

EP Series

Fiber Extender




User Manual

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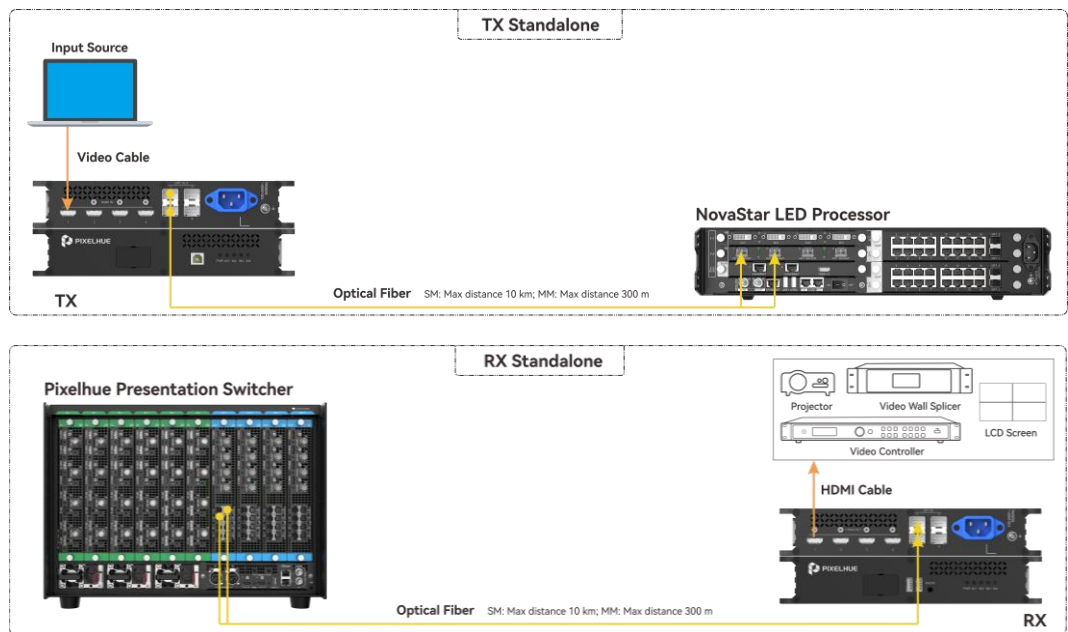
The latest edition of user manuals can be downloaded from the PIXELHUE website www.pixelhue.com.

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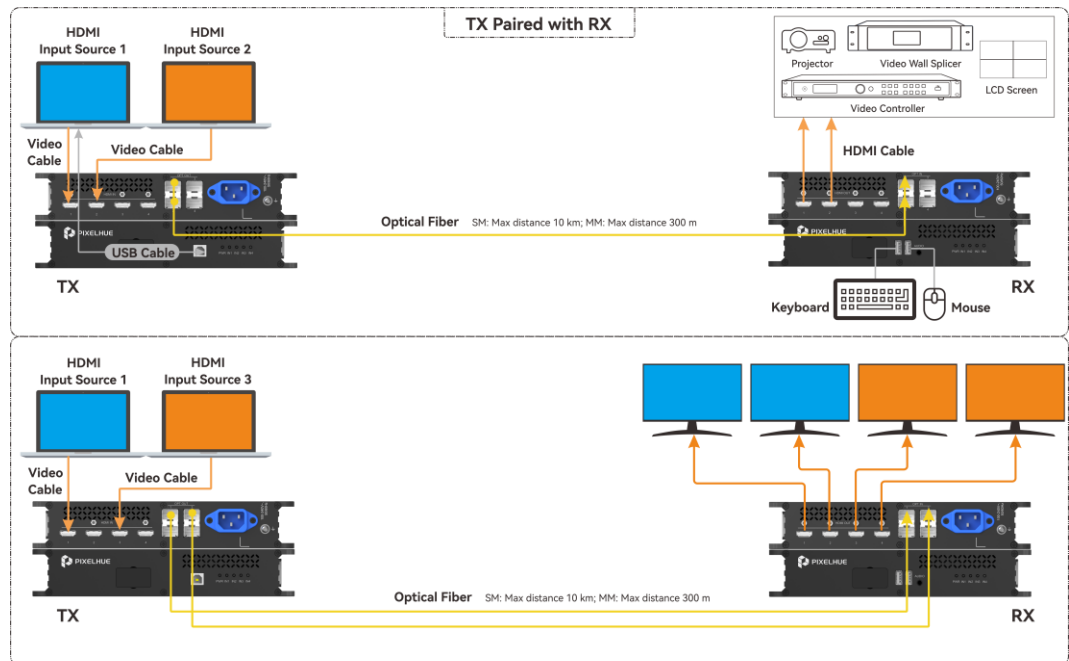
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1 Applications

Standalone Use



Paired Use



Caution

- The picture is for illustration purpose only. In actual use, stacking of the devices is forbidden.
- All fiber optic cables within the optical module must be connected, otherwise the device may experience operational anomalies.

2 Software Installation

2.1 Obtain Software

The BCTools installation package can be obtained through the following methods:

- Obtain the BCTools installation package from the device provider and copy it to your control computer.
- Contact your sales or technical engineer to obtain the software installation package and copy it to your control computer.

2.2 Software Installation

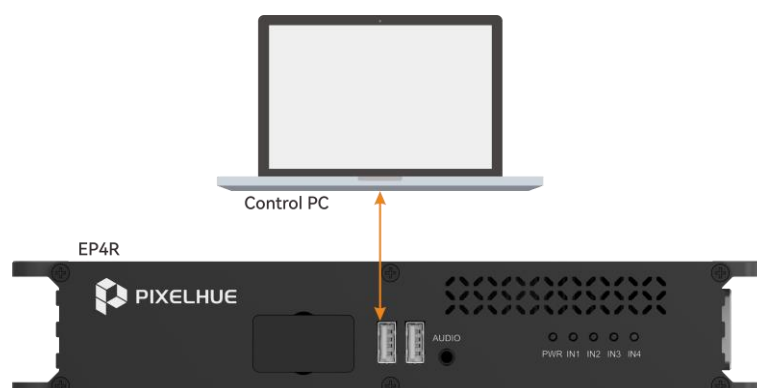
Extract the software package to the computer, double click the BCTools.exe installation package, and follow the prompts to complete the installation of the software.

