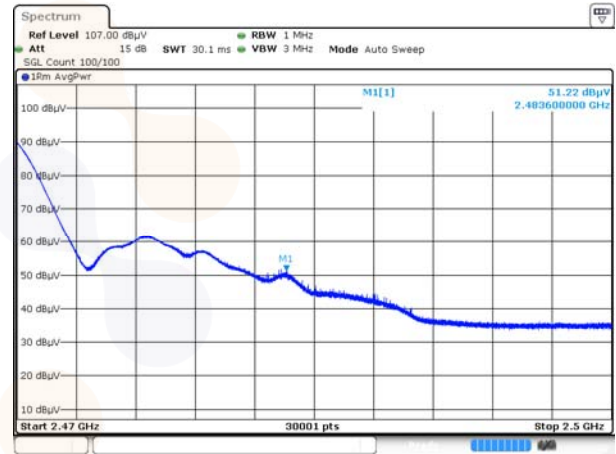
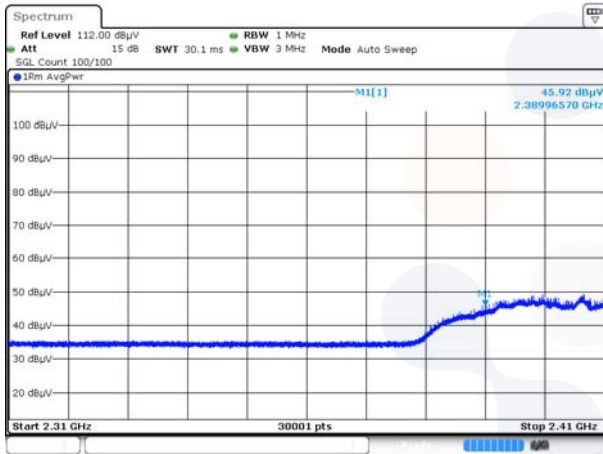


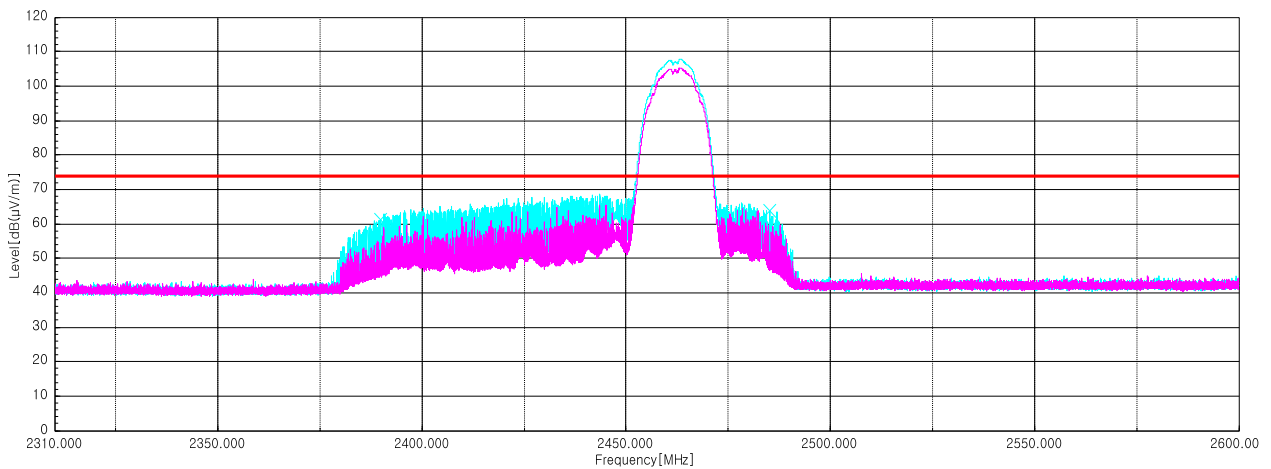
802.11b_2 462 MHz

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								
2 389.97 ¹⁾	V	64.30	27.10	-30.53	-	60.87	74.00	13.13
2 483.60 ¹⁾	V	66.50	27.84	-30.41	-	63.93	74.00	10.07
4 923.90 ¹⁾	H	52.60	32.84	-42.96	-	42.48	74.00	31.52
7 408.23 ¹⁾	V	51.00	36.48	-41.62	-	45.86	74.00	28.14
Average Data								
2 389.97 ¹⁾	V	45.92	27.10	-30.53	-	42.49	54.00	11.51
2 483.60 ¹⁾	V	51.22	27.84	-30.41	-	48.65	54.00	5.35

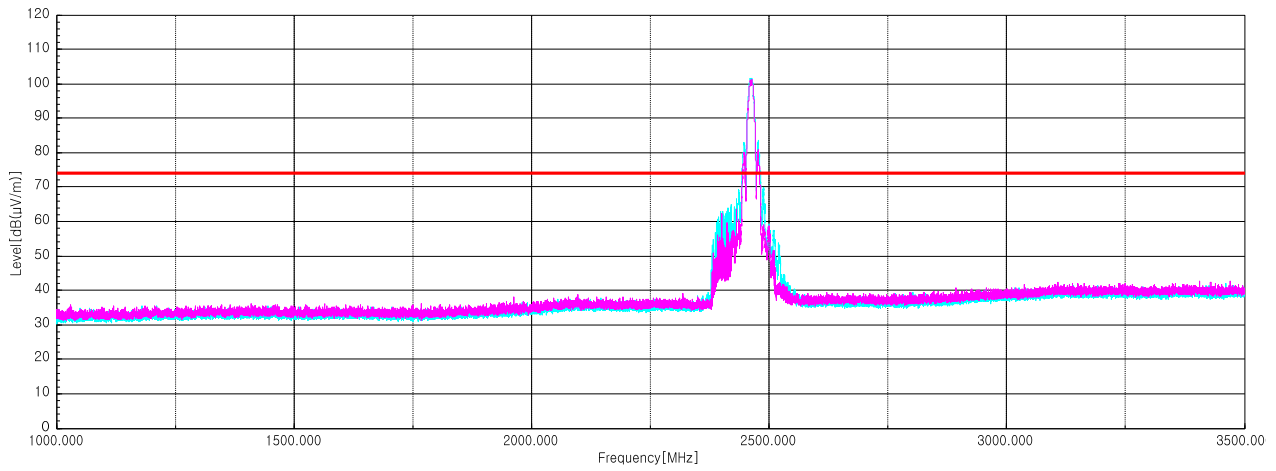
Average data



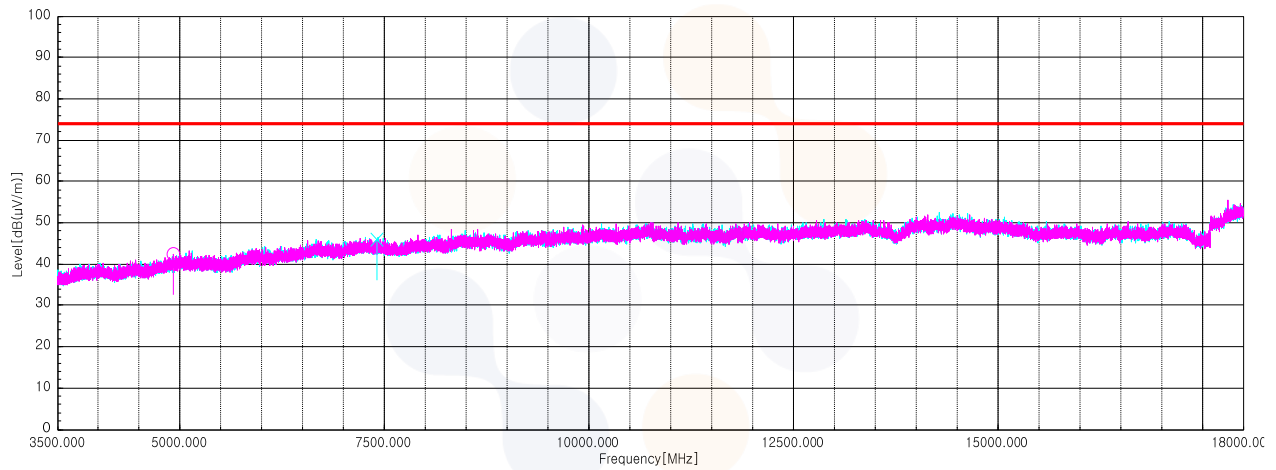
Horizontal/Vertical for Band-edge



Horizontal/Vertical for 1 GHz ~ 3.5 GHz



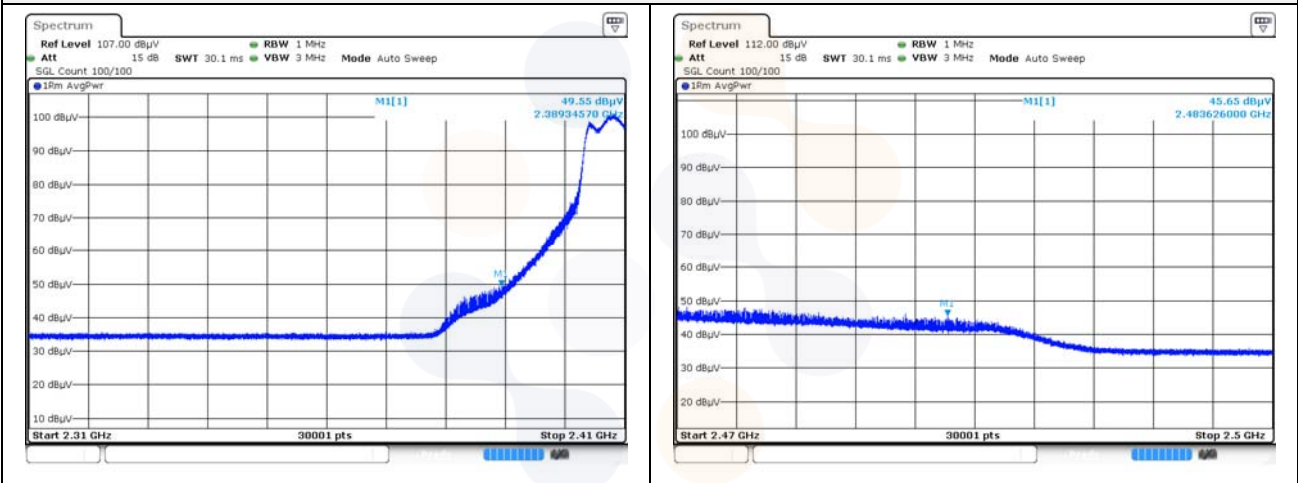
Horizontal/Vertical for 3.5 GHz ~ 18 GHz



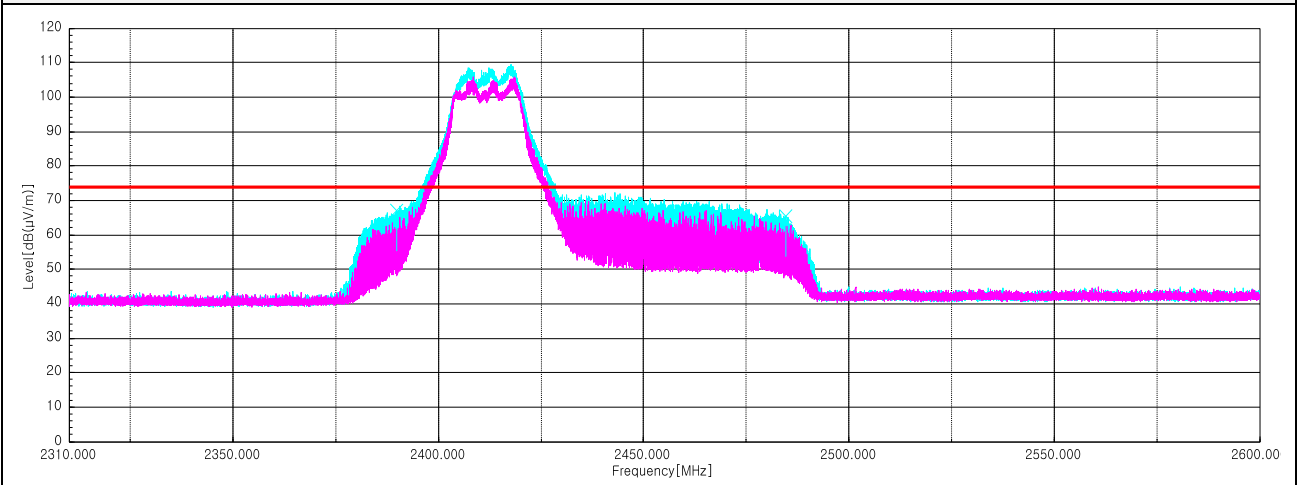
802.11g_2 412 MHz

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								
2 389.35 ¹⁾	V	70.40	27.10	-30.53	-	66.97	74.00	7.03
2 483.63 ¹⁾	V	67.90	27.84	-30.41	-	65.33	74.00	8.67
4 829.65 ¹⁾	H	52.70	32.26	-43.15	-	41.81	74.00	32.19
7 318.33 ¹⁾	H	51.40	36.76	-41.53	-	46.63	74.00	27.37
Average Data								
2 389.35 ¹⁾	V	49.55	27.10	-30.53	0.30	46.42	54.00	7.58
2 483.63 ¹⁾	V	45.65	27.84	-30.41	0.30	43.38	54.00	10.62

