

Product Name: AX1500 Wi-Fi 6 Router	Report No: FCC022022-03976RF1
Product Model: T262-T21D	Security Classification: Open
Version: V1.0	Total Page: 184

TIRT Testing Report

Prepared By:	Checked By:	Approved By:	
Stone Tang	Randy Lv	Daniel Chen	
Stone Tang	Randy Lv	Daniel chen	

RF TEST REPORT

FCC ID: 2A22E-WWYLT262

According to

47 CFR FCC Part 15, Subpart C(Section 15.247)

ANSI C63.10:2013

Equipment : AX1500 Wi-Fi 6 Router
Model No. : T262-T21D, T262-T21X, T262-BXX, T262-PQX, (the last X=A-Z or a-z, which indicates for different appearance, dimension and color.)
Trademark : N/A
Product No. : 20220804012992
Applicant : Micronet Union Technology(Chengdu) Co., Ltd
Room 502, Building 5, N.O. 528, Yuefei Road, Shibantan Street, Xindu District, Chengdu, Sichuan, China

- The test result referred exclusively to the presented test model /sample.
- Without written approval of TIRT Inc. the test report shall not reproduced except in full.
- Receipt date: 2022.08.04
- Test date: 2022.08.06 ~ 2022.12.20
- Issue date: 2022.12.20

Lab: Beijing TIRT Technology Service Co.,Ltd Shenzhen
Add: 101, 3 # Factory Building, Gongjin Electronics Shatin Community, Kengzi Street,
Pingshan District, Shenzhen, China
TEL: +86-0755-27087573

Table of Contents

History of this test report.....	5
1. General Information	6
1.1 Applicant.....	6
1.2 Manufacturer.....	6
1.3 Basic Description of Equipment Under Test.....	6
1.4 Transmit Operating Mode	7
2. Summary of Test Results	8
2.1 Summary of Test Items	8
2.2 Application of Standard.....	8
2.3 Test Instruments	9
2.4 Test Mode	10
2.5 Test Condition	10
2.6 Duty Cycle of Test Signal	11
2.7 Measurement Uncertainty.....	16
2.8 Test Location.....	16
2.9 Deviation from Standards	16
2.10 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 Peripherals.....	17
3.1.3 Test Procedure	17
3.1.4 Test Setup	18
3.1.5 Test Result.....	18
3.2 Radiated Emission and Band Edge	25
3.2.1 Limit.....	25
3.2.2 Test Peripherals.....	25
3.2.3 Test Procedure	25
3.2.4 Test Setup	27
3.2.5 Test Result.....	28

3.3	Spurious Emission at Antenna Port	91
3.3.1	Limit.....	91
3.3.2	Test Peripherals.....	91
3.3.3	Test Procedure	91
3.3.4	Test Setup	92
3.3.5	The Result	93
3.4	6dB Bandwidth.....	140
3.4.1	Limit.....	140
3.4.2	Test Peripherals.....	140
3.4.3	Test Procedure	140
3.4.4	Test Setup	141
3.4.5	Test Result.....	141
3.5	Maximum conducted (peak) output power	167
3.5.1	Limit.....	167
3.5.2	Test Peripherals.....	167
3.5.3	Test Procedure	167
3.5.4	Test Setup	167
3.5.5	Table of Parameters of Text Software Setting.....	168
3.5.6	The Result	169
3.6	Power Spectral Density.....	170
3.6.1	Limit.....	170
3.6.2	Test Peripherals.....	170
3.6.3	Test Procedure	170
3.6.4	Test Setup	171
3.6.5	The Result	172

History of this test report

Original Report Issue Date: 2022.12.20

- ☒ No additional attachment
- ☐ Additional attachments were issued following record

Attachment No.	Issue Date	Description

1. General Information

1.1 Applicant

Micronet Union Technology(Chengdu) Co., Ltd

Room 502, Building 5, N.O. 528, Yuefei Road, Shibantan Street, Xindu District, Chengdu, Sichuan, China

1.2 Manufacturer

Micronet Union Technology(Chengdu) Co., Ltd

Room 502, Building 5, N.O. 528, Yuefei Road, Shibantan Street, Xindu District, Chengdu, Sichuan, China

1.3 Basic Description of Equipment Under Test

Items	Description	
Equipment Name	AX1500 Wi-Fi 6 Router	
Model Number	T262-T21D, T262-T21X, T262-BXX, T262-PQX, (the last X=A-Z or a-z, which indicates for different appearance, dimension and color.)	
Trade Mark	N/A	
Power Supply	100V~240V,50/60Hz	
Adapter1 information	Model: RD1201000-C55-35MGD Input: 100-240V~, 50/60Hz 0.6A Output: 12V1.0A	
Adapter2 information	Model: MAUS-12010001202 Input: 100-240V~, 50/60Hz 0.35A Output: 12V1.0A	
Adapter3 information	Model: DYS12100CF-U Input: 100-240V~, 50/60Hz 0.3A Output: 12V1.0A	
Operate temperature	0℃-45℃	
EUT Stage	○ Product Unit	● Final-Sample
Operating Band and Conducted Output Power (Max power)	2400MHz ~ 2483.5MHz	●IEEE 802.11b: 15.28dBm
Product Type	IEEE 802.11b: WLAN (SISO) IEEE 802.11g: WLAN (SISO) IEEE 802.11n: WLAN (MIMO)	
Nominal Bandwidth	20MHz / 40MHz	
Modulation	IEEE 802.11b: DSSS (DBPSK / DQPSK / CCK) IEEE 802.11g: OFDM (BPSK / QPSK / 16QAM / 64QAM) IEEE 802.11n: OFDM (BPSK / QPSK / 16QAM / 64QAM)	
Data Rate (Mbps)	IEEE 802.11b mode: DSSS (1/2/5.5/11) IEEE 802.11g mode: OFDM (6/9/12/18/24/36/48/54) IEEE 11n (20MHz) mode: MCS0~MCS15 IEEE 11n (40MHz) mode: MCS0~MCS15	

Eleven channels are provided for 802.11b, 802.11g, 802.11n (20MHz):

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
2400MHz ~ 2483.5 MHz	01	2412MHz	07	2442MHz
	02	2417MHz	08	2447MHz
	03	2422MHz	09	2452MHz
	04	2427MHz	10	2457MHz
	05	2432MHz	11	2462MHz
	06	2437MHz	/	/

Seven channels are provided for 802.11n (40MHz):

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
2400MHz ~ 2483.5 MHz	03	2422 MHz	07	2442MHz
	04	2427MHz	08	2447MHz
	05	2432MHz	09	2452MHz
	06	2437MHz	/	/

Model Difference Description

They have the same circuit and the only difference is antenna and appearance, please refer to APPENDIX 2_EUT Internal Photos, EUT1, EUT4 and EUT5 have the identical antenna, EUT2 and EUT3 have the identical antenna.

Antenna information

EUT	Antenna gain	Antenna Type
EUT1, EUT4 and EUT5	Ant1: 5.25dBi, Ant2: 5.32dBi	External antenna
EUT2 and EUT3	Ant1: 4.32dBi, Ant2: 4.32dBi	Integral antenna

1.4 Transmit Operating Mode

Transmit Operating Mode					Transmit Multiple Antennas			
☒	Operating mode 1 (single antenna)				☒	1TX		
☒	Operating mode 2 (multiple antenna, no beam forming)				☒	2TX	☐ 3TX	☐ 4TX
☐	Operating mode 3 (multiple antenna, with beam forming)				☐	2TX	☐ 3TX	☐ 4TX
☒	802.11b	Operating mode	☒	1TX	☐	2TX	☐	3TX
☒	802.11g	Operating mode	☒	1TX	☐	2TX	☐	3TX
☒	802.11n(20MHz)	Operating mode	☐	1TX	☒	2TX	☐	3TX
☒	802.11n(40MHz)	Operating mode	☐	1TX	☒	2TX	☐	3TX

Note:

802.11b, 1Mbps~11Mbps: 1TX1RX.

802.11g, 6Mbps~54Mbps: 1TX1RX.

802.11n20MHz/40MHz, MCS0~ MCS15: 2TX2RX.

2. Summary of Test Results

2.1 Summary of Test Items

47 CFR FCC Part 15, Subpart C (Section 15.247)			
Test item	FCC Clause	Results	Remarks
AC Power Conducted Emission	15.207	Pass	Meet the requirement of the limit
Radiated Emission and Band Edge Measurement	15.205/15.209 /15.247(d)	Pass	Meet the requirement of the limit
Spurious Emission at Antenna Port	15.247(d)	Pass	Meet the requirement of the limit
6dB Bandwidth	15.247(a)(2)	Pass	Meet the requirement of the limit
Conducted Power	15.247(b)	Pass	Meet the requirement of the limit
Power Spectral Density	15.247(e)	Pass	Meet the requirement of the limit
Antenna Requirements	15.203	Compliance	Note
Note: The EUT1, EUT4 and EUT5 has 2 external antennas arrangement which was permanently attached;			
The EUT2 and EUT3 has 2 Internal antennas arrangement which was permanently attached.			

2.2 Application of Standard

47 CFR FCC Part 15, Subpart C (Section 15.247)

KDB 558074 D01 15.247 Meas Guidance v05r02

KDB 662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10:2013

2.3 Test Instruments

No.	Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EMI Receiver	Rohde&Schwarz	ESCI	1166.5950.03	2023/11/09
2	AMN	Rohde&Schwarz	ENV216	3560.6550.05	2023/11/09
3	AMN	Schwarzbeck	NSLK8127	#829	2023/11/09
4	ECSI RF IN RF Cable	Rohde&Schwarz	RP-X1	N/A	2023/11/09
5	ECSI RF IN RF Cable	Rohde&Schwarz	Sapre sm	N/A	2023/11/09
6	EMI Receiver	Rohde&Schwarz	ESR7	102013	2023/11/09
7	Spectrum analyzer	Rohde&Schwarz	FSV30	103741	2023/11/09
8	Spectrum analyzer	KEYSIGHT	N9010A-44	MY51440158	2023/11/09
9	Integral Antenna	Schwarzbeck	VULB 9163	VULB 9163-361	2023/11/20
10	Integral Antenna	Schwarzbeck	BBHA 9120D	BBHA 9120D 1201	2023/11/20
11	Integral Antenna	Schwarzbeck	BBHA 9170	9170#685	2023/11/20
12	Preamplifier	Schwarzbeck	BBV9745	#78	2023/11/09
13	Preamplifier	Schwarzbeck	BBV9721	9721-019	2023/11/09
14	Preamplifier	RF System/UK	TRLA-010180G5 0B	22062101	2023/07/20
15	ECSI RF IN RF Cable	Rohde&Schwarz	AP-X1	N/A	2023/11/09
16	ECSI RF IN RF Cable	HAOXUN	Z-108	N/A	2023/11/09
17	RF Cable	ZDECL	ZT40-2.92J-2.92J -6M	18124358	2023/07/20
18	Spectrum Analyzer	Agilent	N9010A	MY51440158	2023/11/09
19	Spectrum Analyzer	Agilent	N9010A	MY52221119	2023/11/09
20	Temp&Humidity Recorder	Anymetre	JR900	N/A	2023/11/03
21	Temp&Humidity Chamber	ETOMA	NTH1100-30A	16080628	2023/11/03
22	Filter	STI	STI15-9845	N/A	N/A
23	Filter	STI	5.1G	N/A	N/A
24	Filter	STI	STI15-9845	N/A	N/A
25	Testing Software	EZ-EMC	TW-03A2	N/A	N/A
26	Power Collection Unit	Tonscend	JS0806-2	188060134	2023/09/13
27	Tonscend Test System	Tonscend	2.6.77.0518	NA	NA

2.4 Test Mode

Frequency Range : 2400~2483.5 MHz				
Test Items	Mode	Data Rate	Channel	Antenna
AC Power Conducted Emission	Simultaneous transmitting	-	-	-
Radiated Emission and Band Edge Measurement	802.11b	1Mbps	01/06/11	1/2
	802.11g	6Mbps	01/06/11	1/2
	802.11n(20MHz)	MCS0	01/06/11	1&2
	802.11n(40MHz)	MCS0	03/06/09	1&2
Spurious Emission at Antenna Port	802.11b	1Mbps	01/06/11	1/2
	802.11g	6Mbps	01/06/11	1/2
	802.11n(20MHz)	MCS0	01/06/11	1&2
	802.11n(40MHz)	MCS0	03/06/09	1&2
6dB Bandwidth	802.11b	1Mbps	01/06/11	1/2
	802.11g	6Mbps	01/06/11	1/2
	802.11n(20MHz)	MCS0	01/06/11	1&2
	802.11n(40MHz)	MCS0	03/06/09	1&2
Conducted Power	802.11b	1Mbps	01/06/11	1/2
	802.11g	6Mbps	01/06/11	1/2
	802.11n(20MHz)	MCS0	01/06/11	1&2
	802.11n(40MHz)	MCS0	03/06/09	1&2
Power Spectral Density	802.11b	1Mbps	01/06/11	1/2
	802.11g	6Mbps	01/06/11	1/2
	802.11n(20MHz)	MCS0	01/06/11	1&2
	802.11n(40MHz)	MCS0	03/06/09	1&2

2.5 Test Condition

Applicable to	Environmental conditions	Input Power	Tested by
AC Power Conducted Emission	24.6°C, 56 % RH	120V AC	Stone Tang
Radiated Emission and Band Edge Measurement	24.2°C, 55 % RH	120V AC	Stone Tang
Spurious Emission at Antenna Port	24.6°C, 56 % RH	120V AC	Stone Tang
6dB Bandwidth	24.6°C, 56 % RH	120V AC	Stone Tang
Conducted Power	24.5°C, 56 % RH	120V AC	Stone Tang
Power Spectral Density	24.4°C, 56 % RH	120V AC	Stone Tang

The applicant declare the operating environment of EUT as below:

Normal conditions: 120V AC, 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.

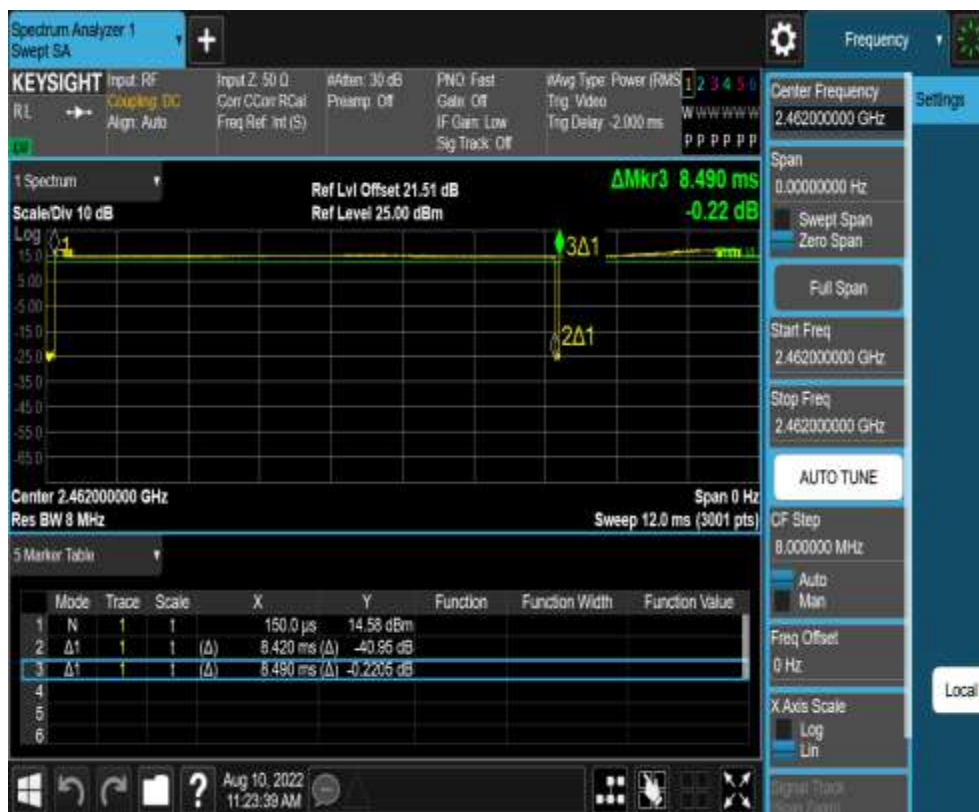
All the duty factor of other test mode have been considered.

Test Mode	Antenna	Channel	Transmitting Duration [ms]	Transmitting Period [ms]	Duty Cycle [%]	Duty Factor
11B	Ant1	2462	8.41	8.58	98.02	0
	Ant2	2462	8.42	8.49	99.18	0
11G	Ant1	2462	1.40	1.58	88.61	0.53
	Ant2	2462	1.40	1.58	88.61	0.53
11N20MIMO	Ant1	2462	1.31	1.45	89.87	0.46
	Ant2	2462	1.31	1.39	90.10	0.45
11N40MIMO	Ant1	2452	0.65	0.84	77.38	1.11
	Ant2	2452	0.65	0.77	84.42	0.74

11B_Ant1_2462



11B_Ant2_2462



11G_Ant1_2462



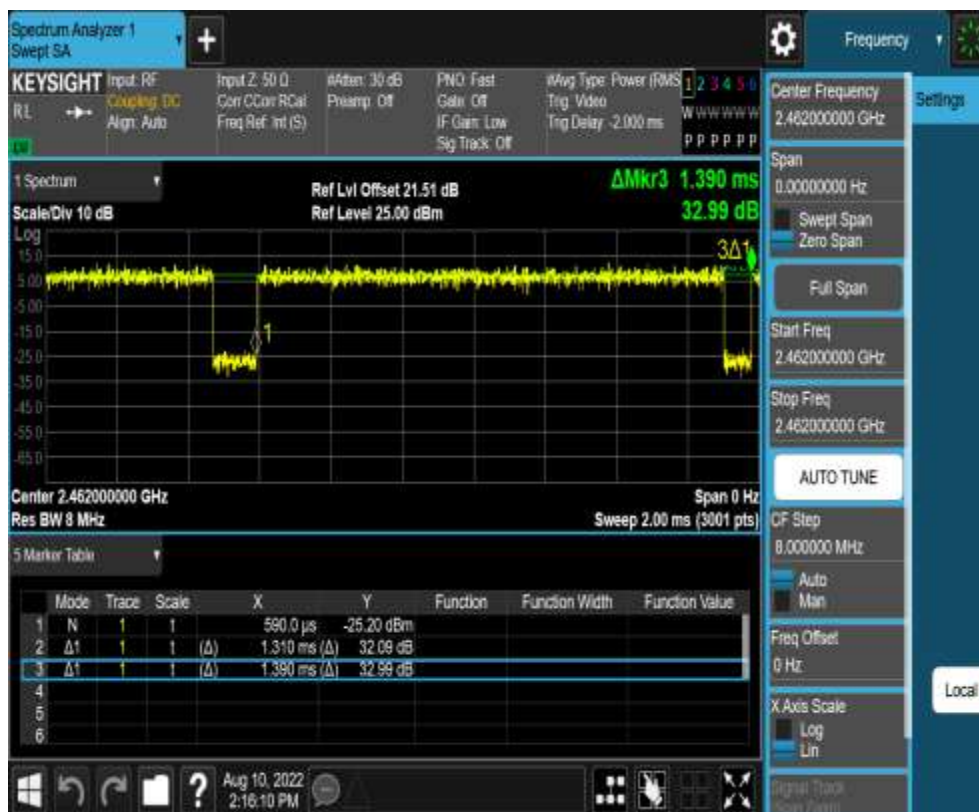
11G_Ant2_2462



11N20MIMO Ant1 2462



11N20MIMO Ant2 2462



11N40MIMO_Ant1_2452



11N40MIMO_Ant2_2452



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	$\pm 142.12\text{kHz}$
RF power conducted	$\pm 0.74\text{dB}$
RF power radiated	$\pm 3.25\text{dB}$
Spurious emissions, conducted	$\pm 1.78\text{dB}$
Spurious emissions, radiated (9KHz~30MHz)	$\pm 2.56\text{dB}$
Spurious emissions, radiated (30MHz~1GHz)	$\pm 4.6\text{dB}$
Spurious emissions, radiated (Above 1GHz)	$\pm 4.9\text{dB}$
Conduction Emissions(150kHz~30MHz)	$\pm 3.1\text{dB}$
Humidity	$\pm 4.6\%$
Temperature	$\pm 0.7^{\circ}\text{C}$
Time	$\pm 1.25\%$

2.8 Test Location

Company:	Beijing TIRT Technology Service Co.,Ltd Shenzhen
Address:	101, 3 # Factory Building, Gongjin Electronics Shatin Community, Kengzi Street, Pingshan District, Shenzhen, China
CNAS Registration Number:	CNAS L14158
A2LA Registration Number:	6049.01
FCC Designation Number:	CN1309
Test Firm Registration Number:	825524
Telephone:	+86-0755-27087573

2.9 Deviation from Standards

None

2.10 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 Peripherals

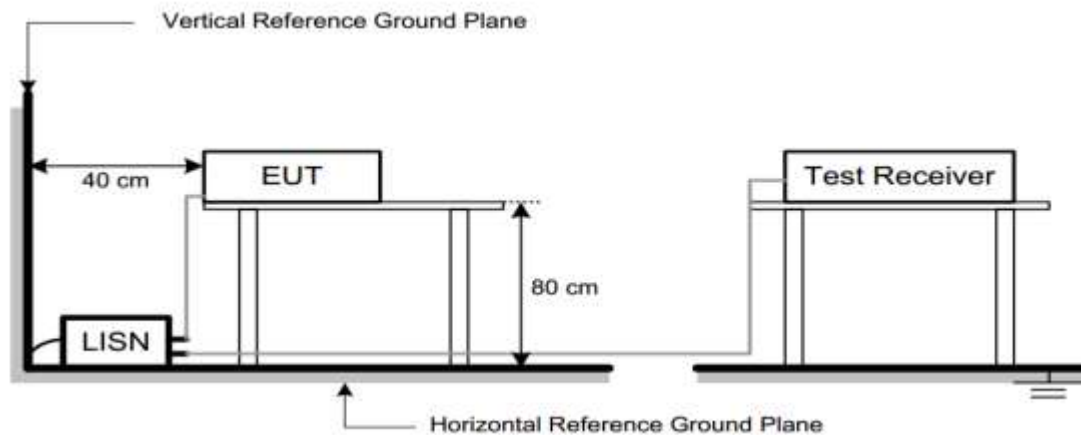
Support Equipment				
No.	Equipment	Brand Name	Model Name	Remarks
1	Record PC	Lenovo	M4500T	NA
2	Control PC	Lenovo	M4500T	NA

3.1.3 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.

3.1.4 Test Setup



3.1.5 Test Result

Note:

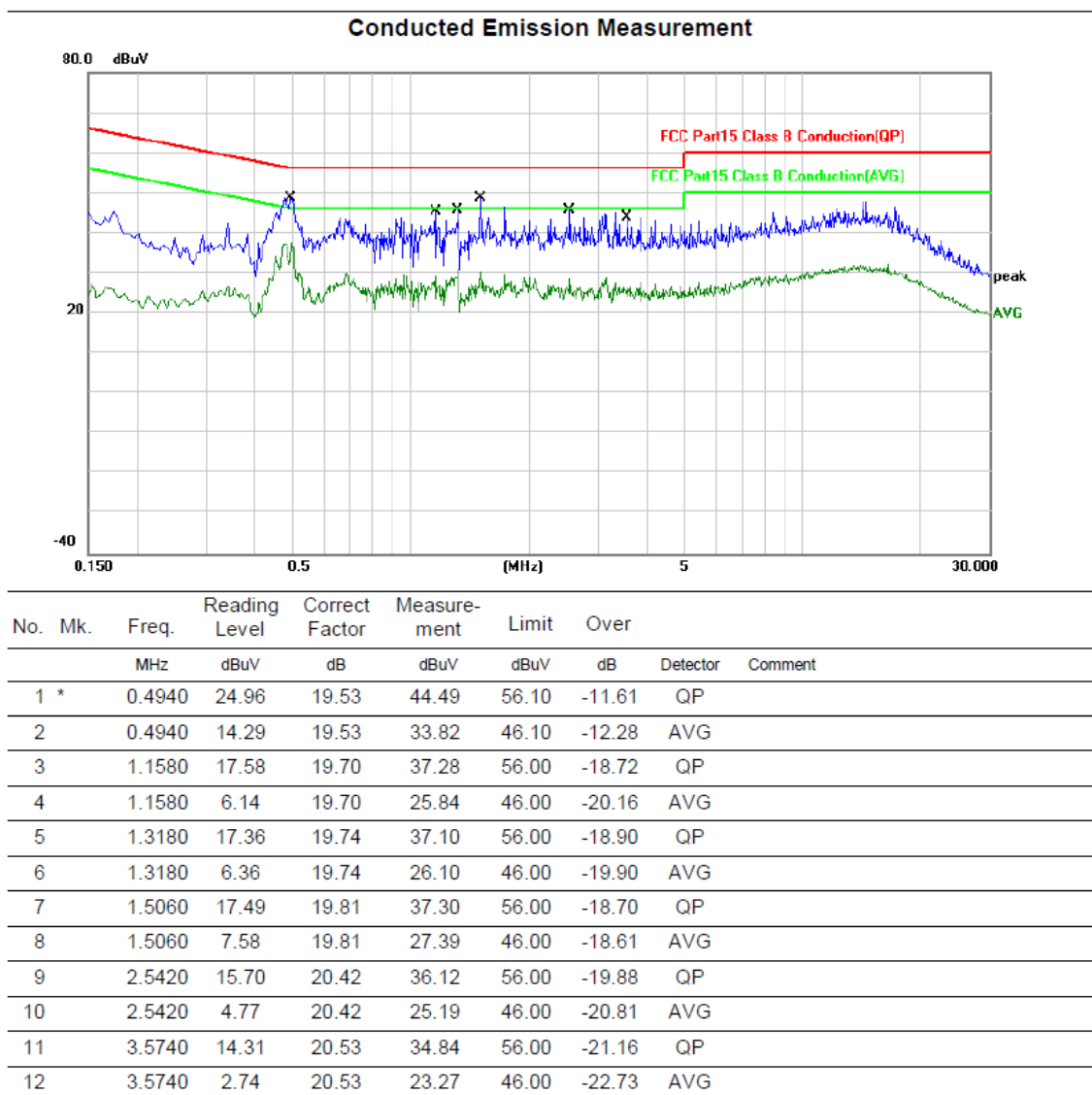
1. Correct Factor = LISN Factor + Cable Loss + Pulse Limiter Factor, the value was added to Original Receiver Reading by the software automatically.
2. Measurement = Reading + Correct Factor.
3. Over = Measurement – Limit
4. Four samples and three adapters were pre-scanned and the worst results were recorded as follows
5. Simultaneous transmitting: 2.4G Wifi transmitting + 5G Wifi transmitting

For adapter1

Note: This adapter has been tested the conducted emission together with five EUTs. We only recorded the data of the worst mode is EUT1. Please see the following:

150kHz~30MHz	Worst Case Operating Mode: Simultaneous transmitting
--------------	--

Line

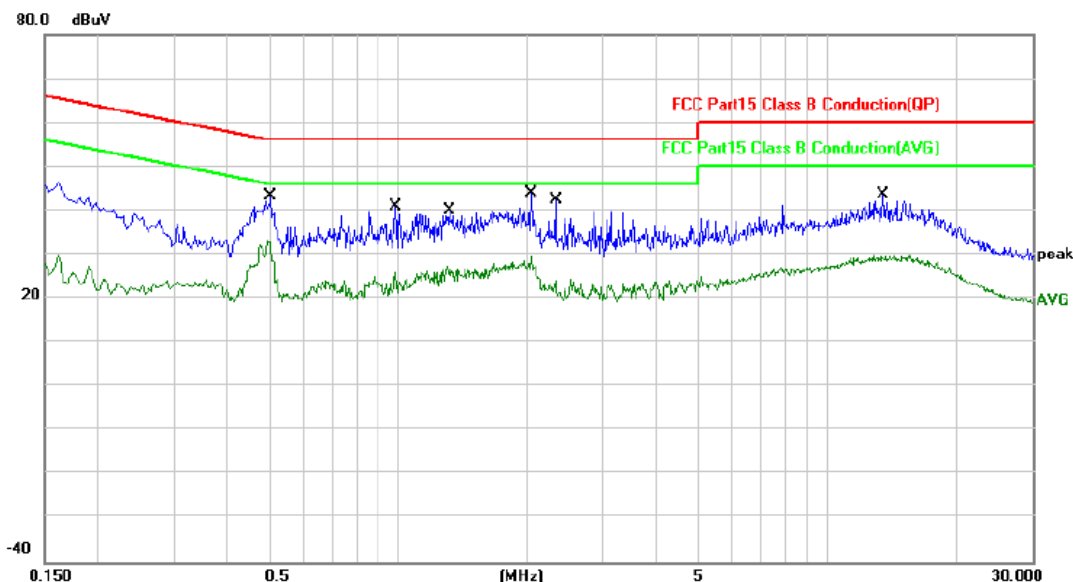


150kHz~30MHz

Worst Case Operating Mode: Simultaneous transmitting

Neutral

Conducted Emission Measurement



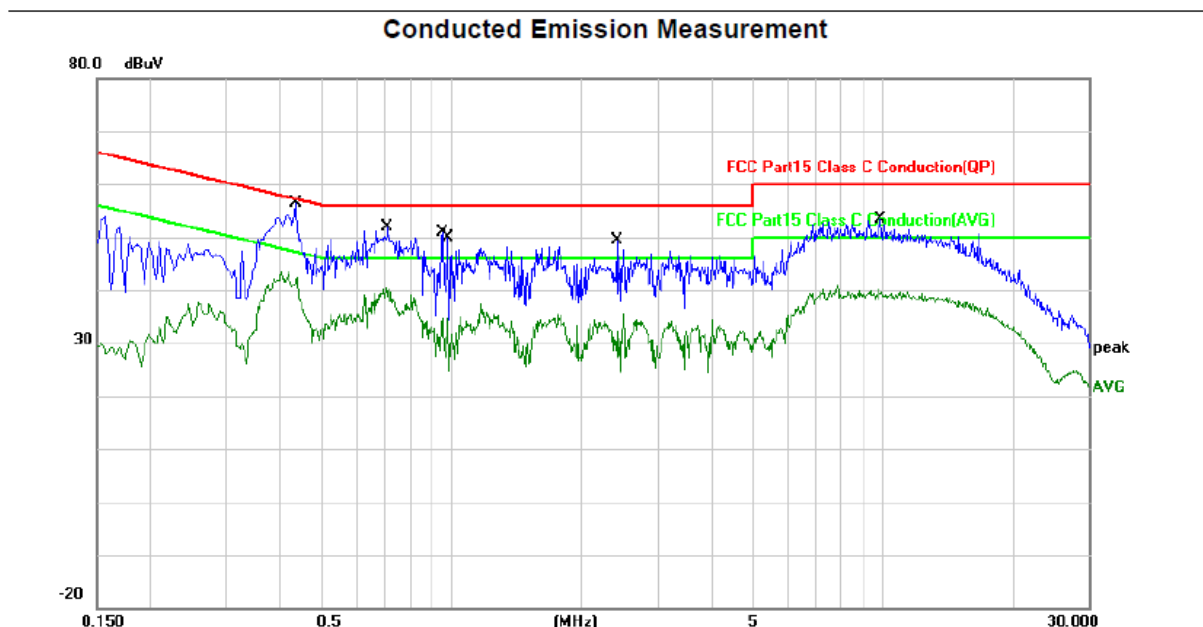
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.5060	17.47	19.74	37.21	56.00	-18.79	QP	
2	*	0.5060	11.29	19.74	31.03	46.00	-14.97	AVG	
3		0.9860	12.51	19.88	32.39	56.00	-23.61	QP	
4		0.9860	3.39	19.88	23.27	46.00	-22.73	AVG	
5		1.3140	12.30	19.99	32.29	56.00	-23.71	QP	
6		1.3140	5.49	19.99	25.48	46.00	-20.52	AVG	
7		2.0340	12.45	20.31	32.76	56.00	-23.24	QP	
8		2.0340	6.15	20.31	26.46	46.00	-19.54	AVG	
9		2.3260	9.59	20.50	30.09	56.00	-25.91	QP	
10		2.3260	1.13	20.50	21.63	46.00	-24.37	AVG	
11		13.4340	12.37	21.44	33.81	60.00	-26.19	QP	
12		13.4340	6.70	21.44	28.14	50.00	-21.86	AVG	

For adapter2

Note: This adapter has been tested the conducted emission together with five EUTs. We only recorded the data of the worst mode is EUT1. Please see the following:

150kHz~30MHz	Worst Case Operating Mode: Simultaneous transmitting
--------------	--

Line



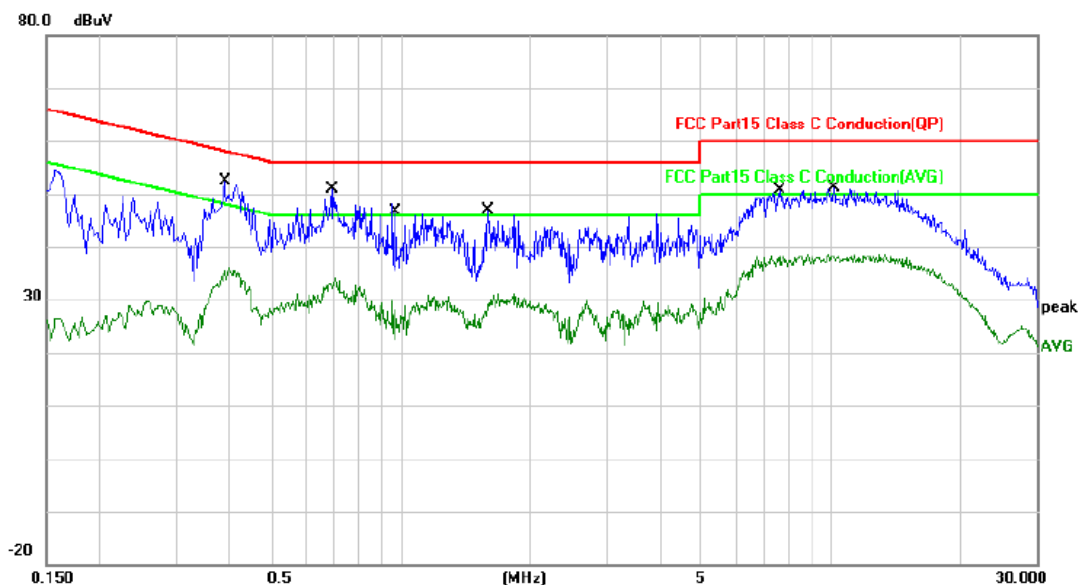
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.4340	30.97	19.53	50.50	57.18	-6.68	QP	
2	*	0.4340	21.15	19.53	40.68	47.18	-6.50	AVG	
3		0.7100	27.59	19.56	47.15	56.00	-8.85	QP	
4		0.7100	19.18	19.56	38.74	46.00	-7.26	AVG	
5		0.9500	21.41	19.64	41.05	56.00	-14.95	QP	
6		0.9500	9.69	19.64	29.33	46.00	-16.67	AVG	
7		0.9820	19.24	19.65	38.89	56.00	-17.11	QP	
8		0.9820	8.42	19.65	28.07	46.00	-17.93	AVG	
9		2.4140	17.90	20.34	38.24	56.00	-17.76	QP	
10		2.4140	6.90	20.34	27.24	46.00	-18.76	AVG	
11		9.8820	25.20	20.94	46.14	60.00	-13.86	QP	
12		9.8820	16.87	20.94	37.81	50.00	-12.19	AVG	

