adertech

NVX-UB2-TRN

USB 2.0 over IP 1GbE Network Extender



User manual

VER 1.0

Thank you for purchasing this product

We have done everything possible to ensure that our equipment pleases our consumers. When solving any problems in the operation and connection ADERTECH equipment, it is best to contact authorized companies and specialists who work with our equipment. Our equipment is intended for professional use, so you have professional skills in using such equipment. ADERTECH is a manufacturer of a wide range of multimedia solutions.

Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lighting strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

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1. Introduction

This USB 2.0 over IP 1GbE network extender supports fiber and copper, with automatic switching between two options, and the fiber has a higher priority. This extender features 1x USB Host and 4x USB Devices. In Device mode, it supports the connection of up to four USB 2.0 Devices (such as mouse, keyboard, USB Flash Drive, camera, touch screen, printer, etc.); In HOST mode, it supports one USB 2.0 Host output to connect to a computer.

The system is based on Linux for software development, providing flexible control methods. With compact form factor and good compatibility, this network extender can be widely used in education, medical, enterprise, command and dispatching center and other project installations.

This extender features Open API, which is easy to integrate with the third-party system to support USB 2.0 over IP function.

2. Features

- ☆ Supports USB 2.0 standard, with USB Host (Type B) supporting data transfer rates up to 480Mbps
- ☆ 1x USB Host port (Type B), 4x USB Device ports (Type A)
- ☆ Integrated Host/Device functionality, 2 roles switchable via DIP switch
- ☆ Supports copper and fiber ports with automatic selection
- ☆ One-to-one data transmission, with configurable transmission pairing, parameter settings, and device discovery
- ☆ Supports KM one to one and one to many
- ☆ Supports USB Flash Drive, camera, printer, fax, touch panel etc.
- ☆ Open API, easy to integrate with the third-party system
- ☆ PoE supported (802.3at Class 4, PD mode)

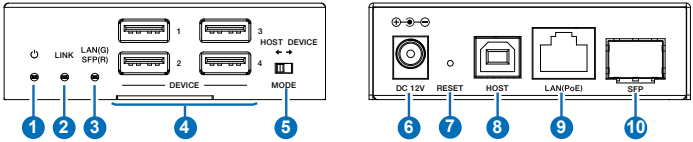
3. Package Contents

① 1x USB 2.0 over IP 1GbE Network Extender
② 1x 12V/2.5A Locking Power Supply
③ 2x Mounting Ear
④ 4x Machine Screw (KM3*6)
⑤ 1x User Manual

4. Specifications

Technical	
USB Support	USB 2.0, with maximum rate of 480Mb/s
Video Network Bandwidth	1G
Max Transmission Distance	328ft/100m (CAT6/6A/7)
Output Power Supply	**12V 2.5A:** Four USB Device ports can each achieve 5V 1A output.
	PoE 802.3at: Four USB Device ports can each achieve 5V 0.9A output.
	PoE 802.3af: Four USB Device ports can achieve a total output of 5V 1.2A.
ESD Protection	IEC 61000-4-2: ±15kV (Air-gap discharge) & ±8kV (Contact discharge)
Connection	
1x USB Host [Type B, 4-pin female] 4x USB 2.0 Device [Type A, 4-pin female] 1x 1GB LAN [RJ45 connector, supporting PoE] 1x 1GB Fiber [SFP]	
Mechanical	
Housing	Metal Enclosure
Color	Black
Dimensions	85mm [W] x 117.5mm [D] x 25.5mm [H]
Weight	297g
Power Supply	Input: AC100 - 240V 50/60Hz, Output: DC 12V/2.5A (US/EU standards, CE/FCC/UL certified)
Power Consumption	Host: 1.92W (Max); Device: 2.76W (Max)
Operating Temperature	0°C ~ 40°C / 32°F ~ 104°F
Storage Temperature	-20°C ~ 60°C / -4°F ~ 140°F
Relative Humidity	20% - 90% RH (no-condensing)

