

RF TEST REPORT

FCC ID: 2BBLK-WL2079T

Test Report No.....: RF230809011-01-001

Product(s) Name.....: WiFi+BT Module

Model(s).....: WL00024

Trade Mark.....: MTK

Applicant.....: Huizhou Speed Wireless Technology Co., Ltd

Address.....: No. 138 Huize Road, Hi-Tech Industrial Park of East River, Zhongkai
Hi-tech District, Huizhou City, Guangdong Province, China

Receipt Date.....: 2023.08.09

Test Date.....: 2023.10.07~2023.10.21

Issued Date.....: 2023.10.21

Standards.....: 47 CFR FCC Part 15, Subpart E(Section 15.407)
ANSI C63.10:2013

Testing Laboratory.....: Shenzhen Haiyun Standard Technical Co., Ltd.

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Table of Contents

History of this test report.....	4
1. General Information	5
1.1 Applicant	5
1.2 Manufacturer.....	5
1.3 Basic Description of Equipment Under Test.....	5
2. Summary of Test Results	7
2.1 Summary of Test Items	7
2.2 Application of Standard.....	7
2.3 Test Instruments	8
2.4 Operation Mode	9
2.5 Test Condition	9
2.6 Duty Cycle of Test Signal	10
2.7 Measurement Uncertainty.....	15
2.8 Test Location.....	15
2.9 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED .	16
2.10 SUPPORT UNITS	16
2.11 Deviation from Standards	16
2.12 Abnormalities from Standard Conditions.....	16
3. Test Procedure And Results	17
3.1 AC Power Line Conducted Emission	17
3.1.1 Limit.....	17
3.1.2 Test Procedure	17
3.1.3 Test Setup	17
3.1.4 Test Result.....	18
3.2 Radiated Emission	20
3.2.1 Limit.....	20
3.2.2 Test Procedure	21
3.2.3 Test Setup	22
3.2.4 Test Result.....	23
3.3 Spectrum Bandwidth.....	154

3.3.1	Limit.....	154
3.3.2	Test Procedure	154
3.3.3	Test Setup	155
3.3.4	Test Result.....	156
3.4	Conducted Output Power.....	357
3.4.1	Limit.....	357
3.4.2	Test Procedure	357
3.4.3	Test Setup	357
3.4.4	Table of Parameters of Text Software Setting.....	358
3.4.5	The Result.....	360
3.5	Power Spectral Density.....	367
3.5.1	Limit.....	367
3.5.2	Test Procedure	367
3.5.3	Test Setup	368
3.5.4	The Result.....	369

History of this test report

Original Report Issue Date: 2023.10.21

- No additional attachment
- Additional attachments were issued following record

Attachment No.	Issue Date	Description

1. General Information

1.1 Applicant

Huizhou Speed Wireless Technology Co., Ltd

No. 138 Huize Road, Hi-Tech Industrial Park of East River, Zhongkai Hi-tech District, Huizhou City, Guangdong Province, China

1.2 Manufacturer

Huizhou Speed Wireless Technology Co., Ltd

No. 138 Huize Road, Hi-Tech Industrial Park of East River, Zhongkai Hi-tech District, Huizhou City, Guangdong Province, China

1.3 Basic Description of Equipment Under Test

Report No.	POC230809011-S001	
Report Name	WiFi+BT Module	
Model Name	WL00024	
Trademark	MTK	
Software Version	/	
Hardware Version	V12	
Power Supply	DC 3.3V~12V	
Operating Temperature	0℃-60℃	
EUT Stage	○ Product Unit	● Final-Sample
Operating Band	5150MHz ~5350MHz	● IEEE 802.11a/n/ac/ax(20MHz)
	5470MHz ~5725MHz	● IEEE 802.11n/ac/ax(40MHz)
	5725MHz ~5850MHz	● IEEE 802.11ac/ax(80MHz)
Product Type	IEEE 802.11a: WLAN (MIMO) IEEE 802.11n: WLAN (MIMO) IEEE 802.11ac: WLAN (MIMO) IEEE 802.11ax: WLAN (MIMO)	
Nominal Bandwidth	20MHz / 40MHz / 80MHz	
Modulation	OFDM, OFDMA	
Data Rate (Mbps)	IEEE 11a mode : 6/9/12/18/24/36/48/54 IEEE 11n mode : up to 300 Mbps IEEE 11ac mode : up to 866.6 Mbps IEEE 11ax mode : up to 1201 Mbps	
Type of Device	Slave device	
Antenna gain	Ant1: 3.7dBi, Ant2: 3.2dBi	
Antenna type	PCB antenna	
DFS Function (Master devices)	●	5250MHz ~5350MHz
	●	5470MHz ~5725MHz

Channel Information			
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5150-5250	802.11a /n /ac /ax (20MHz)	5180-5240	36-48
5250-5350		5260-5320	52-64
5470-5725		5500-5700	100-140
5725-5850		5745-5825	149-165
5150-5250	802.11n /ac /ax (40MHz)	5190-5230	38-46
5250-5350		5270-5310	54-62
5470-5725		5510-5670	102-134
5725-5850		5755-5795	151-159
5150-5250	802.11ac /ax (80MHz)	5210	42
5250-5350		5290	58
5470-5725		5530, 5610	106, 122
5725-5850		5775	155

Note: For 802.11ax mode only support full RU mode.

2. Summary of Test Results

2.1 Summary of Test Items

47 CFR FCC Part 15, Subpart C (Section 15.247)			
Test item	Standard	Results	Remarks
AC Power Conducted Emission	15.207 15.407(b)	Pass	Meet the requirement of the limit
Radiated Emission	15.205(a) 15.209(a) 15.407(b)	Pass	Meet the requirement of the limit
Antenna Requirements	15.203	Compliance	Note
Spectrum Bandwidth	15.407(a) 15.407(e)	Pass	Meet the requirement of the limit
Maximum EIRP	15.407(a)	Pass	Meet the requirement of the limit
Power Spectral Density	15.407(a)	Pass	Meet the requirement of the limit
Note: The EUT has two PCB antennas, the max. gain of antenna 1 is 3.7dBi and the max. gain of antenna 2 is 3.2dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement.			

2.2 Application of Standard

47 CFR FCC Part 15, Subpart E

KDB 662911 D01 Multiple Transmitter Output v02r01

KDB 789033 D02 General UNII Test Procedures New Rules v02r01

KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02

ANSI C63.10:2013

2.3 Test Instruments

Radiated Emissions						
No.	Equipment	Manufacturer	Type No.	Serial No.	Cal. date (yyyy/mm/dd)	Cal. Due date (yyyy/mm/dd)
1	Test receiver	Rohde&Schwarz	ESU	100184	2023/5/3	2024/5/2
2	Horn Antenna	Schwarzbeck	BBHA 9120 D	9120D-127 3	2023/4/23	2024/4/22
3	Low frequency amplifier	Unknown	LNA 0920N	2014	2023/5/3	2024/5/2
4	High frequency amplifier	Schwarzbeck	BBV 9718	284	2023/5/3	2024/5/2
5	Loop Antenna	Schwarzbeck	FMZB1519 B	00029	2022/7/4	2025/7/3
6	Log periodic antenna	Schwarzbeck	VULB 9168	1151	2023/4/23	2024/4/22
7	Horn Antenna	Schwarzbeck	BBHA 9120 D	9120D-127 3	2022/5/5	2025/5/4
8	Horn Antenna	Schwarzbeck	BBHA 9170	9170#685	2022/7/4	2025/7/3
9	Temp&Humidity Recorder	Meideshi	JR900	/	2023/5/3	2024/5/2
10	RF cable(966 chamber)9kHz-1 GHz	Unknown	Unknown	Unknown	2023/5/3	2024/5/2
11	RF cable(966 chamber)1GHz- 18GHz	Unknown	Unknown	Unknown	2023/5/3	2024/5/2
12	RF cable(966 chamber)18GHz -40GHz	Unknown	Unknown	Unknown	2023/5/3	2024/5/2
13	Test software	Farad Technology Co., Ltd	EZ-EMC	/	/	/
Conducted Emission						
1	Test receiver	Rohde&Schwarz	ESCI	100718	2023/5/3	2024/5/2
2	LISN	Rohde&Schwarz	ENV216	100075	2023/5/3	2024/5/2
3	Pulse limiter	Rohde&Schwarz	ESH3-Z2	102299	2023/5/3	2024/5/2
4	RF cable (9kHz-30MHz)	Unknown	Unknown	Unknown	2023/5/3	2024/5/2
5	Test software	Farad Technology Co., Ltd	EZ-EMC	/	/	/
RF Conducted Emission						
1	MXA Signal Analyzer	Keysight	N9021B	MY600801 69	2023/4/23	2024/4/22
2	RF Control Unit	dsusoft	JS0806-2	21G806044 9	2023/4/23	2024/4/22
3	power supply unit	dsusoft	JS0806-4A DC	N/A	2023/4/23	2024/4/22
4	VXG Signal Generator	Keysight	M9384B	MY612707 87	2023/4/23	2024/4/22
5	EXG Analog Signal Generator	Keysight	N5173B	MY591012 82	2023/4/23	2024/4/22
6	Test software	dsusoft	JS1120-3	/	/	/

2.4 Operation Mode

The EUT was supplied by and it was run in TX mode that was controlled by Master provided RF testing program. The worst case test result was showed in the report.

2.5 Test Condition

Test Item	Environmental conditions	Input Power	Tested by
AC Power Conducted Emission	25°C, 53% RH	AC 120V/60Hz	Albert Fan
Radiated Emission	24°C, 51% RH	AC 120V/60Hz	Albert Fan
Spectrum Bandwidth	24.4°C, 53% RH	DC 5V	Jason Huang
Conducted Power	24.4°C, 53% RH	DC 5V	Jason Huang
Power Spectral Density	24.4°C, 53% RH	DC 5V	Jason Huang
Dynamic Frequency Selection (DFS)	24.3°C, 55% RH	DC 5V	Jason Huang

Note: Adapter supply voltage AC 120V/60Hz.

The applicant declare the operating environment of EUT as below:

Normal conditions: 5V DC, 15~35°C

2.6 Duty Cycle of Test Signal

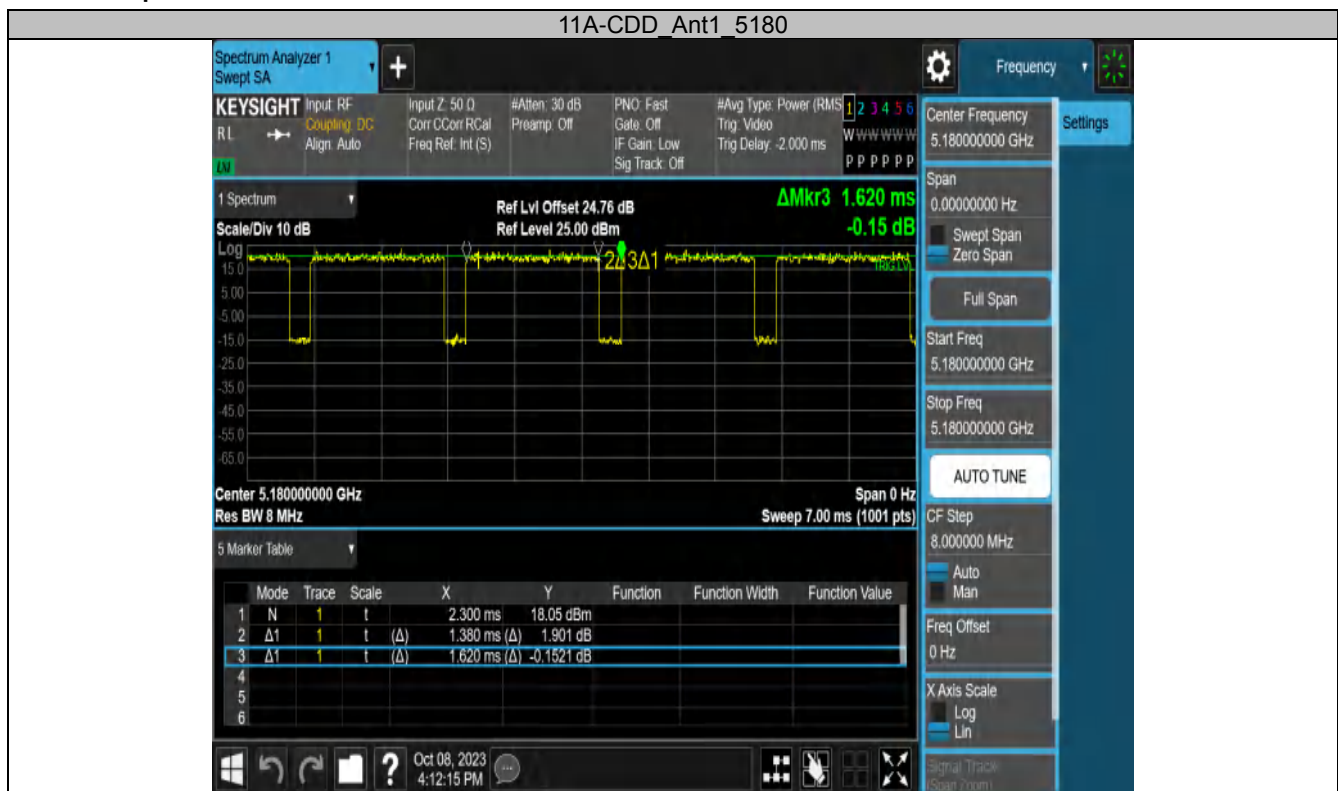
If duty cycle is $\geq 98\%$, duty factor is not required.

If duty cycle is $< 98\%$, duty factor shall be considered.

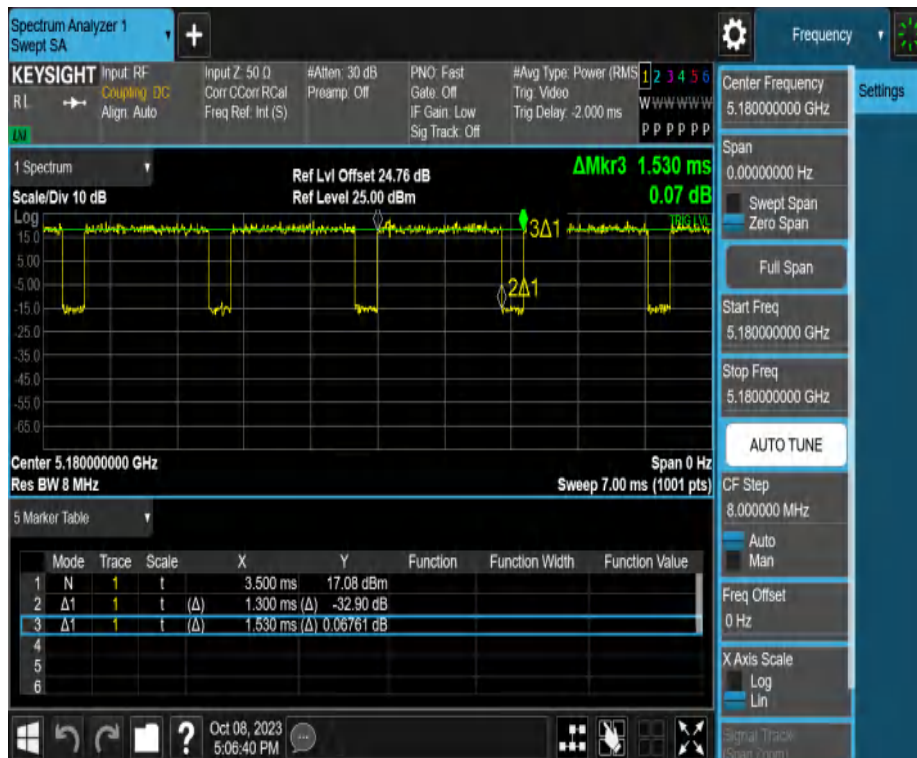
All the duty factor of other test mode have been considered.

Test Mode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11A-CDD	Ant1	5180	1.38	1.62	85.19
11N20MIMO	Ant1	5180	1.30	1.53	84.97
11N40MIMO	Ant1	5190	0.65	0.88	73.86
11AC20MIMO	Ant1	5180	0.68	0.91	74.73
11AC40MIMO	Ant1	5190	0.35	0.58	60.34
11AC80MIMO	Ant1	5210	0.19	0.42	45.24
11AX20MIMO	Ant1	5180	0.21	0.41	51.22
11AX40MIMO	Ant1	5190	0.20	0.42	47.62
11AX80MIMO	Ant1	5210	0.19	0.42	45.24

Test Graphs



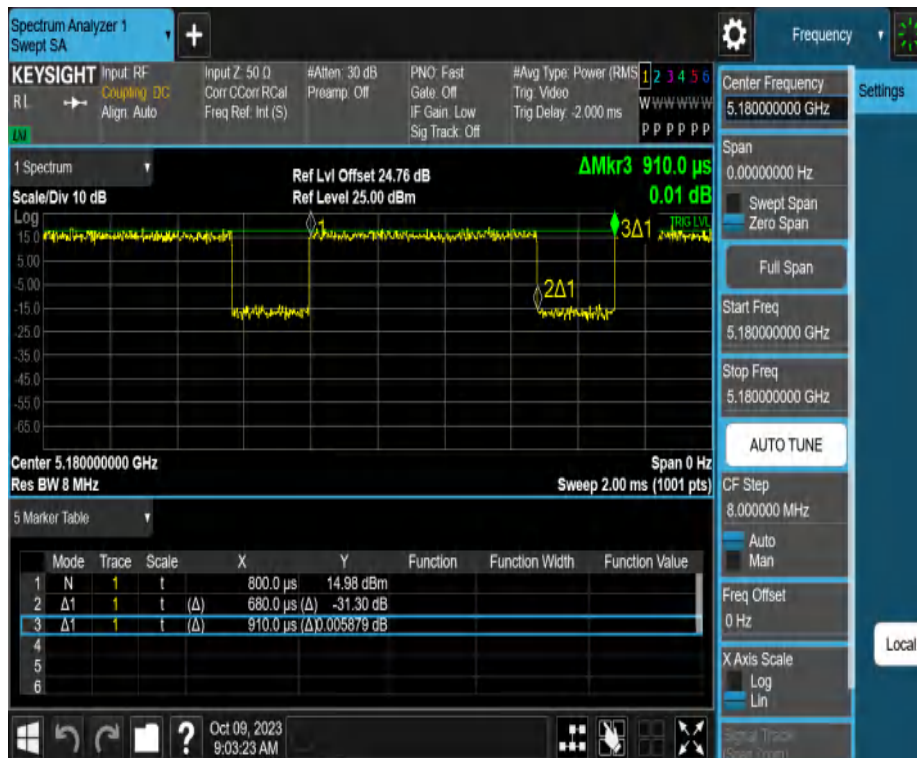
11N20MIMO_Ant1_5180



11N40MIMO_Ant1_5190



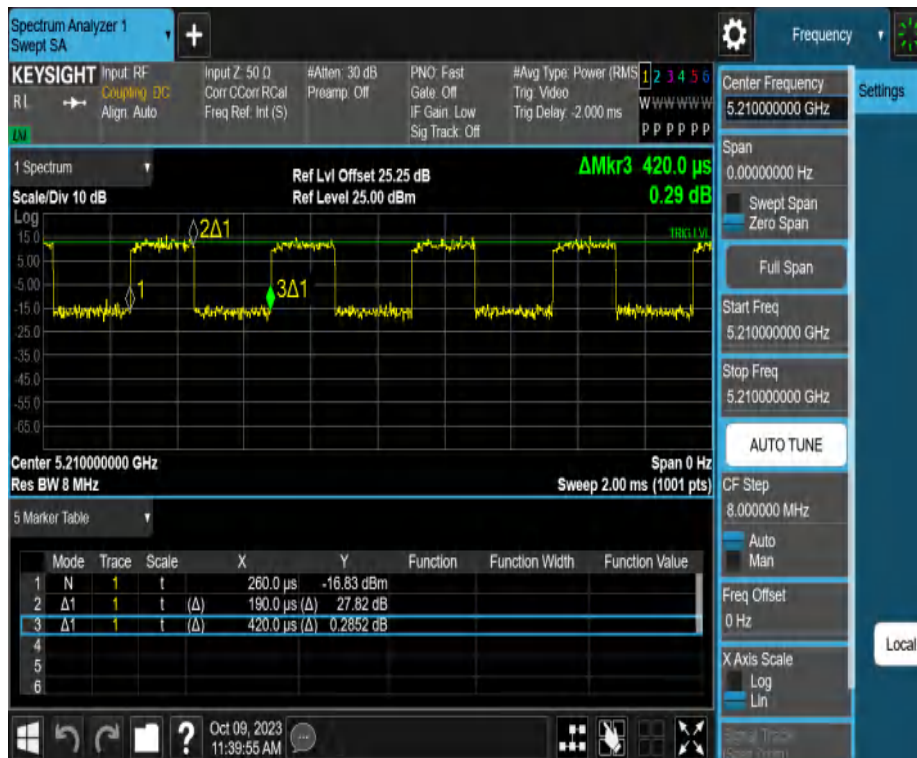
11AC20MIMO_Ant1_5180



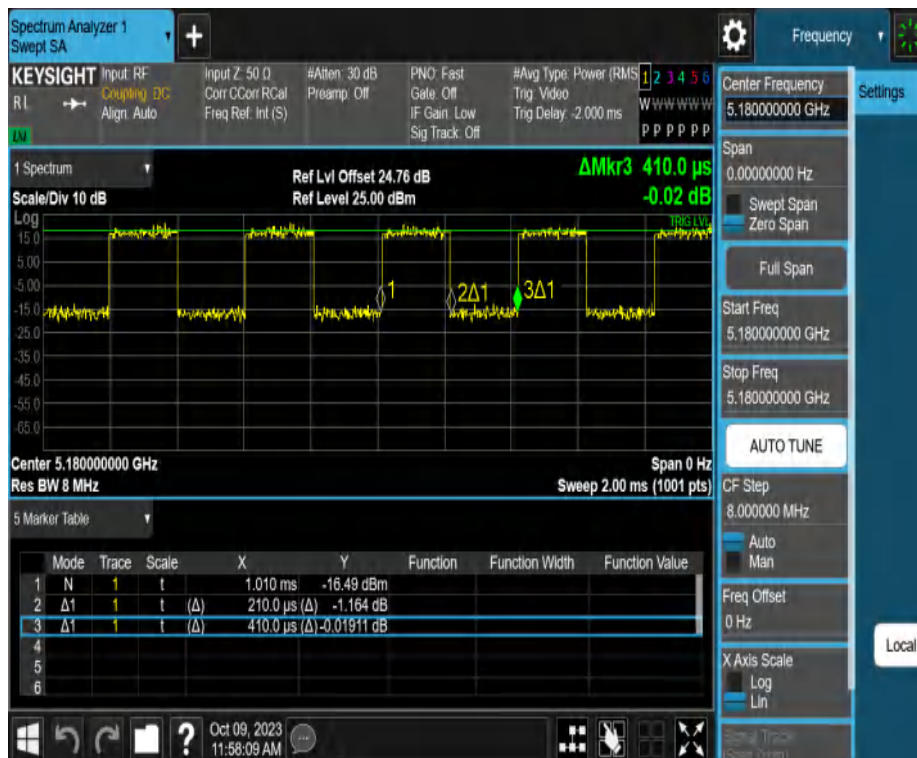
11AC40MIMO_Ant1_5190



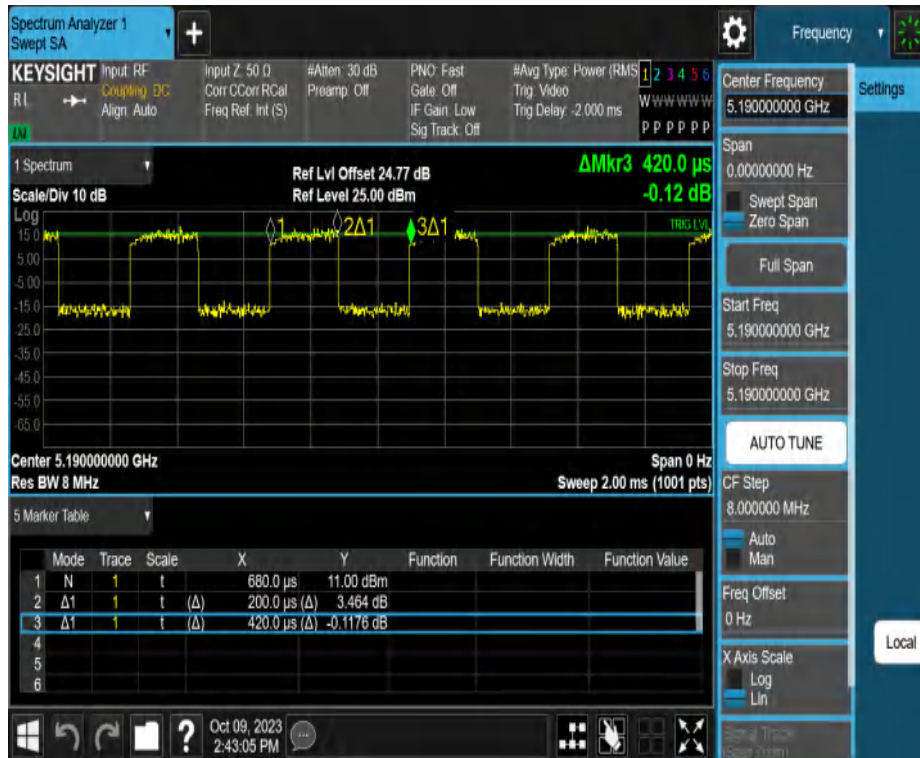
11AC80MIMO_Ant1_5210



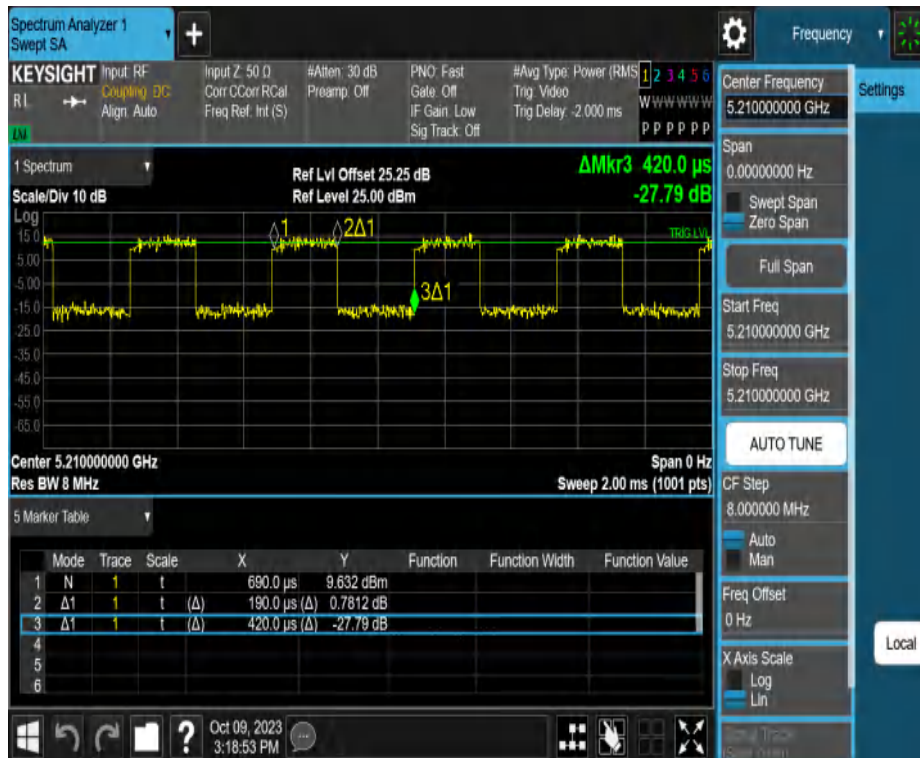
11AX20MIMO_Ant1_5180



11AX40MIMO_Ant1_5190



11AX80MIMO_Ant1_5210



2.7 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT.

