JIANT FM · SOUND · FX · MOD

engines, effects, modulation, sequencer and songs

firmware V10 · M-VAVE FM-1 · juanjiant-bit.github.io/JIANT

ENGINES · EDIT 1 / EDIT 2

ELEVEN ENGINES, ALL SYNTHESIS

ENGINE	EDIT 1				EDIT 2				WHAT TO KNOW
DRUM-X	MORPH	TUNE	TONE	DECAY	NOISE DRIVE	FM	ENV	FOLD	8 sounds BD SD CP CH OH TM RS CB, sides A / B: **MORPH** morphs the kit. The kit first: **KIT 3** BP FEEDBK, **X-MOD** RATE DEPTH SHAPE RAND. Then a sound (KNOB 1 the sound): SIDE PITCH PMOD · DECAY NOISE COLOR · MODE PM.TYPE DRIVE · **LAYER** (no note) FEEDBK **SEND** (CHO / DLY / REV). Last LEVELS and **STEREO** IMAGE (a knob through the kit's stereo placings). KIT, SOUND 1–4 and HOME › BEING draw the kit as little beings that squash and shout on each hit (0.9.4).
VOICE	VOWEL	VOWEL2	TALK	SHIFT	BUZZ	BREATH	Q	RAND	Formant voice (after klattsch): vowels, talk, breath. **WORDS** (0.8.5): LANG ES / EN / JA sings syllables, a note each (POS THEME ARTIC SHIFT · BUZZ BREATH Q LOOP); LYRIC TEXT (OCT+ on WORDS types it, KNOB 3 dice; the web editor sends it) or W1–16 words, S1–8 scat; "-" holds the vowel. **Its picture** (0.9.4): a CT head whose tongue, jaw, lips and velum sing the phoneme.
ANIMAL	MODE	PRESS	CHAOS	SIZE	SWEEP	RATE	GROUP	TEMP	Animal calls (0.8.3), MODE the source: **CMOS** the 40106 / 4093 bird circuit (TOUCH COUPLE CAP · HYST RATE GROUP FM) · **PULSE** crickets, cicadas, frogs (CLICK Q · DETUNE) · **WHSTL** birds, a Hopf whistle · **WING** mosquito, bee, fly (BUZZ DRIFT · DOPPLR) · **GLOTT** wolf, bark, roar, purr (MOUTH ROUGH · AIR). GROUP: syllables + gaps; TEMP °C speeds a cricket up (Dolbear). A note is a call. **Its picture** (0.9.4): bird ↔ insect ↔ mammal by MODE, leaned by SIZE.
LOFI	CHIP	WAVE	DUTY	CRUSH	-	VIB	BEND	MASK	Chip: PLS TRI SAW NOIS WRAM. **BYTE**: ALGO VAR · MOTN GRIT BEND LOOP. **FLOAT** (floatbeat): ALGO VAR · MOTN FBK BEND LOOP; CHIP sets FULL / 4BIT / 1BIT. **Its picture** (0.9.6): a caterpillar whose skin is the output, a segment per bit of the byte. **par9**: 48 formulas each in BYTE and FLOAT (ALGO 0–191); MOTN past half is **SYNC**: the formula's slow bits follow the bar, so a note only transposes it, never changes its speed.
ANALOG	WAVE	DETUNE	MIX	NOISE	CUT	RES	DRIVE	INT	SAW SQR TRI SIN PWM **SYNC RING SAW3**; INT: osc 2 ±24 st. Its filter is per voice. **Its picture** (0.9.6): a cell whose membrane is the wave, spikes where DRIVE clips, a ring at CUT.
FM6	ALG	FB	MOD	RATIO	MEG	VMOD	DETUNE	SLOT	Dexed's 6 operators, 32 algorithms drawn, .syx patches (SLOT), MOD / RATIO move the modulators. **OPERATOR · OP ENV · OPERATOR 2**: each operator on the device (ratio / fixed, fine, level, its envelope, mode, detune, velocity). **SLOT B1–B32**: a 32-voice .syx sent from the web editor. **Its picture** (0.9.6): the operators as bichos wired as the algorithm, OP ENV's riding its envelope.
PHASE	WAVE	WAVE2	DCW	ENV	DETUNE	LINE	SUB	FB	Phase distortion (CZ); **FB** feeds the output back into the phase: hard edge to growl. **Its picture** (0.9.6): a snail, its shell's chambers at the bent phase, its sole the wave.
WHEEL	REG	SUB	BODY	TOP	PERC	CLICK	DRIVE	ROTOR	Drawbar organ: registrations, percussion, rotary. **Its picture** (0.9.6): nine tube worms, one a drawbar, bent by the rotor.
NOISE	MODE	COLOR	FREQ	PEAK	TRK	DENSE	DRIFT	CRUSH	Coloured and metallic noise, tracked or free. **Its picture** (0.9.6): a swarm walking by COLOR, swirling by FREQ.
STRING	EXCITE	DECAY	BRIGHT	POS	STRETCH	BODY	SIZE	BOW	Karplus-Strong string (snd5): EXCITE NOISE PLUCK PICK HAMMR STICK; POS where it is struck, STRETCH a stiff, metallic string, BODY / SIZE its box. **BOW** a bow's noise into the loop. RELEASE is its damper: the string rings after the step and dies out when let go. NYLON, STEEL GTR, HARP, KOTO, PIANO, MARIMBA, BOWED…
ADD	MODE	MORPH	BRIGHT	PARTIAL	SHIFT	COMB	DECAY	MOTION	Additive (snd5): partials by MODE HARM ODD WIDE BELL BAR DRUM **PRIME FIFTH SUB PLATE** (par6); MORPH between spectra, PARTIAL how many, SHIFT stretches them, COMB carves notches, DECAY the highs die first, MOTION sweeps the spectrum. Presets PRIME ORG, QUINT, DRONE, GONG, TOTEM…

