PCH2CSD STATUS ON **18/06/24**

COLOR CODES FOR **STATUS and NEXT TO-DOs SECTIONS**:

GREEN – OK

PALE GREEN – OK WITH SOME TODO

YELLOW – JUST A QUESTION OF TIME

ORANGE – (PROBABLY) TOUGH

GREEN COLOR IN **GROUP SECTION** MEANS IT WAS UPDATED FROM THE PREVIOUS DOC UPDATE

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| **Group** | **Description** | **Status** | **Next TO-DOs** |
| **In/Out** | Contains audio IO modules and some MIDI related modules | Almost completed. See TODO for *Status* module |  |
| **Osc (Oscillators)** | Contains oscillators (basic waveforms, phase mod, shaping oscil, simple physical model), noise generators, DrumSynth and DX7 model. | Majority of OSCs are OK.  Some things to be clarified i.e. decay times, waveshaping oscs waves etc. | *MetNoise* and *String* are the next things to do.  *DX* models is not yet implemented (though *DXRouter* is done) |
| **Rnd (Random Generators)** | Contains random generators and triggers | RandomA & B are OK in statistical sense. | Probably to try get the whole rand sequence.. also analyze Rnd1 vs Rnd2 and impl RndTrig |
| **Filter** | Contains filters of several types (from basic ones to equalizers, comb filter and wah-wah effect) | *LP, HP, all EQs, WahWah, Vocoder, Voice* (under testing) | Multi & Static just a matter of time. Find the closest opcode to *Nord* and *Classic* filters. |
| **Delay** | Contains several delays (from single to multitap) | Completed | Common check needed and also filter values for the last units |
| **Level** | Contains a lot modules related to value modulation, comparison etc. | Completed | Common check needed |
| **Switch** | Contains a number of different switches | Completed | Need revisiting and checking |
| **Seq** | Contains several sequencers | Completed | Audio rate versions are not implemented yet |
| **Note** | Contains note quantizers, gliders, zero crossing counter etc. | *NoteQuant*, *NoteScaler, ZeroCounter* (blue mode only), *LevelScaler* are done.  *KeyQuant* (Closest mode) | *PartQuant* |
| **LFO** | Contains several LFOs and also a Clock generator | Completed without two last LFOA waveforms. Needs checking. | Two last LFOA waveforms still need to be done |
| **Env** | Contains several types of envelopes (H, D, ADSR, AHD etc.) | Done: *EnvADSR, ModADSR, EnvH, EnvD, EnvAHD, ModAHD* | EnvADR, EnvADDSR, EnvMulti |
| **FX** | Contains typical set of digital effects (chorus, flanger, phaser, reverb, digitizer, pitch shifter, scratcher and compressor). | *Flanger* & *Chorus* are done (with good precision). *Phaser* is coming. *FreqShift & Digitizer* are added, but NM’s FFT is dirtier. *Compressor* is done. | *Reverb* should be done asap since it is frequently used. |
| **Shaper** | Contains typical shaping modules | *Clip, Wrap, Static, ShpExp* and *Rect* are done, mostly without modulation feature. *Saturate* needs checking | *Drive* is the only one to finish the group |
| **Mixers** | Contains a number of mixers | Completed | Four last modules need checking in modulation mode |
| **Logic** | Contains logic modules (from AND, OR, XOR etc to binary counter and ADC/DAC) | Completed | Check switch time for better simulation |
| **MIDI** | Typical MIDI section (note on, program change etc). | Completed | Nothing special |