# PATCH EDITOR

by Kiwi TECHNICS

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## CONCEPTS

The Patch Editor is a compact hardware unit designed to communicate with various synthesizers and provide control over the synthesizer parameters that can be changed. The Patch Editor concept was arrived at because of the frustration of the parameter driven editing system adopted by many synthesizer manufacturers. This was originally done to save manufacture costs and reduce synthesizer size as fewer parts are required but this concept makes it difficult to edit parameter settings quickly, especially in a 'live' situation. The Patch Editor puts you back in control by giving you back the knobs.

Each active controller in the Patch Editor is lit by a LED. If a control is unused it will be dark and will have no effect. This has added to the cost of making the Patch Editor but it was felt that the visual feedback was important for error free ease of use. Switches can be Red or Green. If a switch has an off state then this will be normally shown as red with active states showing green. Switches that have a normal and inverted state will show normal as green and inverted as red. Switches that have dynamic settings will flash slowly for these settings and show steady for the non dynamic settings.

The maximum value of each control is synthesizer specific and can vary from 4 ( the maximum noise level on a Roland© Juno-1) to 256 on a Roland© JX-3P and 4096 on Kiwitechnics Korg Polysix & Roland Juno-106 Upgrades. These will normally be 0-63, 0-100 or 0-127 for most synthesizers.

The display will always show the control accessed and the level set. This is similar to the way the Roland© PG-1000 operates.

The Patch Editor can be controlled via MidiCC with a MidiCC command being provided for each control. MidiCC commands that are invalid or unused are either ignored or set to the nearest level depending on the control involved.

**MidiCC support in the Patch Editor will allow systems that can only output MidiCC to control any synth that the Patch Editor supports.**

The Patch Editor can have any standard MIDI channel (1-16) set independently for each synthesizer selected and the MIDI channel for MidiCC control to the Patch Editor can also be set. These are remembered when the Patch Editor is switched off. It is possible to send commands to the Patch Editor on one midi channel and the Patch Editor will output to the synth on another. This could be useful if the control codes to the Patch Editor could be interpreted differently by the synth being controlled.

All incoming MIDI except for commands to the Patch Editor are passed through to the MIDI out port. All output from the Patch Editor also uses this MIDI port and this output is interlaced with any incoming MIDI data. This introduces a 1-3mS delay as the commands are interpreted and resent. This must be done so as the incoming MIDI can be mixed with the MIDI generated by the Patch Editor without breaking MIDI strings. The MIDI running status byte needs to be reinserted if the incoming string has a running status byte that has been interrupted by the Patch Editor sending out commands. MIDI real time signals (clocks etc) are put directly to the output for a minimal delay which is normally about 100$\mu$S no matter what is happening within the Patch Editor. All incoming MIDI is passed to the MIDI through port without delay.

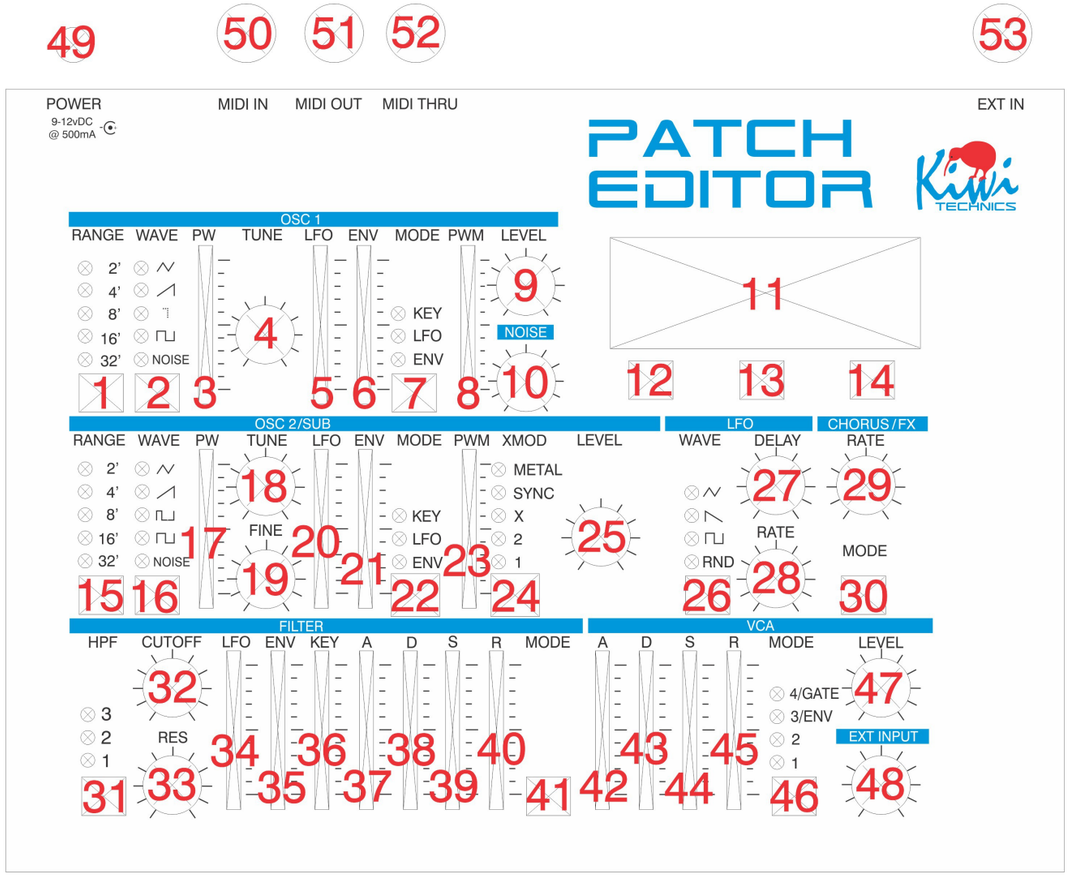
If a time critical MIDI unit is part of the chain then this should be run from the MIDI Through port to reduce delays.

**If the Patch Editor midiCC command set is being used to translate to sysex be aware the the Patch Editor may need to send much more date than it receives so it is important that not too much data is sent too quickly or the Patch Editor buffers will overflow resulting in corrupted midi. This will cause random errors like stuck notes.**

Power requirements are a single 9-12vDC supply at 500mA. 9v is preferred to stop the PE getting too warm. The polarity is marked on the Patch Editor and it is protected against reversed power. It was decided not to include a power unit with the Patch Editor as these are country specific and easily purchased throughout the world. A universal voltage power pack can be provided if required but it has a New Zealand plug format and will require adapter plugs for use in other countries.

**Note: From serial number 001135 and higher the DC Plug polarity has been changed to the more standard positive tip / negative shell.**

## Patch Editor Layout




1. Osc 1 Range Select
2. Osc 1 Waveform Select
3. Osc 1 Pulse Width
4. Osc 1 Tune
5. Osc 1 LFO Modulation
6. Osc 1 ENV Modulation
7. Osc 1 Mode
8. Osc 1 PWM
9. Osc 1 Level
10. Noise Level
11. LCD Display
12. Menu Button 1
13. Menu Button 2
14. Menu Button 3
15. Osc 2 Range Select
16. Osc 2 Waveform Select
17. Osc 2 Pulse Width
18. Osc 2 Tune
19. Osc 2 Fine Tune
20. Osc 2 LFO Modulation
21. Osc 2 ENV Modulation
22. Osc 2 Mode
23. Osc 2 PWM
24. Osc 2 XMod
25. Osc 2 Level
26. LFO Wave
27. LFO Delay
28. LFO Rate
29. Chorus/FX Rate
30. Chorus Mode
31. HPF Mode
32. Filter Cutoff
33. Filter Resonance
34. Filter LFO Modulation
35. Filter ENV Modulation
36. Filter Key Follow Amount
37. Filter/EG1 Attack
38. Filter/EG1 Decay
39. Filter/EG1 Sustain
40. Filter/EG1 Release
41. Filter Mode
42. VCA/EG2 Attack
43. VCA/EG2 Decay
44. VCA/EG2 Sustain
45. VCA/EG2 Release
46. VCA Mode
47. VCA Level
48. Ext Level
49. Power
50. MIDI Input
51. MIDI Output
52. MIDI Through
53. External Input

## Patch editor Control Descriptions


### Osc 1 & 2 Range Select

Depending on the synthesizer selected the ranges available with the Range select buttons (1) (15) will vary. Not all ranges are supported by all synthesizers. For synthesizers with a single oscillator the Oscillator 2 control will be disabled or used for other purposes. As an example of this the Osc 2 Range select is used to shift octaves in the Roland© MKS-80.


### Osc 1 & 2 Waveform Select

The Waveform select buttons (2) (16) with cycle through the available waveforms for the synthesizer selected. Depending on the synthesizer type the waveforms available will vary. With the Korg DW-6000 & DW-8000 this button will cycle through all the available waveforms.


### Osc 1 & 2 Pulse Width

These controls (3) (17) set the manual width of the Pulse Width waveform if selected. Not all synthesizer types support this. The control will remain dark if unused.


### Osc 1 and 2 Tune and Fine

When available these will light and allow Osc 1 and 2 to be tuned within the range of +/- 12 notes. The fine tune control (19) on oscillator 2 only normally will allow a +/- 50 cent adjustment. The fine tune control (19) will also act as a detune control on some synthesizer types. See the individual synthesizer tables for the exact use in each synthesizer type.


### LFO and ENV Mods

The LFO (5) (20) (34) and the ENV (6) (21) (35) set the amount of Low Frequency Oscillator modulation and envelope modulation to the oscillators and LP Filter. On some synthesizer types the oscillator 1 control will modulate both oscillator 1 and 2. The source for the envelope varies for each synthesizer type. Envelope Modulation is usually provided by Filter/EG1 if it is used in the synthesizer type selected or VCA/EG2 if it is not.


### Mode

The Mode controls (7) (22) (41) (46) use will change with each synthesizer type selected. In the initial design concept the Oscillator Mode buttons where envisaged to select the source of the PWM control but this has changed as the Patch Editor has developed. An example of a use of this button is in the Roland Juno-1 where this button will select the PW wave form. The exact use is detailed in the supported synthesizer tables.


### Osc PWM

The Oscillator PWM (8) (23) controls normally controls the Pulse Width Modulation but use can vary. The exact use is detailed in the supported synthesizer tables.


### Osc 1 & 2 Level & Noise

These controls (9) (25) (10) are the mixer section of the synthesizer and normally sets the levels of Oscillator 1 & 2 and the Noise source. These can also have other uses depending on the synthesizer type selected. An example of this is the Roland MKS-80 which has no Oscillator Level controls so Oscillator Level 1 is used as the Tone 1 & 2 Balance, Oscillator Level 2 is used as the Upper/Lower Balance and the Noise Level is used for the Manual XMod control.

**Menu Buttons**

These three buttons (12) (13) (14) select the menu level and allow setup changes. The number at the bottom left of the display above the first menu button (12) always shows the current menu level. Menu level 0 is the normal play mode and the first menu button will show green. In all other menus this button will show red. The last menu level will cycle back to the first. The use of the second (13) and third (14) menu buttons vary and will always show on the display.

**Menu Level 0**

This is the normal play mode. The second menu button (13) will always act as the manual send in this menu level. The third menu button (14) will change depending on the synthesizer type selected. For the Roland MKS-70 & MKS-80 the third menu button will allow upper/lower tone select (see MKS70 bug report in the synthesizer tables regarding this feature).

**Menu Level 1**

This menu level selects the active synthesizer type.

**Menu Level 2**

This menu level sets the outgoing MIDI channel for commands to the Synthesizer selected. The second (13) and third (14) menu buttons allow any channel to be selected from 1 to 16. Each synthesizer type will store the MIDI channel separately which will allow more than one synthesizer to be controlled using the Patch Editor. Only the active synthesizer can be controlled 'live' but any supported type can be controlled via SysEx. The synthesizer type in the Patch Editor can be quickly changed using menu level 4.

**Menu Level 3**

This menu level sets the incoming MIDI channel for commands to the Patch Editor. The second (13) and third (14) menu buttons allow any channel to be selected from 1 to 16.

**Menu Level 4**

This menu level sets the brightness of the LEDs to suit the light levels.

**Menu Level 5**

This menu level allows any continuous control to be 'mapped' to the external input. Moving any continuous control while in this menu level will 'map' that control. The currently 'mapped' control will be over written if another control is moved. The 'mapping' is cleared by menu button 3 (14). Once a control has been 'mapped' the External Input level control (48) will flash during mapping and stay lit in normal play mode. While in this mode the external level is displayed on the right side of the display.


**Osc 2 XMod**

The XMod button (24) will select between the various Cross Modulation options available. The types available will depend on the synthesizer type selected.


**LFO Controls**

Not all wave types are available for all synthesizer types (26). Some synthesizer types only provide a sine wave. The Korg DW-6000 and the Roland Juno-1 are examples of this. The LFO Delay (27) and LFO Rate (28) are common to all synthesizer types supported.


**Chorus Controls**

Used for synthesizers that support Chorus and FX (29) (30).


**HPF Mode**

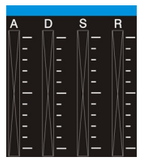
High Pass Filter select (31). Some synthesizers have buttons select control for the HPF and some have a continuous variable control. Where a variable control is used the HPF mode button will provide 10 levels of HPF and the PW control of Oscillator 2 will give continuous variable control. Both of these controls will overwrite each other. The HPF setting will jump to which ever control is used.


**Filter Cutoff & Res**

Low Pass Filter Cutoff (32) and Resonance Adjust (33). This control is common to all synthesizer types.

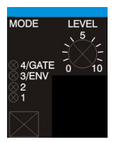

**Filter Key Follow Amount**

This control (36) sets the amount of key follow modulation for the filter cutoff.




**EG1/EG2 ADSR**

These controls (37) (38) (39) (40) (42) (43) (44) (45) set the shape of the EG1 and EG2 Envelopes. The EG1 envelope, if used, will normally control the Filter via the ENV mod control (35). If the EG1 is not used then the EG2 will be the source of all the ENV Mod controls. For synthesizer types that have more complex ADSR controls with extra break levels etc these are controlled to make them act like a ADSR type control.




**VCA Mode and Level**

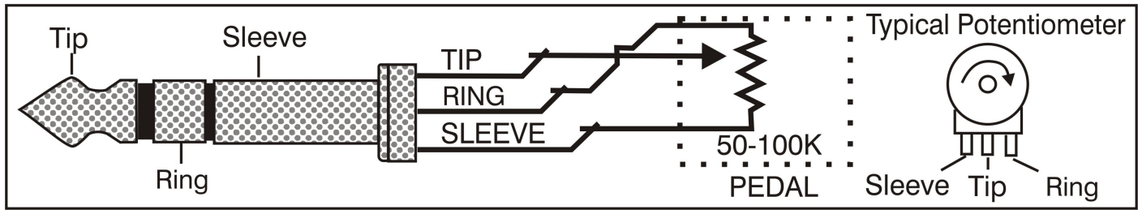
The VCA Mode control (46) sets the VCA Mode and will vary depending on the synthesizer being controlled. It will normally select between Gate and Env. The Level will set the final VCA level (47) if available for the the synthesizer type selected. If there is no VCA level available then this control will send a MIDI volume level control.


**Ext Level**

The External Level control (48) will adjust the external level input. If a continuous control has been 'mapped' to the external input then this control will set the maximum level of the External Input for that control. The external input and the 'mapped' control will overwrite each other with the output jumping to which ever is used.

## External Input

The external input (53) can be assigned to any continuous control by using menu level 5. Any control that is moved while in menu level 5 will 'map' itself to the external input. This is indicated by the external input level control (48) flashing. The 'mapping' can be cleared by pressing the third menu button (14) while in menu level 5. The current External Input level is displayed live in menu level 5 to enable checking of the external control. The External Level control (48) will then set the maximum effect that the External input (53) will have on the 'mapped' control. The External Input is a 0v to 5v control signal with a 47k input impedance. The tip of the ¼" (6.5mm) External Input socket is the input, the ring is a 5v supply out and the body is ground. The 5v supply has a 10k pullup and can source 500$\mu$A.




The External Input signal will effect the 'mapped' control in a positive fashion only. For example if the 'mapped' control is at 0% and the External input level control (48) is at 100% then the external input voltage will cover the full range of the 'mapped' control (0% to 100%). If the 'mapped' control is at 50% and the External input level control is at 50% then the external input voltage will cover the range 50% to 100% of the 'mapped' control. If the 'mapped' control is at 50% and the External input level control is at 25% then the external input voltage will cover the range 50% to 75% of the 'mapped' control. If the maximum of the 'mapped' control is exceeded then the level is capped to the control 100% level.

## System Reset

The Patch Editor also has a memory erase feature built in which will put the non volatile memory back to a known state. This is accessed by pressing the XMod Button (24) as the Patch Editor is powered on. It will set all MIDI channel data to channel 1, LED brightness to 5 and all switches to the first position.

## Power requirements

Power requirements are a single 9vDC supply at 500mA. The polarity is marked on the Patch Editor and it is protected against reversed power. The required DC plug is 2.5mm ID, 5.5mm OD and a minimum of 10mm long. It was decided not to include a power unit with the Patch Editor as these are country specific and easily purchased throughout the world. A universal voltage power pack can be provided if required but it has a New Zealand plug format and will require adapter plugs for use in other countries.

The Patch Editor can get warm near the voltage regulator on the back left corner when running on full brightness with a 12 volt DC supply. If this becomes an issue then either lower the brightness setting or run the Patch Editor on a 9 volts DC supply. No damage to the Patch Editor will result from this. 9vDC is the preferred supply.

## Program Update

The KiwiTechnics Patch Editor Update Mode is entered by pressing the HPF button while the PE is powered on. The Update file is then 'played' into the PE using midiOX or similar. The update progress is displayed on the Display. Once the 'Update Successful' message is displayed the PE should be repowered.

It is important that there is no midi devices are in the chain between the PC sending the update and the PE being updated. A direct link is required.

