WHY SHOULD YOU USE USB MATRIX IN YOUR MEETING ROOM?

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1. WHAT IS USB MATRIX?

A **USB matrix** is a specialized hardware device that allows **multiple host computers** (like laptops or PCs) to share and access **multiple USB peripherals** (like cameras, microphones, printers, or storage) at the same time in any combination.

Unlike a standard USB switch, which typically lets only one computer use all connected devices at a time, a matrix allows for independent routing.

2. KEY FUNCTIONS

- **Independent Routing:** In a 4x4 matrix, Computer A can use a webcam while Computer B simultaneously uses a printer or a shared hard drive from the same device.
- **Simultaneous Multi-Host Access:** It maintains active connections to several hosts, allowing users to "mix and match" which computer controls which peripheral without unplugging cables.
- **High-Speed Data & Power:** Modern versions support **USB 3.2 Gen 1 (5Gbps)** or higher, providing enough bandwidth for high-definition cameras and fast data transfers.
- **Flexible Control:** Switching can be managed via physical buttons, infrared remotes, or even network interfaces (WebGUI/RS-232) for professional installations.

3. COMMON VARIATIONS

- **Pure USB Matrix:** Focuses strictly on USB data routing for peripheral sharing.
- **USB-C/HDMI Matrix:** Often used in 2026 meeting rooms to switch both **4K video and USB data** simultaneously, often providing laptop charging through a single cable.
- **USB Audio Matrix:** Specifically designed for professional audio, routing Dante network channels or analog audio into a unified USB stream for video conferencing.

4. USE CASES

- **Meeting Rooms (BYOD):** Switching a room’s high-end camera and mic between a permanent Room PC and a guest's laptop.
- **Control Rooms:** Allowing operators to monitor multiple systems while instantly "strolling" their mouse and keyboard control between screens.
- **Laboratories/Education:** Sharing specialized hardware like microscopes or document cameras across several student workstations.

