

ELFIN-04 POLYSYNTH MIDI IMPLEMENTATION

- 2021-06-05 ISGK Instruments / Hideaway Studio 2025
- <<https://github.com/risgk/digital-synth-vra8-n>>

Concept

- 4-Voice Polyphonic Synthesizer

Details of Controllers

- "OSC1/2 (SAW/N/SQ)": OSC1 Wave / OSC2 Wave
 - Values 0-15: OSC1 SAW / OSC2 SAW
 - Values 16-63: OSC1 SAW / OSC2 SQUARE
 - Values 64-87: OSC1 SQUARE / OSC2 NOISE
 - Values 88-111: OSC1 SQUARE / OSC2 SAW
 - Values 112-127: OSC1 SQUARE / OSC2 SQUARE
- "SUB (SIN/NOISE/SQ)": SUB Osc Wave
 - Values 0-31: SIN
 - Values 32-95: NOISE
 - Values 96-127: SQUARE
- "LFO (T/2/SA/S&H/SQ)": LFO Wave
 - Values 0-15: Triangle (Key Trigger: Off)
 - Values 16-47: Triangle 2 (Key Trigger: On)
 - Values 48-79: SAW Down (Key Trigger: On)
 - Values 80-111: RANDOM (Key Trigger: On)
 - Values 112-127: SQUARE Up (Key Trigger: On)
- "LFO FADE TIME": This affects "LFO DEPTH" but not "MODULATION DEPTH"
- "PITCH > CUTOFF": In other words, Filter CUTOFF Keyboard Tracking (Off/Half/Full)
- "LEGATO (OFF/ON)": LEGATO Portamento
 - When LEGATO Portamento is ON, Single Trigger is forced
- "K. ASN (L/L/P/H/LST)": Key ASSIGN / Trigger Mode
 - Values 0-47: Lowest Note / Single Trigger
 - Values 48-79: Paraphonic (Lowest and Highest Notes, Duophonic) / Single Trigger
 - Values 80-111: Highest Note / Single Trigger
 - Values 112-127: LAST One Note / Multi Trigger
- "EXP BY VEL (OFF/ON)": EXPRESSION Control By (Note ON) VELOCITY
- "DAMP AND ATTACK": DAMP the EG level to zero before ATTACK (0-63: Off, 64: Slowest, 127: Fastest)
- "POLY / UNISON MODE": Switches between Polyphonic and Detuned Unison Mode
 - Values 0-63: POLY MODE (Power on Default)
 - Values 64-127: UNISON MODE
- "UNISON DETUNE AMOUNT": Determines degree of detuning between voices in UNISON MODE
 - Values 0-127: 0 = No Detune 127 = Max Detune

MIDI Implementation Chart

[Monophonic Synthesizer] Model: Digital Synth VRA8-N		MIDI Implementation Chart		Date: 2021-06-05 Version: 2.5.1
Function...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	x	1	
Mode	Default Messages Altered	x	3	
Note Number	: True Voice	x	0-127	
Velocity	Note ON	x	o (V=1-127)	When EXP BY VEL is ON
	Note OFF	x	x	
After Touch	Key's Ch's	x	x	
Pitch Bend		x	o	
Control Change	1	x	o	MODULATION DEPTH
	11	x	o	EXPRESSION
	24	x	o	OSC1/2 (SAW/SQ)
	25	x	o	OSC MIX (1/2)
	20	x	o	OSC2 COARSE (-/+)
	21	x	o	OSC2 FINE (-/+)
	29	x	o	SUB (SIN/NOISE/SQ)
	26	x	o	SUB LEVEL
	104	x	o	EG > PITCH (-/+)
	105	x	o	EG > P. TGT (1&2/2)
	16	x	o	CUTOFF
	17	x	o	RESONANCE
	18	x	o	EG > CUTOFF (-/+)
	31	x	o	AMP EG (OFF/ON)
	23	x	o	ATTACK
	19	x	o	DECAY
	27	x	o	SUSTAIN
	28	x	o	RELEASE (OFF/ON)
	14	x	o	LFO (T/2/SA/RND/SQ)
	80	x	o	LFO RATE
	82	x	o	LFO > PITCH (-/+)
	83	x	o	LFO > CUTOFF (-/+)
	81	x	o	LFO DEPTH
	3	x	o	EG > LFO RATE (-/+)
	9	x	o	LFO > P. TGT (1&2/2)
	15	x	o	LFO FADE TIME
	85	x	o	P. BEND RANGE
	86	x	o	PITCH > CUTOFF
	106	x	o	EXP > CUTOFF (-/+)
	107	x	o	EXP > AMP LEVEL
	22	x	o	PORTAMENTO
	30	x	o	LEGATO (OFF/ON)
	87	x	o	K. ASN (L/L/P/H/LST)
	89	x	o	EXP BY VEL (OFF/ON)
	108	x	o	OSC LEVEL
	109	x	o	UNISON DETUNE AMOUNT
	110	x	o	POLY / UNISON MODE
	111	x	o	DAMP AND ATTACK
	90, 112-119	x	x	(RESERVED)
Program Change	: True #	x	o	
		*****	0-7, 127	127: Random Control
System Exclusive		x	x	
System Common	: Song Pos	x	x	
	: Song Sel	x	x	
	: Tune	x	x	
System Real Time	: Clock	x	x	
	: Commands	x	x	
Aux Messages	: Local ON/OFF	x	x	
	: All Notes OFF	x	o 123-127	
	: Active Sense	x	x	
	: Reset	x	x	
Notes				
Mode 1: Omni On, Poly	Mode 2: Omni On, Mono	o: Yes		
Mode 3: Omni Off, Poly	Mode 4: Omni Off, Mono	x: No		