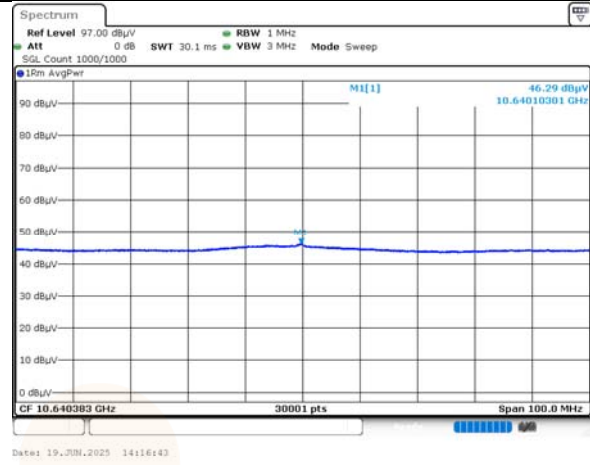
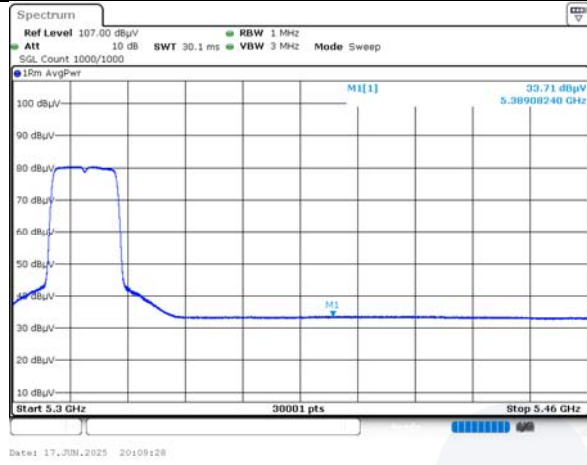
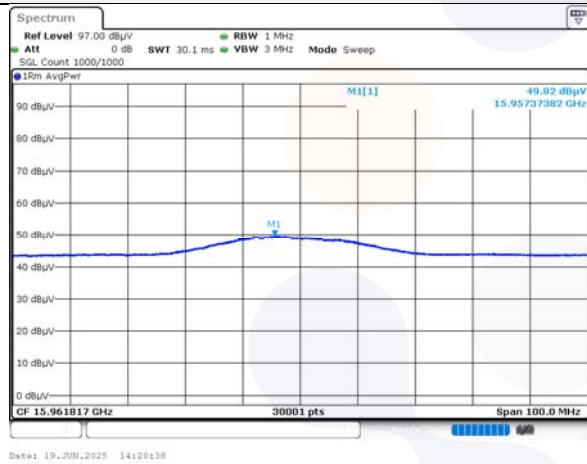


802.11ac_VHT20_Highest Channel (5 320 MHz)

Average data

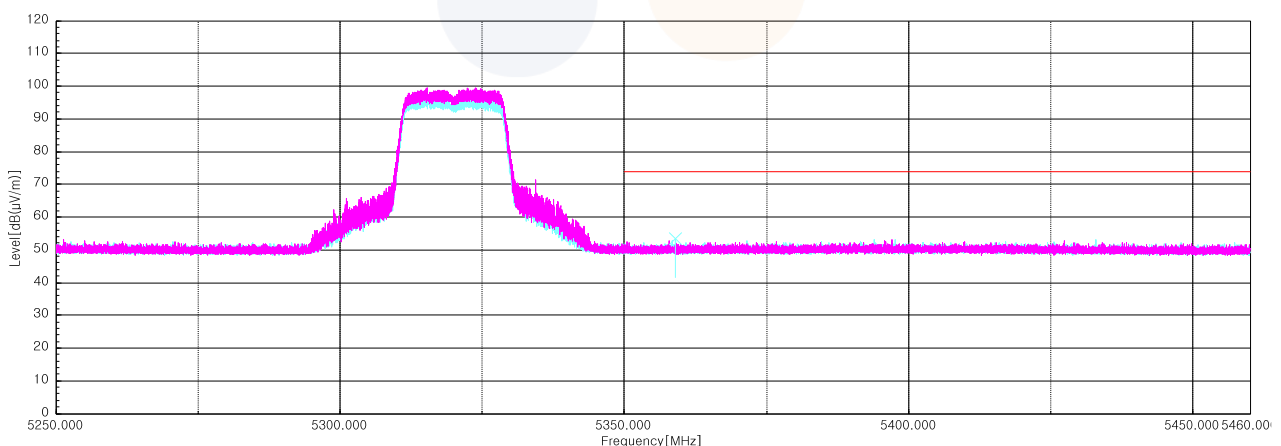


Average data



Blank

Horizontal/Vertical for Band-edge



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802.11ac_VHT40_Lowest Channel (5 270 MHz)

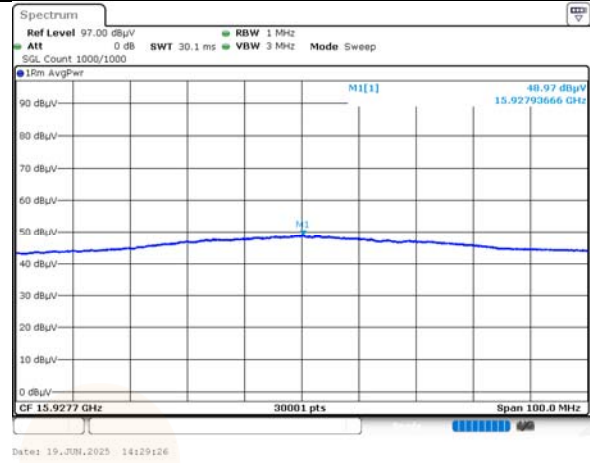
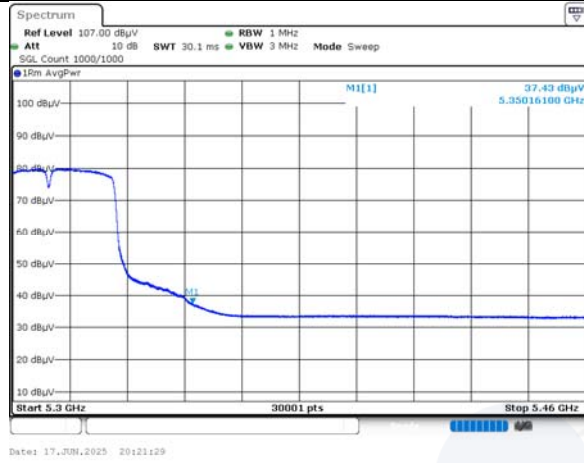
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
10 520.40	V	57.40	38.90	-43.10	-	53.20	68.20	15.00
15 814.97 ¹⁾	H	61.20	37.90	-40.73	-	58.37	74.00	15.63
Average Data								
15 814.97 ¹⁾	H	48.66	37.90	-40.73	1.53	47.36	54.00	6.64

802.11ac_VHT40_Highest Channel (5 310 MHz)

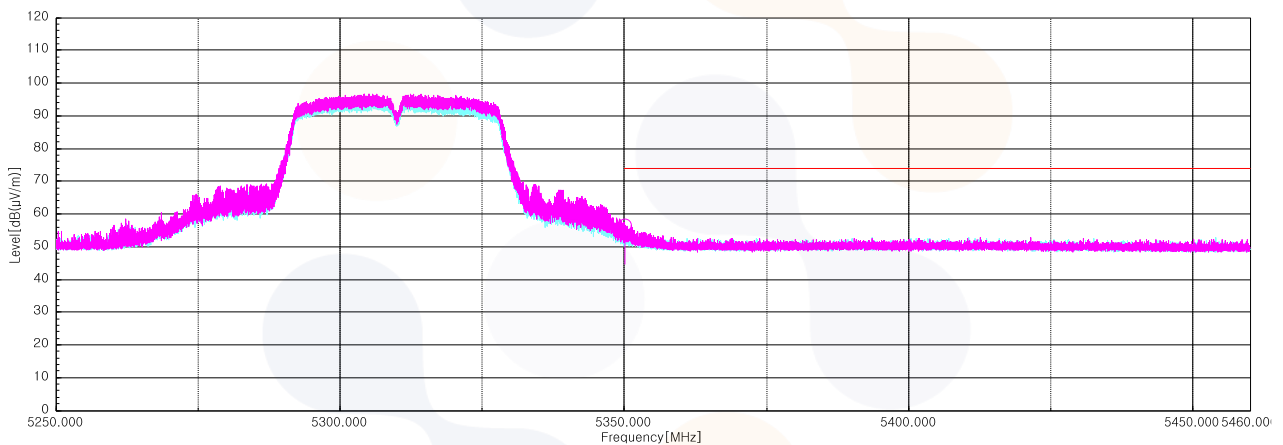
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 350.16 ¹⁾	H	49.60	33.00	-26.26	-	56.34	74.00	17.66
10 585.18	H	56.20	39.07	-43.24	-	52.03	68.20	16.17
15 927.94 ¹⁾	H	61.00	38.00	-40.62	-	58.38	74.00	15.62
Average Data								
5 350.16 ¹⁾	H	37.43	33.00	-26.26	1.53	45.70	54.00	8.30
15 927.94 ¹⁾	H	48.97	38.00	-40.62	1.53	47.88	54.00	6.12

802.11ac_VHT40_Highest Channel (5 310 MHz)

Average data

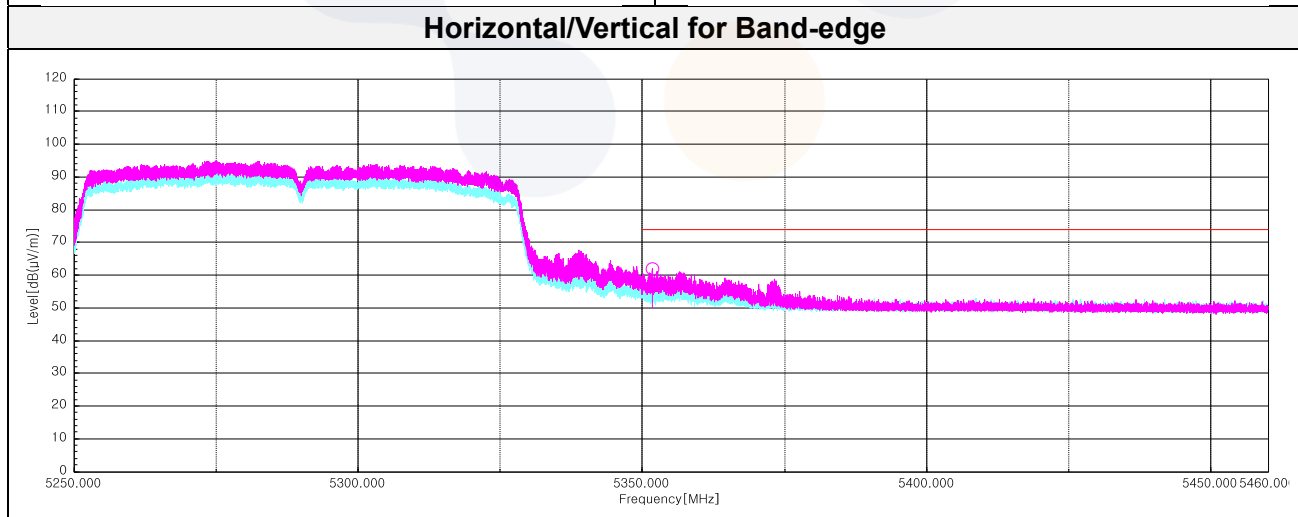
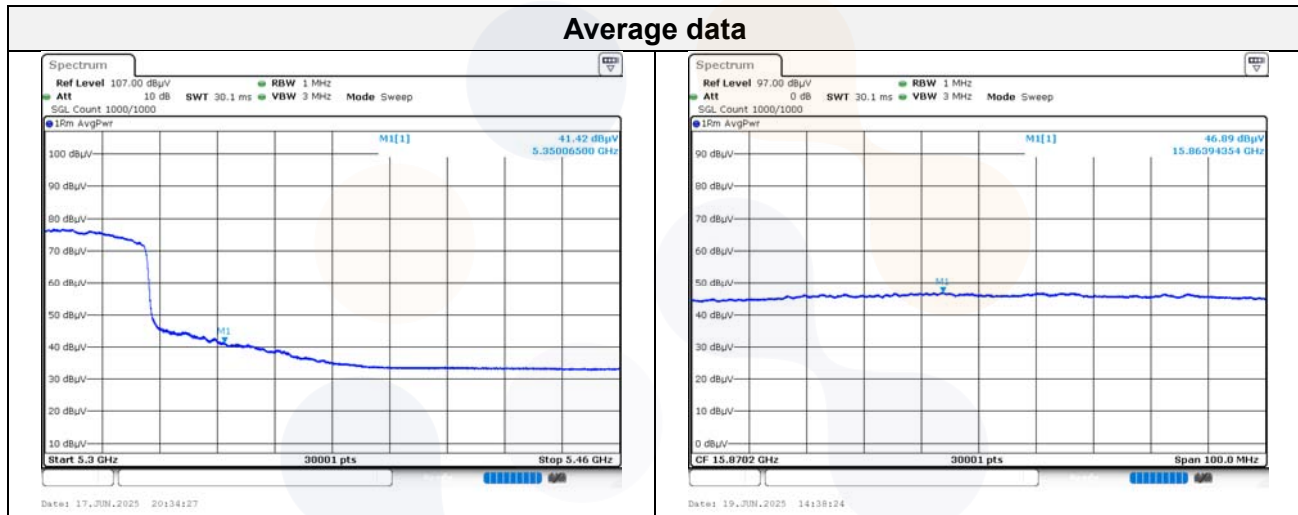


Horizontal/Vertical for Band-edge



802.11ac_VHT80_Middle Channel (5 290 MHz)

