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Storm Interface 450 Series USB Encoder Configuration Utility User Guide

450 Series USB Encoder
Configuration Utility

To customise the output codes just download and install the Configuration Utility from **www.storm-interface.com** This lets you do the following :-

Scan the encoder in order to	Confirm the encoder is connected Show which version of firmware is installed Show which keypad is set (4, 12 or 16 key) Show which code table is selected (default, alternate or customised)
And also	Change the keypad setting Change the selected code table Change the buzzer volume (450i only) Change the brightness on illuminated keypads (450i only) Self test the encoder
For re-legendable keypads	Customise the code table by assigning a USB code to each key Add a modifier in front of each USB code Save this configuration Export or Import configuration files
For maintenance purposes	Update the encoder firmware if a new version is released Restore all settings to original factory defaults.

F.A.Q's

Does this encoder need a special driver ?	No – it works with the standard USB keyboard driver.
Does the utility work on any pc ?	At present it does not run on Linux or Mac OS. The utility requires Windows 10 or later.

Download from **www.storm-interface.com** and install on a Windows PC (Win 10 or later)

Run the application.

Plug in the encoder + keypad.

Scan the encoder. The configuration will be displayed as below on the home screen.
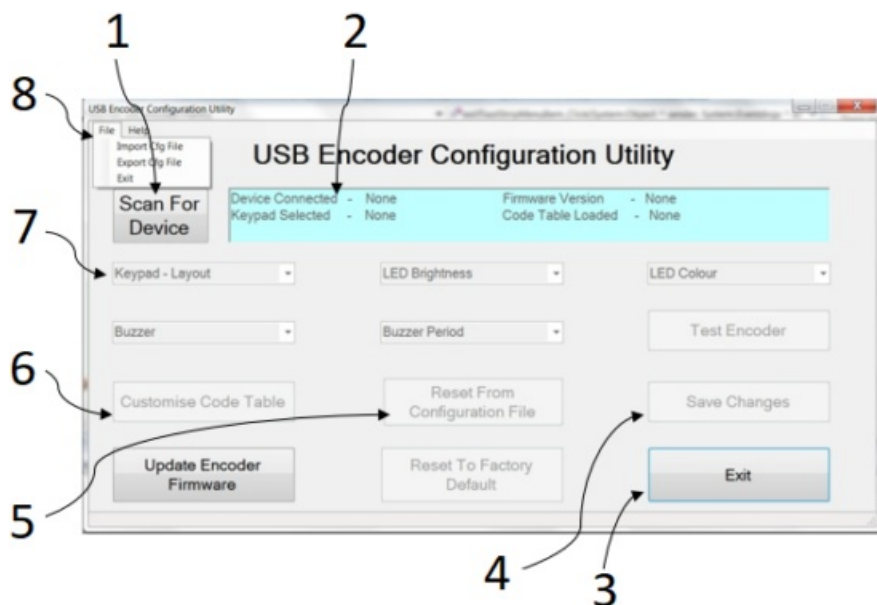
If you have a standard layout keypad then the output from the default code table will correspond to the keypad
If you have a keypad designed to allow customisation of keytop graphics then you need to assign a code to each key.

The configuration file is saved to the pc and to the encoder when the **Save Changes** button is pressed.

Use the dropdown boxes to change settings on the 450i Encoder for

- Brightness
- Buzzer

LED Colour is White only

1. Press "**Scan for Device**" to find connected encoder
2. Device details are displayed
    • Encoder Type
    • Keypad
    • Code Table
    • Firmware Version
3. Press "**Exit**"

4. Press "**Save Changes**" to save your changes onto the pc and also onto the encoder

5. Press "**Reset from Configuration File**" to use the configuration that you have already created and saved

6. Press "**Customise Code Table**" to change the customised code table

   See following pages for the Code Table Screen

7. To change the code table use the drop down box

8. Use the File Menu to Import /Export Configuration Files

For product updates / reset, use the buttons for

- Updating the firmware if a new version is released
- Reset all settings to factory defaults
- Self Test the encoder

