

GENERAL\_INFORMATION\_REQUIRED  
FOR\_TYPE\_ACCEPTANCE

2.983 (a,b,c) YAESU MUSEN CO., LTD. will sell the FCCID: K66VX-800U

UHF transciever in quantity, for use under FCC RULES PART 22, 74, 90, 95, & 90.210.

2.983 (d) TECHNICAL\_DESCRIPTION

- (1) ALLOWED AUTHORIZED BANDWIDTH = 11.25KHz.  
90.209(b)(5)

$$B_n = 2M + 2DK$$

$$M = 3000$$

$$D = 2.5\text{KHz (Peak Deviation)}$$

$$K = 1$$

$$B_n = 2(3.0K) + 2(2.5K)(1) = 6.0K + 5.0K = 11.0K$$

Type of Emission: 11K0F3E

- (2) ALLOWED AUTHORIZED BANDWIDTH = 20.0KHz.  
90.209(b)(5)

$$B_n = 2M + 2DK$$

$$M = 3000$$

$$D = 5.0\text{KHz (Peak Deviation)}$$

$$K = 1$$

$$B_n = 2(3.0K) + 2(5.0K)(1) = 6.0K + 10.0K = 16.0K$$

Type of Emission: 16K0F3E

- (2) Frequency Range: 450-485 MHz

- (3) Power Range and Controls: This UUT has two(2) power ranges, 1.0Watt & 5.0Watt.

- (4) Maximum Average Output Power Rating: 5.0Watts into a 50 ohm resistive load.

- (5) DC Voltages and Current into Final Amplifier:

| POWER INPUT | FINAL AMPLIFIER ONLY |
|-------------|----------------------|
| POWER OUT   | 5.4                  |

|           |     |
|-----------|-----|
| Vce Volts | 7.2 |
|-----------|-----|

|          |     |
|----------|-----|
| Ice Amps | 1.5 |
|----------|-----|

|           |      |
|-----------|------|
| Pin Watts | 10.2 |
|-----------|------|

- (6) Function of each electron tube or semiconductor device or other active circuit device:  
See attached list in Exhibit 10A-10C.

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2.983 (d)(6)

2.983(d) (7) Complete Circuit Diagrams: The circuit diagram is included as PAGES 7-9. The block diagram is included as PAGE 6.

(8) Instruction book. The instruction manual is included as 11A-11D.

(9) Tune-up procedure. The tune-up procedure is given in exhibit 13A-13F.

(10) Description of all circuitry and devices provided for determining and stabilizing frequency is included in the circuit description in 12A-12D.

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 is described in paragraph 6.3.5 of the instruction manual.

Limiting Modulation:

The transmitter audio limiting circuitry is contained in the loop filter U501, U502, & U503.

Limiting Power: The power is preset at the factory for either high or low. 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. The test procedure used was TIA/EIA-603 S2.2.1. RF power is measured by connecting a 50 ohm, resistive wattmeter to the RF output connector. With a nominal battery voltage of 7.2V, and the transmitter properly adjusted the RF output measures:

INPUT POWER: (7.2V)(1.5A) = 10.80Watts

AVERAGE CONDUCTED OUTPUT POWER: 5.4 Watts Efficiency: 47%

INPUT POWER(L0): (7.2V)(0.9) = 6.48 Watts

AVERAGE CONDUCTED OUTPUT POWER(L0): 1.3 Watts Efficiency: 20%

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2.993(a)(b) Field\_strength\_of\_spurious\_emissions:

The tabulated Data shows the results of the radiated field strength emissions test. The spectrum was scanned from 30 to 4.7 GHz. This test was conducted per ANSI C63.4-1992 with the exception of briefly connecting the transmitter to a half wave dipole for the purpose of establishing a reference.

NAME OF TEST: RADIATED SPURIOUS EMISSIONS

REQUIREMENTS: Emissions must be  $43 + 10\log(P_o)$  dB below the mean power output of the transmitter.  
HIGH POWER

$$50 + 10\log(5.4) = 57.30 \text{ dBc or } 70\text{dBc, whichever is the lessor.}$$

$$50 + 10\log(1.0) = 50\text{dBc}$$

NOTE: FOR THE MARGIN CALCULATION BELOW 70dB WAS USED.

