

**SPECIFICATION LIMITS AND SAMPLE CALCULATIONS**

The limits for radiated emissions are based on the power of the transmitter at the operating frequency. Data is measured in the logarithmic form of decibels relative to one milliwatt, or dB milliwatts (dBm). For radiated emissions, the measured data is obtained by the substitution method. The field strength of the emissions from the EUT are measured on a test site with a receiver. A signal generator and antenna are then substituted for the EUT. The output of the signal generator is adjusted to a level such that the same field strength as was measured from the EUT is observed. The power level is corrected by the difference between the gain of the antenna and the gain of an isotropic radiator. This level is recorded as the equivalent isotropically radiated power (EIRP) of the EUT.

**RADIATED EMISSIONS SPECIFICATION LIMITS, SECTION 24.238)**

| Frequency<br>Range<br>(MHz)             | Limit                                                                                                          |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Operating frequency                     | 2 watts                                                                                                        |
| Outside of the assigned frequency block | 43+10log <sub>10</sub> (mean output power in watts) dB below the measured amplitude at the operating frequency |

**SAMPLE CALCULATIONS – EFFECTIVE ISOTROPICALLY RADIATED POWER**

The margin of a given emission peak relative to the limit is calculated as follows:

$$R_C = S - C + G_A$$

and

$$M = R_C - L_S$$

where:

- S = Signal Generator output in dBm
- C = Cable loss in dB
- G<sub>A</sub> = Substitution Antenna Gain in dBi
- R<sub>C</sub> = Corrected Reading in dBm of substituted signal
- L<sub>S</sub> = Specification Limit in dBm
- M = Margin in dB Relative to Spec