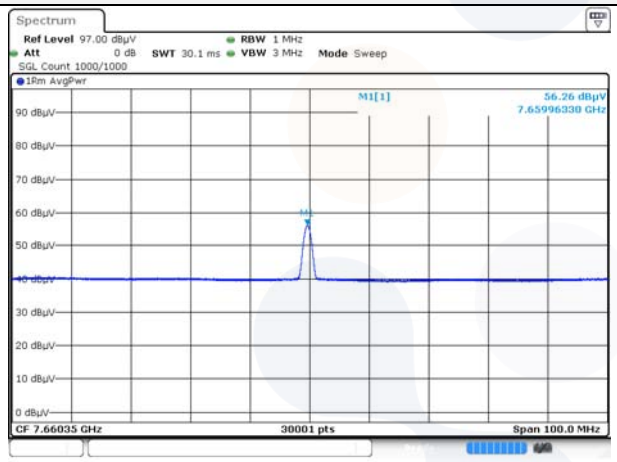
802.11a UNII 3

Lowest Channel (5 745 ㎒)

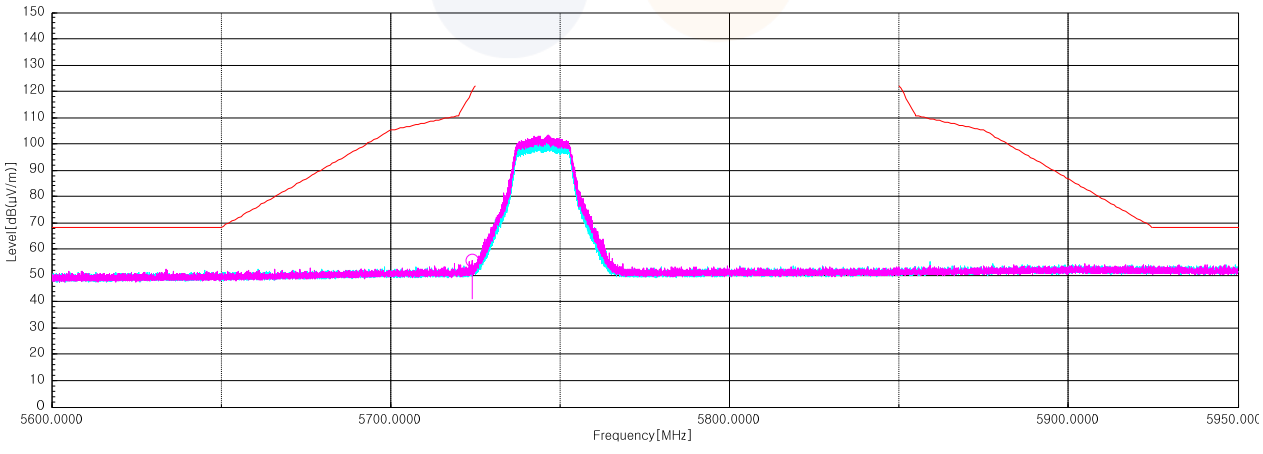
Frequency	Pol.	Reading	Antenna Factor	Amp. + Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 724.11	H	49.10	33.34	-26.58	-	55.86	120.20	64.34
7 659.96[1)]	H	57.40	36.12	-41.01	-	52.51	74.00	21.49
11 127.60[1)]	H	52.70	38.40	-41.58	-	49.52	74.00	24.48
17 235.63	V	50.30	38.24	-36.82	-	51.72	68.20	16.48
Average Data								
7 659.96[1)]	H	56.26	36.12	-41.01	-	51.37	54.00	2.63

