THE SIDSYNTH COOKBOOK

Recipes for sound, served by Chef Musical



Eight original recipes. A little seasoning. No need to turn every knob to eleven.

A practical companion to the SIDSynth User Manual | Version 1.10.22

A note from the kitchen

The User Manual explains what SIDSynth controls do. This book shows one way to put them to work. Each recipe starts with a sound in mind, gives you a short list of ingredients, and walks through the order of operations.

These are starting points, not sacred values. Your MIDI range, playing style, register, host, and taste all matter. Listen after each step; change one ingredient at a time. If a recipe sounds wrong, the remedy is usually less complicated than the recipe.



Mise en place

1. Start from a patch you can change without regret. Save a copy first if the sound matters.
2. Turn Master Volume down before adding drive or several layers. Raise it after the sound is balanced.
3. Unless a recipe says otherwise, begin in Layer mode. It offers per-waveform layers and keeps pulse width between 5% and 95%.
4. When a recipe uses only one or two oscillators, switch the others off. A quiet extra waveform can still be an extra ingredient.
5. The numeric values below are suggested starts. Use your ears for the final seasoning.

Chef's rule: *If you cannot hear which change helped, you changed too many things at once.*

The recipes

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A word before the first bite: *Mon dieu, do not enable Sync and Ring together just because both switches are nearby. Choose the effect you came for.*

01 Pulse bass with a moving edge

A compact bass whose pulse gently changes shape while the filter keeps it seated.

Yield A focused mono or poly bass patch.

Ingredients

Control	Start here
Model	Layer
OSC 1	On; Pulse on; Saw, Triangle, and Noise off
OSC 1 pulse width	0.38
OSC 1 envelope	Attack 0.01 s; Decay 0.18 s; Sustain 0.35; Release 0.12 s
OSC 1 PWM	Depth 0.18; Rate 0.8 Hz
Low-pass	Enabled; Cutoff about 0.28; Resonance modest; Drive about 0.15

Method

1. In the oscillator rack, leave OSC 1 on Pulse and switch off the unused waveform buttons. Turn OSC 2 and OSC 3 off for the first pass.

2. Set the pulse width around 0.38. This is a fairly narrow pulse, but it remains comfortably inside Layer mode's 5-95% range.

3. Set a quick attack, a short decay, moderate sustain, and a short release. The note should speak promptly and stop without a long tail.

4. In Advanced Controls, raise OSC 1 PWM Depth from zero to about 0.18 and set OSC 1 Rate near 0.8 Hz. PWM has its own sine movement; it is not the pitch LFO.

5. Enable the Low-pass filter. Lower Cutoff until the top edge settles, then add only enough Drive to give the bass some grain.

Taste for *You should hear a steady fundamental with a slow, audible hollowing and brightening. If the movement is too obvious, reduce depth before changing rate.*

Chef's warning	**PWM needs an active Pulse waveform. Do not set depth to maximum first; the pulse can sweep too far and the bass will lose its center.**

02 Hard-sync mustard lead

A bright, nasal lead with a playable harmonic sweep. The mod wheel does the stirring.

Yield A cutting lead for held notes and short phrases.

Ingredients

Control	Start here
OSC 1	On; Saw on; establish the lower pitch
OSC 2	On; Saw on; Tune about +7 semitones
Sync	On; OSC 1 drives the OSC 2 sync relationship
MIDI and mapping	Enable Mod Wheel in Master Controls; enable OSC2 Tune in Advanced Controls with low Depth
Low-pass	Enabled; start fairly open; Resonance low to moderate
Effects	Optional short Delay, added after the sync tone is clear

Method

1. Enable OSC 1 and OSC 2, select Saw for both, and start with OSC 1 at its normal pitch. Turn OSC 3 off.

2. Set OSC 2 Tune about seven semitones above OSC 1. Select Sync On. OSC 1 is the master for OSC 2 in this sync pair.

3. Enable Mod Wheel in Master Controls. In Advanced Controls, enable OSC2 Tune in Mod Wheel Mapping and begin with a small Depth. The wheel then moves OSC 2's pitch relative to the sync master.