150kHz~30MHz

Worst Case Operating Mode: Simultaneous transmitting

Neutral

Conducted Emission Measurement



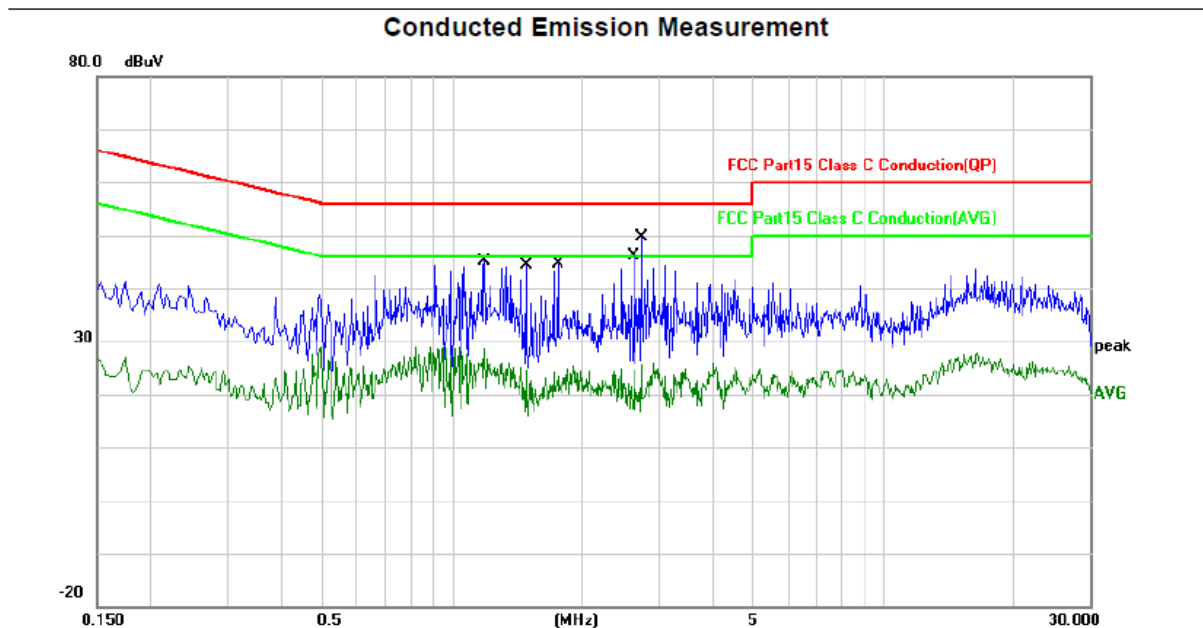
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.3900	26.04	19.71	45.75	58.06	-12.31	QP	
2		0.3900	14.33	19.71	34.04	48.06	-14.02	AVG	
3		0.6900	23.33	19.79	43.12	56.00	-12.88	QP	
4		0.6900	12.60	19.79	32.39	46.00	-13.61	AVG	
5		0.9740	16.20	19.87	36.07	56.00	-19.93	QP	
6		0.9740	4.53	19.87	24.40	46.00	-21.60	AVG	
7		1.5980	16.26	20.11	36.37	56.00	-19.63	QP	
8		1.5980	7.66	20.11	27.77	46.00	-18.23	AVG	
9		7.5740	22.92	20.74	43.66	60.00	-16.34	QP	
10		7.5740	14.85	20.74	35.59	50.00	-14.41	AVG	
11		10.1380	23.10	20.98	44.08	60.00	-15.92	QP	
12		10.1380	15.23	20.98	36.21	50.00	-13.79	AVG	

For adapter3

Note: This adapter has been tested the conducted emission together with five EUTs. We only recorded the data of the worst mode is EUT1. Please see the following:

150kHz~30MHz	Worst Case Operating Mode: Simultaneous transmitting
--------------	--

Line



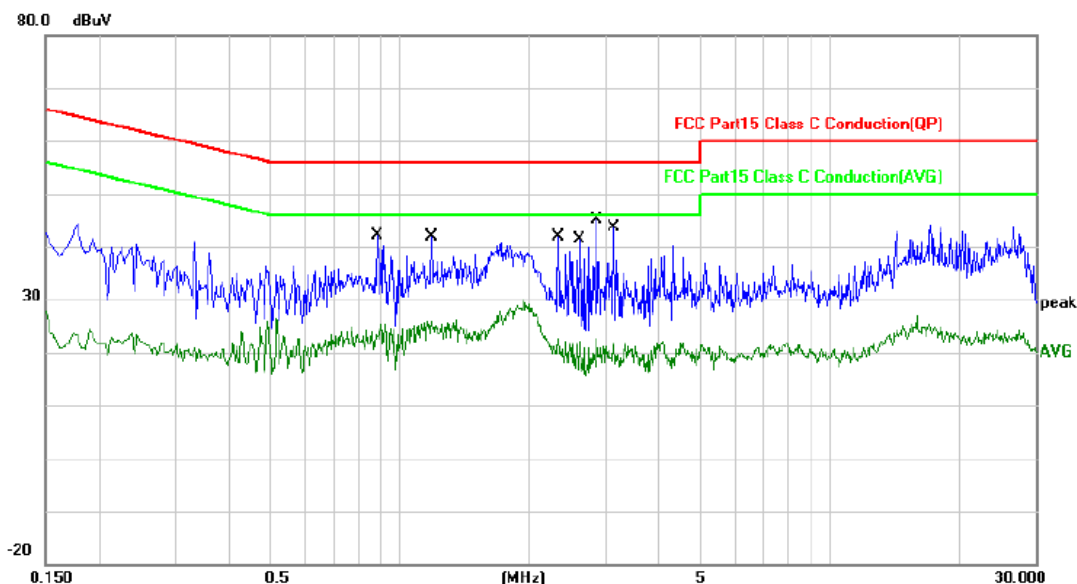
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		1.1740	13.38	19.70	33.08	56.00	-22.92	QP	
2		1.1740	3.01	19.70	22.71	46.00	-23.29	AVG	
3		1.1860	13.97	19.71	33.68	56.00	-22.32	QP	
4	*	1.1860	5.13	19.71	24.84	46.00	-21.16	AVG	
5		1.4860	10.32	19.80	30.12	56.00	-25.88	QP	
6		1.4860	2.27	19.80	22.07	46.00	-23.93	AVG	
7		1.7620	9.66	19.94	29.60	56.00	-26.40	QP	
8		1.7620	0.86	19.94	20.80	46.00	-25.20	AVG	
9		2.6380	12.10	20.48	32.58	56.00	-23.42	QP	
10		2.6380	-2.86	20.48	17.62	46.00	-28.38	AVG	
11		2.7500	11.12	20.57	31.69	56.00	-24.31	QP	
12		2.7500	-2.44	20.57	18.13	46.00	-27.87	AVG	

150kHz~30MHz

Worst Case Operating Mode: Simultaneous transmitting

Neutral

Conducted Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.8860	11.09	19.85	30.94	56.00	-25.06	QP	
2		0.8860	2.88	19.85	22.73	46.00	-23.27	AVG	
3		1.1860	10.58	19.95	30.53	56.00	-25.47	QP	
4 *		1.1860	4.64	19.95	24.59	46.00	-21.41	AVG	
5		2.3420	5.53	20.51	26.04	56.00	-29.96	QP	
6		2.3420	-1.67	20.51	18.84	46.00	-27.16	AVG	
7		2.6100	8.25	20.52	28.77	56.00	-27.23	QP	
8		2.6100	-3.34	20.52	17.18	46.00	-28.82	AVG	
9		2.8780	6.81	20.32	27.13	56.00	-28.87	QP	
10		2.8780	-2.86	20.32	17.46	46.00	-28.54	AVG	
11		3.1420	7.79	20.23	28.02	56.00	-27.98	QP	
12		3.1420	-3.39	20.23	16.84	46.00	-29.16	AVG	

3.2 Radiated Emission and Band Edge

3.2.1 Limit

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.

3.2.2 Test Peripherals

Support Equipment				
No.	Equipment	Brand Name	Model Name	Remarks
1	Record PC	Lenovo	M4500T	NA
2	Control PC	Lenovo	M4500T	NA

3.2.3 Test Procedure

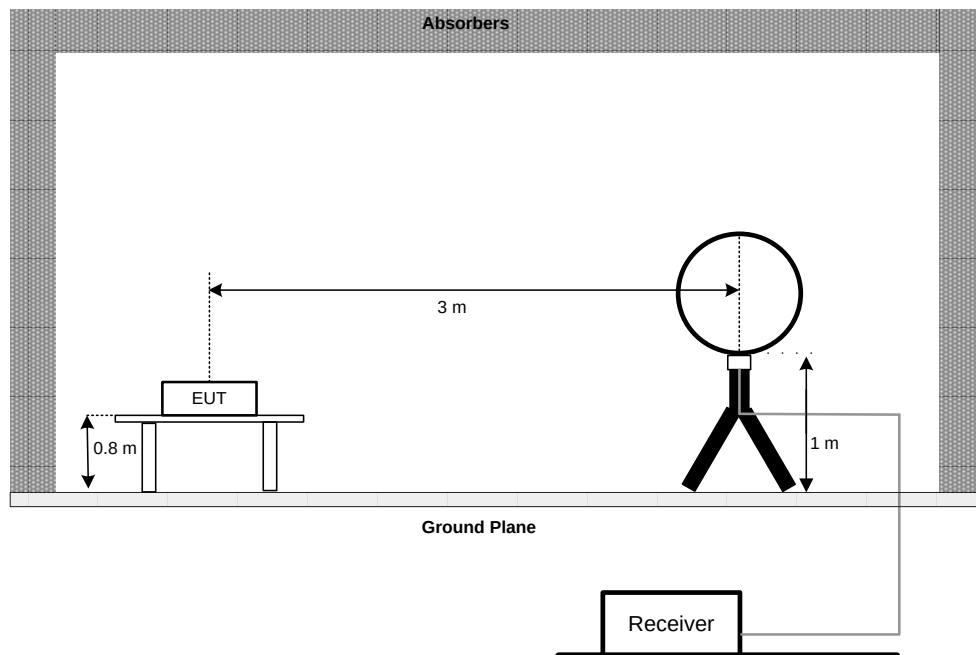
Test Method	
☐ Conducted Measurement	☒ Radiated Measurement
Test Channels	
☒ Lowest, Middle and Highest Channel	☐ Lowest and Highest Channel
Environmental conditions	
☒ Normal	☐ Normal and Extreme
Note: ☒ : Test ☐ : No Test	

- 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)

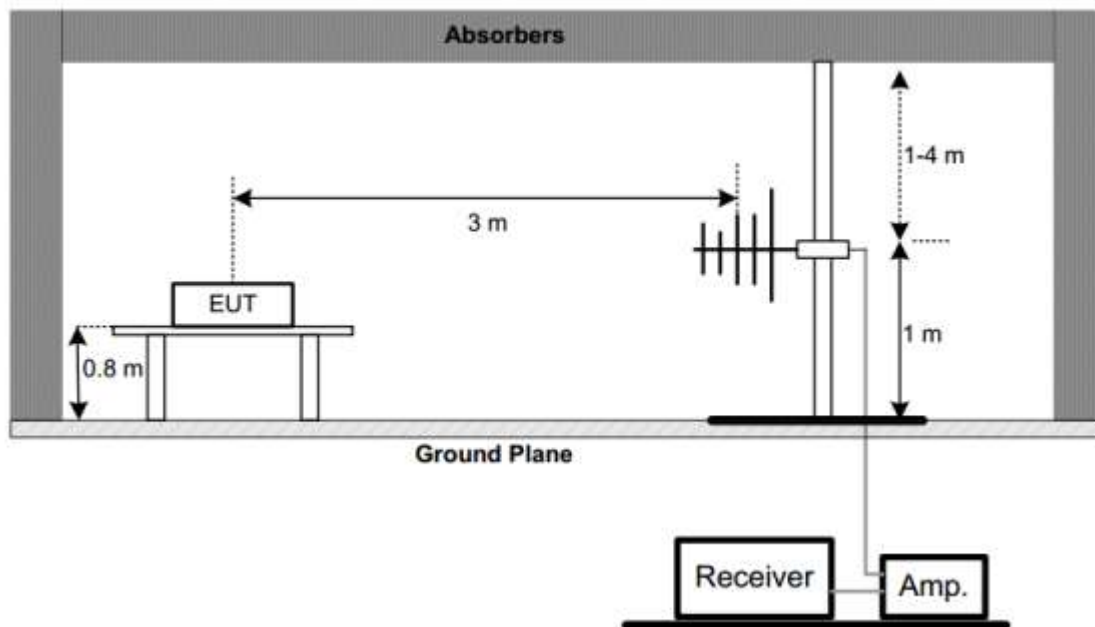
- b) The measuring distance of 3 m or 1.5m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
- c) The height 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.

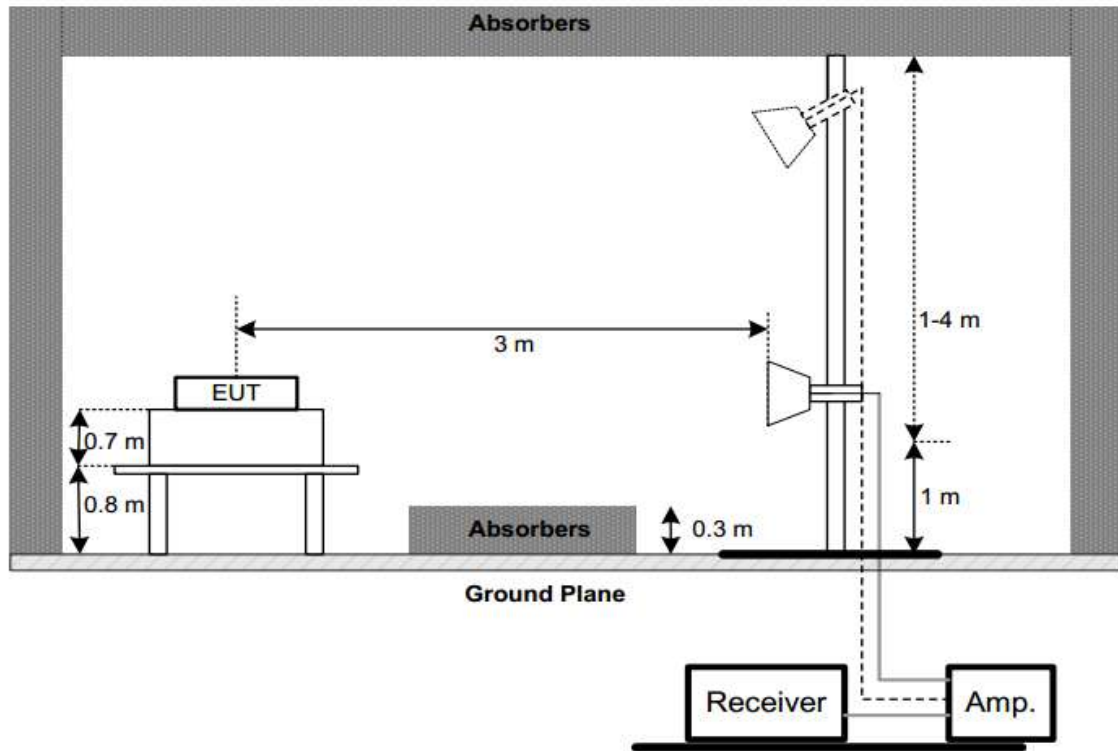
3.2.4 Test Setup

(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**3.2.5 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. Simultaneous transmitting: 2.4G Wifi transmitting + 5G Wifi transmitting

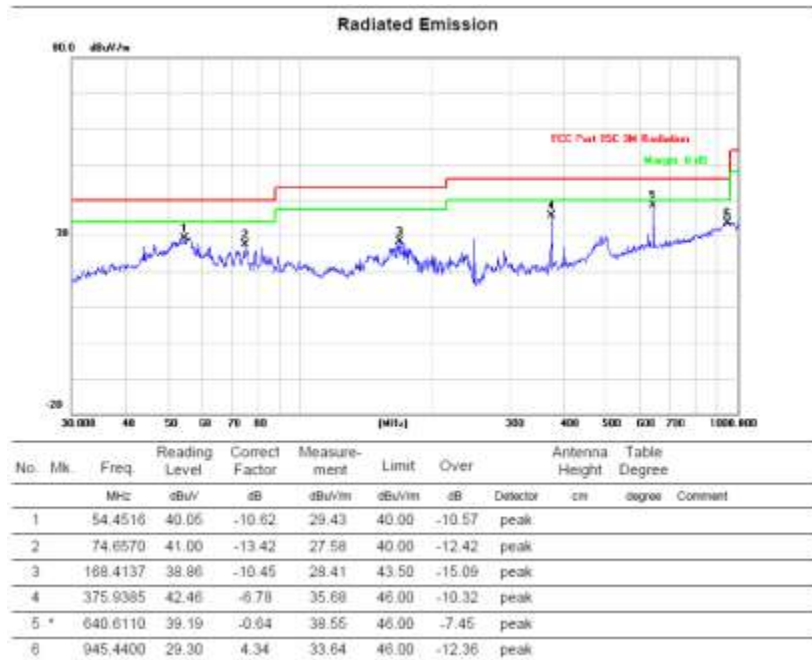
For EUT1+adapter1

We only recorded the data of the worst mode. Please see the following:

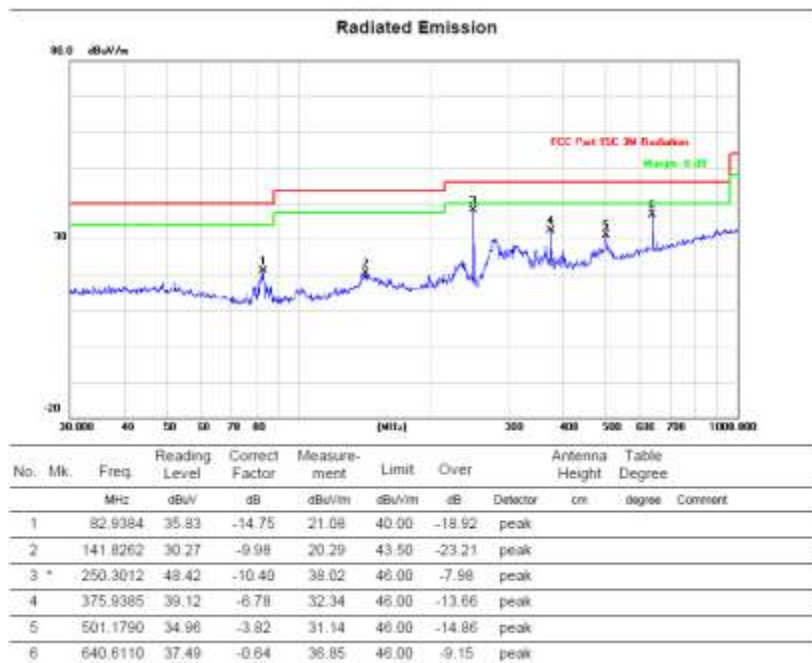
Below 1G (30MHz~1GHz)

Worst Case Operating Mode: Simultaneous transmitting

VERTICAL



HORIZONTAL



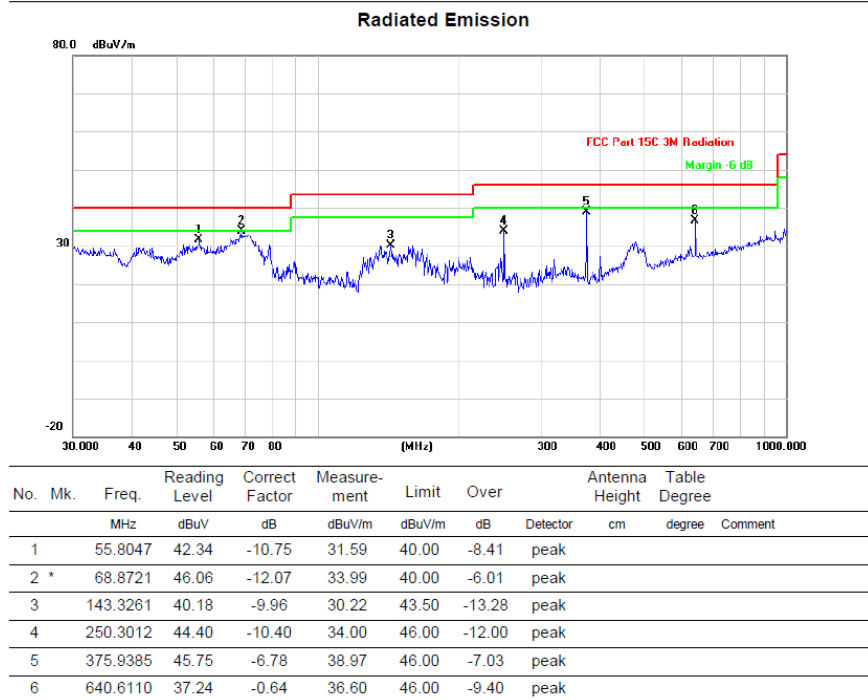
For EUT1+adapter2

We only recorded the data of the worst mode. Please see the following:

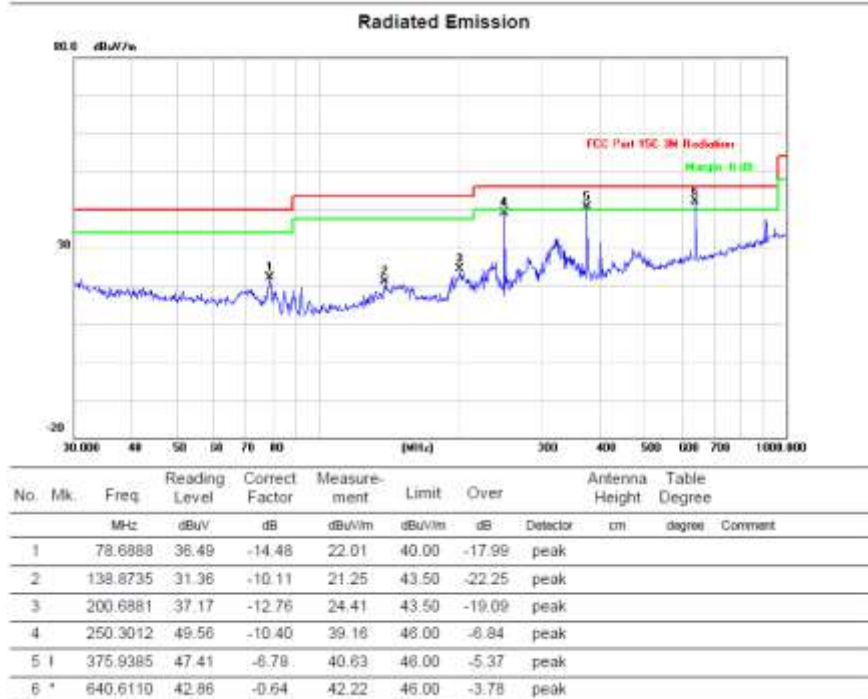
Below 1G (30MHz~1GHz)

Worst Case Operating Mode: Simultaneous transmitting

VERTICAL



HORIZONTAL



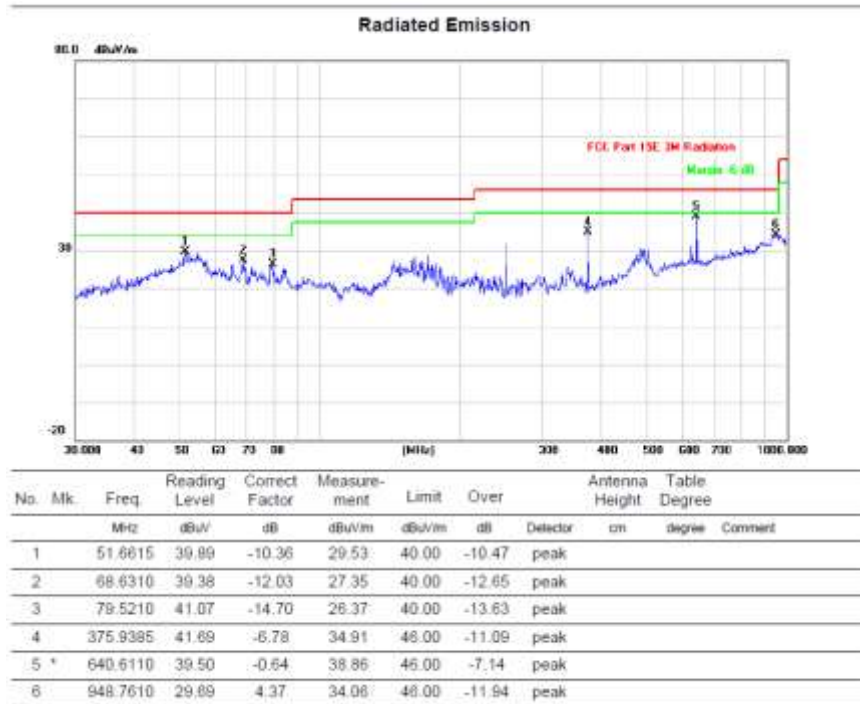
For EUT1+adapter3

We only recorded the data of the worst mode. Please see the following:

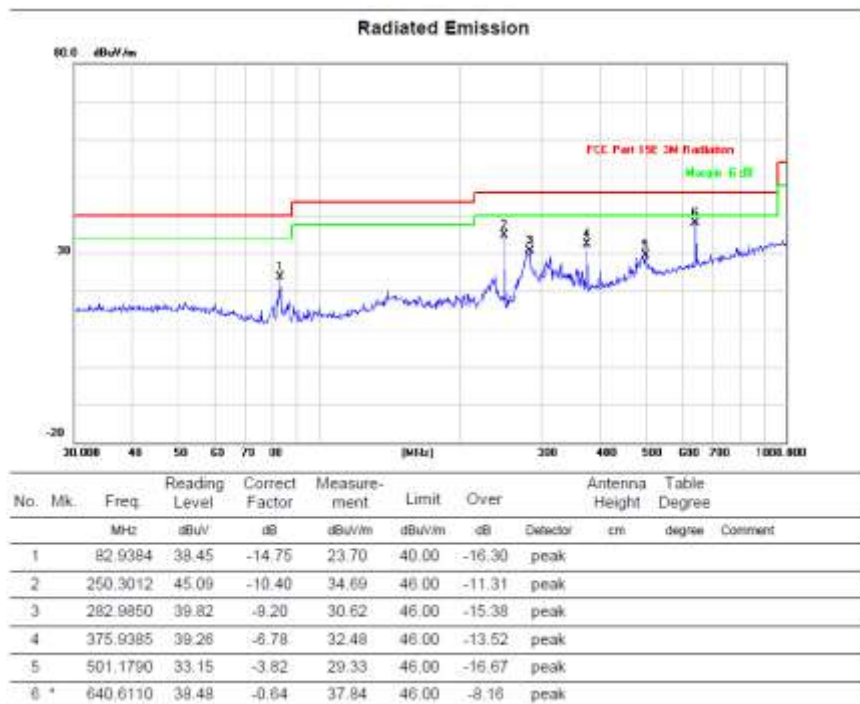
Below 1G (30MHz~1GHz)

Worst Case Operating Mode: Simultaneous transmitting

VERTICAL



HORIZONTAL



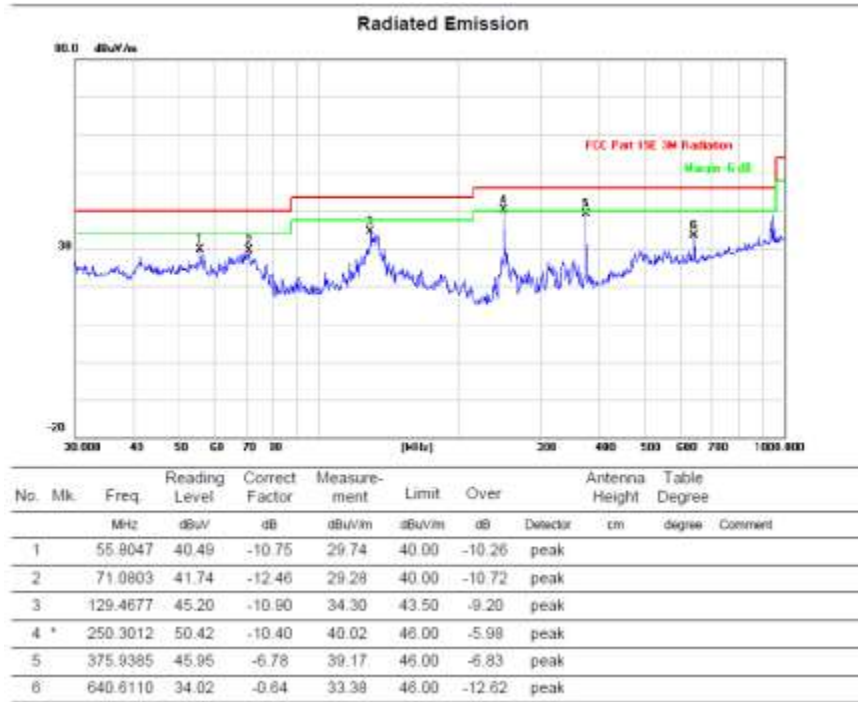
For EUT2+adapter1

We only recorded the data of the worst mode. Please see the following:

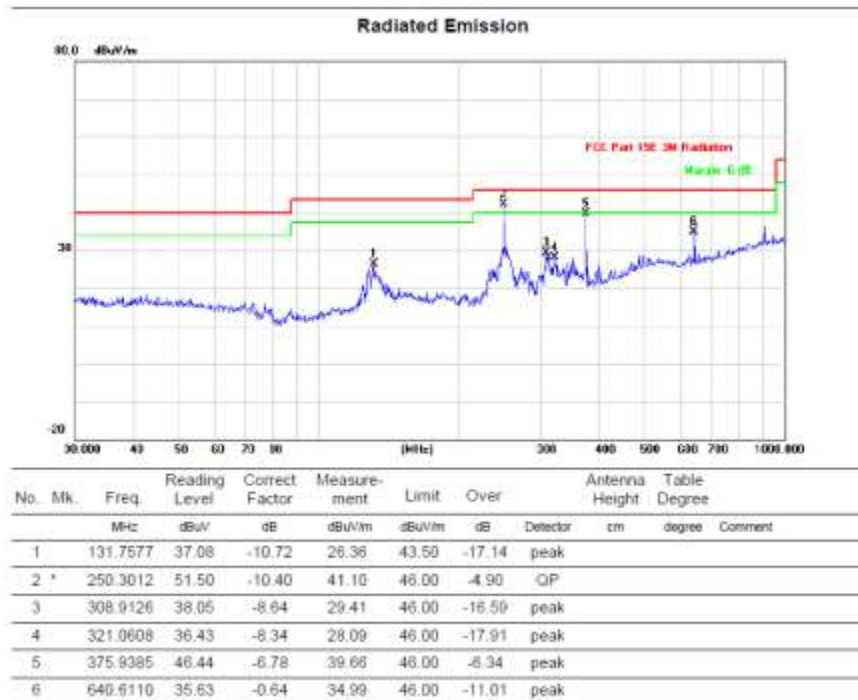
Below 1G (30MHz~1GHz)

Worst Case Operating Mode: Simultaneous transmitting

VERTICAL



HORIZONTAL



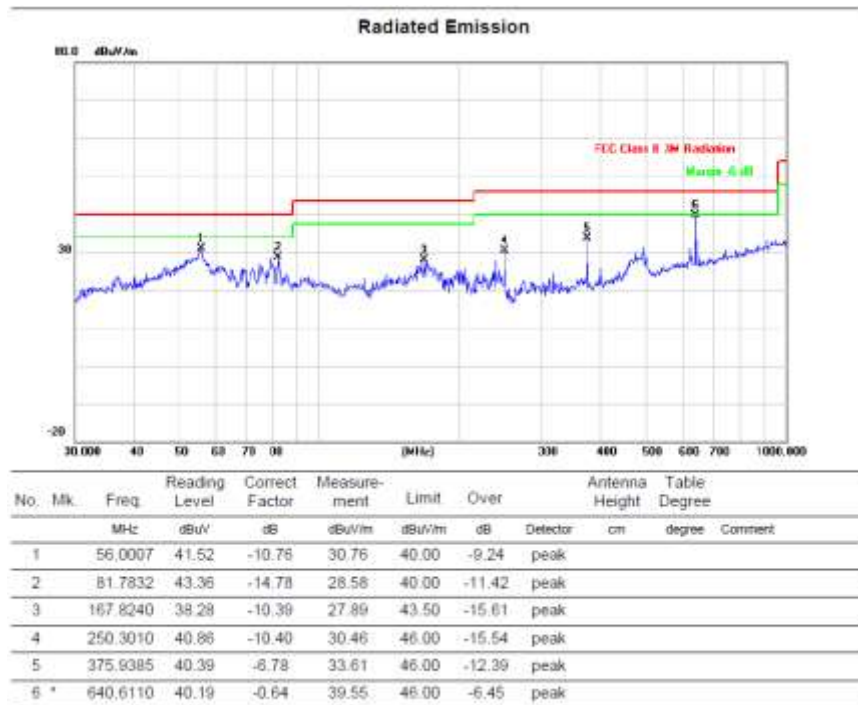
For EUT2+adapter2

We only recorded the data of the worst mode. Please see the following:

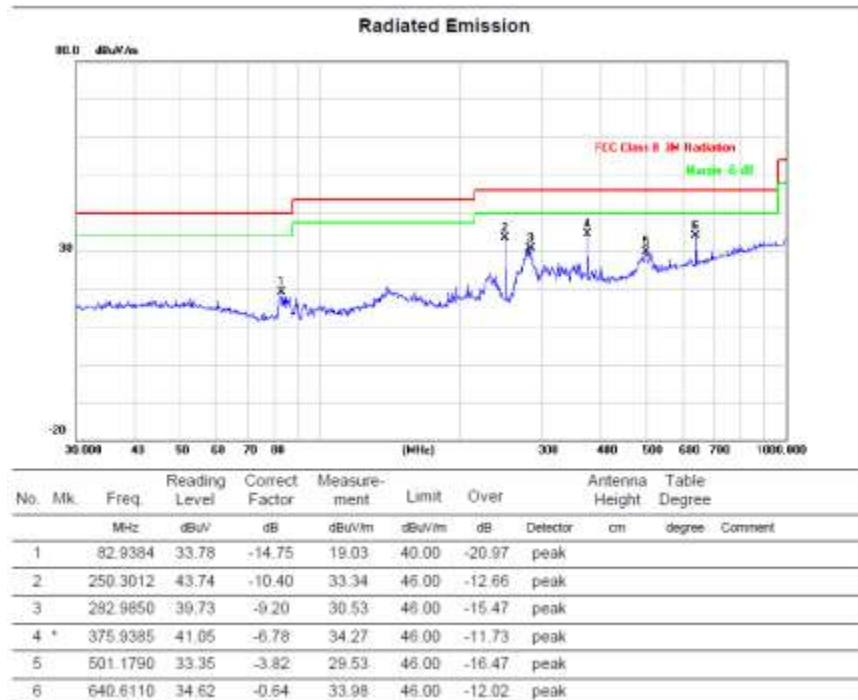
Below 1G (30MHz~1GHz)

Worst Case Operating Mode: Simultaneous transmitting

VERTICAL



HORIZONTAL



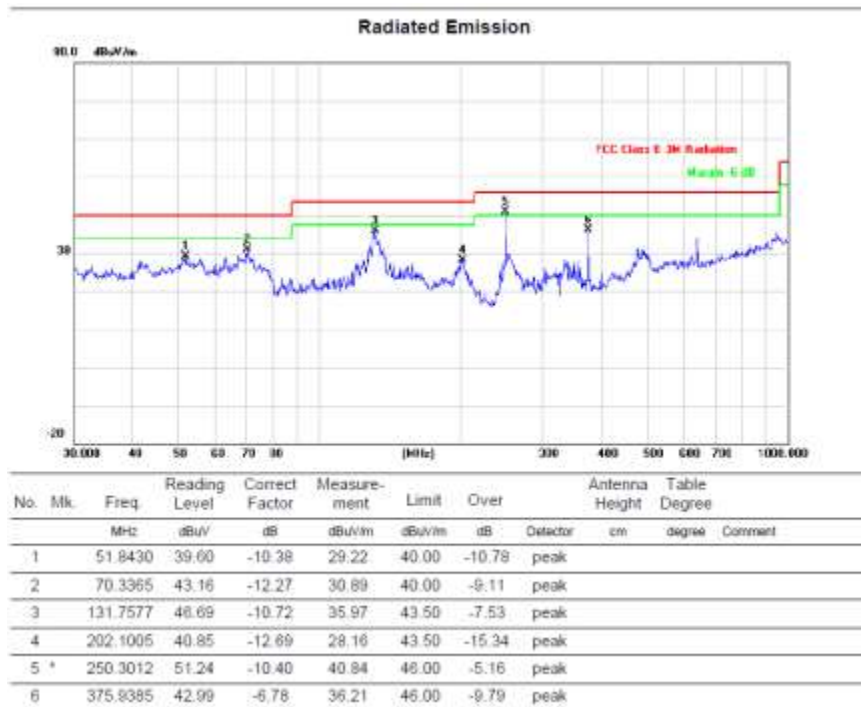
For EUT2+adapter3

We only recorded the data of the worst mode. Please see the following:

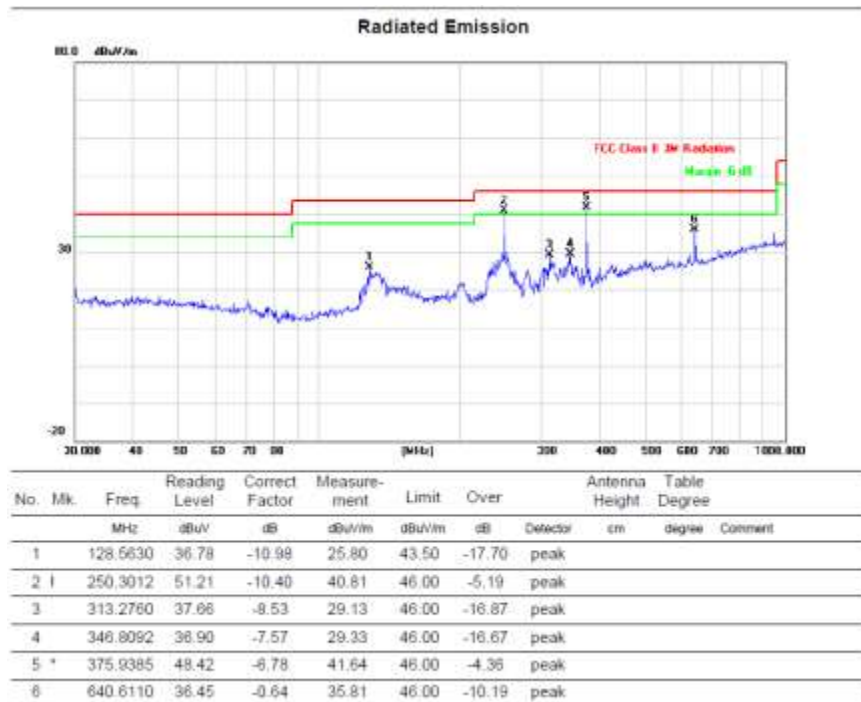
Below 1G (30MHz~1GHz)

Worst Case Operating Mode: Simultaneous transmitting

VERTICAL



HORIZONTAL



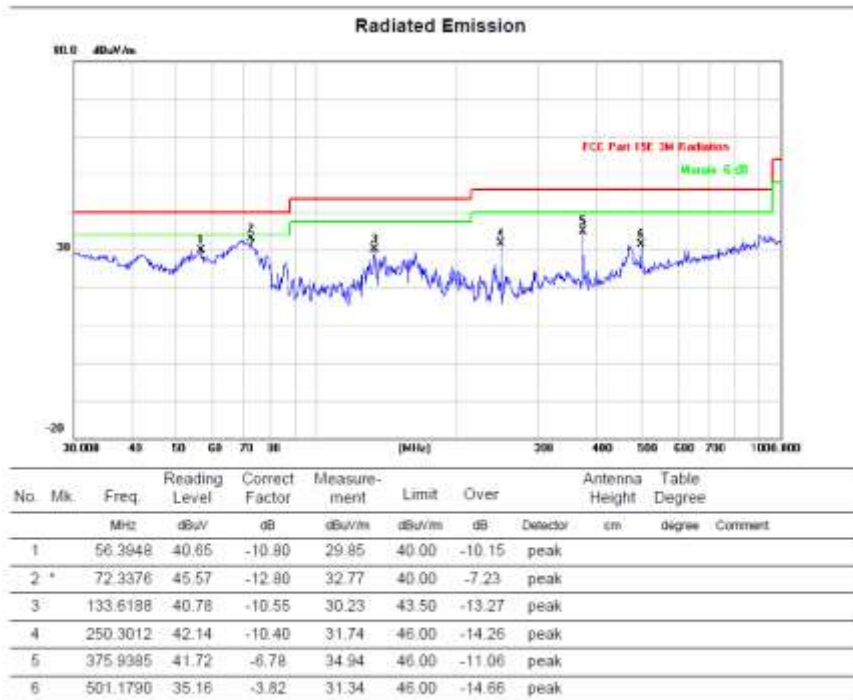
For EUT3+adapter1

We only recorded the data of the worst mode. Please see the following:

Below 1G (30MHz~1GHz)

Worst Case Operating Mode: Simultaneous transmitting

VERTICAL



HORIZONTAL



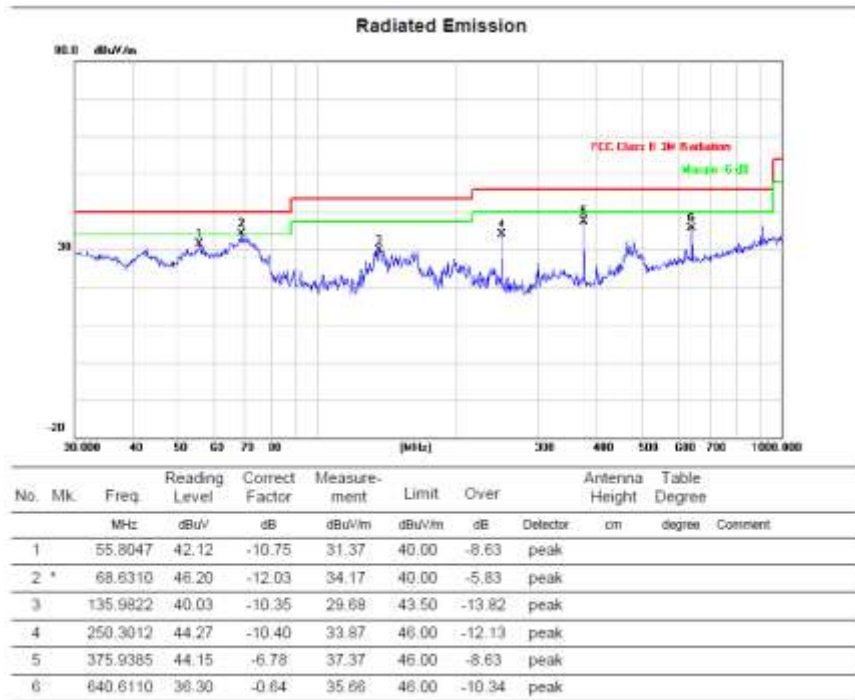
For EUT3+adapter2

We only recorded the data of the worst mode. Please see the following:

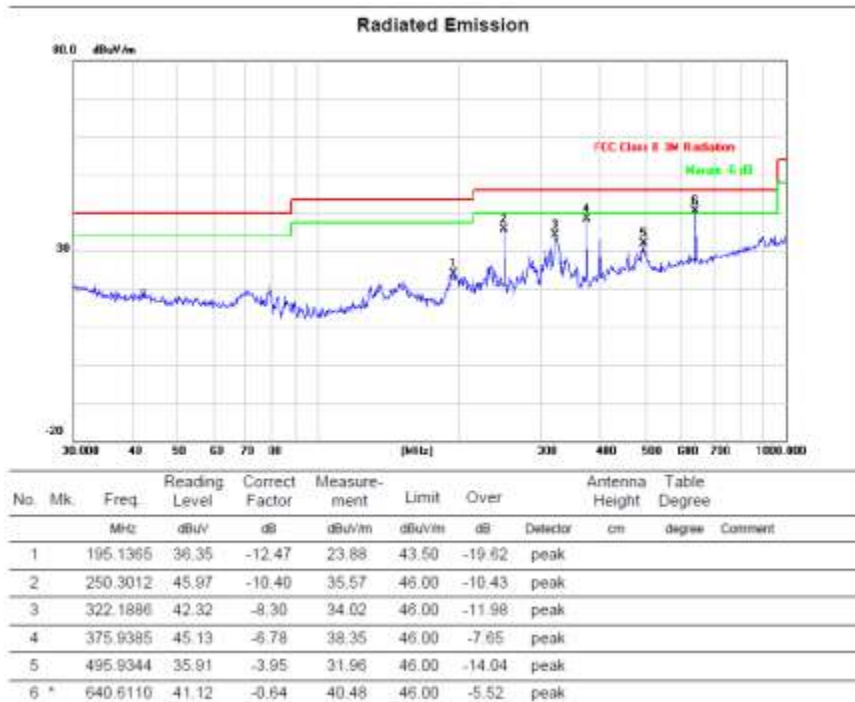
Below 1G (30MHz~1GHz)

Worst Case Operating Mode: Simultaneous transmitting

VERTICAL



HORIZONTAL



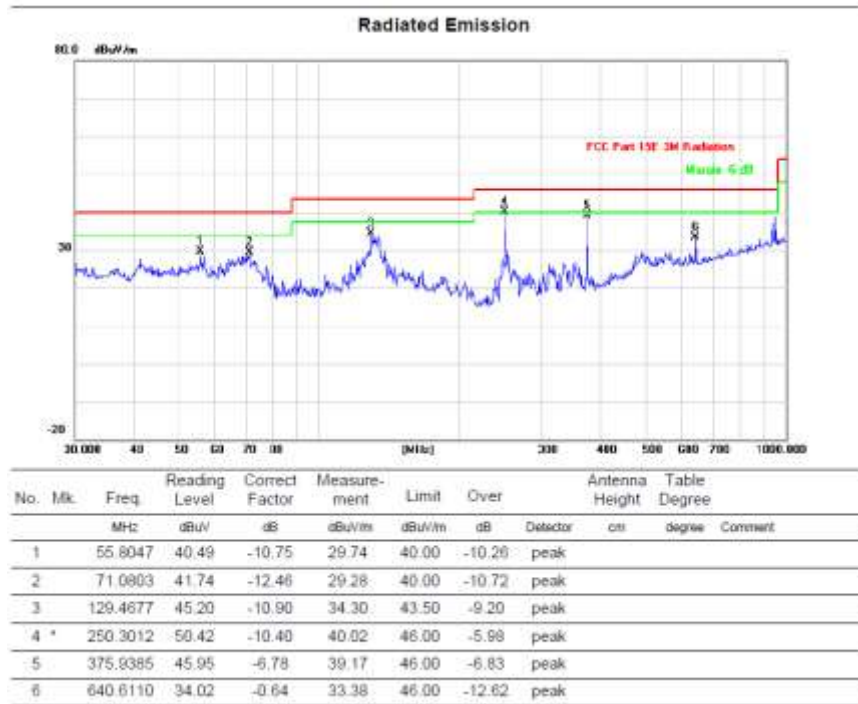
For EUT3+adapter3

We only recorded the data of the worst mode. Please see the following:

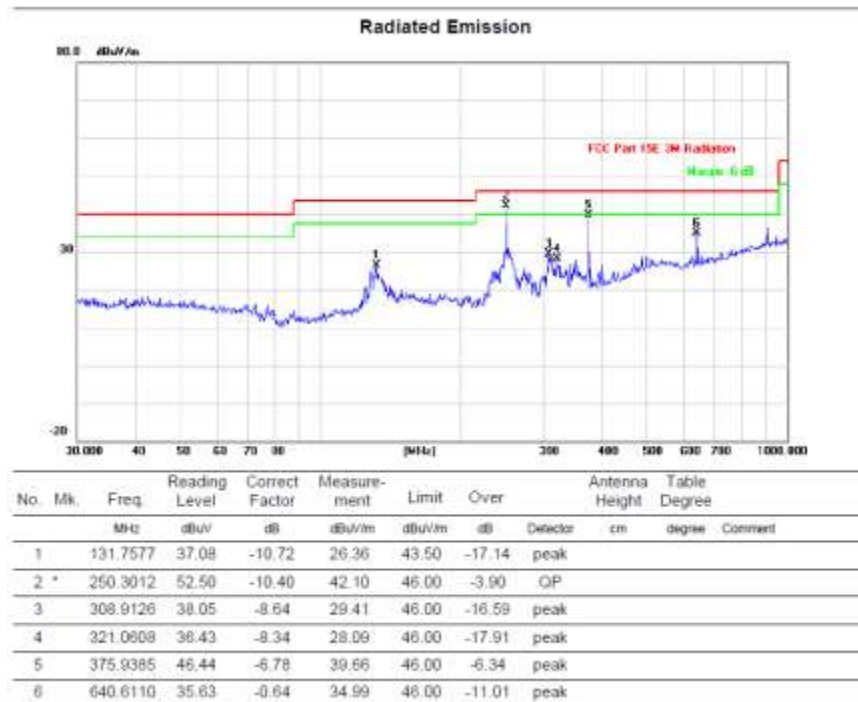
Below 1G (30MHz~1GHz)

Worst Case Operating Mode: Simultaneous transmitting

VERTICAL



HORIZONTAL



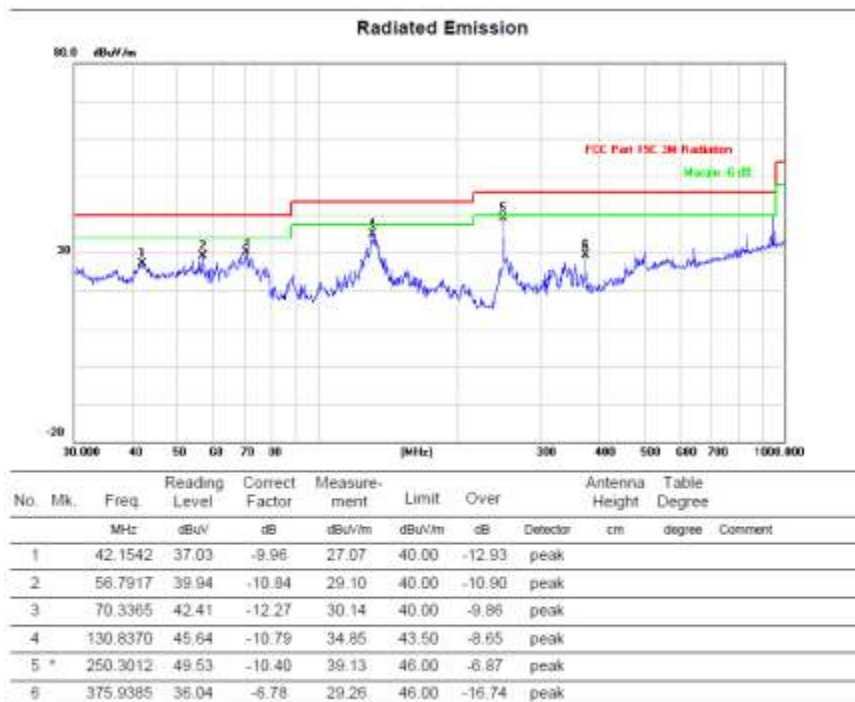
For EUT4+adapter1

We only recorded the data of the worst mode. Please see the following:

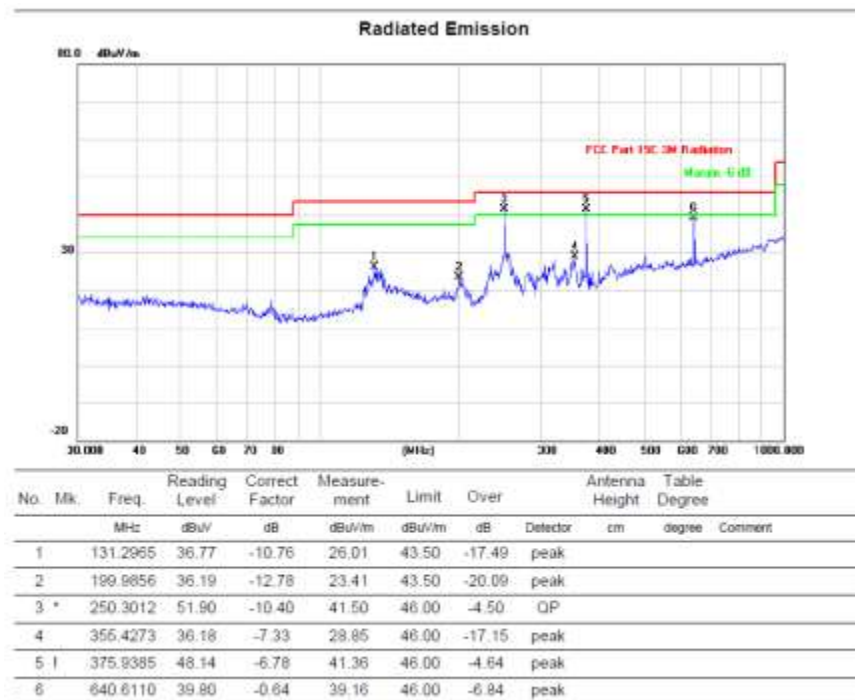
Below 1G (30MHz~1GHz)

Worst Case Operating Mode: Simultaneous transmitting

VERTICAL



HORIZONTAL



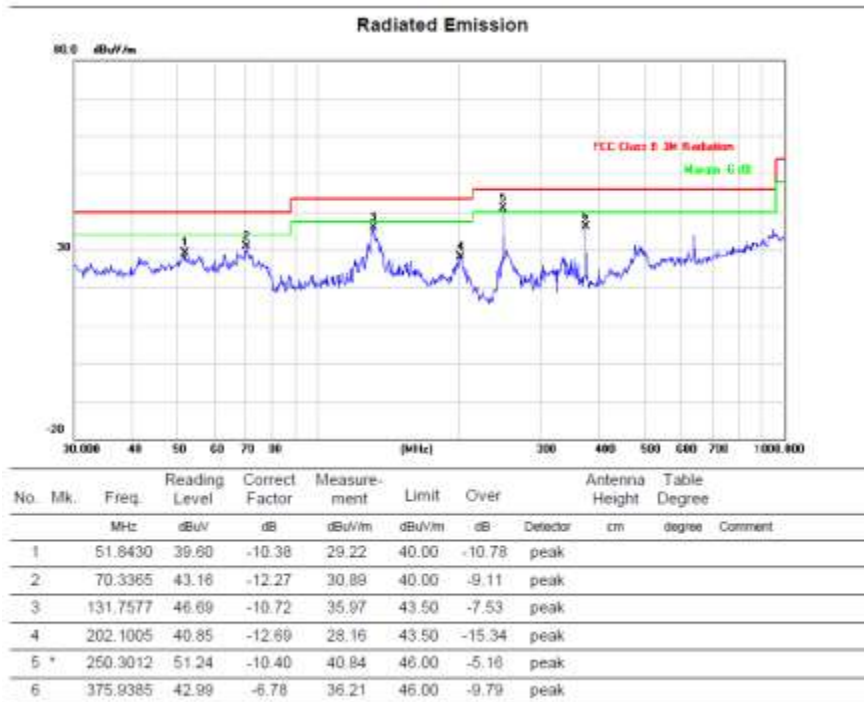
For EUT4+adapter2

We only recorded the data of the worst mode. Please see the following:

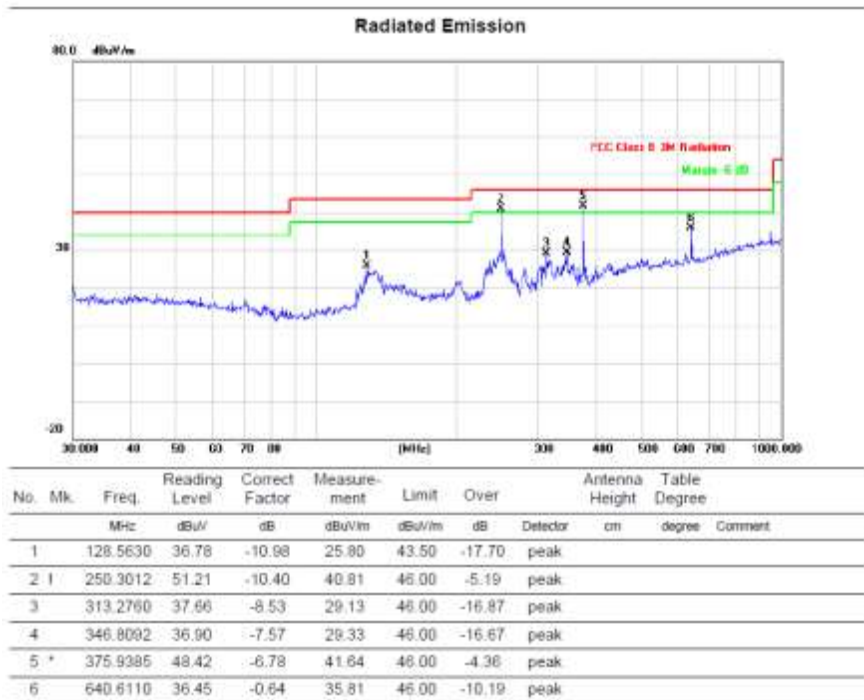
Below 1G (30MHz~1GHz)

Worst Case Operating Mode: Simultaneous transmitting

VERTICAL



HORIZONTAL



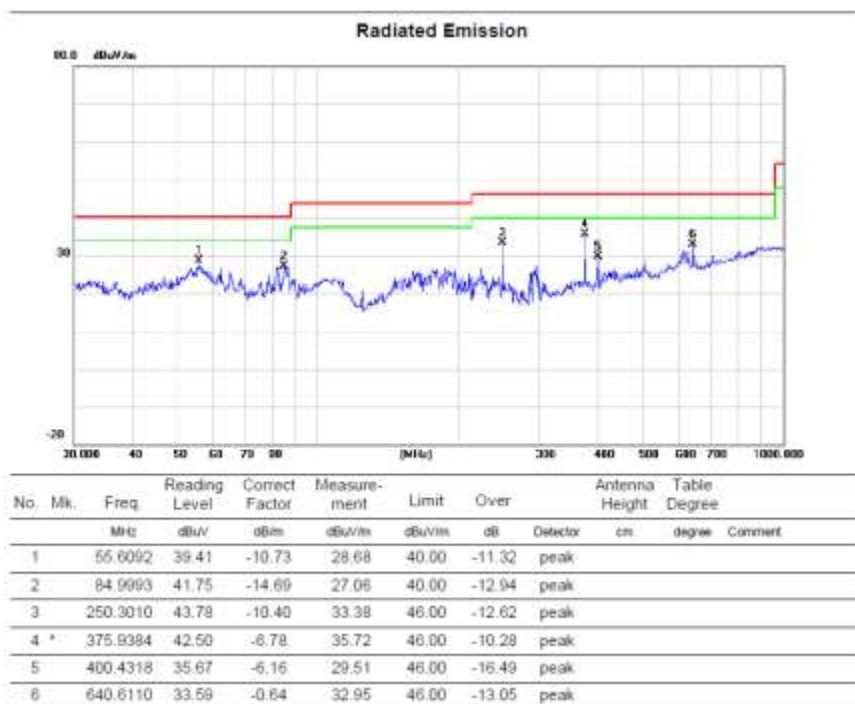
For EUT4+adapter3

We only recorded the data of the worst mode. Please see the following:

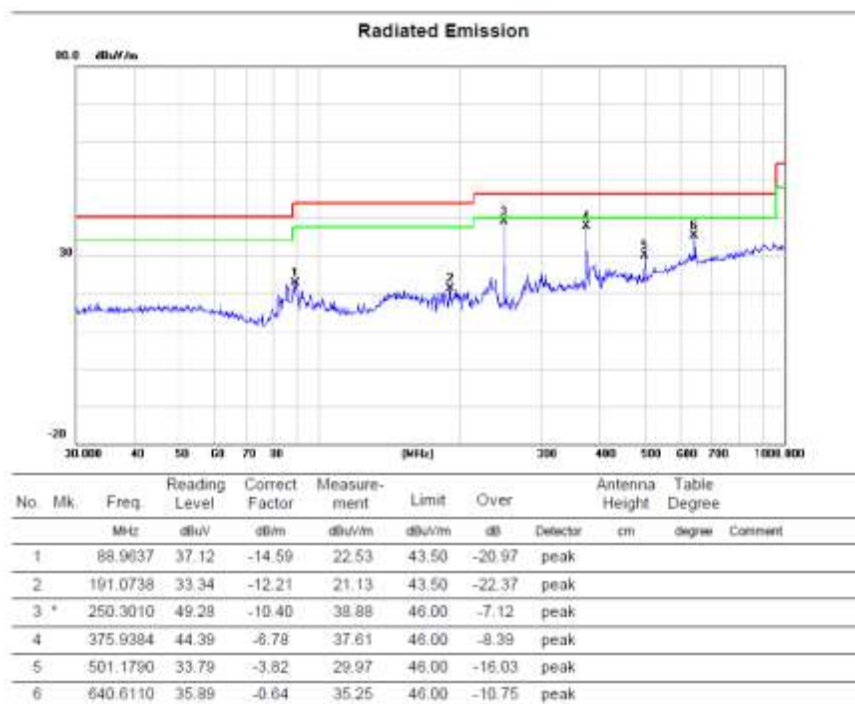
Below 1G (30MHz~1GHz)

Worst Case Operating Mode: Simultaneous transmitting

VERTICAL



HORIZONTAL



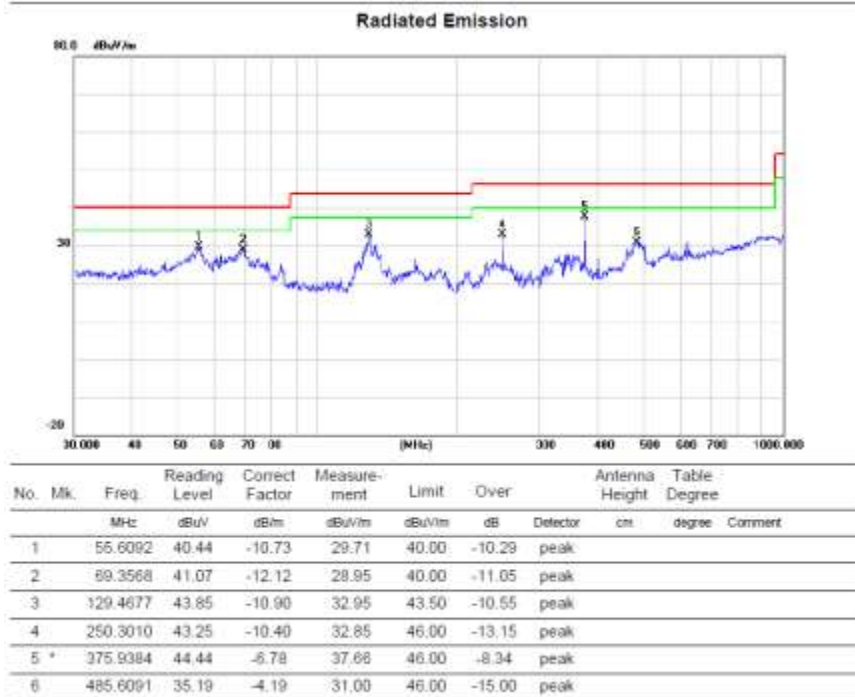
For EUT5+adapter1

We only recorded the data of the worst mode. Please see the following:

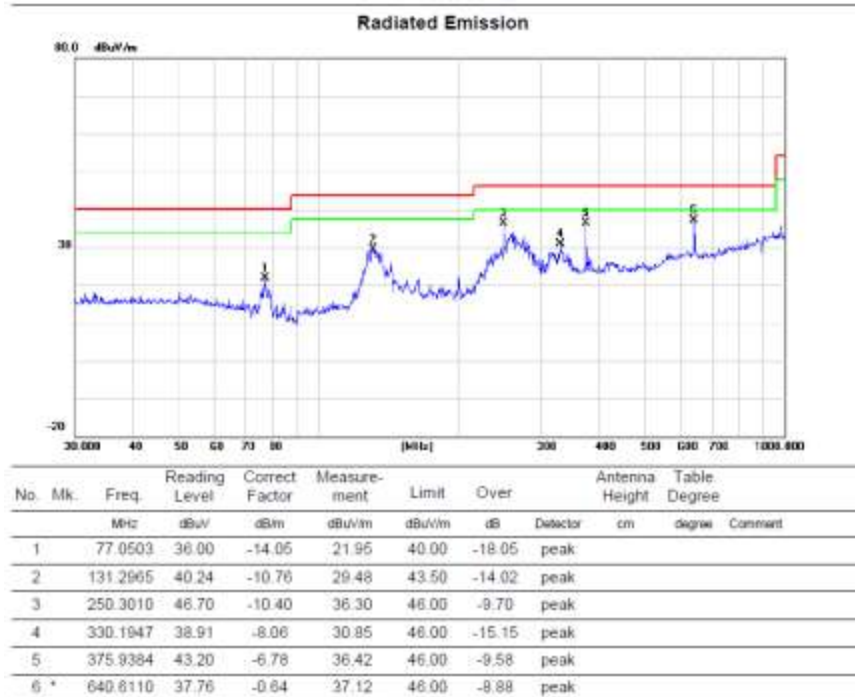
Below 1G (30MHz~1GHz)

Worst Case Operating Mode: Simultaneous transmitting

VERTICAL



HORIZONTAL



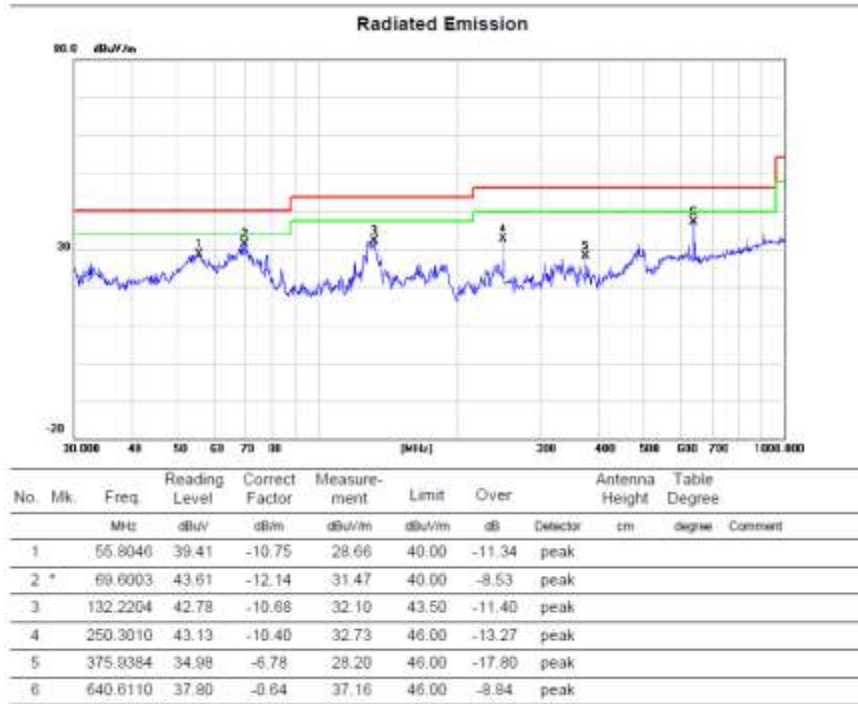
For EUT5+adapter 2

We only recorded the data of the worst mode. Please see the following:

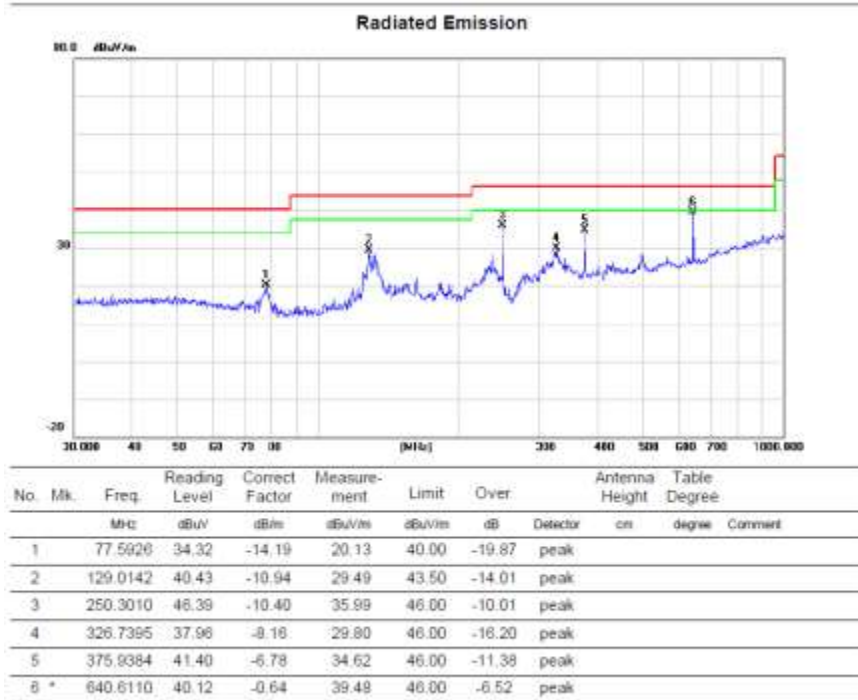
Below 1G (30MHz~1GHz)

Worst Case Operating Mode: Simultaneous transmitting

VERTICAL



HORIZONTAL



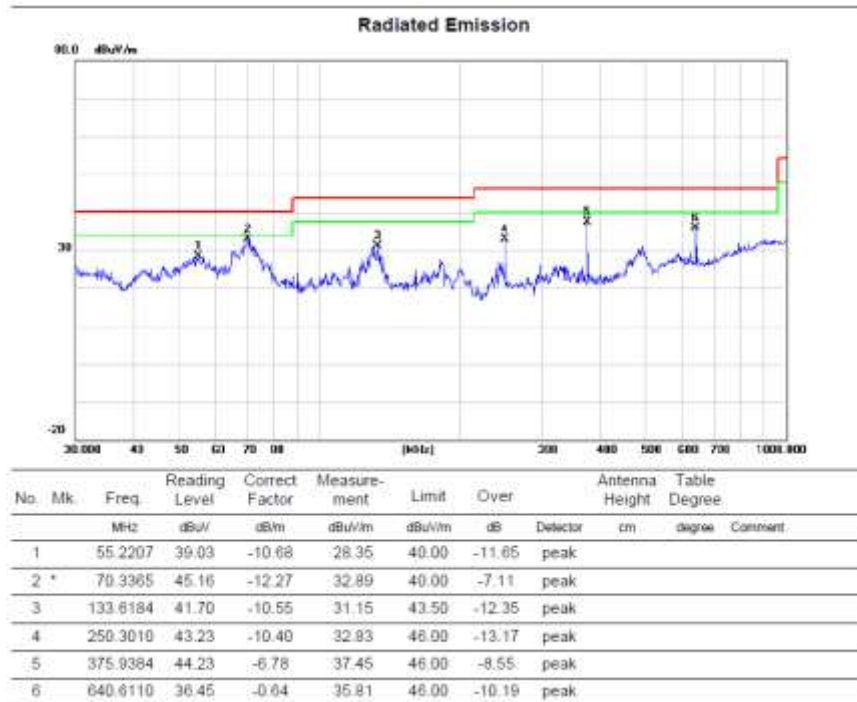
For EUT5+adapter3

We only recorded the data of the worst mode. Please see the following:

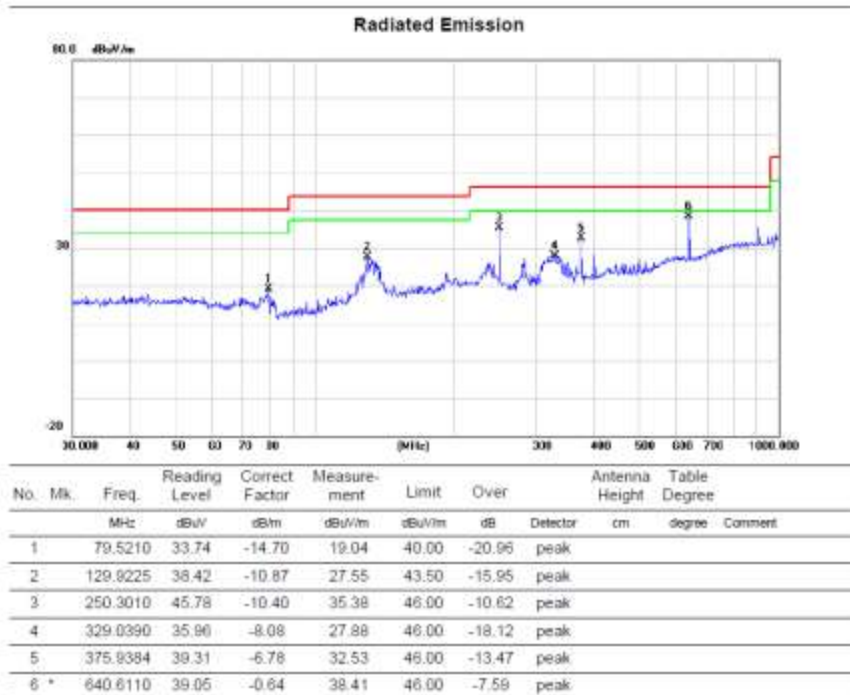
Below 1G (30MHz~1GHz)

Worst Case Operating Mode: Simultaneous transmitting

VERTICAL



HORIZONTAL



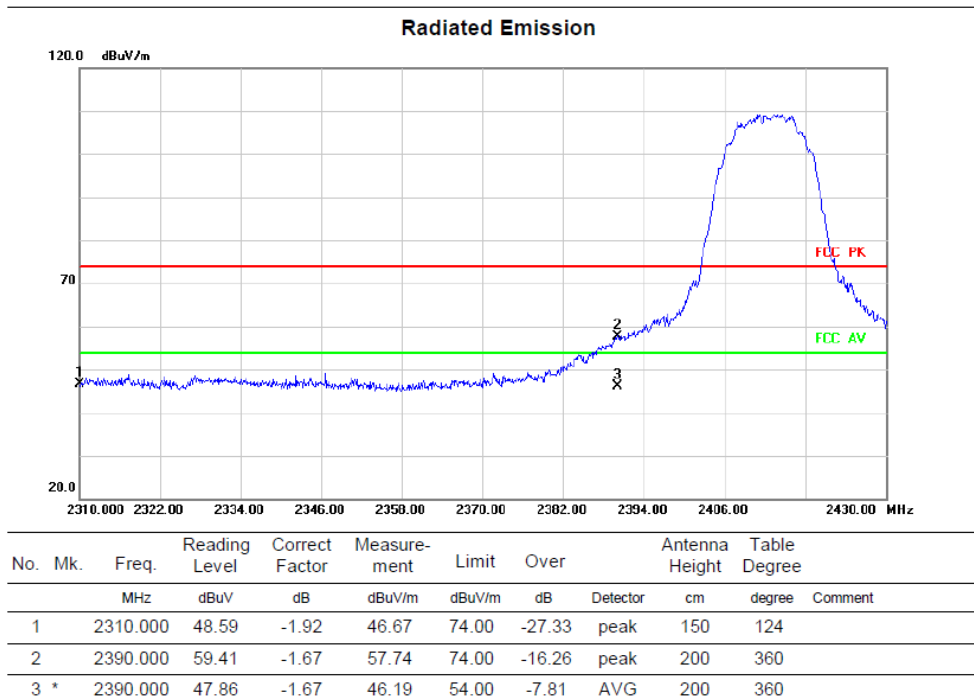
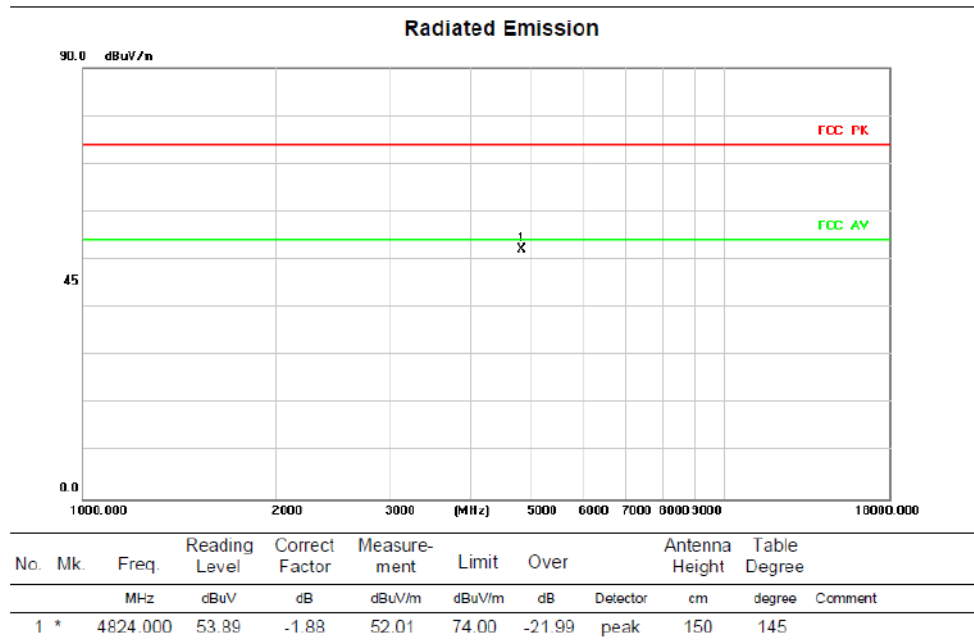
3) Radiated emission: Above 1G

Note:

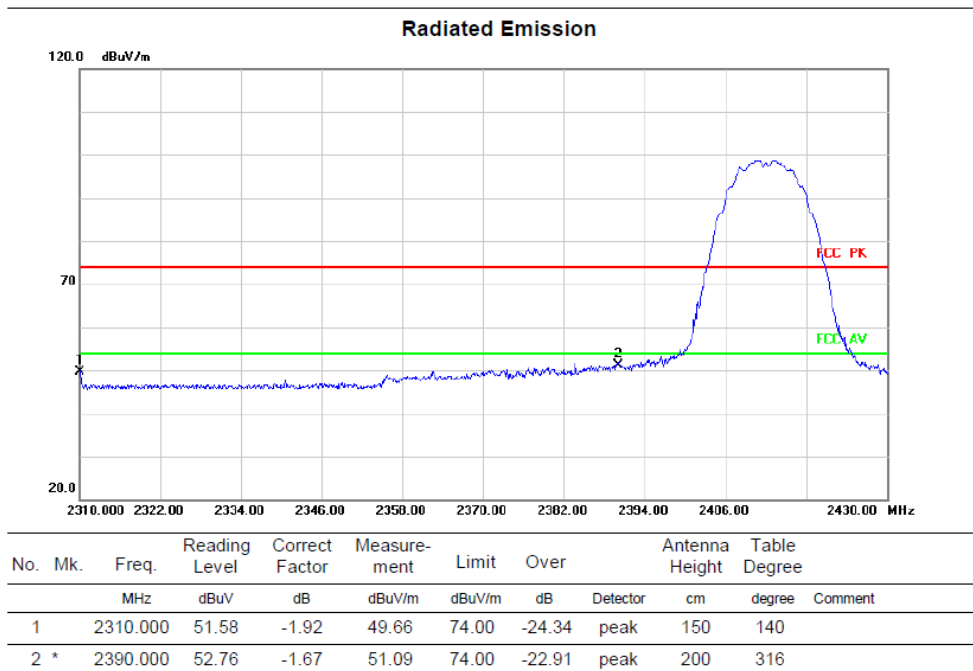
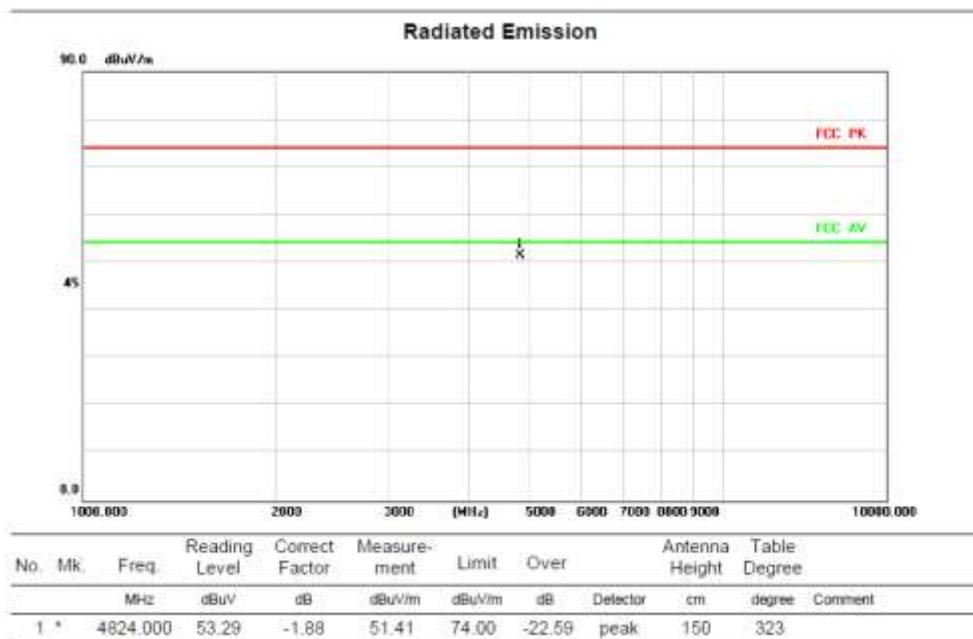
1. Measurement = Reading + Correct Factor.
2. Over = Measurement – Limit
3. For 802.11B and 802.11G modes, only worst case for antenna1 were recored.

For EUT1

Above 1G (1GHz~18GHz)	Test mode:11B	Test Channel:1
VERTICAL		



HORIZONTAL

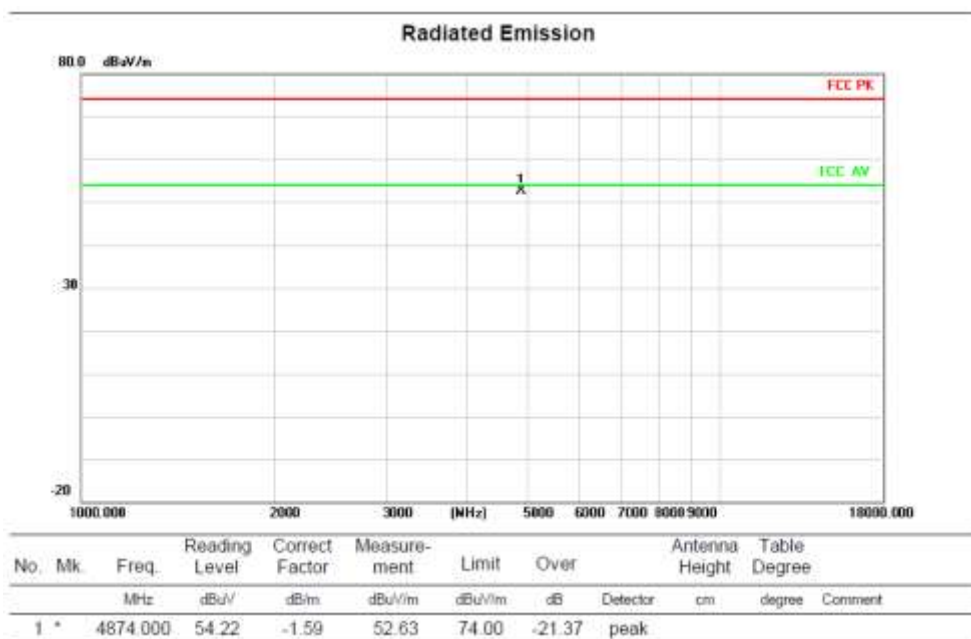


Above 1G (1GHz~18GHz)

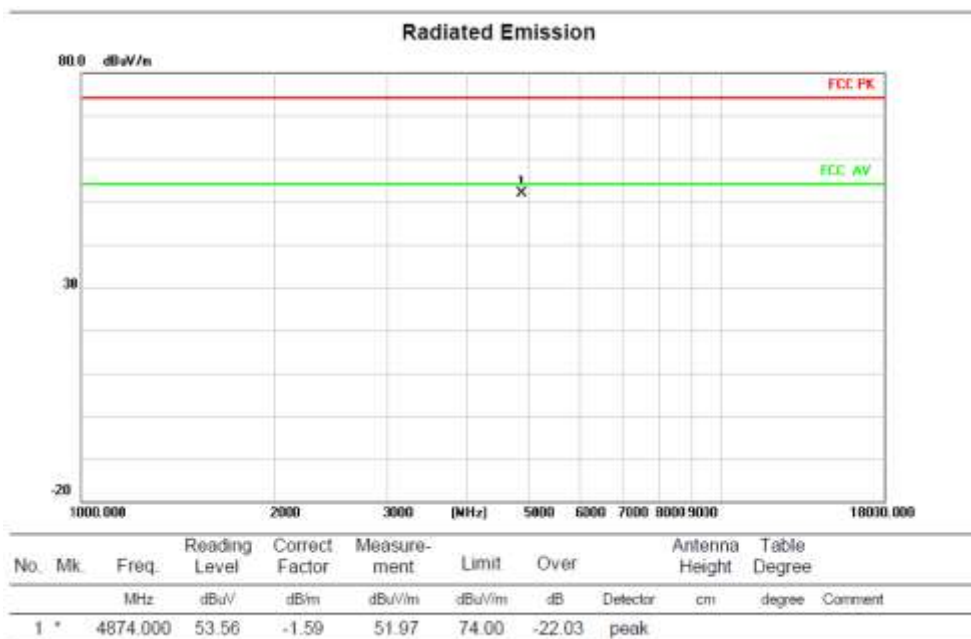
Test mode: 11B

Test Channel: 6

VERTICAL



HORIZONTAL



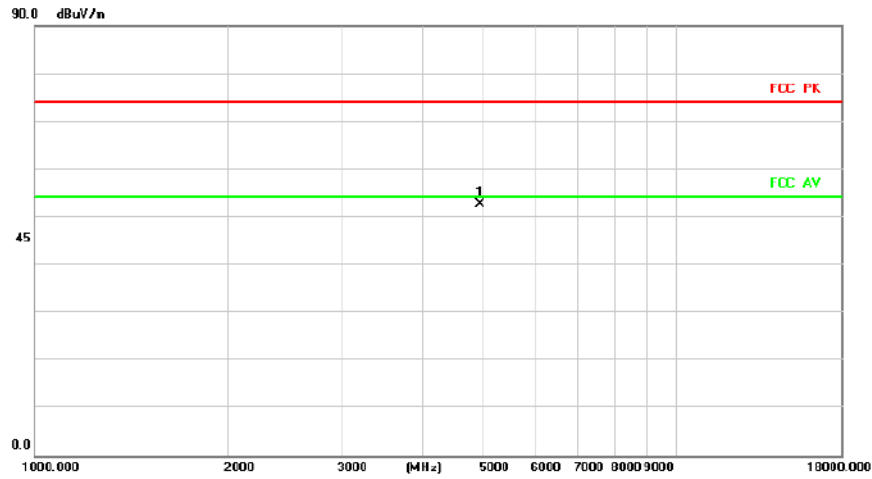
Above 1G (1GHz~18GHz)

Test mode: 11B

Test Channel:11

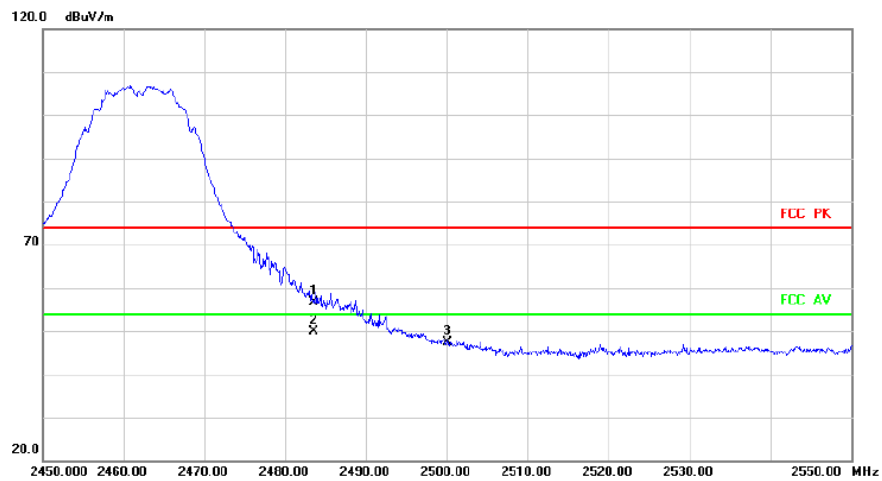
VERTICAL

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	*	4924.000	54.06	-1.30	52.76	74.00	-21.24	peak	200	135

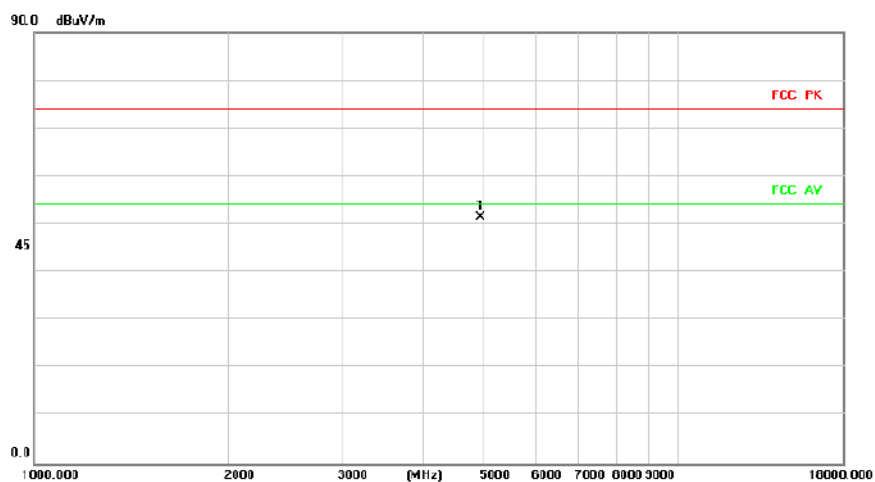
Radiated Emission



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		2483.500	57.89	-1.28	56.61	74.00	-17.39	peak	150	198
2	*	2483.500	51.23	-1.28	49.95	54.00	-4.05	AVG	150	198
3		2500.000	48.55	-1.21	47.34	74.00	-26.66	peak	150	103

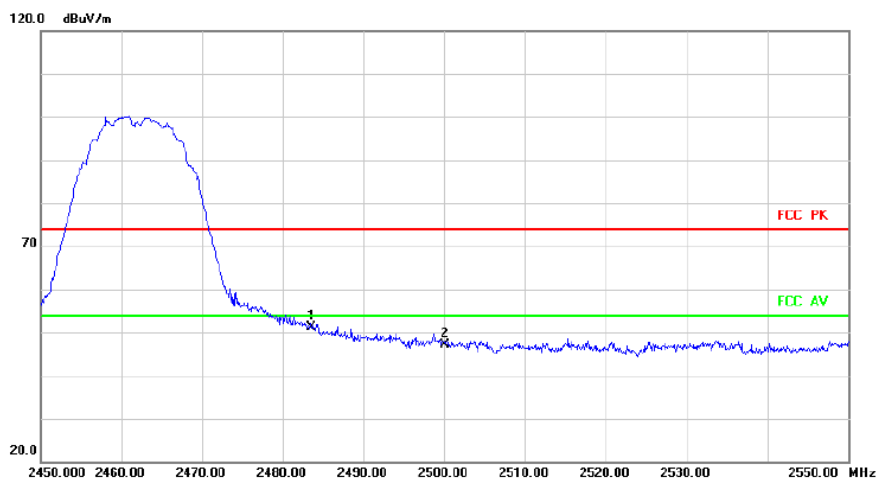
HORIZONTAL

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	*	4924.000	52.68	-1.30	51.38	74.00	-22.62	peak	200	197

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	*	2483.500	52.31	-1.28	51.03	74.00	-22.97	peak	200	156
2		2500.000	48.36	-1.21	47.15	74.00	-26.85	peak	200	134

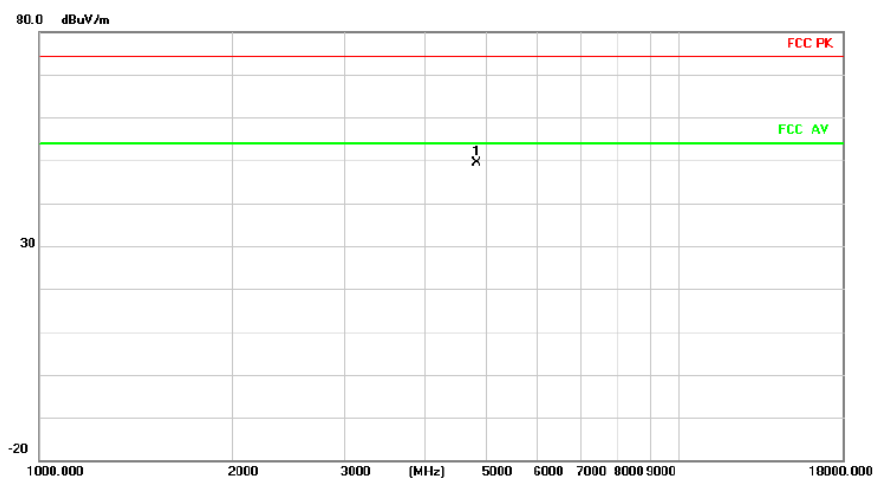
Above 1G (1GHz~18GHz)

Test mode:11G

Test Channel:1

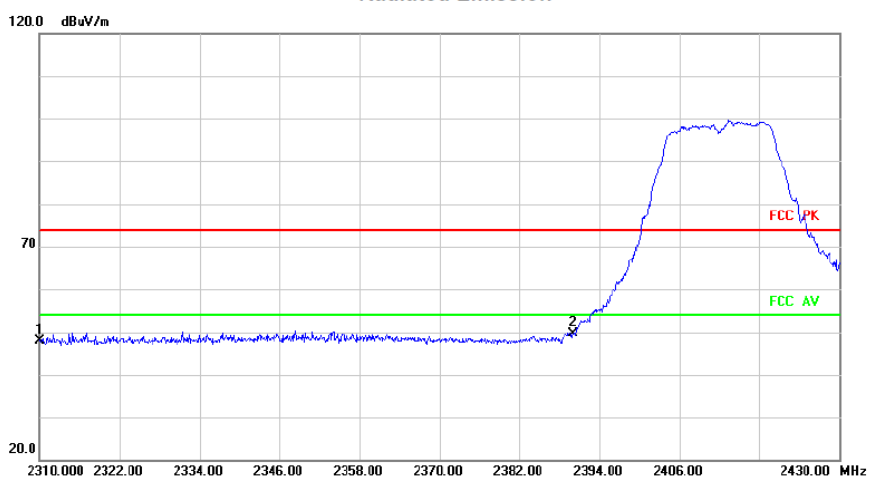
VERTICAL

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	*	4824.000	51.24	-1.88	49.36	74.00	-24.64	peak		

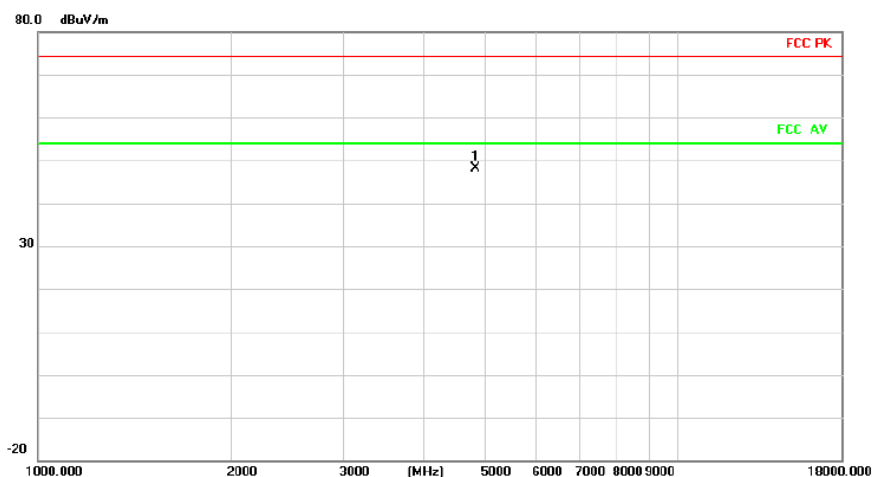
Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		2310.000	43.82	4.08	47.90	74.00	-26.10	peak		
2	*	2390.000	45.33	4.33	49.66	74.00	-24.34	peak		

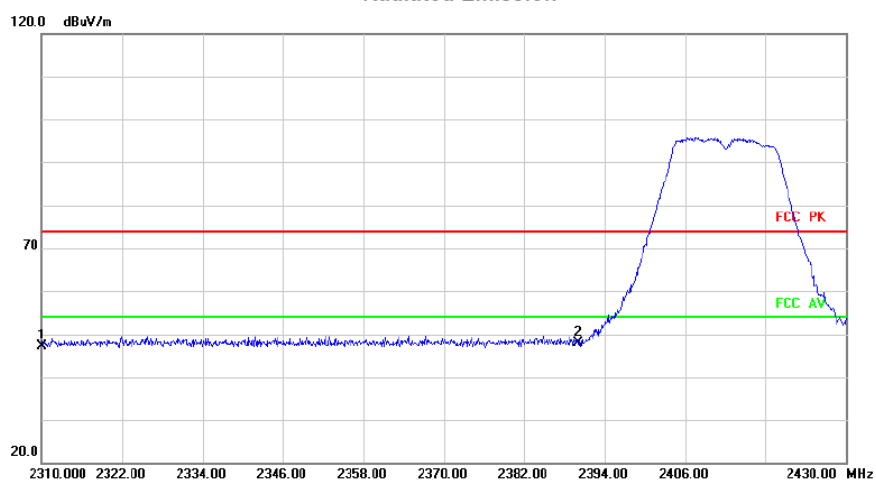
HORIZONTALA

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	*	4824.000	49.97	-1.88	48.09	74.00	-25.91	peak		

Radiated Emission



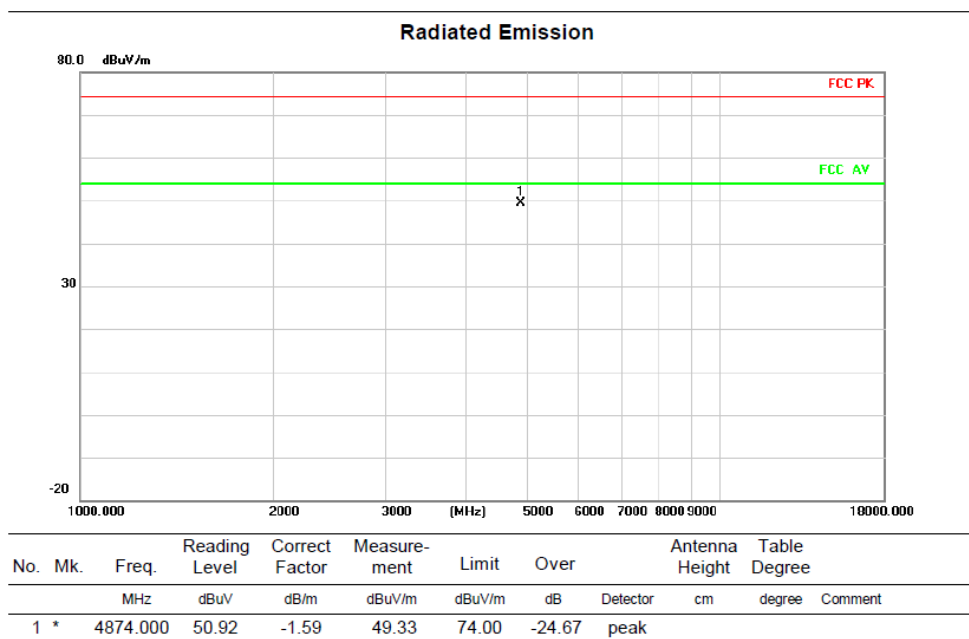
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		2310.000	42.93	4.08	47.01	74.00	-26.99	peak		
2	*	2390.000	43.47	4.33	47.80	74.00	-26.20	peak		

Above 1G (1GHz~18GHz)

