



Connected Classroom with Networked AV



OPPORTUNITY

Investing in the infrastructure required to share content in the classroom from sources such as laptops, room PCs, set top boxes and document cameras to displays throughout the room is important for today's learning environment. If affordable, classrooms already equipped with local technology to streamline learning could easily be connected to each other.



SOLUTION

HARMAN Networked AV can turn a basic classroom setup into a connected campus. Connecting room sources in each classroom to the network allows any instructor to pull content from any source – regardless of physical location. This ensures that sharing can occur quickly and easily from room to room and even across campus.

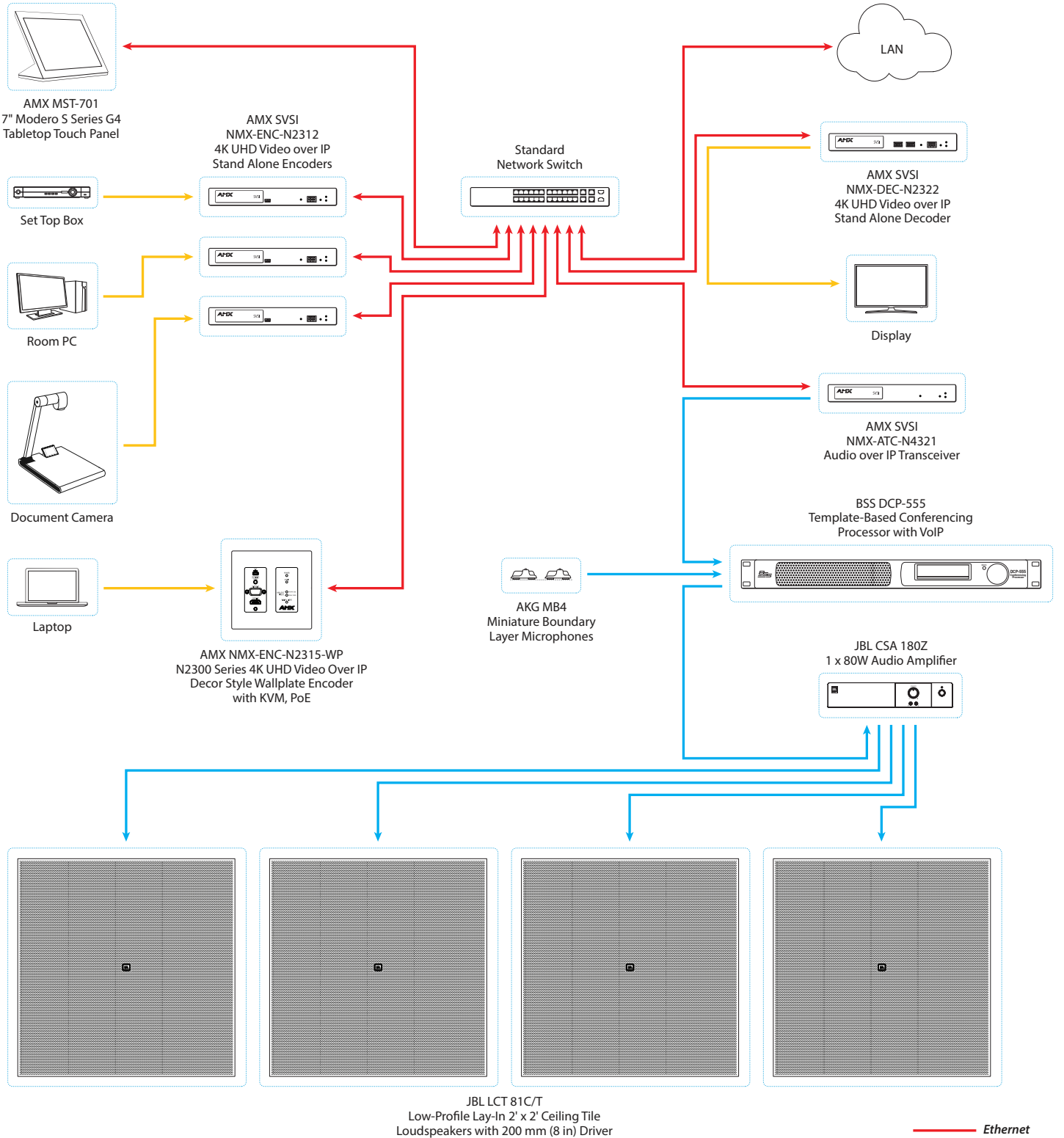
In addition, by using Networked AV rather than a dedicated centralized infrastructure, facilities can save cost. Networked AV uses the existing wiring infrastructure and standard network switches eliminating the need for a dedicated AV switchers and cabling. Networked AV is also inherently flexible. Because it uses standard network switches, adding classrooms is easy. Simply use an open network port, or link an additional network switch.

