disting mk4

_travelers guide
_for surveying new worlds

112 algorithms | **64** presets | **A–D** sector 1 of 4

[s] press [s] hold › then chips: number · name · range X Y Z in · A B out

two endless encoders, three inputs, two outputs · 112 algorithms, A1 to N8 · up to 8 parameters each

sector A–D | sector E–G | sector H–K | sector L–N

blue = hold

A maths + utilities

A1 – A8

A1 precision adder
knob rec

A X + Y + offset, or X + offset
B X – Y – offset, or Y ± offset

offset = ±10V in steps derived from Z

`0 Z Mode 0–1` `1 sum Mode 0–2` `2 divisor 1–12` `3 modulo 0–5` `4 slew 0–32`

A2 four quadrant multiplier
knob rec

A X * Y * scale
B -X * Y * scale

scale = 1/10 to 10x in steps derived from Z

`0 Z Mode 0–1` `1 Y Offset -20–20`

A3 full-wave rectifier
Z selects mode

A abs(X + Y) or abs(X)
B abs(X - Y) or abs(Y)

no parameters

A4 minimum/maximum
Z gate

A min(X, Y)
B max(X, Y)

no parameters

A5 linear/exponential converter
Z hz/V scale, centred on 1kHz

A (2 ^ X) * scale
B log2(Y / scale)

`0 type A 0–1` `1 type B 0–1`

A6 quantizer
midi in + out

Y transpose (Z positive) or trigger (Z negative)
Z chooses scale & function of Y

A quantized(X)
B trigger on note change

`0 input X attenuation 0–32` `1 transpose mode 0–1` `2 key -31–31` `3 offset 0–31` `4 MIDI Gate 0–1` `5 transpose -48–48` `6 MIDI Mode 0–2`

A7 comparator
Z hysteresis

A gate from X > Y
B inverted gate

`0 X Offset -40–40` `1 Y Offset -40–40`

A8 dual waveshaper
knob rec

Z gain

A shaped X
B shaped Y

`0 type A 0–1` `1 type B 0–1` `2 X offset -40–40` `3 Y offset -40–40` `4 mix A 0–32` `5 mix B 0–32`

B modulation + vcos

B1 – B8

B1 sample and hold
z: sample

Z slew rate

A X when Y exceeds 1V
B noise ±8V

`0 mode 0–1` `1 offset 0–31` `2 noise colour 0–3` `3 noise X 0–64` `4 atten B 0–32` `5 up slew -1–31` `6 down slew -1–31`

B2 slew rate limiter
Z slew rate

A slew rate limited (X + Y) or X
B slew rate limited (X + Y) or Y

`0 up slew -1–32` `1 down slew -1–32` `2 type A 0–1` `3 type B 0–1` `4 mode 0–1`

B3 pitch and envelope tracker
Z slew rate for envelope

A V/octave pitch derived from X, plus Y
B envelope derived from X

no parameters

B4 clockable delay/echo
tap tempo

X signal
Y clock input
Z feedback

A output according to mode
B output according to mode

`0 delay time multiplier -15–8` `1 output mode 0–2` `2 mix -33–32` `3 feedback -1–32` `4 MIDI clock divider 0–15`

B5 lfo
X hz/V frequency
Y waveshape
Z tune

A saw -> sine -> triangle
B pulse -> square -> pulse

`0 sets an attenuation for output A 0–40` `1 sets an attenuation for output B 0–40` `2 sets an offset for output A -40–40` `3 sets an offset for output B -40–40` `4 Y offset -32–32`

B6 clockable lfo
tap tempo

X clock input
Y waveshape
Z integer multiplier/divider

A saw -> sine -> triangle
B pulse -> square -> pulse

`0 output A attenuverter -32–32` `1 output B attenuverter -32–32` `2 Y Offset -32–32`

B7 vco with linear fm
midi in

X V/Oct pitch input
Y linear FM input
Z tune ±0.5 octaves

A selectable output waveforms (with B)
B see A

`0 octave shift -16–8` `1 sets an attenuation for output A 0–32` `2 sets an attenuation for output B 0–32` `3 type A 0–5` `4 type B 0–5` `5 fine tune/enable sync -51–50`

B8 vco with waveshaping
midi in

X V/Oct pitch input
Y waveshape/PWM
Z tune ±0.5 octaves or sync

A selectable output waveforms (with B)
B see A

`0 octave shift -16–8` `1 sets an attenuation for output A 0–32` `2 sets an attenuation for output B 0–32` `3 offset for input Y (manual shape control) -32–32` `4 selects output waveforms 0–4` `5 transpose -12–12` `6 fine tune/enable sync -51–50`

