Speech Quality of Mobile Phones via Bluetooth Link

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Communication via headsets and hands-free devices often use the Bluetooth connection to a mobile phone for voice transmission. Control commands (AT-commands) are defined in order to configure the Bluetooth connection and disable internal signal processing in the mobile phone like echo cancellation or noise reduction. This is especially important if such signal processing is provided by the headset or hands-free implementation in order to avoid cascaded signal processing in the terminals and additionally in the mobile phones. However, many mobile phones do not consider the AT-commands appropriately and leave internal signal processing active. This significantly influences and often degrades speech quality of the complete system, the headset in conjunction with the mobile phone or the hands-free terminal working in conjunction with these phones. This is a very critical aspect e.g. for the automotive industry offering hands-free implementations using the Bluetooth link to customers' mobile phones for speech transmission. Comparison tests using a new reference Bluetooth interface were carried out on a high number of mobile phones. Typical results are discussed that clearly demonstrate the dramatically influences on speech transmission quality.

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