BLUE LANTERN MODULES · DRUM MACHINE ENGINES

tecDoc

User Manual



56 drum engines · 4 one-jack kits · ADSR, effects, clock · 96 kHz

Eurorack module · Blue Lantern Modules, Chandler, Arizona

CONTENTS

Inside this manual

1 **Welcome**
What tecDoc is, and a quick start

2 **Panel and controls**
Knobs, jacks and the display

3 **How tecDoc works**
Triggers, decay, tuning, retriggering, levels

4 **Kicks**
808K 909K HARD BOOM RMBL 606K 707K 78K DIST TRPK

5 **Snares and claps**
808S 909S 808C 909C RIM CLAV 606S 707S 78S CRNC LOFS SNCL BRSH

6 **Hats and cymbals**
808H 909H CYMB RIDE 606H 78H CRSH RVRS

7 **Toms and hand percussion**
808T 909T COWB MARA CONG BONG AGOG TRIA TAMB WOOD GUIR

8 **Electronic**
SKIN CLNG ZAP PLUK BLIP NOIS BYTE SYND FMDR GLCH

9 **Kits**
KIT8 KIT9 KIT6 KITC: eight instruments on one jack

10 **Settings menu**
ADSR envelope, quantizer, effects, META mode, calibration

11 **The MORE page**
FM jack, clock and rhythm, arpeggiator, effects, presets, favorites, display

12 **Patch ideas**
Drum machine starting points

13 **Quick reference**
All 56 engines at a glance

14 **Specifications**

CHAPTER 1

Welcome

tecDoc is a **drum machine in a Eurorack module**. It has 56 synthesized percussion engines: the kicks, snares, claps and hats of the classic 808, 909, 606 and 707-style machines and of vintage preset rhythm boxes, modern distorted and trap kicks, a crunchy bit-crushed clap and a lo-fi sampler snare, cymbals, toms, hand percussion, electronic drums and four complete one-jack kits.

Every sound is synthesized in real time. There are no samples, so every engine can be tuned, shortened, lengthened and modulated by CV. On top of the engines, tecDoc has an AD or ADSR envelope, a quantizer, bit and sample-rate reduction, built-in effects (chorus, ring modulator, echo, drive and filter) and a second settings page (MORE) with an internal clock, ratchets, probability, swing, an arpeggiator, 8 presets and favorite engines.

Highlights

- **Classic machine models**: 808, 909, 606 and 707-style kicks, snares, claps and hats, plus vintage rhythm-box kick, snare and hat.
- **Modern kicks**: hard industrial, distorted, long melodic boom, trap glide and folded rumble.
- **Dirty claps and snares**: CRNC, a bit-crushed and distorted clap; LOFS, a lo-fi sampler snare; a snare and clap layer; brushes.
- **Cymbals and percussion**: cymbal, ride, crash, reverse cymbal, toms, congas, bongos, cowbell, agogo, triangle, tambourine, woodblock, guiro, maracas, claves and rimshot.
- **Electronic**: syndrum, FM drums, additive skins, FM metal, zaps, plucks, 8-bit blips, noise FX, bytebeat and glitches.
- **Four kits**: TIMBRE CV picks one of eight instruments on every trigger, for a whole drum part from one jack.
- **A groovebox in one module**: ICLK plays with nothing patched; RTCH, PROB, SWNG and random TIMBRE/COLOR make patterns that breathe.
- **Stage-friendly**: COLOR is always the decay, drums are tuned per hit like a drum machine and retriggers never click.

Quick start

1. Power on. After the start-up animation the display shows **808K**, the first engine.
2. Patch a clock or a trigger sequence into **TRIG**. **Every engine needs triggers to make a sound**, or turn on the internal clock: in the menu, open **MORE** and set **ICLK** to 120.
3. Turn the encoder to choose an engine. Turn **TIMBRE** for the tone and **COLOR** for the decay.
4. Tune with COARSE, FINE or a V/OCT sequence.
5. Click the encoder to open the settings menu; click again to return.

NOTE Your pitch calibration and settings are kept in the module's memory and are not affected by choosing engines.

CHAPTER 2

Panel and controls

Knobs and display

Control	Function
Encoder + display	Turn to select the engine. Click to open or close the settings menu. Hold for 1 second on special menu items (calibration, presets, logo editing, factory reset). On the engine screen, hold to mark a favorite engine.
PITCH (coarse)	Coarse tuning. Its range is set by RANG in the settings menu. Use it to tune drums.
FINE	Fine tuning.
FM (attenuverter)	Amount and polarity of the FM input. In META mode it scales engine selection instead.
TIMBRE	The engine's tone control: snappy, attack, drive, crunch, sweep and so on. In the kits it selects the instrument.
TIMBRE attenuverter	Amount and polarity of the TIM MOD CV input.
COLOR	**Decay**, in every engine. In the hat engines it goes from closed to open.

Inputs and output

Jack	Function
GATE	Fires the drum. Also fires the internal envelope (in ADSR mode it is a gate) and clocks the MORE-page rhythm features.
1V/OCT	1 V/octave tuning, sampled at each trigger.
FM	Pitch modulation, scaled by the FM attenuverter. FMDS on the MORE page sends it elsewhere; in META mode it selects the engine.
TIM MOD	CV for TIMBRE, scaled by its attenuverter and added to the knob.
COLOR	CV for the decay, added to the knob (0 V to +5 V spans the full range).
WAVE	Audio output.

In this manual the GATE input is also called TRIG, as on the display.

The display

The four-character LED display shows the current engine name (or the note or a level meter, see DISP on the MORE page). In this manual engine names appear like this:

808K CRNC KIT6 TDOC

CHAPTER 3

How tecDoc works

Triggers

Every engine is a drum: it sounds when a trigger arrives at TRIG (or from the internal clock, ICLK) and fades to silence. A new trigger restarts the sound. Gates work too: only the rising edge starts a hit.

Decay

COLOR is the decay in every engine. The ranges given in this manual are the time for the sound to fall by 40 dB, from COLOR fully counter-clockwise to fully clockwise. In the hat engines COLOR takes you from closed to open; on RVRS it sets the length of the swell.

Tuning

All engines follow V/OCT, the PITCH and FINE knobs and the FM input. Like on a drum machine, **the pitch is sampled at each trigger**: if the pitch CV changes while a hit is ringing, the new pitch applies from the next hit. This keeps tuned toms, booms and plucks clean when a sequencer moves on.
Each engine is offset so that one pitch CV puts it in a useful range: kicks sit 10 to 19 semitones below the played note (C3 at V/OCT gives a 40–70 Hz kick), snares a few semitones above, and bells, hats and cymbals one to three octaves above. The offset of each engine is given in its description.

Retriggering

When a new trigger arrives while the previous hit is still sounding, the old sound is faded out in about 0.3 ms instead of being cut. Fast rolls and ratchets stay click-free.

Sound and level

tecDoc renders at 96 kHz. Kicks and toms hit close to full scale; hats, claps and snares are mixed slightly lower, as on a drum machine. Engines that can overload use a soft clipper. CRNC, LOFS and GLCH crush their own sound on purpose; BITS and RATE in the menu add digital crunch to any engine.

CHAPTER 4

Kicks

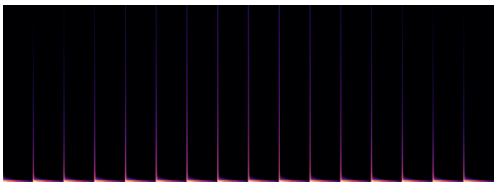
Ten kicks, from the classic machines to modern distorted and trap kicks.

Each engine has a *sound portrait*: a picture of four bars of tecDoc playing a 128 BPM pattern while TIMBRE sweeps slowly. Time runs left to right and frequency (0–16 kHz) bottom to top.

808K

808 Kick

Engine 1 · Resonator kick



The classic deep analog boom: a ringing resonator excited by the trigger, with a small downward pitch bend and a filtered click on top. Short settings give a tight, round thump; long settings give the famous sub-bass boom.

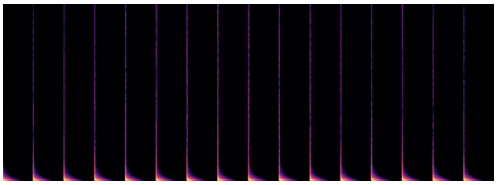
TIMBRE	Tone: click brightness and level, and the depth of the attack bend (2–8 semitones)
COLOR	Decay, 50 ms to 4.4 s
PITCH	17 semitones below the played note (C3 at V/OCT gives G1, 49 Hz)

TIP For house and techno, COLOR at 10 o'clock. For hip-hop or trap booms, turn COLOR past 2 o'clock and sequence V/OCT with your bassline.

