Mutable Instruments — Plaits

- Manual PDF

Certainly! Here's a concise cheat sheet for the Mutable Instruments Plaits Eurorack module, ideal for quick reference and performance.
Note: This is based on the content above, not an official PDF. Official Mutable Plaits manual PDF link

---

Mutable Instruments Plaits Cheat Sheet

Power

- **-12V / +12V power supply**
- 2x5 pin connector (make sure red stripe matches "Red stripe" mark)
- **Current draw:** +12V: 50mA, -12V: 5mA

Front Panel Controls

Label	Control	Description
A	Model Buttons & LEDs	Select Synthesis Model (2 banks × 8 models; LEDs show selection)
B	FREQUENCY	Coarse tuning (default: 8 oct, adjustable to 14 semitones via settings)
C	HARMONICS	Model-dependent timbre (details vary)

Label	Control	Description
D	TIMBRE	Model-dependent texture/detail control
E	MORPH	Model-dependent adjustment (often morph/pulse width)
F	Attenuverters	For TIMBRE, FM, MORPH CVs—set modulation depth; when unpatched, controls from env

---

I/O Jacks Reference

Jack	Type	Description & Range
MODEL CV	Input	Selects model. 0V to +5V (LEDs show current/CV)
HARM, TIMBRE, MORPH, FREQ CV	Input	Model parameter modulation, typically -5V to +5V, expect CV scaling varies by model
TRIG	Input	Gate/trigger (> 1.5V = trigger) – excites, envelopes, etc
LEVEL	Input	VCA/LPG/Accent (audio-rate OK); ~0V (closed) to +5V (open)
V/OCT	Input	Pitch CV, -3V to +7V for C0–C8 (1V/octave standard)
OUT	Output	Main audio output (10Vpp max typical, bipolar audio)
AUX	Output	Variant/sidekick/byproduct audio (10Vpp max typical)

Fast Usage Guide

1. **Patch Power & Audio**: Connect power as instructed. Patch OUT (and AUX if desired) to mixer/VCA.
2. **Model Selection**:
3. Use upper/lower (A) buttons to select model/bank. LEDs will indicate which.
4. Patch MODEL CV for voltage control (0–+5V). When triggered, only changes at next TRIG.
5. **Tuning**:
6. Set FREQUENCY (B). For fine range (14 semitones), hold 2nd button (A) and turn HARMONICS.
7. **Sound Shaping**:
8. HARMONICS / TIMBRE / MORPH knobs: Adjusted per model (see summary below).
9. Modulate parameters via their CV ins, depth set by attenuverters (F).
10. **Pitch CV**:
11. Patch 1V/oct source to V/OCT.
12. **Percussive/LPG**:
13. TRIG fires an internal decay envelope/excites models, unless LEVEL is patched (then, LEVEL acts as VCA/Accent).

Settings (Hold Button A Combos)

- **Adjust LPG/Envelope**: Hold 1st button (A), turn TIMBRE (VCFA↔VCA response) or MORPH (LPG ring time/envelope decay).
- **FREQ Knob Range**: Hold 2nd button (A), turn HARMONICS. 8 settings: C0±7st, ..., all LEDs = C0–C8 (8 octaves).
- **Any knob used for these settings is not 'live' on main function until matched with physical position.**

Synthesis Models: Parameter Summary

Model	HARMONICS	TIMBRE	MORPH	AUX
Virtual Analog	Detuning	Pulse shape	Saw notch width	Hardsync sum waveform
Wavefolder	Waveshaper curve	Fold amount	Asymmetry	Alt wavefolder shape (Warps style)
FM Synthesis (2op)	Ratio	Mod. index	Feedback/ Chaos	Suboscillator
Formants	F1/FM2 ratio	Formant freq	Formant width/ shape	Filtered waveform type (filter morph)
Additive	Spectral bumps	Bump position	Bump width/ shape	Hammond drawbars partials
Wavetable	Bank (A-D)	Row (brightness)	Column (varied)	5-bit lo-fi output
Chords	Chord type	Inversion/ transp.	Waveform select	Root note of chord
Speech	Vowel/Word crossfade	Species	Phoneme/ Word segment	Pure vocal fold signal

Model	HARMONICS	TIMBRE	MORPH	AUX
Granular Cloud (Swarm)	Pitch randomization	Grain density	Grain overlap/ duration	Sine grain variant
Filtered Noise	LP↔BP↔HP morph	Clock freq	Filter resonance	Dual BP filter, separation = HARM
Dust Noise	Freq randomization	Density	Allpass↔BP morph	Raw dust noise
Inharmonic String/ Resonator	Material/ inhar.	Brightness/ density	Decay time	Exciter only (mini-Rings)
Kick Drum (Analog)	Attack/OD	Brightness	Decay	FM triangle drum synth
Snare Drum	Harm↔Noise balance	Drum mode balance	Decay	FM + noise-based snare
Hi-Hat (Analog)	Metal↔Noise	HPF cutoff	Decay	Ring-mod metal + clean VCA

Calibration & Firmware

- **Calibration**: Hold both buttons; see detailed steps above.
- **Update/Firmware**: Listen to firmware audio file at MODEL CV in, freq knob at noon.

Troubleshooting Highlights

- **Settings lost?** Change model after tweaking to save.
- **Unexpected clicks?** Check Frequency knob range.
- **Trigger not working?** Recalibrate.
- **2 LEDs lit (1 blinking)?** MODEL CV is not at 0V (unpatched or power fault).

Voltage Ranges

Input	Range/Trigger
MODEL CV	0–5V (mod selects from full model set)
HARM, TIMBRE, MORPH, FREQ CV	-5V to +5V typical, CV scaling varies
TRIG	>1.5V for trigger
LEVEL	0–5V (acts as VCA; percussive accent if TRIG patched)
V/OCT	-3V to +7V (C0–C8, 1V/octave)

Outputs are typical audio modular levels, ±5V (10Vpp), unipolar in models with percussive envelopes, per model.

Reference Links

- Official Plaits Manual PDF
- Generated With Eurorack Processor