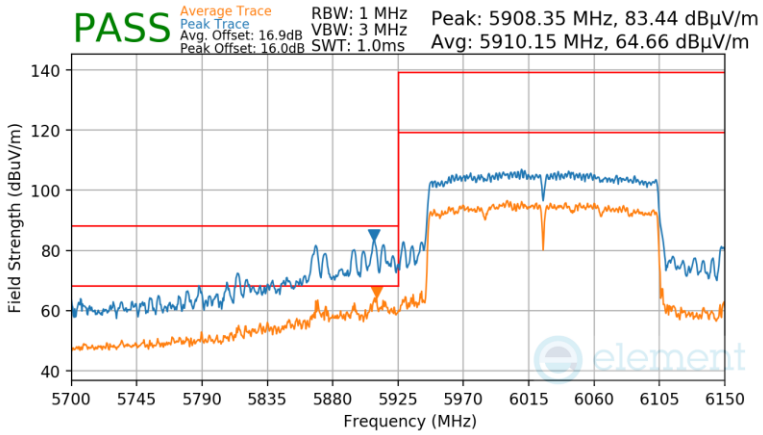
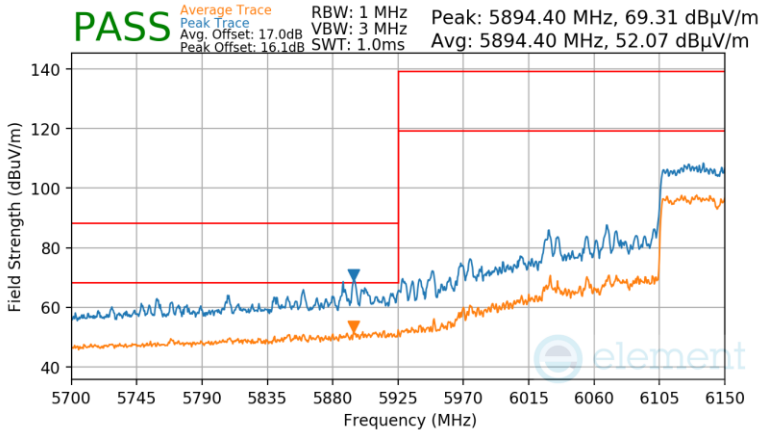
RU996x2

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS11
Distance of Measurements:	3 Meters
Operating Frequency:	6025MHz
Channel:	15



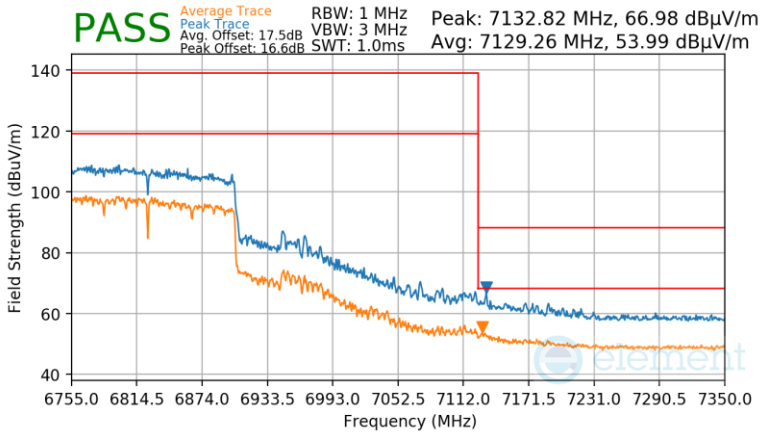
Plot 7-1812. SDM Diversity Radiated Lower Band Edge (Peak & Average – UNII Band 5 – RU996x2)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS11
Distance of Measurements:	3 Meters
Operating Frequency:	6185MHz
Channel:	47



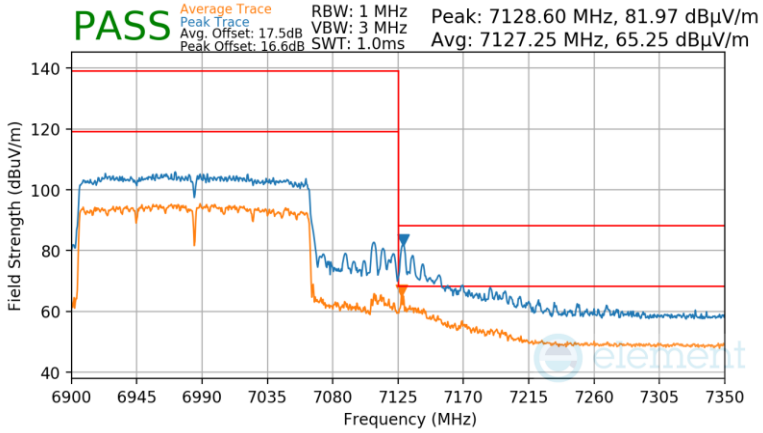
Plot 7-1813. SDM Diversity Radiated Lower Band Edge (Peak & Average – UNII Band 5 – RU996x2)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS11
Distance of Measurements:	3 Meters
Operating Frequency:	6825MHz
Channel:	175



Plot 7-1814. SDM Diversity Radiated Lower Band Edge (Peak & Average – UNII Band 8 – RU996x2)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS11
Distance of Measurements:	3 Meters
Operating Frequency:	6985MHz
Channel:	207



Plot 7-1815. SDM Diversity Radiated Lower Band Edge (Peak & Average – UNII Band 8 – RU996x2)

7.8 Radiated Spurious Emissions – Below 1GHz

§15.209; RSS-Gen [8.9]

Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for radiated spurious emissions. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR and Table 7 of RSS-Gen (8.10) must not exceed the limits shown in Table 7-280 per Section 15.209 and RSS-Gen (8.9).

Frequency	Field Strength [µV/m]	Measured Distance [Meters]
0.009 – 0.490 MHz	2400/F (kHz)	300
0.490 – 1.705 MHz	24000/F (kHz)	30
1.705 – 30.00 MHz	30	30
30.00 – 88.00 MHz	100	3
88.00 – 216.0 MHz	150	3
216.0 – 960.0 MHz	200	3
Above 960.0 MHz	500	3

Table 7-280. Radiated Limits

Test Procedures Used

ANSI C63.10-2013

Test Settings

Quasi-Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 120kHz (for emissions from 30MHz – 1GHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 120kHz (for emissions from 30MHz – 1GHz)
3. VBW = 300kHz
4. Detector = quasi-peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Test Setup

The EUT and measurement equipment were set up as shown in the diagrams below.