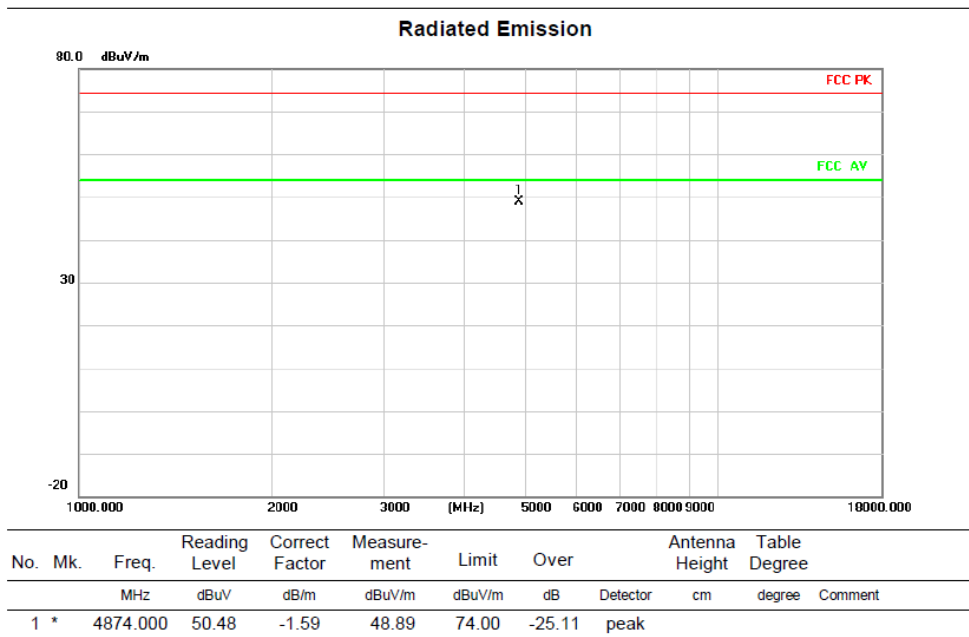
Test mode: 11G

Test Channel: 6

VERTICAL



HORIZONTAL



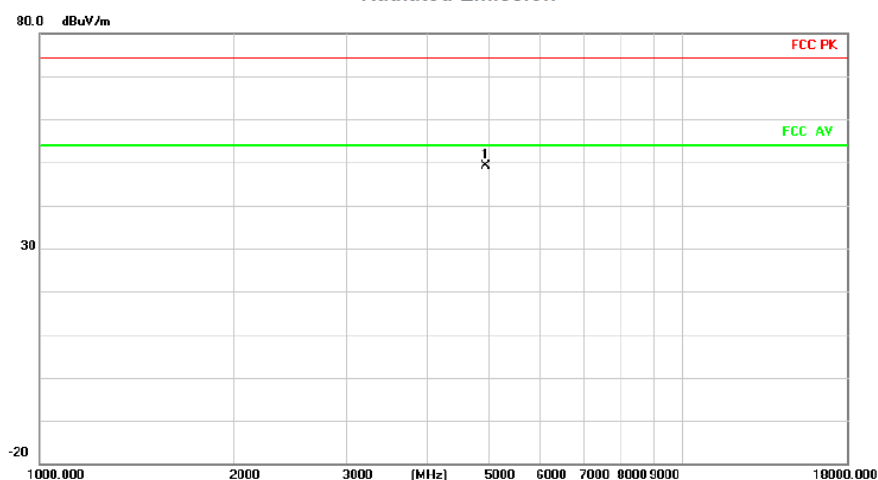
Above 1G (1GHz~18GHz)

Test mode: 11G

Test Channel:11

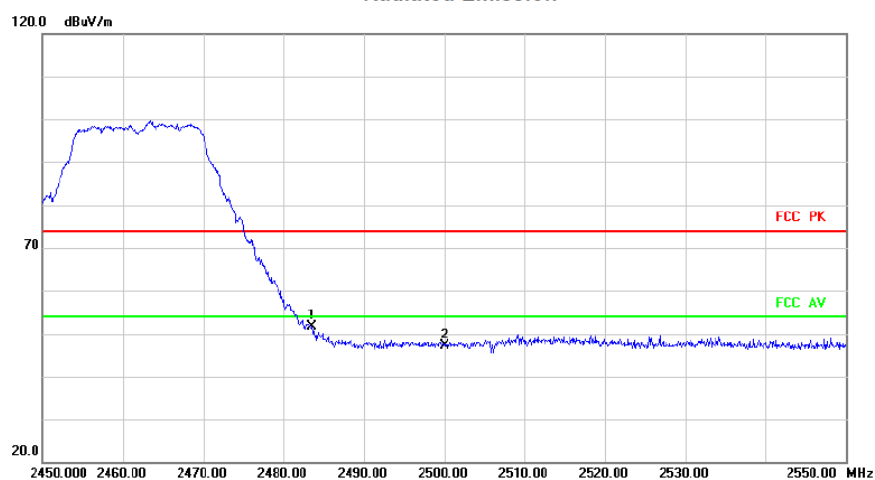
VERTICAL

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	*	4924.000	50.49	-1.30	49.19	74.00	-24.81	peak		

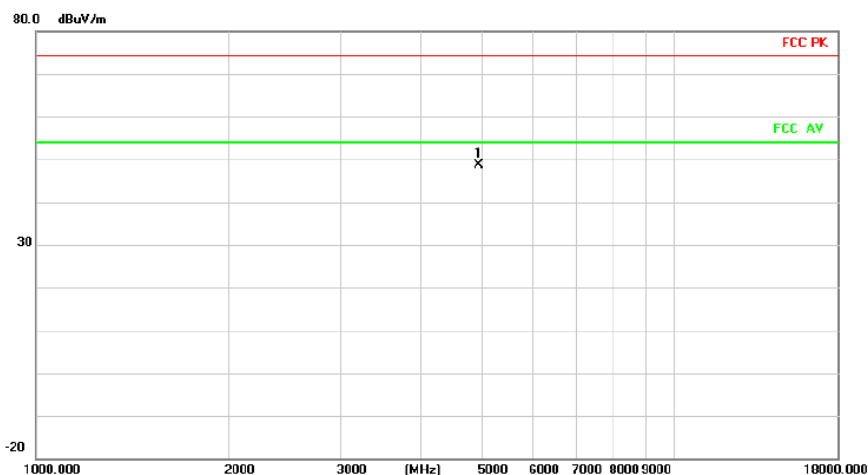
Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	*	2483.500	46.85	4.72	51.57	74.00	-22.43	peak		
2		2500.000	42.39	4.79	47.18	74.00	-26.82	peak		

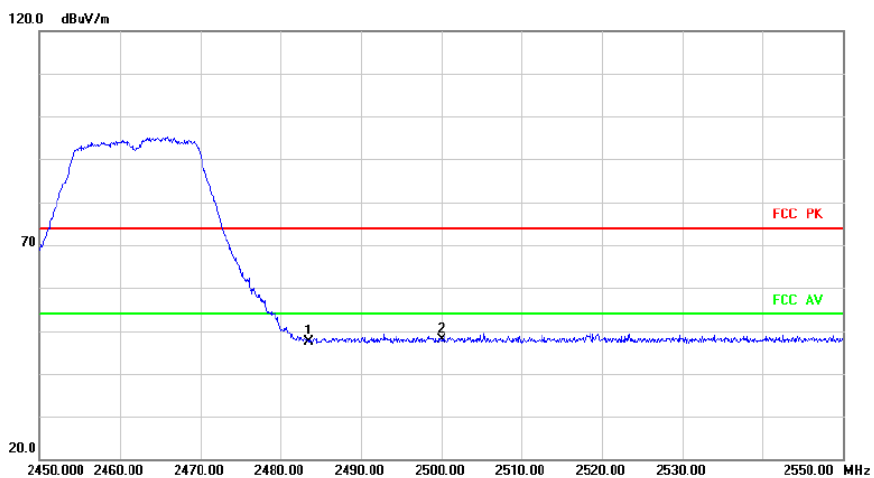
HORIZONTAL

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	Detector	cm	degree
1	*	4924.000	49.89	-1.30	48.59	74.00	-25.41	peak		

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		2483.500	42.60	4.72	47.32	74.00	-26.68	peak		
2	*	2500.000	43.06	4.79	47.85	74.00	-26.15	peak		

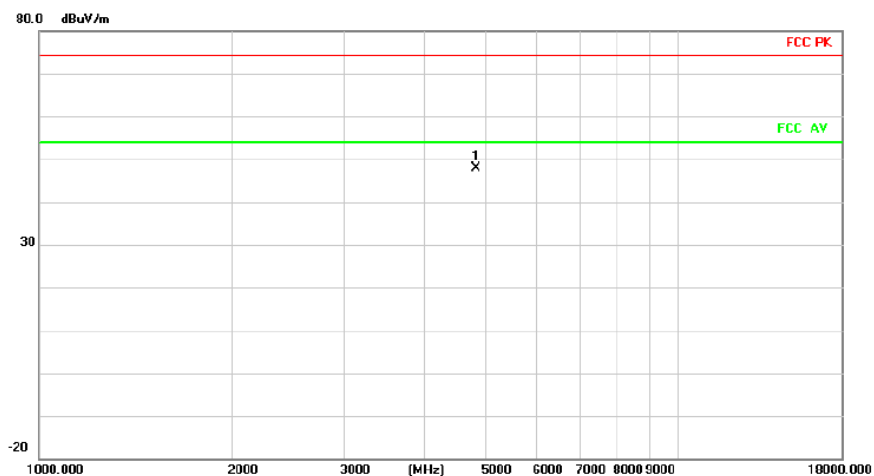
Above 1G (1GHz~18GHz)

Test mode: 11N20MIMO

Test Channel:1

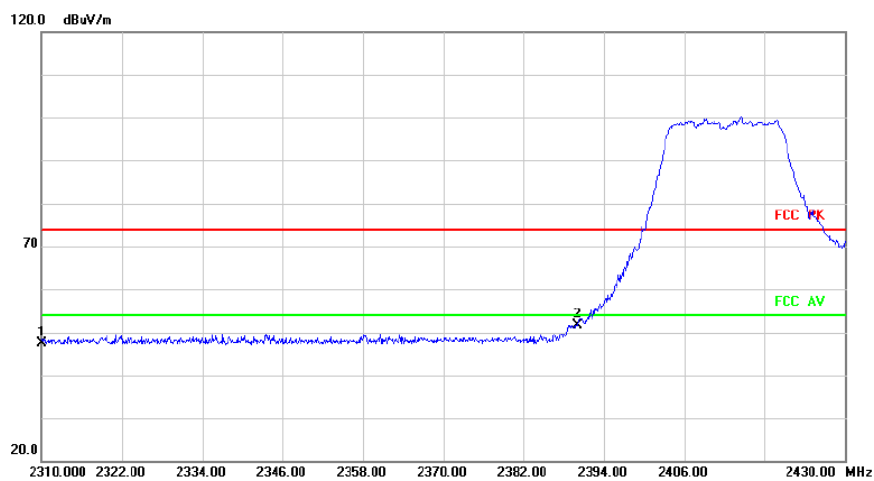
VERTICAL

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	*	4824.000	49.86	-1.88	47.98	74.00	-26.02	peak		

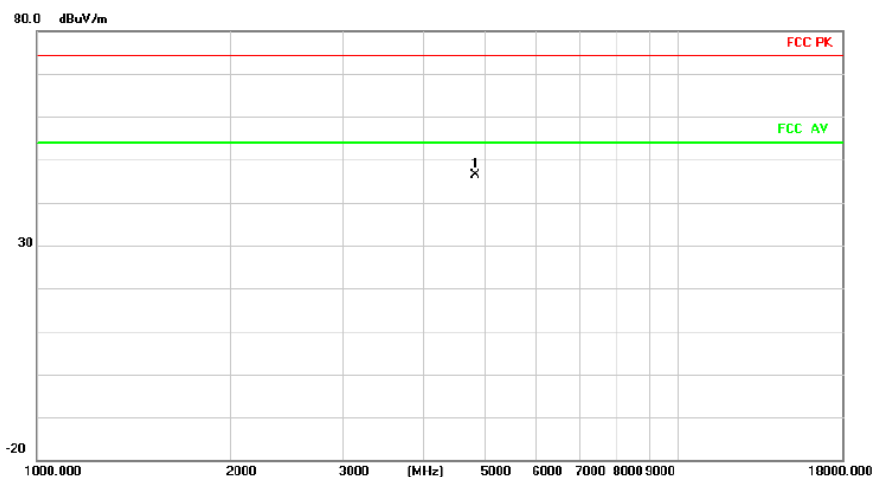
Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		2310.000	43.18	4.08	47.26	74.00	-26.74	peak		
2	*	2390.000	47.36	4.33	51.69	74.00	-22.31	peak		

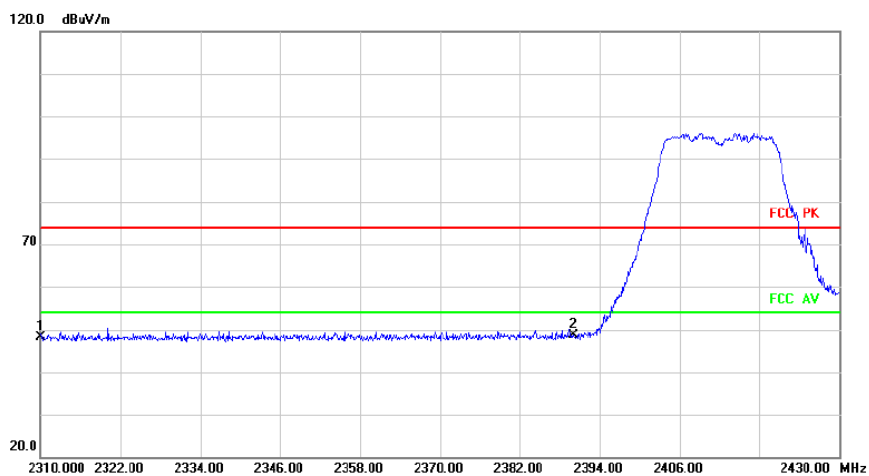
HORIZONTAL

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	Detector	cm	degree
1	*	4824.000	48.15	-1.88	46.27	74.00	-27.73	peak		

Radiated Emission



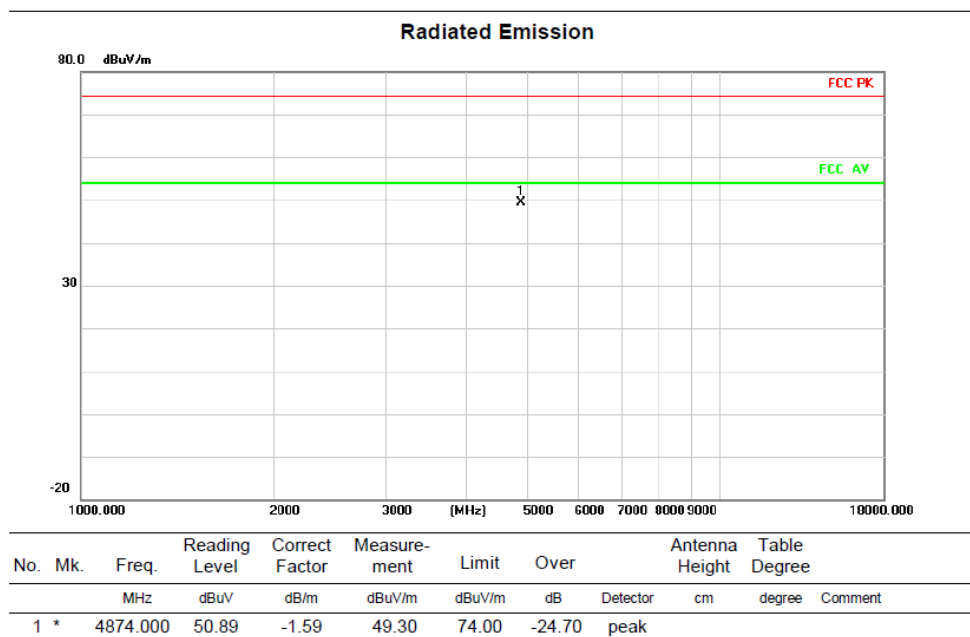
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		2310.000	44.06	4.08	48.14	74.00	-25.86	peak		
2	*	2390.000	44.38	4.33	48.71	74.00	-25.29	peak		

Above 1G (1GHz~18GHz)

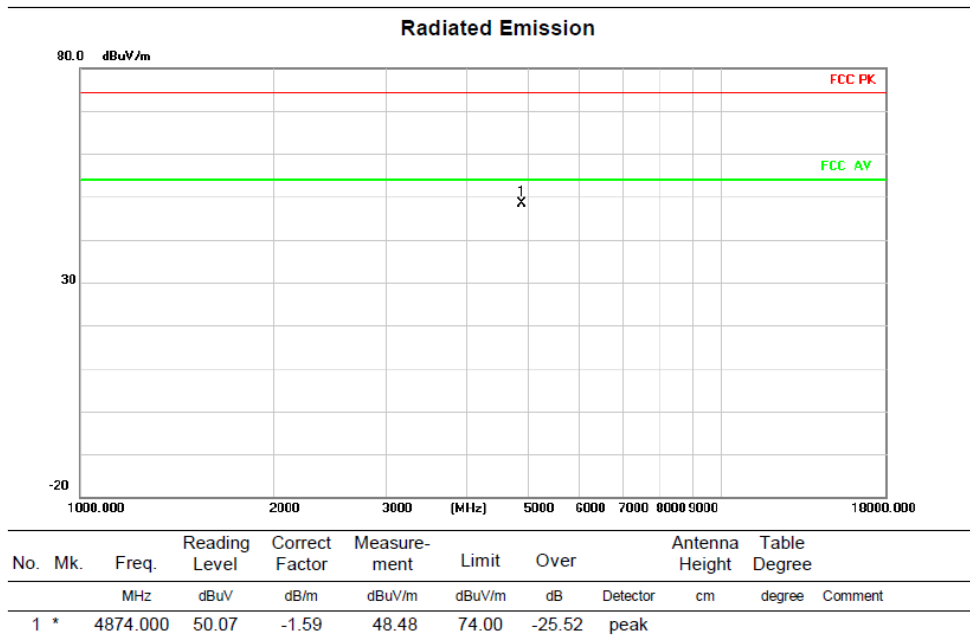
Test mode: 11N20MIMO

Test Channel: 6

VERTICAL



HORIZONTAL



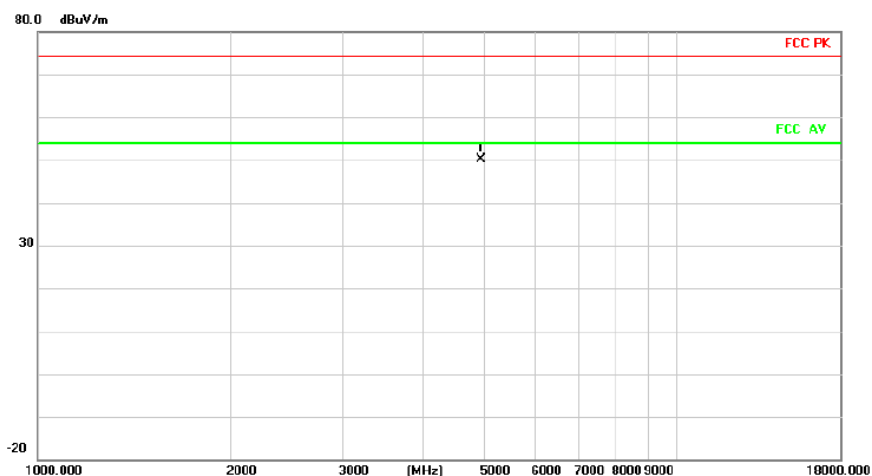
Above 1G (1GHz~18GHz)

Test mode: 11N20MIMO

Test Channel:11

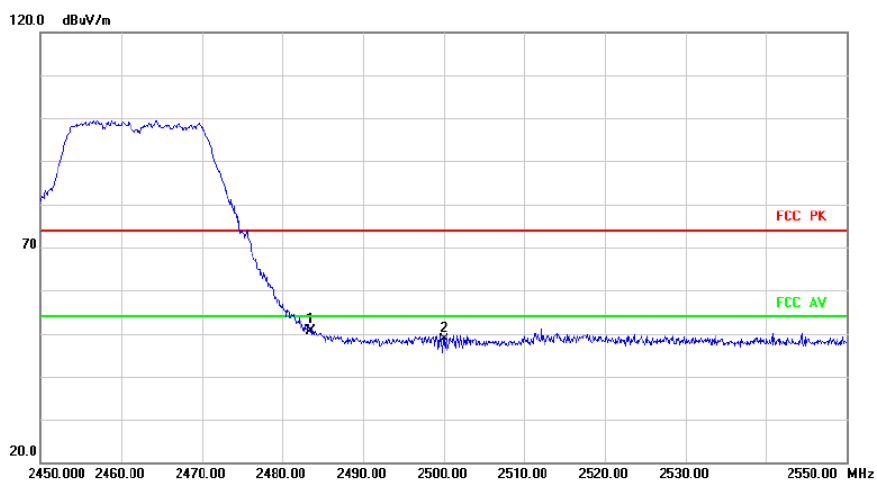
VERTICAL

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	*	4924.000	51.36	-1.30	50.06	74.00	-23.94	peak		

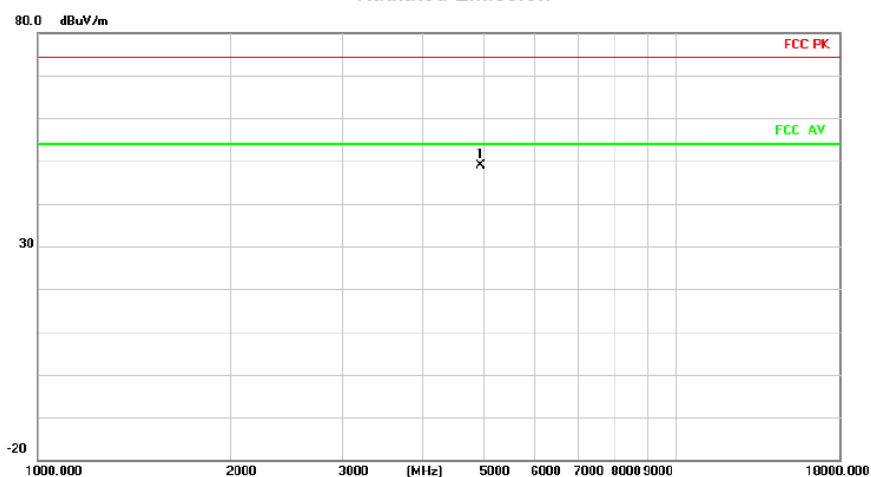
Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2483.500	45.83	4.72	50.55	74.00	-23.45	peak		
2		2500.000	43.94	4.79	48.73	74.00	-25.27	peak		

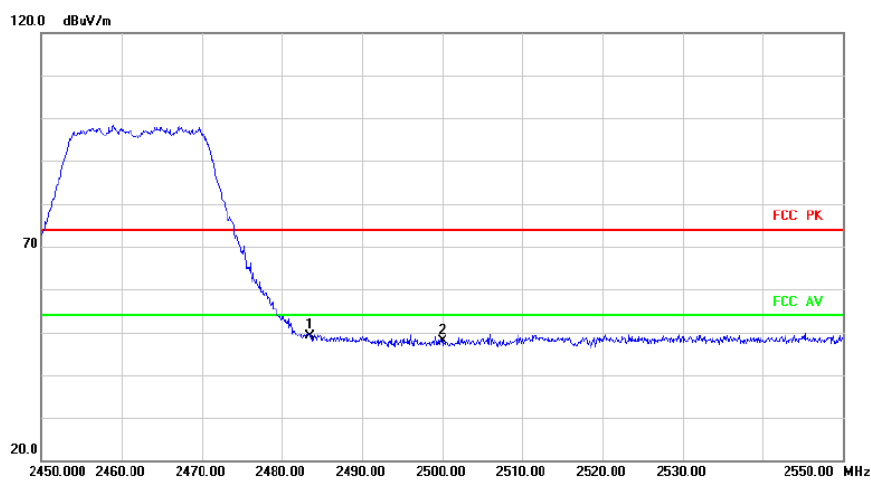
HORIZONTAL

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	Detector	cm	degree
1	*	4924.000	50.11	-1.30	48.81	74.00	-25.19	peak		

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	*	2483.500	44.40	4.72	49.12	74.00	-24.88	peak		
2		2500.000	43.14	4.79	47.93	74.00	-26.07	peak		

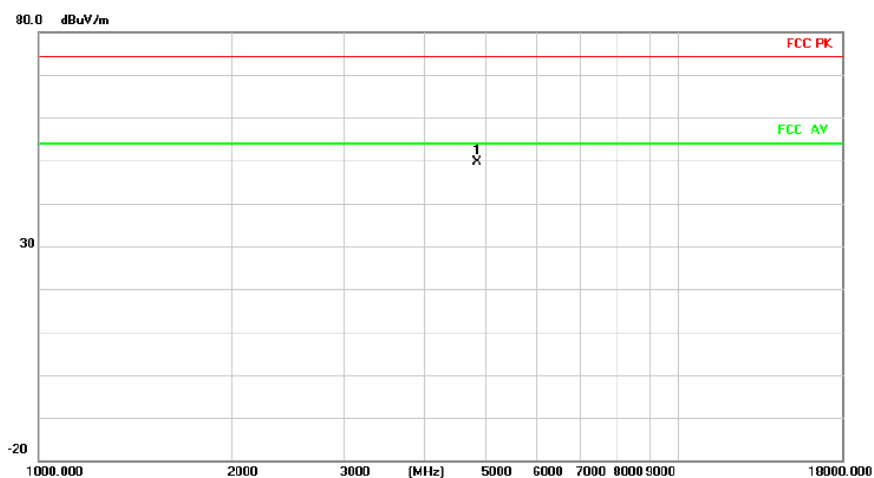
Above 1G (1GHz~18GHz)

Test mode: 11N40MIMO

Test Channel:3

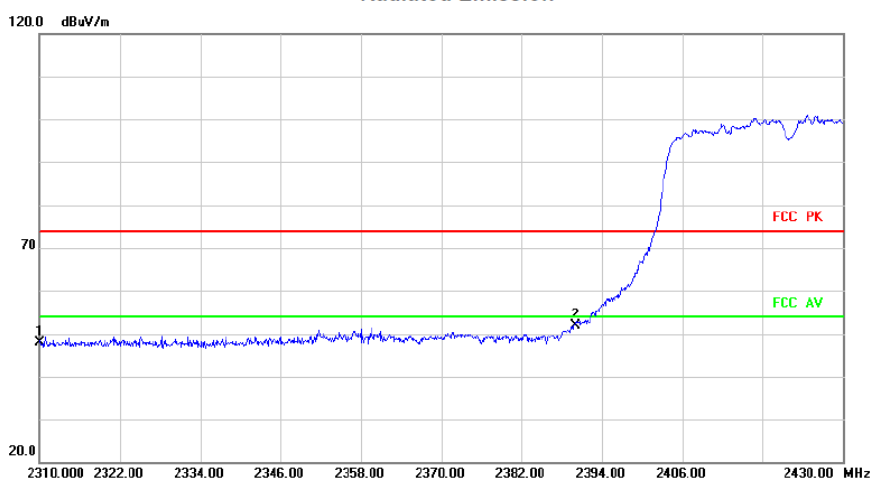
VERTICAL

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	*	4844.000	51.51	-1.77	49.74	74.00	-24.26	peak		

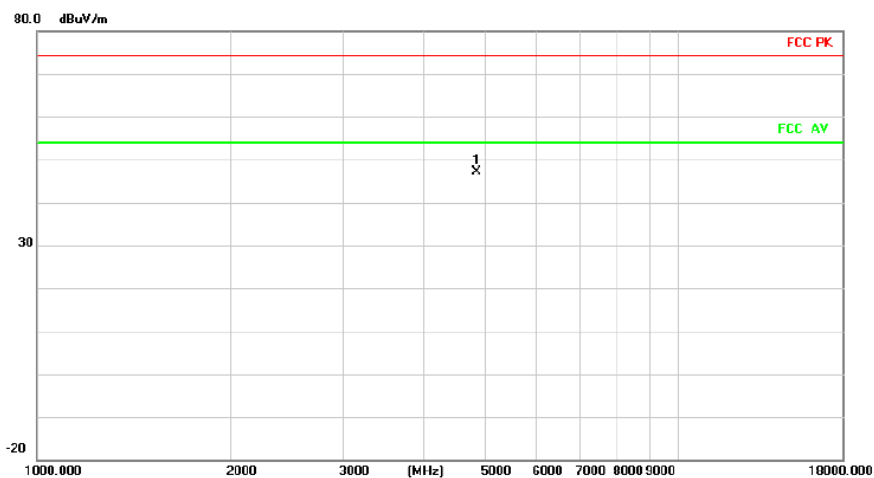
Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		2310.000	43.83	4.08	47.91	74.00	-26.09	peak		
2	*	2390.000	47.62	4.33	51.95	74.00	-22.05	peak		

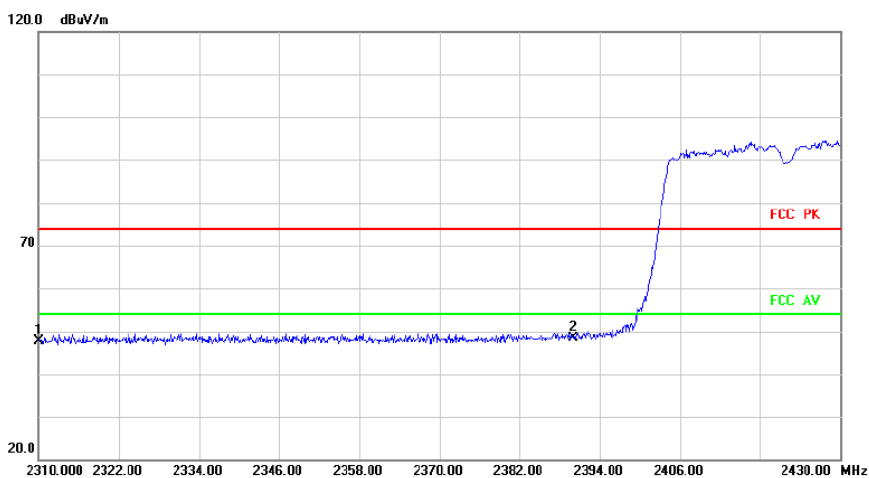
HORIZONTAL

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	Detector	cm	degree
1	*	4844.000	48.93	-1.77	47.16	74.00	-26.84	peak		

Radiated Emission



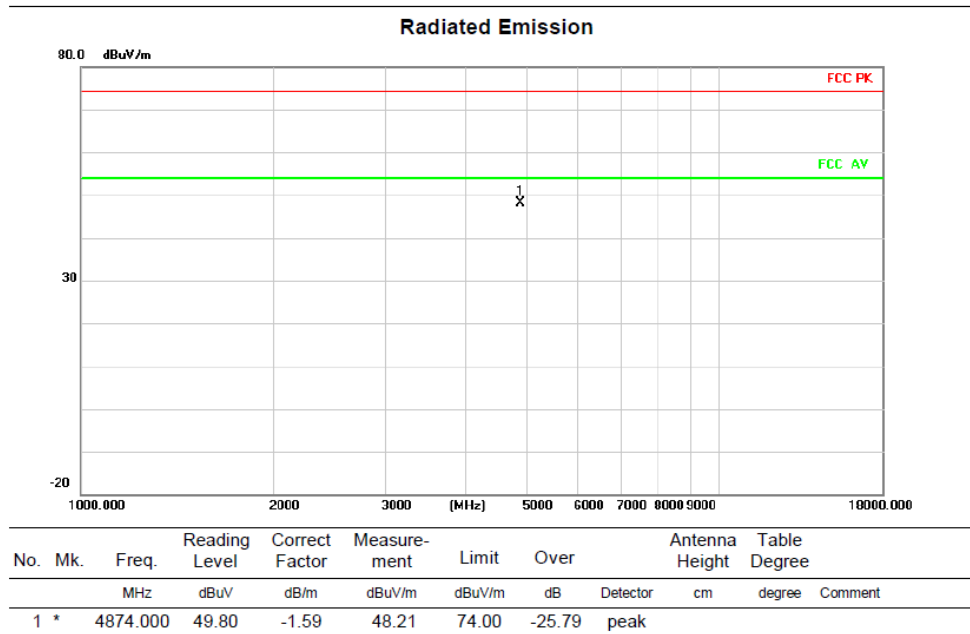
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		2310.000	43.66	4.08	47.74	74.00	-26.26	peak		
2	*	2390.000	44.08	4.33	48.41	74.00	-25.59	peak		

Above 1G (1GHz~18GHz)

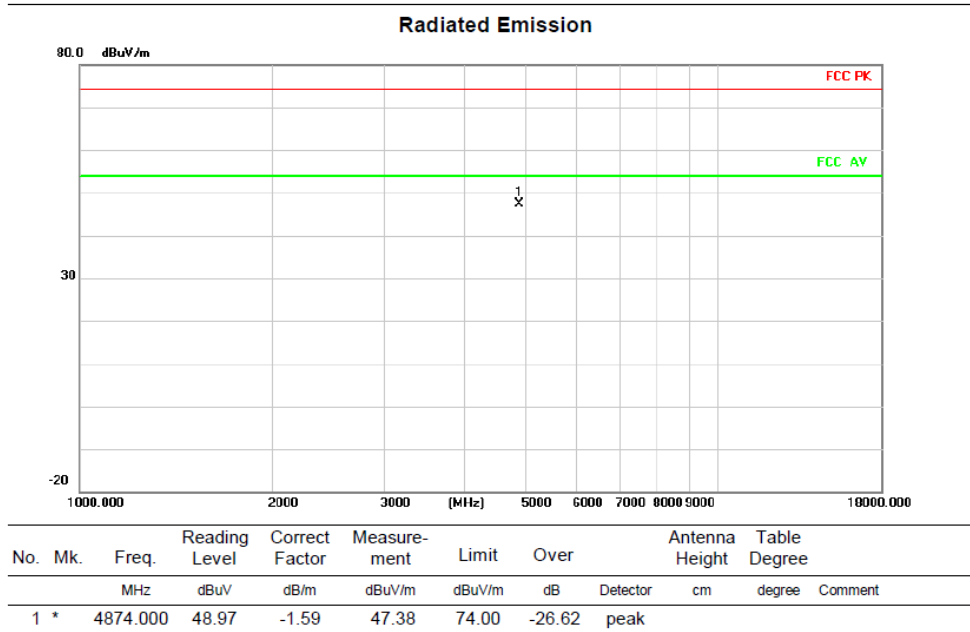
Test mode: 11N40MIMO

Test Channel: 6

VERTICAL



HORIZONTAL



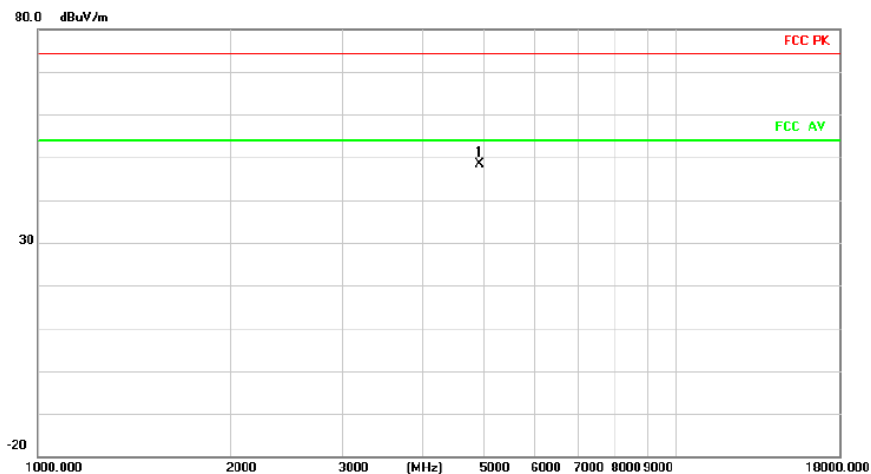
Above 1G (1GHz~18GHz)