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Uncertainty	
Parameter	Uncertainty
Occupied Channel Bandwidth	$\pm 143.88\text{kHz}$
Power Spectral Density	$\pm 0.743\text{dB}$
Conducted Spurious Emission	$\pm 1.328\text{dB}$
RF power conducted	$\pm 0.384\text{ dB}$
Conducted emission(9kHz~30MHz) AC main	$\pm 2.72\text{dB}$
Radiated emission(9kHz~30MHz)	$\pm 2.66\text{dB}$
Radiated emission (30MHz~1GHz)	$\pm 4.62\text{dB}$
Radiated emission (1GHz~18GHz)	$\pm 4.86\text{dB}$
Radiated emission (18GHz~40GHz)	$\pm 3.80\text{dB}$

2.8 Test Location

Company:	Shenzhen Haiyun Standard Technical CO., Ltd.
Address:	No. 110-113, 115, 116, Block B, Jinyuan Business Building, Bao'an District, Shenzhen, China
CNAS Registration Number:	CNAS L18252
CAB identifier:	CN0145
A2LA Certificate Number:	6823.01
Telephone:	0755-26024411

2.9 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.10 SUPPORT UNITS

Support Equipment				
No.	Equipment	Brand Name	Model Name	Remarks
1	mini PC	/	S10	DC 12V/4A
2	Adapter	TEKA	TEKA-TE120250US	OUTPUT: DC 12V/2.5A

2.11 Deviation from Standards

None

2.12 Abnormalities from Standard Conditions

None

3. Test Procedure And Results

3.1 AC Power Line Conducted Emission

3.1.1 Limit

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μ V)	Average Level dB(μ V)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

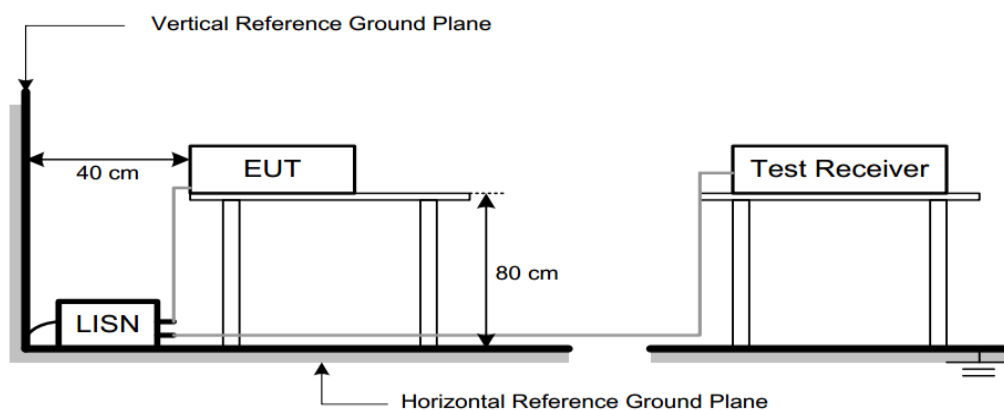
3.1.2 Test Procedure

Test Method	
●Conducted Measurement	○Radiated Measurement
Test Channels	
○ Lowest, Middle and Highest Channel	○ Lowest and Highest Channel
Environmental conditions	
●Normal	○Normal and Extreme

Note: ●:Test ○:No Test

- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

3.1.3 Test Setup



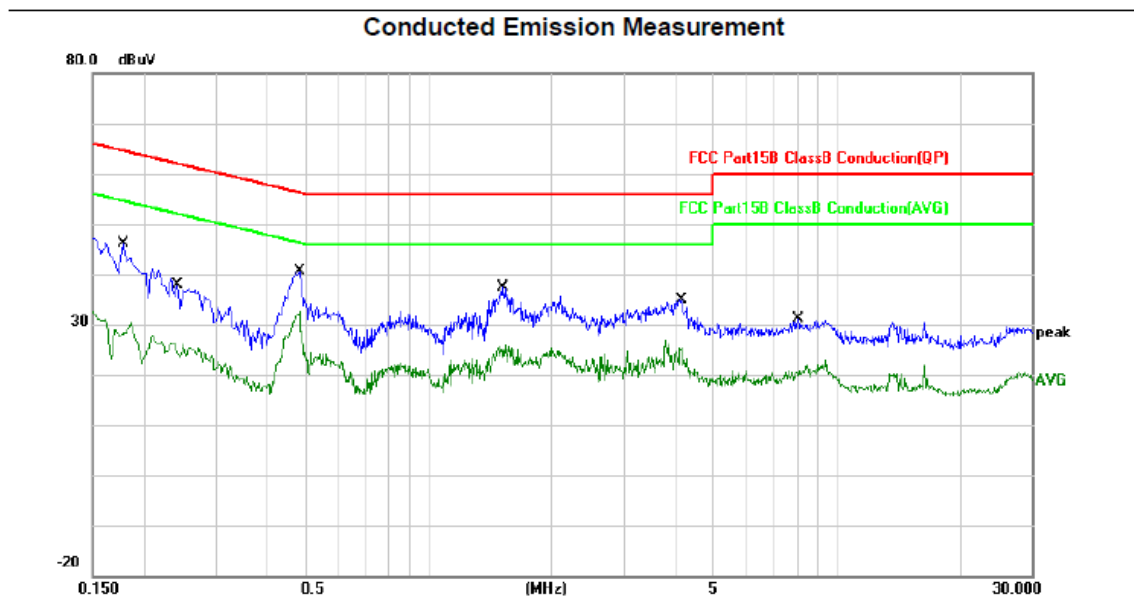
3.1.4 Test Result

Note:

1. Correct Factor = LISN Factor + Cable Loss + Pulse Limiter Factor, the value was added to Original Receiver Reading by the software automatically.
2. Measurement = Reading + Correct Factor.
3. Over = Measurement – Limit
4. The TX A-CDD Mode Channel 52 is found to be the worst case and recorded.

150kHz~30MHz	TX A-CDD Channel 52
--------------	---------------------

Line



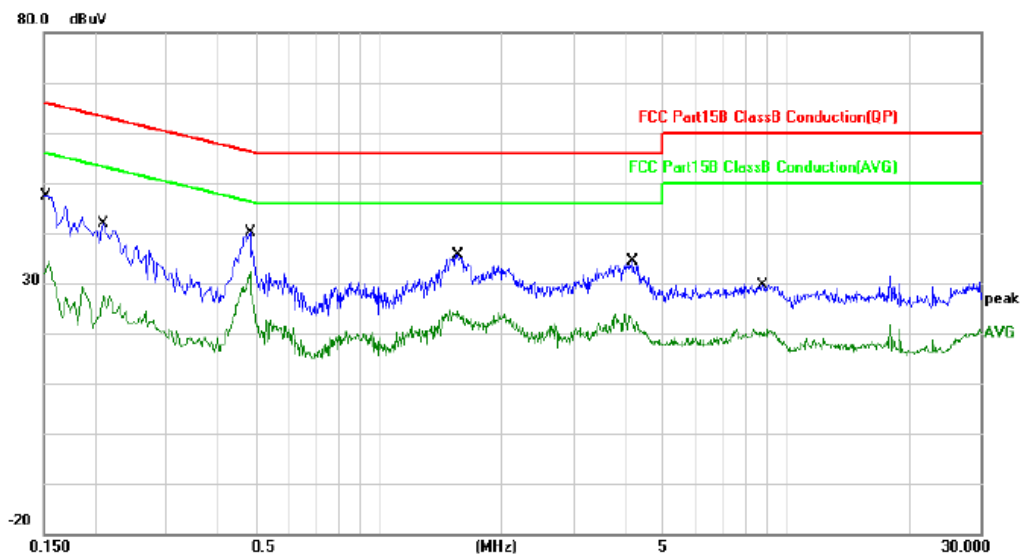
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1780	19.97	19.88	39.85	64.58	-24.73	QP	
2		0.1780	7.55	19.88	27.43	54.58	-27.15	AVG	
3		0.2420	13.57	19.88	33.45	62.03	-28.58	QP	
4		0.2420	4.67	19.88	24.55	52.03	-27.48	AVG	
5		0.4820	18.84	19.88	38.72	56.30	-17.58	QP	
6 *		0.4820	10.76	19.88	30.64	46.30	-15.66	AVG	
7		1.5180	11.99	19.90	31.89	56.00	-24.11	QP	
8		1.5180	5.44	19.90	25.34	46.00	-20.66	AVG	
9		4.1780	9.89	19.91	29.80	56.00	-26.20	QP	
10		4.1780	1.99	19.91	21.90	46.00	-24.10	AVG	
11		8.0300	4.89	19.94	24.83	60.00	-35.17	QP	
12		8.0300	-1.06	19.94	18.88	50.00	-31.12	AVG	

150kHz~30MHz

TX A-CDD Channel 52

Neutral

Conducted Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1540	23.58	19.88	43.46	65.78	-22.32	QP	
2		0.1540	9.92	19.88	29.80	55.78	-25.98	AVG	
3		0.2100	16.22	19.88	36.10	63.21	-27.11	QP	
4		0.2100	4.39	19.88	24.27	53.21	-28.94	AVG	
5		0.4820	17.85	19.88	37.73	56.30	-18.57	QP	
6	*	0.4820	10.06	19.88	29.94	46.30	-16.36	AVG	
7		1.5660	10.11	19.90	30.01	56.00	-25.99	QP	
8		1.5660	3.30	19.90	23.20	46.00	-22.80	AVG	
9		4.1940	9.52	19.91	29.43	56.00	-26.57	QP	
10		4.1940	-0.06	19.91	19.85	46.00	-26.15	AVG	
11		8.7580	3.54	19.95	23.49	60.00	-36.51	QP	
12		8.7580	-1.75	19.95	18.20	50.00	-31.80	AVG	

3.2 Radiated Emission

3.2.1 Limit

1) Limit of radiated emission measurement:

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

Frequency (MHz)	Distance Meters(m)	Field Strength Limit	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V})/\text{m}$
0.009 – 0.49	300	2400/F(kHz)	-
0.490 – 1.705	30	24000/F(kHz)	-
1.705 – 30	30	30	-
30~88	3	100	40.0
88~216	3	150	43.5
216~960	3	200	46.0
960~1000	3	500	54.0
Above 1000	3	74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

Note: (1) Emission level $\text{dB}\mu\text{V} = 20 \log$ Emission level $\mu\text{V/m}$

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

2) Limit of unwanted emission out of the restricted bands:

Frequency(MHz)	EIRP Limit(dBm/MHz)	Equivalent Field Strength at 3m($\text{dB}\mu\text{V}/\text{m}$)
5150-5250	-27	68.2
5250-5350	-27	68.2
5470-5725	-27	68.2
5725-5850	-27 NOTE (2)	68.2
	10 NOTE (2)	105.2
	15.6 NOTE (2)	110.8
	27 NOTE (2)	122.2

Note: (1) The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength: $E[\text{dB}\mu\text{V}/\text{m}] = \text{EIRP}[\text{dBm}] + 95.2$, for $d=3\text{m}$

(2) According to 15.407(b)(4)(i), all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

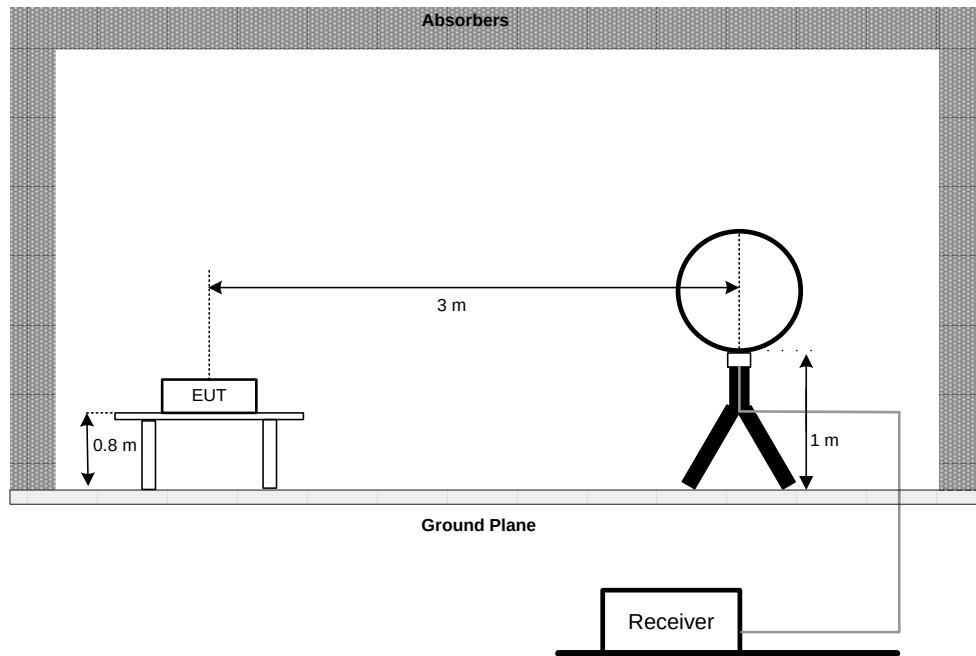
3.2.2 Test Procedure

Test Method	
○Conducted Measurement	●Radiated Measurement
Test Channels	
●Lowest, Middle and Highest Channel	○ Lowest and Highest Channel
Environmental conditions	
●Normal	○Normal and Extreme
Note:●:Test ○:No Test	

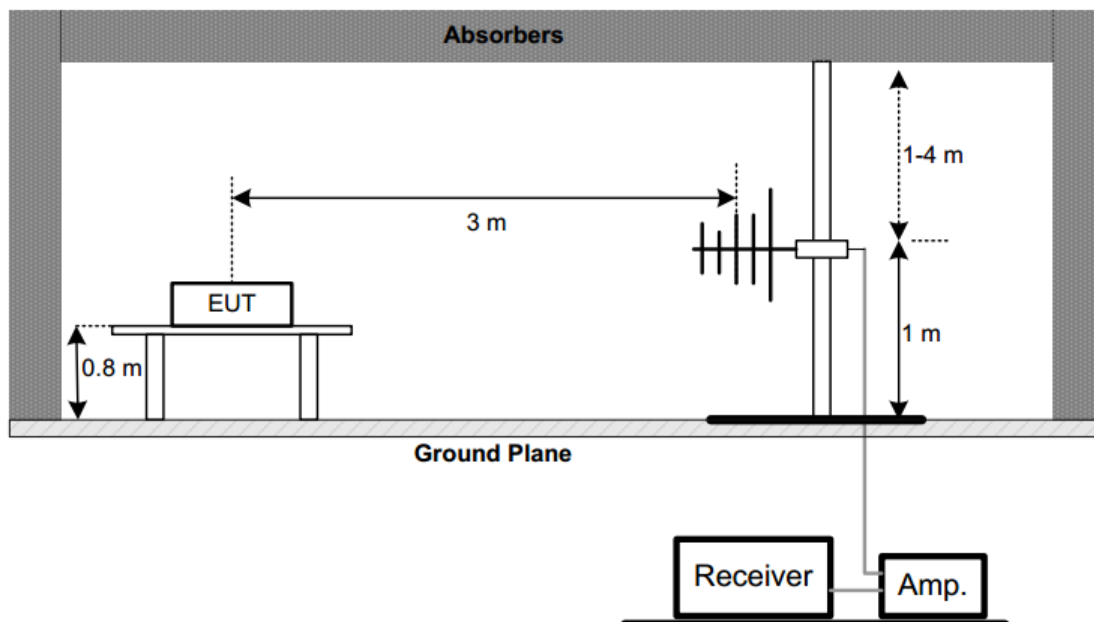
- a) The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1 GHz)
- b) The measuring distance of 3 m or 1.5m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
- c) The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- e) The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.
- f) The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- g) All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1 GHz)
- h) All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1 GHz)
- i) For the actual test configuration, please refer to the related Item -EUT Test Photos.

3.2.3 Test Setup

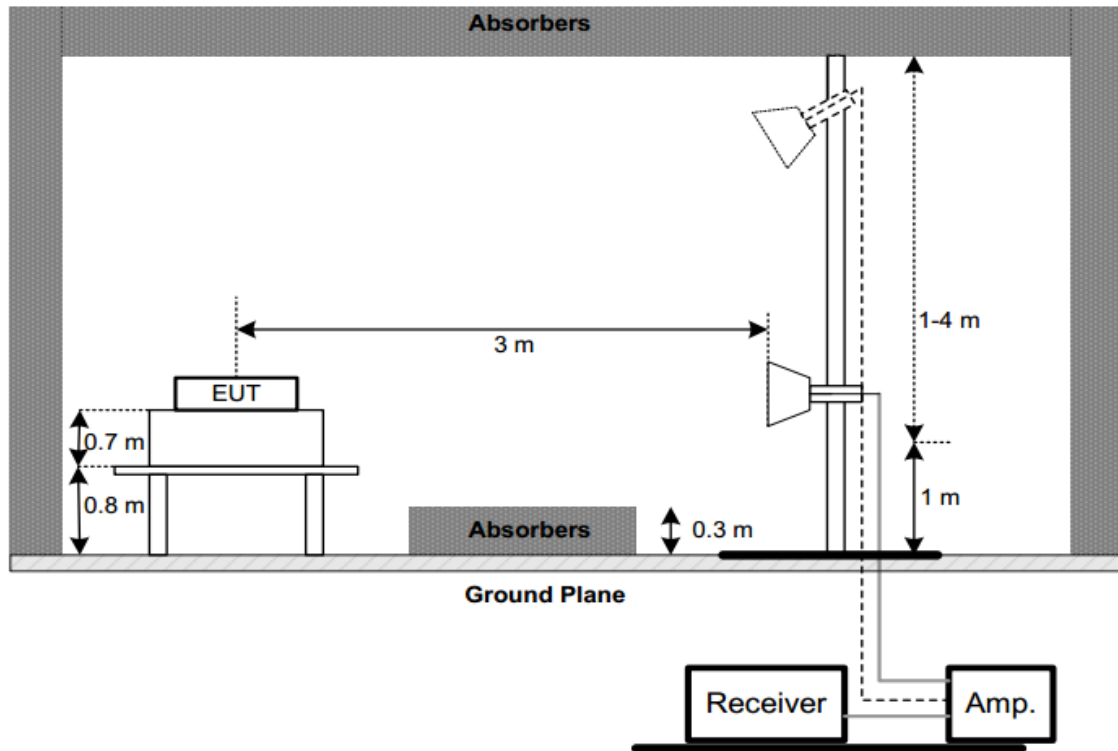
(A) Radiated Emission Test Set-Up Frequency Below 30 MHz



(B) Radiated Emission Test Set-Up Frequency 30 MHz-1000 MHz



(C) Radiated Emission Test Set-Up Frequency Above 1 GHz



3.2.4 Test Result

1) Radiated emission: 9kHz-30MHz

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not recorded in this report.

2) Radiated emission: 30MHz-1G

Note:

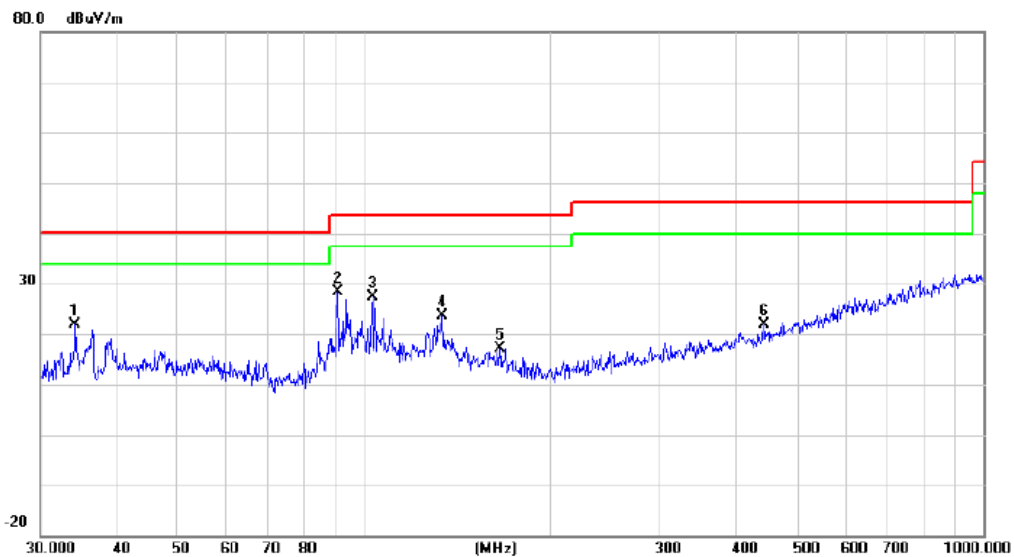
1. Measurement = Reading + Correct Factor.
2. Over = Measurement – Limit
3. The TX A-CDD Mode Channel 52 is found to be the worst case and recorded.

