ImproSculpt Midi implementation chart

Midi note input

Midi note input on channel 1,2,3,4 and 6 is directed to the multitimbral synthesizer (midi_direct_instruments.inc)

Midi note inputs on channel 5 has special control functions as listed:

chn	note number	description
5	60	less attack, use longer attack time for envelopes on the multitimbral synthesizer
5	61	more attack, use shorter attack time for envelopes on the multitimbral synthesizer
5	62	less wet, decrease effects send (mainly for a chorus and filter send) for the multitimbral synthesizer
5	63	more wet, increase effect send (chorus/filter) for the multitimbral synthesizer
5	64	toggle chorale voice 1, on/off alternating switch for interval melody generator voice 1
5	65	toggle chorale voice 2
5	66	toggle chorale voice 3
5	67	record disable switch for recording of interval series (for the interval melody generator)
5	68	record enable switch for recording of interval series
5	69	all notes off (standard midi panic button) for the multitimbral synthesizer
5	70	start/stop toggle, alternating switch for start or stop of ImproSculpt's master clock
5	71	tap tempo, standard tap tempo functionality for setting ImproSculpt's master tempo

Preset recall

Midi note input on channel 16 will recall ImproSculpt presets.
The note number determines the preset number to be recalled, starting at note number 61 (= preset 1)

chn	note number	description
16	61	recall preset 1
16	62	recall preset 2

…etc

Program change

The multitimbral midi synthesizer accepts midi program change messages (on any midi channel).
The effective range (number of different instrument timbres) of program change numbers are 0 to 29
This will change the instrument timbre used to respond to midi notes on midi channel 1,2,3,4 and 6
Program numbers 0,1,2,3,4 equals the timbre on pgm numbers 10,11,12,13,14 and 20,21,22,23,24.
Program numbers 1,2,3,4,5,6,7,8,9,15,16,17,18,19,25,26,27,28,29 have unique timbres.

chn	pgm no	instrument
any	0	PianoVibShade
any	1	Vibraphone
any	2	ClavinetMarimba*
any	3	PhasMello
any	4	MellotronStringOrchestra
any	5	PhasMoog
any	6	MellotronSoloOctUpIntermittent
any	7	ClavinetVibraphoneMellotron*
any	8	VibraphoneEpiano
any	9	ClavinetPianoVibraphone
any	15	PhaseDistMelloStringFluteMarimba
any	16	DevilDogIntermittent
any	17	MellotronStrings-EminorBend
any	18	ArmySynth
any	19	MellotronFluteChoir
any	25	Phas4
any	26	Zyne
any	27	PhaseDistSweepAttack
any	28	SoftPadOctUpEpiano
any	29	PhaseDistMegatron

Note on control change mapping
Some of the midi control change inputs have a mapping table to enable other response curves than the strictly linear.
This is noted in the "mapping" column below.
A "-" signifies linear mapping. A string starting with the letters "gi" signifies the name of a global csound ftable.
The ftables used can be inspoected/edited in the "file /inc/globals_ftables.inc", or "inc/ML/ftgen_control_basic2.inc".
Refer to the csound manual for parameter details on the table generation opcode ftgen.

