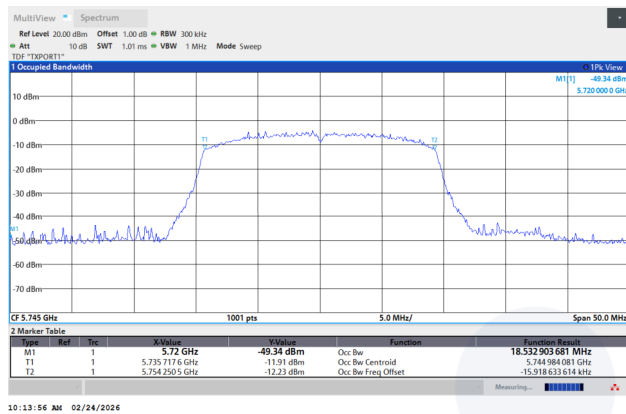


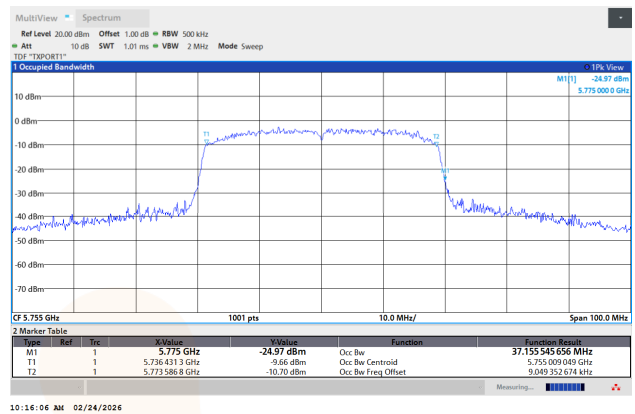
In order to simplify the report, attached plots were the worst case per bandwidth

99% bandwidth

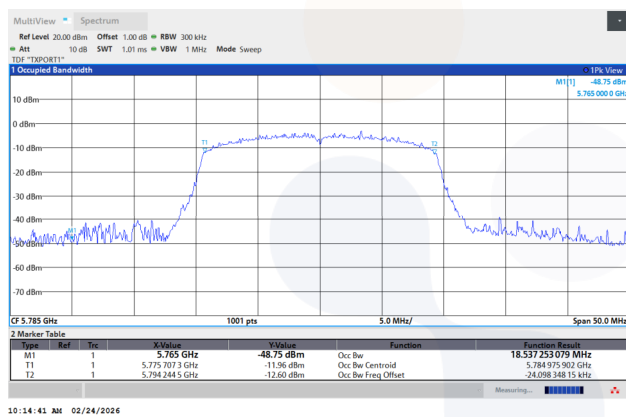
UNII 3 / 802.11ax HE20 / Low ch.



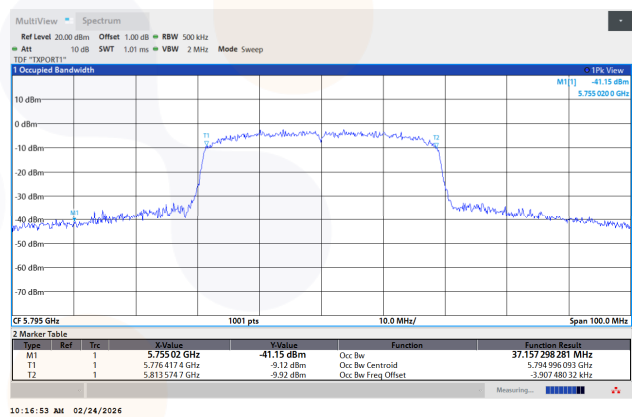
UNII 3 / 802.11ax HE40 / Low ch.



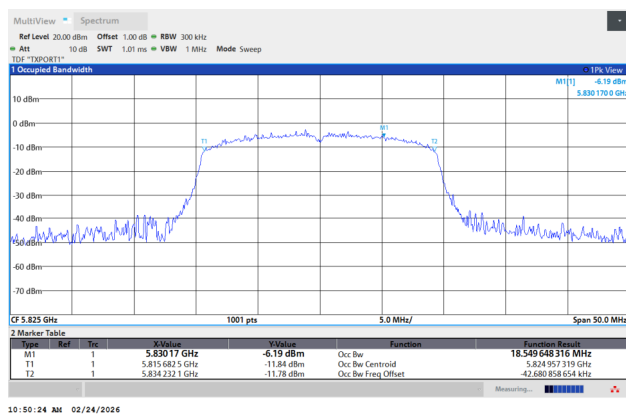
UNII 3 / 802.11ax HE20 / Mid ch.



UNII 3 / 802.11ax HE40 / High ch.



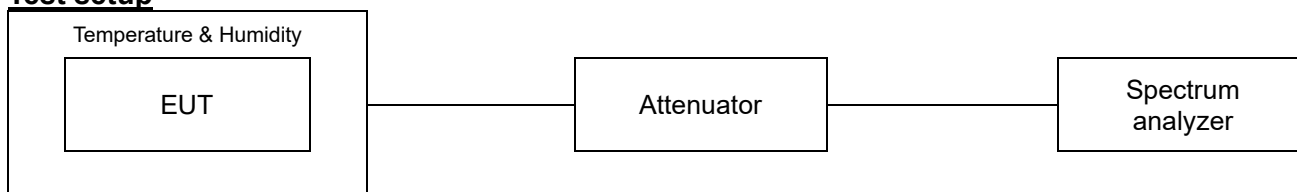
UNII 3 / 802.11ax HE20 / High ch.



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7.5. 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.

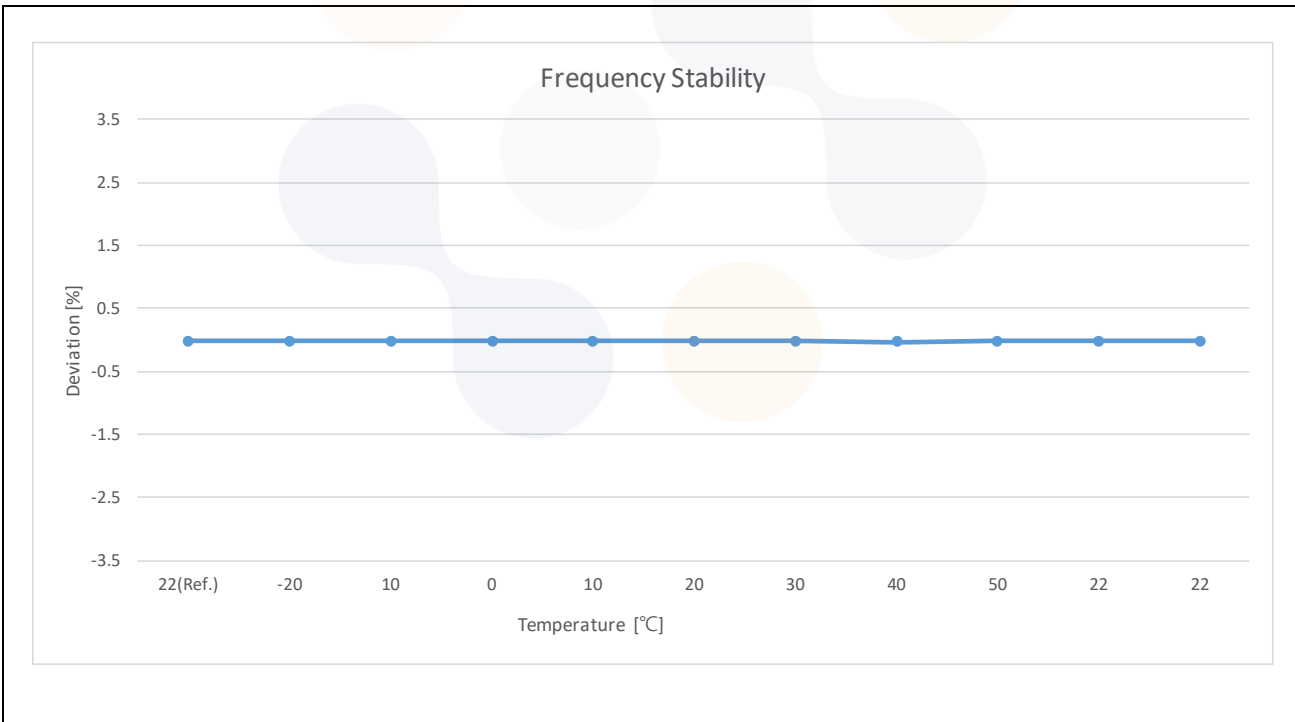
Test procedure

ANSI C63.10 - Section 6.8

Test results

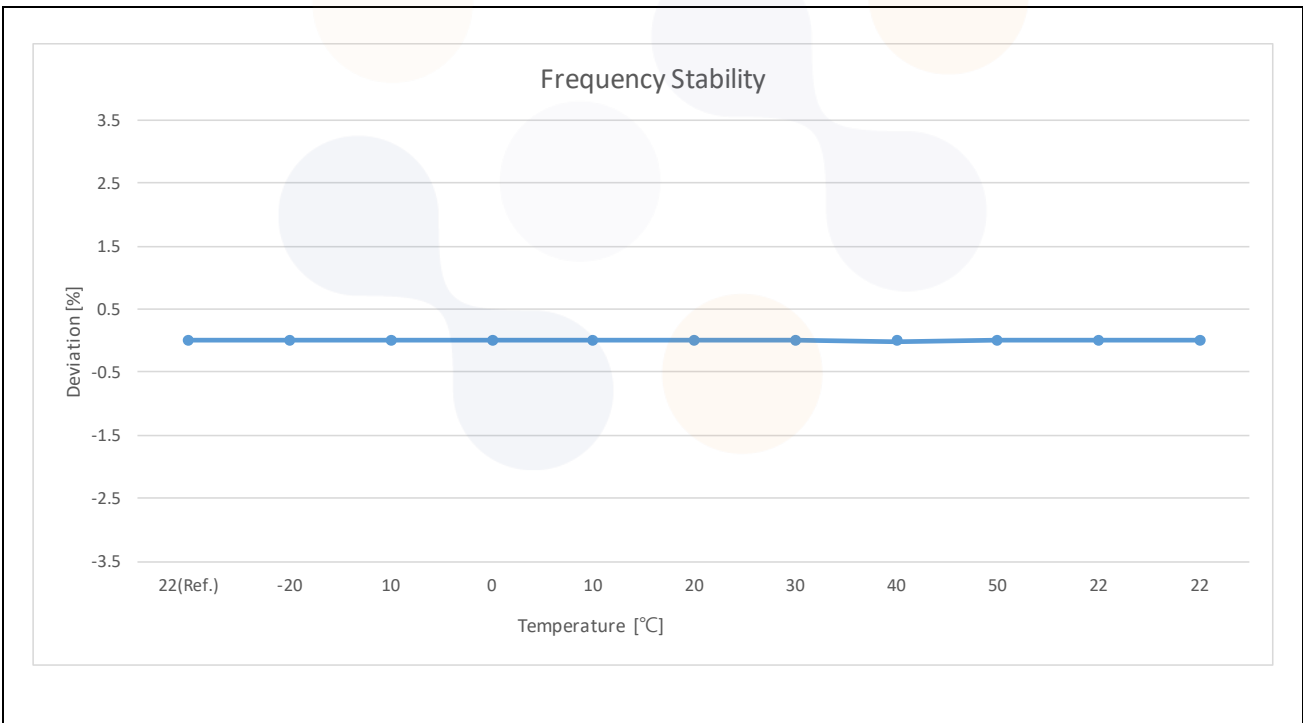
Test band : UNII-1
 Frequency (Hz) : 5 180 000 000

Voltage (%)	Power (V)	Temp. (°C)	Frequency (Hz)	Frequency error (Hz)	Deviation (%)	Limit (MHz)
					(%)	(MHz)
100	11.10	22(Ref.)	517 997 842 0	-21 580.000	-0.000 417	5 150 ≤ F ≤ 5 250
		-20	517 997 403 0	-25 970.000	-0.000 501	
		-10	517 998 382 0	-16 180.000	-0.000 312	
		0	517 998 521 0	-14 790.000	-0.000 286	
		10	517 998 022 0	-19 780.000	-0.000 382	
		20	517 998 122 0	-18 780.000	-0.000 363	
		30	517 997 363 0	-26 370.000	-0.000 509	
		40	517 997 243 0	-27 570.000	-0.000 532	
		50	517 997 682 0	-23 180.000	-0.000 447	
85	9.44	22(Ref.)	517 997 862 0	-21 380.000	-0.000 413	
115	12.77	22(Ref.)	517 997 862 0	-21 380.000	-0.000 413	



Test band : UNII-3
 Frequency (Hz) : 5 745 000 000

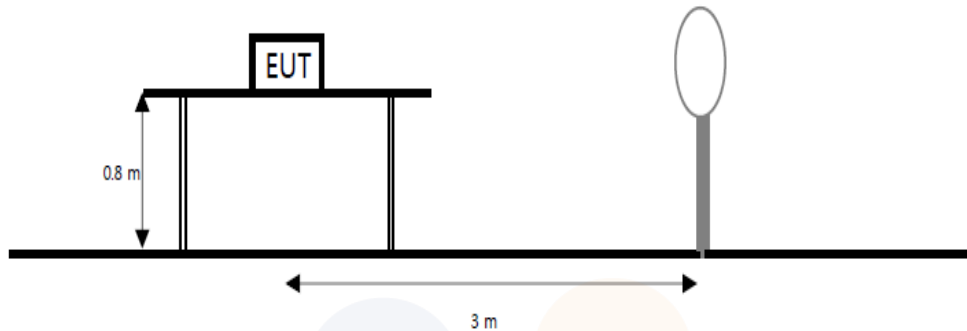
Voltage (%)	Power (V)	Temp. (°C)	Frequency (Hz)	Frequency error (Hz)	Deviation (%)	Limit (MHz)
100	11.10	22(Ref.)	574 497 702 0	-22 980.000	-0.000 400	5 725 ≤ F ≤ 5 850
		-20	574 497 123 0	-28 770.000	-0.000 501	
		-10	574 498 222 0	-17 780.000	-0.000 309	
		0	574 498 302 0	-16 980.000	-0.000 296	
		10	574 497 802 0	-21 980.000	-0.000 383	
		20	574 497 862 0	-21 380.000	-0.000 372	
		30	574 497 063 0	-29 370.000	-0.000 511	
		40	574 496 923 0	-30 770.000	-0.000 536	
		50	574 497 463 0	-25 370.000	-0.000 442	
85	9.44	22(Ref.)	574 497 702 0	-22 980.000	-0.000 400	
115	12.77	22(Ref.)	574 497 702 0	-22 980.000	-0.000 400	



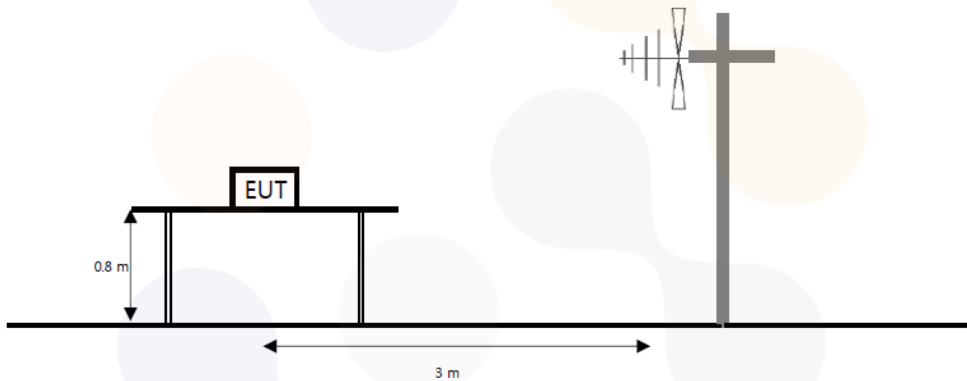
7.6. Spurious Emission, Band Edge and Restricted bands

Test setup

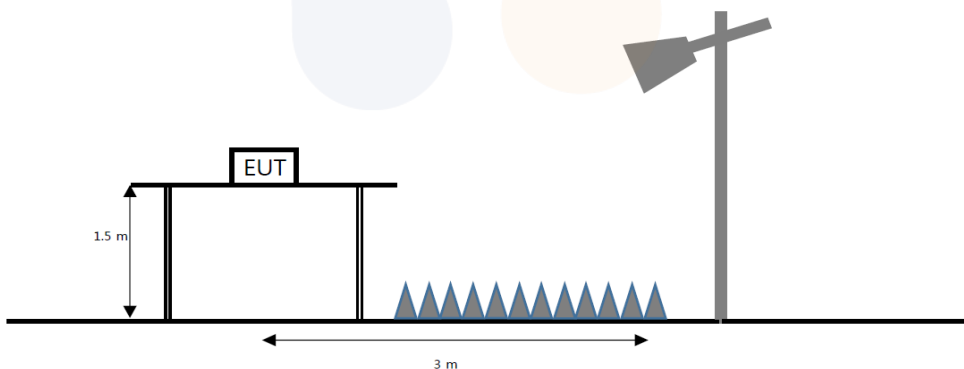
The diagram below shows the test setup that is utilized to make the measurements for emission from 9 kHz to 30 MHz Emissions



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



The diagram below shows the test setup that is utilized to make the measurements for emission from 1 GHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz 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 (MHz)	Field strength ($\mu V/m$)	Measurement distance (m)
0.009 - 0.490	2 400/F(kHz)	300
0.490 - 1.705	24 000/F(kHz)	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 MHz, 76–88 MHz, 174–216 MHz or 470–806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., Section 15.231 and 15.241.

