Classroom as a Studio

Design Objective

As a value-add distributor, Midwich strives to bring you useful and practical information such as this Classroom as a Studio Guide.

The various stages of lockdown have created unique opportunities to upgrade facilities within the events, government or education sectors.

This design is intended to utilise proven, high bandwidth, switching and transportation technology to replicate the in-person teaching experience for students on-campus, at home or anywhere.

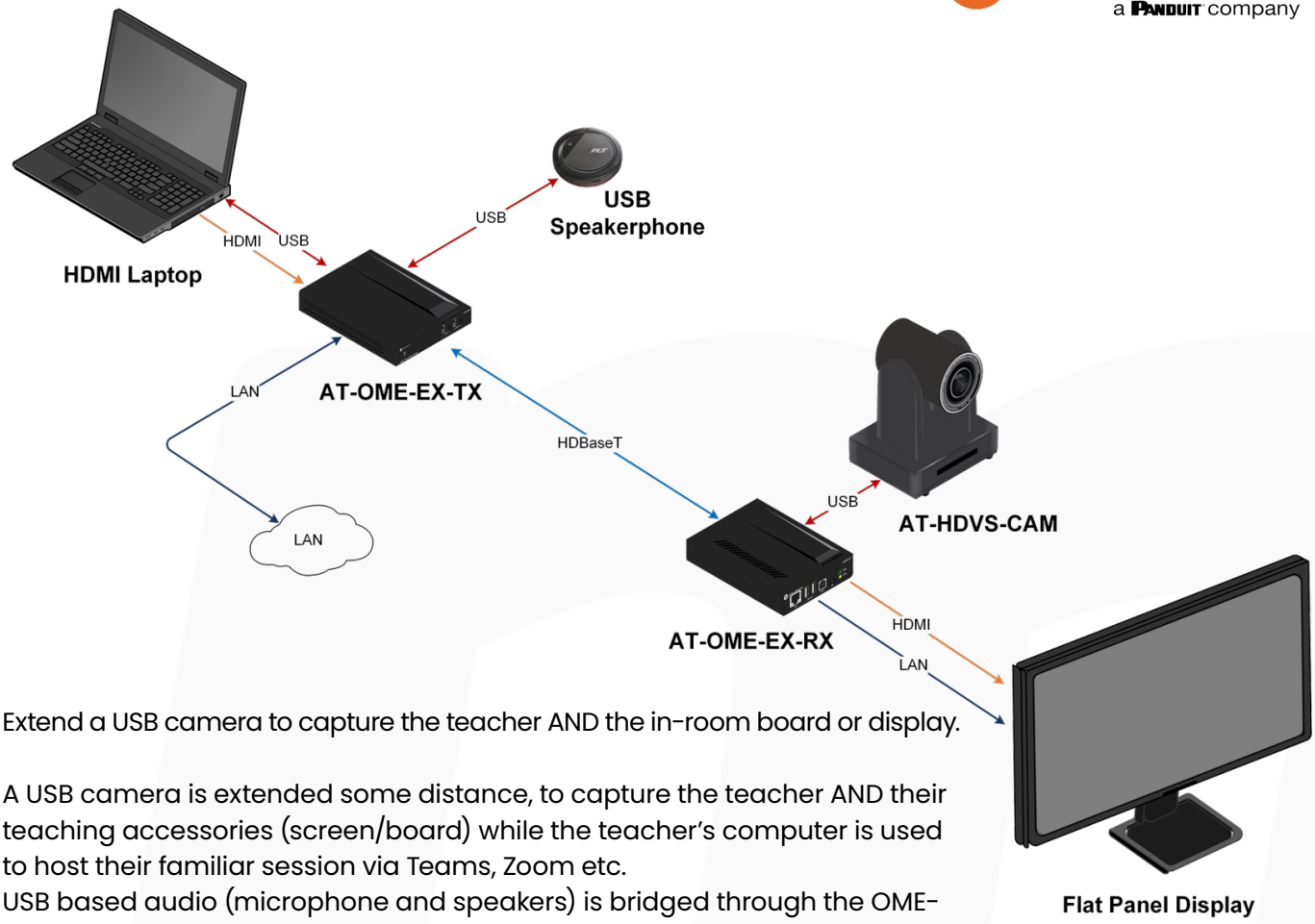
Our Goals:

