Expert Sleepers Disting 4.14

(10/29/19)

A1	Precision CV Adder	R	Z	Offset ±10 Volts	X	Input	Y	Input	A	X+Y+Z SUM / X+Z ADD Z / X+Z ADDZ	B	X-Y-Z DIFF. / Y-Z SUB Z / Y+Z ADD Z	P0: OCTAVE SHIFT ON/OFF P1: Z OFFSET MODE 0 1 2
A2	4 Quadrant Modulator	R	Z	Scale (1/10 to 10 X)	X	Input	Y	Input	A	X*Y*SCALE	B	-X*Y*SCALE	P0: INTEGER/SMOOTH STEPS
A3	Full Rectifier	●	Z	Mode	X	Input	Y	Input	A	ABS(X) / ABS(X+Y) SUM	B	ABS(Y) / ABS(X-Y) DIFF.	P0: Z MODE - 0= INDEPENDANT 0= X & Y COMBINED
A4	Minimum Maximum	G	Z	Gate	X	Input	Y	Input	A	MINIMUM (X,Y)	B	MAXIMUM (X,Y)	
A5	Linear to Exponential	●	Z	Hz/V Scale Tune	X	Exponential In	Y	Linear In	A	Linear/Gate Invert	B	Exponential/Gate Invert	P0: A LINEAR OUT/GATE INVERTER P1: B EXPONENTIAL OUT/GATE INVERTER
A6	Quantizer	◔	Z	Scale Select	X	Voltage Input	Y	Trigger Transpose	A	Quantized Out	B	Gate Out	P0: X IN ATTEN. P1: TRANSPOSE MODE P2: KEY P3: OFFSET P4: MIDI GATE ON/OFF
A7	Comparator	●	Z	Hysteresis	X	Input	Y	Input	A	X > Y = Gate	B	X < Y = Gate	
A8	Waveshaper Dual	R	Z	Gain (Pos & Neg)	X	Folder Input	Y	Triangle Input	A	Folder Output	B	Tri to Sine Out	
B1	Sample & Hold	G	Z	Slew Rate	X	Sample Input	Y	Gate Input	A	Hold Out	B	Noise Out	P0: 0=S&H 1= TRACK & HOLD P1: TIME OFFSET P2: 0 1 2 3 P3: NOISE ADDED TO X
B2	Slew Rate Limiter	●	Z	Slew Rate	X	Input	Y	Input	A	Linear Slew Out	B	Log Slew Out	P0: UP SLEW P1: DOWN SLEW
B3	Pitch Track/Env. Follow	●	Z	Envelope Rate	X	Audio Input	Y	Pitch Mod.	A	1v/Octave Out	B	Envelope Out	
B4	Delay Clockable	T	Z	Feedback	X	Audio Input	Y	Clock Input	A	Mix/Mix/Delay	B	Delay/Mix/Delay	P0: DELAY TIME MULTIPLIER P1: OUTPUT MODE 0 1 2
B5	LFO	●	Z	Tune	X	Rate: 1Hz/Volt	Y	Waveshape/PWM	A	-5V 0V +5V	B	-5V 0V +5V	P0: LFO A ATTEN. P1: LFO B ATTEN. P3: LFO A OFFSET P4: LFO B OFFSET
B6	LFO Clockable	T	Z	Multiply/Divide	X	Clock Input	Y	Waveshape/PWM	A	-5V 0V +5V	B	-5V 0V +5V	P0: LFO A ATTEN. P1: LFO B ATTEN. P3: Y WAVESHAPE
B7	VCO Linear FM	●	Z		X	Carier Pitch In	Y	Mod. Pitch Ratio	A	0 1 2 3 4	B	0 1 2 3 4	P0: OCTAVE P1: A ATTEN. P2: B ATTEN. P3: VCO A WAVE P4: VCO B WAVE
