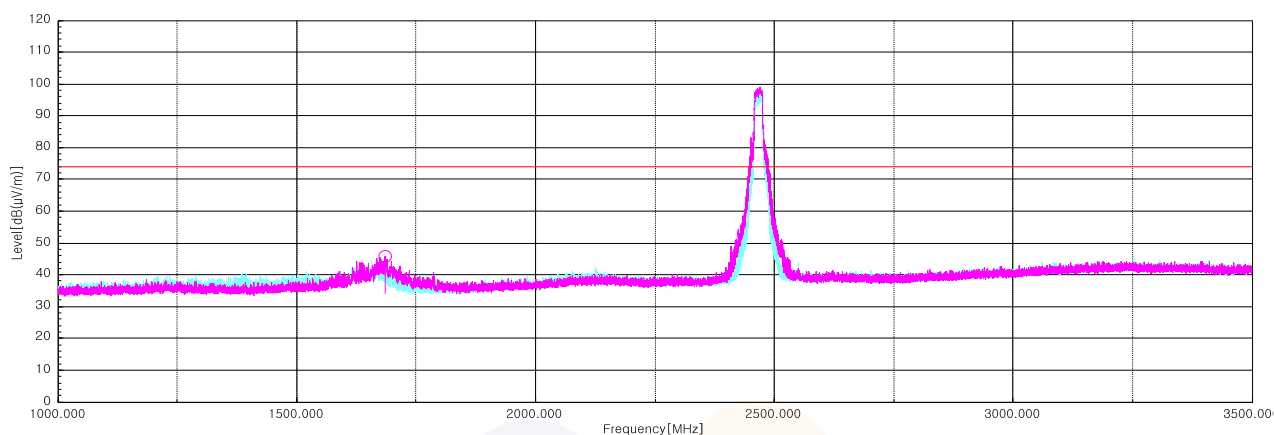
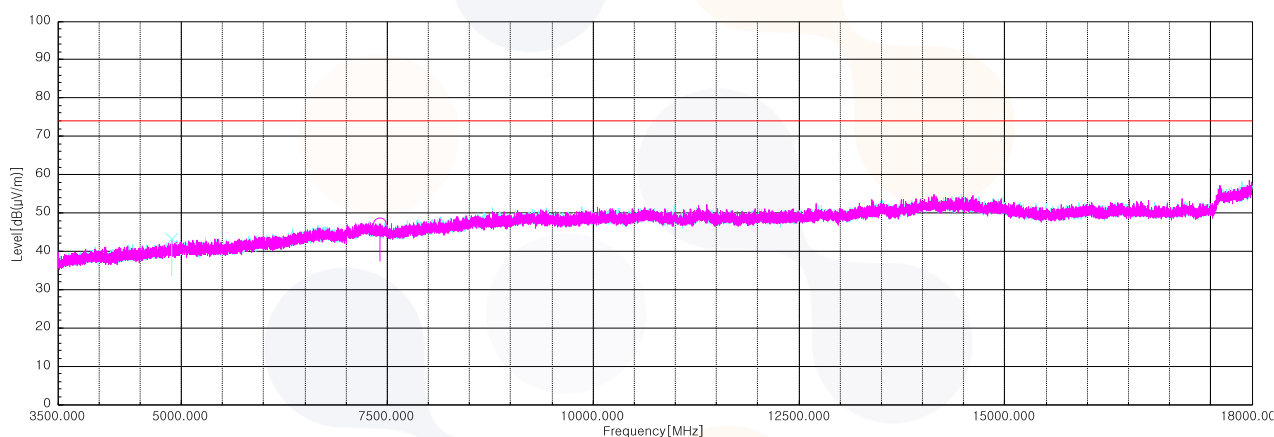


Horizontal/Vertical for 1 GHz ~ 3.5 GHz

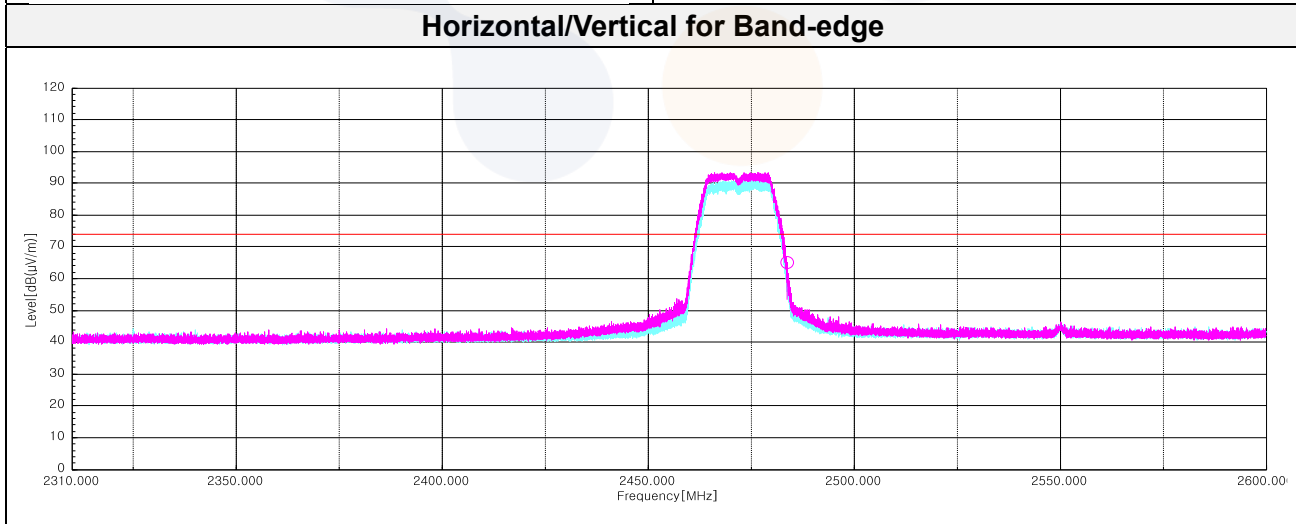
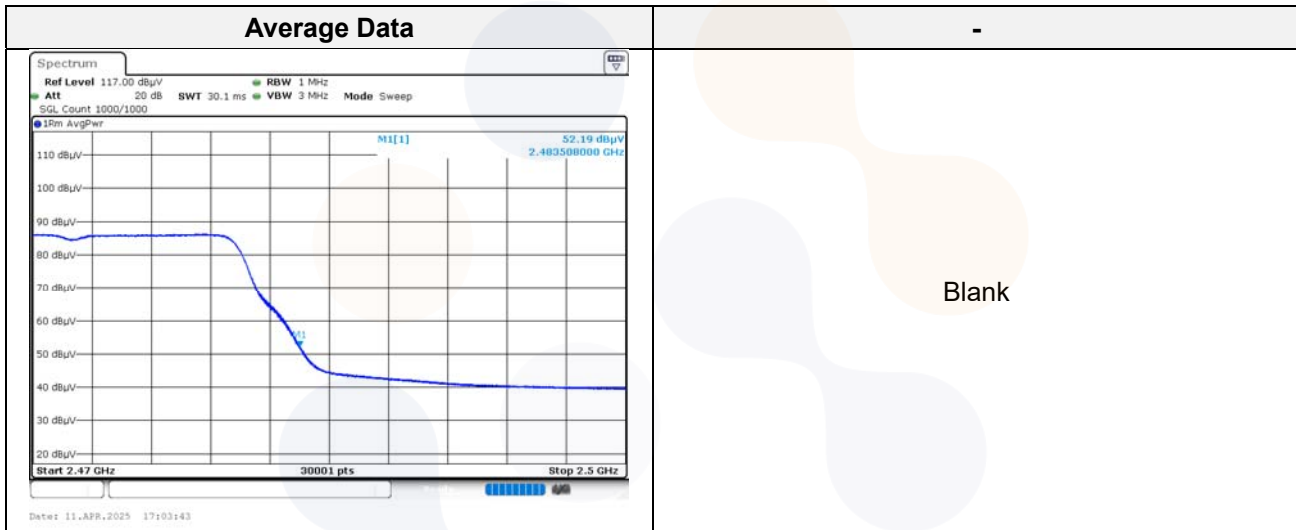


