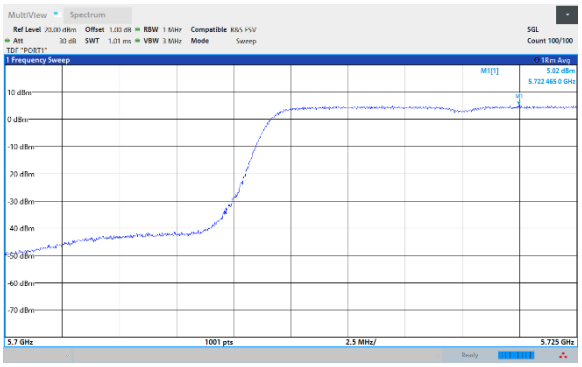
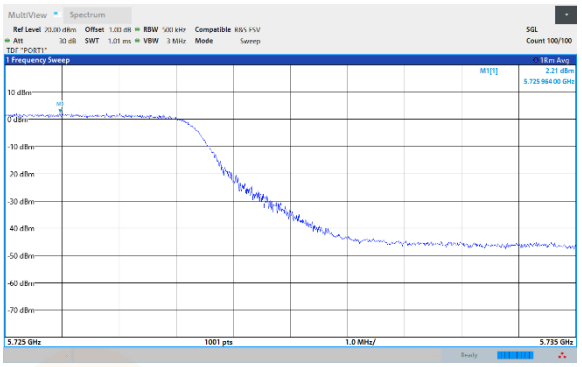
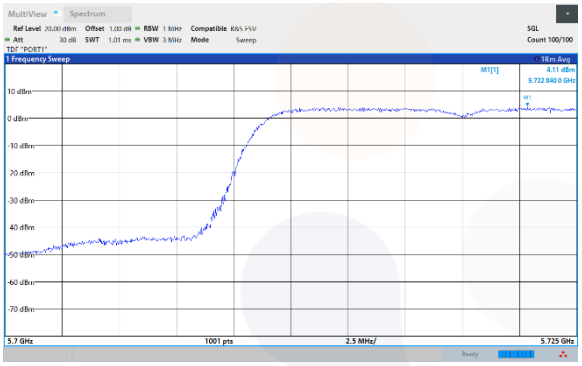
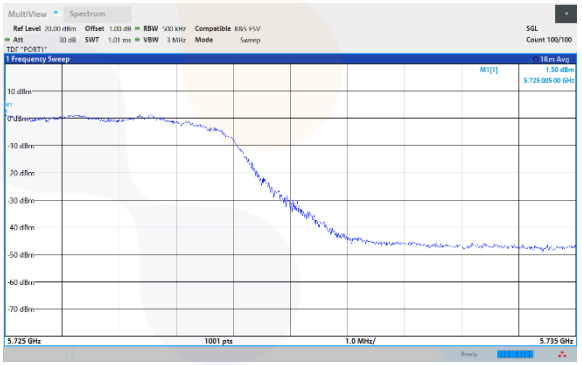
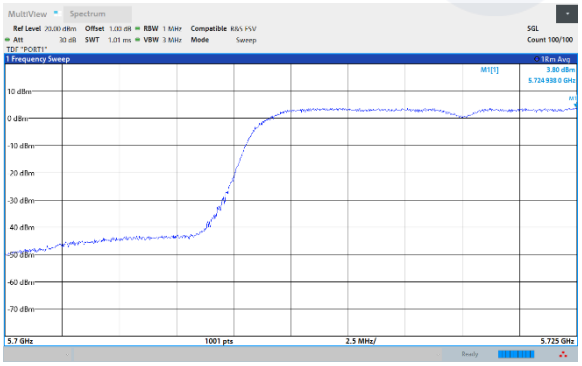
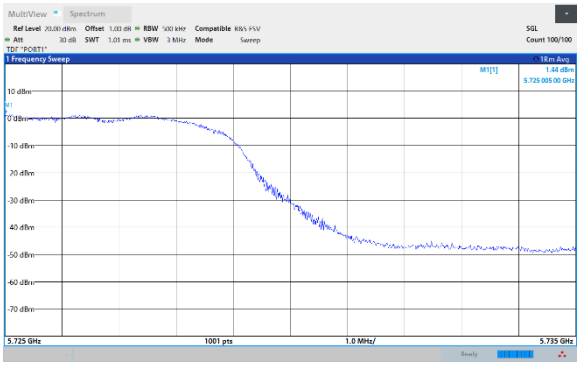
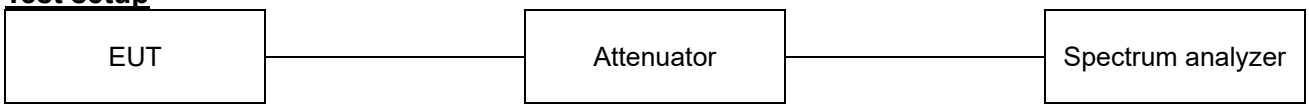
UNII-2C / 802.11a	UNII-3 / 802.11a
	
UNII-2C / 802.11n HT20	**UNII-3 / 802.11n HT20**
	
UNII-2C / 802.11ac VHT20	**UNII-3 / 802. 11ac VHT20**
	

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 MHz, 76-88 MHz, 174-216 MHz, and 470-602 MHz, unless otherwise indicated.

Test procedure

ANSI C63.10-2013 - Section 6.8.1

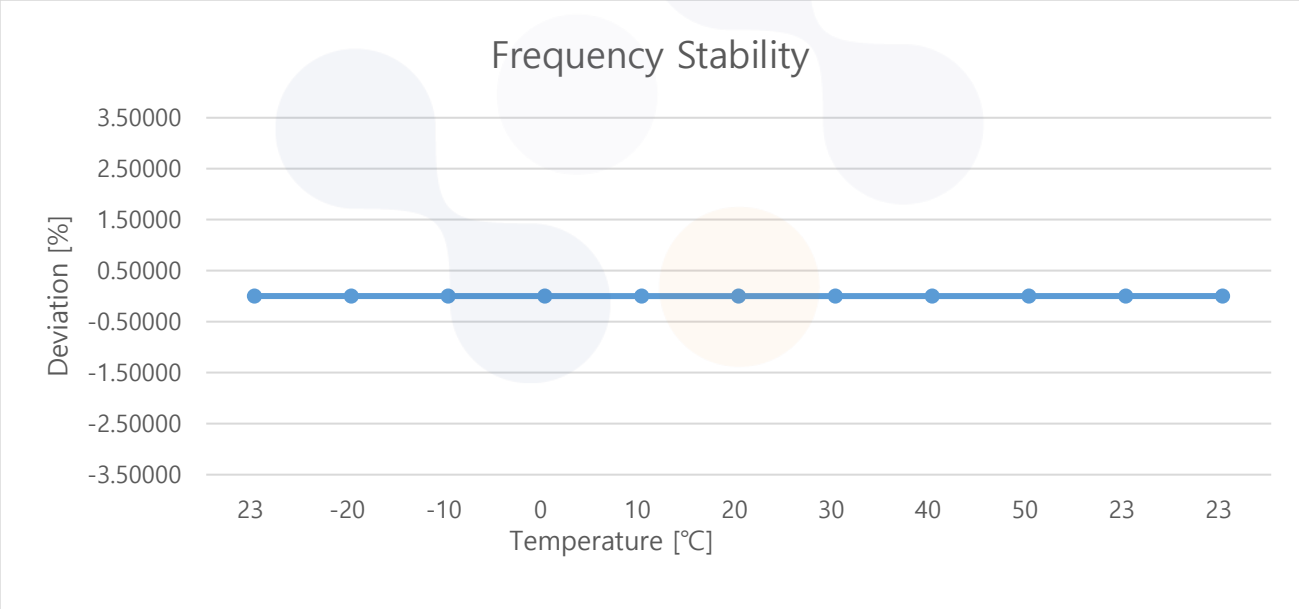
Test results

[DC 5 V]

Test band : UNII-1

Frequency (㎐) : 5 180 000 000

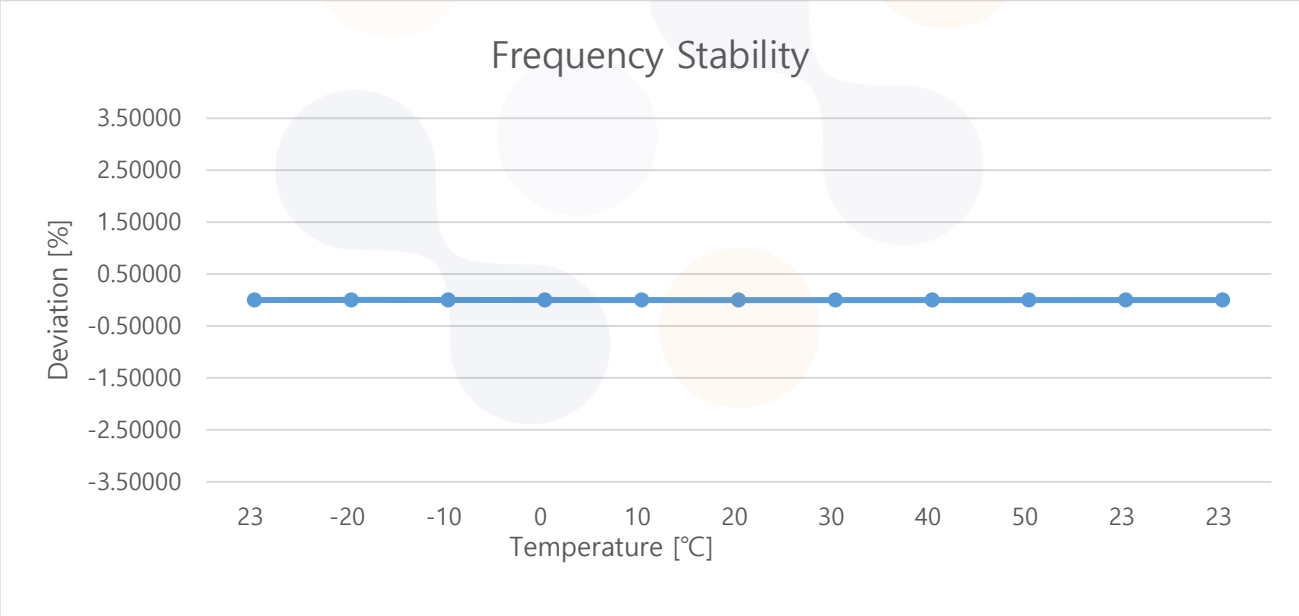
Voltage (%)	Power (V)	Temp. (°C)	Frequency (㎐)	Frequency error (㎐)	Deviation	
					(ppm)	(%)
100%	5.00	+23(Ref)	5 179 996 400	-3 600	-0.69	-0.000 07
		-20	5 180 029 170	29 170	5.63	0.000 56
		-10	5 180 029 570	29 570	5.71	0.000 57
		0	5 180 023 580	23 580	4.55	0.000 46
		+10	5 180 014 190	14 190	2.74	0.000 27
		+20	5 180 004 200	4 200	0.81	0.000 08
		+30	5 179 995 000	-5 000	-0.97	-0.000 10
		+40	5 179 990 810	-9 190	-1.77	-0.000 18
		+50	5 179 996 200	-3 800	-0.73	-0.000 07
85%	4.25	+23(Ref)	5 179 994 810	-5 190	-1.00	-0.000 10
115%	5.75	+23(Ref)	5 179 993 610	-6 390	-1.23	-0.000 12



Test band : UNII-2A

Frequency (㎐) : 5 260 000 000

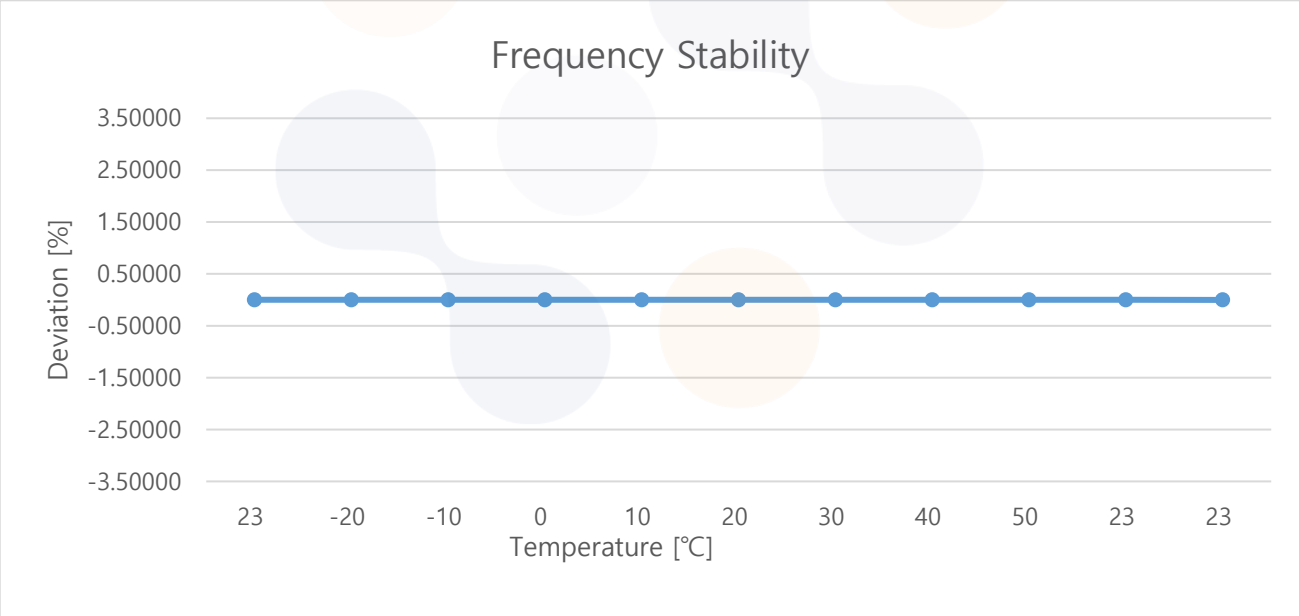
Voltage (%)	Power (V)	Temp. (°C)	Frequency (㎐)	Frequency error (㎐)	Deviation	
					(ppm)	(%)
100%	5.00	+23(Ref)	5 259 994 810	-5 190	-0.99	-0.000 10
		-20	5 260 028 970	28 970	5.51	0.000 55
		-10	5 260 030 570	30 570	5.81	0.000 58
		0	5 260 025 770	25 770	4.90	0.000 49
		+10	5 260 016 180	16 180	3.08	0.000 31
		+20	5 260 005 390	5 390	1.02	0.000 10
		+30	5 259 996 800	-3 200	-0.61	-0.000 06
		+40	5 259 990 610	-9 390	-1.79	-0.000 18
		+50	5 259 994 210	-5 790	-1.10	-0.000 11
85%	4.25	+23(Ref)	5 259 993 010	-6 990	-1.33	-0.000 13
115%	5.75	+23(Ref)	5 259 992 010	-7 990	-1.52	-0.000 15



Test band : UNII-2C

Frequency (㎐) : 5 500 000 000

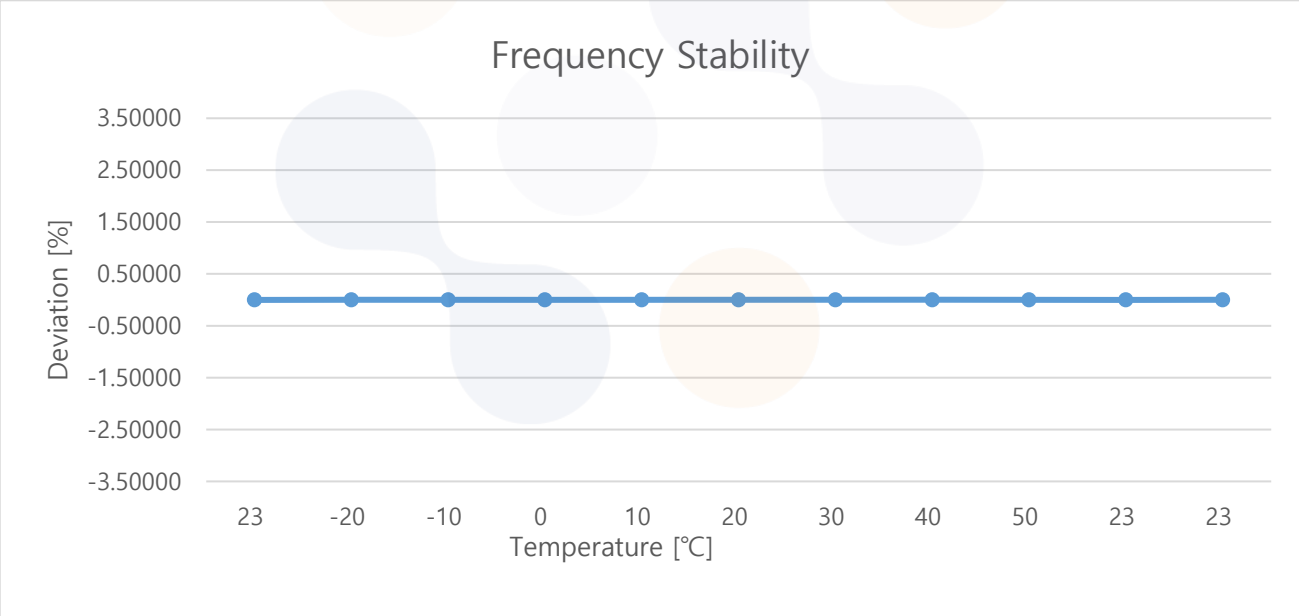
Voltage (%)	Power (V)	Temp. (°C)	Frequency (㎐)	Frequency error (㎐)	Deviation	
					(ppm)	(%)
100%	5.00	+23(Ref)	5 499 990 010	-9 990	-1.82	-0.000 18
		-20	5 500 030 170	30 170	5.49	0.000 55
		-10	5 500 032 170	32 170	5.85	0.000 59
		0	5 500 027 370	27 370	4.98	0.000 50
		+10	5 500 017 980	17 980	3.27	0.000 33
		+20	5 500 006 790	6 790	1.23	0.000 12
		+30	5 499 997 000	-3 000	-0.55	-0.000 06
		+40	5 499 990 410	-9 590	-1.74	-0.000 17
		+50	5 499 993 210	-6 790	-1.23	-0.000 12
85%	4.25	+23(Ref)	5 499 989 610	-10 390	-1.89	-0.000 19
115%	5.75	+23(Ref)	5 499 989 410	-10 590	-1.93	-0.000 19



Test band : UNII-3

Frequency (㎐) : 5 745 000 000

Voltage (%)	Power (V)	Temp. (°C)	Frequency (㎐)	Frequency error (㎐)	Deviation	
					(ppm)	(%)
100%	5.00	+23(Ref)	5 744 988 610	-11 390	-1.98	-0.000 20
		-20	5 745 030 970	30 970	5.39	0.000 54
		-10	5 745 033 570	33 570	5.84	0.000 58
		0	5 745 028 770	28 770	5.01	0.000 50
		+10	5 745 019 380	19 380	3.37	0.000 34
		+20	5 745 007 790	7 790	1.36	0.000 14
		+30	5 744 997 800	-2 200	-0.38	-0.000 04
		+40	5 744 990 010	-9 990	-1.74	-0.000 17
		+50	5 744 992 210	-7 790	-1.36	-0.000 14
85%	4.25	+23(Ref)	5 744 988 810	-11 190	-1.95	-0.000 20
115%	5.75	+23(Ref)	5 744 989 010	-10 990	-1.91	-0.000 19

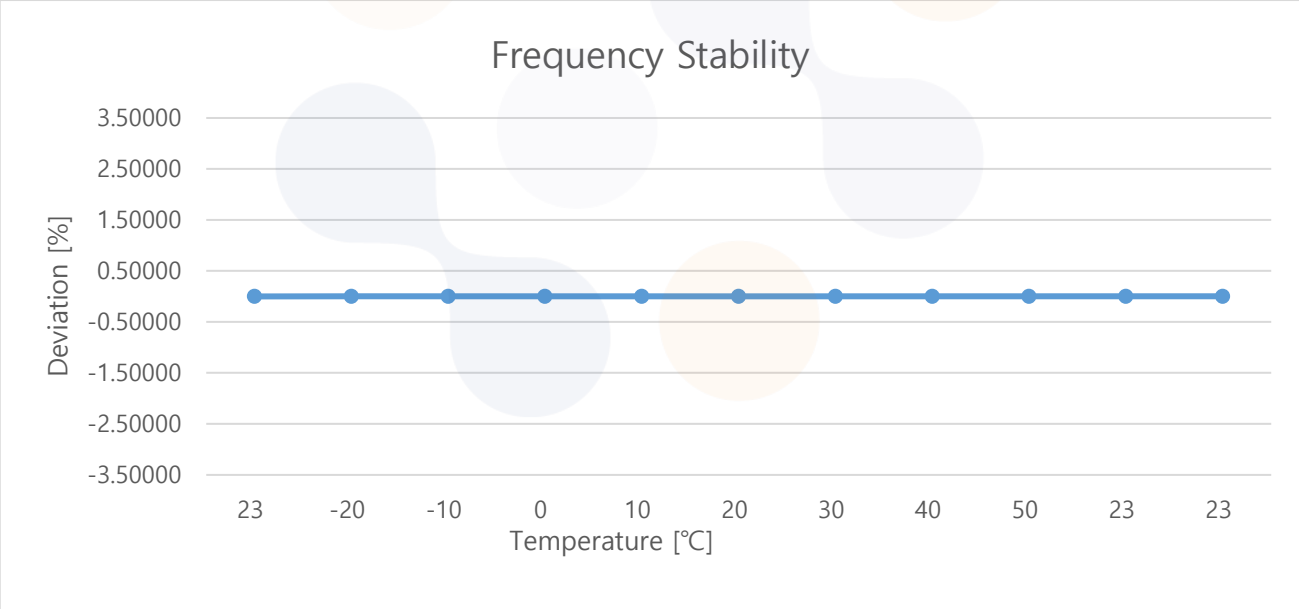


[DC 12 V]