909K

909 Kick

Engine 2 · Swept kick with attack click



The punchy kick of house and techno: a slightly squashed sine with a fast two-stage pitch sweep, plus a noise and pulse attack that cuts through a mix.

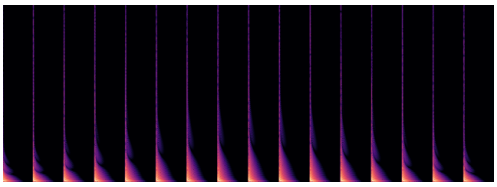
TIMBRE	Attack: click level, from round (0) to sharp (100%)
COLOR	Decay, 60 ms to 1.5 s
PITCH	15 semitones below the played note (C3 gives A1, 55 Hz)

TIP TIMBRE at 2 o'clock and COLOR at 11 o'clock is a classic four-on-the-floor kick. Tune it to the key of your track with COARSE.

HARD

Hard Kick

Engine 3 · Saturated industrial kick



A long, deep pitch sweep pushed into heavy saturation, then low-passed so the distortion stays fat rather than fizzy. For hard techno, industrial, gabber and hardstyle.

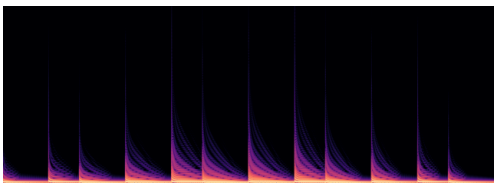
TIMBRE	Drive, 1× to 16×
COLOR	Decay, 60 ms to 2 s
PITCH	−15 semitones

TIP Full TIMBRE with a short COLOR gives a pounding industrial kick. Add BITS reduction for extra grit.

BOOM

Boom

Engine 4 · Long melodic sub kick



A long sub kick that glides down an octave into its note, with adjustable saturation so it stays audible on small speakers. Play basslines with it.

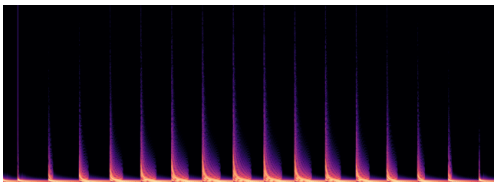
TIMBRE	Saturation
COLOR	Decay, 250 ms to 7.5 s
PITCH	One octave below the played note

TIP Sequence V/OCT with a bassline and set COLOR to 1 o'clock. Use ARP UP with ACRD OCT for instant octave bass patterns.

RMBL

Rumble

Engine 5 · Kick into a wavefolder



A kick with a fixed 2-octave sweep, driven into a wavefolder and low-passed at 6× the fundamental. As each hit decays the folding fades away, so the sound goes from growl to clean sub: the rolling rumble of modern techno.

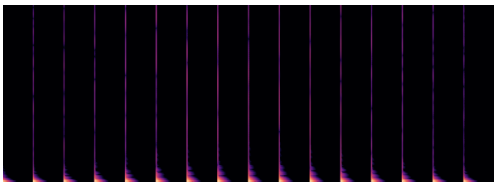
TIMBRE	Fold drive
COLOR	Decay, 130 ms to 4 s
PITCH	−15 semitones

TIP Trigger on the off-beats, with a reverb after the module, under a kick from another source.

606K

606 Kick

Engine 29 · Short, punchy kick · new



The tight, dry kick of the small 1980s rhythm boxes: a sine with a quick 9-semitone drop and a short click. It has less boom than the 808K and more knock, so it sits well in busy electro, acid and minimal patterns.

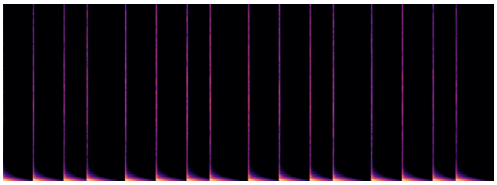
TIMBRE	Punch: more click and more drive into a soft clipper
COLOR	Decay, 40 ms to 0.9 s
PITCH	14 semitones below the played note

TIP TIMBRE at 1 o'clock, COLOR at 9 o'clock and a 16th-note pattern with PROB at 80 % gives a lively electro kick.

707K

707 Kick

Engine 30 · Tight body with a beater click · new



A firm, compact kick with a bright beater click on top, in the style of the sample-based drum machines of the mid 1980s. The body sweeps 14 semitones in a few milliseconds; the click is band-passed noise plus a short high tone.

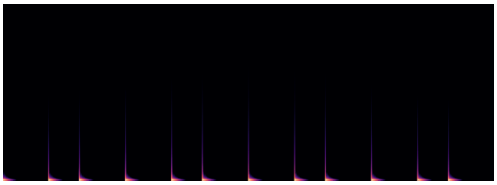
TIMBRE	Attack: beater level
COLOR	Decay, 80 ms to 1.5 s
PITCH	16 semitones below the played note

TIP Turn TIMBRE up for Chicago house and Italo; turn it down for a softer, rounder thump.

78K

Rhythm-box Kick

Engine 31 · Soft vintage ping · new



The soft, round kick of late-1970s preset rhythm machines: a short ping with almost no pitch sweep. TIMBRE adds a decaying second harmonic for a woodier knock.

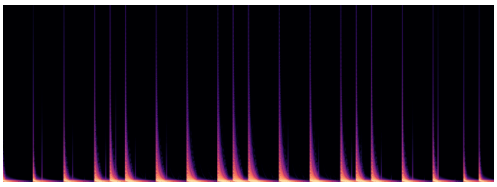
TIMBRE	Tone: amount of second harmonic
COLOR	Decay, 40 ms to 0.4 s
PITCH	10 semitones below the played note

TIP Short COLOR, TIMBRE at 10 o'clock and SWNG 58 % for a gentle, vintage bossa or pop groove.

DIST

Distorted Kick

Engine 32 · Overdriven kick · new



A big 909-style sweep pushed into a clipper with an asymmetric bias, so the distortion adds even harmonics as well as odd ones, then softened by a tone filter that darkens as the drive goes up.

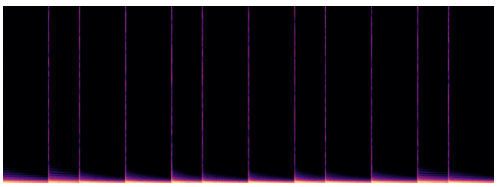
TIMBRE	Drive, 2× to 17×
COLOR	Decay, 80 ms to 1.5 s
PITCH	15 semitones below the played note

TIP TIMBRE at 3 o'clock with a short COLOR is a hard-techno kick. Add DRIV on the MORE page for even more.

TRPK

Trap Kick

Engine 33 · Long gliding sub · new



A deep, long sub that glides down as it rings, with a short punch at the start and gentle saturation so it carries on small speakers. Turn TIMBRE up for the long downward glide heard in trap and drill.

TIMBRE	Glide, 0 to 12 semitones down over the length of the note
COLOR	Decay, 0.3 s to 4 s
PITCH	19 semitones below the played note

TIP Sequence V/OCT with a bassline, COLOR at 2 o'clock, TIMBRE at 11 o'clock. GLID 3 for slides between notes.

CHAPTER 5

Snares and claps

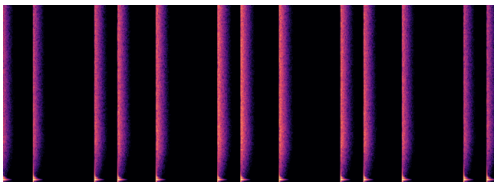
Snares, claps, rimshot and claves, including the crunchy CRNC clap and the LOFS lo-fi snare.

Each engine has a *sound portrait*: a picture of four bars of tecDoc playing a 128 BPM pattern while TIMBRE sweeps slowly. Time runs left to right and frequency (0–16 kHz) bottom to top.

808S

808 Snare

Engine 6 · Two resonators and noise



Two ringing resonators tuned 1 : 1.84 apart give the body; high-passed noise gives the snares. Clean, round and unmistakably electronic.

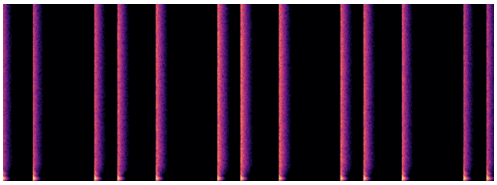
TIMBRE	Snappy: noise level (also thins the body slightly)
COLOR	Decay, 45 ms to 0.8 s
PITCH	7 semitones above the played note

TIP TIMBRE at 2 o'clock, COLOR at 10 o'clock. Raise V/OCT a little for a tighter, higher snare.

909S

909 Snare

Engine 7 · Swept body and bright crack



Two squashed sines with a pitch sweep for the body, and bright, band-limited noise with a separate short “crack” stage on the attack. The sharp snare of house and techno.

