

(numbers are decimal, except as noted)

Function	CC #	Valid Values
Mod Wheel	01	0-127 assignable (see below)
Glide Time	05	0-127 Same as 62
Volume	07	0-127
Split Balance	08	0-127 Same as 80
VCO1 Triangle	20	0-127 0-63:Off,64-127:On
VCO1 Saw	21	0-127 0-63:Off,64-127:On
VCO1 Pulse	22	0-127 0-63:Off,64-127:On (turns off Sq if on)
VCO1 Square	23	0-127 0-63:Off,64-127:On (turns off Pls if on)
VCO2 Triangle	24	0-127 0-63:Off,64-127:On
VCO2 Saw	25	0-127 0-63:Off,64-127:On
VCO2 Pulse	26	0-127 0-63:Off,64-127:On
VCO2 Noise	27	0-127 0-63:Off,64-127:On
Bender	28	0-127 0-63:Off,64-127:On
Glissando	29	0-127 0-63:Off,64-127:On
Hold	30	0-127 0-63:Off,64-127:On (same as 64)
LFO 1 Rate	32	0-127
LFO 1 Delay	33	0-127
VCO Mod by LFO 1	34	0-127
VCO Mod by Env 1	35	0-127
PWM Pulse Width	36	0-127
PWM amount	37	0-127
XMOD manual	38	0-127
XMOD Env 1	39	0-127
VCO 1 Range	40	0-127
VCO 2 Range	41	0-127
VCO 2 Fine pitch	42	0-127
VCO Mixer	43	0-127 (0:full VCO1)
VCF Freq	44	0-127
VCF Resonance	45	0-127
VCF Mod by Env	46	0-127
VCF Mod by LFO 1	47	0-127
VCF Key tracking	48	0-127
VCA Env 2 amt	49	0-127
VCA LFO 1 mod	50	0-127
Env 1 Attack	51	0-127
Env 1 Decay	52	0-127
Env 1 Sustain	53	0-127
Env 1 Release	54	0-127
Env 1 Key Follow	55	0-127
Env 2 Attack	56	0-127
Env 2 Decay	57	0-127
Env 2 Sustain	58	0-127
Env 2 Release	59	0-127
Env 2 Key Follow	60	0-127
Arp Rate	61	0-127 When MIDI clk selected: 0-24: Whole notes (/96) 25-49: Half notes (/48) 50-74: Quarter notes (/24) 75-100: Eighth notes (/12)

			101-127: Sixteenth notes (/6)
Glide Time	62	0-127	Same as CC 05, 0=Fast
Unison Detune	63	0-127	
Sustain pedal	64	0-127	(0-63 off, 64-127 on)
Portamento On/Off	65	0-127	(0-63 off, 64-127 on)
LFO 1 Waveform	66	0-127	0-31:Tri, 32-63:Saw, 64-95:Squ, 96-127:Ran
PWM Modulation	67	0-127	0-63:Env1, 64-127:LFO1
VCO Modulation	68	0-127	0-31:None, 32-63:VCO1, 64-95:VCO2, 96-127:VCO1+2
VCO 1 Waveform	69	0-127	Bit 3:Tri enabled Bit 4:Saw enabled Bit 5:Pulse enabled Bit 6:Sq Enabled Bits 0-2 not used
VCO 2 Waveform	70	0-127	Bit 3:Tri enabled Bit 4:Saw enabled Bit 5:Pulse enabled Bit 6:Noise Enabled Bits 0-2 not used
Filter Mode	71	0-127	0-31:LPF, 32-63:HPF, 64-127:BPF
Osc Sync Mode	72	0-127	0-31:None 32-63:VCO 2 syncs to 1 64-95:VCO 1 syncs to 2 96-127:Both sync to the other
VCF Env Mod	73	0-127	0-63: VCF mod by Env 1 64-127: VCF Mod by Env 2
VCF Env 1 Pol	74	0-127	0-63: Positive envelope 64-127: Negative envelope
Key Assign Mode (CC 77 is only available in whole mode)	77	0-127	0-15: Poly1 16-31: Poly2 32-47: Unison 48-63: Solo 64-127: Solo Unison
Master Tune	79	0-127	
Split Balance	80	0-127	Same as CC 08 0: Lower only 64: Equal volume 127: Upper only
Arp Mode	84	0-127	0-63:Off 64-79:Up 80-95:Down 96-111:Up leads, then down 112-127:Random
Arp Range	85	0-127	0-31:1 octave 32-63:2 octaves 64-95:3 octaves 96-127:4 octaves

In whole mode, CC's on the base MIDI channel will affect all voices.
In split mode, use the base MIDI channel for the upper voices, and
base+1 for the lower voices. This matches Roland's JP6 MIDI channel
usage, but is different from Europa.

