

Clockaudio Microphones Are a Game-Changer for German Manufacturing Giant Schaeffler



THE CLIENT & THE CHALLENGE

When Schaeffler Automotive Aftermarket, a division of German manufacturing giant Schaeffler, upgraded its Langen, Germany headquarters it was under a strong directive. Guided by Michael Söding, Head of Automotive Aftermarket for the company, the project team was challenged to create an environment that transformed the company culture from closed concept to one that provided an open concept and a heavy use of glass. Another goal for the project was to provide a sense of transparency for the organization while pushing the technical and cultural boundaries of the company through the facility's use of technology and system design.

THE INTEGRATION TEAM

As part of the redesign, AV consultant Bernd Schindler, a long-time advisor to Schaeffler saw the opportunity to introduce new technical specifications into the project and equipment that updated and upgraded the distribution of AV signals in the Langen site's 18-seat

boardroom. A key space for the overall project, Söding shares that "the boardroom is truly the "heart of our global extended management board."

The bulk of the hardware delivery and smaller pieces of the installation was provided by integration and architectural design experts, Franken Lehrmittel Medientechnik. However, the new deployment of the boardroom technologies, the majority of the installation and all of the programming was provided by Schindler.

SCHAEFFLER GROUP AUTOMOTIVE AFTERMARKET

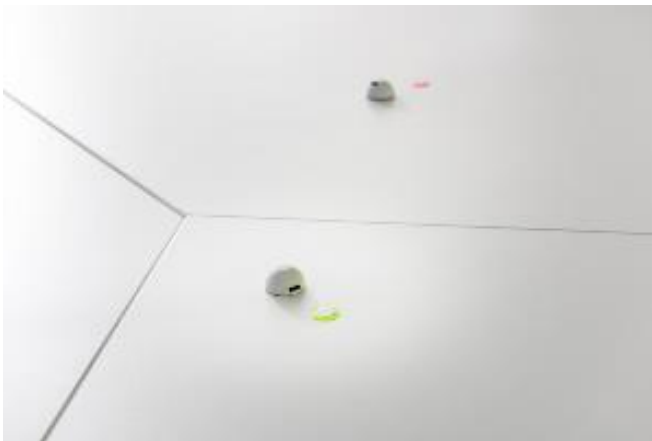
THE PROJECT DESIGN

Designed for flexibility, the boardroom is mainly used by the company for presentations, videoconferencing and broadcast. A 98" touch-enabled wall-mounted screen is available for use by staff and visitors to support presentations when the room is set for traditional boardroom use.

Presenters are able to connect laptops and devices via Microsoft Surface Dock, USB and HDMI connections which are housed in connection boxes (offering power) in the custom-built Brunner boardroom table.



When the room is needed for videoconferencing, the tables are configured into a 'U'-shape which face a second, slightly smaller 85" wall-mounted display. Mounted above the display is a Vaddio RoboShot 12 USB camera, and located below the table is a Vaddio AV Bridge, which is used to support videoconferencing via Skype for Business, as well as to capture the meetings and to stream them for broadcast purposes.



THE EQUIPMENT

Clockaudio C 012 boundary microphones were installed and integrated into the table at each pair of seats. Each microphone has a flush-mount capacitive TS 001 touch switch as well as an integrated LED light which indicates whether the microphone is on or off.

As per Söding, "The (Clockaudio) microphones are a game changer." "We still have other meeting rooms where all the microphones are open, so if people have a cup of coffee by them you can hear them stirring (with) their spoon, or pouring water." By having microphones with individual touch switches", he adds, "you can control and easily see which microphones are open in this space."

