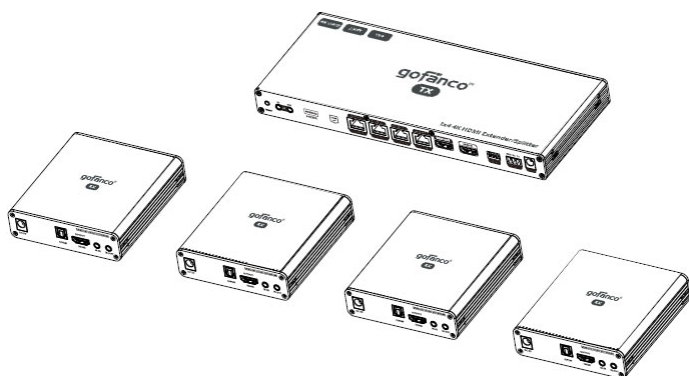




1x4 HDMI 2.0 Splitter/ Extender - 70M

User's Guide



P/N:HD20Ext-4P

Thank you for purchasing from gofanco. Our products aim to meet all your 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 adapter only. Make sure the specification matches if using 3rd-party DC power adapters

Introduction

The 1x4 HDMI 2.0 CAT Splitter/Extender distributes HDMI signals from one source device to four CAT6/7 outputs and one HDMI output (loopout).

Features

- Extends HDMI transmissions up to 70m (230ft) over CAT6/7
- HDMI 2.0 and HDCP 2.2 compliant
- Supports up to 4K @60Hz YUV 4:4:4, HDR
- Supports Bi-directional IR control, RS232 command control, EDID management
- Supports up to 5.1ch digital audio and audio extraction to Toslink
- Near zero latency
- Lightning/Surge/ESD protection

Installation Requirements

- HDMI source devices (DVD player, set top box, PC, etc.)
- HDMI displays (SDTV/Monitor, HDTV/Monitor, projector, etc.)
- HDMI cables (not included)
- CAT cables (not included)

Package Contents

- 1x 1x4 HDMI 2.0 Transmitter
- 4x CAT6/7 Receivers
- 1x IR Emitter cable
- 4x IR Receiver cables
- 1x TX power adapter (12V/2A)
- 4x RX power adapters (5V/2A)
- Surface mount accessories
- 1x Terminal block (RS232)
- User guide

Product Layout

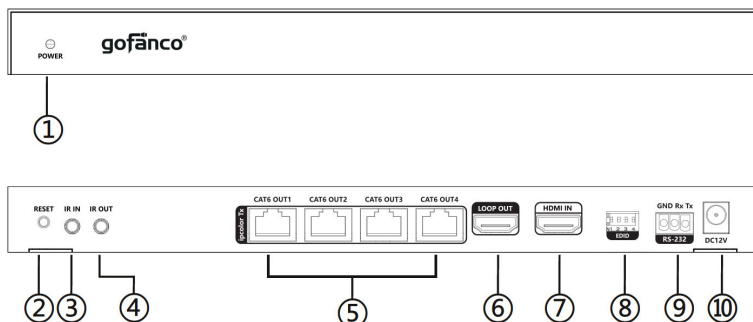


Figure 1: Transmitter Layout

1. **Power LED:** On when the Transmitter is powered on
2. **Reset Button:** Press to restart the Transmitter
3. **IR In:** Connects to the IR Receiver cable
4. **IR Out:** Connects to the IR Emitter cable
5. **CAT6/7 Out (x4):** Connects to the CAT6/7 In of the Receivers using CAT6/7 cables (CAT cables not included)
6. **HDMI Out:** Connects to your HDMI display
7. **HDMI In:** Connects to your HDMI source device
8. **EDID DIP Switch:** Selects the output resolution
9. **RS232:** Connects to your control PC's RS232 port
10. **Power Jack:** Connects to the included 12V/2A power adapter

Product Layout Continued

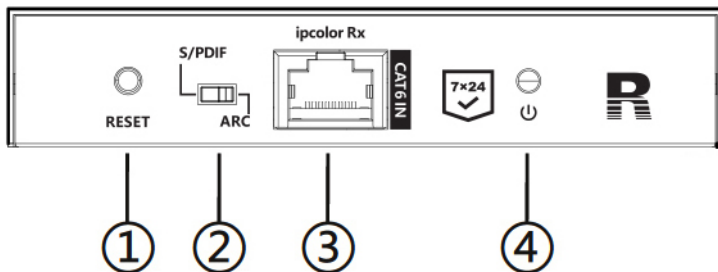


Figure 2: Receiver Front Panel Layout

1. **Reset Button:** Press to restart the Receiver
2. **Audio Switch:** Extracts HDMI/ ARC audio to Optical Out:
 - **S/PDIF:** Extracts audio from the HDMI source (from TX) to S/PDIF Out
 - **ARC:** Extracts audio from the display (RX's HDMI output) to S/PDIF Out
3. **CAT6/7 In:** Connects to the CAT6/7 Out of the Transmitter using CAT6/7 cables (CAT cables not included)
4. **Power/Signal LED:** When the Receiver is powered on:
 - LED is on when HDMI signal is detected
 - LED is flashing when no HDMI signal is detected

