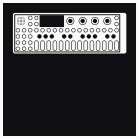
OP–1 field

portable synthesizer
user guide

OP–1 field



introduction

to begin, we'd like to say thank you for choosing OP–1 field, and also for contributing to the OP–1 legacy. we launched the original back in 2011, so what better way to honor the tool that made us than by giving it some tlc. by adapting to the latest technology, updating the design and evolving with the needs of our operators, OP–1 field is the natural continuation of its predecessor and the beginning of a new era.

thank you!

field system

field system began as an idea to create a series of products that function as part of a whole. with aluminum casings and nylon bag accessories; every item is designed with portability, compatibility and durability in mind. as usual, we aim to pack in as much technology into as little space as possible, getting the most out of every device. more than just an engineering challenge, field system is driven by a desire to rethink the way we approach music making.

care

before getting started, make sure to carefully read these instructions. see the section at the end on warnings and warranty for more information. OP–1 field is a highly technical and delicate product. make sure to learn how to properly operate, care for and store your device. take the time to register your unit here: teenage.engineering/register

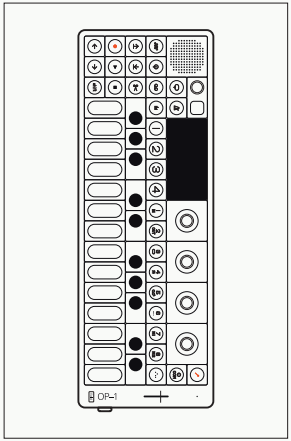
the latest version of this manual: teenage.engineering/guides/op-1

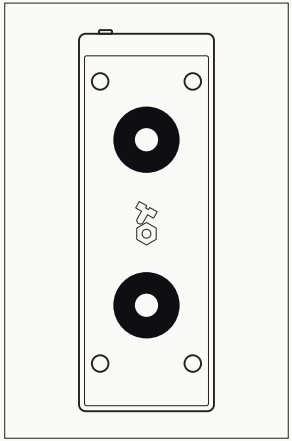
hardware

OP–1 field is a precision tool, made in natural anodized aluminum, with encoders in the color palette of blue, ochre, gray and orange to keep things playful. the low profile keyboard is durable and responsive so it's easy on the fingers. the display is a custom made color lcd, mounted directly onto the keyboard. the soft velcro rings on the bottom side mean the unit can be attached securely to a surface, case or stand. connectivity includes a usb type c port and line in and out sockets, as well as bluetooth le and fm radio.

OP–1 field highlights:

- ultra portable synthesizer
- usb-c audio interface
- host and device for audio and midi
- 4-track 32-bit stereo tape recorder
- multiple tapes
- stereo sampler
- stereo drum machine
- 7 sequencers
- 3 band equalizer
- 8 stereo effects
- built-in speaker
- fm radio receiver and transmitter
- accelerometer and gyroscope
- midi over bluetooth le
- 24 hour rechargeable battery

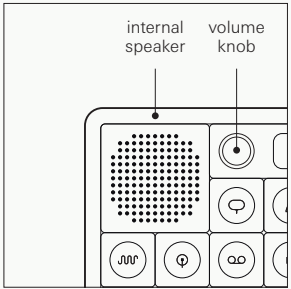




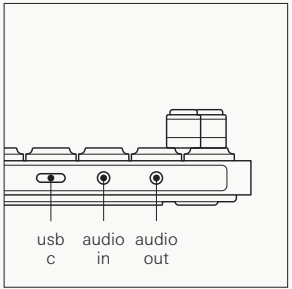
overview

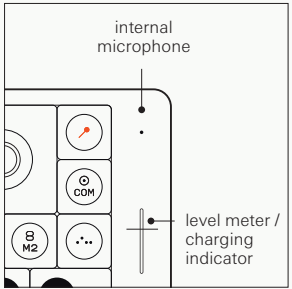
the top left side holds the internal speaker and the main volume knob. on the right you can find a 3.5 mm audio output jack, used for connecting a pair of headphones, a mixer or your speakers. next, the 3.5 mm audio input jack is used when recording or processing any external line-level audio, such as another synthesizer. then, a usb-c port for audio / midi / charging and data, a charging led and the power switch. on the top right you can find the built-in microphone and the level meter.

left side



right side

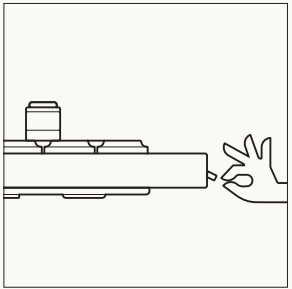




power on

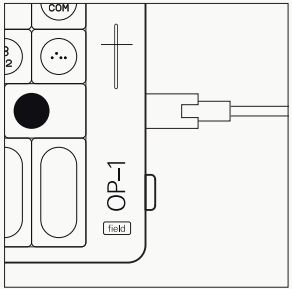
to power on your unit, flip the power switch located on the right side of the device to the up position. the display will show the logo and the currently installed firmware version and then arrive at the tape screen. to power off, flip the switch to the down position.

data is stored automatically, so you don't have to worry about saving. the next time you power on your OP–1 field, everything will still be there, exactly as you left it.



charging

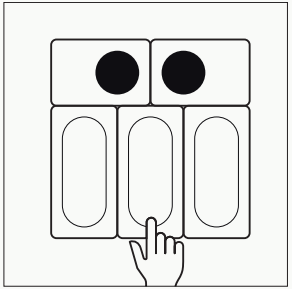
OP–1 field is charged through the usb-c port located on the right side of the unit. the first thing you should do is connect it to a computer or a usb charger. keep it connected until the battery is fully charged, indicated by the charging led on the right side and the level meter. to check battery level, hold the help key (speech bubble). the leds will light up to indicate the level. to keep the battery healthy, the unit should be charged at least every 6 months.



start

the OP–1 workflow is based around playing, recording and layering sounds on tape. the four main modes: synth, drum, tape and mixer are where you'll spend the most time. press synth or drum to access the synth or drum modes and play notes on the keyboard to hear how they sound. once you've got what you want, hit record and record it to tape. keep layering and arranging as you like and press mixer to adjust track levels and eq of your mix. it's as simple as that to build your songs on OP–1 field.

keyboard



synth

in synth mode you use the keys on the keyboard to play notes. OP–1 field has several original synth engines, each with its own character.

drum

drum mode works similarly to synth mode, except the keys are used for playing drum and percussion sounds, laid out as drum kits.

tape

tape is the heart of OP–1, where you record and layer sounds. OP–1 field has four stereo tracks per tape and can hold multiple tapes.

mixer

the mixer is where you control levels and panning for each of the four tracks, as well as the main eq, effects and drive.

shift

use shift with other keys or encoders for secondary functions, such as fine-tuning a parameter and for menu access.

help

the help button will guide you throughout the interface. use it in combination with any other key to see more information on that topic.

user guide

when pressing help you'll see a quick help overlay, explaining the most basic relevant information per screen.

in addition to the help overlays, you can also press and hold shift and then press help to access the built-in user guide. here you'll find a quick start tutorial, as well as more detailed guide information. use the track keys T1-T4, as well as the encoders to navigate through the sections of the guide.

track keys T1-T4

press T1 while in synth or drum mode to show the 'synthesis engine'. in tape and mixer you'll access 'track 1' and the main 'mixer' screen.

T2 holds the 'envelope' in synth and drum modes, 'track 2' in tape and the main 'equalizer' while in mixer mode.

T3 is where you access 'FX' for both synth and drum modes. in tape, 'track 3' and 'main FX' can be found in mixer mode.

finally T4, which will show the 'lfo' screen in synth and drum modes and 'track 4' of tape, while 'master out' in mixer mode.

guide conventions

sometimes you will need to press keys in sequence, sometimes in combination. these illustrations and texts will help you to follow along in the guide.

to press a key, you tap it and then release. to hold a key, you press it and keep it pressed down. the encoders and most keys have different functions depending on the context, as described earlier.

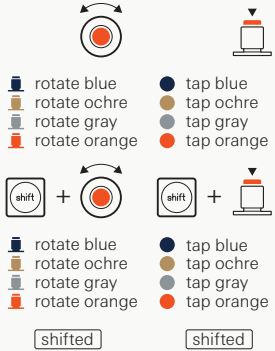
press one key at the time.

hold one key and press the second key.

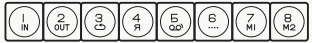
sometimes gray keys are shown for context but not active.

encoder commands

the four color coded encoders are related to the graphical interface on the display. by turning an encoder, you control the parameter with the corresponding color. an encoder can have multiple functions. using an encoder in combination with the shift key usually allows for fine tuning, and tapping an encoder usually means ‘confirm’, ‘return to default’ or access to even more extensive features. try it out and see what happens!



preset sounds



in synth and drum mode, the sound selection keys 1-8 are your eight instant access preset keys.

press any key from 1 to 8 while in synth or drum mode, to access the different sounds or drum kits stored to these preset slots. a preset consists of all four modules:

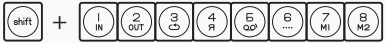
- T1 engine
- T2 envelope
- T3 FX
- T4 lfo

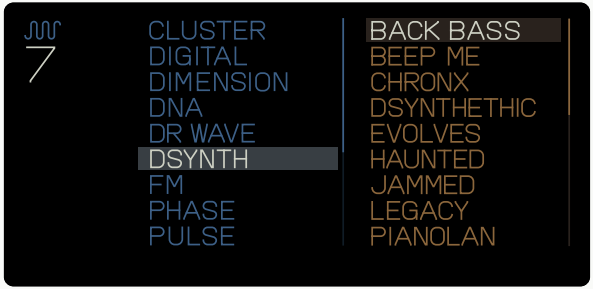
to load a different preset to any of these slots, press shift + any key from 1 to 8. this will reveal a list of all available engines, as well as the presets per engine. select a preset by turning the blue encoder for engine type and ochre encoder for preset choices.

note: the difference between changing just an engine (shift + T1) and a preset (shift + 1-8) is that the later changes all four module settings T1-T4.

changing presets

engine
preset





synth mode

OP–1 field has several original synthesis engines, each with its own characteristics. to enter synthesizer mode, or synth mode, press the synth key - the key with the wave symbol on it. when in synth mode, the synth engine's visual representation module is located under T1, which is the first screen that will be shown when you change or select a sound. a sound preset consists of four modules (T1–T4) and the synthesis engine is the first one (T1).

