

# **Desktop KVM OVER IP Optical Network Extender (Ultra HD HDMI)**

## **A. Introduction:**

Lossless KVM OVER IP HDMI optical network extender uses CAT6/7 cable or optical fiber to transmit video, audio and KVM signals among multi- computer rooms/data centers. Video quality can be in desktop-class applications, and break through the limitation of transmission distance based TCP/IP protocol, Ensure lossless on vision, hear and control; Delay free experience, ensure the quality and efficiency of control.

## **B. Features:**

- I. Audio/video, serial port, Infrared RS232, USB keyboard&mouse, USB flash are extend through network or Optical fiber;
- II. CAT6 / 7 network cable can be used to transmit more than 100 meters, and can be extended infinitely through the switch;
- III. With routing switching function, it can pass through the network switch and support 32 groups of pairing through the dial switch;
- IV. Support Unicast mode and Multicast mode (one to one, one to many);
- V. Supports maximum UHD UHD resolution: 4kx2k@30Hz;

VI. Supports HDMI 1.4 & HDCP 2.2;

VII. Automatic detection of display mode and DDC synchronization function, automatic display of the best resolution of the back-end display;

VIII. Lossless video compression algorithm based on patent authorization;

IX. Support USB 2.0 full rate transmission function;

X. Transmission delay < 80us;

### **C. Technical advantages**

Lossless display without delay

The lossless KVM over IP HDMI optical network extender optimizes the image quality and transmission delay respectively based on the patented video compression algorithm, which can ensure the lossless display of the image and transmit with a delay less than 80us 1080p@60hz/4kx2k@30Hz HD Ultra HD real-time image, as if in the local direct connection viewing experience

