What is QuanClick

QuanClick is a user configurable mouse and keyboard code generator.

It reacts to presses from a 6 button keypad and sends sequences of mouse or keyboard control codes over USB just like a real mouse or keyboard would do as you move or press them.

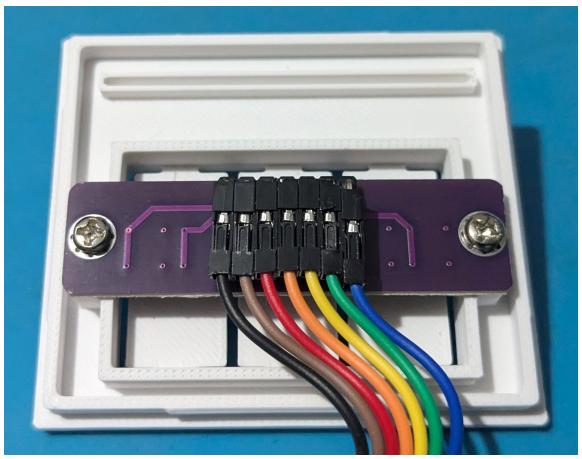
Because you can send sequences of codes (or macros) you can replace many mouse or keyboard actions with just one button press.

For example you can program one button to fill in your entire email address with just one click.

Building the device

Connect up the buttons

Attach the pins from one end of the multiway cable to the pin header on the keypad



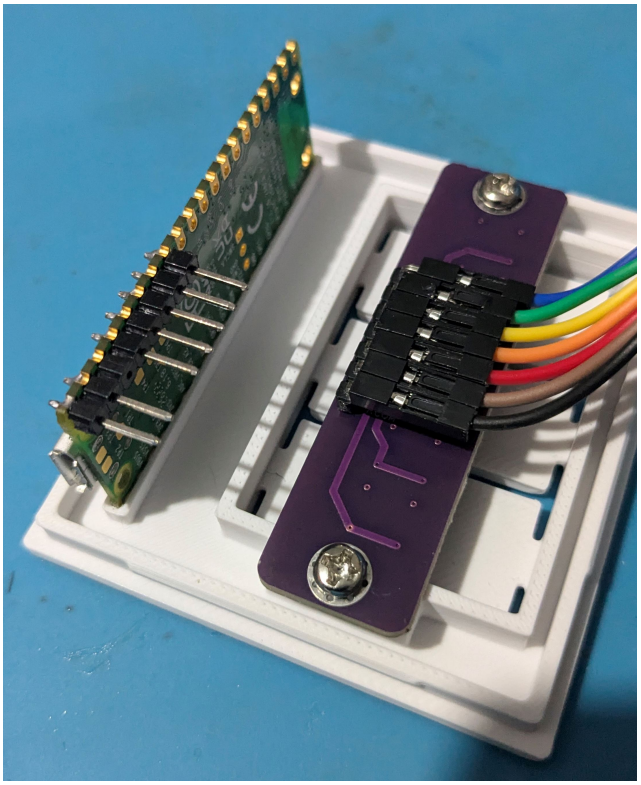
Your multiway cable may not have the same coloured wires as in this photo - that's not important, just that they are all different colours so you can easily identify them either end.

Just make sure all the connectors are pushed in fully.

The connection to the left (in this picture the pin with the black wire) is the common connection, the other 6 are each of the buttons.

Insert the Pico

Carefully insert the Pico into the printed slot as shown in the photo below. Insert one corner first then work the other corner in by pushing down on the edge of the board. It is a firm fit but be careful not to damage the board .

