

Document reference:	PCB reference:
	SPIRIT1 DK MB - STEVAL-IKR001V4 MOTHERBOARD
Company:	
STMicroelectronics	

Item	Quantity	Reference	Part/Value	Characteristics/Notes	PCB Footprint	Manufacturer	Manufacturer's ordering code / Orderable Part Number
1	1	CN1	USB_miniB	USB mini B connector	MINI USB	AUCON Tech inc.	
2	1	CN2	NE	DO NOT ASSEMBLY	CARD_MICROSD_S	Hirose Electric	DM3AT-SF-PEJ
3	8	C13,C14,C15,C16,C17,C18,C19,C20	C_10N_0603_X7R_K_25	Ceramic 25V Tol. 10%	SM/C_0603		
4	1	C21	C_4N7_0603_X7R_J_25	Ceramic 25V Tol. 5%	SM/C_0603		
5	13	C22,C63,C77,C78,C80,C81,C82,C83,C84,C85,C86,C87,C88	C_NE_0603	DO NOT ASSEMBLY	SM/C_0603		
6	19	C29,C32,C33,C34,C35,C36,C40,C44,C47,C49,C51,C56,C67,C69,C74,C79,C89,C90,C9	C_100N_0603_X7R_K_16	Ceramic 16V Tol. 10%	SM/C_0603		
7	4	C30,C43,C45,C48	C_10U_0805_K_6V3	Ceramic 6V3 Tol. 10%	SM/C_0805		
8	1	C31	C_1U_1608_Tant_K_6V3	Tantalum 6V3 Tol. 10%	TANTALUM_0603		
9	1	C37	C_10U_2012_Tant_K_6V3	Tantalum 6V3 Tol. 10%	TANTALUM_0805		
10	2	C38,C39	C_6P8_0603_C0G_J_50	Ceramic 50V Tol. 5%	SM/C_0603		
11	2	C41,C42	C_20P_0603_C0G_J_50	Ceramic 50V Tol. 5%	SM/C_0603		
12	1	C46	C_100P_0603_C0G_K_50	Ceramic 50V Tol. 10%	SM/C_0603		
13	1	C50	C_33N_0603_X7R_K_50	Ceramic 50V Tol. 10%	SM/C_0603		
14	3	C58,C66,C73	C_1U_0603_X5R_K_10	Ceramic 10V Tol. 10%	SM/C_0603		
15	1	C59	C_2U2_0603_X5R_K_6V3	Ceramic 6V3 Tol. 10%	SM/C_0603		
16	1	C76	C_NE_2012	DO NOT ASSEMBLY	TANTALUM_0805		
17	2	DL1, DL9	GREEN	LED DIODE	SM/D0805_S	Kingbright	KP2012MGC
18	1	DL2	ORANGE	LED DIODE	SM/D0805_S	Kingbright	KP-2012SEC
19	1	DL3	RED	LED DIODE	SM/D0805_S	Kingbright	KP-2012SURC
20	1	DL4	BLUE	LED DIODE	SM/D0805_S	Kingbright	KP-2012MBC
21	1	DL5	YELLOW	LED DIODE	SM/D0805_S	Kingbright	KP-2012SYC
22	1	DL8	NE	DO NOT ASSEMBLY	SM/D0805_S		
23	2	DI1,DI2	STPS0520Z	DIODE SCHOTTKY	SOD123_S	ST	STPS0520Z
24	1	D3	SMA6F5.0A	Transil	SMB	ST	SMA6F5.0A
25	6	D4,D5,D6,D7,D8,D9	Z5V1	5V1 Zener diode	SOD123_S	Vishay	MMSZ5231B-VG508
26	1	JP2	Jumper_2	Jumper MALE 100mils	BLKCON.100/VH/TM15Q/W.100/2		
27	1	J2	JTAG	IDC Box HEADER	WALCON.100/VH/TM20E/W.325/20	Tyco Electronics	2-1634688-0
28	1	J3	NE	DO NOT ASSEMBLY	BNC_512_1477	Tyco Electronics	5-1634503-1
29	1	J4	DC_JACK_2.5		PLUGALIM_S		
30	1	J5	NE		BLKCON.100/VH/TM20E/W.200/6		
31	2	J6,J7	BB02-KY102-K03-A00000	SPIRIT1 CONNECTORS	CONNBB02KY	Gradconn	BB02-KY102-K03-A00000
32	1	J8	PROBES	Strip line male 1X12 100mils	BLKCON.100/VH/TM15Q/W.100/12		
33	1	L2	L_BEAD_0805_30OHM_100M	Ferrite 30Ohm @ 100MHz	SM/L_0805	Würth Electronics	74279206
34	1	L3	L_2U2_1210_J_320M	RF choke	SM/L_1210	Würth Electronics	74476402
35	2	L5,L6	L_BEAD_0805_1K_OHM_100M	Ferrite 1000Ohm @ 100MHz	SM/L_0805	Murata	BLM21BD102SN1D
36	1	L7	L_NE_0805	DO NOT ASSEMBLY	SM/L_0805		
37	10	R16,R17,R18,R22,R23,R24,R25,R26,R81,R100	R_100K_0603_J	1/8W Tol. 5%	SM/R_0603		
38	4	R19,R20,R21,R27	R_100_0603_J	1/8W Tol. 5%	SM/R_0603		
39	19	R28,R29,R30,R31,R33,R37,R79,R91,R92,R108,R117,R118,R119,R120,R121,R122,R123,R124,R12	R_NE_0603	DO NOT ASSEMBLY	SM/R_0603		
40	2	R32,R64	R_1M_0603_J	1/8W Tol. 5%	SM/R_0603		
41	13	R34,R35,R36,R54,R55,R68,R69,R77,R95,R103,R129,R130	R_0R0_0603	0 Ohm	SM/R_0603		
42	2	R46,R52	R_510_0603_J	1/8W Tol. 5%	SM/R_0603		
43	3	R47,R48,R51	R_680_0603_J	1/8W Tol. 5%	SM/R_0603		
44	1	R53	R_47_0603_J	1/8W Tol. 5%	SM/R_0603		
45	4	R56,R57,R60,R61	R_4K7_0603_J	1/8W Tol. 5%	SM/R_0603		
46	2	R65,R66	R_10K_0603_J	1/8W Tol. 5%	2SMR-0603		
47	3	R70,R83,R96	R_10K_0603_J	1/8W Tol. 5%	SM/R_0603		
48	1	R71	R_0R0_0805	0 Ohm	SM/R_0805		
49	1	R72	R_1R8_0603_F	1/8W Tol. 1%	SM/R_0603		
50	1	R73	R_22K_0603_J	1/8W Tol. 5%	SM/R_0603		
51	1	R75	R_24K_0603_F	1/8W Tol. 1%	SM/R_0603		
52	1	R76	R_33K_0603_F	1/8W Tol. 1%	SM/R_0603		
53	2	R78,R94	R_47K_0603_J	1/8W Tol. 5%	SM/R_0603		
54	1	R90	R_470_0603_J	1/8W Tol. 5%	SM/R_0603		
55	1	R126	OE	OR0 between 1-2	2SMR-0603		
56	1	R128	R_NE_0603	DO NOT ASSEMBLY	SM/R_0603		
58	3	SW1,SW2,SW3	SW_PUSHBUTTON-DPST	Tactile Switch	PULS4SMD.	Tyco Electronics	4-1437565-1
59	1	S1	SWITCH 1X2		SWITCH_115-6283	EAO	09.03201.02
60	1	TP2	AIN-		TESTPOINT_S	Keystone Electronics	5117 (5000)

