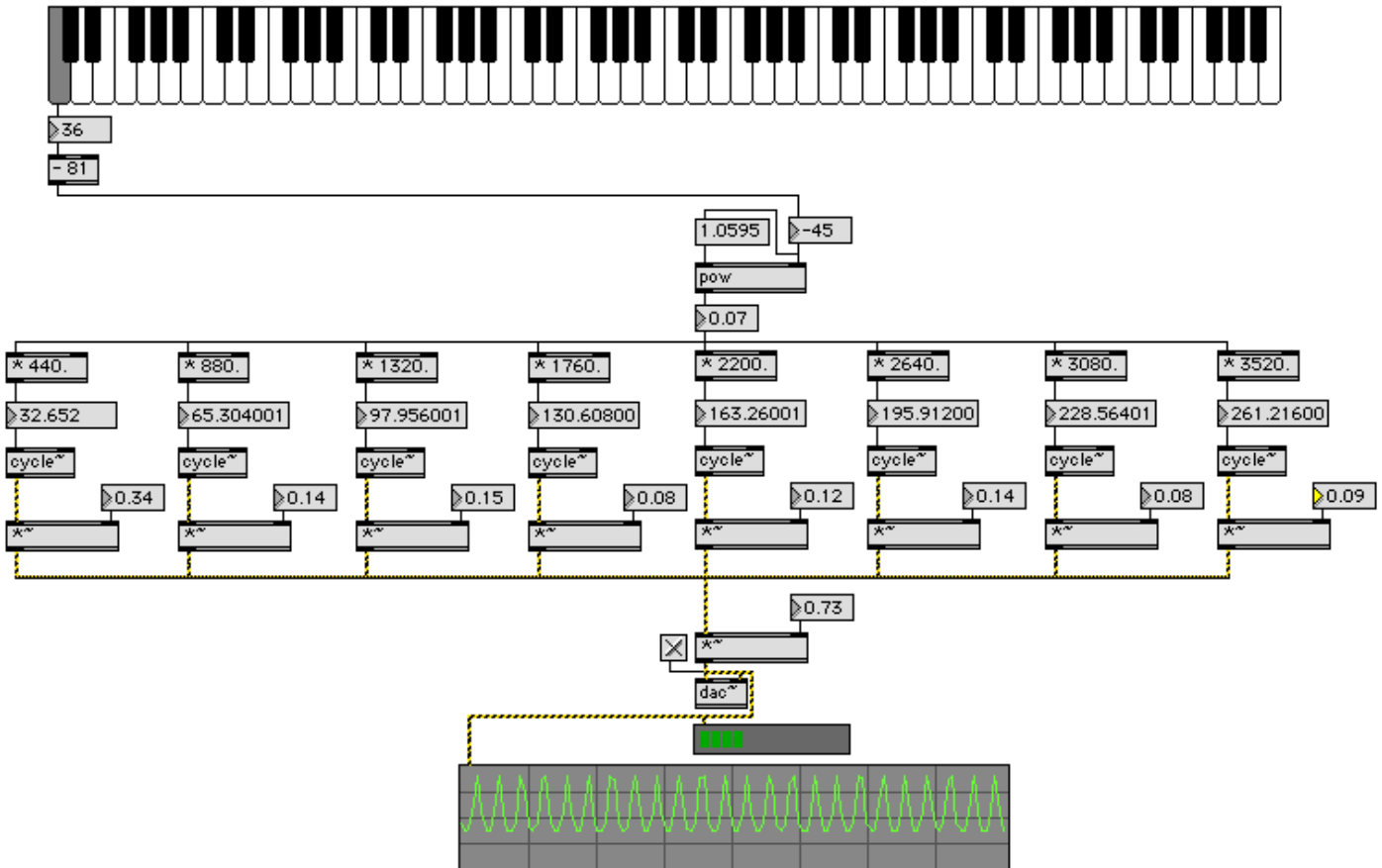


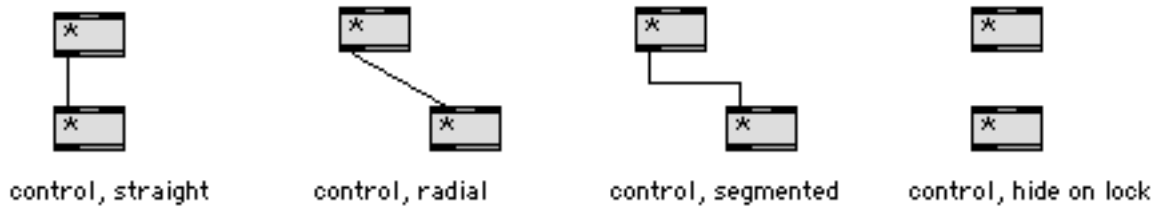
## EMS Additive Synthesizer



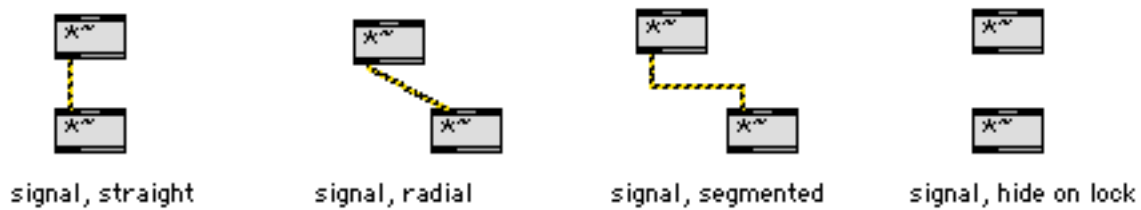
1. Note structure of oscillator, frequency control, and amplitude control.
2. Note the 8 copies of the oscillator, at fixed frequencies of  $1f$ ,  $2f$ ,  $3f$ ,  $4f$ ,  $5f$ ,  $6f$ ,  $7f$ ,  $8f$  for  $f = 440$ .
3. Note that 440 is written as a float: 440. (with a decimal).
4. Note that the 8 oscillators are mixed through a single signal multiplier (\*~), to a stereo dac~, to a level meter, and to an oscilloscope.'
5. Note the expression 1.0595 raised to the  $-45$  power.
6. Note the keyboard output and its conversion so that low C plays a note with a fundamental frequency of 32.652 hz.

**Composition : Electronic Media II**  
**Spring 2005**  
**EMS Patch Cord Methodologies**

1. Different ways of patching objects with control (black) patch cords.



2. Different ways of patching objects with signal (black and gold) patch cords.



3. To use radial patch cords, patch directly without breakpoints.
4. To use segmented patch cords, select **Options>Segmented Patch Cords**.
5. To delete a breakpoint on a segmented patch cord, hold down option-cmd and click on the breakpoint.
6. To hide patch cords on lock, highlight the patch cord, then select **Object>Hide on Lock**.