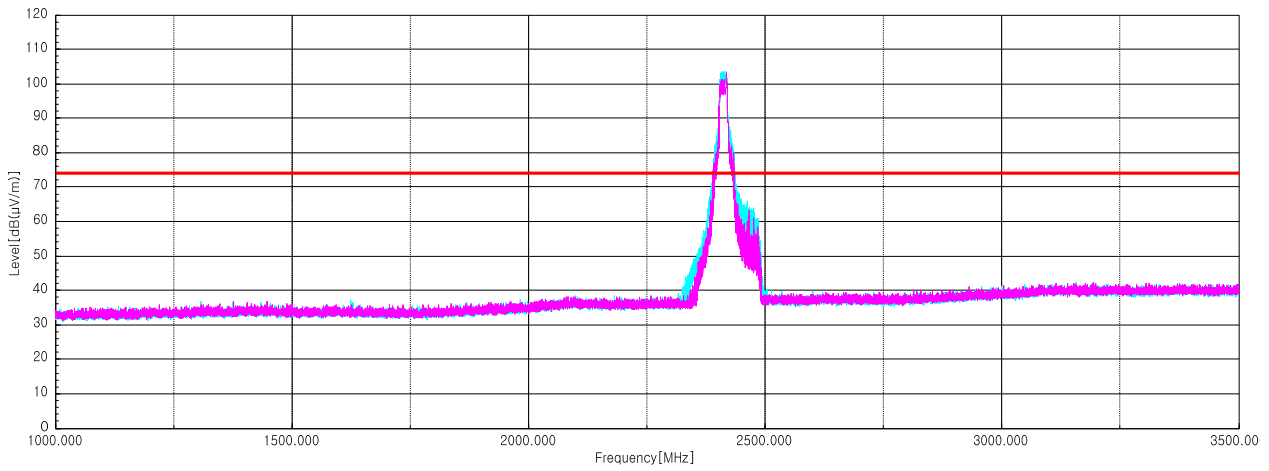
Average data



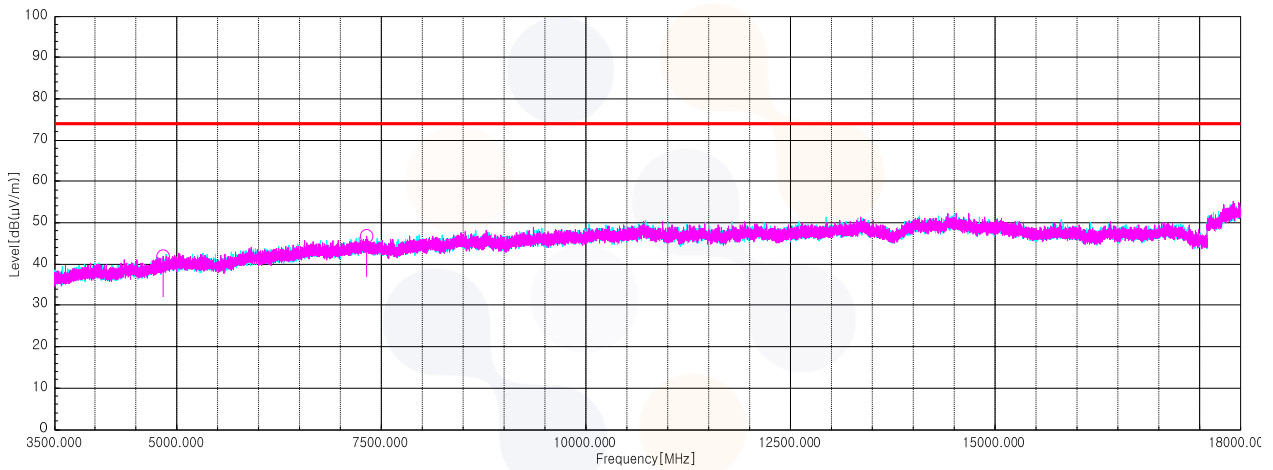
Horizontal/Vertical for Band-edge



Horizontal/Vertical for 1 GHz ~ 3.5 GHz



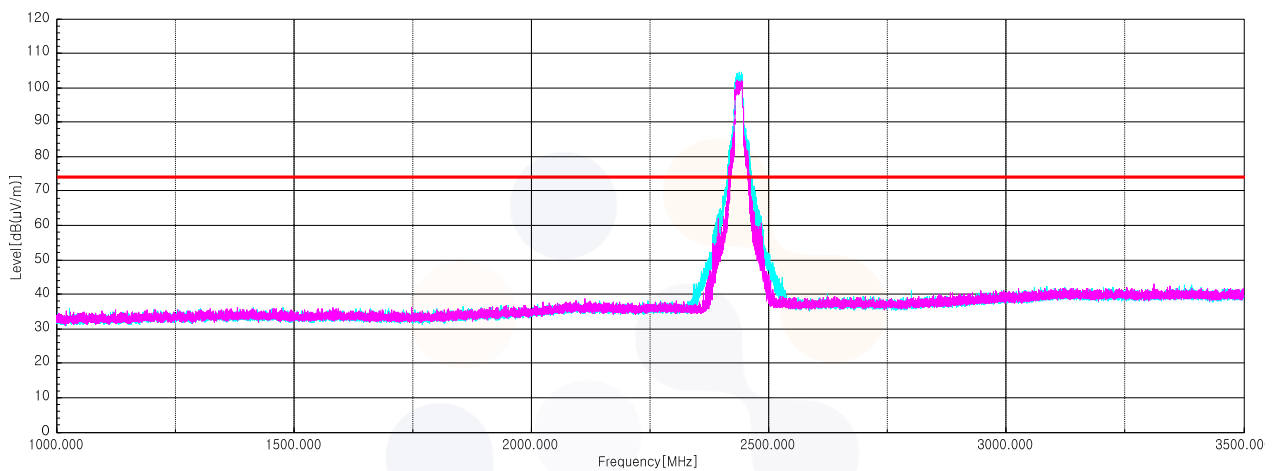
Horizontal/Vertical for 3.5 GHz ~ 18 GHz



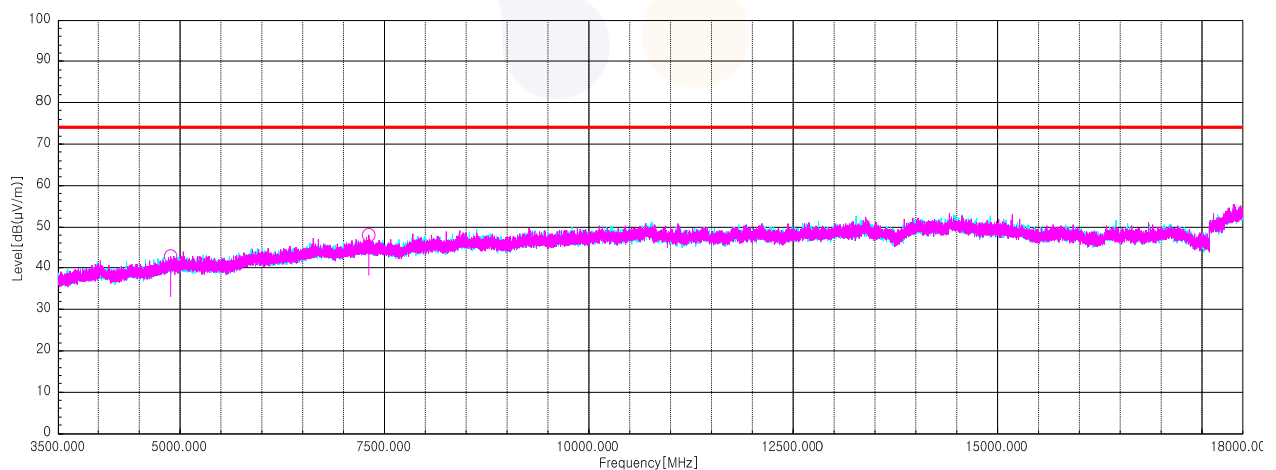
802.11g_2 437 MHz

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								
4 884.75 ¹⁾	H	53.20	32.54	-43.04	-	42.70	74.00	31.30
7 307.22 ¹⁾	H	52.70	36.79	-41.52	-	47.97	74.00	26.03
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

