Xcalibur 11U

User Manual

Excalibur 11U Transmitter (HX150U-11-18G-T)
Excalibur 11U Receiver (HX150U-11-18G-R)

4K HDMI 2.0 WITH USB2.0 EXTENDER SET
150M @1080P OR 120M @4K

HDMI 2.0 (4K60 4:4:4), USB2.0, Auto Down-Scaler,
Auto HDCP control, bidirectional IR control

Thank you for purchasing this PRODUCT

This PRODUCT is designed with the professional AV installers in mind. The many extensive features assist in system integration, validation, and maintenance.

Installation precautions

This product has special circuitry to protect it against moderate surges and static discharges. However, to ensure reliable operation and long service life, it is important to take the necessary precautions against any spikes, surges and static discharges.

Place the units away from heat sources and allow adequate ventilation.

Shielded cable and in particular cat6, cat6a or cat7 is highly recommended. As much as possible, cables should be in one piece and routed away from any noisy sources, avoiding long runs in close proximity to AC mains cables.

Do not connect the interconnecting Cat cable to any other device unless explicitly specified, as permanent damage may occur.

This 18Gbps extender can extend HDMI 2.0 signals, USB 2.0 control, and bi-directional IR to a maximum distance of 150m for 1080p or 120m for 4K60 4:4:4, using a single Cat6 cable.
Only one PSU is required at either the transmitter or the receiver as Power over Cable (PoC) is supported in both directions via the Cat6 cable.

All USB devices up to USB 2.0 such as keyboard, mouse, audio, video, etc. are supported up to a maximum data rate of 170Mbps.

Features

- HDMI 2.0b – Supports up to 4K60 4:4:4 (18Gbps)
- USB 2.0 – Supports up to USB 2.0, to 170 Mbps max.
- Supports Bulk, Control, Interrupt, and Isochronous Transfers
- **150m** for 1080p or **120m** for 4K, using single Cat5e, 6, 6a, 7
- HDCP 1.4 / 2.2 compliant
- Auto HDCP control
- Auto 4K → 1080p **Down-Scaler**
- EDID management
- Bi-directional IR
- Supports **CEC** pass-through
- PoC – Requires only a single PSU at the Transmitter or Receiver
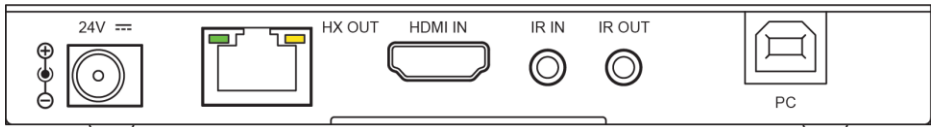
Connectors and Controls

Transmitter

Front

Name	Description
Power LED	Lit – Transmitter powered
EDID Switch	COPY - Use display device EDID 1080p - Use default 1080p EDID
SERVICE	Micro USB for configuration or update

Rear

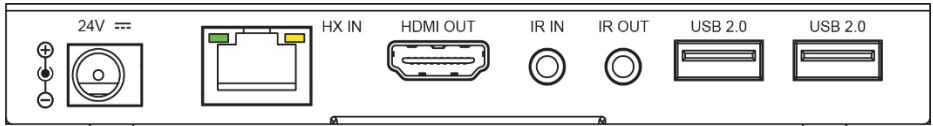| Name	Description
24V	24V DC Power input (2.1mm barrel jack)
HX OUT	RJ45 Cat6 cable output to the Xcalibur 11U Receiver
HX Green LED	**Solid:** Good Link **Flashing:** Poor connection **Off:** No link connection
HX Yellow LED	**Solid:** HDMI with HDCP present **Flashing:** HDMI with no HDCP **Off:** No HDMI signal present
HDMI IN	HDMI input from the source device
IR IN	Input for IR signal to the Receiver unit
IR OUT	IR signal output from the Receiver unit
PC	USB-B connection to the PC (host)

Receiver

Front

Name	Description
Power LED	Lit – Receiver powered
SERVICE	Micro USB for configuration or update

Rear

Name	Description
24V	24V DC Power input (2.1mm barrel jack)
HX in	RJ45 Cat6 cable input from the Xcalibur 11U Transmitter
HX Green LED	**Solid:** Good Link **Flashing:** Poor connection **Off:** No link connection
HX Yellow LED	**Solid:** HDMI with HDCP present **Flashing:** HDMI with no HDCP **Off:** No HDMI signal present
HDMI OUT	HDMI output to the display device
IR IN	Input for IR control to the Transmitter unit
IR OUT	IR control signal output from the Transmitter unit
USB 2.0 (2x)	USB-A connectors for Keyboard, mouse, camera, or other peripheral devices

Using this Product

1. Connect the video source to the Transmitter HDMI input.
2. Connect a USB cable from the Type B connector to the PC.
3. Connect the display to the Receiver HDMI Output.
4. Connect the required USB devices to the USB-A connectors on the Receiver unit.
5. Connect the Cat6 cable to the HX ports of the Xcalibur extenders.
6. Connect IR eye / emitter as required.
7. Connect the 24V DC PSU to the Transmitter or Receiver unit.

