

LPC213x

Philips ARM
Design Contest 2005

CONTEST ENTRY AR1764

MUSICAL INSTRUMENTS TUNER, TONE GENERATOR



1. ABSTRACT

This project uses a Philips LPC2138 Arm microcontroller to make a musical instruments tuner. To do this, it samples a signal from microphone with internal ADC and then calculates the FFT to find the fundamental frequency. On display is showing the frequency detected, the closest note and the percentage difference.

A second function implemented is a tone generator. You can choose a note and the microcontroller synthesizes it using its DAC.

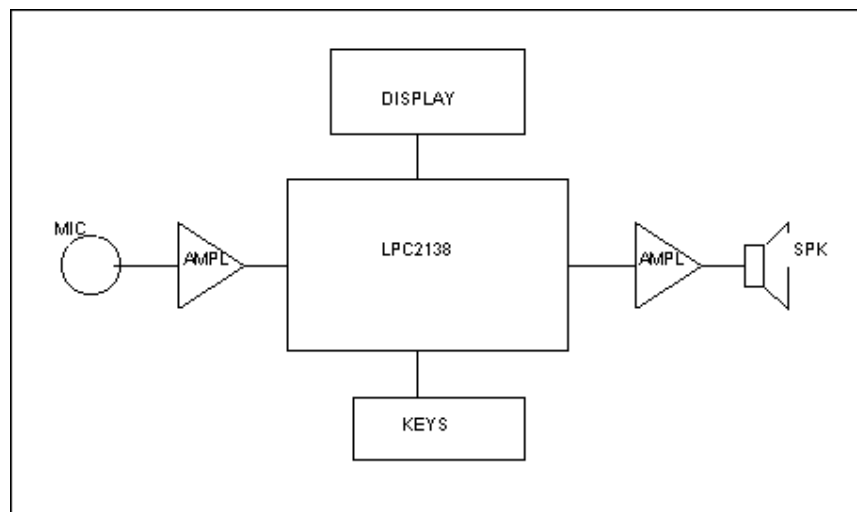


Figure 1 – Block diagram

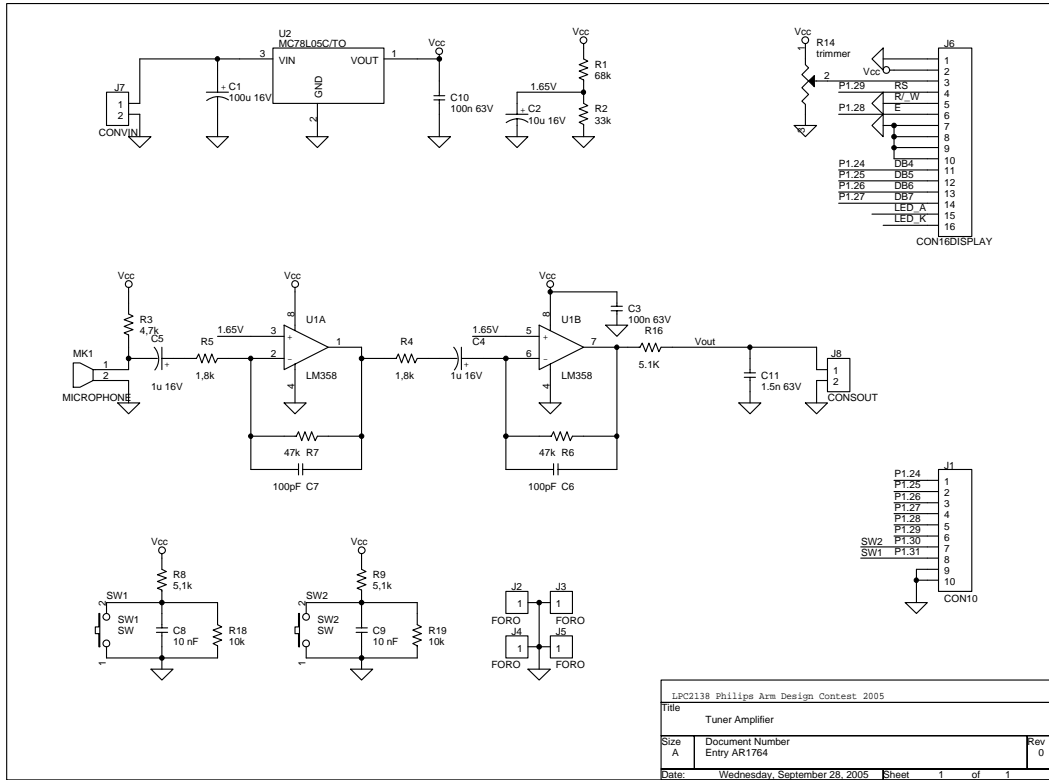


Figure 2 - Schematic