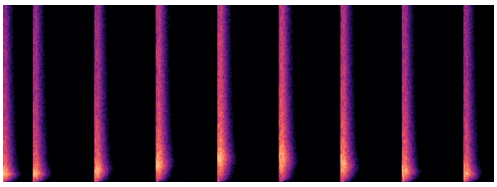
TIMBRE	Snappy: noise level
COLOR	Decay, 35 ms to 0.7 s
PITCH	5 semitones above the played note

TIP Full TIMBRE with a short COLOR is a tight rimshot-like crack. Set RTCH to 4 for snare rolls at the end of a phrase.

808C

808 Clap

Engine 8 · Burst clap with reverb tail



Band-passed noise shaped into four sawtooth bursts about 11 ms apart, followed by a reverb-like tail: the classic drum-machine clap.

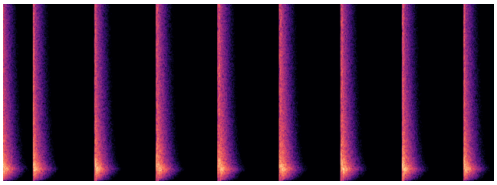
TIMBRE	Tone: band-pass filter frequency
COLOR	Tail, 80 ms to 0.9 s
PITCH	The filter follows the note (about 1 kHz at C3)

TIP Claps on 2 and 4 with COLOR at noon. A small random CV on V/OCT makes each clap slightly different.

909C

909 Clap

Engine 9 · Tight clap with room tail



Three tight, bright bursts with a little random spread on every hit (like several people clapping), then a separately filtered room tail.

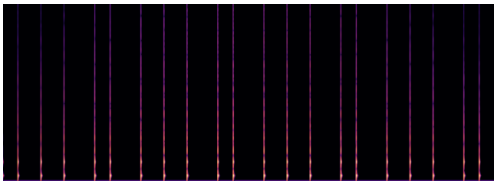
TIMBRE	Spread: burst spacing 4–14 ms
COLOR	Tail, 80 ms to 1.3 s
PITCH	The filter follows the note

TIP Low TIMBRE for a single, snappy clap; high TIMBRE for a loose, crowd-like clap.

RIM

Rimshot

Engine 10 · Overdriven resonators



Two very short resonators (1 : 3.66), overdriven and high-passed: the woody “tock” of a drum-machine rimshot.

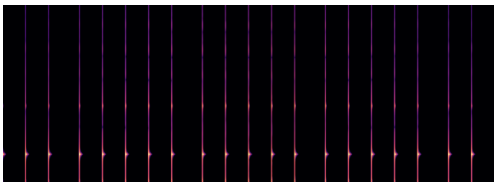
TIMBRE	Tone: drive
COLOR	Decay, 5 to 60 ms
PITCH	22 semitones above the played note (C3 gives about 455 Hz)

TIP Great with RTCH 3 for syncopated rim figures.

CLAV

Claves

Engine 11 · High wooden click



A short, high resonator with a hard attack. TIMBRE adds an inharmonic overtone and a sharper click.

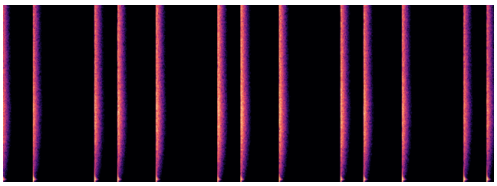
TIMBRE	Hardness
COLOR	Decay, 8 to 150 ms
PITCH	51 semitones above the played note (C3 gives about 2.5 kHz)

TIP Sequence V/OCT for melodic, marimba-like clicks.

606S

606 Snare

Engine 34 · Bright noise snare · new



A crisp, bright snare in the style of the small analog boxes: two short, un-swept tones and a lot of high-passed noise. It is lighter and hissier than the 808S, and cuts through without much low end.

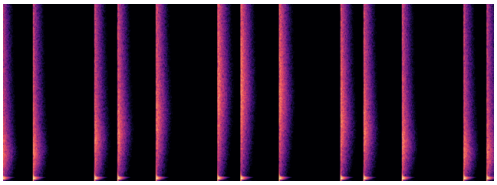
TIMBRE	Snappy: from tone to noise
COLOR	Decay of the noise, 40 ms to 0.38 s (the tones are shorter)
PITCH	9 semitones above the played note

TIP TIMBRE at 2 o'clock and COLOR at 10 o'clock. Pair it with 606K and 606H, or use KIT6.

707S

707 Snare

Engine 35 · Punchy snare with ring · new



A punchy snare with a short pitch sweep, a ringing overtone and a two-stage noise snap: the hard, slightly metallic snare of 1980s pop, house and freestyle.

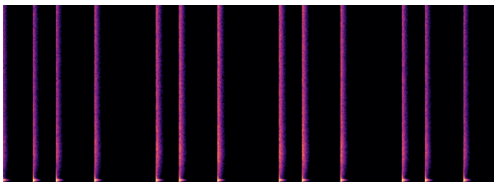
TIMBRE	Tone: darker to brighter noise (±12 semitones)
COLOR	Decay, 60 ms to 0.9 s
PITCH	6 semitones above the played note

TIP COLOR at noon with ECHO 6 for a big gated-style snare. Use RTCH 4 for fills.

78S

Rhythm-box Snare

Engine 36 · Vintage ping and noise · new



The soft, short snare of late-1970s preset rhythm machines: a pitched ping and a little filtered noise. Gentle and lo-fi; perfect for vintage pop, soul and chill patterns.

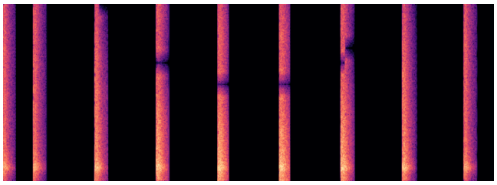
TIMBRE	Noise amount
COLOR	Decay, 30 ms to 0.25 s
PITCH	3 semitones above the played note

TIP Low TIMBRE and short COLOR on beats 2 and 4, with SWNG 60 %.

CRNC

Crunch Clap

Engine 37 · Bit-crushed, distorted clap · new



A hand clap built to be dirty: four fast noise bursts and a tail, driven hard into a clipper, then crushed to a few bits and played back at a low sample rate. Even at TIMBRE zero it is crunchy; at full TIMBRE it is a 3-bit, 8 kHz smash with heavy aliasing.

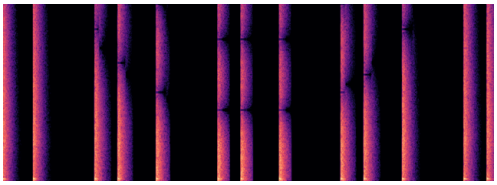
TIMBRE	Crunch: drive 3× to 10×, resolution 6 to 3 bits, sample rate 32 to 8 kHz
COLOR	Tail, 60 ms to 0.9 s
PITCH	Filter follows the note (38 semitones above)

TIP TIMBRE at 2 o'clock, COLOR at noon, ECHO 5 with TIME on CLK. (dotted). Patch random CV into TIMBRE so every clap crunches differently.

LOFS

Lo-fi Snare

Engine 38 · Sampler-style snare · new



A fat, swept snare played through a crusher modelled on 12-bit samplers: low sample rate with no filtering before it, so the noise folds back into a gritty, aliased crunch, then a gentle low-pass after it.

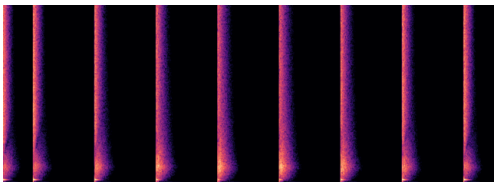
TIMBRE	Crush: 26 kHz and 12 bits down to 6 kHz and 6 bits
COLOR	Decay, 40 ms to 0.9 s
PITCH	4 semitones above the played note

TIP TIMBRE at 11 o'clock for boom-bap snares; turn it up for a broken, crushed sound.

SNCL

Snare + Clap

Engine 39 · Layered snare and clap · new



A snare and a clap played together, as in so many house and pop records. TIMBRE balances the two: from mostly snare (body and noise) to mostly clap (three bursts and a tail).

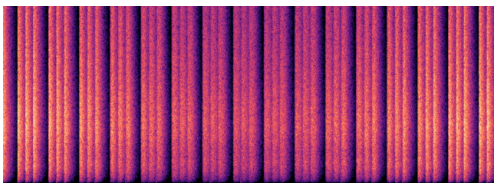
TIMBRE	Balance: snare → clap
COLOR	Decay, 60 ms to 0.9 s
PITCH	Snare 6 semitones above the played note; clap filter follows the note

TIP TIMBRE at noon for an even layer. ECHO 4 with a short TIME gives a roomy backbeat.