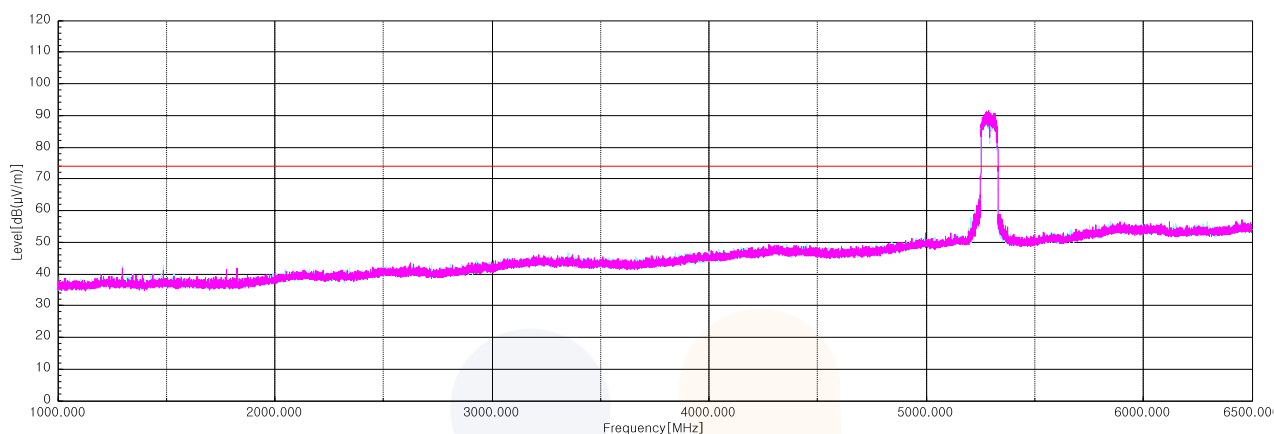
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μ V))	(dB)	(dB)	(dB)	(dB(μ V/m))	(dB(μ V/m))	(dB)
Peak data								
5 350.07 ¹⁾	H	55.00	33.00	-26.26	-	61.74	74.00	12.26
10 553.75	H	55.80	39.01	-43.17	-	51.64	68.20	16.56
15 863.94 ¹⁾	H	58.90	38.03	-40.68	-	56.25	74.00	17.75
Average Data								
5 350.07 ¹⁾	H	41.42	33.00	-26.26	2.61	50.77	54.00	3.23
15 863.94 ¹⁾	H	46.89	38.03	-40.68	2.61	46.85	54.00	7.15



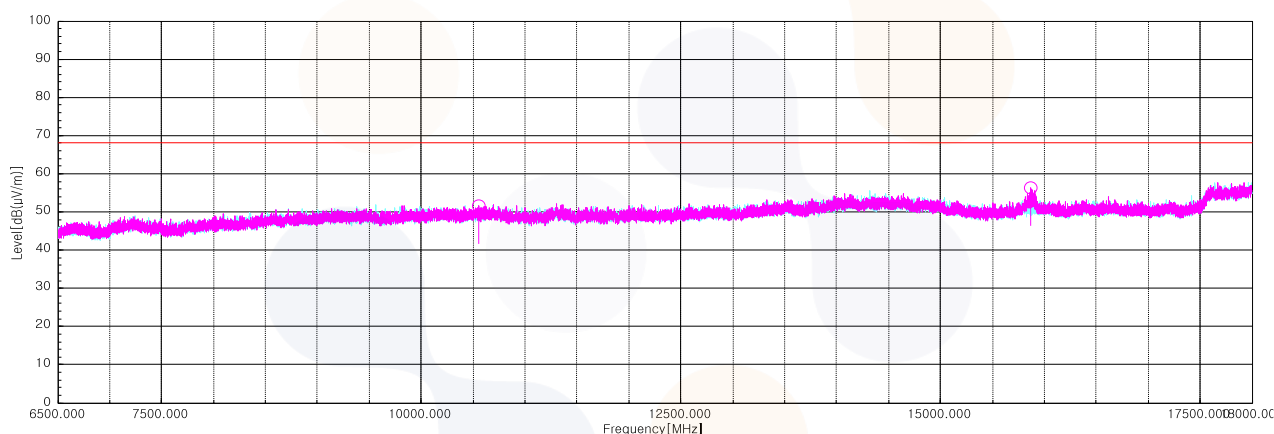
Plot of Harmonics and Spurious Emissions

In order to simplify the report, attached plots were only the lowest margin condition
802.11ac_VHT80 UNII-2A_Middle Channel (5 290 MHz)

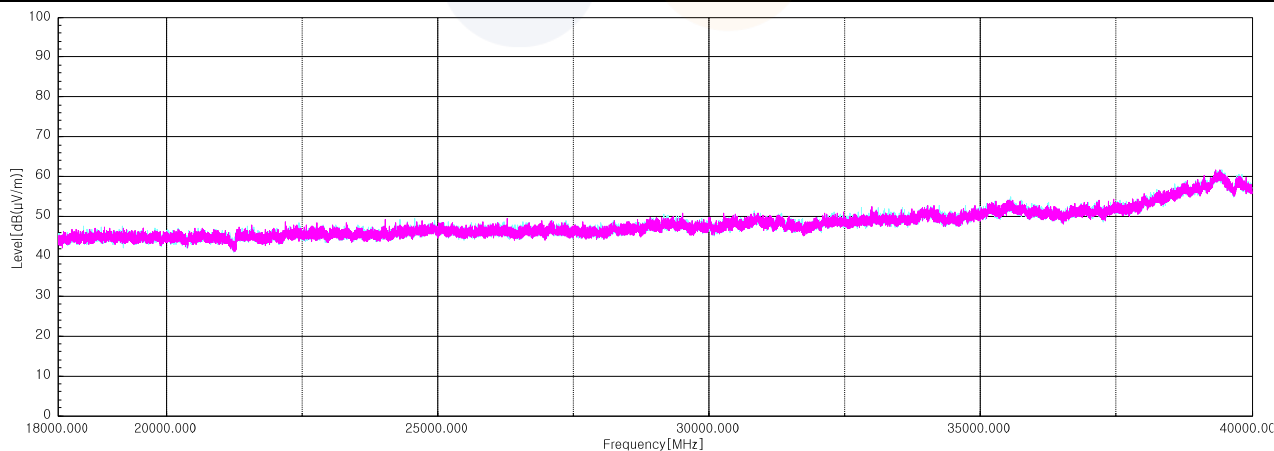
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



UNII-2C

802.11a_Lowest Channel (5 500 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								
5 392.20 ¹⁾	H	45.90	33.00	-26.26	-	52.64	74.00	21.36
11 029.38 ¹⁾	V	55.70	38.84	-43.01	-	51.53	74.00	22.47
16 494.65	H	61.50	37.90	-40.36	-	59.04	68.20	9.16
Average Data								
5 392.20 ¹⁾	H	33.80	33.00	-26.26	0.27	40.81	54.00	13.19
11 029.38 ¹⁾	V	43.54	38.84	-43.01	0.27	39.64	54.00	14.36

802.11a_Middle Channel (5 580 MHz)

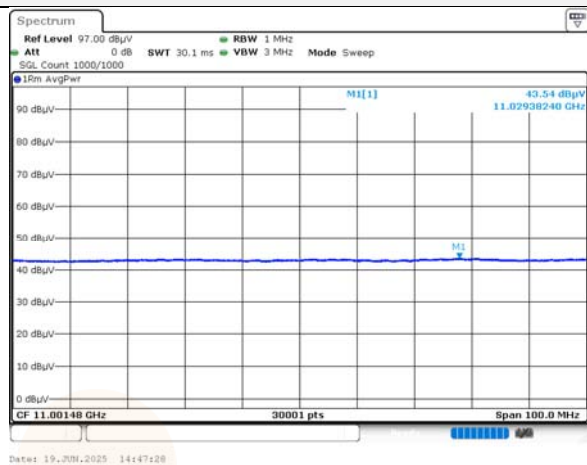
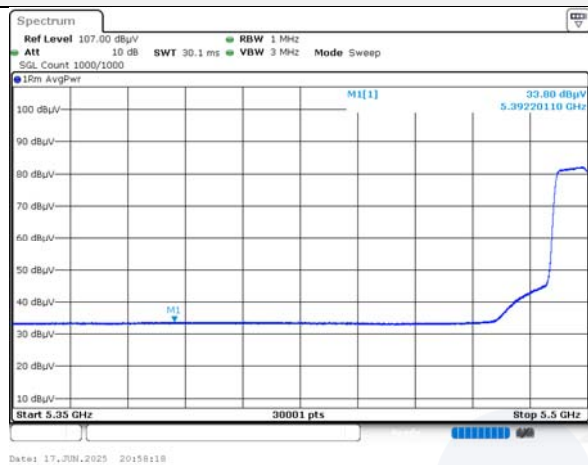
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μ V))	(dB)	(dB)	(dB)	(dB(μ V/m))	(dB(μ V/m))	(dB)
Peak data								
11 201.97 ¹⁾	H	57.20	38.90	-42.72	-	53.38	74.00	20.62
16 794.80	H	63.50	37.61	-41.10	-	60.01	68.20	8.19
Average Data								
11 201.97 ¹⁾	H	45.59	38.90	-42.72	0.27	42.04	54.00	11.96

802.11a_Highest Channel (5 700 MHz)

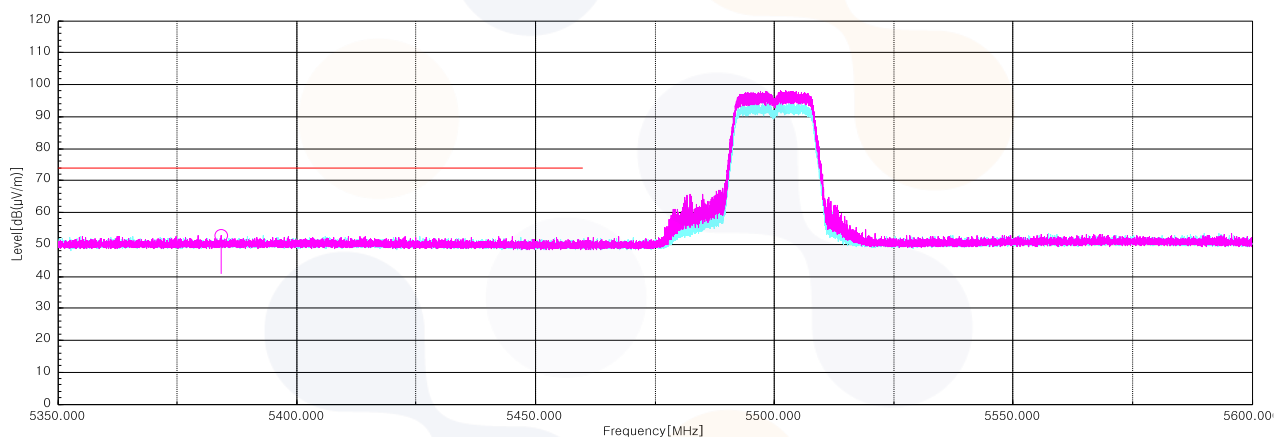
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μ V))	(dB)	(dB)	(dB)	(dB(μ V/m))	(dB(μ V/m))	(dB)
Peak data								
5 819.35	V	46.10	34.12	-25.48	-	54.74	68.20	13.46
11 408.60 ¹⁾	H	55.70	39.10	-42.37	-	52.43	74.00	21.57
17 104.15	H	60.90	37.71	-41.22	-	57.39	68.20	10.81
Average Data								
11 408.60 ¹⁾	H	43.96	39.10	-42.37	0.27	40.96	54.00	13.04

802.11a_Lowest Channel (5 500 MHz)

Average data

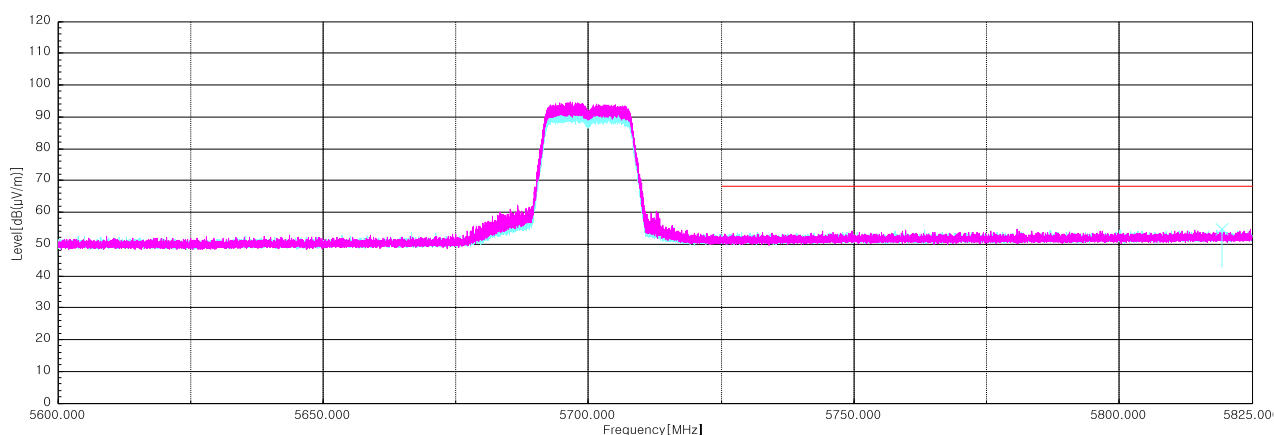


Horizontal/Vertical for Band-edge



Highest Channel (5 700 MHz)

Horizontal/Vertical for Band-edge



802.11n_HT20_Lowest Channel (5 500 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								
5 421.59 ¹⁾	H	46.00	33.00	-26.26	-	52.74	74.00	21.26
10 977.72 ¹⁾	V	54.80	38.94	-43.11	-	50.63	74.00	23.37
16 506.53	H	62.40	37.90	-40.37	-	59.93	68.20	8.27
Average Data								
5 421.59 ¹⁾	H	33.76	33.00	-26.26	0.44	40.94	54.00	13.06

802.11n_HT20_Middle Channel (5 580 MHz)

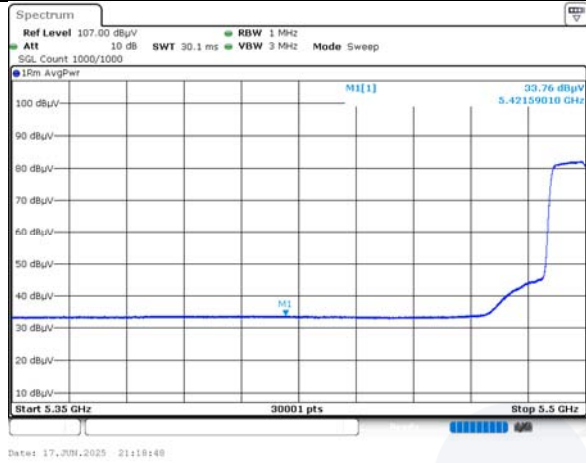
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μ V))	(dB)	(dB)	(dB)	(dB(μ V/m))	(dB(μ V/m))	(dB)
Peak data								
11 201.24 ¹⁾	H	55.40	38.90	-42.72	-	51.58	74.00	22.42
16 794.42	H	62.50	37.61	-41.10	-	59.01	68.20	9.19
Average Data								
11 201.24 ¹⁾	H	45.16	38.90	-42.72	0.44	41.78	54.00	12.22
No spurious emissions were detected within 20 dB of the limit.								

