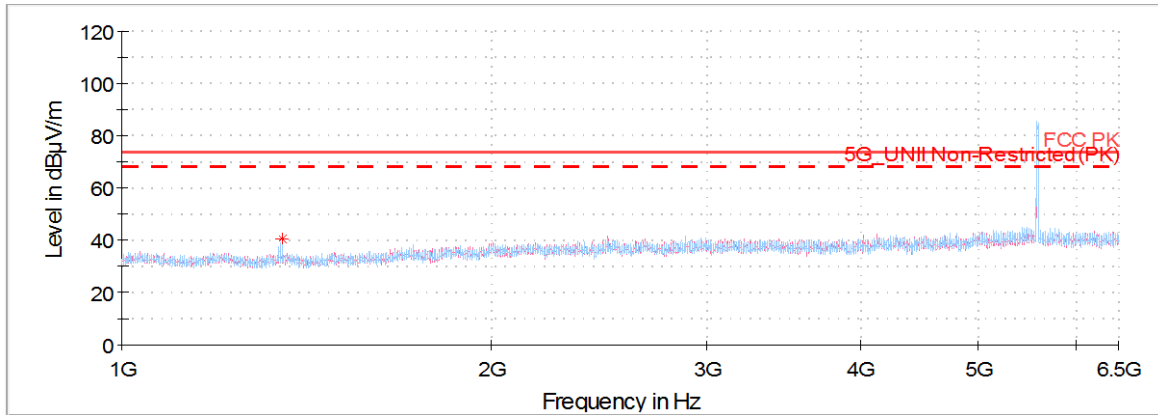
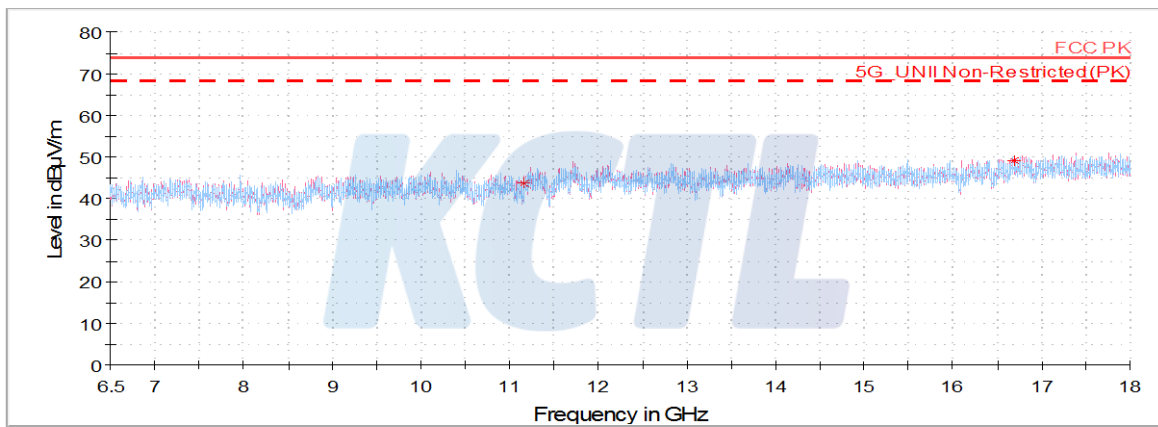


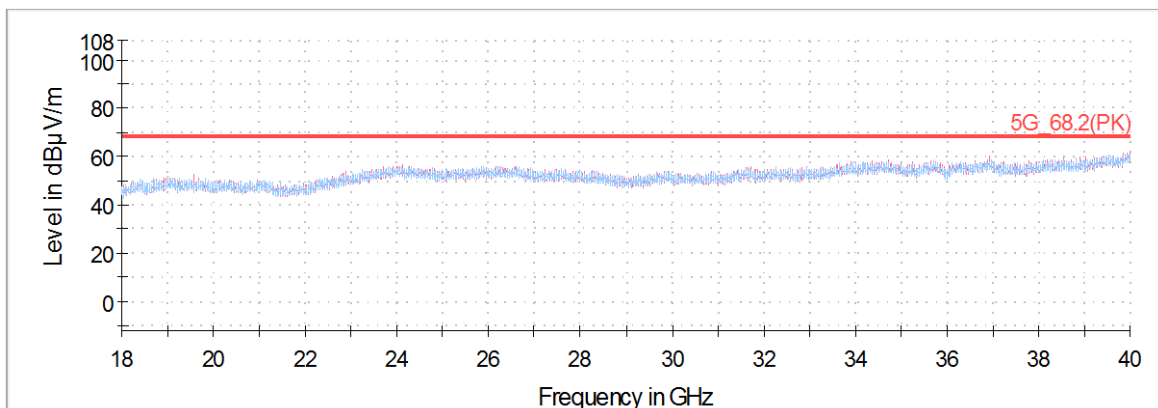
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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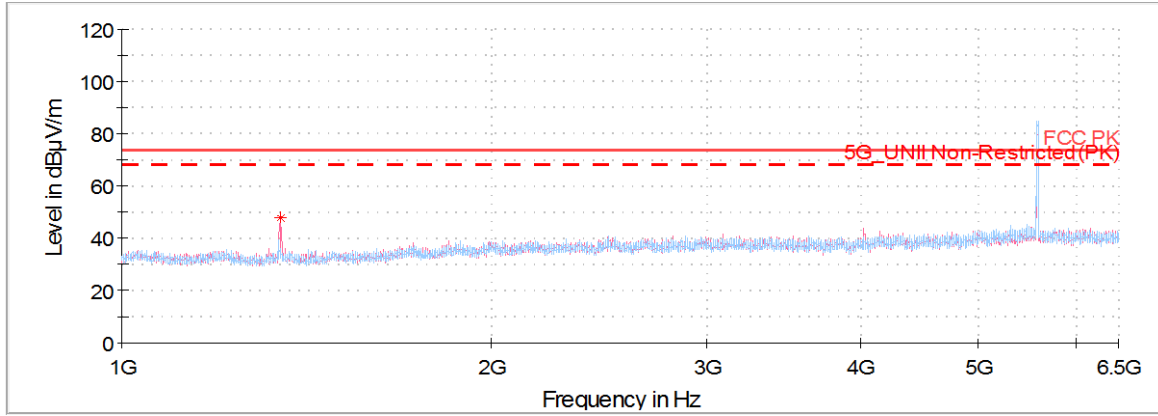
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KCTL**Highest Channel (5 700 MHz)**

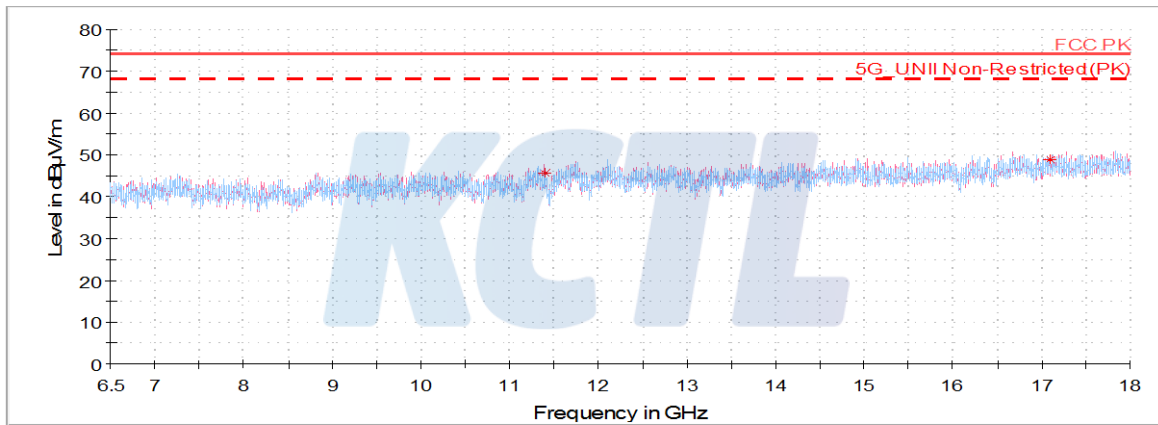
Frequency	Pol.	Reading	Cable Loss	Amp Gain	Antenna Factor	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μ V))	(dB)	(dB)	(dB)	(dB)	(dB(μ V/m))	(dB(μ V/m))	(dB)
Peak data									
1 344.95 ¹⁾	V	56.45	2.80	-36.72	25.18	-	47.71	74.00	26.29
11 399.36 ¹⁾	V	59.25	8.50	-60.73	38.56	-	45.58	74.00	28.42
17 099.77	H	56.04	10.47	-58.39	40.90	-	49.02	68.20	19.18
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

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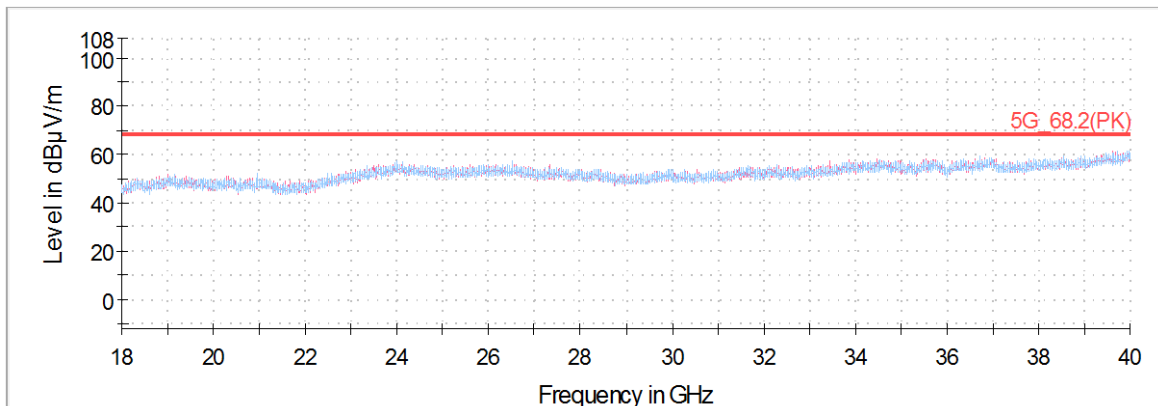
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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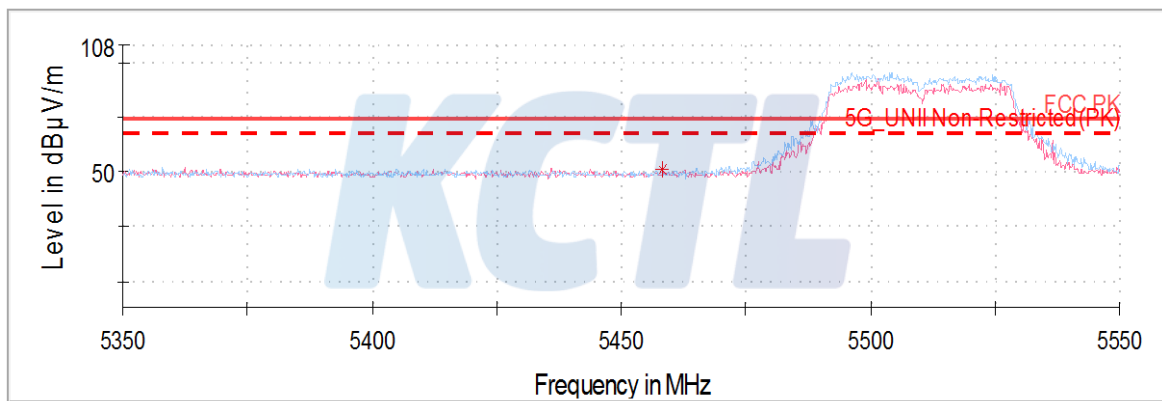
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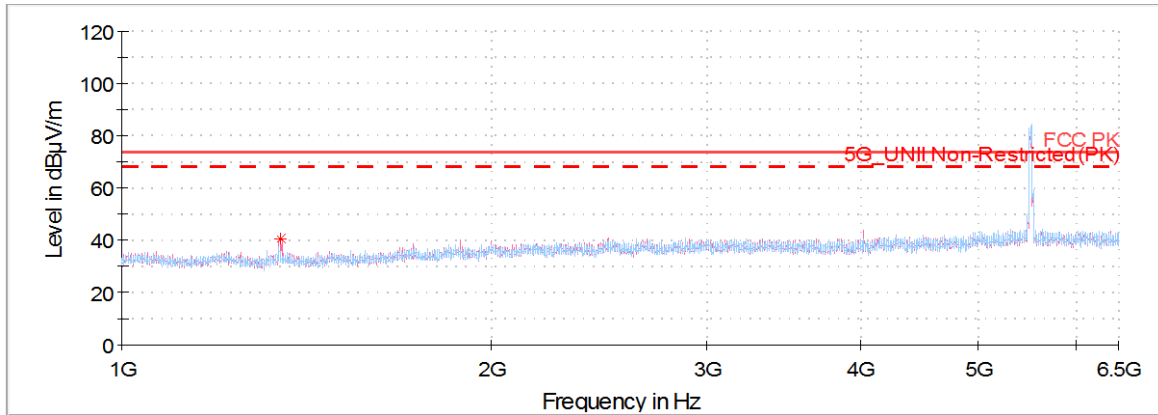
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**802.11n40 – ANT 0****Lowest Channel (5 510 MHz)**

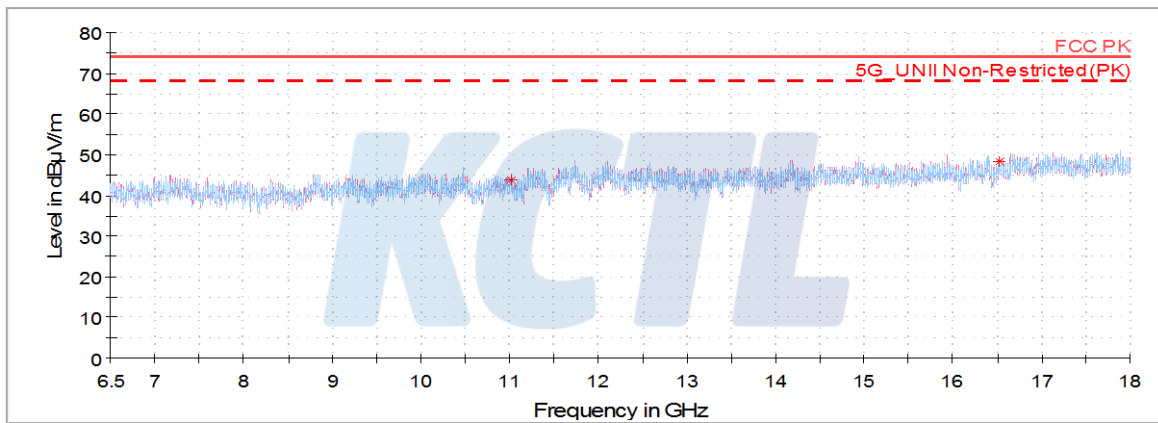
Frequency (MHz)	Pol. (V/H)	Reading (dB(μ V))	Cable Loss (dB)	Amp Gain (dB)	Antenna Factor (dB)	DCCF (dB)	Result (dB(μ V/m))	Limit (dB(μ V/m))	Margin (dB)
Peak data									
1 346.33 ¹⁾	V	49.44	2.80	-36.73	25.19	-	40.70	74.00	33.30
5 458.27 ¹⁾	V	44.98	5.76	-33.54	33.59	-	50.79	74.00	23.21
11 019.86 ¹⁾	V	59.06	8.42	-61.83	38.22	-	43.87	74.00	30.13
16 531.23	H	55.84	10.28	-56.90	38.99	-	48.21	68.20	19.99
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

Horizontal/Vertical for Band-edge

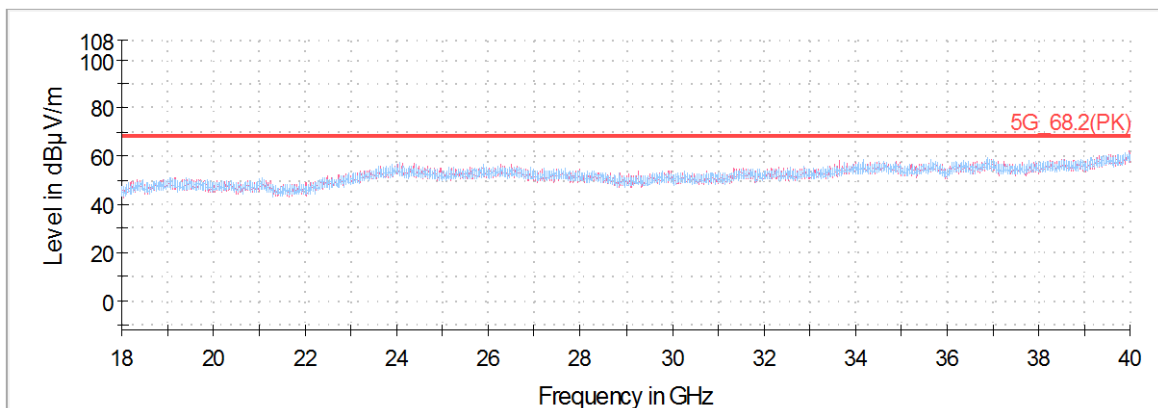
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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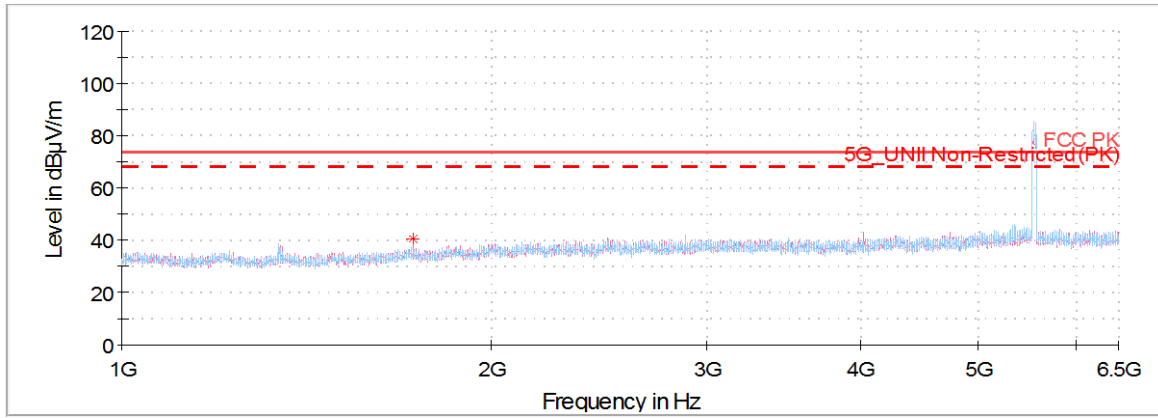
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KCTL**Middle Channel (5 590 MHz)**

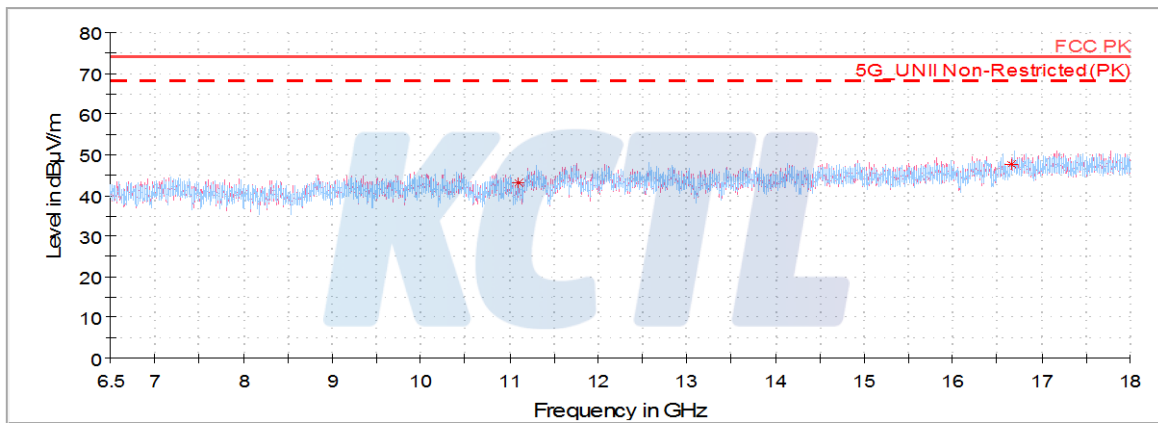
Frequency	Pol.	Reading	Cable Loss	Amp Gain	Antenna Factor	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μ V))	(dB)	(dB)	(dB)	(dB)	(dB(μ V/m))	(dB(μ V/m))	(dB)
Peak data									
1 728.41	V	47.12	3.17	-36.49	26.71	-	40.51	68.20	27.69
11 182.16 ¹⁾	H	57.95	8.44	-61.59	38.29	-	43.09	74.00	30.91
16 771.27	V	54.97	10.32	-57.08	39.32	-	47.53	68.20	20.67
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

KCTL

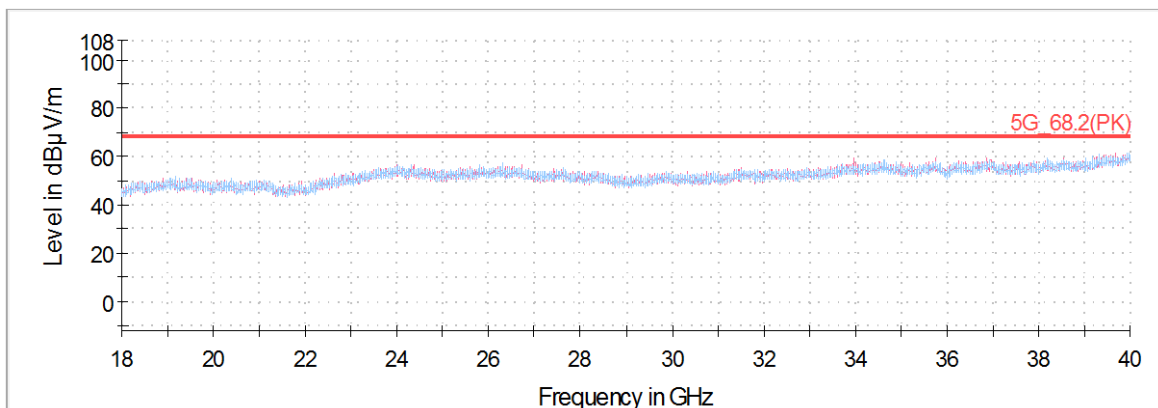
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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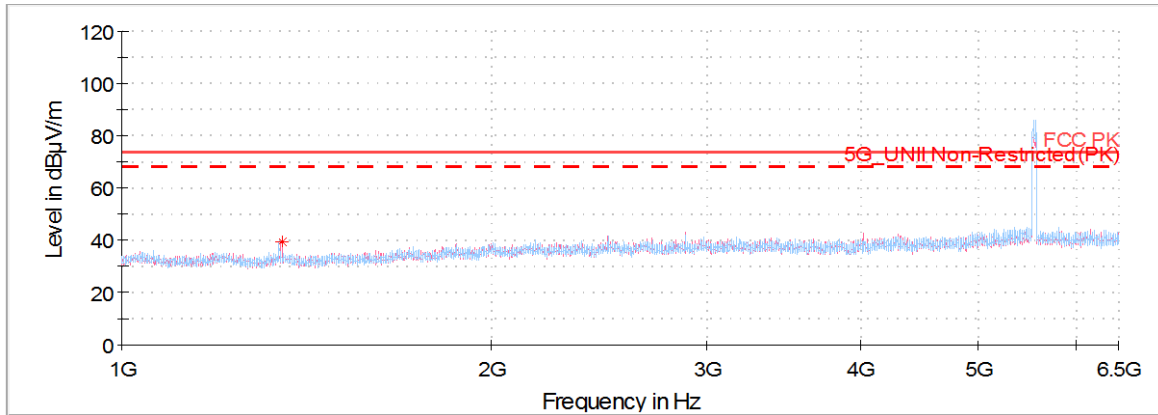
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KCTL**Highest Channel (5 670 MHz)**

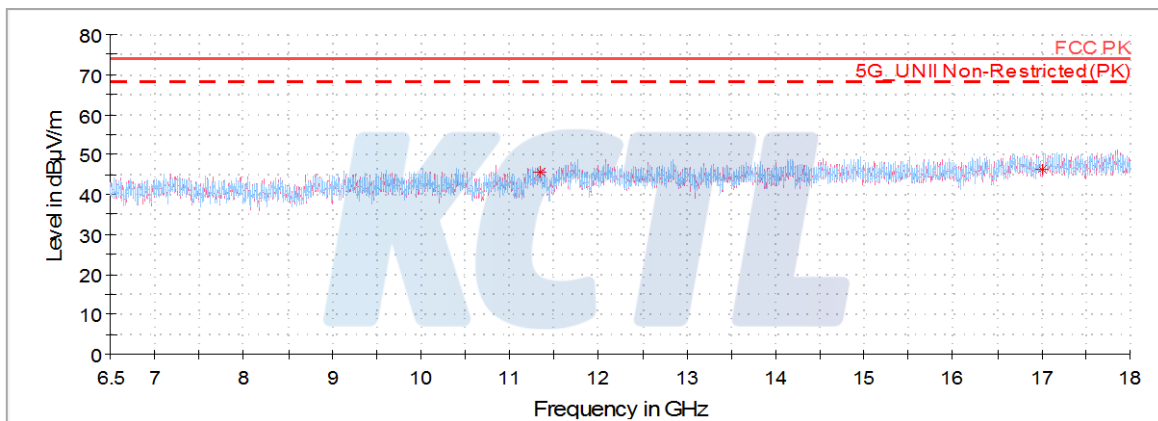
Frequency	Pol.	Reading	Cable Loss	Amp Gain	Antenna Factor	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μ V))	(dB)	(dB)	(dB)	(dB)	(dB(μ V/m))	(dB(μ V/m))	(dB)
Peak data									
1 349.59 ¹⁾	V	48.32	2.80	-36.74	25.20	-	39.58	74.00	34.42
11 340.06 ¹⁾	V	59.41	8.49	-60.91	38.51	-	45.50	74.00	28.50
17 010.28	V	53.30	10.42	-57.68	40.36	-	46.40	68.20	21.80
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

KCTL

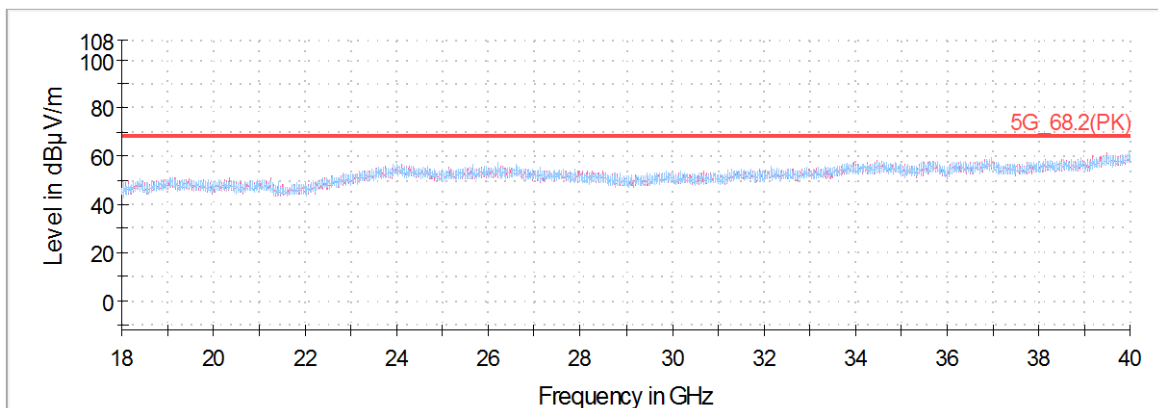
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz

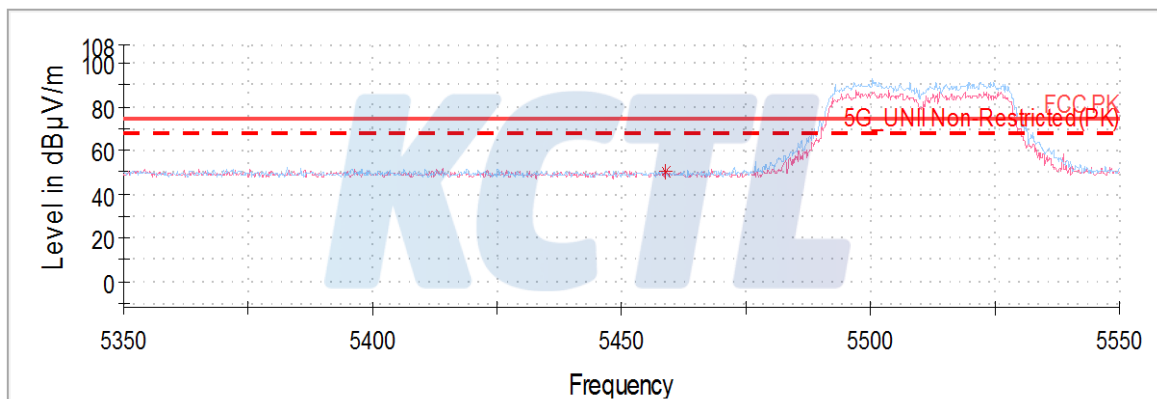


Horizontal/Vertical for 18 GHz ~ 40 GHz

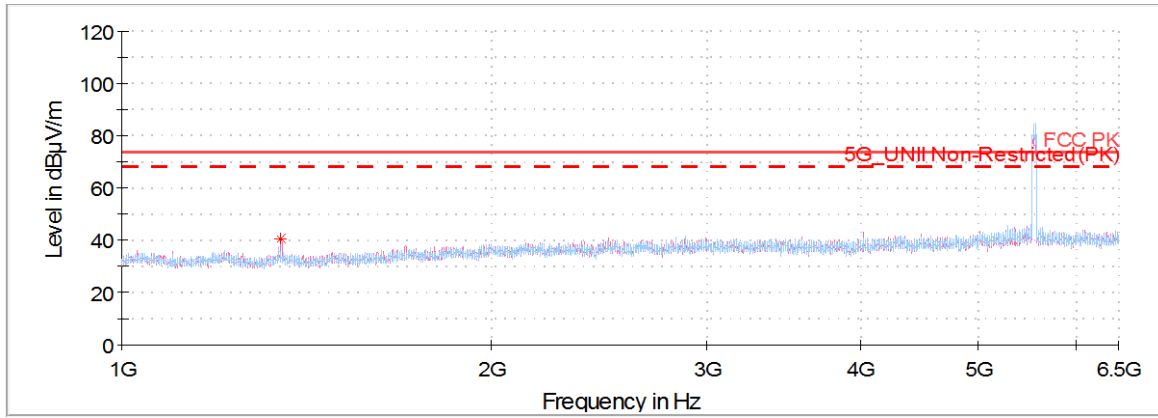


802.11n40 – ANT 1**Lowest Channel (5 510 MHz)**

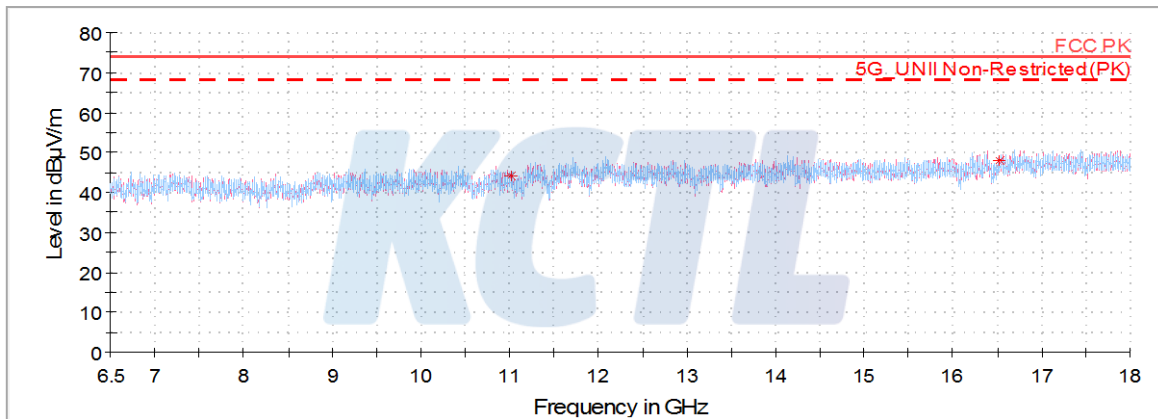
Frequency (MHz)	Pol. (V/H)	Reading (dB(μ V))	Cable Loss (dB)	Amp Gain (dB)	Antenna Factor (dB)	DCCF (dB)	Result (dB(μ V/m))	Limit (dB(μ V/m))	Margin (dB)
Peak data									
1 348.39 ¹⁾	V	49.42	2.80	-36.73	25.19	-	40.68	74.00	33.32
5 458.95 ¹⁾	V	44.12	5.76	-33.55	33.59	-	49.92	74.00	24.08
11 020.94 ¹⁾	H	59.49	8.42	-61.82	38.22	-	44.31	74.00	29.69
16 530.16	V	55.77	10.28	-56.89	38.98	-	48.14	68.20	20.06
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

Horizontal/Vertical for Band-edge

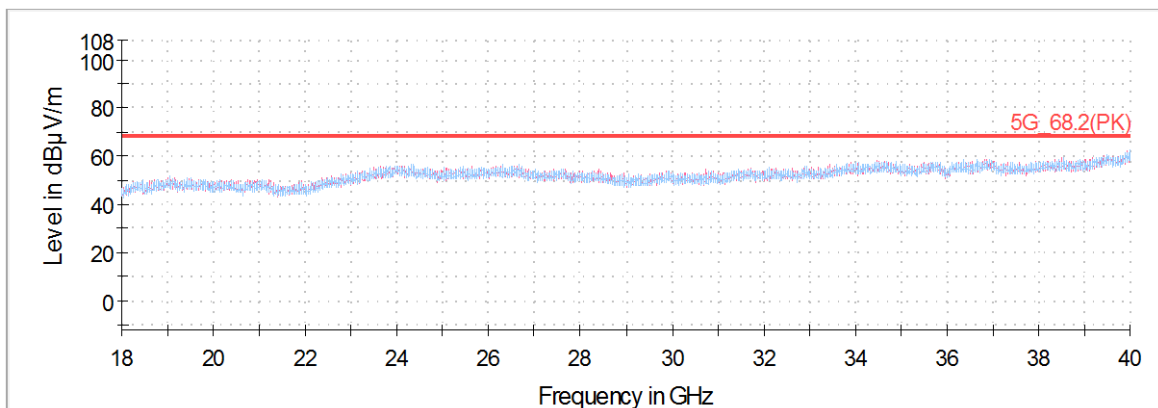
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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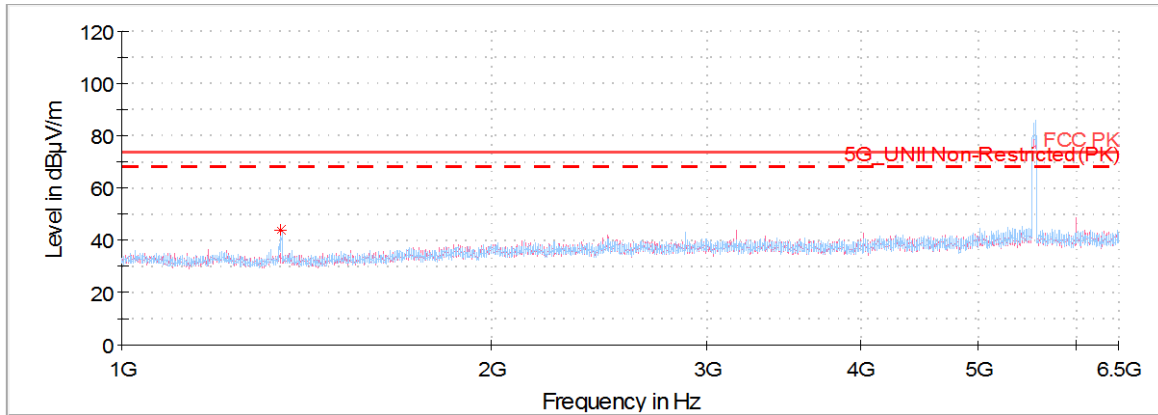
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KCTL**Middle Channel (5 590 MHz)**

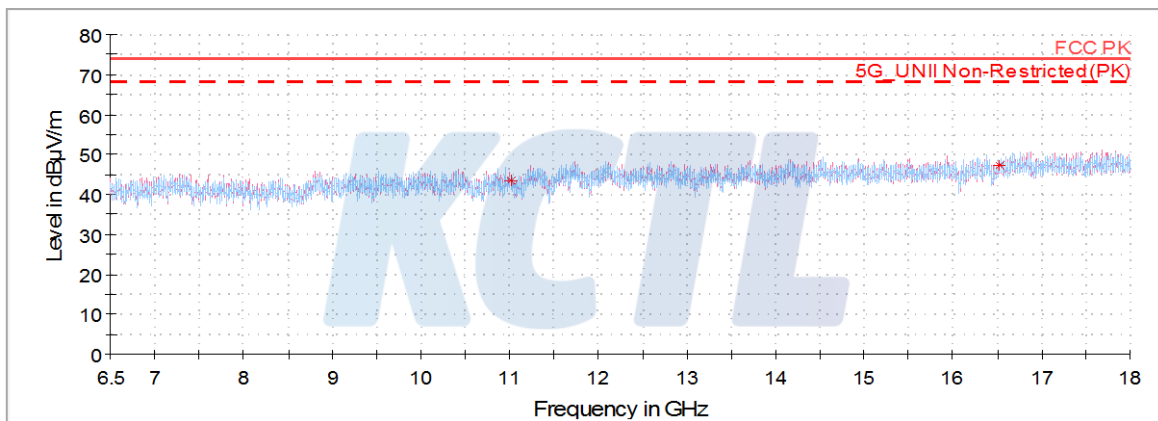
Frequency	Pol.	Reading	Cable Loss	Amp Gain	Antenna Factor	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μ V))	(dB)	(dB)	(dB)	(dB)	(dB(μ V/m))	(dB(μ V/m))	(dB)
Peak data									
1 346.84 ¹⁾	H	52.87	2.80	-36.73	25.19	-	44.13	74.00	29.87
11 180.22 ¹⁾	H	58.78	8.42	-61.83	38.22	-	43.59	74.00	30.41
16 770.52	V	54.93	10.28	-56.90	38.99	-	47.30	68.20	20.90
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

KCTL

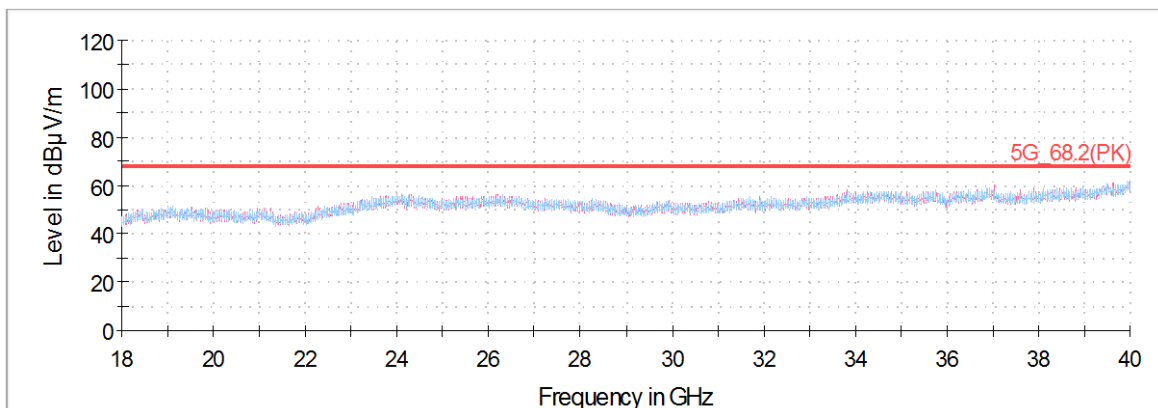
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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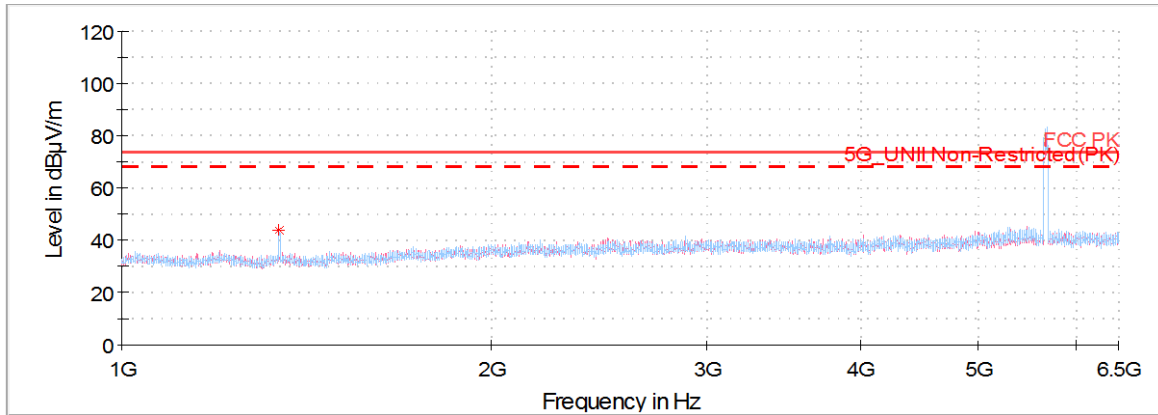
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KCTL**Highest Channel (5 670 MHz)**

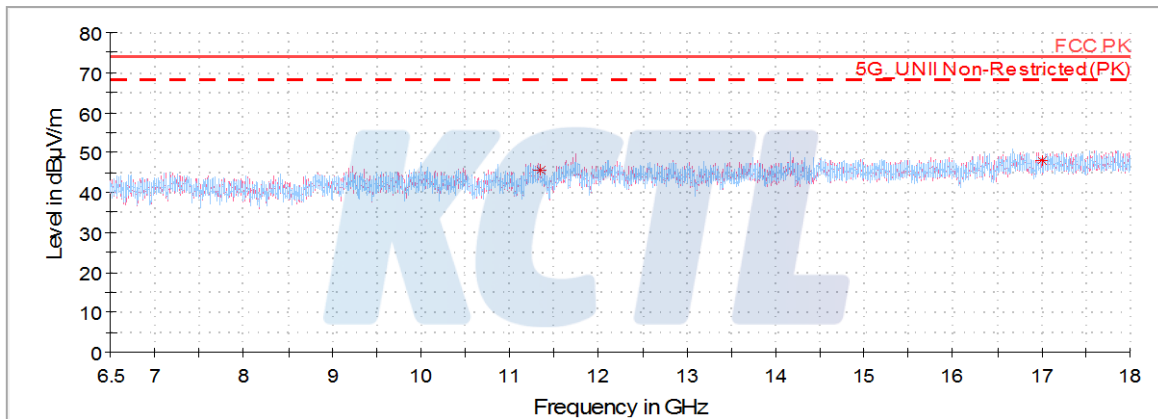
Frequency	Pol.	Reading	Cable Loss	Amp Gain	Antenna Factor	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μ V))	(dB)	(dB)	(dB)	(dB)	(dB(μ V/m))	(dB(μ V/m))	(dB)
Peak data									
1 344.27 ¹⁾	H	52.72	2.80	-36.72	25.18	-	43.98	74.00	30.02
11 340.06 ¹⁾	V	59.55	8.49	-60.91	38.51	-	45.64	74.00	28.36
17 011.36	V	54.78	10.42	-57.69	40.37	-	47.88	68.20	20.32
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

KCTL

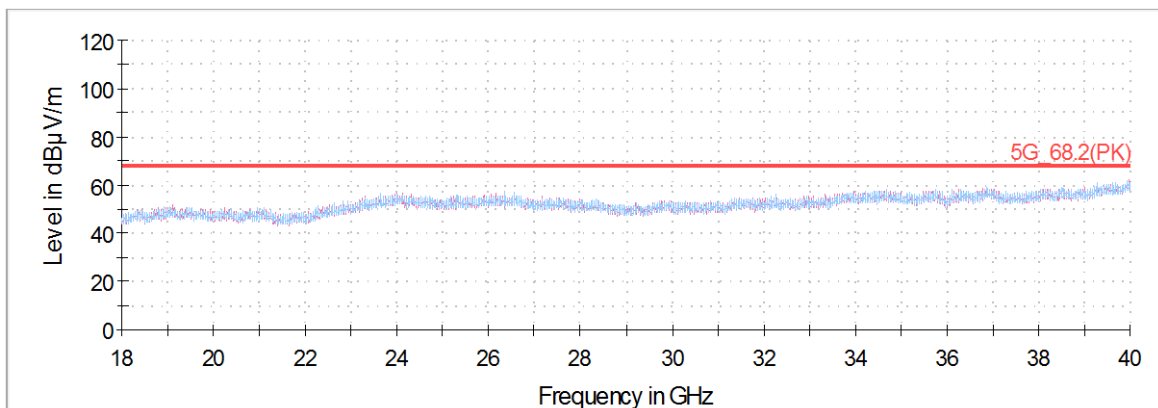
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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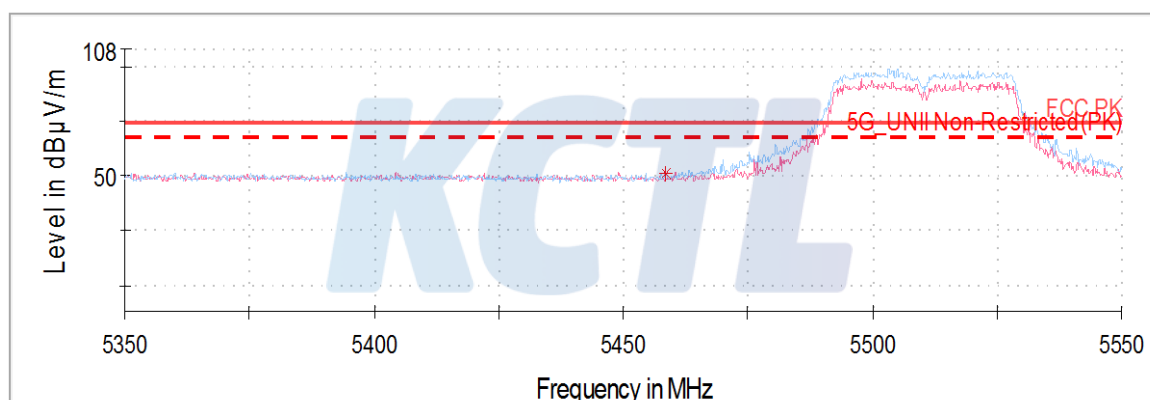


802.11n40 – MIMO

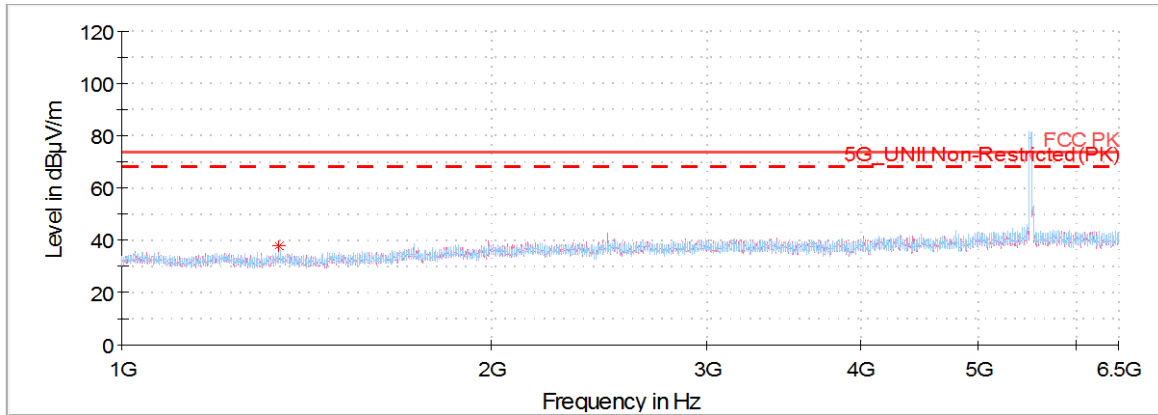
Lowest Channel (5 510 MHz)

Frequency (MHz)	Pol. (V/H)	Reading (dB(μ V))	Cable Loss (dB)	Amp Gain (dB)	Antenna Factor (dB)	DCCF (dB)	Result (dB(μ V/m))	Limit (dB(μ V/m))	Margin (dB)
Peak data									
1 343.75 ¹⁾	H	46.74	2.80	-36.72	25.18	-	38.00	74.00	36.00
5 458.61 ¹⁾	H	45.55	5.76	-33.54	33.59	-	51.36	74.00	22.64
11 019.50 ¹⁾	H	59.16	8.42	-61.83	38.22	-	43.97	74.00	30.03
16 530.16	H	54.58	10.28	-56.89	38.98	-	46.95	68.20	21.25
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

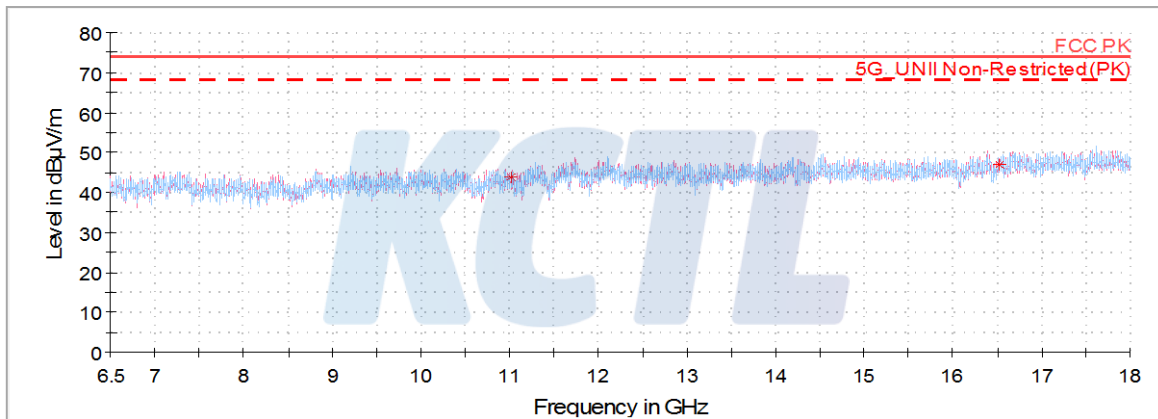
Horizontal/Vertical for Band-edge



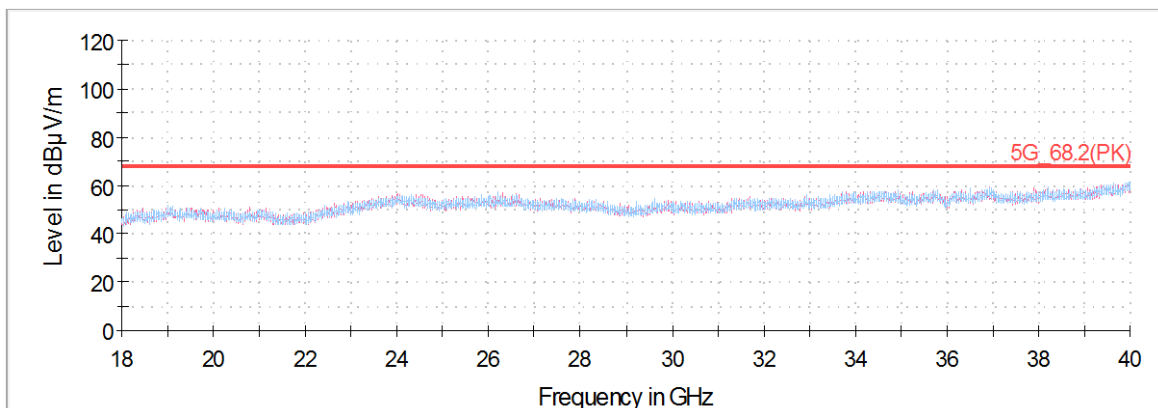
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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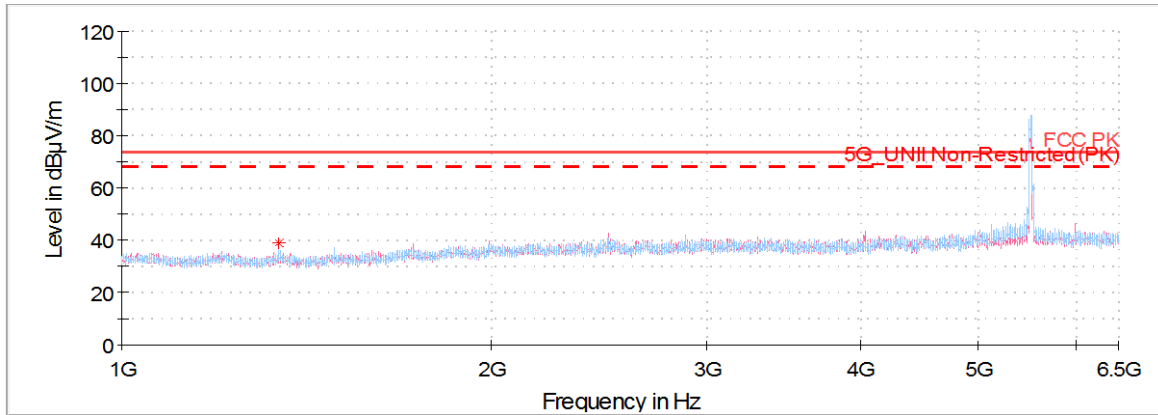
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**Middle Channel (5 590 MHz)**

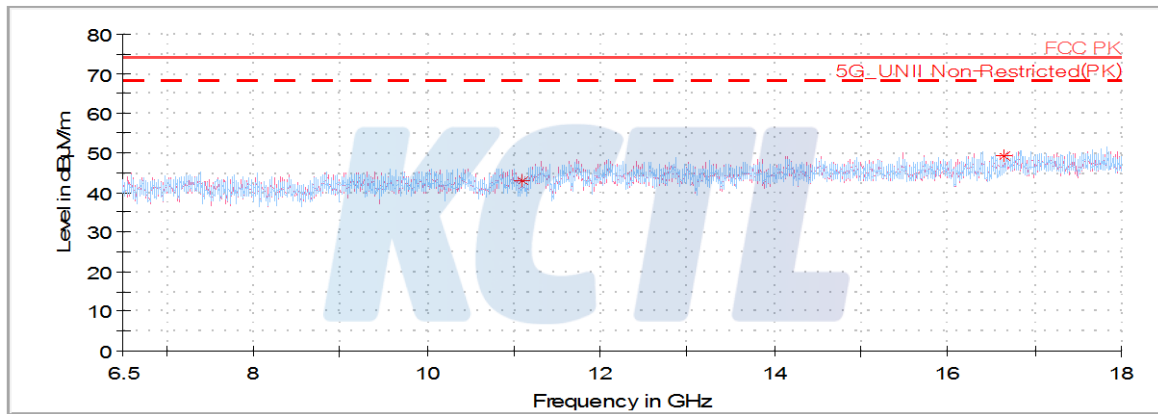
Frequency (MHz)	Pol. (V/H)	Reading (dB(μ V))	Cable Loss (dB)	Amp Gain (dB)	Antenna Factor (dB)	DCCF (dB)	Result (dB(μ V/m))	Limit (dB(μ V/m))	Margin (dB)
Peak data									
1 344.09 ¹⁾	H	47.51	2.80	-36.72	25.18	-	38.77	74.00	35.23
11 180.94 ¹⁾	V	57.65	8.44	-61.60	38.29	-	42.78	74.00	31.22
16 770.91	H	56.60	10.32	-57.08	39.32	-	49.16	68.20	19.04
Average Data									
No spurious emissions were detected within 20 dB of the limit.									



