

Synth Controller manual addendum 'M-80' for Roland MKS-80

General notes

The 'M-80' edition offers access to all parameters of the big MPG-80 except 'PATCH MANUAL' – which would not make any sense either because the knobs of the Synth Controller have multiple functions.

Right at the moment you tweak a knob, the MKS-80's display jumps to the appropriate parameter page and shows the change in value. You can finetune the value directly on the MKS-80's with it's UP/DOWN buttons.

The M-80 edition became quite crowded. To keep it as userfriendly and readable as possible we had to shorten some paras (e.g. 'VCO MOD <0>' instead of 'VCO MOD INV/OFF/NORM'). Some 'not so important' parameter were implemented as a shift-function. More on that later.

The value span of most MKS-80 parameters range from 0-100. As the Synth Controller's hardware is designed to work best with the ordinary midi-data span of 0-127, nothing seems to happen on the last 12% of tweaking. This is a normal behaviour and no malfunction.

Some parameters benefit from a middle position (e.g. VCO2 Tune, Sync, ...). Such dials were 'centered', means the MKS-80 value of 50 is set in middle position and there are no changes in both 6% at the beginning and the end of the dial span.

Before you can start ...

... 2 technical details need to be set:

- a) the MKS-80 slider labeled 'MIDI FUNCTION' must be set to 'III'
- b) the midichannel of the MKS-80 and the Synth Controllers must be identical

Midichannel learn

To teach the Synth Controller it's default midichannel please hold the upper and lower button for 2 seconds. The LEDs will start to flash. Now send a note on the desired channel into the Midi In jack. The learnt channel keeps stored even when removing power.

Color layers

The **red** layer contains all parameters of the VCOs.

The **green** layer is dedicated to the VCF and both envelopes.

In the **blue** layer you will find VCA, Dynamics, sensitivity / targets for Pitchbend and Aftertouch as well as the parameter for the patch.

Common parameters of a function group like e.g. VCO-1, VCF or LFO are connected with a slight color bar.

Shift Parameters

Some parameters on the faceplate are printed in small letters like e.g. 'env reset on/off' in the green layout above EG1 Decay. These are 'shift'-parameters and will be sent to your MKS only as long as you keep the already lighted button pressed.

Example: if you tweak the KEYFOLLOW-dial you will – as expected - change the KEYFOLLOW AMOUNT between 0 and 100. Hold the red button down and turn the same knob: now you switch if KEYFOLLOW should take effect on VCO1, VCO2 or if it's off. As soon as you release the red button the 'normal' parameter is active again.

All Shift parameters in detail (faceplate printout of the pot in brackets):

- **PWM Source – values: eg1, lfo, kybd (PWM)**
- **KEY FOLLOW Destination – values: vco1, off, vco2 (KEY FOLLOW)**
- **VCF ENV Source – values: eg1, eg2 (VCF ENV)**
- **ENVELOPE RESET – values: off, on (EG1 Decay)**
- **EG1 DYNAMICS – values: off, on (EG1 KEY FOLLOW)**
- **EG2 DYNAMICS – values: off, on (EG2 KEY FOLLOW)**
- **lfo-2 rate (LFO RATE)**
- **BEND range VCO2 – values: off, normal, wide (BEND VCO1)**
- **TOUCH Destination – values: vco lfo-2, vcf frequency (TOUCH SENSE)**
- **split point (KEY MODE)**
- **HOLD – values: off, on, midi (GLIDE)**

Bipolar parameters

Some parameters are bi-polar, their value is 0 in the middle, growing up to +100 to the right and -100 on leftmost position. Typical example: ENV amount on VCF FREQUENCY. Normally on MKS-80 / MPG-80 you flip a switch called polarity invert (POL NORM/INV). As the hardware of the Synth Controller is capable of doing so (without losing value resolution) we thought it's a good idea to implement value and polarity into one single dial. Such bipolar parameter have a PLUS and MINUS sign to the right and left of the parameter name.

Bipolar parameters:

- **PWM Intensity**
- **CROSS EG1 amount**
- **VCO2 TUNE.** Special case: the value for TUNE is always positive. A value below 50 means detuning 'down' compared to VCO1, above 50 means detune up. A value of 50 is in tune with VCO1, that's why TUNE for VCO2 is centered and also has the PLUS/MINUS signs besides the parameter name.
- **VCF ENV Amount**

Bipolar Switch-Parameter 'VCO MOD'

VCO1 and VCO2 both got a pot with the name „MOD <0>“. It 'switches' the VCO-modulation (LFO/EG1) on, off or inverted on:

- left INV
- middle OFF
- right NORM

Upper and Lower Tone

Your MKS-80 offers SPLIT- and DUAL-Patches containing two independant tones, the Upper and the Lower tone. The Synth Controller offers kind of switch to decide wheter parameter changes are sent to UPPER or LOWER. To select UPPER as destination simply hold the first 2 buttons for 2 seconds. The LEDs shortly flash. Accordingly you select LOWER by holding the lower 2 buttons. After powerup the Upper Tone is set by default. That's also the default tone for MKS-80 patches in key mode WHOLE offering just one tone.

Control Change numbers

The Synth Controller allows to remote most MKS-80 parameters by ordinary control change messages. It's the same here as with the knobs, values above 100 are simply ignored by the MKS-80.

11	VCO MOD – Lfo 1
12	VCO MOD – Env 1
13	PWM – PW
14	PWM – Depth
15	PWM – Invert
16	PWM – EG1/LFO1/Key
17	CROSS – Manual
18	CROSS – Env 1
19	CROSS – Invert
20	VCO1 – MOD – Invert
21	VCO1 – Range
22	VCO1 – Wave
23	VCO1 – Sync ½/off
24	VCO2 – Mod Invert
25	VCO2 – Range
26	VCO2 – Tune
27	VCO2 – Wave
28	KEYFOLLOW – Depth
29	KEYFOLLOW – VCO1/Off/VCO2
30	Mixer
31	HPF
32	VCF – Freq
33	VCF – Reso
34	VCF – ENV Depth
35	VCF – Env1/Env2
36	VCF – Env Invert
37	VCF – LFO1
38	VCF – Keyfollow
39	VCA – Env 2
40	VCA – LFO 1
41	Dynamics Time
42	Dynamics Level
43	LFO 1 – Rate
44	LFO 1 – Delay
45	LFO 1 – Wave
46	Env Reset On/Off
47	Env1 – Dynamics
48	Env1 – A
49	Env1 – D
50	Env1 – S
51	Env1 – R
52	Env1 – Key
53	Env2 – Dynamics
54	Env2 – A
55	Env2 – D
56	Env2 – S
57	Env2 – R
58	Env2 – Key
59	Patch Balance
60	Patch Unison Detune Upper
61	Patch Glide Upper
62	Patch Unison Detune Lower
63	Patch Glide Lower