# SYNTH TABLES

## Fender Chroma Polaris

Cable requirements

The Fender Chroma Polaris uses a standard MIDI cable

**PE release v5.0 or higher.**

## Fender Chroma Polaris Controls

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Not Used | LFO Wave (26) | Sweep Wave - Sine, Square |
| Osc 1 Wave (2) | Saw, Pulse | LFO Delay (27) | Vibrato Delay |
| Osc 1 PW (3) | Osc 1 Pulse Width | LFO Speed (28) | Sweep Rate |
| Osc 1 Tune (4) | Osc 1 Transpose | Chorus/FX Rate (29) | Glide Rate |
| Osc 1 LFO Mod (5) | Osc 1 Vibrato Amount | Chorus/FX Mode (30) | Not Used |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Noise Source - Off, On |
| Osc 1 Mode (7) | PWM Source - Env, Sweep | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Osc 1 PWM | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Not Used | Filter LFO Modulation (34) | VCF LFO Sweep Depth |
| Noise Level (10) | Not Used | Filter ENV Modulation (35) | VCF Env Depth |
| Osc 2 Range (15) | Not Used | Filter Key Follow (36) | VCF Key Track |
| Osc 2 Wave (16) | Saw, Pulse | Filter ADSR (37-40) | VCF Envelope |
| Osc 2 PW (17) | Osc 2 Pulse Width | Filter Mode (41) | VCF ENV Mode - Fixed, Touch |
| Osc 2 Tune (18) | Osc 2 Transpose | VCA ADSR (42-45) | VCA Envelope (no sustain) |
| Osc 2 Fine Tune (19) | Osc 2 Detune | VCA Mode (46) | VCA ENV Mode - Fixed, Touch |
| Osc 2 LFO Mod (20) | Osc 2 Vibrato Amount | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | Osc 2 Env Amount | | |
| Osc 2 Mode (22) | PWM Source - Env, Sweep | | |
| Osc 2 PWM (23) | Osc 2 PWM | | |
| Osc 2 XMod | Sync / Ring Mod - Off/Off, On/Off, Off/On, On/On | | |
| Osc 2 Level (25) | Not Used | | |

# SYNTH TABLES

## Cheetah MS6

Cable and MIDI requirements

The Cheetah MS6 uses a standard MIDI cable.

## Cheetah MS6 Controls

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Low, Low/Med, High/Med, High | LFO1 Wave (26) | Triangle, Sawtooth, Square, Random |
| Osc 1 Wave (2) | Off, Pulse, Triangle, Sawtooth, Pulse+Tri, Pulse+Saw | LFO1 Delay (27) | Active |
| Osc 1 PW (3) | DCO A Pulse Width | LFO1 Speed (28) | Active |
| Osc 1 Tune (4) | DCO A Tune | Chorus/FX Rate (29) | Portamento Time |
| Osc 1 LFO Mod (5) | DCO A LFO Modulation | Chorus/FX Mode (30) | Portamento Off, Rate & Time Modes |
| Osc 1 ENV Mod (6) | DCO A ENV Modulation | HPF (31) | Mono - Poly Mode select |
| Osc 1 Mode (7) | DCO A Envelope Selection 1 or 2 | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | DCO A PWM Modulation | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Oscillator A <> B Mix | Filter LFO Modulation (34) | Active |
| Noise Level (10) | DCO Mix Envelope Depth | Filter ENV Modulation (35) | Active |
| Osc 2 Range (15) | Low, Low/Med, High/Med, High | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Off, Pulse, Triangle, Saw, Pulse+Tri, Pulse+Saw, Noise | Filter ADSR EG1 (37-40) | Active |
| Osc 2 PW (17) | DCO B Pulse Width | Filter Mode (41) | Filter Envelope Select 1 or 2 |
| Osc 2 Tune (18) | DCO B Coarse Tune | VCA ADSR EG2 (42-45) | Active |
| Osc 2 Fine Tune (19) | DCO B Fine Tune | VCA Mode (46) | DCO A & B PWM On/Off |
| Osc 2 LFO Mod (20) | DCO B LFO Modulation | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | DCO B ENV Modulation | | |
| Osc 2 Mode (22) | DCO B Envelope Selection 1 or 2 | | |
| Osc 2 PWM (23) | DCO B PWM Modulation | | |
| Osc 2 XMod (24) | Sync On/Off | | |
| Osc 2 Level (25) | DCO A & B PWM Level | | |

# SYNTH TABLES

## Kawai K3m

Cable requirements

The Kawai K3m uses a standard MIDI cable

**PE release v4.5 or higher.**

## Kawai K3m Controls

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Not Used | LFO Wave (26) | Triangle, Saw, R. Saw, Square, Random |
| Osc 1 Wave (2) | Portamento On/Off | LFO Delay (27) | Active |
| Osc 1 PW (3) | Portamento Speed | LFO Speed (28) | Active |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | VCA LFO Amount |
| Osc 1 LFO Mod (5) | Auto Bend Amount | Chorus/FX Mode (30) | Chorus Mode (Off and 7 types) |
| Osc 1 ENV Mod (6) | Velocity VCF Level | HPF (31) | Not Used |
| Osc 1 Mode (7) | Pitch Bend Range | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Velocity VCA Level | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Not Used | Filter LFO Modulation (34) | Active |
| Noise Level (10) | Not Used | Filter ENV Modulation (35) | Active |
| Osc 2 Range (15) | 16', 8', 4' | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Not Used | Filter ADSR (37-40) | VCF Envelope |
| Osc 2 PW (17) | Low Cut Filter Tune | Filter Mode (41) | Not Used |
| Osc 2 Tune (18) | Active | VCA ADSR (42-45) | VCA Envelope |
| Osc 2 Fine Tune (19) | Active | VCA Mode (46) | Not Used |
| Osc 2 LFO Mod (20) | LFO Mod Level | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | Wave 1 Shape | | |
| Osc 2 Mode (22) | Not Used | | |
| Osc 2 PWM (23) | Wave 2 Shape | | |
| Osc 2 XMod | Not Used | | |
| Osc 2 Level (25) | Wave Balance Mix | | |

# SYNTH TABLES

## KiwiTechnics Kiwi-3P Upgrade

Cable requirements

The Roland 3P KiwiTechnics Upgrade uses a standard MIDI cable

The KiwiTechnics 3P upgrade is a complete rewrite of the operating system in the Roland JX-3P synthesizer. Many enhancements have been made and to enable control of them all the KiwiTechnics 3P Upgrade has been split over two control pages.

## Roland© JX-3P KiwiTechnics Upgrade Controls Page 1

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | 16', 8', 4' | LFO1 Wave (26) | Sine,Tri, Saw, Rev Saw, Sqr, Random |
| Osc 1 Wave (2) | Sawtooth, Pulse, Square | LFO1 Delay (27) | Active |
| Osc 1 PW (3) | Not Used | LFO1 Speed (28) | Active |
| Osc 1 Tune (4) | DCO1 Tune +-12 Semitones | Chorus/FX Rate (29) | Chorus Auto Speed or Manual Position |
| Osc 1 LFO Mod (5) | DCO 1 LFO Level - See page 2 for LFO Source | Chorus/FX Mode (30) | Chorus Auto, Chorus Manual, Chorus Off |
| Osc 1 ENV Mod (6) | DCO 1 ENV Level - note split ± 63 control | HPF (31) | Off, 10% to 100% in 11 steps |
| Osc 1 Mode (7) | Select DCO 1 EG Source - EG1 or EG2 | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Osc 1 & 2 Mix | Filter LFO Mod (34) | Filter LFO Level - See page 2 for LFO Source |
| Noise Level (10) | Portamento Rate | Filter ENV Mod (35) | VCF ENV Level - note split ± 63 control |
| Osc 2 Range (15) | 16', 8', 4' | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Sawtooth, Pulse, Square, Noise | EG1 ADSR (37-40) | Active |
| Osc 2 PW (17) | Not Used | Filter Mode (41) | Select Filter EG - EG1 or EG2 |
| Osc 2 Tune (18) | DCO2 Tune ±12 Semitones | EG2 ADSR (42-45) | Active |
| Osc 2 Fine Tune (19) | DCO2 Fine Tune ±50 Cents | VCA Mode (46) | Select VCA - Gate, EG1 or EG2 |
| Osc 2 LFO Mod (20) | DCO 2 LFO Level - See page 2 for LFO Source | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | DCO 2 ENV Level - note split ± 63 control | | |
| Osc 2 Mode (22) | Select DCO 2 EG Source - EG1 or EG2 | | |
| Osc 2 PWM (23) | Not Used | | |
| Osc 2 XMod | Sync Off, Sync On, Metal | | |
| Osc 2 Level (25) | Not Used | | |

## Roland© JX-3P KiwiTechnics Upgrade Controls Page 2

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Arpeggiator Mode - Up, Down, U&D, Random | LFO 2 Wave (26) | Sine,Tri, Saw, Rev Saw, Sqr, Random |
| Osc 1 Wave (2) | Arpeggiator Range - 0, 1 or 2 Octaves | LFO 2 Delay (27) | Active |
| Osc 1 PW (3) | Not Used | LFO 2 Speed (28) | Active |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | Key Assign Detune |
| Osc 1 LFO Mod (5) | Not Used | Chorus/FX Mode (30) | Key Mode - Poly 1,2 Mono 1,2 Unison 1,2 |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Bend Level Dest - DCO, VCF, VCA |
| Osc 1 Mode (7) | Select DCO 1 LFO Source - LFO1, LFO2 | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Not Used | Filter LFO Modulation (34) | Active |
| Noise Level (10) | Portamento Rate | Filter ENV Modulation (35) | Active |
| Osc 2 Range (15) | Seq Clock Source | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Arp Clock Source | EG1 ADSR (37-40) | Not Used |
| Osc 2 PW (17) | Aftertouch Level - note split ± 63 control | Filter Mode (41) | Select Filter LFO Source - LFO1, LFO2 |
| Osc 2 Tune (18) | Modulation Level - note split ± 63 control | EG2 ADSR (42-45) | VCA LFO Mod Level on Release |
| Osc 2 Fine Tune (19) | Not Used | VCA Mode (46) | Select VCA LFO Source - LFO1, LFO2 |
| Osc 2 LFO Mod (20) | Not Used | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | Not Used | | |
| Osc 2 Mode (22) | Select DCO 2 LFO Source - LFO1, LFO2 | | |
| Osc 2 PWM (23) | Not Used | | |
| Osc 2 XMod | Pattern Clock Source | | |
| Osc 2 Level (25) | Pattern Level | | |

## Roland© KiwiTechnics JX-3P Upgrade Notes

The oscillator design in the JX-3P is a digital system and the filter uses the custom Roland chip the IR3109 for each of the six voices. The KiwiTechnics Upgrade has realized the full potential of the 3P and provides full midi control for all parameters.

More details can be found in the KiwiTechnics 3P Upgrade manual.

# SYNTH TABLES

## KiwiTechnics KiwiSix Upgrade

Cable requirements

The KiwiTechnics Korg PolySix Upgrade uses a standard MIDI cable

The KiwiTechnics Korg PolySix upgrade is a complete rewrite of the operating system in the Korg PolySix synthesizer. Parameter Control via midi is now possible.

## Korg© PolySix KiwiTechnics Upgrade Controls Page 1

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | 16', 8', 4' | LFO1 Wave (26) | MG Wave Select - 5 types |
| Osc 1 Wave (2) | Sawtooth, Pulse, PWM | LFO1 Delay (27) | MG Delay |
| Osc 1 PW (3) | Pulse Width Shape | LFO1 Speed (28) | MG Rate |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | FX Rate |
| Osc 1 LFO Mod (5) | Not Used - Use MG Destination | Chorus/FX Mode (30) | FX Type - Off, Chorus, Phase, Ensemble |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Not Used |
| Osc 1 Mode (7) | PWM Wave - 5 types | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | PWM Rate | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Not Used | Filter LFO Mod (34) | Not Used - Use MG Destination |
| Noise Level (10) | Not Used | Filter ENV Mod (35) | VCF ENV Level - split ± 63 control |
| Osc 2 Range (15) | Sub Osc Mode - Off, -1 Octave, -2 Octaves | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Not Used | EG1 ADSR (37-40) | Not Used |
| Osc 2 PW (17) | Not Used | Filter Mode (41) | Key Mode - Poly 1, Poly 2, Unison |
| Osc 2 Tune (18) | Not Used | EG2 ADSR (42-45) | Active |
| Osc 2 Fine Tune (19) | Not Used | VCA Mode (46) | Select VCA - Gate or EG |
| Osc 2 LFO Mod (20) | Not Used | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | Not Used | | |
| Osc 2 Mode (22) | Not Used | | |
| Osc 2 PWM (23) | Not Used | | |
| Osc 2 XMod | MG Destination - VCO, VCF or VCA | | |
| Osc 2 Level (25) | MG Osc Level | | |

## Korg© PolySix KiwiTechnics Upgrade Controls Page 2

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Arp Range - 1,2 or 3 Octaves | LFO1 Wave (26) | Not Used |
| Osc 1 Wave (2) | Arp Mode - Up, Down, U&D, Random | LFO1 Delay (27) | Not Used |
| Osc 1 PW (3) | Not Used | LFO1 Speed (28) | Not Used |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | Not Used |
| Osc 1 LFO Mod (5) | Not Used | Chorus/FX Mode (30) | Not Used |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Not Used |
| Osc 1 Mode (7) | Arp Clock Division | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Not Used | Filter LFO Mod (34) | Not Used |
| Noise Level (10) | Not Used | Filter ENV Mod (35) | VCF ENV Level - split ± 63 control |
| Osc 2 Range (15) | Not Used | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Not Used | EG1 ADSR (37-40) | Not Used |
| Osc 2 PW (17) | Not Used | Filter Mode (41) | Not Used |
| Osc 2 Tune (18) | Not Used | EG2 ADSR (42-45) | Not Used |
| Osc 2 Fine Tune (19) | Not Used | VCA Mode (46)Not Used | Not Used |
| Osc 2 LFO Mod (20) | Not Used | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | Not Used | | |
| Osc 2 Mode (22) | Sequencer Clock Division | | |
| Osc 2 PWM (23) | Not Used | | |
| Osc 2 XMod | Not Used | | |
| Osc 2 Level (25) | Not Used | | |

## Roland© KiwiTechnics Kiwisix Upgrade Notes

Random mode on the Arp is only available via midi control
MG & PWM Wave select is only available via midi control
Full details can be found in the KiwiTechnics Korg PolySix Upgrade manual.

# SYNTH TABLES

## KiwiTechnics Kiwi-106 Upgrade

Cable requirements

The Roland Kiwi-106 KiwiTechnics Upgrade uses a standard MIDI cable

The KiwiTechnics Kiwi-106 upgrade is a complete rewrite of the operating system in the Roland Juno-106 synthesizer. Many enhancements have been made and to enable control of them all the KiwiTechnics Kiwi-106 Upgrade has been split over two control pages. For more comprehensive control the bundled Kiwi-106 Editor software can be used.

## KiwiTechnics Kiwi-106 Upgrade Controls Page 1

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | 16', 8', 4' | LFO1 Wave (26) | Sine,Tri, Saw, Rev Saw, Sqr, Random |
| Osc 1 Wave (2) | Sawtooth, Pulse, Both, None | LFO1 Delay (27) | Active |
| Osc 1 PW (3) | PW Shape / Depth | LFO1 Speed (28) | Active |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | Key Assign Detune |
| Osc 1 LFO Mod (5) | DCO LFO Level - See page 2 for LFO Source | Chorus/FX Mode (30) | Chorus Off, Chorus On 1, Chorus On 2 |
| Osc 1 ENV Mod (6) | DCO ENV Level - Use DCO Mode for Polarity | HPF (31) | Off, 1, 2, or 3 |
| Osc 1 Mode (7) | PWM Manual/LFO | VCF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | VCF Resonance (33) | Active |
| Osc 1 Level (9) | Not Used | Filter LFO Mod (34) | Filter LFO Level - See page 2 for LFO Source |
| Noise Level (10) | Noise Level | Filter ENV Mod (35) | VCF ENV Level – Use Filter Mode for Polarity |
| Osc 2 Range (15) | DCO ENV Source - ENV1 Norm/Inv or ENV2 Norm/Inv | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | DCO LFO Source - LFO1 Norm/Inv or LFO2 Norm/Inv | ENV1 ADSR (37-40) | Active |
| Osc 2 PW (17) | Not Used | Filter Mode (41) | Filter ENV - ENV1 Norm/Inv or ENV2 Norm/Inv |
| Osc 2 Tune (18) | DCO Bend Mod Amount | ENV2 ADSR (42-45) | Active |
| Osc 2 Fine Tune (19) | VCF Bend Mod Amount | VCA Mode (46) | VCA Gate, ENV1 Norm/Inv or ENV2 Norm/Inv |
| Osc 2 LFO Mod (20) | DCO LFO Mod Wheel Amount | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | Portamento Rate (0=Off) | | |
| Osc 2 Mode (22) | Not Used | | |
| Osc 2 PWM (23) | Not Used | | |
| Osc 2 XMod | LFO Mode- Normal/Plus | | |
| Osc 2 Level (25) | Sub Level | | |

## KiwiTechnics Kiwi-106 Upgrade Controls Page 2

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Arpeggiator Mode - Up, Down, U&D, Random, As Played | LFO 2 Wave (26) | Sine,Tri, Saw, Rev Saw, Sqr, Random, Rnd 2 |
| Osc 1 Wave (2) | Arpeggiator Range - 0, 1 or 2 Octaves | LFO 2 Delay (27) | Active |
| Osc 1 PW (3) | Not Used | LFO 2 Speed (28) | Active |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | Key Assign Detune |
| Osc 1 LFO Mod (5) | Not Used | Chorus/FX Mode (30) | Key Mode - Poly 1,2 Unison |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Seq Clock Source |
| Osc 1 Mode (7) | Select DCO LFO Source - LFO1, LFO2 | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Active |
| Osc 1 Level (9) | GLOBAL – Internal Note Velocity (50%-100% only) | Filter LFO Modulation (34) | Active |
| Noise Level (10) | Noise Level | Filter ENV Modulation (35) | Active |
| Osc 2 Range (15) | Internal Clock Source | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Internal/Ext/Midi Clock Divide Type | ENV1 ADSR (37-40) | Not Used |
| Osc 2 PW (17) | Not Used | Filter Mode (41) | Select Filter LFO Source - LFO1, LFO2 |
| Osc 2 Tune (18) | Internal Clock Rate | ENV2 ADSR (42-45) | VCA LFO Mod Level (VCA Release Slider) |
| Osc 2 Fine Tune (19) | Not Used | VCA Mode (46) | Select VCA LFO Source - LFO1, LFO2 |
| Osc 2 LFO Mod (20) | Aftertouch Level - note split ± 63 control | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | Modulation Level - note split ± 63 control | | |
| Osc 2 Mode (22) | Arp Clock Source | | |
| Osc 2 PWM (23) | Not Used | | |
| Osc 2 XMod | Pattern Clock Source | | |
| Osc 2 Level (25) | Pattern Level | | |

## Roland© KiwiTechnics Kiwi-106 Upgrade Notes

The oscillator design in the Juno-106 is a digital system and the filter uses the custom Roland hybrid called the 80017a for each of the six voices. The 80017a consists of two BA662 VCAs and one IR3109 Filter IC. The KiwiTechnics Kiwi-106 Upgrade has realized the full potential of the Juno-106 and provides full midi control for all parameters and many new features.