BCTools currently supports installation on Windows 7 and above systems only.

2.3 Control Connections

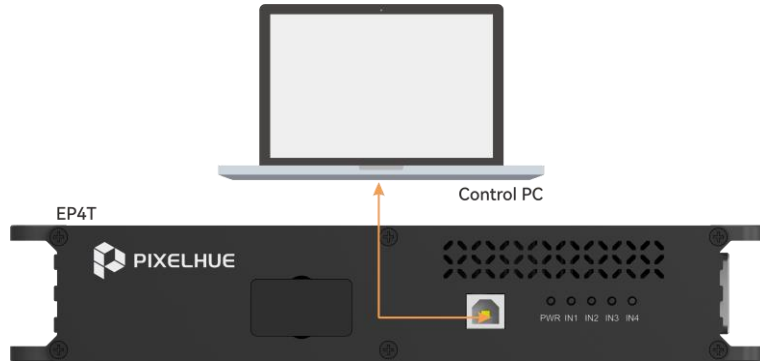
- Connect the control computer to the left USB connector of the EP4R using a USB cable.

Figure 2-1 RX device connection



- Connect the USB connector of the EP4T to the control computer using a USB cable.

Figure 2-2 TX device connection



3 Device Update

Prerequisites

- The corresponding device update package has been obtained.
- The device has been connected to the control computer.

Operating Procedure

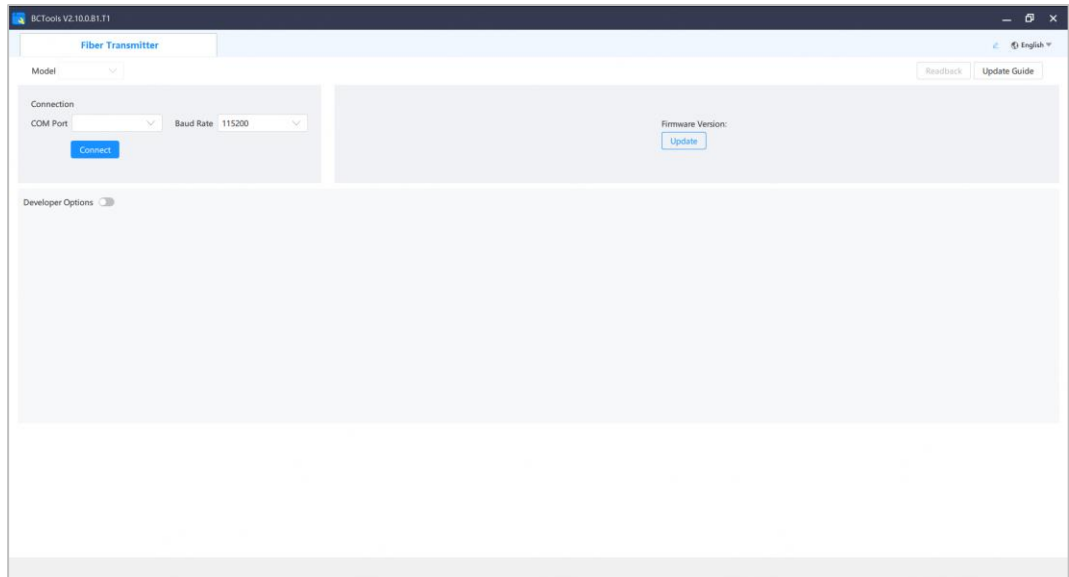
- Step 1 Disconnect all inputs and outputs from the device to be updated.
- Step 2 Unplug the power supply of the device to ensure a complete shutdown.
- Step 3 Open the silicone cover on the front panel of the device.

Figure 3-1 Open silicone cover



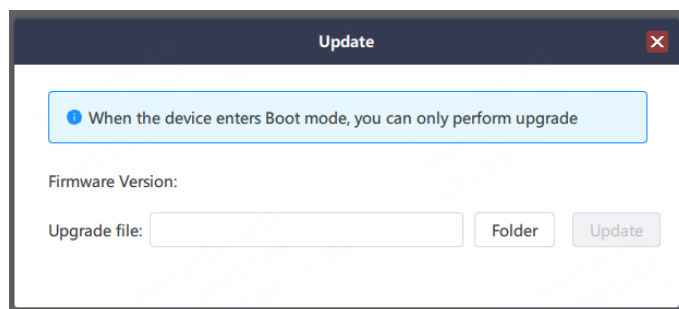
- Step 4 Toggle the BOOT switch downward to enable the BOOT mode.
- Step 5 Connect the control computer to the device using a USB cable.
- Step 6 Plug in the power supply for the device to initiate power-up.
- Step 7 Launch the BCTools program, select **Fiber Transmitter** to and enter the corresponding interface.

Figure 3-2 Fiber extender interface



- Step 8 In the **Connection** section, click the dropdown next to **COM Port** and select the device COM port.
- Step 9 Click **Connect**, and the device will automatically connect.
Once successful, the device model will appear next to **Model** at the top.
Click **Readback** in the upper right to view the current version information under **Firmware Version**.
- Step 10 Click **Update** on the right to enter the firmware update interface.

