

Bill of materials

Table 1. STDES-BCBIDIR bill of materials

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
1	1	-	Table 2. STDES-BCBIDIR	Main power board	ST	Not available for separate sale
2	2	-	Table 3. STDES-PFCBIDIR	Control board	ST	Not available for separate sale
3	2	-	Table 4. STDES-GAP2SICD	Driver board	ST	Not available for separate sale

Table 2. STDES-BCBIDIR - main power board

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
1	12	C1 C3 C6 C8 C9 C11 C54 C55 C57 C60 C61 C63	470nF/50V	Condensatore ceramico multistrato (MLCC) WURTH 470nF, ±10%, 50 V c.c., SMD	Wurth Electronics Inc.	885012207102
2	12	C2 C4 C5 C7 C10 C12 C53 C56 C58 C59 C62 C64	10uF	Aluminum Electrolytic Capacitors	Wurth Electronics Inc.	865250643009
3	8	C13 C14 C65 C66 C68 C69 C71 C72	4.7uF 50V	CAPACITOR CERAMIC SMD 1210	Wurth Electronics Inc.	885012209048
4	4	C15 C67 C70 C73	10uF 16V	CAPACITOR CERAMIC SMD 1210	Wurth Electronics Inc.	885012109009
5	4	C16 C74 C75 C76	470pF	CAPACITOR CERAMIC SMD 2211	Murata	GA352QR7GF471KW01L
6	56	C17 C19 C23 C25 C26 C29 C30 C31 C33 C34 C36 C38 C41 C43 C45 C48 C50 C77 C79 C83 C85 C86 C89 C92 C94 C96 C99 C101 C105 C107 C108 C109 C112 C114 C116 C117 C120 C122 C124 C125 C128 C130 C132 C133 C136 C138 C140 C142 C144 C146 C149 C150 C168 C171 C173 C175	100nF 25V	CAPACITOR CERAMIC SMD 0603	Wurth Electronics Inc.	885012206071R
7	47	C18 C20 C22 C24 C27 C32 C35 C37 C39 C42 C44 C46 C49 C51 C78 C80 C82 C84 C87 C90 C93 C95 C97 C100 C102 C104 C106 C110 C113 C115 C118 C121 C123 C126 C129	1uF 25V	CAPACITOR CERAMIC SMD 0603	Wurth Electronics Inc.	885012206076

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
		C131 C134 C137 C139 C141 C145 C147 C148 C169 C172 C174 C176				
8	8	C21 C40 C47 C52 C81 C91 C98 C103	N.M.	CAPACITOR CERAMIC SMD 0603	ANY	ANY
9	8	C28 C180 C181 C182 C183 C184 C185 C186	100pF/25V	Condensatore ceramico multistrato (MLCC) 100pF, ±5%, 25V cc, SMD	ANY	
10	3	C152 C153 C154	6.8uF	X2-Safety Class Capacitor; MKP - Metallized Polypropylene	Würth Electronics Inc.	890324028008
11	4	C155 C156 C161 C162	470uF	Aluminium Electrolytic Capacitors	Würth Electronics Inc.	861141486024
12	2	C157 C158	25uF	WCAP-FTDB DC-Link Capacitor,32.5mm,25u F	Würth Electronics Inc.	890494428004CS
13	1	C159	100nF	MKT-Metallized polyester	Würth Electronics Inc.	890493425009CS
14	1	C160	10nF	MKT-Metallized polyester	Würth Electronics Inc.	890493422002CS
15	3	C177 C178 C179	680nF	WCAP-FTBE Film Capacitors,C2,PITCH: 15,LxWxH:18x8.5x15		890283425008CS
16	5	D1 D2 D3 D4 D5	STPS360AFY	DIODE SCHOTTKY 60V 3A SOD128	STMicroelectro nics	STPS360AFY
17	10	D6 D7 D8 D9 D10 D11 D12 D13 D14 D15	LED RED	LED RED CLEAR 1206 SMD	Würth Electronics Inc.	150120RS75000
18	15	D_G1 D_G2 D_G3 D_G4 D_G5 D_G6 D_G7 D_G8 D_G9 D_G10 D_G11 D_G12 D_G13 D_G14 D_G15	LED_Green_0805		Würth Electronics Inc.	150080GS75000
19	4	D_R1 D_R2 D_R3 D_R4	LED_Red_0805		Würth Electronics Inc.	150080RS75000
20	3	F1 F2 F3	30A	Industrial & Electrical Fuses 30A 250VAC Midget	Littelfuse	0BLN030.T
21	3	H20 H21 H22	tdex6015	t high-performance extruded fan heat sink	Thermo Electric Devices	TDEX6015/TH12G
22	2	IC1 IC2	MCA1101-50-5	Board Mount Current Sensors High Accuracy +/-50A Current Sensor, 3.3V, Fixed gain, 1.5MHz 3dB BW, OCD, Galvanic Isolation. UL/IEC/EN60950-1 and UL1577 certified. SOIC-16		