Below 1G (30MHz~1GHz)

TX A Channel 52

VERTICAL

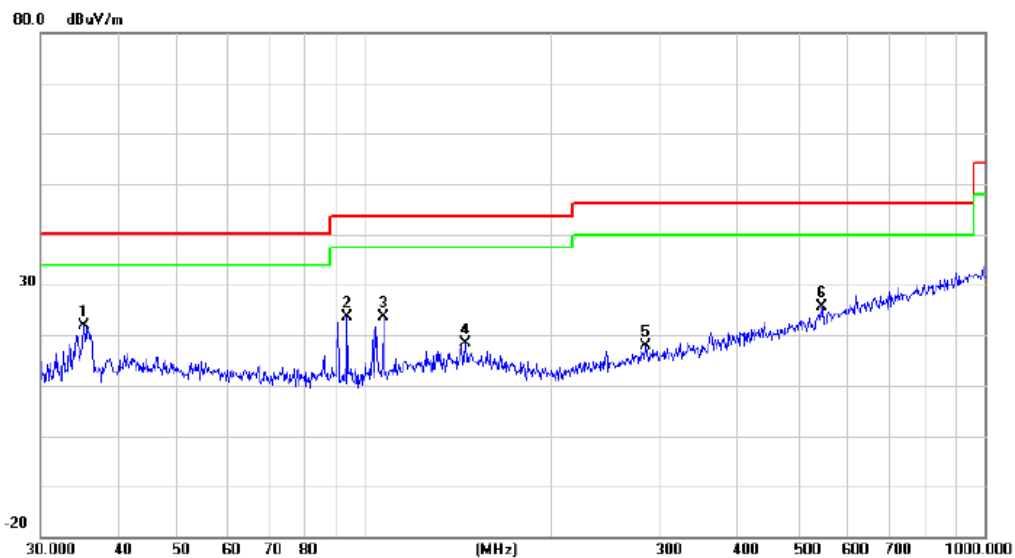
Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		34.1561	33.57	-11.75	21.82	40.00	-18.18	peak		
2	*	90.5374	42.98	-14.64	28.34	43.50	-15.16	peak		
3		103.0800	40.46	-13.10	27.36	43.50	-16.14	peak		
4		133.6188	33.73	-10.10	23.63	43.50	-19.87	peak		
5		165.4866	26.90	-9.70	17.20	43.50	-26.30	peak		
6		441.7426	26.74	-4.81	21.93	46.00	-24.07	peak		

HORIZONTAL

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	35.2511	33.56	-11.58	21.98	40.00	-18.02	peak		
2		93.7684	37.87	-14.26	23.61	43.50	-19.89	peak		
3		107.1337	36.11	-12.58	23.53	43.50	-19.97	peak		
4		145.3505	27.87	-9.61	18.26	43.50	-25.24	peak		
5		283.9791	26.49	-8.64	17.85	46.00	-28.15	peak		
6		545.1825	27.77	-2.17	25.60	46.00	-20.40	peak		

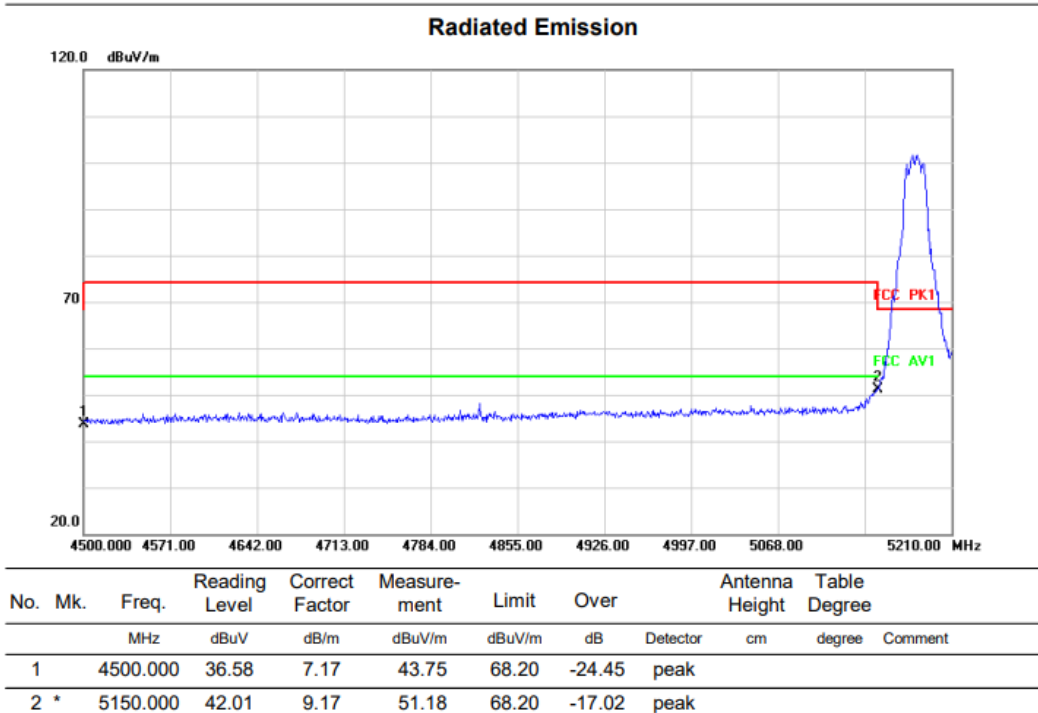
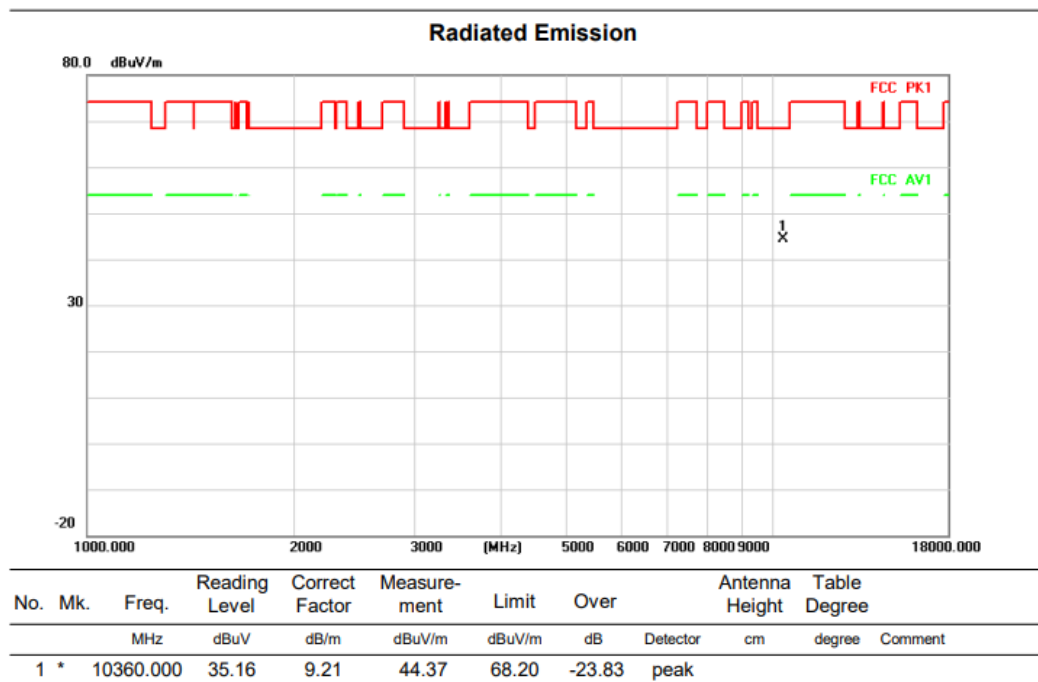
3) Radiated emission: Above 1G

Note:

1. Measurement = Reading + Correct Factor.
2. Over = Measurement – Limit

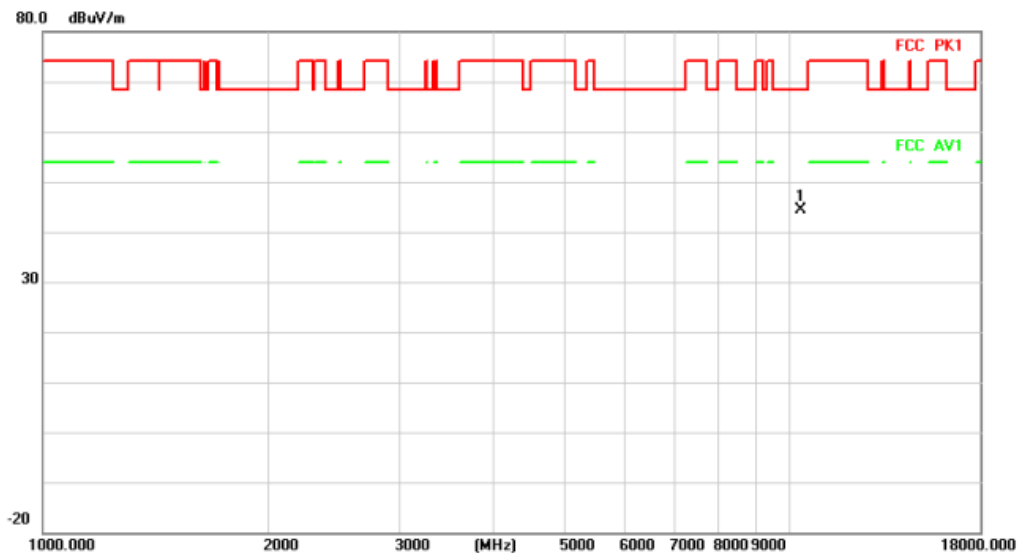
Above 1G (1GHz~18GHz)	Test mode:11A-CDD	Test Channel:36
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VERTICAL



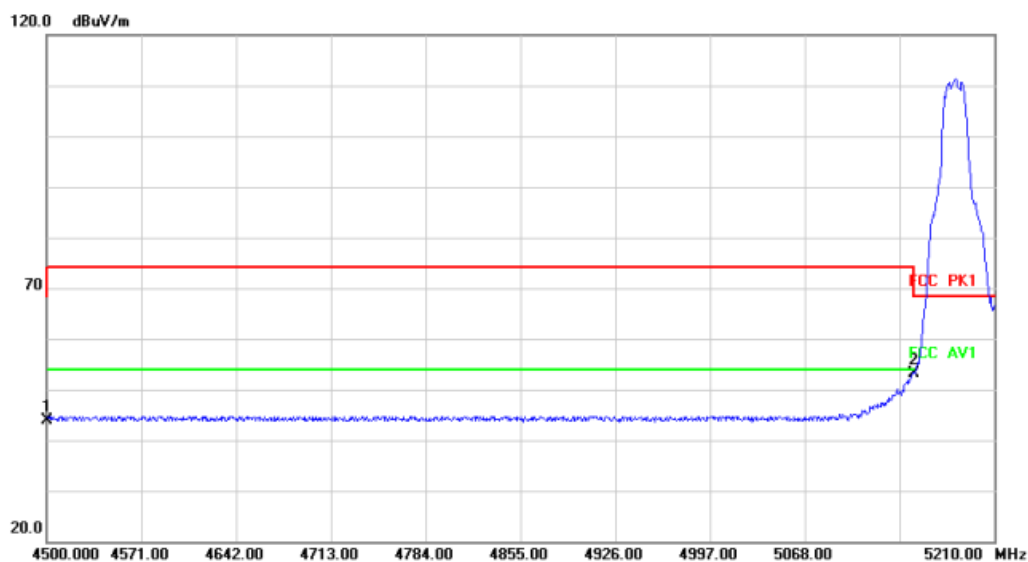
HORIZONTAL

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	10360.000	35.16	9.21	44.37	68.20	-23.83	peak		

Radiated Emission



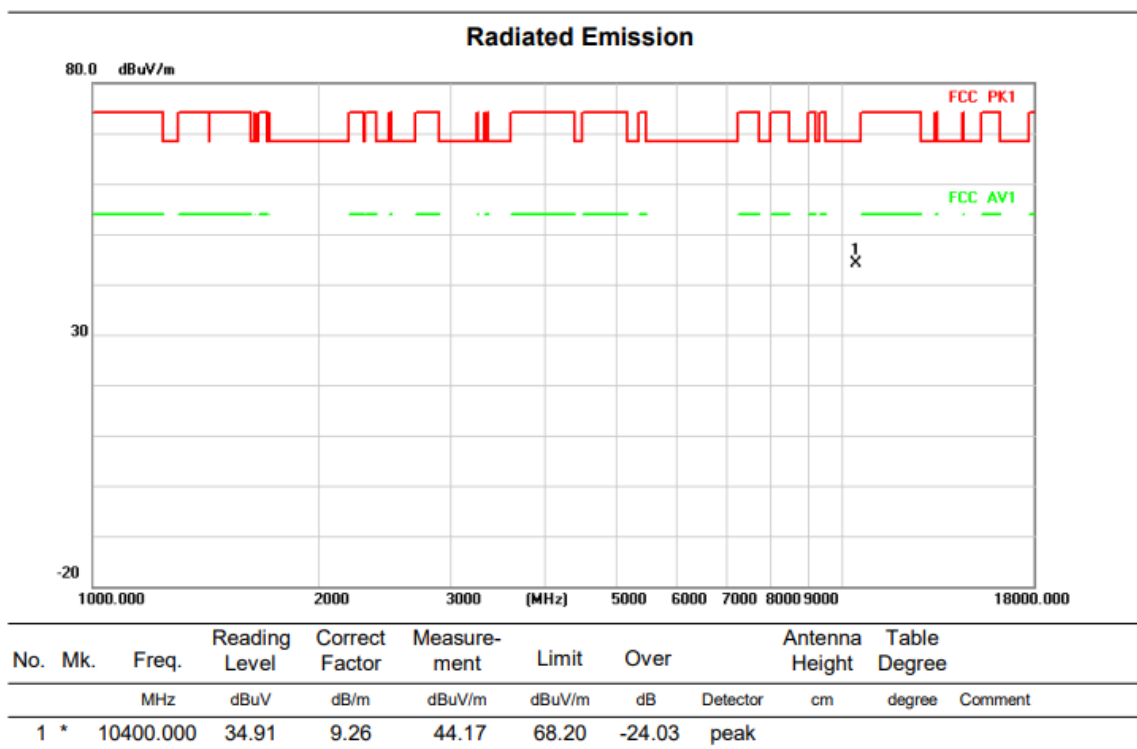
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		4500.000	36.72	7.17	43.89	68.20	-24.31	peak		
2	*	5150.000	43.97	9.17	53.14	68.20	-15.06	peak		

Above 1G (1GHz~18GHz)

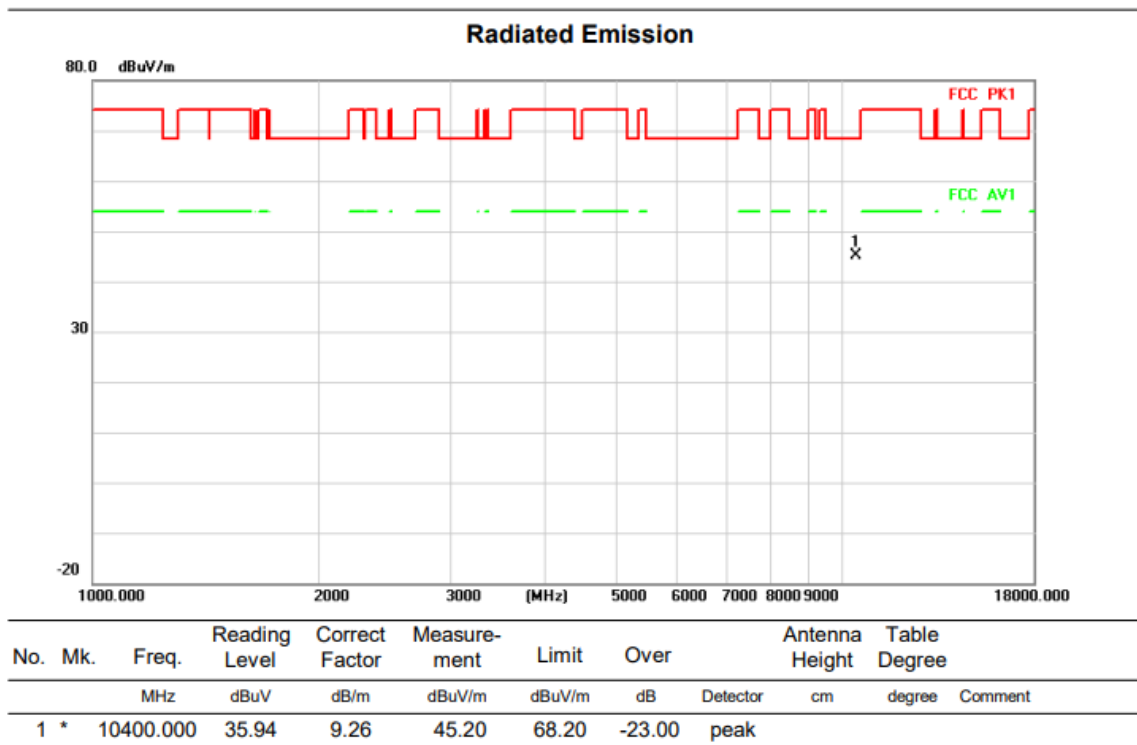
Test mode: 11A-CDD

Test Channel:40

VERTICAL



HORIZONTAL

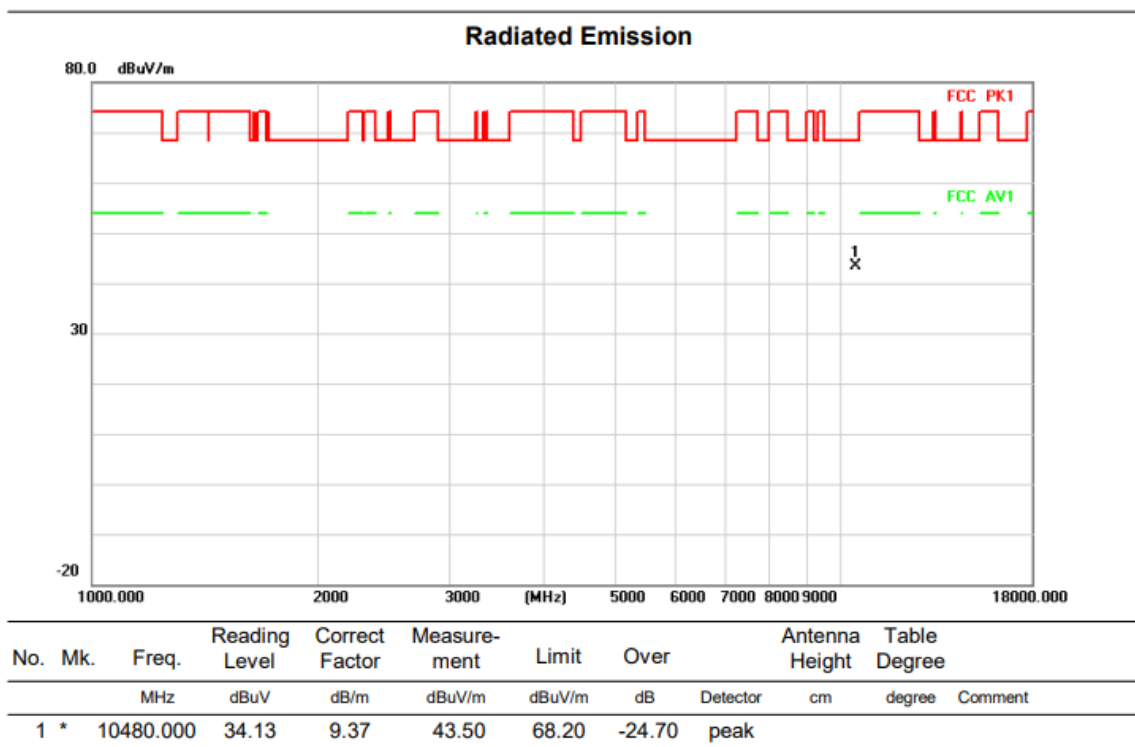


Above 1G (1GHz~18GHz)

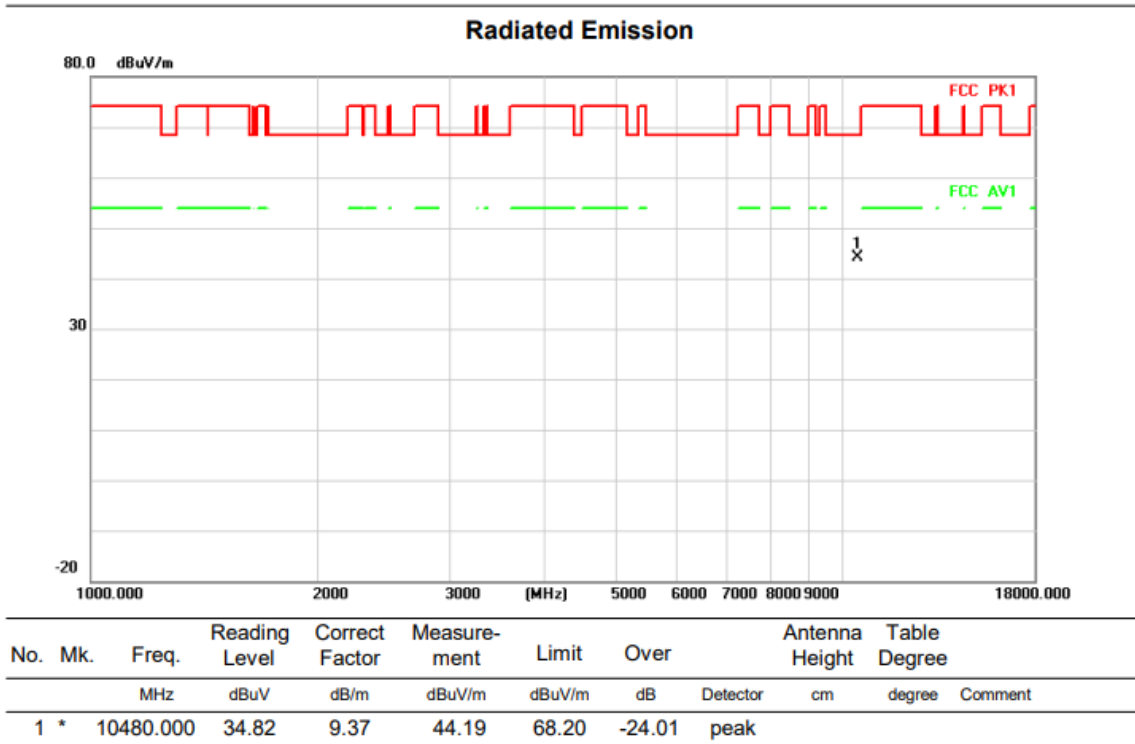
Test mode: 11A-CDD

Test Channel:48

VERTICAL



HORIZONTAL

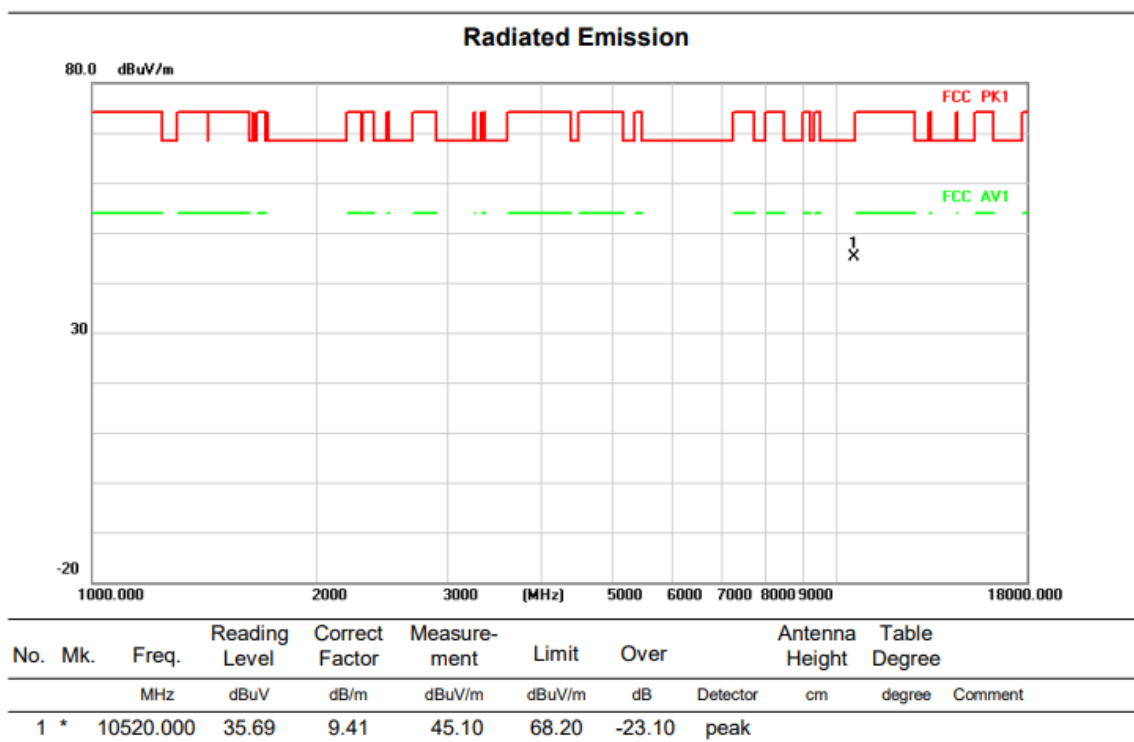


Above 1G (1GHz~18GHz)