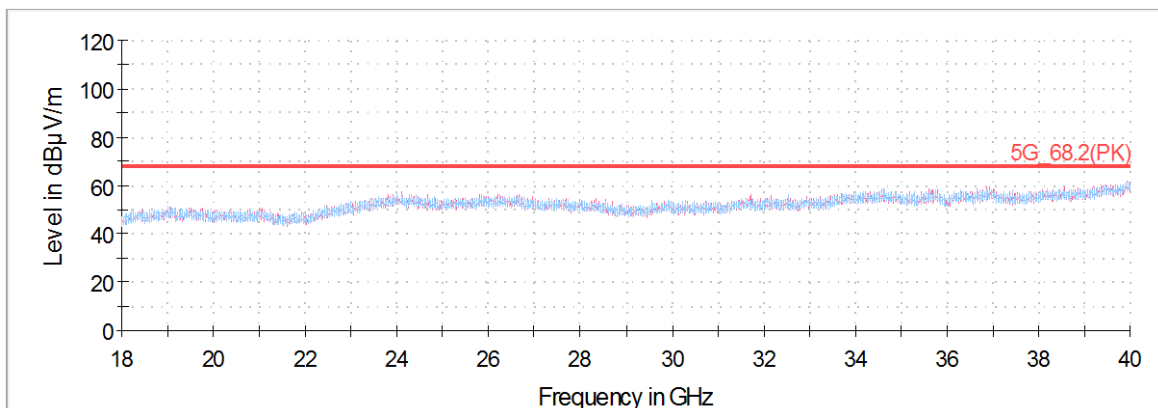
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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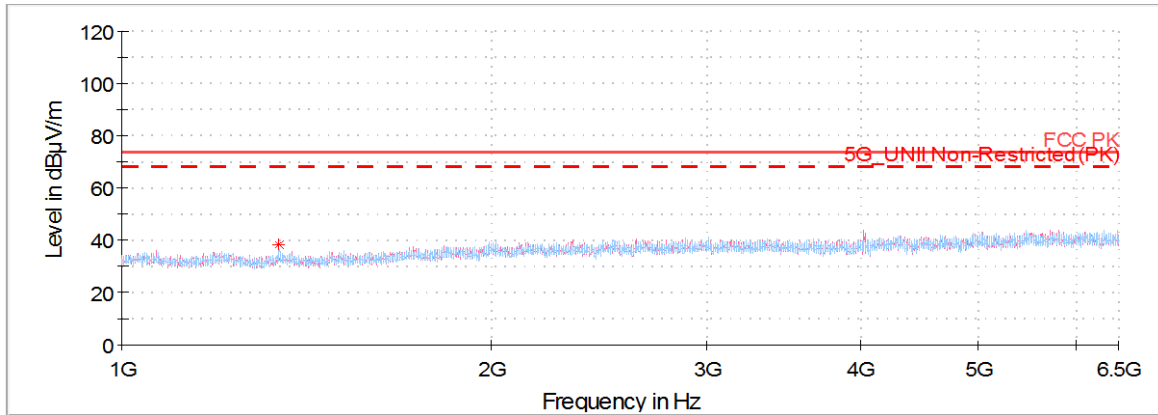
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KCTL**Highest Channel (5 670 MHz)**

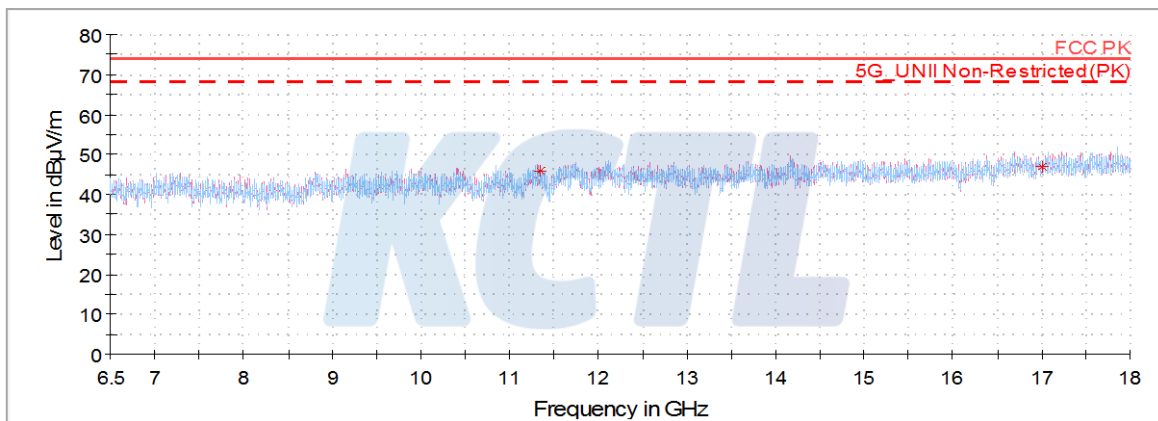
Frequency	Pol.	Reading	Cable Loss	Amp Gain	Antenna Factor	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μ V))	(dB)	(dB)	(dB)	(dB)	(dB(μ V/m))	(dB(μ V/m))	(dB)
Peak data									
1 343.92 ¹⁾	H	47.17	2.80	-36.72	25.18	-	38.43	74.00	35.57
11 340.78 ¹⁾	H	59.91	8.49	-60.90	38.51	-	46.01	74.00	27.99
17 010.28	V	53.84	10.42	-57.68	40.36	-	46.94	68.20	21.26
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

KCTL

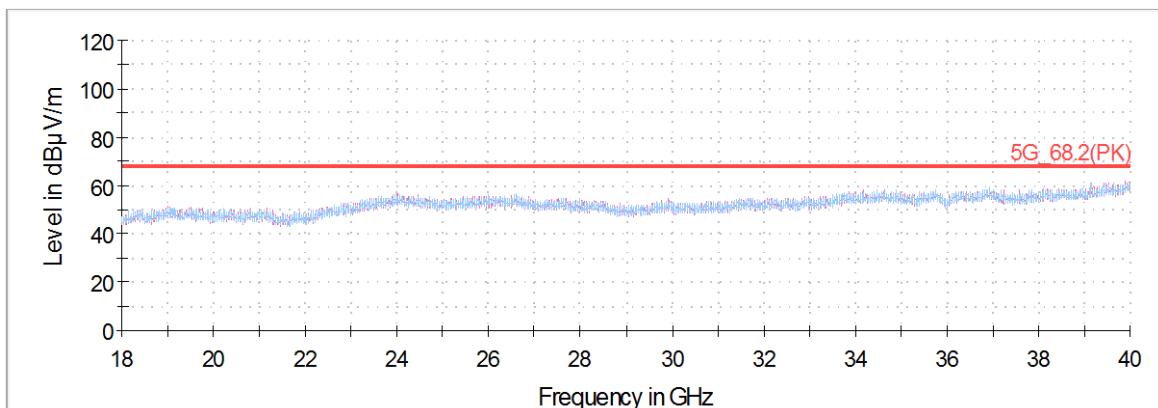
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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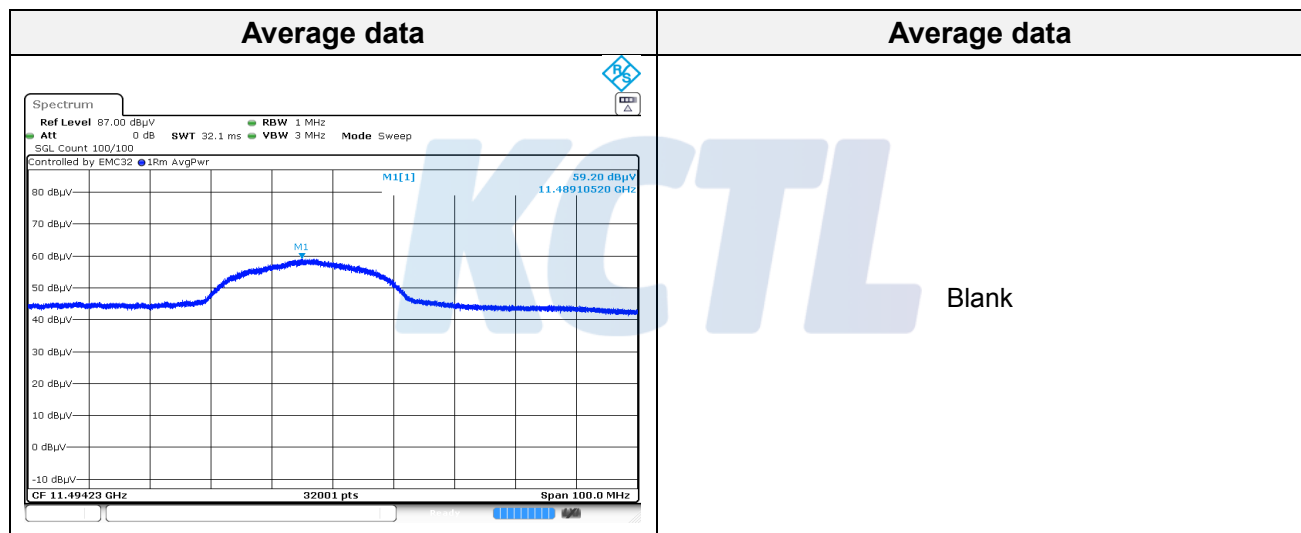
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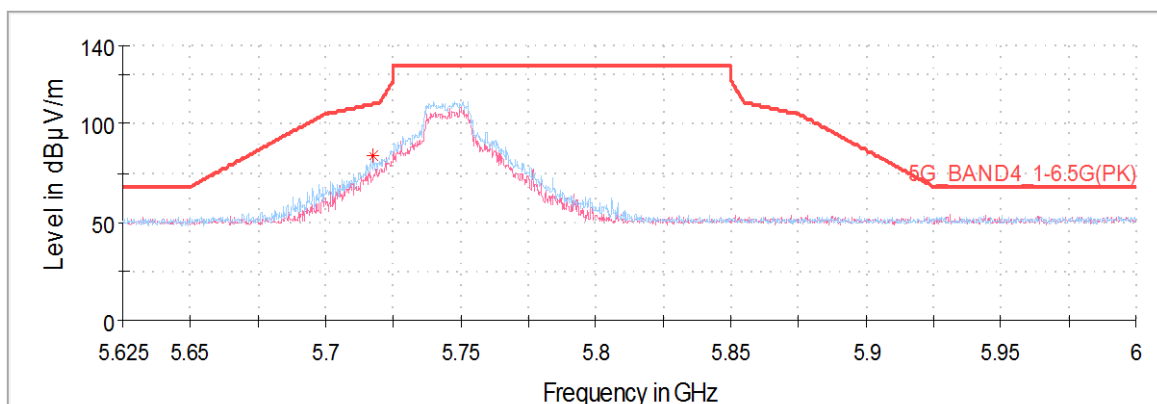
Test results (Above 1 000 MHz) U-NII-3 802.11a – ANT 0

Lowest Channel (5 745 MHz)

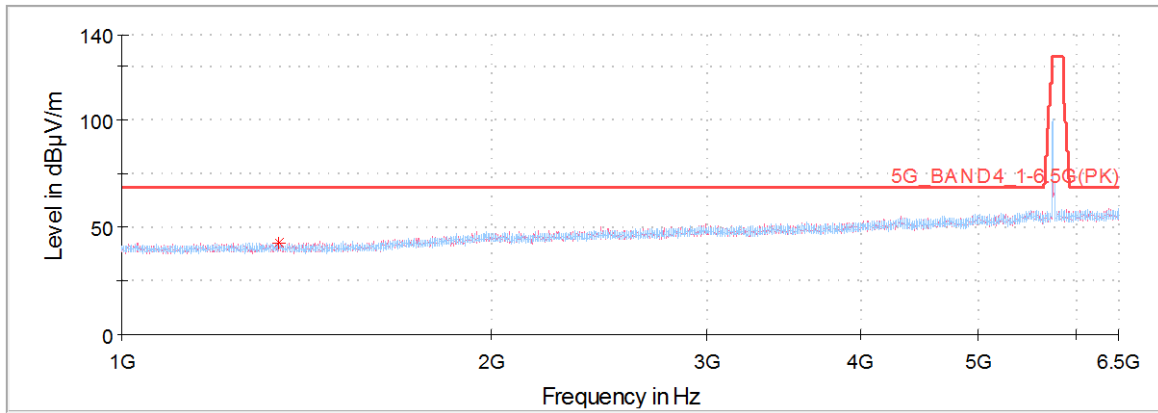
Frequency	Pol.	Reading	Cable Loss	Amp Gain	Antenna Factor	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data									
1 340.83 ¹⁾	V	51.73	2.79	-36.69	25.16	-	42.99	74.00	31.01
5 717.80	H	76.45	5.92	-32.44	33.98	-	83.91	110.18	26.27
11 494.23 ¹⁾	V	69.13	8.52	-60.45	38.64	-	55.84	74.00	18.16
17 235.25	V	68.13	10.53	-59.45	41.71	-	60.92	68.20	7.28
Average Data									
11 494.23 ¹⁾	V	59.20	8.52	-60.45	38.64	0.11	46.02	54.00	7.98



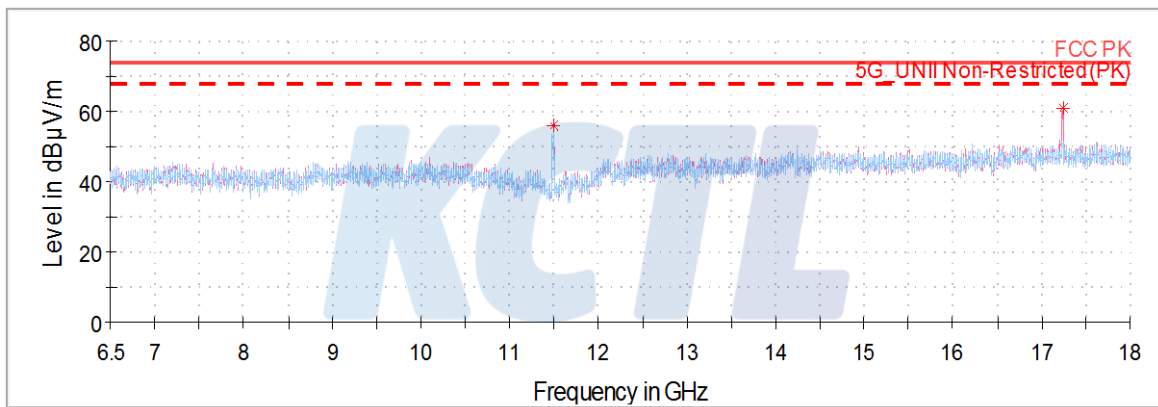
Horizontal/Vertical for Band-edge



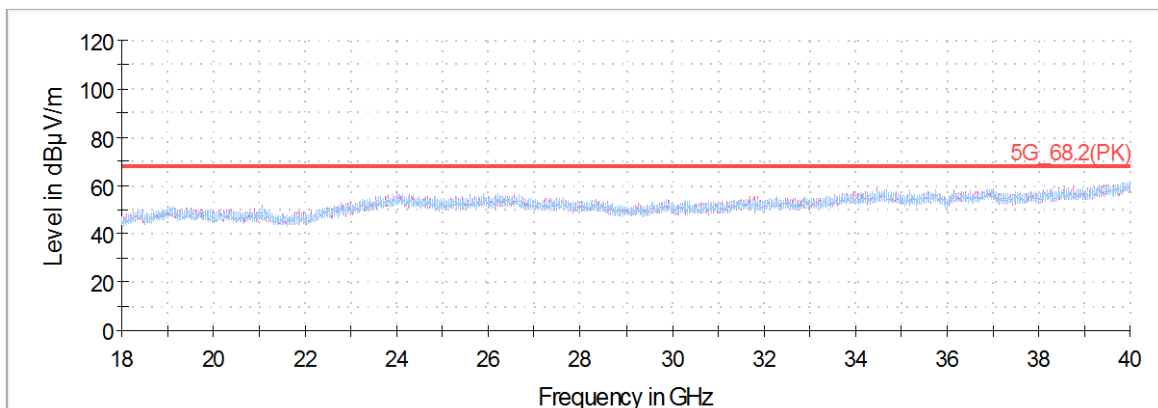
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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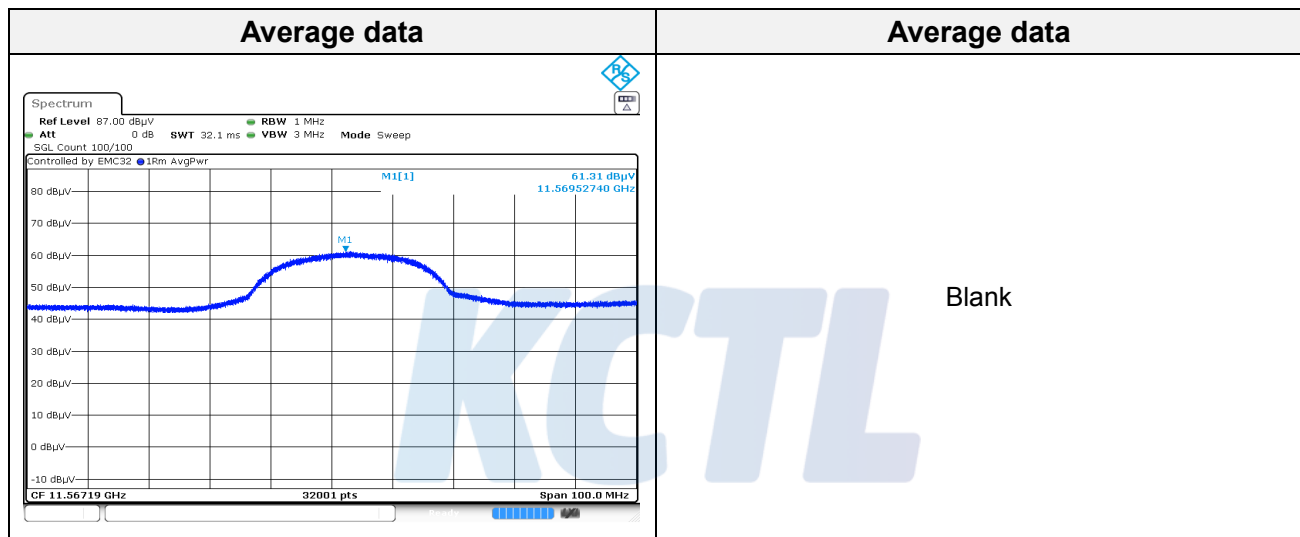
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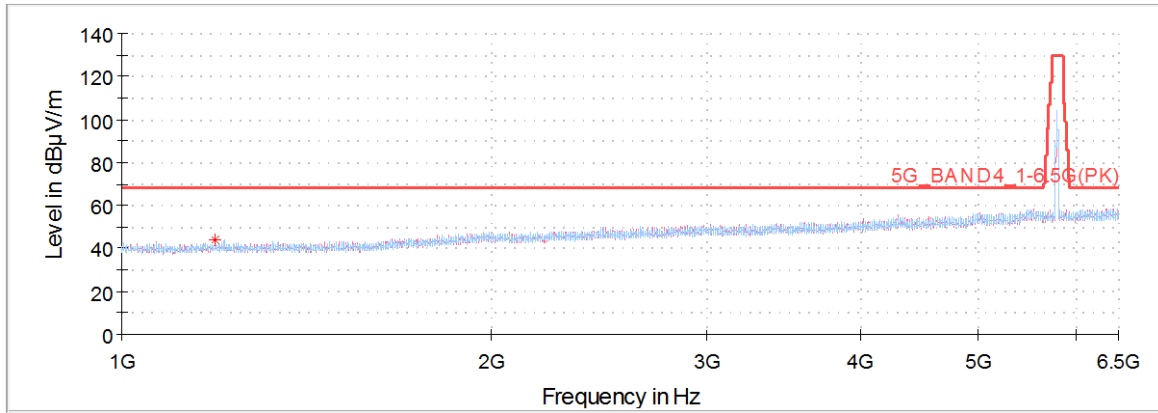


Middle Channel (5 785 MHz)

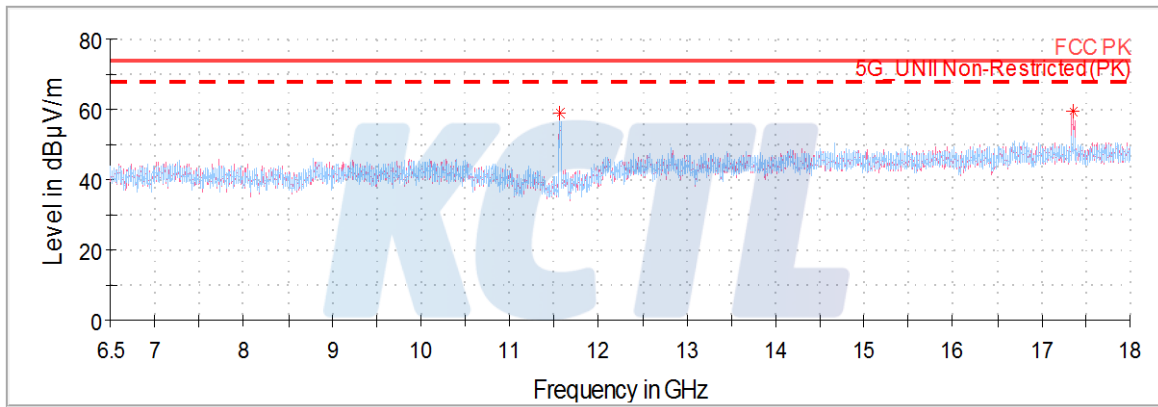
Frequency	Pol.	Reading	Cable Loss	Amp Gain	Antenna Factor	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data									
1 192.33 ¹⁾	H	53.09	2.65	-36.04	24.57	-	44.27	74.00	29.73
11 567.19 ¹⁾	H	72.02	8.54	-60.40	38.71	-	58.87	74.00	15.13
17 354.92	V	67.01	10.58	-60.39	42.43	-	59.63	68.20	8.57
Average Data									
11 567.19 ¹⁾	H	61.31	8.54	-60.40	38.71	0.11	48.27	54.00	5.73



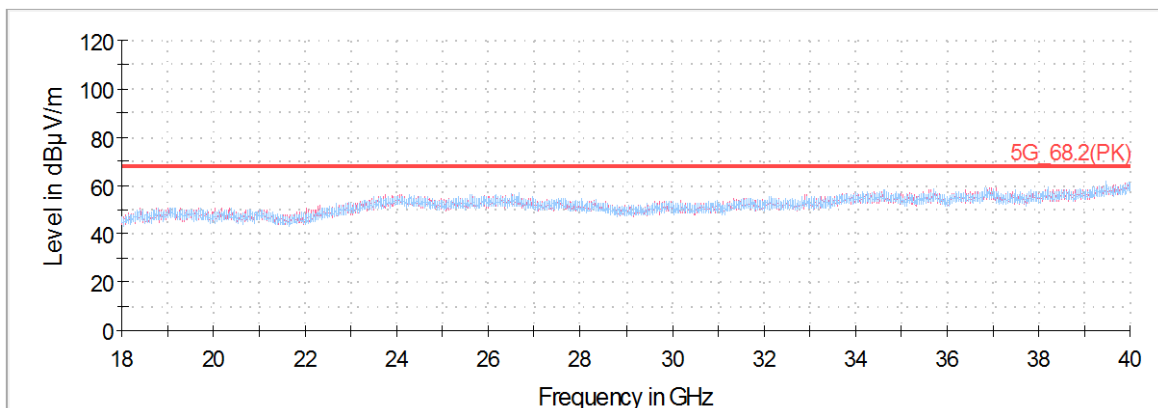
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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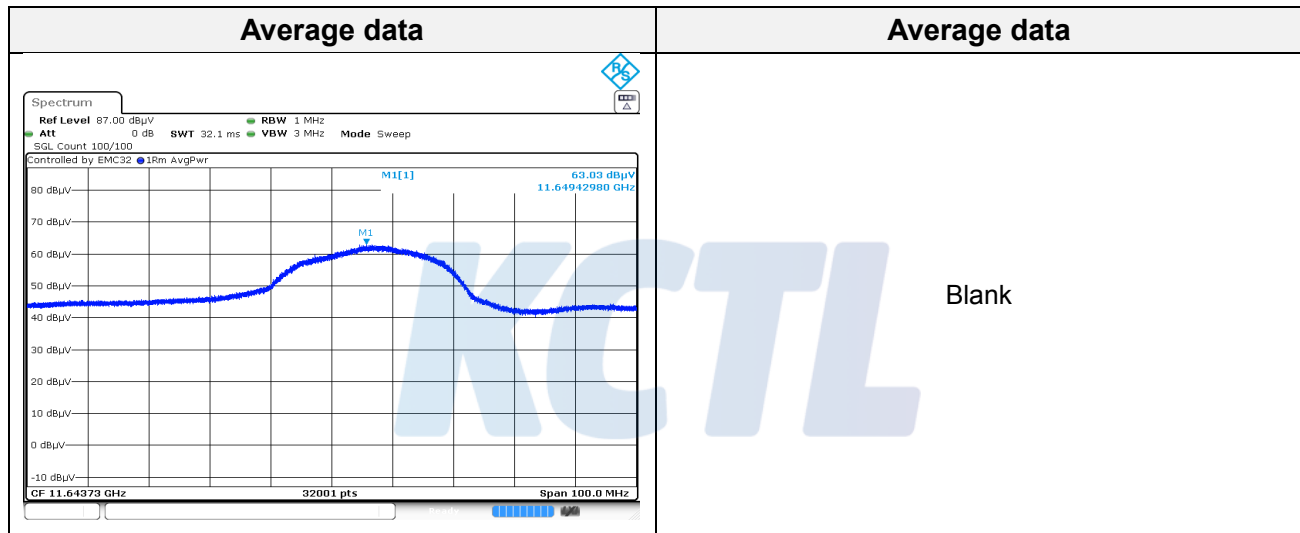
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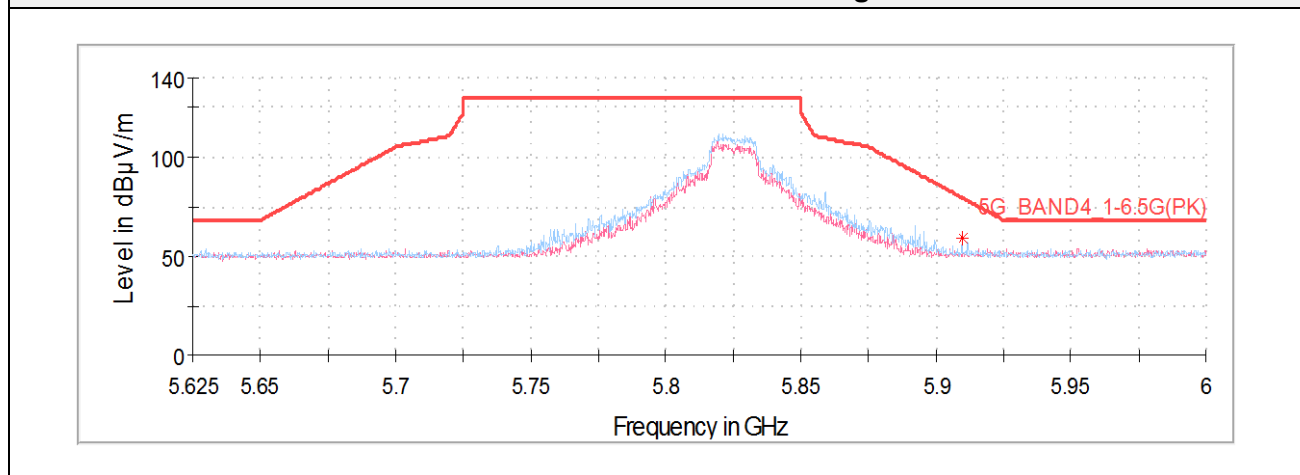


Highest Channel (5 825 MHz)

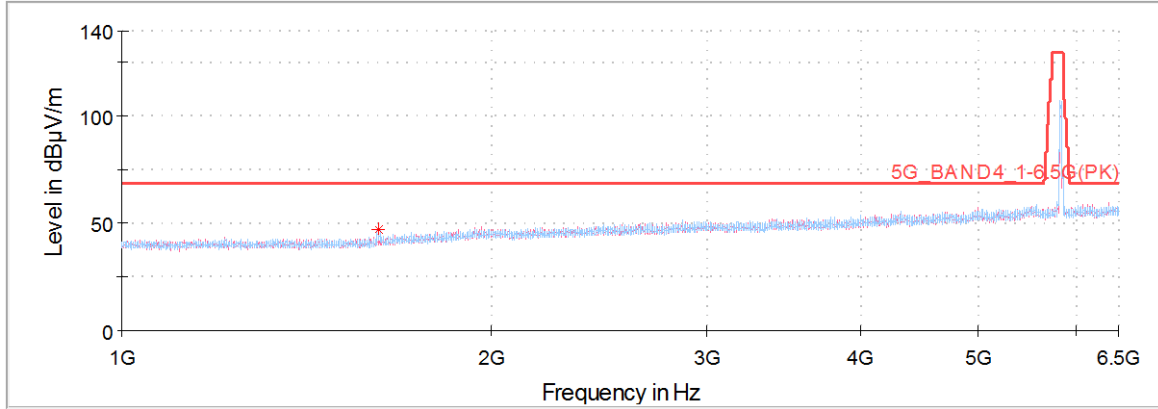
Frequency	Pol.	Reading	Cable Loss	Amp Gain	Antenna Factor	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data									
1 620.64 ¹⁾	H	55.24	3.06	-37.21	26.28	-	47.37	74.00	26.63
5 909.61	H	51.41	6.04	-32.50	34.26	-	59.21	79.59	20.38
11 643.73 ¹⁾	V	74.05	8.55	-60.34	38.78	-	61.04	74.00	12.96
17 473.52	V	68.02	10.64	-61.32	43.14	-	60.48	68.20	7.72
Average Data									
11 643.73 ¹⁾	V	63.03	8.55	-60.34	38.78	0.11	50.13	54.00	3.87



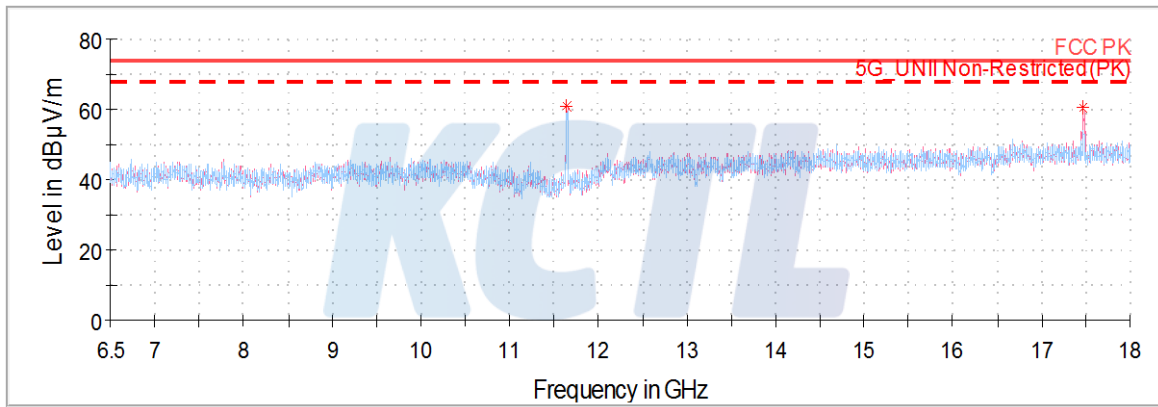
Horizontal/Vertical for Band-edge



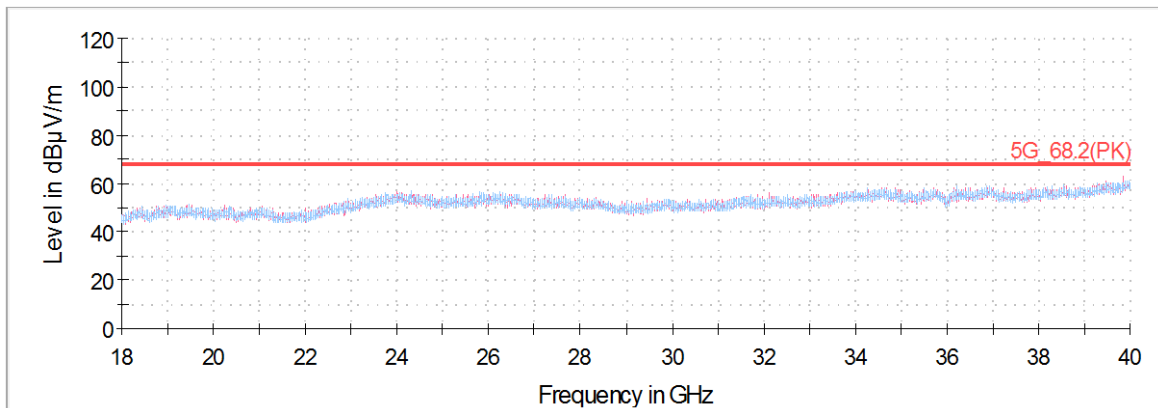
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



KCTL Inc.

