Magnus Tölle
advanced audio application

Application Note Addendum MAS voice board Rev 6

Application **Joint reference design MICROCHIP/MICRONAS**

application kit MAS voice board Rev 6

Topic **This document describes an improvement regarding the voice recording quality of the above application**

Summary **adding a capacitor to the application board improves the quality of the voice recording significantly. Please refer to the schematics for the details discussed below**

Dear valued customer,

One of the key features of the MICRONAS MAS 3507D MPEG audio decoder is the support of voice recording functions with download software modules available from MICRONAS.

The common mode rejection ratio (CMRR) of the on-board ADC Crystal CS5330 (U11) is low due to some issues related to the board's concept and the implemented layout. The supply voltage of the ADC is bypassed through a ceramic capacitor C40 sized 100nF. Our research has revealed that this is not sufficient and that a permanent buzzing background noise is added to the audio signal during recording and monitoring.

Adding an electrolytic capacitor to the bypass capacitor C40 improves the quality of the voice recording significantly. We had good results with capacitors at values higher or equal 470µF/6.3V.
However, we would like to emphasize that this countermeasure may **not** be needed in similar applications which ensure a high CMRR with an optimized PCB-layout.

In case you should have received the 'MAS voice board Rev 6' already, we recommend to modify the board accordingly. We would like to apologize for this late notification and appreciate your understanding!

Your application team
advanced audio
MICRONAS GmbH