Customising the Code Table

The utility displays a screen that shows for each key

- Which USB code is assigned
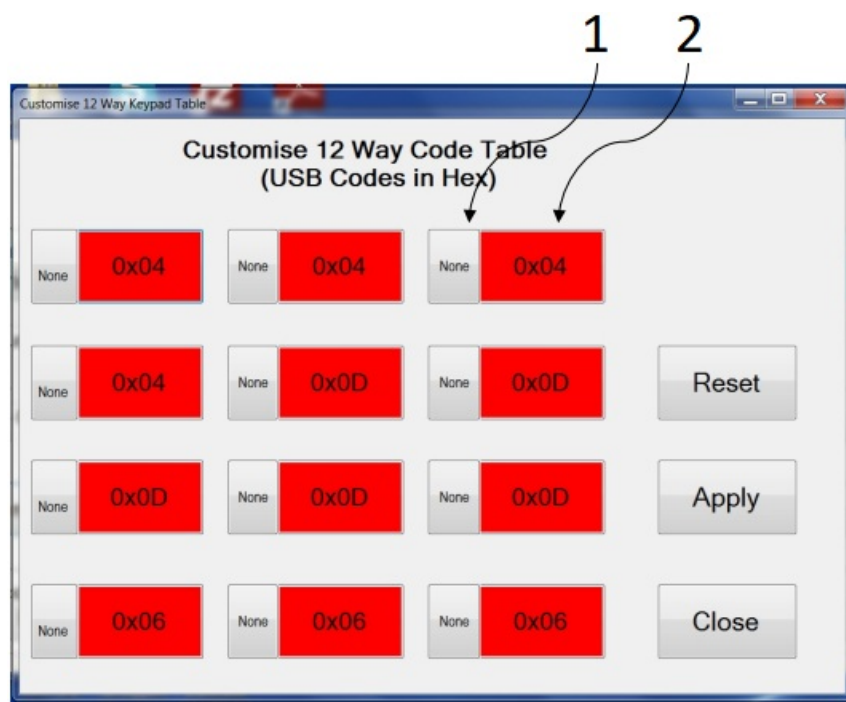- Which modifier (if any) is applied to the USB code.

Click on each position and select a USB code from the drop down list.

Add a modifier for each position if required.

Press "**Apply**" to reserve your changes.
This does not save the changes at this stage.

Press "**Close**" to return to the home screen

"**Reset**" reloads the default code table

1. Modifier
2. USB Code

The full list of USB Codes is shown on the following pages.
USB Codes that have been checked in Word are shown in the relevant column, for example :

			Un-shifted	Shifted
Code	0x04	gives	**a**	**A**

Where the same USB code gives a different character dependent on the host language setting then this is shown in the relevant language column.

The actual function of the USB code is determined by the application; not all codes have a function in every application.

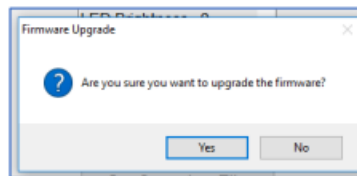Updating the Firmware

When you update the firmware the utility keeps a copy of your configuration (including any customised codes, and reloads it back on the encoder as part of the firmware update process

Download the new firmware from **www.storm-interface.com**,

Connect the encoder.

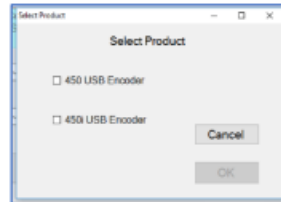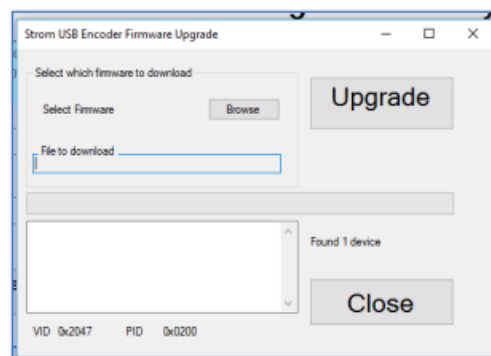Press **Scan for Device** to find the connected encoder