Test mode: 11N40MIMO

Test Channel:9

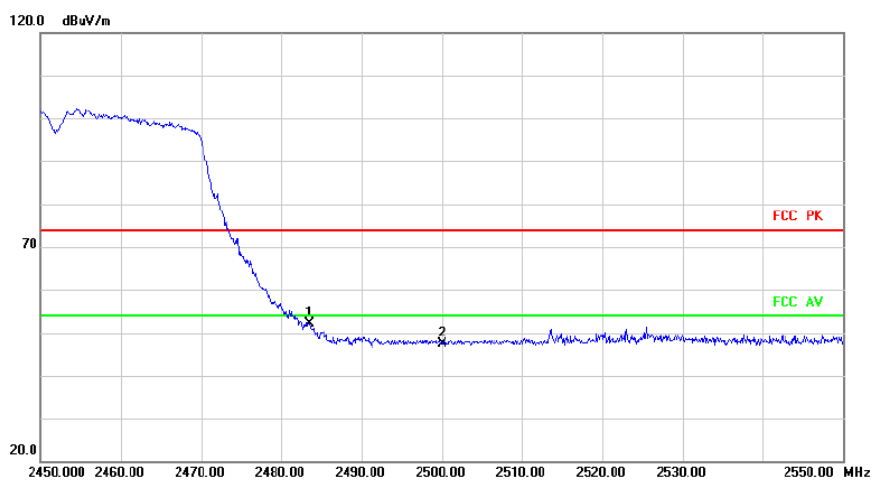
VERTICAL

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	*	4904.000	49.91	-1.42	48.49	74.00	-25.51	peak		

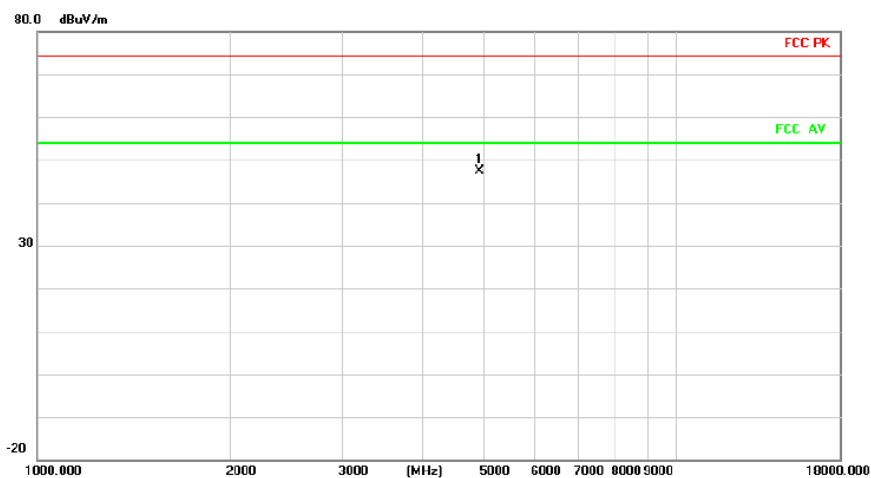
Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2483.500	47.52	4.72	52.24	74.00	-21.76	peak		
2		2500.000	42.54	4.79	47.33	74.00	-26.67	peak		

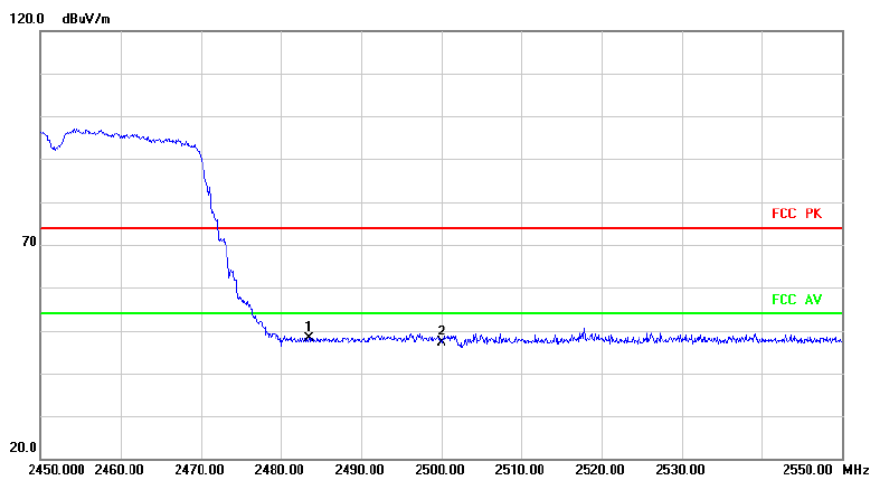
HORIZONTAL

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	Detector	cm	degree
1	*	4904.000	48.91	-1.42	47.49	74.00	-26.51	peak		

Radiated Emission



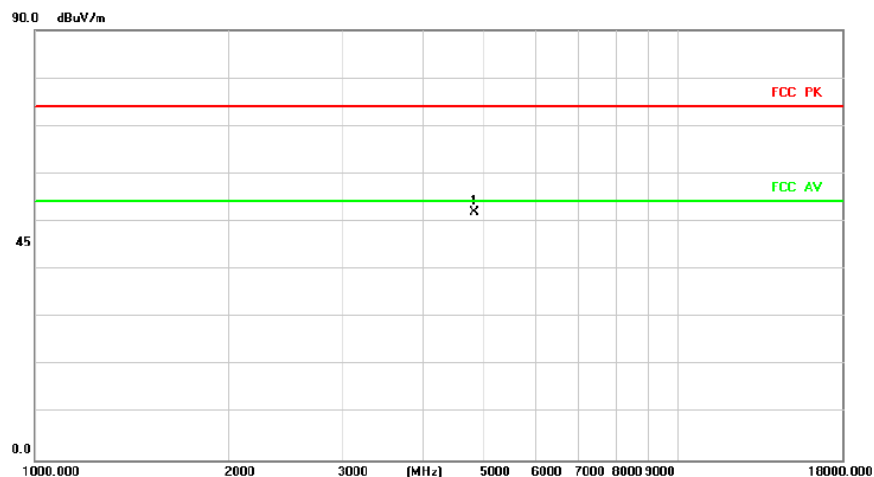
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	*	2483.500	43.47	4.72	48.19	74.00	-25.81	peak		
2		2500.000	42.41	4.79	47.20	74.00	-26.80	peak		

For EUT2

Above 1G (1GHz~18GHz)	Test mode: 11B	Test Channel:1
-----------------------	----------------	----------------

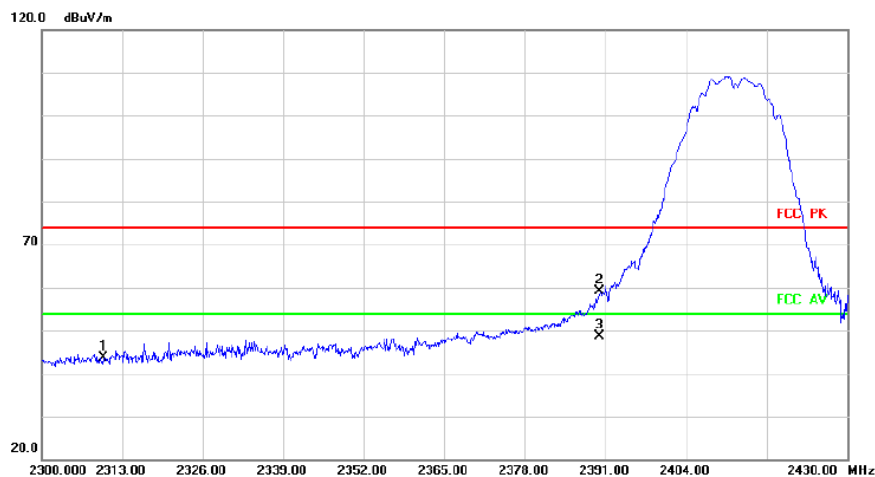
VERTICAL

Radiated Emission



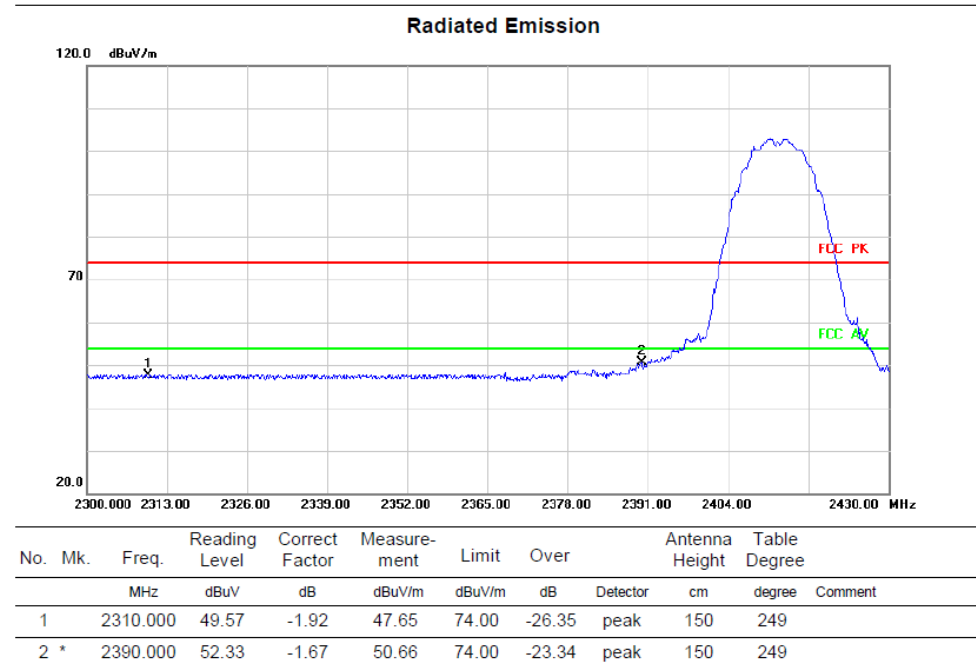
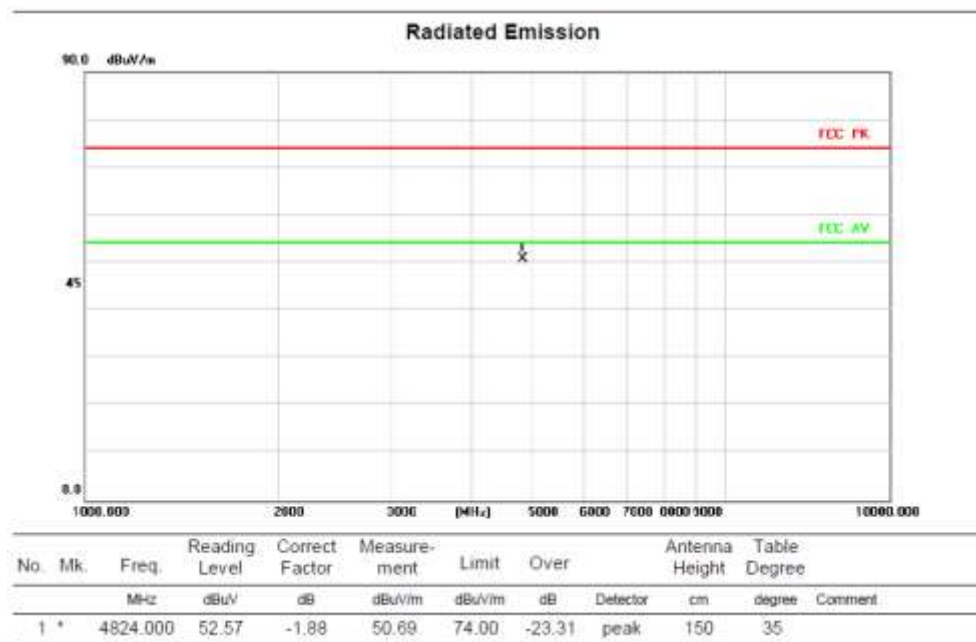
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	4824.000	53.65	-1.88	51.77	74.00	-22.23	peak	200	157

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		2310.000	45.49	-1.92	43.57	74.00	-30.43	peak	150	42
2		2390.000	60.81	-1.67	59.14	74.00	-14.86	peak	200	241
3	*	2390.000	50.31	-1.67	48.64	54.00	-5.36	AVG	200	241

HORIZONTAL

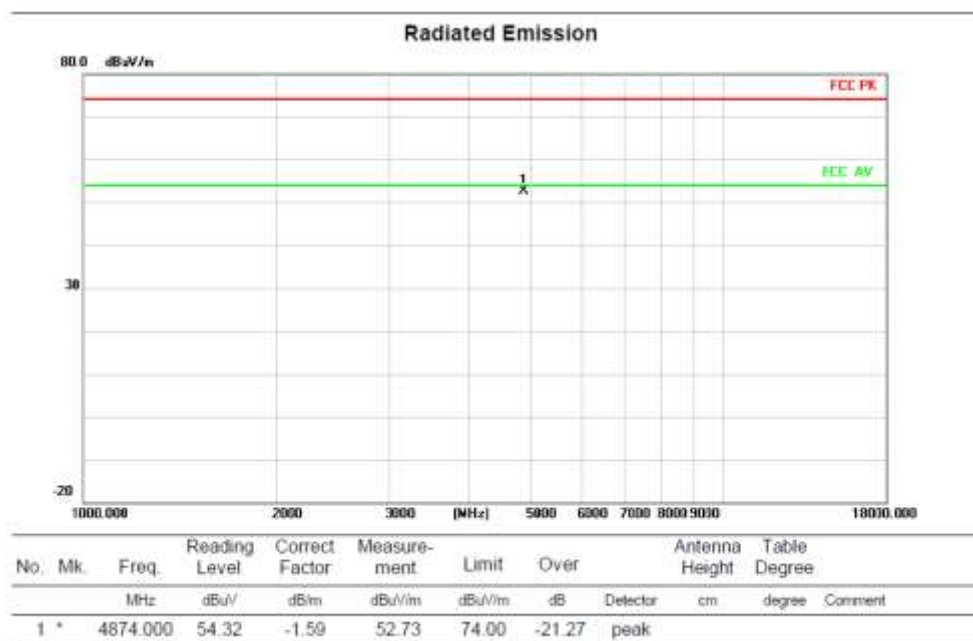


Above 1G (1GHz~18GHz)

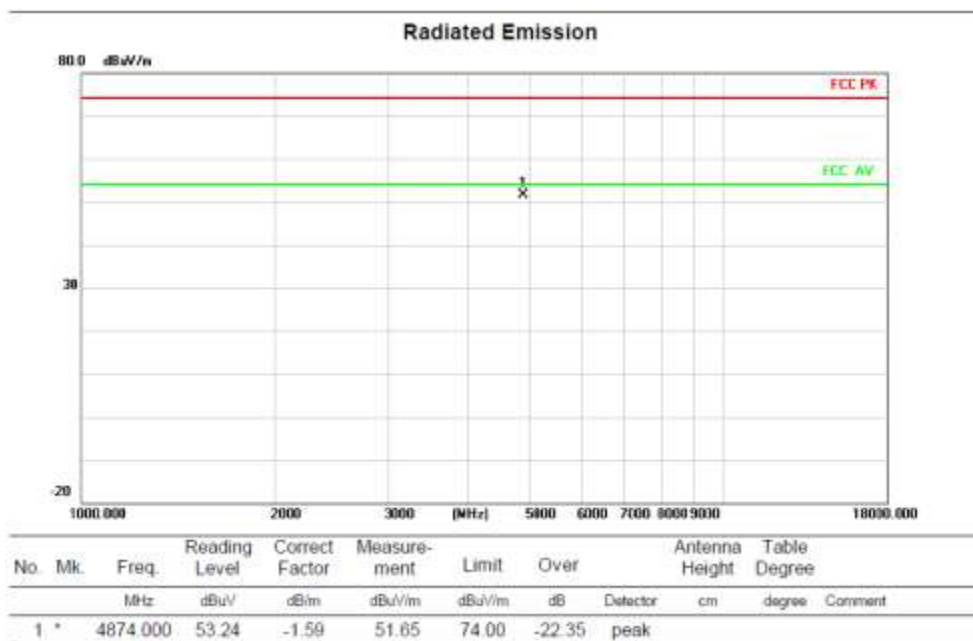
Test mode: 11B

Test Channel: 6

VERTICAL



HORIZONTAL



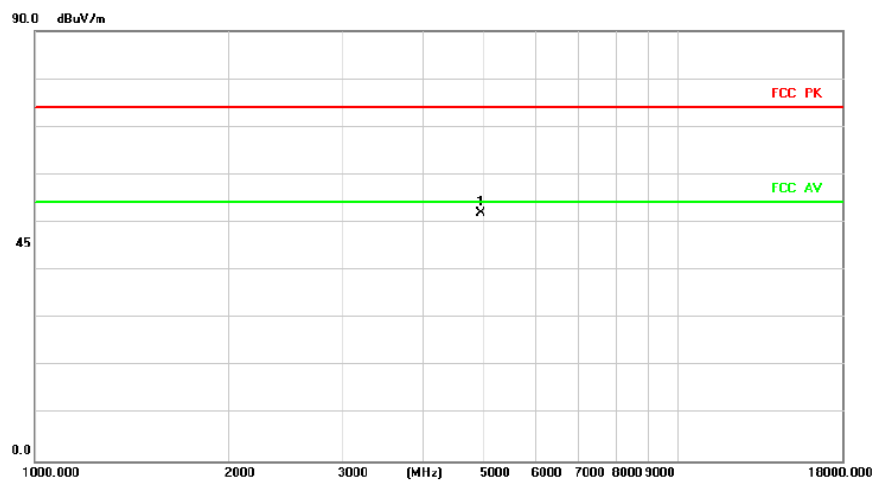
Above 1G (1GHz~18GHz)

Test mode: 11B

Test Channel:11

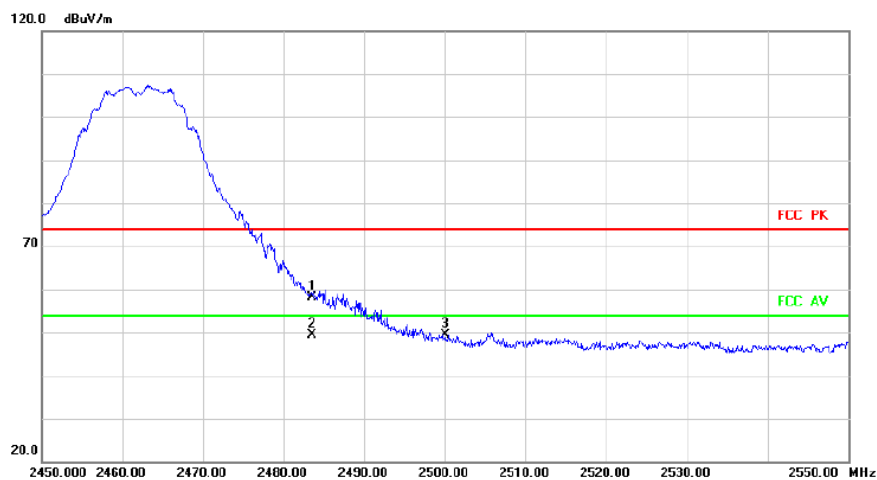
VERTICAL

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	*	4924.000	53.11	-1.30	51.81	74.00	-22.19	peak	150	135

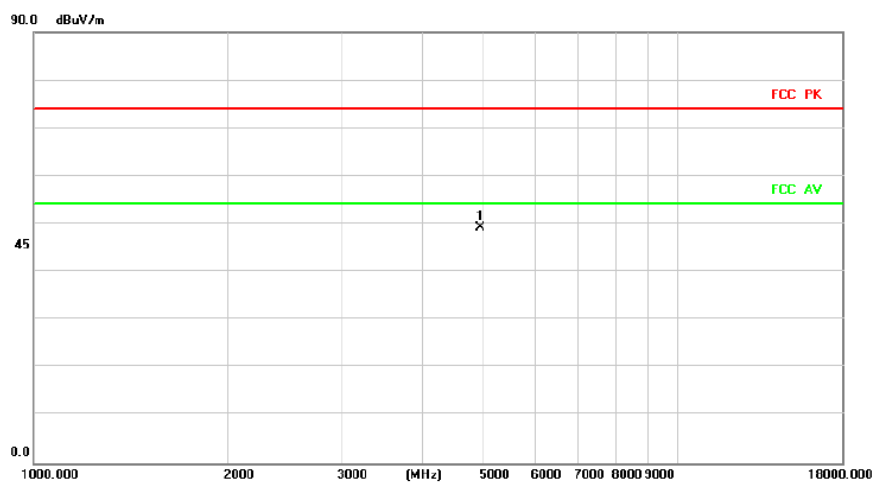
Radiated Emission



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		2483.500	59.44	-1.28	58.16	74.00	-15.84	peak	150	243
2	*	2483.500	50.55	-1.28	49.27	54.00	-4.73	AVG	150	243
3		2500.000	50.47	-1.21	49.26	74.00	-24.74	peak	200	92

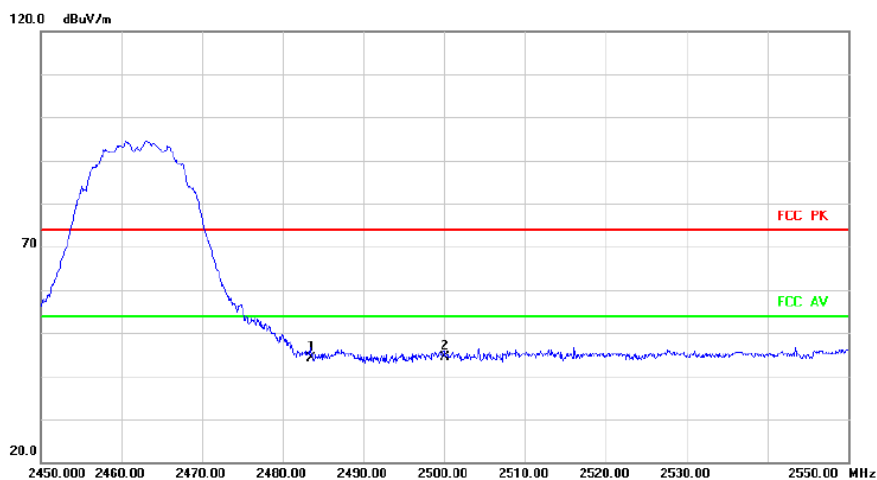
HORIZONTAL

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	Detector	cm	degree
1	*	4924.000	50.39	-1.30	49.09	74.00	-24.91	peak	200	197

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		2483.500	55.35	-11.28	44.07	74.00	-29.93	peak	200	75
2	*	2500.000	55.57	-11.21	44.36	74.00	-29.64	peak	150	119

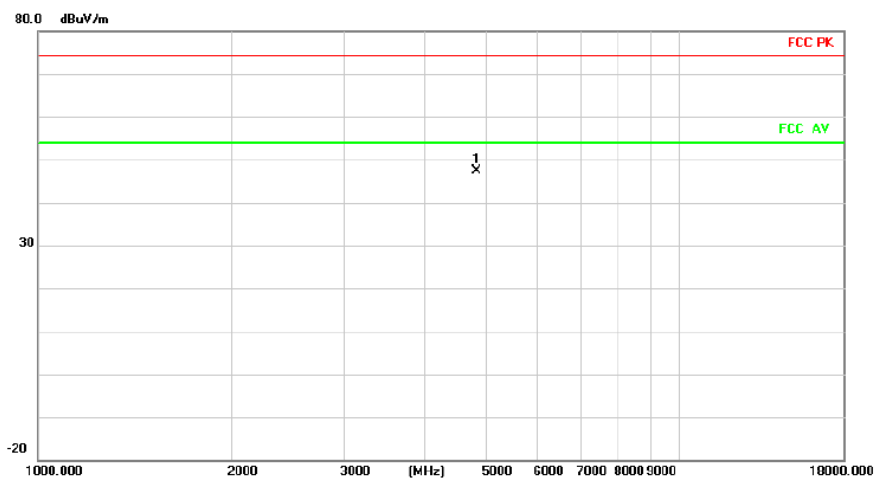
Above 1G (1GHz~18GHz)

Test mode:11G

Test Channel:1

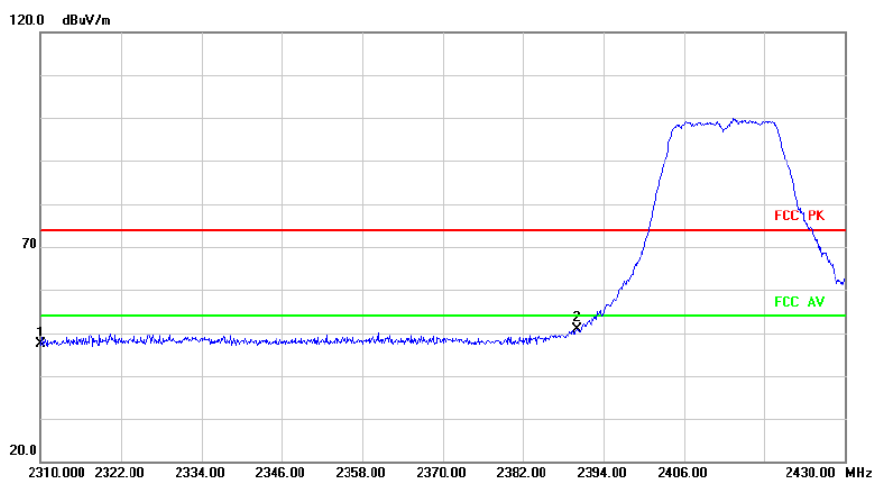
VERTICAL

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	*	4824.000	49.31	-1.88	47.43	74.00	-26.57	peak		

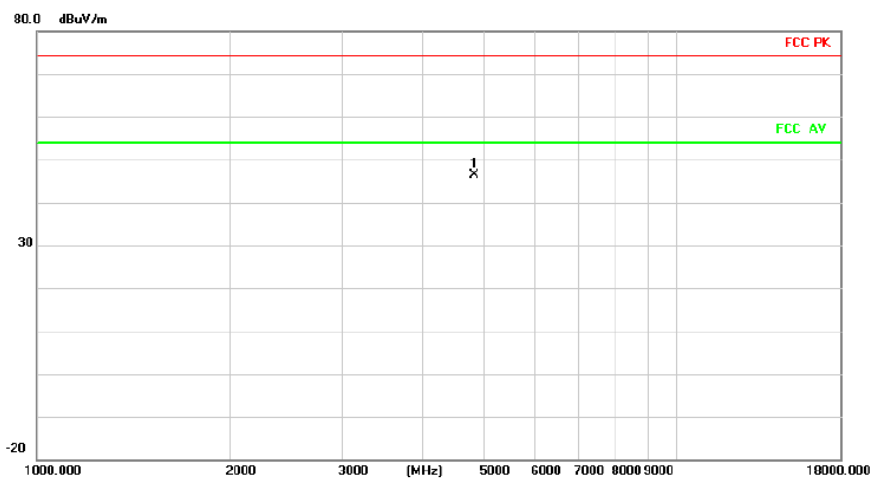
Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		2310.000	43.28	4.08	47.36	74.00	-26.64	peak		
2	*	2390.000	46.46	4.33	50.79	74.00	-23.21	peak		

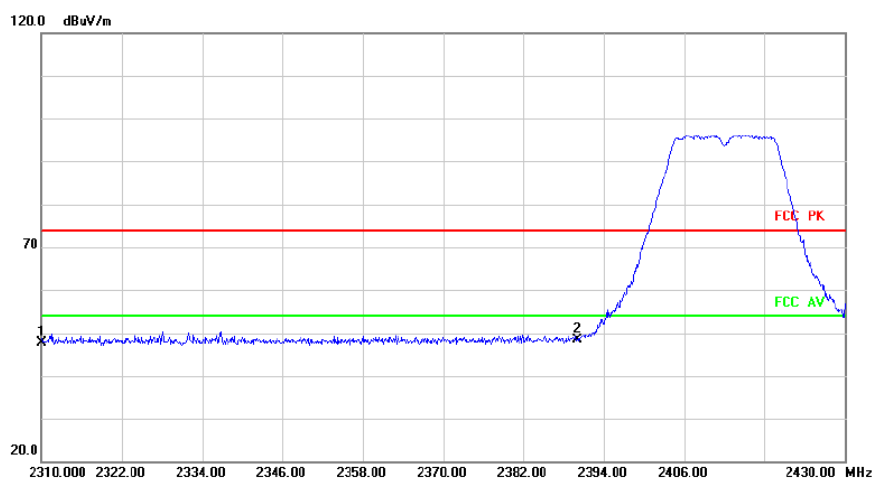
HORIZONTAL

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	*	4824.000	48.38	-1.88	46.50	74.00	-27.50	peak		

Radiated Emission



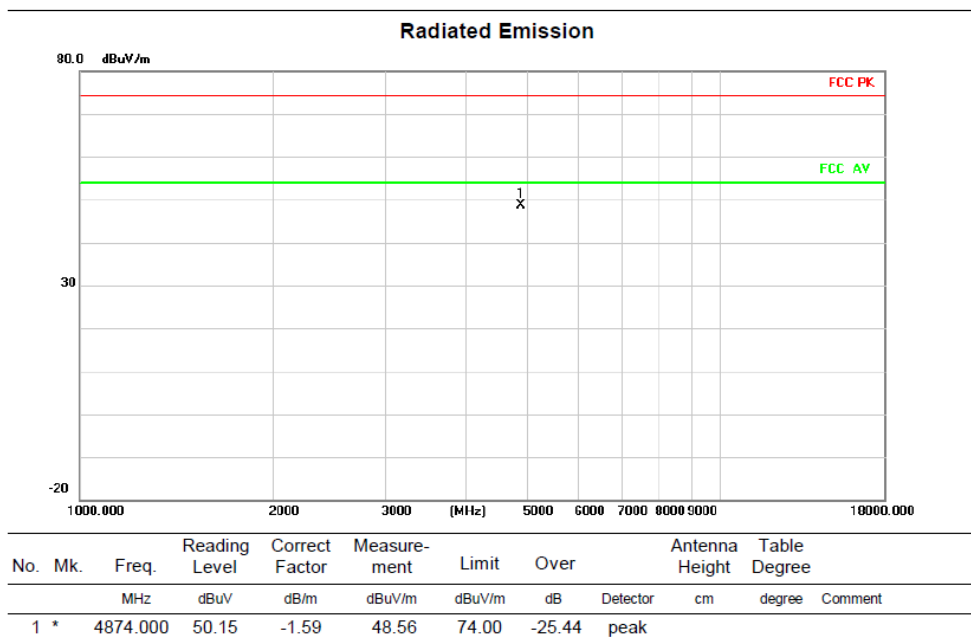
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		2310.000	43.63	4.08	47.71	74.00	-26.29	peak		
2	*	2390.000	44.17	4.33	48.50	74.00	-25.50	peak		

Above 1G (1GHz~18GHz)

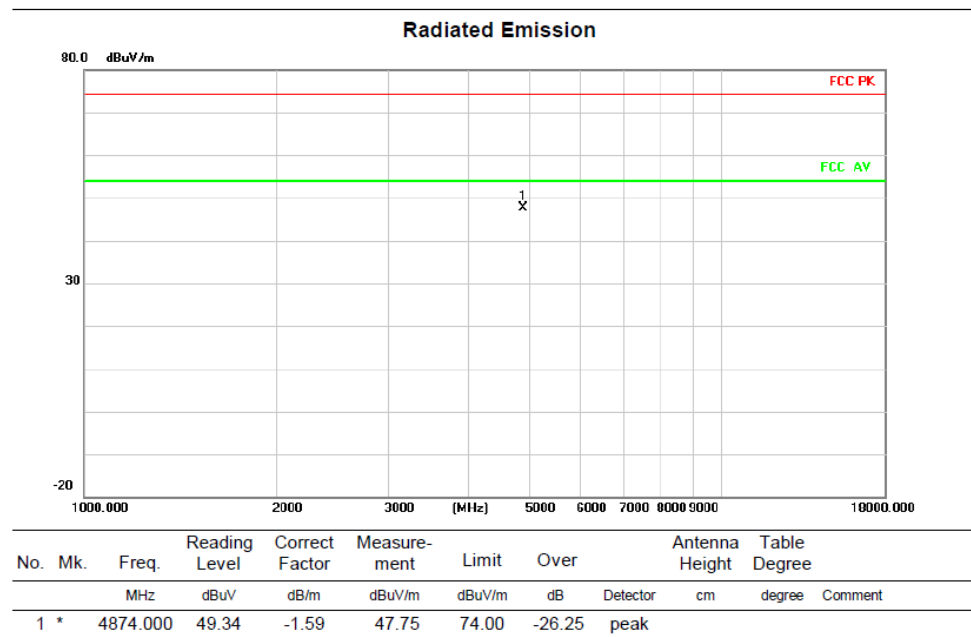
Test mode: 11G

Test Channel: 6

VERTICAL



HORIZONTAL



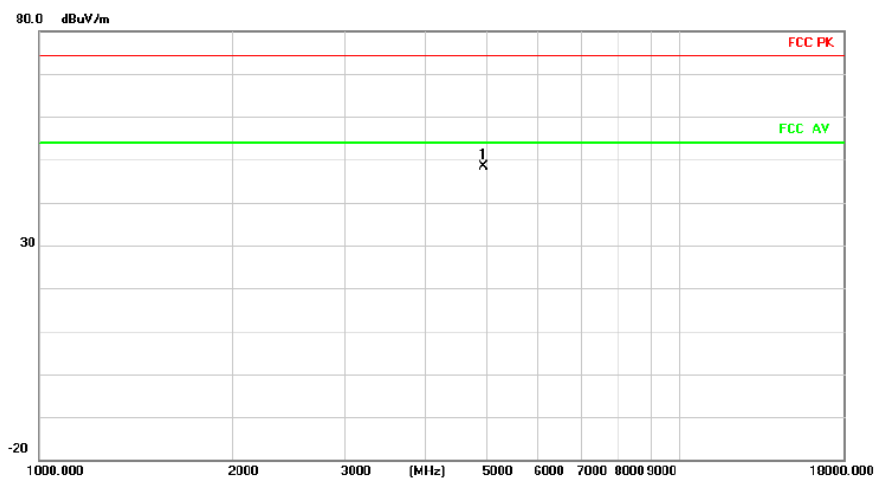
Above 1G (1GHz~18GHz)