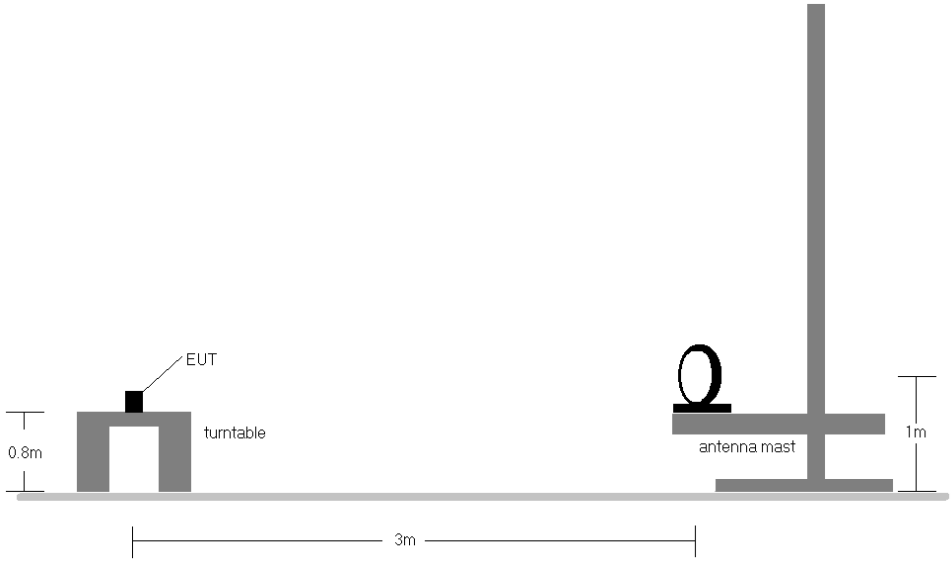


Figure 7-6. Radiated Test Setup < 30MHz

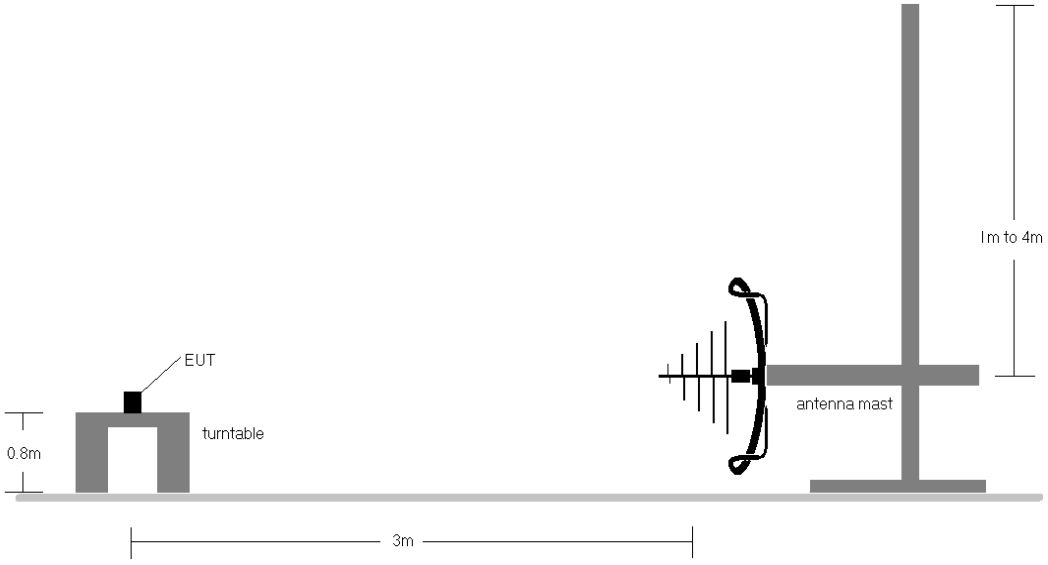


Figure 7-7. Radiated Test Setup < 1GHz

Test Notes

1. All emissions lying in restricted bands specified in §15.205 and RSS-Gen (8.10) are below the limit shown in Table 7-280.
2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes. For below 30MHz the loop antenna was positioned in 3 orthogonal planes (X front, Y side, Z top) to determine the orientation resulting in the worst case emissions.
3. This unit was tested with its standard battery.
4. The spectrum is investigated using a peak detector and final measurements are recorded using CISPR quasi peak detector on emissions that were within 6dB of the limit.
5. Emissions were measured at a 3 meter test distance.
6. Emissions are investigated while operating on the center channel of the mode, band, and modulation that produced the worst case results during the transmitter spurious emissions testing.
7. No spurious emissions were detected within 20dB of the limit below 30MHz.
8. The results recorded using the broadband antenna is known to correlate with the results obtained by using a tuned dipole with an acceptable degree of accuracy. The VSWR for the measurement antenna was found to be less than 2:1.
9. Both configurations below were investigated, and the worst case has been reported.
    a. EUT powered by AC/DC adaptor via USB-C cable with wire charger
    b. EUT powered by host PC via USB-C cable with wire charger
10. All antenna configurations were investigated and only the worst case is reported.
11. The unit was tested with all possible modes and only the highest emission is reported.

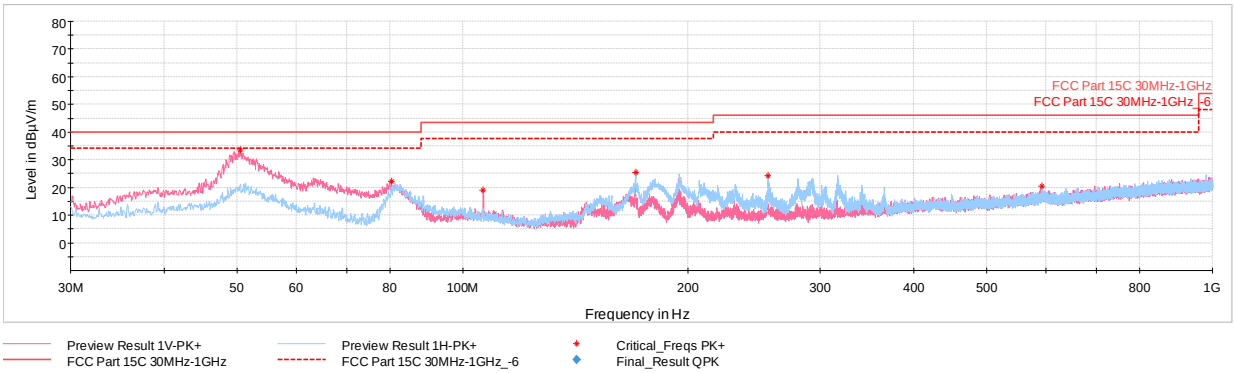
Sample Calculations

Determining Spurious Emissions Levels

- Field Strength Level $_{[dB\mu V/m]}$ = Analyzer Level $_{[dBm]}$ + 107 + AFCL $_{[dB/m]}$
- AFCL $_{[dB/m]}$ = Antenna Factor $_{[dB/m]}$ + Cable Loss $_{[dB]}$ - Preamp Gain $_{[dB]}$
- Margin $_{[dB]}$ = Field Strength Level $_{[dB\mu V/m]}$ – Limit $_{[dB\mu V/m]}$

7.8.1 SDM Primary Radiated Spurious Emissions Measurements (Below 1GHz)

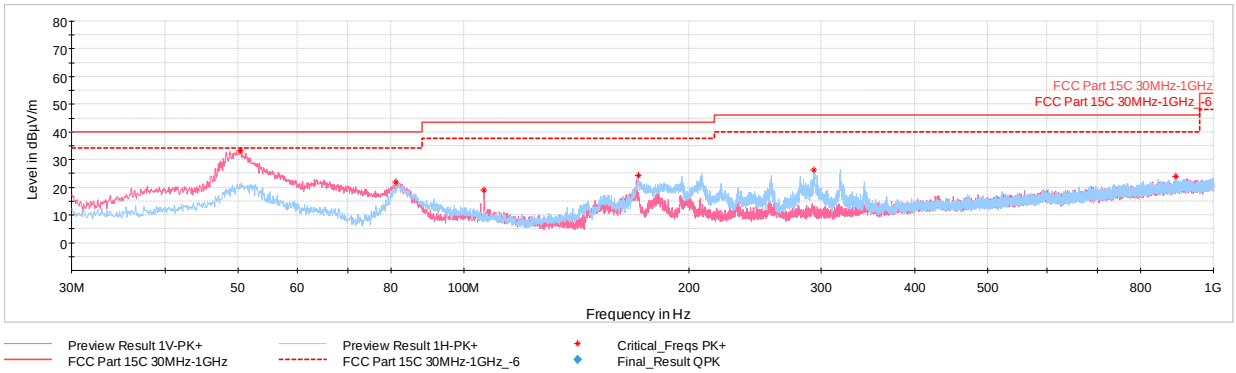
§15.209; RSS-Gen [8.9]



Plot 7-1816. Radiated Spurious Emissions below 1GHz SDM Primary (802.11ax – Ch.1 – RU26) with AC/DC Adapter

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
50.47	Max-Peak	V	100	203	-60.76	-12.66	33.58	40.00	-6.42
80.39	Max-Peak	V	100	73	-63.46	-21.18	22.36	40.00	-17.64
106.48	Max-Peak	V	200	308	-71.32	-16.52	19.16	43.52	-24.36
170.21	Max-Peak	H	200	149	-62.72	-18.93	25.35	43.52	-18.17
255.57	Max-Peak	H	100	240	-67.92	-14.77	24.31	46.02	-21.71
591.97	Max-Peak	H	100	235	-79.00	-7.46	20.54	46.02	-25.48