According to section 15.205(a) and (b),

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
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	2 483.5 - 2 500	17.7 - 21.4
8.376 25 - 8.386 75	25	2 690 - 2 900	22.01 - 23.12
8.414 25 - 8.414 75	156.7 - 156.9	3 260 - 3 267	23.6 - 24.0
12.29 - 12.293	162.012 5 - 167.17	3 332 - 3 339	31.2 - 31.8
12.519 75 - 12.520 25	167.72 - 173.2	3 345.8 - 3 358	36.43 - 36.5
12.576 75 - 12.577 25	240 - 285	3 600 - 4 400	Above 38.6
13.36 - 13.41	322 - 335.4		

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 MHz, compliance with the limits in section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1 000 MHz, 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 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

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



IC

According to RSS-247(6.6),

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum device, digitally modulated device, or hybrid system is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz 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 6.3.2, 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 MHz

Frequency(MHz)	Field strength (μ V/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 MHz

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

Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

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:

- 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).
- Unwanted emissions that fall into restricted frequency bands listed in table 7 shall comply with the limits specified in table 5 and table 6.
- 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.

According to RSS-247(7.3),

For each band shall comply with the following e.i.r.p. spectral density limits:

For transmitters operating in the 5 150-5 250 MHz.

- All emissions outside the 5 150-5 350 MHz band shall not exceed -27 dBm/MHz peak e.i.r.p. spectral density
- any unwanted emissions that falls between the upper edge of the 26 dB bandwidth and 5350 MHz shall be attenuated below the channel power by at least 26 dB, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth.

For transmitters operating in the band 5 725-5 850 MHz.

- 27 dBm/MHz at frequencies from the band edges decreasing linearly to 15.6 dBm/MHz at 5 MHz above or below the band edges;
- 15.6 dBm/MHz at 5 MHz above or below the band edges decreasing linearly to 10 dBm/MHz at 25 MHz above or below the band edges;
- 10 dBm/MHz at 25 MHz above or below the band edges decreasing linearly to -27 dBm/MHz at 75 MHz above or below the band edges; and
- 27 dBm/MHz at frequencies more than 75 MHz above or below the band edges.

Test procedure

ANSI C63.10 - Section 12.7.5, 12.7.6, 12.7.7.2

KDB 789033 D02 v02r01 – Section G

Test settings

Peak field strength measurements

- Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- RBW = as specified in table
- VBW $\geq$ [3×RBW]
- Detector = peak
- Sweep time = No faster than coupled (auto) time
- Trace mode = max hold
- Allow sweeps to continue until the trace stabilizes

Table. RBW as a function of frequency

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

Average field strength measurements

Trace averaging with continuous EUT transmission at full power

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

- RBW = 1 MHz (unless otherwise specified).
- VBW $\geq [3 \times \text{RBW}]$.
- Detector = Power averaging (RMS), if $[\text{span} / (\# \text{ of points in sweep})] \leq (\text{RBW} / 2)$. Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition is not satisfied, then the detector mode shall be set to peak.
- Averaging type = power (i.e., rms):
- As an alternative, the detector and averaging type may be set for linear voltage averaging.
- Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.
- Sweep time = auto.
- 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 ($D \geq 98\%$) cannot be achieved and the duty cycle is constant (duty cycle variations are less than $\pm 2\%$), then the following procedure shall be used:

- The EUT shall be configured to operate at the maximum achievable duty cycle.
- Measure the duty cycle D of the transmitter output signal as described in 11.6.
- RBW = 1 MHz (unless otherwise specified).
- VBW $\geq [3 \times \text{RBW}]$.
- Detector = Power averaging (RMS), if $[\text{span} / (\# \text{ of points in sweep})] \leq (\text{RBW} / 2)$. 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.
- Averaging type = power (i.e., rms):
- As an alternative, the detector and averaging type may be set for linear voltage averaging.
- Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.
- Sweep time = auto.
- Perform a trace average of at least 100 traces.
- 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:
 - If power averaging (rms) mode was used in step e), then the applicable correction factor is $[10 \log (1 / D)]$, where D is the duty cycle.
 - If linear voltage averaging mode was used in step e), then the applicable correction factor is $[20 \log (1 / D)]$, where D is the duty cycle.

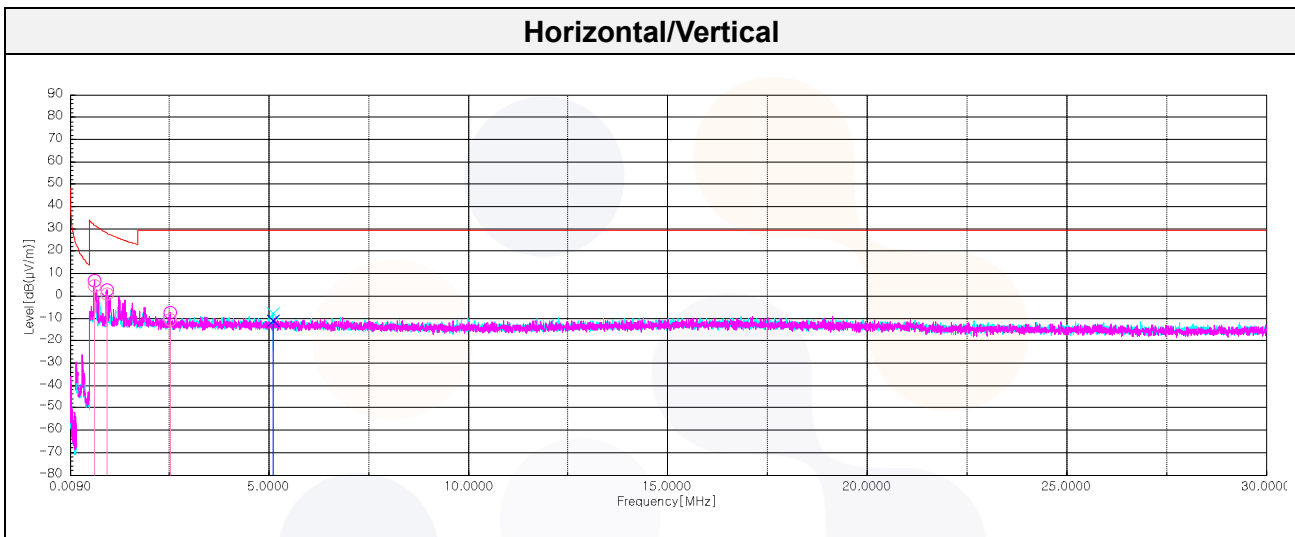
Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-70-4904-0113 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR26-SRF0150 Page (42) of (85)	 
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Notes:

- $f < 30$ MHz, extrapolation factor of 40 dB/decade of distance. $F_d = 40 \log(D_m/D_s)$
 $f \geq 30$ MHz, 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
- Factors(dB) = Antenna factor(dB/m) + Cable loss(dB) + or Amp. gain(dB) + or F_d (dB)
- The worst-case emissions are reported however emissions whose levels were not within 20 dB of respective limits were not reported.
- Average test would be performed if the peak result were greater than the average limit.
- ¹⁾ means restricted band.
- Below 30 MHz 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."
- Above 1 GHz the worst results between two antenna polarizations (H and V) were documented in the test report.
- For above 1 GHz pre-scan to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 kHz for peak measurements.
- 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 kHz 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.

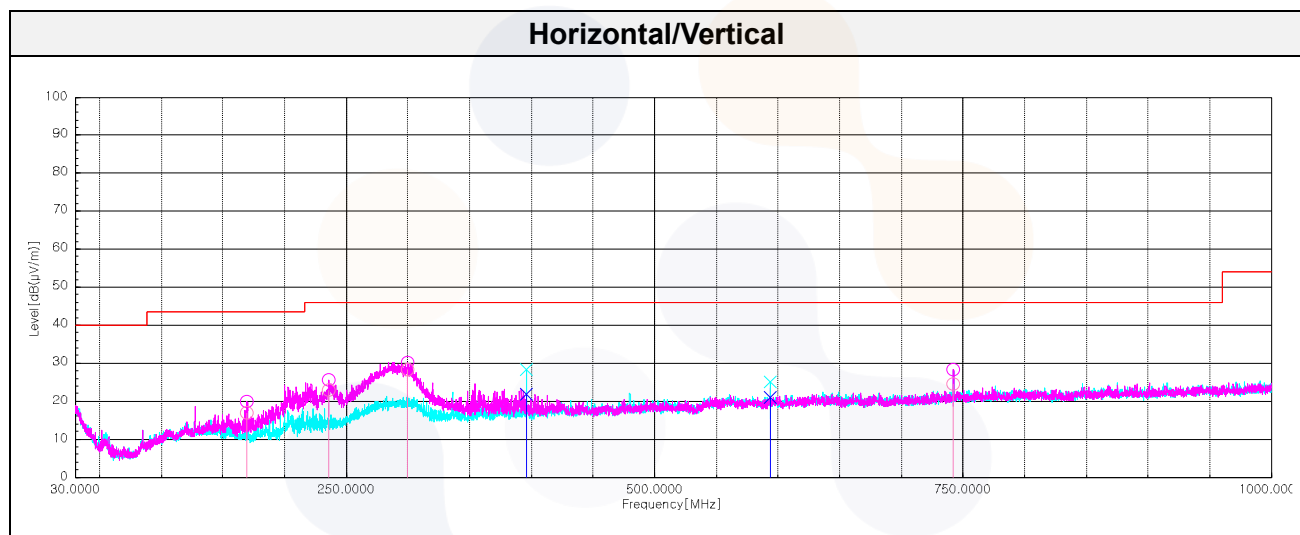
Test results (Below 30 MHz) – Worst case: 802.11n HT40 / UNII1_5 230 MHz

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μ V))	(dB)	(dB)	(dB)	(dB(μ V/m))	(dB(μ V/m))	(dB)
Quasi peak data								
0.63	H	57.10	20.23	-32.68	40.00	4.65	31.60	26.95
0.95	H	53.20	20.29	-32.66	40.00	0.83	28.04	27.21
2.52	H	41.20	20.38	-32.43	40.00	-10.85	29.54	40.39
5.10	V	41.00	20.50	-32.56	40.00	-11.06	29.54	40.60



Test results (Below 1 000 MHz) – Worst case: 802.11n HT40 / UNII1_5 230 MHz

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μ V))	(dB)	(dB)	(dB)	(dB(μ V/m))	(dB(μ V/m))	(dB)
Quasi peak data								
169.56 ¹⁾	H	32.80	15.39	-31.26	-	16.93	43.52	26.59
236.25	H	37.20	16.74	-30.95	-	22.99	46.02	23.03
300.02	H	40.20	19.10	-31.14	-	28.16	46.02	17.86
395.93	V	31.20	21.30	-30.85	-	21.65	46.02	24.37
594.06	V	26.60	24.60	-30.10	-	21.10	46.02	24.92
742.47	H	28.90	25.62	-29.93	-	24.59	46.02	21.43



Test results (Above 1 000 MHz)

UNII 1

802.11a_Lowest Channel (5 180 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 149.80 ¹⁾	H	55.80	33.30	-27.61	-	61.49	74.00	12.51
10 357.10	V	59.20	38.79	-39.98	-	58.01	68.20	10.19
15 538.25 ¹⁾	H	61.80	38.72	-37.93	-	62.59	74.00	11.41
Average Data								
5 149.80 ¹⁾	H	36.72	33.30	-27.61	0.25	42.66	54.00	11.34
15 538.25 ¹⁾	H	46.78	38.72	-37.93	0.25	47.82	54.00	6.18

802.11a_Middle Channel (5 200 MHz)

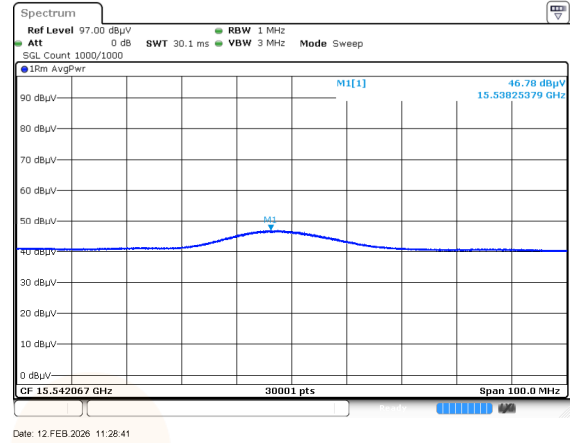
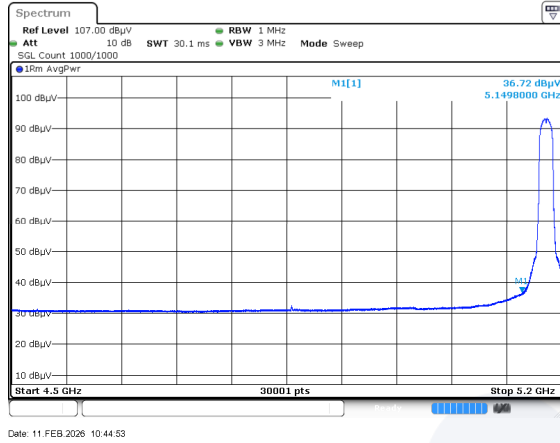
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
10 400.80	V	59.50	38.80	-39.99	-	58.31	68.20	9.89
15 599.71 ¹⁾	V	59.50	38.80	-37.74	-	60.56	74.00	13.44
Average Data								
15 599.71 ¹⁾	V	47.34	38.80	-37.74	0.25	48.65	54.00	5.35

802.11a_Highest Channel (5 240 MHz)

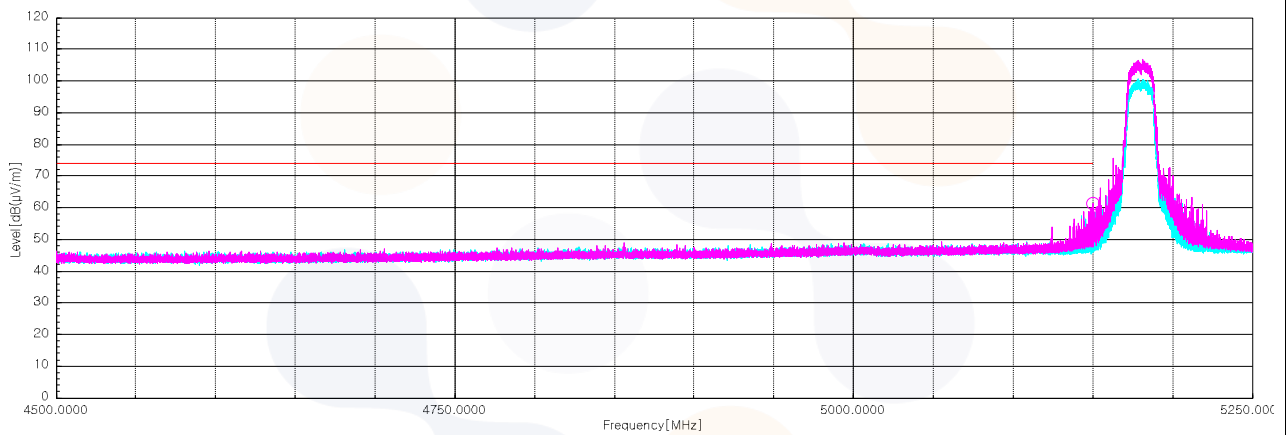
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
10 475.17	V	63.40	38.80	-40.00	-	62.20	68.20	6.00
15 719.69 ¹⁾	H	62.20	38.70	-37.36	-	63.54	74.00	10.46
Average Data								
15 719.69 ¹⁾	H	48.30	38.70	-37.36	0.25	49.89	54.00	4.11

802.11a_Lowest Channel (5 180 MHz)

