

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

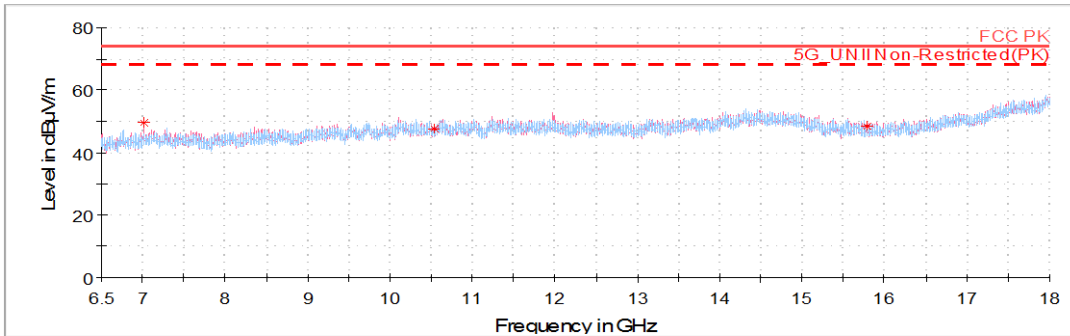
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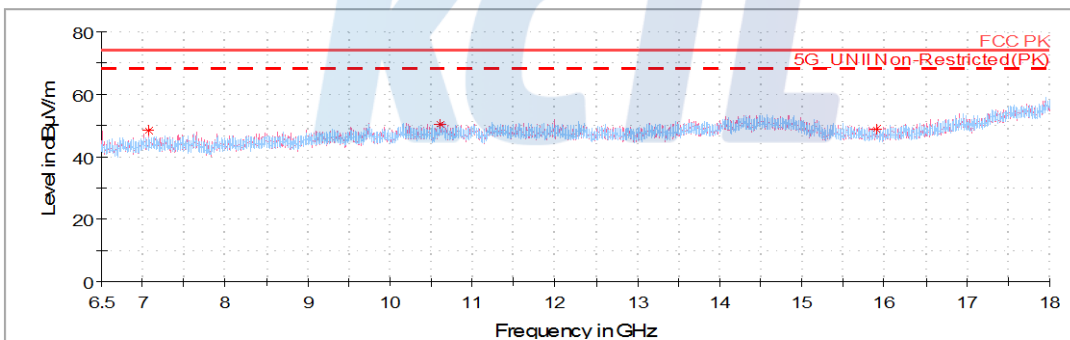
- 6.5 GHz ~ 18 GHz data_U-NII-2A

- 802.11a

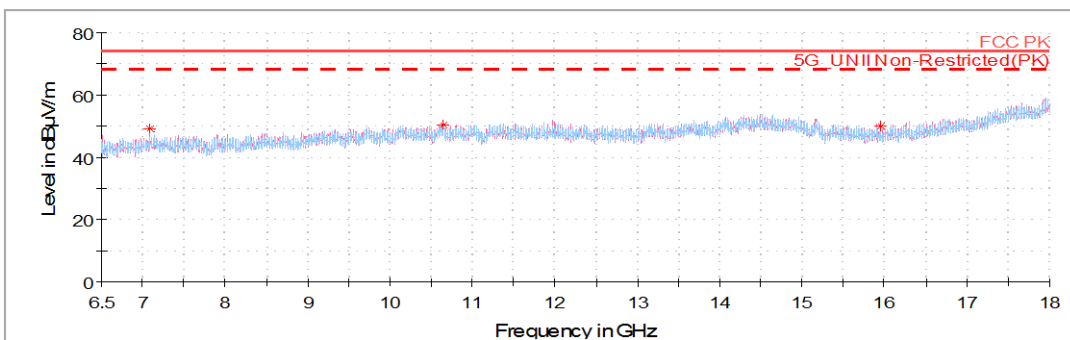
Lowest Channel (5 260 MHz)



Middle Channel (5 300 MHz)

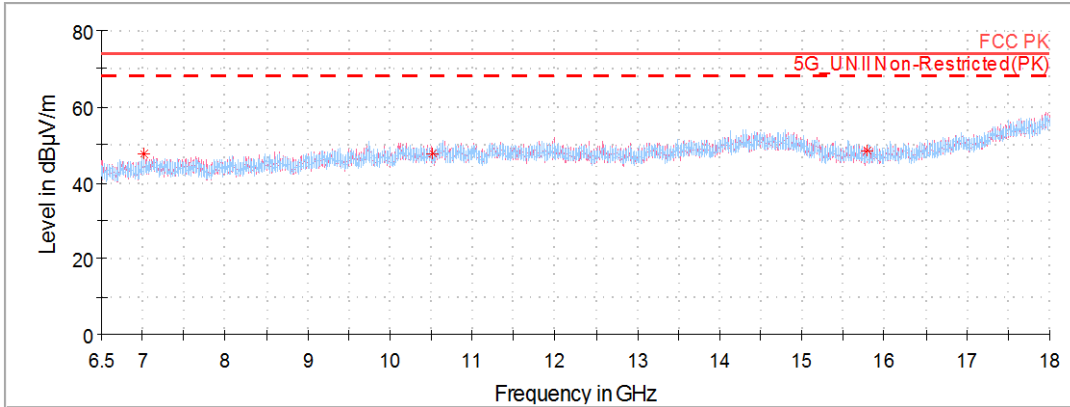


Highest Channel (5 320 MHz)

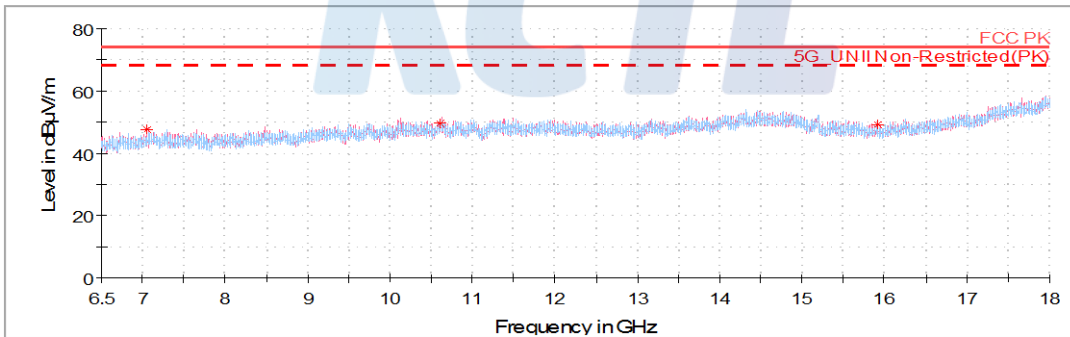


- 802.11n HT20

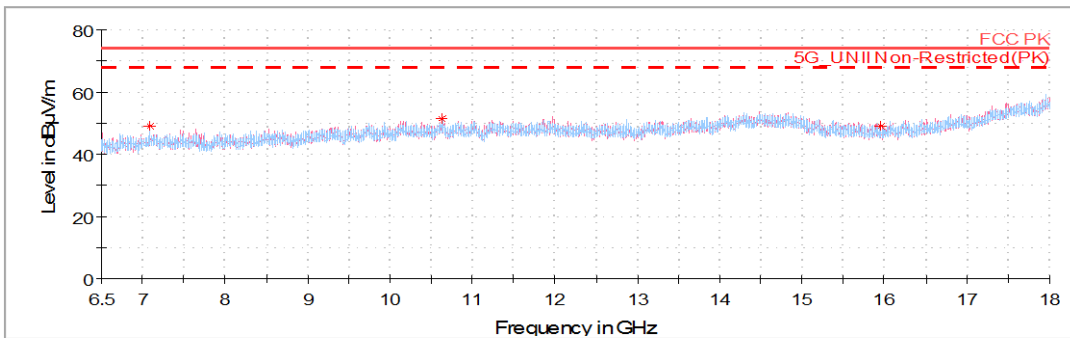
Lowest Channel (5 260 MHz)



Middle Channel (5 300 MHz)



Highest Channel (5 320 MHz)



KCTL Inc.

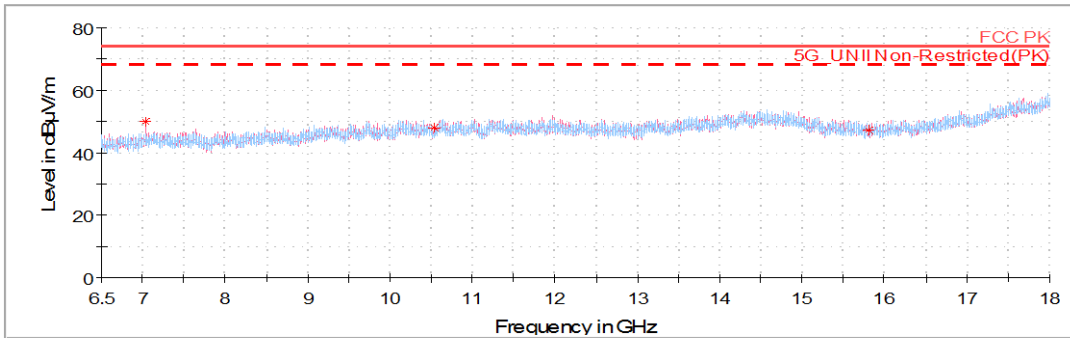
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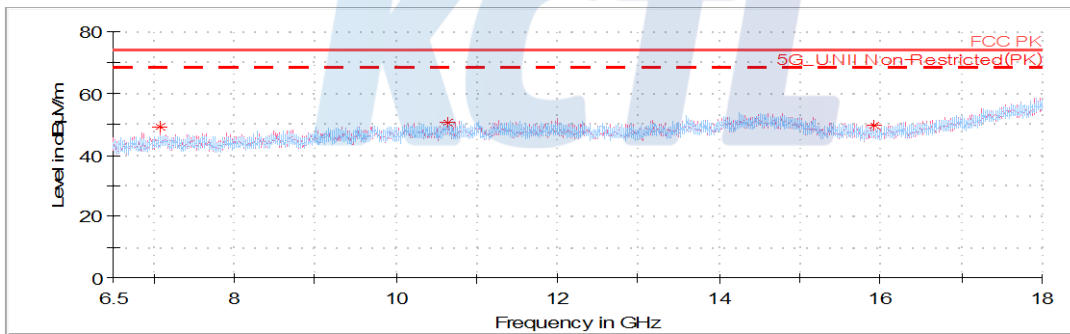


- 802.11n HT40

Lowest Channel (5 270 MHz)

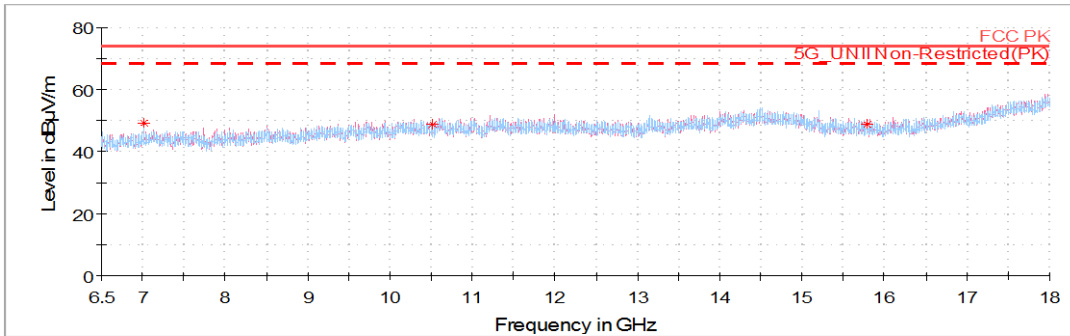


Highest Channel (5 310 MHz)

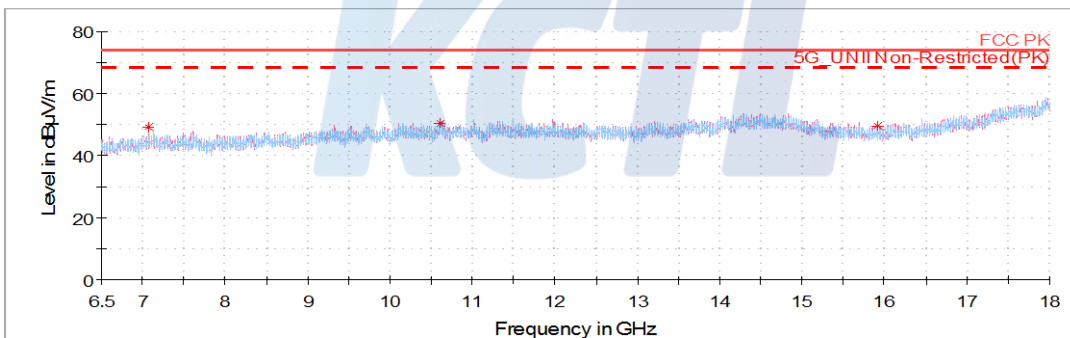


- 802.11ac VHT20

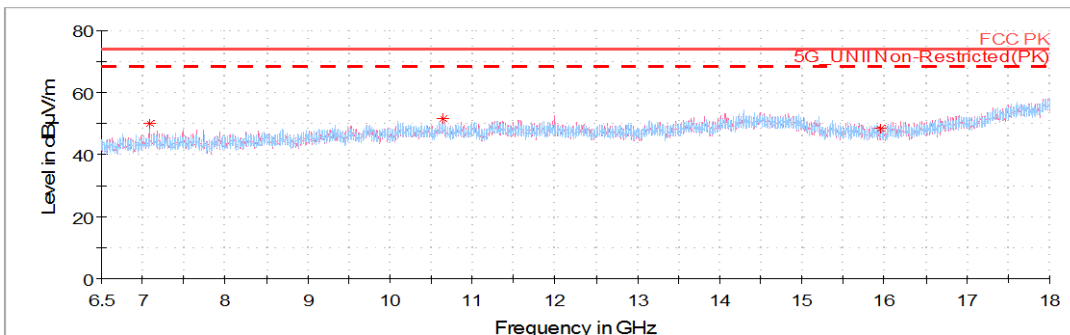
Lowest Channel (5 260 MHz)



Middle Channel (5 300 MHz)

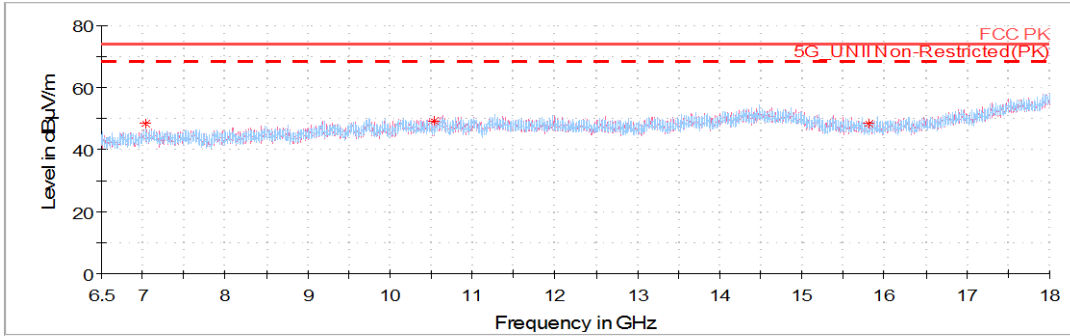


Highest Channel (5 320 MHz)

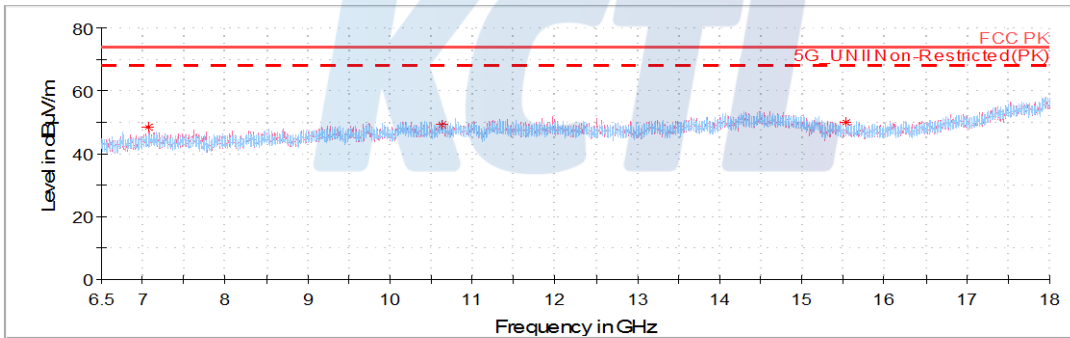


- 802.11ac VHT40

Lowest Channel (5 270 MHz)

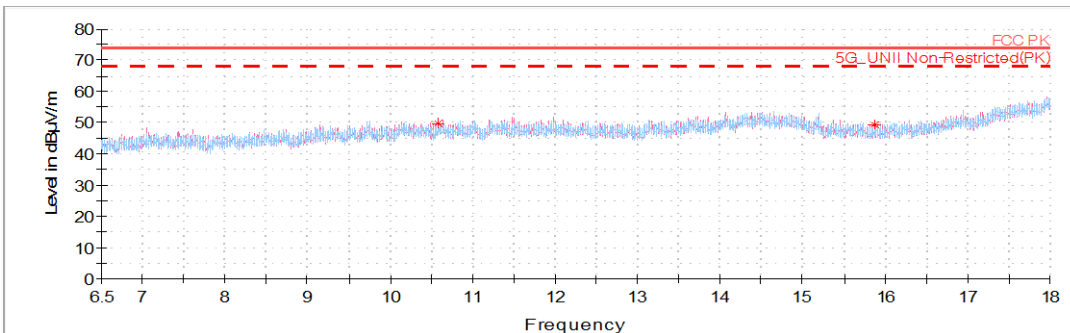


Highest Channel (5 310 MHz)



- 802.11ac VHT80

Middle Channel (5 290 MHz)



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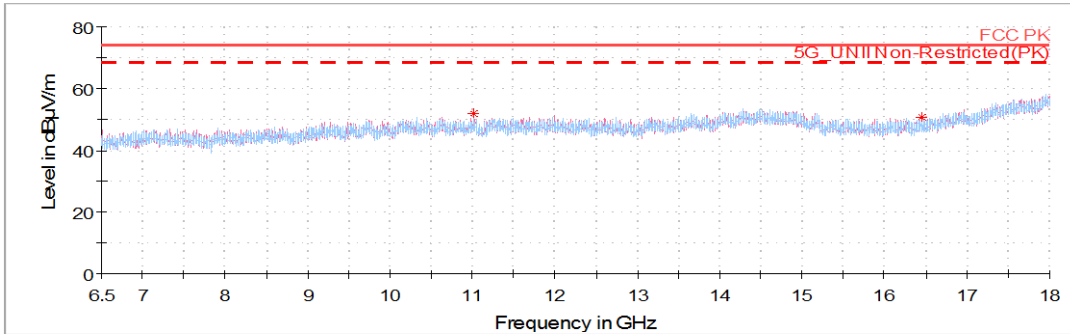
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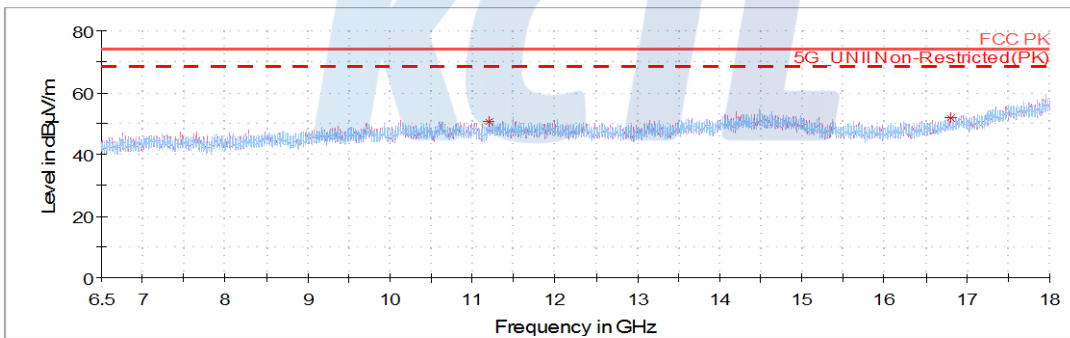
- 6.5 GHz ~ 18 GHz data_U-NII-2C

- 802.11a

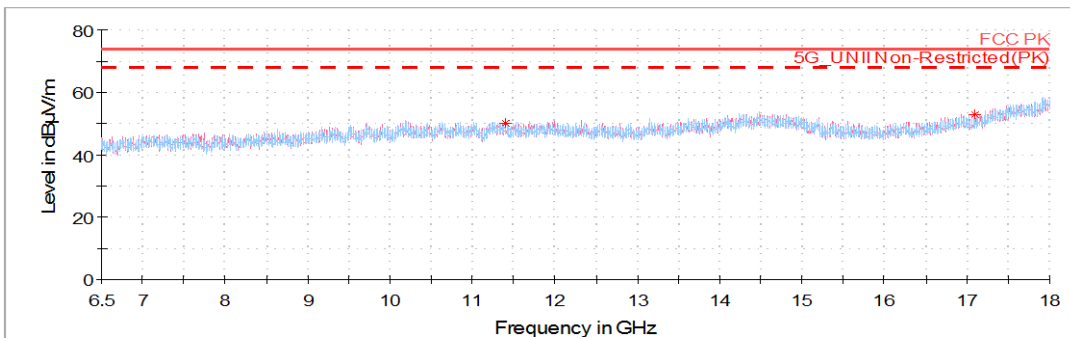
Lowest Channel (5 500 MHz)



