gofanco®

1x2 4K HDMI CAT Extender/Splitter

G4-0131C

P/N: HD20Ext-2P

Thank you for purchasing from gofanco. Our products aim to meet all our connectivity needs wherever you go. For optimum performance and safety, please read the instructions carefully and keep this User's Guide for future reference. If you need more information about our products, please visit **www.gofanco.com**.

For technical support, email us at **support@gofanco.com**.
For drivers or manual download, please go to **www.gofanco.com/downloads**.

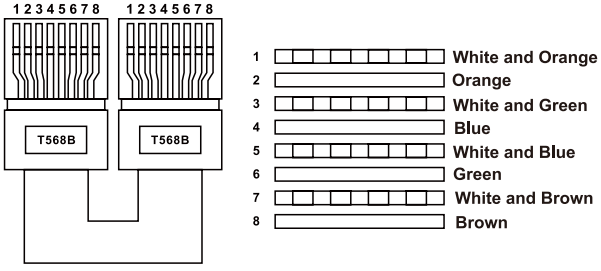
Important Safety Notices

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 put any items into the device or attempt to modify its operation.
- 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 and IR 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 power adapters only. Make sure the specification matches if using 3rd-party DC power adapters.

Important Safety Notices (Continued)

- This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lighting strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.
- The product requires the use of UTP connectors. Please connect in direct interconnection method and do not cross connect.



Direct Interconnection Method

Table of Contents

1. Introduction

The 18Gbps HDMI 1×2 Splitter can distribute 1 HDMI source signal to any 2 display devices, with video resolution up to 4K2K@50/60Hz 4:4:4. It is designed with 1 HDMI loop output and 2 CAT outputs. The HDMI signal transmission distance can be extended up to 115ft/35m at the resolution of 4K2K@60Hz, or 164ft/50m meters at 4K2K@30Hz, or 197ft/60m meters at 1080P@60Hz via a single CAT6/6a/7 cable. The product supports one-way IR control signal pass-through, audio extract function and advanced EDID management.

2. Features

- HDMI 2.0b, HDCP 2.2 and HDCP 1.x compliant
- 18Gbps video bandwidth
- Video resolution up to 4K2K@50/60Hz 4:4:4
- Supports HDR, HDR10+, HLG, Dolby Vision
- Up to 7.1CH HD audio pass-through
- Supports digital and analog audio extraction
- Extends HDMI signal transmission distance up to 115ft/35m at 4K@60Hz, 164ft/50m at 4K2K@30Hz, 197ft/60m at 1080p@60Hz via CAT6/6a/7 cables
- 1 HDMI input, 1 HDMI output (loopout) and 2 CAT outputs
- Supports 20-60Hz one-way IR source device control from the receiver side
- Advanced EDID management
- Supports one-way PoC (Power-over-Cable)

3. Package Contents

- 1x 18Gbps HDMI 1x2 CAT Extender/Splitter Transmitter
- 2x CAT receivers
- 1x IR blaster Cable (1.5 m)
- 2x IR receiver Cable (1.5m, 20K-60KHz)
- 1x DC locking power adapter (12V/1A)
- Mounting accessories
- 1x User manual

4. Product Layout

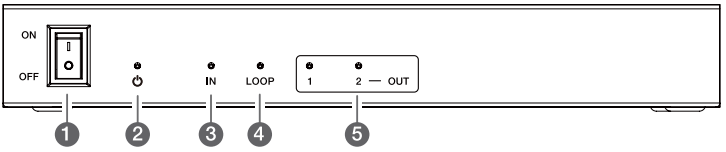


Figure 1: Transmitter Layout (Front)

NO.	Name	Function Description
1	POWER Switch	Press this switch to power on/off the device
2	POWER LED	The red power LED will be on when the device is powered on
3	IN LED	The green LED will be on when the HDMI IN port connects to an active source device
4	LOOP LED	The green LED will be on when the HDMI LOOP OUT port connects to an active display
5	OUT LEDs (1-2)	The green LEDs will be on when the transmitter's CAT OUTPUTs connect to the receivers' CAT IN

4. Product Layout (Continued)

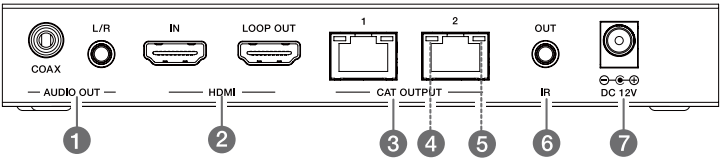


Figure 1: Transmitter Layout (Back)