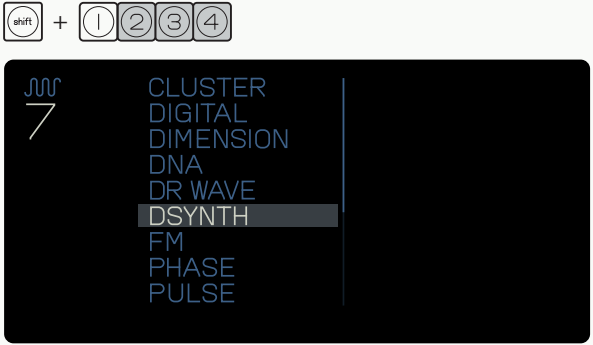
to change the synth engine press shift + T1. this opens a synthesis browser screen, with a list of possible synthesis engine choices. rotate the blue encoder to scroll through the list.

press T1 or tap the blue encoder to confirm your choice.

what follows is an overview of all the synth engines and parameters, adjustable using the encoders.

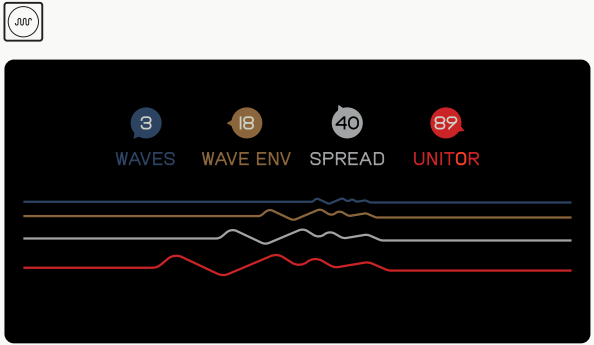
synthesis selection

select engine confirm



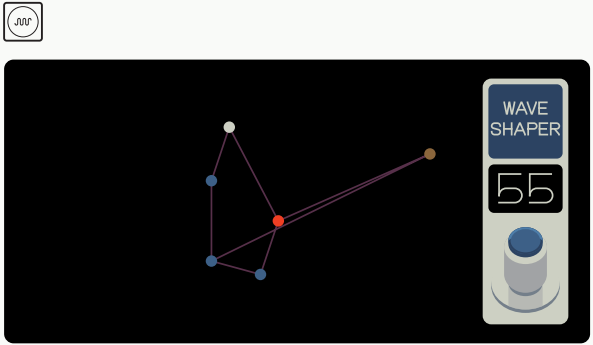
cluster

- wave number
- wave envelope
- spread
- unitor



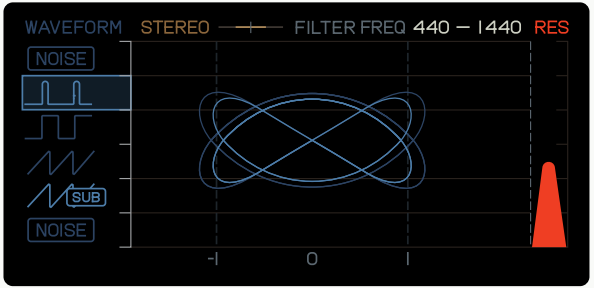
digital

- show pop-up
- show pop-up
- show pop-up
- show pop-up
- wave shaper
- octave
- detune and ring modulation
- digitalness



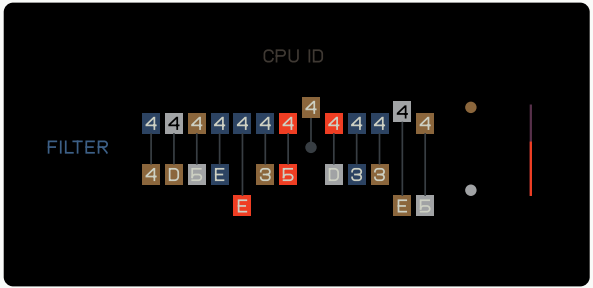
dimension

- waveform
- modulation
- filter cutoff frequency
- filter resonance



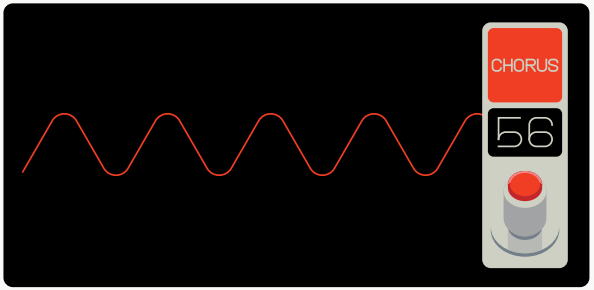
dna

- filter
- wave number
- wave modifier
- noise



dr wave

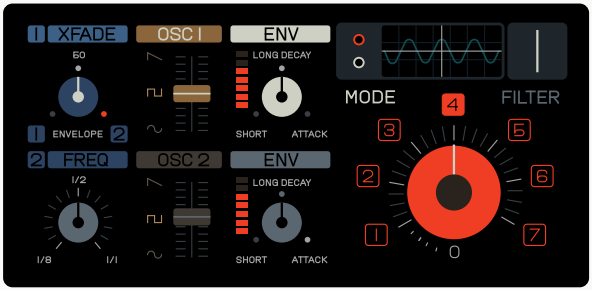
- show pop-up
- show pop-up
- show pop-up
- show pop-up
- wave type and length
- filter
- phase
- chorus



dsynth

- env crossfader
- waveform
- envelope
- cross modulation
- frequency
- waveform
- envelope
- filter cutoff frequency

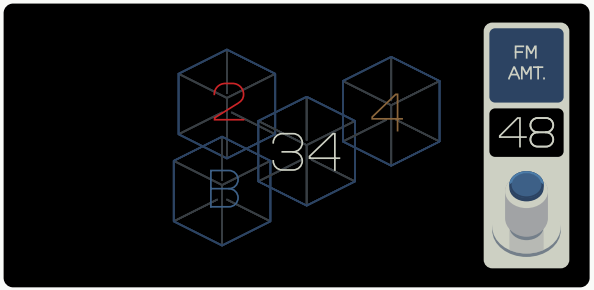
shifted



fm

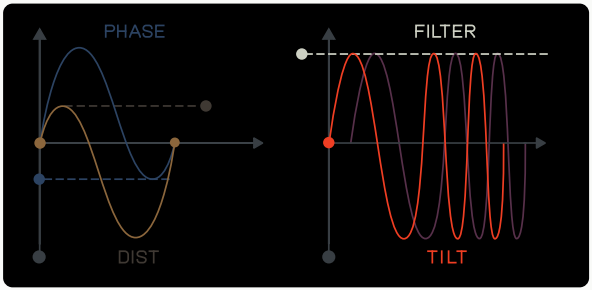
- show pop-up
- show pop-up
- show pop-up
- show pop-up

- fm amount
- frequency
- topology
- detune



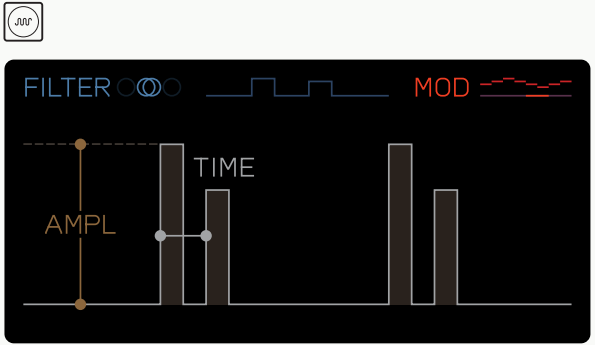
phase

- phase shift
- distortion amount
- phase filter
- phase tilt



pulse

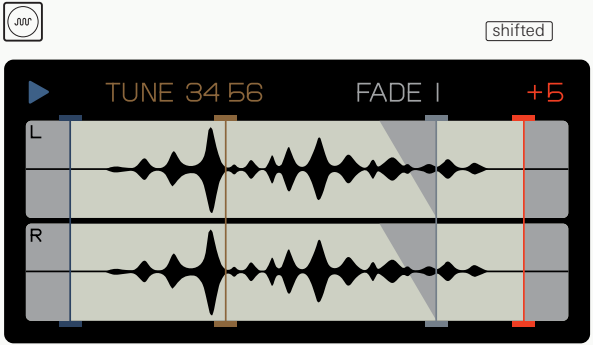
- filter
- amplitude
- second pulse
- modulation



sampler

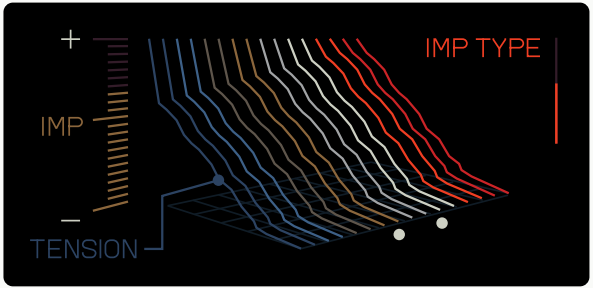
- start zoom
- loop in zoom
- loop out zoom
- end zoom
- start
- loop in
- loop out
- end
- direction
- fine tune
- loop fade
- gain

shifted



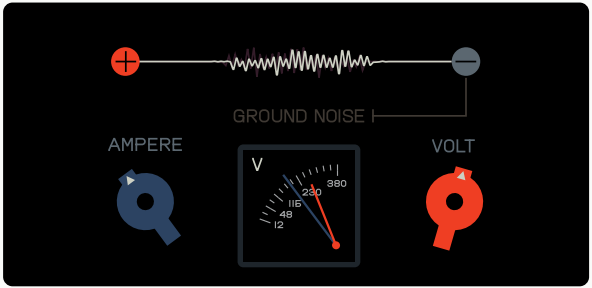
string

- filter
- amplitude
- second pulse
- modulation



voltage

- modulation
- ground noise
- phase filter
- detune



synth sampler

the synth sampler is a chromatic stereo sampler with region loop functionality. playing the keyboard will play the sound from the start point, loop a section if enabled and play it through to the end upon release. this is the main view (T1), showing the waveform. the sound is affected by the envelope (T2), the FX (T3) and T4 lfo as well.

you can import your own sounds or sample straight into your OP–1 field using any input source.