Middle Channel (5 600 MHz)

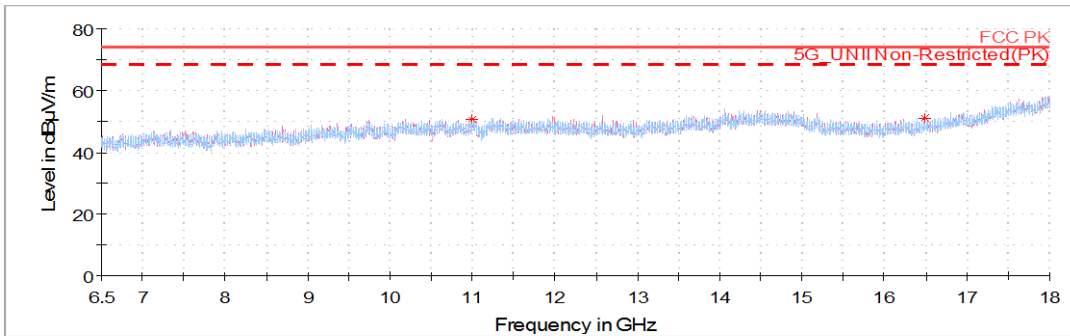


Highest Channel (5 700 MHz)

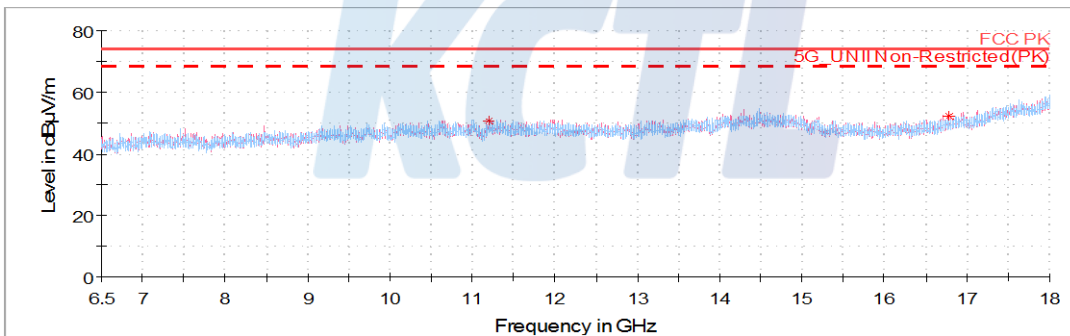


- 802.11n HT20

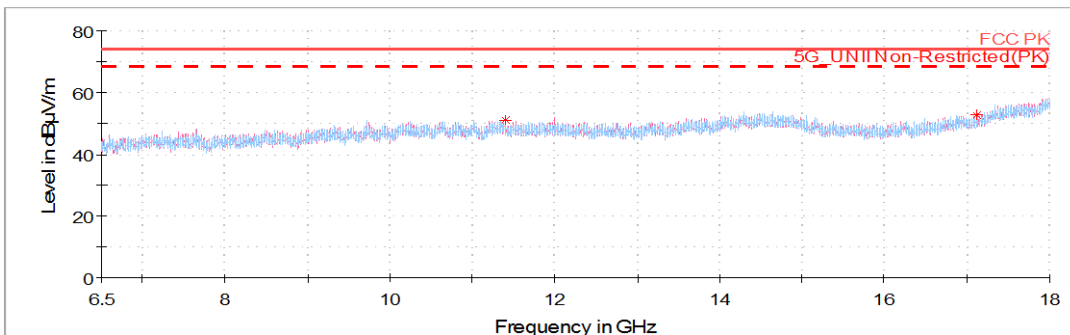
Lowest Channel (5 500 MHz)



Middle Channel (5 600 MHz)

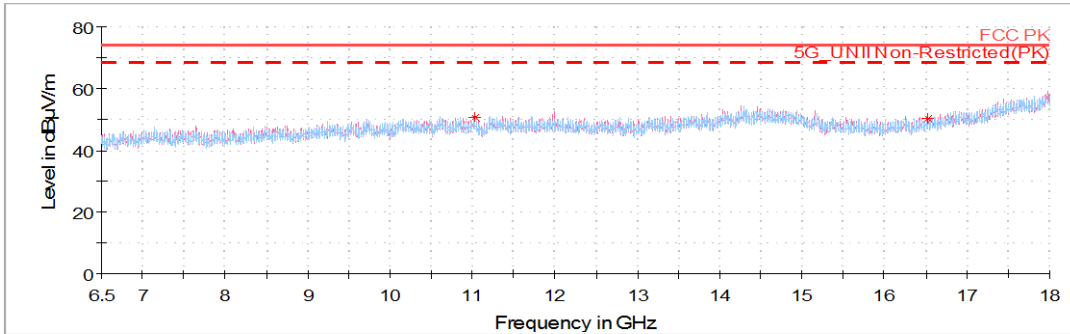


Highest Channel (5 700 MHz)

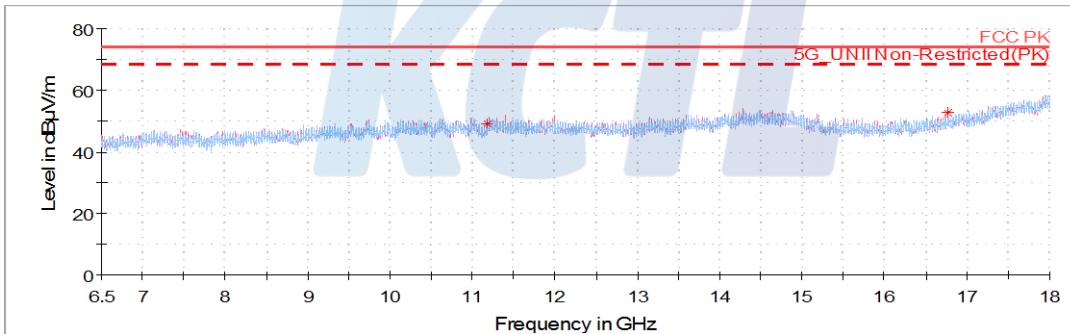


- 802.11n HT40

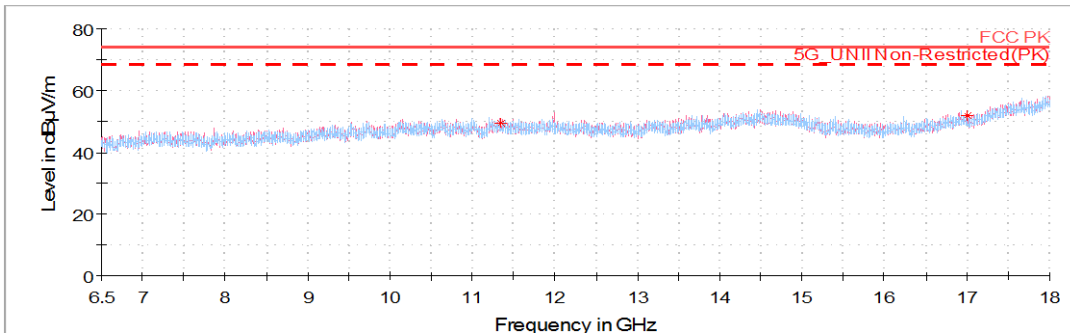
Lowest Channel (5 510 MHz)



Middle Channel (5 590 MHz)

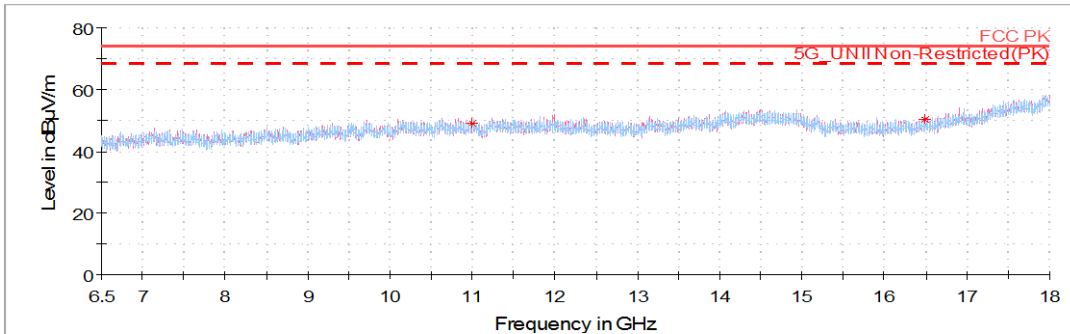


Highest Channel (5 670 MHz)

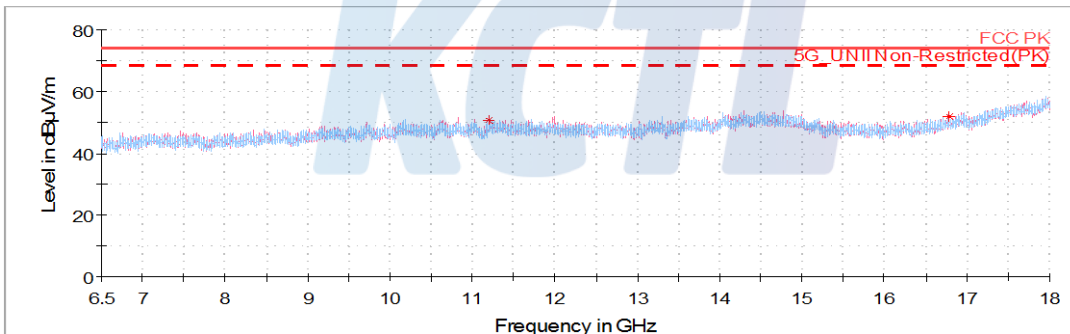


- 802.11ac VHT20

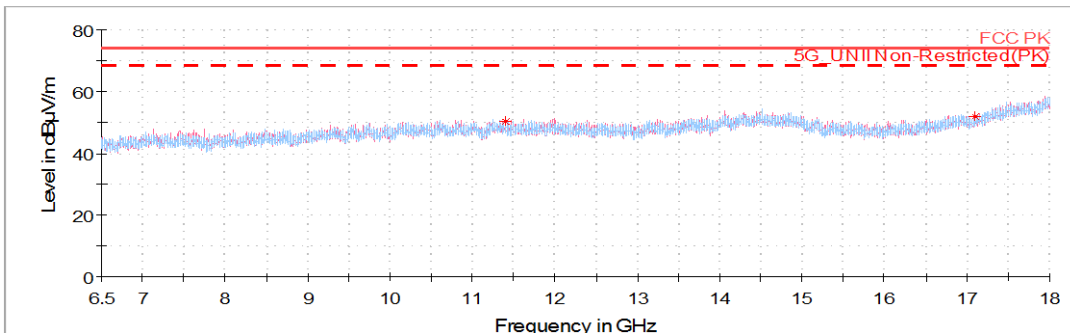
Lowest Channel (5 500 MHz)



Middle Channel (5 600 MHz)

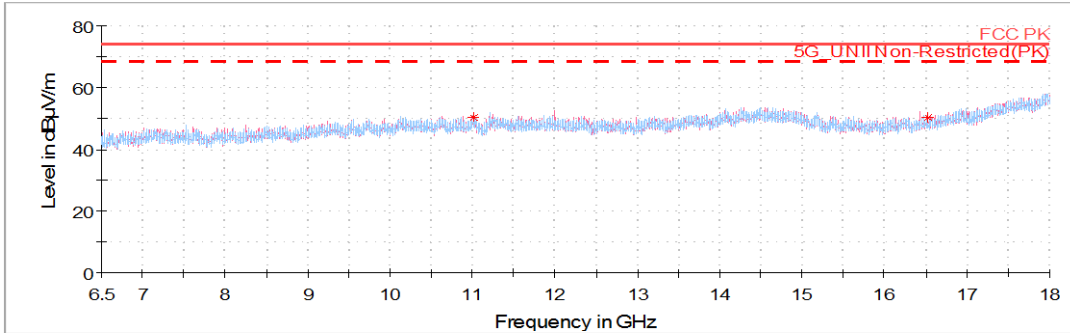


Highest Channel (5 700 MHz)

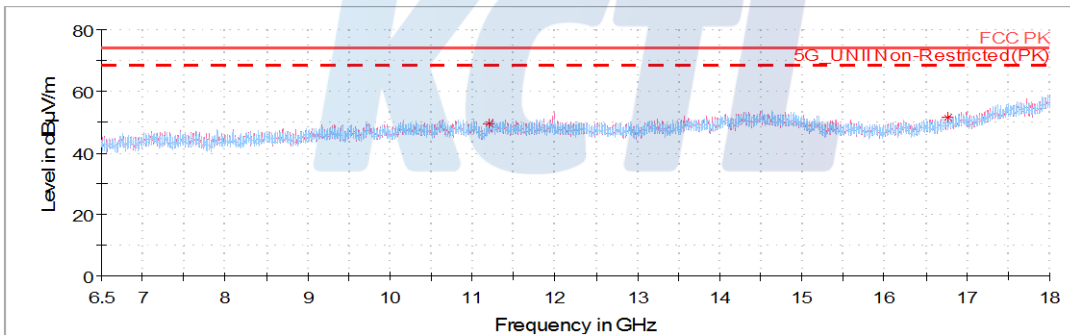


- 802.11ac VHT40

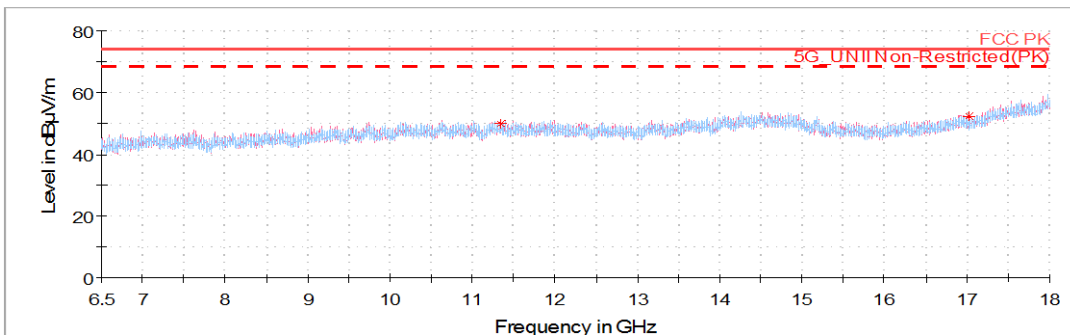
Lowest Channel (5 510 MHz)



Middle Channel (5 590 MHz)



Highest Channel (5 670 MHz)



KCTL Inc.

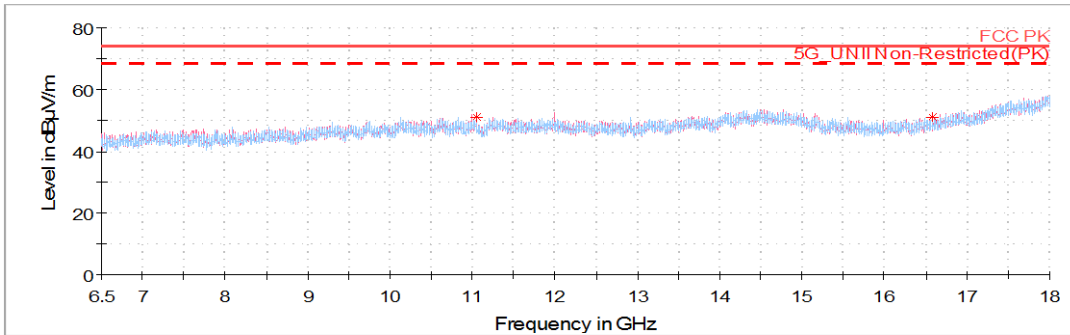
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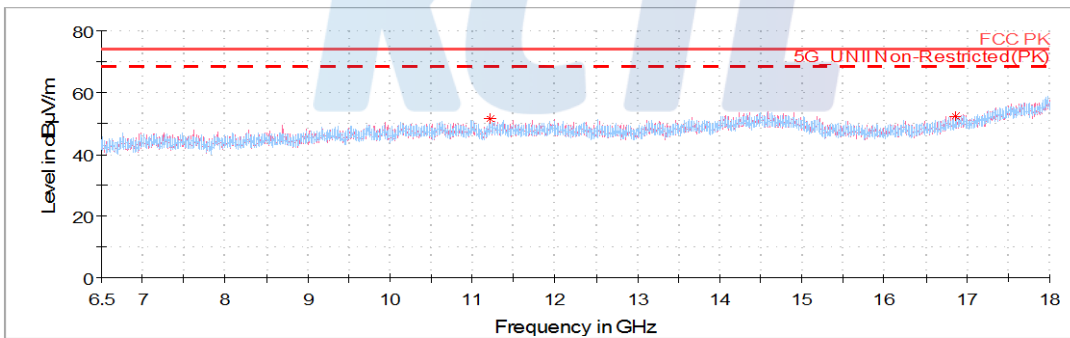


- 802.11ac VHT80

Lowest Channel (5 530 MHz)



Highest Channel (5 610 MHz)



KCTL Inc.

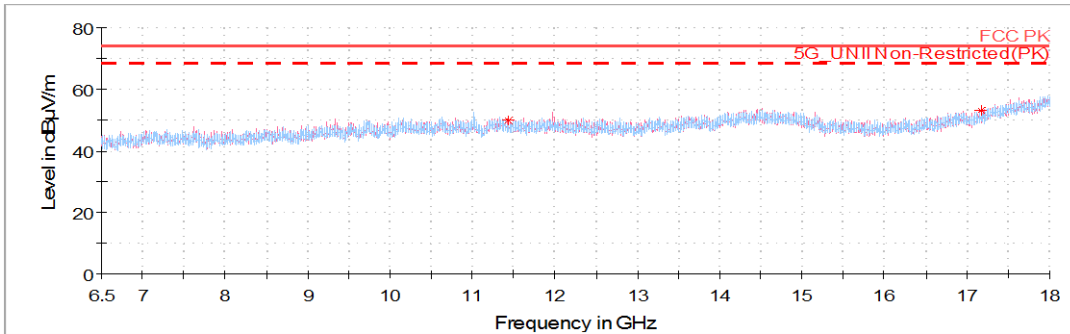
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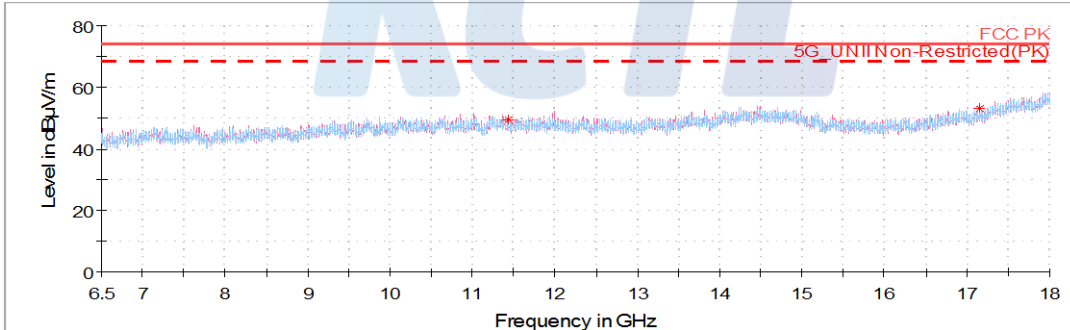
- 802.11a

5 720 MHz



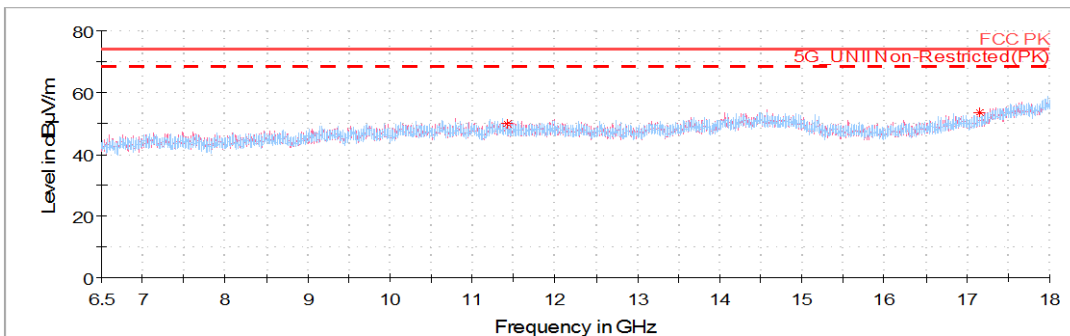
- 802.11n HT20

5 720 MHz



- 802.11n HT40

5 710 MHz



KCTL Inc.