More details can be found in the KiwiTechnics Kiwi-106 Upgrade manual.

# SYNTH TABLES

## Kiwitechnics Kiwi-8P

Cable requirements

The Roland JX-8P uses a standard MIDI cable

## Kiwitechnics Kiwi8P Controls Pg1

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | 16', 8', 4', 2' | LFO 1 Wave (26) | Sine, Tri, Saw, Rev Saw, Square, Random |
| Osc 1 Wave (2) | Saw, Pulse, Square, Noise | LFO Delay (27) | LFO 1 Delay |
| Osc 1 PW (3) | Not Used | LFO Speed (28) | LFO 1 Rate |
| Osc 1 Tune (4) | DCO 1 Tune | Chorus/FX Rate (29) | DCO Detune |
| Osc 1 LFO Mod (5) | DCO 1 LFO Mod | Chorus/FX Mode (30) | Chorus Off, 1, 2 |
| Osc 1 ENV Mod (6) | DCO 1 ENV Mod | HPF (31) | Off, 1, 2, 3 |
| Osc 1 Mode (7) | DCO 1 & 2 Envelope Mode | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | DCO 1 Env Source | LPF Resonance (33) | Active |
| Osc 1 Level (9) | DCO 1 Level | Filter LFO Modulation (34) | Active |
| Noise Level (10) | Not Used | Filter ENV Modulation (35) | Active |
| Osc 2 Range (15) | 16', 8', 4', 2' | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Saw, Pulse, Square, Noise | Filter ADSR (37-40) | Active |
| Osc 2 PW (17) | Not Used | Filter Mode (41) | Filter Envelope Source |
| Osc 2 Tune (18) | DCO 2 Tune | VCA ADSR (42-45) | Active |
| Osc 2 Fine Tune (19) | DCO 2 Fine Tune | VCA Mode (46) | Envelope 1-3, Gate |
| Osc 2 LFO Mod (20) | DCO 2 LFO Mod | VCA Level (47) | Patch Level |
| Osc 2 ENV Mod (21) | DCO 2 ENV Mod | | |
| Osc 2 Mode (22) | DCO 2 Env Source | | |
| Osc 2 PWM (23) | Not Used | | |
| Osc 2 XMod (24) | Off, 1, 2, Cross Mod | | |
| Osc 2 Level (25) | DCO 2 Level | | |

## Kiwitechnics Kiwi8P Controls Pg2

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Arp Clock Divide (13 options) | LFO 2 Wave (26) | Sine, Tri, Saw, Rev Saw, Square, Random |
| Osc 1 Wave (2) | Seq Clock Divide (13 options) | LFO Delay (27) | LFO 2 Delay |
| Osc 1 PW (3) | Tone MW Output Level | LFO Speed (28) | LFO 2 Rate |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | Analog Feel Level |
| Osc 1 LFO Mod (5) | Not Used | Chorus/FX Mode (30) | Master Clock Source (Int, Midi) |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | VCF LFO Source |
| Osc 1 Mode (7) | DCO 1&2 LFO Source | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Mix 2 Dynamics Level | LPF Resonance (33) | Active |
| Osc 1 Level (9) | DCO 1 Dynamics Level | Filter LFO Modulation (34) | Active |
| Noise Level (10) | DCO 2 Dynamics Level | Filter ENV Modulation (35) | Active |
| Osc 2 Range (15) | Arp Mode (Up, Down, U&D, Random, As played) | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Arp Range (1-4 Octaves) | Filter Decay | Not Used |
| Osc 2 PW (17) | Not Used | Filter Sustain | Not Used |
| Osc 2 Tune (18) | Internal Master Clock Rate | Filter Release | Not Used |
| Osc 2 Fine Tune (19) | Patch Clock Rate | Filter Mode | Bend Range |
| Osc 2 LFO Mod (20) | VCF Dynamics Level | VCA Attack | Env 3 Attack |
| Osc 2 ENV Mod (21) | VCA Dynamics Level | VCA Decay | Env 3 Decay |
| Osc 2 Mode (22) | Not Used | VCA Sustain | Env 3 Sustain |
| Osc 2 PWM (23) | Not Used | VCA Release | Env 3 Release |
| Osc 2 XMod (24) | Key Mode (Poly, Poly Dual, Poly Trip, Unison, Solo) | VCA Mode (46) | VCA LFO Source |
| Osc 2 Level (25) | Mixer 2 Env Mod Level | VCA Level (47) | Synth Output Level |

## Kiwitechnics Kiwi-8P Notes

The JX-8P has two separate oscillators. The oscillator design in the JX-8P is a digital system and the filter and the VCA use the custom Roland chip the IR3R05 for each of the six voices.

Full upgrade details can be found in the Kiwi-8P user guide.

# SYNTH TABLES

## Organix Midi 3P Upgrade

Cable requirements

The Organix midi 3P Upgrade uses a standard MIDI cable

**PE release v4.6 or higher.**

## Organix JX-3P Controls

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | 16', 8', 4' | LFO Wave (26) | Triangle, Square, Random |
| Osc 1 Wave (2) | Sawtooth, Pulse, Square | LFO Delay (27) | Active |
| Osc 1 PW (3) | Not Used | LFO Speed (28) | Active |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | Not Used |
| Osc 1 LFO Mod (5) | Not Used | Chorus/FX Mode (30) | Chorus On, Chorus Off |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Off, 10% to 100% - For continuous control use (17) |
| Osc 1 Mode (7) | Used to enable Osc 1 LFO & Env modulation | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Osc 1 & 2 Mix | Filter LFO Modulation (34) | Active |
| Noise Level (10) | Not Used | Filter ENV Modulation (35) | Active |
| Osc 2 Range (15) | 16', 8', 4' | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Sawtooth, Pulse, Square, Noise | Filter ADSR (37-40) | Not Used |
| Osc 2 PW (17) | HPF Continuous control | Filter Mode (41) | EG Normal, EG Inv |
| Osc 2 Tune (18) | Active | VCA ADSR (42-45) | Active |
| Osc 2 Fine Tune (19) | Active | VCA Mode (46) | Envelope, Gate |
| Osc 2 LFO Mod (20) | Not Used | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | Not Used | | |
| Osc 2 Mode (22) | Used to enable Osc 2 LFO & Env modulation | | |
| Osc 2 PWM (23) | Not Used | | |
| Osc 2 XMod | Sync Off, Sync On, Metal | | |
| Osc 2 Level (25) | Not Used | | |

## Moog Slim Phatty

Cable requirements

The Moog Slim Phatty uses a standard MIDI cable

## Moog Slim Phatty Controls

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | 16', 8', 4', 2' | LFO Wave (26) | Modulation Wave Type |
| Osc 1 Wave (2) | Not used | LFO Delay (27) | Modulation Amount |
| Osc 1 PW (3) | Ocs 1 Wave Shape | LFO Speed (28) | LFO Rate |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | Portamento Glide Rate |
| Osc 1 LFO Mod (5) | Arp Clock Course Rate | Chorus/FX Mode (30) | Modulation Destination 1 |
| Osc 1 ENV Mod (6) | Arp Clock Fine Rate | HPF (31) | Filter Poles Number 1-4 |
| Osc 1 Mode (7) | Arp Enable | LPF Cutoff (32) | VCF Cutoff |
| Osc 1 PWM (8) | Arp Clock Source | LPF Resonance (33) | VCF Resonance |
| Osc 1 Level (9) | Osc 1 Level | Filter LFO Modulation (34) | VCF Overload |
| Noise Level (10) | Arp Clock Divisions | Filter ENV Modulation (35) | VCF ENV Depth |
| Osc 2 Range (15) | 16', 8', 4', 2' | Filter Key Follow (36) | VCF Key Follow |
| Osc 2 Wave (16) | Not Used | Filter ADSR (37-40) | Filter Envelope |
| Osc 2 PW (17) | Osc 2 Wave Shape | Filter Mode (41) | Modulation Destination 2 |
| Osc 2 Tune (18) | Osc 2 Frequency | VCA ADSR (42-45) | VCA Envelope |
| Osc 2 Fine Tune (19) | Not used | VCA Mode (46) | Not Used |
| Osc 2 LFO Mod (20) | Arp Range Octaves | VCA Level (47) | Output Volume |
| Osc 2 ENV Mod (21) | Arp Pattern | | |
| Osc 2 Mode (22) | Arp Run/Stop | | |
| Osc 2 PWM (23) | Arp Mode | | |
| Osc 2 XMod | DCO 1&2 Sync | | |
| Osc 2 Level (25) | Osc 2 Level | | |

# SYNTH TABLES

## Korg DW-6000

Cable and MIDI requirements

The Korg DW6000 uses a standard MIDI cable, Parameter 81 needs to be set to the same channel number that is programmed into the Patch Editor for the DW-6000 or Parameter 83 can be set to Omni. Parameter 82 needs to be set to 2 to enable SysEx control.

## KORG© DW-6000 Controls

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | 16', 8', 4' | LFO1 Wave (26) | Not Used - LFO is sine wave only |
| Osc 1 Wave (2) | 8 Preprogrammed Wave types | LFO1 Delay (27) | Active |
| Osc 1 PW (3) | Not Used | LFO1 Speed (28) | Active |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | Not Used |
| Osc 1 LFO Mod (5) | Active - effects both Oscillators | Chorus/FX Mode (30) | Chorus Off, Chorus On |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Not Used |
| Osc 1 Mode (7) | Not Used | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Active | Filter LFO Modulation (34) | Active |
| Noise Level (10) | Active | Filter ENV Modulation (35) | Active |
| Osc 2 Range (15) | 16', 8', 4' | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | 8 Preprogrammed Wave types | Filter ADSR EG1 (37-40) | Active |
| Osc 2 PW (17) | Not Used | Filter Mode (41) | Filter Envelope Polarity |
| Osc 2 Tune (18) | Osc 2 Interval (unison, minor 3rd, major 3rd, perfect 4th and perfect 5th) | VCA ADSR EG2 (42-45) | Active |
| Osc 2 Fine Tune (19) | Osc 2 Detune | VCA Mode (46) | Envelope (EG2 only), Gate |
| Osc 2 LFO Mod (20) | Not Used | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | Not Used | | |
| Osc 2 Mode (22) | Not Used | | |
| Osc 2 PWM (23) | Not Used | | |
| Osc 2 XMod (24) | Not Used | | |
| Osc 2 Level (25) | DCO 2 Mixer Control | | |

## Korg DW-6000 Notes

The DW-6000 uses two separate voice generators which are not VCOs but rather are preprogrammed wave form generators which change their frequency depending on the note played. The waveforms are generated from ROM (Read Only Memory) look up tables and the frequencies are calculated in real time by very fast hardware multipliers and a DAC (Digital to Analog Converter) to produce the final waveform. When you think that this system is calculating complex waveforms for 12 separate waveforms simultaneously (up to 6 notes with 2 oscillators each) all in real time it is fairly impressive. A more conventional filter and VCA is used which uses the NJM2069 combo chip for each of the 6 voices.

The Korg DW-6000 uses a complex system of combining controls as there is a limited memory available within the DW-6000. This makes it a difficult synthesizer to control using standard SysEx controllers. The Patch Editor handles the combining of controls invisibly. Because of this combining, changing one control in a combination will also set the other part to the current Patch Editor setting. This is unavoidable due to the way the DW-6000 is controlled. Combinations are

1) Oscillator 1 Range & VCA Env Release
2) Oscillator 2 Range & LFO Rate
3) Filter Key Modulation & LFO Delay
4) Filter LFO Modulation & Chorus Mode
5) Oscillator 1 & Oscillator 2 Waveforms
6) Oscillator 2 Tune & Fine Tune
7) Filter Bend (not used) & VCA Env Sustain
8) Oscillator 1 LFO Mod & Polarity

The oscillators 1 and 2 Range buttons are used to step through all possible octaves. These are 16', 8' and 4'.
The oscillators 1 and 2 Wave buttons are used to step though all possible programmed wave types. These are Brass, Violin, Acoustic Piano, Electric Piano, Synth Bass, Saxophone, Clavicord and Bell.

The Oscillator 2 tune will change the oscillator 1 and 2 interval. Possible interval options are unison (same as Oscillator 1) , minor 3rd, major 3rd, perfect 4th and perfect 5th. The Fine Tune control on the Patch Editor will provide Oscillator 2 Detune.

The Oscillator 1 LFO modulation control will effect both oscillators 1 and 2.

The Filter Keyboard Track has three possible levels, Off, 50% and 100% and the Filter Mode button will invert the filter envelope. Green is a normal envelope and red is inverted.

The Envelopes in the DW-6000 use extra controls. In addition to Attack, Decay, Sustain and Release there are break level and slope controls. The Patch Editor sets the slope equal to the decay and the break level equal to the sustain which has the effect of changing the envelope generators to the four control system.

# SYNTH TABLES

## Korg DW-8000

Cable and MIDI requirements

The Korg DW8000 uses a standard MIDI cable, Parameter 84 needs to be set to the same channel number that is programmed into the Patch Editor (or set to Omni using Parameter 86). Parameter 85 needs to be set to 2 to enable SysEx control.

## KORG© DW-8000 Controls Pg1

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | 16', 8', 4' | LFO1 Wave (26) | Triangle, Sawtooth, Square, Random |
| Osc 1 Wave (2) | 16 Preprogrammed Wave types | LFO1 Delay (27) | Active |
| Osc 1 PW (3) | Not Used | LFO1 Speed (28) | Active |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | FX Delay Rate |
| Osc 1 LFO Mod (5) | Active - Effects both Osc 1 & 2 | Chorus/FX Mode (30) | Not Used |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Not Used |
| Osc 1 Mode (7) | Key Assign Mode, Poly 1 & 2, Unison 1 & 2 | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Active |
| Osc 1 Level (9) | DCO 1 Level | Filter LFO Modulation (34) | Active |
| Noise Level (10) | Active | Filter ENV Modulation (35) | Active |
| Osc 2 Range (15) | 16', 8', 4' | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | 16 Preprogrammed Wave types | Filter ADSR EG1 (37-40) | Active |
| Osc 2 PW (17) | Not Active | Filter Mode (41) | Filter Envelope Polarity |
| Osc 2 Tune (18) | Osc 2 Interval (unison, minor 3rd, major 3rd, perfect 4th and perfect 5th) | VCA ADSR EG2 (42-45) | Active |
| Osc 2 Fine Tune (19) | Osc 2 Detune | VCA Mode (46) | Not Used |
| Osc 2 LFO Mod (20) | FX Delay Feedback | VCA Level (47) | FX Delay Level |
| Osc 2 ENV Mod (21) | FX Delay Intensity | | |
| Osc 2 Mode (22) | FX Delay time (Eight Settings) | | |
| Osc 2 PWM (23) | FX Delay Factor - adjusts Delay time by a small amount | | |
| Osc 2 XMod (24) | Not Used | | |
| Osc 2 Level (25) | DCO 2 Level | | |

## KORG© DW-8000 Controls Pg2

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Auto Bend Select - Off, Osc 1, Osc 2, Both | LFO1 Wave (26) | Not Used |
| Osc 1 Wave (2) | Auto Bend Mode - Up, Down | LFO1 Delay (27) | Not Used |
| Osc 1 PW (3) | Auto Bend Time | LFO1 Speed (28) | Not Used |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | Not Used |
| Osc 1 LFO Mod (5) | Auto Bend Intensity | Chorus/FX Mode (30) | Not Used |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Not Used |
| Osc 1 Mode (7) | Not Used | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Not Used | Filter LFO Modulation (34) | Filter Env Attack |
| Noise Level (10) | Portamento Amount | Filter ENV Modulation (35) | Filter Env Decay |
| Osc 2 Range (15) | Not Used | Filter Key Follow (36) | Filter Env Break Point |
| Osc 2 Wave (16) | Not Used | Filter Attack | Filter Env Slope |
| Osc 2 PW (17) | Not Used | Filter Decay | Filter Env Sustain |
| Osc 2 Tune (18) | Osc Bend Amount | Filter Sustain | Filter Env Release |
| Osc 2 Fine Tune (19) | Not Used | VCF Mode | VCF Bend Mode - Off, On |
| Osc 2 LFO Mod (20) | Aftertouch Osc MG | Filter Release | VCA Env Attack |
| Osc 2 ENV Mod (21) | Aftertouch VCF | VCA Attack | VCA Env Decay |
| Osc 2 Mode (22) | Not Used | VCA Decay | VCA Env Break Point |
| Osc 2 PWM (23) | Aftertouch VCA | VCA Sustain | VCA Env Slope |
| Osc 2 XMod (24) | Not Used | VCA Release | VCA Env Sustain |
| Osc 2 Level (25) | Not Used | VCA Mode (46) | Not Used |
| | | VCA Level (47) | VCA Env Release |

## Korg DW-8000 Notes

The DW-8000 uses two separate voice generators which are not VCOs but rather are preprogrammed wave form generators which change their frequency depending on the note played. The waveforms are generated from ROM (Read Only Memory) look up tables and the frequencies are calculated in real time by very fast hardware multipliers and a DAC (Digital to Analog Converter) to produce the final waveform. A more conventional filter and VCA is used which uses the NJM2069 combo chip for each of the 8 voices.

The oscillators 1 and 2 Range buttons are used to step through all possible octaves. These are 16', 8' and 4'.
The oscillators 1 and 2 Wave buttons are used to step though all possible programmed wave types. These are Brass & Strings, Clarinet, Acoustic Piano, Electric Piano, Electric Piano Hard, Clavicord ,Organ, Brass, Saxophone, Violin, Acoustic Guitar, Guitar (distorted), Electric Bass, Digital Bass, Bell and Organ/Whistle.

