



11N40MIMO_Ant2_High_2452



Reference level

11B_Ant1_2412



11B_Ant2_2412



11B_Ant1_2437



11B_Ant2_2437



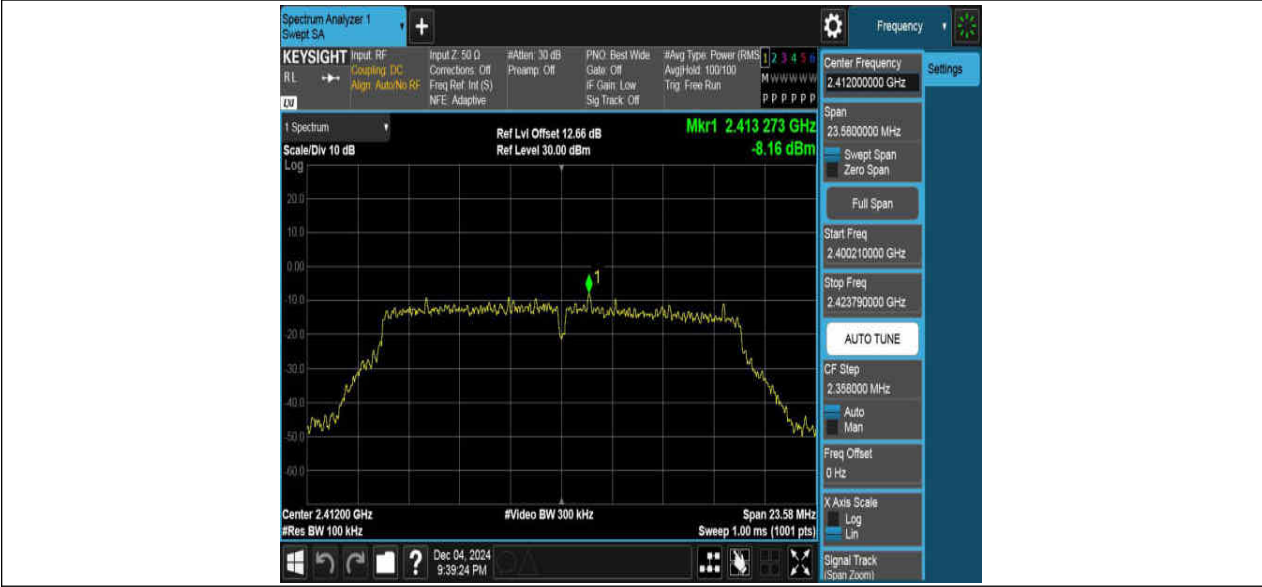
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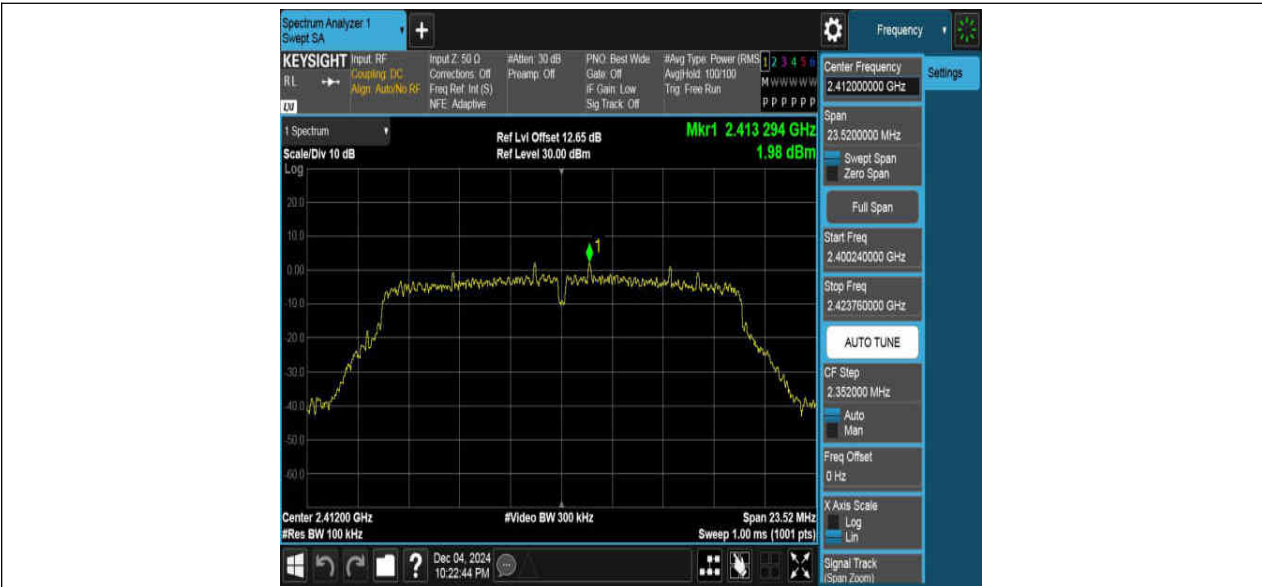
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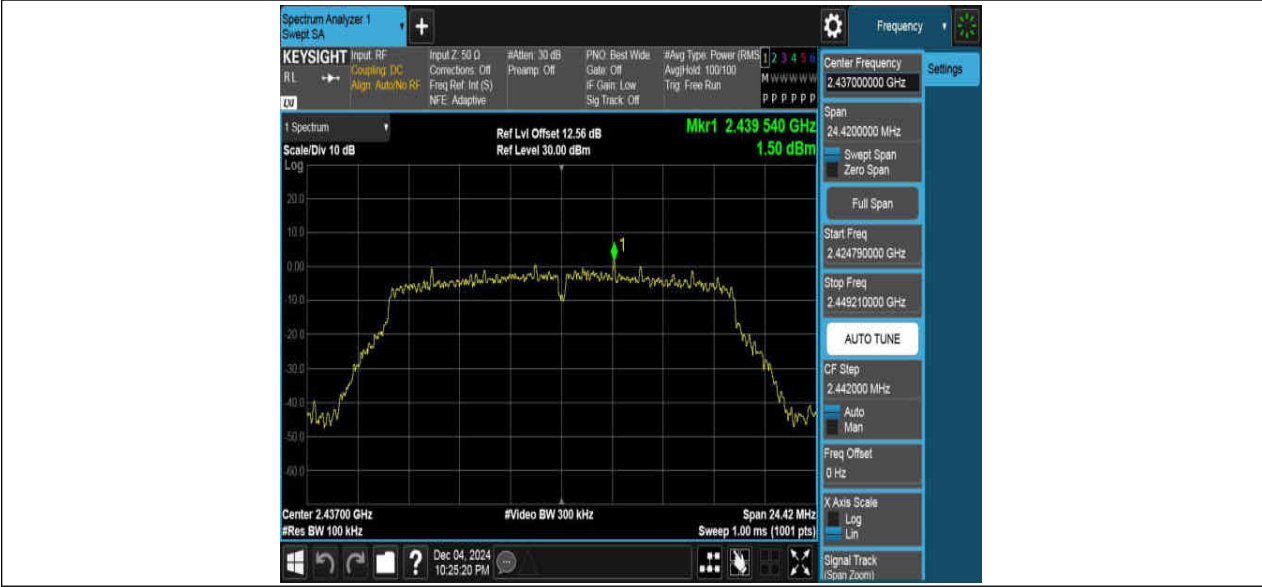
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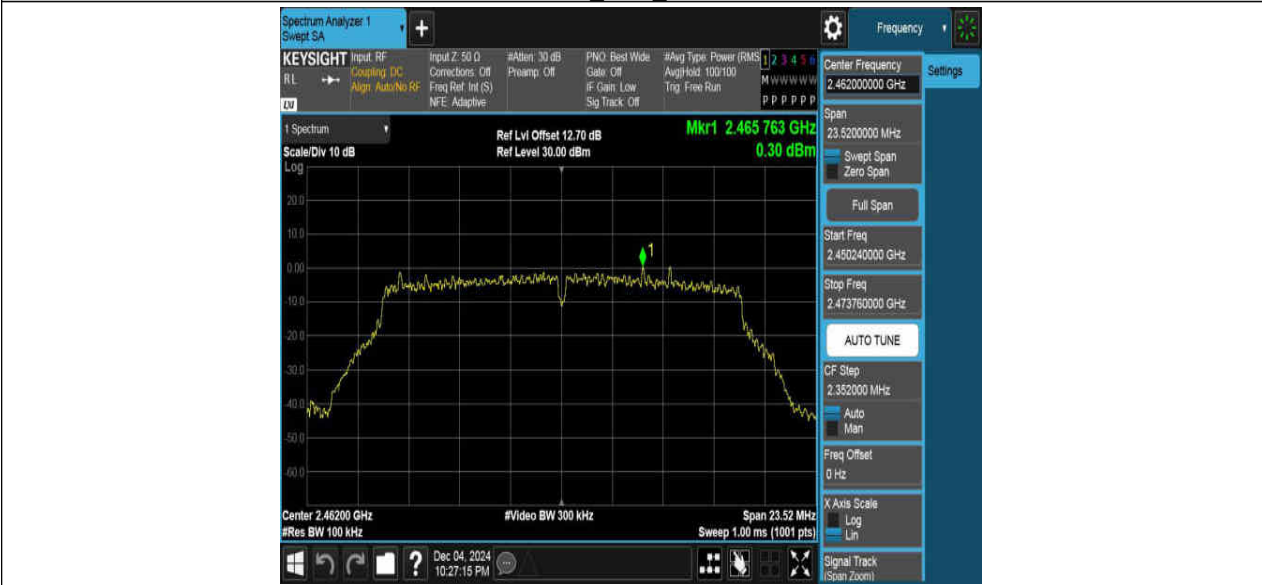
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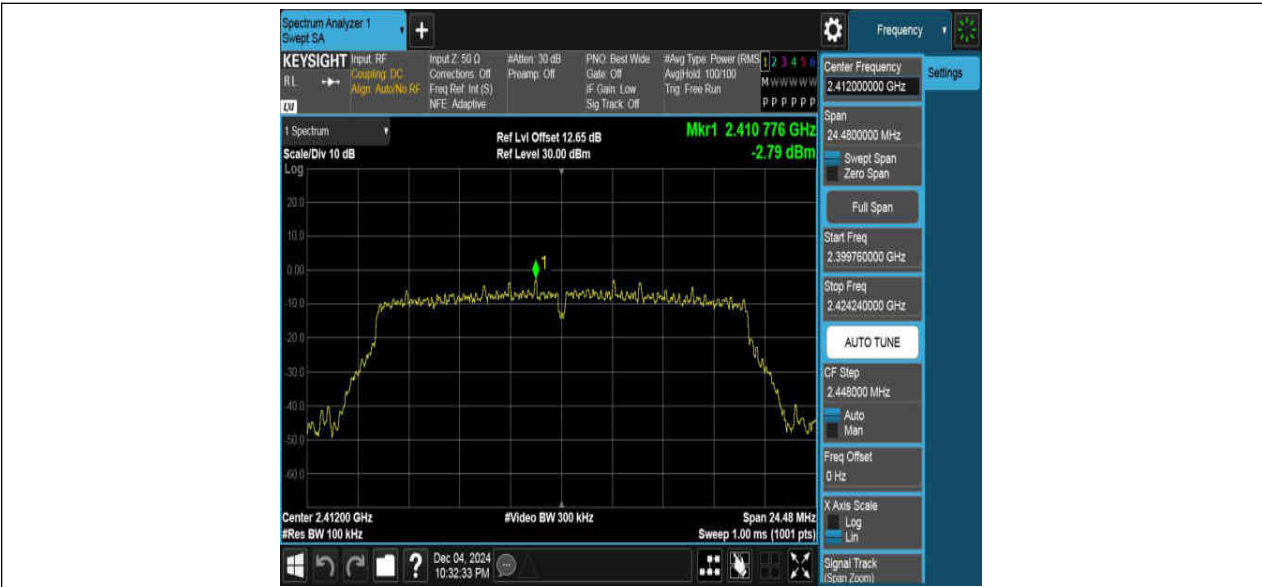
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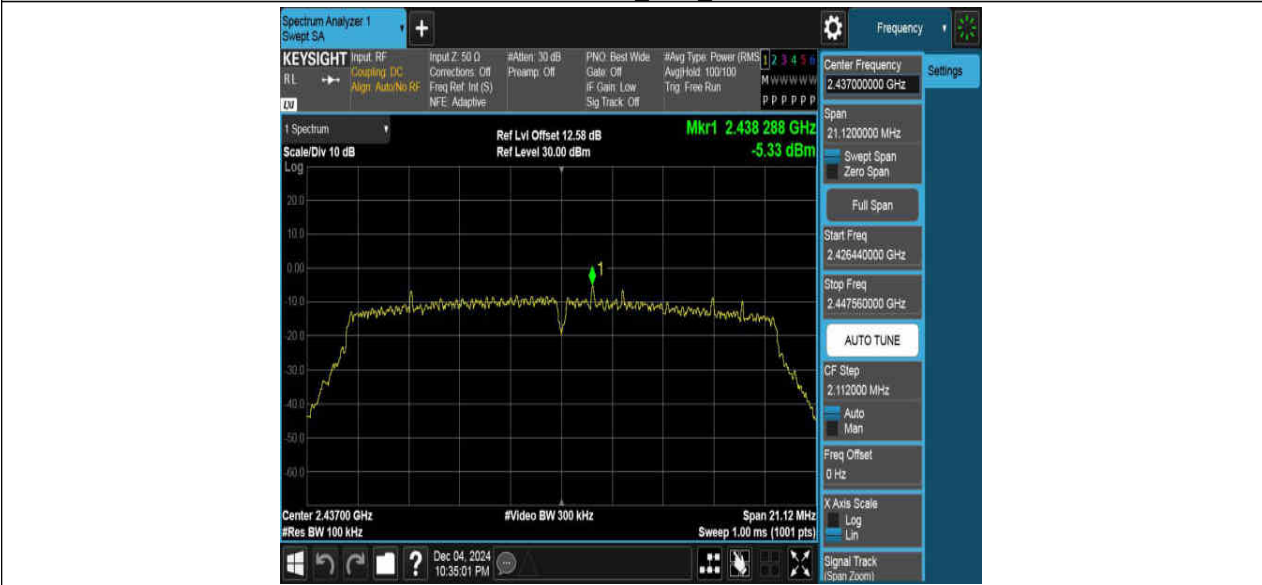
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11N20MIMO_Ant2_2412



