

Test Report

Verified code: 935284

Report No.: E20221227602901-4

Customer: Lumi United Technology Co., Ltd

Address: B1, Chongwen Park, Nanshan iPark, Liuxian Avenue, Taoyuan Residential District,
Nanshan District, Shenzhen, China

Sample Name: Camera Hub G3

Sample Model: CH-H03

Receive Sample Date: Jan.05,2023

Test Date: Jan.12,2023 ~ Jan.12,2023

Reference Document: CFR 47, FCC Parts Subpart E Unlicensed National Information Infrastructure Devices
§ 15.209 Unwanted Emissions

Test Result: Pass

Prepared by: *Wen Wen*

Reviewed by: *Wen Wen*

Approved by: *Zhao Zetian*

GRG METROLOGY & TEST GROUP CO., LTD

Issued Date: 2023-04-14

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REPORT ISSUED HISTORY

Report Version	Report No.	Description	Compile Date
1.0	E20221227602901-4	Original Issue	2023-03-13

The applicant declared that the model CH-H03 comparison before and after the change as below: The 802.11n HT40 mode of the 2.4G Wi-Fi module has been deleted for this model, as well as other modification information in the following table. There are corresponding changes to the circuit schematic and PCB layout, but this will not affect the RF performance test results. For details, see the following table:

The Original model		The New model	
Change 1. Parameter before change	Bit number C160 is vacant	Parameter after Change	Add C160 capacitor, capacity : 12pF
Change 2. Add components	1.R97 location as shown below 2.R17, C158, and C159 are empty as shown below 3.R34 is another name on the motherboard, under the camera	Parameter after Change	1.Move bit number R97 position 2.Move bit number R34 position 3.Add resistor R17=120R, capacitor C158=27pF, C159=27pF
Change 3. Change component parameters (Change pcba: usb small version)	bit number: L1 (resistor) Parameter: 0R (usb small version)	Parameter after Change	bit number: L1 (magnetic bead) Parameter: magnetic bead value: 100MHz@120ohm magnetic beads (usb small version)
Change 4. Parameter before change (U1 added one replacement suppliers)	bit number: U1 parameter: 2.8V~30V\1MHz\2A\0.6mA\SOT23-6 SILERGY SY7200AABC	Parameter after Change	bit number: U1 A:parameter: 2.8V~30V\1MHz\2A\0.6mA\SOT23-6 SILERGY SY7200AABC B: parameter: 2.7~6V\60mA\0.8MHz\1A\SOT23-6 ETA ETA1617S2G

<p>Change 5. Parameter before change</p>	<p>Bit number U6 is FORESEE/FS35ND02G-S3Y2QWFI000</p>	<p>Parameter after Change</p>	<p>Bit number U6 is 1.ESMT/F50L2G41XA -104YG2B or 2.Winbond/W25N02KVZEIR</p>
<p>Change 6. Add components</p>	<p>Bit number U19 is HDSC/HC32F005C6UA</p>	<p>Parameter after Change</p>	<p>Bit number U19 is Cmsemicon/CMS32L031QN20</p>
<p>Change 7. Change component parameters (Change pcba: usb small version)</p>	<p>1.Bit number U18 is SmartSens/SC3335 2.Bit number U12 is 1.2V LDO</p>	<p>Parameter after Change</p>	<p>1.Bit number U18 is SmartSens/SC3338 2.Bit number U12 is vacant</p>
<p>Change 8. Software Version</p>	<p>3.2.8_0003.0004</p>	<p>Parameter after Change</p>	<p>V3.5.2_0010.0004</p>

Note: According to the difference declared letter by applicant, after evaluated only the Unwanted Emissions 30MHz to 1GHz test data need tested and revised, all other test data please refer to the report E20210426746801-11 which issue on 2021-09-04.

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1. TEST RESULT SUMMARY

Standard	Item	Limit / Severity	Result
15.209	Unwanted Emissions	15.209	PASS

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2. GENERAL DESCRIPTION OF EUT


2.1. APPLICANT

Name: Lumi United Technology Co., Ltd
 Address: B1, Chongwen Park, Nanshan iPark, Liuxian Avenue, Taoyuan Residential District, Nanshan District, Shenzhen, China

2.2. MANUFACTURER

Name: Lumi United Technology Co., Ltd
 Address: B1, Chongwen Park, Nanshan iPark, Liuxian Avenue, Taoyuan Residential District, Nanshan District, Shenzhen, China

2.3. BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Product Name: Camera Hub G3
 Product Model: CH-H03
 Adding Model: /
 FCC ID: 2AKIT-CHH03
 Trade Name: Aqara
 Power Supply: DC5V power supplied by adapter
 Adapter Model: A8A-050200U-US1
 Specification: Input: 100-240V~ 50/60Hz 0.35A
 Output: 5.0V  2.0A
 Frequency Band: U-NII-1: 5180 MHz~5240 MHz
 U-NII-2A: 5260 MHz~5320 MHz
 U-NII-2C: 5500 MHz~5700 MHz
 U-NII-3: 5745 MHz~5825 MHz
 Modulation Type: OFDM
 Antenna Specification: Internal antenna with 2dBi gain (Max.)
 Number Of Channel: U-NII-1:
 IEEE 802.11a / n HT20 / ac VHT20: 4 Channels
 IEEE 802.11n HT40 / ac VHT40: 2 Channels
 IEEE 802.11acVHT80: 1 Channel
 U-NII-2A:
 IEEE 802.11a / n HT20 / ac VHT20: 4 Channels
 IEEE 802.11n HT40 / ac VHT40: 2 Channels
 IEEE 802.11acVHT80: 1 Channel
 U-NII-2C:
 IEEE 802.11a / n HT20 / ac VHT20: 11 Channels
 IEEE 802.11n HT40 / ac VHT40: 5 Channels