Various master controls

chn	ctl num	min	max	init	mapping	parameter description

chn	ctl num	min	max	init	mapping	parameter description
1	1	0,1	1	0,5	-	filter cutoff frequency for some of the instruments played via midi (channel 1,2,3,4)
1	2	0	1	0	-	pitch bend down for the multitimbral synthesizer (midi channels 1,2,3,4,6)
1	3	0	1	0	-	pitch bend up for the multitimbral synthesizer (midi channels 1,2,3,4,6)
1	4	0	1	0	-	channel pitch bend up for the multitimbral synth (only affect notes played on midi channel 4)
1	5	0	1	0	-	ringmodulator mix for some of the instruments in the multitimbral synthesizer
1	6	0	1	1	giPreVol	master amplitude for for the multitimbral synthesizer (pre effect sends)
1	7	0	1	0	-	delay send (active for the multitimbral synthesizer and the partikkel generators)
1	10	0	20	0	-	rotor speed (and mix) for the rotary speaker effect (efx send from multitimbral synthesizer and partikkel generators)
1	11	0	1	0	-	distortion mix/amount (efx send from multitimbral synthesizer and partikkel generators)
1	16	0	1	0	-	phaser mix/amount (efx send from multitimbral synthesizer and partikkel generators)
1	17	0	1	0	-	reverb send (efx send from multitimbral synthesizer and partikkel generators)
1	20	0	1	0,1	-	master amplitude for algorithmically generated voices
1	21	0	4	0,1	-	master amplitude control for the partikkel cloud generator
1	64	0	1	0	-	ringmod mix (efx send from multitimbral synthesizer and partikkel generators) * note: the ringmod frequency for this ringmod effect is set by midi note input on channel 1
1	80	0	1	0	-	activate audio live sampling (active as long as ctl value is above 64)

Partikkel generator voice 1

chn	ctl num	min	max	init	mapping	parameter description
9	1	0	4	1	-	partikkel amp
9	2	1	1500	400	giExpRise,	grain rate
9	3	0	12,5	1	-	transposition (FqCenter)
9	4	0	5	1	-	duration
9	5	0	1	0,5	-	attack time
9	6	0	20	0	-	FM frequency
9	7	0	1500	1	giExpRise,	FM index
9	8	0	1	0	-	sweep duration
9	9	0	7	0	-	channel mask loop index
9	10	0	7	0	-	gain mask loop index
9	11	0	1	0	-	channel pan width for partikkel separate outputs
9	12	0	1	0,1	-	effect sends for partikkel separate outputs (reverb/delay)
9	13	0	1	0	-	wave mix X
9	14	0	1	0	-	wave mix Y
9	15	0	1	0	-	available

chn	ctl num	min	max	init	mapping	parameter description
9	16	0	1	0	-	time pointer
9	17	0	1	0	-	available
9	18	0	1	0	-	available
9	19	0	1	0	-	available
9	20	0	1	0	-	available
9	21	0	1	0	-	available
9	22	0	1	0	-	available
9	23	0	1	0	-	available
9	24	0	1	0	-	available
9	25	0	1	0	-	available
9	26	0	1	0	-	available
9	27	0	1	0	-	transposition scaling (x1 or x3 toggle)
9	28	-1	1	1	-	transposition direction toggle (up/down)
9	29	0	1	0	-	wave assign slot 1
9	30	0	1	0	-	wave assign slot 2
9	31	0	1	0	-	wave assign slot 3
9	32	0	1	0	-	wave assign slot 4

Partikkel generator voice 2

chn	ctl num	min	max	init	mapping	parameter description
9	33	0	4	1	-	partikkel amp
9	34	1	1500	400	giExpRise,	grain rate
9	35	0	12,5	1	-	transposition (FqCenter)
9	36	0	5	1	-	duration
9	37	0	1	0,5	-	attack time
9	38	0	20	0	-	FM frequency
9	39	0	1500	1	giExpRise,	FM index
9	40	0	1	0	-	sweep duration
9	41	0	7	0	-	channel mask loop index
9	42	0	7	0	-	gain mask loop index
9	43	0	1	0	-	channel pan width for partikkel separate outputs
9	44	0	1	0,1	-	effect sends for partikkel separate outputs (reverb/delay)
9	45	0	1	0	-	wave mix X
9	46	0	1	0	-	wave mix Y
9	47	0	1	0	-	available
9	48	0	1	0	-	time pointer

chn	ctl num	min	max	init	mapping	parameter description
9	49	0	1	0	-	available
9	50	0	1	0	-	available
9	51	0	1	0	-	available
9	52	0	1	0	-	available
9	53	0	1	0	-	available
9	54	0	1	0	-	available
9	55	0	1	0	-	available
9	56	0	1	0	-	available
9	57	0	1	0	-	available
9	58	0	1	0	-	available
9	59	0	1	0	-	transposition scaling (x1 or x3 toggle)
9	60	-1	1	1	-	transposition direction toggle (up/down)
9	61	0	1	0	-	wave assign slot 1
9	62	0	1	0	-	wave assign slot 2
9	63	0	1	0	-	wave assign slot 3
9	64	0	1	0	-	wave assign slot 4

