

- 2.983(d) (7) Complete Circuit Diagrams: The circuit diagram is included as EXHIBIT #7. The block diagram is included as EXHIBIT #5.
- (8) Instruction book. The instruction manual is included as EXHIBIT #8.
- (9) Tune-up procedure. The tune-up procedure is given in EXHIBIT #10.
- (10) Description of all circuitry and devices provided for determining and stabilizing frequency is included in the circuit description in the instruction manual.

- 2.983 (11) Description of any circuits or devices employed for suppression of spurious radiation, for limiting modulation, and for limiting power. In addition to the interstage filtering the multi-section low pass filter made up of L12, L11, C40, C47, C95, C46, C94, C45, & C26.

Limiting Modulation:

The transmitter audio limiting circuitry is contained in the loop filter IC01.

Limiting Power: There is no provision for limiting power.

- (12) Digital modulation. This unit does NOT use digital modulation.

- 2.983(e) The data required by 2.985 through 2.997 is submitted below.

- 2.985(a) RF power output.  
RF power is measured by connecting a 50 ohm, resistive wattmeter to the RF output connector. With a nominal battery voltage of 13.6V, and the transmitter properly adjusted the RF output measures:

HIGH POWER

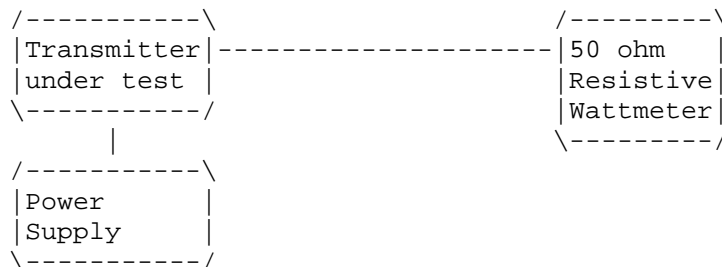
INPUT POWER: (13.2V)(1.26A) = 16.6 Watts

OUTPUT POWER: 5.0 Watts Efficiency: 30%

LOW POWER

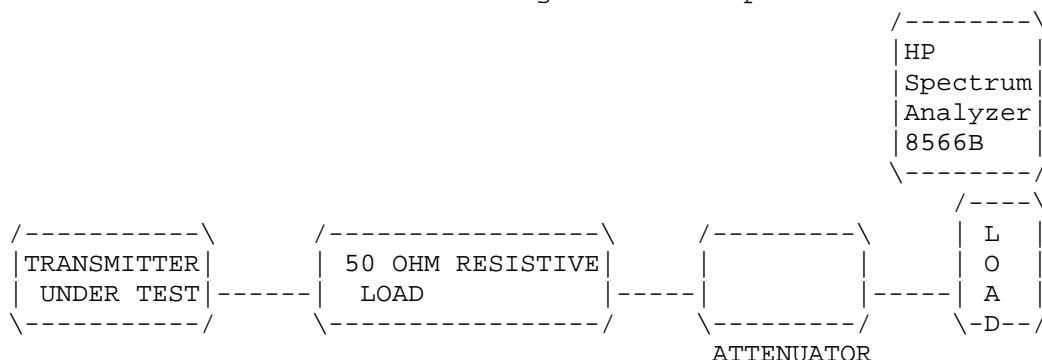
INPUT POWER: (13.2V)(0.36) = 4.75 Watts

OUTPUT POWER: 0.90 Watts Efficiency: 19%



2.991 Spurious emissions at antenna terminals(conducted):  
 Data on the following page shows the level of conducted spurious responses. The carrier was modulated 100% using a 2500Hz tone. The spectrum was scanned from 0.4 to at least the 10th harmonic of the fundamental. The measurements were made in accordance with standard TIA/EIA-603.

Method of Measuring Conducted Spurious Emissions



2.991 Continued Spurious Emissions at the Antenna Terminals:

REQUIREMENTS: Emissions must be  $43 + 10\log(P_o)$  dB below the mean power output of the transmitter.  
 For 25KHz  $43 + 10\log(5.0) = 43 + 7.0 = 50.0\text{dB}$   
 For 12.5KHz  $50 + 10\log(P_o) = 50 + 7.0 = 57.0$

EMISSION FREQUENCY MHz	dB BELOW CARRIER	
	HIGH POWER	LOW POWER
154.60	00.0	0.00
309.20	-62.3	-61.5
463.80	-72.5	-66.4
618.40	-63.4	-60.6
773.00	-80.6	-72.2
927.60	-64.6	-66.3
1082.20	-63.0	-64.1
1236.80	-80.1	-78.9
1391.40	-75.6	-74.6
1546.00	-76.4	-77.3

METHOD OF MEASUREMENT: The procedure used was TIA/EIA-603 STANDARD without any exceptions. An audio generator was connected to the UUT through a dummy microphone circuit and the output of the transmitter connected to a standard load and from the standard load through a pre-selector filter of the spectrum analyzer. The spectrum was scanned from 400KHz to at least the tenth harmonic of the fundamental using a HP model 8566B spectrum analyzer. The measurements were made using the shielded room located at TIMCO ENGINEERING INC. 25355 WEST NEWBERRY ROAD, NEWBERRY FLORIDA 32669.