The Oscillator 2 tune will change the oscillator 1 and 2 interval. Possible interval options are unison (same as Oscillator 1) , minor 3rd, major 3rd, perfect 4th and perfect 5th. The Fine Tune control on the Patch Editor will provide Oscillator 2 Detune.

The Oscillator 1 LFO modulation control will effect both oscillators 1 and 2.

The Envelopes in the DW-8000 use extra controls. In addition to Attack, Decay, Sustain and Release there are break level and slope controls. On page 1 the Patch Editor sets the slope equal to the decay and the break level to maximum and break time to minimum which has the effect of changing the envelope generators to the four control system. On page two full control is provided.

The DW8000 has a comprehensive delay section. This has been placed in the unused Oscillator 2 modulation area, the FX/Chorus rate control & the VCA Level control is used to set the Delay level.

# SYNTH TABLES

## Korg DSS-1

Cable and MIDI requirements

The Korg DSS-1 uses a standard MIDI cable.

## Korg DSS-1 Page 1 Controls

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | OSC 1 Range | LFO1 Wave (26) | OSC MG Destination Select |
| Osc 1 Wave (2) | OSC 1 Multi Sound Number (16 types) | LFO1 Delay (27) | OSC MG Delay |
| Osc 1 PW (3) | OSC Auto Bend Intensity | LFO1 Speed (28) | OSC MG Rate |
| Osc 1 Tune (4) | OSC Auto Bend Time | Chorus/FX Rate (29) | Unison Detune |
| Osc 1 LFO Mod (5) | OSC 1 & 2 MG Intensity | Chorus/FX Mode (30) | Key Assign (Poly 1&2, Unison 2-8 voices) |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | VCF Mode (12/24dB) |
| Osc 1 Mode (7) | OSC Auto Bend Destination Select | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Oscillator 1 <> 2 Mix | Filter LFO Modulation (34) | Active |
| Noise Level (10) | Active | Filter ENV Modulation (35) | Active |
| Osc 2 Range (15) | OSC 2 Range | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | OSC 2 Multi Sound Number (16 types) | Filter ADSR EG1 (37-40) | Active |
| Osc 2 PW (17) | Not Used | Filter Mode (41) | VCF EG Polarity |
| Osc 2 Tune (18) | OSC 2 Interval | VCA ADSR EG2 (42-45) | Active |
| Osc 2 Fine Tune (19) | OSC 2 Detune | VCA Mode (46) | Not Used |
| Osc 2 LFO Mod (20) | Not Used | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | Not Used | | |
| Osc 2 Mode (22) | OSC Auto Bend Polarity | | |
| Osc 2 PWM (23) | Not Used | | |
| Osc 2 XMod (24) | Sync On/Off | | |
| Osc 2 Level (25) | Not Used | | |

## Korg DSS-1 Page 2 Controls

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Not Used | LFO1 Wave (26) | Not Used |
| Osc 1 Wave (2) | Not Used | LFO1 Delay (27) | Equalizer Treble |
| Osc 1 PW (3) | DDL MG-A Frequency | LFO1 Speed (28) | Equalizer Bass |
| Osc 1 Tune (4) | DDL-1 Time | Chorus/FX Rate (29) | Not Used |
| Osc 1 LFO Mod (5) | DDL-1 MG A Intensity | Chorus/FX Mode (30) | Not Used |
| Osc 1 ENV Mod (6) | DDL-1 MG B Intensity | HPF (31) | Joystick VCF Sweep Select |
| Osc 1 Mode (7) | DCO 1 Envelope Source EG1, EG1 inv, EG2, EG2 inv | LPF Cutoff (32) | Not Used |
| Osc 1 PWM (8) | DDL-1 Feedback | LPF Resonance (33) | Not Used |
| Osc 1 Level (9) | DDL-1 Effect Level | Filter LFO Modulation (34) | VCF MG Delay |
| Noise Level (10) | Not Used | Filter ENV Modulation (35) | VCF MG Frequency |
| Osc 2 Range (15) | Not Used | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | DDL-2 Input Select | Filter ADSR EG1 (37-40) | Joystick Pitch Bend Range on VCF Release |
| Osc 2 PW (17) | DDL MG-B Frequency | Filter Mode (41) | Not Used |
| Osc 2 Tune (18) | DDL-2 Time | VCA ADSR EG2 (42-45) | Not Used |
| Osc 2 Fine Tune (19) | Not Used | VCA Mode (46) | Not Used |
| Osc 2 LFO Mod (20) | DDL-2 MG A Intensity | VCA Level (47) | Not Used |
| Osc 2 ENV Mod (21) | DDL-2 MG B Intensity | | |
| Osc 2 Mode (22) | DDL-2 Mod Polarity | | |
| Osc 2 PWM (23) | DDL-2 Feedback | | |
| Osc 2 XMod (24) | Not Used | | |
| Osc 2 Level (25) | DDL-2 Effect Level | | |

# SYNTH TABLES

## Korg DSM-1

Cable and MIDI requirements

The Korg DSM-1 uses a standard MIDI cable.

## Korg DSM-1 Page 1 Controls

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Not Used | LFO Wave (26) | OSC MG Wave (Sine, Tri, Square) |
| Osc 1 Wave (2) | Not Used | LFO Delay (27) | OSC MG Delay |
| Osc 1 PW (3) | Multi Sound Number | LFO Speed (28) | OSC MG Rate |
| Osc 1 Tune (4) | Tune (+-) | Chorus/FX Rate (29) | Not Used |
| Osc 1 LFO Mod (5) | OSC MG Intensity | Chorus/FX Mode (30) | Not Used |
| Osc 1 ENV Mod (6) | Pitch Bend Range | HPF (31) | Not Used |
| Osc 1 Mode (7) | Not Used | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Not Used |
| Osc 1 Level (9) | Not Used | Filter LFO Modulation (34) | VCF MG Intensity |
| Noise Level (10) | Not Used | Filter ENV Modulation (35) | VCF EG Intensity |
| Osc 2 Range (15) | Not Used | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Not Used | Filter ADSR EG1 (37-40) | Active (ADSR only) |
| Osc 2 PW (17) | Auto Bend Direction (Up/Down) | Filter Mode (41) | VCF EG Polarity |
| Osc 2 Tune (18) | Auto Bend Time | VCA ADSR EG2 (42-45) | Active (ADSR only) |
| Osc 2 Fine Tune (19) | Auto Bend Intensity | VCA Mode (46) | Not Used |
| Osc 2 LFO Mod (20) | Not Used | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | Not Used | | |
| Osc 2 Mode (22) | OSC Auto Bend Polarity | | |
| Osc 2 PWM (23) | Not Used | | |
| Osc 2 XMod (24) | Not Used | | |
| Osc 2 Level (25) | Not Used | | |

## Korg DSM-1 Page 2 Controls

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Not Used | LFO Wave (26) | VCF MG Wave (Sine, Tri, Square) |
| Osc 1 Wave (2) | Not Used | LFO Delay (27) | VCF MG Delay |
| Osc 1 PW (3) | Not Used | LFO Speed (28) | VCF MG Rate |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | Not Used |
| Osc 1 LFO Mod (5) | Not Used | Chorus/FX Mode (30) | Not Used |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Not Used |
| Osc 1 Mode (7) | Not Used | LPF Cutoff (32) | VCF Cutoff Aftertouch |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Bender VCF Sweep Intensity |
| Osc 1 Level (9) | Not Used | Filter LFO Modulation (34) | VCF MG Init After Touch |
| Noise Level (10) | Not Used | Filter ENV Modulation (35) | Not Used |
| Osc 2 Range (15) | Not Used | Filter Key Follow (36) | Not Used |
| Osc 2 Wave (16) | Not Used | Filter ADSR EG (37-40) | VCF Attack, Decay, Slope Aftertouch Sense |
| Osc 2 PW (17) | Not Used | Filter Mode (41) | Not Used |
| Osc 2 Tune (18) | Not Used | VCA ADSR EG2 (42-45) | VCA Attack, Decay, Slope Aftertouch Sense<br>EG Release Keytrack |
| Osc 2 Fine Tune (19) | Not Used | VCA Mode (46) | Not Used |
| Osc 2 LFO Mod (20) | Auto Bend Touch Sens Intensity | VCA Level (47) | Total Level Aftertouch Sense |
| Osc 2 ENV Mod (21) | Not Used | | |
| Osc 2 Mode (22) | Not Used | | |
| Osc 2 PWM (23) | Not Used | | |
| Osc 2 XMod (24) | Not Used | | |
| Osc 2 Level (25) | Not Used | | |

Note: The DSM-1 that we used for testing had a bad audio glitch everytime parameter change midi was sent to it.

# SYNTH TABLES

## Korg M1

Cable and MIDI requirements

The Korg M1 uses a standard MIDI cable, The M1 must be placed in Edit Mode on the front panel.

## KORG© M1 Controls Pg1 - Single Mode

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | 16', 8', 4' | LFO1 Wave (26) | VDF MG Wave Tri/Up Saw/Dn Saw/Sqr |
| Osc 1 Wave (2) | Not Used - Wave selected using the PW slider | LFO1 Delay (27) | VDF MG Delay |
| Osc 1 PW (3) | Wave types internal & cartridge | LFO1 Speed (28) | VDF MG Rate |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | Effect 2 Type |
| Osc 1 LFO Mod (5) | Pitch MG Intensity | Chorus/FX Mode (30) | Effect 1 On/Off |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Not Used |
| Osc 1 Mode (7) | Voice Mode Single/Double/Drum | VDF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Not Used |
| Osc 1 Level (9) | DCO Level | Filter LFO Modulation (34) | VDF MG Intensity |
| Noise Level (10) | Not Used | Filter ENV Modulation (35) | VDF EG Intensity |
| Osc 2 Range (15) | Not Used | Filter Key Follow (36) | VDF Key Follow Amount |
| Osc 2 Wave (16) | DCO MG Wave Tri/Up Saw/Dn Saw/Sqr | Filter ADSR EG1 (37-40) | A/D/S/R Only |
| Osc 2 PW (17) | DCO MG Delay | Filter Mode (41) | Not Used |
| Osc 2 Tune (18) | Not Used | VDA ADSR EG2 (42-45) | A/D/S/R Only |
| Osc 2 Fine Tune (19) | Not Used | VCA Mode (46) | Not Used |
| Osc 2 LFO Mod (20) | DCO MG Rate | VCA Level (47) | Not Used |
| Osc 2 ENV Mod (21) | Not Used | | |
| Osc 2 Mode (22) | DCO Hold On/Off | | |
| Osc 2 PWM (23) | Effect 1 Type | | |
| Osc 2 XMod (24) | DCO Mono/Poly | | |
| Osc 2 Level (25) | Not Used | | |

## KORG© M1 Controls Pg2 - Double Mode

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | DCO 1 16', 8', 4' | LFO1 Wave (26) | VDF MG Wave Tri/Up Saw/Dn Saw/Sqr |
| Osc 1 Wave (2) | Not Used - DCO 1 Wave selected using the PW slider | LFO1 Delay (27) | VDF MG Delay |
| Osc 1 PW (3) | Wave types internal & cartridge | LFO1 Speed (28) | VDF MG Rate |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | Effect 2 Type |
| Osc 1 LFO Mod (5) | Pitch MG Intensity | Chorus/FX Mode (30) | Effect 2 On/Off |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Not Used |
| Osc 1 Mode (7) | Voice Mode Single/Double/Drum | VDF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Not Used |
| Osc 1 Level (9) | DCO 1 Level | Filter LFO Modulation (34) | VDF MG Intensity |
| Noise Level (10) | Not Used | Filter ENV Modulation (35) | VDF EG Intensity |
| Osc 2 Range (15) | DCO 1 16', 8', 4' | Filter Key Follow (36) | VDF Key Follow Amount |
| Osc 2 Wave (16) | Not Used - DCO 2 Wave selected using the PW slider | Filter ADSR EG1 (37-40) | A/D/S/R Only |
| Osc 2 PW (17) | Wave types internal & cartridge | Filter Mode (41) | Not Used |
| Osc 2 Tune (18) | DCO 2 Tune | VDA ADSR EG2 (42-45) | A/D/S/R Only |
| Osc 2 Fine Tune (19) | DCO 2 Detune | VCA Mode (46) | Not Used |
| Osc 2 LFO Mod (20) | Not Used | VCA Level (47) | Not Used |
| Osc 2 ENV Mod (21) | Not Used | | |
| Osc 2 Mode (22) | DCO Hold On/Off | | |
| Osc 2 PWM (23) | Not Used | | |
| Osc 2 XMod (24) | DCO Mono/Poly | | |
| Osc 2 Level (25) | DCO 2 Level | | |

## Korg M1 Notes

The M1 uses an unusual menu system which alters depending on the mode the M1 is in. The same command sent to the M1 in Single Mode will have a completely different action in Double Mode or Drum Mode. The PE will needs to be matched to the mode of the M1 to get useful results. The M1 also need to be placed into edit mode on the front panel before editing is possible.

There are a large number of parameters that are not practical to edit from the PE and these must be done from the M1. The PE tries to cover the most useful.

The oscillator wave forms are to numerous to be placed on the waveform button so these have been placed on the PW slider. The lowest numbers select internal waves and the higher numbers select cartridge waves if a cartridge is present.

The Envelopes in the M1 use extra controls. In addition to Attack, Decay, Sustain and Release there are break level and slope controls. The Patch Editor only controls the A/D/S/R sections.

# SYNTH TABLES

## Oberheim Matrix 6

Cable and MIDI requirements

The Oberheim Matrix 6 uses a standard MIDI cable.

## Oberheim Matrix 6 Page 1 Controls

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Not Used | LFO1 Wave (26) | Tri, Up Saw, Down Saw, Sqr, Random, Noise, Sample Mod |
| Osc 1 Wave (2) | Osc 1 Wave (Off Pulse, Wave, Both) | LFO1 Delay (27) | LFO 1 Initial Amplitude |
| Osc 1 PW (3) | DCO 1 Initial Pulse Width Amount | LFO1 Speed (28) | LFO 1 Rate |
| Osc 1 Tune (4) | DCO 1 Initial Frequency Semitones | Chorus/FX Rate (29) | Portamento Initial Rate |
| Osc 1 LFO Mod (5) | DCO 1 Freq by LFO 1 Modulation Amount | Chorus/FX Mode (30) | Legato Portamento Enable |
| Osc 1 ENV Mod (6) | OSC 1 Initial Wave Shape | HPF (31) | VCF Fixed Mods (Off, Level 1, Vibrato, Both) |
| Osc 1 Mode (7) | OSC 1 Fixed Mods (Off, Level 1, Vibrato, Both) | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | DCO 1 PW by LFO2 Modulation Amount | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Oscillator 1 <> 2 Mix | Filter LFO Modulation (34) | VCF FM Amount |
| Noise Level (10) | Not Used | Filter ENV Modulation (35) | VCF Env 1 Amount |
| Osc 2 Range (15) | Not Used | Filter Key Follow (36) | VCF Pressure Mod Amount |
| Osc 2 Wave (16) | Osc 2 Wave (Off Pulse, Wave, Both) | Filter ADSR EG1 (37-40) | Env 1 |
| Osc 2 PW (17) | DCO 2 Initial Pulse Width Amount | Filter Mode (41) | Env 1 Trigger Mode |
| Osc 2 Tune (18) | DCO 2 Tune Semitones | VCA ADSR EG2 (42-45) | Env 2 |
| Osc 2 Fine Tune (19) | DCO 2 Detune Cents | VCA Mode (46) | Env 2 Trigger Mode |
| Osc 2 LFO Mod (20) | DCO 2 Freq by LFO 2 Modulation Amount | VCA Level (47) | VCA Initial Level |
| Osc 2 ENV Mod (21) | OSC 2 Initial Wave Shape | | |
| Osc 2 Mode (22) | OSC 1 Fixed Mods (Off, Level 1, Vibrato, Both) | | |
| Osc 2 PWM (23) | DCO 2 PW by LFO2 Modulation Amount | | |
| Osc 2 XMod (24) | Sync On/Off | | |
| Osc 2 Level (25) | Not Used | | |

## Oberheim Matrix 6 Page 2 Controls

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | OSC 1 Click (On/Off) | LFO Wave (26) | LFO 2 Tri, Up Saw, Down Saw, Sqr, Random, Noise, Sample Mod |
| Osc 1 Wave (2) | Tracking Input Select (20 types) | LFO Delay (27) | LFO 2 Initial Amplitude |
| Osc 1 PW (3) | Tracking Point 1 | LFO Speed (28) | LFO 2 Rate |
| Osc 1 Tune (4) | Tracking Point 2 | Chorus/FX Rate (29) | Not Used |
| Osc 1 LFO Mod (5) | Tracking Point 3 | Chorus/FX Mode (30) | Key Assign Mode (4 types) |
| Osc 1 ENV Mod (6) | Tracking Point 4 | HPF (31) | VCF Keyboard Mod (Key, Portamento) |
| Osc 1 Mode (7) | Not Used | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Tracking Point 5 | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Not Used | Filter LFO Modulation (34) | Not Used |
| Noise Level (10) | Not Used | Filter ENV Modulation (35) | Env 1 Initial Delay |
| Osc 2 Range (15) | OSC 2 Click (On/Off) | Filter Key Follow (36) | Env 2 Initial Delay |
| Osc 2 Wave (16) | Not Used | Filter ADSR EG1 (37-40) | Env 3 Initial Delay (on VCF Release Slider) |
| Osc 2 PW (17) | Not Used | Filter Mode (41) | Env 1 Mode (DADR/Free run) |
| Osc 2 Tune (18) | Not Used | VCA ADSR EG2 (42-45) | Env 3 ADSR |
| Osc 2 Fine Tune (19) | Not Used | VCA Mode (46) | Env 2 Mode (DADR/Free run) |
| Osc 2 LFO Mod (20) | Not Used | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | Not Used | | |
| Osc 2 Mode (22) | Not Used | | |
| Osc 2 PWM (23) | Not Used | | |
| Osc 2 XMod (24) | Not Used | | |
| Osc 2 Level (25) | Not Used | | |

## Oberheim Matrix 6 Notes

Some Sysex commands on the Oberheim Matrix 6 are very slow responding to sysex and it does not respond well to large numbers of commands in rapid succession. With some commands to the Matrix 6 the synth will stop responding for 1-2 seconds and hang notes or have other random problems until it catches up. This makes it unsuitable to control parameters in a live situation but a patch has been provided to help set up the Matrix 6.

