

GS1-E version 1.2.1 BOM

Part substitution is fine, if you have lots of 1% resistors, then go for it.

The only thing to watch is the height of electrolytics, low profile ones must be used

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

Blue parts are on the upper control pcb.

If you are sourcing your own transistors, Aliexpress has loads of modern 1015,1815 etc, I've tested these and they work fine

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

included in partial DIY kit

Value	Count	Location	Mouser	Alternatives	Notes
Resistors					
5% Carbon 1/4W					
330R	2	R20,R23	Search "CFR 330ohm 1/4w" etc		
1K	2	R24,R28			
10K	3	R4,R6,R22			
15K	1	R19			
22K	4	R5,R9,R14,R120			R120 is the current limiting cap for the LED, if using red or green instead of blue, then use lower value
33K	2	R2,R18			
47K	6	R11,R12,R13,R17,R26,R118			
56K	2	R7,R15			
100K	6	R1,R16,R21,R25,R27,R119			
150K	1	R10			
560K	1	R8			
Capacitors					
MLCC					
100n	2	C303,C304	mlcc leaded 0.1uf		2.5mm leg spacing
Tantalum					
3.3uF	1	C1	TAP335K035CCS		1uF, 2.2uF - Vary this for different "speed" of overall envelope <= faster up to 10uF for a slow/longer release
Electrolytic					
10u/25v	2	C300,C301			Must be low profile!
Diodes					
1SS133M	7	D1,D2,D3,D4,D5,D6,D7	1SS133M		
1N5817	2	D301,D302	511-1N5817		
3mm LED	1	D22	Red		Any standard 3mm LED
IC					
4558	2	IC1,IC2	RC4558P		Any variant of the 4558 op amp
Transistors					
2SA1015	3	Q2,Q5,Q8	NOS rare part	2SA733,2SA1115	Q7 label on some PCB maybe wrong - it should be the 1015 with extra line on footprint
2SC1815	8	Q1,Q3,Q4,Q6,Q7,Q9,Q10,Q32	NOS rare part	2SC945,2SC2603	

These are provided in the partial kit option.

Misc				
NC/NO	1 SW4	Momentary push switch		https://www.aliexpress.com/item/32918173433.html
PJ301M	4 U1-U4	Thonk etc		Thonkiconn
B50K	1 VR3	Thonk etc	B100K	Song Heui tall trimmer
A100K	1 VR1	Thonk etc	A500K	Song Heui tall trimmer
A250K	2 VR2,VR4	Thonk etc	A1M	Song Heui tall trimmer
PWR	1 SV1			10pin euro power header or 2x5 pin header
1x4	2 JP1,JP2			1x4 male header
1x3	1 JP3			1x3 male header
1x4	2 JP1,JP2			1x4 female header
1x3	1 JP3			1x3 female header
11mm	2 Standoff			
3mm	2 Screws for standoff			

The alternatives are the original Sys100 values.
The original values are biased to the first 50% of travel
We prefer the wider control with the Values as proposed in black text.