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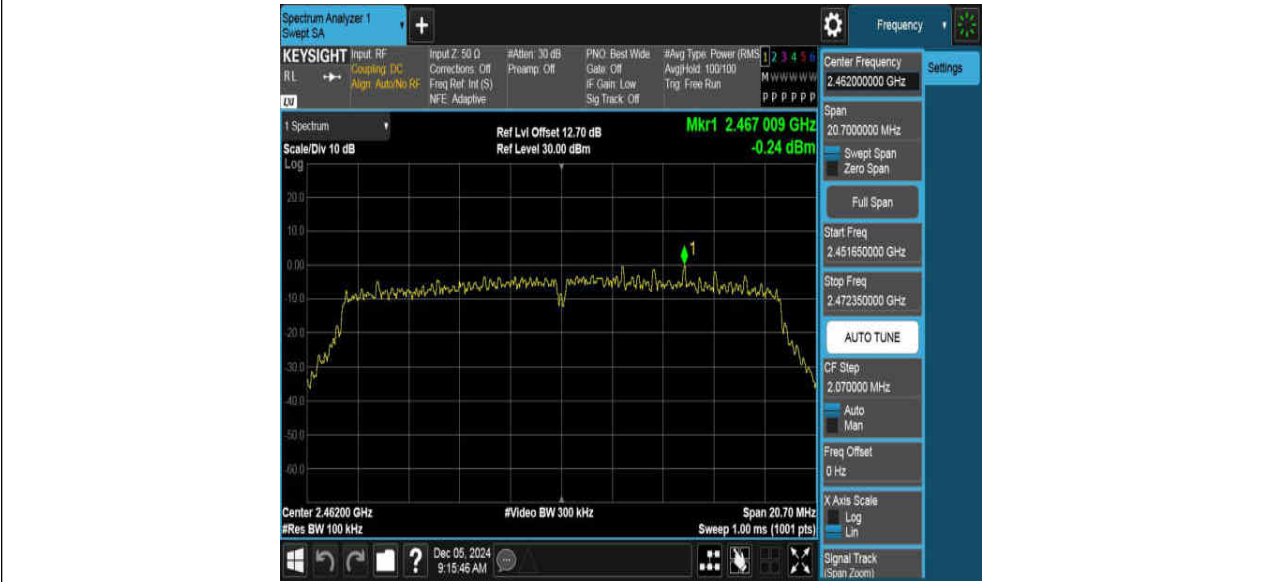
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11N20MIMO_Ant2_2462



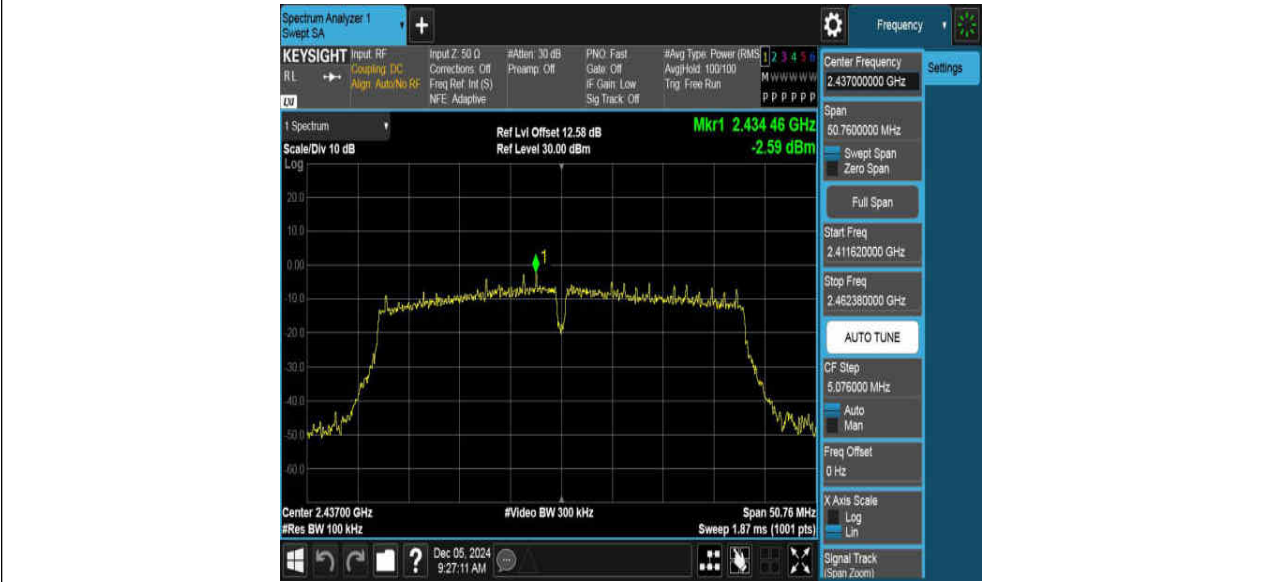
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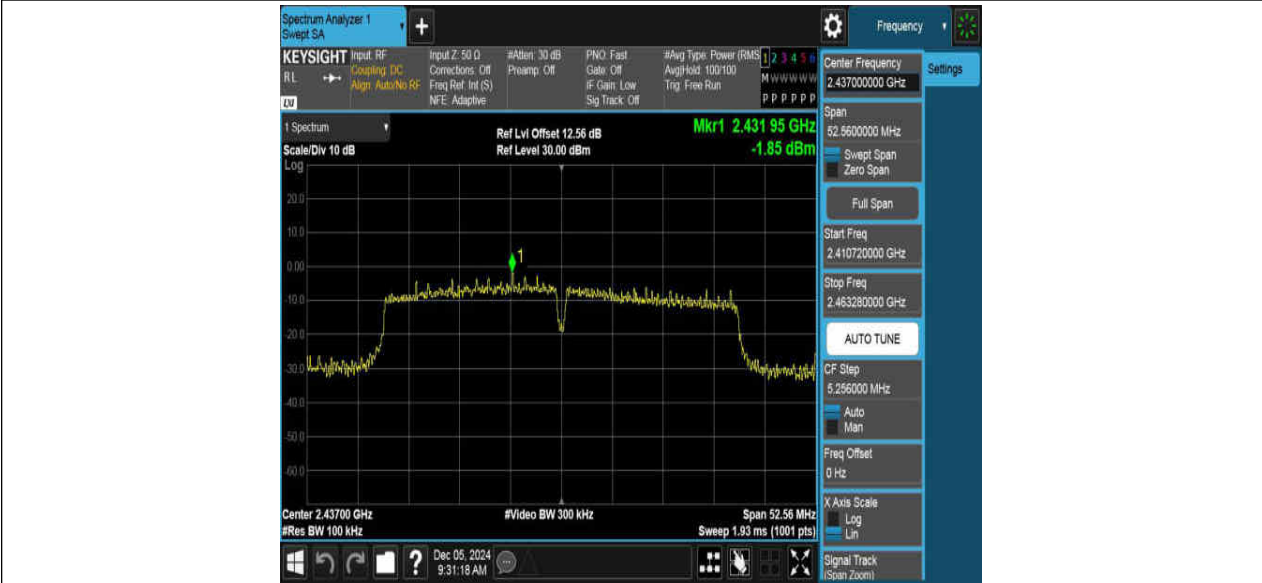
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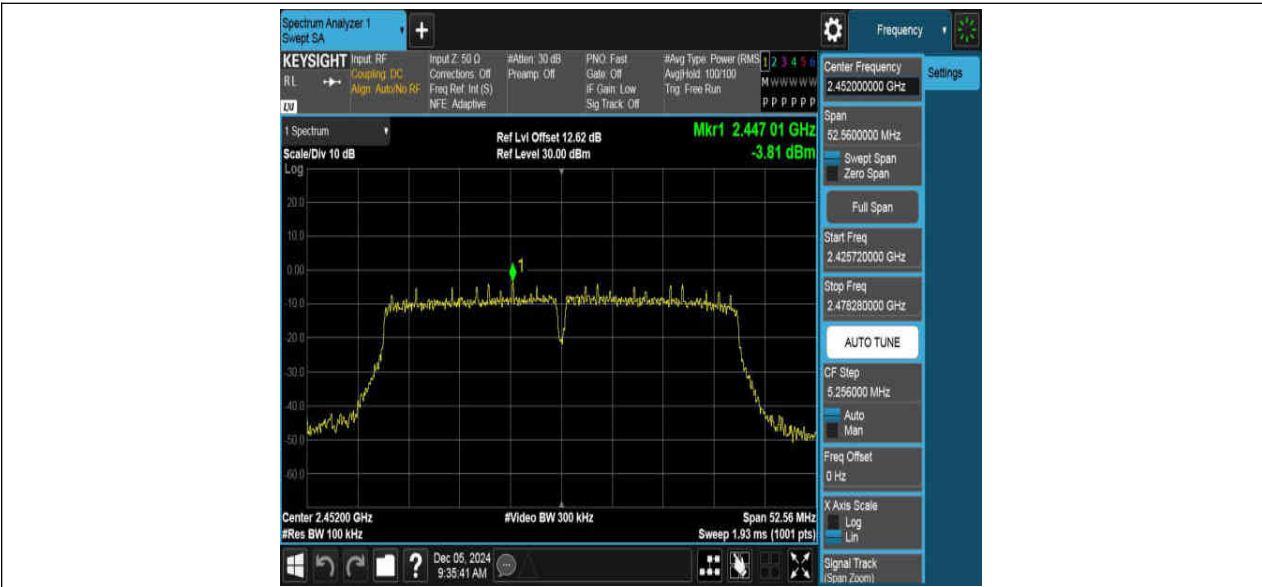
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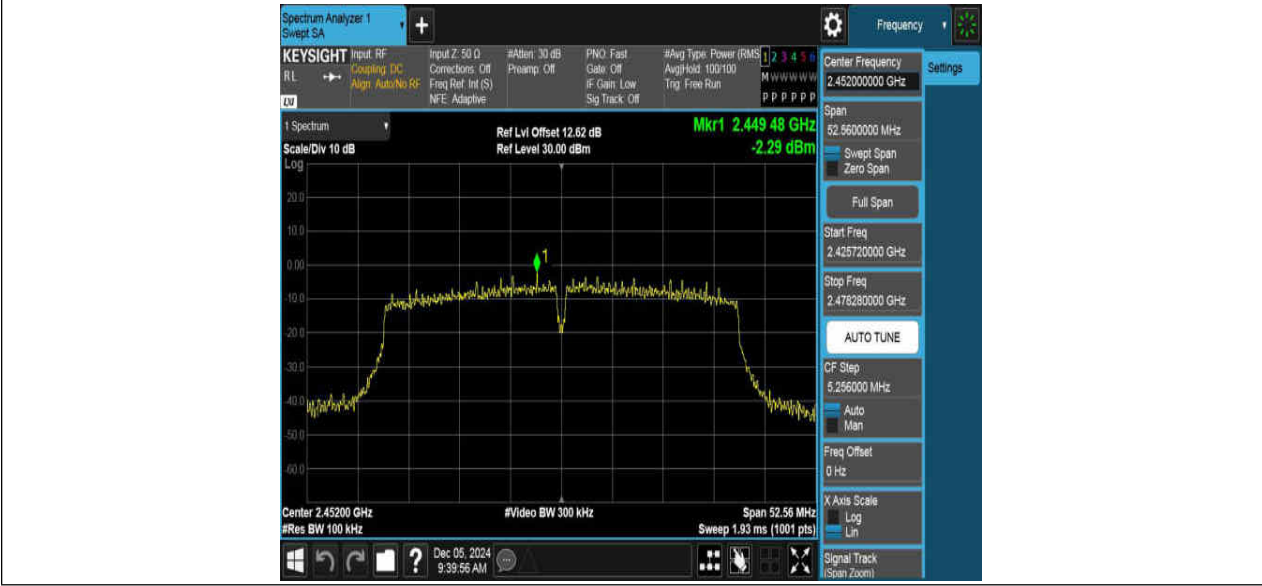
11N40MIMO_Ant2_2437



11N40MIMO_Ant1_2452

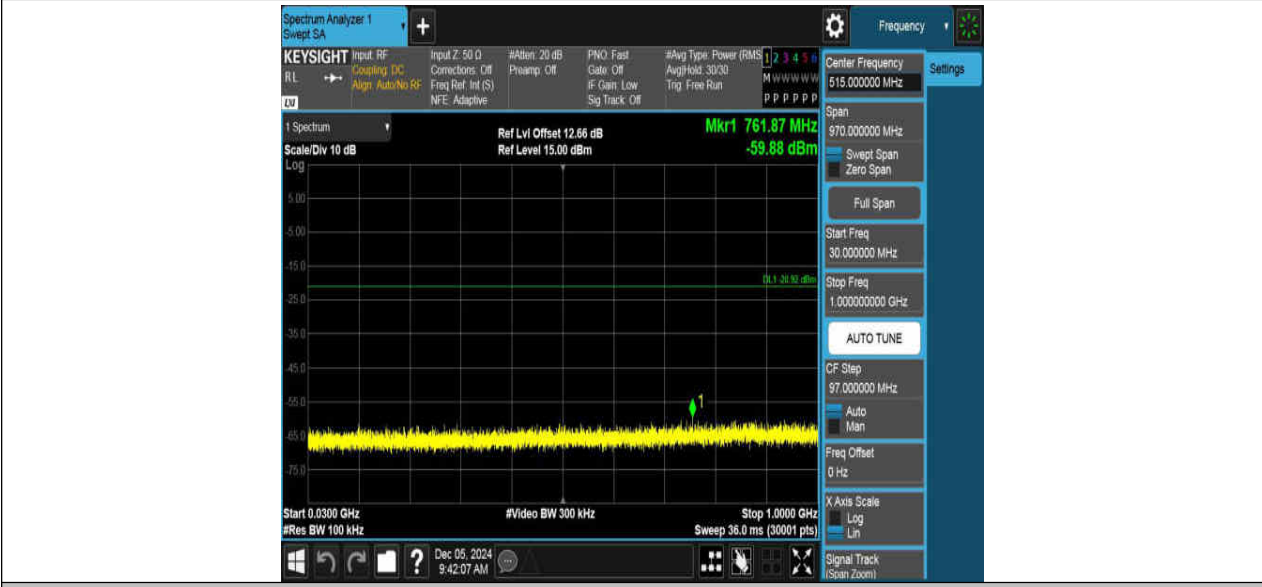


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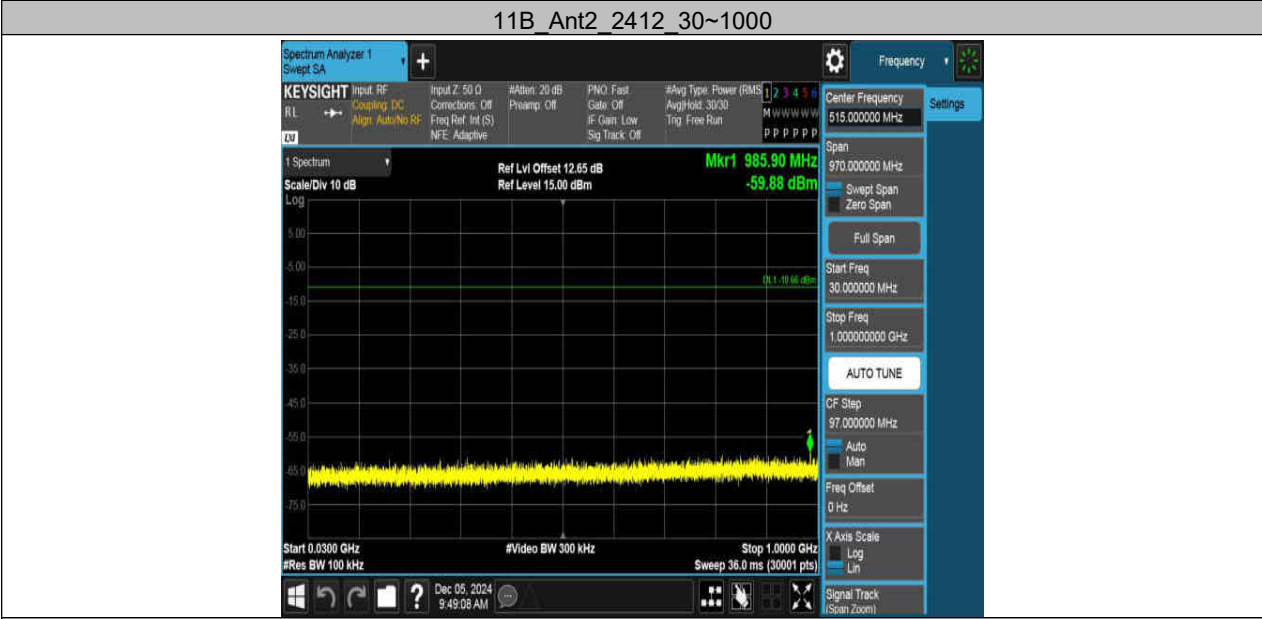