NO.	Name	Function Description
1	AUDIO OUT (COAX, L/R)	Coaxial/analog audio output port, connected to an amplifier or speaker
2	HDMI port	IN: HDMI input port, connected to HDMI source device such as DVD or set-top box with an HDMI cable
		LOOP OUT: HDMI loop output port, connected to the HDMI display device such as TV or Monitor with an HDMI cable
3	CAT OUTPUT port (1~2)	Connect to the CAT IN port of the CAT receiver with a CAT cable
4	Link Signal Indicator (Green)	Illuminating: Transmitter and receiver are connected. Dark: Transmitter and receiver are not connected
5	Data Signal Indicator (Orange)	Illuminating: HDMI signal with HDCP. Flashing: HDMI signal without HDCP. Dark: No HDMI signal
6	IR OUT	Connect the IR Blaster cable to transmit IR signal from the CAT receiver
7	DC 12V	Plug the DC 12V power supply into the unit and connect the adapter to an AC outlet (Note: The transmitter can power the receiver via a CAT cable.)

4. Product Layout (Continued)

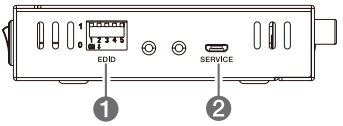


Figure 2: Transmitter Layout (Side)

NO.	Name	Function Description
1	EDID DIAL switch	Used to set EDID mode. Please refer to “8. EDID Mode” for details
2	SERVICE port	Used for firmware update or serial port command control. Please refer to “9. ASCII Commands” for details.

4. Product Layout (Continued)

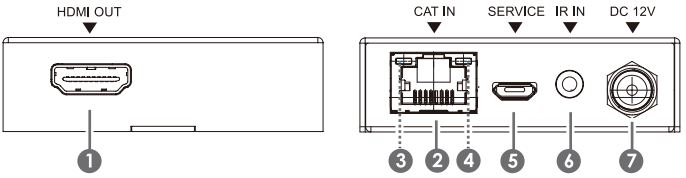


Figure 2: Receiver Layout

NO.	Name	Function Description
1	HDMI OUT	HDMI output port, connect to HDMI display device such as TV or Projector with an HDMI cable
2	CAT IN	Connect to the CAT OUTPUT port on the transmitter with a CAT cable
3	Power Indicator (Green)	When the receiver is powered on, the power indicator will be on
4	Data Signal Indicator (Orange)	Illuminating: HDMI signal with HDCP Flashing: HDMI signal without HDCP Dark: No HDMI signal
5	SERVICE port	Used for firmware update
6	IR IN	Connect the IR Receiver cable. The IR signal will be sent to the IR OUT port of the transmitter
7	DC 12V	Plug DC 12V/1A power supply into the unit and connect the adapter to an AC outlet. (Note: The CAT receiver also can be powered by the transmitter via a CAT cable.)

5. Specifications

Technical	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2 / 1.x
Video Bandwidth	594MHz / 18Gbps
Video Resolution	Input: 480i ~1080P50/60Hz, 4Kx2K@24/30Hz, 4K2K@60Hz Loop Out: 480i ~1080P50/60Hz, 4Kx2K@24/30Hz, 4K2K@60Hz
Color Depth	8-bit, 10-bit, 12-bit (1080p@60Hz) 8-bit, 10-bit, 12-bit (4K2K@60Hz YCbCr 4:2:2 / 4:2:0) 8-bit (4K2K@60Hz YUV 4:4:4)
Color Space	RGB, YCbCr 4:4:4 / 4:2:2, YUV 4:2:0
HDR	HDR10, HDR10+, HLG, Dolby Vision
HDMI Audio Formats	LPCM, Dolby Digital/Plus/EX, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio
Coaxial Audio Formats	LPCM 2.0, LPCM 5.1, Dolby Digital 2/5.1CH
Analog Audio Formats	PCM 2.0CH
Extended Distance	115ft/35m at 4K2K@60Hz (600M Bandwidth) 164ft/50m at 4K2K@30Hz (300M Bandwidth) 197ft/60m at 1080P@60Hz (148.5M Bandwidth)
ESD Protection	Human body model—±8kV (Air-gap discharge) & ESD Protection ±4kV (Contact discharge)