B8	VCO with Waveshape	●	Z	Tune±½Oct.(Sync)	X	Pitch 1v/Oct. In	Y	Waveshape/PWM	A	0 1 2	B	0 1 2	P0: OCT.P1:A ATTEN.P2:B ATTEN.P3:SHAPE P4:WAVE 0,1,2 P5:TRANSPOSE P6:FINE/SYNC
C1	Precision Adder	R	Z	Offset	X	Input	Y	Input	A	X + Y + Offset	B	X + Y – Offset	P0: OFFSET DIVISOR P1: SUM MODE
C2	VC Delay Line	●	Z	Bipolar Feedback	X	Audio Input	Y	Delay Time 0-8v	A	Delay Only Out	B	Mix Out	P0: OFFSET TO Y DELAY TIME P1: Y ATTENUATOR P2: SATURATION ON/OFF
C3	Ping Pong Feedback	T	Z	Feedback	X	Audio Input	Y	Clock	A	Left Audio Out	B	Right Audio Out	P0: OUT MODE 1 =DRY OFF P1: TIME MULTIPLY P2: INPUT PAN
C4	Ping Pong Pan	T	Z	Pan CV In	X	Audio Input	Y	Clock	A	Left Audio Out	B	Right Audio Out	P0: FEEDBACK P1: TIME MULTIPLY P2: OUT MODE 0=MIX 1=DELAY ONLY
C5	Resonator	S	Z	Gain	X	Audio Input	Y	Freq. 1v/Oct. In	A	Audio Output	B	Env.Follow Out	P0: Y PITCH SEMITONES
C6	Vocoder	●	Z	Decay Time	X	Modulator Input	Y	Carier Input	A	Audio Output	B	Env.Follow Out	P0: FILTER BANK, 0=1/2 OCT.100HZ 1=1/3 OCT.250HZ P1: A ATTEN. P2: B ATTEN.
C7	Phaser	●	Z	Bipolar Feedback	X	Audio Input	Y	Phase Shift	A	Audio Mix Out	B	Audio Phaser Out	P0: Y OFFSET MANUAL SWEEP P1: NUMBER OF STAGES (1 TO 10)
C8	Bit Crusher	●	Z	Bit Reduction	X	Audio Input	Y	Sample Rate	A	Audio Output	B	Comparator Out	P0: Y OFFSET SAMPLE RATE P1: BIT REDUCER MODE P2: MANGLE MODE
D1	DJ Filter (Low-High)	●	Z	Filter Sweep	X	Left Audio In	Y	Right Audio In	A	Left Audio Out	B	Right Audio Out	P0: RESONANCE
D2	Tape Delay	●	Z	Feedback	X	Audio Input	Y	Tape Speed	A	Mix/Mix/Delay	B	Delay/Mix/Delay	P0: TAPE LENGTH P1: FINE LENGTH P2: TAPE SPEED P3: OUPUT MODES
D3	Waveform Animator	●	Z	Separation	X	Audio Input	Y	Center Threshold	A	Animated Out	B	Square Waves Out	P0: LFO DEPTH P1: Y THRESHOLD P2: LFO RATE P3: SCALE -1 = AUTO
D4	State Variable Filter	●	Z	Blend Filter Type	X	Audio Input	Y	Freq. 1v/Oct In	A	LP<BP>HP	B	HP<BP>LP	P0: Y FREQUENCY OFFSET (-80 TO +80) P1: RESONANCE