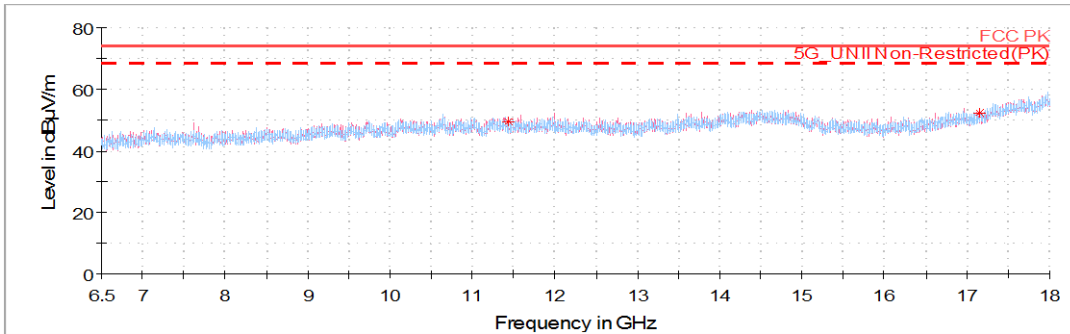
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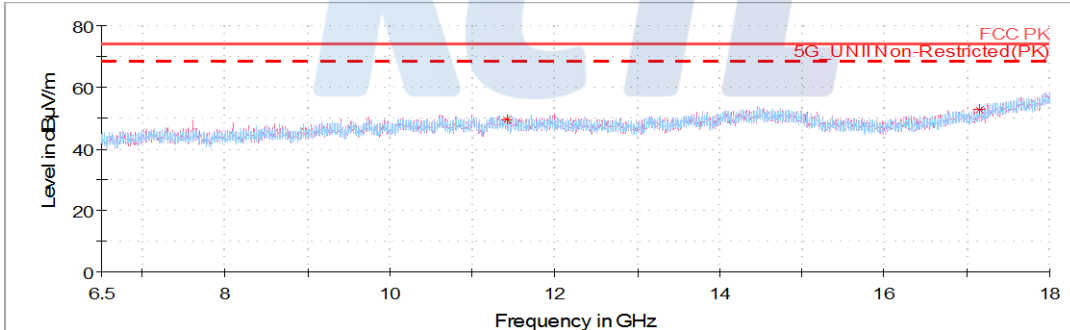
- 802.11ac VHT20

5 720 MHz



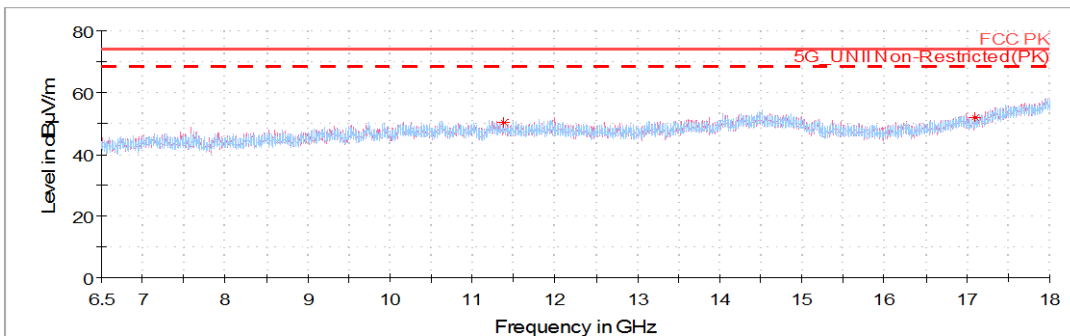
- 802.11ac VHT40

5 710 MHz



- 802.11ac VHT80

5 690 MHz



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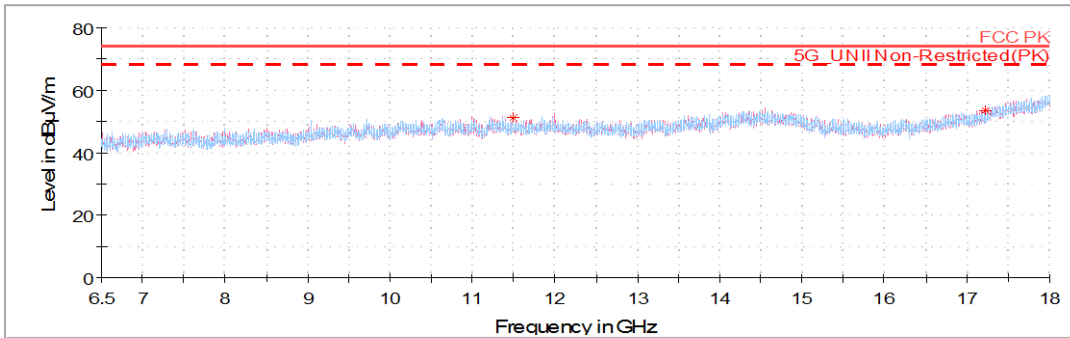
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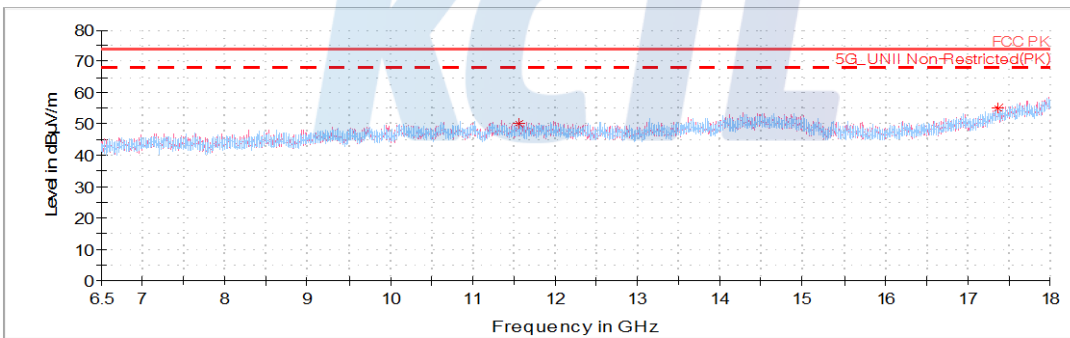
- 6.5 GHz ~ 18 GHz data_U-NII-3

- 802.11a

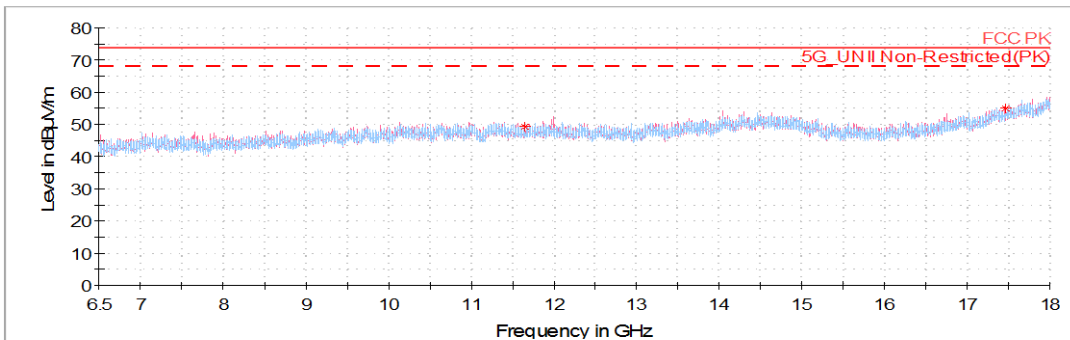
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

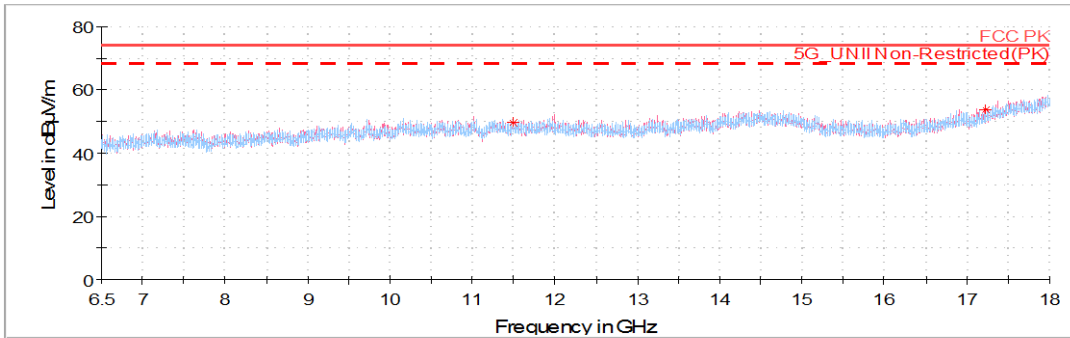


Highest Channel (5 825 MHz)

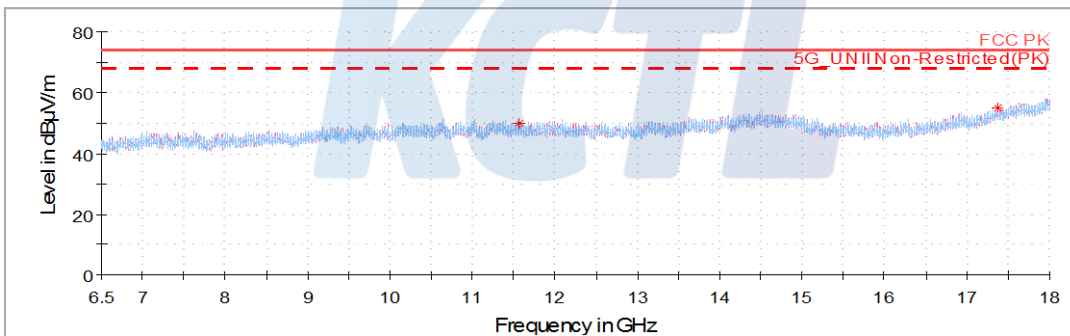


- 802.11n HT20

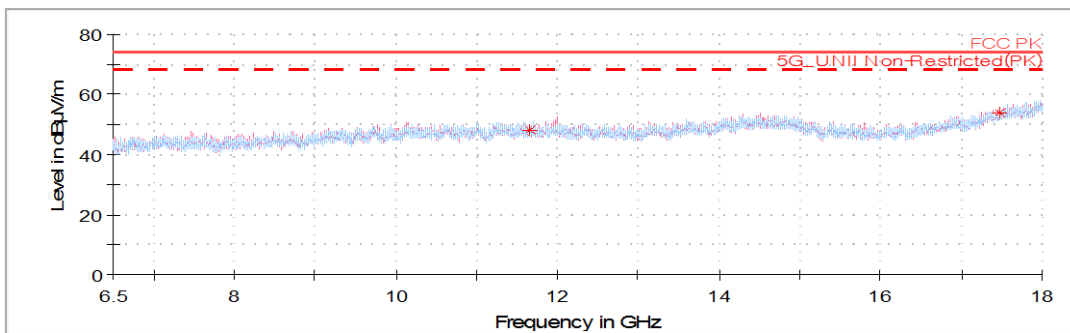
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

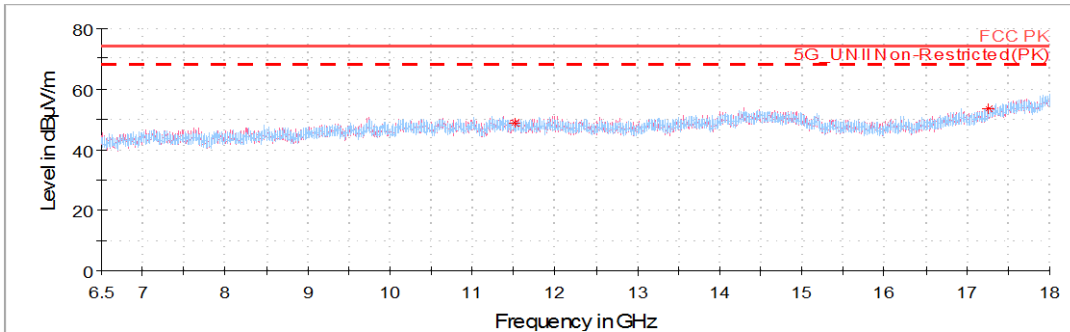


Highest Channel (5 825 MHz)

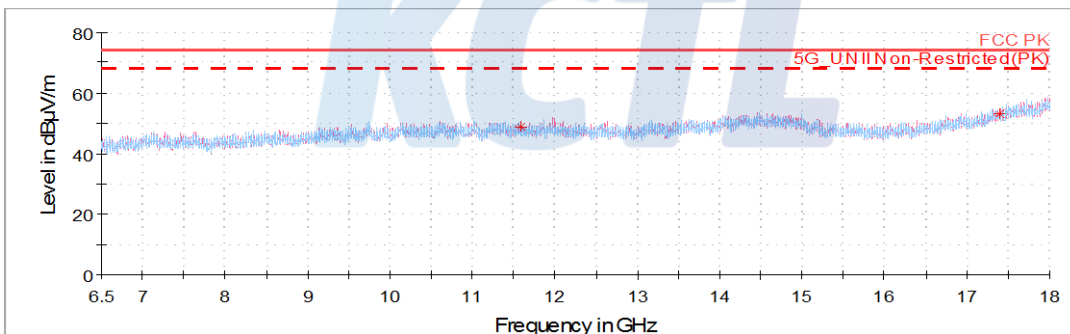


- 802.11n HT40

Lowest Channel (5 755 MHz)

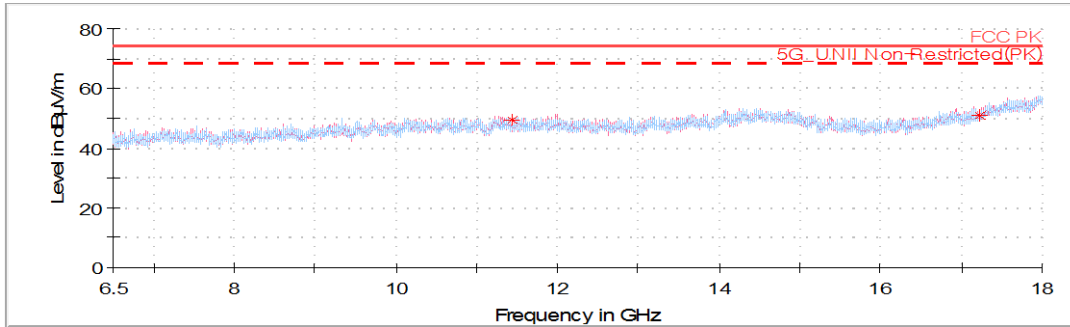


Highest Channel (5 795 MHz)

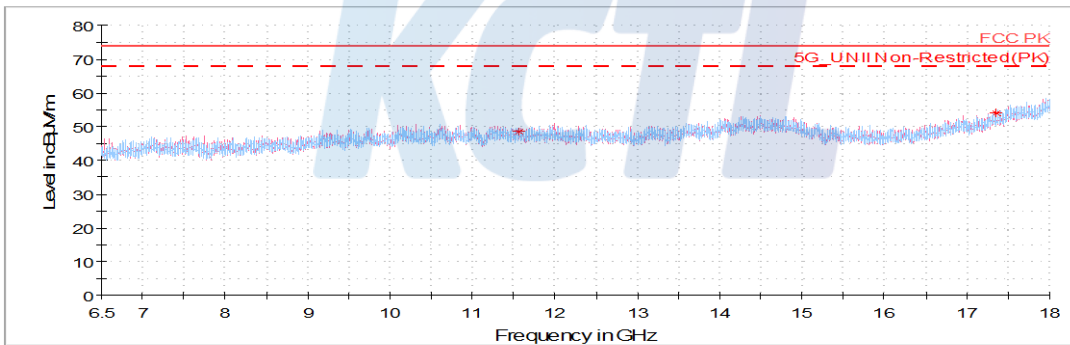


- 802.11ac VHT20

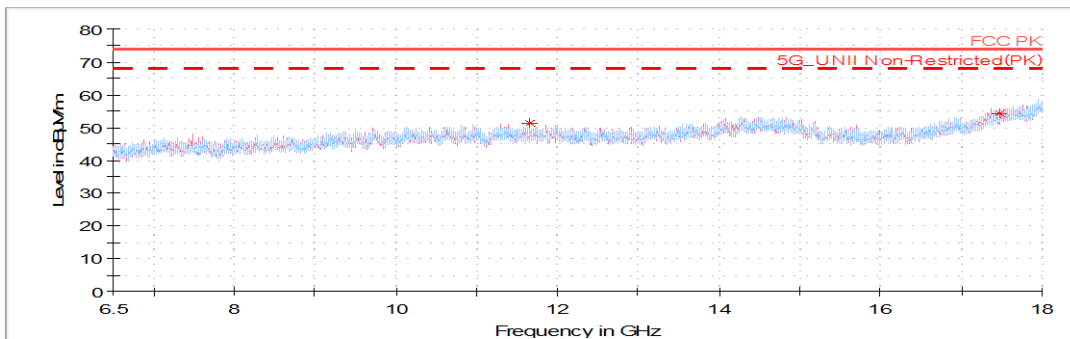
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

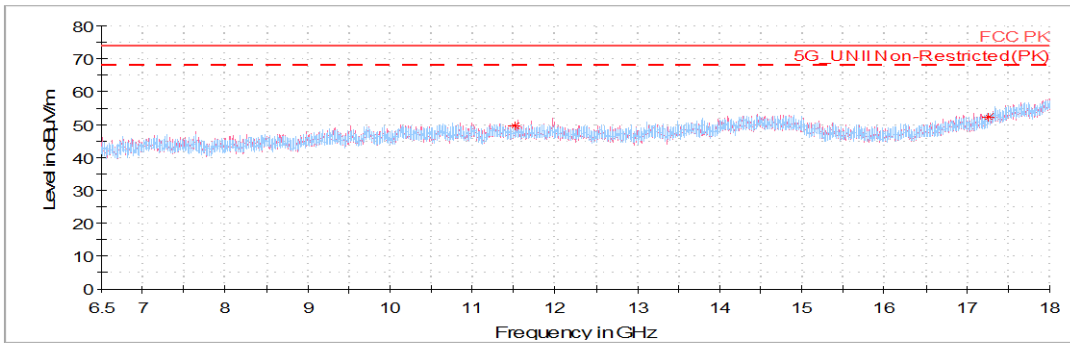


Highest Channel (5 825 MHz)

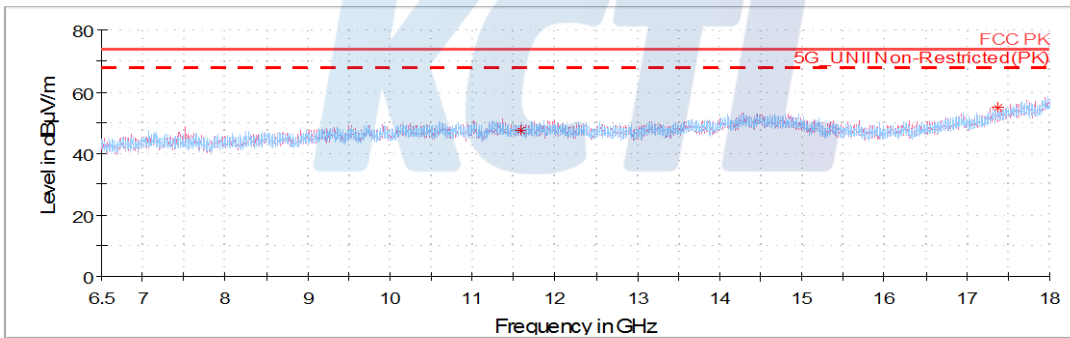


- 802.11ac VHT40

Lowest Channel (5 755 MHz)

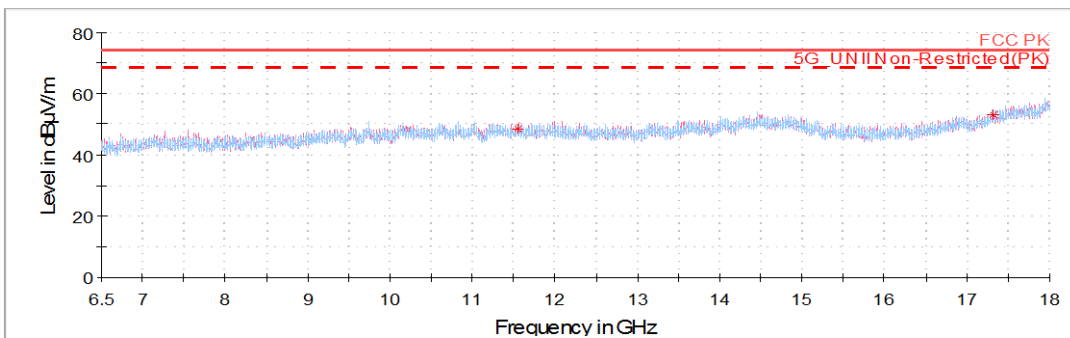


Highest Channel (5 795 MHz)



- 802.11ac VHT80

Middle Channel (5 775 MHz)



