

Architectural and Engineering Specifications

Active Field Control

AFC3

The Acoustic Enhancement system shall be installed in the venue, fulfilling the following requirements.

The system shall offer modular functionality for the enhancement of the diffuse reverberation (REV), early reflections (ER), lateral reflections (LR), electronic stage shell (SHELL) and energy exchange for dedicated areas of the hall (EX).

The system's reverberation modules shall use a hybrid regenerative technique, using the original acoustic properties of the room or hall together with high density convolution, to enhance the acoustic response in a natural way. The modules shall respond to sound sources throughout the whole room or hall, producing a diffuse sound field that cannot be localized by listeners.

The system shall be stable, performing without colouration or feedback always.

The system shall be efficient to implement, with efficient use of DSP and transducer components. To accomplish this, loop stability shall be achieved by additional means to using many independent channels, eg. using FIR filters and/or spatial averaging.

After the tuning of the system, a system manual shall be provided describing the system's behavior for all pre-sets unambiguously, using commonly accepted acoustical parameters.

The core DSP unit shall support a selection of either analogue i/o and networked i/o, supporting the Dante, Cobranet and EtherSound networked audio protocols. The system's pre-amplifiers and power amplifiers shall support a selection of analogue i/o and/or networked i/o compatible with the core DSP unit.

The system's signal chains, including inputs, DSP, power amplifiers and loudspeakers, shall support a peak output power with sufficiently low distortion that matches the system's input and output levels at the maximum sound pressure levels occurring in the hall with a dynamic range greater than 110dB.