Horizontal/Vertical for 3.5 GHz ~ 18 GHz

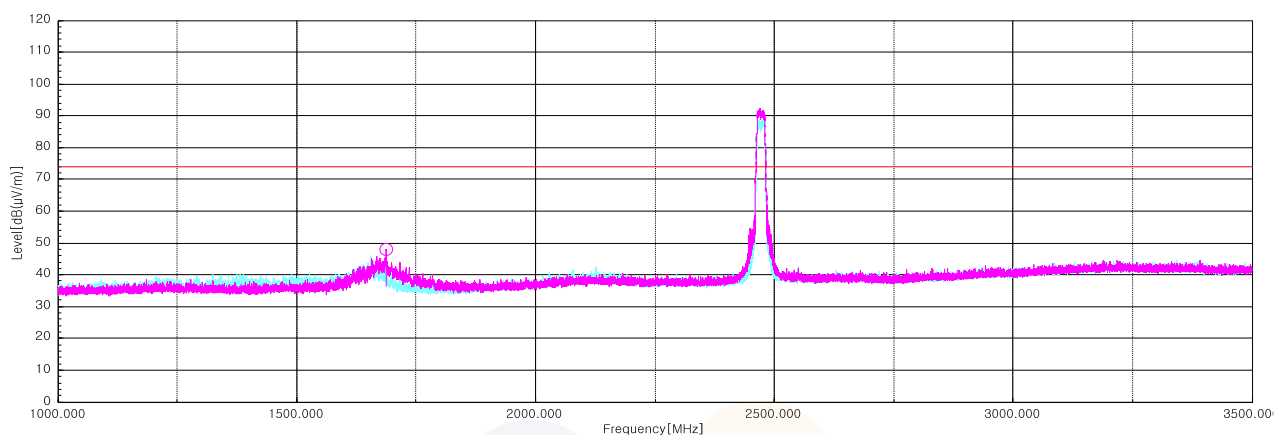


802.11g_2 472 MHz

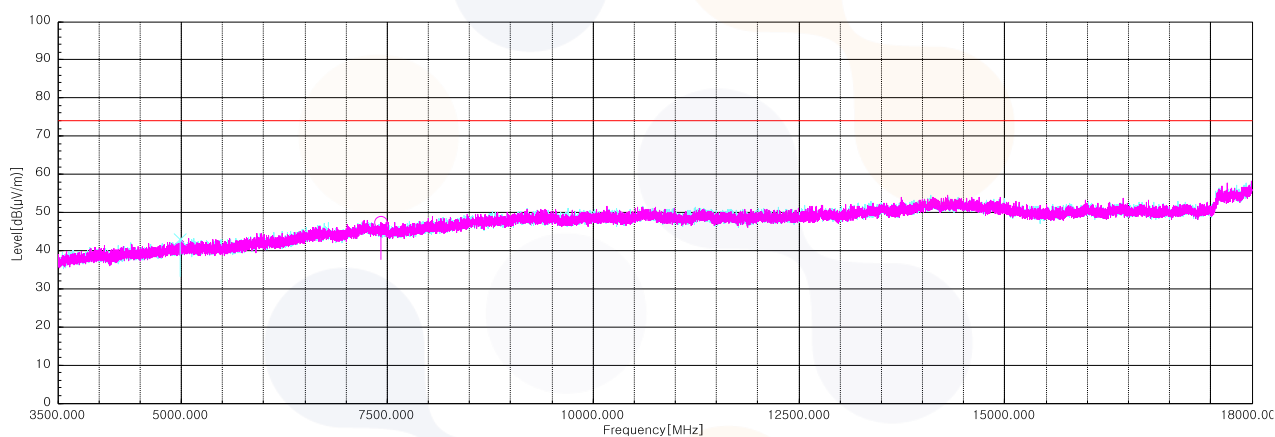
Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μ V))	(dB)	(dB)	(dB)	(dB(μ V/m))	(dB(μ V/m))	(dB)
Peak data								
2 483.51 ¹⁾	H	67.20	27.84	-29.91	-	65.13	74.00	8.87
1 687.25 ¹⁾	H	70.60	25.10	-47.71	-	47.99	74.00	26.01
4 983.83 ¹⁾	V	54.90	33.04	-44.96	-	42.98	74.00	31.02
7 429.50 ¹⁾	H	54.20	36.64	-43.47	-	47.37	74.00	26.63
Average Data								
2 483.51 ¹⁾	H	52.19	27.84	-29.91	0.30	50.42	54.00	3.58



Horizontal/Vertical for 1 GHz ~ 3.5 GHz

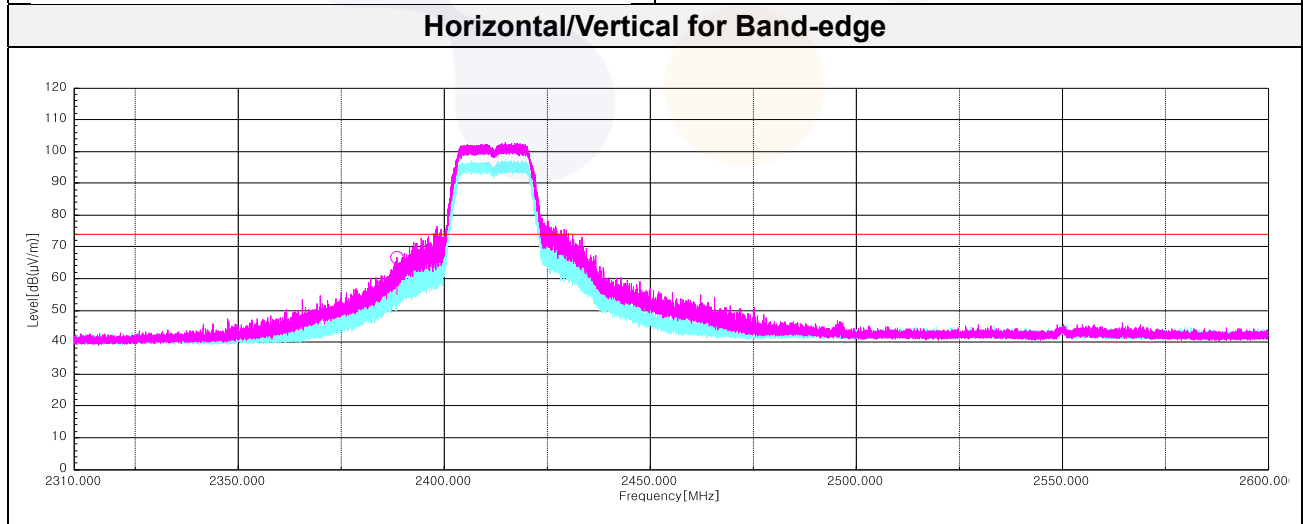
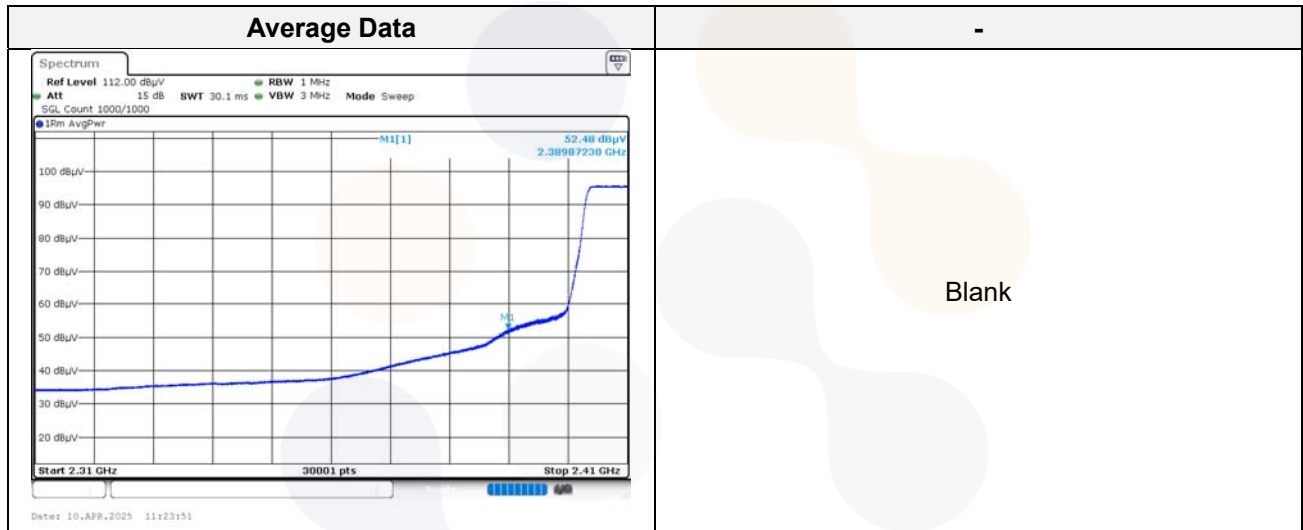


Horizontal/Vertical for 3.5 GHz ~ 18 GHz

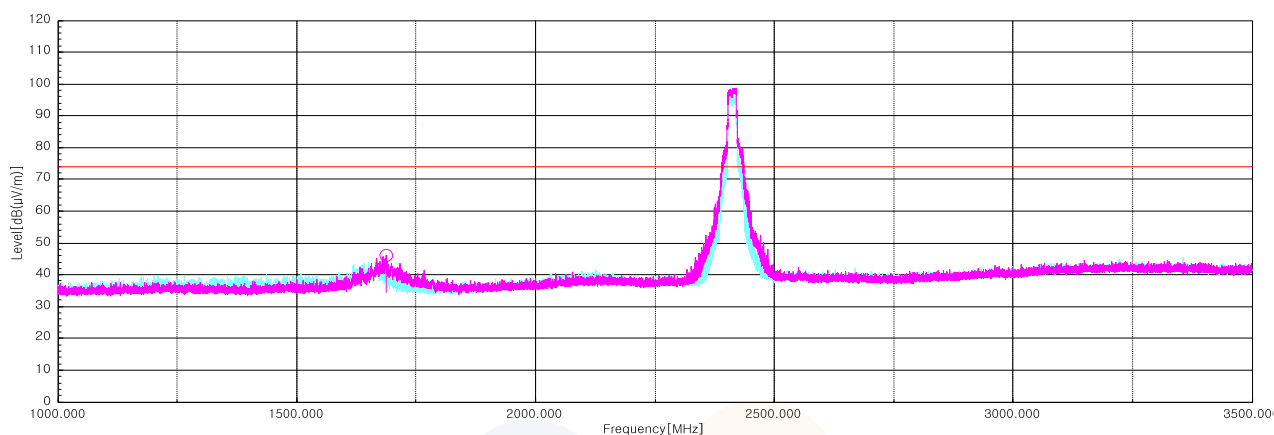


802.11n_HT20_2 412 MHz

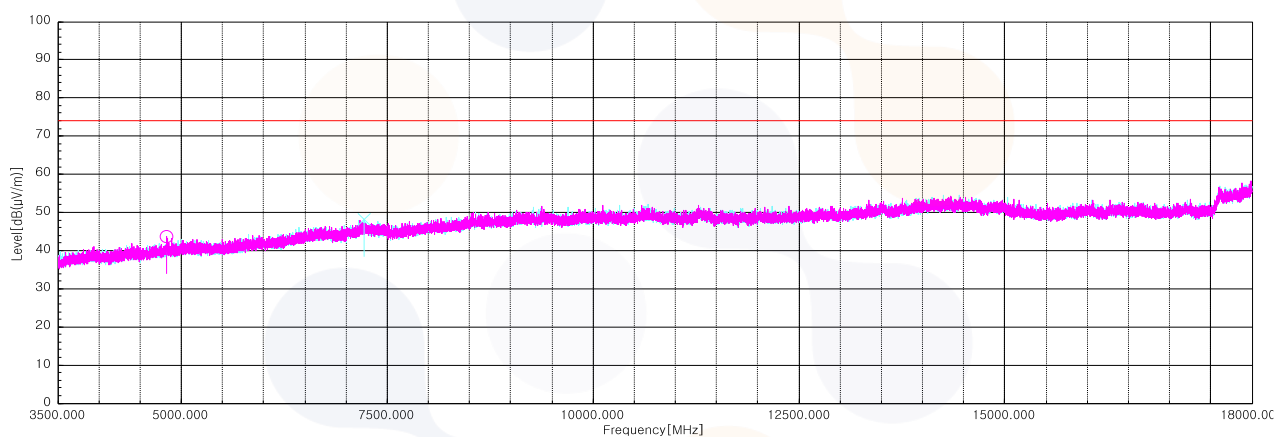
Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
2 389.87 ¹⁾	H	69.70	27.10	-30.05	-	66.75	74.00	7.25
1 687.42 ¹⁾	H	68.70	25.10	-47.71	-	46.09	74.00	27.91
4 825.78 ¹⁾	H	56.80	32.35	-45.69	-	43.46	74.00	30.54
7 223.12	V	54.80	37.09	-43.74	-	48.15	68.20	20.05
Average Data								
2 389.87 ¹⁾	H	52.48	27.10	-30.05	0.32	49.85	54.00	4.15