Figure 3-3 Fiber extender interface



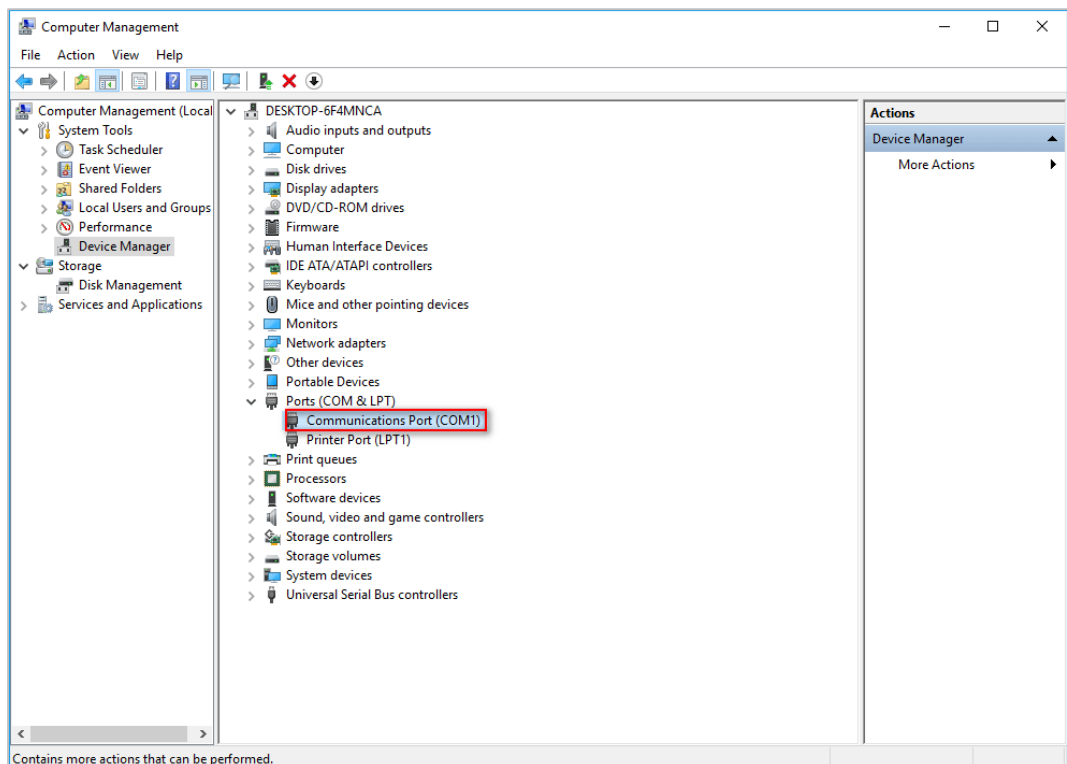
- Step 11 Click **Folder** to choose the folder containing the update files.
- Step 12 Click **Update**, and the system will begin updating the device firmware.
After the update, click **Readback** in the upper right to view the updated version information under **Firmware Version**.
- Step 13 Once the update is complete, set the BOOT DIP switch on the device front panel upward to **OFF**, disabling the BOOT mode.
If the update fails, adjust the device port number and try updating again.

Modify COM Port Number

If the device update fails via BCTools, modify the COM port number and retry the update.

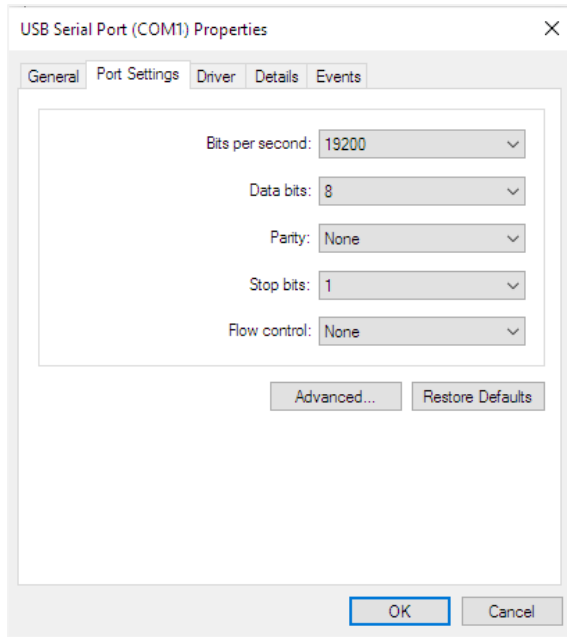
- Step 1 On the computer desktop, right click **This PC**, select **Manage**, and enter the **Computer Management** interface.
- Step 2 Click **Ports** to expand the port list interface.

Figure 3-4 Computer management



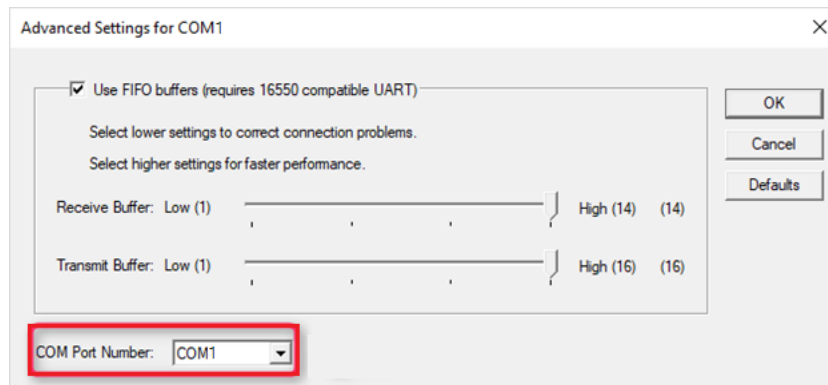
- Step 3 Right click the target serial port, select **Properties**, and enter the serial port properties interface.
- Step 4 Select **Port Settings** to enter the port settings interface.

Figure 3-5 Port settings



Step 5 Click **Advanced** to enter the advanced settings interface.

Figure 3-6 Advanced settings



Step 6 Click the dropdown box next to **COM Port Number** and select the port number.

Step 7 Click **OK** to complete the port number settings and return to the **Computer Management** interface to view the updated port number.

After modifying the COM port number, use BCTools to update the device again.

