The Purpose
The Smart Guitar allows all levels of guitar players to easily read and write music.

The Device
The board takes in 6 analog signals from a guitar and converts them into notes on a music score.

User Interface
A push button interface allows mode to switch between live stream, tuning and data storage. Additional buttons allow user to change the current time signature.

Guitar Signals
The Roland pickup allows 6 signals from each string to be read by the ADC. The digital data is sent to the processor, which then performs a FFT on the converted signals.

Data Transfer
A 128MB SDRAM is used to store all of the FFT data. The data is then either transferred to the display through Bluetooth or the RS232 port.