4. Hold a note and move the wheel slowly. Find the narrow range where the tone talks without becoming an alarm in a tiled kitchen.

5. If needed, lower the Low-pass Cutoff slightly or add a little Resonance. Add Delay only after the dry lead is useful.

Taste for *The pitch may stay recognizably anchored while the harmonics seem to travel. The wheel should add a controlled sweep, not a second unrelated melody.*

Chef's warning	Do not confuse Sync with Ring Mod. Avoid enabling both while diagnosing the sound, and do not start with a large OSC2 Tune modulation depth.

03 The metallic pot lid

Ring modulation turns two oscillator signals into bright, inharmonic partials. Serve short at first.

Yield A bell-like accent, metallic stab, or science-fiction ping.

Ingredients

Control	Start here
OSC 1 and OSC 2	On; Ring uses this pair
Ring	On; OSC 1 is forced to Triangle by the engine
OSC 2	Try Triangle or Saw; Tune at 0, +7, or +12 semitones
Amp envelope	Fast Attack; short Decay; low Sustain; Release to taste
Filter	Optional Low-pass; start with modest Resonance

Method

1. Turn Ring on in the Filter panel. The engine makes OSC 1 Triangle for the ring-mod signal and keeps OSC 1 and OSC 2 effective.

2. Choose OSC 2's waveform and adjust its Tune. Small interval changes can transform the result, so audition one interval at a time.

3. Shape the amplitude as an accent: quick Attack, short Decay, low Sustain, and enough Release for the tail you want.

4. If the tone is too sharp, enable Low-pass and lower its Cutoff. Keep Resonance restrained until the note has a stable body.

5. Try single notes first. Then test a chord at a lower master level; ring-mod partials add up quickly.

Taste for *A clear strike should lead into a short, strange metallic tail. If it sounds like a buzzer, change OSC 2's waveform or interval before adding effects.*

Chef's warning	Ring already forces OSC 1 and OSC 2 into the signal path. Do not expect OSC 1's selected waveform to remain in control, and do not stack Sync on top during setup.

04 Quack bass with filter envelope

A plucky oscillator with a cutoff contour that opens on the attack and settles back.

Yield A percussive bass with a little 'wah' at the front of each note.

Ingredients

Control	Start here
Model	Layer
OSC 1	Pulse on; other waveforms off; OSC 2 and 3 off
Amp envelope	Attack 0.01 s; Decay about 0.25 s; Sustain about 0.55; short Release
Low-pass	Enabled; Cutoff around 0.30; Automation Off
Filter Envelope	Attack 0.01 s; Decay 0.28 s; Sustain 0.15; Release 0.12 s
LP Depth	Start positive, around +0.40

Method

1. Use a single pulse oscillator and enable the Low-pass filter. Set the base Cutoff to the darker side of the control's range.

2. In Advanced Controls, set the Filter Envelope to a quick Attack and moderate Decay. Keep Sustain low and Release short for a pluck.

3. Raise LP Depth from zero to about +0.40. Positive depth raises the cutoff as the envelope rises, then the cutoff returns toward its base setting.

4. Play a low note and adjust Cutoff first, then Depth. If the opening quack is right but the body is too bright, lower the base Cutoff rather than shortening the envelope immediately.

5. Try a small increase in oscillator Sustain if you want the bass to hold after the filter movement has settled.

Taste for *The first instant should be brighter than the body of the note. If the envelope is inaudible, check that LP Depth is not still at zero and the Low-pass is enabled.*

Chef's warning	**The filter envelope is shared and follows the newest note; it is not a separate filter ADSR for every held chord note. Avoid maximum depth until you know where the base cutoff sits.**

05 Sunday-afternoon layered pad

Three restrained layers, slow envelopes, and just enough stereo width to make room at the table.

Yield A broad, evolving chord bed.

