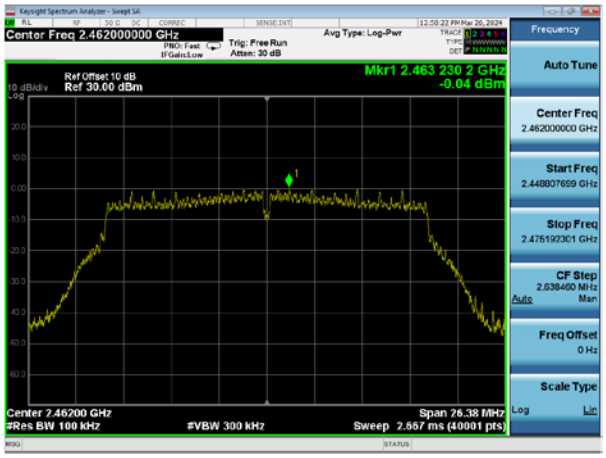
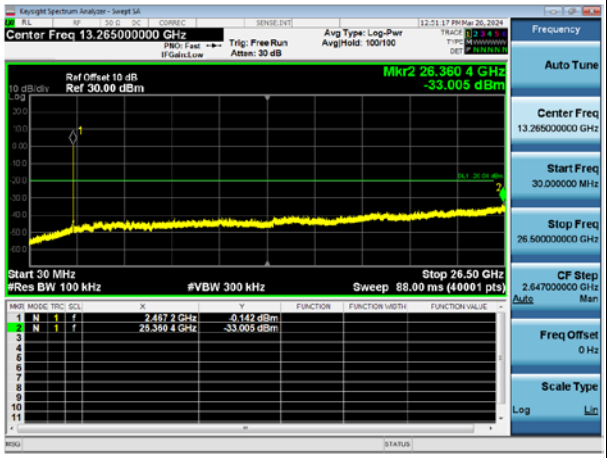
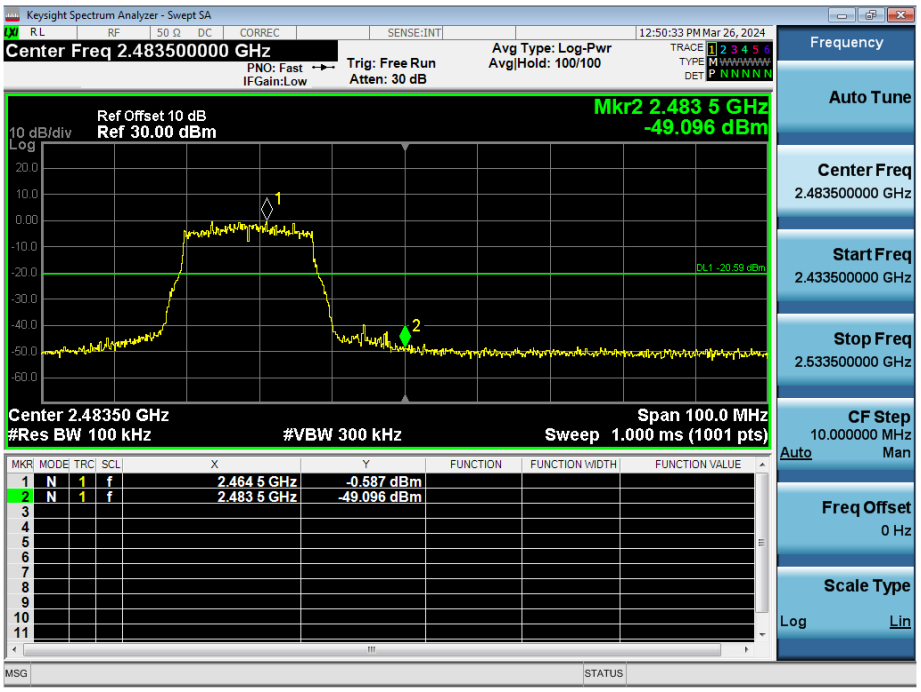
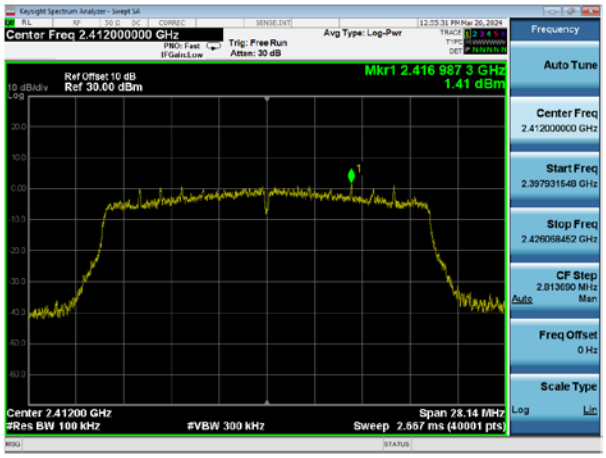
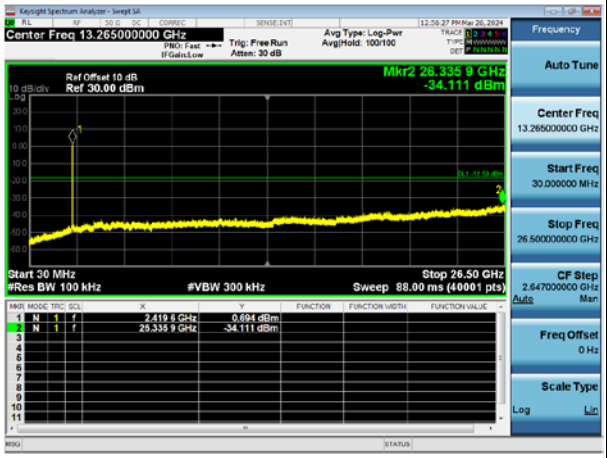
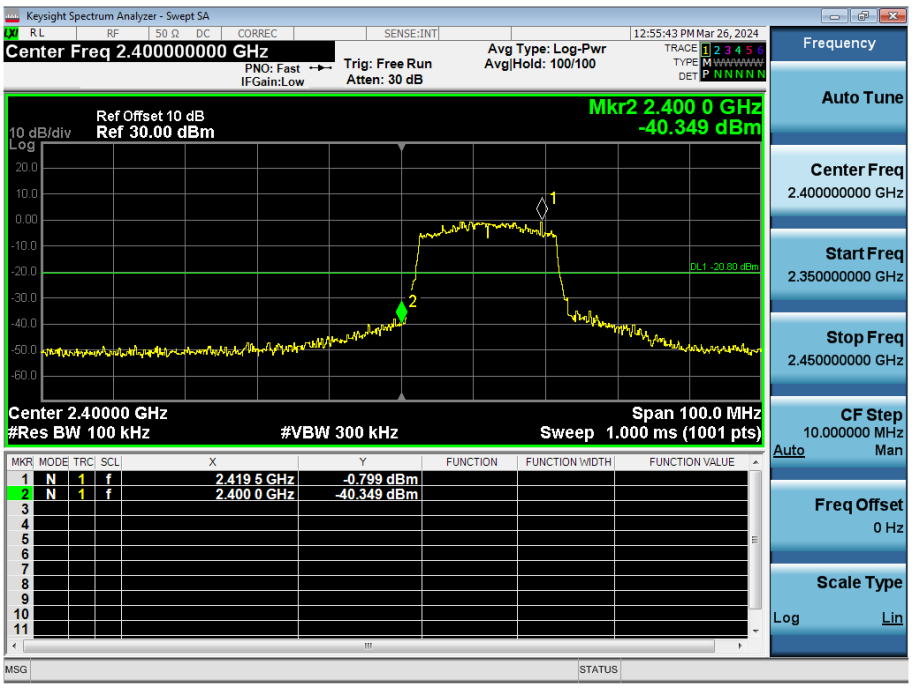
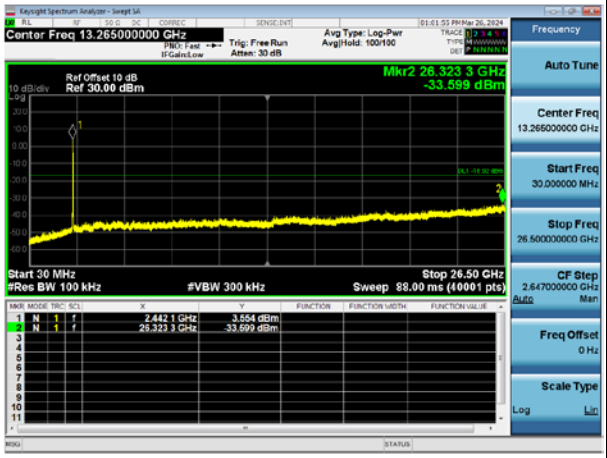
Chain B

WLAN 802.11n HT20 channel 11 (2462MHz)	
Reference Level	**Spurious Emission**
	
Band Edge	
	

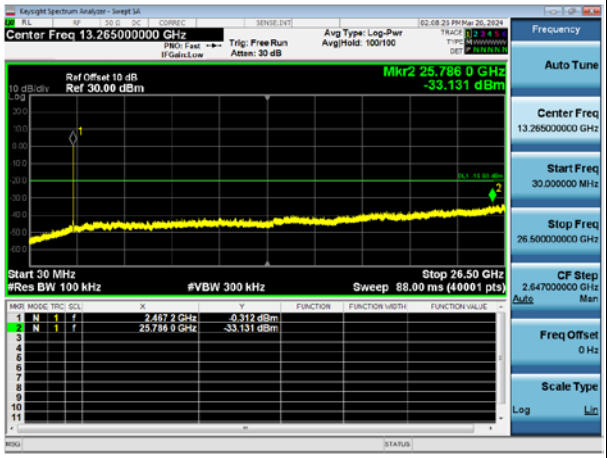
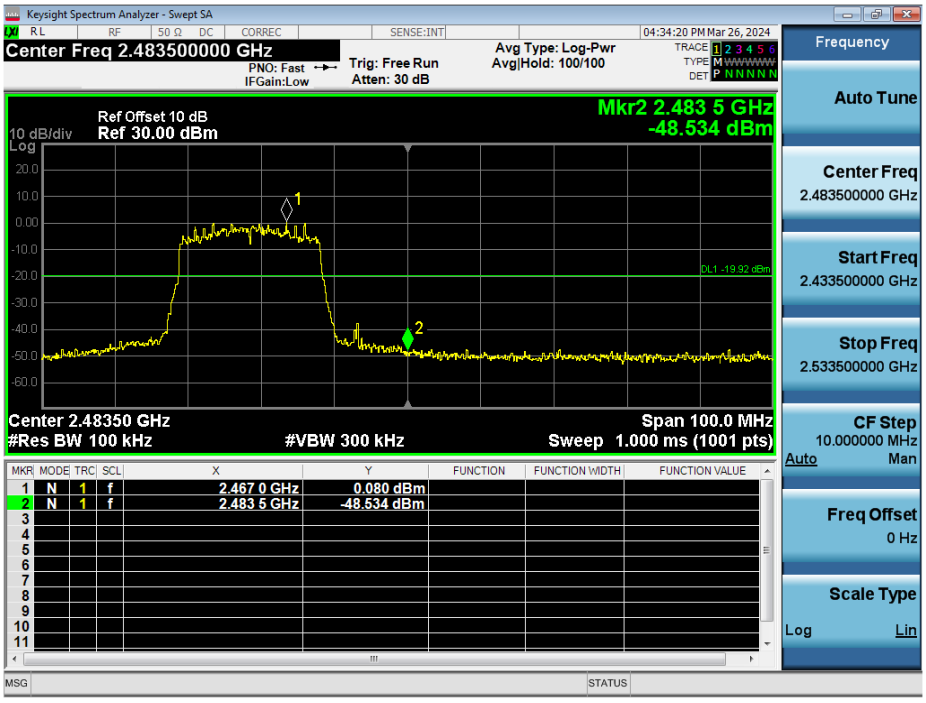
Chain B

WLAN 802.11ax HE20 channel 01 (2412 MHz)	
Reference Level	**Spurious Emission**
	
Band Edge	
	

Chain B

WLAN 802.11ax HE20 channel 06 (2437 MHz)	
Reference Level	**Spurious Emission**
	

Chain B

WLAN 802.11ax HE20 channel 11 (2462MHz)	
Reference Level	**Spurious Emission**
	
Band Edge	
	

2.6 Radiated Band Edges and Spurious Emission Measurement

2.6.1 Limit

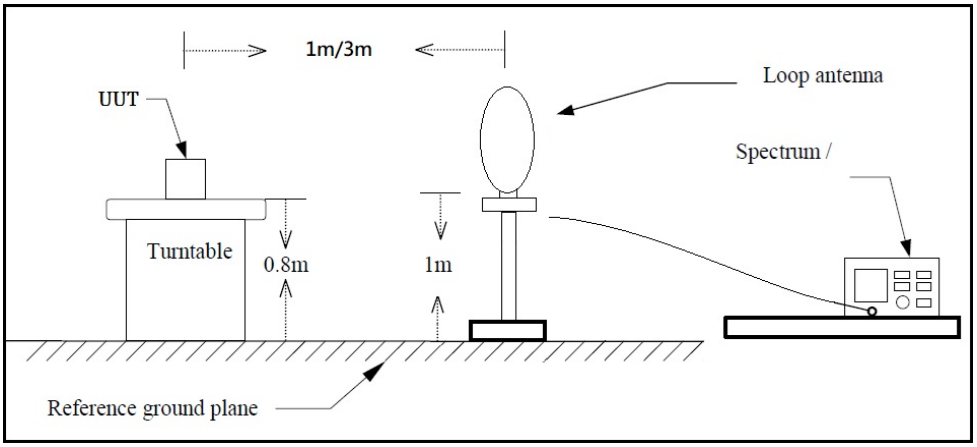
Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

Remarks:

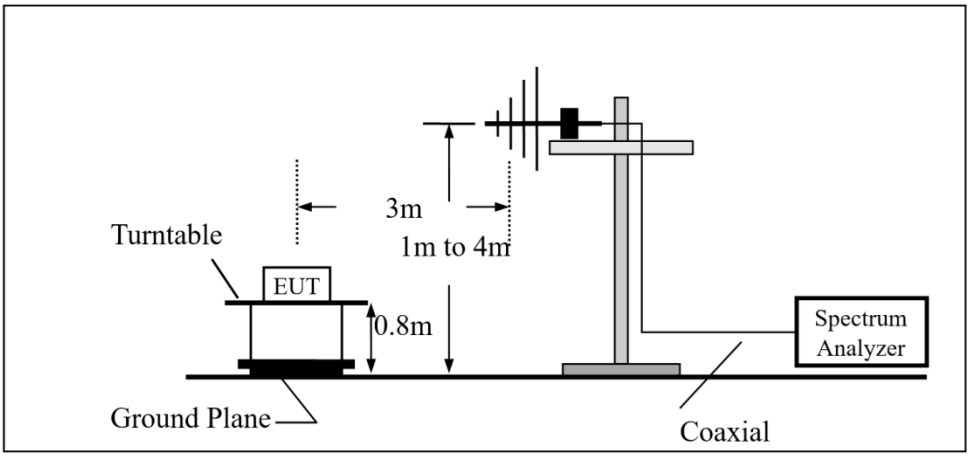
1. RF Voltage (dBuV) = 20 log RF Voltage(uV)
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system

2.6.2 Test Setup

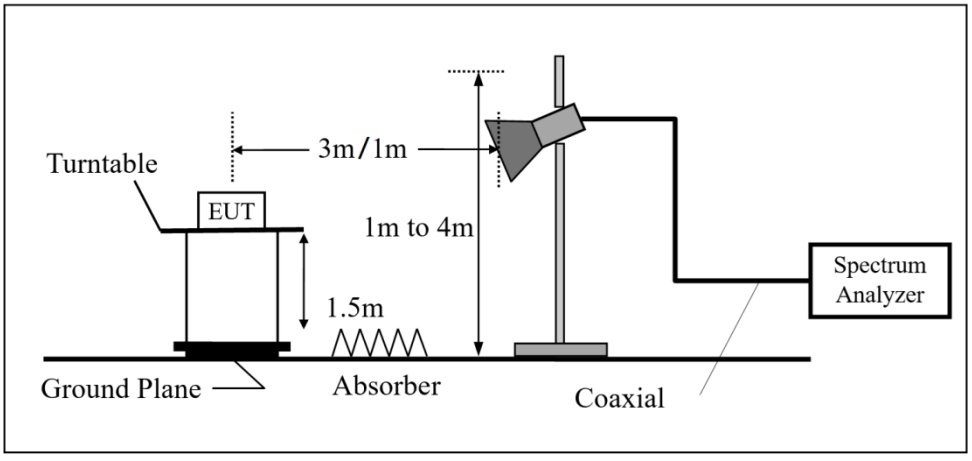
Below 30MHz



30MHz~1GHz



Above 1GHz



2.6.3 Test Procedure

The EUT was setup according to ANSI C63.10 : 2013 chapter 6.4, 6.5, 6.6 and tested according test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

(1) The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meters chamber room for the test. The table was rotated 360 degrees to determine the position of the highest radiation.

(2) The EUT was set 3 meters away from the interference-receiving antenna, the height of the antenna is varied from 1 meter to 4 meters above the ground to determine the maximum value of the field strength.

(3) Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

(4) For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

(5) The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

(6) The test-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. If the peak reading value also meets the average limit, measurement with the average detector is unnecessary.

Remarks:

(a) The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.

(b) The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.

(c) The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz(Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.

(d) All modes of operation were investigated and the worst-case emissions are reported.

For Radiated emission below 30MHz

(1) The EUT was placed on the top of a rotating table 0.8 meters above the ground in a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

(2) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

(3) Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

(4) For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

(5) The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

For Radiated emission Above 30MHz

(7) The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for the test. The table was rotated 360 degrees to determine the position of the highest radiation.

(8) The EUT was set 3 meters away from the interference-receiving antenna, the height of the antenna is varied from 1 meter to 4 meters above the ground to determine the maximum value of the field strength.

(9) Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

(10) For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

(11) The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

(12) The test-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. If the peak reading value also meets the average limit, measurement with the average detector is unnecessary.