Horizontal/Vertical for 1 GHz ~ 3.5 GHz

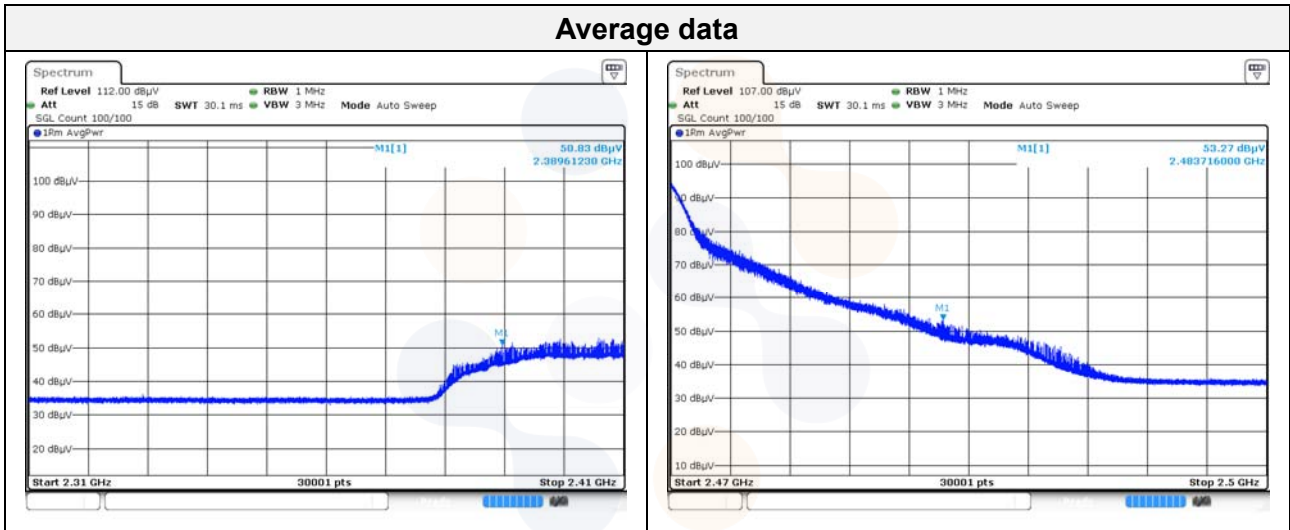


Horizontal/Vertical for 3.5 GHz ~ 18 GHz

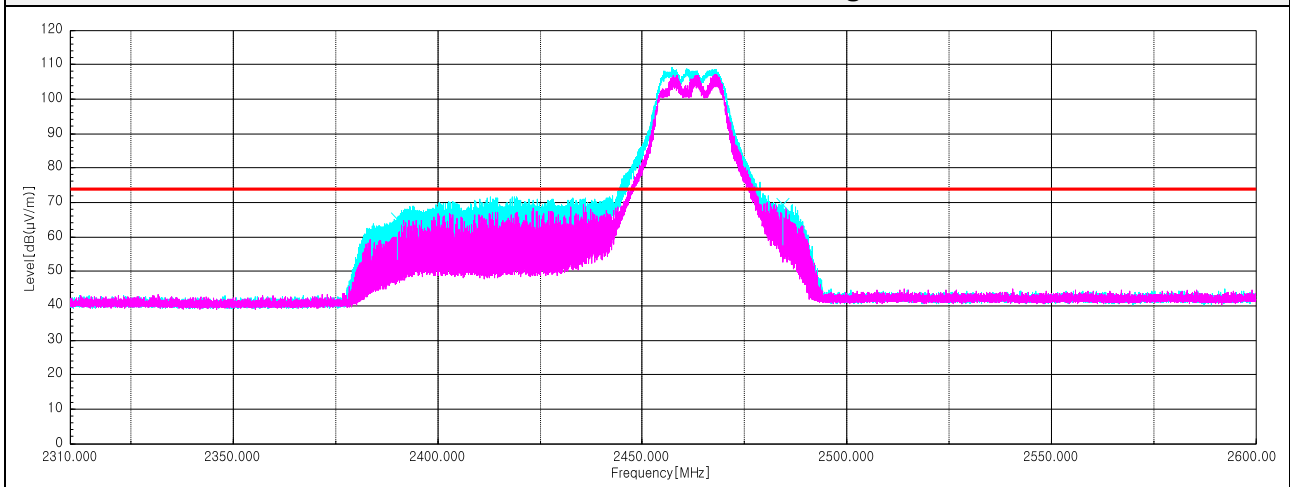


802.11g_2 462 MHz

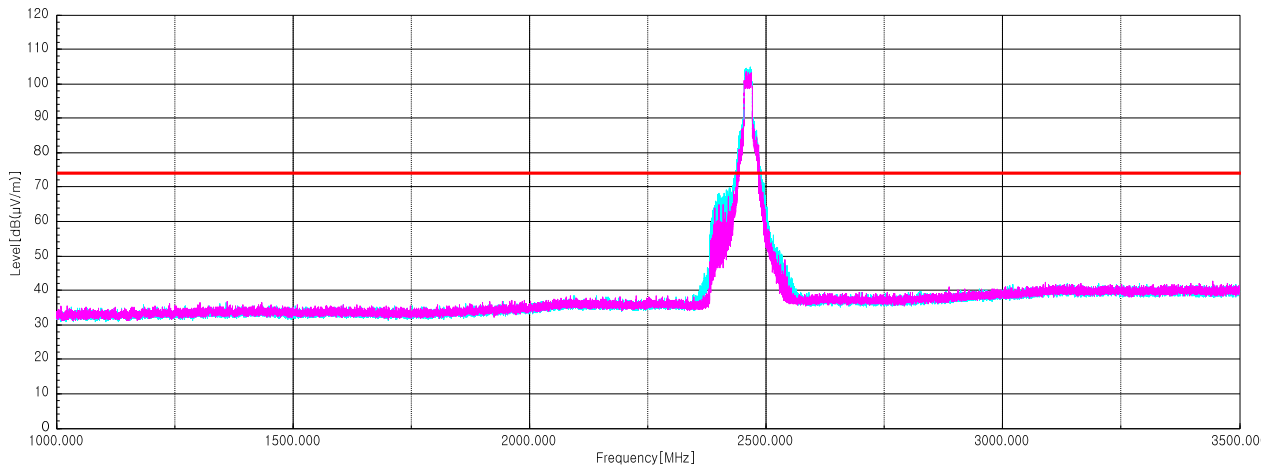
Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μ V))	(dB)	(dB)	(dB)	(dB(μ V/m))	(dB(μ V/m))	(dB)
Peak data								
2 389.61 ¹⁾	V	68.30	27.10	-30.53	-	64.87	74.00	9.13
2 483.72 ¹⁾	V	71.90	27.84	-30.41	-	69.33	74.00	4.67
4 961.60 ¹⁾	H	53.20	32.95	-42.89	-	43.26	74.00	30.74
7 335.73 ¹⁾	H	52.10	36.73	-41.55	-	47.28	74.00	26.72
Average Data								
2 389.61 ¹⁾	V	50.83	27.10	-30.53	0.30	47.70	54.00	6.30
2 483.72 ¹⁾	V	53.27	27.84	-30.41	0.30	51.00	54.00	3.00



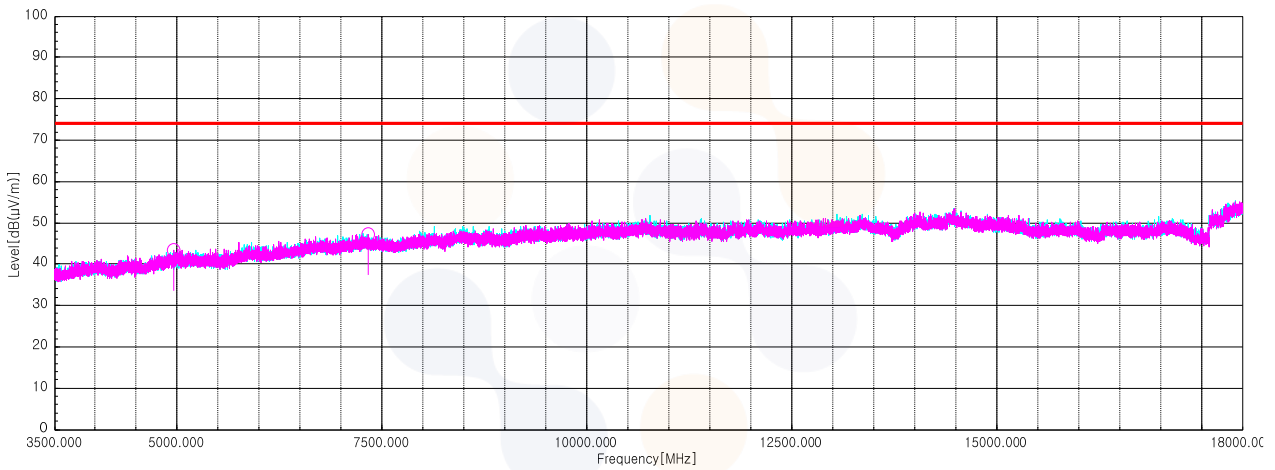
Horizontal/Vertical for Band-edge



Horizontal/Vertical for 1 GHz ~ 3.5 GHz



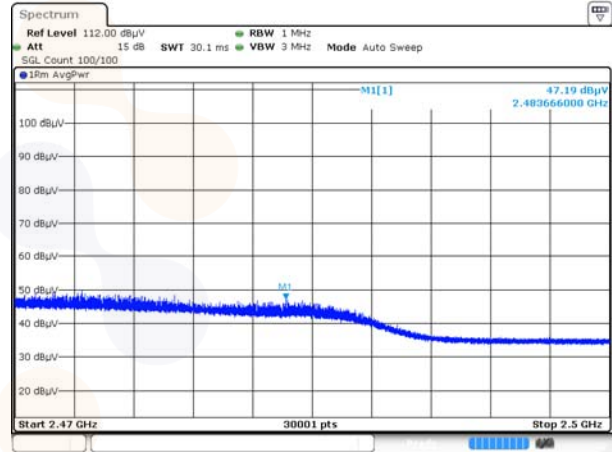
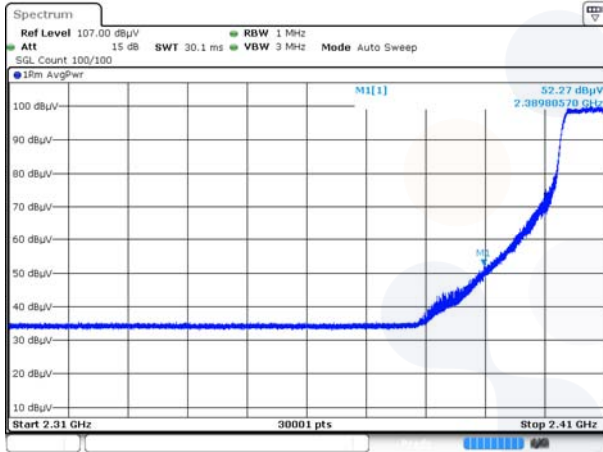
Horizontal/Vertical for 3.5 GHz ~ 18 GHz



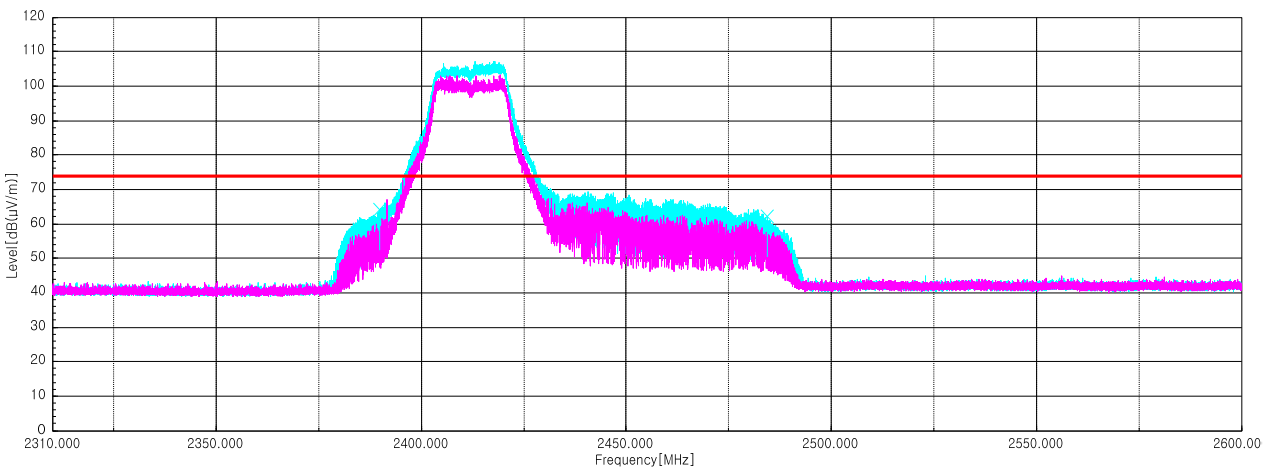
802.11n HT20_2 412 MHz

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								
2 389.81 ¹⁾	V	67.40	27.10	-30.53	-	63.97	74.00	10.03
2 483.67 ¹⁾	V	64.70	27.84	-30.41	-	62.13	74.00	11.87
4 836.42 ¹⁾	V	52.90	32.27	-43.14	-	42.03	74.00	31.97
7 287.88 ¹⁾	H	51.40	36.98	-41.50	-	46.88	74.00	27.12
Average Data								
2 389.81 ¹⁾	V	52.27	27.10	-30.53	0.59	49.43	54.00	4.57
2 483.67 ¹⁾	V	47.19	27.84	-30.41	0.59	45.21	54.00	8.79