- start
- loop in
- loop out
- end

- direction
- fine tune
- loop fade
- gain

shifted

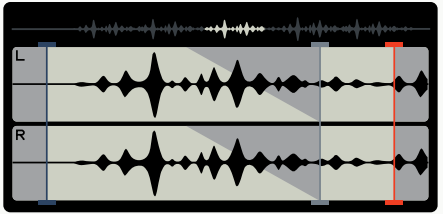
- start zoom
- loop in zoom
- loop out zoom
- end zoom

- finer tune

shifted

this is the main sampler view while holding shift, showing play direction, tuning, loop fading and gain, as well as the entire stereo waveform.

this is a zoomed in view, great for adjusting exact in and out zero positions within the sample. tap any encoder to zoom in around its section. tap again to exit to the main view.



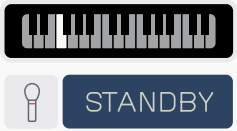
sampling

to sample a sound using the built-in microphone, make sure the sampler is selected and press the input key (the top right key with a mic symbol). choose microphone as input.

adjust threshold and gain settings (gray and orange). hold any key and speak into the microphone. release the key and then play the keyboard.

use the encoders to trim the start and end points of your sound and enjoy the beautiful sound of your voice.

more information about recording can be found in the input chapter.

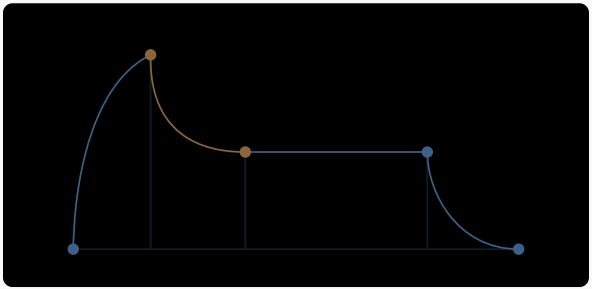


recording screen

envelope

- attack
- decay
- sustain
- release

an adsr envelope is the second (T2) module of a synth sound. this controls how the sound is shaped over time.



play mode

- play mode
- portamento
- bend range
- volume

hold shift while in the envelope screen to access various play mode patch settings.

shifted

effects

the internal stereo effects module in OP–1 field can be found under T3. to add an effect to a sound, press the FX key (T3). one effect at a time can be active. to change effect, press shift + T3. use the blue encoder to scroll through the list and press T3 to make your selection. you may toggle an effect on and off by pressing the T3 key again.

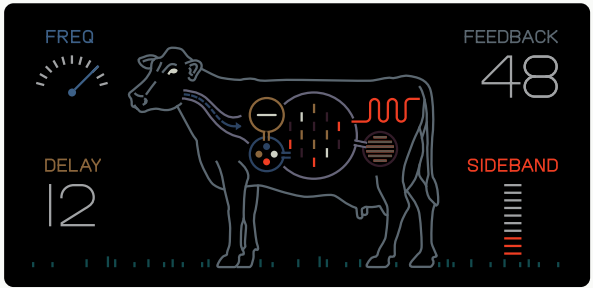
effects work the same way for both synthesizer mode and drum mode.

master effects are the same as found in synth and drum mode, but instead they are applied to the main mix. press mixer and then T3 to access the master effects. the master effect will not be recorded to tape but will be recorded during output mixdown.

use the color coded encoders to adjust the effect. an overview of the available effects and parameters follows.

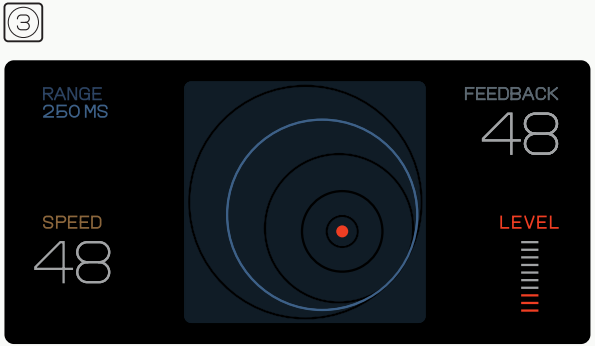
cwo

- frequency
- delay
- feedback
- sideband



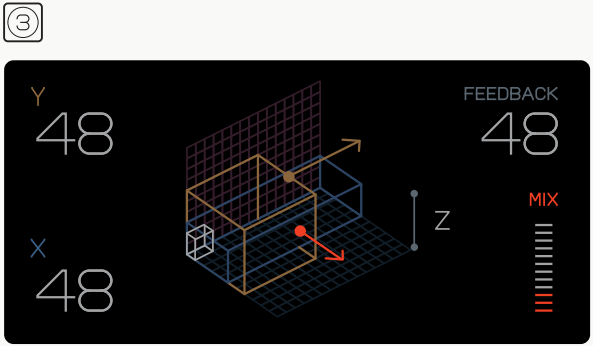
delay

- range
- speed
- feedback
- level



grid

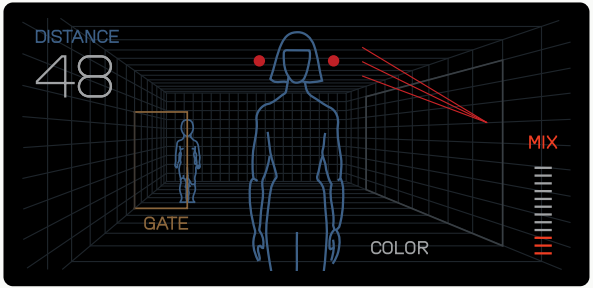
- x size
- y size
- z feedback
- mix



mother

- distance
- gate
- color
- mix

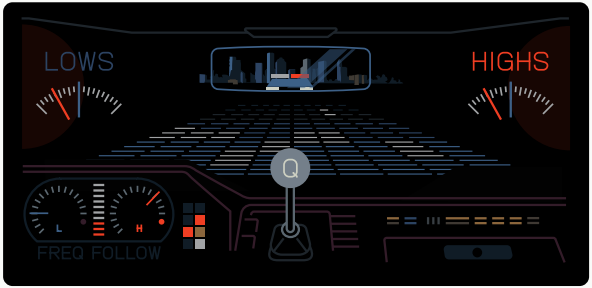
③



nitro

- frequency
- filter follow
- feedback
- frequency

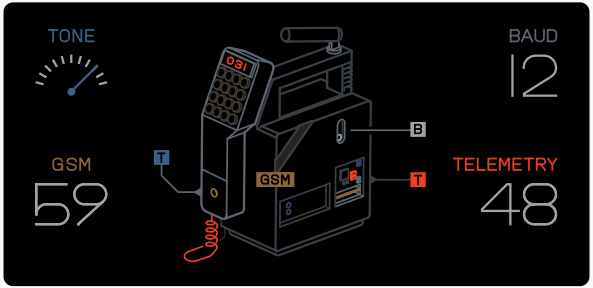
③



phone

- tone
- gsm
- baud
- telemetry

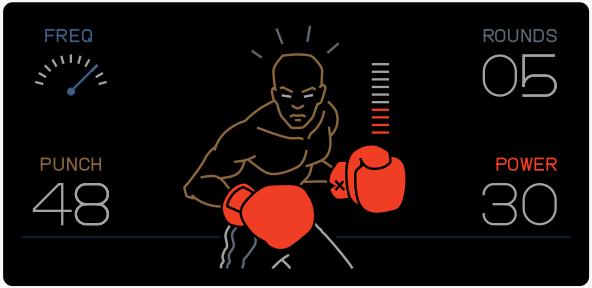
③



punch

- frequency
- punch
- rounds
- power

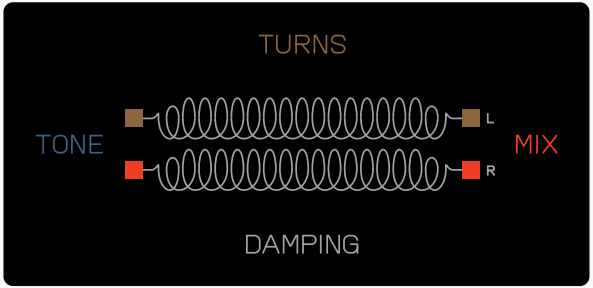
③



spring

- tone
- turns
- damping
- mix

③



pro-tip: use effects to get creative and turn any preset into your own unique sound.

when designing a sound, try to experiment with the effects and their controls, to shape it, to add color, and to get it as close as you can to what you want to achieve. when an effect is used in combination with an lfo (see the next chapter) you can really make your sound come to life and take your sound design game to a whole new level. listen carefully and explore the possibilities.

lfo

the fourth module of a sound preset is its low frequency oscillator, or lfo. the lfo lets you modulate any parameter from the synth engine, the envelope or the effects.

to add an lfo to a sound, press T4. you may toggle the lfo on or off by pressing the T4 key a second time.

