

Waldorf Pulse System Exclusiev Format Version 1.1

1.) Program Dump

Byte Nr.	Value	Description
0	\$F0	Start of System Exclusive
1	\$3E	Waldorf Electronics GmbH Manufacturer ID
2	\$0B	Pulse Machine ID
3	DEV	Entsprich dem Globalparameter Device ID, s. 5.6
4	\$00	Dump Typ, Hier Program Dump
5	PRG	Program Number 0-99 fuer P.1 bis P.99 und P.rn
6	16-112	Oscillator 1 Transpose -48...48
7	0-127	Oscillator 1 Tune -64...63
8	0-2	Oscillator 1 Shape 0: Pulse 1: Saw 2: Triangle
9	0-127	Oscillator 1 Pulsewidth
10	16-112	Oscillator 2 Transpose -48...48
11	0-127	Oscillator 2 Tune -64...63
12	0-3	Oscillator 2 Shape 0: Pulse 1: Saw 2: Triangle 3: Crossmod
13	0-127	Oscillator 2 Pulsewidth
14	0-1	Oscillator 2 Sync 0:off 1:on
15	0-1	Oscillator 2 Keytrack 0:off 1:on
16	16-112	Oscillator 3 Transpose -48...48
17	0-127	Oscillator 3 Tune -64...63
18	0-2	Oscillator 3 Shape 0: Pulse 1: Saw 2: Triangle
19	0-127	Osc 1 Level
20	0-127	Osc 2 Level
21	0-127	Osc 3 Level
22	0-127	Noise Level
23	0-127	LFO 1 Speed
24	0-4	LFO 1 Shape 0:sine 1:tri 2: Saw 3: Pulse 4:Sample & Hold
25	0-127	LFO 2 Speed
26	0-127	LFO 2 Delay
27	0-127	Envelope 1 Attack
28	0-127	Envelope 1 Decay
29	0-127	Envelope 1 Sustain
30	0-127	Envelope 1 Release
31	0-127	Envelope 1 Keytrack -64...63
32	0-3	Envelope 1 Trigger 0:Sg1 1:Sg2 2:rt1 3: rt2
33	0-127	Envelope 2 Attack
34	0-127	Envelope 2 Decay
35	0-127	Envelope 2 Sustain
36	0-127	Envelope 2 Release
37	0-127	Envelope 2 Keytrack -64...63
38	0-3	Envelope 2 Trigger 0:Sg1 1:Sg2 2:rt1 3: rt2
39	0-127	Pitch Mod -64...63
40	0-15	Pitch Mod Source (see table)
41	0-127	Portamento time
42	0-1	Portamento mode 0:normal 1:fingered
43	0-24	Pitchbend Scale
44	0-15	Mod 1 Source (see table)
45	0-127	Mod 1 Amount -64...63
46	0-15	Mod 1 Destination (see table)
47	0-15	Mod 2 Source (see table)
48	0-127	Mod 2 Amount -64...63
49	0-15	Mod 2 Destination (see table)
50	0-15	Mod 3 Source (see table)
51	0-127	Mod 3 Amount -64...63
52	0-15	Mod 3 Destination (see table)
53	0-15	Mod 4 Source (see table)
54	0-127	Mod 4 Amount -64...63

55	0-15	Mod 4 Destination (see table)
56	0-1	Arpeggiator 0:off 1:on
57	0-10	Arpeggiator Range
58	0-31	Arpeggiator Tempo
59	0-127	Arpeggiator Clock 0: extern, 1-127 for 48 to 300 BpM
60	0-3	Arpeggiator Mode 0: up 1: down 2: alternate 3:random
61	0-127	Cutoff Frequency
62	0-127	Cutoff Keytrack -64...63
63	0-127	Cutoff Envelope 1 Sense -64...63
64	0-127	Cutoff Velo Sens -64...63
65	0-15	Cutoff Mod Source (See table)
66	0-127	Cutoff Mod Amount -64...63
67	0-127	Resonance
68	0-127	Volume
69	0-127	Volume Velo Sens -64...63
70	0-127	Panning L64..cnt..r63
71	0	reserved
72	0	reserved
73	0	reserved
74	0	reserved
75	CHK	Checksumme ueber bytes 6 bis 74, bit 7 geloescht
76	¥F7	End of System Exclusive

