### SEMINAR INVITATION



## Testing smart

# Testing modern audio devices using Klippel – Bluetooth, Wireless, Cloud, Microphones, Beamforming

#### **General Information**

SOUTH CHINA Wednesday, 14<sup>th</sup> November 2018, 1:00PM – 5:00PM Phoenix Room, BEST WESTERN Shenzhen Felicity Hotel, Heping Road No.1085, Shenzhen, China

#### EAST/NORTH CHINA

<u>Tuesday, 20<sup>th</sup>, November 2018, 1:00PM – 5:00PM</u> Pine City Lodge Hotel, Shanghai, China, No.777, Zhaojiabang Road, Xuhui District, Shanghai

Presenter: Dr. Stefan Irrgang (KLIPPEL Engineer) Language: English with Chinese on-site translation Registration Fee: Free of charge

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#### Content

Smart audio devices require also smart testing approaches. Traditional testing methods are not sufficient to check for more and more complex DSP based, active speakers and microphone array configurations. Flexible digital interfaces as well as the processing of recorded wavefiles are the basis for modern test equipment and methods. However, reliability, sensitivity, speed and robustness in a production environment are essential parts in any test configuration. In this seminar the interaction of all those aspects are discussed and demonstrated.

An outlook how a modern test system shall be part of the smart audio device and the mutual benefits of such an approach are presented as well.

#### **Keytopics**

- Synchronization of different clocks and asynchronous audio sources such as a cloud or audio stand- alone player
- Bluetooth device testing: Essential needs in R&D and QC and related Klippel solutions
- Headphone and Headset testing
- Active Noise Control testing
- Checking microphone performance and directivity in R&D and QC-EOL
- Evaluation of beamforming algorithms for speaker and microphones
- Smart Speaker testing in minimal cycle time
- Is transducer testing still required when testing the final audio product?
- Traceability, Statistics
- Improving audio quality Learning from Production

#### Who should attend?

Loudspeaker /audio system manufacturers and designers