

Functional EMF Meter -r2 BOM

Reference	Description	Value	Quantity	Dat sheet or Part Link
				AlliExpress: 17/25cm 5 Section Metal Full-Channel Am Fm Radio Antenna Telescopic Antenna Rotating Antenna Aerial M2.5 https://www.aliexpress.us/item/3256806492066394.html
				eBay for the ATT
AE1	Antenna 3" – 8 5/8", 5 Segment, Dia. 5mm (.198") or ATT 5000 Cordless phone antenna	Ant 3", 5mm	0	0 + Red Enamel 26 AWG Wire Wrap
AE1 Option	ATT 5000 Cordless phone antenna	6mm Dia 3" antenna	1	eBay as low as \$3 each
BT1	6v Battery Pack - 6V Option	4 AA Batteries	1	For 6V supply BT1, BT1 3D, Buck1 are required. Aliexpress: https://www.aliexpress.us/item/3256805289292980.html
BT1 3D	6v Battery Pack Mount, 3D printed	AA 3D Holder	1	
BUCK1	6V buck converter	DD0315NA	1	https://www.aliexpress.us/item/2251832636713190.html
BT1,BT2	9v Battery Clip and Holder - 9V Option	3D Printed	2	For 9V supply BT1, BT2, 9V batteries with clips, 3D printed 9V batery Holder required All Electronics, Yellow Metallized polyester film radial capacitors. 22n or 22 nf desired, .022uf
YC1,YC2,YC3	Yellow .022uf Cosmetic Capacitor (22n)	Y .022uf Cosmetic	3	AliExpress
WC2,WC2	White .001uf Cosmetic Capacitor (10n)	W .001uf Cosmetic	2	AlliExpress
C1	Mylar Capacitor	0.1uf	1	MLCC substitute or Jameco / AliExpress for Mylar
C2	Electrolytic Capacitor - Blue Sleeve	4.7uf	1	Mouser/Digikey
C3	Ceramic Disk Capacitor	220pf	1	Mouser/Digikey
C4	Mylar/MLCC Capacitor	.0027uf	1	AliExpress/Mouser
C8	Mylar/MLCC Capacitor	.047uf	1	Jameco, AliExpress, Mouser/Digikey
C9,C10,C11	Electrolytic Capacitor	1uf	3	Mouser/Digikey
C17	Electrolytic Capacitor - Optional based on 5v regulator	1uf	1	Mouser/Digikey
C12,C13	Ceramic Capacitor-0805 SMD, Based on Regulator	0.1-0.33uf	1	Mouser/Digikey, 0805 Package
C5,C6,C7	Ceramic Capacitor-0805 SMD	0.1uf	3	Mouser/Digikey, 0805 Package
C14	Electrolytic Capacitor - Optional, used with -6v BUCK1	220uf	1	Mouser/Digikey, 220uf/10v
C15	Electrolytic Capacitor	10uf	1	Mouser/Digikey
C16	Electrolytic Capacitor - Black Sleeve	10uf	1	Mouser/Digikey
D1, D2, D4, D5, D7, D8, D9	Signal Diode	1N914	7	Mouser/Digikey
D11, D12, D13, D14, D15	Red LED	Ultra Bright Red, 5MM	5	Mouser, Lighthouse LED, AliExpress
D10	Rectifier Diode, SMD	SL1A	1	IN4001 equivalent, SL1A, Any source, SMD, SOD-123 package
L1	EMF Pickup coil	3D Printed	1	32 gauge, 36 AWG Preferred 32g 0.11 per ft @ 12°
L2	Cosmetic Antenna Coil Left Side, Optional EMF connection	Hand Made	1	26 AWG red enameled
L3	Cosmetic Coil Right Side	Hand Made	1	22AWG 0.6438mm 0.0253", Copper Wire 0.65mm
L4	33uH Inductor, SMD 0805	33uH	1	Mouser/Digikey, 33uH 0805 Package
LS1	Speaker 20x30mm, 8 ohm, 1.5 Watt	20x30x0.4mm 1Watt	1	AlliExpress, https://www.aliexpress.us/item/3256807204066808.html
Q1	2N3904/CMPT3019 or Equiv, SMD SOT-23	CMPT3019	1	Mouser/Digikey
R1, R19, R7	1/4w Resistor	1M	3	Any source