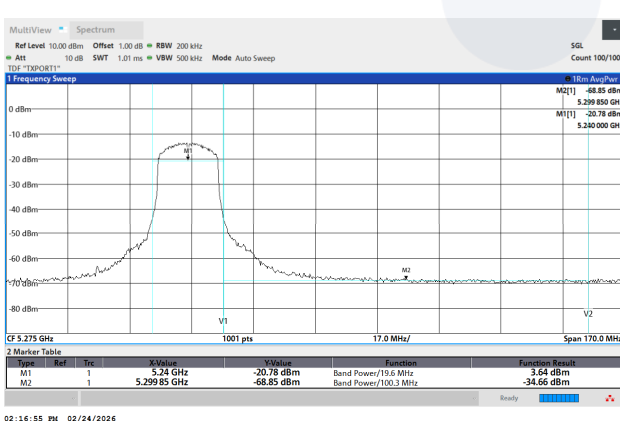
Average data



Horizontal/Vertical for Band-edge



Additional band-edge within 5250 – 5350 MHz



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Notes:

1. V1: Upper-edge of the 26 dB bandwidth
2. V2: Band-edge at 5350 MHz

802.11n_HT20_Lowest Channel (5 180 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 149.99 ¹⁾	H	47.20	33.30	-27.61	-	52.89	74.00	21.11
10 358.25	V	58.30	38.78	-39.98	-	57.10	68.20	11.10
15 539.78 ¹⁾	V	57.40	38.72	-37.93	-	58.19	74.00	15.81
Average Data								
5 149.99 ¹⁾	H	34.42	33.30	-27.61	0.36	40.47	54.00	13.53
15 539.78 ¹⁾	V	46.95	38.72	-37.93	0.36	48.10	54.00	5.90

802.11n_HT20_Middle Channel (5 200 MHz)

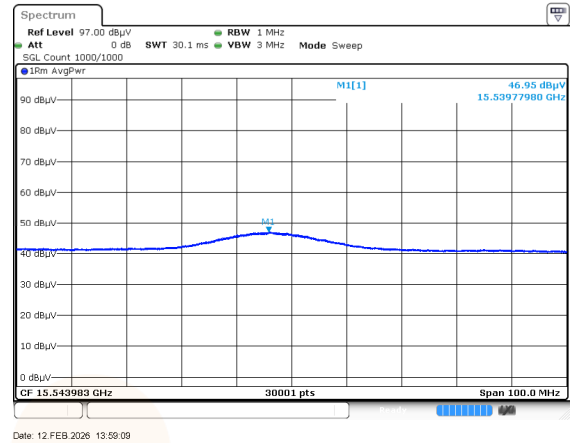
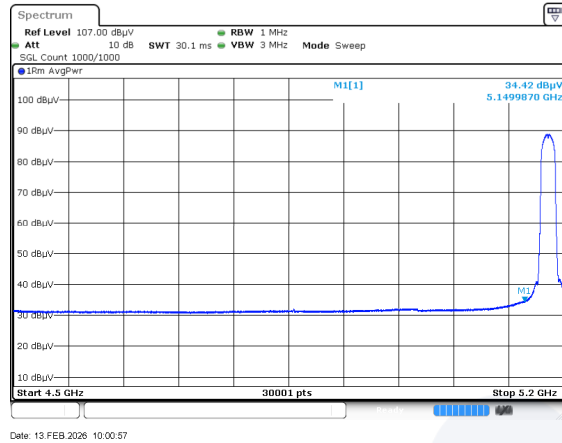
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
10 399.65	V	60.00	38.70	-39.99	-	58.71	68.20	9.49
15 600.34 ¹⁾	V	58.10	38.70	-37.74	-	59.06	74.00	14.94
Average Data								
15 600.34 ¹⁾	V	47.78	38.70	-37.74	0.36	49.10	54.00	4.90

802.11n_HT20_Highest Channel (5 240 MHz)

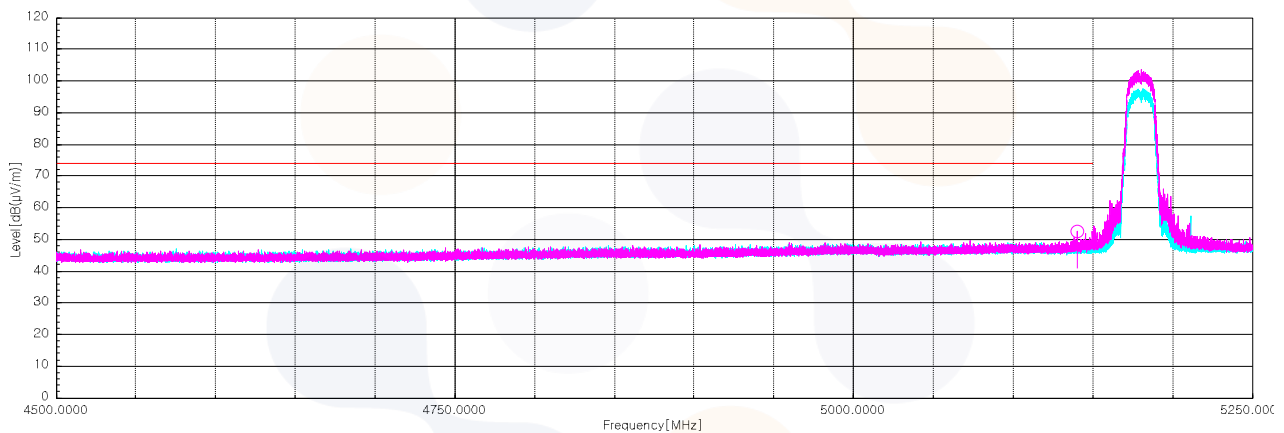
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
10 482.07	V	63.40	38.80	-40.00	-	62.20	68.20	6.00
15 719.71 ¹⁾	V	60.40	38.70	-37.36	-	61.74	74.00	12.26
Average Data								
15 719.71 ¹⁾	V	47.83	38.70	-37.36	0.36	49.53	54.00	4.47

802.11n_HT20_Lowest Channel (5 180 MHz)

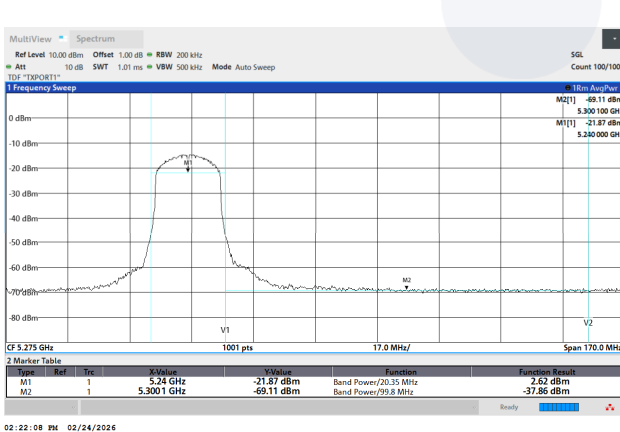
Average data



Horizontal/Vertical for Band-edge



Additional band-edge within 5250 – 5350 MHz



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Notes:

1. V1: Upper-edge of the 26 dB bandwidth
2. V2: Band-edge at 5350 MHz

802.11n_HT40_Lowest Channel (5 190 MHz)

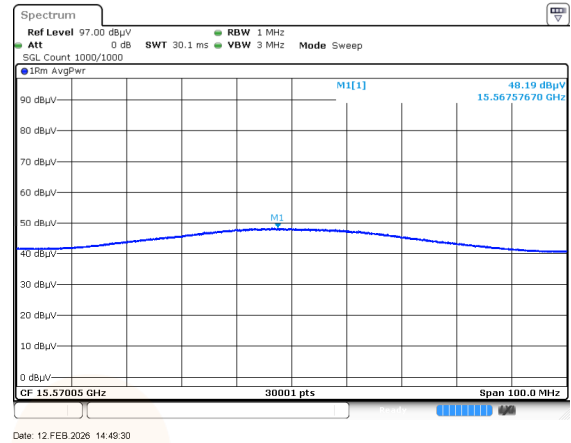
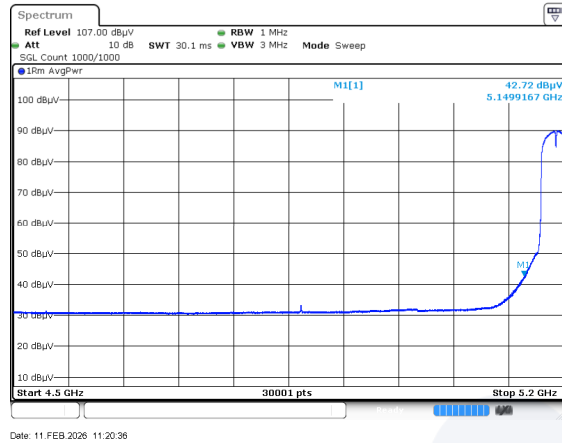
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 149.92 ¹⁾	H	61.30	33.30	-27.61	-	66.99	74.00	7.01
10 377.03	V	58.50	38.75	-39.99	-	57.26	68.20	10.94
15 567.58 ¹⁾	V	59.10	38.80	-37.84	-	60.06	74.00	13.94
Average Data								
5 149.92 ¹⁾	H	42.72	33.30	-27.61	0.70	49.11	54.00	4.89
15 567.58 ¹⁾	V	48.19	38.80	-37.84	0.70	49.85	54.00	4.15

802.11n_HT40_Highest Channel (5 230 MHz)

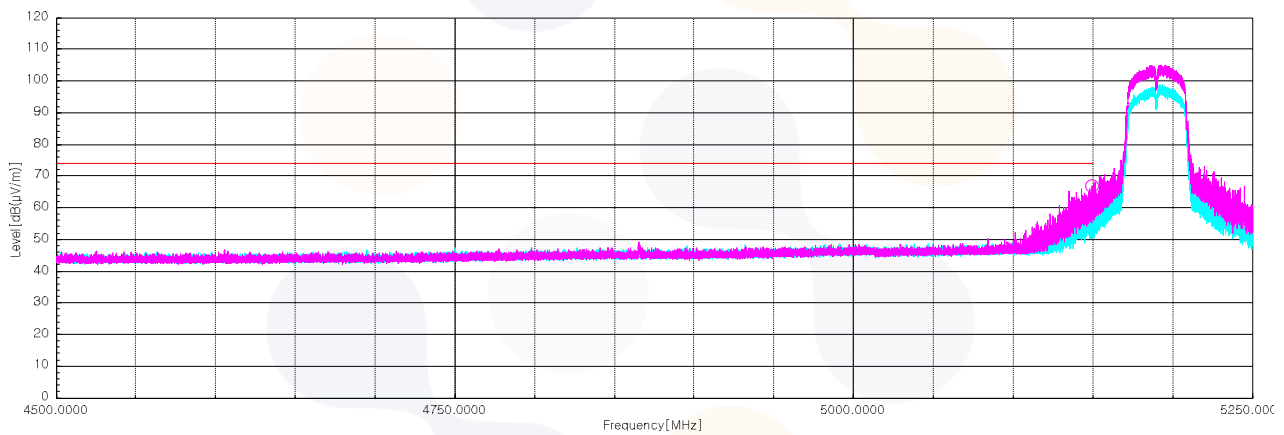
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
10 460.22	V	61.70	38.80	-40.00	-	60.50	68.20	7.70
15 567.58 ¹⁾	V	60.40	38.80	-37.84	-	61.36	74.00	12.64
Average Data								
15 567.58 ¹⁾	V	48.19	38.80	-37.84	0.70	49.85	54.00	4.15

802.11n_HT40_Lowest Channel (5 190 MHz)

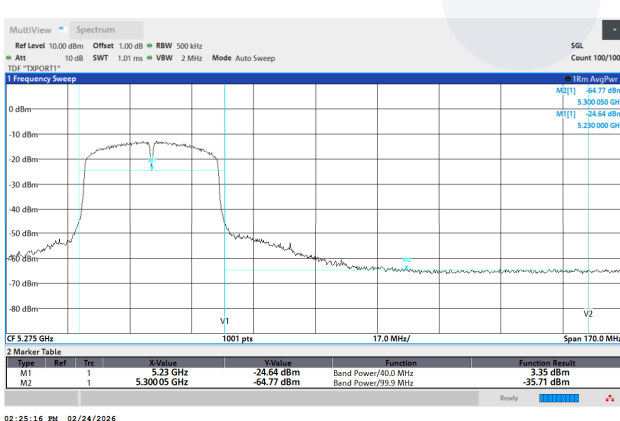
Average data



Horizontal/Vertical for Band-edge



Additional band-edge within 5250 – 5350 MHz



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Notes:

1. V1: Upper-edge of the 26 dB bandwidth
2. V2: Band-edge at 5350 MHz

802.11ac_VHT20_Lowest Channel (5 180 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 149.94 ¹⁾	H	53.50	33.30	-27.61	-	59.19	74.00	14.81
10 361.32	V	58.60	38.78	-39.98	-	57.40	68.20	10.80
15 539.93 ¹⁾	V	62.90	38.72	-37.93	-	63.69	74.00	10.31
Average Data								
5 149.94 ¹⁾	H	35.93	33.30	-27.61	0.26	41.88	54.00	12.12
15 539.93 ¹⁾	V	48.35	38.72	-37.93	0.26	49.40	54.00	4.60

802.11ac_VHT20_Middle Channel (5 200 MHz)

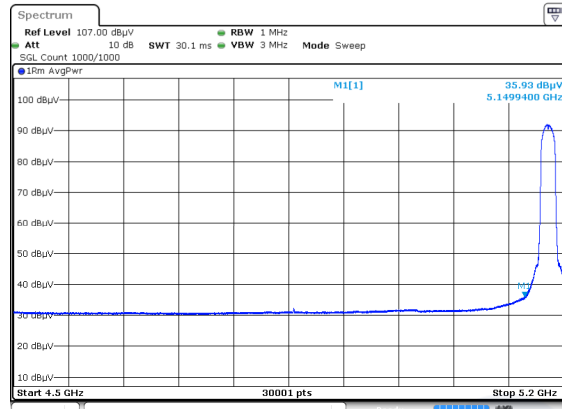
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
10 401.18	V	60.70	38.80	-39.99	-	59.51	68.20	8.69
15 599.76 ¹⁾	V	57.80	38.80	-37.74	-	58.86	74.00	15.14
Average Data								
15 599.76 ¹⁾	V	47.86	38.80	-37.74	0.26	49.18	54.00	4.82

802.11ac_VHT20_Highest Channel (5 240 MHz)

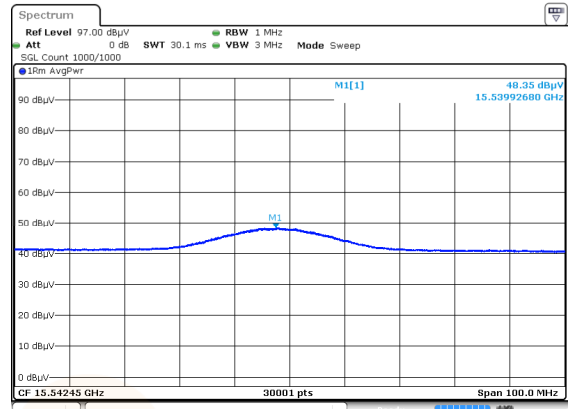
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
10 482.83	V	61.50	38.80	-40.00	-	60.30	68.20	7.90
15 720.51 ¹⁾	V	59.30	38.70	-37.36	-	60.64	74.00	13.36
Average Data								
15 720.51 ¹⁾	V	47.94	38.70	-37.36	0.26	49.54	54.00	4.46

802.11ac_VHT20_Lowest Channel (5 180 MHz)