Press **Update Encoder Firmware** and press **Yes**
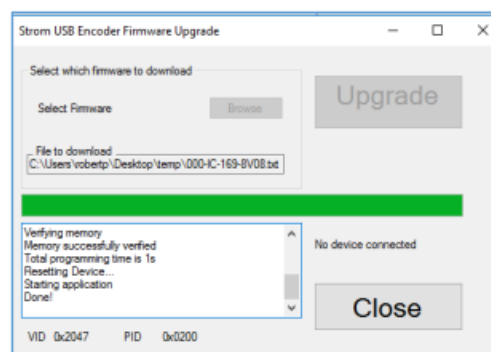
Select encoder type and press **OK**

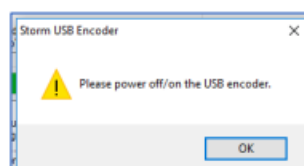Browse to locate the firmware file and press **Upgrade**

The progress bar shows in green.

When progress is complete press **Close**

Unplug the cable

Re-connect the cable and press **OK**

Press **Scan For** and the new version of firmware will be displayed

Full Code Table Reference

450 Series USB Encoder with Firmware Revision 8v04 Using Generic HID Keyboard DriverWhen customising the code table on the encoder you can place a modifier in front of the USB Code						**Any Language differences (using Word)**						
e.g. E1 , 34 will give you @				English U.K. (if different to U.S.)		**English U.S.**			French	German	Spanish	
USB Usage ID (Dec)	**USB Usage ID (Hex)**	**Usage Name**	Note	Un-shifted	Shifted	**Un-shifted**	**Shifted**	**Num lock**			
00	00	Reserved (no event indicated)	9								
01	01	Keyboard Error Roll Over	9								
02	02	Keyboard POST Fail	9								
03	03	Keyboard Error Undefined	9								
04	04	Keyboard a and A	4			**a**	**A**				
05	05	Keyboard b and B				**b**	**B**				
06	06	Keyboard c and C	4			**c**	**C**				
07	07	Keyboard d and D				**d**	**D**				
08	08	Keyboard e and E				**e**	**E**				
09	09	Keyboard f and F				**f**	**F**				

10	0A	Keyboard g and G			g	G				
11	0B	Keyboard h and H			h	H				
12	0C	Keyboard i and I			i	I				
13	0D	Keyboard j and J			j	J				
14	0E	Keyboard k and K			k	K				
15	0F	Keyboard l and L			l	L				
16	10	Keyboard m and M	4		m	M				
17	11	Keyboard n and N			n	N				
18	12	Keyboard o and O	4		o	O				
19	13	Keyboard p and P	4		p	P				
20	14	Keyboard q and Q	4		q	Q				
21	15	Keyboard r and R			r	R				
22	16	Keyboard s and S	4		s	S				
23	17	Keyboard t and T			t	T				
24	18	Keyboard u and U			u	U				
25	19	Keyboard v and V			v	V				
26	1A	Keyboard w and W	4		w	W				

27	1B	Keyboard x and X	4			x	X			
28	1C	Keyboard y and Y	4			y	Y			
29	1D	Keyboard z and Z	4			z	Z			
30	1E	Keyboard 1 and !	4			1	!			
31	1F	Keyboard 2 and @	4	2	"	2	@			
32	20	Keyboard 3 and #	4	3	£	3	#			
33	21	Keyboard 4 and $	4			4	$			
34	22	Keyboard 5 and %	4			5	%			
35	23	Keyboard 6 and ^	4			6	^			
36	24	Keyboard 7 and &	4			7	&			
37	25	Keyboard 8 and *	4			8	*			
38	26	Keyboard 9 and (	4			9	(			
39	27	Keyboard 0 and)				0	)			
40	28	Keyboard Return (ENTER)	5							
41	29	Keyboard ESCAPE								
42	2A	Keyboard DELETE (Backspace)	13							
43	2B	Keyboard Tab								

