Schlappi Engineering — 100 Grit

- Manual PDF

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100 Grit Manual PDF

Using Schlappi Engineering 100 Grit for Melodic Music

The **Schlappi Engineering 100 Grit** is often described as a touch-controlled distortion/filter/performance instrument, but it can absolutely be used to create **melodic material**, not just noise and destruction. From the manual, the key melodic building blocks are:

- a **low pass transistor ladder filter**
- a **VCA**
- a **distortion stage**
- **filter FM inputs**
- **resonance behavior that can approach self-oscillation**
- **touch points** that act like resistive patch points into circuit nodes
- several **internal feedback normalizations** that can turn the module into a playable voice or animated processor

Because this manual only covers **one module**, the most useful way to answer your question is to explain how the **different sections of the 100 Grit work together** to produce melodic components such as:

- tuned filter pings
- basslines
- distorted leads
- FM-like tones
- self-oscillating sine-ish melodic voices
- animated harmonics that follow pitch CV

What in 100 Grit is useful for melody?

1. Filter as the pitch-bearing core

The manual says:

- **FM1 and FM2 sum together and control the cutoff frequency**
- **FM2** can be used for **V/OCT CV to roughly track along with incoming signal**
- the filter can be trimmed so resonance **just starts to self-oscillate**

This means the filter is not just a tone shaper — it can become a **quasi-oscillator** or at least a **pitch-emphasizing resonant core**.

Melodic implications

- Send **1V/oct or sequencer pitch CV** into **FM2**
- Raise **RES**
- Tune **FREQUENCY** to the desired range
- Use **OUT** for cleaner melodic material or **DIST** for a more aggressive voice

This likely won't behave like a precision oscillator, but it can produce: - rough melodic tracking - tuned resonant notes - acid-like lines - screaming leads with recognizable pitch centers

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2. VCA lets envelopes articulate notes

The manual is clear that:

- **GAIN controls the gain of the VCA**
- **No sound will come out of either output without some initial gain**
- **5V at GAIN CV gives unity gain**
- you can use **GAIN CV** as a normal VCA control input

Melodic implications

A VCA is one of the main things needed to turn a continuous tone into a **note phrase**.

Use: - envelope to **GAIN CV** - pitch CV to **FM2** - gate/trigger to your envelope generator - output from **OUT** or **DIST**

This gives you a standard melodic voice structure: **pitch CV → FM2 envelope → GAIN CV**
audio source or self-oscillation → audio path

So even though 100 Grit is wild, it can still function as a classic **articulated mono synth voice**.

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3. Resonance can make tones sing or self-oscillate

The resonance section is especially important melodically.

From the manual: - **RES controls resonance** - **RES CV** can modulate resonance - internal resonance trim can be set so the filter **just starts to self-oscillate** - removing the **Input to Resonance header (J9)** changes the character and allows self-oscillation to overtake the input signal more strongly

Melodic implications

This enables at least three melodic uses:

A. Resonant filtering of an existing oscillator

Patch an oscillator into **IN1** and use: - **FM2** for pitch-related movement if desired - **RES** to emphasize harmonics - **GAIN CV** for note articulation

This yields strong melodic bass/lead processing.

B. Filter ping voice

With high resonance and short envelopes into frequency or gain, the module can behave like a **pinged resonant filter**, producing percussive but pitched notes.

C. Self-oscillating voice

If trimmed appropriately and set for strong resonance, the filter can become a **standalone tone source**. Then: - sequence **FM2** - envelope **GAIN CV** - monitor **OUT**

This is one of the clearest ways to get melody directly from the 100 Grit without another oscillator.

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4. Distortion can preserve melody while adding harmonics

The distortion path is not just chaos. The manual states: - **DIST** is the output of the distortion circuit following the VCA - **GAIN** controls how hard distortion is pushed - the **x100** switch gives extreme distortion

Melodic implications

For melodic work, distortion helps in two ways:

A. Make simple melodic lines more present

A basic sine/triangle/saw into 100 Grit can become: - thicker bass - screaming lead - harmonically rich sequence

B. Create pitch-rich resonant tones

When resonance is already near oscillation, the distortion can turn a plain resonant tone into: - acid basslines - industrial melodies - unstable but still trackable solos

For melody, it is often best to start with: - **x100 off** - moderate **GAIN** - moderate **IN1** - use **OUT** and **DIST** alternately to hear where pitch remains clearest

Then engage **x100** once the line is established.

Internal interactions that matter for melodic patching

5. Normalizations can animate a melodic voice

One of the most interesting features in the manual is that **unused inputs have internal feedback normalizations**. These can make a melodic patch much more alive.

Key normalizations:

- **IN1 normalled to DIST2**
- **IN2 normalled to DIST**
- **FM1 normalled to DIST**
- **GAIN CV normalled to POLE 2**
- **RES CV normalled to DIST**

These are active only when the input is **unpatched**, and the associated control must be turned down if you do not want its effect.

