

A-1 Precision Adder Has knob recorder Parameters 0: Z smooth or integers	A-2 Four Quadrant Multiplier Has knob recorder Parameters 0: Z smooth or integers	A-3 Full-wave Rectifier	A-4 Minimum Maximum
Z Offset	Z Scale	Z Mode ●	Z Gate
X Input	X Input	X Input	X Input
Y Input	Y Input	Y Input	Y Input
A $X + Y + Z$	A $X * Y * Z$	A $\begin{matrix} \text{abs}(X + Y) \\ \text{abs}(X) \end{matrix}$	A $\min(X, Y)$
B $X - Y - Z$	B $-X * Y * Z$	B $\begin{matrix} \text{abs}(X - Y) \\ \text{abs}(Y) \end{matrix}$	B $\max(X, Y)$
A-5 Linear/ Exponential Converter	A-6 Quantizer Parameters 0: Attenuation X 1: Transpose mode 2: Key	A-7 Comparator	A-8 Dual Waveshaper Has knob recorder
Z Tune	Z Scale & Mode ●	Z Hysteresis	Z Gain
X Exp In	X Input	X Input	X Input
Y Linear In	Y Transpose Trigger In	Y Input	Y Input
A Linear Out	A Quantized	A $X > Y$	A Folded X
B Exp Out	B Trigger	B $X < Y$	B Shaped Y

B-1 Sample and Hold Press Z to trigger Parameters 0: Track or sample	B-2 Slew Rate Limit	B-3 Pitch & Envelope Tracker	B-4 Clockable Delay/Echo Has tap tempo
Z Slew rate	Z Slew rate	Z Slew rate	Z Feedback
X Input	X Input } summed	X Audio In	X Audio In
Y Trigger	Y Input	Y Offset A	Y Clock
A Sampled X	A Linear slew	A V/Octave	A Dry+delay
B Noise	B Log slew	B Envelope	B Delay only
B-5 LFO 0: Attenuation A 1: Attenuation B 2: Offset A 3: Offset B	B-6 Clockable LFO Has tap tempo Parameters 0: Attenuation A & B	B-7 VCO with Linear FM Parameters 0: Octave shift 1: Attenuation A 2: Attenuation B	B-8 VCO with waveshaping 0: Octave shift 1: Attenuation A 2: Attenuation B 3: Y offset
Z Tune	Z Multiplier	Z Tune	Z Tune
X Hz/V In	X Clock	X V/Octave	X V/Octave
Y Waveshape	Y Waveshape	Y Linear FM	Y Waveshape
A Saw/Sin/Tri	A Saw/Sin/Tri	A Sine	A Saw/Tri/Saw
B Square	B Square	B Saw	B Square

C-1 Precision Adder Has knob recorder Parameters 0: Z divisor	C-2 Voltage Controlled Delay Line Parameters 0: Y offset	C-3 Clockable Ping Pong Has tap tempo Parameters 0: Output Mode	C-4 Clockable Ping Pong Has tap tempo Parameters 0: Feedback
Z Offset	Z Feedback	Z Feedback	Z Input Pan
X Input	X Audio In	X Audio In	X Audio In
Y Input	Y Delay Time	Y Clock	Y Clock
A $X + Y + Z$	A Delay only	A Left	A Left
B $X - Y - Z$	B Dry+delay	B Right	B Right
C-5 Resonator Push Z for 'strike' Parameters 0: Y offset	C-6 Vocoder Parameters 0: Filter bank	C-7 Phaser Parameters 0: Y offset 1: Number of stages	C-8 Bit Crusher Parameters 0: Y offset 1: Reduction mode 2: Mangling mode
Z Gain	Z Decay	Z Feedback	Z Bit depth
X Audio In	X Modulator	X Audio In	X Input
Y V/Octave	Y Carrier	Y Sweep	Y Sample rate
A Audio Out	A Audio Out	A Dry+phase	A Output
B Envelope	B Envelope	B Phase only	B Comparator