BRSH

Brush

Engine 40 · Brush swish · new



Soft band-passed noise with an adjustable attack, for brushes on a snare. Short attack gives a tap; long attack gives a sweeping swish.

TIMBRE	Attack, 1 ms (tap) to 100 ms (swish)
COLOR	Decay, 60 ms to 0.9 s
PITCH	The filters follow the note

TIP Patch an alternating CV into TIMBRE: short taps on the beats and long swishes in between, with SWNG 62 %.

CHAPTER 6

Hats and cymbals

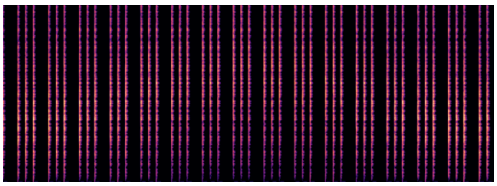
Hats go from closed to open with COLOR. Cymbals ring for up to several seconds.

Each engine has a *sound portrait*: a picture of four bars of tecDoc playing a 128 BPM pattern while TIMBRE sweeps slowly. Time runs left to right and frequency (0–16 kHz) bottom to top.

808H

808 Hat

Engine 12 · Six squares, filtered



Six square-wave oscillators at the classic inharmonic ratios, through a high band-pass and a high-pass filter. COLOR goes from a closed tick to an open hat.

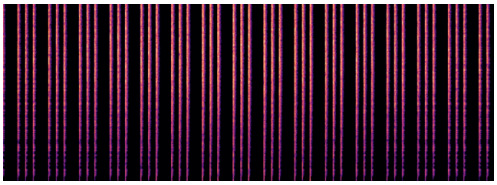
TIMBRE	Tone: filter frequency, ±10 semitones
COLOR	Closed (12 ms) → open (1.2 s)
PITCH	8 semitones above the played note (the six oscillators follow V/OCT)

TIP Patch an accent or stepped CV into COLOR to switch between closed and open hats on a single trigger line.

909H

909 Hat

Engine 13 · Bright metal and noise



A dense metallic cluster mixed with noise, high-passed for the sizzling, bright hats of house and techno. A short extra attack stage adds bite.

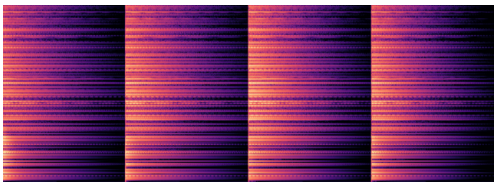
TIMBRE	Mix: metal → noise
COLOR	Closed (17 ms) → open (1.5 s)
PITCH	22 semitones above the played note

TIP 16th-note triggers with a slow LFO on COLOR give the classic open-hat swell.

CYMB

Cymbal

Engine 14 · Two-band metal crash



The six squares split into a low band with a short decay and a high band with a long one, like the classic analog cymbal.

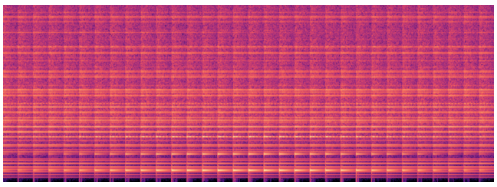
TIMBRE	Tone: balance between the low and high bands
COLOR	Decay, 0.2 to 4 s
PITCH	8 semitones above the played note

TIP Fire it on the first beat of a phrase. Lower V/OCT gives a darker, larger cymbal.

RIDE

Ride

Engine 15 · Metal wash and bell ping



A metallic wash combined with a bell “ping” made of three inharmonic sines.

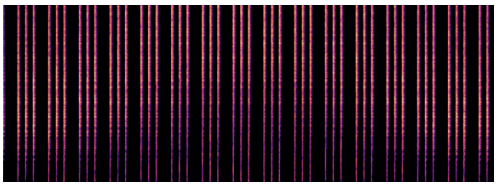
TIMBRE	Ping: bell amount
COLOR	Decay, 0.3 to 4 s
PITCH	Wash 20 semitones above the played note, bell 36 above

TIP Quarter-note triggers with TIMBRE at 2 o'clock for a jazz-house ride.

606H

606 Hat

Engine 41 · Crisp metallic hat · new



Six square oscillators at a 606-style tuning, plus a little noise, through two band-pass filters: a bright, crisp, slightly sizzly hat. COLOR goes from closed to open.

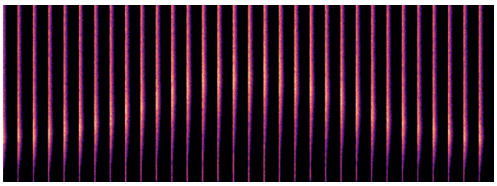
TIMBRE	Tone, ±8 semitones
COLOR	Closed (10 ms) to open (1 s)
PITCH	14 semitones above the played note

TIP 16th notes with COLOR at 8 o'clock and RNDC 4: every hat a little different, like a real drum machine's accents.

78H

Rhythm-box Hat

Engine 42 · Soft noise hat · new



Resonant high-passed noise: the soft, airy “tss” of a vintage preset rhythm box. TIMBRE moves the resonance.

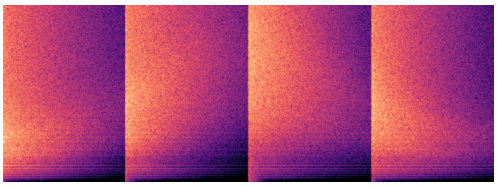
TIMBRE	Tone, ±9 semitones
COLOR	Closed (20 ms) to open (0.9 s)
PITCH	The filters follow the note

TIP Eighth notes with SWNG 56 % for a vintage pop groove; pair with 78K and 78S, or use KITC.

CRSH

Crash

Engine 43 · Crash cymbal · new



A bright splash of noise and metallic squares with a long, shimmering tail. The attack has an extra burst so the crash cuts through before it settles.

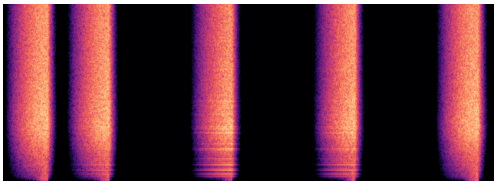
TIMBRE	Dark → bright
COLOR	Decay, 0.4 s to 5 s
PITCH	18 semitones above the played note (the filters follow the note)

TIP Trigger it on the first beat of every 8 bars, COLOR at 2 o'clock.

RVRS

Reverse Cymbal

Engine 44 · Swell and cut · new



A reverse cymbal: the sound swells up from silence and then cuts off, like a cymbal played backwards. The swell length is set by COLOR at the moment of the trigger.

TIMBRE	Noise → metal
COLOR	Swell length, 0.1 s to 2 s
PITCH	18 semitones above the played note

TIP At 120 BPM, COLOR at about 1 o'clock gives a one-beat swell: trigger it a beat before the drop.

CHAPTER 7

Toms and hand percussion

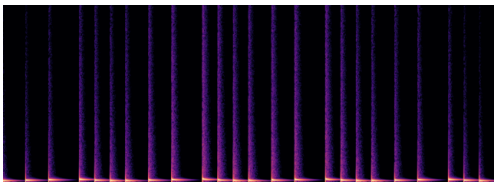
Toms, congas, bongos, bells and shakers. Sequence V/OCT for melodic percussion.

Each engine has a *sound portrait*: a picture of four bars of tecDoc playing a 128 BPM pattern while TIMBRE sweeps slowly. Time runs left to right and frequency (0–16 kHz) bottom to top.

808T

808 Tom

Engine 16 · Resonator tom / conga



A ringing resonator with a downward pitch bend and a breath of filtered noise. Low TIMBRE gives clean, conga-like tones; high TIMBRE gives full, bending toms.

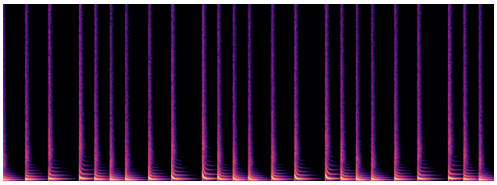
TIMBRE	Bend (1–7 semitones) and noise
COLOR	Decay, 60 ms to 1.3 s
PITCH	Played note

TIP Use ARP DOWN for tom fills, or sequence V/OCT for melodic congas.

909T

909 Tom

Engine 17 · Swept tom with noise attack



A squashed sine with a strong pitch sweep and a noise attack: punchy, electronic toms.

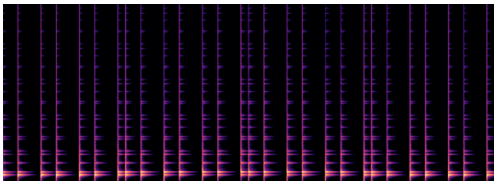
TIMBRE	Sweep depth, 4 to 24 semitones
COLOR	Decay, 60 ms to 1.5 s
PITCH	Played note

TIP High TIMBRE and short COLOR give laser-like toms.

