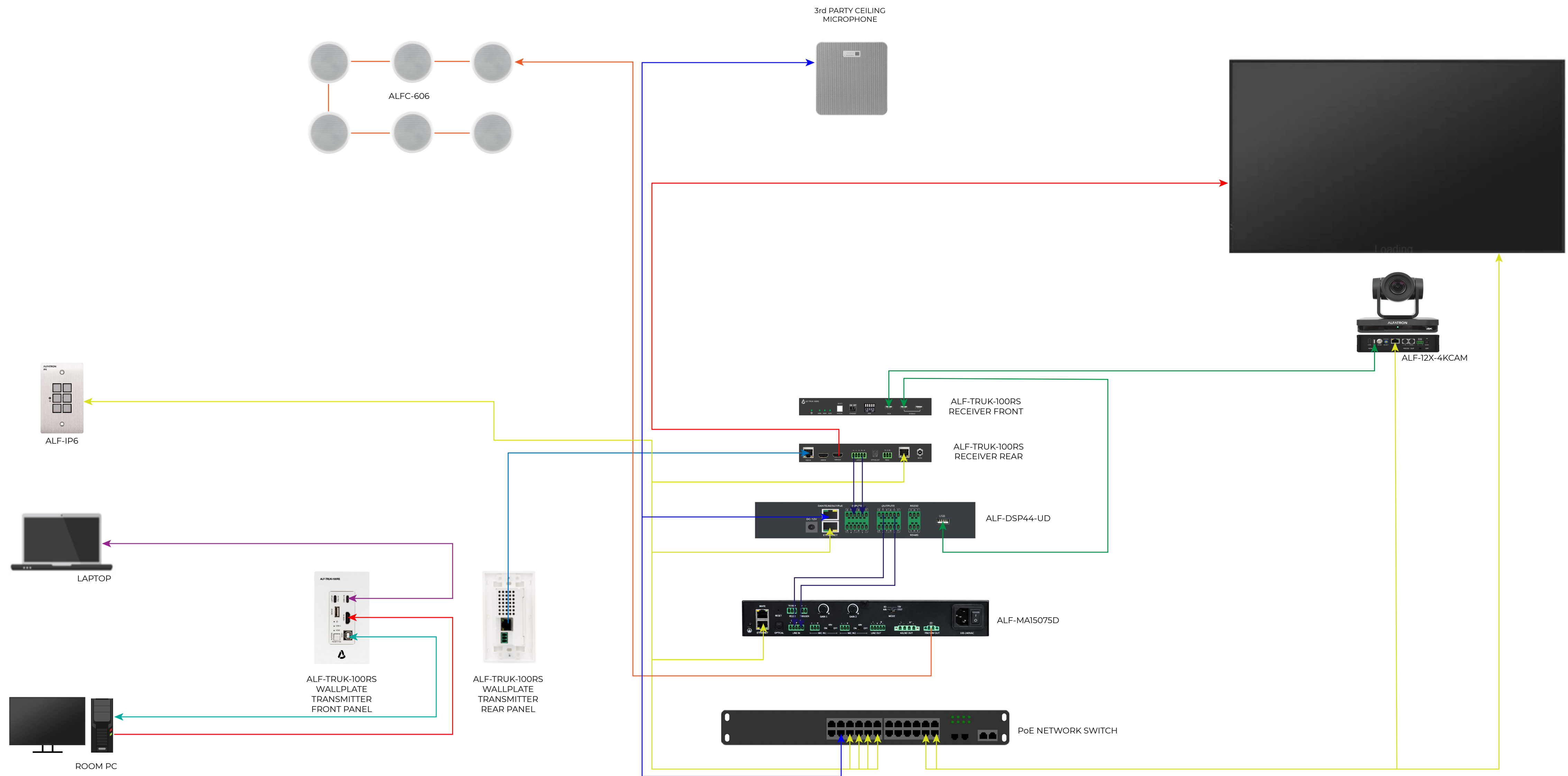




ALT-TRUK-100RS RANGE EXTENSION BYOD UC SOLUTION WITH AUDIO AND CONTROL



HDMI



LAN



DANTE



USB 3.0



USB 2.0



USB-C



HDBT



SPEAKER



AUDIO

SOLUTION OVERVIEW

This solution provides a long-range BYOD conferencing and presentation platform built around the ALF-TRUK-100RS wallplate transmitter and receiver kit, designed to extend video, USB, audio, and control over a single CAT cable. The system enables users to connect laptops at the table while accessing room-based USB peripherals, audio processing, and display equipment located remotely, creating a clean and flexible meeting environment.