C delay + effects

C1 – C8

C1 counter
z: step 1

X clock input
Y reset input

A clock outputs (with B)
B see A

`0 sets the number of steps 1–32` `1 skips 0–32` `2 clock pulse speed 1–50` `3 clock pulse length 1–50` `4 MIDI clock divider 0–15`

C2 voltage controlled delay line
X audio input
Y delay time
Z feedback (bipolar)

A delay output
B delay output plus input signal

`0 applies an offset to the Y input -32–32` `1 attenuator for the Y input -32–32` `2 enable saturation 0–1` `3 linear/Exponential Y 0–1`

C3 clockable ping pong delay (z feedback)
tap tempo

X audio input
Y clock
Z feedback

A left output
B right output

`0 mix -33–32` `1 delay time multiplier -15–8` `2 input pan -32–32` `3 MIDI clock divider 0–15`

C4 clockable ping pong delay (z input pan)
tap tempo

X audio input
Y clock
Z input pan

A left output
B right output

`0 feedback 0–31` `1 delay time multiplier -15–8` `2 mix -33–32` `3 MIDI clock divider 0–15`

C5 resonator
z: strike

X audio or trigger input
Y centre frequency (pitch)
Z gain

A audio output
B envelope of audio output

`0 applies an offset to the Y input -32–32` `1 mode 0–1`

C6 vocoder
X modulator input
Y carrier input
Z sets the decay time

A audio output
B envelope output

`0 selects the filter bank 0–1` `1 output A attenuation/gain 0–64` `2 output B attenuation/gain 0–64`

C7 phaser
X audio input
Y sweep
Z feedback (bipolar)

A phase-shifted output plus input signal
B phase-shifted output

`0 applies an offset to the Y input -31–31` `1 sets the number of phaser stages 1–10`

C8 bit crusher
X signal input
Y sample rate or signal (stereo) input
Z sets bit reduction

A signal output
B comparator or signal (stereo) output

`0 applies an offset to the Y input -31–31` `1 selects the bit reduction mode 0–7` `2 selects the bit mangling mode 0–7` `3 stereo mode 0–1`

D filters

D1 – D8

D1 dj filter
z: centre filter

X stereo audio input (with Y)
Y see X
Z filter sweep

A stereo audio output (with B)
B see A

`0 filter resonance 0–31`

D2 tape delay
X audio input
Y tape speed
Z feedback

A output according to mode
B output according to mode

`0 tape length 0–43` `1 fine length control -9–9` `2 tape speed -8–16` `3 output mode 0–2` `4 mix -33–32` `5 feedback -1–32`

D3 waveform animator
X audio input
Y threshold
Z separation

A animated output
B square waves output

`0 LFO depth -1–31` `1 Y offset -31–31` `2 LFO rate 0–31` `3 scale -1–31`

D4 state variable filter
X audio input
Y filter frequency
Z filter type

A filter output LP->BP->HP
B filter output HP->BP->LP

`0 Y Offset -80–80` `1 filter resonance 0–31`

D5 lp/hp filter
X audio input
Y filter frequency
Z filter resonance

A low pass filter output
B high pass filter output

`0 Y Offset -80–80`

D6 lp/bp filter
X audio input
Y filter frequency
Z filter resonance

A low pass filter output
B band pass filter output

`0 Y Offset -80–80`

D7 bp/hp filter
X audio input
Y filter frequency
Z filter resonance

A band pass filter output
B high pass filter output

`0 Y Offset -80–80`

D8 bp/notch filter
X audio input
Y filter frequency
Z filter resonance

A band pass filter output
B notch filter output

`0 Y Offset -80–80`

algorithm directory

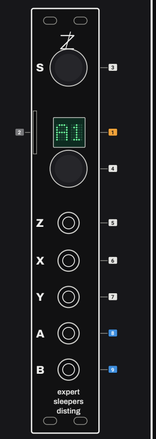
4 sectors · 14 banks

A – D | E – G | H – K | L – N

_fig.03 : front panel

4 hp · 9 tags

1	**display** · dot matrix · 2 characters at a time	
2	**sd** · microsd slot · audio, midi, scala	
3	**s** · endless encoder · turn · push · hold	
4	**z** · endless encoder · turn · push · hold	
5	**z in** · cv, added to the z encoder	
6	**x in** · input · ±10 V	
7	**y in** · input · ±10 V	
8	**a out** · output · ±10 V	
9	**b out** · output · ±10 V	