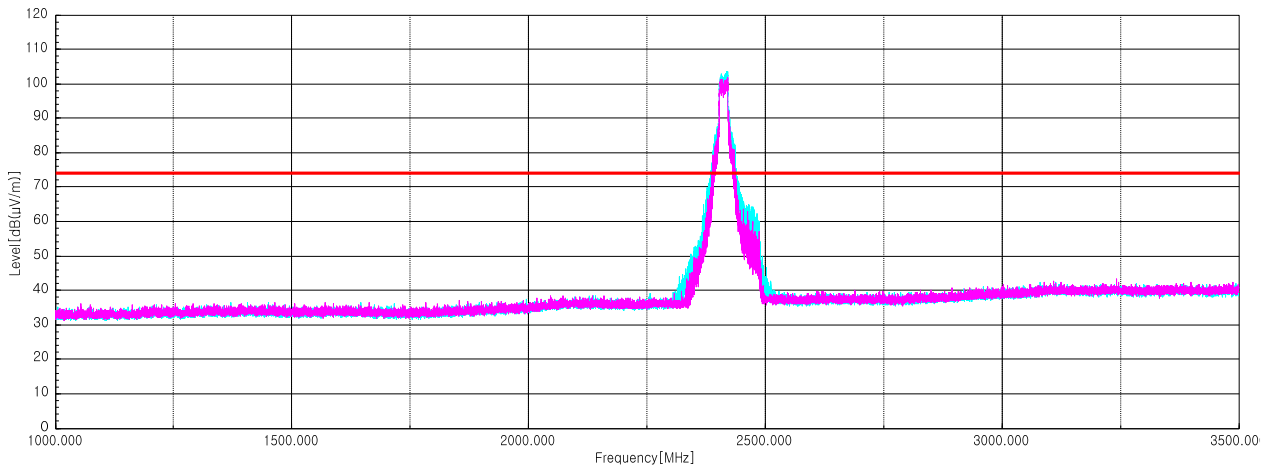
Average data



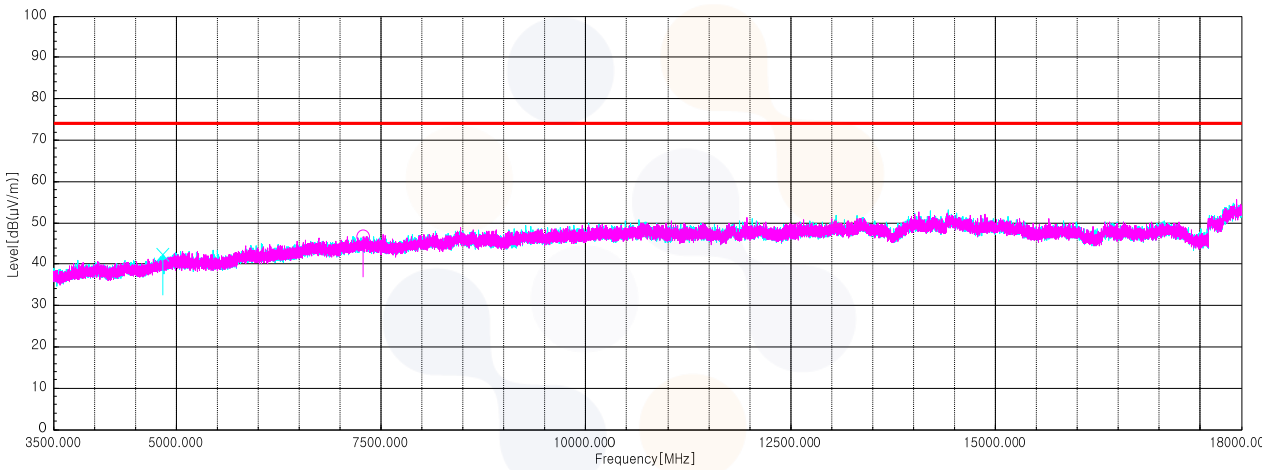
Horizontal/Vertical for Band-edge



Horizontal/Vertical for 1 GHz ~ 3.5 GHz



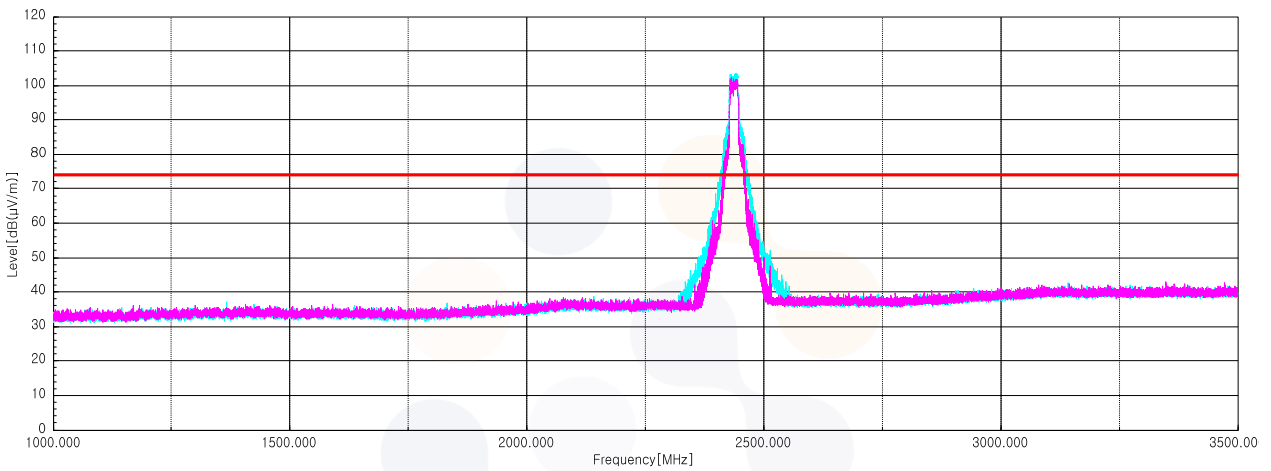
Horizontal/Vertical for 3.5 GHz ~ 18 GHz



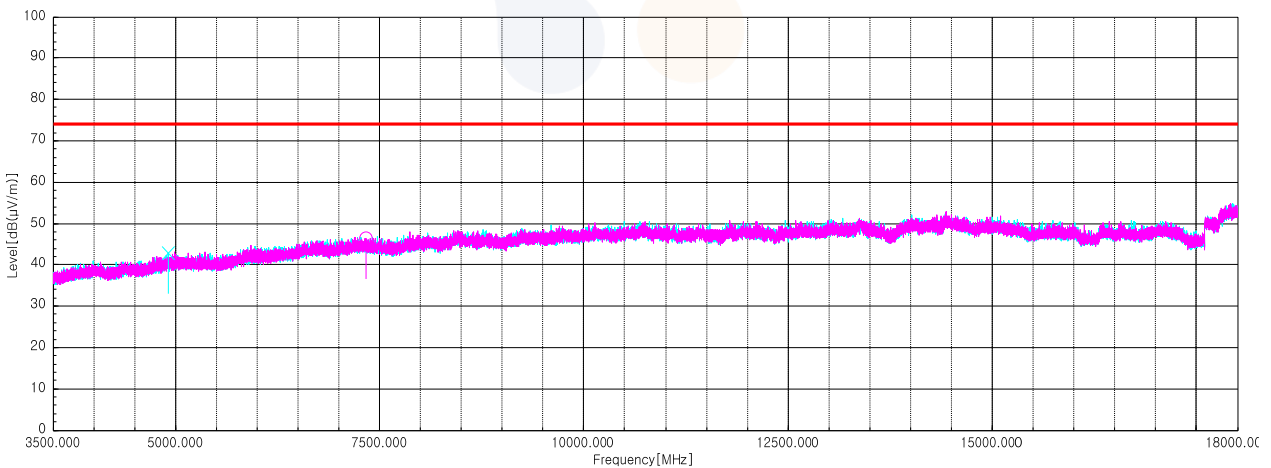
802.11n HT20_2 437 MHz

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB($\mu V/m$))	(dB($\mu V/m$))	(dB)
Peak data								
4 917.13 ¹⁾	V	53.10	32.80	-42.98	-	42.92	74.00	31.08
7 338.63 ¹⁾	H	51.40	36.72	-41.55	-	46.57	74.00	27.43
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

Horizontal/Vertical for 1 GHz ~ 3.5 GHz



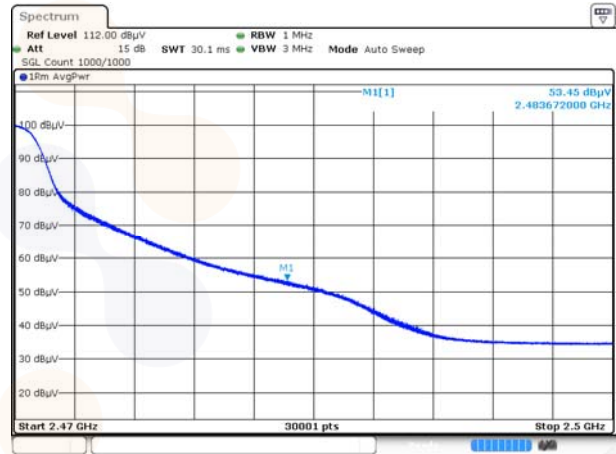
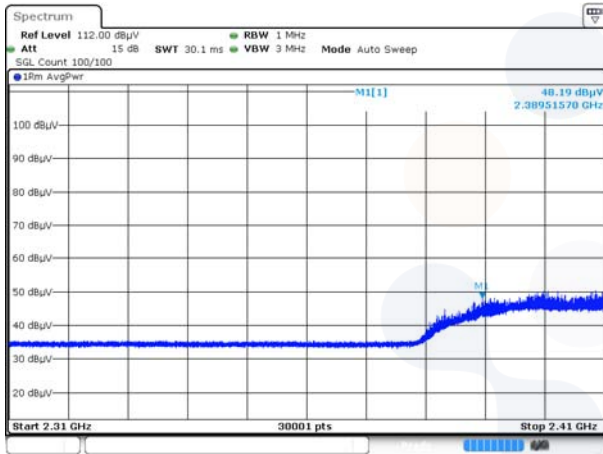
Horizontal/Vertical for 3.5 GHz ~ 18 GHz



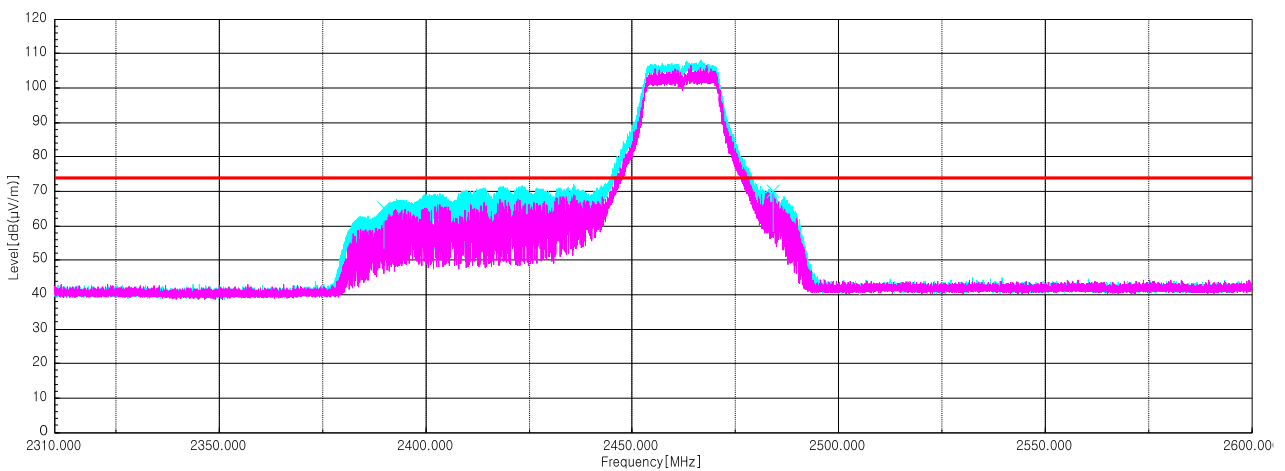
802.11n HT20_2 462 MHz

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								
2 389.52 ¹⁾	V	68.40	27.10	-30.53	-	64.97	74.00	9.03
2 483.67 ¹⁾	V	72.60	27.84	-30.41	-	70.03	74.00	3.97
4 983.35 ¹⁾	V	52.30	33.03	-42.84	-	42.49	74.00	31.51
7 358.45 ¹⁾	H	51.90	36.57	-41.57	-	46.90	74.00	27.10
Average Data								
2 389.52 ¹⁾	V	48.19	27.10	-30.53	0.59	45.35	54.00	8.65
2 483.67 ¹⁾	V	53.45	27.84	-30.41	0.59	51.47	54.00	2.53