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
23	2	J1 P1	Digital Power Connector	Connector Erni 284166 32X2 female	ERNI	284166
24	5	J2 J3 J8 J9 J10	Dev3	SWITCH SLIDE SPDT 500MA 12V	Wurth Electronics Inc.	450301014042
25	4	J4 J5 J6 J7	DaughterBoard	Each DaughterBoard consists of 7 connectors of the indicated part number	Preci-Dip	801-87-002-10-001101
26	3	J11 J12 J13	DaughterBoard	Each DaughterBoard consists of 7 connectors of the indicated part number	Mill-Max Mfg Corp.	834-43-002-10-001000
27	16	J14 J15 J16 J17 J18 J19 J20 J21 J22 J23 J24 J25 J26 J27 J28 J29	74651195R	Screw erminal with External Thread	Wurth Electronics Inc.	74651195R
28	5	J30 J31 J32 J33 J34	9324-0-15-15-23-2 7-04-0	Circuit Board Hardware - PCB RECPT. GOLD/ NICKEL .106 IN. PRESSFIT	Mill-Max Mfg Corp.	9324-0-15-15-23-27-04-0
29	8	J35 J36 J37 J38 J39 J40 J41 J42	Con3	SIL VERTICAL PC TAIL PIN HEADER	Harwin Inc.	M20-9990345
30	28	J43 J44 J45 J46 J47 J48 J49 J50 J51 J52 J53 J54 J55 J56 J57 J58 TP114 TP115 TP116 TP117 TP118 TP119 TP120 TP121 TP122 TP123 TP124 TP125	Testpoint	PC TEST POINT NATURAL	Harwin Inc.	S2751-46R
31	8	JP1 JP2 JP3 JP4 JP5 JP6 JP8 JP9	Jp_pcb		ANY	
32	47	L1 L2 L3 L4 L6 L7 L8 L9 L10 L11 L12 L13 L14 L15 L16 L17 L18 L19 L20 L21 L22 L26 L27 L28 L29 L30 L31 L32 L33 L34 L35 L36 L37 L38 L39 L40 L41 L42 L43 L44 L45 L46 L47 L56 L57 L58 L59	220hm@100MHZ		Wurth Electronics Inc.	742792021
33	4	L5 L23 L24 L25	1uH	SMT Power Inductor	Wurth Electronics Inc.	7447730
34	3	L48 L51 L53	7.8 uH	Power Inductor 7.8 uH 20.5A	Wurth Electronics Inc.	750344312
35	3	L49 L50 L52	255u	Power Inductor 255uH 23 A	Wurth Electronics Inc.	760801101
36	8	LEM1 LEM2 LEM3 LEM4 LEM5 LEM6 LEM7 LEM8	CASR 15-NP	SENSOR CURRENT HALL 15A AC/DC	LEM USA Inc.	CASR 15-NP
37	4	LS1 LS2 LS3 LS4	Relay 30A	General Purpose Relays Industrial Relays (General Purpose)	TE Connectivity / P&B	T9AV5L12-12