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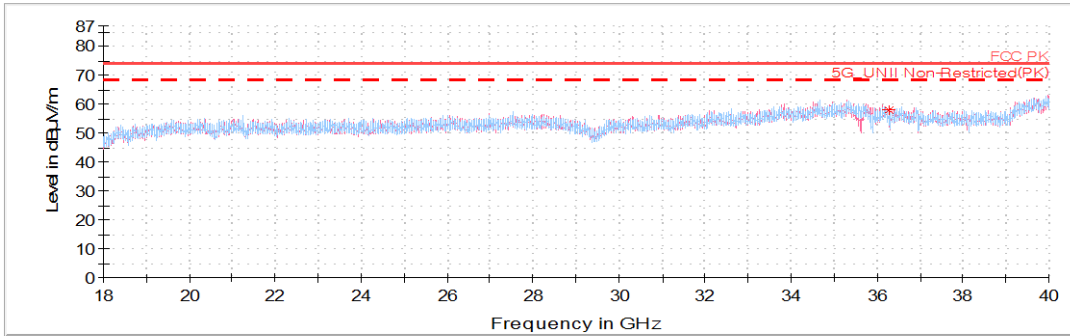
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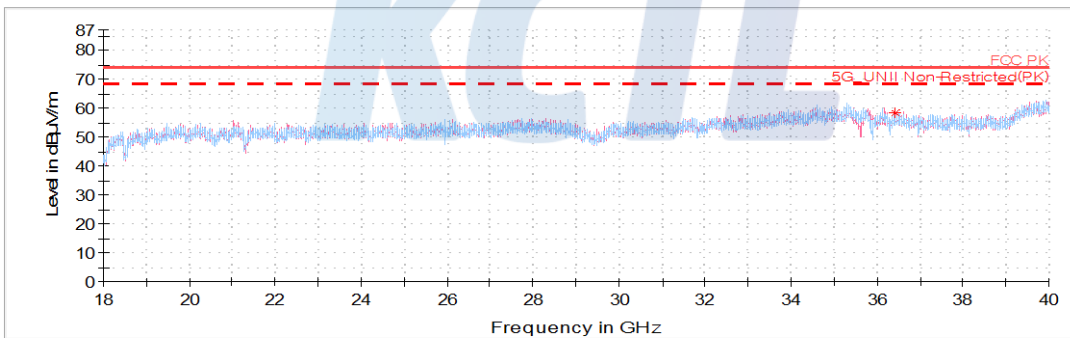
- 18 GHz ~ 40 GHz data_U-NII-1

- 802.11a

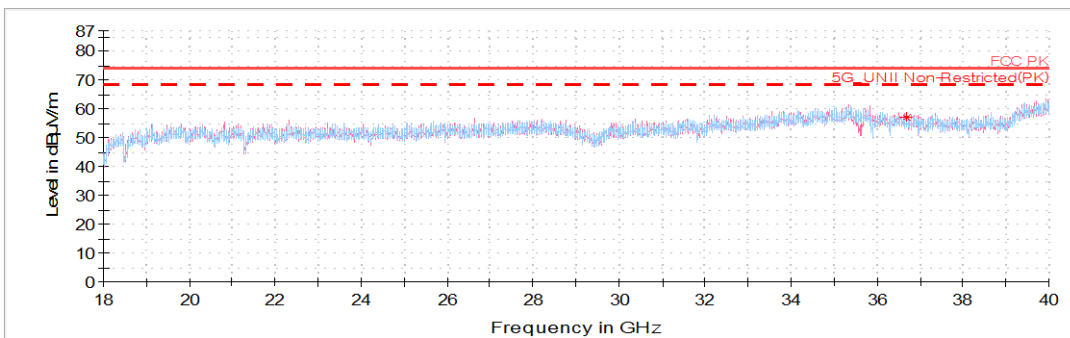
Lowest Channel (5 180 MHz)



Middle Channel (5 200 MHz)

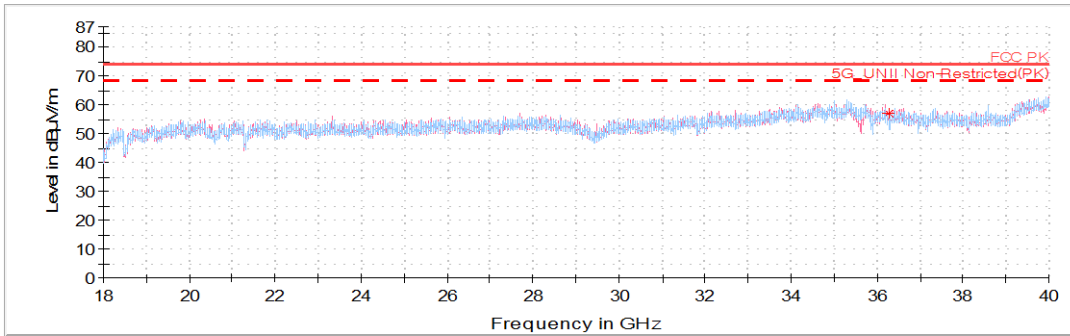


Highest Channel (5 240 MHz)

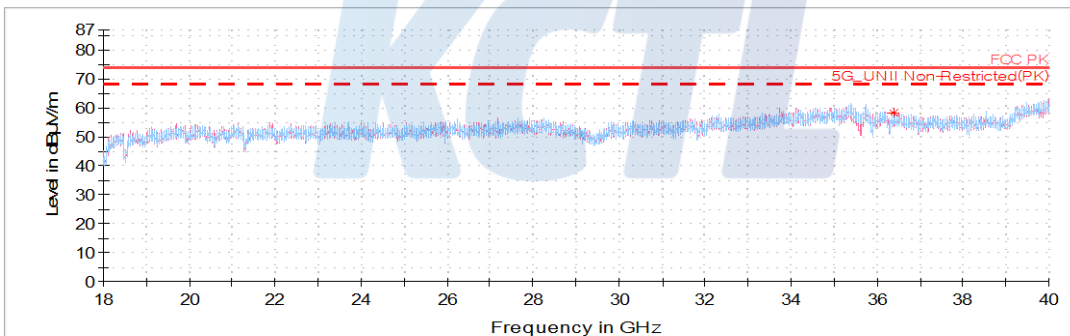


- 802.11n HT20

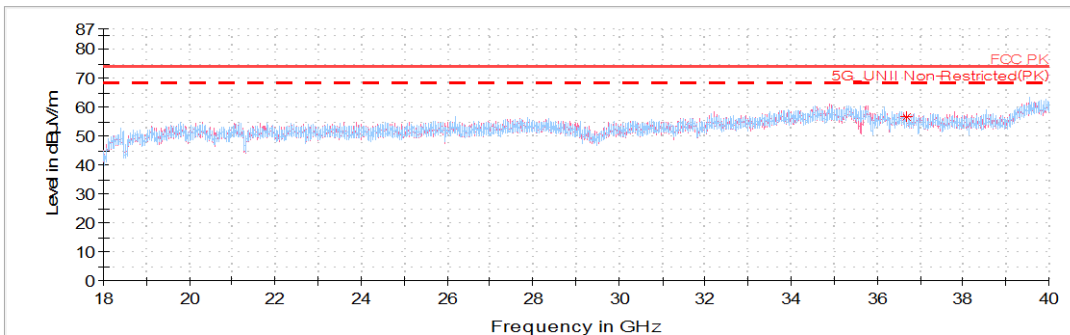
Lowest Channel (5 180 MHz)



Middle Channel (5 200 MHz)



Highest Channel (5 240 MHz)



KCTL Inc.

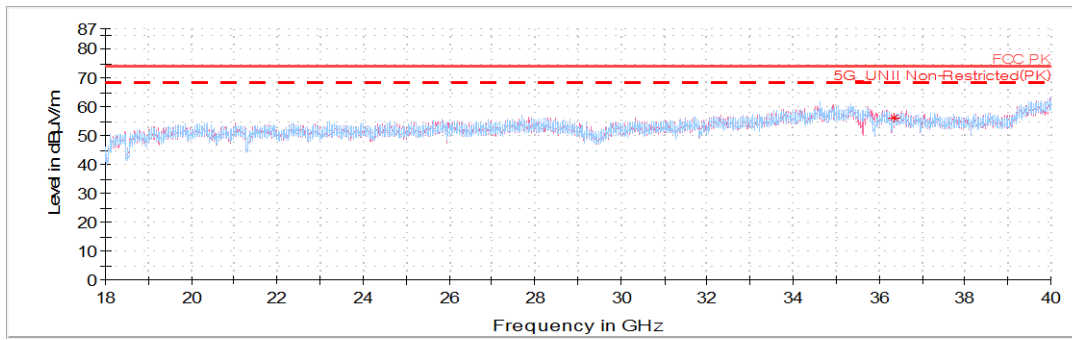
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Suwon-si, Gyeonggi-do, 16677, Korea
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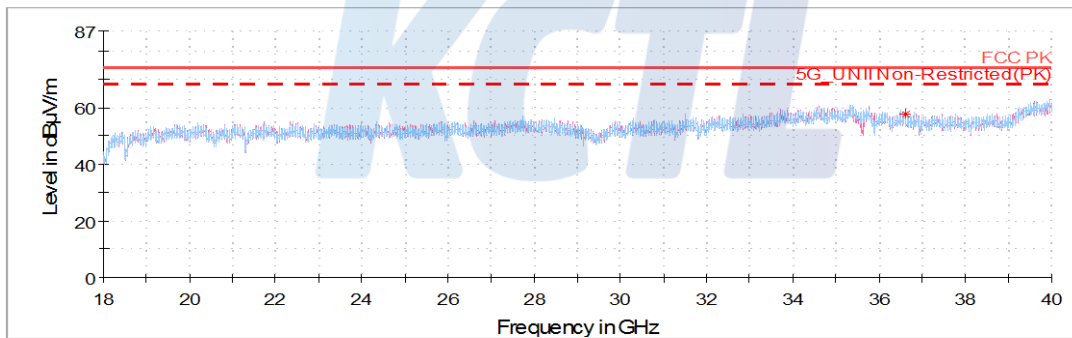


- 802.11n HT40

Lowest Channel (5 190 MHz)

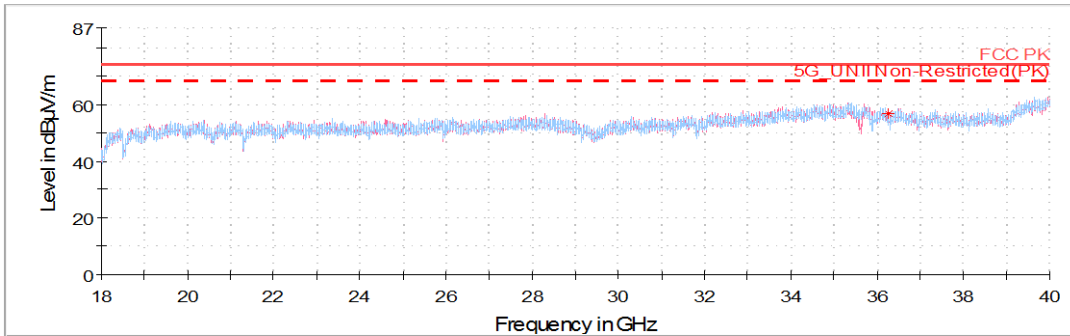


Highest Channel (5 230 MHz)

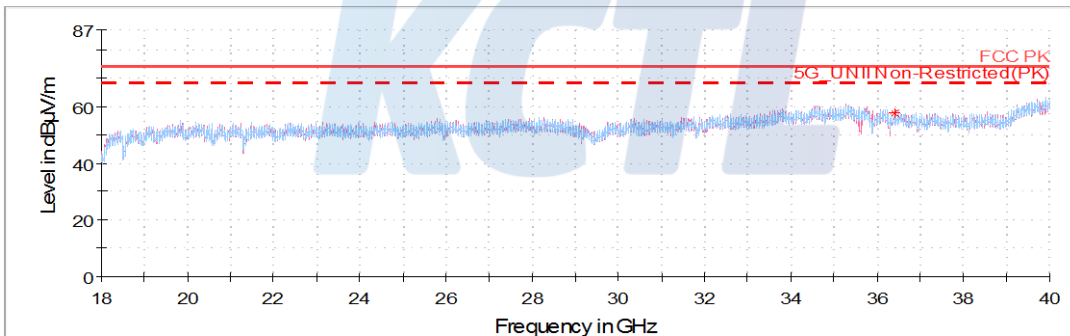


- 802.11ac VHT20

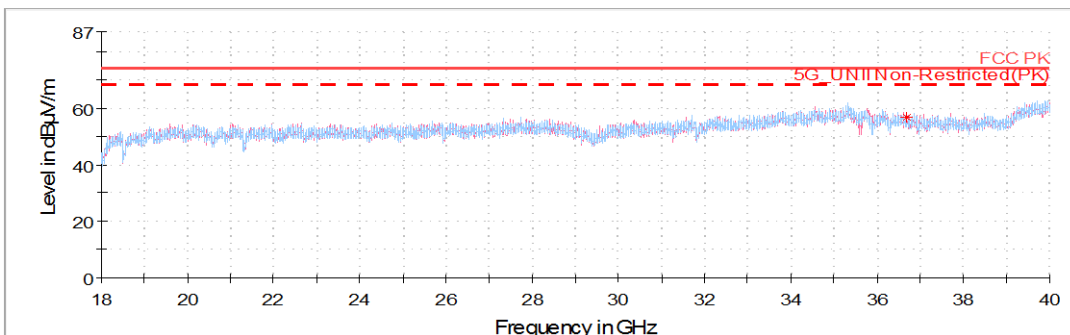
Lowest Channel (5 180 MHz)



Middle Channel (5 200 MHz)

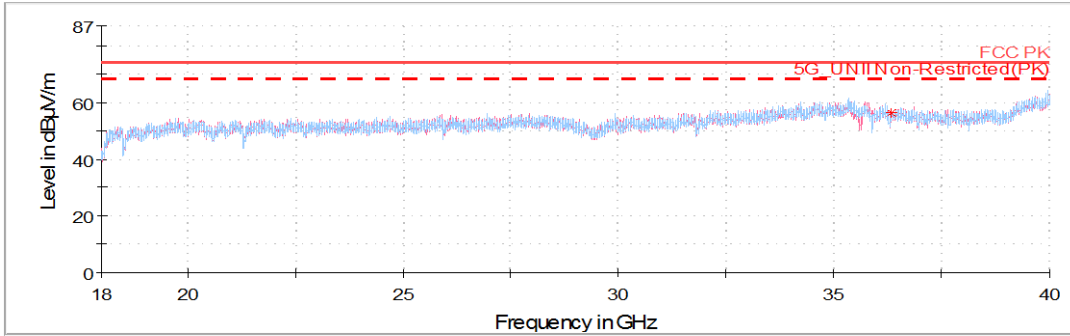


Highest Channel (5 240 MHz)

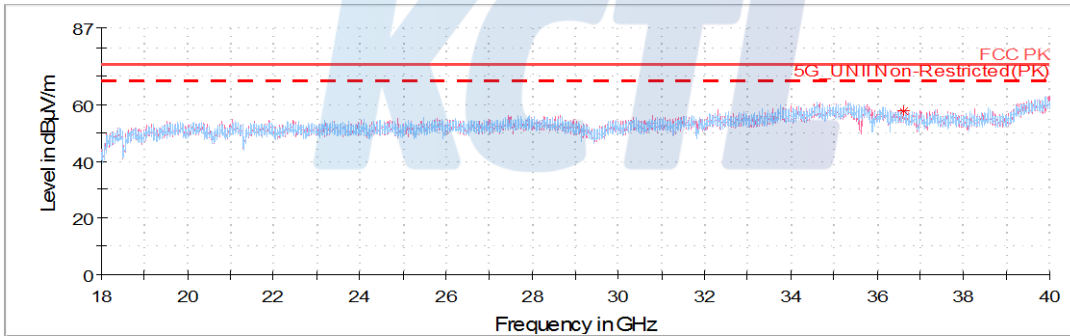


- 802.11ac VHT40

Lowest Channel (5 190 MHz)

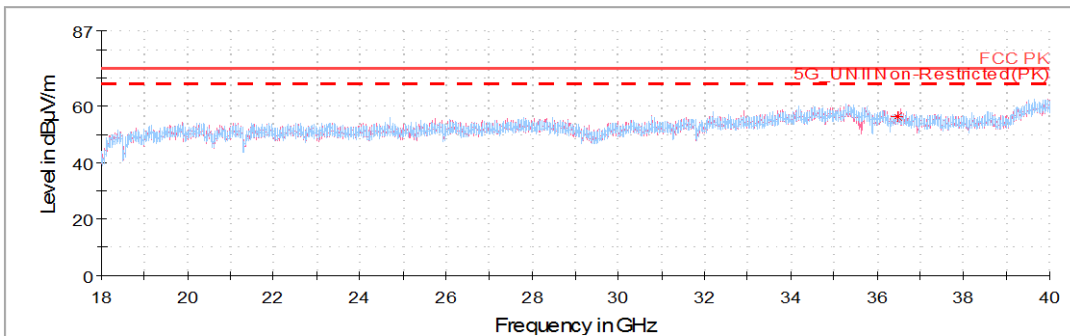


Highest Channel (5 230 MHz)



- 802.11ac VHT80

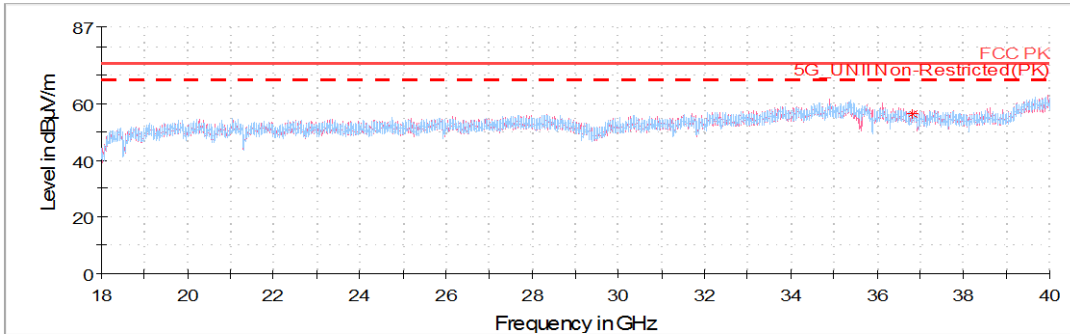
Middle Channel (5 210 MHz)



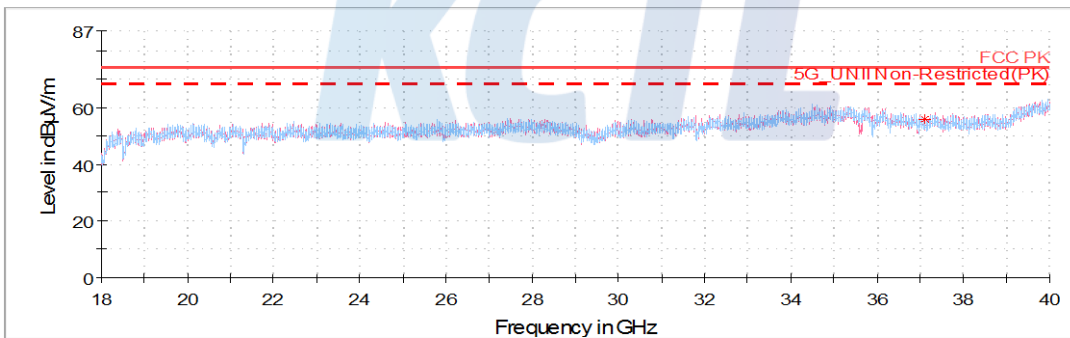
- 18 GHz ~ 40 GHz data_U-NII-2A

- 802.11a

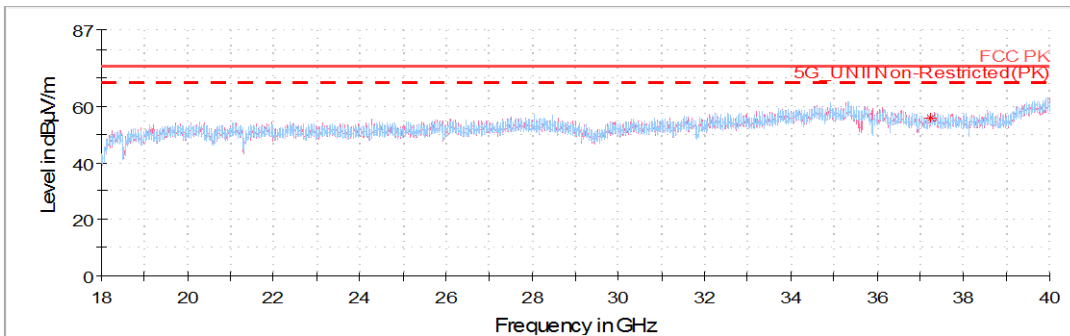
Lowest Channel (5 260 MHz)



Middle Channel (5 300 MHz)

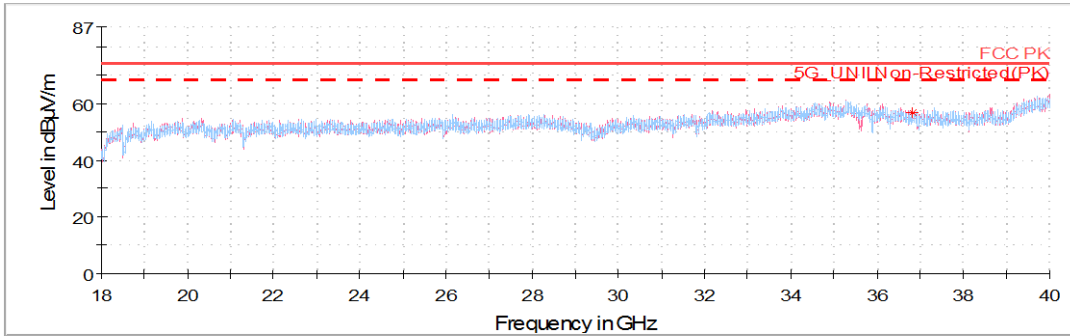


Highest Channel (5 320 MHz)

