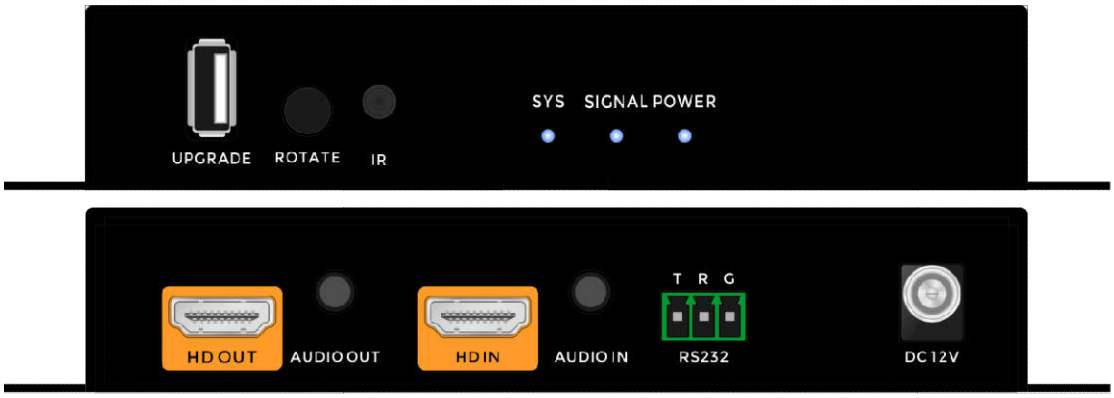
NEXIS

User Manual

BC-78A

4K60 Adjuster with rotation, scaling, test pattern etc functions



Version 2504

Important Safety Information

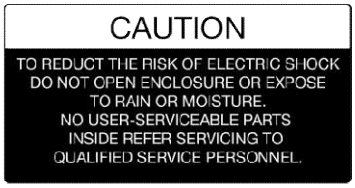
1. Read, follow, and keep these instructions.
2. Heed all warnings.
3. Do not use this product near water. Keep away from wet places, such as: spas, pools, sinks, laundries, wet basements, etc.
4. When cleaning, unplug the switcher and wipe with a dry cloth. Do not use damp cloths, cleaning fluids, or aerosols which may result in electric shock, fire, or switcher damage.
5. Operate this product using only the included power supply and/or power cable. Use of an unapproved power implement may impair performance, damage the product, or cause fires.
6. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
7. Do not install or place this product near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
8. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the product.
9. Only use attachments/accessories specified by BC to avoid fire, shock, or other hazards.
10. To reduce the risk of electric shock and/or damage to this product, never handle or touch this switcher or power cord if your hands are wet or damp. Do not expose this product to rain or moisture.
11. Unplug this product during lightning storms or when unused for long periods of time.
12. Never open, remove switcher panels, or make any adjustments not described in this manual. Attempting to do so could result in electric shock, damage to the switcher, or other hazards.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



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1. Introduction

It is an advanced Signal generator to have different test patterns without the HDMI input source, also can use the IR remote to setup the output resolutions from 720p,1080p, 4K30 and 4K60. When have an HDMI source connected, it can be used as the image rotator between 0/90/180/270 degrees, up/down-scaling, support the IR remote, front-key button, RS232 to control the devices functions, include cascading, scaling, rotation etc.

2. Feature

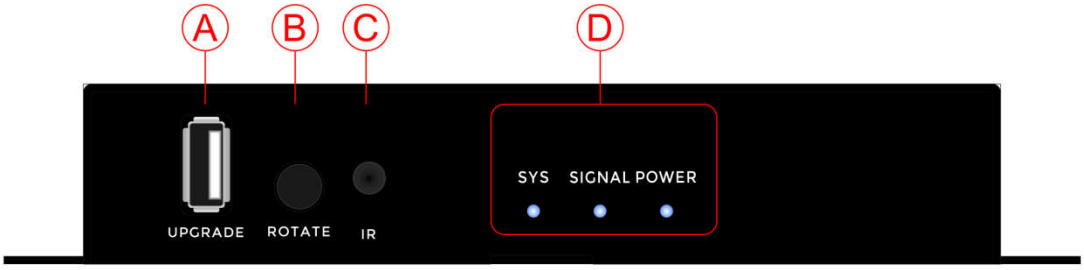
- Support HDMI2.0, and the resolution up to 3840*2160@60Hz
- Support the front panel push-button, IR remote and RS232 control
- Support OSD, scaling and EDID management function
- Support audio embedding and de-embedding
- Support image 90, 180, 270 and 360 degree rotation
- Support USB-A upgrading

