

※ No compression

**4K**  
3840x2160

HDMI 2.0b / HDMI 1.4

※ No latency

※ 4K@60p YUV444/RGB444



※ Clock Data Recovery



※ EDID Passthrough



※ HDCP 2.2/2.3 / HDCP 1.4

※ Mouse & Keyboard  
or Touch Screen



※ Gigabit Ethernet



### Features

- ※ Real-time direct transmission technology, without any video compression and/or video latency
- ※ Compliant with HDMI 2.0b, HDMI 1.4 and DVI 1.0
- ※ Data rate up to 18 Gbps ( 6 Gbps by channel )
- ※ Supports lossless 4K video up to 4096\*2160@60p (4:4:4), 3840\*2160@60p (4:4:4), 1920\*1080@120p (4:4:4)
- ※ Compatible with other VESA standard resolutions and user-defined custom resolutions
- ※ Built-in automatic EDID manager to prevent signal interruption
- ※ Support 8/10/12 bits color depth
- ※ HDCP 2.3/2.2/1.4 Compatible
- ※ Support 3D and HDR (only for bypass mode)
- ※ Support HDMI 2.0 output scale-down, from 3840\*2160@60p to 1920\*1080@60p / 4096\*2160@60p to 2048\*1080@60p
- ※ Built-in 3-ports Gigabit Ethernet Switch, with two local Ethernet ports and one 1000base-X fiber port
- ※ Support IEEE 802.3, IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3x, IEEE 802.3z
- ※ Support USB Mouse, USB Keyboard or USB Touch Screen
- ※ Receiver built-in re-clock chip, jitter cleaning for best compliance
- ※ Applies duplex fiber to connect the transmitter and the receiver
- ※ Up to 300m by 9/125µm Single-Mode Fiber
- ※ Low RFI / EMI profile for sensitive applications
- ※ Plug-and-play, Hot-pluggable, Rack-mountable

Note :

The maximum transmission distance may vary depending on the fiber type, bandwidth, connector splicing, losses, model, chromatic dispersion, environmental factor and kinks.

### Applications

- ※ KVM Seat Collaboration Manage System
- ※ Remote monitor for traffic, industrial, military control
- ※ Airplane On-board Video System
- ※ Passenger Information System
- ※ Factory assembly line
- ※ TV Broadcast Station
- ※ LED signboards in streets and in stadiums
- ※ Large video wall system
- ※ LCD, Projector, Plasma display connection
- ※ Medical Imaging Equipment
- ※ Conference Room Video Equipment
- ※ Home Theater