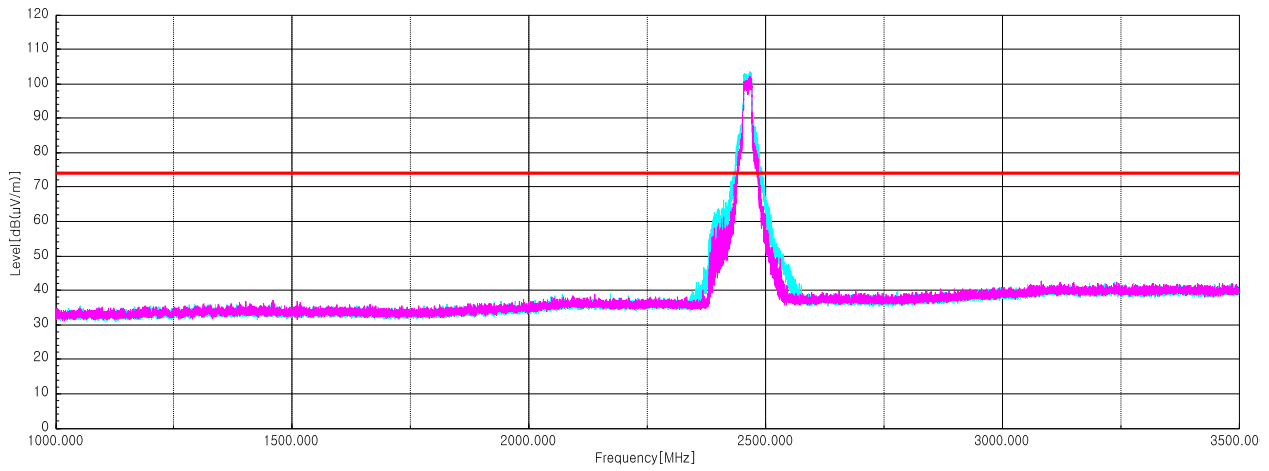
Average data



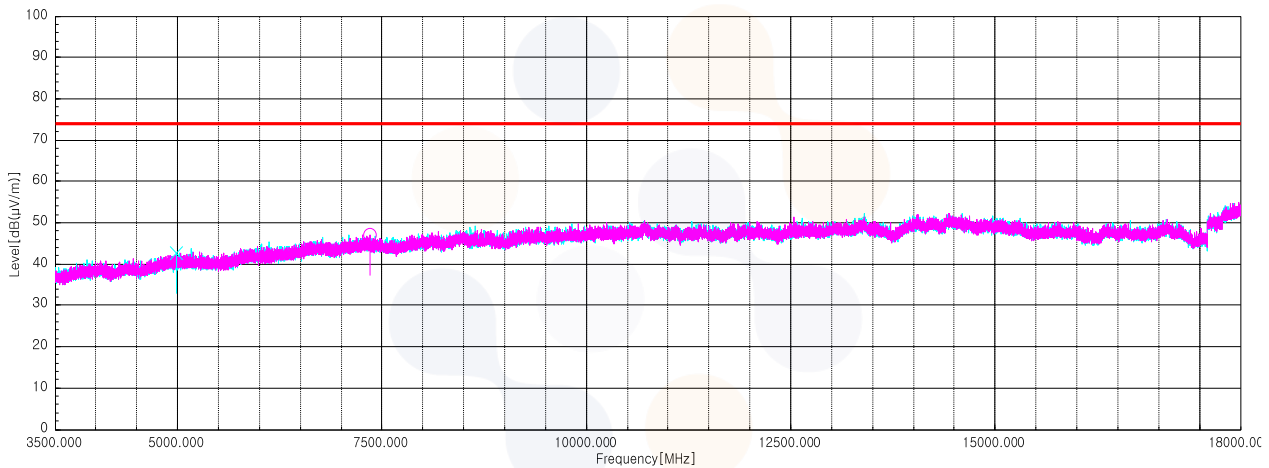
Horizontal/Vertical for Band-edge



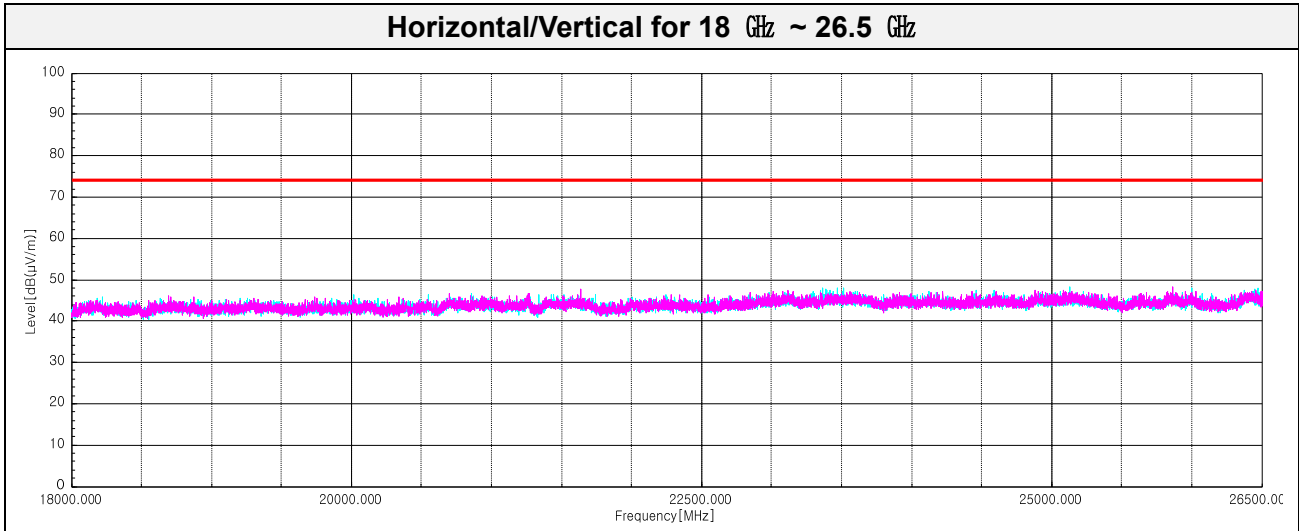
Horizontal/Vertical for 1 GHz ~ 3.5 GHz



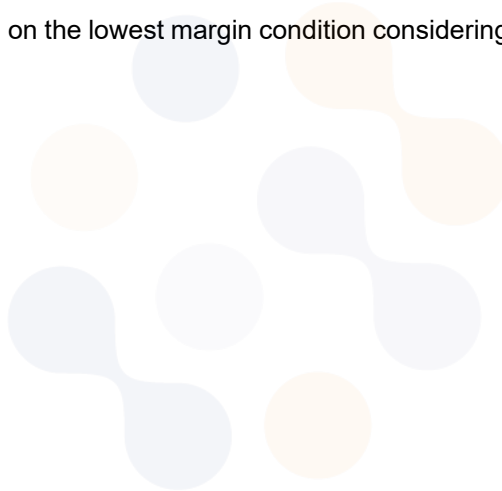
Horizontal/Vertical for 3.5 GHz ~ 18 GHz



Test results (Above 18 GHz) – Worst case: 802.11n HT20 SISO / 2 462 MHz

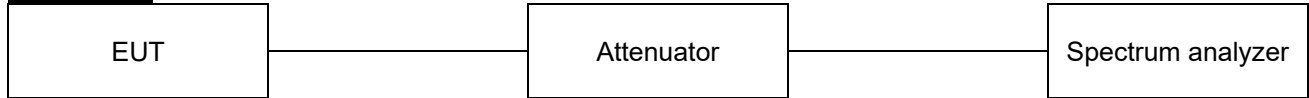


Note: The Worst case was based on the lowest margin condition considering Harmonic and Spurious Emission



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 x 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.

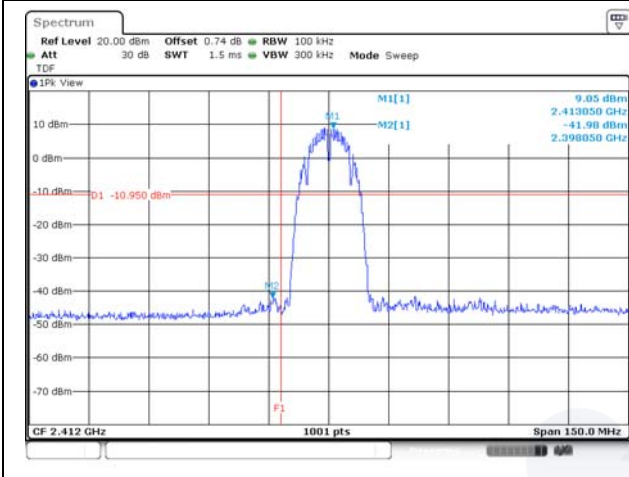
Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