5. Specifications (Continued)

Connection	
Input	1x HDMI IN [Type A, 19-pin female]
Output	1x HDMI LOOP OUT [Type A, 19-pin female] 2x CAT OUTPUT [RJ45, 8-pin female] 1x COAX AUDIO OUT [RCA] 1x L/R AUDIO OUT [3.5mm Stereo Mini-jack]
Control	1x SERVICE [Micro USB, Update port] 1x IR OUT [3.5mm Stereo Mini-jack]

5. Specifications (Continued)

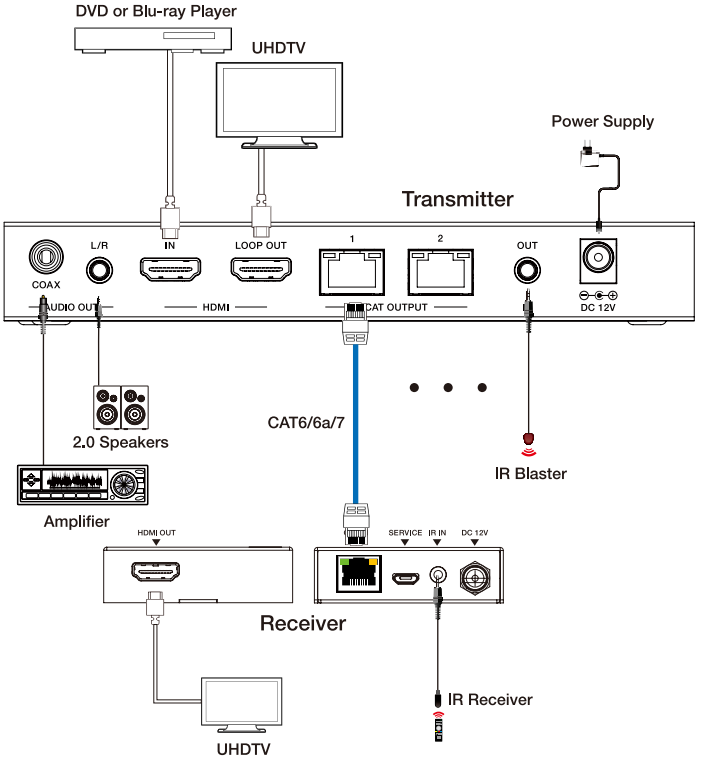
Mechanical	
Housing	Metal Enclosure
Silkscreen Color	Black
Dimensions	Transmitter: 175mm (W) × 100mm (D) × 25mm (H) Receiver: 88mm (W) × 61mm (D) × 18mm (H)
Weight	Transmitter: 485g / Receiver:155g
Power Supply	Input: AC100 - 240V 50/60Hz, Output: DC 12V/1A (US/EU standards, CE/FCC/UL certified)
Power Consumption	8.28W (Max.)
Operation Temperature	0°C ~ 40°C / 32°F ~ 104°F
Storage Temperature	-20°C ~ 60°C / -4°F ~ 140°F
Relative Humidity	20~90% RH (non-condensing)

6. Hardware Installation

1. Power off all devices including your HDMI source and HDMI display(s).
2. Connect your HDMI source device to the Transmitter's HDMI In connector with an HDMI cable (HDMI cable not included).
3. Connect your CAT cables between the Transmitter and CAT6/7 receivers.
4. Optional: Connect an HDMI display to the HDMI Out connector of the transmitter using an HDMI cable (HDMI cable not included). This connection is needed only if you require local monitoring of the HDMI signal.
5. Connect an HDMI display to each CAT6/7 receiver's HDMI Out connector with an HDMI cable (HDMI cables not included).
6. Optional: Connect the IR Receiver cables and the IR Emitter cable to the IR interface ports. This connection is needed only if you need to control your HDMI devices from the remote location. See IR Control on page 23 for more information.
7. Plug the included 12V/1A power adapter into the transmitter's Power Jack. ***Note:** Power-over-Cable (PoC) technology allows one power supply to power the receiver through the CAT cable.
8. Power on your HDMI source device and HDMI display(s). The Splitter/Extender is ready for use.

7. Connection Diagram

The application diagram shows the most typical input and output devices used with the Extender/Splitter.