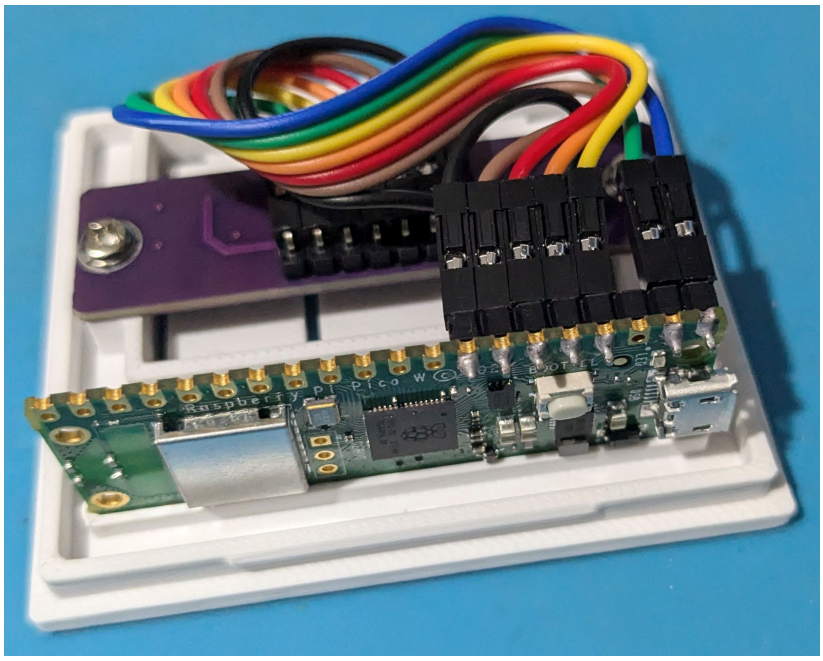


Connect the Pico

Connect the wires to the Pico as shown in the photo matching your appropriate colours between button board and Pico.

Note the gap between connection 2 and 3.

Check that the common wire on the button board is connected to the 7th end connection pin on the Pico



Close the lid

Fit the lid onto the box by aligning the left (non-USB socket) side of the lid first

Check board alignment

Look through the side USB window and check that the bottom of the Pico board is matched into the slot in the base of the case as shown in the photo below

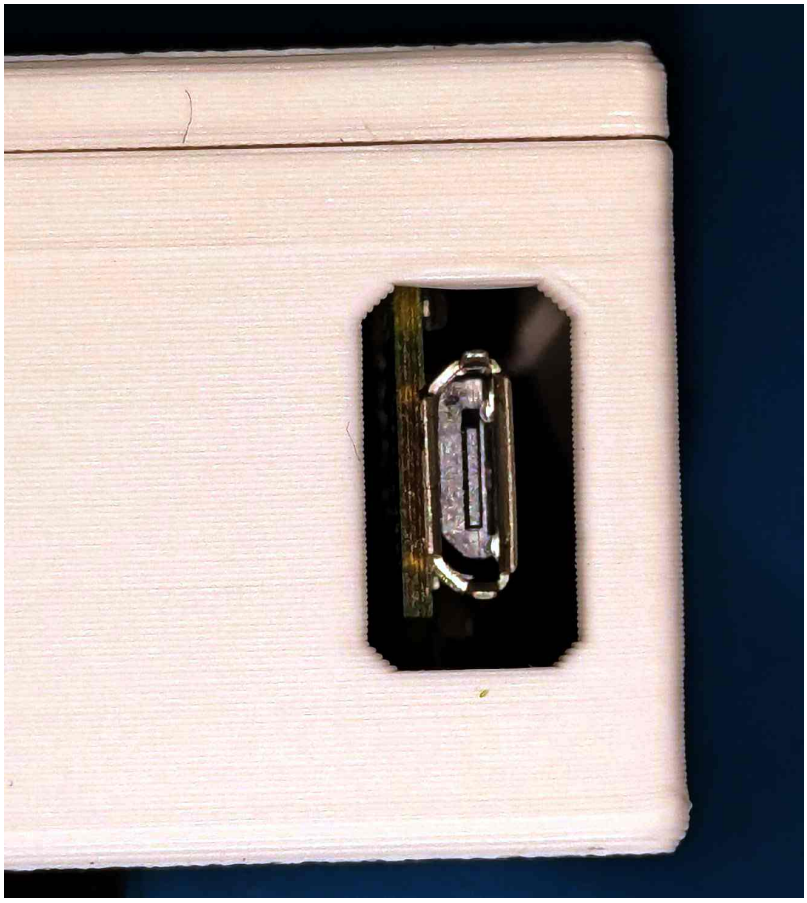
If the board is not aligned then lift the lid and gently move the Pico in its lid slot and try again.

Once the board aligns well then click the lid down.

Check MicroUSB alignment

Look in the side USB window and check the MicroUSB socket sits square in the hole.