802.11n_HT20_Highest Channel (5 700 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								
5 755.78	V	46.50	33.73	-25.59	-	54.64	68.20	13.56
11 407.49 ¹⁾	H	56.10	39.10	-42.37	-	52.83	74.00	21.17
17 105.68	H	62.00	37.71	-41.21	-	58.50	68.20	9.70
Average Data								
11 407.49 ¹⁾	H	43.80	39.10	-42.37	0.44	40.97	54.00	13.03

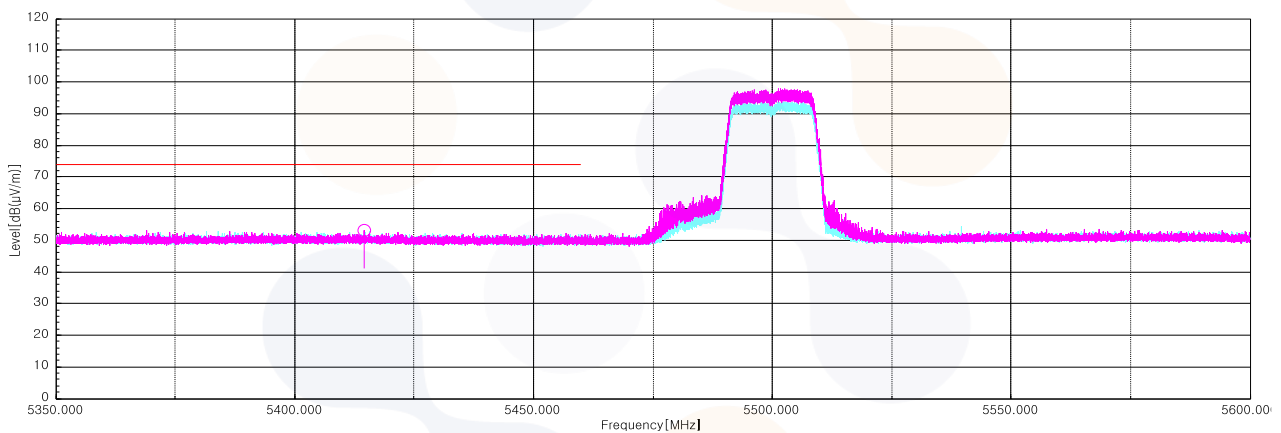
802.11n_HT20_Lowest Channel (5 500 MHz)

Average data



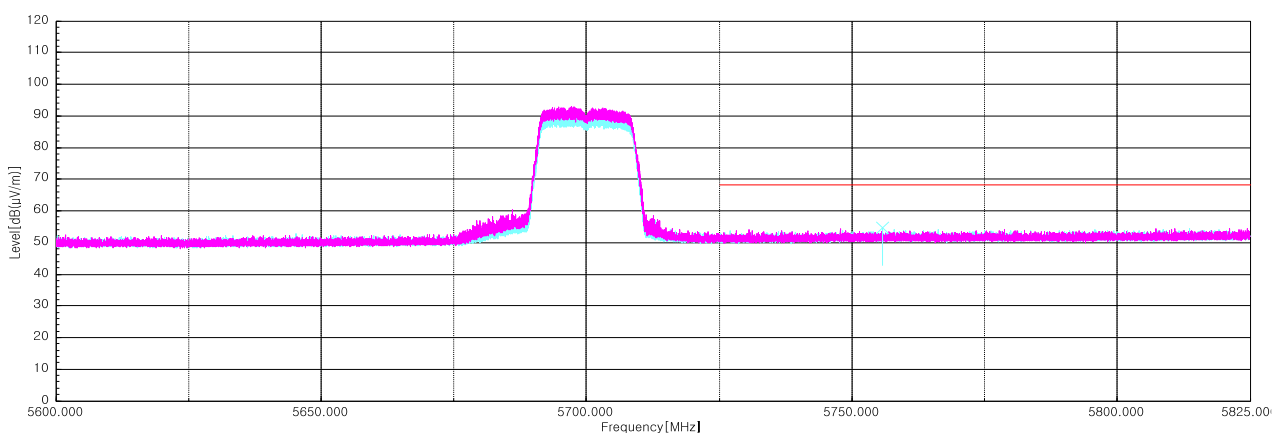
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Horizontal/Vertical for Band-edge



Highest Channel (5 700 MHz)

Horizontal/Vertical for Band-edge



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802.11n_HT40_Lowest Channel (5 510 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								
5 406.64 ¹⁾	V	46.30	33.00	-26.26	-	53.04	74.00	20.96
11 033.30 ¹⁾	H	54.80	38.83	-43.00	-	50.63	74.00	23.37
16 542.95	H	60.20	37.90	-40.45	-	57.65	68.20	10.55
Average Data								
5 406.64 ¹⁾	V	33.70	33.00	-26.26	0.75	41.19	54.00	12.81

802.11n_HT40_Middle Channel (5 590 MHz)

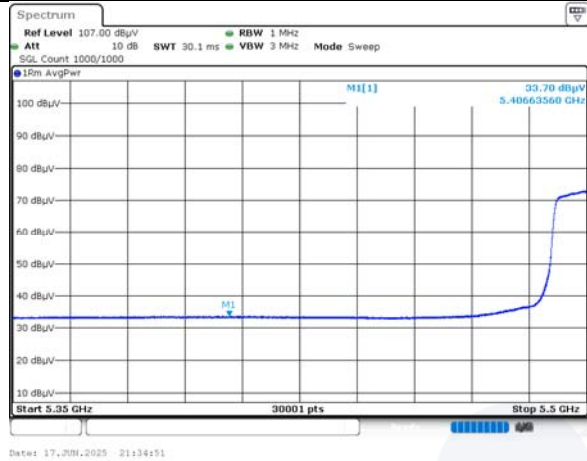
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
11 185.83 ¹⁾	H	55.10	38.90	-42.75	-	51.25	74.00	22.75
16 764.90	H	59.90	37.67	-41.01	-	56.56	68.20	11.64
Average Data								
11 185.83 ¹⁾	H	44.95	38.90	-42.75	0.75	41.85	54.00	12.15

802.11n_HT40_Highest Channel (5 670 MHz)

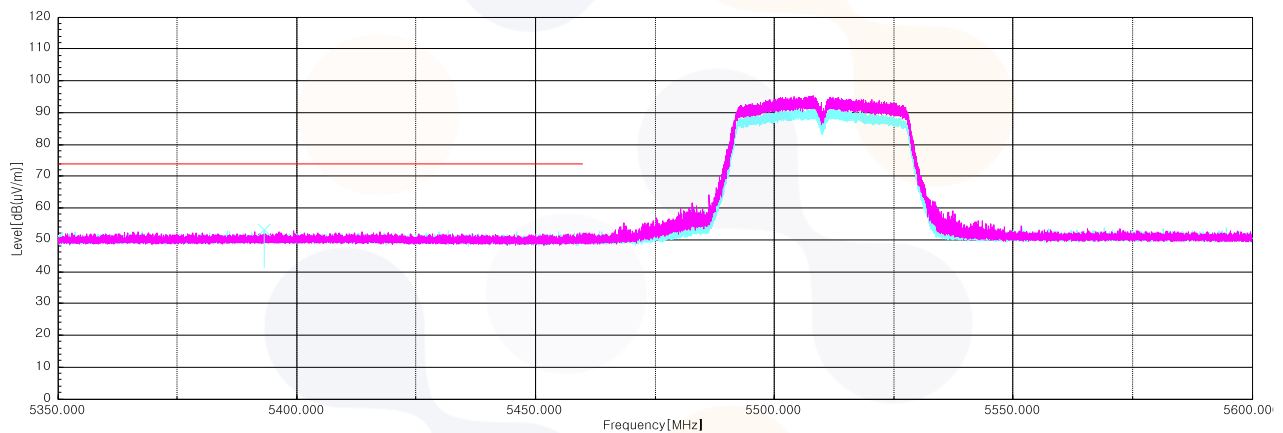
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 796.56	H	46.20	33.98	-25.52	-	54.66	68.20	13.54
11 410.56 ¹⁾	H	55.50	39.10	-42.36	-	52.24	74.00	21.76
16 992.98	H	58.30	37.50	-41.72	-	54.08	68.20	14.12
Average Data								
11 410.56 ¹⁾	H	44.10	39.10	-42.36	0.75	41.59	54.00	12.41

802.11n_HT40_Lowest Channel (5 510 MHz)

Average data

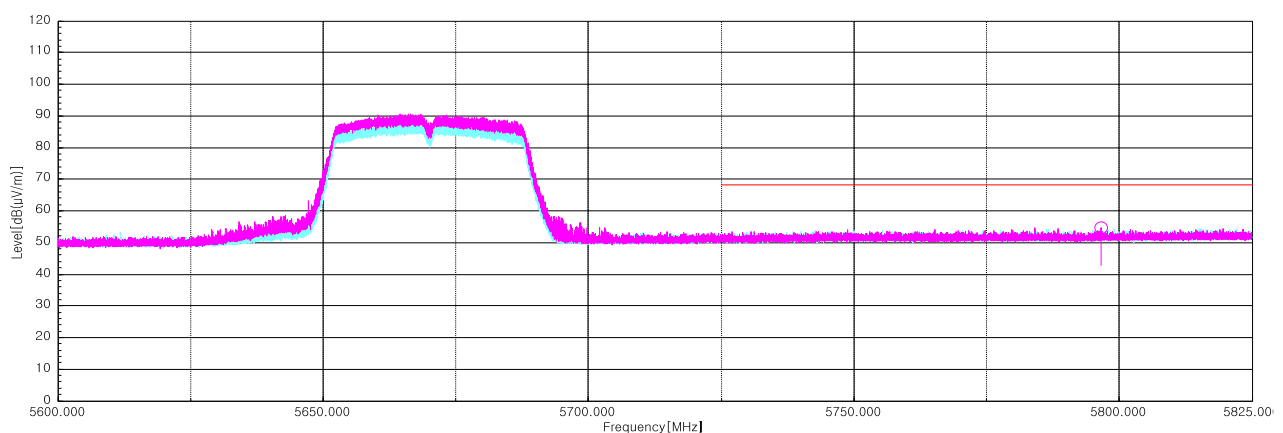


Horizontal/Vertical for Band-edge



Highest Channel (5 670 MHz)

Horizontal/Vertical for Band-edge



802.11ac_VHT20_Lowest Channel (5 500 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								
5 412.05 ¹⁾	V	46.10	33.00	-26.26	-	52.84	74.00	21.16
11 000.05 ¹⁾	H	56.00	38.90	-43.06	-	51.84	74.00	22.16
16 508.07	H	65.10	37.90	-40.37	-	62.63	68.20	5.57
Average Data								
5 412.05 ¹⁾	V	33.56	33.00	-26.26	0.97	41.27	54.00	12.73
11 000.05 ¹⁾	H	43.74	38.90	-43.06	0.97	40.55	54.00	13.45

802.11ac_VHT20_Middle Channel (5 580 MHz)

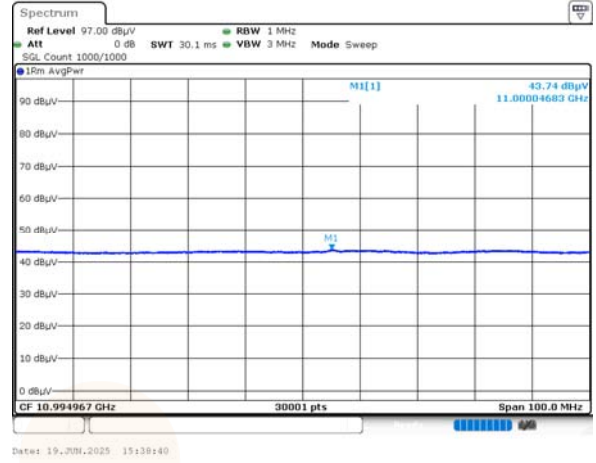
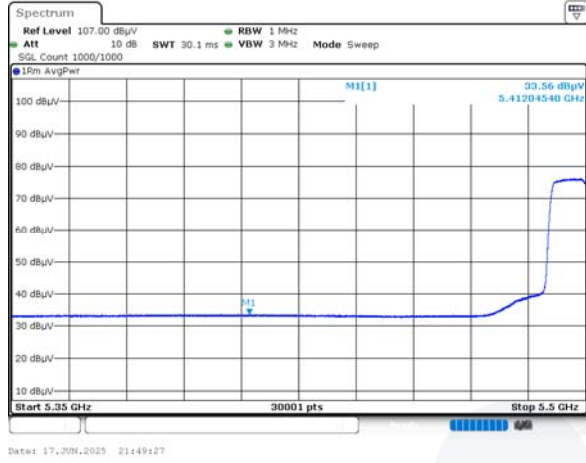
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
11 202.91 ¹⁾	H	56.80	38.90	-42.72	-	52.98	74.00	21.02
16 792.12	H	62.50	37.62	-41.09	-	59.03	68.20	9.17
Average Data								
11 202.91 ¹⁾	H	45.56	38.90	-42.72	0.97	42.71	54.00	11.29