- Teaching from home
- Teaching from a remote location
- Teaching from a pre-COVID-19 classroom
- Teaching from a hybrid studio/classroom (post COVID-19)

Use Case:

- Previously a teacher, in their natural environment, taught and engaged with their students directly however, this is no longer the norm and may be undesirable.
- Imposed distance between teacher and student has necessitated a shift in the teaching environment from a traditional classroom to a studio to create a hybrid learning facility./p
- The Classroom as a Studio can be setup and configured in several ways but each should take advantage of available resources such as microphones, cameras, and in room displays but with minimal impact on the teacher, allowing them 'teach'.
- Within the studio the teacher may now connect with remote students and deliver the lesson in a meaningful and engaging manner.

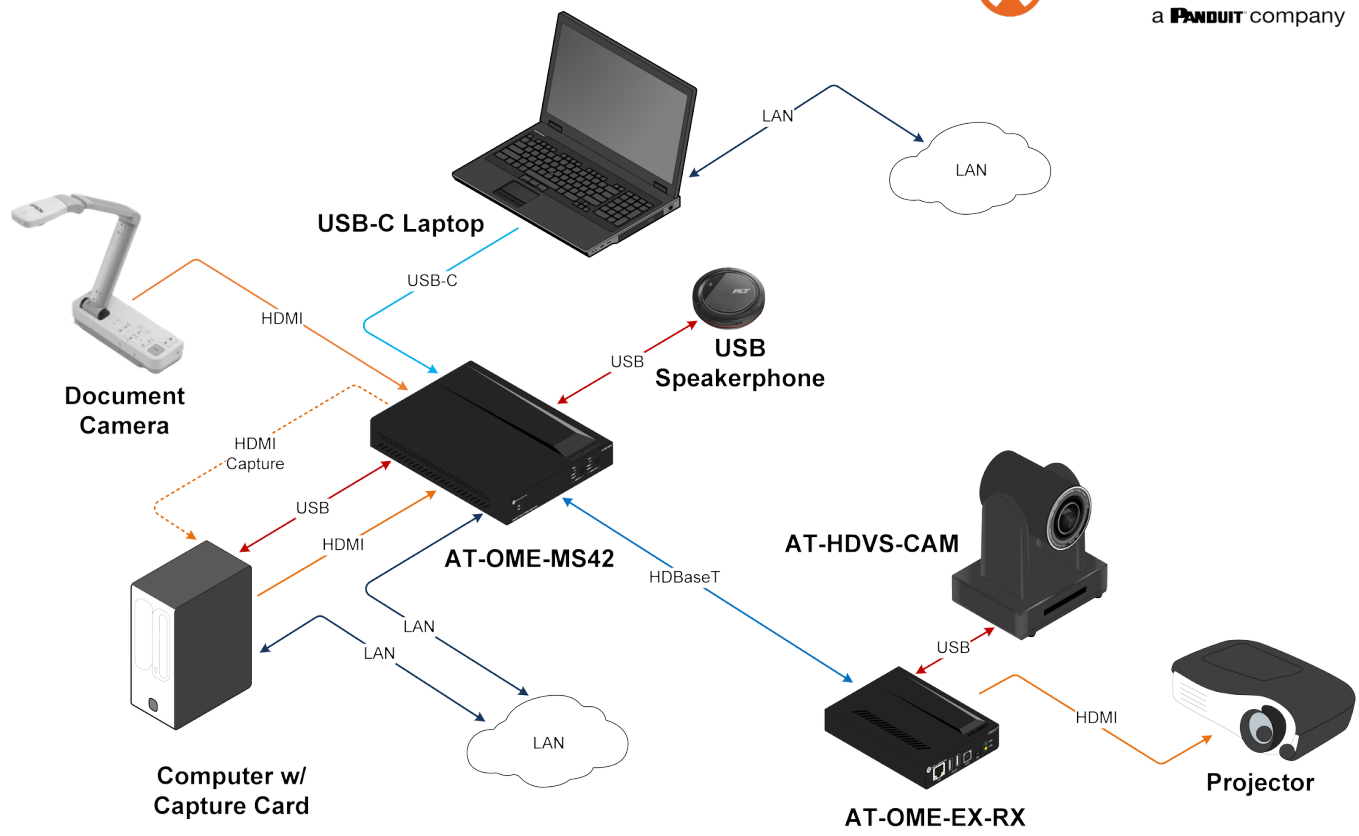
Scenario 1: USB Studio - Video Instruction (AT-OME-EX-KIT)



Extend a USB camera to capture the teacher AND the in-room board or display.