61	1	TP3	AIN+		TESTPOINT_S	Keystone Electronics	5117 (5000)
62	1	TP4	SV		TESTPOINT_S	Keystone Electronics	5117 (5000)
63	1	TP5	VsenseP		TESTPOINT_S	Keystone Electronics	5117 (5000)
64	1	TP6	VsenseN		TESTPOINT_S	Keystone Electronics	5117 (5000)
65	1	TP7	VCC_RF		TESTPOINT_S	Keystone Electronics	5117 (5000)
66	4	TP8,TP9,TP12,TP13	GND		TESTPOINT_S	Keystone Electronics	5117 (5000)
67	1	TP10	SCM_SENSE_RANGE2		TESTPOINT_S	Keystone Electronics	5117 (5000)
68	1	TP11	SCM_SENSE_RANGE1		TESTPOINT_S	Keystone Electronics	5117 (5000)
69	1	TP14	NE	DO NOT ASSEMBLY	TESTPOINT_S	Keystone Electronics	5117 (5000)
70	1	U3	SKQUDBE010	Joystick	JOYSTICK_516_110	ALPS	SKQUDBE010
71	1	U4	USBLC6-2P6	USB protection	SOT23-6L_S	ST	USBLC6-2SC6
72	1	U5	NE	DO NOT ASSEMBLY	LCD_MB542	ST	LCD_MB542
73	1	U14	STM32L152VBT6	MCU	QUAD.50M/100/WG16.00	ST	STM32L152VBT6
74	1	U15	BNX022-01	EMI Suppression Filter	FILTERBNX022_619_7201_REV1	Murata	BNX022-01
75	1	U16	STG5123	SPDT Switch	DFN6L_12X1	ST	STG5123DTR
76	1	U17	LD39050XX	Fixed LDO	LD39050	ST	LD39050PUR
77	1	U18	AD_AD5245	Digital Pot.	SOG.65M/8/WG6.20/L2.90	Analog Devices	AD5245BRJZ100-RL7CT
78	1	U19	TI_TLV274	Precision QUAD opamp	SOG.65M/14/WG6.20/L5.35_S	Texas Instrument	TLV274
79	1	U22	NE	DO NOT ASSEMBLY	SM/SOT23_123	ST	2STR1215
80	1	U24	LD39150DT33-R	3V3 LDO	DPAK	ST	LD39150DT33-R
81	1	U27	NE	DO NOT ASSEMBLY	LGA16_3X3X1	ST	LS331DLH
82	1	U28	NE	DO NOT ASSEMBLY	SOG.65M/8/WG4.90/L3.80	ST	STLM75DS2F
83	2	U29,U30	NE	DO NOT ASSEMBLY	SOG.050/8/WG.244/L.175	Analog Devices	AD8628ARZ
84	2	U31,U32	ST2378E	Voltage level translator	SOG.65M/20/WG8.20/L6.98	ST	ST2378ETTR
85	4	V1,V2,V3,V4	VITE	Distanziatori M3/10mm	MTHOLE3_S		
86	1	X1	32.768 kHz	XTAL 32.768kHz 3.2X8mm	OSCI_32.768KHZ	EPSON TOYOCOM	MC-146, 32.768kHz, 20ppm, 6pF
87	1	X2	8MHz	XTAL 8 MHz	QUARTZ	FOX	FOX5LF/080-20, 8MHz, 50ppm, 20pF