14 banks · this sector in colour

A B C D E F G H I J K L M N

pick: [s] › algorithm › turn › push

the controls

dmk4_00

[s] turn	changes the current parameter
[s] push	menu: algorithm · save · load · help · settings · calibrate
[s] + turn	pick the parameter number
[z] push	next parameter · or the algorithm's own press (tap, trigger, freeze…) · cancels menus
[z] + turn	knob recorder: up to 14 s of z moves, looped · turn z to stop
z cv	added to the z encoder's value
sockets	light red for + V, blue for – V

reading a card

every algorithm

left	inputs X · Y and the z encoder + cv
right	outputs A · B
tags	knob rec · tap tempo · z presses · midi
chips	parameters in menu order: number, name, range

disting mk4 _travelers guide _for surveying new worlds

112 algorithms | **64** presets | **E–G** sector 2 of 4

[s] press [s] hold › then chips: number · name · range X Y Z in · A B out

two endless encoders, three inputs, two outputs · 112 algorithms, A1 to N8 · up to 8 parameters each

sector A–D | **sector E–G** | sector H–K | sector L–N

blue = hold

E envelopes + dynamics — E1 – E6

E1 ar envelope
`z: trigger` `midi in`
X trigger input
Y trigger input
Z sets the envelope times
A envelope output
B envelope output
`0 trigger Mode 0–2` `1 Z Mode 0–1` `2 output A Attenuverter -40–41` `3 output B Attenuverter -40–40` `4 output A Offset -40–40` `5 output B Offset -40–40` `6 attack shape 0–32` `7 release shape 0–32`

E2 ar envelope & vca
`z: trigger` `midi in`
X trigger input
Y VCA input
Z sets the envelope times
A envelope output
B VCA output
`0 trigger Mode 0–8` `1 Z Mode 0–1` `2 output A Attenuverter -40–41` `3 output B Attenuverter -40–40` `4 output A Offset -40–40` `5 output B Offset -40–40` `6 attack shape 0–32` `7 release shape 0–32`

E3 dual ar envelope
`z: trigger` `midi in`
X trigger input A
Y trigger input B
Z sets the envelope times
A envelope output A
B envelope output B
`0 trigger Mode 0–2` `1 Z Mode 0–1` `2 output A Attenuverter -40–41` `3 output B Attenuverter -40–40` `4 output A Offset -40–40` `5 output B Offset -40–40` `6 attack shape 0–32` `7 release shape 0–32`

E4 stereo compressor
X left input
Y right input
Z compression ratio
A left output
B right output
`0 threshold -36–0` `1 attack time 0–99` `2 release time 0–99` `3 make-up gain -1–36` `4 lookahead 0–99`

E5 side-chain compressor
X left input
Y right input
Z side-chain input
A left output
B right output
`0 threshold -36–0` `1 attack time 0–99` `2 release time 0–99` `3 make-up gain -1–36` `4 lookahead 0–99` `5 compression ratio 0–99`

E6 mono compressor
X audio input
Y side-chain input
Z compression ratio
A audio output
B gain reduction output
`0 threshold -36–0` `1 attack time 0–99` `2 release time 0–99` `3 make-up gain -1–36` `4 lookahead 0–99` `5 side-chain mix -80–12`

E envelopes + dynamics — E7 – E8 · cont.

E7 euro to buchla converter
X 1V/octave input
Y gate input
Z tune ±0.5 octaves
A 1.2V/octave output
B gate/trigger output
`0 octave shift -8–8` `1 coarse -99–99` `2 fine -99–99` `3 offset -99–99` `4 gate level 0–99` `5 coarser -99–99`

E8 buchla to euro converter
X 1.2V/octave input
Y gate/trigger input
Z tune ±0.5 octaves
A 1V/octave output
B trigger output
`0 octave shift -8–8`

F clocked envelopes + shift registers — F1 – F4

F1 clockable ad envelope (with mute)
`tap tempo`
X clock input
Y mute input
Z sets the envelope shape
A envelope output
B envelope output
`0 delay time multiplier -15–8` `1 output A Attenuverter -40–41` `2 output B Attenuverter -40–40` `3 attack shape 0–32` `4 decay shape 0–32`

F2 clockable ad envelope (with gate)
`tap tempo`
X clock input
Y gate input
Z sets the envelope shape
A envelope output
B envelope output
`0 delay time multiplier -15–8` `1 output A Attenuverter -40–41` `2 output B Attenuverter -40–40` `3 attack shape 0–32` `4 decay shape 0–32`

F3 clockable ad envelope (with trigger)
`tap tempo`
X clock input
Y trigger input
Z sets the envelope shape
A envelope output
B envelope output
`0 delay time multiplier -15–8` `1 output A Attenuverter -40–41` `2 output B Attenuverter -40–40` `3 attack shape 0–32` `4 decay shape 0–32`

F4 clockable ad envelope & vca
`tap tempo`
X clock input
Y VCA input
Z sets the envelope shape
A envelope output
B VCA output
`0 delay time multiplier -15–8` `1 output A Attenuverter -40–41` `2 output B Attenuverter -40–40` `3 attack shape 0–32` `4 decay shape 0–32`

F clocked envelopes + shift registers — F5 – F8 · cont.