Insert the MicroUSB cable into the Pico



Setup the Pico

Plug in the Pico into your computer

- Wait whilst Windows install the com port
- Unplug the Pi Pico

Put the Pico into UF2 download mode

- Hold down the BOOT/SEL button on the Pi Pico using a small screwdriver through the hole in the case
- Plug in Pi Pico
- Release the BOOT/SEL button
- Windows will open an explorer window

Adding CircuitPython to the Pi Pico

Download the CircuitPython 9.1.4 .UF2 file

  - https://circuitpython.org/board/raspberry_pi_pico/
  - drag and drop the download into the Pi Pico root folder

Donload and install Thonny with Python

Thonny website

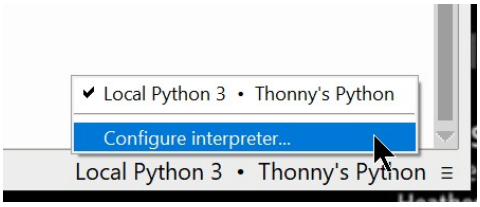
- https://thonny.org/

Github download for portable version

- https://github.com/thonny/thonny/releases/download/v4.1.6/thonny-py38-4.1.6-windows-portable.zip
- Extract all to C:\Users\{user_name}\Thonny
- Run Thonny.exe
  - Language: English (UK)
  - Initial Settings: Raspberry Pi (simple)

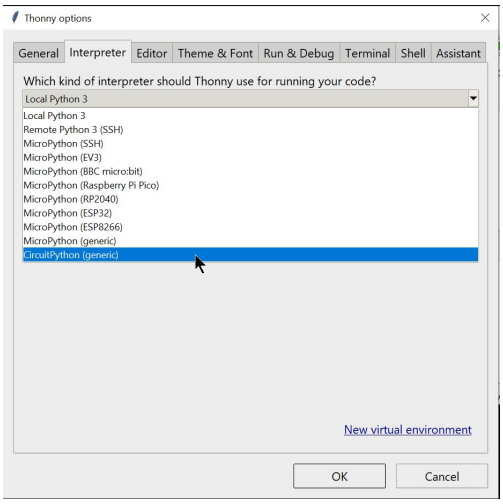
Click on the lower Thonny menu

- Configure interpreter...



Select an interpreter

- CircuitPython (generic)
- Select OK



Thonny should detect the Pico com port and show in the lower menu

You are now setup to program your Pico

Programming the Pico

QuanClick source code

Obtain the source code from

- CHANGE_ME {insert web link here}

Open the QuanClick.py python file in Thonny

- File…
  - Open…
    - This Computer
    - Navigate to file and select Open

Run the script

- Run…
  - Run current script

Changing the macros

The code can be modified to set personal actions for any key, some examples pre-exist in the source code

The definitions are listed in the “button_actions” array at line 27 of the code

There are 3 types of actions – keyboard, mouse_move and mouse_click

The keyboard actions contain Keycode types which are encoded codes for each key and special keys like SHIFT and WINDOWS.

The mouse_move actions contain an x,y co-ordinate move

The mouse_click actions contain Mouse types like LEFT_BUTTON

Appendix

Keycodes

Keycode	Value	Function
A	4	a and A
ALT	226	Alias for LEFT_ALT; Alt is also known as Option (Mac)
APPLICATION	101	also known as the Menu key (Windows)
B	5	b and B
BACKSLASH	49	\ and |
BACKSPACE	42	Delete backward (Backspace)
C	6	c and C
CAPS_LOCK	57	Caps Lock
COMMA	54	, and <
COMMAND	227	Labelled as Command on Mac keyboards, with a clover glyph
CONTROL	224	Alias for LEFT_CONTROL
D	7	d and D
DELETE	76	Delete forward
DOWN_ARROW	81	Move the cursor down
E	8	e and E
EIGHT	37	8 and *
END	77	End (often moves to end of line)
ENTER	40	Enter (Return)
EQUALS	46	=` and ``+
ESCAPE	41	Escape
F	9	f and F
F1	58	Function key F1
F10	67	Function key F10
F11	68	Function key F11
F12	69	Function key F12
F13	104	Function key F13 (Mac)
F14	105	Function key F14 (Mac)
F15	106	Function key F15 (Mac)
F16	107	Function key F16 (Mac)
F17	108	Function key F17 (Mac)
F18	109	Function key F18 (Mac)
F19	110	Function key F19 (Mac)
F2	59	Function key F2
F20	111	Function key F20
F21	112	Function key F21
F22	113	Function key F22
F23	114	Function key F23
F24	115	Function key F24
F3	60	Function key F3
F4	61	Function key F4
F5	62	Function key F5
F6	63	Function key F6
F7	64	Function key F7
F8	65	Function key F8
F9	66	Function key F9
FIVE	34	5 and %
FORWARD_SLASH	56	/ and ?
FOUR	33	4 and $
G	10	g and G