	IEEE 802.11ac VHT80: 2 Channel
	U-NII-3:
	IEEE 802.11a / n HT20 / ac VHT20: 5 Channels
	IEEE 802.11n HT40 / ac VHT40: 2 Channels
	IEEE 802.11acVHT80: 1 Channel
Channels Spacing:	IEEE 802.11a: 20MHz
	IEEE 802.11n HT20: 20MHz
	IEEE 802.11n HT40: 40MHz
	IEEE 802.11acVHT20: 20MHz
	IEEE 802.11acVHT40: 40MHz
	IEEE 802.11acVHT80: 80MHz
Transmit Power:	U-NII-1:
	10.12dBm for IEEE 802.11a
	9.96dBm for IEEE 802.11n HT20
	8.31dBm for IEEE 802.11acVHT20
	10.03dBm for IEEE 802.11n HT40
	7.85dBm for IEEE 802.11acVHT40
	8.49dBm for IEEE 802.11ac VHT80
	U-NII-2A:
	10.39dBm for IEEE 802.11a
	10.16dBm for IEEE 802.11n HT20
	8.51dBm for IEEE 802.11acVHT20
	10.53dBm for IEEE 802.11n HT40
	8.46dBm for IEEE 802.11acVHT40
	9.05dBm for IEEE 802.11ac VHT80
	U-NII-2C:
	8.91dBm for IEEE 802.11a
	8.27dBm for IEEE 802.11n HT20
	6.82dBm for IEEE 802.11acVHT20
	8.77dBm for IEEE 802.11n HT40
	6.67dBm for IEEE 802.11acVHT40
	7.00dBm for IEEE 802.11ac VHT80
	U-NII-3:
	8.34dBm for IEEE 802.11a
	7.90dBm for IEEE 802.11n HT20
	6.64dBm for IEEE 802.11acVHT20
	8.07dBm for IEEE 802.11n HT40
	6.01dBm for IEEE 802.11acVHT40
	6.65dBm for IEEE 802.11ac VHT80
Temperature Range:	-10°C~40°C
Hardware	
Version:	A20-GHC01-MIAN-X4
Software	
Version:	V3.5.2_0010.0004

Sample submitting Provided by customer Sampling

way:

Sample No: E20221227602901-0002

Note: /

2.4. TEST OPERATION MODE

Mode No.	Description of the modes
1	5G Wi-Fi TX mode

2.5. CHANNEL LIST

Mode	Band	Channel	Frequency (MHz)	Mode	Band	Channel	Frequency (MHz)
IEEE 802.11a	U-NII-1	36	5180	IEEE 802.11n HT20	U-NII-1	36	5180
		40	5200			40	5200
		44	5220			44	5220
		48	5240			48	5240
	U-NII-2A	52	5260		U-NII-2A	52	5260
		56	5280			56	5280
		60	5300			60	5300
		64	5320			64	5320
	U-NII-2C	100	5500		U-NII-2C	100	5500
		104	5520			104	5520
		108	5540			108	5540
		112	5560			112	5560
		116	5580			116	5580
		120	5600			120	5600
		124	5620			124	5620
		128	5640			128	5640
	U-NII-3	132	5660		U-NII-3	132	5660
		136	5680			136	5680
		140	5700			140	5700
		149	5745			149	5745
153		5765	153	5765			
157		5785	157	5785			
	161	5805		161	5805		
	165	5825		165	5825		

Mode	Band	Channel	Frequency (MHz)
IEEE 802.11ac VHT20	U-NII-1	36	5180
		40	5200
		44	5220
		48	5240
	U-NII-2A	52	5260
		56	5280
		60	5300
		64	5320
	U-NII-2C	100	5500
		104	5520
		108	5540

		112	5560
		116	5580
		120	5600
		124	5620
		128	5640
		132	5660
		136	5680
		140	5700
	U-NII-3	149	5745
		153	5765
		157	5785
		161	5805
		165	5825

Mode	Band	Channel	Frequency (MHz)	Mode	Band	Channel	Frequency (MHz)
IEEE 802.11 n HT40	U-NII-1	38	5190	IEEE 802.11 ac VHT40	U-NII-1	38	5190
		46	5230			46	5230
	U-NII-2A	54	5270		U-NII-2A	54	5270
		62	5310			62	5310
	U-NII-2C	102	5510		U-NII-2C	102	5510
		110	5550			110	5550
		118	5590			118	5590
		126	5630			126	5630
	U-NII-3	134	5670		U-NII-3	134	5670
		151	5755			151	5755
		159	5795			159	5795

Mode	Band	Channel	Frequency (MHz)
IEEE 802.11ac VHT80	U-NII-1	42	5210
	U-NII-2A	58	5290
	U-NII-2C	106	5530
		122	5610
	U-NII-3	155	5775

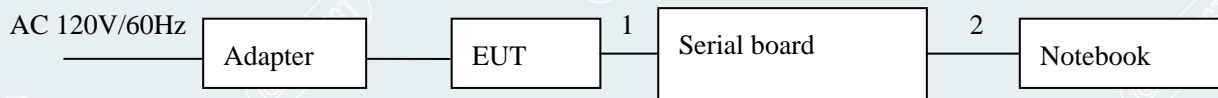
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2.6. LOCAL SUPPORTIVE INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Note
Notebook	LENOVO	TianYi 310-14ISK	MP18DLC6	/
Serial board	/	/	/	/

No.	Cable Type	Qty.	Shielded Type	Ferrite Core(Qty.)	Length
1	DC Cable	1	No	0	1.0m
2	USB Cable	1	No	0	1.5m

