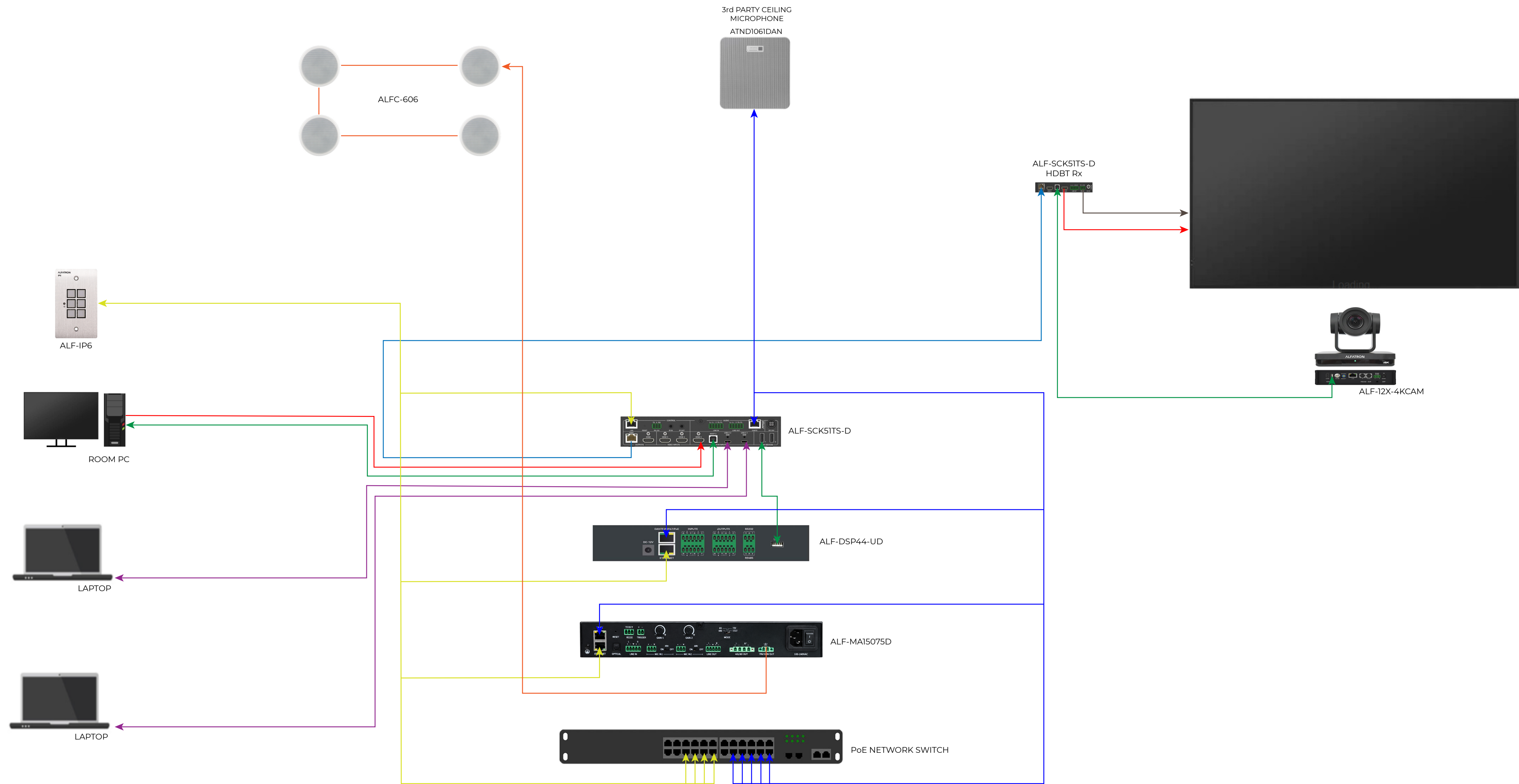




ALF-SCK51TS-D
BYOD UC SOLUTION WITH DANTE AUDIO AND CONTROL



HDMI



LAN



DANTE



USB 2.0



USB-C



HDBT



SPEAKER



AUDIO

SOLUTION OVERVIEW

This solution delivers a comprehensive BYOD conferencing and presentation platform built around the ALF-SCK51TS-D multi-format presentation switcher, providing advanced multi-window display, seamless switching, and integrated USB extension for modern meeting and training environments. The system supports multiple wired laptop inputs alongside a room PC, allowing users to quickly connect and share content while maintaining a professional and flexible collaboration experience.

