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ALFATRON ELECTRONICS GmbH GERMANY

ALF-TRUK100-RS



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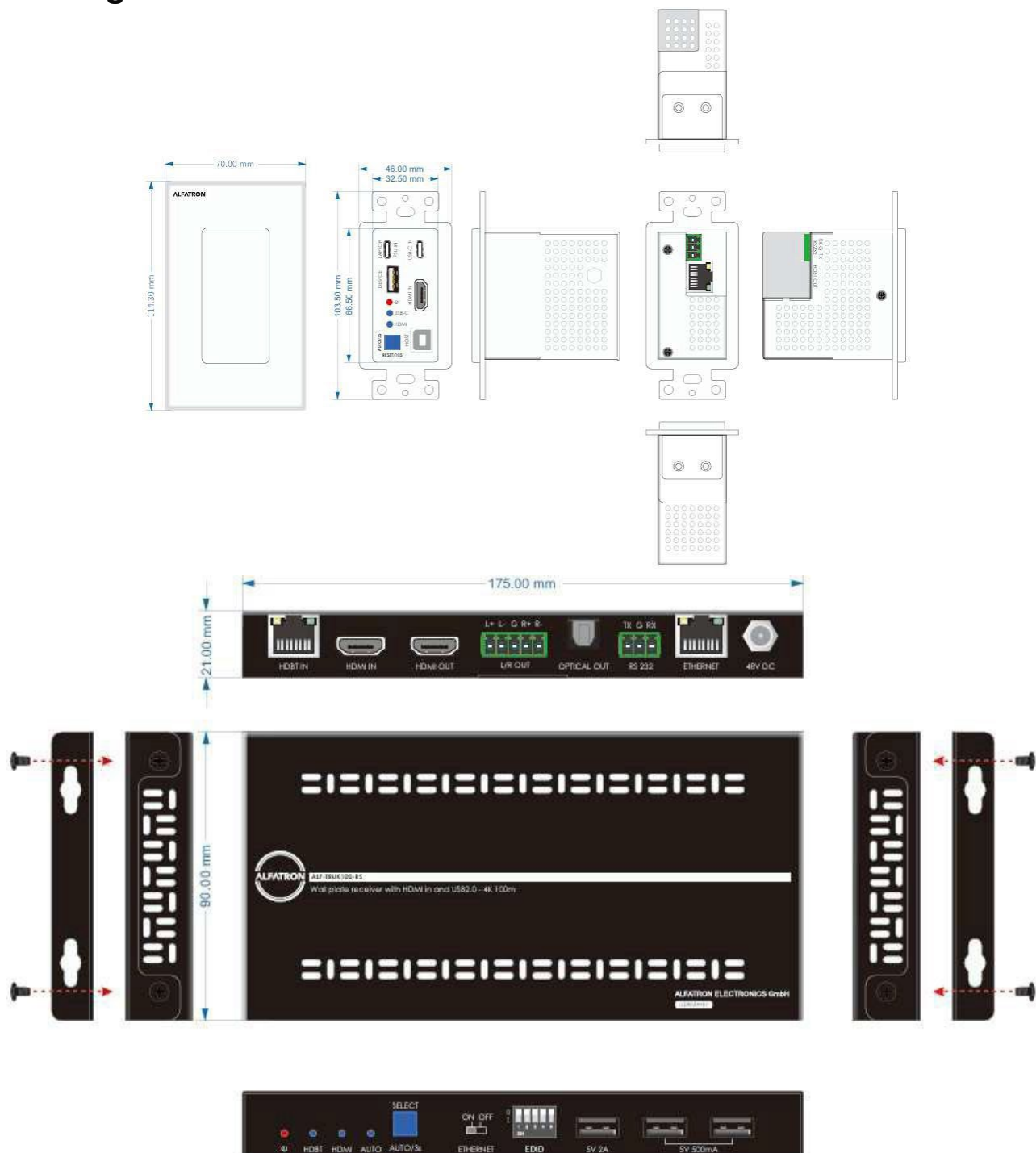
1 Description

The ALF-TRUK100-RS is an HDBaseT wall plate extender kit for video (Max 4K@60 4:4:4), audio, USB2.0, RS232 control signal and Ethernet over distances max up to 100m.