# SYNTH TABLES

## Oberheim Matrix 1000

Cable and MIDI requirements

The Oberheim Matrix 1000 uses a standard MIDI cable.

## Oberheim Matrix 1000 Controls

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Not Used | LFO1 Wave (26) | Tri, Up Saw, Down Saw, Sqr, Random, Noise, Sample Mod |
| Osc 1 Wave (2) | Saw, Tri, Pulse, Pulse+Saw, Pulse+Tri | LFO1 Delay (27) | LFO 1 Rate |
| Osc 1 PW (3) | DCO 1 Initial Pulse Width Amount | LFO1 Speed (28) | LFO 2 Rate |
| Osc 1 Tune (4) | DCO 1 Tune Semitones | Chorus/FX Rate (29) | Not Used |
| Osc 1 LFO Mod (5) | DCO 1 LFO Modulation | Chorus/FX Mode (30) | Not Used |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Not Used |
| Osc 1 Mode (7) | DCO 1 Envelope Source EG1, EG1 inv, EG2, EG2 inv | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | DCO 1 LFO2 PWM Modulation Amount | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Oscillator 1 <> 2 Mix | Filter LFO Modulation (34) | Active |
| Noise Level (10) | Not Used | Filter ENV Modulation (35) | Active |
| Osc 2 Range (15) | Not Used | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Saw, Tri, Pulse, Pulse+Saw, Pulse+Tri | Filter ADSR EG1 (37-40) | Active |
| Osc 2 PW (17) | DCO 2 Initial Pulse Width Amount | Filter Mode (41) | Not Used |
| Osc 2 Tune (18) | DCO 2 Tune Semitones | VCA ADSR EG2 (42-45) | Active |
| Osc 2 Fine Tune (19) | DCO 2 Detune Cents | VCA Mode (46) | Not Used |
| Osc 2 LFO Mod (20) | DCO 2 LFO Modulation | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | Not Used | | |
| Osc 2 Mode (22) | DCO 2 Envelope Source EG1, EG1 inv, EG2, EG2 inv | | |
| Osc 2 PWM (23) | DCO 2 LFO2 PWM Modulation Amount | | |
| Osc 2 XMod (24) | Sync On/Off | | |
| Osc 2 Level (25) | Not Used | | |

## Oberheim Matrix 1000 Notes

Some Sysex commands on the Oberheim Matrix 1000 are very slow responding to sysex and it does not respond well to large numbers of commands in rapid succession. This is especially so for the filter cutoff. When a series of Sysex commands are sent to the M1000 the synth will stop responding and hang notes or have other random problems until it catches up. This makes it unsuitable to control parameters in a live situation but a patch has been provided to help set up the M1000. The parameter for Filter sustain control does not work in the M1000 and has been disabled in this patch.

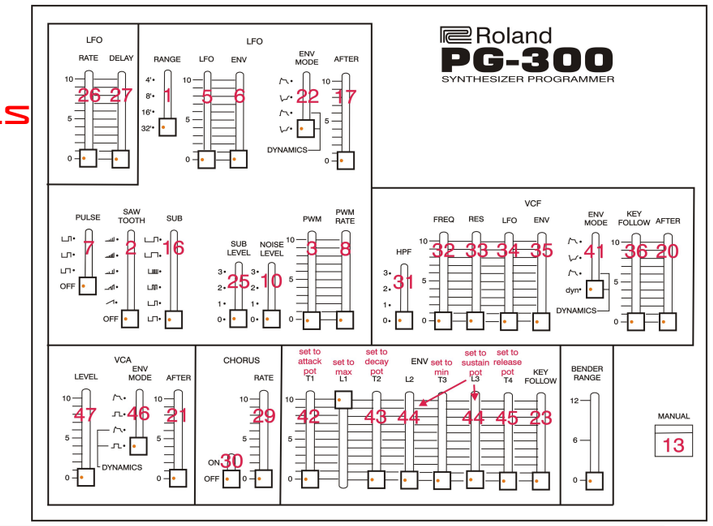
# SYNTH TABLES

## Roland Juno-1 Juno-2 and HS-10

Cable requirements

The Roland Juno-1/HS-10 uses a standard MIDI cable

## EQUIVALENT CONTROLS




## Roland© Juno-1/HS-10 Controls Pg1

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | 32',16', 8', 4' | LFO Wave (26) | Not Used (sine only) |
| Osc 1 Wave (2) | Sawtooth Waveform Select | LFO Delay (27) | Active |
| Osc 1 PW (3) | DCO PW/PWM | LFO Speed (28) | Active |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | Active (Chorus Rate) |
| Osc 1 LFO Mod (5) | Active | Chorus/FX Mode (30) | Chorus On, Chorus Off |
| Osc 1 ENV Mod (6) | Active | HPF (31) | Active |
| Osc 1 Mode (7) | PW Waveform Select | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | PWM Rate | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Not Used | Filter LFO Modulation (34) | Active |
| Noise Level (10) | Active (0-3 range) | Filter ENV Modulation (35) | Active |
| Osc 2 Range (15) | Not Used | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Sub Osc Waveform & Octave Select | Filter ADSR (37-40) | Not Used |
| Osc 2 PW (17) | DCO Aftertouch Depth | Filter Mode (41) | Active EG Mode |
| Osc 2 Tune (18) | Not Used | VCA ADSR (42-45) | Active 4 stage |
| Osc 2 Fine Tune (19) | Not Used | VCA Mode (46) | Envelope, Gate |
| Osc 2 LFO Mod (20) | VCF Aftertouch | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | VCA Aftertouch | | |
| Osc 2 Mode (22) | Used to select Env type for Osc ENV Mod | | |
| Osc 2 PWM (23) | Envelope Key Follow | | |
| Osc 2 XMod (24) | Not Used | | |
| Osc 2 Level (25) | Sub Osc Level (0-3 Range) | | |

## Roland© Juno-1/HS-10 Controls Pg2

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Not Used | LFO Wave (26) | Not Used |
| Osc 1 Wave (2) | Not Used | LFO Delay (27) | Not Used |
| Osc 1 PW (3) | Not Used | LFO Speed (28) | Not Used |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | Not Used |
| Osc 1 LFO Mod (5) | Not Used | Chorus/FX Mode (30) | Not Used |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Not Used |
| Osc 1 Mode (7) | Not Used | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Not Used | Filter LFO Modulation (34) | Active |
| Noise Level (10) | Not Used | Filter ENV Modulation (35) | Active |
| Osc 2 Range (15) | Not Used | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Not Used | Filter Decay | T1 Time |
| Osc 2 PW (17) | Not Used | Filter Sustain | L1 Level |
| Osc 2 Tune (18) | Not Used | Filter Release | T2 Time |
| Osc 2 Fine Tune (19) | Not Used | Filter Mode | Not Used |
| Osc 2 LFO Mod (20) | Not Used | VCA Attack | L2 Level |
| Osc 2 ENV Mod (21) | Not Used | VCA Decay | T3 Time |
| Osc 2 Mode (22) | Not Used | VCA Sustain | L3 Level |
| Osc 2 PWM (23) | Not Used | VCA Release | T4 Time |
| Osc 2 XMod (24) | Not Used | VCA Mode (46) | Not Used |
| Osc 2 Level (25) | Not Used | VCA Level (47) | Not Used |

## Roland Juno 1, Juno 2 & HS-10 Notes

The Juno 1, Juno 2 & HS-10 synthesizers have one oscillator and a sub oscillator for each of the six voices. The oscillator design is a digital system and the filter and the VCA is the custom Roland chip the IR3R05 for each of the six voices. The HS-10 is the same as the Juno-1 apart from the panel sticker on the front.

The oscillator 1 Wave switch (1) is used to step though all possible Sawtooth wave types. These are Off, Sawtooth type 1, Sawtooth type 2, Sawtooth type 3+PW, Sawtooth type 4 and Sawtooth type 5. For the Sawtooth type 3+PW waveform the PW level control (3) is used to adjust the PW and the PWM Speed control (8) is used to give a PWM LFO effect. Fully off on the PWM Speed (8) stops the LFO and PW control is manual only using the PW control (3). These controls will have no effect for the other Sawtooth wave types.
The oscillator 1 Mode switch is used to step through all the possible pulse wave types. Valid types are Off, Pulse type 1, Pulse type 2 and Pulse type 3+PW. For the Pulse type 3+PW waveform the PW level control is used to adjust the PW and the PWM Speed control is used to give a PWM LFO effect. Fully off on the PWM Speed stops the LFO and PW control is manual only using the PW control. These controls will have no effect for the other Pulse wave types.

Oscillator 2 on the Patch Editor is used to control the sub oscillator. The oscillator 2 wave switch (16) is used to step through all the possible sub oscillator wave forms and octaves. These are -1 octave Square Wave, minus one octave Pulse wave type 1, 2 and 3, minus 2 octaves Square wave and minus 2 octaves pulse wave. This and the level control (25) are the only valid controls for the sub oscillator.

Oscillator 2 Mode Button (22) is used to select the envelope mode for the Osc ENV mod (6). Valid options are Normal, Inverted, Normal with Dynamics, Inverted with Dynamics. The Filter Mode Button (41) has the same options for the Filter ENV control (35).

There is no separate EG controls for the filter and the VCA EG controls (42-45) are used for Oscillator, Filter and VCA modulation. The VCA Mode Button (46) has 4 valid options. Envelope, Gate, Envelope with Dynamics and Gate with Dynamics

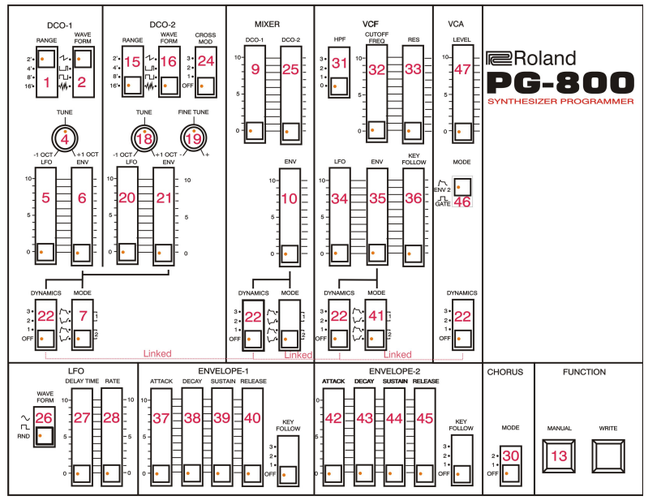
# SYNTH TABLES

## Roland JX-8P

Cable requirements

The Roland JX-8P uses a standard MIDI cable

## EQUIVALENT CONTROLS




## Roland© JX-8P Controls Pg1

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | 16', 8', 4', 2' | LFO Wave (26) | Sine, Square, Random |
| Osc 1 Wave (2) | Saw, Pulse, Square, Noise | LFO Delay (27) | LFO Delay |
| Osc 1 PW (3) | Not Used | LFO Speed (28) | LFO Rate |
| Osc 1 Tune (4) | DCO 1 Tune | Chorus/FX Rate (29) | Not Used |
| Osc 1 LFO Mod (5) | DCO 1 LFO Mod | Chorus/FX Mode (30) | Chorus Off, 1, 2 |
| Osc 1 ENV Mod (6) | DCO 1 ENV Mod | HPF (31) | Off, 1, 2, 3 |
| Osc 1 Mode (7) | DCO 1 & 2 Envelope Mode | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Active |
| Osc 1 Level (9) | DCO 1 Level | Filter LFO Modulation (34) | Active |
| Noise Level (10) | Not Used | Filter ENV Modulation (35) | Active |
| Osc 2 Range (15) | 16', 8', 4', 2' | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Saw, Pulse, Square, Noise | Filter ADSR (37-40) | Active |
| Osc 2 PW (17) | Not Used | Filter Mode (41) | Filter Envelope Source |
| Osc 2 Tune (18) | DCO 2 Tune | VCA ADSR (42-45) | Active |
| Osc 2 Fine Tune (19) | DCO 2 Fine Tune | VCA Mode (46) | Envelope 2, Gate |
| Osc 2 LFO Mod (20) | DCO 2 LFO Mod | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | DCO 2 ENV Mod | | |
| Osc 2 Mode (22) | Not Used | | |
| Osc 2 PWM (23) | Not Used | | |
| Osc 2 XMod (24) | Off, 1, 2, Cross Mod | | |
| Osc 2 Level (25) | DCO 2 Level | | |

## Roland© JX-8P Controls Pg2

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Not Used | LFO Wave (26) | Key Follow Env 1 Off,1 ,2 ,3 |
| Osc 1 Wave (2) | Not Used | LFO Delay (27) | Not Used |
| Osc 1 PW (3) | Not Used | LFO Speed (28) | Not Used |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | Not Used |
| Osc 1 LFO Mod (5) | Not Used | Chorus/FX Mode (30) | Key Follow Env 2 Off,1 ,2 ,3 |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Not Used |
| Osc 1 Mode (7) | DCO 1&2 Dynamics Mode Off,1 ,2 ,3 | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Not Used | Filter LFO Modulation (34) | Active |
| Noise Level (10) | Not Used | Filter ENV Modulation (35) | Active |
| Osc 2 Range (15) | Not Used | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Not Used | Filter Decay | Not Used |
| Osc 2 PW (17) | Not Used | Filter Sustain | Not Used |
| Osc 2 Tune (18) | Not Used | Filter Release | Not Used |
| Osc 2 Fine Tune (19) | Not Used | Filter Mode | VCF Dynamics Mode Off,1 ,2 ,3 |
| Osc 2 LFO Mod (20) | Not Used | VCA Attack | Not Used |
| Osc 2 ENV Mod (21) | Not Used | VCA Decay | Not Used |
| Osc 2 Mode (22) | Mixer Envelope Mode | VCA Sustain | Not Used |
| Osc 2 PWM (23) | Not Used | VCA Release | Not Used |
| Osc 2 XMod (24) | Mixer Dynamics Mode Off,1 ,2 ,3 | VCA Mode (46) | VCA Dynamics Mode Off,1 ,2 ,3 |
| Osc 2 Level (25) | Mixer Env Mod Level | VCA Level (47) | Not Used |

## Roland JX-8P Notes

The JX-8P has two separate oscillators. The oscillator design in the JX-8P is a digital system and the filter and the VCA use the custom Roland chip the IR3R05 for each of the six voices.

Oscillator 1 & 2 share a common envelope type for the ENV Modulation controls (6) (21). The Oscillator 1 Mode Button (7) selects the envelope type and source for both Oscillators and the Filter Mode Button (41) selects the envelope type and source for the Filter. Valid options are EG1 (37-40) Normal, EG1 Inverted, EG2 (42-45) Normal and EG2 Inverted.

Oscillator 2 Mode switch (22) is used to set the Dynamics for both Oscillators, the Mixer, VCF & VCA. These are all set to the same value. Valid options are 0 (off), 1, 2 and 3.

# SYNTH TABLES

## Roland Juno-106 / MKS-7

Cable requirements

The Roland Juno-106 uses a standard MIDI cable

## EQUIVALENT CONTROLS

The Roland Juno-106 did not have a dedicated controller available.

### Roland© Juno-106 Controls

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | 16', 8', 4' | LFO Wave (26) | Not Used (sine only) |
| Osc 1 Wave (2) | Sawtooth / Pulse Only | LFO Delay (27) | Active |
| Osc 1 PW (3) | Not Used | LFO Speed (28) | Active |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | Not Used |
| Osc 1 LFO Mod (5) | Active | Chorus/FX Mode (30) | Chorus Off, Mode 1, Mode2 |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Active |
| Osc 1 Mode (7) | PWM Source Select - LFO or Manual | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Active | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Not Used | Filter LFO Modulation (34) | Active |
| Noise Level (10) | Active | Filter ENV Modulation (35) | Active |
| Osc 2 Range (15) | Not Used | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Not Used | Filter ADSR (37-40) | Not Used |
| Osc 2 PW (17) | Not Used | Filter Mode (41) | Envelope Polarity |
| Osc 2 Tune (18) | Not Used | VCA ADSR (42-45) | Active |
| Osc 2 Fine Tune (19) | Not Used | VCA Mode (46) | Envelope, Gate |
| Osc 2 LFO Mod (20) | Not Used | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | Not Used | | |
| Osc 2 Mode (22) | Not Used | | |
| Osc 2 PWM (23) | Not Used | | |
| Osc 2 XMod (24) | Not Used | | |
| Osc 2 Level (25) | Sub Osc Level | | |

### Roland Juno 106 Notes

The Juno 106 synthesizers have one oscillator which is divided by two to give a sub oscillator for each of the six voices. The oscillator design is a digital system and the filter and the VCA is the custom Roland chip the 80017a filter hybrid for each of the six voices.

The oscillator 1 Wave switch (1) is used to step though the possible wave types. These are Sawtooth and Pulse or combination only.

There is no separate EG controls for the filter and the VCA EG controls (42-45) are used for Oscillator, Filter and VCA modulation.

Note: Because the switch settings are combined into two commands changing one switch will cause the others in the same command to be sent also with whatever settings are on the Patch Editor. This is unavoidable due to the way the Juno-106 is controlled.

Switch combinations are

1) Chorus, Wave and Range selections.
2) HP Filter, VCA Env, Envelope Polarity & PWM selections.

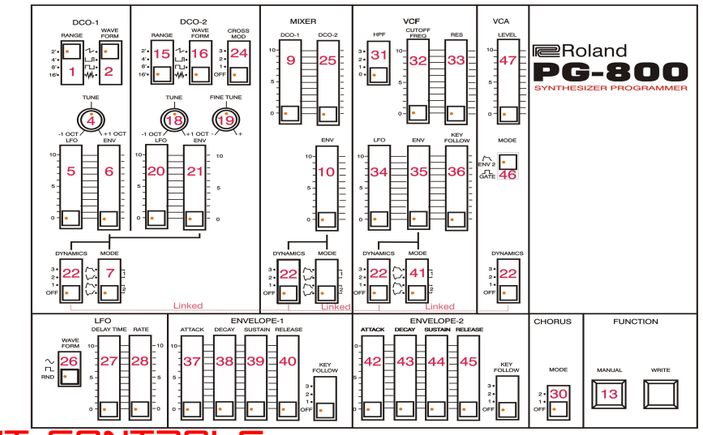
The MKS-7 can be controlled using the Juno-106 Patch

# SYNTH TABLES

## Roland MKS-70 / JX-10SE

Cable requirements

The Roland MKS-70 uses a standard MIDI cable. The JX-10 can also be used on this patch but must have the Colin Fraser upgrade fitted (JX-10SE). The JX-10SE does not support Upper/Lower Board changing so only limited control is possible.




