Session 7
Audio-rate FM, generative approach

VA309 Modular Sound Synthesis @ EKA
Aubery Lis

Informational / Organisational

Coursework 2 deadline just happened!

I will check your submissions within a week or so.

Coursework 3 handed out today!

Same as coursework 2 but about west coast style patching (sessions 6 and 7)

Recap of previous sessions

- What is "west coast approach" in synthesis?
- What are its main concepts?
- Who is its originator?

Recap of previous sessions

- What is a wavefolder? Is it the same as waveshaper and wave multiplier? What controls does it have?

- What makes it similar to a VCF? What is different about it?

Recap of previous sessions

- What is a low pass gate and what does it do to sound?
- Can we call VCF$\rightarrow$VCA a lowpass gate?

Complex waveshape generation

- The difference between east/west coast paradigms is more than "filtering a saw VS wavefolding a sine"

- In east coast (moog stuff), more complex sound is created by mixing many VCOs together, + maybe some white noise. Good for filters, usually not so good for wavefolders

- In west coast (the one we learn right now), wavefolder is often the main sound transformer, and you want to feed it a sine/triangle or something similar

- If we're limited to one VCO into wavefolder, what can be done to further enhance the sound?

Complex waveshape generation

- Start with the patch below. Set LFO to rather slow speed

- Slowly crank up the lfo

- Notice how as the LFO speed goes up, the sound shifts from having an up-down pitch motion to being one complex, often metallic or wet sounding texture
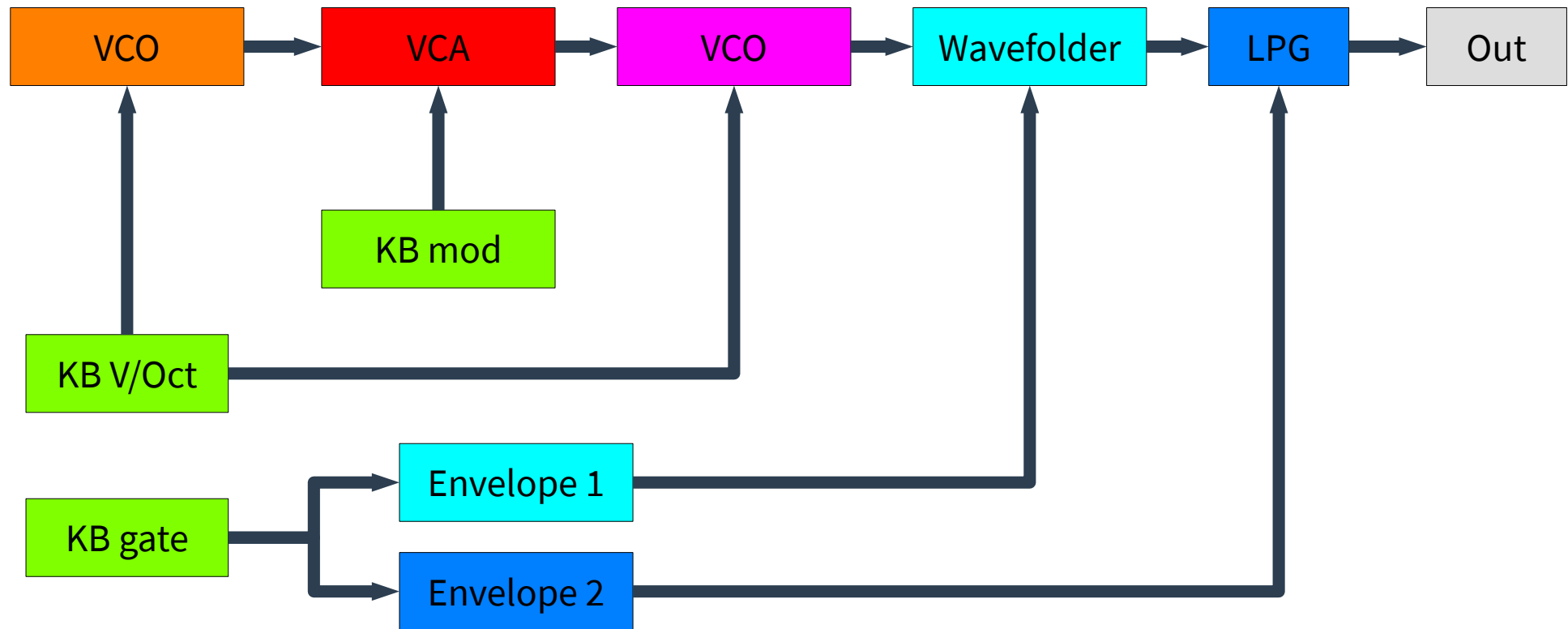
- That's audio-rate frequency modulation!