It includes USB2.0 and USB-C host interfaces, plus a USB2.0 interface for a peripheral device such as speakerphone, video camera, microphone, or keyboard and mouse with the charging functions.

The transmitter's feature is a US one-gang, wall plate form factor, and includes one white faceplate.

2 Drawings

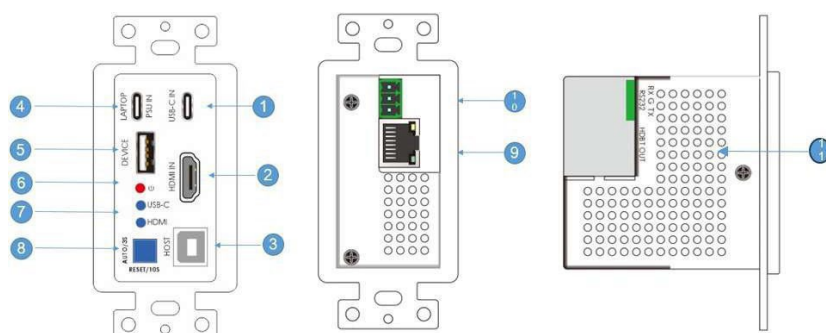


3 Features

- Extend USB-C, HDMI2.0 & USB2.0 signal over HDBT2.0.
- HDMI 2.0, 18G, 4K@60 4:4:4, HDCP 2.2 and backward compatible.
- Transmission distance of 4K@60 4:4:4 Max up to 100m (CAT6 STP cable).
- USB2.0 bandwidth rate max up to 480M/bps with the HDBT 2.0 standard on USB speed.
- USB-C supports 4K@60 4:2:0.
- USB-C charging port, Max supports 100 W PD, to charge the connected PC.
- HDMI In on Rx for BYOD devices and with Auto-sw control.
- De-embedded audio (analog and optical) at Rx.
- RS232 passes through from Tx to Rx.
- Supports Auto SW and manual mode via button.
- Support 48v PoC function (only from Rx to Tx).
- EDID & HDCP management on Dip switch.
- Support 3D, HDR10 and Dolby Vision.
- Ethernet port for USB-C or USB-B Ethernet usage and supports ethernet ON/OFF control on RX unit.
- US one-gang enclosure for Decora-style at Tx.
- Ventilation holes for heat dissipation at the back of the transmitter.
- Black or white face plates available.