# EQUIVALENT CONTROLS

## Roland© MKS-70 Controls - Page A

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | 16', 8', 4',2' | LFO Wave (26) | Sine, Square, Random |
| Osc 1 Wave (2) | Saw, Pulse, Square, Noise | LFO Delay (27) | Active |
| Osc 1 PW (3) | Not Used | LFO Speed (28) | Active |
| Osc 1 Tune (4) | Active | Chorus/FX Rate (29) | Not Active |
| Osc 1 LFO Mod (5) | Active | Chorus/FX Mode (30) | Chorus Off, Chorus Mode 1 and 2 |
| Osc 1 ENV Mod (6) | Active | HPF (31) | Active |
| Osc 1 Mode (7) | Osc 1 & 2 Envelope Source Select | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Active |
| Osc 1 Level (9) | DCO Mixer 1 Control | Filter LFO Mod (34) | Active |
| Noise Level (10) | Not Used | Filter ENV Mod (35) | Active |
| Osc 2 Range (15) | 16', 8', 4',2' | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Saw, Pulse, Square, Noise | Filter ADSR EG1 (37-40) | Active |
| Osc 2 PW (17) | Not Used | Filter Mode (41) | Filter Envelope Source Select |
| Osc 2 Tune (18) | Active | VCA ADSR EG2 (42-45) | Active |
| Osc 2 Fine Tune (19) | Active | VCA Mode (46) | Envelope (EG2 only), Gate |
| Osc 2 LFO Mod (20) | Active | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | Active | | |
| Osc 2 Mode (22) | Not Used | | |
| Osc 2 PWM (23) | Not Used | | |
| Osc 2 XMod (24) | Off, Sync 1, Sync 2, XMod | | |
| Osc 2 Level (25) | DCO 2 Mixer Control | | |

## Roland© MKS-70 Controls - Page B

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Upper / Lower Voice Key Assign ** | LFO Wave (26) | Key Follow Env 1 |
| Osc 1 Wave (2) | Up/Low Hold Mode **<br>Both Voices Key Mode * | LFO Delay (27) | Not Used |
| Osc 1 PW (3) | Not Used | LFO Speed (28) | Not Used |
| Osc 1 Tune (4) | Upper / Lower Chromatic Shift ** | Chorus/FX Rate (29) | Upper / Lower Unison Detune **<br>Dual Detune * |
| Osc 1 LFO Mod (5) | Upper / Lower LFO Mod Depth ** | Chorus/FX Mode (30) | Key Follow Env 2 |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Bender Mode Off/On **<br>Bend Range 2,3,4,7,12 semi tones * |
| Osc 1 Mode (7) | Selects DCO1&2 Dynamics | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Upper / Lower Voice Balance * | Filter LFO Mod (34) | Active |
| Noise Level (10) | Used for Mixer Modulation | Filter ENV Mod (35) | Active |
| Osc 2 Range (15) | Upper / Lower Portamento On / Off ** | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Upper / Lower Bender On / Off ** | Filter Release (40) | Envelope 1 Key Follow |
| Osc 2 PW (17) | Both Voices Portamento Time * | Filter Mode (41) | Select VCF Dynamics |
| Osc 2 Tune (18) | Upper / Lower Split Point ** | VCA Release (45) | Envelope 2 Key Follow |
| Osc 2 Fine Tune (19) | Not Used | VCA Mode (46) | Select VCA Dynamics |
| Osc 2 LFO Mod (20) | Aftertouch Vibrato * | VCA Level (47) | Total Volume * |
| Osc 2 ENV Mod (21) | Aftertouch Brilliance * | | |
| Osc 2 Mode (22) | Selects Mixer Envelope Mode | | |
| Osc 2 PWM (23) | Aftertouch Volume * | | |
| Osc 2 XMod (24) | Selects Mixer Dynamics | | |
| Osc 2 Level (25) | Not Used | | |

* = These controls apply to both voices boards and are only found on the 'Both' B page
** = These controls are found only on the Upper or Lower B page

## Roland MKS-70 Notes

The MKS-70 has two separate oscillators. The oscillator design in the MKS-70 is a digital system and the filter and the VCA is the custom Roland chip the IR3R05 for each of the six voices. The circuitry is very similar to the JX-8P and the JX-10. The MKS-70 is basically two JX-10 voice boards fitted into a rack mount case. The two boards are called Tone A and Tone B and can have completely independent settings. The Patch Editor can address these separately on the MKS-70 or simultaneously via the Tone Select Button. This feature will not work on the JX-10 with the Colin Fraser Upgrade and the boards must be swapped on the JX-10 using the synthesizer buttons.

All controls will only effect the selected Tone Board (A or B) and the non selected Tone Board will remain unchanged.

Oscillator 1 & 2 share a common envelope type for the ENV Modulation controls (6) (21). The Oscillator 1 Mode Button (7) selects the envelope type and source for both Oscillators and the Filter Mode Button (41) selects the envelope type and source for the Filter. Valid options are EG1 (37-40) Normal, EG1 Inverted, EG2 (42-45) Normal and EG2 Inverted.

## Roland© MKS-70 Bug Report

Program releases v1.03 and v1.04 in the MKS-70 only allow access to Tone Board A via the MIDI port. Commands sent to Tone Board B will only change Tone Board A settings. To correct this the MKS-70 needs to have the latest program v1.08 fitted. v1.05,1.06 & 1.07 have not been tested and may or may not work. For v1.03 you will require A,B&C Roms. For v1.04 only the A Rom is required. The 'A,B&C' Roms can be purchased from Kiwitechnics, Vintage Planet (http://www.vintageplanet.nl) or possibly Roland but we have had issues getting support for the older equipment from Roland. Pressing and holding the Value Switch at power on will display the version number of the A ROM on the MKS-70.

# SYNTH TABLES

## Roland JD-990 FX

Cable requirements

The Roland MKS-70 uses a standard MIDI cable.

## Roland© JD990 FX Controls – Page 1

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Not Used | LFO Wave (26) | Portamento Mode |
| Osc 1 Wave (2) | Not Used | LFO Delay (27) | Bend Range Up |
| Osc 1 PW (3) | Chorus Depth | LFO Speed (28) | Bend Range Down |
| Osc 1 Tune (4) | Chorus Rate | Chorus/FX Rate (29) | Portamento Time |
| Osc 1 LFO Mod (5) | Chorus Delay Time | Chorus/FX Mode (30) | Portamento On/Off |
| Osc 1 ENV Mod (6) | Chorus Feedback | HPF (31) | Solo Sync Master (Off, 4 types) |
| Osc 1 Mode (7) | Distortion Type (7 types) | LPF Cutoff (32) | Phaser Depth |
| Osc 1 PWM (8) | Chorus Level | LPF Resonance (33) | Phaser Resonance |
| Osc 1 Level (9) | Distortion Drive | Filter LFO Mod (34) | Phaser Manual |
| Noise Level (10) | Distortion Level | Filter ENV Mod (35) | Phaser Rate |
| Osc 2 Range (15) | Solo On/Off | Filter Key Follow (36) | Phaser Mix |
| Osc 2 Wave (16) | Solo Legato On/Off | Filter Attack (37) | Delay Tap Left |
| Osc 2 PW (17) | Reverb Time | Filter Decay (38) | Delay Left Level |
| Osc 2 Tune (18) | Reverb Early Ref | Filter Sustain (39) | Delay Tap Centre |
| Osc 2 Fine Tune (19) | Reverb HF Damp | Filter Release(40) | Delay Center Level |
| Osc 2 LFO Mod (20) | Reverb Pre Delay | Filter Mode (41) | Delay Mode |
| Osc 2 ENV Mod (21) | Reverb Level | VCA Attack (42) | Delay Tap Right |
| Osc 2 Mode (22) | Reverb Type (10 types) | VCA Decay (43) | Delay Right Level |
| Osc 2 PWM (23) | Analog Feel | VCA Sustain (44) | Delay Feedback |
| Osc 2 XMod (24) | Not Used | VCA Release (45) | Not Used |
| Osc 2 Level (25) | Not Used | VCA Mode (46) | Not Used |
| | | VCA Level (47) | Active |

## Roland© JD-990 FX Page 2

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Group A Effect Sequence (24 types) | LFO Wave (26) | Not Used |
| Osc 1 Wave (2) | Group B Effect Sequence (6 types) | LFO Delay (27) | Not Used |
| Osc 1 PW (3) | Not Used | LFO Speed (28) | Not Used |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | Not Used |
| Osc 1 LFO Mod (5) | Not Used | Chorus/FX Mode (30) | Not Used |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Group B Block 1 On/Off |
| Osc 1 Mode (7) | Not Used | LPF Cutoff (32) | Not Used |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Not Used |
| Osc 1 Level (9) | Not Used | Filter LFO Mod (34) | Spectrum Band 1 |
| Noise Level (10) | Not Used | Filter ENV Mod (35) | Spectrum Band 2 |
| Osc 2 Range (15) | Group A Block 1 On/Off | Filter Key Follow (36) | Spectrum Band 3 |
| Osc 2 Wave (16) | Group A Block 2 On/Off | Filter Attack (37) | Spectrum Band 4 |
| Osc 2 PW (17) | Not Used | Filter Decay (38) | Spectrum Band 5 |
| Osc 2 Tune (18) | Not Used | Filter Sustain (39) | Spectrum Band 6 |
| Osc 2 Fine Tune (19) | Not Used | Filter Release(40) | Spectrum Band Width |
| Osc 2 LFO Mod (20) | Not Used | Filter Mode (41) | Group B Block 2 On/Off |
| Osc 2 ENV Mod (21) | Not Used | VCA Attack (42) | Not Used |
| Osc 2 Mode (22) | Group A Block 3 On/Off | VCA Decay (43) | Not Used |
| Osc 2 PWM (23) | Not Used | VCA Sustain (44) | Not Used |
| Osc 2 XMod (24) | Group A Block 4 On/Off | VCA Release (45) | Not Used |
| Osc 2 Level (25) | Not Used | VCA Mode (46) | Group B Block 3 On/Off |
| | | VCA Level (47) | Not Used |

## Roland© JD990 Notes

The Roland JD-990 is a complex synth with more controls than it is possible to fit on the PE. The JD-990 has been split up into two separate patches. One does much of the FX controls and the other the Patch Tone Controls for Tone A-D. Each patch is made up of four separate Tones (A,B,C & D) and each of these has two pages of controls.

It is not possible to fit all parameters into the PE layout so only those deemed the most useful for Patch editing have been included.

# SYNTH TABLES

## Roland JD-990 Tone

Cable requirements

The Roland JD-990 uses a standard MIDI cable.

## Roland© JD990 Tone Controls – Page 1

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Wave Source (3 types) | LFO Wave (26) | LFO 1 Wave (8 Types) |
| Osc 1 Wave (2) | Tone Delay Mode (5 types) | LFO Delay (27) | LFO 1 Delay |
| Osc 1 PW (3) | Wave Form Low 0-127 | LFO Speed (28) | LFO 1 Rate |
| Osc 1 Tune (4) | Pitch Random | Chorus/FX Rate (29) | LFO 1 Fade |
| Osc 1 LFO Mod (5) | Tone Delay Time | Chorus/FX Mode (30) | LFO 1 Offset (3 types) |
| Osc 1 ENV Mod (6) | FXM Depth | HPF (31) | Not Used |
| Osc 1 Mode (7) | Pitch Key Follow (17 types) | LPF Cutoff (32) | Not Used |
| Osc 1 PWM (8) | FXM Color | LPF Resonance (33) | Not Used |
| Osc 1 Level (9) | Not Used | Filter LFO Mod (34) | Not Used |
| Noise Level (10) | Not Used | Filter ENV Mod (35) | Not Used |
| Osc 2 Range (15) | Tones Octave – Note works for all tones 1-4 | Filter Key Follow (36) | Not Used |
| Osc 2 Wave (16) | Not Used | Filter Attack (37) | Pitch Envelope Time 1 |
| Osc 2 PW (17) | Not Used | Filter Decay (38) | Pitch Envelope Time 2 |
| Osc 2 Tune (18) | WG Pitch Course | Filter Sustain (39) | Pitch Envelope Sustain Level |
| Osc 2 Fine Tune (19) | WG Pitch Fine | Filter Release(40) | Pitch Envelope Time 3 |
| Osc 2 LFO Mod (20) | LFO 1 Mod | Filter Mode (41) | Not Used |
| Osc 2 ENV Mod (21) | Envelope Depth | VCA Attack (42) | Not Used |
| Osc 2 Mode (22) | Selects Mixer Envelope Mode | VCA Decay (43) | Not Used |
| Osc 2 PWM (23) | Not Used | VCA Sustain (44) | TVA LFO 1 Mod Level |
| Osc 2 XMod (24) | Sync Slave Mode On/Off | VCA Release (45) | TVA LFO 2 Mod Level |
| Osc 2 Level (25) | Not Used | VCA Mode (46) | Not Used |
| | | VCA Level (47) | TVA Level |

## Roland© JD-990 FX Page 2

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Not Used | LFO Wave (26) | LFO 2 Wave (8 Types) |
| Osc 1 Wave (2) | Not Used | LFO Delay (27) | LFO 2 Delay |
| Osc 1 PW (3) | Wave Form High 128-255 | LFO Speed (28) | LFO 2 Rate |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | LFO 2 Fade |
| Osc 1 LFO Mod (5) | Pitch LFO 2 Mod | Chorus/FX Mode (30) | LFO 2 Offset (3 types) |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | TVF Mode (3 types) |
| Osc 1 Mode (7) | Pan Key Follow (15 types) | LPF Cutoff (32) | Filter Cutoff |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Filter Resonance |
| Osc 1 Level (9) | Tone Pan | Filter LFO Mod (34) | Filter LFO 1 Mod |
| Noise Level (10) | Not Used | Filter ENV Mod (35) | Filter TVF Env Level |
| Osc 2 Range (15) | Not Used | Filter Key Follow (36) | Filter Key Follow |
| Osc 2 Wave (16) | Not Used | Filter Attack (37) | TVF Envelope Time 1 |
| Osc 2 PW (17) | Not Used | Filter Decay (38) | TVF Envelope Time 2 |
| Osc 2 Tune (18) | Not Used | Filter Sustain (39) | TVF Envelope Sustain Level |
| Osc 2 Fine Tune (19) | Not Used | Filter Release(40) | TVF Envelope Time 4 |
| Osc 2 LFO Mod (20) | Filter LFO 2 Mod | Filter Mode (41) | Not Used |
| Osc 2 ENV Mod (21) | Not Used | VCA Attack (42) | TVA Envelope Time 1 |
| Osc 2 Mode (22) | Not Used | VCA Decay (43) | TVA Envelope Time 2 |
| Osc 2 PWM (23) | Not Used | VCA Sustain (44) | TVA Envelope Sustain Level |
| Osc 2 XMod (24) | Not Used | VCA Release (45) | TVA Envelope Time 4 |
| Osc 2 Level (25) | Not Used | VCA Mode (46) | Not Used |
| | | VCA Level (47) | Not Used |

## Roland© JD990 Notes

The Roland JD-990 is a complex synth with more controls than it is possible to fit on the PE. The JD-990 has been split up into two separate patches. One does much of the FX controls and the other the Patch Tone Controls for Tone A-D. Each patch is made up of four separate Tones (A,B,C & D) and each of these has two pages of controls.

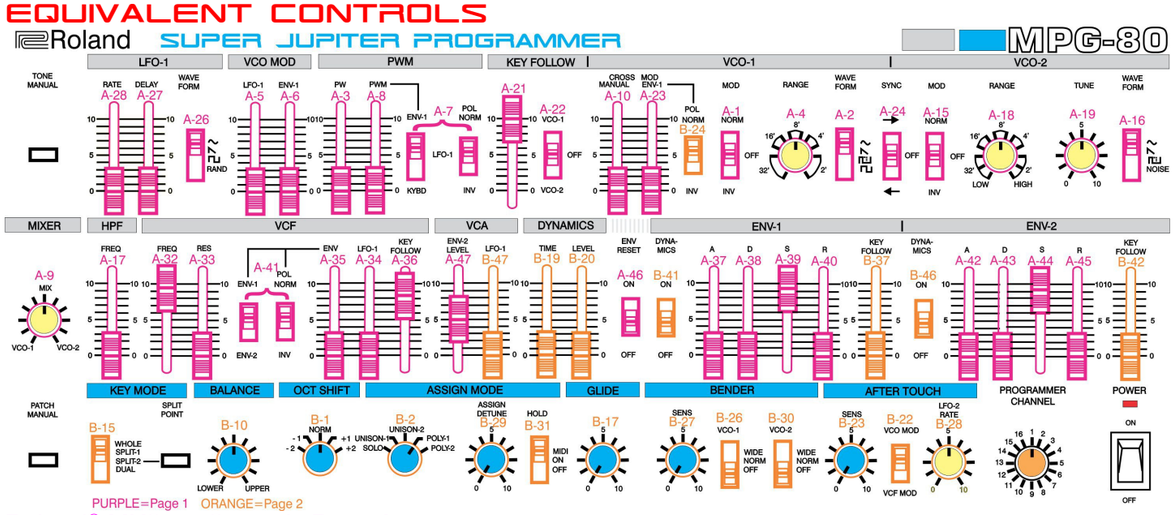
It is not possible to fit all parameters into the PE layout so only those deemed the most useful for Patch editing have been included.