4 Device Connection and Usage

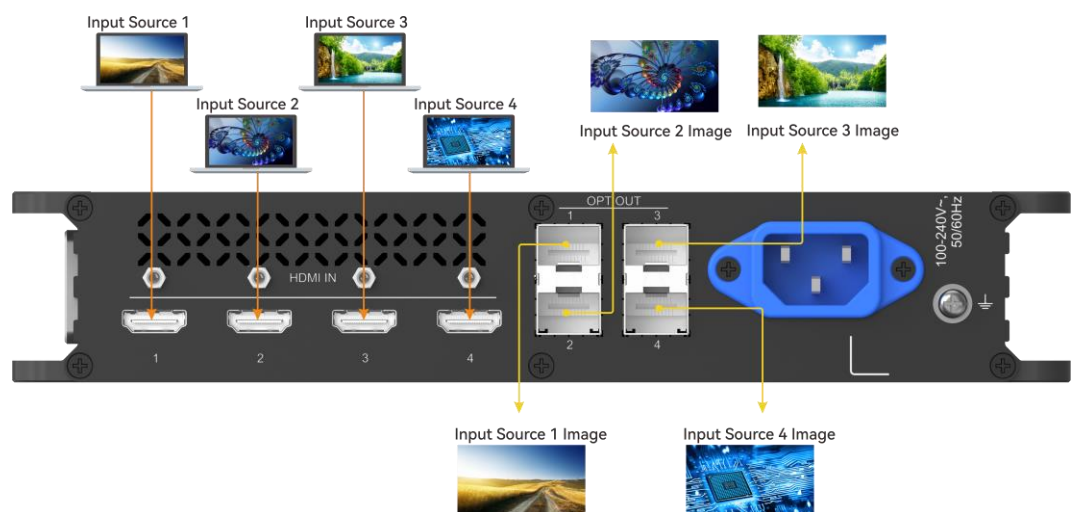
4.1 TX Standalone Usage

4.1.1 Direct Output

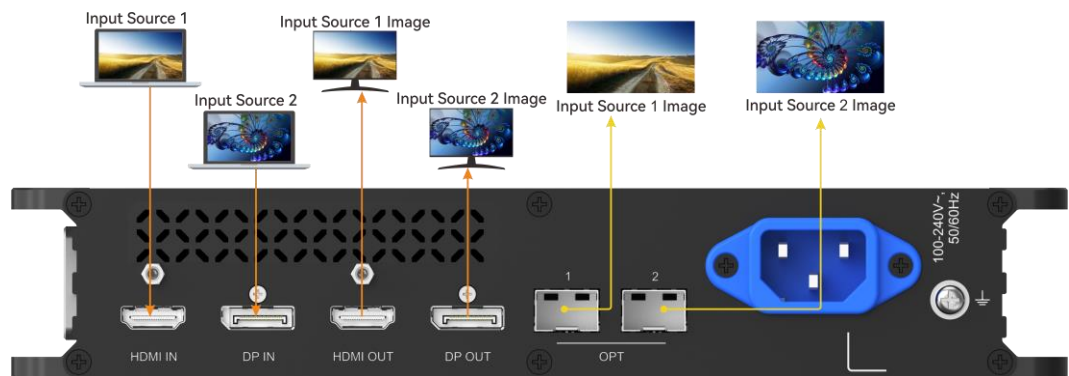
When the input source resolution is DL (3840×1080@60Hz) or below, the OPT port corresponds to the HDMI connector for output.

EP4T

- OPT 1 outputs HDMI 1.
- OPT 2 outputs HDMI 2.
- OPT 3 outputs HDMI 3.
- OPT 4 outputs HDMI 4.



EP2

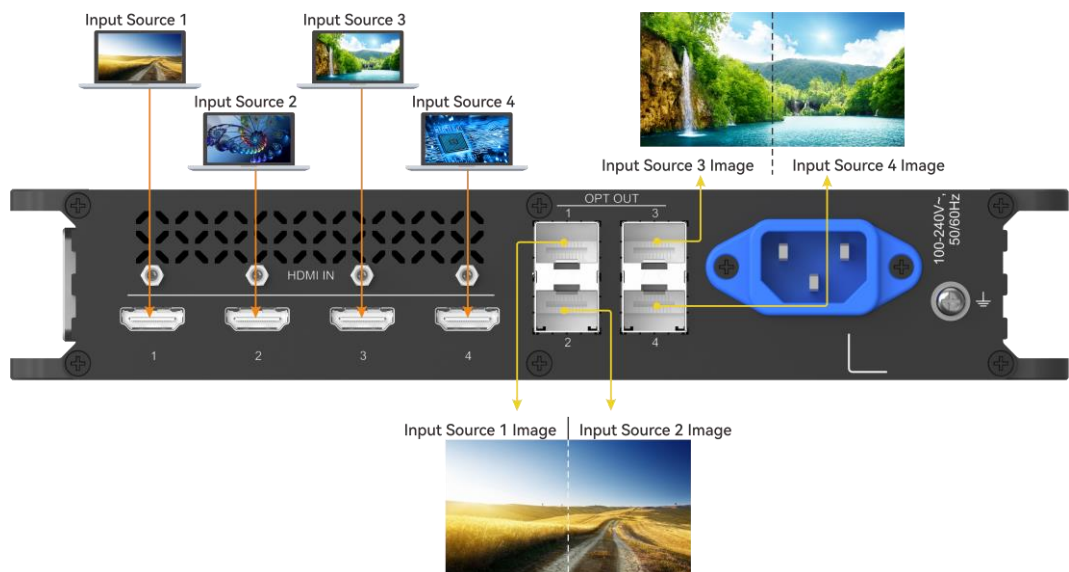


4.1.2 Mosaic Output

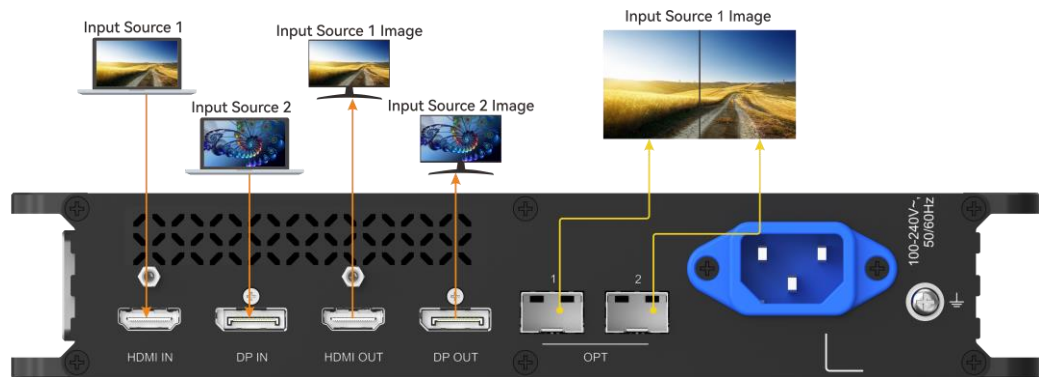
When the input source resolution is DL (3840×1080@60Hz) or above, two OPT ports stitch the HDMI output.

EP4T

- When all 4 HDMI input connectors are connected:
 - OPT 1 and OPT 2 stitch and output HDMI 1 content.
 - OPT 3 and OPT 4 stitch and output HDMI 3 content.
 - HDMI 2 and HDMI 4 do not output.
- When HDMI 1 and HDMI 3 are not connected:
 - OPT 1 and OPT 2 stitch and output HDMI 2 content.
 - OPT 3 and OPT 4 stitch and output HDMI 4 content.