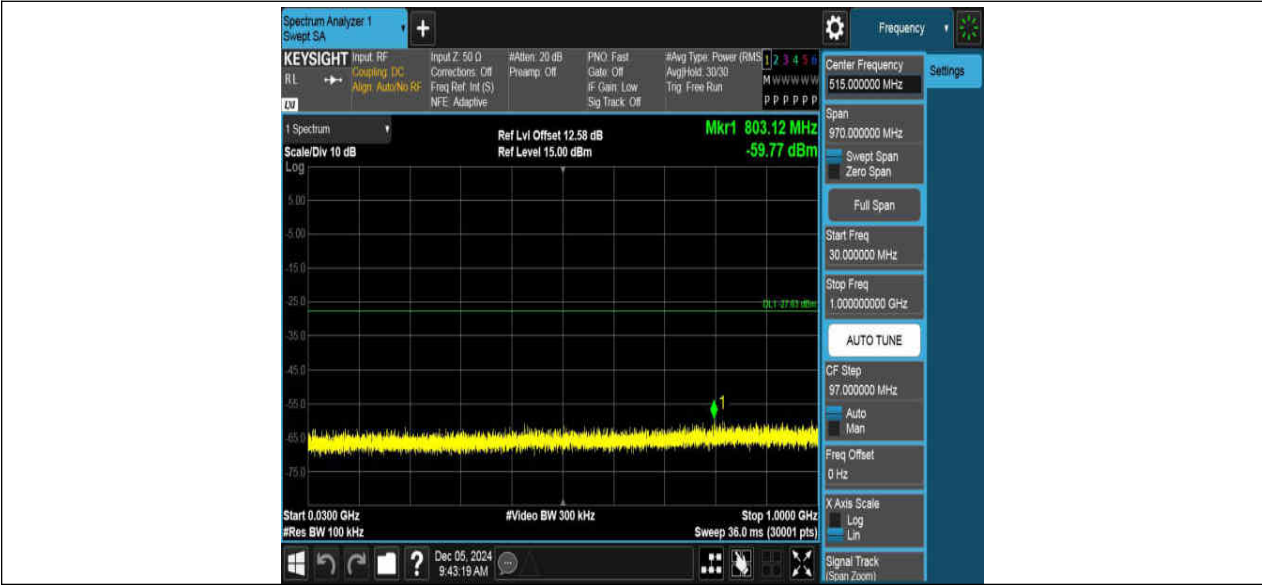
Spurious Emission:

11B_Ant1_2412_30~1000

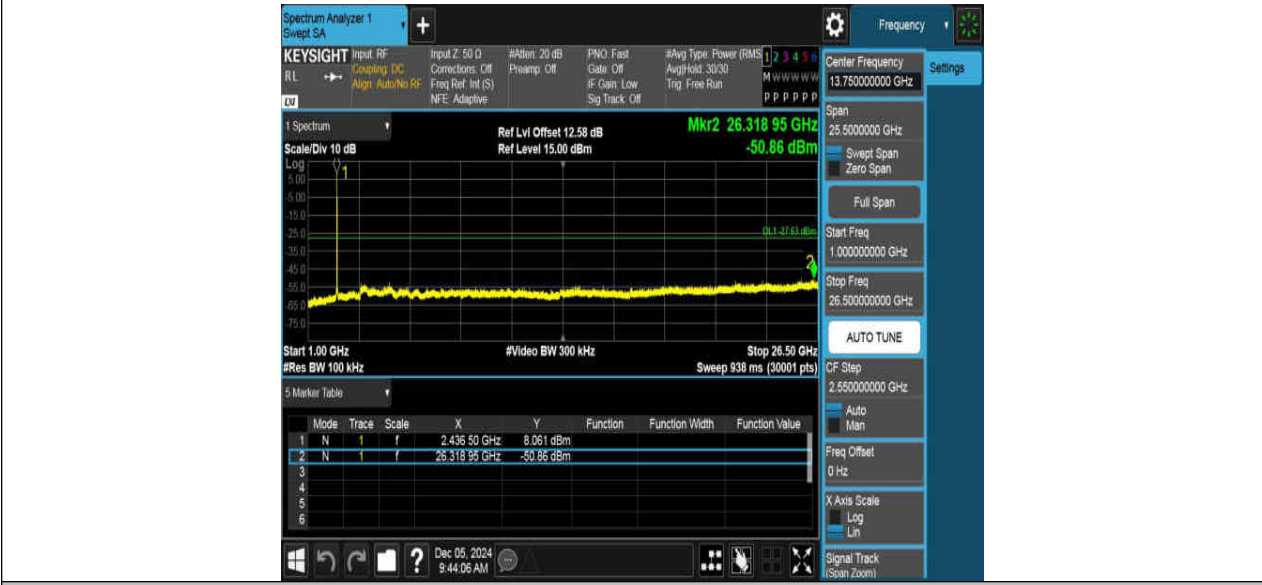


11B_Ant1_2412_1000~26500

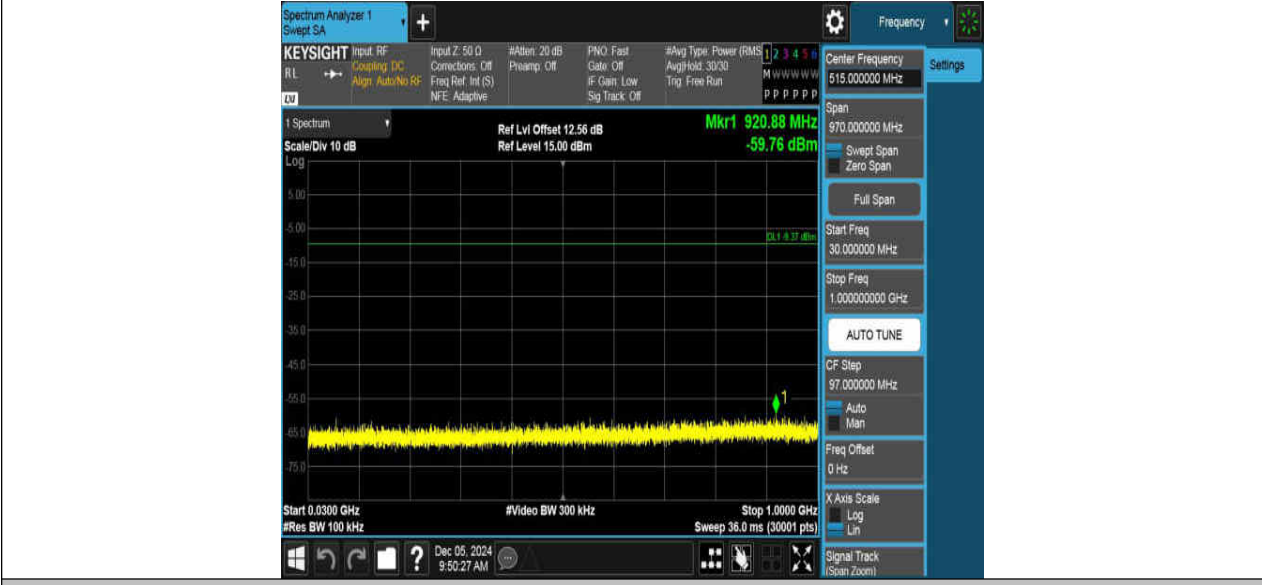




11B_Ant1_2437_1000~26500



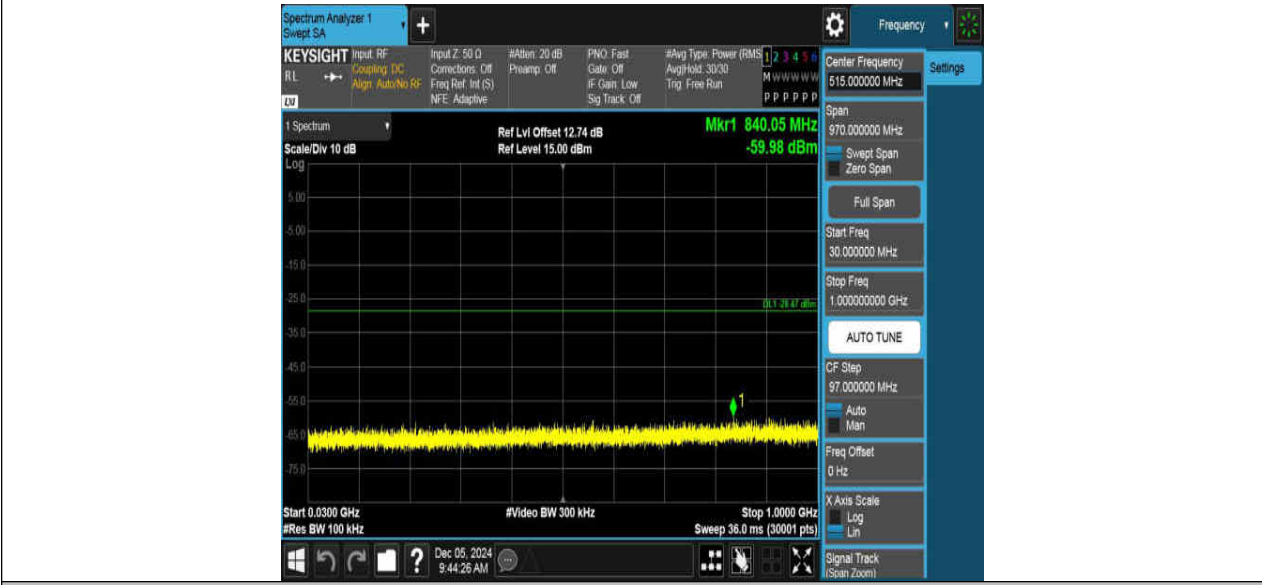
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11B_Ant2_2437_1000~26500