Product Layout Continued

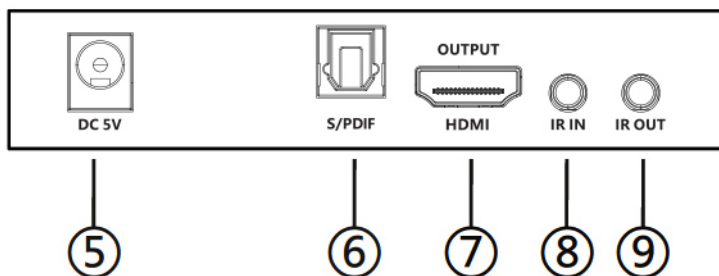


Figure 3: Receiver Back Panel Layout

5. **Power Jack:** Connects to the included 5V/2A power adapter
6. **S/PDIF Out:** Connects to speakers or AVR
7. **HDMI Out:** Connects to your HDMI display
8. **IR In:** Connects to the IR Receiver cable
9. **IR Out:** Connects to the IR Emitter cable

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 is 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, starting on page 10, for proper IR connection.
7. Plug the included 12V/2A power adapter into the Transmitter's Power Jack and 5V/2A power adapter into the Receiver's Power Jack, then plug the power adapters into a reliable power outlet.
8. Power on your HDMI source device and HDMI display(s). The Splitter/Extender is ready for use.

Application Diagram

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

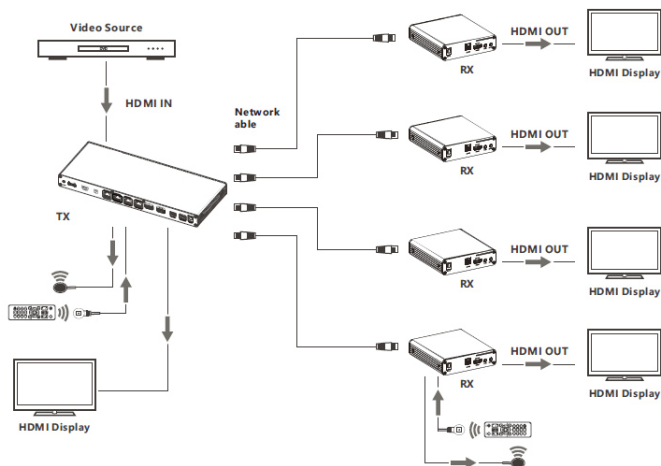
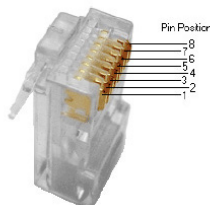


Figure 4: Application Diagram

CAT Cable Wiring

We suggest both RJ-45 connectors be wired identically using T568B wiring standard for the best performance and compatibility.

Both connectors must be wired identically, to T568B standard.



RJ45 Plug Colour Code (T568B)	
Contact Side - Tab is on Back	
8	BROWN
7	WHITE / BROWN
6	GREEN
5	WHITE / BLUE
4	BLUE
3	WHITE / GREEN
2	ORANGE
1	WHITE / ORANGE

Note: You may use CAT5e, CAT6 wiring, however, for best performance CAT6a or CAT7 (particularly in electrically noisy environments) is recommended. The maximum transmission distance and video quality may be compromised by cable quality, patch cables, poor termination, wall plates, cable kinks, and electrical interference. We recommend using 100% copper 23AWG (avoid CCA type) CAT cable, in one straight run (avoid/minimize patches) and avoid close proximity to electrical sources.

IR Control

Provides IR control of the connected devices. The IR feature is bi-directional so either the source device or the display device(s) can be remotely controlled.

Controlling the Source Device

1. Connect an IR Emitter Cable to the IR Out port of the Transmitter.
2. Point the IR Emitter 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 CAT6/7 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 CAT 6/7 Receivers.

Controlling the Display Device(s) using IR In

Allows you to remotely control each display individually.

1. Connect an IR Receiver Cable to the IR In port of the Transmitter.
2. Connect an IR Emitter Cable to the IR Out port on each CAT6/7 Receiver.
3. Point the IR Emitter Cable's IR eye in line with the display's IR window.

EDID Management

EDID is used by the source device to match the video resolution to the connected display(s). However, since displays with different capabilities are often connected to the Transmitter, the EDID DIP switch can be used to set the EDID to a fixed value to offer the best compatibility across all connected displays.