EP2



4.1.3 Copy Output

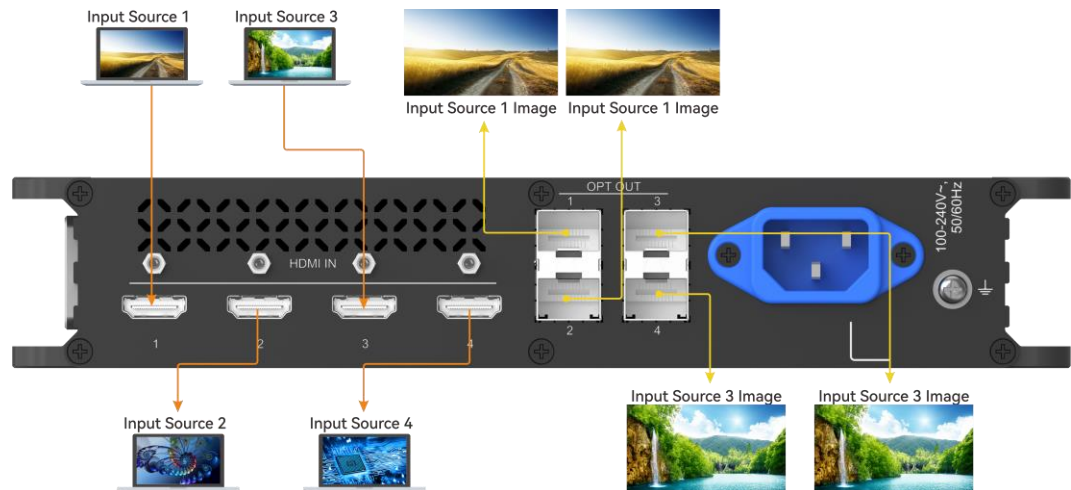
Open the silicone cover on the front panel and toggle the COPY switch downward to enable the copy function.

When the input source is DL (3840×1080@60Hz) or below, two OPT ports copy and output the HDMI content.

EP4T Copy Output Enabled	EP2 Copy Output Enabled
<p>OFF</p> <p>COPY BOOT</p>	<p>OFF</p> <p>COPY CONVERT BOOT</p>

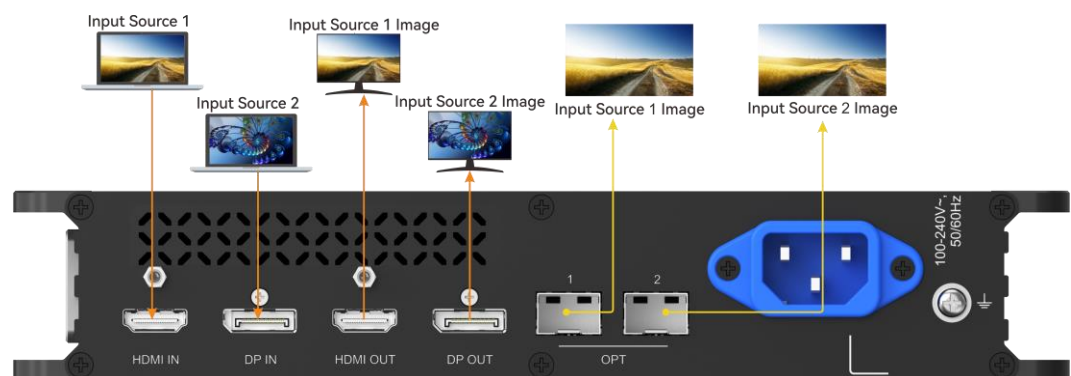
EP4T

- When all 4 HDMI input connectors are connected:
 - OPT 1 and OPT 2 copy and output HDMI 1 content.
 - OPT 3 and OPT 4 copy and output HDMI 3 content.
 - HDMI 2 and HDMI 4 do not output.
- When HDMI 1 and HDMI 3 are not connected:
 - OPT 1 and OPT 2 copy and output HDMI 2 content.
 - OPT 3 and OPT 4 copy and output HDMI 4 content.



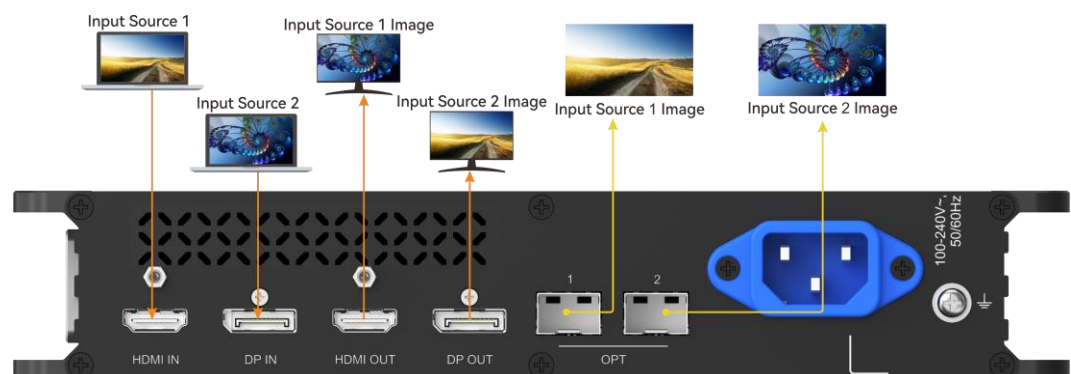
EP2

- When both HDMI and DP input connectors are connected, OPT1 and OPT2 copy and output the HDMI content.
- When the HDMI input connector is not connected, OPT1 and OPT2 copy and output the DP content.

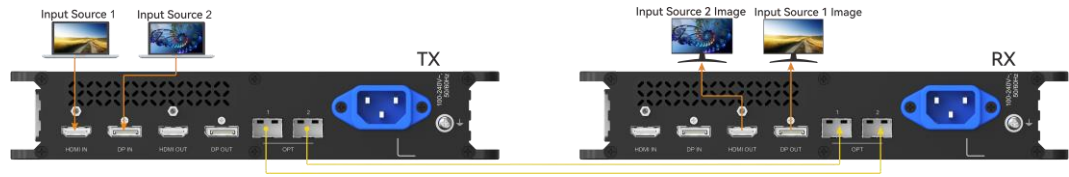


4.1.4 Conversion Output

When EP2 is used as TX, it supports HDMI and DP connector conversion. Open the silicone cover on the front panel and toggle the CONVERT switch downward to enable the conversion function.