FILTER · EVERY ENGINE

TYPE	CUT	RES	DRV

LP · HP · BP · COMB. COMB rings tuned to the note: CUT moves it ±32 st, RES how much it rings. ANALOG and LOFI: per voice; the others: on the track, following LFO / ENV DEST FLT (DRV = the track's DIST).

VOICE · PLAYING

VCE	GLD	GLMOD	PRIO

POLY · MONO · LEG · UNI: glide and its mode; LAST / LOW / HIGH priority. **8 voices** shared by the six tracks (MONO and LEGATO keep their note).

DICE

EDIT + SELECT: a random factory preset of the engine, every parameter moved up to a quarter of its range. DRUM-X: both sides of every sound around the factory kit. Heard at once: OCT+ OK keeps it, OCT- CANCEL brings the sound back. SEQ / LFO / FX + SELECT: the sequence, the LFO, the effects, the same way. HOME + SELECT (or HOME twice on HOME): **GEN**, the song generator, HOME's last three pages: GENRE (**EXPLORE**, where it opens: no genre, every rule broken; RANDOM; 43 genres; PRESETS too) · SEED · ENERGY · FORM; DRUMS · BASS · CHORDS · ARP · LEAD amounts; COMPLEX · SWING · HUMAN (SELECT: the next page). OCT+ makes the piece (again: a new seed), OCT- back to ECO. GLO + G4 undoes.

MODULATION

ENV · LFO

ENV

ATK	DEC	SUS	REL

ENV DEST

FLT	PIT	SHP	LOOP

LOOP: held, the envelope cycles from the sustain: an ADSR-shaped LFO.

LFO

RATE	WAVE	PHS	FADE

SIN TRI SAW SQR S&H

LFO DEST

PIT	FLT	SHP	AMP

MOD MATRIX · 4 SLOTS A TRACK

SLOT	SRC	DST	AMT

SOURCES

LFO · ENV · VEL · KEY · RAND · MODW · AT · EXPR · M1 · M2 · M3 · M4 · STEP

DESTINATIONS

PITCH · CUT · SHP · AMP · PAN · DIST · CHO · DLY · REV · RATE · VIB · E1..E8 · CLIP · PNCH · D.TIM · D.FB · D.TON · D.MIX · R.SIZ · R.DMP · C.RAT · C.DEP

E1..E8: the engine's own EDIT knobs. CLIP / PNCH: the master. D. R. C.: the DELAY, REVERB and CHORUS buses (a STEP source on D.TIM sequences the delay time).