Table 7-281. Radiated Spurious Emissions below 1GHz SDM Primary (802.11ax – Ch.1 – RU26) with AC/DC Adapter



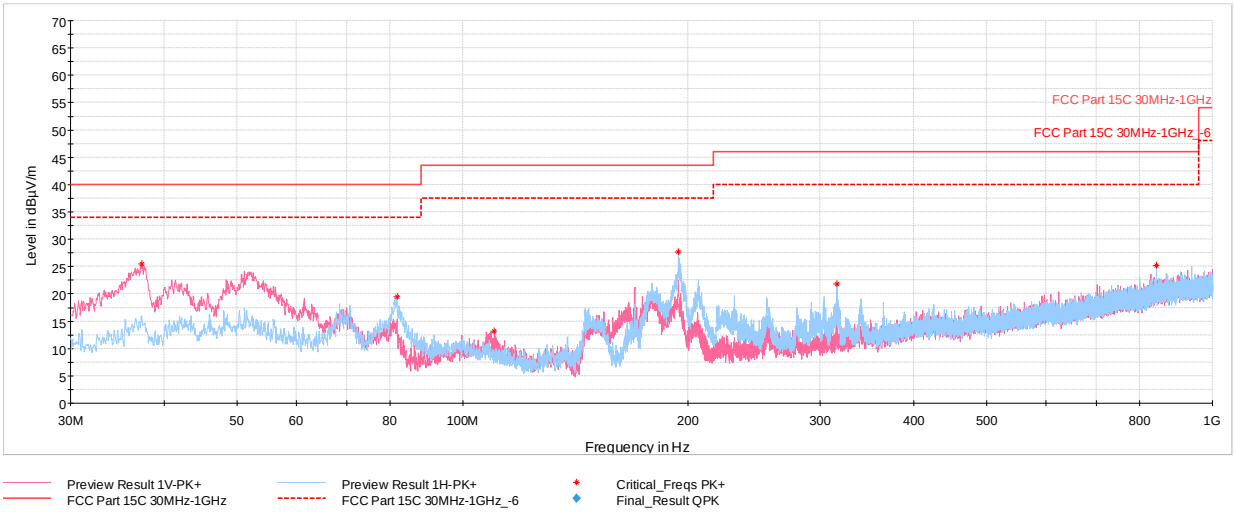
Plot 7-1817. Radiated Spurious Emissions below 1GHz SDM Primary (802.11ax – Ch.1 – RU242) with AC/DC Adapter

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
50.42	Max-Peak	V	100	2	-60.96	-12.66	33.38	40.00	-6.62
81.22	Max-Peak	V	300	19	-64.12	-21.02	21.86	40.00	-18.14
106.44	Max-Peak	V	200	62	-71.41	-16.52	19.07	43.52	-24.45
171.04	Max-Peak	H	200	5	-63.90	-18.89	24.21	43.52	-19.31
293.40	Max-Peak	H	100	255	-66.12	-14.60	26.28	46.02	-19.74
890.68	Max-Peak	V	200	43	-79.60	-3.38	24.02	46.02	-22.00

Table 7-282. Radiated Spurious Emissions below 1GHz SDM Primary (802.11ax – Ch.1 – RU242) with AC/DC Adapter

7.8.2 SDM Diversity Radiated Spurious Emissions Measurements (Below 1GHz)

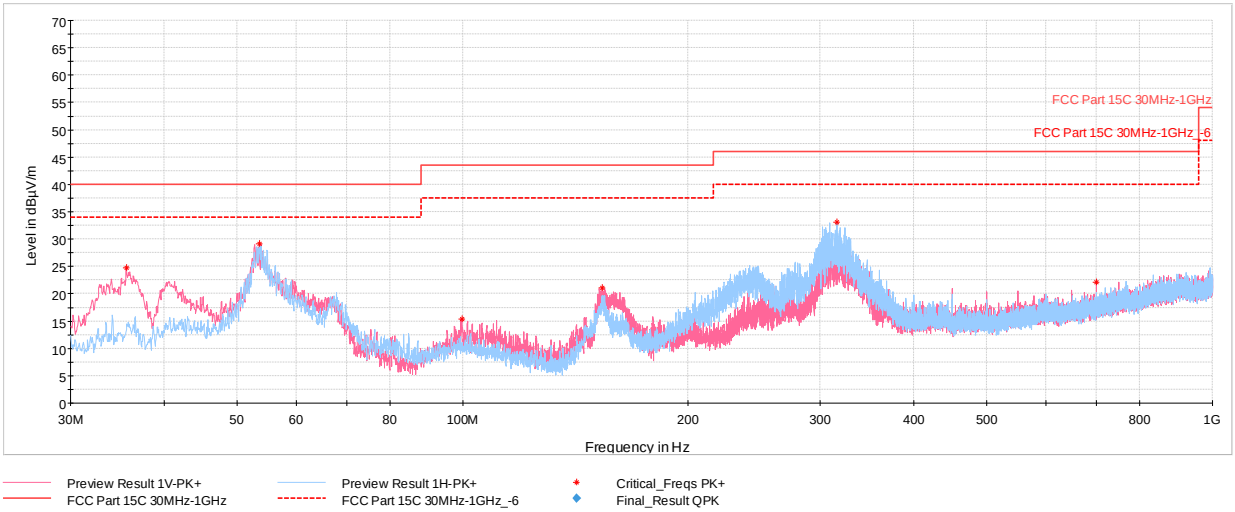
§15.209; RSS-Gen [8.9]



Plot 7-1818. Radiated Spurious Emissions below 1GHz SDM Diversity (802.11ax – Ch.1 – RU26) with AC/DC Adapter

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
37.37	Max-Peak	V	100	0	-66.44	-15.14	25.42	40.00	-14.58
81.80	Max-Peak	H	200	262	-66.73	-20.82	19.45	40.00	-20.55
110.27	Max-Peak	V	100	0	-77.01	-16.86	13.13	43.52	-30.39
193.98	Max-Peak	H	100	233	-62.34	-16.94	27.72	43.52	-15.80
315.47	Max-Peak	H	100	48	-71.20	-13.99	21.81	46.02	-24.21
841.89	Max-Peak	H	100	148	-78.42	-3.38	25.20	46.02	-20.82

Table 7-283. Radiated Spurious Emissions below 1GHz SDM Diversity (802.11ax – Ch.1 – RU26) with AC/DC Adapter



Plot 7-1819. Radiated Spurious Emissions below 1GHz SDM Diversity (802.11ax – Ch.1 – RU242) with AC/DC Adapter

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
35.63	Max-Peak	V	100	165	-66.71	-15.56	24.73	40.00	-15.27
53.57	Max-Peak	H	300	215	-64.31	-13.54	29.15	40.00	-10.85
99.74	Max-Peak	V	100	204	-75.18	-16.45	15.37	43.52	-28.15
153.63	Max-Peak	V	100	254	-65.93	-20.00	21.07	43.52	-22.45
315.28	Max-Peak	H	100	106	-59.85	-14.01	33.14	46.02	-12.88
699.74	Max-Peak	V	200	177	-78.61	-6.32	22.07	46.02	-23.95

Table 7-284. Radiated Spurious Emissions below 1GHz SDM Diversity (802.11ax – Ch.1 – RU242) with AC/DC Adapter

7.9 AC Line-Conducted Emissions Measurement

§15.407; RSS-Gen [8.8]

Test Overview and Limit

All AC line conducted spurious emissions are measured with a receiver connected to a grounded LISN while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for AC Line conducted spurious emissions. Only the conducted emissions of the configuration that produced the worst case emissions are reported in this section.

All conducted emissions must not exceed the limits shown in the table below, per Section 15.207 and RSS-Gen (8.8).

