

# po-14 submarine

QUICK REFERENCE CHEATSHEET

pocket operator · teenage.engineering

HARDWARE CONTROLS	
CONTROL	FUNCTION
keys 1-16	sounds / patterns / fx / steps / volume
knob A	param 1 / swing / hours (context)
knob B	param 2 / tempo / minutes (context)
sound	hold + key to select synth / drum
pattern	hold + key to select / chain
fx	hold + key to toggle effect
bpm	cycle presets; hold + knobs to fine-tune
write	enter write / record mode
key	hold + keys for play styles / chords
play/stop	start and stop sequencer
<b>SOUND PARAMETERS</b>	
knob A	param 1 (pitch / tone / character)
knob B	param 2 (decay / color / texture)
per-step parameter locking supported	
<b>TEMPO</b>	
HIP HOP 80	DISCO 120
TECHNO 140	
hold <b>bpm</b> + knob B = fine-tune (60-240 BPM)	
hold <b>bpm</b> + knob A = swing	
hold <b>bpm</b> + 1-16 = volume (caution >5 w/ headphones)	

SOUNDS (HOLD SOUND + KEY)	
SYNTH ENGINES (SOUNDS 1-15)	
sounds 1-15	bass synthesis engines: FM, phase distortion, wavetable, physical modeled string and variations
knob A	set pitch / character per engine
knob B	set decay / timbre per engine
15 distinct bass synth algorithms – each engine has unique tonal character shaped by knobs A and B	
<b>SOUND 16 – MICRO DRUM KIT</b>	
hold <b>sound</b> + 16	select drum kit mode
hold lit step + knob A	select drum (1-16 voices)
knob B	decay / tone of selected drum
drum kit fills 16 drum/perc voices within a single pattern step	
<b>KEY – PLAY STYLES</b>	
hold <b>key</b> + 1-16	punch in chord / arpeggio / transposition
hold <b>key</b> (no press)	clear current play style
<b>key</b> + <b>bpm</b>	toggle sync mode (SY0-SY5)
hold <b>key</b> + knobs	write parameter lock for play style

EFFECTS (HOLD FX + KEY)			
1 Lo Sample Rate	2 Distortion	3 Bit Crush	4 Delay
5 LP Filter	6 LP Sweep	7 HP Filter	8 HP Sweep
9 Stutter 4	10 Stutter 3	11 Feedback	12 Param LFO
13 Octave Up	14 Octave Down	15 Half Note Up	16 Vibrato
hold <b>fx</b> alone = clear all effects			
<b>fx</b> + <b>play</b> = fade out & stop			
some effects are mutually exclusive			

SEQUENCER & RECORDING	
<b>BASICS</b>	
<b>play/stop</b>	start / stop
<b>write</b>	write mode (REC on LCD)
keys 1-16 (write)	enter / remove steps
16 patterns	each with 16 steps
<b>WRITE MODE – PITCH &amp; LENGTH</b>	
hold lit step + knob A	set write pitch for that step
hold lit step + knob B	set write length for that step
<b>LIVE RECORD</b>	
hold <b>write</b> + key (play)	record in live (quantized)
hold <b>write</b> + knobs	parameter params over time
<b>PARAMETER LOCK</b>	
hold key + knobs	lock A/B values to that step
<b>PATTERNS &amp; CHAINS</b>	
hold <b>ptn</b> + key	select pattern
hold <b>ptn</b> + sequence	chain up to 16 patterns
hold <b>write</b> + <b>ptn</b> + key	copy pattern to slot
<b>key</b> + <b>ptn</b>	clear active pattern
chain: press ptn then tap keys in order to queue patterns	

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COMBOS · SYNC · SPECS

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## ALL BUTTON COMBINATIONS

COMBINATION	ACTION
hold <b>sound</b> +1-15	select synth bass sound (engine)
hold <b>sound</b> +16	select micro drum kit
hold <b>ptn</b> +1-16	select pattern
hold <b>fx</b> +1-16	toggle effect on/off
hold <b>fx</b> (no key)	clear all effects
<b>fx</b> + <b>play</b>	fade out and stop
press <b>bpm</b>	cycle presets (80 / 120 / 140)
hold <b>bpm</b> +knob B	fine-tune tempo (60-240 BPM)
hold <b>bpm</b> +knob A	adjust swing
hold <b>bpm</b> +1-16	set master volume (caution >5 w/ headphones)
press <b>write</b>	enter write / record mode
hold <b>write</b> +1-16 (playing)	live punch-in recording (quantized)
hold key+knobs (write mode)	parameter lock that step
hold <b>write</b> +knobs (playing)	automate param across timeline
hold lit step+knob A (write)	set note pitch for that step
hold lit step+knob B (write)	set note length for that step
hold <b>key</b> +1-16	punch in chord / arpeggio / transposition
hold <b>key</b> (no key press)	clear current play style
<b>key</b> + <b>bpm</b>	toggle sync mode (SY0-SY5)
hold <b>ptn</b> +sequence of keys	chain patterns (up to 16)
hold <b>write</b> + <b>ptn</b> +1-16	copy pattern to slot
<b>key</b> + <b>ptn</b>	clear active pattern
<b>sound</b> + <b>bpm</b>	check battery status
<b>sound</b> + <b>write</b>	power off (saves all data)
hold <b>ptn</b> + <b>write</b> at battery insert	factory reset
<b>CLOCK &amp; ALARM</b>	
on startup	knob A = hours · knob B = minutes · any key to confirm
set alarm	hold <b>sound</b> + <b>ptn</b> → knobs for time → key to set pattern
disable alarm	turn knob A all the way down
reset clock	remove batteries and restart

## SYNC & CONNECTIVITY

### SYNC MODES — HOLD KEY + BPM TO TOGGLE

MODE	INPUT	OUTPUT
SY0	stereo	stereo (default)
SY1	stereo	mono + sync
SY2	sync	stereo
SY3	sync	mono + sync
SY4	mono + sync	stereo
SY5	mono + sync	mono + sync

3.5mm stereo cable · audio: right ch · sync: left ch · toggle with **key**+**bpm**

### TWO-UNIT SETUP

master	SY1 or SY3 (sync out on left ch)
slave	SY2 or SY4 (sync in on left ch)

## SPECS & POWER

sounds	15 synth bass engines + micro drum kit
effects	16
patterns	16 × 16 steps
max chain	16 patterns
BPM range	60-240 (presets: 80 / 120 / 140)
volume	16 levels (caution above 5 w/ headphones)
sync modes	6 (SY0-SY5)
power	2 × AAA batteries
auto power-off	5 min idle / 60 min w/ line-in

### POWER CONTROLS

<b>sound</b> + <b>write</b>	manual power off (saves data)
<b>sound</b> + <b>bpm</b>	check battery status
any key	wake from sleep

same battery type only — do not mix · all data saves on power-off  
factory reset: hold **ptn**+**write** while inserting batteries