



OMNI

Simplifying BYOM Meeting Spaces with
BSS AVoIP and Virtual Network Hub



SIMPLIFYING BYOM MEETING SPACES WITH BSS AVOIP AND VIRTUAL NETWORK HUB

USB connectivity is essential in modern meeting spaces, connecting cameras, microphones, and other room devices to conferencing platforms such as Microsoft Teams, Zoom Rooms, and Cisco Webex. However, reliable USB cable lengths are limited to less than 5 meters, creating challenges for AV system design. This application brief explores how BSS OMNI AVOIP and Virtual Network Hub technology simplify USB extension, routing, and BYOM deployments while providing greater flexibility for meeting space integration.



VIRTUAL NETWORK USB HUB

Virtual Network USB Hub is a key technology in many BSS OMNI AV-over-IP and USB-over-IP products. It enables USB extension and routing over Gigabit Ethernet, with several important benefits for AV integration in meeting spaces.

- USB signals can be transported to any network-attached location, removing any distance limitations.
- USB devices at up to four remote OMNI endpoints can be simultaneously connected to a host PC at its own OMNI endpoint, as if they were connected with a traditional USB hub. This is ideal for integrating independent USB devices, such as cameras and microphones, that are installed throughout a meeting space.
- USB can be dynamically routed between different host PCs. This allows the ability to switch room devices between a dedicated Microsoft Teams or Zoom Rooms PC, or a participant's laptop for hosting a meeting (also known as BYOM or Bring Your Own Meeting).

FEATURE AVAILABILITY

Virtual Network USB Hub is available in most OMNI 600 Series AV-over-IP encoders and decoders, as well as the OMNI 200 Series of USB-over-IP endpoints.

BSS OMNI AVOIP MODELS WITH VIRTUAL NETWORK HUB TECHNOLOGY:

OMNI-VE-660

4K60 MWC/Dante AV-A & 1080p H.26x Multi-Codec, Dual-Stream Encoder with USB Audio



OMNI-VD-660

4K60 MWC/Dante AV-A & 1080p H.26x Multi-Codec Decoder



OMNI-VE-630-WP

4K60 MWC/Dante AV-A Encoder Wallplate with USB Audio (US & EU/UK)



OMNI-VD-630-WP

4K60 MWC/Dante AV-A Decoder Wallplate (US & EU/UK)



OMNI-UE-210

USB over IP Host Transceiver with USB Audio



OMNI-UD-210

USB over IP Device Transceiver



OMNI-UD-210-WP

USB over IP Device Transceiver Wallplate



EXAMPLE APPLICATION

HYBRID MEETING SPACE WITH BYOM SUPPORT

The requirements for many meeting spaces today include dedicated compute devices to support hybrid meetings using the conferencing software of choice for the enterprise. Of course, these spaces will also include a display, camera, microphones, and speakers to enable communication with remote meeting participants.

Additionally, there is often a requirement to provide the capability for users to leverage their own devices to host or attend meetings with alternate conferencing software platforms. Known as BYOM (Bring Your Own Meeting), this design requires that the user device can leverage the same display, camera, microphones, and speakers that would normally be used with the room's dedicated compute device.

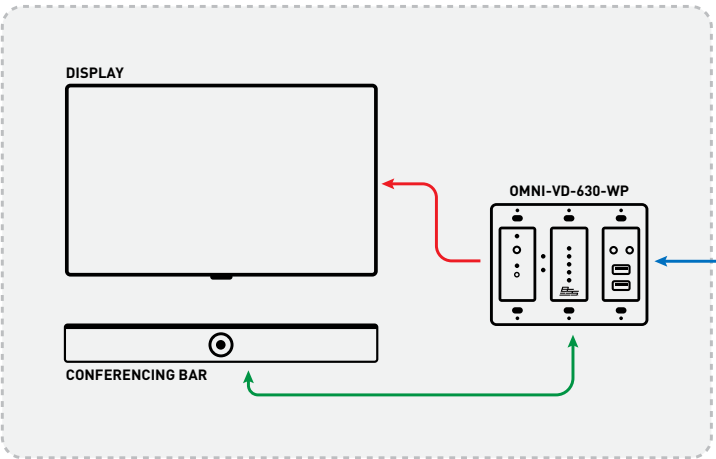
The following example illustrates how BSS AVoIP solutions with Virtual Network Hub technology can provide an elegant solution for meeting spaces with these requirements.