8. EDID Modes

The defined EDID setting list of the product is shown as below:

EDID Mode	EDID Description
11111	1080P, Stereo Audio 2.0
11110	1080P, Dolby/DTS 5.1
11101	1080P, HD Audio 7.1
11100	1080I, Stereo Audio 2.0
11011	1080I, Dolby/DTS 5.1
11010	1080I, HD Audio 7.1
11001	1080P 3D, Stereo Audio 2.0
11000	1080P 3D, Dolby/DTS 5.1
10111	1080P 3D, HD Audio 7.1
10110	4K2K30Hz_444, Stereo Audio 2.0
10101	4K2K30Hz_444, Dolby/DTS 5.1
10100	4K2K30Hz_444, HD Audio 7.1
10011	4K2K60Hz_420, Stereo Audio 2.0
10010	4K2K60Hz_420, Dolby/DTS 5.1
10001	4K2K60Hz_420, HD Audio 7.1
10000	4K2K60Hz_444, Stereo Audio 2.0
01111	4K2K60Hz_444, Dolby/DTS 5.1

8. EDID Modes (Continued)

EDID Mode	EDID Description
01110	4K2K60Hz_444, HD Audio 7.1
01101	4K2K60Hz_444, Stereo Audio 2.0 HDR
01100	4K2K60Hz_444, Dolby/DTS 5.1 HDR
01011	4K2K60Hz_444, HD Audio 7.1HDR
01010	COPY_FROM_LOOP OUT
01001	COPY_FROM_CAT OUT1
01000	COPY_FROM_CAT OUT2
00111	1080P, Stereo Audio 2.0
00110	1080P, Stereo Audio 2.0
00101	1080P, Stereo Audio 2.0
00100	1080P, Stereo Audio 2.0
00011	1080P, Stereo Audio 2.0
00010	1080P, Stereo Audio 2.0
00001	1080P, Stereo Audio 2.0
00000	PC control mode

9. ASCII Commands

The product also supports ASCII command control. Connect the SERVICE port of the product to a PC with an USB cable. Then, open a Serial Command tool on PC to send ASCII commands to control the product.

The ASCII command list about the product is shown as below.

ASCII Commands
Serial port protocol. Baud rate: 115200 (default), Data bits: 8bit, Stop bits:1, Check bit: 0
x - Parameter 1 y - Parameter 2 ! - Delimiter

Command Code	Function Description	Example	Feedback	Default Setting
Power				
s power z!	Power on/off the device, z=0~1 (z=0 power off, z=1 power on)	s power 1!	Power on System Initializing... Initialization Finished! FW version x.xx.xx	power on
r power!	Get current power state	r power!	power on/power off	
s reboot!	Reboot the device	s reboot!	reboot	

9. ASCII Commands (Continued)

Command Code	Function Description	Example	Feedback	Default Setting
System Setup				
help!	List all commands	help!		
r type!	Get device model	r type!	gofanco	
r status!	Get device current status	r status!	Get the unit all status: power, in/out connection, edid mode	
r fw version!	Get Firmware version	r fw version!	MCU BOOT: Vx.xx.xx MCU APP: Vx.xx.xx	
r link in!	Get the connection status of the input port	r link in!	HDMI IN: connect	
r link out y!	Get the connection status of the y output port, y=0~2 (0=all, 1~2=CAT 1~2)	r link out 1!	CAT OUT1: connect	
r link loop out y!	Get the connection status of the y loop output port, y=1	r link loop out 1!	HDMI LOOP OUT: connect	
s reset!	Reset to factory defaults	s reset!	Reset to factory defaults System Initializing... Initialization Finished! FW version x.xx.xx	

9. ASCII Commands (Continued)

Command Code	Function Description	Example	Feedback	Default Setting
Output Setting				
s hdmi stream z!	Set hdmi loop output stream on/off z=0~1 (0:disable,1:enable)	s hdmi stream 1!	Enable hdmi loop out stream Disable hdmi loop out stream	enable
s cat y stream z!	Set cat output y stream on/off, y=0~2 (0=all), z=0~1 (0:disable,1:enable)	s cat 1 stream 1! s cat 0 stream 1!	Enable cat output 1 stream Disable cat output 1 stream Enable cat all outputs stream Disable cat all outputs stream	enable
r hdmi stream!	Get hdmi loop out stream status	r hdmi stream!	Enable hdmi loop output stream	
r cat y stream!	Get cat output y stream status, y=0~2 (0=all)	r cat 1 stream!	Enable cat output 1 stream	
s hdmi hdcp z!	set hdmi loop output port hdcp status, z=0~1 (0=disable, 1=enable)	s hdmi hdcp 1!	hdmi loop out hdcp on	all hdmi out hdcp active
r hdmi hdcp!	Get HDCP status of loop out	r hdmi hdcp!	hdmi loop out hdcp on	
s cat y hdcp z!	set cat output y port hdcp status y=0~2 (0=all), z=0~1 (1=on, 0=off)	s cat 1 hdcp 1!	cat out 1 hdcp on	all cat out hdcp active
r cat y hdcp!	Get HDCP status of cat out y, y=0~2 (0=all)	r cat 1 hdcp!	cat out 1 hdcp on	