R26, R5	1/4w Resistor	22k	2	Any source
R2	1/4w Resistor	91k	1	Any source
R3	1/4w Resistor	9.1k	1	Any source
R4	1/4w Resistor	1k	1	Any source
R23, R6, R8	1/4w Resistor	10k	3	Any source
R13	1/8w SMD Resistor, 0805	10k	1	Any source
R11, R12, R14, R20, R27, R9	1/4w Resistor	100k	6	Any source
R10	1/4w Resistor	10M	1	Any source
R15	1/4w Resistor	100	1	Any source
R16	1/8w SMD Resistor, 0805	470k	1	Any source
R22	1/8w Resistor	3.3M	1	Any source
R21	1/4w Resistor	2.2M	1	Any source
R17	1/8w SMD Resistor, 0805	15k	1	Any source
R18	1/4w Resistor	7.5k	1	Any source
R24	1/4w Resistor	47k	1	Any source
R25, R31	1/8w SMD Resistor, 0805	1.8k	2	Any source
R28	1/4w Resistor	1.2k	1	Any source
R30	1/4w Resistor	33	1	Any source
R29	1/4w Resistor	1.5k	1	Any source
RV1,RV2	Variable resistor. 3326/3362/3386 F or P series	100k	1	Mouser Electronics, https://www.mouser.com/ProductDetail/bourns/3386H-1-104LF?qs=m2uG%2FFdTAPVxo77x9HS0w%3D%3D 2 Jameco https://www.jameco.com/z/3386P-1-104LF-JVP-Jameco-ValuePro-1-2-Watt-3-8-Square-Trimming-Potentiometer-100k-Ohm_43027.html (\$0.99)
RV3	1k/5k ohm, Variable resistor (PT15 Series)	5k	1	Included with VU meter or Jameco for PT15 Black Pot
SW1	SW_Coded_EECO_2700_-31/33	EECO 276133M	1	eBay, A Variety of switches are supported.
SW2	SW_DIP_x04, Piano or Rotary S-2151	SW_DIP_x04	1	Digkey or Mouser, https://www.mouser.com/ProductDetail/CTS-Electronic-Components/195-4MS7qs=hDoPxpGr7dwh3etBscOg%3D%3D
SW3,SW4,SW5	SW_Push_ 6x6x5mm SPST	Tactile Switches,6X6	3	Mouser, AliExpress
SW6	SW_SPDT AA Supply E101SD1A1BE \$10.32 SW_DPD7 9v Supply E201MD1AV2BE \$12.32-\$15.46	Toggle Switch	1	Digkey/Mouser, C&K E201MD1AQE (\$15.46) or E-Switch 100DP1T1B1M6QE (\$4.35) https://www.mouser.com/ProductDetail/C/K/E201MD1AQE7qs=c89up6qALNEis%2Fy1k1m0A%3D%3D https://www.mouser.com/ProductDetail/E-Switch/100DP1T1B1M6QE7qs=wUxugUr1qx%252BysjepFRca%3D%3D https://www.mouser.com/ProductDetail/C/K/101SD1A1BE?qs=V27O%2FkrGudytwoweDEvTyA%3D%3D
U1	TL084	TL084	1	Mouser/Digikey
U2	ATtiny85-20U, SOIC8 SMD	ATtiny85-20U	1	Mouser/Digikey
U3	DF Player PCB	DFR0299	1	AliExpress
U4	5v regulator (LDO), DPAK, SMD	TC1262-5	1	LF50CDT Regulator Minimum 500ma output. Mouser, w/ 9v source 1 TC1262-5.0 Regulator LDO 500ma min, AA source
U5	LM3914N	LM3914N	1	AliExpress
VU1	Requires a 3D printed base	MF-110A	1	AliExpress, https://www.aliexpress.us/item/3256807924391371.html
VU1_BASE	3D Printed Base for MF-110 Meter element		1	Requires screws from MF-110A meter
MS-M3	Mechanical screw, Battery Holder	M3 x 6mm	8	AliExpress
MS-8	Mechanical Standoff, Battery Holder	M3-10mm	4	AliExpress
Misc Colored wire	Various wire routes, cosmetic only	24 AWG	1	Jameco
Magnet Wire	26 AWG (.415mm) red enameled wire. 2 layers of wire wrap, cosn 26 AWG	1	AliExpress	
SD_CARD	Micro SD Card 1/4GB	1 or 4GB	1	
EMF r2 PCB	PCB		1	

Approximate part cost \$70.00