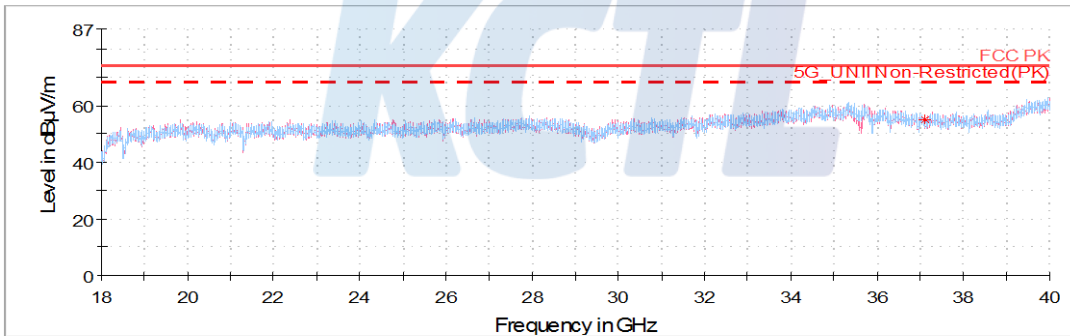


- 802.11n HT20

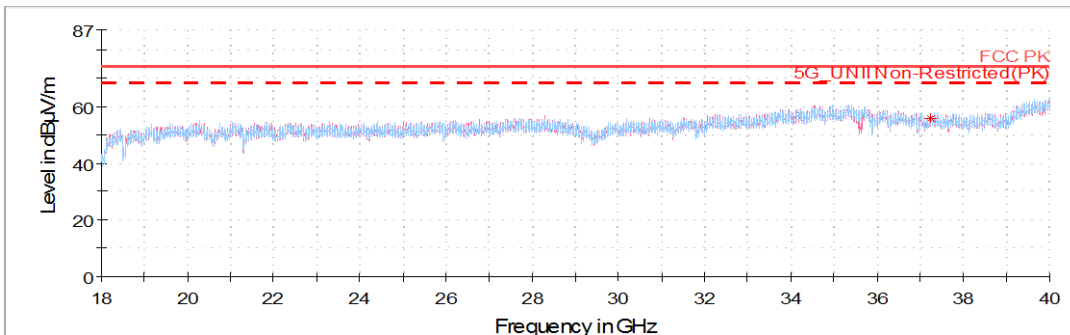
Lowest Channel (5 260 MHz)



Middle Channel (5 300 MHz)

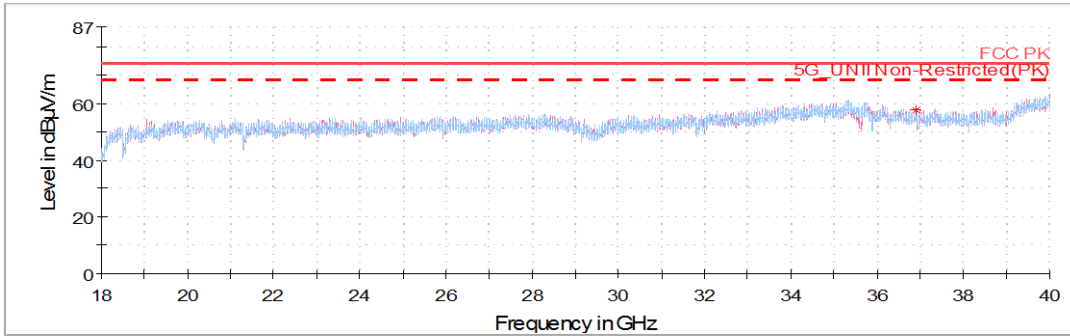


Highest Channel (5 320 MHz)

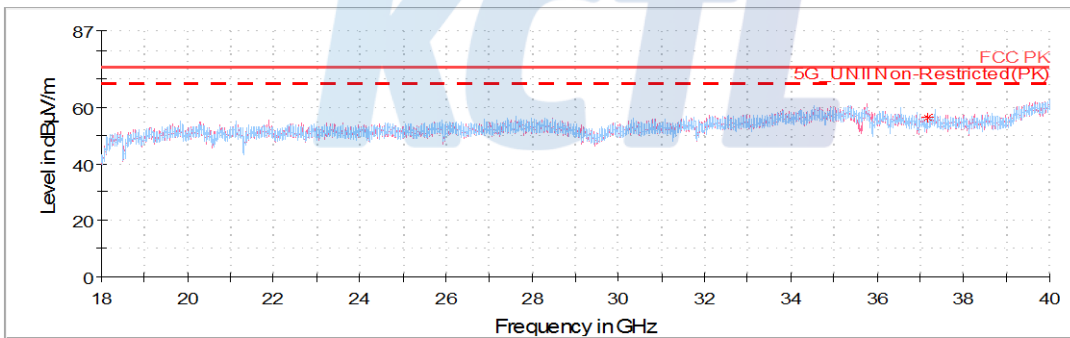


- 802.11n HT40

Lowest Channel (5 270 MHz)

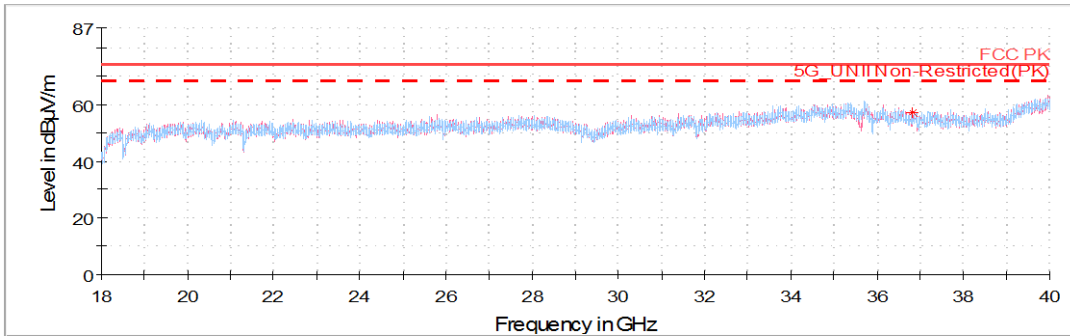


Highest Channel (5 310 MHz)

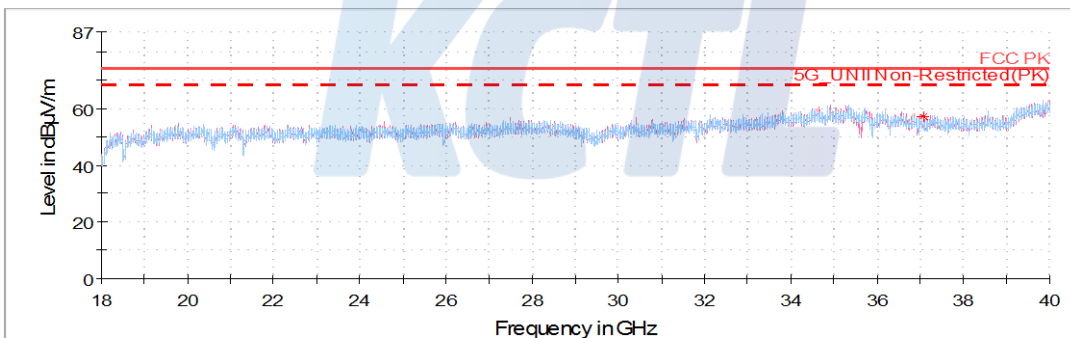


- 802.11ac VHT20

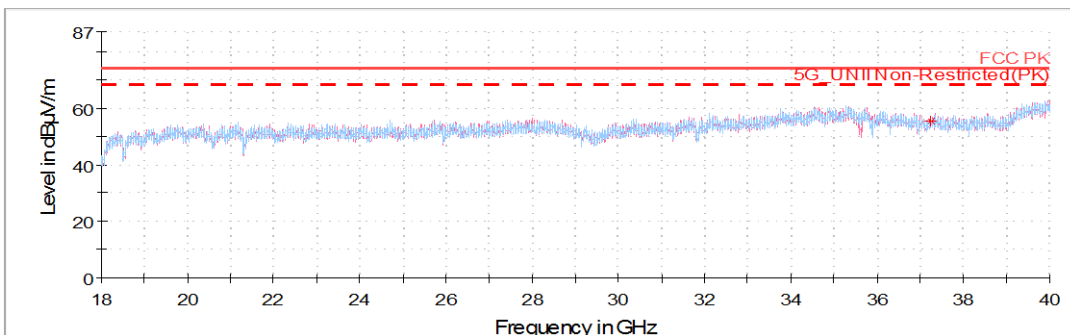
Lowest Channel (5 260 MHz)



Middle Channel (5 300 MHz)

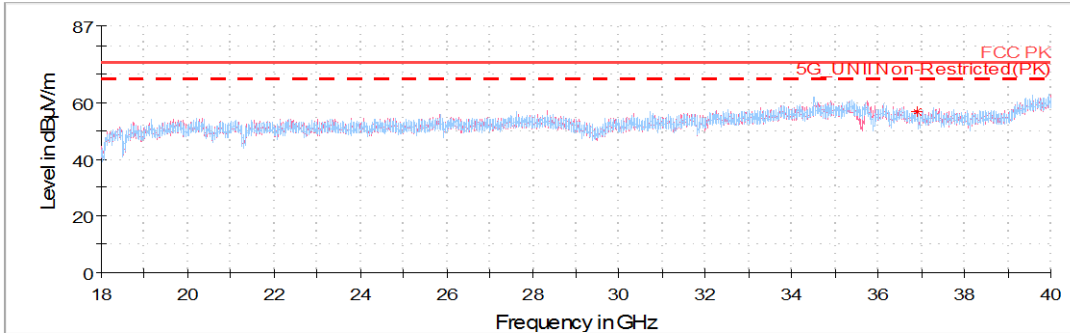


Highest Channel (5 320 MHz)

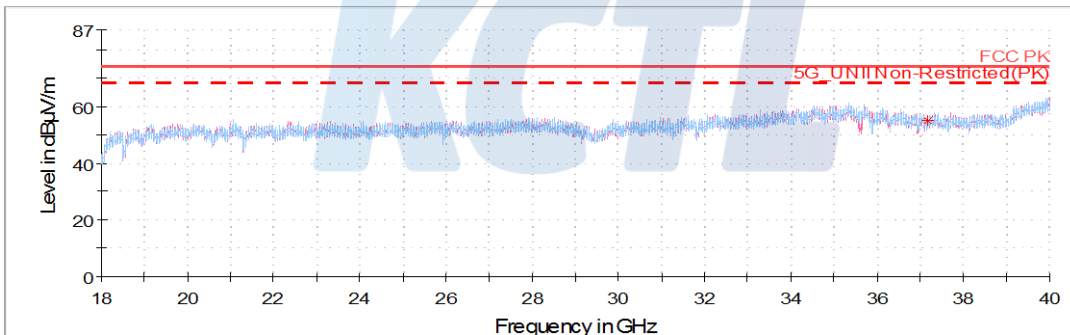


- 802.11ac VHT40

Lowest Channel (5 270 MHz)

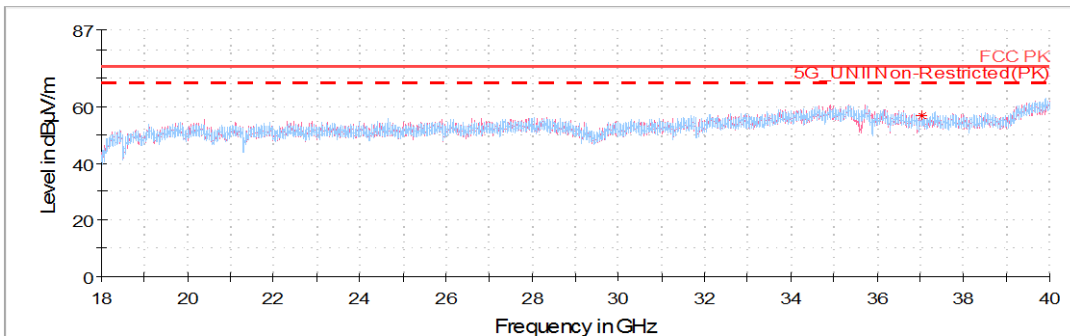


Highest Channel (5 310 MHz)



- 802.11ac VHT80

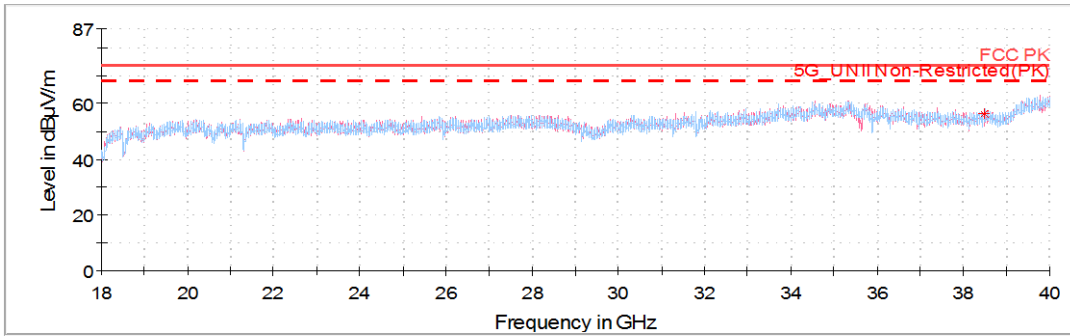
Middle Channel (5 290 MHz)



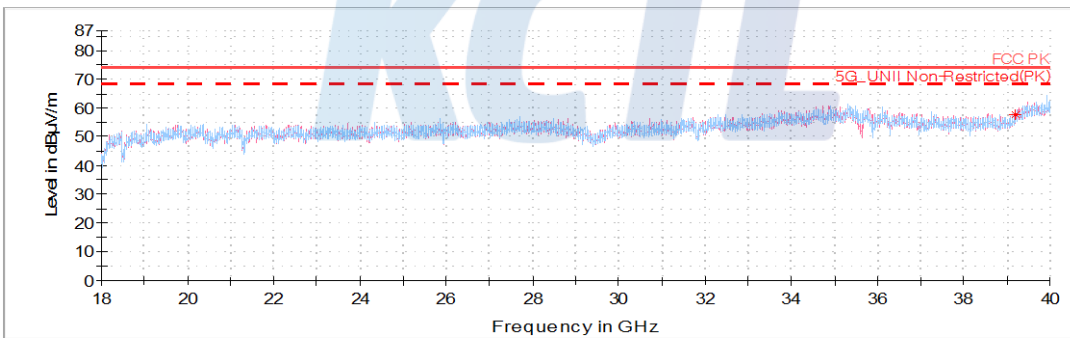
- 18 GHz ~ 40 GHz_U-NII-2C

- 802.11a

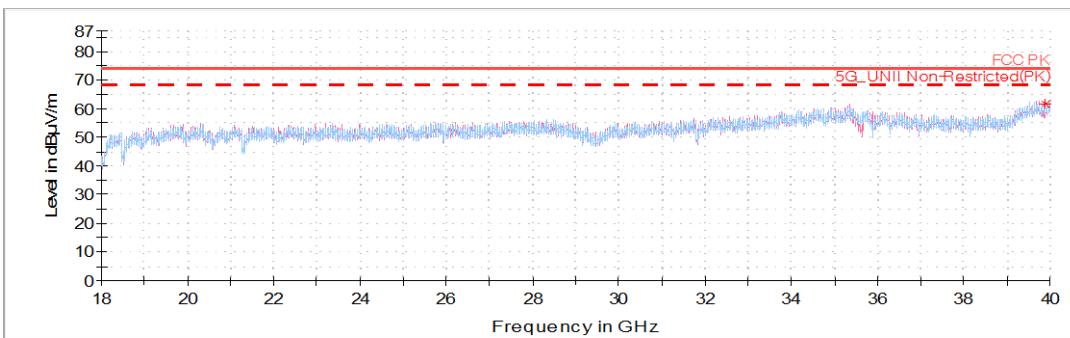
Lowest Channel (5 500 MHz)



Middle Channel (5 600 MHz)

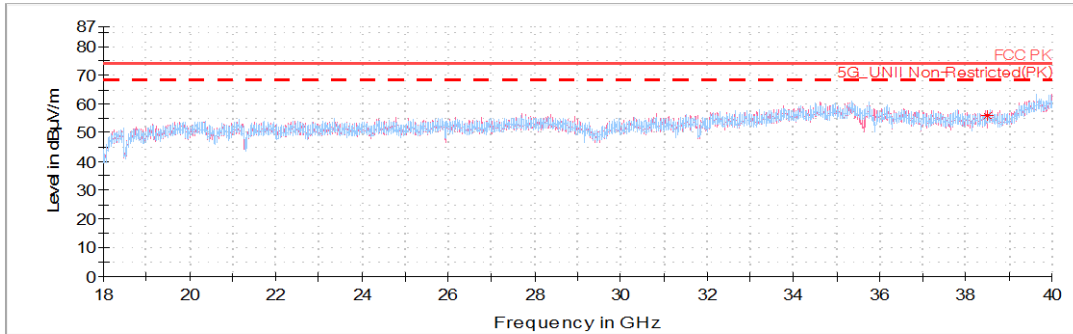


Highest Channel (5 700 MHz)

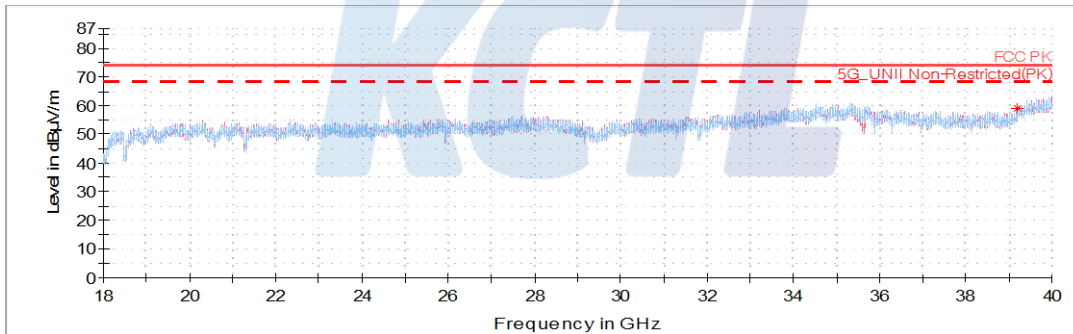


- 802.11n HT20

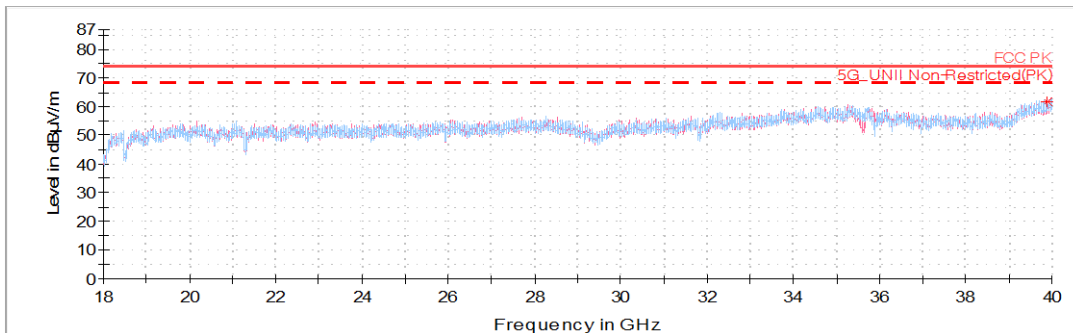
Lowest Channel (5 500 MHz)



Middle Channel (5 600 MHz)

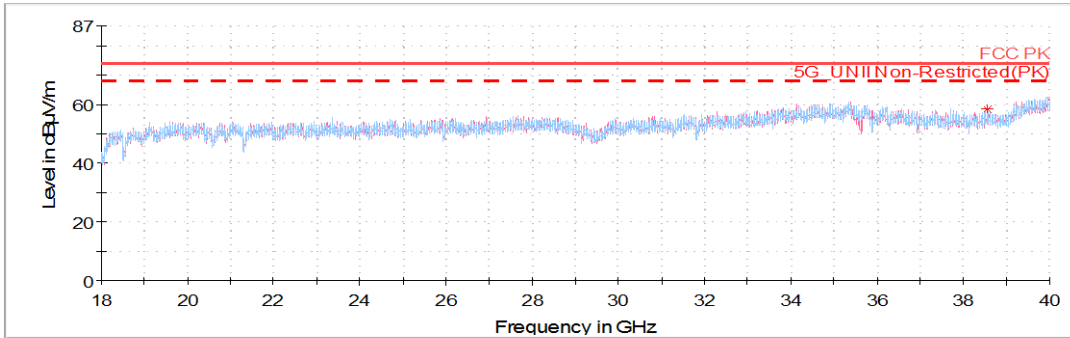


Highest Channel (5 700 MHz)

