



4x1 HDMI 2.0 Switch with HDMI ARC & CEC User's Guide



P/N: Switch41-HD20

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Important Safety Notices

Please read safety instructions carefully before installation and operation.

- Please pay close attention to all warnings and hints for this device
- Do not expose this unit to rain, heavy moisture, or liquid
- Do not repair the device or open the enclosure without professional guidance to avoid electric shocks. Doing so may void your warranty
- Keep the product in a well-ventilated location to avoid damage from overheating

- Shut off power and make sure environment is safe before installation
- Do not plug the HDMI cables in/out when the device is in use to avoid cable damage. Make sure they are plugged into the correct ports
- Use the included DC5V power adapter only. Make sure the specification matches if using 3rd-party DC power adapters

Introduction

The 4x1 HDMI 2.0 Switch allows you to select and switch between 4 HDMI source devices to display on 1 HDMI display.

Features

- Allows 4 HDMI source devices to be switched/routed to 1 display
- Supports 4K @60Hz YUV 4:4:4, HDR, 3D
- Included IR remote control allows you to select and switch source devices
- Compliant with HDMI 2.0, HDCP 2.3 with 18Gbps bandwidth
- Supports ARC and CEC

Package Contents

- 4x1 HDMI 2.0 Switch with HDMI ARC & CEC
- Remote controller
- RS232 cable (3.5mm to DB9)
- 2 Mounting ears + 4 mounting screws
- IR Receiver cable
- 4 Plastic pads
- Power adapter
- User's guide

Installation Requirements

1. HDMI source device (computer, DVD player, XBOX, PS3, etc)
2. HDMI display device (SDTV/Monitor, HDTV/Monitor, projector, etc.)
3. HDMI cables

Layout



Figure 1: Front Panel Layout

- ① Auto/Source Button:
 - Press to switch to next input source.
 - Press and hold at least three seconds to switch between manual mode and auto mode.
- ② Power LED: The LED illuminates red when power is applied.
- ③ Audio Mode LED:
 - Illuminates green when de-embedding audio.
 - Illuminates yellow when in ARC mode.
- ④ Switching Mode LED:
 - Illuminates green in manual switch mode.
 - Illuminates yellow in auto-switch mode.
- ⑤ Input 1~4 LED: The LED illuminates green when there is HDMI input on the corresponding channel.
- ⑥ FIRMWARE: Micro-USB port for firmware upgrade.



Figure 2: Rear Panel Layout

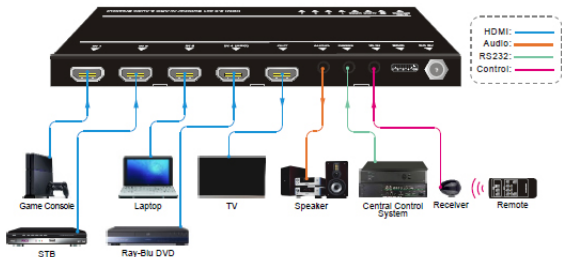
- ① IN 1~4: Four type-A female HDMI input ports to connect HDMI sources. The input 4 port supports ARC.
- ② OUT: Type-A female HDMI output port to connect HDMI display.
- ③ AUDIO: 3.5mm mini jack for analog audio output.
- ④ RS232: 3.5mm mini jack to connect control device (e.g. PC).
- ⑤ IR IN: 3.5mm mini jack to connect the included IR receiver for remote control.
- ⑥ EDID: 4-pin DIP switch for EDID setting.
- ⑦ DC 5V: DC port to connect a 5V DC AC power adapter.

Hardware Installation

1. Power off all devices including your HDMI source and HDMI display(s).
2. Connect your HDMI source devices to the Switch's HDMI Input connectors with HDMI cables (HDMI cables not included).
3. Connect your HDMI display to the Switch's HDMI output connector with an HDMI cable (HDMI cable not included).
4. Optional: Connect the included IR Receiver cable into the Switch's IR In port. This connection is needed only if device control is required using the included Remote Controller.
5. Plug the included power adapter into the Switch's Power Jack, then plug the power adapter into a reliable power source.
6. Power on all connected devices.
7. The Switch is ready for use.

Connection Diagram

The diagram shows the most typical input and output devices used with the switch.



