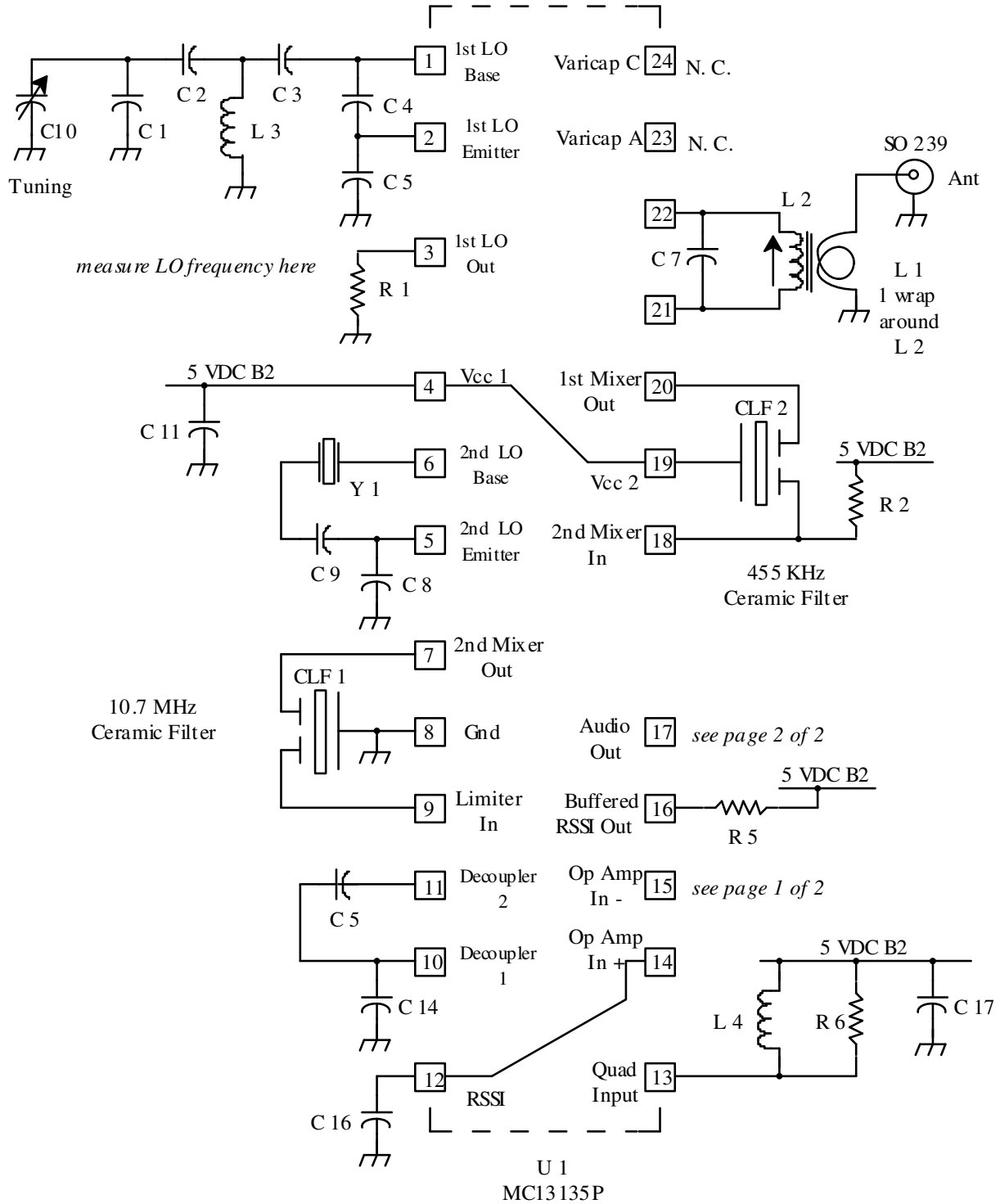


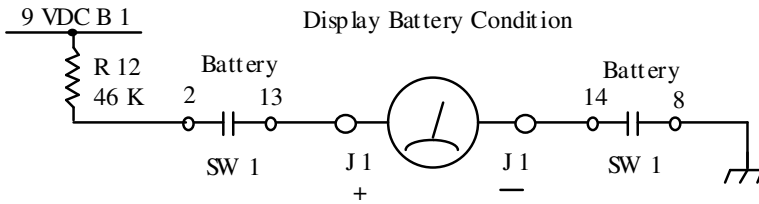
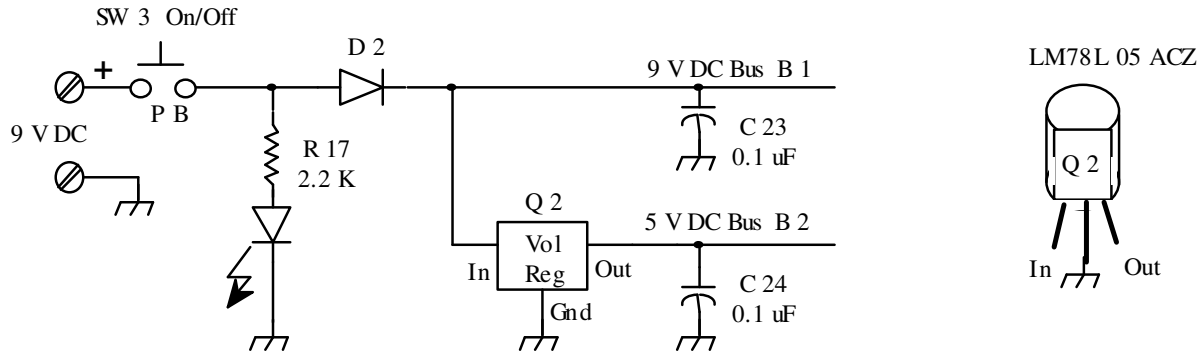
MFJ 224 2 Meter FM Analyzer

Dual Conversion Narrowband FM Receiver IC Schematic

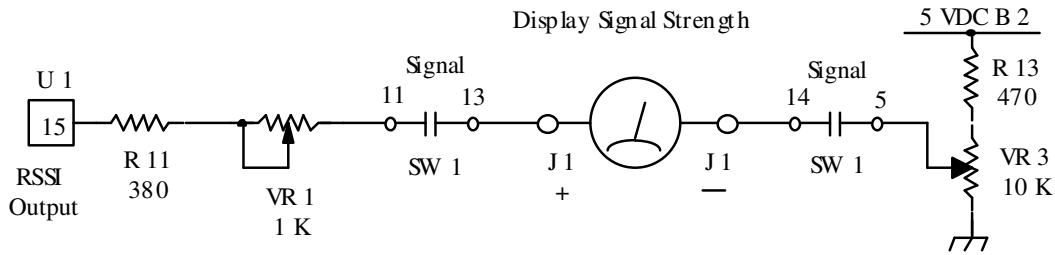


NOTE: this circuit is very similar to the Vecronics VEC-1002K 2 meter FM receiver kit

