

TIDA-00277: Automotive Cluster Chime Reference Design - Test Data

This document shares the tests results of the TPA6211A1-Q1 EVM connected to a speaker. This set up simulates the chime in an automotive cluster. A chime can be an audible indicator for various alerts.

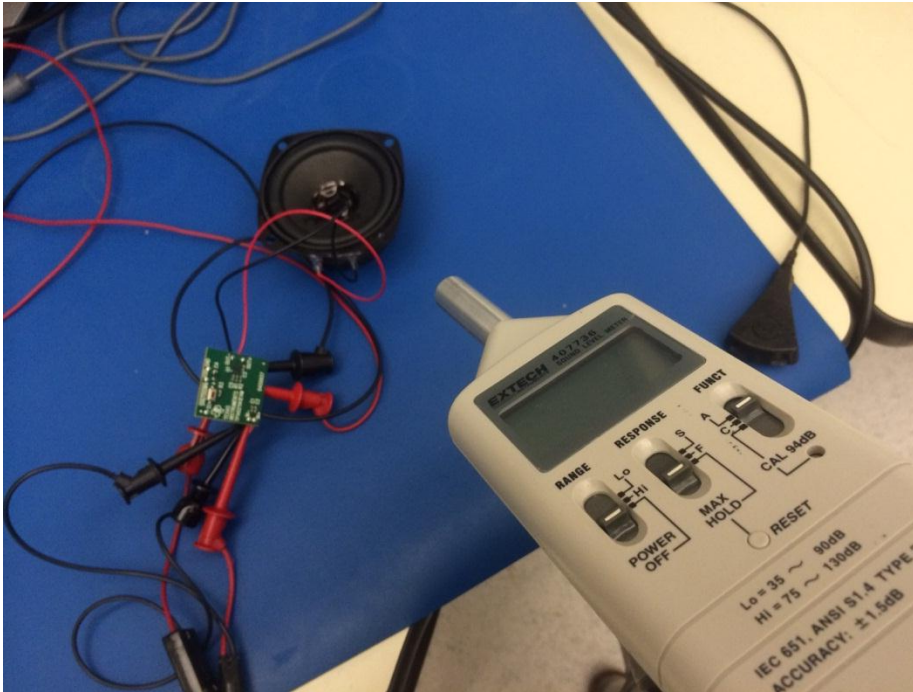
The data is structured into two main categories:

1. Test set up
2. Test data including
 - a. Waveform into audio amp
 - b. Waveform into speaker
 - c. dBA level

Equipment used to create this data:

1. Oscilloscope
2. Function generator
3. Power supply
4. TPA6211A1-Q1 EVM
5. Speaker (Visaton FR8-4ohm)
6. dBA meter (Extech 407736)