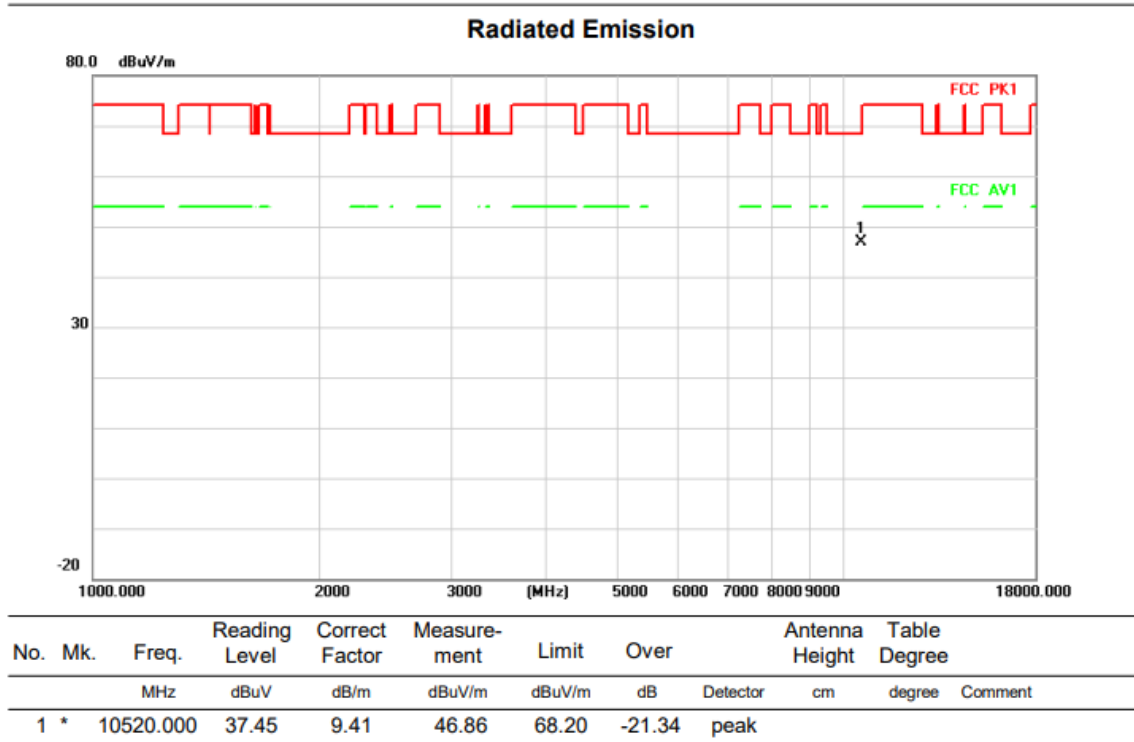
Test mode: 11A-CDD

Test Channel:52

VERTICAL



HORIZONTAL

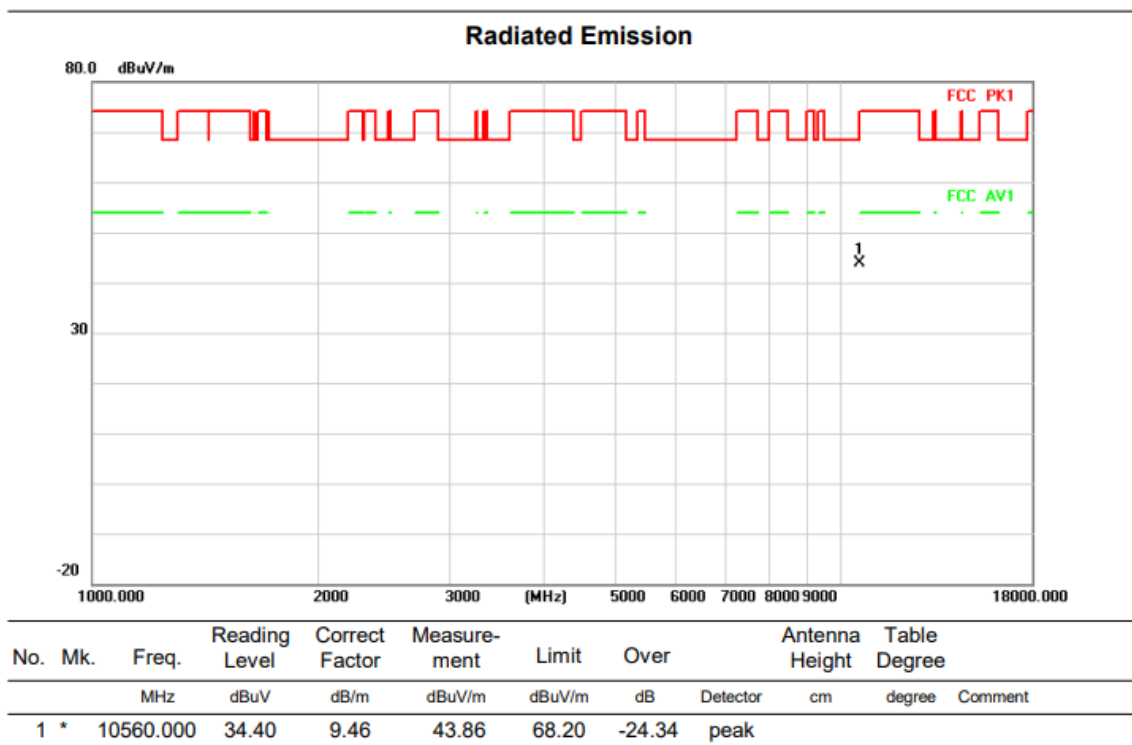


Above 1G (1GHz~18GHz)

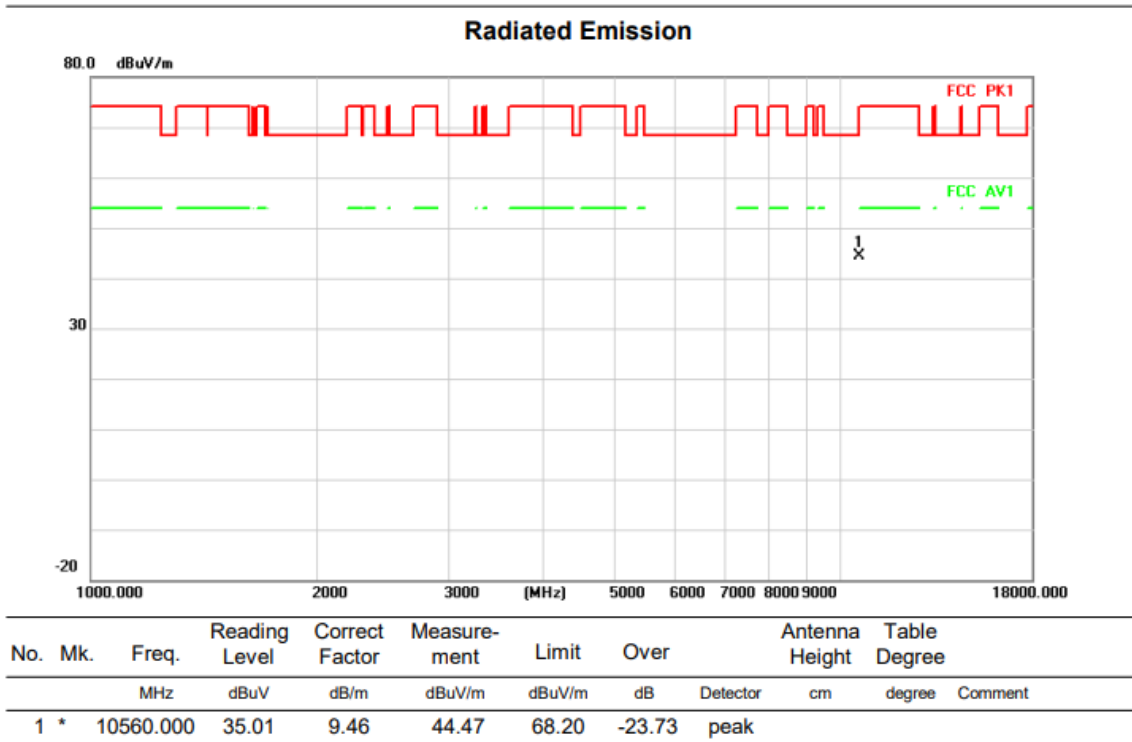
Test mode: 11A-CDD

Test Channel:56

VERTICAL



HORIZONTAL



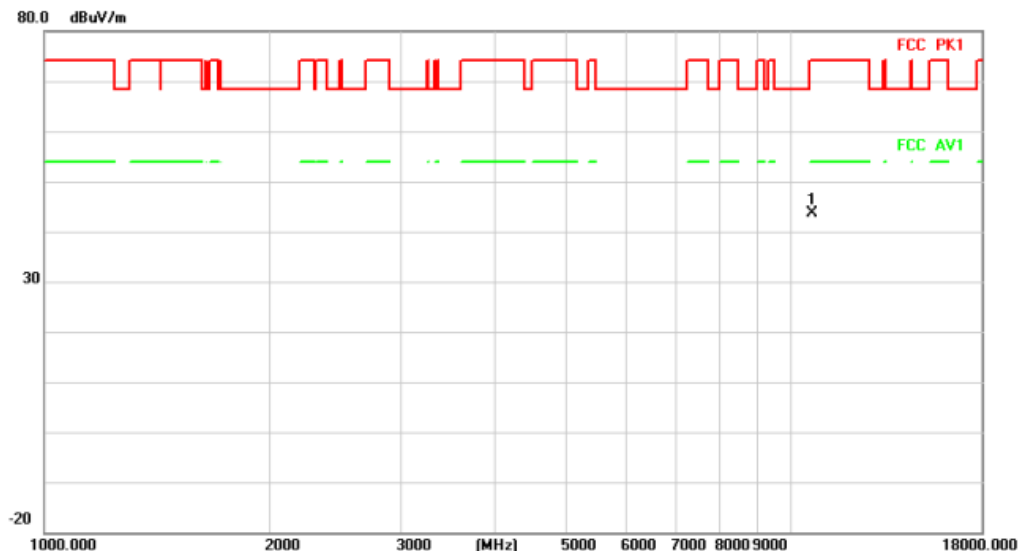
Above 1G (1GHz~18GHz)

Test mode: 11A-CDD

Test Channel:64

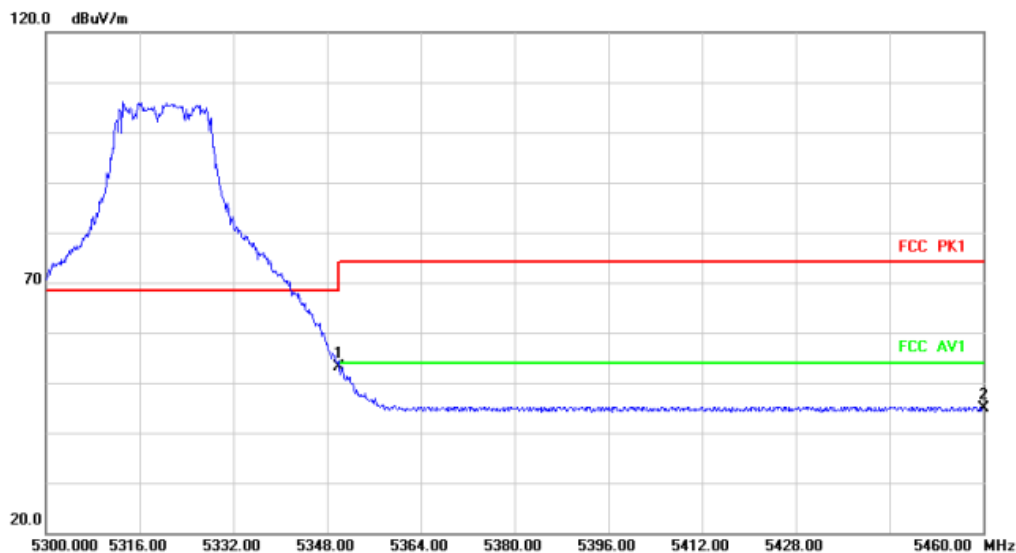
VERTICAL

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree
1	*	10640.000	34.07	9.58	43.65	74.00	-30.35	peak	

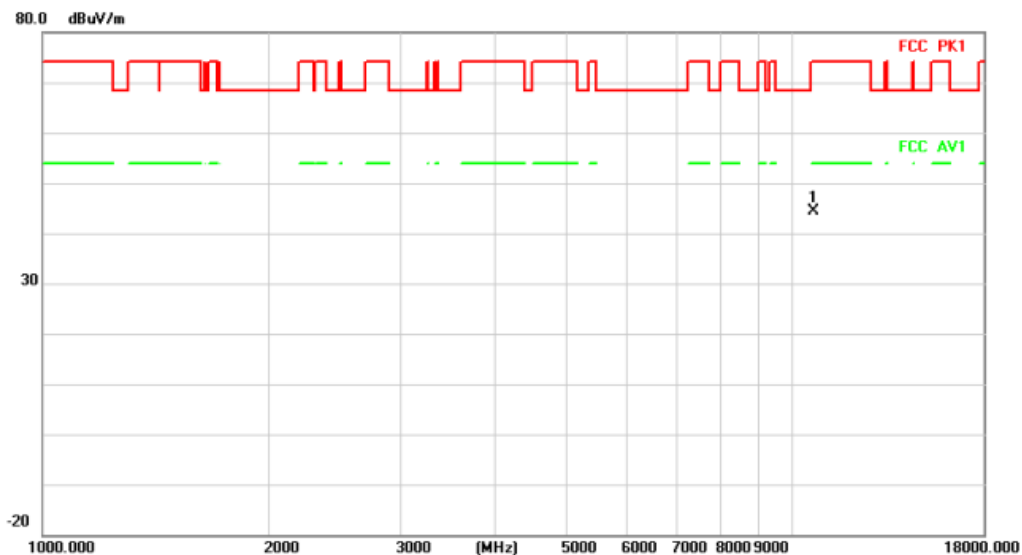
Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree
1	*	5350.000	43.78	9.30	53.08	68.20	-15.12	peak	
2		5460.000	35.52	9.31	44.83	68.20	-23.37	peak	

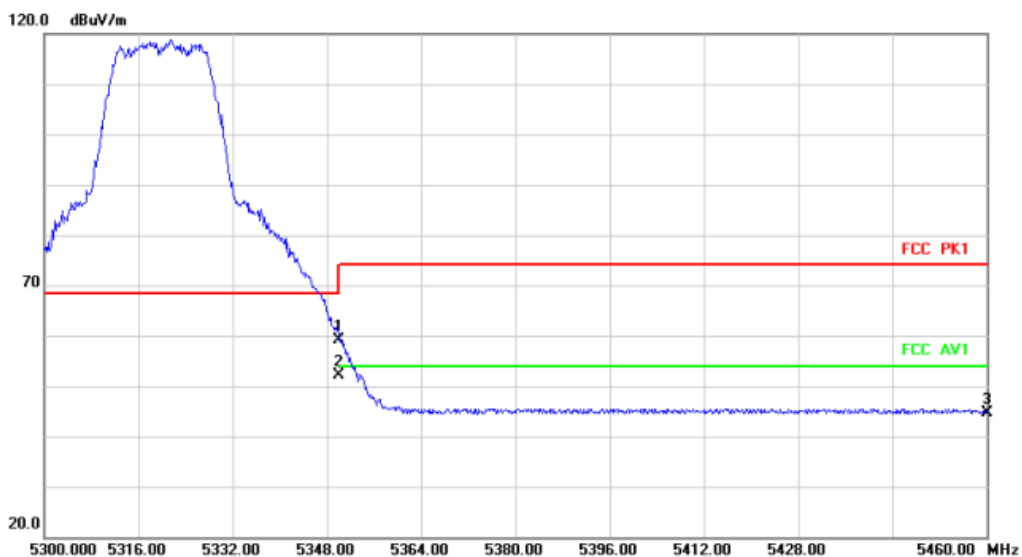
HORIZONTAL

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	10640.000	34.82	9.58	44.40	74.00	-29.60	peak		

Radiated Emission



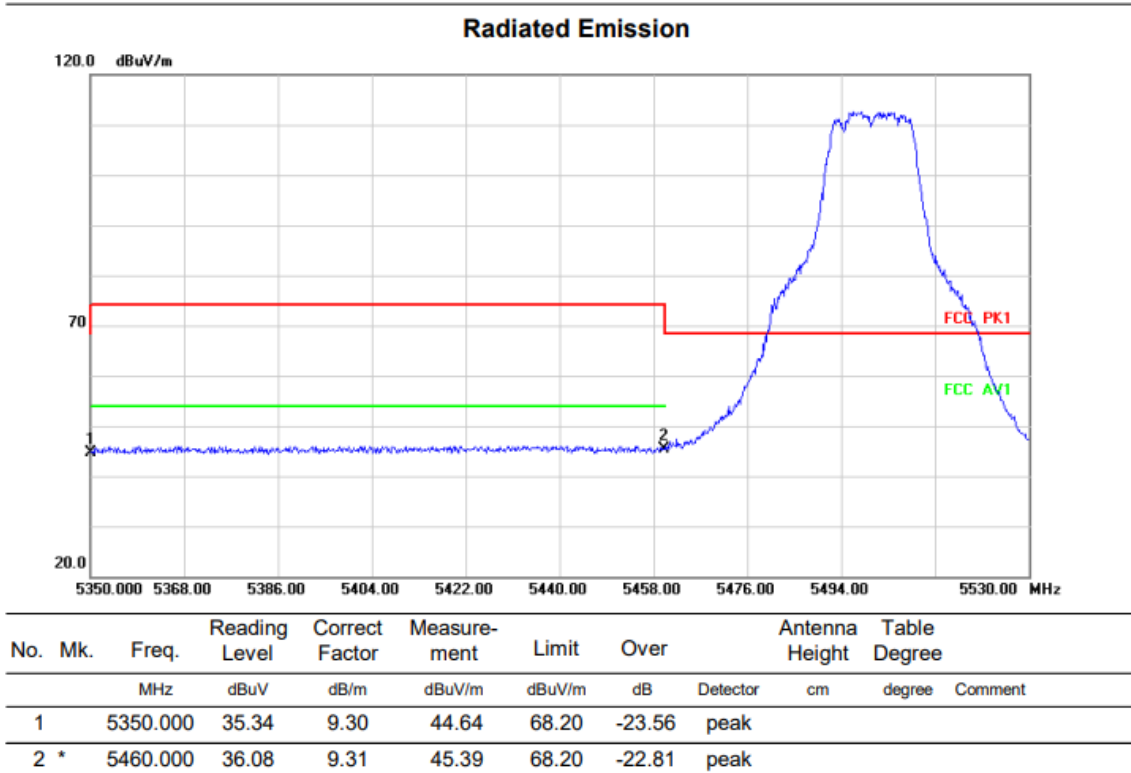
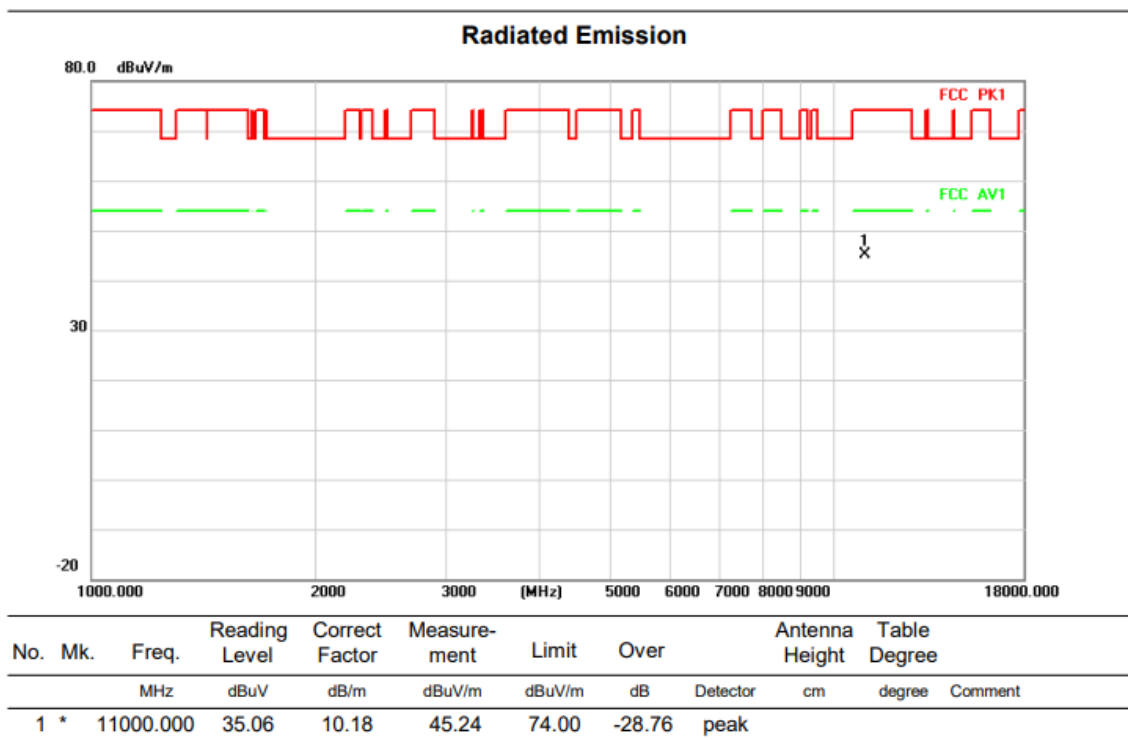
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		5350.000	49.92	9.30	59.22	68.20	-8.98	peak		
2	*	5350.000	42.92	9.30	52.22	54.00	-1.78	AVG		
3		5460.000	35.21	9.31	44.52	68.20	-23.68	peak		

Above 1G (1GHz~18GHz)