Average data

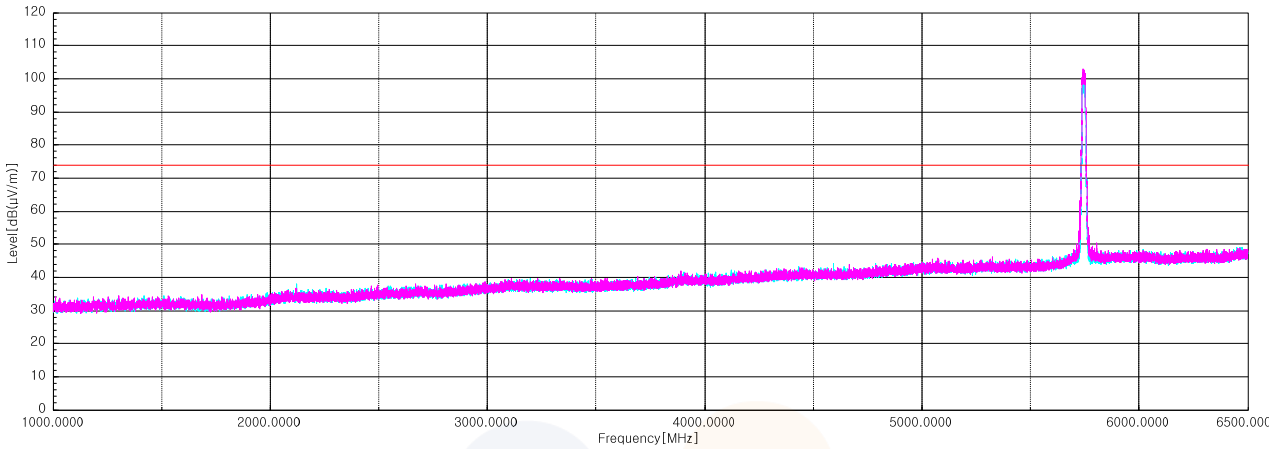


Blank

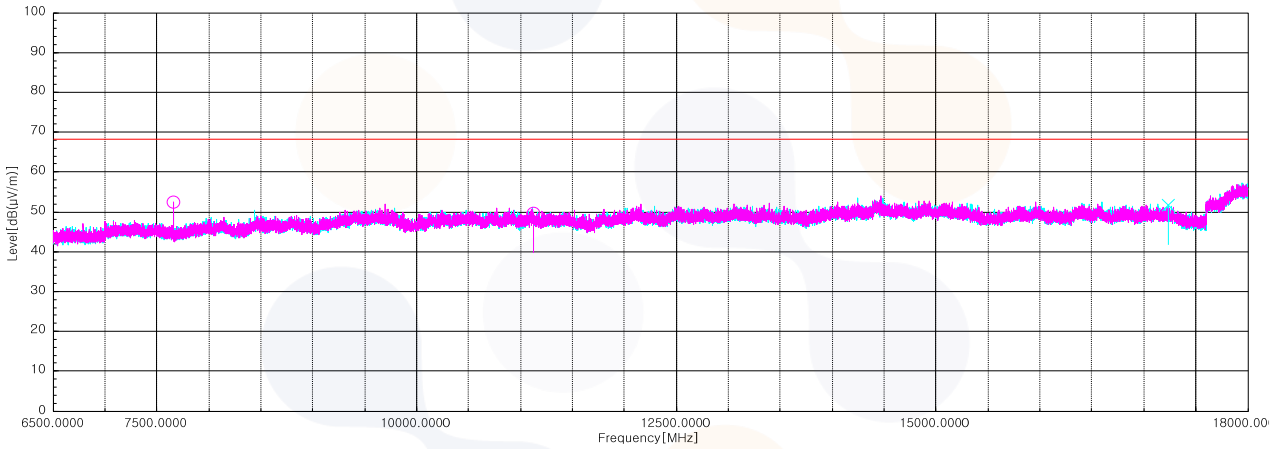
Horizontal/Vertical for Band-edge



Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓

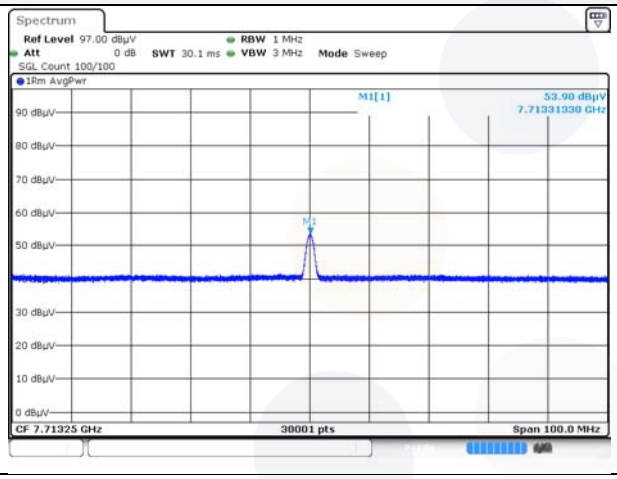


Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



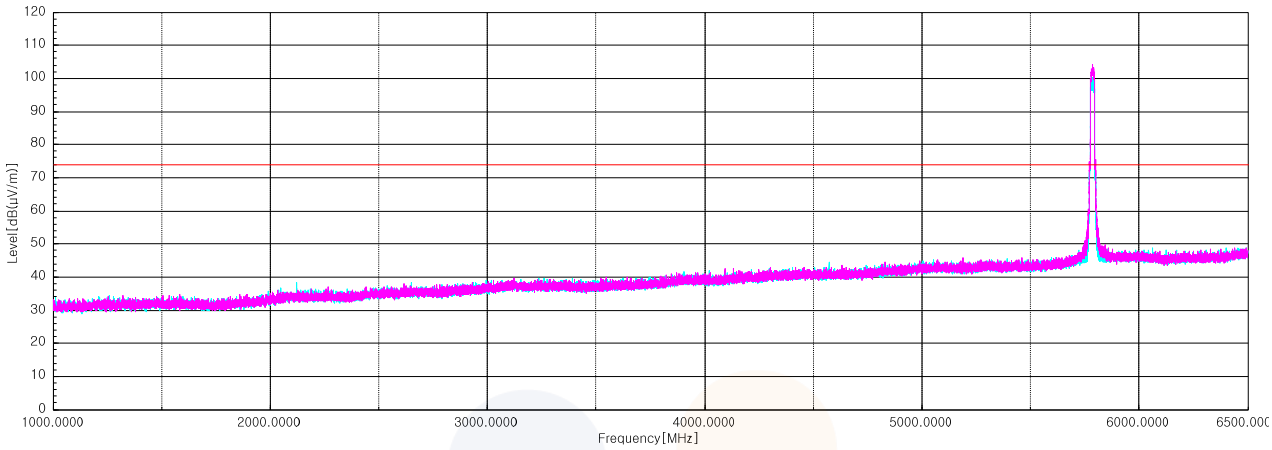
Middle Channel (5 785 ㎒)

Frequency	Pol.	Reading	Antenna Factor	Amp. + Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
7 713.28[1)]	H	56.50	36.35	-41.17	-	51.68	74.00	22.32
11 566.13[1)]	H	53.50	38.47	-41.71	-	50.26	74.00	23.74
17 380.53	H	48.50	38.78	-36.87	-	50.41	68.20	17.79
Average Data								
7 713.31[1)]	H	53.90	36.35	-41.17	-	49.08	54.00	4.92

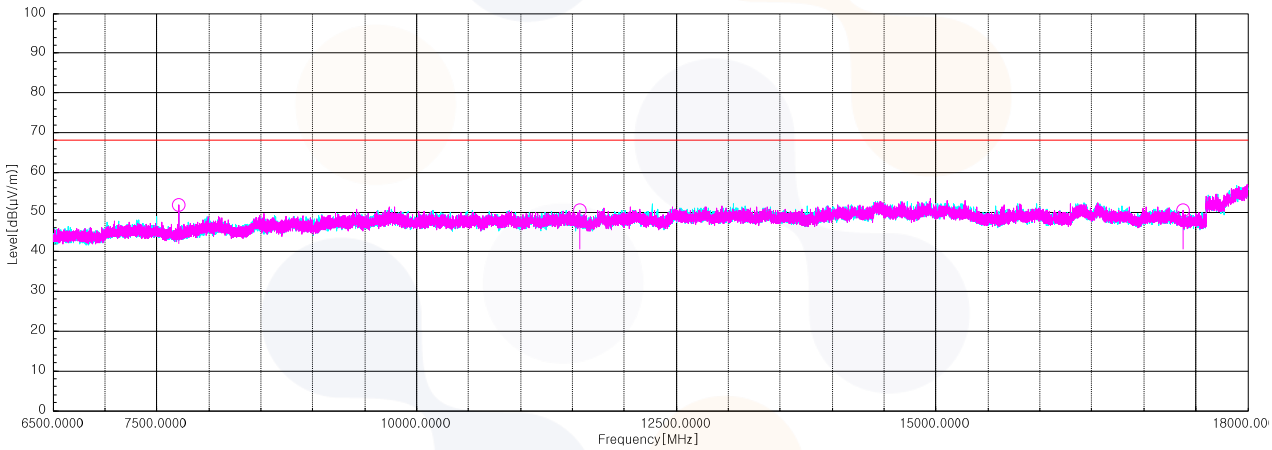
Average data	
	Blank

\

Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



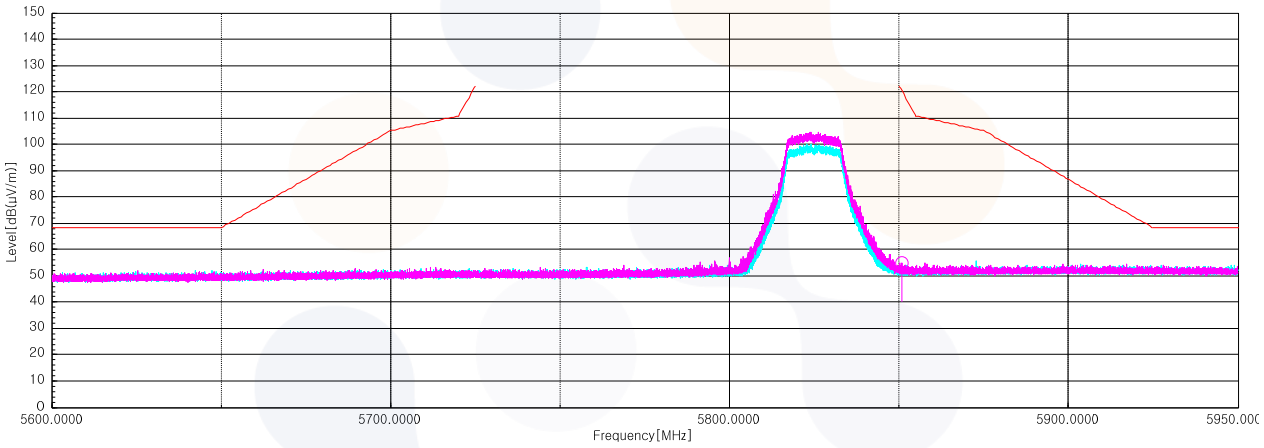
Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



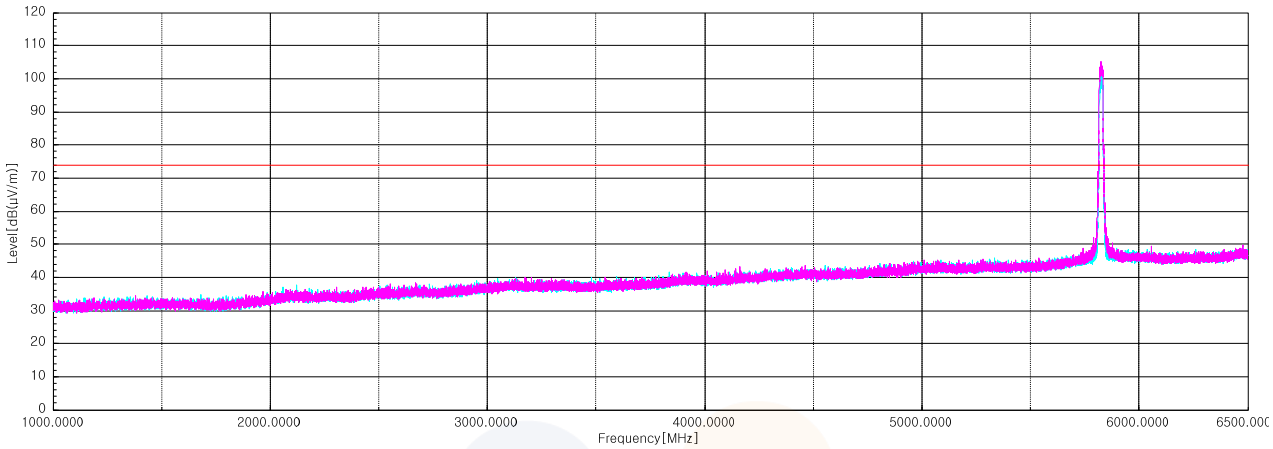
Highest Channel (5 825 ㎒)