9. ASCII Commands (Continued)

Command Code	Function Description	Example	Feedback	Default Setting
Output Setting				
s cat y dsc mode z!	set cat output y port dsc mode status y=0~2 (0=all), z=1~3 (1=Cat cable distance normal Mode, 2=Cat cable distance 35M Mode, 3=Cat cable distance 70M Mode)	s cat 1 dsc mode 2!	cat out 1 dsc mode 2	Cat cable distance 35M Mode (35M)
r cat y dsc mode!	Get dsc mode of cat out y, y=0~2 (0=all)	r cat 1 dsc mode!	cat out 1 dsc mode 2	
s audio mute 1!	set audio output port mute status (1-mute, 0-umute)	s audio mute 1!	s audio mute 1	s audio unmute (0)
r audio mute!	Get audio output mute status	r audio mute!	audio mute 1	

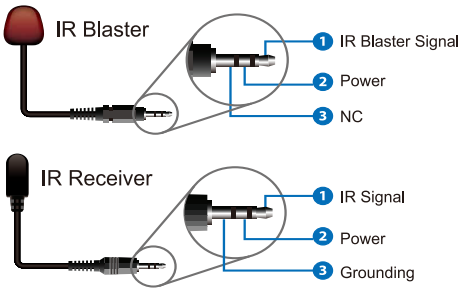
9. ASCII Commands (Continued)

Command Code	Function Description	Example	Feedback	Default Setting
EDID Setting				
s edid in from z!	Set input EDID from default EDID z, z=1~24 1, 1080p,Stereo Audio 2.0 2, 1080p,Dolby/DTS 5.1 3, 1080p,HD Audio 7.1 4, 1080i,Stereo Audio 2.0 5, 1080i,Dolby/DTS 5.1 6, 1080i,HD Audio 7.1 7, 3D,Stereo Audio 2.0 8, 3D,Dolby/DTS 5.1 9, 3D,HD Audio 7.1 10, 4K2K30_444,Stereo Audio 2.0 11, K2K30_444,Dolby/DTS 5.1 12, 4K2K30_444,HD Audio 7.1 13, 4K2K60_420,Stereo Audio 2.0 14, K2K60_420,Dolby/DTS 5.1 15, 4K2K60_420,HD Audio 7.1 16, 4K2K60_444,Stereo Audio 2.0 17, K2K60_444,Dolby/DTS 5.1 18, 4K2K60_444,HD Audio 7.1 19, 4K2K60_444,Stereo Audio 2.0 HDR 20, K2K60_444,Dolby/DTS 5.1 HDR 21, 4K2K60_444,HD Audio 7.1 HDR 22, copy from hdmi loop out 23, copy from cat output 1 24, copy from cat output 2	s edid in from 1!	input EDID:1080p, Stereo Audio 2.0 Please toggle EDID dip switch to 00000!	1080p, Stereo Audio 2.0
s edid user1 00 FF FF FF FF ...!	Set user1 EDID data	s edid user1 00 ff ff ff ff .... !	user1 EDID data: 00 FF FF	
r edid user1!	Get user1 EDID data	r edid user1!	user1 EDID data : 00 FF FF FF FF FF FF 00	
r edid in!	Get EDID status of the input	r edid in!	input EDID: 4K2K60_444,Stereo Audio 2.0	
r edid in data!	Get the EDID data of the hdmi input	r edid in data!	EDID data : 00 FF FF FF FF FF FF 00	

10. IR Control

IR Receiver

IR Blaster



Note: When the angle between the IR receiver and the remote control is ± 45 °, the transmission distance is 0-5 meters; when the angle between the IR receiver and the remote control is ± 90 °, the transmission distance is 0-8 meters.

Controlling the Source Device

1. Connect the IR Blaster cable to the IR Out port of the transmitter.
2. Point the IR Blaster cable's IR eye in line with the source device's IR window.
3. Connect an IR Receiver cable to the IR In port on each CAT receiver.

Note:

The transmitter's IR Out connector will output the IR signals received from any of the CAT 6/7 receivers, so as to allow control of a source from any of the remote CAT6/7 receivers.

11. Disclaimer

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