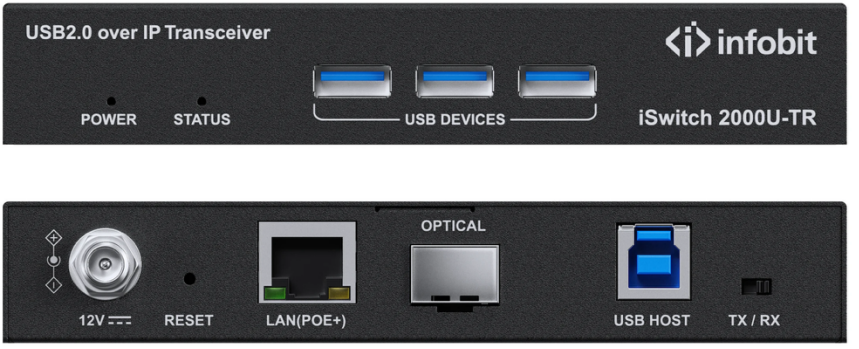
iSwitch 2000U-TR

USB over IP Transceiver

Hardware User Manual V1.0



CONTENT

infobit

IMPORTANT SAFETY INSTRUCTIONS

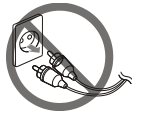
1. Do not expose this apparatus to rain, moisture, dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

6. Clean this apparatus only with dry cloth.

2. Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Ensure the unit is well ventilated.

7. Unplug this apparatus during lightning storms or when unused for long periods of time.

3. To prevent risk of electric shock or fire hazard due to overheating, do not obstruct the unit's ventilation openings with newspapers, tablecloths, curtains, and similar items.



8. Protect the power cord from being walked on or pinched particularly at plugs.

4. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Only use attachments / accessories specified by the manufacturer.

5. Do not place sources of naked flames, such as lighted candles, on the unit.

10. Refer all servicing to qualified service personnel.

1. INTRODUCTION

1.1 OVERVIEW

The **iSwitch 2000U-TR** is a USB 2.0 **transceiver** configurable as either a transmitter or a receiver for USB extension over Gigabit Ethernet. Fully interoperable with the **iSwitch 2000H/ 2000HC** series family, it offers a cost-effective solution for applications where only USB 2.0 signal extension is required.

1.2 FEATURES

- USB **transceiver** configurable as either transmitter or receiver.
- High-speed **USB 2.0** transmission over Gigabit Ethernet.
- Functions as a **local USB hub** with support for USB 3.2 Gen 2 in Transmitter mode.
- Supports **PoE 802.3at (PoE+)** for power supply via a remote PoE-capable switch.
- Supports **point-to-multipoint** application—up to seven remote USB peripherals can be associated with one transmitter in **USB over IP** (USBoIP) mode.
- Unlimited number of associated keyboards and mice in **Keyboard Mouse Over IP** (KmoIP) mode.
- Interoperable with the **iSwitch 2000H/ 2000HC** series family, providing an efficient and cost-effective solution for USB 2.0 signal extension.
- Supports **802.1x authentication**.
- Integrates with the IP controller **(iSwitch 2000-CTL)** for device management.

1.3 PACKAGE CONTENTS

- 1 x iSwitch 2000U-TR Transceiver Unit
- 1 x 12V DC 2A Power Adapter (US/EU/UK/AU)
- 2 x Wall-Mount Brackets
- 2 x Screws

1.4 SPECIFICATIONS

Technical	
USB Host	1 x USB 3.2 Gen 2 Type-B, 10Gbps
USB Device	- Local end: 3 x USB 3.2 Gen 2 Type-A, 10Gpbs (applies to TX mode) - Remote end: 3 x USB 2.0 Type-A, 480Mbps (applies to RX mode)
LAN	1 x RJ45 (PoE+)
Control Methods	- DIP switch (for TX/RX configuration) - IP controller **(iSwitch 2000-CTL)** - Telnet API

General	
Operating Temperature/ Humidity	32°F – 113°F (0°C – 45°C), 10% – 90%, non-condensing
Storage Temperature/ Humidity	-4°F – 158°F (-20°C – 70°C), 10% – 90%, non-condensing
ESD Protection	Human body model: ±8kV (air-gap discharge) / ±4kV (contact discharge)

General	
Power Supply	12V DC; PoE+
Power Consumption	- No load: 2.2W - Max.: 18.5W (full load with 3A current)
Device Dimension (W x H x D)	5.51" x 0.93" x 3.54" (140 mm x 23.5 mm x 90 mm)
Net Weight	0.70lb (0.32kg)

