Automatic Guitar Tuner

Team 3

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Automatic Guitar Tuner

• A musical Tuner that can automatically tune a guitar using a motor.

Key Features
  • Detects pitch of musical note
  • Automatic guitar tuning controlled by motor
  • Battery powered
  • Controlled by input buttons
  • Displays pitch on screen

• Market
  • USA
  • Europe
  • Asia
Key Requirements

• Cost
  • Sales Price: $25, Component Cost: $15, Assembly & Test Costs: $5

• Environment
  • Indoor, Outdoor, Stationary, Mobile
  • Operating Temp Range: -10 to 65 °C
  • Operating Humidity Range: 0 to 80 %Rh

• Power Input(s)
  • Battery Power: 12VDC(Input), 5VDC(output), 3A(ImaxOut)

• Major Functions, Quantities Measured, Displayed
  • On, Off
Block Diagram

A – Power by Jixiang

Battery

12V

B – Control by Matt Frank

Microphone

Filter

Amplifier

C – Audio Input by Danny

ADC

Microcontroller

D – Motor by Matt Makowski

Motor (Servo)

Tuning Peg Attachment

E – Display/IO by Keyu

Display

Input Control

F – Speaker by Nate

Signal Correction

Speaker

5V

12V