D5	Low & Highpass Filter	●	Z	Resonance	X	Audio Input	Y	Freq. 1v/Oct In	A	Lowpass Output	B	Highpass Output	P0: Y FREQUENCY OFFSET (-80 TO +80)
D6	Low & Bandpass Filter	●	Z	Resonance	X	Audio Input	Y	Freq. 1v/Oct In	A	Lowpass Output	B	Bandpass Output	P0: Y FREQUENCY OFFSET (-80 TO +80)
D7	Band & Highpass Filter	●	Z	Resonance	X	Audio Input	Y	Freq. 1v/Oct In	A	Bandpass Output	B	Highpass Output	P0: Y FREQUENCY OFFSET (-80 TO +80)
D8	Bandpass & Notch Filter	●	Z	Resonance	X	Audio Input	Y	Freq. 1v/Oct In	A	Bandpass Output	B	Notch Output	P0: Y FREQUENCY OFFSET (-80 TO +80)
E1	AR Envelope	G	Z	Envelope Times	X	Trigger Input	Y	Trigger Input	A	Envelpoe A Out	B	Envelpoe B Out	P0: TRIG MODE P1: Z MODE P2: A ATTN. P3: B ATTN. P4: A OFF. P5: B OFF. P6: A P&: R
E2	AR Envelope & VCA	G	Z	Envelope Times	X	Trigger Input	Y	VCA Input	A	Envelpoe A Out	B	Envelpoe B Out	P0: TRIG MODE P1: Z MODE P2: A ATTN. P3: B ATTN. P4: A OFF. P5: B OFF. P6: A P&: R
E3	Dual AR Envelope	G	Z	Envelope Times	X	A Trigger Input	Y	B Trigger Input	A	Envelpoe A Out	B	Envelpoe B Out	P0: TRIG MODE P1: Z MODE P2: A ATTN. P3: B ATTN. P4: A OFF. P5: B OFF. P6: A P&: R
E4	Stereo Compressor	●	Z	Comp. Ratio	X	Left Audio In	Y	Right Audio In	A	Left Audio Out	B	Right Audio Out	P0: THERSHOLD P1: ATTACK P2: RELEASE P3: MAKE-UP GAIN P4: LOOKAHEAD
E5	Side-Chain Compressor	●	Z	Side-Chain Input	X	Left Audio In	Y	Right Audio In	A	Left Audio Out	B	Right Audio Out	P0: THERSHOLD P1: ATTACK P2: RELEASE P3: MAKE-UP GAIN P4: LOOKAHEAD P5: RATIO
E6	Mono Compressor	●	Z	Comp. Ratio	X	Audio Input	Y	Side-Chain Input	A	Audio Output	B	Reduction Output	P0: THERSHOLD P1: ATTACK P2: RELEASE P3: MAKE-UP GAIN P4: LOOKAHEAD P5: RATIO
E7	Euro/Buchla Converter	●	Z	Tune ±½ Octave	X	1v/Octave Input	Y	Gate Input	A	1.2v/Octave Out	B	Gate/Trigger Out	P0: OCTAVE SHIFT ±8V
E8	Buchla /Euro Converter	●	Z	Tune ±½ Octave	X	1.2v/Octave In	Y	Gate/Trigger In	A	1v/Octave Out	B	Trigger Out	P0: OCTAVE SHIFT ±8V