## 2.) Program Bulk Dump

Byte Nr.	Value	Description
0	¥F0	Start of System Exclusive
1	¥3E	Waldorf Electronics GmbH Manufacturer ID
2	¥0B	Pulse Machine ID
3	DEV	Entsprich dem Globalparameter Device ID, s. 5.6
4	¥01	Dump Typ, Hier Program Bulk Dump
5	PRG	Program Number 0-39 fuer P.1 bis P.40
6	16-112	Oscillator 1 Transpose -48...48
7	0-127	Oscillator 1 Tune -64...63
8	0-2	Oscillator 1 Shape 0: Pulse 1: Saw 2: Triangle
9	0-127	Oscillator 1 Pulsewidth
10	16-112	Oscillator 2 Transpose -48...48
11	0-127	Oscillator 2 Tune -64...63
12	0-3	Oscillator 2 Shape 0: Pulse 1: Saw 2: Triangle 3: Crossmod
13	0-127	Oscillator 2 Pulsewidth
14	0-1	Oscillator 2 Sync 0:off 1:on
15	0-1	Oscillator 2 Keytrack 0:off 1:on
16	16-112	Oscillator 3 Transpose -48...48
17	0-127	Oscillator 3 Tune -64...63
18	0-2	Oscillator 3 Shape 0: Pulse 1: Saw 2: Triangle
19	0-127	Osc 1 Level
20	0-127	Osc 2 Level
21	0-127	Osc 3 Level
22	0-127	Noise Level
23	0-127	LFO 1 Speed
24	0-4	LFO 1 Shape 0:sine 1:tri 2: Saw 3: Pulse 4:Sample & Hold
25	0-127	LFO 2 Speed
26	0-127	LFO 2 Delay
27	0-127	Envelope 1 Attack
28	0-127	Envelope 1 Decay
29	0-127	Envelope 1 Sustain
30	0-127	Envelope 1 Release
31	0-127	Envelope 1 Keytrack -64...63

32	0-3	Envelope 1 Trigger 0:Sg1 1:Sg2 2:rt1 3: rt2
33	0-127	Envelope 2 Attack
34	0-127	Envelope 2 Decay
35	0-127	Envelope 2 Sustain
36	0-127	Envelope 2 Release
37	0-127	Envelope 2 Keytrack -64...63
38	0-3	Envelope 2 Trigger 0:Sg1 1:Sg2 2:rt1 3: rt2
39	0-127	Pitch Mod -64...63
40	0-15	Pitch Mod Source (see table)
41	0-127	Portamento time
42	0-1	Portamento mode 0:normal 1:fingered
43	0-24	Pitchbend Scale
44	0-15	Mod 1 Source (see table)
45	0-127	Mod 1 Amount -64...63
46	0-15	Mod 1 Destination (see table)
47	0-15	Mod 2 Source (see table)
48	0-127	Mod 2 Amount -64...63
49	0-15	Mod 2 Destination (see table)
50	0-15	Mod 3 Source (see table)
51	0-127	Mod 3 Amount -64...63
52	0-15	Mod 3 Destination (see table)
53	0-15	Mod 4 Source (see table)
54	0-127	Mod 4 Amount -64...63
55	0-15	Mod 4 Destination (see table)
56	0-1	Arpeggiator 0:off 1:on
57	0-10	Arpeggiator Range
58	0-31	Arpeggiator Tempo
59	0-127	Arpeggiator Clock 0: extern, 1-127 for 48 to 300 BpM
60	0-3	Arpeggiator Mode 0: up 1: down 2: alternate 3:random
61	0-127	Cutoff Frequency
62	0-127	Cutoff Keytrack -64...63
63	0-127	Cutoff Envelope 1 Sense -64...63
64	0-127	Cutoff Velo Sens -64...63
65	0-15	Cutoff Mod Source (See table)
66	0-127	Cutoff Mod Amount -64...63
67	0-127	Resonance
68	0-127	Volume
69	0-127	Volume Velo Sens -64...63
70	0-127	Panning L64..cnt..r63
71	0	reserved
72	0	reserved
73	0	reserved
74	0	reserved
75	CHK	Checksumme ueber bytes 6 bis 74, bit 7 geloescht
76	\$F7	End of System Exclusive

### 3.) Global Parameter Dump

Byte Nr.	Value	Description
0	F0	Start of System Exclusive
1	3E	Waldorf Electronics GmbH Manufacturer ID
2	0B	Pulse Machine ID
3	DEV	Entsprich dem Globalparameter Device ID, s. 5.6
4	08	Dump Typ, Hier Program Bulk Dump
5	0-99	Startup Program 1-99/random
6	54-74	Master tune 430...450 Hz
7	0-127	Control X
8	0-16	MIDI Channel 0: omni 1-16: Channel 1-16
9	0-126	Device ID

