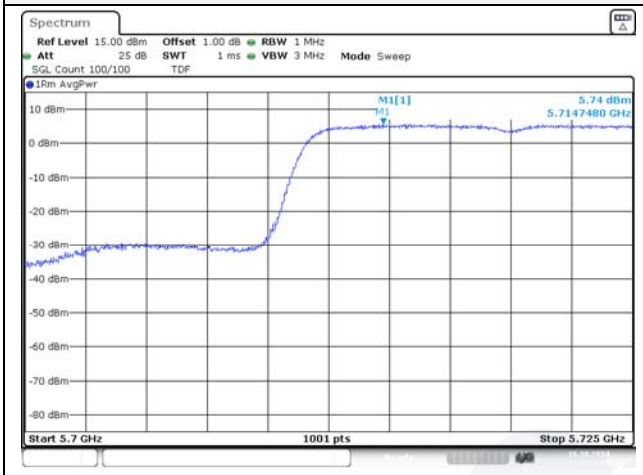
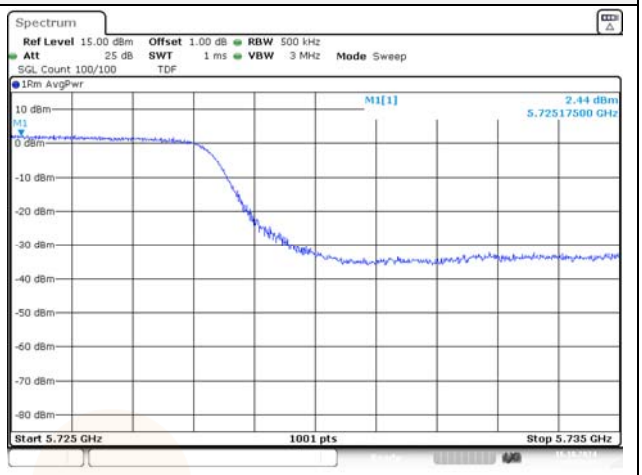
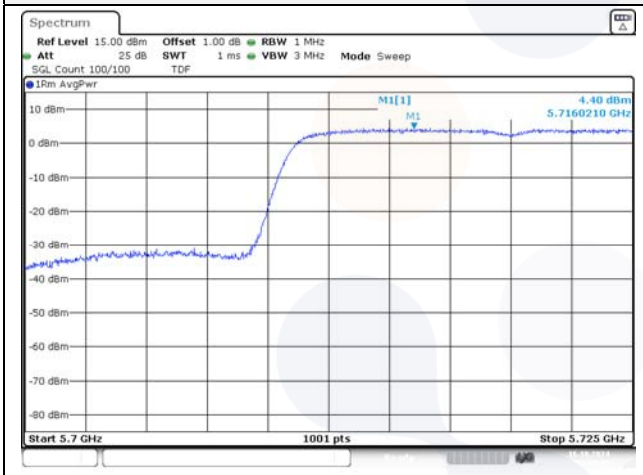
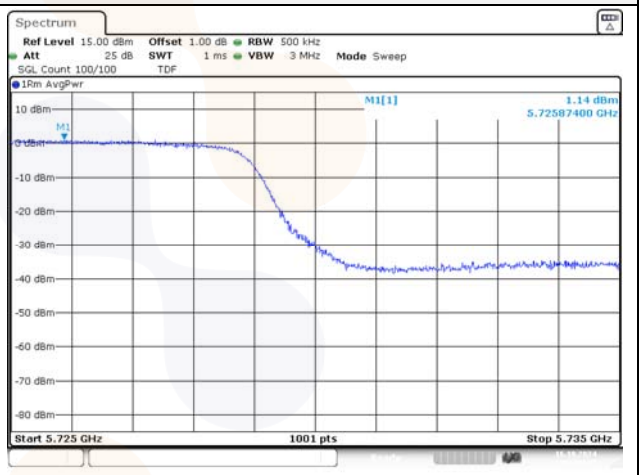
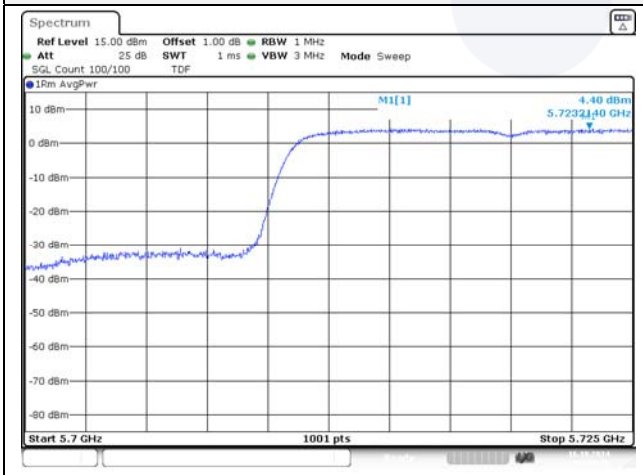
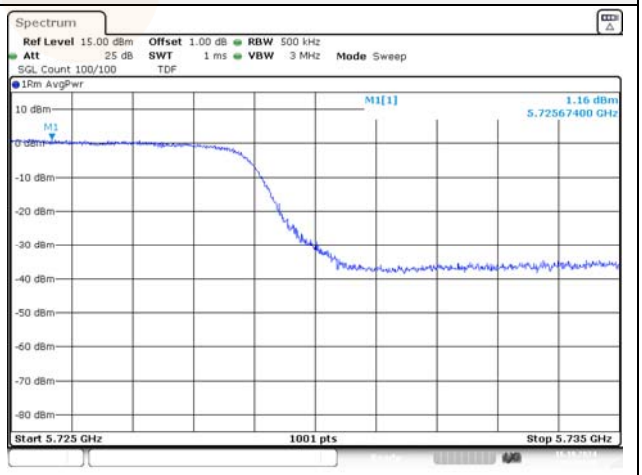
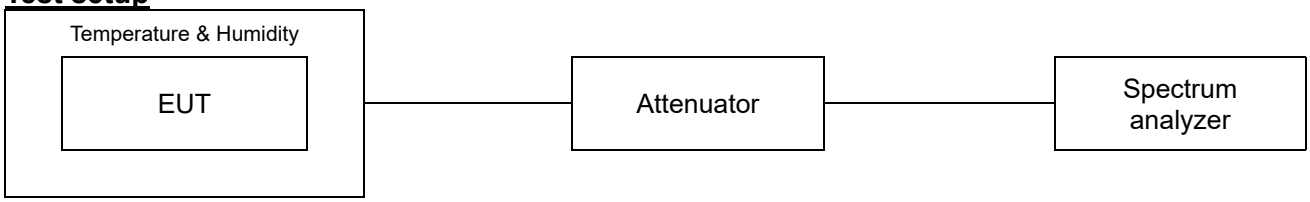
UNII-2C / 802.11a	UNII-3 / 802.11a
	
UNII-2C / 802.11n_HT20	**UNII-3 / 802.11n_HT20**
	
UNII-2C / 802.11ac_VHT20	**UNII-3 / 802.11ac_VHT20**
	

7.6. Frequency stability

Test setup



Limit

According to §15.407(g),
Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

According to RSS-GEN(6.11),
For licence-exempt devices, the following conditions apply:

(a) at the temperatures of -20°C (-4°F), +20°C (+68°F) and +50°C (+122°F), and at the manufacturer's rated supply voltage

(b) at the temperature of +20°C (+68°F) and at ±15% of the manufacturer's rated supply voltage

If the frequency stability limits are only met within a temperature range that is smaller than the range specified in (a) for licensed or licence-exempt devices, the frequency stability requirement will be deemed to be met if the transmitter is automatically prevented from operating outside this smaller temperature range and if the published operating characteristics for the equipment are revised to reflect this restricted temperature range.

If the device contains both licence and licence-exempt transmitter modules, the device's frequency stability shall be measured under the most stringent condition specified in the applicable RSS of the transmitter module.

In addition, if an unmodulated carrier is not available, the method used to measure frequency stability shall be described in the test report.

According to RSS-GEN(8.11),
If the frequency stability of the licence-exempt radio apparatus is not specified in the applicable RSS, the fundamental emissions of the radio apparatus should be kept within at least the central 80% of its permitted operating frequency band in order to minimize the possibility of out-of-band operation. In addition, its occupied bandwidth shall be entirely outside the restricted bands and the prohibited TV bands of 54-72 ㎒, 76-88 ㎒, 174-216 ㎒, and 470-602 ㎒, unless otherwise indicated.

Test procedure

ANSI C63.10-2013 - Section 6.8.1

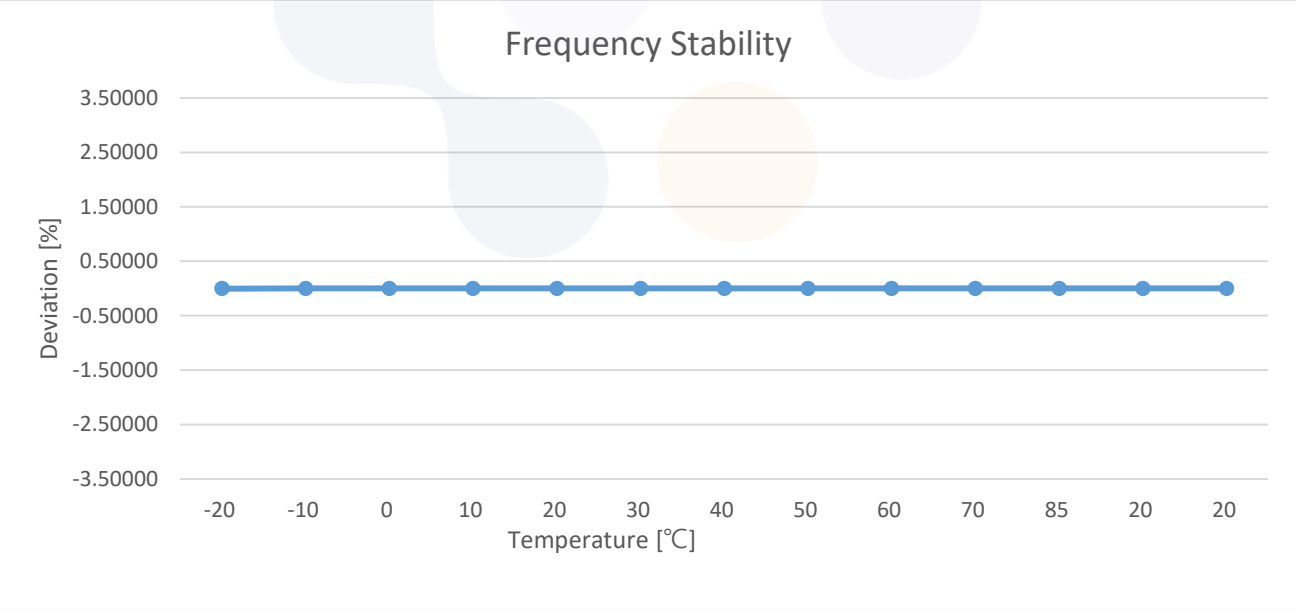
Test results

[DC 5 V]

Test band : UNII-1

Frequency (㎐) : 5 180 000 000

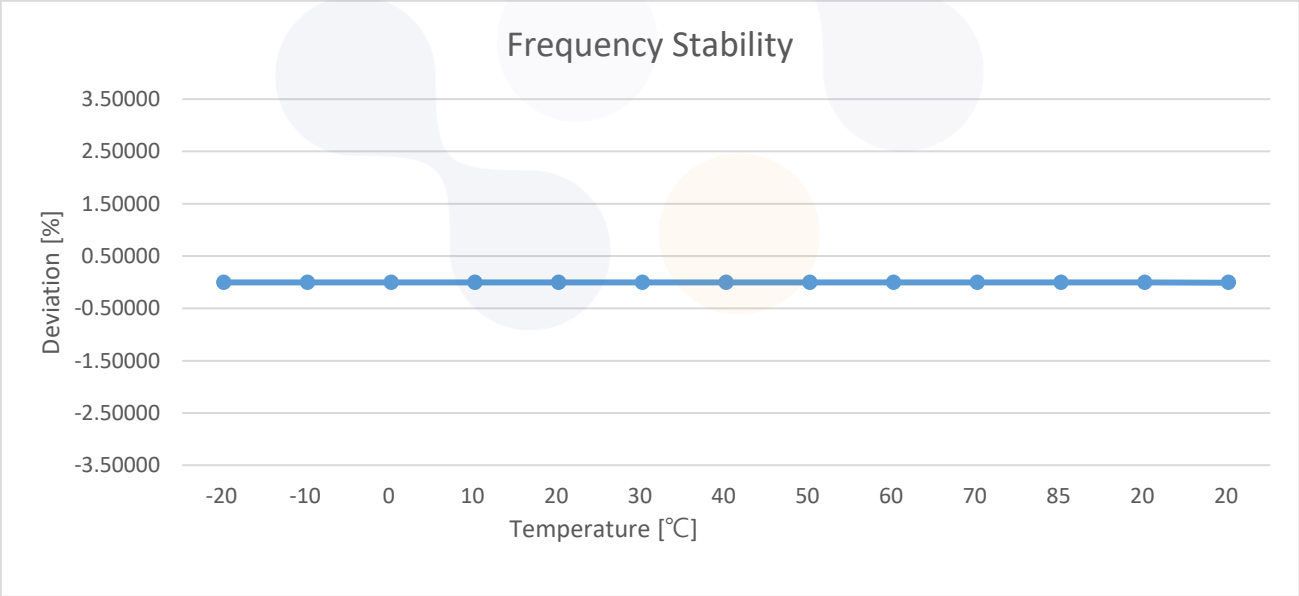
Voltage (%)	Power (V)	Temp. (°C)	Frequency (㎐)	Frequency error (㎐)	Deviation	
					(ppm)	(%)
100	5.00	-20	5 259 967 030	-35 760	-6.90	-0.000 69
		-10	5 259 969 030	-30 770	-5.94	-0.000 59
		0	5 259 964 240	-33 770	-6.52	-0.000 65
		+10	5 259 965 630	-33 370	-6.44	-0.000 64
		+20	5 259 970 030	-34 370	-6.64	-0.000 66
		+30	5 259 965 430	-33 570	-6.48	-0.000 65
		+40	5 259 970 430	-32 170	-6.21	-0.000 62
		+50	5 259 966 230	-28 970	-5.59	-0.000 56
		+60	5 259 967 430	-31 770	-6.13	-0.000 61
		+70	5 259 964 240	-34 770	-6.71	-0.000 67
		+85	5 259 968 830	-30 770	-5.94	-0.000 59
85	4.25	+20	5 259 964 240	-33 570	-6.48	-0.000 65
115	5.75	+20	5 259 963 640	-34 370	-6.64	-0.000 66



Test band : UNII-2A

Frequency (㎐) : 5 260 000 000

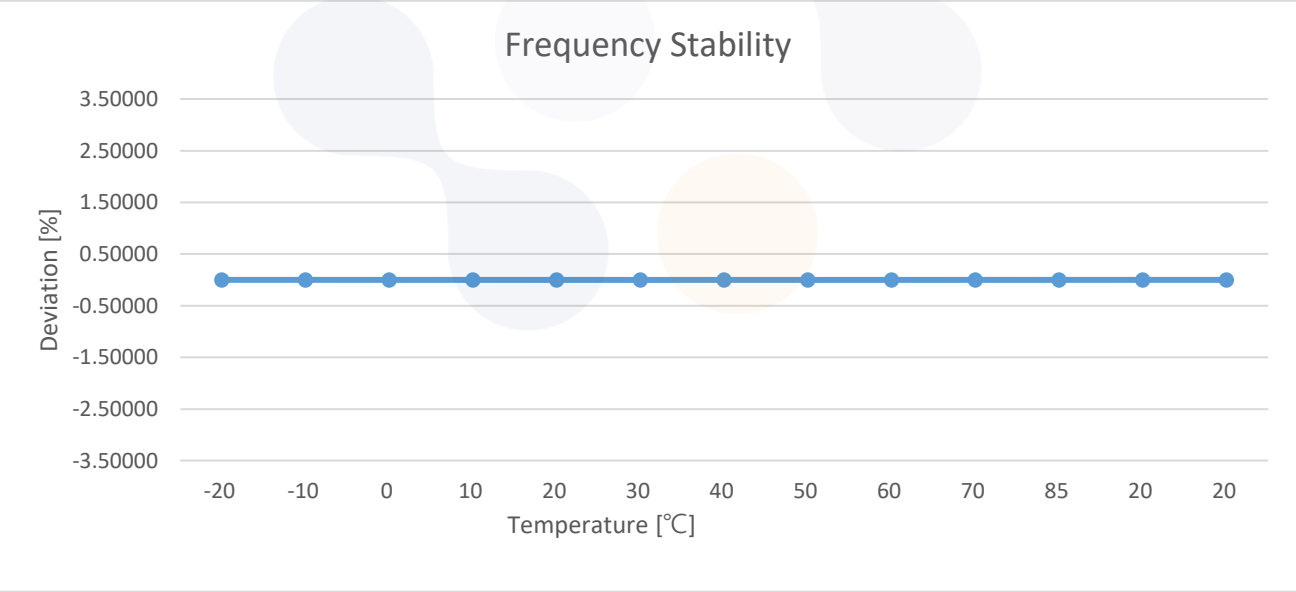
Voltage (%)	Power (V)	Temp. (°C)	Frequency (㎐)	Frequency error (㎐)	Deviation	
					(ppm)	(%)
100	5.00	-20	5 259 967 030	-32 970	-6.27	-0.000 63
		-10	5 259 969 030	-30 970	-5.89	-0.000 59
		0	5 259 964 240	-35 760	-6.80	-0.000 68
		+10	5 259 965 630	-34 370	-6.53	-0.000 65
		+20	5 259 970 030	-29 970	-5.70	-0.000 57
		+30	5 259 965 430	-34 570	-6.57	-0.000 66
		+40	5 259 970 430	-29 570	-5.62	-0.000 56
		+50	5 259 966 230	-33 770	-6.42	-0.000 64
		+60	5 259 967 430	-32 570	-6.19	-0.000 62
		+70	5 259 964 240	-35 760	-6.80	-0.000 68
		+85	5 259 968 830	-31 170	-5.93	-0.000 59
85	4.25	+20	5 259 964 240	-35 760	-6.80	-0.000 68
115	5.75	+20	5 259 963 640	-36 360	-6.91	-0.000 69



Test band : UNII-2C

Frequency (㎐) : 5 500 000 000

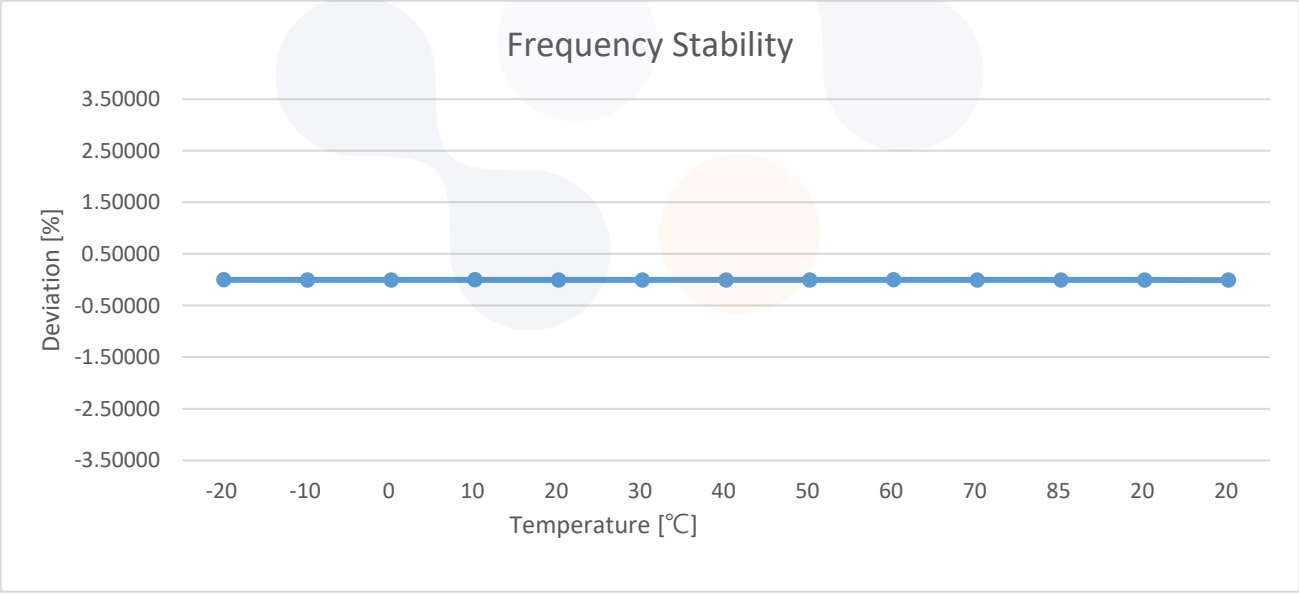
Voltage (%)	Power (V)	Temp. (°C)	Frequency (㎐)	Frequency error (㎐)	Deviation	
					(ppm)	(%)
100	5.00	-20	5 499 965 830	-34 170	-6.21	-0.000 62
		-10	5 499 968 030	-31 970	-5.81	-0.000 58
		0	5 499 968 230	-31 770	-5.78	-0.000 58
		+10	5 499 962 240	-37 760	-6.87	-0.000 69
		+20	5 499 963 440	-36 560	-6.65	-0.000 67
		+30	5 499 964 240	-35 760	-6.50	-0.000 65
		+40	5 499 968 430	-31 570	-5.74	-0.000 57
		+50	5 499 964 240	-35 760	-6.50	-0.000 65
		+60	5 499 965 430	-34 570	-6.29	-0.000 63
		+70	5 499 962 440	-37 560	-6.83	-0.000 68
		+85	5 499 966 830	-33 170	-6.03	-0.000 60
85	4.25	+20	5 499 967 030	-32 970	-5.99	-0.000 60
115	5.75	+20	5 499 966 430	-33 570	-6.10	-0.000 61



Test band : UNII-3

Frequency (㎐) : 5 745 000 000

Voltage (%)	Power (V)	Temp. (°C)	Frequency (㎐)	Frequency error (㎐)	Deviation	
					(ppm)	(%)
100	5.00	-20	5 744 965 630	-34 370	-5.98	-0.000 60
		-10	5 744 961 440	-38 560	-6.71	-0.000 67
		0	5 744 961 440	-38 560	-6.71	-0.000 67
		+10	5 744 967 030	-32 970	-5.74	-0.000 57
		+20	5 744 961 240	-38 760	-6.75	-0.000 68
		+30	5 744 962 040	-37960	-6.61	-0.000 66
		+40	5 744 961 640	-38 360	-6.68	-0.000 67
		+50	5 744 962 440	-37 560	-6.54	-0.000 65
		+60	5 744 964 840	-35 160	-6.12	-0.000 61
		+70	5 744 961 240	-38 760	-6.75	-0.000 68
		+85	5 744 960 040	-39 960	-6.96	-0.000 70
85	4.25	+20	5 744 959 440	-40 560	-7.06	-0.000 71
115	5.75	+20	5 744 959 040	-40 960	-7.13	-0.000 71

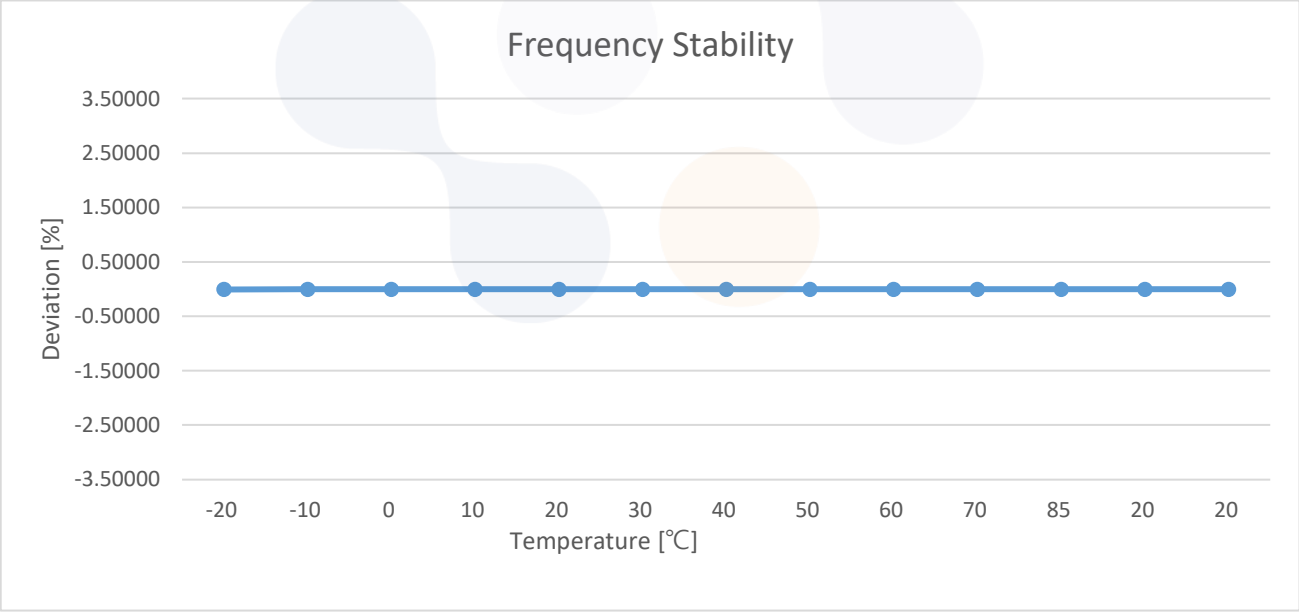


[DC 12 V]