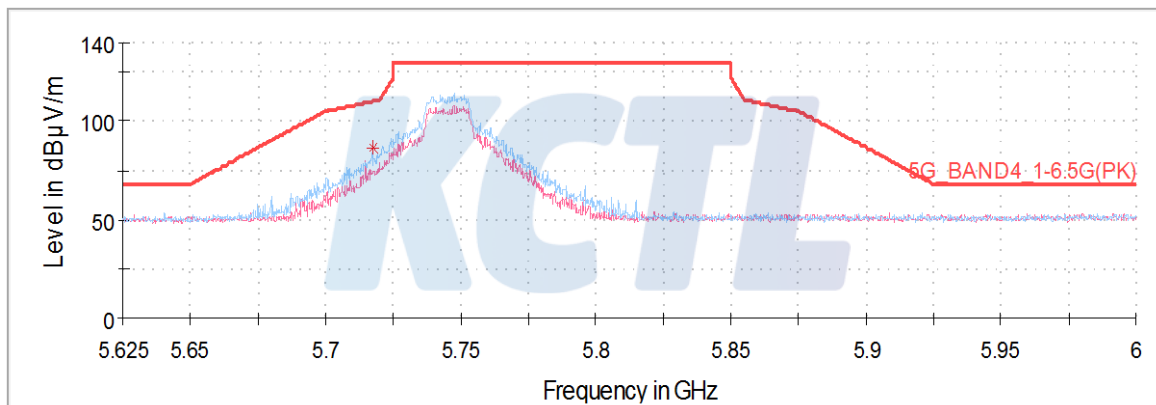
65, Sinwon-ro, Yeongtong-gu,
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TEL: 82-31-285-0894 FAX: 82-505-299-8311
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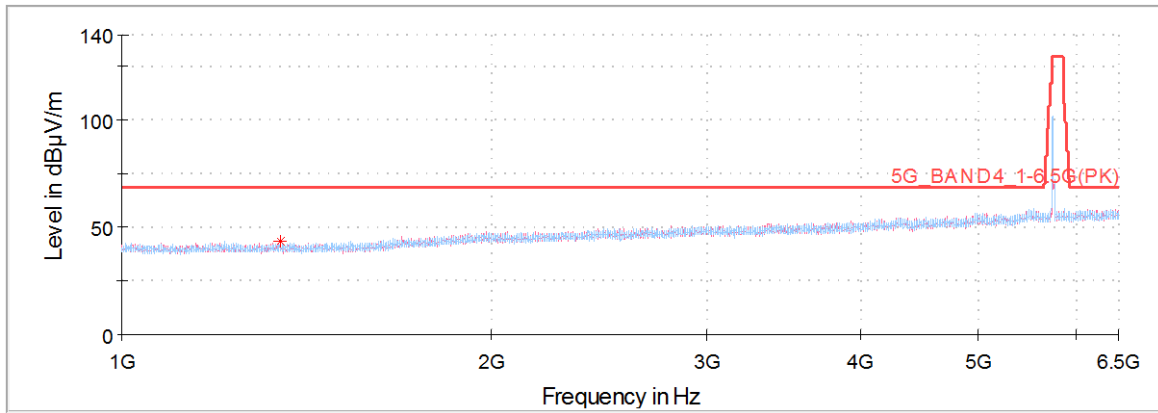
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**802.11a – ANT 1****Lowest Channel (5 745 MHz)**

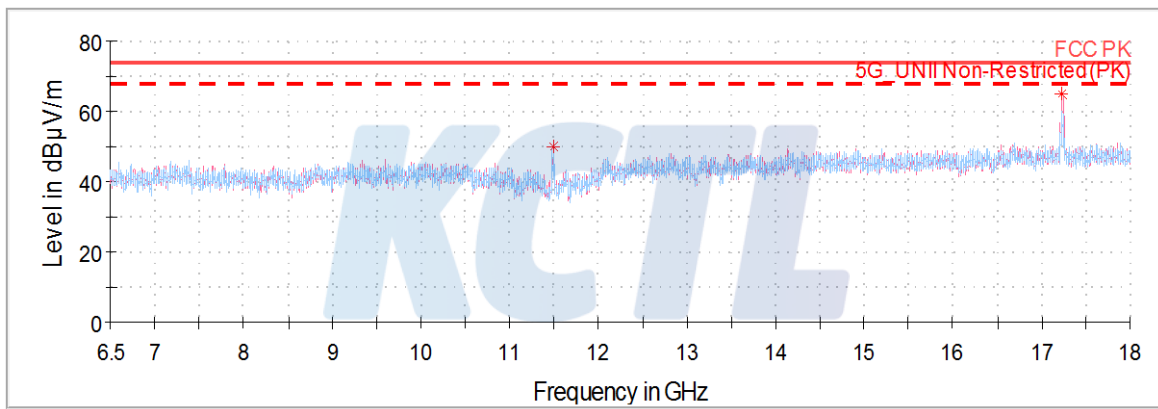
Frequency (MHz)	Pol. (V/H)	Reading (dB(μ V))	Cable Loss (dB)	Amp Gain (dB)	Antenna Factor (dB)	DCCF (dB)	Result (dB(μ V/m))	Limit (dB(μ V/m))	Margin (dB)
Peak data									
1 347.02 ¹⁾	H	52.27	2.80	-36.73	25.19	-	43.53	74.00	30.47
5 717.28	H	79.03	5.92	-32.44	33.98	-	86.49	110.04	23.55
11 493.52 ¹⁾	V	63.12	8.52	-60.45	38.64	-	49.83	74.00	24.17
17 229.14	V	72.22	10.53	-59.40	41.67	-	65.02	68.20	3.18
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

Horizontal/Vertical for Band-edge

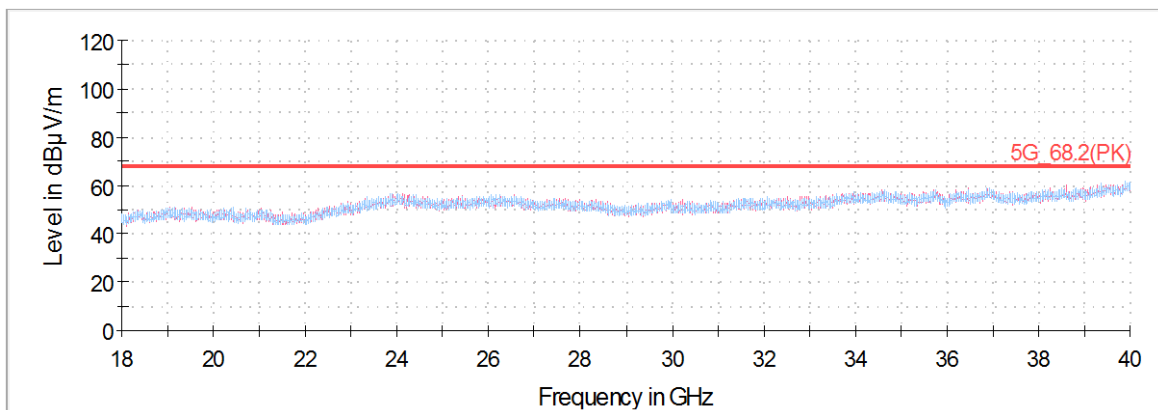
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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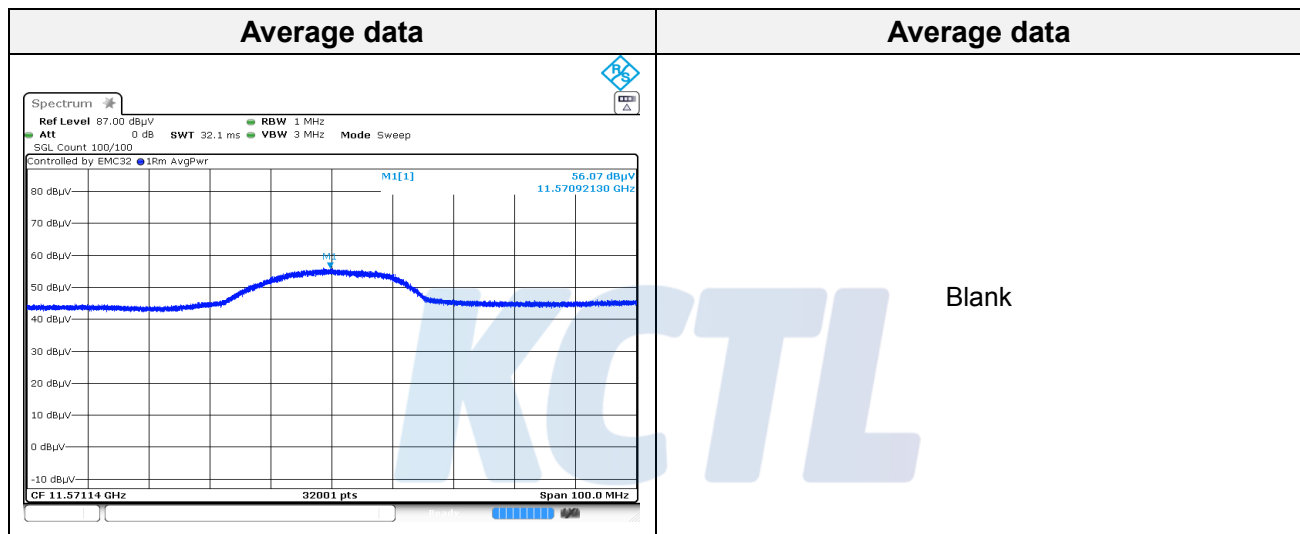
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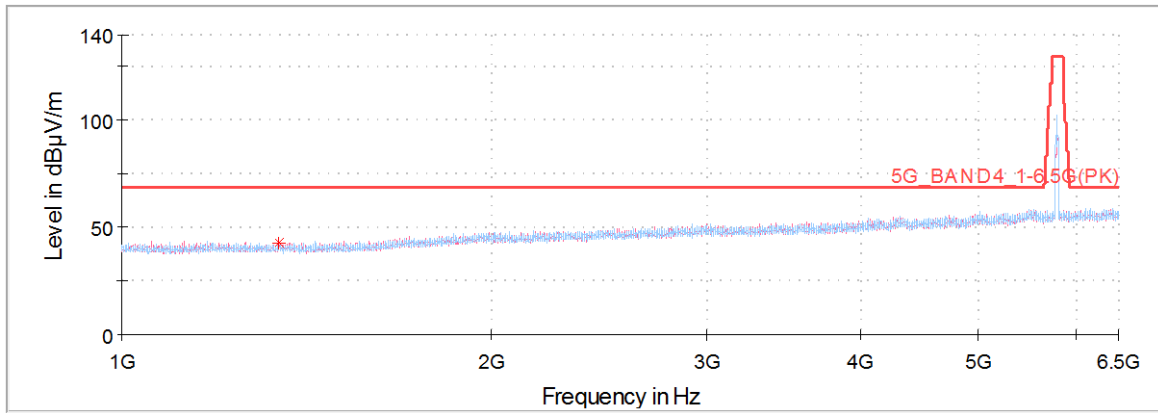


Middle Channel (5 785 MHz)

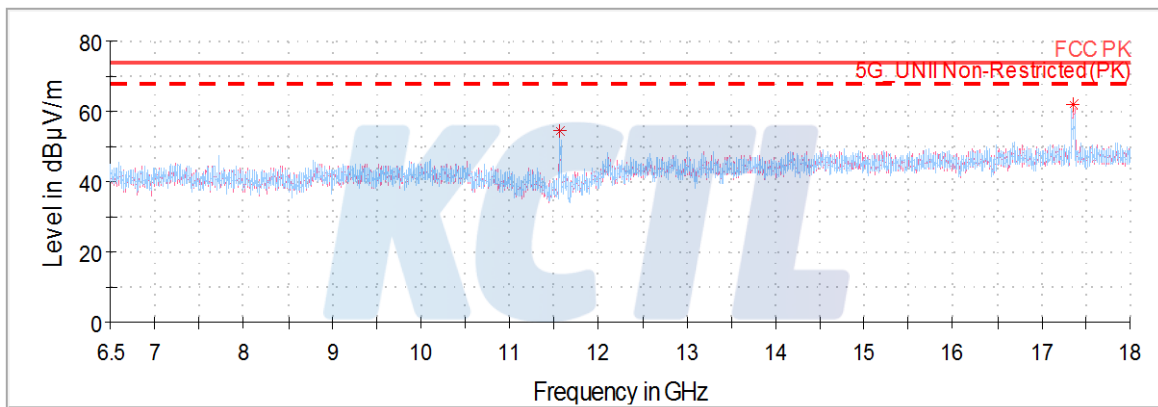
Frequency	Pol.	Reading	Cable Loss	Amp Gain	Antenna Factor	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μ V))	(dB)	(dB)	(dB)	(dB)	(dB(μ V/m))	(dB(μ V/m))	(dB)
Peak data									
1 341.34 ¹⁾	V	51.43	2.79	-36.70	25.17	-	42.69	74.00	31.31
11 571.14 ¹⁾	H	67.42	8.54	-60.39	38.71	-	54.28	74.00	19.72
17 361.39	V	69.59	10.59	-60.45	42.47	-	62.20	68.20	6.00
Average Data									
11 571.14 ¹⁾	H	56.07	8.54	-60.39	38.71	0.11	43.04	54.00	10.96



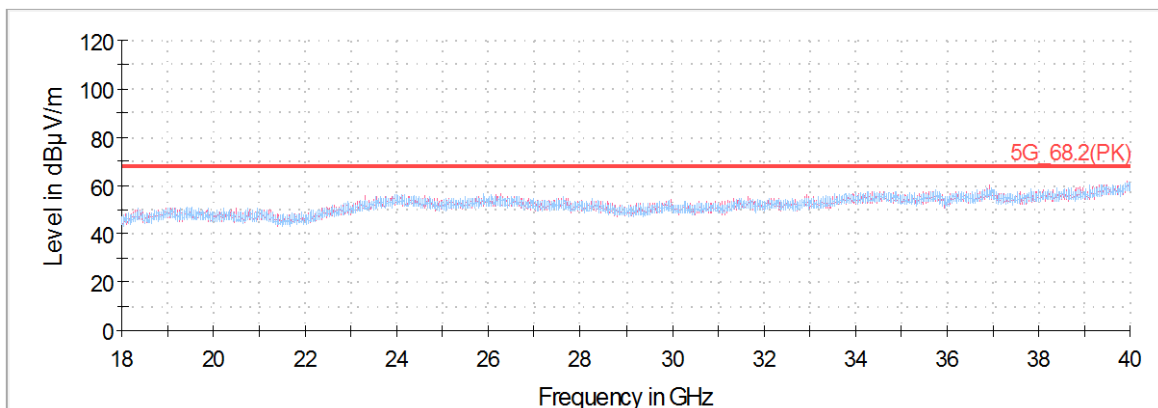
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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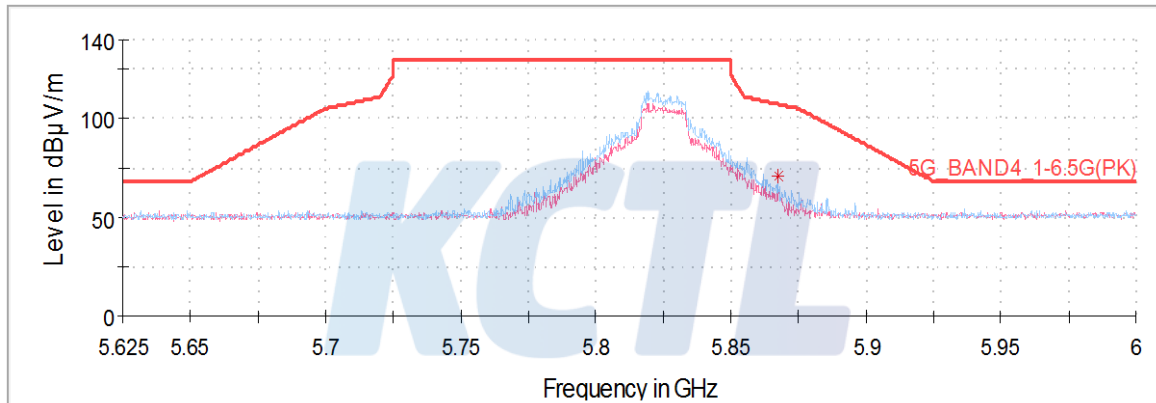
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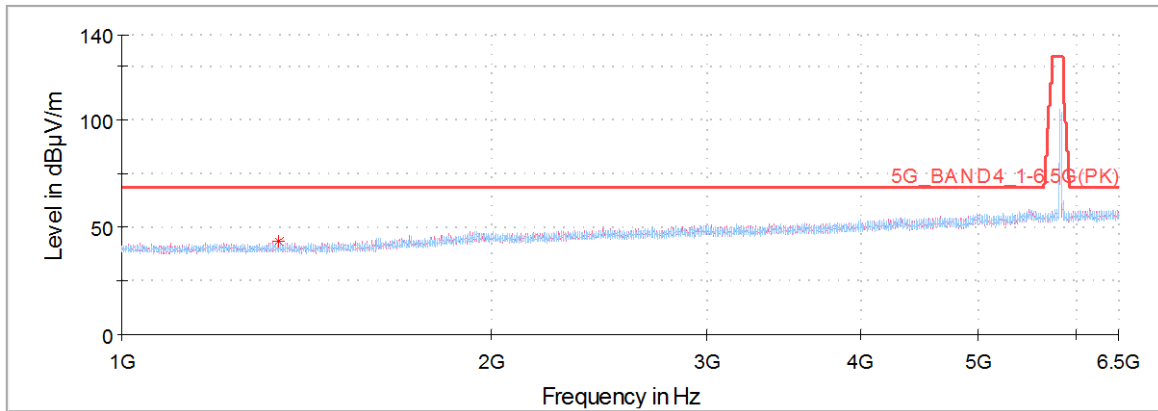
Highest Channel (5 825 MHz)

Frequency (MHz)	Pol. (V/H)	Reading (dB(μV))	Cable Loss (dB)	Amp Gain (dB)	Antenna Factor (dB)	DCCF (dB)	Result (dB(μV/m))	Limit (dB(μV/m))	Margin (dB)
Peak data									
1 344.44 ¹⁾	H	52.48	2.80	-36.72	25.18	-	43.74	74.00	30.26
5 867.33	H	62.88	6.02	-32.47	34.20	-	70.63	107.35	36.72
11 651.64 ¹⁾	H	65.41	8.56	-60.35	38.79	-	52.42	74.00	21.58
17 471.36	V	71.54	10.64	-61.31	43.13	-	64.00	68.20	4.20
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

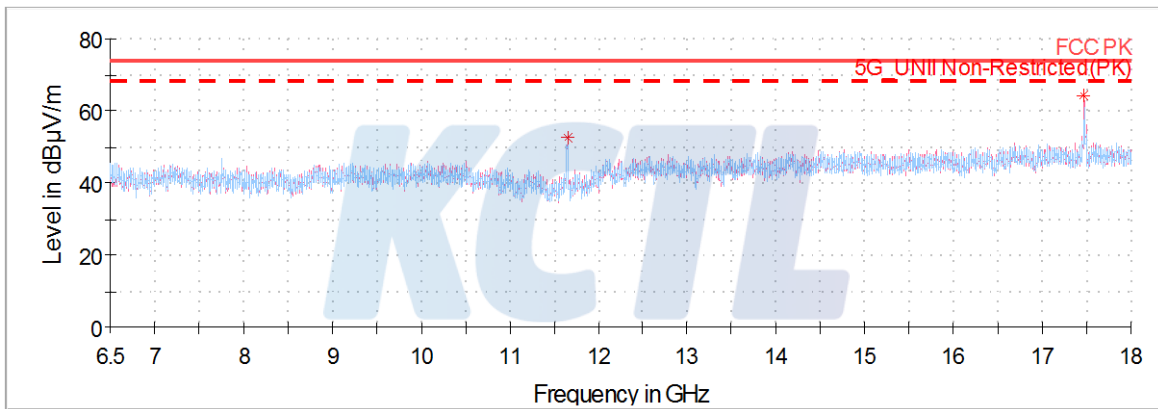
Horizontal/Vertical for Band-edge



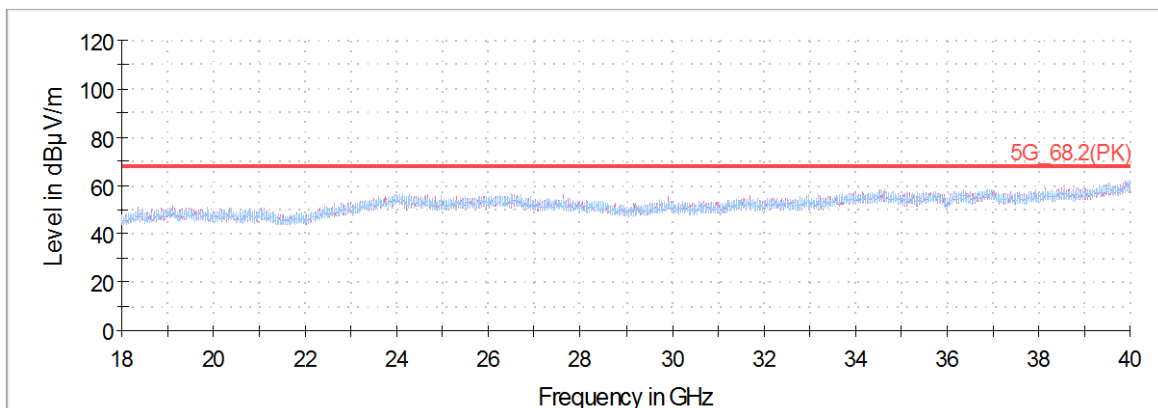
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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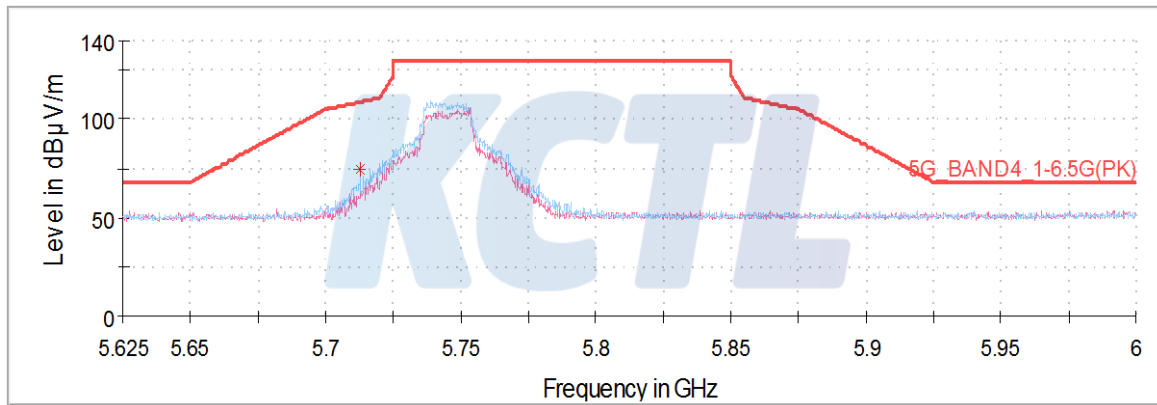


802.11n20 – ANT 0

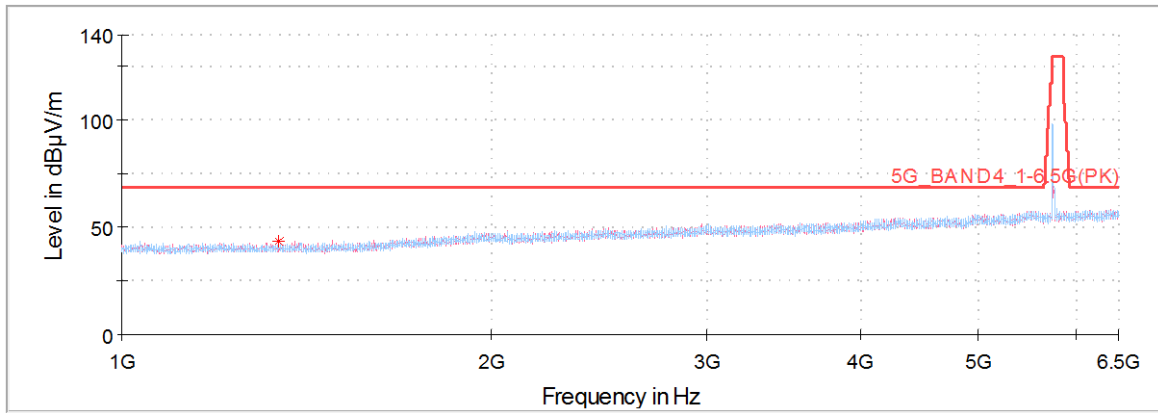
Lowest Channel (5 745 MHz)

Frequency (MHz)	Pol. (V/H)	Reading (dB(μ V))	Cable Loss (dB)	Amp Gain (dB)	Antenna Factor (dB)	DCCF (dB)	Result (dB(μ V/m))	Limit (dB(μ V/m))	Margin (dB)
Peak data									
1 343.92 ¹⁾	H	52.44	2.80	-36.72	25.18	-	43.70	74.00	30.30
5 712.81	H	67.03	5.92	-32.45	33.97	-	74.47	108.79	34.32
11 493.52 ¹⁾	V	66.01	8.52	-60.45	38.64	-	52.72	74.00	21.28
17 236.33	V	61.74	10.53	-59.46	41.72	-	54.53	68.20	13.67
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