A USB camera is extended some distance, to capture the teacher AND their teaching accessories (screen/board) while the teacher's computer is used to host their familiar session via Teams, Zoom etc.
USB based audio (microphone and speakers) is bridged through the OME-EX-TX device to the teachers computer.

Scenario 2: USB Studio with Source Switching (AT-OME-MS42)



Add source switching to 1st scenario bring in additional media such as document cameras, additional shared sources or additional camera views and minimise cabling.

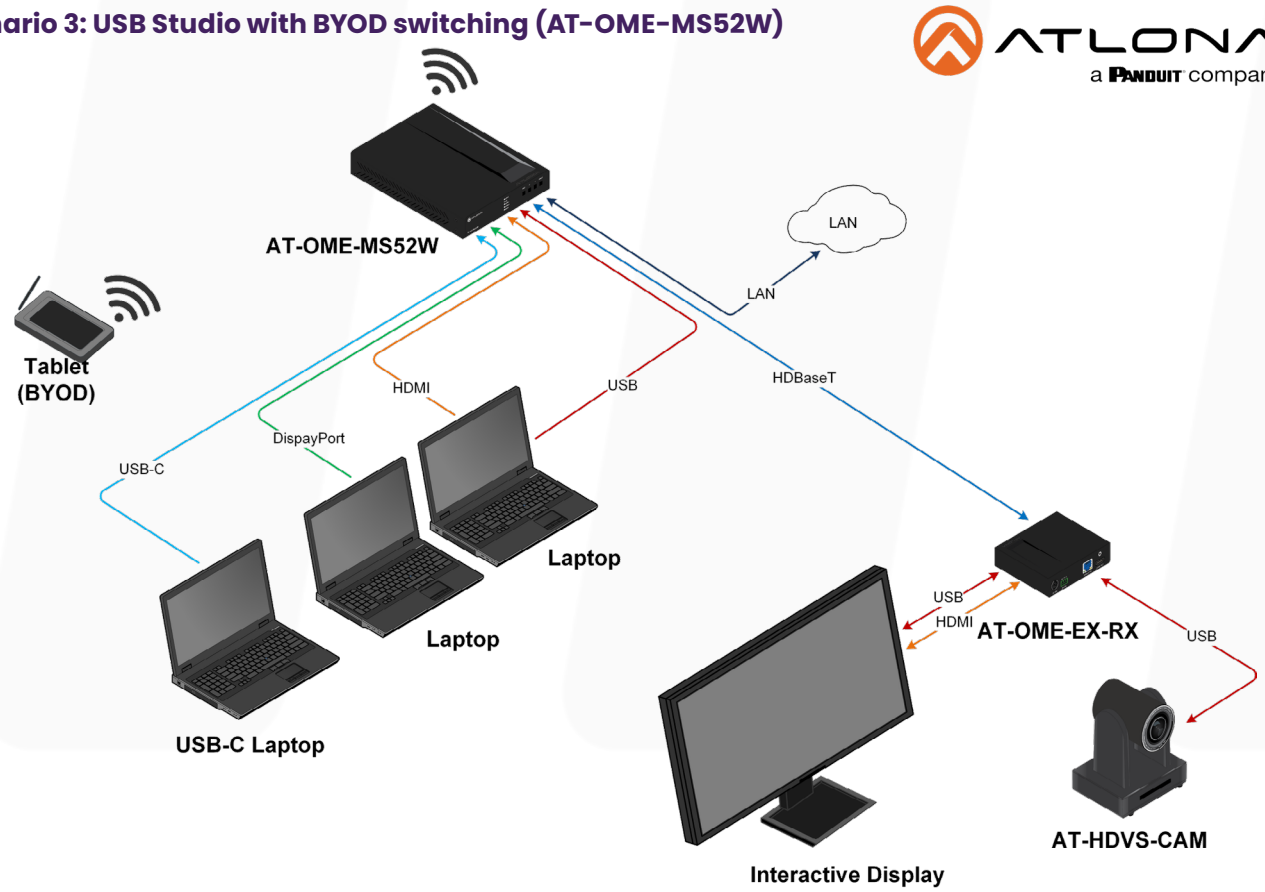
A similar setup however now a display (projector) is also extended some distance, to allow for capture of the teacher AND their teaching accessories (screen/board) and provide a larger local view of attendees, for the teacher.

