PANIO Enterprise Product User Manual

UW3440_W

4×4 USB 3.2 Gen 1 Matrix Switcher

User Manual | Version: V1.0

For B2B multi-host collaboration, conference room sharing, control rooms, smart classrooms, and industrial integration.

Model Number	UW3440_W
Product Positioning	4×4 USB 3.2 Gen 1 Matrix Switcher
Key Features	USB 3.2 Gen 1, 5 Gbps, 4×4 matrix switching, TCP/IP, RS-232, IR remote, Web GUI

Table of Contents

1. Safety Reminders

Thank you for choosing the PANIO UW3440_W 4×4 USB 3.2 Gen 1 Matrix Switcher. To ensure stable performance and operational safety throughout installation, daily operation, and long-term deployment, please read this section carefully before using the unit, and retain this manual for future reference.

Safety Instructions

- Before applying power, verify that the chassis and the entire system share a common ground reference. Proper grounding minimises static build-up, electromagnetic interference and surge events that may degrade USB signal integrity.
- Use only an AC outlet with protective earth, paired with the supplied 24V/2A locking power adapter. Do not substitute uncertified replacement adapters, as this may damage the unit and create safety hazards.
- Power down the unit and disconnect the power cord before performing any cabling, rack relocation or service work. In humid environments or during extended periods of non-use, please disconnect mains power.
- Do not place heavy objects on the power cord, USB cables or control cables. Avoid pinching or sharp bending, which may cause short circuits, leakage, or signal degradation.
- USB signals are sensitive to cable quality. Use the bundled USB 3.0 Type A to Type B cables and avoid uncertified or excessively long substitutes to maintain reliable 5 Gbps throughput.
- Install the unit in a level, well-ventilated location, away from high temperature, high humidity, dust, liquids, or chemical exposure.
- All service work must be performed by PANIO authorised personnel. Do not open the chassis without authorisation, as doing so may cause personal injury and will void the warranty.
- Each USB device port supplies up to 5V/1.5A with built-in over-current protection. Do not connect peripherals whose total current draw exceeds this rating on a single port.

2. Product Introduction

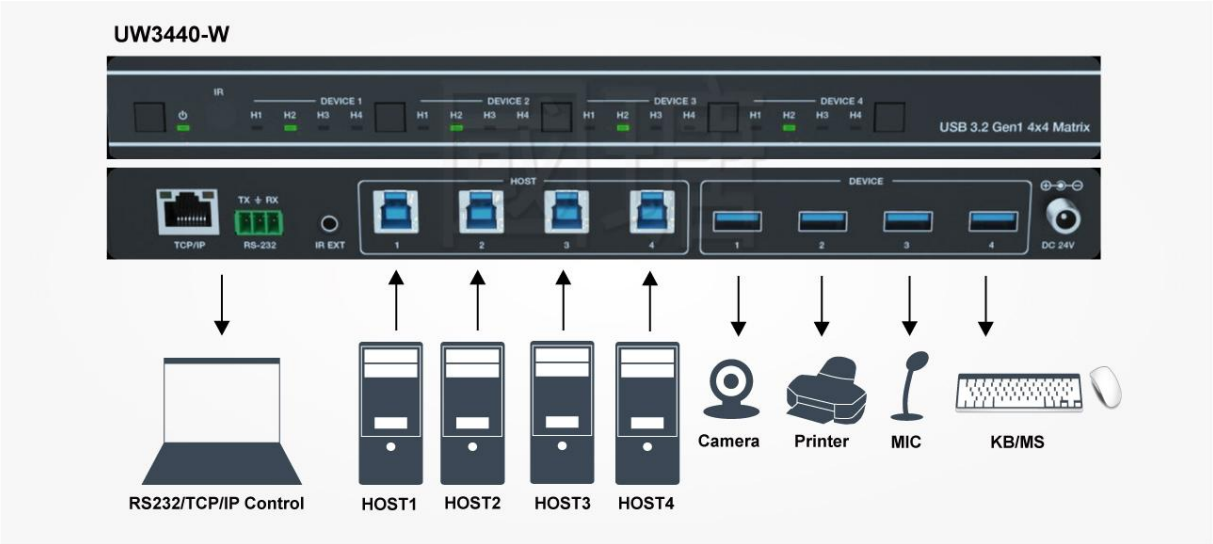
PANIO UW3440_W is a 4×4 USB 3.2 Gen 1 matrix switcher purpose-built for B2B multi-host collaboration environments. It allows four host computers and four USB peripherals to be cross-routed on demand, enabling shared resources, instant workstation handover, and flexible operator configurations.

