

A wave recorder and player.

Record or play WAV files to or from a compact flash card in 8 bit pc card mode, or SD /MMC card or ATA hard disk with a FAT16 or FAT32 partition.

Uses the AVR ADC for recording and the PWM for playback.

Note only PCM encoded (format tag = 1) WAV files are supported.

Record supports sample rates from 8kHz to about 36kHz, mono or stereo.

Playback supports various sample rates, mono or stereo. 16bit WAV files are played back with less than 16bit resolution depending on the sample rate.

The file system used is a separate package of libs "phils fat 16 32".

A pair of MF10 switched capacitor filters are used for the anti-alias filter and PWM filter. They are switched from anti-alias filter to PWM filter using a 4PDT CMOS switch. The low pass and notch frequency of the filter is controlled by the filter clock, which is generated by counter 3 OC3B.

All user interaction is via the serial port and a terminal.

The circuit is only for the filter and switch. Wiring of the mass storage device is dependant on which device is used, and how it is connected to the AVR.