Jupiter X/XM ABM Analog Synth Models underlying zencore

* = not in zencore menus, change/view via midi sysex only

	Jupiter 8	Juno 106	JX-8P	SH-101
Structure	normal: XMOD (partial 2 routed through partial 1's filter) sync on: sync (partials have own filter etc)	normal: OFF (partials have own filter etc)	normal: OFF (partials have own filter etc) xmod on: xmod (partial 2 routes through partial 1's filter) sync on: sync (partials have own filter etc)	normal: OFF (partials have own filter etc)
Partial 1 Waveform	**OSC1**: TRI = PCM-SYNC 046 - JP-8 TRI - osc attenuation 78 SAW = VA SAW - osc attenuation 107 PW = VA SQR - osc attenuation 200 SQR = VA SQR - osc attenuation 200	**PW** = VA SQR + Invert osc attenuation off=0 / on=158 [205 if HPF=0]	**note: partial 1 is OSC 2** SAW = VA SAW - osc attenuation 0 to 134 PULSE = PCM-SYNC 048 JX-8P Pulse - osc attenuation 0 to 215 SQR = VA Square - osc attenuation 0-222 NOISE = noise - osc attenuation 0 to 55	**PW** = VA SQR + Invert osc attenuation 0 to 169
Partial 2 Waveform	**OSC2:** SINE = PCM-SYNC 047 - JP-8 SINE - osc attenuation 67 SAW = VA SAW - osc attenuation 107 PW = VA SQR - osc attenuation 210 NOISE = NOISE - osc attenuation 72	**SAW** = VA SAW + Invert osc attenuation off=0 / on=94 [131 if HPF=0]	**note: partial 2 is OSC 1** SAW = VA SAW - osc attenuation 0 to 134 PULSE = PCM-SYNC 048 JX-8P Pulse - osc attenuation 0 to 215 SQR = VA Square - osc attenuation 0-222 NOISE = noise - osc attenuation 0 to 55	**SAW** = VA SAW + Invert osc attenuation 0 to 122
Partial 3 Waveform	none	**SUB OSC** = VA SQR + Invert osc attenuation=0 to 255 coarse tune -12	none	**SUB OSC** affected by SUB OSC parameter **1OCT DN** = VA SQR + Invert coarse tune -12 + osc attenuation 0 to 130 **2OCT DN1** = VA SQR + Invert coarse tune -24 + osc attenuation 0 to 130 **2OCT DN2** = PCM-SYNC 045 SH-101Sub OS coarse tune -24 + osc attenuation 0 to 81
Partial 4 Waveform	none	**NOISE** = NOISE	NOISE = NOISE (always on, level=8)	**NOISE** = NOISE osc attenuation 0 to 255
Level value controls:	normal: XMD OSC 1/2 LVL 0 to 127 sync mode: osc attenuation 0 to normal xmod mode value eg saw=107	osc attenuation	normal: osc attenuation sync mode: osc attenuation xmod mode: XMD OSC 1/2 LVL and osc attenuation is set to max of normal range	osc attenuation
xmod	0-10800	none	on: fixed at 600	none
PW range	65 to 122	65 to 5	none	64 to 121
Model Specific OSC notes	OSC2 Low Freq Mode: partial2/osc2 pitch down depth*=57	none	Mixer settings affect OSC 2/partial 1 level via partial 1 matrix **Mixer Env Mode:** Matrix Source: ENV1=Filter Env ENV2=Amp Env Matrix Dest : OSC attenuation **Mixer Env Depth** = Matrix Amounts 0 to 33 **Mixer Dynamics:** 0 = Vel Range Lower 1 / vel fade lower=0 / curve=EXP 1 = Vel Range Lower 50 / vel fade lower=127 / curve=EXP 2 = Vel Range Lower=127 / vel fade lower=127 / curve=LIN 3 = Vel Range Lower=110 / vel fade lower=127 /curve=EXP	none