**Application topology:**

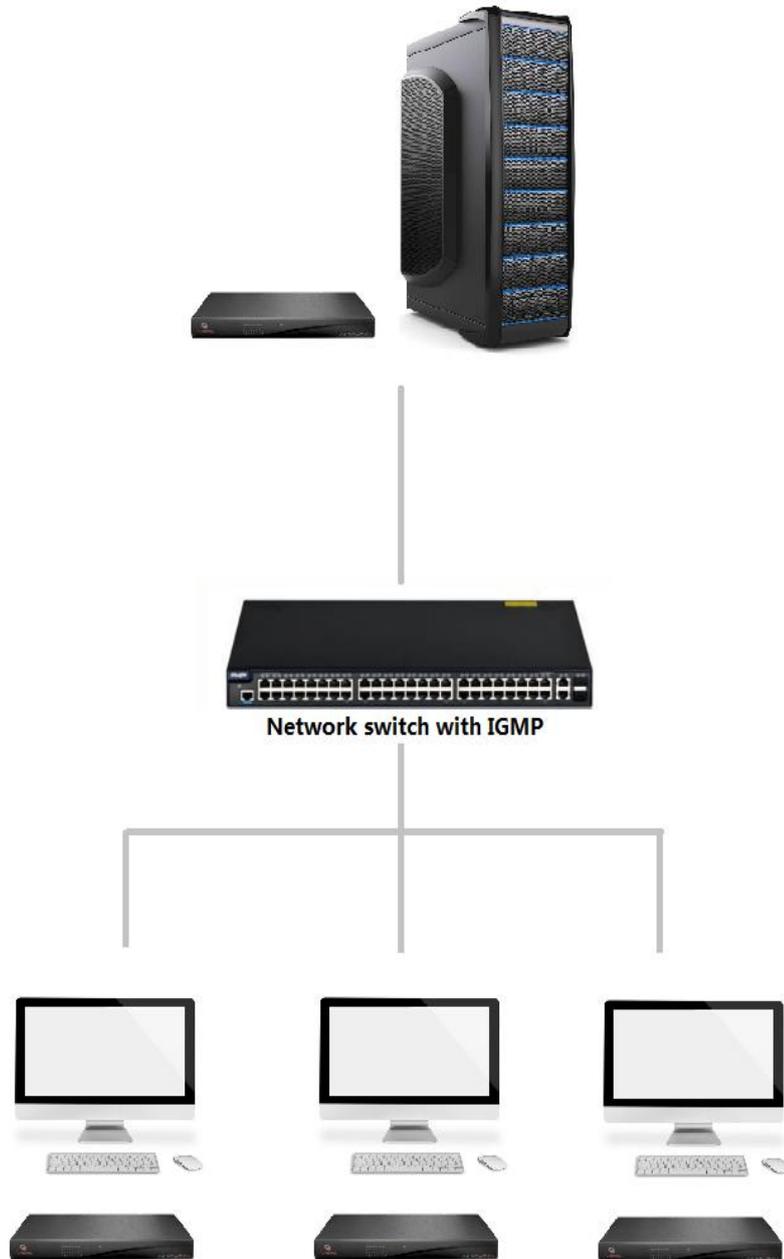
**Unicast mode (one to one)**



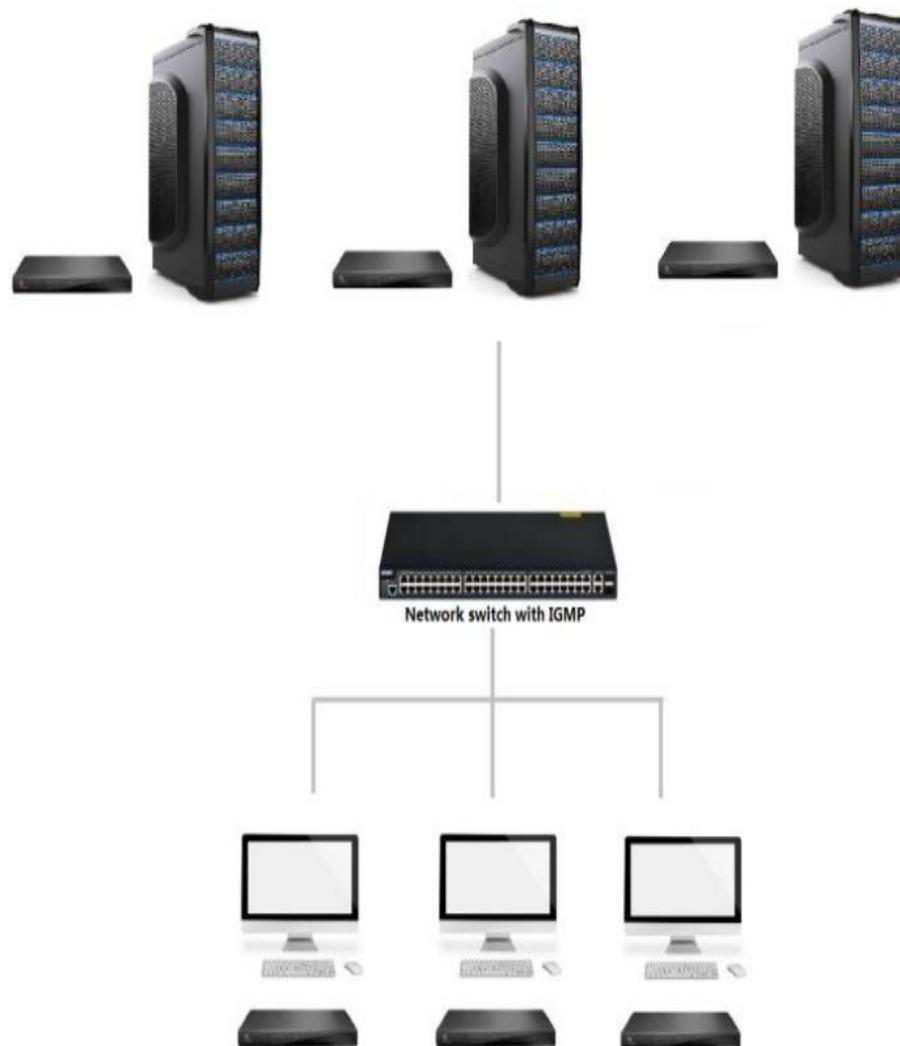
**Up to 100 meters over a  
single cat 5e/6/7 cable**