F5 shift register random cvs
`midi in`
X clock input
Y modify input
Z sets the randomness
A unipolar output
B bipolar output or trigger
`0 direction 0–1` `1 length 1–32` `2 slew rate 0–31` `3 output attenuverter -40–40` `4 offset -40–40` `5 MIDI clock divisor 0–15` `6 output B signal 0–5`

F6 shift register random quantized cvs
`midi in + out`
X clock input
Y modify input
Z sets the randomness
A quantized CV output
B trigger output
`0 direction 0–1` `1 length 1–32` `2 scale 0–17` `3 output attenuverter -40–40` `4 MIDI Gate 0–1` `5 transpose -48–48` `6 slew 0–31` `7 MIDI clock divisor 0–15`

F7 shift register random triggers
`z: modify` `midi in`
X clock input
Y modify input
Z sets the randomness
A trigger output
B inverse trigger output
`0 length 1–32` `1 pulse A 0–31` `2 pulse B 0–31` `3 MIDI clock divisor 0–15`

F8 shift register random dual triggers
`z: modify` `midi in`
X clock input
Y modify input
Z sets the randomness
A trigger output A
B trigger output B
`0 length A 1–32` `1 length B 1–32` `2 pulse A 0–31` `3 pulse B 0–31` `4 MIDI clock divisor 0–15`

G references + midi — G1 – G3

G1 es-1 emulation
X input 1
Y input 2
Z trim
A output 1
B output 2
no parameters

G2 es-2 emulation
X input 1
Y input 2
Z trim
A output 1
B output 2
no parameters

G3 pitch reference
X not used (with Y)
Y see X
Z sets the amplitude of A & B
A sine output
B square output
`0 semitone 0–11` `1 octave -1–9` `2 tuning -99–99`

G references + midi — G4 – G8 · cont.

G4 frequency reference
X not used (with Y)
Y see X
Z sets the amplitude of A & B
A sine output
B square output
no parameters

G5 tuner
X input
Y not used
Z sets the amplitude of B
A a copy of X
B a sine wave at the tracked pitch
`0 reference frequency -99–99`

G6 clock
`z: start / stop or tap` `midi in + out`
X clock input
Y run/stop input
Z ratchet
A clock outputs (with B)
B see A
`0 mode 0–5` `1 clock divisor for A -2–14` `2 clock divisor for B -2–14` `3 clock divisor for X 0–11` `4 Y mode 0–3` `5 tempo -120–120` `6 Z mode 0–1` `7 ratchet mode 0–6`

G7 midi/cv
`midi in`
X not used (with Y)
Y see X
Z not used
A pitch CV output
B gate output
`0 transpose -48–48` `1 pitch bend depth 0–24` `2 scale -1–99` `3 portamento 0–32` `4 interrupt 0–100` `5 priority 0–2` `6 mode 0–1`

G8 cv/midi
`midi out`
X pitch CV input
Y gate input
Z mod wheel or velocity CV input
A & B pass through X & Y
`0 channel offset 0–99` `1 Z mode -127–127` `2 X CC -99–99` `3 Y CC -99–99` `4 X Trigger -99–99` `5 Y Trigger -99–99` `6 Z Trigger -99–99`

algorithm directory

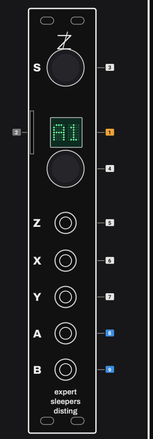
4 sectors · 14 banks

A – D | **E – G** | **H – K** | **L – N**

fig.03 : front panel

4 hp · 9 tags

1	**display**	dot matrix · 2 characters at a time
2	**sd**	microsd slot · audio, midi, scala
3	**s**	endless encoder · turn · push · hold
4	**z**	endless encoder · turn · push · hold
5	**z in**	cv, added to the z encoder
6	**x in**	input · ±10 V
7	**y in**	input · ±10 V
8	**a out**	output · ±10 V
9	**b out**	output · ±10 V



14 banks · this sector in colour
A B C D **E** **F** **G** H I J K L M N
pick: [s] › algorithm › turn › push

presets · favourites

dmk4_01

presets	64 slots: algorithm + parameter values + current parameter · z is never stored
preset 0	loads at power-up · saved on every algorithm change · save there to keep a setup
save	push S, turn 1, push, pick slot, push · “click, turn, click, click” for slot 0
favourites	favourites.txt on the card: up to 16 algorithms as O1 – P8
select bus	answers save / recall when enabled in settings

sd card

dmk4_02

card	fat32, mbr · 32 GB sdhc recommended
audio	16-bit wav, mono or stereo, any rate · up to 100 folders × 100 files
playlist.txt	per-file loop, fades, pitch, ramp / triggers on B, start quantize, loop markers
midi	format 0 files in a MIDI folder · midi-playlist.txt · notes › A pitch, B gate
scala	scl + kbm folders, logTables file, playlist-scales.txt
help	help folder of hXXX.txt files, scrolled by menu › help

design homage to the house of x / powers of x data pages — designed by tom muller with jonathan hickman
not affiliated with expert sleepers, mathias kettner or marvel