Test band : UNII-1

Frequency (㎐) : 5 180 000 000

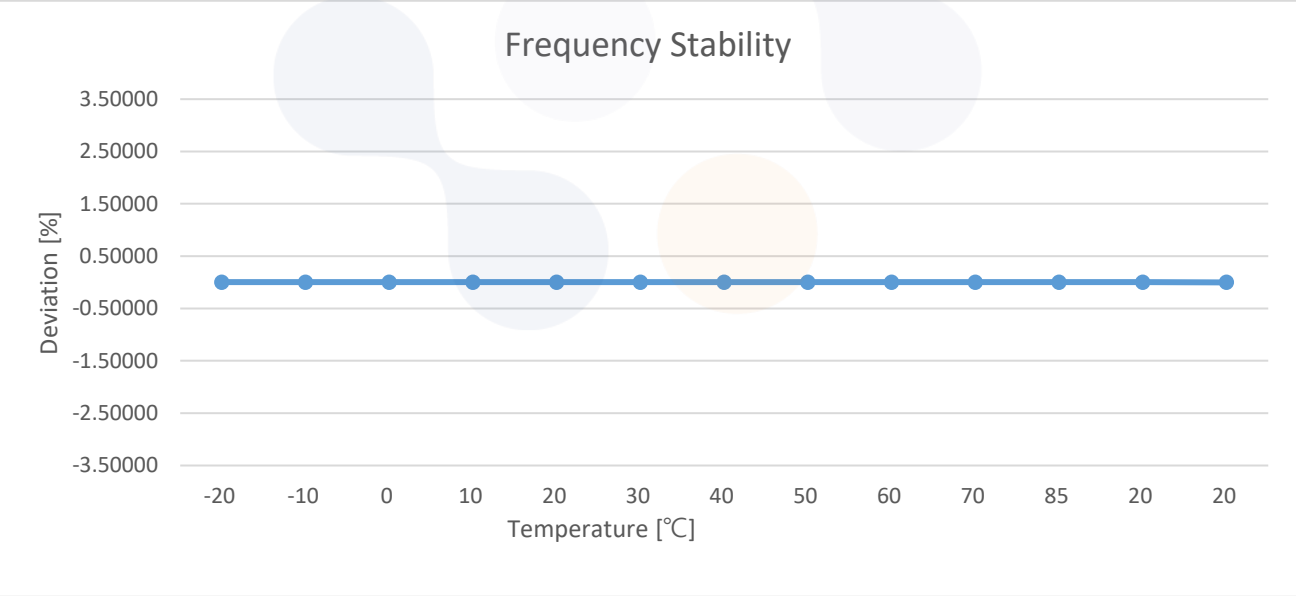
Voltage (%)	Power (V)	Temp. (°C)	Frequency (㎐)	Frequency error (㎐)	Deviation	
					(ppm)	(%)
100	12.00	-20	5 179 965 030	-34 970	-6.75	-0.000 68
		-10	5 179 965 630	-34 370	-6.64	-0.000 66
		0	5 179 965 630	-34 370	-6.64	-0.000 66
		+10	5 179 965 430	-34 570	-6.67	-0.000 67
		+20	5 179 971 430	-28 570	-5.52	-0.000 55
		+30	5 179 965 630	-34 370	-6.64	-0.000 66
		+40	5 179 965 430	-34 570	-6.67	-0.000 67
		+50	5 179 965 430	-34 570	-6.67	-0.000 67
		+60	5 179 968 430	-31 570	-6.09	-0.000 61
		+70	5 179 965 030	-34 970	-6.75	-0.000 68
		+85	5 179 966 230	-33 770	-6.52	-0.000 65
85	10.20	+20	5 179 964 840	-35 160	-6.79	-0.000 68
115	13.80	+20	5 179 964 440	-35 560	-6.86	-0.000 69



Test band : UNII-2A

Frequency (㎐) : 5 260 000 000

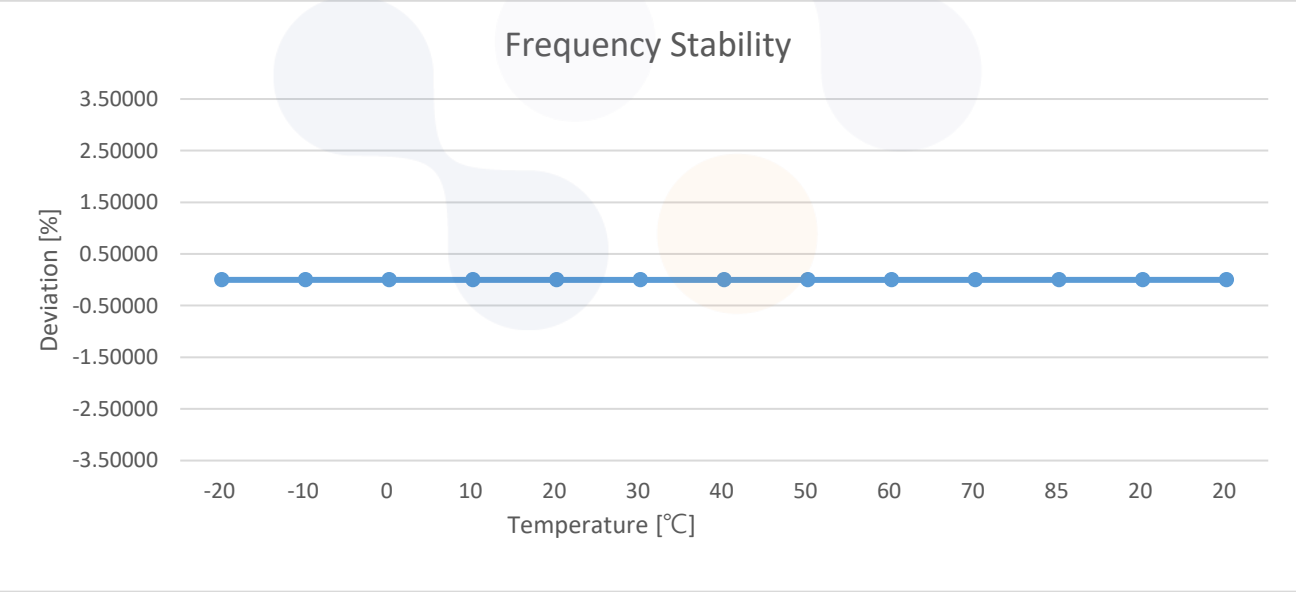
Voltage (%)	Power (V)	Temp. (°C)	Frequency (㎐)	Frequency error (㎐)	Deviation	
					(ppm)	(%)
100	12.00	-20	5 259 969 030	-30 970	-5.89	-0.000 59
		-10	5 259 964 240	-35 760	-6.80	-0.000 68
		0	5 259 969 830	-30 170	-5.74	-0.000 57
		+10	5 259 965 630	-34 370	-6.53	-0.000 65
		+20	5 259 969 430	-30 570	-5.81	-0.000 58
		+30	5 259 970 030	-29 970	-5.70	-0.000 57
		+40	5 259 964 240	-35 760	-6.80	-0.000 68
		+50	5 259 969 830	-30 170	-5.74	-0.000 57
		+60	5 259 967 830	-32 170	-6.12	-0.000 61
		+70	5 259 964 040	-35 960	-6.84	-0.000 68
		+85	5 259 965 230	-34 770	-6.61	-0.000 66
85	10.20	+20	5 259 963 240	-36 760	-6.99	-0.000 70
115	13.80	+20	5 259 962 840	-37 160	-7.06	-0.000 71



Test band : UNII-2C

Frequency (㎐) : 5 500 000 000

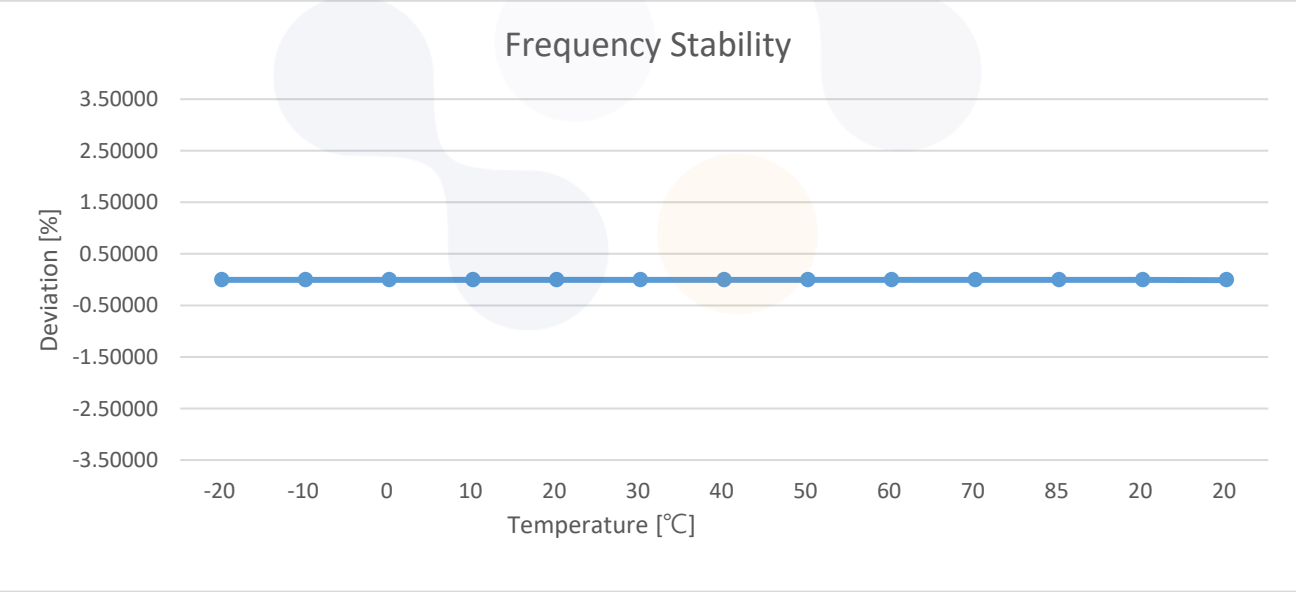
Voltage (%)	Power (V)	Temp. (°C)	Frequency (㎐)	Frequency error (㎐)	Deviation	
					(ppm)	(%)
100	12.00	-20	5 499 967 630	-32 370	-5.89	-0.000 59
		-10	5 499 962 040	-37 960	-6.90	-0.000 69
		0	5 499 968 230	-31 770	-5.78	-0.000 58
		+10	5 499 967 630	-32 370	-5.89	-0.000 59
		+20	5 499 966 030	-33 970	-6.18	-0.000 62
		+30	5 499 967 230	-32 770	-5.96	-0.000 60
		+40	5 499 967 630	-32 370	-5.89	-0.000 59
		+50	5 499 968 830	-31 170	-5.67	-0.000 57
		+60	5 499 966 030	-33 970	-6.18	-0.000 62
		+70	5 499 968 030	-31 970	-5.81	-0.000 58
		+85	5 499 967 630	-32 370	-5.89	-0.000 59
85	10.20	+20	5 499 966 230	-33 770	-6.14	-0.000 61
115	13.80	+20	5 499 966 030	-33 970	-6.18	-0.000 62



Test band : UNII-3

Frequency (㎐) : 5 745 000 000

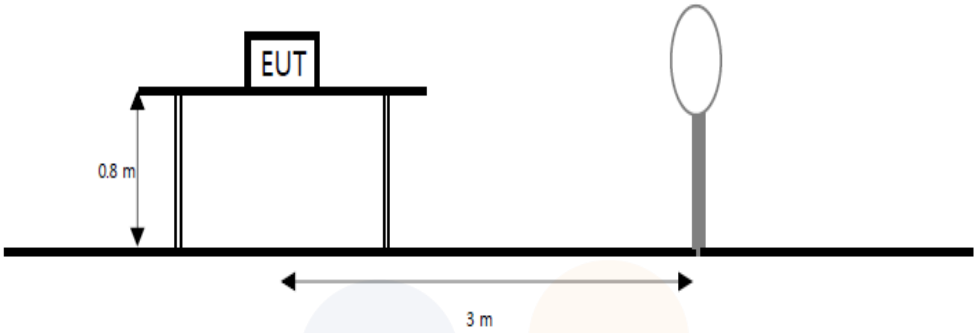
Voltage (%)	Power (V)	Temp. (°C)	Frequency (㎐)	Frequency error (㎐)	Deviation	
					(ppm)	(%)
100	12.00	-20	5 744 961 040	-38 960	-6.78	-0.000 68
		-10	5 744 960 240	-39 760	-6.92	-0.000 69
		0	5 744 966 630	-33 370	-5.81	-0.000 58
		+10	5 744 966 030	-33 970	-5.91	-0.000 59
		+20	5 744 966 030	-33 970	-5.91	-0.000 59
		+30	5 744 966 030	-33 970	-5.91	-0.000 59
		+40	5 744 966 630	-33 370	-5.81	-0.000 58
		+50	5 744 962 040	-37 960	-6.61	-0.000 66
		+60	5 744 960 440	-39 560	-6.89	-0.000 69
		+70	5 744 961 840	-38 160	-6.64	-0.000 66
		+85	5 744 961 440	-38 560	-6.71	-0.000 67
85	10.20	+20	5 744 965 230	-34 770	-6.05	-0.000 61
115	13.80	+20	5 744 964 840	-35 160	-6.12	-0.000 61



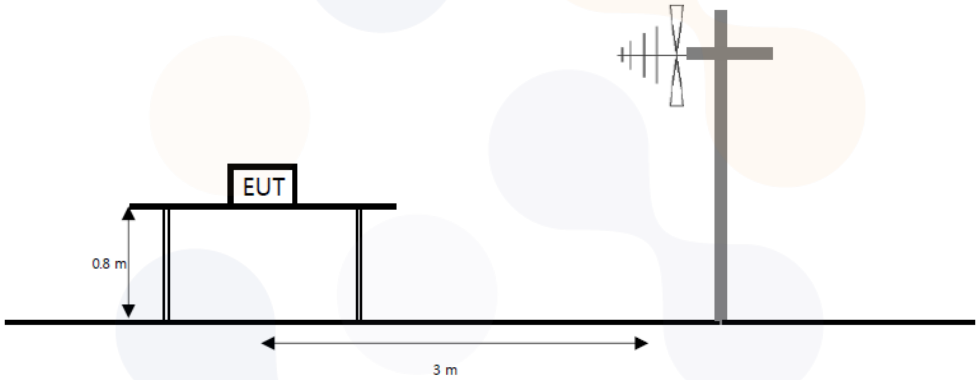
7.7. Spurious Emission, Band Edge and Restricted bands

Test setup

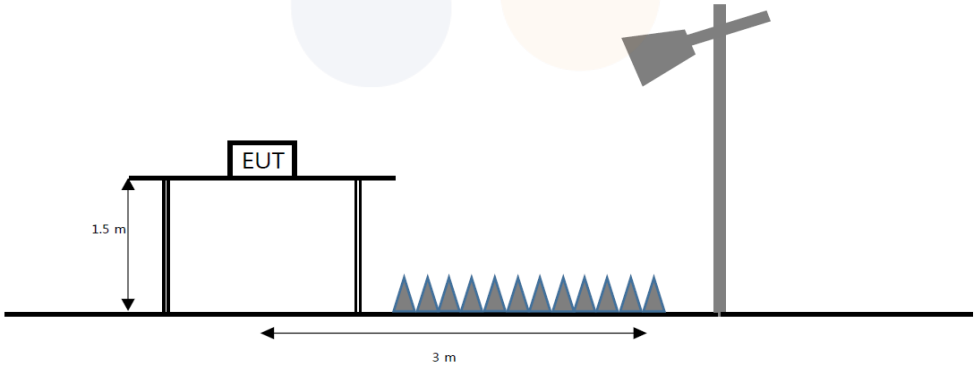
The diagram below shows the test setup that is utilized to make the measurements for emission from 9 ㎑ to 30 ㎒ Emissions



The diagram below shows the test setup that is utilized to make the measurements for emission from 30 ㎒ to 1 ㎓ emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 1 ㎓ to the tenth harmonic of the highest fundamental frequency or to 40 ㎓ emissions, whichever is lower.



Limit

FCC

According to section 15.209(a) except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (㎒)	Field strength (㎶/m)	Measurement distance (m)
0.009 - 0.490	2 400/F(㎑)	300
0.490 - 1.705	24 000/F(㎑)	30
1.705 - 30	30	30
30 - 88	100**	3
88 - 216	150**	3
216 - 960	200**	3
Above 960	500	3

**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54–72 ㎒, 76–88 ㎒, 174–216 ㎒ or 470–806 ㎒. However, operation within these frequency bands is permitted under other sections of this part, e.g., Section15.231 and 15.241.

According to section 15.205(a) and (b) only spurious emissions are permitted in any of the frequency bands listed below:

㎒	㎒	㎒	㎓
0.009 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
0.495 - 0.505	16.694 75 - 16.695 25	608 - 614	5.35 - 5.46
2.173 5 - 2.190 5	16.804 25 - 16.804 75	960 – 1 240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1 300 – 1 427	8.025 - 8.5
4.177 25 - 4.177 75	37.5 - 38.25	1 435 – 1 626.5	9.0 - 9.2
4.207 25 - 4.207 75	73 - 74.6	1 645.5 – 1 646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1 660 – 1 710	10.6 - 12.7
6.267 75 - 6.268 25	108 - 121.94	1 718.8 – 1 722.2	13.25 - 13.4
6.311 75 - 6.312 25	123 - 138	2 200 – 2 300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2 310 – 2 390	15.35 - 16.2
8.362 - 8.366	156.524 75 - 156.525 25	2 483.5 – 2 500	17.7 - 21.4
8.376 25 - 8.386 75	156.7 - 156.9	2 690 – 2 900	22.01 - 23.12
8.414 25 - 8.414 75	162.012 5 - 167.17	3 260 – 3 267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3 332 – 3 339	31.2 - 31.8
12.519 75 - 12.520 25	240 - 285	3 345.8 – 3 358	36.43 - 36.5
12.576 75 - 12.577 25	322 - 335.4	3 600 – 4 400	Above 38.6
13.36 - 13.41			

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in section 15.209. At frequencies equal to or less than 1 000 ㎒, compliance with the limits in section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1 000 ㎒, compliance with the emission limits in section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in section 15.35 apply to these measurements.

According to section 15.407(b), undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

For transmitters operating in the 5.15-5.25 ㎓ band: All emissions outside of the 5.15-5.35 ㎓ band shall not exceed an e.i.r.p. of −27 ㏈m/㎒
For transmitters operating in the 5.25-5.35 ㎓ band: All emissions outside of the 5.15-5.35 ㎓ band shall not exceed an e.i.r.p. of −27 ㏈m/㎒.
For transmitters operating in the 5.47-5.725 ㎓ band: All emissions outside of the 5.15-5.35 ㎓ band shall not exceed an e.i.r.p. of −27 ㏈m/㎒.

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

IC

According to RSS-247(5.5), In any 100 ㎑ bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 ㏈ below that in the 100 ㎑ bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 ㏈ instead of 20 ㏈. Attenuation below the general field strength limits specified in RSS-Gen is not required.

According to RSS-Gen(8.9), Except where otherwise indicated in the applicable RSS, radiated emissions shall comply with the field strength limits shown in table 5 and table 6. Additionally, the level of any transmitter unwanted emission shall not exceed the level of the transmitter's fundamental emission.

Table 5- General field strength limits at frequencies above 30 ㎒

Frequency(㎒)	Field strength (㎶/m at 3 m)
30 to 88	100
88 to 216	150
216 to 960	200
Above 960	500

Table 6- General field strength limits at frequencies below 30 ㎒

Frequency	Magnetic field strength (H-Field) (㎂/m)	Measurement distance(m)
9 – 490 ㎑[1)]	6.37/F (F in ㎑)	300
490 – 1705 ㎑	63.7/F (F in ㎑)	30
1.705 - 30 ㎒	0.08	30

According to RSS-Gen(8.10), Restricted frequency bands, identified in table 7, are designated primarily for safety-of-life services (distress calling and certain aeronautical activities), certain satellite downlinks, radio astronomy and some government uses. Except where otherwise indicated, the following conditions related to the restricted frequency bands apply:

(a) The transmit frequency, including fundamental components of modulation, of licence-exempt radio apparatus shall not fall within the restricted frequency bands listed in table 7 except for apparatus compliant with RSS-287, Emergency Position Indicating Radio Beacons (EPIRB), Emergency Locator Transmitters (ELT), Personal Locator Beacons (PLB), and Maritime Survivor Locator Devices (MSLD).
(b) Unwanted emissions that fall into restricted frequency bands listed in table 7 shall comply with the limits specified in table 5 and table 6.
(c) Unwanted emissions that do not fall within the restricted frequency bands listed in table 7 shall comply either with the limits specified in the applicable RSS or with those specified in table 5 and table 6.

Table 7- Restricted frequency bands*

MHz	MHz	GHz
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 - 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 - 3267	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 - 8500	
108 - 138	--	

* Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

Test procedure

ANSI C63.10-2013 Section 12.7.7.2, 12.7.5, 12.7.6
KDB 789033 D02 v02r01 – Section G

Test settings

Peak field strength measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = as specified in table
3. VBW ≥ (3×RBW)
4. Detector = peak
5. Sweep time = auto
6. Trace mode = max hold
7. Allow sweeps to continue until the trace stabilizes

Table. RBW as a function of frequency

Frequency	RBW
9 ㎑ to 150 ㎑	200 ㎐ to 300 ㎐
0.15 ㎒ to 30 ㎒	9 ㎑ to 10 ㎑
30 ㎒ to 1 000 ㎒	100 ㎑ to 120 ㎑
> 1 000 ㎒	1 ㎒

Average field strength measurements

Trace averaging with continuous EUT transmission at full power

If the EUT can be configured or modified to transmit continuously (D ≥ 98%), then the average emission levels shall be measured using the following method (with EUT transmitting continuously):

1. RBW = 1 ㎒ (unless otherwise specified).
2. VBW ≥ (3×RBW).
3. Detector = RMS (power averaging), 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 this condition cannot be satisfied, then the detector mode shall be set to peak.
4. Averaging type = power (i.e., rms):
   1) As an alternative, the detector and averaging type may be set for linear voltage averaging.
   2) Some instruments require linear display mode to use linear voltage averaging. Log or ㏈ averaging shall not be used.
5. Sweep time = auto.
6. Perform a trace average of at least 100 traces.

Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction

If continuous transmission of the EUT (D ≥ 98%) cannot be achieved and the duty cycle is constant (duty cycle variations are less than ±2%), then the following procedure shall be used:

1. The EUT shall be configured to operate at the maximum achievable duty cycle.
2. Measure the duty cycle D of the transmitter output signal as described in 11.6.
3. RBW = 1 ㎒ (unless otherwise specified).
4. VBW ≥ [3 × RBW].
5. Detector = RMS (power averaging), 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 this condition cannot be satisfied, then the detector mode shall be set to peak.
6. Averaging type = power (i.e., rms):
   1) As an alternative, the detector and averaging type may be set for linear voltage averaging.
   2) Some instruments require linear display mode to use linear voltage averaging. Log or ㏈ averaging shall not be used.
7. Sweep time = auto.
8. Perform a trace average of at least 100 traces.
9. A correction factor shall be added to the measurement results prior to comparing with the emission limit 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:
   1) If power averaging (rms) mode was used in step f), then the applicable correction factor is [10 log (1 / D)], where D is the duty cycle.
   2) If linear voltage averaging mode was used in step f), then the applicable correction factor is [20 log (1 / D)], where D is the duty cycle.
   3) If a specific emission is demonstrated to be continuous (D ≥ 98%) rather than turning ON and OFF with with the transmit cycle, then no duty cycle correction is required for that emission.

Band edge measurements

Integration Method

For maximum emissions measurements, follow the procedures described in II.G.5., “Procedures for unwanted maximum Emissions Measurements above 1000 ㎒. Except for the following changes:

1. Set RBW = 100 ㎑
2. Set VBW ≥ 3 × RBW
3. Perform a band-power integration across the 1 ㎒ bandwidth in which the band edge emission level is to be measured. CAUTION: you must ensure that the spectrum analyzer or EMI receiver is set for peak detection and max-hold for this measurement.

For average emissions measurements, follow the procedures described in II.G.6., “Procedures for average unwanted Emissions Measurements above 1000 ㎒. Except for the following changes:

1. Set RBW = 100 ㎑
2. Set VBW ≥ 3 × RBW
3. Perform a band-power integration across the 1 ㎒ bandwidth in which the band edge emission level is to be measured.