DIP Switch



Switch down for "0"



Switch up for "1"

Switch Status				EDID Information
1	2	3	4	
0	0	0	0	4K@60Hz 2CH
1	0	0	0	4K@60Hz 5.1CH
0	1	0	0	4K@60Hz 7.1CH
0	0	1	0	4K@60Hz HDR 7.1CH
0	0	0	1	4K@30Hz 2CH
1	1	0	0	4K@30Hz 5.1CH
1	0	1	0	4K@30Hz 7.1CH
1	0	0	1	4K@30Hz HDR 7.1CH
0	1	1	0	1080p@60Hz 2CH
0	1	0	1	1080p@60Hz 5.1CH
0	0	1	1	1080p@60Hz 7.1CH
1	1	1	0	1080i@60Hz 2CH
1	1	0	1	1080i@60Hz 5.1CH
1	0	1	1	1080i@60Hz 7.1CH
0	1	1	1	1080p@60Hz HDR 7.1CH
1	1	1	1	Auto

Note: Auto - outputs the most compatible resolution to all CAT6/7 Receivers

RS232 Control

Connect your control PC's RS232 serial port to the Transmitter's RS232 port using an RS232 cable (cable not included).

RS232 Commands

- Default settings: Baud rate: 9600, Data bit: 8, Stop bit: 1, Parity bit: 0

Control Commands	Function Descriptions	
ES XX On/n	Turn on the network signal output port(s), choose from “01” to “02” (the network ports from right to left are: 01, 02,.); “All” means all four ports	
ES XX Off/n	Turn off the network signal output port(s), choose from “01” to “02” (the network ports from right to left are: 01, 02,.); “All” means all four ports	
Reset/n	Restart the device	
Recover/n	Restore device factory settings	
Baud XX /n	Set the baud rate value: 9600 (default), 19200, 38400, 57600, 115200	
Examples of control commands are shown below:		
Control Command	ES 02 On/n	
Function Description	Trun on network signal output port 02	
Return Values	Received successfully	ES 02 On OK
	Receive failed	ES 02 On FAIL
Control Command	ES All Off/n	
Function Description	Turn off all the network signal output ports	
Return Values	Received successfully	ES All Off OK
	Receive failed	ES All Off FAIL
Control Command	Reset/n	
Function Description	Restart the device	
Return Values	Received successfully	Reset OK
	Receive failed	Reset FAIL
Control Command	Baud 19200/n	
Function Description	Set the baud rate value: 9600	
Return Values	Received successfully	Baud 19200 OK
	Receive failed	Baud 19200 FAIL

FAQ & Troubleshooting

Q: Poor video quality or no video signal on display:

A1: Check whether the HDMI cables are connected properly and are in good working condition.

A2: Make sure the resolution of the display is compatible with the splitter's resolution

Q: No HDMI signal output from the CAT6/7 connectors while the local HDMI out port is working normally:

A1: Check whether the HDMI cables are connected properly and are in good working condition.

Q: Splash screen on the displays:

A1: Cause by damaged or low quality HDMI cables. Change to a higher quality HDMI cable.

Specifications

Item	Specification
Transmission protocol	ipcolor
Distribution mode	1 IN 4 OUT
Transmission distance	CAT6/6A/7 ≤ 70m
HDMI signal	HDMI 2.0, HDCP 2.2
HDMI Resolution	480i@60Hz, 480p@60Hz, 576i@50Hz, 576p@50Hz, 720p@50/60Hz, 1080i@50/60Hz, 1080p@50/60Hz, 1280x960, 1280x800, 1280x768, 1680x1050, 1360x768, 1366x768, 1600x900, 1024x768, 800x600, 3840x2160@24/25/30/50/60Hz, 4096x2160@24/25Hz
Audio formats	LPCM/DTS-HD/DTS-Audio/Dolby Digital 5.1
IR	Bi-directional IR passback (20-60kHz)
RS-232	3 pin: Tx-D-Rx-D-GND, follows RS-232 levels
Working temperature	-20~60°C
Storage temperature	-30~70°C
Humidity (no condensation)	0~90% RH
Protection	ESD protection 1a Contact discharge level 3 1b Air discharge level 3 Implementation of the standard: IEC61000-4-2
	Lightning protection
	Surge protection
Power supply	TX: DC 12V/2A RX: DC 5V/2A
Power consumption	TX < 13W RX < 4W
Material	Aluminum alloy material + crystal panel
Color	Black
Weight	TX: 640g RX: 210g
Dimension	TX: 264.00(L) x 104.00(W) x 23.50(H)mm RX: 106.0(L) x 99.0(W) x 26.2(H)mm

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