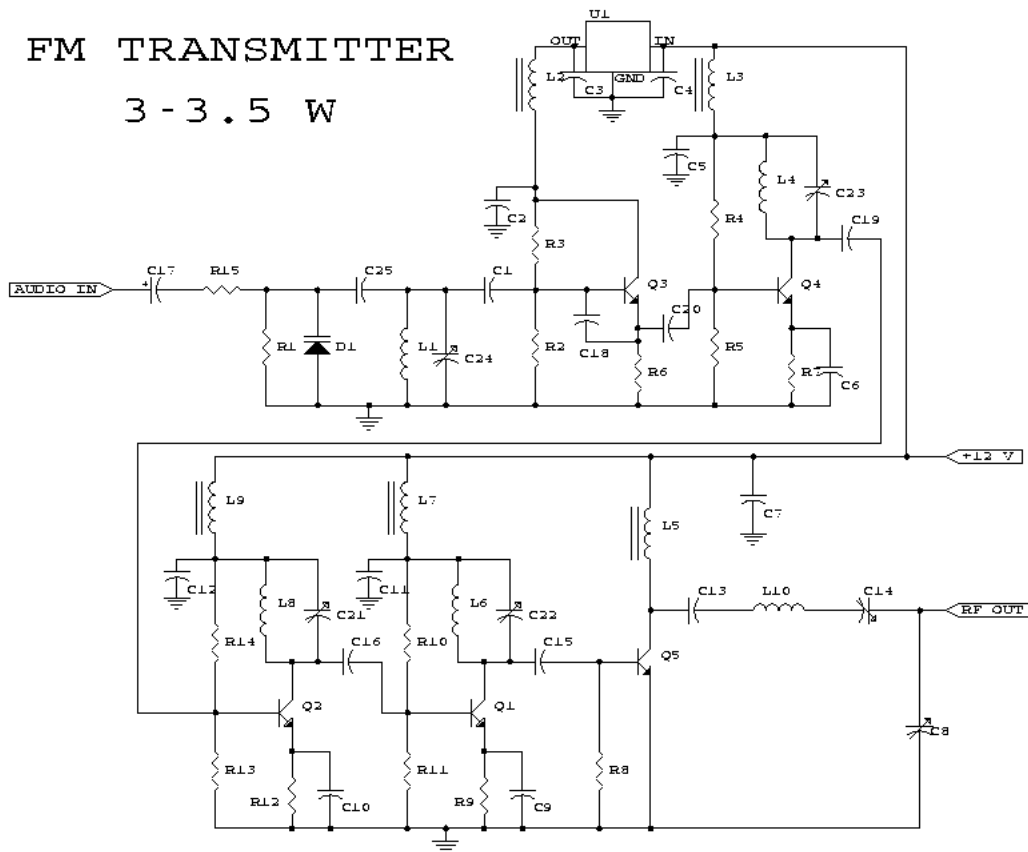


## FM Transmitter

This is the schematic for an FM transmitter with 3 to 3.5 W output power that can be used between 90 and 110 MHz. Although the stability isn't so bad, a PLL can be used on this circuit.

This is a circuit that I've build a few years ago for a friend, who used it in combination with the BLY88 amplifier to obtain 20 W output power. From the notes that I made at the original schematic, it worked fine with a SWR of 1 : 1.05 (quite normal at my place with my antenna).

### Schematic



### Parts:

Part	Total Qty.	Description	Substitutions
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R1,R4,R14,R15	4	10K 1/4W Resistor	
R2,R3	2	22K 1/4W Resistor	
R5,R13	2	3.9K 1/4W Resistor	
R6,R11	2	680 Ohm 1/4W Resistor	
R7	1	150 Ohm 1/4W Resistor	
R8,R12	2	100 Ohm 1/4W Resistor	
R9	1	68 Ohm 1/4W Resistor	
R10	1	6.8K 1/4W Resistor	
C1	1	4.7pF Ceramic Disc Capacitor	
C2,C3,C4,C5,C7,C11,C12	7	100nF Ceramic Disc Capacitor	
C6,C9,C10	3	10nF Ceramic Disc Capacitor	
C8,C14	2	60pF Trimmer Capacitor	
C13	1	82pF Ceramic Disc Capacitor	
C15	1	27pF Ceramic Disc Capacitor	
C16	1	22pF Ceramic Disc Capacitor	
C17	1	10uF 25V Electrolytic Capacitor	
C18	1	33pF Ceramic Disc Capacitor	
C19	1	18pF Ceramic Disc Capacitor	
C20	1	12pF Ceramic Disc Capacitor	
C21,C22,C23,C24	4	40pF Trimmer Capacitor	
C25	1	5pF Ceramic Disc Capacitor	
L1	1	5 WDG, Dia 6 mm, 1 mm CuAg, Space 1 mm	
L2,L3,L5,L7,L9	5	6-hole Ferroxcube Wide band HF Choke (5 WDG)	

L4,L6,L8	3	1.5 WDG, Dia 6 mm, 1 mm CuAg, Space 1 mm	
L10	1	8 WDG, Dia 5 mm, 1 mm CuAg, Space 1 mm	
D1	1	BB405	BB102 or equal (most varicaps with C = 2-20 pF [approx.] will do)
Q1	1	2N3866	
Q2,Q4	2	2N2219A	
Q3	1	BF115	
Q5	1	2N3553	
U1	1	7810 Regulator	
MIC	1	Electret Microphone	
MISC	1	PC Board, Wire For Antenna, Heatsinks	

## Notes:

1. Email [Rae XL Tkacik](mailto:Rae.XL.Tkacik) with questions, comments, etc.
2. The circuit has been tested on a normal RF-testing breadboard (with one side copper). Make some connections between the two sides. Build the transmitter in a RF-proof casing, use good connectors and cable, make a shielding between the different stages, and be aware of all the other RF rules of building.
3. Q1 and Q5 should be cooled with a heat sink. The case-pin of Q4 should be grounded.
4. C24 is for the frequency adjustment. The other trimmers must be adjusted to maximum output power with minimum SWR and input current.
5. Local laws in some states, provinces or countries may prohibit the operation of this transmitter. Check with the local authorities.

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搜集整理：电子零件城-笨笨兔 (QQ: 154502842)      2004-04-10