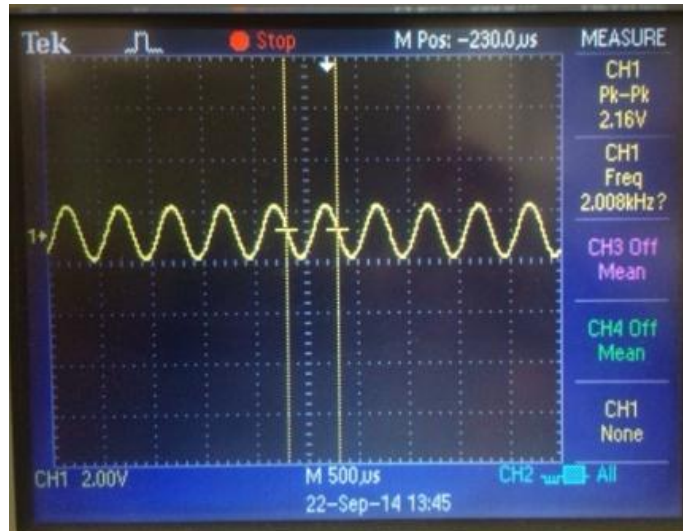
Section 1: Test set up



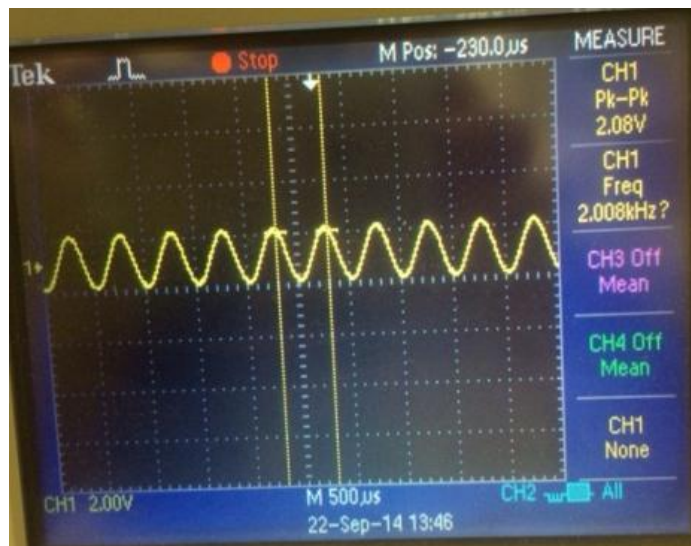
- Set up function generator to 2kHz @ 2.16Vpp
- Set power supply to be 5V @ 10mA
- Hook up function generator to pin 3 (IN+) of TPA6211A1-Q1 EVM
- Hook up pin 4 (IN-) to ground. Note: We are driving the amplifier with a single-ended sine wave. If filtering is added to the inputs of the amplifier, make sure the same filter circuitry is at both pin 3 and pin 4 to keep circuit balanced.
- Hook up speaker to pin 5 (VO+) and pin 8 (VO-) of TPA6211A1-Q1 EVM
- Hook up power supply to pin 6 (Vdd) and pin 7 (gnd)
- Turn on power supply. An audible, clean sound should come out of the speaker.
- Use Extech 407736 dBA meter to read out sound levels. A good rule thumb for distance from dB meter to speaker is 4-5x the diameter of the speaker.

Section 2: Waveforms

- Power supply @ 3.5V
 - Waveform (from function generator) going into the amplifier
 - Amplitude 2.16Vpp Freq 2kHz

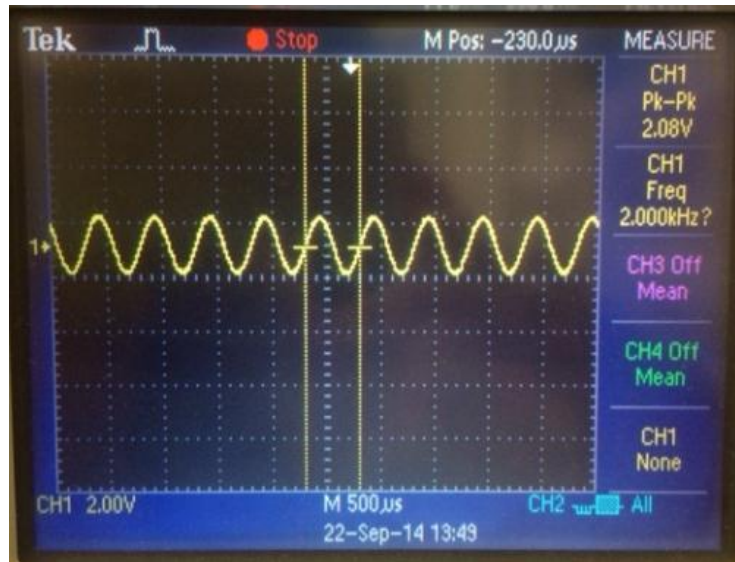


- Waveform going into speaker
 - Amplitude 2.08V Freq 2.008 kHz

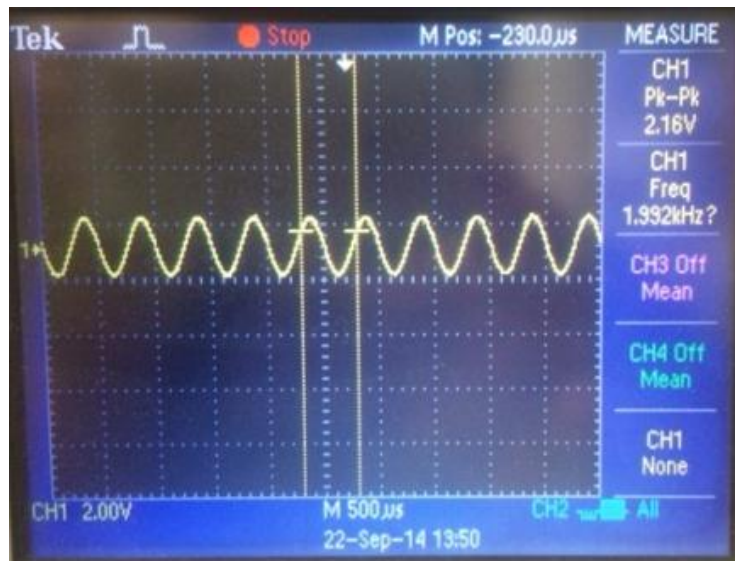


- dBA meter reading (Extech 407736)
 - 99.7 dBA

- Power supply @5v
 - Waveform (from function generator) going into the amplifier
 - Amplitude 2.16V Freq 2kHz



- Waveform going into speaker
 - Amplitude 2.16V Freq 1.992kHz



- dBA meter reading (Extech 407736)
 - Extech 407736 = 100.3 dBA

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