2.7. CONFIGURATION OF SYSTEM UNDER TEST



Test software:

Software version
QCOM_V1.0

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Power Setting:

Mode	Frequency (MHz)	Power Setting	Frequency (MHz)	Power Setting
IEEE 802.11a	5180	48	5500	48
	5200	48	5580	48
	5240	48	5700	48
	5260	48	5745	48
	5300	48	5785	48
	5320	48	5825	48

Mode	Frequency (MHz)	Power Setting	Mode	Frequency (MHz)	Power Setting
IEEE 802.11n HT20	5180	48	IEEE 802.11ac VHT20	5180	44
	5200	48		5200	44
	5240	48		5240	44
	5260	48		5260	44
	5300	48		5300	44
	5320	48		5320	44
	5500	48		5500	44
	5580	48		5580	44
	5700	48		5700	44
	5745	48		5745	44
	5785	48		5785	44
	5825	48		5825	44

IEEE 802.11n HT40	5190	48	IEEE 802.11ac VHT40	5190	44
	5230	48		5230	44
	5270	48		5270	44
	5310	48		5310	44
	5510	48		5510	44
	5550	48		5550	44
	5670	48		5670	44
	5755	48		5755	44
	5795	48		5795	44

Mode	Frequency (MHz)	Power Setting	Frequency (MHz)	Power Setting
IEEE 802.11ac VHT80	5210	44	5610	44
	5290	44	5775	44
	5530	44	/	

3. LABORATORY AND ACCREDITATIONS

3.1. LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of GRG METROLOGY & TEST GROUP CO., LTD.

Add : No.1301 Guanguang Road Xinlan Community, Guanlan Street, Longhua District
Shenzhen, 518110, People's Republic of China

P.C. : 518110

Tel : 0755-61180008

Fax : 0755-61180008

3.2. ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA A2LA(Certificate #2861.01)

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada ISED (Company Number: 24897, CAB identifier:CN0069)

USA FCC (Registration Number: 759402, Designation Number:CN1198)

Copies of granted accreditation certificates are available for downloading from our web site,
[Uhttp://www.grgtest.com](http://www.grgtest.com)

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3.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement		Frequency	Uncertainty
Radiated Emission	Horizontal	30MHz~200MHz	4.5dB
		200MHz~1000MHz	4.4 dB
	Vertical	30MHz~200MHz	4.4dB
		200MHz~1000MHz	4.5dB

Measurement	Uncertainty
RF frequency	6.0×10^{-6}
Humidity	6 %
Temperature	2°C

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95%.
 This uncertainty represents an expanded uncertainty factor of $k=2$.

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4. LIST OF USED TEST EQUIPMENT AT GRGT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Radiated Spurious Emission(30MHz-1GHz)				
Test S/W	EZ	CCS-03A1	/	/
Test Receiver	R&S	ESR7	102444	2023-09-02
Preamplifier	EMEC	EM330	I00426	2023-03-05
Bi-log Antenna	TESEQ	CBL6143A	26039	2024-10-23

Note: The calibration interval of the above test instruments is 12 months except Bi-log Antenna, The calibration interval of the Bi-log Antenna is 24 months.

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5. RADIATED SPURIOUS EMISSIONS

5.1 LIMITS

The maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

The unwanted emissions which fall in Restricted bands shall not exceed the field strength levels specified in the following table:

15.209 Radiated emission limits

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

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5.2 TEST PROCEDURES

- a. EUT was placed on a turn table, which is 0.8 meter high above ground for below 1GHz test, and which is 1.5 meter high above ground for above 1GHz test.
- b. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower.
- c. Set the EUT transmit continuously with maximum output power.
- d. The turn table can rotate 360 degrees to determine the position of the maximum emission level.
- e. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.
- f. Spectrum analyzer setting parameters please see the below table.
- g. Repeat above procedures until all channels were measured.
- h. Record the results in the test report.

For 9kHz-150kHz

Spectrum Parameters	Setting
RBW	300Hz(for Peak&AVG)/CISPR 200Hz(for QP)
VBW	300Hz(for Peak&AVG)/CISPR 200Hz(for QP)
Start frequency	9kHz
Stop frequency	150kHz
Sweep Time	Auto
Detector	PEAK/QP/AVG
Trace Mode	Max Hold

Note : For 9kHz-90kHz&110kHz-150kHz,the detector is average,other frequency is CISPR QP detector.

For 150kHz-30MHz

Spectrum Parameters	Setting
RBW	9kHz
VBW	9kHz
Start frequency	150kHz
Stop frequency	30MHz
Sweep Time	Auto
Detector	QP
Trace Mode	Max Hold

Note : For 150kHz-490kHz,the detector is average,other frequency is CISPR QP detector.

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For 30MHz-1GHz

Spectrum Parameters	Setting
RBW	120kHz
VBW	300kHz
Start frequency	30MHz
Stop frequency	1GHz
Sweep Time	Auto
Detector	QP
Trace Mode	Max Hold

For Above 1GHz

Spectrum Parameters	Setting	
RBW	1MHz	
VBW	PEAK Measurement	AVG Measurement
	3MHz	Duty cycle ≥ 98%, VBW = 10Hz Duty cycle < 98%, VBW ≥ 1/T Video bandwidth mode = RMS (power averaging)
Start frequency	1GHz	
Stop frequency	40GHz	
Sweep Time	Auto	
Detector	PEAK	
Trace Mode	Max Hold	

Note :

- (1) T is the on-time time of the duty cycle, when EUT transmit continuously with maximum output power, unit is seconds. reference section 2.9 for the on-time time.
- (2) Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:

$$E = \text{EIRP} - 20\log D + 104.8$$
 where:
 E = electric field strength in dBμV/m,
 EIRP = equivalent isotropic radiated power in dBm
 D = specified measurement distance in meters.
 So: $E = -27 - 20\log 3 + 104.8 = 68.3 \text{ (dB}\mu\text{V/m)}$.
- (3) The unwanted emissions which fall in Restricted bands shall not exceed the field strength, Above 18G test distance is 1m, so the Peak Limit = $74 + 20 \cdot \log(3/1) = 83.54 \text{ (dB}\mu\text{V/m)}$.
 The Avg Limit = $54 + 20 \cdot \log(3/1) = 63.54 \text{ (dB}\mu\text{V/m)}$.
- (4) The maximum emissions of the operation frequency bands, Above 18G test distance is 1m, so the Peak Limit = $68.3 + 20 \cdot \log(3/1) = 77.84 \text{ (dB}\mu\text{V/m)}$.