44	2C	Keyboard Spacebar									
45	2D	Keyboard – and (underscore)4	4			–	_				
46	2E	Keyboard = and +	4			=	+				
47	2F	Keyboard [and {	4			[	{				
48	30	Keyboard] and }	4			]	}				
49	31	Keyboard \ and |				\	|				
50	32	Keyboard Non-US # and ~	2	#	~	\	|				
51	33	Keyboard ; and :	4			;	:				
52	34	Keyboard ' and "	4	'	@	'	"				
53	35	Keyboard Grave Accent and Tilde	4			`	~				
54	36	Keyboard, and <	4			,	<				
55	37	Keyboard . and >	4			.	>				
56	38	Keyboard / and ?	4			/	?				
57	39	Keyboard Caps Lock11	11								
58	3A	Keyboard F1				F1					
59	3B	Keyboard F2				F2					
60	3C	Keyboard F3				F3					
61	3D	Keyboard F4				F4					

62	3E	Keyboard F5			**F5**				
63	3F	Keyboard F6			**F6**				
64	40	Keyboard F7			**F7**				
65	41	Keyboard F8			**F8**				
66	42	Keyboard F9			**F9**				
67	43	Keyboard F10			**F10**				
68	44	Keyboard F11			**F11**				
69	45	Keyboard F12			**F12**				
70	46	Keyboard PrintScreen	1						
71	47	Keyboard Scroll Lock	1 1						
72	48	Keyboard Pause	1						
73	49	Keyboard Insert	1						
74	4A	Keyboard Home	1		**Home**	**Select line of text**			
75	4B	Keyboard PageUp	1		**PgUp**	**Select text above**			
76	4C	Keyboard Delete Forward	1 , 1 4		**Delete**	**Select text forward**			

77	4D	Keyboard End	1		**End**	**Select to end**			
78	4E	Keyboard PageDown	1		**PgDn**	**Select to page down**			
79	4F	Keyboard RightArrow	1		**Goes right**	**Select to right**			
80	50	Keyboard LeftArrow	1		**Goes left**	**Select to left**			
81	51	Keyboard DownArrow	1		**Goes down**	**Select line down**			
82	52	Keyboard UpArrow	1		**Goes up**	**Select line up**			
83	53	Keypad Num Lock and Clear	1 1		**Toggles Numlock**				
84	54	Keypad /	1		**/**				
85	55	Keypad *			*****				
86	56	Keypad –			**–**				
87	57	Keypad +			**+**				
88	58	Keypad ENTER			**Enter**				
89	59	Keypad 1 and End			**End**		**1**		
90	5A	Keypad 2 and Down Arrow			**Down arrow**		**2**		
91	5B	Keypad 3 and PageDn			**Page down**		**3**		

92	5C	Keypad 4 and Left Arrow			**Left arrow**	**4**			
93	5D	Keypad 5				**5**			
94	5E	Keypad 6 and Right Arrow			**Right arrow**	**6**			
95	5F	Keypad 7 and Home			**Home**	**7**			
96	60	Keypad 8 and Up Arrow			**Up arrow**	**8**			
97	61	Keypad 9 and PageUp			**Page up**	**9**			
98	62	Keypad 0 and Insert				**0**			
99	63	Keypad . and Delete			**.**	**.**			
100	64	Keyboard Non-US \ and		3, 6		\				
101	65	Keyboard Application	1 2						
102	66	Keyboard Power	9						
103	67	Keypad =			= on Mac O/S only				
104	68	Keyboard F13							
105	69	Keyboard F14							
106	6A	Keyboard F15							

107	6B	Keyboard F16								
108	6C	Keyboard F17								
109	6D	Keyboard F18								
110	6E	Keyboard F19								
111	6F	Keyboard F20								
112	70	Keyboard F21								
113	71	Keyboard F22								
114	72	Keyboard F23								
115	73	Keyboard F24								
116	74	Keyboard Execute								
117	75	Keyboard Help								
118	76	Keyboard Menu								
119	77	Keyboard Select								
120	78	Keyboard Stop								
121	79	Keyboard Again								
122	7A	Keyboard Undo								
123	7B	Keyboard Cut								