Horizontal/Vertical for 1 GHz ~ 3.5 GHz



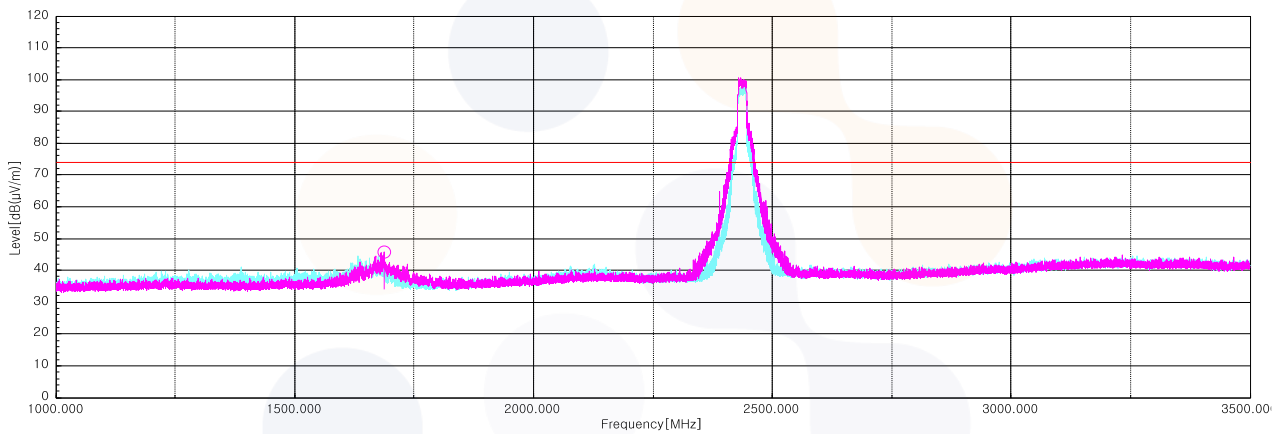
Horizontal/Vertical for 3.5 GHz ~ 18 GHz



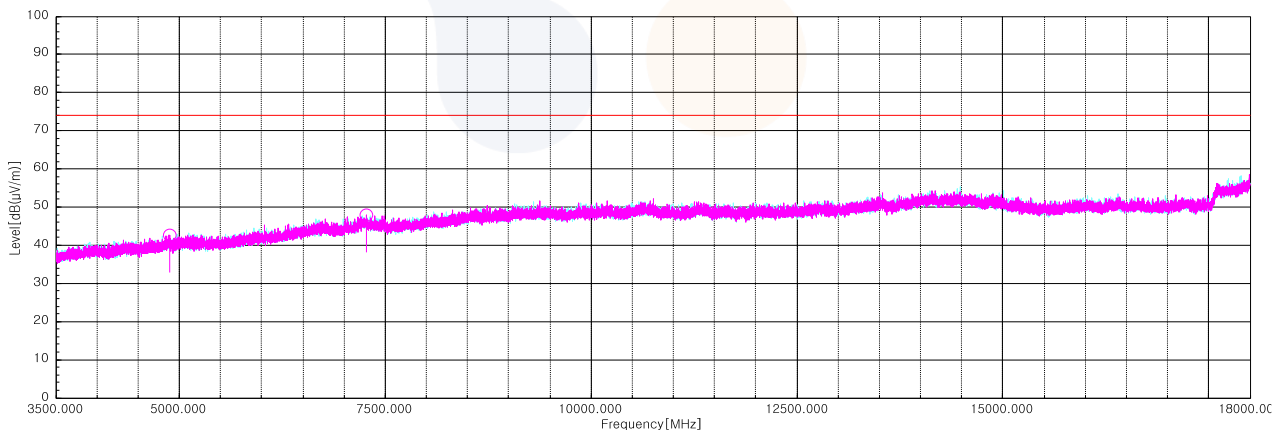
802.11n_HT20_2 437 MHz

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								
1 686.75 ¹⁾	H	68.40	25.10	-47.71	-	45.79	74.00	28.21
4 889.58 ¹⁾	H	55.40	32.74	-45.39	-	42.75	74.00	31.25
7 273.87 ¹⁾	H	54.70	37.15	-43.76	-	48.09	74.00	25.91
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

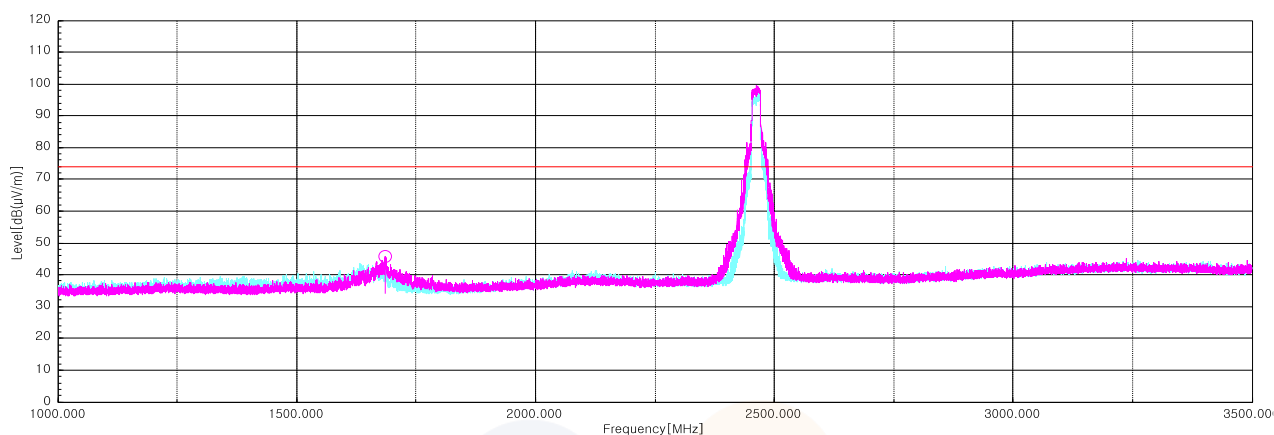
Horizontal/Vertical for 1 GHz ~ 3.5 GHz



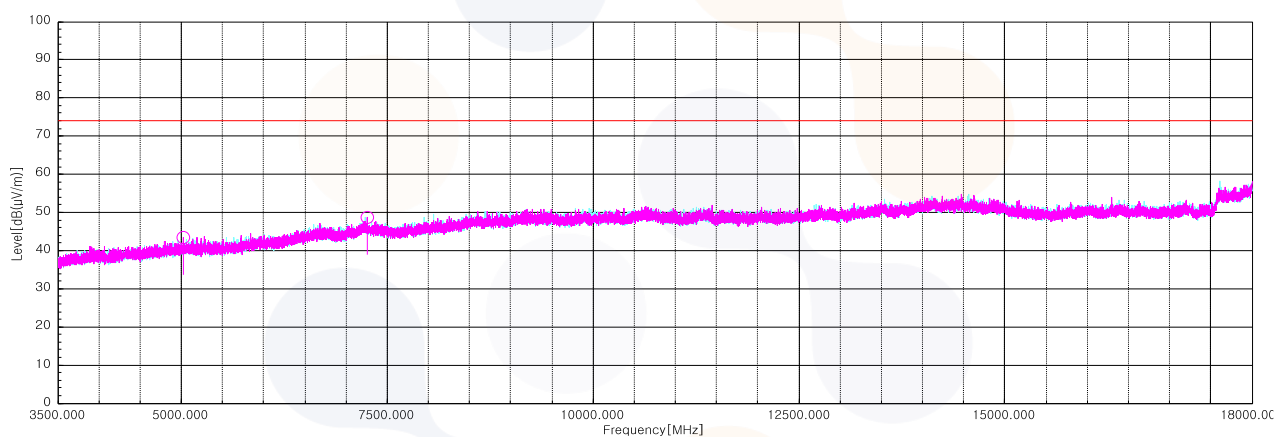
Horizontal/Vertical for 3.5 GHz ~ 18 GHz