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**Specifications**

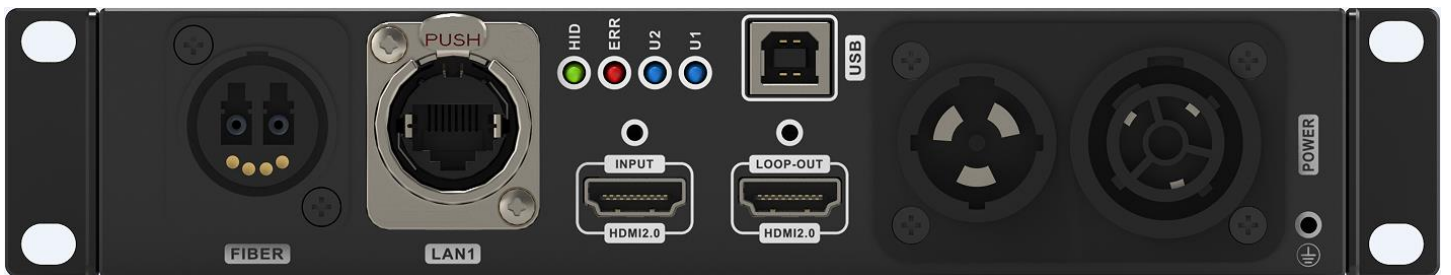
| <b>Video</b>   |  | <b>HDMI 2.0, HDCP 2.0 / HDCP 1.4, DVI 1.0</b> |   |
|--|--|---|---|
| Max. Pixel Clock   | 600 MHz  |   |   |
| Max. Data Rate   | 18 Gbps ( 6 Gbps by channel )  |   |   |
| Max. Resolution  | 3840*2160@60p (YCbCr 444/RGB444), 4096*2160@60P (YCbCr 444/RGB444)<br>3840*2160@30p, 4096*2160@30p, 1920*1200@60p, 1920*1080@120p, 1920*1080@60p,<br>compatible with other VESA standard resolutions and user-defined custom resolutions |   |   |
| Digital Audio Support  | 7.1 channel LPCM, 192 kHz, 24 bits   |   |   |
| <b>Connections</b>   |  | <b>Transmitter</b>                            | <b>Receiver</b>                             |
| HDMI2.0 Input  | 1 x HDMI Type A female with safe-lock screw  |   | /   |
| HDMI2.0 Loop-Out   | 1 x HDMI Type A female with safe-lock screw  |   | /   |
| HDMI2.0 Output   | /  |   | 1 x HDMI Type A female with safe-lock screw |
| LAN  | 2 x Neutrik EtherCON / RJ45  |   | 2 x Neutrik EtherCON / RJ45                 |
| USB  | 1 x Type B USB female  |   | 2 x Type A USB female                       |
| FIBER  | Neutrik OpticalCON DUO / Duplex LC-PC  |   | Neutrik OpticalCON DUO / Duplex LC-PC       |
| POWER  | Neutrik PowerCON True1 with loop output  |   | Neutrik PowerCON True1 with loop output     |
| <b>Fiber Optics / Wave length</b>  |  |   |   |
| Fiber Type / Max. Length   | 9/125 μm Single mode fiber / up to 300 m   |   |   |
| Video Channel Wave length  | 1270~1330 nm Tx / 1490 nm Tx / 1550 nm Rx  | 1270~1330 nm Rx / 1550 nm Tx / 1490 nm Rx     |   |
| Ethernet Channel Wave length   | 1310 nm Tx / 1550 nm Rx  | 1550 nm Tx / 1310 nm Rx                       |   |
| <b>Control</b>   |  |   |   |
| KVM  | USB HID ( Mouse and Keyboard or USB Touch Screen )   |   |   |
| <b>DDC ( Digital Display Channel ) / HDCP ( High-Bandwidth Digital Content )</b> |  |   |   |
| EDID / HDCP  | EDID an HDCP passthrough, with an automatic EDID manager built-in the transmitter  |   |   |
| <b>Physical Properties</b>   |  |   |   |
| Housing  | 1U Alufer enclosure  |   |   |
| Rack dimensions ( W x D x H )  | 433 x 255 x 44 mm (without brackets)   | 480 x 255 x 44 mm (with brackets)             |   |
| Box dimensions ( W x D x H )   | 184 x 284 x 40 mm (without brackets)   | 212 x 284 x 40 mm (with brackets)             |   |
| Weight   | Rack : 1,4 kg  | Transmitter Box : 1,5 kg                      | Receiver Box : 1,5 kg                       |
| <b>Environmental</b>   |  |   |   |
| Operating Temperature  | from 0°C to +50°C  |   |   |
| Storage Temperature  | from -40°C to +85°C  |   |   |
| Operating Humidity   | from 5% to 80% (non-condensing)  |   |   |
| Storage Humidity   | from 5% to 95% (non-condensing)  |   |   |
| <b>Power Requirements</b>  |  |   |   |
| Internal AC Power Adapter input  | from 100 to 240 VAC @ 50-60 Hz 0.2 A   |   |   |
| Power Consumption  | Transmitter UF-HDF460KM-2GE-T: 10 W  | Receiver UF-HDF460KM-2GE-R : 10 W             |   |
| <b>Warranty</b>  |  |   |   |
| Limited Warranty   | 1 year warranty  |   |   |

