

Bill of materials
Table 1. STEVAL-PTOOL4A bill of materials

Item	Q.ty	Ref.	Part/value	Description	Manufacturer	Order code
1	16	C1 C3 C5 C6 C11 C12 C13 C14 C21 C28 C31 C35 C46 C48 C57 C58	100nF, 0201, 16V, +/-10%	CAPACITOR CERAMIC SMD 0201	Würth Elektronik	885012104001
2	2	C2 C4	20p, 0201, 25V, +/-5%	CAPACITOR CERAMIC SMD 0201 (not assembled)	Würth Elektronik	885012004008
3	7	C7, C18, C19, C20, C23, C27, C30	2n2, 0402 (1005 Metric), 16V, +/-10%	CAPACITOR CERAMIC SMD 0402	Würth Elektronik	885012205027
4	5	C8 C22 C26 C29 C42	1nF, 0201, 25V, +/-10%	CAPACITOR CERAMIC SMD 0201	Würth Elektronik	885012204006
5	3	C9 C17 C55	10nF, 0201, 25V, +/-10%	CAPACITOR CERAMIC SMD 0201	Würth Elektronik	885012204004
6	4	C10 C16 C45 C47	1uF, 0201, 16V, +/-20%	CAPACITOR CERAMIC SMD 0201	Würth Elektronik	885012104007
7	1	C15	10uF, 0402, 10V, +/-20%	CAPACITOR CERAMIC SMD 0402	Würth Elektronik	885012105022
8	1	C24	3.3nF, 0402, 16V, +/-10%	CAPACITOR CERAMIC SMD 0402	Würth Elektronik	885012205028
9	2	C25 C41	NM 0201	CAPACITOR CERAMIC SMD 0201 (not assembled)	Any	Any
10	3	C32 C38 C43	220nF, 0603, 50V, +/-10%	CAPACITOR CERAMIC SMD 0603	TDK	CGA3E3X7R1H224K080AE
11	2	C33A C33B	180uF, Radial, 8x9mm, 50V, +/-20%	Cap Pol Radial (Electrolytic); 3.50 mm C X 8.00 mm Dia X 9.00 mm H body	Würth Elektronik	860080674013
12	2	C33 C34	4.7uF, 0603, 25V, +/-10%	CAPACITOR CERAMIC SMD 0603	TDK	C1608X5R1E475K080AC
13	2	C36 C50	100nF, 0402, 50V, +/-10%	CAPACITOR CERAMIC SMD 0402	Würth Elektronik	885012205086
14	4	C37 C39 C40 C51	1uF, 0603, 50V, +/-10%	CAPACITOR CERAMIC SMD 0603	Würth Elektronik	885012206126