Test results

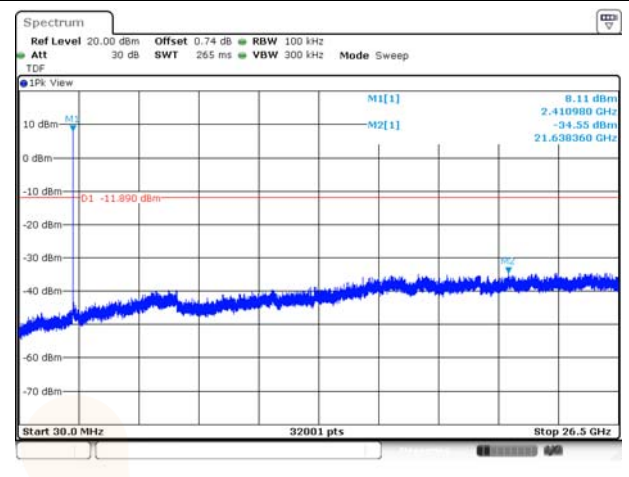
SISO

802.11b

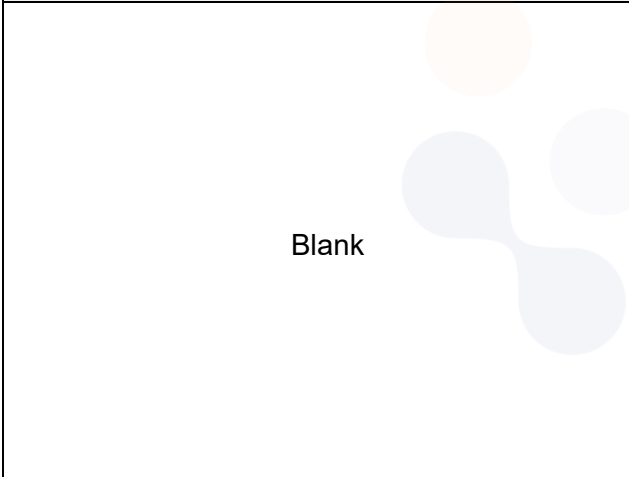
Conducted band-edge / 2 412 MHz



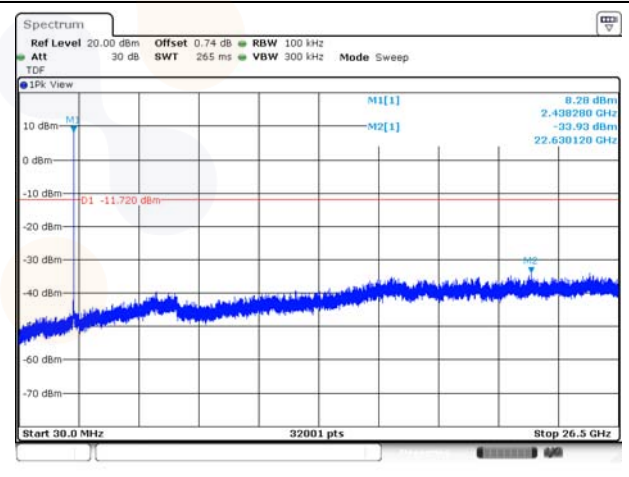
Conducted spurious / 2 412 MHz



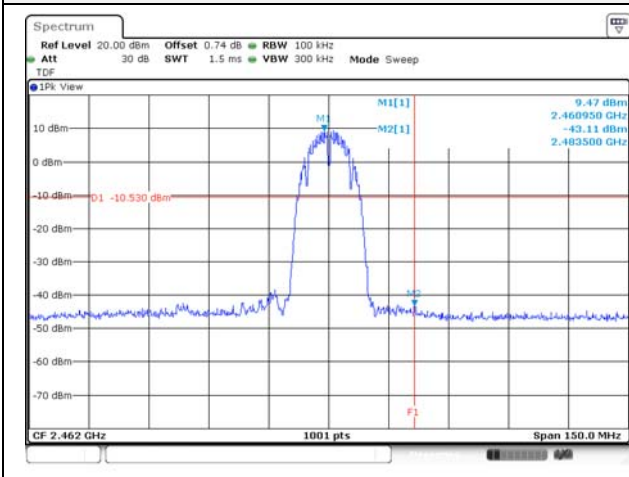
Conducted band-edge / 2 437 MHz



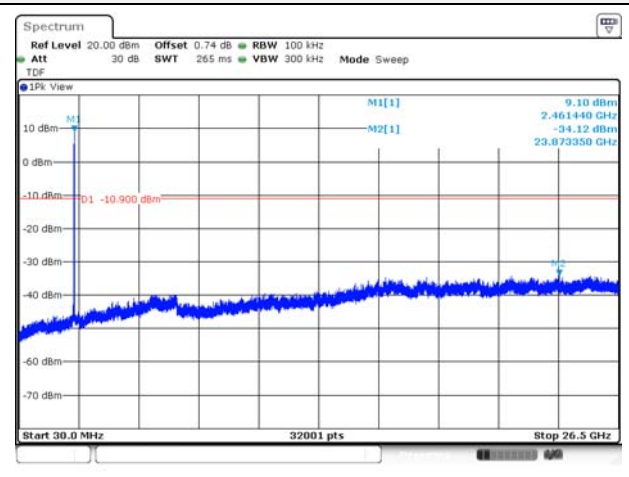
Conducted spurious / 2 437 MHz



Conducted band-edge / 2 462 MHz

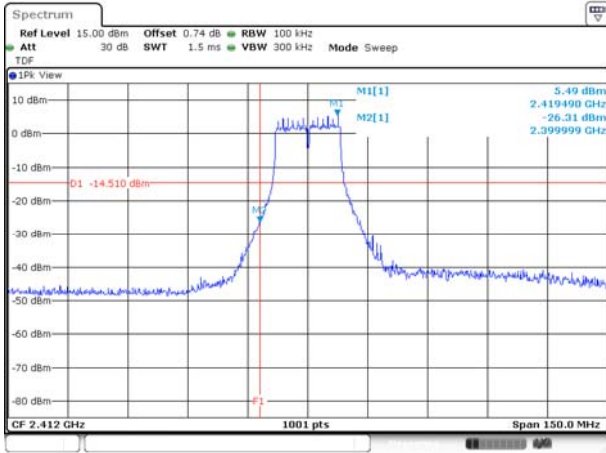


Conducted spurious / 2 462 MHz

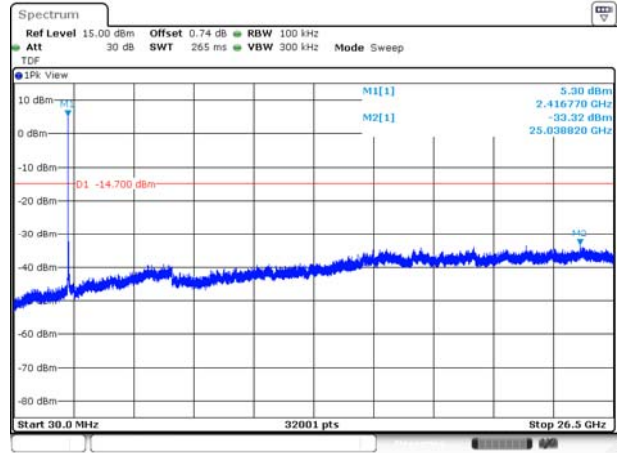


802.11g

Conducted band-edge / 2 412 MHz



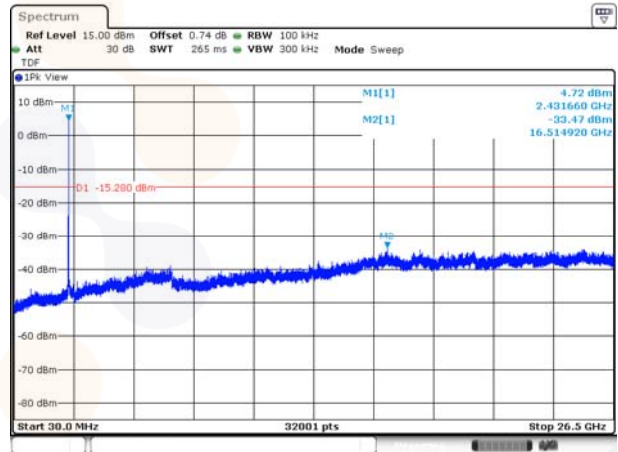
Conducted spurious / 2 412 MHz



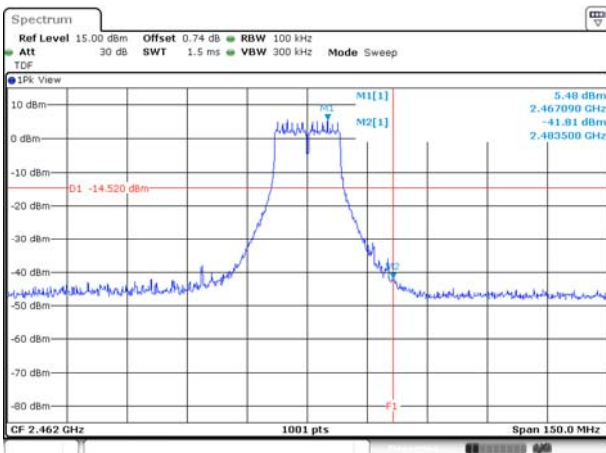
Conducted band-edge / 2 437 MHz

Blank

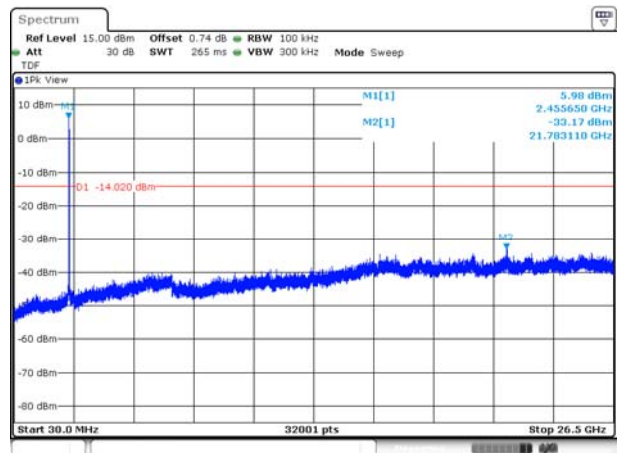
Conducted spurious / 2 437 MHz



Conducted band-edge / 2 462 MHz

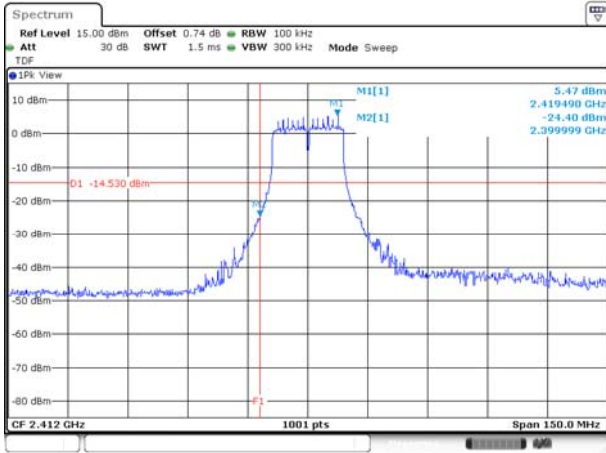


Conducted spurious / 2 462 MHz

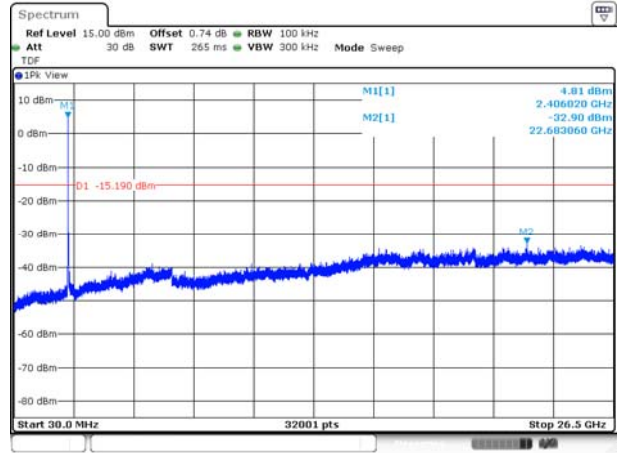


802.11n HT20

Conducted band-edge / 2 412 MHz



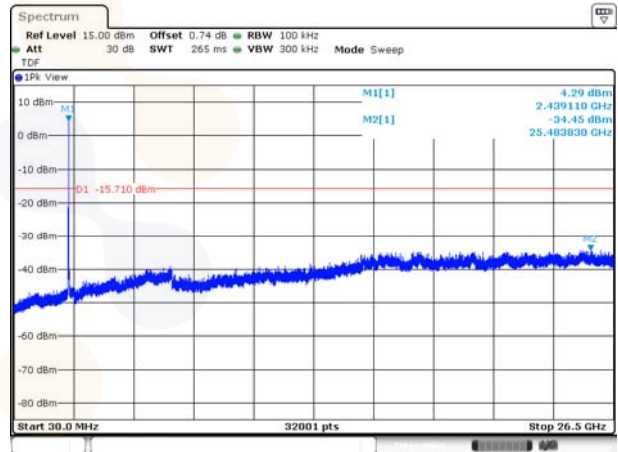
Conducted spurious / 2 412 MHz



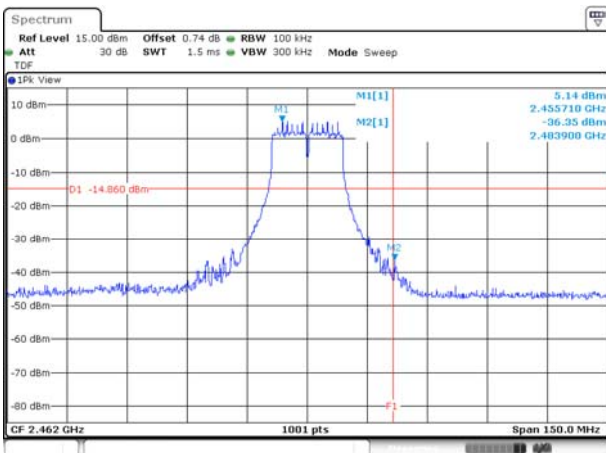
Conducted band-edge / 2 437 MHz

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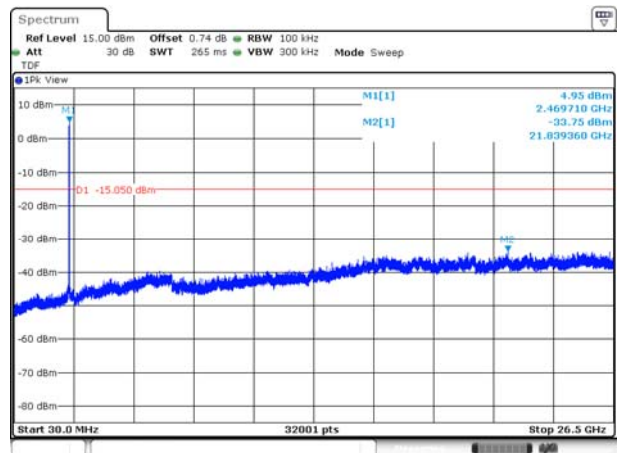
Conducted spurious / 2 437 MHz



Conducted band-edge / 2 462 MHz



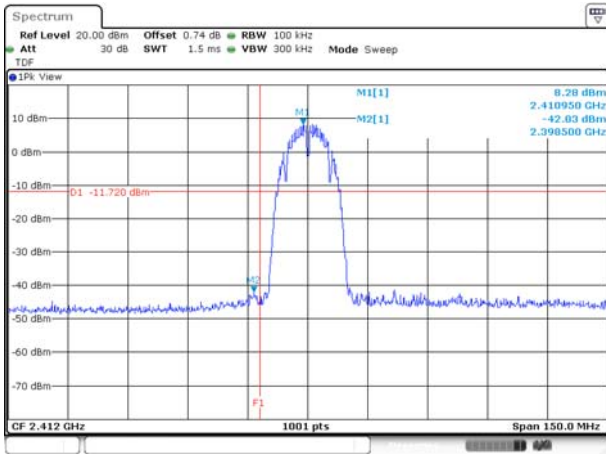
Conducted spurious / 2 462 MHz



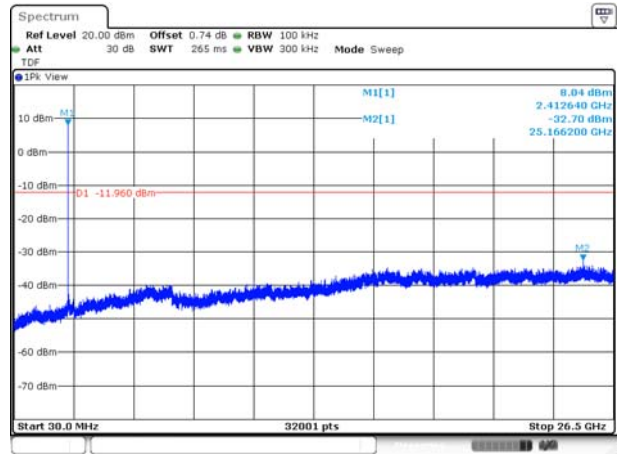
MIMO_ANT 1

802.11b

Conducted band-edge / 2 412 MHz



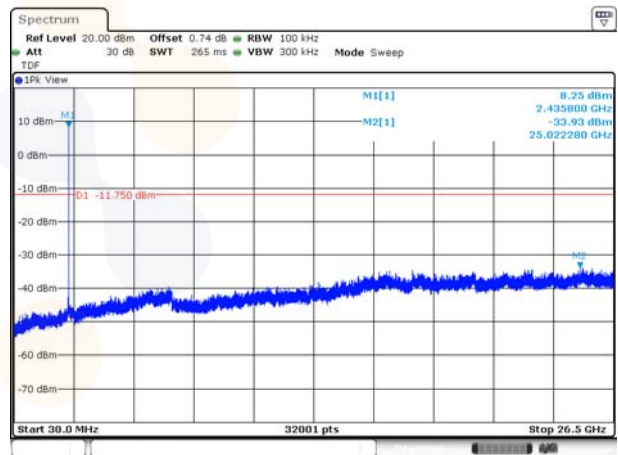
Conducted spurious / 2 412 MHz



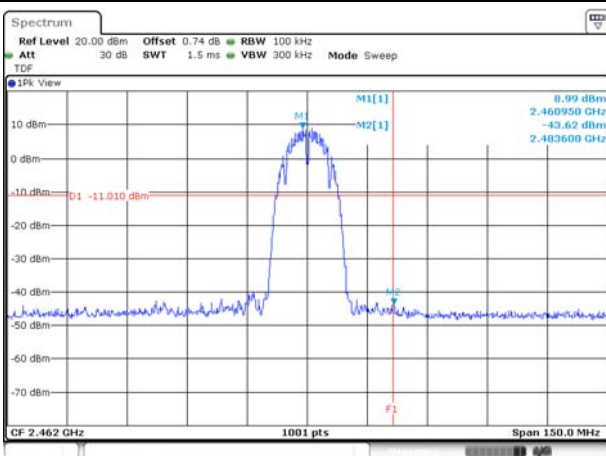
Conducted band-edge / 2 437 MHz

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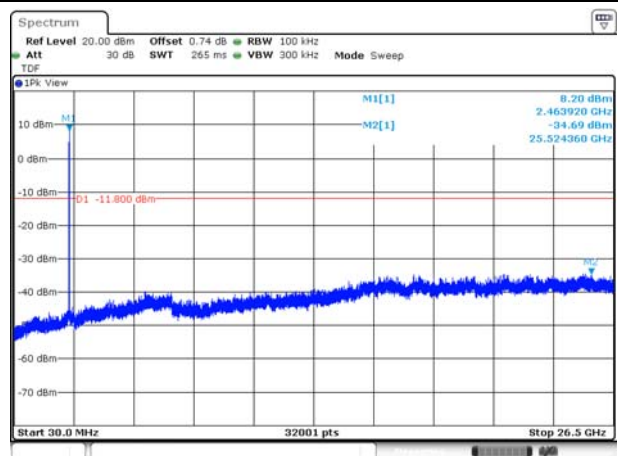
Conducted spurious / 2 437 MHz



