Wave Index Table

December 3, 2017

Preamble

This document provides a table of all of the implemented waveforms for use in the *plebitp* wavetable. Wave names that end in W utilize the wave parameter to change how that wave sounds. Wave names that contain Pulse 1, 2, or H utilize the pulse parameters to produce a pulse effect of that type. At the end of the Wave Index Table is some information on the pulse and wave parameters and how they affect the waveforms. Waveforms that are red do not work properly yet.

Wave Index Table

Basic Waves (00-1F)

00	Silence	08	Saw Pulse	10		18	Half-Sine
01	Square	09	Sine Pulse	11		19	Half-Sine Pulse
02	Triangle	0A	Square NES W	12		1A	N Sine W
03	Saw	0B	Square NES Pulse W	13		1B	N Sine Pulse W
04	Sine	0C	Square Vortex	14	Blacmange	1C	N Sine Pulse 2 W
05	White Noise	0D	Square Pulse Vortex	15		1D	N Sine Pulse H W
06	Square Pulse 1	0E	Square Pulse 2	16	Sine Pulse 2	1E	N Half-Sine W
07	Triangle Pulse 1	0F	Square Pulse H	17	Sine Pulse H	1F	N Half-Sine Pulse W

Specialized Waves (20-3F)

20	Mux Wave (Shared)	28	30		38
21	Mux Wave (Swap)	29	31	Wave Piecewise	39
22	Mux Wave (Swap2)	2A	32	Wave Piecewise Pulse Control	3A
23	Mux Pulse Control	2B	33		3B
24	Mux Pulse2 Control	2C	34		3C
25	Mux Pulse H Control	2D	35		3D
26		2E	36		3E
27		2F	37		3F

Untitled Section

40	48	50	58
41	49	51	59
42	4A	52	5A
43	4B	53	5B
44	4C	54	5C
45	4D	55	5D
46	4E	56	5E
47	4F	57	5F

Percussion and Noise (60-7F)

60	Noise 0	68	70	78
61	Noise 1	69	71	79
62	Noise 2 [P1]	6A	72	7A
63	Noise 3 [P1W]	6B	73	7B
64	Bongo	6C	74	7C
65		6D	75	7D
66		6E	76	7E
67		6F	77	7F

Untitled Section

80	88	90	98
81	89	91	99
82	8A	92	9A
83	8B	93	9B
84	8C	94	9C
85	8D	95	9D
86	8E	96	9E
87	8F	97	9F

Untitled Section

A0	A8	B0	B8
A1	A9	B1	B9
A2	AA	B2	BA
A3	AB	B3	BB
A4	AC	B4	BC
A5	AD	B5	BD
A6	AE	B6	BE
A7	AF	B7	BF

Untitled Section

C0	C8	D0	D8
C1	C9	D1	D9
C2	CA	D2	DA
C3	CB	D3	DB
C4	CC	D4	DC
C5	CD	D5	DD
C6	CE	D6	DE
C7	CF	D7	DF

Untitled Section

E0	E4	E8	EC
E1	E5	E9	ED
E2	E6	EA	EE
E3	E7	EB	EF

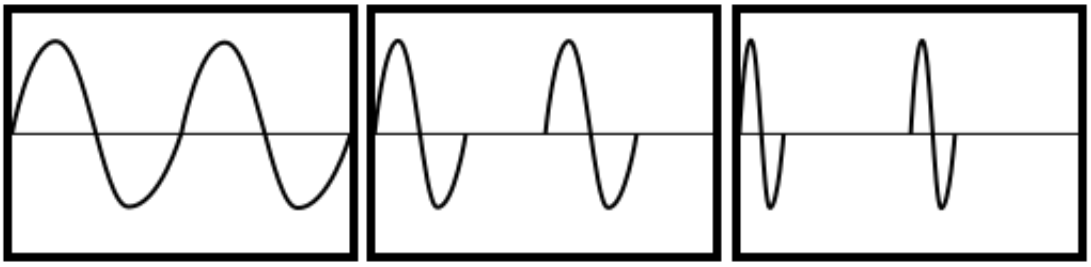
Wave Functions

F0		F4	Set Mux Gen 1	F8		FC	Dec Loop Ctr, Jump if not 0
F1		F5	Set Mux Gen 2	F9		FD	Set Custom Jump
F2	Set Wave1	F6	Note Fine Tune	FA	Set Repeat Ctr	FE	Jump to Custom Jump
F3	Set Wave2	F7		FB	Set Loop Ctr	FF	Jump to Index