Lin.
FM

| LFO | → | VCO | → | Wavefolder | → | Out |

Buchla Model 259 (1970s)
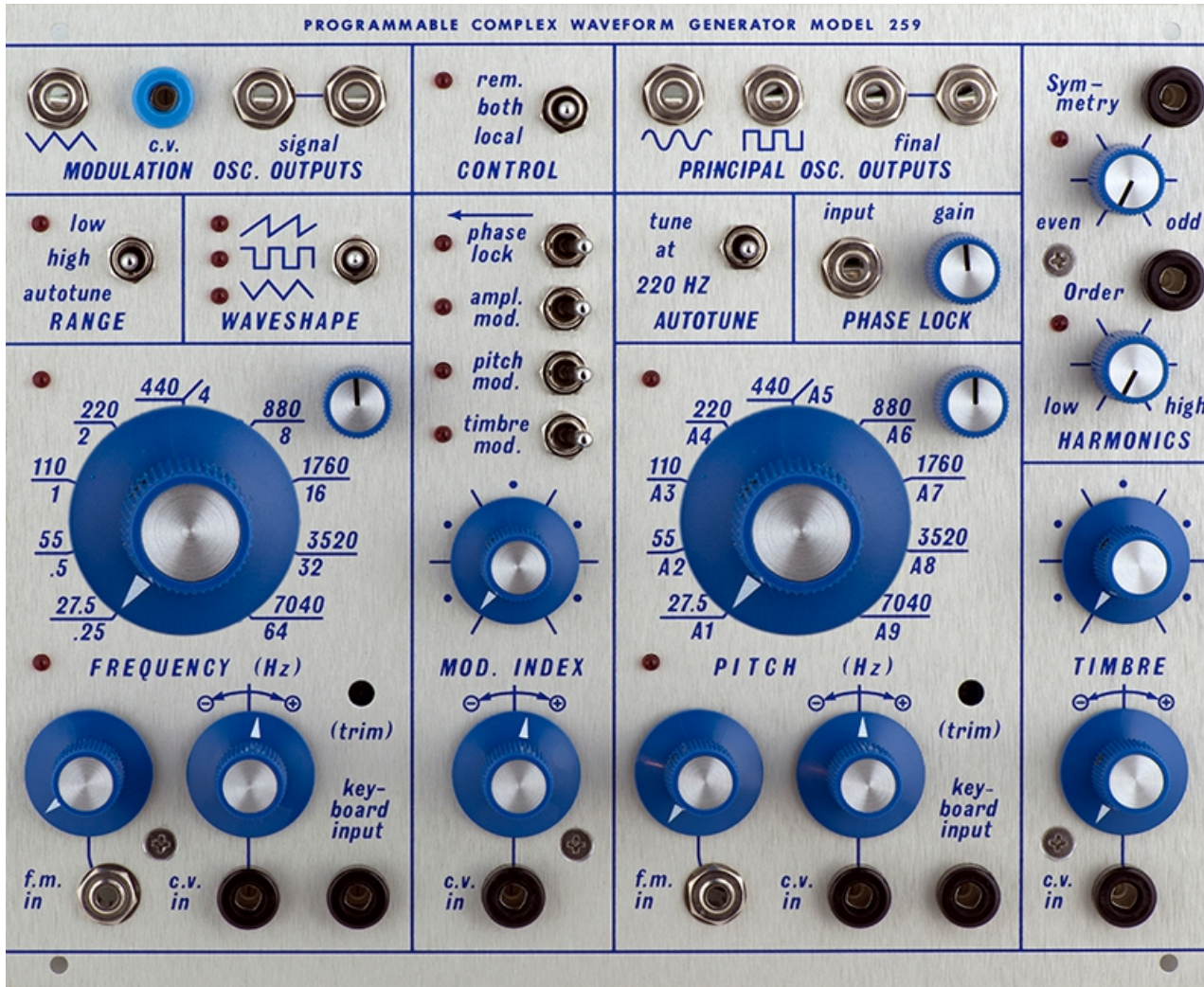
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Make your own complex waveform generator

Generative approach

- A slightly more modern term for a technique that originates from early west coast style experiments

- Usually, it means letting the synthesizer generate the song on its own, with minimal interference from the synthesist after the patch is complete

- The synthesist takes the role of a "system designer", and the music is the result of the system running free on its own

- Is often made by generating random/chaotic values using a S&H, using heavy audio feedback, etc

Basic generative patch