PartikkelCloud metaparameters (if linked to partikkel voice 1 controls)

chn	ctl num	min	max	init	mapping	parameter description
9	1	0	4	1	-	amp
9	2	0,05	5000	1	giExpRise,	rateScale
9	3	0,01	1,8	1	-	transpScale
9	4	1	-0,5	1	-	transparency
9	8	0	0,5	0	-	turbulence
9	11	0	1	0	-	width
9	12	0	1	0,1	-	reverb and delay send

Feedback instrument, instance 1

chn	ctl num	min	max	init	mapping	parameter description
9	65	0	2	1	-	input amp
9	66	0	6	1	-	output amp
9	67	0	2	0,1	-	internal feed
9	68	0	1	0	-	noise level
9	69	10	10000	4000	-	autoLevel ref
9	70	0	1	0,1	-	autoLevel mix
9	71	0	1	1	-	pvsFilter mix

channel	ctl num	min	max	init	mapping	parameter description
9	72	0	2	1	-	pvsFilter ampMod
9	73	1	40	8	-	pvsFilter numBands
9	74	0,1	3	1	-	pvsFilterResponseTime
9	75	0	1	1	-	adFilterMix
9	76	0	1	0,1	-	adFilterQ
9	77	0	200	50	-	adFilterStr
9	78	0,1	10	0,1	-	adFilterHoming
9	79	0	1	0	-	resonatorMix
9	80	50	900	140	-	resonatorFreq
9	81	0	1	0,25	-	delayMix
9	82	10	2000	400	-	delayTime
9	83	0	1	0,5	-	delayFeed
9	84	20	5000	2700	-	delay lowpass freq
9	85	0	400	2	-	delay LFO amount (to delay time)
9	86	0	1	0,03	-	delay LFO freq

Feedback instrument, instance 2

channel	ctl num	min	max	init	mapping	parameter description
9	87	0	2	1	-	input amp
9	88	0	6	1	-	out amp
9	89	0	2	0,1	-	internal feed
9	90	0	1	0	-	noise level
9	91	10	10000	4000	-	autoLevel ref
9	92	0	1	0,1	-	autoLevel mix
9	93	0	1	1	-	pvsFilter mix
9	94	0	2	1	-	pvsFilter ampMod
9	95	1	40	8	-	pvsFilter numBands
9	96	0,2	3	1	-	pvsFilterResponseTime
9	97	0	1	1	-	adFilterMix
9	98	0	1	0,7	-	adFilterQ
9	99	0	200	50	-	adFilterStr
9	100	0,1	10	0,3	-	adFilterHoming
9	101	0	1	0	-	resonatorMix
9	102	50	900	140	-	resonatorFreq
9	103	0	1	0,25	-	delayMix
9	104	10	2000	700	-	delayTime

channel	ctl num	min	max	init	mapping	parameter description
9	105	0	1	0,5	-	delayFeed
9	106	20	5000	2700	-	delay lowpass freq
9	107	0	400	2	-	delay LFO amount (to delay time)
9	108	0	1	0,03	-	delay LFO freq

