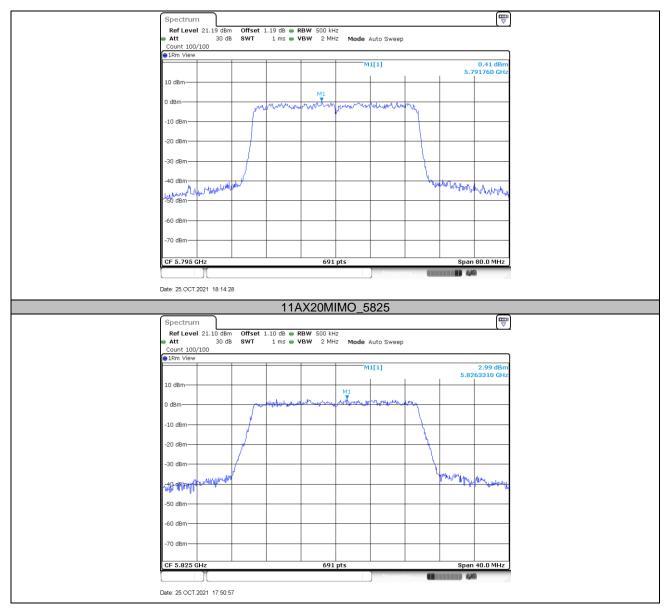


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9.5 Unwanted emissions

Transmitting spurious emission test result as below:

Test Method:

Radiated Mode:

- 1. The EUT was place on a turn table which is 1.5m above ground plane for above 1GHz and 0.8m above ground for below 1GHz at 3meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- 2. The EUT was set 3 meters away from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 3. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned
- 5. Use the following spectrum analyzer settings According to C63.10: For Below 1GHz
 - Use the following spectrum analyzer settings:
 - Span = wide enough to cMasterture the peak level of the in-band emission and all spurious
 - RBW = 100 KHz to 120KHz, VBW≥RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.For Peak unwanted emissions For Above 1GHz:
 - Span = wide enough to capture the peak level of the in-band emission and all spurious
 - RBW = 1MHz, VBW≥RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.
 - Procedures for Average Unwanted Emissions Measurements above 1000 MHz a) Follow the requirements in II.G.3. "General Requirements for Unwanted Emissions Measurements."
 - b) Average emission levels shall be measured using one of the following two methods. c) Method AD (Average Detection): Primary method
 - (i) RBW = 1 MHz.
 - (ii) VBW ≥ 3 MHz.
 - (iii) Detector = power averaging (rms), if span/(# of points in sweep) ≤ RBW/2. Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If the condition is not satisfied, the detector mode shall be set to peak. As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode in order to use linear voltage averaging. Log or dB averaging shall not be used.
 - (v) Sweep time = auto.
 - (vi) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, the number of traces shall be increased by a factor of 1/x, where x is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be

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continuous—i.e., 100% duty cycle—rather than turning on and off with the transmit cycle, at least 100 traces shall be averaged.)

(vii) If tests are performed with the EUT transmitting at a duty cycle less than 98%, a correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:

If power averaging (rms) mode was used in II.G.6.c)(iv), the correction factor is 10 log (1/x), where x is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB must be added to the measured emission levels. If linear voltage averaging mode was used in II.G.6.c)(iv), the correction factor is 20 log (1/x), where x is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB must be added to the measured emission levels. If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning on and off with the transmit cycle, no duty cycle correction is required for that emission.

Limit

According to part 15.407b (1) (2) (3) (4)

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

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 e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

According to part 15.407b (8), Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

According to part 15.407b (9), The provisions of §15.205 apply to intentional radiators operating under this section.

Note: According to C63.10, the Conversion Factors between E[dBµV/m] and EIRP[dBm] as below:

 $E[dB\mu V/m] = EIRP[dBm] + 95.2$, for d = 3 meters.

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

Radiated Mode:

Transmitting spurious emission test result as below: Remark: only the worst case shown on the report.