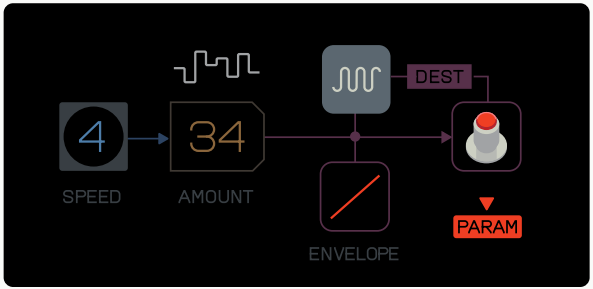
to change lfo, press shift + T4. this opens a browser screen, with the list of possible lfos. the lfo works the same way for both synth mode and drum mode.

pro-tip: use the lfo to add character and movement to your sounds when working on sound design. adding subtle modulation often goes a long way and can make your presets sound much more interesting and unique.

experiment as much as you want and just disable or change the lfo if needed.

random lfo

speed
amount
destination
envelope
parameter



element lfo

element lfo lets you use an external source to affect a parameter of your sound. use the blue encoder to select the input source.

if selecting the external input option you need to configure this in the input screen. press shift + input (the mic key) to select input and to adjust the gain. if radio is selected here you may tune in to a radio station for interesting results. the destinations (synth engine, envelope, FX and main) affect which parameters are available to choose from.

g-force allows you to affect a parameter by physically tilting your unit. shake the sound.

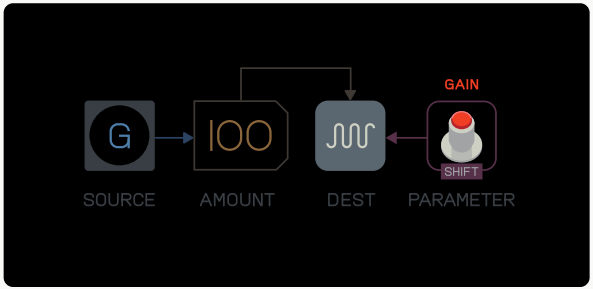
external input (mic / line in / radio / usb) can be used as the input source for the lfo.

envelope means the envelope (T2) is the lfo input source.

sum means whatever sound is sent to main out will be the lfo input source.

source
amount
destination
parameter

parameter



midi lfo

parameter 1
parameter 2
parameter 3
parameter 4

destination 1
destination 2
destination 3
destination 4

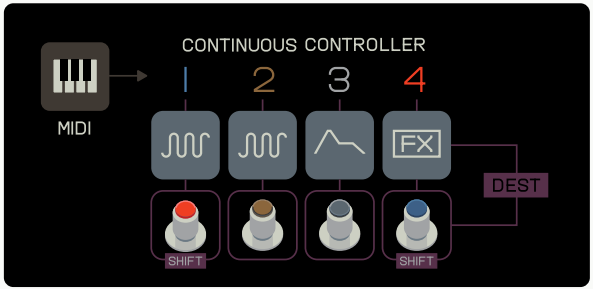
the midi lfo lets you receive external midi control change data (midi cc) to control parameters within OP–1 field.

press shift + T4 from any synth or drum patch to set this up. use midi cc 1-4 from the external source and use the encoders to assign the internal parameter destinations.

connect your external midi device or daw to your OP–1 field using usb and make sure to properly configure and transmit the external signals. midi cc can be sent from most hardware midi controllers, daws or music software.

for more information on how to set it up for your situation, please consult the manual of your particular device or software.

shifted



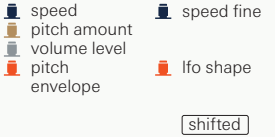
tremolo lfo

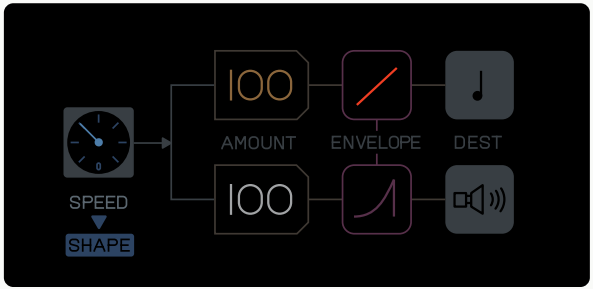
tremolo lfo lets you modulate the pitch and volume of your sound to create tremolo effects. turn blue to set speed. ochre sets the amount of pitch modulation and gray sets modulation amount for volume.

note: these parameters can have negative values, effectively inverting the lfo shape.

orange sets the envelope.
use shift + orange encoder to change lfo shape:

- sine
- saw
- exp
- square
- blip





value lfo

the value lfo modulates a single parameter value, using one of four lfo shapes.

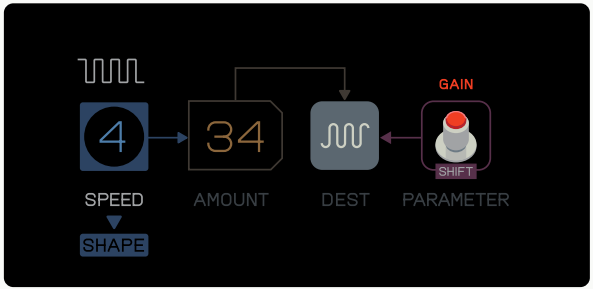
turn blue to set speed. ochre sets the level and gray sets destination. the destination parameter offers the lfo synced to whenever a note is triggered, or running free, based on the internal tempo.

the orange encoder sets destination parameter.

tap the blue encoder to change the lfo shape:

- square
- ramp
- saw
- sine

shifted

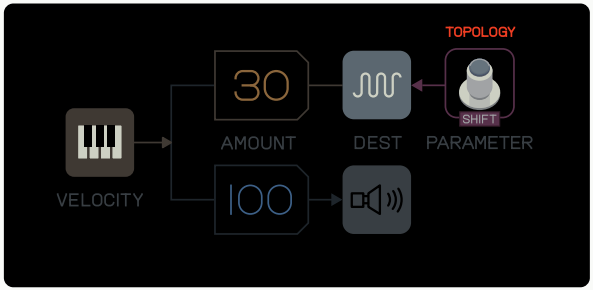


velocity lfo

destination amount
volume amount
destination
parameter

the velocity lfo takes keyboard velocity and translates that into lfo data. use this lfo together with an external midi keyboard to get richer expression possibilities. playing the keys piano or forte / soft or loud, will affect the chosen destination parameter accordingly.

there is also a second option to affect volume amplification.



drum mode

drum mode in OP–1 field includes a stereo drum sampler (drum) and a dual oscillator drum synth (dbox). press the drum key to enable drum mode. as with synth mode, this enables both the T1-T4 modules and the sound selection keys 1-8.a drum kit preset cosists of all four modules:

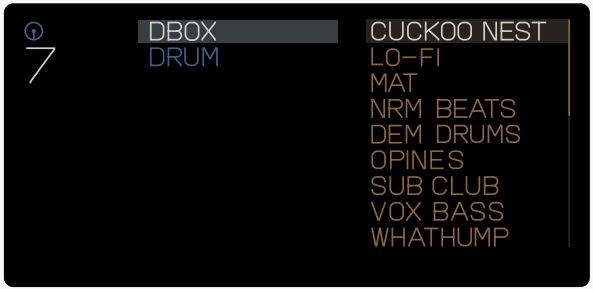
- T1 drum engine
- T2 drum envelope
- T3 FX
- T4 lfo

to load a drum kit, press shift + any key from 1 to 8. this will reveal a list of the drum engines, and the drum kit presets per engine.

use the encoders to scroll through the list and press 1-8 again to confirm your selection.

load drum kit

engine
drum kit



drum sampler

to layout a drum kit, press any key on the musical keyboard and start to set the in point of the sound. this can be anywhere on the sample. then set the out point and hit the same key again to confirm your settings. you should now hear the part of the sample that you have assigned to that key. the tools to set up your drum kit are noted on the encoders to the right. the channels can either be stereo or stacked. the envelope, effects and lfo work in the same way for drum as for synthesizer.

- tuning
- in point
- out point
- play mode

- direction
- panning
- attack
- gain

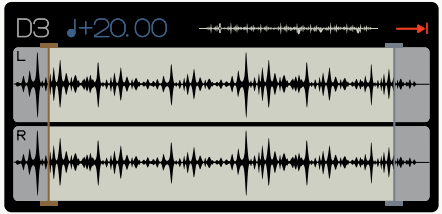
shifted

- fine tuning
- in point zoom
- out point zoom

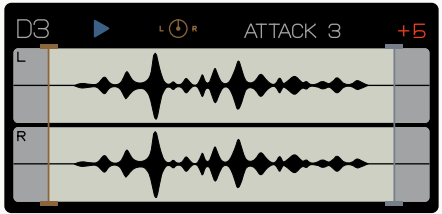
- stereo L+R / stacking A+B

shifted

this is the main drum sampler view, showing each note with corresponding settings and the active section of the stereo waveform.



this is a zoomed in view, great for adjusting exact in and out zero positions within the sample. tap ochre or gray to zoom in. tap again to exit to the main view.



dbox

dbox, short for drumbox, is a dual oscillator synthesizer, convenient for producing drum sounds. every key on the musical keyboard represents a unique sound.

hold shift to access the second oscillator layer.

- pitch
- waveform
- envelope
- cross modulation

- pitch
- waveform
- envelope
- filter cutoff frequency

shifted

this is the main dbox screen controlling the settings for the first oscillator as well as for cross modulation.

while holding shift you instead get access to the second oscillator and the filter setting for dbox.