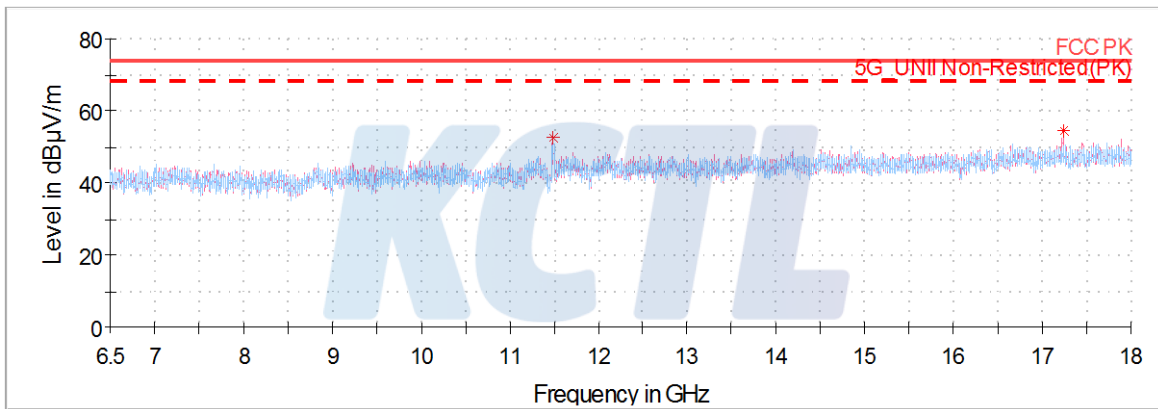
Horizontal/Vertical for Band-edge



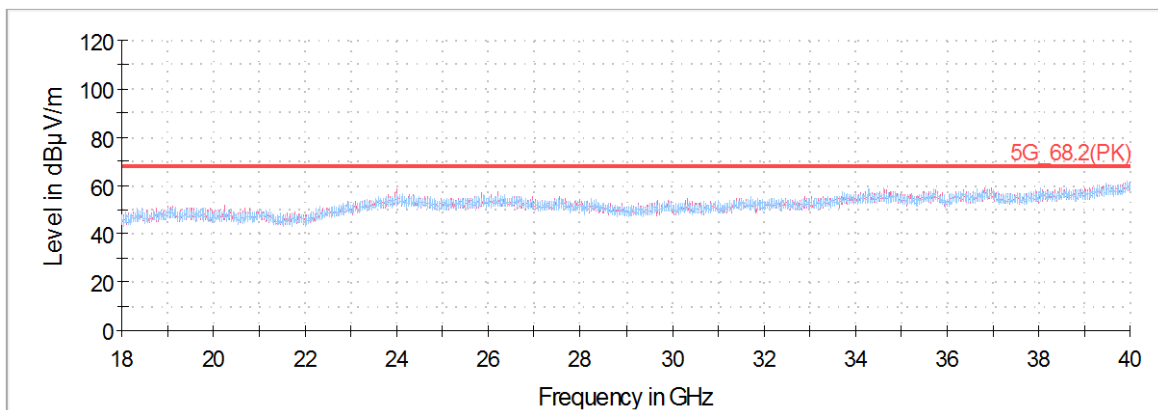
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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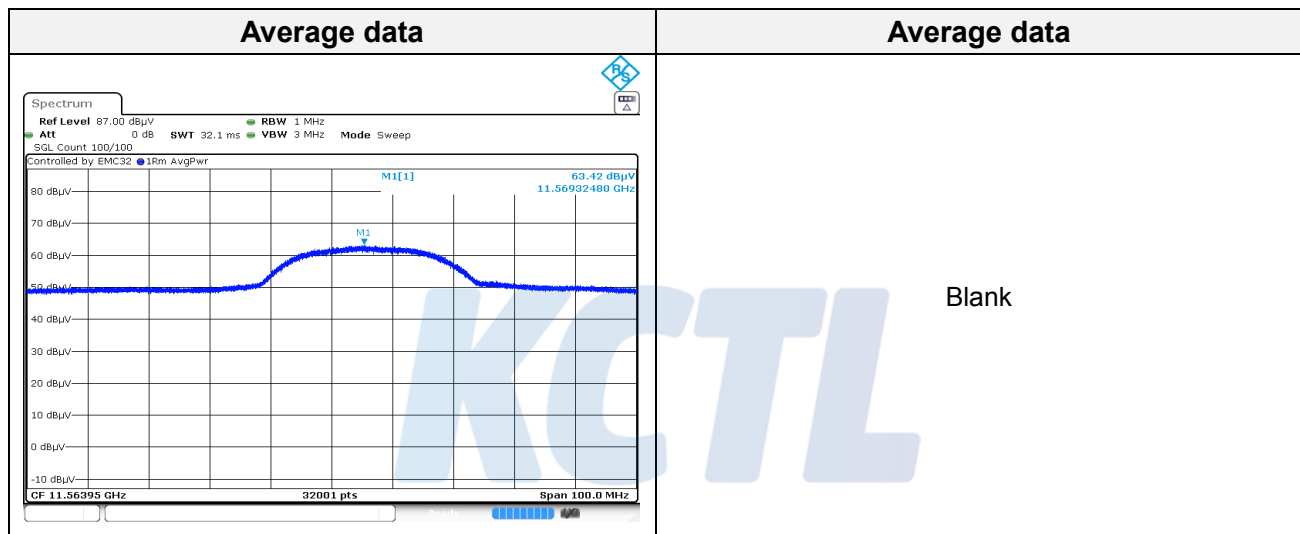
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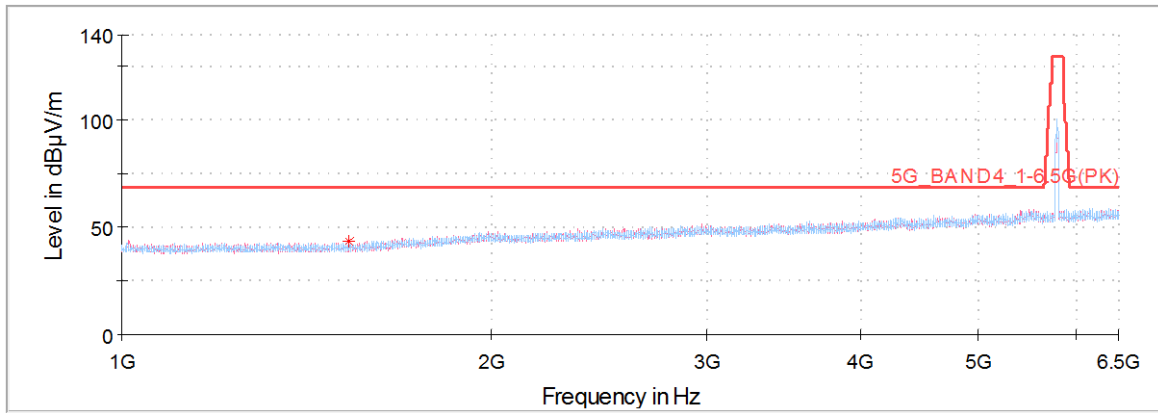


Middle Channel (5 785 MHz)

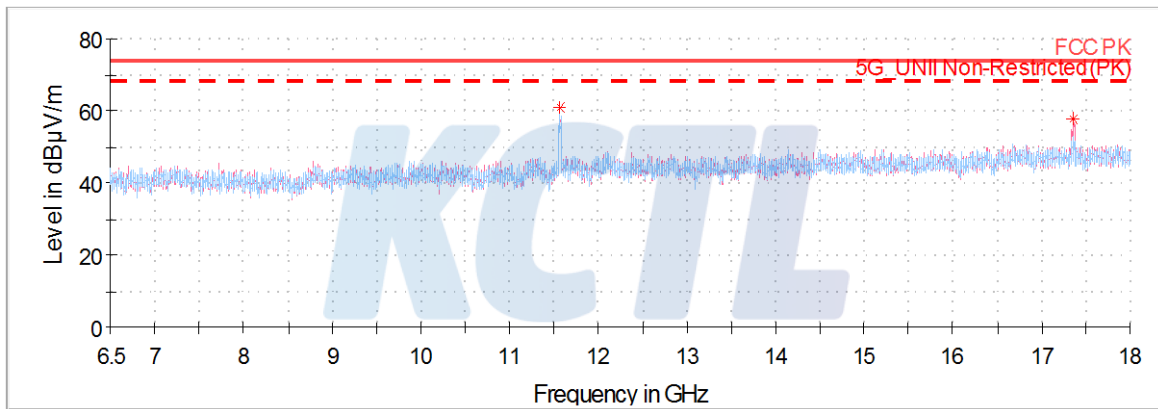
Frequency	Pol.	Reading	Cable Loss	Amp Gain	Antenna Factor	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data									
1 534.02 ¹⁾	H	52.01	2.98	-37.37	25.94	-	43.56	74.00	30.44
11 563.95 ¹⁾	H	74.31	8.54	-60.40	38.71	-	61.16	74.00	12.84
17 358.52	V	65.19	10.59	-60.42	42.45	-	57.81	68.20	10.39
Average Data									
11 563.95 ¹⁾	H	63.42	8.54	-60.40	38.71	0.10	50.37	54.00	3.63



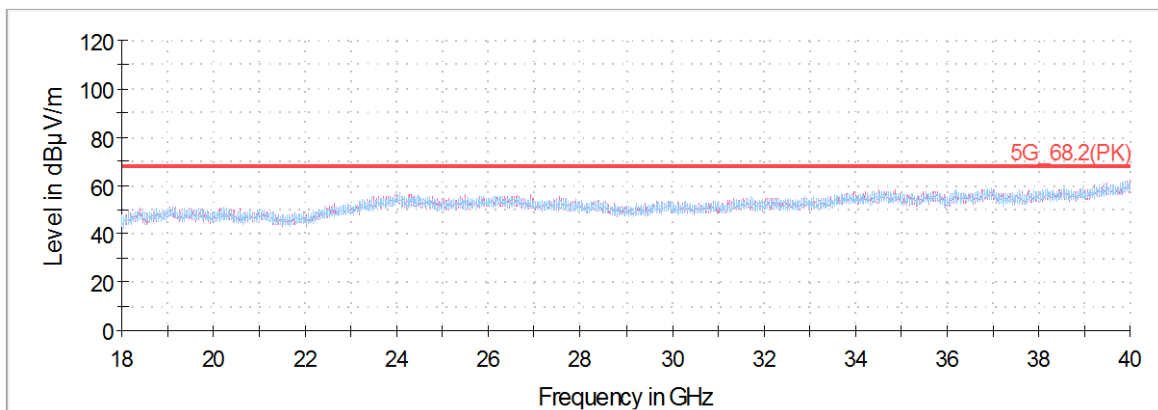
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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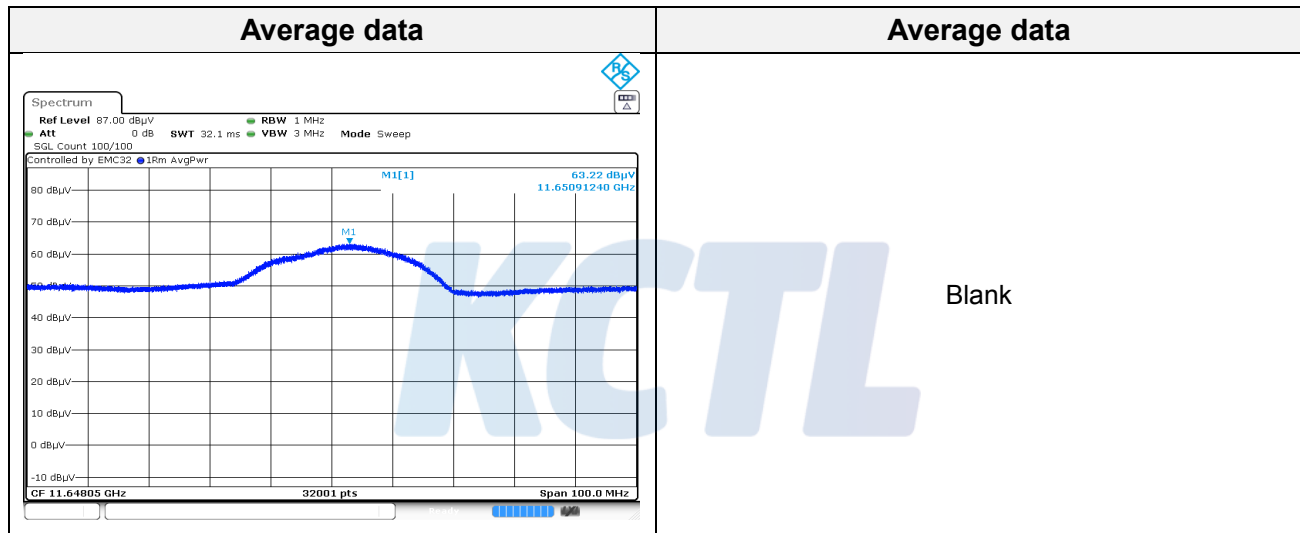
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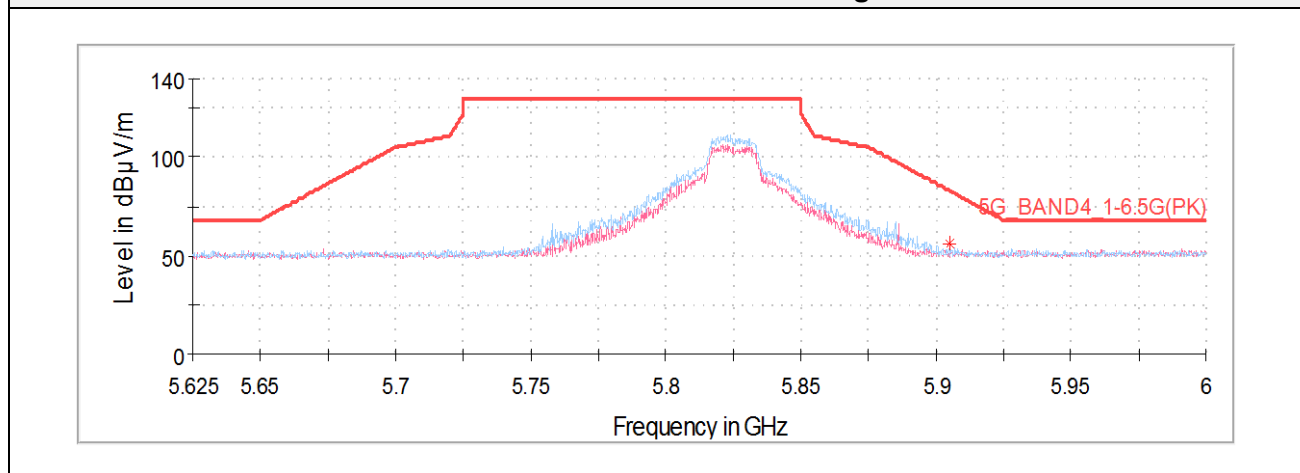


Highest Channel (5 825 MHz)

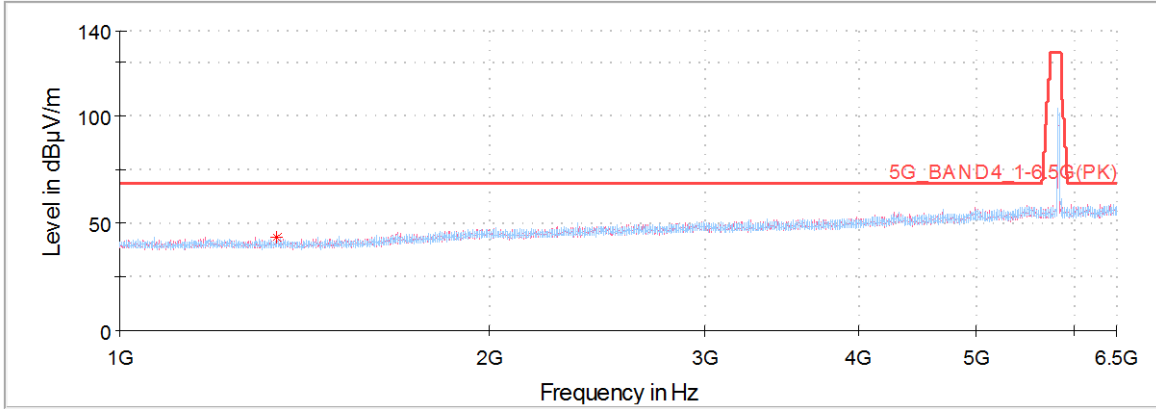
Frequency	Pol.	Reading	Cable Loss	Amp Gain	Antenna Factor	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data									
1 344.27 ¹⁾	H	52.54	2.80	-36.72	25.18	-	43.80	74.00	30.20
5 904.97	H	48.67	6.04	-32.53	34.26	-	56.44	83.02	26.58
11 648.05 ¹⁾	V	76.23	8.55	-60.33	38.78	-	63.23	74.00	10.77
17 473.88	V	64.74	10.64	-61.32	43.14	-	57.20	68.20	11.00
Average Data									
11 648.05 ¹⁾	V	63.22	8.55	-60.33	38.78	0.10	50.32	54.00	3.68



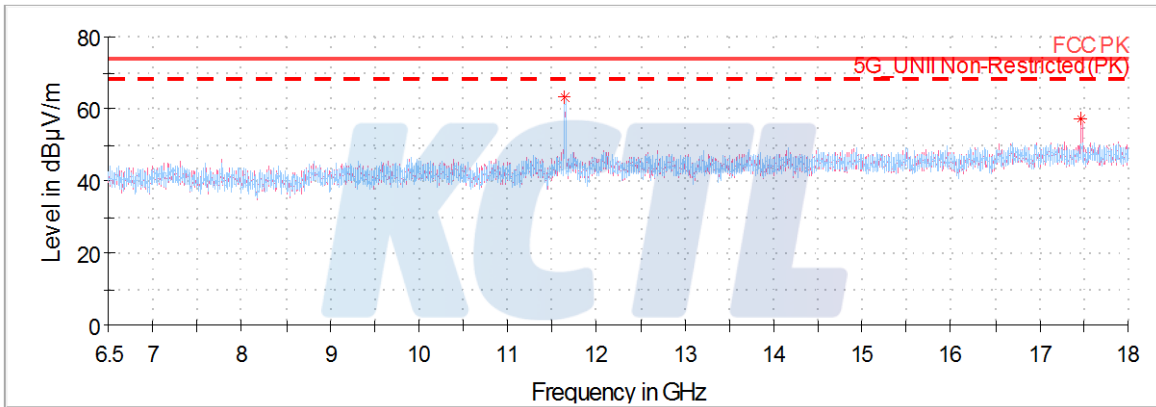
Horizontal/Vertical for Band-edge



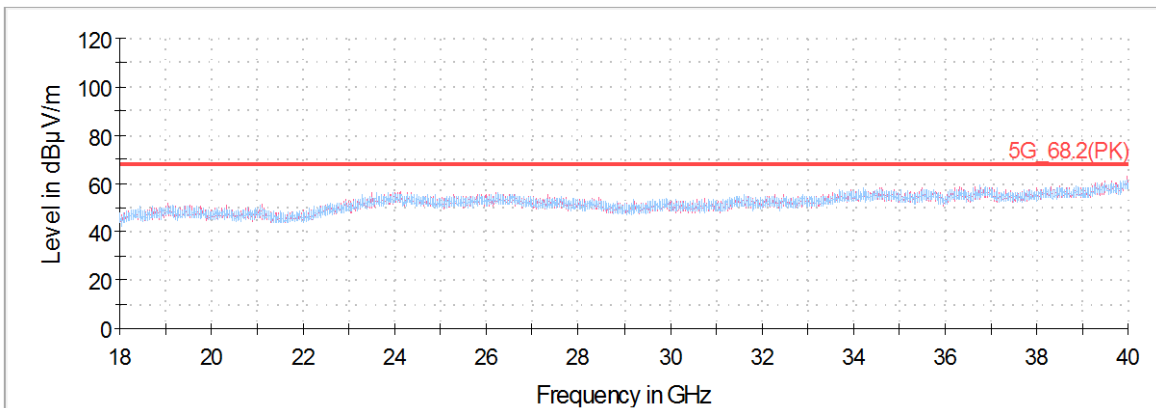
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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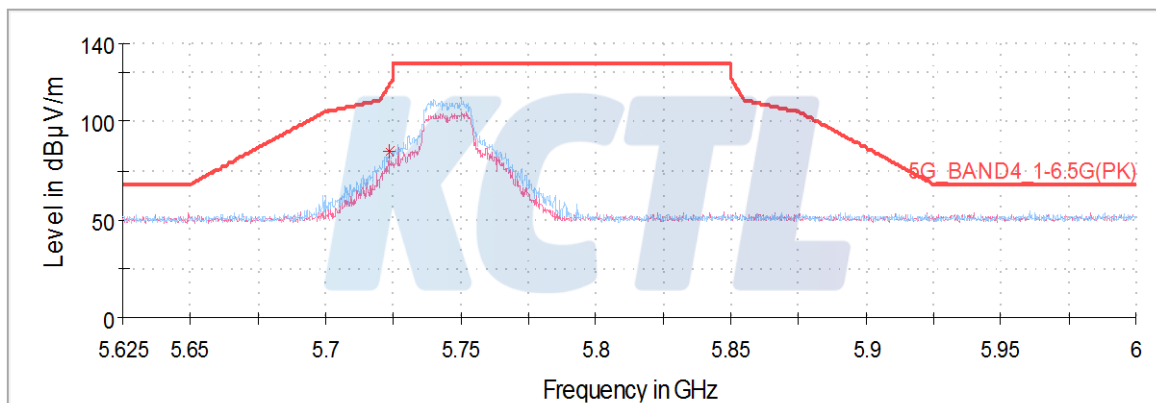
65, Sinwon-ro, Yeongtong-gu,
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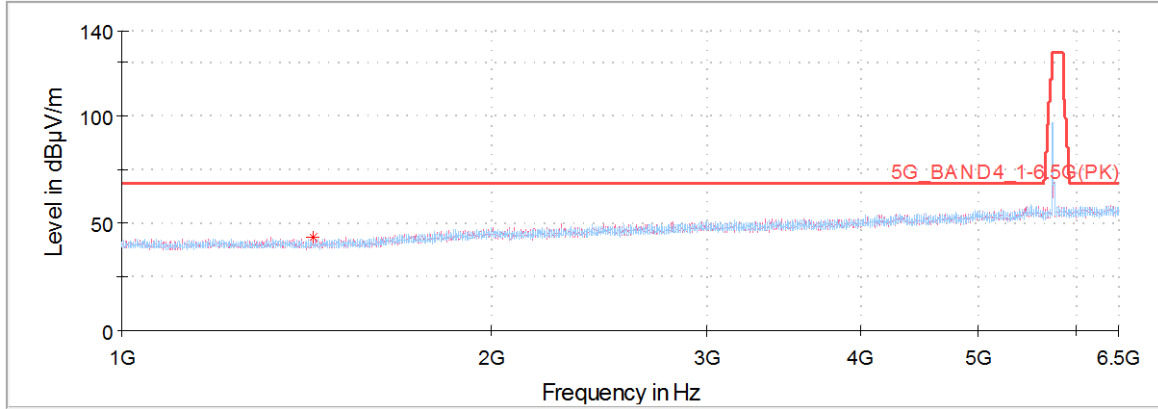
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**802.11n20 – ANT 1****Lowest Channel (5 745 MHz)**

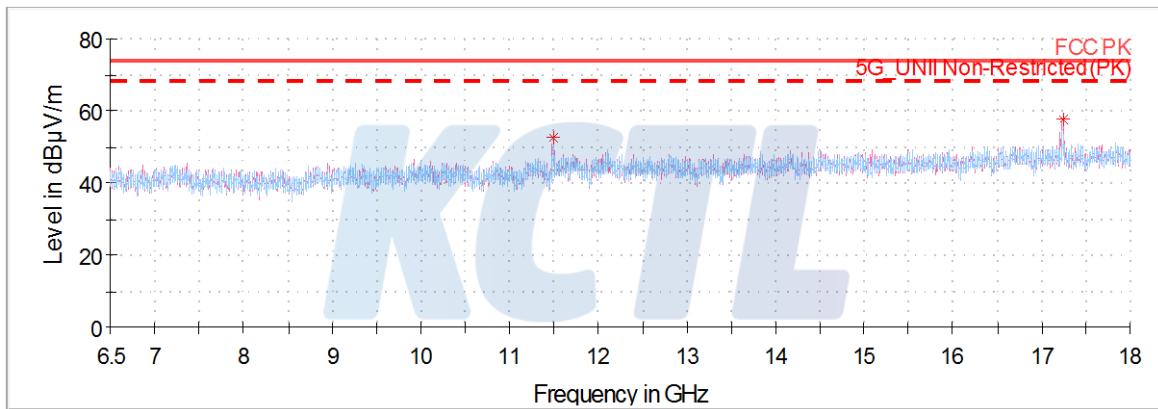
Frequency	Pol.	Reading	Cable Loss	Amp Gain	Antenna Factor	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB)	(dB($\mu V/m$))	(dB($\mu V/m$))	(dB)
Peak data									
1 431.75	H	52.35	2.88	-37.10	25.53	-	43.66	68.20	24.54
5 723.47	H	77.54	5.93	-32.44	33.99	-	85.02	118.71	33.69
11 491.36 ¹⁾	H	66.00	8.52	-60.46	38.64	-	52.70	74.00	21.30
17 238.48	V	64.99	10.53	-59.48	41.73	-	57.77	68.20	10.43
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

Horizontal/Vertical for Band-edge

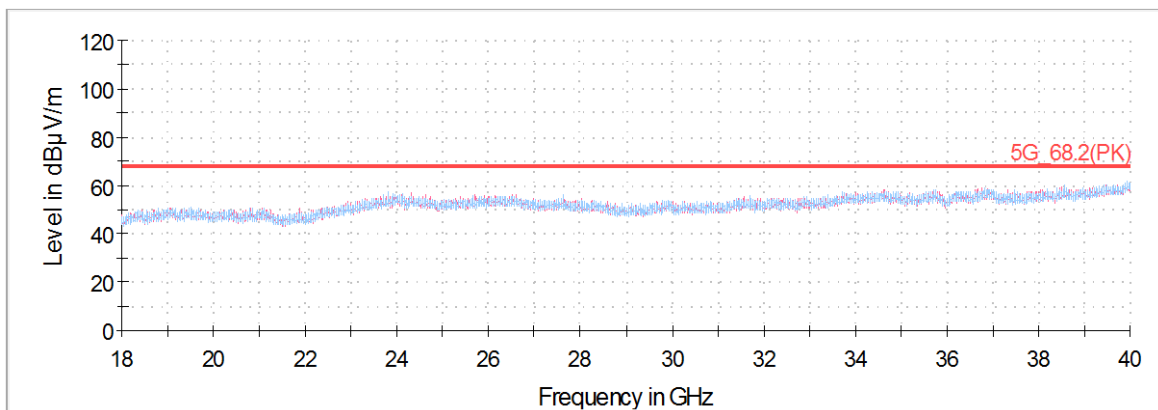
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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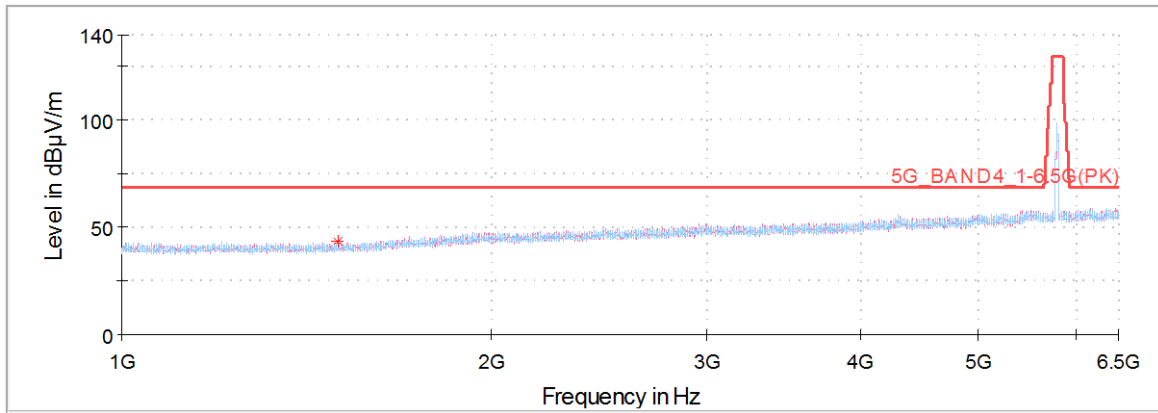
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KCTL**Middle Channel (5 785 MHz)**