Test mode: 11A-CDD

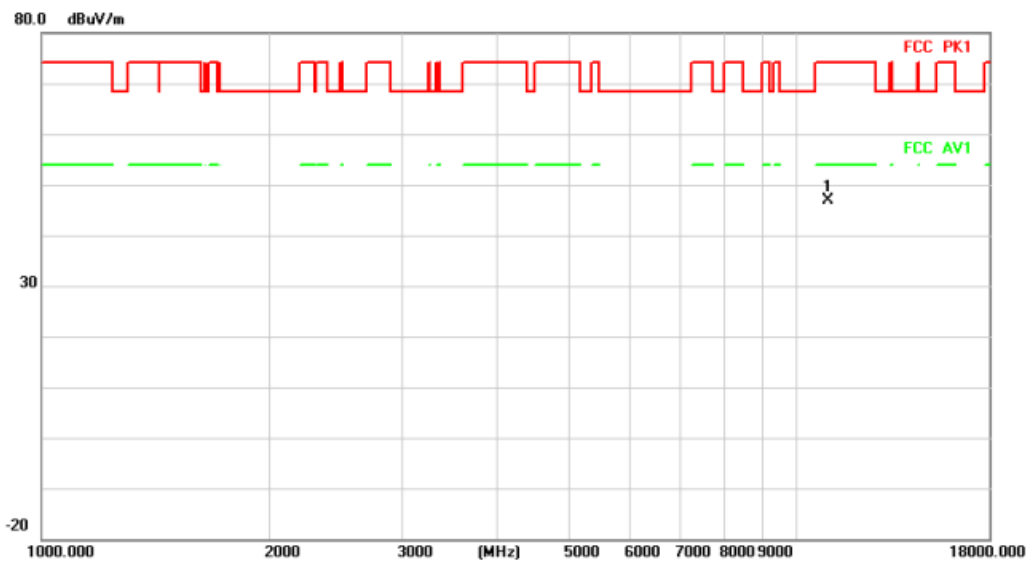
Test Channel:100

VERTICAL



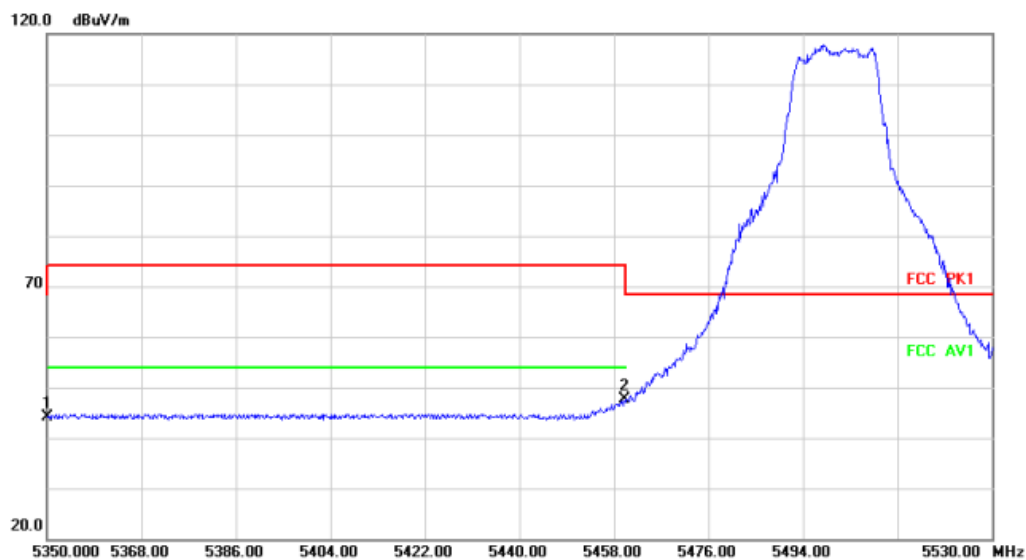
HORIZONTAL

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	11000.000	36.59	10.18	46.77	74.00	-27.23	peak		

Radiated Emission



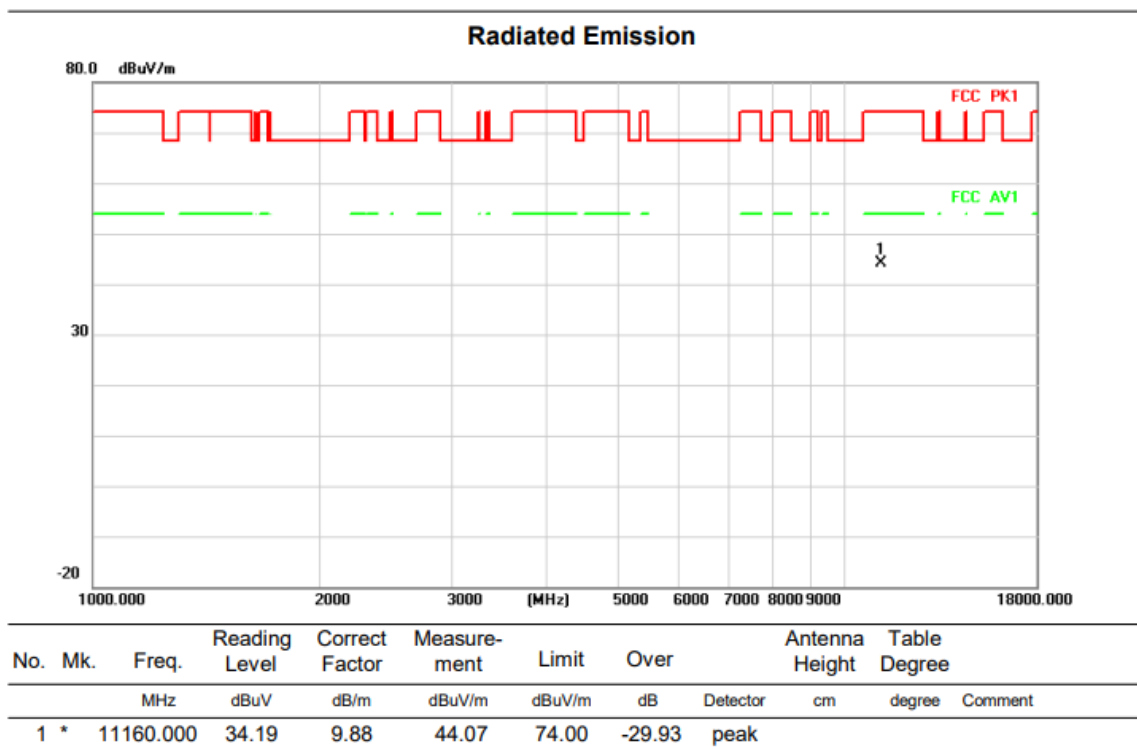
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		5350.000	34.85	9.30	44.15	68.20	-24.05	peak		
2	*	5460.000	38.36	9.31	47.67	68.20	-20.53	peak		

Above 1G (1GHz~18GHz)

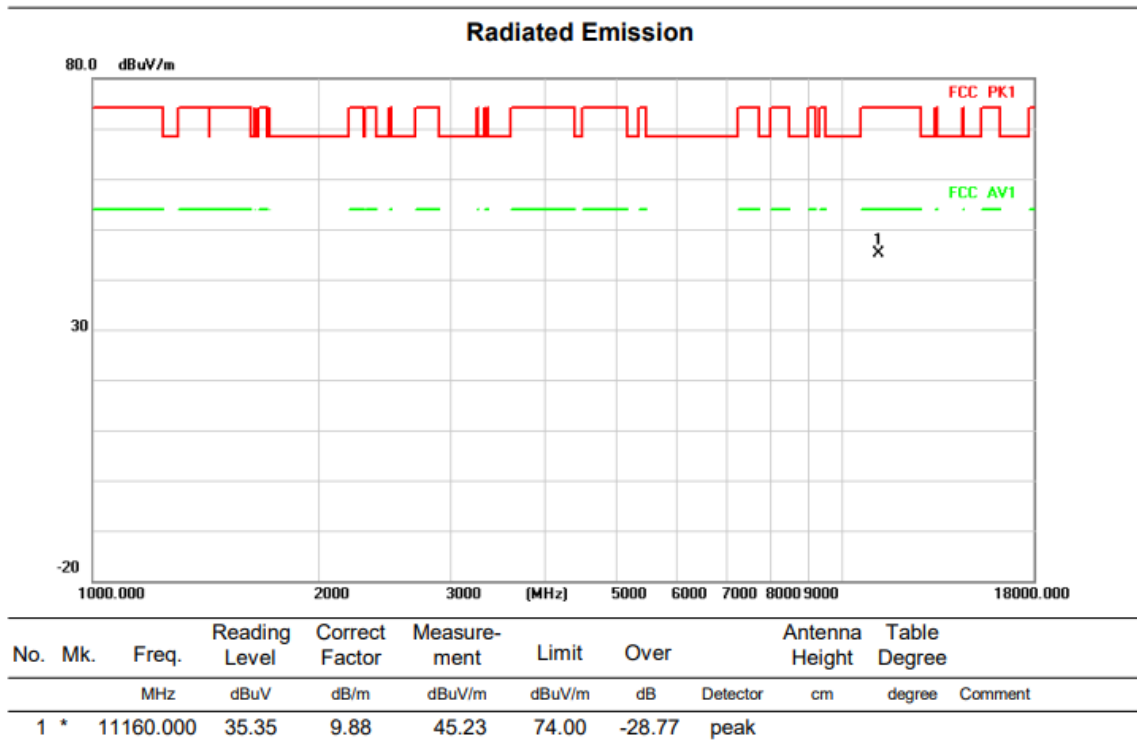
Test mode: 11A-CDD

Test Channel:116

VERTICAL



HORIZONTAL

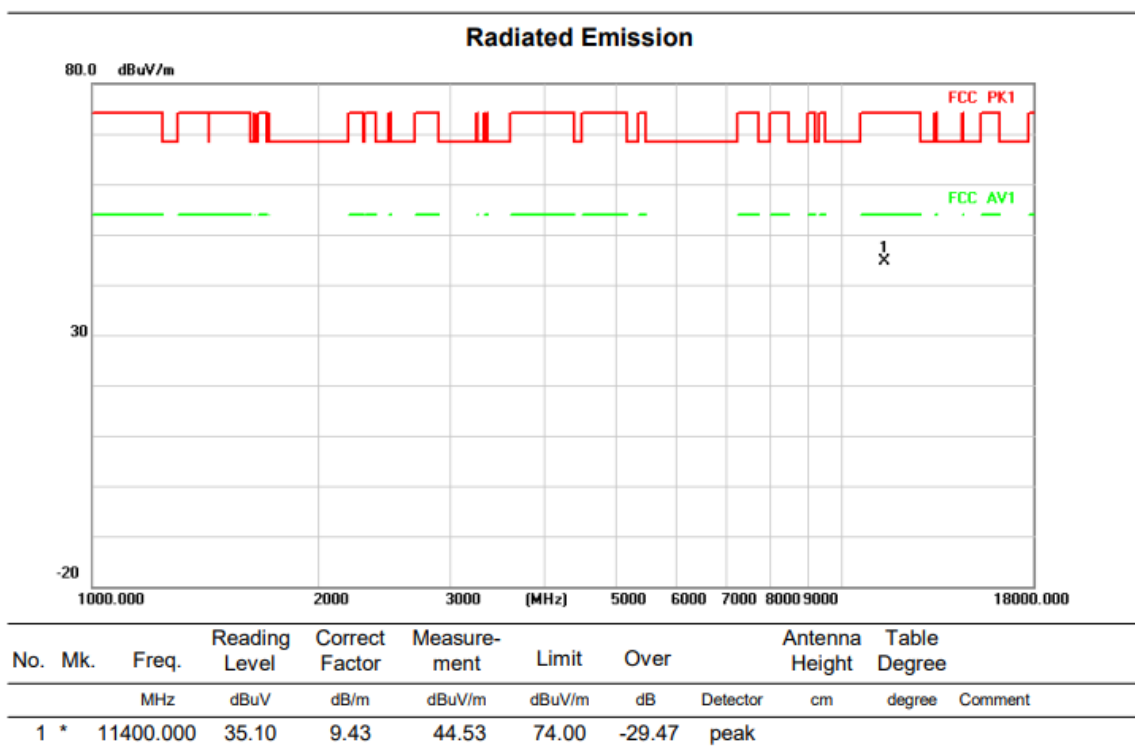


Above 1G (1GHz~18GHz)

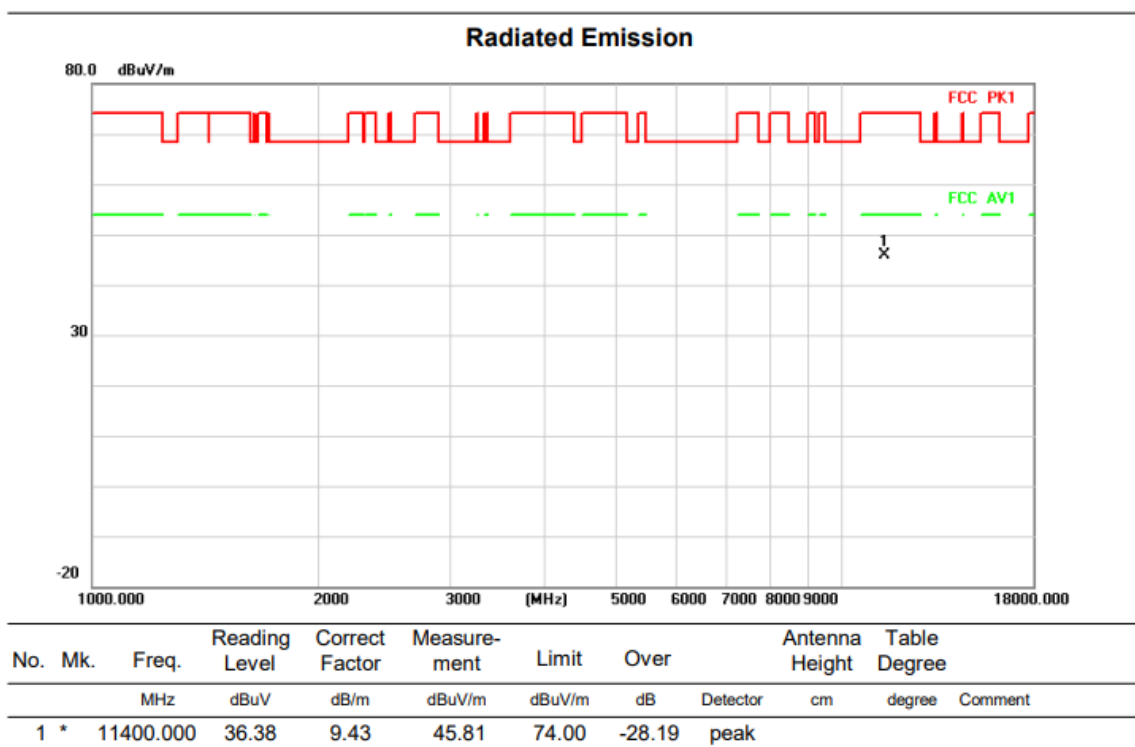
Test mode: 11A-CDD

Test Channel:140

VERTICAL



HORIZONTAL

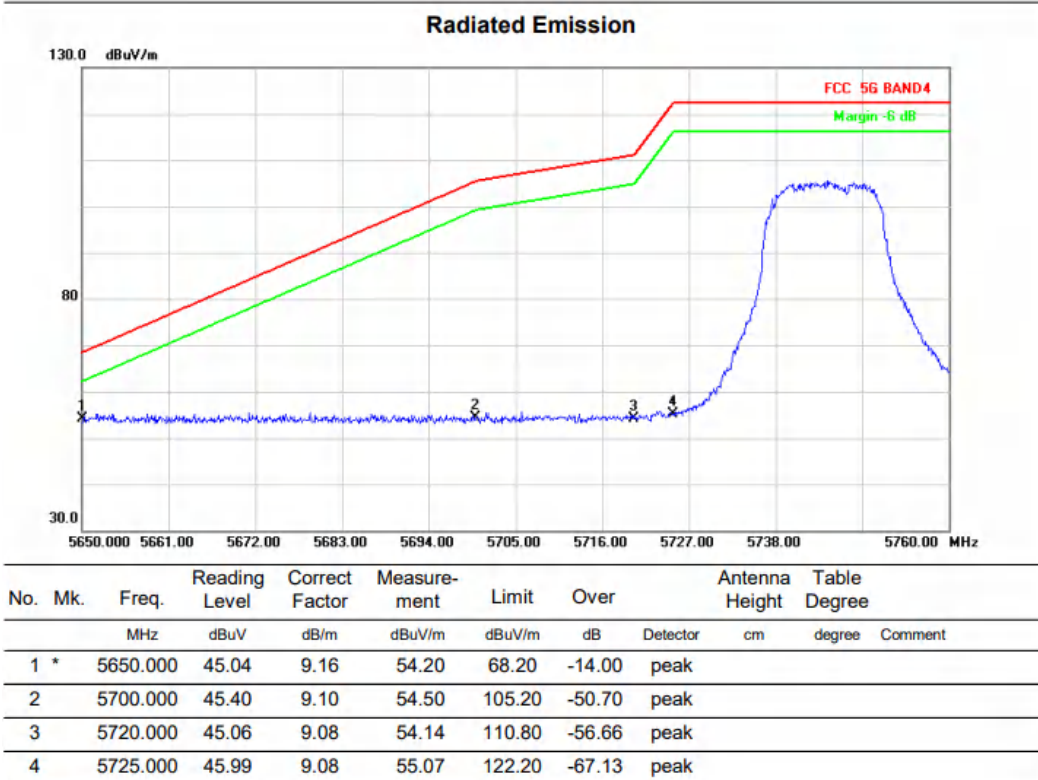
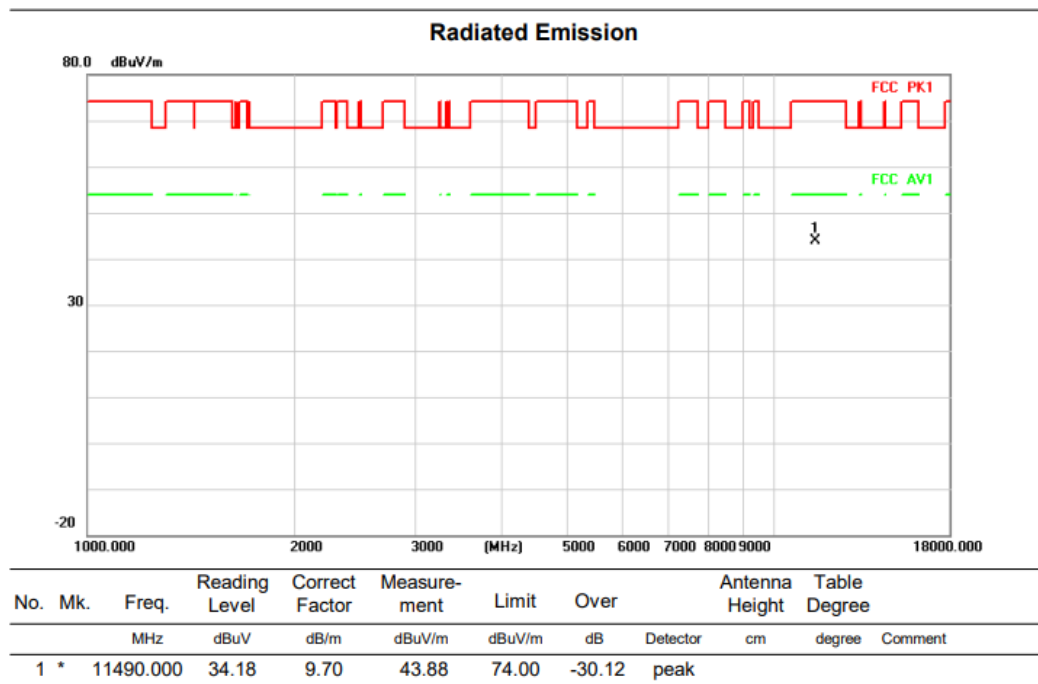


Above 1G (1GHz~18GHz)

Test mode: 11A-CDD

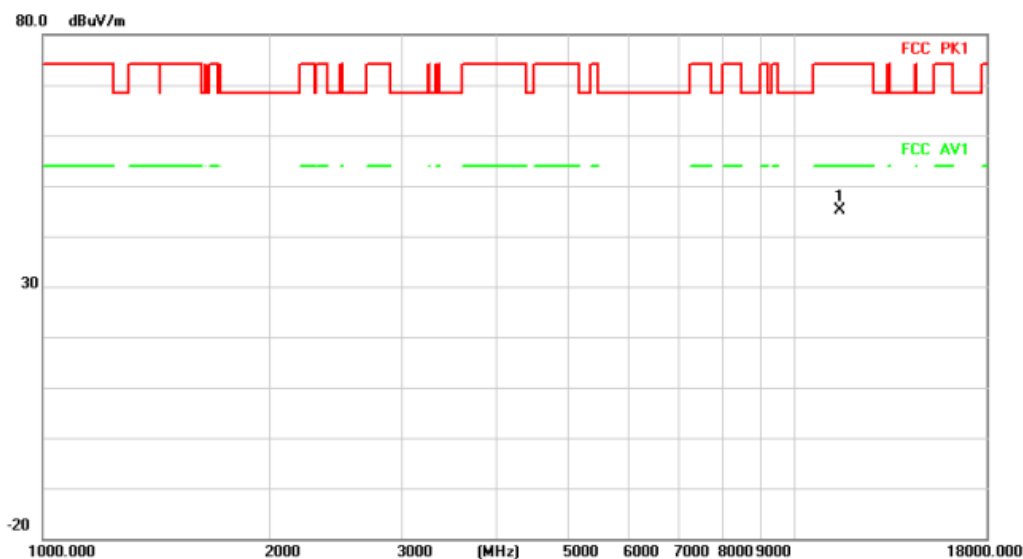
Test Channel:149

VERTICAL



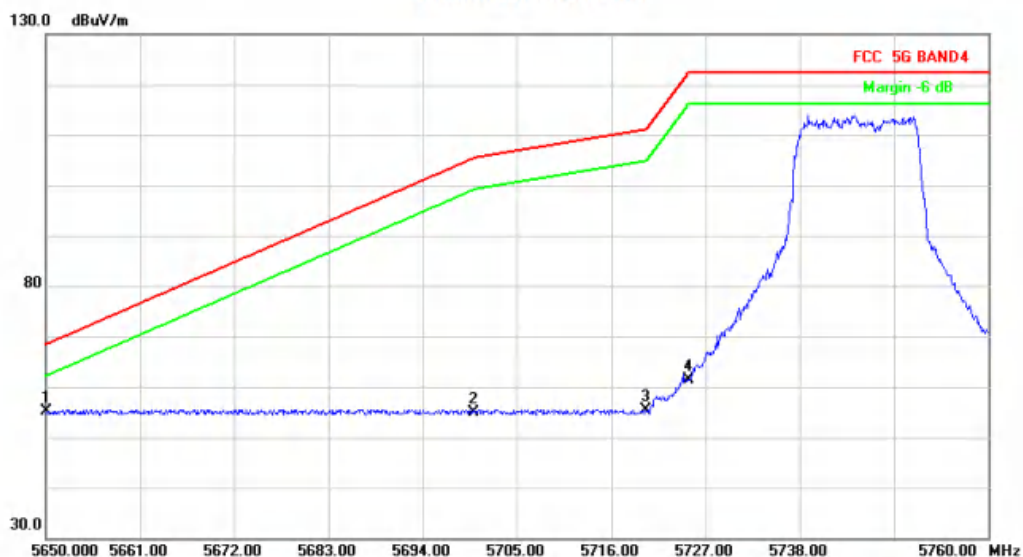
HORIZONTAL

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	11490.000	35.33	9.70	45.03	74.00	-28.97	peak		

Radiated Emission



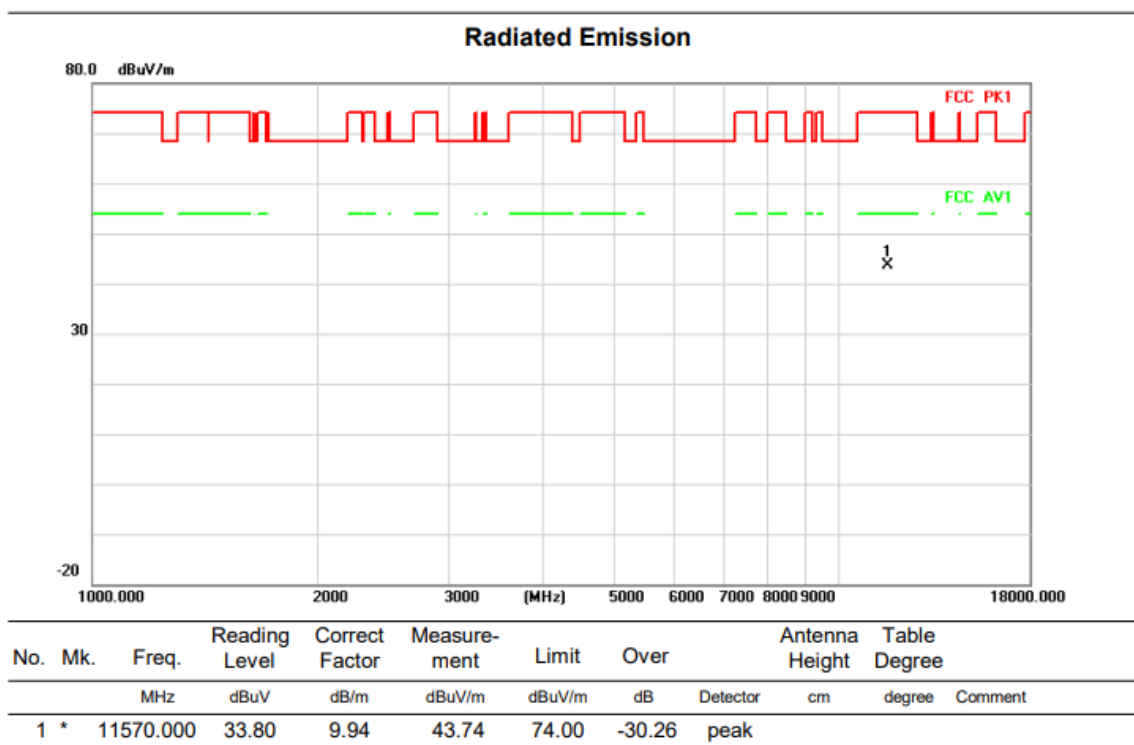
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	5650.000	46.07	9.16	55.23	68.20	-12.97	peak		
2		5700.000	45.84	9.10	54.94	105.20	-50.26	peak		
3		5720.000	46.29	9.08	55.37	110.80	-55.43	peak		
4		5725.000	52.29	9.08	61.37	122.20	-60.83	peak		