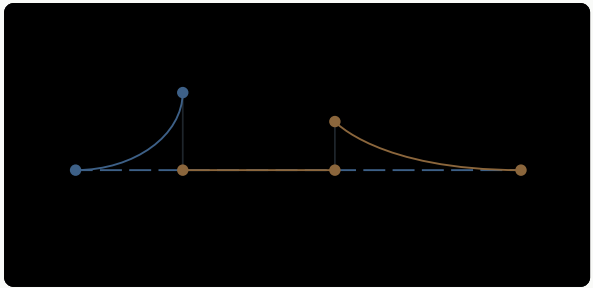
drum envelope

the drum envelope works slightly differently compared to the synth envelope. in drum mode you get a transient processor that allows you to control and shape the attack and release of your percussion sounds, to make them sound more or less sharp or soft. a transient is that initial high level peak of a sound, such as the snappy part of a kick drum or a snare drum. with the drum envelope you can shape your drums to sound more aggressive or more laid back.

use the blue encoder to control the attack of the transients. the ochre encoder controls the overall gain of your sound. the gray encoder adjusts the release and tail of the sound, and finally the orange encoder controls the overall timing of the attack and release.

drum envelope

attack
gain
release
timing



tape mode

the heart of OP–1 field is its built-in tape feature. each tape has 4 stereo tracks and 6 minutes recording time per track (at normal tape speed). you can store up to 8 tapes in memory and can instantly switch between them.

press tape to enter tape mode. T1-T4 now represent the four tape tracks, keys 1-8 represent the 'tape tricks', and the tape transport control keys as well as the tape edit keys are now active. note: record, play and stop are always active.

to use the tape first select a synth sound or drum kit that you want to record, then press tape to enter tape mode.

select a track to record to by pressing any of the track keys T1-T4 and find an empty spot on tape.

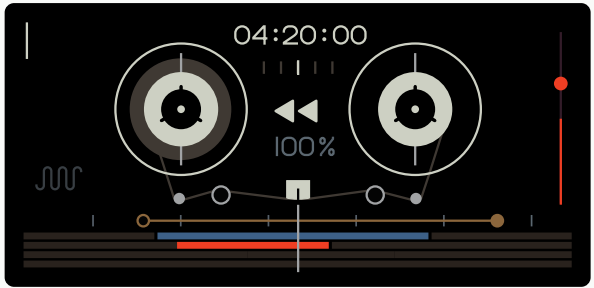
play the keys and adjust recording level with the orange encoder.

hold record and start playing, then press stop when you're done. now rewind and listen to your recording.

scrub
loop out point
tape speed
recording level

slide a take
loop in point
tape speed %
loop out point

shifted



record to tape

record.

play.

stop.

tape edit

lift / erase. press the lift key to lift a take.

drop. use this as way to place the last take stored in memory.

split. this splits a take.

use the arrow keys to rewind and fast-forward the playback of the tape. they are also used for octave shift.

tape tricks

sound 1 / loop in.
sets the loop in point.

sound 2 / loop out.
sets the loop out point.

sound 3 / loop on/off.
toggles loop on/off.

sound 4 / break.
stops the tape.

sound 5 / reverse.
change direction of the tape.

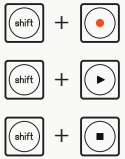
sound 6 / chop.
a tempo locked repeat effect.

sound 7 / memo 1.
memorize any parameters.

sound 8 / memo 2.
memorize any parameters.

in synth and drum mode, the sound selection keys 1-8 access different preset sounds. in tape and mixer mode they are called tape tricks - a collection of functions made to interact with the tape or the mixer.

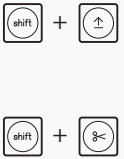
shift functions



arm recording.

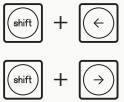
play in reverse.

tape grid resolution.

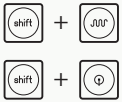


lift all. lifts all four tracks within an active loop.

join. this joins two nearby takes.



jump. jump left and right between beat markers.



revert preset. discard any changes done to the active sound and revert to its saved preset.

tape browser

tape style
tape

rename
load
new
erase / delete

shift + ∞

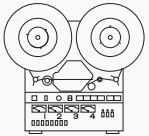
OP–1 field has four different tape styles and can hold up to eight tapes in memory.

each tape references different recording methods and their unique characteristics. from studio and vintage tape, to porta casette and disc mini, each tape style adds its own flavor to your recordings. you can also rename your tapes to suit your tracks for easy identification.

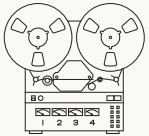
each tape is 6 minutes long and has 4 stereo tracks in 32-bit resolution. these are the available tape styles:

- studio 4-track.
- vintage 4-track.
- porta 4-track.
- disk mini.

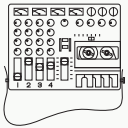
tape styles



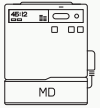
studio 4-track. professional studio recording with optimal sound quality. 15 inch / second tape speed.



vintage 4-track. classic model with the lowest tape speed still used in a pro setting. 7 1/2 inch / second.



porta 4-track. consumer high-speed multitrack machine using compact cassette. 3 3/4 inch / second.



disc mini. magneto-optical data storage with psychoacoustic digital audio data compression.

mixer

mixer is the final stage of the sound path. its main function is to set the individual levels and panning of the four tape tracks, adjust the master equalizer, add a master effect on your mix, as well as to control the main output level and drive.

the mixer transforms the four tape tracks into one stereo signal. to enter the mixer, press the mixer key. then press T1 to enter the mixer main screen.

these are the four mixer pages:

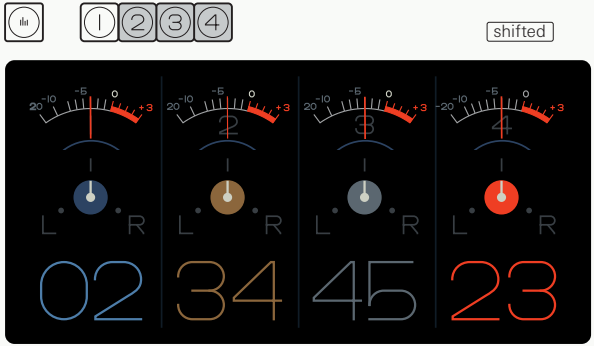
- T1 mixer.
  set the individual levels and panning of the four tape tracks. use shift and T1-T4 to mute the different tracks.
- T2 equalizer.
  adjust the three-band master equalizer.
- T3 master FX.
  apply an effect to the main mix.
- T4 master out.
  controls main output volume and drive.

mixer

track 1 mute
track 2 mute
track 3 mute
track 4 mute

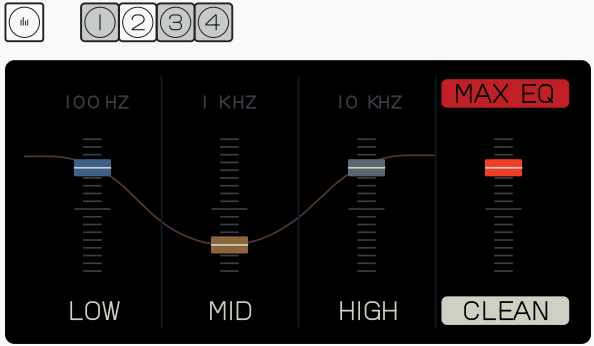
track 1 level
track 2 level
track 3 level
track 4 level

track 1 pan
track 2 pan
track 3 pan
track 4 pan



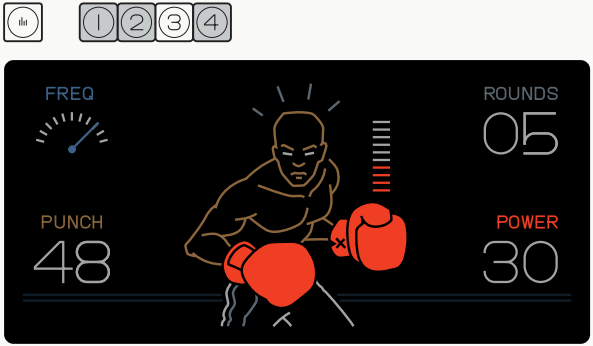
equalizer

- low
- mid
- high
- eq amount
- low toggle
- mid toggle
- high toggle
- eq toggle



master effect

master effects are the same as those found in synthesizer and drum mode, but applied to the main mix.



master out

the master out screen is found under T4. here you adjust the master volume, balance left and right, drive amount and the release of the drive.

adding drive narrows the difference between high and low audio levels, and makes the output sound louder and more compact. at high levels of drive, the audio starts to sound distorted.

release sets how quickly the drive will narrow the difference between high and low audio levels. at mid to long release times, you'll start to notice the drive as a 'pumping' sound.

you can use drive to add texture to your music and to make your final mix more dirty and raw. however in doing so you will lose dynamics and your mix might sound dull and tiring. less is often more in this case so find a balance that works for you.

master out

master left
master right
drive
release
stereo link
stereo link

shifted

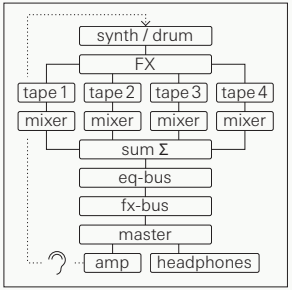
sound path

shift + mixer

the sound path is an overview of the way the sound moves from the moment you hit a key on the musical keyboard or press play on tape, until it reaches the speaker or line out. to help you keep an eye on this, there is a sound path screen in mixer mode that you may check at anytime.

