



Blackbird All to HDMI

with HDBaseT Extender, 100m

PH 15746

1.Introduction

This machine is a high-performance presentation scaler and switcher. It accepts one of eight inputs: one DVI, two VGA, one composite video and four HDMI signals. The HDMI, HDMI2 to bypass the input function, supports input resolutions up to 4Kx2K@30Hz, and HDMI3, HDMI4, DVI, VGA1, VGA2, CV scales the video, supports output resolutions up to 1920x1080P@60Hz. It scales the video, embeds the audio, and simultaneously outputs the signal to HDMI and HDBaseT output, HDBaseT output transmission distances up to 328ft/100m (100m Version) through CAT5e/6/7 cable, together with S/PDIF and stereo audio outputs. Flexible control mode diversity, through the front panel button, remote control, RS-232 and TCP/IP control.

2.Features

- HDMI, HDCP and DVI compliant
- The HDMI1,HDMI2 to bypass the input function, supports input resolutions up to 4Kx2K@30Hz
- The HDMI3,HDMI4,DVI,VGA1,VGA2,CV scales the video, supports input resolutions:
 - HDMI1: 480i to 1080p
 - VGA: 1920x 1080P@60Hz, 1360 x 768P@60Hz, 1280 x 1024P@60Hz,
 - 1024 x 768P@60Hz, 1280 x 720P@60Hz, 1280 x 768P@60Hz,
 - 800 x 600@60Hz, 640 x 480P@60Hz
 - CV: Supports PAL, NTSC358, NTSC4.43, SECAM, PAL/M, PAL/N standard TV formats
- Supports transmission distances up to 328ft/100m (100m Version) through CAT5e/6/7 cable
- Supports POE function
- VGA video supports VPBP and RGBHV
- Picture Adjustment Settings
- Supports embeds the audio
- Supports S/PDIF and stereo audio outputs
- Supports HDBaseT LAN Serving function
- The USB and RS-232 for the firmware update
- Supports RS-232, remote control, on-panel control and TCP/IP Control
- Supports smart EDID management

3.Package Contents

- ALL to HDMI with HDBaseT 100m Cat6 Extender 1pcs
- HDBaseT Receiver 1pcs
- 24V/1A DC power adaptor 1pcs
- Operation Manual 1pcs
- Wideband IR Tx cable 9pcs
- Wideband IR Rx cable 2pcs
- Scaler Switcher IR Remote 1pcs
- Mounting ears 2pcs
- RS232 cable 1pcs

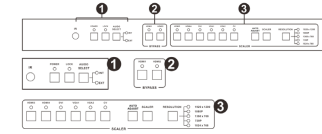
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4.Specifications

Input Ports	4xHDMI,1xDVI,2xVGA,1xRCA , 1xRS-232,1xRJ-45(Control),1x IR IN, 7x3P captive screw connector(3.81mm), 1xUSB
Output Ports	1xHDMI,2xRJ-45(LAN), 2xRCA, 1xRJ-45(HDBaseT),1x IR OUT
Input Resolutions Support	Up to 4Kx2K@30Hz
Output Resolutions Support	Up to 4Kx2K@30Hz(HDMI BYPASS) Up to 1920x1080P@60Hz(SCALER) IR, RS-232, TCP/IP, Buttons
Control	Human-body Model ±8kV (Air-gap discharge) ±4kV (Contact discharge)
ESD Protection	24 V/1 A DC (US/EU standards, CE/FCC/UL certified)
Power Supply	440 mm (W)×200 mm (D)×45 mm (H) 2300g
Dimensions	Weight
Weight	Chassis Material
Chassis Material	Silkscreen Color
Silkscreen Color	Operating Temperature
Operating Temperature	Storage Temperature
Storage Temperature	Relative Humidity
Relative Humidity	Power Consumption
Power Consumption	

5. PANEL FUNCTIONS

5.1 Front Panel



Part 1
IR: IR Receiver window (accepts the remote control signal of this device only).

POWER: Press this button to power the device standby on/off. Press this button more than 2 seconds, the device has reached the standby mode. The LED will illuminate green when the power is on, red when it is in 'Standby' mode.

LOCK: Press this button to lock all the buttons on the panel, press again to unlock.