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5.3 TEST SETUP

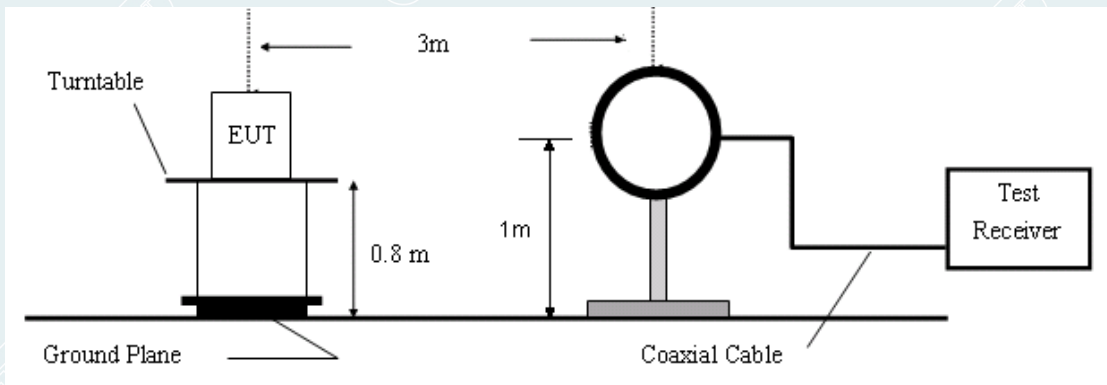


Figure 1. 9kHz to 30MHz radiated emissions test configuration

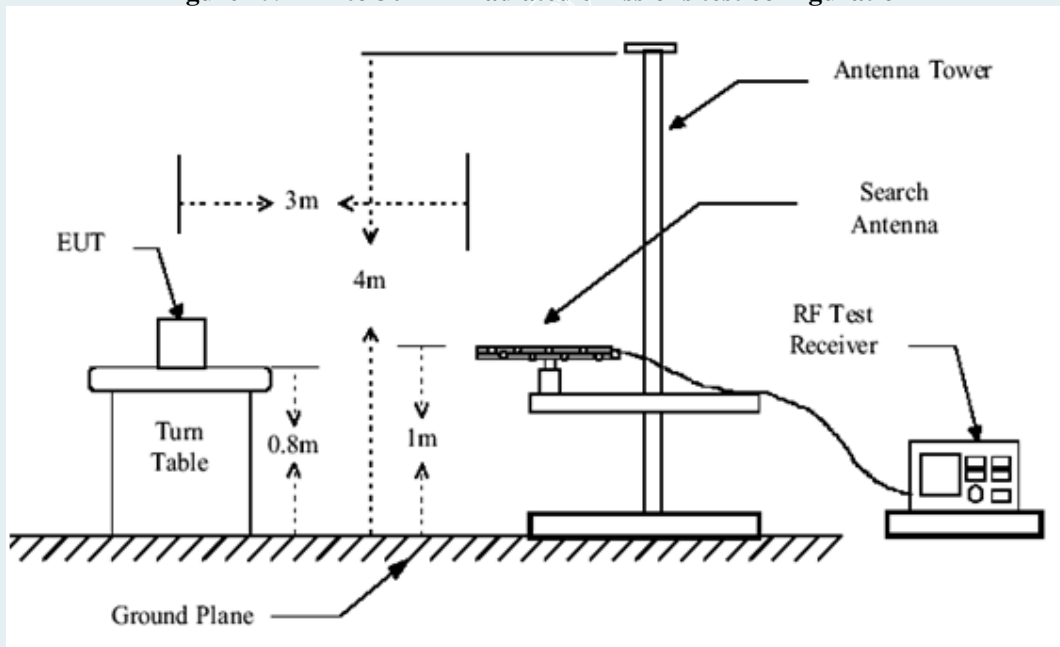


Figure 2. 30MHz to 1GHz radiated emissions test configuration

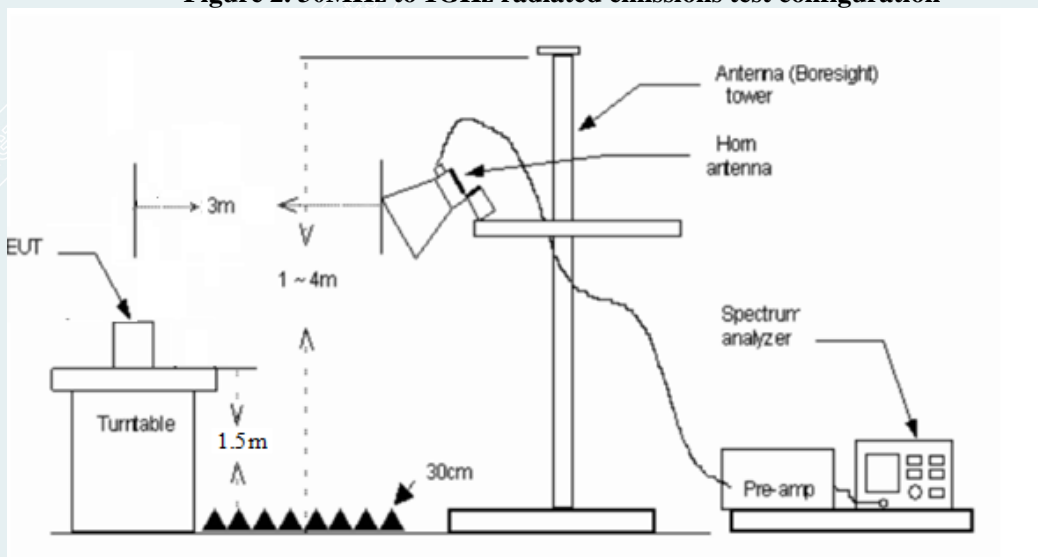


Figure 3. 1GHz-18GHz radiated emissions test configuration

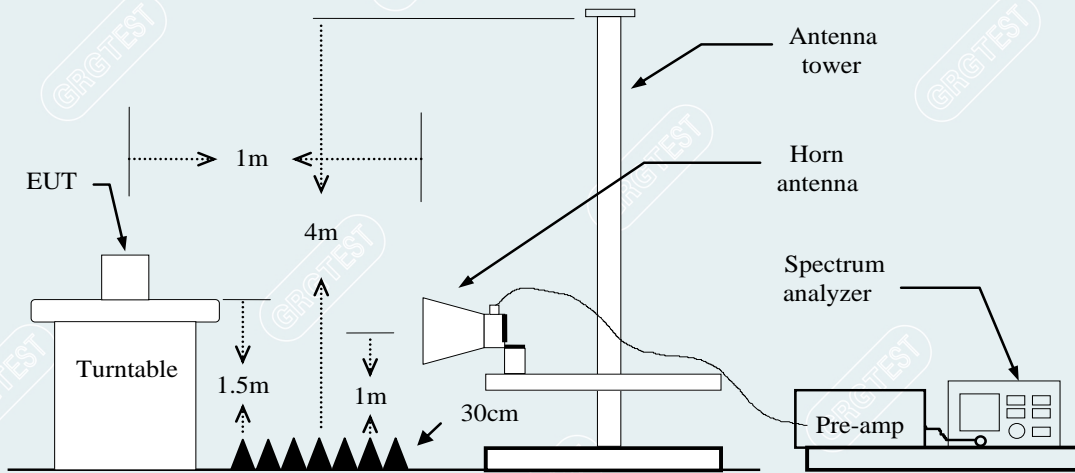


Figure 4. Above 18GHz radiated emissions test configuration

5.4 DATA SAMPLE

30MHz to 1GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	37.06	-15.48	21.58	40.00	-18.42	QP	Vertical

1GHz-18GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Level (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	49.66	53.43	3.77	74.00	20.57	peak	Vertical
xxx	xxx	34.98	38.75	3.77	54.00	15.25	AVG	Vertical

Above 18GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Level (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	59.22	58.58	-0.64	83.54	24.96	peak	Vertical
xxx	xxx	53.01	52.37	-0.64	63.54	11.17	AVG	Vertical

- Frequency (MHz) = Emission frequency in MHz
- Ant.Pol. (H/V) = Antenna polarization
- Reading (dBuV) = Uncorrected Analyzer / Receiver reading
- Factor (dB) = Antenna factor + Cable loss – Amplifier gain
- Result (dBuV/m) = Reading (dBuV) + Correction Factor (dB/m)
- Limit (dBuV/m) = Limit stated in standard
- Margin (dB) = Remark Result (dBuV/m) – Limit (dBuV/m)
- Peak = Peak Reading
- QP = Quasi-peak Reading
- AVG = Average Reading

5.5 TEST RESULTS

Below 1GHz

All models were pretested and only the worst modes and channels were recorded in this report. (IEEE 802.11a)