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112 algorithms | **64** presets | **H–K** sector 3 of 4

[s] press [s] hold › then chips: number · name · range X Y Z in · A B out

two endless encoders, three inputs, two outputs · 112 algorithms, A1 to N8 · up to 8 parameters each

sector A–D sector E–G **sector H–K** sector L–N

blue = hold

H dual utilities — H1 – H8

H1 crossfade/pan — knob rec

A mix of X & Y according to Z
B inverted mix of X & Y according to Z, or LFO

`0 crossfade/pan law 0–3` `1 clip mode 0–2`
`2 output B option/LFO speed -1–99` `3 output B attenuation 0–32`

H2 dual sample and hold — z: sample

A X when Z exceeds 1V
B Y when Z exceeds 1V

`0 mode 0–1` `1 offset 0–31` `2 noise X 0–64` `3 noise Y 0–64`
`4 slew A 0–32` `5 slew B 0–32`

H3 dual quantizer (z scale) — midi out

Z chooses scale
A quantized(X)
B quantized(Y)

`0 input X attenuation 0–32` `1 input Y attenuation 0–32`
`2 X transpose -31–31` `3 Y transpose -31–31` `4 key -31–31`

H4 dual quantizer — midi in + out

Z trigger
A quantized(X)
B quantized(Y)

`0 input X attenuation 0–32` `1 input Y attenuation 0–32`
`2 X scale/trigger mode -18–18` `3 Y scale/trigger mode -18–18`
`4 MIDI Gate 0–1` `5 offset 0–31` `6 key -31–31`

H5 dual euclidean patterns — midi in

X clock input
Y reset input
Z sets the 'pulses' for pattern 2
A pattern 1 out
B pattern 2 out

`0 steps 1–16` `1 pulses (pattern 1) 1–16` `2 A Rotation 0–96`
`3 pulse length 0–31` `4 B Rotation -1–96` `5 repeat 0–96`
`6 MIDI clock divisor -15–15`

H6 dual delayed pulse generator

Z function depends on parameter setting
A pulse triggered by X
B pulse triggered by Y

`0 Z mode 0–6` `1 range 0–12` `2 delay -1–31` `3 length 0–31`

H7 noise

Z blend
A noise, optionally scaled by X
B noise, optionally scaled by Y

`0 type A -1–3` `1 type B -1–3` `2 attenuation A -1–31`
`3 attenuation B -1–31`

H8 quantizer 2 — midi in

X pitch CV input
Y trigger input or pitch CV input
Z sets the interval between A & B
A quantized CV out
B quantized CV out

`0 pattern n/a` `1 scale 0–2` `2 key -12–12` `3 input X attenuation 0–32`
`4 trigger mode / offset / Y attenuation -32–32` `5 slew rate 0–32`

I sd audio playback — I1 – I8

I1 audio playback — z: retrigger

X retrigger CV
Y start position CV
Z selects the sample
A left audio output
B right audio output

`0 folder 0–99` `1 envelope time 0–99` `2 start offset 0–127`
`3 Z mode 0–2`

I2 clocked audio playback — z: retrigger

X retrigger CV
Y clock
Z selects the sample, or start position
A left audio output
B right audio output

`0 folder 0–99` `1 envelope time 0–99`
`2 selects the sample and function of Z -1–99`

I3 audio playback with v/oct — z: retrigger

X retrigger CV
Y V/octave pitch CV
Z selects the sample, or start position
A left audio output
B right audio output

`0 folder 0–99` `1 octave shift -8–8` `2 envelope time 0–99`
`3 MIDI mode -1–4` `4 pitch bend depth 0–24` `5 start offset 0–127`
`6 selects the sample and function of Z -1–99`

I4 audio playback with z speed — z: retrigger

X retrigger CV
Y start position CV
Z sets the playback speed
A left audio output
B right audio output

`0 folder 0–99` `1 selects the sample 0–99` `2 envelope time 0–99`
`3 start offset 0–127`

I5 audio playback with reverse — z: retrigger

X retrigger CV
Y selects the sample
Z sets the playback speed
A left audio output
B right audio output

`0 folder 0–99` `1 Y offset -49–49` `2 envelope time 0–99`

I6 audio playback with scrub

X not used
Y playback position
Z selects the sample
A left audio output
B right audio output