Average data

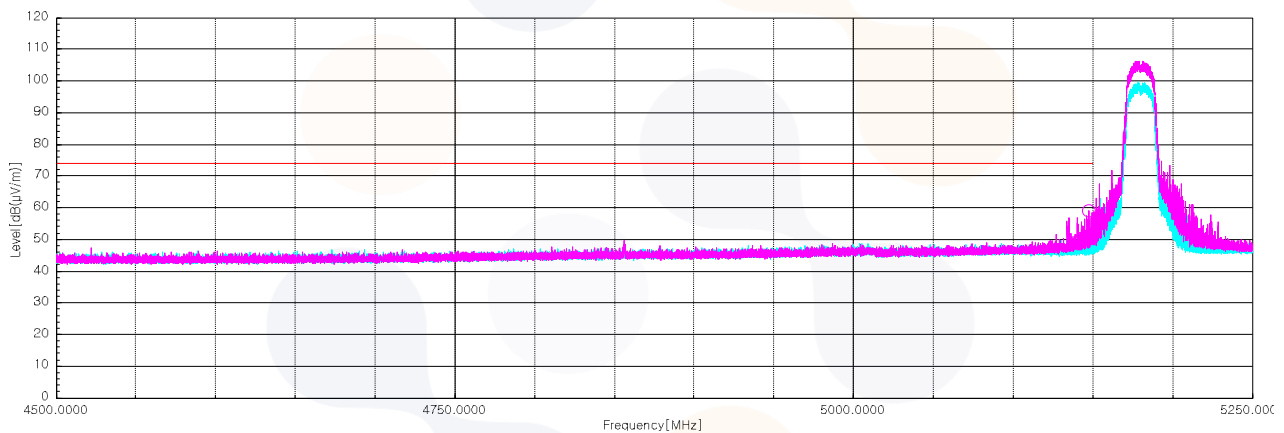


Date: 11 FEB 2026 11:07:24

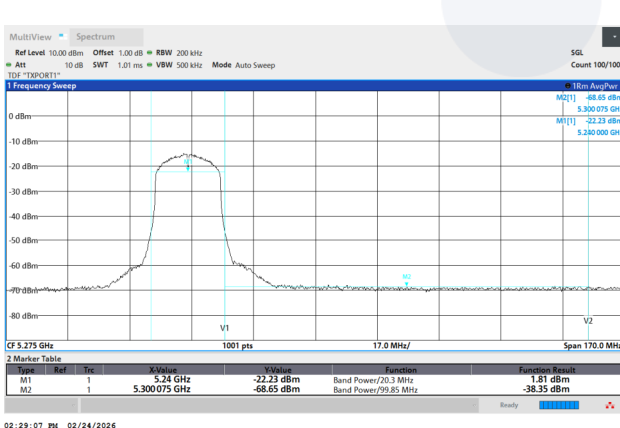


Date: 12 FEB 2026 14:24:21

Horizontal/Vertical for Band-edge



Additional band-edge within 5250 – 5350 MHz



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Notes:

1. V1: Upper-edge of the 26 dB bandwidth
2. V2: Band-edge at 5350 MHz

802.11ac_VHT40_Lowest Channel (5 190 MHz)

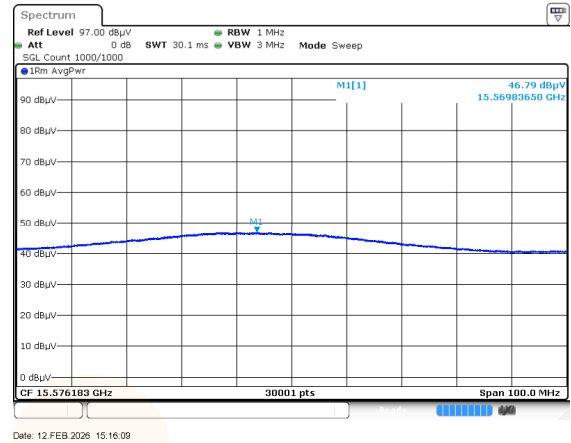
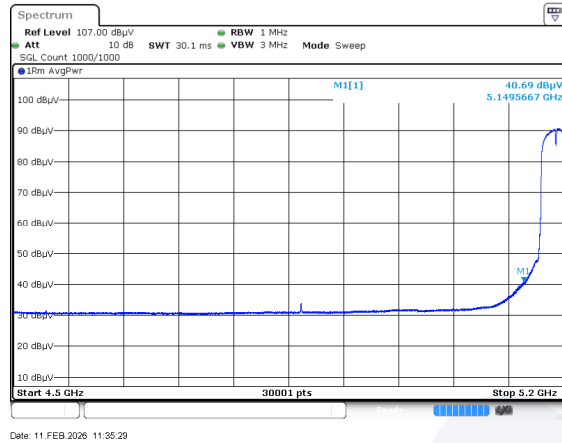
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 149.57 ¹⁾	H	60.00	33.30	-27.61	-	65.69	74.00	8.31
10 383.93	V	58.30	38.73	-39.99	-	57.04	68.20	11.16
15 569.84 ¹⁾	V	56.70	38.80	-37.83	-	57.67	74.00	16.33
Average Data								
5 149.57 ¹⁾	H	40.69	33.30	-27.61	0.51	46.89	54.00	7.11
15 569.84 ¹⁾	V	46.79	38.80	-37.83	0.51	48.27	54.00	5.73

802.11ac_VHT40_Highest Channel (5 230 MHz)

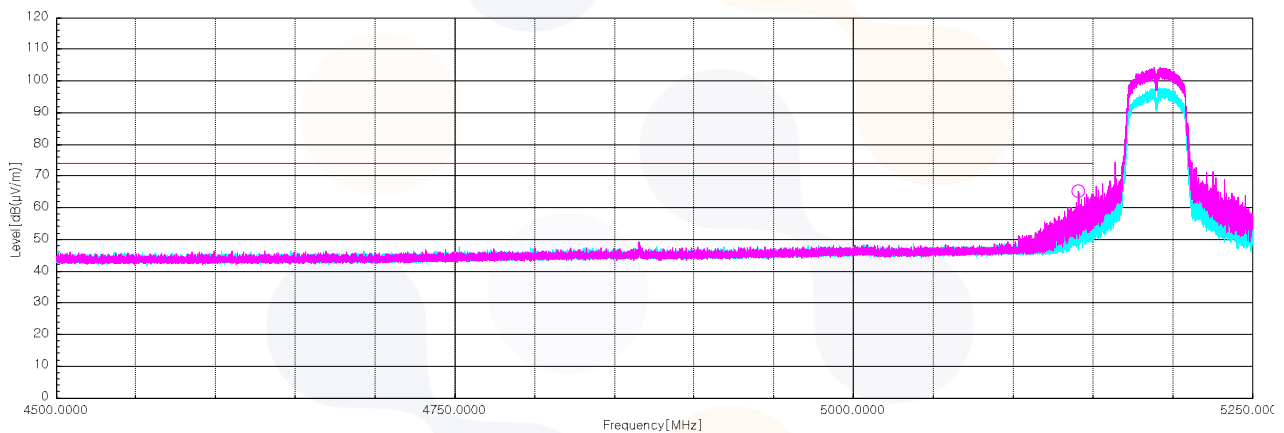
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
10 454.85	V	60.40	38.80	-39.99	-	59.21	68.20	8.99
15 692.45 ¹⁾	V	60.00	38.70	-37.45	-	61.25	74.00	12.75
Average Data								
15 692.45 ¹⁾	V	48.95	38.70	-37.45	0.51	50.71	54.00	3.29

802.11ac_VHT40_Lowest Channel (5 190 MHz)

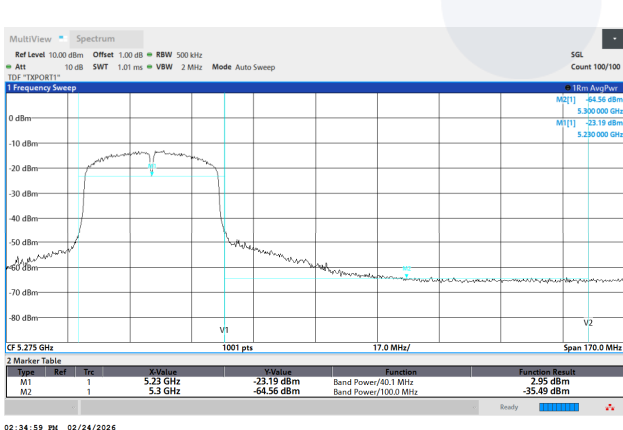
Average data



Horizontal/Vertical for Band-edge



Additional band-edge within 5250 – 5350 MHz



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Notes:

1. V1: Upper-edge of the 26 dB bandwidth
2. V2: Band-edge at 5350 MHz

Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-70-4904-0113 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR26-SRF0150 Page (55) of (85)	 
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802.11ax_HE20_Lowest Channel (5 180 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 140.60	H	44.50	33.28	-27.63	-	50.15	74.00	23.85
10 361.70	V	59.00	38.78	-39.98	-	57.80	68.20	10.40
15 540.28	V	57.10	38.72	-37.92	-	57.90	74.00	16.10
Average Data								
15 540.28	V	47.49	38.72	-37.92	0.35	48.64	54.00	5.36

802.11ax_HE20_Middle Channel (5 200 MHz)

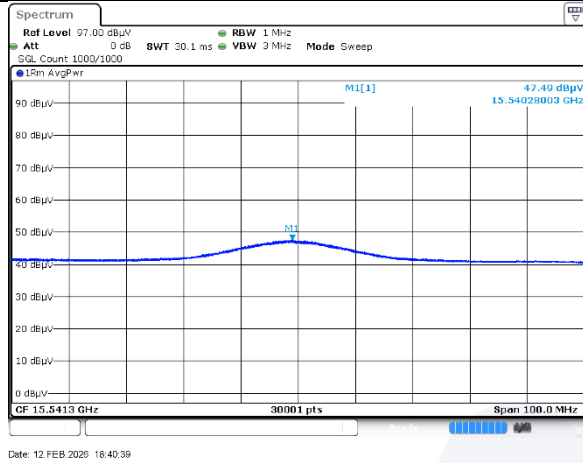
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
10 406.17	V	60.00	38.80	-39.99	-	58.81	68.20	9.39
15 600.04	V	63.30	38.70	-37.74	-	64.26	74.00	9.74
Average Data								
15 600.04	V	48.40	38.70	-37.74	0.35	49.71	54.00	4.29

802.11ax_HE20_Highest Channel (5 240 MHz)

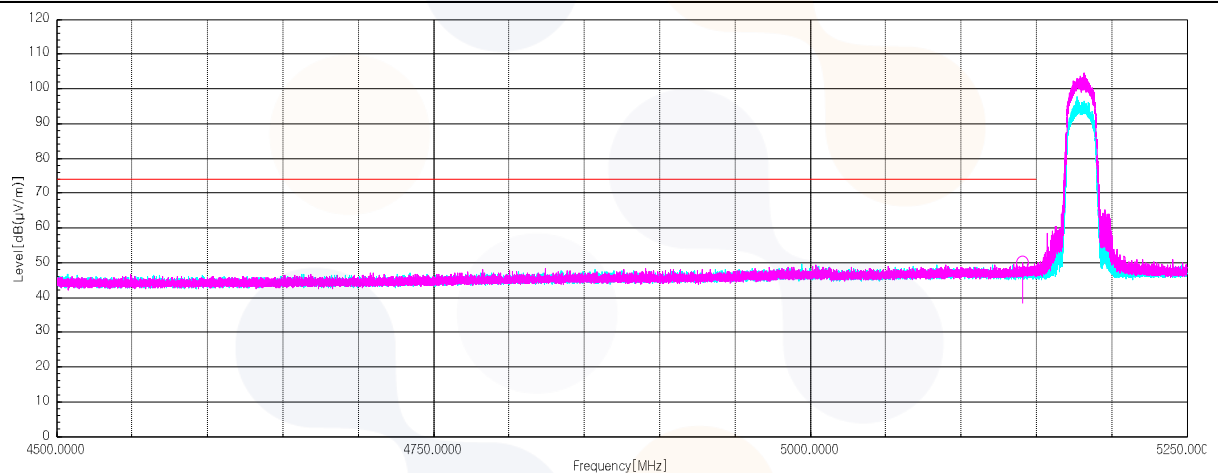
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
10 483.60	V	63.20	38.80	-40.00	-	62.00	68.20	6.20
15 719.01	V	61.50	38.70	-37.37	-	62.83	74.00	11.17
Average Data								
15 719.01	V	48.65	38.70	-37.37	0.35	50.33	54.00	3.67

802.11ax_HE20_Lowest Channel (5 180 MHz)

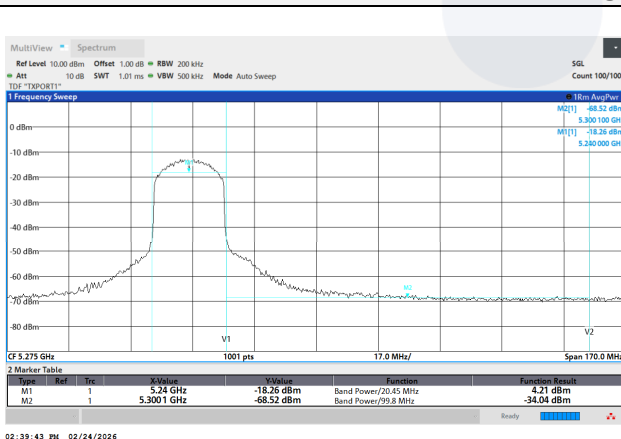
Average data



Horizontal/Vertical for Band-edge



Additional band-edge within 5250 – 5350 MHz



Notes:

1. V1: Upper-edge of the 26 dB bandwidth
2. V2: Band-edge at 5350 MHz

Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-70-4904-0113 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR26-SRF0150 Page (57) of (85)	 
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802.11ax_HE40_Lowest Channel (5 190 MHz)

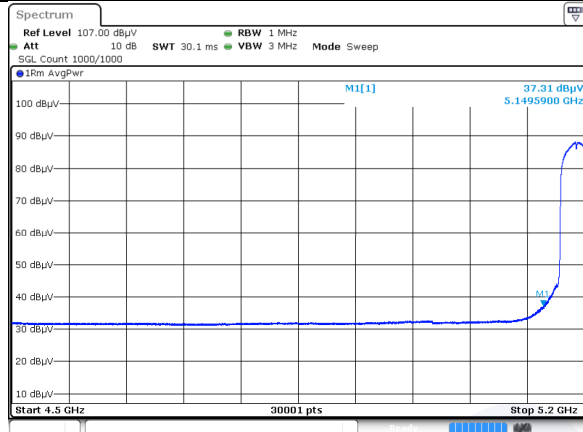
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB($\mu V/m$))	(dB($\mu V/m$))	(dB)
Peak data								
5 149.59	H	60.90	33.30	-27.61	-	66.59	74.00	7.41
10 381.25	V	57.70	38.74	-39.99	-	56.45	68.20	11.75
15 566.29	V	57.50	38.80	-37.84	-	58.46	74.00	15.54
Average Data								
5 149.59	H	37.31	33.30	-27.61	0.61	43.61	54.00	10.39
15 566.29	V	46.62	38.80	-37.84	0.61	48.19	54.00	5.81

802.11ax_HE40_Highest Channel (5 230 MHz)

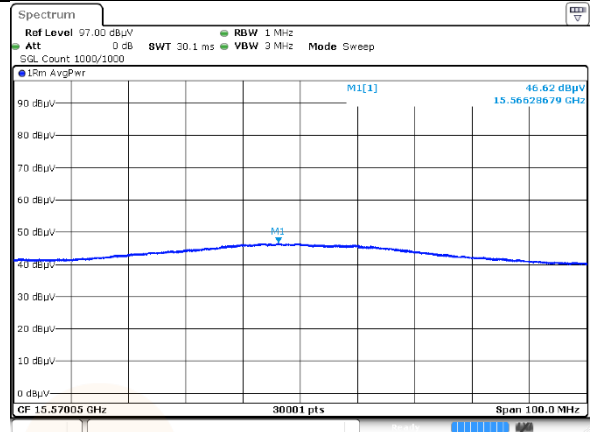
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB($\mu V/m$))	(dB($\mu V/m$))	(dB)
Peak data								
10 468.65	V	59.60	38.80	-40.00	-	58.40	68.20	9.80
15 693.97	V	57.90	38.70	-37.44	-	59.16	74.00	14.84
Average Data								
15 693.97	V	47.99	38.70	-37.44	0.61	49.86	54.00	4.14

802.11ax_HE40_Lowest Channel (5 190 MHz)

Average data

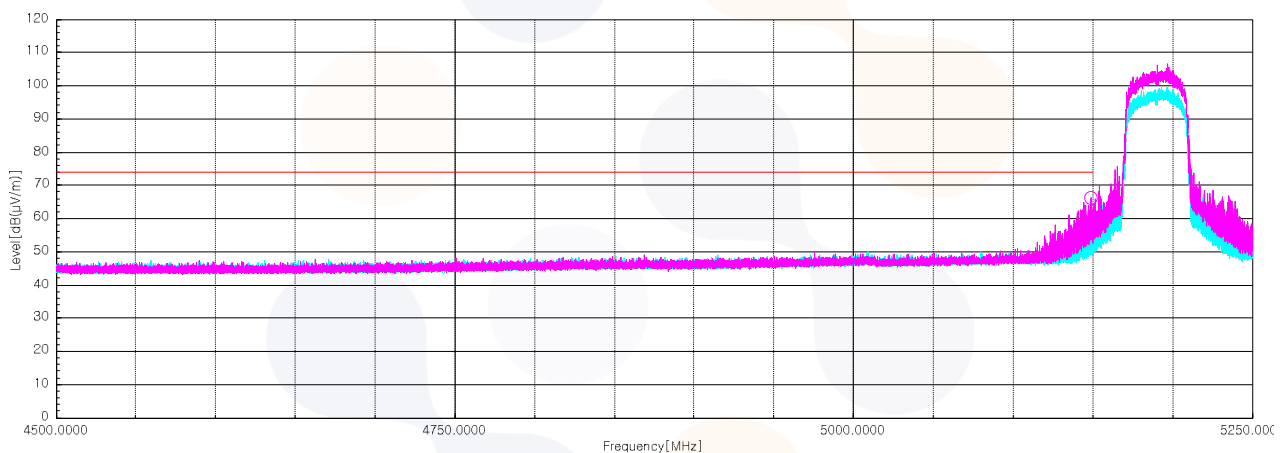


Date: 11.FEB.2026 14:40:21

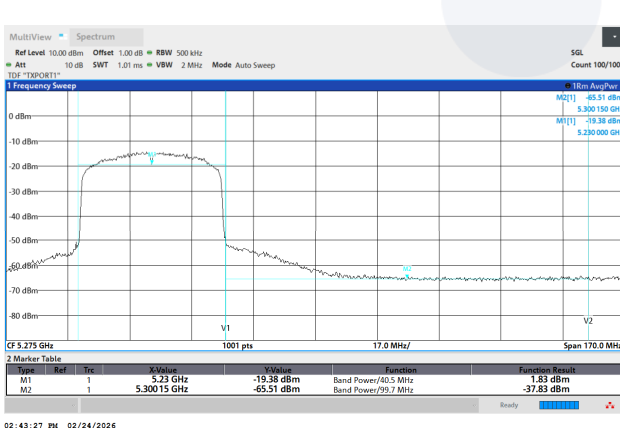


Date: 12.FEB.2026 19:05:43

Horizontal/Vertical for Band-edge



Additional band-edge within 5250 – 5350 MHz



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Notes:

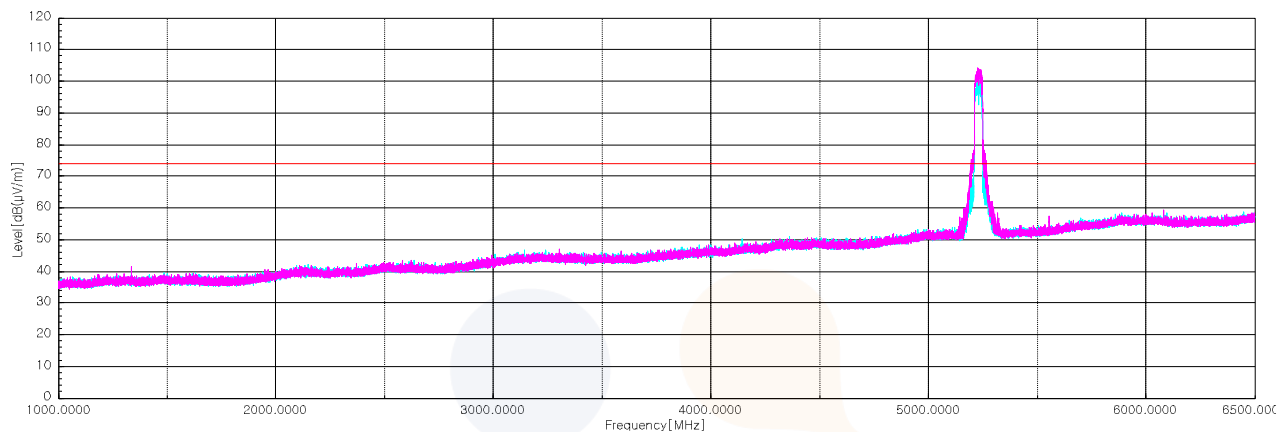
1. V1: Upper-edge of the 26 dB bandwidth
2. V2: Band-edge at 5350 MHz

Plot of Harmonics and Spurious Emissions

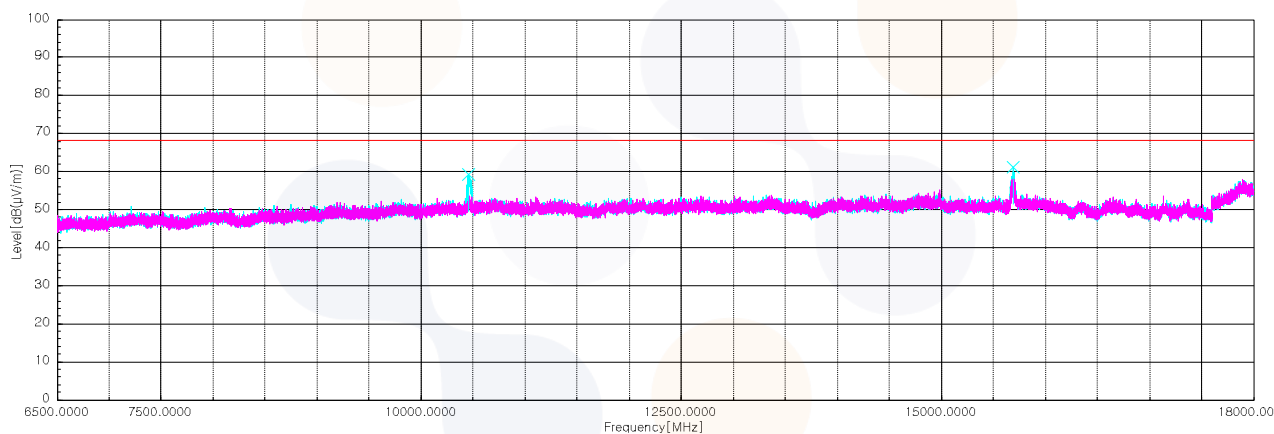
In order to simplify the report, attached plots were only the lowest margin condition

UNII 1_802.11ac VHT40_Highest Channel (5 230 MHz)

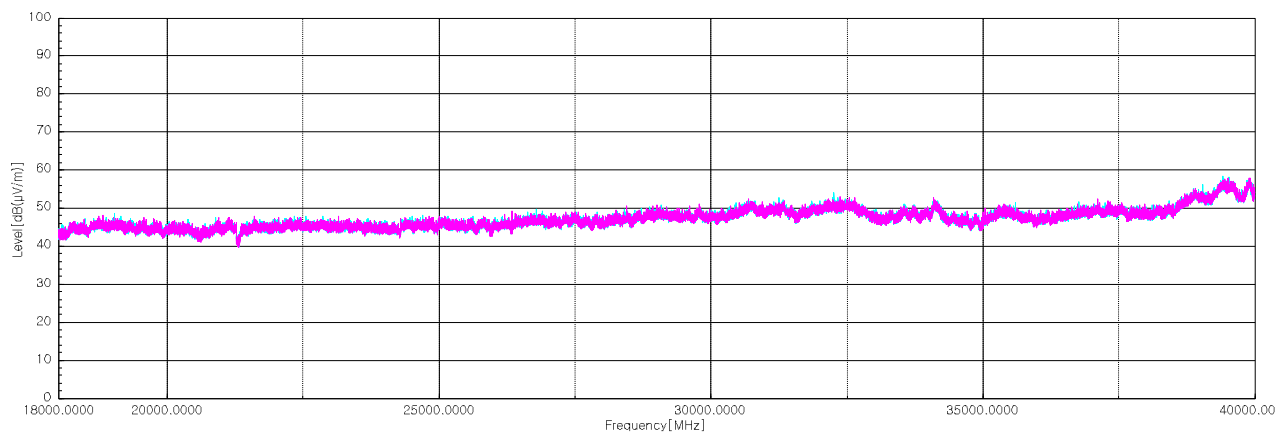
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



UNII 3

802.11a_Lowest Channel (5 745 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 724.62	H	61.40	33.45	-26.82	-	68.03	121.30	53.27
11 490.19 ¹⁾	V	55.20	38.92	-39.78	-	54.34	74.00	19.66
17 228.73	V	55.70	38.16	-35.37	-	58.49	68.20	9.71
Average Data								
11 490.19 ¹⁾	V	46.44	38.92	-39.78	0.25	45.83	54.00	8.17

802.11a_Middle Channel (5 785 MHz)

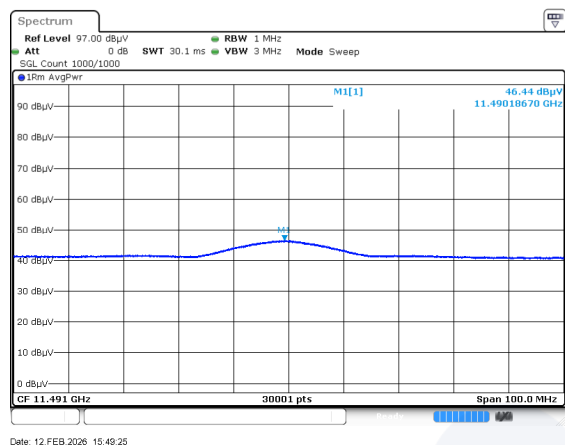
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
11 569.87 ¹⁾	V	52.80	38.76	-39.67	-	51.89	74.00	22.11
17 360.22	V	53.30	38.64	-35.21	-	56.73	68.20	11.47
Average Data								
11 569.87 ¹⁾	V	44.24	38.76	-39.67	0.25	43.58	54.00	10.42

802.11a_Highest Channel (5 825 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 850.55	H	59.20	34.10	-26.12	-	67.18	120.90	53.72
11 650.14 ¹⁾	V	52.30	38.80	-39.54	-	51.56	74.00	22.44
17 467.93	V	50.00	39.07	-35.16	-	53.91	68.20	14.29
Average Data								
11 650.14 ¹⁾	V	43.18	38.80	-39.54	0.25	42.69	54.00	11.31

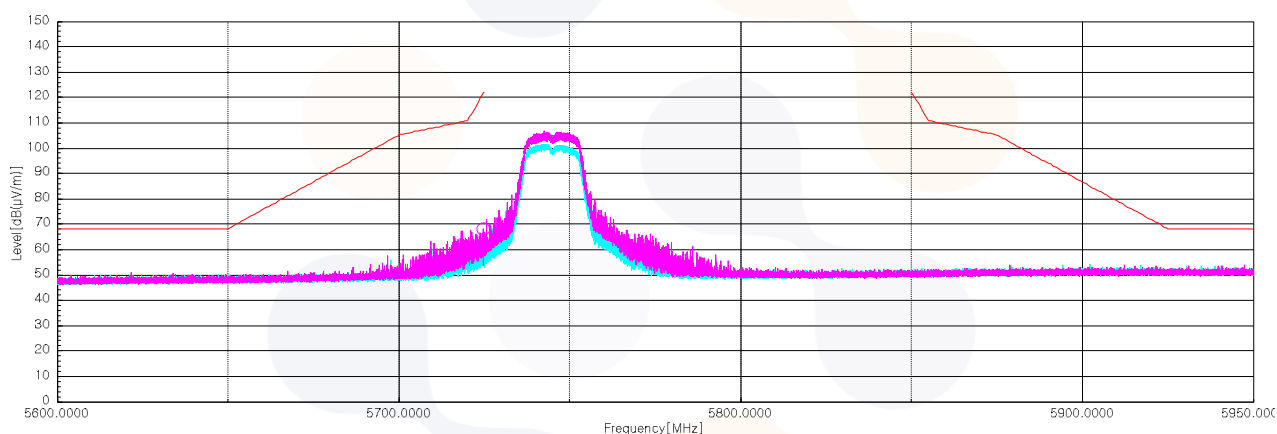
802.11a_Lowest Channel (5 745 MHz)

Average data



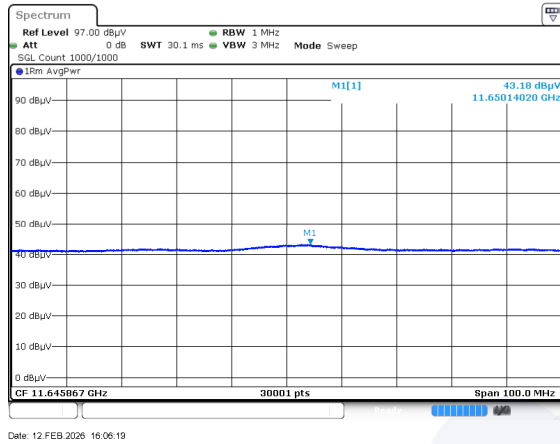
Blank

Horizontal/Vertical for Band-edge

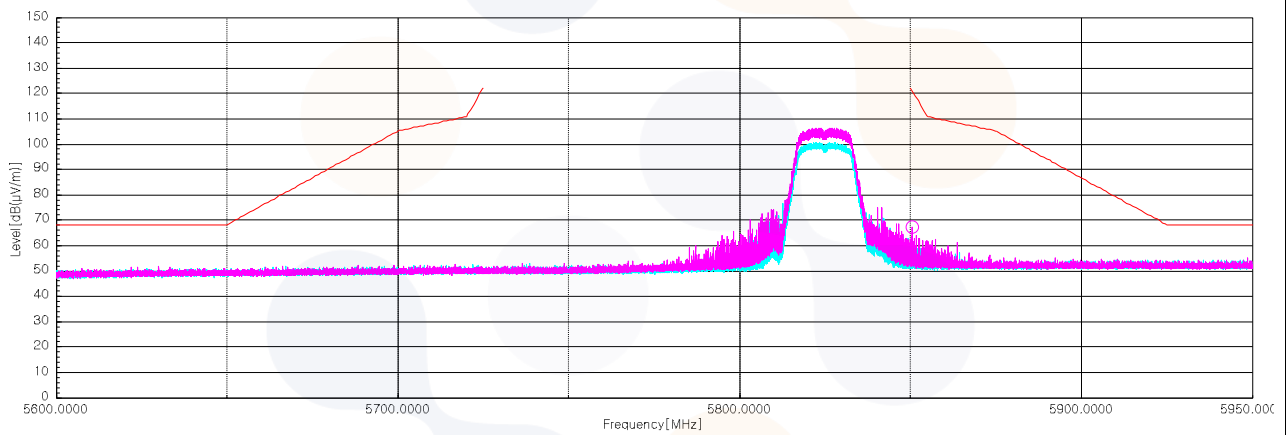


802.11a_Highest Channel (5 825 MHz)

Average data



Horizontal/Vertical for Band-edge



802.11n_HT20_Lowest Channel (5 745 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 722.54	H	56.90	33.45	-26.83	-	63.52	116.60	53.08
11 490.07 ¹⁾	V	54.20	38.92	-39.78	-	53.34	74.00	20.66
17 239.85	V	51.80	38.18	-35.31	-	54.67	68.20	13.53
Average Data								
11 490.07 ¹⁾	V	44.79	38.92	-39.78	0.36	44.29	54.00	9.71
Average Data								

802.11n_HT20_Middle Channel (5 785 MHz)

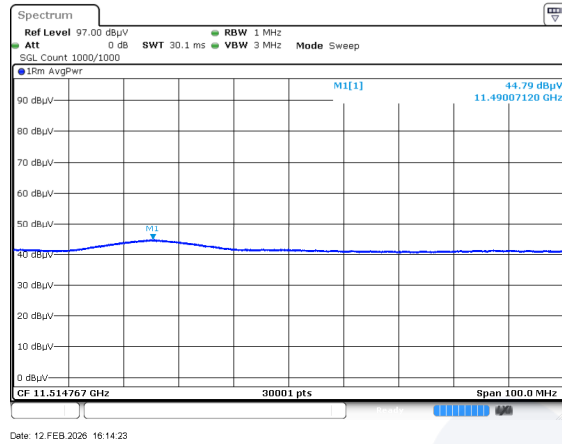
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
11 568.85 ¹⁾	V	55.60	38.76	-39.67	-	54.69	74.00	19.31
17 352.93	V	53.90	38.61	-35.21	-	57.30	68.20	10.90
Average Data								
11 568.85 ¹⁾	V	43.96	38.76	-39.67	0.36	43.41	54.00	10.59

802.11n_HT20_Highest Channel (5 825 MHz)

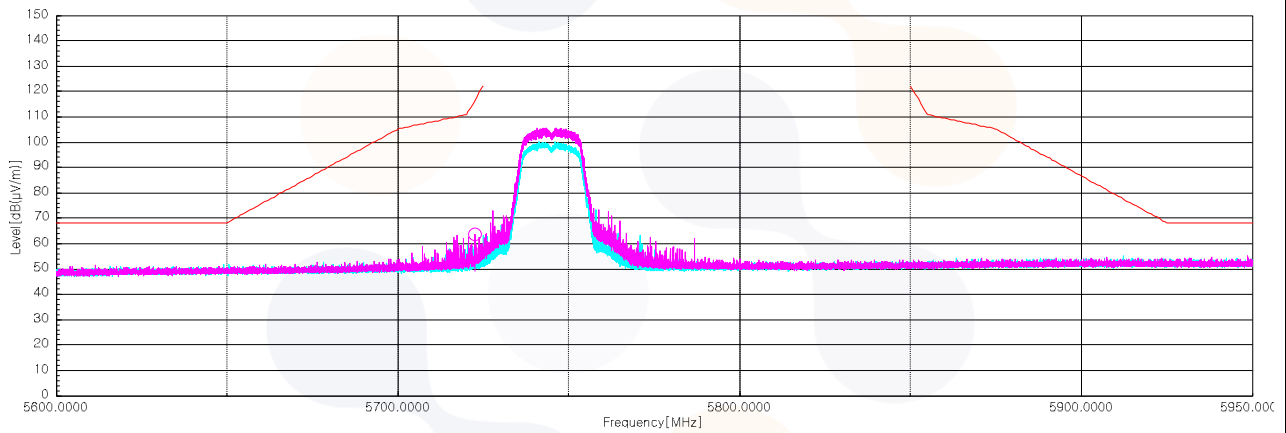
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 850.78	H	57.20	34.10	-26.12	-	65.18	120.40	55.22
11 649.52 ¹⁾	V	52.50	38.80	-39.54	-	51.76	74.00	22.24
17 480.20	V	51.00	39.12	-35.15	-	54.97	68.20	13.23
Average Data								
11 649.52 ¹⁾	V	43.37	38.80	-39.54	0.36	42.99	54.00	11.01