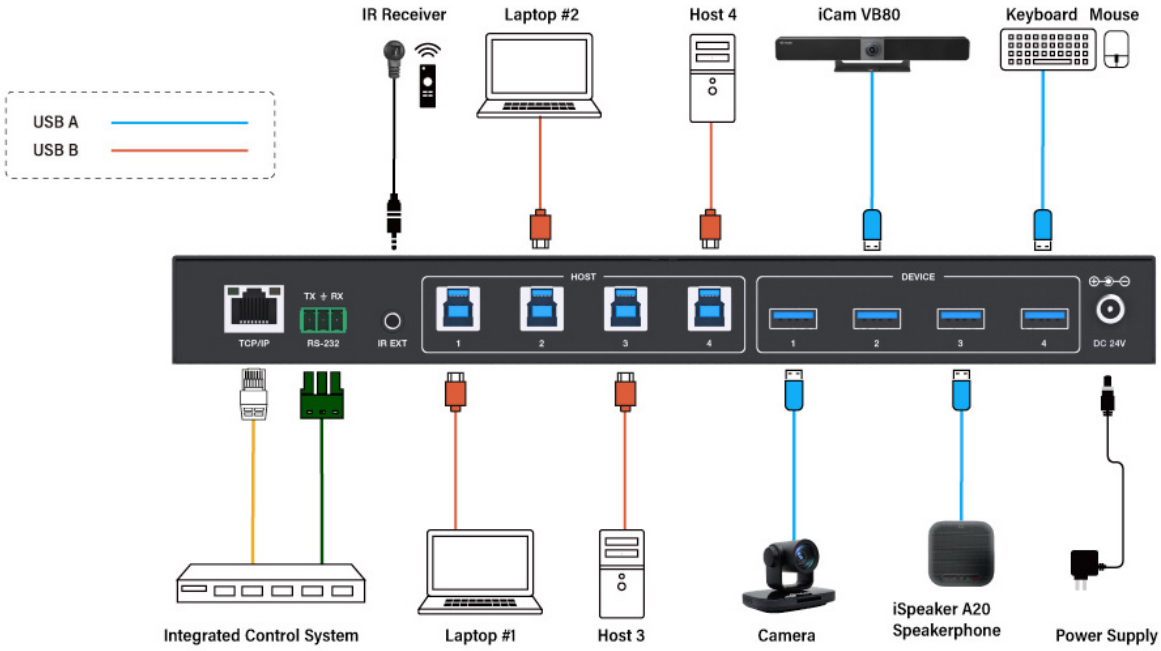
5. INFOBIT USB MATRIX

5.1 IMATRIX UB44-V2

FEATURES

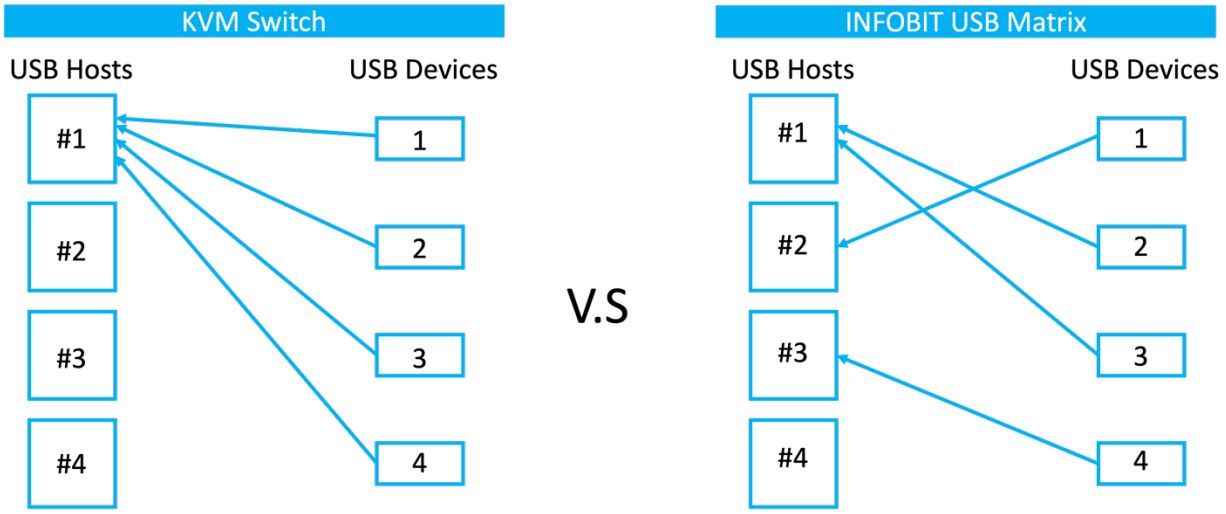
- USB 5Gbps **4×4 Matrix**
- Enables **4 computers** to share 4 USB 3.2 Gen 1 devices
- **USB 3.2 Gen 1** compliant, data transfer rates up to **5Gbps**
- **LED** indicates which host is active
- Over-current protection
- **5V/1.5A output** for USB device ports
- USB device ports compliant with **USB 3.2 Gen 1, USB 2.0, and USB 1.1**
- **Plug and Play** – no drivers or external power adapter needed
- Multi-platform support – Windows, Linux and Mac
- Control via front **panel buttons**, **IR remote**, **RS-232**, and **Web GUI**

DIAGRAM



6. WHAT DIFFERENCE BETWEEN USB MATRIX AND KVM SWITCHER?

The primary difference between a **USB Matrix** and a **KVM (Keyboard, Video, Mouse)** system is the type of signals they handle and how they manage connections between multiple users and computers.



- **Signal Type:** A **USB Matrix** only switches and routes USB data signals (like keyboard, mouse, or webcams). A **KVM** switches video signals (HDMI, DisplayPort) in addition to USB peripherals.
- **Routing Logic:**
  - **USB Matrix:** Allows **multiple users** to independently access different computers at the same time. For example, User A can use Computer 1 while User B uses Computer 2, or both can share a single device.
  - **KVM Switch:** Typically allows **one user** to toggle a all of peripherals at one time between multiple computers.
  - **KVM Matrix:** Combines both, allowing multiple users to simultaneously share and switch between multiple computers' video and USB signals.

COMPARISON TABLE

Feature	**USB Matrix** iMatrix UB44-V2	**KVM Switch** iSwitch 201HK	**All-in-One Matrix** iMatrix HU44
Switches Video?	No	Yes	Yes
Switches USB?	Yes Any USB devices switched.	Yes All USB devices togeter.	Yes Any USB devices switched.

Best Use Case	Sharing printers or webcams across a lab.	Single-desk setups with two laptops or a PC.	Control rooms, broadcast centers, or data centers.

6. WHY USE USB MATRIX IN BYOD/BYOM MEETING ROOMS?

In a meeting room, a USB matrix (or specialized USB host switcher) is essential for **BYOD (Bring Your Own Device)** and **BYOM (Bring Your Own Meeting)** setups because it allows professional-grade audio and video peripherals to be shared dynamically between a fixed Room PC and a user's laptop.

