

conducted spurious values by at most 1-2 dB. The spur specification, per Part 87.139, is $43 + 10\log_{10} P_Y$ dBc. Assume P_Y (mean power) to be $1.5 \times 25 = 37.5$ watts. Then the spurs must be no greater than -58.7 dBc. It can be seen that the worst spur, the 2nd harmonic, without the corrections measures $44 - (-32) = 76$ dBc, so the correction will not make a significant difference. We conclude that the PA25 amplifier does meet the requirements for Part 2.991 and Part 87.139.

Part 2.993—Field Strength of Spurious Radiations

Like the tests for Part 2.991, these tests were also performed at Smith Electronics by James Pollack. Their approved open field site was used. Jack Streater and Greg Shafer of Mentor Radio witnessed the tests.

The attached Polaroid photos (p. 8b) show the open field test setup. The rotating fibre-glas platform is driven by a motor remotely controlled from the wooden shed housing the test equipment. The shed is not visible in the photos but is located about 30 feet from the antenna mast, just out of view and to the left of the photo view showing the mast and platform. In the photo, the antenna mounted on the mast structure is the Emco horn antenna for measurements above 1000 Mhz. The antenna height on the mast is controlled from the shed by a pulley and rope. The antenna orientation (vertical or horizontal polarization) and "direction" is set manually and can not be controlled remotely.

The PA25 and a dummy rf load were placed on a wooden table atop the rotating platform. The power supply and M15 driver were inside a rack cabinet placed on the rotating platform below the table. The 4-wire power cable (46 vdc, 13 vdc, gnd and ptt) was 10 ft. long—considerably more than necessary and about the maximum that would ever be used in actual service. The cable can be seen in the photo with the extra length resting on the fibreglas platform. The wires for 46 vdc and gnd were #18 gauge. The RG-8 coax was also 10 ft. long, with the excess length also resting on the fibreglas platform. The 115 vac power cord for the power supply goes through a conduit at the center of the platform, and connects to an extension cord that runs along the ground to the equipment shed.

The photo view of the top of the wooden table shows the PA25, the dummy load and the power and coax cables.

Equipment used:

1. Mentor Radio Co. Model M15 (FCC ID BULM15), the transmitter of which was used to drive the PA25 rf amplifier.
2. Bird model 8306-200-N 25 watt rf coaxial 20 dB attenuator
3. Bird model 80BNCF 5 watt coaxial resistor (50 ohm)
4. Power supplies for the M15 and PA25 (made by Mentor Radio Co.)
5. Singer-Stoddard model NM37-57 field strength meter (to 1000 Mhz)
6. Hewlett-Packard model 8593EM spectrum analyzer (for measurements from 1000 Mhz to 1500 Mhz)
7. Emco model 3104 biconical antenna (for 30-200 Mhz)
8. Emco model 3146 log periodic antenna (for 200-1000 Mhz)