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
38	6	Q1 Q2 Q3 Q4 Q5 Q6	STS6NF20V, SO-8	MOSFET N-CH 20V 6A 8SOIC	ST	STS6NF20V
39	10	R1 R6 R47 R55 R63 R67 R74 R90 R98 R106	0	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
40	8	R2 R43 R51 R59 R68 R86 R94 R102	13.7 k	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
41	8	R3 R44 R52 R60 R69 R87 R95 R103	N.M.	N.M.	N.M.	N.M.
42	8	R4 R45 R53 R61 R70 R88 R96 R104	4.12 k	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
43	19	R5 R25 R26 R37 R46 R54 R62 R73 R89 R97 R105 R112 R127 R140 R151 R165 R179 R238 R243	1k	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
44	8	R7 R48 R56 R64 R71 R91 R99 R107	4.7 k	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
45	20	R8 R50 R58 R66 R72 R93 R101 R109 R119 R121 R131 R133 R143 R146 R157 R160 R170 R173 R182 R185	10 k	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
46	8	R9 R49 R57 R65 R75 R92 R100 R108	N.M.	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
47	1	R10	3.9 M	CHIP RESISTOR SMD 0.1% 1/4W 1206	ANY	
48	1	R11	5.6 M	CHIP RESISTOR SMD 0.1% 1/4W 1206	ANY	
49	1	R12	2 M	CHIP RESISTOR SMD 0.1% 1/4W 1206	ANY	
50	1	R13	17.4 k	CHIP RESISTOR SMD 0.1% 1/4W 1206	ANY	
51	1	R14	24 k	CHIP RESISTOR SMD 0.1% 1/4W 1206	ANY	
52	2	R15 R17	0	CHIP RESISTOR SMD 0.1% 1/4W 0603	ANY	
53	2	R16 R18	10.5 k	CHIP RESISTOR SMD 0.1% 1/4W 0603	ANY	
54	1	R19	17.4 k	CHIP RESISTOR SMD 0.1% 1/4W 0603	ANY	
55	1	R20	470	Resistore per montaggio superficiale a film spesso Vishay 4700 ±1%, 0,1W, 0603, serie CRCW	ANY	

