

4.5 Out-of-Band Conducted Emissions
FCC Rule 15.407(b)

Requirement:

For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.

For transmitters operating in the 5.725-5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed and EIRP of -27 dBm/MHz.

The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

Procedure:

Spectrum Analyzer was connected to the output of the EUT. For measurements above 1 GHz, the Resolution Bandwidth was set to 1 MHz; for measurements below 1 GHz, the Resolution Bandwidth was set 100 kHz, and the Video Bandwidth was set to 30 kHz. Several plots were made in the frequency range from 5715 to 5835 MHz.

In addition, plots were made in the frequency range from 1 MHz to 40 GHz.

Result:

Refer to the following plots and data tables (on the next page) for out-of-band conducted emissions data:

Plot 4.a1 – 4.a10: Low Channel Emissions

Plot 4.b1 – 4.b10: High Channel Emissions

The antenna used for this application has the gain equals 28.4 dBi, therefore the EUT pass the test with a margin of 3.2 dB without reducing the output power.

Operating frequency	Frequency, MHz	Level, dBm	Limit, dBm/MHz	Maximum allowed antenna gain, * dBi
5300 MHz	5150	-67.8 from plot 4.a5	-27.0	40.8
	5350	-59.3 from plot 4.a7	-27.0	32.3

Operating frequency	Frequency, MHz	Level, dBm	Limit, dBm/MHz	Maximum allowed antenna gain,* dBi
5775 MHz	5715	-58.6 from plot 4.b4	-27.0	31.6
	5725	-57.0 from plot 4.b5	-17.0	40.0
	5825	-56.2 from plot 3.b6	-17.0	39.2
	5835	-58.6 from plot 3.b7	-27.0	31.6

* Maximum antenna gain without reducing the Output Power.



