Test band : UNII-1

Frequency (㎐) : 5 180 000 000

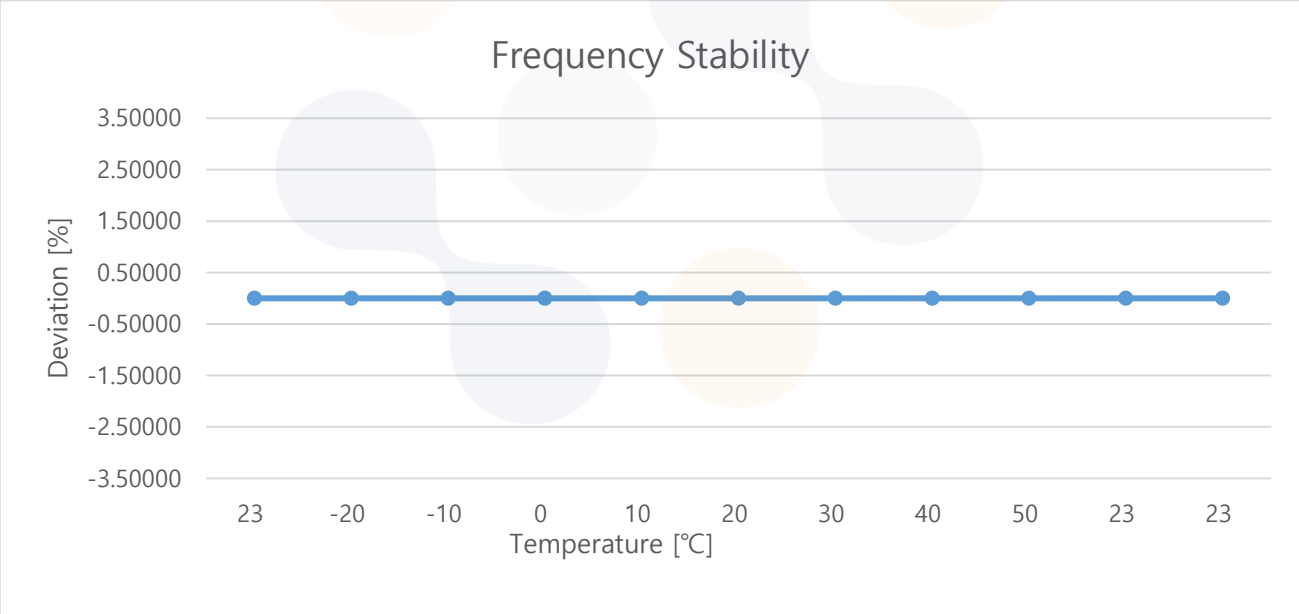
Voltage (%)	Power (V)	Temp. (°C)	Frequency (㎐)	Frequency error (㎐)	Deviation	
					(ppm)	(%)
100%	12.00	+23(Ref)	5 179 994 210	-5 790	-1.12	-0.000 11
		-20	5 180 028 970	28 970	5.59	0.000 56
		-10	5 180 029 770	29 770	5.75	0.000 58
		0	5 180 023 580	23 580	4.55	0.000 46
		+10	5 180 014 190	14 190	2.74	0.000 27
		+20	5 180 004 200	4 200	0.81	0.000 08
		+30	5 179 995 000	-5 000	-0.97	-0.000 10
		+40	5 179 990 610	-9 390	-1.81	-0.000 18
		+50	5 179 995 000	-5 000	-0.97	-0.000 10
85%	10.20	+23(Ref)	5 179 995 000	-5 000	-0.97	-0.000 10
115%	13.80	+23(Ref)	5 179 995 400	-4 600	-0.89	-0.000 09



Test band : UNII-2A

Frequency (㎐) : 5 260 000 000

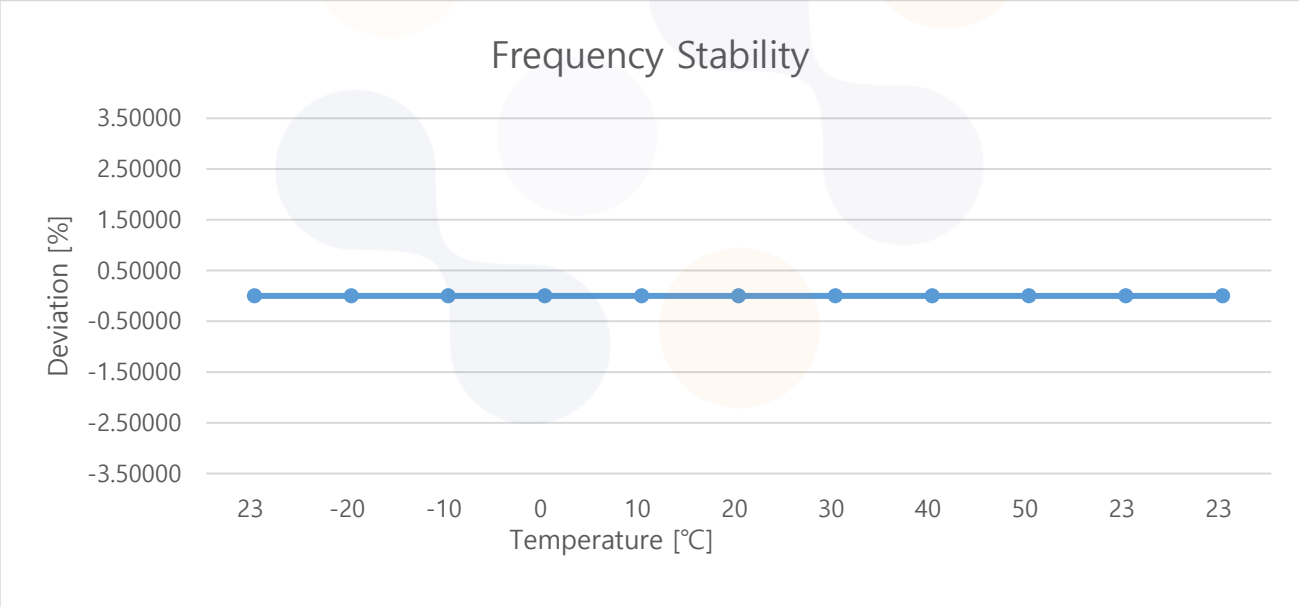
Voltage (%)	Power (V)	Temp. (°C)	Frequency (㎐)	Frequency error (㎐)	Deviation	
					(ppm)	(%)
100%	12.00	+23(Ref)	5 259 995 800	-4 200	-0.80	-0.000 08
		-20	5 260 028 170	28 170	5.36	0.000 54
		-10	5 260 030 570	30 570	5.81	0.000 58
		0	5 260 025 770	25 770	4.90	0.000 49
		+10	5 260 016 380	16 380	3.11	0.000 31
		+20	5 260 006 190	6 190	1.18	0.000 12
		+30	5 259 996 200	-3 800	-0.72	-0.000 07
		+40	5 259 990 610	-9 390	-1.79	-0.000 18
		+50	5 259 993 410	-6 590	-1.25	-0.000 13
85%	10.20	+23(Ref)	5 259 996 800	-3 200	-0.61	-0.000 06
115%	13.80	+23(Ref)	5 259 997 400	-2 600	-0.49	-0.000 05



Test band : UNII-2C

Frequency (㎐) : 5 500 000 000

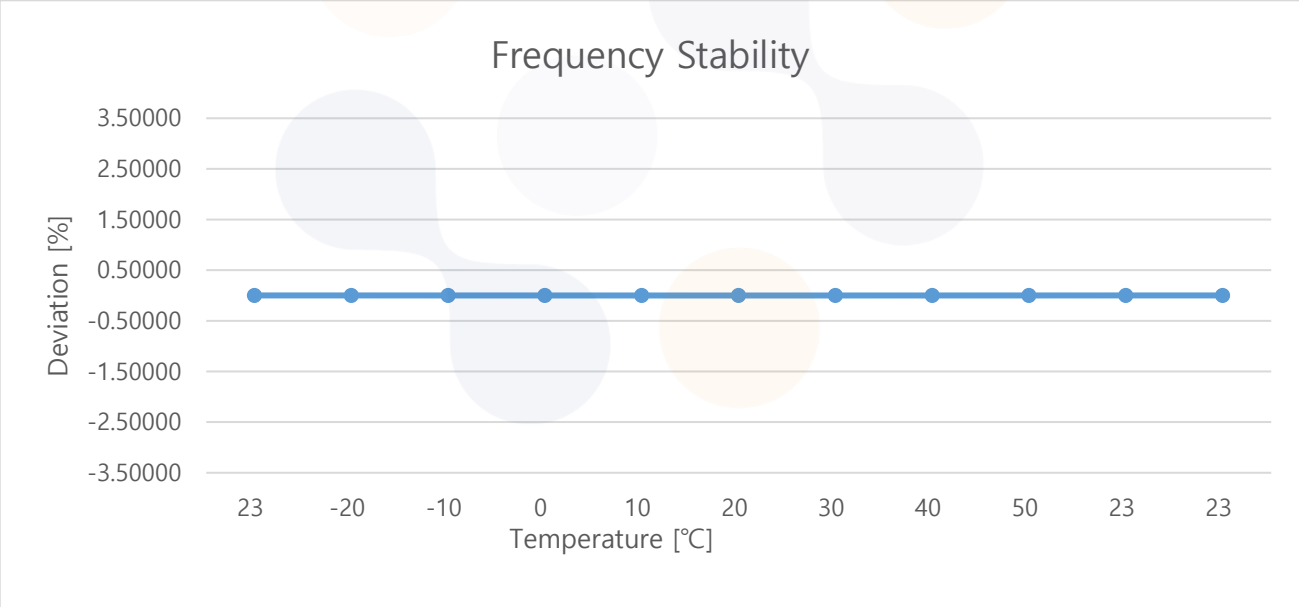
Voltage (%)	Power (V)	Temp. (°C)	Frequency (㎐)	Frequency error (㎐)	Deviation	
					(ppm)	(%)
100%	12.00	+23(Ref)	5 499 998 800	-1 200	-0.22	-0.000 02
		-20	5 500 029 170	29 170	5.30	0.000 53
		-10	5 500 032 170	32 170	5.85	0.000 59
		0	5 500 027 570	27 570	5.01	0.000 50
		+10	5 500 016 980	16 980	3.09	0.000 31
		+20	5 500 007 190	7 190	1.31	0.000 13
		+30	5 499 996 400	-3 600	-0.65	-0.000 07
		+40	5 499 990 410	-9 590	-1.74	-0.000 17
		+50	5 499 992 610	-7 390	-1.34	-0.000 13
85%	10.20	+23(Ref)	5 500 000 000	0	0	0
115%	13.80	+23(Ref)	5 500 001 200	1 200	0.22	0.000 02



Test band : UNII-3

Frequency (㎐) : 5 745 000 000

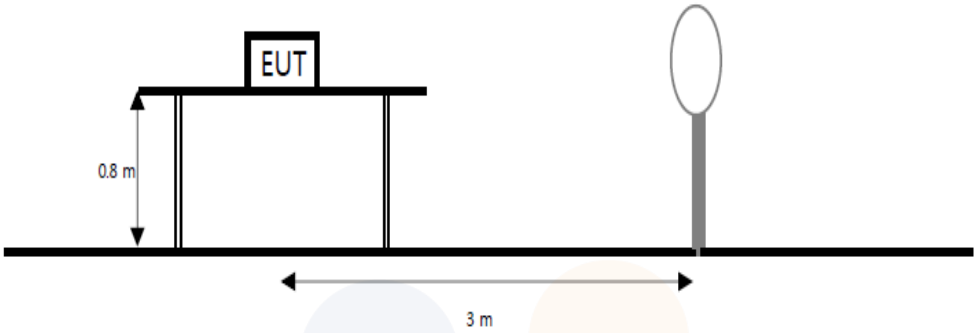
Voltage (%)	Power (V)	Temp. (°C)	Frequency (㎐)	Frequency error (㎐)	Deviation	
					(ppm)	(%)
100%	12.00	+23(Ref)	5 744 999 000	-1 000	-0.17	-0.000 02
		-20	5 745 030 570	30 570	5.32	0.000 53
		-10	5 745 033 770	33 770	5.88	0.000 59
		0	5 745 028 970	28 970	5.04	0.000 50
		+10	5 745 019 380	19 380	3.37	0.000 34
		+20	5 745 008 390	8 390	1.46	0.000 15
		+30	5 744 997 000	-3 000	-0.52	-0.000 05
		+40	5 744 989 810	-10 190	-1.77	-0.000 18
		+50	5 744 991 810	-8 190	-1.43	-0.000 14
85%	10.20	+23(Ref)	5 745 000 600	600	0.10	0.000 01
115%	13.80	+23(Ref)	5 745 001 800	18 00	0.31	0.000 03



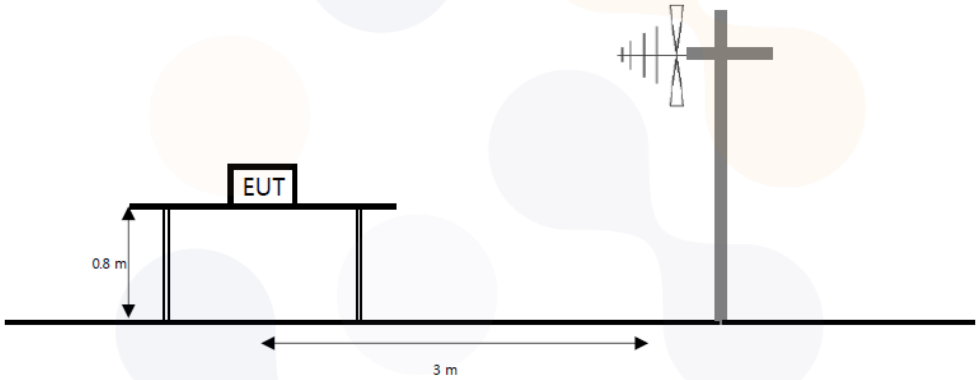
7.7. Spurious Emission, Band Edge and Restricted bands

Test setup

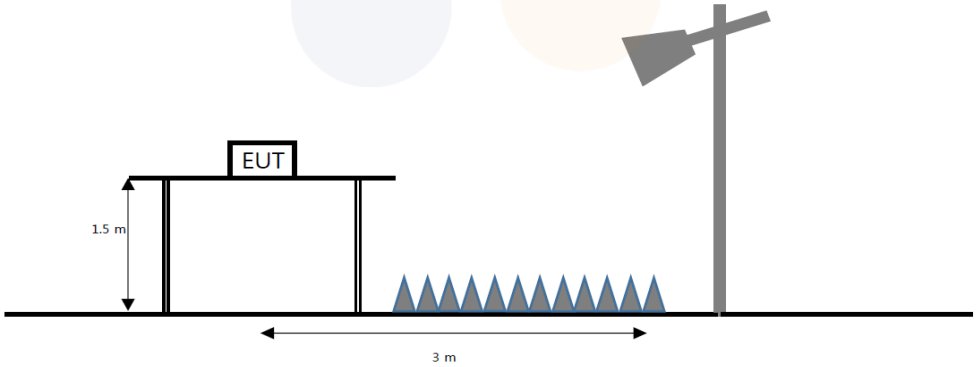
The diagram below shows the test setup that is utilized to make the measurements for emission from 9 ㎑ to 30 ㎒ Emissions



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 dBm/㎒
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 dBm/㎒.

For transmitters operating in the 5.725-5.85 ㎓ band: All emissions shall be limited to a level of -27 dBm/㎒ at 75 ㎒ or more above or below the band edge increasing linearly to 10 dBm/㎒ 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 dBm/㎒ at 5 ㎒ above or below the band edge, and from 5 ㎒ above or below the band edge increasing linearly to a level of 27 dBm/㎒ 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 dB 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 dB instead of 20 dB. 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 dB 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.

Notes:

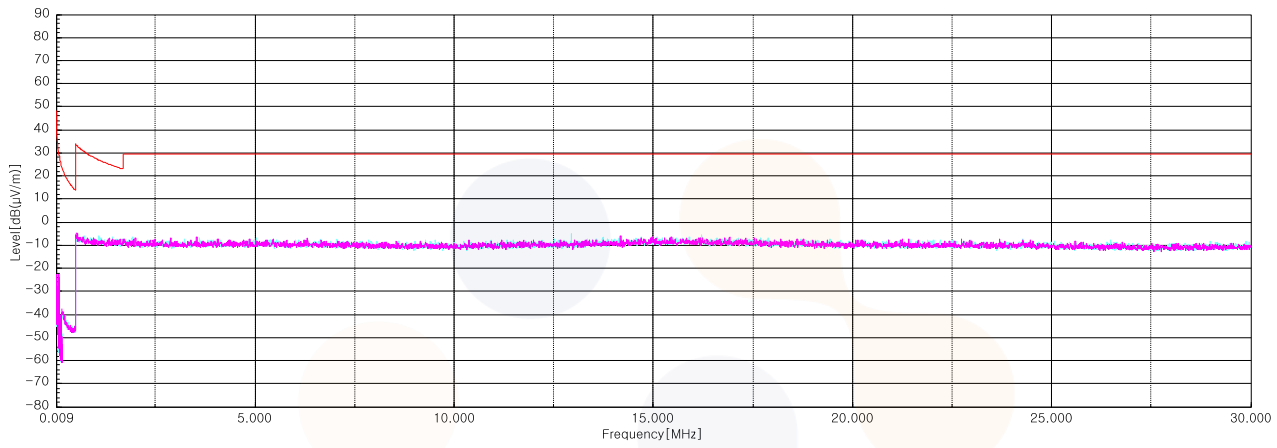
1. *f* <30 ㎒, extrapolation factor of 40 dB/decade of distance. $F_d = 40\log(D_m/D_s)$
   f ≥30 ㎒, extrapolation factor of 20 dB/decade of distance. $F_d = 20\log(D_m/D_s)$
   Where:
   F_d= Distance factor in dB
   D_m= Measurement distance in meters
   D_s= Specification distance in meters
2. Factors(dB) = Antenna factor(dB/m) + Cable loss(dB) + or Amp. gain(dB) + or F_d(dB)
3. The worst-case emissions are reported however emissions whose levels were not within 20 dB 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. 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 dB of the limit, then the following statement shall be made: “No spurious emissions were detected within 20 dB of the limit.”
7. 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.
8. 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 dBμV/m, which is equivalent to Y - 51.5 = Z dBμA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to be 15.209(a) limit.

[DC 5V]

Test results (Below 30 ㎒) – Worst case: 802.11a / UNII-2C_5 700 ㎒

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

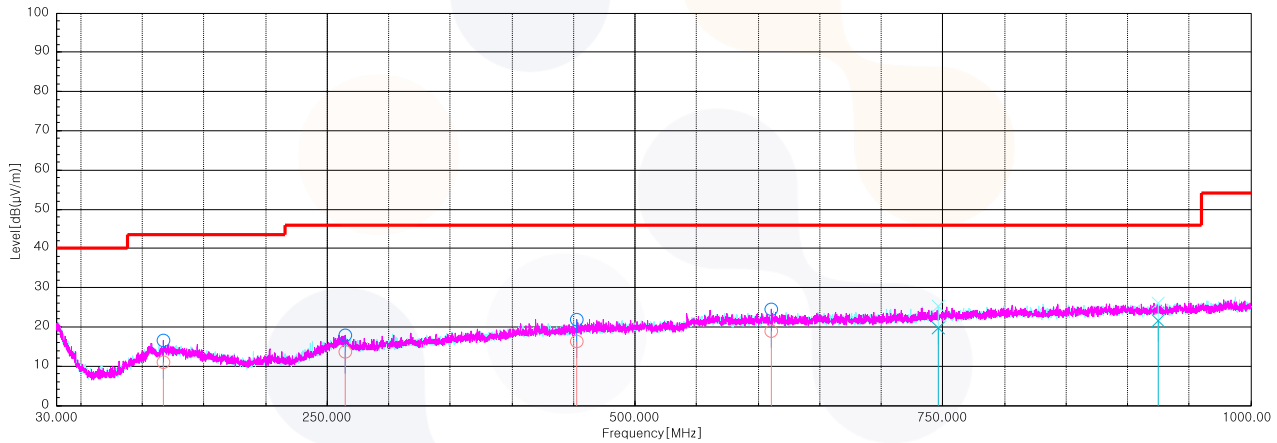
Horizontal/Vertical



Test results (Below 1 000 ㎒) – Worst case: 802.11a / UNII-2C_5 700 ㎒

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								
117.30[1)]	H	24.80	17.93	-31.58	-	11.15	43.50	32.35
264.50[1)]	H	24.40	20.10	-30.79	-	13.71	46.00	32.29
452.68	H	24.30	22.60	-30.61	-	16.29	46.00	29.71
610.91[1)]	H	24.40	24.70	-30.29	-	18.81	46.00	27.19
746.10	V	24.40	25.50	-30.19	-	19.71	46.00	26.29
924.70	V	23.80	26.50	-28.72	-	21.58	46.00	24.42

Horizontal/Vertical



Test results (Above 1 000 ㎒)

802.11a_UNII-1

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								
5 142.05[1)]	V	45.50	33.28	-27.43	-	51.35	74.00	22.65
10 362.08[1)]	V	54.90	38.88	-43.85	-	49.93	68.20	18.27
15 548.20[1)]	H	54.00	38.20	-41.54	-	50.66	74.00	23.34
Average Data								
5 142.05[1)]	V	35.12	33.28	-27.43	-	40.97	54.00	13.03

Middle Channel (5 200 ㎒)

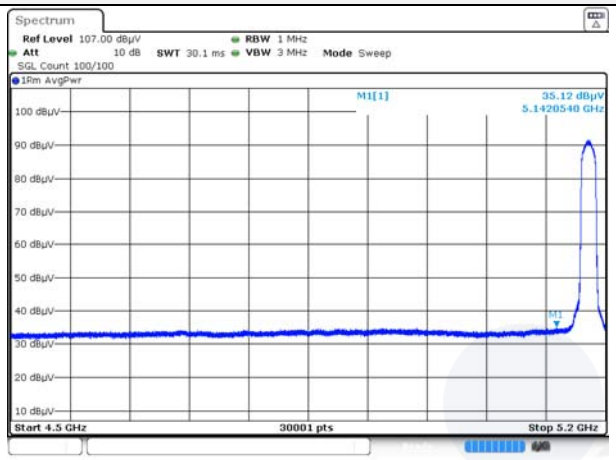
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 414.60	V	55.50	39.03	-43.84	-	50.69	68.20	17.51
15 593.05[1)]	H	54.20	38.11	-41.54	-	50.77	74.00	23.23
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

Highest Channel (5 240 ㎒)

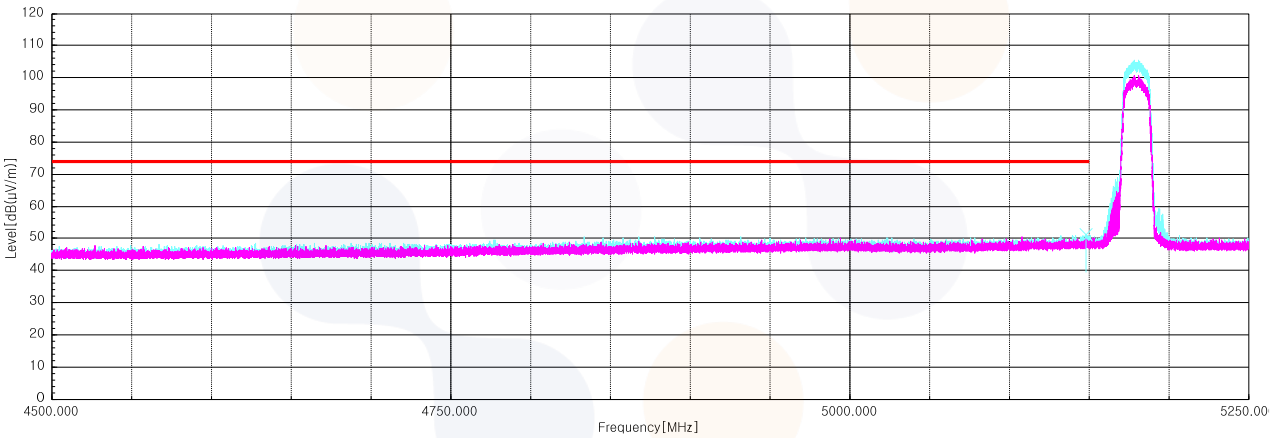
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 487.43	V	55.80	39.00	-43.84	-	50.96	68.20	17.24
15 711.50[1)]	H	53.30	38.10	-41.52	-	49.88	74.00	24.12
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11a_UNII-1

