranged and named correctly as shown previously.

Basic Serial Command List

@00:OK\$	OK
@00:UP\$	Direction Key, Up
@00:REV\$	Playback
@00:FWD\$	Fast Forward
@00:REP\$	Repeat Play
@00:MUTE\$	Mute/Unmute Toggle
@00:VOL+\$	Volume Up
@00:VOL-\$	Volume Down
@00:STOP\$	Stop
@00:PREV\$	Previous File
@00:NEXT\$	Next File
@00:ENTER\$	Enter
@00:LEFT\$	Direction Key, Left
@00:DOWN\$	Direction Key, Down
@00:SYNC\$	Start Over (return to the beginning of the file)
@00:POWER\$	Power Toggle (On or Off)
@00:AUDIO\$	Open Audio Format Window
@00:PAUSE\$	Pause
@00:RIGHT\$	Direction Key, Right
@00:00\$	Play all files in the root folder on an endless loop
@00:01\$	Play files in folder linked to Playlist 1 in autoplay.txt
@00:02\$	Play files in folder linked to Playlist 2 in autoplay.txt
@00:99\$	Play files in folder linked to Playlist 99 in autoplay.txt
@00:HDMI_ON	Enable HDMI audio output at any time
@00:HDMI_OFF	Disable HDMI audio output at any time
@00:SPDIF_ON	Enable SPDIF audio output at any time
@00:SPDIF_OFF	Disable SPDIF audio output at any time
@00:AUDIO_ON	Enable Analog audio output at any time
@00:AUDIO_OFF	Disable Analog audio output at any time

Serial Protocol

Transfer Rate	9600 bps		Pinout
Data Bits	8		Pin 2, Tx
Parity	None		Pin 3, Rx
Stop Bits	1		Pin 5, Ground
Flow Control	None or Off		Shell, Ground

Installation

- Attach the player to a flat surface with the screws provided.
- Connect push-buttons, if desired, for media selection. Push buttons should be four-wire momentary switches, and can be illuminated (2-5 volt LED).
- Connect A-V output(s) to a monitor, amplifier, or a headphone amplifier if desired.
- Connect power supply to AC power, then to the MH1 power port.
- For initial testing, connect A-V output(s) to a test player to check for desired functionality.
- Call Audio Authority with questions that are not addressed in this manual.

Example System

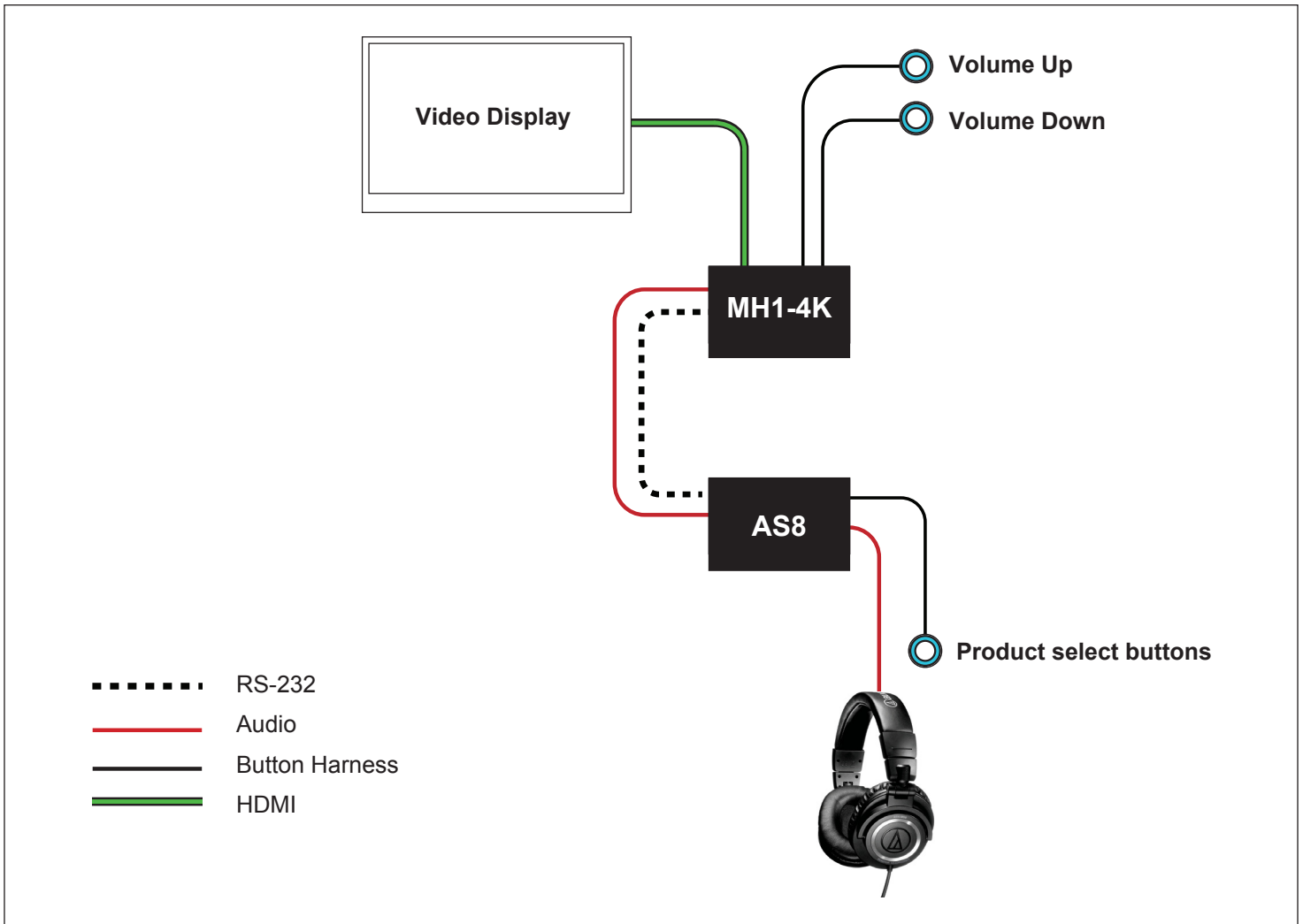


Figure 6. Example System with 1x4 distribution amplifier for headphones. With custom programming, the AH-8 can trigger the MH1-4K to play a specific media file for each product.