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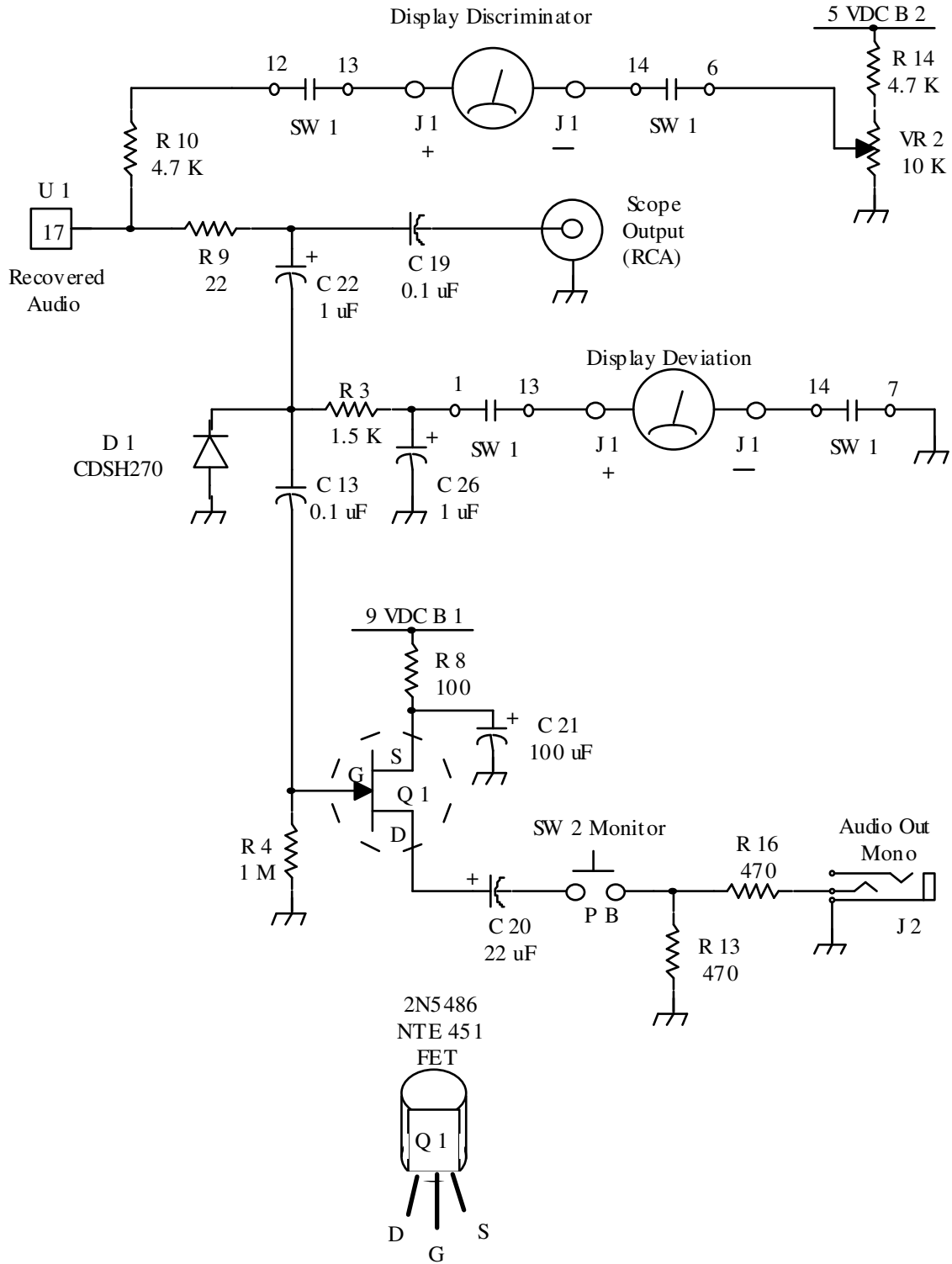