Test mode: 11G

Test Channel:11

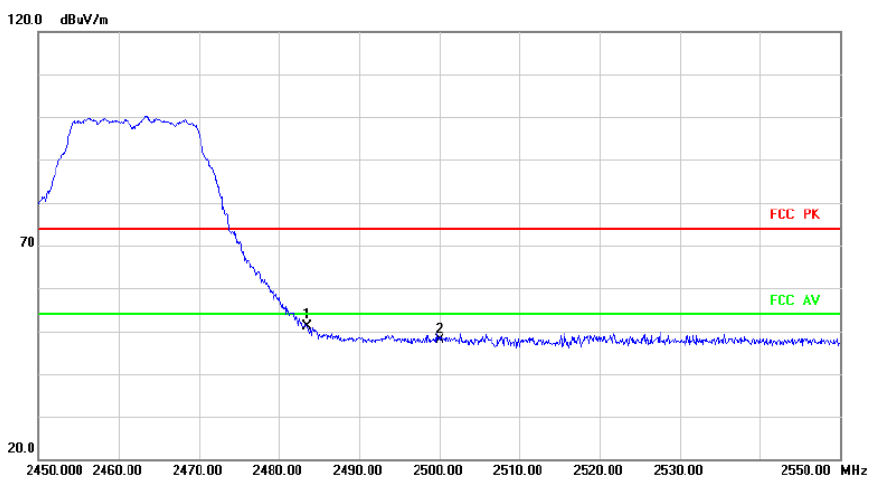
VERTICAL

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	*	4924.000	49.73	-1.30	48.43	74.00	-25.57	peak		

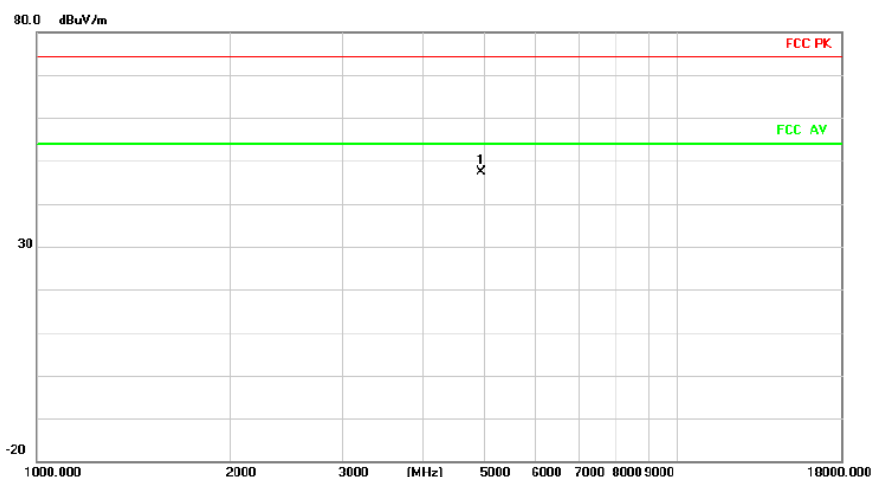
Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	*	2483.500	46.52	4.72	51.24	74.00	-22.76	peak		
2		2500.000	43.20	4.79	47.99	74.00	-26.01	peak		

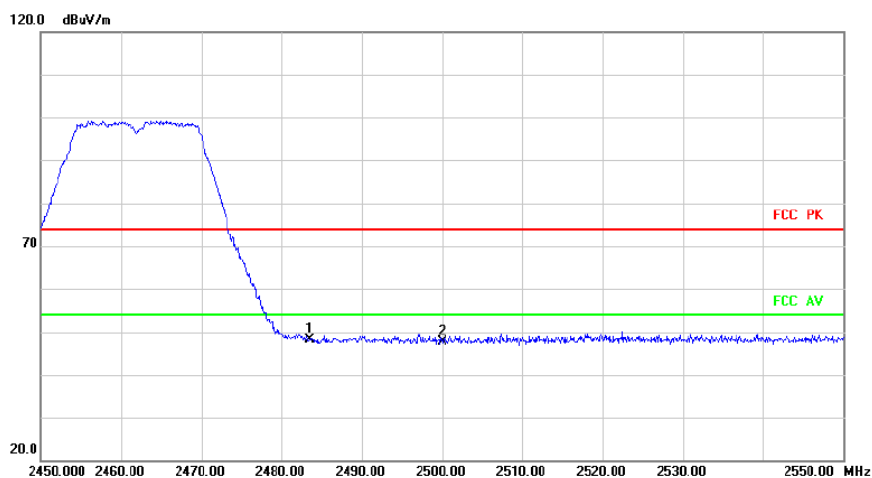
HORIZONTAL

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	Detector	cm	degree
1	*	4924.000	48.77	-1.30	47.47	74.00	-26.53	peak		

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	*	2483.500	43.48	4.72	48.20	74.00	-25.80	peak		
2		2500.000	42.95	4.79	47.74	74.00	-26.26	peak		

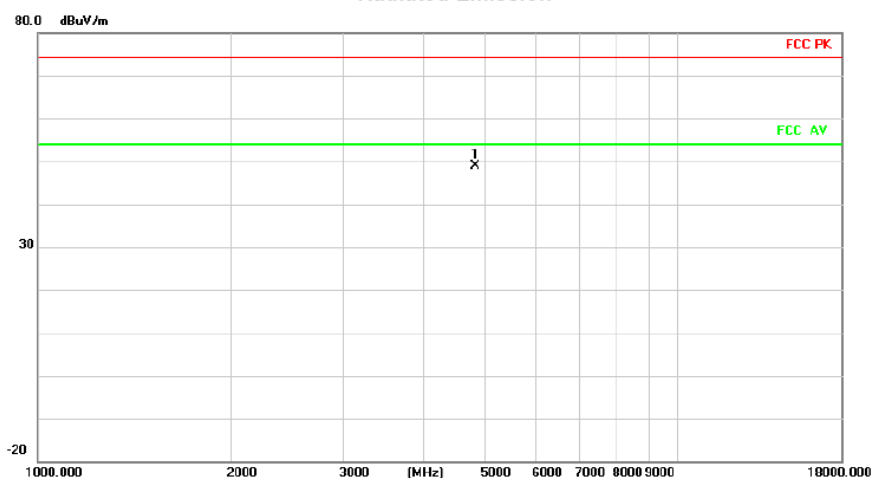
Above 1G (1GHz~18GHz)

Test mode: 11N20MIMO

Test Channel:1

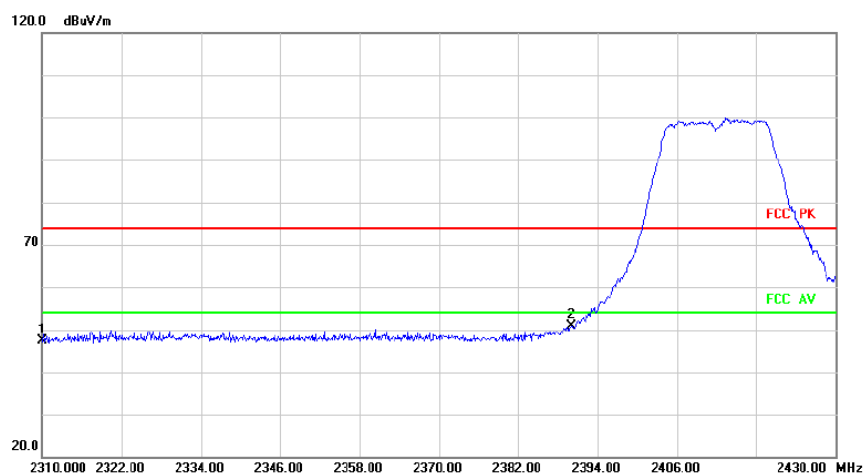
VERTICAL

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	4824.000	50.82	-1.88	48.94	74.00	-25.06	peak		

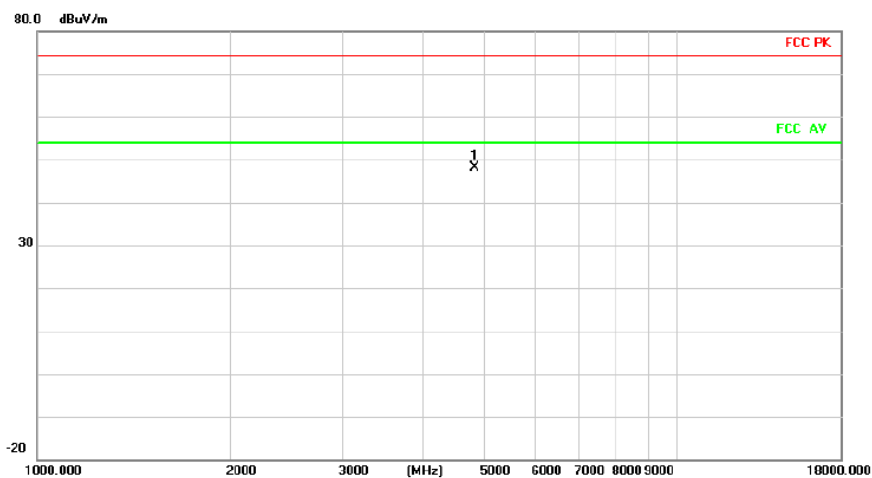
Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		2310.000	43.28	4.08	47.36	74.00	-26.64	peak		
2	*	2390.000	46.46	4.33	50.79	74.00	-23.21	peak		

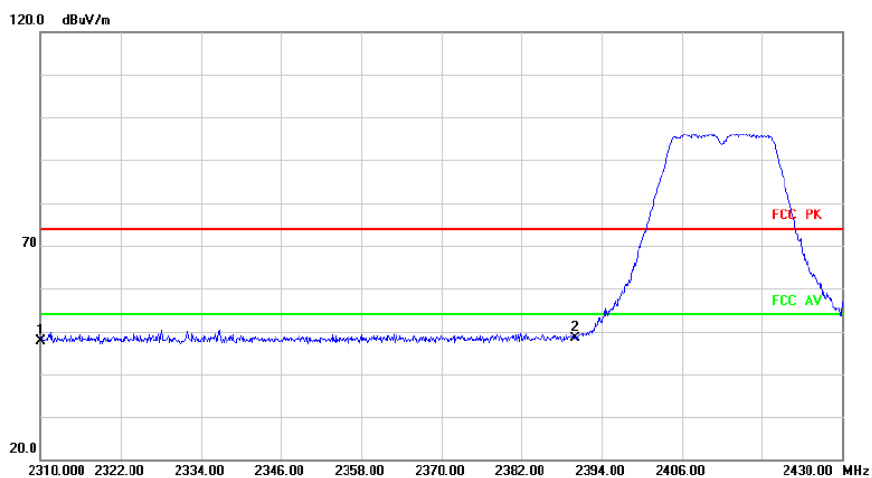
HORIZONTAL

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	Detector	cm	degree
1	*	4824.000	50.02	-1.88	48.14	74.00	-25.86	peak		

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		2310.000	43.63	4.08	47.71	74.00	-26.29	peak		
2	*	2390.000	44.17	4.33	48.50	74.00	-25.50	peak		

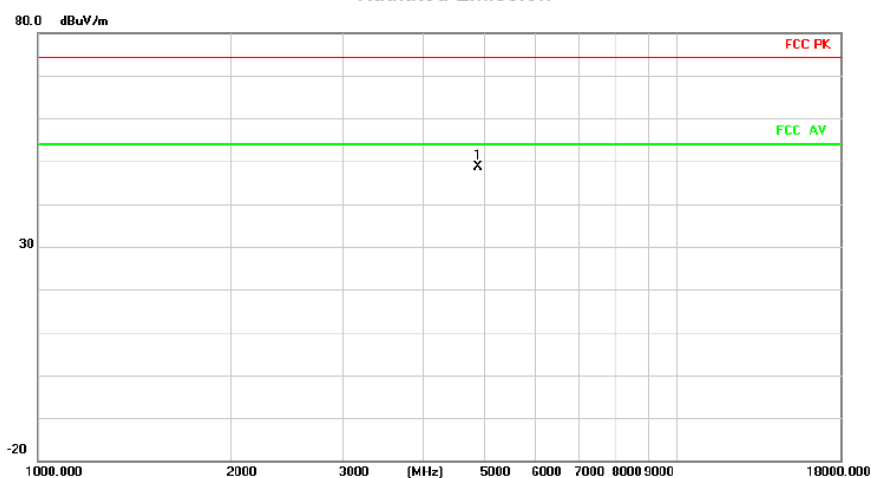
Above 1G (1GHz~18GHz)

Test mode: 11N20MIMO

Test Channel: 6

VERTICAL

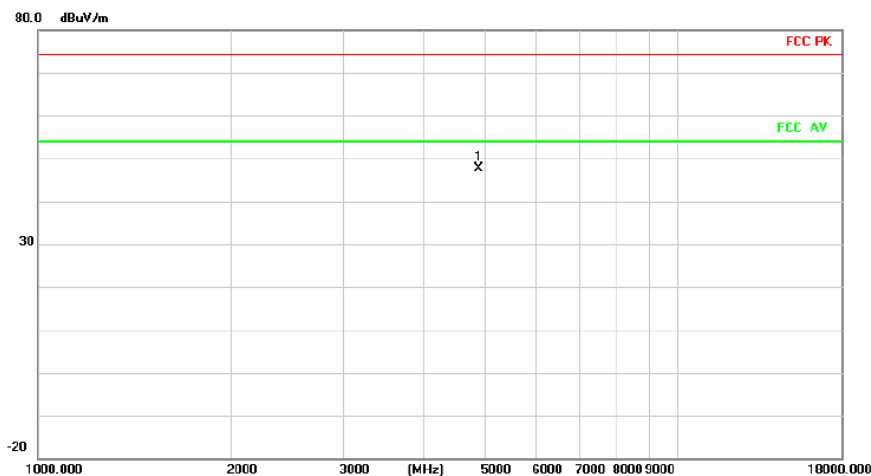
Radiated Emission



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	*	4874.000	50.15	-1.59	48.56	74.00	-25.44	peak		

HORIZONTAL

Radiated Emission



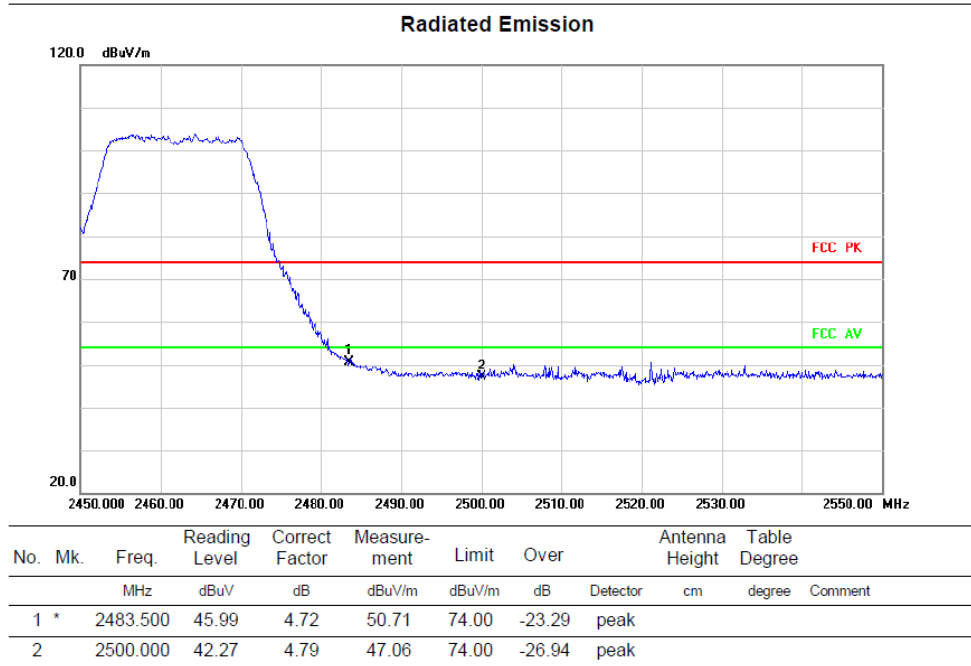
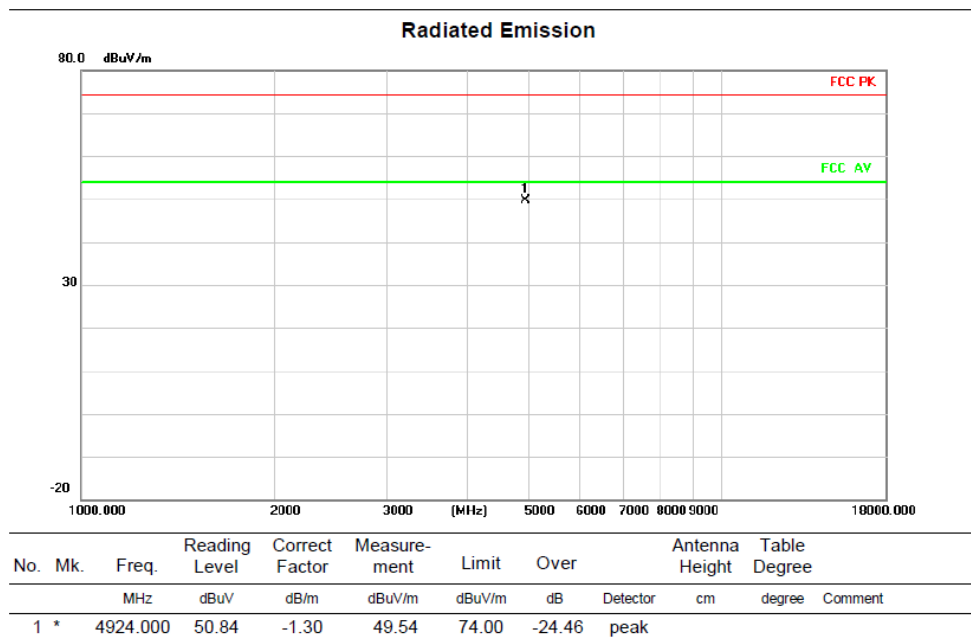
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	4874.000	49.29	-1.59	47.70	74.00	-26.30	peak		

Above 1G (1GHz~18GHz)

Test mode: 11N20MIMO

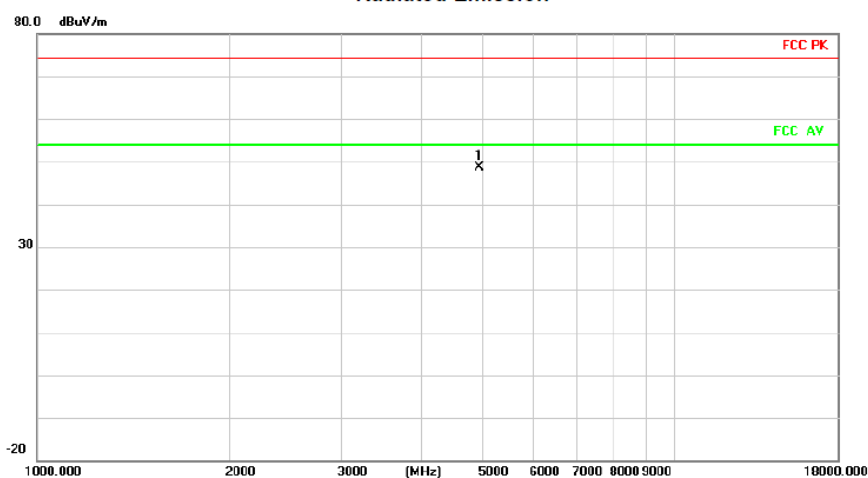
Test Channel:11

VERTICAL



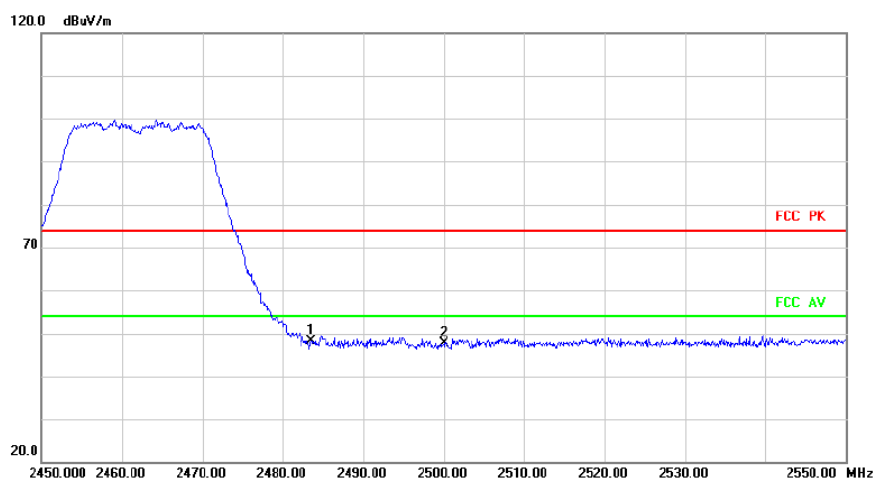
HORIZONTAL

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	Detector	cm	degree
1	*	4924.000	50.03	-1.30	48.73	74.00	-25.27	peak		

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	*	2483.500	43.34	4.72	48.06	74.00	-25.94	peak		
2		2500.000	42.88	4.79	47.67	74.00	-26.33	peak		

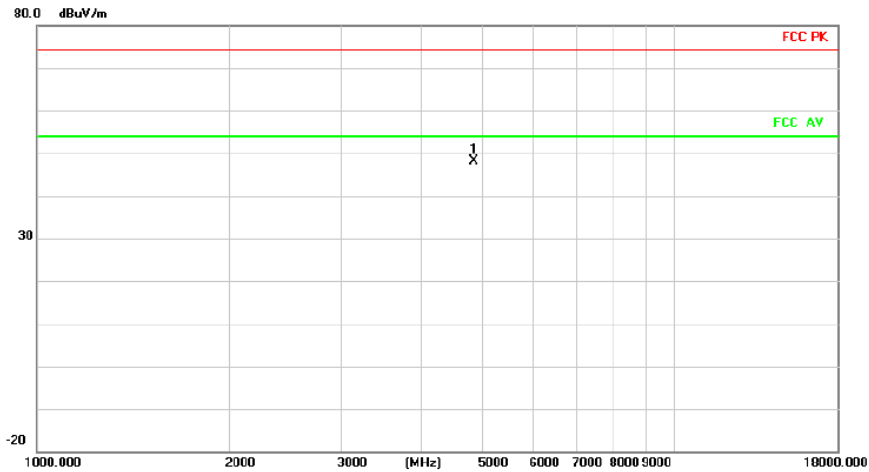
Above 1G (1GHz~18GHz)

Test mode: 11N40MIMO

Test Channel:3

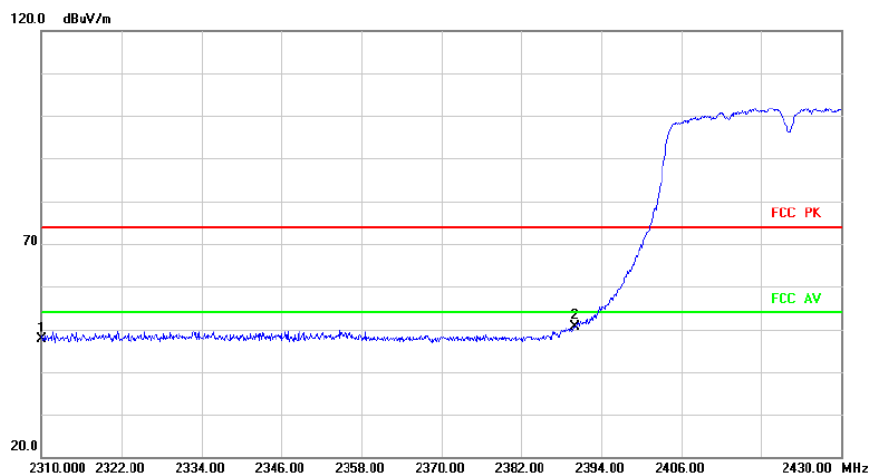
VERTICAL

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	*	4844.000	49.95	-1.77	48.18	74.00	-25.82	peak		

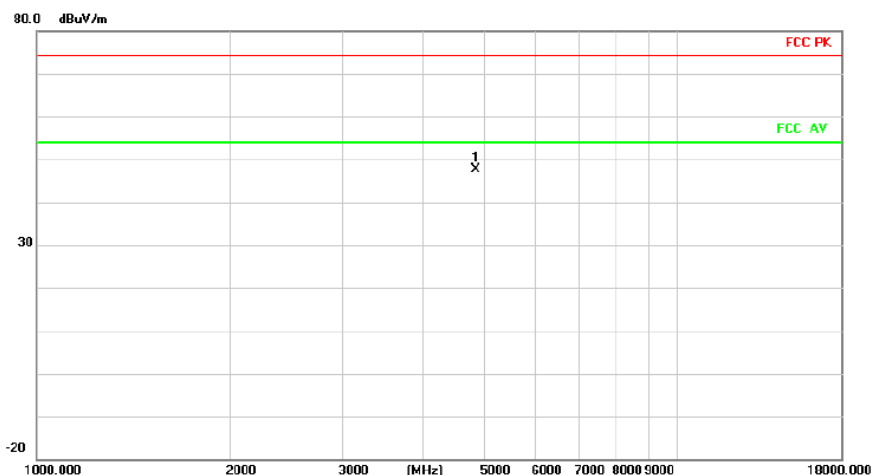
Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		2310.000	43.44	4.08	47.52	74.00	-26.48	peak		
2	*	2390.000	46.30	4.33	50.63	74.00	-23.37	peak		

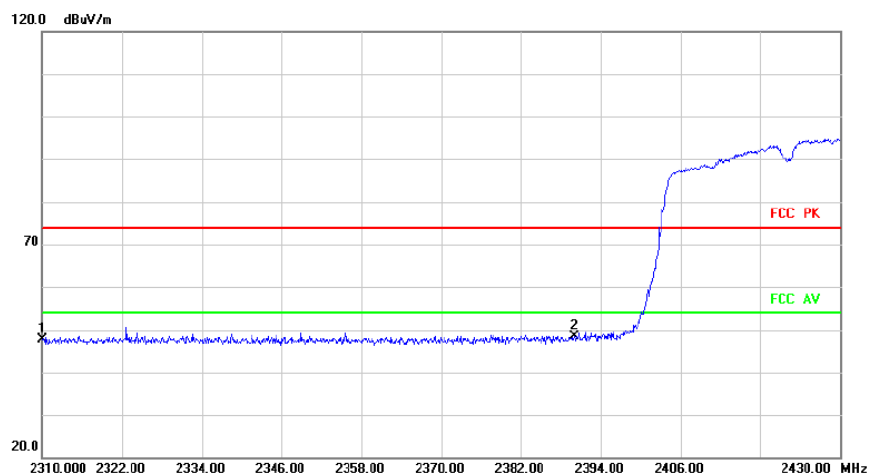
HORIZONTAL

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	Detector	cm	degree
1	*	4844.000	49.33	-1.77	47.56	74.00	-26.44	peak		

Radiated Emission



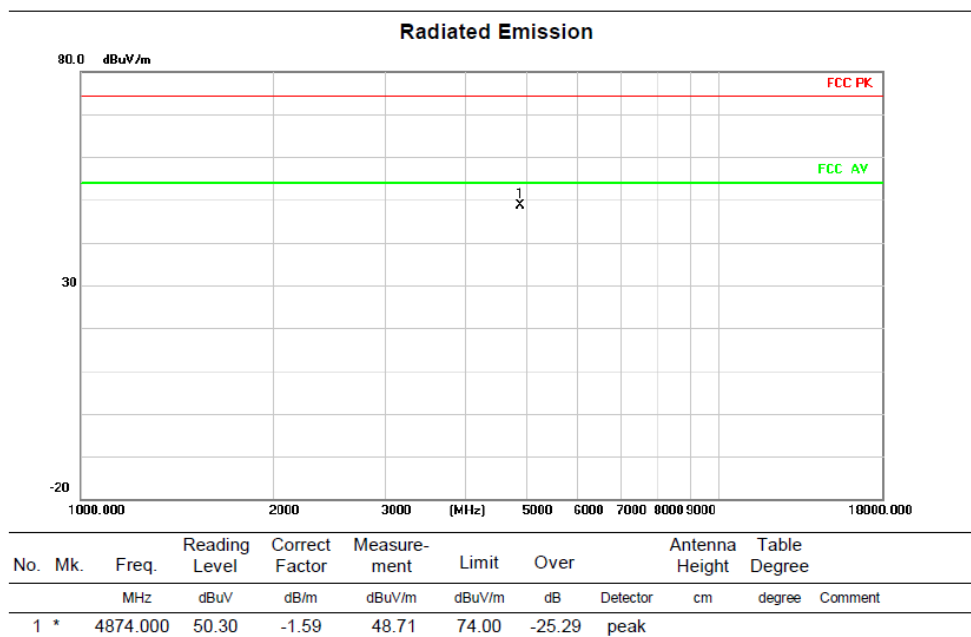
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		2310.000	43.56	4.08	47.64	74.00	-26.36	peak		
2	*	2390.000	44.09	4.33	48.42	74.00	-25.58	peak		

Above 1G (1GHz~18GHz)

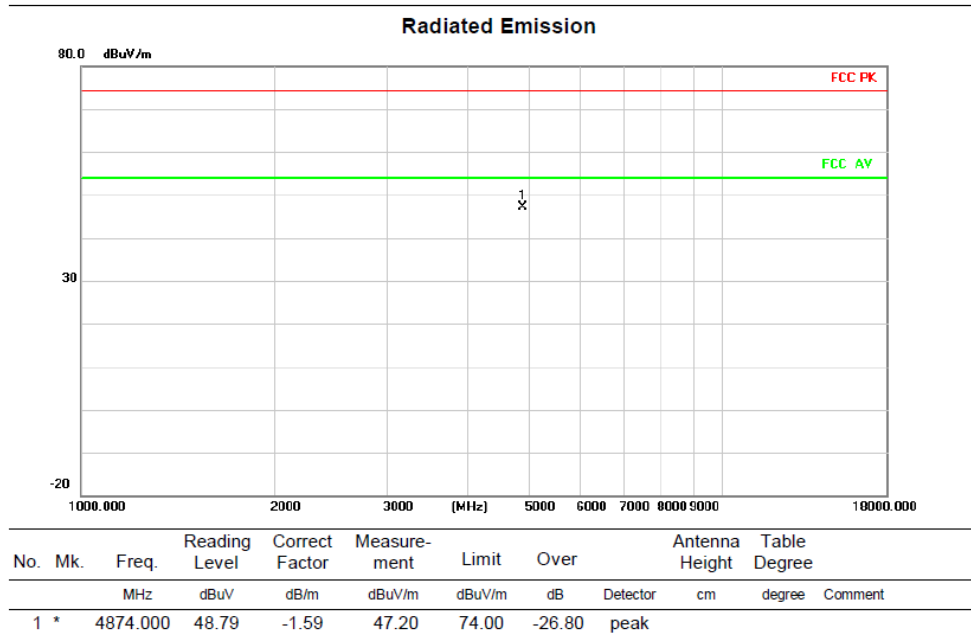
Test mode: 11N40MIMO

Test Channel: 6

VERTICAL



HORIZONTAL



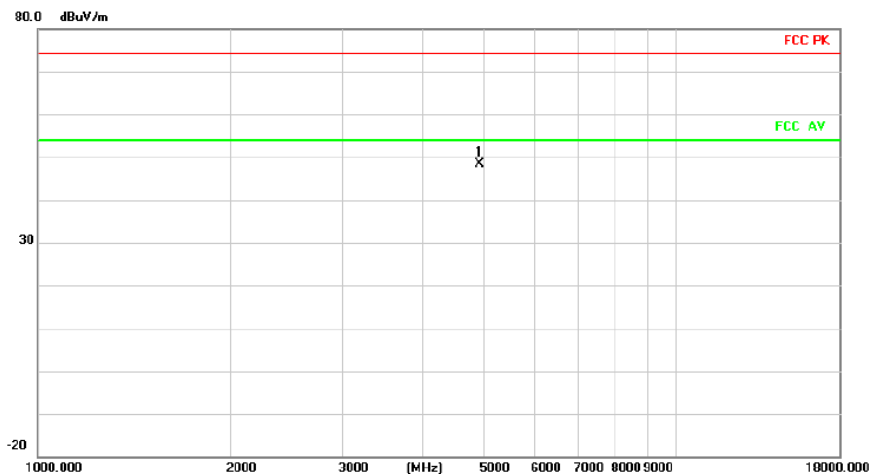
Above 1G (1GHz~18GHz)

Test mode: 11N40MIMO

Test Channel:9

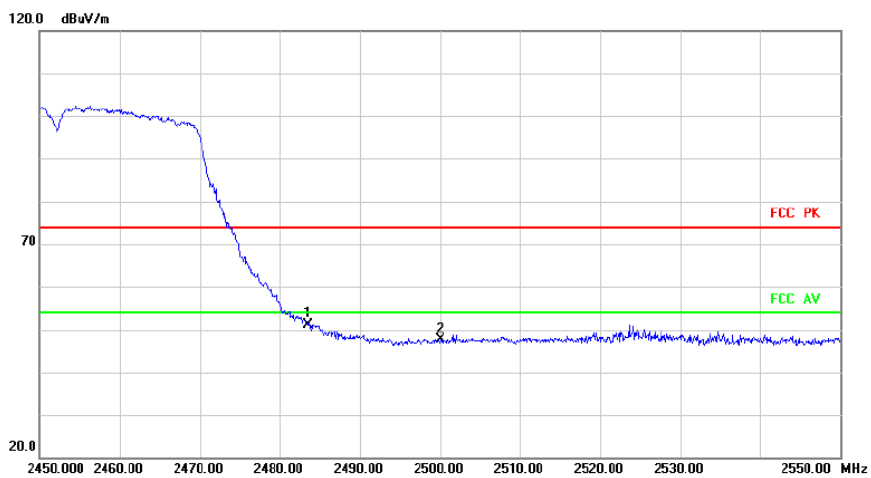
VERTICAL

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	*	4904.000	49.89	-1.42	48.47	74.00	-25.53	peak		