Auto Down-Scaler

Xcalibur-11U is equipped with intelligent Auto-scaler. With a 4K screen attached, it simply passes all 4K HDMI signals; however, when connected to a 1080p display, all 4K signals are automatically down-scaled to 1080p.

Auto HDCP

When the display unit can only handle HDCP 1.4, the Xcalibur-11U automatically will convert HDCP 2.2 video signals to HDCP 1.4 format.

EDID Switch

The EDID switch on the transmitter has two modes:
Copy: Uses the EDID of the display attached to the receiver.
1080p: Sets 1080p60 with 2ch (stereo) audio as the default EDID.

IR Pass Through

Connect the IR Eye (IR detector) to the IR IN. Connect the IR Emitter (blaster) to the IR OUT of the remote device. The IR signals are then passed through to the remote device and emitted. The emitter connector can be a 3.5mm mono style, in which case the entire sleeve is the +ve signal.

IR signals with carrier frequency in the range of 25-60 KHz can pass through.
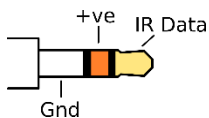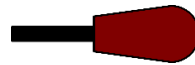

Figure 1 - Xcalibur IR Eye

Figure 2 -Xcalibur IR Emitter

Figure 3 - IR Eye Connector Wiring
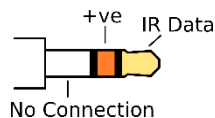

Figure 4 - IR Blaster Connector Wiring

Connection Example

USB2.0

Xcalibur 11U
Transmitter

HX150UT-18G

Xcalibur HDMI+USB Extender

HDMI

24V PSU

Up to 150m
Cat6a Cable

Xcalibur 11U
Receiver

HX150R-18G

Xcalibur HDMI Extender 150M

Xcalibur

sy

OPTIONAL
24V PSU

USB2.0
DEVICE 2

USB2.0
DEVICE 1
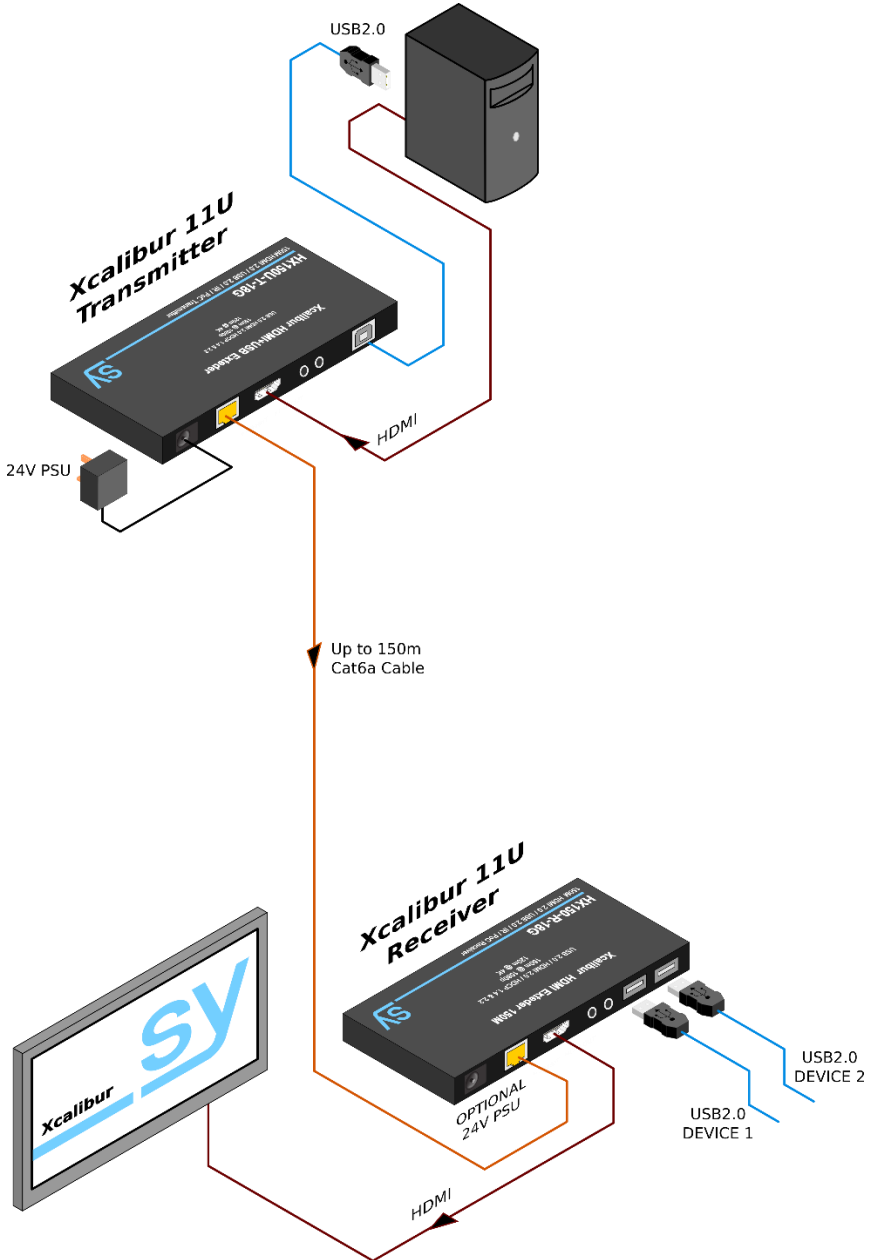
HDMI

Specifications

General

HDMI Resolutions	All HDMI and PC resolutions up to 4K2K 60Hz 4:4:4
HDMI Standard	Up to HDMI 2.0b
HDCP Compliance	HDCP 1.4 & HDCP 2.2
Colour Depth	8-bit, 10-bit ,12-bit for 1080p or 4K24/30 8-bit for 4K60
HDR	HDR, HDR10, HDR10+, Dolby Vision, HLG
USB Compliance	1.0, 1.1 and 2.0
USB Capability	Bulk Transfers, Control Transfers, Interrupt Transfers, and Isochronous Transfers
USB Data Rate	170 Mbps minimum
HDMI Audio	L-PCM 2.0, 2.1, 5.1, 6.1, 7.1 Dolby Digital, Dolby TrueHD, Dolby Digital+ (DD+), DTS-ES, DTS HD Master, DTS-HRA, DTS-X
Transmission Distance	**150m** @ 1080p, **120m** @ 4K2K
IR IN, IR OUT	25-60 KHz carrier frequency
Power Supply	24V 1.0A
Power Consumption	13W Max (Transmitter 2.75W Receiver: 7.25)

Environmental

Operating Temperature	0 ~ 40°C (32 ~ 104°F)
