

Designator	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution Allowed	Lead Free
Y2	1	Crystal Oscillator	32.768 kHz	20 PPM	NX2012SA	NDK	NX2012SA-32.768K-STD-MUB-1	Yes	Yes
Y1	1	Temperature Compensated Xtal Oscillator - 48MHz	48 MHz	2 PPM	NX2016SA	NDK	NT2016SA-48M-END4910A	Yes	Yes
X3	1	Crystal Oscillator	12 MHz 30 ppm	30 PPM	3.2x2.5mm	TCX	7V-12.000MAHE-T	Yes	Yes
U7, U8	2	Intelligent load switch with reverse current protection and current limit	400 mA	-	SOT-23-5	ON Semiconductor	FPF2110	Yes	Yes
U6	1	ARM Cortex-M3 running at up to 96 MHz 256kB Flash+52kB SRAM	-	-	LQFP-100	Atmel	ATSAM3U2CA-AU	No	Yes
U5	1	EMI Common Mode Filter with ESD Protection for High Speed Serial Digital Interfaces	3.3 V	-	WDFN-8	ON Semiconductor	EMI2121MTTAG	Yes	Yes
U4	1	Low current voltage detector with active low CMOS RESET output	-	2%	TSOP-5	ON Semiconductor	NCP300LSN27T1G	Yes	Yes
U3	1	Linear Voltage Regulator, LDO, Ultra Low Iq, Ultra Low Noise, 200 mA	3.3 V	-	TSOP-5	ON Semiconductor	NCP702SN33T1G	Yes	Yes
SPB1, SPB2, SPB3, SPB4	4	Plastic spacer internal/internal M3x6 thread 20mm - BLACK	M3 20 mm	-	Hex	Essentra	303070000002	Yes	Yes
SMA1	1	SMA Female Edge Mount Connector for 0.062" Thick Board	50 Ω	-	SMA	Linx	CON SMA003.062	Yes	Yes
S1, S2, S3, S4	4	Pan head cross screw M3x8	M3	-	-	-	DIN7985	Yes	Yes
S	1	Slide Switches PC MNT 3 PIN SLIDE	200 mA	-	Through Hole	E-Switch	EG1218	Yes	Yes
RGB	1	RGB LED	RGB	-	141100%	Würth Elektronik	150141M173100	Yes	Yes
R64	1	Thick Film Resistors - SMD	1.2K Ω	5%	R0402	YAGEO	RC0402JR-071K2L	Yes	Yes
R63	1	Thick Film Resistors - SMD	390 Ω	5%	R0402	YAGEO	RC0402JR-07390RL	Yes	Yes
R62	1	Thick Film Resistors - SMD	1K Ω	5%	R0402	YAGEO	RC0402JR-071KL	Yes	Yes
R46	1	Thick Film Resistors - SMD	33K Ω	1%	R0603	Panasonic	ERJ3EKF3302V	Yes	Yes
R43	1	Thick Film Resistors - SMD	220 Ω	1%	R0603	Panasonic	ERJ3EKF4701V	Yes	Yes
R42	1	Thick Film Resistors - SMD	1M Ω	5%	R0603	ROHM	KTR03E2PJ105	Yes	Yes
R32	1	Thick Film Resistors - SMD	820 Ω	5%	R0603	Panasonic	ERJ-3GEYJ821V	Yes	Yes
R27, R28, R33, R34	4	Thick Film Resistors - SMD	4K7 Ω	1%	R0603	Panasonic	ERJ3EKF4701V	Yes	Yes
R26	1	Thick Film Resistors - SMD Jumper	0 Ω	5%	R0603	Panasonic	ERJ-3GEYJ821V	Yes	Yes
R19, R20, R29, R30, R31	5	Thick Film Resistors - SMD	150 Ω	1%	R0603	Panasonic	ERJ3EKF1500V	Yes	Yes
R17, R47	2	Thick Film Resistors - SMD	100K Ω	1%	R0603	Panasonic	ERJ3EKF1003V	Yes	Yes
R15, R16	2	Thick Film Resistors - SMD	39 Ω	1%	R0603	Panasonic	ERJ3EKF39R0V	Yes	Yes
R14, R18, R23	3	Thick Film Resistors - SMD	6K8 Ω	1%	R0603	Panasonic	ERJ3EKF6801V	Yes	Yes
R13, R45, R48, R50, R58, R59	6	Thick Film Resistors - SMD	10K Ω	1%	R0402	YAGEO	RT0402FRE0710KL	Yes	Yes
R5	1	Thick Film Resistors - SMD	12K Ω	5%	R0402	YAGEO	RC0402JR-0712KL	Yes	Yes
R2	1	Thick Film Resistors - SMD	2.7K Ω	5%	R0402	YAGEO	RC0402JR-072K7L	Yes	Yes
R1, R3, R4, R6, R7, R8, R9, R10, R11, R21, R22, R35, R36, R37, R38, R39, R40, R41, R44, R49, R51, R52, R53, R55, R56, R57, R60, R61, LVCO, CE4, CE5	31	Thick Film Resistors - SMD Jumper	0 Ω	5%	R0402	YAGEO	RC0402JR-070RL	Yes	Yes
Q1	1	MOSFET Single N-Channel Logic Level Power	0.2 A	-	SOT-23-3	ON Semiconductor	BSS138L	Yes	Yes