At the core of the solution, the ALF-TRUK-100RS extends USB, video, Ethernet, and control signals up to 100 metres over CAT cabling between the wallplate transmitter and rack-mounted receiver. This USB extension capability allows USB peripherals connected at the receiver — such as a USB camera and DSP — to be available to the user’s laptop at the table. This enables seamless BYOD conferencing where users can connect once and instantly access room cameras, microphones, and audio processing without additional USB cables.

The USB-C connection on the ALF-TRUK-100RS provides single-cable connectivity for modern laptops, supporting video, USB host data, and up to 100W charging when an external USB-C power supply is connected to the charging port. The USB-C interface also supports Ethernet over USB, allowing connected laptops to gain wired network access through the system, improving network stability for conferencing applications.

Video and USB signals are transported over HDBaseT-style extension to the receiver, where the display and USB devices are located. A USB conference camera connected at the receiver is routed back to the user’s laptop via the extended USB connection, enabling high-quality video conferencing. The receiver also integrates with the ALF-DSP64-UD, allowing USB audio to be processed and distributed to the room’s amplification system. Balanced audio output from the DSP feeds the ALF-MA15075D amplifier, which powers the ALFC-606 ceiling speakers for clear room audio reinforcement.

Control integration is supported through RS-232 pass-through on the ALF-TRUK-100RS, allowing control signals to be extended between the table and rack equipment. This enables switching, display control, and automation integration from local control panels such as the ALF-IP6 or third-party control systems. Network connectivity via the PoE switch further allows centralized control and monitoring.

Overall, this solution leverages the ALF-TRUK-100RS to provide long-distance USB and video extension, single-cable USB-C connectivity with charging and network access, USB peripheral integration at the receiver location, balanced audio distribution, and RS-232 control, delivering a clean and highly capable BYOD conferencing solution for medium to large meeting rooms and training 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-TRUK-100RS Overview

The ALF-TRUK-100RS is a wallplate-style USB-C and HDMI extension solution designed for long-distance BYOD connectivity in meeting and training spaces. It extends video, USB, Ethernet, audio, and control up to 100 metres over a single CAT cable, allowing users to connect at the table while accessing room peripherals at the receiver location. The USB-C input supports single-cable video, USB data, Ethernet over USB, and up to 100W charging when an external power supply is connected, while the HDMI input accommodates presentation-only sources. USB extension over HDBaseT enables devices such as cameras, DSPs, and touch displays connected at the receiver to be available to the user’s laptop, and RS-232 pass-through allows control of displays and other equipment, delivering a clean and flexible long-range BYOD solution.

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-TRUK-100RS HDBT Extender kit
- 1 x ALF-DSP44-UD Digital Signal Processor
- 1 x ALF-MA15075D Amplifier
- 1 x ALF-IP6 Keypad Controller
- 6 x ALFC-606 Celing Loudspeakers
- 1 x ALF-HDMI 6ft HDMI Cable
- 1 x ALF-HDMI 16ft HDMI Cable
- 1 x ALF-USBC-16ft Cables

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 Table Connectivity

In medium to large meeting rooms, the ALF-TRUK-100RS allows users to connect their laptop at the table using USB-C while accessing room-based USB peripherals such as a camera and DSP located at the rack. Video, USB, and control signals are extended up to 100 metres over CAT cabling, eliminating the need for long USB runs. The single USB-C connection provides video, USB data, Ethernet over USB, and optional laptop charging, creating a clean and simple BYOD experience.

2. Training Rooms with Long-Distance Extension

In training environments where equipment racks are located away from the presenter’s position, the TRUK-100RS extends connectivity between the table and the display location. Presenters can connect via USB-C or HDMI at the wallplate while the system routes video to the display and provides access to room microphones, DSP processing, and speakers. This ensures reliable performance and consistent audio/video integration across larger spaces.

3. Boardrooms with Integrated USB Conferencing Peripherals

In boardroom deployments, USB peripherals such as a conferencing camera and DSP are connected at the receiver, allowing users to access them through the extended USB connection. This enables seamless BYOD conferencing using a single cable, while balanced audio from the DSP feeds the room amplifier and ceiling speakers. The solution keeps the table free of equipment and centralises AV hardware in the rack.

4. Rooms Requiring Control and Network Integration

For spaces requiring automation, the TRUK-100RS supports RS-232 control pass-through, allowing switching and display control from the table location. Ethernet over USB on the USB-C connection provides wired network access for stable conferencing, while the long-range extension supports flexible room layouts. This makes the solution ideal for corporate meeting rooms, training centres, and education environments needing integrated AV and control functionality.