2.6.4 Duty Cycle

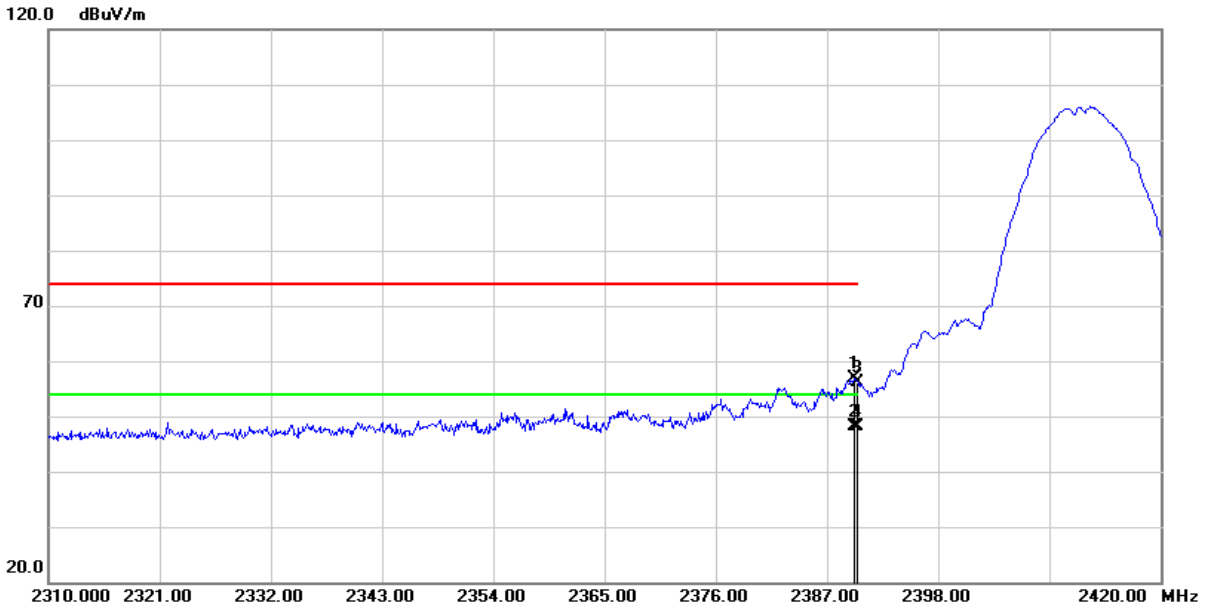
Protocol	Frequency (MHz)	on time (ms)	on+off time (ms)	Duty cycle	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11b	2412	8.520	8.550	0.996	0.015	0.010
802.11g	2412	1.405	1.495	0.940	0.270	0.712
802.11n HT20	2412	1.320	1.410	0.936	0.286	0.758
802.11ax HE20	2412	1.040	1.120	0.929	0.322	0.962

2.6.5 Test Result of Radiated Band Edge Measurement

The following tables for radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X axis) were recorded in this report.

Test Frequency	
RF	**802.11b / 802.11g / 802.11n HT20 / 802.11ax HE20**
Tx	CH01 (2412MHz) CH11 (2462MHz)

Test Mode :	Transmit (802.11b 1Mbps)	**Test Date :**	2024/03/22
Test Channel :	CH01 (2412MHz)	**Temperature :**	22.1 °C
Polarization :	Horizontal	**Relative Humidity :**	46 %

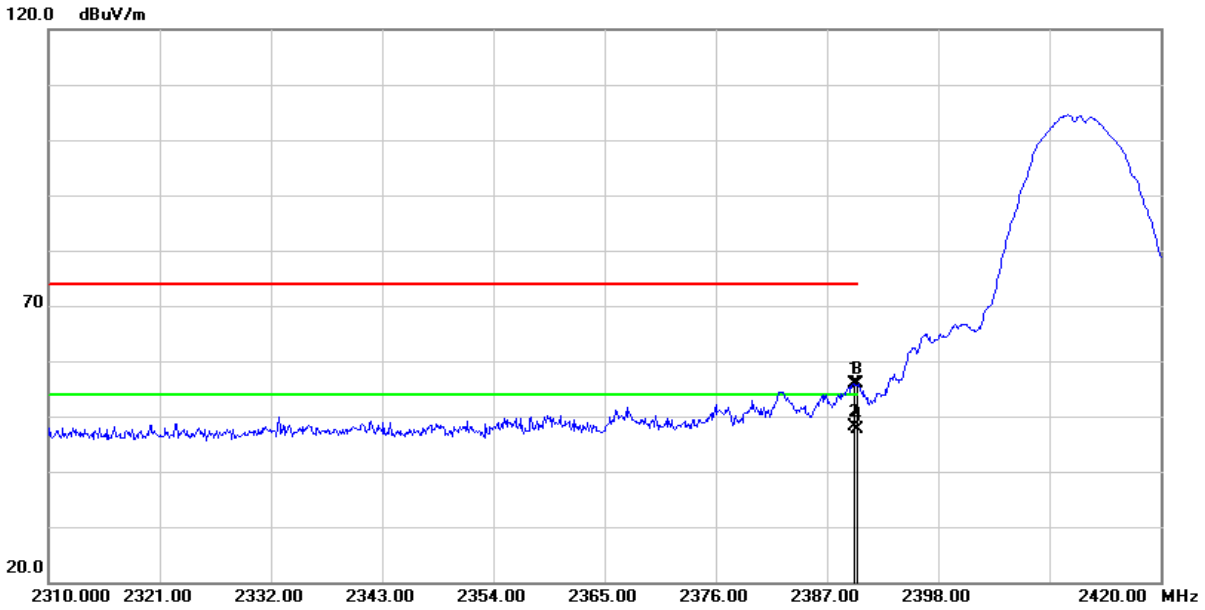


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.750	62.63	-5.69	56.94	74.00	-17.06	peak
2	2389.750	53.90	-5.69	48.21	54.00	-5.79	AVG
3	2390.000	61.81	-5.69	56.12	74.00	-17.88	peak
4	2390.000	53.76	-5.69	48.07	54.00	-5.93	AVG

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11b 1Mbps)	**Test Date :**	2024/03/22
Test Channel :	CH01 (2412MHz)	**Temperature :**	22.1 °C
Polarization :	Vertical	**Relative Humidity :**	46 %

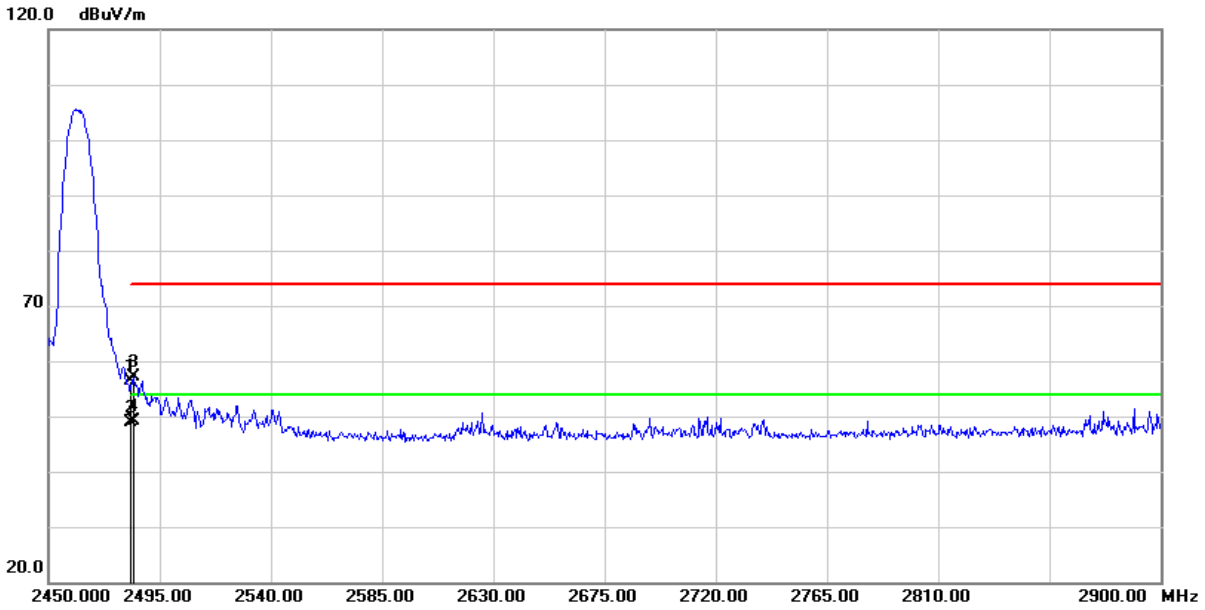


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.750	61.68	-5.69	55.99	74.00	-18.01	peak
2	2389.750	53.77	-5.69	48.08	54.00	-5.92	AVG
3	2390.000	61.52	-5.69	55.83	74.00	-18.17	peak
4	2390.000	53.41	-5.69	47.72	54.00	-6.28	AVG

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11b 1Mbps)	Test Date :	2024/03/22
Test Channel :	CH11 (2462MHz)	Temperature :	22.1 °C
Polarization :	Horizontal	Relative Humidity :	46 %

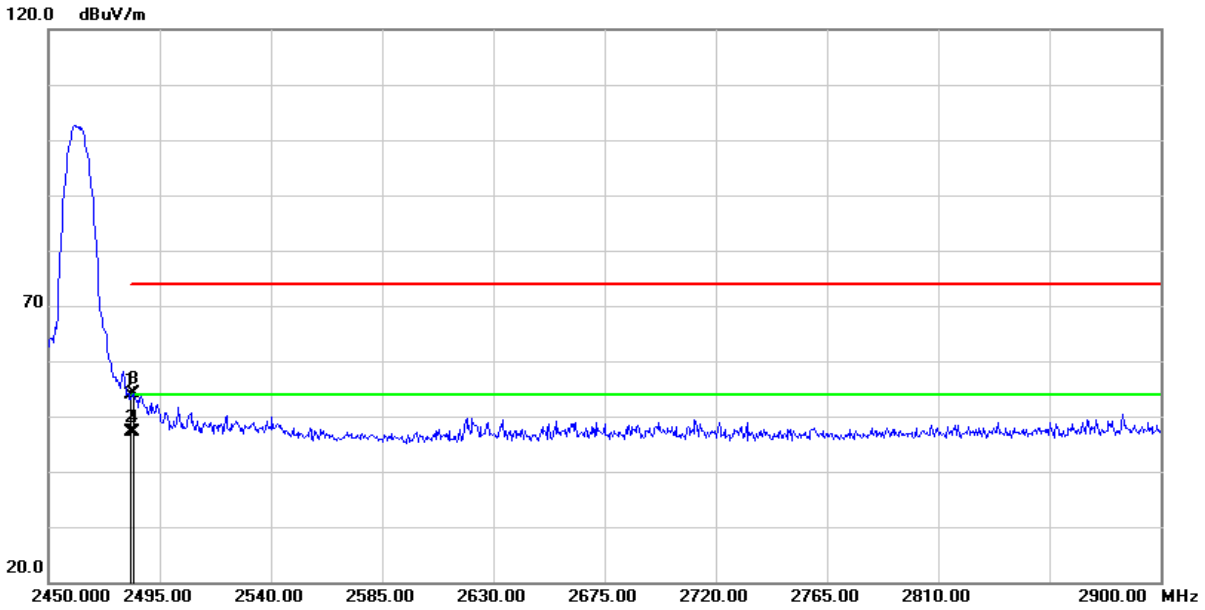


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	62.22	-5.81	56.41	74.00	-17.59	peak
2	2483.500	54.76	-5.81	48.95	54.00	-5.05	AVG
3	2484.200	62.87	-5.80	57.07	74.00	-16.93	peak
4	2484.200	54.93	-5.80	49.13	54.00	-4.87	AVG

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11b 1Mbps)	Test Date :	2024/03/22
Test Channel :	CH11 (2462MHz)	Temperature :	22.1 °C
Polarization :	Vertical	Relative Humidity :	46 %

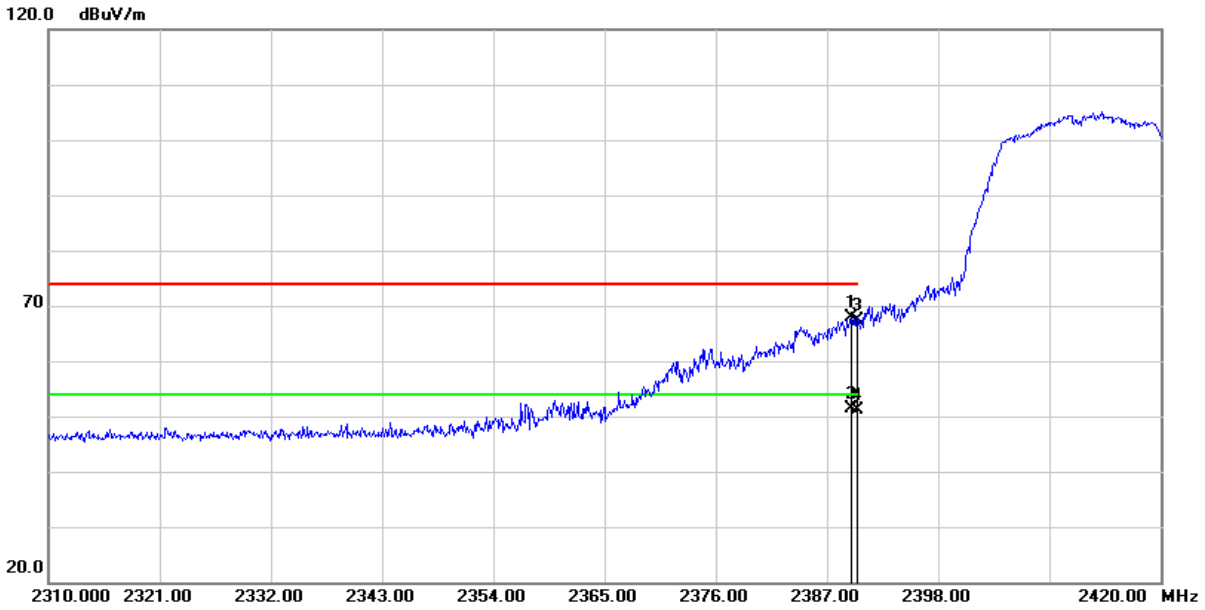


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	59.58	-5.81	53.77	74.00	-20.23	peak
2	2483.500	52.86	-5.81	47.05	54.00	-6.95	AVG
3	2484.200	59.83	-5.80	54.03	74.00	-19.97	peak
4	2484.200	52.99	-5.80	47.19	54.00	-6.81	AVG

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11g 6Mbps)	**Test Date :**	2024/03/22
Test Channel :	CH01 (2412MHz)	**Temperature :**	22.1 °C
Polarization :	Horizontal	**Relative Humidity :**	46 %

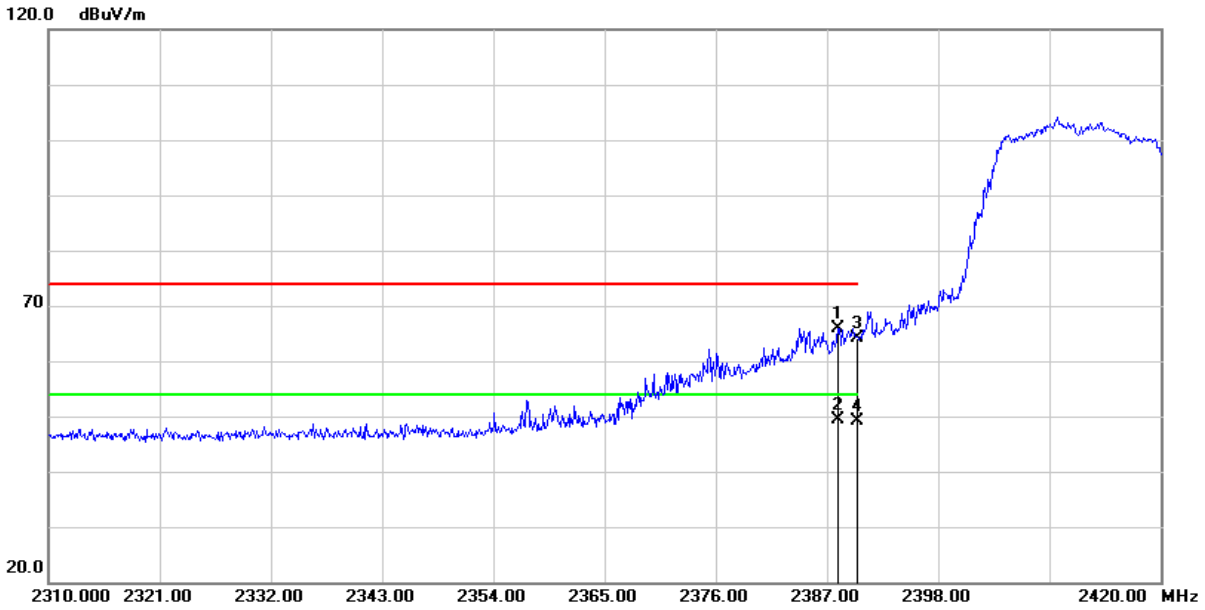


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.420	73.64	-5.70	67.94	74.00	-6.06	peak
2	2389.420	56.96	-5.70	51.26	54.00	-2.74	AVG
3	2390.000	73.11	-5.69	67.42	74.00	-6.58	peak
4	2390.000	56.80	-5.69	51.11	54.00	-2.89	AVG

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11g 6Mbps)	**Test Date :**	2024/03/22
Test Channel :	CH01 (2412MHz)	**Temperature :**	22.1 °C
Polarization :	Vertical	**Relative Humidity :**	46 %

