



ALF-WUK4A  
VIDEO VIDEO SWITCHING SOLUTION WITH AUDIO AND CONTROL

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HDMI
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LAN
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DANTE
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USB 3.0
-   
USB 2.0
-   
USB-C
-   
HDBT
-   
SPEAKER
-   
AUDIO

## The Solution

This solution provides a complete AV switching, audio distribution, and control system designed for meeting rooms, classrooms, and professional presentation environments. At the centre of the system is the ALF-WUK4A 4x1 HDMI switcher, which manages multiple input sources while delivering high-quality video and integrated audio handling to the main room display, forming the core of a simple yet highly capable AV setup.

The ALF-WUK4A supports up to four HDMI sources, including laptops and a room PC, allowing all devices to remain connected for quick and efficient switching. With both automatic and manual switching modes, the system enables seamless plug-and-present operation or controlled source selection depending on user requirements. Supporting 4K video, the switcher ensures sharp and detailed image quality, making it suitable for modern displays and high-resolution content such as presentations, video playback, and data-rich applications.

A key feature of the ALF-WUK4A is its integrated audio management, including ARC (Audio Return Channel) and a dedicated audio output. ARC allows audio from the display to be routed back into the system, while the audio output is sent to the ALF-PA2B amplifier for reliable sound reinforcement. The amplifier then drives the ALFC-406 ceiling speakers, providing clear and evenly distributed audio throughout the space, ensuring speech intelligibility and consistent performance for both voice and multimedia content.

The system also incorporates RS-232 control, enabling seamless integration with the ALF-IP6 wall-mounted controller. This allows users to manage source selection, display functions, and overall system operation from a simple and intuitive interface. The addition of control integration ensures the system can be automated, reducing user intervention and improving ease of use in day-to-day operation.

Overall, this solution combines flexible HDMI switching, advanced audio routing, amplification, and centralized control into a streamlined and scalable AV system. With the ALF-WUK4A as the core, supported by the ALF-PA2B, ALFC-406 speakers, and ALF-IP6 controller, it delivers a reliable and user-friendly solution for environments requiring high-quality video, clear audio, and efficient system control.

## ALF-WUK4A Overview

The ALF-WUK4A is a compact and reliable 4x1 HDMI switcher designed to simplify multi-source connectivity in professional AV environments. It allows up to four HDMI input devices—such as laptops, media players, or room PCs—to be connected simultaneously and switched to a single display output, making it ideal for meeting rooms, classrooms, and huddle spaces. The unit supports both automatic and manual switching modes, providing flexibility for different use cases. In auto mode, the switcher detects and selects the active input when a device is connected or powered on, enabling a seamless plug-and-present experience. In manual mode, users can select inputs directly, offering greater control in structured presentation or controlled environments.

With support for 4K video resolution and ARC (Audio Return Channel), the ALF-WUK4A ensures high-quality video and allows audio to be returned from the display to an external audio system. It also includes RS-232 control, enabling integration with third-party control systems for automated operation. The switcher maintains stable signal performance across all inputs, ensuring consistent and reliable operation. Designed for ease of use and quick installation, the ALF-WUK4A provides a straightforward solution for managing multiple HDMI sources. Its compact form factor and intuitive operation make it a practical and efficient choice for everyday AV switching applications.

## ALF-PA2B Overview

The ALF-PA2B is a compact and efficient stereo power amplifier designed to deliver reliable audio amplification in professional AV environments. Ideal for meeting rooms, classrooms, and small commercial spaces, it provides clean and consistent sound reinforcement for both speech and background audio applications. The amplifier supports multiple input types, including line-level and microphone inputs, allowing flexible integration with a variety of audio sources such as switchers, media players, and presentation systems. Its simple interface ensures easy setup and operation, making it suitable for both standalone use and integration into larger AV systems.

With its efficient power output, the ALF-PA2B can drive ceiling or wall-mounted speakers effectively, delivering balanced audio coverage across the listening area. Its compact form factor allows for discreet installation behind displays, under tables, or within equipment racks, helping maintain a clean and organized system design. Reliable, easy to use, and versatile, the ALF-PA2B provides a practical amplification solution for everyday AV installations requiring clear audio performance and straightforward integration.

## ALFC-406 Overview

The ALFC-406 is a compact 2-way in-ceiling loudspeaker designed for clear and consistent audio in commercial AV environments. Featuring a 4-inch driver, it delivers balanced sound for speech and background music, making it ideal for meeting rooms, classrooms, and hospitality spaces.

Supporting both low-impedance and 70V/100V line systems, the ALFC-406 offers flexible integration into a wide range of audio installations. Its low-profile design and easy installation make it a practical and reliable choice for distributed audio applications.

## **ALF-IP6 Overview**

The ALF-IP6 is a programmable wall-mounted keypad controller designed to provide simple and intuitive control of AV systems in professional environments. Featuring six configurable buttons, it allows users to manage key functions such as display power, input selection, volume control, and system on/off from a single, easy-to-use interface.

The controller communicates over IP, enabling flexible integration into networked AV systems, while also supporting RS-232 control for direct communication with compatible devices such as switchers, displays, and amplifiers. This dual control capability makes it suitable for both standalone operation and integration into larger, centralized control systems.

Each button can be custom programmed to perform specific actions or trigger multiple commands, allowing tailored control based on the application. Its clean, low-profile design ensures it blends seamlessly into meeting rooms, classrooms, and corporate environments while providing reliable day-to-day operation.

## Solution Bill of Quantities

- 1 x ALF-WUK4A HDMI Switcher
- 1 x ALF-IP6 Controller
- 1 x ALF-PA2B Amplifier
- 2 x ALFC-406 Ceiling Loudspeakers
- 4 x ALF-HDMI 6ft HDMI Cables
- 1 x ALF-HDMI 16.5ft Cable

### Third Party Equipment

- 1 x 3rd Display
- 1 x Display mounting bracket
- 1 x POE Network Switch / POE Injector  
(Switch required for IP display control, alternatively IR control can be used)

## Solution Use Cases

### 1. Smart Meeting Room with One-Touch Control

In a modern meeting room, users can connect multiple laptops and a room PC to the ALF-WUK4A and switch between sources effortlessly. The ALF-IP6 wall controller provides simple one-touch control for display power, input selection, and volume. Video is delivered in 4K to the main display, while audio is routed via ARC or audio out to the ALF-PA2B and distributed through ALFC-406 ceiling speakers for clear, consistent sound.

### 2. Classroom with Integrated AV and Control

In an education setting, instructors can connect various devices and switch between them using the ALF-WUK4A. The ALF-IP6 allows easy control of system functions without needing technical knowledge. Audio from lessons and media is amplified by the ALF-PA2B and played through ceiling speakers, ensuring all students can clearly hear content while viewing high-quality visuals on the display.

### 3. Boardroom with Automated AV Operation

In corporate boardrooms, the system enables multiple presenters to stay connected while RS-232 control allows the ALF-IP6 to automate switching and display functions. This reduces user interaction and ensures a smooth meeting experience. Audio is distributed through the amplifier and ceiling speakers, providing a clean and professional environment for presentations and conferencing.

### 4. Training Rooms with Flexible Content Sharing

For training environments, the ALF-WUK4A allows quick switching between instructor and participant devices using auto or manual modes. The ALF-IP6 simplifies operation for different users, while the audio system ensures even coverage across the room. With integrated video switching, audio distribution, and control, the system supports dynamic and interactive training sessions.