MSEQ · MACROS

MSEQ · A CV SEQUENCER PER TRACK

STEP	LVL	LEN	SLEW

16 levels, DIV on MSEQ 2, in time with the transport. Use it from MOD, SRC STEP.

MACROS M1–M4

Hold LFO: the knobs are M1–M4, latched until LFO again. Each session starts with 2 random routes a track; F3 rolls new ones, G3 clears. By hand: MOD, SRC M1...M4. Saved with the project.

SEQUENCER

64 steps a track, up to 4 notes a step, piano roll and drum grid. One chain (V10.6): STEP (the roll / grid, K1 all 64 steps) · LENGTH · TRACK · EUCLID · MODES · MUTATE · PLAYHEADS · STRETCH · COMP · COMP 2 · AUTOMATION · AUTO LIST; SELECT walks, SEQ jumps to the next group, PRESETS loads a pattern. **Hold a step + turn a knob**: a parameter lock. STEP K4 **VEL** (V10.8): 1–127, then ACC, SLD, A+S. Step recording: hold a chord + KNOB 1 its length; + ARP: arpeggiated (K1 rate, K2 order, K3 oct). COMP / COMP 2: two components a step (CHANCE, RATCH, ARP NOTES / SEQ / SCALE, TRIG, RAND, OCT, TONAL, BEND, ECHO, PULSE, JUMP, REV, FILL, KILL, WALK, CLIMB, TOUCH: a kit's SHORT / GHOST / FLAM); a TRIG or FILL wins; WALK / CLIMB: a degree / an octave further every N loops (K4), UP DOWN UP-DN RND over a range (K3), stackable; ARP: ORDER × range, RATE in note values (x1 1/32 1/32T 1/64 1/64T 1/128); RATCH / ECHO: DIV; EVERY (KNOB 4): the loops the step's components play on (ALWAYS 1/2 2/2 1/3 .. 4/4 1/8 FIRST !FIRST SKIP). TRACK: PITCH, CHANCE thins the whole track, HUMAN one amount (velocity, timing, gate, decay / release), REC Q, STRETCH / REPEAT act as the knob turns; ROTATE reads the sequence from another step; NOTE's MICRO moves a step off the grid in 64ths (±32/64; REC Q 0 % records where you played, to the 64th). **EUCLID** (V10.6; V10.16 VARY in four turns A A' A'' B, and **MUTATE**: EVERY 1–16 bars, AMOUNT, ORBIT / DRIFT / PULSE, GROOVE / RHYTHM / FEEL / ALL, OCT+ now, OCT- the anchor). HITS, STEPS 2–64, ROTATE write the track's pattern live; K4 LANE (DRUM-X: each sound its own; V10.7 **ALL**, the default: K1 DENSITY 1–8 writes a whole kit, a lane picked writes only that lane) or VARY; MODES adds ACCENT GHOST RATCHET VARY (DRUM-X) or MOTION HARMONY OCTAVE SLIDE; notes in the track's SCL, else the key the other tracks fit (FROM Tn), else NEW KEY; OCT+ a new variation, OCT- the one before. REC + knobs while playing: automation (64 records a section, MOTION page plays / clears them, AUTO LIST edits them).

PATTERN · TRACK

LEN	DIV	SWG	GATE
PIT	CHN	HUM	RECQ

SCALE · ARP

ROOT and SCALE are every melodic track's: CHR MAJ MIN DOR MIX PEN MPEN HARM PHRY LYD LOC MEL BLUES WHOLE DIMHW DIMWH. QNT snaps keys or the sequence, **ALL TR** (SCL KNOB 4) moves every sequence along the scale. **CHORD**: a key plays a chord (TRIAD 7TH ADD9 SUS2 SUS4 in key, MAJ MIN 7 MAJ7 MIN7 POWER), VOICING LEAD leads each to the next, STRUM as a harp.

