HyFlex Classroom

Many schools and students are interested in alternatives to traditional methods of conducting and attending classes. Leading educational institutions are currently pursuing a hybrid / flexible, or HyFlex, course model that provides a variety of options for delivering lesson materials. HyFlex classrooms include technology that facilitates live face-to-face and online instruction (synchronous), while also allowing students to view recorded course content on demand (asynchronous).

Needs Assessment

Purpose	Create a classroom AV system that supports simultaneous live in-person and online instruction as well as recordings for on-demand viewing
Display	Ceiling or wall-mount projector of sufficient image size and brightness to provide critical viewing in a variety of lighting conditions
Sources	User laptop or room PC
Cameras	Provide video capture of teacher for direct instruction and students for class participation
Audio	Provide microphone for capture of instructor and class audio as well as distribution of audio throughout the room
Control	AV control should be comprehensive, yet simple to operate with minimal training
Cable	Select the appropriate Category cabling system for the network and HDBaseT extension

AV Routing and Extension

The Atlona **AT-OME-MS42** matrix switcher with USB mounted at the instructor's desk provides connections for primary AV sources including USB-C for a laptop as well as HDMI and USB connections for the room PC. In addition, USB peripheral connections are provided for the room camera and an audio digital signal processor (DSP). The OME-MS42 also provides HDMI output of instructional content to the instructor's confidence monitor.

The HDBaseT output of the OME-MS42 connects to an Atlona **AT-OME-EX-RX** receiver and supports extension of various signals up to 330 feet (100 meters) over a single shielded Category 6A cable. This includes video content from the laptop or room PC for the projector, control signals for the projector, and USB data for the Atlona **AT-HDVS-CAM** PTZ camera dedicated to the instructor.

USB

The Atlona **AT-USB-EX100-KIT** USB 2.0 extender brings USB signals from a second HDVS-CAM to the OME-MS42 when video of classroom students is needed.

USB integration is a key element of this solution, providing the audio and video functionality necessary for HyFlex in common video conferencing applications such as Zoom or Microsoft® Teams®. The software allows selection of the instructor's

microphone and camera for direct instruction, or the room microphone and camera for group discussions between in-class and online students. The USB host switching capabilities built-in to the AT-OME-MS42 allow all the USB peripherals to be routed to either the laptop or room PC host as needed. The recording capabilities of the conferencing software allow session files to be created and uploaded to the learning management system for later, on-demand use.

PTZ Cameras

Two AT-HDVS-CAMs deliver professional-grade video that is superior in image quality to a conventional webcam. Motorized pan, tilt, and zoom allow precise framing for the instructor camera and the room camera.

Control

An intuitive graphical user interface, or GUI, on the Atlona **AT-VTP-700VL** touch panel provides convenient access to AV system functions. The Atlona **AT-VGW-HW-3** Velocity hardware gateway acts as the central control processor for the system. Over network connections, the gateway takes user input from the touch panel, or a BYOD smartphone or tablet, and instructs the switcher to send a power command to the projector, select source inputs, adjust audio settings, and select a preset or PTZ functionality for either the instructor or classroom camera.