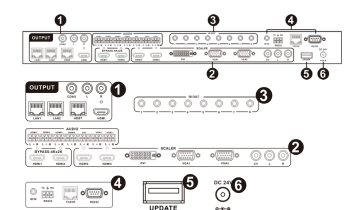
AUDIO SELECT: Press this button to select audio from digital (NT) or analog (EXT). When the signal is HDMI input.

2

Part 2
HDMI INPUT BYPASS: Press these buttons to switch directly to the required source. An LED will illuminate to indicate the selected input source.

Part 3
SCALER SELECT: 1. Source select: Press these buttons to switch directly to the required source. An LED will illuminate to indicate the selected input source.
2. Picture adjustment: Press scaler or auto adjust button to adjust the output picture.
Note: a. When the signal source for VGA(RGBHV) input, auto adjust button is valid. b. Scaler adjust the step: six steps
3. Resolution select: Press the button to select different resolution output. An LED will illuminate to indicate the selected resolution.

5.2 Rear Panel



Part1
OUTPUT: The HDMI OUTPUT connect to HDMI equipped TVs or monitors and the HDBT OUTPUT connect to the HDBT Receiver. The coaxial and stereo output is connected an audio amplifier. The LAN is connected to PC or Router.

Part2
INPUT: 1) HDMI 1/2/3/4: Connect to HDMI sources such as DVD player/Blu-ray player for both video and audio signal conversion.
2) DVI: Connect to DVI sources such as PC.
3) VGA 1/2: Connect to a PC/Laptop source for video signal input with a D-Sub 15pin cable or connect to a DVD player source for video signal input with a D-Sub 15pin to 3 RCA adaptor cable.
4) CV+L/R: Connect to a composite video source such as a video /DVD player for both video and audio signal conversion.
5) 3P captive screw connectors(3.81mm): Connect to source's L/R output with 3P cable for audio signal conversion.

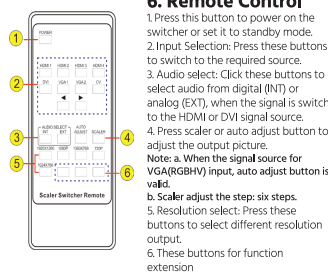
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Part 3
IR OUT: Connect with the supplied wideband IR TX.

Part 4
CONTROL: 1)TCP/IP: This port is the link for TCP/IP controls, connect to an active Ethernet link with an RJ45 terminated cable.
2)RS232(DB9): Connect to a PC or control system with D-Sub 9-pin cable for the transmission of RS-232 commands.
Note: The RS-232 interface can control the machine.
3)IR IN: Connect with the supplied wideband IR RX
4)RS232(3.81mm 3P captive screw connector): Connect to a PC or control system with a D-Sub 9pin to 3P cable.
Note: The RS-232 interface only with the remote receiver (HDBaseT Receiver) RS-232 communication.

Part5
UPDATE PORT: Connect U flash drive, system software update.

Part6
DC POWER INPUT: Plug the 24V/1A DC power supply into the DC24V power in.



6. Remote Control

- Press this button to power on the switcher or set it to standby mode.
- Input Select: Press these buttons to switch to the required source.
- Audio select: Click these buttons to select audio from digital (INT) or analog (EXT), when the signal is switch to the HDMI or DVI signal source.
- Press scaler or auto adjust button to adjust the output picture.
Note: a. When the signal source for VGA(RGBHV) input, auto adjust button is valid.
b. Scaler adjust the step: six steps.
- Resolution select: Press these buttons to select different resolution output.
- These buttons for function extension

7. Serial Control

The RS-232 port lets you send and receive simple RS-232 signals between a controller and a serial device via the switcher which is connected to the RS-232 port (3.81mm 3P captive screw connector) and outputs via CAT5e/6/7 cable.

4

The example, illustrated in **Figure 2**, shows a PC or control system that is connected to the switcher via the RS-232 port (3.81mm 3P captive screw connector). The HDBT output connector on the switcher is connected via CAT5e/6/7 cable to an HDBT receiver. The HDBT receiver connects to a projector via HDMI and RS-232. The PC or control system sends RS-232 signals control projector, by the switcher and HDBT receiver.