802.11ac_VHT20_Highest Channel (5 700 MHz)

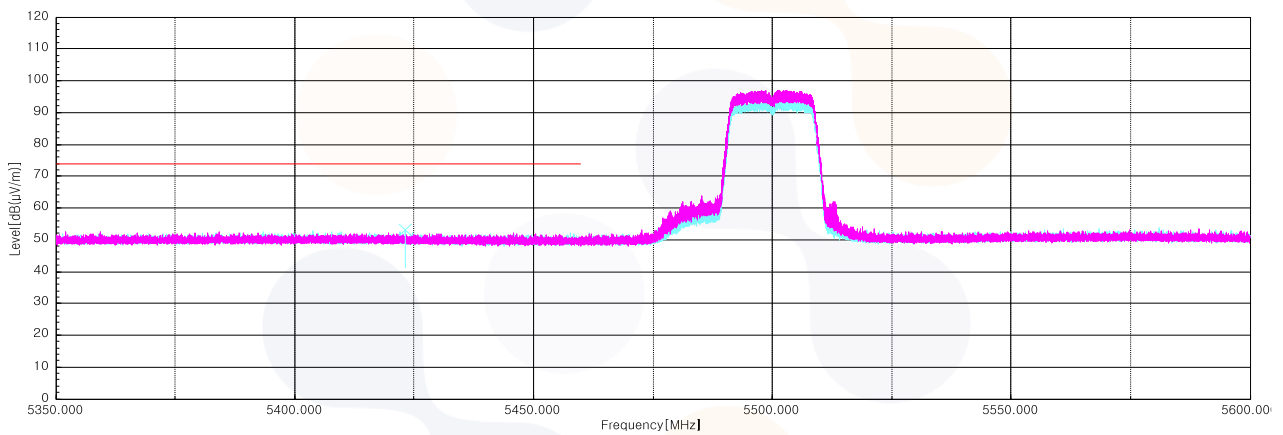
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 814.13	H	45.70	34.08	-25.49	-	54.29	68.20	13.91
11 408.78 ¹⁾	H	55.50	39.10	-42.37	-	52.23	74.00	21.77
17 106.83	H	62.70	37.71	-41.21	-	59.20	68.20	9.00
Average Data								
11 408.78 ¹⁾	H	43.91	39.10	-42.37	0.97	41.61	54.00	12.39

802.11ac_VHT20_Lowest Channel (5 500 MHz)

Average data

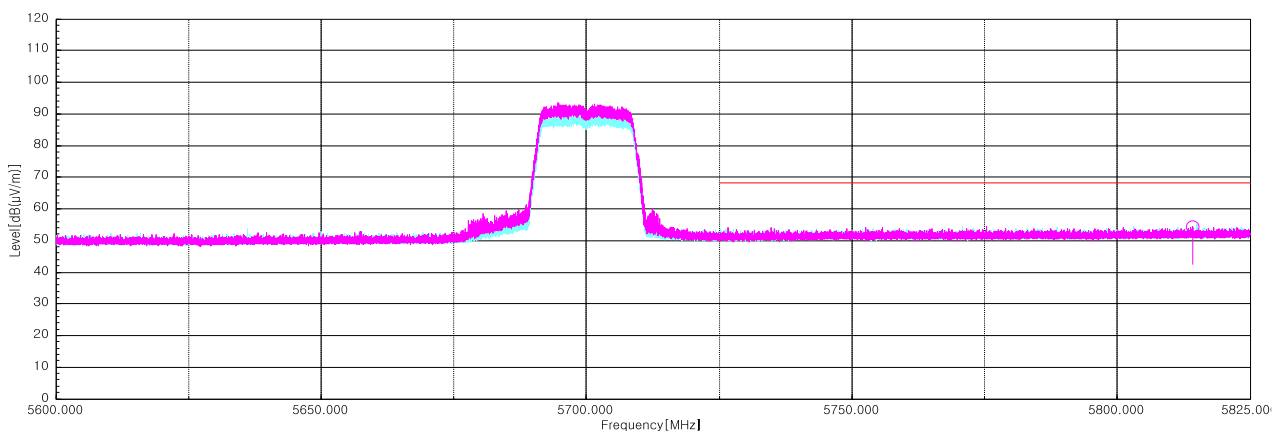


Horizontal/Vertical for Band-edge



Highest Channel (5 700 MHz)

Horizontal/Vertical for Band-edge



802.11ac_VHT40_Lowest Channel (5 510 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								
5 394.80 ¹⁾	V	46.40	33.00	-26.26	-	53.14	74.00	20.86
11 021.03 ¹⁾	H	54.90	38.86	-43.02	-	50.74	74.00	23.26
Average Data								
5 394.80 ¹⁾	V	33.52	33.00	-26.26	1.53	41.79	54.00	12.21

802.11ac_VHT40_Middle Channel (5 590 MHz)

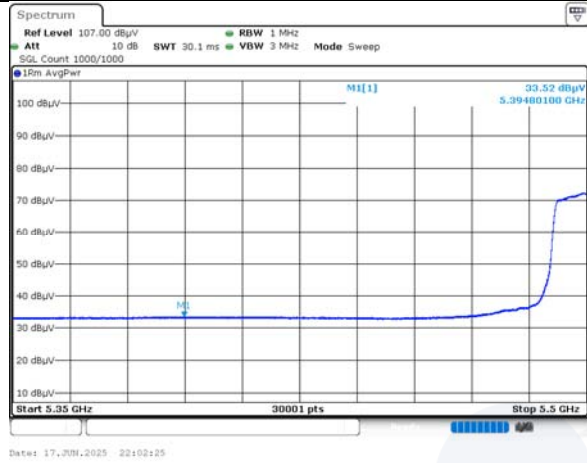
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB($\mu V/m$))	(dB($\mu V/m$))	(dB)
Peak data								
11 142.47 ¹⁾	V	55.20	38.90	-42.82	-	51.28	74.00	22.72
16 760.30	H	59.80	37.68	-40.99	-	56.49	68.20	11.71
Average Data								
11 142.47 ¹⁾	V	44.52	38.90	-42.82	1.53	42.13	54.00	11.87

802.11ac_VHT40_Highest Channel (5 670 MHz)

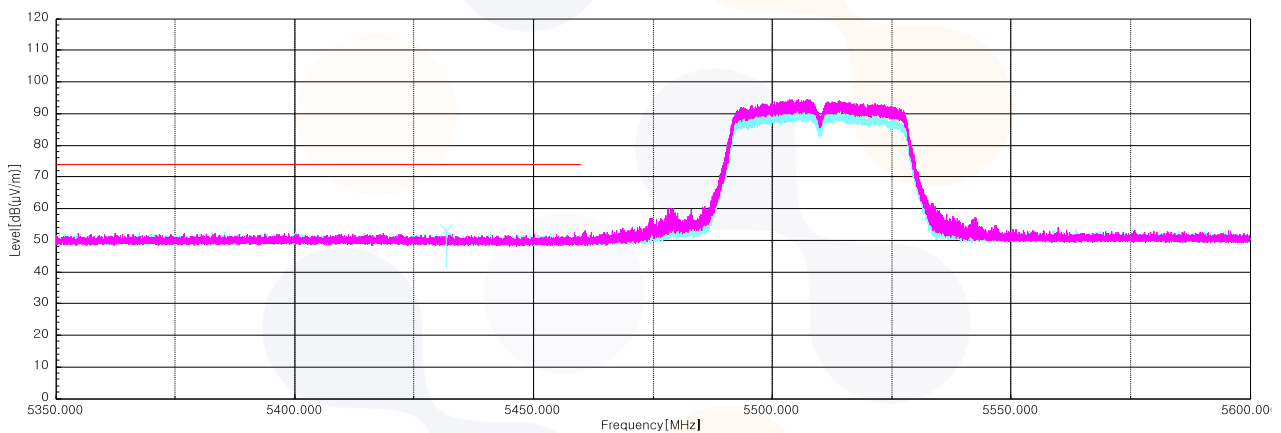
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB($\mu V/m$))	(dB($\mu V/m$))	(dB)
Peak data								
5 809.85	H	46.40	34.06	-25.50	-	54.96	68.20	13.24
11 345.30 ¹⁾	H	55.80	39.00	-42.48	-	52.32	74.00	21.68
16 996.43	H	59.90	37.50	-41.73	-	55.67	68.20	12.53
Average Data								
11 345.30 ¹⁾	H	44.06	39.00	-42.48	1.53	42.11	54.00	11.89

802.11ac_VHT40_Lowest Channel (5 510 MHz)

Average data

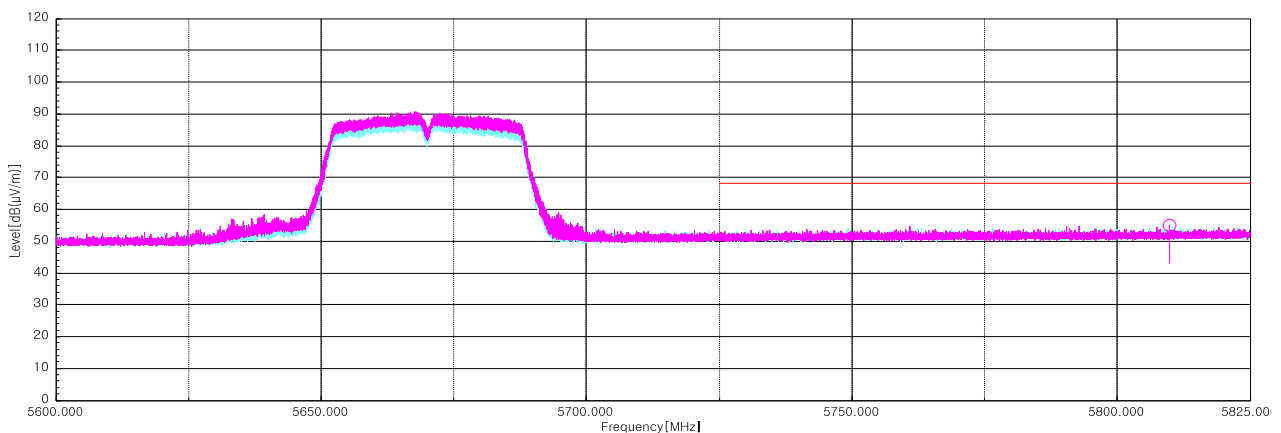


Horizontal/Vertical for Band-edge



Highest Channel (5 670 MHz)

Horizontal/Vertical for Band-edge



802.11ac_VHT80_Lowest Channel (5 530 MHz)

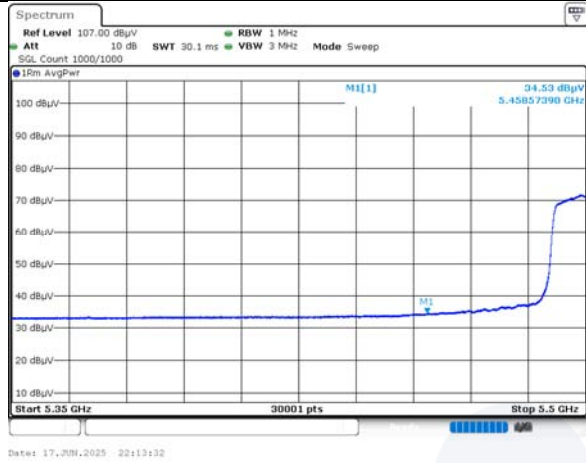
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 458.57 ¹⁾	H	47.40	33.00	-26.25	-	54.15	74.00	19.85
11 079.30 ¹⁾	H	54.40	38.90	-42.93	-	50.37	74.00	23.63
16 614.63	H	59.40	37.87	-40.63	-	56.64	68.20	11.56
Average Data								
5 458.57 ¹⁾	H	34.53	33.00	-26.25	2.61	43.89	54.00	10.11

802.11ac_VHT80_Highest Channel (5 610 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								
5 757.37	H	46.30	33.74	-25.59	-	54.45	68.20	13.75
11 300.21 ¹⁾	H	55.50	39.00	-42.55	-	51.95	74.00	22.05
16 815.50	H	60.80	37.57	-41.16	-	57.21	68.20	10.99
Average Data								
11 300.21 ¹⁾	H	44.18	39.00	-42.55	2.61	43.24	54.00	10.76

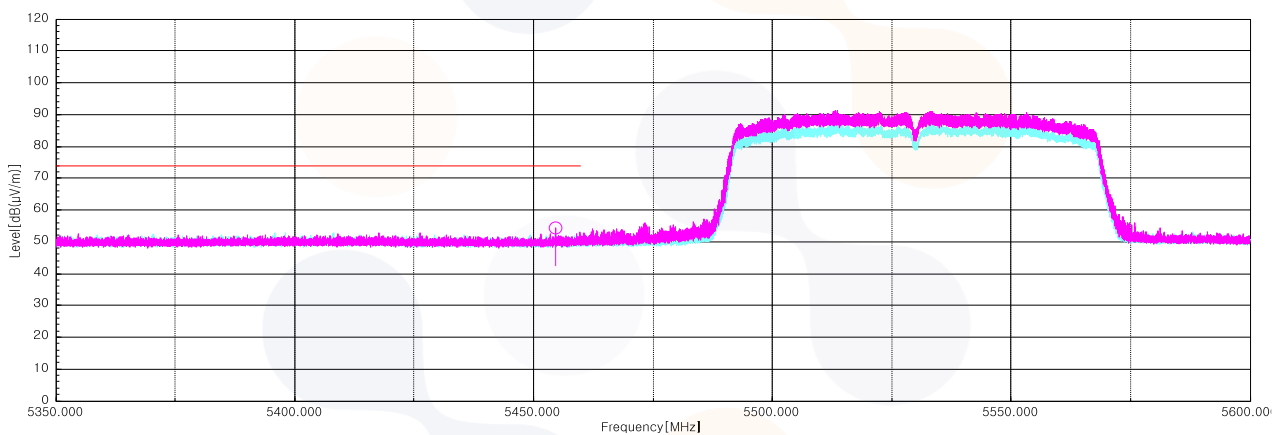
802.11ac_VHT80_Lowest Channel (5 530 MHz)