METER
 200 uA full scale
 Internal R 742 Ohm
 measured I_m 186 uA

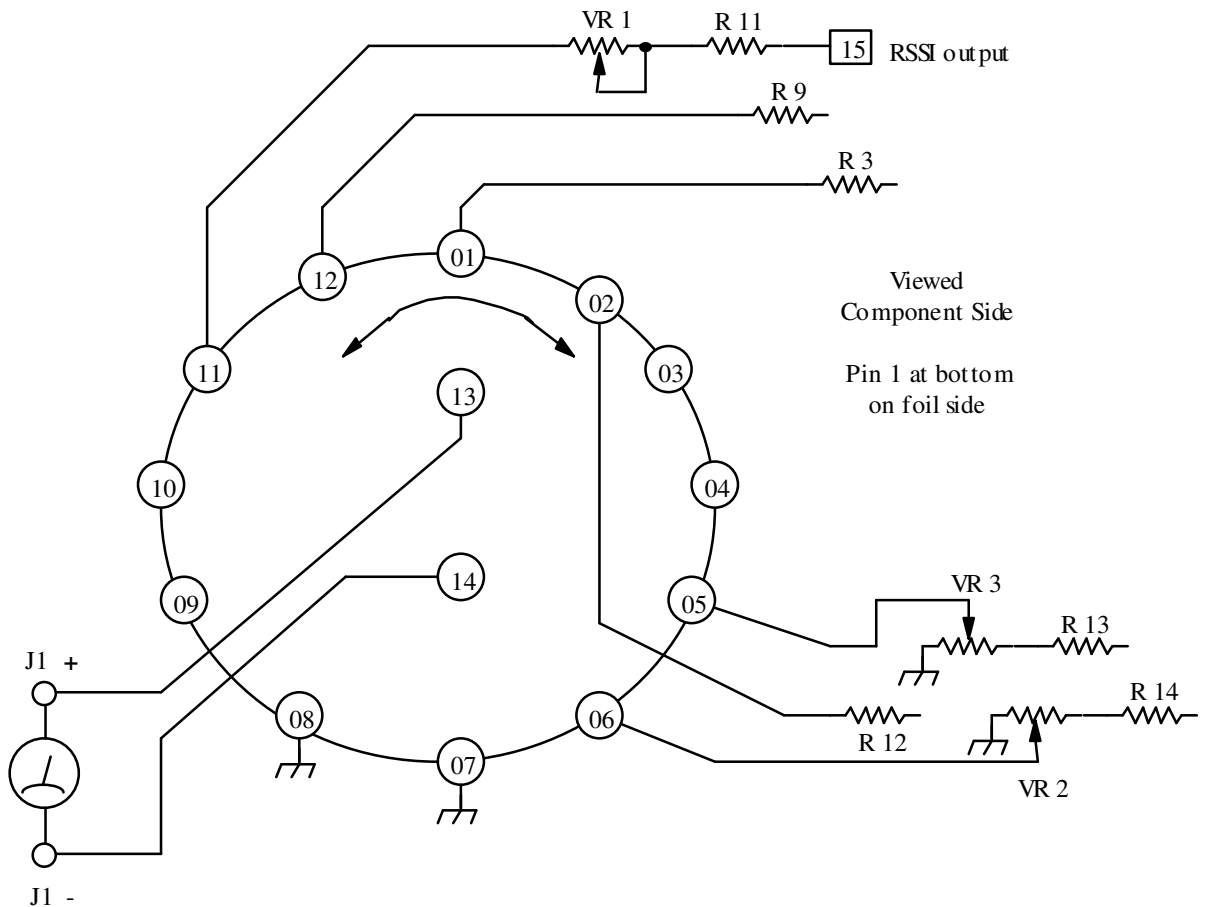
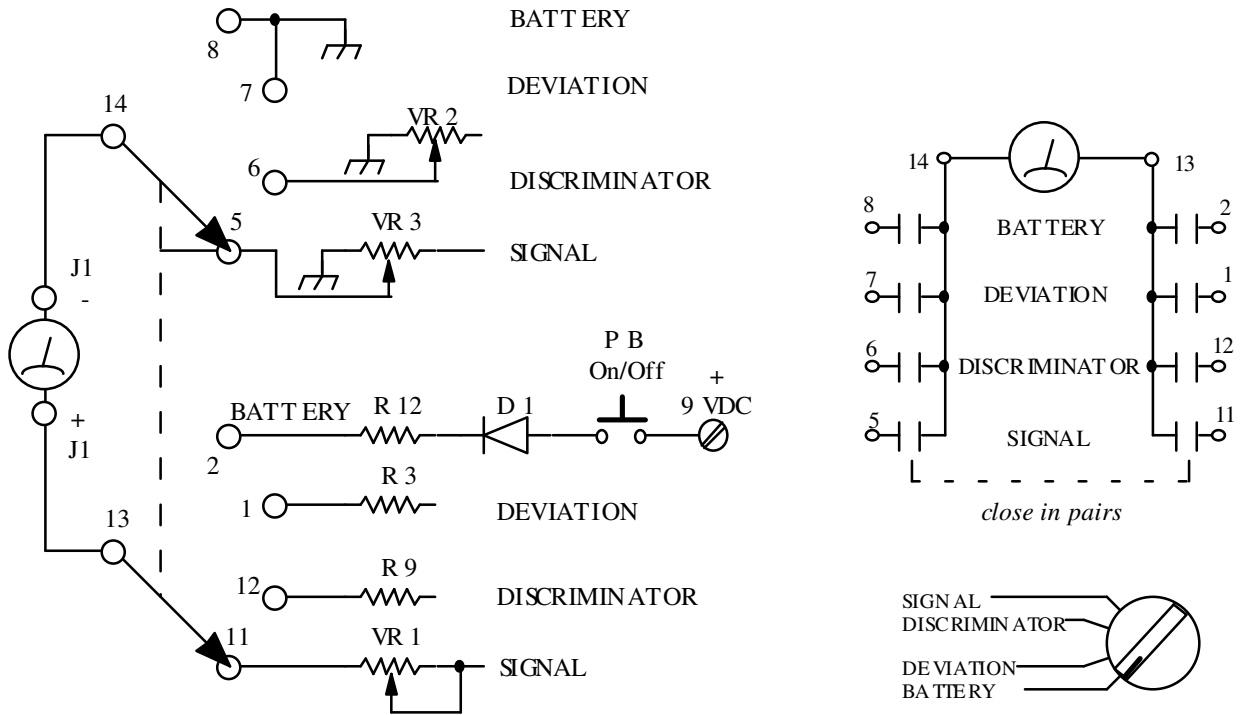