11B_Ant1_2462_30~1000



11B_Ant1_2462_1000~26500



11B_Ant2_2462_30~1000

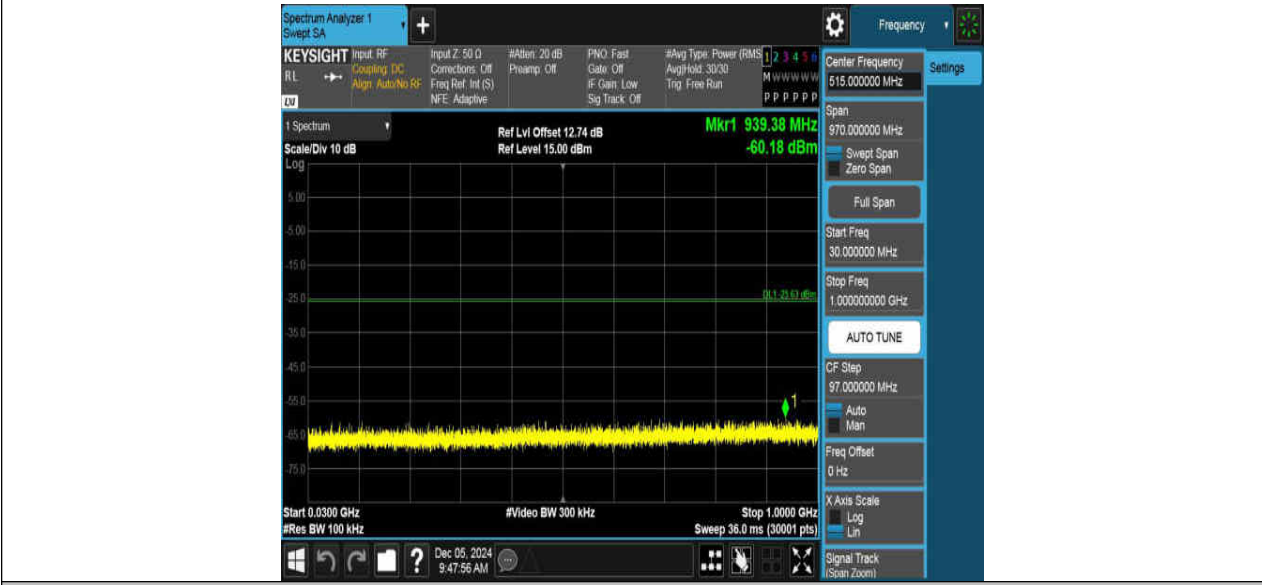








11G_Ant1_2462_30~1000



11G_Ant1_2462_1000~26500



11G_Ant2_2462_30~1000

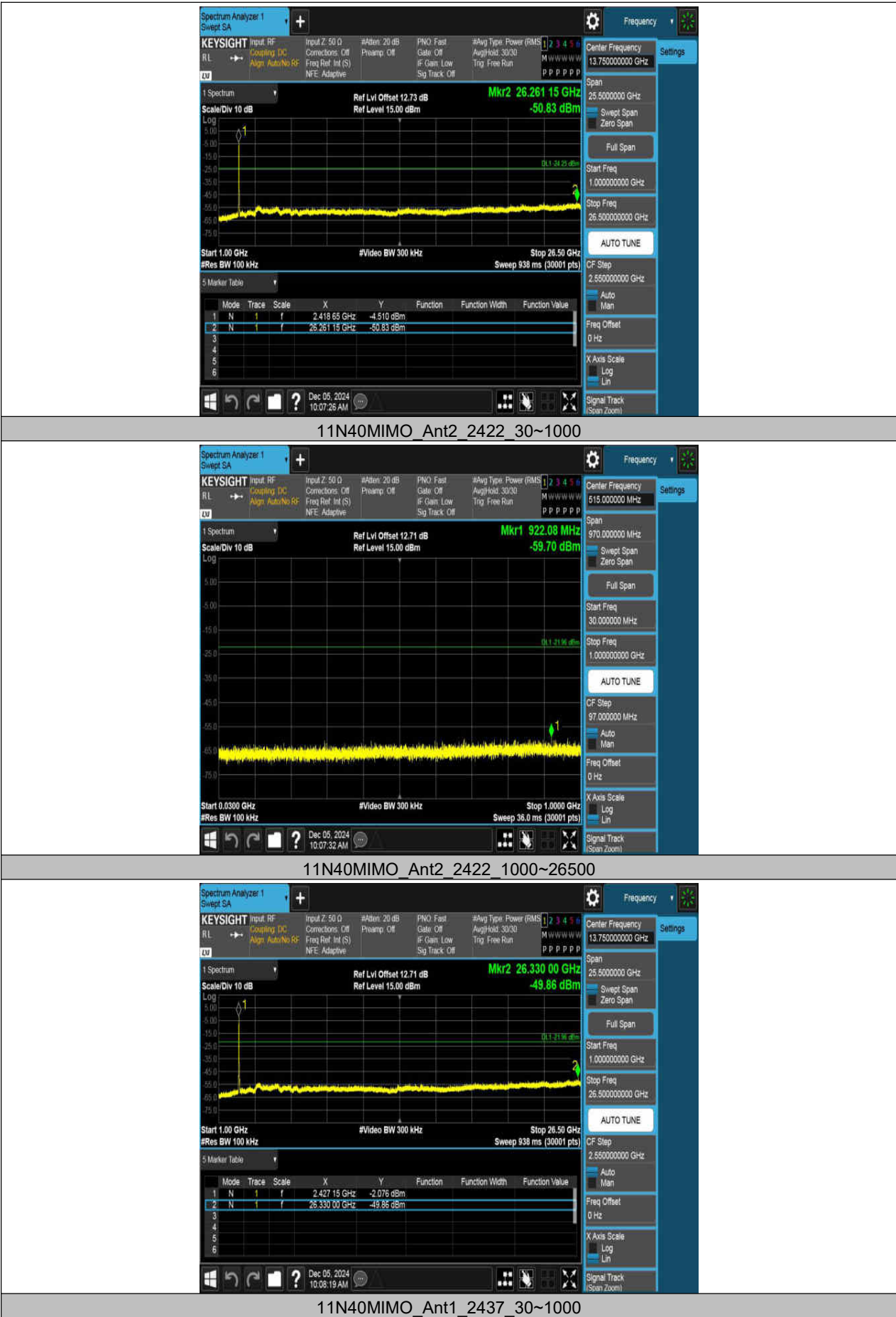














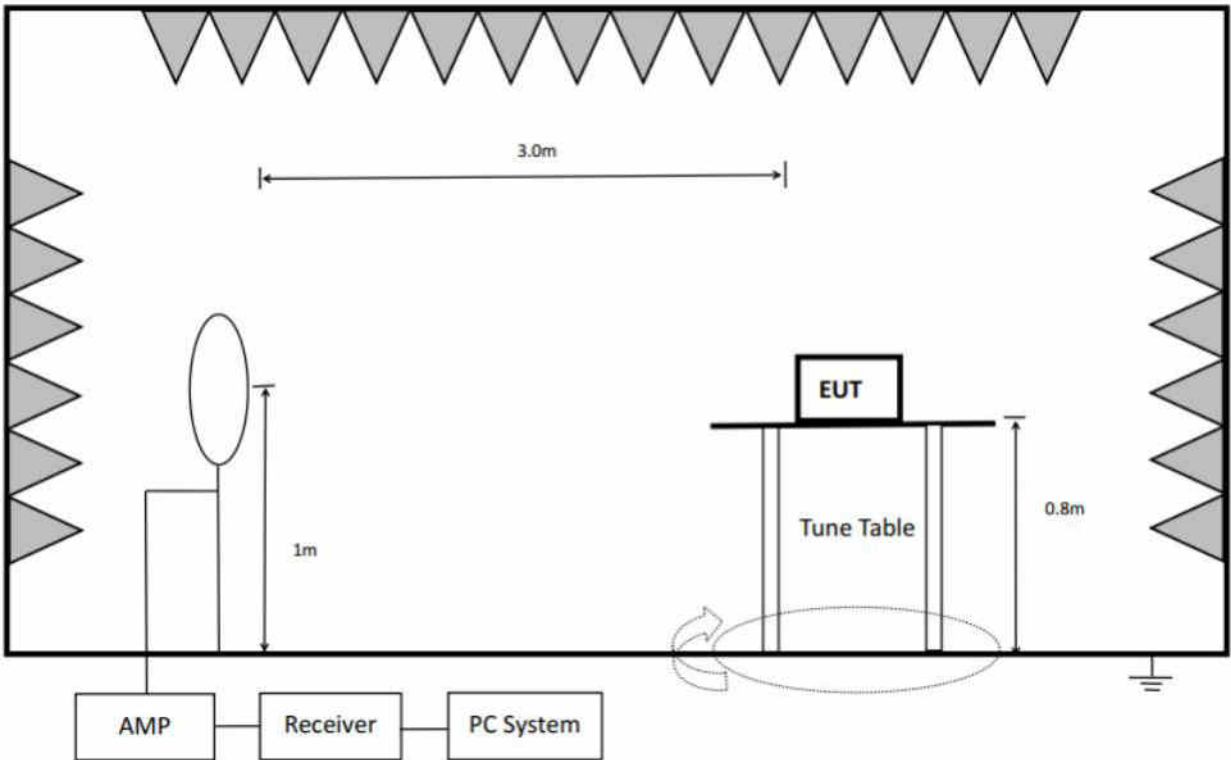




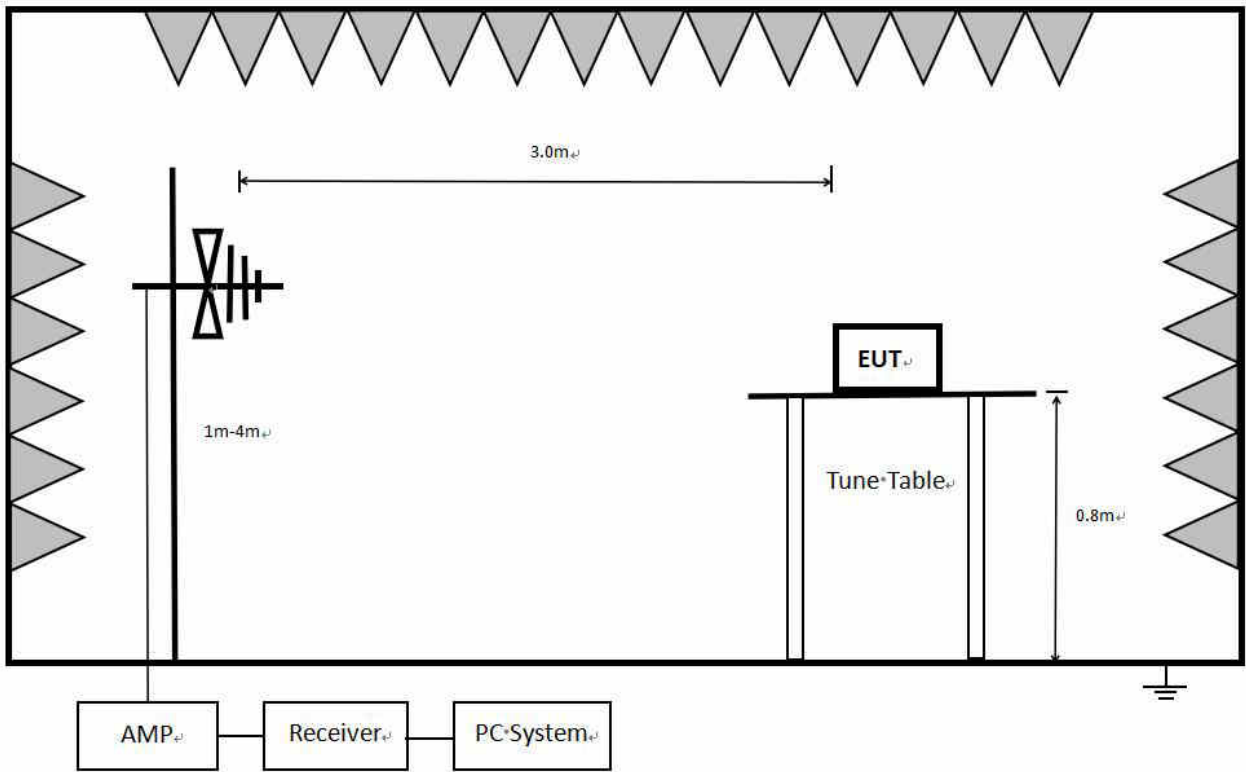
13. Radiated Emission

13.1. Block diagram of test setup

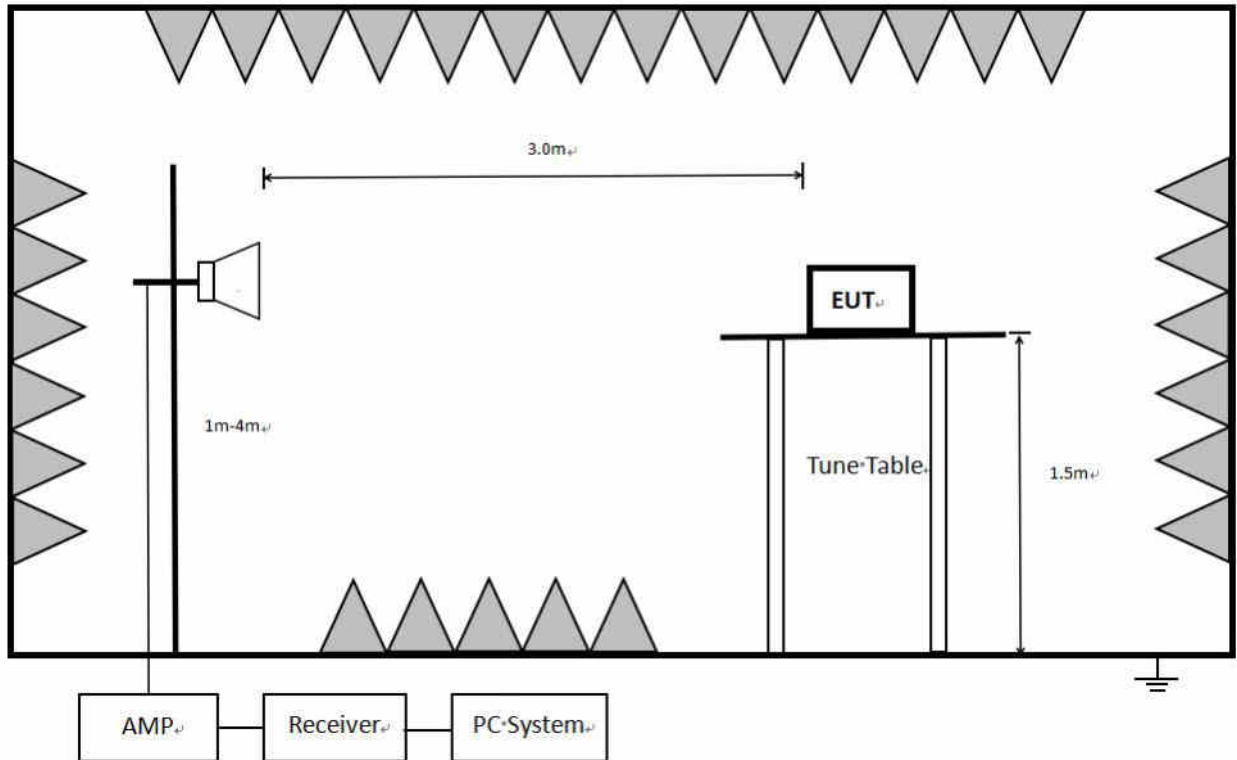
In 3 m Anechoic Chamber, test setup diagram for 9 kHz - 30 MHz:



In 3 m Anechoic Chamber, test setup diagram for 30 MHz - 1 GHz:



In 3 m Anechoic Chamber, test setup diagram for frequency above 1 GHz:



Note: For harmonic emissions test an appropriate high pass filter was inserted in the input port of AMP.

13.2. Limit

(1) FCC 15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.1772&4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.2072&4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			

¹Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

²Above 38.6

(2) FCC 15.209 Limit.

Frequency MHz	Distance Meters	Field Strengths Limit	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
0.009 ~ 0.490	300	$2400/\text{F}(\text{kHz})$	$67.6-20\log(\text{F})$
0.490 ~ 1.705	30	$24000/\text{F}(\text{kHz})$	$87.6-20\log(\text{F})$
1.705 ~ 30.0	30	30	29.54
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) At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

(2) At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). This paragraph (f) shall not apply to Access BPL devices operating below 30 MHz.

About Restricted bands of operation please refer to FCC § 15.205(a).

13.3. Test Procedure

Below 30 MHz:

The setting of the spectrum Analyzer

RBW	300 Hz (From 9 kHz to 0.15 MHz)/ 10 kHz (From 0.15 MHz to 30 MHz)
VBW	1 kHz (From 9 kHz to 0.15 MHz)/ 30 kHz (From 0.15 MHz to 30 MHz)
Sweep	Auto
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013
2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 80 cm meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of 1 meter height antenna tower.
5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
6. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT

measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.

Below 1 GHz and above 30 MHz:

The setting of the spectrum Analyzer

RBW	100 kHz
VBW	300 kHz
Sweep	Auto
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

Above 1 GHz:

RBW	1 MHz
VBW	PEAK: 3 MHz AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 1.5m above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement above 1GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.

6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for AVG measurements. For the Duty Cycle please refer to clause 8.1.ON TIME AND DUTY CYCLE.

7. Restriction band: Investigated frequency range from 2310 MHz to 2430 MHz and 2445 MHz to 2500 MHz, 2310 MHz to 2450 MHz and 2425 MHz to 2500MHz.

All restriction band should comply with 15.209, other emission should be at least 20 dB below the fundamental.

Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

Note 2: The EUT does not support simultaneous transmission.

Note 3: The EUT was fully exercised with external accessories during the test. In the case of multiple accessory external ports, an external accessory shall be connected to one of each type of port.

13.4. Results

Pass. (See below detailed test result)

All the emissions except fundamental emission from 9 kHz to 25 GHz were comply with 15.209 limits.

Note1: According exploratory test, the emission levels are 20 dB below the limit detected from 9 kHz to 30 MHz, so the final test was performed with frequency range from 30 MHz to 26 GHz and recorded in below.

Note2: For emissions below 1 GHz, according exploratory explorer test, when change Tx mode and channel, have no distinct influence on emissions level, so for emissions below 1 GHz, the final test was only performed with EUT working in ANT2, 11B mode.

Note3: For emissions above 1 GHz. If peak results comply with AV limit, AV Result is deemed to comply with AV limit.

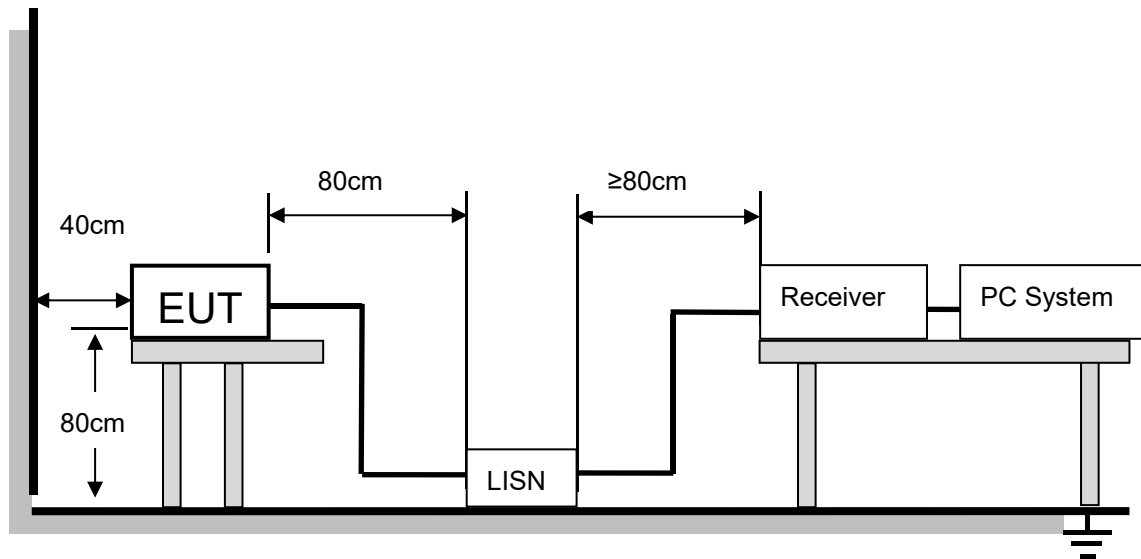
13.5. Original test data

Below 1 GHz and above 30 MHz test data Refer to appendix A

Above 1 GHz test data Refer to appendix B

14. AC Power Line Conducted Emissions

14.1. Block diagram of test setup



The EUT is put on a table of non-conducting material that is 80 cm high. The vertical conducting wall of shielding is located 40 cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through an Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9 kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

14.2. Limits

Please refer to CFR 47 FCC § 15.207 (a).

