

SECTION 9: Field Strength of Spurious Emission

Field Strength of Spurious Emission is measured with two kind of configuration, the one is with HX68-C only and the another is with HX68 -C connected with HX69-C.

9.1 Test Procedure FCC 2.1053

- 1) The HX68-C was aligned for transmitter operation on 453.5125MHz at full rated power.
- 2) The Carrier is modulated by a 2.5kHz tone at an input level 16dB greater than that necessary to produce 50 percent modulation. The input level shall be established at the frequency of maximum response of the audio modulation.
- 4) Output of HX68 -C was connected with dummy load attenuator 40dB.
- 5) Tune-up the transmitter (EUT)
- 6) For each spurious measurement the receiving antenna is adjusted to the correct length for the frequency involved. These measurements are made from the lowest radio frequency generated in the EUT or 30MHz to the tenth harmonics of the carrier.
- 7) EUT was placed on a platform of nominal size, 1m by 1.5m, raised 1m above the conducting ground plane. Test was made with the antenna positioned in both the horizontal and vertical planes of polarization.
The Radiated Electric Field Strength intensity has been measured in No.2 semi anechoic chamber (7.5x5.8x5.2m) with a ground plane and at a distance of 3m.
The measuring antenna height was varied between 1 to 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.
The measurements were performed for both vertical and horizontal antenna polarization.
- 8) Exchanged the EUT to the Substitution Antenna, the measurement was set for the same height 1m as the EUT. The frequency below 1GHz of the Substitution Antenna was used as the Half wave dipole Antenna, which is harmonized with the measured frequency in 7).
The frequency above 1GHz of the Substitution Antenna was used with Horn Antenna.
The Substitution Antenna was connected with the Signal Generator, and the polarized electromagnetic radiation of the Substitution Antenna was matched with the one of the measuring Antenna, which was set with the Signal Generator to the measured frequency in 7). Then, we set with the Output power (CW) of the Signal Generator where the measuring electromagnetic field is equal to the measured value in 7).
The measuring antenna height was varied between 1 to 4m to obtain the maximum receiving level.
Its Output power of Signal Generator was recorded.
- 9) Effective radiated power was calculated by subtracting the cable loss and the attenuator loss connected between the Signal Generator and the Substitution Antenna from the Output power of the Signal Generator recorded in 8). For the usage of the Antenna (Horn Antenna) except for the Half wave dipole Antenna (2.14dBi) for the Substitution Antenna, the Effective radiated power was calculated by compensating the finite difference in the Antenna gain of the Half wave dipole Antenna, and Substitution Antenna.

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