`0 folder 0–99` `1 speed limit 1–99` `2 slew 0–32` `3 Y offset -32–32`

I7 dual audio playback

X trigger A
Y trigger B
Z selects the samples
A left audio output
B right audio output

`0 folder 0–99` `1 selects the panning option 0–1`
`2 envelope time 0–99`

I8 dual audio playback with z speed

X trigger A
Y trigger B
Z sets the playback speed
A left audio output
B right audio output

`0 folder 0–99` `1 selects sample A 0–99` `2 selects sample B 0–99`
`3 selects the panning option 0–1`
`4 select which sample(s) are affected by Z 0–3` `5 envelope time 0–99`

J midi files, multisample + recording — J1 – J8

J1 midi file playback (clocked) — midi out

X clock
Y retrigger CV
Z selects the MIDI file
A pitch CV output
B gate output

`0 selects the MIDI file -1–31` `1 clock multiplier 0–96`

J2 multisample 2 audio playback

X retrigger CV
Y V/octave pitch CV
Z tune ±0.5 octaves
A left audio output
B right audio output

`0 folder 0–99` `1 octave shift -8–8` `2 envelope time 0–99`
`3 MIDI mode -1–4` `4 pitch bend depth 0–24`
`5 selects the panning option 0–1` `6 gate offset 0–60`

J3 midi file playback (free running) — midi out

X V/octave speed CV
Y retrigger CV
Z sets the playback speed
A pitch CV output
B gate output

`0 selects the MIDI file 0–31`

J4 audio playback with end cv

X retrigger or end position CV
Y start position CV
Z end position or retrigger CV
A left audio output
B right audio output

`0 folder 0–99` `1 selects the sample 0–99` `2 envelope time 0–99`

J5 audio recorder

X left audio input
Y right audio input
Z controls recording
A left audio output
B right audio output

`no parameters`

J6 multisample audio playback

X retrigger CV
Y V/octave pitch CV
Z tune ±0.5 octaves
A left audio output
B right audio output

`0 folder 0–99` `1 octave shift -8–8` `2 envelope time 0–99`
`3 MIDI mode -1–4` `4 pitch bend depth 0–24` `5 gate offset 0–63`

J7 mono audio recorder

X mono audio input
Y not used
Z controls recording
A echo the input (with B)
B see A

`no parameters`

J8 audio playback with crossfade

X gate/clock CV
Y V/octave pitch CV
Z selects the sample
A left audio output
B right audio output

`0 folder 0–99` `1 octave shift -8–8` `2 crossfade time 0–99`
`3 gate mode 0–2`

K wavetables + sd delay — K1 – K8

K1 wavetable vco — midi in

X V/Oct pitch input
Y wavetable input
Z tune ±0.5 octaves
A wavetable output
B sub-octave square output or detuned output

`0 chooses the wavetable 0–99` `1 octave shift -16–8`
`2 Y offset -32–32` `3 output B option/detune -4–99` `4 phase -1–127`

K2 clockable wavetable lfo — tap tempo

X clock input
Y wavetable input
Z integer multiplier/divider
A wavetable output (with B)
B see A

`0 chooses the wavetable 0–99` `1 Y Offset -32–32`
`2 output A attenuverter -32–32` `3 output B attenuverter -32–32`
`4 LFO time multiplier -15–8`

K3 wavetable waveshaper

X signal input
Y wavetable input
Z gain
A wavetable output
B complementary wavetable output

`0 chooses the wavetable 0–99` `1 Y Offset -32–32`

K4 clockable wavetable envelope — tap tempo

X clock input
Y wavetable input
Z trigger
A wavetable output (with B)
B see A

`0 chooses the wavetable 0–99` `1 Y Offset -32–32`
`2 output A attenuverter -32–32` `3 output B attenuverter -32–32`
`4 envelope time multiplier -15–8` `5 trigger mode 0–2`

K5 programmable quantizer — midi out

Y pitch or trigger
Z slew
A quantized(X+Y)
B trigger on note change

`0 scale 0–99` `1 input X attenuation 0–32`
`2 input Y attenuation -1–32` `3 transpose -31–31` `4 offset 0–31`
`5 mode 0–1`

K6 clockable sd delay — tap tempo

X signal
Y clock input
Z feedback
A output according to mode
B output according to mode

`0 delay time multiplier -15–8` `1 maximum feedback 0–8`
`2 output mode 0–2`

K7 stereo clockable sd delay — tap tempo

X stereo audio inputs (with Y)
Y see X
Z feedback
A stereo audio outputs (with B)
B see A

`0 delay time multiplier -15–8` `1 maximum feedback 0–8`

K8 stereo clockable sd delay (z clock) — tap tempo

X stereo audio inputs (with Y)
Y see X
Z clock input
A stereo audio outputs (with B)
B see A