Horizontal/Vertical for 1 GHz ~ 3.5 GHz

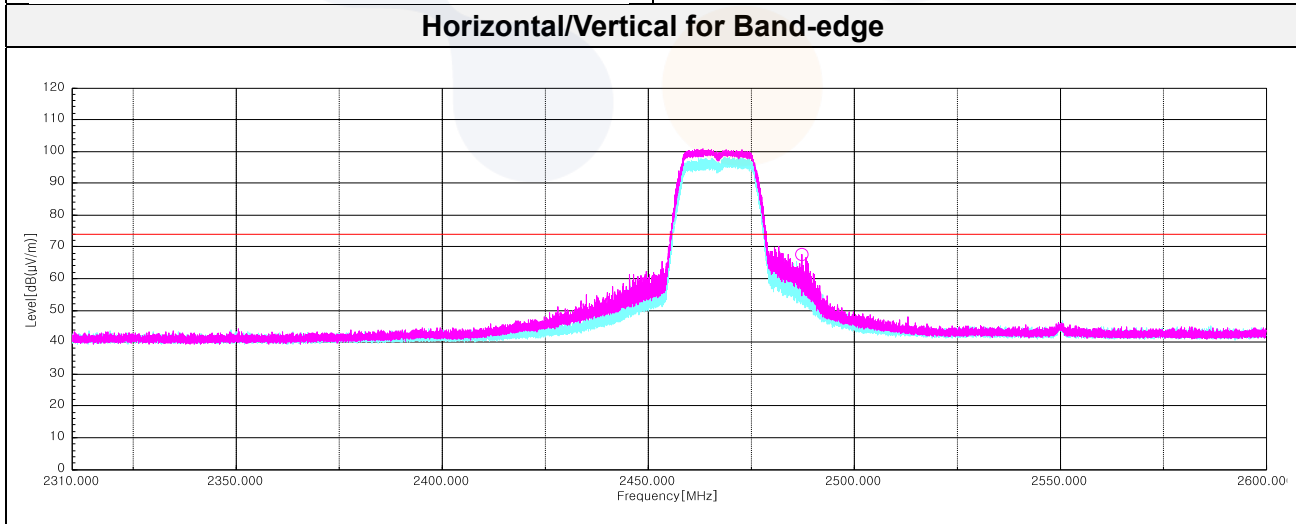
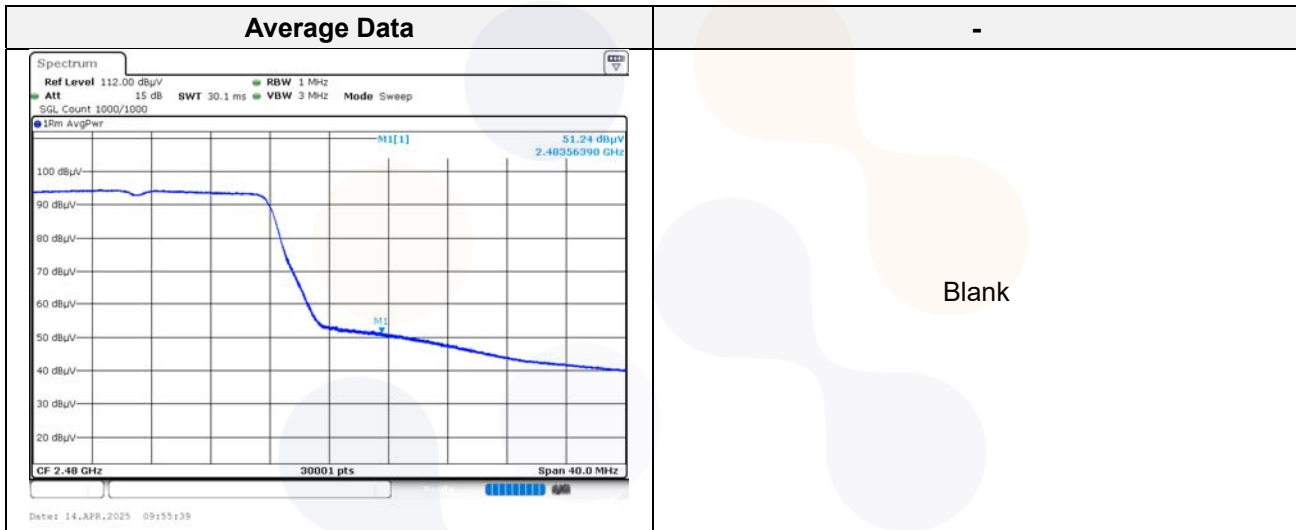


Horizontal/Vertical for 3.5 GHz ~ 18 GHz

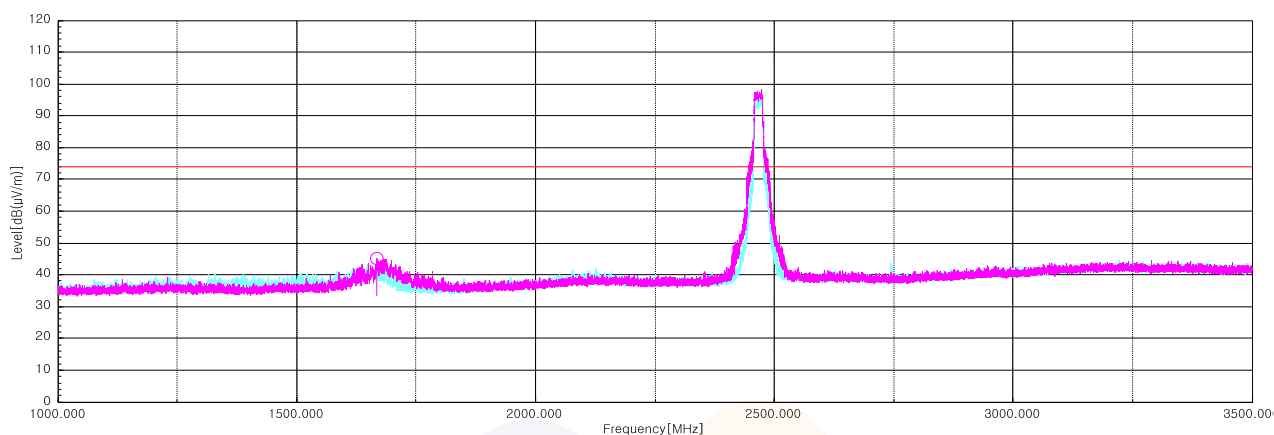


802.11n_HT20_2 467 MHz

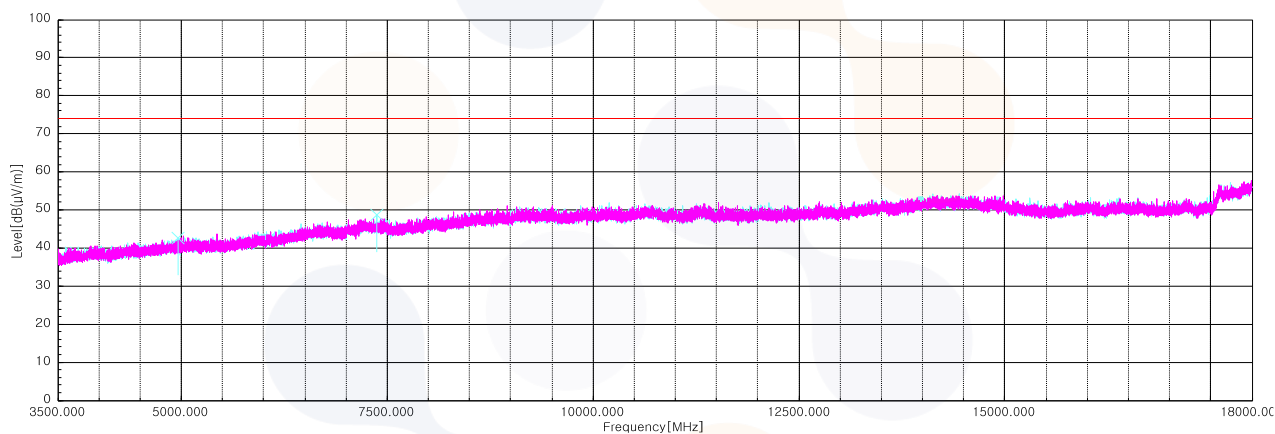
Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μ V))	(dB)	(dB)	(dB)	(dB(μ V/m))	(dB(μ V/m))	(dB)
Peak data								
2 483.56 ¹⁾	H	69.80	27.84	-29.90	-	67.74	74.00	6.26
1 668.17 ¹⁾	H	67.80	25.10	-47.71	-	45.19	74.00	28.81
4 960.63 ¹⁾	V	54.70	32.94	-45.06	-	42.58	74.00	31.42
7 373.92 ¹⁾	V	55.40	36.75	-43.57	-	48.58	74.00	25.42
Average Data								
2 483.56 ¹⁾	H	51.24	27.84	-29.90	0.32	49.50	54.00	4.50



Horizontal/Vertical for 1 GHz ~ 3.5 GHz

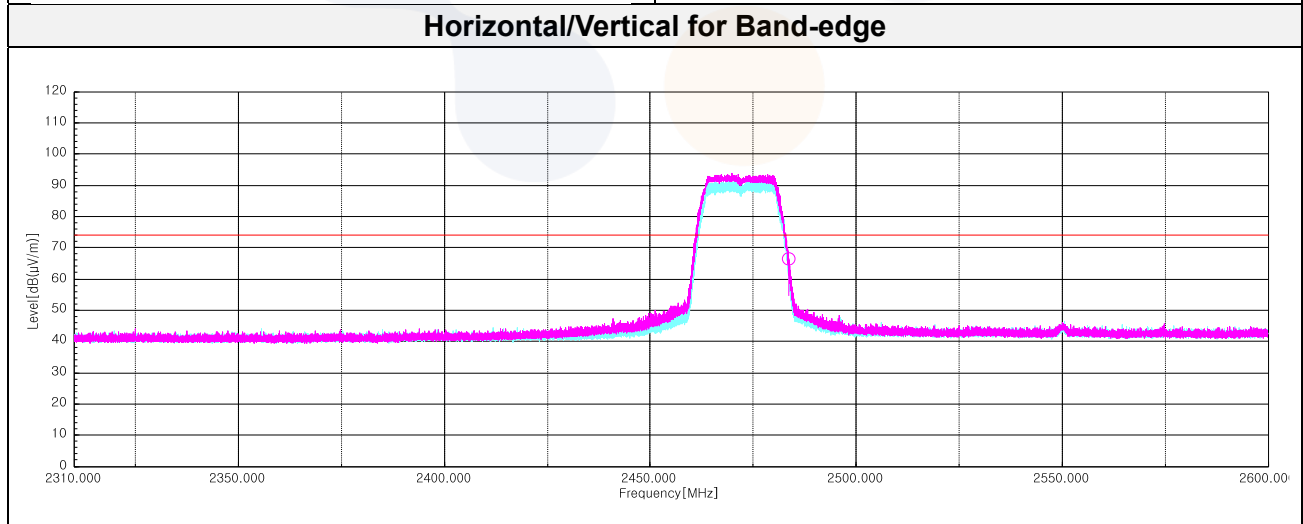
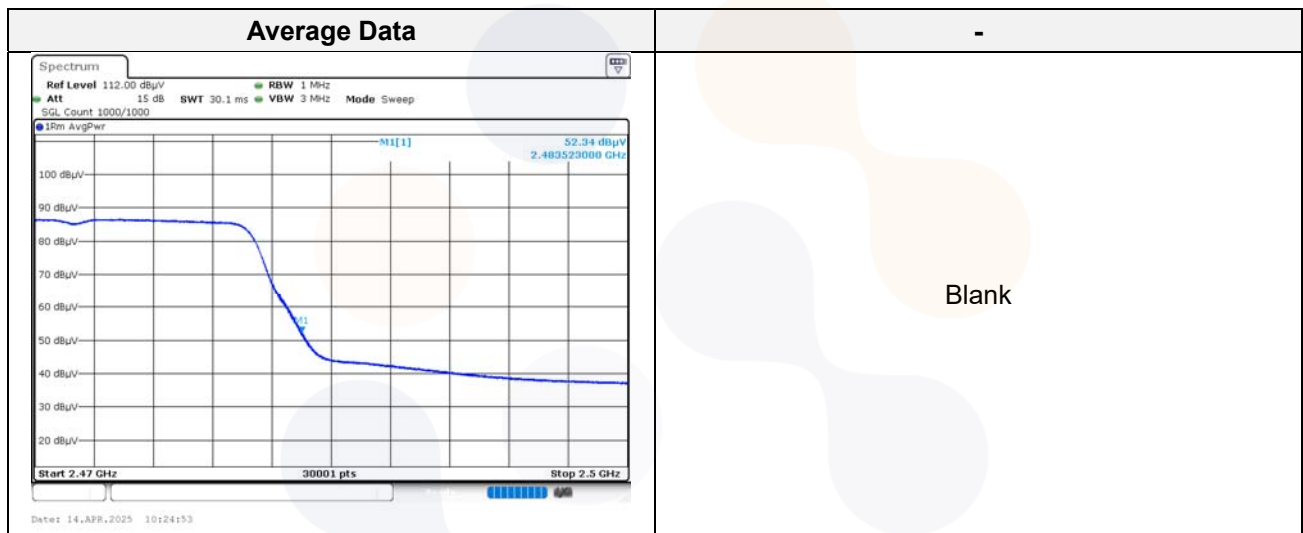