**TRANSMITTER**

**Front Panel**

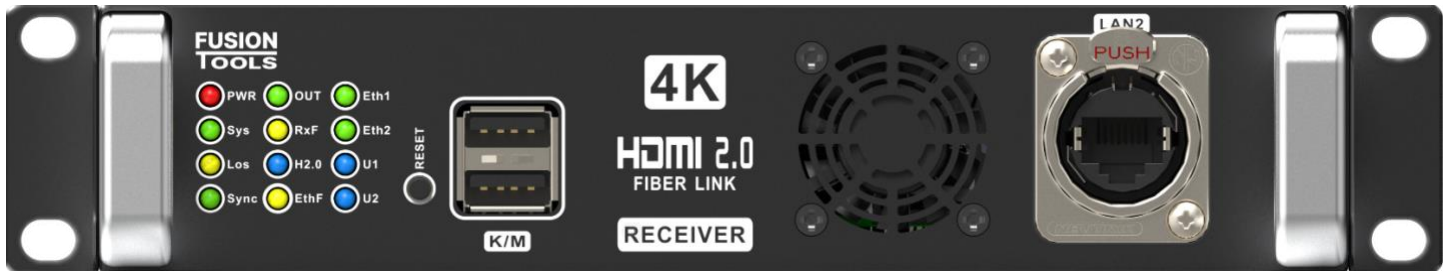


**Rear Panel**

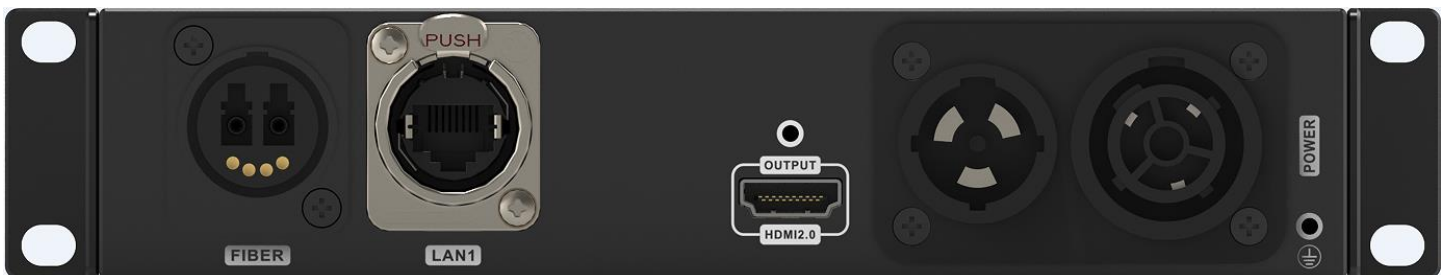


**RECEIVER**













**Front Panel**







**Rear Panel**















**TRANSMITTER - LED Description**

| Front Panel  |  |  |
|--|--|--|
|  PWR  |  IPT  |  Eth1 |
|  Sys  |  Loop |  Eth2 |
|  Los  |  TxF  |  Sink |
|  Sync |  EthF |  H2.0 |