Lowest Channel (5 180 ㎒)

Average data	
	Blank

Horizontal/Vertical for Band-edge



802.11n HT20_UNII-1

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								
4 997.95[1)]	V	45.50	32.90	-27.49	-	50.91	74.00	23.09
10 353.27	H	53.90	38.89	-43.85	-	48.94	68.20	19.26
15 401.00[1)]	V	53.30	38.60	-41.59	-	50.31	74.00	23.69
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

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								
10 407.32	H	55.10	39.01	-43.84	-	50.27	68.20	17.93
15 588.83[1)]	H	53.90	38.12	-41.54	-	50.48	74.00	23.52
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

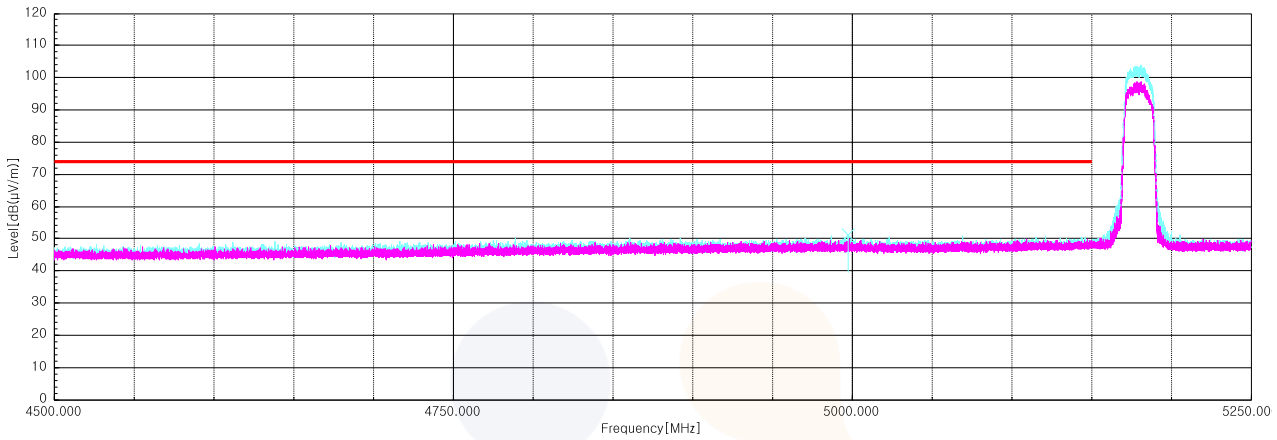
Highest Channel (5 240 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 482.45	V	54.90	39.00	-43.84	-	50.06	68.20	18.14
15 725.30[1)]	V	53.80	38.10	-41.51	-	50.39	74.00	23.61
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11n HT20_UNII-1

Lowest Channel (5 180 ㎒)

Horizontal/Vertical for Band-edge



802.11ac VHT20_UNII-1

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								
5 138.23[1)]	V	45.90	33.28	-27.43	-	51.75	74.00	22.25
10 362.08	H	55.40	38.88	-43.85	-	50.43	68.20	17.77
15 532.87[1)]	V	54.00	38.23	-41.54	-	50.69	74.00	23.31
Average Data								
5 138.23[1)]	V	34.72	33.28	-27.43	0.24	40.81	54.00	13.19

Middle Channel (5 200 ㎒)

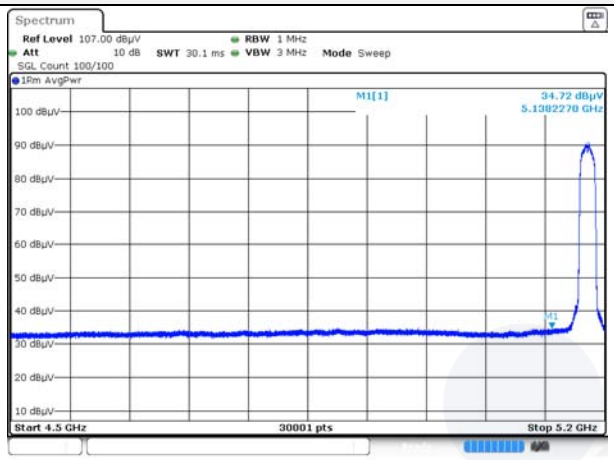
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 411.53	V	55.20	39.02	-43.84	-	50.38	68.20	17.82
15 591.13[1)]	V	54.00	38.12	-41.54	-	50.58	74.00	23.42
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

Highest Channel (5 240 ㎒)

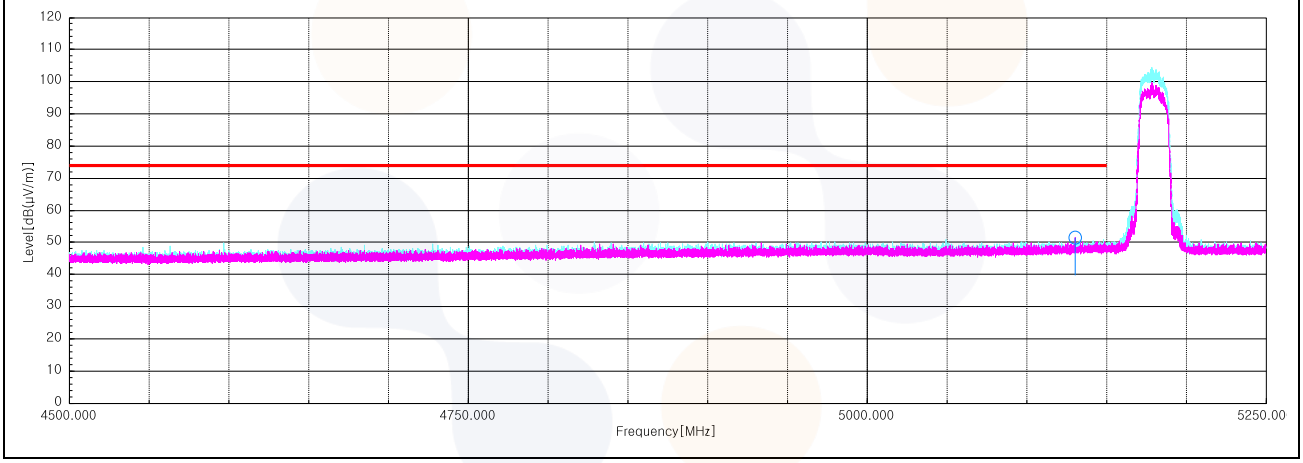
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 469.80	V	55.40	39.00	-43.84	-	50.56	68.20	17.64
15 722.62[1)]	H	54.00	38.10	-41.51	-	50.59	74.00	23.41
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11ac VHT20_UNII-1

Lowest Channel (5 180 ㎒)

Average data	
	Blank

Horizontal/Vertical for Band-edge

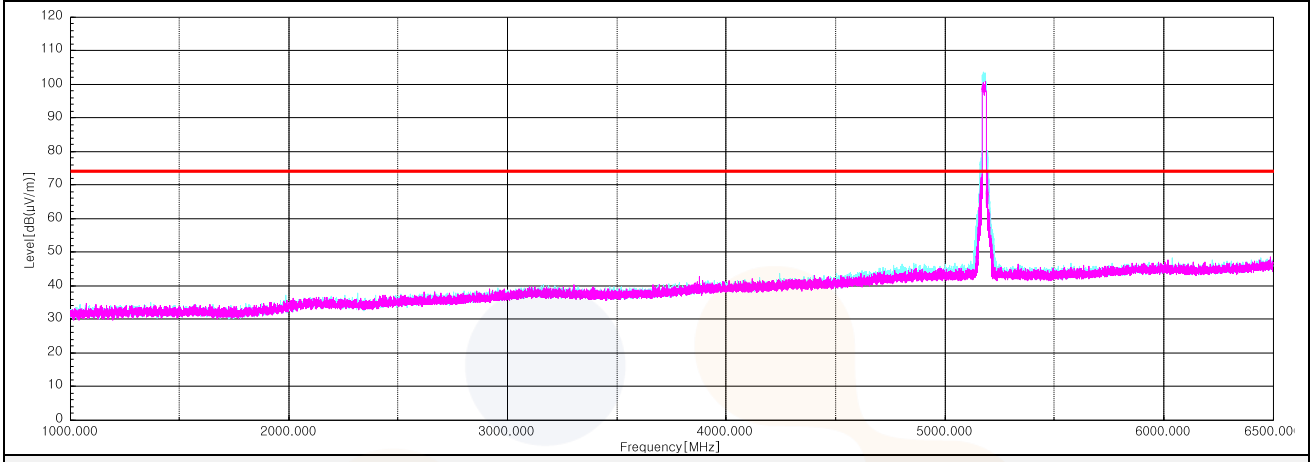


Plot of Harmonics and Spurious Emissions

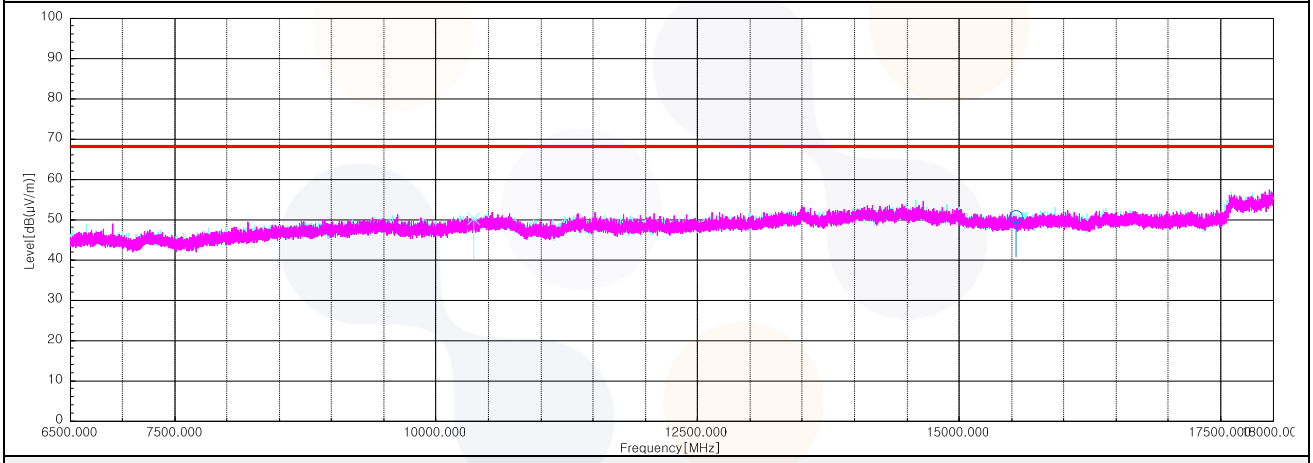
In order to simplify the report, attached plots were only the lowest margin condition

802.11a UNII-1_Lowest Channel (5 180 ㎒)

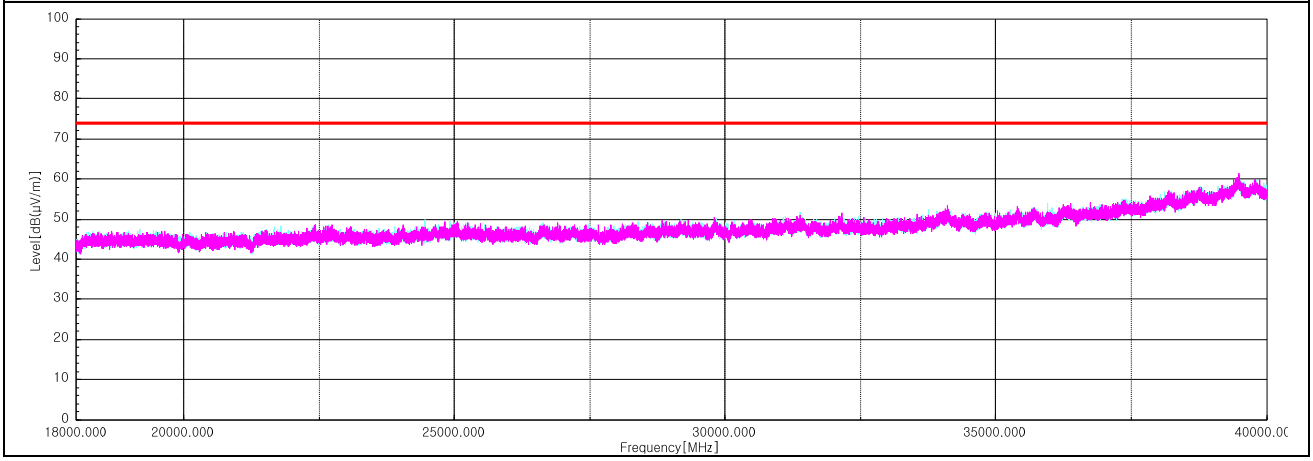
Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



802.11a UNII-2A

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								
10 531.90	V	55.40	39.00	-43.92	-	50.48	68.20	17.72
15 778.20[1)]	V	54.10	38.10	-41.48	-	50.72	74.00	23.28
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

Middle Channel (5 280 ㎒)

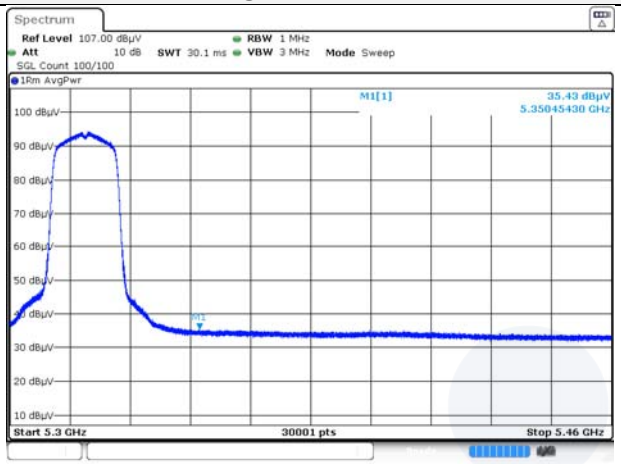
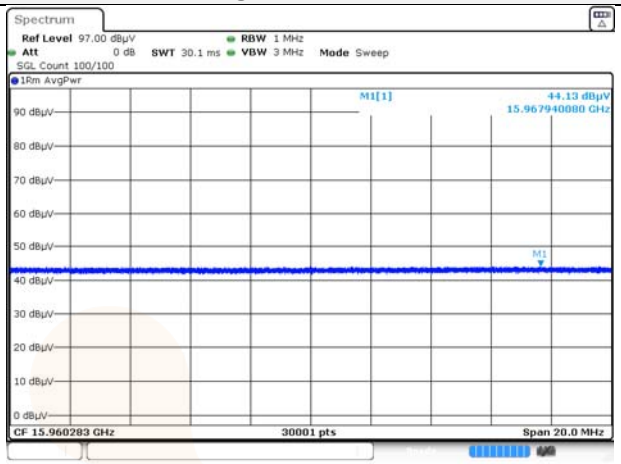
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 552.60	V	54.60	39.11	-43.96	-	49.75	68.20	18.45
15 839.15[1)]	H	53.30	38.28	-41.42	-	50.16	74.00	23.84
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

Highest Channel (5 320 ㎒)

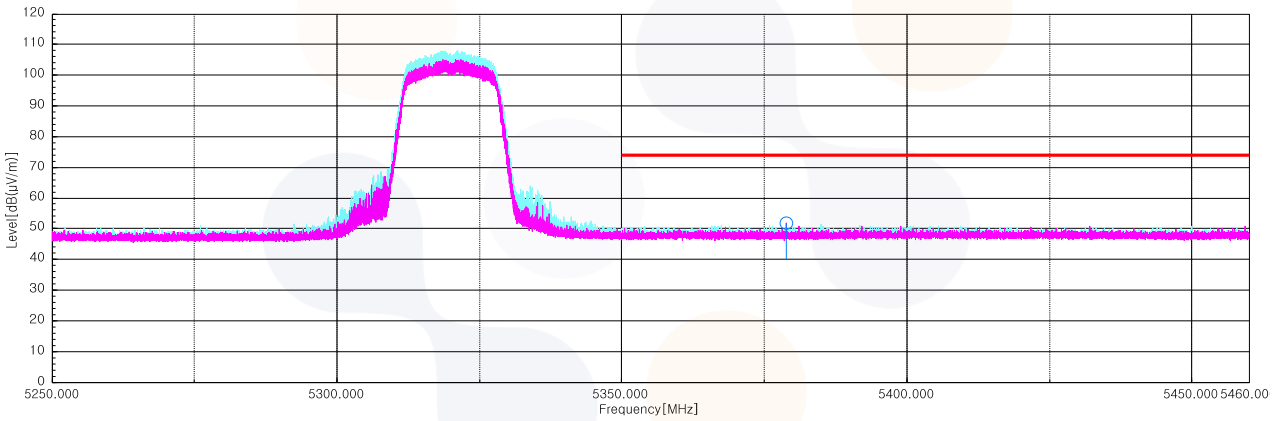
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 350.45[1)]	V	45.70	33.00	-27.07	-	51.63	74.00	22.37
10 639.23[1)]	H	55.00	39.28	-44.17	-	50.11	74.00	23.89
15 967.94[1)]	V	55.40	38.20	-41.29	-	52.31	74.00	21.69
Average Data								
5 350.45[1)]	V	35.43	33.00	-27.07	-	41.36	54.00	12.64
15 967.94[1)]	V	44.13	38.20	-41.29	-	41.04	54.00	12.96

802.11a_UNII-2A

Highest Channel (5 320 ㎒)

Average (5 350.45 ㎒)	Average (15 967.94 ㎒)
	

Horizontal/Vertical for Band-edge



802.11n HT20_UNII-2A

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								
10 514.27	H	54.50	39.00	-43.87	-	49.63	68.20	18.57
15 743.32[1)]	V	54.20	38.10	-41.51	-	50.79	74.00	23.21
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

Middle Channel (5 280 ㎒)

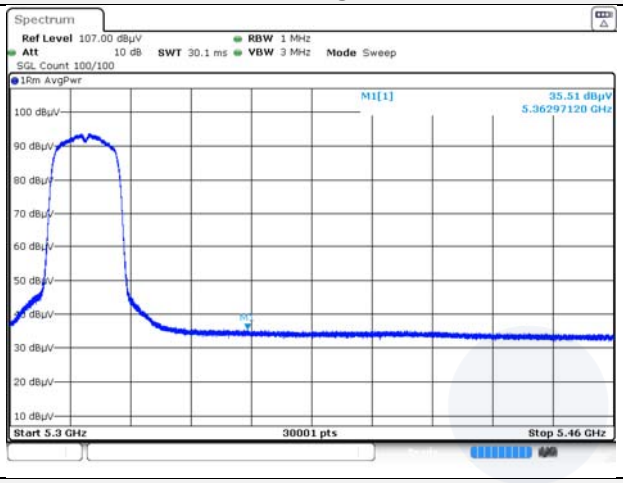
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 554.52	H	54.50	39.11	-43.97	-	49.64	68.20	18.56
15 828.42[1)]	H	53.30	38.26	-41.43	-	50.13	74.00	23.87
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

Highest Channel (5 320 ㎒)

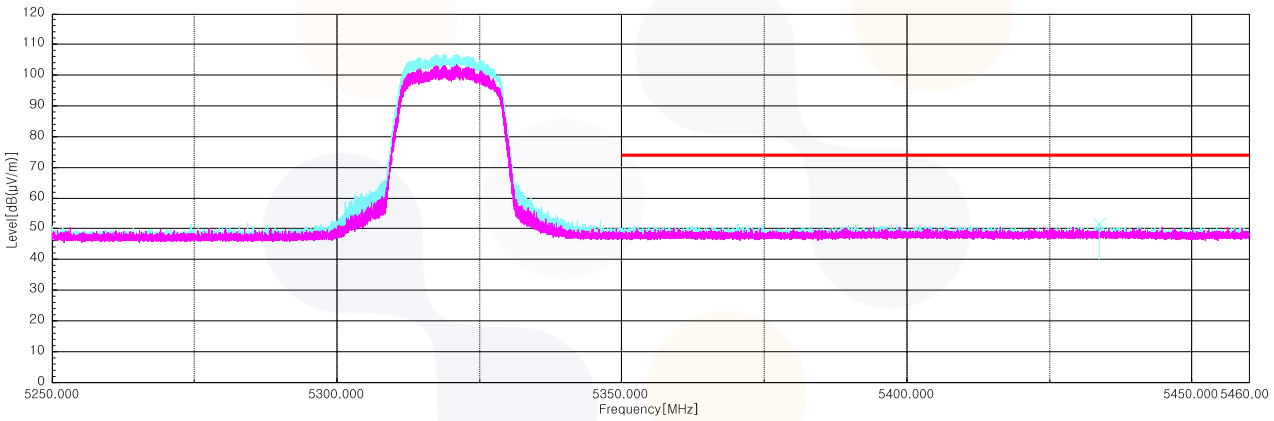
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 362.97[1)]	V	45.30	33.00	-27.03	-	51.27	74.00	22.73
10 643.07[1)]	H	54.80	39.29	-44.18	-	49.91	74.00	24.09
15 972.55[1)]	H	53.50	38.20	-41.29	-	50.41	74.00	23.59
Average Data								
5 362.97[1)]	V	35.51	33.00	-27.03	0.25	41.73	54.00	12.27

802.11n HT20_UNII-2A

Highest Channel (5 320 ㎒)

Average	
	Blank

Horizontal/Vertical for Band-edge



802.11ac VHT20_UNII-2A

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								
10 517.72	H	55.20	39.00	-43.88	-	50.32	68.20	17.88
15 771.23[1)]	V	54.60	38.10	-41.49	-	51.21	74.00	22.79
Average Data								
15 771.23[1)]	V	44.31	38.10	-41.49	-	40.92	54.00	13.08

Middle Channel (5 280 ㎒)

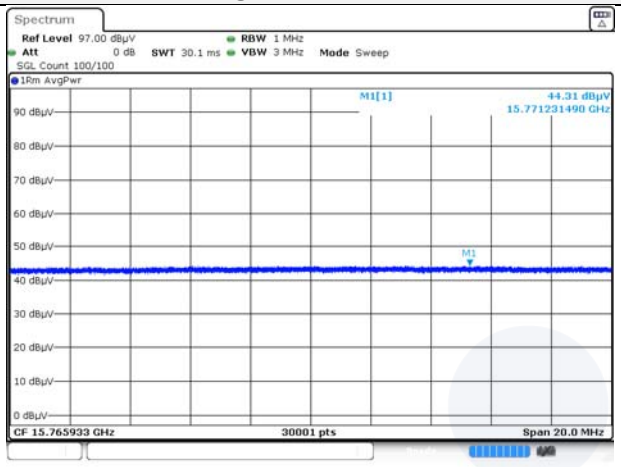
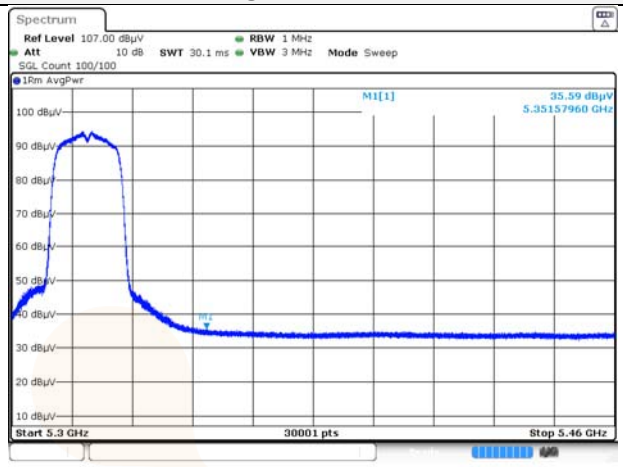
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 592.08	V	54.70	39.18	-44.06	-	49.82	68.20	18.38
15 847.20[1)]	H	52.90	38.29	-41.41	-	49.78	74.00	24.22
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