At the core of the system, the ALF-SCK51TS-D features two USB-C inputs that support Alt-DisplayPort video, USB host connectivity, and up to 60W charging, enabling single-cable connection for modern laptops. These inputs allow users to connect their device for presentation, conferencing peripherals, and power simultaneously. Additional HDMI inputs support further wired sources such as room PCs or guest devices. The switcher also provides multi-window display capabilities, allowing multiple sources to be shown simultaneously on the main room display for side-by-side comparison and collaborative discussions. Seamless switching between sources ensures transitions occur without screen blanking, making it ideal for live presentations and interactive environments.

The solution incorporates HDBaseT extension to the display location using the SCK51TS-D receiver, which delivers video, USB, and control over a single cable. The receiver provides USB device connectivity, allowing a USB camera connected at the display — such as the ALF-12X-4KCAM — to be routed back to the main switcher. This USB over HDBaseT capability enables BYOD conferencing, allowing connected laptops to access the room camera without requiring additional USB cabling back to the rack.

Audio is managed through integration with the ALF-DSP64-UD digital signal processor, which handles microphone inputs including a ceiling array microphone. Processed audio is then routed to the ALF-MA15075D amplifier, driving the ALFC-606 ceiling speakers to provide clear and evenly distributed sound throughout the space. This ensures both local audio reinforcement and conferencing audio are optimised for speech intelligibility.

The system also supports UART serial control via the HDBaseT receiver, enabling control integration at the display location. This allows external control panels or automation systems to communicate with equipment in the rack, simplifying room control deployment. An ALF-IP6 control keypad is included for source selection and system control, while network connectivity allows integration with third-party control systems for expanded automation.

Overall, this solution combines multi-window presentation, seamless switching, dual USB-C single-cable connectivity with charging, USB camera extension over HDBaseT, DSP-based audio processing, and flexible control capabilities to create a powerful BYOD collaboration platform suitable for training rooms, lecture spaces, and medium to large meeting environments.

ALF-IP6 Overview

The ALF-IP6 is a programmable wall-mounted keypad controller designed for simple and intuitive AV system control. Featuring six configurable buttons, it allows users to manage key room functions such as display power, input selection, volume control, and system on/off. The unit communicates over IP and includes RS-232 and dual IR ports for flexible integration with displays, switchers, and amplifiers. Its clean, low-profile design makes it ideal for meeting rooms, training spaces, classrooms, and hospitality environments requiring reliable, straightforward control.

ALF-SCK51TS-D Overview

The ALF-SCK51TS-D is a multi-format presentation switcher designed for meeting rooms, training spaces, and collaborative environments. Integrated scaling automatically adjusts all connected sources to a common output resolution, while single and multi-window display modes allow flexible content layouts. Seamless switching ensures smooth transitions between presenters. The unit includes two USB-C inputs supporting DisplayPort Alt Mode, USB host functionality, and up to 60W charging, along with a USB-B host paired with HDMI input 3. USB device connections on both the main unit and HDBaseT receiver enable shared access to conferencing peripherals and flexible USB routing. This allows presenters to connect using a single cable while maintaining access to shared room USB devices.

ALF-DSP44-UD Overview

The Alfatron DSP44-UD (Dante) is a professional 4×4 audio DSP with analog I/O, Dante networking, USB audio, and RS-232/RS-485/IP control for conferencing and installed-audio systems. Powered by ADI SHARC 21489, it supports 2-channel AEC, noise suppression, auto-mixing, EQ, compression, AGC, feedback suppression, ANC, and delay, using 24-bit/48 kHz converters with a 110 dB dynamic range. Configuration is handled through the Alfatron DSP Controller, offering full routing, processing, and secure user-level control.

