

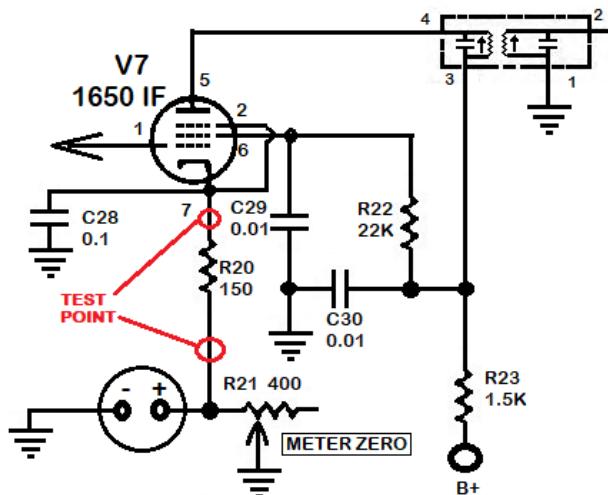
SX-117 S-METER DISCUSSION

The s-meter in the 117 is very basic. It is measuring the cathode current of V7, the 1650 IF amp. If V7 is good and the radio has no other faults and the alignment is correct, it just works. Turn the RF GAIN control to minimum and adjust the meter zero control for zero on the meter. The meter ckt will drift for the first 15 to 20 minutes of operation. Allow it to stabilize before adjusting.

It is futile to work on the s-meter circuitry before all other problems are eliminated and the receiver is in perfect alignment.

S-METER SCHEMATIC & TEST VOLTAGE

Warm up 15 minutes. On 80 meters tune up @ 3.900MHz, LSB, with 3uv signal input. Adjust the signal input to 50uv. Perform the no signal and S9 tests as described below.



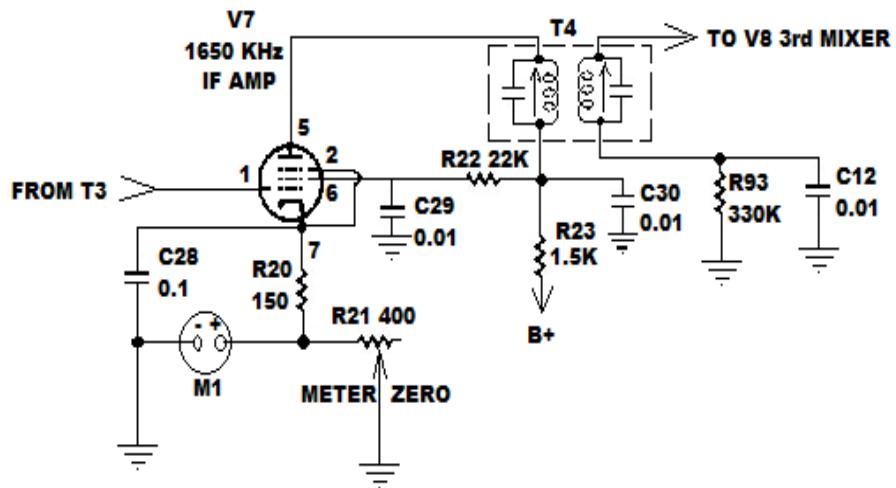
For this test NO SIG turn the RF GAIN control to 0. For S9 turn the RF GAIN to 10. Due to variations in power supplies and front end gain the voltages will vary. The ratio of change and the direction of the change should not.

	V7 PIN 7	JUNCTION R20 & R21
NO SIG	2.3vdc	0.41vdc
S9	1.15vdc	0.21vdc

The s-meter is only true when the RF GAIN is set to max. The standard for s-meter readings in HF receivers is: 3uv in will present S5 and 50uv in will produce S9. If everything else is working properly there are only 5 parts that will cause the s-meter to malfunction: V7, the meter, R20, R21, and C28.

1650 IF AMP/ S-METER SCHEMATIC & VOLTAGE CHART

Static test, no signal in, RF GAIN and AF GAIN at minimum.



REF: B+=172V, SECONDARY B+=149V AND AUXILIARY B+=146V, Power supply voltages may vary +/- 10%. Voltages in the chart will vary accordingly.

MEASUREMENTS TAKEN WITH NO SIGNAL IN						
PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7
1.23	2.35	6.3vac	0	145	81.8	2.35

See section 7-6 for V7, 1650 IF voltage chart.