Notes:

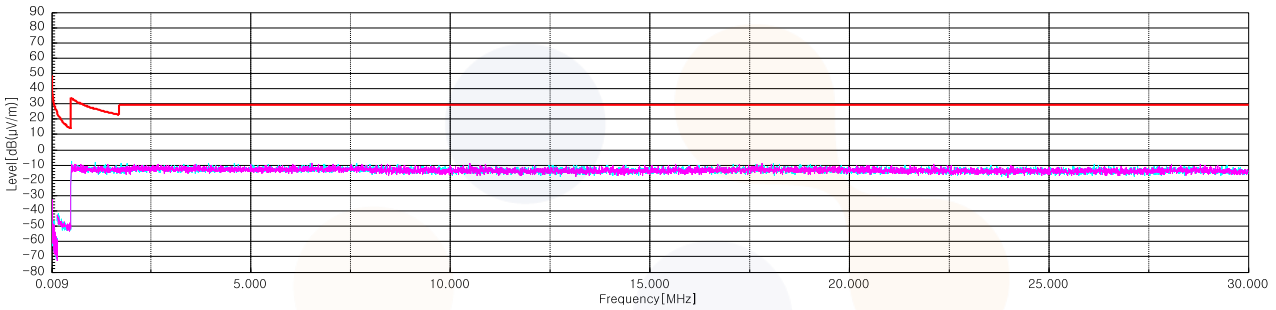
1. *f* <30 ㎒, extrapolation factor of 40 ㏈/decade of distance. $F_d = 40\log(D_m/D_s)$
   f ≥30 ㎒, extrapolation factor of 20 ㏈/decade of distance. $F_d = 20\log(D_m/D_s)$
   Where:
   F_d= Distance factor in ㏈
   D_m= Measurement distance in meters
   D_s= Specification distance in meters
2. Factors(㏈) = Antenna factor(㏈/m) + Cable loss(㏈) + or Amp. gain(㏈) + or F_d(㏈)
3. The worst-case emissions are reported however emissions whose levels were not within 20 ㏈ of respective limits were not reported.
4. Average test would be performed if the peak result were greater than the average limit.
5. 1) means restricted band.
6. Above 1 ㎓ the worst results between two antenna polarizations (H and V) were documented in the test report.
7. Below 30 ㎒ frequency range, In order to search for the worst result, all orientations about parallel, perpendicular, and ground-parallel were investigated then reported. when the emission level was higher than 20 ㏈ of the limit, then the following statement shall be made: “No spurious emissions were detected within 20 ㏈ of the limit.”
8. For above 1 ㎓ pre-scan to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 ㎒; the video bandwidth is set to 30 ㎑ for peak measurements.
9. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω. For example, the measurement frequency X ㎑ resulted in a level of Y ㏈㎶/m, which is equivalent to Y - 51.5 = Z ㏈㎂/m, which has the same margin, W ㏈, to the corresponding RSS-GEN Table 6 limit as it has to be 15.209(a) limit.

[DC 5 V]

Test results (Below 30 ㎒) – Worst case: 802.11a / UNII-1_5 180 ㎒

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Quasi peak data								
No spurious emissions were detected within 20 ㏈ of the limit.								

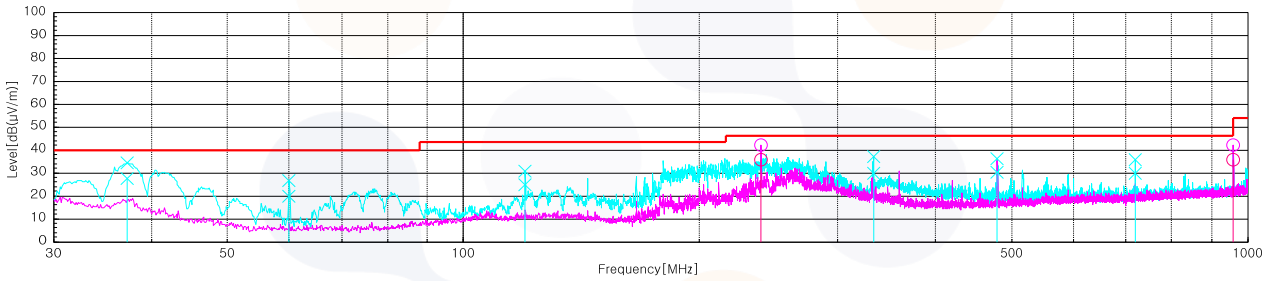
Horizontal/Vertical



Test results (Below 1 000 ㎒) – Worst case: 802.11a / UNII-1_5 180 ㎒

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Quasi peak data								
37.28	V	37.60	20.91	-31.25	-	27.26	40.00	12.74
59.95	V	38.50	12.09	-30.89	-	19.70	40.00	20.30
119.97[1)]	V	37.30	17.70	-30.05	-	24.95	43.50	18.55
240.01[1)]	H	47.50	17.10	-28.80	-	35.80	46.00	10.20
333.25[1)]	V	38.40	19.50	-27.98	-	29.92	46.00	16.08
480.08	V	34.40	22.70	-26.91	-	30.19	46.00	15.81
720.03	V	30.70	24.50	-25.41	-	29.79	46.00	16.21
960.11[1)]	H	32.40	26.40	-23.05	-	35.75	54.00	18.25

Horizontal/Vertical



Test results (Above 1 000 ㎒)

UNII-1

802.11a_Lowest Channel (5 180 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 149.73[1)]	H	43.01	34.22	-24.13	-	53.10	74.00	20.90
10 347.52[1)]	V	57.79	37.51	-48.60	-	46.70	68.20	21.50
15 545.52	V	57.68	39.90	-46.80	-	50.78	74.00	23.22
Average Data								
5 149.73[1)]	H	32.14	34.22	-24.13	0.22	42.45	54.00	11.55

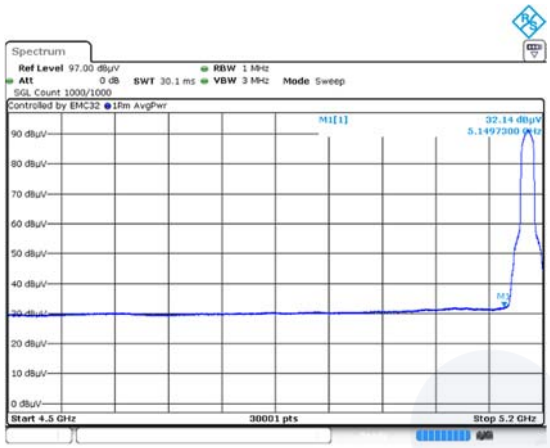
802.11a_Middle Channel (5 200 ㎒)

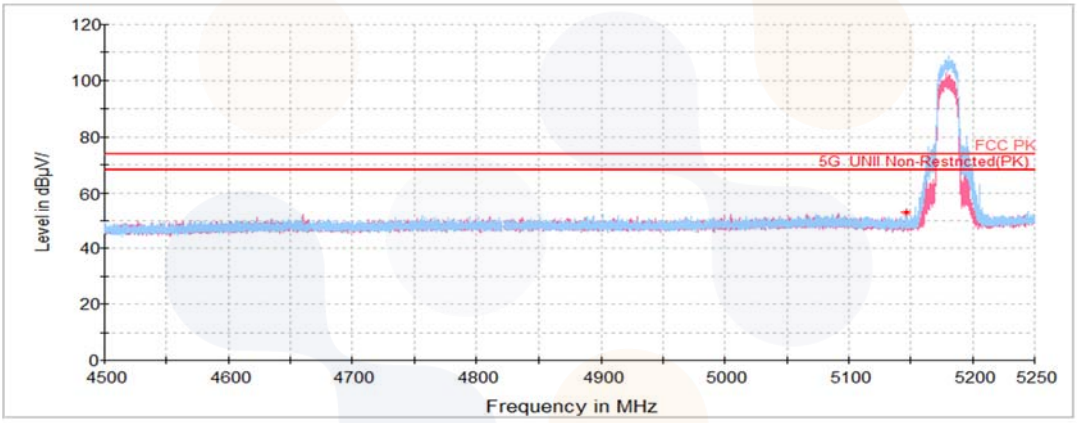
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 408.47	V	57.35	37.55	-48.48	-	46.42	68.20	21.78
15 629.47[1)]	V	57.64	39.90	-46.82	-	50.72	74.00	23.28
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11a_Highest Channel (5 240 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 452.93	H	57.57	37.57	-48.39	-	46.75	68.20	21.45
15 719.55[1)]	H	57.13	39.90	-46.83	-	50.20	74.00	23.80
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

In order to simplify the report, attached plots were only the lowest margin condition 802.11a_Lowest Channel (5 180 ㎒)

Average data	
	Blank

Horizontal/Vertical for Band-edge


802.11n_HT20_Lowest Channel (5 180 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 079.73[1)]	H	42.72	34.16	-24.08	-	52.80	74.00	21.20
10 358.63	V	57.72	37.52	-48.58	-	46.66	68.20	21.54
15 530.57[1)]	H	57.81	39.90	-46.80	-	50.91	74.00	23.09
Average Data								
5 079.73[1)]	H	31.98	34.16	-24.08	0.26	42.32	54.00	11.68

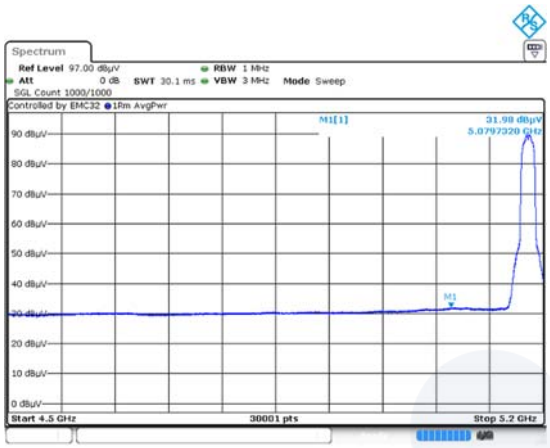
802.11n_HT20_Middle Channel (5 200 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 377.03	V	58.04	37.53	-48.54	-	47.03	68.20	21.17
15 612.60[1)]	H	57.53	39.90	-46.81	-	50.62	74.00	23.38
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

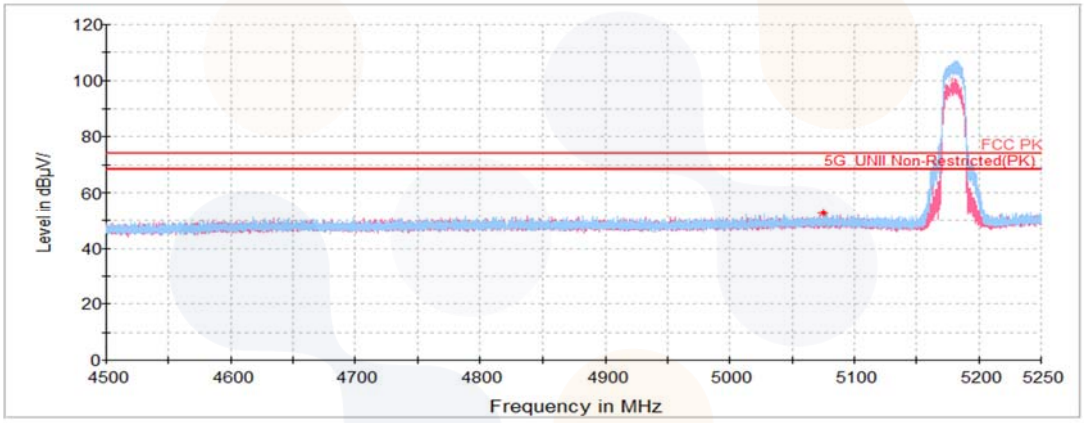
802.11n_HT20_Highest Channel (5 240 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 497.40	V	57.73	37.60	-48.31	-	47.02	68.20	21.18
15 709.58[1)]	V	57.21	39.90	-46.83	-	50.28	74.00	23.72
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

In order to simplify the report, attached plots were only the lowest margin condition 802.11n_HT20_Lowest Channel (5 180 ㎒)

Average data	
	Blank

Horizontal/Vertical for Band-edge



802.11ac_VHT20_Lowest Channel (5 180 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 082.63[1)]	H	43.48	34.17	-24.08	-	53.57	74.00	20.43
10 346.75	H	58.28	37.51	-48.60	-	47.19	68.20	21.01
15 567.37[1)]	H	57.73	39.90	-46.80	-	50.83	74.00	23.17
Average Data								
5 082.63[1)]	H	32.20	34.17	-24.08	0.26	42.55	54.00	11.45

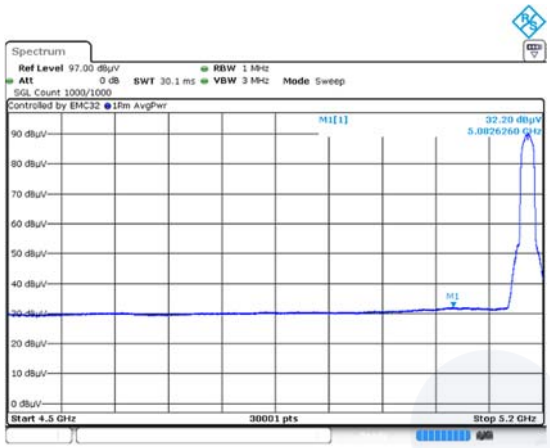
802.11ac_VHT20_Middle Channel (5 200 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 465.97	V	58.42	37.58	-48.37	-	47.63	68.20	20.57
15 633.68[1)]	V	57.29	39.90	-46.82	-	50.37	74.00	23.63
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

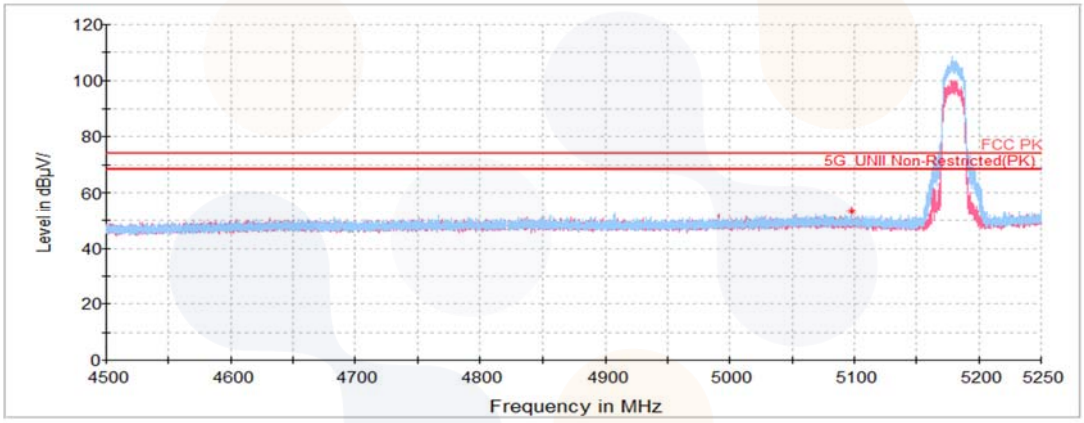
802.11ac_VHT20_Highest Channel (5 240 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 410.77	V	58.13	37.55	-48.48	-	47.20	68.20	21.00
15 723.00[1)]	H	56.86	39.90	-46.83	-	49.93	74.00	24.07
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

In order to simplify the report, attached plots were only the lowest margin condition 802.11ac_VHT20_Lowest Channel (5 180 ㎒)

Average data	
	Blank

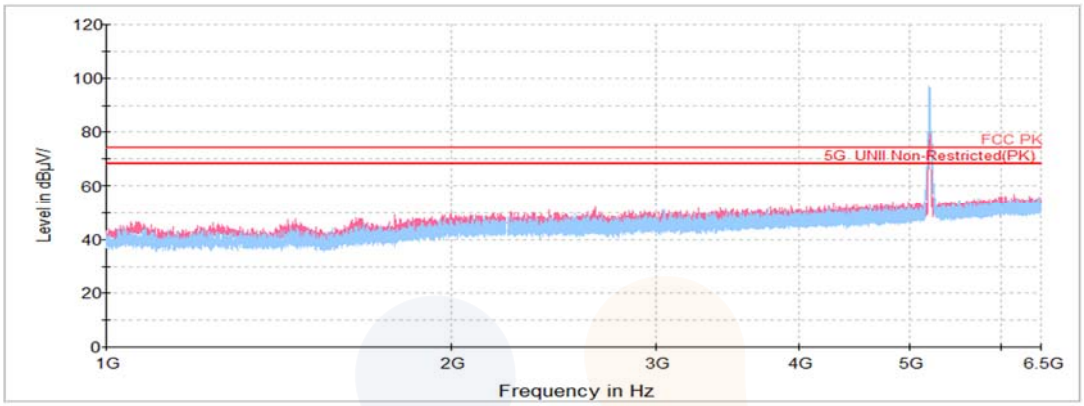
Horizontal/Vertical for Band-edge



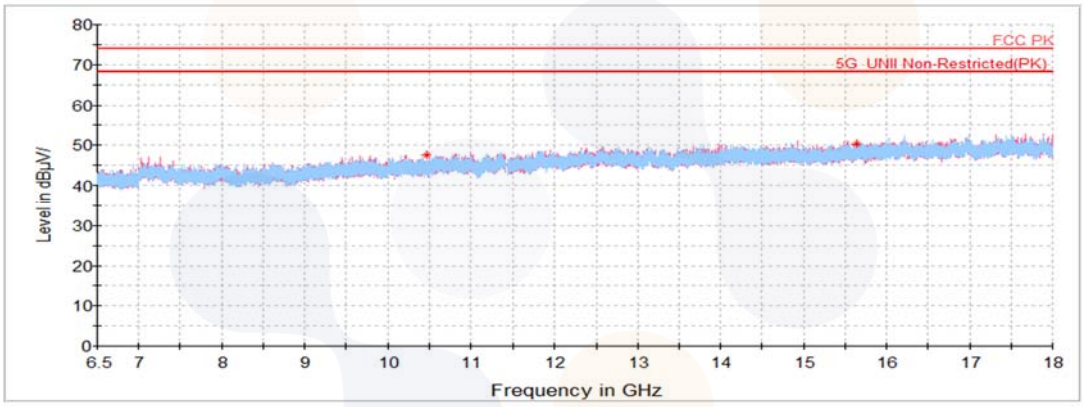
Plot of Harmonics and Spurious Emissions

In order to simplify the report, attached plots were only the lowest margin condition
802.11ac_VHT20_Lowest Channel (5 180 ㎒)

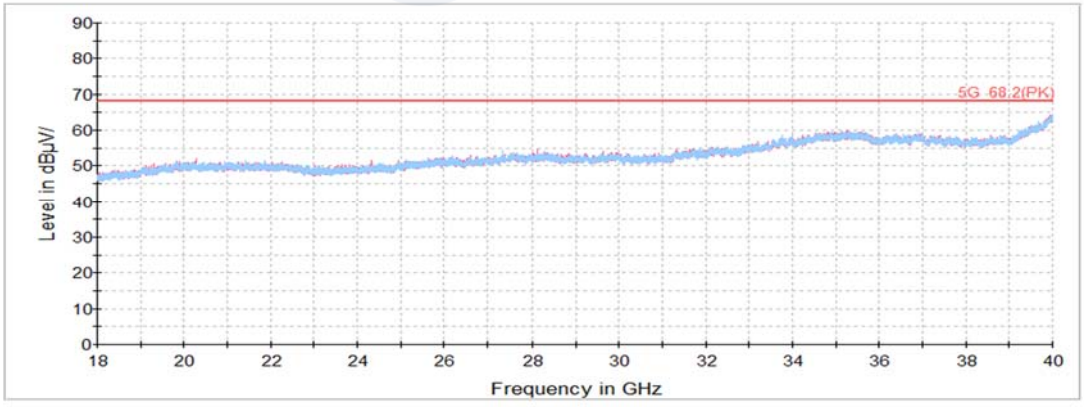
Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



UNII-2A

802.11a_Lowest Channel (5 260 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 558.73	H	58.14	37.64	-48.34	-	47.44	68.20	20.76
15 772.45[1)]	H	57.78	39.90	-46.84	-	50.84	74.00	23.16
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

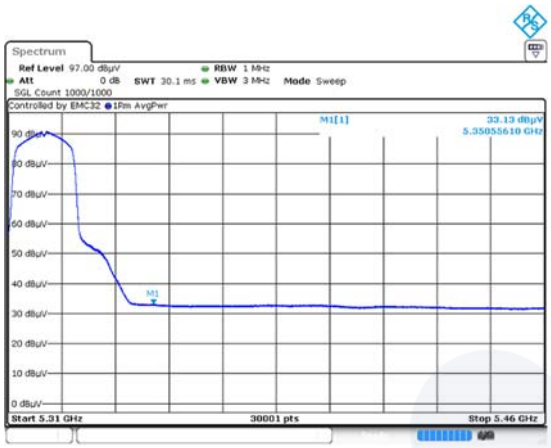
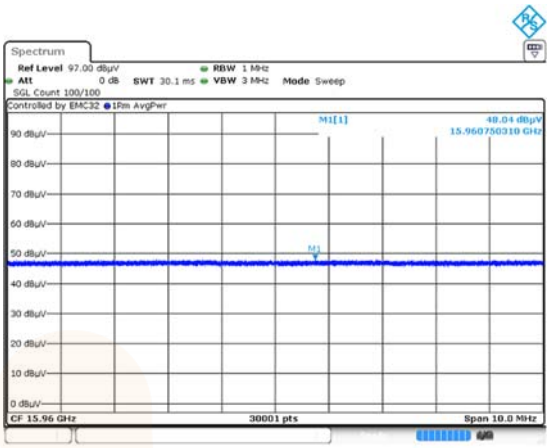
802.11a_Middle Channel (5 280 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 537.65	H	59.45	37.62	-48.32	-	48.75	68.20	19.45
15 844.06[1)]	V	58.69	39.90	-46.85	-	51.74	74.00	22.26
Average Data								
15 844.06[1)]	V	48.25	39.90	-46.85	0.22	41.52	54.00	12.48

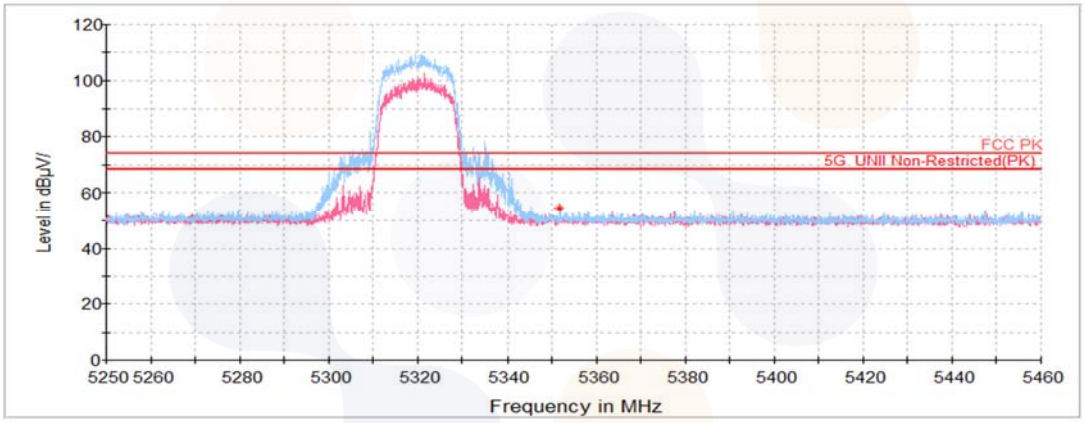
802.11a_Highest Channel (5 320 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 350.56[1)]	H	43.62	34.38	-23.36	-	54.64	74.00	19.36
10 680.63[1)]	V	60.59	37.71	-48.41	-	49.89	74.00	24.11
15 960.75[1)]	V	58.80	39.90	-46.87	-	51.83	74.00	22.17
Average Data								
5 350.56[1)]	H	33.13	34.38	-23.36	0.22	44.37	54.00	9.63
15 960.75[1)]	V	48.04	39.90	-46.87	0.22	41.29	54.00	12.71

In order to simplify the report, attached plots were only the lowest margin condition 802.11a_Highest Channel (5 320 ㎒)

Average (5 350.56㎒)	Average (15 960.75 ㎒)
	

Horizontal/Vertical for Band-edge



802.11n_HT20_Lowest Channel (5 260 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 571.38	V	59.32	37.64	-48.35	-	48.61	68.20	19.59
15 768.23[1)]	V	57.79	39.90	-46.84	-	50.85	74.00	23.15
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

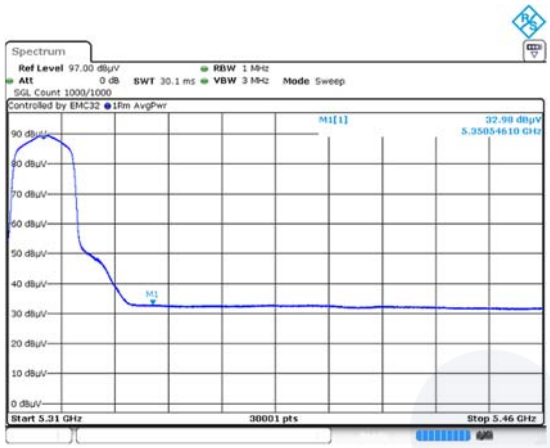
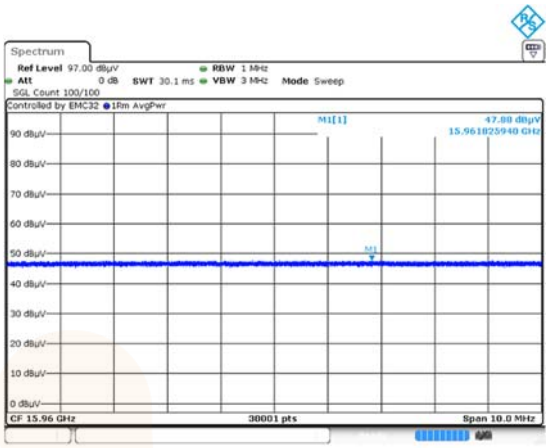
802.11n_HT20_Middle Channel (5 280 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 520.02	V	59.33	37.61	-48.31	-	48.63	68.20	19.57
15 840.72[1)]	V	58.91	39.90	-46.85	-	51.96	74.00	22.04
Average Data								
15 840.72[1)]	V	48.35	39.90	-46.85	0.26	41.66	54.00	12.34

