

Bill of Materials – nRF 51422 Moisture Sensor circuit

Designator	Value	Description	Footprint	Manufacturer part-nr.
C1, C2, C13, C14	12 pF	Capacitor, NPO, ±2%	0402	600L120JT200T
C3	2.2 nF	Capacitor, X7R, ±10%	0402	GRM155R71H222KA01D
C4	Variable	Selfdesigned Probe	Throughhole	See PCB design
C5, C15, C20	0.1 µF	Ceramic bypass ± 20%	0402	C0402X5R0J104M020BC
C6	4 pF	Ceramic bypass ± 20%	0402	GRM0225C1C4R0CD05D
C7, C17, C19	4.7 µF	Capacitor, X5R, ±10%	0402	06036D475KAT2A
C8, C11	100 nF	Capacitor, X7R, ±10%	0402	GCM155R71C104KA55D
C9	1.0 nF	Capacitor, X7R, ±10%	0402	VJ0402Y102KXAAC
C10	47 nF	Capacitor, X7R, ±10%	0402	GRM155R71E473KA88D
C12	1.0 µF	Capacitor, X7R, ±10%	0603	EMK107B7105KA-T
C16	1.0 µF	Electrolytic bypass ± 20%	Custom	UWG1V010MCL1GB
C18	10 nF	Capacitor, X7R, ±10%	0402	GCM155R71H103KA55D
Cm	1.2 pF	Capacitor, ±10%	0402	500R07S1R2BV4T
L1	22 µH	Chip inductor, high current, ±20%	Footprint modified	LPS4018-223M
Lm1	2.7 nH	High frequency chip inductor ±5%	0402	L-07C2N7SV6T
Lm2	3.3 nH	High frequency chip inductor ±5%	0402	0402CS-3N3XJLW
L4	10 µH	Chip inductor, IDC, min = 50 mA, ±20%	0603	BRL1608T100M
L5	15 nH	High frequency chip inductor ±10%	0402	L-07C15NKV6T
U1	nRF51422	MCU	Custom	nRF51422-QFAA-R7 v2
U2	555-Timer	555-Timer CMOS	DSBGA-8	LMC555CTP/NOPB
U3	ADP5090	Charge Controller	Custom	ADP5090ACPZ-1-R7
X1	16 Mhz	XTAL SMD 2520, 16MHz, 8 pF, ± 40ppm	BT-XTAL_2520	581-CX2520SB16DFLJZZ
X2	32.768kHz	XTAL SMD 3215, 32.768kHz, 9 pF ± 20ppm	XTAL_3215	SM8S-9-32.768K-20
B1	2.45 GHz	Balun	Custom Made	2450BM14E0003T
A1	2.45 GHz	Antenna, 2.4-2.5 GHz	Custom Made	2450AT18B100E
R1	0.51 MΩ	Resistor	0402	ERJ-2RK5103X
R2	1 MΩ	Resistor	0402	WCR0402-1M0FA
R3	3.3 MΩ	Resistor	0402	CHV0805-JW-335ELF
R4	10 MΩ	Resistor	0402	HVC2512-10MFT18
R5	Optional/20 kΩ	Resistor	Optional	ERJ-6ENF2002V
R6	5.9 MΩ	Resistor	0402	CRCW08055M90FKEA
R7	4.02 MΩ	Resistor	0402	CRCW06034M02FKEA
R8, R9	5 MΩ	Resistor	0402	CRHV1206AF5M00FKFT
BAT+	3.6V	3.6V LIR battery	Custom	LIR2450
Battery holder		Battery holder LIR2450	Custom	BC-2404