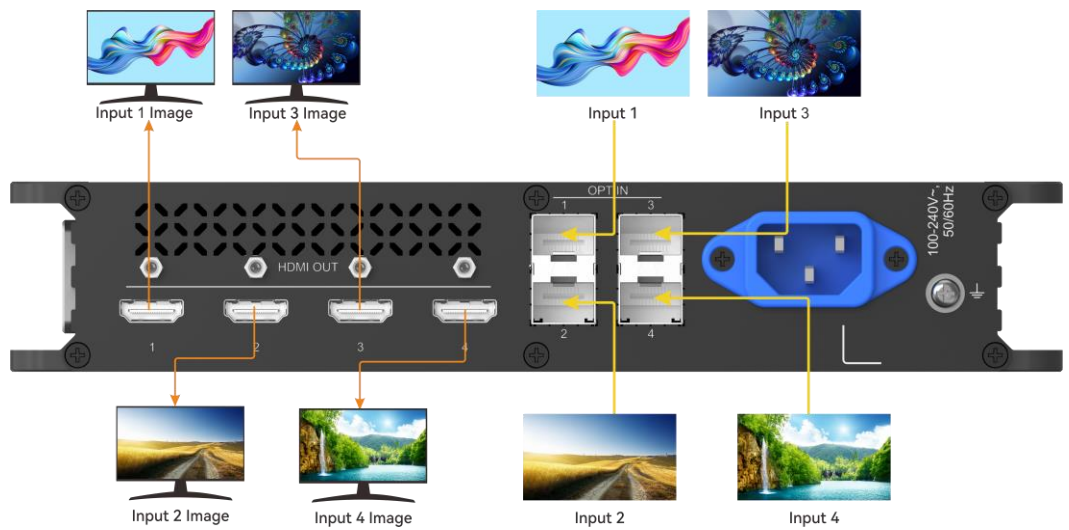
When paired with RX for signal format conversion, the OPT ports can be cross-connected.



4.2 RX Standalone Usage

4.2.1 Direct Output

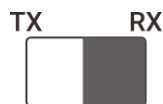
EP4R



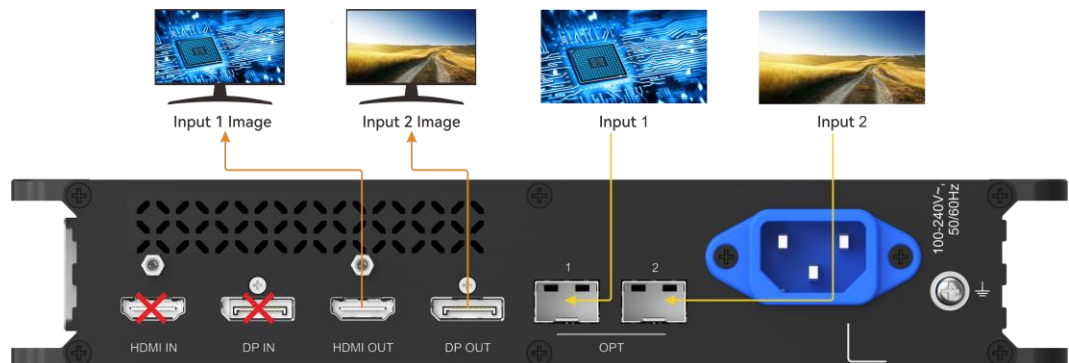
EP2

Open the silicone cover on the front panel and toggle the TX and RX switches to the right to set the device to RX mode.

After switching the device mode, the device must be restarted for the changes to take effect.

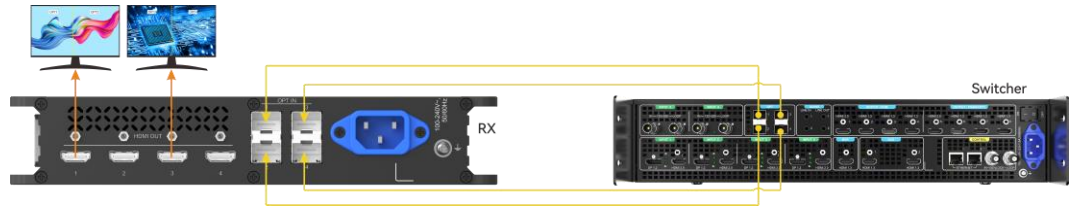


When EP2 is used as RX, the HDMI IN and DP IN connectors are unavailable.

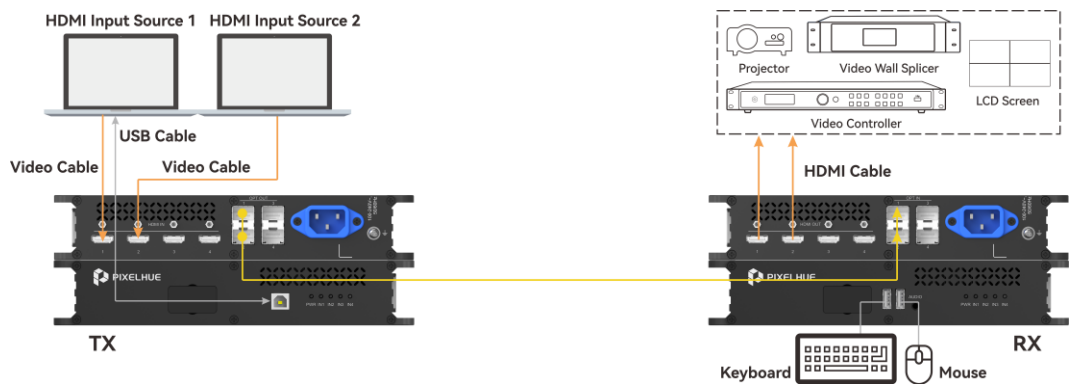


4.2.2 Mosaic Output

When the input is from a switcher, the RX device automatically stitches the OPT input signals for output.



