

Twiddler.cfg Version 4 Binary File Format

Header # of bytes	Settings and table location information (16 bytes)	Used in Twiddler3
1	config format version	✓
2	chord-map offset from start of file, LSB first then MSB	✓
2	mouse-chord-map offset, LSB first then MSB	
2	string table offset, LSB first then MSB	✓
2	mouse mode time - timeout for staying in mouse mode	
2	mouse jump time - allows for a quick double-tap in a direction, within a this timeout, to start out with a faster mouse movement	
1	normal mouse starting speed	
1	mouse jump mode starting speed	
1	mouse acceleration factor	
1	delay on key repeat	
1	options byte bit 0x01: key repeat enabled bit 0x02: mass storage mode enabled on power-on	✓

Default config example data (hex)		
Location	Value	Note
0000	04	Version 4
0001	10 00	Address 0010
0003	F8 01	Address 01F8
0005	1F 02	Address 021F
0007	DC 05	
0009	7F 01	
000B	03	
000C	06	
000D	0A	
000E	64	
000F	05	key repeat and mass storage enabled

Chord Map # of bytes	Entries of four bytes, terminated with an all-zero entry	Used in Twiddler3
2	Chord representation, LSB first then MSB	✓
1	HID modifier byte for this HID key code, or use FF for sequence	✓
1	HID key code (see notes), or sequence index	✓

Default config example data (hex)		
Location	Value	Note
0010	00 08	O OOLO
0012	00	no modifiers
0013	2A	BACKSPACE
0014	44 40	O MMOM
0016	00	no modifiers
0017	2B	TAB

00A4	80 02	O OMOL
00A6	20	SHIFT
00A7	21	'3' (i.e. '#')

01C8	20 02	O ORRO
01CA	FF	sequence
01CB	00	Index 0
01C8	20 12	S ORRO
01CA	FF	sequence
01CB	01	Index 1

4	End of table delimiter	☐
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01F4	00 00 00 00	End of table
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Mouse Map # of bytes	Entries of three bytes, terminated with an all-zero entry	Used in Twiddler3
2	Chord representation, LSB first then MSB	
1	Mouse action byte	

3	End of table delimiter	
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Sequence Map # of bytes	Variable-length entries, terminated with a 0-length entry	Used in Twiddler3
2	Length of sequence entry, LSB first then MSB. First sequence is known as index 0, next sequence is known as index 1, etc.	✓
1	HID modifier byte for this HID code in the sequence(see notes)	✓
1	HID key code in the sequence (see notes)	✓
	... additional 2-byte sets depending on length of sequence ...	✓

4	End of table delimiter	✓
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Default config example data (hex)		
Location	Value	Note
01F8	08 00	
01FA	02	

021C	00 00 00	End of table
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Default config example data (hex)		
Location	Value	Note
021F	0A 00	10 byte entry(index 0)
0221	00	no modifiers
0222	17	't'
0223	00	no modifiers
0224	0B	'h'
0225	00	no modifiers
0226	08	'e'
0227	00	no modifiers
0228	2C	SPACE
0229	0A 00	10 byte entry(index 1)
022B	20	SHIFT
022C	17	't' (i.e. 'T')
022D	00	no modifiers
022E	0B	'h'
022F	00	no modifiers
0230	08	'e'
0231	00	no modifiers
0232	2C	SPACE
0233	08 00	8 byte entry(index 2)
0235	00	no modifiers
0236	12	'o'
0237	00	no modifiers
0238	09	'r'
0239	00	no modifiers
023A	2C	SPACE

0283	00 00	End of table
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Notes: Config version 4 format was used in Twiddler 2.1. Not all file information is used in Twiddler 3  
 HID key codes referenced from: [http://www.usb.org/developers/hidpage/Hut1\\_12v2.pdf](http://www.usb.org/developers/hidpage/Hut1_12v2.pdf)  
 HID key codes:0xFB through 0xFE are reserved for special purposes (like going to upgrade mode)

### Button Chord Representation Bitmask

Thumb  
 bit 0 4 8 12

Fingers  
 bit 3 bit 2 bit 1  
 bit 7 bit 6 bit 5  
 bit 11 bit 10 bit 9  
 bit 15 bit 14 bit 13

#### THUMBS

0x0001 NUM button  
 0x0010 ALT button  
 0x0100 CTRL button  
 0x1000 SHFT button

#### FINGERS

0x0002 A button  
 0x0004 E button  
 0x0008 SP button

0x0020 B button  
 0x0040 F button  
 0x0080 DEL button

0x0200 C button  
 0x0400 G button  
 0x0800 BS button

0x2000 D button  
 0x4000 H button  
 0x8000 ENT button

### HID Modifier byte Bitmask

0x01 Left Ctrl  
 0x02 Left Shift  
 0x04 Left Alt  
 0x08 Left GUI  
 0x10 Right Ctrl  
 0x20 Right Shift  
 0x40 Right Alt  
 0x80 Right GUI

### Mouse Action Bitmask:

0x01 Button Left  
 0x02 Button Right  
 0x04 Button Middle  
 0x08 Action Button Toggle  
 0x10 Modifier CTRL  
 0x20 Modifier SHIFT  
 0x40 Modifier Alt  
 0x80 Action Double Click

Button Mask 0x07  
 Action Mask 0x88  
 Modifier Mask 0x70

Revision	Notes
0	Initial Release