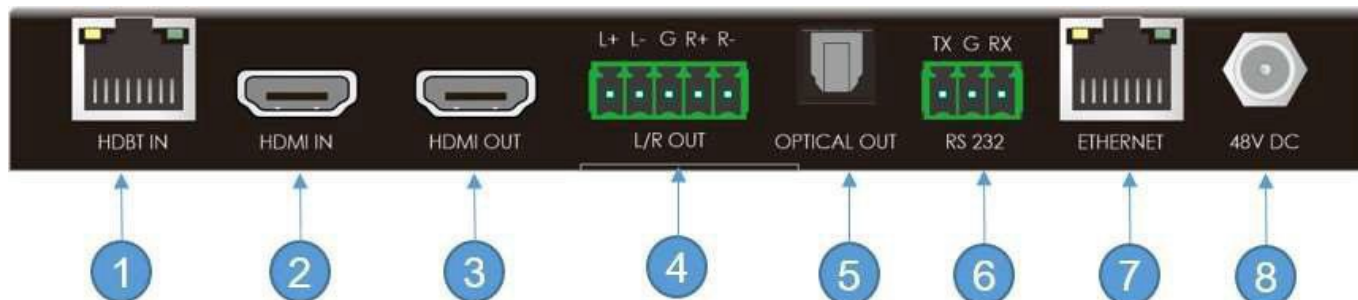
4 Operation Controls and Functions

4.1 Transmitter Panel:

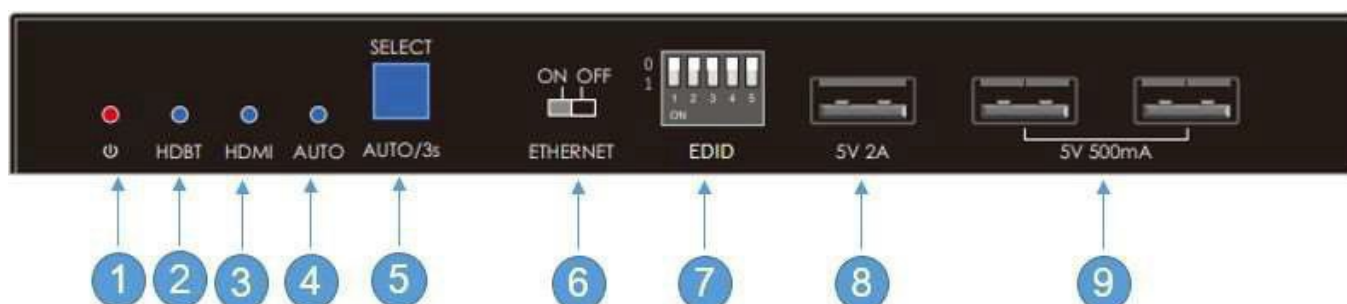


Front Panel		
No.	Name & Description	Remark
1	USB-C Port	USB-C Port (DP Alt Mode), connect to USB-C source
2	HDMI Port	HDMI Port, connect to HDMI source
3	USB-B Host	USB-B Host Port, connect to PC USB host
4	USB-C Port	USB-C Port, connect to an extra USB-C Charger, to charge the connected device
5	USB-A Port	Connect to USB devices, with 5V,1A
6	Power LED Indicator	The LED indicator will illuminate in green when the product is powered on, and red when the product is on standby
7	USB-C & HDMI LED Indicator	1: When USB-C input is selected, the LED will illuminate green 2: When HDMI input is selected, the LED will illuminate green
8	Source Button	1: On manual mode, press to choose HDMI or USB-C for input source 2: Press 3 seconds, enters the Auto-sw mode or back to manual switch mode 3: Press for 10 seconds, for factory reset
9	HDBaseT Output Port	Connect to Receiver's HDBaseT input port via a Cat6 STP cable
10	RS232 Port	1: Connect to receiver's RS232 port, for RS232 pass through transmit 2: Control the transmitter's sources selection
11	Ventilation holes	For heat dissipation

4.2 Receiver's Panel



Rear Panel		
No.	Name & Description	Remark
1	HDBaseT Input Port	Connect from the transmitter's HDBaseT output port via a Cat6 STP cable
2	HDMI IN Port	Connect to a BYOD or HDMI source device
3	HDMI OUT Port	HDMI output port, to connect to a display monitor or projector
4	Analogy Audio	De-embedded audio on 5 pin-phoenix connectors
5	Digital Audio	De-embedded audio on optical port
6	RS232 port	Connect to transmitter's RS232 port, for RS232 pass through
7	Ethernet Port	Connect to LAN switch to get Ethernet for USB-C or USB-B on Tx
8	Power Supply	Connect to the supplied 48V PSU for power (RX powers TX only over HDBT power)



Rear Panel		
No.	Name & Description	Remark
1	Power LED indicator	The LED indicator will illuminate in green when the product is powered on, and red when the product is on standby
2	HDBT Source LED indicator	When HDBT source is selected, it will illuminate blue
3	HDMI Source LED indicator	When HDMI source is selected, it will illuminate blue
4	Auto SW LED indicator	When receiver is entered into Auto SW mode, it will illuminate blue
5	Button control	1: On manual mode, press to choose HDBT or HDMI for input source 2: Press 3 seconds, enters the Auto-sw mode or back to manual switch mode
6	DIP Switch	Enable or disable Ethernet
7	EDID DIP Switch	EDID or HDCP management
8	USB-A Port	Connect USB devices, 5V, 2A, such as speakerphone, USB Microphones etc.
9	USB-A Port	Connect USB devices, 5V, 500mA, such as USB speakerphones, USB camera or USB Microphones etc.