| Rear Panel  |   |  |  |
|---|---|--|--|
|  HUD |  ERR |  U1 |  U2 |

| LED         | Status          | Description  |
|-------------|-----------------|--|
| <b>PWR</b>  | <b>OFF</b>      | Transmitter is power Off   |
|             | <b>ON</b>       | Transmitter is power On  |
| <b>Sys</b>  | <b>OFF</b>      | System has not finished starting up or is not running properly   |
|             | <b>ON</b>       | System crash ( if the system crash indicator will remain in an uncertain state, it may be on or off )  |
|             | <b>Blinking</b> | System is running normally   |
| <b>Los</b>  | <b>ON</b>       | EDID/HDCP/KM control data channel Optical signal reception is normal   |
|             | <b>OFF</b>      | EDID/HDCP/KM control data channel Optical signal is loss   |
| <b>Sync</b> | <b>OFF</b>      | EDID/HDCP/KM control data channel synchronization fails  |
|             | <b>Blinking</b> | EDID/HDCP/KM control data channel synchronizing  |
|             | <b>ON</b>       | EDID/HDCP/KM control data channel synchronized   |
| <b>IPT</b>  | <b>OFF</b>      | no source connected on HDMI Input port   |
|             | <b>Blinking</b> | a source is connected on transmitter HDMI input port, but no signal received   |
|             | <b>ON</b>       | a signal is properly received on HDMI input port   |
| <b>Loop</b> | <b>OFF</b>      | no device connected on HDMI loop port  |
|             | <b>Blinking</b> | a device is connected on HDMI loop port, but no signal transmit  |
|             | <b>ON</b>       | a device is connected on HDMI loop port and signal transmitted properly  |
| <b>TxF</b>  | <b>OFF</b>      | no video signal transmit over fiber  |
|             | <b>Blinking</b> | the video signal has been transmitted over fiber, but some Lane are faulty. For example, QSFP+ Module Tx laser is failure or laser power is not enough |
|             | <b>ON</b>       | the video signal is properly transmitted over fiber  |
| <b>EthF</b> | <b>OFF</b>      | Ethernet channel Optical signal is loss  |
|             | <b>ON</b>       | Ethernet channel Optical signal reception is normal  |
| <b>Eth1</b> | <b>OFF</b>      | no LAN connection on Ethernet port 1   |
|             | <b>ON</b>       | a LAN communication is established on Ethernet port 1  |
|             | <b>Blinking</b> | data is being transmitted on Ethernet port 1   |
| <b>Eth2</b> | <b>OFF</b>      | no LAN connection on Ethernet port 2   |
|             | <b>ON</b>       | a LAN communication is established on Ethernet port 2  |
|             | <b>Blinking</b> | data is being transmitted on Ethernet port 2   |
| <b>Sink</b> | <b>OFF</b>      | no monitor connected on receiver HDMI output port  |
|             | <b>ON</b>       | a monitor is connected on receiver HDMI output port  |
| <b>H2.0</b> | <b>OFF</b>      | The device operates in HDMI 1.4 mode   |
|             | <b>ON</b>       | The device operates in HDMI 2.0 mode   |
| <b>HID</b>  | <b>OFF</b>      | there is no host connected on HID USB port   |
|             | <b>ON</b>       | a connection with a host is established on HID USB port  |
| <b>ERR</b>  | <b>OFF</b>      | no error   |
|             | <b>ON</b>       | an error occurred on HID USB communication with host   |
| <b>U2</b>   | <b>ON</b>       | Connected to the host and initialized successfully   |
|             | <b>Blinking</b> | data is being transmitted on receiver's HID USB port 2   |
| <b>U1</b>   | <b>ON</b>       | Connected to the host and initialized successfully   |
|             | <b>Blinking</b> | data is being transmitted on receiver's HID USB port 1   |