In split mode, the following CC's will be accepted on either MIDI channel:
Volume (07)

Split Balance (08,80)

Arp Rate (61)

Master Tune (79)

Note: In split mode, CC's sent to either voice board will update any related front panel LEDs. This was done to provide confirmation that the CC was received. Also, CC's do not update upper and lower patch settings for the front panel switches. (Potentiometer settings are updated) If you select Lower, then use a CC to set the upper Arp range to 3 octaves, then select Upper, you won't see that range. Because of this CC's are not useful for patch editing. They are meant for controlling the current voice board settings.

There are two ways to select the VCO waveforms. CC's 69 and 70 use just one value to set all four waveform states. This would be useful when a pot is controlling. CC's 20-27 allow individual on/off control of each waveform. These would be useful if pushbuttons are controlling.

User settings can be changed as follows: First, unprotect RAM. Now press and hold Tune. Now select bank E. This will display the current settings. Number switches can now be pressed, one at a time, to toggle individual settings bits and their LEDs. Release Tune when you are finished.

- 1: Mod CC assign bit 1
- 2: Mod CC assign bit 2
- 3: Mod CC assign bit 3

Bit 1	Bit 2	Bit 3	Mod wheel CC assignment:
LED Off	LED Off	LED Off	VCO mod by LFO 1 amount
LED On	LED Off	LED Off	VCF cutoff mod by LFO1 amount
LED Off	LED On	LED Off	VCA mod by LFO 1 amount
LED On	LED On	LED Off	LFO 1 rate
LED Off	LED Off	LED On	XMOD manual amount
LED On	LED Off	LED On	Pulse Width
LED Off	LED On	LED On	VCF cutoff
LED On	LED On	LED On	VCF resonance

- 4: LED On to select MIDI Arp clocking (connecting an external clk overrides this)
- 5: LED On to not require MIDI Start and Stop messages for MIDI Arp clocking
- 6: If LED is On, all patch and patch presets are loaded from EPROM, which contains the factory data. Patch saves always go to SRAM. Note: This setting just reads from EPROM instead of RAM when you load a patch. It does not write anything into the save RAM patches.
- 7: If EPROM patches are enabled, turning on this LED forces patch presets to be loaded from SRAM. This enables creating new patch presets that use factory patches
- 8: If LED is on, turns off MIDI "All Notes Off" messages normally sent by JP6
These messages are sent every time the last pressed key is released.

These settings are saved when power is off, along with the MIDI channel.

To set the MIDI channel, unprotect RAM, press and hold Tune, then press A or B

and a number switch. This procedure has not changed from the Roland V6 code. MIDI OMNI mode can only be turned on and off using CC messages, and always defaults to off at power up.

Note: To make space for saved values, patch preset D8 has been removed. Attempts to select this patch preset will cause D7 to be selected instead. So there are now only 31 patch presets available.

MIDI clocks are assumed to be 24PPQ, but arpeggiator notes can be whole notes, half notes, quarter notes, eighth notes, or sixteenth notes. This selection is made using the Arp Rate setting (pot or CC 61) when MIDI clocking is enabled:

- 1) Slowest arp clock rate (whole notes, 96 pulses per arp step)
- 2) Slower arp clock rate (half notes, 48 pulses per arp step)
- 3) "Normal" clock rate (quarter notes, 24 pulses per arp step)
- 4) Faster clock rate (eighth notes, 12 pulses per arp step)
- 5) Fastest clock rate (sixteenth notes, 6 pulses per arp step)

The Arp setting that was "Down then Up" has been changed to a random arpeggiator mode.

VCO1 and VCO2 waveform switches now toggle, so multiple waveforms can easily be enabled, and all waveforms can be turned off. VCO1 Pulse and Square cannot be enabled at the same time.

It is now possible to enable VCO sync in both directions. Please don't ask me exactly what this does, or if it's even useful.

To save all tone RAM patches and patch presets as MIDI sysex, press and hold Tune, then press and release Write. To load this data back into the JP6, turn off memory protect and send the file to MIDI In.

Tone RAM addresses 0-07EFh are saved in the Sysex file.
(Addresses 07F0-07FFh were for patch preset D8, which no longer exists)
This is 2032 bytes. Each byte is sent as two nibbles,
so there are 4064 data bytes. The header is 5 bytes,
plus 1 for the EOX, so the total size of the packet is 4070 bytes.

You can still load tape saved patch files. If you load all patch presets, preset D8 will overwrite the saved MIDI channel and user presets, so you will need to set them afterwards.