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F1	Clock AD Env (Mute) (T)	Z	Envelope Shape	X	Clock Input	Y	Mute Input	A	Envelope Output	B	Envelope Output	P0: MULTIPLIER P1: A ATTNVRTR P2: B ATTNVRTR P3: ATTACK P4: DECAY
F2	Clock AD Env (Gate) (T)	Z	Scale (1/10 to 10 X)	X	Clock Input	Y	Gate Input	A	Envelope Output	B	Envelope Output	P0: MULTIPLIER P1: A ATTNVRTR P2: B ATTNVRTR P3: ATTACK P4: DECAY
F3	Clock AD Env (Trig) (T)	Z	Mode	X	Clock Input	Y	Trigger Input	A	Envelope Output	B	Envelope Output	P0: MULTIPLIER P1: A ATTNVRTR P2: B ATTNVRTR P3: ATTACK P4: DECAY
F4	Clock AD Env (VCA) (T)	Z	Gate	X	Clock Input	Y	VCA Audio In	A	Envelope Output	B	VCA Audio Out	P0: MULTIPLIER P1: A ATTNVRTR P2: B ATTNVRTR P3: ATTACK P4: DECAY
F5	Shift Register Random ●	Z	Randomness	X	Clock Input	Y	Flip Modifier	A	Unipolar Output	B	Bipolar Output	P0: FORWARD/BACKWARD P1: LENGTH P2: SLEW RATE P3: ATTNVRTR P4: OFFSET
F6	Shift Register Quantize	Z	Scale Select	X	Clock Input	Y	Flip Modifier	A	Unipolar Output	B	Bipolar Output	P0: FORWARD/BACKWARD P1: LENGTH P2: SCALE P3: ATTNVRTR P4: MIDI GATE P5: TRANSPOSE
F7	Shift Register Random Trig ●	Z	Hysteresis	X	Clock Input	Y	Flip Modifier	A	Trigger Output	B	Inverse Trig Out	P0: LENGTH (1 TO 16 STEPS)
F8	Shift Register Dual Trig ●	Z	Gain (Pos&Neg)	X	Clock Input	Y	Flip Modifier	A	A Trigger Output	B	B Trigger Output	P0: LENGTH A (1 TO 16 STEPS) P1: LENGTH B (1 TO 16 STEPS)
G1	ES-1 Emulation ●	Z	Trim	X	In 1 from DAW	Y	In 2 from DAW	A	Out 1 to modular	B	Out 2 to modular	
G2	ES-2 Emulation ●	Z	Trim	X	In 1 from Modular	Y	In 2 from Modular	A	Out 1 to DAW	B	Out 2 to DAW	
G3	Pitch Reference ●	Z	Out Amplitude	X		Y		A	Sine Out ∿	B	Square Out ⎍	P0: SEMITONE P1: OCTAVE
G4	Frequency Reference ●	Z	Out Amplitude	X		Y		A	Sine Out ∿	B	Square Out ⎍	
G5	Tuner ●	Z		X	Audio Input	Y		A	Audio Thru Out	B	Sine Out ∿	
G6	MIDI Clock	Z		X	Clock Input	Y	Run / Run[stop]	A	Clock A Output	B	Clock B Output	P0: A DIVISOR P1: B DIVISOR P2: MIDI DIVISOR P3: RUN/RUN[STOP]
G7	MIDI to CV	Z		X		Y		A	Pitch CV Output	B	Gate Output	P0: TRANSPOSE P1: PITCH BEND DEPTH P2: SCALE P3: FINGERED PORTAMENTO
G8	CV to MIDI	Z	Velocity/Mod Wheel	X	Pitch CV Intput	Y	Gate Input	A		B		P0: TIMING OFFSET P1: Z MODE 0= Z SETS VELOCITY 1= MOD WHEEL
H1	Crossfade/Pan (R)	Z	Crossfade/Pan	X	Input	Y	Input	A	Mix of X&Y	B	Inverse Mix	P0: MODE (GAIN, EQUAL, DJ , FX LOOP) P1: CLIP MODE P2: OUT MODE P3: MIX B
H2	Dual Sample & Hold (G)	Z	Hold Gate	X	Sample A Input	Y	Sample B Input	A	A Output	B	B Output	P0: S&H/TRACK&HOLD P1: TIMING OFFSET P2: NOISE+X P3: NOISE+Y P4:SLEW A P5: SLEW B
H3	Dual Quantizer Z scale	Z	Scale	X	CV A Input	Y	CV B Input	A	Quantized A Out	B	Quantized B Out	P0: X IN ATTN. P1: Y IN ATTN. P2: X TRANSPOSE P3: Y TRANSPOSE
H4	Dual Quantizer Z trigger	Z	Trigger	X	CV A Input	Y	CV B Input	A	Quantized A Out	B	Quantized B Out	P0: X IN ATTN. P1: Y IN ATTN. P2: X SCALE/TRIG P3: Y SCALE/TRIG
H5	Dual Euclidean Patterns ●	Z	Pulse Pattern 2	X	Clock Input	Y	Reset Input	A	Pulse 1 Output	B	Pulse 1 Output	P0: STEPS P1: B PATTERN P2: A ROTATE P3: LENGTH P4: B ROTATE P5: REPEAT