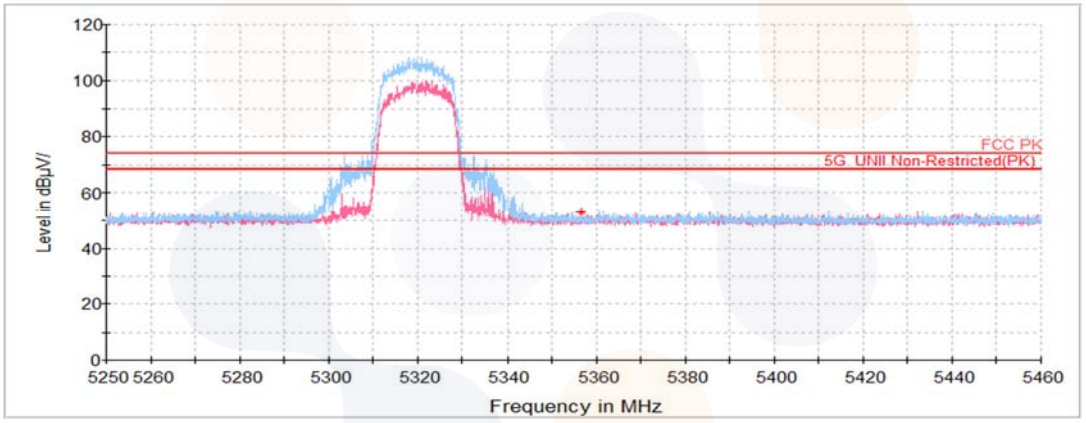
802.11n_HT20_Highest Channel (5 320 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 350.55[1)]	H	42.11	34.38	-23.36	-	53.13	74.00	20.87
10 631.57[1)]	H	59.46	37.68	-48.38	-	48.76	74.00	25.24
15 961.83[1)]	V	59.06	39.90	-46.87	-	52.09	74.00	21.91
Average Data								
5 350.55[1)]	H	32.98	34.38	-23.36	0.26	44.26	54.00	9.74
15 961.83[1)]	V	47.88	39.90	-46.87	0.26	41.17	54.00	12.83

In order to simplify the report, attached plots were only the lowest margin condition 802.11n_HT20_Highest Channel (5 320 ㎒)

Average (5 350.55 ㎒)	Average (15 961.83 ㎒)
	

Horizontal/Vertical for Band-edge



802.11ac_VHT20_Lowest Channel (5 260 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 552.98	V	58.98	37.63	-48.33	-	48.28	68.20	19.92
15 773.22[1)]	H	57.78	39.90	-46.84	-	50.84	74.00	23.16
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

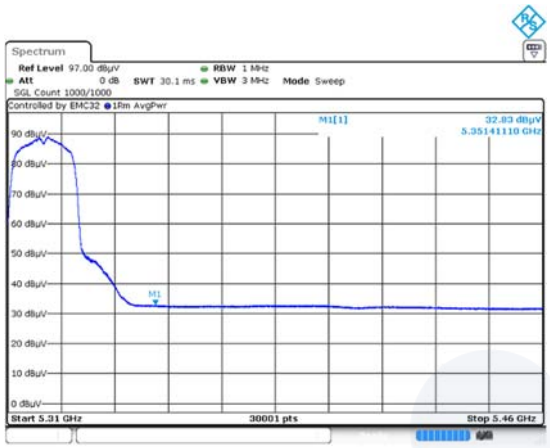
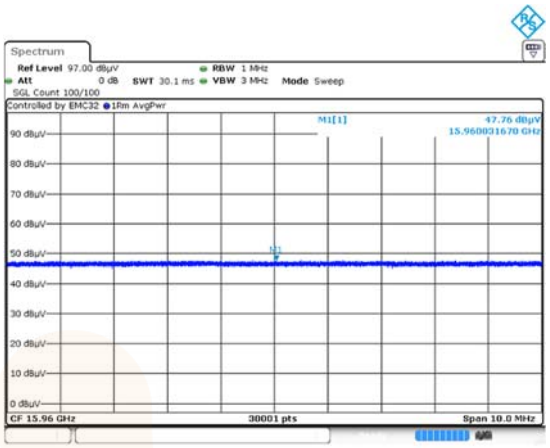
802.11ac_VHT20_Middle Channel (5 280 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 592.47	V	60.65	37.66	-48.36	-	49.95	68.20	18.25
15 843.16[1)]	H	59.85	39.90	-46.85	-	52.90	74.00	21.10
Average Data								
15 843.16[1)]	H	48.30	39.90	-46.85	0.26	41.61	54.00	12.39

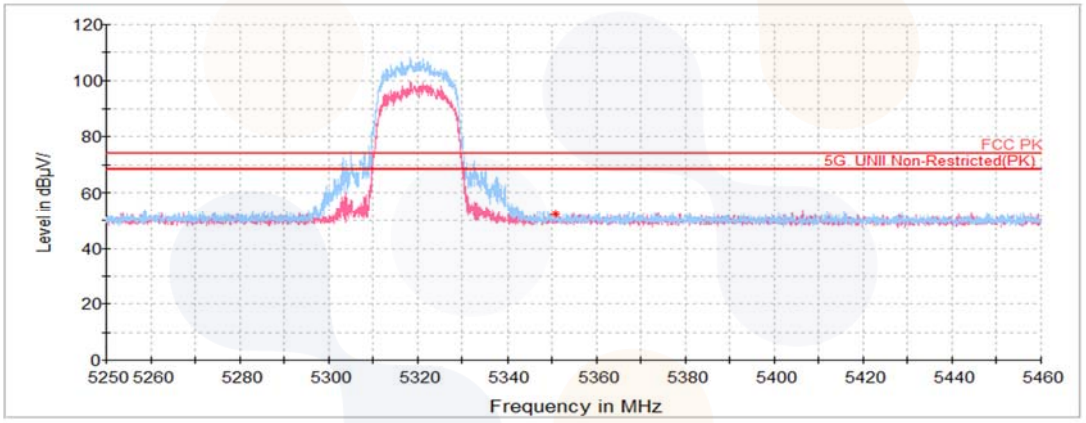
802.11ac_VHT20_Highest Channel (5 320 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 351.41[1)]	H	41.32	34.38	-23.36	-	52.34	74.00	21.66
10 610.87[1)]	V	59.68	37.67	-48.37	-	48.98	74.00	25.02
15 960.03[1)]	H	58.46	39.90	-46.87	-	51.49	74.00	22.51
Average Data								
5 351.41[1)]	H	32.83	34.38	-23.36	0.26	44.11	54.00	9.89
15 960.03[1)]	H	47.76	39.90	-46.87	0.26	41.05	54.00	12.95

In order to simplify the report, attached plots were only the lowest margin condition 802.11ac_VHT20_Highest Channel (5 320 ㎒)

Average (5 351.41 ㎒)	Average (15 960.03 ㎒)
	

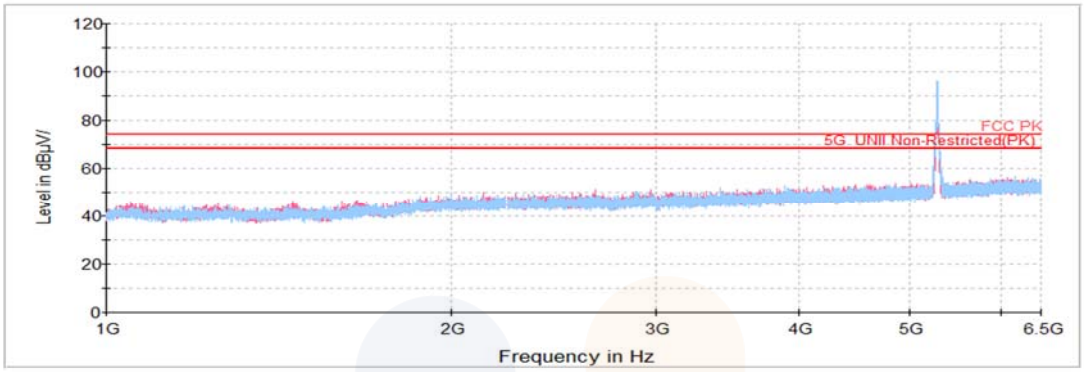
Horizontal/Vertical for Band-edge



Plot of Harmonics and Spurious Emissions

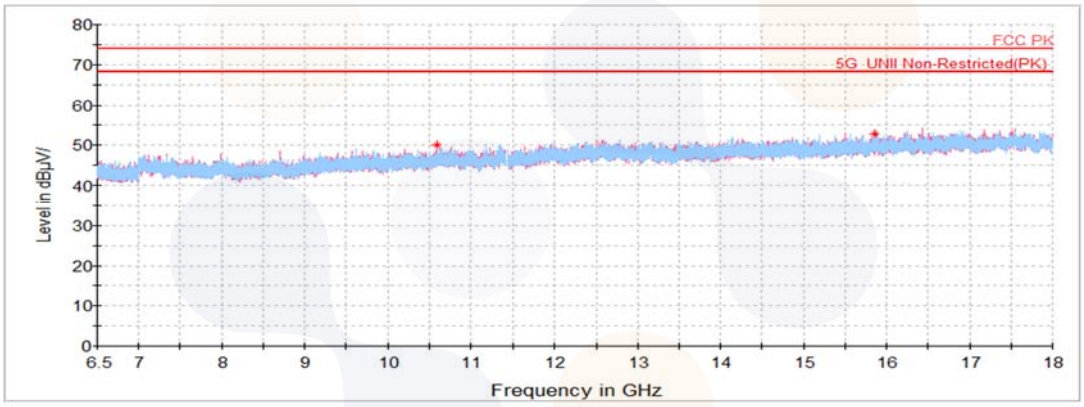
In order to simplify the report, attached plots were only the lowest margin condition
802.11a_UNII-2A_Highest Channel (5 320 ㎒)

Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓

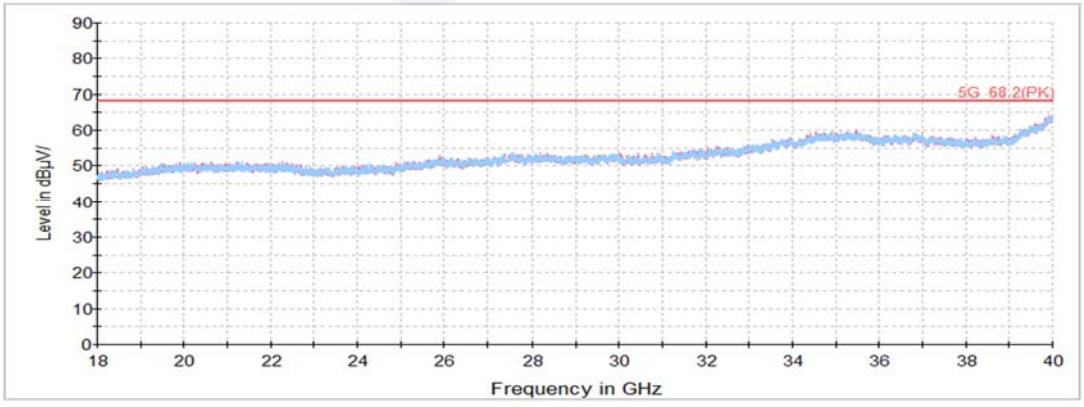


Comment

Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



UNII-2C

802.11a_Lowest Channel (5 500 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 394.44[1)]	H	43.14	34.42	-23.67	-	53.89	74.00	20.11
10 992.67[1)]	H	58.63	37.90	-48.61	-	47.92	74.00	26.08
16 534.52	H	56.83	41.23	-46.15	-	51.91	68.20	16.29
Average Data								
5 394.44[1)]	H	33.26	34.42	-23.67	0.22	44.23	54.00	9.77

802.11a_Middle Channel (5 600 ㎒)

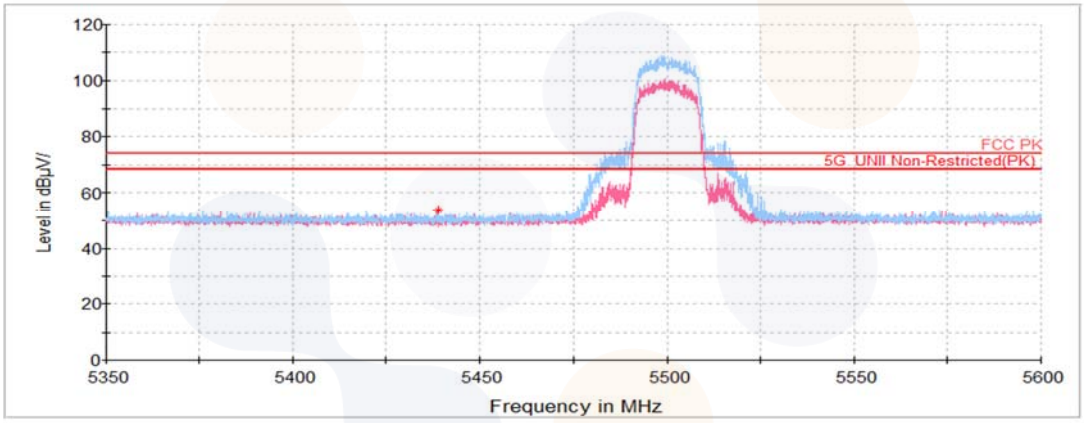
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 196.22[1)]	H	59.75	38.06	-48.58	-	49.23	74.00	24.77
16 793.27	V	57.25	41.49	-46.03	-	52.71	68.20	15.49
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11a_Highest Channel (5 700 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 726.51	H	45.48	34.86	-23.13	-	57.21	68.20	10.99
11 394.78[1)]	H	60.17	38.22	-48.54	-	49.85	74.00	24.15
17 142.87	H	56.94	41.46	-45.77	-	52.63	68.20	15.57
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

In order to simplify the report, attached plots were only the lowest margin condition 802.11a_Lowest Channel (5 500 ㎒)

Average data	
	Blank

Horizontal/Vertical for Band-edge


802.11n_HT20_Lowest Channel (5 500 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 394.10[1)]	H	43.43	34.42	-23.67	-	54.18	74.00	19.82
10 981.17[1)]	H	59.12	37.89	-48.60	-	48.41	74.00	25.59
16 490.05	V	56.34	41.48	-46.18	-	51.64	68.20	16.56
Average Data								
5 394.10[1)]	H	33.13	34.42	-23.67	0.26	44.14	54.00	9.86

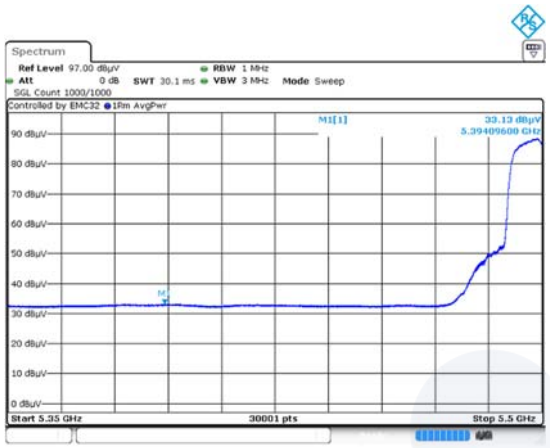
802.11n_HT20_Middle Channel (5 600 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 206.95[1)]	H	59.04	38.07	-48.58	-	48.53	74.00	25.47
16 822.02	V	57.18	41.52	-46.02	-	52.68	68.20	15.52
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

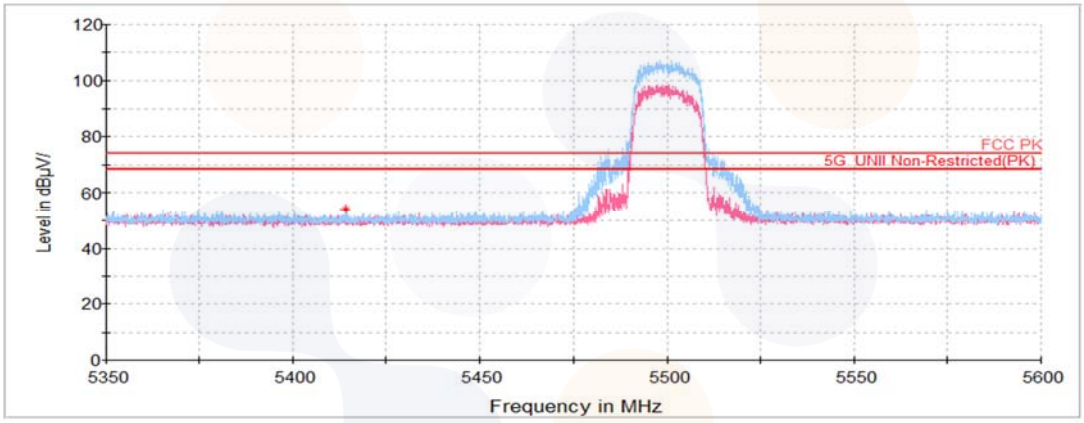
802.11n_HT20_Highest Channel (5 700 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 729.94	H	42.01	34.87	-23.12	-	53.76	68.20	14.44
11 383.67[1)]	H	60.42	38.21	-48.54	-	50.09	74.00	23.91
17 080.77	H	56.44	41.43	-45.84	-	52.03	68.20	16.17
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

In order to simplify the report, attached plots were only the lowest margin condition 802.11n_HT20_Lowest Channel (5 500 ㎒)

Average data	
	Blank

Horizontal/Vertical for Band-edge



802.11ac_VHT20_Lowest Channel (5 500 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 396.47[1)]	H	42.47	34.42	-23.68	-	53.21	74.00	20.79
10 996.12[1)]	H	59.29	37.90	-48.61	-	48.58	74.00	25.42
16 543.33	V	56.90	41.24	-46.15	-	51.99	68.20	16.21
Average Data								
5 396.47[1)]	H	33.23	34.42	-23.68	0.26	44.23	54.00	9.77

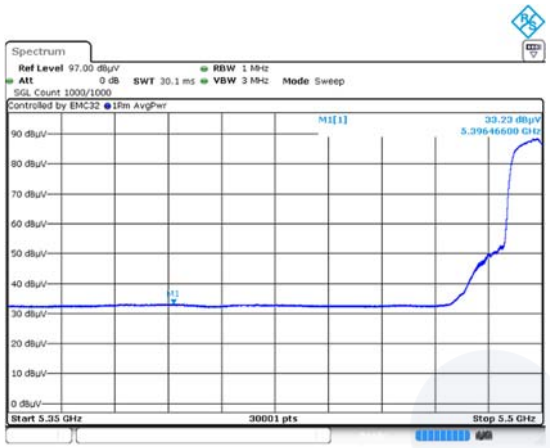
802.11ac_VHT20_Middle Channel (5 600 ㎒)

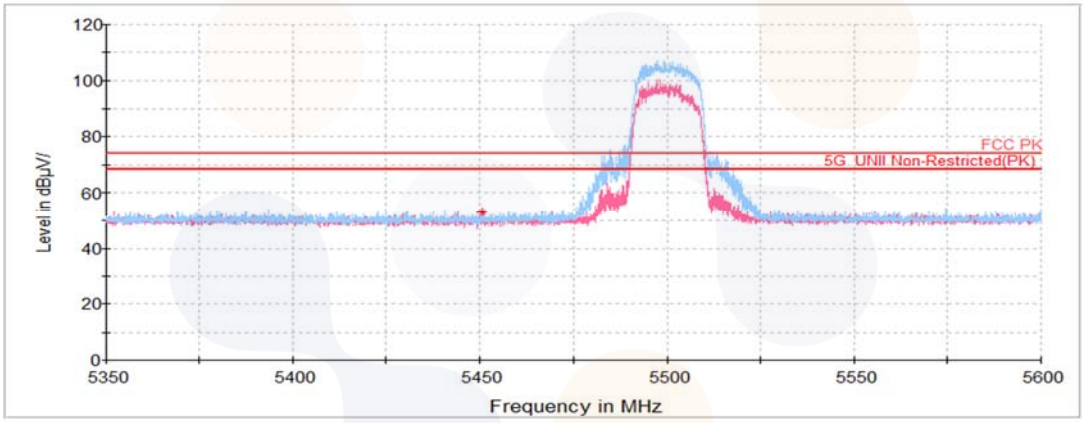
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 224.58[1)]	V	59.20	38.08	-48.57	-	48.71	74.00	25.29
16 820.48	V	57.20	41.52	-46.02	-	52.70	68.20	15.50
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

802.11ac_VHT20_Highest Channel (5 700 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 729.65	H	42.71	34.87	-23.12	-	54.46	68.20	13.74
11 417.40[1)]	V	59.47	38.23	-48.54	-	49.16	74.00	24.84
17 061.22	H	56.62	41.42	-45.86	-	52.18	68.20	16.02
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

In order to simplify the report, attached plots were only the lowest margin condition
802.11ac_VHT20_Lowest Channel (5 500 ㎒)

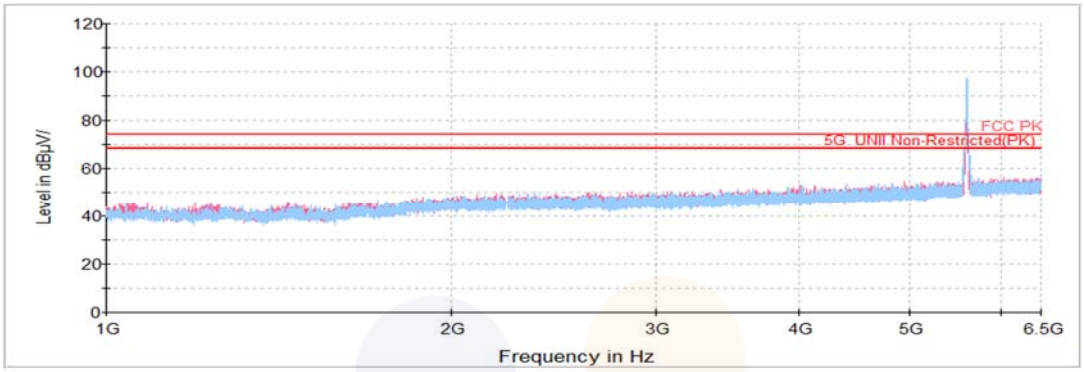
Average data	
	Blank

Horizontal/Vertical for Band-edge


Plot of Harmonics and Spurious Emissions

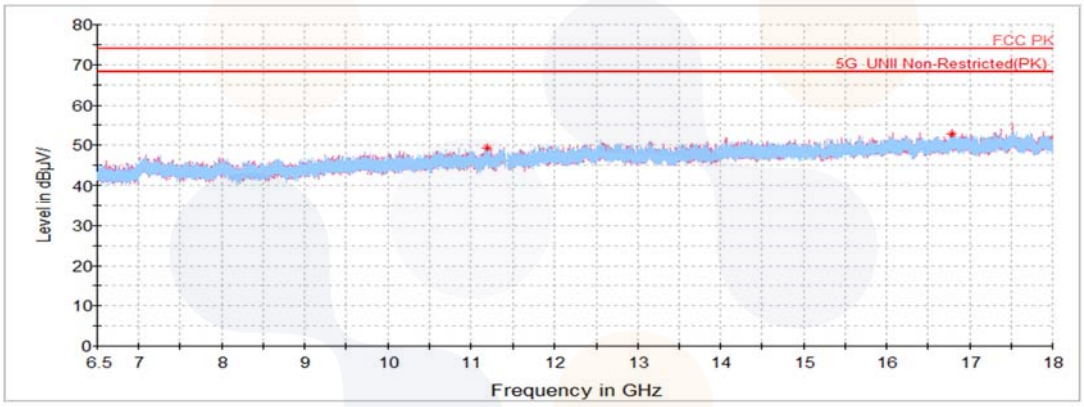
In order to simplify the report, attached plots were only the lowest margin condition
802.11a_UNII-2C_Lowest Channel (5 500 ㎒)

Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓

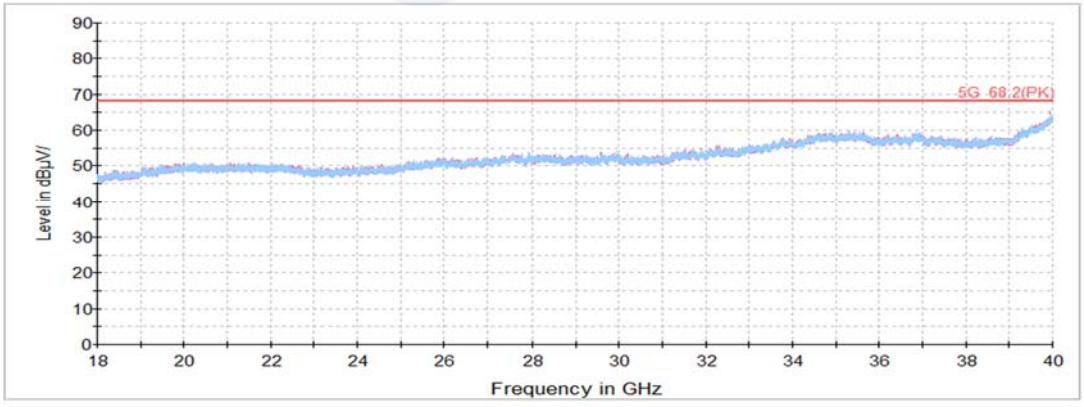


Comment

Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



Straddle Channel

802.11a (5 720 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 382.90[1)]	V	59.77	38.21	-48.54	-	49.44	74.00	24.56
17 217.23	H	56.47	41.49	-45.68	-	52.28	68.20	15.92
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

802.11n_HT20 (5 720 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 406.28[1)]	H	59.68	38.23	-48.54	-	49.37	74.00	24.63
17 178.90	V	56.49	41.47	-45.73	-	52.23	68.20	15.97
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

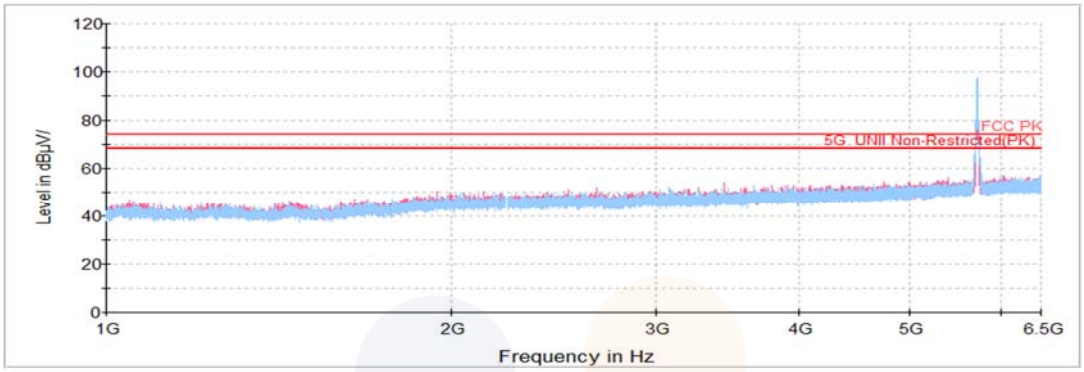
802.11ac_VHT20 (5 720 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 422.38[1)]	H	59.57	38.24	-48.54	-	49.27	74.00	24.73
17 186.95	V	55.97	41.47	-45.72	-	51.72	68.20	16.48
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