3. Specification

Video	
Input port	1* HDMI2.0
Input resolution	• **HDMI2.0:** 640x480, 800x600, 1024x768, 1280x768, 1280x800, 1280x1024, 1360x768, 1366x768, 1440x900, 1400x1050, 1600x1200, 1680x1050, 1920x1200, 720x480 (480p), 720x576 (576p), 1280x720 (720p30), 1280x720 (720p50), 1280x720 (720p60), 1920x1080 (1080p24), 1920x1080 (1080p25), 1920x1080 (1080p30), 1920x1080 (1080p50), 1920x1080 (1080p60), 3840x2160(2160p30),3840x2160 (2160p50), 3840x2160 (2160p60)
Output port	1* HDMI2.0
Output resolution	**HDMI2.0:** 1920x1080 (1080p50), 1920x1080 (1080p60), 3840x2160 (2160p30) , 3840x2160 (2160p50) , 3840x2160 (2160p60)
Audio	
Input port	1x HDMI, 1*3.5mm Analog
Input audio signal	RAW PCM, 16 bit, 32/44.1/48KHz sps; PCM 2.0
Output port	1* HDMI2.0, 1* Analog Audio(3.5mm audio)
Output audio signal	RAW PCM, 16 bit, 32/44.1/48KHz sps; PCM 2.0
Control	
Front control	Rotate
IR	IR remote controller
RS232	3-pin Phoenix
Others	
Operating temperature	0 to +45 C (32 to + 113 F)
Storage temperature	-20 to +70 C (-4 to + 158 F)
Humidity	10% to 90%
Static Protection	Human body discharge mode: ±8kV (air gap discharge)/ ±4kV (contact discharge)

Video	
Power adapter	DC 12 V 1.5 A
Power consumption	10W(Max)
Product size(mm)	138*85*28
Net Weight	0.5kg

4. Panels



UPGRADE: for the USB-A firmware upgrading(upgrading steps will be provided by video when needed)

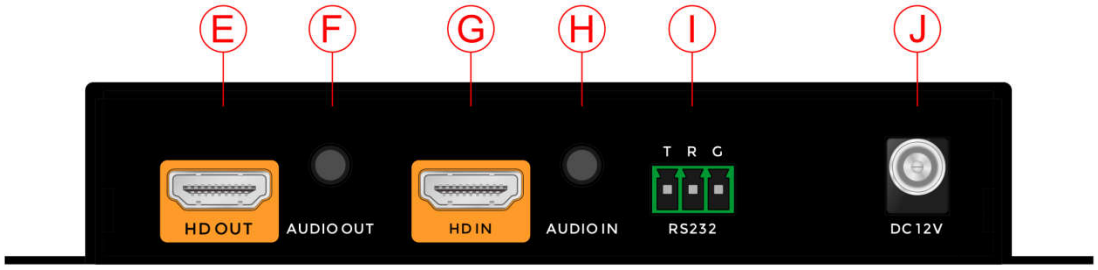
ROTATE: For the image rotate or long-press 3s to bring up/cancel OSD menu