Horizontal/Vertical for 3.5 GHz ~ 18 GHz

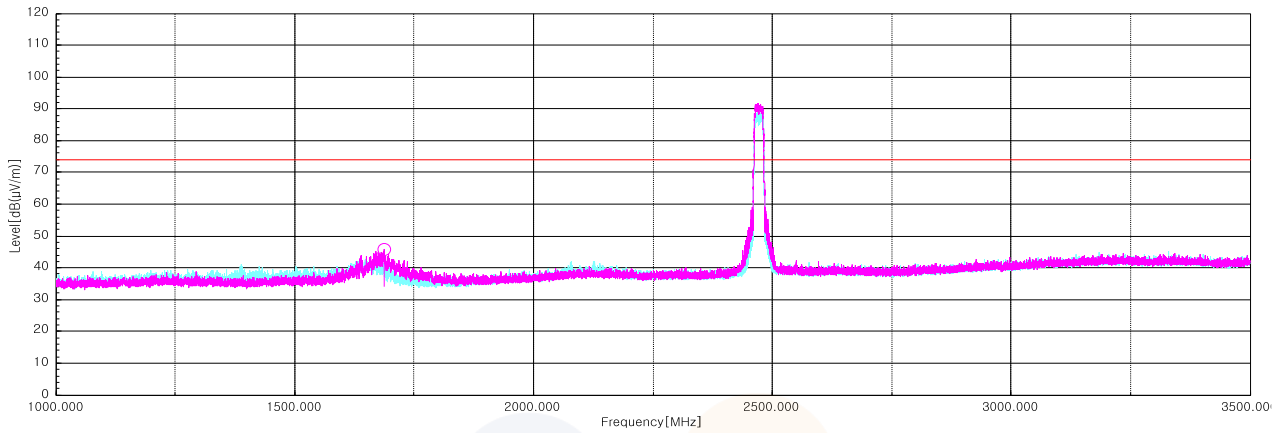


802.11n_HT20_2 472 MHz

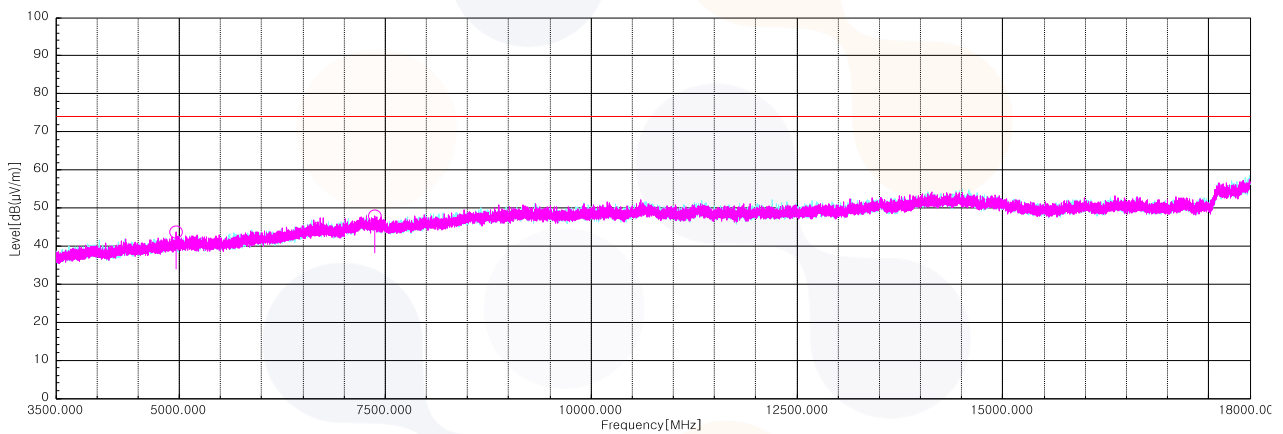
Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μ V))	(dB)	(dB)	(dB)	(dB(μ V/m))	(dB(μ V/m))	(dB)
Peak data								
2 483.52 ¹⁾	H	68.50	27.84	-29.91	-	66.43	74.00	7.57
1 687.17 ¹⁾	H	68.30	25.10	-47.71	-	45.69	74.00	28.31
4 958.22 ¹⁾	H	55.80	32.93	-45.07	-	43.66	74.00	30.34
7 372.95 ¹⁾	H	54.70	36.75	-43.57	-	47.88	74.00	26.12
Average Data								
2 483.52 ¹⁾	H	52.34	27.84	-29.91	0.32	50.59	54.00	3.41



Horizontal/Vertical for 1 GHz ~ 3.5 GHz

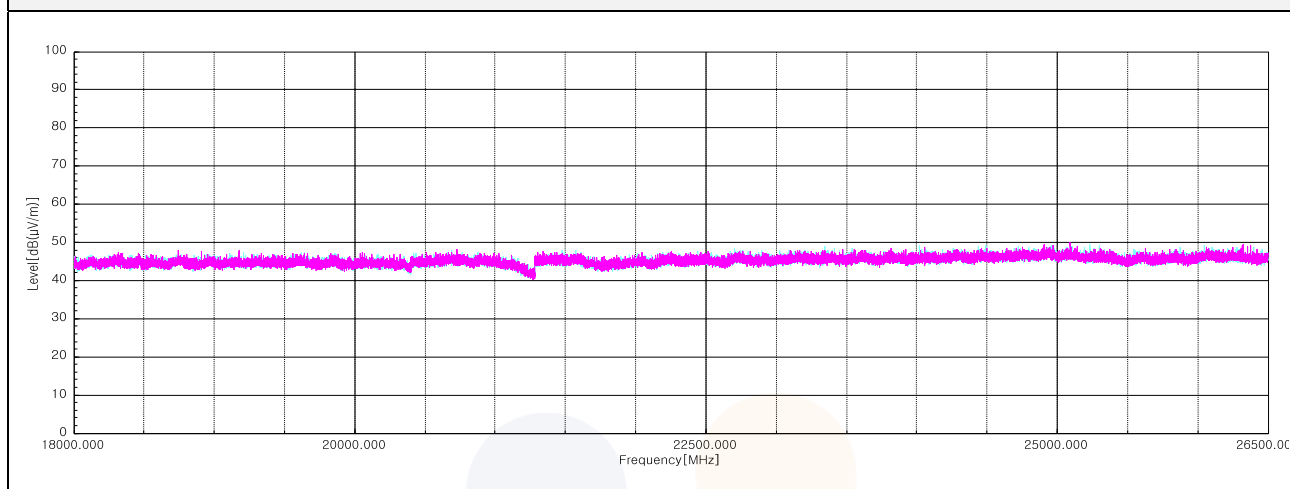


Horizontal/Vertical for 3.5 GHz ~ 18 GHz



Test results (Above 18 GHz) – Worst case: 802.11n_HT20 / 2 462 MHz

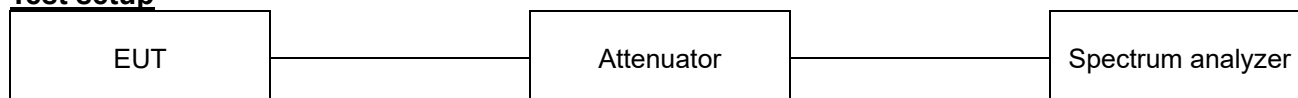
Horizontal/Vertical for 18 GHz ~ 26.5 GHz



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

7.5. Conducted Spurious Emission

Test setup



Limit

According to §15.247(d) and RSS-247(5.5), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operation, the radio frequency power that is produced by the intentional radiator 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 the transmitter demonstrates compliance with the peak conducted power averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation specified in §15.209(a) is not required. In addition, radiated emission limits specified in §15.209(a) (see §15.205(c)).

Limit : 20 dBc

Test procedure

ANSI C63.10 - Section 11.11.3, 14.3.3

KDB 558074 D01 v05 - Section 8.5

KDB 662911 D01 v02r01 – section (E)(3)(b)

Test settings

Establish an emission level by using the following procedure:

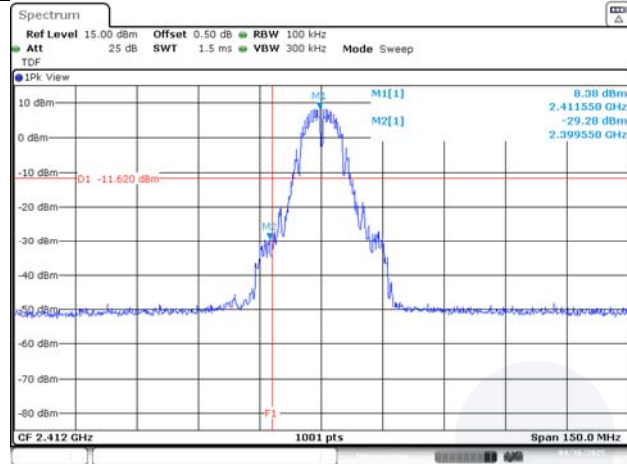
- 1) Set the center frequency and span to encompass frequency range to be measured.
- 2) Set the RBW = 100 kHz
- 3) Set the VBW $\geq [3 \times \text{RBW}]$
- 4) Detector = peak
- 5) Sweep time = auto couple
- 6) Trace mode = max hold
- 7) Allow trace to fully stabilize.
- 8) Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