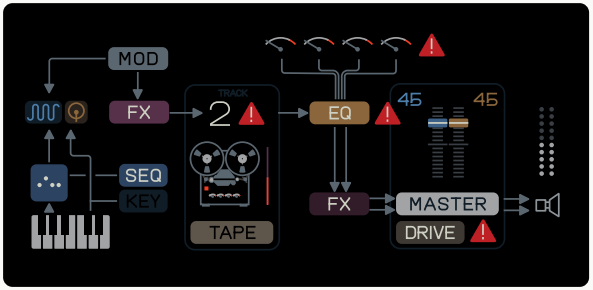
to enter the sound path screen, press shift + mixer key.

note: a warning symbol will light up when any critical level is set to zero.



sound path

shift + mixer



sequencers

OP–1 field comes with seven original sequencers that let you program your music in different ways. both synthesizer and drum mode have their own dedicated sequencer memory and can have separate types active, even though only one can be played at a time. the big difference between the tape and a sequencer is that tape records audio, while a sequencer stores note data. one of the reasons for using a sequencer is that you may change or alter the sound but continue playing the same stored notes.

to select sequencer type press shift and the sequencer key to enter the sequencer browser screen.

turn the blue encoder to make your selection, then tap it or press the sequencer key again to enable.

note: repeatedly pressing the sequencer key will toggle the selected sequencer on or off.

sequencers

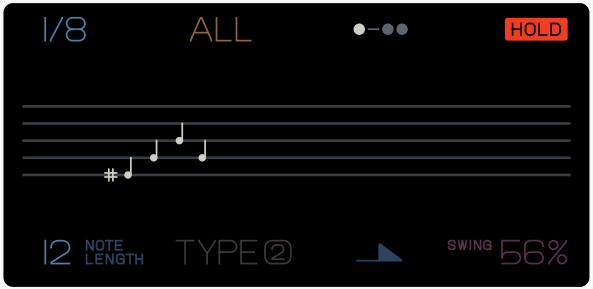
select sequencer

enable

arpeggio

- note value
- trigger mode
- trigger pattern
- hold
- note length
- type
- pause / skip
- swing

shifted



endless

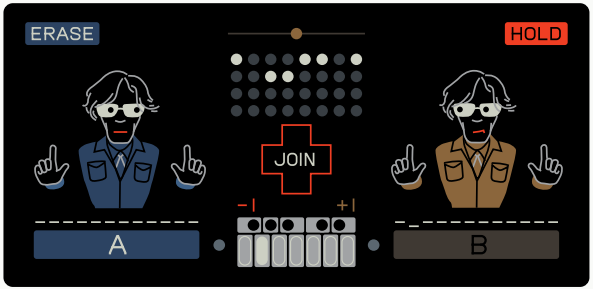
- note value
- swing
- trigger pattern
- hold
- manual mode
- rotate pattern
- direction

shifted

finger

- move cursor
- swing
- pattern length
- hold
- erase notes
- play mode

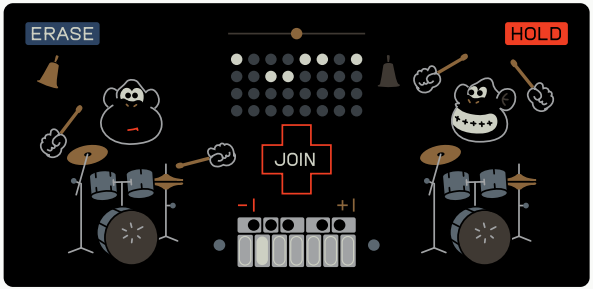
shifted



finger (drum)

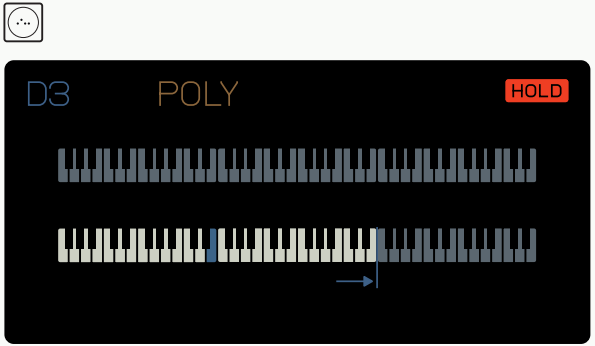
- move cursor
- swing
- pattern length
- hold
- erase notes
- play mode

shifted



hold

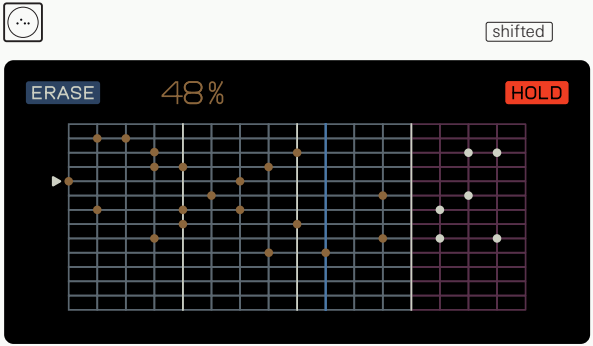
- clear
- break point
- mono / poly
- transpose
- hold



pattern

- move cursor
- swing
- pattern length
- hold
- erase notes
- offset notes
- move section
- play mode

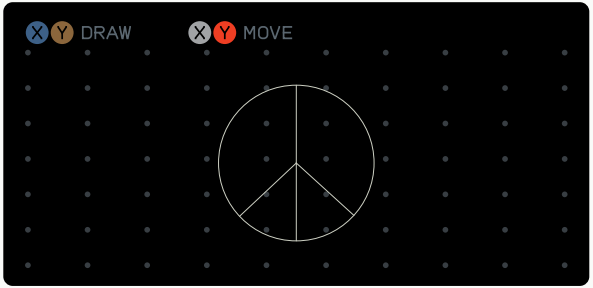
shifted



sketch

- draw x
- draw y
- move x
- move y
- erase
- use divider
- use grid
- hold

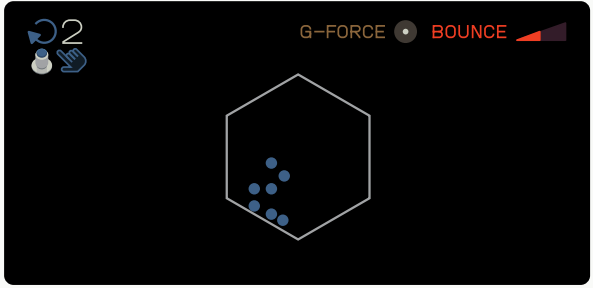
shifted



tombola

- rotation speed
- heaviness
- shape
- bounciness
- manual mode

shifted



tempo

tempo sets the master tempo in beats per minute for all sequencers, tempo-synced lfos and the tape. turn blue to adjust bpm and press tempo repeatedly to tap tempo. change sync mode using ochre and tape speed using gray. orange lets you control the metronome. link means if bpm and tape speed is linked or not.

pro-tip: use the left and right keys to nudge tempo. this can be handy when jamming together with others in a non synced setting.

the different sync modes are:

- free - internal clock, no sync.
- beat match - internal clock sync.
- midi sync - external clock sync.
- PO sync / 1/16 sync.

PO sync and 1/16 sync can be used to synchronize pocket operators and modular units from OP–1 field. turn orange to engage PO sync (master or synced) and use shift and ochre to switch to 1/16 sync. the output signal is split into dual mono, L being the sync signal and R the audio mix.

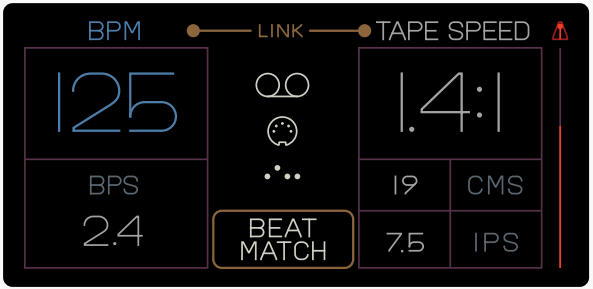
beat match

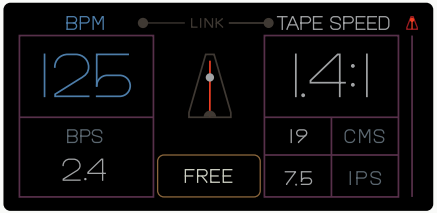
bpm
sync mode
tape speed
metronome level

bpm fine
PO sync / 1/16 sync

metronome sound

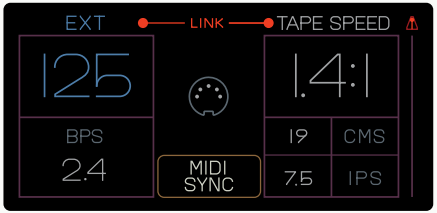
shifted





free tempo.

internal clock is used, no sync is sent or received. metronome is currently on.

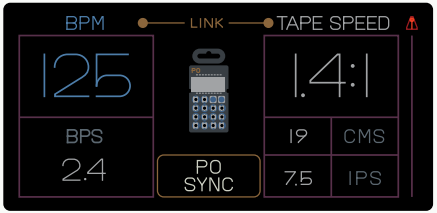


midi sync.

this is the main mode to use when syncing OP–1 field to external devices. external clock is detected and sync is received.

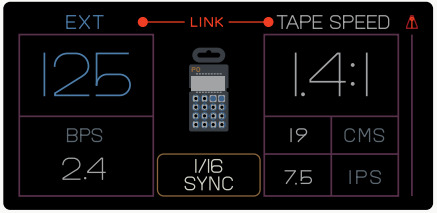
PO sync.

use PO sync to synchronize your pocket operators straight from OP–1 field.



1/16 sync.

hold shift and turn ochre while using PO sync to get a 16th note sync pulse, handy for modular systems.



settings

pressing shift and tempo will show the settings menu. here you can access global settings such as the date and time, display brightness as well as overall tuning. use the blue encoder to select setting, use ochre to change parameter and use gray to adjust the value. in the clock setting you can also use orange to set the time.

the settings tools are:

- clock - so you know what time it is.
- system - display brightness and region setting related to radio.
- tuning - global detuning.

clock

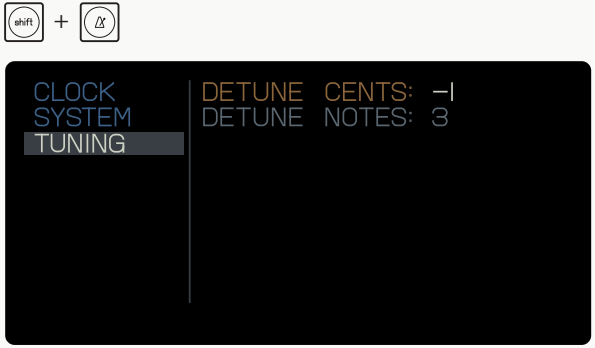
setting
set month
set date
set time

system

parameter
value

tuning

parameter
value



input

the input key is used when you want to record any external audio or when resampling internally. pressing input will toggle the selected input source on or off, or prepare to sample if you're in the sampler context.

press shift + input to access the input screen.

use the blue encoder to select one of the different input sources:

- built-in microphone / line in
- built-in fm radio
- usb audio
- output to input / resample (ear)

adjust the input gain and recording threshold with orange and gray.