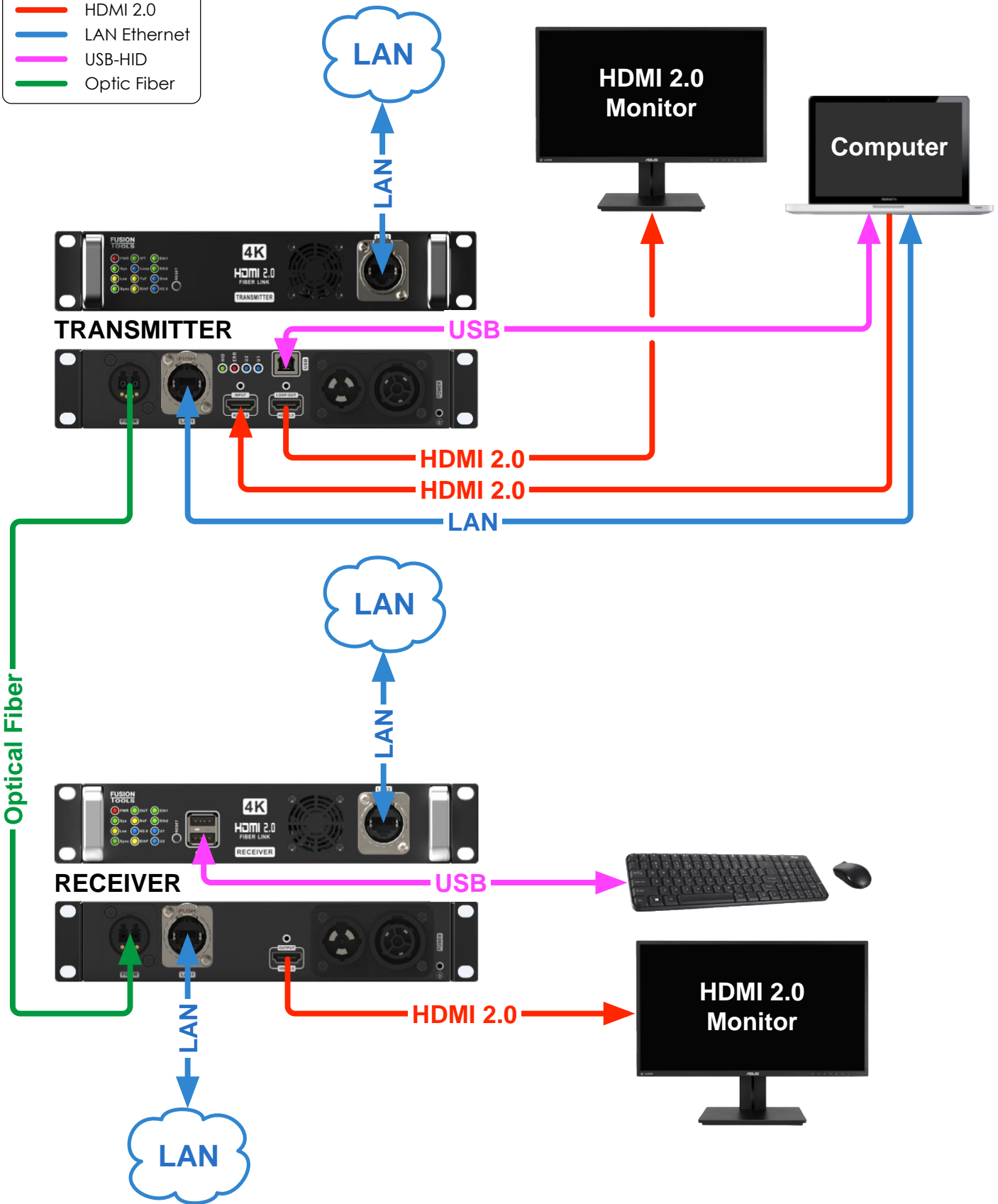
**RECEIVER - LED Description**

| Front Panel  |  |  |
|--|--|--|
|  PWR  |  OUT  |  Eth1 |
|  Sys  |  RxF  |  Eth2 |
|  Los  |  H2.0 |  U1   |
|  Sync |  EthF |  U2   |

| LED  | Status          | Description  |
|--|-----------------|--|
| <b>PWR</b>   | <b>OFF</b>      | Receiver is power Off  |
|  | <b>ON</b>       | Receiver is power On   |
| <b>Sys</b>   | <b>OFF</b>      | System has not finished starting up or is not running properly   |
|  | <b>ON</b>       | System crash ( if the system crash indicator will remain in an uncertain state, it may be on or off )  |
|  | <b>Blinking</b> | System is running normally   |
| <b>Los</b>   | <b>ON</b>       | EDID/HDCP/KM control data channel Optical signal reception is normal   |
|  | <b>OFF</b>      | EDID/HDCP/KM control data channel Optical signal is loss   |
| <b>Sync</b>  | <b>OFF</b>      | EDID/HDCP/KM control data channel synchronization fails  |
|  | <b>Blinking</b> | EDID/HDCP/KM control data channel synchronizing  |
|  | <b>ON</b>       | EDID/HDCP/KM control data channel synchronized   |
| <b>OUT</b>   | <b>OFF</b>      | no device connected on HDMI output port  |
|  | <b>Blinking</b> | a device is connected on HDMI output port, but no signal transmit  |
|  | <b>ON</b>       | a device is connected on HDMI output port and signal transmitted properly  |
| <b>RxF</b>   | <b>OFF</b>      | no video signal transmit over fiber  |
|  | <b>Blinking</b> | the video signal has been received from fiber, but some Lane are faulty.<br>For example, QSFP+ Module Tx laser is failure or laser power is not enough |
|  | <b>ON</b>       | the video signal is properly received from fiber   |
| Note : If the video link is not established properly, the transmitter will turn off the laser of the video fiber channel (QSFP+ Module), there will be no video optical signal received from fiber |                 |  |
| <b>H2.0</b>  | <b>OFF</b>      | The device operates in HDMI 1.4 mode   |
|  | <b>ON</b>       | The device operates in HDMI 2.0 mode   |
| <b>EthF</b>  | <b>OFF</b>      | Ethernet channel Optical signal is loss  |
|  | <b>ON</b>       | Ethernet channel Optical signal reception is normal  |
| <b>Eth1</b>  | <b>OFF</b>      | no LAN connection on ethernet port 1   |
|  | <b>ON</b>       | a LAN communication is established on ethernet port 1  |
|  | <b>Blinking</b> | data is being transmitted on ethernet port 1   |
| <b>Eth2</b>  | <b>OFF</b>      | no LAN connection on ethernet port 2   |
|  | <b>ON</b>       | a LAN communication is established on ethernet port 2  |
|  | <b>Blinking</b> | data is being transmitted on ethernet port 2   |
| <b>U1</b>  | <b>OFF</b>      | no device connected on receiver's HID USB port 1   |
|  | <b>ON</b>       | a HID device inserted in HID USB port 1  |
|  | <b>Blinking</b> | data is being transmitted on receiver's HID USB port 1   |
| <b>U2</b>  | <b>OFF</b>      | no HID device connected on receiver's HID USB port 2   |
|  | <b>ON</b>       | a HID device inserted in HID USB port 2  |
|  | <b>Blinking</b> | data is being transmitted on receiver's HID USB port 2   |

