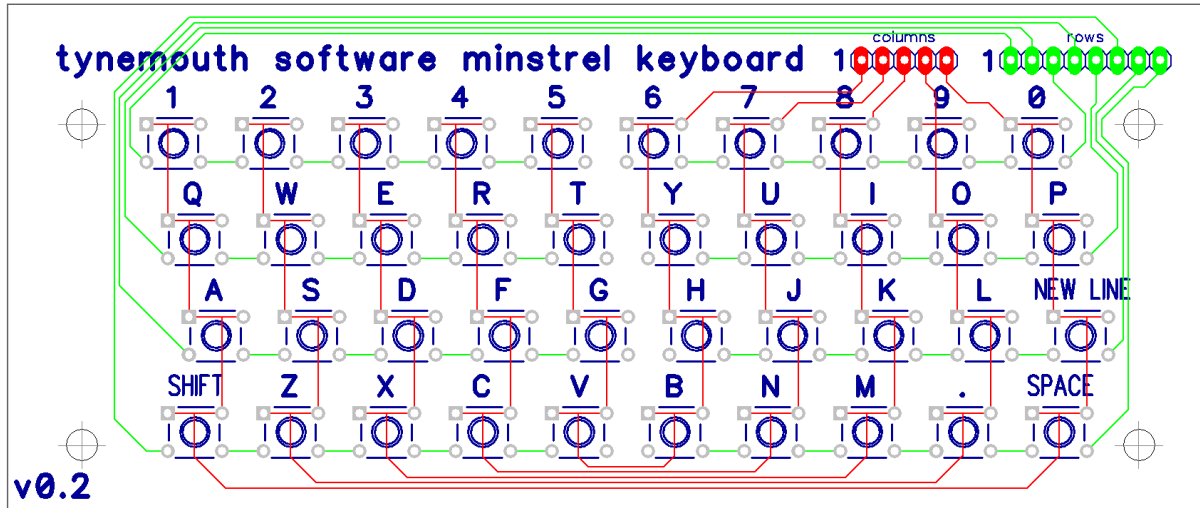


# tynemouth software

## TYNEMOUTH SOFTWARE TACTILE SWITCH KEYBOARD FOR MINSTREL

### PCB LAYOUT



The red traces show the columns, the green the rows. Note: the horizontal pairs of pins on the tactile switches are connected together internally, so the green row circuits pass through the switches.

### MATRIX

The keys are arranged a matrix with 8 rows of 5 keys. This matches the Minstrel ZX80 Clone and ZX81.

	Col 5	Col 4	Col 3	Col 2	Col 1
Row 1	1	2	3	4	5
Row 2	Q	W	E	R	T
Row 4	A	S	D	F	G
Row 6	SHIFT	Z	X	C	V

	Col 1	Col 2	Col 3	Col 4	Col 5
Row 3	6	7	8	9	0
Row 5	Y	U	I	O	P
Row 7	H	J	K	L	NEW LINE
Row 8	B	N	M	.	SPACE

### PINOUTS

The connectors on the top right of the board are numbered from left to right. Pin 1 faces towards the centre.

Row 1	1	2	3	4	5
Row 2	Q	W	E	R	T
Row 3	6	7	8	9	0
Row 4	A	S	D	F	G
Row 5	Y	U	I	O	P
Row 6	SHIFT	Z	X	C	V
Row 7	H	J	K	L	NEW LINE
Row 8	B	N	M	.	SPACE

Col 1	5	T	G	V	6	Y	H	B
Col 2	4	R	F	C	7	U	J	N
Col 3	3	E	D	X	8	I	K	M
Col 4	2	W	S	Z	9	O	L	.
Col 5	1	Q	A	SHIFT	0	P	NEW LINE	SPACE

### PARTS LIST

- 40 x Push to make tactile switch 6mm x 6mm (e.g. Panasonic EVQ-PAC04M)
- 1 x 5 way and 1 x 8 way 0.1 connector to mate with Minstrel. Use plug and socket, or pin headers and cables.