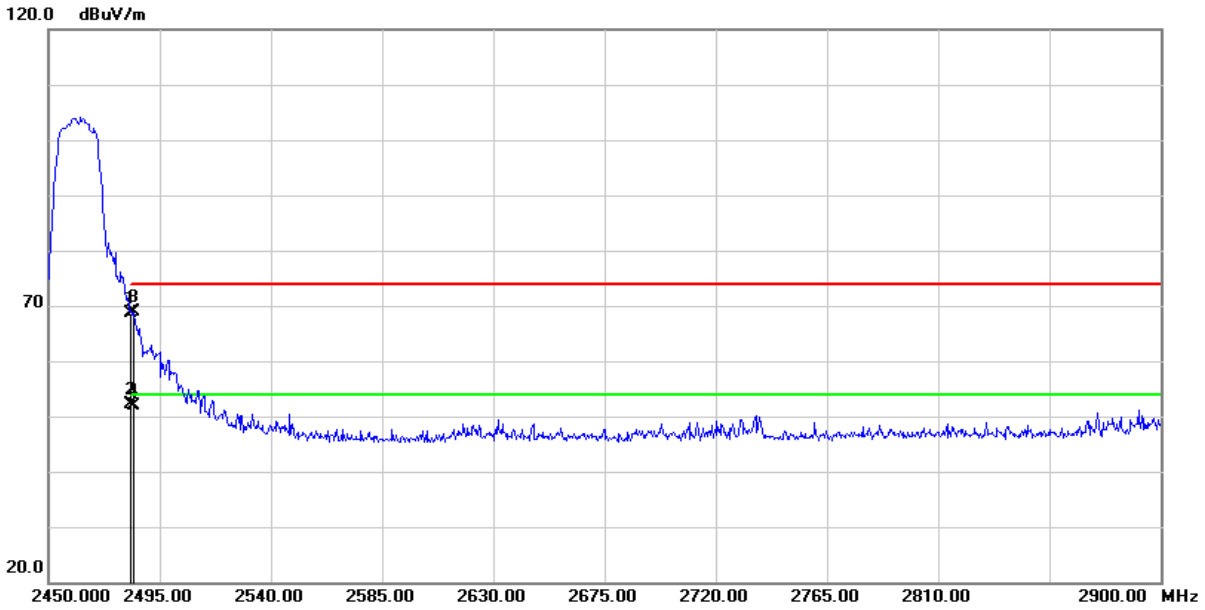


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.100	71.63	-5.71	65.92	74.00	-8.08	peak
2	2388.100	55.04	-5.71	49.33	54.00	-4.67	AVG
3	2390.000	69.72	-5.69	64.03	74.00	-9.97	peak
4	2390.000	54.92	-5.69	49.23	54.00	-4.77	AVG

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11g 6Mbps)	Test Date :	2024/03/22
Test Channel :	CH11 (2462MHz)	Temperature :	22.1 °C
Polarization :	Horizontal	Relative Humidity :	46 %

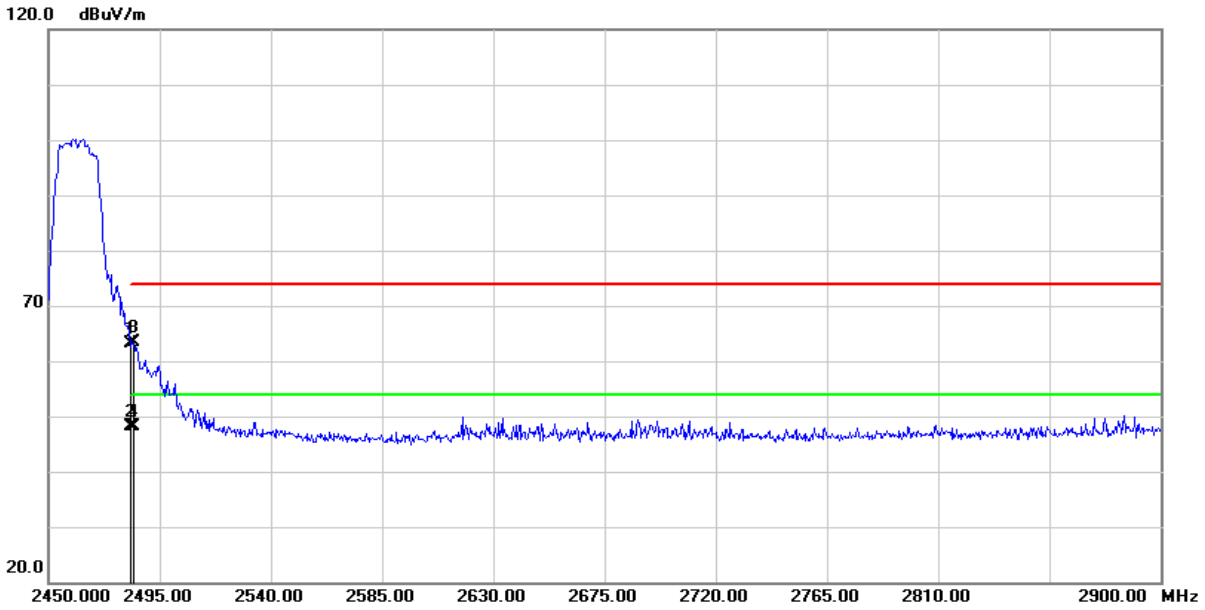


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	74.40	-5.81	68.59	74.00	-5.41	peak
2	2483.500	57.82	-5.81	52.01	54.00	-1.99	AVG
3	2484.650	74.59	-5.80	68.79	74.00	-5.21	peak
4	2484.650	57.68	-5.80	51.88	54.00	-2.12	AVG

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11g 6Mbps)	Test Date :	2024/03/22
Test Channel :	CH11 (2462MHz)	Temperature :	22.1 °C
Polarization :	Vertical	Relative Humidity :	46 %

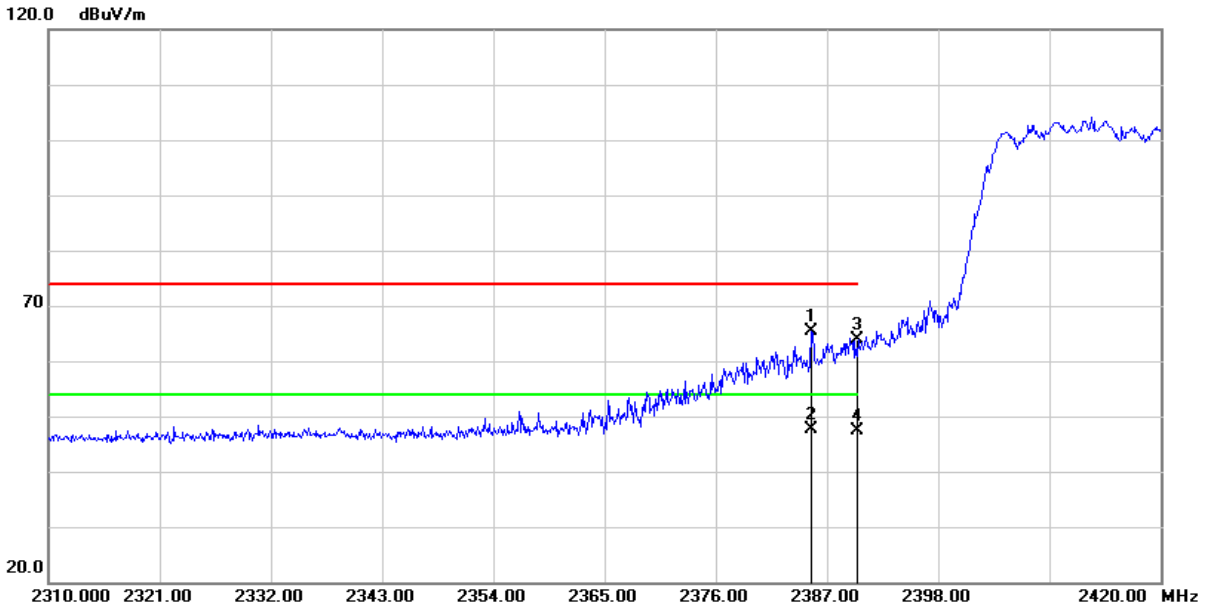


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	68.87	-5.81	63.06	74.00	-10.94	peak
2	2483.500	54.05	-5.81	48.24	54.00	-5.76	AVG
3	2484.650	69.27	-5.80	63.47	74.00	-10.53	peak
4	2484.650	53.91	-5.80	48.11	54.00	-5.89	AVG

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11n HT20 MCS0)	Test Date :	2024/03/25
Test Channel :	CH01 (2412MHz)	Temperature :	23.5 °C
Polarization :	Horizontal	Relative Humidity :	46 %

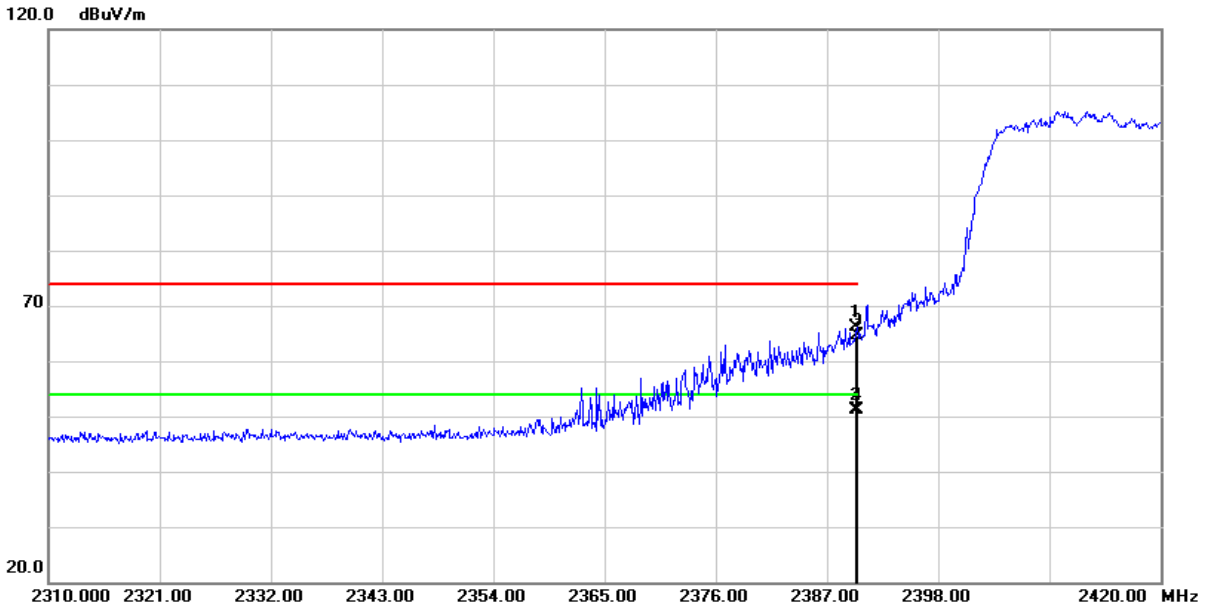


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2385.460	71.19	-5.70	65.49	74.00	-8.51	peak
2	2385.460	53.37	-5.70	47.67	54.00	-6.33	AVG
3	2390.000	69.53	-5.69	63.84	74.00	-10.16	peak
4	2390.000	53.08	-5.69	47.39	54.00	-6.61	AVG

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11n HT20 MCS0)	Test Date :	2024/03/25
Test Channel :	CH01 (2412MHz)	Temperature :	23.5 °C
Polarization :	Vertical	Relative Humidity :	46 %

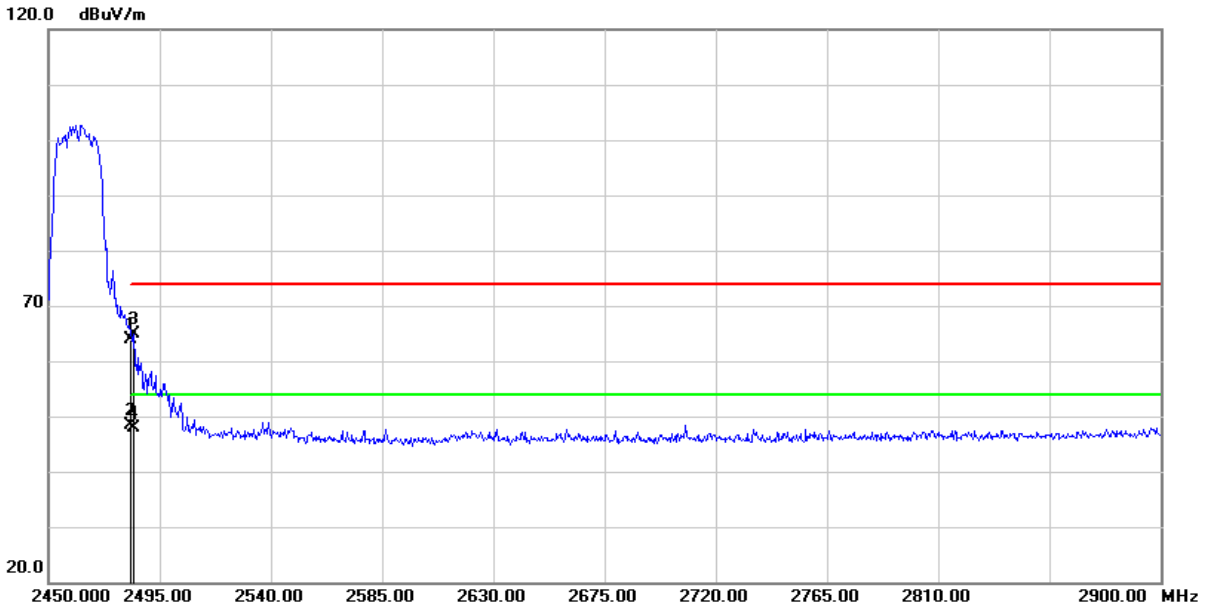


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.920	71.91	-5.69	66.22	74.00	-7.78	peak
2	2389.920	56.86	-5.69	51.17	54.00	-2.83	AVG
3	2390.000	70.31	-5.69	64.62	74.00	-9.38	peak
4	2390.000	56.72	-5.69	51.03	54.00	-2.97	AVG

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11n HT20 MCS0)	Test Date :	2024/03/25
Test Channel :	CH11 (2462MHz)	Temperature :	23.5 °C
Polarization :	Horizontal	Relative Humidity :	46 %

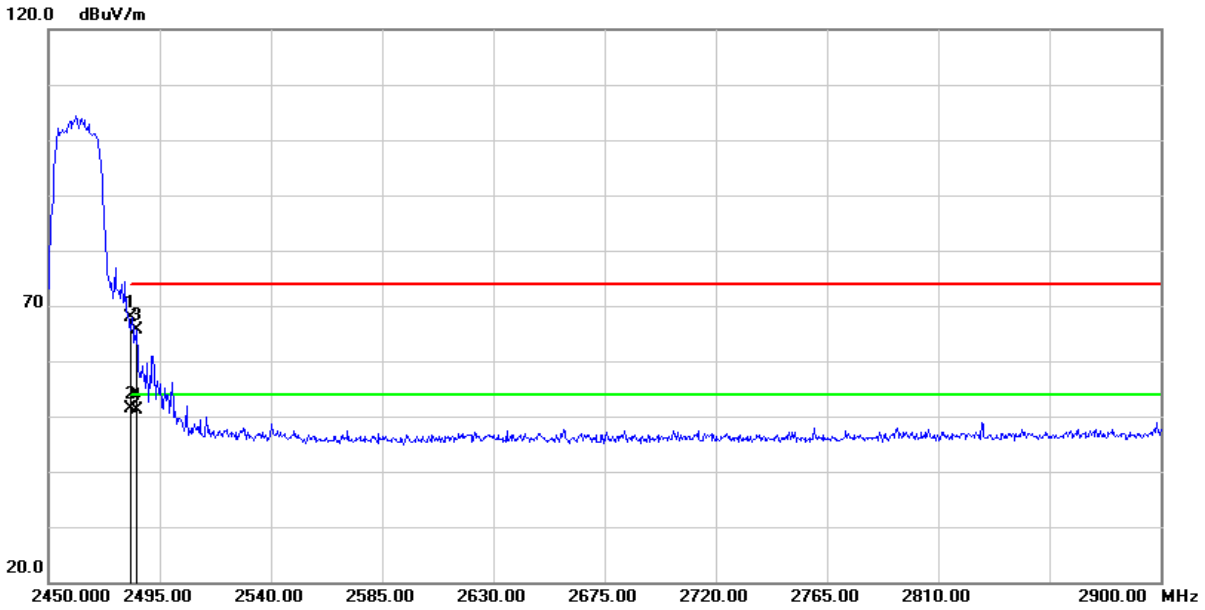


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	69.60	-5.81	63.79	74.00	-10.21	peak
2	2483.500	54.31	-5.81	48.50	54.00	-5.50	AVG
3	2484.650	70.61	-5.80	64.81	74.00	-9.19	peak
4	2484.650	53.67	-5.80	47.87	54.00	-6.13	AVG

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11n HT20 MCS0)	Test Date :	2024/03/25
Test Channel :	CH11 (2462MHz)	Temperature :	23.5 °C
Polarization :	Vertical	Relative Humidity :	46 %

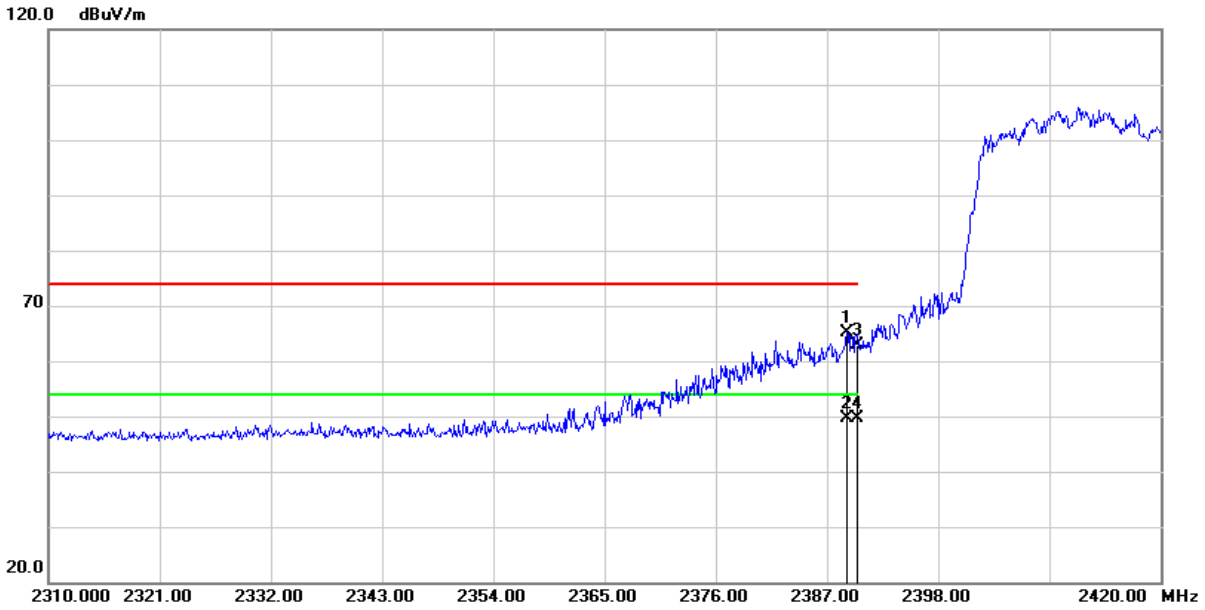


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	73.68	-5.81	67.87	74.00	-6.13	peak
2	2483.500	57.15	-5.81	51.34	54.00	-2.66	AVG
3	2485.550	71.43	-5.80	65.63	74.00	-8.37	peak
4	2485.550	56.89	-5.80	51.09	54.00	-2.91	AVG