ALF-MA15075D Overview

The ALF-MA15075D is a compact 1U Class-D digital mixing amplifier designed for both low- and high-impedance systems. It delivers 2 × 75W at 4/8Ω or 150W at 70/100V, making it ideal for distributed commercial audio applications. Its Class-D design ensures energy efficiency, low heat output, and reduced inrush current, with automatic standby to minimize power consumption. It features Dante, optical, balanced analogue inputs, and two microphone inputs with phantom power support, along with stereo low-impedance, 70/100V, and balanced line-level outputs. Integrated DSP includes a five-band graphic EQ, TCP/IP web control, trigger input, and front-panel status LEDs, ensuring flexible control and efficient system integration.

ALFC-606 Overview

The ALF-C606 is a 2-way 6" in-ceiling loudspeaker with integrated backbox, designed for distributed audio in seminar rooms, classrooms, training spaces, and lecture venues. It delivers clear sound for both speech and background audio and supports 70V/100V constant-voltage systems with selectable power taps of 30W / 15W / 7.5W, as well as 30W at 8 Ω. The speaker provides a frequency response of 70Hz–20kHz with 90dB (1W/1m) sensitivity, ensuring consistent and reliable audio coverage while maintaining a discreet, low-profile ceiling installation.

Solution Bill of Quantities

- 1 x ALF-12X-4KCAM Camera
- 1 x ALF-SCK51TS-D Scaler switcher
- 1 x ALF-DSP44-UD Digital Signal Processor
- 1 x ALF-MA15075D Amplifier
- 1 x ALF-IP6 Keypad Controller
- 4 x ALFC-606 Celing Loudspeakers
- 1 x ALF-HDMI 6ft HDMI Cable
- 2 x ALF-USBC-16ft Cables
- 1 x ALF-USB-C 6ft Cable

Third Party Equipment

- 1 x Display
- 1 x Display mounting bracket
- 1 x Room PC
- 1 x 3rd Party DANTE Ceiling microphone
- 1 x PoE Network switch

Solution Use Cases

1. Medium to Large Meeting Rooms with BYOD Collaboration

In medium to large meeting rooms, users can connect laptops using the dual USB-C inputs on the ALF-SCK51TS-D, providing single-cable video, USB host connectivity, and up to 60W charging. Participants can quickly switch between presenters using seamless switching, while the multi-window display allows multiple sources to be shown simultaneously for collaborative discussions. The USB camera connected at the display is extended back to the switcher via the HDBaseT receiver, enabling full BYOD conferencing without additional USB cabling.

2. Training Rooms with Multi-Presenter Content Display

In training environments, instructors and participants can share multiple sources at once using the multi-window capability. This allows training material, participant laptops, and a room PC to be displayed side-by-side. Seamless switching ensures smooth transitions between presenters during live sessions, while the DSP-processed ceiling microphone captures audience questions and routes audio to the ceiling speakers for clear reinforcement.

3. Boardrooms with Single-Cable Laptop Connectivity

For executive boardrooms, the dual USB-C inputs provide convenient single-cable connectivity for modern laptops, including charging and conferencing peripherals. Users can quickly connect and begin presenting while accessing the room camera via USB over HDBaseT. Multi-window mode allows simultaneous display of presentations, video calls, and shared documents, supporting more efficient decision-making sessions.

4. Lecture and Seminar Spaces with Ceiling Microphone Audio

In lecture or seminar environments, the system integrates a ceiling microphone into the DSP for clear voice capture across the room. Audio is processed and distributed through the ceiling speakers via the amplifier, ensuring even sound coverage. The presenter can connect via USB-C, while additional sources such as a room PC can be displayed simultaneously using multi-window layouts for interactive learning.

5. Rooms Requiring Local Control and Automation Integration

In environments requiring flexible control, the HDBaseT receiver provides UART serial passthrough, allowing control signals from the display location to reach rack-mounted equipment. Combined with the ALF-IP6 keypad and network connectivity, the system can be integrated with third-party control platforms. This setup is ideal for corporate meeting rooms, training centres, and education spaces where automated source switching, display control, and audio routing are required.