Average data



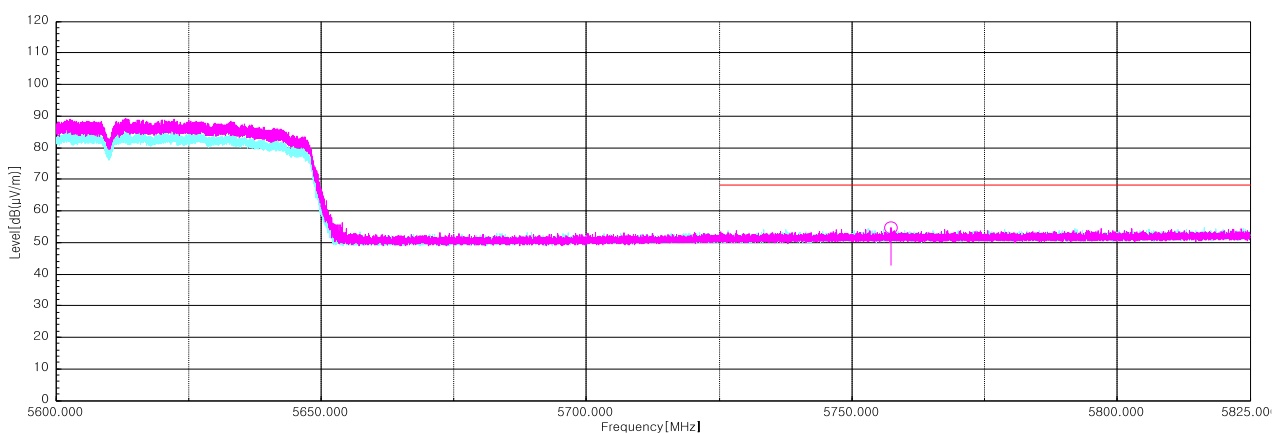
Blank

Horizontal/Vertical for Band-edge



Highest Channel (5 610 MHz)

Horizontal/Vertical for Band-edge



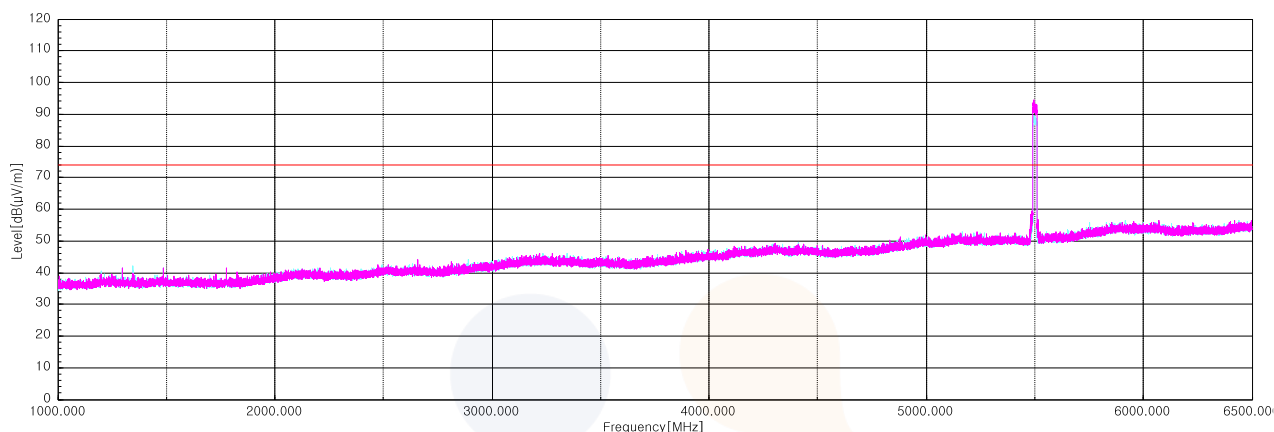
UNII-2C

Plot of Harmonics and Spurious Emissions

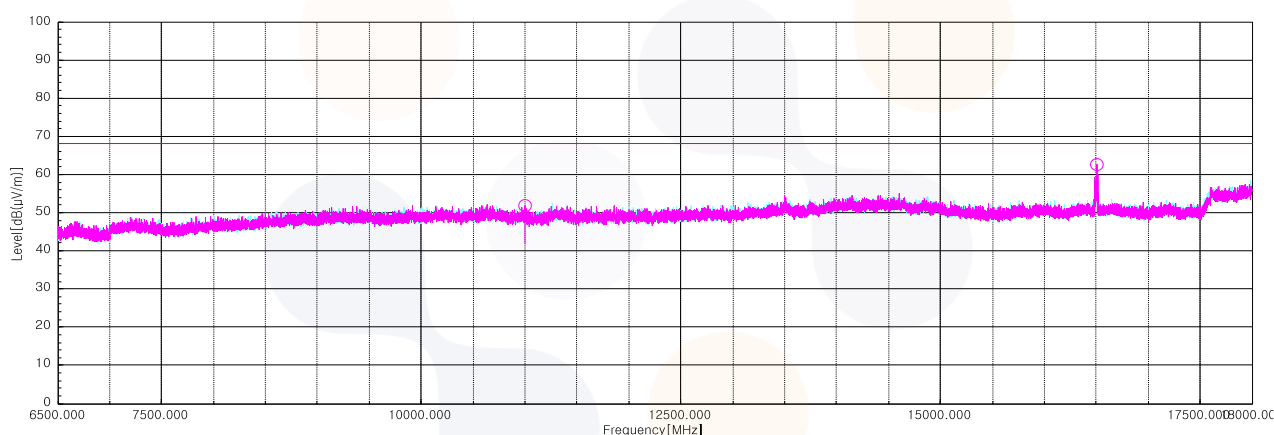
In order to simplify the report, attached plots were only the lowest margin condition

802.11ac_VHT20_UNII-2C_Low Channel (5 500 MHz)

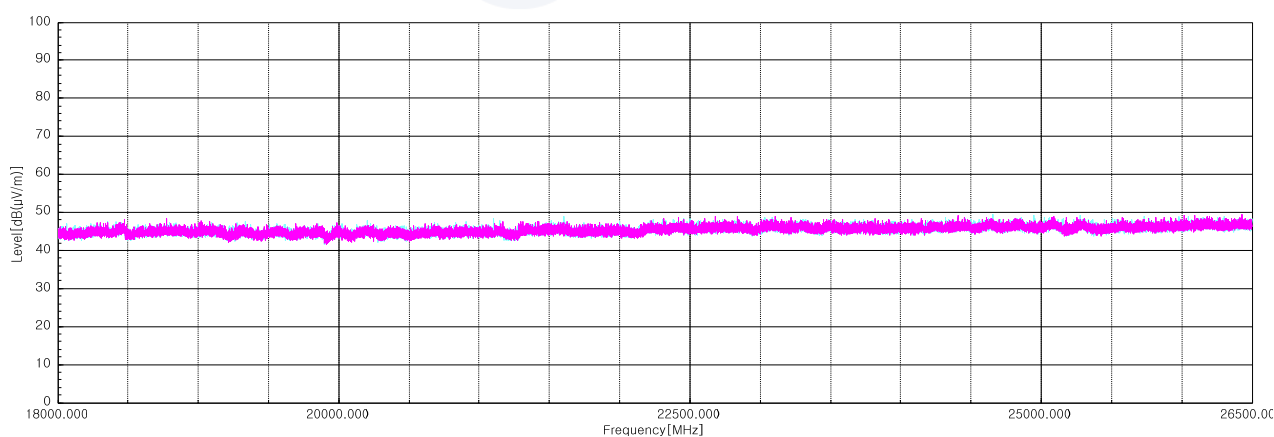
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



Straddle Channel

802.11a (5 720 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								
11 432.84 ¹⁾	H	56.60	39.10	-42.33	-	53.37	74.00	20.63
17 159.35	H	61.60	37.82	-40.94	-	58.48	68.20	9.72
Average Data								
11 432.84 ¹⁾	H	44.14	39.10	-42.33	0.27	41.18	54.00	12.82

802.11n_HT20 (5 720 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								
11 432.31 ¹⁾	H	57.80	39.10	-42.33	-	54.57	74.00	19.43
17 170.08	H	63.30	37.84	-40.89	-	60.25	68.20	7.95
Average Data								
11 432.31 ¹⁾	H	44.80	39.10	-42.33	0.44	42.01	54.00	11.99

802.11n_HT40 (5 710 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								
11 410.66 ¹⁾	V	55.20	39.10	-42.36	-	51.94	74.00	22.06
17 127.53	H	58.20	37.76	-41.10	-	54.86	68.20	13.34
Average Data								
11 410.66 ¹⁾	V	44.10	39.10	-42.36	0.75	41.59	54.00	12.41
No spurious emissions were detected within 20 dB of the limit.								

802.11ac_VHT20 (5 720 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								
11 409.82 ¹⁾	H	55.90	39.10	-42.37	-	52.63	74.00	21.37
17 167.02	V	60.40	37.83	-40.90	-	57.33	68.20	10.87
Average Data								
11 409.82 ¹⁾	H	44.06	39.10	-42.37	0.97	41.76	54.00	12.24

802.11ac_VHT40 (5 710 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								
11 410.35 ¹⁾	H	54.90	39.10	-42.36	-	51.64	74.00	22.36
17 106.83	H	59.30	37.71	-41.21	-	55.80	68.20	12.40
Average Data								
11 410.35 ¹⁾	H	44.06	39.10	-42.36	1.53	42.33	54.00	11.67

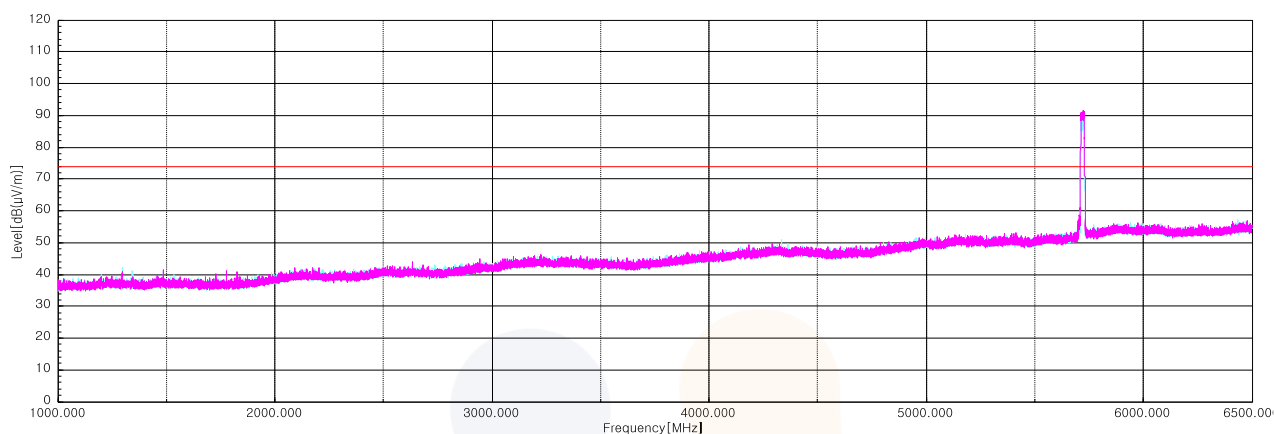
802.11ac_VHT80 (5 690 MHz)

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								
11 300.65 ¹⁾	V	55.00	39.00	-42.55	-	51.45	74.00	22.55
17 062.37	H	58.60	37.60	-41.43	-	54.77	68.20	13.43
Average Data								
11 300.65 ¹⁾	V	44.40	39.00	-42.55	2.61	43.46	54.00	10.54

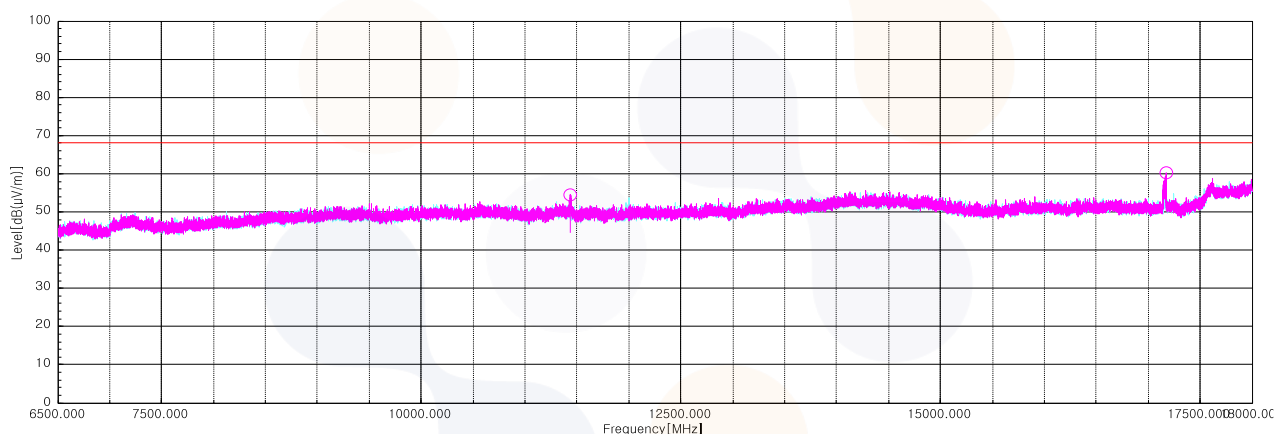
Plot of Harmonics and Spurious Emissions

In order to simplify the report, attached plots were only the lowest margin condition
802.11n_HT20_Straddle Channel (5 720 MHz)