Audio

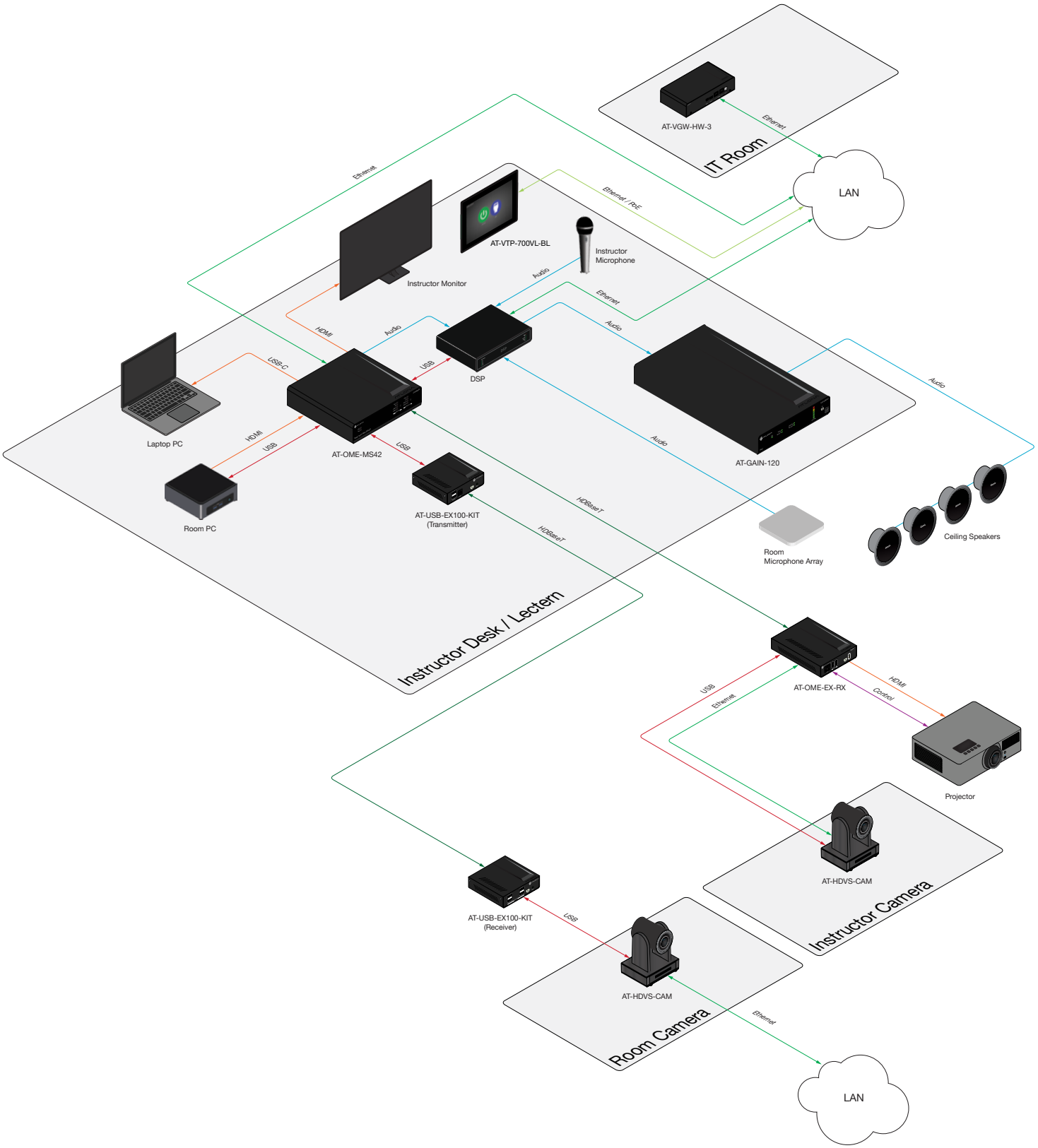
A third-party digital signal processor is dedicated to routing audio for the HyFlex system. Instructor and room microphones are presented to the conferencing software as USB devices. Computer and instructor microphone audio from the OME-MS42 are routed through the DSP and on to the Atlona **AT-GAIN-120** amplifier, which supplies up to 120 watts of power to speakers mounted in the ceiling.

Cabling and Connectivity

A Panduit unshielded Category 6A cabling system delivers LAN data and Power over Ethernet, when applicable, to connected AV equipment. Shielded Category 6A cabling is used for HDBaseT connections.

Hybrid Flexible Classroom Bill of Materials

QTY	Description	SKU	
1	Atlona Omega 4×2 Matrix Switcher with USB	AT-OME-MS42	
1	Atlona Omega HDBaseT Receiver for HDMI with USB	AT-OME-EX-RX	
2	Atlona PTZ camera with USB	AT-HDVS-CAM	
1	Atlona USB 2.0 Extender Kit over Category Cable	AT-USB-EX100-KIT	
1	Atlona Velocity System Hardware Gateway	AT-VGW-HW-3	
1	Atlona Velocity System 7" Touch Panel	AT-VTP-700VL-BL	
1	Atlona Power Amplifier – 120 Watts	AT-GAIN-120	
	Category Cable Components:	**Unshielded**	**Shielded**
	Panduit Category 6A Copper Cable	PUP6AHD04BU-G	PUFP6X04BU-UG
	Panduit Category 6A RJ45 Jack Module	CJ6X88TGBU	CJS6X88TGY
	Panduit Category 6A Field Term RJ45 Plug	FP6X88MTG	FPS6X88MTG
	Panduit Category 6A 28 AWG Patch Cord	UTP28X7BU	STP6X7BL
	Laptop, PC, display, projector, DSP, microphones, speakers, projection screen, and miscellaneous cabling	Furnished by others	



PANDUIT®

800-777-3300 | cs@panduit.com | panduit.com

ATLONA a PANDUIT company

877-536-3976 | 408-962-0515 | atlona.com

ATAG07--SA-ENG 09/24