Plot of Harmonics and Spurious Emissions

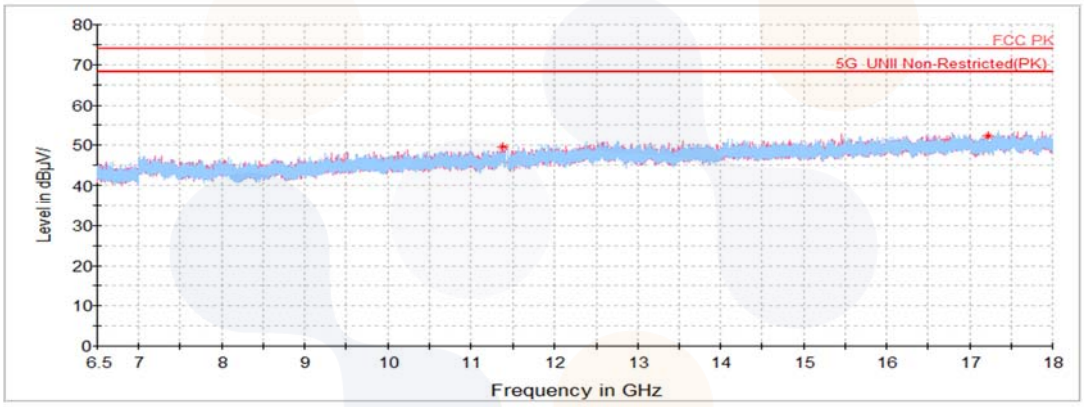
In order to simplify the report, attached plots were only the lowest margin condition
802.11a_Straddle Channel (5 720 ㎒)

Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓

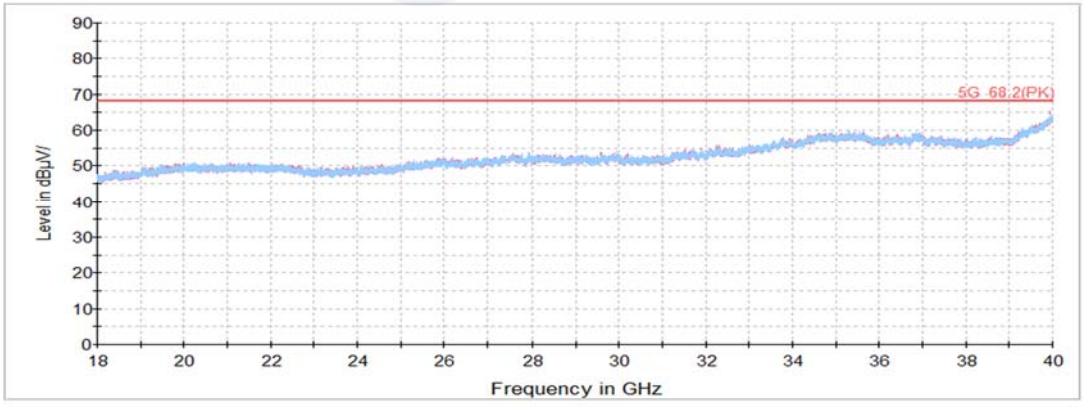


Comment

Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



UNII-3

802.11a_Lowest Channel (5 745 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 724.69	H	60.45	34.86	-23.14	-	72.17	121.50	49.33
11 413.18[1)]	H	60.02	38.23	-48.54	-	49.71	74.00	24.29
17 272.05	H	57.41	41.51	-45.62	-	53.30	68.20	14.90
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

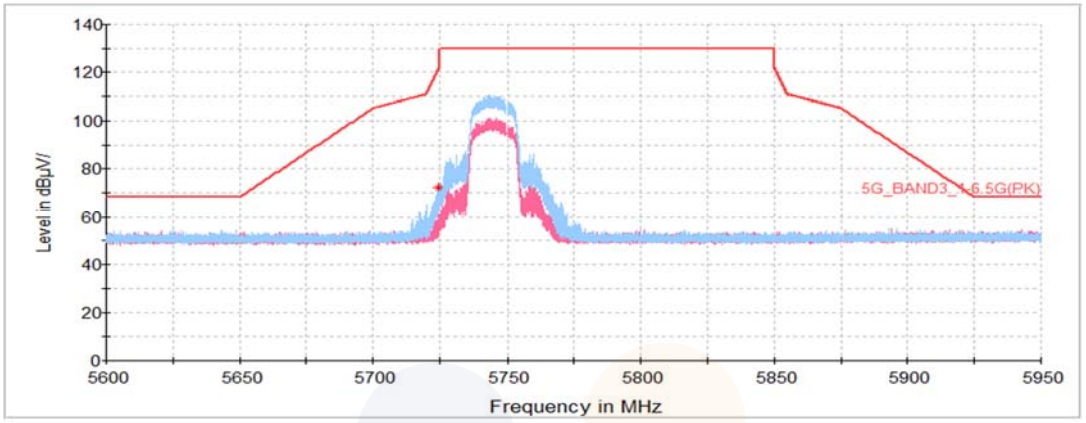
802.11a_Middle Channel (5 785 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 576.87[1)]	H	58.90	38.39	-48.58	-	48.71	74.00	25.29
17 359.45	V	57.46	41.54	-45.52	-	53.48	68.20	14.72
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

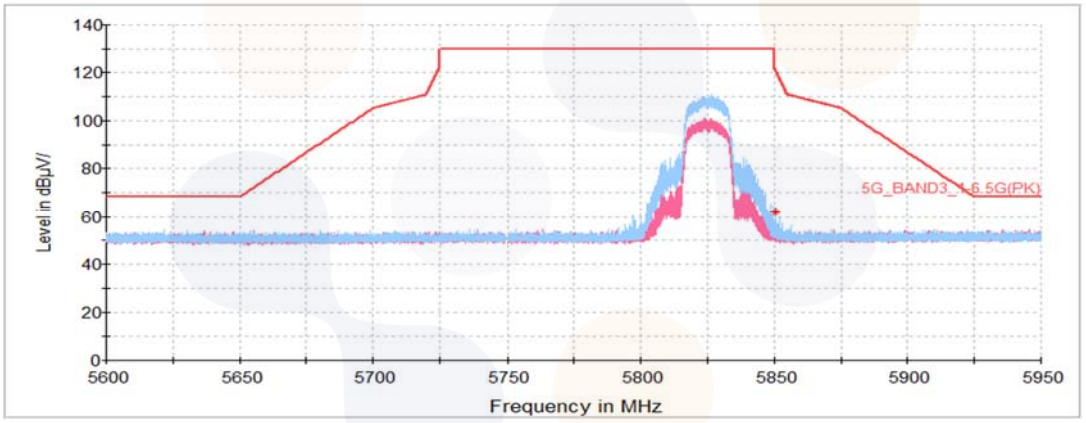
802.11a_Highest Channel (5 825 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 850.78	H	49.82	35.06	-22.88	-	62.00	120.43	58.43
11 665.42[1)]	H	59.04	38.50	-48.65	-	48.89	74.00	25.11
17 410.05	V	56.31	41.56	-45.46	-	52.41	68.20	15.79
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

802.11a_Lowest Channel (5 745 ㎒)

Horizontal/Vertical for Band-edge


802.11a_Highest Channel (5 825 ㎒)

Horizontal/Vertical for Band-edge


802.11n_HT20_Lowest Channel (5 745 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 724.75	H	55.43	34.86	-23.14	-	67.15	121.63	54.48
11 509.78[1)]	V	58.85	38.31	-48.53	-	48.63	74.00	25.37
17 214.17	V	56.69	41.49	-45.68	-	52.50	68.20	15.70
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

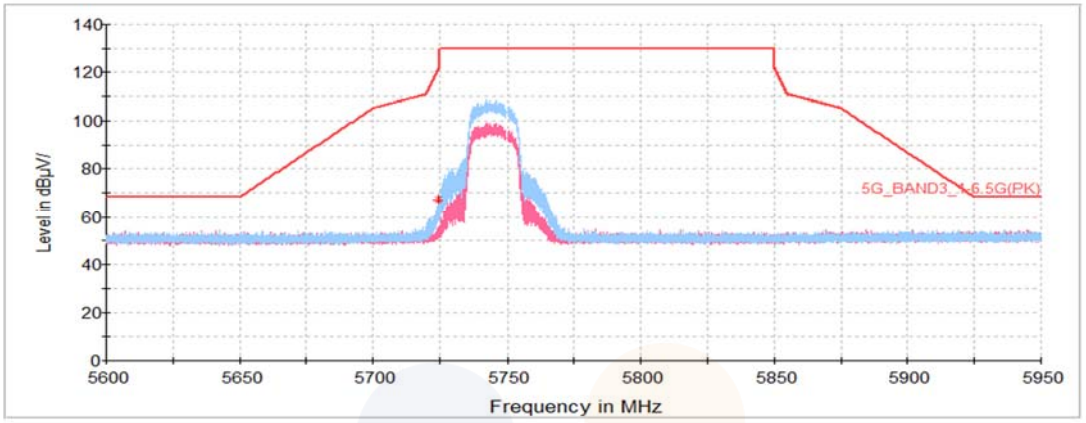
802.11n_HT20_Middle Channel (5 785 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 612.13[1)]	H	58.27	38.43	-48.61	-	48.09	74.00	25.91
17 382.45	H	56.09	41.55	-45.49	-	52.15	68.20	16.05
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

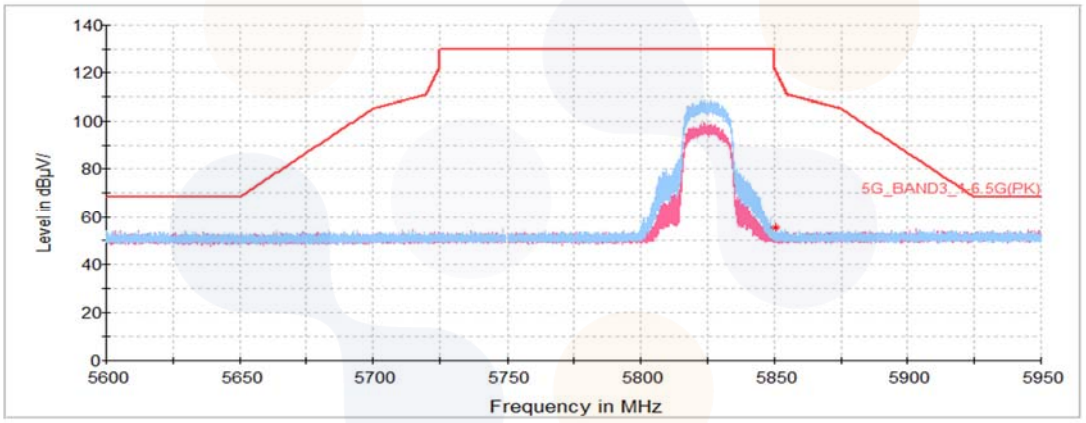
802.11n_HT20_Highest Channel (5 825 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 850.43	H	43.24	35.06	-22.88	-	55.42	121.23	65.81
11 641.27[1)]	H	58.29	38.47	-48.63	-	48.13	74.00	25.87
17 496.30	H	56.24	41.60	-45.36	-	52.48	68.20	15.72
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

802.11n_HT20_Lowest Channel (5 745 ㎒)

Horizontal/Vertical for Band-edge


802.11n_HT20_Highest Channel (5 825 ㎒)

Horizontal/Vertical for Band-edge


802.11ac_VHT20_Lowest Channel (5 745 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 724.87	H	55.34	34.86	-23.14	-	67.06	121.90	54.84
11 498.67[1)]	H	58.50	38.30	-48.52	-	48.28	74.00	25.72
17 241.38	V	56.79	41.50	-45.65	-	52.64	68.20	15.56
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

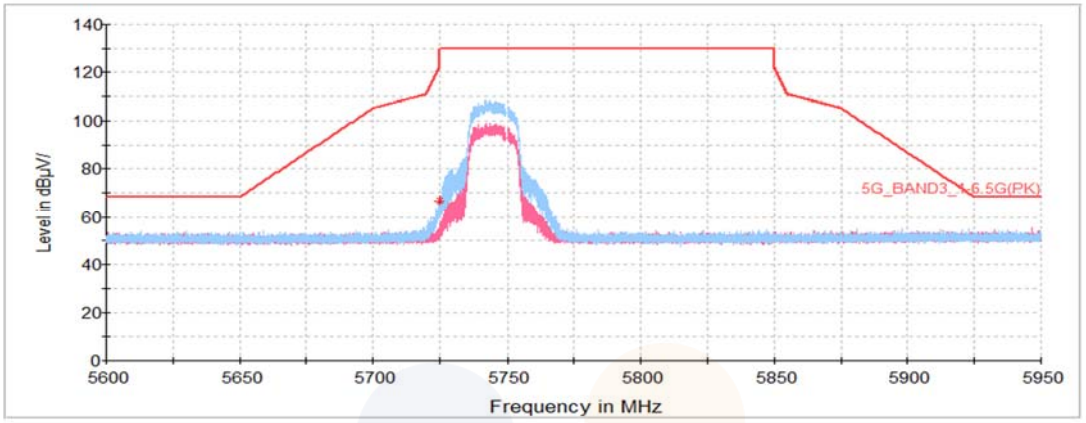
802.11ac_VHT20_Middle Channel (5 785 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 563.07[1)]	H	58.93	38.38	-48.57	-	48.74	74.00	25.26
17 364.82	V	56.24	41.55	-45.51	-	52.28	68.20	15.92
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

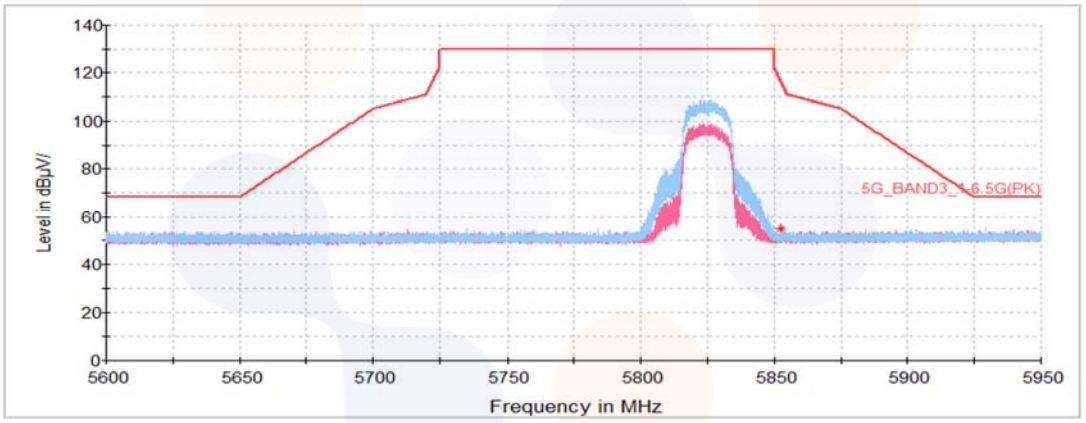
802.11ac_VHT20_Highest Channel (5 825 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 852.72	H	42.78	35.06	-22.89	-	54.95	115.99	61.04
11 674.62[1)]	H	57.40	38.51	-48.65	-	47.26	74.00	26.74
17 432.28	V	56.17	41.57	-45.43	-	52.31	68.20	15.89
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11ac_VHT20_Lowest Channel (5 745 ㎒)

Horizontal/Vertical for Band-edge


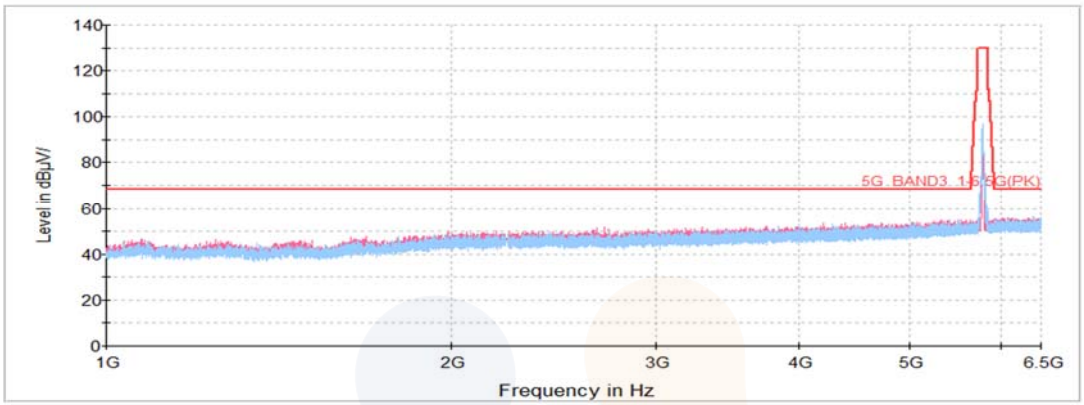
802.11ac_VHT20_Highest Channel (5 825 ㎒)

Horizontal/Vertical for Band-edge


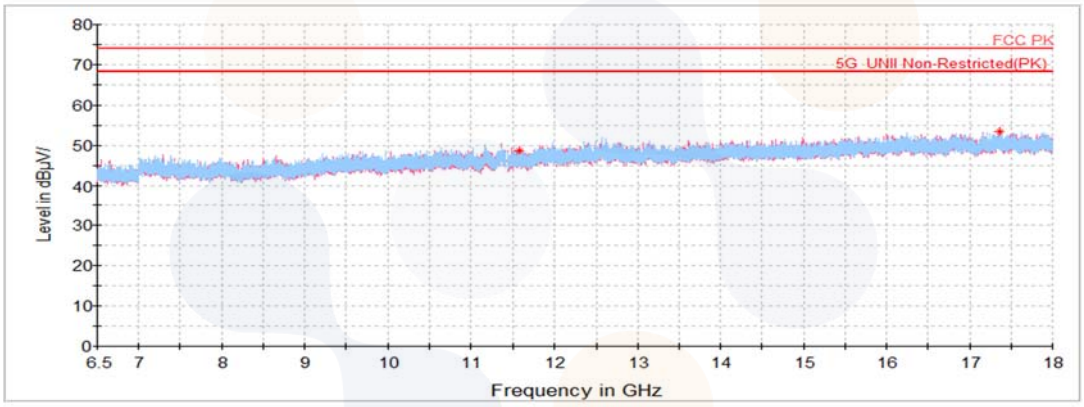
Plot of Harmonics and Spurious Emissions

In order to simplify the report, attached plots were only the lowest margin condition
802.11a_UNII-3_Middle Channel (5 785 ㎒)

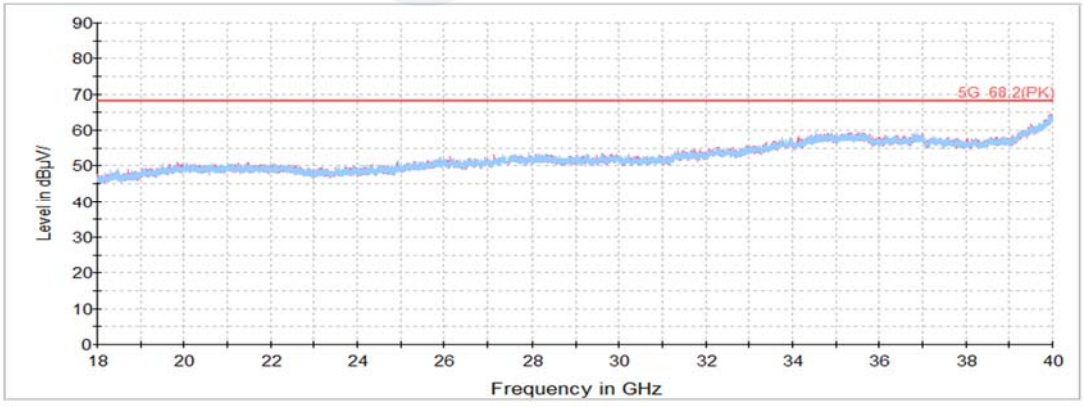
Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓

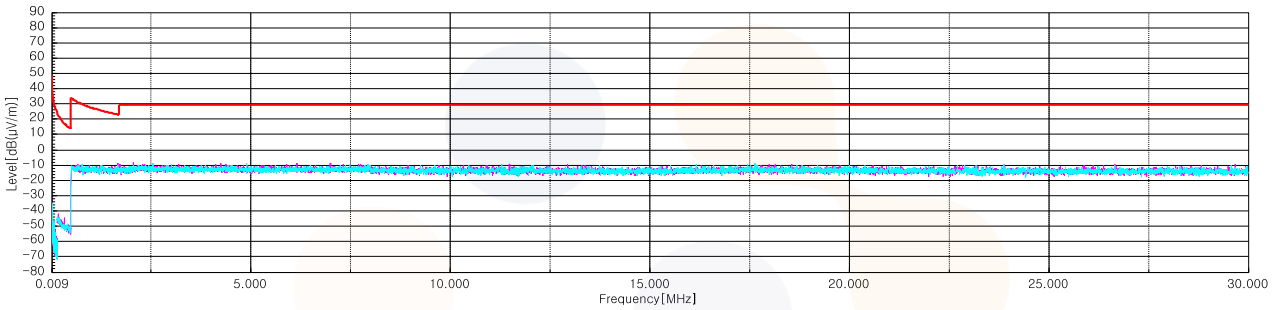


[DC 12 V]

Test results (Below 30 ㎒) – Worst case: 802.11a / UNII-1_5 180 ㎒

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Quasi peak data								
No spurious emissions were detected within 20 ㏈ of the limit.								