Frequency (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Note 1: * Decreasing linearly with logarithm of frequency.

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

14.3. Test procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm above the ground plane.

Configuration EUT to simulate typical usage as described in clause 2.4 and test equipment as described in clause 10.2 of this report.

All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30 MHz for emissions in each of the test modes.

During the above scans, the emissions were maximized by cable manipulation.

The test mode(s) described in clause 2.4 were scanned during the preliminary test.

After the preliminary scan, we found the test mode producing the highest emission level.

The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions.

Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

The test data of the worst-case condition(s) was recorded.

The bandwidth of test receiver is set at 9 kHz.

14.4. Test result

According to 15.207, power Line Conducted Emission is not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.

15. Antenna Requirements

15.1. Applicable Requirements

Please refer to FCC §15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Please refer to FCC §15.247(b)(4)

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

15.2. Result

The antenna used for this product is PCB antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is 4.86 dBi for antenna 1, 3.49 dBi for antenna 2.

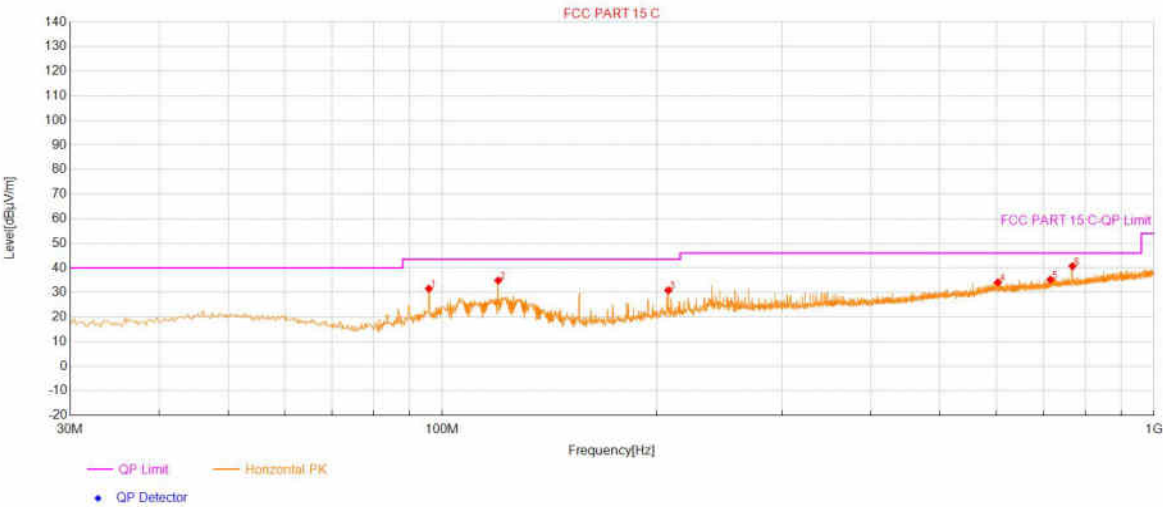
APPENDIX A – Radiated Emission Below 1GHz Test Data

Test Report

Project Information			
EUT:		Environment:	24.3℃;52%
Model:	P13.A01.H4	SN:	
Mode:	11B_2412	Voltage:	DC 4.2V
Customer:		Engineer:	Fly Liao
Remark:			

Start of Test: 2024-12-19

Test Graph



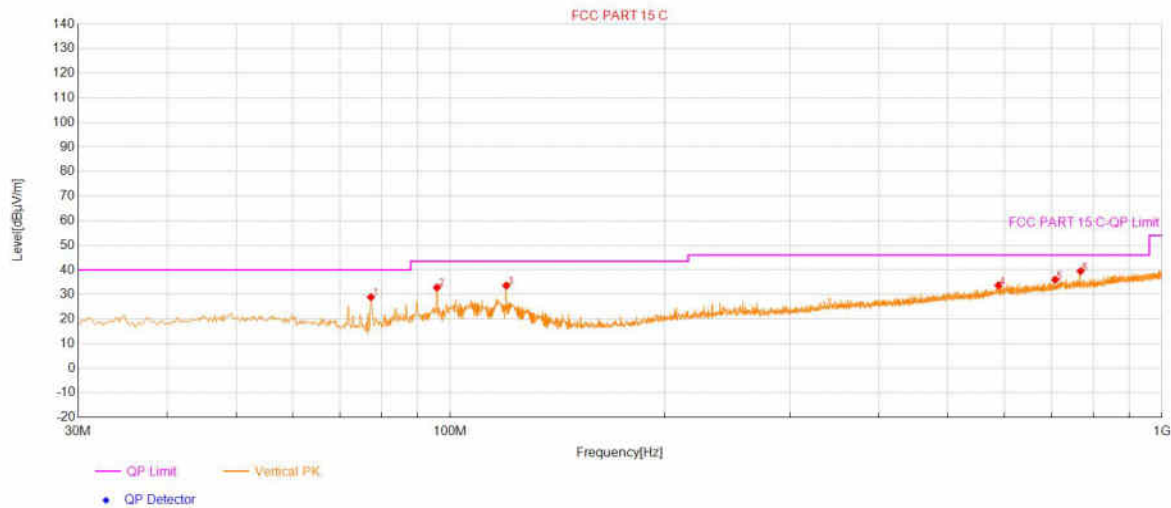
Suspected Data List										
NO.	Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity	Verdict
1	95.7792	31.59	19.16	43.50	11.91	100	32	PK	Horizontal	PASS
2	119.8400	34.89	18.00	43.50	8.61	100	210	PK	Horizontal	PASS
3	207.7395	30.86	20.74	43.50	12.64	100	120	PK	Horizontal	PASS
4	603.3847	34.11	30.51	46.00	11.89	100	355	PK	Horizontal	PASS
5	714.9570	35.23	31.74	46.00	10.77	100	360	PK	Horizontal	PASS
6	768.1236	40.68	32.81	46.00	5.32	100	269	PK	Horizontal	PASS

Test Report

Project Information			
EUT:		Environment:	24.3℃;52%
Model:	P13.A01.H4	SN:	Fly Liao
Mode:	11B_2412	Voltage:	DC 4.2V
Customer:		Engineer:	
Remark:			

Start of Test: 2024-12-19

Test Graph



Suspected Data List										
NO.	Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity	Verdict
1	77.3455	28.92	15.60	40.00	11.08	100	1	PK	Vertical	PASS
2	95.7792	32.83	19.16	43.50	10.67	100	258	PK	Vertical	PASS
3	119.8400	33.65	18.00	43.50	9.85	100	312	PK	Vertical	PASS
4	588.8318	33.73	30.06	46.00	12.27	100	186	PK	Vertical	PASS
5	707.5835	36.02	31.47	46.00	9.98	100	203	PK	Vertical	PASS
6	768.1236	39.51	32.81	46.00	6.49	100	160	PK	Vertical	PASS

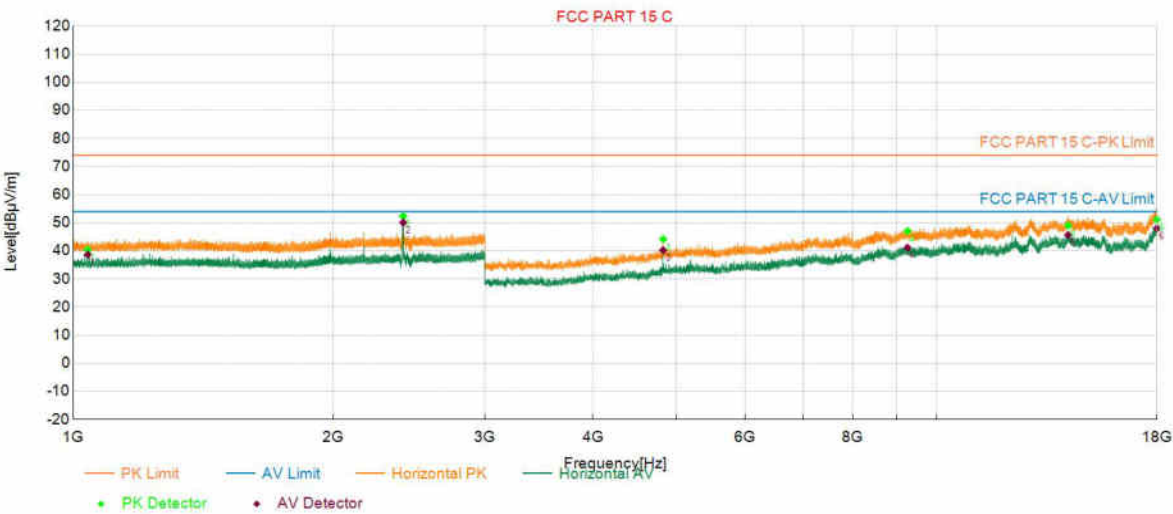
APPENDIX B – Radiated Emission Above 1GHz Test Data

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11B_2412	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:21		
Test Standard: FCC PART 15 C			

Start of Test:2024-12-04 10:23:51

Test Graph



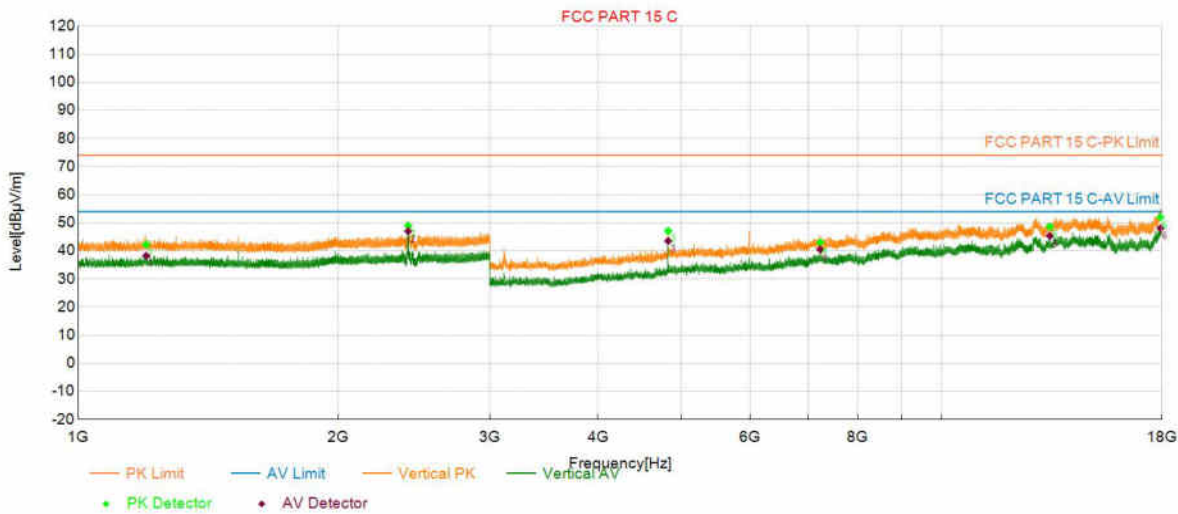
PK Final Data List										
NO.	Frequency (MHz)	PK Value (dBµV/m)	PK Limit (dBµV/m)	PK Margin (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1039.8020	40.40	74.00	33.60	38.64	54.00	15.36	150	192	Horizontal
2	2411.5706	52.35	74.00	21.65	50.06	54.00	3.94	150	84	Horizontal
3	4823.3412	44.19	74.00	29.81	40.25	54.00	13.75	150	162	Horizontal
4	9253.8127	47.04	74.00	26.96	41.11	54.00	12.89	150	3	Horizontal
5	14199.5600	49.03	74.00	24.97	45.63	54.00	8.37	150	71	Horizontal
6	17992.4996	51.13	74.00	22.87	47.98	54.00	6.02	150	10	Horizontal

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11B_2412	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:21		
Test Standard: FCC PART 15 C			

Start of Test:2024-12-04 10:25:11

Test Graph



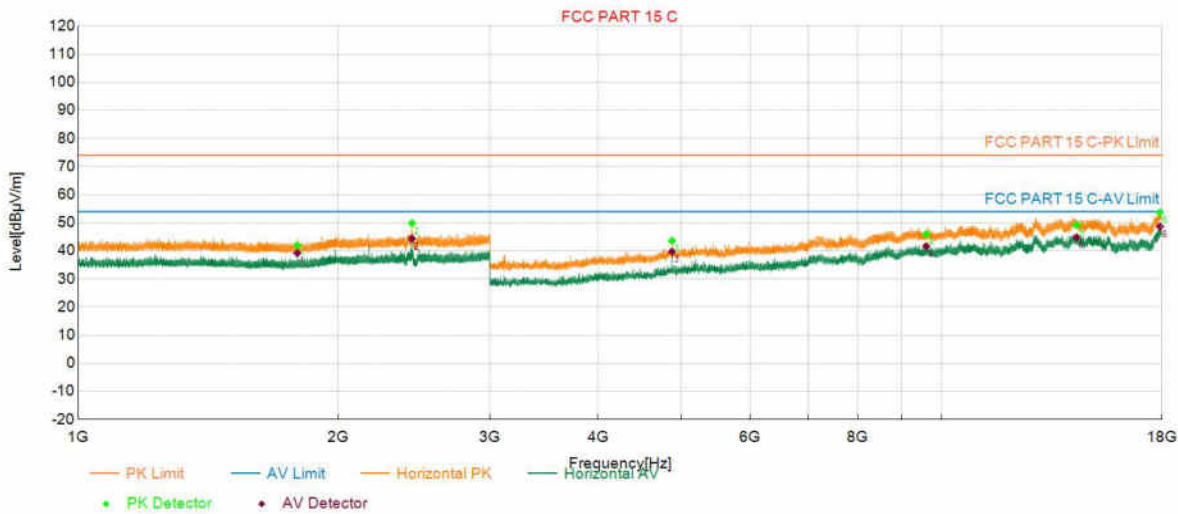
PK Final Data List										
NO.	Frequency (MHz)	PK Value (dBµV/m)	PK Limit (dBµV/m)	PK Margin (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1199.1100	42.23	74.00	31.77	38.27	54.00	15.73	150	104	Vertical
2	2411.5706	48.93	74.00	25.07	47.01	54.00	6.99	150	310	Vertical
3	4823.3412	47.08	74.00	26.92	43.52	54.00	10.48	150	148	Vertical
4	7236.2118	43.02	74.00	30.98	40.51	54.00	13.49	150	194	Vertical
5	13347.5174	48.61	74.00	25.39	45.34	54.00	8.66	150	157	Vertical
6	17930.2465	52.03	74.00	21.97	48.06	54.00	5.94	150	111	Vertical

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11B_2437	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:21		
Test Standard: FCC PART 15 C			

