



























## Bank I-a

I-a Precision Adder  Has knob recorder Parameters 0: Z smooth or integers	I-b Four Quadrant Multiplier  Has knob recorder Parameters 0: Z smooth or integers	I-c Full-wave Rectifier 	I-d 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 $\frac{\text{abs}(X + Y)}{\text{abs}(X)}$	A $\min(X, Y)$
B $X - Y - Z$	B $-X * Y * Z$	B $\frac{\text{abs}(X - Y)}{\text{abs}(Y)}$	B $\max(X, Y)$
2-a Linear/Exponential Converter 	2-b Quantizer 	2-c Comparator 	2-d 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









## Bank I-a

3-a Sample and Hold  Press Z to trigger	3-b Slew Rate Limiter 	3-c Pitch & Envelope Tracker 	3-d 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
4-a LFO  0: Attenuation A 1: Attenuation B 2: Offset A 3: Offset B	4-b Clockable LFO  Has tap tempo Parameters 0: Attenuation A & B	4-c VCO with Linear FM  Parameters 0: Octave shift 1: Attenuation A 2: Attenuation B	4-d VCO with waveshaping  Parameters 0: Octave shift 1: Attenuation A 2: Attenuation B
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









## Bank I-b

<p>I-a Precision Adder</p>  <p>Has knob recorder Parameters 0: Z divisor</p>	<p>I-b Voltage Controlled Delay Line</p>  <p>Parameters 0: Y offset</p>	<p>I-c Clockable Ping Pong</p>  <p>Has tap tempo Parameters 0: Output Mode</p>	<p>I-d Clockable Ping Pong</p>  <p>Has tap tempo Parameters 0: Feedback</p>
<b>Z</b> Offset	<b>Z</b> Feedback	<b>Z</b> Feedback	<b>Z</b> Input Pan
<b>X</b> Input	<b>X</b> Audio In	<b>X</b> Audio In	<b>X</b> Audio In
<b>Y</b> Input	<b>Y</b> Delay Time	<b>Y</b> Clock	<b>Y</b> Clock
<b>A</b> $X + Y + Z$	<b>A</b> Delay only	<b>A</b> Left	<b>A</b> Left
<b>B</b> $X - Y - Z$	<b>B</b> Dry+delay	<b>B</b> Right	<b>B</b> Right
<p>2-a Resonator</p>  <p>Push Z for 'strike'</p>	<p>2-b Vocoder</p>  <p>Parameters 0: Filter bank</p>	<p>2-c Phaser</p>  <p>Parameters 0: Y offset 1: Number of stages</p>	<p>2-d</p> 
<b>Z</b> Gain	<b>Z</b> Decay	<b>Z</b> Feedback	
<b>X</b> Audio In	<b>X</b> Modulator	<b>X</b> Audio In	
<b>Y</b> V/Octave	<b>Y</b> Carrier	<b>Y</b> Sweep	
<b>A</b> Audio Out	<b>A</b> Audio Out	<b>A</b> Dry+phase	
<b>B</b> Envelope	<b>B</b> Envelope	<b>B</b> Phase only	









## Bank I-b

<p>3-a</p> 	<p>3-b Tape Delay</p>  <p>Parameters 0: Tape length</p> <p><b>Z</b> Feedback</p> <p><b>X</b> Audio In</p> <p><b>Y</b> Tape speed</p> <p><b>A</b> Dry+delay</p> <p><b>B</b> Delay only</p>	<p>3-c</p> 	<p>3-d State Variable Filter</p>  <p>Parameters 0: Filter resonance</p> <p><b>Z</b> Filter Type</p> <p><b>X</b> Audio In</p> <p><b>Y</b> V/Octave</p> <p><b>A</b> LP/BP/HP</p> <p><b>B</b> HP/BP/LP</p>
<p>4-a LP/HP Filter</p> 	<p>4-b LP/BP Filter</p> 	<p>4-c BP/HP Filter</p> 	<p>4-d BP/Notch Filter</p> 
<b>Z</b> Resonance	<b>Z</b> Resonance	<b>Z</b> Resonance	<b>Z</b> Resonance
<b>X</b> Audio In	<b>X</b> Audio In	<b>X</b> Audio In	<b>X</b> Audio In
<b>Y</b> V/Octave	<b>Y</b> V/Octave	<b>Y</b> V/Octave	<b>Y</b> V/Octave
<b>A</b> Low pass	<b>A</b> Low pass	<b>A</b> Band pass	<b>A</b> Band pass
<b>B</b> High pass	<b>B</b> Band pass	<b>B</b> High pass	<b>B</b> Notch









Bank I-c

<p>I-a AR Envelope </p> <p>0: Trigger Mode 1: Z Mode 2: Out A Attenuverter 3: Out B Attenuverter</p>	<p>I-b AR Envelope (w/ push) </p> <p>Press Z to trigger Parameters 0: Trigger Mode</p>	<p>I-c AR Envelope &amp; VCA </p> <p>0: Trigger Mode 1: Z Mode 2: Out A Attenuverter 3: Out B Attenuverter</p>	<p>I-d AR Envelope &amp; VCA </p> <p>Press Z to trigger 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>2-a Dual AR Envelope </p> <p>0: Trigger Mode 1: Z Mode 2: Out A Attenuverter 3: Out B Attenuverter</p>	<p>2-b Dual AR Envelope </p> <p>Press Z to trigger Parameters 0: Trigger Mode</p>	<p>2-c </p>	<p>2-d </p>
Z Times	Z Times		
X Trigger A	X Trigger A		
Y Trigger B	Y Trigger B		
A Env Out A	A Env Out A		
B Env Out B	B Env Out B		

## Bank I-c

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

# SD Playback Bank

<p>I-a SD Playback</p> 	<p>I-b</p> 	<p>I-c SD Playback V/Oct</p> 	<p>I-d SD Playback Z Speed</p>  <p>Parameters 0: Sample selection</p>
<p>Z Select</p>		<p>Z Select</p>	<p>Z Speed</p>
<p>X Retrigger</p>		<p>X Retrigger</p>	<p>X Retrigger</p>
<p>Y Start Pos</p>		<p>Y V/Oct</p>	<p>Y Start Pos</p>
<p>A Left Out</p>		<p>A Left Out</p>	<p>A Left Out</p>
<p>B Right Out</p>		<p>B Right Out</p>	<p>B Right Out</p>
<p>3-a</p> 	<p>3-b</p> 	<p>3-c</p> 	<p>3-d</p> 

# Expert Sleepers disting mk3 Quick Reference Guide

## For firmware v3.3

**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

### Changing Bank

- Press 'S' (to enter the menu)
- Turn to select '2' (change bank)
- Press to accept
- Turn to select bank
- 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.