`0 delay time multiplier -15–8` `1 feedback 0–40`

✦ algorithm directory

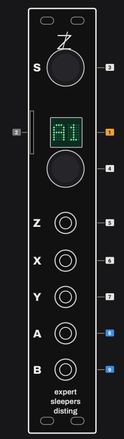
4 sectors · 14 banks

A – D | E – G | H – K | L – N

_fig.03 : front panel

4 hp · 9 tags

1	**display**	dot matrix · 2 characters at a time
2	**sd**	microsd slot · audio, midi, scala
3	**s**	endless encoder · turn · push · hold
4	**z**	endless encoder · turn · push · hold
5	**z in**	cv, added to the z encoder
6	**x in**	input · ±10 V
7	**y in**	input · ±10 V
8	**a out**	output · ±10 V
9	**b out**	output · ±10 V



14 banks · this sector in colour
A B C D E F G **H** **I** **J** **K** L M N
pick: [s] › algorithm › turn › push

· settings — dmk4_03 · menu 4

display	brightness · scroll speed · continuous filenames
midi	in ch · out ch · thru · program change = preset / algorithm / off · switch param
sd	wav sample rate 75k / 46.875k · sd delay max minutes
recall	select bus recall on / off

· midi — dmk4_04 · GT2 header

cc 1 – 6	parameters 0 – 5
cc 17 · 19	take over z · give z back (value ≥ 64)
cc 18	select algorithm
program	preset or algorithm, per settings
ports	3.3 V midi on a 4-pin header · din or trs breakout

disting mk4

_travelers guide
_for surveying new worlds

112 algorithms | **64** presets | **L–N** sector 4 of 4

[s] press [s] hold › then chips: number · name · range X Y Z in · A B out

two endless encoders, three inputs, two outputs · 112 algorithms, A1 to N8 · up to 8 parameters each

sector A–D sector E–G sector H–K **sector L–N** blue = hold

L reverb, chorus + mix — L1 – L5

L1 stereo reverb — z: freeze
X left input
Y right input
Z wet/dry or freeze
A left output
B right output
`0 size 1–32` `1 feedback 1–32` `2 character 0–5` `3 low pass filter -1–31` `4 gain 0–12` `5 wet/dry -33–32` `6 high pass filter 0–99`

L2 mono-to-stereo reverb — z: freeze
X audio input
Y feedback CV
Z wet/dry or freeze
A left output
B right output
`0 size 1–32` `1 feedback 1–32` `2 character 0–5` `3 low pass filter -1–31` `4 gain 0–12` `5 wet/dry -33–32` `6 high pass filter 0–99`

L3 dual reverb — z: freeze
Z wet/dry or freeze
A X plus reverb
B Y plus reverb
`0 size 1–32` `1 feedback 1–32` `2 character 0–5` `3 low pass filter -1–31` `4 gain 0–12` `5 wet/dry -33–32` `6 high pass filter 0–99`

L4 dual vowel filter
X inputs (with Y)
Y see X
Z vowel selection
A outputs (with B)
B see A
`0 vowel A -1–8` `1 vowel B -1–8` `2 BPF gain 2 -20–0` `3 BPF gain 3 -20–0`

L5 stereo chorus
X audio input
Y LFO rate
Z wet/dry
A left output
B right output
`0 LFO depth 0–99` `1 Y offset -64–32` `2 feedback -63–63` `3 lowpass filter -1–31` `4 delay time 1–64` `5 fine delay time -32–32` `6 stages 1–6` `7 saturation 0–1`

L reverb, chorus + mix — L6 – L8 · cont.

L6 mono chorus
X audio input
Y LFO rate
Z wet/dry
A blended output
B wet output
`0 LFO depth 0–99` `1 Y offset -64–32` `2 feedback -63–63` `3 lowpass filter -1–31` `4 delay time 1–64` `5 fine delay time -32–32` `6 stages 1–6` `7 saturation 0–1`

L7 mixer — knob rec
X inputs (with Y)
Y see X
Z pan for input X
A left output
B right output
`0 input X gain -40–6` `1 input Y gain -40–6` `2 Y pan -32–32`

L8 gate
X left input
Y right input
Z threshold
A left output
B right output
`0 attack time 0–99` `1 hold time 0–99` `2 release time 0–99` `3 lookahead 0–99`

M lfos, logic + chaos — M1 – M3

M1 delayed lfo
X trigger input
Y ramp time
Z LFO speed
A LFOs, ramps, or ramped LFOs (with B)
B see A
`0 output type A 0–8` `1 output type B 0–8` `2 LFO speed range -32–32` `3 ramp time range -32–32` `4 attenuverter A -32–32` `5 attenuverter B -32–32`

M2 scaled lfo
X min/max or offset/scale (with Y)
Y see X
Z LFO speed
A LFOs (with B)
B see A
`0 output type A 0–6` `1 output type B 0–6` `2 LFO speed range -32–32` `3 mode 0–1` `4 X Offset -48–48` `5 Y Offset -48–48`

M3 logic
X inputs (with Y)
Y see X
Z selects logical operation for output A
A logic outputs (with B)
B see A
`0 output B logical operation -2–7` `1 input X threshold -100–100` `2 input Y threshold -100–100` `3 input X hysteresis -100–100` `4 input Y hysteresis -100–100`

M lfos, logic + chaos — M4 – M8 · cont.