COWB

Cowbell

Engine 18 · Two squares, band-passed



Two square waves (1 : 1.48) through a band-pass filter, with a two-stage decay: the clank of the classic machine cowbell.

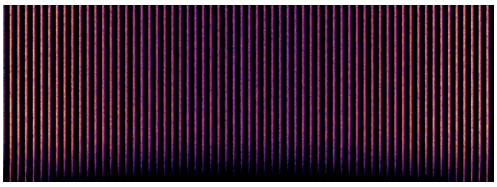
TIMBRE	Tone: filter frequency
COLOR	Decay, 70 ms to 0.8 s
PITCH	24.5 semitones above the played note (C3 gives 540 Hz)

TIP Play it on the off-beats with ARP UP and ACRD OCT for an instant Latin-house groove.

MARA

Maracas

Engine 19 · Shaker noise with swell



High-passed noise with an adjustable fade-in. Short settings are maracas; longer attack settings become shakers.

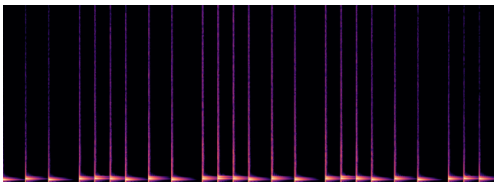
TIMBRE	Attack, 0 to 40 ms
COLOR	Decay, 12 to 320 ms
PITCH	The filter follows the note

TIP 16th notes, with a little attack on the off-beat 16ths, give a natural shuffle.

CONG

Conga

Engine 45 · Hand drum · new



A drum membrane with its second mode, a little pitch drop on the attack and a slap of band-passed noise. TIMBRE goes from an open, round tone to a sharp slap.

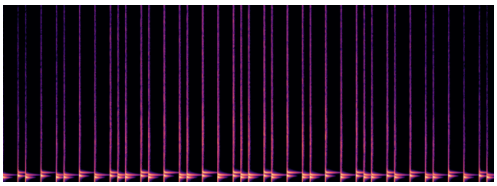
TIMBRE	Open → slap
COLOR	Decay, 60 ms to 0.9 s
PITCH	7 semitones above the played note

TIP Sequence two or three notes on V/OCT and move TIMBRE between open tones and slaps.

BONG

Bongo

Engine 46 · Small hand drum · new



The same model as CONG, an octave up and shorter: a bright, cracking bongo.

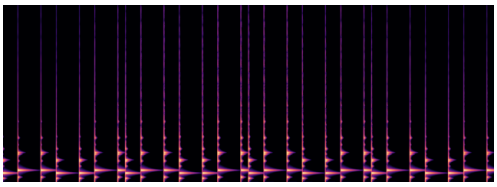
TIMBRE	Open → slap
COLOR	Decay, 40 ms to 0.4 s
PITCH	19 semitones above the played note

TIP Fast 16ths with PROB 70 % and RNDT 6 for a free, improvised bongo part.

AGOG

Agogo

Engine 47 · Bell · new



Two inharmonic partials with a touch of FM on the attack: the bright, slightly clangy agogo bell of samba and Latin house.

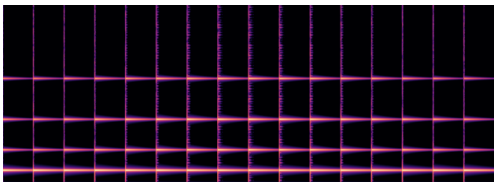
TIMBRE	Brightness (upper partial and FM)
COLOR	Decay, 60 ms to 1.5 s
PITCH	31 semitones above the played note

TIP Alternate two notes a fifth apart for the classic high/low agogo pattern.

TRIA

Triangle

Engine 48 · Ringing triangle · new



Four high, inharmonic partials and a tiny strike noise, with a long ring. Short decays give a muted triangle; long decays give the open ring.

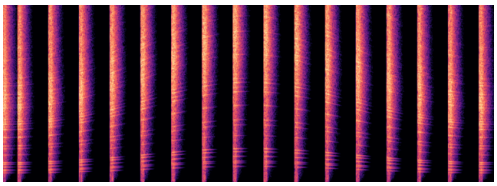
TIMBRE	Brightness (upper partials)
COLOR	Decay, 0.1 s to 4 s
PITCH	36 semitones above the played note

TIP Alternate short and long COLOR (patch a square LFO into COLOR) for open/muted triangle patterns.

TAMB

Tambourine

Engine 49 · Jingle shake · new



A quick shake of three bursts of high metallic jingles. Each hit is spaced a little differently, so the tambourine never sounds mechanical.

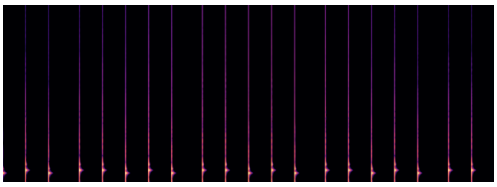
TIMBRE	Jingle tone (one octave)
COLOR	Decay, 60 ms to 0.9 s
PITCH	30–42 semitones above the played note

TIP Off-beat 8ths with SWNG 58 %: instant soul and disco.

WOOD

Woodblock

Engine 50 · Hollow wooden ping · new



A short, hollow two-mode ping with a click: a woodblock or temple block. Retune it with V/OCT for melodic patterns.

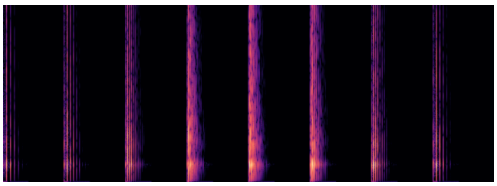
TIMBRE	Hardness (click and upper mode)
COLOR	Decay, 12 ms to 0.2 s
PITCH	31 semitones above the played note

TIP Sequence a few notes of a pentatonic scale (QNTZ) for a temple-block melody.

GUIR

Guiro

Engine 51 · Scraped gourd · new



A train of small clicks through two band-pass filters, like a stick scraped along a ridged gourd. TIMBRE sets how fast the stick moves; COLOR sets how long each scrape lasts.

TIMBRE	Scrape rate (two octaves)
COLOR	Scrape length, 60 ms to 0.9 s
PITCH	The scrape rate and the filters follow the note

TIP Alternate long and short scrapes (COLOR) on the off-beats for a cha-cha feel.

CHAPTER 8

Electronic

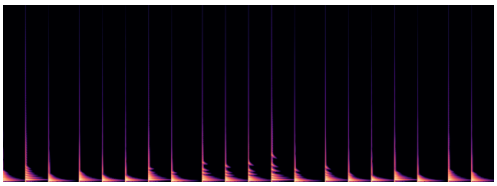
Synth drums, FM, plucks, blips, noise and glitches.

Each engine has a *sound portrait*: a picture of four bars of tecDoc playing a 128 BPM pattern while TIMBRE sweeps slowly. Time runs left to right and frequency (0–16 kHz) bottom to top.

SKIN

Skin

Engine 20 · Additive drum



Six sine partials, the higher ones fading faster. TIMBRE morphs their ratios from a harmonic series, through the ratios of a real drum membrane, to a prime-number series.

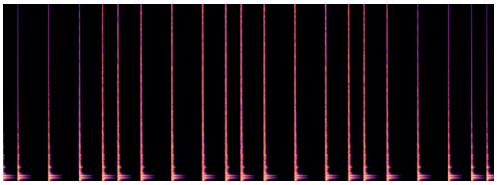
TIMBRE	Partial ratios: harmonic → membrane → prime
COLOR	Decay, 60 ms to 2 s
PITCH	Played note

TIP Membrane settings (12 o'clock) give tuned hand drums; prime settings give metal plates.

CLNG

Clang

Engine 21 · FM metal



Two cross-modulated 3-operator FM chains with inharmonic ratios: bells, gongs and clanking metal.

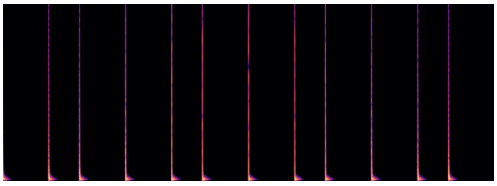
TIMBRE	Modulation index
COLOR	Decay, 40 ms to 2 s
PITCH	One octave above the played note

TIP Random CV into V/OCT and TIMBRE for industrial scrap-metal percussion.

ZAP

Zap

Engine 22 · Extreme pitch sweep



A sine diving from several octaves above the note in a few milliseconds: lasers, blips and synth toms.