Conducted band-edge / 2 462 MHz

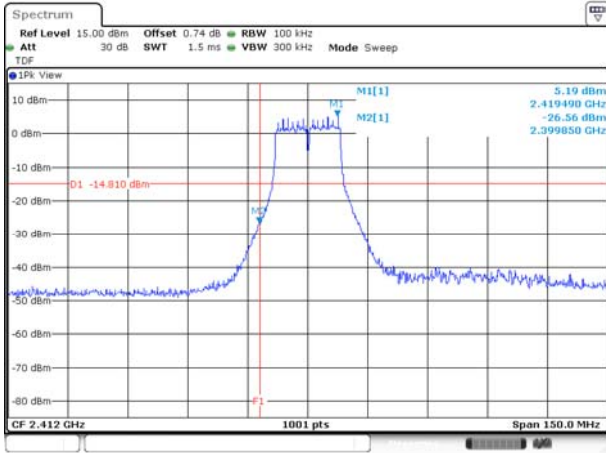


Conducted spurious / 2 462 MHz

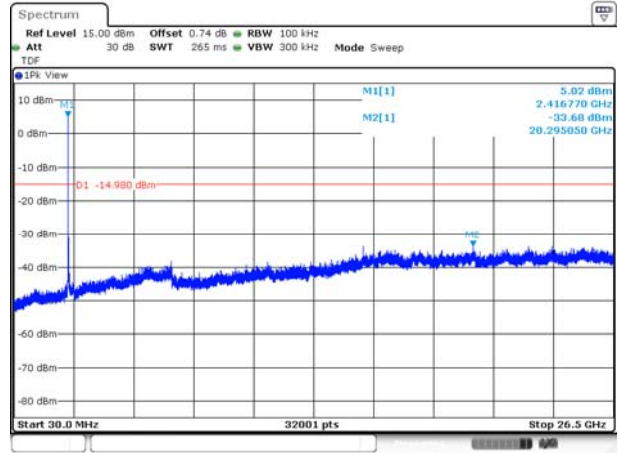


802.11g

Conducted band-edge / 2 412 MHz



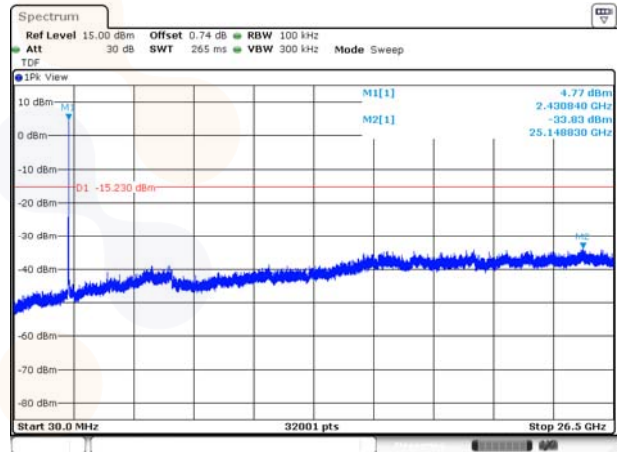
Conducted spurious / 2 412 MHz



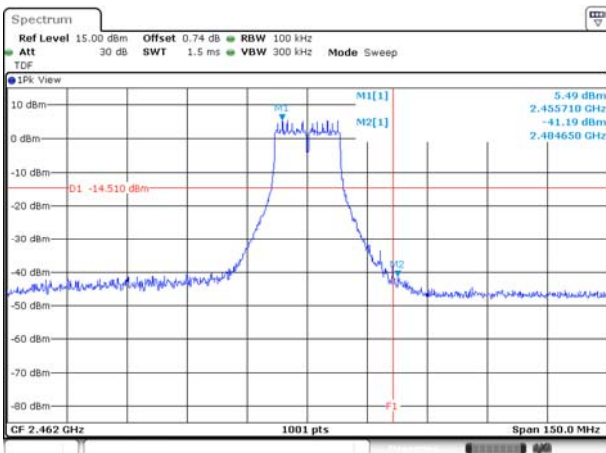
Conducted band-edge / 2 437 MHz

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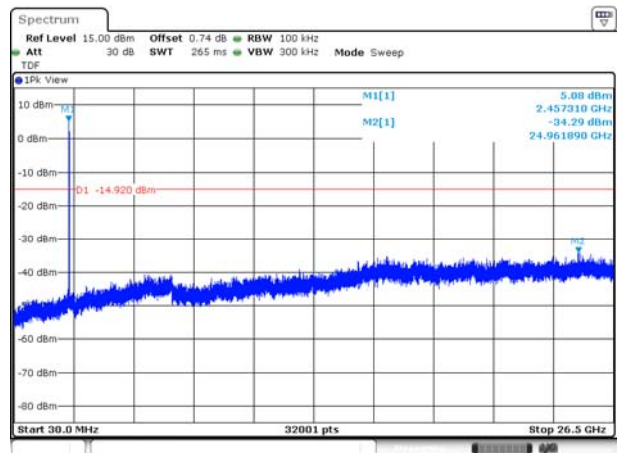
Conducted spurious / 2 437 MHz