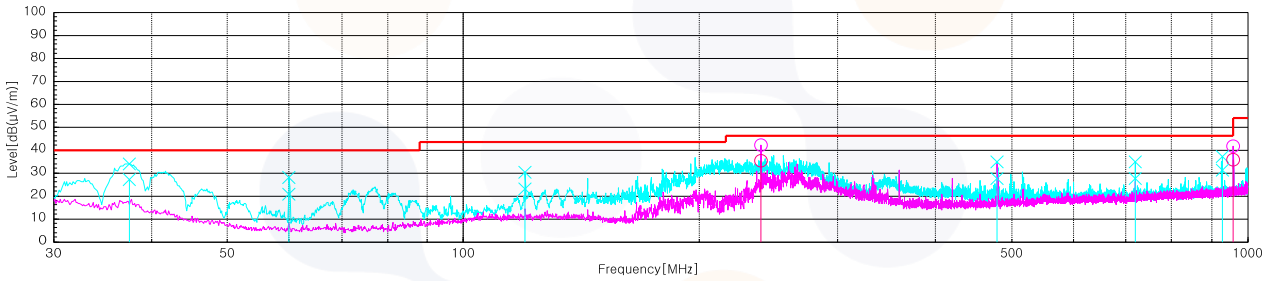
Horizontal/Vertical



Test results (Below 1 000 ㎒) – 802.11a / UNII-1_5 180 ㎒

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Quasi peak data								
37.52[1)]	V	37.50	20.74	-31.26	-	26.98	40.00	13.02
59.95	V	39.60	12.09	-30.89	-	20.80	40.00	19.20
119.97[1)]	V	35.50	17.70	-30.05	-	23.15	43.50	20.35
240.01[1)]	H	47.00	17.10	-28.80	-	35.30	46.00	10.70
479.96	V	31.80	22.70	-26.91	-	27.59	46.00	18.41
720.03	V	28.60	24.50	-25.41	-	27.69	46.00	18.31
929.92	V	28.50	26.00	-23.42	-	31.08	46.00	14.92
960.11[1)]	H	32.40	26.40	-23.05	-	35.75	54.00	18.25

Horizontal/Vertical



Test results (Above 1 000 ㎒)

UNII-1

802.11a_Lowest Channel (5 180 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 149.47[1)]	H	42.99	34.22	-24.13	-	53.08	74.00	20.92
10 391.60	V	58.34	37.53	-48.51	-	47.36	68.20	20.84
15 528.65[1)]	V	57.51	39.90	-46.80	-	50.61	74.00	23.39
Average Data								
5 149.47[1)]	H	32.22	34.22	-24.13	0.22	42.53	54.00	11.47

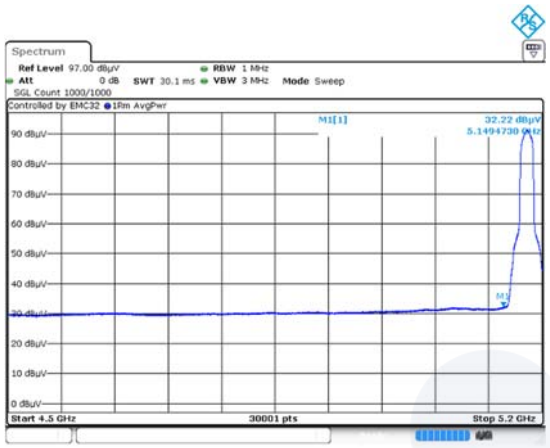
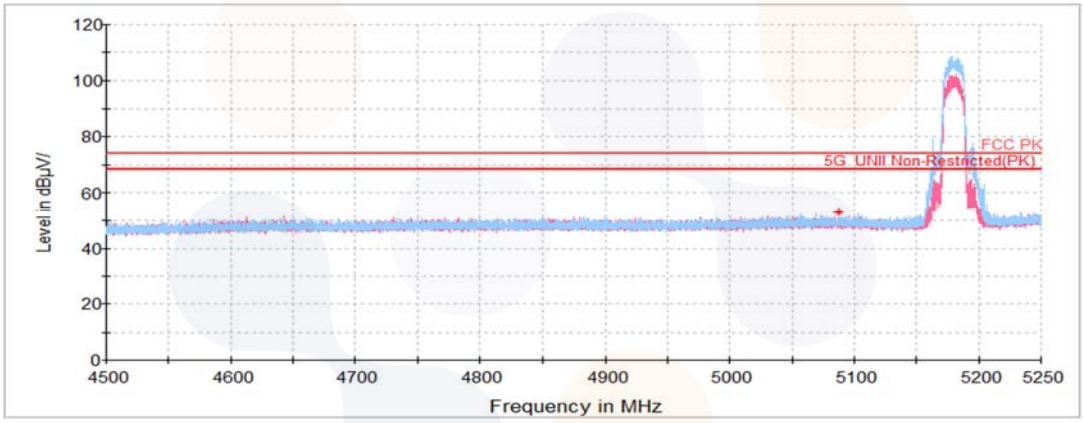
802.11a_Middle Channel (5 200 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 418.82	V	57.91	37.55	-48.46	-	47.00	68.20	21.20
15 591.90[1)]	H	57.14	39.90	-46.81	-	50.23	74.00	23.77
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11a_Highest Channel (5 240 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 431.85	V	57.00	37.56	-48.43	-	46.13	68.20	22.07
15 689.65[1)]	V	57.44	39.90	-46.83	-	50.51	74.00	23.49
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

In order to simplify the report, attached plots were only the lowest margin condition 802.11a_Lowest Channel (5 180 ㎒)

Average data	
	Blank
Horizontal/Vertical for Band-edge	
	

802.11n_HT20_Lowest Channel (5 180 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 082.72[1)]	H	42.16	34.17	-24.08	-	52.25	74.00	21.75
10 380.87	V	57.96	37.53	-48.53	-	46.96	68.20	21.24
15 565.83[1)]	H	57.14	39.90	-46.80	-	50.24	74.00	23.76
Average Data								
5 082.72[1)]	H	32.03	34.17	-24.08	0.26	42.38	54.00	11.62

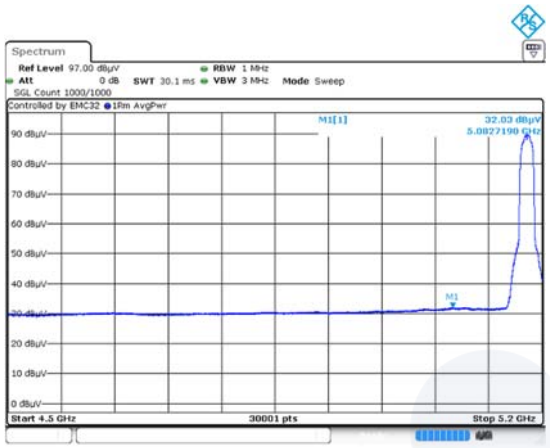
802.11n_HT20_Middle Channel (5 200 ㎒)

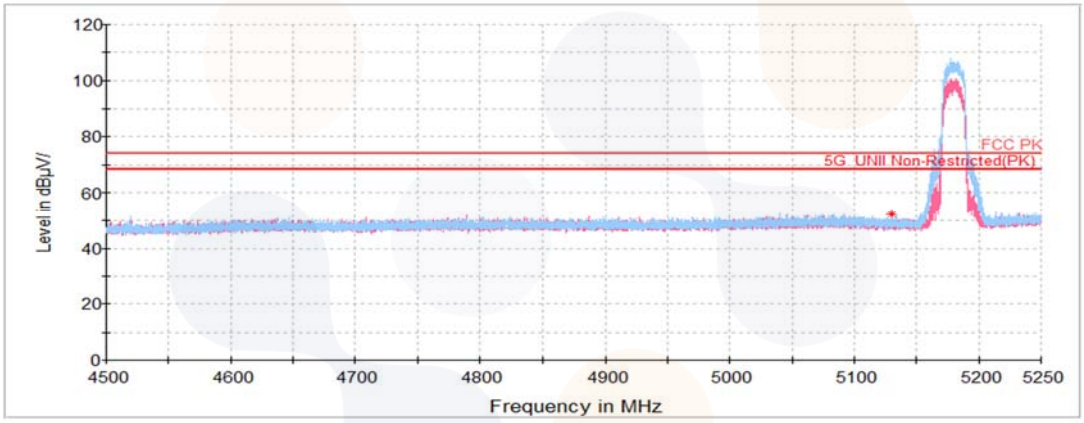
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 384.70	H	58.68	37.53	-48.53	-	47.68	68.20	20.52
15 617.20[1)]	V	57.05	39.90	-46.81	-	50.14	74.00	23.86
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

802.11n_HT20_Highest Channel (5 240 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 436.45	V	57.82	37.56	-48.42	-	46.96	68.20	21.24
15 741.40[1)]	H	57.69	39.90	-46.84	-	50.75	74.00	23.25
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

In order to simplify the report, attached plots were only the lowest margin condition 802.11n_HT20_Lowest Channel (5 180 ㎒)

Average data	
	Blank

Horizontal/Vertical for Band-edge


802.11ac_VHT20_Lowest Channel (5 180 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 077.31[1)]	H	42.07	34.16	-24.09	-	52.14	74.00	21.86
10 367.83	V	58.23	37.52	-48.56	-	47.19	68.20	21.01
15 584.62[1)]	V	56.84	39.90	-46.81	-	49.93	74.00	24.07
Average Data								
5 077.31[1)]	H	32.12	34.16	-24.09	0.26	42.45	54.00	11.55

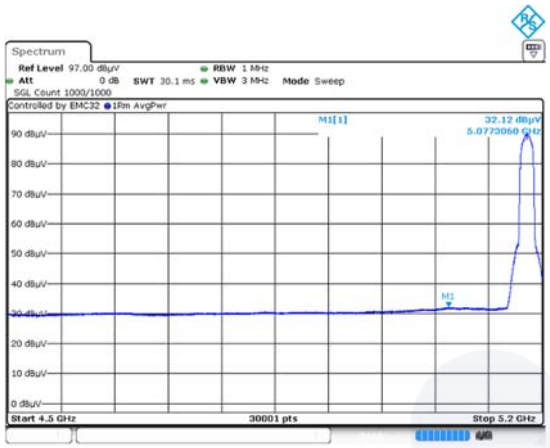
802.11ac_VHT20_Middle Channel (5 200 ㎒)

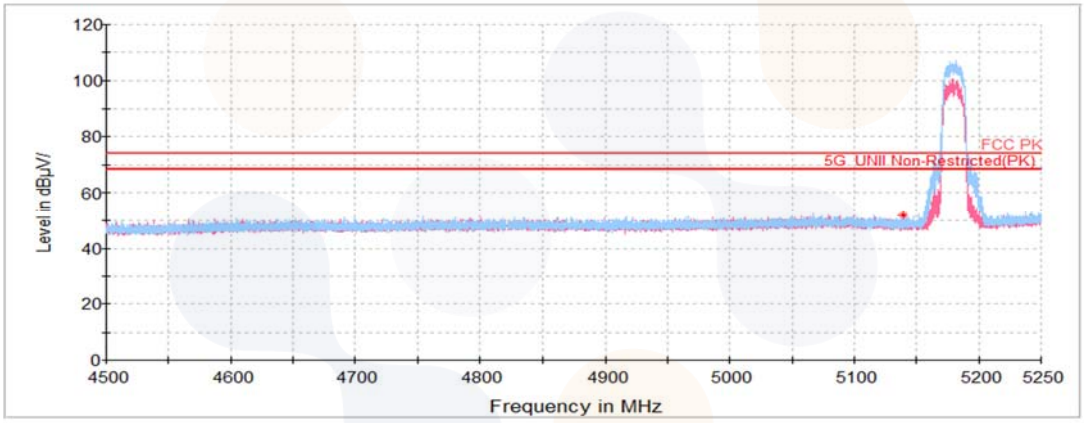
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 436.83	H	57.49	37.56	-48.42	-	46.63	68.20	21.57
15 582.32[1)]	V	56.91	39.90	-46.81	-	50.00	74.00	24.00
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

802.11ac_VHT20_Highest Channel (5 240 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 451.78	H	57.93	37.57	-48.39	-	47.11	68.20	21.09
15 769.38[1)]	H	57.46	39.90	-46.84	-	50.52	74.00	23.48
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

In order to simplify the report, attached plots were only the lowest margin condition
802.11ac_VHT20_Lowest Channel (5 180 ㎒)

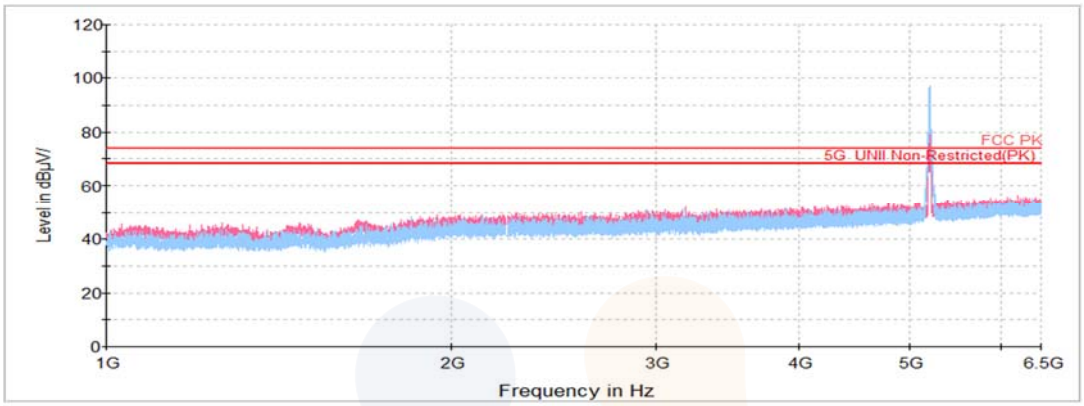
Average data	
	Blank

Horizontal/Vertical for Band-edge


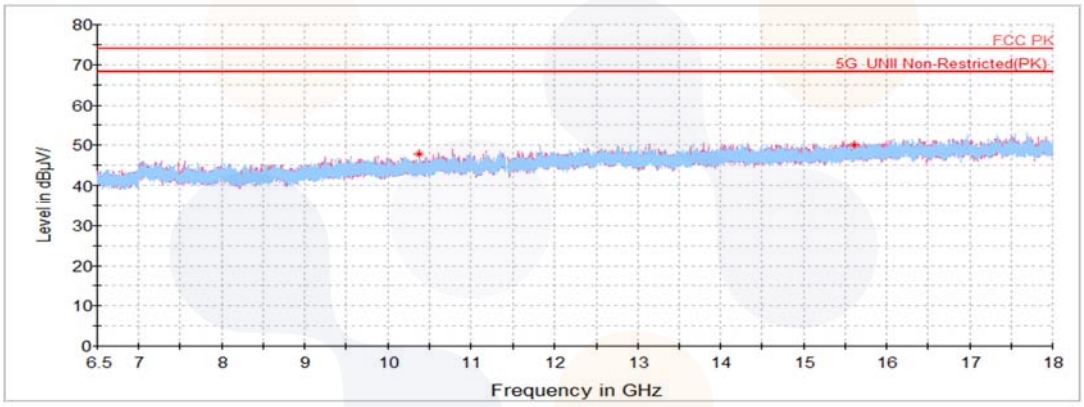
Plot of Harmonics and Spurious Emissions

In order to simplify the report, attached plots were only the lowest margin condition
802.11a_UNII-1_Lowest Channel (5 180 ㎒)

Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓

UNII-2A

802.11a_Lowest Channel (5 260 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 529.22	V	57.74	37.62	-48.32	-	47.04	68.20	21.16
15 775.90[1)]	V	57.37	39.90	-46.84	-	50.43	74.00	23.57
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

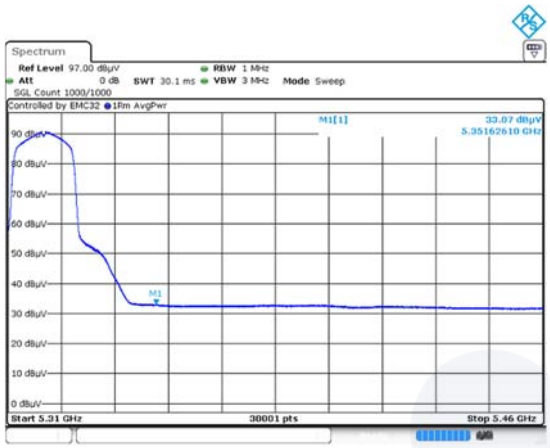
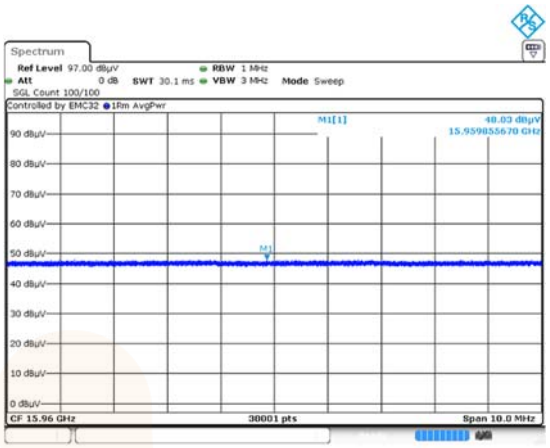
802.11a_Middle Channel (5 280 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 592.85	H	60.27	37.66	-48.36	-	49.57	68.20	18.63
15 839.53[1)]	V	58.99	39.90	-46.85	-	52.04	74.00	21.96
Average Data								
15 839.53[1)]	V	48.32	39.90	-46.85	0.22	41.59	54.00	12.41

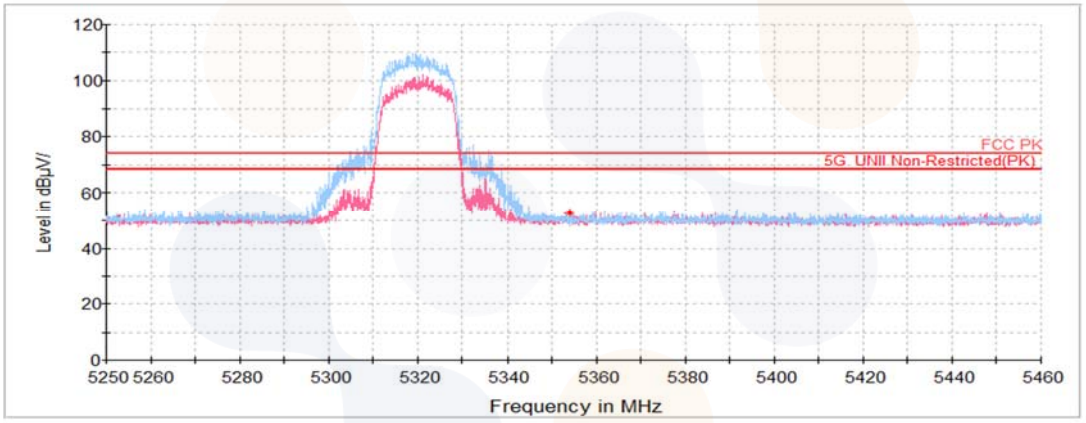
802.11a_Highest Channel (5 320 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 351.63[1)]	H	41.85	34.38	-23.37	-	52.86	74.00	21.14
10 638.47[1)]	V	59.54	37.68	-48.39	-	48.83	74.00	25.17
15 959.86[1)]	H	59.48	39.90	-46.87	-	52.51	74.00	21.49
Average Data								
5 351.63[1)]	H	33.07	34.38	-23.37	0.22	44.30	54.00	9.70
15 959.86[1)]	H	48.03	39.90	-46.87	-	41.06	54.00	12.94

In order to simplify the report, attached plots were only the lowest margin condition 802.11a_Highest Channel (5 320 ㎒)

Average (5 351.63 ㎒)	Average (15 959.86 ㎒)
	

Horizontal/Vertical for Band-edge



802.11n_HT20_Lowest Channel (5 260 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 556.43	V	59.36	37.63	-48.34	-	48.65	68.20	19.55
15 783.62[1)]	H	59.52	39.90	-46.84	-	52.58	74.00	21.42
Average Data								
15 783.62[1)]	H	48.03	39.90	-46.84	0.26	41.35	54.00	12.65

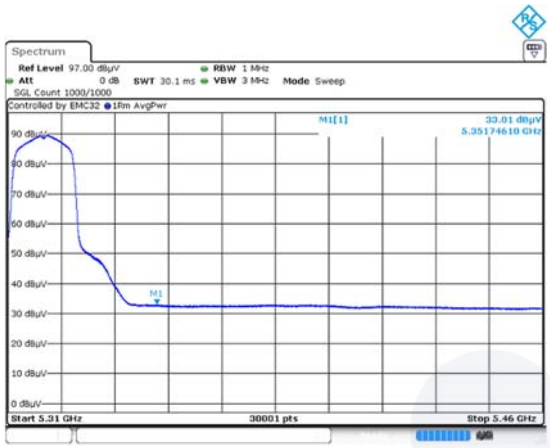
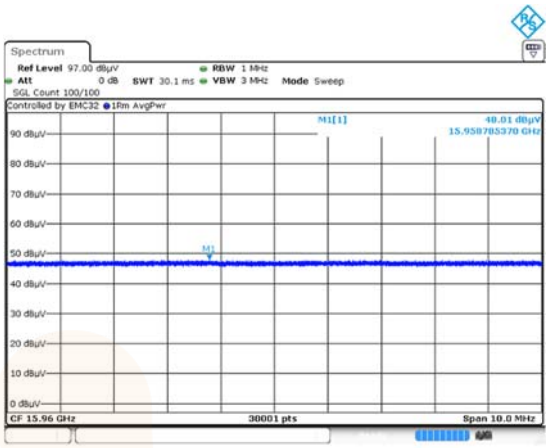
802.11n_HT20_Middle Channel (5 280 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 551.07	H	59.07	37.63	-48.33	-	48.37	68.20	19.83
15 840.28[1)]	V	59.23	39.90	-46.85	-	52.28	74.00	21.72
Average Data								
15 840.28[1)]	V	48.32	39.90	-46.85	0.26	41.63	54.00	12.37

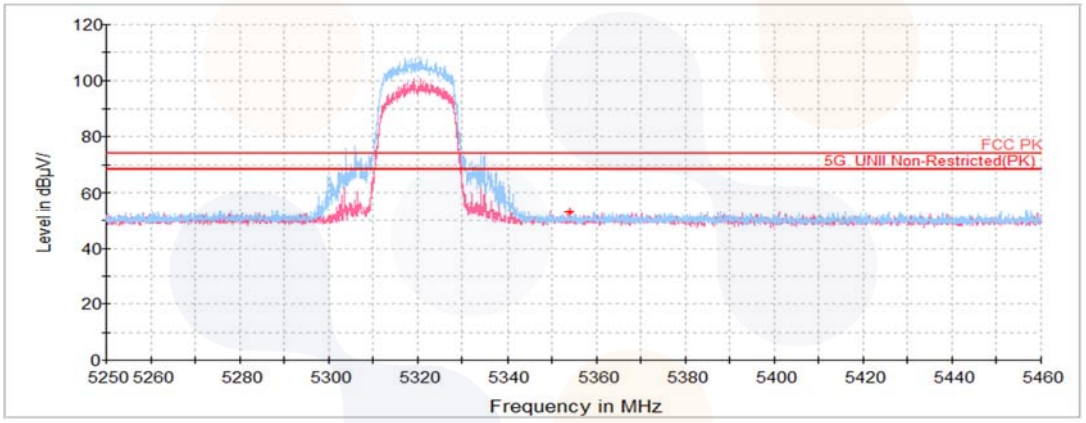
802.11n_HT20_Highest Channel (5 320 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 351.75[1)]	H	42.24	34.38	-23.37	-	53.25	74.00	20.75
10 633.87[1)]	H	59.49	37.68	-48.38	-	48.79	74.00	25.21
15 958.79[1)]	V	59.41	39.90	-46.87	-	52.44	74.00	21.56
Average Data								
5 351.75[1)]	H	33.01	34.38	-23.37	0.26	44.28	54.00	9.72
15 958.79[1)]	V	48.01	39.90	-46.87	0.26	41.30	54.00	12.70

In order to simplify the report, attached plots were only the lowest margin condition 802.11n_HT20_Highest Channel (5 320 ㎒)

Average (5 351.75 ㎒)	Average (15 958.79 ㎒)
	

Horizontal/Vertical for Band-edge



802.11ac_VHT20_Lowest Channel (5 260 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 557.97	V	58.37	37.63	-48.34	-	47.66	68.20	20.54
15 757.88[1)]	V	57.57	39.90	-46.84	-	50.63	74.00	23.37
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

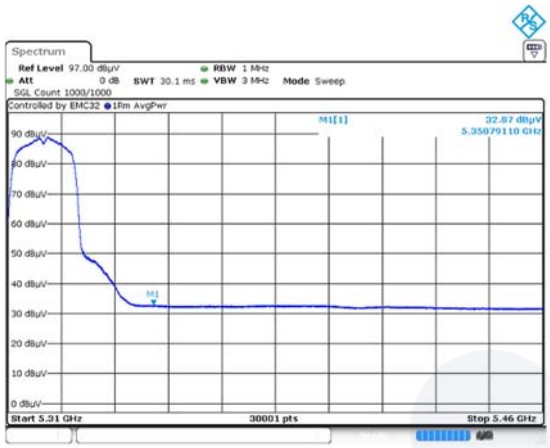
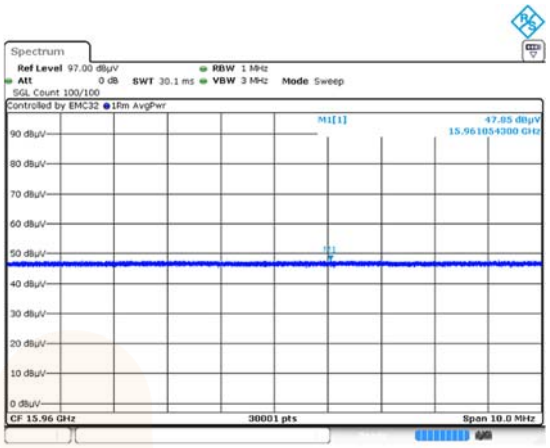
802.11ac_VHT20_Middle Channel (5 280 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 570.62	V	59.62	37.64	-48.34	-	48.92	68.20	19.28
15 841.10[1)]	H	59.04	39.90	-46.85	-	52.09	74.00	21.91
Average Data								
15 841.10[1)]	H	48.32	39.90	-46.85	0.26	41.63	54.00	12.37

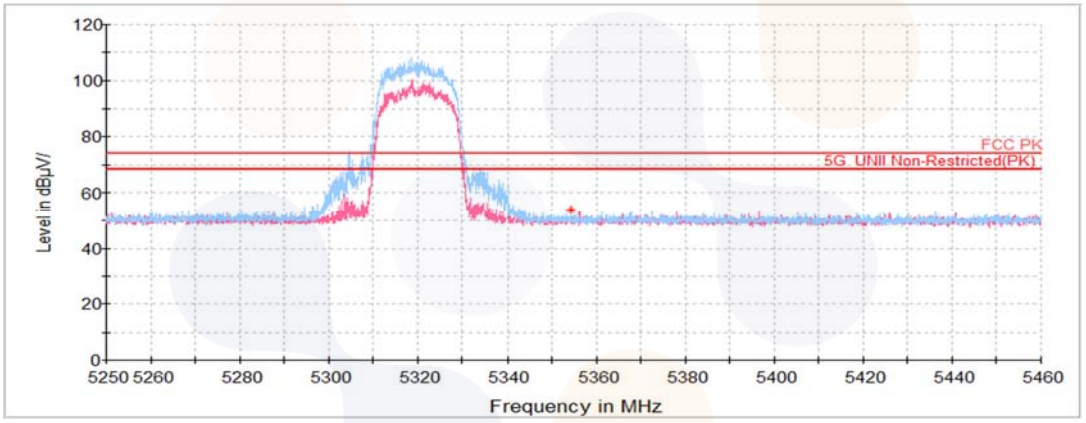
802.11ac_VHT20_Highest Channel (5 320 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 350.79[1)]	H	42.95	34.38	-23.36	-	53.97	74.00	20.03
10 651.50[1)]	V	59.11	37.69	-48.40	-	48.40	74.00	25.60
15 961.05[1)]	H	59.03	39.90	-46.87	-	52.06	74.00	21.94
Average Data								
5 350.79[1)]	H	32.87	34.38	-23.36	0.26	44.15	54.00	9.85
15 961.05[1)]	H	47.85	39.90	-46.87	0.26	41.14	54.00	12.86

In order to simplify the report, attached plots were only the lowest margin condition 802.11ac_VHT20_Highest Channel (5 320 ㎒)

Average (5 350.79 ㎒)	Average (15 961.05 ㎒)
	