6.1 SEAMLESS PERIPHERAL SHARING (BYOM)

A USB matrix allows a single set of high-quality equipment—such as 4K cameras, beam-forming microphone arrays, and specialized speaker systems—to transition instantly between the dedicated Room PC (running a native app like Microsoft Teams Rooms) and a guest laptop. Without it, you would have to manually unplug and replug several USB cables every time a user wants to host a meeting from their own device.

6.2 SINGLE-CABLE CONNECTIVITY

Modern USB-C matrix switchers allow a user to connect their laptop via a **single USB-C cable** to gain full control of the room's AV system.

- **Video & Audio:** The laptop uses the room’s professional camera and microphone as if they were built-in.
- **Charging:** Many of these switchers provide high-wattage power (e.g., 60W–100W) to the laptop through the same cable, preventing it from dying during a meeting.

6.3 PLATFORM INTEROPERABILITY

Meeting rooms are often "locked" into one platform (e.g., **Zoom Rooms**). A USB matrix enables **platform flexibility**:

- If a guest needs to host a **Microsoft Teams**, **Google Meet** or **Webex** call in a Teams-dedicated room, the matrix "detaches" the USB peripherals from the Room PC and gives them to the guest laptop.
- This eliminates "platform lock-in," ensuring the room equipment works with any software the user prefers.

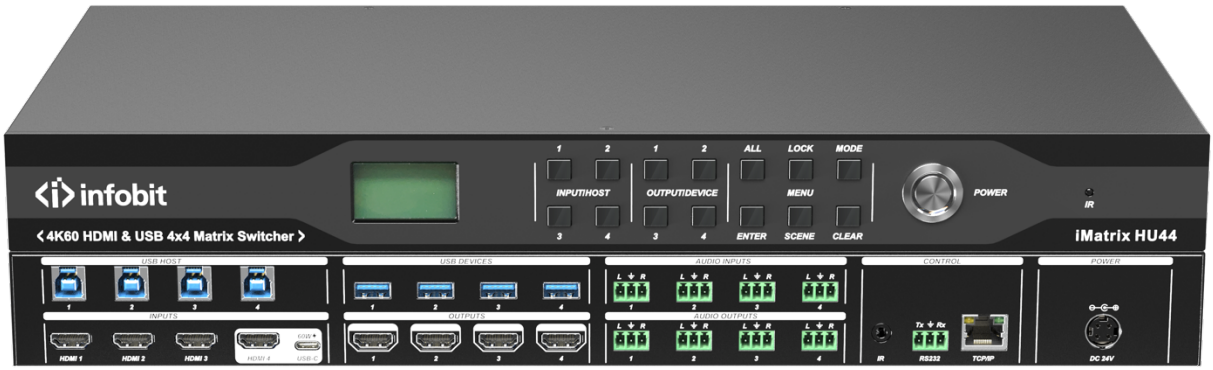
6.4 AUTOMATED & INTELLIGENT SWITCHING

Professional USB switches often feature **automatic detection**. When a laptop is plugged into the table's USB-C port, the matrix automatically routes the camera and microphone to the laptop. When unplugged, it reverts control back to the Room PC, ensuring the room is always ready for the next scheduled meeting without manual configuration.

6.5 EFFICIENT CABLE MANAGEMENT

By centralizing all USB connections into a single matrix (often hidden behind the display or under the table), you reduce cable clutter.

7. INFOBIT IMATRIX HU44



FEATURES

- 4×4 **HDMI matrix**
- 4×4 **USB matrix**
- 8×8 **audio matrix**
- HDMI 2.0, **4K@60Hz 4:4:4** & HDCP2.2.
- Video **seamless switching**.
- Provides up to **60W PD** charging for USB-C.
- Switch any **USB A device** to any 4 of 5 USB hosts as matrix mode.
- Supports **wired BYOM (Bring Your Own Meeting)** to switching among Room and BYOD PC.
- Be compatible with **USB videobar, camera, speaker, microphones** with brands INFOBIT, Logitech, Poly, Yealink, Jabra and more
- **USB-C and HDMI Input 4** auto detection **and** auto switching**.**
- USB-C **4K60Hz DP1.4** AV Input.
- Supports analog audio **embedding & de-embedding**
- Supports **separated presets** saving or recalling for Video switching, USB switching and Audio switching.
- Control via front panel buttons, IR, RS-232 or **TCP/IP (WEB-GUI).**
- Support **CEC** to control displays ON/OFF
- Supports standard **VESA resolutions** and **user-defined resolutions.**

DIAGRAM