Rand player module

channel	ctl num	min	max	init	mapping	parameter description
10	1	0	1	0	-	; rPlay1 enable/disable
10	2	0	127	1	-	; rPlay1 polyphony
10	3	0	5	0	giQuadRise	; rPlay1 duration
10	4	0	4	1	giQuadRise	; rPlay1 amp scale
10	5	1	16	1	-	; rPlay1 rhythm select
10	6	0	16	1	-	; rPlay1 rhythm var
10	7	1	8	2	-	; rPlay1 rhythm fact
10	8	0,001	2	0,01	giQuadRise	; rPlay1 attack time
10	9	0,001	2	0,1	giQuadRise	; rPlay1 decay time
10	10	0	1	1	-	; rPlay1 sustain level
10	11	0,001	2	0,05	giQuadRise	; rPlay1 release time
10	12	0	3	0	-	; rPlay1 filter mode
10	13	20	6000	1000	giQuadRise	; rPlay1 filter cf
10	14	0	0,9	0,2	-	; rPlay1 filter cf rdev
10	15	1	9	5	-	; rPlay1 filter q
10	16	0	1	0,3	-	; rPlay1 pan
10	17	0	1	0,3	-	; rPlay1 pan rdev
10	18	0	1	0	-	; rPlay1 reverb
10	19	0	1	0,2	-	; rPlay1 reverb rdev
10	20	0	1	0	-	; rPlay1 delay
10	21	0	1	0,2	-	; rPlay1 delay rdev
10	22	0	1	0	-	; rPlay1 segmentOrganizer enable/disable
10	23	0	1	0	-	; rPlay1 segmentOrganizer latest, shortest
10	24	0	127	3	-	; rPlay1 segmentOrganizer numsegments
10	25	0	1	0	-	; rPlay1 manual segment assign "latest 1" : replace
10	26	0	1	0	-	; rPlay1 manual segment assign "latest 1" : remove
10	27	0	1	0	-	; rPlay1 manual segment assign "latest 1" : add
10	28	0	127	64	-	; rPlay1 pitch transpose

10	29	0	127	0	-	; rPlay1 pitch rDev minimum
10	30	0	127	0	-	; rPlay1 pitch rDev maximum
10	31	0	1	0	-	; not used
10	32	0	1	0	-	; not used
10	33	0	1	0	-	; rPlay2 enable/disable
10	34	0	127	1	-	; rPlay2 polyphony
10	35	0	5	0	giQuadRise	; rPlay2 duration
10	36	0	4	1	giQuadRise	; rPlay2 amp scale
10	37	1	16	1	-	; rPlay2 rhythm select
10	38	0	16	1	-	; rPlay2 rhythm var
10	39	1	8	2	-	; rPlay2 rhythm fact
10	40	0,001	2	0,01	giQuadRise	; rPlay2 attack time
10	41	0,001	2	0,1	giQuadRise	; rPlay2 decay time
10	42	0	1	1	-	; rPlay2 sustain level
10	43	0,001	2	0,05	giQuadRise	; rPlay2 release time
10	44	0	3	0	-	; rPlay2 filter mode
10	45	20	6000	1000	giQuadRise	; rPlay2 filter cf
10	46	0	0,9	0,2	-	; rPlay2 filter cf rdev
10	47	1	9	5	-	; rPlay2 filter q
10	48	0	1	0,3	-	; rPlay2 pan
10	49	0	1	0,3	-	; rPlay2 pan rdev
10	50	0	1	0	-	; rPlay2 reverb
10	51	0	1	0,2	-	; rPlay2 reverb rdev
10	52	0	1	0	-	; rPlay2 delay
10	53	0	1	0,2	-	; rPlay2 delay rdev
10	54	0	1	0	-	; rPlay2 segmentOrganizer enable/disable
10	55	0	1	0	-	; rPlay2 segmentOrganizer latest, shortest
10	56	0	127	3	-	; rPlay2 segmentOrganizer numsegments
10	57	0	1	0	-	; rPlay2 manual segment assign "latest 1" : replace
10	58	0	1	0	-	; rPlay2 manual segment assign "latest 1" : remove
10	59	0	1	0	-	; rPlay2 manual segment assign "latest 1" : add
10	60	0	127	64	-	; rPlay2 pitch transpose
10	61	0	127	0	-	; rPlay2 pitch rDev minimum
10	62	0	127	0	-	; rPlay2 pitch rDev maximum
10	63	0	1	0	-	; not used
10	64	0	1	0	-	; not used