Auto/Source Button Control

Manual Switching

When manual switching mode is enabled, the switching mode LED will be green. Simply press the Auto/Source button to switch to the next input device.

Automatic Switching

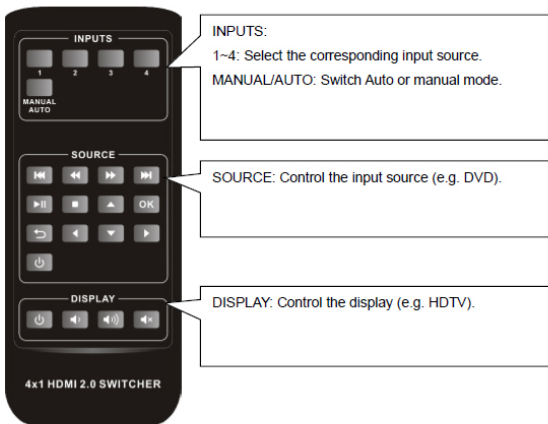
To enable automatic switching mode, press and hold down the Auto/Source button for 3 seconds. The switching mode LED will turn to yellow color.

Auto Switching Modes

- **New Input:** When a new input is detected, the switcher will automatically switch to it
- **Reboot:** When the switcher is power cycled, the last active HDMI device will be the active device. If the last active HDMI device is not available, the switcher will automatically switch to the first available source device starting with HDMI Input 1
- **Source Removed:** When an active source device is removed, the switcher will automatically switch to the first available active input starting with HDMI Input 1

Remote Controller

Please connect an IR receiver to the IR input port; the IR remote is used for signal switching and it can also be used to control source and display devices based on CEC function.



Note:

- Due to the HDMI input 4 port does not support CEC, the source device connected to this port can not be controlled by IR remote.
- The source and display devices are required to support CEC when the IR remote is used to control them.

Figure 3: Remote Controller

RS232 Control Software

Works with most serial command and monitoring software such as CommWatch.

- Download CommWatch or the serial command software of your choice
- Installation: Copy the control software files and paste them to the hard drive of your PC
- Uninstallation: Delete all control software files from the PC

Basic Settings

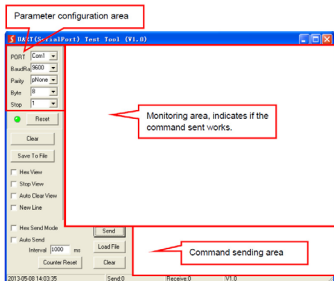
1. Connect all input and output devices as needed, then connect the PC to the Matrix Switcher.
2. Double click the software icon to run the control software. The icon is shown below.



The examples shown on this page and the following page are from CommWatch serial command software.

Control Software Interface

Set the COM port, Baud rate, data bit, stop bit, and parity. Enter commands into the Command Sending Area.



RS232 Commands

Default settings: Baud rate: 9600, Data bit: 8, Stop bit: 1, Parity bit: none.

Notes

- In Commands column, "["and"]" are included for easy reading and do not need to be typed in the actual command string
- End the command string with the ending symbols "." or ","
- Type carefully, the commands are case sensitive
- All commands must end with <CR><LF>

Signal Switching

Function	Command	Feedback Example
Switch to HDMI input 1.	>>HDMI1	<<HDMI1
Switch to HDMI input 2.	>>HDMI2	<<HDMI2
Switch to HDMI input 3.	>>HDMI3	<<HDMI3
Switch to HDMI input 4.	>>HDMI4	<<HDMI4
Enable auto-switching mode.	>>AUTO	<<AUTO Switch
Enable manual switching mode.	>>MANUAL	<<MANUAL Switch

Source Device Control

- The input source device must support CEC
- HDMI Input 4 doesn't support CEC IR Remote control commands

Function	Command	Feedback Example
Turn on the input source device, e.g. Blue-ray DVD.	>>SRCon	<<SRCon
Turn off the input source device, e.g. Blue-ray DVD.	>>SRCOff	<<SRCOff
Play	>>SRCPlay	<<SRCPlay
Pause	>>SRCPause	<<SRCPause
Stop	>>SRCStop	<<SRCStop
Fast Forward x1	>>SRCForward	>>SRCForward
Fast Rewind x1	>>SRCBackward	<<SRCBackward
Next Section	>>SRCSkipForward	>>SRCSkipForward