5 Specification

HDMI Input	1. HDMI 2.0, supports resolution up to 4K@60Hz 4:4:4, HDR 10 and Dolby Vision. 2. Supports up to LPCM 7.1, Dolby® TrueHD, Dolby Digital® Plus, and DTS-HD® Master Audio™ .																																																												
USB-C	1. Supports up to 4K UHD 60Hz 4:2:0. 2. Supports charging Max up to 100W PD																																																												
HDMI Output	1. HDMI V2.0, supports resolution up to 4K@60Hz 4:4:4, HDR 10 and Dolby Vision. 2. Supports up to PCM 7.1, Dolby® TrueHD, Dolby Digital® Plus, and DTS-HD® Master Audio™ . 3. Downscaling <table><tr><th colspan="3">Input</th><th colspan="2">Output</th></tr><tr><th>Resolution</th><th>Refresh</th><th>Colour Space</th><th>Downscale</th><th>1080p Specs</th></tr><tr><td>4K</td><td>60Hz</td><td>4:4:4</td><td>Support</td><td>1080p@60Hz 4:4:4</td></tr><tr><td>4K</td><td>50Hz</td><td>4:4:4</td><td>Support</td><td>1080p@50Hz 4:4:4</td></tr><tr><td>4K</td><td>30Hz</td><td>4:4:4</td><td>Support</td><td>1080p@30Hz 4:4:4</td></tr><tr><td>4K</td><td>25Hz</td><td>4:4:4</td><td>Support</td><td>1080p@25Hz 4:4:4</td></tr><tr><td>4K</td><td>24Hz</td><td>4:4:4</td><td>Support</td><td>1080p@24Hz 4:4:4</td></tr><tr><td>4K</td><td>60Hz</td><td>4:2:0</td><td>Support</td><td>1080p@60Hz 4:4:4</td></tr><tr><td>4K</td><td>50Hz</td><td>4:2:0</td><td>Support</td><td>1080p@50Hz 4:4:4</td></tr><tr><td>4K</td><td>30Hz</td><td>4:2:0</td><td>Support</td><td>1080p@30Hz 4:4:4</td></tr><tr><td>4K</td><td>25Hz</td><td>4:2:0</td><td>Support</td><td>1080p@25Hz 4:4:4</td></tr><tr><td>4K</td><td>24Hz</td><td>4:2:0</td><td>Support</td><td>1080p@24Hz 4:4:4</td></tr></table>	Input			Output		Resolution	Refresh	Colour Space	Downscale	1080p Specs	4K	60Hz	4:4:4	Support	1080p@60Hz 4:4:4	4K	50Hz	4:4:4	Support	1080p@50Hz 4:4:4	4K	30Hz	4:4:4	Support	1080p@30Hz 4:4:4	4K	25Hz	4:4:4	Support	1080p@25Hz 4:4:4	4K	24Hz	4:4:4	Support	1080p@24Hz 4:4:4	4K	60Hz	4:2:0	Support	1080p@60Hz 4:4:4	4K	50Hz	4:2:0	Support	1080p@50Hz 4:4:4	4K	30Hz	4:2:0	Support	1080p@30Hz 4:4:4	4K	25Hz	4:2:0	Support	1080p@25Hz 4:4:4	4K	24Hz	4:2:0	Support	1080p@24Hz 4:4:4
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Distance	4K@60 444 at 10m for Cat 6 and Upwards UTP cable																																																												
HDCP Management	1. Input: HDCP 2.2 and 1.4 compliant. Output: Manageable (Default follows the display). 2. Follow the source. 3. Follow the display. For example: it will output HDCP 1.4 when source is HDCP 2.2 when connect to HDCP 1.4 display. It will not turn off HDCP if display does not support HDCP. Note: will provide one hidden command to turn on/off.																																																												
Audio Output	1: 5 Pin-phoenix balanced audio output 2: Optical output																																																												
USB2.0	1: Max up to 480mbps source dependent 2: x1 HOST Port on Tx & USB-A (5V, 1A) device port on Tx 3: 1x USB-A (5V, 2A), 1x USB-A (5V, 500Ma), 1x USB-A either for device or firmware upgrade (5V, 500Ma) on RX																																																												
RS232	1. To control the sources switching and the default baud rate is 9600. 2. Works with Rx, for RS232 pass through																																																												
CEC	Supports CEC pass through (only from HDMI IN from Tx to HDMI OUT on Rx)																																																												
EDID Management	1. Copy the display's EDID. 2. Use the built-in EDID (16 EDID in total)																																																												
Ethernet Port	1. USB-C or USB-B can access to Ethernet 2. ON/OFF control according to the actual requirements																																																												
Firmware	The firmware can be updated by RS232 or USB-A on Rx																																																												
Dimensions (WxDXH)	TX – 46 x 67 x 103.5mm RX – 175 x 96 x 21mm																																																												