Ingredients

Control	Start here
Model	Layer
OSC 1	Triangle; center pan; gentle level
OSC 2	Saw; Tune about +12 semitones; pan slightly left
OSC 3	Pulse near 0.50 width; pan slightly right; lower level
Envelopes	Attack about 0.8 s; Release about 2.0 s; sustain to fit the arrangement
Effects	Chorus and Reverb at restrained wet mixes

Method

1. Select Layer mode. Give each oscillator a different job: Triangle for a soft center, Saw for upper harmonics, and a moderate Pulse layer for definition.

2. Tune OSC 2 up an octave and keep OSC 1 near center. Move the other oscillators apart in the stereo field, but not hard left and right yet.

3. Use a slower Attack and longer Release. Balance oscillator volumes so each layer can be heard without any one layer dominating.

4. Select the 8580 filter character for a smoother starting color. Enable Low-pass and lower the Cutoff until the saw layer sits behind the chord.

5. Add a little Chorus, then Reverb. Compare with both effects bypassed; keep only the amount that improves the part in the mix.

Taste for *The chord should bloom rather than arrive all at once. Each oscillator should have a distinct place, and the dry sound should still be pleasant.*

Chef's warning	Three oscillators at full volume plus full Chorus and Reverb is not width; it is a queue at the door. Do not use maximum harmonics on every layer as a substitute for balancing.

06 Noise snare, no frying pan required

A short burst of noise, shaped by Band-pass and a quick amplitude envelope.

Yield A crisp synthetic snare or percussion accent.

Ingredients

Control	Start here
Model	Layer
OSC 1	Noise on; other waveforms off; OSC 2 and 3 off
OSC 1 envelope	Attack 0.001 s; Decay about 0.10 s; Sustain 0; Release about 0.04 s
Route	Route OSC 1 into the filter
Band-pass	Enabled; Cutoff in the upper middle; moderate Drive
Optional color	A small amount of Bitcrusher or Reverb, not both at full mix

Method

1. Select Noise for OSC 1 and switch off its other waveforms. Turn OSC 2 and OSC 3 off so the transient is easy to judge.

2. Use a very quick Attack, short Decay, Sustain at zero, and a short Release. The amp envelope, not the filter, gives the noise its duration.

3. Set the voice Model to Layer. Route OSC 1 into the filter, enable Band-pass, and move Cutoff until the burst has the right body.

4. Add Drive in small amounts if the transient needs more bite. Use a single note at a moderate level while tuning the sound.

5. Once the dry snare works, add either a little Bitcrusher for grit or a small Reverb tail for space.

Taste for *A short, defined burst should read as percussion before the reverb arrives. Adjust Band-pass Cutoff to move between a thin snap and a fuller thump.*

Chef's warning	Noise is broad by nature. Do not leave the other oscillators sounding under it, and do not use long Sustain unless you are intentionally making a noise wash.

07 A held-note arpeggio, properly plated

Let the arp handle note order and timing; give it a simple patch that leaves room for the pattern.

Yield A repeating one-note-at-a-time figure from a held chord.

Ingredients

Control	Start here
Arpeggiator	Enable On; Mode Up or Played
Rate	1/16 for a familiar starting pulse
Pattern	Steps 8; Hits 5; Octaves 1
Gate and Swing	Gate about 0.55; Swing about 0.10
Tempo	Host BPM when published; otherwise Project BPM in the hamburger menu
Latch	Off for hands-on playing; On to hold the current notes

Method

1. Choose a simple, short-envelope patch and turn the Arpeggiator On in Advanced Controls.

2. Set Mode to Up for ordered pitches, or Played to preserve the order in which you press the notes. Begin with Rate at 1/16.

3. Set Steps to 8 and Hits to 5. Hits cannot exceed Steps; SIDSynth keeps that relationship in range.

4. Set Octaves to 1, Gate near 0.55, and Swing near 0.10. Raise Swing only after the straight pattern is clear.

5. Hold a small chord. The arpeggiator follows host tempo when the host publishes BPM; otherwise it follows Project BPM. If you enable Latch, play a new chord to replace the held pattern.