IR: for the IR remote control

SYS: for the power and system indicator

SIGNAL: For the signal connection

POWER: for the power status



HD OUT: HDMI output up to 4K60 with scaling

AUDIO OUT: for the 3.5mm audio de-embedding

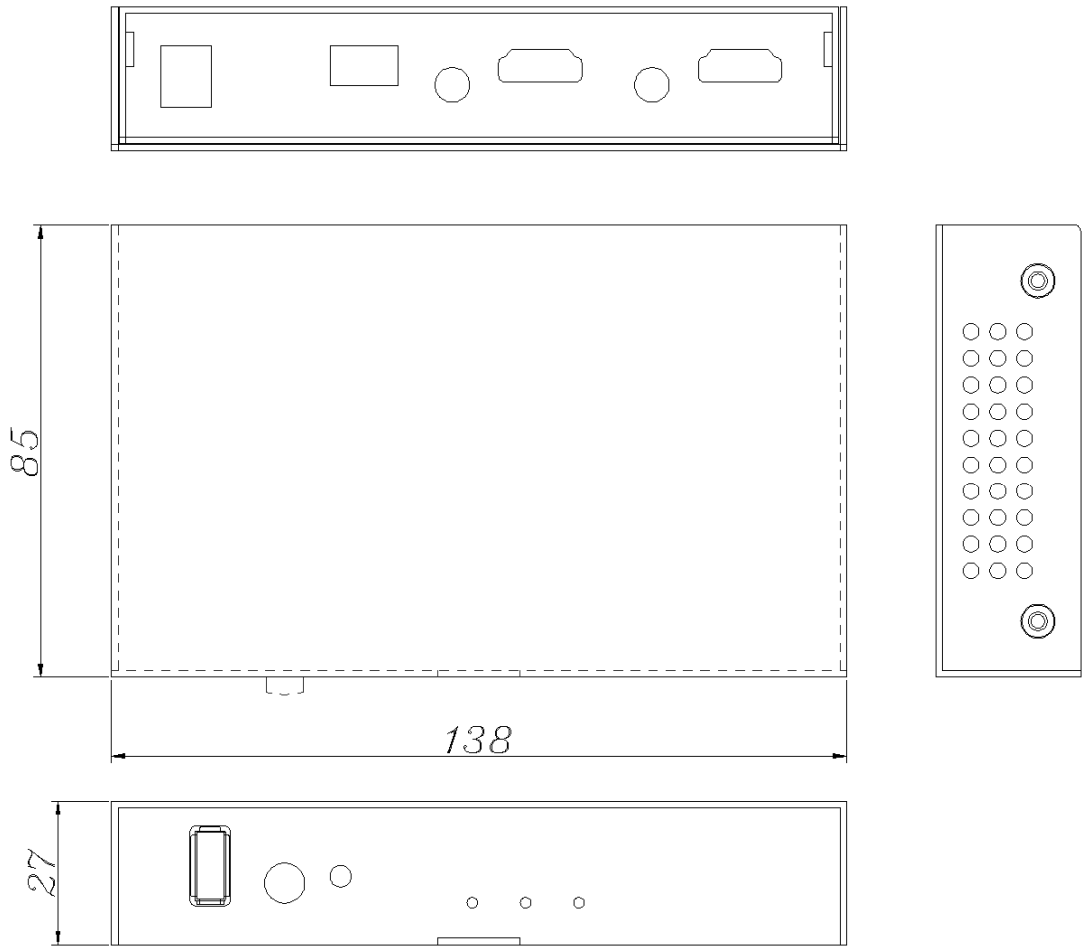
HD IN: HDMI input up to 4K60

AUDIO IN: for the 3.5mm audio embedding

RS232: support the RS232 commands control

DC12V: DC12V power adapter

5. Dimension(mm)



6. Operation

Can support the front panel “ROTATE”button to have the output image rotation from 90/180/270 degrees, just a short press the button, then it can have the image rotated in the above degrees cycling:


Rotate 90


Rotate 180


Rotate 270


Normal Display

If long-press(3s) this “ROTATE” button for 3s, it will bring up the OSD menu on the HDMI output connected display to show the input/output resolution and color space those info:



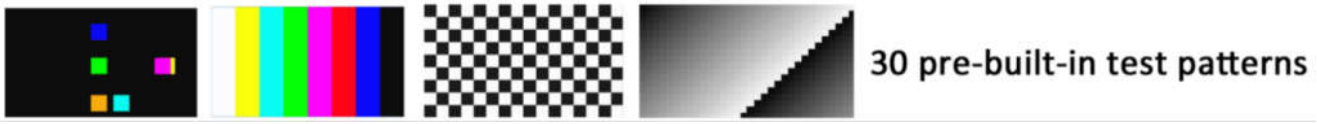
7. DIP switch on the bottom

8-PIN DIP Switch setting table

DIP	Position 0(ON)	Position 1(Numbers)
D1	RS232 EDID/resolution control enable	DIP switchEDID/resolution control enable
D2	Reserved button, Default at “1”	
D3	D3/D4 both at 00: 4K60	D3/D4 each at 01: 4K30
D4	D3/D4 both at 11: 1080P60	D3/D4 each at 10: 1920*1200
D5	D5/D6 both at 00: 4k60 EDID	D5/D6 each at 01: 4K30 EDID
D6	D5/D6 both at 11: 1080P60 EDID	D5/D6 each at 10: 1920*1200 EDID
D7	Use 3.5mm audio input	Use HDMI audio
D8	Test pattern OFF(V1.9.1)	Test pattern ON(V1.9.1)
	This 8-PIN DIP switch is at the bottom(ON is position 0)	

*Note: Rotation function will need to have the DIP2 set to 0 position, then use the front panel ROTATE button for the 90/180/270 degrees rotations. If long-press this ROTATE button for 3 seconds, it will enter into the OSD model, also this OSD not working when it’s under the test pattern mode.

DIP8 is for the testing patterns, when it’s enable, no need to have the HDMI input connected, it will show the built-in 30 patterns as the input source(please note when did the DIP switch setting, it will need to cycle power this adjuster to have the function takes effects)



8. IR Remote control

RESET: Press “RESET” buttons 6 times for factory rest

ROT1: For the output image rotation

RECALL: Press “RECALL” button 6 times to bring up OSD menu

RES: for the output resolution settings 720P, 1080P, 4K30, 4k60

SAVE: Press “SAVE” button 6 times to off the OSM menu



9. **RS232 Control Commands**

RS232 cable with straight-through connection

Communication protocol:

Baud rate: 115200

Data bit: 8

Stop bit: 1

Check bit: None

All control instructions are sent in hexadecimal mode or the ASCII format

HEX format commands.

Type	Command	Function
Reset	EB 90 00 12 00 ff 21 00 00 00 00 00 00 00 00 0000 00	EDID4K60, output at 1080P60
Output Resolution	EB 90 00 12 00 ff 23 00 00 00 00 00 00 00 00 00 00 00	1920x1080@60
	EB 90 00 12 00 ff 23 06 00 00 00 00 00 00 00 00 00 00	2560x1600@60
	EB 90 00 12 00 ff 23 08 00 00 00 00 00 00 00 00 00 00	3840x2160@60
	EB 90 00 12 00 ff 23 0A 00 00 00 00 00 00 00 00 00 00	3840x2160@30
	EB 90 00 12 00 ff 23 0D 00 00 00 00 00 00 00 00 00 00	4096x2160@60
	EB 90 00 12 00 ff 23 0E 00 00 00 00 00 00 00 00 00 00	4096x2160@30
	EB 90 00 12 00 ff 23 11 00 00 00 00 00 00 00 00 00 00	2560x1080@60
	EB 90 00 12 00 ff 23 12 00 00 00 00 00 00 00 00 00 00	2560x1440@60
INPUT EDID	EB 90 00 12 ff 02 24 02 0F 0008 701E 00 00 00 00 00	3840*2160P30
	EB 90 00 12 ff 02 24 02 0F 0008 703C 00 00 00 00 00	3840*2160P60
	EB 90 00 12 ff 02 24 02 0A 0006 403C 00 00 00 00 00	2560*1600P60
	EB 90 00 12 ff 02 24 02 0A 0005 A03C 00 00 00 00 00	2560*1440P60
	EB 90 00 12 ff 02 24 02 07 8004 B03C 00 00 00 00 00	1920*1200P60
	EB 90 00 12 ff 02 24 02 07 8004 383C 00 00 00 00 00	1920*1080P60
	EB 90 00 12 ff 02 24 02 07 8004 381E 00 00 00 00 00	1920*1080P30
Output Rotation	EB 90 00 12 00 ff 34 00 00 00 00 00 00 00 00 00 00 00	0°
	EB 90 00 12 00 ff 34 00 01 00 00 00 00 00 00 00 00 00	90°
	EB 90 00 12 00 ff 34 00 05 00 00 00 00 00 00 00 00 00	180°
	EB 90 00 12 00 ff 34 00 02 00 00 00 00 00 00 00 00 00	270°
Output Freeze	EB 90 00 12 00 ff 2A 01 01 01 01 00 00 00 00 00 00 00	Freeze
	EB 90 00 12 00 ff 2A 00 00 00 00 00 00 00 00 00 00 00	Unfreeze