PB3, PC0, RESET	3	SMD pushbutton top actuated 6x6x4.3mm	-	-	SMD	Würth Elektronik	430182043816	Yes	Yes

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LT1, LT2	2	Fixed Inductors	18 nH	2%	L0402	Murata	LQW15AN18NG00D	Yes	Yes
LF2	1	Fixed Inductors	2.2nH	0.2 nH	L0402	Murata	LQW15AN2N2C10D	Yes	Yes
LF1	1	Fixed Inductors	9.5 nH	2%	L0402	Murata	LQW15AN9N5G00D	Yes	Yes
LE1	1	Fixed Inductors	40 nH	2%	L0402	Murata	LQW15AN40NG00D	Yes	Yes
LC1, LC2, LC3, LT3	4	Fixed Inductors	18 nH	2%	L0402	Murata	LQW15AN18NG00D	Yes	Yes
LB1, LB2	2	Fixed Inductors	12 nH	2%	L0402	Murata	LQW15AN12NG00D	Yes	Yes
L5	1	EMI Suppression ferrite bead SMD	30 Ω	-	F0603	Würth Elektronik	742792609	Yes	Yes
JP1, JP2, JP3, JP4, JP5, JP12	6	Jumper 2.54mm pitch black	-	-	-	Sullins Connector Solutions	QPC02SXGN-RC	Yes	Yes
J10	1	Headers	-	-	Through Hole	FCI / Amphenol	67996-410-060024LF	Yes	Yes
J6, J9	2	SMD vertical male header 2x5pins 1.27mm	-	-	-	Samtec Inc.	FTSH-105-01-F-DV-K		
J5	1	USB - micro B USB 2.0 Receptacle Connector 5 Position Surface Mount, Right Angle, Through Hole	-	-	Through Hole	Amphenol ICC	10118194-0001LF		
IC1	1	AXM0F343-256-1-TX40 RF System on a Chip - SoC Sub GHz, 27-1050 MHz RF Microcontroller	AXM0F343-256-1-TX40	-	QFN40	ON Semiconductor	AXM0F343-256-1-TX40	No	Yes
FB1	1	Ferrite Bead	600 Ω	-	F0402	Murata	BLM15AG601SN1D	Yes	Yes
D3	1	SMD LED	LIGHT GREEN	-	D0603	Würth Elektronik	150060VS75000	Yes	Yes
D2	1	SMD LED	LIGHT RED	-	D0603	Würth Elektronik	150060RS75000	Yes	Yes
CM1	1	CAP SMD	6.2 pF	0.1 pF	C0402	Murata	GRM1555C1H6R2BA01D	Yes	Yes
CLF	1	CAP SMD	82pF	2%	C0402	Murata	GRM1555C1H820GA01D	Yes	Yes
CF 1, CM2, CM3	3	CAP SMD	3.6pF	0.1 pF	C0402	Murata	GRM1555C1H3R6BA01D	Yes	Yes
CF1, CF2	2	CAP SMD	2.2 pF	0.1 pF	C0402	Murata	GRM1555C1H2R2BA01D	Yes	Yes
CE3	1	CAP SMD	0.9pF	0.05 pF	C0402	Murata	GRM1555C1HR90WA01D	Yes	Yes
CE1, CE2	2	CAP SMD	4.3pF	0.1 pF	C0402	Murata	GRM1555C1H4R3BA01D	Yes	Yes
CB2, CT1, CT2, CT3	4	CAP SMD	2.7pF	0.1 pF	C0402	Murata	GRM1555C1H2R7BA01D	Yes	Yes
CABLE_USB	1	USB A Male to Micro-B Male cable length 50cm	-	-	-	CNC Tech	102-1092-BL-00050	Yes	Yes
C52	1	CAP SMD	4.7uF	10%	C0603	Murata	GRM188R60J475KE19J	Yes	Yes
C49, C51, C100, C101	4	CAP SMD	100pF	5%	C0402	Murata	GRM1555C1H101JA01D	Yes	Yes
C41, C42, C43, C44	4	CAP SMD	1 μF	10%	C0402	Murata	GRM155R6YA105KE11D	Yes	Yes
C39, C40	2	CAP SMD	4μ7	10%	C0402	Murata	GRM188R6YA475KE15D	Yes	Yes
C38	1	CAP SMD	100 nF	10%	C0402	Murata	GRM188R71E104KA01D	Yes	Yes
C37	1	CAP SMD	4n7	5%	C0805	TDK	C2012C0G2E472J125AA	Yes	Yes
C31, C32	2	CAP SMD	12 pF	5%	C0402	Murata	GRM1555C1E120JA01D	Yes	Yes
C14, C26	2	CAP SMD	10 μF	10%	C0402	Murata	GRM188D71A106KA73D	Yes	Yes
C13, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C27, C28, C29, C30, C33	17	CAP SMD	100 nF	10%	C0402	Murata	GRM155R61E104KA87D	Yes	Yes
C12	1	CAP SMD	10 pF	5%	C0402	Murata	GRM1555C1E100JA01D	Yes	Yes
C3	1	CAP SMD	0.1uF	10%	C0402	Murata	GRM155R71H104KE14D	Yes	Yes
C1, C50, C102	3	CAP SMD	10nF	10%	C0402	Murata	GRM155R71E103KA01D	Yes	Yes
BH1	1	SMD battery holder for CR2032 type batteries	-	-	-	Keystone Electronics	3002	Yes	Yes