



SOLUTION OVERVIEW

The ALF-250W-UB solution delivers a versatile commercial audio distribution platform designed for retail stores, shopping centres, hospitality venues, training rooms, and public spaces requiring a combination of background music, paging, and emergency override functionality. The mixer amplifier integrates multiple audio source options within a single unit, including front and rear microphone inputs for staff announcements, USB thumb drive playback for MP3 audio files, built-in Bluetooth wireless streaming for mobile devices and tablets, and an onboard FM tuner for radio-based content.

In addition to the internal media sources, dedicated line-level inputs allow connection of third-party media players, digital signage systems, satellite receivers, or background music services, enabling operators to select and mix between various audio sources depending on operational requirements. Independent input gain controls, along with bass and treble tone adjustments and a master volume control, allow precise balancing of music and voice to ensure consistent intelligibility and even coverage across the listening environment, while automatic priority management ensures paging microphones override background music for clear announcements without manual intervention.

The system also supports integration with external evacuation and emergency broadcast systems through a dedicated emergency input, allowing connection to fire alarm panels or building-wide evacuation controllers. When triggered, the emergency input automatically overrides all active audio sources, ensuring safety announcements are broadcast clearly across all connected speakers while maintaining compliance with life-safety requirements. The amplifier distributes audio via 70V/100V constant voltage outputs to multiple ALFC-606 ceiling speakers, providing wide and even coverage throughout the space while allowing simple loop wiring and easy scalability as additional areas are added.

This approach simplifies installation, reduces cabling complexity, and allows additional speakers to be added as coverage requirements expand. The amplifier also supports low-impedance speaker outputs for smaller zones or localized installations and includes a line output for system expansion where larger coverage areas are required. Additional operational features include front-panel media controls for USB and FM playback, Bluetooth pairing functionality for quick wireless connection, and independent level control for each input source to allow simultaneous mixing of microphones and background music. Built-in protection circuitry provides overload, short-circuit, and thermal protection to maintain long-term reliability in continuous operation environments, delivering a flexible all-in-one system combining background music playback, paging, emergency evacuation integration, and scalable ceiling speaker distribution.

ALF-250W-UB Overview

The ALF-250W-UB is a high-power commercial mixer amplifier designed to provide flexible background music, paging, and emergency audio distribution for retail environments, hospitality venues, education spaces, and public areas. The unit integrates multiple audio sources including front and rear microphone inputs for announcements, USB thumb drive playback for MP3 media, built-in Bluetooth streaming for wireless audio from mobile devices, and an onboard FM tuner for radio content, allowing operators to deliver a variety of audio without additional equipment.

Dedicated line-level inputs enable connection of external media players, music services, or digital signage audio, while independent level controls, bass and treble adjustment, and master volume provide precise mixing and tonal balancing of voice and music. Priority functionality ensures microphones automatically override background audio for clear paging, and a dedicated emergency input allows integration with fire alarm or evacuation systems so emergency messages take precedence over all other sources.

The amplifier distributes audio through 70V/100V constant voltage outputs for scalable multi-speaker installations, while also supporting low-impedance speakers for localized zones, and includes a line output for system expansion. Designed for reliability, the unit supports both AC mains and 24V DC backup power operation and incorporates protection circuitry for overload, short circuit, and thermal conditions, making it a powerful all-in-one solution for background music, announcements, and safety messaging across larger distributed audio systems.

ALFC-606 Overview

The ALFC-606 is a two-way 6-inch commercial ceiling loudspeaker designed for distributed background music and voice reinforcement in retail, hospitality, education, and corporate environments. Featuring a coaxial driver configuration with integrated back box, the speaker delivers clear and balanced audio reproduction across a wide frequency range, making it suitable for both music playback and paging applications.

The speaker supports 8 Ω low-impedance operation as well as selectable 70V/100V line transformer taps, including 30W, 15W, and 7.5W power settings, allowing flexible system design and easy scalability in distributed audio installations. With a sensitivity of approximately 90dB (1W/1m) and a frequency response of 70Hz–20kHz, the ALFC-606 provides consistent coverage and intelligible speech across large areas.

The integrated back box improves low-frequency performance while also simplifying installation and meeting typical commercial ceiling requirements. Designed for use with distributed amplifier systems, the speaker is well suited for background music, paging, and general-purpose audio reinforcement where even coverage, reliability, and clean ceiling aesthetics are required.

Solution Bill of Quantities

- 1 x ALF-250W-UB Amplifier
- 24 x ALFC-606 Ceiling Loudspeakers

Third Party Equipment

- 1 x 3rd Party paging microphone
- 1 x 3rd Party media player (optional)
- 1 x 3rd Party evacuation system (optional)
- 1 x 3rd Party USB Thumb drive (optional)

Solution Use Cases

1. Retail Store Background Music and Staff Paging

In a retail environment, the system provides continuous background music via Bluetooth streaming, USB thumb drive playback, or FM radio, creating a consistent in-store atmosphere. Staff can use a gooseneck paging microphone at the counter for announcements such as promotions, closing times, or customer assistance. The ALF-250W-UB distributes audio to multiple ALFC-606 ceiling speakers for even coverage across the shop floor, while the emergency input allows integration with the building evacuation system for safety announcements.

2. Supermarket with Zoned Announcements

A supermarket installation uses the system for background music from a media player connected via line input, with staff paging microphones located at service desks and management offices. Handheld dynamic microphones can be used for mobile announcements during peak trading periods. The distributed ALFC-606 ceiling speakers provide consistent audio coverage throughout aisles and checkout areas, and priority override ensures paging is clearly heard over music. Integration with the evacuation system ensures emergency messaging automatically takes precedence.

3. Hospitality Venue with Wireless Microphone Support

In a restaurant or café, background music is delivered from Bluetooth or USB playback, while a wireless handheld microphone system connects through the line input for staff announcements or event hosting. A tabletop paging microphone at reception allows staff communication when required. The ALFC-606 ceiling speakers provide discreet, even coverage for dining areas, and tone controls allow adjustment for ambient noise levels. Emergency system integration ensures compliance with venue safety requirements.

4. Training or Public Facility Announcement System

In a training facility or public venue, background audio may be supplied from FM radio or a connected media player, while a desk-mounted gooseneck microphone is used for scheduled announcements. A wireless lapel microphone can also be connected for presenters needing hands-free operation. The ALF-250W-UB distributes audio evenly through ALFC-606 ceiling speakers across corridors and common areas, and the emergency input allows connection to the building fire alarm system so evacuation instructions automatically override all audio sources when triggered.