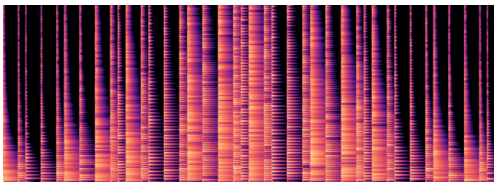
TIMBRE	Sweep depth, 2 to 8 octaves (deeper is also faster)
COLOR	Decay, 30 ms to 1.3 s
PITCH	The sweep ends on the played note

TIP Short COLOR and low TIMBRE make a punchy electro tom.

PLUK

Pluck

Engine 23 · Karplus-Strong string



A burst of noise sent into a tuned delay line: a plucked-string model from woody plucks to long, ringing tones.

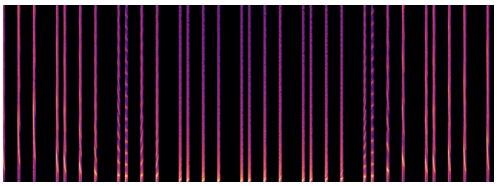
TIMBRE	Brightness
COLOR	Decay, 0.2 s to 8 s
PITCH	Played note

TIP Use ARP UP or RAND with ICLK for plucked arpeggios.

BLIP

Blip

Engine 24 · 8-bit square



A video-game square wave with a pitch sweep and 4-bit output. Below 12 o'clock it sweeps down into the note, above 12 o'clock it sweeps up.

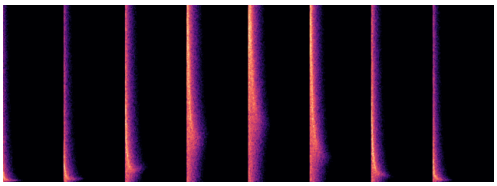
TIMBRE	Sweep: down 3 octaves ← none (noon) → up 3 octaves
COLOR	Decay, 10 ms to 0.7 s
PITCH	One octave above the played note

TIP Combine with ARP UP or UPDN for chiptune arpeggios.

NOIS

Noise

Engine 25 · Filtered noise FX



White noise through a resonant low-pass filter that falls on each hit: noise snares, sweeps, risers and impacts.

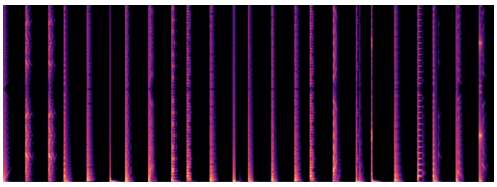
TIMBRE	Filter cutoff
COLOR	Decay, 20 ms to 1.8 s
PITCH	The filter follows the note

TIP Long COLOR and RTCH 4 give a build-up noise roll.

BYTE

Byte

Engine 26 · Bytebeat glitch



Each hit plays the output of one of eight integer “bytebeat” formulas, from buzzy tones to rhythmic glitches.

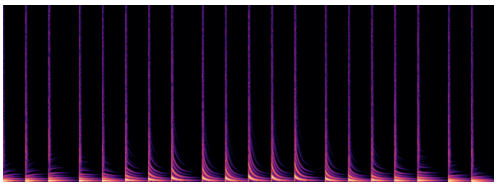
TIMBRE	Formula (8 zones) and start point within it
COLOR	Decay, 70 ms to 2 s
PITCH	The formula clock follows the note

TIP Random CV into TIMBRE gives a different glitch on every hit.

SYND

Syndrum

Engine 52 · Swept synth drum · new



The disco “pew”: a rounded tone with a long, slow pitch sweep and a burst of noise. At the left of TIMBRE the pitch rises a little; at about 9 o'clock it is steady; turning right it falls by up to 30 semitones.

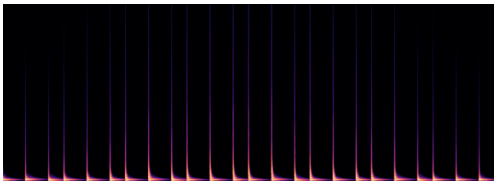
TIMBRE	Sweep: up 6 ← none (9 o'clock) → down 30 semitones
COLOR	Decay, 80 ms to 1.5 s
PITCH	5 semitones below the played note

TIP TIMBRE at 3 o'clock and COLOR at 1 o'clock on the off-beats: instant disco. ECHO 6 for more space.

FMDR

FM Drum

Engine 53 · Two-operator FM percussion · new



A two-operator FM drum with an inharmonic ratio and an index that decays faster than the sound. Each hit starts metallic and settles into a clean, round tone.

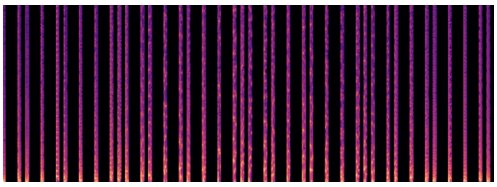
TIMBRE	FM index (clean → metallic)
COLOR	Decay, 60 ms to 1.5 s
PITCH	5 semitones below the played note

TIP Sequence V/OCT for tuned FM toms and percussion; low TIMBRE for a soft electronic tom.

GLCH

Glitch

Engine 54 · Random stepped tones · new



Every hit is a new random pattern of stepped tones (square, pulse, saw or held noise) that jump in pitch every 2 to 18 ms, crushed to 4 bits. Use it for fills, beeps, computer noise and IDM ornaments.

TIMBRE	Register: up to 3 octaves higher
COLOR	Decay, 30 ms to 0.9 s
PITCH	Follows the note, plus random jumps of −12 to +19 semitones

TIP ICLK 140, RTCH 2 and PROB 60 %: no two bars are alike.

CHAPTER 9

Kits

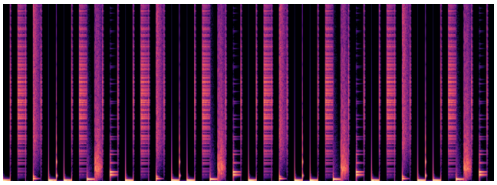
Each kit is eight instruments on one jack: TIMBRE chooses the instrument at each trigger, in eight equal zones (0.625 V each). A new trigger chokes the previous instrument, like a drum machine's hat choke. COLOR is the decay; the closed hat uses the short quarter of the range and the open hat the long half.

Each engine has a *sound portrait*: a picture of four bars of tecDoc playing a 128 BPM pattern while TIMBRE sweeps slowly. Time runs left to right and frequency (0–16 kHz) bottom to top.

KIT8

808 Kit

Engine 27 · Eight instruments on one jack



TIMBRE chooses the instrument at each trigger, in eight equal zones: **BD · SD · CP · CH · OH · TOM · CB · RIM**. A new trigger chokes the previous instrument, like a drum machine's hat choke.

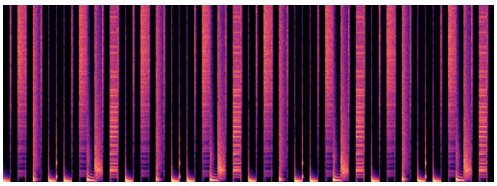
TIMBRE	Instrument, latched at the trigger (each zone is 0.625 V)
COLOR	Decay of the chosen instrument (CH uses the short quarter, OH the long half)
PITCH	Played note, with each instrument's own offset

TIP Patch a sequencer's CV into TIMBRE and its gate into TRIG to play a full drum part from one module.

KIT9

909 Kit

Engine 28 · Eight instruments on one jack



The same idea with the 909-style models: **BD · SD · CP · CH · OH · TOM · RIDE · RIM**.

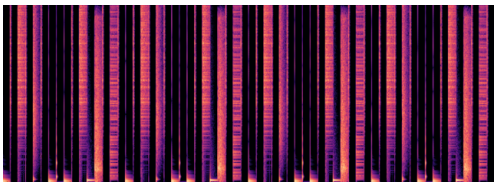
TIMBRE	Instrument, latched at the trigger
COLOR	Decay of the chosen instrument
PITCH	Played note, with each instrument's own offset

TIP Kick on zone 1, hats on zones 4 and 5: a sequencer with 8 CV levels plays a whole house groove.

KIT6

606-style Kit

Engine 55 · Eight instruments on one jack · new



Eight instruments chosen by TIMBRE at each trigger, built from the tecDoc engines: **606K · 606S · CRNC · CH · OH · TOM · CYMB · RIM**. The hats are the 606H; the clap is the crunchy CRNC.

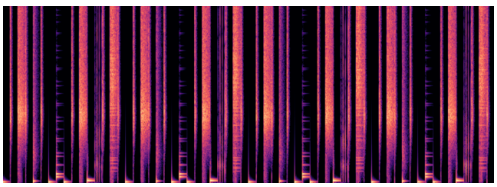
TIMBRE	Instrument, latched at the trigger (each zone is 0.625 V)
COLOR	Decay of the chosen instrument (CH uses the short quarter, OH the long half)
PITCH	Played note, with each instrument's own offset

TIP A sequencer with 8 CV levels into TIMBRE and its gate into TRIG plays a whole electro pattern from one module.

