

Michal Laird
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Micro-Controller Operated Automatic Guitar Tuner

Prototyping Data-sheet

Features:

- **Arduino Uno with Atmega328 processor**

- Utilizes GPIO to implement analog sampling and frequency detection, as well as provide user with interface. Operates at 9 volts, with a 16MHz clock rate.

- **DC Motor with H-Bridge control**

- Bi-directional motor ideal for winding application, operates between 5v to 9v. RPM of 4260 at maximum efficiency, providing about 32 g-cm torque to turn guitar peg. Motor draws 0.3 amps current.

- **Audio Quality Sampling Rate**

- 38.5kHz sampling rate of ADC port.

- **Pre-Amp Circuit.**

- Op amp circuit that amplifies and offsets the voltage from guitar to 2.5 v, for better frequency detection. Fail-safe design with diodes to prevent clipping.

- **User Push Button and 7-Segment Display**

- Allows user to select corresponding string they wish to tune, as indicated on display. Also includes LEDs to indicate flat, sharp, or in-tune note.