Mode: Mode 1/ IEEE 802.11a

Temp. /Hum.:22.3°C/49%RH/101.0kPa

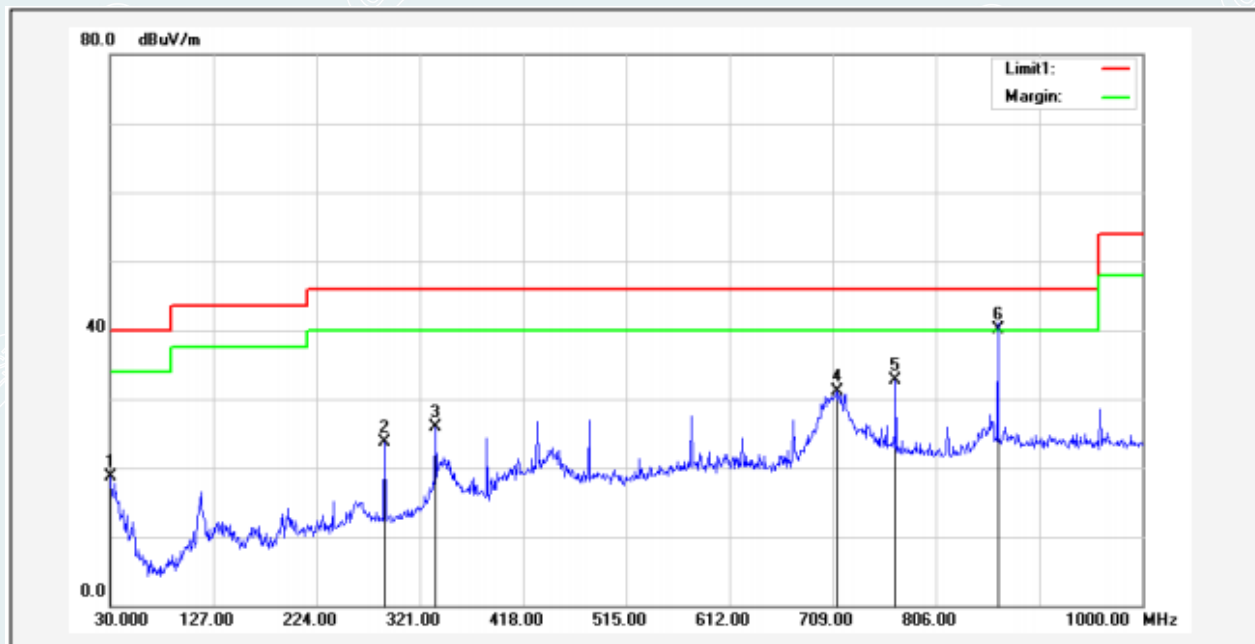
Test Engineer: Huang Xinlong

Frequency:5180MHz

Power supply:AC 120V/60Hz

Test Date: 2023-01-12

Polarity: Horizontal



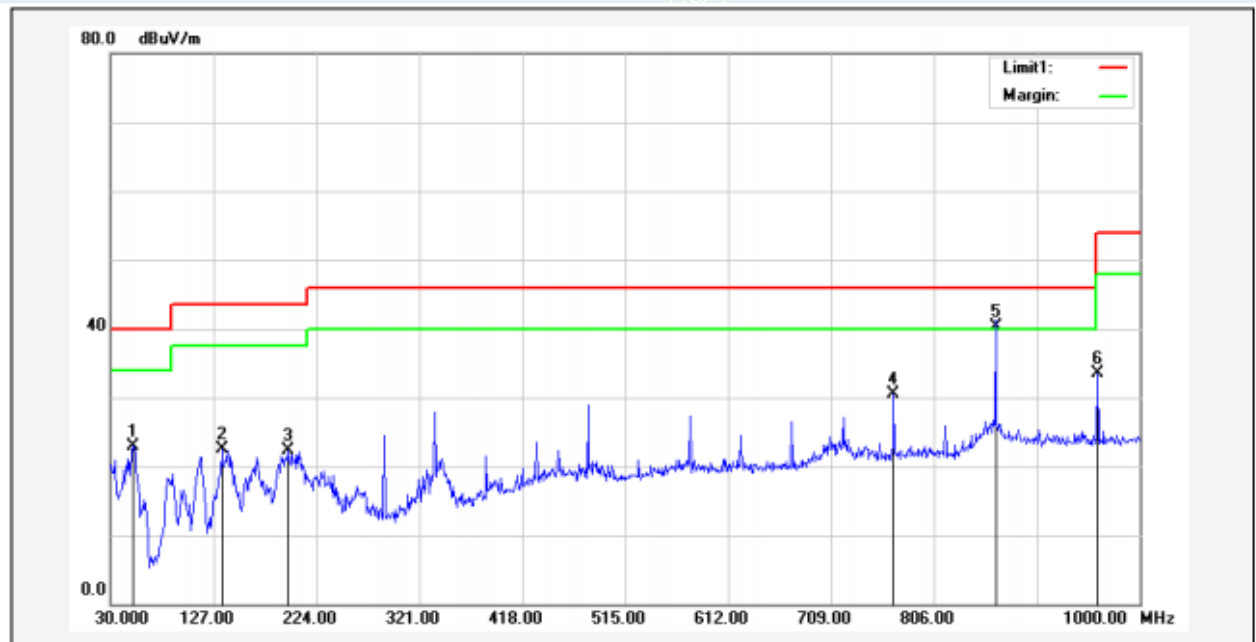
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	30.0000	35.42	-16.65	18.77	40.00	-21.23	356	100	QP
2	288.0200	47.53	-23.90	23.63	46.00	-22.37	0	201	QP
3	335.5500	48.72	-22.79	25.93	46.00	-20.07	223	100	QP
4	712.8800	46.38	-15.34	31.04	46.00	-14.96	266	100	QP
5	768.1700	47.10	-14.32	32.78	46.00	-13.22	304	100	QP
6*	864.2000	53.75	-13.61	40.14	46.00	-5.86	116	100	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5180MHz
 Power supply: AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Vertical



