

MIDI Implementation Chart				
NRPN				
msb	lsb	val	Module name	Controller
1	0-3	gain channel <lsb>	mixer1	
1	4-7	gain channel <lsb>	mixer2	
1	8-11	gain channel <lsb>	mixer3 0,2,3	
1	9	gain channel <lsb>	mixer3 1	
1	12-15	gain channel <lsb>	mixer4	
1	16-19	gain channel <lsb>	mixer5	Volume
2	0	frequency	filter1	Feedback
2	1	resonance	filter1	delay
2	4	frequency	filter3	Dry/Wet
2	5	resonance	filter3	
3	0-7	tap <lsb>	delay time	
4	0	duration	Duration, either on omni or part. If set, on selection from mark to endmark	
4	1	max Amplitude	max Amp either on omni or part. If set, on selection from mark to endmark	
5	0	FM rate	sine1.frequency	
5	1	FM depth	sine1.amplitude	
6	0	mark	copy/move starts from this segment	right click
6	1	endmark	copy/move ends at this segment	right click
6	2	marked source partial	copy/move happens from this partial	
6	3	segment	target segment	right click
6	4	partial	copy to target partial	Key='V'
6	5	partial	move to target partial	Key='X'
6	6	partial	delete in source partial	Key='Delete'
6	7	partial	reset markers	Key='U'
6	8	-	toggle debug	Key='D'
6	9,4	partial	copy and insert into target partial	Key='I'
6	9,5	partial	move from source and insert into target partial	Key='Insert'
7	0	click	instrument	off/on
10	segment	level	set levels[lsb]/set alllevels[lsb] (spread==true) 2 byte=(h+I/100)/50-1=>level 14-bit NRPN	h=1st byte, I 2nd
11	0	part	val > 0:part = val - 1; if val=0->omni	
11	1	1	reset segment block	
11	1	2	if omni:reset all;else reset part	
11	1	3	spread = true;	
11	1	4	spread = false;	
11	1	6	setnumharm (part + 1);	
11	1	7	setnumseg (segment + 1);	
11	1	8	reverse part or all partials (omni=true). If set, from mark to endmark	
11	2	segment	segment = val*16;	
11	3	segments	set numseg	
11	4	part	set numparts	
16	part	harmonic	HarmInst.setFreq Hi-Byte=int part, low-byte=frac part 14-bit NRPN	
13	part	offset		
14	part	phase		
15	part	numseg		
17	part	solo	off/on	
18	part	mute	off/on	
CC	controller	val	function	
1	Modulation	0-127	fm frequency	File/Save
50	Keystep seq record	127	save teensy DSP data (also sent by Hydra-Pro write file) (Harm.ins and Harm.pre)	Key S
51	Keystep seq stop	127	show envelope in DSP memory (also sent by opening the graph)	
SysEx	F07E02<size><type><specs>	data		
type	<specs>			
1	parts,segs,fmax,click[,maxlev,maxseg]	init instrument , click:1 remove click fmax=1--> no distortion		[only in vfx]
2	parts,segs	merge instrument		not in vfx
10	partial,segment	set int,fract parts of levels per partial and segment, repeated if numsegs>40 byte=(h+I/100)/50-1=>level		
11		create level from amplitude,time pairs (after creation mutates into type 10)		
12	partial,segment	set amplitudes per part and segment		
13	partial	set offsets/10 starting from partial		
14	partial	set phases starting from partial		
15	partial,segment	set durations per partial and segment		Must be the last entry!
16	partial	set frequencies int,fract*100 and setup all partials. starting from partial		
12,15		if list has less entries than numsegs, the last entry will be padded to all the remaining fields.		