

TB-Seq v1.4.1 BOM

This PCB set can be used to either build a standalone sequencer module for use in Ge0sync desktop machines, or as a normal 8hp Euro-rack module.

BUILDING FOR DESKTOP

You only need to build the lower "Sequencer Board" PCB

Install all parts on the PCB numbered 0-100 and 900+ **Do not install those numbered 300+ i.e the Euro power input circuit**

Install the 4x 4pin and 1x 2pin Molex headers

BUILDING FOR EURO MODULE

You need to build both PCB but all MIDI parts should be installed on the upper "Control Board" only.

Install all parts on the PCB's numbered 0-100 and 300+ **Do not install those numbered 900+ i.e. those above the dotted line on the "Sequencer Board"**

Install the 4x 4pin pin as pin headers, and the 6pin (2x3) power and ground pin header. **Do not install the 2pin power header.**

Install the 6pin ISP header on the reverse of the "Sequencer Board"

[Blue parts on on upper "Control Board"](#)

If in doubt read the build guide!

Standard 11mm clearance between the two boards, so just keep that in mind.

In the Mouser column, I've either placed a part number or search terms. Due to part shortages etc, the string that will find you suitable parts to choose from what is in stock etc.

Value	Count	Location	Mouser	Alternatives	Notes
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COMMON PARTS FOR BOTH BUILDS

Value	Count	Location	Mouser	Alternatives	Notes
Resistors					
1% MetalFilm 1/4W - or better (0.1% - but can be expensive)					
3K	1	R3	Search "MFR 3K 1/4w" etc		
4K7	1	R5			
6K8	1	R14			
10K	3	R4,R13,R15			
5% Carbon 1/4W or better (can be 1%)					
1K	7	R6,R7,R8,R9,R10,R11,R12	Search "CFR 1K 1/4w" etc		
10K	2	R1,R2			
Jumper	2	R16, RX-JUMP			R16 may not be on your PCB don't worry - RX Jump is the RX input to the Atmega - MIDI comms, but needs broken if uploading code via an Arduino
Capacitors					
MLCC					
22p	2	C4,C5	mlcc leaded 22pf		2.5mm leg spacing
10n	1	C2	mlcc leaded 0.01uf		2.5mm leg spacing
100n	1	C1	mlcc leaded 0.1uf		2.5mm leg spacing
Electrolytic					
0.33u/25	1	C3	50N5W0R33MEFC4X5		Low profile, but normal 11mm will fit laying flat
Diodes					
3mm LED	1	RDY			Normal 3mm led - any colour
IC					
78L05	1	IC1	511-L78L05ABZ		
ATMEGA328P	1	IC3	556-ATMEGA328P-PU		Programmed version included in kit
MCP4822	1	IC4	579-MCP4822-E/P		
LM328	1	IC5	926-LM358N/NOPB		Must be good quality for DAC multiplier - DO NOT USE TL072 they don't cope well with low voltages - 358N better than 358P but 358P better than any TL
Crystal					
16Mhz	1	Q1	815-ABL-16-B4Y		
Misc					
Reset SW	1	S1-RESET	710-431256031716		

0.96 OLED	1 I2C-DISPLAY		I2C 4pin variant - VCC,GND,SCL,SDA	
Encoder	1 SW1	Aliexpress etc	ALPS_EC12E_SW	24 detents, push switch
2x3	1 JP1		2x3 male header	

EURO RACK ADDITIONAL PARTS FOR MODULE BUILD

Resistors				
5% Carbon 1/4W - or better				
220R	1 R300		Search "CFR 220ohm 1/4w" etc	
1K2	1 R301			
5K6	1 R302			
Jumper	4 BRD-GND,VCC,SCL,SDA			Connect these in the order that matches your display, so BRD-SCL goes to your I2C-SCL pin etc
Diodes				
1N4148	1 D302	512-1N4148		On control PCB
1N5817	2 D301,D302	511-1N5817		
Capacitors				
MLCC				
100n	2 C303,C304	mlcc leaded 0.1uf		2.5mm leg spacing
Electrolytic				
47u/25	2 C300,C301	e.g. UKL1E470MEDANA		Low profile, but normal 11mm will fit laying flat
IC				
6N138	1 IC300	859-6N138		
Misc				
PWR	1			10pin euro power header or 2x5 pin header
MIDI JACK	1 MIDI	806-KCDX-5S-N2		Horizontal PCB mount
PJ301M	8 U1-U8	Thonk etc		Thonkiconn
1x4	4 DISPLAY, CV-OUTPUTS, CV-IN-OUT,ENC-MIDI			1x4 male pin header
2x3	1 JP2			2x3 male pin header
1x10	2 DISPLAY, CV-OUTPUTS, CV-IN-OUT,ENC-MIDI			1x4 male pin header
1x4	1 JP2			2x3 male pin header
11mm	3 Standoff			
3mm	6 Screws			

DESKTOP ADDITIONAL PARTS

Resistors				
5% Carbon 1/4W - or better				
220R	1 R900		Search "CFR 220ohm 1/4w" etc	
1K2	1 R901			
5K6	1 R902			
Diodes				
1N4148	1 D902	512-1N4148		On control PCB
IC				
6N138	1 IC900	859-6N138		
Misc				
PJ301M	8 U1-U8	Thonk etc		Thonkiconn
MIDI JACK	1 MIDI IN	164-2531		Vertical PCB mount
1x4	8 DISPLAY, CV-OUTPUTS, CV-IN-OUT,ENC-MIDI	538-10-11-2043		Molex 4 pin plug
1x2	2 PWR,GND	538-10-11-2023		Molex 2 pin plug
1x4	8 DISPLAY, CV-OUTPUTS, CV-IN-OUT,ENC-MIDI	538-22-04-5048		Molex 4 pin header

1x2
Molex pin
Hookup wire

2 PWR,GND
36

538-22-23-2028
538-08-55-0129

Molex 2 pin header
Molex plug pins, maybe cheaper - cheaper in bulk
For cables from molex plugs to Jack board, encoder, display and power input