GRAVE_ACCENT	53	` and ~
GUI	227	Alias for LEFT_GUI; GUI is also known as the Windows key or Command (Mac)
H	11	h and H
HOME	74	Home (often moves to beginning of line)
I	12	i and I
INSERT	73	Insert
J	13	j and J
K	14	k and K
KEYPAD_ASTERISK	85	Keypad *
KEYPAD_BACKSLASH	100	Keypad \ and | (Non-US)
KEYPAD_EIGHT	96	Keypad 8 and Up Arrow
KEYPAD_ENTER	88	Keypad Enter
KEYPAD_EQUALS	103	Keypad = (Mac)
KEYPAD_FIVE	93	Keypad 5
KEYPAD_FORWARD_SLASH	84	Keypad /
KEYPAD_FOUR	92	Keypad 4 and Left Arrow
KEYPAD_MINUS	86	Keypad -
KEYPAD_NINE	97	Keypad 9 and PgUp
KEYPAD_NUMLOCK	83	Num Lock (Clear on Mac)
KEYPAD_ONE	89	Keypad 1 and End
KEYPAD_PERIOD	99	Keypad . and Del
KEYPAD_PLUS	87	Keypad +
KEYPAD_SEVEN	95	Keypad 7 and Home
KEYPAD_SIX	94	Keypad 6 and Right Arrow
KEYPAD_THREE	91	Keypad 3 and PgDn
KEYPAD_TWO	90	Keypad 2 and Down Arrow
KEYPAD_ZERO	98	Keypad 0 and Ins
L	15	l and L
LEFT_ALT	226	Alt modifier left of the spacebar
LEFT_ARROW	80	Move the cursor left
LEFT_BRACKET	47	[and {
LEFT_CONTROL	224	Control modifier left of the spacebar
LEFT_GUI	227	GUI modifier left of the spacebar
LEFT_SHIFT	225	Shift modifier left of the spacebar
M	16	m and M
MINUS	45	-` and ``_
N	17	n and N
NINE	38	9 and (
O	18	o and O
ONE	30	1 and !
OPTION	226	Labelled as Option on some Mac keyboards
P	19	p and P
PAGE_DOWN	78	Go forward one page
PAGE_UP	75	Go back one page
PAUSE	72	Pause (Break)
PERIOD	55	. and >
POUND	50	# and ~ (Non-US keyboard)
POWER	102	Power (Mac)
PRINT_SCREEN	70	Print Screen (SysRq)
Q	20	q and Q
QUOTE	52	' and "
R	21	r and R
RETURN	40	Alias for ENTER
RIGHT_ALT	230	Alt modifier right of the spacebar
RIGHT_ARROW	79	Move the cursor right

RIGHT_BRACKET	48	] and }
RIGHT_CONTROL	228	Control modifier right of the spacebar
RIGHT_GUI	231	GUI modifier right of the spacebar
RIGHT_SHIFT	229	Shift modifier right of the spacebar
S	22	s and S
SCROLL_LOCK	71	Scroll Lock
SEMICOLON	51	; and :
SEVEN	36	7 and &
SHIFT	225	Alias for LEFT_SHIFT
SIX	35	6 and ^
SPACE	44	Alias for SPACEBAR
SPACEBAR	44	Spacebar
T	23	t and T
TAB	43	Tab and Backtab
THREE	32	3 and #
TWO	31	2 and @
U	24	u and U
UP_ARROW	82	Move the cursor up
V	25	v and V
W	26	w and W
WINDOWS	227	Labelled with a Windows logo on Windows keyboards
X	27	x and X
Y	28	y and Y
Z	29	z and Z
ZERO	39	0 and)

Mouse codes

Mouse Code	Value	Function
BACK_BUTTON	8	Back mouse button.
FORWARD_BUTTON	16	Forward mouse button.
LEFT_BUTTON	1	Left mouse button.
MIDDLE_BUTTON	4	Middle mouse button.
RIGHT_BUTTON	2	Right mouse button.