Frequency	Pol.	Reading	Antenna Factor	Amp. + Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 850.82	H	47.40	33.80	-26.48	-	54.72	120.30	65.58
7 766.53	H	56.00	36.43	-41.05	-	51.38	68.20	16.82
11 635.90[1)]	H	52.00	38.33	-41.58	-	48.75	74.00	25.25
17 400.47	V	47.20	38.80	-36.65	-	49.35	68.20	18.85
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

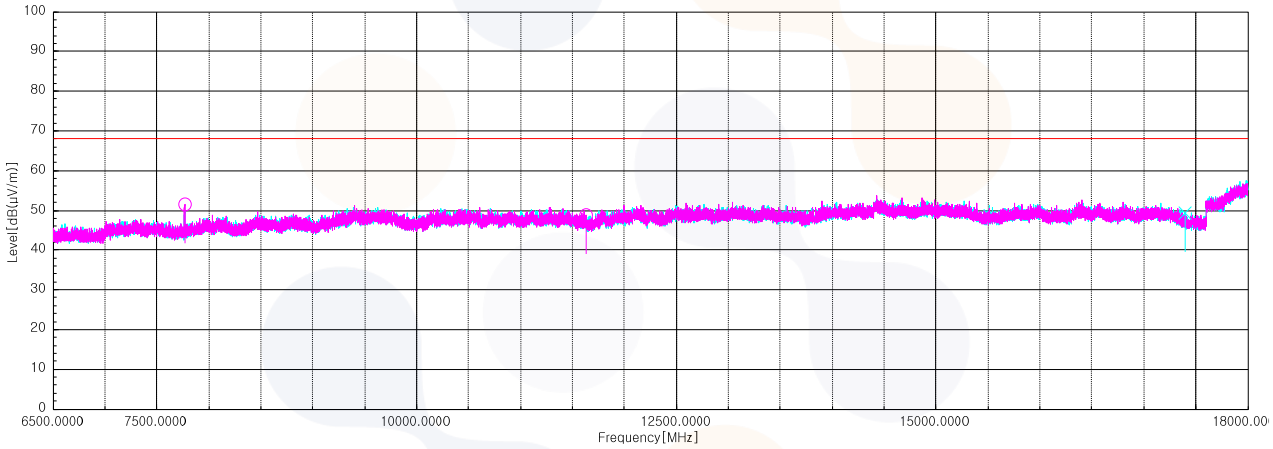
Horizontal/Vertical for Band-edge



Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓

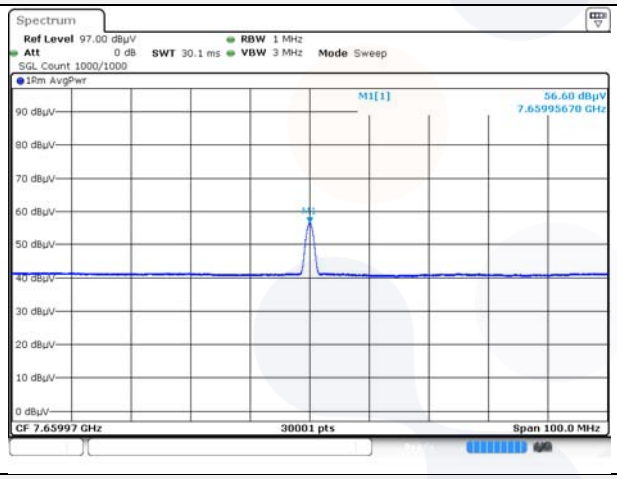


802.11n HT20_UNII 3

Lowest Channel (5 745 ㎒)

Frequency	Pol.	Reading	Antenna Factor	Amp. + Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 724.80	H	48.50	33.35	-26.58	-	55.27	121.70	66.43
7 659.96[1)]	H	58.40	36.12	-41.01	-	53.51	74.00	20.49
11 494.83[1)]	H	53.70	38.70	-41.44	-	50.96	74.00	23.04
17 223.37	V	50.90	38.19	-36.80	-	52.29	68.20	15.91
Average Data								
7 659.96[1)]	H	56.60	36.12	-41.01	-	51.71	54.00	2.29

Average data



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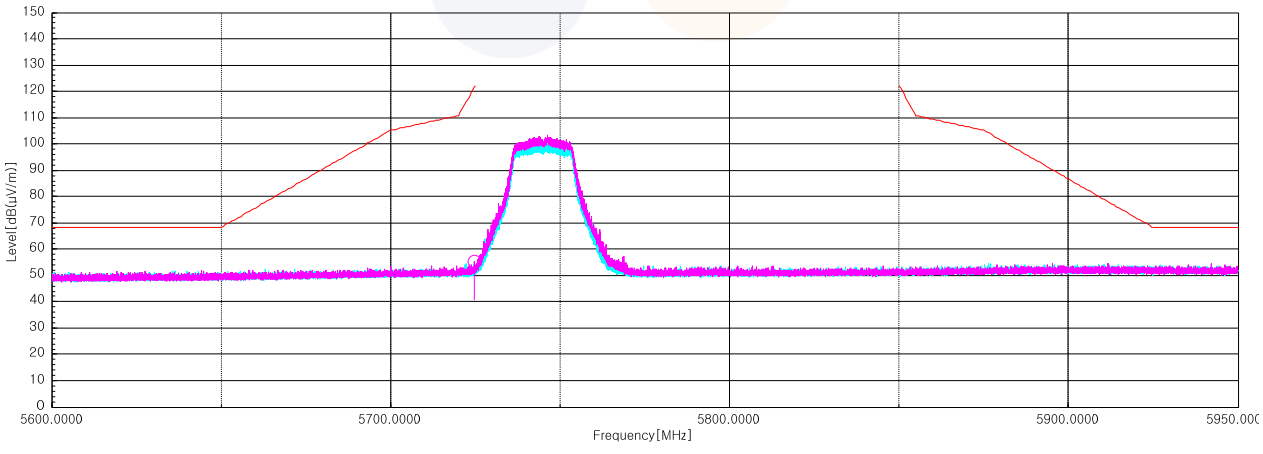
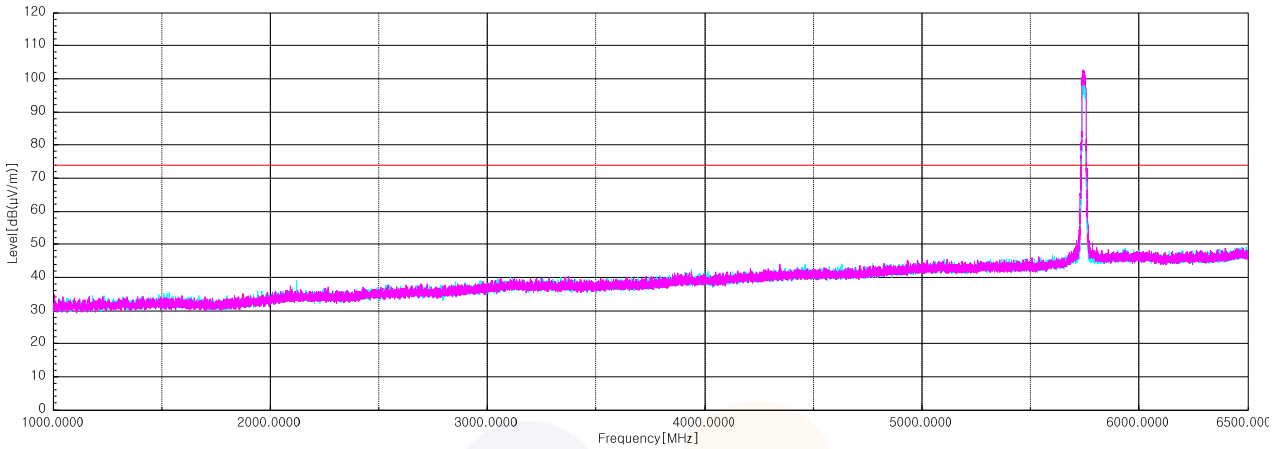
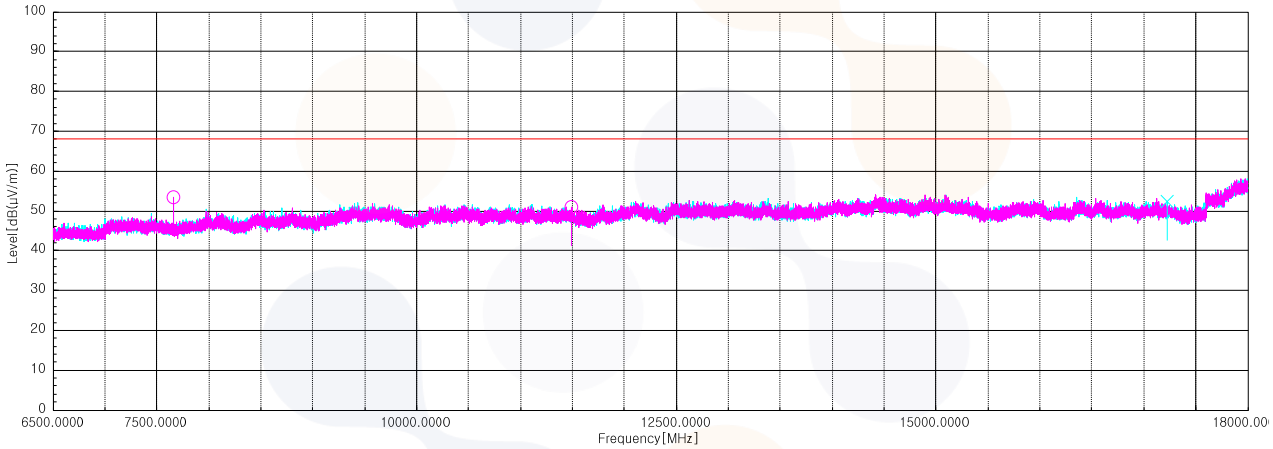
Horizontal/Vertical for Band-edge



Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



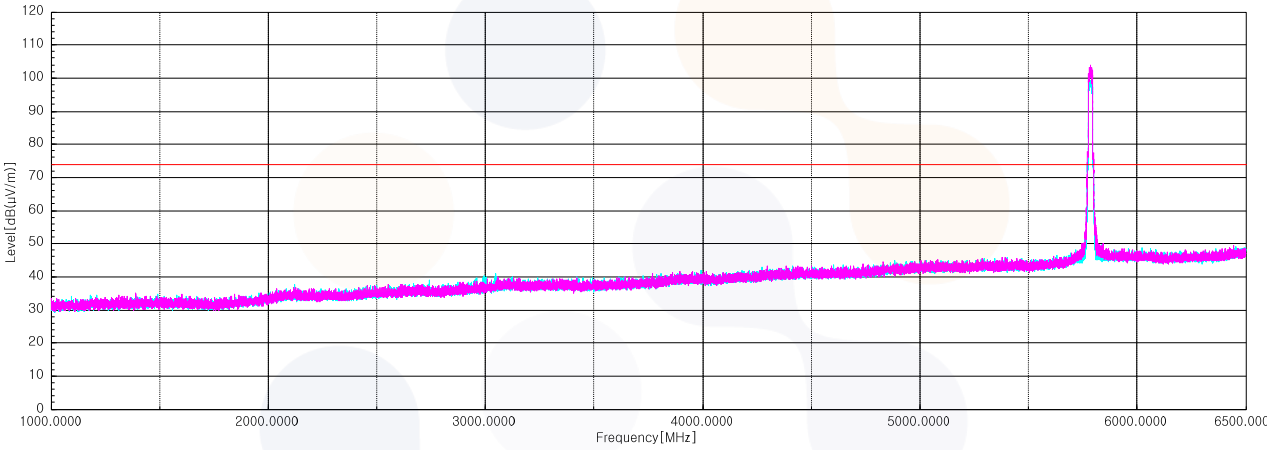
Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



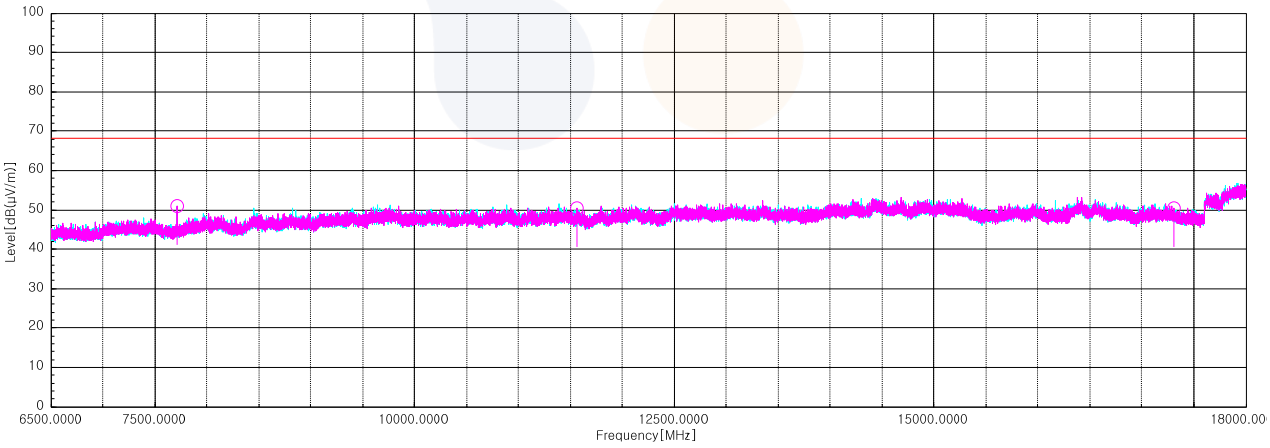
Middle Channel (5 785 ㎒)

Frequency	Pol.	Reading	Antenna Factor	Amp. + Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
7 713.63[1)]	H	55.80	36.35	-41.17	-	50.98	74.00	23.02
11 564.60[1)]	H	53.80	38.47	-41.72	-	50.55	74.00	23.45
17 309.62	H	49.00	38.32	-36.94	-	50.38	68.20	17.82
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



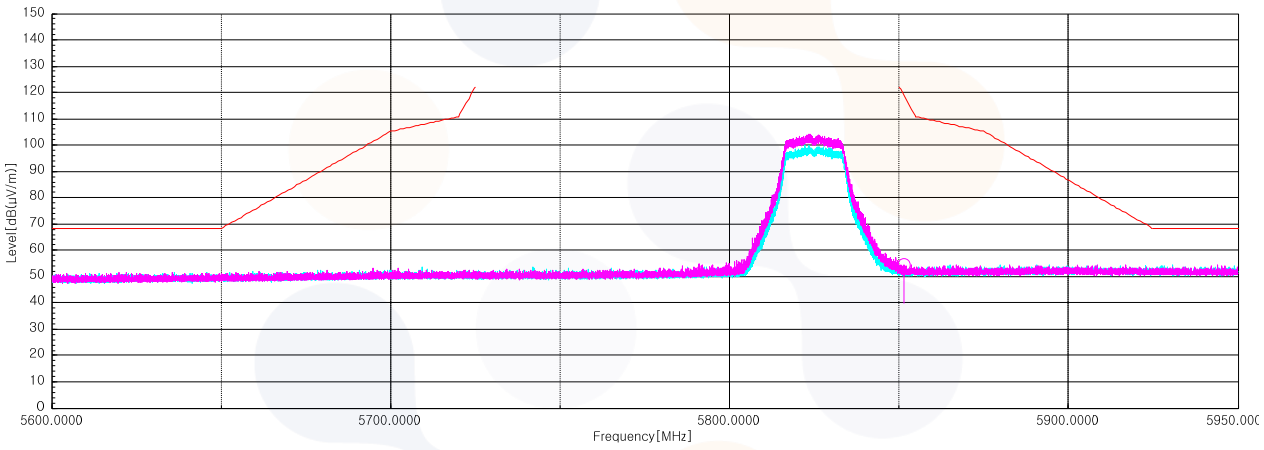
Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