Above 1G (1GHz~18GHz)

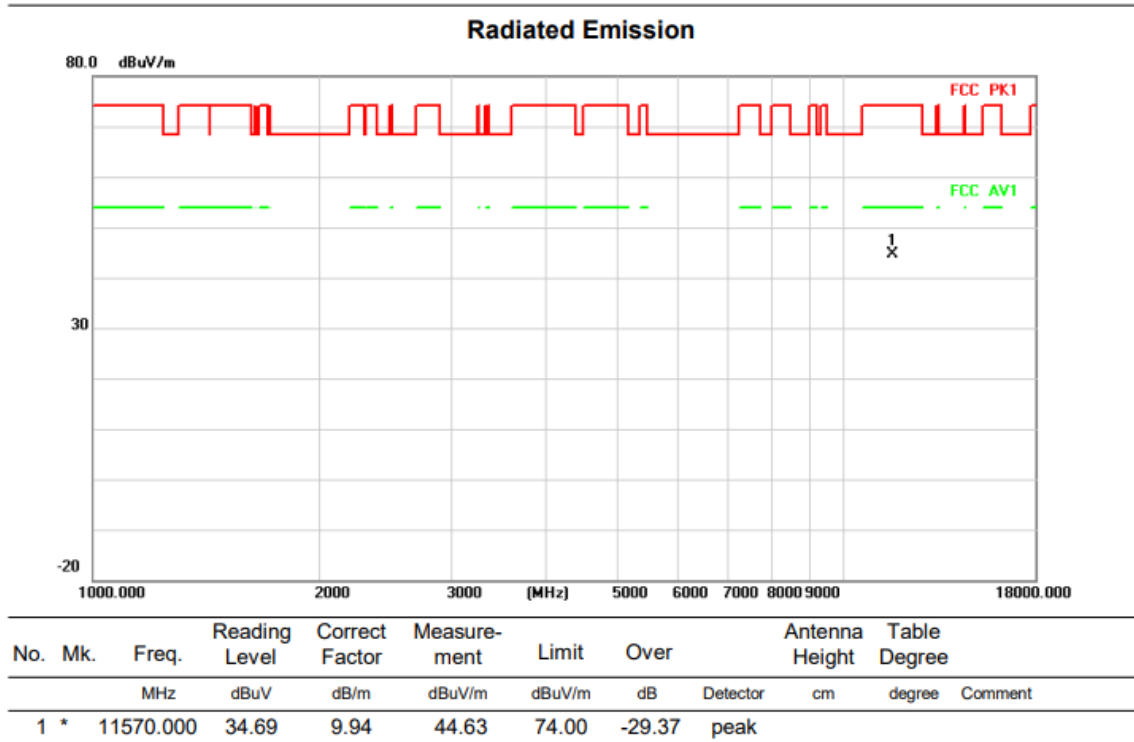
Test mode: 11A-CDD

Test Channel:157

VERTICAL



HORIZONTAL

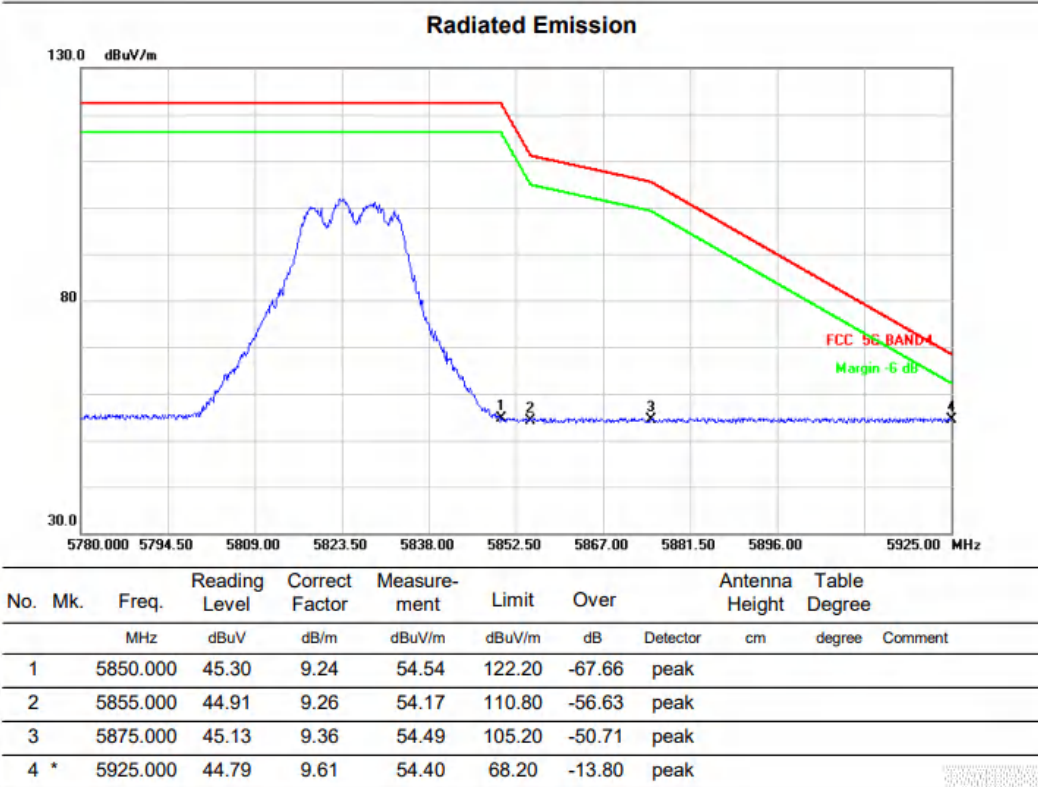
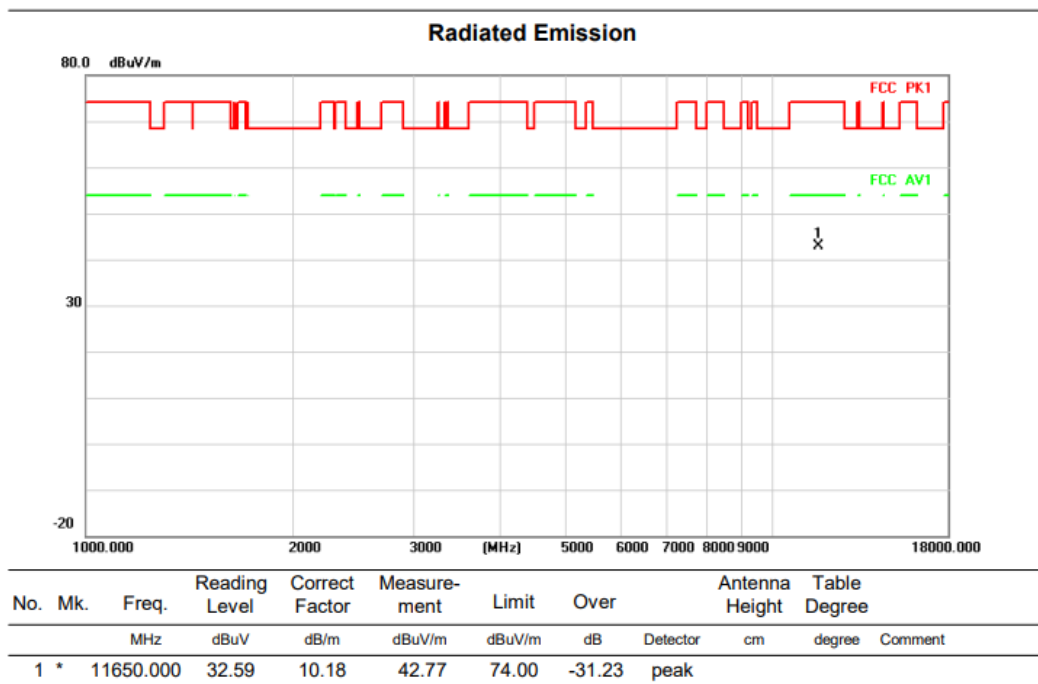


Above 1G (1GHz~18GHz)

Test mode: 11A-CDD

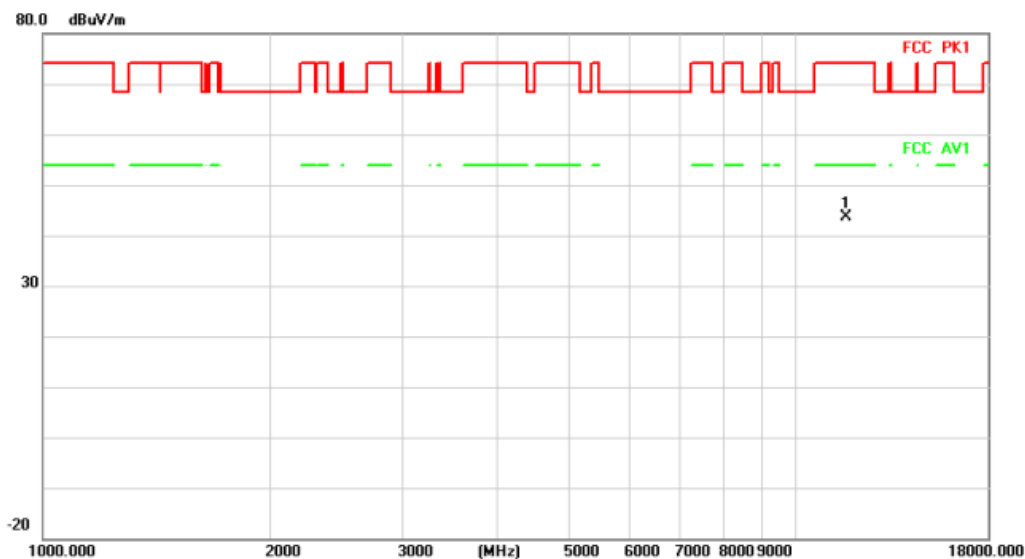
Test Channel:165

VERTICAL



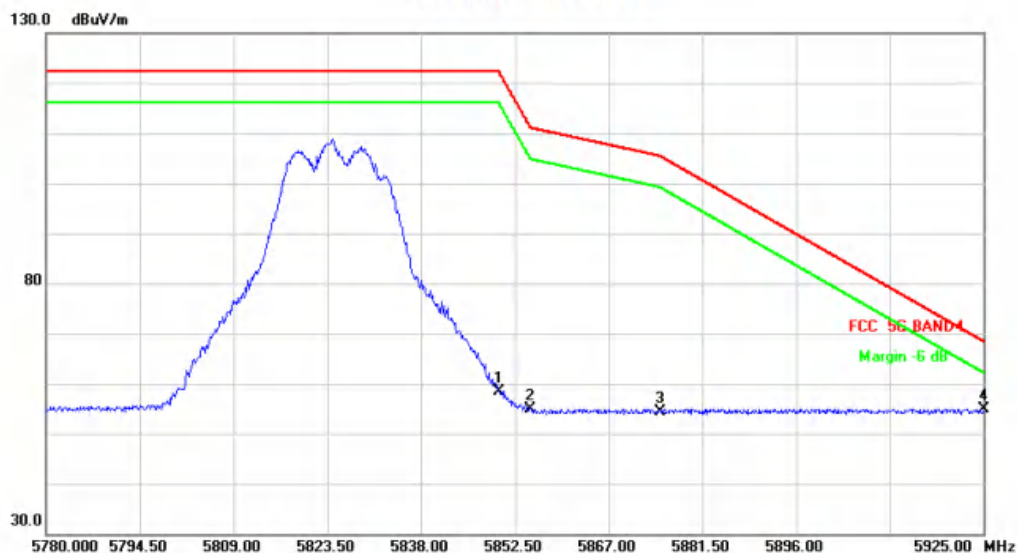
HORIZONTAL

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	11650.000	33.54	10.18	43.72	74.00	-30.28	peak		

Radiated Emission



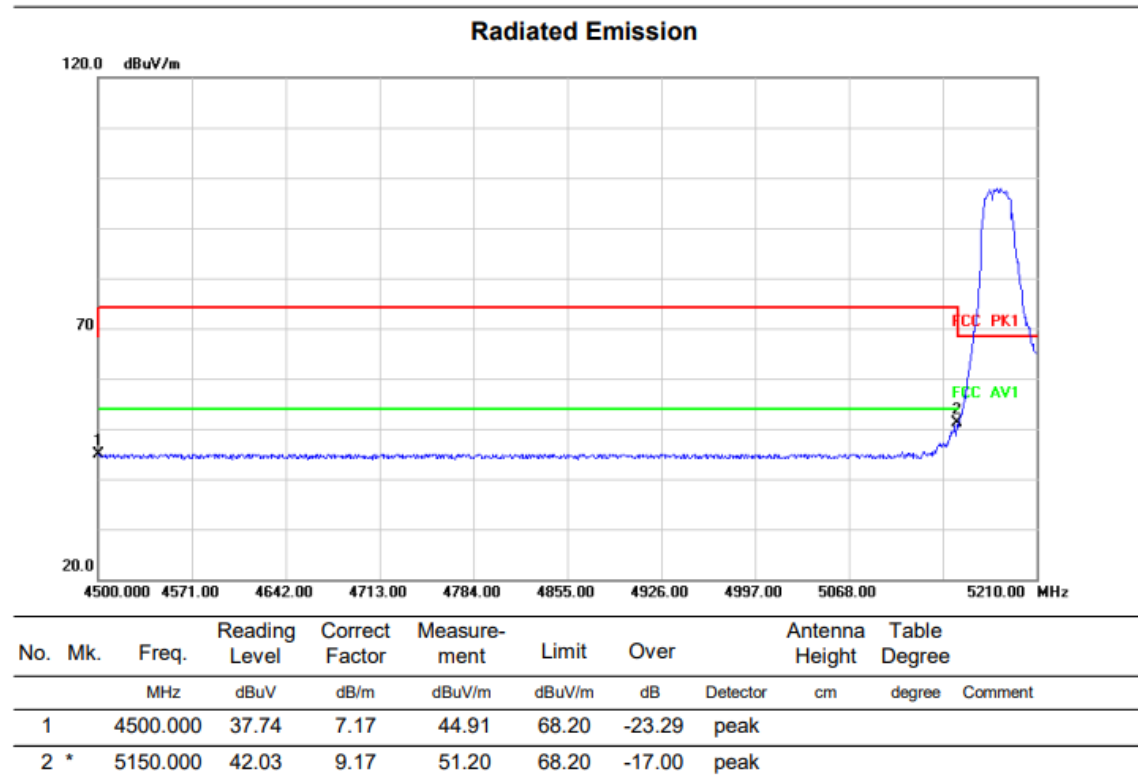
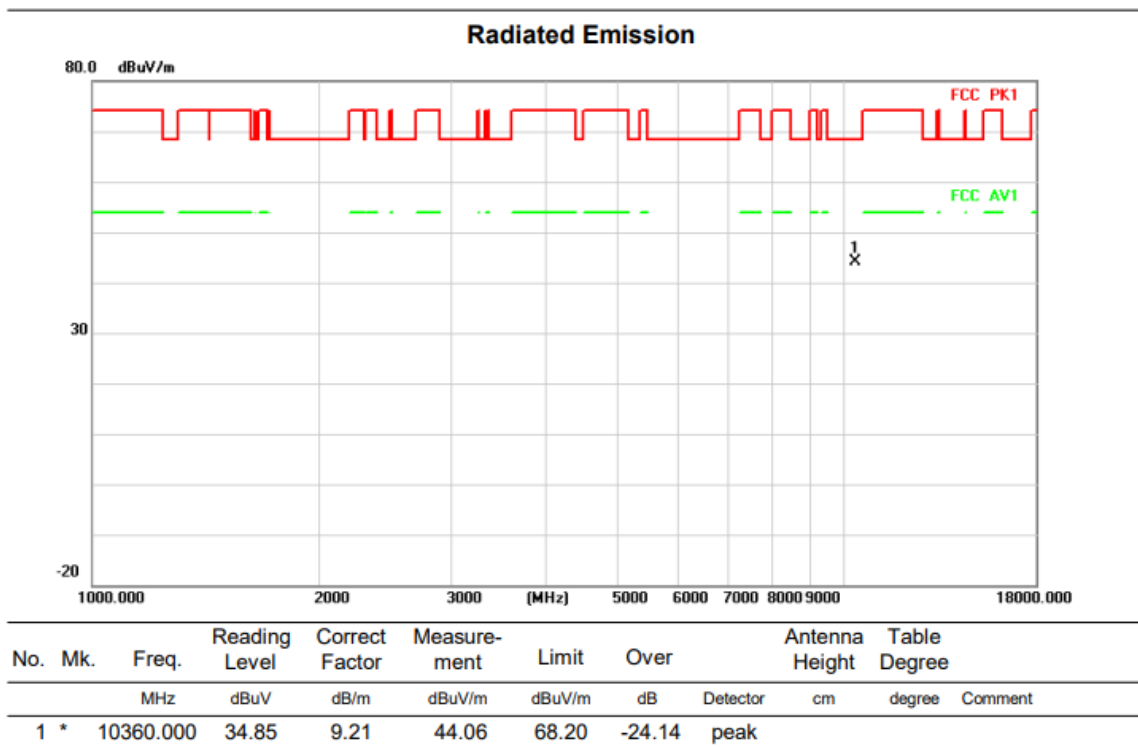
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		5850.000	49.16	9.24	58.40	122.20	-63.80	peak		
2		5855.000	45.56	9.26	54.82	110.80	-55.98	peak		
3		5875.000	44.95	9.36	54.31	105.20	-50.89	peak		
4	*	5925.000	45.31	9.61	54.92	68.20	-13.28	peak		

Above 1G (1GHz~18GHz)

Test mode: 11N20MIMO

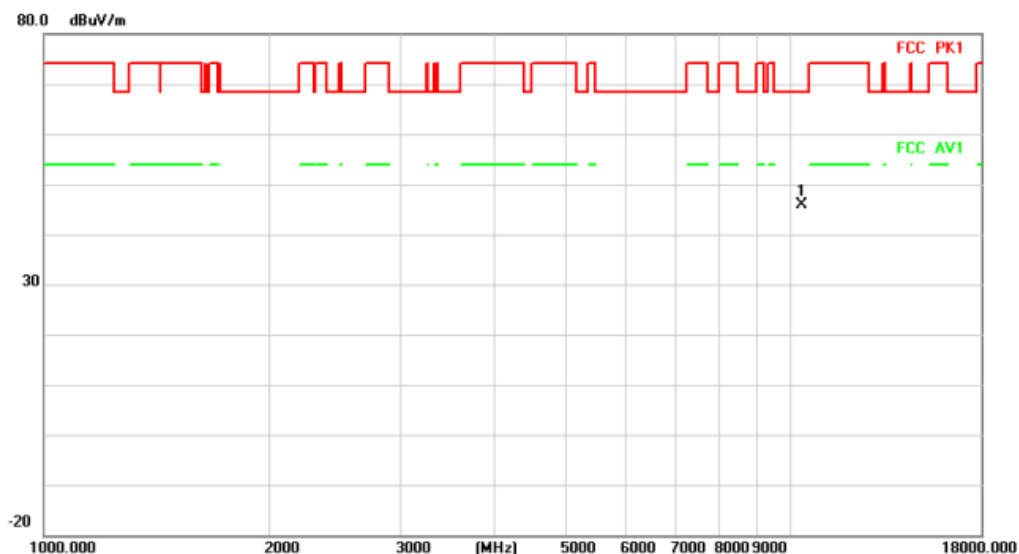
Test Channel:36

VERTICAL



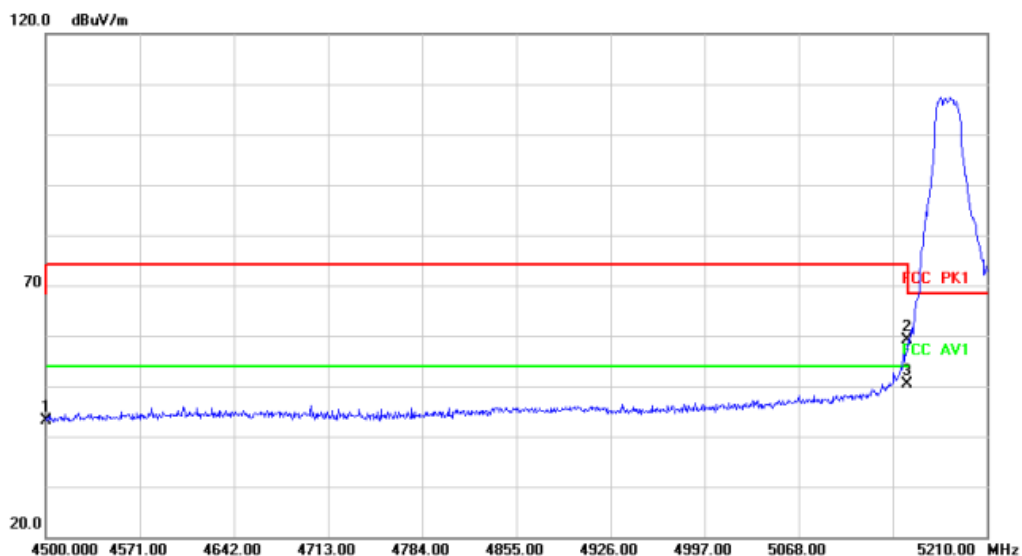
HORIZONTAL

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	10360.000	36.76	9.21	45.97	68.20	-22.23	peak		

Radiated Emission



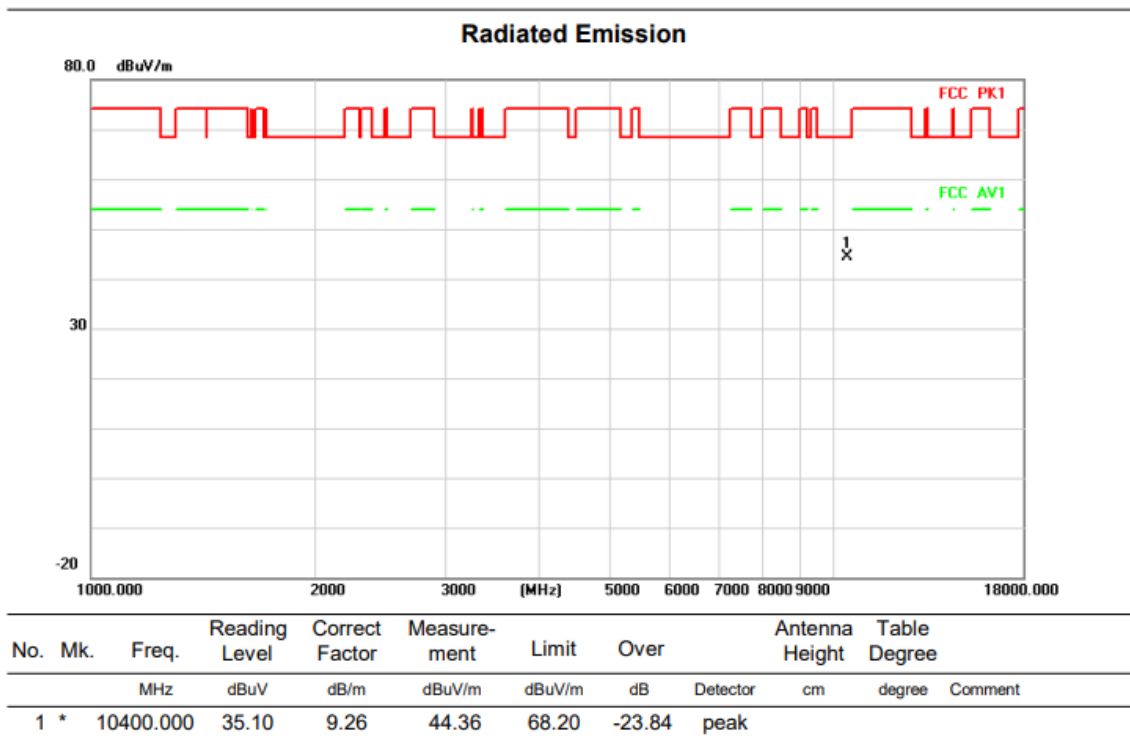
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		4500.000	35.98	7.17	43.15	68.20	-25.05	peak		
2		5150.000	50.06	9.17	59.23	68.20	-8.97	peak		
3	*	5150.000	41.10	9.17	50.27	54.00	-3.73	AVG		