802.11n_HT20_Lowest Channel (5 745 MHz)

Average data

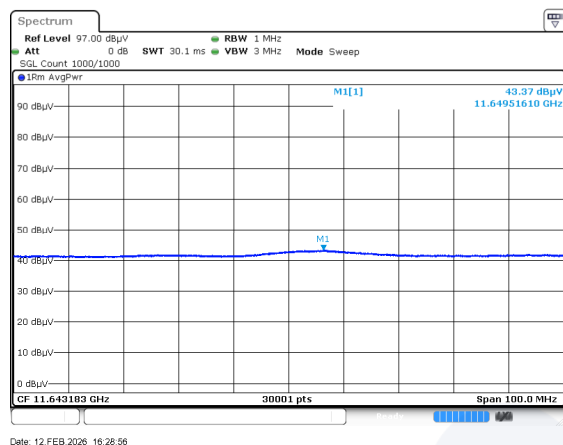


Horizontal/Vertical for Band-edge



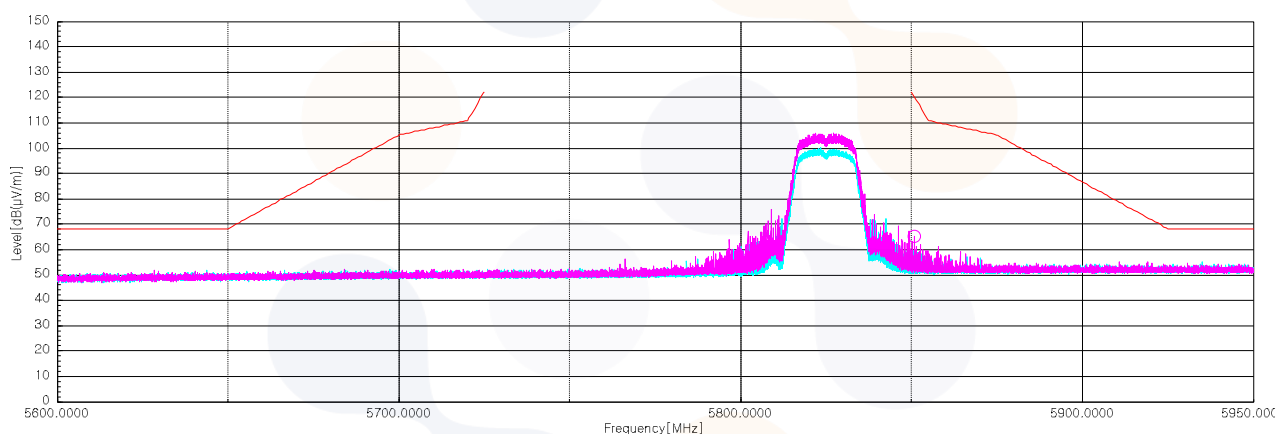
802.11n_HT20_Highest Channel (5 825 MHz)

Average data



Blank

Horizontal/Vertical for Band-edge



802.11n_HT40_Lowest Channel (5 755 MHz)

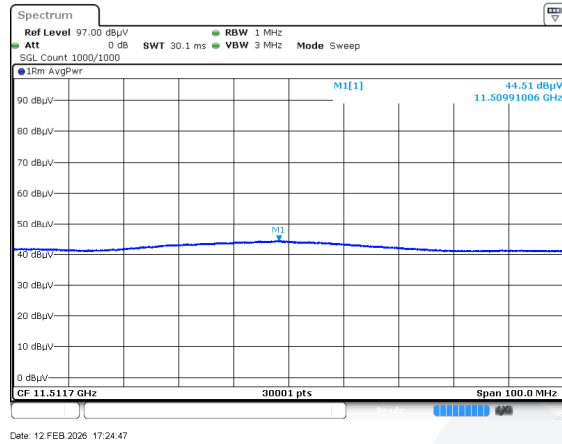
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 724.73	H	62.80	33.45	-26.82	-	69.43	121.60	52.17
11 509.91 ¹⁾	V	54.00	38.88	-39.77	-	53.11	74.00	20.89
17 277.80	V	52.50	38.26	-35.25	-	55.51	68.20	12.69
Average Data								
11 509.91 ¹⁾	V	44.51	38.88	-39.77	0.70	44.32	54.00	9.68

802.11n_HT40_Highest Channel (5 795 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 854.33	H	55.90	34.12	-26.10	-	63.92	112.30	48.38
11 590.18 ¹⁾	V	52.50	38.72	-39.64	-	51.58	74.00	22.42
17 379.77	V	49.80	38.72	-35.20	-	53.32	68.20	14.88
Average Data								
11 590.18 ¹⁾	V	43.25	38.72	-39.64	0.70	43.03	54.00	10.97

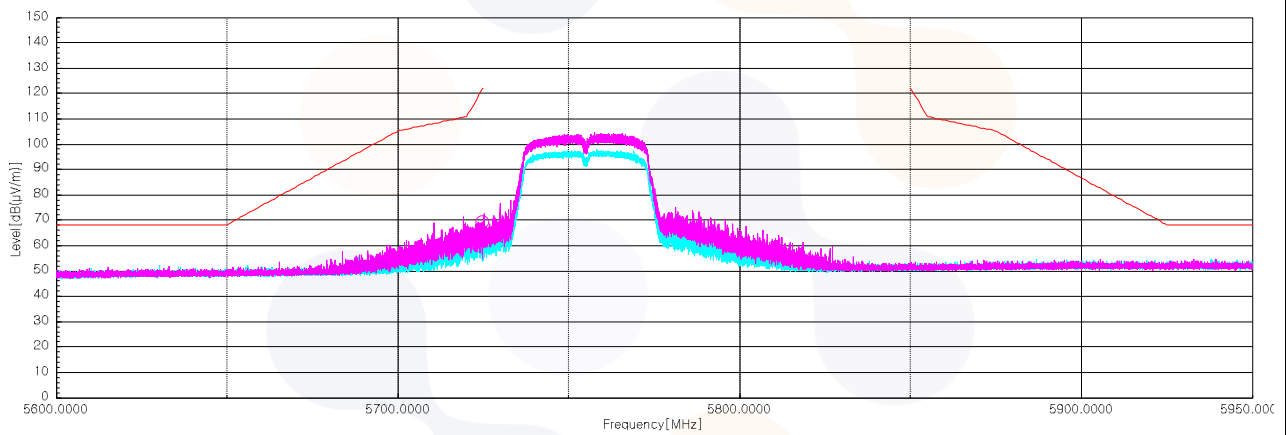
802.11n_HT40_Lowest Channel (5 755 MHz)

Average data



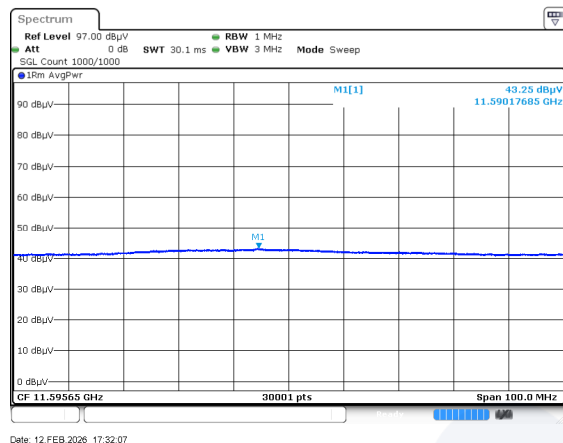
Blank

Horizontal/Vertical for Band-edge

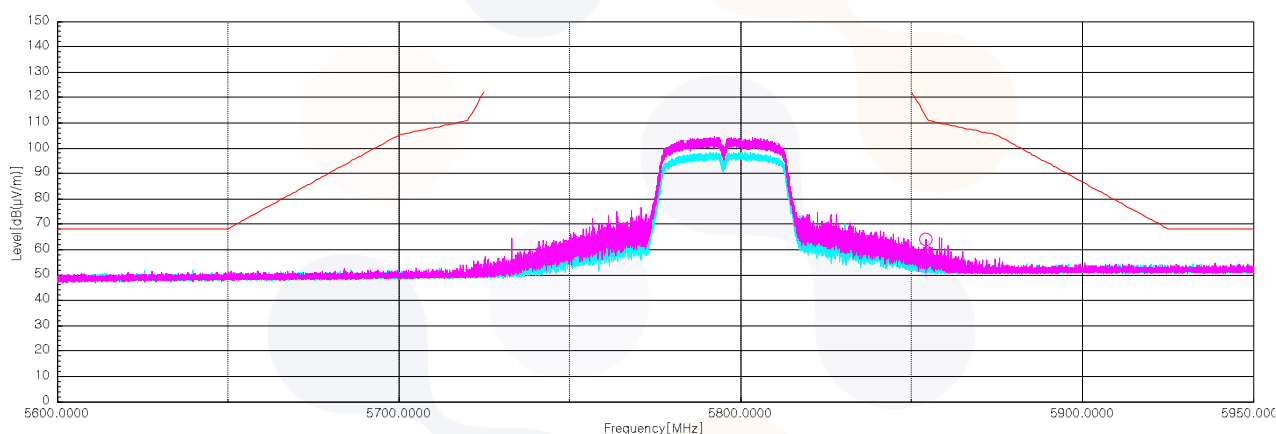


802.11n_HT40_Highest Channel (5 795 MHz)

Average data



Horizontal/Vertical for Band-edge



802.11ac_VHT20_Lowest Channel (5 745 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 723.17	H	59.80	33.45	-26.82	-	66.43	118.00	51.57
11 489.95 ¹⁾	V	56.80	38.92	-39.78	-	55.94	74.00	18.06
17 236.78	V	55.50	38.17	-35.33	-	58.34	68.20	9.86
Average Data								
11 489.95 ¹⁾	V	46.99	38.92	-39.78	0.26	46.39	54.00	7.61

802.11ac_VHT20_Middle Channel (5 785 MHz)

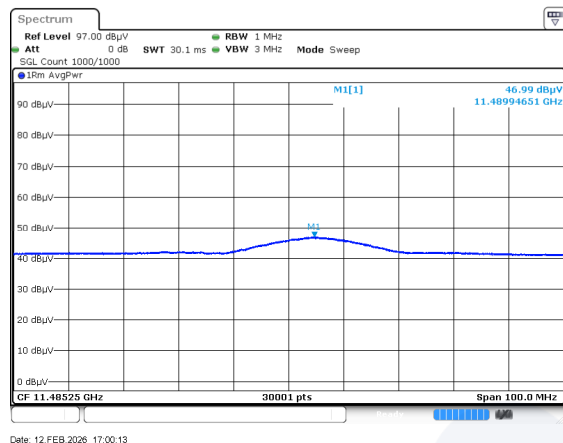
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
11 569.98 ¹⁾	V	53.40	38.76	-39.67	-	52.49	74.00	21.51
17 355.62	V	50.30	38.62	-35.21	-	53.71	68.20	14.49
Average Data								
11 569.98 ¹⁾	V	44.41	38.76	-39.67	0.26	43.76	54.00	10.24

802.11ac_VHT20_Highest Channel (5 825 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 852.92	H	55.60	34.11	-26.11	-	63.60	115.50	51.90
11 648.53 ¹⁾	V	52.60	38.80	-39.54	-	51.86	74.00	22.14
17 467.55	V	48.70	39.07	-35.16	-	52.61	68.20	15.59
Average Data								
11 648.53 ¹⁾	V	43.13	38.80	-39.54	0.26	42.65	54.00	11.35

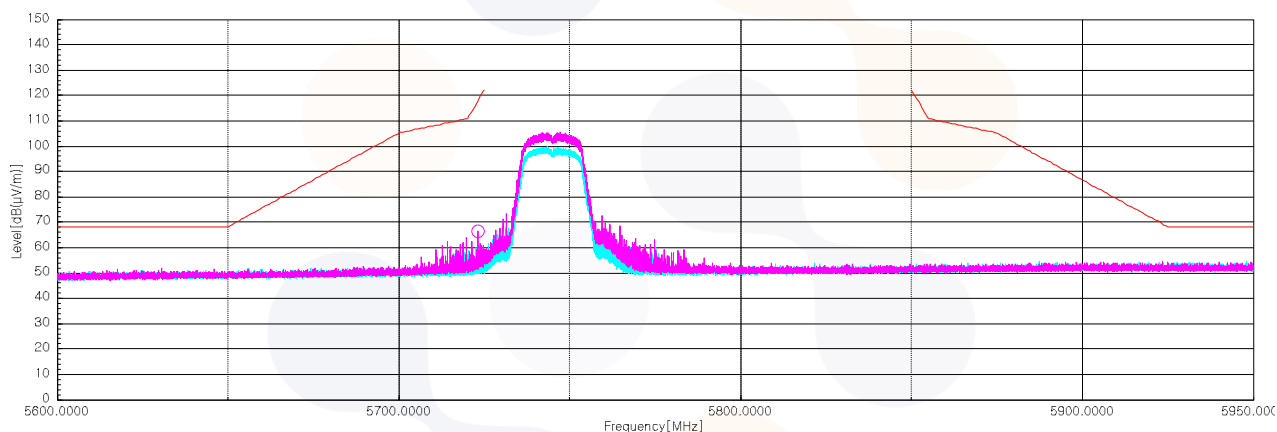
802.11ac_VHT20_Lowest Channel (5 745 MHz)

Average data



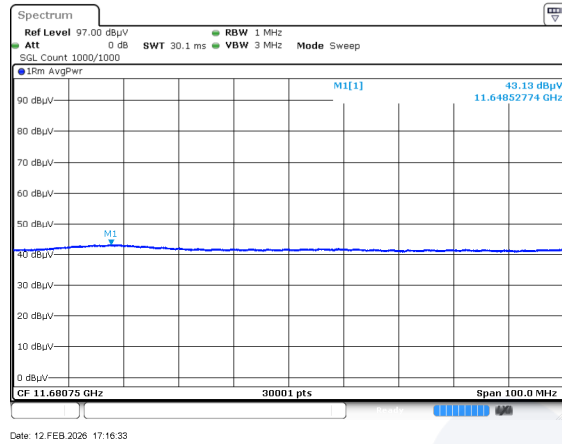
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Horizontal/Vertical for Band-edge

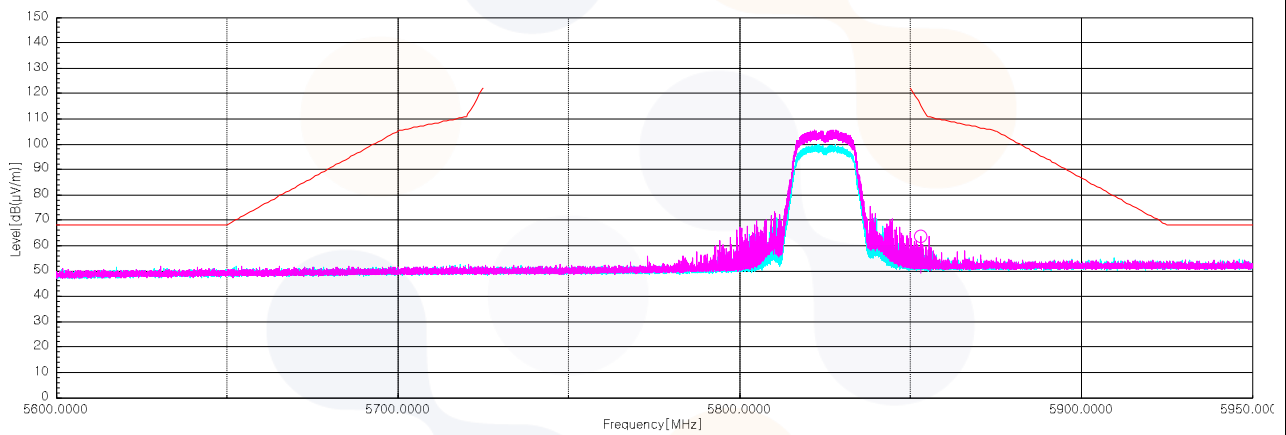


802.11ac_VHT20_Highest Channel (5 825 MHz)

