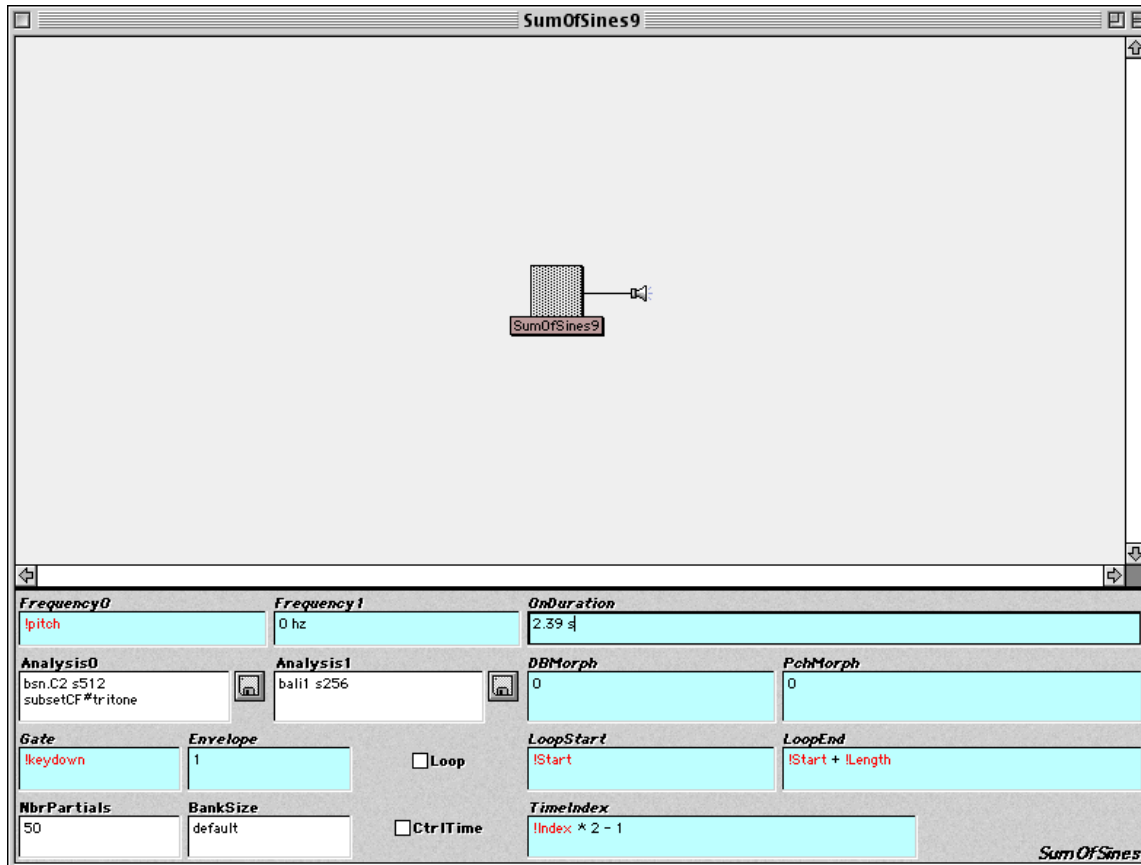


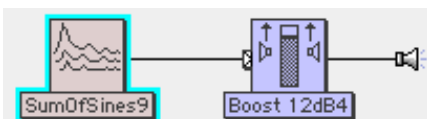
Composition: Electronic Media II
January 23, 2006
Spectral Resynthesis Using Sum of Sines in Kyma

1. As discussed in class, analyze several interesting sounds using the **Spectral Analysis** tool. Then, using the **Spectral Editor**, extract individual or multiple harmonics and save them as subsets of the original analysis file.
2. To resynthesize these files and record them to aiff files, do the following:
 - a. Create a New Soundfile, as discussed in class.
 - b. From the **Prototypes** window drag **Sources&Generators>Sum of Sines** prototype and drop it on the Soundfile window. Double-click on the **Sum of Sines** icon to display the edit window, as shown below:



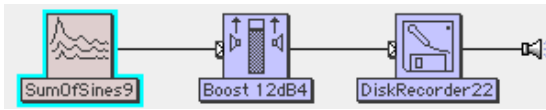
- c. Set the parameters to those shown above, where:
 - Frequency0** = !pitch (this allows the pitch of the sound to be controlled by the MIDI keyboard)
 - Analysis0** = the analysis file or subset you wish to use (click on the disk icon and navigate)
 - Gate** = !keydown (this allows the sound to be triggered by any key of the MIDI keyboard)
 - NbrPartials** = 50 (use the least number of partials possible for better processing)
 - Envelope** = 1 (this is the maximum volume)
 - OnDuration** = 2.39 s (here, the duration of the analysis file)
 - Loop** = off
 - CtrlTime** = off
 All other parameters leave untouched for now.