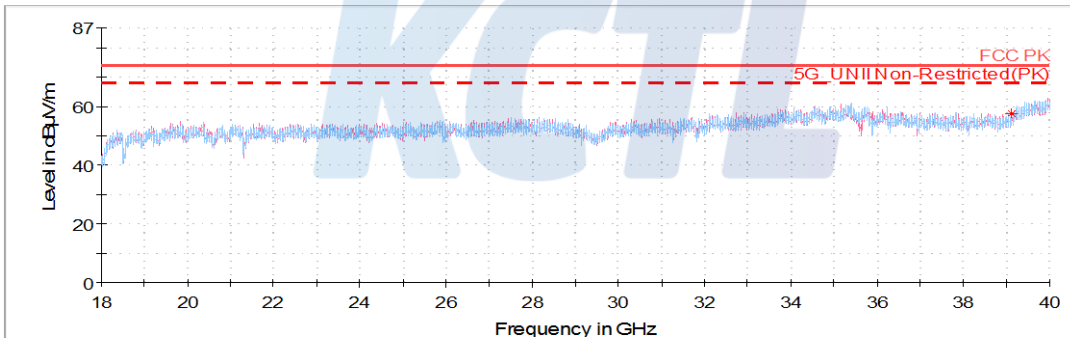


- 802.11n HT40

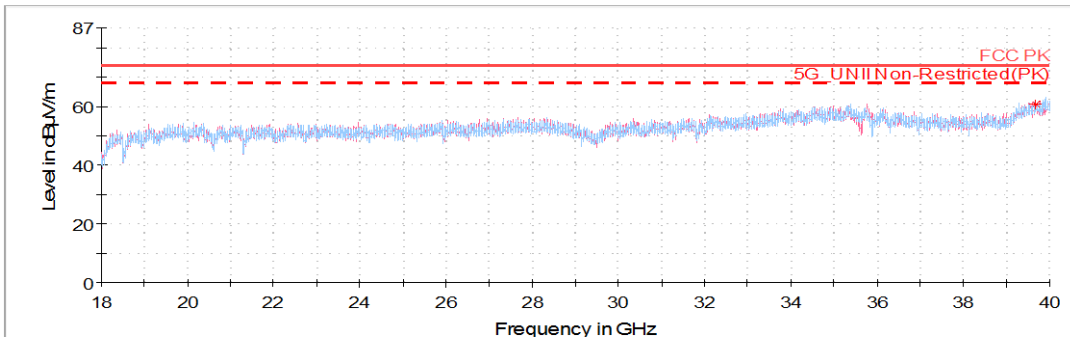
Lowest Channel (5 510 MHz)



Middle Channel (5 590 MHz)

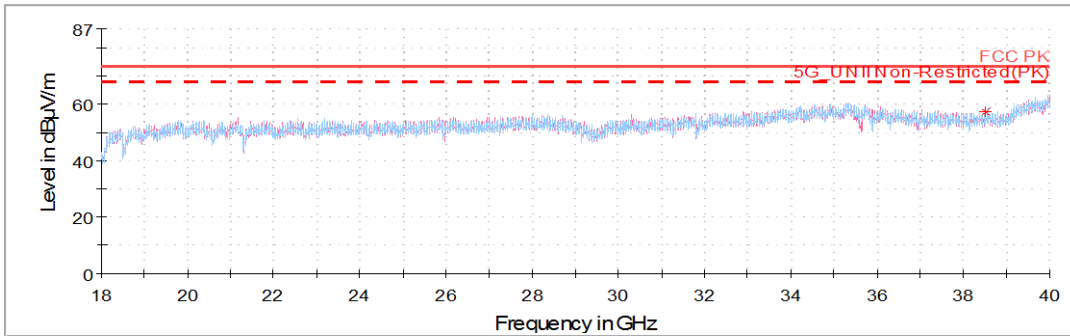


Highest Channel (5 670 MHz)

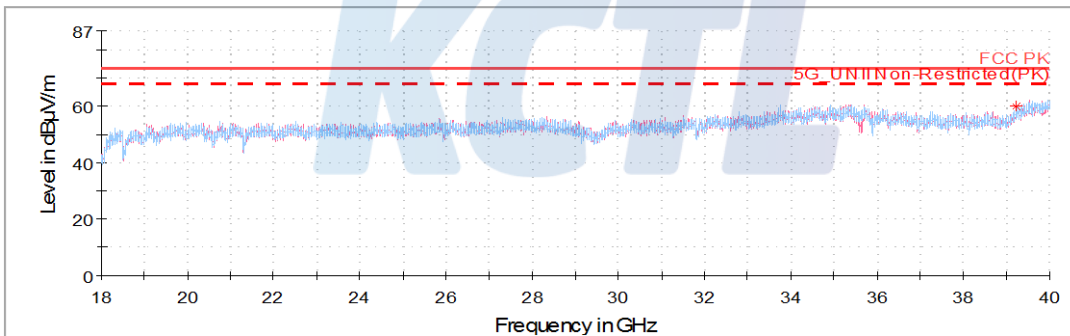


- 802.11ac VHT20

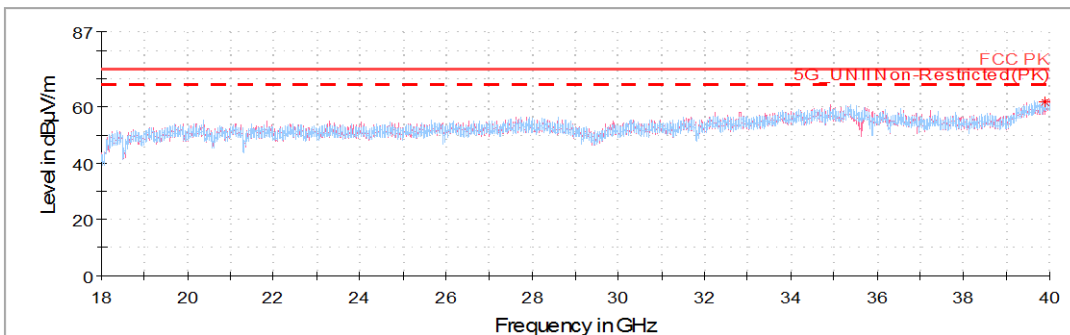
Lowest Channel (5 500 MHz)



Middle Channel (5 600 MHz)

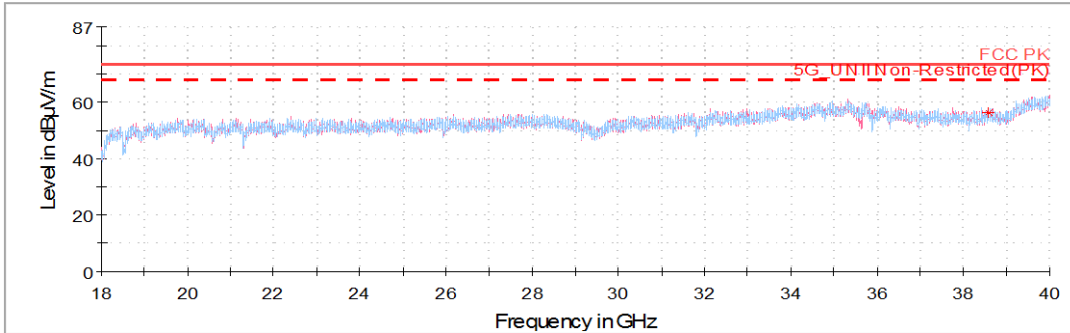


Highest Channel (5 700 MHz)

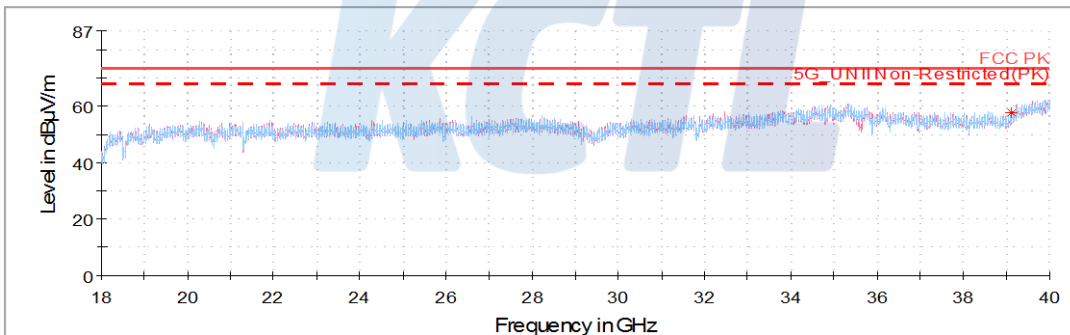


- 802.11ac VHT40

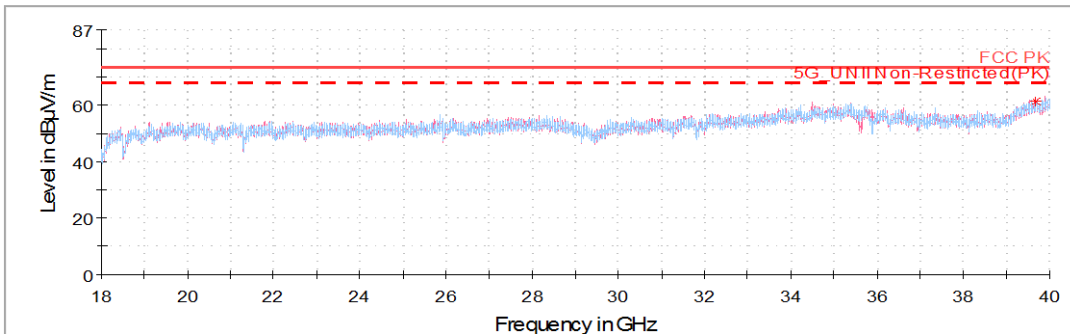
Lowest Channel (5 510 MHz)



Middle Channel (5 590 MHz)

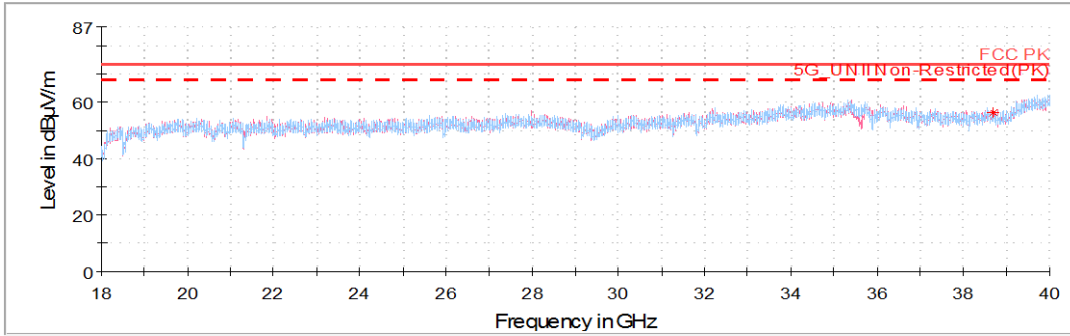


Highest Channel (5 670 MHz)

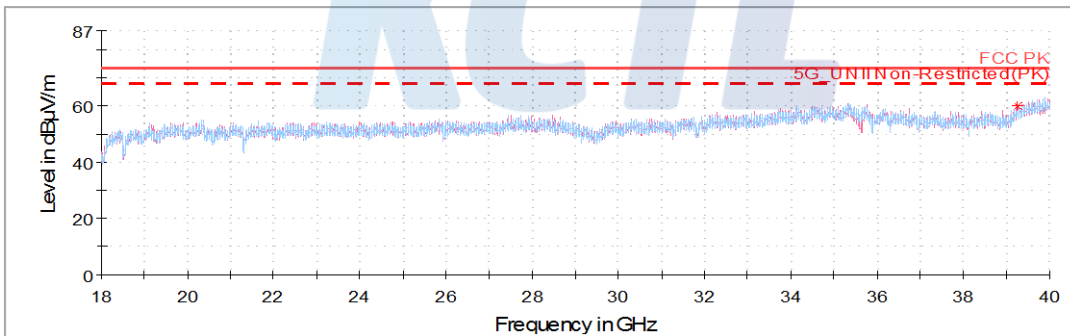


- 802.11ac VHT80

Lowest Channel (5 530 MHz)

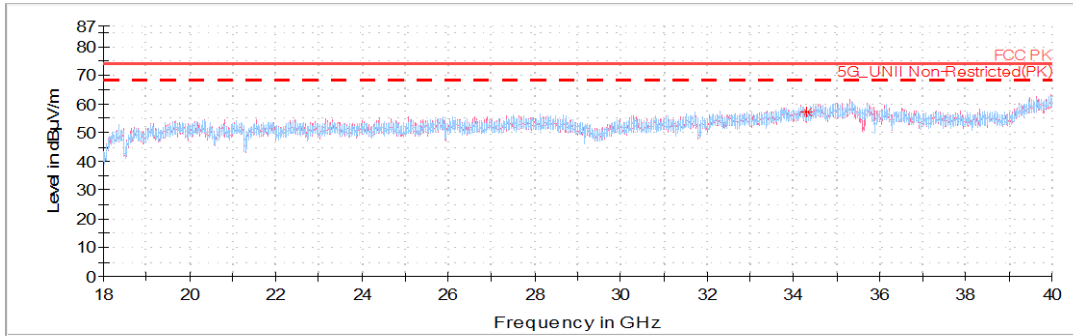


Highest Channel (5 610 MHz)



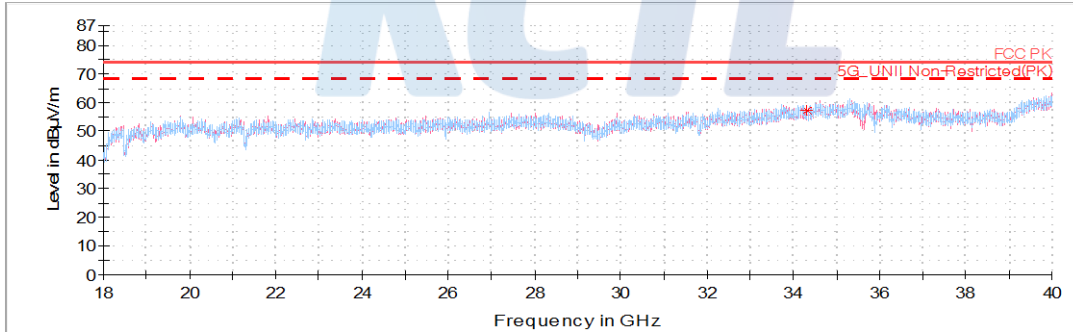
- 802.11a

5 720 MHz



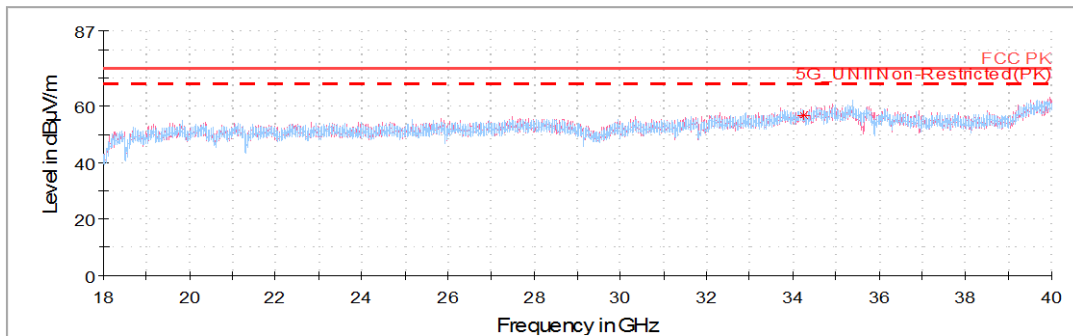
- 802.11n HT20

5 720 MHz



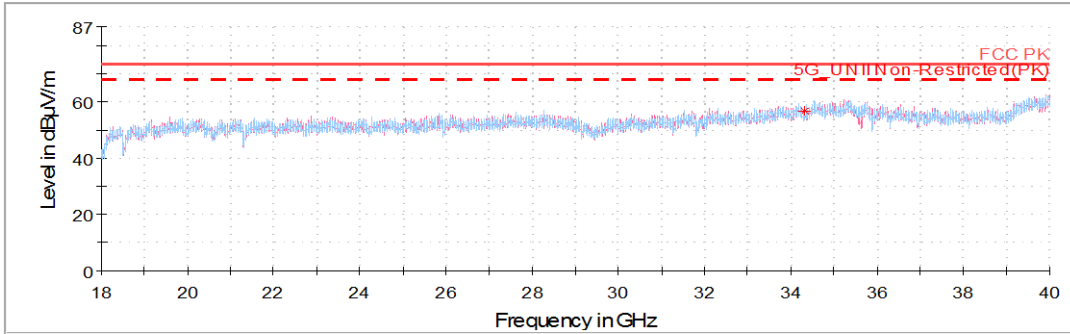
- 802.11n HT40

5 710 MHz



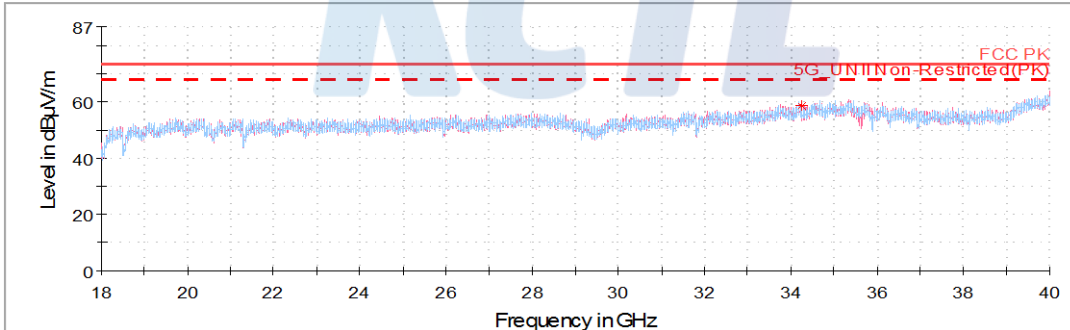
- 802.11ac VHT20

5 720 MHz



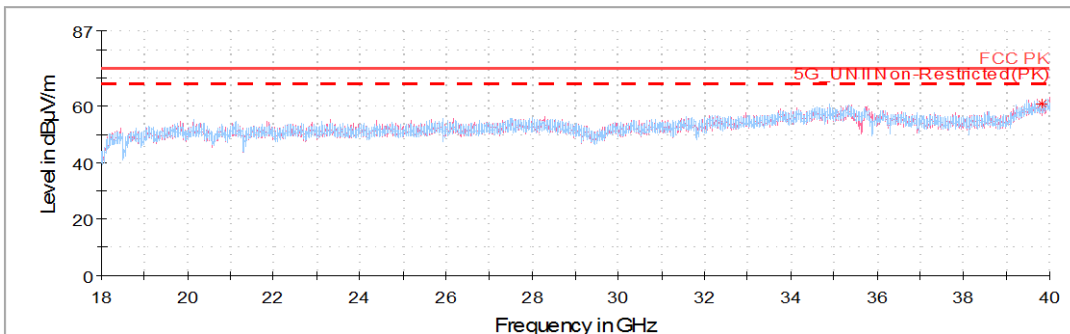
- 802.11ac VHT40

5 710 MHz



- 802.11ac VHT80

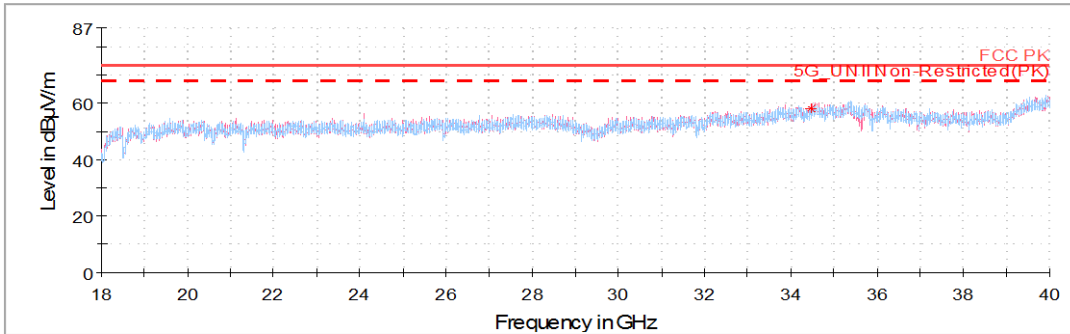
5 690 MHz



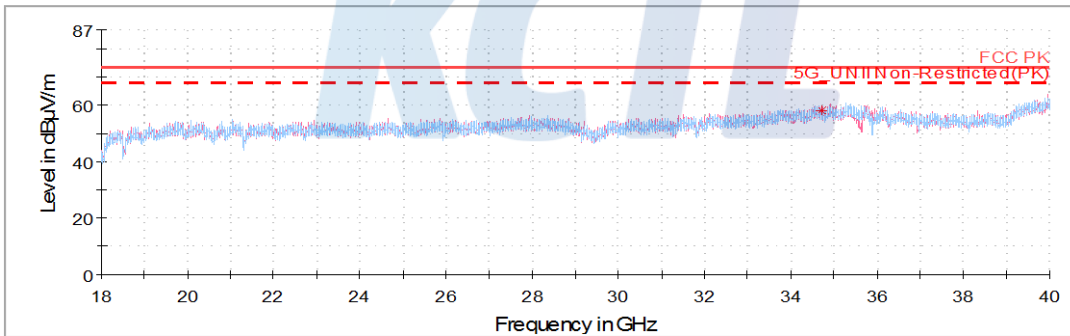
- 18 GHz ~ 40 GHz data_U-NII-3

- 802.11a

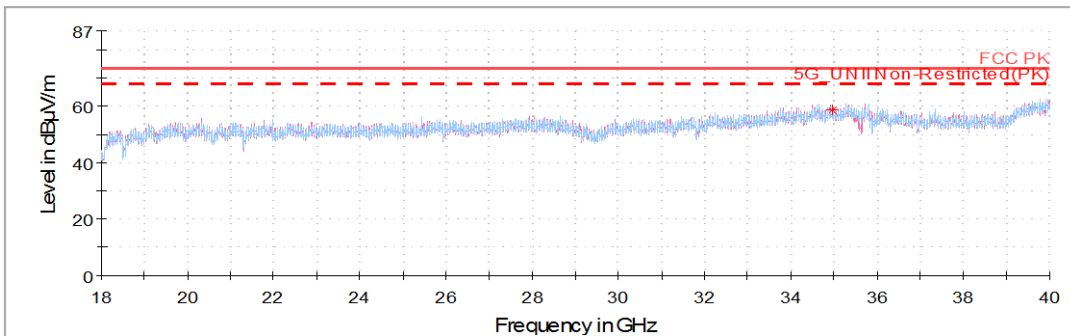
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