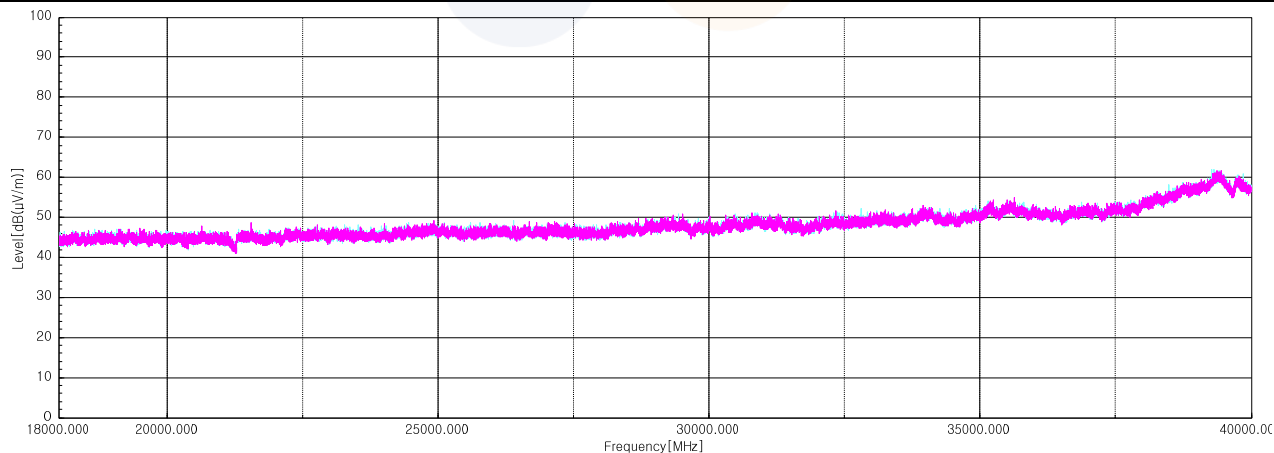
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



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($\mu V/m$))	(dB($\mu V/m$))	(dB)
Peak data								
5 724.71	H	48.40	33.50	-25.67	-	56.23	121.50	65.27
11 497.80 ¹⁾	H	60.20	38.90	-42.21	-	56.89	74.00	17.11
17 229.88	V	62.00	38.12	-40.59	-	59.53	68.20	8.67
Average Data								
11 497.80 ¹⁾	H	45.27	38.90	-42.21	0.27	42.23	54.00	11.77

802.11a_Middle Channel (5 785 MHz)

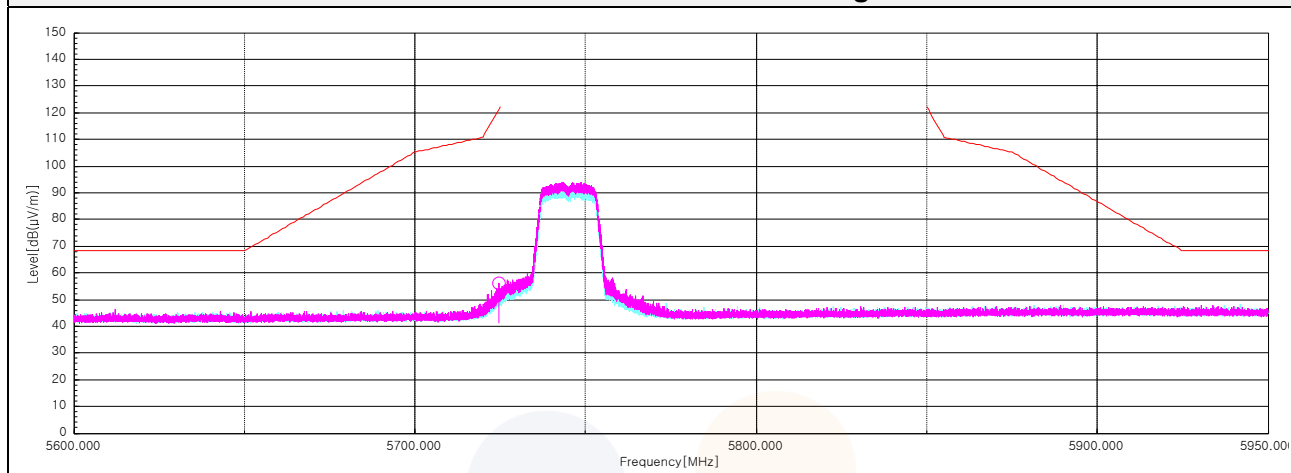
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB($\mu V/m$))	(dB($\mu V/m$))	(dB)
Peak data								
11 567.72 ¹⁾	H	63.40	38.76	-41.97	-	60.19	74.00	13.81
17 348.33	H	61.30	38.59	-40.86	-	59.03	68.20	9.17
Average Data								
11 567.72 ¹⁾	H	47.25	38.76	-41.97	0.27	44.31	54.00	9.69

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($\mu V/m$))	(dB($\mu V/m$))	(dB)
Peak data								
5 850.53	H	42.10	34.20	-25.43	-	50.87	121.00	70.13
11 653.30 ¹⁾	H	61.40	38.59	-41.66	-	58.33	74.00	15.67
17 466.78	H	61.00	39.10	-41.31	-	58.79	68.20	9.41
Average Data								
11 653.30 ¹⁾	H	47.91	38.59	-41.66	0.27	45.11	54.00	8.89

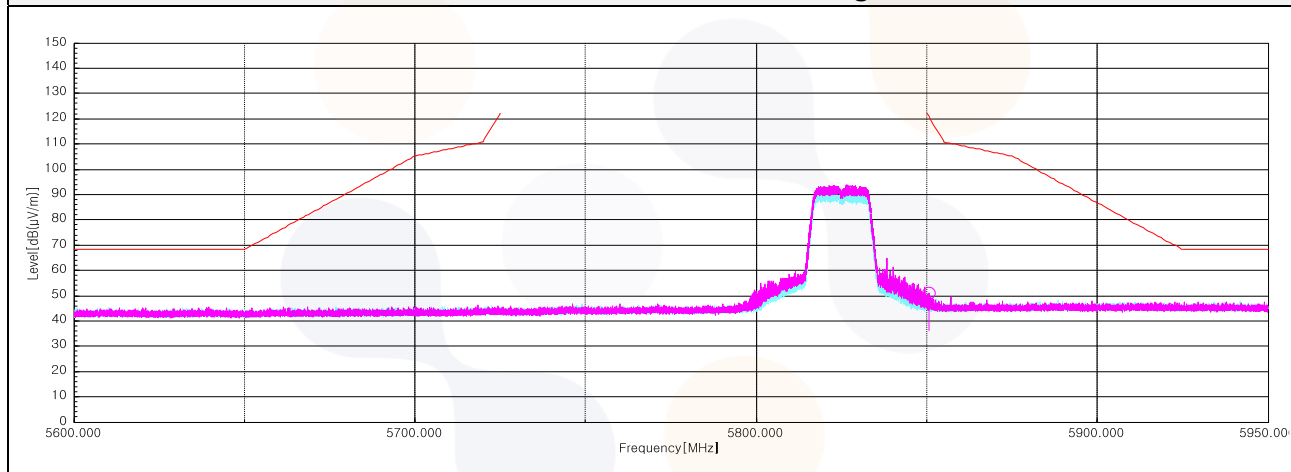
802.11a_Lowest Channel (5 745 MHz)

Horizontal/Vertical for Band-edge



802.11a_Highest Channel (5 825 MHz)

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								
5 724.27	H	47.80	33.50	-25.67	-	55.63	120.50	64.87
11 476.61 ¹⁾	H	59.10	38.95	-42.25	-	55.80	74.00	18.20
17 238.70	V	61.40	38.15	-40.55	-	59.00	68.20	9.20
Average Data								
11 476.61 ¹⁾	H	43.52	38.95	-42.25	0.44	40.66	54.00	13.34

802.11n_HT20_Middle Channel (5 785 MHz)

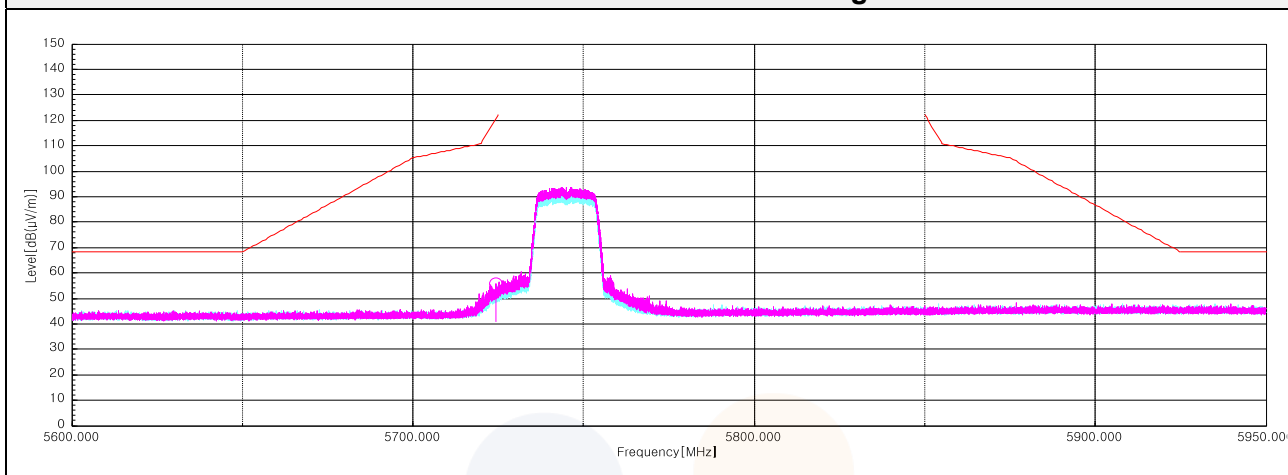
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
11 570.09 ¹⁾	H	60.90	38.76	-41.96	-	57.70	74.00	16.30
17 347.95	V	59.60	38.59	-40.86	-	57.33	68.20	10.87
Average Data								
11 570.09 ¹⁾	H	47.06	38.76	-41.96	0.44	44.30	54.00	9.70

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								
5 850.11	H	42.40	34.20	-25.43	-	51.17	121.90	70.73
11 653.56 ¹⁾	H	61.30	38.59	-41.66	-	58.23	74.00	15.77
17 467.17	V	57.80	39.10	-41.32	-	55.58	68.20	12.62
Average Data								
11 653.56 ¹⁾	H	46.66	38.59	-41.66	0.44	44.03	54.00	9.97

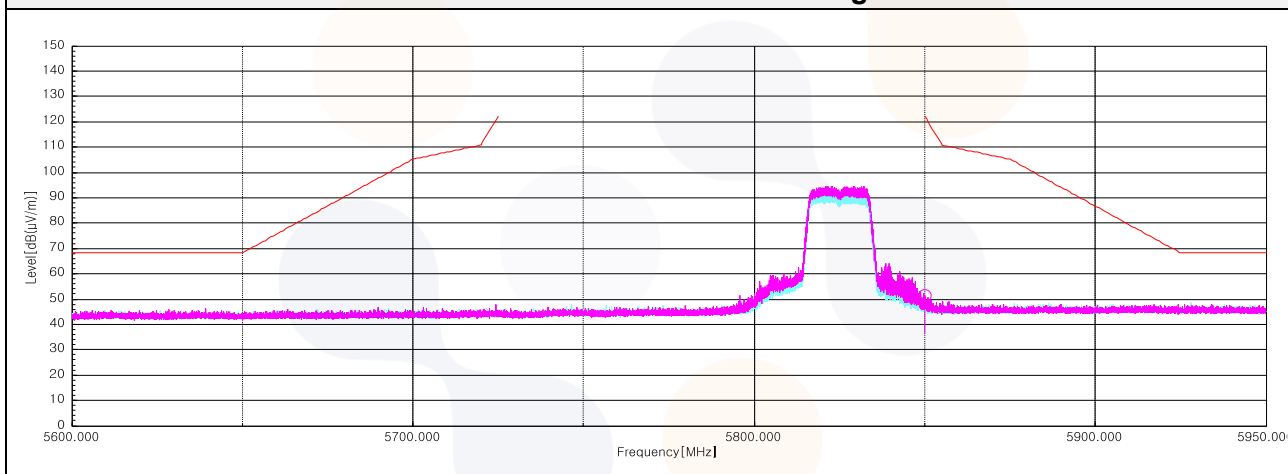
802.11n_HT20_Lowest Channel (5 745 MHz)

Horizontal/Vertical for Band-edge



802.11n_HT20_Highest Channel (5 825 MHz)

Horizontal/Vertical for Band-edge



802.11n_HT40_Lowest Channel (5 755 MHz)

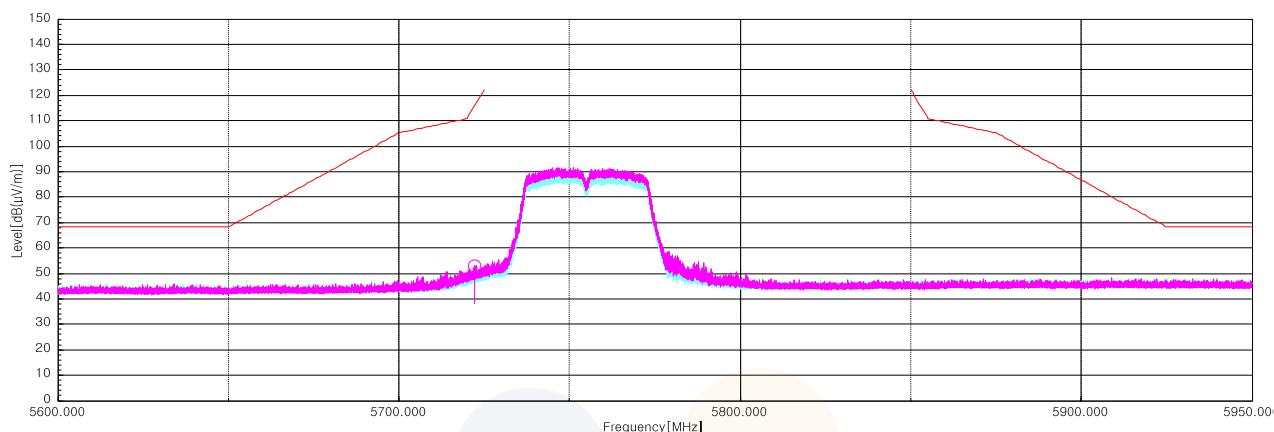
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 722.30	H	45.20	33.49	-25.67	-	53.02	116.00	62.98
11 234.19 ¹⁾	H	56.40	38.90	-42.67	-	52.63	74.00	21.37
17 257.87	H	58.30	38.23	-40.52	-	56.01	68.20	12.19
Average Data								
11 234.19 ¹⁾	H	44.11	38.90	-42.67	0.75	41.09	54.00	12.91

