

CHURCH OF SAINT JEAN-BAPTISTE DE MAULEON

COMPANY: FOHNN AUDIO
LOCATION: MAULEON-LICHARRE, FRANCE



Architectural audio is a concept with which Fohhn Audio has long been associated. The German loudspeaker manufacturer has supplied numerous systems for a range of challenging environments from concert halls, churches and other historically protected buildings to modern shopping centres, airports and railway stations. However, a recent commission to produce what is probably the world's first 'talking cross' for the Church of Saint Jean-Baptiste de Mauléon in the Basque region of France, provided engineers with a rather different challenge.

The picturesque 19th Century church, with its fine stained glass windows, is a cornerstone of the community by attracting many of the region's visitors. However, the building's acoustics have left much to be desired, with generations of worshippers struggling, amid strong reflections and reverberation, to hear the detailed content of services.

With the church's sound system due for an update, Régis Durouchoux, sound engineer from RDX in Tours - a company specialising in church sound reinforcement - was keen to pursue an idea he had nurtured for a while. The idea was to build a loudspeaker system into a cross, which could be suspended at the front of the church to provide invisible, high-quality

sound coverage. It was a concept that, in all his years of experience, Régis had never been able to implement due to technological limitations. However, at the suggestion of Daniel Borreau from Fohhn's French distribution partner Rock-Audio Distribution, Régis tried one of Fohhn's Linea Focus line source systems with integrated beam steering technology. Specially designed for use in challenging acoustic environments, these award-winning loudspeakers are remarkable for their ability to provide direct, targeted sound coverage along with the highest levels of speech intelligibility and music reproduction. The systems' slim dimensions also enable them to be visually integrated into a range of settings, appearing almost invisible.

Immediately convinced by the results, Régis requested a Linea Focus LFI-220 system, subtly incorporated within a cruciform design, to be manufactured at the Fohhn factory in Nürtingen. The slender, 2.2-metre, electronically steerable loudspeaker, housed in the vertical axis of the cross, is equipped with 16 four-inch neodymium drivers, integrated 16-channel DSP amplifier and 16 separate DSP channels. The loudspeaker's vertical sound inclination angle can be adjusted between $-/+40^\circ$ and its vertical beam width between $0^\circ-90^\circ$. This enables the loudspeaker beam

to precisely target the congregation, while minimising reflections from the church's stonewalls, ceiling and floor. The system also contains a special algorithm to further reduce the effect of unwanted side lobes, which can have an adverse affect on the overall clarity. Using Fohhn's Audio Soft control software, adjustments can be made in real time, in 0.1° increments, enabling minute adjustments to be made to suit any changing acoustic situations. The loudspeaker housing, its front grille and the cruciform casement have all been painted in a special gold RAL colouring to complement the church's interior.

Suspended over the altar, the magnificent gold cross appears, quite literally, to speak to the congregation. A combination of state-of-the-art loudspeaker technology and ecclesiastical art has now resulted in clear speech transmission and superior intelligibility - things that were previously unknown at the church. The installation had its premiere at the Whit Sunday service, delighting both Pastor Jeannot Etchetto and his congregation. The pastor was heard to observe with some amusement that the new system even translates the Basque language.

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