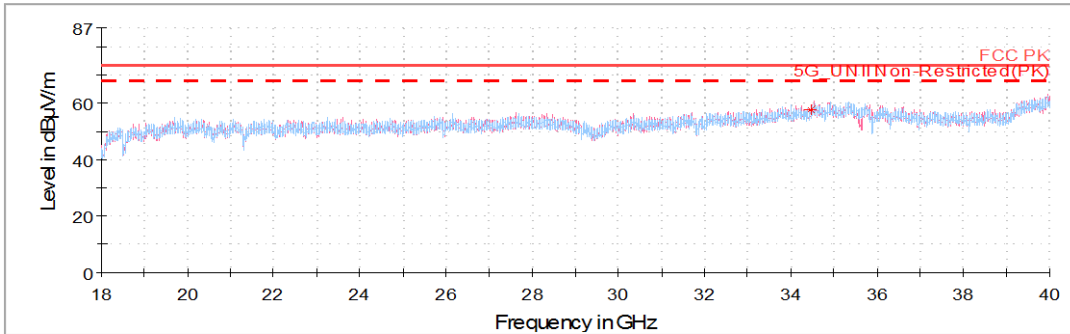


Highest Channel (5 825 MHz)

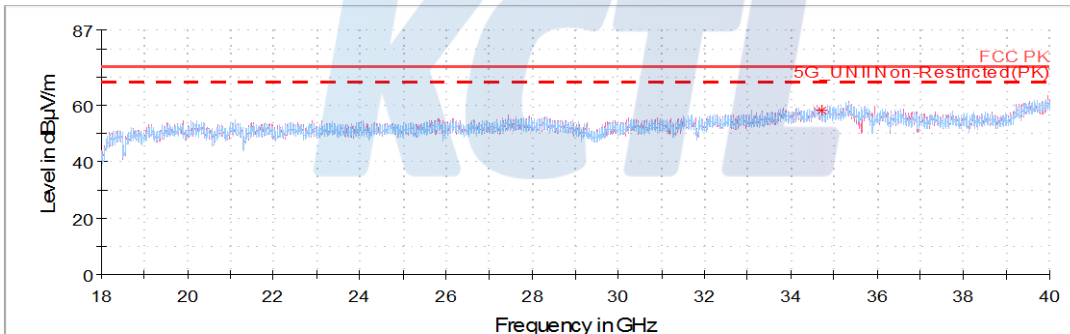


- 802.11n HT20

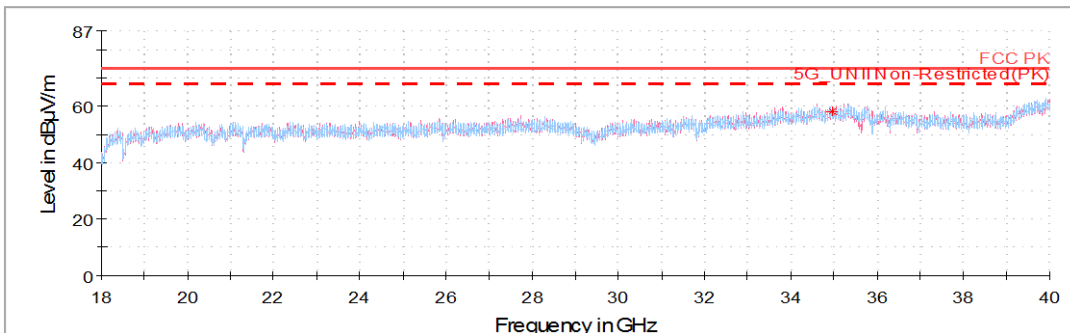
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

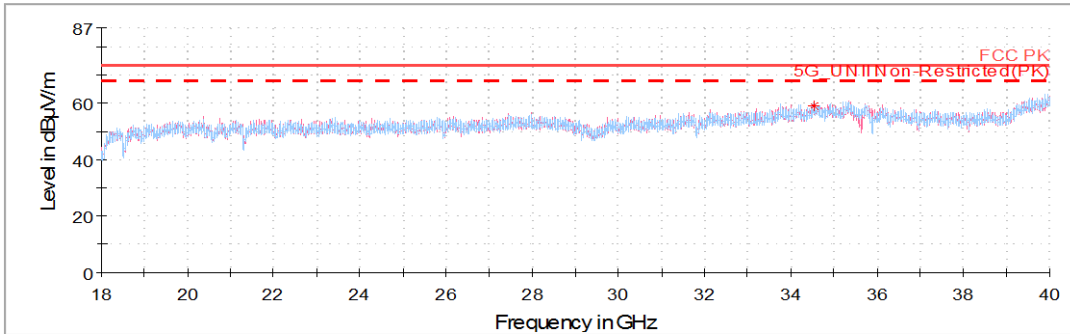


Highest Channel (5 825 MHz)

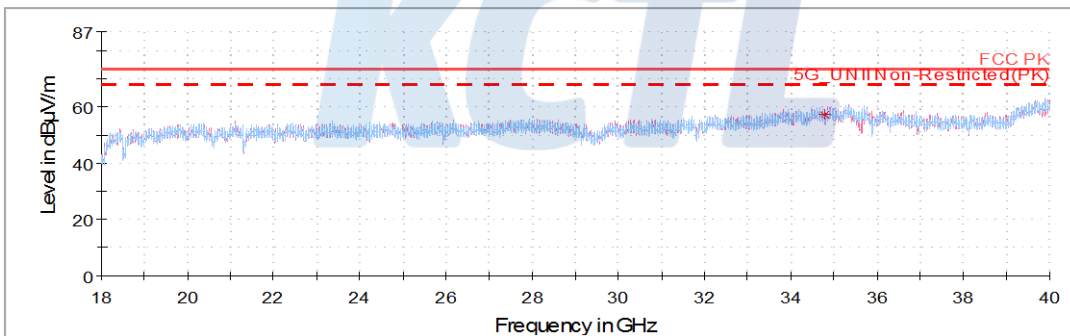


- 802.11n HT40

Lowest Channel (5 755 MHz)

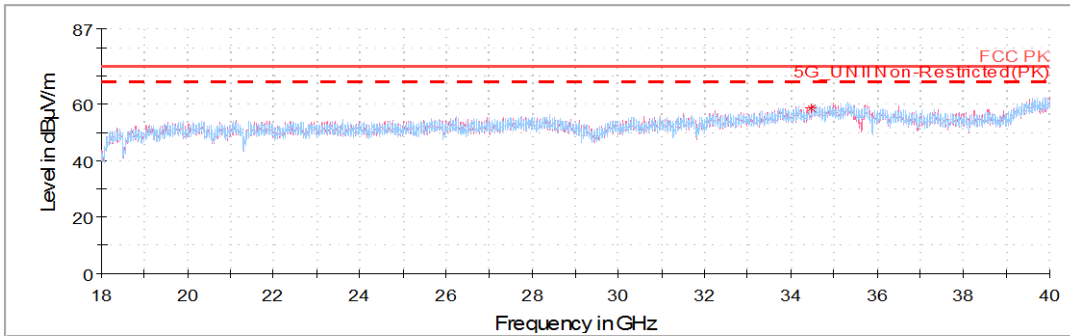


Highest Channel (5 795 MHz)

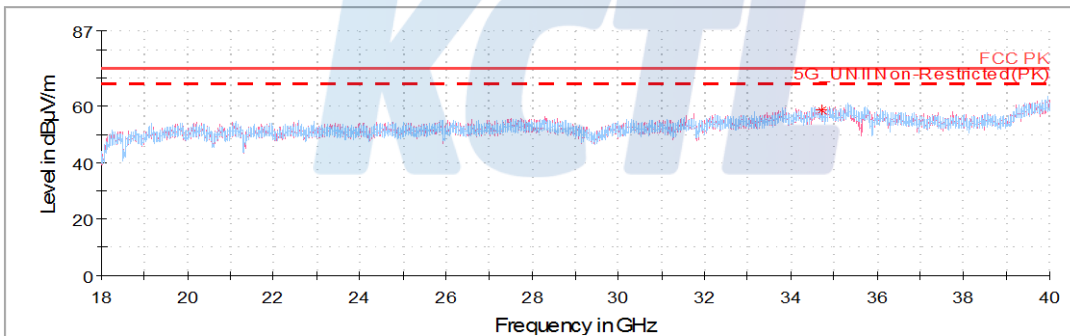


- 802.11ac VHT20

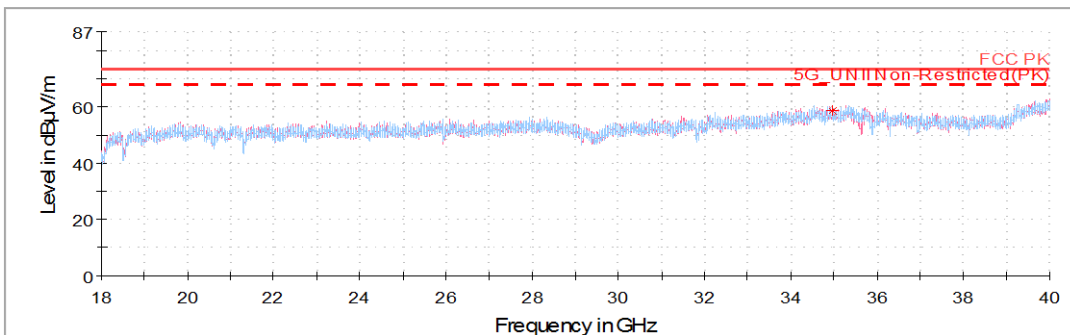
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

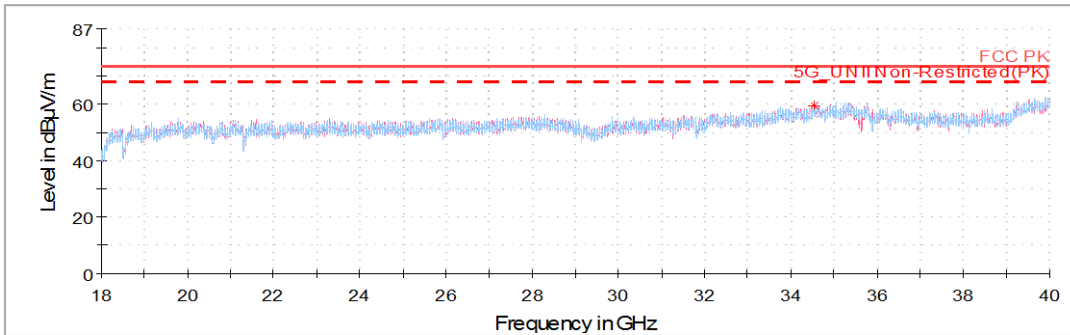


Highest Channel (5 825 MHz)

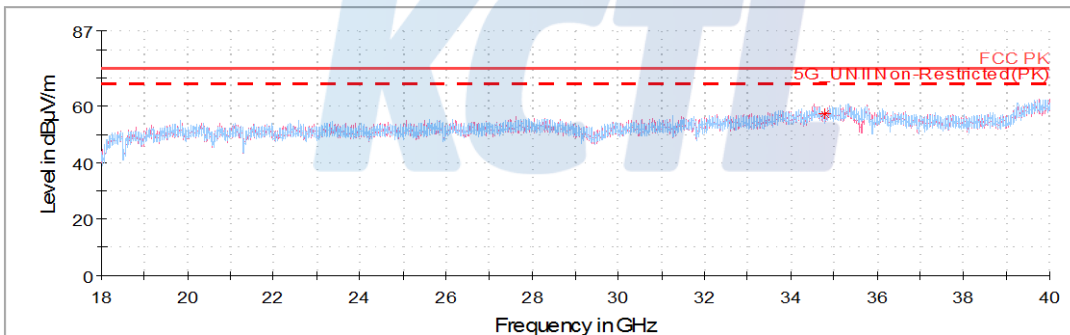


- 802.11ac VHT40

Lowest Channel (5 755 MHz)

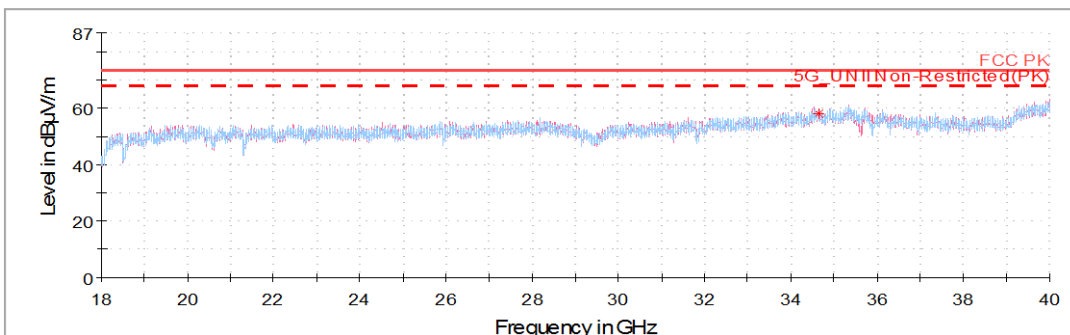


Highest Channel (5 795 MHz)



- 802.11ac VHT80

Middle Channel (5 775 MHz)



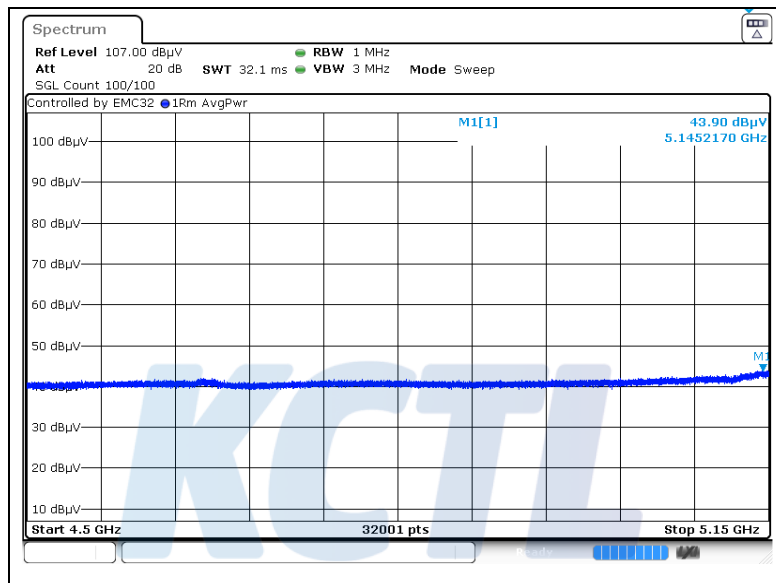
5.2.4.2 Test Plot

Figure 2. Plot of the average data emissions

- Restricted Bandedge data_U-NII-1(Lowest Channel)

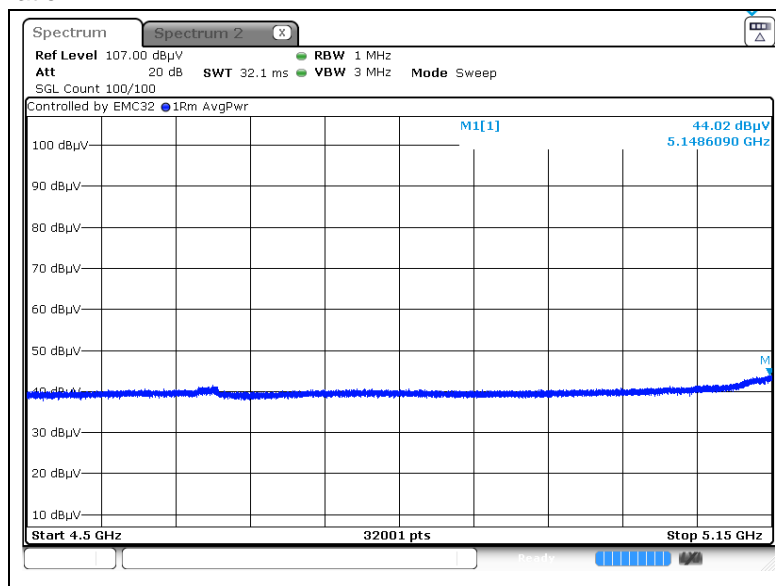
- 802.11a

Worst Antenna polarization : V



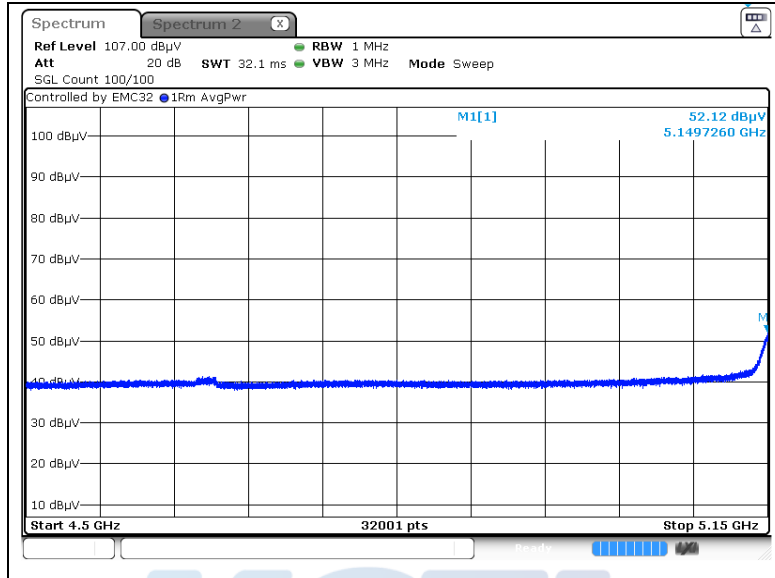
- 802.11n HT20

Worst Antenna polarization : V



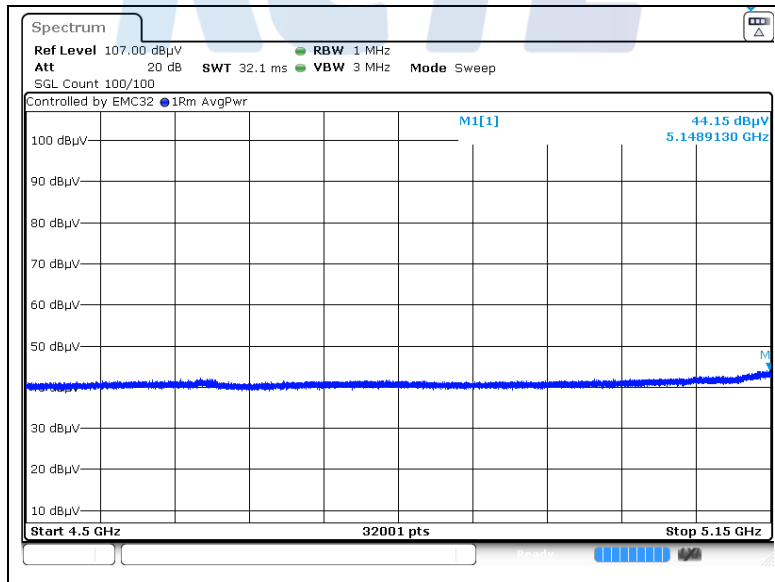
- 802.11n HT40

Worst Antenna polarization : V



- 802.11ac VHT20

Worst Antenna polarization : V



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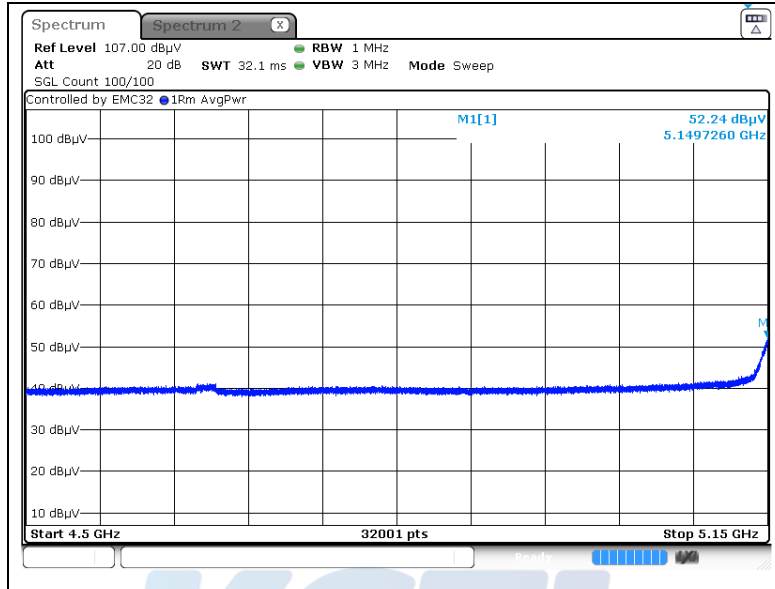
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