<p>D-1</p>	<p>D-2 Tape Delay</p> <p>Parameters 0: Tape length</p> <p>Z Feedback</p> <p>X Audio In</p> <p>Y Tape speed</p> <p>A Dry+delay</p> <p>B Delay only</p>	<p>D-3</p>	<p>D-4 State Variable Filter</p> <p>Parameters 0: Filter resonance</p> <p>Z Filter Type</p> <p>X Audio In</p> <p>Y V/Octave</p> <p>A LP/BP/HP</p> <p>B HP/BP/LP</p>
<p>D-5 LP/HP Filter</p> <p>Z Resonance</p> <p>X Audio In</p> <p>Y V/Octave</p> <p>A Low pass</p> <p>B High pass</p>	<p>D-6 LP/BP Filter</p> <p>Z Resonance</p> <p>X Audio In</p> <p>Y V/Octave</p> <p>A Low pass</p> <p>B Band pass</p>	<p>D-7 BP/HP Filter</p> <p>Z Resonance</p> <p>X Audio In</p> <p>Y V/Octave</p> <p>A Band pass</p> <p>B High pass</p>	<p>D-8 BP/Notch Filter</p> <p>Z Resonance</p> <p>X Audio In</p> <p>Y V/Octave</p> <p>A Band pass</p> <p>B Notch</p>

<p>E-1 AR Envelope</p> <p>0: Trigger Mode 1: Z Mode 2: Out A Attenuverter 3: Out B Attenuverter</p>	<p>E-2 AR Envelope (w/ push)</p> <p>Press Z to trigger</p> <p>Parameters 0: Trigger Mode</p>	<p>E-3 AR Envelope & VCA</p> <p>0: Trigger Mode 1: Z Mode 2: Out A Attenuverter 3: Out B Attenuverter</p>	<p>E-4 AR Envelope & VCA</p> <p>Press Z to trigger</p> <p>Parameters 0: Trigger Mode</p>
Z Times	Z Times	Z Times	Z Times
X Trigger	X Trigger	X Trigger	X Trigger
Y Trigger	Y Trigger	Y VCA In	Y VCA In
A Env Out	A Env Out	A Env Out	A Env Out
B Env Out	B Env Out	B VCA Out	B VCA Out
<p>E-5 Dual AR Envelope</p> <p>0: Trigger Mode 1: Z Mode 2: Out A Attenuverter 3: Out B Attenuverter</p>	<p>E-6 Dual AR Envelope</p> <p>Press Z to trigger</p> <p>Parameters 0: Trigger Mode</p>	<p>E-7 Euro to Buchla Converter</p> <p>Parameters 0: Octave shift</p>	<p>E-8 Buchla to Euro Converter</p> <p>Parameters 0: Octave shift</p>
Z Times	Z Times	Z Tune	Z Tune
X Trigger A	X Trigger A	X IV/Oct	X 1.2V/Oct
Y Trigger B	Y Trigger B	Y Gate	Y Gate/trigger
A Env Out A	A Env Out A	A 1.2V/Oct	A IV/Oct
B Env Out B	B Env Out B	B Gate/trigger	B Trigger

F-1 Clockable AD (mute) Has tap tempo Parameters 0: Output Attenuverter	F-2 Clockable AD (gate) Has tap tempo Parameters 0: Output Attenuverter	F-3 Clockable AD (trig) Has tap tempo Parameters 0: Output Attenuverter	F-4 Clockable AD & VCA Has tap tempo Parameters 0: Output Attenuverter
Z Shape	Z Shape	Z Shape	Z Shape
X Clock	X Clock	X Clock	X Clock
Y Mute	Y Gate	Y Trigger	Y VCA In
A Env Out	A Env Out	A Env Out	A Env Out
B Env Out	B Env Out	B Env Out	B VCA Out
F-5 Shift Register CVs 0: Direction 1: Length 2: Slew rate 3: Output attenuator	F-6 Shift Register Quantized 0: Direction 1: Length 2: Scale 3: Output attenuator	F-7 Shift Register Triggers Press Z to modify seq Parameters 0: Length	F-8 Shift Register Dual Trigs Parameters 0: Length A 1: Length B
Z Randomness	Z Randomness	Z Randomness	Z Randomness
X Clock	X Clock	X Clock	X Clock
Y Modify	Y Modify	Y Modify	Y Modify
A Unipolar	A Quantized	A Trigger	A Trigger A
B Bipolar	B Trigger	B Inverse	B Trigger B

G-1 ES-1 Emulation	G-2 ES-2 Emulation	G-3 Pitch Reference Parameters 0: Semitone 1: Octave	G-4 Frequency Reference
Z Trim	Z Trim	Z Amplitude	Z Amplitude
X Input 1	X Input 1	X	X
Y Input 2	Y Input 2	Y	Y
A Output 1	A Output 1	A Sine Out	A Sine Out
B Output 2	B Output 2	B Square Out	B Square Out
G-5 Tuner	G-6 MIDI Clock 0: Divisor A 1: Divisor B 2: Divisor MIDI out 3: Y Mode	G-7 MIDI/CV Parameters 0: Transpose 1: Bend depth	G-8 CV/MIDI Parameters 0: Offset 1: Z Mode
Z Amplitude	Z Unused	Z Unused	Z Mod or Vel
X Input	X Clock	X Unused	X Pitch CV
Y	Y Run/stop	Y Unused	Y Gate
A Output	A Output	A Pitch CV	A Unused
B Sine Out	B Output	B Gate	B Unused