H6	Dual Delay Pulse Generator ●	Z	Function	X	Trigger A	Y	Trigger B	A	Pulse Gernerator A	B	Pulse Gernerator B	P0: MODE (DELAY,LENGTH,HIGH,LOW <1, >1,TRIG) P1: RANGE P2: DELAY P3: LENGTH
H7	Dual Noise ●	Z	Blend Mix	X	VCA A VC Input	Y	VCA B VC Input	A	Noise A Output	B	Noise B Output	P0: TYPE A P1: TYPE B P2: ATTN.A P3: ATTN.B (−1 0 1 2 3; Z MIX)
H8	Quantizer 2	Z	A&B Interval	X	CV Input	Y	Trigger/CV In	A	Quantized A Out	B	Quantized B Out	P0: PATTERN P1: SCALE P2: KEY P3: X ATNN. P4: Y TRIG MODE P5: SLEW
I1	Audio Playback SD	Z	Sample Select	X	Retrigger CV In	Y	Start Position CV	A	Left Audio Out	B	Right Audio Out	P0: SD MEMORY CARD FOLDER P1: ENVELOPE TIME
I2	Clocked Audio Playback	Z	Sample Select	X	Retrigger CV In	Y	Clock Input	A	Left Audio Out	B	Right Audio Out	P0: SD MEMORY CARD FOLDER P1: ENVELOPE TIME
I3	Audio Playback 1v/Oct.	Z	Sample Select	X	Retrigger CV In	Y	Pitch 1v/Oct In	A	Left Audio Out	B	Right Audio Out	P0: SD MEMORY CARD FOLDER P1: OCTAVE P2: ENV.TIME P3: MIDI MODE
I4	Audio Playback Z Speed	Z	Playback Speed	X	Retrigger CV In	Y	Start Position CV	A	Left Audio Out	B	Right Audio Out	P0: SD MEMORY CARD FOLDER P1: SAMPLE SELECT P3: ENVELOPE TIME
I5	Audio Playback Reverse	Z	Playback Speed	X	Retrigger CV In	Y	Sample Select	A	Left Audio Out	B	Right Audio Out	P0: SD MEMORY CARD FOLDER P1: Y SAMPLE SELECT P3: ENVELOPE TIME
I6	Audio Playback Scrub ●	Z	Sample Select	X		Y	Playback Position	A	Left Audio Out	B	Right Audio Out	P0: SD MEMORY CARD FOLDER P1: SPEED LIMIT P2: SLEW P3: Y OFFSET
I7	Dual Audio Playback	Z	Sample Select	X	Trigger for A	Y	Trigger for B	A	Left Audio Out	B	Right Audio Out	P0: SD MEMORY CARD FOLDER P1: A=LEFT B=RIGHT/STEREO P2: ENV. TIME
I8	Dual Audio Playback Z Speed	Z	Playback Speed	X	Trigger for A	Y	Trigger for B	A	Left Audio Out	B	Right Audio Out	P0: CARD FOLDER P1: SAMPLE A P2: SAMPLE B P3: PAN MODE P4: Z SELECT MODE P5: ENV.TIME
J1	MIDI File Play Clocked	Z	Midi File Select	X	Clock Input	Y	Retrigger CV In	A	Pitch CV Output	B	Gate Output	P0: MIDI FILE SELECT, −1 = Z KNOB SELECTS 0 TO 31 SELECTS FILE, Z KNOB DISABLED
J2	Multisample Playback 2	Z	Tune ±½ Octave	X	Retrigger CV In	Y	Pitch 1v/Oct In	A	Left Audio Out	B	Right Audio Out	P0: FOLDER P1: OCTAVE P2: ENV.TIME P3: MIDI MODE P4: PITCH BEND P5:PAN
J3	MIDI File Play Freerun	Z	Playback Speed	X	Pitch 1v/Oct In	Y	Retrigger CV In	A	Pitch CV Output	B	Gate Output	
J4	Audio Playback w/End ●	Z	End Position/Retrig	X	Retrig/End Position	Y	Start Position CV	A	Left Audio Out	B	Right Audio Out	P0: SD MEMORY CARD FOLDER P1: ENVELOPE TIME
J5	Audio Recorder ●	Z	Record/Stop Gate	X	Left Audio In	Y	Right Audio In	A	Left Audio Out	B	Right Audio Out	
J6	Multisample Playback	Z	Tune ±½ Octave	X	Retrigger CV In	Y	Pitch 1v/Oct In	A	Left Audio Out	B	Right Audio Out	P0: SD MEMORY CARD FOLDER P1: OCTAVE P2: ENV.TIME P3: MIDI MODE
J7	Mono Audio Recorder ●	Z	Record/Stop Gate	X	Mono Audio In	Y		A	Mono Audio Out	B		
J8	Audio Playback Crossfade ●	Z	Sample Select	X	Gate/Clock CV	Y	Pitch 1v/Oct In	A	Left Audio Out	B	Right Audio Out	P0: SD CARD FOLDER P1: OCTAVE P2: CROSSFADE TIME P3: GATE MODE