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11ax HE20 MCS0)	Test Date :	2024/03/25
Test Channel :	CH01 (2412MHz)	Temperature :	23.5 °C
Polarization :	Horizontal	Relative Humidity :	46 %

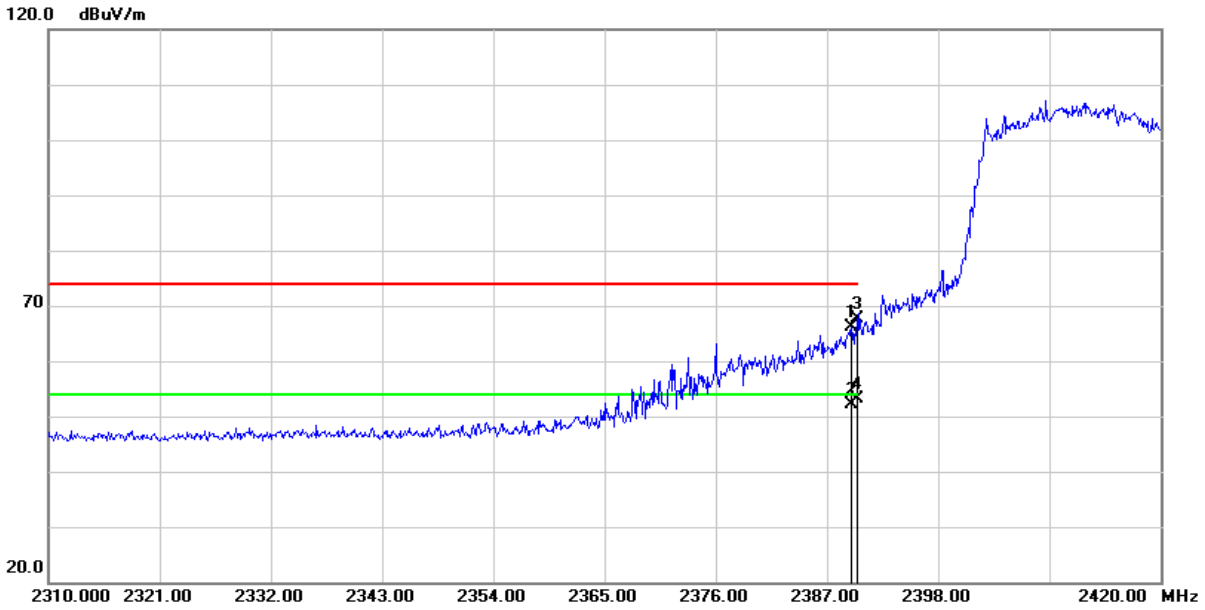


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.980	70.86	-5.70	65.16	74.00	-8.84	peak
2	2388.980	55.22	-5.70	49.52	54.00	-4.48	AVG
3	2390.000	68.46	-5.69	62.77	74.00	-11.23	peak
4	2390.000	55.42	-5.69	49.73	54.00	-4.27	AVG

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11ax HE20 MCS0)	Test Date :	2024/03/25
Test Channel :	CH01 (2412MHz)	Temperature :	23.5 °C
Polarization :	Vertical	Relative Humidity :	46 %

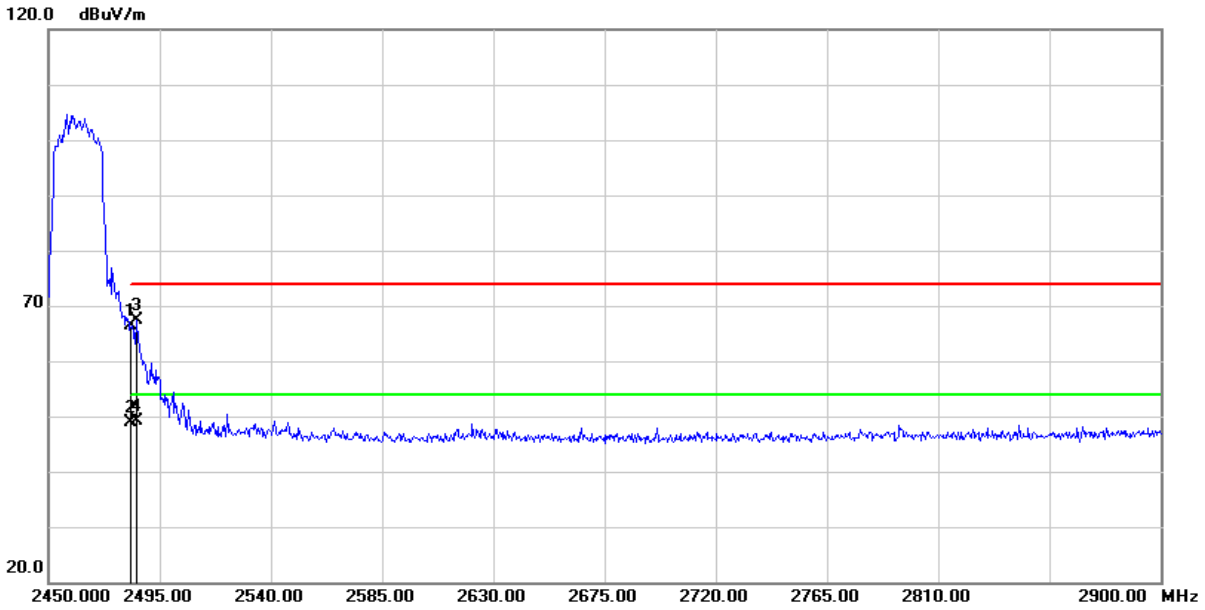


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.420	71.73	-5.70	66.03	74.00	-7.97	peak
2	2389.420	57.86	-5.70	52.16	54.00	-1.84	AVG
3	2390.000	73.31	-5.69	67.62	74.00	-6.38	peak
4	2390.000	58.81	-5.69	53.12	54.00	-0.88	AVG

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11ax HE20 MCS0)	Test Date :	2024/03/25
Test Channel :	CH11 (2462MHz)	Temperature :	23.5 °C
Polarization :	Horizontal	Relative Humidity :	46 %

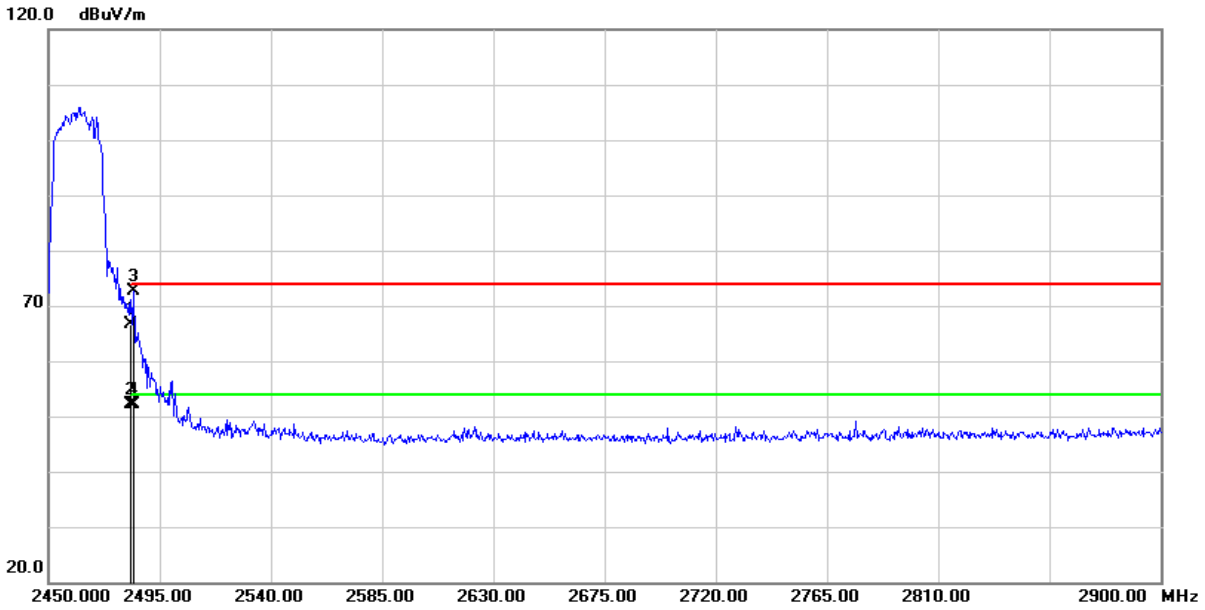


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	72.27	-5.81	66.46	74.00	-7.54	peak
2	2483.500	54.76	-5.81	48.95	54.00	-5.05	AVG
3	2485.550	73.22	-5.80	67.42	74.00	-6.58	peak
4	2485.550	54.86	-5.80	49.06	54.00	-4.94	AVG

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11ax HE20 MCS0)	Test Date :	2024/03/25
Test Channel :	CH11 (2462MHz)	Temperature :	23.5 °C
Polarization :	Vertical	Relative Humidity :	46 %



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	72.33	-5.81	66.52	74.00	-7.48	peak
2	2483.500	57.90	-5.81	52.09	54.00	-1.91	AVG
3	2484.650	78.49	-5.80	72.69	74.00	-1.31	peak
4	2484.650	58.03	-5.80	52.23	54.00	-1.77	AVG

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

2.6.6 Test Result of Radiated Spurious Emission Measurement

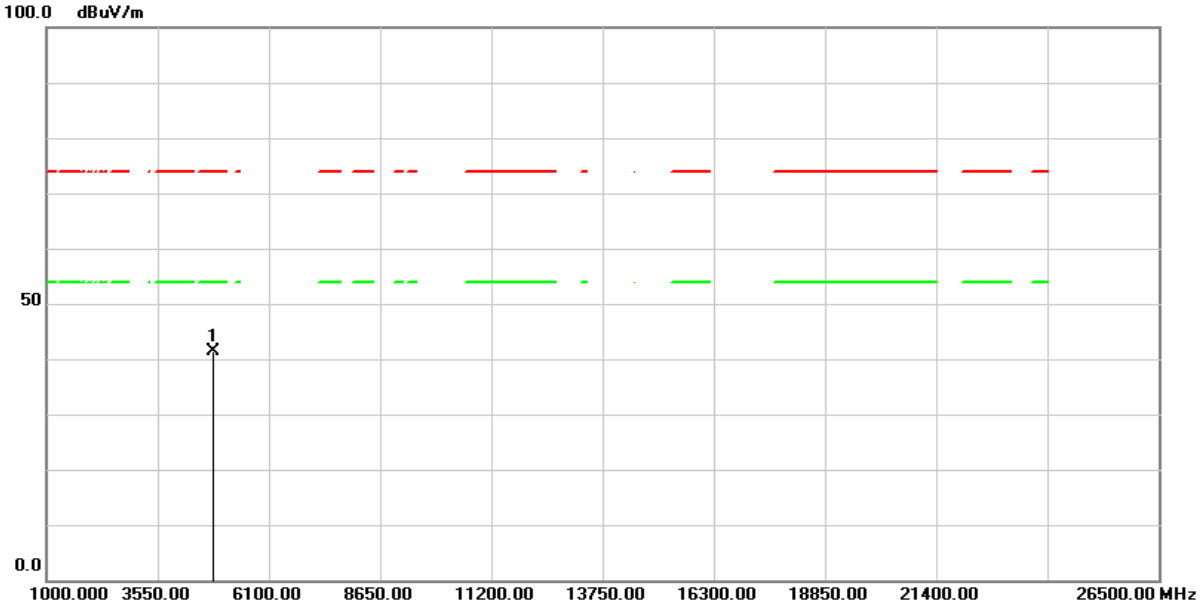
(1) The radiation measurement frequency is 9kHz ~ 30MHz. The interference value of this frequency range is less than the limit value of 20 dB. It is considered that the background noise value is not recorded.

(2) The following table shows the radiation measurement frequency from 30MHz to 26.5GHz, pre-scanning in the X, Y and Z axes. The worst case (X-axis) is documented in this report.

Test Frequency	
RF	**802.11b / 802.11g / 802.11n HT20 / 802.11ax HE20**
Tx	CH01 (2412MHz) CH06 (2437MHz) CH11 (2462MHz)

Above 1GHz Data

Test Mode :	Transmit (802.11b 1Mbps)	Test Date :	2024/03/23
Test Channel :	CH01 (2412MHz)	Temperature :	22.1 °C
Polarization :	Horizontal	Relative Humidity :	46 %

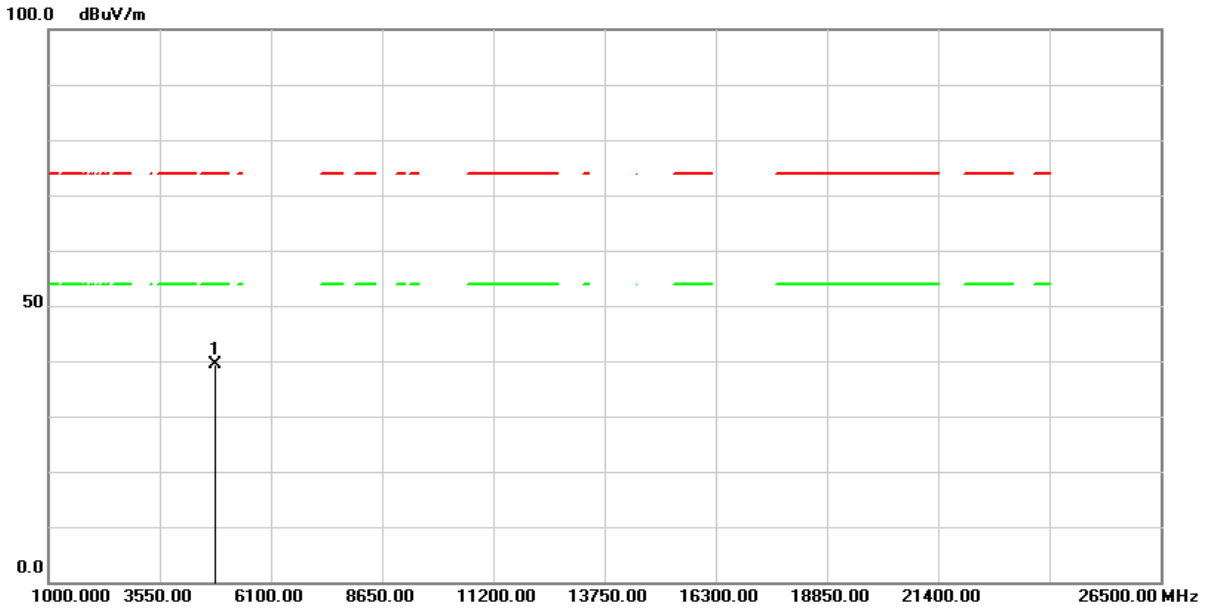


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4824.000	60.31	-18.98	41.33	74.00	-32.67	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11b 1Mbps)	**Test Date :**	2024/03/23
Test Channel :	CH01 (2412MHz)	**Temperature :**	22.1 °C
Polarization :	Vertical	**Relative Humidity :**	46 %

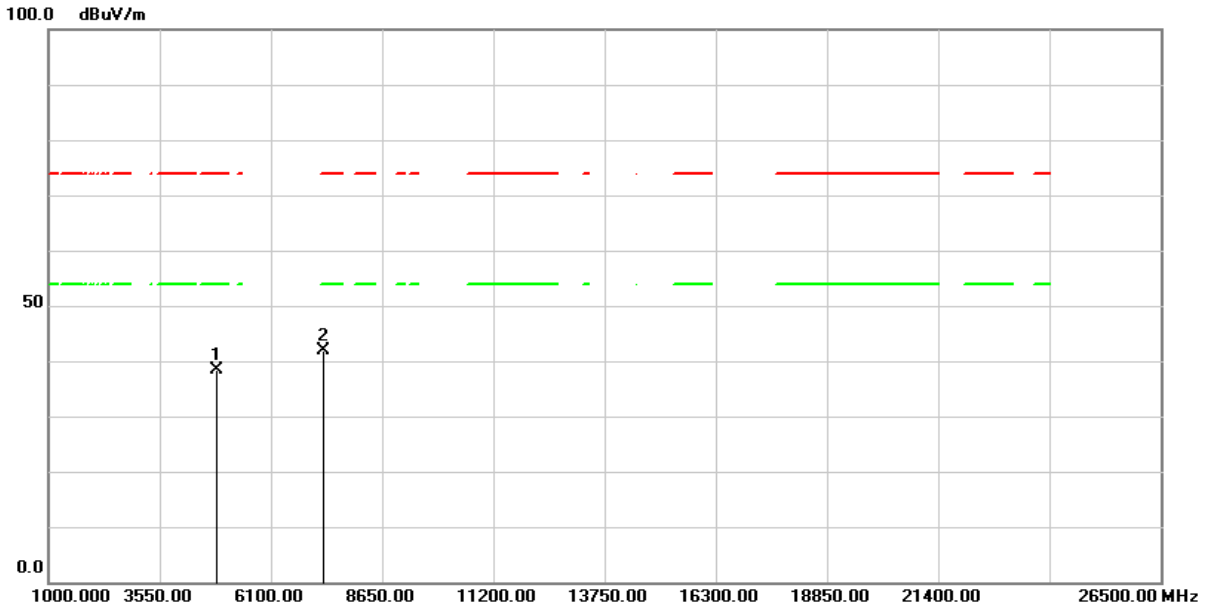


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4824.000	58.30	-18.98	39.32	74.00	-34.68	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11b 1Mbps)	Test Date :	2024/03/23
Test Channel :	CH06 (2437MHz)	Temperature :	22.1 °C
Polarization :	Horizontal	Relative Humidity :	46 %