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								
5 850.50	H	40.60	34.20	-25.43	-	49.37	121.10	71.73
11 588.14 ¹⁾	H	57.20	38.72	-41.89	-	54.03	74.00	19.97
17 397.02	H	57.90	38.59	-41.05	-	55.44	68.20	12.76
Average Data								
11 588.14 ¹⁾	H	44.13	38.72	-41.89	0.75	41.71	54.00	12.29

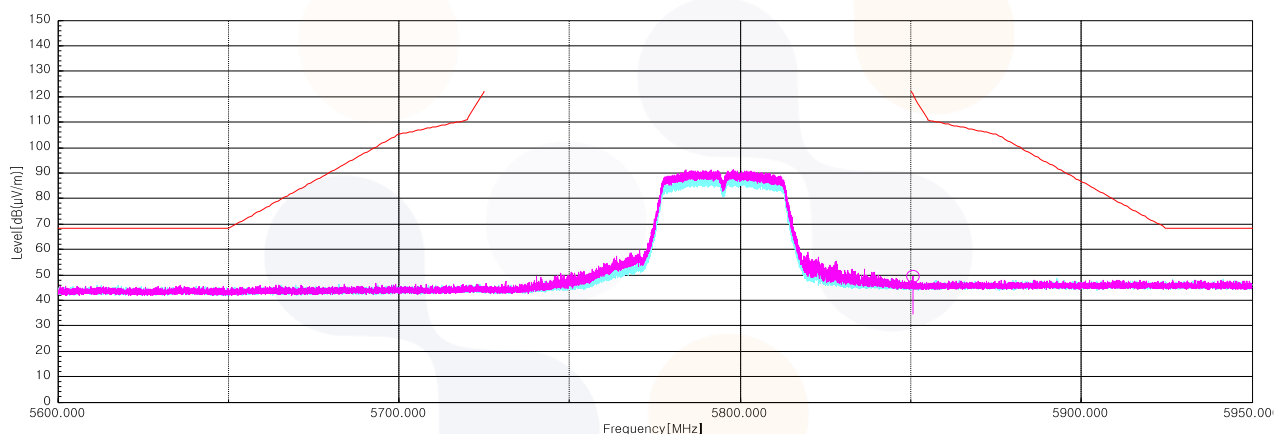
802.11n_HT40_Lowest Channel (5 755 MHz)

Horizontal/Vertical for Band-edge



802.11n_HT40_Highest Channel (5 795 MHz)

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								
5 722.98	H	52.00	33.49	-25.67	-	59.82	117.60	57.78
11 492.32 ¹⁾	H	58.70	38.92	-42.22	-	55.40	74.00	18.60
17 236.02	H	60.10	38.14	-40.56	-	57.68	68.20	10.52
Average Data								
11 492.32 ¹⁾	H	44.93	38.92	-42.22	0.97	42.60	54.00	11.40

802.11ac_VHT20_Middle Channel (5 785 MHz)

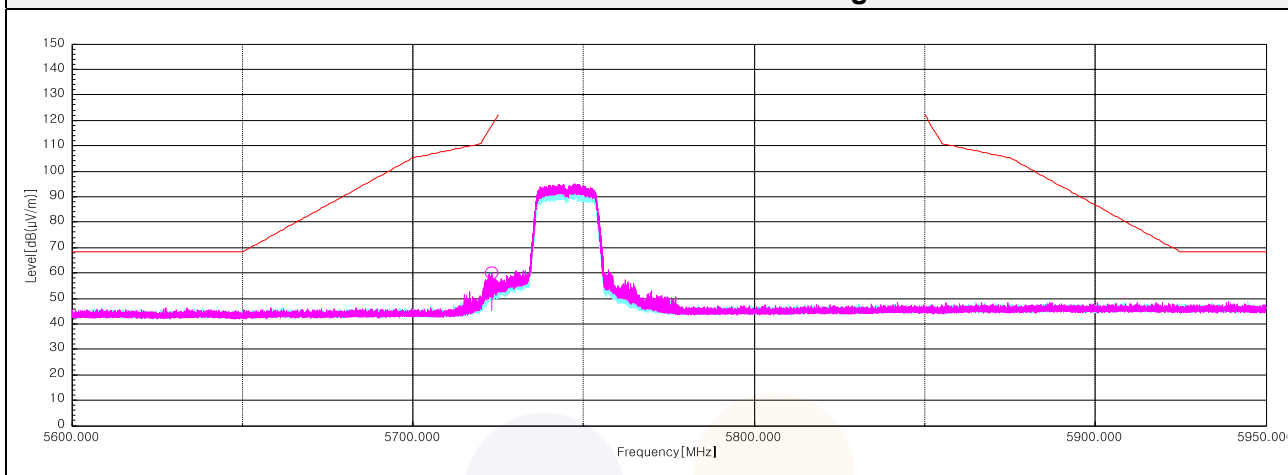
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
11 570.99 ¹⁾	H	60.00	38.76	-41.95	-	56.81	74.00	17.19
17 350.25	V	61.70	38.50	-40.87	-	59.33	68.20	8.87
Average Data								
11 570.99 ¹⁾	H	47.54	38.76	-41.95	0.97	45.32	54.00	8.68
No spurious emissions were detected within 20 dB of the limit.								

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								
5 850.61	H	47.30	34.20	-25.43	-	56.07	120.80	64.73
11 652.19 ¹⁾	H	62.20	38.60	-41.66	-	59.14	74.00	14.86
17 473.30	V	59.00	39.14	-41.34	-	56.80	68.20	11.40
Average Data								
11 652.19 ¹⁾	H	47.37	38.60	-41.66	0.97	45.28	54.00	8.72

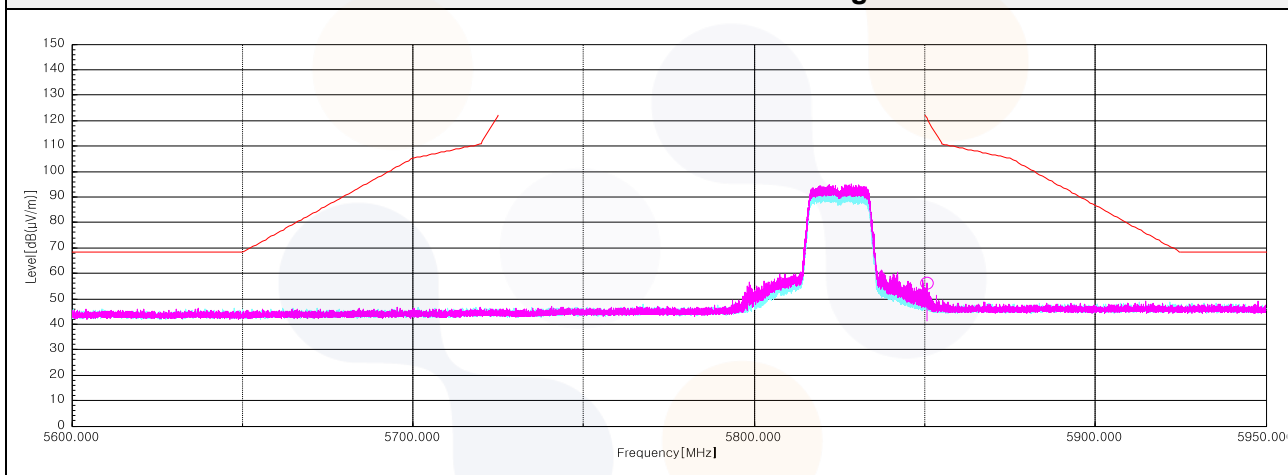
802.11ac_VHT20_Lowest Channel (5 745 MHz)

Horizontal/Vertical for Band-edge



802.11ac_VHT20_Highest Channel (5 825 MHz)

Horizontal/Vertical for Band-edge



802.11ac_VHT40_Lowest Channel (5 755 MHz)

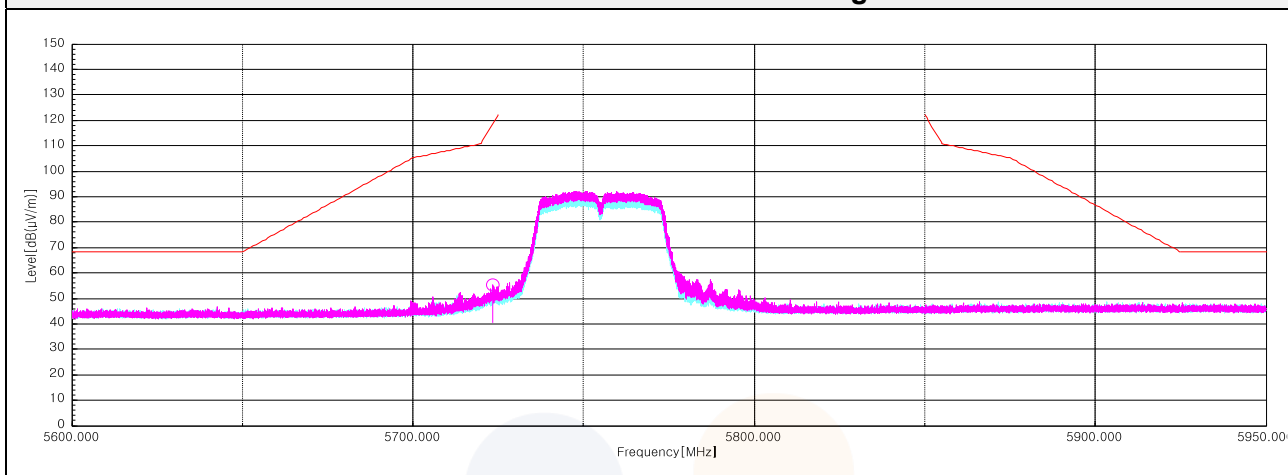
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
5 723.32	H	47.40	33.49	-25.67	-	55.22	118.40	63.18
11 522.24 ¹⁾	H	57.90	38.86	-42.13	-	54.63	74.00	19.37
17 255.95	H	58.50	38.22	-40.51	-	56.21	68.20	11.99
Average Data								
11 522.24 ¹⁾	H	44.75	38.86	-42.13	1.53	43.01	54.00	10.99

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								
5 852.35	H	39.30	34.21	-25.43	-	48.08	116.80	68.72
11 588.03 ¹⁾	H	57.20	38.72	-41.89	-	54.03	74.00	19.97
17 369.42	V	58.10	38.54	-40.94	-	55.70	68.20	12.50
Average Data								
11 588.03 ¹⁾	H	45.71	38.72	-41.89	1.53	44.07	54.00	9.93

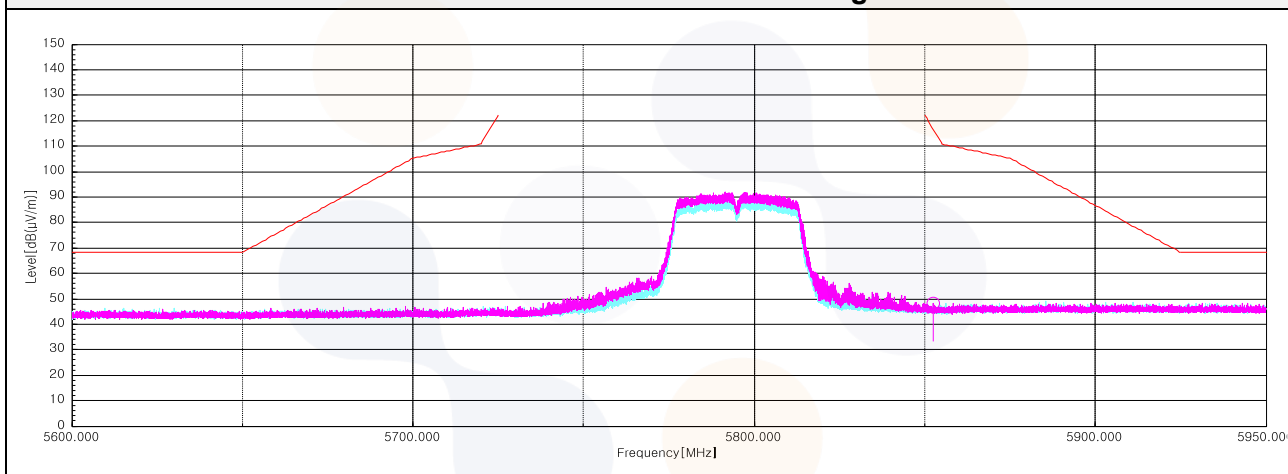
802.11ac_VHT40_Lowest Channel (5 755 MHz)