ARP MODES

OFF UP DN UPDN RND ORD REPEAT DNUP UP+8 CONV DIVG PINKY THUMB WALK CHORD **TRNS** (the keys transpose the sequence)

SONGS

8 projects × 4 sections (A–D), a song of up to 16 rows by bars (SAVE › PROJECT › ARRANGE. OCT+ adds a row, OCT- deletes one, PLAY plays; END: STOP, x2–x8, LOOP), SLOOP style. **TIMELINE** (V10, after ARRANGE): the song as lanes; per row each track can play another section (**FROM**) and a variation (**VAR**: MUTE THIN FILL HALF REV SHIFT OCT± VAR 1–4). Each row can hold a **scene**: mutes, DRUM-X group mutes, macros and MIDI punch-ins. SAVE held plays sections live on the next bar, stores them, records the song (SONG REC). Each section keeps its sounds, steps, motion, kit and its SLICER.

EFFECTS

PER TRACK

FX · SENDS

DST	CHO	DLY	REV

DIST

DST	TYPE	TONE	-

SOFT · HARD · FOLD · CRUSH · RECT.

AUTO PAN

DEPTH	RATE	SYNC	WAVE

The track's pan swung L–R around its PAN. SYNC **BEAT**: RATE 4 BARS ... 1/32, in time with the bar; **FREE**: in Hz. SIN · TRI · SAW · SQR · S&H, never a click.

SLICER · ONE ON A BUS

SLCR	PAT	RATE	DEPTH

OFF · GATE · STUT, 16 patterns, 1/8 ... 32T. **SL BUS**: T1–T6 and **FX** (the delay / reverb / chorus returns) ON / OFF: everything on = the whole mix chopped after the effects. **SL PITCH**: the repeats' 16-step pitch (±24 st, tape style, QNT SCL to the scale).

DELAY · CHORUS

DLY

TIME	FDBK	TONE	MIX

DLY 2

WIDE	PITCH	SPRY	MOD

DLY 3

TYPE	PING	-	-

Synced (4BAR ... 1/32; V10.8 dotted 1/4D 1/8D 1/16D) or free (5 ms – 2.95 s; past 0.74 s darker); PITCH / SPRY: a grain delay.

CHORUS

RATE	DEPTH	STER	-

STER: 0 as always, down to mono, up to twice as wide.

REVERB · FIVE MODELS

TYPE		SIZE		DAMP		PRE	
MOD		RATE		FILT		WIDE	

TYPE	WHAT IT IS	SIZE	DAMP	MOD	RATE	WIDE
ROOM	Classic room	decay	darkens	chorus on the tail	its speed	stereo
SPRING	Amp spring tank	length · decay	darkens	wobble	wobble speed	stereo
SHIMR	Up an octave on every pass; **PRE → AIR** (±24 st: down darker and lower, up airier and higher)	decay	darkens	how much shimmer	–	–
RESO	4 strings tuned to the scale; **PRE → PITCH** (0–14 steps up), **DAMP → FOLW** (OFF / T1–T6: the chord follows that track's notes)	how long they ring	FOLW	past half: the chord opens	–	–
CLOUD	Granular wash; SIZE max **freezes** it; **PRE → AIR** (±24 st: the cloud down / up, darker / airier)	decay · freeze	darkens	grains pitched + chorus	grain density	grain spread

MASTER

CLIP	PNCH	DUCK	REL

CLIP saturates without getting louder. **PNCH** drives the drums: denser body. **DUCK**: the kick pulls the rest down (REL its release). An always-on **leveler** (slow 2:1, –9...+6 dB) before the limiter keeps patches at a steady volume.

TAPE

TAPE	WOW	-	-

After MASTER: TAPE saturates, darkens the highs and lifts the lows; WOW the wow and flutter (par9: much stronger at 100).

EQ · 4 BANDS (par9)

LOW	LO MID	HI MID	HIGH

–12...+12 dB, wide and gentle (~200 Hz, 1 kHz, 4 kHz); at 0 it costs nothing.

PUNCH-IN FX (FX HELD)

REPEAT 1/8 · 1/16 · 1/32, LPF, HPF, LOOP 3 / 5 / 7, GLITCH on the grid; on the notes: OCT–/+, ½ TEMPO, DEC–/+, STUTTER, ATK+, ARP, RANDOM. Knobs: FILTER CRUSH THROW DEPTH. Recordable per section.