Frequency of emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50

Table 7-285. Conducted Limits

*Decreases with the logarithm of the frequency.

Test Procedures Used

ANSI C63.10-2013, Section 6.2

Test Settings

Quasi-Peak Measurements

1. Analyzer center frequency was set to the frequency of the spurious emission of interest
2. RBW = 9kHz (for emissions from 150kHz – 30MHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

Average Measurements

1. Analyzer center frequency was set to the frequency of the spurious emission of interest
2. RBW = 9kHz (for emissions from 150kHz – 30MHz)
3. Detector = RMS
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

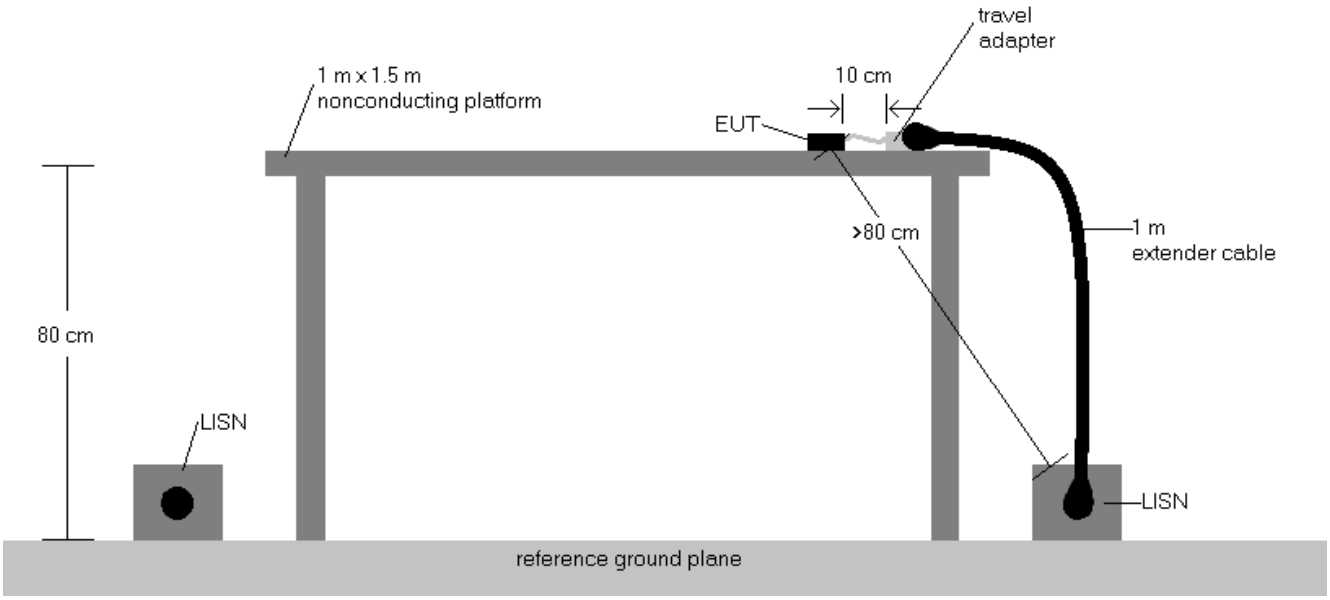
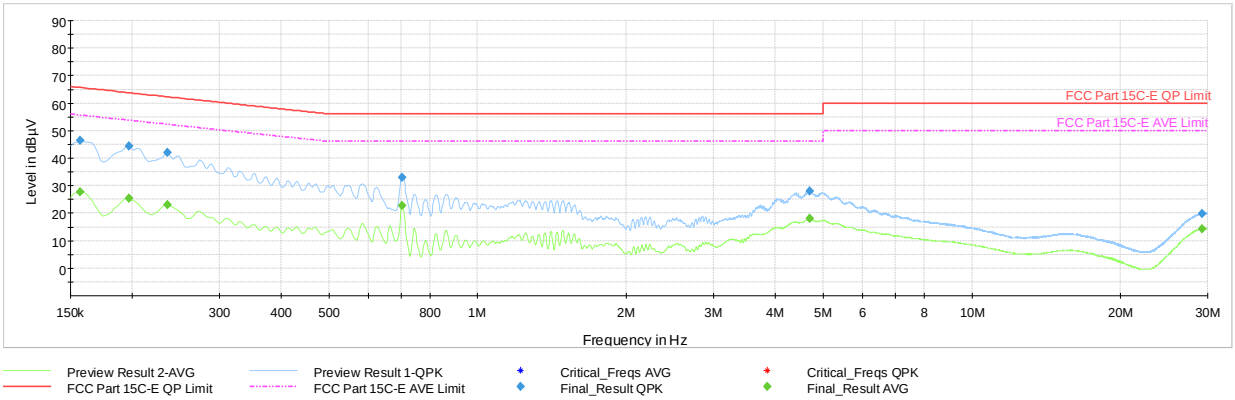


Figure 7-8. Test Instrument & Measurement Setup

Test Notes

1. All modes of operation were investigated and the worst-case emissions are reported. The emissions found were not affected by the choice of channel used during testing.
2. Both configurations below were investigated, and the worst case has been reported.
    a. EUT powered by AC/DC adaptor via USB-C cable with wire charger
    b. EUT powered by host PC via USB-C cable with wire charger
3. The limit for an intentional radiator from 150kHz to 30MHz are specified in 15.207 and RSS-Gen (8.8).
4. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
5. QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Correction Factor (dB)
6. Margin (dB) = QP/AV Level (dBµV) - QP/AV Limit (dBµV)
7. Traces shown in plots are made using quasi-peak and average detectors.
8. Deviations to the Specifications: None.
9. The unit was tested with all possible modes and only the highest emission is reported.

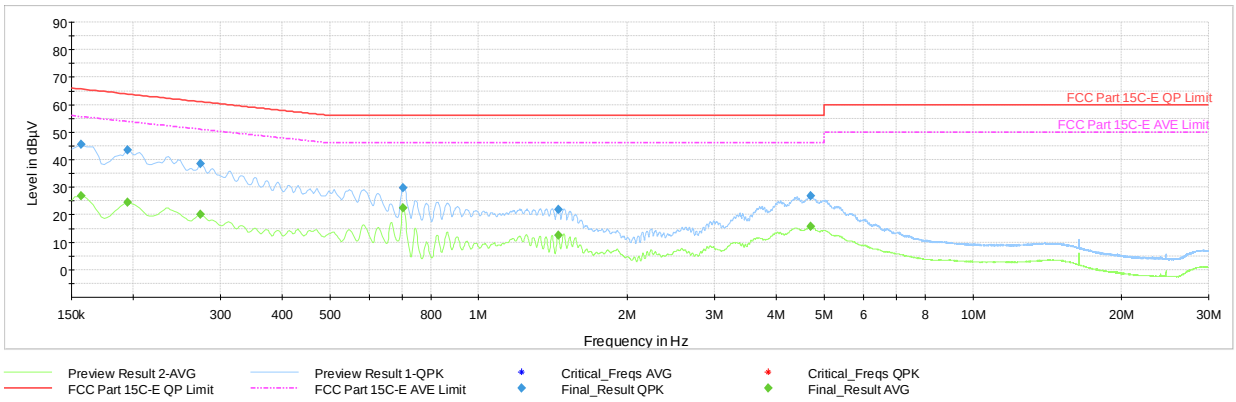
7.9.1 SDM Primary Line-Conducted Emissions Measurements



Plot 7-1820. AC Line Conducted Plot with SDM Primary 11ax UNII Band 5 – RU26 – Ch.1 (L1) with AC/DC Adapter