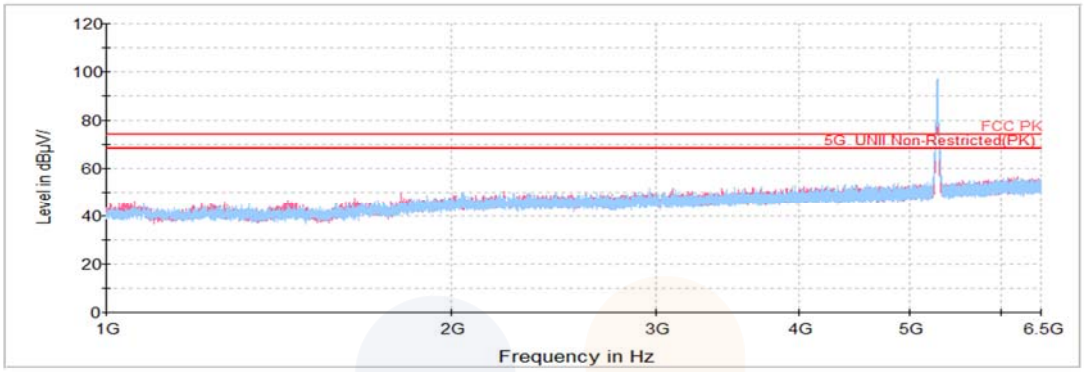
Horizontal/Vertical for Band-edge



Plot of Harmonics and Spurious Emissions

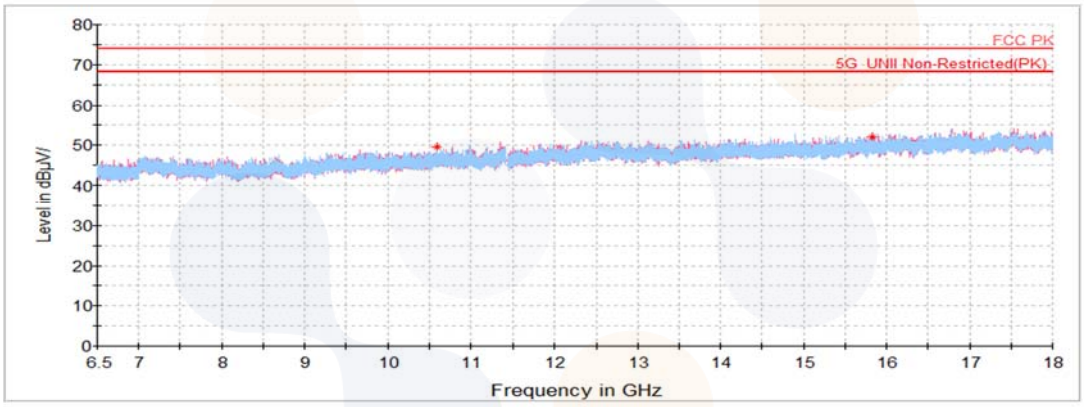
In order to simplify the report, attached plots were only the lowest margin condition
802.11a_UNII-2A_Highest Channel (5 320 ㎒)

Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓

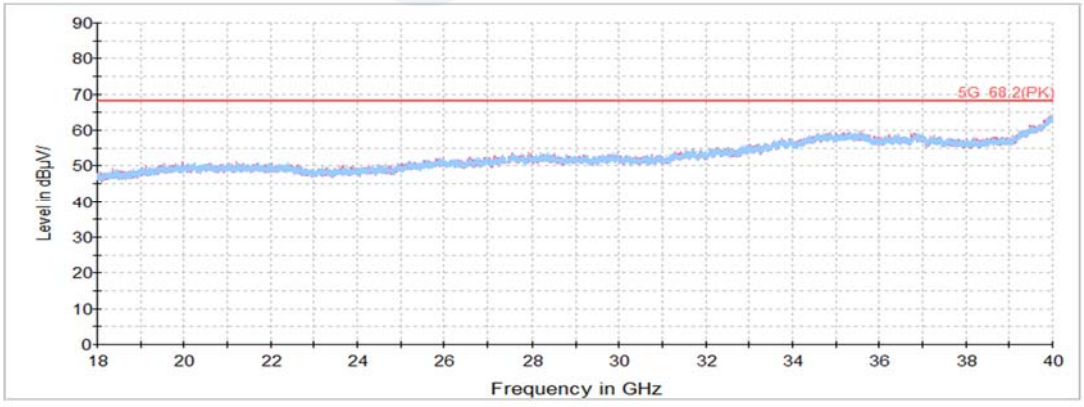


Comment

Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



UNII-2C

802.11a_Lowest Channel (5 500 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 393.53[1)]	H	43.43	34.41	-23.66	0.22	54.40	74.00	19.60
10 980.78[1)]	V	59.15	37.89	-48.60	-	48.44	74.00	25.56
16 434.85	V	57.41	41.40	-46.26	-	52.55	68.20	15.65
Average Data								
5 393.53[1)]	H	33.24	34.41	-23.66	-	43.99	54.00	10.01

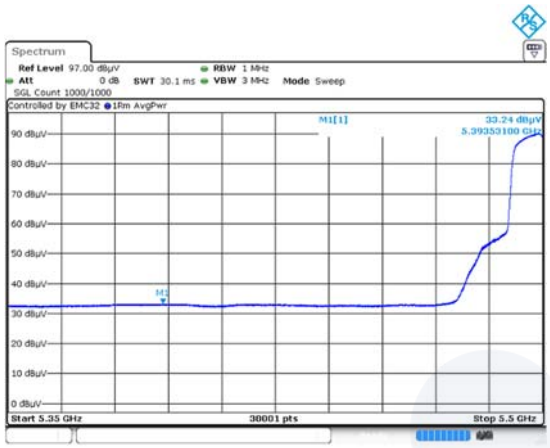
802.11a_Middle Channel (5 600 ㎒)

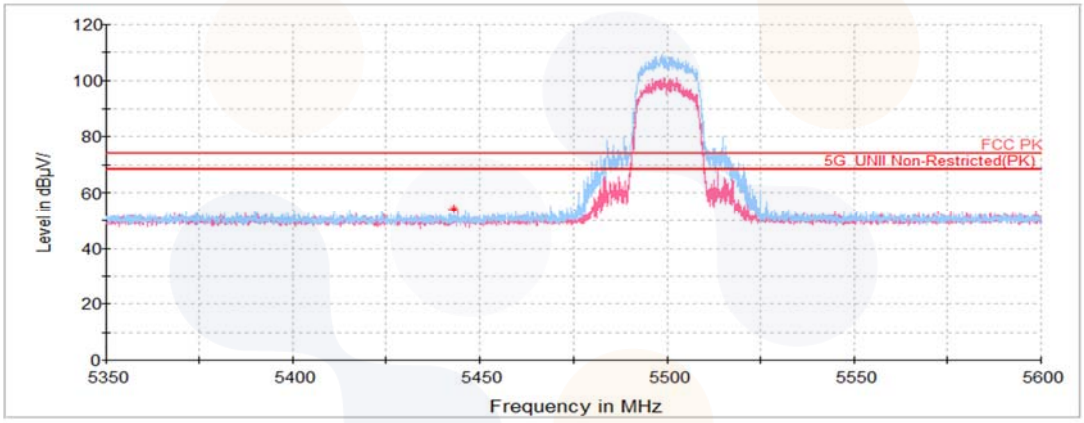
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 414.72[1)]	V	59.76	38.23	-48.54	-	49.45	74.00	24.55
17 137.50	V	57.36	41.46	-45.77	-	53.05	68.20	15.15
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

802.11a_Highest Channel (5 700 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 725.06	H	43.46	34.86	-23.14	-	55.18	68.20	13.02
11 394.78[1)]	H	60.17	38.22	-48.54	-	49.85	74.00	24.15
17 142.87	H	56.94	41.46	-45.77	-	52.63	68.20	15.57
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

In order to simplify the report, attached plots were only the lowest margin condition 802.11a_Lowest Channel (5 500 ㎒)

Average data	
	Blank

Horizontal/Vertical for Band-edge


802.11n_HT20_Lowest Channel (5 500 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 397.43[1)]	H	42.14	34.42	-23.69	-	52.87	74.00	21.13
10 992.67[1)]	H	59.35	37.90	-48.61	-	48.64	74.00	25.36
16 525.32	H	57.26	41.23	-46.16	-	52.33	68.20	15.87
Average Data								
5 397.43[1)]	H	33.19	34.42	-23.69	0.26	44.18	54.00	9.82

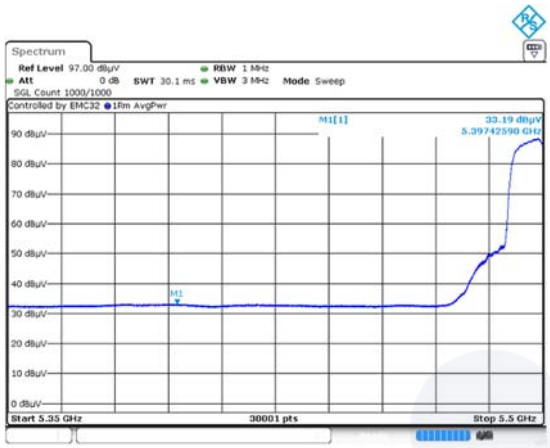
802.11n_HT20_Middle Channel (5 600 ㎒)

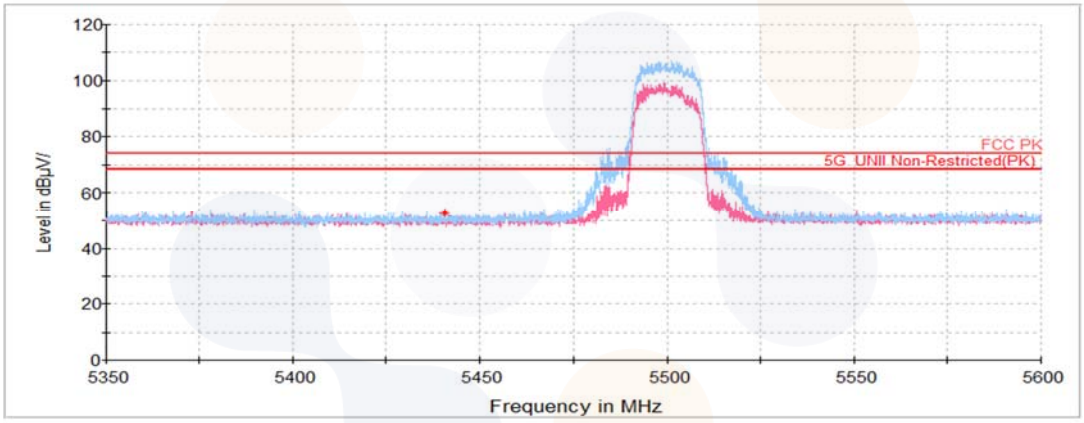
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 179.73[1)]	V	59.52	38.04	-48.58	-	48.98	74.00	25.02
16 789.43	V	57.17	41.49	-46.03	-	52.63	68.20	15.57
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

802.11n_HT20_Highest Channel (5 700 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 726.12	H	42.42	34.86	-23.14	-	54.14	68.20	14.06
11 403.60[1)]	H	60.06	38.22	-48.54	-	49.74	74.00	24.26
17 150.53	H	57.98	41.46	-45.76	-	53.68	68.20	14.52
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

In order to simplify the report, attached plots were only the lowest margin condition 802.11n_HT20_Lowest Channel (5 500 ㎒)

Average data	
	Blank

Horizontal/Vertical for Band-edge


802.11ac_VHT20_Lowest Channel (5 500 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 382.41[1)]	H	42.10	34.41	-23.58	-	52.93	74.00	21.07
10 980.02[1)]	H	59.95	37.89	-48.60	-	49.24	74.00	24.76
16 568.63	H	58.22	41.27	-46.14	-	53.35	68.20	14.85
Average Data								
5 382.41[1)]	H	33.17	34.41	-23.58	0.26	44.26	54.00	9.74

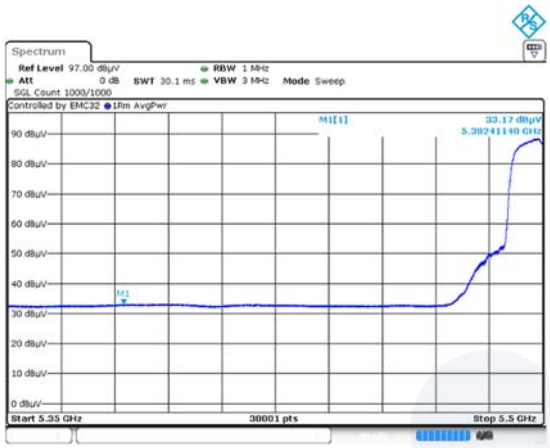
802.11ac_VHT20_Middle Channel (5 600 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 224.97[1)]	V	59.55	38.08	-48.57	-	49.06	74.00	24.94
16 585.12	H	57.78	41.29	-46.13	-	52.94	68.20	15.26
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

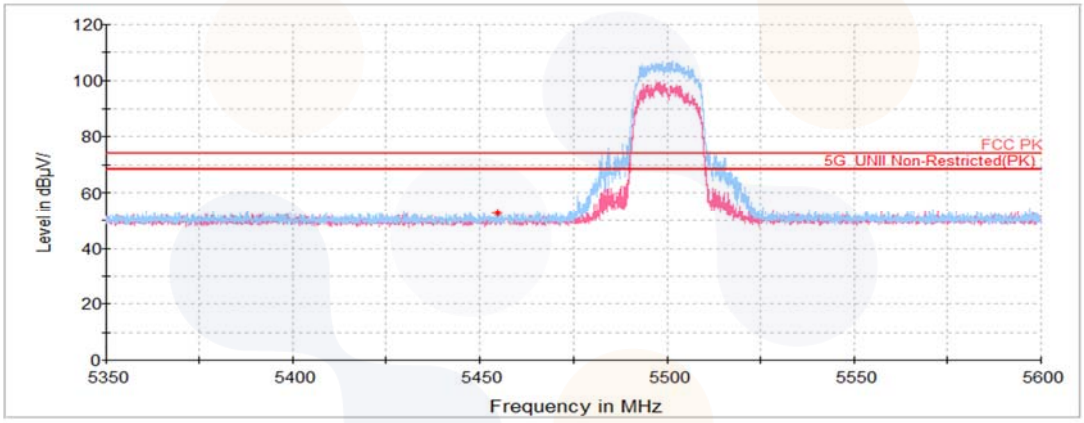
802.11ac_VHT20_Highest Channel (5 700 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 729.99	H	41.61	34.87	-23.12	-	53.36	68.20	14.84
11 421.23[1)]	V	59.89	38.24	-48.54	-	49.59	74.00	24.41
17 102.62	V	57.32	41.44	-45.81	-	52.95	68.20	15.25
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

In order to simplify the report, attached plots were only the lowest margin condition
802.11ac_VHT20_Lowest Channel (5 500 ㎒)

Average data	
	Blank

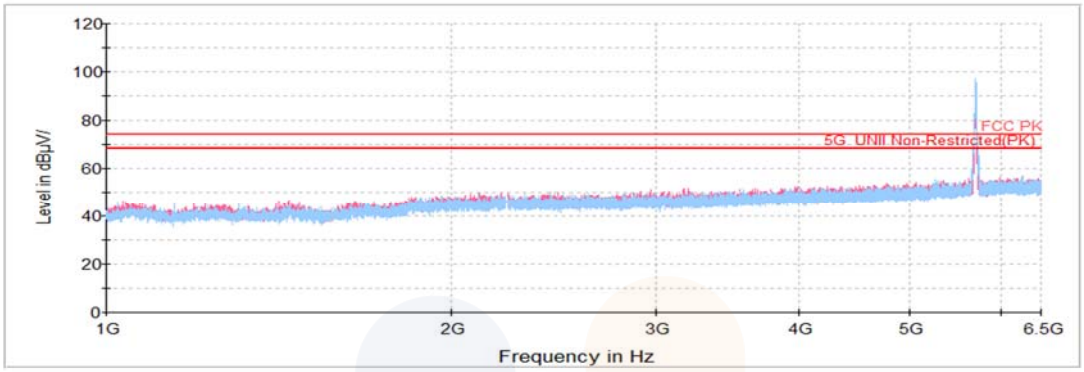
Horizontal/Vertical for Band-edge



Plot of Harmonics and Spurious Emissions

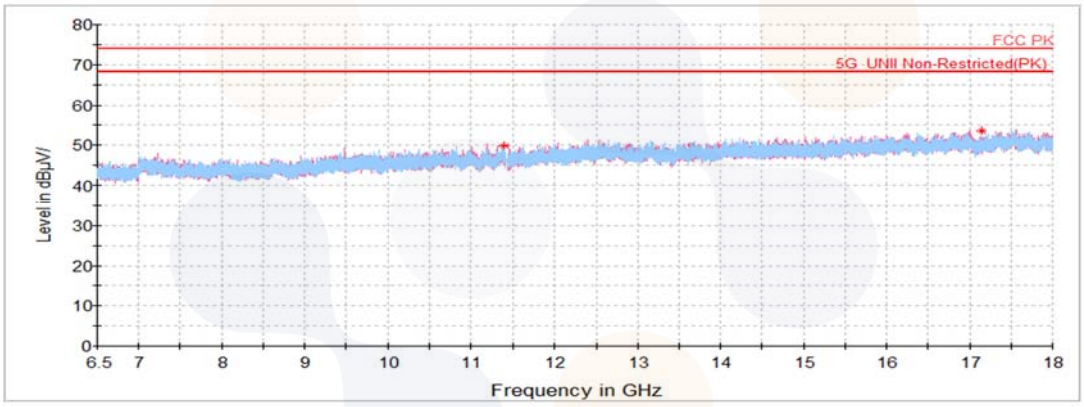
In order to simplify the report, attached plots were only the lowest margin condition
802.11ac_VHT20_UNII-2C_Lowest Channel (5 500 ㎒)

Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓

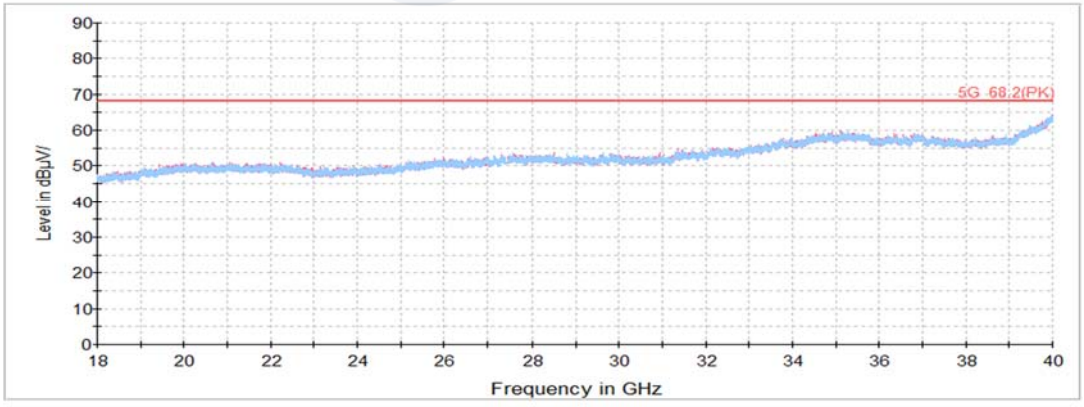


Comment

Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



Straddle Channel

802.11a (5 720 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 499.43[1)]	V	59.22	38.30	-48.52	-	49.00	74.00	25.00
17 151.68	H	57.11	41.46	-45.76	-	52.81	68.20	15.39
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

802.11n_HT20 (5 720 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 413.18[1)]	V	59.85	38.23	-48.54	-	49.54	74.00	24.46
17 209.95	V	57.24	41.48	-45.69	-	53.03	68.20	15.17
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

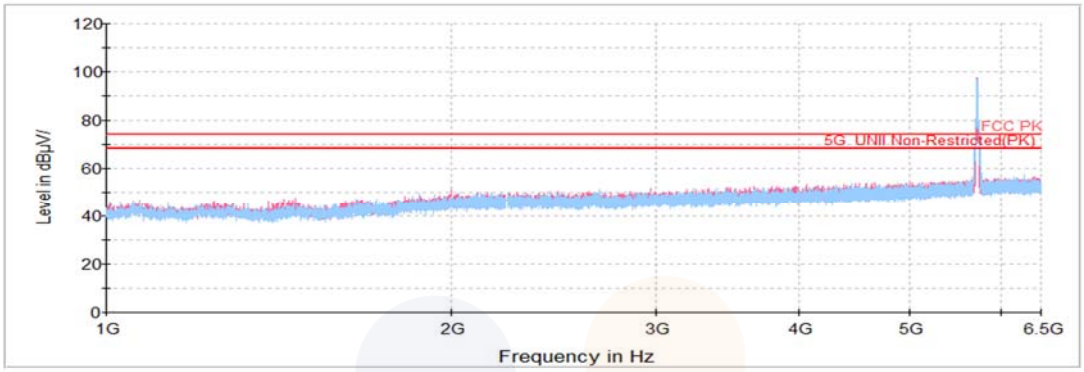
802.11ac_VHT20 (5 720 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 401.30[1)]	V	59.63	38.22	-48.54	-	49.31	74.00	24.69
17 171.62	H	57.87	41.47	-45.73	-	53.61	68.20	14.59
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

Plot of Harmonics and Spurious Emissions

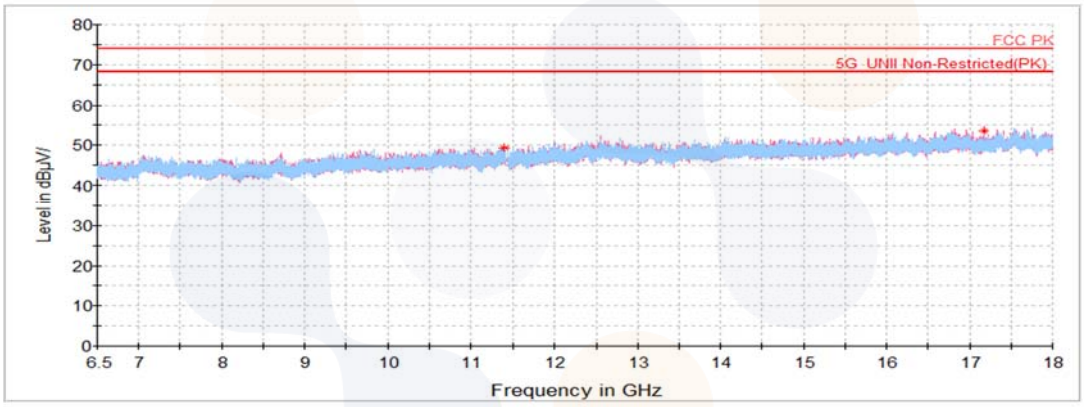
In order to simplify the report, attached plots were only the lowest margin condition
802.11ac_VHT20_Straddle Channel (5 720 ㎒)

Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓

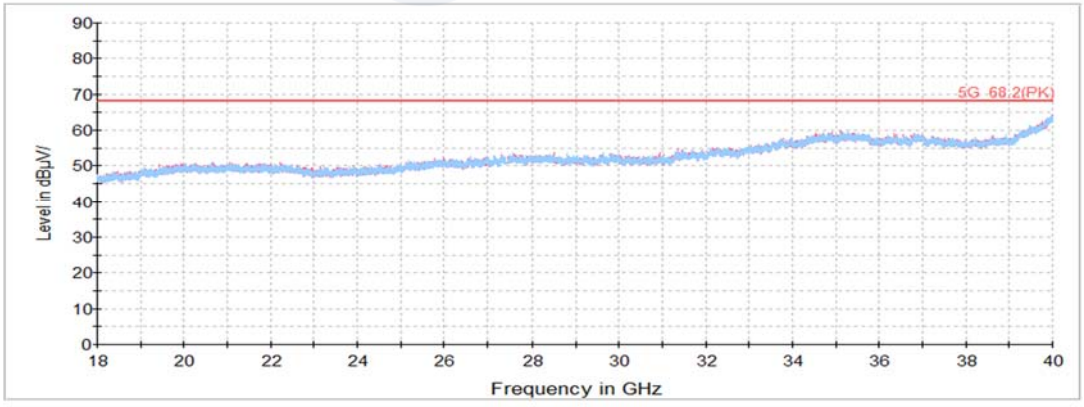


Comment

Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



UNII-3

802.11a_Lowest Channel (5 745 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 724.64	H	59.91	34.86	-23.14	-	71.63	121.37	49.74
11 504.80[1)]	H	60.07	38.31	-48.52	-	49.86	74.00	24.14
17 244.83	H	56.60	41.50	-45.65	-	52.45	68.20	15.75
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

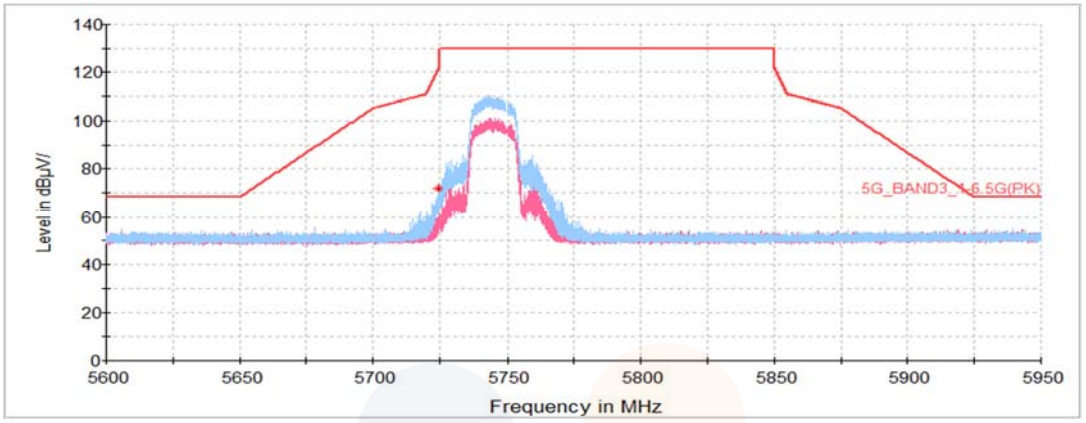
802.11a_Middle Channel (5 785 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 547.35[1)]	H	59.26	38.36	-48.56	-	49.06	74.00	24.94
17 340.67	V	58.10	41.54	-45.54	-	54.10	68.20	14.10
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