Conducted band-edge / 2 462 MHz

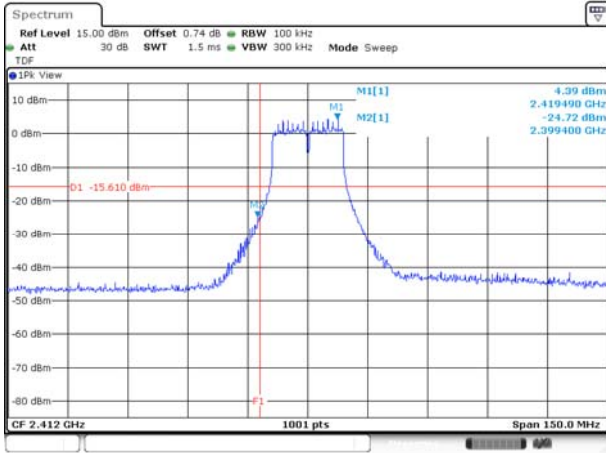


Conducted spurious / 2 462 MHz

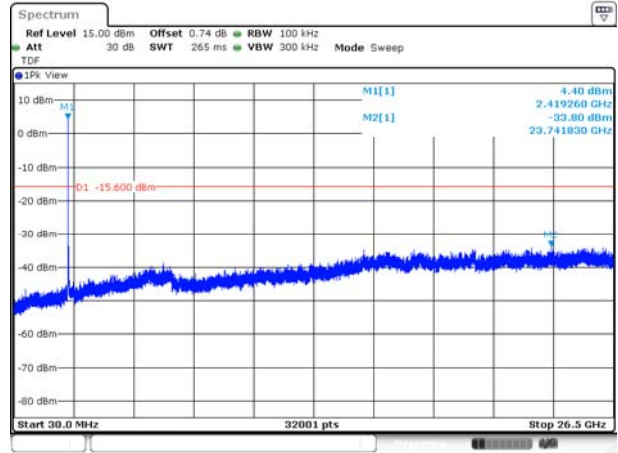


802.11n HT20

Conducted band-edge / 2 412 MHz



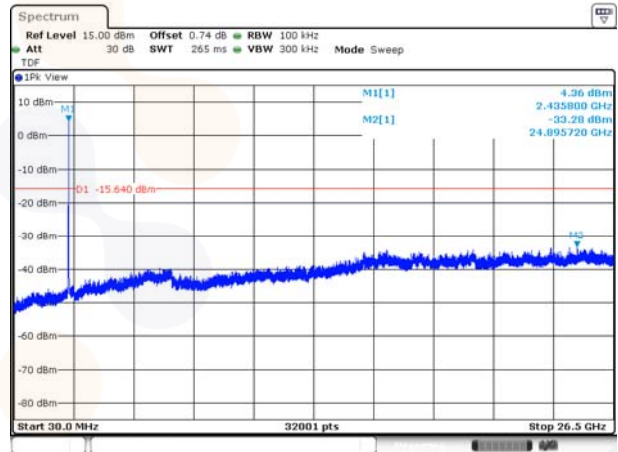
Conducted spurious / 2 412 MHz



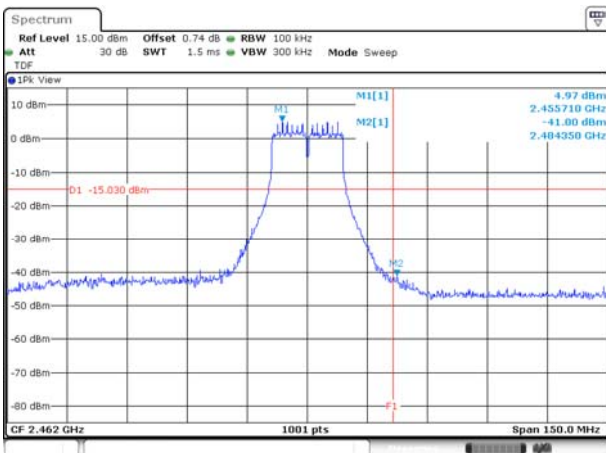
Conducted band-edge / 2 437 MHz

Blank

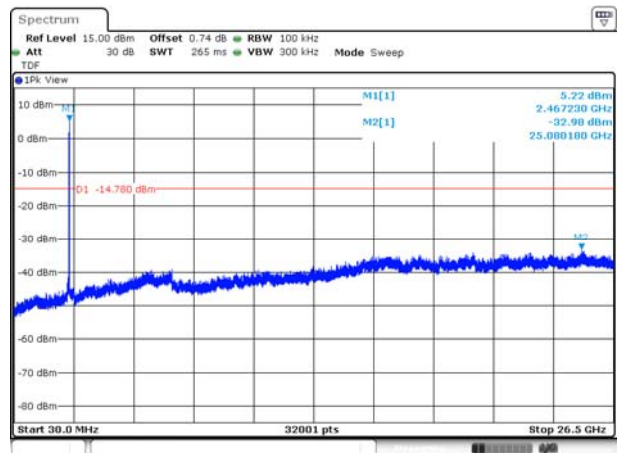
Conducted spurious / 2 437 MHz



Conducted band-edge / 2 462 MHz



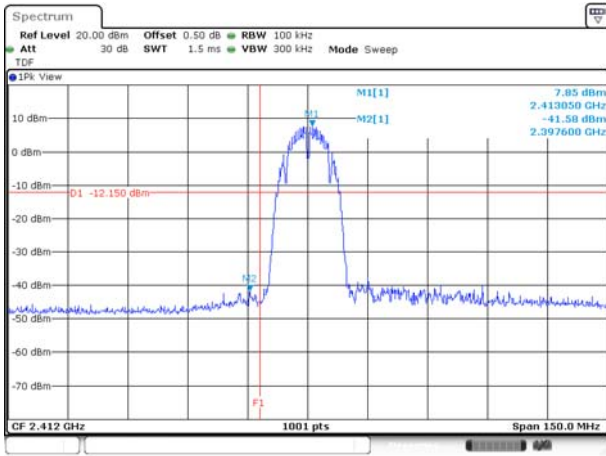
Conducted spurious / 2 462 MHz



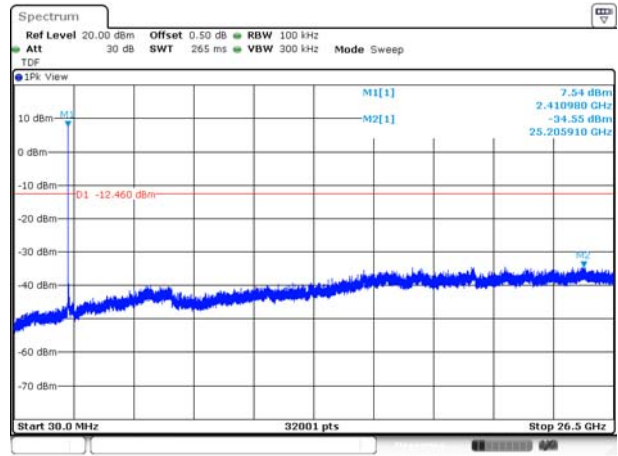
MIMO_ANT 2

802.11b

Conducted band-edge / 2 412 MHz



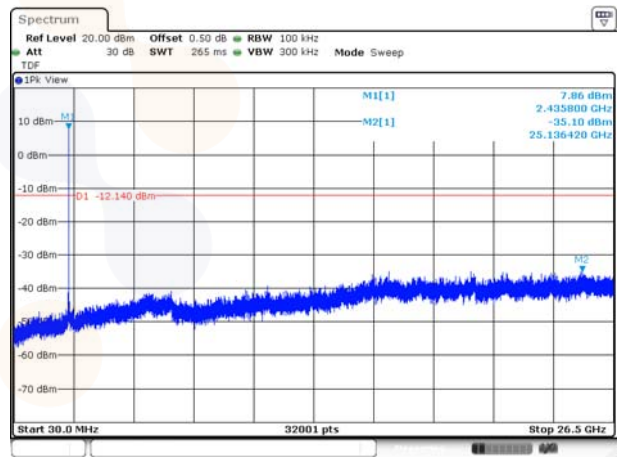
Conducted spurious / 2 412 MHz



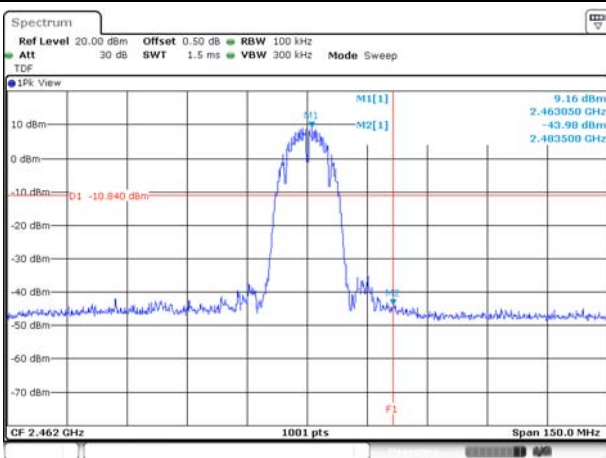
Conducted band-edge / 2 437 MHz

Blank

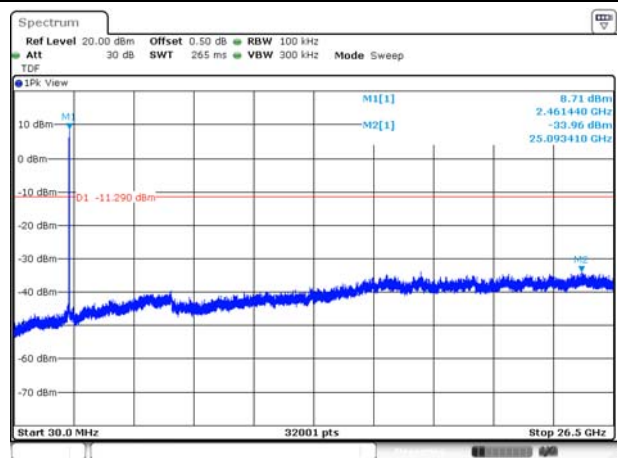
Conducted spurious / 2 437 MHz



Conducted band-edge / 2 462 MHz

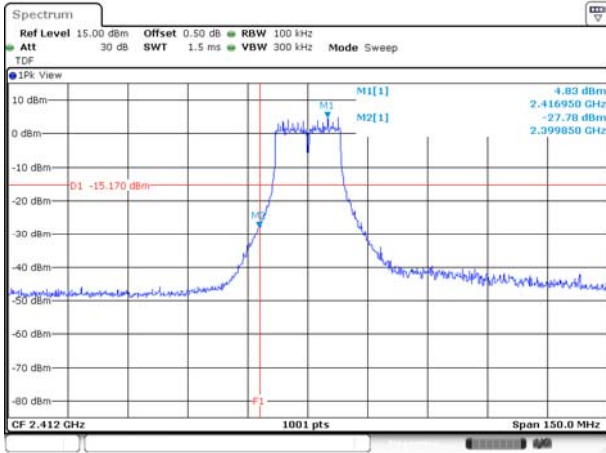


Conducted spurious / 2 462 MHz

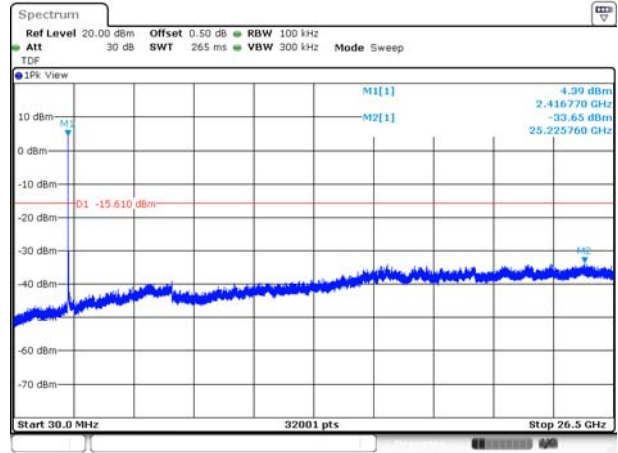


802.11g

Conducted band-edge / 2 412 MHz



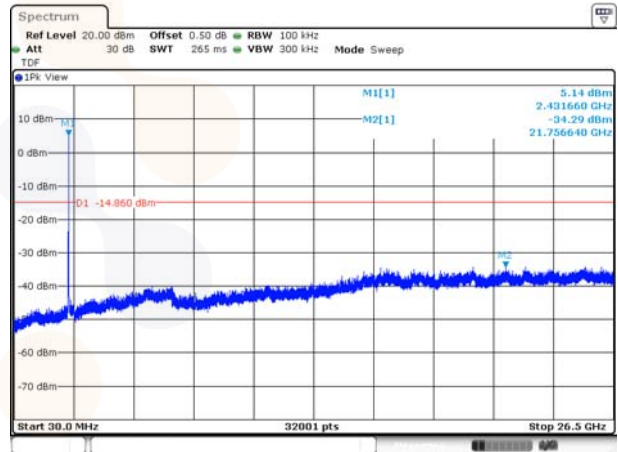
Conducted spurious / 2 412 MHz



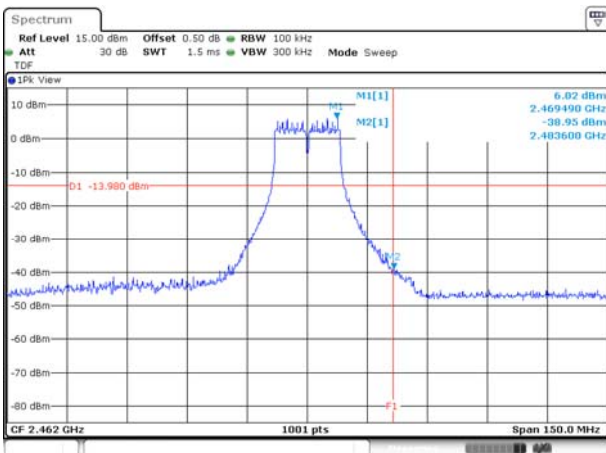
Conducted band-edge / 2 437 MHz

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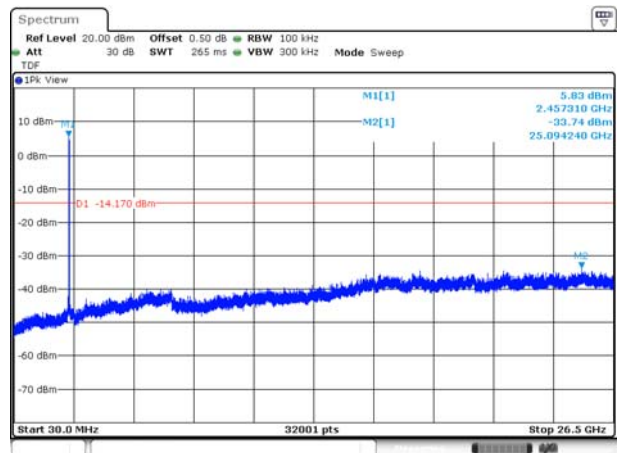
Conducted spurious / 2 437 MHz



Conducted band-edge / 2 462 MHz

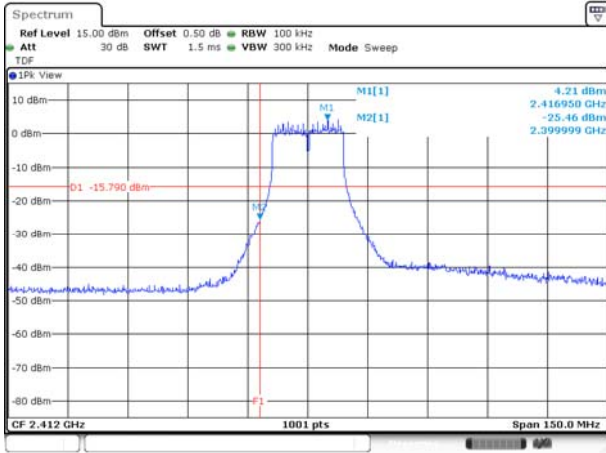


Conducted spurious / 2 462 MHz

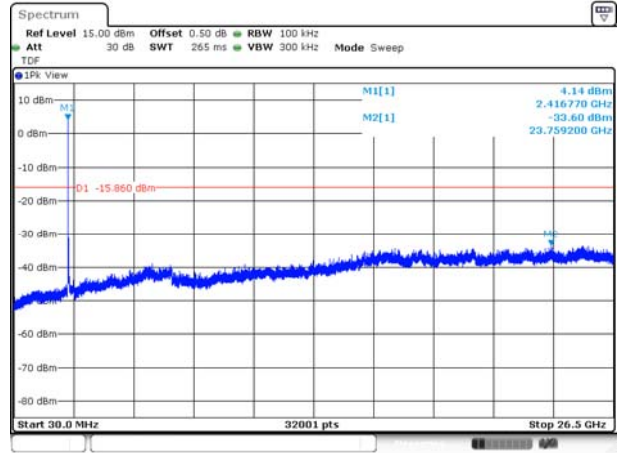


802.11n HT20

Conducted band-edge / 2 412 MHz



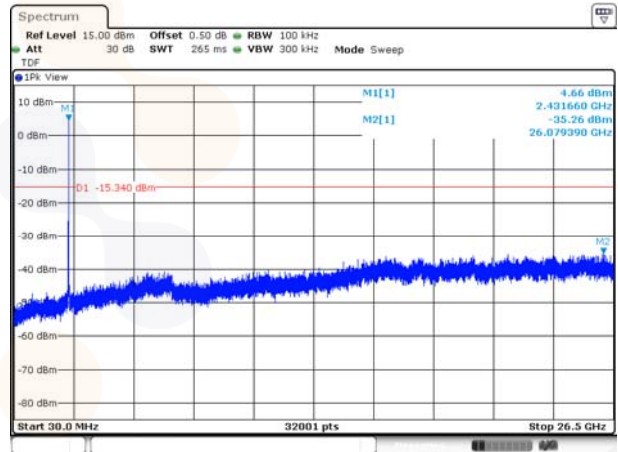
Conducted spurious / 2 412 MHz



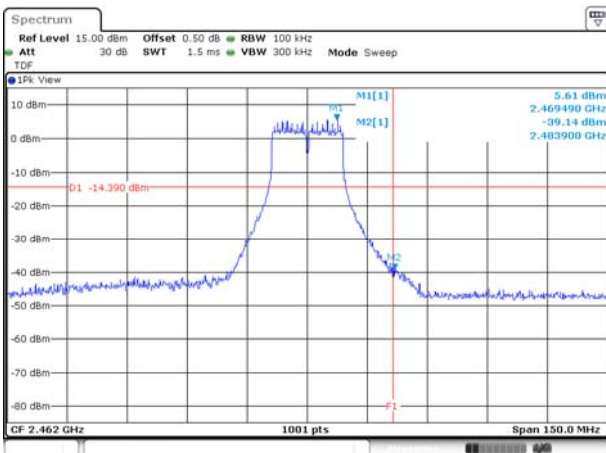
Conducted band-edge / 2 437 MHz

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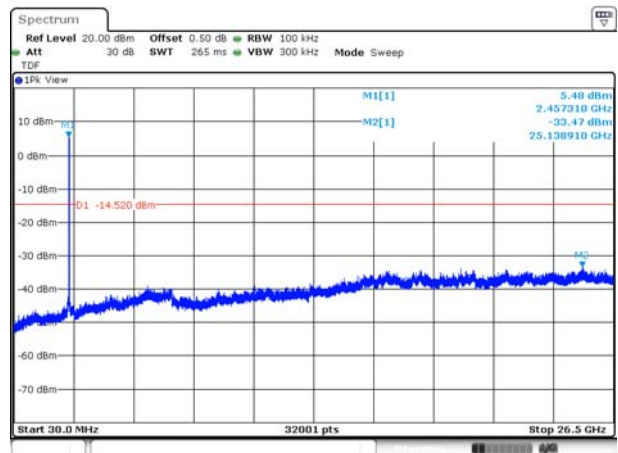
Conducted spurious / 2 437 MHz



Conducted band-edge / 2 462 MHz



Conducted spurious / 2 462 MHz



8. Measurement equipment

Equipment Name	Manufacturer	Model No.	Serial No.	Next Cal. Date
Spectrum Analyzer	R&S	FSVA40	101574	24.03.28
Spectrum Analyzer	R&S	FSV40	100988	24.07.03
PSA Spectrum Analyzer	Agilent	E4440A	MY44303500	24.07.04
EMI TEST RECEIVER	R&S	ESCI3	100001	24.08.18
Signal Generator	R&S	SMB100A	176206	24.01.19
DC Power Supply	AGILENT	E3632A	MY51220373	24.07.03
Power Sensor	R&S	NRP-Z81	1137.9009.02-106223-bB	24.04.25
Attenuator	R&S	DNF Dämpfungsglied 10 dB in N-50 Ohm	0002	24.04.25
Attenuator	API Inmet	40AH2W-10	17	24.05.03
High Pass Filter	Wainwright Instruments GmbH	WHKX12-2805-3000-18000-40SS	SN59	24.10.16*
High Pass Filter	Qotana	DBHF058004000A	23041800061	24.07.10
Broadband PreAmplifier	SCHWARZBECK	BBV9718D	53	24.03.17
Low Noise Amplifier	TESTEK	TK-PA18H	220123-L	24.10.12*
Low Noise Amplifier	TESTEK	TK-PA1840H	220234-L	24.10.17*
Amplifier	SONOMA INSTRUMENT	310N	421910	24.10.12*
Horn Antenna	SCHWARZBECK	BBHA9120D	2764	24.10.18*
Horn Antenna	SCHWARZBECK	BBHA9170	1266	24.10.16*
Bilog Antenna	Teseq GmbH	CBL 6112D	61521	24.11.17**
Loop Antenna	R&S	HFH2-Z2	100355	24.08.10
TWO-LINE V - NETWORK	R&S	ENV216	101358	24.09.27*
Controller	INNCO SYSTEMS	CO3000	1442/54370322/P	-
Antenna Mast	INNCO SYSTEMS	MA4640-XP-ET	-	-
Turn Device	INNCO SYSTEMS	DS1200-S-1t	-	-

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

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

End of test report