The unit is fully USB 3.2 Gen 1 compliant, offering up to 5 Gbps throughput and backward compatibility with USB 2.0 and USB 1.1. It is well suited for high-bandwidth peripherals such as USB conference cameras, USB microphones, USB docking stations, external SSD storage, and high-resolution webcams.

To simplify on-site integration, UW3440_W provides five complementary control methods: front-panel buttons, IR remote, RS-232, TCP/IP, and an embedded Web GUI. These can be used independently or in combination across applications including control rooms, conference rooms, smart classrooms, dual-operator workstations, and laboratory environments.

The metal chassis follows a rack-friendly form factor and ships with mounting ears for 19-inch deployment, making the UW3440_W a dependable enterprise-grade infrastructure component for round-the-clock operation.

Diagram



3. Key Features

- 4×4 USB matrix architecture: four hosts share four USB devices simultaneously or sequentially, supporting flexible multi-user collaboration scenarios.
- USB 3.2 Gen 1 compliant, delivering up to 5 Gbps throughput, with backward compatibility for USB 2.0 and USB 1.1.
- Supports the USB Multiple Transaction Translator (MTT) architecture, maintaining favourable bandwidth utilisation when multiple low- and full-speed devices operate concurrently.
- Each USB device port provides 5V/1.5A output with over-current protection, capable of directly powering common peripherals such as USB drives, keyboards, and pointing devices.
- Five control methods — front-panel buttons, IR remote, RS-232, TCP/IP, and Web GUI — accommodate the deployment requirements of integrated control systems.
- LED indicators show in real time which host each device is connected to, providing clear at-a-glance status feedback.
- Eight Preset slots are available for saving and instantly recalling routine switching scenarios.
- Cross-platform support for Windows, macOS, and Linux hosts, with true plug-and-play operation and no driver installation required.
- Robust ESD protection: ±8 kV air discharge / ±4 kV contact discharge, conforming to IEC 61000-4-2.

- Centralised 24V/2A power input and rack-mount support for stable long-term operation in control rooms, conference suites, broadcast facilities, and industrial environments.

4. Technical Specifications

4.1 System Specifications

Item	Specification
Model Number	UW3440_W
System Architecture	4×4 USB 3.2 Gen 1 Matrix Switcher
USB Standard	USB 3.2 Gen 1 (backward compatible with USB 2.0 / USB 1.1)
Maximum Data Rate	5 Gbps
Transmission Distance	USB 3.2 Gen 1 at 5 Gbps: up to 3 m (9.8 ft) over passive cable
IR Specification	Signal level 5 Vp-p; receiver frequency fixed at 38 kHz
ESD Protection	IEC 61000-4-2: ±8 kV (air discharge) / ±4 kV (contact discharge)
Over-Current Protection	Built-in on every USB device port
Platform Support	Windows / macOS / Linux, plug-and-play, no drivers required

4.2 Interface Specifications

Interface	Specification & Quantity
USB Host Inputs	4 × USB 3.2 Gen 1 Type B female (host connection)
USB Device Outputs	4 × USB 3.2 Gen 1 Type A female (peripheral connection; 5V/1.5A)
TCP/IP Control	1 × RJ45 (100M LAN; supports Web GUI / Telnet)
RS-232 Control	1 × 3-pin 3.81 mm Phoenix connector
IR Extension	1 × 3.5 mm stereo mini-jack (IR EXT)
Power Input	1 × DC 24V/2A locking power input

Note: The USB 3.2 Gen 1 device ports do not support DisplayPort™ video (DP Alt Mode) or USB Power Delivery (PD).