**Diagram**

- HDMI 2.0
- LAN Ethernet
- USB-HID
- Optic Fiber



**Instructions**

| Video    |   |
|----------|---|
| 1.       | Transmitter :<br>1. connect a source device to the Transmitter HDMI Input port.<br>2. connect a display to the Transmitter HDMI loop-out port.  |
| 2.       | Receiver : connect a display to the Receiver HDMI Output port.  |
| Fiber    |   |
| 3.       | Using a OpticalCON DUO cable or Duplex PC-PC cable to connect the Transmitter fiber on the Receiver fiber.<br><small>A cross cable should be used to connect the transmitter's A port (Tx) to the receiver's B port (Rx) and the transmitter's B port (Rx) to the receiver's A port (Tx).</small> |
| USB K/M  |   |
| 4.       | Transmitter : connect the USB port of the transmitter to an USB host port of a computer.  |
| 5.       | Receiver : connect mouse and keyboard or touch screen to the receiver's USB ports.  |
| Ethernet |   |
| 6.       | Transmitter : connect the switch and terminal equipment with Cat. 6 cable.<br>Receiver : connect the LAN1/LAN2 and terminal equipment with Cat 6 cable.<br><small>( Cat.6 cables must meet the requirements of EIA/TIA 568A )</small>   |
| Power    |   |
| 7.       | Plug the Power Adapter cables into the PowerCON True1 slots on the Transmitter and Receiver.  |
| Reset    |   |
| 8.       | If the extender fault during operation, the system can be reset by pressing the reset button. This could solve some extender faults.<br>If the fault cannot be eliminated by pressing the reset button, please power on the equipment again.  |

**Built-in automatic EDID manager operation mode :**

- ✘ By default, the built-in EDID manager presents a 1920\*1080@60p EDID of a virtual monitor named " 2CH1080 ".
- ✘ When a monitor is connected to the receiver's main output, or transmitter's loop output, its EDID is automatically recorded by the EDID manager.
- ✘ A priority is given to the monitor connected on receiver's main output, its EDID will overwrite the one of the loop monitor registered beforehand.
- ✘ In case of monitors disconnection or fiber connection loss, the EDID manager will maintain the signal transmission from the source.
- ✘ If the monitor connected to the main output is replace by another one, its EDID will automatically replace the one previously registered.
- ✘ This EDID is stored in a temporary memory, it will be automatically reinitialized in case of transmitter reboot or reset.

**Built-in HDMI outputs scaler operation mode :**

- ✘ If the monitor connected on an HDMI output can not handle HDMI 2.0 signal, the transmitted signal to it will be down-scaled to HDMI 1.4 signal.
- ✘ Each output ports has its own down-scaler, so one output can work with the original signal during the other one running with scaled signal.
- ✘ An UHD signal 3840\*2160 will be convert to an HD signal 1920\*1080, an 4K signal 4096\*2160 will be convert to an 2K signal 2048\*1080.

( Only these two standard resolutions are supported by the scaler, another resolution will not be down-converted and transmitted in its original format, frame-rate will remain as it was ).