H-1 Crossfade/ Pan Has knob recorder Parameters 0: Crossfade/pan law	H-2 Dual Sample & Hold Parameters 0: Sample or Track	H-3 Dual Quantizer (Z scale) 0: X Attenuation 1: Y Attenuation 2: X Transpose 3: Y Transpose	H-4 Dual Quantizer 0: X Attenuation 1: Y Attenuation 2: X Scale 3: Y Scale
Z Fade/pan	Z Gate	Z Scale	Z Trigger
X Input 1	X Input A	X Input A	X Input A
Y Input 2	Y Input B	Y Input B	Y Input B
A Left Out	A Output X	A Quantized X	A Quantized X
B Right Out	B Output Y	B Quantized Y	B Quantized Y
H-5 Dual Euclidean Patterns 0: Steps 1: Pulses 1 2: Rotation 3: Pulse length	H-6 Dual Delayed Pulse Gen 0: Z Mode 1: Range 2: Delay 3: Length	H-7	H-8
Z Pulses 2	Z Control		
X Clock	X Trigger A		
Y Reset	Y Trigger B		
A Output 1	A Output X		
B Output 2	B Output Y		

I-1 Audio Playback	I-2 Clocked Audio Playback	I-3 Audio Playback V/Oct Parameters 0: Octave shift	I-4 Audio Playback Z Speed Parameters 0: Sample selection
Z Select	Z Select	Z Select	Z Speed
X Retrigger	X Retrigger	X Retrigger	X Retrigger
Y Start Pos	Y Clock	Y V/Oct	Y Start Pos
A Left Out	A Left Out	A Left Out	A Left Out
B Right Out	B Right Out	B Right Out	B Right Out
I-5	I-6	I-7	I-8

<p>J-1 MIDI Playback (Clocked)</p>	<p>J-2</p>	<p>J-3 MIDI Playback (Free)</p> <p>Parameters 0: MIDI File selection</p>	<p>J-4 Audio Playback End CV</p> <p>Parameters 0: Sample selection</p>
<p>Z Select</p>		<p>Z Speed</p>	<p>Z Trigger /End Pos</p>
<p>X Clock</p>		<p>X V/Oct</p>	<p>X End Pos /Trigger</p>
<p>Y Retrigger</p>		<p>Y Retrigger</p>	<p>Y Start Pos</p>
<p>A CV Out</p>		<p>A CV Out</p>	<p>A Left Out</p>
<p>B Gate Out</p>		<p>B Gate Out</p>	<p>B Right Out</p>
<p>J-5 Audio Recorder</p> <p>Z Record</p> <p>X Input L</p> <p>Y Input R</p> <p>A Output L</p> <p>B Output R</p>	<p>J-6</p>	<p>J-7</p>	<p>J-8</p>

<p>K-1 Wavetable VCO</p> <p>Parameters 0: Wavetable 1: Octave shift 2: Y offset</p> <p>Z Tune</p> <p>X V/Octave</p> <p>Y Wave</p> <p>A Wave Out</p> <p>B Sub Out</p>	<p>K-2</p>	<p>K-3</p>	<p>K-4</p>
<p>K-5</p>	<p>K-6</p>	<p>K-7</p>	<p>K-8</p>

Expert Sleepers disting mk4 Quick Reference Guide

For firmware v4.2

X, **Y** and **Z** are **Inputs**.

A and **B** are **Outputs**.

Changing Algorithm

Either:

- Push 'S' and hold in while turning, or
- Use the menu:
 - Press 'S' twice
 - Turn to select algorithm
 - Press to accept

Parameters

Turn 'S' to modify the currently selected parameter.

Press 'Z' to cycle between parameters (if the current algorithm has more than one parameter).

Tap Tempo

If available – press 'Z'. The time between two presses defines the delay/LFO/etc. time.

Knob Recorder

If available – push 'Z' and hold in while turning. Release to begin playback. Turn 'Z' to stop playback and regain manual control.

Menus

Press 'Z' to cancel menu mode.