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
56	1	R21	5.1k	Resistore per montaggio superficiale a film spesso Panasonic 5,1kO $\pm 1\%$, 0,25W, 0603, serie ERJPA3	ANY	
57	1	R22	22	Resistore per montaggio superficiale a film spesso Vishay 22O $\pm 1\%$, 0,25W, 1206, serie CRCW	ANY	
58	1	R23	33k	Resistore per montaggio superficiale a film spesso Vishay 33kO $\pm 1\%$, 0,1W, 0603, serie CRCW	ANY	
59	1	R24	10k	Resistore SMD Bourns 10kO $\pm 1\%$, 0,1W, 0603, serie CR0603-FX	ANY	
60	11	R27 R28 R38 R114 R129 R144 R153 R167 R183 R239 R245	10k	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
61	3	R29 R30 R39	1.4k	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
62	11	R31 R32 R40 R116 R134 R147 R155 R171 R186 R240 R248	30k	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
63	3	R33 R35 R41	1.5k	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
64	3	R34 R36 R42	475	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
65	1	R76	3.9 M	CHIP RESISTOR SMD 0.1% 1/10W 1206	ANY	
66	1	R77	5.6 M	CHIP RESISTOR SMD 0.1% 1/10W 1206	ANY	
67	1	R78	2 M	CHIP RESISTOR SMD 0.1% 1/10W 1206	ANY	
68	2	R79 R85	17.4 k	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
69	1	R80	24 k	CHIP RESISTOR SMD 0.1% 1/10W 1206	ANY	
70	14	R81 R83 R118 R120 R130 R132 R142 R145 R156 R159 R169 R172 R181 R184	0	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
71	2	R82 R84	10.5 k	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
72	6	R110 R111 R123 R124 R136 R137	1.27 M	CHIP RESISTOR SMD 0.1% 1/10W 1206	ANY	
73	12	R113 R122 R125 R135 R138 R148 R152 R161 R164 R174 R177 R187	8.25 k	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
74	3	R115 R126 R139	1.24 M	CHIP RESISTOR SMD 0.1% 1/10W 1206	ANY	
75	3	R117 R128 R141	51.1 k	CHIP RESISTOR SMD 0.1% 1/10W 1206	ANY	
76	6	R149 R150 R162 R163 R175 R176	1.27 M	CHIP RESISTOR SMD 0.1% 1/4W 1206	ANY	
77	3	R154 R166 R178	1.24 M	CHIP RESISTOR SMD 0.1% 1/4W 1206	ANY	
78	3	R158 R168 R180	51.1 k	CHIP RESISTOR SMD 0.1% 1/4W 1206	ANY	
79	3	R188 R189 R190	0.33	RES 0.33 OHM 5W 5% RADIAL	TE Connectivity Passive Product	SQMW5R33J
80	6	R191 R192 R193 R194 R195 R196	240k	Resistenza fissa per montaggio superficiale di precisione a film spesso Panasonic 240kO ±1%, 0,25W, 1206, serie ERJ	ANY	
81	3	R197 R198 R200	150	Wirewound Resistors - Through Hole 150 Ohms 5W 300PPM	TE Connectivity	SQMW5150RJ
82	12	R199 R203 R204 R205 R206 R207 RLED1 RLED2 RLED3 RLED11 RLED12 RLED13	4k	Resistore per montaggio superficiale a film spesso TE Connectivity 1kO ±1%, 0,1W, 0603, serie CRG0603	ANY	ANY
83	5	R201 R208 R209 R210 R211	22	CHIP RESISTOR SMD 1% 1/10W 0603	ANY	
84	5	R202 R212 R213 R214 R216	33k	CHIP RESISTOR SMD 1% 1/10W 0603	ANY	
85	11	R215 R217 R218 R219 RLED4 RLED8 RLED9 RLED10 RLED14 RLED18 RLED19	1k	Resistore per montaggio superficiale a film spesso TE Connectivity 1kO ±1%, 0,1W, 0603, serie CRG0603	ANY	ANY
86	2	R228 R241	3.3 k	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
87	2	R230 R242	1.05 k	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
88	2	R233 R247	9.09 k	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
89	2	R235 R249	11.7 k	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
90	2	R236 R244	34 k	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
91	2	R237 R246	14 k	CHIP RESISTOR SMD 0.1% 1/10W 0603	ANY	
92	14	R250 R251 R252 R253 R254 R255 R256 R257 R258	47k	CHIP RESISTOR SMD 1% 1/8W 0805	ANY	

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
		R259 R260 R261 R262 R263				
93	1	RE1	G7J-4A-P DC12		ANY	G7J-4A-P DC12
94	6	RLED5 RLED6 RLED7 RLED15 RLED16 RLED17	2.2k	Resistore per montaggio superficiale a film spesso TE Connectivity 1kO ±1%, 0,1W, 0603, serie CRG0603	ANY	ANY
95	88	TP4 TP5 TP6 TP7 TP8 TP9 TP10 TP11 TP12 TP13 TP14 TP15 TP16 TP17 TP18 TP19 TP20 TP21 TP22 TP23 TP24 TP25 TP26 TP27 TP28 TP29 TP30 TP31 TP32 TP33 TP34 TP35 TP36 TP37 TP38 TP39 TP40 TP41 TP42 TP43 TP44 TP45 TP46 TP47 TP48 TP49 TP50 TP51 TP52 TP53 TP54 TP55 TP56 TP57 TP58 TP59 TP60 TP61 TP62 TP63 TP64 TP65 TP66 TP67 TP68 TP69 TP70 TP71 TP72 TP73 TP74 TP75 TP76 TP77 TP78 TP79 TP80 TP81 TP82 TP83 TP105 TP107 TP108 TP109 TP110 TP111 TP112 TP113	TestPoint_Ring	Polo terminale RS Pro, diam. foro 1mm, Bronzo fosforoso	ANY	ANY
96	18	TP84 TP85 TP86 TP87 TP88 TP89 TP90 TP91 TP92 TP93 TP94 TP95 TP96 TP97 TP98 TP99 TP126 TP127	TEST POINT	PC TEST POINT NATURAL	Harwin Inc.	S1751-46R
97	18	TW1 TW2 TW3 TW4 TW5 TW6 TW7 TW8 TW9 TW10 TW11 TW12 TW13 TW14 TW15 TW16 TW17 TW18	CON1	Standoffs & Spacers WA-SBRIE M3x60mm	Würth Electronics Inc.	971600324
98	4	U1 U3 U27 U30	LD29080DT50R, DPAK	IC REG LINEAR 5V 800MA DPAK	ST	LD29080DT50R
99	4	U2 U4 U25 U29	LD29150DT33R, DPAK	Regolatori di tensione LDO 1.5A VLD 400mV 3.3V Fixed	ST	LD29150DT33R
100	4	U5 U31 U32 U33	5V_in/5V_out	Modulo di alimentazione c.c.-c.c. DCH010505SN7, Modulo SIP, 4-Pin	Würth Electronics Inc.	1779205141