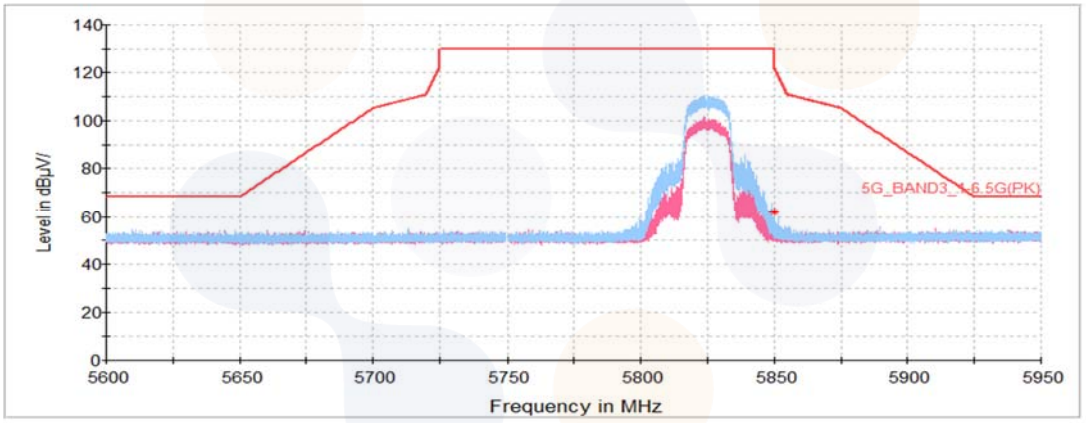
802.11a_Highest Channel (5 825 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 850.17	H	49.94	35.06	-22.88	-	62.12	121.82	59.69
11 599.87[1)]	H	58.22	38.42	-48.60	-	48.04	74.00	25.96
17 516.23	H	57.07	40.88	-45.36	-	52.59	68.20	15.61
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11a_Lowest Channel (5 745 ㎒)

Horizontal/Vertical for Band-edge


802.11a_Highest Channel (5 825 ㎒)

Horizontal/Vertical for Band-edge


802.11n_HT20_Lowest Channel (5 745 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 724.67	H	54.61	34.86	-23.14	-	66.33	121.45	55.11
11 515.92[1)]	V	58.84	38.32	-48.53	-	48.63	74.00	25.37
17 261.70	V	57.01	41.50	-45.63	-	52.88	68.20	15.32
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

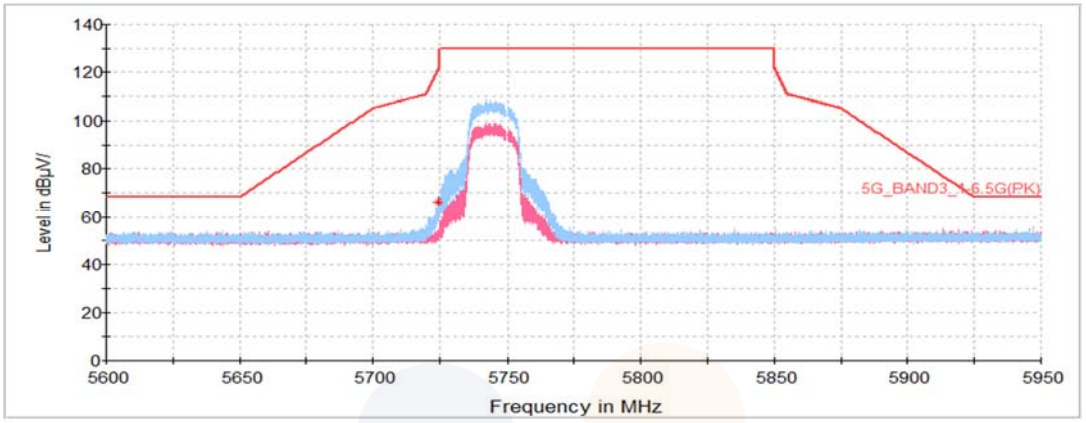
802.11n_HT20_Middle Channel (5 785 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 583.77[1)]	H	58.80	38.40	-48.58	-	48.62	74.00	25.38
17 345.27	H	56.42	41.54	-45.53	-	52.43	68.20	15.77
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

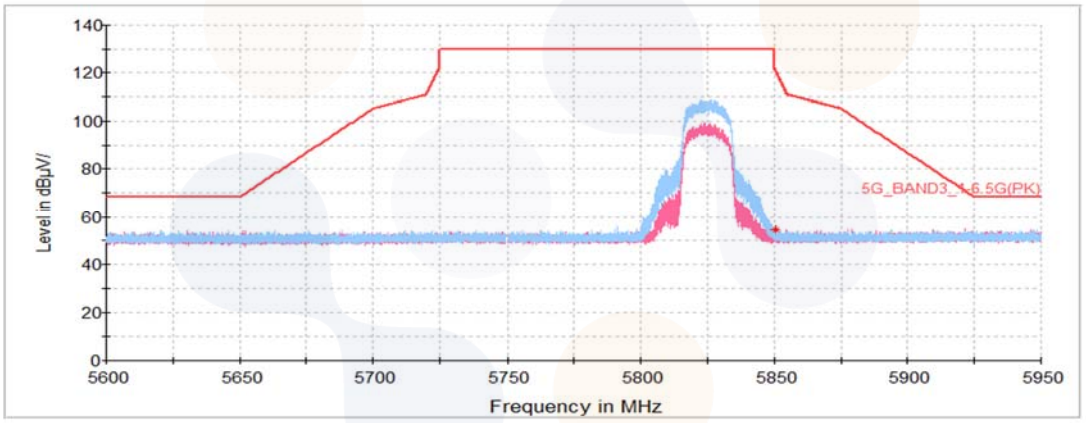
802.11n_HT20_Highest Channel (5 825 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 850.62	H	42.40	35.06	-22.88	-	54.58	120.78	66.20
11 685.35[1)]	H	57.38	38.52	-48.66	-	47.24	74.00	26.76
17 442.63	H	56.14	41.58	-45.42	-	52.30	68.20	15.90
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11n_HT20_Lowest Channel (5 745 ㎒)

Horizontal/Vertical for Band-edge


802.11n_HT20_Highest Channel (5 825 ㎒)

Horizontal/Vertical for Band-edge


802.11ac_VHT20_Lowest Channel (5 745 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 724.40	H	54.56	34.86	-23.15	-	66.27	120.84	54.57
11 459.18[1)]	H	58.77	38.27	-48.53	-	48.51	74.00	25.49
17 209.95	V	57.02	41.48	-45.69	-	52.81	68.20	15.39
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

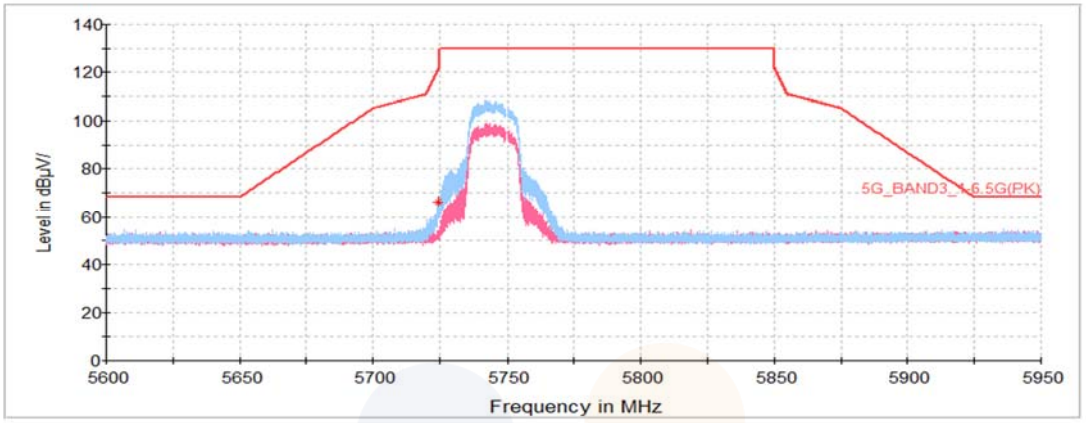
802.11ac_VHT20_Middle Channel (5 785 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 564.60[1)]	H	58.61	38.38	-48.57	-	48.42	74.00	25.58
17 346.80	V	56.25	41.54	-45.53	-	52.26	68.20	15.94
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

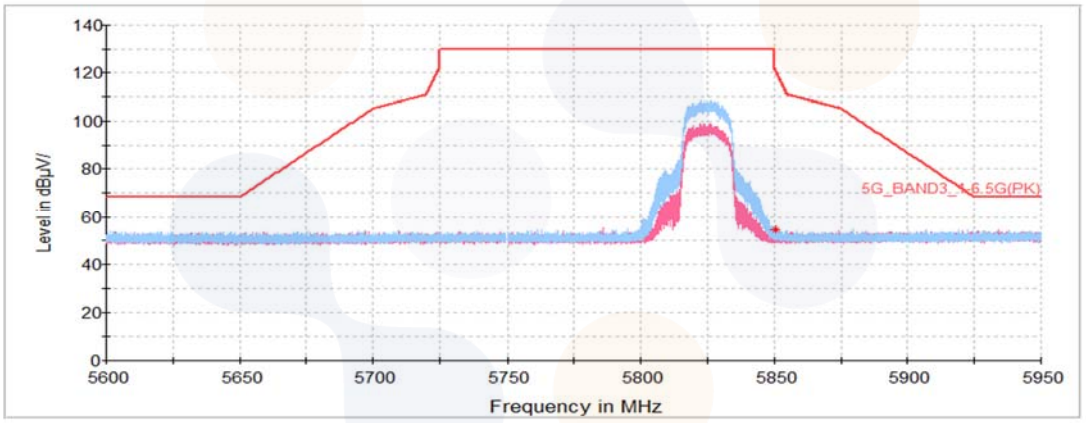
802.11ac_VHT20_Highest Channel (5 825 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 850.62	H	42.29	35.06	-22.88	-	54.47	120.78	66.31
11 610.22[1)]	H	58.58	38.43	-48.61	-	48.40	74.00	25.60
17 452.98	H	55.37	41.58	-45.41	-	51.54	68.20	16.66
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11ac_VHT20_Lowest Channel (5 745 ㎒)

Horizontal/Vertical for Band-edge


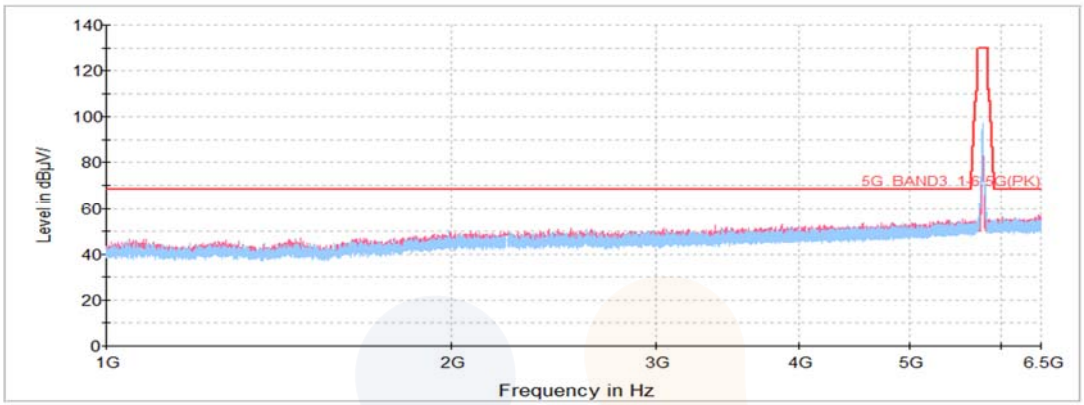
802.11ac_VHT20_Highest Channel (5 825 ㎒)

Horizontal/Vertical for Band-edge


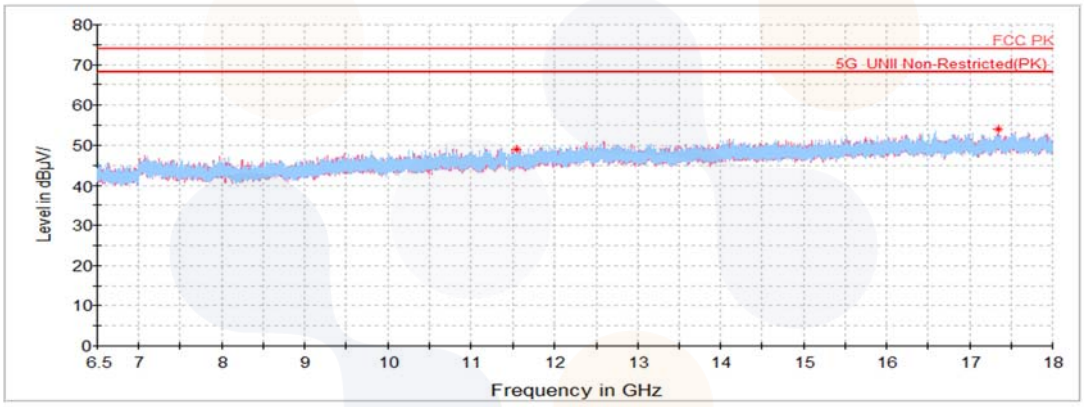
Plot of Harmonics and Spurious Emissions

In order to simplify the report, attached plots were only the lowest margin condition
802.11a_UNII-3_Middle Channel (5 785 ㎒)

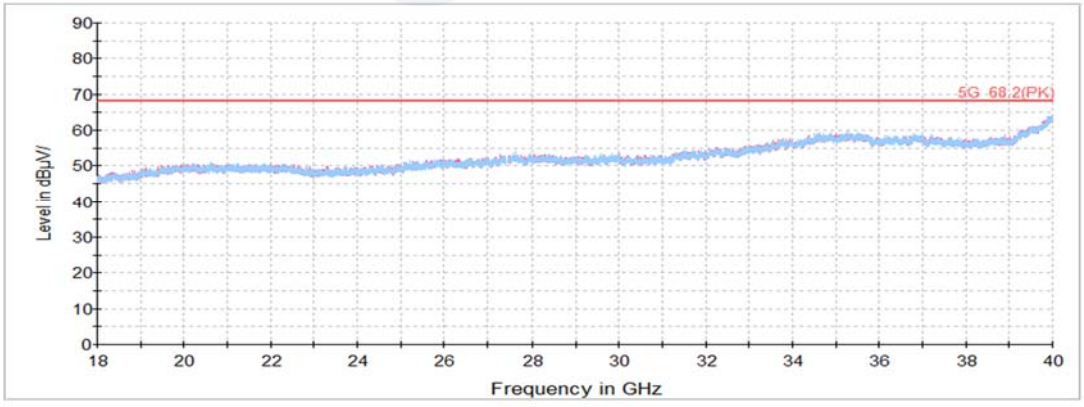
Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓

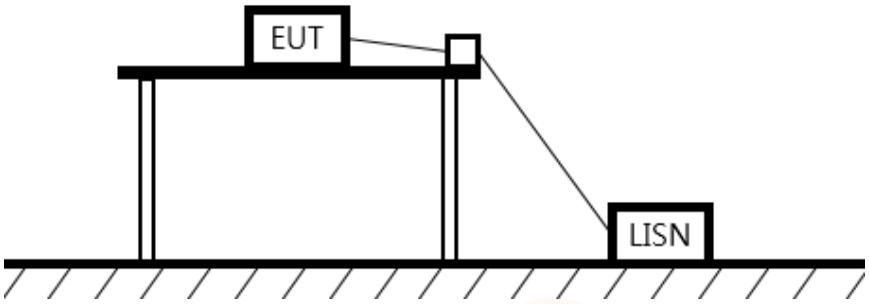


Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



7.8. AC Conducted emission

Test setup



Limit

§15.407

According to 15.207(a) and RSS-Gen (8.8), for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 ㎑ to 30 ㎒, shall not exceed the limits in the following table, as measured using a 50uH/50 ohm line impedance stabilization network (LISN). Compliance with the provision of this paragraph shall on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower applies at the boundary between the frequencies ranges.

Frequency of Emission (㎒)	Conducted limit (dBμV/m)	
	Quasi-peak	Average
0.15 – 0.50	66 - 56*	56 - 46*
0.50 – 5.00	56	46
5.00 – 30.0	60	50

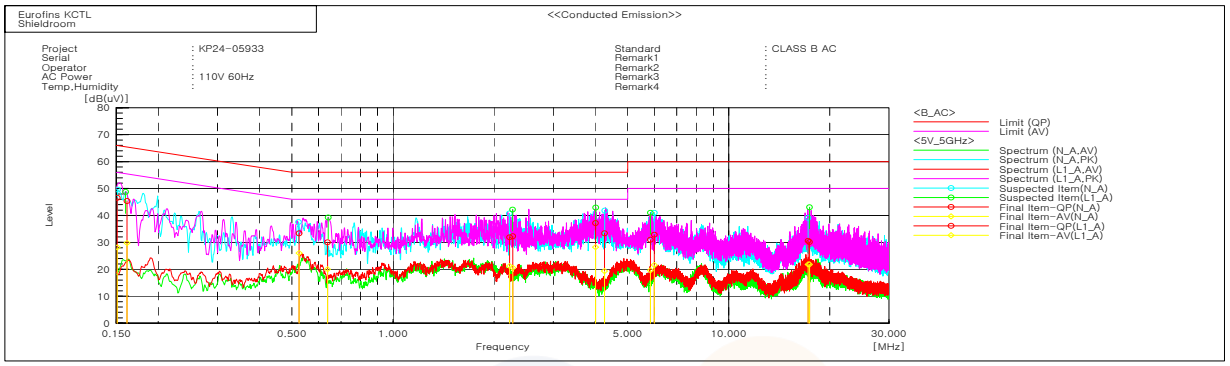
Measurement procedure

1. The EUT was placed on a wooden table of size, 1 m by 1.5 m, raised 80 ㎝ in which is located 40 ㎝ away from the vertical wall and 1.5m away from the side wall of the shielded room.
2. Each current-carrying conductor of the EUT power cord was individually connected through a 50Ω/50μH LISN, which is an input transducer to a spectrum analyzer or an EMI/Field Intensity Meter, to the input power source.
3. Exploratory measurements were made to identify the frequency of the emission that had the highest amplitude relative to the limit by operating the EUT in a range of typical modes of operation, cable position, and with a typical system equipment configuration and arrangement. Based on the exploratory tests of the EUT, the one EUT cable configuration and arrangement and mode of operation that had produced the emission with the highest amplitude relative to the limit was selected for the final measurement.
4. The final test on all current-carrying conductors of all of the power cords to the equipment that comprises the EUT (but not the cords associated with other non-EUT equipment is the system) was then performed over the frequency range of 0.15 ㎒ to 30 ㎒.
5. The measurements were made with the detector set to peak amplitude within a bandwidth of 10 ㎑ or to quasi-peak and average within a bandwidth of 9 ㎑. The EUT was in transmitting mode during the measurements.

Test results

[DC 5 V]

Worst case: 802.11a / UNII-1_5 180 ㎒



Final Result

--- N_A Phase ---

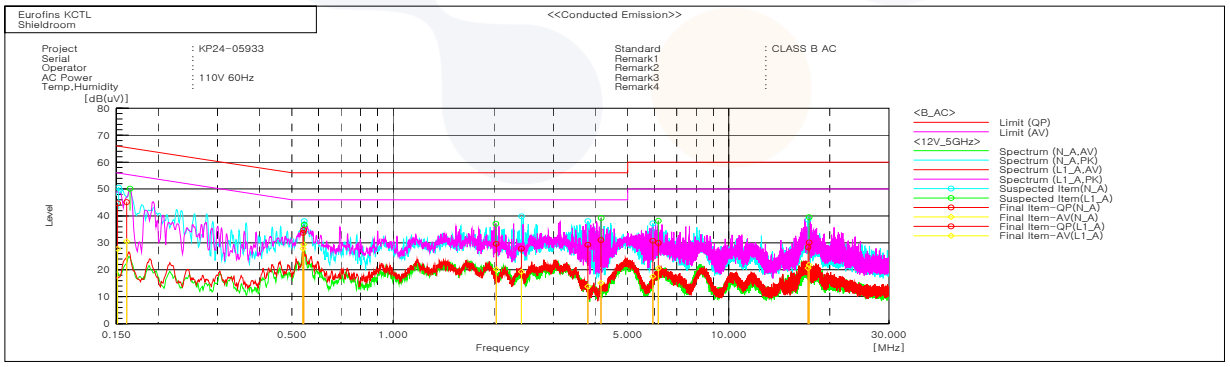
No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Margin QP [dB]	Margin CAV [dB]
1	0.15088	36.7	18.3	9.9	46.6	28.2	66.0	56.0	19.4	27.8
2	0.52537	23.4	16.0	10.0	33.4	26.0	56.0	46.0	22.6	20.0
3	2.22425	21.9	11.2	10.0	31.9	21.2	56.0	46.0	24.1	24.8
4	4.27063	23.4	9.4	10.0	33.4	19.4	56.0	46.0	22.6	26.6
5	6.00625	22.8	11.5	10.1	32.9	21.6	60.0	50.0	27.1	28.4
6	17.24365	20.0	11.3	10.6	30.6	21.9	60.0	50.0	29.4	28.1

--- L1_A Phase ---

No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Margin QP [dB]	Margin CAV [dB]
1	0.16141	35.3	19.7	10.1	45.4	29.8	65.4	55.4	20.0	25.6
2	0.63818	20.0	10.0	10.0	30.0	20.0	56.0	46.0	26.0	26.0
3	2.27285	22.3	10.5	10.0	32.3	20.5	56.0	46.0	23.7	25.5
4	4.01129	27.2	18.2	10.0	37.2	28.2	56.0	46.0	18.8	17.8
5	5.84667	20.9	9.6	10.1	31.0	19.7	60.0	50.0	29.0	30.3
6	17.39475	19.4	11.1	10.8	30.2	21.9	60.0	50.0	29.8	28.1

[DC 12 V]

Worst case: 802.11a / UNII-1_5 180 ㎒



Final Result

--- N_A Phase ---

No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Margin QP [dB]	Margin CAV [dB]
1	0.15136	34.8	17.9	9.9	44.7	27.8	65.9	55.9	21.2	28.1
2	0.542	24.8	19.3	10.0	34.8	29.3	56.0	46.0	21.2	16.7
3	2.41252	17.9	9.3	10.0	27.9	19.3	56.0	46.0	28.1	26.7
4	3.80703	19.3	3.8	10.0	29.3	13.8	56.0	46.0	26.7	32.2
5	5.9455	20.7	7.4	10.1	30.8	17.5	60.0	50.0	29.2	32.5
6	17.24655	17.8	10.1	10.6	28.4	20.7	60.0	50.0	31.6	29.3

--- L1_A Phase ---

No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Margin QP [dB]	Margin CAV [dB]
1	0.16106	35.1	20.4	10.1	45.2	30.5	65.4	55.4	20.2	24.9
2	0.53987	23.7	18.0	10.0	33.7	28.0	56.0	46.0	22.3	18.0
3	2.03031	19.7	10.1	10.0	29.7	20.1	56.0	46.0	26.3	25.9
4	4.16637	21.1	5.1	10.0	31.1	15.1	56.0	46.0	24.9	30.9
5	6.1726	19.9	10.4	10.1	30.0	20.5	60.0	50.0	30.0	29.5
6	17.35957	19.4	11.0	10.8	30.2	21.8	60.0	50.0	29.8	28.2

8. Measurement equipment

Equipment Name	Manufacturer	Model No.	Serial No.	Next Cal. Date
Spectrum Analyzer	R&S	FSV30	100808	25.07.01
DC Power Supply	TOYOTECH	TL305TP	21040092	25.07.01
Attenuator	R&S	DNF	0006	25.01.18
Attenuator	Weinschel ENGINEERING	56-10	51395	25.01.19
Power Sensor	R&S	NRP-Z81	1137.9009.02-106223-bB	25.04.24
Vector Signal Generator	R&S	SMBV100A	257566	25.07.01
Signal Generator	R&S	SMB100A	176206	25.01.18
Temp & Humid Chamber	ESPEC	SH-642	93016978	25.01.18
Spectrum Analyzer	R&S	FSV40	100989	25.10.10
Horn antenna	ETS.lindgren	3117	00251528	25.01.26
Horn antenna	ETS.lindgren	3116	00086635	25.01.25
AMPLIFIER	B&Z Technologies	BZRT-00504000-481055-382525	26299-27735	25.06.24
AMPLIFIER	B&Z Technologies	BZR-0050400-551028-252525	27736	25.06.24
Attenuator	API Inmet	40AH2W-10	12	25.04.30
High pass Filter	WT	WT-A1699-HS	WT160411002	25.04.25
High pass Filter	Qotana	DBHF058004000A	20070100016	25.06.24
EMI TEST RECEIVER	R&S	ESCI7	100732	25.02.28
Bi-Log Antenna	TESEQ	CBL 6112D	62438	25.05.25
Amplifier	SONOMA INSTRUMENT	310N	284608	25.08.13
ATTENUATOR	KEYSIGHT	8491B-6dB	MY39271082	25.05.25
LOOP Antenna	R&S	HFH2-Z2	100355	26.06.25
ISOLATION TRANSFORMER	ONETECH CO.,LTD	OT-IT500VA	OTR1-16026	25.03.21
TWO-LINE V - NETWORK	R&S	ENV216	101353	25.03.27
EMI TEST RECEIVER	R&S	ESCI3	100001	25.08.12
Antenna Mast	Innco Systems	MA4640-XP-ET	MA4000/396/30810213/L	-
Controller	Innco Systems	CO3000	1175/45850319/P	-
Antenna Mast	Innco Systems	MA4640/800-XP-ET	-	-
Turn Table	Innco Systems	DT2000	79	-

End of test report