In this system example AMX N2312 encoders are used to stream video content from a variety of sources at resolutions up to 4K onto the network. That content is then available to the room display with the use of an N2322 decoder. Adding additional sources, displays and projectors to the network simply requires additional encoders and decoders. This allows the system to grow one input or output at a time.

While encoders are typically permanently installed in equipment racks or cabinets, the AMX N2315 wallplate encoder provides a flexible entry point into the system. It can easily be added to a podium for a clean look with an obvious connection for visiting laptops.

The Networked AV system is easily tied to a robust HARMAN Professional audio solution using the AMX N4321 Audio Over IP Transceiver. A BSS DCP-555 conferencing processor for integrated instructor microphones with automatic microphone mixing, JBL CS series amplifier, and JBL LCT 81C/T Ceiling Tile Speakers work together to amplify instructor and student voices reducing voice strain while ensuring everyone in the class can hear clearly to improve learning.

NETWORKED AV CLASSROOM SYSTEM DIAGRAM



JBL LCT 81C/T
Low-Profile Lay-In 2' x 2' Ceiling Tile
Loudspeakers with 200 mm (8 in) Driver

— Ethernet
— HDMI
— Stereo Audio



AMX N2300 Series 4K 4K30 4:2:0

Don't miss a single moment watching the big game or reviewing video at the big meeting with the 4K over IP solution that is fast enough for live action even price sensitive markets will appreciate. The new AMX SVSI N2300 Series Encoders and Decoders are designed to distribute beautiful 4K video with less latency, and consuming less power - all at an extremely competitive price.



BSS DCP-555 Digital Conferencing Processor

This audio processor designed specifically for conferencing applications provides multiple connectivity options, acoustic echo cancellation, and more. The DCP-555 provides microphone connectivity and optimization, automixing of microphones and room audio, acoustic echo cancellation, USB connectivity for web conferencing, and line output for in-room speakers.



Audio over IP Transceiver Provides Audio switching and Distribution

The NMX-ATC-N4321 Audio Transceiver is an audio-over-IP solution that both sends and receives two-channel balanced or unbalanced audio over IP. Simply connect a balanced audio input into the IN port and it's converted to IP packets that are switchable and routable just like data or voice.



AMX Modero S Touch Panels

Bring smooth user control and sleek styling to any conference room with Modero S Touch Panels. The Modero S panels include advanced features that let users operate AV equipment simply and effectively. The Modero S provides an intuitive, gesture-based interface perfect for conference rooms, classrooms, or small huddle spaces.



JBL Professional LCT 81C/T Low-Profile Lay-In 2' x 2' Ceiling Tile Loudspeaker with 200 mm (8 in) Driver

LCT 81C/T is a full-range ceiling speaker designed to lay into a 2 ft x 2 ft US-style suspended grid ceiling, with no cutting of ceiling tiles required, making for an easy and cost-effective installation with a minimum of mess. The low profile depth of only 100 mm (4 in) allows the speaker to fit in locations where deeper loudspeakers do not. The very high sensitivity of 96 dB provides maximum sound level, even at low tap settings.



AMX N2300 Series 4K Video over IP Decor Style Wallplate

The NMX-ENC-N2315-WP encoder fits conveniently into a 2-gang US back box for easy installation in a wall, floor or lectern. Connect to power and Ethernet using a single category cable. The NMX-ENC-N2315 includes standard features like input scaling, bi-directional serial, IR, embedded 7.1 audio, and KVM-over-IP extension. The N2300 Series provides a flexible, feature-rich, and simple-to-deploy Networked AV solution that can be used in 4K applications with resolutions up to 4096x2160, with support for HDCP 2.2. Utilizing JPEG2000 encoding, the N2315-WP delivers video with latency so low it supports extremely sensitive applications.