5. Operation Controls and Functions



No.	Name	Function Description
1	POWER LED (Red)	▪ When the unit is powered on, the red power LED will flash until the system is ready, then it will turn to steady on. ▪ When the unit is powered off, the LED is off.
2	LINK LED (Green)	▪ Light off: The Host/Device is not connected via the SFP port or LAN port. ▪ Light flashing: The Host/Device is connected via the SFP port or LAN port, but the pairing is not successful. ▪ Light on: The Host/Device is connected via the SFP port or LAN port, and the pairing is successful.
3	LAN(G)/ SFP(R) LED	▪ When neither the LAN port nor the SFP port is connected, the LED indicating mode is as follows: Green + Red (Yellow): Automatic detection mode. Green: Manually set the LAN port mode. Red: Manually set the SFP port mode. ▪ When either the LAN port or the SFP port is connected, the LED indicates the port being used for the current connection: Green: Connect via the LAN port. Red: Connect via the SFP port.
4	USB DEVICE 1/2/3/4 ports	Four USB 2.0 device ports, connected to mouse, keyboard, USB Flash Drive, camera, touch screen, printer or other USB devices.
5	HOST/DEVICE MODE switch	Used to switch the Host/Device mode. ▪ Switch to the left: The unit is set to the Host mode (by default). ▪ Switch to the right: The unit is set to the Device mode.
6	DC 12V	The device can be powered via two methods: ▪ Local DC 12V/2.5A power supply (has the priority) ▪ PoE from Network Switch. Device acts as PD mode.
7	RESET button	Restore default settings button. Press and hold this button for 5 seconds in the power-on state, three LEDs on the front panel will flash simultaneously, then release the button to restore the default settings (Auto IP, and the IP address is 169.254.xxx.xxx).

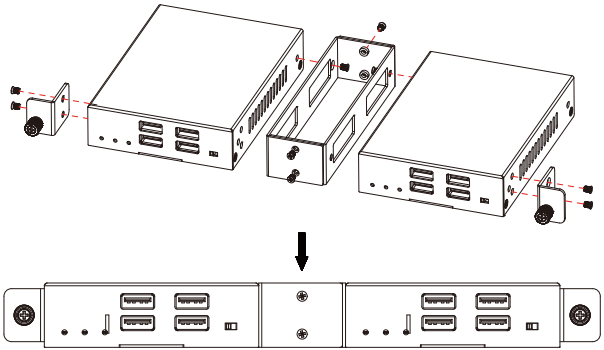
No.	Name	Function Description
8	HOST port	USB Host port, connected to PC.
9	LAN(PoE) port	1G Ethernet port, connected to the 1G Switch via a network cable. This port supports PoE function, and is compatible with 802.3af and 802.3at.
10	SFP port	1G optical fiber port, connected to the 1G Switch via an optical fiber cable.

Note: The LAN(PoE) port and the SFP port support automatic detection mode (by default) and manual setting mode.

6. Rack Mounting Instruction

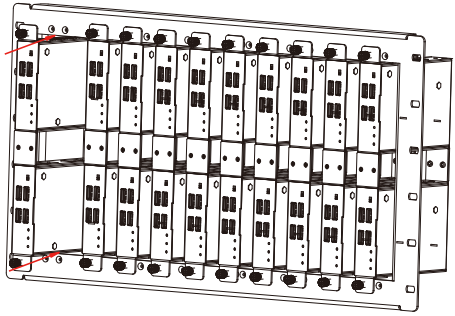
This extender can be mounted in a standard 6U V2 rack (Please contact your supplier for 6U V2 rack sale). The mounting steps are as follows:

Step 1: Use included screws to fix the rack bracket on one side of the extender, and fix a mounting ear on the other side of the extender, then fix the rack bracket and a mounting ear on another extender in the same way, as shown in the figure below.

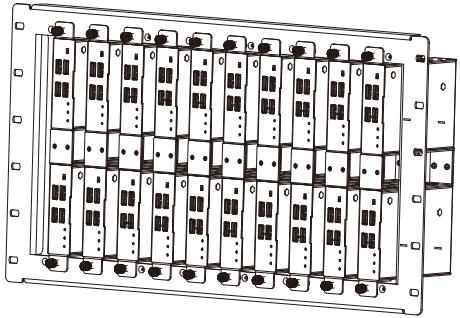


Effect after installation

Step 2: Insert the two extenders, which are mounted with rack bracket and mounting ears in step 1, into a 6U V2 rack (up to 20 units can be installed vertically), as shown in the figure below.



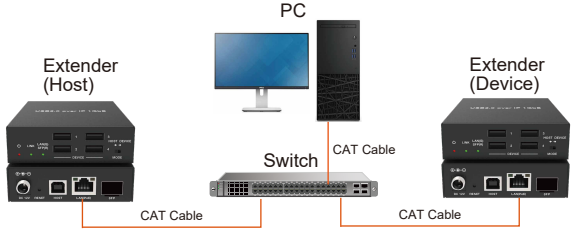
Step 3: Use screws to fix mounting ears on the rack to complete the mounting, as shown in the figure below.