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
101	21	U6 U9 U13 U14 U17 U19 U21 U23 U34 U37 U38 U40 U42 U46 U48 U51 U55 U58 U60 U67 U69	TSV911IYLT, SOT23-5L	IC OPAMP GP 8MHZ RRO SOT23-5	ST	TSV911IYLT
102	8	U7 U20 U22 U24 U35 U39 U41 U43	TL431ACL3T, SOT23	IC VREF SHUNT ADJ SOT23-3	ST	TL431ACL3T
103	2	U8 U36	AMC1311QDWVR Q1	IC ISOLATION 8SOIC	Texas Instruments	AMC1311QDWVRQ1
104	4	U10 U11 U26 U28	691213510002	Fixed Terminal Blocks WR-TBL 5.08mm THT 2Pin 14A 300V 20mOhm	Würth Electronics Inc.	691213510002
105	1	U12	STLM20W87F, SOT323-5L	SENS TEMP ANLG VOLT SOT-323-5	ST	STLM20W87F
106	6	U45 U47 U50 U54 U56 U59	AMC1350DWVR	Amplificatore Di isolamento 1 Circuito 8-SOIC	TexasInstrume nt	AMC1350DWVR
107	2	U62 U64	M1F45M12W2-1L A, ACEPACK DMT-32	Power module fourpack topology 45 m? typ. SiC Power MOSFET with NTC	ST	M1F45M12W2-1LA
108	1	U63	M1P30M12W3-1L A	Power module sixpack topology 27.5 m? typ. SiC Power MOSFET with NTC	ST	M1P30M12W3-1LA
109	11	U71 U72 U73 U74 U75 U76 U77 U78 U79 U80 U81	TLVH431MIL3T, SOT23	IC VREF SHUNT ADJ SOT23-3	STMicroelectro nics	TLVH431AIL3T

Table 3. STDES-PFCBIDIR - control board

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
1	13	C1 C8 C14 C21 C22 C27 C30 C31 C36 C37 C38 C39 C41	2.2nF/50V	Würth Elektronik, 0603 (1608M) 2.2nF Multilayer Ceramic Capacitor MLCC 50V dc ±10% , SMD 885012206085	Würth Elektronik	885012206085
2	9	C2 C3 C10 C11 C12 C13 C34 C42 C43	100nF/16V	Würth Elektronik, 0603 (1608M) 100nF Multilayer Ceramic Capacitor MLCC 16V dc ±10% , SMD 885012206046	Würth Elektronik	885012206046
3	16	C4 C5 C6 C7 C18 C19 C20 C23 C24 C25 C26 C28 C29 C33 C35 C40	100pF/50V	Würth Elektronik, 0603 (1608M) MLCC 885012006057	Würth Elektronik	885012006057
4	2	C9 C32	1uF/25V	Würth Elektronik, 0603 (1608M) 1µF Multilayer Ceramic Capacitor MLCC 25V dc ±10% , SMD 885012206076	Würth Elektronik	885012206076
5	1	C15	470nF/50V	Würth Elektronik, 0805 (2012M) 470nF	Würth Elektronik	885012207102