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.157	FINAL	—	27.78	55.63	-27.86	L1	GND
0.157	FINAL	46.5	—	65.63	-19.14	L1	GND
0.197	FINAL	—	25.24	53.73	-28.49	L1	GND
0.197	FINAL	44.3	—	63.73	-19.40	L1	GND
0.236	FINAL	—	23.16	52.25	-29.09	L1	GND
0.236	FINAL	42.1	—	62.25	-20.19	L1	GND
0.704	FINAL	33.1	—	56.00	-22.94	L1	GND
0.704	FINAL	—	22.83	46.00	-23.17	L1	GND
4.688	FINAL	28.0	—	56.00	-28.03	L1	GND
4.693	FINAL	—	17.96	46.00	-28.04	L1	GND
29.243	FINAL	19.9	—	60.00	-40.06	L1	GND
29.252	FINAL	—	14.31	50.00	-35.69	L1	GND

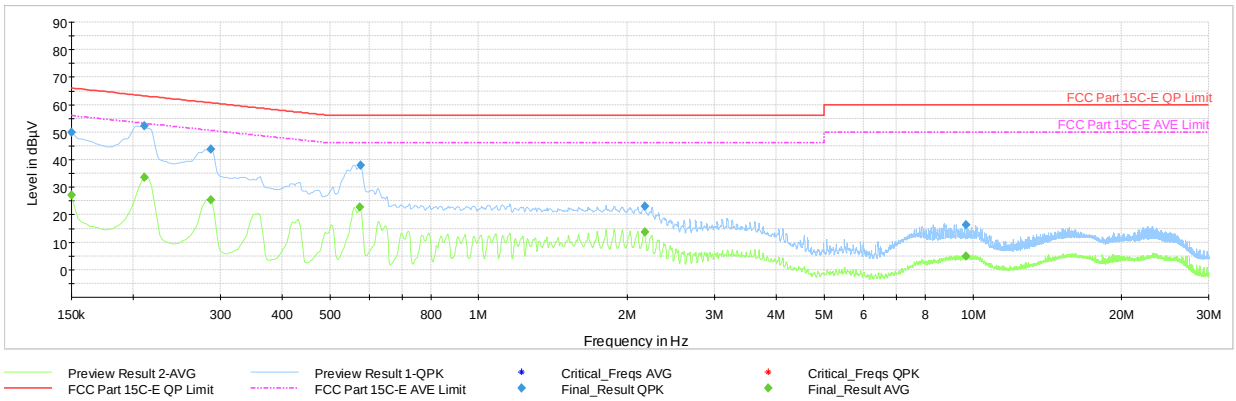
Table 7-286. AC Line Conducted Data with SDM Primary 11ax UNII Band 5 – RU26 – Ch.1 (L1) with AC/DC Adapter



Plot 7-1821. AC Line Conducted Plot with SDM Primary 11ax UNII Band 5 – RU26 – Ch.1 (N) with AC/DC Adapter

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.157	FINAL	—	26.78	55.63	-28.85	N	GND
0.157	FINAL	45.5	—	65.63	-20.11	N	GND
0.195	FINAL	—	24.44	53.82	-29.38	N	GND
0.195	FINAL	43.4	—	63.82	-20.40	N	GND
0.274	FINAL	38.6	—	61.00	-22.42	N	GND
0.274	FINAL	—	20.12	51.00	-30.89	N	GND
0.704	FINAL	29.8	—	56.00	-26.20	N	GND
0.704	FINAL	—	22.60	46.00	-23.40	N	GND
1.448	FINAL	—	12.59	46.00	-33.41	N	GND
1.451	FINAL	21.9	—	56.00	-34.08	N	GND
4.693	FINAL	—	15.67	46.00	-30.33	N	GND
4.695	FINAL	26.7	—	56.00	-29.27	N	GND

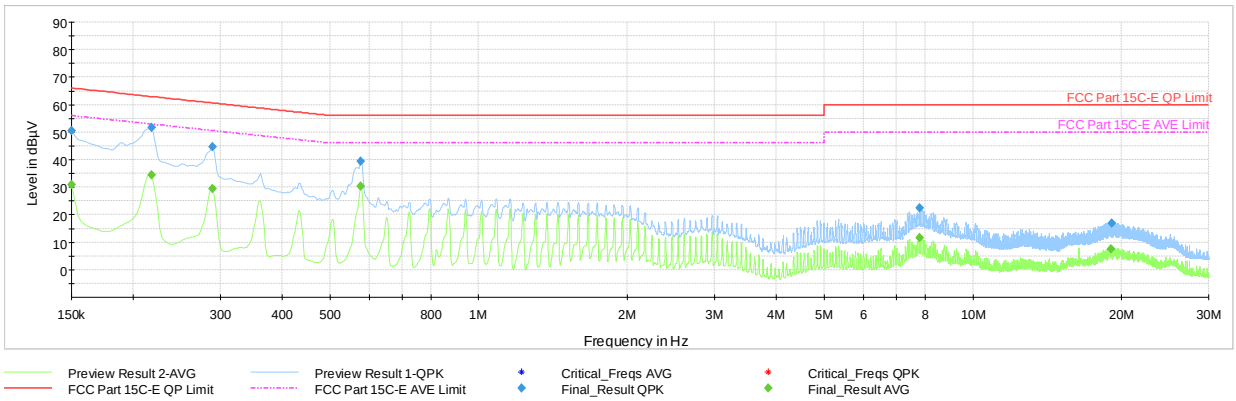
Table 7-287. AC Line Conducted Data with SDM Primary 11ax UNII Band 5 – RU26 – Ch.1 (N) with AC/DC Adapter



Plot 7-1822. AC Line Conducted Plot with SDM Primary 11ax UNII Band 5 – RU242 – Ch.1 (L1) with Laptop

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.15	FINAL	—	27.07	56.00	-28.93	L1	GND
0.15	FINAL	50.1	—	66.00	-15.92	L1	GND
0.211	FINAL	—	33.44	53.18	-19.74	L1	GND
0.211	FINAL	52.2	—	63.18	-10.96	L1	GND
0.287	FINAL	—	25.39	50.60	-25.21	L1	GND
0.287	FINAL	43.7	—	60.60	-16.88	L1	GND
0.575	FINAL	—	22.62	46.00	-23.38	L1	GND
0.578	FINAL	38.1	—	56.00	-17.95	L1	GND
2.171	FINAL	23.1	—	56.00	-32.93	L1	GND
2.171	FINAL	—	13.73	46.00	-32.27	L1	GND
9.681	FINAL	16.2	—	60.00	-43.78	L1	GND
9.688	FINAL	—	4.90	50.00	-45.10	L1	GND

Table 7-288. AC Line Conducted Data with SDM Primary 11ax UNII Band 5 – RU242 – Ch.1 (L1) with Laptop

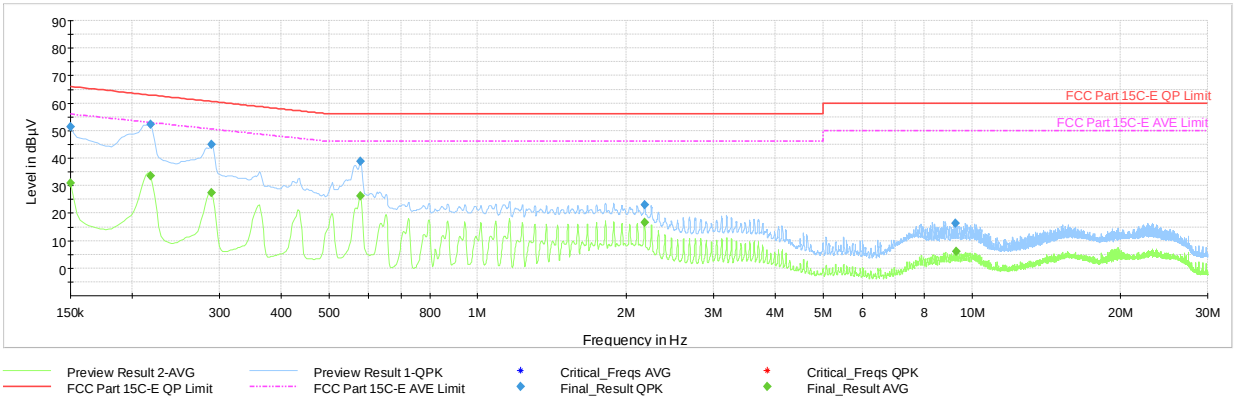


Plot 7-1823. AC Line Conducted Plot with SDM Primary 11ax UNII Band 5 – RU242 – Ch.1 (N) with Laptop