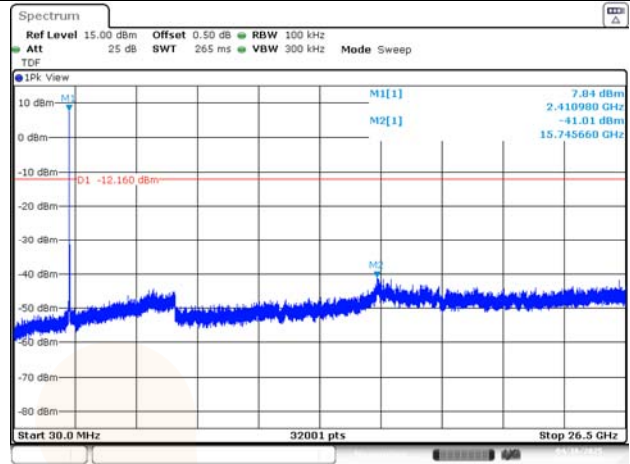
Test results

802.11b

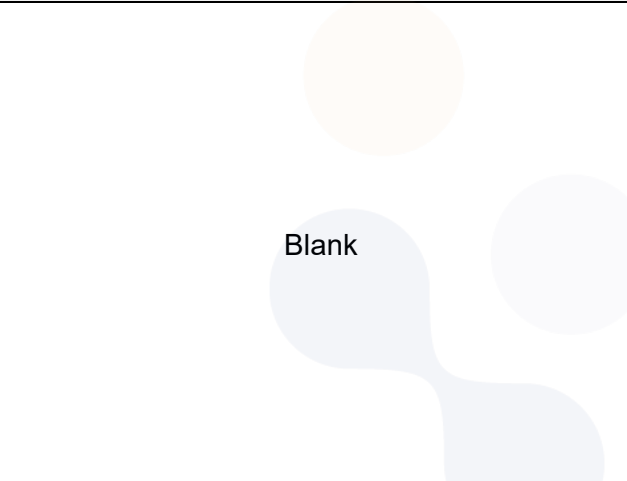
Conducted band-edge / 2 412 MHz



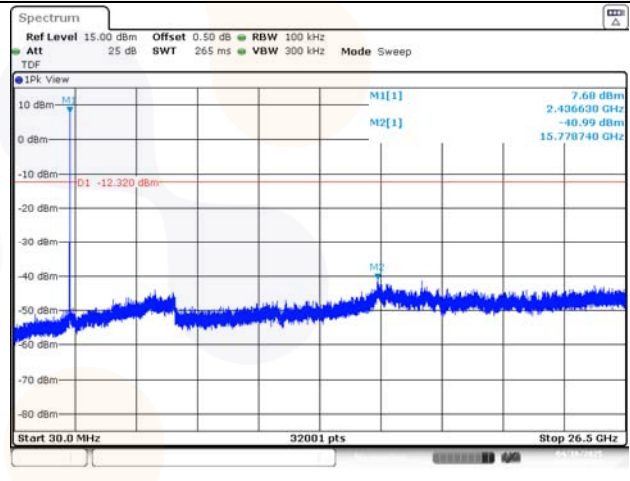
Conducted spurious / 2 412 MHz



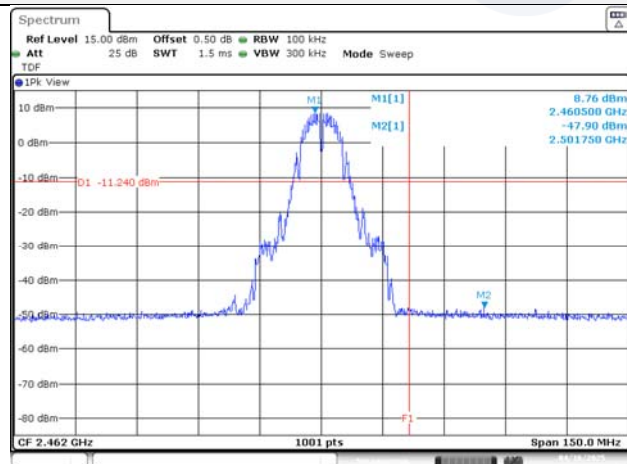
Conducted band-edge / 2 437 MHz



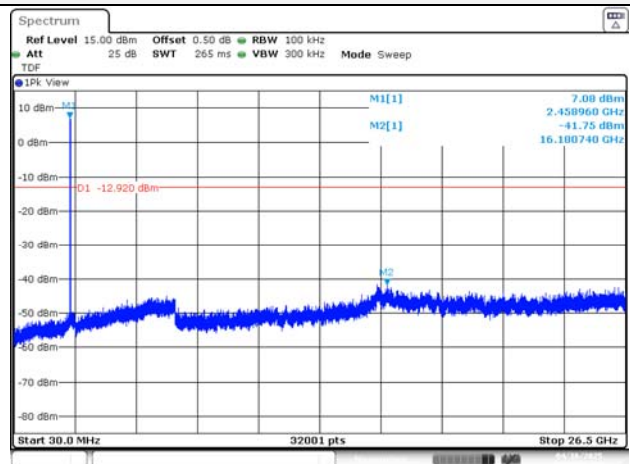
Conducted spurious / 2 437 MHz



Conducted band-edge / 2 462 MHz

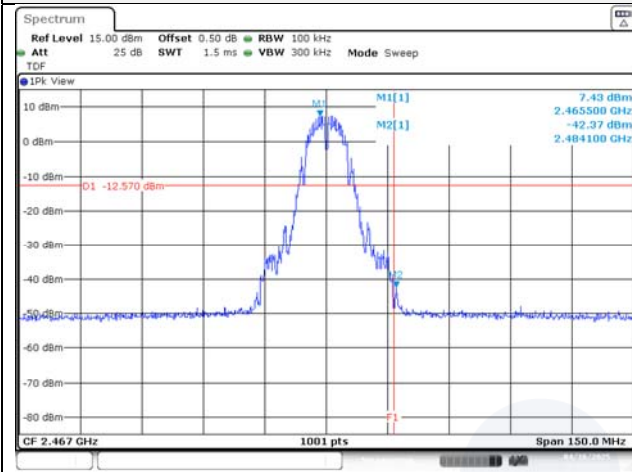


Conducted spurious / 2 462 MHz

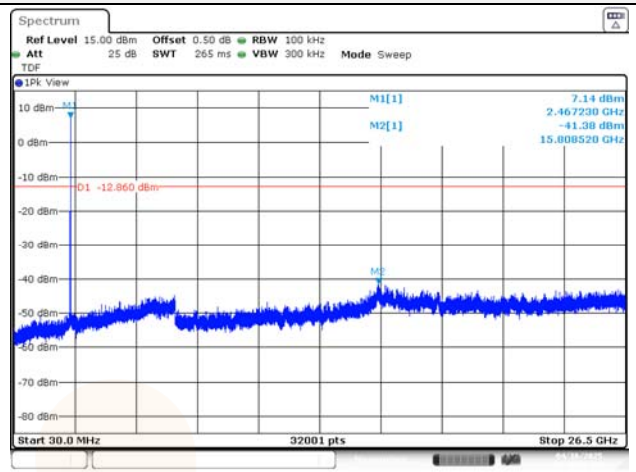


802.11b

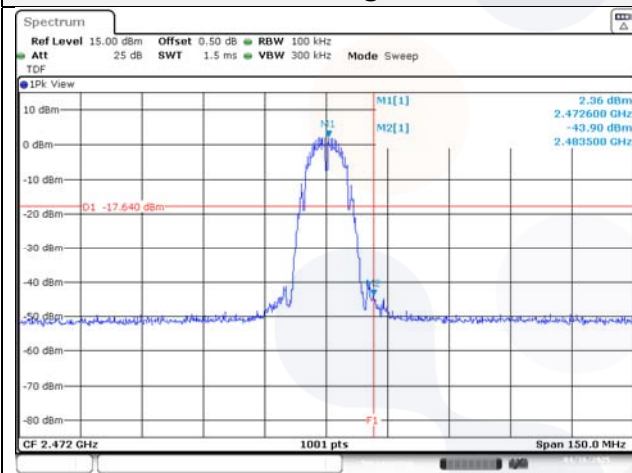
Conducted band-edge / 2 467 MHz



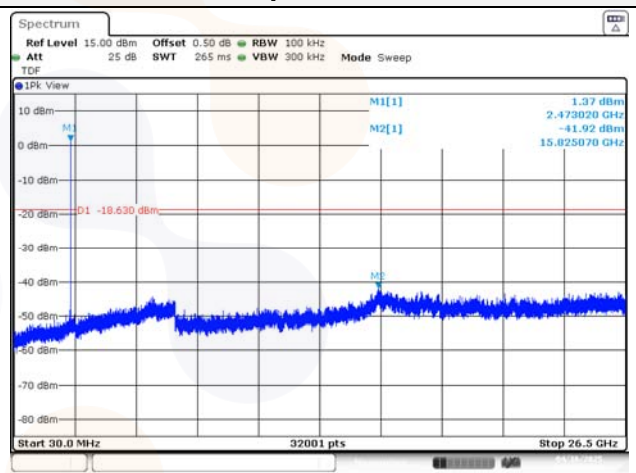
Conducted spurious / 2 467 MHz



Conducted band-edge / 2 472 MHz

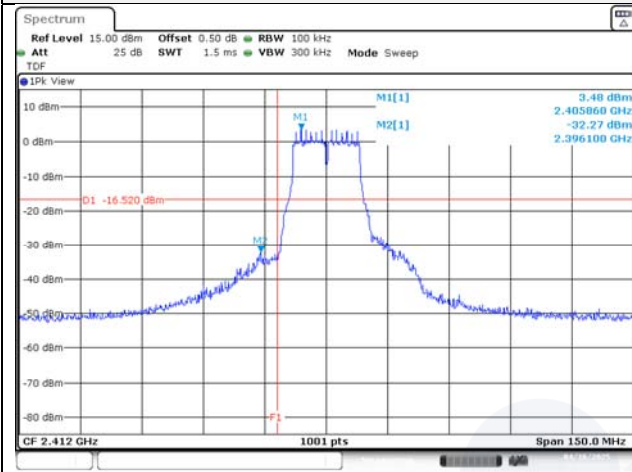


Conducted spurious / 2 472 MHz

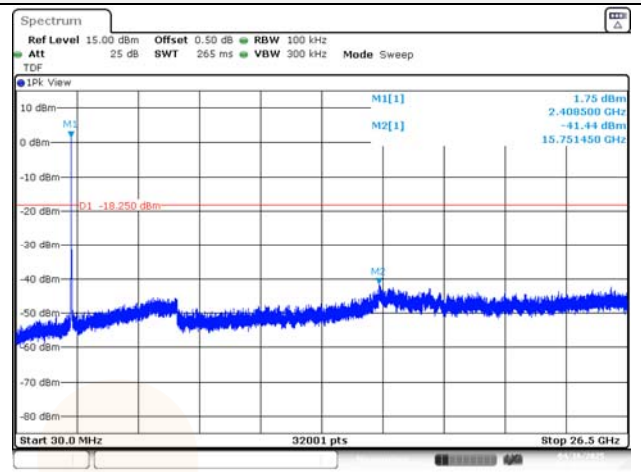


802.11g

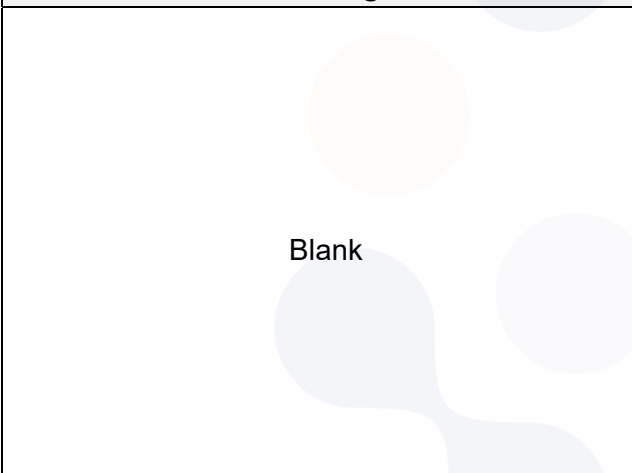
Conducted band-edge / 2 412 MHz



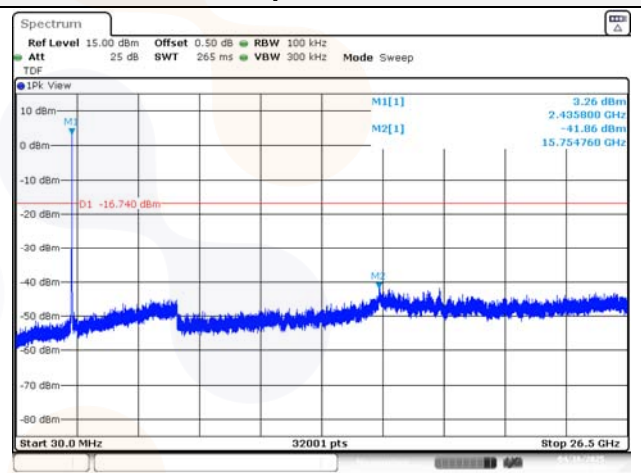
Conducted spurious / 2 412 MHz



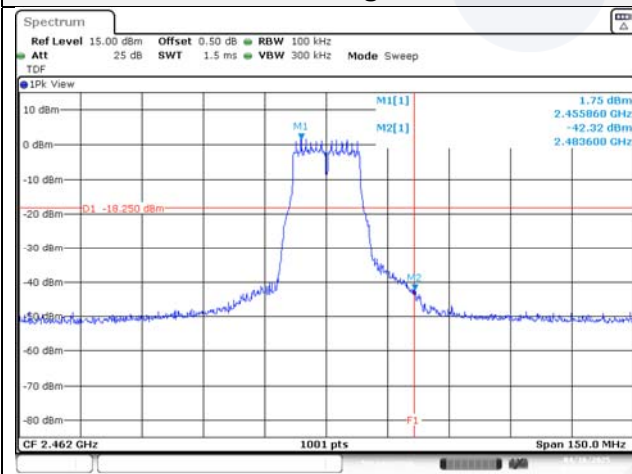
Conducted band-edge / 2 437 MHz



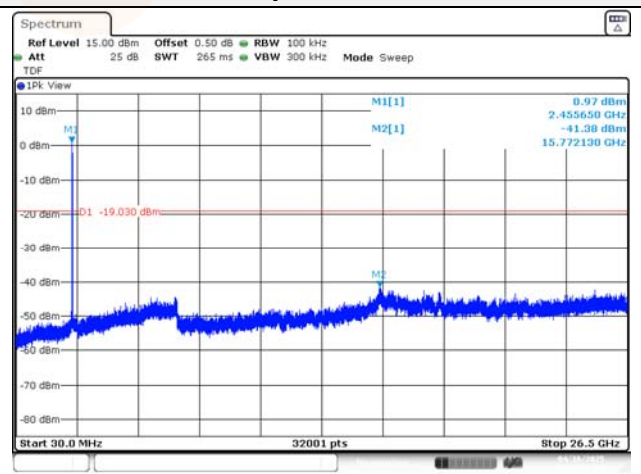
Conducted spurious / 2 437 MHz



Conducted band-edge / 2 462 MHz