Start of Test:2024-12-04 10:35:20

Test Graph



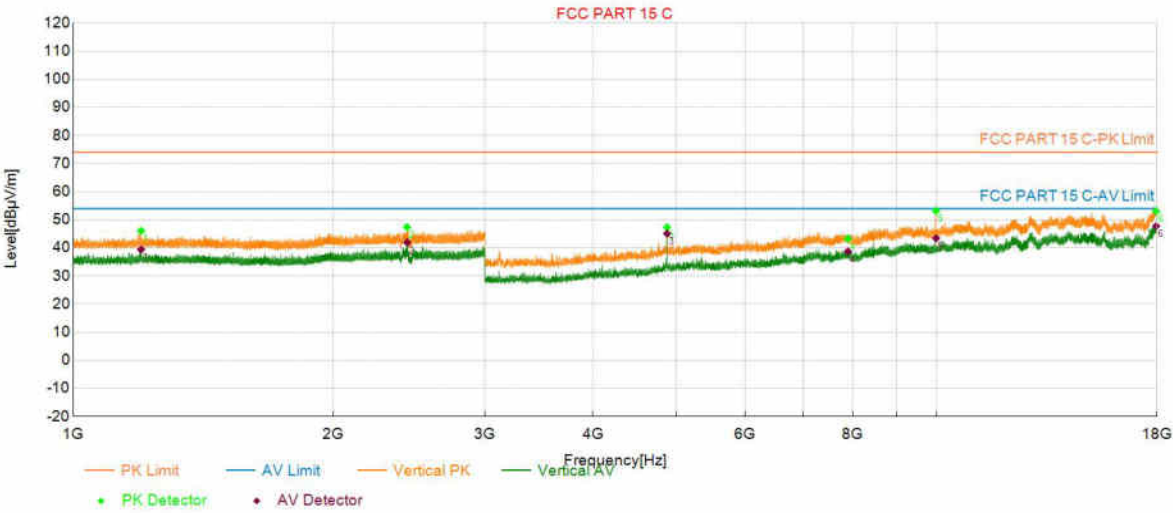
PK Final Data List										
NO.	Frequency (MHz)	PK Value (dBµV/m)	PK Limit (dBµV/m)	PK Margin (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1794.0397	41.94	74.00	32.06	39.23	54.00	14.77	150	122	Horizontal
2	2435.9718	49.85	74.00	24.15	44.41	54.00	9.59	150	69	Horizontal
3	4873.5937	43.56	74.00	30.44	39.73	54.00	14.27	150	172	Horizontal
4	9597.3299	45.98	74.00	28.02	41.61	54.00	12.39	150	180	Horizontal
5	14335.3168	49.18	74.00	24.82	44.82	54.00	9.18	150	227	Horizontal
6	17905.4953	53.65	74.00	20.35	48.64	54.00	5.36	150	180	Horizontal

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11B_2437	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:21		
Test Standard: FCC PART 15 C			

Start of Test:2024-12-04 10:36:41

Test Graph



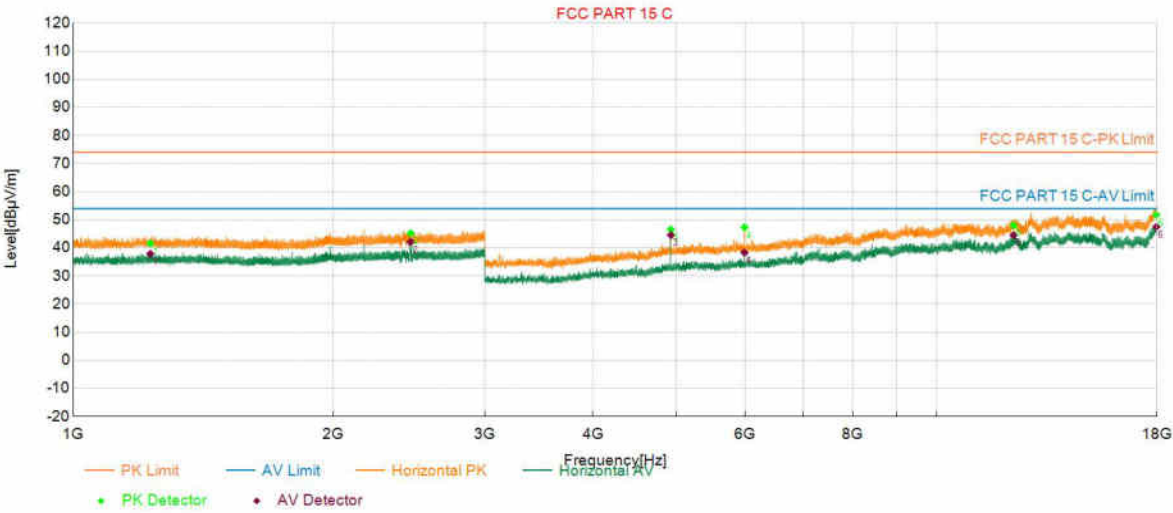
PK Final Data List										
NO.	Frequency (MHz)	PK Value (dBµV/m)	PK Limit (dBµV/m)	PK Margin (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1198.6099	46.04	74.00	27.96	39.41	54.00	14.59	150	112	Vertical
2	2436.2718	47.41	74.00	26.59	41.93	54.00	12.07	150	303	Vertical
3	4873.5937	47.30	74.00	26.70	45.07	54.00	8.93	150	154	Vertical
4	7893.9947	43.26	74.00	30.74	38.74	54.00	15.26	150	43	Vertical
5	9984.3492	53.18	74.00	20.82	43.42	54.00	10.58	150	351	Vertical
6	17957.2479	53.03	74.00	20.97	47.75	54.00	6.25	150	0	Vertical

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11B_2462	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:21		
Test Standard: FCC PART 15 C			

Start of Test:2024-12-04 10:44:33

Test Graph



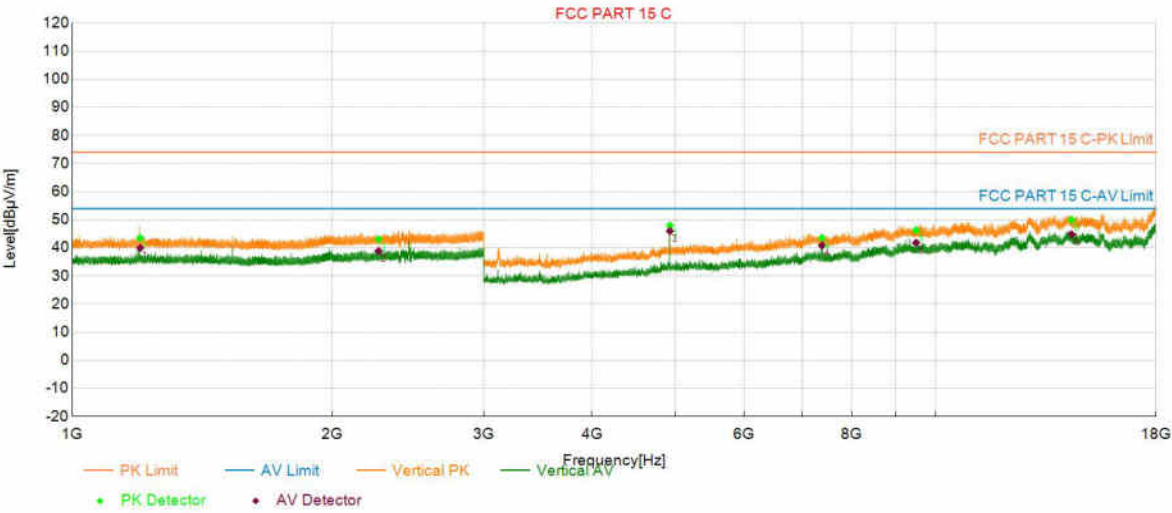
PK Final Data List										
NO.	Frequency (MHz)	PK Value (dBµV/m)	PK Limit (dBµV/m)	PK Margin (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1228.5114	41.60	74.00	32.40	37.83	54.00	16.17	150	120	Horizontal
2	2459.6730	45.25	74.00	28.75	42.13	54.00	11.87	150	68	Horizontal
3	4923.8462	46.53	74.00	27.47	44.55	54.00	9.45	150	168	Horizontal
4	5990.3995	47.29	74.00	26.71	38.31	54.00	15.69	150	114	Horizontal
5	12279.4640	48.01	74.00	25.99	44.55	54.00	9.45	150	8	Horizontal
6	17967.7484	51.73	74.00	22.27	47.46	54.00	6.54	150	159	Horizontal

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11B_2462	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:21		
Test Standard: FCC PART 15 C			

Start of Test:2024-12-04 10:45:53

Test Graph



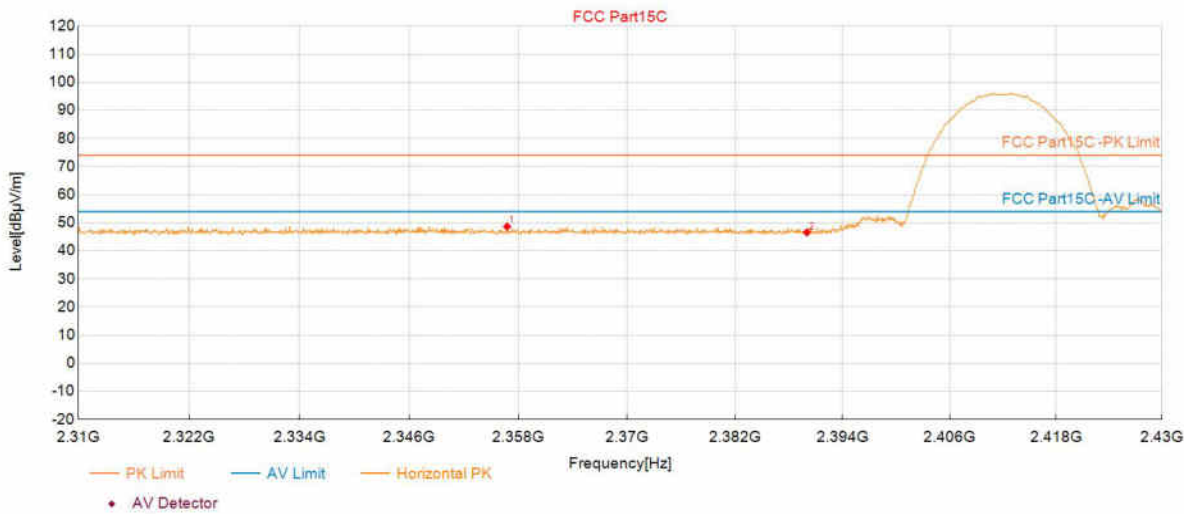
PK Final Data List										
NO.	Frequency (MHz)	PK Value (dBµV/m)	PK Limit (dBµV/m)	PK Margin (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1198.8099	43.47	74.00	30.53	39.95	54.00	14.05	150	106	Vertical
2	2263.9632	43.04	74.00	30.96	38.87	54.00	15.13	150	124	Vertical
3	4923.8462	47.95	74.00	26.05	45.97	54.00	8.03	150	149	Vertical
4	7386.9693	43.51	74.00	30.49	40.81	54.00	13.19	150	149	Vertical
5	9492.3246	46.32	74.00	27.68	41.82	54.00	12.18	150	88	Vertical
6	14372.0686	49.95	74.00	24.05	44.85	54.00	9.15	150	3	Vertical

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11B_2412	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:21		
Test Standard: FCC Part15C			

Start of Test:2024-12-04 10:58:21

Test Graph



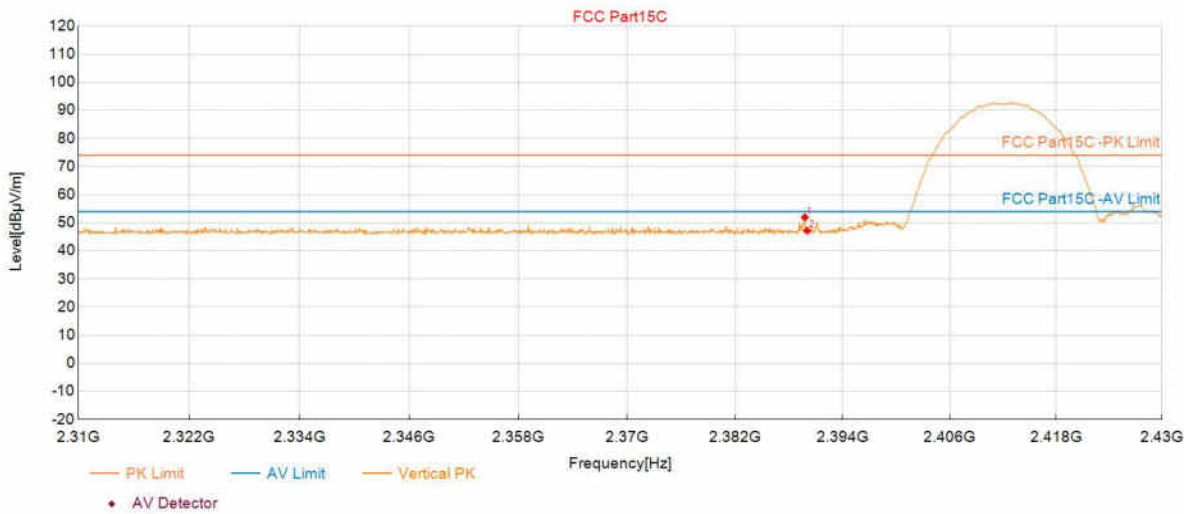
Suspected Data List								
NO.	Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Polarity
1	2356.7634	48.62	6.47	74.00	25.38	150	83	Horizontal
2	2390.0200	46.59	6.53	74.00	27.41	150	214	Horizontal

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11B_2412	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:21		
Test Standard: FCC Part15C			

Start of Test:2024-12-04 10:59:01

Test Graph



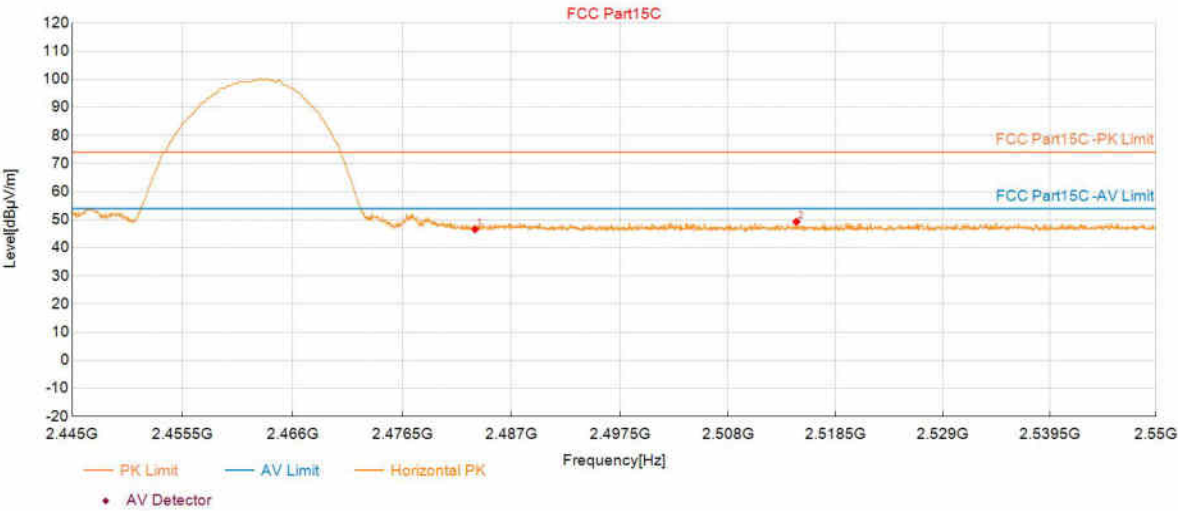
Suspected Data List								
NO.	Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Polarity
1	2389.7799	51.92	6.52	74.00	22.08	150	97	Vertical
2	2390.0200	47.20	6.53	74.00	26.80	150	58	Vertical

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11B_2462	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:21		
Test Standard: FCC Part15C			