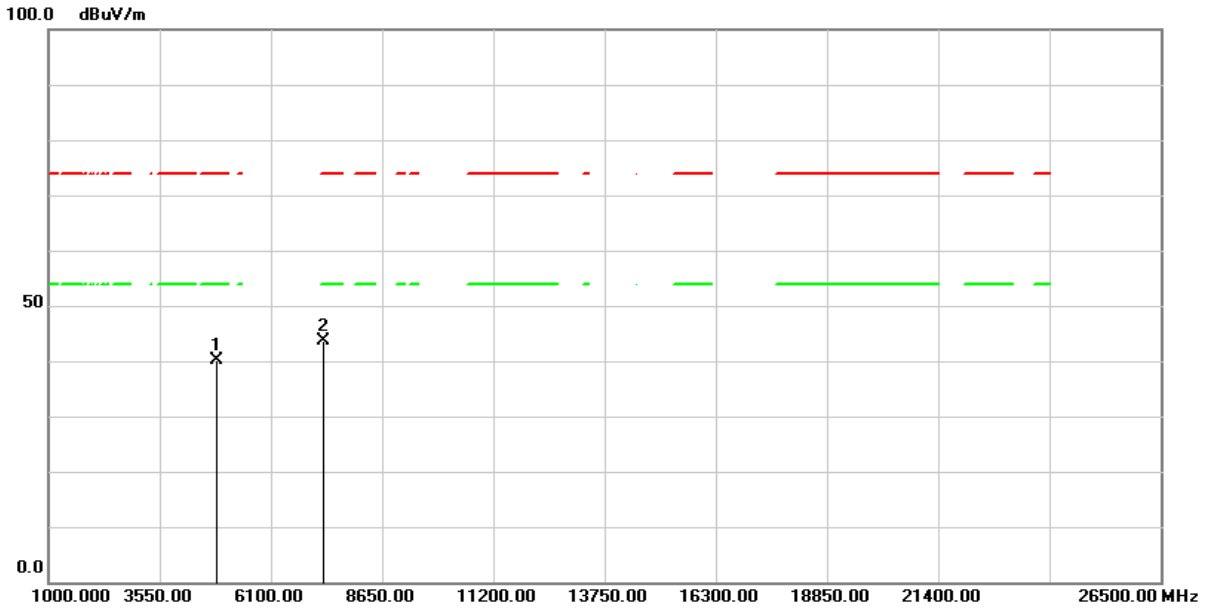


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4874.000	57.26	-19.00	38.26	74.00	-35.74	peak
2	7311.000	54.53	-12.53	42.00	74.00	-32.00	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11b 1Mbps)	Test Date :	2024/03/23
Test Channel :	CH06 (2437MHz)	Temperature :	22.1 °C
Polarization :	Vertical	Relative Humidity :	46 %

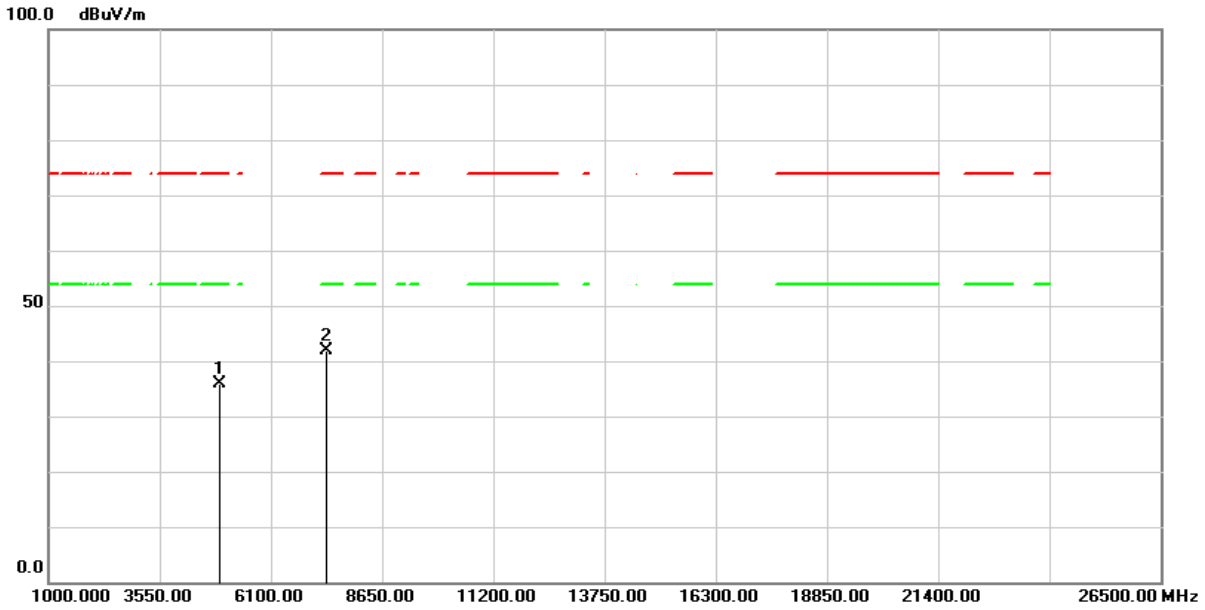


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4874.000	59.05	-19.00	40.05	74.00	-33.95	peak
2	7311.000	56.11	-12.53	43.58	74.00	-30.42	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11b 1Mbps)	Test Date :	2024/03/23
Test Channel :	CH11 (2462MHz)	Temperature :	22.1 °C
Polarization :	Horizontal	Relative Humidity :	46 %

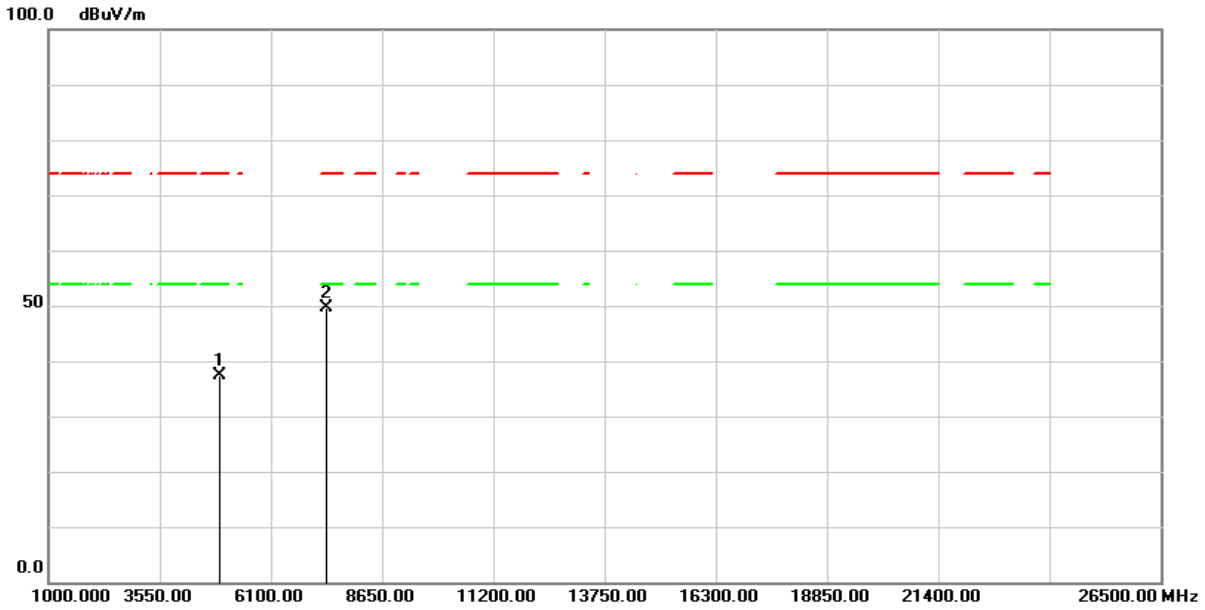


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.000	54.95	-19.01	35.94	74.00	-38.06	peak
2	7386.000	54.25	-12.39	41.86	74.00	-32.14	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11b 1Mbps)	**Test Date :**	2024/03/23
Test Channel :	CH11 (2462MHz)	**Temperature :**	22.1 °C
Polarization :	Vertical	**Relative Humidity :**	46 %

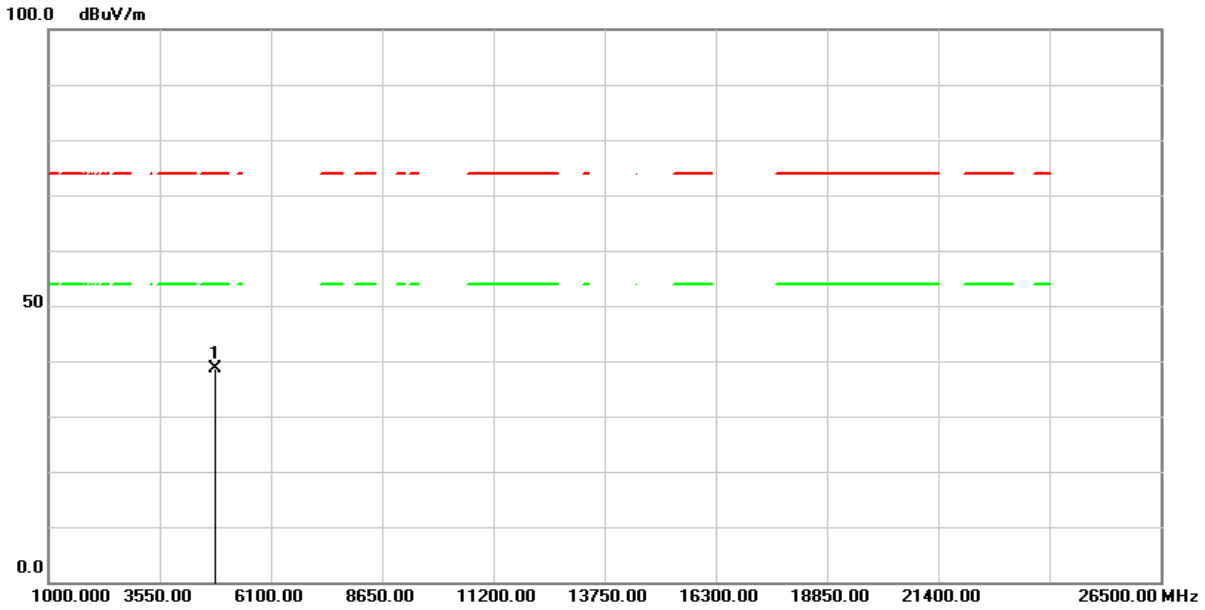


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.000	56.41	-19.01	37.40	74.00	-36.60	peak
2	7386.000	62.06	-12.39	49.67	74.00	-24.33	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11g 6Mbps)	**Test Date :**	2024/03/23
Test Channel :	CH01 (2412MHz)	**Temperature :**	22.1 °C
Polarization :	Horizontal	**Relative Humidity :**	46 %

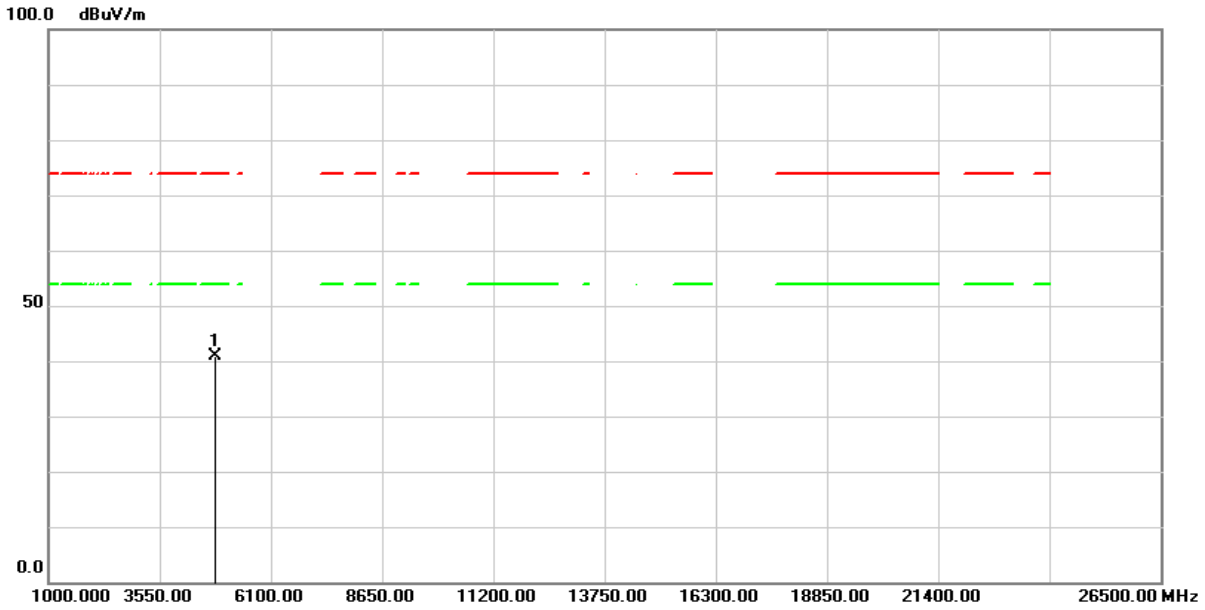


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4824.000	57.54	-18.98	38.56	74.00	-35.44	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11g 6Mbps)	**Test Date :**	2024/03/23
Test Channel :	CH01 (2412MHz)	**Temperature :**	22.1 °C
Polarization :	Vertical	**Relative Humidity :**	46 %

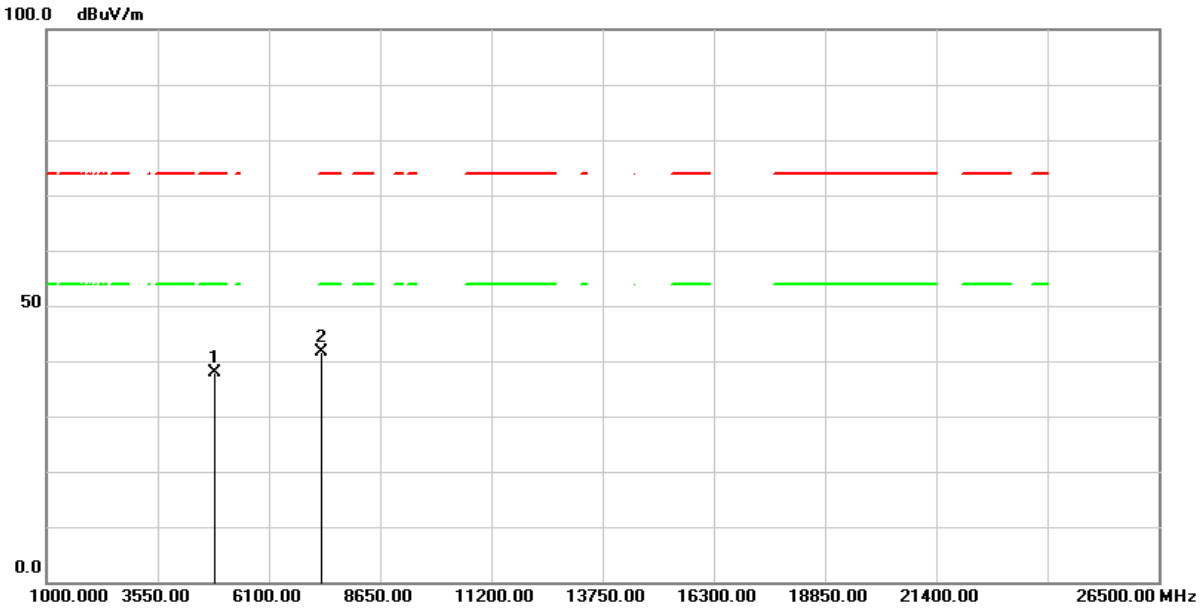


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4824.000	59.84	-18.98	40.86	74.00	-33.14	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11g 6Mbps)	**Test Date :**	2024/03/23
Test Channel :	CH06 (2437MHz)	**Temperature :**	22.1 °C
Polarization :	Horizontal	**Relative Humidity :**	46 %

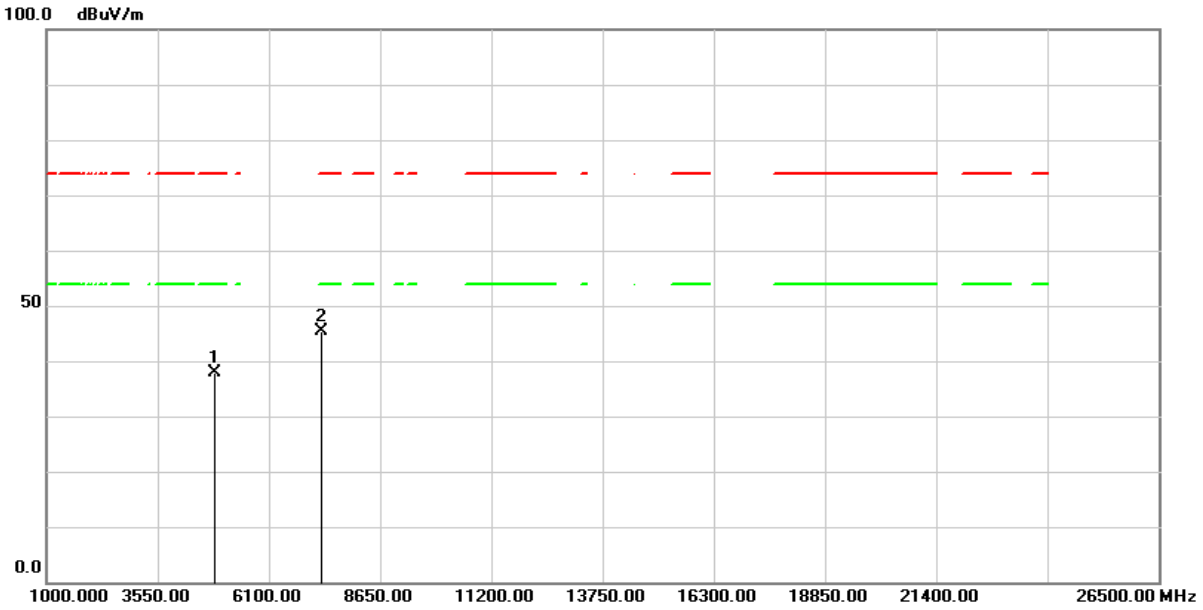


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4874.000	56.92	-19.00	37.92	74.00	-36.08	peak
2	7311.000	54.24	-12.53	41.71	74.00	-32.29	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11g 6Mbps)	Test Date :	2024/03/23
Test Channel :	CH06 (2437MHz)	Temperature :	22.1 °C
Polarization :	Vertical	Relative Humidity :	46 %