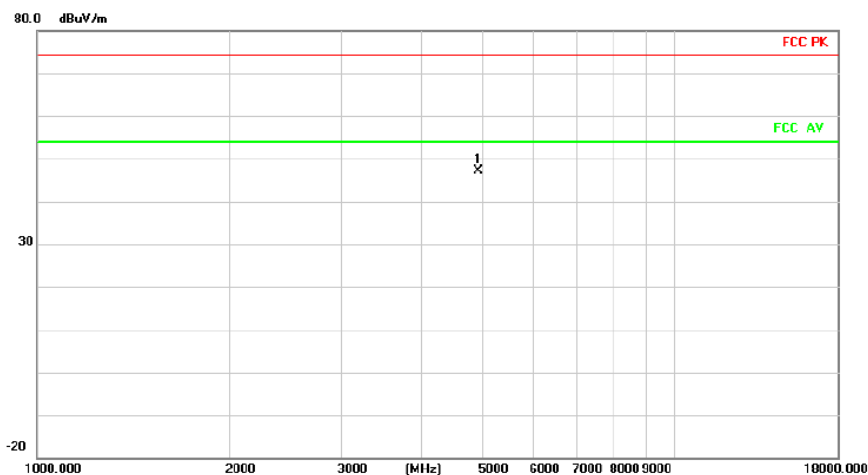
Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	*	2483.500	46.35	4.72	51.07	74.00	-22.93	peak		
2		2500.000	42.78	4.79	47.57	74.00	-26.43	peak		

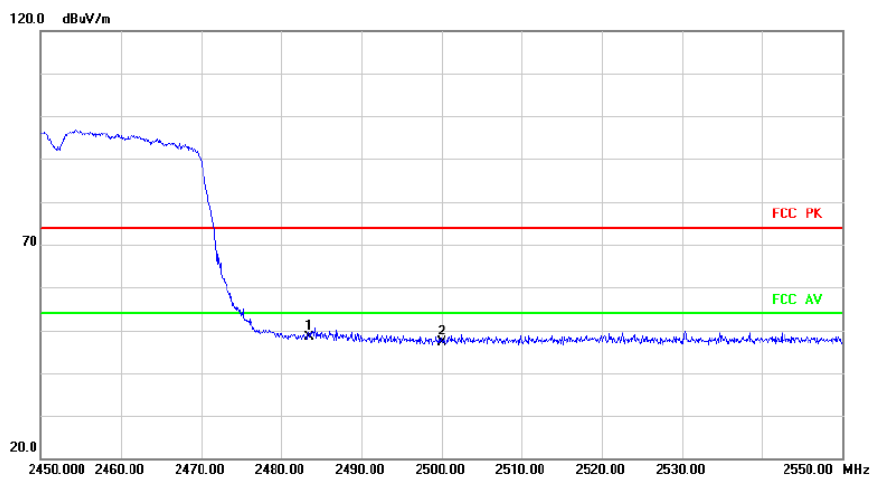
HORIZONTAL

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	Detector	cm	degree
1	*	4904.000	48.51	-1.42	47.09	74.00	-26.91	peak		

Radiated Emission



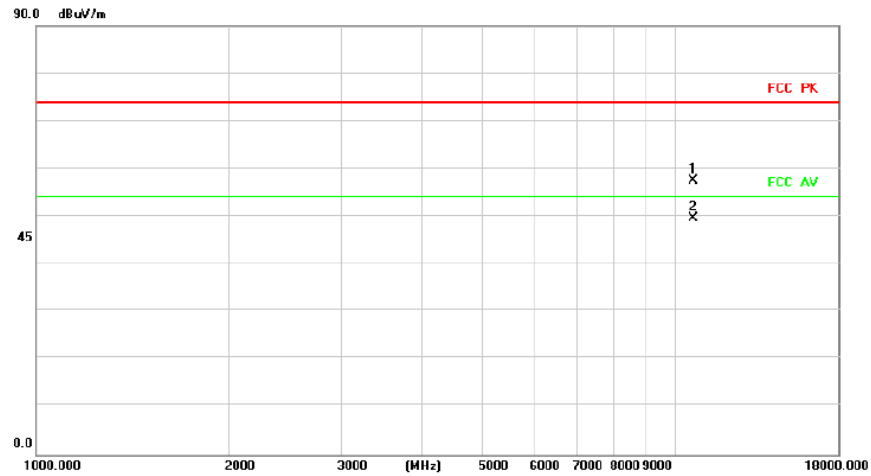
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	*	2483.500	43.64	4.72	48.36	74.00	-25.64	peak		
2		2500.000	42.25	4.79	47.04	74.00	-26.96	peak		

Above 1G (1GHz~18GHz)

Operating Mode: Simultaneous transmitting

VERTICAL

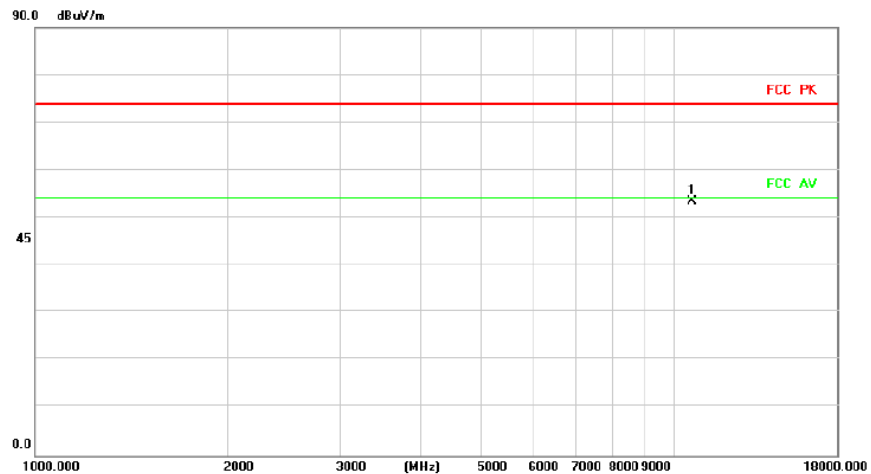
Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		10640.000	48.14	9.52	57.66	74.00	-16.34	peak	150	242
2 *		10640.000	40.43	9.52	49.95	54.00	-4.05	AVG	150	242

HORIZONTAL

Radiated Emission



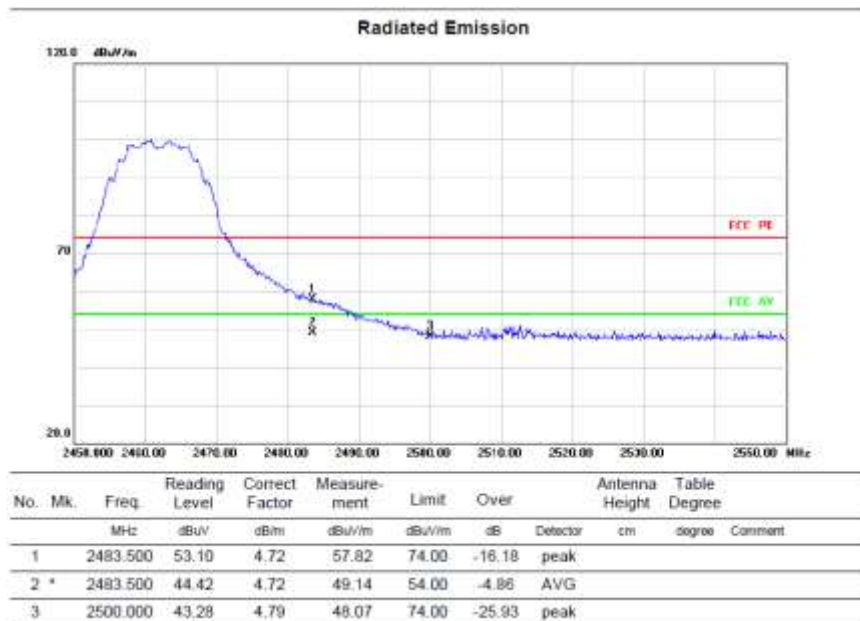
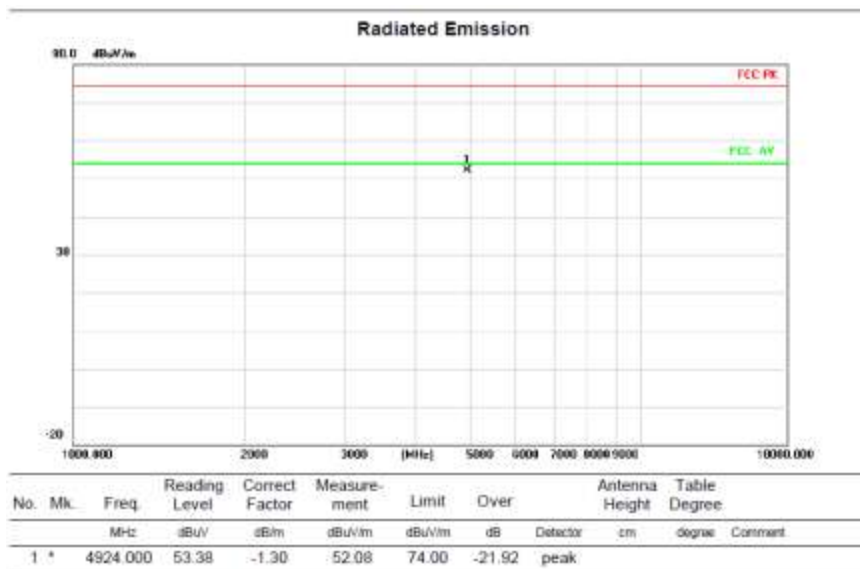
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1 *		10640.000	44.04	9.52	53.56	74.00	-20.44	peak	150	147

For EUT3

We tested all modes and only the worst case was recorded, please see the following:

Above 1G (1GHz~18GHz)	Test mode: 11B	Test Channel:11
-----------------------	----------------	-----------------

VERTICAL

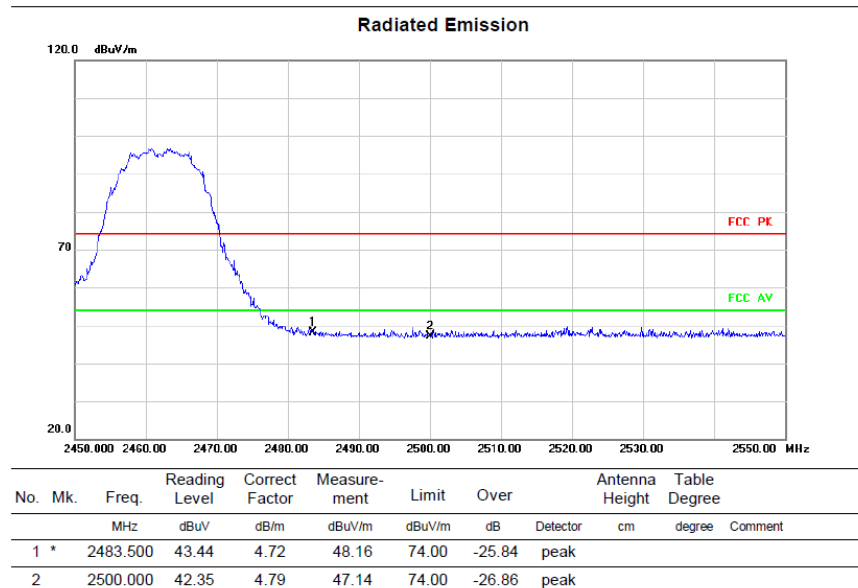
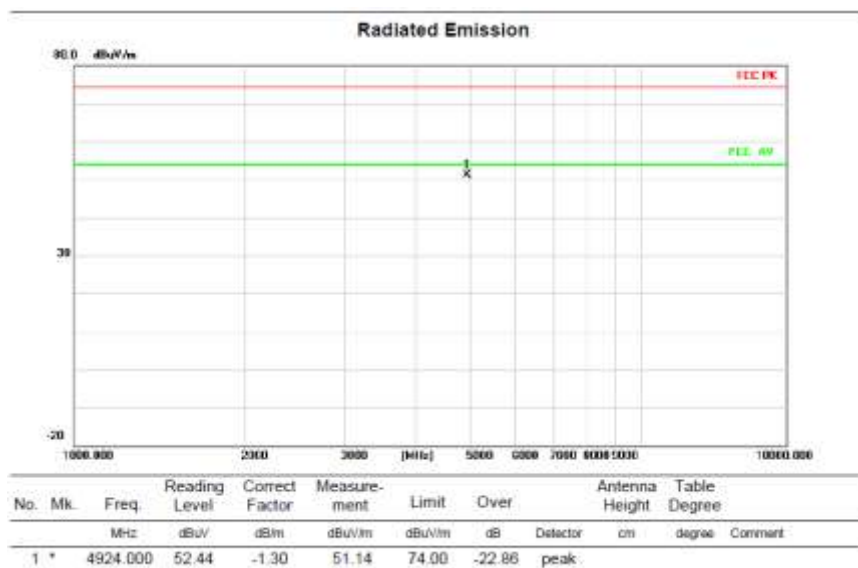


Above 1G (1GHz~18GHz)

Test mode: 11B

Test Channel:11

HORIZONTAL



For EUT4

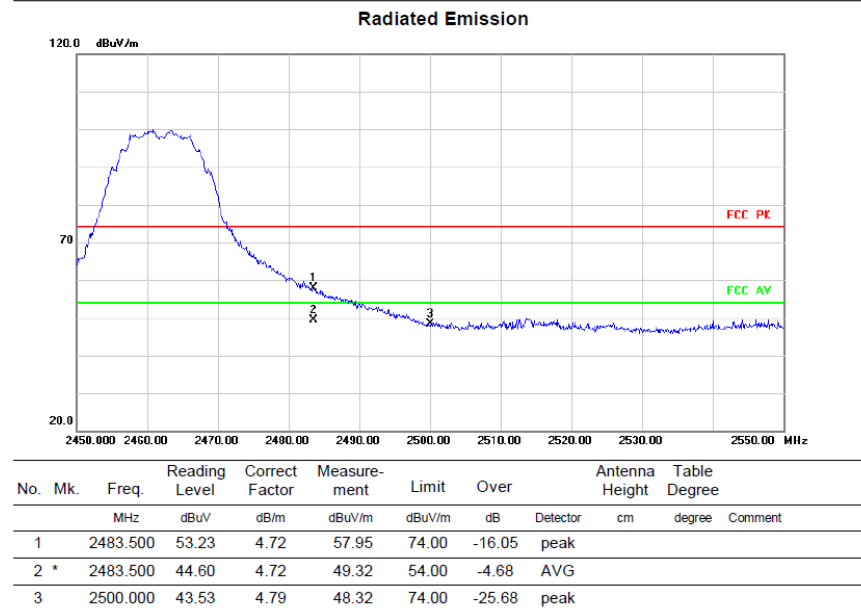
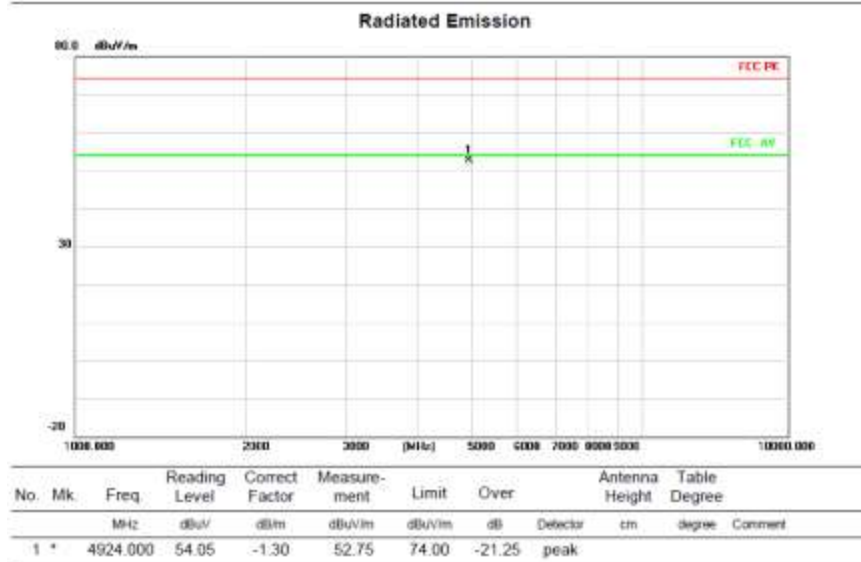
We tested all modes and only the worst case was recorded, please see the following:

Above 1G (1GHz~18GHz)

Test mode: 11B

Test Channel:11

VERTICAL

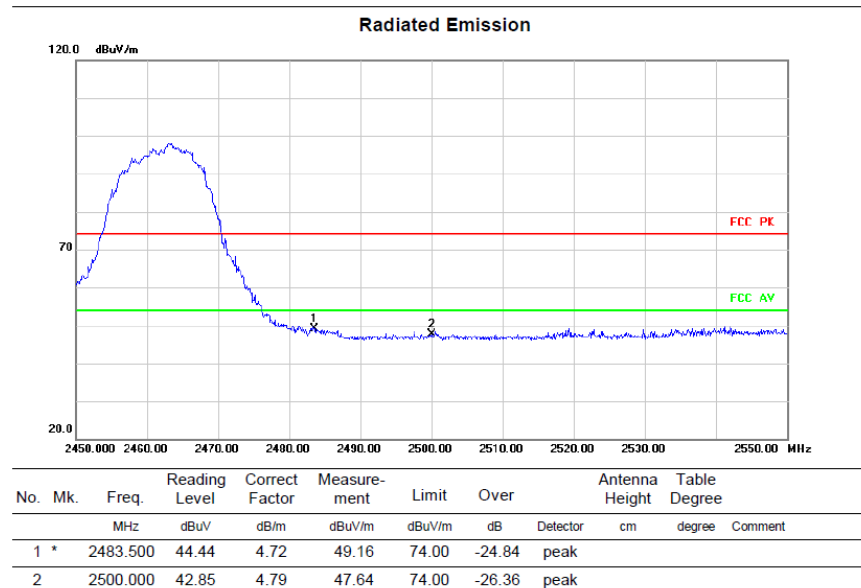
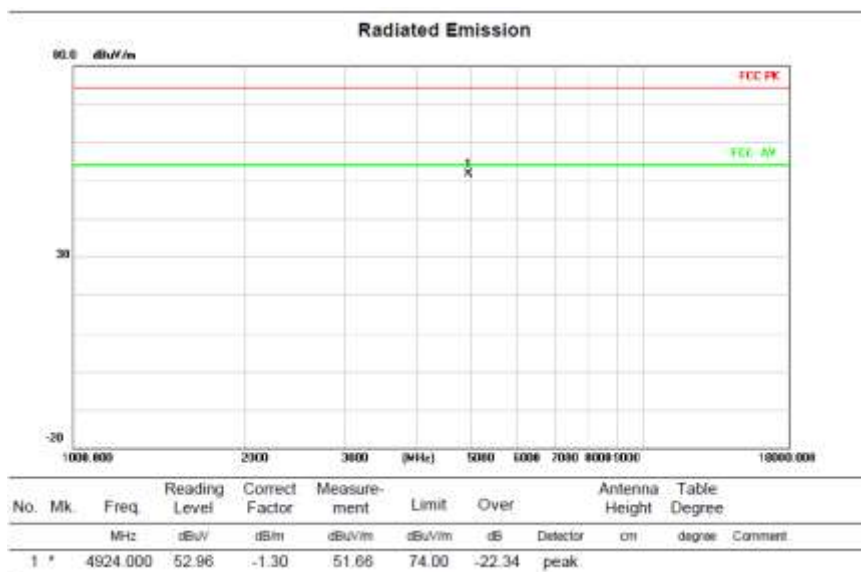


Above 1G (1GHz~18GHz)

Test mode: 11B

Test Channel:11

HORIZONTAL

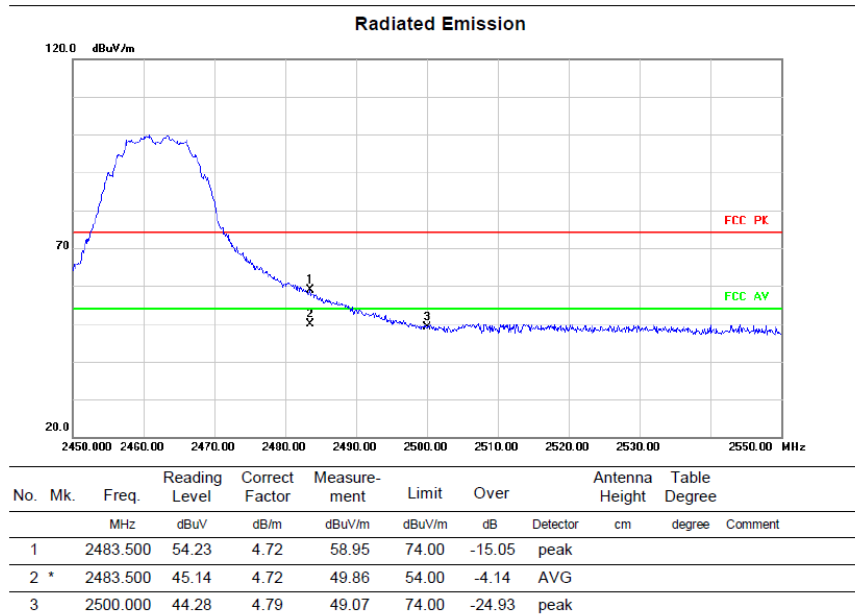
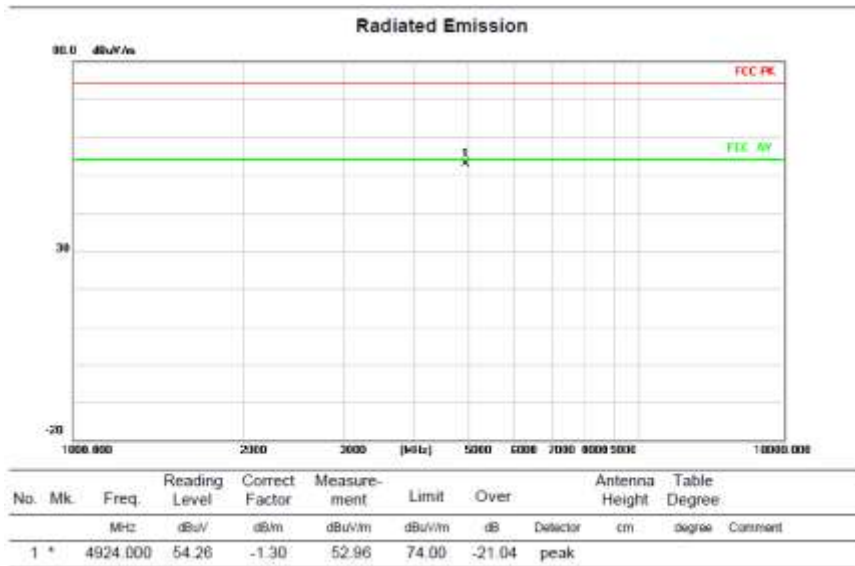


For EUT5

We tested all modes and only the worst case was recorded, please see the following:

Above 1G (1GHz~18GHz)	Test mode: 11B	Test Channel:11
-----------------------	----------------	-----------------

VERTICAL

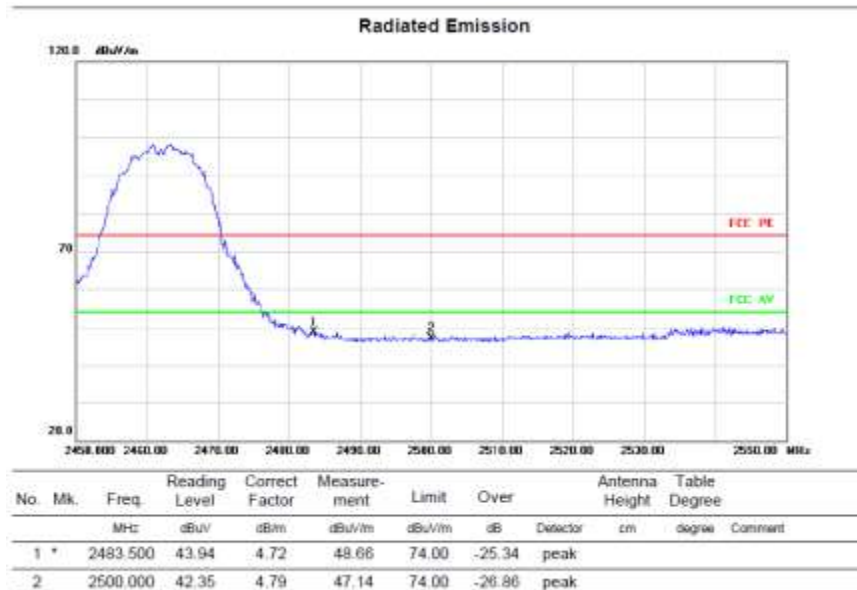
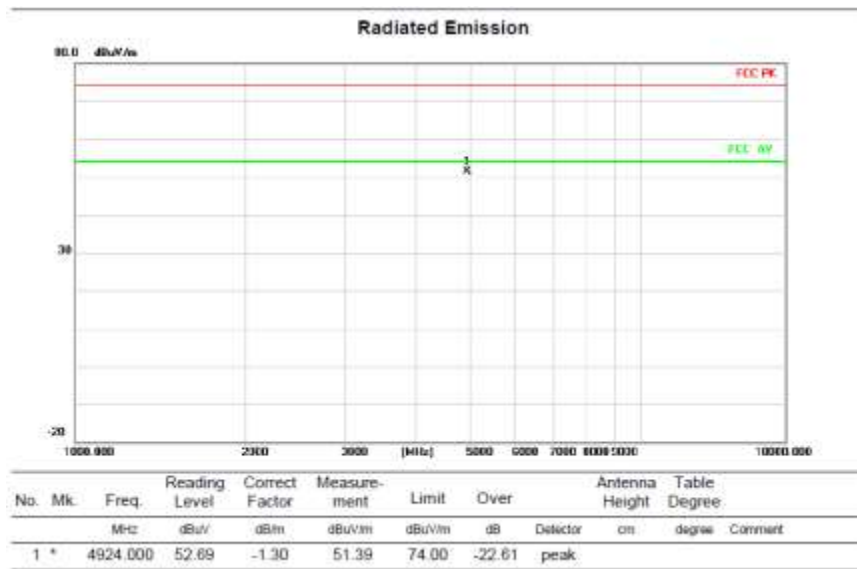


Above 1G (1GHz~18GHz)

Test mode: 11B

Test Channel:11

HORIZONTAL



The high frequency, which started from 18GHz to 25GHz, was pre-scanned and the result which was 20dB lower than the limit line was not recorded in this report.

3.3 Spurious Emission at Antenna Port

3.3.1 Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak Output Power limits. If the transmitter complies with the Output Power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

3.3.2 Test Peripherals

Support Equipment				
No.	Equipment	Brand Name	Model Name	Remarks
1	Record PC	Lenovo	M4500T	NA
2	Control PC	Lenovo	M4500T	NA

3.3.3 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 EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.

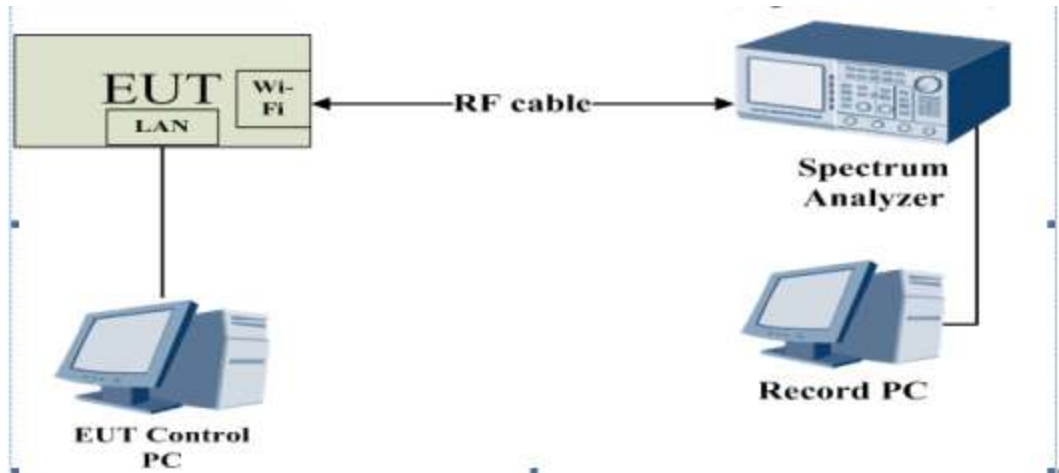
b) Spectrum Setting as below:

Centre Frequency	The centre frequency of the channel under test
RBW	100 kHz
VBW	300 kHz
Frequency span	2 x Nominal Channel Bandwidth
Detector Mode	Peak
Trace Mode	Max Hold
Sweep Time	Auto Couple

c) Allow trace to full stabilize.

d) Use the peak marker function to determine the maximum power level in any 100kHz band segment within the fundamental EBW.

3.3.4 Test Setup



3.3.5 The Result

3.3.5.1. Conducted Spurious Emission

Test Mode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	5.86	5.86	---	PASS
			30~1000	5.86	-43.33	≤-14.14	PASS
			1000~26500	5.86	-36.92	≤-14.14	PASS
	Ant2	2412	Reference	3.51	3.51	---	PASS
			30~1000	3.51	-46.85	≤-16.49	PASS
			1000~26500	3.51	-39.87	≤-16.49	PASS
	Ant1	2437	Reference	5.41	5.41	---	PASS
			30~1000	5.41	-43.58	≤-14.59	PASS
			1000~26500	5.41	-36.89	≤-14.59	PASS
	Ant2	2437	Reference	3.21	3.21	---	PASS
			30~1000	3.21	-46.71	≤-16.79	PASS
			1000~26500	3.21	-39.39	≤-16.79	PASS
	Ant1	2462	Reference	6.07	6.07	---	PASS
			30~1000	6.07	-43.75	≤-13.93	PASS
			1000~26500	6.07	-39.11	≤-13.93	PASS
	Ant2	2462	Reference	2.07	2.07	---	PASS
			30~1000	2.07	-47.27	≤-17.93	PASS
			1000~26500	2.07	-39.55	≤-17.93	PASS
11G	Ant1	2412	Reference	0.32	0.32	---	PASS
			30~1000	0.32	-46.59	≤-19.68	PASS
			1000~26500	0.32	-39.38	≤-19.68	PASS
	Ant2	2412	Reference	-1.77	-1.77	---	PASS
			30~1000	-1.77	-49.12	≤-21.77	PASS
			1000~26500	-1.77	-39.67	≤-21.77	PASS
	Ant1	2437	Reference	0.10	0.10	---	PASS
			30~1000	0.10	-46.03	≤-19.9	PASS
			1000~26500	0.10	-38.98	≤-19.9	PASS
	Ant2	2437	Reference	-2.58	-2.58	---	PASS
			30~1000	-2.58	-49.88	≤-22.58	PASS
			1000~26500	-2.58	-39.75	≤-22.58	PASS
	Ant1	2462	Reference	0.39	0.39	---	PASS
			30~1000	0.39	-46.82	≤-19.61	PASS
			1000~26500	0.39	-39.14	≤-19.61	PASS
	Ant2	2462	Reference	-3.07	-3.07	---	PASS
			30~1000	-3.07	-50	≤-23.07	PASS
			1000~26500	-3.07	-39.36	≤-23.07	PASS

11N20MIMO	Ant1	2412	Reference	-1.73	-1.73	---	PASS
			30~1000	-1.73	-46.97	≤ -21.73	PASS
			1000~26500	-1.73	-39.41	≤ -21.73	PASS
	Ant2	2412	Reference	-4.41	-4.41	---	PASS
			30~1000	-4.41	-50.08	≤ -24.41	PASS
			1000~26500	-4.41	-39.05	≤ -24.41	PASS
	Ant1	2437	Reference	-2.52	-2.52	---	PASS
			30~1000	-2.52	-47.36	≤ -22.52	PASS
			1000~26500	-2.52	-38.81	≤ -22.52	PASS
	Ant2	2437	Reference	-4.95	-4.95	---	PASS
			30~1000	-4.95	-50.19	≤ -24.95	PASS
			1000~26500	-4.95	-39.04	≤ -24.95	PASS
	Ant1	2462	Reference	-1.45	-1.45	---	PASS
			30~1000	-1.45	-47.45	≤ -21.45	PASS
			1000~26500	-1.45	-38.59	≤ -21.45	PASS
	Ant2	2462	Reference	-5.34	-5.34	---	PASS
			30~1000	-5.34	-50.62	≤ -25.34	PASS
			1000~26500	-5.34	-38.61	≤ -25.34	PASS
11N40MIMO	Ant1	2422	Reference	-4.74	-4.74	---	PASS
			30~1000	-4.74	-47.65	≤ -24.74	PASS
			1000~26500	-4.74	-39.7	≤ -24.74	PASS
	Ant2	2422	Reference	-6.71	-6.71	---	PASS
			30~1000	-6.71	-50.99	≤ -26.71	PASS
			1000~26500	-6.71	-39.53	≤ -26.71	PASS
	Ant1	2437	Reference	-4.89	-4.89	---	PASS
			30~1000	-4.89	-46.85	≤ -24.89	PASS
			1000~26500	-4.89	-38.85	≤ -24.89	PASS
	Ant2	2437	Reference	-7.27	-7.27	---	PASS
			30~1000	-7.27	-50.84	≤ -27.27	PASS
			1000~26500	-7.27	-39.26	≤ -27.27	PASS
	Ant1	2452	Reference	-4.75	-4.75	---	PASS
			30~1000	-4.75	-45.5	≤ -24.75	PASS
			1000~26500	-4.75	-39.1	≤ -24.75	PASS
	Ant2	2452	Reference	-7.14	-7.14	---	PASS
			30~1000	-7.14	-50.47	≤ -27.14	PASS
			1000~26500	-7.14	-38.82	≤ -27.14	PASS

11B_Ant1_2412_0~Reference



11B_Ant1_2412_30~1000



11B_Ant1_2412_1000~26500



11B_Ant2_2412_0~Reference



11B_Ant2_2412_30~1000



11B_Ant2_2412_1000~26500



11B_Ant1_2437_0~Reference



11B_Ant1_2437_30~1000



11B_Ant1_2437_1000~26500



11B_Ant2_2437_0~Reference



11B_Ant2_2437_30~1000



11B_Ant2_2437_1000~26500