10	CHK	Checksumme ueber bytes 6 bis 9, bit 7 geloescht
11	\$F7	End of System Exclusive

#### 4.) Program Dump Request

Byte Nr.	Value	Description
0	\$F0	Start of System Exclusive
1	\$3E	Waldorf Electronics GmbH Manufacturer ID
2	\$0B	Pulse Machine ID
3	DEV	Entsprich dem Globalparameter Device ID, s. 5.6
4	\$40	Dump Typ, Hier Program Dump Request
5	PRG	Program Number 0-99 fuer P.1 bis P.99 und P.rn
6	\$F7	End of System Exclusive

#### 5.) Program Bulk Dump Request

Byte Nr.	Value	Description
0	\$F0	Start of System Exclusive
1	\$3E	Waldorf Electronics GmbH Manufacturer ID
2	\$0B	Pulse Machine ID
3	DEV	Entsprich dem Globalparameter Device ID, s. 5.6
4	\$41	Dump Typ, Hier Program Bulk Dump Request
5	PRG	Program Number 0-99 fuer P.1 bis P.99 und P.rn
6	\$F7	End of System Exclusive

#### 6.) Global Parameter Dump Request

Byte Nr.	Value	Description
0	\$F0	Start of System Exclusive
1	\$3E	Waldorf Electronics GmbH Manufacturer ID
2	\$0B	Pulse Machine ID
3	DEV	Entsprich dem Globalparameter Device ID, s. 5.6
4	\$48	Dump Typ, Hier Global Parameter Dump Request
5	\$F7	End of System Exclusive

#### 7.) Controller Asignments

Hex	Dec	Beschreibung
01	1	Modulation Wheel
02	2	Breath Controller
05	5	Portamento time Parameter
07	7	Main Volume
0A	10	Panning Parameter 0-127 for L64...r63
0E	14	Envelope 1 Attack 0-127
0F	15	Envelope 1 Decay 0-127
10	16	Envelope 1 Sustain 0-127
11	17	Envelope 1 Release 0-127

12	18	Envelope 2 Attack	0-127
13	19	Envelope 2 Decay	0-127
14	20	Envelope 2 Sustain	0-127
15	21	Envelope 2 Release	0-127
18	24	LF01 Speed	0-127
19	25	LF01 Shape	0:sin 1:tri 2:saw 3:pls 4:S-H
1A	26	LF02 Speed	0-127
1B	27	LF02 Delay	0-127
1C	28	Envelope 1 Keytrack	0-127 for -64...63
1D	29	Envelope 1 Trigger	0: sg1 1: sg2 2: rt1 3: rt2 see 5.41
1E	30	Envelope 2 Keytrack	0-127 for -64...63
1F	31	Envelope 2 Trigger	0: sg1 1: sg2 2: rt1 3: rt2 see 5.41
20	32	Osc 1 Semitone	16...112 representing -48...48
21	33	Osc 1 Tune	0-127 for -64...63
22	34	Osc 1 Shape	0: Pulse 1: Sawtooth 2: Triangle
23	35	Osc 1 Pulsewidth	0-127
24	36	Osc 2 Semitone	16...112 representing -48...48
25	37	Osc 2 Tune	0-127 for -64...63
26	38	Osc 2 Shape	0: Pulse 1: Sawtooth 2: Triangle 3: Crossmod
27	39	Osc 2 Pulsewidth	0-127
28	40	Osc 2 Keytrack	0: off, 1: on
29	41	Osc 2 Sync	0: off, 1: on
2A	42	Osc 3 Semitone	16...112 representing -48...48
2B	43	Osc 3 Tune	0-127 for -64...63
2C	44	Osc 3 Shape	0: Pulse 1: Sawtooth 2: Triangle
2D	45	Osc 1 Level	0-127
2E	46	Osc 2 Level	0-127
2F	47	Osc 3 Level	0-127
30	48	Noise Level	0-127
32	50	Cutoff Frequency	0-127
33	51	Cutoff Keytrack	0-127 for -64...63
34	52	Cutoff Env1 Sens	0-127 for -64...63
35	53	Cutoff Velo Sens	0-127 for -64...63
36	54	Cutoff Mod S0urce	0-15 See 5.51
37	55	Cutoff Mod Amount	0-127 for -64...63
38	56	Resonance	0-127
39	57	Volume	0-127
3A	58	Volume Velo Sens	0-127 for -64...63
3C	60	Pitch Mod Source	0-15 See 5.51
3D	61	Pitch Mod Amount	0-127 for -64...63
3E	62	Portamento Mode	0: normal 1: fingered
3F	63	Pitchbend Scale	0-24
40	64	Sustain Switch	
66	102	Arpeggiator Active	0: off 1: on
67	103	Arpeggiator Range	1-10 Oktaven
68	104	Arpeggiator Tempo	0-15 0:1/1 1: 1/2. 2:1/2t 3: 1/2 4: 1/4. 5:1/4t 6: 1/4 7: 1/8. 8:1/8t 9: 1/8 10: 1/16. 11:1/16t 12: 1/16 13: 1/32. 14:1/32t 15: 1/32
69	105	Arpeggiator Clock	0: extern, 1-127 for 48 to 300 BpM
6A	106	Arpeggiator Mode	0: up 1: down 2: alternate 3:random
6C	108	Mod Unit 1 Source	0-15 see 5.51
6D	109	Mod Unit 1 Amount	0-127 for -64...63