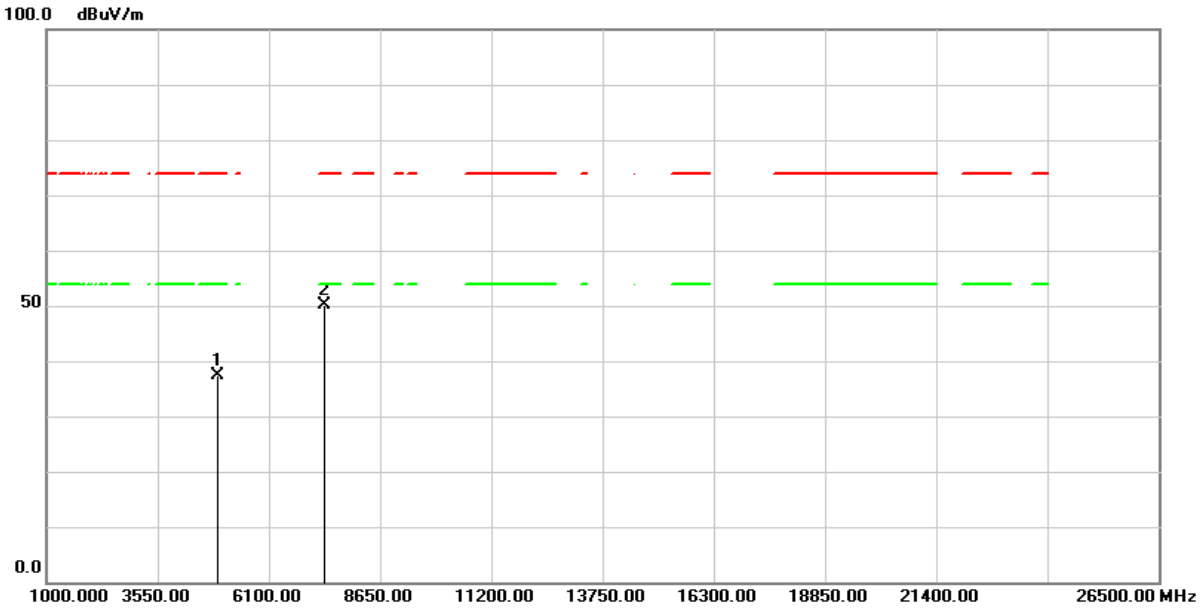


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4874.000	56.98	-19.00	37.98	74.00	-36.02	peak
2	7311.000	58.03	-12.53	45.50	74.00	-28.50	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11g 6Mbps)	Test Date :	2024/03/23
Test Channel :	CH11 (2462MHz)	Temperature :	22.1 °C
Polarization :	Horizontal	Relative Humidity :	46 %

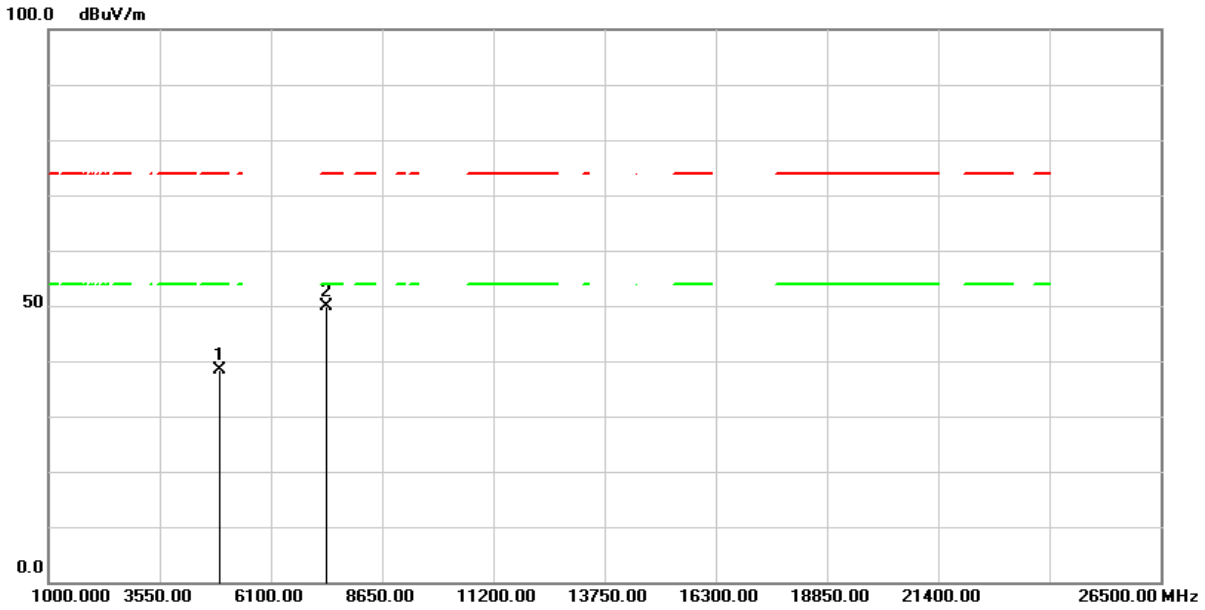


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.000	56.47	-19.01	37.46	74.00	-36.54	peak
2	7386.000	62.51	-12.39	50.12	74.00	-23.88	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11g 6Mbps)	Test Date :	2024/03/23
Test Channel :	CH11 (2462MHz)	Temperature :	22.1 °C
Polarization :	Vertical	Relative Humidity :	46 %

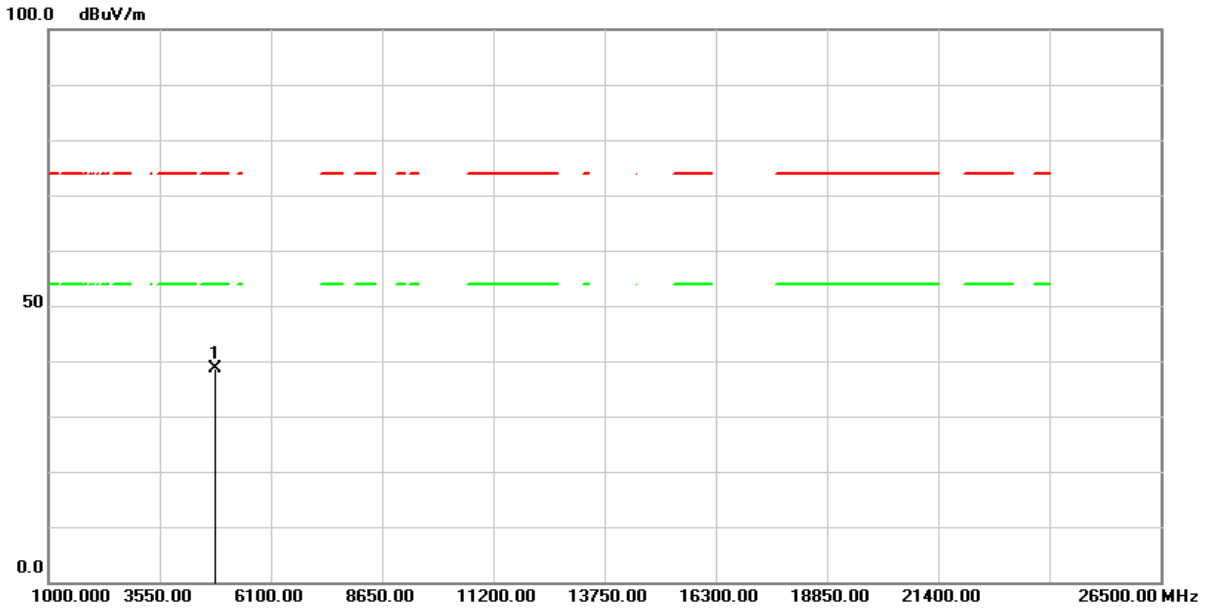


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.000	57.27	-19.01	38.26	74.00	-35.74	peak
2	7386.000	62.20	-12.39	49.81	74.00	-24.19	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11n HT20 MCS0)	**Test Date :**	2024/03/25
Test Channel :	CH01 (2412MHz)	**Temperature :**	23.5 °C
Polarization :	Horizontal	**Relative Humidity :**	46 %

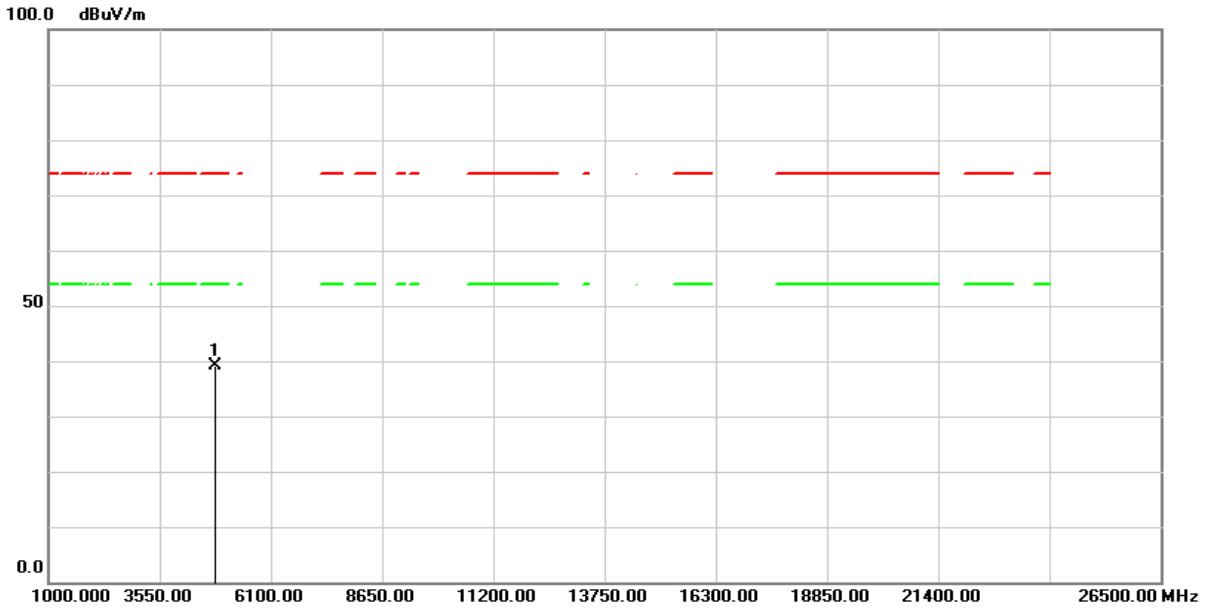


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4824.000	57.61	-18.98	38.63	74.00	-35.37	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11n HT20 MCS0)	**Test Date :**	2024/03/25
Test Channel :	CH01 (2412MHz)	**Temperature :**	23.5 °C
Polarization :	Vertical	**Relative Humidity :**	46 %

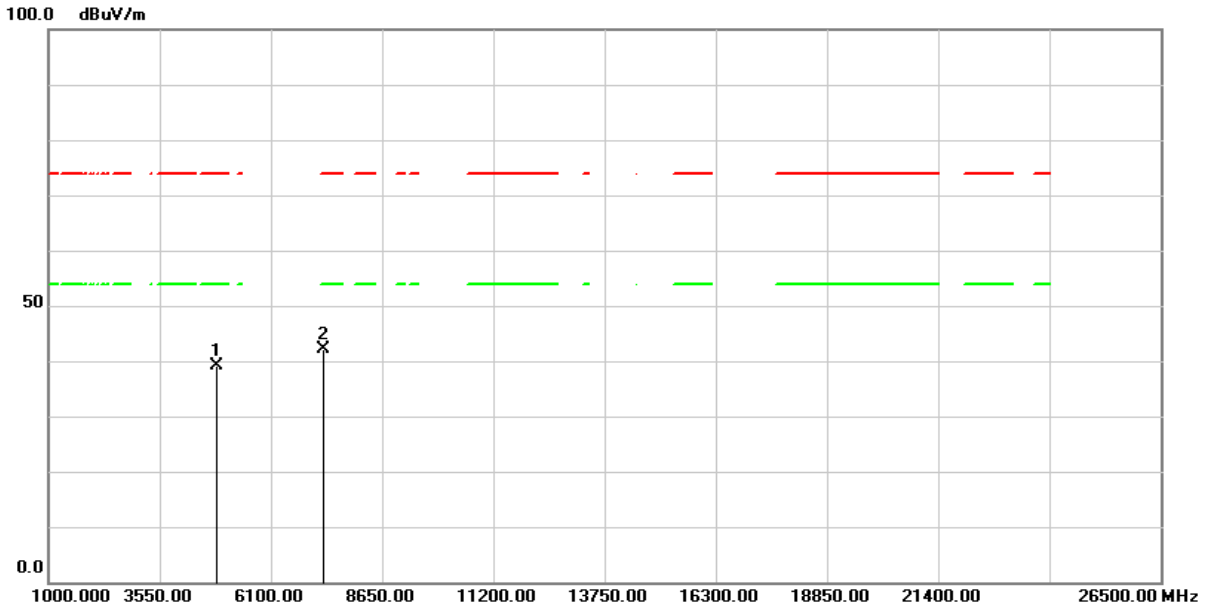


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4824.000	58.23	-18.98	39.25	74.00	-34.75	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11n HT20 MCS0)	Test Date :	2024/03/25
Test Channel :	CH06 (2437MHz)	Temperature :	23.5 °C
Polarization :	Horizontal	Relative Humidity :	46 %

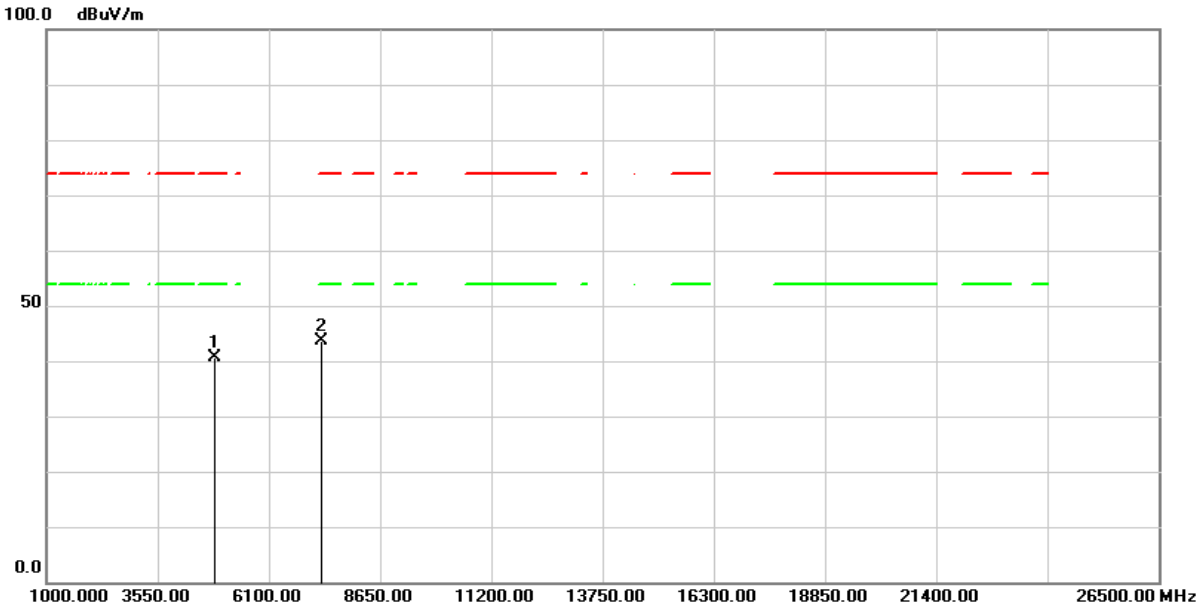


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4874.000	58.10	-19.00	39.10	74.00	-34.90	peak
2	7311.000	54.71	-12.53	42.18	74.00	-31.82	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11n HT20 MCS0)	Test Date :	2024/03/25
Test Channel :	CH06 (2437MHz)	Temperature :	23.5 °C
Polarization :	Vertical	Relative Humidity :	46 %

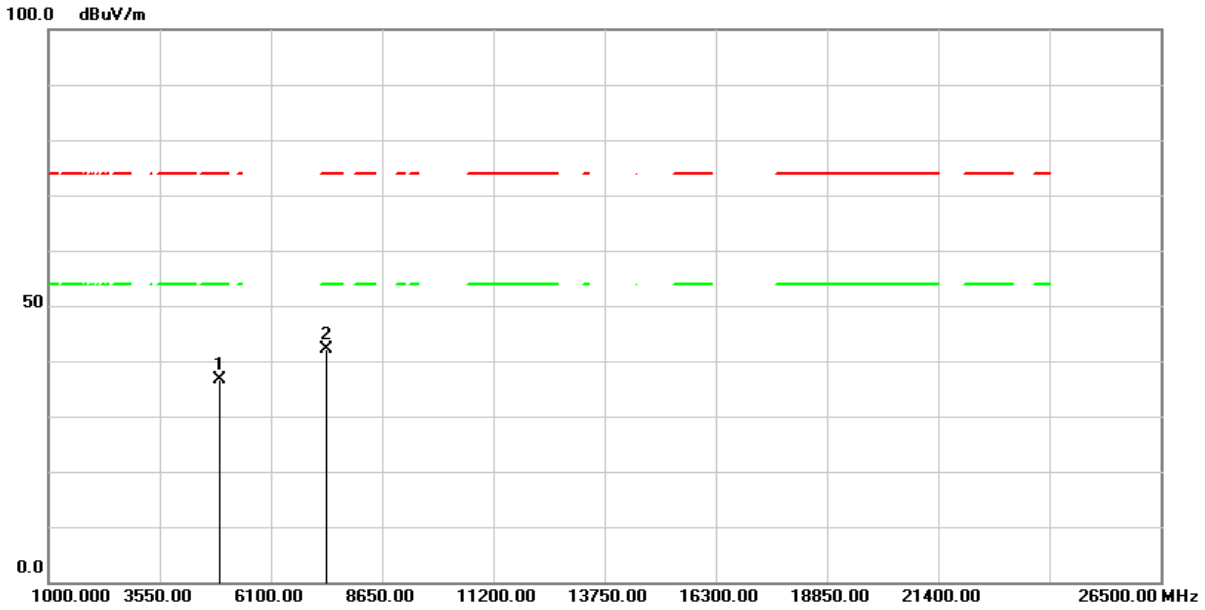


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4874.000	59.65	-19.00	40.65	74.00	-33.35	peak
2	7311.000	56.16	-12.53	43.63	74.00	-30.37	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11n HT20 MCS0)	Test Date :	2024/03/25
Test Channel :	CH11 (2462MHz)	Temperature :	23.5 °C
Polarization :	Horizontal	Relative Humidity :	46 %