KITC

Rhythm-box Kit

Engine 56 · Eight instruments on one jack · new



The vintage preset rhythm machine in one engine: **78K · 78S · GUIR · CH · OH · CONG · TAMB · COWB**. The hats are the 78H.

TIMBRE	Instrument, latched at the trigger
COLOR	Decay of the chosen instrument
PITCH	Played note, with each instrument's own offset

TIP Add SWNG 58 % and a slow tempo for bossa, beguine and soft pop patterns.

CHAPTER 10

Settings menu

Click the encoder to enter the menu, turn to choose an item, and click to edit it. Turn to change the value and click again to go back to the list. Settings are saved automatically and kept when the power is off.

On the display, the envelope items start with a small envelope symbol (shown here as “env”).

Item	Values	Function
WAVE	56 engines	Engine selection (also directly on the encoder).
META	OFF / ON	When ON, the FM input selects the engine instead of modulating pitch. Rising CV steps upward through the list from the engine selected with WAVE.
BITS	2BIT … 16B	Bit depth of the output (2, 3, 4, 6, 8, 12, 16 bits). Lower values add digital crunch.
RATE	4KHZ … 96K	Output sample rate (4, 8, 16, 24, 32, 48, 96 kHz). Lower values add aliasing and a lo-fi character.
TSRC	EXT. / AUTO	Trigger source. EXT.: the TRIG jack. AUTO: also triggers automatically when the V/OCT pitch changes by more than about half a semitone.
TDLY	NONE … 4ms	Delays incoming triggers by 125 µs to 4 ms, so a V/OCT voltage arriving just after the gate is captured correctly.
ENV	AD / ADSR	Envelope type. AD: fires on each trigger. ADSR: follows the gate at TRIG.
env ATT	0 … 15	Attack time of the internal envelope.
env DEC	0 … 15	Decay time of the internal envelope.
env SUS	0 … 15	Sustain level (ADSR only).
env REL	0 … 15	Release time after the gate falls (ADSR only).
env FM	0 … 15	Envelope amount to pitch.
env TIM	0 … 15	Envelope amount to TIMBRE.
env COL	0 … 15	Envelope amount to COLOR.
env VCA	OFF / ON	When ON, the envelope also shapes the output level (useful with ADSR, to choke a drum when the gate falls).
RANG	EXT. / FREE / XTND / 440	Range of the COARSE knob. EXT.: ±4 octaves around the V/OCT note. FREE: ±4 octaves around C3. XTND: wider range, without accurate V/OCT scaling. 440: locked to A = 440 Hz, for tuning.
OCTV	−2 … +2	Octave transposition.
QNTZ	OFF, SEMI, scales	Quantizes V/OCT to semitones or to one of 53 scales: church modes, blues, pentatonic, folk, Japanese, gamelan, gypsy, Arabic, flamenco, whole tone, quarter-tone scales, Indian ragas and 6 chord-tone scales (MAJ, MIN, MAJ7, MIN7, DOM7, SUS4) that only play the notes of the chord.
ROOT	C … B	Root note of the quantizer scale.

Item	Values	Function
FLAT	OFF / ON	Detunes low and high notes slightly, like the tracking imperfections of an analog VCO.
DRFT	OFF, 1, 2, 3, FULL	Random pitch drift, like an unstable analog oscillator.
SIGN	OFF, 1, 2, 3, FULL	Adds subtle waveform imperfections that are unique to your module.
CHOR	OFF, LITE, DEEP, ENS	Chorus: light, deep, or a three-voice ensemble.
RING	OFF, 30 … 1200 Hz	Ring modulator after the engine, for robotic and metallic tones.
ECHO	0 … 15	Echo level (0 = off). A BBD-style echo with darkening repeats. Not available on PLUK (see chapter 11).
TIME	125 … 1200 ms, CLK	Echo time, or locked to the clock at TRIG (or ICLK): CLK, CLK. (dotted), CLKT (triplet), CL/2, CLx2.
FDBK	0 … 15	Echo repeats.
MORE	—	Opens the MORE page (chapter 11).
BRIG	3 levels	Display brightness.
CAL.	—	Pitch calibration (see below).
CV tester	—	Bar graphs of the TIMBRE, COLOR, V/OCT and FM inputs, for checking CV ranges.
TDOC	—	Version. Click to show the start-up animation; **holding for 1 s restores all factory settings, including calibration**. (To reset only the sound, use INIT on the MORE page.)

The internal envelope

With ENV on AD, the attack–decay envelope fires on every trigger. With ENV on **ADSR**, it follows the gate at TRIG: attack, decay to the sustain level while the gate is high, and release when it goes low. Either way the envelope amounts can modulate pitch (env FM), TIMBRE (env TIM), COLOR (env COL) and the output level (env VCA). With ENV on ADSR and env VCA on, a long drum (BOOM, TRPK, CRSH, TRIA) is choked when the gate falls, like a hand muting a cymbal.

TIP On drums, env FM adds an extra pitch sweep (try it on 808T or CONG) and env TIM adds a per-hit tone change. On TRIA or CRSH: ENV ADSR, SUS 15, REL 3, VCA on, and the gate length chokes the ring.

META mode

With META on, the FM input selects the engine (FMDS on the MORE page then has no effect). 0 V plays the engine chosen with WAVE, and rising voltages step upward through the list. While META is active, the display follows the engine currently playing.

TIP Set WAVE to 808K and feed a stepped sequence into FM in META mode: one trigger line then steps through the kicks, snares, claps and hats, like a drum machine with a single output. The kits (KIT8, KIT9, KIT6, KITC) do the same with TIMBRE.

Calibrating V/OCT

Pitch tracking is calibrated at the factory and normally never needs attention. To recalibrate:

1. Disconnect any cable from the **FM** input.
2. Connect a calibrated V/OCT source (keyboard or MIDI-to-CV converter) to **V/OCT**.

3. Set **COARSE** and **FINE** to 12 o'clock.
4. In the menu, go to **CAL.** and hold the encoder for 1 second. The display shows **>C2**.
5. Send exactly **1 V** and click the encoder. The display shows **>C4**.
6. Send exactly **3 V** and click the encoder. Calibration is saved.

TIP Calibrate with ICLK on and a pitched engine such as 808T or TRIA, so you can hear the pitch while the reference voltages are sent.

NOTE Holding the encoder on the version item (**TDOC**) restores all factory settings and also erases your calibration. Only do this if you intend to recalibrate.

CHAPTER 11

The MORE page

tecDoc has a second page of settings, so the main menu stays short. In the menu, scroll to **MORE** and click: the MORE page opens. **BACK** (first and last item) returns to the main menu. Settings are edited as usual: click to edit, turn, click to return. Everything is saved with your settings, and the calibration is never touched.

TIP Every feature works on every engine. Start with ICLK (no patching needed), then add RTCH and PROB.

FM jack and randomness

Item	Values	What it does
FMDS	PTCH TIMB COLR ECHO RING FILT DRIV CRSH PRST	What the FM jack controls: pitch (default), TIMBRE, COLOR, echo level, ring frequency, filter cutoff, drive, crush (sample-rate and bit reduction), or the preset (PRST: 0–5 V picks preset 1–8).
RNDT / RNDC	0–15	Each trigger moves TIMBRE / COLOR by a random amount: every hit gets a slightly different tone or length. (On the kits, keep RNDT at 0: TIMBRE picks the instrument.)

Rhythm and triggers

Item	Values	What it does
RTCH	1–4	Ratchet: each note repeats 1–4 times, spread over one clock step.
PROB	6–100 %	Probability that a trigger plays.
SWNG	50–75 %	Swing: every other note is played late.
ICLK	OFF, 40–240 BPM	Internal clock (quarter notes): the module plays with nothing patched at TRIG.
GATE	13–100 %	Gate length of the notes made by ICLK and ratchets (for the ADSR).
TRNT	OFF 1OCT 2OCT	Each note jumps to a random note (in the QNTZ scale when one is set).
OCTJ	OFF 25–100 %	Chance of a random octave jump, up or down.

Arpeggiator and voice

Item	Values	What it does
ARP	OFF UP DOWN UPDN RAND UP2 CONV	Arpeggiator, stepped by each trigger (or ICLK). CONV plays from the outside in.
ACRD	OCT 5TH MAJ MIN SUS4 MAJ7 MIN7 DOM7 ADD9 DIM	The chord the arpeggiator plays.
ARNG	1–3	Arpeggiator range in octaves.
GLID	0–15	Glide between notes (up to 2.5 s).