Additionally in this design, the teachers local PC is fitted with a capture card to allow remote students to "see" in-room material captured by another accessory such as a document camera.

USB-C connectivity also allows very simple, convenient, 1 wire connection for another laptop, connecting not only HDMI Video and Audio but also LAN and Power (upto 60W) A teachers preferred conferencing system (soft codec solution such as Teams, Zoom etc) acts as the core of the system and allows for the lesson to easily be shared both to local and remote attendees while also facilitating the inclusion of the local hardware resources. In this way the Document camera would appear as a secondary source via the in-room computer capture card, creating a compatible video stream, allowing printed material to be shared to all.

USB Audio (the Microphone / SpeakerPhone) is bridged through the OME-MS42 device to the Teachers computer for integration with the preferred soft codec solution. Zoom, Teams etc.
It could be a single All In One, USB Mic/Speaker device as shown or a more substantial multi-microphone solution with room speakers.

Scenario 3: USB Studio with BYOD switching (AT-OME-MS52W)



This solution introduces the AT-UHD-MS52W, wireless matrix switcher together with the remote HDBaseT receiver but this now brings in-room USB technology, multi-computer platform capability and wireless screen sharing (without Apps). That means devices using Android, macOS, iOS, Chromebook, anything that is wireless, along with PC's both wired and wireless. We could still connect USB devices such as a speaker phone, to enhance Teams, Zoom etc. delivery as well as take advantage of the MS52W's capability to respond to hardware "triggers". These triggers could be something like a floor pressure matt that utilises the relay outputs to help automate things like electric curtains, electric screens or even lighting control.

Note: The above diagrams show just some of the infinite arrangement and capabilities that are possible based on using Teams and Zoom to overcome the current "distancing" requirements. Should they be desired / required, enhancements could be made, such as...

- include extra microphones and DSP audio systems
- include interactive touch screens
- include hardware lesson capture, recording and storage
- include a Control System layer to provide aS user friendly interface to the additional hardware.

Product Sku	Description
AT-OME-EX-KIT	**ATLONA** - Omega 4K/UHD Tx/Rx w/USB, Control &PoE, 100m
AT-OME-EX-KIT-LT	**ATLONA** - Omega 4K/UHD Tx/Rx w/USB, Control &PoE, 70m
AT-OME-EX-RX	**ATLONA** - Omega 4K/UHD Rx w/USB, Control &PoE
AT-HDVS-CAM-W	**ATLONA** - Professional USB 2.0 PTZ Camera -White
AT-OME-MS42	**ATLONA** - Omega 4K/UHD, Tx, Multi-format switcher for HDMI, DisplayPort and USB-C. W/USB pass through
AT-OME-MS52W	**ATLONA** - Omega 4K/UHD, Tx, Multi-format switcher for HDMI, DisplayPort, and USB-C with Wireless casting. W/USB pass through over HDBaseT

Control / Support overview: Velocity (AMS)

Whilst not typically utilized off-campus and not shown on these drawings, the systems above are readily network enabled and could join into a managed network relying on the Atlona "Velocity", Control, Management, and monitoring platform.

Regardless of Studio type, simple, flexible control is provided by the Atlona "Velocity", Control, Management, and monitoring system (AMS) by taking advantage of the devices GUI-based integrated web servers. Provided as either a hardware appliance or as a software VM, Velocity provides simple system and device configuration, deployment and management with the interactions, flow, and visual elements of a web or mobile app GUI.

The Velocity AT-VGW Server Gateway supports industry-standard, secure data communications, and can run within a private, dedicated AV device network. An innovative, network-based system architecture allows full redundancy and failover with two VGW-HW or SW instances in operation, maximizing AV system reliability while preventing downtime for such critical applications.
The Atlona Management System, (AMS) is now included with Velocity and enables centralized organization and management of networked Atlona device installations throughout a facility or residence, greatly reducing integration time while serving as a convenient portal for helpdesk support.

Video Resource Link: - Classroom as a Studio

*Please note: When designing a solution there are often a variety of brand options available and we invite you to discuss these with your Midwich sales representative.