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K1	Wavetable VCO		Z	Tune ±½ Octave	X	Pitch 1v/Oct. In	Y	Wavetable lookup	A	Wavetable A Out	B	Wavetable B Out	P0: SELECT WAVETABLE P1: OCTAVE P2: Y OFFSET P3: B MODE P4: B PHASE
K2	Clocked Wavetable LFO	●	Z	Clock Multi/Divide	X	Clock Input	Y	Wavetable lookup	A	Wavetable A Out	B	Wavetable B Out	P0: SELECT WAVETABLE P1: Y OFFSET P2: A ATTENUVERTER P3: B ATTENUVERTER
K3	Wavetable Shaper VCO	●	Z	1 to 16 Gain	X	Shaper Input	Y	Wavetable lookup	A	Wavetable Out	B	Reverse Lookup Out	P0: SELECT WAVETABLE P1: Y OFFSET
K4	Clocked Wavetable ENV	●	Z	Trigger	X	Clock Input	Y	Wavetable lookup	A	Wavetable A Out	B	Wavetable B Out	P0: SELECT WAVETABLE P1: Y OFFSET P2: A ATTEN. P3: B ATTEN. P4: TIME MULTI.
K5	Scala Quantizer		Z	Slew	X	Quantizer In	Y	Quantizer In	A	Quantized Out	B	Note Change Gate	P0: SCALE P1: X ANNTEN. P2: Y ANNTEN. P3: TRANSPOSE P3: OFFSET
K6	Clocked SD Delay	T	Z	Feedback Loop	X	Audio Input	Y	Clock Input	A	Mix/Mix/Delay	B	Delay/Mix/Delay	P0: DELAY TIME MULTIPLY P1: MAX FEEDBACK LOOP P2: OUT MODE
K7	Clock Stereo SD Delay	T	Z	Feedback Loop	X	Left Audio In	Y	Right Audio In	A	Left Audio Out	B	Right Audio Out	P0: DELAY TIME MULTIPLY P1: MAX FEEDBACK
K8	Clock Stereo SD Z Delay	T	Z	Clock Input	X	Left Audio In	Y	Right Audio In	A	Left Audio Out	B	Right Audio Out	P0: DELAY TIME MULTIPLY P1: FEEDBACK
L1	Stereo Reverb	●	Z	Wet/Dry	X	Left Audio In	Y	Right Audio In	A	Left Audio Out	B	Right Audio Out	P0: SIZE P1: FEEDBACK P2: CHARACTER P3: FILTER FREQ. P4: GAIN P5:WET/DRY-FREEZE
L2	Mono to Stereo Reverb	●	Z	Wet/Dry	X	Audio Input	Y	Feedback CV In	A	Left Audio Out	B	Right Audio Out	P0: SIZE P1: FEEDBACK P2: CHARACTER P3: FILTER FREQ. P4: GAIN P5:WET/DRY-FREEZE
L3	Dual Reverb	●	Z	Wet/Dry	X	Audio A Input	Y	Audio B Input	A	Audio A Output	B	Audio B Output	P0: SIZE P1: FEEDBACK P2: CHARACTER P3: FILTER FREQ. P4: GAIN P5:WET/DRY-FREEZE
L4	Dual Vowel Filter	●	Z	Select Vowel	X	Left Audio In	Y	Right Audio In	A	Left Audio Out	B	Right Audio Out	P0: A VOWEL P1: B VOWEL P2: BANDPASS 2 GAIN P3: BANDPASS 3 GAIN
