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Distance Learning

Since educational institutions are currently unable to meet with students directly, they are interested in solutions for providing instruction to students who are off-campus or at home. The desire is to replicate the in-person teaching experience as much as possible. The challenge is compounded by the fact that many instructors are also prevented from being on campus and must deliver course material from home.

Needs Assessment

Purpose	AV system with camera that replicates the in-class experience for distance learning by capturing the instructor next to the display. System should be flexible, and able to adapt to changing functional requirements
Display	Flat panel display of sufficient size for presenting instructional materials
Sources	User laptop USB speakerphone (See ***Audio*** Below) USB PTZ camera
Control	Power on/off and source selection shall be automatic requiring minimal user intervention and no remote or control panel
Audio	Microphone for instructor audio and speaker for program and far-end videoconference audio

Routing and Extension

The Atlona **AT-OME-MS42** matrix switcher with USB mounted at the instructor's home office desk provides USB-C or HDMI and USB connections for the laptop as well as USB for the speakerphone. The USB-C connection provides convenient and clutter-free setup for newer laptops and MacBooks by offering video, audio, USB data, and device charging on a single cable. The OME-MS42 also provides HDMI output of instructional content and control signals for the display.

Since USB cameras don't have a long enough cable to place a camera for optimal framing of the Instructor and display, the Atlona **AT-OME-EX-RX** HDBaseT receiver provides a USB connection for the Atlona **AT-HDVS-CAM** PTZ camera. The receiver routes the camera's USB signal back to the OME-MS42 switcher, up to 330 feet, over a standard category network cable.

PTZ Camera

The HDVS-CAM delivers professional-quality video that is far superior to a conventional webcam. A larger sensor and 10x optical zoom provide greater detail for recordings and video conferences. A handheld remote allows precise control of motorized pan, tilt, and zoom for proper framing of the instructor and lesson materials.

USB

A key element of this design is its integration of USB to provide a superior videoconferencing/distance instruction experience over the standard laptop resources. When the user connects their laptop HDMI and USB to the system, they gain access to the high-resolution camera and conferencing grade speakerphone.

Control

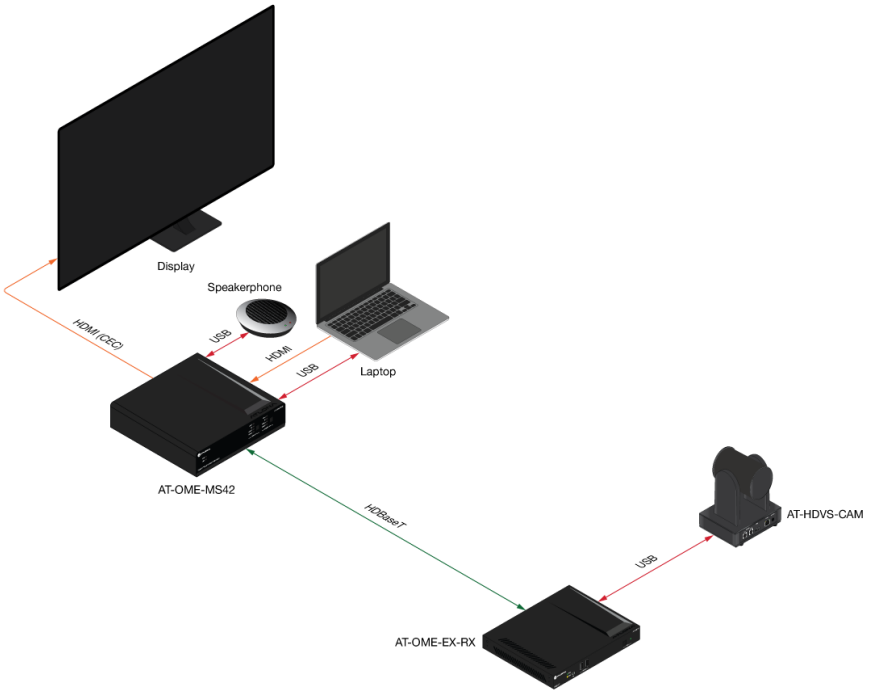
The OME-MS42 switcher provides automatic display control and automatic input selection for the system. When the instructor connects their laptop to the switcher, it detects the active signal and sends an CEC, RS-232, or Ethernet command to power up the display or projector and selects the laptop as the current input. When the laptop is disconnected, a command will be sent to power down the display or projector.

Flexible System

This design provides a high-quality distance learning presentation environment for instructors forced to teach from home. However, it's use is not limited to this application. As instructors return to the classroom, there is a high probability that class sizes will be limited, with distance learning and lecture capture still required. The core components of the system can be transferred to the classroom, and when combined with additional inputs as well as swapping the display for a projector, it becomes a complete classroom presentation and distance learning solution.

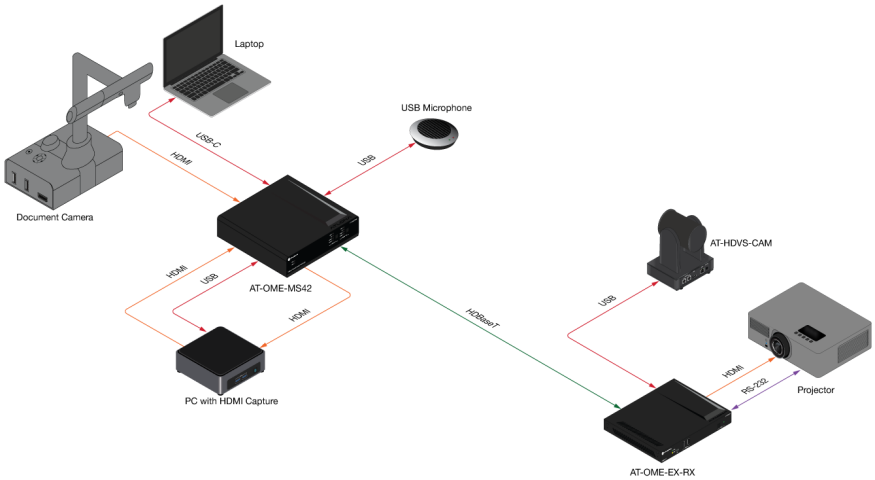
Distance Learning Delivered from Instructor's Home Office

The system serves as the basis for a temporary home office installation, allowing the instructor to connect their laptop to a display, camera, and speakerphone.



Distance Learning Delivered from Classroom

In a classroom, the system connects to a projector for critical viewing by students in class, and accommodates additional sources, all while retaining the ability to support distance learning.



Distance Learning Bill of Material

QTY	Description	SKU
1	Kit Includes: AT-OME-MS42 4x2 Matrix Switcher with USB AT-OME-EX-RX HDBaseT Receiver for HDMI with USB	AT-OME-MS42-KIT
1	PTZ Camera with USB	AT-HDVS-CAM
	Laptop, display/projector, USB speakerphone, document camera, PC with HDMI capture, Miscellaneous cabling	Furnished by others

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