Taste for *You should hear a repeating eight-step phrase with five sounding hits. If the rhythm feels wrong, check host tempo or Project BPM before changing the rate.*

Chef's warning	This is not a chord strum: held notes are collected into the pattern instead of sounding together. Do not set Hits above Steps, and do not forget Latch is a deliberate hold.

08 The mono siren with a long glide

A controlled pitch slide with modest aftertouch vibrato. The chef permits drama, not seasickness.

Yield A monophonic lead or siren phrase played from a MIDI controller.

Ingredients

Control	Start here
OSC 1 Voice Mode	Mono
Portamento	On; Glide Rate around 4.5 as a musical starting point
MIDI	Enable Pitch Bend; Advanced Bend Range about 12 semitones
Aftertouch	Enable; Advanced Amount around 0.20; Curve Soft; Rate about 5 Hz
Patch	One clear waveform; low effects while setting the movement

Method

1. Set OSC 1 Voice Mode to Mono. Keep the first test to one oscillator so the pitch movement is easy to hear.

2. Enable Portamento and start Glide Rate around 4.5. The glide works for a mono oscillator voice; adjust the rate to taste.

3. Enable Pitch Bend and set the Advanced Bend Range around 12 semitones. Use a smaller range if your part needs tighter intonation.

4. Enable Aftertouch. In Advanced Controls, choose Soft Curve, set Amount around 0.20, and Rate near 5 Hz.

5. Hold a note, apply pressure gradually, then bend to the next note. Lower Aftertouch Amount if the vibrato overwhelms the pitch line.

Taste for *The glide should connect notes while pressure adds a gentle vibrato. Keep the pitch bend deliberate; a full two-octave gesture is a special effect, not a default setting.*

Chef's warning	Portamento requires the oscillator to be Mono and the master Portamento switch to be On. Aftertouch can become a wide vibrato; start low and do not mistake it for pitch instability.

When the dish tastes wrong

Before rebuilding the patch, isolate the problem. Chef Musical recommends the following order, and he is already reaching for the ladle.



Symptom	First check
No sound	Check Master Volume, oscillator On, selected waveform, MIDI channel, and note range. If the oscillator is routed through a filter, make sure that filter is enabled.
Pulse sounds static	Confirm Pulse is selected, PWM Depth is above zero, and you changed the rate for that same oscillator. PWM is independent of the pitch LFO.
Filter envelope does nothing	Check the selected filter is enabled, its depth is not zero, and automation is not taking over the cutoff movement.
Sync tone is too harsh	Reduce OSC2 Tune modulation, lower resonance, or close the Low-pass Cutoff slightly. Do not add more drive first.
Arpeggio tempo is unexpected	Check whether the host is publishing BPM. If not, set Project BPM in the hamburger menu.
Everything is harsh or loud	Turn down Master Volume, bypass effects, then reintroduce one layer or effect at a time.



The chef's universal correction: *mute two oscillators, bypass the effects, and listen again. A good patch survives being served plain.*

What to avoid



Avoid	Why the chef objects
Changing five controls at once	You lose the cause-and-effect. Change one thing, play the same note, and listen.
Maximum resonance plus maximum drive	Both can dominate the tone. Set the cutoff first, then add resonance or drive in small steps.
PWM depth without Pulse	PWM changes pulse width. It cannot animate a waveform that is not selected.
Assuming the pitch LFO controls PWM	PWM has its own per-oscillator sine, depth, and rate controls.
Sync and Ring as a default combination	They alter the first two oscillators' behavior. Build and understand one effect before adding another.
Every effect at once	Delay, Chorus, Reverb, and distortion can hide the oscillator and envelope work you are trying to judge.
Ignoring the host's tempo source	The arp uses host BPM when available, otherwise Project BPM. Check which source is active before changing the rhythmic rate.
Treating a recipe as a preset	These settings are starting points. Register, controller, velocity, and the rest of the arrangement change the result.

Chef Musical's final word: *Season carefully. Taste often. Save the patch before serving it to the band.*



Bon appétit. And please, for the love of the filter, save a copy before the next experiment.