124	7C	Keyboard Copy									
125	7D	Keyboard Paste									
126	7E	Keyboard Find									
127	7F	Keyboard Mute									
128	80	Keyboard Volume Up									
129	81	Keyboard Volume Down									
130	82	Keyboard Locking Caps Lock	12								
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146	92	Keyboard LANG330								
147	93	Keyboard LANG431								
148	94	Keyboard LANG532								
149	95	Keyboard LANG68								
150	96	Keyboard LANG78								
151	97	Keyboard LANG88								
152	98	Keyboard LANG98								
153	99	Keyboard Alternate Erase7								
154	9A	Keyboard SysReq/Attention1								
155	9B	Keyboard Cancel								
156	9C	Keyboard Clear								

157	9D	Keyboard Prior								
158	9E	Keyboard Return								
159	9F	Keyboard Separator								
160	A0	Keyboard Out								
161	A1	Keyboard Oper								
162	A2	Keyboard Clear/Again								
163	A3	Keyboard CrSel/Props								
164	A4	Keyboard ExSel								
224	E0	Keyboard LeftControl								
225	E1	Keyboard LeftShift								
226	E2	Keyboard LeftAlt								
227	E3	Keyboard Left GUI	10, 23							
228	E4	Keyboard RightControl								
229	E5	Keyboard RightShift								
230	E6	Keyboard RightAlt								

231	E7	Keyboard Right GUI	10.24							

Notes on the Code Tables 1-15, 20-34

1 Usage of keys is not modified by the state of the Control, Alt, Shift or Num Lock keys. That is, a key does not send extra codes to compensate for the state of any Control, Alt, Shift or Num Lock keys.

2 Typical language mappings: US: \| Belg: ƒÊ`' FrCa: <}> Dan:f* Dutch: <> Fren:*ƒÊ Ger: #f Ital: u˜ LatAm: }`] Nor:,* Span: }C Swed: ,* Swiss: $' UK: #~.

3 Typical language mappings: Belg:<\> FrCa:á‹â Dan:<\> Dutch:]|[Fren:<> Ger:<|> Ital:<> LatAm:<> Nor:<> Span:<> Swed:<|> Swiss:<\> UK:\| Brazil: \|.

4 Typically remapped for other languages in the host system.

5 Keyboard Enter and Keypad Enter generate different Usage codes.

6 Typically near the Left-Shift key in AT-102 implementations.

7 Example, Erase-Eaze. key.

8 Reserved for language-specific functions, such as Front End Processors and Input Method Editors.

9 Reserved for typical keyboard status or keyboard errors. Sent as a member of the keyboard array. Not a physical key.

10 Windows key for Windows 95, and gCompose.h

11 Implemented as a non-locking key; sent as member of an array.

12 Implemented as a locking key; sent as a toggle button. Available for legacy support; however, most systems should use the non-locking version of this key.

13 Backs up the cursor one position, deleting a character as it goes.

14 Deletes one character without changing position.

15-20 See additional foot notes in the USB spec

21 Toggle double-byte/single-byte mode

22 Undefined, available for other front end language processors

23 Windowing environment key, examples are Microsoft left win key, mac left apple key, sun left meta key

24 Windowing environment key, example are Microsoft right win key, macintosh right apple key, sun right meta key

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Change History

Instructions for Config Utility	Date	Version	Details	
	16 Aug 24	1.0	Split out from Engineering Manual	

USB Configuration Utility		Date	Version	Details
4500-SW01		1 Aug 13	2.1	First Release
		20 Aug 13	3.0	Increased size of modifier button + Increased size of Select Code Combo box.
		12 Nov 13	4.0	Update in line with 8v04 release
		01 Feb 22	5.1	Update user agreement wording

450 Series USB Encoder Config Utility v1.0 Aug 2024

www.storm-interface.com

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Documents / Resources

	Storm Interface 450 Series USB Encoder Configuration Utility [pdf] User Guide 450 Series USB Encoder Configuration Utility, 450 Series, USB Encoder Configuration Utility, Encoder Configuration Utility, Configuration Utility, Utility

References

- **User Manual**