**Packing List**

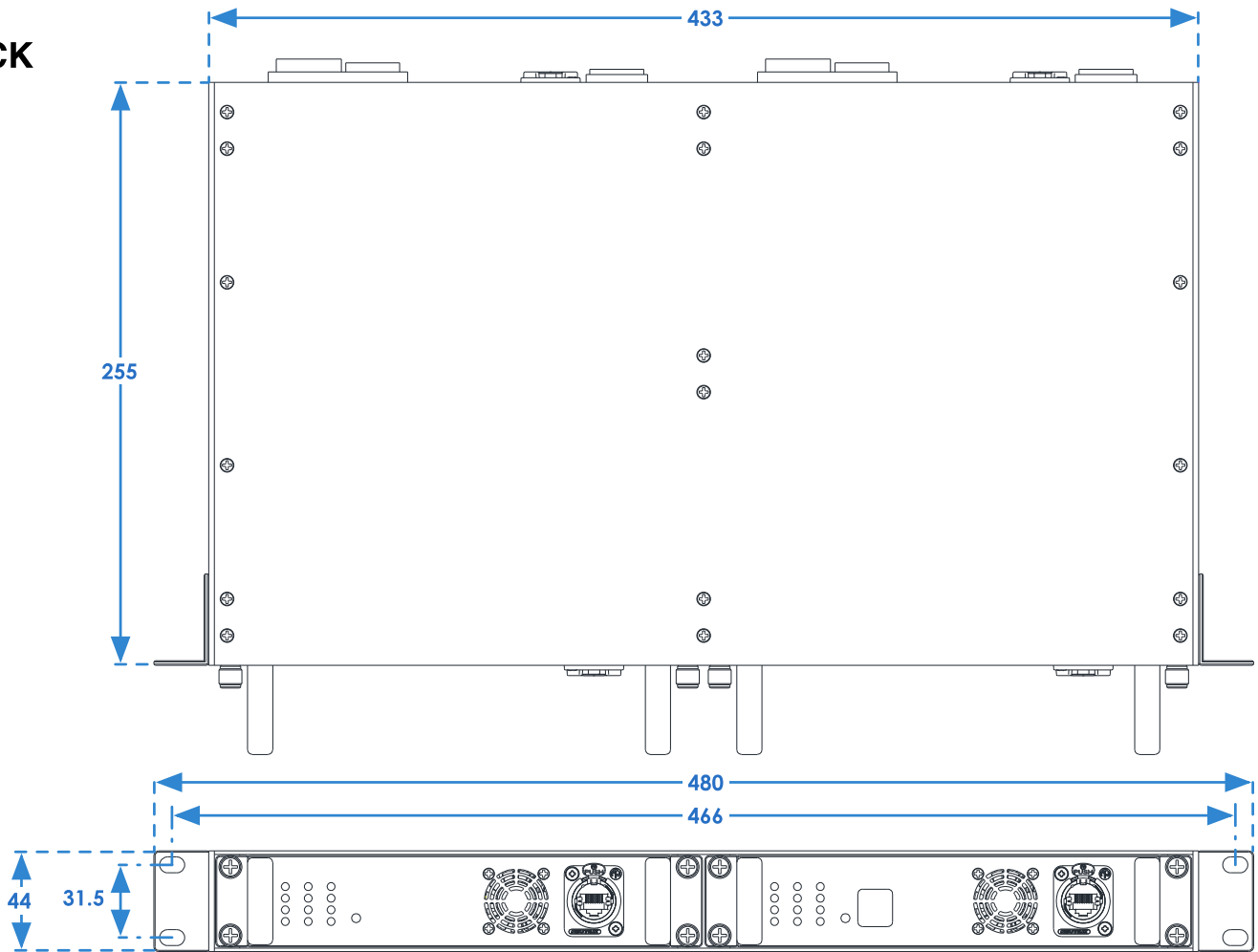
The HDMI 2.0 KVM Fiber Optic Extender ships with the items listed below.

If any of these items are not present in the box when you first open it, immediately contact your dealer.

- ✘ 1 x Transmitter Box UF-HDF460KM-2GE-T
- ✘ 1 x Receiver Box UF-HDF460KM-2GE-R
- ✘ 1 x 0.6m USB2.0 Male A - Male B Cable
- ✘ 1 x Rack 1U UF-R1U
- ✘ 2 x 70cm Power Cable
- ✘ 1 x 60cm Junction PowerCON True Male – Female Cable
- ✘ 1 x 32cm Removable Black Safety Sling
- ✘ 1 x Masking Plates
- ✘ 1 x User Manual

Dimensions (mm)

**RACK**



**BOX**