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
				Multilayer Ceramic Capacitor MLCC 50V dc, SMD 885012207102		
6	1	C16	10uF	Wurth Elektronik 10µF Electrolytic Capacitor 16V dc, Surface Mount - 865230340001	Wurth Elektronik	865230340001
7	1	C17	100pF/50V	Wurth Elektronik, 0603 (1608M) MLCC 885012006057	Wurth Elektronik	885012006057
8	1	CN1	Jtag_SWD_Adapter	Samtec, FTSH, 10 Way, 2 Row, Straight Pin Header	Samtec	FTSH-105-01-F-D-K
9	8	D1 D2 D4 D5 D6 D7 D9 D10	GREEN	3.2 V Green LED 2012 (0805) SMD, Wurth Elektronik WL-SMCW 150080GS75000	Wurth Elektronik	150080GS75000
10	2	D3 D8	SMAJ5.0A-TR, SMA	STMicroelectronics SMAJ5.0A-TR, Uni-Directional TVS Diode, 400W, 2-Pin DO-214AC	ST	SMAJ5.0A-TR
11	1	J1	PLUG 64 PIN 90	Connector Erni 90° 384241 32X2 male	ERNI	384241
12	1	J2	UART1	Wurth Elektronik, WR-PHD, 6130, 4 Way, 1 Row, Straight Pin Header	Wurth Elektronik	61300411121
13	1	J3	UART2	Wurth Elektronik, WR-PHD, 6130, 4 Way, 1 Row, Straight Pin Header	Wurth Elektronik	61300411121
14	1	J4	i2C	Wurth Elektronik, WR-PHD, 6130, 4 Way, 1 Row, Straight Pin Header	Wurth Elektronik	61300411121
15	2	JP1 JP3	3JP_pcb		N.M.	N.M.
16	1	JP2	STRIP_2X3		N.M.	N.M.
17	1	L1	WE-CBF	Wurth Elektronik Ferrite Bead (EMI Suppression), 1.6 x 0.8 x 0.8mm (0603 (1608M)), 1200 impedance at 100 MHz	Wurth Elektronik	74279262
18	1	LED1	PLCC4_3P2X2P8	LED Bivar, Verde, rosso, SMD, 2,4 V, 2 Led, PLCC 4	Bivar	SMTL4-SBC
19	16	R1 R2 R3 R5 R6 R8 R11 R12 R16 R17 R19 R20 R21 R22 R26 R28	10k	Bourns 10kO, 0603 (1608M) Thick Film SMD Resistor ±1% 0.1W - CR0603-FX-1002ELF	ANY	ANY
20	10	R4 R7 R23 R24 R27 R29 R30 R31 R32 R33	1k	TE Connectivity 1kO, 0603 Thick Film SMD Resistor ±1% 0.1W - CRG0603F1K0	ANY	ANY

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
21	7	R9 R10 R13 R14 R15 R18 R25	0	TE Connectivity 00, 0603 (1608M) Thick Film SMD Resistor ±0% 0.1W - CRG0603ZR	ANY	ANY
22	2	S1 S2	FSM4JSMA	Black Button Tactile Switch, Single Pole Single Throw (SPST) 50 mA @ 24 V dc 1.4mm Surface Mount	TE Connectivity ALCOSWITCH Switches	FSM4JSMA
23	41	TP1 TP2 TP3 TP4 TP5 TP6 TP7 TP8 TP9 TP10 TP11 TP12 TP13 TP14 TP15 TP16 TP17 TP18 TP19 TP20 TP21 TP22 TP23 TP24 TP25 TP26 TP27 TP28 TP29 TP30 TP31 TP32 TP33 TP34 TP35 TP36 TP37 TP38 TP39 TP40 TP41	TestPoint	RS PRO 1mm Black Terminal Post	ANY	ANY
24	1	U1	STM32G474RET3, LQFP 64 10x10x1.4 mm	Arm® Cortex®-M4 32b MCU+FPU, 512KB Flash, 150 MHz, 128KB SRAM	ST	STM32G474RET3
25	1	U2	LDL1117S33R, SOT-223	STMicroelectronics LDL1117S33R, 1 Low Dropout Voltage, Voltage Regulator 1.2A, 3.3 V 4-Pin, SOT-223	ST	LDL1117S33R
26	1	U3	ESDAL, SOT23-3L	STMicroelectronics ESDA6V1L, Dual- Element Uni- Directional TVS Diode, 300W, 3-Pin SOT-23	ST	ESDA6V1L
27	1	USB1	microUSB	Molex Right Angle, SMT, Socket Type Micro-B 2.0 USB Connector	MOLEX	47346-0001