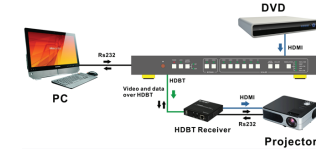


Figure 2

8. IR Control Operations

The IR control can realize two-way control function, and the 8 IR OUT ports are corresponding to the 8video inputs one to one, and switch following the corresponding video source.
The example, illustrated in **Figure 3** and **Figure 4**:
1) To control far-end display: The IR Receiver (Rx1) is connected to the switcher IR IN port. The HDBT output connector on the switcher is connected via CAT5e/6/7 cable to an HDBT receiver. The HDBT receiver connect to a TV via HDMI, and the IR Transmitter (Tx2) is connected to the HDBT receiver IR OUT port.
To control this machine (switcher) or far-end display device from local by using corresponding remote controller.

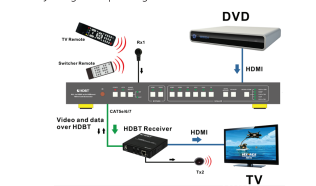


Figure 3

5

2) Control local device (DVD, Switcher, etc) from remote: The IR Receiver (Rx2) is connected to the HDBT receiver IR IN port. The HDBT output connector on the switcher is connected via CAT5e/6/7 cable to an HDBT receiver. The IR Transmitter (Tx1) is connected to the switcher IR OUT port.
IR remote can be used to control this machine (switcher) or local source device from remote.

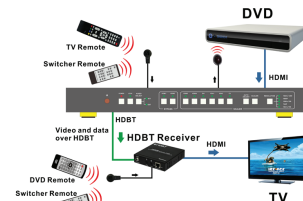
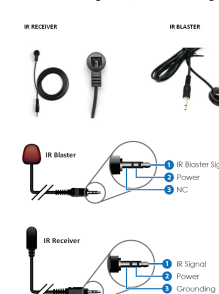


Figure 4

IR Cable Pin Assignment, illustrated in **Figure 5**:



6

9. HDBT Receiv



- OUTPUT LED:** The output status indicating lamp. This red LED illuminate when the TV plug in with HDMI cable.
- HDMI OUT:** HDMI output port. This slot is where you connect the HDTV or monitor with HDMI cable
- ETHERNET:** This slot provide Internet signal from transmitter or to transmitter.
- RS232:** Phoenix jack provide Serial port control signal from transmitter or to transmitter.
- DC IN:** Plug the 24V DC power supply into the unit.
- IR RX:** Channel 2 IR Receiver. Connect with Wideband IR Rx.
- IR TX:** Channel 1 IR Transmitter. Connect with Wideband IR Tx.
- LINK LED:** The connection status indicating lamp.
※ Illuminate: The Transmitter and Receiver is good connections.
※ Flashing: The Transmitter and Receiver is poor connections.
※ Dark: The Transmitter and Receiver is no connections.
- HDBaseT IN:** Standard HDBaseT signal input port. Connect HDBaseT transmitter with a UTP cable follows the standard of IEEE-568B.
- DATA LED:** The data status indicating lamp.
※ Illuminate: The HDMI signal with HDCP.
※ Flashing: The HDMI signal without HDCP.
※ Dark: No HDMI signal.

7

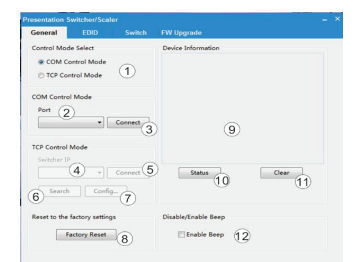
9. PC controller user guide

Installation
Switcher controller is a green software. Just copy SwitcherController.exe to PC which is used to control the Switcher by RS232 COM port or TCP/IP to complete installation.