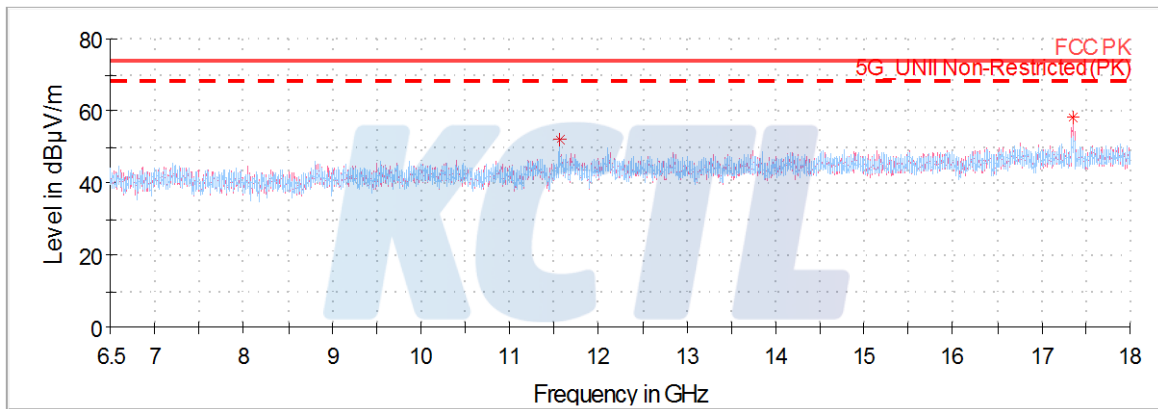
Frequency	Pol.	Reading	Cable Loss	Amp Gain	Antenna Factor	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μ V))	(dB)	(dB)	(dB)	(dB)	(dB(μ V/m))	(dB(μ V/m))	(dB)
Peak data									
1 499.30 ¹⁾	H	51.82	2.95	-37.34	25.80	-	43.23	74.00	30.77
11 573.30 ¹⁾	V	65.29	8.54	-60.40	38.72	-	52.15	74.00	21.85
17 351.33	V	65.44	10.58	-60.36	42.41	-	58.07	68.20	10.13
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

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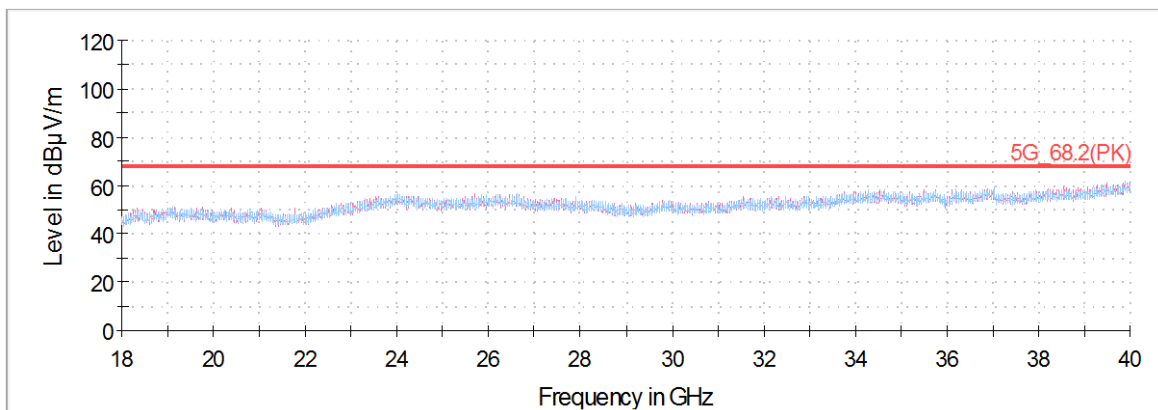
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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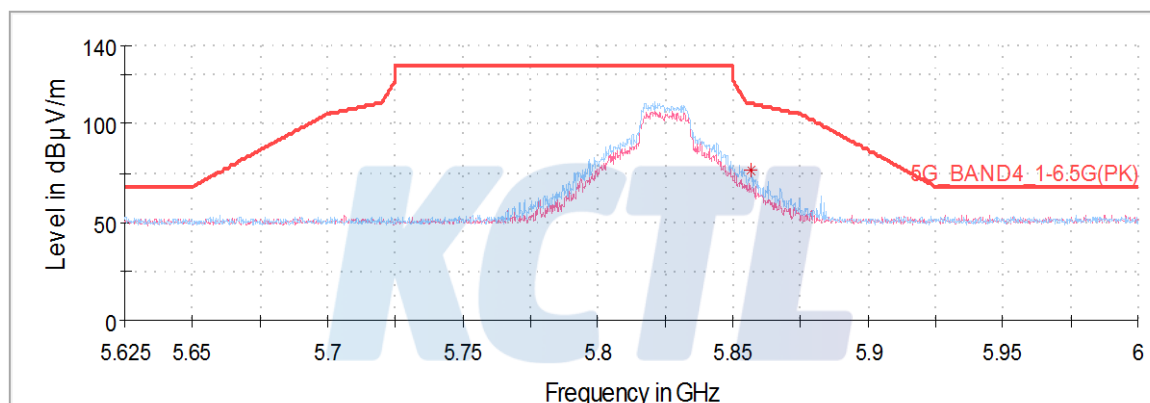
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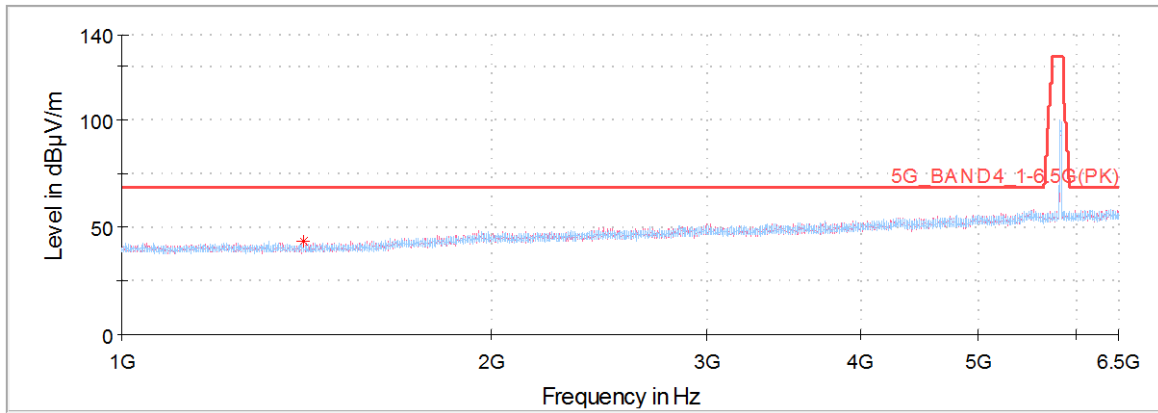
Highest Channel (5 825 MHz)

Frequency (MHz)	Pol. (V/H)	Reading (dB(μ V))	Cable Loss (dB)	Amp Gain (dB)	Antenna Factor (dB)	DCCF (dB)	Result (dB(μ V/m))	Limit (dB(μ V/m))	Margin (dB)
Peak data									
1 404.25 ¹⁾	H	51.95	2.85	-37.00	25.42	-	43.22	74.00	30.78
5 856.84	H	69.02	6.01	-32.45	34.19	-	76.77	110.28	33.51
11 652.72 ¹⁾	H	66.02	8.56	-60.35	38.79	-	53.02	74.00	20.98
17 473.88	V	68.06	10.64	-61.32	43.14	-	60.52	68.20	7.68
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

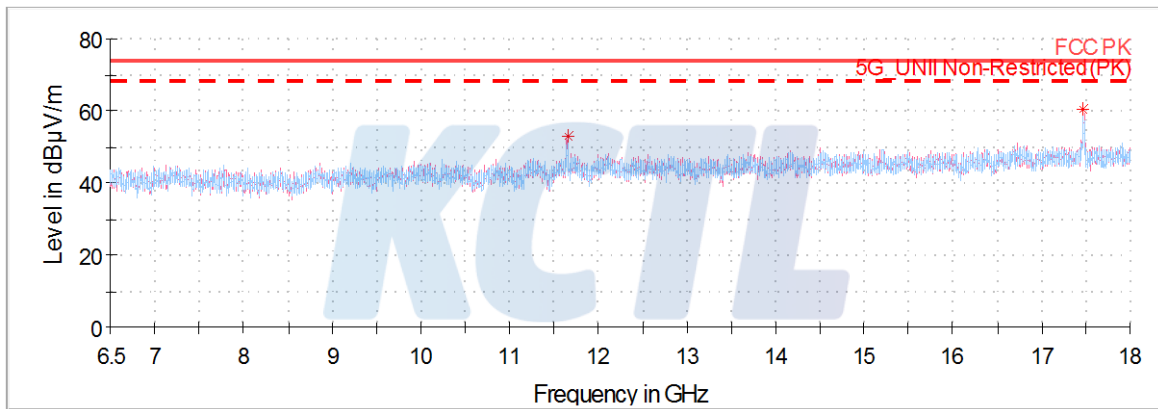
Horizontal/Vertical for Band-edge



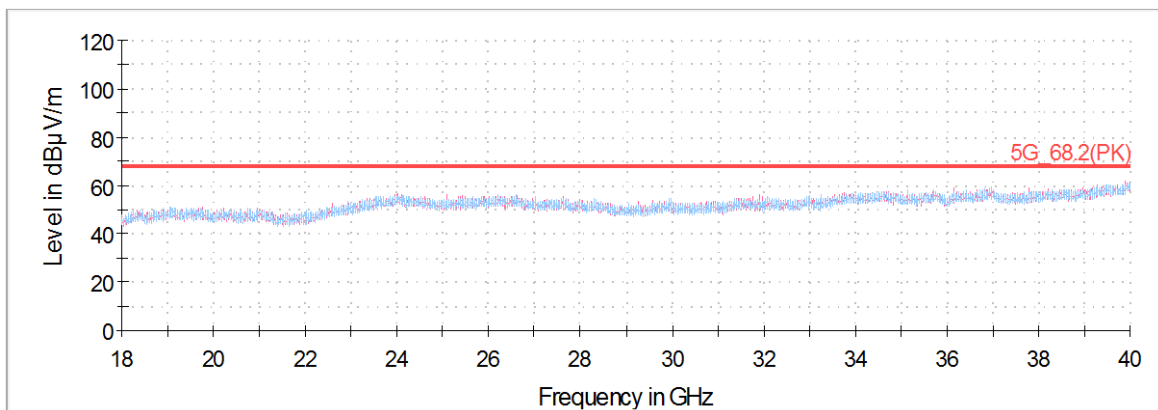
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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KR19-SRF0029-B

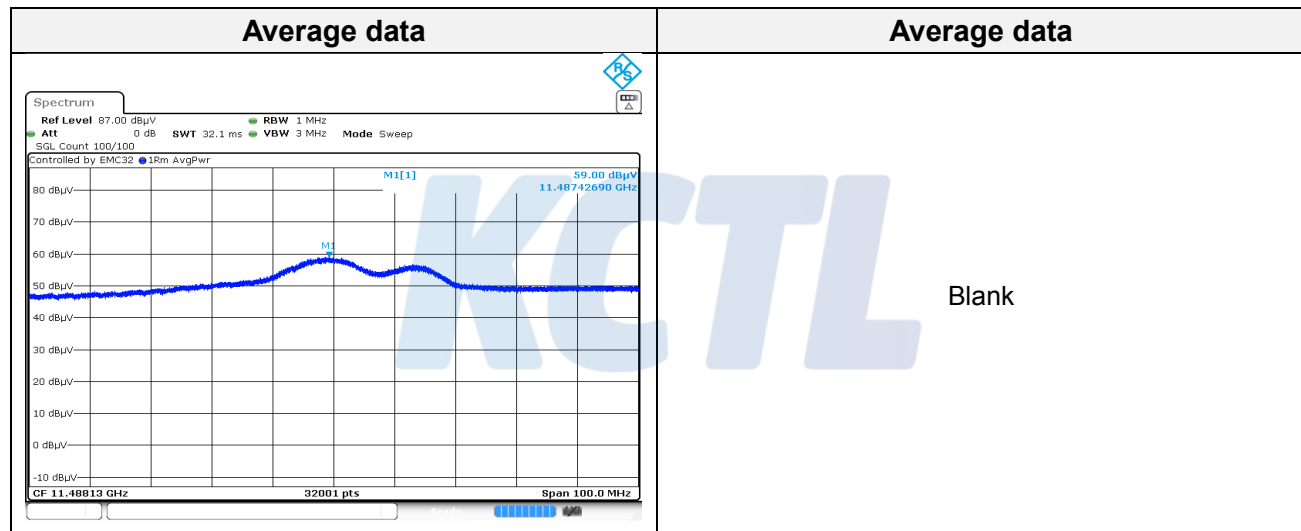
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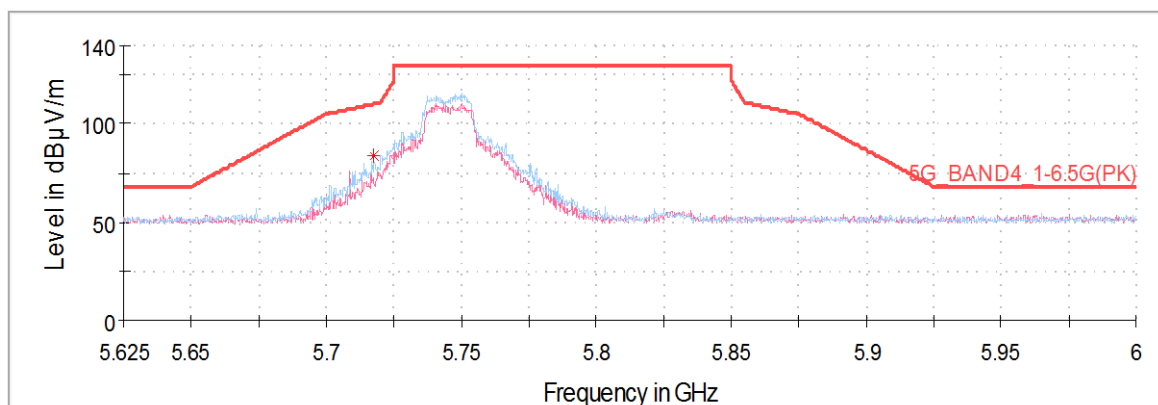
802.11n20 – MIMO

Lowest Channel (5 745 MHz)

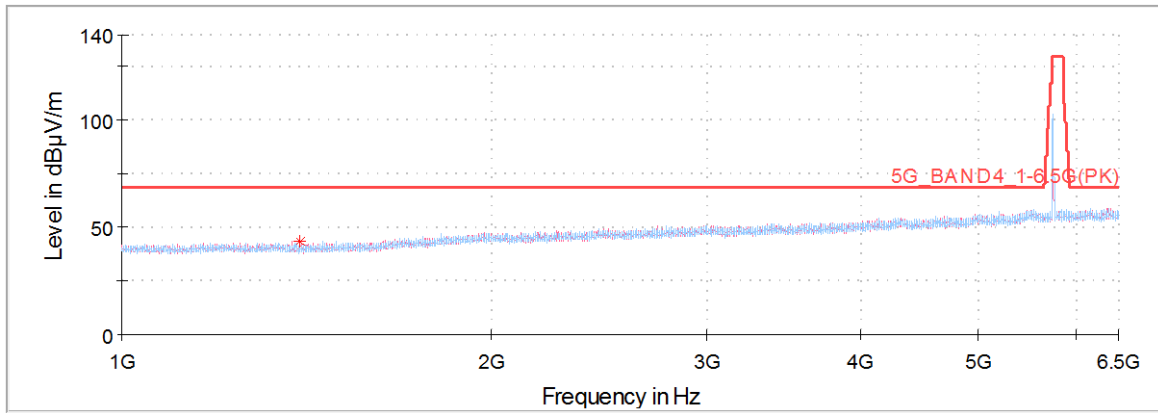
Frequency	Pol.	Reading	Cable Loss	Amp Gain	Antenna Factor	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data									
1 398.06 ¹⁾	H	52.23	2.85	-36.97	25.39	-	43.50	74.00	30.50
5 717.63	H	76.70	5.92	-32.40	33.98	-	84.20	110.14	25.94
11 488.13 ¹⁾	V	70.41	8.52	-60.48	38.64	-	57.09	74.00	16.91
17 236.33	V	69.09	10.53	-59.46	41.72	-	61.88	68.20	6.32
Average Data									
11 488.13 ¹⁾	V	59.00	8.52	-60.48	38.64	0.10	45.78	54.00	8.22



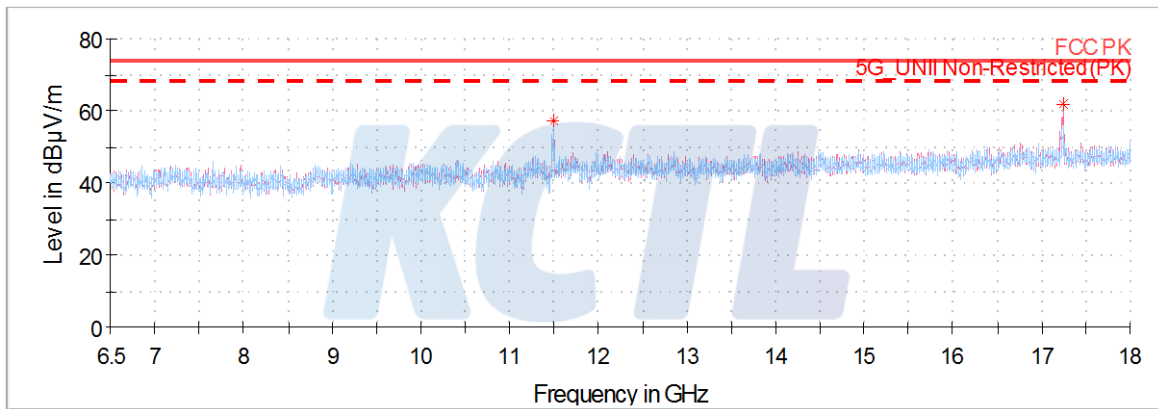
Horizontal/Vertical for Band-edge



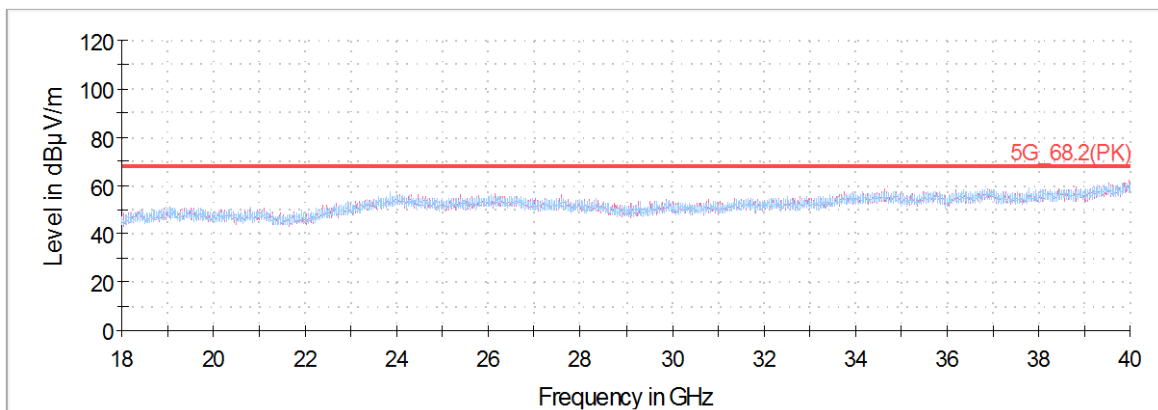
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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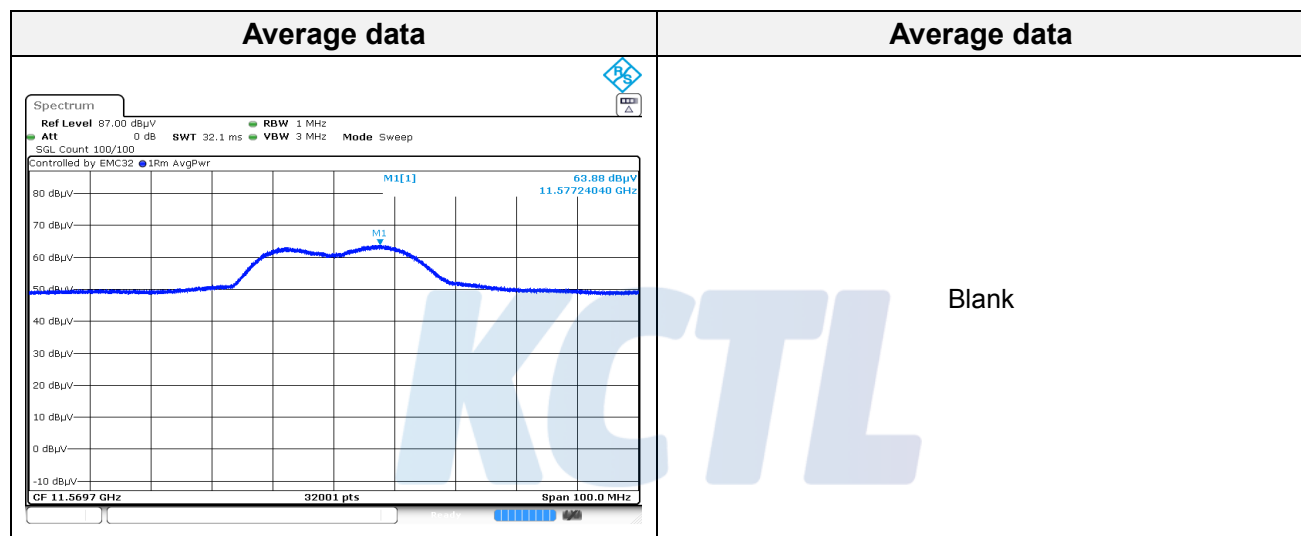
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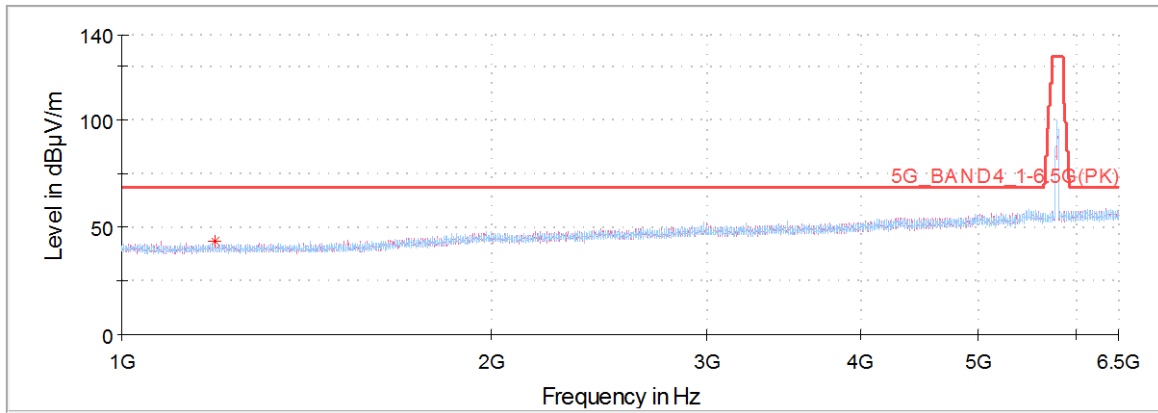


Middle Channel (5 785 MHz)

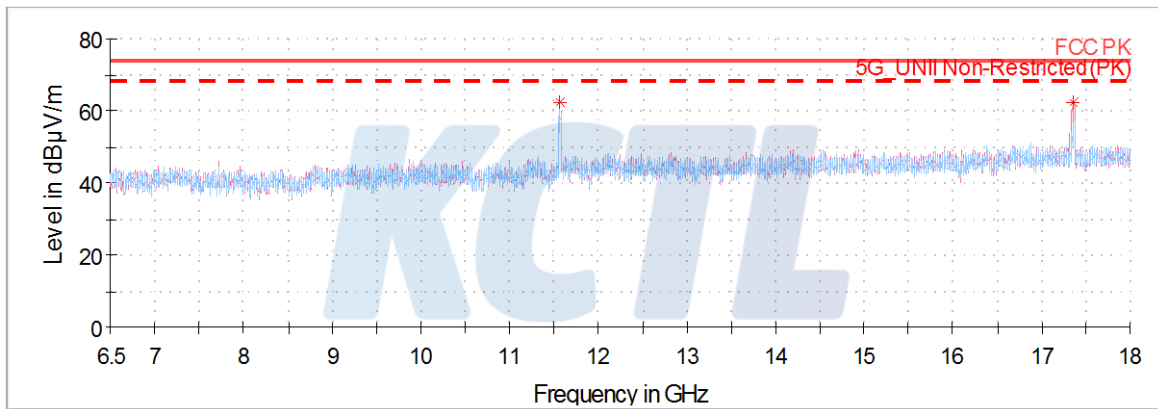
Frequency	Pol.	Reading	Cable Loss	Amp Gain	Antenna Factor	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μ V))	(dB)	(dB)	(dB)	(dB)	(dB(μ V/m))	(dB(μ V/m))	(dB)
Peak data									
1 191.98 ¹⁾	H	52.49	2.65	-36.04	24.57	-	43.67	74.00	30.33
11 569.70 ¹⁾	V	75.68	8.54	-60.39	38.71	-	62.54	74.00	11.46
17 355.64	V	69.68	10.58	-60.39	42.43	-	62.30	68.20	5.90
Average Data									
11 569.70 ¹⁾	V	63.88	8.54	-60.39	38.71	0.10	50.84	54.00	3.16



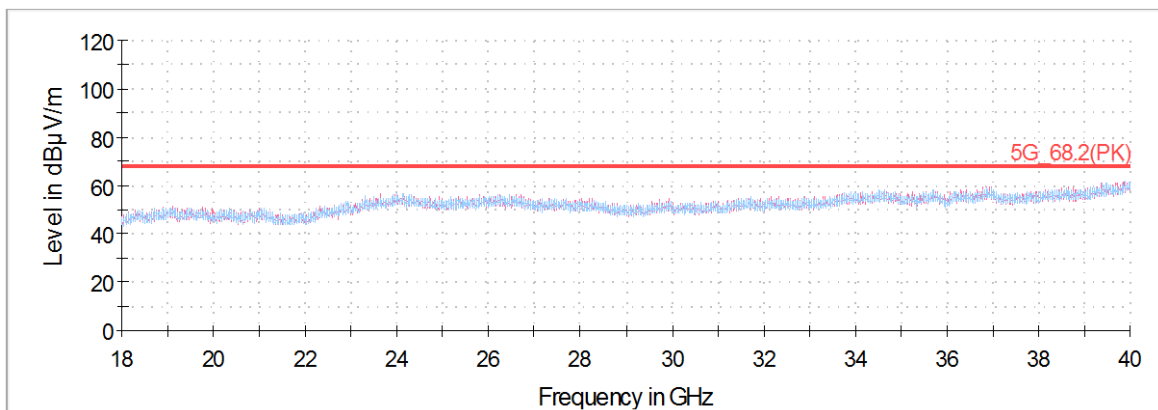
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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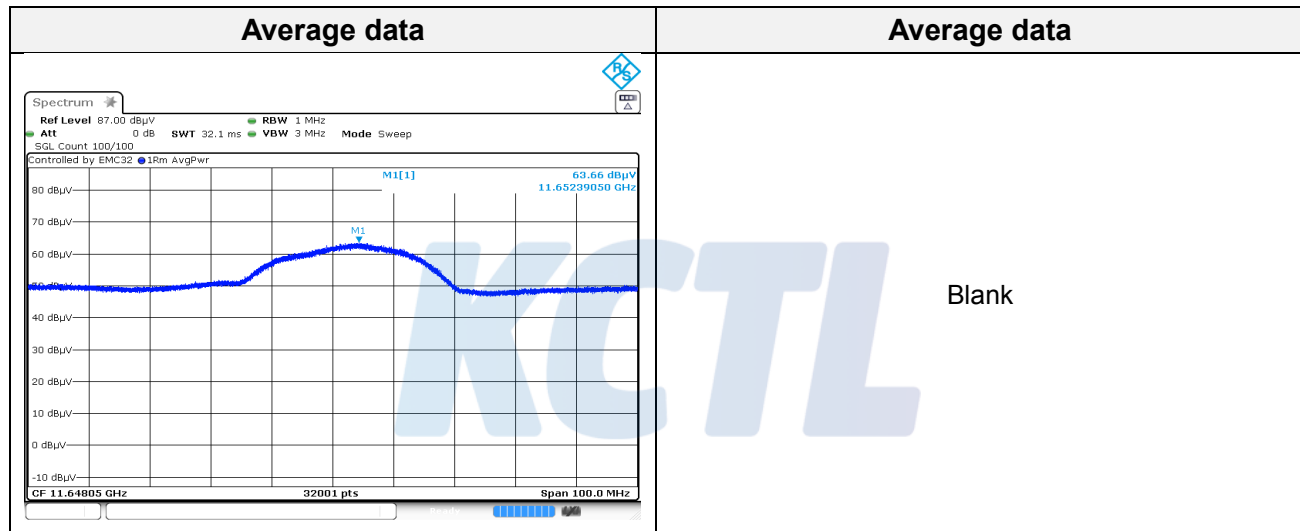
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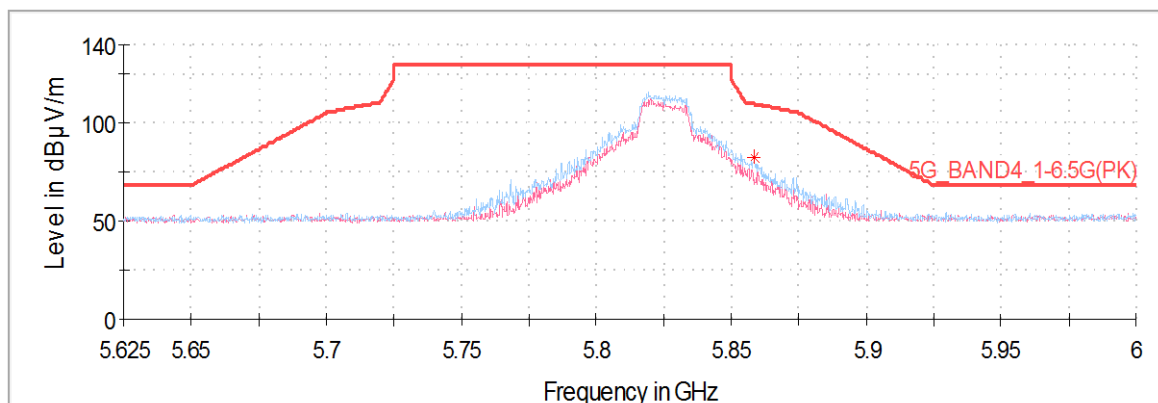