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15	1	C44	10pF, 0201, 25V, +/-5%	CAPACITOR CERAMIC SMD 0201	Würth Elektronik	885012004004
16	3	C49 C53 C60	10uF, 1206, 50V, +/-10%	CAPACITOR CERAMIC SMD 1206	Würth Elektronik	885012108022
17	1	C52	22uF, 1210, 25V, +/-10%	CAPACITOR CERAMIC SMD 1210	Würth Elektronik	885012209074
18	1	C54	1uF, 0805, 50V, +/-10%	CAPACITOR CERAMIC SMD 0805	Würth Elektronik	885012207103R
19	1	C56	4.7nF, 0201, 25V, +/-10%	CAPACITOR CERAMIC SMD 0201	Würth Elektronik	885012104008
20	5	D1 D2 D3 D4 D19	BAT54SWFILM, SC-70, SOT-323, 40V, 0.3A	DIODE ARRAY SCHOTTKY 40V SOT323	ST	BAT54SWFILM
21	2	D5 D20	LED RED, 0402 (1005 Metric)	Rectangle with Flat Top, 1.00mm x 0.50mm, LED YELLOW-GREEN	Würth Elektronik	150040RS73220
22	1	D6	LED GREEN, 0402 (1005 Metric)	Rectangle with Flat Top, 1.00mm x 0.50mm, LED YELLOW-GREEN	Würth Elektronik	150040VS73240
23	5	D7 D8 D9 D21 D22	ESDALC6V1-1U2, 0201 (0603 Metric), 3V, 2A, 20W	TVS DIODE 3VWM ST0201 (not assembled)	ST	ESDALC6V1-1U2
24	6	D10 D11 D14 D16 D17 D18	BAT54K, SC-79, SOD-523, 40V, 0.3A	DIODE SCHOTTKY 40V 300MA SOD523	ST	BAT54KFILM
25	3	D12 D13 D15	STPS0560Z, SOD-123, 60V, 0.5A	DIODE SCHOTTKY 60V 500MA SOD123 (not assembled)	ST	STPS0560Z
26	1	FA1	250mA, 0.039" L x 0.020" W x 0.013" H (0.99mm x 0.51mm x 0.33mm), 32V, 0.25 A	FUSE BOARD MNT 250MA 32VDC 0402	Littelfuse	0435.250KRS
27	2	FB1 ,FB2	470 OHM, 0402 (1005 Metric), 0.25A, +/-25%	FERRITE BEAD 470 OHM 0402 1LN	Würth Elektronik	7427927141
28	1	J1	Con3_Strip_SMD, 1A	CONN HEADER SMD 3POS 1.27MM	Sullins Connector Solutions	GRPB031VWTC-RC
29	2	J2 J3	Con2_Strp_SMD, 1A	CONN HEADER SMD 2POS 1.27MM	Harwin	M50-3630242R
30	1	J4	62701421621, 50V, 1A	CONN HEADER SMD 14POS 1.27MM	Würth Elektronik	62701421621

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31	2	J5, J13	250V, 3A	CONN HEADER 2.54mm STR 5POS	Würth Elektronik	61300511121
32	2	J6 J7	Battery+, Battery-, 100A	CONN HEADER R/A 6POS, M3	Würth Elektronik	7461101
33	3	J8 J9 J10	OUT_U1, OUT_V1, OUT_W1, 100A	CONN HEADER R/A 6POS ,M3	Würth Elektronik	7461057
34	2	J11, J12	DNM 0612	TIN DROP JUMPER 0612 (not assembled)		Dimension provided
35	1	J14	DNM, 1A	CONN HEADER 1.27mm 2POS PCB GOLD (not assembled)	Sullins Connector Solutions	GRPB021VWVN-RC
36	1	J16	3Amp/250V, 2.54mm pitch	3 pin Header (not assembled)	Würth Elektronik	61300311121
37	6	JP1, JP2, JP3, JP12, JP14, JP15	0 OHM, 0201, 25V, 50mW, +/-1%	RES SMD 1% 1/20W 0201	Panasonic	ERJ-1GN0R00C
38	1	JP14	0 OHM, 0201, 25V, 50mW, +/-1%	RES SMD 1% 1/20W 0201 (not assembled)	Panasonic	ERJ-1GN0R00C
39	1	L1	BEAD, 0603, 2A	INDUCTOR SMD 0603	Würth Elektronik	782631141
40	1	L2	27uH, 12*12mm, 3.7A, +/-20%	FIXED IND 27UH 3.7A 46 MOHM SMD	Würth Elektronik	744770127
41	4	MH1 MH2 MH3,MH4	M2 HOLE NOT PLATED	Mounting Hole M2 not plated		As per the Gerber
42	1	NTC1	10k, 0603 (1608 Metric), 150V, 125mW, +/-1%	CHIP RESISTOR SMD 1% 1/8W 0603	SEI Stackpole	RNCP0603FTD10K0
43	6	Q1 Q2 Q3 Q4 Q5 Q6	STL220N6F7, PowerFLAT 5x6, 60V, 120A, 187W	N-channel 60 V, 1.9 mO typ., 120 A STripFET™ F7	ST	STL220N6F7
44	1	Q7	2STR2160, TO-236-3, SC-59, SOT-23-3, 60V, 2A, 500mW	TRANS PNP 60V 1A SOT23-3	ST	2STR2160
45	1	Q8	2STR1160, TO-236-3, SC-59, SOT-23-3, 60V, 1A, 500mW	TRANS NPN 60V 1A SOT-23	ST	2STR1160
46	6	R2 R4 R6 R49 R51 R53	27k, 0402, 50V, 62.5mW, +/-1%	CHIP RESISTOR SMD 1% 1/16W 0402	Bourns	CR0402-FX-2702GLF
47	4	R3 R5 R8 R88	3.9k, 0201, 25V, 50mW, +/-1%	CHIP RESISTOR SMD 1% 1/20W 0201	YAGEO	AF0201FR-073K9L
48	3	R7 , R71	10k, 0201, 25V, 50mW, +/-1%	CHIP RESISTOR SMD 1% 1/20W 0201	YAGEO	RC0201FR-0710KL
49	1	R11	10K, 0201, 25V, 50mW, +/- 1%	CHIP RESISTOR SMD 1% 1/20W	YAGEO	RC0201FR-0710KL