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.150	FINAL	—	31.05	56.00	-24.95	N	GND
0.150	FINAL	50.5	—	66.00	-15.55	N	GND
0.218	FINAL	—	34.50	52.91	-18.42	N	GND
0.218	FINAL	51.8	—	62.91	-11.09	N	GND
0.290	FINAL	—	29.42	50.54	-21.11	N	GND
0.290	FINAL	44.7	—	60.54	-15.87	N	GND
0.578	FINAL	39.5	—	56.00	-16.53	N	GND
0.578	FINAL	—	30.34	46.00	-15.66	N	GND
7.800	FINAL	22.4	—	60.00	-37.62	N	GND
7.807	FINAL	—	11.70	50.00	-38.30	N	GND
19.059	FINAL	—	7.55	50.00	-42.45	N	GND
19.068	FINAL	17.0	—	60.00	-43.02	N	GND

Table 7-289. AC Line Conducted Data with SDM Primary 11ax UNII Band 5 – RU242 – Ch.1 (N) with Laptop

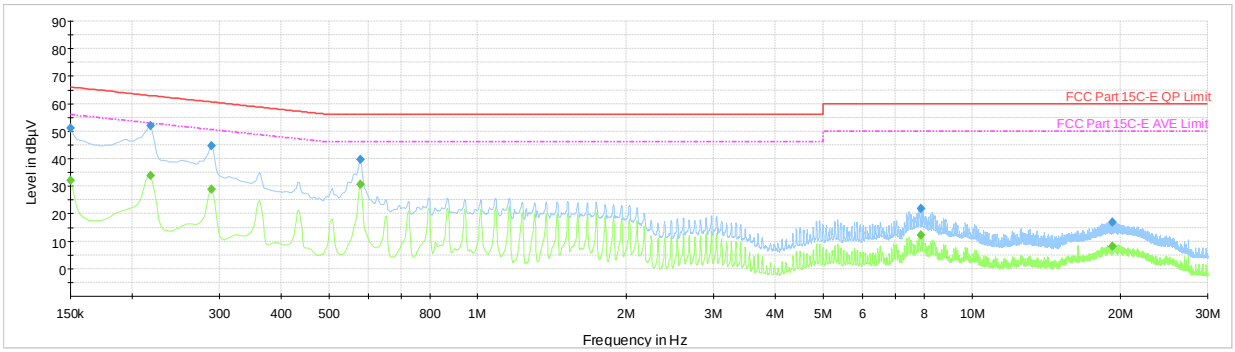
7.9.2 SDM Diversity Line-Conducted Emissions Measurements



Plot 7-1824. AC Line Conducted Plot with SDM Diversity 11ax UNII Band 5 – RU26 – Ch.1 (L1) with AC/DC Adapter

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.150	FINAL	—	30.82	56.00	-25.18	L1	GND
0.150	FINAL	51.5	—	66.00	-14.49	L1	GND
0.218	FINAL	—	33.68	52.91	-19.23	L1	GND
0.218	FINAL	52.2	—	62.91	-10.71	L1	GND
0.290	FINAL	—	27.35	50.54	-23.19	L1	GND
0.290	FINAL	44.9	—	60.54	-15.63	L1	GND
0.580	FINAL	38.8	—	56.00	-17.18	L1	GND
0.580	FINAL	—	26.21	46.00	-19.79	L1	GND
2.175	FINAL	23.1	—	56.00	-32.90	L1	GND
2.175	FINAL	—	16.68	46.00	-29.32	L1	GND
9.269	FINAL	16.4	—	60.00	-43.63	L1	GND
9.283	FINAL	—	6.04	50.00	-43.96	L1	GND

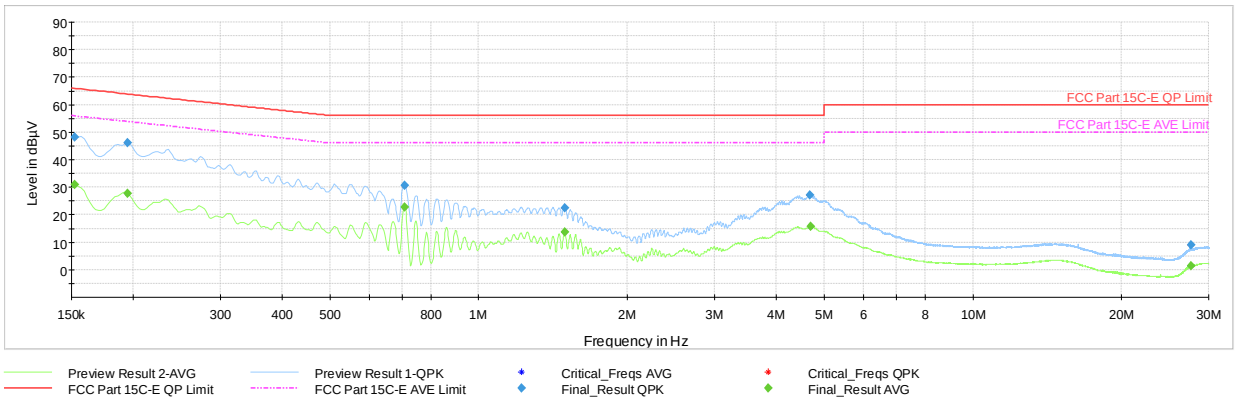
Table 7-290. AC Line Conducted Data with SDM Diversity 11ax UNII Band 5 – RU26 – Ch.1 (L1) with AC/DC Adapter



Plot 7-1825. AC Line Conducted Plot with SDM Diversity 11ax UNII Band 5 – RU26 – Ch.1 (N) with AC/DC Adapter

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.150	FINAL	—	32.07	56.00	-23.93	N	GND
0.150	FINAL	51.0	—	66.00	-15.02	N	GND
0.218	FINAL	—	33.77	52.91	-19.14	N	GND
0.218	FINAL	51.9	—	62.91	-11.03	N	GND
0.290	FINAL	—	28.81	50.54	-21.73	N	GND
0.290	FINAL	44.8	—	60.54	-15.78	N	GND
0.580	FINAL	39.7	—	56.00	-16.31	N	GND
0.580	FINAL	—	30.63	46.00	-15.37	N	GND
7.883	FINAL	22.0	—	60.00	-37.99	N	GND
7.895	FINAL	—	12.23	50.00	-37.77	N	GND
19.241	FINAL	17.0	—	60.00	-43.00	N	GND
19.246	FINAL	—	8.20	50.00	-41.80	N	GND

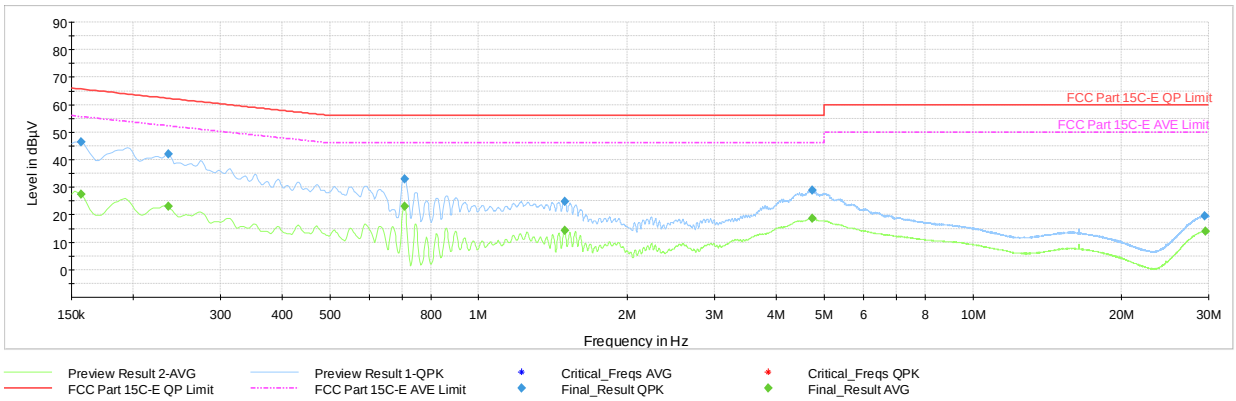
Table 7-291. AC Line Conducted Data with SDM Diversity 11ax UNII Band 5 – RU26 – Ch.1 (N) with AC/DC Adapter



