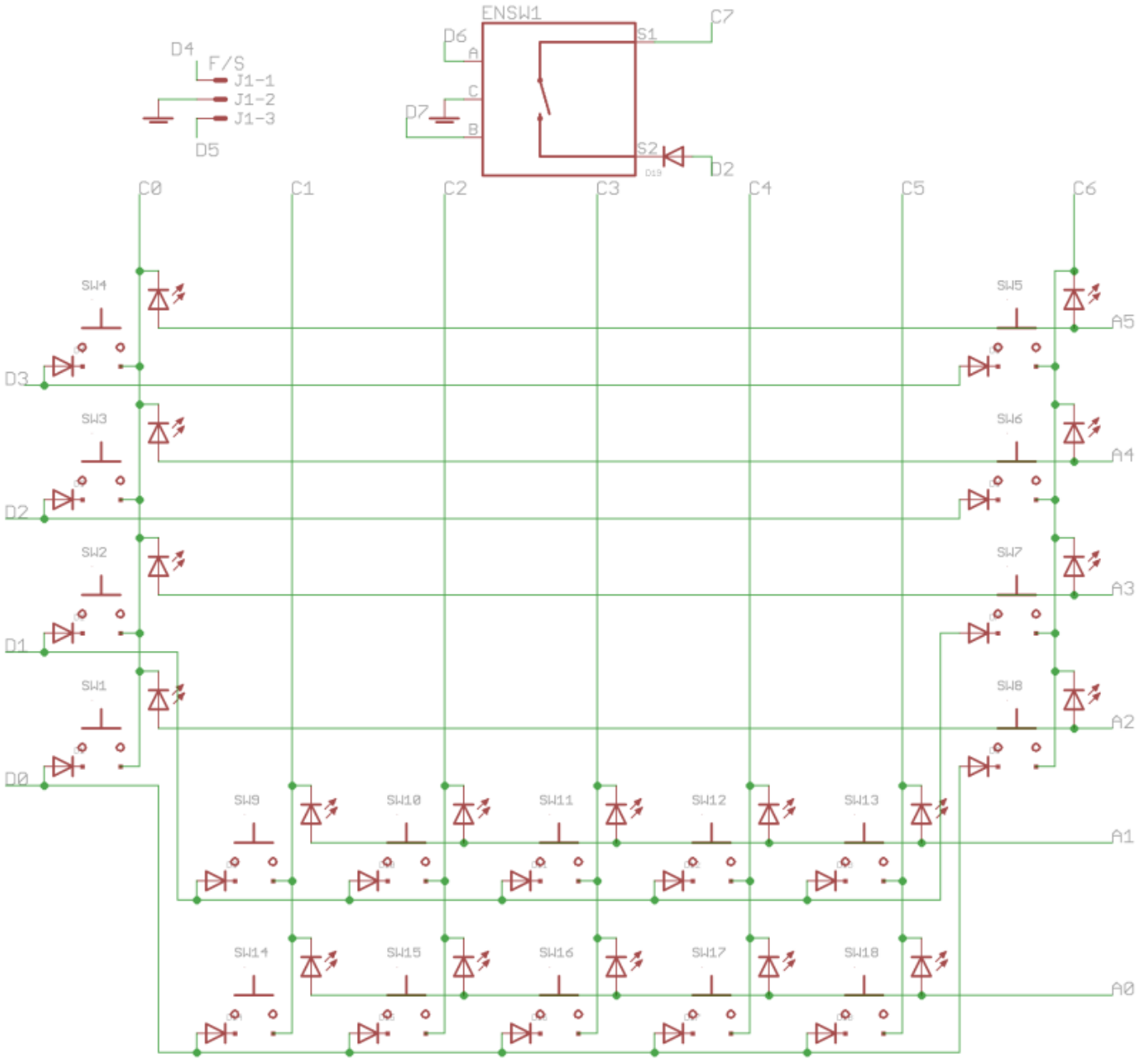
SEQv4+ Jog module

A BLM using 18 illuminated MEC switches placed around an encoder (datawheel). Two spare DIN pins can accommodate a footswitch and a modular gate.

Schematic

The circuit is a BLM, but only four DIN columns are used. The other four DIN pins scan an encoder and two inputs intended as footswitch/gate. Standard SRIO in on J89 and chained out on J89A.

The BLM is as follows:



Note the encoder connected to pins D7 and D6, and header J1 connected directly to D5 and D4. All of the cathode rows are used, even C7 just for the encoder push switch.

Only six DOUT anode columns are used. These are current limited by resistors R1-6.

BOM v1.0 placeholder

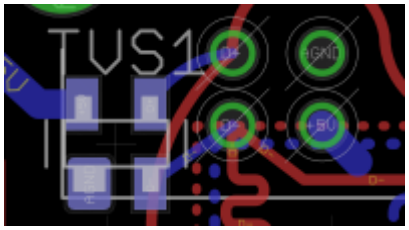
Type	Qty	Value	Package	Parts	Mouser	Reichelt	Conrad	Other	Notes
Resistors									
	6	100-220R 5%	THT	R1-6					
Resistor network									
	1	10k	SOM16	RN1	4816P-T02-103LF				
Capacitors									
	3	100n	1206	C1-3					
Diodes									
	19	1N4148	THT						
LEDs									
	18	various	3mm						put LEDs in the switches first!
ICs									
	1	74HC165	SOIC16	IC2	595-SN74HC165DR				
	2	74HC595	SOIC16	IC1, IC3					
Encoder									
	1	STEC12				STEC12E08			
Switches									
	18	MEC/APEM	3FTH9	SW1-18	642-3FTH9	TASTER 3FTH9	705276 - 62		
Headers									
	1	1*3	male						
	2	2*5	male						
Hardware									
	6	M3 spacer	TBD						
	1	datawheel	DK-38?						
	18	switchcaps	22.5mm		642-1S11-22.5		1S11-22.5		

Versions

v1.0: first release.

Assembly placeholder

Solder the SMT parts first. Ensure the TVS diode is aligned with the larger pin on the larger pad and that the wide edge of the body fits between the silkscreen indicators:



Note this is the board viewed from the bottom; the larger pin is on the bottom-left.

To have a through-hole USB A socket, the pins are quite close together. Be careful to avoid bridges when soldering and **test with a multimeter to ensure no adjacent pins are connected afterwards!**

It goes without saying, but ensure none of the metal parts are touching (e.g. the outside of the USB sockets with J7, the 1N4148 diode with the mounting brackets etc.).

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