Highest Channel (5 320 ㎒)

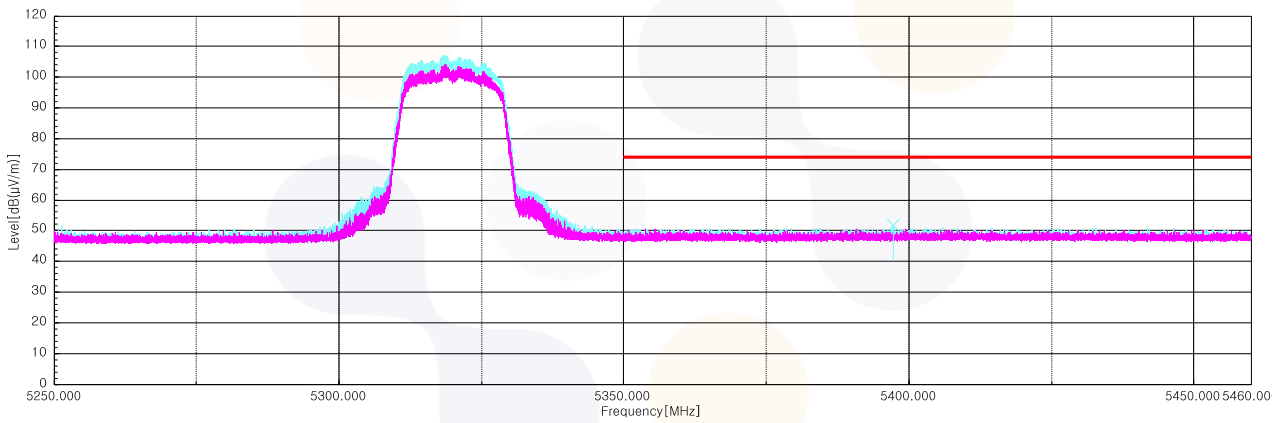
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 351.58[1)]	V	45.60	33.00	-27.07	-	51.53	74.00	22.47
10 631.18[1)]	H	54.70	39.26	-44.15	-	49.81	74.00	24.19
15 951.47[1)]	V	54.00	38.20	-41.31	-	50.89	74.00	23.11
Average Data								
5 351.58[1)]	V	35.59	33.00	-27.07	0.24	41.76	54.00	12.24

802.11ac VHT20_UNII-2A

Highest Channel (5 320 ㎒)

Average (15 771.23 ㎒)	Average (5 351.58 ㎒)
	

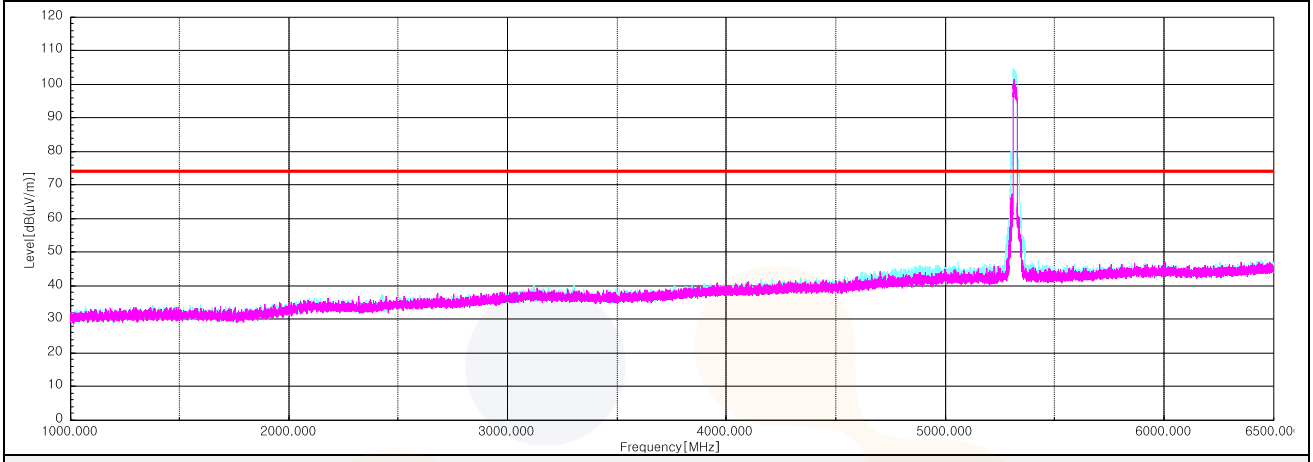
Horizontal/Vertical for Band-edge



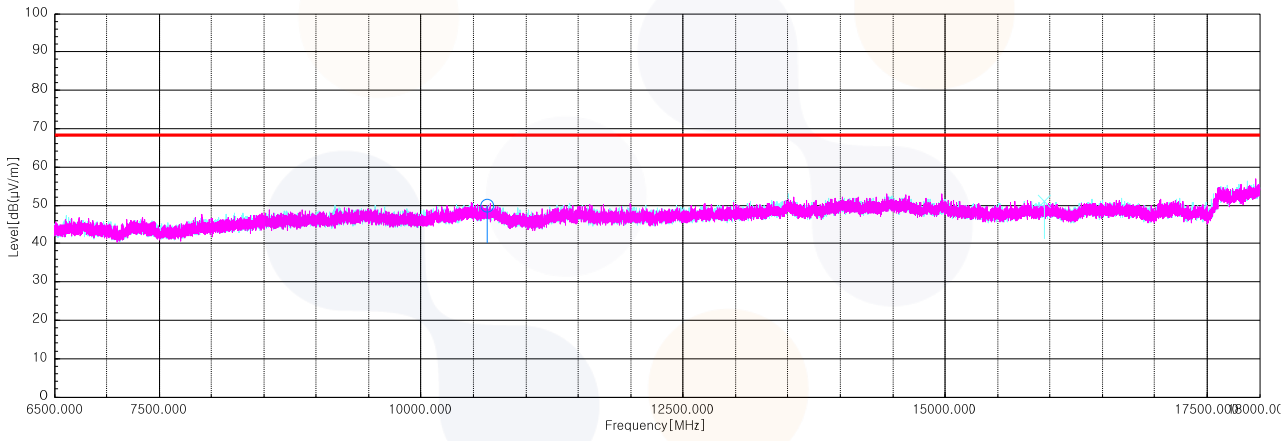
Plot of Harmonics and Spurious Emissions
In order to simplify the report, attached plots were only the lowest margin condition

802.11ac VHT20_UNII-2A_Highest Channel (5 320 ㎒)

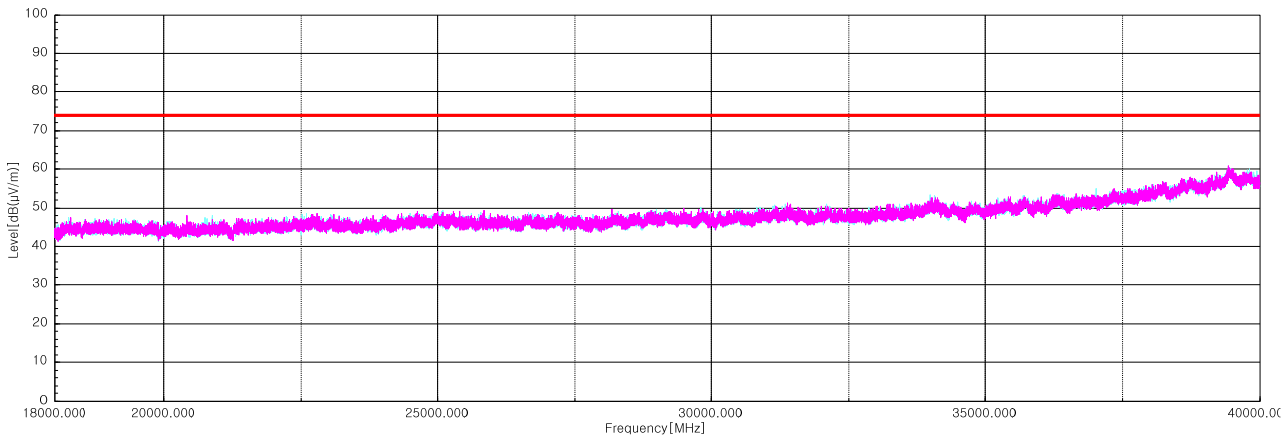
Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



802.11a UNII-2C

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								
5 459.59[1)]	V	45.30	33.00	-26.73	-	51.57	74.00	22.43
11 003.02[1)]	H	53.10	39.09	-43.77	-	48.42	74.00	25.58
16 493.12	V	53.60	38.10	-41.39	-	50.31	68.20	17.89
Average Data								
5 459.59[1)]	V	34.24	33.00	-26.73	-	40.51	54.00	13.49

Middle Channel (5 600 ㎒)

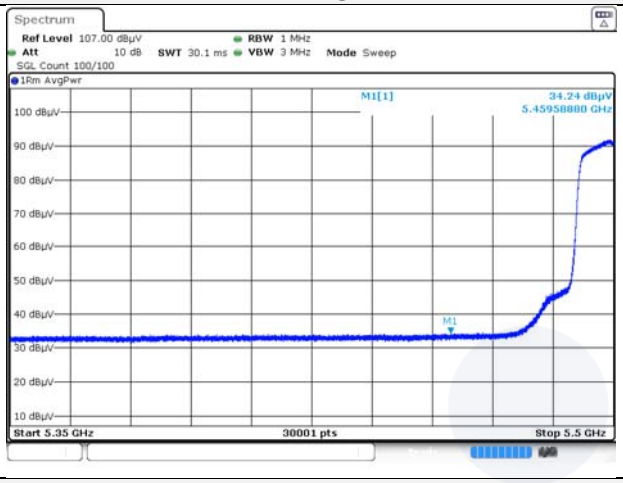
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 206.95[1)]	H	53.30	39.11	-43.56	-	48.85	74.00	25.15
16 814.35	H	55.20	38.10	-41.85	-	51.45	68.20	16.75
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

Highest Channel (5 700 ㎒)

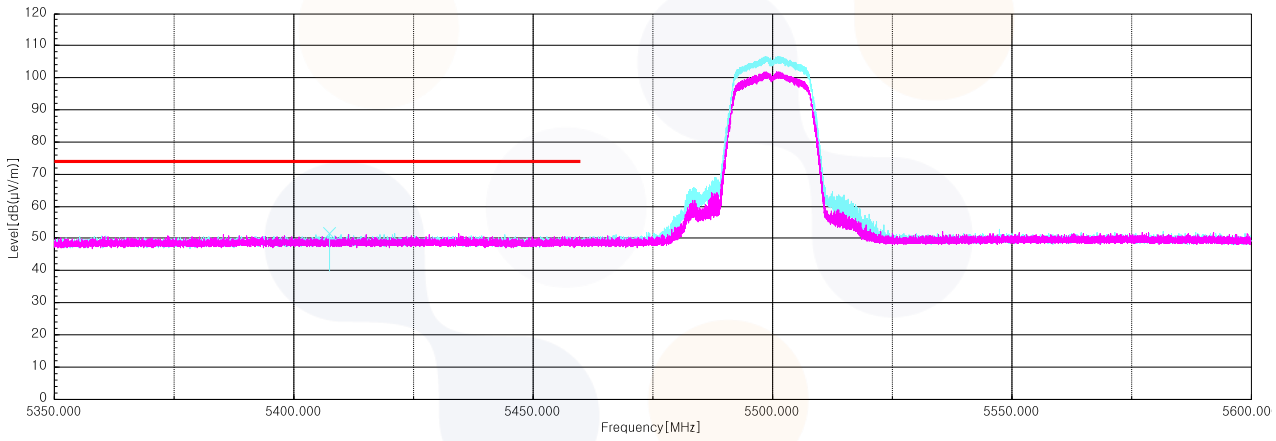
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 819.32	H	45.70	34.08	-26.39	-	53.39	68.20	14.81
11 401.68[1)]	H	53.80	39.20	-43.05	-	49.95	74.00	24.05
17 067.73	V	54.80	38.14	-42.11	-	50.83	68.20	17.37
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

802.11a_UNII-2C

Lowest Channel (5 500 ㎒)

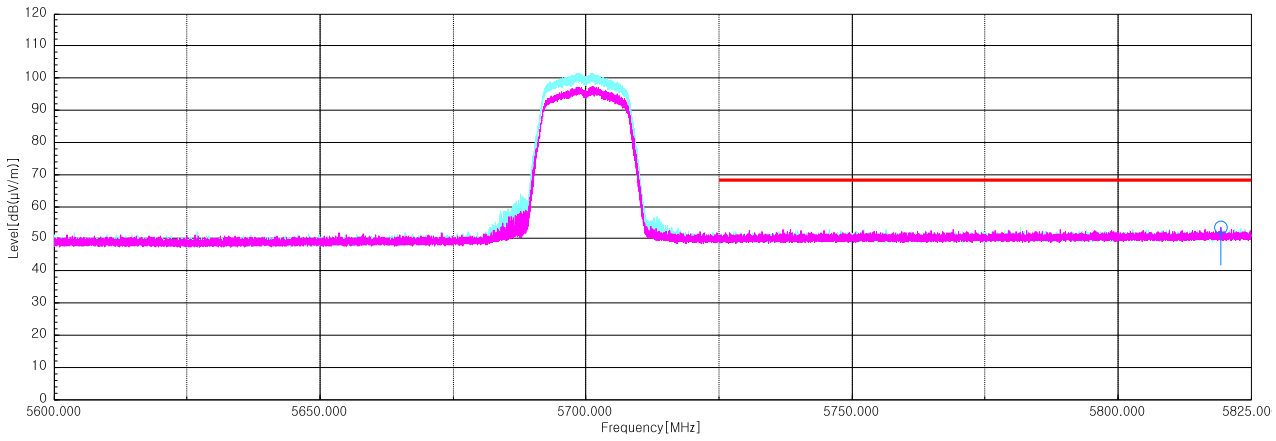
Average	
	Blank

Horizontal/Vertical for Band-edge



Highest Channel (5 700 ㎒)

Horizontal/Vertical for Band-edge



802.11n HT20_UNII-2C

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								
5 459.28[1)]	V	45.50	33.00	-26.74	-	51.76	74.00	22.24
10 980.78[1)]	H	54.10	39.14	-43.82	-	49.42	74.00	24.58
17 149.77	H	54.70	38.10	-41.68	-	51.12	68.20	17.08
Average Data								
5 459.28[1)]	V	34.07	33.00	-26.74	0.25	40.58	54.00	13.42

Middle Channel (5 600 ㎒)

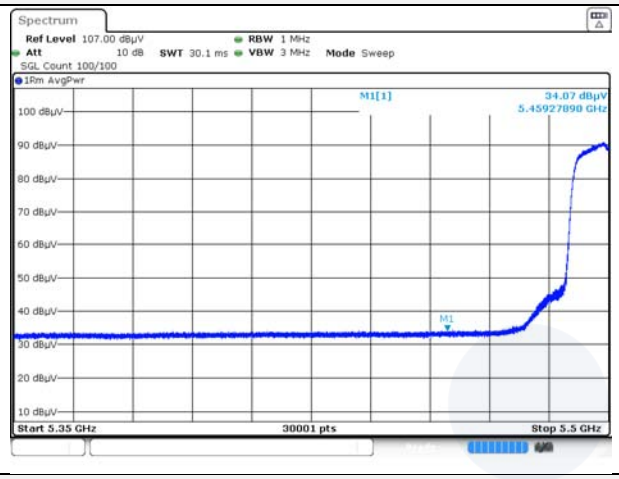
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 213.47[1)]	H	53.30	39.13	-43.56	-	48.87	74.00	25.13
16 800.17	H	55.20	38.10	-41.81	-	51.49	68.20	16.71
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

Highest Channel (5 700 ㎒)

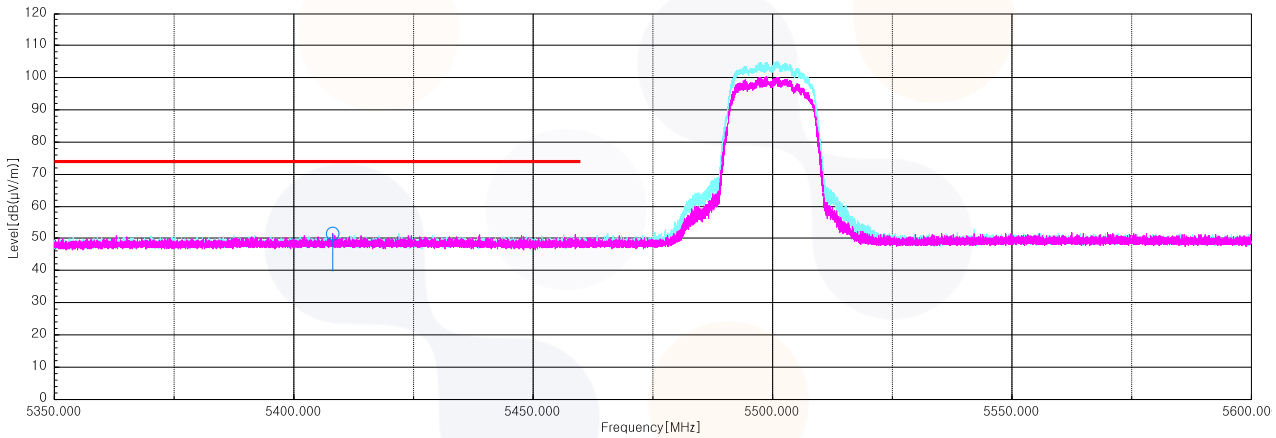
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 786.87	V	45.90	33.95	-26.51	-	53.34	68.20	14.86
11 403.98[1)]	V	54.10	39.20	-43.04	-	50.26	74.00	23.74
17 079.62	H	55.20	38.16	-42.05	-	51.31	68.20	16.89
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11n HT20_UNII-2C

Lowest Channel (5 500 ㎒)

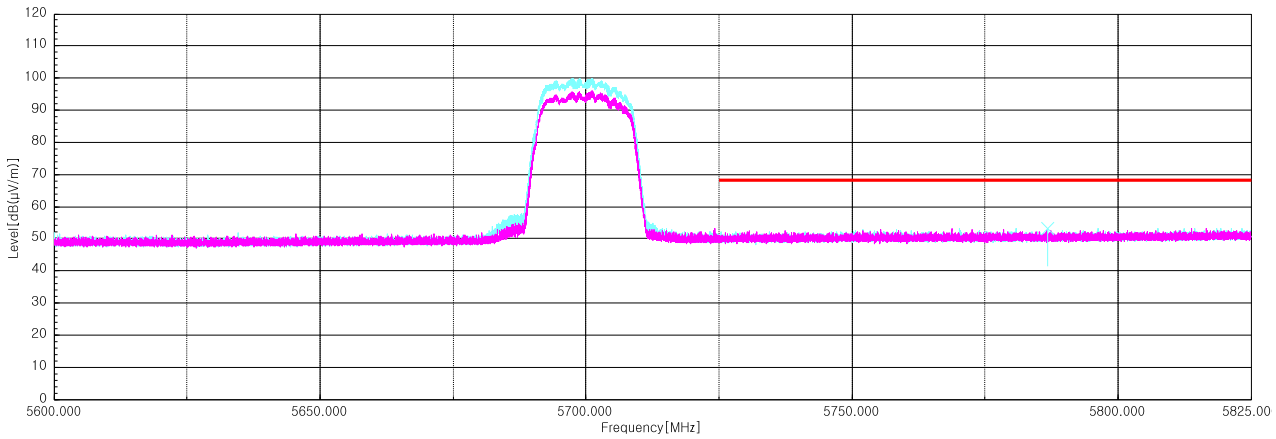
Average data	
	Blank

Horizontal/Vertical for Band-edge



Highest Channel (5 700 ㎒)

Horizontal/Vertical for Band-edge



802.11 ac VHT20_UNII-2C

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								
5 456.64[1)]	V	45.10	33.00	-26.74	-	51.36	74.00	22.64
10 976.95[1)]	V	52.60	39.15	-43.83	-	47.92	74.00	26.08
16 488.52	V	54.00	38.10	-41.40	-	50.70	68.20	17.50
Average Data								
5 456.64[1)]	V	34.13	33.00	-26.74	0.24	40.63	54.00	13.37

Middle Channel (5 600 ㎒)

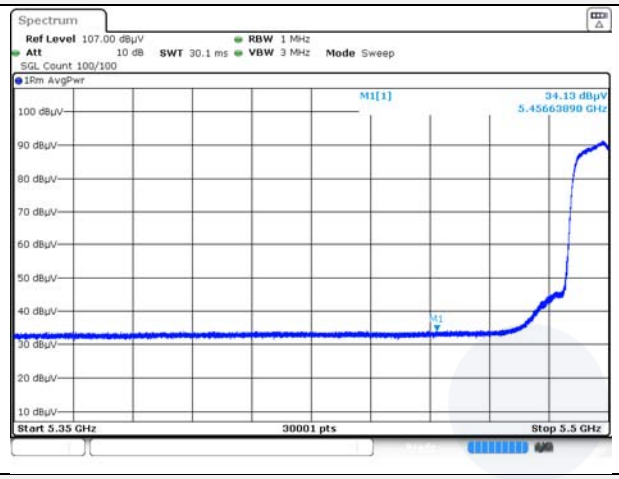
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 206.95[1)]	H	53.60	39.11	-43.56	-	49.15	74.00	24.85
16 808.22	V	54.80	38.10	-41.83	-	51.07	68.20	17.13
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

Highest Channel (5 700 ㎒)