L5	Stereo Chorus	●	Z	Wet/Dry/Mix	X	Audio Input	Y	LFO Rate	A	Left Audio Out	B	Right Audio Out	P0: LFO AMT. P1: Y OFFSET P2: FEEDBACK P3: FILTER P4: TIME P5: FINE TIME 6:STAGES 7:SAT.
L6	Mono Chorus	●	Z	Wet/Dry/Mix	X	Audio Input	Y	LFO Rate	A	Mixed Audio Out	B	Wet Audio Out	P0: LFO AMT. P1: Y OFFSET P2: FEEDBACK P3: FILTER P4: TIME P5: FINE TIME 6:STAGES 7:SAT.
L7	Mixer	R	Z	X Panarama	X	X Audio Input	Y	Y Audio Input	A	Left Audio Out	B	Right Audio Out	P0: X ATTENUATION P1: Y ATTENUATION P2: Y PAN
L8	Gate (Noise Gate)	●	Z	Threshold	X	Left Audio In	Y	Right Audio In	A	Left Audio Out	B	Right Audio Out	P0: ATTACK TIME P1: HOLD P2: RELEASE TIME P3: LOOKAHEAD
M1	Delayed LFO	●	Z	LFO Rate CV In	X	Trigger Input	Y	Ramp Time	A	LFO A Output	B	LFO B Output	P0: A TYPE P1: B TYPE P2: RATE RANGE P3: RAMP TIME P4: A ATTN. P5: B ATTN.
M2	Scaled LFO	●	Z	LFO Rate CV In	X	Minimum/Offset	Y	Maximum/Offset	A	LFO A Output	B	LFO B Output	P0: A TYPE P1: B TYPE P2: RATE RANGE P3: MODE P4: X OFFSET P5: Y OFFSET
M3	Logic	●	Z	Logic A Type	X	Logic A Input	Y	Logic B Input	A	Logic A Output	B	Logic B output	P0: B TYPE P1: X THRESH. P2: X THRESH. P3: X HYSTERESIS P4: Y HYSTERESIS
M4	Half-Wave Rectifier	R	Z	Threshold	X	Input	Y	Input	A	Output	B	Output	P0: MODE 0: A=POSX+NEGY B=NEGX+POSY MODE 1: ADD TOP/BOT. MODE 2: NEGATE TOP/BOT.
M5	Stereo Filter	●	Z	Frequency CV In	X	Left Audio In	Y	Right Audio In	A	Left Audio Out	B	Right Audio Out	P0: LOWPASS, BANDPASS & HIGHPASS P1: RESONANCE
M6	Stereo Tape Delay	●	Z	Tape Speed CV In	X	Left Audio In	Y	Right Audio In	A	Left Audio Out	B	Right Audio Out	P0: TAPE LENGTH P1: FINE LENGTH P2: FEEDBACK P3: OUTPUT MODE
N1	Switch	R	Z	CV or Trigger	X	Audio/CV Input	Y	Audio/CV Input	A	X / Y Output	B	Y / X Output	P0: MODE: SWITCH/TRIGGER P1: HYSTERESIS P4: CROSSFADE MS.
N5	Pulsar VCO		Z	Tune/Masking	X	Pitch 1v/Oct. In	Y	Formant 1v/Oct.	A	+Mask Output	B	-Mask Output	P0: WAVETABLE P1: WAVE P2: WINDOW P3: Y LINK P4: MASKING P5: OCTAVE
N8	Clocked Ping Pong Delay	T	Z	Feedback Loop	X	Audio Input	Y	Clock Input	A	Left Audio Out	B	Right Audio Out	P0: TIME MULTI. P1: MAX. FEEDBACK LOOP P2: OUTPUT MODE P4: INPUT PAN