6E	110	Mod Unit 1 Destination 0-15 see 5.52
6F	111	Mod Unit 2 Source 0-15 see 5.51
70	112	Mod Unit 2 Amount 0-127 for -64...63
71	113	Mod Unit 2 Destination 0-15 see 5.52
72	114	Mod Unit 3 Source 0-15 see 5.51
73	115	Mod Unit 3 Amount 0-127 for -64...63
74	116	Mod Unit 3 Destination 0-15 see 5.52
75	117	Mod Unit 4 Source 0-15 see 5.51
76	118	Mod Unit 4 Amount 0-127 for -64...63
77	119	Mod Unit 4 Destination 0-15 see 5.52

## 8.) Modulationsquellen

Zur besseren Orientierung ist eine Tabelle mit allen zur Verfuegung stehenden Modulationsquellen auf das Geraet aufgedruckt. (s. 3.x)

Die Modulationsquellen im einzelnen:

0 off	Konstant Null, es findet keine Modulation statt
1 LFO1	Das Signal des LFO1 (s. 5.31 LFO1)
2 LFO1*Modwheel	Das Signal des LFO1 mit dem Wert des Modulationsrades (MIDI Controller #1) multipliziert
3 LFO1*Aftertouch	Das Signal des LFO1 mit MIDI Aftertouch multipliziert
4 LFO2	Das Signal des LFO2 (s. 5.32 LFO1)
5 LFO2*Envelope 1	Das Signal des LFO2 mit der ersten Huellkurve multipliziert
6 Envelope 1	Die erste Huellkurve
7 Envelope 2	Die zweite Huellkurve
8 Velocity	MIDI Note-On Velocity
9 Keytrack	MIDI Notenummer
10 Pitch follow	Prinzipiell wie Keytrack, hier wird jedoch Portamento beruecksichtigt.
11 Pitchbend	MIDI Pitch Bend
12 Modwheel	MIDI Modulationsrad (MIDI Controller #1)
13 Aftertouch	MIDI Aftertouch
14 Breath Ctr.	MIDI Breath Controller (MIDI Controller #2)
15 Control X	Selectable Controller (s. 7.0 Globalparameter)

## 9.) Modulationsziele

Zur besseren Orientierung ist auch eine Tabelle mit allen zur Verfuegung stehenden

Modulationszielen auf das Geraet aufgedruckt. (s. 3.x)

Die Modulationsziele im einzelnen:

0 Pitch	Tonhoehe aller Oszillatoren
1 Osc1 Pitch	Tonhoehe fuer Oszillator 1
2 Osc2 Pitch	Tonhoehe fuer Oszillator 2
3 Osc3 Pitch	Tonhoehe fuer Oszillator 3
4 Pulswidth 1	Pulsbreite Oszillator 1
5 Pulswidth 2	Pulsbreite Oszillator 2
6 Osc1 Level	Lautstaerke Oszillator 1
7 Osc2 Level	Lautstaerke Oszillator 2
8 Osc3 Level	Lautstaerke Oszillator 3
9 Noise Level	Lautstaerke des Rauschgenerators
10 Cutoff	Filter Frequenz
11 Resonance Filter	Resonanz
12 Volume	Gesamtlautstaerke

13 Panning	Stereo Position
14 LFO1 Speed	Frequenz des LFO1
15 Mod1 Amount	Modulationstiefe der Modulationseinheit 1