Melodic use of each normalization

IN2 ← DIST

The manual says this acts as a **distorted resonance path in opposition to RES**.

Use this for: - more vocal melodic tones - unstable harmonic emphasis on basslines - snarling leads

With a pitched input, this can add motion without losing the basic note.

FM1 ← DIST

The manual says this applies the distortion output as dynamic frequency modulation.

Use this carefully for: - metallic melodic lines - laser-bass sequences - aggressive pitch shimmer

For melody, keep FM1 amount low. Too much will smear pitch.

GAIN CV ← POLE 2

The manual calls this a relatively subtle form of distortion, shifting harmonic content.

This is one of the most useful melodic features because it creates: - internal animation tied to the filter - harmonic movement that follows the note - a more “alive” tone without fully destroying pitch

Great for: - basslines - drones with melodic contour - sustained leads

RES CV ← DIST

This introduces audio-rate modulation of resonance and can make laser sounds and screeches.

For melodic use: - keep low - use as accent coloration - add only on select notes or phrases

This can be very expressive but becomes chaotic quickly.

Touch points as melodic performance controls

The touch points are not only for noise. They expose: - **DIST 2 OUT** - **GAIN CV** - **DIST 2 AMP PIN** - **RES CV** - **DIST 1 AMP PIN** - **FREQ CV** - **DIST OUT** - another **GAIN CV**

The manual describes them as **direct resistive connections** to circuit points. You can bridge them with: - fingers - patch cable tips - alligator clips - conductive materials

Melodic uses of touch points

6. Manual expressive pitch bending

Touching or injecting signal at **FREQ CV** can create: - vibrato - bends - squeals - expressive pitch movement

This makes 100 Grit act like a playable lead instrument.

7. Dynamic timbral articulation

Using: - **DIST OUT → GAIN CV** - **DIST 2 OUT → RES CV** - or finger-bridging adjacent output/input points

you can add phrase-specific changes during a melodic performance.

This is useful for: - turning sustained notes into expressive gestures - adding grit at phrase endings - making repeated notes vary naturally

8. Audio-rate modulation for pitched sidebands

The manual notes audio into **FREQ CV**, **GAIN CV**, or **RES CV** can create distortion and AM/FM-like effects.

If the source is pitched and somewhat related to the note being played, you can get: - clangorous intervals - quasi-FM melodies - harmonic enrichment

This works especially well if another oscillator is patched to a touch point while pitch CV sequences the filter.

Practical melodic patch ideas

Patch 1: Distorted bass voice

This is the most straightforward melodic use.

Patch

- Oscillator saw/square → **IN1**
- Sequencer pitch CV → oscillator 1V/oct
- Same pitch CV or related CV → **FM2**
- Envelope → **GAIN CV**
- Listen to **OUT** first, then **DIST**

Settings

- **IN1** around 50–75%
- **FREQUENCY** low to mid
- **RES** around 20–40%
- **GAIN** around 50–75%
- **x100** off initially

Result

- solid bass articulation
- resonant vowel/growl tone
- controlled harmonic aggression
- notes remain defined

Why it works

The oscillator provides stable pitch, while 100 Grit adds: - filtering - envelope shaping - saturation - internal harmonic animation

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Patch 2: Self-oscillating lead voice

Use the filter itself as the sound source.

Patch

- No audio input, or very low audio input
- Pitch CV/sequencer → **FM2**
- Envelope → **GAIN CV**
- Listen to **OUT**
- Raise **RES** until near or at oscillation

Optional

- use **J9** resonance header behavior if you want more self-oscillation dominance
- add slight **FM1** amount unpatched for internal distortion feedback FM

Result

- unstable but playable lead tones
- sine-ish to tearing resonant voice
- great for acid, industrial lead lines, eerie melodies

Notes

The manual only says **roughly track**, so expect: - character over precision - best results in narrower melodic ranges - excellent expressive imperfections

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Patch 3: Pinged melodic percussion

This creates tuned percussive notes that can still form melodies.

Patch

- No sustained input required, or use a very short transient input
- Triggered envelope → **GAIN CV**
- Pitch CV → **FM2**
- High **RES**
- Listen to **OUT**

Result

- tuned blips
- tom-like notes
- wooden/plucky resonant sounds
- melodic percussion lines

Enhancement

Use a little **DIST** output to add edge, but not so much that pitch disappears.

Patch 4: Acid-style sequenced line

100 Grit looks especially suited for this.

Patch

- VCO saw → **IN1**
- Sequencer pitch → VCO
- Envelope or accent CV → **GAIN CV**
- Pitch CV or envelope modulation → **FM2**
- Listen to **DIST** or **OUT**

Settings

- **RES** medium-high
- **FREQUENCY** fairly open
- **GAIN** high enough to saturate

- **x100** off or momentary on for accents

Result

- squelchy, aggressive, unstable acid lines
- strong melodic contour
- expressive accents through gain and resonance interaction

Extra trick

Leave **FM1** unpatched and bring it up slightly so the **DIST-normalled modulation** adds bite and movement.