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Lst updtae : 12-08-13



MFJ 224 2 Meter FM Signal Analyzer - Rotary Switch S 1



MFJ 224 2 M FM Analyzer Parts List					
Res	Value	Note / Comment	Cap	Value	Note / Comment
1	4.7 K	pin 3 to gnd, 1st LO out (frq)	1	56 pF	Mylar (blue) 560
2	390	CFL 2, pin 18, 5 VDC (Vcc2)	2	15 pF	Multilayer (tan) 15J
3	1.5 K	SW 1-1 & C 26	3	100 pF	Multilayer (tan) 10I
4	1 M	Q 1 Gate	4	15 pF	Multilayer (tan) 15J
5	10 K	Pin 16 to 5 VDC	5	18 pF	Multilayer (tan) 18J
6	47 K	Pin 13 & L 4	6	0.001 uF	102 disk
7	470	Q 1 Drain	7	10 pF	Multilayer (tan) 10J
8	100	Q 1 Source & C 21 (to 9 VDC)	8	56 pF	Mylar (blue) 560
9	22	Pin 17	9	18 pF	Multilayer (tan) 18J
10	4.7 K	Pin 17	10	40-96 pF	N50 Variable (9 rotor, 8 stator plates)
11	380	Pin 15	11	0.1 uF	104 disk
12	46 K	Battery metering	12	0.001 uF	102 disk
13	470	Signal metering	13	0.1 uF	104 disk
14	4.7 K	Discriminator metering	14	0.1 uF	104 disk
15	47	Audio Out Ckt	15	0.1 uF	104 disk
16	47	Audio Out Ckt	16	0.1 uF	104 disk
17	2.2 K	LED	17	10 uF	Electrolytic 5 V bus B2
U1	IC	MC 13 135 P (24 pin), pin 8 Gnd	18	0.1 uF	104 disk
Q 1	2N5486	NTE 451, FET	19	0.1 uF	104 disk
Q2	LM78L05	5 V regulator (pin 4 and others)	20	22 uF	Electrolytic, Audio Out Ckt
L1	1 turn	Wrapped around L2	21	100 uF	Electrolytic, Q 1, Source
L2	4 1/2 Turn	Yellow, 0.166 to 0.218 uH *	22	1 uF	Electrolytic
L3	0.047 uH	Coilcraft 144-02SL, can	23	0.1 uF	104 disk
L4	660 uH	AMC 2A 6597 97098 (black)	24	0.1 uF	104 disk
CFL 1	455 MHz	Ceramic Filter 10.7 MHz SFE 10.7	25	0.01 uF	104 disk
CFL 2	10.7 MHz	Ceramic Filter 455 KHZ 55D	26	1 uF	Electrolytic Deviation
Y 1	Crystal	10.245 MHz	D 1		CDSH270 (R 3, anode to Gnd)
VR 1	1 K	Adj. pot	D 2		3907, in DC line form battery
VR 2	10 K	Adj. pot	J 1	2 Pin	Meter
VR 3	10 K	Adj. pot	J 2	Audio	1/8 mono jack
SW 1	Rotary	Function Switch, 4 position	J 3	Scope	R C A
SW 2	Monitor	Push Button, in On (closed)	LED		Power On indicator
SW 3	Power	Push Button, in On	M 1	Meter	0 - 200 uA R _T = 742 ohm
*	<i>no part number availabel, description based on Coilcraft inductor catalog, part # 142-04-J08</i>				