

FM Synthesis– Adar Guy

Sound One: Harmonicity Ramp – 0:20 seconds

When I drew the modulation rate, I wanted to form as much of an arc as possible, to get an exponentially decaying increase of modulation, peaking in the middle of the sound's time domain, and exponentially decreasing afterwards. The amplitude was set to 'climb and falls' but the ramping harmonicity overtook that sound. The values of the ramp were from a harmonicity of 1 to 1200 in 10 seconds. This way the sound would pass through the different harmonics and at times where sound was heard above the noise, it is assumed that it was enharmonic. The sndpeek clip displays the noise well on the grid when it spreads it evenly throughout, and then you can notice the moments that a clearer more enharmonic sound is produced.

Sound Two: Wavy Sound – 0:35 seconds

The modulation growth and decay for this sound still had its peak in the middle of the time domain with an equal increase as decrease but the rate of change was more moderate and because the sound is longer as well, the sound is slowly evolving. The amplitude index was designed to produce a zigzag of volume that helped contribute to the wavy sound I had. The sndpeek clip shows the movement of the sound well on the blue wave when the oscillation gets bigger and smaller and on the grid when the width waves in and out. But unlike the first sound this second sound is clear and is displayed in the clip with the clear movement of the blue sound wave and consistency of the grid wave.

Sound Three: Two Ends – 0:05 seconds

After drawing each index, which were set to be identical, I played with the harmonicity and saw that as I raised it, the sound I produced had its frequency display in max as two individual sidebands on each end of the spectrum. I thought this was interesting because it suggested that they were like mirroring frequencies to one another. In sndpeek I saw the sound's behavior and the defined harmonics that were represented to the right of the sound. Their movement indicated the rate of modulation and resulting harmonic range that I set earlier in the index.

Sound Four: Computer Laugh – 0:03 seconds

After having created three sounds that were heavily modulated and not enharmonic I wanted to create a more 'pure tone' sound and after simplifying the indexes and setting the harmonicity to 0, I slowly began looking for the sound I wanted by raising the harmonicity under 0.01. The resulting sound initially made me think, "If a computer could laugh..." The clip shows the clarity of the sound as well as its gradual amplitude increase and decrease.

Sound Five: Repeated Squish – $1/2 * 8 = 0:04$ seconds

For this sound I wanted to use the melody patch for something short and fun by creating a small zigzagging modulation function, and finding the right harmonicity. The sound itself was 0.5 seconds long and after finding other pitches in the same key I modified the melody patch. The pattern interval was set to 220 ms, which was a good tempo to hear each pitch clearly. This sndpeek clip was less obvious in representing the sound but the pitch changes were clear. This is likely due to the frequency modulation that displaced the harmonics evenly spread out.