4.3 TX and RX Paired Usage



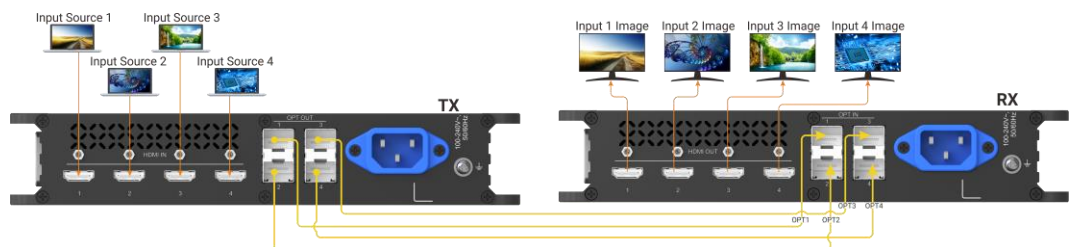
- When RX and TX are paired, a single connector supports up to 4096×2160@60Hz.
- For KVM control, it is advisable to use the recommended mouse brands, which have undergone rigorous compatibility testing with EP series devices to ensure a more stable and reliable experience.

For specific mouse brands and models, please consult your technical support.

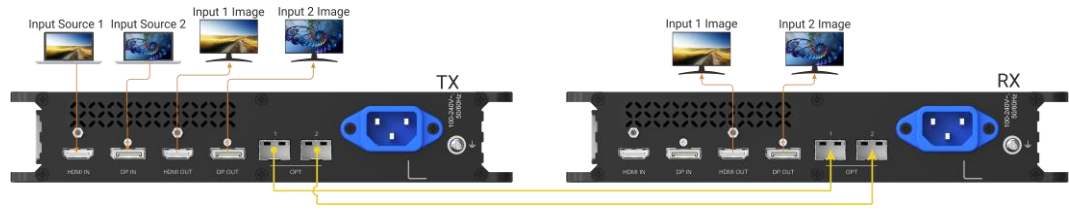
4.3.1 TX and RX Corresponding Output

When the COPY switch on both TX and RX is set to OFF, the input image on TX's HDMI IN can be output through the corresponding RX's HDMI OUT connector.

EP4T and EP4R



EP2

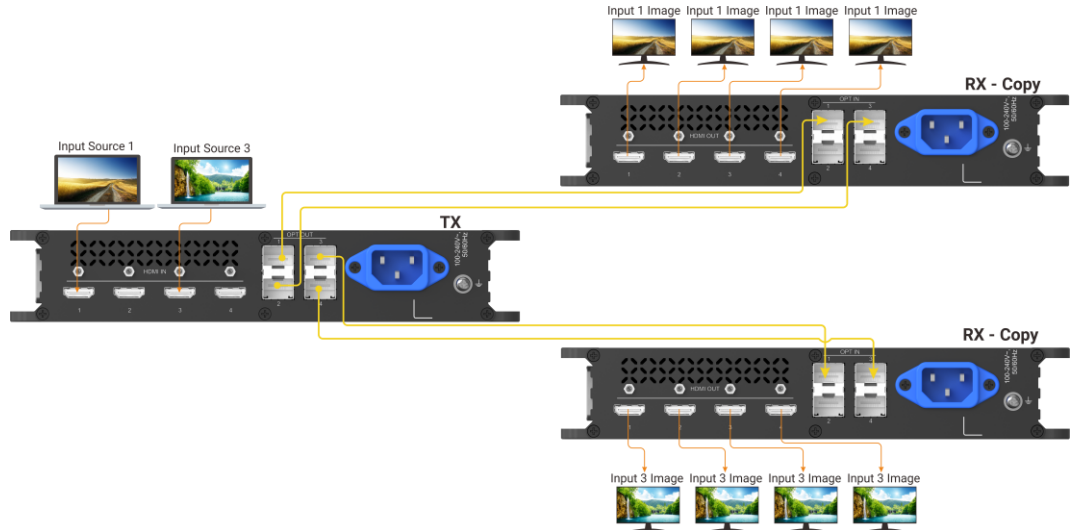


4.3.2 TX and RX Copy Output

TX and RX Copy Output Enabled

When the input copy functions on both TX and RX are enabled, the input images from TX's HDMI IN 1 and HDMI IN 3 can be copied for output.

- When all four HDMI inputs on TX are active:
 - RX's HDMI OUT 1 and HDMI OUT 2 copy HDMI IN 1.
 - RX's HDMI OUT 3 and HDMI OUT 4 copy HDMI IN 3.
 - No output for HDMI IN 2 and HDMI IN 4
- When HDMI IN 1 and HDMI IN 3 on TX are inactive:
 - RX's HDMI OUT 1 and HDMI OUT 2 copy HDMI IN 2.
 - RX's HDMI OUT 3 and HDMI OUT 4 copy HDMI IN 4.



Either TX or RX Copy Output Enabled

- When either EP4T or EP4R has copying enabled:
 - TX's OPT1 and OPT2 copy HDMI IN 1; if HDMI IN 1 is disconnected, they copy HDMI IN 2.
 - TX's OPT3 and OPT4 copy HDMI IN 4; if HDMI IN 3 is disconnected, they copy HDMI IN 4.
 - RX's HDMI OUT 1 and HDMI OUT 2 copy OPT1.
 - RX's HDMI OUT 3 and HDMI OUT 4 copy OPT3.

- No output for RX's OPT2 and OPT4
- When EP2 is used as either TX or RX with copying enabled:
 - TX's OPT 1 and OPT 2 copy HDMI IN; if HDMI IN is disconnected, they copy DP IN.
 - RX's HDMI OUT and DP OUT copy OPT 1, with no output for OPT 2.