Plot 7-1826. AC Line Conducted Plot with SDM Diversity 11ax UNII Band 5 – RU242 – Ch.1 (L1) with AC/DC Adapter

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.152	FINAL	—	30.83	55.88	-25.05	L1	GND
0.152	FINAL	48.2	—	65.88	-17.64	L1	GND
0.195	FINAL	—	27.80	53.82	-26.02	L1	GND
0.195	FINAL	46.2	—	63.82	-17.58	L1	GND
0.708	FINAL	—	22.88	46.00	-23.12	L1	GND
0.708	FINAL	30.6	—	56.00	-25.43	L1	GND
1.493	FINAL	22.5	—	56.00	-33.48	L1	GND
1.493	FINAL	—	13.68	46.00	-32.32	L1	GND
4.684	FINAL	27.0	—	56.00	-28.97	L1	GND
4.691	FINAL	—	15.77	46.00	-30.23	L1	GND
27.593	FINAL	9.0	—	60.00	-51.02	L1	GND
27.623	FINAL	—	1.43	50.00	-48.57	L1	GND

Table 7-292. AC Line Conducted Data with SDM Diversity 11ax UNII Band 5 – RU242 – Ch.1 (L1) with AC/DC Adapter



Plot 7-1827. AC Line Conducted Plot with SDM Diversity 11ax UNII Band 5 – RU242 – Ch.1 (N) with AC/DC Adapter

Frequency [MHz]	Process State	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Line	PE
0.157	FINAL	—	27.44	55.63	-28.20	N	GND
0.157	FINAL	46.6	—	65.63	-19.07	N	GND
0.236	FINAL	—	23.03	52.25	-29.23	N	GND
0.236	FINAL	42.1	—	62.25	-20.12	N	GND
0.708	FINAL	—	23.09	46.00	-22.91	N	GND
0.708	FINAL	32.9	—	56.00	-23.10	N	GND
1.491	FINAL	24.7	—	56.00	-31.32	N	GND
1.491	FINAL	—	14.38	46.00	-31.62	N	GND
4.731	FINAL	28.8	—	56.00	-27.19	N	GND
4.736	FINAL	—	18.53	46.00	-27.47	N	GND
29.481	FINAL	19.4	—	60.00	-40.60	N	GND
29.524	FINAL	—	13.90	50.00	-36.10	N	GND

Table 7-293. AC Line Conducted Data with SDM Diversity 11ax UNII Band 5 – RU242 – Ch.1 (N) with AC/DC Adapter

7.10 Proper Power Adjustment, Client Devices Connected to a Standard Power Access Point §15.407; RSS-248

Test Overview and Limits

A client device that connects to a Standard Power AP must limit its power to a minimum of 6 dB lower than its associated Standard Power access point's authorized transmit power. The term "authorized" means the AFC-approved power level for the AP to use on a particular channel.

Test Procedure Used

KDB 987594 D02 v02r01 – Section L
ANSI C63.10-2013 – Section 12.3.3.2 Method PM-G
ANSI C63.10-2013 – Section 14.2 Measure-and-Sum Technique

Test Settings

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

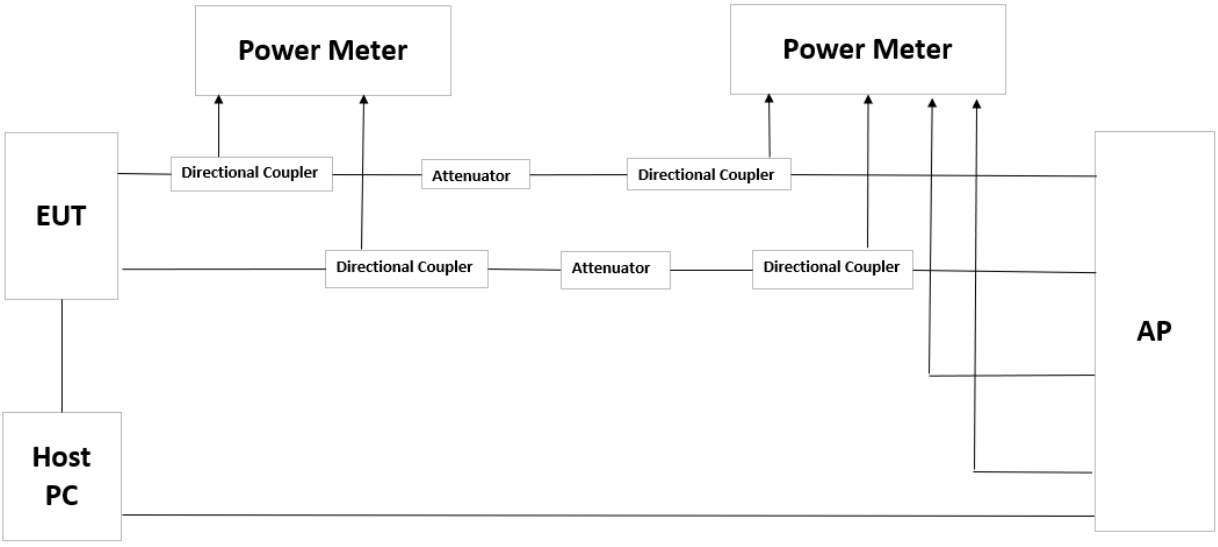


Figure 7-9. Test Instrument & Measurement Setup

Test Notes

1. AFC Limit was set to 36, 28 and 21 dBm EIRP.
2. Standard Power AP which was used in the test setup is not certified and it's a production version.
3. Standard Power AP specification is declared by Apple/manufacturer.

36 dBm EIRP

Channel	Frequency (MHz)	Mode	Power Measured (dBm)					Correlated Gain (dBi)	Measured e.i.r.p (dBm)
			Ant0	Ant1	Ant2	Ant3	Summed		
5	5975	TxBF	19.87	19.72	19.41	19.31	25.6	6.02	31.62

Table 7-294: AP measured e.i.r.p

Channel	Frequency (MHz)	Power Measured (dBm)			Correlated Gain (dBi)	Measured e.i.r.p (dBm)
		Antenna 3c	Antenna 3a	Summed		
5	5975	12.08	4.37	12.76	1.9	14.66

Table 7-295: EUT measured e.i.r.p (MIMO)

28 dBm EIRP

Channel	Frequency (MHz)	Mode	Power Measured (dBm)					Correlated Gain (dBi)	Measured e.i.r.p (dBm)
			Ant0	Ant1	Ant2	Ant3	Summed		
5	5975	CDD	19.82	19.63	19.48	19.49	25.63	0	25.63

Table 7-296: AP measured e.i.r.p

Channel	Frequency (MHz)	Power Measured (dBm)			Correlated Gain (dBi)	Measured e.i.r.p (dBm)
		Antenna 3c	Antenna 3a	Summed		
5	5975	11.97	4.22	12.64	1.9	14.54

Table 7-297: EUT measured e.i.r.p (MIMO)

21 dBm EIRP

Channel	Frequency (MHz)	Mode	Power Measured (dBm)					Correlated Gain (dBi)	Measured e.i.r.p (dBm)
			Ant0	Ant1	Ant2	Ant3	Summed		
5	5975	CDD	12.68	12.87	12.93	12.44	18.75	0	18.75

Table 7-298: AP measured e.i.r.p

Antenna	Channel	Frequency (MHz)	Power Measured (dBm)	Antenna Gain (dBi)	Measured e.i.r.p (dBm)
3c	5	5975	11.84	1.9	13.74
3a	5	5975	6.77	0.9	7.67

Table 7-299: EUT measured e.i.r.p (SISO)

7.11 Dual Client Test, Demonstration of Proper Power Adjustment based on Associated AP §15.407

Test Overview and Limits

A client device may connect to a Standard Power AP with a maximum power level of 30 dBm EIRP. A client may also connect to a Low Power indoor AP, but the power level is limited to a maximum of 24 dBm EIRP. If a client has the flexibility to connect to both APs, verification is needed to show that it can distinguish between the two configurations, and then control the power levels accordingly.