Above 1G (1GHz~18GHz)

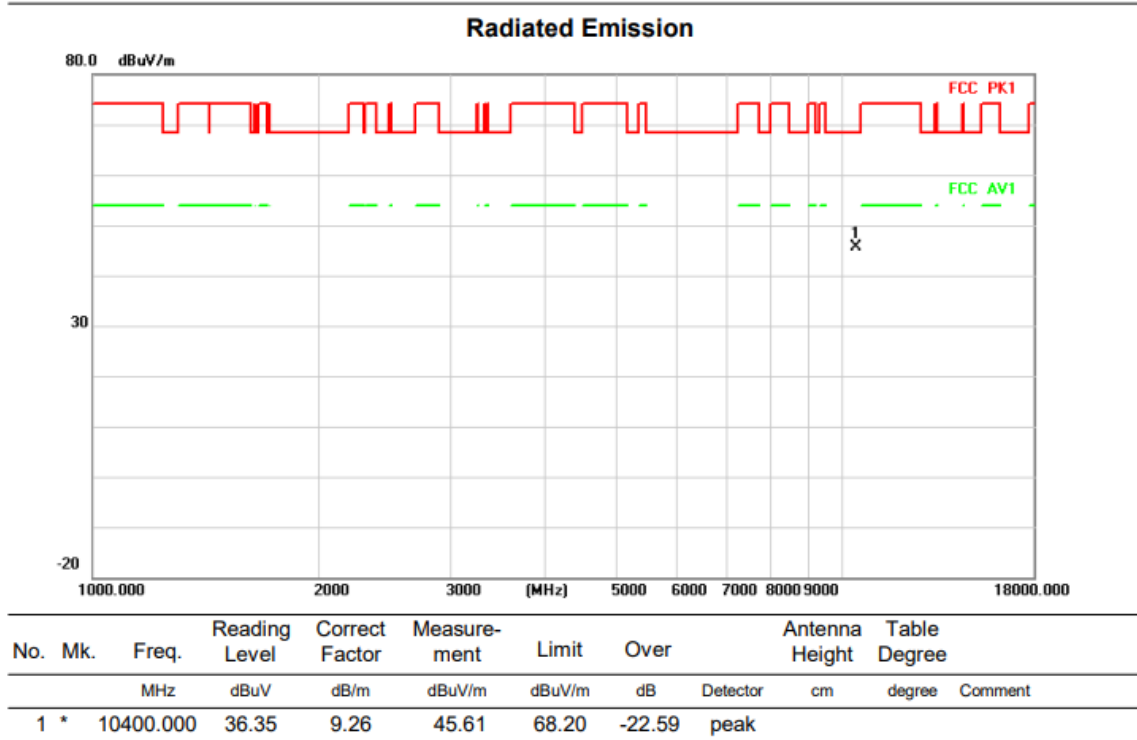
Test mode: 11N20MIMO

Test Channel:40

VERTICAL



HORIZONTAL

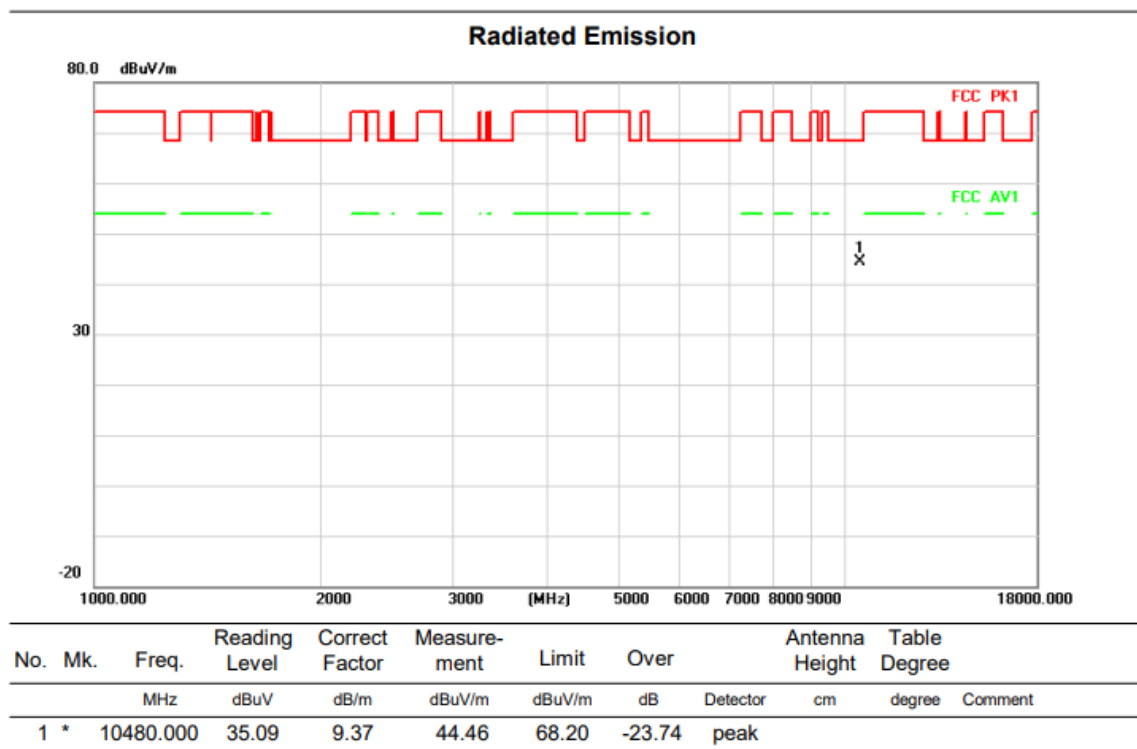


Above 1G (1GHz~18GHz)

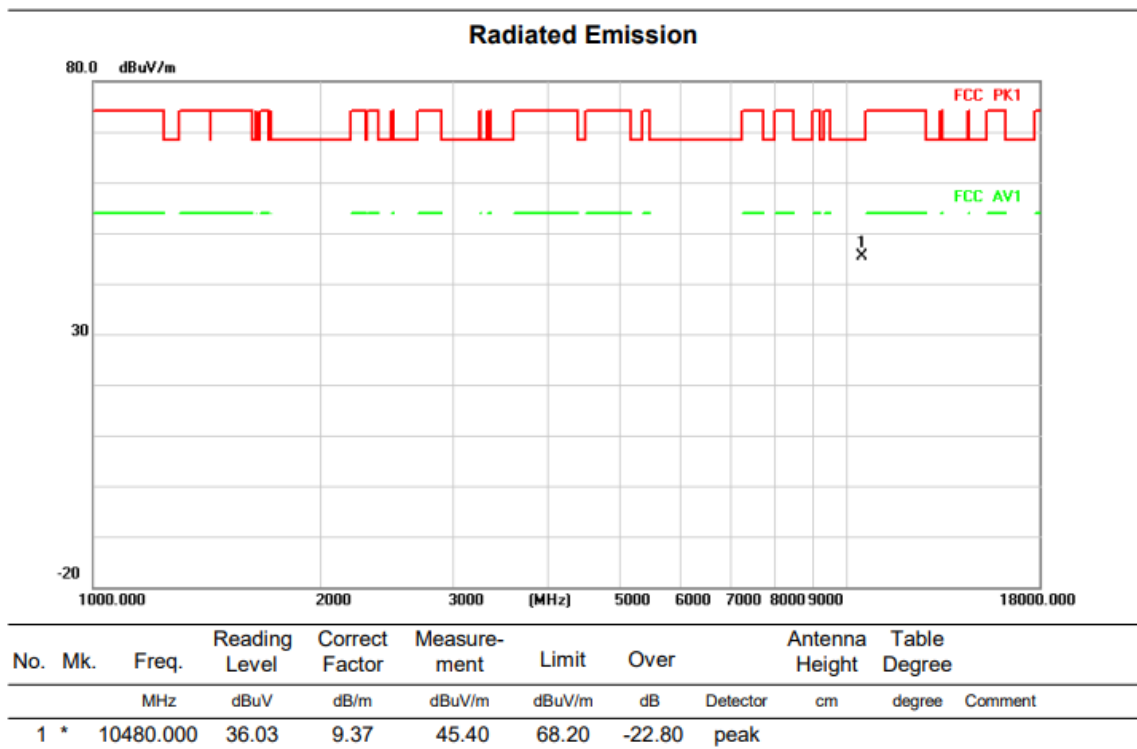
Test mode: 11N20MIMO

Test Channel:48

VERTICAL



HORIZONTAL

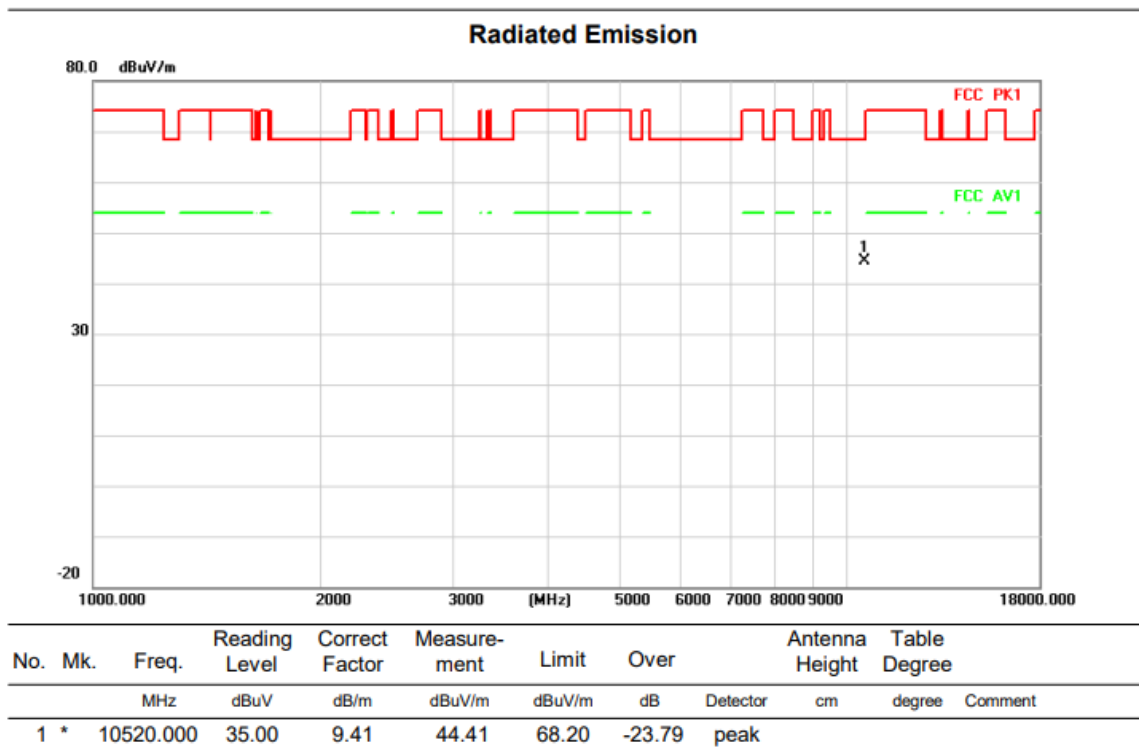


Above 1G (1GHz~18GHz)

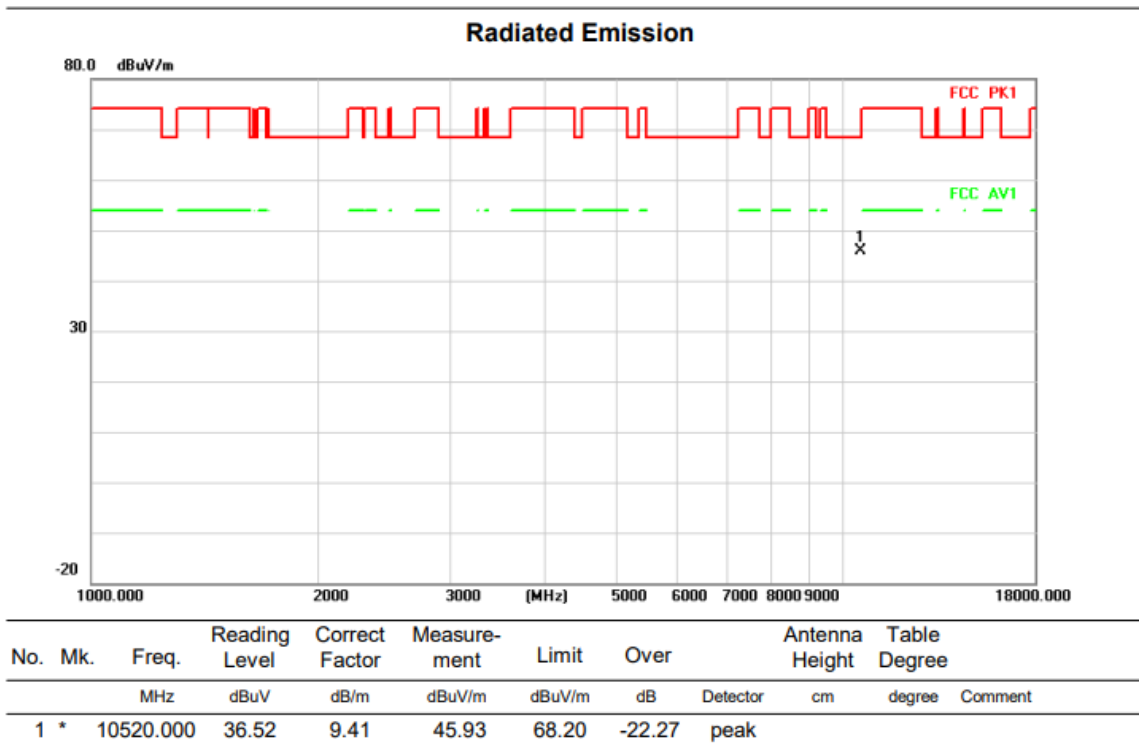
Test mode: 11N20MIMO

Test Channel:52

VERTICAL



HORIZONTAL

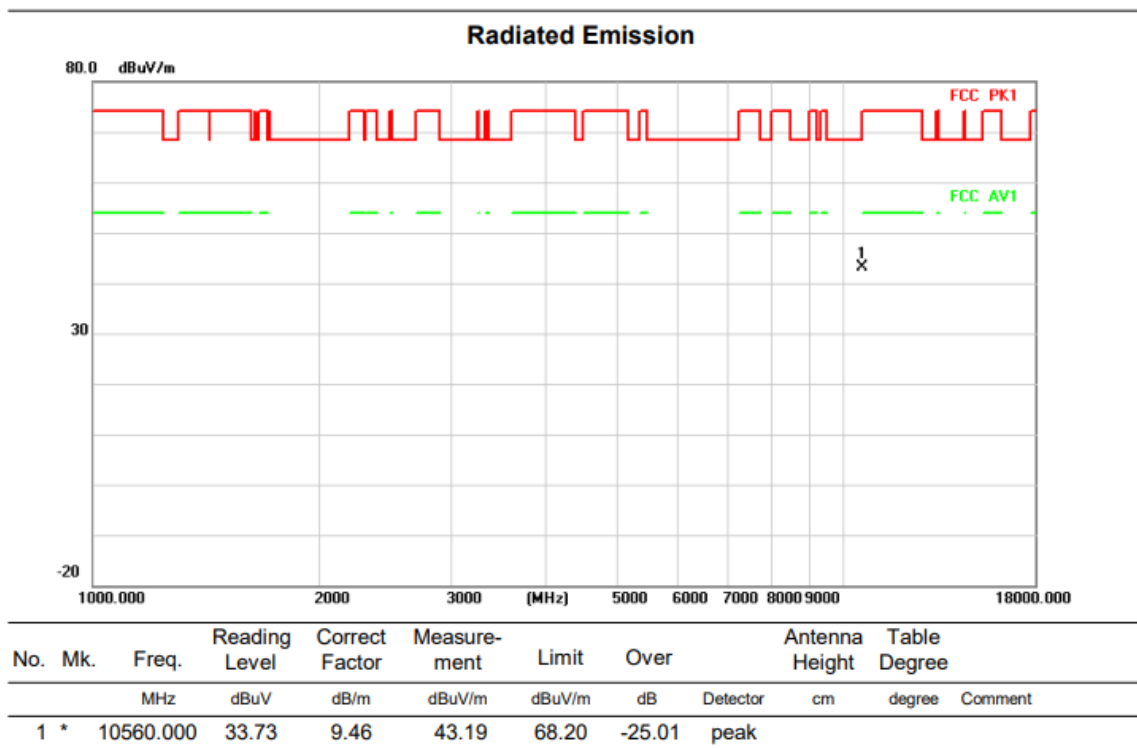


Above 1G (1GHz~18GHz)

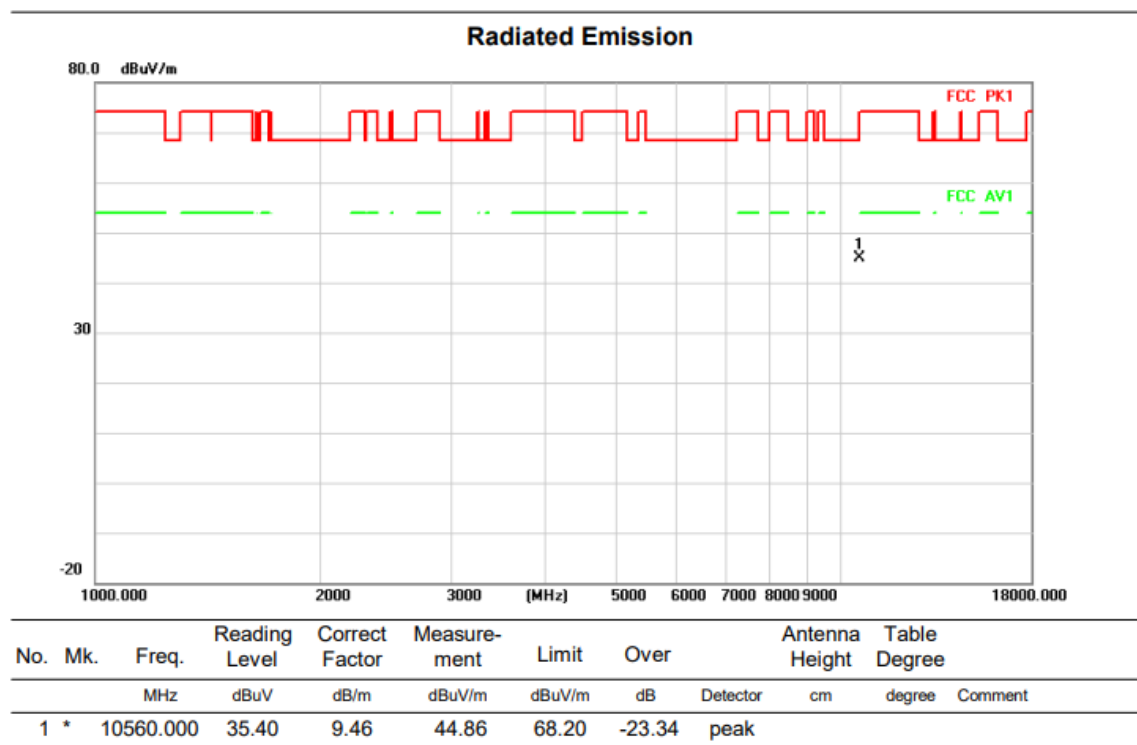
Test mode: 11N20MIMO

Test Channel:56

VERTICAL



HORIZONTAL



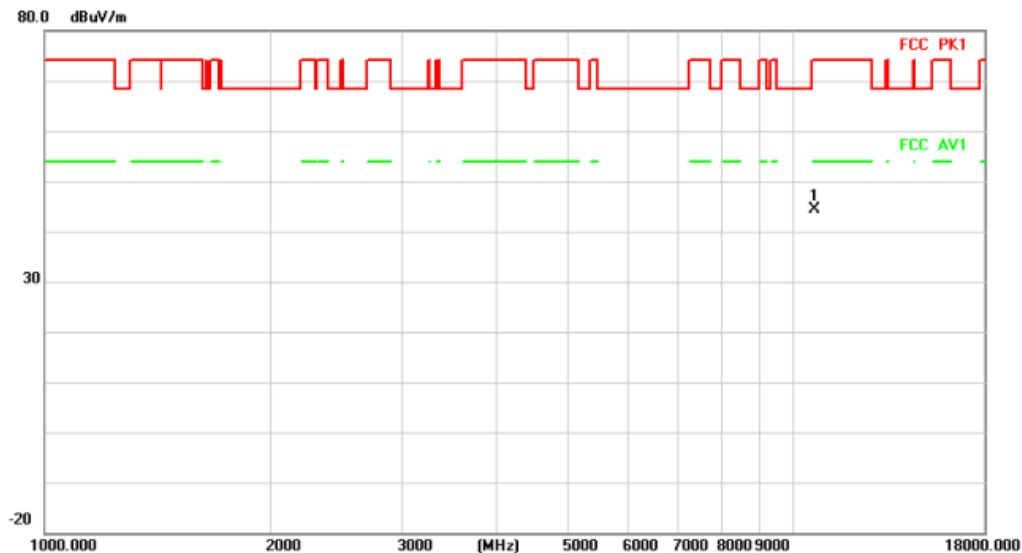
Above 1G (1GHz~18GHz)

Test mode: 11N20MIMO

Test Channel:64

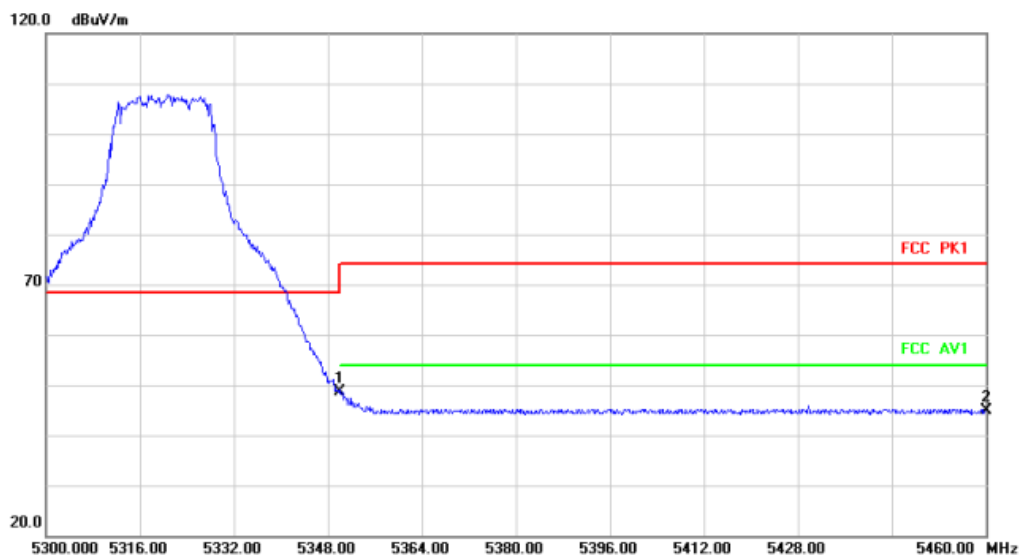
VERTICAL

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	*	10640.000	34.68	9.58	44.26	74.00	-29.74	peak		Comment