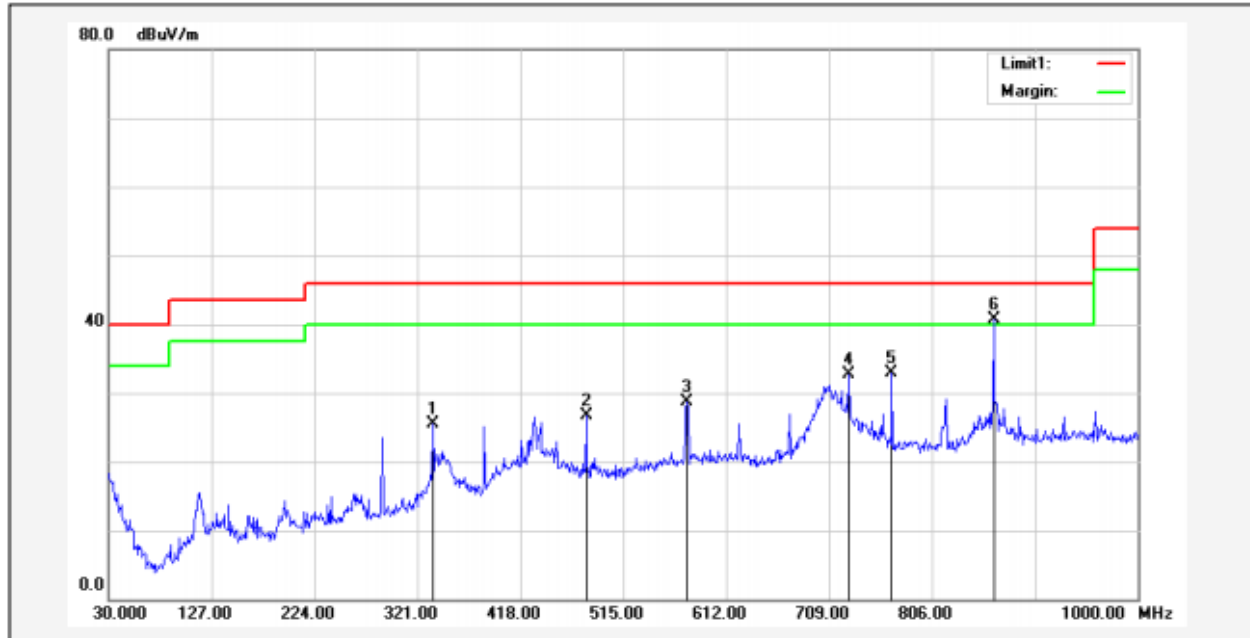
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	51.3400	49.47	-26.48	22.99	40.00	-17.01	133	100	QP
2	134.7600	48.27	-25.79	22.48	43.50	-21.02	294	100	QP
3	196.8400	49.04	-26.80	22.24	43.50	-21.26	80	100	QP
4	768.1700	44.88	-14.32	30.56	46.00	-15.44	280	200	QP
5*	864.2000	53.96	-13.61	40.35	46.00	-5.65	360	126	QP
6	960.2300	46.14	-12.64	33.50	54.00	-20.50	174	100	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5200MHz
 Power supply: AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Horizontal



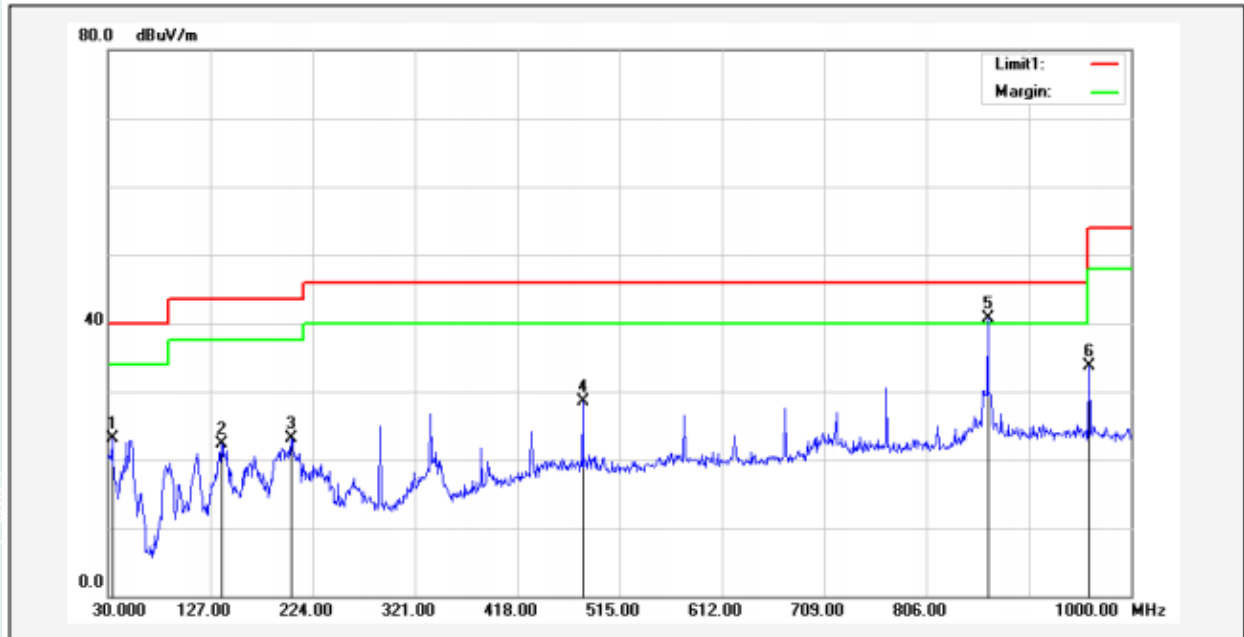
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	335.5500	48.24	-22.79	25.45	46.00	-20.55	211	100	QP
2	480.0800	45.45	-18.68	26.77	46.00	-19.23	26	100	QP
3	575.1400	45.08	-16.43	28.65	46.00	-17.35	356	300	QP
4	727.4300	47.74	-15.04	32.70	46.00	-13.30	111	100	QP
5	768.1700	47.27	-14.32	32.95	46.00	-13.05	303	100	QP
6*	864.2000	54.22	-13.61	40.61	46.00	-5.39	115	100	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5200MHz
 Power supply: AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Vertical



