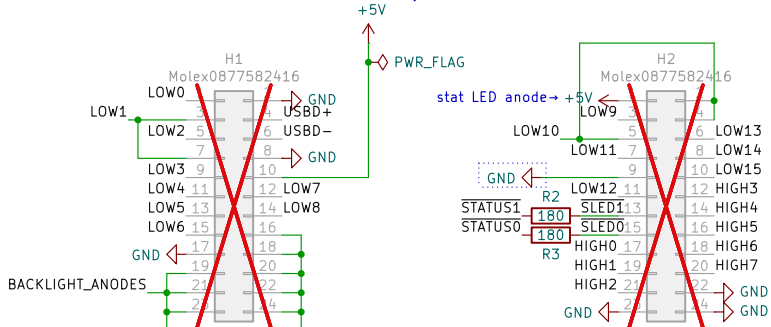


Keyboard controller headers

Must be installed by end user.

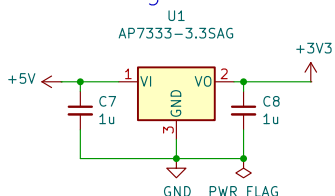


TKL has current limiting resistors for backlight LEDs on the backplane. This version omits them to save space and reduce cost. This is incompatible with the fullsize model.

There are 19 physical sense lines, but most columns are sparse. By unifying two sets of physical lines we can reduce the required pins to 16. See table below.

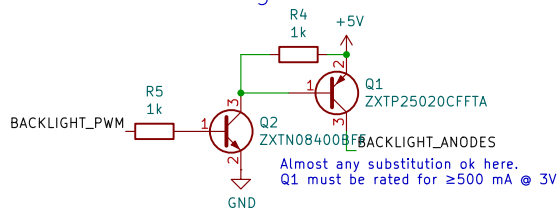
Note that H2 pin 9 (marked above) is the NumLock LED cathode on the fullsize model, but grounded on TKL. This board will blow the NumLock LED if inserted in the fullsize model. Whoops.

Regulator

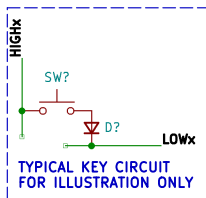


Specified regulator is absurd overkill. This is the SOT-23 non-R pinout, which is surprisingly rare, making substitutions somewhat harder.

Backlight driver



Almost any substitution ok here. Q1 must be rated for ≥500 mA @ 3V



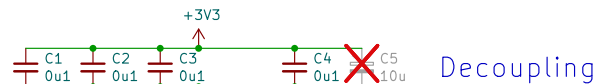
WASD CODE V2B TKL KEY MATRIX WIRING

LOW	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
HIGH 0	PGDN		7	F10	0	9	8	END	4	F5	PRTS	DIP1	3	2	1	
1	RT	DN	N	F12	/		LT	B			RALT	DIP3				
2		M	ENT		(.)	(.)		V	RCTL		LALT	DIP4	C	X	Z	
3		SPACE	H	F11	(')		F6	UP	G			DIP5	F4	K88	ESC	
4	RSHIF	J	\	:	L	K		F	RSUP			DIP6	D	S	A	
5	LSHIF	Y	BSP	[F7]		T		LSUP	MENU		F3	CAPS	TAB	
6		U	P	O	i		R	PAU			SCLK		E	W	Q	
7	PGUP	INS	DEL	6	F9	(-)	F8	=	HOM	5	LCTL		DIP2	F2	F1	(')

Note that LOW1 and LOW10 combine multiple sparse physical columns to save I/Os.

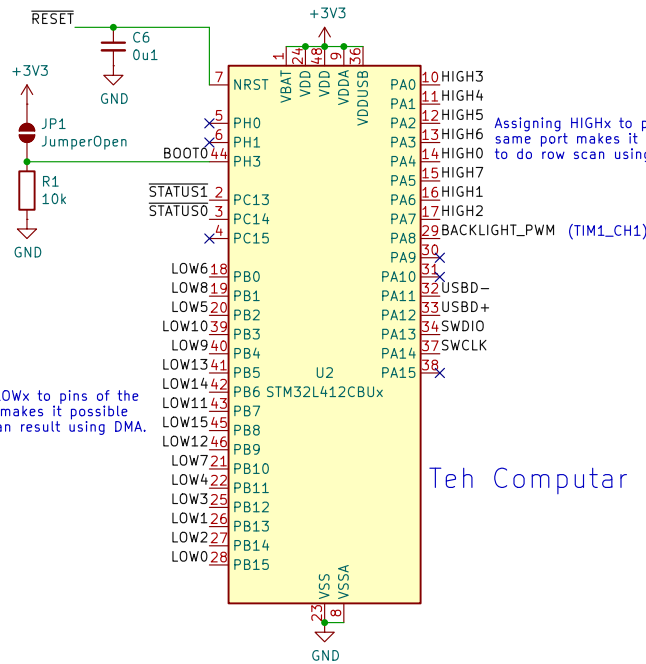
Keys named by PC104 convention, e.g. CAPS next to A, ALTs by SPACE, MENU by RSUP.

DIP1-6 are the configuration switches, which act like keys.



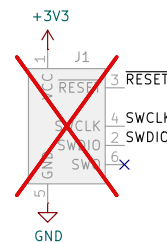
Power stability tests show C5 is not actually necessary.

STM32L4 does not have an internal BOOT pull-down. External resistor req'd for stable boot from flash. Jumper allows recovery if the firmware is thoroughly hosed.



Assigning LOWx pins of the same port makes it possible to read scan result using DMA.

Teh Computer



Debug header

Cliff L. Biffle

Sheet: /
File: wasd-code-upgrade.kicad_sch

Title: reCODE for WASD CODE v2 TKL

Size: A4 Date: 2024-06-10

KiCad E.D.A. 8.0.5

Rev: 2.1

Id: 1/1