Table 4. STDES-GAP2SICD - driver board

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
1	4	C228 C238 C384 C385	22 uF	CAPACITOR CERAMIC SMD 0805		
2	4	C229 C239 C244 C253	2.2 uF	CAPACITOR CERAMIC SMD 0805		
3	4	C230 C240 C245 C254	100 nF	CAPACITOR CERAMIC SMD 0603		
4	4	C231 C241 C246 C255	1 nF	CAPACITOR CERAMIC SMD 0603		
5	2	C234 C248	220pF	CAPACITOR CERAMIC SMD 0603	Würth Elektronik	885012206079
6	2	C243 C257	CAP NP		ANY	

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
7	1	C250	1 nF	CAP CER 1 nF 25V 0603	Würth Elektronik	885012006044
8	1	C251	0.1uF	CAP CER 0.1UF 50V X7R 0603	Würth Elektronik	885012206095
9	1	C252	1 uF	CAP CER 1UF 6.3V X5R 0603	Yageo	CC0603KRX5R5BB105
10	2	D25 D28	TZMB20-GS08	DIODE ZENER 20V 500MW SOD80	Vishay Semiconductor Diodes Division	TZMB20-GS08
11	2	D26 D29	TZMC5V1-GS08	DIODE ZENER 5.1V 500MW SOD80	Vishay Semiconductor Diodes Division	TZMC5V1-GS08
12	2	DC9 DC10	R12P22005D	CONV DC/DC 2W 12VIN +20/-5VOUT T	Recom Power	R12P22005D
13	2	F1 L51	22Ohm@100MHz		Würth Elektronik	742792021
14	3	J16 J17 J18	SOLDER JUMPER3	TIN DROP JUMPER 0603 3pin		
15	7	J19 J20 J21 J22 J23 J24 J25	CONN_002P_000 C_1			802-10-002-20-001000
16	2	L49 L50	IND	Fixed Inductor 22uH SMD 0805	Taiyo Yuden	LBC2012T220M
17	2	R168 R177	100	CHIP RESISTOR SMD 1% 1/10W 0603		
18	2	R169 R178	N.M	CHIP RESISTOR SMD 1% 1/10W 0603		
19	2	R171 R180	22	CHIP RESISTOR SMD 5% 1/4W 1206	any	
20	2	R172 R181	4.7	CHIP RESISTOR SMD 5% 1/4W 1206	any	
21	2	R173 R182	R			
22	2	R175 R184	47k	CHIP RESISTOR SMD 1% 1/8W 0805		
23	6	TP67 TP68 TP69 TP70 TP71 TP72	TestPoint_Ring	Polo terminale RS Pro, diam. foro 1mm, Bronzo fosforoso	ANY	ANY
24	1	U53	STGAP2SiCD, SSOP 32 LEAD 300 MIL PKG .0315 P	STGAP2SiCD	ST	STGAP2SiCD
25	2	C232 C249	2.2uF/25V	Condensatore ceramico multistrato (MLCC) WE 2,2uF, ±10%, 25 V c.c., SMD	Würth Elektronik	885012108019
26	2	C233 C247	470nF/50V	Condensatore ceramico multistrato (MLCC) 470nF, ±10%, 50 V c.c., SMD	Würth Elektronik	885012207102

IMPORTANT NOTICE – READ CAREFULLY

STMicroelectronics NV and its subsidiaries (“ST”) reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgment.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of purchasers’ products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. For additional information about ST trademarks, refer to www.st.com/trademarks. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2023 STMicroelectronics – All rights reserved