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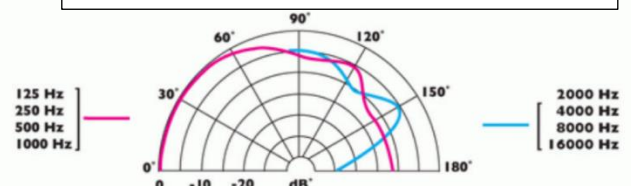
CLOCKAUDIO PRODUCT HIGHLIGHT

The C012 condenser microphones used on this project for the Schaeffler Automotive Aftermarket boardroom provided a through desk mount, boundary layer type microphone with a cardioid polar pattern. Also included were rubber shock mounts to minimize the transfer of mechanical noise from the boardroom table.

The C012 microphones are made of a robust high-quality brass construction with a low profile robust brass top. It is terminated with a male 3 Pin XLR. The microphone is powered by a 9 to 48 volts phantom power adaptor which also includes filters that eliminate all GSM frequencies from 800-1200 MHz.



C012-RF Polar Pattern (pictured below)



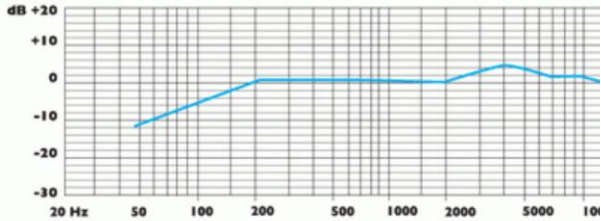
Technical specifications for the C012 are as follows:

Frequency response: 50 Hz to 18 KHz
Sensitivity: -37dB +/- 3dB @ 1KHz (0dB=1V/Pa)
Impedance: 200 Ohms
Length: 90.00mm (3.55")

CLOCKAUDIO

Total harmonic distortion (THD) at an operating level of 120dB is no greater than 1%.

CO12-RF Frequency Response (pictured below)



Clockaudio is proud to have been included in this installation, alongside the following companies and products below.

THE RESULT

Schindler's confidence in the design of the project, and the use of new technologies never previously used in a commercial environment, pushed beyond the standard limits of Schaeffler. With the end result culminating in a good experience for the users of the room as well as an InAVate Award.

OUR THANKS

Clockaudio would like to thank the InAVation Awards and Anna Mitchell for their January 9, 2018 original published content that this case study was based upon.

For more on the inAVation Awards, visit <http://www.inavationawards.com/>

Equipment List

For Audio

Biamp Tesira Forté AVB VI, Tesira AMP-8150, Tesira AMP-4150, Tesira EX-IN and Tesira EX-Logic

Clockaudio C 012 boundary microphones and TS 001 touch switches

ML Audio Novasonar Dynamic 60, Novasonar Boxer 100-2 and Novasonar GL 60-PN

Revolabs Executive Elite 4 with Executive Elite wearable microphones

For Video

Biamp TesiraLux IDH-1 and TesiraLux OH-1

Eyevis 98-in and 85-in touch enabled UHD

Icron USB Ranger 2304

Vaddio RoboShot 12 and AV Bridge

WolfVision Cynap

For Control

Crestron CP3 controller and TS-1542 touchpanel

USB-EXT-DM-REMOTE and USB-EXT-DM-LOCAL

Extron SW4 USB-switchers

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ABOUT CLOCKAUDIO

For over 20 years, Clockaudio has been dedicated to manufacturing innovative pro-audio products.

With corporate headquarters and manufacturing located in the United Kingdom and additional offices in both North America (Montreal, Canada) and Asia (Singapore), Clockaudio is led by a talented team of audio specialists dedicated to quality, service and innovation.

Globally, audio professionals actively seek out and recommend Clockaudio for its reputation as a trusted and responsive manufacturer and its customer driven approach to audio solutions. Central to this is the in-house research and development that Clockaudio consistently reinvests in which allows clients to explore customized prototypes and develop specific briefs in partnership.

Consultants and contractors alike help to drive Clockaudio's product development process and appreciate the opportunity to be involved in the engineering process and final solution. The ability to customize is just one of the many factors which makes Clockaudio...clearly different.

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For more on this project or other Clockaudio projects, please contact news@clockaudio.com.