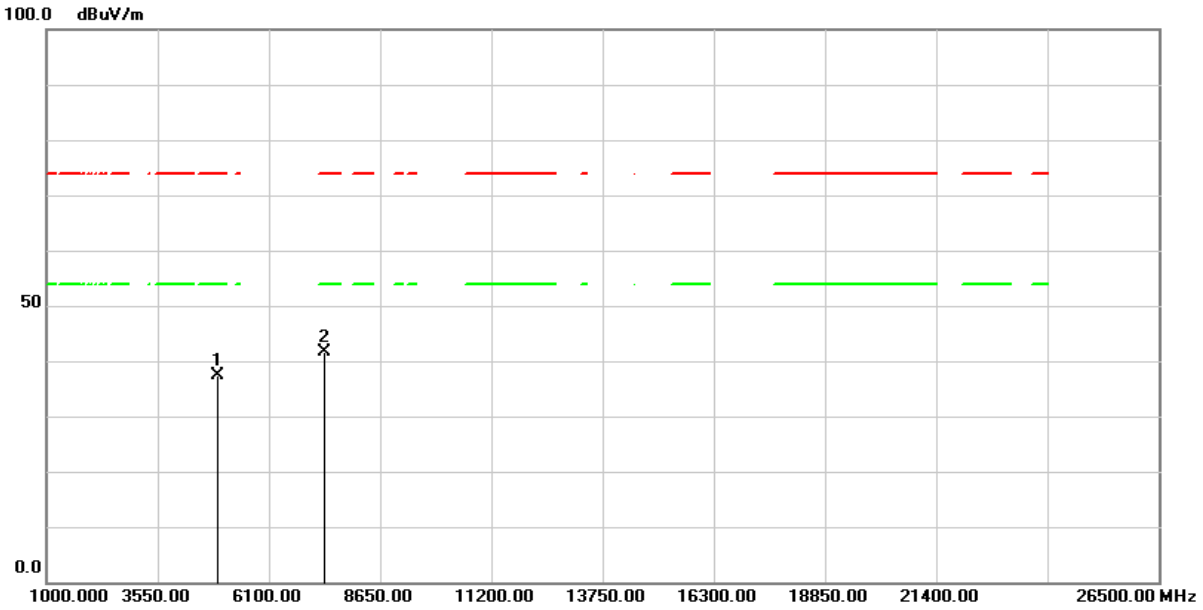


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.000	55.60	-19.01	36.59	74.00	-37.41	peak
2	7386.000	54.42	-12.39	42.03	74.00	-31.97	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11n HT20 MCS0)	**Test Date :**	2024/03/25
Test Channel :	CH11 (2462MHz)	**Temperature :**	23.5 °C
Polarization :	Vertical	**Relative Humidity :**	46 %

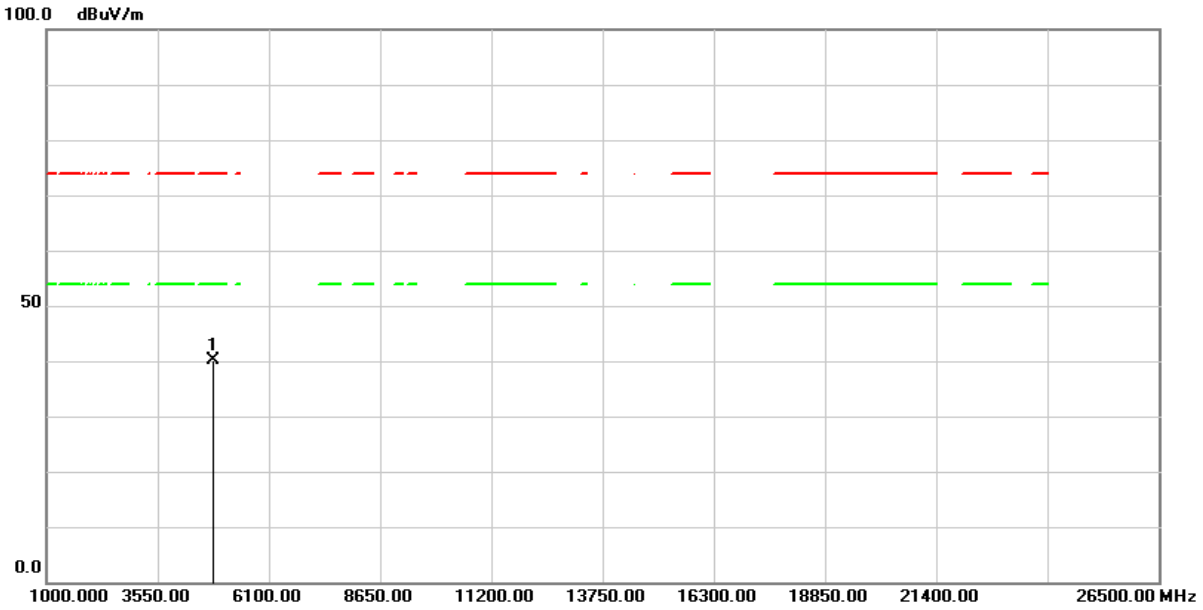


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.000	56.32	-19.01	37.31	74.00	-36.69	peak
2	7386.000	54.04	-12.39	41.65	74.00	-32.35	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11ax HE20 MCS0)	**Test Date :**	2024/03/25
Test Channel :	CH01 (2412MHz)	**Temperature :**	23.5 °C
Polarization :	Horizontal	**Relative Humidity :**	46 %

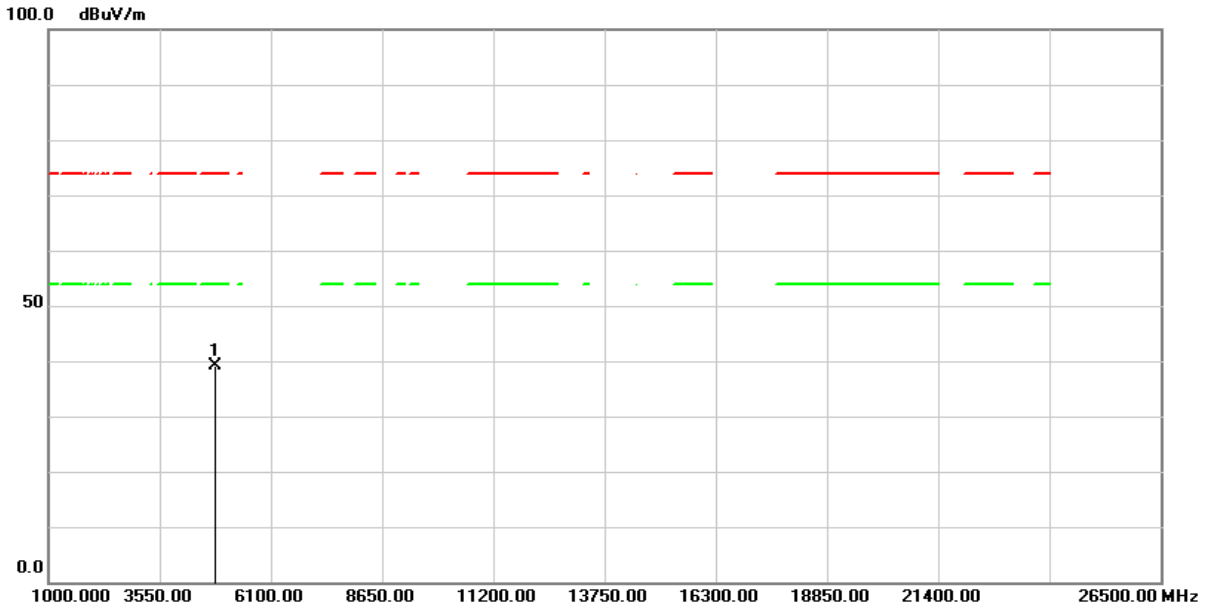


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4824.000	59.03	-18.98	40.05	74.00	-33.95	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11ax HE20 MCS0)	**Test Date :**	2024/03/25
Test Channel :	CH01 (2412MHz)	**Temperature :**	23.5 °C
Polarization :	Vertical	**Relative Humidity :**	46 %

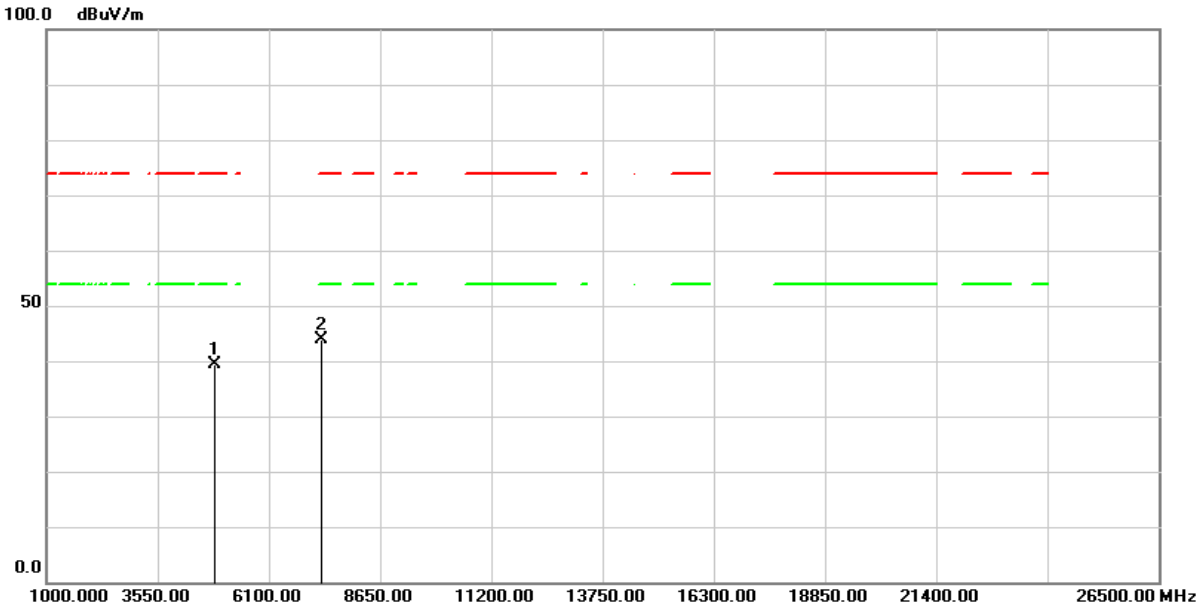


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4824.000	58.18	-18.98	39.20	74.00	-34.80	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11ax HE20 MCS0)	Test Date :	2024/03/25
Test Channel :	CH06 (2437MHz)	Temperature :	23.5 °C
Polarization :	Horizontal	Relative Humidity :	46 %

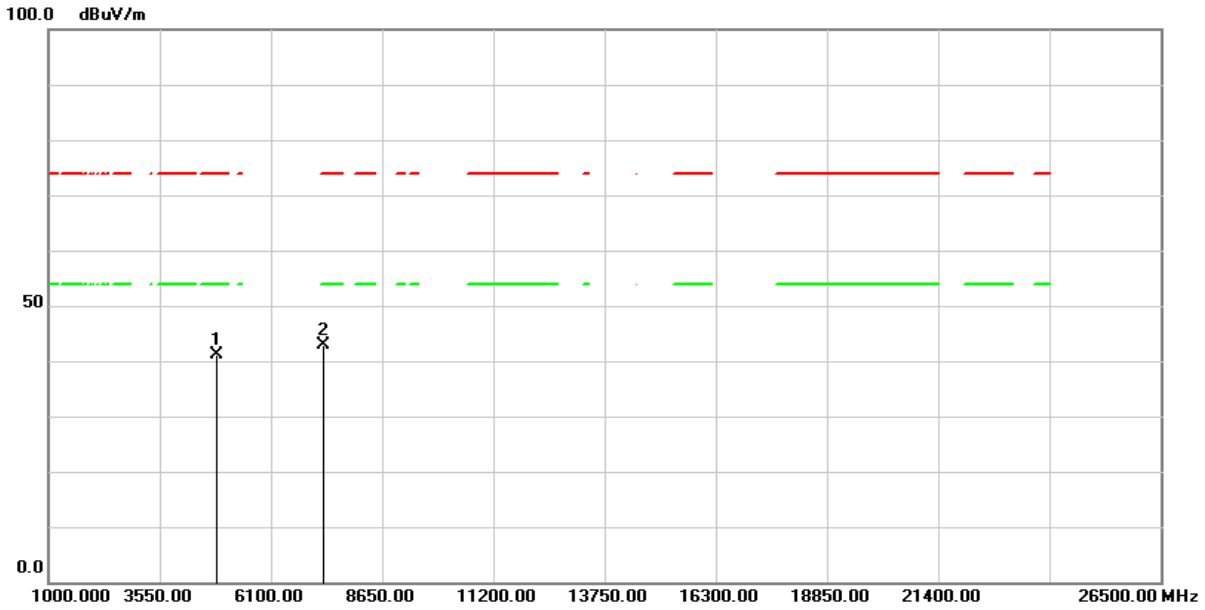


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4874.000	58.40	-19.00	39.40	74.00	-34.60	peak
2	7311.000	56.36	-12.53	43.83	74.00	-30.17	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11ax HE20 MCS0)	Test Date :	2024/03/25
Test Channel :	CH06 (2437MHz)	Temperature :	23.5 °C
Polarization :	Vertical	Relative Humidity :	46 %

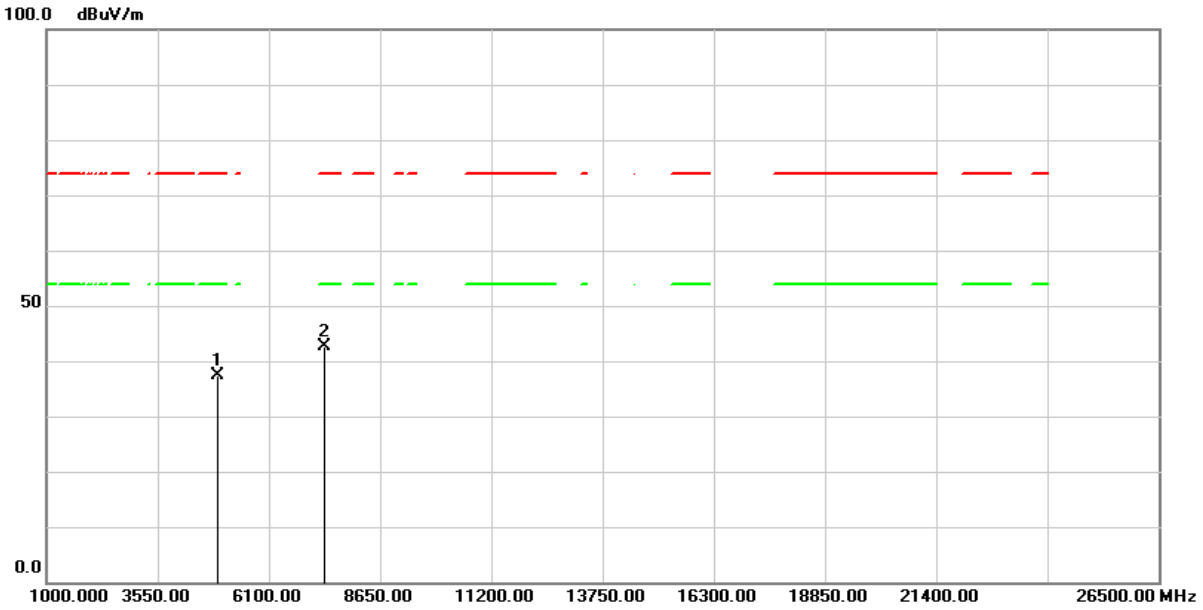


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4874.000	60.13	-19.00	41.13	74.00	-32.87	peak
2	7311.000	55.29	-12.53	42.76	74.00	-31.24	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11ax HE20 MCS0)	Test Date :	2024/03/25
Test Channel :	CH11 (2462MHz)	Temperature :	23.5 °C
Polarization :	Horizontal	Relative Humidity :	46 %

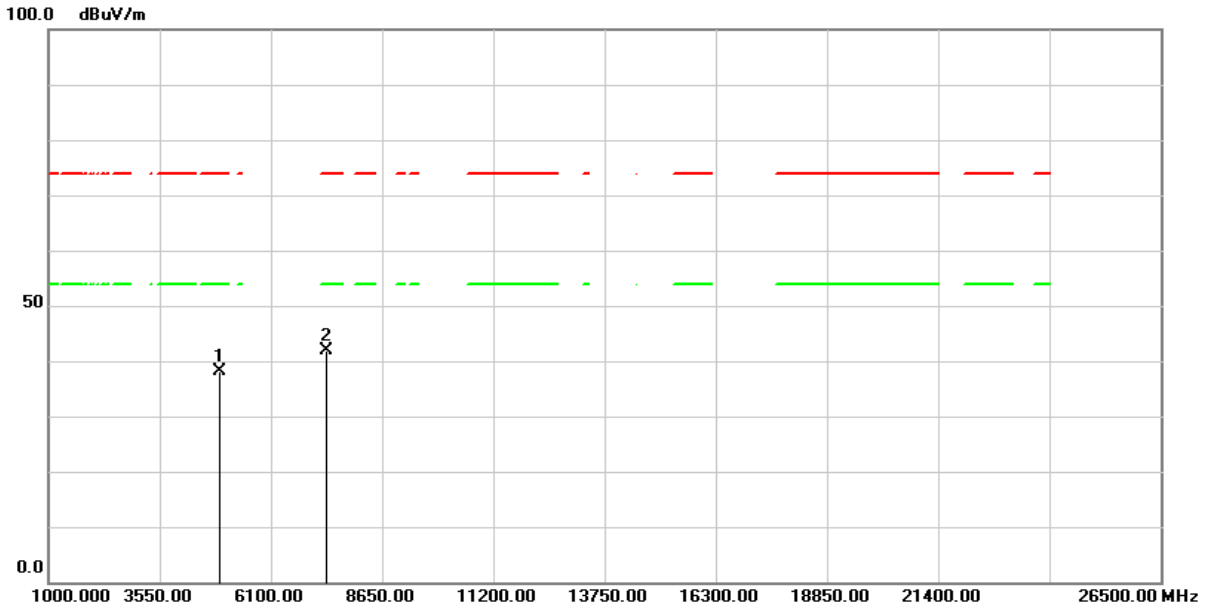


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.000	56.50	-19.01	37.49	74.00	-36.51	peak
2	7386.000	54.91	-12.39	42.52	74.00	-31.48	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11ax HE20 MCS0)	Test Date :	2024/03/25
Test Channel :	CH11 (2462MHz)	Temperature :	23.5 °C
Polarization :	Vertical	Relative Humidity :	46 %