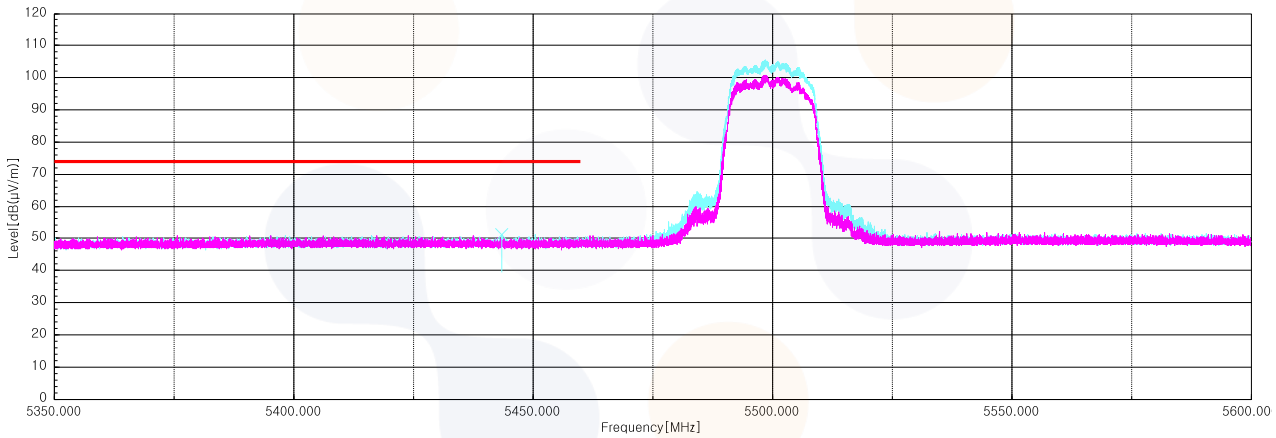
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 794.45	V	45.80	33.98	-26.48	-	53.30	68.20	14.90
11 408.97[1)]	H	54.10	39.20	-43.02	-	50.28	74.00	23.72
17 093.03	V	54.80	38.19	-41.98	-	51.01	68.20	17.19
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11ac VHT20_UNII-2C

Lowest Channel (5 500 ㎒)

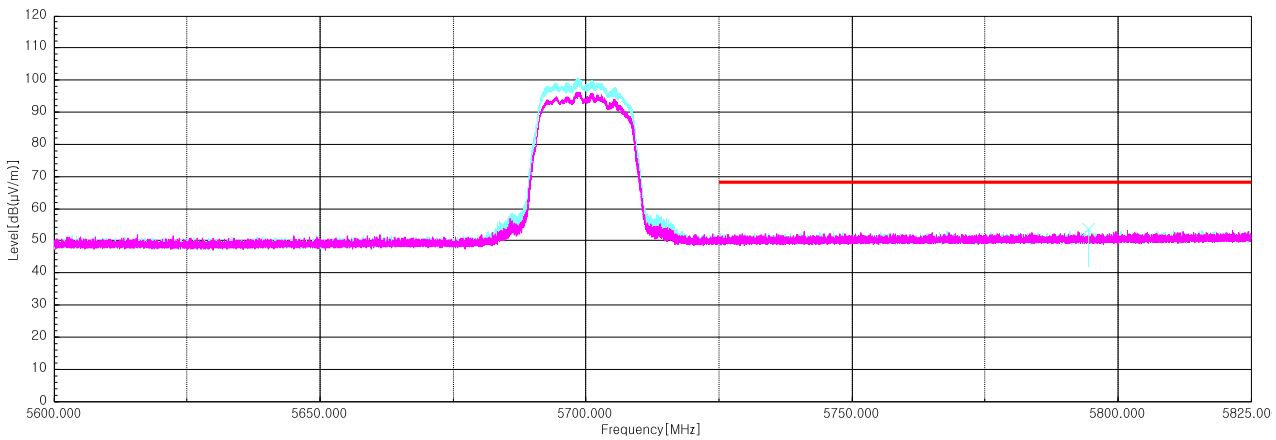
Average data	
	Blank

Horizontal/Vertical for Band-edge



Highest Channel (5 700 ㎒)

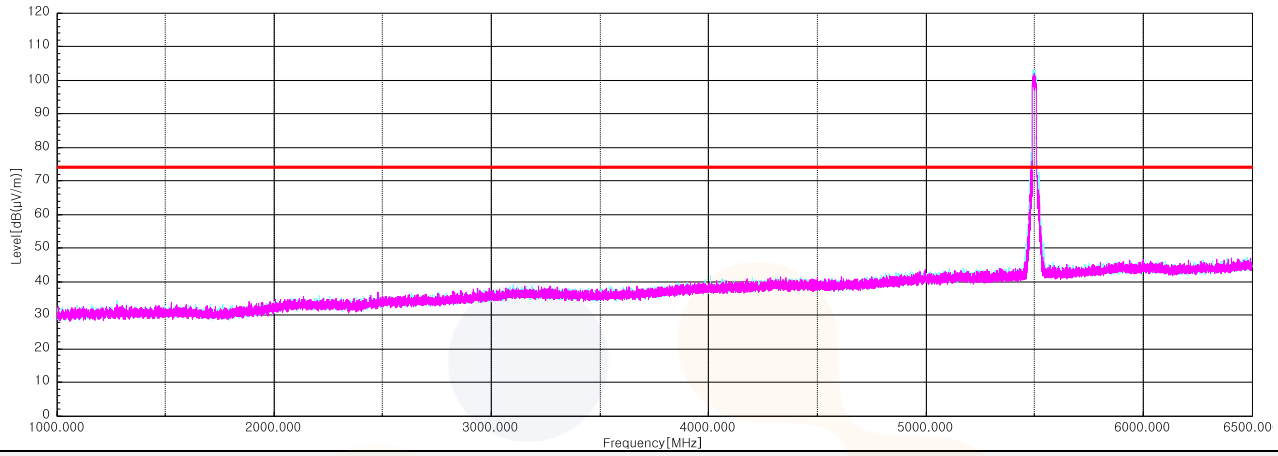
Horizontal/Vertical for Band-edge



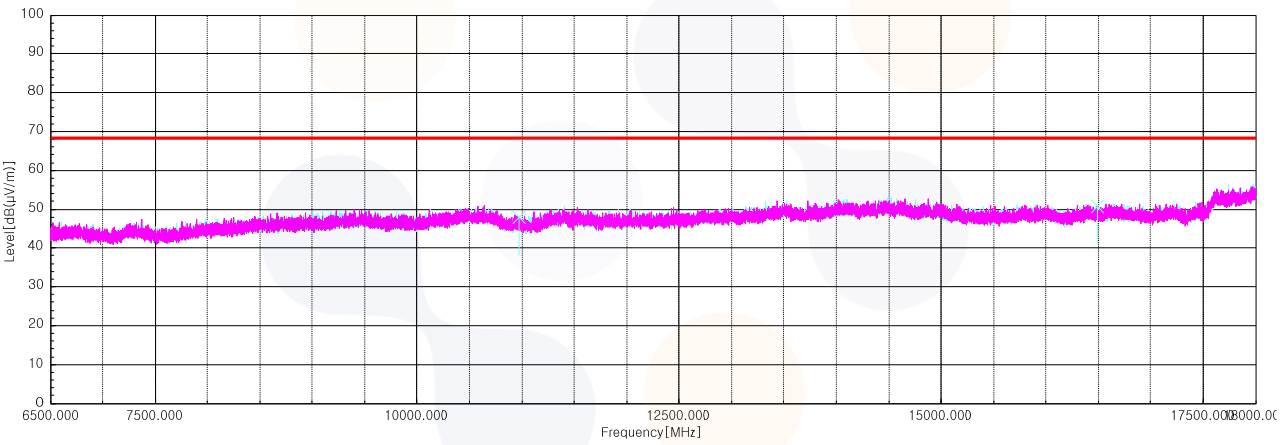
Plot of Harmonics and Spurious Emissions
In order to simplify the report, attached plots were only the lowest margin condition

802.11ac VHT20_UNII-2C_Lowest Channel (5 500 ㎒)

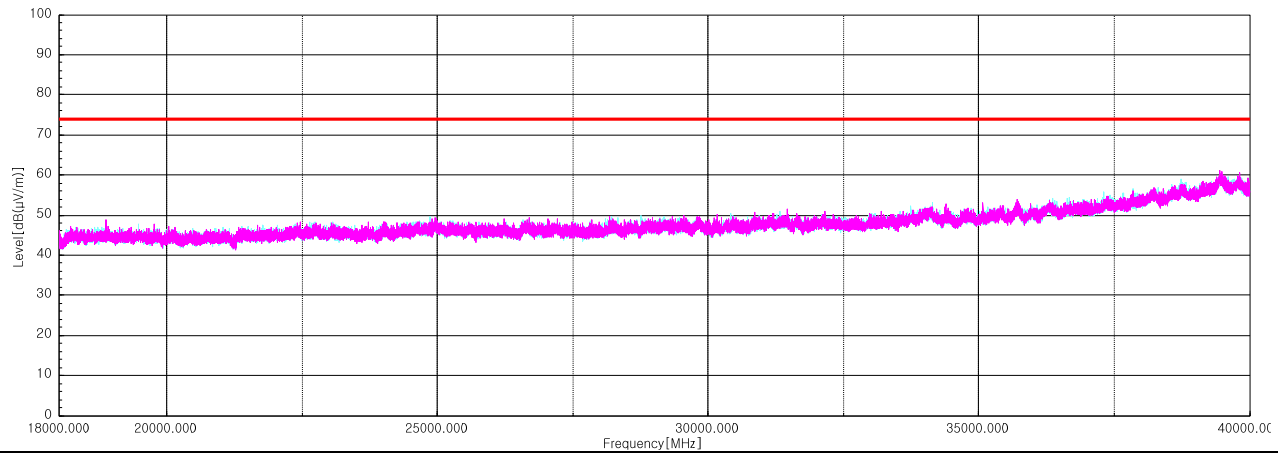
Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



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								
11 137.95[1)]	V	52.40	39.00	-43.63	-	47.77	74.00	26.23
17 155.90	V	54.50	38.10	-41.65	-	50.95	68.20	17.25
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								
11 144.85[1)]	H	52.80	39.00	-43.63	-	48.17	74.00	25.83
17 180.43	V	54.50	38.10	-41.52	-	51.08	68.20	17.12
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

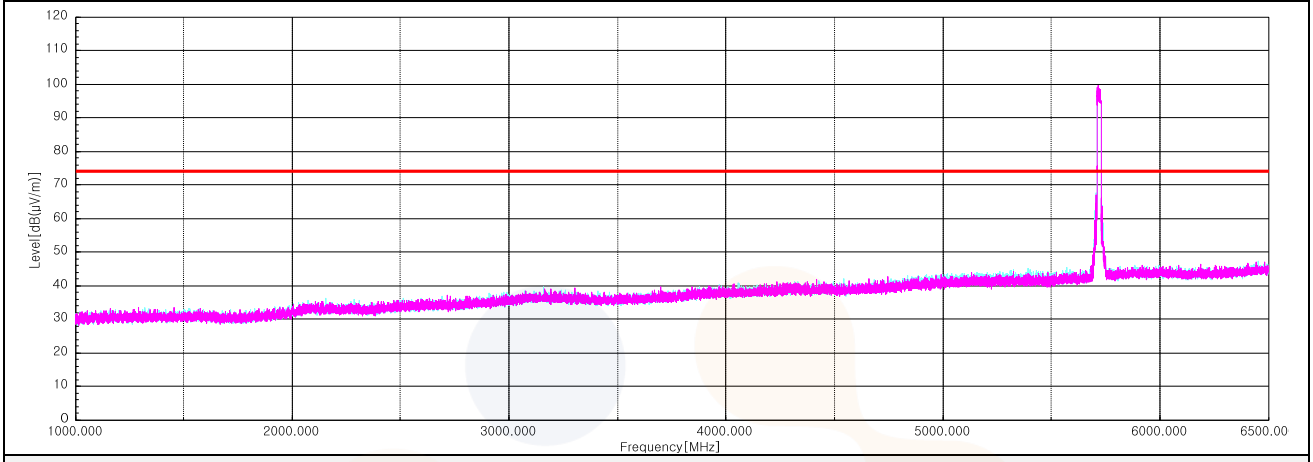
802.11ac VHT20 (5 720 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 435.80[1)]	H	52.30	39.20	-42.94	-	48.56	74.00	25.44
17 160.12	V	54.20	38.10	-41.62	-	50.68	68.20	17.52
Average Data								

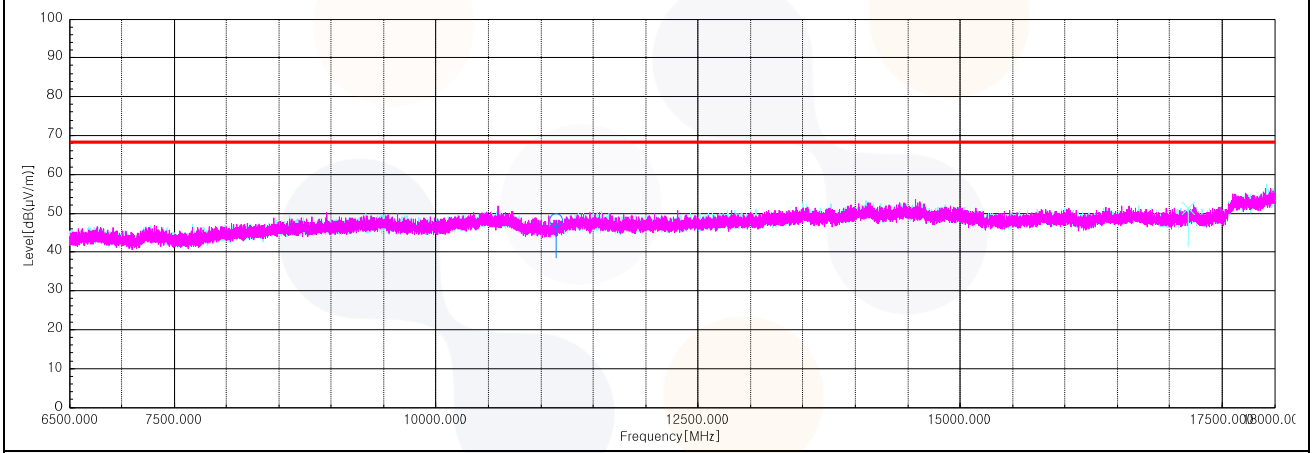
Plot of Harmonics and Spurious Emissions
In order to simplify the report, attached plots were only the lowest margin condition

802.11n HT20_Straddle Channel (5 720 ㎒)

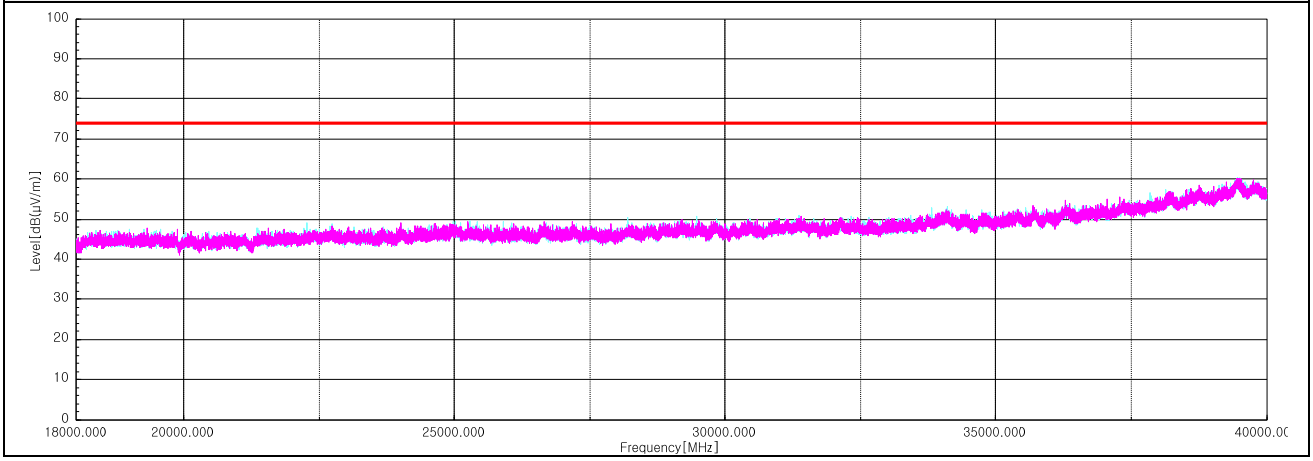
Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



802.11a_UNII-3

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								
5 724.82	V	40.30	33.75	-26.65	-	47.40	121.80	74.40
11 491.77[1)]	H	54.30	39.02	-42.77	-	50.55	74.00	23.45
17 228.73	H	55.40	38.41	-41.26	-	52.55	68.20	15.65
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

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								
11 565.37[1)]	H	53.70	38.87	-42.55	-	50.02	74.00	23.98
17 359.45	V	51.70	38.74	-41.48	-	48.96	68.20	19.24
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

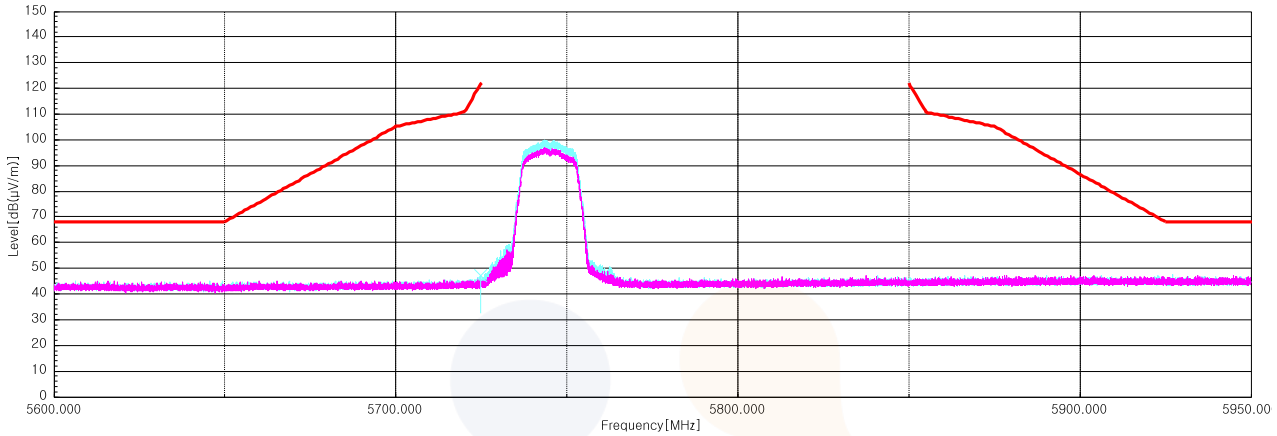
Highest Channel (5 825 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 851.52	V	39.20	34.21	-26.26	-	47.15	118.70	71.55
11 639.35[1)]	V	53.80	38.72	-42.34	-	50.18	74.00	23.82
17 465.25	H	55.20	39.26	-41.80	-	52.66	68.20	15.54
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11a_UNII-3

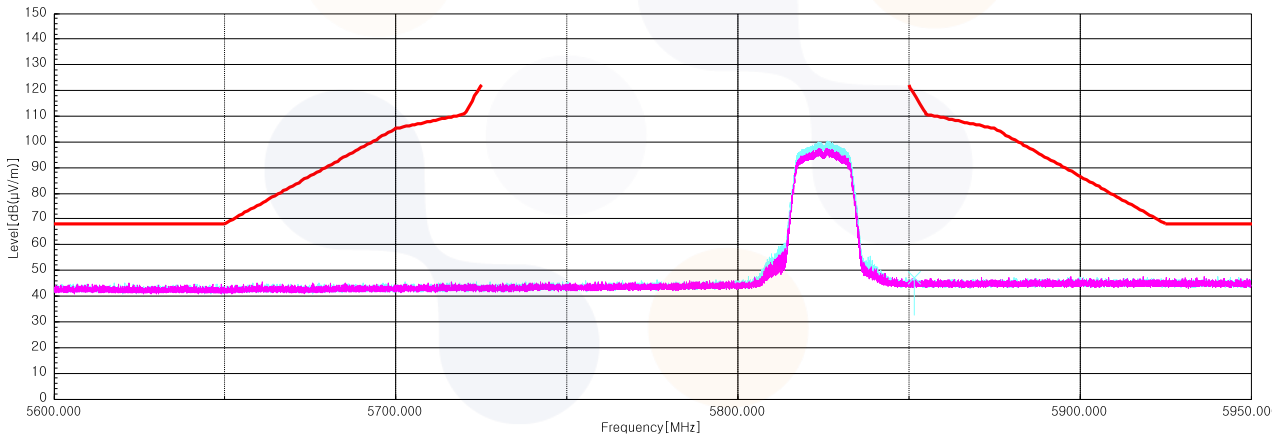
Lowest Channel (5 745 ㎒)

Horizontal/Vertical for Band-edge



Highest Channel (5 825 ㎒)

Horizontal/Vertical for Band-edge



802.11n HT20_UNII-3

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								
5 724.02	V	41.00	33.74	-26.65	-	48.09	120.00	71.91
11 505.57[1)]	H	53.70	38.99	-42.72	-	49.97	74.00	24.03
17 248.28	H	54.40	38.49	-41.16	-	51.73	68.20	16.47
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

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								
11 574.57[1)]	H	53.70	38.85	-42.53	-	50.02	74.00	23.98
17 361.37	V	52.40	38.75	-41.49	-	49.66	68.20	18.54
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

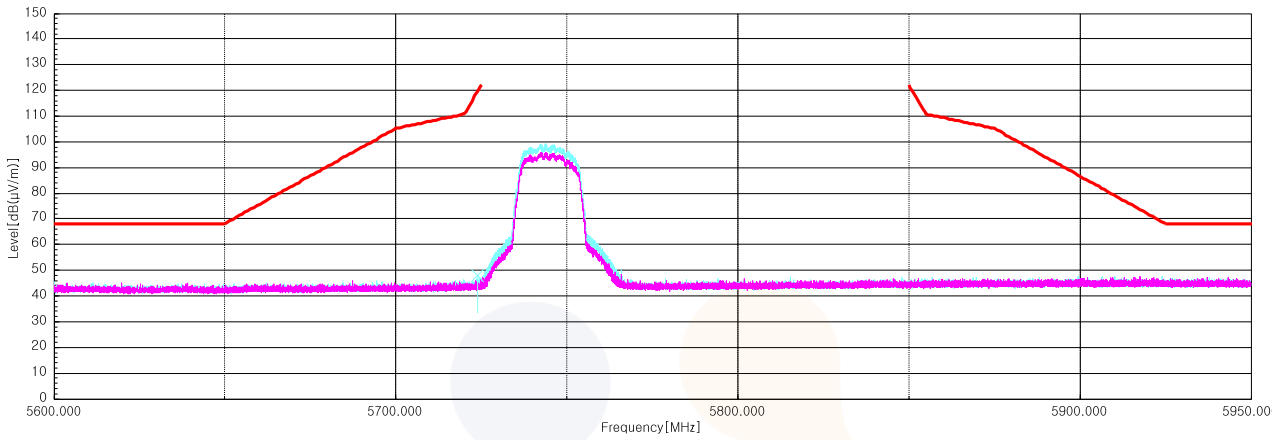
Highest Channel (5 825 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 856.74	V	39.90	34.23	-26.24	-	47.89	110.30	62.41
11 653.53[1)]	V	53.70	38.80	-42.30	-	50.20	74.00	23.80
17 468.32	V	52.50	39.27	-41.81	-	49.96	68.20	18.24
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11n HT20_UNII-3