Patch 5: Harmonic melody shaper for an external oscillator

Instead of making a voice from scratch, use 100 Grit to turn a plain melody into something animated.

Patch

- Clean VCO/submix → **IN1**
- Melody from sequencer controls oscillator pitch
- Envelope → **GAIN CV**
- Leave **GAIN CV** normalization partially active if useful
- Listen to **OUT** and/or **DIST**

Result

- melodic line stays recognizable
- harmonics move internally
- can go from warm to brutal without losing sequence identity

This is especially effective if your source oscillator is simple, because 100 Grit can supply much of the personality.

Patch 6: Manual touch-played melodic solo

Use the touch points as performance controls over a sequenced note stream.

Patch

- Oscillator → **IN1**
- Pitch CV → oscillator and optionally **FM2**
- Envelope → **GAIN CV**
- Listen to **DIST**
- During playback, touch:
- **DIST OUT** with **FREQ CV**
- **DIST 2 OUT** with **RES CV**
- adjacent output/input pairs

Result

- expressive bends
- phrase-ending shrieks
- manually injected timbral accents
- a playable solo voice rather than static sequence

This is one of the most unique melodic uses of the module.

Which output is better for melody: OUT or DIST?

OUT

Better for: - clearer pitch - filter-based melodic work - self-oscillation patches - basslines where note definition matters

DIST

Better for: - aggressive leads - industrial bass - harmonically dense melodic phrases - expressive destruction after the note is established

A good strategy is: 1. build the melody on **OUT** 2. switch to **DIST** 3. add x100 or feedback slowly

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Headers and their role in melodic behavior

J9: Input to Resonance

Default is **ON**.

Manual says this: - maintains bass frequencies - prevents some classic resonance-related volume loss - removing it allows more whistling sounds and lets self-oscillation overtake the input

Melodic use

- **ON**: better for basslines and fuller melodic material
- **OFF**: better for whistling resonant leads and self-oscillating melodic patches

J10: Output Source

Default is **VCA**

If moved, **OUT** can come directly from the filter rather than post-VCA.

Melodic use

- **VCA position**: best for articulated notes with envelopes

- **Filter output position**: best if you want continuous filter tone independent of GAIN, or want to use DIST and OUT as two different melodic/timbral taps

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Best strategies for making 100 Grit musical instead of random

1. Start with stable pitch elsewhere

The easiest way to make 100 Grit melodic is to feed it: - a tuned VCO - quantized sequence - bass drone with pitch center

Then use 100 Grit for articulation and color.

2. Add chaos gradually

Because many controls are normalized to feedback sources, it is easy to lose pitch definition. For musical use: - begin with all secondary controls fully CCW - add one modulation path at a time - monitor whether the note center remains audible

3. Use FM2 for pitch, FM1 for character

Based on the manual, **FM2** is the better destination for external pitch tracking, while **FM1** is often useful as a character modulation lane due to its distortion normalization.

4. Keep distortion after pitch is established

If the melody is disappearing: - lower **GAIN** - reduce **IN1** - use **OUT** instead of **DIST** - reduce **FM1** - reduce **RES CV**

5. Treat touch points like expressive macros

Rather than using them constantly, use them for: - fills - transitions - accents - note bends at phrase ends

That keeps the melodic line intelligible.

Best melodic roles for 100 Grit in a system

The manual suggests a module that excels at these melodic jobs:

Bass voice processor

Probably one of its strongest roles: - input oscillator - sequence pitch externally - use resonance and gain for weight and aggression

Dirty lead synth

Especially with: - resonant filter - rough tracking via FM2 - touch point performance

Resonant auxiliary voice

Self-oscillation or filter ping patches can act as: - second melody line - countermelody - tuned percussion

Performance sound design layer

Even if another module provides pitch, 100 Grit can provide: - expressive harmonic movement - phrase-level distortion - live tactile interaction

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Summary

The **Schlappi 100 Grit** can create melodic components by combining its sections in a few core ways:

1. **Filter + FM2 + resonance** can act as a rough pitch-bearing voice
2. **GAIN CV** gives note articulation, making it usable like a synth voice
3. **OUT** preserves note clarity; **DIST** adds aggressive harmonic content
4. **Self-oscillation** and **filter pinging** make it capable of generating melody on its own
5. **Feedback normalizations** add animated harmonics and movement that can follow a sequence
6. **Touch points** provide highly expressive manual performance control for bends, modulation, and accents

In practice, the most musical uses are: - **distorted basslines** - **acid leads** - **resonant self-oscillating melodies** - **pinged tuned percussion** - **externally pitched melodies made more alive through internal feedback and touch control**

So while 100 Grit is famous for destruction, the manual makes it clear that it is also a very strong **melodic performance processor and semi-voice**, especially when used with pitch CV, envelopes, and careful control of its internal feedback paths.