Document reference:	PCB reference:
SPIRIT1 RF PCB 868 MHz - STEVAL-IKR001V4 DAUGHTER BOARD	
Company:	
STMicroelectronics	

Item	Quantity	Reference	Part / Value	Note	Package	Manufacturer	Manufacturer's ordering code / Orderable Part Number	868 MHz
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1	1	C0	C_100n_0402_X7R	Decoupling cap on VREG (pin # 17)	SM/C_0402	Murata	GRM155R71C104KA88D	100nF
2	1	C1	C_TBD_0402_C0G	TX LPF first cap shunt	SM/C_0402			NE
3	1	C2	C_TBD_0402_C0G	TX LPF second cap shunt	SM/C_0402	Murata	GRM1555C1H8R2DZ01	8.2pF
4	1	C3	C_TBD_0402_C0G	TX LPF third cap shunt	SM/C_0402	Murata	GRM1555C1H5R6DZ01	5.6pF
5	1	C4	C_TBD_0402_C0G	RXP Balun shunt cap	SM/C_0402	Murata	GRM1555C1H2R2CZ01	2.2pF
6	1	C14	C_TBD_0402_C0G	Additional notch filter cap	SM/C_0402	Murata	GRM1555C1H1R2CZ01	1.2pF
7	1	C15	C_TBD_0402_C0G	PA load capacitor	SM/C_0402			NE
8	1	C5	C_TBD_0402_C0G	RXN Balun series	SM/C_0402	Murata	GRM1555C1H1R8CZ01	1.8pF
9	3	C6, C7, C8	C_TBD_0402_C0G	DC block for RX	SM/C_0402	Murata	GRM1555C1H221JA01	220pF
10	1	C9	C_12P_0402_C0G	XTAL load cap (Xout)	SM/C_0402	Murata	GRM1555C1H120JZ01	12pF
11	1	C10	C_10P_0402_C0G	XTAL load cap (Xin)	SM/C_0402	Murata	GRM1555C1H100JZ01	10pF
12	1	C20	C_1U_0603_X7R	VBAT & SMPS OUT filter cap	SM/C_0603	Murata	GRM188R60J105KA01D	1uF
13	1	C11	C_1U_0603_X7R	VBAT & SMPS OUT filter cap	SM/C_0603	Murata	GRM188R60J474KA01D	470nF
14	1	C12	C_100n_0402_X7R	SMPS OUT filter cap	SM/C_0402	Murata	GRM155R71C104KA88D	100nF
15	1	C13	C_TBD_0402_X7R	SMPS OUT filter cap	SM/C_0402	Murata	GRM1555C1H331JA01D	330pF