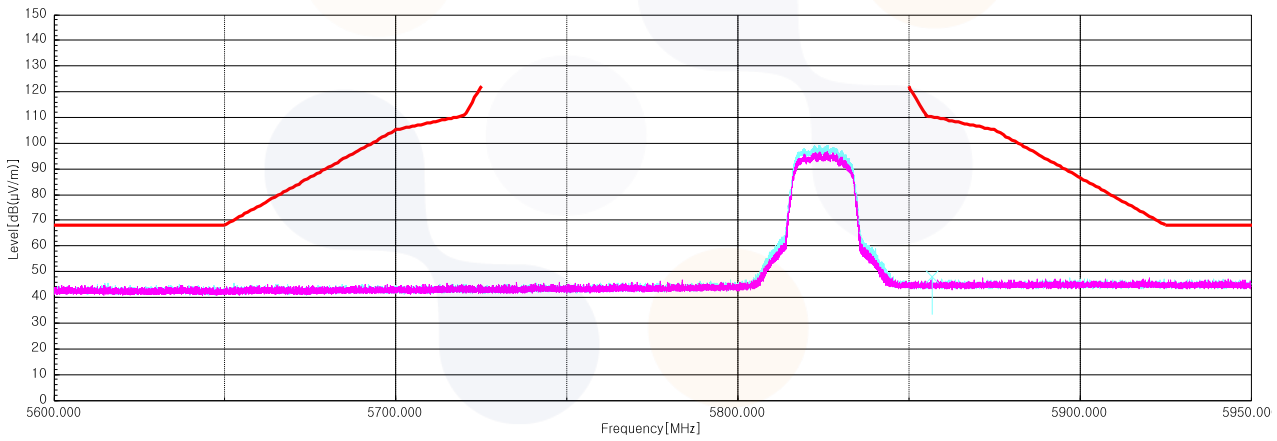
Lowest Channel (5 745 ㎒)

Horizontal/Vertical for Band-edge



Highest Channel (5 825 ㎒)

Horizontal/Vertical for Band-edge



802.11ac VHT20_UNII-3

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								
5 724.79	V	39.10	33.75	-26.65	-	46.20	121.70	75.50
11 497.13[1)]	V	53.60	39.01	-42.75	-	49.86	74.00	24.14
17 229.12	H	53.70	38.42	-41.26	-	50.86	68.20	17.34
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

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								
11 585.68[1)]	V	54.60	38.83	-42.50	-	50.93	74.00	23.07
17 362.90	H	54.50	38.75	-41.49	-	51.76	68.20	16.44
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

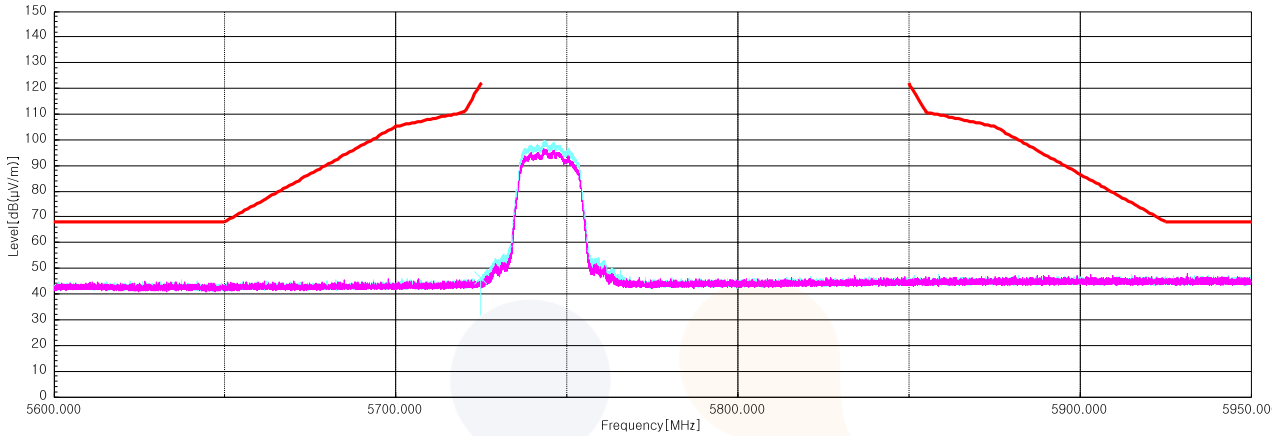
Highest Channel (5 825 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 852.16	V	39.70	34.21	-26.26	-	47.65	117.30	69.65
11 656.98[1)]	H	53.10	38.80	-42.29	-	49.61	74.00	24.39
17 468.32	H	51.40	39.27	-41.81	-	48.86	68.20	19.34
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

802.11ac VHT20_UNII-3

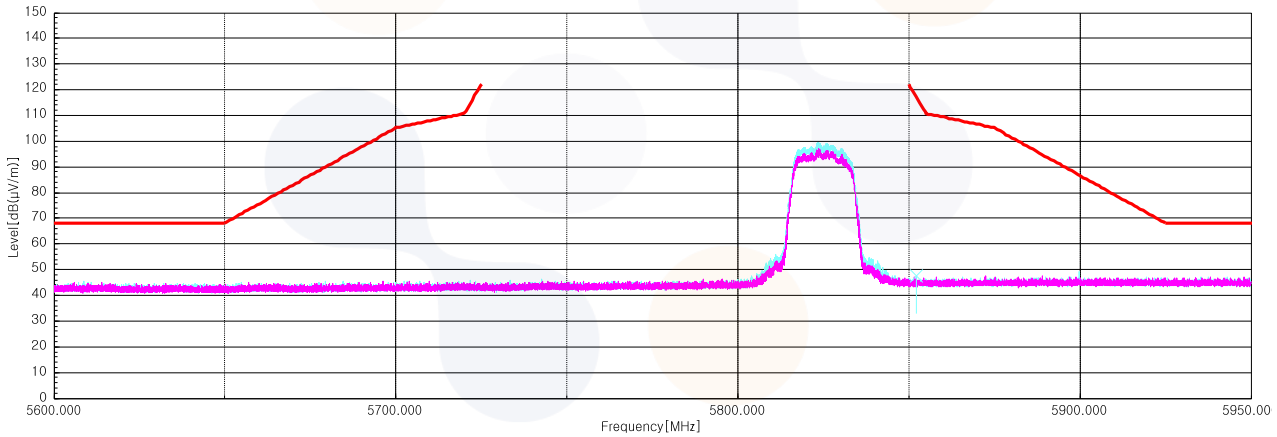
Lowest Channel (5 745 ㎒)

Horizontal/Vertical for Band-edge



Highest Channel (5 825 ㎒)

Horizontal/Vertical for Band-edge

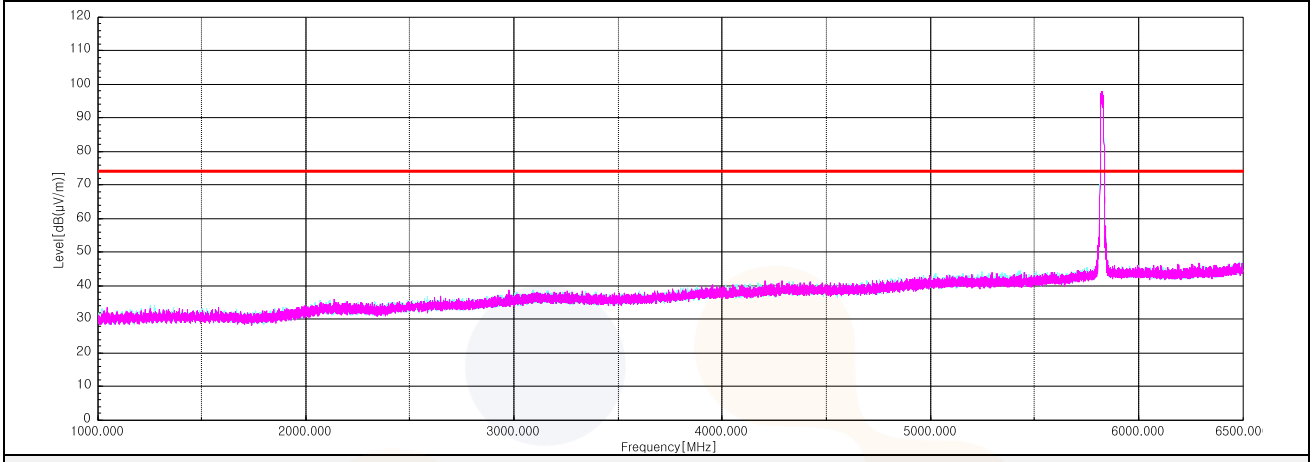


Plot of Harmonics and Spurious Emissions

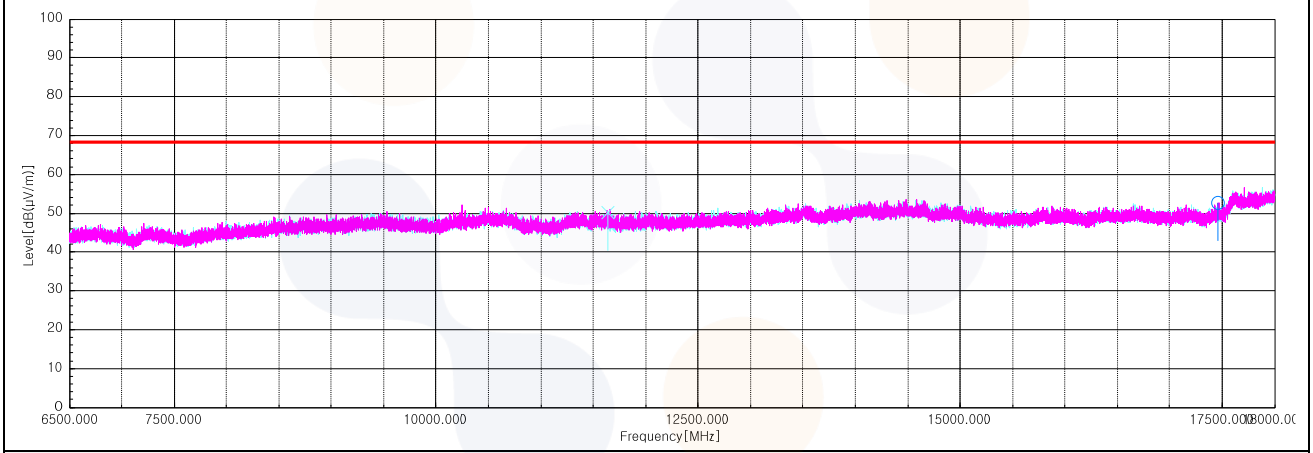
In order to simplify the report, attached plots were only the lowest margin condition

802.11a_UNII-3_Highest Channel (5 825 ㎒)

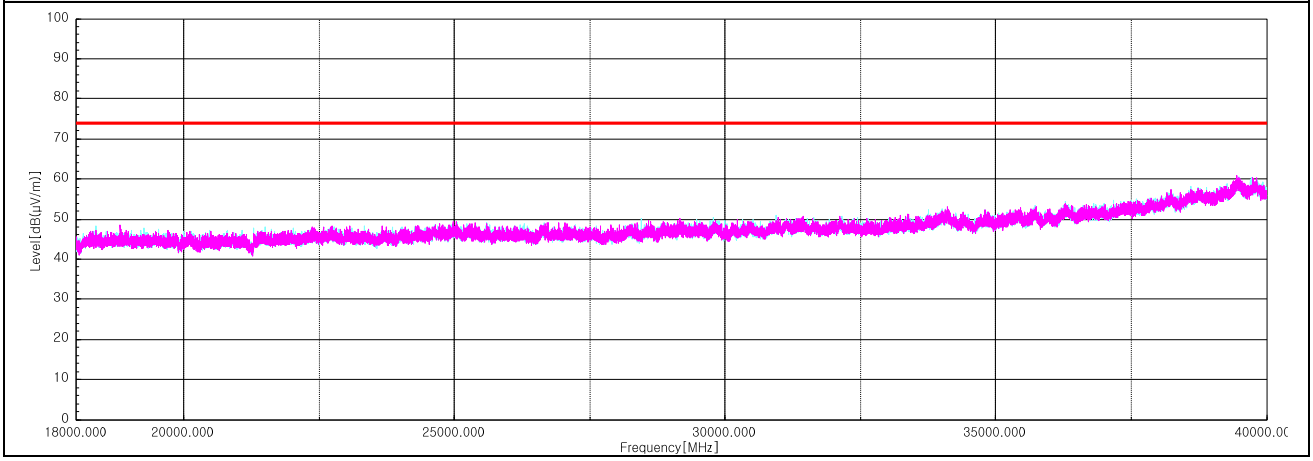
Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓

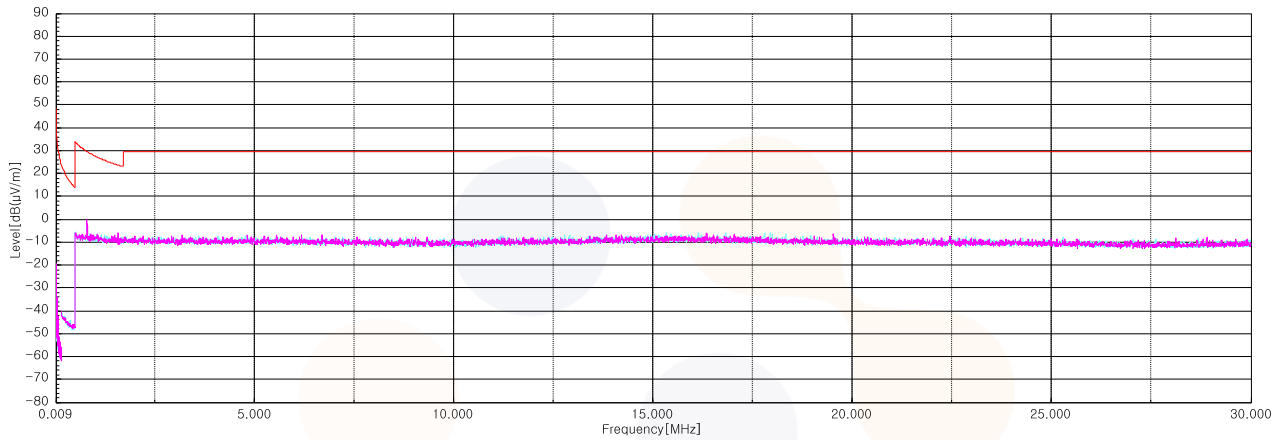


[DC 12V]

Test results (Below 30 ㎒) – Worst case: 802.11a / UNII-2C_5 700 ㎒

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

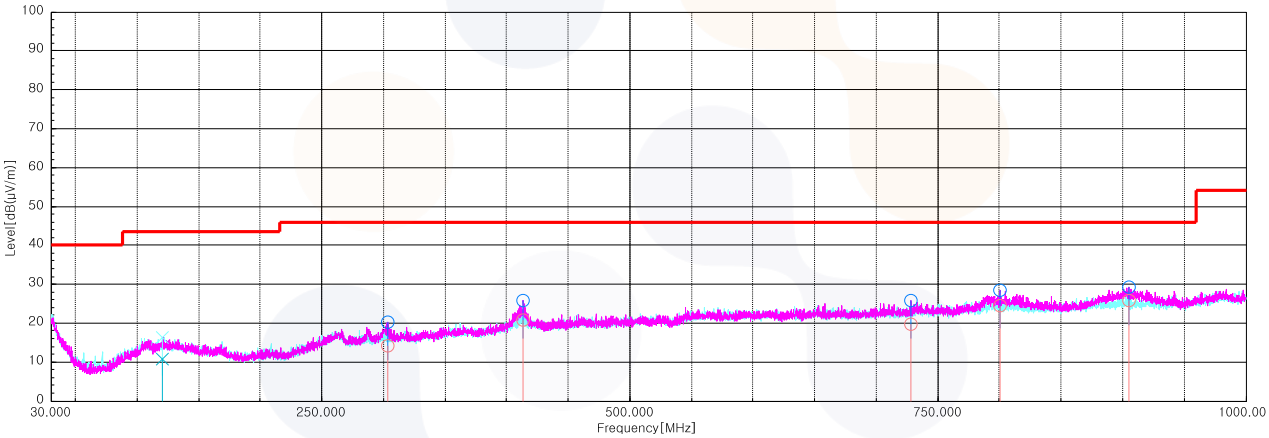
Horizontal/Vertical



Test results (Below 1 000 ㎒) – Worst case: 802.11a / UNII-2C_5 700 ㎒

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								
120.82[1)]	V	24.10	18.10	-31.52	-	10.68	43.50	32.82
303.90	H	25.80	19.20	-30.78	-	14.22	46.00	31.78
413.51	H	29.40	22.18	-30.75	-	20.83	46.00	25.17
728.52	H	24.80	25.20	-30.20	-	19.80	46.00	26.20
800.06	H	28.40	25.90	-29.71	-	24.59	46.00	21.41
905.18	H	28.30	26.50	-28.88	-	25.92	46.00	20.08

Horizontal/Vertical



Test results (Above 1 000 ㎒)

802.11a_UNII-1

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								
5 147.60[1)]	V	45.00	33.30	-27.43	-	50.87	74.00	23.13
10 365.53	V	55.10	38.87	-43.85	-	50.12	68.20	18.08
15 538.23[1)]	V	54.10	38.22	-41.54	-	50.78	74.00	23.22
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

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								
10 416.52	H	54.70	39.03	-43.84	-	49.89	68.20	18.31
15 592.28[1)]	V	53.00	38.12	-41.54	-	49.58	74.00	24.42
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

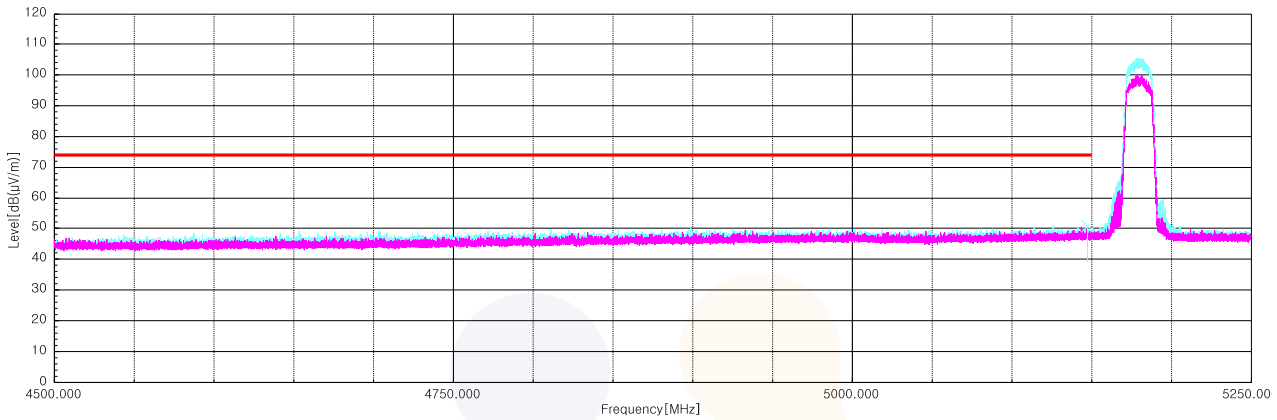
Highest Channel (5 240 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 488.58	V	55.00	39.00	-43.84	-	50.16	68.20	18.04
15 716.48[1)]	V	53.60	38.10	-41.52	-	50.18	74.00	23.82
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11a_UNII-1

Lowest Channel (5 180 ㎒)

Horizontal/Vertical for Band-edge



802.11n HT20_UNII-1

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								
5 080.88[1)]	V	45.00	33.16	-27.45	-	50.71	74.00	23.29
10 360.55	H	54.00	38.88	-43.85	-	49.03	68.20	19.17
15 415.18[1)]	H	53.30	38.54	-41.59	-	50.25	74.00	23.75
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

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								
10 394.28	V	55.00	38.81	-43.84	-	49.97	68.20	18.23
15 599.18[1)]	V	52.60	38.10	-41.53	-	49.17	74.00	24.83
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

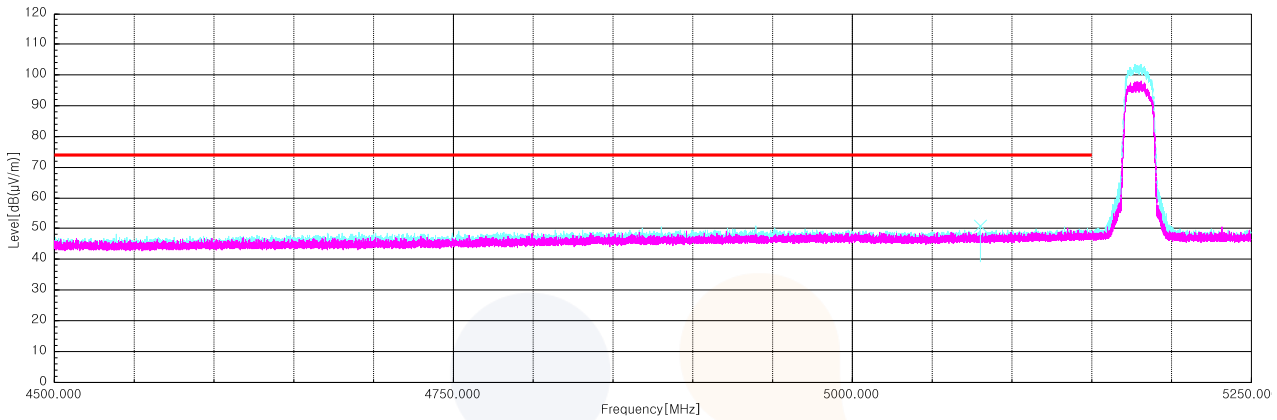
Highest Channel (5 240 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 483.22	H	55.10	39.00	-43.84	-	50.26	68.20	17.94
15 709.58[1)]	V	53.80	38.10	-41.52	-	50.38	74.00	23.62
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11n HT20_UNII-1

Lowest Channel (5 180 ㎒)

Horizontal/Vertical for Band-edge



802.11ac VHT20_UNII-1

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								
5 144.03[1)]	V	44.40	33.29	-27.43	-	50.26	74.00	23.74
10 367.07	V	54.70	38.87	-43.85	-	49.72	68.20	18.48
15 526.35[1)]	H	53.10	38.25	-41.55	-	49.80	74.00	24.20
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

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								
10 414.60	V	54.90	39.03	-43.84	-	50.09	68.20	18.11
15 598.80[1)]	V	53.20	38.10	-41.53	-	49.77	74.00	24.23
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