Item	Q.ty	Ref.	Part/value	Description	Manufacturer	Order code
				0201 (not assembled)		
50	1	R9	10k, 0402, 50V, 62.5mW, +/-1%	CHIP RESISTOR SMD 1% 1/16W 0402	YAGEO	RC0402FR-0710KL
51	6	R10 R13 R17 R23 R36 R43	220, 0201, 25V, 50mW, +/-1%	RES SMD 1% 1/20W 0201	YAGEO	RC0201FR-07220RL
52	3	R12 R14 R15	2k2, 0201, 25V, 50mW, +/- 1%	CHIP RESISTOR SMD 1% 1/20W 0201	YAGEO	RC0201FR-072K2L
53	7	R16 R18 R19 R26 R31 R91 R92	100R, 0201, 25V, 75mW, +/- 0.1%	CHIP RESISTOR SMD 0.1% 75mW 0201	Vishay/Dale	TNPW0201100RBEEED
54	1	R20	51R, 0201, 25V, 50mW, +/-1%	CHIP RESISTOR SMD 1% 1/20W 0201	YAGEO	RC0201FR-0751RL
55	12	R21 R27 R28 R29 R32 R38 R39 R40 R41 R45 R46 R47	30k, 0201, 25V, 50mW, +/-1%	RES SMD 1% 1/20W 0201	YAGEO	RC0201FR-0730KL
56	7	R22 R24 R35 R37 R42 R44 R66	1k, 0201, 25V, 50mW, +/-1%	RES SMD 1% 1/20W 0201	YAGEO	RC0201FR-071KL
57	8	SB7,SB8,SB9,SB10, SB11,SB12,SB13,SB 14			Any	Any
58	2	R33 R34	6.8k, 0201, 25V, 50mW, +/-1%	CHIP RESISTOR SMD 1% 1/20W 0201	YAGEO	RC0201FR-076K8L
59	12	R48, R50, R54, R55, R58, R60, R65, R67, R69, R72, R74, R75	22R, 0402 (1005 Metric), 50V, 62.5mW, +/-1%	CHIP RESISTOR SMD 1% 1/16W 0402	YAGEO	RC0402FR-0722RL
60	7	R52 R56 R63 R64 R68 R73 R76	22k, 0201, 25V, 50mW, +/-1%	CHIP RESISTOR SMD 1% 1/20W 0201	YAGEO	AC0201FR-0722KL
61	3	R57 R59 R61	DNM, 0402	CHIP RESISTOR SMD 1% 1/8W 0402 (not assembled)		RC0201FR-07220RL
62	1	R62	39k, 0201, 25V, 50mW, +/-1%	CHIP RESISTOR SMD 1% 1/20W 0201	YAGEO	RC0201FR-0739KL
63	1	R70	10K, 0201, 25V, 50mW, +/-1%	CHIP RESISTOR SMD 1% 1/20W 0201 (not assembled)		ERJ-1GJF1002C
64	3	R77 R78 R79	3mOhm-3W, 2512 (6332 metric), 3W, +/-1%		Bussmann/Eaton	MSMA2512R0030FGN
65	1	R80	82.5K, 0201, 25V, 50mW, +/-1%	CHIP RESISTOR SMD 1% 1/20W 0201	Panasonic	ERJ-1GNF8252C
66	1	R81	402K, 0201, 25V, 50mW, +/-1%	CHIP RESISTOR SMD 1% 1/20W 0201	Panasonic	ERJ-1GNF4023C