2. PANEL OVERVIEW

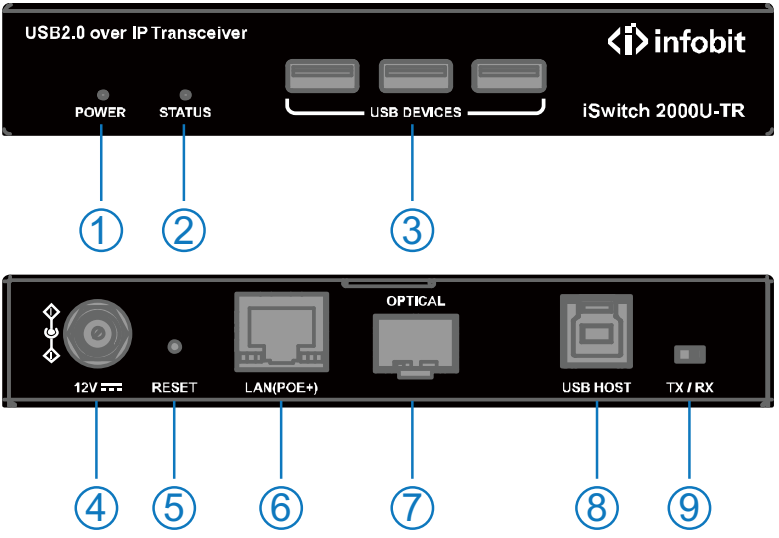


Figure 1: Front and Rear Panels

#	Name	Description
1	POWER LED	• **On**: The device is powered on. • **Blinking**: The device is booting. • **Off**: The device is powered off.
2	STATUS LED	For TX mode: • **On**: The device is powered on. • **Blinking slowly**: The device is being upgraded. • **Blinking rapidly**: The Find me function is activated through the control API to help locate a specific device. For more information, refer to the API documentation. For RX mode: • **On**: The device is connected to a network and associated with a valid USB transmitter. • **Blinking**: The device is connected to a network but associated with an invalid USB transmitter. • **Blinking slowly**: The device is being upgraded. • **Blinking rapidly**: The Find me function is activated through the control API to help locate a specific device. For more information, refer to the API documentation. • **Off**: The device is either not connected to the network or connected but not associated with any USB transmitter.
3	USB DEVICES	For TX mode: 3 x USB 3.2 Gen 2 Type-A ports. For RX mode: 3 x USB 2.0 Type-A ports.

#	Name	Description
		Connect to USB peripherals for USB extension. **Note:** • In TX mode, the device works as a local USB hub. • When powered by a DC adapter, the three ports share a total output current of 3A. • When powered by PoE, the three ports share a total output current of 2.5A.
4	12V	Connect to the included power adapter.
5	RESET	Press and hold the recessed button for at least five seconds, then release it to restore the device to factory default settings. **Note:** Restoring factory default settings erases all configurations and custom data. Back up any important settings before proceeding.
6	LAN(POE+)	Connect either the LAN (POE+) port or the Optical port to a Gigabit Ethernet switch for IP streaming and device control. Default IP mode: DHCP **Note:** 1) If both Ethernet ports are connected to the switch, the first detected connection takes priority. 2) Connect the Optical port to the network switch using a single-mode or multimode SFP module (not included). Transmission distance may vary based on the SFP module. 3) The LAN (POE+) port supports PoE+ power input from a PoE+ enabled switch, eliminating the need for a local adapter.
7	OPTICAL	
8	USB HOST	USB 3.2 Gen 2 Type-B port. Connect to the USB host device.
9	TX/RX	DIP switch for switching between TX and RX modes. Default: **TX**

Note: The device can be powered by either a 12V DC adapter or a PoE switch. When connected to both, it prioritizes the DC adapter over the PoE switch.

3. INSTALLATION

Note:

- Ensure the device is disconnected from the power supply before installation.
- The recommended installation height is within 6.5ft (2m) above the ground.

Installing Wall-Mount Brackets

1. Attach the two wall-mount brackets to both sides of the device diagonally using the included screws (one screw per side).

