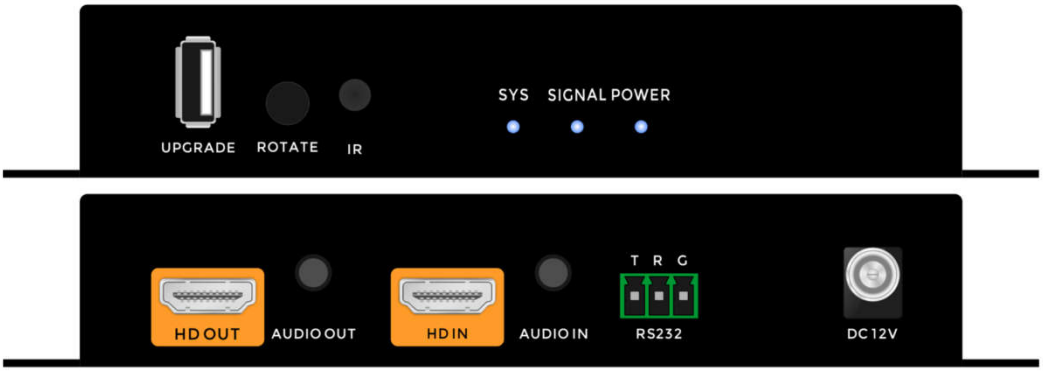


Introduction

It is a premium multi-functions adjuster, it supports 1*HDMI2.0 input, 1* HDMI2.0 output, support 3.5mm audio embedding and de-embedding, support the rotation by 90/180/270 degrees, can use the IR remote, RS232 command or the DIP switch for the controls of resolutions/EDID/rotation/HDCP. It can be used a up/down-scaler, audio embedder or de-embedder or HDCP selector. The input and output resolution up to 4K60 4:4:4 and output resolution can be customized. A small unit can be widely used for solving the EDID/HDCP/Resolutions issues in the projects.

Features

- 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

Specification

Model	BC-78A
Description	4K60 Multi-functions Adjuster
Input	1*HDMI/ Analog Audio, USB-C(currently no actual function)
Output	1*HDMI 1* Analog Audio
Protocol Standard	Supports HDMI1.4, HDCP1.4, HDMI2.0.HDCP2.2
Color Space	Support RGB444, YUV444, YUV422 , x.v.C standard color extension
Resolution	640×480---3840×2160@60Hz(VESA), 480i---4K@60Hz(HDTV)
Control	RS232 & IR, Rotate key
Power	DC: 12V 1.5A

8-PIN DIP Switch setting table

DIP	Position 0	Position 1
D1	RS232 control enable	RS232 control disable
D2	Rotation function enable	Rotation function disable
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	Function reserved	



This 8-PIN DIP switch is at the bottom

*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.

RS232 control

Baud rate: 115200, 8, N, 1

Take EB 90 00 12 ff XX 24 02 04 38 05 EC 3C 00 00 00 00 00 for example:
XX standard for the in put channel：input 1 will be 01, input 2 will be 02, different input channels similar operation.
1080x1516P60 in Hexadecimal format will be 04 38 05 EC 3C
1080 converted to hexadecimal is 438
1516 converted to hexadecimal is 5EC
60 converted to hexadecimal is 3C

Input EDID commands

No.	Hexadecimal format	EDID
1	EB 90 00 12 ff XX 24 02 00 0000 0000 00 00 00 00 00	1920*1080P60
2	EB 90 00 12 ff 02 24 02 0F 0008 701E 00 00 00 00 00	3840*2160P30
3	EB 90 00 12 ff 02 24 02 0F 0008 703C 00 00 00 00 00	3840*2160P60

Output resolution commands

Commands	Functions
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 01 00 00 00 00 00 00 00 00 00 00	1920x1080@50
EB 90 00 12 00 ff 23 02 00 00 00 00 00 00 00 00 00 00	1920x1200@60
EB 90 00 12 00 ff 23 03 00 00 00 00 00 00 00 00 00 00	1360x768@60
EB 90 00 12 00 ff 23 04 00 00 00 00 00 00 00 00 00 00	1280x720x60
EB 90 00 12 00 ff 23 05 00 00 00 00 00 00 00 00 00 00	1024x768x60

EB 90 00 12 00 ff 23 06 00 00 00 00 00 00 00 00 00 00	2560X1600x60
EB 90 00 12 00 ff 23 07 00 00 00 00 00 00 00 00 00 00	2560X1600x50
EB 90 00 12 00 ff 23 0A 00 00 00 00 00 00 00 00 00 00	3840x2160x30
EB 90 00 12 00 ff 23 0B 00 00 00 00 00 00 00 00 00 00	3840x2160x25
EB 90 00 12 00 ff 23 0C 00 00 00 00 00 00 00 00 00 00	3840x2160x24
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 0F 00 00 00 00 00 00 00 00 00 00	720x480@60
EB 90 00 12 00 ff 23 10 00 00 00 00 00 00 00 00 00 00	720x576@50
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
EB 90 00 12 00 ff 23 FF 07 8004 383C 00 00 00 00 00 Red words represent width, blue words represent height, and green words represent frame rate EB 90 00 12 00 ff 23 FF 07 80 04 38 3C 00 00 00 00 00 //1920x1080@60 EB 90 00 12 00 ff 23 FF 07 D0 03 E8 3C 00 00 00 00 00 //2000x1000@60	

IR remote control