6 EDID & HDCP

EDID Setting					
#	JUMPER	DIP-1	DIP-2	DIP-3	DIP-4
1	EDID COPY (See NOTE 1)	0	0	0	0
2	1080P_2CH(PCM)	1	0	0	0
3	1080P_5.1CH	0	1	0	0
4	1080P_7.1CH	1	1	0	0
5	4K30Hz_3D_2CH(PCM)	0	0	1	0
6	4K30Hz_3D_5.1CH	1	0	1	0
7	4K30Hz_3D_7.1CH	0	1	1	0
8	4K60Hz(Y420)_3D_7.1CH	1	1	1	0
9	4K60Hz_3D_2CH(PCM)	0	0	0	1
10	4K60Hz_3D_5.1CH	1	0	0	1
11	4K60Hz_3D_7.1CH	0	1	0	1
12	1080I_2CH	1	1	0	1
13	1080I_6CH	0	0	1	1
14	4K60Hz_3D_2CH(PCM)_HDR	1	0	1	1
15	4K60Hz_3D_5.1CH_HDR	0	1	1	1
16	4K60Hz_3D_7.1CH_HDR	1	1	1	1

HDCP SETTING			
#		DIP-5	
1	DEBUG MODE ON	1	Remove the HDCP on outputs
2	DEBUG MODE OFF	0	HDCP pass through

7 RS232 Commands

Command Code	Description
B02 help!	Lists all commands
B02 s addr xx!	Set System Address to xx {xx=[00~99](00=Single)}
B02 r addr!	Get System Address
B02 r status!	Get device current status
B02 r fw version!	Get Firmware version
B02 r type!	Query matrix model
B02 s in x av out y!	Set input x to output y, x=1~2(1=HDBT IN, 2=HDMI IN), y=1
B02 s hdmi y hdcp x!	Set hdmi output y hdcp mode x, x=0~1(0=hdcp bypass, 1=hdcp none), y=1
B02 s hdmi y auto en/dis!	Set hdmi output y auto mode enable/disable, y=1
B02 s out y downscaler en/dis!	Set output y downscaler mode enable/disable, y=1
B02 r vs out y!	Get output y video route, y=1
B02 r hdmi y hdcp!	Get hdmi output y hdcp mode, y=1
B02 r hdmi y auto!	Get hdmi output y auto mode status, y=1
B02 r out y downscaler!	Get output y downscaler mode status, y=1
B02 r edid data hdmi y!	Get the EDID data of the hdmi output y port, y=1
INPUT SETUP	
B02 s in x edid y!	Set input x edid y{x=[1-2(HDBT,HDMI)], y=[1~16]} 1:EDID_COPY 2:1080P_2CH 3:1080P_5.1CH 4:1080P_7.1CH 5:4K30Hz_3D_2CH 6:4K30Hz_3D_5.1CH 7:4K30Hz_3D_7.1CH 8:4K60HzY420_3D_7.1CH 9:4K60Hz_3D_2CH 10:4K60Hz_3D_5.1CH 11:4K60Hz_3D_7.1CH 12:1080I_2CH 13:1080I_6CH 14:4K60Hz_3D_2CH_HDR 15:4K60Hz_3D_5.1CH_HDR 16:4K60Hz_3D_7.1CH_HDR
B02 r edid in x!	Get in x edid, x=0~2(0=all, 1=HDBT IN, 2=HDMI IN)
B02 r sig sta in x!	Get input x signal status, x=0~2(0=all, 1=HDBT IN, 2=HDMI IN)

8 Application Example