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67	1	R82	0, 0201, 25V, 50mW, +/-1%	RES SMD 0 OHM JUMPER 1/20W 0201	Panasonic	ERJ-1GN0R00C
68	1	R83	121K, 0201, 25V, 50mW, +/-1%	CHIP RESISTOR SMD 1% 1/20W 0201	Panasonic	ERJ-1GNF1213C
69	2	R84, R86	30K, 0603 (1608 Metric), 75V, 100mW, +/-1%	CHIP RESISTOR SMD 1% 1/10W 0603	YAGEO	RC0603FR-0730KL
70	1	R85	27k, 0603 (1608 Metric), 50V, 100mW, +/-1%	CHIP RESISTOR SMD 1% 1/10W 0603	Walsin	WR06X2702FTL
71	1	R87	82K, 0402 (1005 Metric), 50V, 62.5mW, +/-1%	CHIP RESISTOR SMD 1% 1/16W 0402	Bourns	CR0402-FX-8202GLF
72	1	R89	6.8K, 0402 (1005 Metric), 50V, 62.5mW, +/-1%	CHIP RESISTOR SMD 1% 1/16W 0402	Walsin	WR04X6801FTL
73	1	R90	2.2K, 0201, 25V, 50mW, +/-1%	RES SMD 1% 1/20W 0201	YAGEO	AC0201FR-132K2L
74	1	R93	12K, 0402 (1005 Metric), 50V, 62.5mW, +/-1%	CHIP RESISTOR SMD 1% 1/16W 0402	YAGEO	RC0402FR-1312KL
75	2	R94 R95	75R, 0402 (1005 Metric), 50V, 62.5mW, +/-1%	CHIP RESISTOR SMD 1% 1/16W 0402	Bourns	CR0402-FX-75R0GLF
76	1	R96	4.7K, 0402 (1005 Metric), 50V, 62.5mW, +/-1%	CHIP RESISTOR SMD 1% 1/16W 0402	Bourns	CR0402-FX-4701GLF
77	1	R98	1.43K, 0402, 50V, 100mW, +/-1%	CHIP RESISTOR SMD 1% 1/10W 0402	Panasonic	ERJ-2RKF1431X
78	3	SB1 SB2 SB5	0R, 0201, 25V, 50mW, +/-1%	RES SMD 1% 1/20W 0201	Panasonic	ERJ-1GN0R00C
79	3	SB3 SB4 SB6	DNM, 0201	RES SMD 1% 1/20W 0201 (not assembled)		RC0201FR-07220RL
80	1	SW1	miniswitch, 3.00mm x 2.00mm, 15V, 0.02A	SWITCH TACTILE SPST-NO 0.02A 15V	E-Switch	TL3780AF240QG
81	1	TP1	PC13	TEST POINT 1MM SMD PADSTASCK	As per the Gerber	
82	1	U1	STM32G473CET6, 48-LQFP, 3.6V	IC MCU 32BIT 512KB FLASH 48LQFP	ST	STM32G473CET6
83	2	U2 U3	TSV912IQ2T, 8-UFDFN Exposed Pad, 5.5V, 0.035A	IC OPAMP GP 2 CIRCUIT 8DFN	ST	TSV912IQ2T
84	1	U4	STDRIVE101, 24-VFQFN Exposed Pad (4mmX4mm, pitch 0.5mm), 75V, 0.6A	STDRIVE101 - Three-phase gate driver	ST	STDRIVE101

Item	Q.ty	Ref.	Part/value	Description	Manufacturer	Order code
85	1	U5	L6981NDR, 8-SOIC (0.154", 3.90mm Width), 24V, 1.5A	38 V, 1.5 A SYNCHRONOUS STEP-DOWN	ST	L6981NDR
86	1	U6	LDL112PV33R, 6-VDFN Exposed Pad, 5.5V, 1.2A, +/-2%	IC REG LINEAR 3.3V 1A 6DFN	ST	LDL112PV33R
87	1	Y1	24MHz, 4-SMD, No Lead, 10uW	CRYSTAL 8MHZ 18PF SMD (not assembled)	ABRACON	ABM8AIG-8.000MHZ-1Z-T

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