

Part B--Radiated Spurious Emissions--part 2.993

Equipment: same as for part A, plus the following:

one-quarter wave ground plane antenna, tuned  
for 123 Mhz. (vertically polarized)  
table, wood, with rotating platform and mast  
for ground plane antenna  
Dipole antenna, Singer DM-105A-T1 (20-200 Mhz)  
Dipole antenna, Singer DM-105A-T2 (200-400 Mhz)  
Dipole antenna, Singer DM-105A-T3 (400-1000 Mhz)  
wood mast and mast support for dipole antennas  
wood table for supporting field strength meter (FSM)  
and spectrum analyzer  
RG58A/U coaxial cable as necessary  
3-conductor shielded cable for audio signal to  
mic input (modulation) and transmitter control  
heavy-duty 3-conductor power cord to carry 115 v.  
power to equipment

Procedure:

- (a) Set up equipment in open field test site per attached diagram. (Calibration data on test site was previously submitted to FCC, reference 6310/EQU 4-3-0.) The NF-105A Field Strength Meter is used for all measurements up to 1000 Mhz; the Spectrum Analyzer is used above 1000 Mhz. The distance between antennas of 30 feet (9.1 meters) is used so that measured values are essentially "far field".
- (b) Tune up Model MB transmitter per method 1 in technical description. Set modulation as for occupied bandwidth tests.
- (c) With transmitter energized, adjust receiving dipole length and tune FSM to 123.15 Mhz. Measure voltage at FSM antenna connector, with receiving dipole antenna oriented for maximum reception. Record this voltage.
- (d) Scan from 25 Mhz to 1250 Mhz, searching for other spurious emissions. Re-adjust receiving dipole length for each emission detected, changing dipole model as necessary. For each emission, orient receiving dipole for maximum reception. Also experiment with different orientations of power cord of Model MB. Record maximum volts at FSM antenna connector for each spurious emission.

Results:

- (a) For all measurements, the maximum received signal was obtained with the receiving dipole vertical, which is also the polarization of the transmitting ground plane antenna. Power cord orientation did not appear to be significant.
- (b) Receiving antenna height and orientation was adjusted for maximum reception.