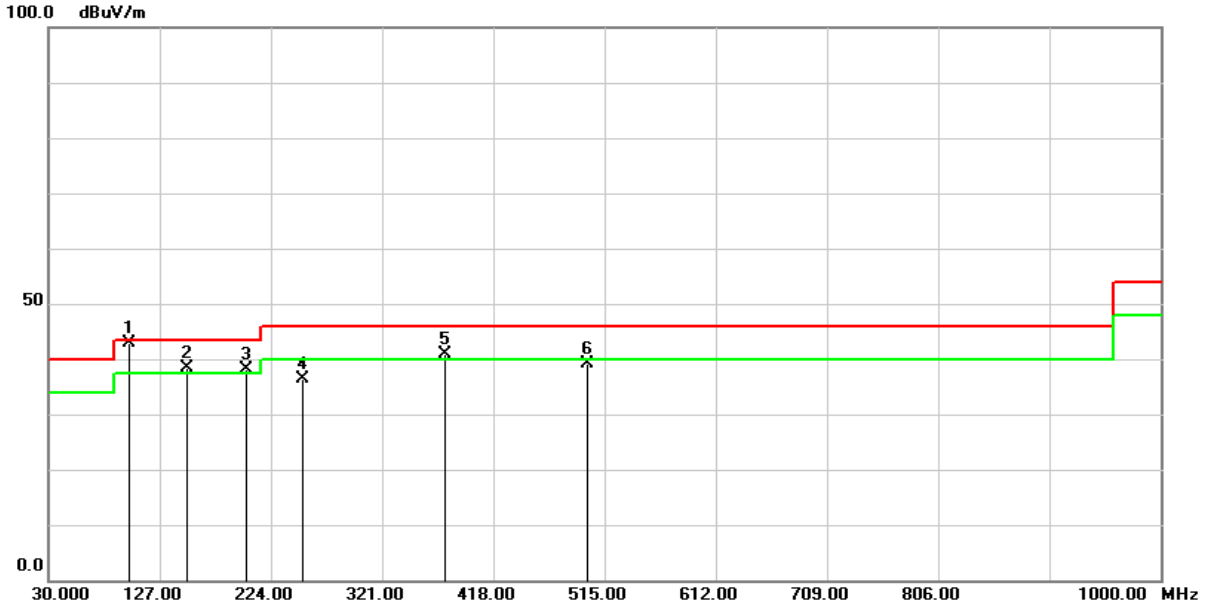
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.000	57.22	-19.01	38.21	74.00	-35.79	peak
2	7386.000	54.24	-12.39	41.85	74.00	-32.15	peak

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Below 1GHz Data

Test Mode :	Transmit (802.11ax HE20 MCS0)	Test Date :	2024/03/21
Test Channel :	CH06 (2437MHz)	Temperature :	20.4 °C
Polarization :	Horizontal	Relative Humidity :	49 %

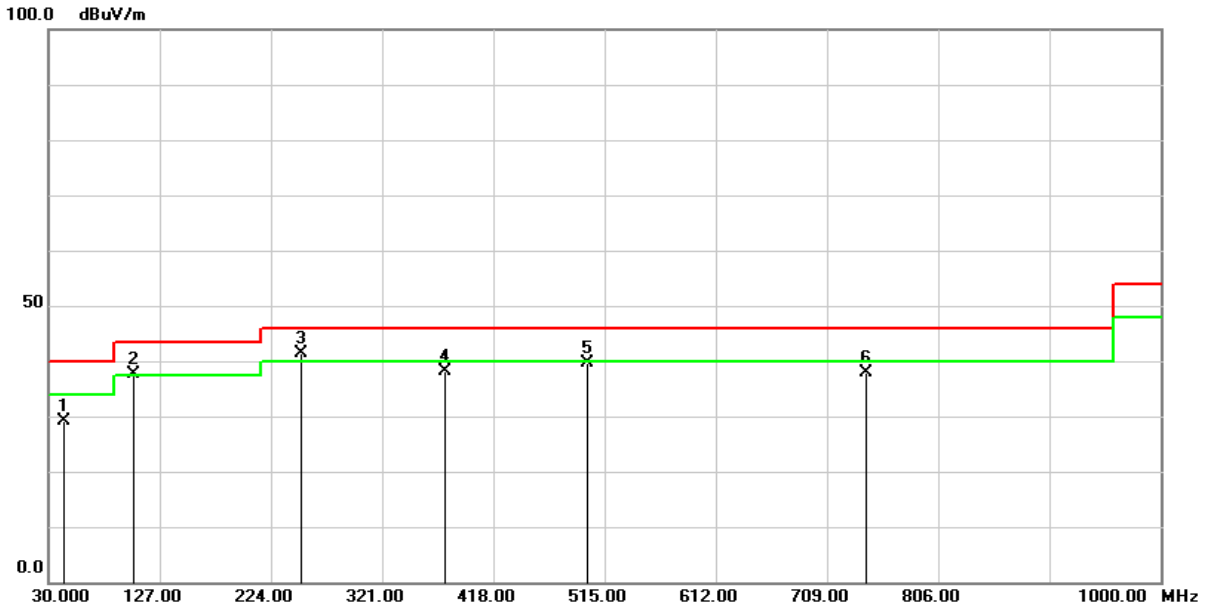


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	100.8100	58.38	-15.51	42.87	43.50	-0.63	QP
2	150.2800	49.39	-11.08	38.31	43.50	-5.19	QP
3	202.6600	52.42	-14.21	38.21	43.50	-5.29	QP
4	252.1300	48.55	-12.06	36.49	46.00	-9.51	QP
5	375.3200	48.97	-7.97	41.00	46.00	-5.00	QP
6	500.4500	43.94	-4.76	39.18	46.00	-6.82	QP

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit (802.11ax HE20 MCS0)	Test Date :	2024/03/21
Test Channel :	CH06 (2437MHz)	Temperature :	20.4 °C
Polarization :	Vertical	Relative Humidity :	49 %



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.5800	40.61	-11.55	29.06	40.00	-10.94	QP
2	104.6900	52.38	-14.81	37.57	43.50	-5.93	QP
3	250.1900	53.58	-12.11	41.47	46.00	-4.53	QP
4	375.3200	46.10	-7.97	38.13	46.00	-7.87	QP
5	500.4500	44.47	-4.76	39.71	46.00	-6.29	QP
6	742.9500	37.03	0.76	37.79	46.00	-8.21	QP

Remark：

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

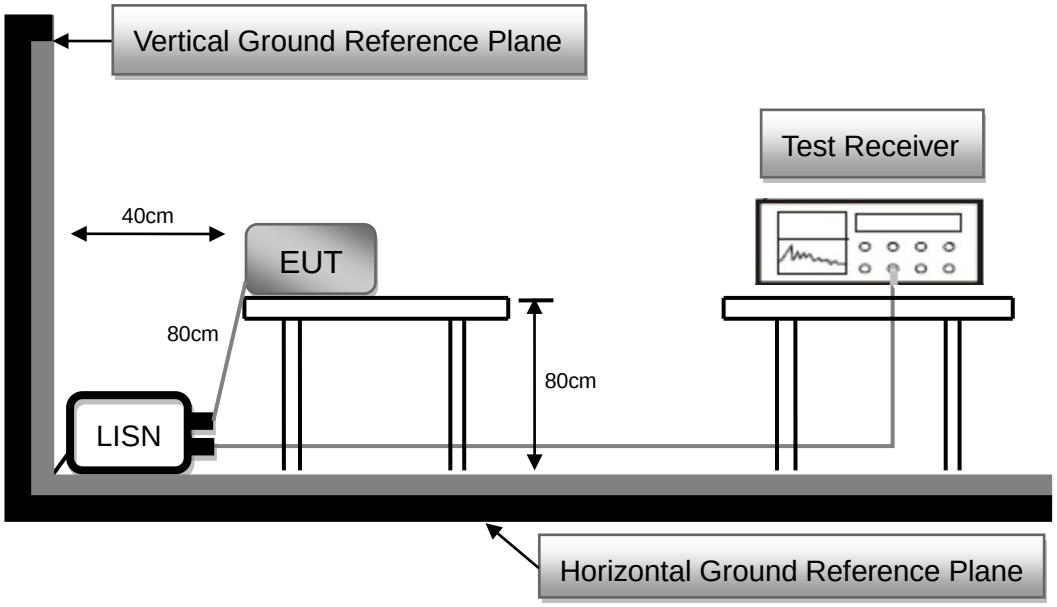
2.7 AC Conducted Emissions Measurement

2.7.1 Limit

Frequency (MHz)	FCC Part 15 Subpart C Paragraph 15.207 (dBμV) Limit	
	Quasi-peak	Average
0.15 to 0.5	66 to 56*	56 to 46*
0.50 to 5.0	56	46
5.0 to 30.0	60	50

*Decreases with the logarithm of the frequency

2.7.2 Test Setup

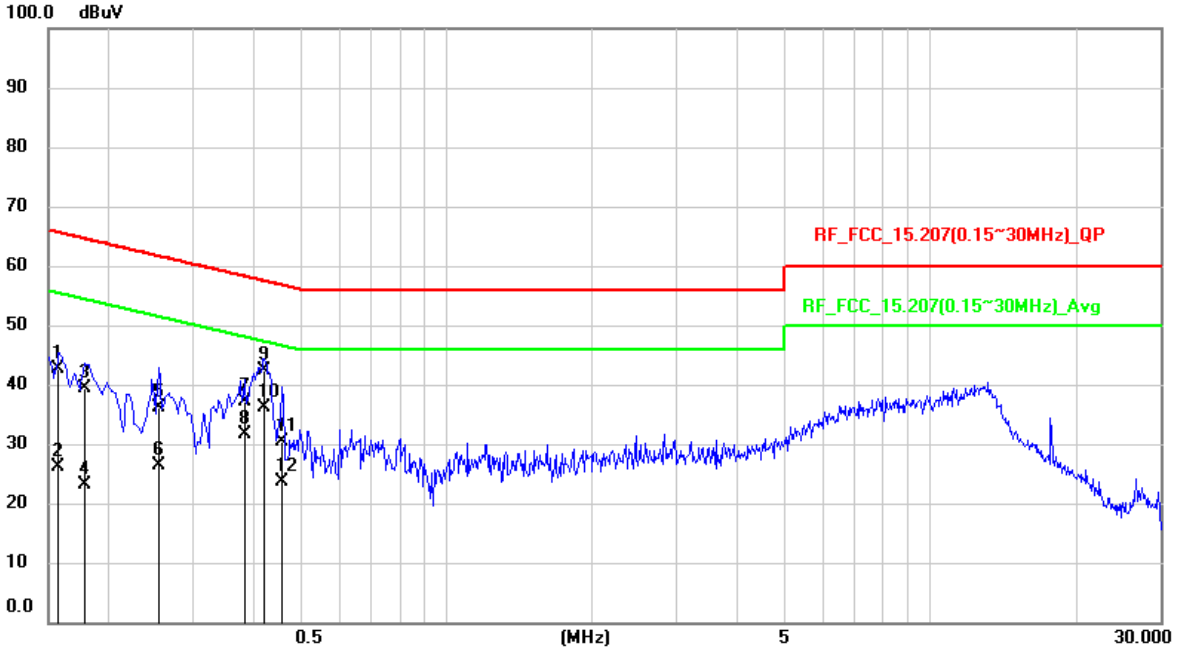


2.7.3 Test Procedure

1. Reference ANSI C63.10 : 2013 chapter 6.2
2. The EUT was placed 0.8 meter height wooden table from the horizontal ground plane with EUT being connected to power source through a line impedance stabilization network (LISN). The LISN at least be 80 cm from nearest chassis of EUT.
3. The line impedance stabilization network (LISN) provides 50 ohm/50uH of coupling impedance for the measuring instrument. All other support equipments powered from additional LISN(s).
4. Interrelating cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle. All I/O cables were positioned to simulate typical usage.
5. All I/O cables that are not connected to a peripheral shall be bundle in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
6. The EMI test receiver connected to LISN powering the EUT. The actual test configuration, please refer to EUT test photos.
7. The receiver scanned from 150kHz to 30MHz for emissions in each of test modes. Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz. A scan was taken on both power lines, Line and Neutral, recording at least six highest emissions.
8. The EUT and cable configuration of the above highest emission levels were recorded. The Test Data of the worst case was recorded.

2.7.4 Test Result

Test Voltage :	120Vac, 60Hz	**Frequency Range:**	0.15-30 MHz
Test Mode :	Transmit (802.11ax HE20 MCS0)	**6dB Bandwidth :**	9 kHz
Test Date :	2024/03/26	**Phase :**	L
Temperature :	20.4℃	**Humidity :**	57 %

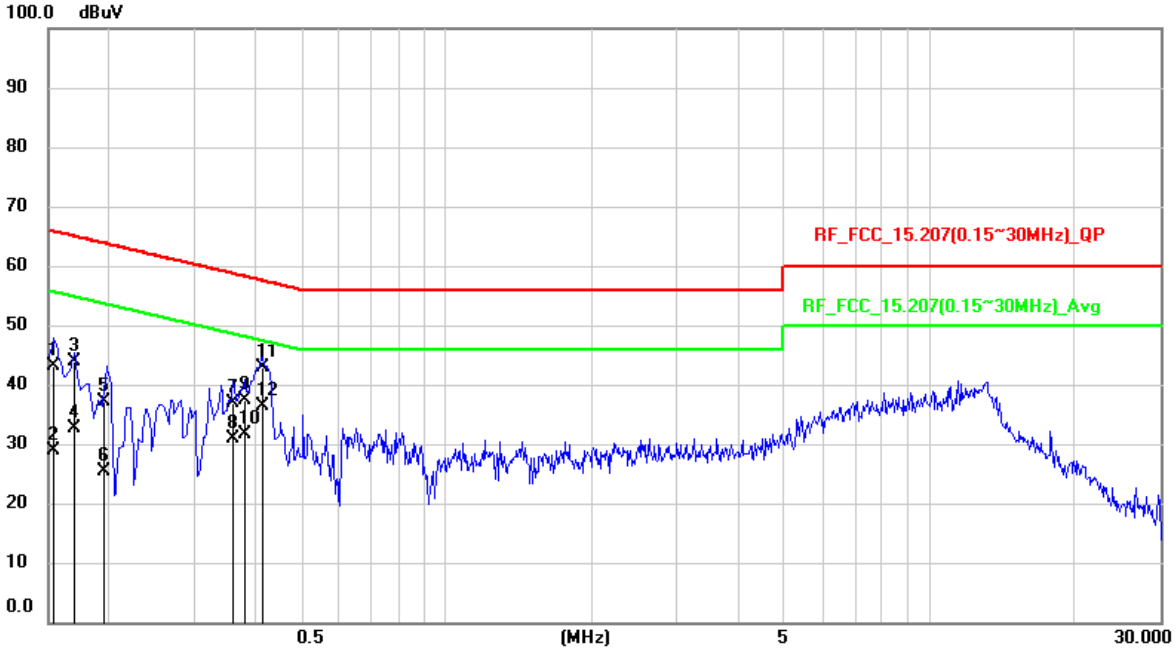


No.	Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measurement (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1566	32.84	9.84	42.68	65.64	-22.96	QP
2	0.1566	16.29	9.84	26.13	55.64	-29.51	AVG
3	0.1791	29.63	9.82	39.45	64.53	-25.08	QP
4	0.1791	13.35	9.82	23.17	54.53	-31.36	AVG
5	0.2542	26.22	9.82	36.04	61.62	-25.58	QP
6	0.2542	16.49	9.82	26.31	51.62	-25.31	AVG
7	0.382	27.27	9.84	37.11	58.24	-21.13	QP
8	0.382	21.73	9.84	31.57	48.24	-16.67	AVG
9	0.42	32.44	9.84	42.28	57.45	-15.17	QP
10	0.42	26.19	9.84	36.03	47.45	-11.42	AVG
11	0.4559	20.53	9.84	30.37	56.77	-26.4	QP
12	0.4559	13.86	9.84	23.7	46.77	-23.07	AVG

Remark:

1. QP = Quasi Peak, AVG = Average
2. Correction Factor = Insertion loss of LISN + Cable loss
3. Measurement Value = Reading Level + Correct Factor
4. Margin Level = Measurement Value –Limit Value

Test Voltage :	120Vac, 60Hz	Frequency Range:	0.15-30 MHz
Test Mode :	Transmit (802.11ax HE20 MCS0)	6dB Bandwidth :	9 kHz
Test Date :	2024/03/26	Phase :	N
Temperature :	20.4℃	Humidity :	57 %



No.	Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measurement (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1538	33.31	9.84	43.15	65.79	-22.64	QP
2	0.1538	19.07	9.84	28.91	55.79	-26.88	AVG
3	0.1688	34	9.84	43.84	65.02	-21.18	QP
4	0.1688	22.84	9.84	32.68	55.02	-22.34	AVG
5	0.1949	27.35	9.83	37.18	63.83	-26.65	QP
6	0.1949	15.58	9.83	25.41	53.83	-28.42	AVG
7	0.3602	27.08	9.84	36.92	58.72	-21.8	QP
8	0.3602	21.01	9.84	30.85	48.72	-17.87	AVG
9	0.3826	27.56	9.84	37.4	58.22	-20.82	QP
10	0.3826	21.84	9.84	31.68	48.22	-16.54	AVG
11	0.4173	33.09	9.84	42.93	57.5	-14.57	QP
12	0.4173	26.58	9.84	36.42	47.5	-11.08	AVG

Remark:

1. QP = Quasi Peak, AVG = Average
2. Correction Factor = Insertion loss of LISN + Cable loss
3. Measurement Value = Reading Level + Correct Factor
4. Margin Level = Measurement Value –Limit Value

--- END ---