Operating Humidity	20 ~ 90% RH (non-condensing)

Physical

Dimensions (WxDxH)	140 x 65 x 18 mm
Weight	Transmitter: 245g Receiver: 250g

In the Box

- 1x SY-150U-T-18G Xcalibur 11U Transmitter
- 1x SY-150U-R-18G Xcalibur 11U Receiver
- 1x IR emitter cable
- 1x wideband IR receiver cable
- 4x mounting plates
- 8x screws for the mounting plates
- 1x 24V 1A locking PSU
- 1x User Manual

Safety Instructions

To ensure reliable operation of this product as well as protecting the safety of any person using or handling these devices while powered, please observe the following instructions:

1. **ONLY USE** the power supply provided. If an alternate supply is required, check the voltage, polarity and that it has sufficient power to supply the device it is connected to.

2. **DO NOT** operate this product outside the specified temperature and humidity range given in the above specifications.

3. Ensure there is adequate ventilation as this product generates heat while operating.

4. Repair of this product should only be carried out by qualified professionals as this product contains sensitive devices that may be damaged by any mistreatment.

5. Only use this product indoors and in a dry environment. **DO NOT** allow any liquids or harmful chemicals to come into contact with this product.

After Sales Service

1. Should you experience any problems while using this product, firstly refer to the Troubleshooting section in this manual and/or your local dealer before contacting SY Technical Support.

2. When calling SY Technical Support, please provide the following information:
   - Full Product Name and Model Number
   - Product Serial Number
   - Details of the fault and any conditions under which the fault occurs.

3. This product has a two year standard warranty beginning from the date of purchase as stated on the sales invoice. For full details please refer to our Terms and Conditions.

4. The SY Product warranty is automatically void under any of the following conditions:
   - The product is already outside of its warranty period
   - Damage to the product due to incorrect usage or storage
   - Damage caused by unauthorised repairs
   - Damage caused by mistreatment of the product

5. Please direct any questions or problems you may have to your local dealer before contacting SY Electronics.

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