

Plena Feedback Suppressor Places of worship



Security Systems



The Plena Feedback Suppressor is an easy-to-use solution for reducing acoustic feedback in places of worship. It uses a DSP to suppress feedback by actively filtering out unwanted room reverb. By shifting the frequency of the output signal by 5 Hz or by adding inaudible noise to the output signal, it detects the reverb component of a signal and removes it before feedback occurs. A built-in 2-input mixer allows two microphones to be used to capture the voice of a moving speaker without increasing the risk of acoustic feedback. It does this by automatically reducing the gain of the microphone with the weakest signal and increasing the gain of the microphone with the strongest signal, thus tracking the moving speaker and optimizing speech intelligibility. The feedback suppressor's adaptive filter has a fast mode (for where the microphone positions change over time) and an accurate mode (for fixed microphone positions).

House of worship:

This application note describes how the Plena Feedback Suppressor overcomes potential acoustic feedback problems in houses of worship where typically several microphones are used, for example by the minister (or other religious leader) in the pulpit and alter, and another for the choir.

Introduction:

In general, houses of worship are large rooms with hard surfaces such as marble, concrete, exposed brick, tiled walls and high ceilings. This type of environment is very reverberant, and when loudspeakers are carefully positioned for adequate coverage, there is an increased risk of feedback from any of the several microphones typically used in this type of venue.

Summary of requirements:

- Several fixed microphone positions
- No acoustic feedback
- Amplified sound should originate close to person speaking
- Quality loudspeakers with speech intelligibility and music reproduction

Solution:

The Plena Feedback Suppressor is an ideal solution for this type of application. It suppresses feedback before it even occurs and automatically adapts itself to the difficult acoustical environment. In this example, the feedback suppressor (5) is connected to the insertion sockets of a Plena Mixer Amplifier (2), using a dual cinch-to-cinch cable. In this way, the feedback suppression will be effective on the signals from all microphones. Up to four microphones (items 3 and 4) can be connected to this mixer amplifier. If necessary, additional microphones can be connected using a Plena Universal Preampfier.

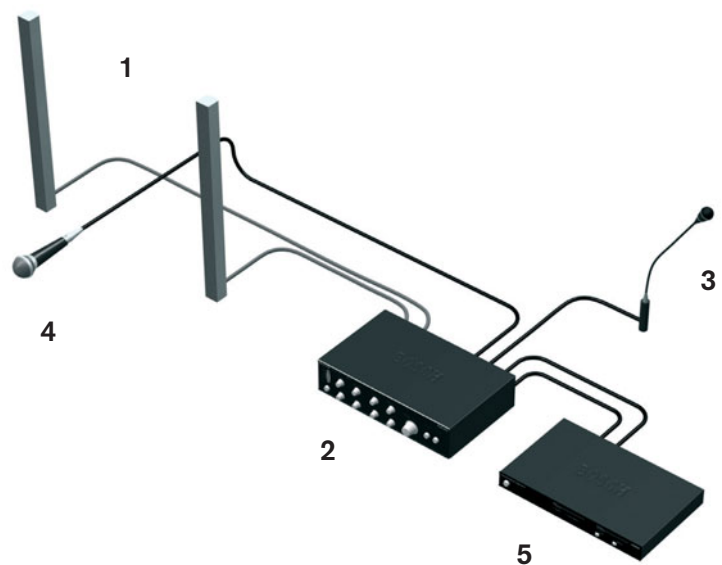
Line array loudspeakers:

The LBC 3201/00 Line Array Loudspeakers (1) complete the system. They can cover a large area and deliver high-quality reproduction of both speech and song. The used line array technology provide an uniform sound distribution throughout the entire listening area, so not too loud at the front and no too quiet at the back. For a more extensive listening area, additional loudspeakers connected to delay units can be positioned further down the venue.

Easy set-up:

In common with all Plena equipment, the Plena Feedback Suppressor is easy to set-up according to the ‘plug and play’ philosophy. The suppression process is completely automatic, and does not require the manual setting up of unpredictable filters to achieve perfect results. The LBC 3201/00 Loudspeaker is also easy to adjust for a specific coverage area by determining the appropriate mounting height using a chart supplied with the loudspeakers. This means that the complete installation can be installed and functionally optimized without the need for specific expertise.

Configuration		
LBB 1968/00	Plena Feedback Suppressor	: 1 x (5)
LBC 3201/00	XLA 3201 90/60 W Line Arrays	: 4 x (1)
LBC 1912/10	Plena 180/120 W Mixer Amplifier	: 1 x (2)
LBC 1949/00	Gooseneck microphone	: 1 x (3)
LBC 2900/xx	Dynamic hand-held microphone	: 1 x (4)



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