TEST DATA: HIGH POWER

| EMISSION<br>FREQUENCY<br>MHZ | EMISSION<br>LEVEL<br>dB | FCC<br>LIMIT<br>dB | ANT |
|------------------------------|-------------------------|--------------------|-----|
| 484.98                       | 0.00                    | 0.00               | H   |
| 970.00                       | 62.7                    | 57.30              | H   |
| 1455.00                      | 88.03                   | 57.30              | V   |
| 1940.00                      | 80.25                   | 57.3               | H   |
| 2425.00                      | 90.20                   | 57.30              | H   |
| 2910.00                      | 75.31                   | 57.30              | H   |
| 3394.80                      | 88.33                   | 57.30              | H   |
| 3880.00                      | 88.28                   | 57.30              | V   |
| 4364.00                      | 87.22                   | 57.30              | V   |

TEST DATA: LOW POWER

| EMISSION<br>FREQUENCY<br>MHZ | METER<br>READING<br>@ 3m dBuV | COAX<br>LOSS<br>dB | ACF<br>dB | FIELD<br>STRENGTH<br>dBuV/m | ATT.<br>LEVEL<br>dB | MARGIN<br>dB | ANT. |
|------------------------------|-------------------------------|--------------------|-----------|-----------------------------|---------------------|--------------|------|
| 484.98                       | 0.00                          | 0.00               |           |                             |                     |              | H    |
| 970.00                       | 68.82                         | 50.00              |           |                             |                     |              | H    |
| 1455.00                      | 70.26                         | 50.00              |           |                             |                     |              | V    |
| 1940.00                      | 84.12                         | 50.00              |           |                             |                     |              | V    |
| 2425.00                      | 90.40                         | 50.00              |           |                             |                     |              | V    |
| 2910.00                      | 74.61                         | 50.00              |           |                             |                     |              | V    |
| 3395.00                      | 85.15                         | 50.00              |           |                             |                     |              | V    |
| 3880.00                      | 90.94                         | 50.00              |           |                             |                     |              | V    |

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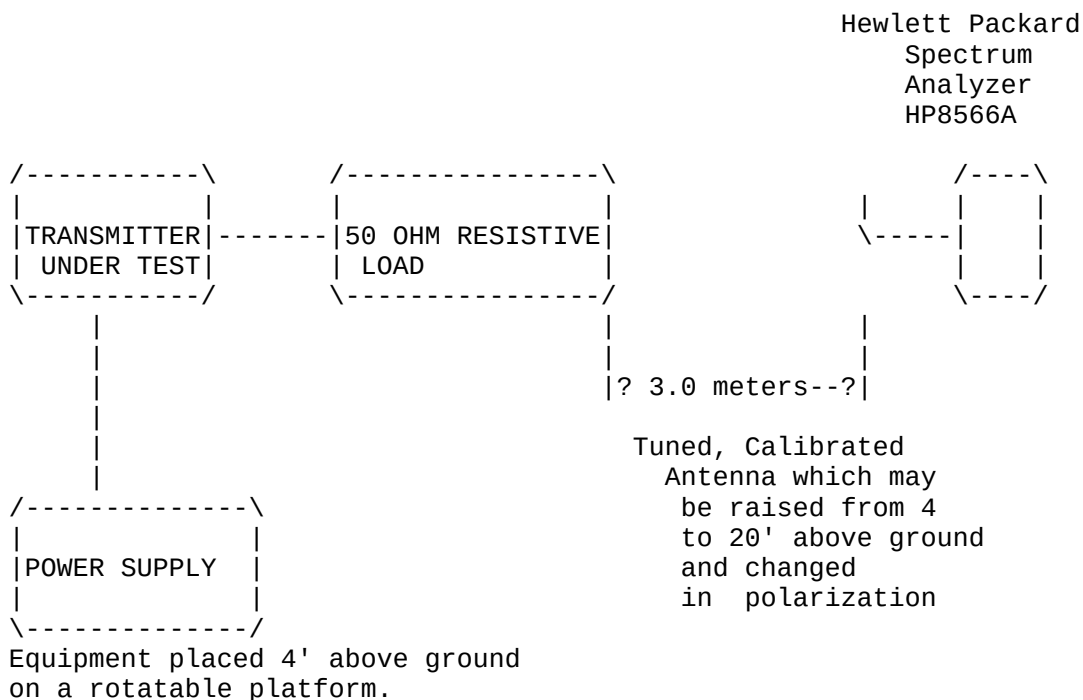
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2.993(a)(b) CONTINUED: Field\_strength\_of\_spurious\_emissions:

METHOD OF MEASUREMENT: The procedure used was TIA/EIA-603 STANDARD. The spectrum was scanned from 30MHz to at least the tenth harmonic of the fundamental using a HP model 8566B spectrum analyzer, an Eaton model 94455-1 Biconical Antenna, a ElectroMetrics antennas models TDA, TDS-25-1, TDS-25-2, RGA-180. Measurements were made at the open field test site of TIMCO ENGINEERING INC. located at 6051 N.W. 19th LANE, GAINESVILLE, FL 32605.

#### Method of Measuring Radiated Spurious Emissions



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