Bastl-Instruments 4/9/2017

This chart shows how the 60Knobs Editor is communicating with the device for custom preset configuration. According to the Editor interface, this chart shows parameters in Decimal unit.
60Knobs editor patches are developed in Cycling74 Max 6 and are available under CC-BY-SA license on bastl github: https://github.com/bastl-instruments/60Knobs/tree/master/Editor

SysEx KNOB SETTINGS

Byte 1	2	3		4	5	6		7		8
SysEx START	Bastl ID	TYPE	//	knob number	ctrl#	ctrl#	//	range	//	SysEx END
240	48	1	*CC*	n (0-59)	# (0-127)	/	*(0-127)*	/		247
		2	*NRPN bipolar*		LSB (0-127)	MSB (0-127)	*(0-16383)*	r (1-63)		
		3	*NRPN unipolar*		LSB (0-127)	MSB (0-127)	*(0-16383)*	r (1-127)		
		4	*DX7*		MSB (0-1)	LSB (0-127)	*(0-144)*	r (1-99)		
		15	*CC on MIDI CH#*		# (0-127)	/	*(0-127)*	MIDI CH# (1-16)		
		16	*disable knob*		/	/		/		
* 240	48	17	*invert direction (max→min)*		/	/		yes/no (1/0)		247
		18	*NRPN exponent*		LSB (0-127)	MSB (0-127)	*(0-16383)*	r (1-4)	*164/200/1600/2000*	

* this sysex has to be sent also for each knob.

example	knob parameters	knob direction
//		
1st knob CC #55	240 48 1 0 55 0 247	240 48 17 0 0 247
2nd knob NRPNb #127 range 11	240 48 2 1 127 0 11 247	240 48 17 1 0 247
3rd knob NRPNu #199 range 127	240 48 3 2 71 1 127 247	240 48 17 2 0 247
4th knob DX7 #39 range 31	240 48 4 3 0 39 31 247	240 48 17 3 0 247
5th knob CC #127 on MIDI CH 16	240 48 15 4 127 16 247	240 48 17 4 0 247
6th knob disabled	240 48 16 5 0 0 247	240 48 17 5 0 247
7th knob CC #21 range inverted	240 48 1 6 21 0 247	240 48 17 6 1 247
8th knob NRPNp #407 range 1600	240 48 18 7 23 3 247	240 48 17 7 0 247

SysEx GLOBAL SETTINGS (after each knob has been set)

Byte 1	2	3		4		5
SysEx START	Bastl ID	command	//	value	//	SysEx END
240	48	9	*GLOBAL*	CH# (1-16)	*MIDI channel*	247
* 240	48	19	*NRPN LSB data*	on/off (0-1)	*1 disables LSB*	247
240	48	5	*PRESET SAVE*	s (0-4)	*memory SLOT*	247

example	
//	command line
Set GLOBAL MIDI CH to 1	240 48 9 1 247
Disable NRPN LSB data out	240 48 19 1 247
Save ALL settings on memory slot 1	240 48 5 0 247

* this command enables NRPN data LSB on CC# 38 (optional according to MIDI standard).

PARAMETERS ARE SHOWN IN DECIMAL UNIT. According to which MIDI compiler you're using, conversion to HEXADECIMAL UNIT might be required.