A6 F6 G7 H8 Scales in C for Quant. and Shift Register Quant. Modes

0	Chromatic	Chromatic	
1	Major	Major Scale	
2	Minor	Minor Scale	
3	Triad	Major Triad	
4	3b+5	Minor Triad	
5	Fifth	Root +5th	
6	Triad+6	Major Triad +6th	
7	3b+5+6	Minor Triad +6th	
8	Triad+7	Major Triad +7th	
9	3b+5+7	Minor Triad +7th	
10	5+6	Root +5th +6th	
11	5+7	Root +5th +7th	
12	Pent	Pentatonic Major	
13	Minor Pent	Pentatonic Minor	
14	Nat Minor	Natural Minor Scale	
15	Harm Minor	Harmonic Minor Scale	

L4 Vowel Descriptions

P.0: Vowel A P.1: Vowel B

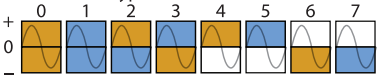
-1	Z	<Sweep>	4	er	bird
0	ow	bought	5	ae	bat
1	oo	boot	6	e	bet
2	a	hot	7	i	bit
3	uh	but	8	iy	beet

C8 Bit Crusher Parameters

Type I = Discontinuous Bit Reduction stages

Type II = Smooth transition between stages

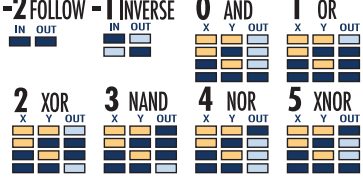
Parameter 0 Type Chart



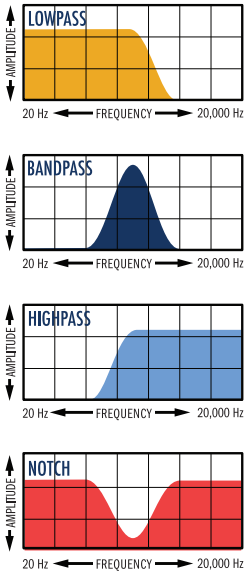
Parameter 1 Mange Mode Chart

0	1	2	3	4	5	6	7
NONE	BIT SWAP 1	BIT SWAP 2	BIT SWAP 3	BIT RO-TATE	XOR 1	XOR 2	XOR 3

M3 Logic Types



D4 D5 D6 D7 D8



E1 E3 E5 Envelope Parameters

P.0: Trigger Mode:

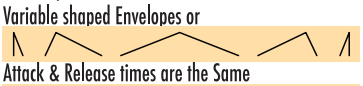
Sustain = ASR Envelope will sustain with gate high

Auto = Envelope will complete full cycle

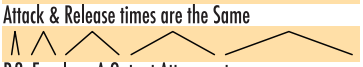
Loop = Envelope loops (LFO mode)

P.1: Shape Mode:

Variable shaped Envelopes or



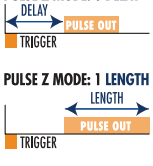
Attack & Release times are the Same



P.2: Envelope A Output Attenuverter (bipolar with positive and negative attenuation)

P.3: Envelope B Output Attenuverter (bipolar)

H6 Dual Delayed Pulse Generator Modes



PULSE Z MODE: 2 OVERIDE
Z Gate will make Outs High

PULSE Z MODE: 3 OFF GATE
Z Gate will stop Outputs

PULSE Z MODE: 4 ON GATE
Z Gate will enable Outputs

PULSE Z MODE: 5 + Z GATE
Z Gate will add to Outputs

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