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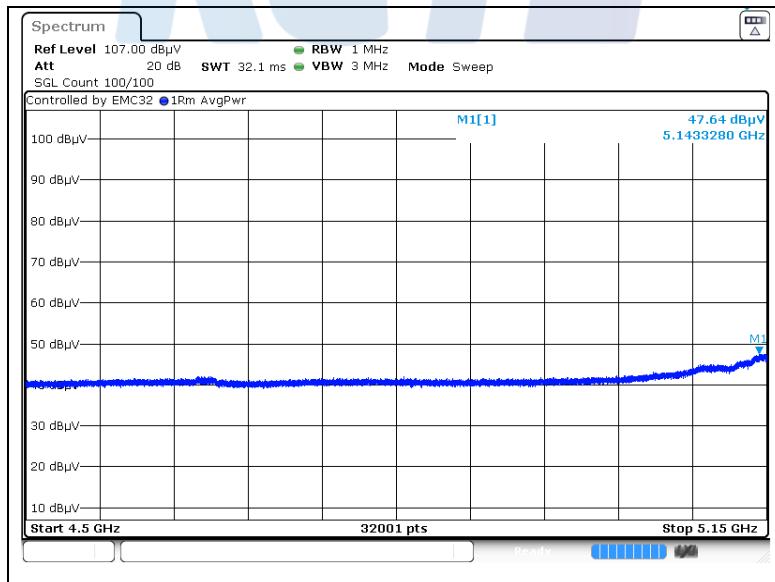
- 802.11ac VHT40

Worst Antenna polarization : V



- 802.11ac VHT80

Worst Antenna polarization : V



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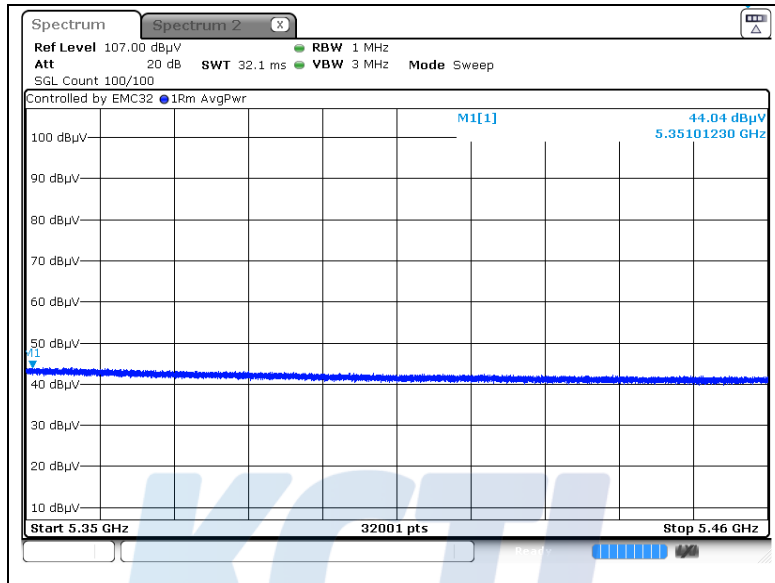
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- Restricted Bandedge data_U-NII-2A(Highest Channel)

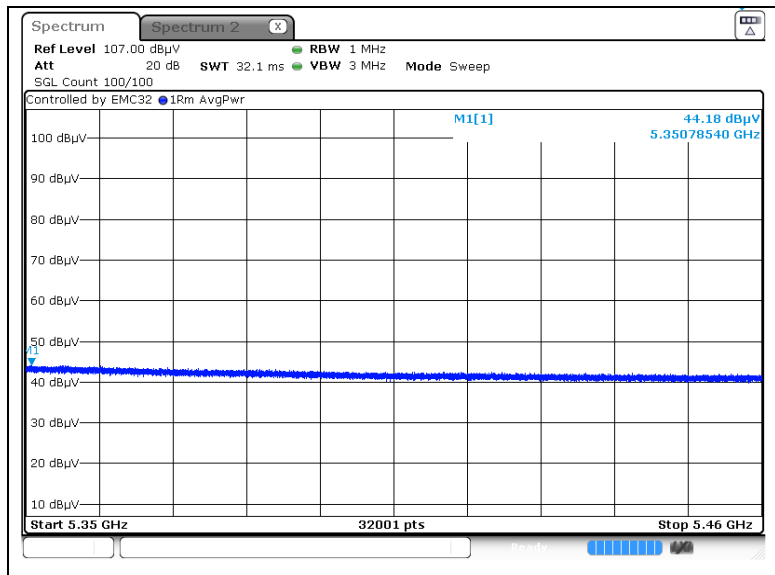
- 802.11a

Worst Antenna polarization : V



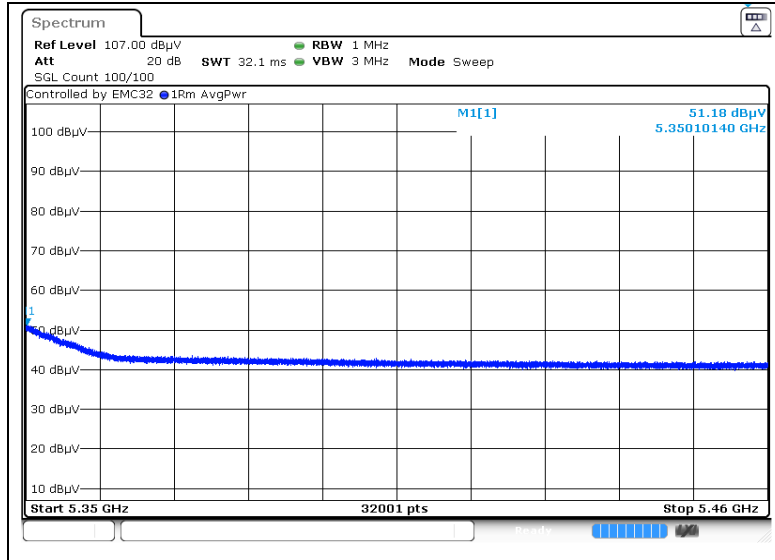
- 802.11n HT20

Worst Antenna polarization : V



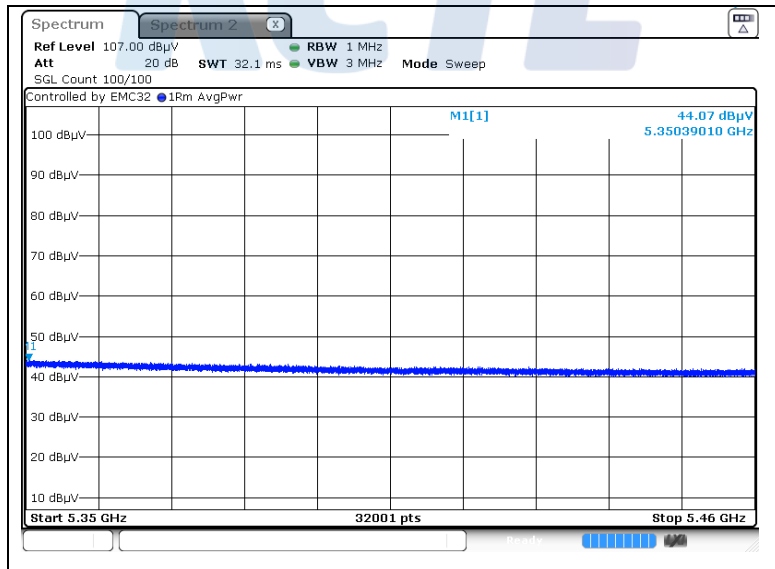
- 802.11n HT40

Worst Antenna polarization : V



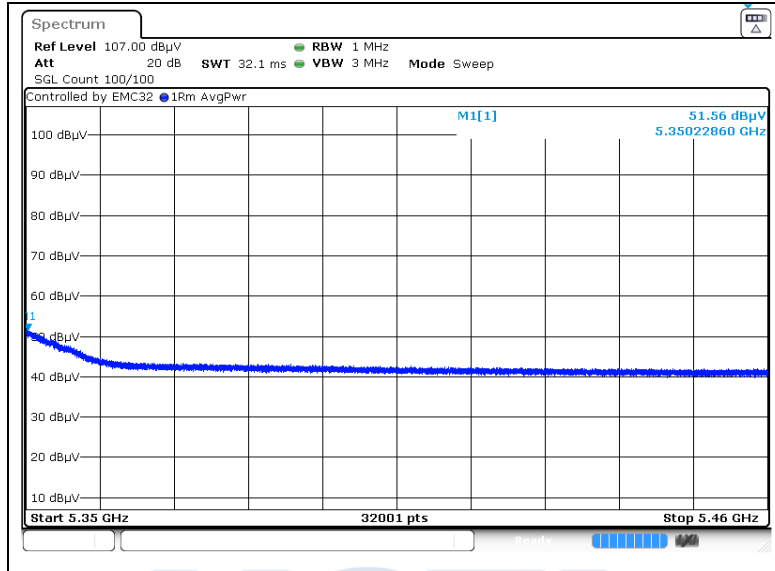
- 802.11ac VHT20

Worst Antenna polarization : V



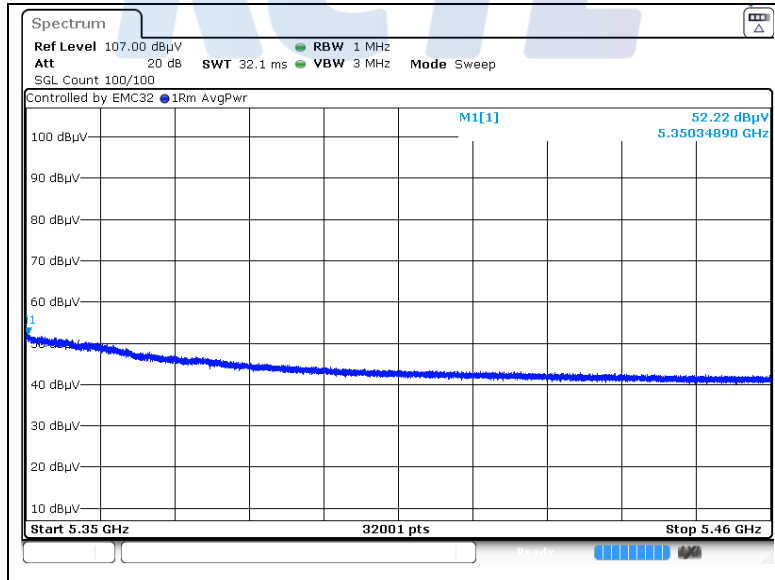
- 802.11ac VHT40

Worst Antenna polarization : V



- 802.11ac VHT80

Worst Antenna polarization : V



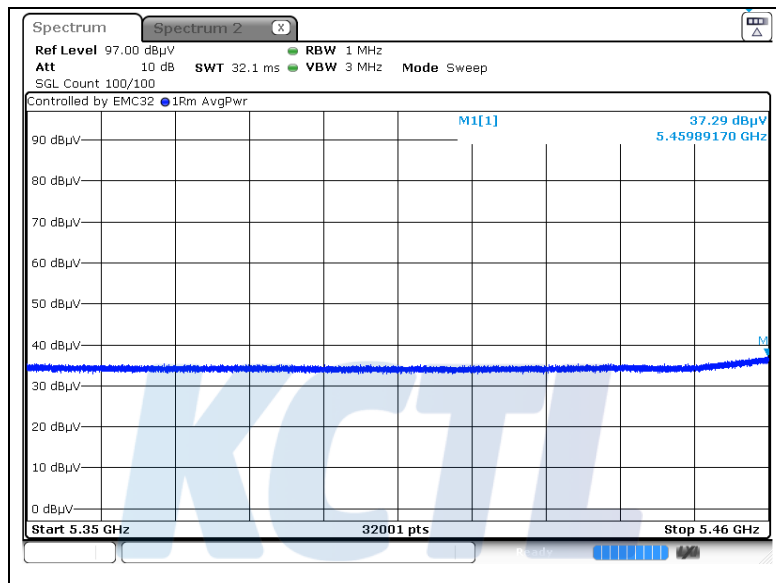
5.2.4.2 Test Plot

Figure 2. Plot of the average data emissions

- Restricted Bandedge data_U-NII-2C(Lowest Channel)

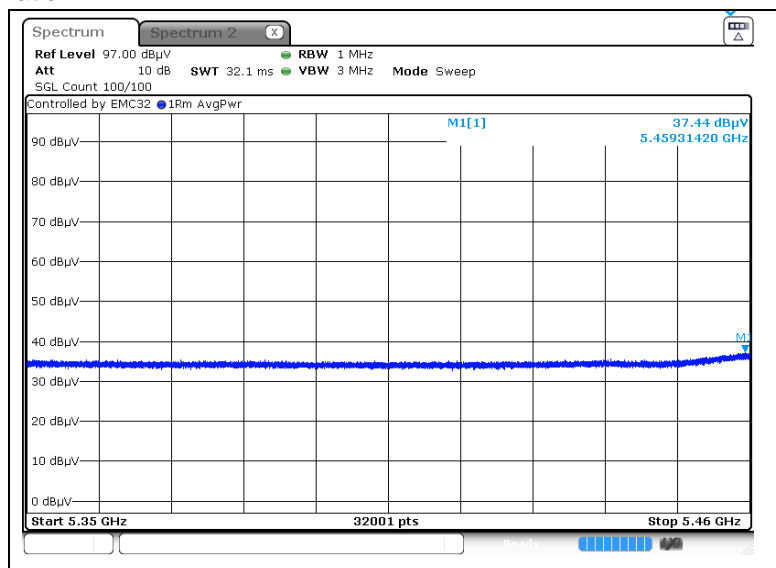
- 802.11a

Worst Antenna polarization : V



- 802.11n HT20

Worst Antenna polarization : V



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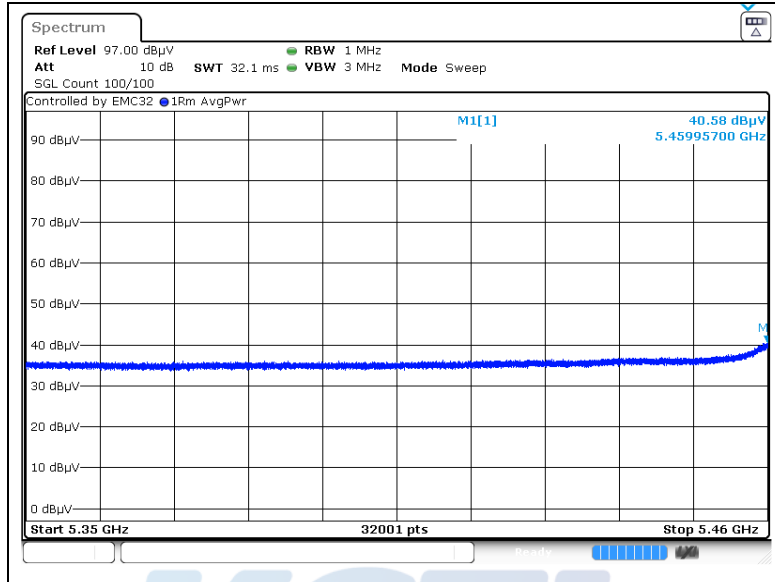
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
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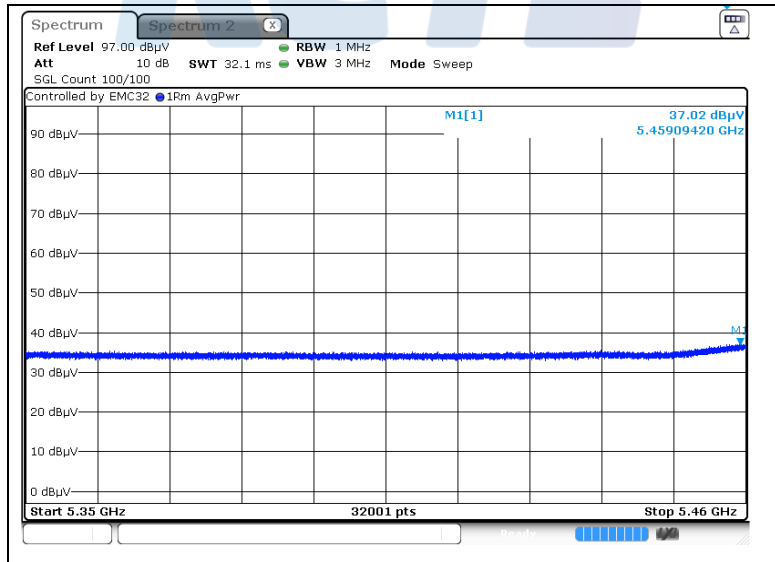
- 802.11n HT40

Worst Antenna polarization : V



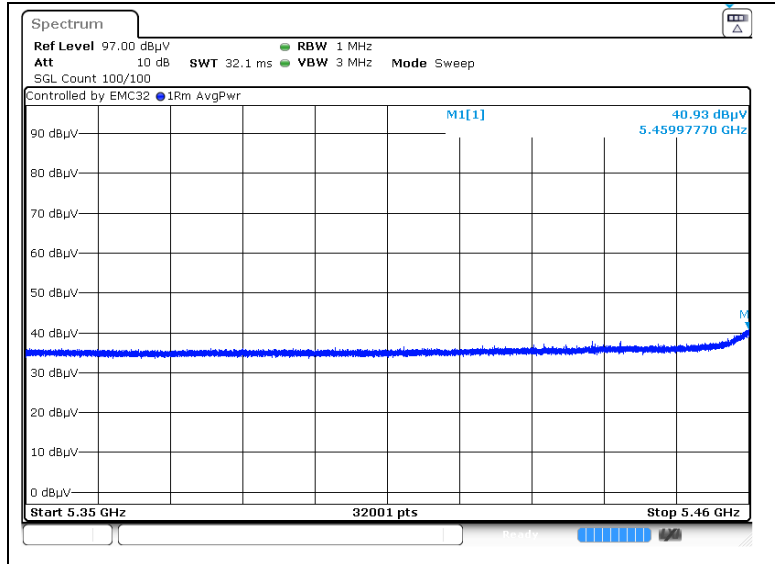
- 802.11ac VHT20

Worst Antenna polarization : V



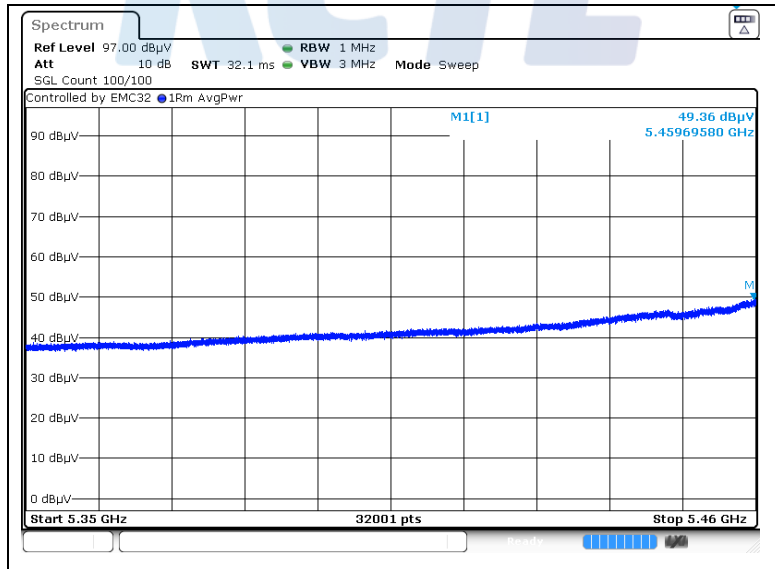
- 802.11ac VHT40

Worst Antenna polarization : V



- 802.11ac VHT80

Worst Antenna polarization : V



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KCTL**6. Test equipment used for test**

	Equipment Name	Manufacturer	Model No.	Serial No.	Next Cal. Date
■	Spectrum Analyzer	R & S	FSV40	100989	19.01.05
■	Spectrum Analyzer	R & S	FSW50	101013	18.06.22
■	Wideband Power Sensor	R & S	NRP-Z81	102398	19.01.31
■	ATTENUATOR	R & S	DNF Dämpfungsglied 10 dB in N-50 Ohm	31212	18.05.15
■	EMI TEST RECEIVER	R & S	ESCI	100732	18.08.24
■	Bi-Log Antenna	SCHWARZBECK	VULB 9163	552	18.05.10
■	Amplifier	SONOMA INSTRUMENT	310N	186280	19.04.05
■	Amplifier	SONOMA INSTRUMENT	310N	284608	18.08.24
■	ATTENUATOR	Weinschel ENGINEERING	1	AE7348	18.05.15
■	Horn antenna	ETS.lindgren	3116	00086635	18.04.25
■	Horn antenna	ETS.lindgren	3115	62589	18.11.21
■	AMPLIFIER	L-3 Narda-MITEQ	AMF-7D- 01001800-22- 10P	2003683	18.06.12
■	AMPLIFIER	L-3 Narda-MITEQ	JS44- 18004000-33- 8P	2000997	18.08.09
■	LOOP Antenna	R & S	HFH2-Z2	100355	20.01.31
■	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	18.05.15
■	Vector Signal Generator	R & S	SMBV100A	257566	19.01.05
■	Signal Generator	R & S	SMR40	100007	18.05.15
■	Cable Assembly	RadiAll	2301761768000 PJ	17.30.38	-
■	Cable Assembly	gigalane	RG-400	-	-
■	Cable Assembly	HUER+SUHNER	SUCOFLEX 104	MY4342/4	-

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