- Preparation**
- Connect PC and Switcher by RS232 cable (headers of both sides of cable should be FEMALE) or TCP/IP(local area network)
 - Power-up Switcher
 - Double click SwitcherController.exe icon to run it

How to control Switcher

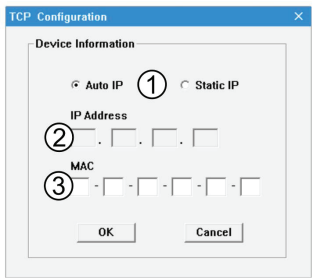
◆ "General" page



- Select RS232 COM or TCP mode
 - Select RS232 COM port
 - Click to connect or disconnect PC and Switcher
 - Select Switcher IP
 - Connect to Switcher IP
 - Search Switcher IP
 - Configure Switcher IP and MAC
 - Click to reset to the factory settings
 - Device information display area
 - Click to refresh device status
 - Click to clear device information
 - Enable or disable Beep
- Note:** 9, 10, 11 function not opened

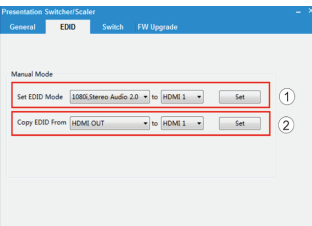
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After action of 7, edit form will pop-up as below:



1. Select auto or static IP
2. Rewrite the Switcher IP
3. Rewrite the Switcher MAC

◆ "EDID control" page



9

1. Select the needed EDID to input port and click set button the EDID will write to the selected HDMI input ports.
2. Copy the selected HDMI output or HDBT output EDID and click set button to write to the selected HDMI input ports.

Note: 1.The HDMI1/HDMI2 support EDID management mode:
The EDID mode table:

EDID Mode	EDID Description
1	1080i, 2CH AUDIO
2	1080i, DOLBY/DTS 5.1
3	1080i, HD AUDIO
4	1080p, 2CH AUDIO
5	1080p, DOLBY/DTS 5.1
6	1080p, HD AUDIO
7	3D,1080p, 2CH AUDIO
8	3D, 1080p,DOLBY/DTS 5.1
9	3D,1080p, HD AUDIO
10	4K*2k, 2CH AUDIO
11	4K*2k, DOLBY/DTS 5.1
12	4K*2k, HD AUDIO
13	DVI 1024x768
14	DVI 1920X1080
15	DVI 1920X1200
16	Copy from HDMI OUTPUT
17	Copy from HDBT OUTPUT

2. The HDMI3/HDMI4/DVI support EDID management mode:
The EDID mode table:

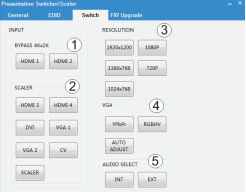
EDID Mode	EDID Description
1	1080i, 2CH AUDIO
2	1080p, 2CH AUDIO
3	DVI 1920X1080

10

EDID. What is it and what is it used for?

Under normal circumstances, a source device (digital and analog) will require information about a connected device/display to assess what resolutions and features are available. The source can then cater its output to send only resolutions and features that are compatible with the attached device/display. This information is called EDID (Extended Display Information Data) and a source device can only accept and read one EDID from a connected device/display. Likewise, the source can only output one resolution for use by a connected device/display.

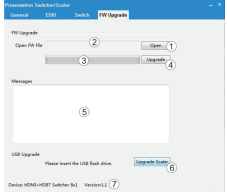
◆ "Switch" page



1. Input Selection (BYPASS 4Kx2K): Click these buttons to switch to the required source
2. Input Selection (SCALER): Click these buttons to switch to the required source, and SCALER button to adjust the output picture.
3. Resolution select: Click these buttons to select different resolution output.
4. When the signal is switched to the VGA1 or VGA2 of port, these buttons can be used.
 - a. AUTO ADJUST: Automatically adjust the output picture.
 - b. RGBHV: Check this button to set VGA1 or VGA2 port for RGBHV signal source input.
 - c. YPbPr: Check this button to set VGA1 or VGA2 port for YPbPr signal source input.
5. Audio select: Click these buttons to select audio from digital (INT) or analog (EXT), when the signal is switched to the HDMI or DVI signal source.

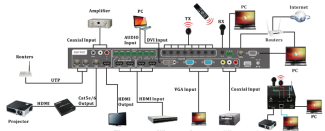
11

◆ "FW upgrade" page



1. Click to open FW file(file extension is ".fw")
2. Display the FW file path
3. Displaying the progress of the software upgrade
4. Click to upgrade the Switcher software
5. Display the message of the software upgrade
6. Click to upgrade the Switcher scaler software
7. Display the switcher software version information

10. Operate and Connect



1. Connect HDMI source (for example, Blu-ray player or DVD player) to the HDMI1/2/3/4 video input connector. Alternatively, you can connect the DVI connector on the DVD player to the HDMI connector on this machine (switcher) via a DVI-HDMI adapter. You can connect the audio signal via the AUDIO IN HDMI 1/2/3/4 3.81mm 3P captive screw connector, or use the embedded audio.