Output Resolution Customizing:

EB 90 00 12 00 ff 23 FF 00 0000 0000 00 00 00 00 00

Red is for the Width, Blue is for the Height, Yellow is for the frame rate

Eg, resolution 1920X1080@60

EB 90 00 12 00 ff 23 FF 07 8004 38 3C 00 00 00 00 00 //1920X1080@60

Or resolution 2000 X 1000@60

EB 90 00 12 00 ff 23 FF 07 D0 03 E8 3C 00 00 00 00 00 //2000x1000@60

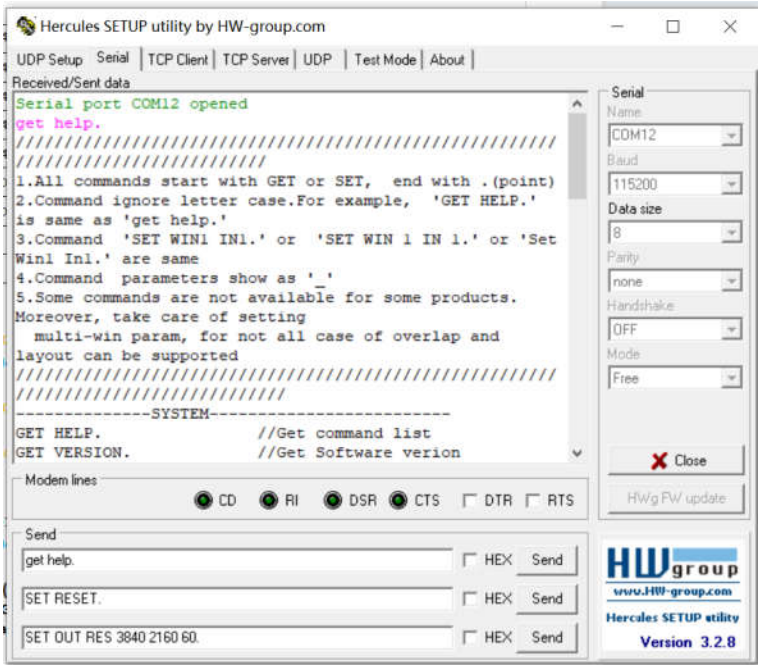
Input EDID settings

1080x1516P60: EB 90 00 12 ff 01 24 02 04 3805 EC3C00 00 00 00 00

Red is for the Width, Blue is for the Height, Yellow is for the frame rate

Commands in ASCII format(Some of the commands are applied for other products)

1. **All commands start with GET or SET, end with .(point)**
2. **Command ignore letter case.For example, 'GET HELP.' is same as 'get help.'**



10. After-Sales

10.1 Warranty Information

The Company warrants that the process and materials of the product are not defective under normal use and service for 2 (2) years following the date of purchase from the Company or its authorized distributors.

If the product does not work within the guaranteed warranty period, the company will choose and pay for the repair of the defective product or component, the delivery of the equivalent product or component to the user for replacement of the defective item, or refund the payment which users have made.

Thereplaced product will become the property of the Company.

The replacement product could be new or repaired.

Whichever is longer, any replacement or repaired of the product or component is for a period of ninety (90) days or the remaining period of the initial warranty. The Company shall not be responsible for any software, firmware,information, or memory data contained in, stored in, or integrated with the product repaired by the customer's return, whether or not during the warranty period.

10.2 Warranty limitations and exceptions

Except above limited warranty, if the product is damaged by over usage, incorrectly use, ignore, accident, unusual physical pressure or voltage, unauthorized modification, alteration or services rendered by someone other than the Company or its authorized agent, the company will not have to bear additional obligations. Exceptusing the product properly in the proper application or normal usage