# SYNTH TABLES

## Roland MKS-80

Cable requirements The Roland MKS-80 uses a standard MIDI cable,

## EQUIVALENT CONTROLS




## Roland© MKS-80 Controls Page A

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | VCO-1 Mod Off, Norm, Inverted | LFO Wave (26) | Triangle, Sawtooth, Square, Random |
| Osc 1 Wave (2) | Sawtooth, Pulse, Square, Triangle | LFO Delay (27) | LFO Delay |
| Osc 1 PW (3) | VCO 1 & 2 PW adjust | LFO Speed (28) | LFO-1 Rate |
| Osc 1 Tune (4) | VCO 1 Range | Chorus/FX Rate (29) | Not Used |
| Osc 1 LFO Mod (5) | VCO 1 & 2 LFO-1 Modulation- (1 & 15) Polarity Select | Chorus/FX Mode (30) | Not Used |
| Osc 1 ENV Mod (6) | VCO 1 & 2 ENV-1 Modulation - (1 & 15) Polarity Select | HPF (31) | Not Used |
| Osc 1 Mode (7) | VCO 1 & 2 PWM Source & Polarity | LPF Cutoff (32) | VCF Cutoff |
| Osc 1 PWM (8) | VCO 1 & 2 PWM Amount | LPF Resonance (33) | VCF Resonance |
| Osc 1 Level (9) | VCO 1 & 2 Mix | Filter LFO Modulation (34) | VCF LFO-1 Modulation Amount |
| Noise Level (10) | Manual XMod Control | Filter ENV Modulation (35) | VCF ENV Mod Amount - (31) Source Select |
| Osc 2 Range (15) | VCO-2 Mod Off, Norm, Inverted | Filter Key Follow (36) | VCF Filter Key Follow |
| Osc 2 Wave (16) | Sawtooth, Pulse, Triangle, Noise | Filter ADSR EG1 (37-40) | VCF Envelope Control |
| Osc 2 PW (17) | HPF Continuous Control | Filter Mode (41) | VCF Envelope Source & Polarity |
| Osc 2 Tune (18) | VCO 2 Range | VCA ADSR EG2 (42-45) | Active |
| Osc 2 Fine Tune (19) | VCO 2 Tune | VCA Mode (46) | Envelope Reset On/Off |
| Osc 2 LFO Mod (20) | Not Used | VCA Level (47) | VCA ENV-2 Modulation |
| Osc 2 ENV Mod (21) | VCO Key Follow | | |
| Osc 2 Mode (22) | VCO 1 & 2 Key Follow mode | | |
| Osc 2 PWM (23) | XMod Env-1 Modulation Amount | | |
| Osc 2 XMod (24) | Off, Sync 1->2, Sync 1<-2 | | |
| Osc 2 Level (25) | Not Used | | |

## Roland© MKS-80 Controls Page B

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Octave Select (-2, -1, Norm, +1, +2) | LFO1 Wave (26) | Bend Range VCO-1 - Off, Norm, Wide |
| Osc 1 Wave (2) | Assign Mode Solo,Unison 1&2, Poly 1&2 | LFO1 Delay (27) | Bender Sensitivity |
| Osc 1 PW (3) | Not Used | LFO1 Speed (28) | LFO-2 Rate |
| Osc 1 Tune (4) | Tone Split Point (note 21 - 108) | Chorus/FX Rate (29) | Unison Detune |
| Osc 1 LFO Mod (5) | Not Used | Chorus/FX Mode (30) | Bender Range VCO-2 - Off, Normal, Wide |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Assign Mode Hold - Off / On / Midi |
| Osc 1 Mode (7) | Not Used | LPF Cutoff (32) | VCF Cutoff |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | VCF Resonance |
| Osc 1 Level (9) | Not Used | Filter LFO Modulation (34) | VCF LFO-1 Modulation Amount |
| Noise Level (10) | Upper/Lower Tone Balance | Filter ENV Modulation (35) | VCF ENV Mod Amount - (31) Source Select |
| Osc 2 Range (15) | Key Mode - Whole, Split, Dual | Filter Key Follow (36) | VCF Filter Key Follow |
| Osc 2 Wave (16) | Not Used | Filter Attack EG1 (37) | Env-1 Key Follow |
| Osc 2 PW (17) | Glide | Filter Mode (41) | Env -1 Dynamics - Off, On |
| Osc 2 Tune (18) | Not Used | Filter Attack EG2 (42-45) | Env-2 Key Follow |
| Osc 2 Fine Tune (19) | Dynamics Time | VCA Mode (46) | Env -2 Dynamics - Off, On |
| Osc 2 LFO Mod (20) | Dynamics Level | VCA Level (47) | VCA LFO-1 Modulation |
| Osc 2 ENV Mod (21) | Not Used | | |
| Osc 2 Mode (22) | Aftertouch Destination - VCO , VCF | | |
| Osc 2 PWM (23) | Aftertouch Sensitivity | | |
| Osc 2 XMod (24) | XMod Polarity - Normal / Inverted | | |
| Osc 2 Level (25) | Not Used | | |

## Roland MKS-80 Notes

The two boards are called Upper and Lower and can have completely independent settings. The Patch Editor can address these separately or simultaneously via the Upper/Lower Select Button.

All controls not marked GLOBAL will only effect the selected Tone Board (Upper or Lower) and the non selected Tone Board will remain unchanged. Global commands will effect both voice boards on any page.

The VCO Range controls on the MKS-80 are variable controls. These have been placed on the Tune controls (4) (18) on the Patch Editor.

The MKS-80 does not have a separate Noise Source as the Oscillator 2 Waveform Select Control (16) is used so the Noise Level Control (10) has been used for the Manual Cross Modulation control.

On the Roland© MKS-80 the High Pass Filter is a continuous control so the HPF cutoff control has been placed on the Osc 2 PW slider (17) (which is not required for the MKS-80 synthesizer).

# SYNTH TABLES

## Studio Electronics ATC

Cable and MIDI requirements

The Studio Electonics ATC uses a standard MIDI cable.

## Studio Electronics ATC Controls

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Not Used | LFO1 Wave (26) | LFO 1 Wave (6 types) |
| Osc 1 Wave (2) | Wave type (3 types & 4 mixes) | LFO1 Delay (27) | Not Used |
| Osc 1 PW (3) | Osc 1 Pulse Width | LFO1 Speed (28) | LFO Osc 1 Rate |
| Osc 1 Tune (4) | Osc 1 Frequency | Chorus/FX Rate (29) | Not Used |
| Osc 1 LFO Mod (5) | Osc 1 LFO Depth | Chorus/FX Mode (30) | Not Used |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Filter Cartridge Type (4 types) |
| Osc 1 Mode (7) | Not Used | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Oscillator 1 Level | Filter LFO Modulation (34) | Not Used |
| Noise Level (10) | Noise Level | Filter ENV Modulation (35) | VCF Env 1 Depth |
| Osc 2 Range (15) | Not Used | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Wave type (3 types & 4 mixes) | Filter ADSR EG1 (37-40) | Active |
| Osc 2 PW (17) | Osc 2 Pulse Width | Filter Mode (41) | Envelope Mode |
| Osc 2 Tune (18) | Osc 2 Frequency | VCA ADSR EG2 (42-45) | Active |
| Osc 2 Fine Tune (19) | Osc 2 Fine Tune | VCA Mode (46) | Not Used |
| Osc 2 LFO Mod (20) | Osc 2 LFO Depth | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | Not Used | | |
| Osc 2 Mode (22) | Not Used | | |
| Osc 2 PWM (23) | Cross Mod Amount | | |
| Osc 2 XMod (24) | Osc 2 Sync Control (Normal & 3 types) | | |
| Osc 2 Level (25) | Oscillator 2 Level | | |

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Not Used | LFO1 Wave (26) | LFO 2 Wave (6 types) |
| Osc 1 Wave (2) | Not Used | LFO1 Delay (27) | Not Used |
| Osc 1 PW (3) | Not Used | LFO1 Speed (28) | LFO Osc 2 Rate |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | Not Used |
| Osc 1 LFO Mod (5) | Not Used | Chorus/FX Mode (30) | Not Used |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Not Used |
| Osc 1 Mode (7) | Not Used | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Not Used | Filter LFO Modulation (34) | Not Used |
| Noise Level (10) | Not Used | Filter ENV Modulation (35) | Not Used |
| Osc 2 Range (15) | Not Used | Filter Key Follow (36) | Not Used |
| Osc 2 Wave (16) | Not Used | Filter ADSR EG1 (37-40) | Envelope 3 |
| Osc 2 PW (17) | Not Used | Filter Mode (41) | Not Used |
| Osc 2 Tune (18) | Not Used | VCA ADSR EG2 (42-45) | Not Used |
| Osc 2 Fine Tune (19) | Not Used | VCA Mode (46) | Not Used |
| Osc 2 LFO Mod (20) | Not Used | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | Not Used | | |
| Osc 2 Mode (22) | Not Used | | |
| Osc 2 PWM (23) | Not Used | | |
| Osc 2 XMod (24) | Not Used | | |
| Osc 2 Level (25) | Not Used | | |

## Studio Electronics ATC Notes

Some commands that are available on the ATC have no midi equivalent and cannot be edited using midi parameter edits. Every available command has been included in this patch.

# SYNTH TABLES

## Sequential Circuits Six-trak and Max

Cable and MIDI requirements

The SC Six-Trak uses a standard MIDI cable.

## Sequential Circuits Six-Trak Controls

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Not Used | LFO1 Wave (26) | Triangle, Square |
| Osc 1 Wave (2) | Not Used | LFO1 Delay (27) | Not Used |
| Osc 1 PW (3) | Oscillator Glide Rate | LFO1 Speed (28) | Active |
| Osc 1 Tune (4) | Not Used | Chorus/FX Rate (29) | Not Used |
| Osc 1 LFO Mod (5) | Not Used | Chorus/FX Mode (30) | Not Used |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Not Used |
| Osc 1 Mode (7) | Not Used | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Active |
| Osc 1 Level (9) | Oscillator / Noise Mix | Filter LFO Modulation (34) | Active |
| Noise Level (10) | Not Used | Filter ENV Modulation (35) | Active |
| Osc 2 Range (15) | Not Used (Uses Tune control for Range) | Filter Key Follow (36) | Active (off / half / full) |
| Osc 2 Wave (16) | Sawtooth, Triangle & Pulse in any selection | Filter ADSR EG1 (37-40) | Active |
| Osc 2 PW (17) | Active | Filter Mode (41) | Filter Envelope Polarity |
| Osc 2 Tune (18) | Coarse Tune | VCA ADSR EG2 (42-45) | Active |
| Osc 2 Fine Tune (19) | Fine Tune | VCA Mode (46) | Not Used |
| Osc 2 LFO Mod (20) | LFO Program Amount | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | Env Modulation | | |
| Osc 2 Mode (22) | Pulse LFO Modulation On/Off | | |
| Osc 2 PWM (23) | Filter/Osc Tri Modulation | | |
| Osc 2 XMod (24) | Oscillator Env Normal / Inverse | | |
| Osc 2 Level (25) | Not Used | | |

## Sequential Circuits Sixtrak Notes

The Sequential Circuits Sixtrak uses a Curtis CEM3394 “synth on a chip” for each of it's six voices. The CEM3394 IC contains the VCO, VCF & VCA.

The Oscillator Tune and Range are combined and placed on the Oscillator 2 Tune (coarse) and Fine Tune controls.

The Filter Keyboard Track has three possible levels, Off, 50% and 100% and the Filter Mode button will invert the filter envelope. Green is a normal envelope and red is inverted.

The Sixtrak needs to be placed into Parameter Edit mode by pressing Control Record then pressing 4.

This patch can also be used on the Sequential Circuits MAX. The MAX needs to be put into parameter edit mode by pressing 'Erase' and then keying in 34. The default midi channel on the MAX is 3. The MAX has no unison function and the Filter LFO has no function.

# SYNTH TABLES

## Waldorf Pulse

Cable and MIDI requirements

The Waldorf Patch uses a standard MIDI cable.

This Waldorf patch uses more controls than are available on the Patch Editor so this patch has been spread over two pages. Menu button 3 will select the active page.

## Waldorf Controls Page 1

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Not used | LFO1 Wave (26) | Sine, Triangle, Sawtooth, Pulse |
| Osc 1 Wave (2) | Triangle, Saw, Pulse | LFO1 Delay (27) | Active |
| Osc 1 PW (3) | DCO 1 Pulse Width | LFO1 Speed (28) | Active |
| Osc 1 Tune (4) | DCO 1 Semitone Adjust | Chorus/FX Rate (29) | Portamento Time |
| Osc 1 LFO Mod (5) | DCO 1 Pitch Mod Amount | Chorus/FX Mode (30) | Portamento Mode |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Filter Mod Source (Off & 15 types) |
| Osc 1 Mode (7) | Pitch Mod Source (Off & 15 types) | LPF Cutoff (32) | Active |
| Osc 1 PWM (8) | Not Used | LPF Resonance (33) | Active |
| Osc 1 Level (9) | DCO 1 Level | Filter LFO Mod (34) | VCF Mod Amount |
| Noise Level (10) | Noise Level | Filter ENV Mod (35) | VCF ENV1 Sens |
| Osc 2 Range (15) | CV 2 Source (Off & 15 types) | Filter Key Follow (36) | Active |
| Osc 2 Wave (16) | Tri, Saw, Pulse, Cross Mod | Filter ADSR EG1 (37-40) | Active |
| Osc 2 PW (17) | DCO 2 Pulse Width | Filter Mode (41) | Not Used |
| Osc 2 Tune (18) | DCO 2 Semitone Adjust | VCA ADSR EG2 (42-45) | Active |
| Osc 2 Fine Tune (19) | DCO 2 Tune Adjust | VCA Mode (46) | Sustain Switch (Off, On) |
| Osc 2 LFO Mod (20) | CV 2 Amount | VCA Level (47) | Active |
| Osc 2 ENV Mod (21) | Not Used | | |
| Osc 2 Mode (22) | DCO 2 Keytrack (Off, On) | | |
| Osc 2 PWM (23) | DCO 2 Pulse Width Mod | | |
| Osc 2 XMod (24) | DCO 2 Sync (Off, On) | | |
| Osc 2 Level (25) | DCO 2 Level | | |

## Waldorf Controls Page 2

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Arpeggiator Active (Off, On, Hold) | LFO2 Wave (26) | Not Used |
| Osc 1 Wave (2) | Arpeggiator Range (1-10 octaves) | LFO2 Delay (27) | LFO 2 Delay |
| Osc 1 PW (3) | Arpeggiator Tempo | LFO2 Speed (28) | LFO 2 Rate |
| Osc 1 Tune (4) | DCO 1 Tune Adjust | Chorus/FX Rate (29) | Not Used |
| Osc 1 LFO Mod (5) | Not Used | Chorus/FX Mode (30) | Not Used |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | Env 1 Trigger Mode |
| Osc 1 Mode (7) | Arpeggiator Clock (32 settings) | VCF Cutoff (32) | Active |
| Osc 1 PWM (8) | Pitch Bend Scale | VCF Resonance (33) | Active |
| Osc 1 Level (9) | Not Used | Filter LFO Mod (34) | VCF Mod Amount |
| Noise Level (10) | External Signal Level | Filter ENV Mod (35) | VCF ENV1 Sens |
| Osc 3 Range (15) | Arpeggiator Mode (7 types) | Filter Key Follow (36) | Active |
| Osc 3 Wave (16) | Tri, Saw, Pulse | ADSR EG3 (37-40) | Release Only - Env 1 Keyfollow Amount |
| Osc 3 PW (17) | DCO 3 Pulse Width | Filter Mode (41) | Env 1 Trigger Mode |
| Osc 3 Tune (18) | DCO 3 Semitone Adjust | ADSR EG2 (42-45) | Release Only - Env 2 Keyfollow Amount |
| Osc 3 Fine Tune (19) | DCO 3 Fine Detune | VCA Mode (46) | Sustain Switch (Off, On) |
| Osc 3 LFO Mod (20) | Not Used | VCA Level (47) | VCA Panning |
| Osc 3 ENV Mod (21) | Not Used | | |
| Osc 3 Mode (22) | Not Used | | |
| Osc 3 PWM (23) | Not Used | | |
| Osc 3 XMod (24) | Not Used | | |
| Osc 3 Level (25) | DCO 3 Level | | |

# SYNTH TABLES

## Waldorf Q/Q Plus MicroQ

Cable and MIDI requirements

The Waldorf Patch uses a standard MIDI cable.

This Waldorf patch uses more controls than are available on the Patch Editor so this patch has been spread over two pages. Menu button 3 will select the active page.

