

Wave Index Table

September 4, 2016

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 or 2] 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.

Wave Index Table

Basic Waves (00-1F)

00	Silence	01	Square	02	Triangle	03	Saw
04	Sine	05	Random	06	Square Pulse	07	Triangle Pulse
08	Saw Pulse	09	Sine Pulse	0A	Square NES W	0B	Square NES Pulse W
0C		0D		0E	Square Pulse2	0F	Square PulseH
10		11		12		13	
14		15		16	Sine Pulse2	17	Sine PulseH
18	Half-Sine	19	Half-Sine Pulse	1A	N Sine W	1B	N Sine Pulse W
1C	N Sine Pulse2 W	1D	N Sine PulseH W	1E	N Half-Sine W	1F	N Half-Sine W

Specialized Waves (20-3F)

20	Mux Wave (Shared)	21	Mux Wave (Swap)	22	Mux Wave (Swap2)	23	Mux Wa
24	Mux Wave Pulse2 Control	25	Mux Wave HPulse Control	26	—	27	—
28	—	29	—	2A	—	2B	—
2C	—	2D	—	2E	—	2F	—
30	Last Wave (not impl)	31	Wave Piecewise	32	Wave Piecewise PCTRL	33	—
34	—	35	—	36	—	37	—
38	—	39	—	3A	—	3B	—
3C	—	3D	—	3E	—	3F	—

Untitled Section

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

Percussion and Noise (60-7F)

60	Noise0	61	Noise1	62	Noise2 [P1]	63	Noise3 [P1W]
64	Bongo	65	—	66	—	67	—
68	—	69	—	6A	—	6B	—
6C	—	6D	—	6E	—	6F	—
70	—	71	—	72	—	73	—
74	—	75	—	76	—	77	—
78	—	79	—	7A	—	7B	—
7C	—	7D	—	7E	—	7F	—

Untitled Section

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

Untitled Section

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

Untitled Section

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

Untitled Section

<i>E0</i>	_	<i>E1</i>	_	<i>E2</i>	_	<i>E3</i>	_
<i>E4</i>	_	<i>E5</i>	_	<i>E6</i>	_	<i>E7</i>	_
<i>E8</i>	_	<i>E9</i>	_	<i>EA</i>	_	<i>EB</i>	_
<i>EC</i>	_	<i>ED</i>	_	<i>EE</i>	_	<i>EF</i>	_

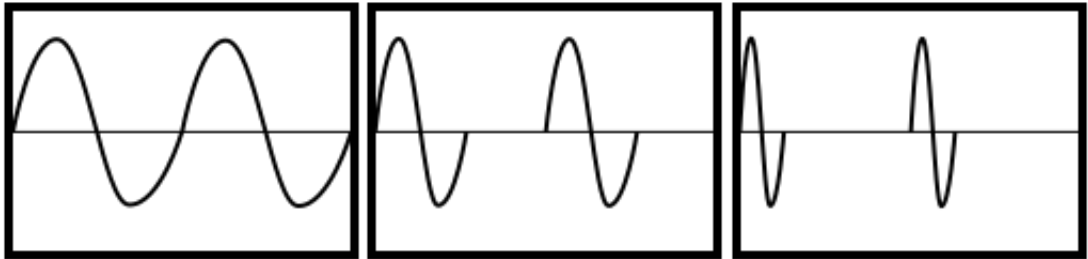
Wave Functions

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

The Pulse Table

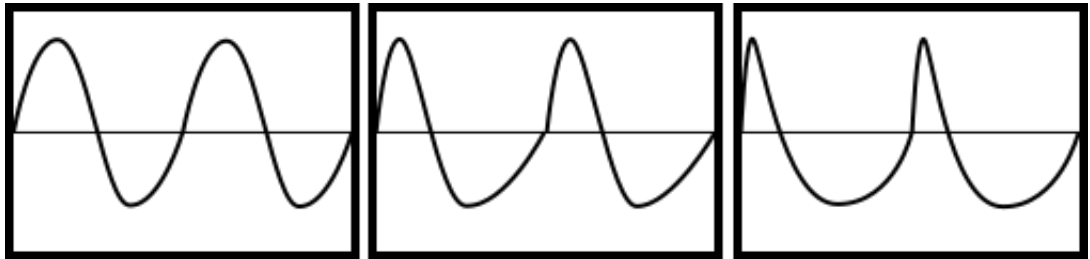
Pulse1 waveforms modulate by contracting their frequencies toward the beginning of pulses, leaving the rest of what the pulse would be (had it not been modulated), as silence.

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.

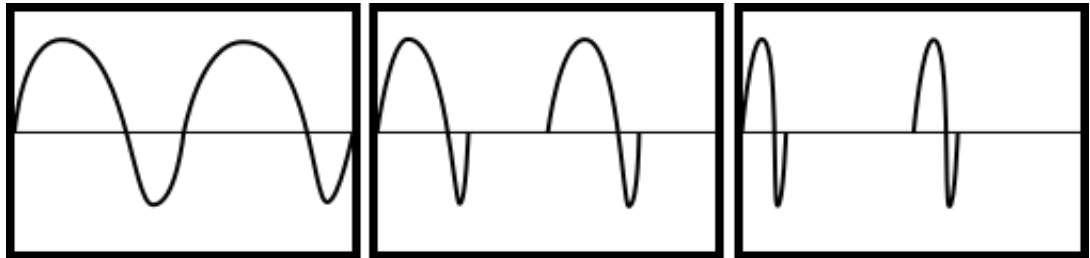
Sine Pulse 2 [80..40..10]



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.

[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): (Wave

Multiplexed waves have two 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.