

HB-20 HDBaseT Twisted Pair Extender Operation Manual V1.0

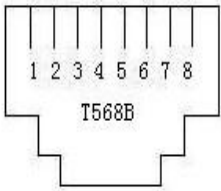
1. Instruction:

- ◆ HB-20 is an integrated HDBaseT technology extender, used with transmitter and receiver.
- ◆ Use common CAT.5e/6 cable as transmission wire. It extends the HDMI signal transmission distance and improves the image quality. The transmission distance is up to 100 meters.
- ◆ It supports all uncompressed 1080p and embedded audio signal transmission simultaneously. It also supports 4K * 2K ultra HD signal transmission.
- ◆ Transmits not only HDMI signal, but also RS232 or RS485 signal synchronously through a single cable.

2. Specifications

Item	Transmitter (T)	Receiver (R)
Maximum Resolution	3840*2160@30Hz , 4096*2160@24HZ	
Maximum Rate	10.2Gbps	
Support Protocol	BtLink1.0	
Maximum Distance	70m (Using CAT.5e/6 Cable)	
Input/Output Connector	HDMI type A *1, 9 pin DB jack *1	
Connector	RJ45	
DC Offset	DC 5V 2A	DC 5V 2A
Net Weight	0.75KG	
Gross Weight	0.9KG	
Packing Size	140MM *90MM*50MM (L*W*H)	

3. RJ45 PIN & Wiring standard definition:

	RJ45		
	PIN	Color	Function
	1	White-orange	TMDS DATA 2+
	2	Orange	TMDS DATA 2-
	3	White-green	TMDS CLOCK +
	4	Blue	TMDS DATA 1+
	5	White-blue	TMDS DATA 1-
	6	Green	TMDS CLOCK -
	7	White-brown	TMDS DATA 0+
	8	Brown	TMDS DATA 0-

Note:

- 1) Make sure that the cable wiring order is the B class, which is orange-white, orange, green-white, blue, blue-white, green, brown-white, brown.
- 2) Please ensure the connection is fine before operating the signal source equipment (such as PC and edge blending processor).
- 3) Check if there's any loose for every connection, make sure they are well connected if the

transmission distance is far away.

4. Transmission distance:

The transmission distance of using CAT.5e and CAT.6 cable(With the different performance of display screen,signal source device and twisted pair cable, the maximum transmission distance may be slightly different).

Signal Type	Distance(m)	Signal Type	Distance(m)
RS232	100	RS485	100

Resolution	Distance(m)	Resolution	Distance(m)
1920*1080@60HZ	100	1920*1200@60HZ	100
3840*1080@60Hz	100	3840*1200@60Hz	100
3840*2160@30Hz	100	4096*2160@24Hz	100
Downward compatible with multiple resolutions			

5. Connecting method:

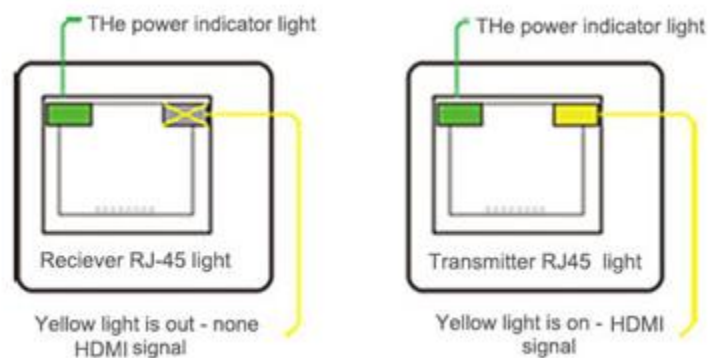
Connect the HDBTX port and HDBRX port through CAT5e/6 cable. Each signal input connector of the transmitter is connected with the signal source and each output connector of the receiver is connected to the output device. As shown below:



HB-20 transmitter connection



HB-20 receiver connection



Network port indicator light

6. Precautions:

- 1) HB-20 does not support HDCP compliant.
- 2) Resolutions below 640 * 480 may cause noise on the screen.
- 3) Keep away from the equipment that can generate electromagnetic waves, such as microwave ovens, radio equipment, high voltage lines, etc.
- 4) Please use high quality CAT.6, including cable and plug. The performance of twisted pair cable may affect the maximum transmission distance.
- 5) Network wiring cannot use STP wire and flat wire. Otherwise it will result in no images.
- 6) Transmitter and receiver cannot be mixed, and need to be connected by rules. Otherwise it will result in no images.
- 7) During use please do not hot plug. Otherwise, the device will be damaged.

7. Q & A

Q: Why the output images have no sound?

A:

- 1) ✓ Check whether the cable is CAT.5e / CAT.6 cable.
- 2) ✓ Check whether the connection sequence of crystal head is correct.
- 3) ✓ Check if the HDMI cable is in well contacted.
- 4) ✓ Replace the HDMI cable.

- 5) ✓ Check whether the source is output correctly.
- 6) ✓ Replace the signal source.
- 7) ✓ Check whether the entire connection system is properly operating with charging.