Average data



Horizontal/Vertical for Band-edge



802.11ac_VHT40_Lowest Channel (5 755 MHz)

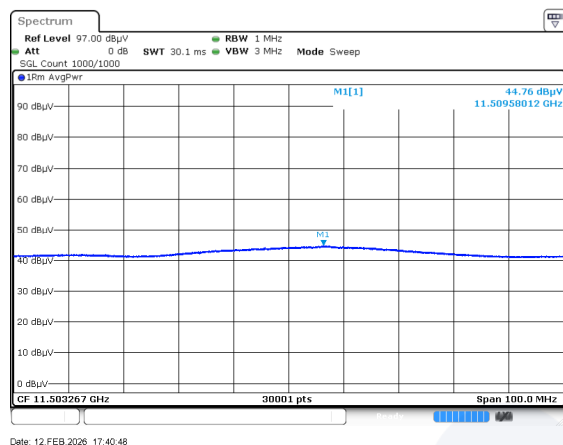
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 724.65	H	64.30	33.45	-26.82	-	70.93	121.40	50.47
11 509.58 ¹⁾	V	53.70	38.88	-39.77	-	52.81	74.00	21.19
17 273.97	V	52.90	38.25	-35.25	-	55.90	68.20	12.30
Average Data								
11 509.58 ¹⁾	V	44.76	38.88	-39.77	0.51	44.38	54.00	9.62

802.11ac_VHT40_Highest Channel (5 795 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 850.34	H	55.20	34.10	-26.12	-	63.18	121.40	58.22
11 622.59 ¹⁾	H	53.10	38.80	-39.58	-	52.32	74.00	21.68
17 380.92	V	51.40	38.72	-35.20	-	54.92	68.20	13.28
Average Data								
11 622.59 ¹⁾	H	41.84	38.80	-39.58	0.51	41.57	54.00	12.43

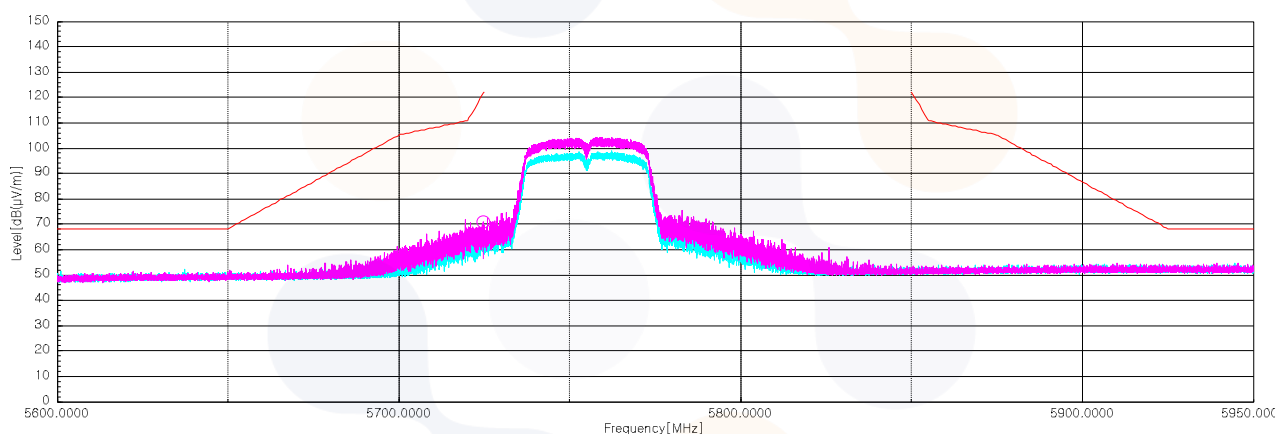
802.11ac_VHT40_Lowest Channel (5 755 MHz)

Average data



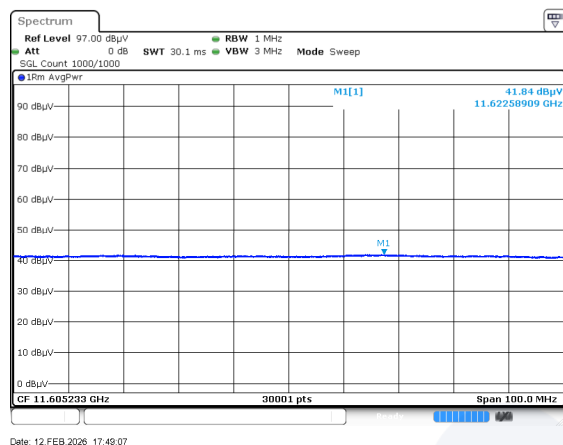
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Horizontal/Vertical for Band-edge

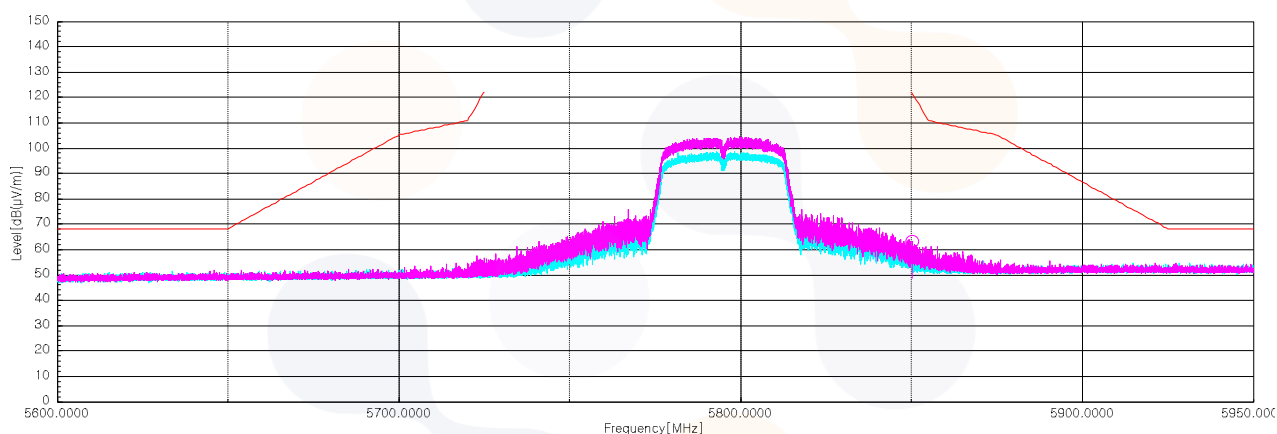


802.11ac_VHT40_Highest Channel (5 795 MHz)

Average data



Horizontal/Vertical for Band-edge



802.11ax_HE20_Lowest Channel (5 745 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 723.57	H	62.90	33.45	-26.82	-	69.53	118.90	49.37
11 489.80 ¹⁾	V	54.00	38.92	-39.78	-	53.14	74.00	20.86
17 229.88	V	52.00	38.16	-35.37	-	54.79	68.20	13.41
Average Data								
11 489.80 ¹⁾	V	45.07	38.92	-39.78	0.35	44.56	54.00	9.44

802.11ax_HE20_Middle Channel (5 785 MHz)

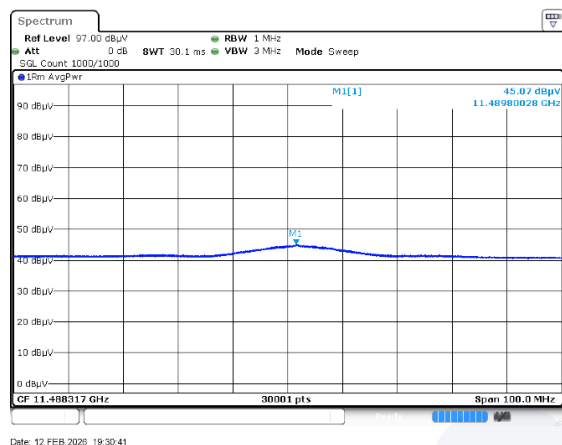
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
11 569.70 ¹⁾	V	54.00	38.76	-39.67	-	53.09	74.00	20.91
17 346.42	V	53.20	38.59	-35.21	-	56.58	68.20	11.62
Average Data								
11 569.70 ¹⁾	V	44.86	38.76	-39.67	0.35	44.30	54.00	9.70

802.11ax_HE20_Highest Channel (5 825 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 853.25	H	58.30	34.11	-26.10	-	66.31	114.80	48.49
11 622.62 ¹⁾	V	52.70	38.80	-39.58	-	51.92	74.00	22.08
17 477.13	V	50.00	39.11	-35.15	-	53.96	68.20	14.24
Average Data								
11 622.62 ¹⁾	V	41.83	38.80	-39.58	0.35	41.40	54.00	12.60

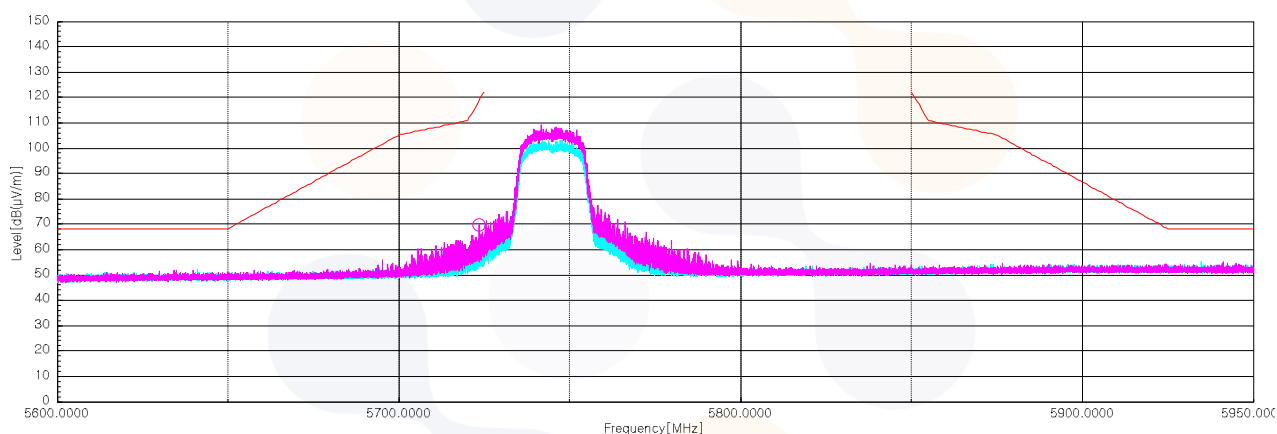
802.11ax_HE20_Lowest Channel (5 745 MHz)

Average data



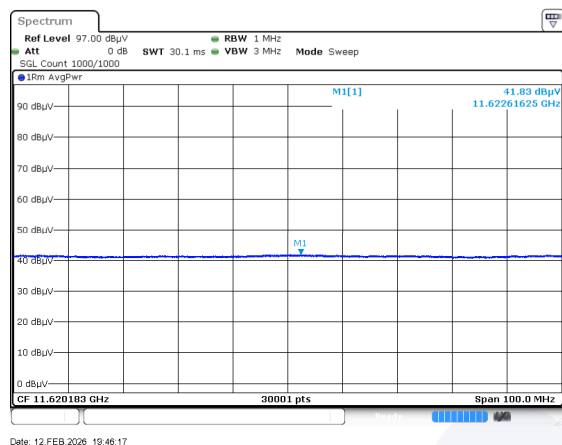
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Horizontal/Vertical for Band-edge

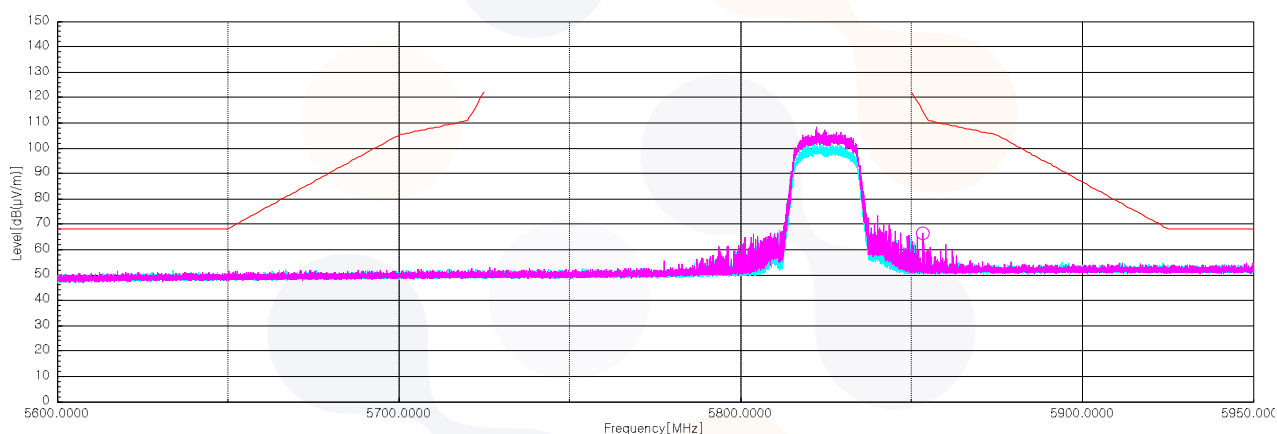


802.11ax_HE20_Highest Channel (5 825 MHz)

Average data



Horizontal/Vertical for Band-edge



Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-70-4904-0113 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR26-SRF0150 Page (78) of (85)	 
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802.11ax_HE40_Lowest Channel (5 755 MHz)

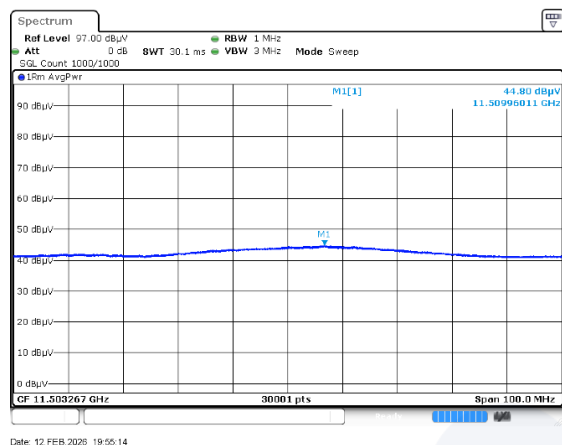
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 724.39	H	64.50	33.45	-26.82	-	71.13	120.80	49.67
11 509.96 ¹⁾	V	52.80	38.88	-39.77	-	51.91	74.00	22.09
17 268.22	V	51.00	38.24	-35.25	-	53.99	68.20	14.21
Average Data								
11 509.96 ¹⁾	V	44.80	38.88	-39.77	0.61	44.52	54.00	9.48

802.11ax_HE40_Highest Channel (5 795 MHz)

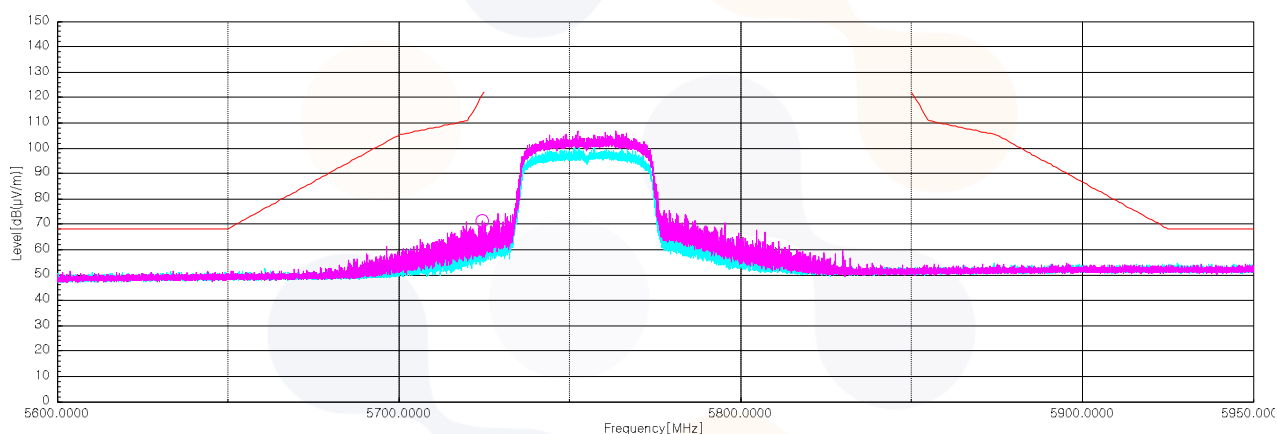
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 850.24	H	55.60	34.10	-26.12	-	63.58	121.70	58.12
11 622.17 ¹⁾	V	53.00	38.80	-39.58	-	52.22	74.00	21.78
17 382.83	V	51.50	38.73	-35.20	-	55.03	68.20	13.17
Average Data								
11 622.17 ¹⁾	V	41.80	38.80	-39.58	0.61	41.63	54.00	12.37