## Multicast mode I (one to many)



## Multicast mode II (multilayer network switching)



## Specification:

### LBX-1600T(Transmitter)

<b>Video</b>	
Signal Protocol	HDMI1.4b、TMDS Signal
Physical interface	HDMI TYPE A
Max Resolution	4096x2160@30Hz (RGB444 format) , 4096x2160@60Hz (YUV420) , 2560x1080@120Hz (RGB444) ,
H D C P	HDCP1.4 & HDCP2.2
Pixel bandwidth	300MHz, all-digital
Interface bandwidth	12Gbps
signal intensity	TMDS +/-0.4Vpp
Minimum maximum level	TMDS 2.9V/3.3V
Impedance	Differential 100 ohm
HDMI wire input distance	Less than10m, Certified HDMI wire is recommended
<b>Audio Interface</b>	
Audio Input	3.5mm audio jack
Audio output	3.5mm audio jack
Gain	0dB
frequency response	20hz-20khz
Signal type	stereo
impedance	Input >10kohm; output 50 ohm
Maximum input level	3Vpp
<b>USB Interface</b>	
Type	Type B seat
Signal Type	USB Signal
Agreement	USB2.0
transmission speed	480Mbps
<b>RS232 Interface</b>	
Connector	3.5mm phoenix jack
Baud rate	115200bps
Signal Type	Digital TTL
Level type	RS-232 level
Signal direction	Two way communication
<b>network interface</b>	
Connector	High speedRJ45
Protocol	TCP/IP
Transmission Distance	use of CAT6/7 shielded wire can be more than 100 meters,Access switch without distance limit
Transmission delay	<80us

<b>Fiber Interface</b>	
Connector	SFP fiber connector, LC fiber
Type	Multimode or single mode
Wavelength	Multimode:850nm    Singlemode: 1310nm
Protocol	TCP/IP
Rate	1.25Gbps
Specifications	Multimode: 50/125um    Singlemode: 9/125um
Transmission Distance	Multimode less than 300m, Single mode:2km~80km
<b>Specifications</b>	
Power	12V/2A
Power waste	<=10W
Temperature	Working temp: 0~50 degree, Storage temp: 20~70 degree
Humidity	10%~90%
Size	13.5cm X 11cm X 3cm (L x W x H)
Mean time between failures	30000 hours

## LBX-1600R Receiver

<b>Video Interface</b>	
Signal protocol	HDMI1.4b、TMDS Signal
Physical interface	HDMI TYPE A
Max Resolution	4kx2k@30Hz
H D C P	HDCP1.4 & HDCP2.2
Pixel bandwidth	300MHz, all-digital
Interface bandwidth	12Gbps
signal intensity	TMDS +/-0.4Vpp
Min max level	TMDS 2.9V/3.3V
Impedance	Difference 100 ohm
HDMI wore input distance	Less than 10m, Certified HDMI wire is recommended
<b>Audio Interface</b>	
MIC Input	3.5mm Audio Jack
Audio Output	3.5mm Audio Jack
Gain	0dB
frequency response	20hz-20khz
Signal Type	Stereo
Impedance	Input >10k ohm; Output: 50 ohm
Maximum Input Level	3Vpp
<b>USB Interface</b>	
Connector	4 type a double deck seats
Signal Type	USB Signal
Protocol	USB2.0
Transmission Speed	480Mbps
Transmission Delay	<80us
<b>RS232 Interface</b>	
Connector	3.5mm Phoenix Jack
Baud Rate	115200bps
Signal Type	Digital
Level Type	RS-232 Level
Signal Direction	Two way communication
<b>Network Interface</b>	
Connector	High speed RJ45
Protocol	TCP/IP
Transmission Distance	Up to 100 meters with CAT6 shielded wire, Access switch without distance limit

<b>Fiber Interface</b>	
Connector	SFP fiber connector, LC fiber
Type	Multimode or Singlemode
Wavelength	Multimode: 850nm    Singlemode: 1310nm
Protocol	TCP/IP
Rate	> 1.25Gbps
Specification:	Multimode: 50/125um    Singlemode: 9/125um
Transmission Distance	Multimode: less than 300m;    Singlemode: 2km~20km
Specification	
Power	12V/2A
Power waste	<=10W
Temperature	Working temp: 0~50 Degree, Storage temp: -20~70 degree
Humidity	10%~90%
Size	13.5cm X 11cm X 3cm    (L x W x H)
Mean time between failures	30000 hours

