EE Senior Design 2016

Tune Box

Meeting Agenda

3 April 2016

ESP portion:

* App successfully sends byte-long command signals to the ESP board. These signals will be sent to the PIC32 via SPI. This represents successful interplay between two (almost three) subsystems and represents good progress toward the second design review (date?)
* Possibly sidelining music upload functionality for the moment
  + Issues with soundcloud upload, could switch to another social media platform
  + For now, we’re choosing to focus our time on the more pressing functionality

Codec portion:

* REFCLK1 running at 11.1 MHz = 200MHz / 18 = 256 x 43.4kHz
* SPI2 running in audio mode successfully
* Codec behavior still not as desired (see timing diagram below)

Digital effects:

* Plan is to implement as discrete-time filters
* Example vision:

sample = getFromMemory();

if ( applyEffectX ) {

sample = effectX(sample);

}

if ( applyEffectY ) {

sample = effectY(sample);

}

sendToCodec(sample);

Analog circuitry:

* Front end tested
  + Takes a 100mVpp signal to a 5Vpp signal
  + Band limited to < 10 kHz
  + Not yet tested with Codec and guitar (for obvious reasons)
* Same for back end

Eagle design:

* Required date? Presumably some time this week
* Relatively simple
  + 2x EEPROM
  + Aux I/O
  + A few op-amps
  + Voltage regulators