802.11ax_HE40_Lowest Channel (5 755 MHz)

Average data

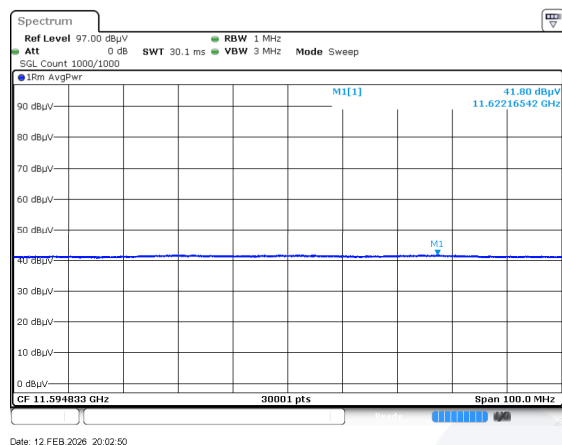


Horizontal/Vertical for Band-edge



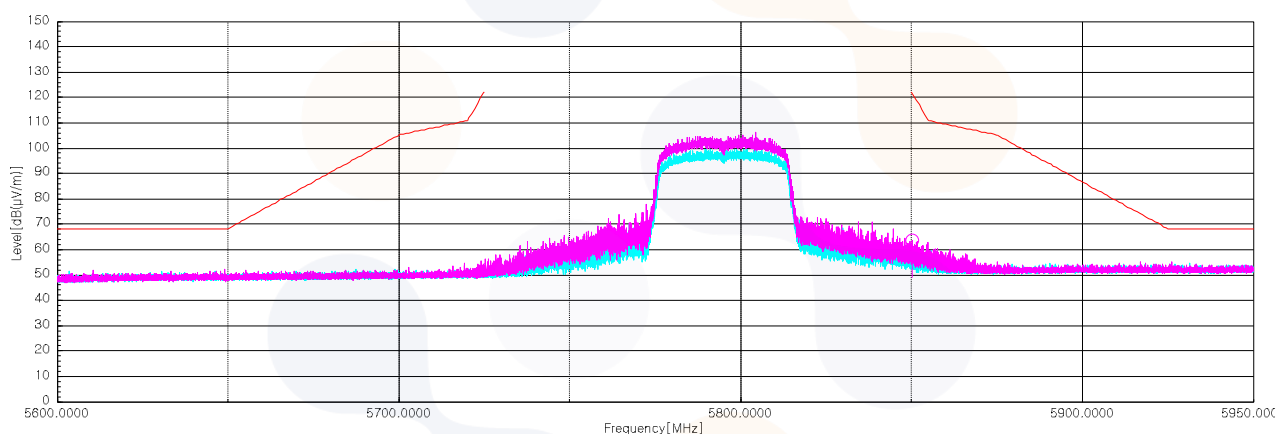
802.11ax_HE40_Highest Channel (5 795 MHz)

Average data



Blank

Horizontal/Vertical for Band-edge

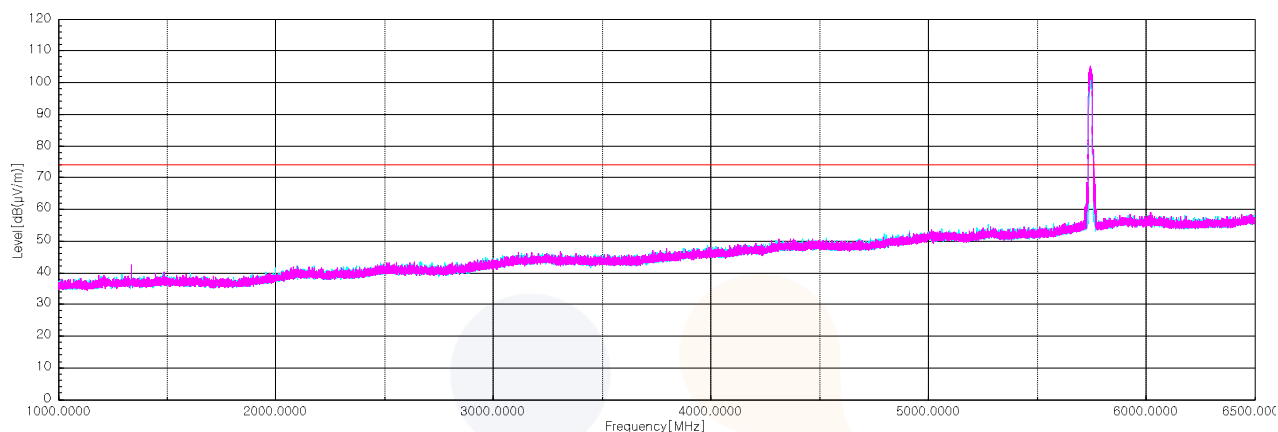


Plot of Harmonics and Spurious Emissions

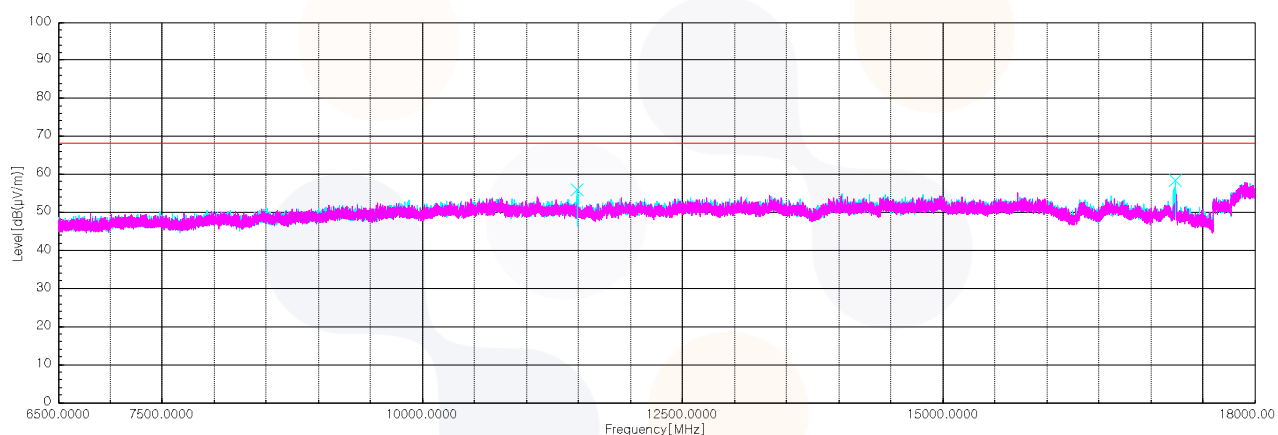
In order to simplify the report, attached plots were only the lowest margin condition

802.11ac VHT20_UNII 3_Lowest Channel (5 745 MHz)

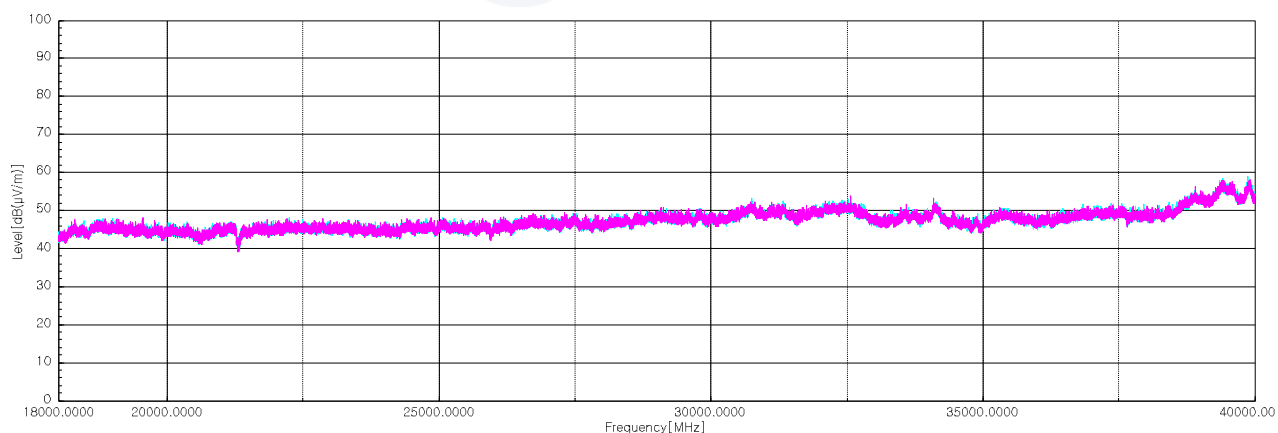
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz

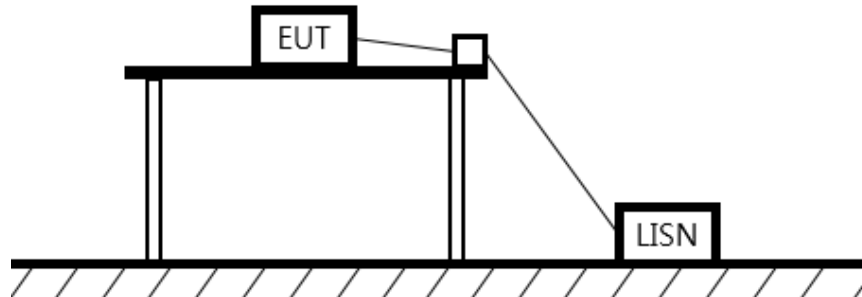


Horizontal/Vertical for 18 GHz ~ 40 GHz



7.7. AC Conducted emission

Test setup



Limit

According to 15.207(a), RSS-Gen(8.8),

Unless stated otherwise in the applicable RSS, for radio apparatus that are designed to be connected to the public utility AC power network, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the range 150 kHz to 30 MHz shall not exceed the limits in table 4, as measured using a 50 μ H / 50 Ω line impedance stabilization network. This requirement applies for the radio frequency voltage measured between each power line and the ground terminal of each AC power-line mains cable of the EUT.

For an EUT that connects to the AC power lines indirectly, through another device, the requirement for compliance with the limits in table 4 shall apply at the terminals of the AC power-line mains cable of a representative support device, while it provides power to the EUT. The lower limit applies at the boundary between the frequency ranges. The device used to power the EUT shall be representative of typical applications.

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

For an EUT with a permanent or detachable antenna operating between 150 MHz and 30 MHz, the AC power-line conducted emissions must be measured using the following configurations:

- Perform the AC power-line conducted emissions test with the antenna connected to determine compliance with the limits of table 4 outside the transmitter's fundamental emission band.
- Retest with a dummy load instead of the antenna to determine compliance with the limits of table 4 within the transmitter's fundamental emission band. For a detachable antenna, remove the antenna and connect a suitable dummy load to the antenna connector. For a permanent antenna, remove the antenna and terminate the RF output with a dummy load or network that simulates the antenna in the fundamental frequency band.

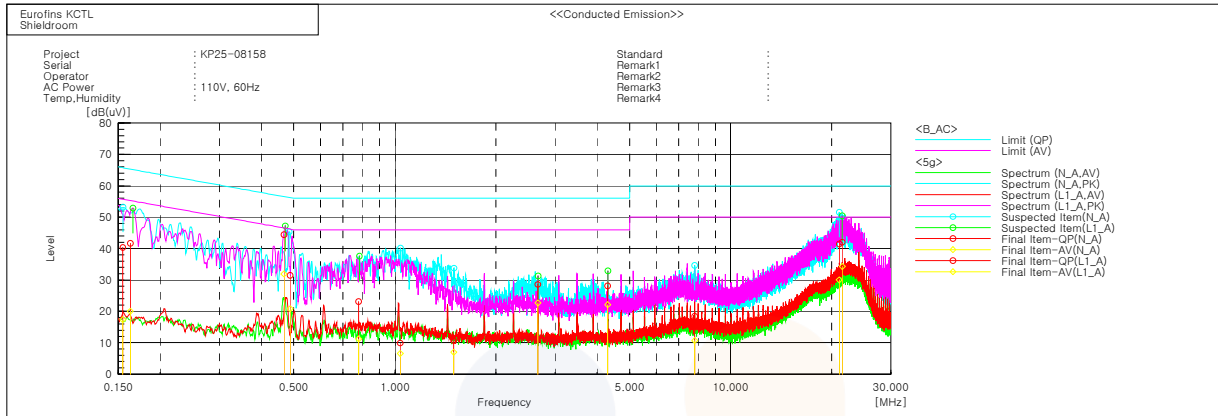
Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-70-4904-0113 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR26-SRF0150 Page (83) of (85)	
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Measurement procedure

1. The EUT was placed on a wooden table of size, 1 m by 1.5 m, raised 80 cm in which is located 40 cm 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 MHz to 30 MHz.
5. The measurements were made with the detector set to peak amplitude within a bandwidth of 10 kHz or to quasi-peak and average within a bandwidth of 9 kHz. The EUT was in transmitting mode during the measurements.

Test results

Worst case: 802.11n HT40 / UNII1_5 230 MHz



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	0.1549	30.2	7.2	10.1	40.3	17.3	65.7	55.7	25.4	38.4
2	0.48787	21.2	10.6	10.2	31.4	20.8	56.2	46.2	24.8	25.4
3	1.03757	-0.2	-3.5	10.1	9.9	6.6	56.0	46.0	46.1	39.4
4	1.49799	0.7	-3.1	10.0	10.7	6.9	56.0	46.0	45.3	39.1
5	7.81864	8.1	0.3	10.4	18.5	10.7	60.0	50.0	41.5	39.3
6	21.0801	30.5	19.0	11.0	41.5	30.0	60.0	50.0	18.5	20.0

--- 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	0.16305	31.4	9.8	10.2	41.6	20.0	65.3	55.3	23.7	35.3
2	0.4674	34.2	21.7	10.2	44.4	31.9	56.6	46.6	12.2	14.7
3	0.78065	13.0	1.1	10.1	23.1	11.2	56.0	46.0	32.9	34.8
4	2.66696	18.7	12.8	9.9	28.6	22.7	56.0	46.0	27.4	23.3
5	4.30402	18.1	12.1	10.0	28.1	22.1	56.0	46.0	27.9	23.9
6	21.50451	31.0	23.3	11.0	42.0	34.3	60.0	50.0	18.0	15.7

8. Measurement equipment

Equipment Name	Manufacturer	Model No.	Serial No.	Next Cal. Date
Spectrum Analyzer	R&S	FSVA3030	101126	26.11.21
Signal Generator	R&S	SMB100A	176206	27.01.15*
Power Sensor	R&S	NRP-Z81	1137.9009.02-106223-bB	27.04.24
Attenuator	HUBER+SUHNER	6610_SK-50-1/199_NE	ATT02	27.07.06
Attenuator	HP	8491B	20205	27.01.15*
DC Power Supply	TOYOTECH	TL305TP	20100121	27.04.23
Spectrum Analyzer	R&S	FSV40	100988	27.04.06
Amplifier	SONOMA INSTRUMENT	310N	421910	27.07.06
Bi-log Antenna	Teseq GmbH	CBL 6112D	61521	26.12.11
Loop Antenna	R&S	HFH2-Z2	100355	28.06.29
DC Power Supply	POWERCOM	DCP-50100A	20220610-01	27.01.16*
Vector Signal Generator	R&S	SMBV100A	257566	27.07.06
Broadband PreAmplifier	SCHWARZBECK	BBV9718D	53	27.07.06
Low Noise Amplifier	TESTEK	TK-PA18H	220123-L	27.07.06
Low Noise Amplifier	TESTEK	TK-PA1840H	220234-L	27.04.28
Horn Antenna	SCHWARZBECK	BBHA9120D	2764	27.06.30
Horn Antenna	SCHWARZBECK	BBHA9170	1266	27.04.29
High Pass Filter	Wainwright Instruments GmbH	WHKX8-5655-6500-18000-40SS	SN7	27.06.29
High Pass Filter	Qotana	DBHF058004000A	23041800061	27.04.28
TWO-LINE V - NETWORK	R&S	ENV216	101584	27.03.24
EMI TEST RECEIVER	R&S	ESCI3	101428	27.08.11
Controller	INNCO SYSTEMS	CO3000	1442/54370322/P	N/A
Antenna Mast	INNCO SYSTEMS	MA4640-XP-ET	AM002	N/A
Turn Device	INNCO SYSTEMS	DS1200-S-1t	0001	N/A

*This equipment was calibrated during the test period, and was used after calibration.

End of test report