Start of Test:2024-12-04 10:53:44

Test Graph



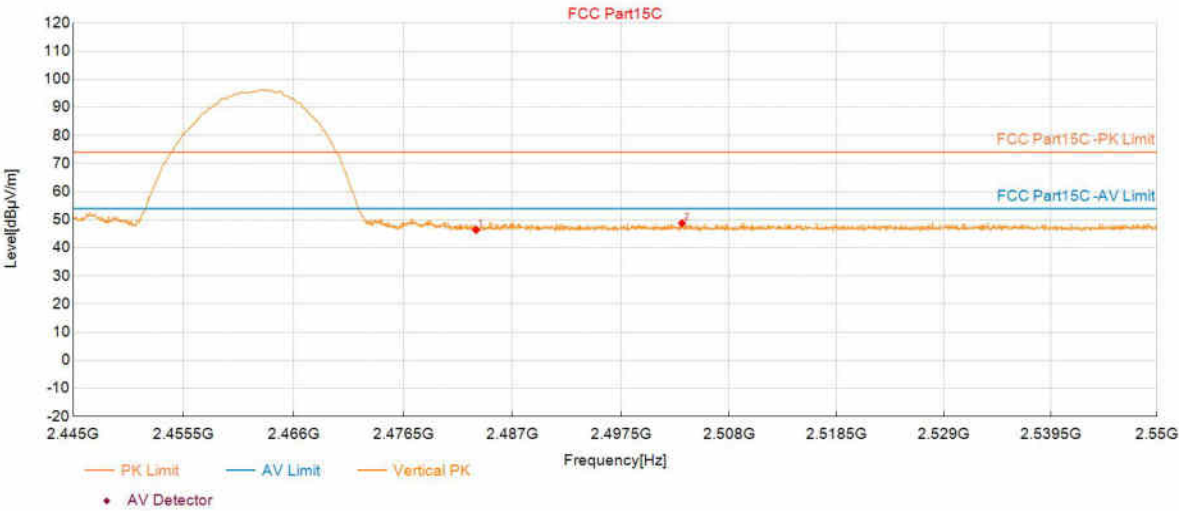
Suspected Data List								
NO.	Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Polarity
1	2483.5128	46.62	6.99	74.00	27.38	150	64	Horizontal
2	2514.6732	49.30	7.15	74.00	24.70	150	235	Horizontal

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11B_2462	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:21		
Test Standard: FCC Part15C			

Start of Test:2024-12-04 10:54:41

Test Graph



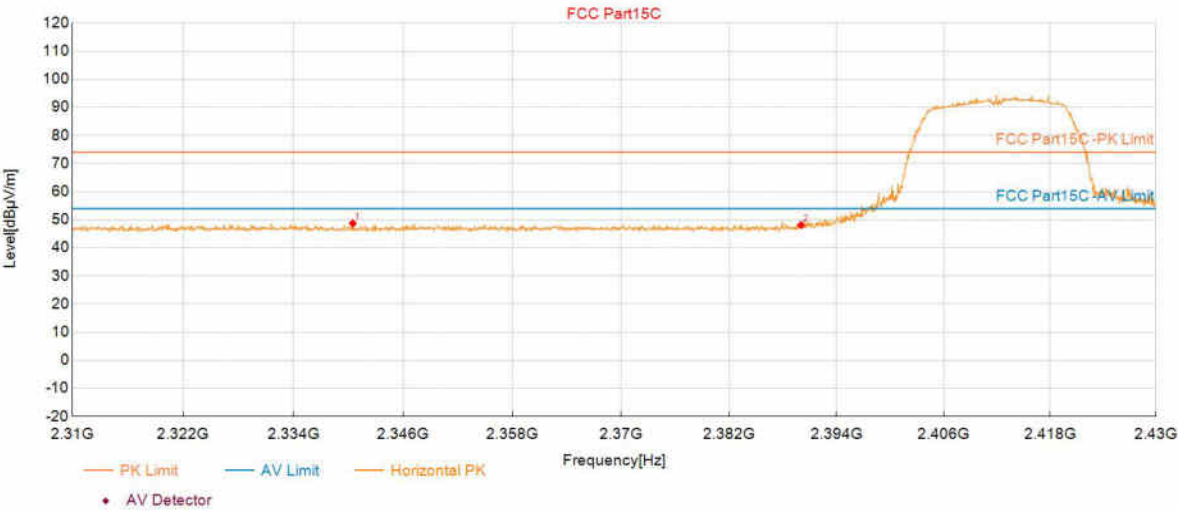
Suspected Data List								
NO.	Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Polarity
1	2483.5128	46.39	6.99	74.00	27.61	150	0	Vertical
2	2503.4345	48.76	7.09	74.00	25.24	150	108	Vertical

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11G_2412	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:15		
Test Standard: FCC Part15C			

Start of Test:2024-12-04 11:02:22

Test Graph



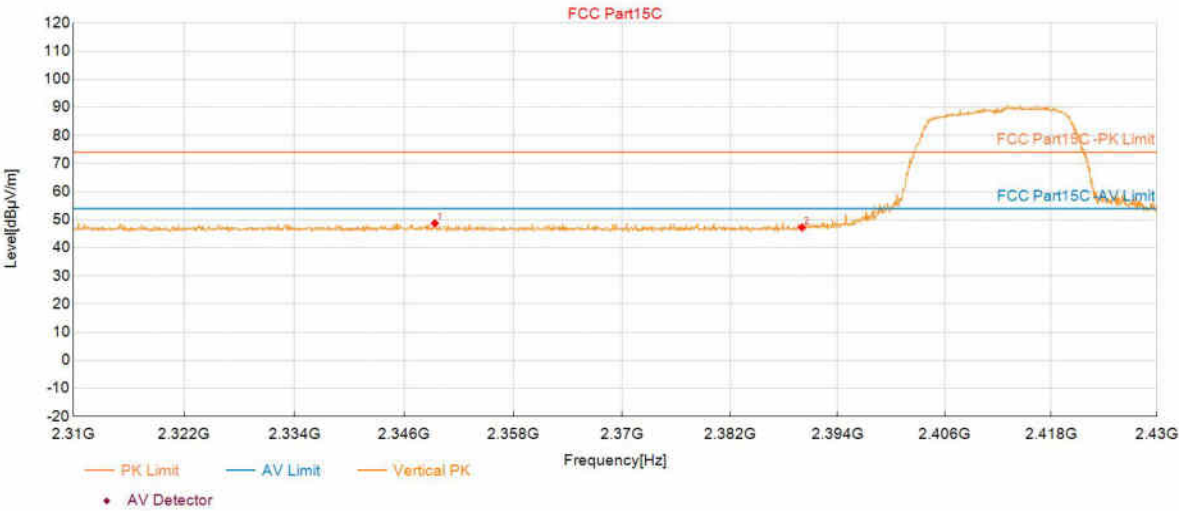
Suspected Data List								
NO.	Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Polarity
1	2340.4952	48.70	6.43	74.00	25.30	150	104	Horizontal
2	2390.0200	48.10	6.53	74.00	25.90	150	322	Horizontal

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11G_2412	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:15		
Test Standard: FCC Part15C			

Start of Test:2024-12-04 11:03:02

Test Graph



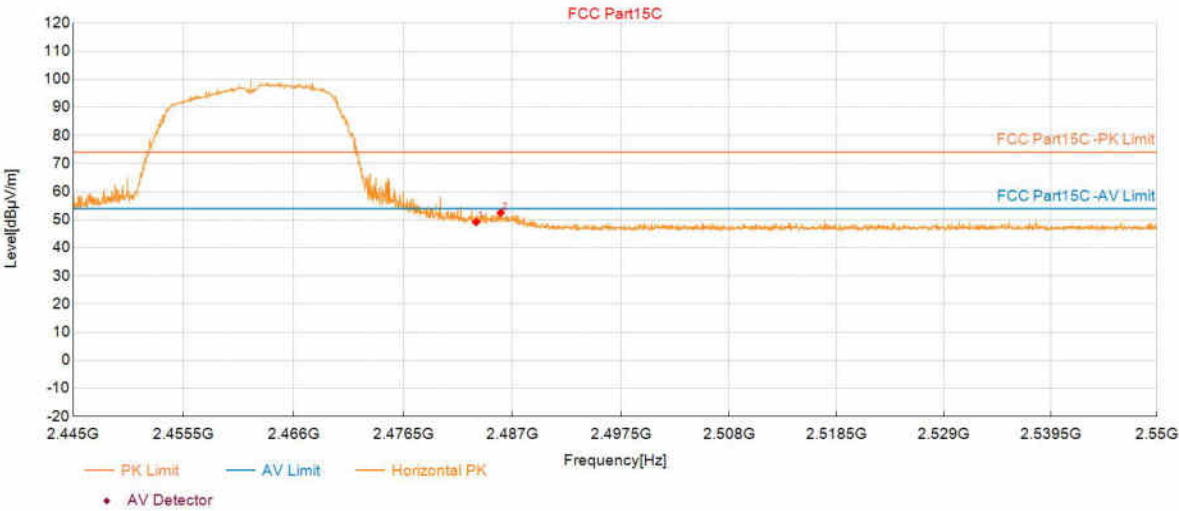
Suspected Data List								
NO.	Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Polarity
1	2349.3797	48.71	6.44	74.00	25.29	150	201	Vertical
2	2390.0200	47.22	6.53	74.00	26.78	150	250	Vertical

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11G_2462	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:15		
Test Standard: FCC Part15C			

Start of Test:2024-12-04 11:05:51

Test Graph



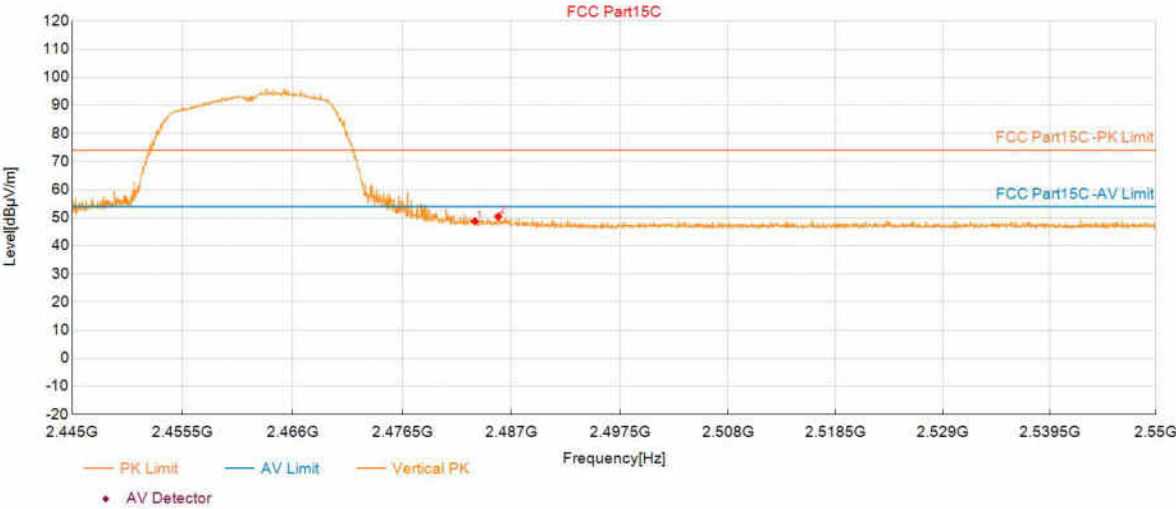
Suspected Data List								
NO.	Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Polarity
1	2483.5128	49.16	6.99	74.00	24.84	150	53	Horizontal
2	2485.8936	52.49	7.00	74.00	21.51	150	63	Horizontal

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11G_2462	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:15		
Test Standard: FCC Part15C			

Start of Test:2024-12-04 11:06:31

Test Graph



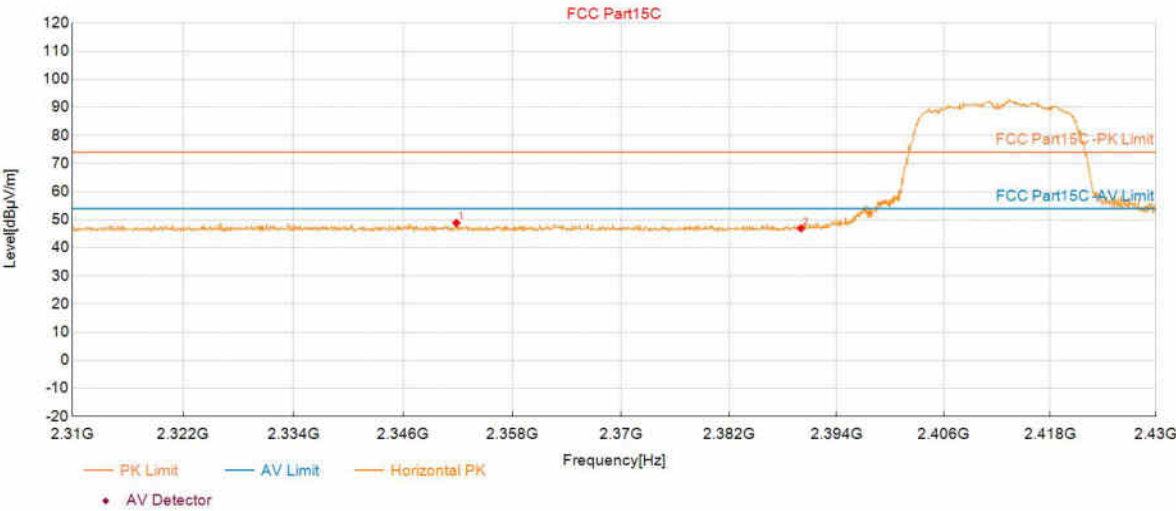
Suspected Data List								
NO.	Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Polarity
1	2483.5128	48.78	6.99	74.00	25.22	150	314	Vertical
2	2485.7536	50.48	7.00	74.00	23.52	150	278	Vertical

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11N20_2412	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:13		
Test Standard: FCC Part15C			

Start of Test:2024-12-04 11:09:46

Test Graph



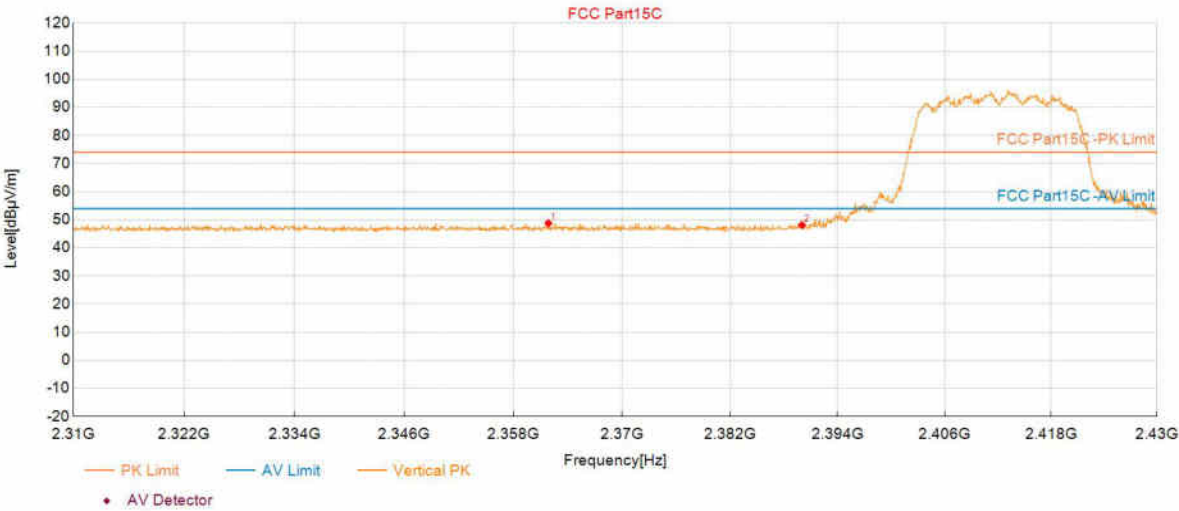
Suspected Data List								
NO.	Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Polarity
1	2351.8409	48.88	6.46	74.00	25.12	150	144	Horizontal
2	2390.0200	46.94	6.53	74.00	27.06	150	165	Horizontal