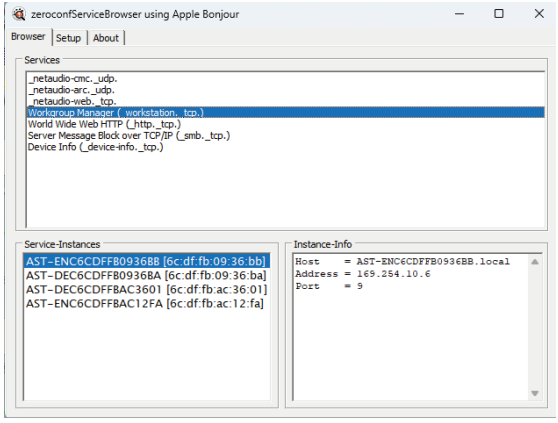
7. Device Discovery

Device discovery is supported via a bonjour protocol checking tool (such as zeroconfService Browser). The operation steps are as follows.

Step 1: Connect the Host, Device and PC to the same Switch. The connection diagram is shown as below.



Step 2: Install a bonjour protocol checking tool (such as zeroconfService Browser) on PC to find the IP address of the Host/Device.
Take zeroconfServiceBrowser as an example. After opening the software, you can select “Workgroup Manager” in Services of Browser, select the item in Service-Instances, and find the IP address in the Address item in of Instance-Info.



Notes:

(1) The window in the lower left corner displays the names of all devices in the current network.

(2) The window in the lower right corner displays the Host name, IP address and Port number of the device.

(3) The name of USB Host starts with AST-ENC; the name of USB Device starts with AST-DEC.

8. Switch Model

A network Switch used to set up the system should support below features:

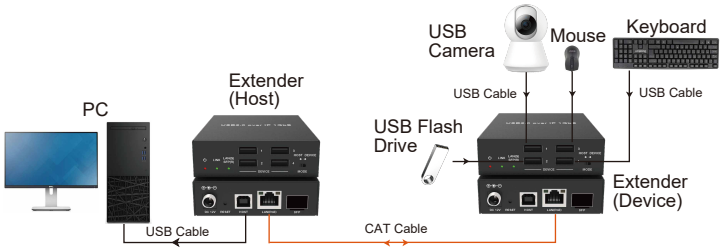
1. Type of layer 3/managed network Switch.
2. Gigabit bandwidth.
3. IGMP snooping.

The following Switch models are highly recommended.

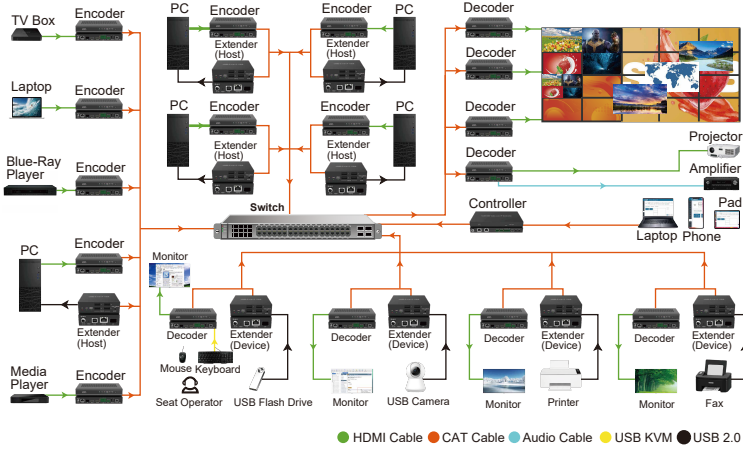
Manufacturer	Model Number
CISCO	CISCO SG500
CISCO	CATALYST series
HUAWEI	S5720S-28X-PWR-LI-AC
ZyXEL	GS2210
LUXUL	AMS-4424P

9. USB 2.0 Extension Application

In the factory default state, or after resetting the extender to factory default settings via the RESET button, directly connect a computer to the Host end, connect USB devices to the Device end, and link the Host mode extender and Device mode extender with a network cable to achieve USB 2.0 signal extension function. The connection diagram is shown as below.



10. System Topology Diagram



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