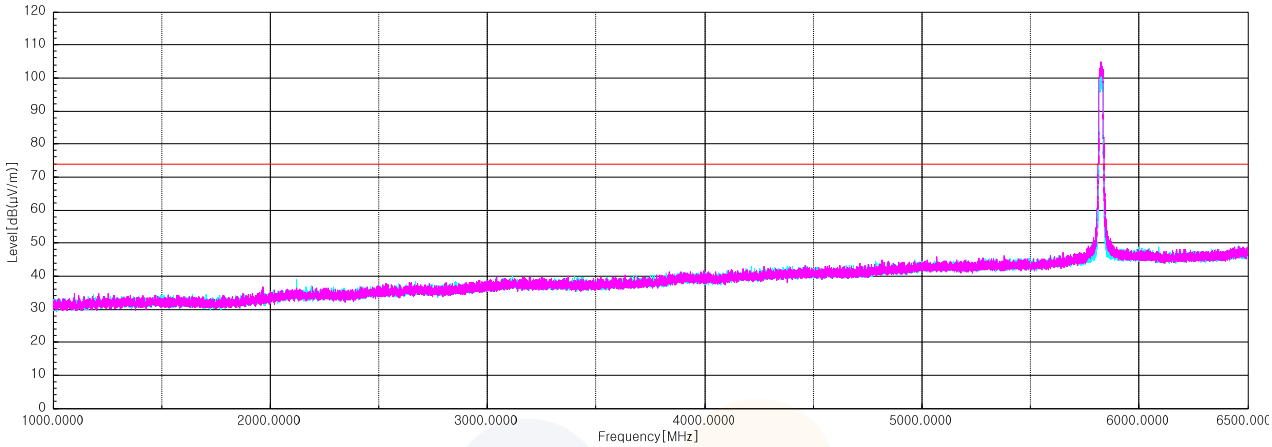
Highest Channel (5 825 ㎒)

Frequency	Pol.	Reading	Antenna Factor	Amp. + Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 851.44	H	47.20	33.81	-26.48	-	54.53	118.90	64.37
7 766.53	H	57.90	36.43	-41.05	-	53.28	68.20	14.92
11 582.23[1)]	V	53.10	38.44	-41.63	-	49.91	74.00	24.09
17 467.17	V	48.40	39.20	-36.37	-	51.23	68.20	16.97
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

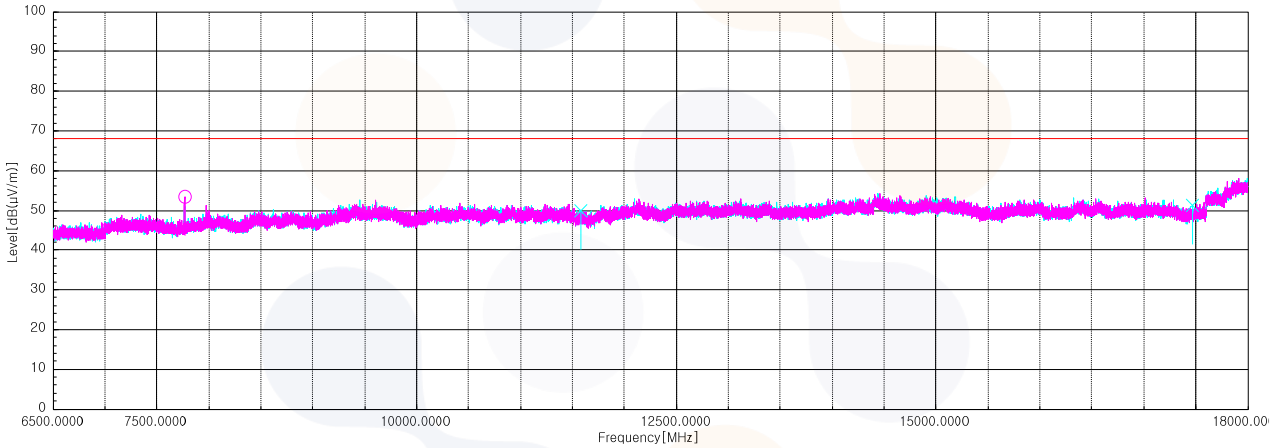
Horizontal/Vertical for Band-edge



Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓

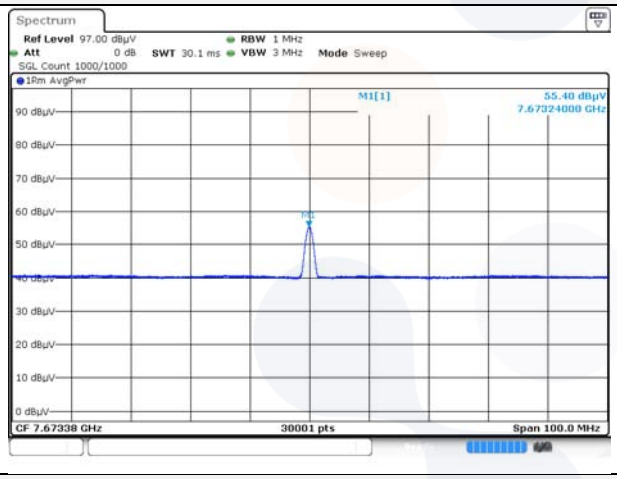


802.11n HT40_UNII 3

Lowest Channel (5 755 ㎒)

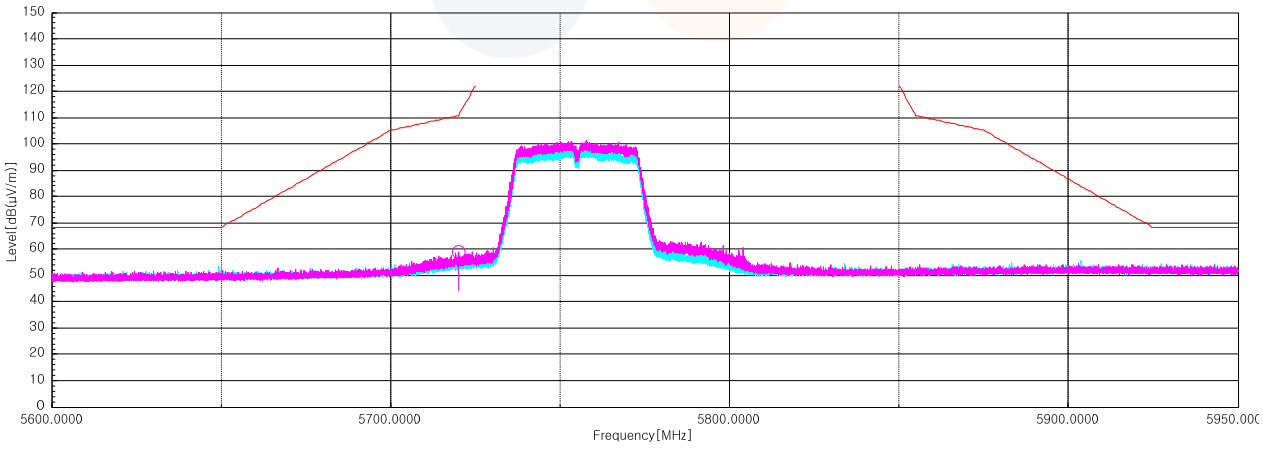
Frequency	Pol.	Reading	Antenna Factor	Amp. + Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 720.05	H	52.30	33.32	-26.58	-	59.04	110.90	51.86
7 673.24[1)]	H	57.00	36.15	-41.07	-	52.08	74.00	21.92
11 519.37[1)]	H	53.60	38.56	-41.57	-	50.59	74.00	23.41
17 261.70	H	50.20	38.22	-36.85	-	51.57	68.20	16.63
Average Data								
7 673.24[1)]	H	55.40	36.15	-41.07	0.18	50.66	54.00	3.34