4.3 Mechanical & Environmental Specifications

Item	Specification
Chassis Material / Colour	Metal enclosure / Black
Dimensions	270 mm (W) × 166 mm (D) × 30 mm (H)
Net Weight	1.16 kg
Power Supply	Input: AC 100–240V 50/60Hz; Output: DC 24V/2A (CE / FCC / UL certified)

Item	Specification
Maximum Power Consumption	13.2 W (Max)
Operating Temperature	0 – 40 °C (32 – 104 °F)
Storage Temperature	-20 – 60 °C (-4 – 140 °F)
Operating Humidity	20% – 80% RH (non-condensing)
Storage Humidity	10% – 90% RH (non-condensing)

5. Package Contents

5.1 Standard Packing List

Item	Qty.	Unit
UW3440_W 4×4 USB 3.2 Gen 1 Matrix main unit	1	pc
DC 24V/2A locking power adapter (multinational plugs)	1	pc
IR remote control	1	pc
IR wideband receiver cable (1.5 m)	1	pc
USB cable (USB 3.0 Type A to Type B, 1.8 m)	4	pcs
3-pin 3.81 mm Phoenix connector	1	pc
Mounting ear	2	pcs
Machine screw (KM3*4)	4	pcs
User manual	1	pc

Note: Please verify the items above upon unpacking. If anything is missing or appears damaged, contact your authorised PANIO sales or service representative immediately.

6. Panel Layout & Port Description

6.1 Front Panel Description

Name	Function Description
Power Button / Indicator	Short-press to power on; LED lights green. Press and hold for three seconds to enter standby mode; LED turns red.
IR Window	Built-in 38 kHz IR receiver for the supplied IR remote control.
DEVICE 1 Select	Short-press to cycle the source host for DEVICE 1 in the order H1 → H2 → H3 → H4. The corresponding host LED illuminates.
DEVICE 2 Select	Short-press to cycle the source host for DEVICE 2 in the order H1 → H2 → H3 → H4. The corresponding host LED illuminates.
DEVICE 3 Select	Short-press to cycle the source host for DEVICE 3 in the order H1 → H2 → H3 → H4. The corresponding host LED illuminates.

Name	Function Description
DEVICE 4 Select	Short-press to cycle the source host for DEVICE 4 in the order H1 → H2 → H3 → H4. The corresponding host LED illuminates.

6.2 Rear Panel Description

Name	Function Description
TCP/IP	100M RJ45 control port. Connect to a router or network switch for Web GUI and Telnet control.
RS-232	3-pin 3.81 mm Phoenix serial port. Connect to a PC or central control system for ASCII command control.
IR EXT	3.5 mm IR receiver extension jack. Use the supplied 38 kHz IR receiver cable when the front-panel IR window is obstructed or the unit is mounted out of line of sight.
HOST 1–4	Four USB 3.2 Gen 1 Type B female ports for connection to four host computers.
DEVICE 1–4	Four USB 3.2 Gen 1 Type A female ports for USB peripherals such as flash drives, keyboards, mice, cameras, or microphones. Each port supplies 5V/1.5A.
DC 24V	DC 24V/2A locking power input.

Note: The USB 3.2 Gen 1 device ports do not support DisplayPort™ video (DP Alt Mode) or USB Power Delivery (PD).

6.3 IR Remote Control

Button	Function Description
Power	Power the unit on or place it in standby mode.
DEVICE 1 zone (H1 / H2 / H3 / H4)	Directly assigns the source host for DEVICE 1.
DEVICE 2 zone (H1 / H2 / H3 / H4)	Directly assigns the source host for DEVICE 2.
DEVICE 3 zone (H1 / H2 / H3 / H4)	Directly assigns the source host for DEVICE 3.
DEVICE 4 zone (H1 / H2 / H3 / H4)	Directly assigns the source host for DEVICE 4.
◄ ►	Cycle to the previous or next host within each DEVICE zone.