Source Device Control Continued

Previous Section	>>SRCSkipBackward	<<SRCSkipBackward
Open the menu setting	>>SRCMenu	>>SRCMenu
Go back	>>SRCBack	>>SRCBack
Confirm (OK)	>>SRCOK	>>SRCOK
Exit	>>SRCExit	>>SRCExit
Up direction	>>SRCUp	>>SRCUp
Down direction	>>SRCDown	>>SRCDown
Left direction	>>SRCLeft	>>SRCLeft
Right direction	>>SRCRight	<<SRCRight

Display Device Control

Function	Command	Feedback Example
Turn on the display device, e.g. HDTV.	>>TVOn	>>TVOn
Turn off the display device, e.g. HDTV.	>>TVOff	>>TVOff
Volume up.	>>TVVOL+	>>TVVOL+
Volume down.	>>TVVOL-	>>TVVOL-
Mute.	>>TVMUTE	>>TVMUTE
Unmute	<<TVUNMUTE	<<TVUNMUTE

Audio Selection

Function	Command	Feedback Example
Select ARC audio channel.	>>AUDExternal	<<AUDExternal
Select the HDMI audio input channel.	>>AUDInternal	>>AUDInternal

System Control


Function	Command	Feedback Example
System reset.	>>RESET	>>RESET
Get system information.	>>SYSInfo	<<AUDExternal << WUH4ARC-H2 << V1.0.0 << ----- <<HDMI1 <<Auto Switch <<AUDExternal <<EDID0

EDID Management

Embedded EDID Settings

The 4-pin DIP switch controls the embedded EDID settings.

ID	Switch Status	Video	Audio
0	0000	Pass through	Pass through
1	0001	1920x1080p@60Hz 4:4:4 RGB 8bit	Stereo
2	0010	1920x1080p@60Hz 4:4:4 RGB 8bit	High Definition
3	0011	1920x1080p@60Hz 4:4:4 RGB 12bit	Stereo
4	0100	1920x1080p@60Hz 4:4:4 RGB 12bit	High Definition
5	0101	3840x2160p@60Hz 4:2:0 RGB 8bit	Stereo
6	0110	3840x2160p@60Hz 4:2:0 RGB 8bit	High Definition
7	0111	3840x2160p@60Hz 4:4:4 RGB 10bit HDR	Stereo
8	1000	3840x2160p@60Hz 4:4:4 RGB 10bit HDR	High Definition
9	1001	1280x800@60Hz	Stereo
10	1010	1920x1200@60Hz	Stereo



When in the lower position, the switch represents "ON", while putting the switch in the up position, it represents "OFF".

FAQ & Solutions

Q: There is no video output or audio and video display is not normal.

A: 1) Check the power adapter connection and make sure the Switch's Power LED is on.

2) Check whether the HDMI cables are connected properly.

3) Check the TV is set to the correct HDMI input.

Q: The display is unstable or pixilated.

A: 1) Check whether the HDMI cables are connected properly.

2) Connect the HDMI source directly to the TV for proper connection.

3) Try different HDMI cables.

Specifications

Video Input	
Input	(4) HDMI
Input Connector	(4) Female type-A HDMI
HDMI Input Resolution	Up to 4Kx2K@60Hz 4:4:4
HDMI Standard	2.0
HDCP Version	2.3
Video Output	
Output	(1) HDMI
Output Connector	(1) Female type-A HDMI
HDMI Output Resolution	Up to 4Kx2K@60Hz 4:4:4
HDMI Standard	2.0
HDCP Version	2.3
Audio	
Output	(1) AUDIO
Output Connector	(1) 3.5mm mini stereo audio jack
Audio Format	PCM
Audio Output Impedance	70 Ohms
Frequency Response	20Hz to 20kHz, ±3dB
Control	
Control	(1) IR IN; (1) RS232
Control Connector	(2) 3.5mm mini jack
General	
Bandwidth	18Gbps
Operation Temperature	-10°C ~ +55°C
Storage Temperature	-25°C ~ +70°C
Relative Humidity	10%-90%
Power Supply	Input: 100V~240V AC; Output: 5V DC 1A
Power Consumption	5W(Max)
Dimension (W*H*D)	194mm x 15mm x 81mm
Net Weight	324g

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