Highest Channel (5 825 MHz)

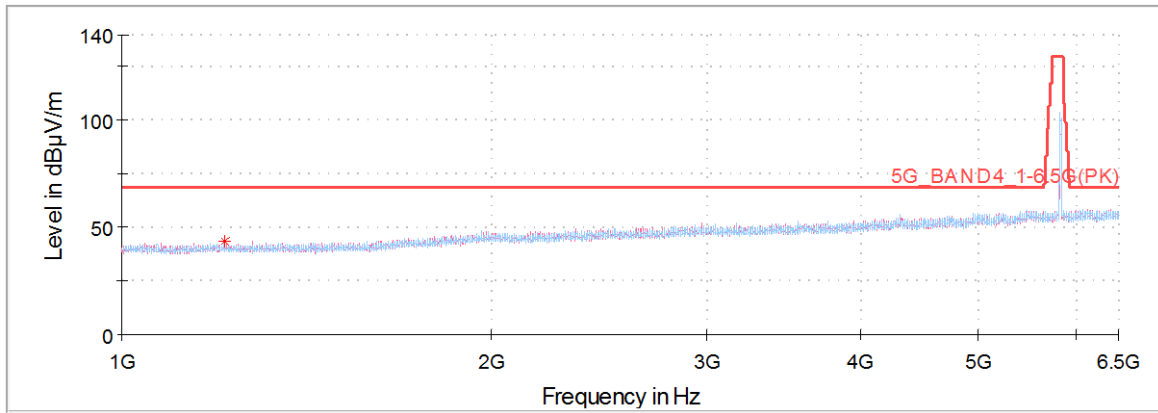
Frequency	Pol.	Reading	Cable Loss	Amp Gain	Antenna Factor	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data									
1 213.47 ¹⁾	H	52.19	2.67	-36.10	24.65	-	43.41	74.00	30.59
5 858.56	H	75.01	6.01	-32.50	34.19	-	82.71	109.80	27.09
11 648.05 ¹⁾	V	76.68	8.55	-60.33	38.78	-	63.68	74.00	10.32
17 475.31	V	70.23	10.64	-61.34	43.15	-	62.68	68.20	5.52
Average Data									
11 648.05 ¹⁾	V	63.66	8.55	-60.33	38.78	0.10	50.76	54.00	3.24



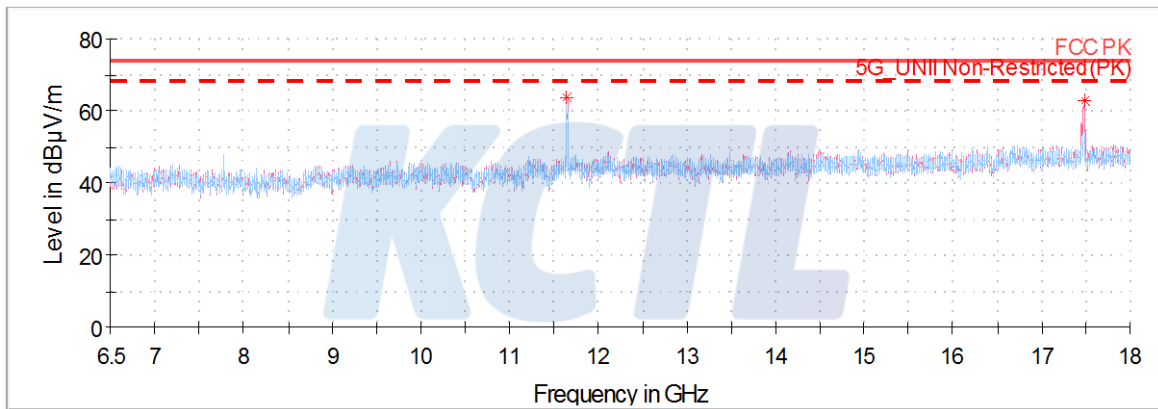
Horizontal/Vertical for Band-edge



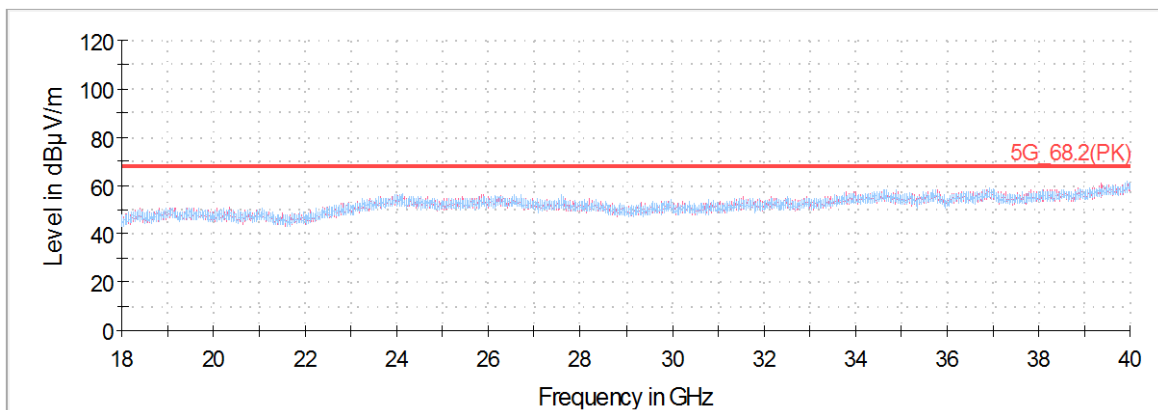
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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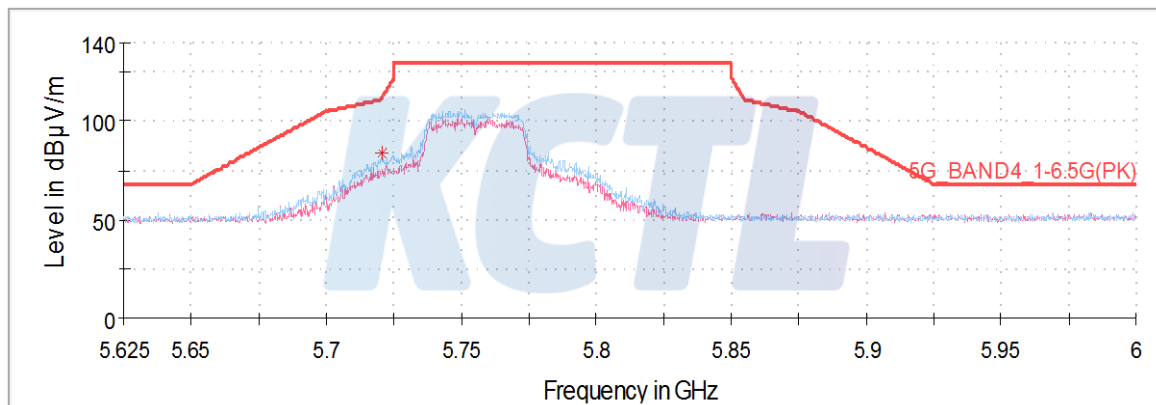
65, Sinwon-ro, Yeongtong-gu,
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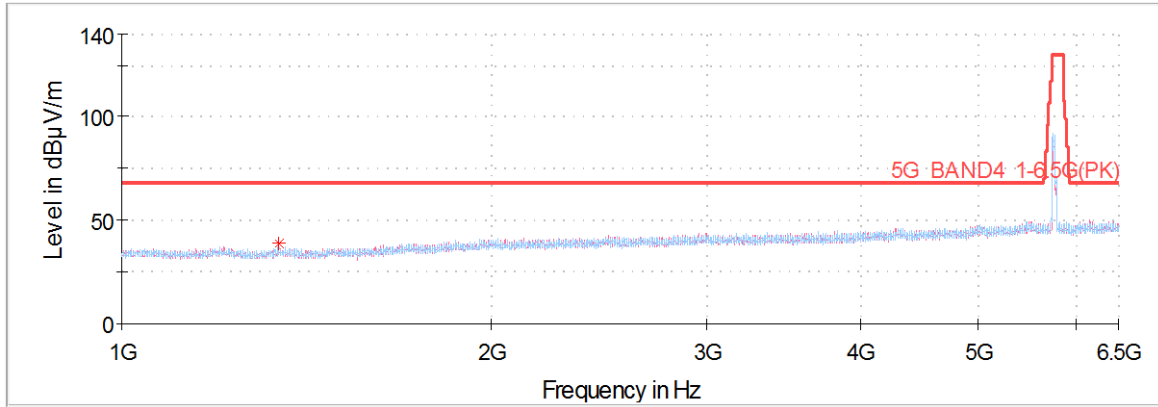
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**802.11n40 – ANT 0****Lowest Channel (5 755 MHz)**

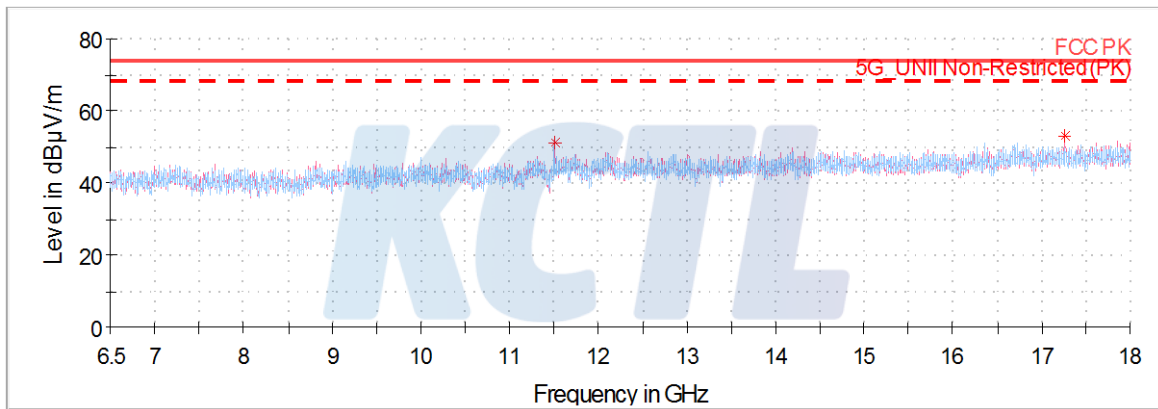
Frequency	Pol.	Reading	Cable Loss	Amp Gain	Antenna Factor	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB)	(dB($\mu V/m$))	(dB($\mu V/m$))	(dB)
Peak data									
1 343.75 ¹⁾	H	47.80	2.80	-36.72	25.18	-	39.06	74.00	34.94
5 720.55	H	76.44	5.92	-32.43	33.98	-	83.91	112.05	28.14
11 506.09 ¹⁾	V	64.23	8.52	-60.44	38.66	-	50.97	74.00	23.03
17 257.53	V	60.10	10.54	-59.63	41.85	-	52.86	68.20	15.34
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

Horizontal/Vertical for Band-edge

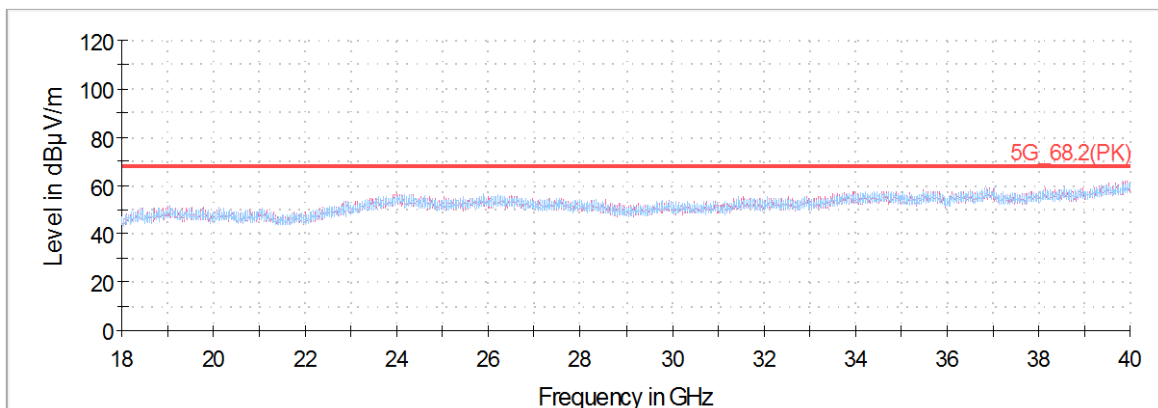
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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Suwon-si, Gyeonggi-do, 16677, Korea
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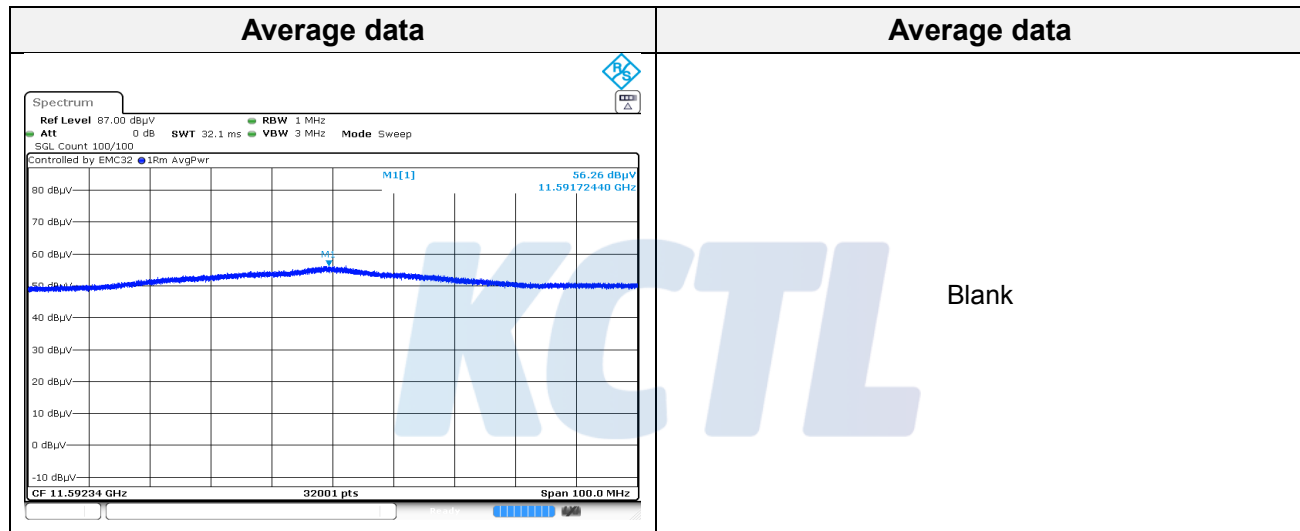
Report No.:
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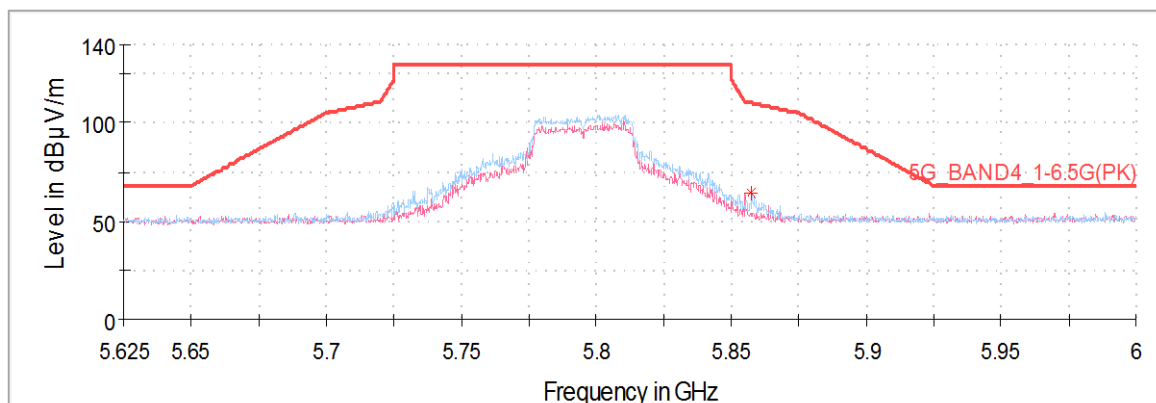


Highest Channel (5 795 MHz)

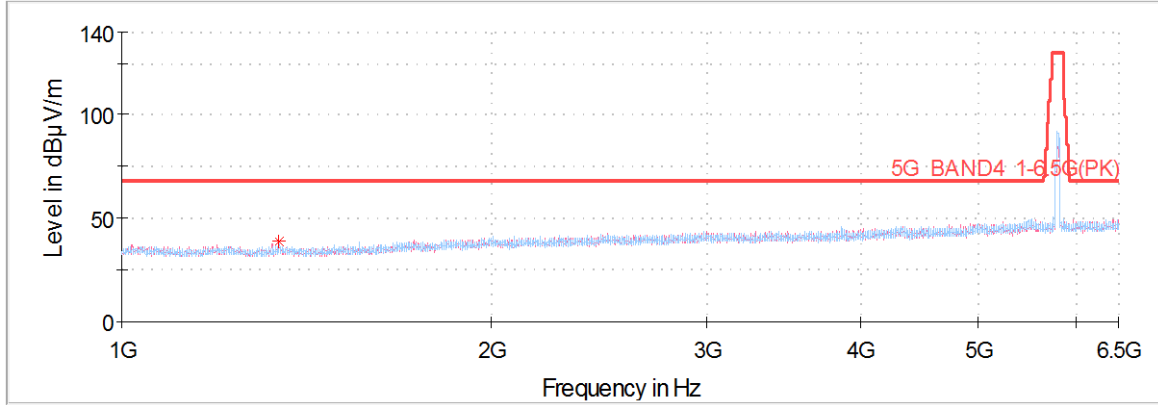
Frequency	Pol.	Reading	Cable Loss	Amp Gain	Antenna Factor	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data									
1 343.92 ¹⁾	H	47.97	2.80	-36.72	25.18	-	39.23	74.00	34.77
5 857.53	H	56.63	6.01	-32.45	34.19	-	64.38	110.09	45.71
11 592.34 ¹⁾	V	67.49	8.54	-60.37	38.73	-	54.39	74.00	19.61
16 974.70	H	58.81	10.41	-57.56	40.23	-	51.89	68.20	16.31
Average Data									
11 592.34 ¹⁾	V	56.26	8.54	-60.37	38.73	0.34	43.50	54.00	10.50



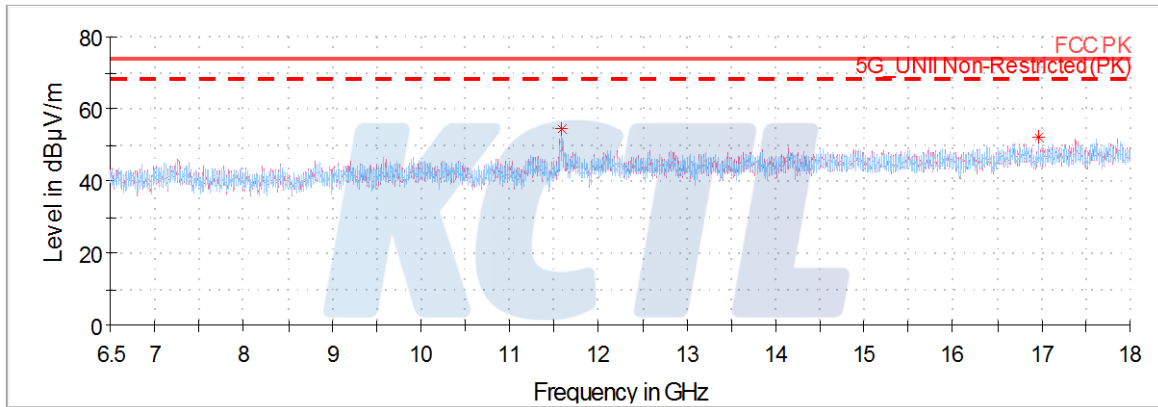
Horizontal/Vertical for Band-edge



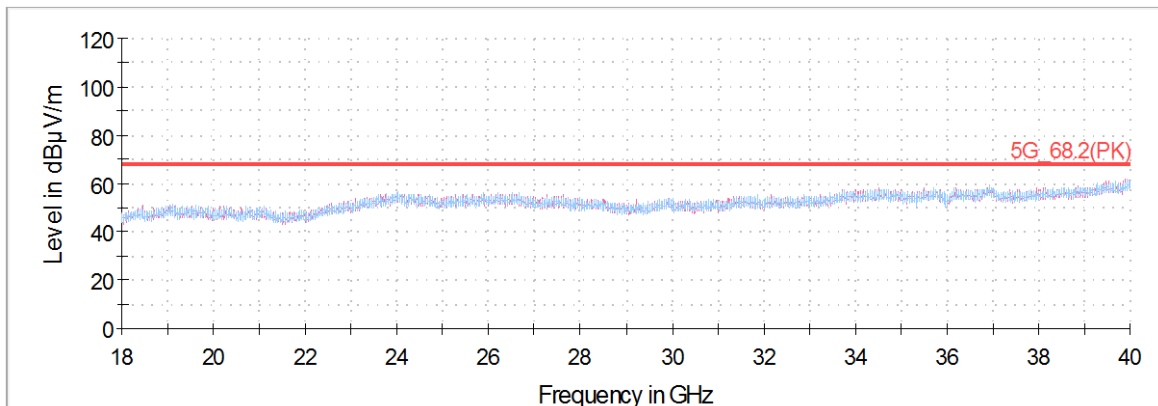
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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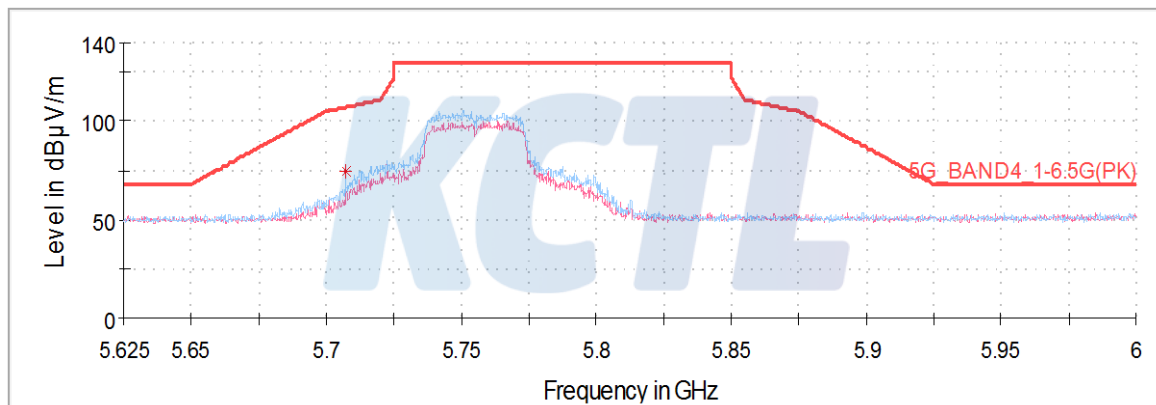


802.11n40 – ANT 1

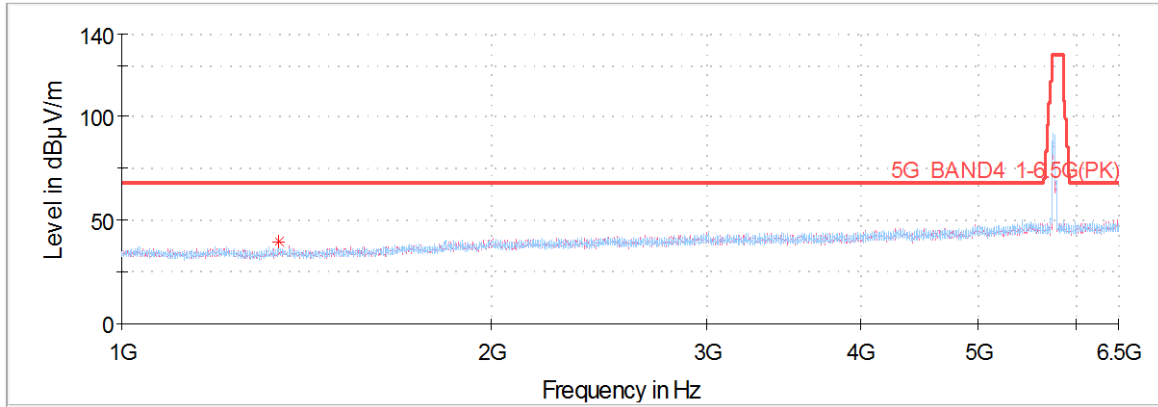
Lowest Channel (5 755 MHz)

Frequency (MHz)	Pol. (V/H)	Reading (dB(μ V))	Cable Loss (dB)	Amp Gain (dB)	Antenna Factor (dB)	DCCF (dB)	Result (dB(μ V/m))	Limit (dB(μ V/m))	Margin (dB)
Peak data									
1 344.09 ¹⁾	H	48.20	2.80	-36.72	25.18	-	39.46	74.00	34.54
5 707.31	H	67.43	5.92	-32.46	33.96	-	74.85	107.25	32.39
11 511.84 ¹⁾	V	61.12	8.53	-60.44	38.66	-	47.87	74.00	26.13
17 265.44	H	55.05	10.54	-59.68	41.89	-	47.80	68.20	20.40
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