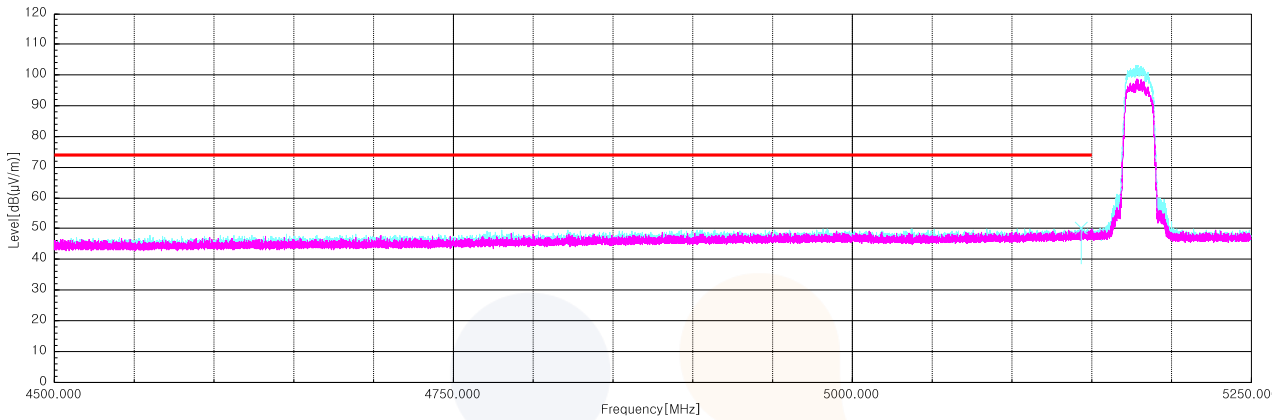
Highest Channel (5 240 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 487.43	V	56.10	39.00	-43.84	-	51.26	68.20	16.94
15 731.05[1)]	H	53.50	38.10	-41.51	-	50.09	74.00	23.91
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11ac VHT20_UNII-1

Lowest Channel (5 180 ㎒)

Horizontal/Vertical for Band-edge

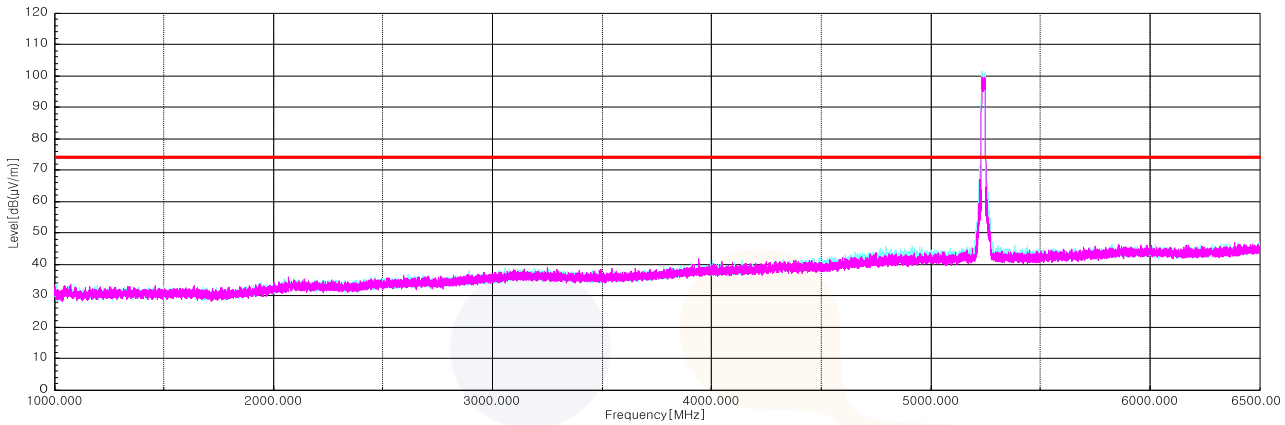


Plot of Harmonics and Spurious Emissions

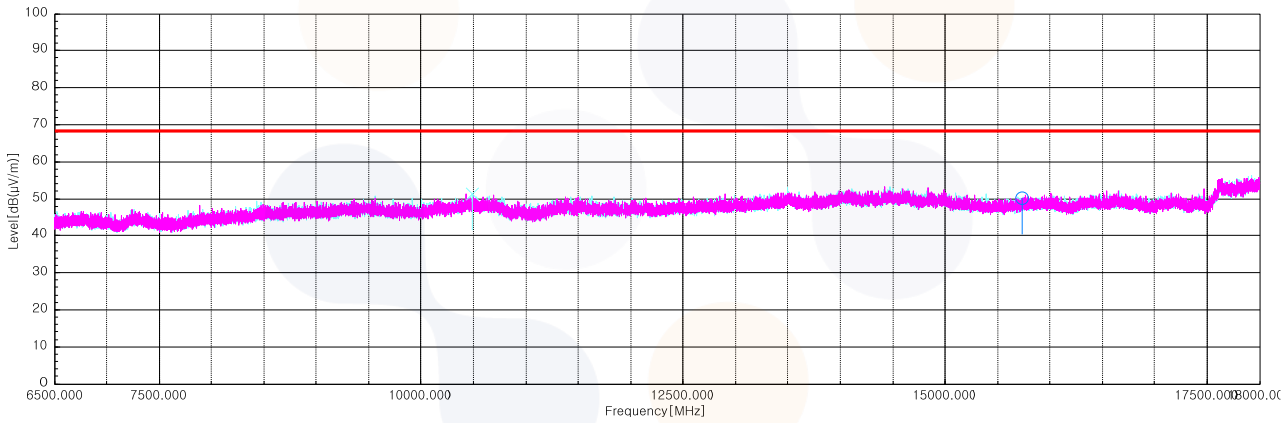
In order to simplify the report, attached plots were only the lowest margin condition

802.11ac VHT20 UNII-1_Highest Channel (5 240 ㎒)

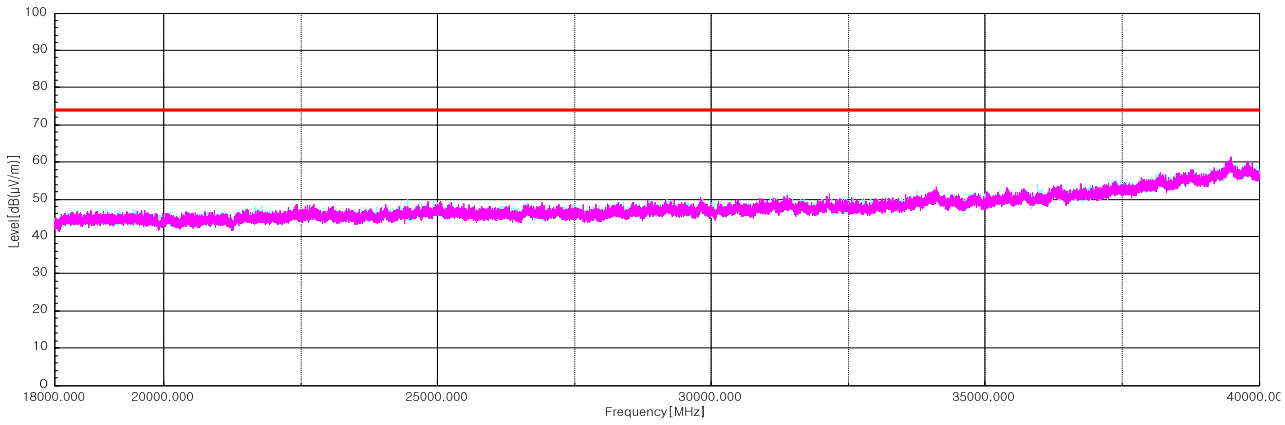
Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



802.11a UNII-2A

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								
10 526.15	H	55.70	39.00	-43.90	-	50.80	68.20	17.40
15 811.93[1)]	V	53.00	38.22	-41.45	-	49.77	74.00	24.23
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

Middle Channel (5 280 ㎒)

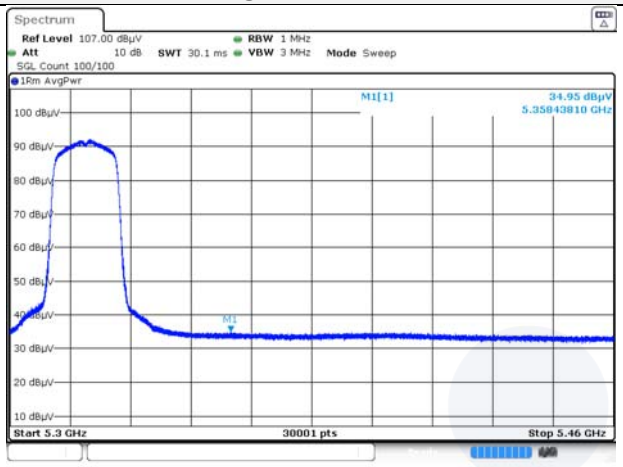
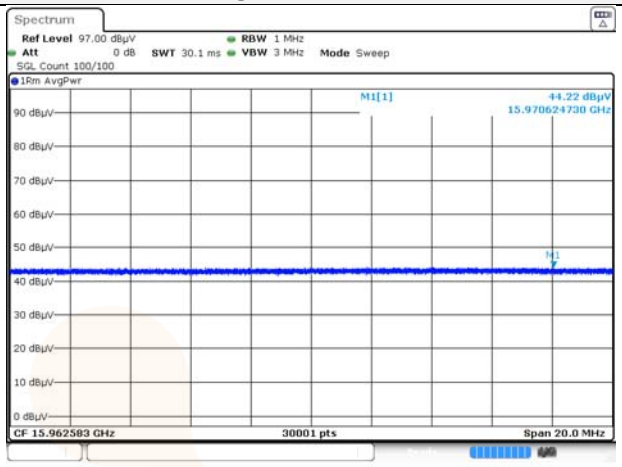
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 559.88	V	54.70	39.12	-43.98	-	49.84	68.20	18.36
15 839.15	H	52.90	38.28	-41.42	-	49.76	74.00	24.24
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

Highest Channel (5 320 ㎒)

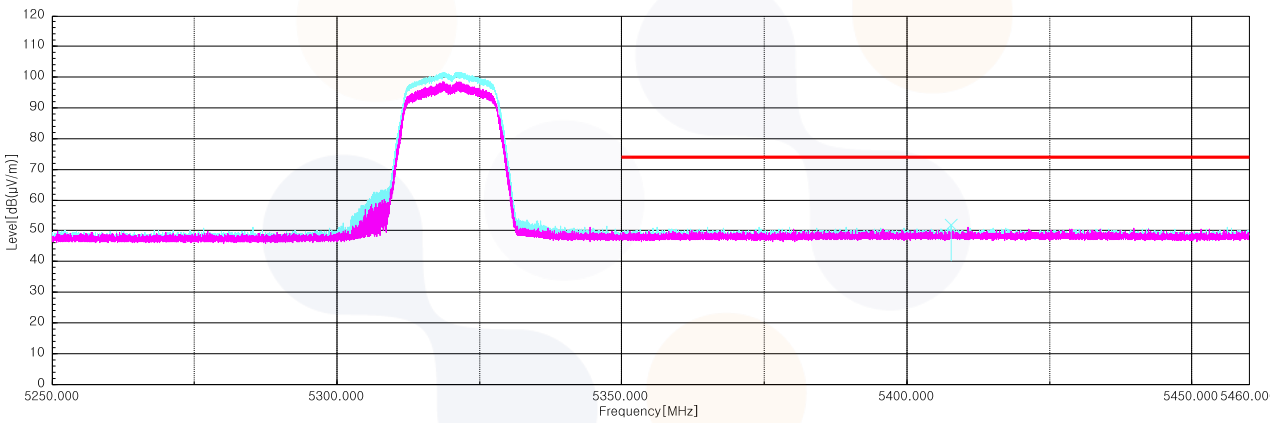
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 358.44[1)]	V	45.70	33.00	-27.05	-	51.65	74.00	22.35
10 636.93[1)]	V	54.60	39.27	-44.16	-	49.71	74.00	24.29
15 970.62[1)]	V	54.30	38.20	-41.29	-	51.21	74.00	22.79
Average Data								
5 358.44[1)]	V	34.95	33.00	-27.05	-	40.90	54.00	13.10
15 970.62[1)]	V	44.22	38.20	-41.29	-	41.13	54.00	12.87

802.11a_UNII-2A

Highest Channel (5 320 ㎒)

Average (5 358.44 ㎒)	Average (15 970.62 ㎒)
	

Horizontal/Vertical for Band-edge



802.11n HT20_UNII-2A

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								
10 510.05	V	55.10	39.00	-43.86	-	50.24	68.20	17.96
15 764.78[1)]	V	54.40	38.10	-41.50	-	51.00	74.00	23.00
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

Middle Channel (5 280 ㎒)

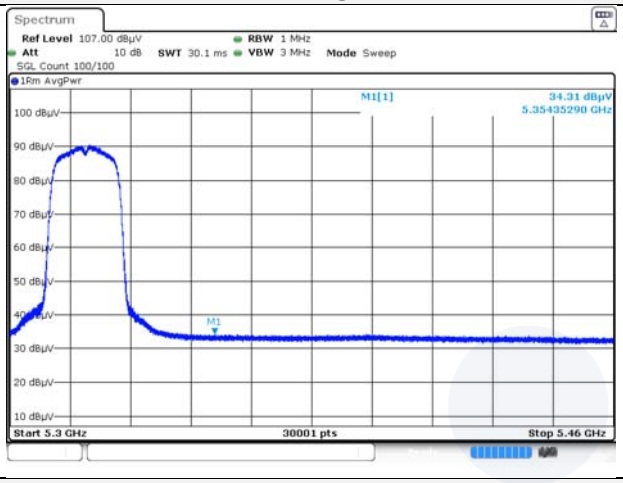
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 567.93	V	55.00	39.14	-44.00	-	50.14	68.20	18.06
15 826.12[1)]	H	53.50	38.25	-41.43	-	50.32	74.00	23.68
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

Highest Channel (5 320 ㎒)

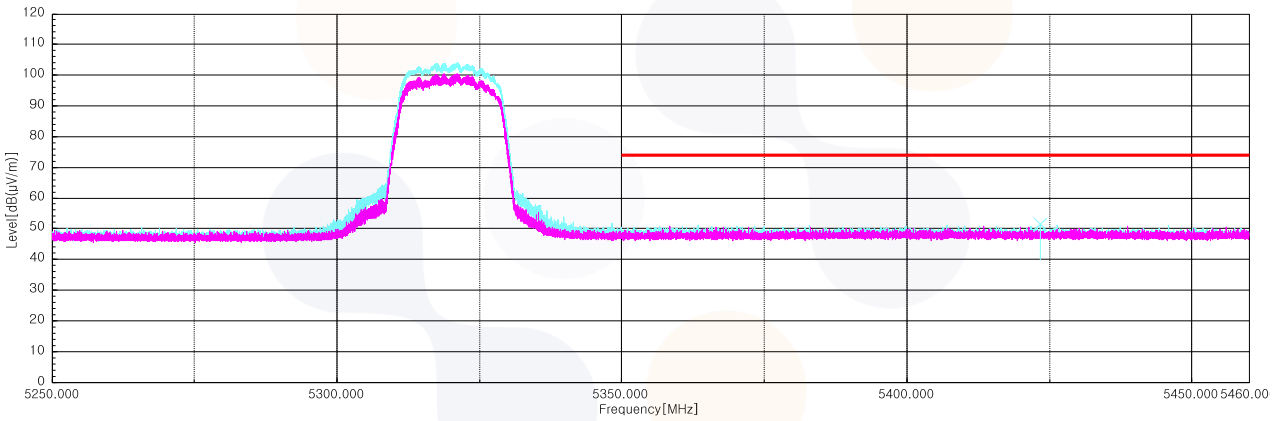
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 354.35[1)]	V	45.10	33.00	-27.06	-	51.04	74.00	22.96
10 646.52[1)]	V	54.80	39.29	-44.19	-	49.90	74.00	24.10
15 967.18[1)]	V	53.80	38.20	-41.29	-	50.71	74.00	23.29
Average Data								
5 354.35[1)]	V	34.31	33.00	-27.06	0.25	40.50	54.00	13.50

802.11n HT20_UNII-2A

Highest Channel (5 320 ㎒)

Average	
	Blank

Horizontal/Vertical for Band-edge



802.11ac VHT20_UNII-2A

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	54.80	39.00	-43.91	-	49.89	68.20	18.31
15 772.06[1)]	H	54.40	38.10	-41.49	-	51.01	74.00	22.99
Average Data								
15 772.06[1)]	H	44.40	38.10	-41.49	0.24	41.25	54.00	12.75

Middle Channel (5 280 ㎒)

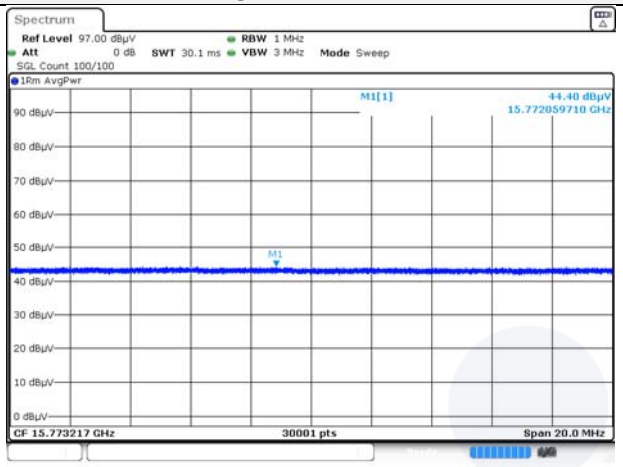
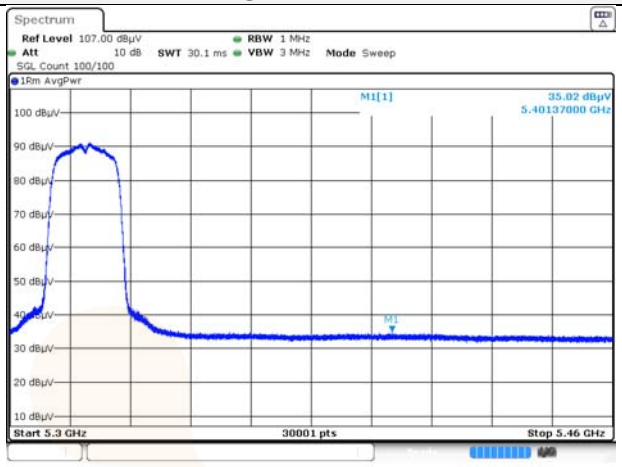
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 570.23	V	54.20	39.14	-44.01	-	49.33	68.20	18.87
15 835.70[1)]	V	52.70	38.27	-41.42	-	49.55	74.00	24.45
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

Highest Channel (5 320 ㎒)

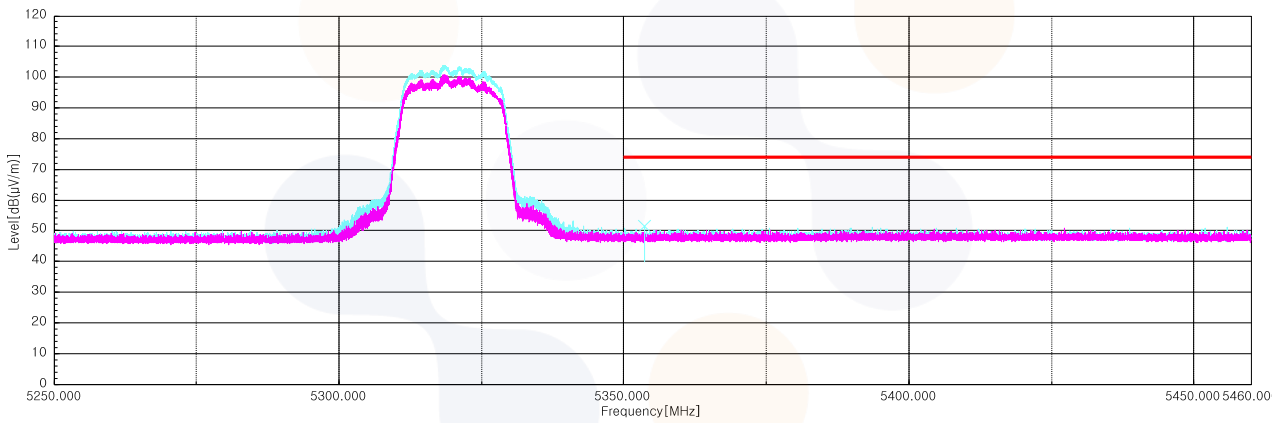
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 401.37[1)]	V	45.40	33.00	-26.91	-	51.49	74.00	22.51
10 633.87[1)]	V	55.10	39.27	-44.16	-	50.21	74.00	23.79
15 955.68[1)]	V	53.50	38.20	-41.30	-	50.40	74.00	23.60
Average Data								
5 401.37[1)]	V	35.02	33.00	-26.91	0.24	41.35	54.00	12.65

802.11ac VHT20_UNII-2A

Highest Channel (5 320 ㎒)

Average (15 772.06 ㎒)	Average (5 401.37 ㎒)
	

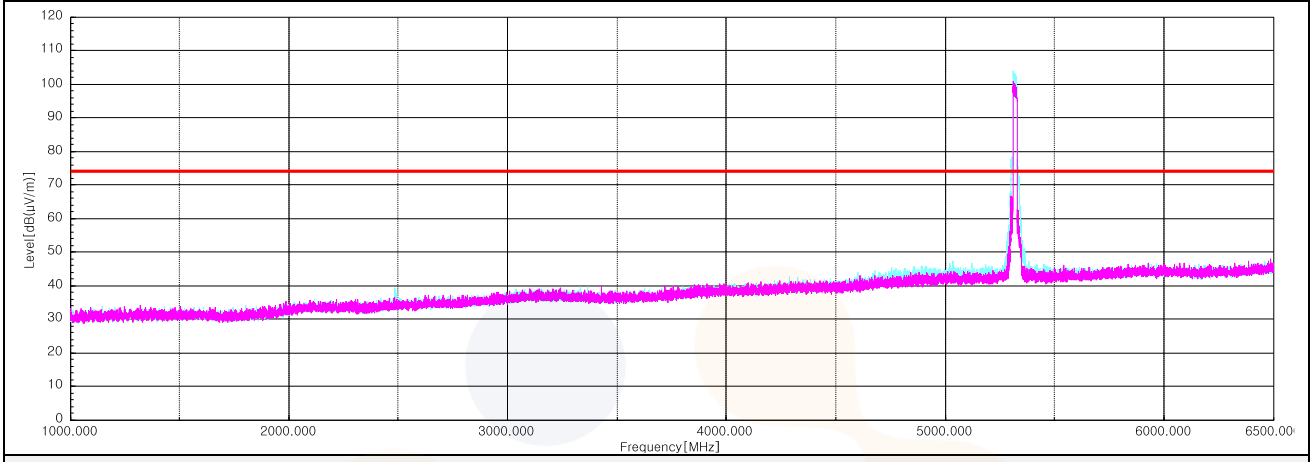
Horizontal/Vertical for Band-edge



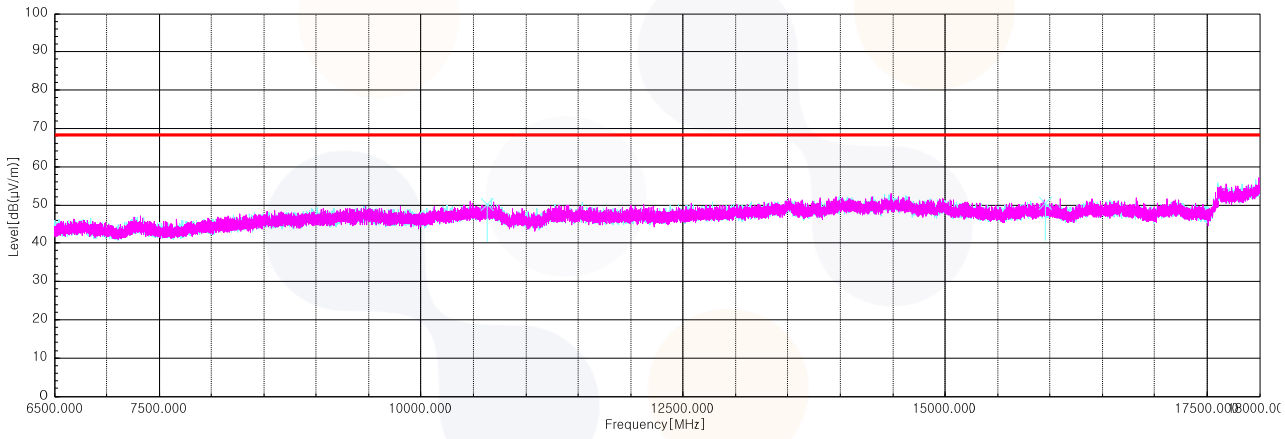
Plot of Harmonics and Spurious Emissions
In order to simplify the report, attached plots were only the lowest margin condition

