Pocket Modular Module Documentation

1. MIDI Module
    a. Parameters
        i. MIDI Channel (Switch between the 16 available MIDI channels)
        ii. Operating Mode (Changes how many of the available outputs we actually use when figuring out which output path we use)
            1. Mono (1 Note, Last Note Played Priority)
            2. Duo (2 Notes, Last Note Played Priority, Last Note is ignored if the 2 paths are already being used)
            3. Trio (3 Notes, Last Note Played Priority, Last Note is ignored if the 3 paths are already being used)
            4. Quad (4 Notes, Last Note Played Priority, Last Note is ignored if the 4 paths are already being used)
    b. Inputs
        i. Note IN (Takes in the MIDI Note data from the keyboard)
        ii. Note ON/OFF
    c. Outputs
        i. Output 1
            1. Note OUT (Convert the Note IN MIDI information into frequency)
            2. Gate OUT (Switches to HIGH if Note ON, switches to LOW if Note OFF)
        ii. Output 2
            1. Note OUT (Convert the Note IN MIDI information into frequency)
            2. Gate OUT (Switches to HIGH if Note ON, switches to LOW if Note OFF)
        iii. Output 3
            1. Note OUT (Convert the Note IN MIDI information into frequency)
            2. Gate OUT (Switches to HIGH if Note ON, switches to LOW if Note OFF)
        iv. Output 4
            1. Note OUT (Convert the Note IN MIDI information into frequency)
            2. Gate OUT (Switches to HIGH if Note ON, switches to LOW if Note OFF)
2. OSC Module (Oscillator)
    a. Parameters
        i. Tune (Sets the frequency offset from whatever frequency is being sent)
        ii. Waveshape (Switches from Sine, Triangle, Sawtooth, and Square Wave)
        iii. PW (Pulse-Width) (Changes the Duty Cycle of the Square waveform)
        iv. FM Depth (Frequency Modulation) (Basically an amplifier that will control how much the FM input is affecting the pitch of the Oscillator)
    b. Inputs
        i. Frequency (Takes in frequency to set the pitch of the oscillator)
        ii. PW Modulation (Takes in a signal that will modulate the PW of the square wave)

        iii. FM Modulation (Takes in a signal that will modulate the frequency of the oscillator)
        iv. Waveshape Modulation (Takes in a signal that will modulate which waveform the oscillator will output)
    c. Outputs
        i. Osc OUT (Audio output of the oscillator)
3. FLT Module (Filter)
    a. Parameters
        i. Frequency Cutoff (Controls where the cutoff frequency of the filter will be)
        ii. Resonance (Controls how loud the cutoff frequency will be (emphasis of the cutoff frequency)
        iii. Feedback (Controls how much feedback there is, i.e how much of the output is fed back into the filter module)
    b. Inputs
        i. Audio IN
        ii. Frequency Cutoff Modulation (Takes in a signal that will modulate the frequency cutoff point of the filter)
        iii. Resonance Modulation (Takes in a signal that will modulate the amount of resonance that will occur)
        iv. Feedback Modulation (Takes in a signal that will modulate the amount of feedback)
    c. Outputs
        i. Audio OUT
4. ENV Module (Envelope)
    a. Parameters
        i. Attack (The initial stage, how long it takes for the signal to reach the highest point)
        ii. Decay (2^{nd} stage, how long it takes for the signal to go from the highest point to the sustain level)
        iii. Sustain (3^{rd} stage, as long as the gate is HIGH, the signal will remain at the sustatin level)
        iv. Release (4^{th} stage, how long it takes for the signal to go to zero after the gate is LOW)
        v. Loop ON/OFF (Toggle switch, if ON, after the release stage, trigger the envelope again, if OFF, only trigger once)
    b. Inputs
        i. Gate IN
    c. Outputs
        i. Envelope OUT (Signal Output of the module)
5. AMP Module (Amplifier)
    a. Parameters
        i. Gain (How loud the signal input will be)
        ii. Feedback (How much of the output is fed back into the amplifier)

    b. Inputs
        i. Audio IN
        ii. Gain Modulation (Takes in a signal that will control how loud the amplifier is over time)
        iii. Feedback Modulation (Takes in a signal that will control how much feedback there is)
    c. Output
        i. Audio OUT
6. MIX Module (Mixer)
    a. Parameters
        i. Channel 1 Level (How loud the channel is)
        ii. Channel 2 Level (How loud the channel is)
        iii. Channel 3 Level (How loud the channel is)
        iv. Channel 4 Level (How loud the channel is)
    b. Inputs
        i. Channel 1 IN
        ii. Channel 2 IN
        iii. Channel 3 IN
        iv. Channel 4 IN
    c. Outputs
        i. Audio OUT
7. LGC Module (Logic)
    a. Parameters
        i. Toggle (AND, OR, XOR, NOT, NAND, NOR, SIGNUM) (There will be some sort of selector that will choose between the logic types)
    b. Inputs
        i. Signal 1 IN
        ii. Signal 2 IN
    c. Outputs
        i. Signal OUT