16	1	C19	C_TBD_0402_C0G	VBAT filtering	SM/C_0402	Murata	GRM155R71C103KA01	10nF
17	1	C21	C_100p_0402_C0G	VBAT bypass capacitors	SM/C_0402	Murata	GRM155C1H101JZ01D	100pF
18	1	C22	C_330p_0402_C0G	Decoupling cap on VREG (pin # 17)	SM/C_0402	Murata	GRM155C1H331JA01D	330pF
19	1	J1	RF_IN/OUT	SMA Jack Assembly, End Launch	SMA-LAT	Emerson	142-0701-881	
20	2	J6, J7	HEADER 5X2	Male Strip 2X5, 100 mils, BOTTOM MOUNT	WALCON.100/VH/TM2OE/W.325/10/MOD			
21	1	L0	L_TBD_0402	TX PA choke	SM/L_0402	Murata	LQG15HSR10J02	100nH
22	1	L1	L_TBD_0402	TX LPF first series ind	SM/L_0402	Murata	LQG15HN3N0S02	3nH
23	1	L2	L_TBD_0402	TX LPF second series ind	SM/L_0402	Tyco Electronics	CRG0402ZR	OR0 (resistor)
24	1	L3	L_TBD_0402	TX LPF third series ind	SM/L_0402	Murata	LQG15HN4N3S02	4.3nH
25	2	L4, L5	L_TBD_0402	RXP-N Balun series ind	SM/L_0402	Murata	LQG15HN18NJ02	18nH
26	1	L6	L_TBD_0402	RX Balun compensation ind	SM/L_0402	Murata	LQG15HN22NJ02	22nH
27	1	L8	L_TBD_0402	SMPS out inductor	SM/L_0402	Coilcraft	0402CS-27N	27nH
28	1	L9	L_TBD_0402	Additional notch filter ind	SM/L_0402	Murata	LQG15HN2N7S02	2.7nH
29	1	L7	L_10U_0805	SMPS out inductor	SM/L_0805	Murata	LQM21FN100M70L	10uH
30	1	R6	R_ORO_0402	USED TO IDENTIFY BAND: mount only 1 OR0 resistor according to assembly options	SM/R_0402	Tyco Electronics		NE
31	1	R7	R_ORO_0402		SM/R_0402	Tyco Electronics		NE
32	1	R8	R_ORO_0402		SM/R_0402	Tyco Electronics		NE
33	1	R9	R_ORO_0402		SM/R_0402	Tyco Electronics	CRG0402ZR	OR0
34	1	R10	R_ORO_0402		SM/R_0402	Tyco Electronics		NE

35	1	R11	R_ORO_0402	assembly options	SM/R_0402	Tyco Electronics		NE
36	1	R12	R_TBD_0402	Used to identify band by firmware	SM/R_0402	Tyco Electronics	CRG0402F100K	100k
37	1	R13	R_TBD_0402		SM/R_0402	Tyco Electronics	CRG0402F200K	200k
38	1	U1	SPIRIT1	RF IC	QFN20_REV3	STMicroelectronics		
39	1	U2	HEADER 1X2	Male Strip 1X2, 100 mils	WALCON.100/VH/T M2OE/W.325/10/M OD			
40	1	Y1	XTAL	XTAL	XTAL_32_25_REV2	NDK	NX3225GA	52 MHz