M4 half-wave rectifier — knob rec
X inputs (with Y)
Y see X
Z threshold
A outputs (with B)
B see A
`0 mode 0–3`

M5 stereo filter — knob rec
X left input
Y right input
Z filter frequency
A left output
B right output
`0 mode 0–2` `1 resonance (Q) 0–31`

M6 stereo tape delay
X left input
Y right input
Z tape speed or feedback
A left output
B right output
`0 tape length 0–26` `1 fine length control -9–9` `2 feedback -1–36` `3 mix -33–32` `4 tape speed -8–16`

M7 granular pitch shifter — z: freeze
X audio input
Y pitch 1V/octave
Z mix or freeze
A mix output
B pitch shifted output
`0 grain length 0–99` `1 window type 0–3` `2 delay 0–32` `3 feedback 0–64` `4 Y Offset (semitones) -48–48` `5 fine (cents) -99–99` `6 mix -65–64`

M8 chaos — z: reset
X influence the chaos (with Y)
Y see X
Z speed
A chaotic outputs (with B)
B see A
`0 range -64–32` `1 outputs 0–11` `2 atten A -64–64` `3 atten B -64–64` `4 offset A -32–32` `5 offset B -32–32` `6 clamp 0–1`

N switches, vcos + shifters — N1 – N2

N1 switch — knob rec — z: switches
X inputs (with Y)
Y see X
Z control CV or trigger
A outputs (with B)
B see A
`0 mode 0–1` `1 hysteresis 0–32` `2 fade 0–99` `3 chance -1–99`

N2 rotary
X audio input
Y mix
Z speed
A stereo outputs (with B)
B see A
`0 mix 0–32` `1 depth 0–63` `2 slew 0–99` `3 crossover 0–32` `4 bass modulation 0–64`

N switches, vcos + shifters — N3 – N8 · cont.

N3 attenuverter/offset
Z not used
A X * scale + offset
B Y * scale + offset
`0 attenuversion A -100–100` `1 offset A -100–100` `2 attenuversion B -100–100` `3 offset B -100–100`

N4 low pass gate
X stereo inputs (with Y)
Y see X
Z frequency/'strike'
A stereo outputs (with B)
B see A
`0 resonance 0–31` `1 up slew 1–99` `2 down slew 1–99`

N5 pulsar vco — midi in
X V/Oct pitch input (fundamental)
Y V/Oct pitch input (formant)
Z tune or masking
A pulsar outputs (with B)
B see A
`0 chooses the wavetable 0–99` `1 chooses the wave 0–99` `2 window 0–3` `3 Y Mode 0–1` `4 masking 0–99` `5 octave -16–8`

N6 phase shifter
X signal
Y phase shift
Z wet/dry
A signal outputs (with B)
B see A
`0 output mode 0–1` `1 Y Offset -32–32` `2 LFO enable 0–1` `3 LFO speed -99–99`

N7 frequency shifter
X signal
Y frequency shift
Z frequency shift
A signal outputs (with B)
B see A
`0 range 0–3` `1 B mode 0–1` `2 include Z 0–1`

N8 clockable sd ping pong — tap tempo
X signal
Y clock input
Z feedback
A stereo audio outputs (with B)
B see A
`0 delay time multiplier -15–8` `1 maximum feedback 0–8` `2 output mode 0–1` `3 input pan -32–32`

✦ algorithm directory

4 sectors · 14 banks

A – D | **E – G** | **H – K** | **L – N**

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4	**z**	endless encoder · turn · push · hold
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6	**x in**	input · ±10 V
7	**y in**	input · ±10 V
8	**a out**	output · ±10 V
9	**b out**	output · ±10 V



14 banks · this sector in colour
A B C D E F G H I J K **L** **M** **N**
pick: [s] › algorithm › turn › push

firmware · calibration

dmk4_05

update	disting4.bin on the card root · power on holding S until “Confirm…” · release
calibrate	menu 5 · A › X, B › Y, push · then a 3 V reference into X, push, into Y, push
power	51 mA +12 V · 19 mA –12 V · no 5 V

reading a card

every algorithm

left	inputs X · Y and the z encoder + cv
right	outputs A · B
tags	knob rec · tap tempo · z presses · midi
chips	parameters in menu order: number, name, range