802.11ac VHT20_UNII-2A_Highest Channel (5 320 ㎒)

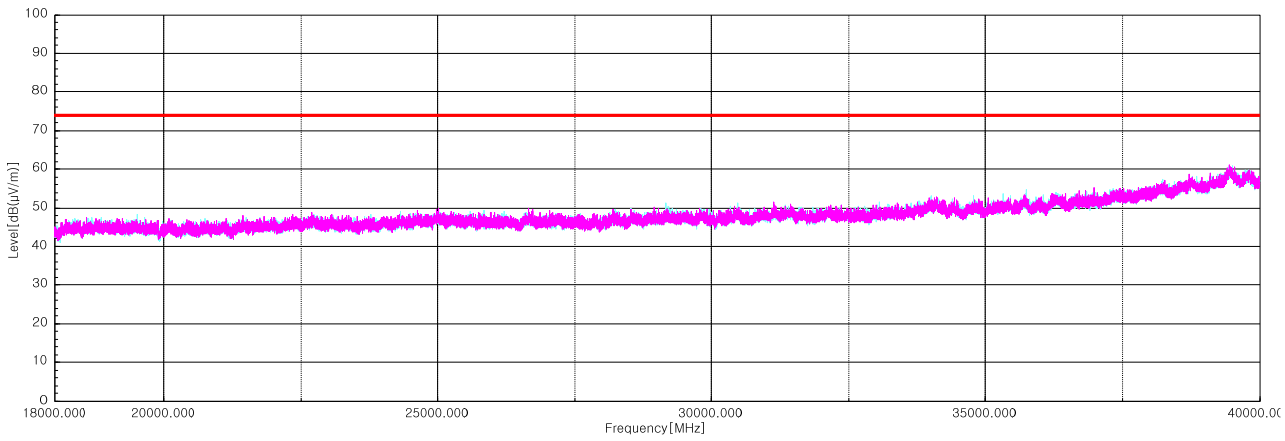
Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



802.11a UNII-2C

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								
5 360.98[1)]	V	44.90	33.00	-27.04	-	50.86	74.00	23.14
10 998.42[1)]	V	52.60	39.10	-43.77	-	47.93	74.00	26.07
16 498.87	V	54.20	38.10	-41.38	-	50.92	68.20	17.28
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

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								
11 209.63[1)]	H	53.20	39.12	-43.56	-	48.76	74.00	25.24
16 805.15	H	53.90	38.10	-41.82	-	50.18	68.20	18.02
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

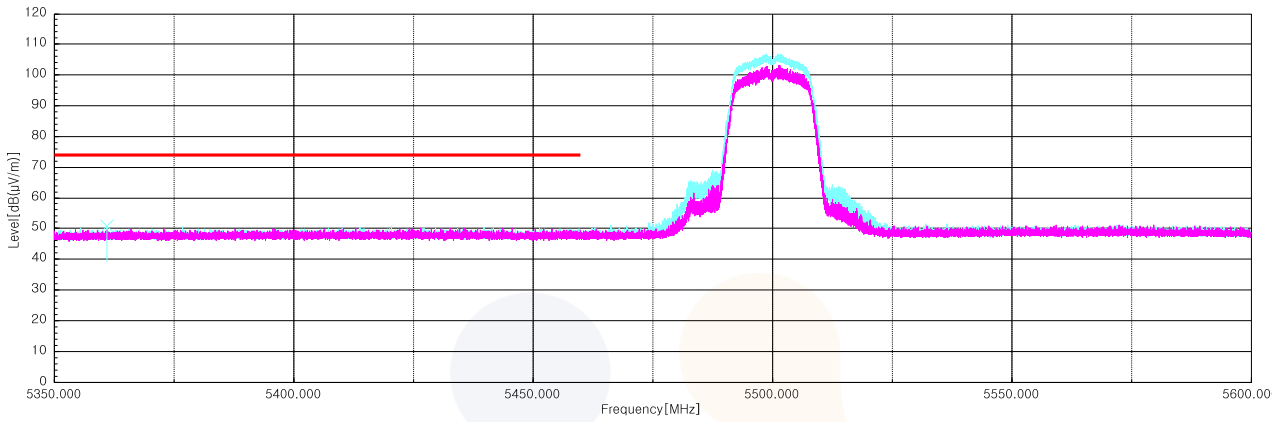
Highest Channel (5 700 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 754.96	H	45.50	33.82	-26.64	-	52.68	68.20	15.52
11 403.22[1)]	V	54.20	39.20	-43.04	-	50.36	74.00	23.64
17 123.32	V	54.80	38.10	-41.82	-	51.08	68.20	17.12
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11a_UNII-2C

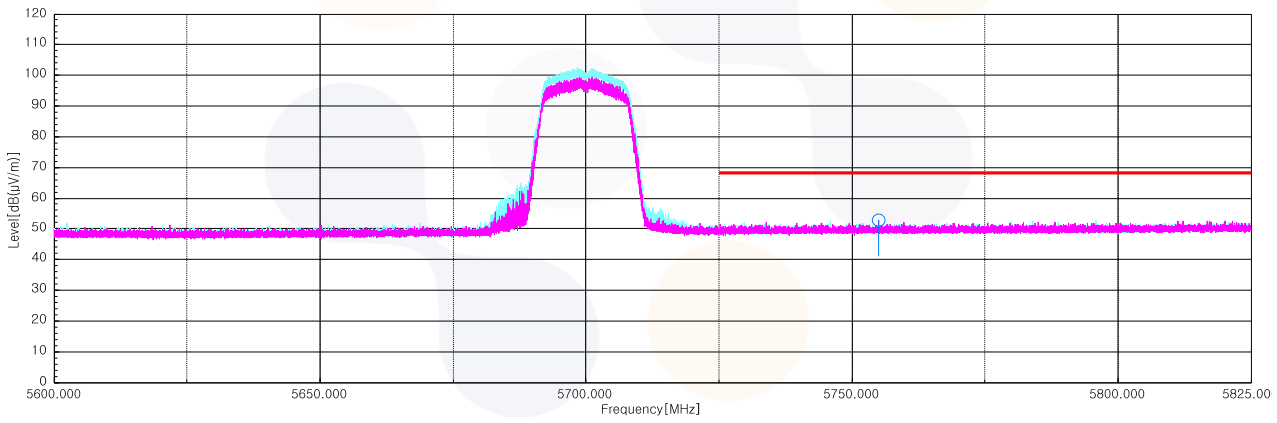
Lowest Channel (5 500 ㎒)

Horizontal/Vertical for Band-edge



Highest Channel (5 700 ㎒)

Horizontal/Vertical for Band-edge



802.11n HT20_UNII-2C

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								
5 431.40[1)]	V	44.50	33.00	-26.82	-	50.68	74.00	23.32
10 984.23[1)]	V	53.30	39.13	-43.81	-	48.62	74.00	25.38
17 163.95	V	54.20	38.10	-41.60	-	50.70	68.20	17.50
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

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								
11 208.48[1)]	V	53.30	39.12	-43.56	-	48.86	74.00	25.14
16 808.60	H	54.30	38.10	-41.83	-	50.57	68.20	17.63
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

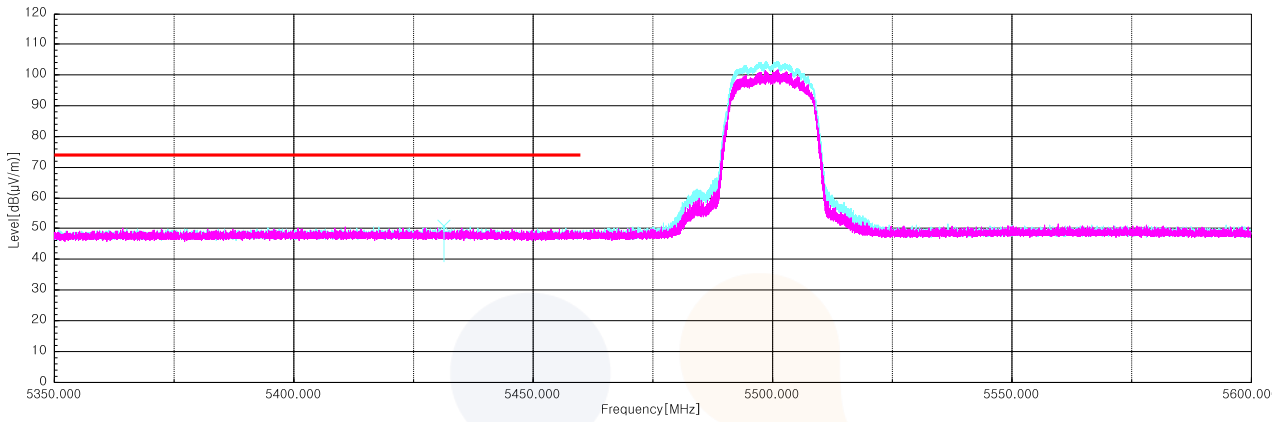
Highest Channel (5 700 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 822.50	H	45.10	34.09	-26.37	-	52.82	68.20	15.38
11 382.13[1)]	H	54.90	39.20	-43.11	-	50.99	74.00	23.01
17 082.30	H	54.10	38.16	-42.04	-	50.22	68.20	17.98
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11n HT20_UNII-2C

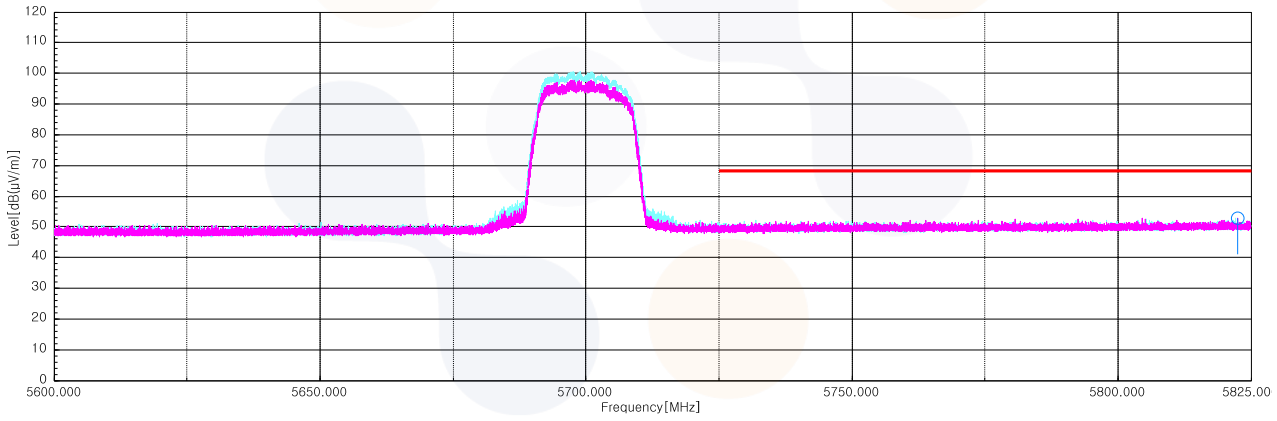
Lowest Channel (5 500 ㎒)

Horizontal/Vertical for Band-edge



Highest Channel (5 700 ㎒)

Horizontal/Vertical for Band-edge



802.11ac VHT20_UNII-2C

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								
5 424.41[1)]	H	44.60	33.00	-26.84	-	50.76	74.00	23.24
10 996.88[1)]	H	53.30	39.11	-43.78	-	48.63	74.00	25.37
16 500.40	H	53.30	38.10	-41.38	-	50.02	68.20	18.18
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

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								
11 207.72[1)]	V	52.90	39.12	-43.56	-	48.46	74.00	25.54
16 808.98	H	54.00	38.10	-41.84	-	50.26	68.20	17.94
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

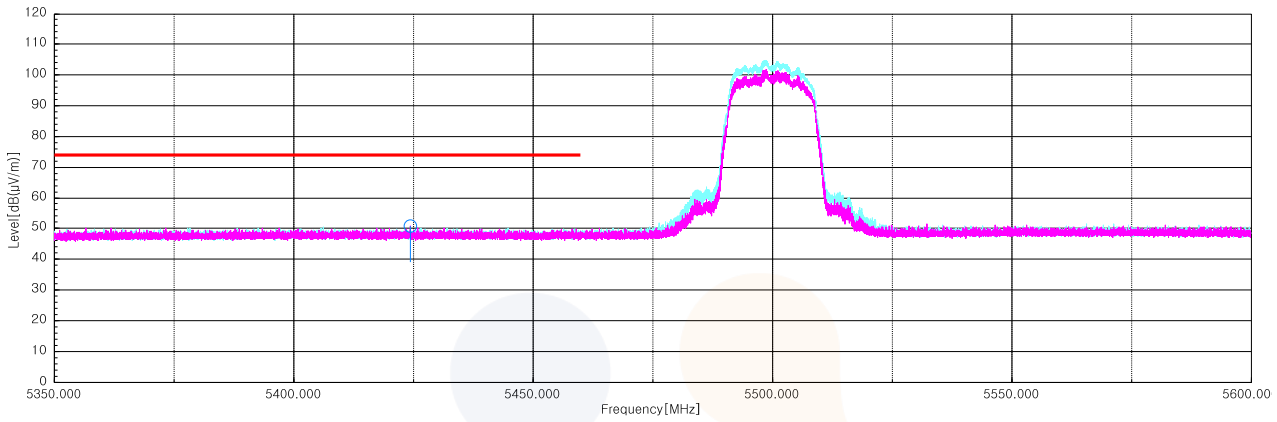
Highest Channel (5 700 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 817.26	H	45.40	34.07	-26.39	-	53.08	68.20	15.12
11 407.05[1)]	H	54.10	39.20	-43.03	-	50.27	74.00	23.73
17 103.77	V	55.10	38.10	-41.92	-	51.28	68.20	16.92
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

802.11ac VHT20_UNII-2C

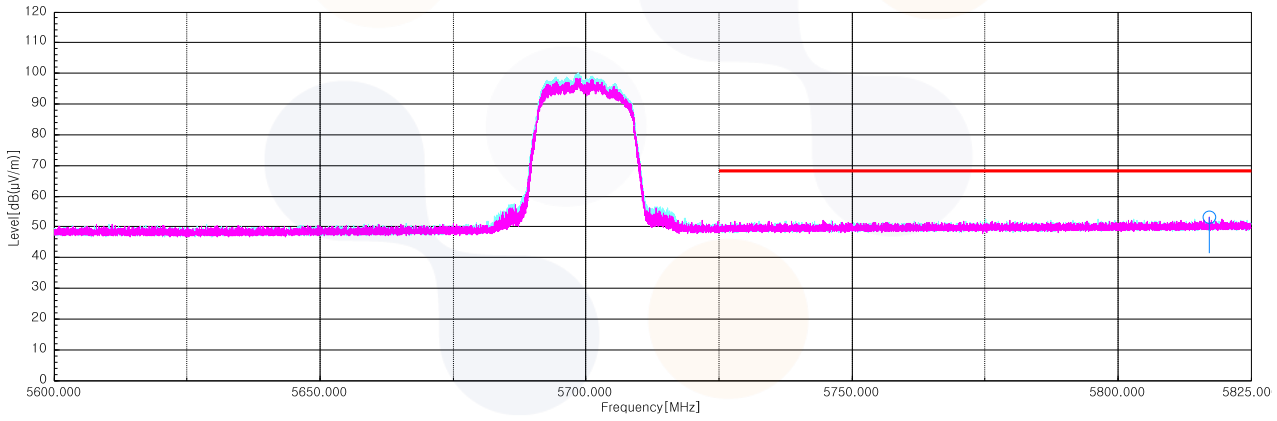
Lowest Channel (5 500 ㎒)

Horizontal/Vertical for Band-edge



Highest Channel (5 700 ㎒)

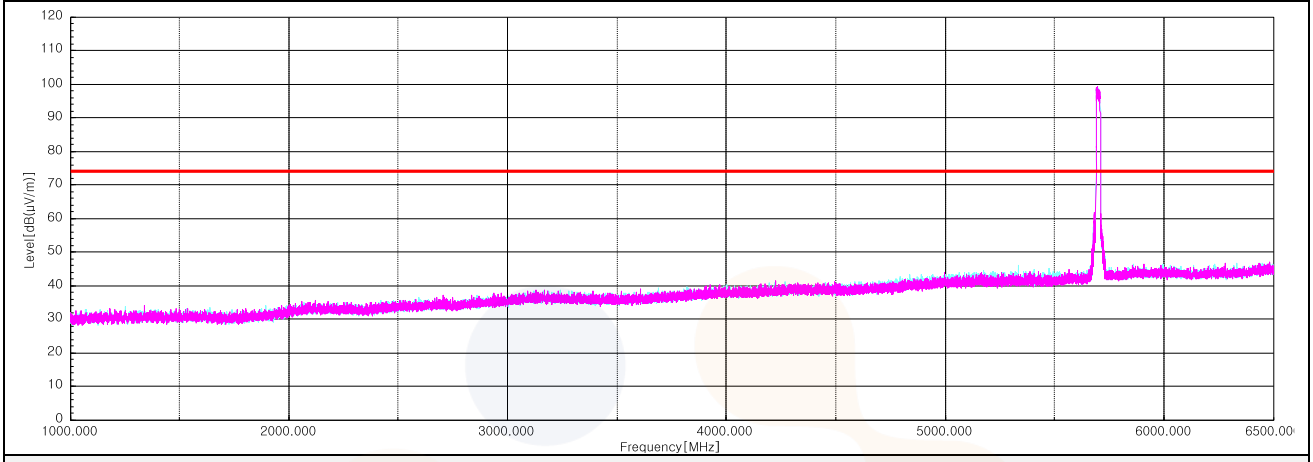
Horizontal/Vertical for Band-edge



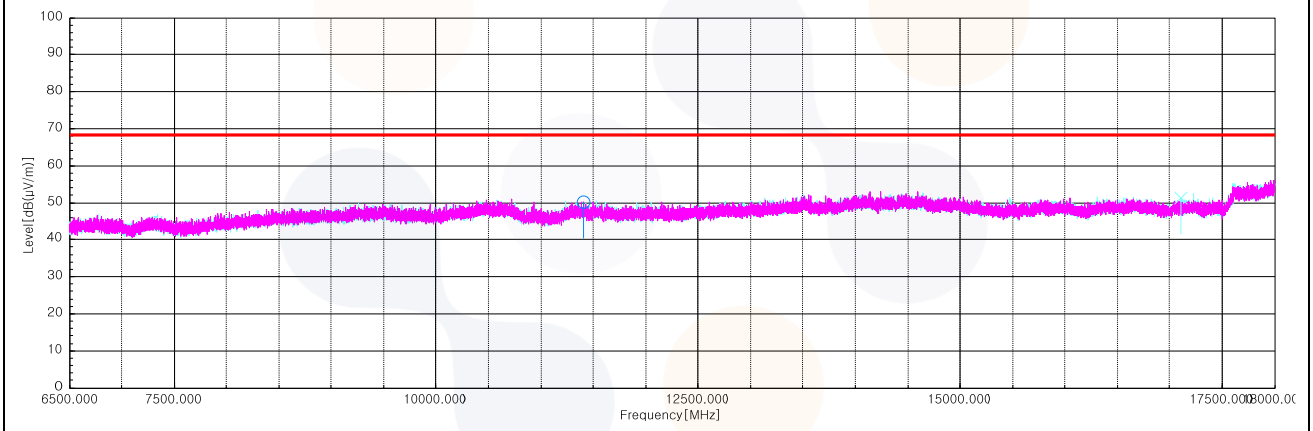
Plot of Harmonics and Spurious Emissions
In order to simplify the report, attached plots were only the lowest margin condition

802.11ac VHT20_UNII-2C _Highest Channel (5 700 ㎒)

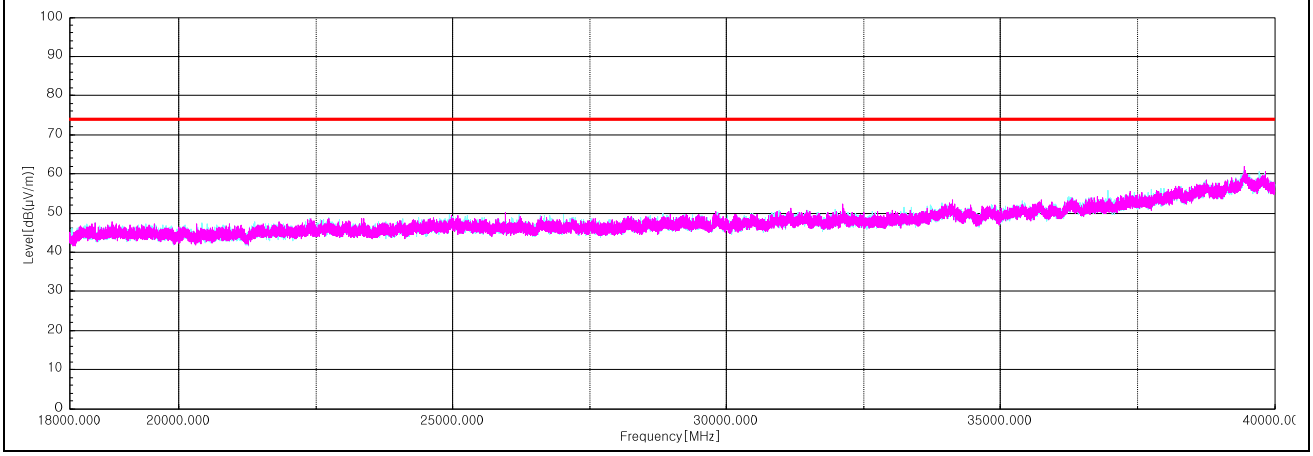
Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



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								
11 406.28[1)]	H	53.80	39.20	-43.03	-	49.97	74.00	24.03
17 165.87	V	54.40	38.10	-41.59	-	50.91	68.20	17.29
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								
11 388.27[1)]	H	54.30	39.20	-43.09	-	50.41	74.00	23.59
17 197.30	H	54.90	38.10	-41.43	-	51.57	68.20	16.63
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								
11 448.07[1)]	H	52.40	39.20	-42.90	-	48.70	74.00	25.30
17 147.47	H	54.90	38.10	-41.69	-	51.31	68.20	16.89
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								