Average data

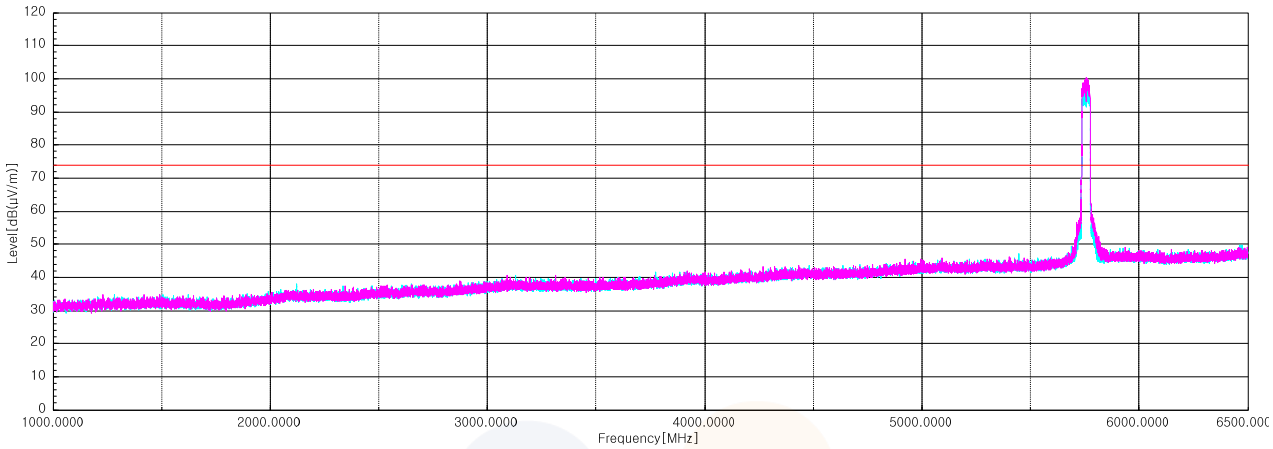


Blank

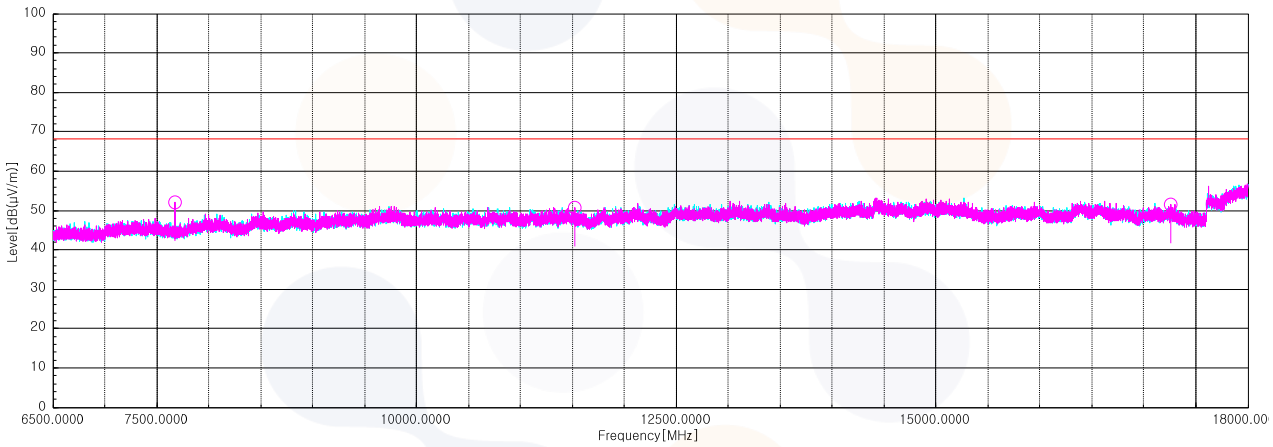
Horizontal/Vertical for Band-edge



Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



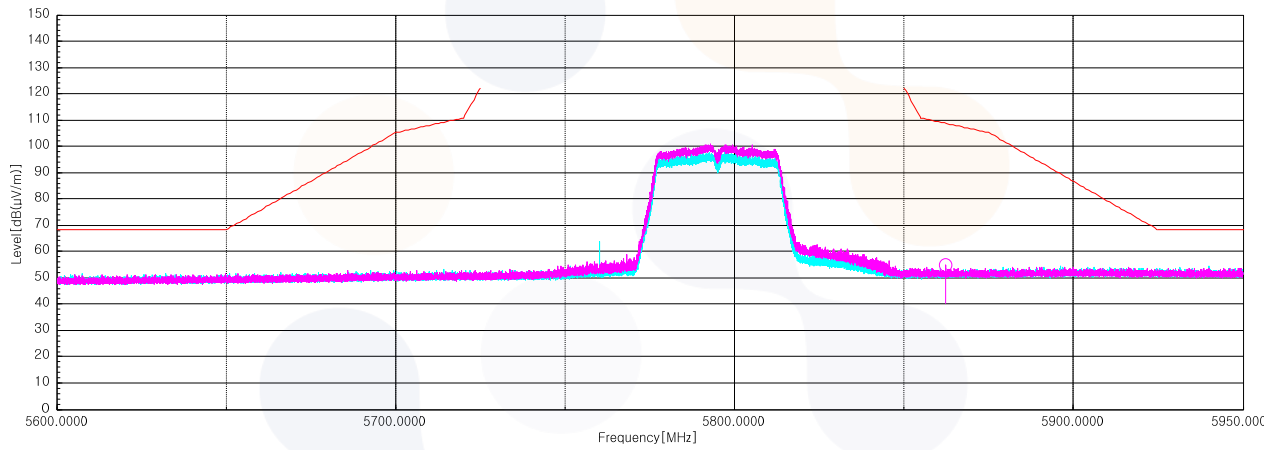
Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



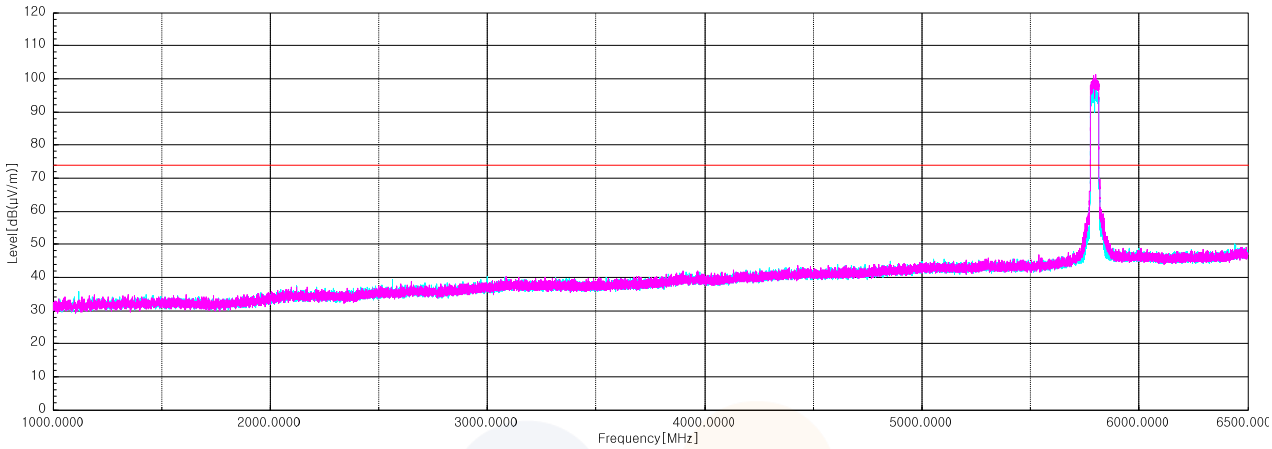
Highest Channel (5 795 ㎒)

Frequency	Pol.	Reading	Antenna Factor	Amp. + Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 862.33	H	47.40	33.85	-26.40	-	54.85	108.70	53.85
7 726.67[1)]	H	55.70	36.41	-41.14	-	50.97	74.00	23.03
11 580.32[1)]	V	52.70	38.44	-41.64	-	49.50	74.00	24.50
17 346.80	H	48.90	38.39	-37.19	-	50.10	68.20	18.10
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