Figure 4-1 EP4T and EP4R

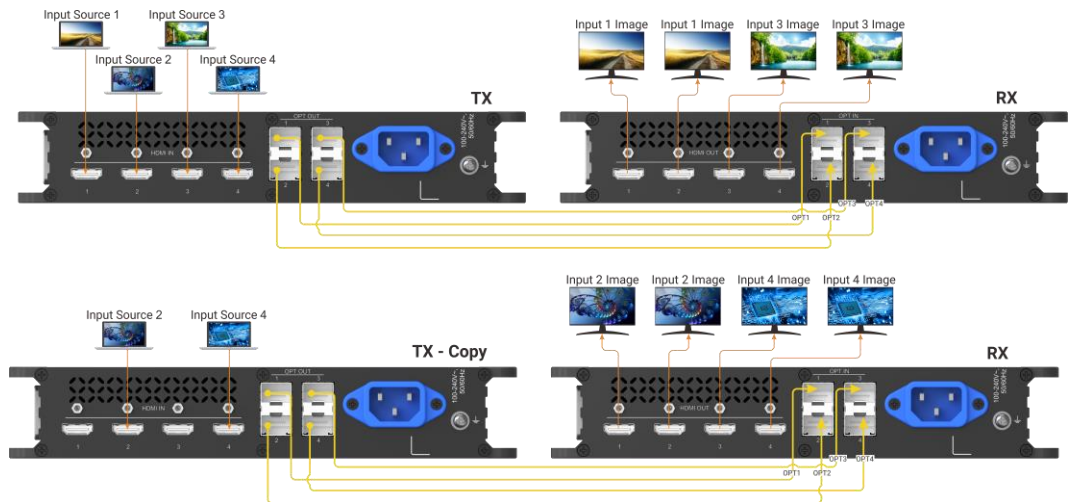
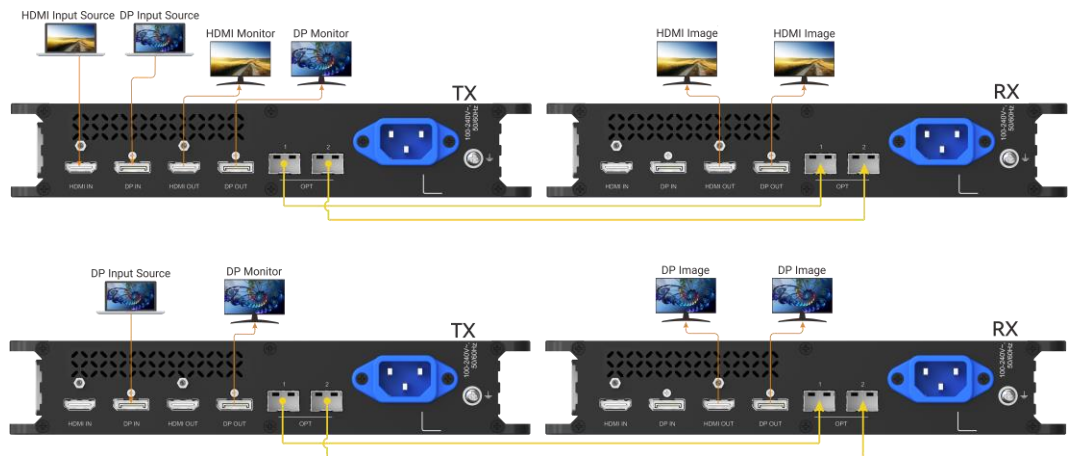


Figure 4-2 EP2



4.3.3 Forced Lossless Output

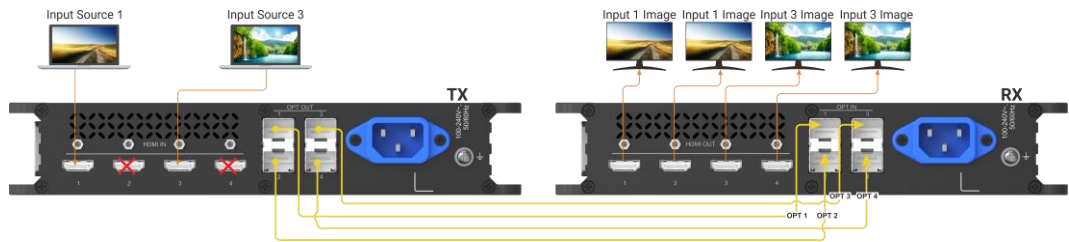
EP series devices support forced lossless output, allowing a single 4Kx2K@60Hz image to be input and output via two OPT ports.

Enabling Forced Lossless Output

Open the silicone cover on the front panel and set the COPY DIP switch and the one adjacent to it downward to enable the forced lossless output feature.

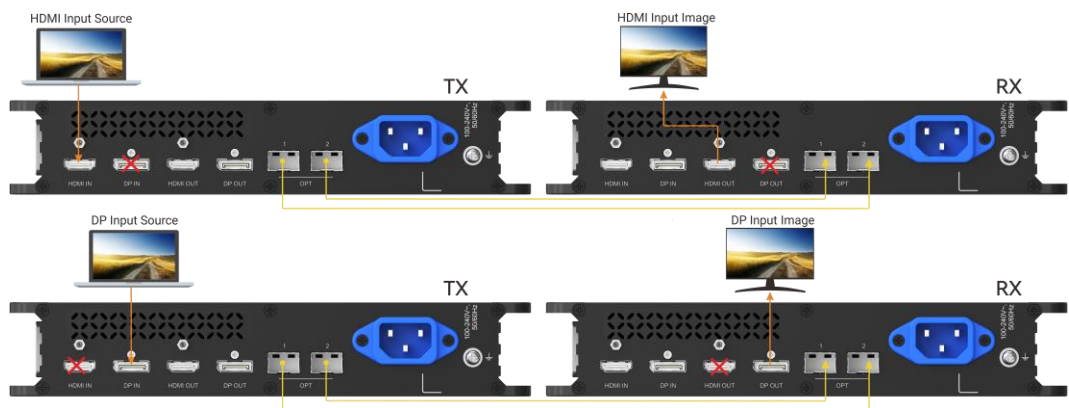
EP4 TX end	EP2 functions as a TX end
<p>OFF</p> <p>COPY BOOT</p>	<p>OFF</p> <p>COPY CONVERT BOOT</p>

EP4



- TX:
 - OPT OUT 1 and OPT OUT 2 mosaic (left and right) and output the uncompressed image of HDMI IN 1. HDMI IN 2 is not active.
 - OPT OUT 3 and OPT OUT 4 mosaic (left and right) and output the uncompressed image of HDMI IN 4. HDMI IN 4 is not active.
- RX:
 - HDMI OUT 1 and HDMI OUT 2 copy each other, outputting the mosaic image of OPT IN 1 and OPT IN 2.
 - HDMI OUT 3 and HDMI OUT 4 copy each other, outputting the mosaic image of OPT IN 3 and OPT IN 4.

EP2



- TX:
 - OPT 1 and OPT 2 mosaic (left and right) and output the uncompressed image of HDMI IN. DP IN is not active.

- RX:
HDMI OUT and DP OUT copy each other, outputting the mosaic image of OPT 1 and OPT 2.