THIS SYSTEM INCLUDES THE FOLLOWING ELEMENTS:

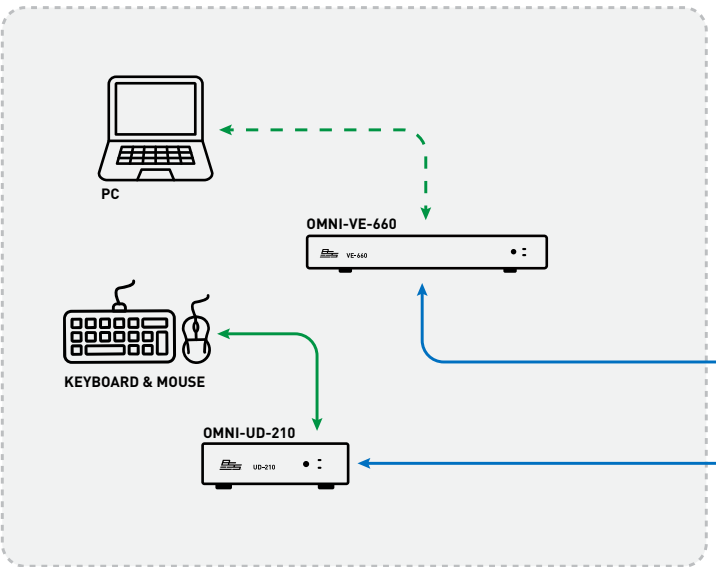
- At the meeting table, there is an OMNI-VE-660 encoder, with a USB-C connection for a user laptop. There is also an OMNI-UD-210 USB endpoint for a keyboard and mouse.
- On the front wall, an OMNI-VD-630-WP decoder wallplate provides HDMI output to the display, and provides a USB device connection for the camera, microphones, and speakers of the conferencing bar.
- There is a credenza with an equipment rack housing an OMNI-VE-660 encoder and a Microsoft Teams Rooms PC. Also in the rack is a network switch.

FRONT WALL

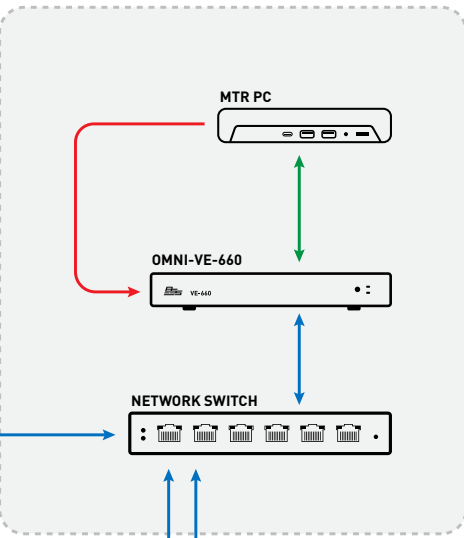


- HDMI
- ETHERNET
- USB
- - - USB-C

MEETING TABLE



RACK / CREDENZA





HYBRID MEETING SPACE WITH BYOM SUPPORT CONTINUED...

The system can be used in Room Mode for hybrid meetings with the Microsoft Teams Rooms (MTR) PC or in BYOM Mode for a participant's laptop.

In Room Mode, USB is routed from both the conferencing bar at the front of the room and the keyboard and mouse at the meeting table to the MTR PC in the credenza. This enables the user to control the PC and provides the PC with access to the camera, microphones, and speakers of the conferencing bar. At the same time, and with the same networked connection, HDMI video from the MTR PC is routed to the display.

When a user's PC is connected to the USB-C connection of the OMNI-VE-660 at the table, the room can automatically switch into BYOM Mode. USB from the conferencing bar is routed to the laptop for camera and audio communications, and video from the laptop is routed to the display. USB, audio, video, and up to 100 watts of power can all be supplied to the laptop through the same USB-C connection on the OMNI-VE-660.

KEY INTEGRATION BENEFITS

This meeting room system illustrates several important benefits of OMNI networked AV with Virtual Network USB Hub technology.

1. SIMPLIFIED INFRASTRUCTURE

Leveraging the IP network to distribute audio, video, and USB signals practically eliminates distance limitations, simplifies cabling with standard category cable, and reduces hardware and maintenance costs by integrating multiple signal types within a single solution.

2. USB ROUTING

The ability to dynamically route USB, audio, and video signals enables the same camera, microphones, speakers, and display for both the room PC and the laptop.

3. VIRTUAL NETWORK USB HUB

The ability to combine USB signals from multiple remote endpoints enables the keyboard and mouse from the table, and camera, microphones, and speakers of the conferencing bar at the front of the room to all be used by the room PC without additional USB hub hardware.

4. ENHANCED USER EXPERIENCE

Users are able to leverage the full capabilities of the room, no matter whether they are using the dedicated room PC or connecting their own device. BYOM is enabled via a single USB-C connection to simplify the user experience.





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