7. Installation & Operation

7.1 Standard Connection

- Use the supplied USB 3.0 Type A to Type B cables to connect each of the four host computers to HOST 1–4 on the rear panel.
- Connect the USB peripherals to be shared (cameras, microphones, keyboards, mice, conferencing soundbars, etc.) to DEVICE 1–4.
- For centralised control, connect the control system's RS-232 to the RS-232 Phoenix connector, or connect the RJ45 port to your LAN to enable TCP/IP and Web GUI control.
- If the front-panel IR window is obstructed or the unit is enclosed in a cabinet, plug the supplied IR wideband receiver cable into IR EXT and route it to a visible location.
- Finally, connect the locking DC 24V power adapter. Once the boot self-check completes the unit is ready for operation.

7.2 Operating Steps

- Unpack the UW3440_W and verify that all accessories are present.
- Complete all cable connections according to the deployment plan before applying power.
- Switch device-to-host pairings using any of the available control methods: front-panel buttons, IR remote, RS-232, TCP/IP, or Web GUI.
- Save frequently-used switching scenes via the Web GUI as Preset 1–8 for one-button recall.
- If video, audio, storage, or control behaviour appears abnormal, refer to Chapter 9 "Troubleshooting & Notes" for guided diagnostics.

7.3 Web GUI

UW3440_W ships with an embedded Web GUI for remote configuration and switching over TCP/IP. The factory default network parameters are listed below; we recommend logging in with the defaults on first deployment, then adjusting to match the production network.

Item	Default Value
IP Mode	Static
IP Address	192.168.0.100
Subnet Mask	255.255.255.0
Gateway	192.168.0.1
TCP/IP Port	8000
Telnet Port	23
Login / Password	Admin / 1234 (please change on first login)

Once logged in, the Web GUI exposes the following pages: Information (device info), Matrix (matrix switching and Preset operations), USB (custom names for hosts and devices, up to 16 characters), Network (IP mode, IP address, subnet mask, gateway, Telnet/TCP port settings), and System (account passwords, panel lock, beeper, serial baud rate, reboot, factory reset, firmware update).

Note: The actual IP address may differ depending on your network. Use the RS-232 ASCII commands "get ip addr" or "get ipconfig" to query the current network settings.

8. Advanced Control & API Commands

UW3440_W supports ASCII command control over RS-232 and TCP/IP, and integrates with control platforms from Crestron, AMX, Extron and others. Commands use plain ASCII text with the serial parameters listed below.

8.1 Serial Port Parameters

Item	Default Value
Baud Rate	115200 (selectable: 4800 / 9600 / 19200 / 38400 / 57600 / 115200)
Data Bits	8
Stop Bits	1
Parity	None
Flow Control	None

Note: x, y, z denote parameter values. Error code E00 indicates an unknown command; E01 indicates an out-of-range parameter.

8.2 Matrix Switching Commands

Command	Function	Sample Response
set device x in host y	Route DEVICE x (1–4) to HOST y (1–4).	device 1 in host 1
get device x in host	Query the current source host of DEVICE x.	device 1 in host 3
set save preset x	Save the current routing as Preset x (1–8).	save to preset 1
set recall preset x	Recall the saved Preset x (1–8).	recall from preset 1
set clear preset x	Clear the saved Preset x (1–8).	clear preset 1
get preset x	Query the contents of Preset x (1–8).	preset 1: device 1->host 1 ...