Note: When selecting HDMI1/2 input, the digital and analog audio output is still the inside HDMI signal source of the sound.

12

2. Connect DVI source (for example, a DVD player) to the DVI video input connector. Alternatively, you can connect the HDMI connector on the DVD player to the DVI connector on this machine (switcher) via a HDMI-DVI adapter. You can connect the audio signal via the AUDIO IN DVI 3.81mm 3P captive screw connector, or use the embedded audio.

3. Connect a computer (YPbPr) or RGBHV source to the VGA1/2 IN video input D-Sub 15pin HD connector. You can connect the audio signal via the AUDIO IN VGA1/2 3.81mm 3P captive screw connector.

	1. Red, Pr	8. Blue GND
	2. Green, Y	10. Sync GND
	3. Blue, Pb	12. DDCSDA
	5. GND	13. HSYNC
	6. Red GND	14. VSYNC
	7. Green GND	15. DDCSCL

- Connect with Component Video (YPbPr) Source:
Operation Examples: Via PC control software
Click the VGA1 or VGA2 button switch to YPbPr or RGBHV source, and click the YPbPr button set to YPbPr source.
6. Connect a composite video source (for example, a composite video player) to the CV IN RCA connector.
7. Connect the HDMI output connector to an HDMI equipped (for examples, TVs or monitors).
8. Connect the HDBT output connector to a HDBT receiver, and connect the HDBT receiver HDMI output connector to an HDMI equipped (for examples, projector or monitors).
Note: 1.When the transmission distance of 100 meters, it is recommended to use STP Cat6 or Cat7 cable.
2.When 4K2K signal is output, it is recommended to use STP Cat6 or Cat7 cable, the transmission distance up to 70 meters.
9. OPTIONAL: Connect an Ethernet cable from the TCP/IP port on the switcher to a local Area Network.
10. OPTIONAL: Connect an RS-232 cable from the RS232 port on the switcher.
11. OPTIONAL: Connect the IR receiving extender to the IR IN port, and the IR emission extender to the IR OUT port.
12. OPTIONAL: Connect LAN1 or LAN2 RJ-45 connector to a router.
13. Connect the DC 24V Locking power supply to the power receptacle on the switcher.
14. Connect the power supply to an available electrical outlet.

13

MAINTENANCE

Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner or benzine to clean this unit.

PRODUCT SERVICE

1. Damage requiring service:

- The unit should be serviced by qualified service personnel if:
- (a) The DC power supply cord or A/C adaptor has been damaged;
 - (b) Objects or liquids have gotten into the unit;
 - (c) The unit has been exposed to rain;
 - (d) The unit does not operate normally or exhibits a marked change in performance;
- The unit has been dropped or the cabinet damaged.
2. **Servicing Personnel:** Do not attempt to service the unit beyond that described in these operating instructions. Refer all other servicing to authorized servicing personnel.
3. **Replacement parts:** When parts need replacing ensure the service uses parts specified by the manufacturer or parts that have the same characteristics as the original parts. Unauthorized substitutes may result in fire, electric shock, or other Hazards.
4. **Safety check:** After repairs or service, ask the service to perform safety checks to confirm that the unit is in proper working condition.

TECHNICAL SUPPORT

Monoprice is pleased to provide free, live, online technical support to assist you with any questions you may have about installation, setup, troubleshooting, or product recommendations. If you ever need assistance with your new product, please come online to talk to one of our friendly and knowledgeable Tech Support Associates. Technical support is available through the online chat button on our website www.monoprice.com during regular business hours, 7 days a week. You can also get assistance through email by sending a message to tech@monoprice.com

14

REGULATORY COMPLIANCE

Notice for FCC



This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Modifying the equipment without Monoprice's authorization may result in the equipment no longer complying with FCC requirements for Class B digital devices. In that event, your right to use the equipment may be limited by FCC regulations, and you may be required to correct any interference to radio or television communications at your own expense.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

15

Notice for Industry Canada

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

16

17

18