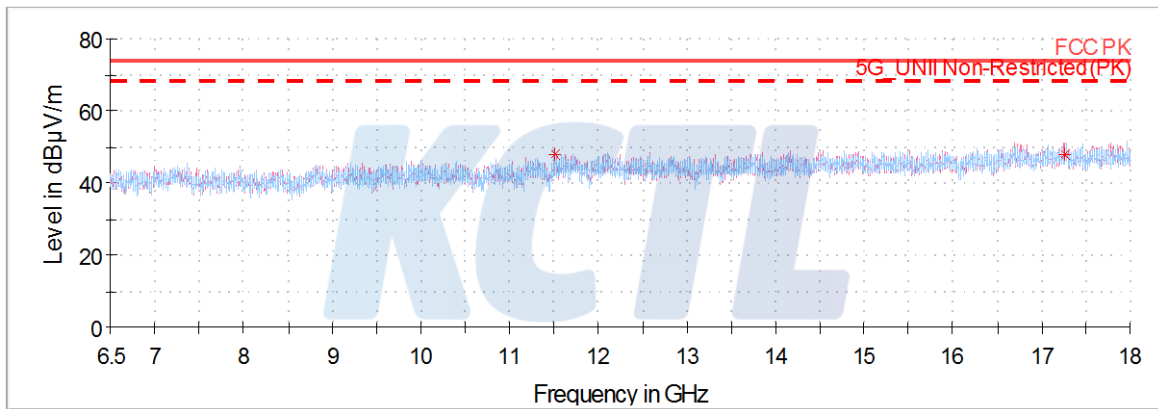
Horizontal/Vertical for Band-edge



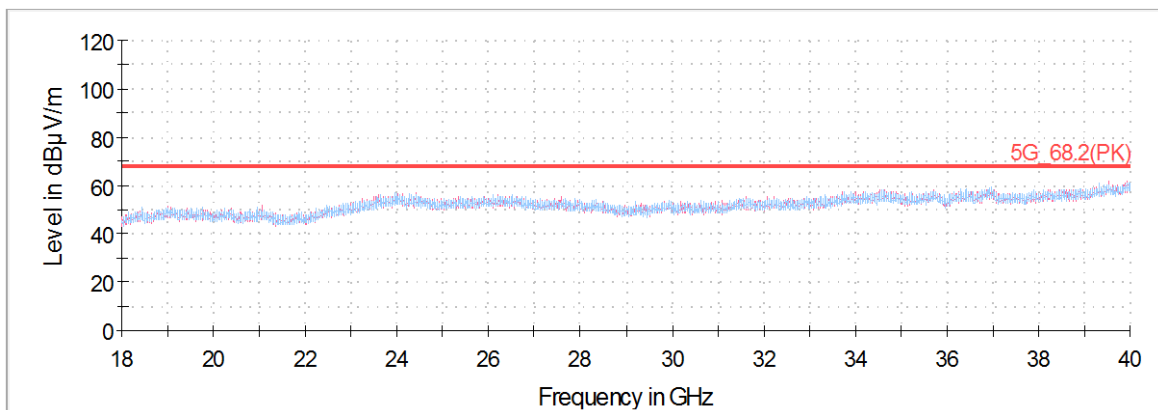
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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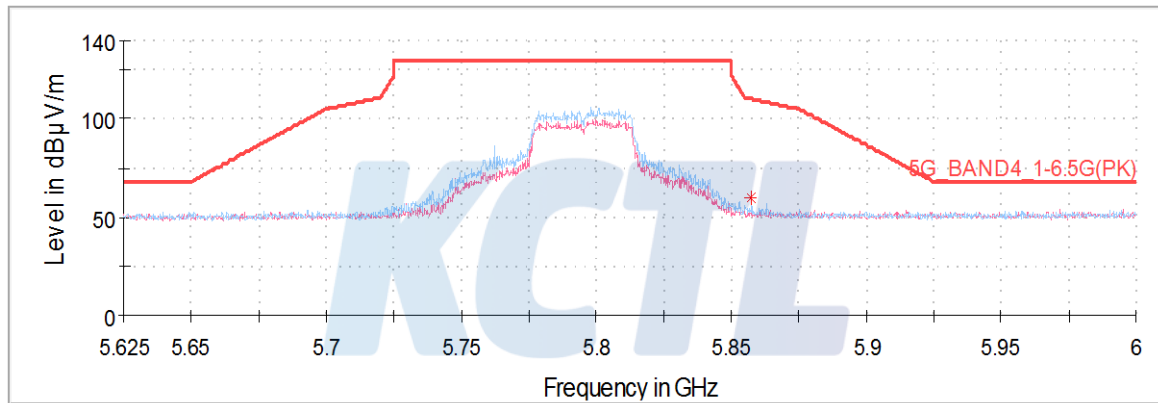
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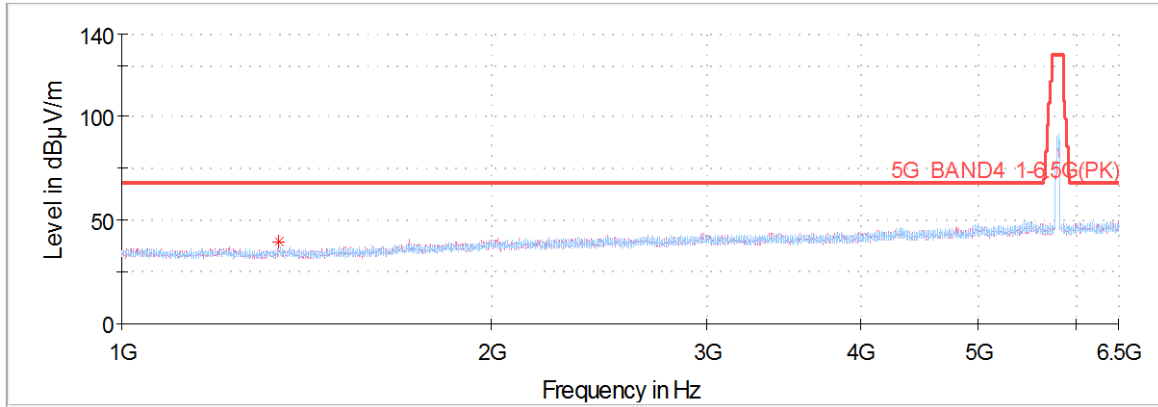
Highest Channel (5 795 MHz)

Frequency (MHz)	Pol. (V/H)	Reading (dB(μ V))	Cable Loss (dB)	Amp Gain (dB)	Antenna Factor (dB)	DCCF (dB)	Result (dB(μ V/m))	Limit (dB(μ V/m))	Margin (dB)
Peak data									
1 343.75 ¹⁾	H	48.60	2.80	-36.72	25.18	-	39.86	74.00	34.14
5 857.53	H	52.50	6.01	-32.45	34.19	-	60.25	110.09	49.84
11 590.19 ¹⁾	H	60.19	8.54	-60.38	38.73	-	47.08	74.00	26.92
17 385.83	H	56.13	10.60	-60.63	42.61	-	48.71	68.20	19.49
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

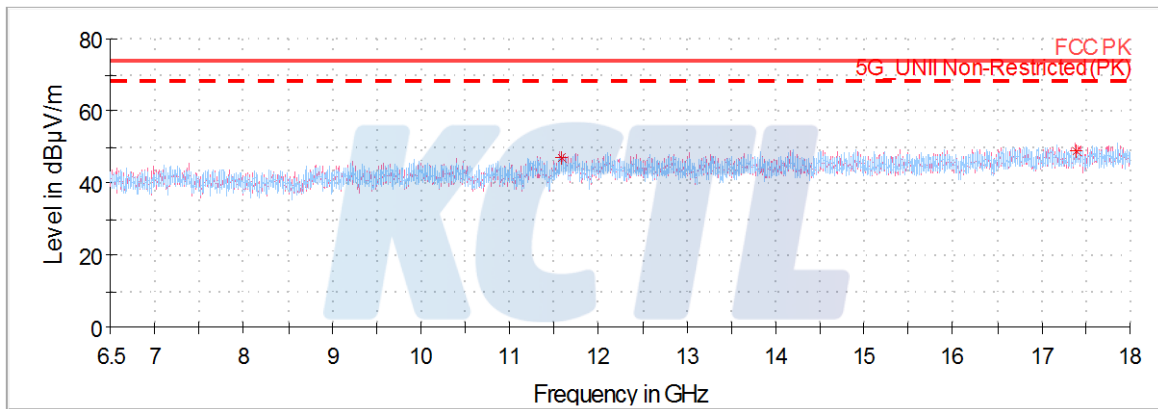
Horizontal/Vertical for Band-edge



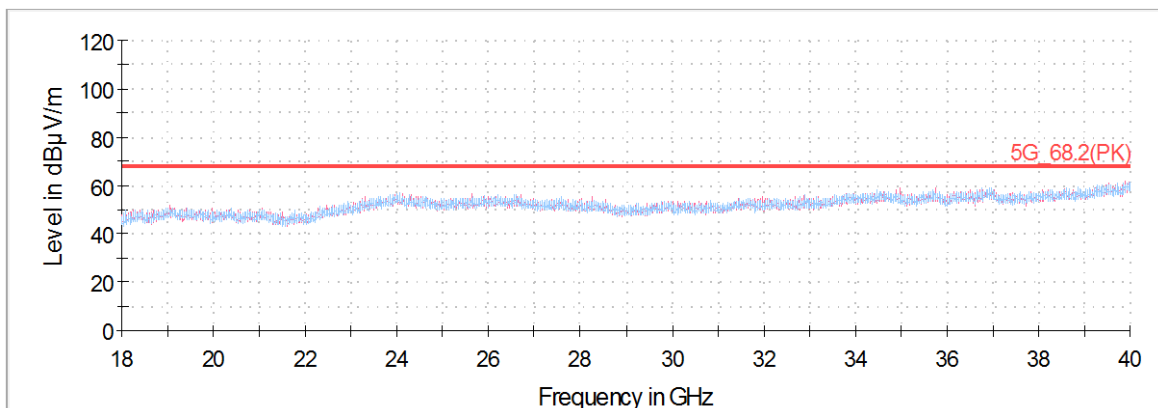
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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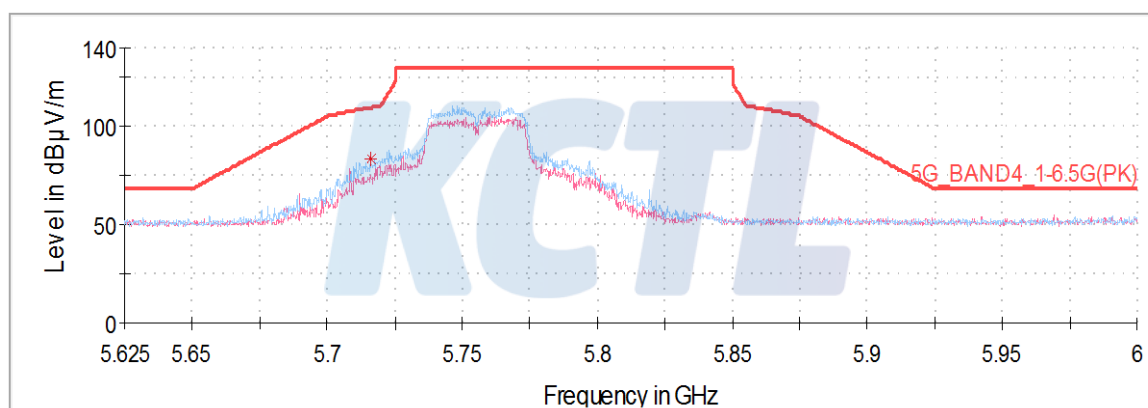


802.11n40 – MIMO

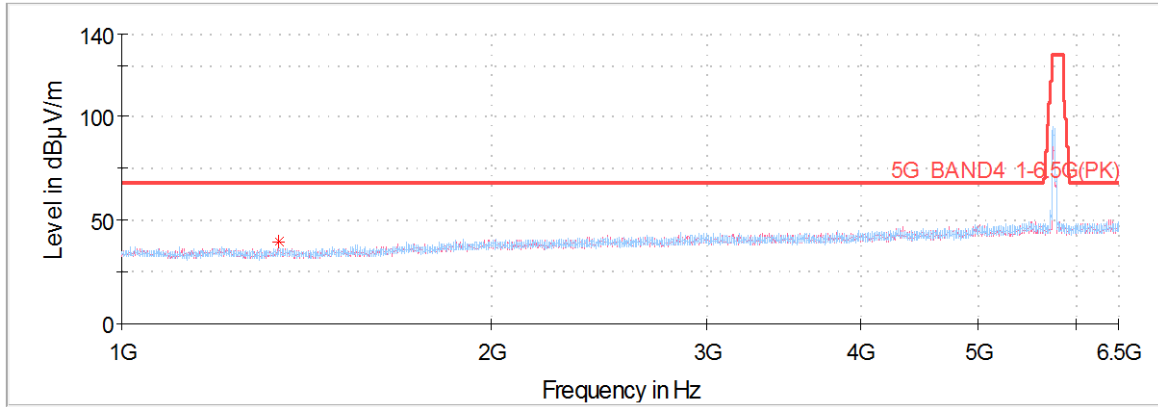
Lowest Channel (5 755 MHz)

Frequency (MHz)	Pol. (V/H)	Reading (dB(μ V))	Cable Loss (dB)	Amp Gain (dB)	Antenna Factor (dB)	DCCF (dB)	Result (dB(μ V/m))	Limit (dB(μ V/m))	Margin (dB)
Peak data									
1 344.09 ¹⁾	H	48.17	2.80	-36.72	25.18	-	39.43	74.00	34.57
5 715.91	H	76.25	5.92	-32.44	33.97	-	83.70	109.65	25.96
11 510.77 ¹⁾	H	59.63	8.53	-60.44	38.66	-	46.38	74.00	27.62
17 265.08	H	57.05	10.54	-59.68	41.89	-	49.80	68.20	18.40
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

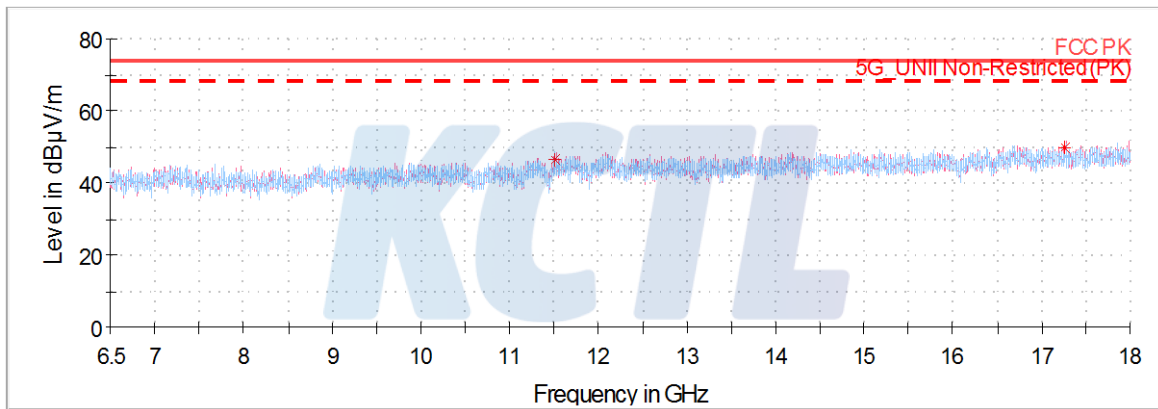
Horizontal/Vertical for Band-edge



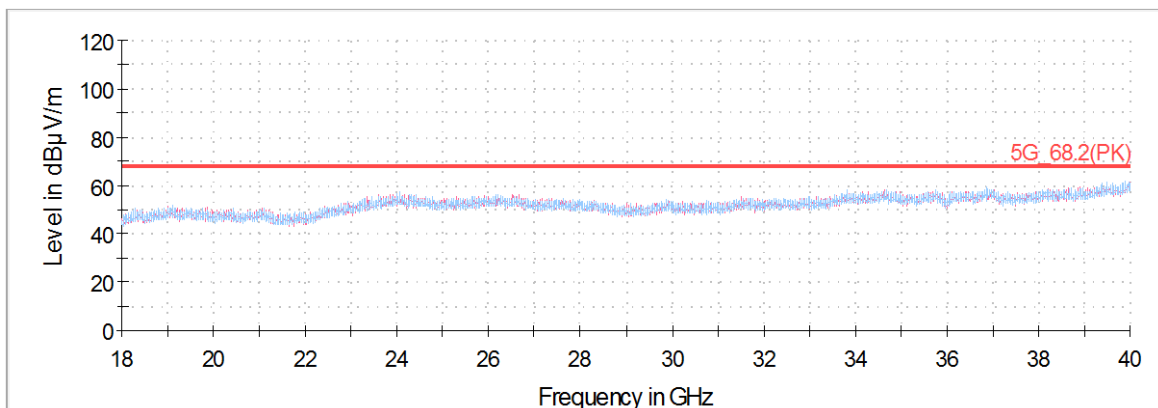
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz



Horizontal/Vertical for 18 GHz ~ 40 GHz



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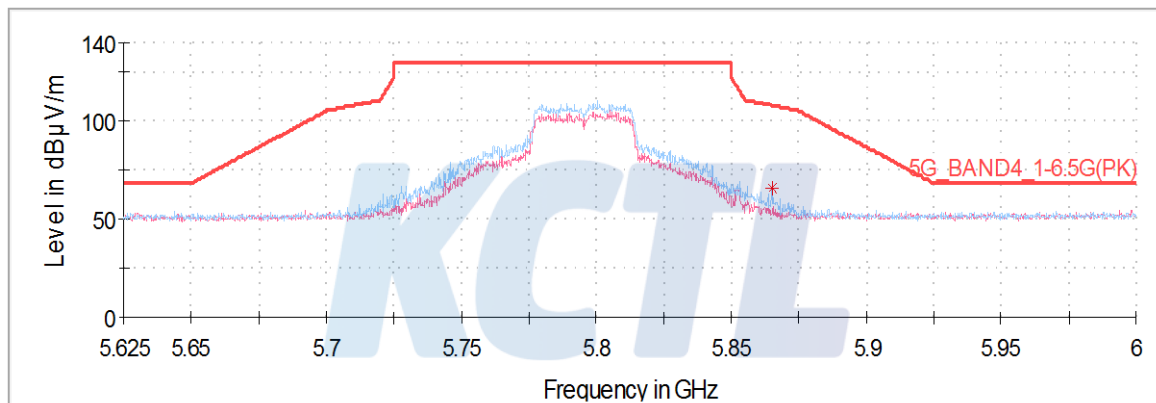
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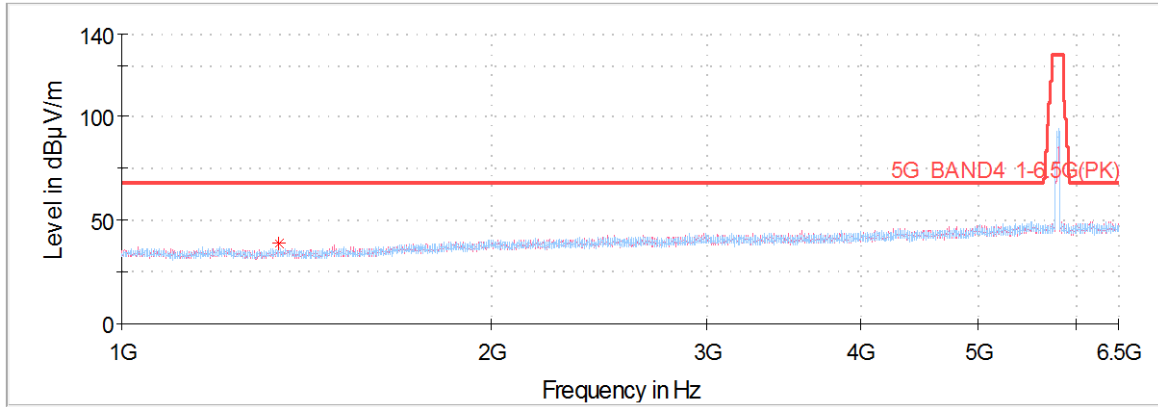
Highest Channel (5 795 MHz)

Frequency (MHz)	Pol. (V/H)	Reading (dB(μ V))	Cable Loss (dB)	Amp Gain (dB)	Antenna Factor (dB)	DCCF (dB)	Result (dB(μ V/m))	Limit (dB(μ V/m))	Margin (dB)
Peak data									
1 343.58 ¹⁾	H	47.66	2.80	-36.71	25.17	-	38.92	74.00	35.08
5 864.92	H	58.03	6.02	-32.47	34.20	-	65.78	108.02	42.25
11 590.55 ¹⁾	V	67.08	8.54	-60.38	38.73	-	53.97	74.00	20.03
17 394.09	V	60.91	10.60	-60.69	42.66	-	53.48	68.20	14.72
Average Data									
No spurious emissions were detected within 20 dB of the limit.									

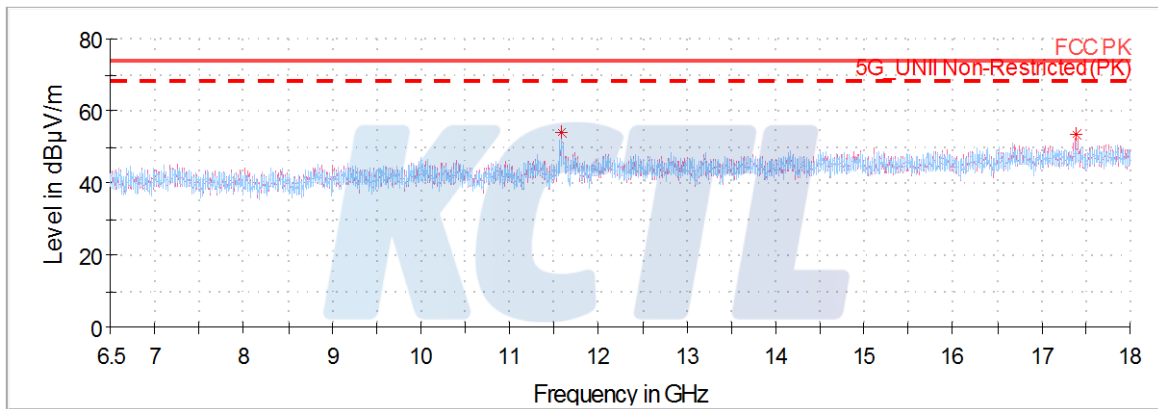
Horizontal/Vertical for Band-edge



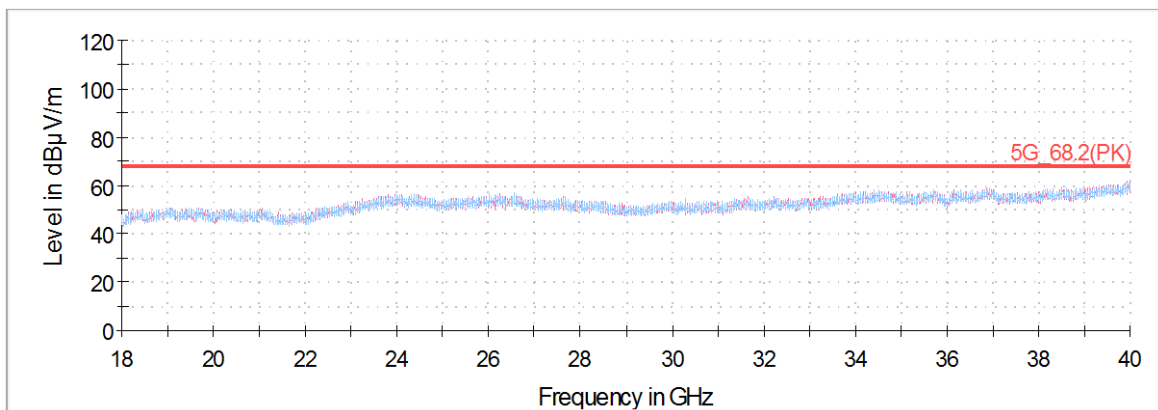
Horizontal/Vertical for 1 GHz ~ 6.5 GHz



Horizontal/Vertical for 6.5 GHz ~ 18 GHz

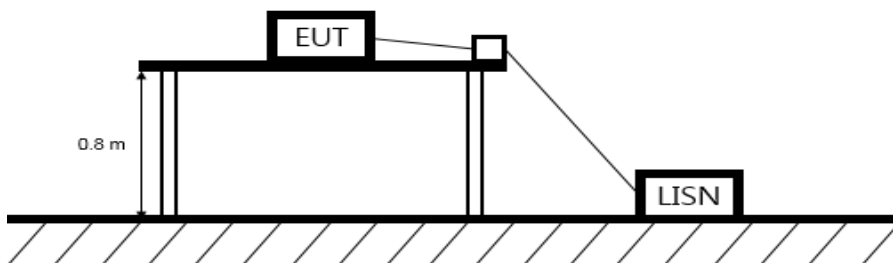


Horizontal/Vertical for 18 GHz ~ 40 GHz



6.2. 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 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohm line impedance stabilization network (LISN). Compliance with the provision of this paragraph shall be on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower value applies at the boundary between the frequency ranges.

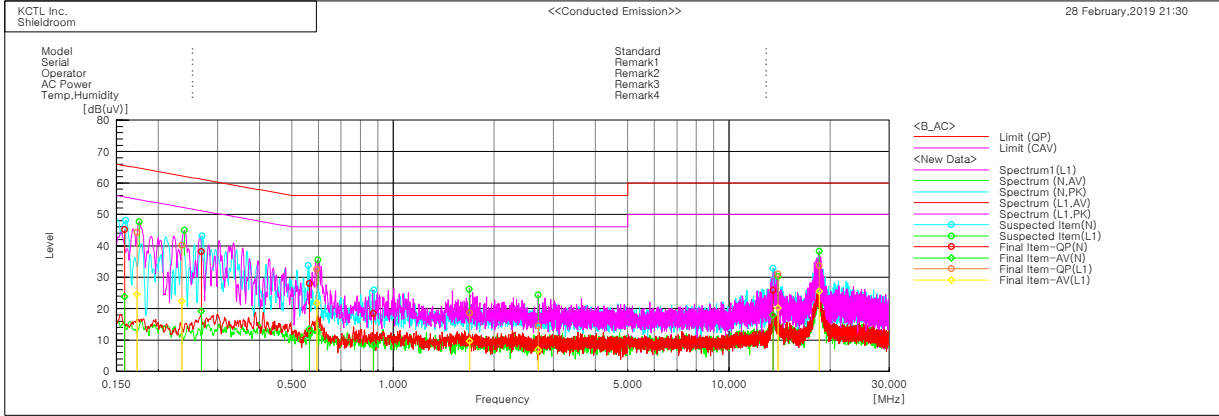
Frequency of Emission (MHz)	Conducted limit (dB μ V/m)	
	Quasi-peak	Average
0.15 – 0.50	66 - 56*	56 - 46*
0.50 – 5.00	56	46
5.00 – 30.0	60	50

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 50 Ω /50 μ H 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 in 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: 802.11n20 / MIMO / U-NII-3 Middle frequency



Final Result

--- N 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	0.15853	35.3	13.8	9.9	45.2	23.7	65.5	55.5	20.3	31.8
2	0.2685	28.5	9.5	9.6	38.1	19.1	61.2	51.2	23.1	32.1
3	0.5635	18.2	3.7	9.8	28.0	13.5	56.0	46.0	28.0	32.5
4	0.87256	8.6	-1.5	9.8	18.4	8.3	56.0	46.0	37.6	37.7
5	13.53974	15.7	7.8	10.1	25.8	17.9	60.0	50.0	34.2	32.1

--- L1 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	0.17268	34.3	14.6	10.0	44.3	24.6	64.8	54.8	20.5	30.2
2	0.23499	30.5	12.7	9.6	40.1	22.3	62.3	52.3	22.2	30.0
3	0.5927	22.6	11.8	9.9	32.5	21.7	56.0	46.0	23.5	24.3
4	1.6874	8.8	-0.1	9.7	18.5	9.6	56.0	46.0	37.5	36.4
5	2.70103	4.8	-2.9	9.7	14.5	6.8	56.0	46.0	41.5	39.2
6	14.00113	21.0	10.2	10.0	31.0	20.2	60.0	50.0	29.0	29.8
7	18.54725	23.5	15.4	10.1	33.6	25.5	60.0	50.0	26.4	24.5

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7. Measurement equipment

Equipment Name	Manufacturer	Model No.	Serial No.	Next Cal. Date
Spectrum Analyzer	R & S	FSV30	101437	19.08.01
Spectrum Analyzer	R & S	FSV40	100988	20.01.04
Pulse Power Meter	ANRITSU	ML2495A	1608009	19.08.02
Pulse Power Sensor	ANRITSU	MA2411B	1726174	19.08.02
ATTENUATOR	R & S	DNF Dämpfungsglied 10 dB in N-50 Ohm	31212	19.05.14
EMI TEST RECEIVER	R & S	ESCI	100732	19.08.23
Bi-Log Antenna	SCHWARZBECK	VULB 9168	583	20.05.04
Amplifier	SONOMA INSTRUMENT	310N	284608	19.08.23
COAXIAL FIXED ATTENUATOR	Agilent	8491B-003	2708A18758	20.05.04
Horn antenna	ETS.lindgren	3116	00086635	19.05.10
Horn antenna	ETS.lindgren	3117	161225	19.05.18
AMPLIFIER	L-3 Narda-MITEQ	AMF-7D-01001800 -22-10P	2003683	19.05.15
AMPLIFIER	L-3 Narda-MITEQ	JS44-18004000-33 -8P	2000997	19.08.02
AMPLIFIER	L-3 Narda-MITEQ	AFS5-00101800-25- S-5	2054571	20.02.21
Broadband Pre Amplifier	SCHWARZBECK	BBV9718	216	19.08.01
LOOP Antenna	R & S	HFH2-Z2	100355	20.08.24
Antenna Mast	Innco Systems	MA4640-XP-ET	-	-
Turn Table	Innco Systems	DT2000	79	-
Antenna Mast	Innco Systems	MA4000-EP	303	-
Turn Table	Innco Systems	DT2000	79	-
Highpass Filter	WT	WT-A1699-HS	WT160411002	19.05.14
TWO-LINE V - NETWORK	R&S	ENV216	101584	19.04.05
EMI TEST RECEIVER	R & S	ESCI	101408	19.08.23
Vector Signal Generator	R & S	SMBV100A	257566	20.01.04
Signal Generator	R & S	SMR40	100007	19.05.15
Cable Assembly	RadiAll	2301761768000PJ	1724.659	-
Cable Assembly	gigalane	RG-400	-	-
Cable Assembly	HUER+SUHNER	SUCOFLEX 104	MY4342/4	-

End of test report