

# 3167 - 250mW Mono FM Transmitter

This kit combines our 3018v2 FM Transmitter, with our 3171 250 mW FM Power Amplifier. The result is a high quality, mono, stable, FM transmitter which can be tuned over the full commercial FM band 88MHz – 108MHz, and which has a true line-of-sight range of 1 kilometer.

We have not included the 3018v2 or 3171 documentation here. Please download them from our website at

<http://www.quasarelectronics.com/pdf/3018v2.pdf>

<http://www.quasarelectronics.com/pdf/3171.pdf>

The schematic for 3167 is given below.

**Assembly.** Check the components against the Component Listing. There is one LINK to add to the board. Note some of the resistors stand up on the board. Place the resistor body on the circle marked on the overlay.

Use some insulated connection wire to mount the MICrophone at least several inches away from the board. Mount the 2N4427 about 5mm to 10mm above the board. Attach the HS106 heatsink to it.

Attach an antenna to the OUT connector. This can be a simple single length of wire about 75cm in the + terminal or a more advanced antenna. Read the 3018v2 documentation for more on antennas.

Make sure there is a good solder connection between the wires of the RFC's and the ferrite. Even though the leads should be tinned make sure there is a good solder connection with the pad.

**Design.** There is one difference between the FM transmitter here and as found in 3018v2. Due to capacitive 'decoupling' (all the 1n0 and 10n ceramic caps across the battery supply) the +ve rail is a RF ground, same as the Gnd rail. Unfortunately, it can have a finite impedance so that it can develop a small RF voltage. It is therefore good practice to reference ALL RF circuits to the same RF ground. N.B. Most DC mains adaptors are unsuitable as they will introduce an intolerable level of mains hum.

## Support

For technical support please email us.

mailto: [support@quasarelectronics.com](mailto:support@quasarelectronics.com)

## COMPONENT LISTING

Resistors 5%, 1/4W		
10R	R1 R8	2
22R	R7	1
47R	R3	1
100R	R9	1
120R	R4	1
470R	R2	1
1K	R11	1
2K2	R5	1
4K7	R6	1
12K	R10 R15	2
22K	R13	1
100K	R12 R14	2
BC338	Q4	1
BC548	Q5	1
78L08	Q3	1
10uF/25V	ecap C10 C12 C17 C20	4
220uF/16V	ecap C2	1
Ceramic capacitors:		
2p7	C15	1
33p	C3	1
47p	C4 C14	2
1n 102	C5 C6 C7 C8 C9	5
3n3 332	C16	1
10n 103	C1 C11 C18	3
22n 223	C19	1
33n 333	C13	1
0-30pF	trimmer	1
Microphone		1
RFChoke	L4 L5 L6	3
Ferrite	L3	1
3t coil	L1	1
5t coil	L2	1
2N2369	Q1	1
2N4427	Q2	1
HS106	heatsink	1
2-pole terminal blocks	X1 X2	2
3167	PCB	1

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