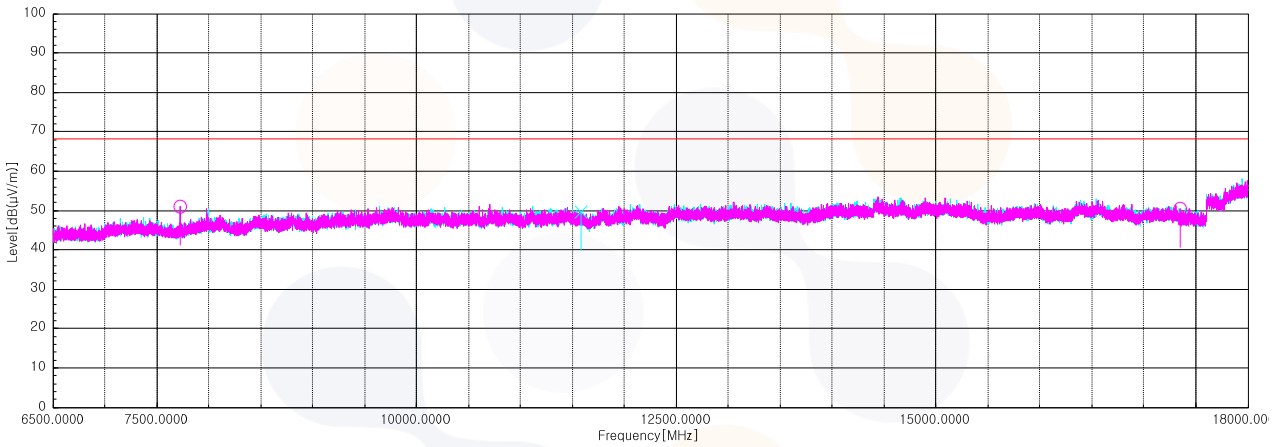
Horizontal/Vertical for Band-edge



Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓

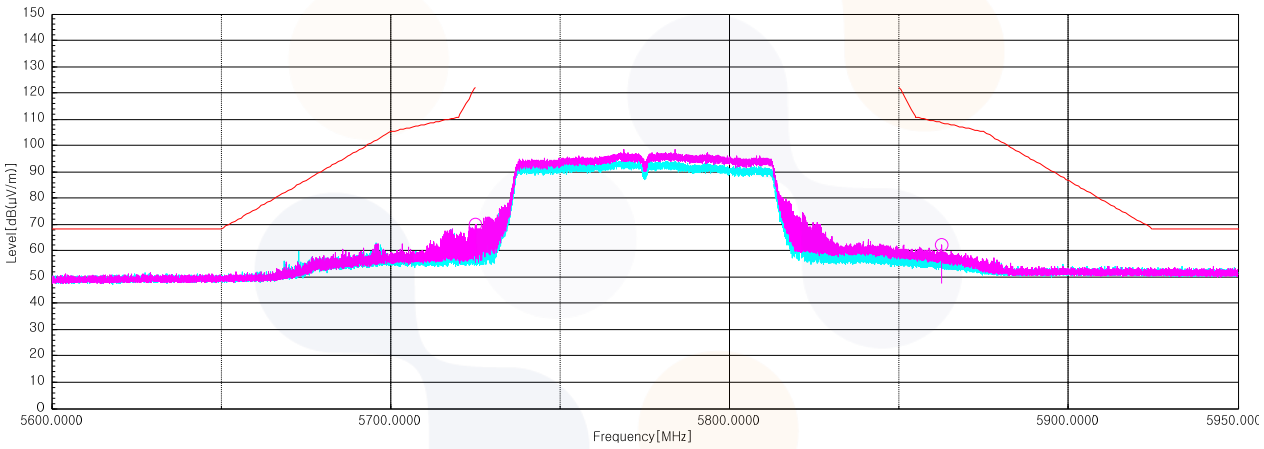


802.11ac VHT80_UNII 3

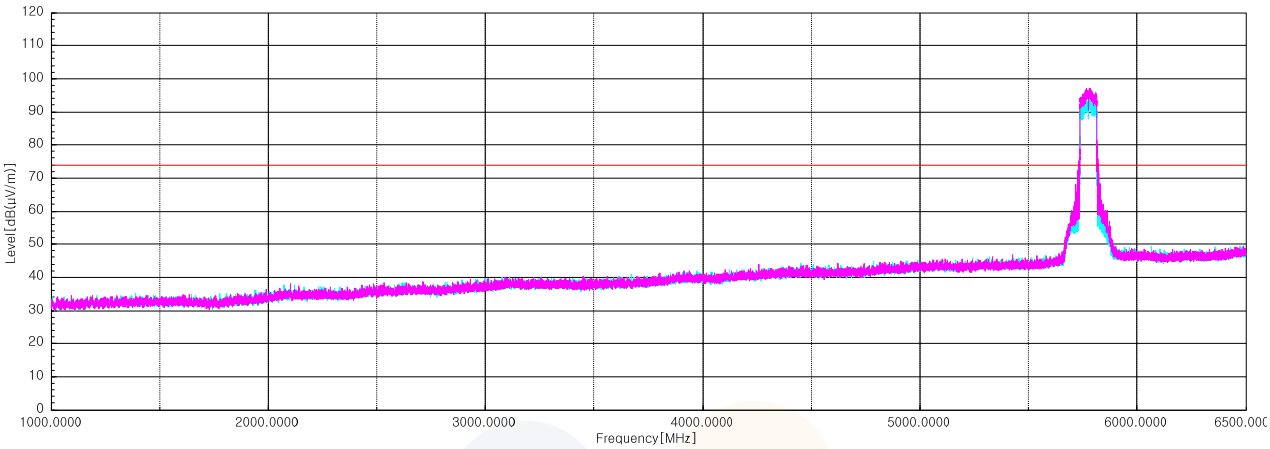
Lowest Channel (5 775 ㎒)

Frequency	Pol.	Reading	Antenna Factor	Amp. + Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 724.89	H	63.20	33.35	-26.58	-	69.97	122.00	52.03
5 862.54	H	54.80	33.85	-26.40	-	62.25	108.70	46.45
7 700.22[1)]	H	55.80	36.30	-41.20	-	50.90	74.00	23.10
11 516.30[1)]	H	53.40	38.57	-41.55	-	50.42	74.00	23.58
17 206.88	H	50.50	38.13	-36.77	-	51.86	68.20	16.34
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