3. To boost the volume of the sound, select from the **Prototypes** window **Gain & Level>Boost 12 dB**, drag, and drop it onto the signal flow chart between **Sum of Sines** and the speaker icon, as shown below.

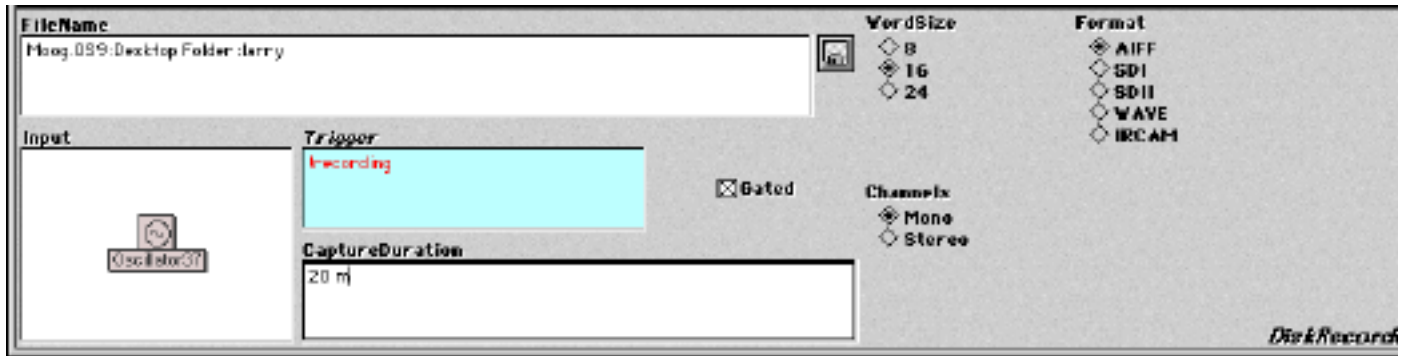


4. To record the sound to disk, do the following:

- a. Select from the **Prototypes** window **Disk>DiskRecorder**, drag, and drop it onto the signal flow chart between **Boost12dB** and the speaker icon, as shown below.



- b. To set the recording parameters, double-click on the **DiskRecord** icon. An edit window like the one below will appear.



c. Set the parameters to those shown above, where:

FileName = "larry" (created by clicking on the disk icon)

WordSize = 16 (for 16-bit files)

Format = AIFF

Channels = Mono

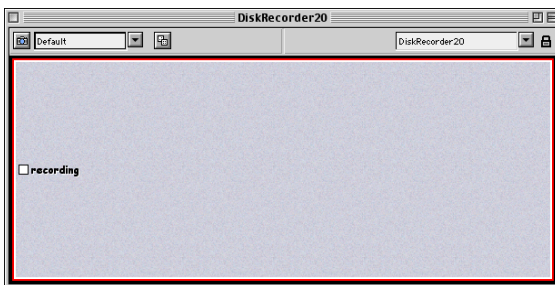
Trigger = !recording (this hot parameter works only when the EMSGlobalMap is loaded; an alternative is to type in another hot parameter name, which will appear in the **Virtual Control Surface** as a slider)

Gated = on (this allows you to turn the recording on and off)

CaptureDuration = 20 m (this allows the **DiskRecorder** to be active for 20 minutes).

d. To record, do the following:

- i. Click on the **DiskRecorder** icon and compile. A virtual control surface like the one below will appear:



- ii. When you're ready to record press the **recording** toggle. To stop recording, press on the **recording** toggle again. To resume recording, press again on the **recording** toggle, ad infinitum,
- iii. When you're finished record uncompile the sound (cmd k).
- iv. You should now have a continuous aiff file, with starts and stops that correspond to the times you click on **!recording** in the **Virtual Control Surface**.