Filter Type	VCF2/JP -12 or -24	VCF1 -24	VCF1 -24	VCF1 -24
cutoff scaling [model] = [zencore]	0 = 8 255 = 280 511 = 532 767 = 792 1023 = 956	0 =28 255 = 308 511 = 604 767 = 888 1023 = 1000	0 = 0 255 = 244 511 = 516 767 = 804 1023 = 980	0 = 28 255 = 196 511 = 456 767 = 708 1023 = 964
keyfollow	0 to 100	0 to 100	0 to 120	0 to 100
VCF Gain Correction*	20	30	10	40
Cutoff key base	60	60	36	36
resonance scaling [model] = [zencore]	0 = 0 255 = 224 511 = 520 767 = 720 1023 = 828	0 = 0 255 = 188 511 = 424 767 = 700 1023 = 1000	0 = 84 255 = 300 511 = 552 767 = 740 1023 = 804	0 = 0 255 = 280 511 = 584 767 = 844 1023 = 1000
HPF	range: 48 to 756	steps: 0=0 osc attenuation increase 1=100 2=500 3=600 eq for 1/2/3: noise +10dB 300 Hz +3dB 2,000 Hz -8dB 4,000Hz	steps: 0=0 1=100 2=500 3=600	fixed: 8
HPF effect on EQ	none	step 0: PW Ptl 1: +10dB 200Hz SAW Ptl 2: +10dB 200Hz SUB OSC Ptl 3: +10dB 200Hz noise Ptl 4: +24dB 300 Hz +3dB 2,000Hz -8dB 4,000Hz step 1/2/3: noise Ptl4: +10dB 300 +3dB 2,000 Hz -8dB 4,000Hz	step 0: OSC1 Ptl1 +5dB 200 Hz OSC2 Ptl2: +5dB 200 Hz step 1/2/3: no eq	fixed: noise Ptl4: +11dB 600 Hz +13dB 1,400 Hz -24dB 500 Hz
LFO Note: All Models use Partial LFO Phase Lock*=ON - this makes all partials use the LFO waveform/rate/detune/key trig/phase pos of partial 1				
Lfo waveforms	sine / saw-dwn / sqr / s & h	fixed: tri	sine / sqr / s & h	tri / sqr / s & h
LFO rate	152 to 912	124 to 904	0 to 868	232 to 932
pitch depth	0 to 51	0 to 30	0 to 36	0 to 78
filter depth	0 to 40	0 to 63	0 to 63	0 to 56
amp depth	0 to 98	none	none	none
Envelope note: ADSR switch is on for all models, so envelopes only use: T1=attack / T3=decay / L3=sustain / T4=release				
Specific Model Envelope Notes	**In model, Pitch and Filter are ENV1 - panel ADSR controls change each other's model values - but sustain has different scaling. Amp is ENV2. [Pitch env] Dest Select : this changes the relevant partial's pitch env depth.**	**In Model, single envelope used for filter and amp - controls change zen filt and amp envs identically. No pitch envelope.**	**In model, pitch and filter are ENV1 - panel controls change zen pitch and filter, but sustain has different scaling. Amp is ENV2**	**In Model, single envelope used for filter and amp - controls change zen filt and amp envs identically. No pitch envelope.**
Pitch Envelope				
Pitch Env Depth	-76 to +76	none	-71 to + 71	none
Attack scaling T1 [model] = [zencore]	0 = 0 255 = 8	none	0 = 0 255 = 60	none

	511 = 140 767 = 508 1023 = 728		511 = 404 767 = 680 1023 = 1023	
Decay Scaling T3 **[model] = [zencore]**	0 = 0 255 = 88 511 = 572 767 = 852 1023 = 1023	none	0 = 4 255 = 152 511 = 568 767 = 876 1023 = 1023	none
Sustain Scaling L3 **[model] = [zencore]**	0 = 0 255 = 124 511 = 252 767 = 380 1023 = 511	none	0 = 0 255 = 128 511 = 260 767 = 388 1023 = 511	none