8.3 Network Setting Commands

Command	Function	Sample Response
get ipconfig	Query the full network configuration.	ip mode: static; ip:

Command	Function	Sample Response
		192.168.0.100...
get mac addr	Query the MAC address.	mac address: 00:1c:91:xx:xx:xx
set ip mode z	Set IP mode: z=0 Static, z=1 DHCP.	set ip mode: static
set ip addr x.x.x.x	Set the static IP address.	set ip address: 192.168.0.100
set subnet x.x.x.x	Set the subnet mask.	set subnet mask: 255.255.255.0
set gateway x.x.x.x	Set the default gateway.	set gateway: 192.168.0.1
set tcp/ip port x	Set the TCP/IP port (1–65535).	set tcp/ip port: 8000
set telnet port x	Set the Telnet port (1–65535).	set telnet port: 23
set net reboot	Restart the network module to apply new network settings.	network reboot...

Note: While DHCP is enabled, the IP address, subnet mask, and gateway cannot be set manually. Use "set ip mode 0" first to switch back to Static. After changing network settings, run "set net reboot" or power-cycle the unit to apply.

9. Troubleshooting & Notes

9.1 Troubleshooting

Symptom	Possible Cause & Suggested Action
Host does not detect connected USB device	Verify that DEVICE-to-HOST routing is correct; ensure USB cables are firmly seated; try the supplied USB 3.0 cables to rule out a cable issue.
USB device cannot reach 5 Gbps	Confirm that the host port is USB 3.0 / 3.2 Gen 1 capable, and that the USB cable is no longer than 3 m and is USB 3.0 certified.
Front-panel buttons unresponsive	Check that the panel lock is off. Send the ASCII command "set lock 0" or disable the panel lock from the Web GUI System page.
IR remote not working	Check the remote's battery; ensure the IR window is not obstructed, or plug the IR wideband receiver cable into IR EXT.
Cannot log in to Web GUI	Confirm the PC and the unit are on the same subnet (default 192.168.0.x). Use the RS-232 command "get ipconfig" to read the current IP, and run "reset" if a factory restore is required.
No response on Telnet or TCP/IP	Confirm that the ports (default TCP 8000, Telnet 23) are not blocked by a firewall. After any network changes, run "set net reboot".
DEVICE port cannot power external peripheral	Ensure that the peripheral's total current draw does not exceed 5V/1.5A. If over-current protection has tripped, disconnect the peripheral, power-cycle, and retry.
Beeper sounds during switching	This is normal operational feedback. Disable with the command "set beep 0" or via the Web GUI System page.

9.2 Notes

- Provide stable power and an appropriate installation environment per the equipment specification. Avoid high temperature, high humidity, dusty conditions, and strong electromagnetic interference.
- USB high-speed signals are sensitive to cable quality. Use the supplied cables wherever possible. For longer runs, use an active USB 3.0 extension cable or a fibre-optic extension solution.
- Before performing firmware updates (MCU / Web GUI), back up your existing Presets and network settings. Do not interrupt power or disconnect the control cable during the update, as this may render the unit unbootable.
- For long-term reliable operation, periodically check connector tightness, cable condition and chassis ventilation. If the chassis becomes unusually hot, emits unusual sounds or odours, power off immediately and contact service.
- When integrating the unit into a control system, validate command behaviour with a serial terminal first, then incorporate the validated commands into your macros or scenes.

10. Warranty Service

PANIO International Co., Ltd. provides a one-year limited warranty from the date of purchase from PANIO or an authorised reseller. Within this period, the unit will be repaired, replaced, or otherwise serviced under the warranty terms when a non-induced fault occurs in the course of normal operation and in accordance with official service requirements.

The warranty does not cover damage caused by misuse, abnormal voltage, lightning strikes, accidental impact, unauthorised disassembly or modification, custom firmware modification, or the use of non-original power adapters or cables. Any software, firmware, and user data on a returned unit are the user’s responsibility to back up; PANIO is not liable for data loss.

To request after-sales service, please contact PANIO International Co., Ltd. or your authorised service representative with the following information to expedite handling: model number (UW3440_W), product serial number, date and channel of purchase, a clear description of the fault, and a brief diagram of the on-site connection topology.