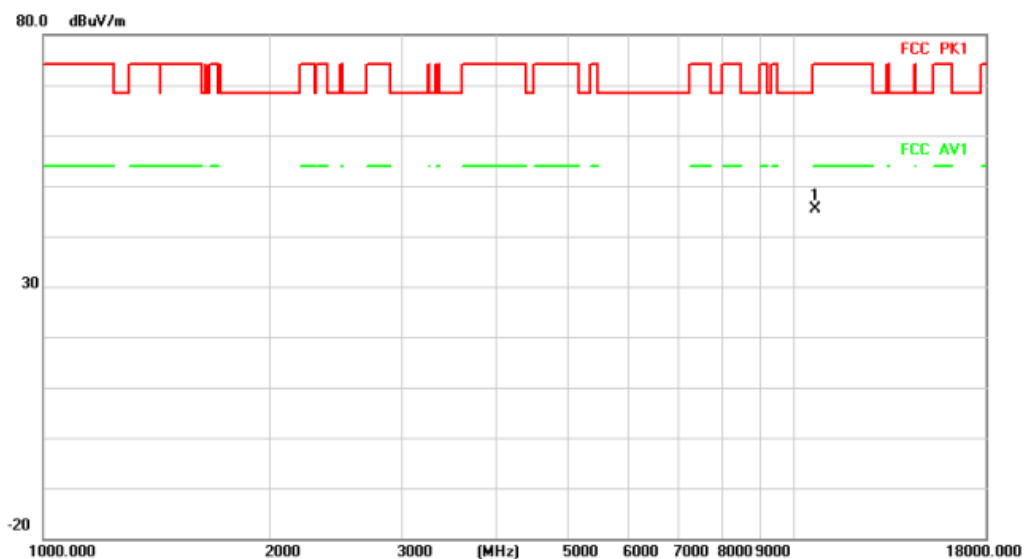
Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	*	5350.000	39.34	9.30	48.64	68.20	-19.56	peak		Comment
2		5460.000	35.56	9.31	44.87	68.20	-23.33	peak		Comment

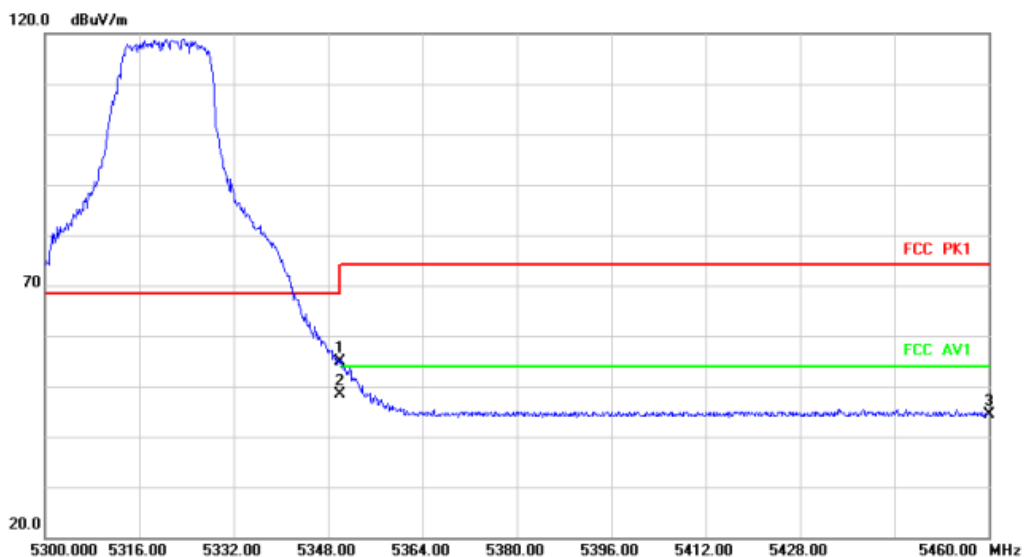
HORIZONTAL

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	10640.000	35.75	9.58	45.33	74.00	-28.67	peak		

Radiated Emission



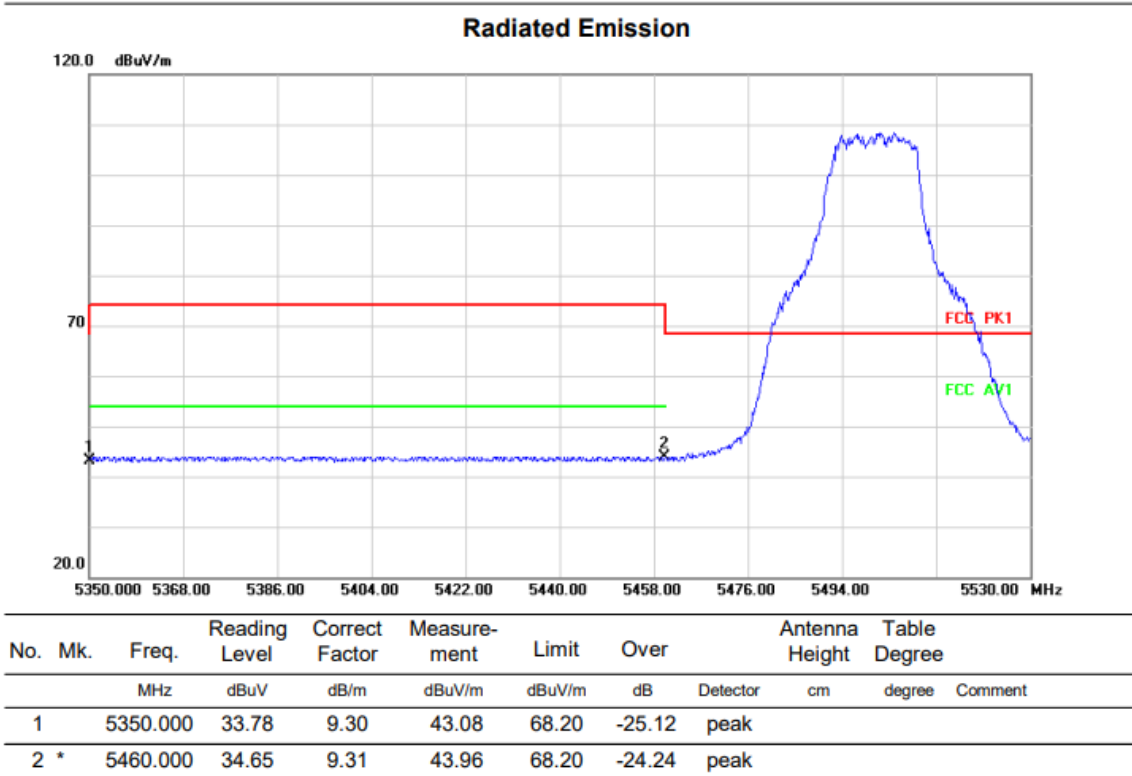
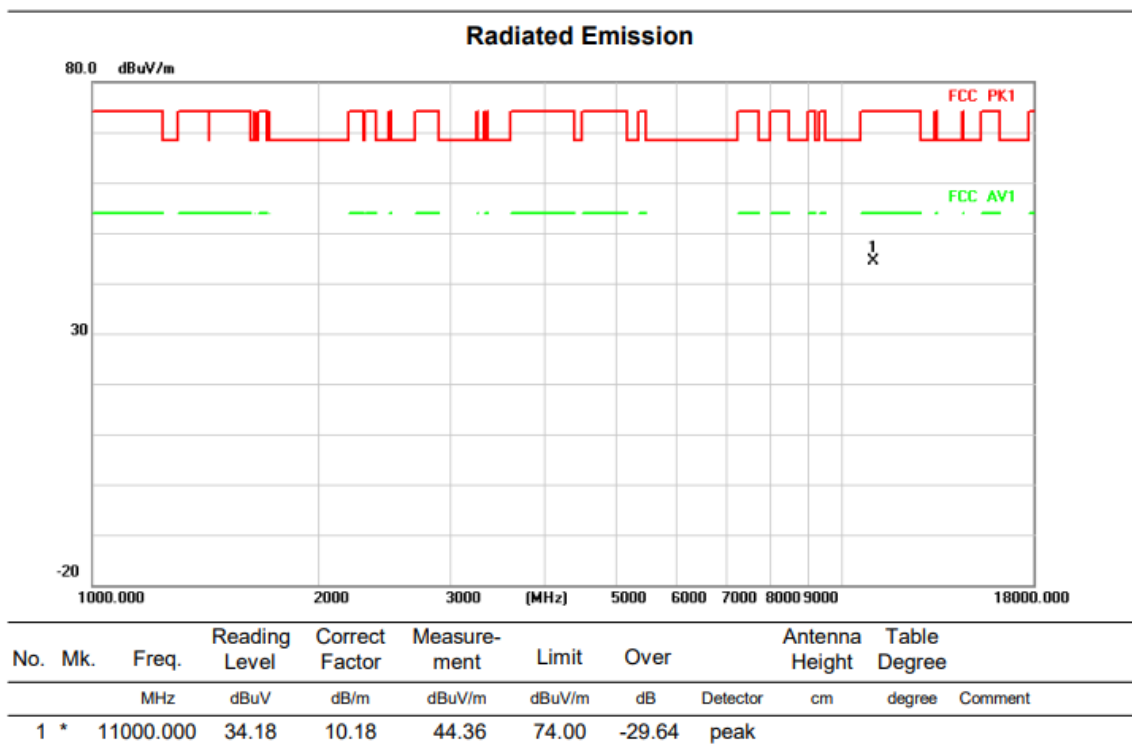
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		5350.000	45.49	9.30	54.79	68.20	-13.41	peak		
2	*	5350.000	38.96	9.30	48.26	54.00	-5.74	AVG		
3		5460.000	35.02	9.31	44.33	68.20	-23.87	peak		

Above 1G (1GHz~18GHz)

Test mode: 11N20MIMO

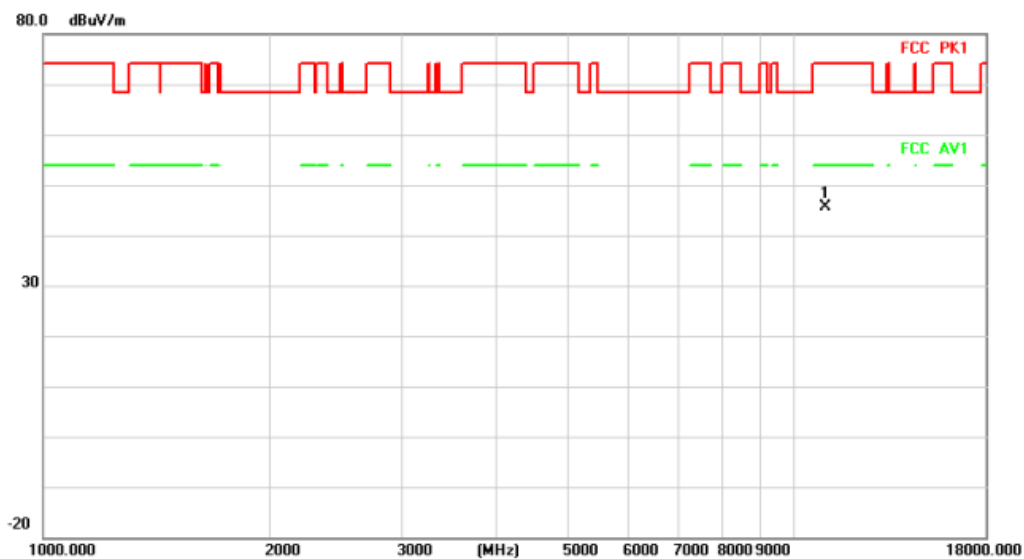
Test Channel:100

VERTICAL



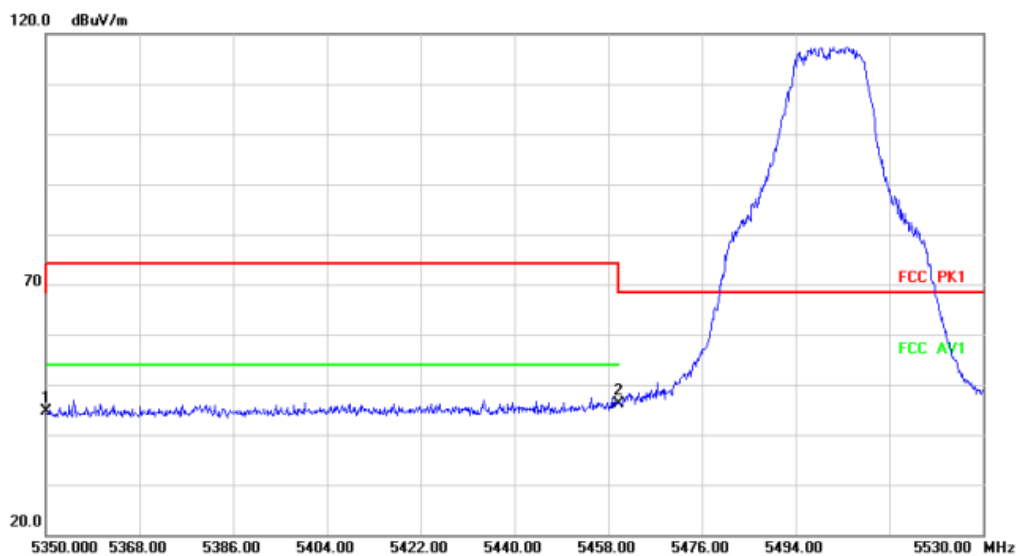
HORIZONTAL

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	11000.000	35.54	10.18	45.72	74.00	-28.28	peak		

Radiated Emission



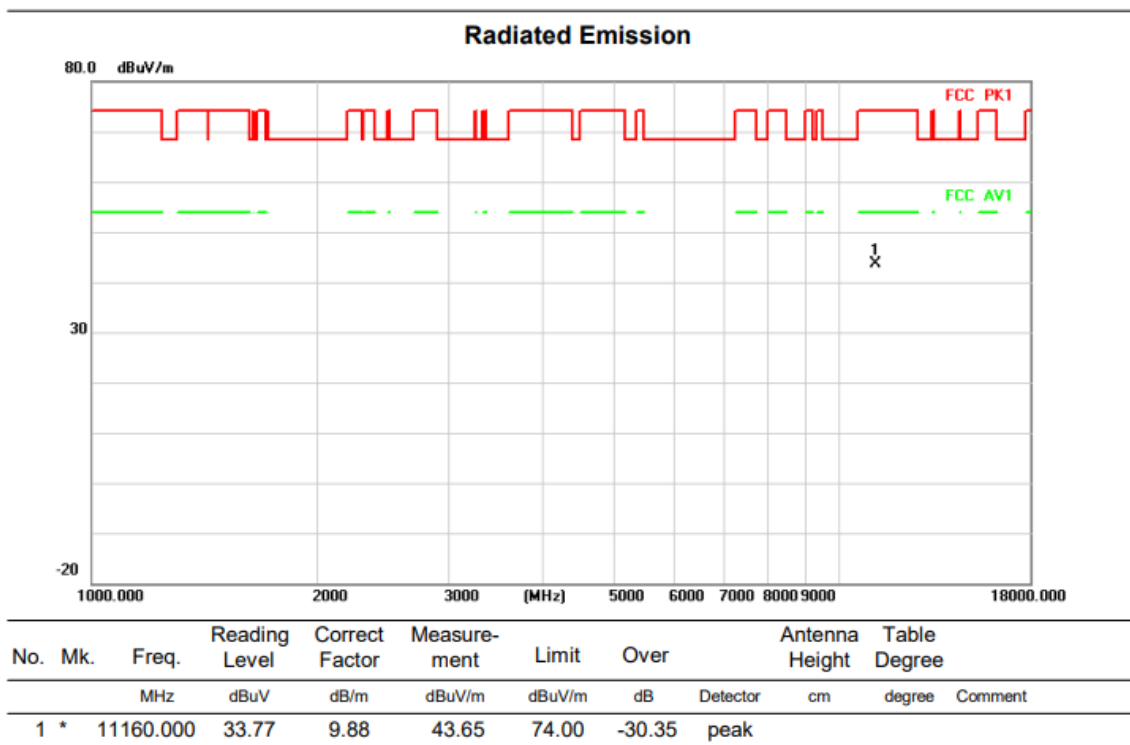
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		5350.000	35.33	9.30	44.63	68.20	-23.57	peak		
2	*	5460.000	36.86	9.31	46.17	68.20	-22.03	peak		

Above 1G (1GHz~18GHz)

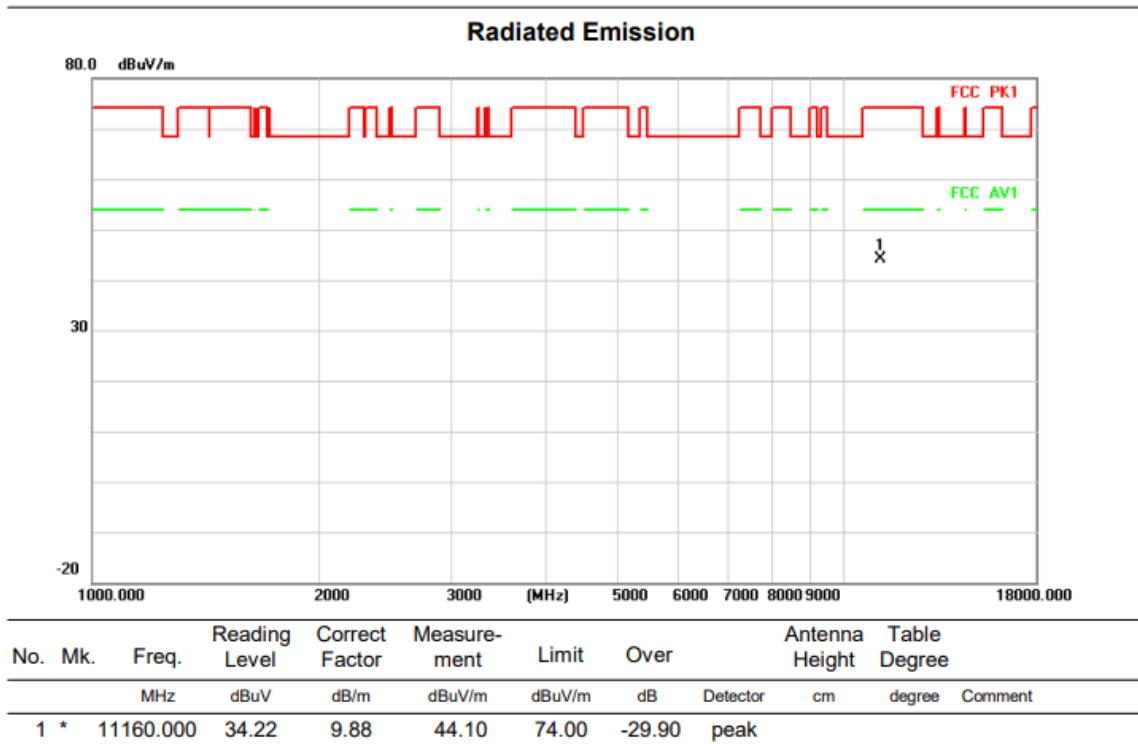
Test mode: 11N20MIMO

Test Channel:116

VERTICAL



HORIZONTAL

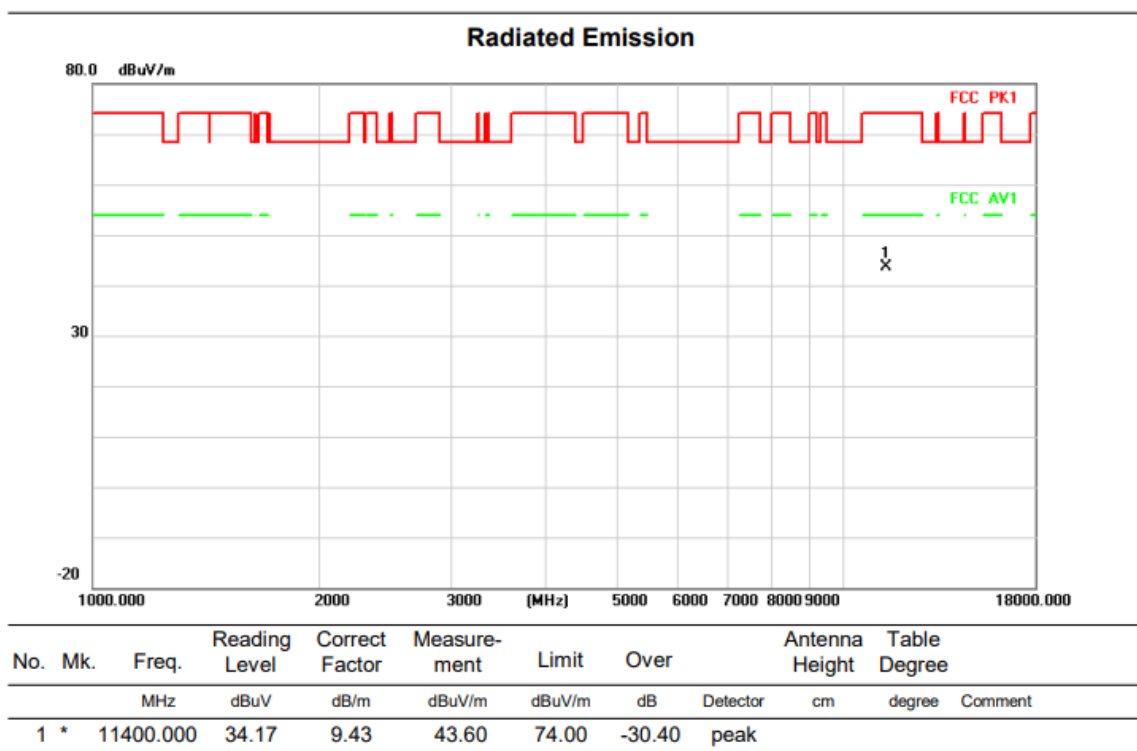


Above 1G (1GHz~18GHz)

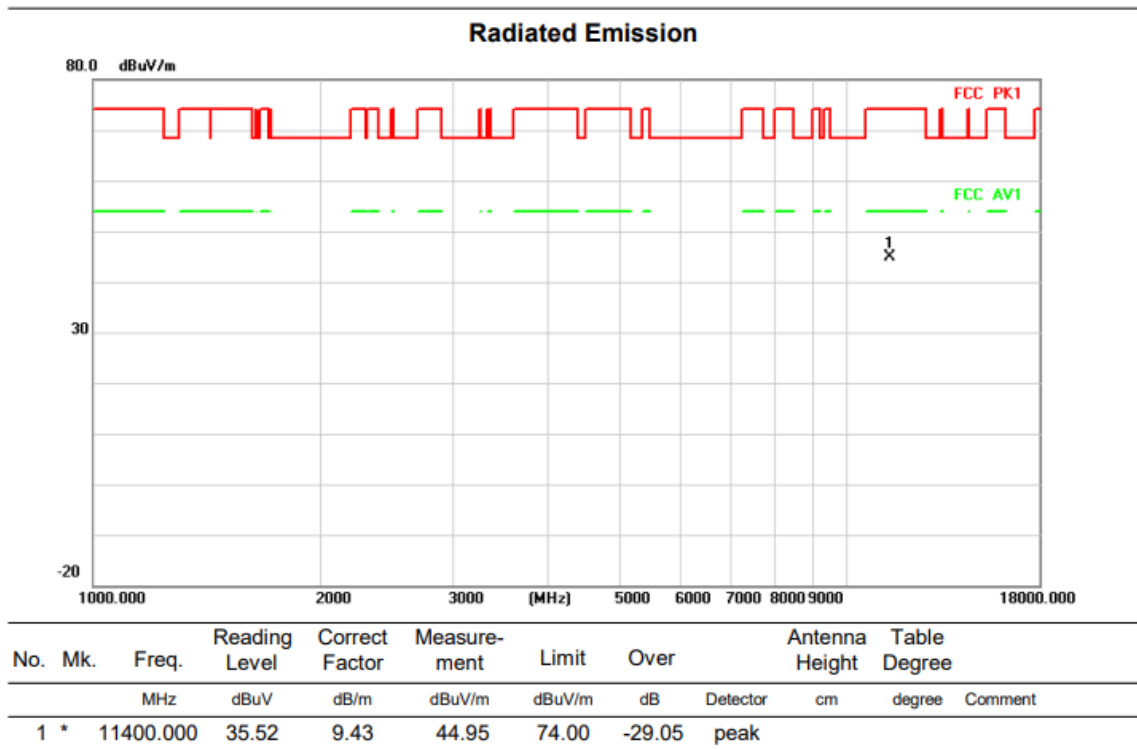
Test mode: 11N20MIMO

Test Channel:140

VERTICAL



HORIZONTAL



Above 1G (1GHz~18GHz)

Test mode: 11N20MIMO

Test Channel:149

VERTICAL