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11N20_2412	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:13		
Test Standard: FCC Part15C			

Start of Test:2024-12-04 11:10:28

Test Graph



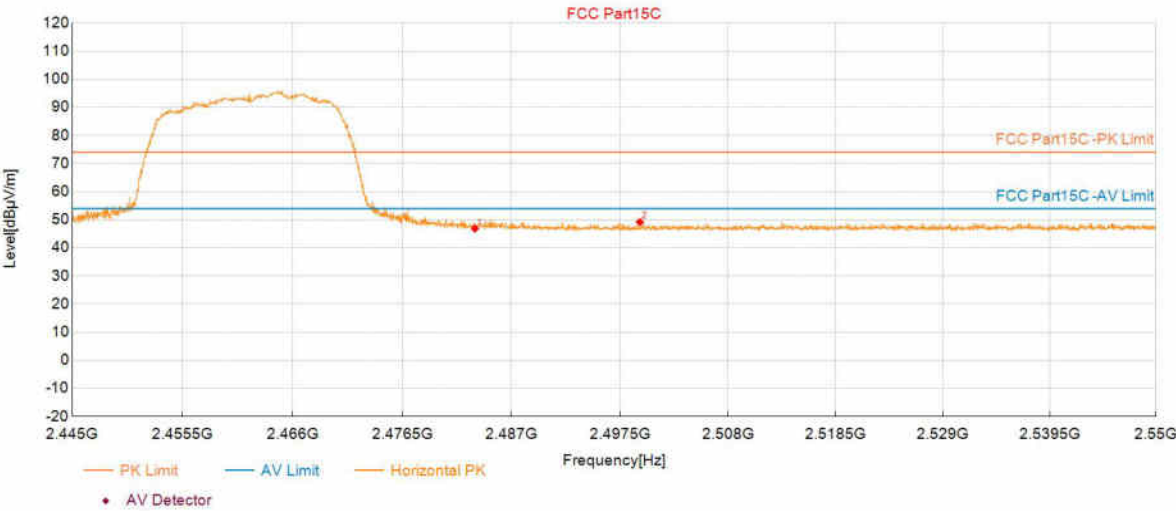
Suspected Data List								
NO.	Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Polarity
1	2361.8659	48.75	6.47	74.00	25.25	150	270	Vertical
2	2390.0200	48.13	6.53	74.00	25.87	150	39	Vertical

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11N20_2462	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:13		
Test Standard: FCC Part15C			

Start of Test:2024-12-04 11:12:39

Test Graph



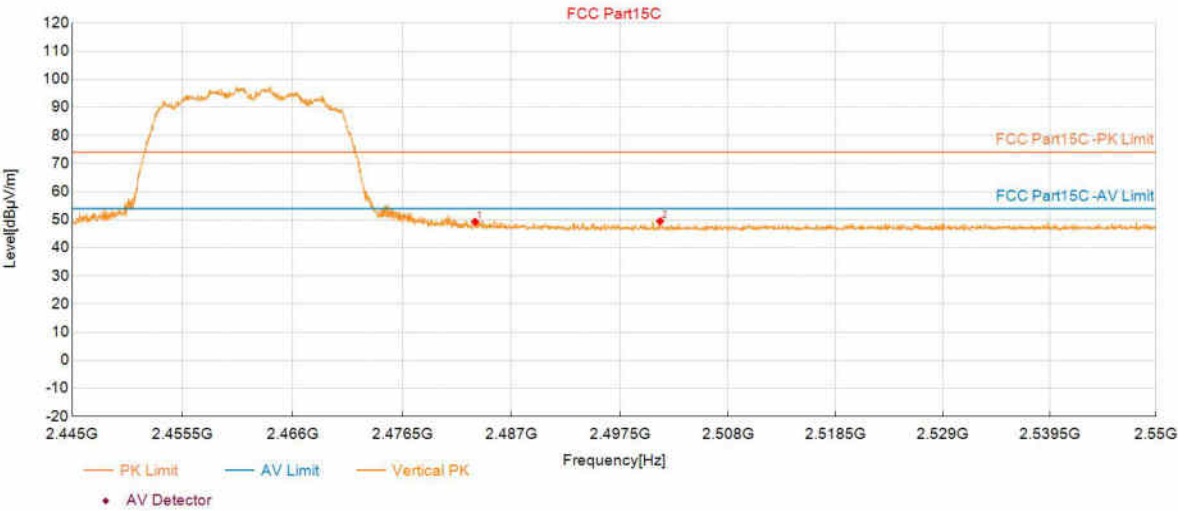
Suspected Data List								
NO.	Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Polarity
1	2483.5128	46.86	6.99	74.00	27.14	150	300	Horizontal
2	2499.4431	49.15	7.08	74.00	24.85	150	300	Horizontal

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11N20_2462	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:13		
Test Standard: FCC Part15C			

Start of Test:2024-12-04 11:13:22

Test Graph



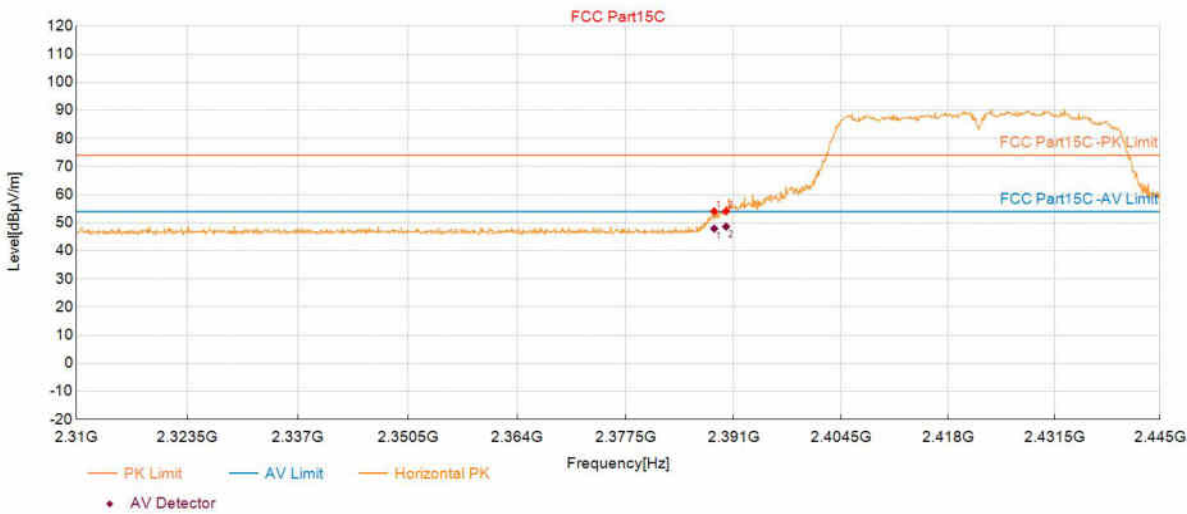
Suspected Data List								
NO.	Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Polarity
1	2483.5128	49.29	6.99	74.00	24.71	150	183	Vertical
2	2501.4038	49.49	7.09	74.00	24.51	150	40	Vertical

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11N40_2422	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:13		
Test Standard: FCC Part15C			

Start of Test:2024-12-04 11:16:31

Test Graph



Suspected Data List								
NO.	Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Polarity
1	2388.5418	54.06	6.52	74.00	19.94	150	83	Horizontal
2	2390.0275	54.08	6.53	74.00	19.92	150	83	Horizontal

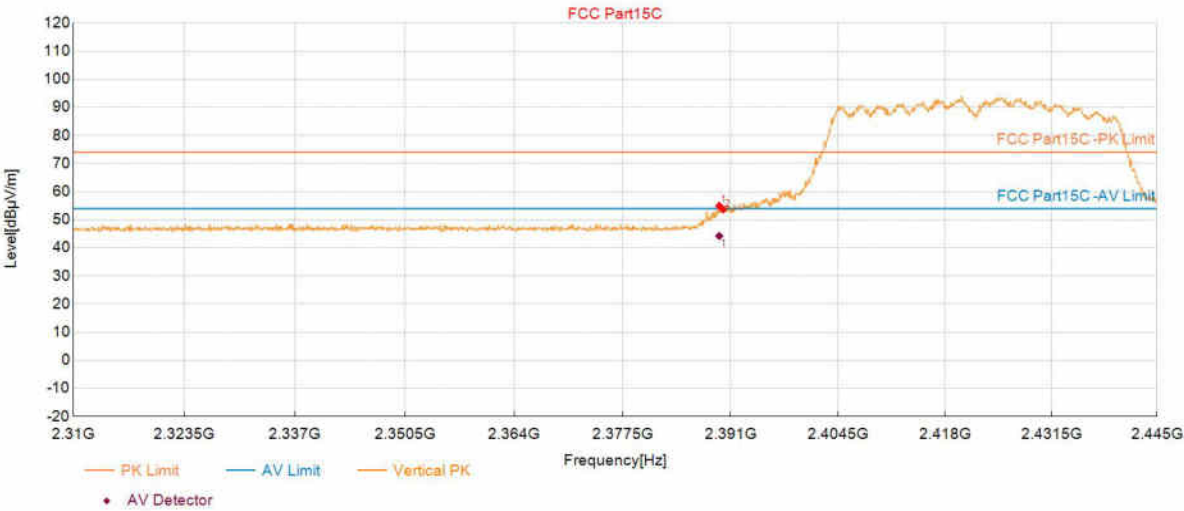
PK Final Data List							
NO.	Frequency (MHz)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	2388.5418	47.91	54.00	6.09	150	83	Horizontal
2	2390.0275	48.62	54.00	5.38	150	83	Horizontal

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11N40_2422	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:13		
Test Standard: FCC Part15C			

Start of Test:2024-12-04 11:17:14

Test Graph



Suspected Data List								
NO.	Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Polarity
1	2389.5548	54.93	6.52	74.00	19.07	150	319	Vertical
2	2390.0275	53.65	6.53	74.00	20.35	150	305	Vertical

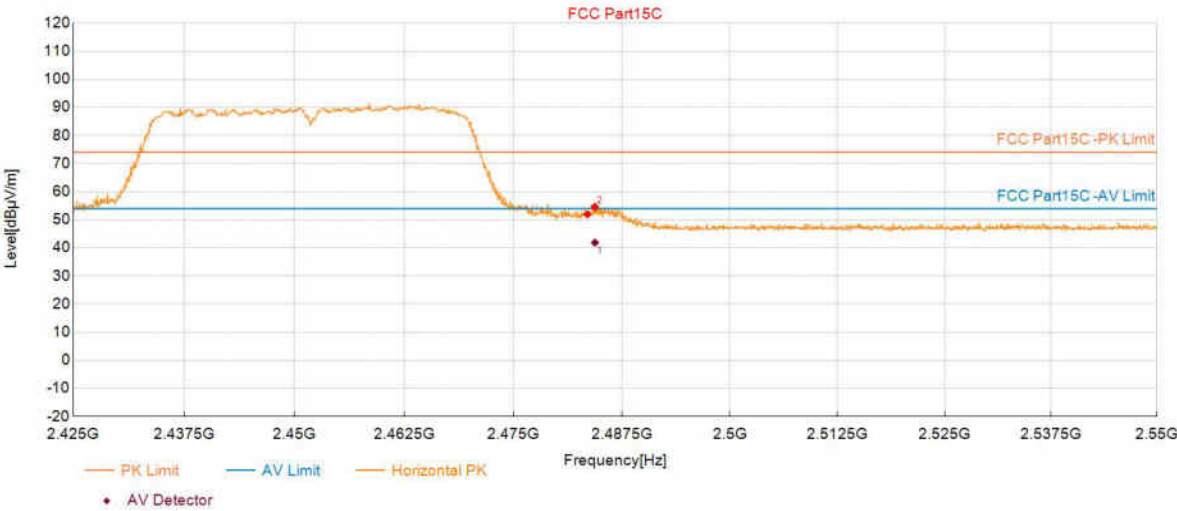
PK Final Data List							
NO.	Frequency (MHz)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	2389.5548	44.22	54.00	9.78	150	176	Vertical

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11N40_2452	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:13		
Test Standard: FCC Part15C			

Start of Test:2024-12-04 11:24:21

Test Graph



Suspected Data List								
NO.	Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Polarity
1	2483.5195	51.90	6.99	74.00	22.10	150	59	Horizontal
2	2484.3948	54.57	7.00	74.00	19.43	150	75	Horizontal

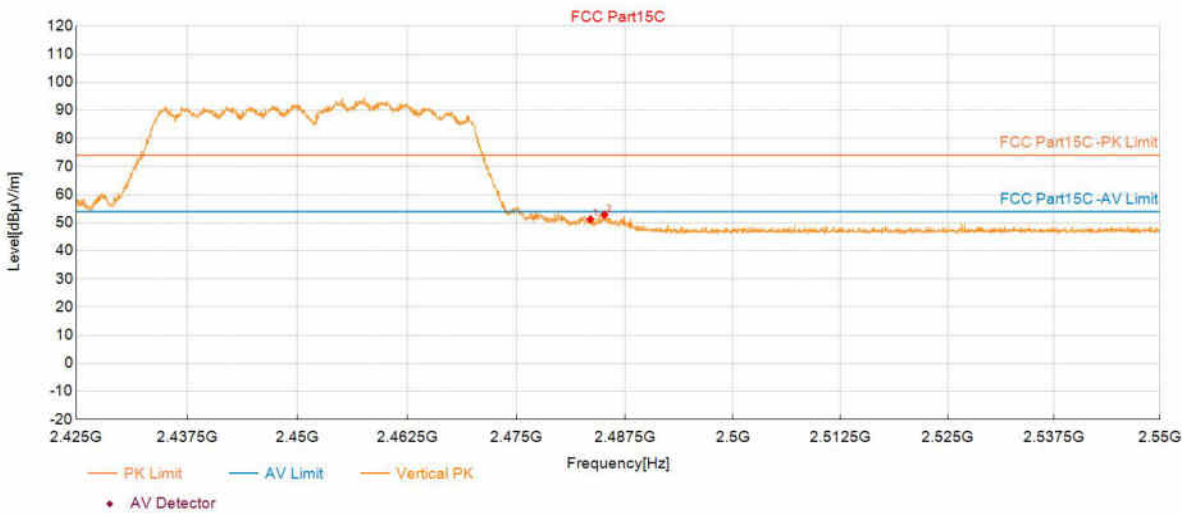
PK Final Data List							
NO.	Frequency (MHz)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	2484.3950	41.88	54.00	12.12	150	68.8	Horizontal

Test Report

Project Information			
Customer:			
EUT:	Vehicle wireless module		
Model:	P13.A01.H4	SN:	
Mode:	11N40_2452	Voltage:	DC 4.2V
Environment:	Temp: 25°C; Humi:60%	Engineer:	Soho Liu
Remark:	Power Set:13		
Test Standard: FCC Part15C			

Start of Test:2024-12-04 11:25:04

Test Graph



Suspected Data List								
NO.	Frequency (MHz)	Level (dBμV/m)	Factor (dB)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Angle (°)	Polarity
1	2483.5195	51.23	6.99	74.00	22.77	150	165	Vertical
2	2485.1450	52.84	7.00	74.00	21.16	150	185	Vertical

END OF REPORT