The Pulse Table

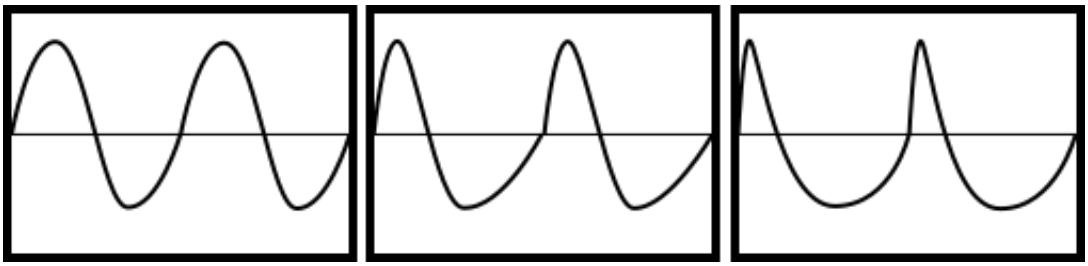
Pulse1 waveforms modulate by contracting their frequencies toward the beginning of pulses, leaving the rest of what the pulse would be (had it not been modulated), as silence.

Sine Pulse 1 [00..80..E0]



Pulse2 is the same idea, but instead of leaving the end for silence, it stretches the "down-valley" (or trough, whatever you want to call it) of the sound to be longer or shorter.

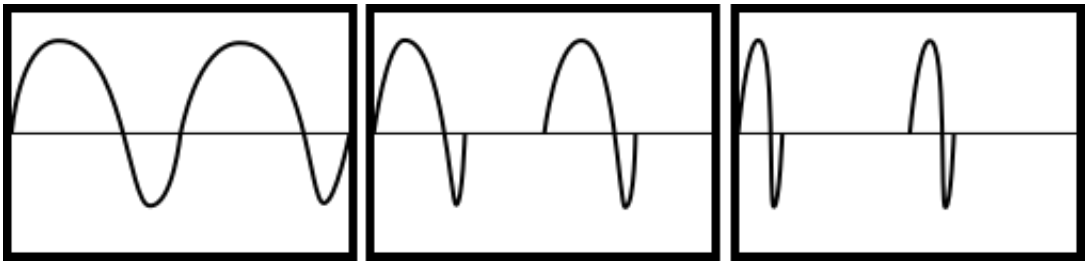
Sine Pulse 2 [80..40..10]



Pulse 2 is only implemented by certain waveforms that have troughs. For example: Square, Sine, and Triangle.

PulseH, Pulse Hybrid, Combines these effects. It applies Pulse1, then Pulse2 inside of the range of the already modulated waveform.

Sine Pulse Hybrid {2[20..20..20] 1[FF..80..10]}



Each track has the two pulse parameters and the Pulse Table is how your song interacts with the pulse parameters.

Entries 0000 to 6FFF add pulse to pulse parameter 1.

Entries DFFF to 7000 subtract pulse (DFFF is -1.)

EXXX Sets the pulse parameter to XXX0.

Entries that begin with F are functions.

F0	Set Pulse 2	F8	
F1	Add Pulse 2	F9	
F2		FA	
F3		FB	Set Loop Counter
F4		FC	Dec Loop Counter, Jump if not 0
F5		FD	Set Custom Jump
F6		FE	Jump to Custom Jump
F7		FF	Jump to index

The Wave Parameter

[Index] [Wave Name] [Description] (Uses Wave parameters 1 or 2):

Some waveforms utilize the wave parameters, but the effect that the wave parameter has on a waveform is dependant on that waveform.

[0A-0B] Square NES W (W1)

Changes how strong the effect of making the square wave similar to a gameboy/NES's square, I don't think it sounds right yet.

[1A-1D] N Sine W (W1)

N Sine duplicates a number of sine waves and shrinks them into the space of 1 normal sine's pulse. Therefore, say wave parameter was set to 2 for a normal N Sine (not pulse.) That sine would be effectively scaled up one octave.

[1E-1F] N Half-Sine W (W1)

Does the same as N Sine W, but with only the top half of a sine wave, in a sort of repeating bell shape.

[20-25] Multiplexed Waves (W1, W2)

Multiplexed waves have to parameters: the ratio of phase between the multiplexed waves, and the ratio of amplitude between them.

20's, 21's, and 22's multiplex effect parameters are bound to the wave parameters. For these, Wave 1 defines the ratio of phase between the two waves. Wave 2 controls the ratio of amplitude between the waves.

23, 24, and 25 all have different ways of interacting with the multiplex effect parameters.

23 uses Pulse1 as the ratio of phase between the waves. Wave 1 controls ratio of amplitude.

24 uses Pulse2 as the ratio of phase between waves, this one is the most useful because you can still use Pulse1 without changing the multiplexer effects. Wave 1 controls ratio of amplitude.

25 uses Pulse1 as the ratio of phase between waves and Pulse2 as the ratio of amplitude.

[63] Noise 3 (W1)

For Noise 1 to 3, Pulse defines the seed that produces the timbre. Noise 3 averages the timbre of a number of different seeds together, which functions as a configurable rudimentary lo-pass filter.