input

input source
fm frequency
threshold
input gain
fm scan

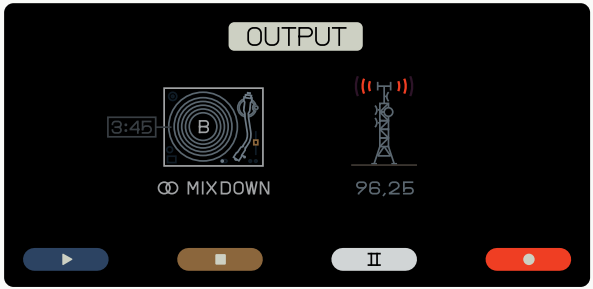
output

when you connect OP–1 field to your computer you will find your tapes are saved as they were recorded, as four audio tracks, giving you access to each of the four tape tracks independently. however, you may want to capture the elements of a live performance or simply access your tape as a stereo audio file - output allows you to do so. press the output key to access the output screen and T1-T4 to operate it. press T4 to begin the recording and then navigate anywhere within OP–1 field and play. mixdown will capture what you are doing. once your performance is complete, hit T2. use T3 to prepare for another recording. your two recordings are stored as 6-minute audio files, available when you connect via usb.

choosing the radio antenna instead lets you set an fm frequency to output whatever you are playing over the fm band. it's best to choose a frequency that is not occupied by an existing fm radio station.

output

select output
fm frequency
play / transmit



com

shift + com

in the com screen you can access midi settings, turn OP–1 field into a midi keyboard controller, list available ble and usb midi devices, as well as access disk mode and mtp. hold shift and press the output key to access the com screen.

com is also where you toggle to advertise OP–1 field as a midi device over bluetooth le, by pressing blue. you can toggle usb charging on or off by pressing orange. this can remove noise related to usb.

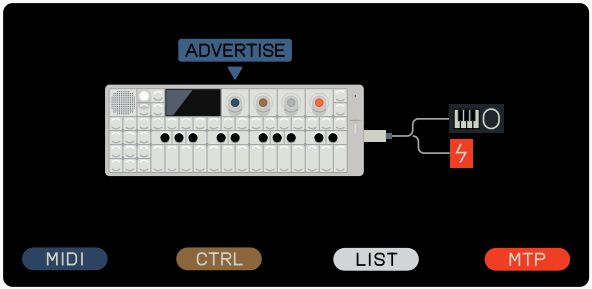
these are the available options:

- T1 midi - set options for midi.
- T2 ctrl - makes your OP–1 field a midi controller keyboard.
- T3 list - list and control any connected usb / ble midi devices. press shift and com again to return.
- T4 mtp / disk - turns OP–1 field into a usb mass storage device while connected to a computer. mtp is default but hold shift and press T4 for disk mode. always make sure to eject the disk before disconnecting OP–1 field from usb.

com

shift + com

- advertise ble midi
- toggle usb charging



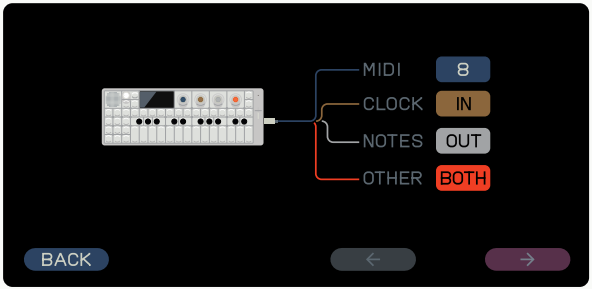
midi

pressing T1 while in the com screen takes you to midi settings. here you can set the incoming and outgoing midi channel (blue), decide how to handle midi clock (ochre) and midi notes (gray), as well as other midi messages (orange), such as modwheel and other midi cc data.

turn the dials to configure OP–1 field midi processing and press T1 again to go back once you're done.

midi

- midi channel
- midi clock
- midi notes
- other midi

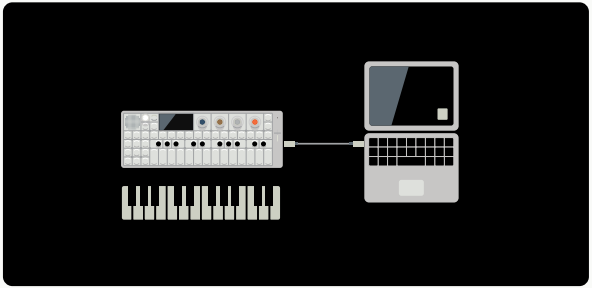


control

midi channel 1-16
encoders relative / absolute
octave

COM 1 2 3 4

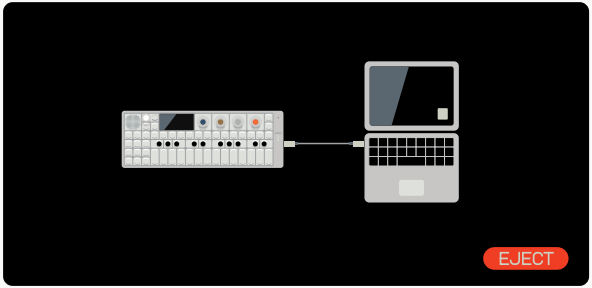
shifted



disk mode / mtp

eject

COM 1 2 3 4



sound files

save snapshot

to save a snapshot of the sound on 1-8, hold the corresponding sound key for three seconds. a file will be stored in the internal 'snapshot' folder, with its name based on the internal date.

press shift + 1-8 and navigate to the snapshot folder to browse through your own saved snapshot presets. you can recall and rename these presets using T1-T4 and the encoders.

save to tape

a sound can also be saved to tape. use the lift key while in synthesizer or drum mode. then switch to tape, locate empty space on the tape and press the drop key. the sound will now be converted to sound-data.

to recall a sound that was saved to tape, press lift, switch to synthesizer or drum mode and press drop.

mtp

OP–1 field's storage allows you to use the media transfer protocol to import sounds from your computer and use them as synth and drum kit presets. you can also export your own presets from your unit.

- connect OP–1 field to a computer.
- hold shift and press com.
- press T4.

mtp is the primary way to access your content. read more about mtp at teenage.engineering/guides/mtp

disk mode

hold shift to instead use disk mode to access your files. note that this mode only gives access to patch data. here's how to use disk mode to access your files:

- connect OP–1 field to a computer.
- hold shift and press com.
- keep holding shift and press T4.
- double-click the OP–1 desktop disk icon to reveal the internal files.

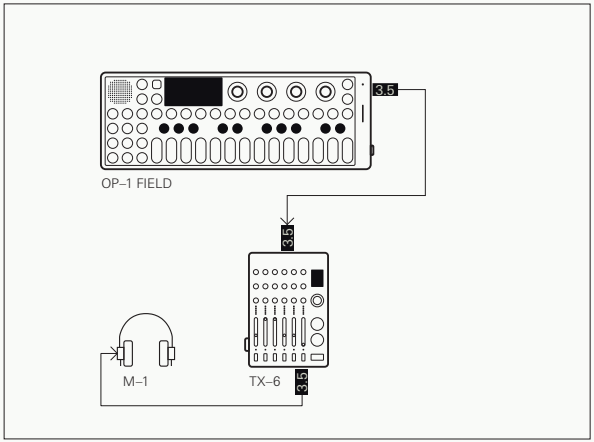
the snapshot presets are stored as audio files in the 'snapshot' folders for synth and drum respectively.

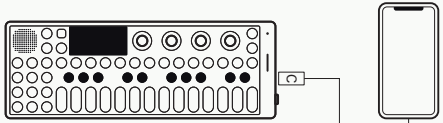
field

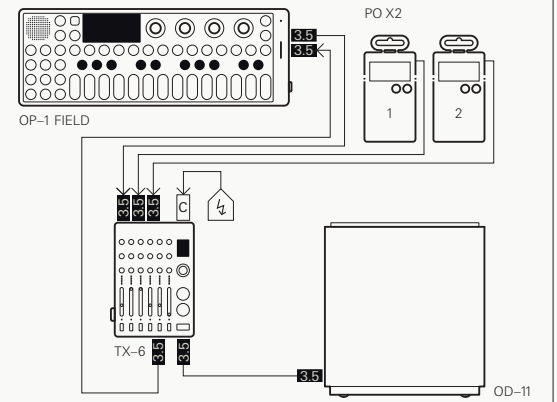
using OP–1 field with other gear

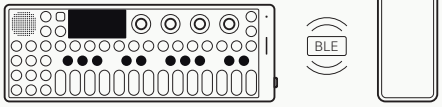
OP–1 field is designed to be used as a stand-alone digital audio workstation, with a computer or together with any of the teenage engineering products, as well as any other audio equipment.

the following pages illustrate a variety of ways in which you can connect OP–1 field to OP–Z, pocket operators and more.