Test Procedure Used

KDB 987594 D02 v02r01 – Section K
ANSI C63.10-2013 – Section 12.3.3.2 Method PM-G
ANSI C63.10-2013 – Section 14.2 Measure-and-Sum Technique

Test Settings

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

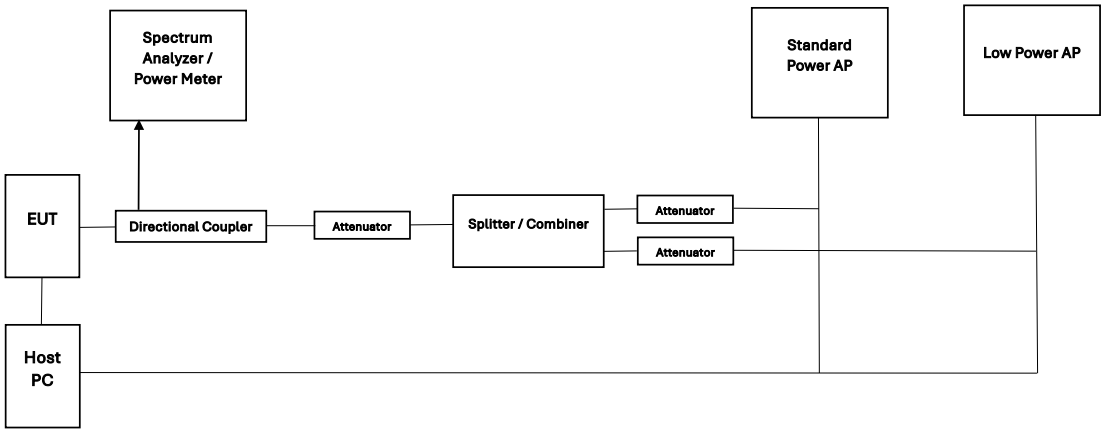
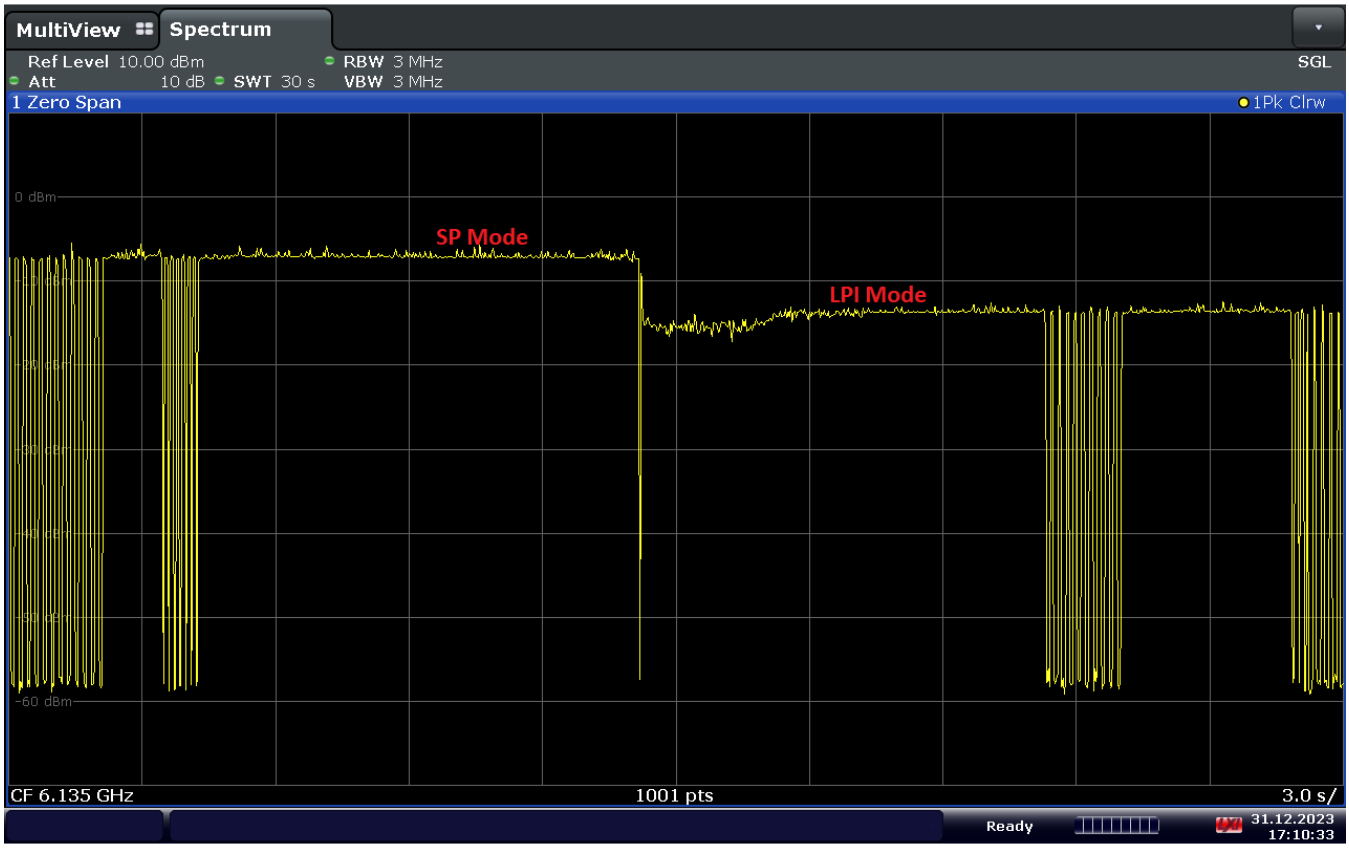


Figure 7-10. Test Instrument & Measurement Setup

Test Notes

1. Standard Power AP was set on highest power setting (36dBm EIRP)
2. Standard Power AP and Low Power Indoor AP were configured to transmit on same channel.
3. DUT was configured for SISO transmission so Antenna 3c was measured.



17:10:33 31.12.2023

Plot 7-1828. Client device observation from Standard Power AP to Low Power Indoor AP

Channel	Frequency (MHz)	Mode	Power Measured (dBm)					Correlated Gain (dBi)	Measured e.i.r.p (dBm)
			Ant0	Ant1	Ant2	Ant3	Summed		
37	6135	TxBF	19.80	19.24	19.79	19.49	25.61	6.02	31.63

Table 7-300: Measured e.i.r.p from Standard Power AP

Antenna	Channel	Frequency (MHz)	Power Measured (dBm)	Antenna Gain (dBi)	Measured e.i.r.p (dBm)
3c	37	6135	10.88	1.9	12.78

Table 7-301: EUT measured e.i.r.p when established with Standard Power AP

Antenna	Channel	Frequency (MHz)	Power Measured (dBm)	Antenna Gain (dBi)	Measured e.i.r.p (dBm)
3c	37	6135	5.66	1.9	7.56

Table 7-302: EUT measured e.i.r.p when established with Low Power Indoor AP

8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Apple Tablet Device FCC ID: BCGA2903** and **IC: 579C-A2903** is in compliance with Part 15 Subpart E (15.407) of the FCC Rules and RSS-248 of the Innovation, Science and Economic Development Canada Rules.