Item	Values	What it does
VIB / VRAT	0–15 / 0–15	Vibrato depth (up to a semitone) and rate.
HARM	OFF ON	Arpeggio and random notes stay in the QNTZ scale.

Effects

The effects run after the engine, on top of CHOR, RING and ECHO in the main menu. If everything is turned on at once on the heaviest engines, tecDoc automatically lightens the chorus, drive and filter so the sound never breaks up.

Item	Values	What it does
DRIV	0–15	Drive (soft saturation).
FILT / FCUT	OFF LP HP BP / 0–31	Output filter and its cutoff.

NOTE PLUK uses the echo's memory for its own string, so ECHO is bypassed while PLUK is selected. The echo comes back as soon as you choose another engine.

Presets and workflow

A preset stores the engine and every sound setting, from both pages. With FMDS on PRST, a CV on the FM jack switches presets: a sequencer can then change the whole sound on every step.

Item	Values	What it does
SAVE	SV 1–SV 8	Choose a slot, then **hold** the encoder: the display says SAVD.
LOAD	LD 1–LD 8	Choose a slot, then **hold** the encoder: LOAD (or EMPT for an empty slot).
INIT	–	Hold the encoder: all sound settings back to default (calibration, presets and favorites stay).
FAVS	OFF ON	On the engine screen, **hold** the encoder to mark an engine as a favorite (FAV+ / FAV–). With FAVS ON, the encoder only stops on favorites.

Display

Item	Values	What it does
DISP	NAME NOTE LEVL	Engine screen: the engine name, the note being played, or a level meter.
SAVR	OFF 1MIN 5MIN 10M	Screensaver: the logo text scrolls after this long without touching the encoder.
LOGO	OFF ON	Boot logo: the logo text scrolls at power-up. **Hold** the encoder on LOGO to edit the text (turn to choose each letter, click for the next).

CHAPTER 12

Patch ideas

Patch	Engine	How
Warehouse kick	909K	Clock on every beat. TIMBRE at 2 o'clock, COLOR at 11 o'clock. Tune to the key of the track with PITCH.
Hard techno kick	DIST	TIMBRE at 3 o'clock, COLOR at 10 o'clock, DRIV 4 on the MORE page. Add BITS 12 for grit.
Trap 808	TRPK	Sequence a bass line into V/OCT, COLOR at 2 o'clock, TIMBRE at 11 o'clock, GLID 3. QNTZ on a minor scale.
Crunchy backbeat	CRNC	Beats 2 and 4, TIMBRE at 2 o'clock, ECHO 5 with TIME on CLK. (dotted), FDBK 6. Random CV into TIM MOD for a different crunch every time.
Boom-bap snare	LOFS	TIMBRE at 11 o'clock, COLOR at noon, SWNG 58 %. Add RATE 24K for even more sampler grit.
Electro pattern	KIT6	A sequencer with 8 CV levels into TIM MOD (attenuverter fully clockwise) and its gate into GATE: kick, snare, crunch clap, hats, tom, cymbal and rim from one jack.
Vintage rhythm box	KITC	Slow tempo, SWNG 60 %, a bossa pattern of kick, rim-shot snare, guiro, hats, conga, tambourine and cowbell.
Hat machine	606H	16th-note clock, COLOR at 8 o'clock, RNDC 4 and PROB 85 %. Patch an accent CV into COLOR to open the hat.
Drop riser	RVRS	COLOR set for a one-beat swell, triggered one beat before the drop. ECHO 6 on CLK.
Disco toms	SYND	Off-beat 8ths, TIMBRE at 3 o'clock, COLOR at 1 o'clock, ECHO 6. Sequence two or three notes.
Latin percussion	CONG	ICLK 112, PROB 80 %, RNDT 8 (open and slap hits), three notes on V/OCT. Try BONG on a second module.
Ratchet fills	707S	RTCH 4 with PROB 30 %: rolls appear now and then at the end of phrases.
Glitch fills	GLCH	ICLK 140, PROB 60 %, RTCH 3, RNDT 10. Every bar sounds different.
One-module drum kit	808K	META on, WAVE on 808K, a sequencer's CV into FM to select the drum, and its gate into GATE. Tune each step with V/OCT.
Kit switching	—	Save 8 different drums as presets, set FMDS to PRST and sequence the FM jack: one module, eight instruments, each with its own effects.

CHAPTER 13

Quick reference

#	Display	Engine	TIMBRE	COLOR
1	808K	808 Kick	Tone	Decay
2	909K	909 Kick	Attack	Decay
3	HARD	Hard Kick	Drive	Decay
4	BOOM	Boom	Saturation	Decay
5	RMBL	Rumble	Fold drive	Decay
6	808S	808 Snare	Snappy	Decay
7	909S	909 Snare	Snappy	Decay
8	808C	808 Clap	Tone	Tail
9	909C	909 Clap	Spread	Tail
10	RIM	Rimshot	Tone	Decay
11	CLAV	Claves	Hardness	Decay
12	808H	808 Hat	Tone	Closed
13	909H	909 Hat	Mix	Closed
14	CYMB	Cymbal	Tone	Decay
15	RIDE	Ride	Ping	Decay
16	808T	808 Tom	Bend	Decay
17	909T	909 Tom	Sweep depth	Decay
18	COWB	Cowbell	Tone	Decay
19	MARA	Maracas	Attack	Decay
20	SKIN	Skin	Partial ratios	Decay
21	CLNG	Clang	Modulation index	Decay
22	ZAP	Zap	Sweep depth	Decay
23	PLUK	Pluck	Brightness	Decay
24	BLIP	Blip	Sweep	Decay
25	NOIS	Noise	Filter cutoff	Decay
26	BYTE	Byte	Formula	Decay
27	KIT8	808 Kit	Instrument	Decay of the chosen instrument
28	KIT9	909 Kit	Instrument	Decay of the chosen instrument
29	606K	606 Kick	Punch	Decay
30	707K	707 Kick	Attack	Decay
31	78K	Rhythm-box Kick	Tone	Decay
32	DIST	Distorted Kick	Drive	Decay
33	TRPK	Trap Kick	Glide	Decay
34	606S	606 Snare	Snappy	Decay of the noise

#	Display	Engine	TIMBRE	COLOR
35	707S	707 Snare	Tone	Decay
36	78S	Rhythm-box Snare	Noise amount	Decay
37	CRNC	Crunch Clap	Crunch	Tail
38	LOFS	Lo-fi Snare	Crush	Decay
39	SNCL	Snare + Clap	Balance	Decay
40	BRSH	Brush	Attack	Decay
41	606H	606 Hat	Tone	Closed
42	78H	Rhythm-box Hat	Tone	Closed
43	CRSH	Crash	Dark → bright	Decay
44	RVRS	Reverse Cymbal	Noise → metal	Swell length
45	CONG	Conga	Open → slap	Decay
46	BONG	Bongo	Open → slap	Decay
47	AGOG	Agogo	Brightness	Decay
48	TRIA	Triangle	Brightness	Decay
49	TAMB	Tambourine	Jingle tone	Decay
50	WOOD	Woodblock	Hardness	Decay
51	GUIR	Guiro	Scrape rate	Scrape length
52	SYND	Syndrum	Sweep	Decay
53	FMDR	FM Drum	FM index	Decay
54	GLCH	Glitch	Register	Decay
55	KIT6	606-style Kit	Instrument	Decay of the chosen instrument
56	KITC	Rhythm-box Kit	Instrument	Decay of the chosen instrument

Every engine is a drum: it needs TRIG or ICLK. Engines 29–56 are new in tecDoc.

CHAPTER 14

Specifications

Engines	56 percussion engines, including 4 eight-instrument kits
Synthesis	Resonator, swept-sine and FM drums, additive and modal membranes, metallic square clusters, filtered noise, multi-burst claps, Karplus-Strong, bit and sample-rate crushing, bytebeat
Sample rate	96 kHz, with selectable reduction down to 4 kHz
Output resolution	16-bit, with selectable reduction down to 2 bits
Internal modulation	AD or ADSR envelope to pitch, TIMBRE, COLOR and level; FM jack routable to 9 destinations; random TIMBRE/COLOR per trigger
Rhythm	Internal clock 40–240 BPM, ratchets, probability, swing, random notes and octave jumps, arpeggiator (6 patterns, 10 chords, 1–3 octaves)
Effects	Chorus (3 modes), ring modulator, echo up to 1.2 s (clock sync), drive, LP/HP/BP filter
Presets	8 slots, selectable from the menu or by CV; favorite engines
Pitch features	1 V/oct calibrated input sampled at each trigger, quantizer (semitones plus 53 scales), octave switch, drift, flattening, glide, vibrato
Settings storage	Non-volatile; settings, presets and calibration are retained when the power is off. Calibration is kept in its own memory area
Format	Eurorack module with a 4-character LED display
Version	TDOC

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