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Instrumental Testing of In-Car Communication Systems

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In-car communication (ICC) systems ease the communication between driver and passengers in a driving vehicle by amplifying and playing back drivers' voice through the rear loudspeakers. The system faces the common acoustic signal coupling problem between speakers and microphone as both acoustic interfaces are in the same cabin. Consequently these systems need to be carefully tuned in order to avoid unnatural speech reproduction, noticeable delay or audible howling. Instrumental tests distinguish between speech transmission parameters and noise transmission parameters. The overall quality of such systems needs to address speech quality in the presence of background noise as this is the real use case in a driving car. Vice versa, for tuning purposes the analysis of speech transmission parameters (gain, frequency response, stability, …) is often required without the influence of noise. Instrumental tests to characterize ICC systems are discussed in this contribution.

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