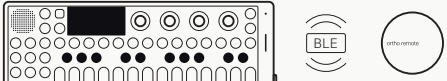

OP–1 FIELD
MOBILE
DEVICE


PO X2
3.5
3.5
OP–1 FIELD
1
2
3.5
3.5
3.5
C
TX–6
3.5
3.5
3.5
OD–11



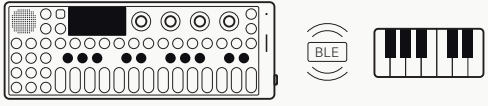
OP–1 FIELD

MOBILE DEVICE



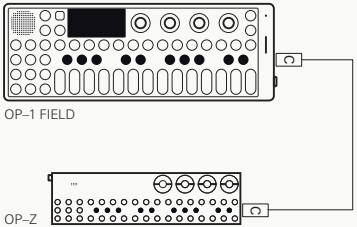
OP–1 FIELD

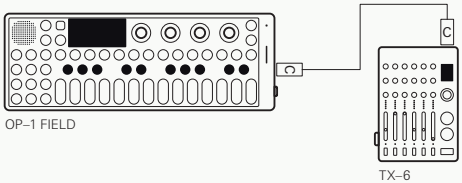
OR–1

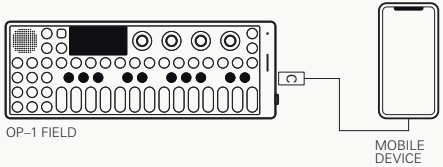


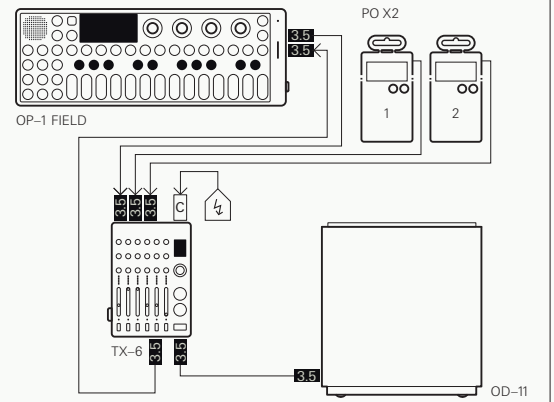
OP–1 FIELD

BLE MIDI CONTROLLER


OP–1 FIELD
OP–Z


OP–1 FIELD
TX–6


OP–1 FIELD
MOBILE
DEVICE


PO X2
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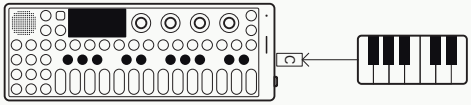
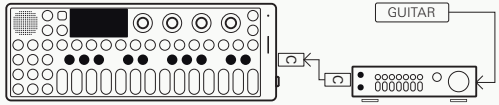
3.5
OD–11

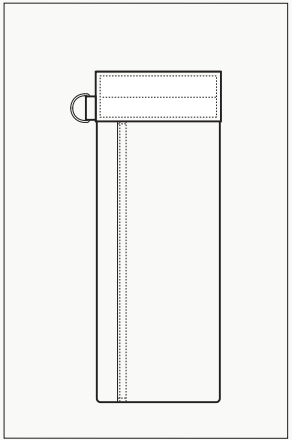

OP–1 FIELD
MIDI
KEYBOARD

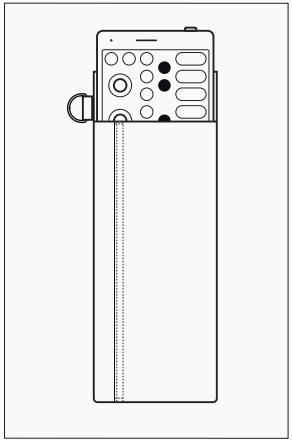

GUITAR
OP–1 FIELD
AUDIO
INTERFACE

accessories

to prepare you for your journey into the field, we've created a collection of custom accessories, crafted from durable fabrics and designed with versatility and durability in mind.

each piece has multiple uses and ways of wear, using adjustable straps and attachments. now you'll be fully equipped to get the most out of your OP–1 field, as well as other field devices.





technical specifications

- 3.5 mm stereo input jack
- 3.5 mm stereo output jack with headset microphone support
- usb audio / midi host & device
- bluetooth low energy radio
- rechargeable battery
- 24 h battery life
- color display

electrical characteristics

audio input:

impedance: 13 kOhm
analog gain: 0 - 31 dB
max level: 8 dBu, 2 Vrms
SNR: 98 dBA (typical)

audio output:

max level: 8 dBu, 2 Vrms
SNR: 124 dBA (typical)

handling

to keep the battery healthy, the unit should be charged at least every 6 months. if not used for a long time, it may not charge again.

ambient working temperature:
10°-35°C (50°-95°F)

ambient storage temperature:
0°-30°C (32°-86°F)

clean the shell of the unit with a lightly damp cloth. let dry before usage.

te boot

te boot is the bootloader in OP–1 field. it loads and runs the firmware and is used for firmware updates and factory reset.

to access te boot:

- turn OP–1 field off.
- disconnect from usb.
- hold com while switching power on to enter te boot.

firmware update

to update the OP–1 field firmware:

- access te boot.
- connect OP–1 field via usb-c to a computer.
- press 1. the device will show up as a mass storage disk.
- put the new firmware file on the disk and safely eject it.
- wait for the update to finish and follow the on-screen instructions.

the latest firmware version:
teenage.engineering/downloads

factory reset

to perform a factory reset:

- access te boot.
- press 7.
- press the orange knob to confirm. note: all user data will be removed.
- restart OP–1 field and wait for the factory reset to finish.

factory reset allows you to erase all user settings and content, as well as recreate the original file structure and restore the unit to factory default.

warnings and warranty

TEENAGE ENGINEERING OP–1 FIELD
MODEL NO: TE002AS002

RISK OF EXPLOSION OR FIRE IF THE BATTERY IS REPLACED BY INCORRECT TYPE. ONLY A BATTERY SUPPLIED BY TEENAGE ENGINEERING INSTALLED BY QUALIFIED PERSONNEL SHOULD BE USED. TO PREVENT POSSIBLE HEARING DAMAGE, DO NOT LISTEN AT HIGH SOUND LEVELS FOR LONG PERIODS.

FOR WARRANTY, SAFETY INSTRUCTIONS AND FULL REGULATORY INFORMATION, VISIT:
TEENAGE.ENGINEERING/GUIDES/OP-1.

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES AND ISED CANADA'S LICENCEEXEMPT RSS(S). OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND

(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

MODIFICATIONS NOT EXPRESSLY APPROVED BY TEENAGE ENGINEERING COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

FCC ID: Z23002A
IC: 9915A-002A

avertissements et garantie

TEENAGE ENGINEERING OP–1 FIELD
MODEL NO: TE002AS002

RISQUE D'EXPLOSION OU DE FEU SI LA BATTERIE EST REMPLACÉE PAR UN TYPE DE BATTERIE INCORRECT. SEULE UNE BATTERIE FOURNIE PAR TEENAGE ENGINEERING ET INSTALLÉE PAR UN PERSONNEL QUALIFIÉ DOIT ÊTRE UTILISÉE. AFIN D'ÉVITER TOUT DOMMAGE LIÉS À VOTRE AUDITION, IL EST RECOMMANDÉ DE NE PAS ÉCOUTER VOTRE MUSIQUE TROP FORT ET TROP LONGTEMPS.

POUR PLUS D'INFORMATIONS À PROPOS DE LA GARANTIE, LES INSTRUCTIONS DE SÉCURITÉS ET INFORMATIONS RÉGLEMENTAIRES, VISITEZ: TEENAGE.ENGINEERING/GUIDES/OP-1.

CET APPAREIL EST CONFORME À LA PARTIE 15 DES RÈGLES DE LA FCC ET LE PERMIS D'ISED CANADA NORMES RSS EXEMPTÉES. SON FONCTIONNEMENT EST SOUMIS AUX DEUX CONDITIONS SUIVANTES:

(1) CET APPAREIL NE DOIT PAS PROVOQUER D'INTERFÉRENCES PRÉJUDICIABLES, ET

(2) IL DOIT ACCEPTER TOUTE INTERFÉRENCE REÇUE, Y COMPRIS LES INTERFÉRENCES POUVANT ENTRAÎNER UN MAUVAIS FONCTIONNEMENT.

LES MODIFICATIONS NON EXPLICITEMENT APPROUVÉES PAR TEENAGE ENGINEERING PEUVENT CONDUIRE À ANNULER LES DROITS DE L'UTILISATEUR À UTILISER L'ÉQUIPEMENT.

FCC ID: Z23002A
IC: 9915A-002A

CAUTION

DO NOT TRY TO CHARGE OR USE A UNIT WITH A SEEMINGLY DAMAGED BATTERY.

ONLY A BATTERY SUPPLIED BY TEENAGE ENGINEERING INSTALLED BY QUALIFIED PERSONNEL SHOULD BE USED.

DISPOSAL OF A BATTERY INTO FIRE OR A HOT OVEN, OR MECHANICALLY CRUSHING OR CUTTING OF A BATTERY, THAT CAN RESULT IN AN EXPLOSION.

LEAVING A BATTERY IN AN EXTREMELY HIGH TEMPERATURE SURROUNDING ENVIRONMENT THAT CAN RESULT IN AN EXPLOSION OR THE LEAKAGE OF FLAMMABLE LIQUID OR GAS.

TO PREVENT POSSIBLE HEARING DAMAGE, DO NOT LISTEN AT HIGH SOUND LEVELS FOR LONG PERIODS.

STORE SMALL PARTS OUT OF THE REACH OF CHILDREN AND INFANTS. IF ACCIDENTALLY SWALLOWED, CONTACT AN EMERGENCY MEDICINE DOCTOR IMMEDIATELY

EU / UK COMPLIANCE

HEREBY, TEENAGE ENGINEERING DECLARES THAT THE RADIO EQUIPMENT TYPE OP–1 FIELD IS IN COMPLIANCE WITH DIRECTIVE 2014/53/EU. THE FULL TEXT OF THE EU DECLARATION OF CONFORMITY IS AVAILABLE AT THE FOLLOWING INTERNET ADDRESS:
TEENAGE.ENGINEERING/GUIDES/OP-1

FREQUENCY BAND: 2400 - 2483.5 MHZ
MAXIMUM OUTPUT POWER: 10 DBM EIRP

RECYCLING

ELECTRICAL AND ELECTRONIC EQUIPMENT, PARTS AND BATTERIES MARKED WITH THIS CROSSED-OUT WHEELIE BIN SYMBOL MUST NOT BE DISPOSED OF WITH NORMAL HOUSEHOLD WASTAGE, IT MUST BE COLLECTED AND DISPOSED OF SEPARATELY TO PROTECT THE ENVIRONMENT.

THIS PRODUCT CONTAINS A BUILT IN LI ION BATTERY.

TEENAGE ENGINEERING AB
TEXTILGATAN 31
120 30 STOCKHOLM
SWEDEN / SUÈDE

designed and
engineered by
teenage
engineering