## Waldorf Q Controls Page 1

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | 64', 32', 16', 8', 4', 2', 1' | LFO1 Wave (26) | LFO 1 Sine, Tri, Saw, Sqr, Random, S&H |
| Osc 1 Wave (2) | Sine, Tri, Saw, Pulse, Alt 1, Alt 2 | LFO1 Delay (27) | LFO 1 Delay |
| Osc 1 PW (3) | DCO 1 Pulse Width | LFO1 Speed (28) | LFO 1 Rate |
| Osc 1 Tune (4) | DCO 1 Semitone Adjust | Chorus/FX Rate (29) | FX 1 Mix |
| Osc 1 LFO Mod (5) | DCO 1 FM Level | Chorus/FX Mode (30) | Not Used |
| Osc 1 ENV Mod (6) | Not Used | HPF (31) | VCF 1 Type - Bypass/10 types |
| Osc 1 Mode (7) | DCO 1 Mod Source - Off/14 sources | LPF 1 Cutoff (32) | VCF 1 Cutoff |
| Osc 1 PWM (8) | DCO 1 Pulse Width Mod | LPF 1 Resonance (33) | VCF 1 Resonance |
| Osc 1 Level (9) | DCO 1 Level | Filter 1 LFO Mod (34) | VCF 1 FM |
| Noise Level (10) | Noise / Ext In Level | Filter 1 ENV Mod (35) | VCF 1 Env Depth |
| Osc 2 Range (15) | 64', 32', 16', 8', 4', 2', 1' | Filter Key Follow (36) | VCF 1 Keytrack |
| Osc 2 Wave (16) | Sine, Tri, Saw, Pulse, Alt 1, Alt 2 | Filter ADSR EG1 (37-40) | VCF Env A/D/S/R |
| Osc 2 PW (17) | DCO 2 Pulse Width | Filter Mode (41) | VCF 1 Mod Source - Off/13 sources |
| Osc 2 Tune (18) | DCO 2 Semitone Adjust | VCA ADSR EG2 (42-45) | VCA Env A/D/S/R |
| Osc 2 Fine Tune (19) | DCO 2 Fine Detune | VCA Mode (46) | Not Used |
| Osc 2 LFO Mod (20) | DCO 1 FM Level | VCA Level (47) | Total volume |
| Osc 2 ENV Mod (21) | Not Used | | |
| Osc 2 Mode (22) | DCO 2 Mod Source - Off/14 sources | | |
| Osc 2 PWM (23) | DCO 2 Pulse Width Mod | | |
| Osc 2 XMod (24) | Sync On/Off | | |
| Osc 2 Level (25) | DCO 2 Level | | |

## Waldorf Q Controls Page 2

| | | | |
|---|---|---|---|
| Osc 3 Range (1) | 64', 32', 16', 8', 4', 2', 1' | LFO2 Wave (26) | LFO 2 Sine, Tri, Saw, Sqr, Random, S&H |
| Osc 3 Wave (2) | Sine, Tri, Saw, Pulse | LFO2 Delay (27) | LFO 2 Delay |
| Osc 3 PW (3) | DCO 3 Pulse Width | LFO2 Speed (28) | LFO 2 Rate |
| Osc 3 Tune (4) | DCO 3 Semitone Adjust | Chorus/FX Rate (29) | FX 2 Mix |
| Osc 3 LFO Mod (5) | DCO 3 FM Level | Chorus/FX Mode (30) | Not Used |
| Osc 3 ENV Mod (6) | Not Used | HPF (31) | VCF 2 Type - Bypass/10 types |
| Osc 3 Mode (7) | DCO 1 Mod Source - Off/14 sources | LPF 2 Cutoff (32) | VCF 2 Cutoff |
| Osc 3 PWM (8) | DCO 1 Pulse Width Mod | LPF 2 Resonance (33) | VCF 2 Resonance |
| Osc 3 Level (9) | DCO 1 Level | Filter 2 LFO Mod (34) | VCF 2 FM |
| Noise Level (10) | Not Used | Filter 2 ENV Mod (35) | VCF 2 Env Depth |
| Osc 2 Range (15) | Not Used | Filter Key Follow (36) | VCF 2 Keytrack |
| Osc 2 Wave (16) | Not Used | Filter ADSR EG1 (37-40) | Env 3 A/D/S/R |
| Osc 2 PW (17) | Not Used | Filter Mode (41) | VCF 2 Mod Source - Off/13 sources |
| Osc 2 Tune (18) | Not Used | VCA ADSR EG2 (42-45) | Env 4 A/D/S/R |
| Osc 2 Fine Tune (19) | Not Used | VCA Mode (46) | Not Used |
| Osc 2 LFO Mod (20) | Not Used | VCA Level (47) | Total volume |
| Osc 2 ENV Mod (21) | Not Used | | |
| Osc 2 Mode (22) | Not Used | | |
| Osc 2 PWM (23) | Not Used | | |
| Osc 2 XMod (24) | Not Used | | |
| Osc 2 Level (25) | DCO Ring Mod Level | | |

# SYNTH TABLES

## Waldorf MicroWave 1

Cable and MIDI requirements

The Waldorf Patch uses a standard MIDI cable.

This Waldorf patch uses more controls than are available on the Patch Editor so this patch has been spread over two pages. Menu button 3 will select the active page.

## Waldorf MicroWave 1 Controls Page 1

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | DCO1 Oct Shift (-2 > +2) | LFO1 Wave (26) | LFO 1 Sine, Saw, Pulse, Random |
| Osc 1 Wave (2) | Not Used | LFO1 Delay (27) | LFO 1 Delay |
| Osc 1 PW (3) | Not Used | LFO1 Speed (28) | LFO 1 Rate |
| Osc 1 Tune (4) | DCO 1 Semitone Adjust | Chorus/FX Rate (29) | LFO 1 Modifier 1 Level |
| Osc 1 LFO Mod (5) | DCO 1 Modifier 1 Level | Chorus/FX Mode (30) | LFO 1 Modifier 1 Source Select (17 types) |
| Osc 1 ENV Mod (6) | DCO 1 Modifier 2 Level | HPF (31) | VCF Res Modifier 1 Source Select (17 types) |
| Osc 1 Mode (7) | DCO 1 Modifier 1 Source Select (17 types) | LPF 1 Cutoff (32) | VCF 1 Cutoff |
| Osc 1 PWM (8) | DCO 1 Modifier 2 Source Select (17 types) | LPF 1 Resonance (33) | VCF 1 Resonance |
| Osc 1 Level (9) | Wave 1 Level | Filter 1 LFO Mod (34) | VCF 1 Modifier 1 Level |
| Noise Level (10) | Noise Level | Filter 1 ENV Mod (35) | VCF 1 Envelope Level |
| Osc 2 Range (15) | DCO2 Oct Shift (-2 > +2) | Filter Key Follow (36) | VCF 1 Keytrack |
| Osc 2 Wave (16) | Not Used | Filter ADSR EG1 (37-40) | VCF Env A/D/S/R |
| Osc 2 PW (17) | DCO 2 Pulse Width | Filter Mode (41) | VCF Modifier 1 Source Select (17 types) |
| Osc 2 Tune (18) | DCO 2 Semitone Adjust | VCA ADSR EG2 (42-45) | VCA Env A/D/S/R |
| Osc 2 Fine Tune (19) | DCO 2 Detune | VCA Mode (46) | Not Used |
| Osc 2 LFO Mod (20) | DCO 2 Modifier 1 Level | VCA Level (47) | Total volume |
| Osc 2 ENV Mod (21) | DCO 2 Modifier 2 Level | | |
| Osc 2 Mode (22) | DCO 2 Modifier 1 Source Select (17 types) | | |
| Osc 2 PWM (23) | DCO 2 Modifier 2 Source Select (17 types) | | |
| Osc 2 XMod (24) | Not Used | | |
| Osc 2 Level (25) | Wave 2 Level | | |

## Waldorf MicroWave 1 Controls Page 2

| | | | |
|---|---|---|---|
| Osc 1 Range (1) | Not Used | LFO Wave (26) | LFO 2 Sine, Saw, Pulse, Random |
| Osc 1 Wave (2) | Not Used | LFO Delay (27) | LFO 2 Delay |
| Osc 1 PW (3) | Wave 1 Start Position | LFO Speed (28) | LFO 2 Rate |
| Osc 1 Tune (4) | Wave 1 Start Sample | Chorus/FX Rate (29) | LFO 2 Symmetry |
| Osc 1 LFO Mod (5) | Wave 1 Modifier 1 Amount | Chorus/FX Mode (30) | LFO 2 Humanize Type |
| Osc 1 ENV Mod (6) | Wave 1 Envelope Amount | HPF (31) | Not Used |
| Osc 1 Mode (7) | Wave 1 Modifier 1 Source Select (17 types) | LPF Cutoff (32) | VCF Cutoff |
| Osc 1 PWM (8) | Wave 1 Modifier 2 Amount | LPF Resonance (33) | VCF Resonance Mod 1 Amount |
| Osc 1 Level (9) | Wave 1 Keytrack Amount | Filter LFO Mod (34) | VCF Modifier 1 Level |
| Noise Level (10) | Not Used | Filter ENV Mod (35) | VCF Envelope Level |
| Osc 2 Range (15) | Not Used | Filter Key Follow (36) | VCF Keytrack |
| Osc 2 Wave (16) | Not Used | Filter ADSR EG1 (37-40) | Not Used |
| Osc 2 PW (17) | Wave 2 Start Position | Filter Mode (41) | Not Used |
| Osc 2 Tune (18) | Wave 2 Start Sample | VCA ADSR EG2 (42-45) | Not Used |
| Osc 2 Fine Tune (19) | Wave 1 & 2 Wave Table | VCA Mode (46) | Not Used |
| Osc 2 LFO Mod (20) | Wave 2 Modifier 1 Amount | VCA Level (47) | VCA Volume Envelope Amount |
| Osc 2 ENV Mod (21) | Wave 2 Envelope Amount | | |
| Osc 2 Mode (22) | Wave 2 Modifier 1 Source Select (17 types) | | |
| Osc 2 PWM (23) | Wave 2 Modifier 2 Amount | | |
| Osc 2 XMod (24) | Not Used | | |
| Osc 2 Level (25) | Wave 2 Keytrack Amount | | |

## Unsupported synthesizers

The following synthesizer types have been tested and found to be not suitable for controlling with the Patch Editor.

Yamaha DX7

The Yamaha DX7 synthesizer is FM based and few of the Patch Editor controls are suitable. This is what is required.


Ensoniq ESQ-1

The Ensoniq ESQ-1 synthesizer does not support midi control well. The ESQ-1 requires simulated button presses via midi to make changes which is very slow and not suitable for real time control. Some controllers get around this by sending a patch dump each time a control is moved. This system is not suitable for the Patch Editor as every setting on a patch will be overwritten each time any control is changed.

# MIDI IMPLEMENTATION

## MidiCC Support

The Patch Editor will recognize MidiCC controlling commands. All MIDI data is sent out the MIDI out port except when the JX-3P synthesizer or PG-800 is selected. All MIDI output is suppressed for these two synthesizer type. MIDI through is unaffected. This is explained more fully in the JX-3P/PG-200 and PG-800 Synthesizer Tables.

The MidiCC commands will only output the selected synth.

### Important Note:

Because sysex commands are much longer than MidiCC commands the Patch Editor will need to output much more data than is sent to it. This will take extra time and there may be a noticeable lag if too much data is sent to the PE too quickly. If the Patch Editor buffer overflows data will be lost which could result in stuck notes and other random midi errors.

MidiCC Codes recognised by the Patch Editor. All values are in hex ($xx)

Format
Bn xx yy  Midi Command Code ($Bn) n=midi channel-1 $0-$f (0-15)
xx = parameter number (see table below)
yy = parameter data

Note: Parameters not active for the selected synthesizer or contain invalid data will be ignored
Note: The Roland JX-3P uses $00-$ff as a control range. As this cannot be sent via SysEx the parameter value byte is doubled within the Patch Editor.

| Parameter Name | Parameter Number | Data | Notes |
|---|---|---|---|
| Osc 1 Range | $41 (65) | | |
| 32' | | 0 | |
| 16' | | 1 | |
| 8' | | 2 | |
| 4' | | 3 | |
| 2' | | 4 | |
| Osc 1 Wave | $42 (66) | | DW-6000 uses 8 wave forms (valid data 0-7)<br>DW-8000 uses 16 wave forms (valid data 0-f) |
| Noise | | 0 | |
| Square | | 1 | |
| Pulse | | 2 | |
| Triangle | | 3 | |
| Sawtooth | | 4 | |
| Osc 1 Pulse Width | $10 (16) | nn | nn=$00-$7f (0-127) |
| Osc 1 Tune | $11 (17) | nn | nn=$00-$7f (0-127) |
| Osc 1 LFO Mod | $12 (18) | nn | nn=$00-$7f (0-127) |
| Osc 1 ENV Mod | $13 (19) | nn | nn=$00-$7f (0-127) |
| Osc 1 PWM Mode | $43 (67) | | |
| Env | | 0 | |
| LFO | | 1 | |
| Key | | 2 | |
| Osc 1 PWM Adjust | $14 (20) | nn | nn=$00-$7f (0-127) |
| Osc 1 Level | $15 (21) | nn | nn=$00-$7f (0-127) |
| Noise Level | $16 (22) | nn | nn=$00-$7f (0-127) |
| Osc 2 Range | $44 (68) | | |
| 32' | | 0 | |
| 16' | | 1 | |
| 8' | | 2 | |
| 4' | | 3 | |
| 2' | | 4 | |
| Osc 2 Wave | $45 (69) | | DW-6000 uses 8 wave forms (valid data 0-7)<br>DW-8000 uses 16 wave forms (valid data 0-f) |
| Noise | | 0 | |
| Square | | 1 | |
| Pulse | | 2 | |
| Triangle | | 3 | |
| Sawtooth | | 4 | |
| Osc 2 Pulse Width | $17 (23) | nn | nn=$00-$7f (0-127) |
| Osc 2 Tune | $18 (24) | nn | nn=$00-$7f (0-127) |
| Osc 2 Fine Tune | $19 (25) | nn | nn=$00-$7f (0-127) |
| Osc 2 LFO Mod | $1a (26) | nn | nn=$00-$7f (0-127) |
| Osc 2 ENV Mod | $1b (27) | nn | nn=$00-$7f (0-127) |
| Osc 2 PWM Mode | $46 (70) | | |
| Env | | 0 | |
| LFO | | 1 | |
| Key | | 2 | |
| Osc 2 PWM Adjust | $1c (28) | nn | nn=$00-$7f (0-127) |
| Osc 2 Sync | $47 (72) | | |
| X | | 0 | |
| 2 | | 1 | |
| 1 | | 2 | |
| 0 | | 3 | |
| Sync | | 4 | |
| Metal | | 5 | |
| Osc 2 Level | $1d (29) | nn | nn=$00-$7f (0-127) |
| LFO Wave | $48 (73) | | |
| Random | | 0 | |
| Square | | 1 | |
| Triangle | | 2 | |
| Sawtooth | | 3 | |
| LFO Delay | $1e (30) | nn | nn=$00-$7f (0-127) |
| LFO Rate | $1f (31) | nn | nn=$00-$7f (0-127) |
| Chorus Mode | $49 (74) | | |
| Off | | 0 | |
| On/1 | | 1 | |
| 2 | | 2 | |
| Chorus Rate | $20 (32) | nn | nn=$00-$7f (0-127) |
| High Pass Filter | $4a (75) | | Roland JX-3P and MKS-80 have 11 steps |
| 0 | | 0 | |
| 1 | | 1 | |
| 2 | | 2 | |
| 3 | | 3 | |
| Filter Cutoff | $21 (33) | nn | nn=$00-$7f (0-127) |
| Filter Resonance | $22 (34) | nn | nn=$00-$7f (0-127) |
| Filter LFO Mod | $23 (35) | nn | nn=$00-$7f (0-127) |
| Filter Env Mod | $24 (36) | nn | nn=$00-$7f (0-127) |
| Filter Key Mod | $25 (37) | nn | nn=$00-$7f (0-127) |
| Filter EG Attack | $27 (39) | nn | nn=$00-$7f (0-127) |
| Filter EG Decay | $28 (40) | nn | nn=$00-$7f (0-127) |
| Filter EG Sustain | $29 (41) | nn | nn=$00-$7f (0-127) |
| Filter EG Release | $30 (42) | nn | nn=$00-$7f (0-127) |
| Filter Mode | $4b (76) | | |
| 0 | | 0 | |
| 1 | | 1 | |

| Parameter Name | Parameter Number | Data | Notes |
|---|---|---|---|
| VCA EG Attack | $2b (43) | nn | nn=$00-$7f (0-127) |
| VCA EG Decay | $2c (44) | nn | nn=$00-$7f (0-127) |
| VCA EG Sustain | $2d (45) | nn | nn=$00-$7f (0-127) |
| VCA EG Release | $2e (46) | nn | nn=$00-$7f (0-127) |
| VCA Mode<br>1<br>2<br>3/Env<br>4/Gate | $4c (77) | <br>0<br>1<br>2<br>3 | |
| VCA Level | $2f (47) | nn | nn=$00-$7f (0-127) |

## Synth Table Order Entries

Sysex Dump format

| | | | |
|---|---|---|---|
| ;a | 11110000 | $f0 | Sysex Start |
| ;b | 00000000 | $00, $21, $16 | Kiwitechnics ID |
| ;c | 00100001 | | |
| ;d | 00010110 | | |
| ;e | 01100000 | $60 $00 | PE Product |
| ;f | 00000000 | | |
| ;g | 00000000 | $00 | Command type - $00=Synth Order Dump |
| ;h | 0xxxxxxx | $xx | currently 29 bytes of data |
| ;i | 11110111 | $f7 | End of Sysex |

Data format is 30 bytes, one for each table entry in the order in the table below. Each entry can be $00-$1c (0-20). The default data looks like
$00,$01,$02,$03,$04,$05,$06,$07,$08,$09,$0a,$0b,$0c,$0d,$0e,$0f,$10,$11,$12,$13,$14,$15,$16,$17,$18,$19,$1a,$1b,$1c,$1d.

As an example is you want the PE to select synth tables in the order Kiwi106, Roland MKS-70, Korg DW6000 and then the rest, the data will look like
$03,$13,$08,$00,$01,$02,$04,$05,$06,$07,$09,$0a,$0b,$0c,$0d,$0e,$0f,$10,$11,$12,$14,$15,$16,$17,$18,$19,$1a,$1b,$1c,$1d.

Important Notes:
Each entry must be unique and there must be no missing numbers. After these entries have been modified the PE must have a valid entry for each synth table (currently 0-29). Any table numbers are above the maximum number the sysex dump will be ignored. Duplicates will cause unpredictable behaviour in the PE. Default entries can be restored using the PE Erase memory Boot (XMod held while power on).

**USE AT YOUR OWN RISK**

| Synth | Table Number | Notes | Synth | Table Number | Notes |
|---|---|---|---|---|---|
| Cheetah MS1 | 0 | Default=$00 (0) | Organix 3P | 14 | Default=$0f (15) |
| RhodesChroma | 1 | Default=$01 (1) | Roland Juno1/2/MKS50 | 15 | Default=$10 (16) |
| Kawai K3m | 2 | Default=$02 (2) | Roland Juno 106 | 16 | Default=$11 (17) |
| Kiwi106 | 3 | Default=$03 (3) | Roland 8P | 17 | Default=$12 (18) |
| Kiwi3P | 4 | Default=$04 (4) | Roland MKS30 (JH Mod) | 18 | Default=$13 (19) |
| KiwiSix | 5 | Default=$05 (5) | Roland MKS70/JX10 | 19 | Default=$14 (20) |
| Korg DSS1 | 6 | Default=$06 (6) | Roland MKS80 | 20 | Default=$15 (21) |
| Korg DSM1 | 7 | Default=$07 (7) | Roland JD990FX | 21 | Default=$16 (22) |
| Korg DW6000 | 8 | Default=$08 (8) | Roland JD990Tone | 22 | Default=$17 (23) |
| Korg DW8000 | 9 | Default=$09 (9) | SC Sixtrak/Max | 23 | Default=$18 (24) |
| Korg M1 | 10 | Default=$0a (10) | SE ATCX | 24 | Default=$19 (25) |
| Moog Slim Phatty | 11 | Default=$0b (11) | Waldorf MW1 | 25 | Default=$1a (26) |
| Marion ASR | 12 | Default=$0c (12) | Waldorf Pulse | 26 | Default=$1b (27) |
| Matrix M6r | 13 | Default=$0d (13) | Waldorf MicroQ | 27 | Default=$1c (28) |
| Matrix M1000 | 14 | Default=$0e (14) | Generic MidiCC | 28 | Default=$1d (29) |