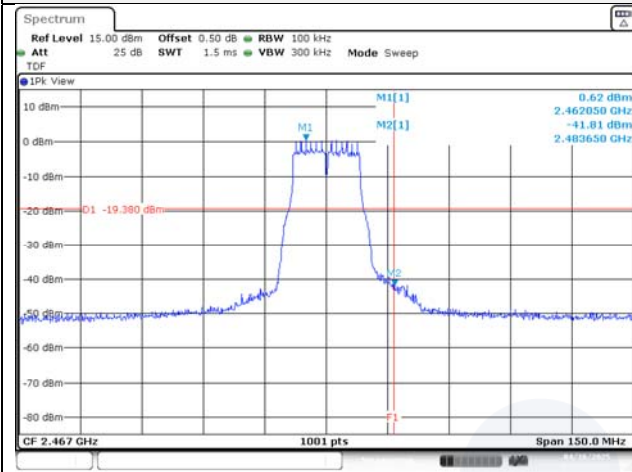


Conducted spurious / 2 462 MHz

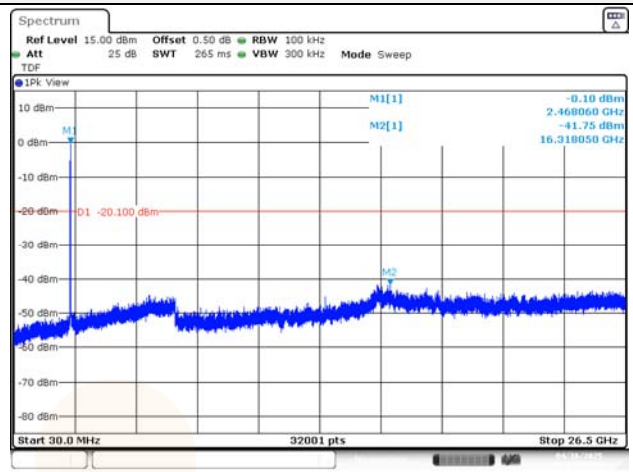


802.11g

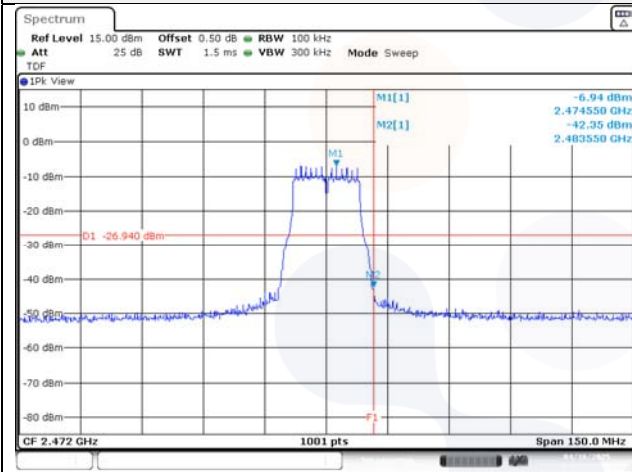
Conducted band-edge / 2 467 MHz



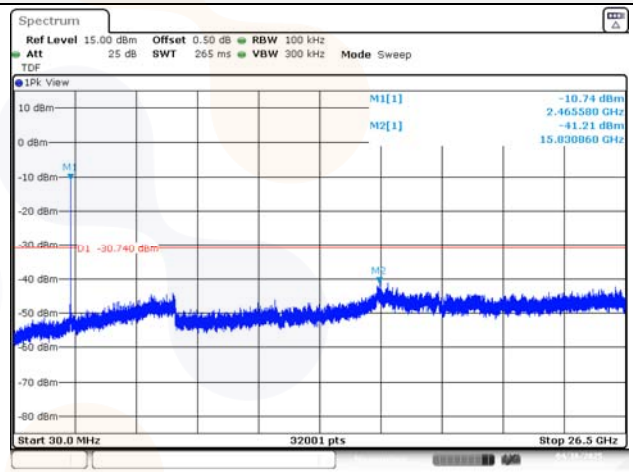
Conducted spurious / 2 467 MHz



Conducted band-edge / 2 472 MHz

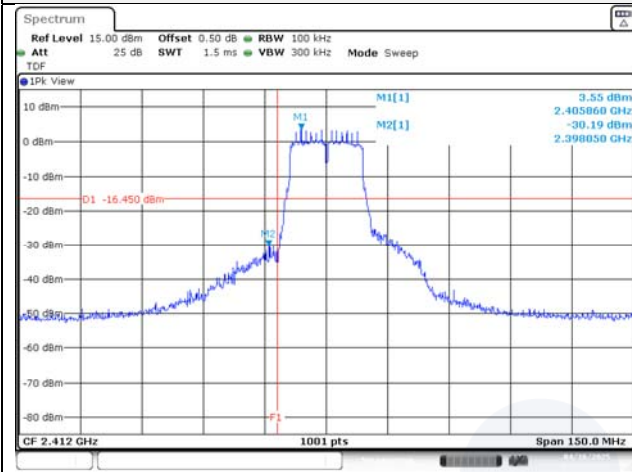


Conducted spurious / 2 472 MHz

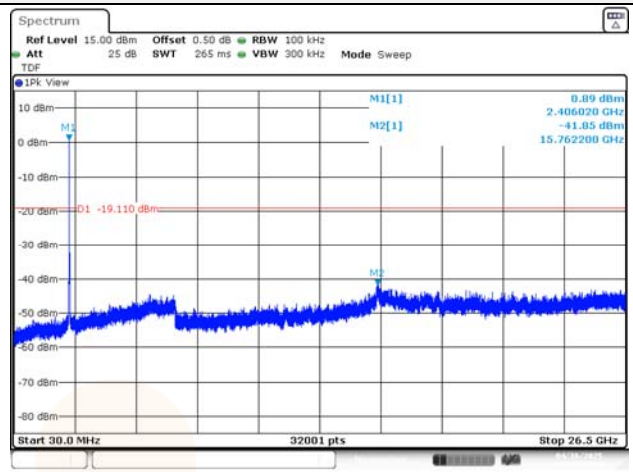


802.11n_HT20

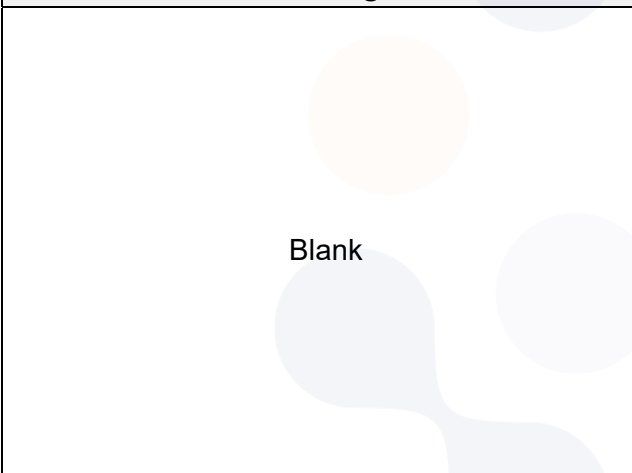
Conducted band-edge / 2 412 MHz



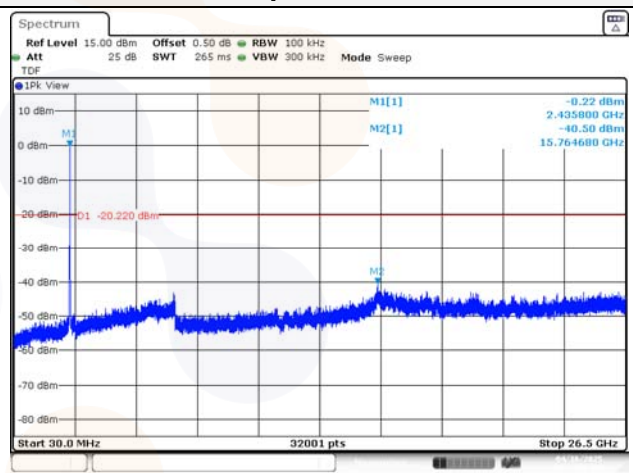
Conducted spurious / 2 412 MHz



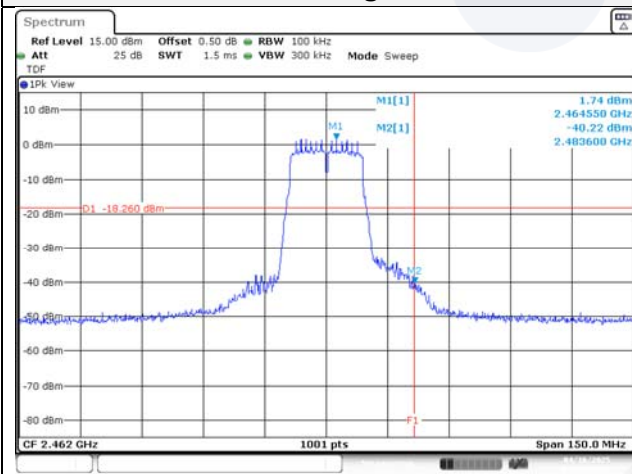
Conducted band-edge / 2 437 MHz



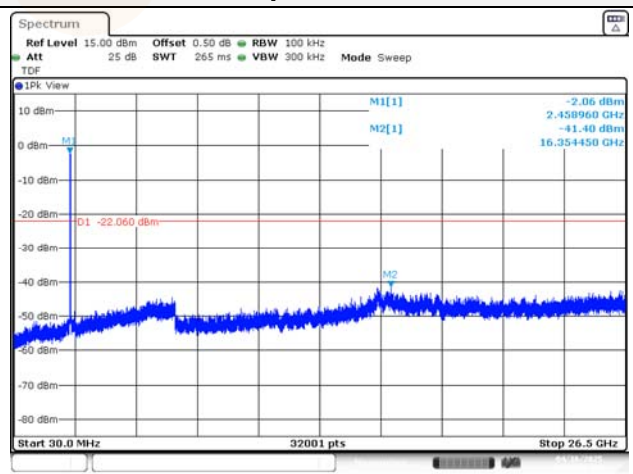
Conducted spurious / 2 437 MHz



Conducted band-edge / 2 462 MHz

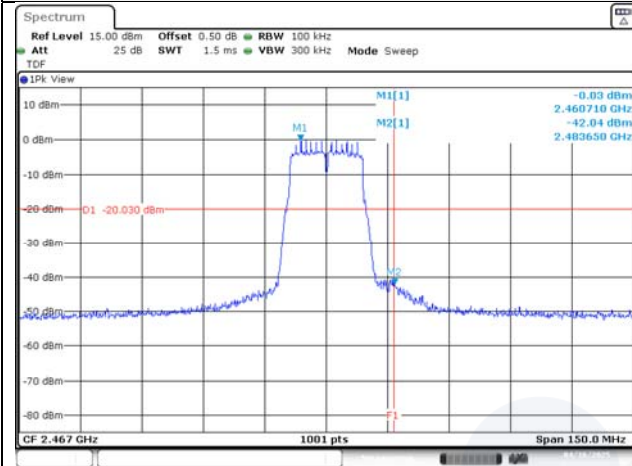


Conducted spurious / 2 462 MHz

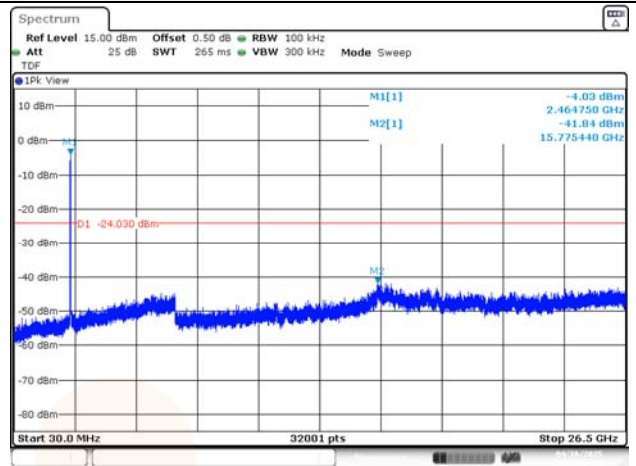


802.11n_HT20

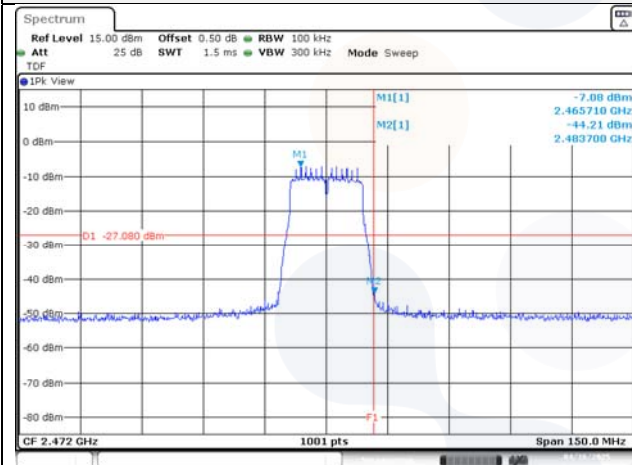
Conducted band-edge / 2 467 MHz



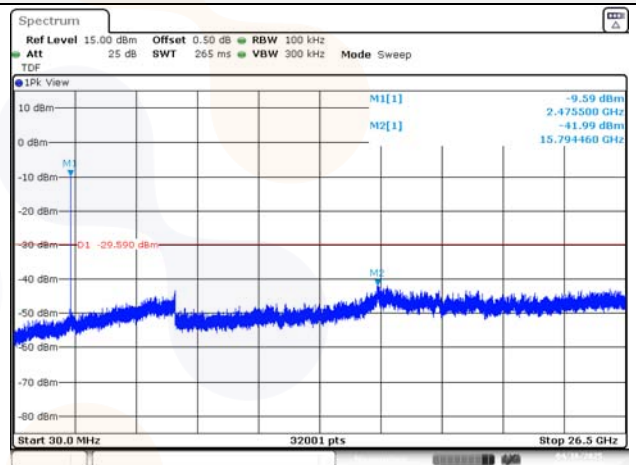
Conducted spurious / 2 467 MHz



Conducted band-edge / 2 472 MHz



Conducted spurious / 2 472 MHz



Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-70-5008-1021 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR25-SRF0093 Page (66) of (66)	
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8. Measurement equipment

Equipment Name	Manufacturer	Model No.	Serial No.	Next Cal. Date
Spectrum Analyzer	R&S	FSV30	101437	26.01.16
Attenuator	HUBER+SUHNER	6610_SK-50-1/199_NE	ATT06	26.03.17
Power Sensor	R&S	NRP-Z81	1137.9009.02-106223-bB	25.04.24
DC Power Supply	TOYOTECH	TL305TP	20100121	25.07.01
Spectrum Analyzer	R&S	FSVA40	101575	25.04.24
Broadband PreAmplifier	SCHWARZBECK	BBV9718D	57	26.01.16
Low Noise Amplifier	TESTEK	TK-PA18H	220124-L	25.10.11
Low Noise Amplifier	TESTEK	TK-PA1840H	220133-L	25.10.14
Horn Antenna	SCHWARZBECK	BBHA9120D	2763	25.10.24
Horn Antenna	SCHWARZBECK	BBHA9170	1267	25.10.15
High Pass Filter	QOTANA TECHNOLOGIES	DBHF0508004000A	23041800061	25.06.24
Signal Generator	R&S	SMB100A	176206	26.01.17
High Pass Filter	Wainwright Instruments GmbH	WHKX12-2805-3000-18000-40SS	SN58	25.10.15
Controller	INNCO SYSTEMS	CO3000	1441/54370322/P	-
Antenna Mast	INNCO SYSTEMS	MA4640-XP-ET	AM003	-
Turn Device	INNCO SYSTEMS	DS1200-S-1t	0003	-

End of test report