Horizontal/Vertical for Band-edge



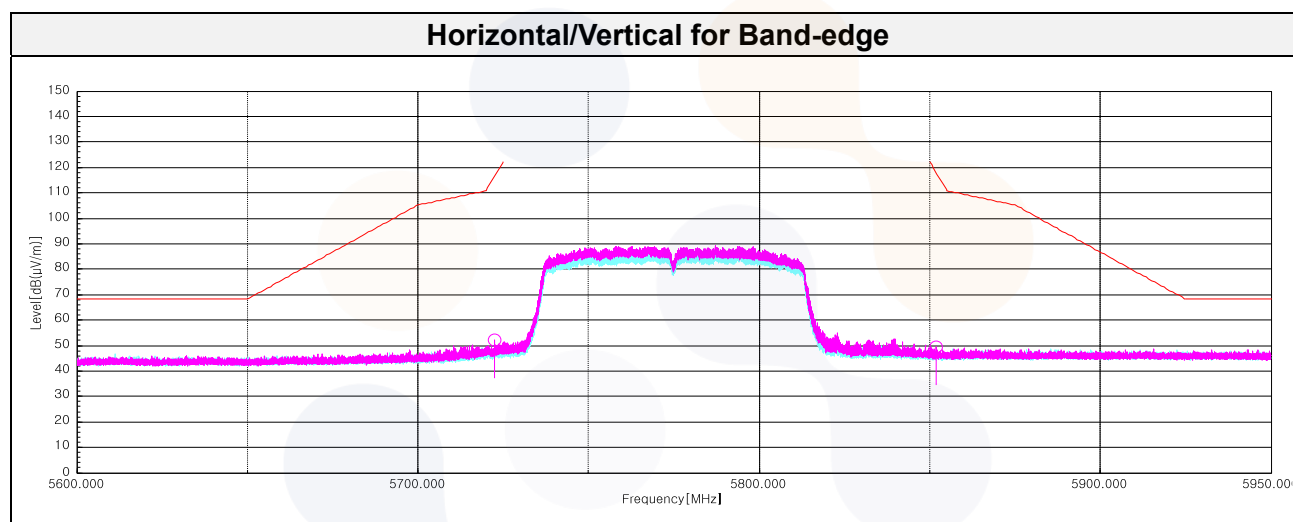
802.11ac_VHT40_Highest Channel (5 795 MHz)

Horizontal/Vertical for Band-edge



802.11ac_VHT80_Middle Channel (5 775 MHz)

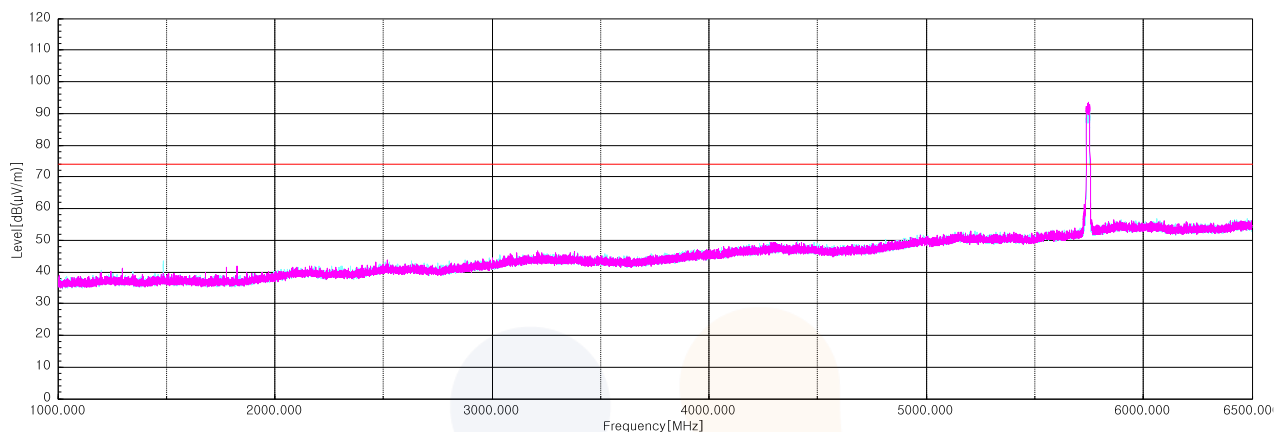
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB($\mu V/m$))	(dB($\mu V/m$))	(dB)
Peak data								
5 722.57	H	44.40	33.49	-25.67	-	52.22	116.70	64.48
5 851.73	H	40.60	34.21	-25.43	-	49.38	118.30	68.92
11 568.75 ¹⁾	H	58.70	38.76	-41.96	-	55.50	74.00	18.50
17 338.75	V	57.30	38.56	-40.83	-	55.03	68.20	13.17
Average Data								
11 568.75 ¹⁾	H	45.02	38.76	-41.96	2.61	44.43	54.00	9.57



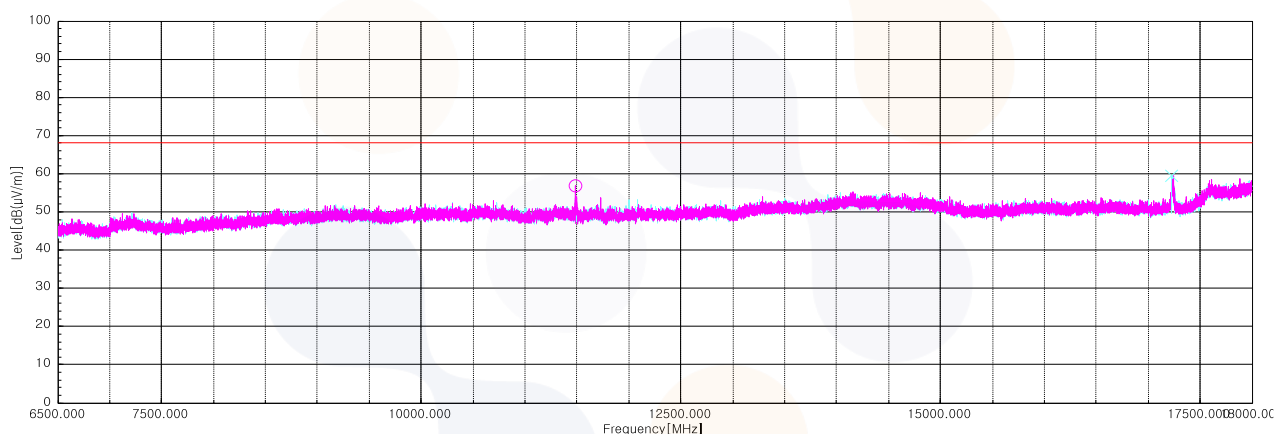
Plot of Harmonics and Spurious Emissions

In order to simplify the report, attached plots were only the lowest margin condition
802.11a_UNII-3_Lowest Channel (5 745 MHz)

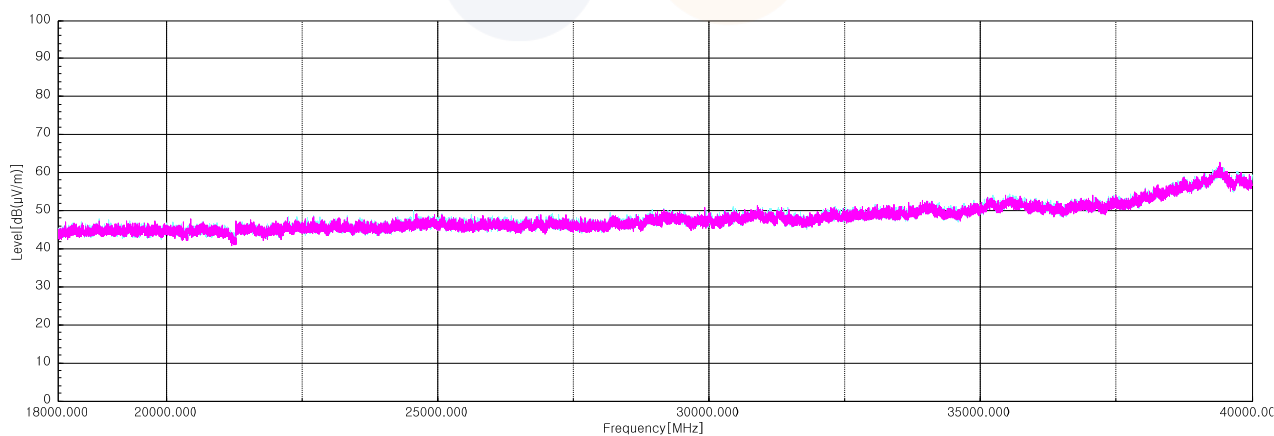
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz

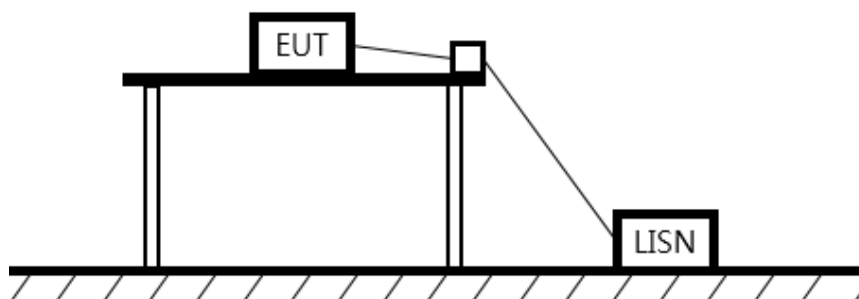


Horizontal/Vertical for 18 GHz ~ 40 GHz



7.8. AC Conducted emission

Test setup



Limit

§15.407

According to 15.207(a) and RSS-Gen (8.8), 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 kHz to 30 MHz, 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.

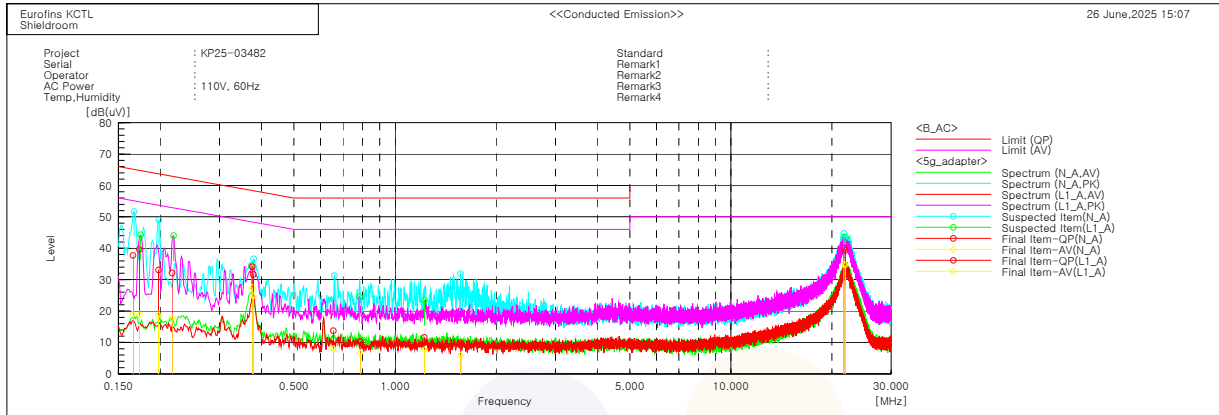
Frequency of Emission (MHz)	Conducted limit (dBμV/m)	
	Quasi-peak	Average
0.15 – 0.50	66 - 56*	56 - 46*
0.50 – 5.00	56	46
5.00 – 30.0	60	50

Measurement procedure

1. The EUT was placed on a wooden table of size, 1 m by 1.5 m, raised 80 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: 802.11ac VHT80 / UNII-2C_5 530 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]
1	0.16579	27.5	8.7	10.2	37.7	18.9	65.2	55.2	27.5
2	0.19764	23.1	8.8	10.0	33.1	18.8	63.7	53.7	30.6
3	0.3757	24.1	17.5	10.0	34.1	27.5	58.4	48.4	24.3
4	0.65511	3.8	-2.0	10.0	13.8	8.0	56.0	46.0	42.2
5	1.56801	-0.8	-3.9	9.9	9.1	6.0	56.0	46.0	46.9
6	21.71076	29.1	24.0	10.9	40.0	34.9	60.0	50.0	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]
1	0.1731	29.4	8.6	10.2	39.6	18.8	64.8	54.8	25.2
2	0.21682	22.2	7.9	9.9	32.1	17.8	62.9	52.9	30.8
3	0.37855	21.6	14.8	10.0	31.6	24.8	58.3	48.3	26.7
4	0.78717	0.3	-3.4	10.0	10.3	6.6	56.0	46.0	45.7
5	1.22193	1.7	-2.2	9.9	11.6	7.7	56.0	46.0	44.4
6	21.92302	28.4	23.7	10.9	39.3	34.6	60.0	50.0	20.7

8. Measurement equipment

Equipment Name	Manufacturer	Model No.	Serial No.	Next Cal. Date
Spectrum Analyzer	R&S	FSVA40	101575	26.04.23
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	26.04.28
Signal Generator	R&S	SMB100A	176206	26.01.17
High Pass Filter	Wainwright Instruments GmbH	WHKX8-5655-6500-18000-40SS	SN8	25.10.15
TWO-LINE V -NETWORK	R&S	ENV216	101358	26.04.22
EMI TEST RECEIVER	R&S	ESCI3	101408	25.08.12
Power Sensor	R&S	NRP-Z81	1137.9009.02-106224-tg	26.07.01
Attenuator	HUBER+SUHNER	6610_SK-50-1/199_NE	ATT10	26.03.17
DC Power Supply	TOYOTECH	TL305TP	21040092	26.06.30
Temp & Humid Chamber	ESPEC CORP.	SH-661	92004048	25.10.10
Signal & Spectrum Analyzer	R&S	FSV3030	1330.5000K30-101710-Wt	26.06.30
Attenuator	HUBER+SUHNER	6610_SK-50-1/199_NE	ATT10	26.03.17
Spectrum Analyzer	R&S	FSV40	100988	26.04.24
PSA Spectrum Analyzer	Agilent	E4440A	MY44303500	25.07.02*
Amplifier	SONOMA INSTRUMENT	310N	421910	25.10.11
Bilog Antenna	Teseq GmbH	CBL 6112D	61521	26.12.11
Loop Antenna	R&S	HFH2-Z2	100355	26.06.25
DC Power Supply	POWERCOM	DCP-50100A	20220610-01	26.01.16
Vector Signal Generator	R&S	SMBV100A	257566	26.07.01
Controller	INNCO SYSTEMS	CO3000	1441/54370322/P	-
Antenna Mast	INNCO SYSTEMS	MA4640-XP-ET	AM003	-
Turn Device	INNCO SYSTEMS	DS1200-S-1t	3	-

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

End of test report