Release Scaling T4 **[model] = [zencore]**	0 = 0 255 = 300 511 = 580 767 = 904 1023 = 1023	none	0 = 0 255 = 172 511 = 576 767 = 876 1023 = 1023	none
Pitch Dynamics	none	none	0: Pitch Velocity Sensitivity=0 / Curve=0 fixed 1: Pitch Velocity Sensitivity=32 / Curve=1 2: Pitch Velocity Sensitivity=50 / Curve=1 3: Pitch Velocity Sensitivity=48 / Curve=2	none
Filter Envelope				
Filter Env Depth	-38 to +38	-63 to +63	-63 to +63	-48 to +48
Attack scaling T1 **[model] = [zencore]**	0 = 0 255 = 8 511 = 140 767 = 508 1023 = 728	0 = 0 255 = 156 511 = 412 767 = 552 1023 = 620	0 = 0 255 = 60 511 = 404 767 = 680 1023 = 1023	0 = 0 255 = 40 511 = 220 767 = 500 1023 = 620
Decay Scaling T3 **[model] = [zencore]**	0 = 0 255 = 88 511 = 572 767 = 852 1023 = 1023	0 = 0 255 = 268 511 = 680 767 = 820 1023 = 988	0 = 4 255 = 152 511 = 568 767 = 876 1023 = 1023	0 = 0 255 = 232 511 = 592 767 = 792 1023 = 924
Sustain Scaling L3 **[model] = [zencore]**	0 = 0 255 = 308 511 = 608 767 = 888 1023 = 1023	0 = 0 255 = 164 511 = 516 767 = 824 1023 = 1023	0 = 0 255 = 156 511 = 384 767 = 676 1023 = 1023	0 = 0 255 = 168 511 = 488 767 = 796 1023 = 1023
Release Scaling T4 **[model] = [zencore]**	0 = 0 255 = 300 511 = 580 767 = 904 1023 = 1023	0 = 0 255 = 316 511 = 700 767 = 836 1023 = 988	0 = 0 255 = 172 511 = 576 767 = 876 1023 = 1023	0 = 0 255 = 272 511 = 608 767 = 788 1023 = 932
Filter Env Key follow	off = 0 / on = -50	none	none	none
Filter Dynamics	none	none	0: TVF Env Vel Sens=0 / curve=0/fixed 1: TVF Env Vel Sens=35 / Curve=1 2: TVF Env Vel Sens=50 / Curve=1 3: TVF Env Vel Sens=40 / Curve=2	none
Amp Envelope				
Attack scaling **[model] = [zencore]**	0 = 0 255 = 16 511 = 192 767 = 572 1023 = 728	0 = 0 255 = 156 511 = 412 767 = 552 1023 = 620	0 = 0 255 = 56 511 = 404 767 = 728 1023 = 1023	0 = 0 255 = 40 511 = 220 767 = 500 1023 = 620
Decay Scaling **[model] = [zencore]**	0 = 0 255 = 848 511 = 632 767 = 852 1023 = 1023	0 = 0 255 = 268 511 = 680 767 = 820 1023 = 988	0 = 12 255 = 172 511 = 588 767 = 892 1023 = 1023	0 = 0 255 = 232 511 = 592 767 = 792 1023 = 924
Sustain Scaling **[model] = [zencore]**	0 = 0 255 = 180 511 = 516 767 = 820 1023 = 1023	0 = 0 255 = 164 511 = 516 767 = 824 1023 = 1023	0 = 0 255 = 220 511 = 476 767 = 736 1023 = 1023	0 = 0 255 = 168 511 = 488 767 = 796 1023 = 1023
Release Scaling **[model] = [zencore]**	0 = 0 255 = 76 511 = 496 767 = 812 1023 = 1023	0 = 0 255 = 316 511 = 700 767 = 836 1023 = 988	0 = 0 255 = 180 511 = 588 767 = 928 1023 = 1023	0 = 0 255 = 272 511 = 608 767 = 788 1023 = 932
Amp Dynamics	none	none	0: Level Vel Sens=0 / Curve=0 Fixed 1: Level Vel Sens=27 / Curve=1 2: Level Vel Sens=47 / Curve=1 3: level Vel Sens=45 / Curve=2	none
Tone Common				
Pitch Drift Cycle*	8	6	6	1
Port Type	Rate	Rate	Time	Time
Port Time	36	40	20	20
Port Start	Pitch	Pitch	Pitch	Pitch
Port Curve	Linear	Linear	Exp-H	Exp-H
Unison Depth	4	3	3	3