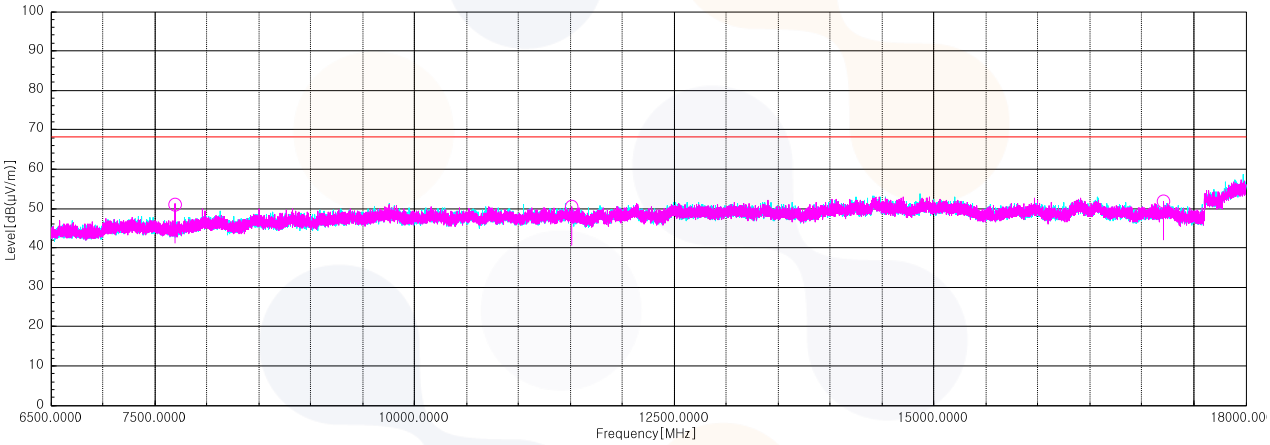
Horizontal/Vertical for Band-edge



Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓

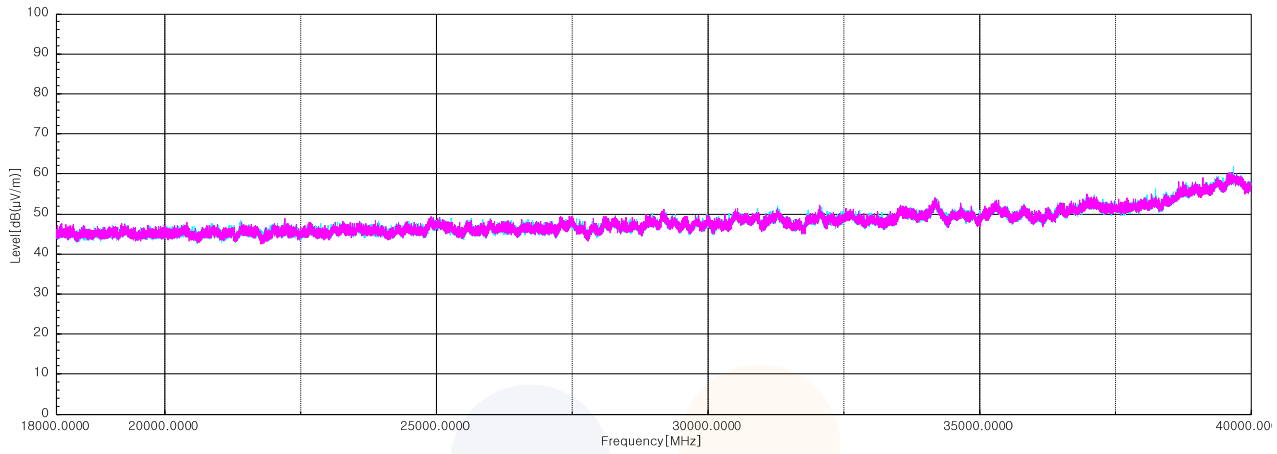


Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



Test results (Above 18 ㎓) – Worst case: 802.11n HT20_UNII 3_5 745 ㎒

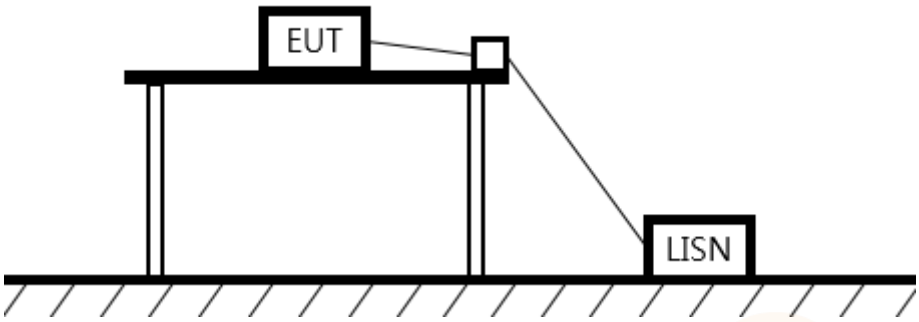
Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



Note: The Worst case was based on the lowest margin condition considering Harmonic and Spurious Emission.

7.6. AC Conducted emission

Test setup



Limit

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

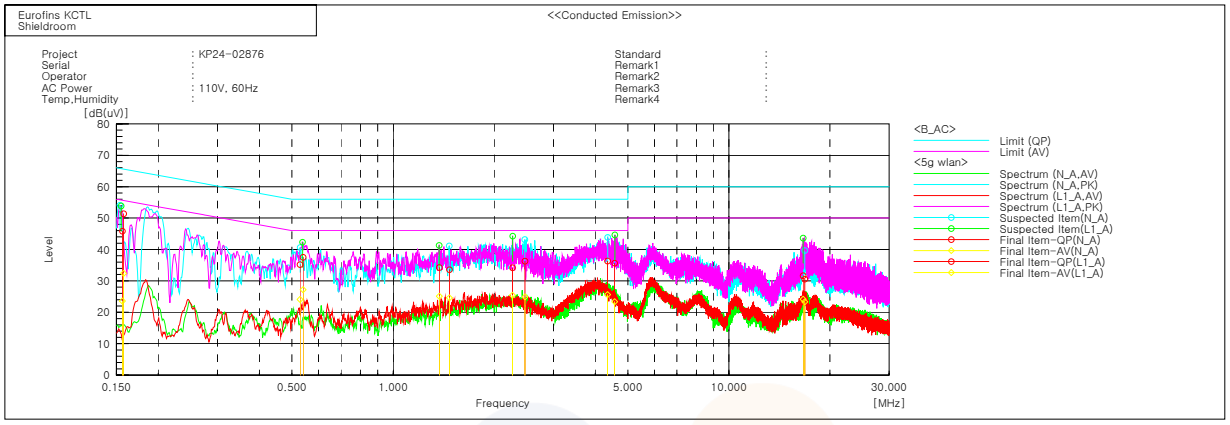
Frequency of Emission (㎒)	Conducted limit (dB㎶/m)	
	Quasi-peak	Average
0.15 – 0.50	66 - 56*	56 - 46*
0.50 – 5.00	56	46
5.00 – 30.0	60	50

Measurement procedure

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

Test results

Worst case: 802.11a_UNII 1_5 240 ㎒



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	0.15636	35.9	13.7	9.9	45.8	23.6	65.7	55.7	19.9	32.1
2	0.52834	25.1	14.0	10.1	35.2	24.1	56.0	46.0	20.8	21.9
3	1.47161	23.6	14.7	9.9	33.5	24.6	56.0	46.0	22.5	21.4
4	2.47115	26.5	15.1	9.8	36.3	24.9	56.0	46.0	19.7	21.1
5	4.35421	26.4	15.7	9.9	36.3	25.6	56.0	46.0	19.7	20.4
6	16.8301	19.7	12.4	10.9	30.6	23.3	60.0	50.0	29.4	26.7

--- 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	0.15763	41.4	22.4	10.0	51.4	32.4	65.6	55.6	14.2	23.2
2	0.53967	27.4	17.1	10.1	37.5	27.2	56.0	46.0	18.5	18.8
3	1.37327	24.3	15.2	9.9	34.2	25.1	56.0	46.0	21.8	20.9
4	2.26821	24.4	15.6	9.8	34.2	25.4	56.0	46.0	21.8	20.6
5	4.57121	25.7	13.5	9.9	35.6	23.4	56.0	46.0	20.4	22.6
6	16.6355	20.7	13.2	10.9	31.6	24.1	60.0	50.0	28.4	25.9

8. Measurement equipment

Equipment Name	Manufacturer	Model No.	Serial No.	Next Cal. Date
Signal & Spectrum Analyzer	R&S	FSV3030	1330.5000K30-101711-nf	2024.10.12
DC Power Supply	AGILENT	E3632A	MY40000265	2025.04.27
Signal generator	R & S	SMB100A	176206	2025.01.18
Attenuator	HUBER+SUHNER	6610_SK-50-1/199_NE	ATT03	2024.10.16
Attenuator	R & S	DNF Dämpfungsglied 10 dB in N-50 Ohm	5	2025.01.18
Power Sensor	R&S	NRP-Z81	1137.9009.02-106224-tg	2025.07.01
Controller	INNCO SYSTEMS	CO3000	1442/54370322/P	-
Antenna Mast	INNCO SYSTEMS	MA4640-XP-ET	AM002	-
Turn Device	INNCO SYSTEMS	DS1200-S-1t	0002	-
Spectrum Analyzer	R&S	FSV40	100988	2025.05.27
PSA Spectrum Analyzer	Agilent	E4440A	MY44303500	2025.07.02
Amplifier	SONOMA INSTRUMENT	310N	421910	2024.10.12
Bilog Antenna	Teseq GmbH	CBL 6112D	61521	2024.11.17
Loop Antenna	R&S	HFH2-Z2	100355	2026.06.25
DC Power Supply	POWERCOM	DCP-50100A	20220610-01	2025.01.19
Vector Signal Generator	R&S	SMBV100A	257566	2025.07.01
Broadband PreAmplifier	SCHWARZBECK	BBV9718D	53	2025.01.19
Low Noise Amplifier	TESTEK	TK-PA18H	220123-L	2024.10.12
Low Noise Amplifier	TESTEK	TK-PA1840H	220234-L	2024.10.17
Horn Antenna	SCHWARZBECK	BBHA9120D	2764	2024.10.18
Horn Antenna	SCHWARZBECK	BBHA9170	1266	2024.10.16
High Pass Filter	Wainwright Instruments GmbH	WHKX8-5655-6500-18000-40SS	SN7	2024.10.16
High Pass Filter	Qotana	DBHF058004000A	23041800061	2025.06.24
TWO-LINE V - NETWORK	R&S	ENV216	101584	2025.03.27
EMI TEST RECEIVER	R&S	ESCI3	101428	2024.08.18
High Pass Filter	Wainwright Instruments GmbH	WHKX8-5655-6500-18000-40SS	SN7	2024.10.16
Band Reject Filter	Wainwright Instruments GmbH	WTRCJV8-5100-5850-20-100-50SSK	62	2024.10.13

End of test report