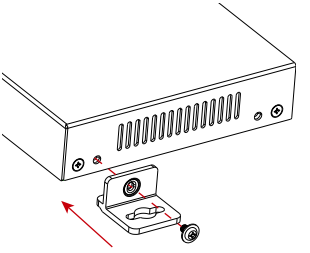


Figure 2: Wall-Mount Bracket Installation

2. Mount the brackets at the desired location using user-supplied screws (not included).

4. TYPICAL APPLICATIONS

4.1 POINT-TO-POINT APPLICATION

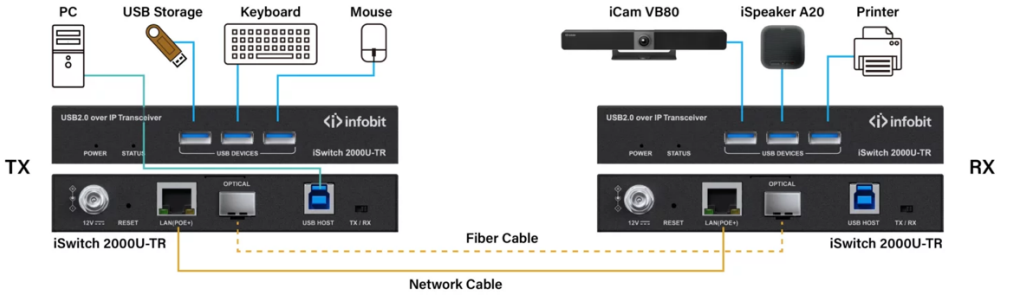


Figure 3: Point-to-Point Application

4.2 POINT-TO-MULTIPOINT APPLICATION

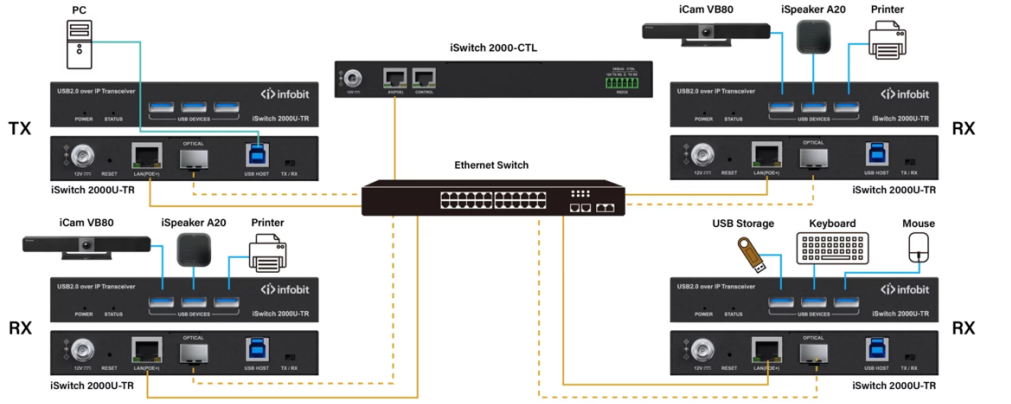


Figure 4: Point-to-Multipoint System Integration

4.3 AV OVER IP SYSTEM INTEGRATION

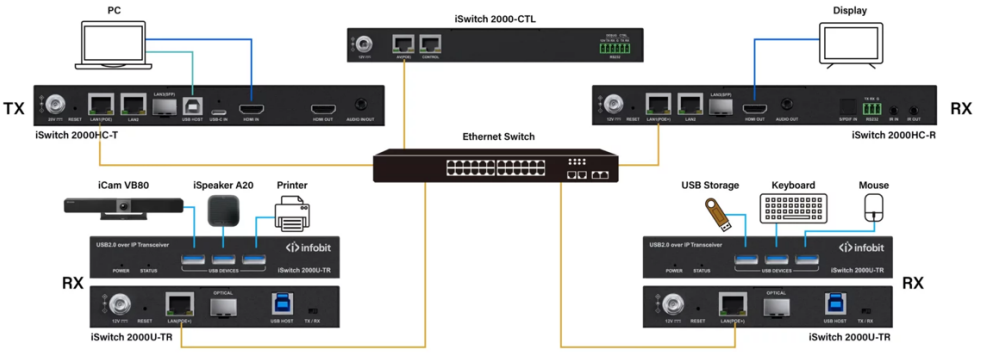


Figure 5: AV over IP System Integration

5. DEVICE CONTROL OVERVIEW

The device can be controlled and configured through the IP controller (iSwitch 2000-CTL). Supported functions include USB signal routing and firmware upgrades. For details, refer to the **iSwitch 2000-CTL** Web Configuration Guide.

Figure 6: Scan to visit iSwitch 2000-CTL website