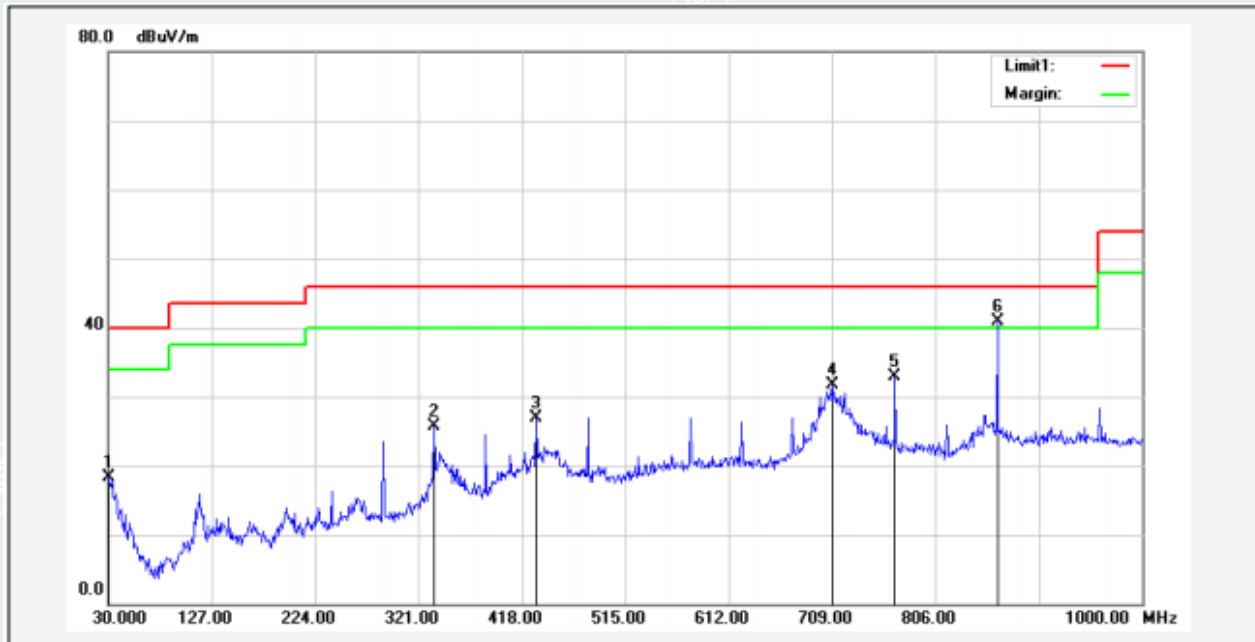
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	33.8800	41.59	-18.52	23.07	40.00	-16.93	122	100	QP
2	137.6700	48.23	-25.87	22.36	43.50	-21.14	253	100	QP
3	203.6300	49.52	-26.50	23.02	43.50	-20.48	89	100	QP
4	480.0800	47.18	-18.68	28.50	46.00	-17.50	164	100	QP
5*	864.2000	54.33	-13.61	40.72	46.00	-5.28	360	127	QP
6	960.2300	46.35	-12.64	33.71	54.00	-20.29	190	100	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5240MHz
 Power supply: AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Horizontal



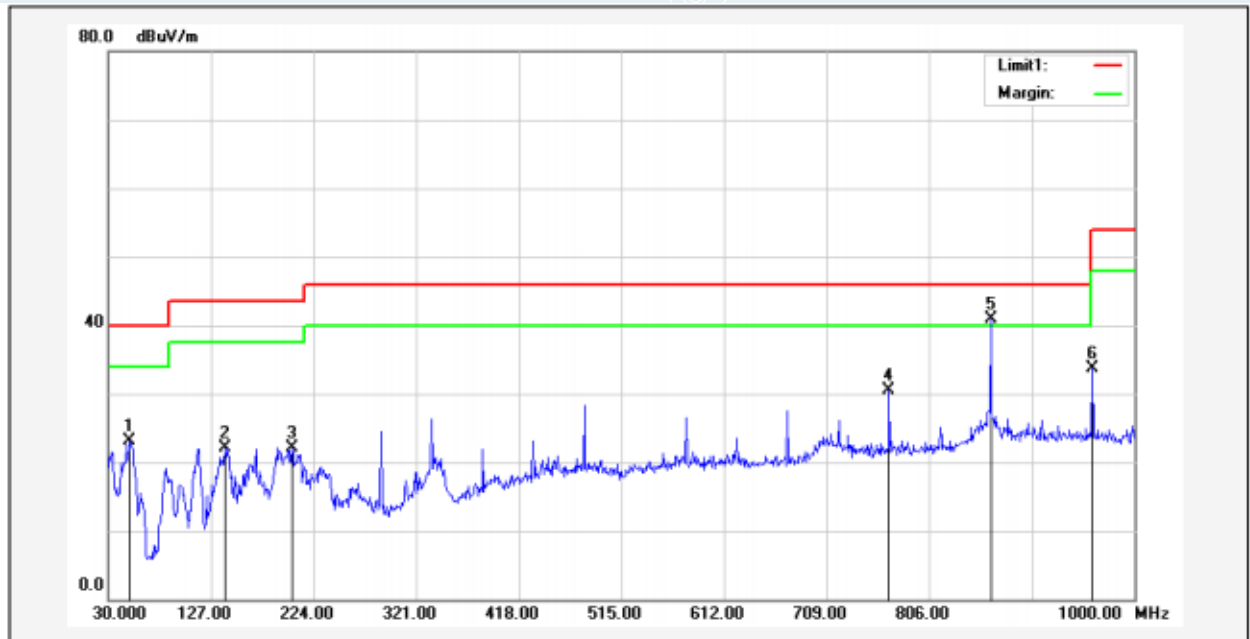
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	30.9700	35.50	-17.11	18.39	40.00	-21.61	308	400	QP
2	335.5500	48.58	-22.79	25.79	46.00	-20.21	222	100	QP
3	431.5800	46.36	-19.53	26.83	46.00	-19.17	26	100	QP
4	709.9700	47.14	-15.41	31.73	46.00	-14.27	264	100	QP
5	768.1700	47.20	-14.32	32.88	46.00	-13.12	304	100	QP
6*	864.2000	54.47	-13.61	40.86	46.00	-5.14	108	100	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5240MHz
 Power supply: AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Vertical



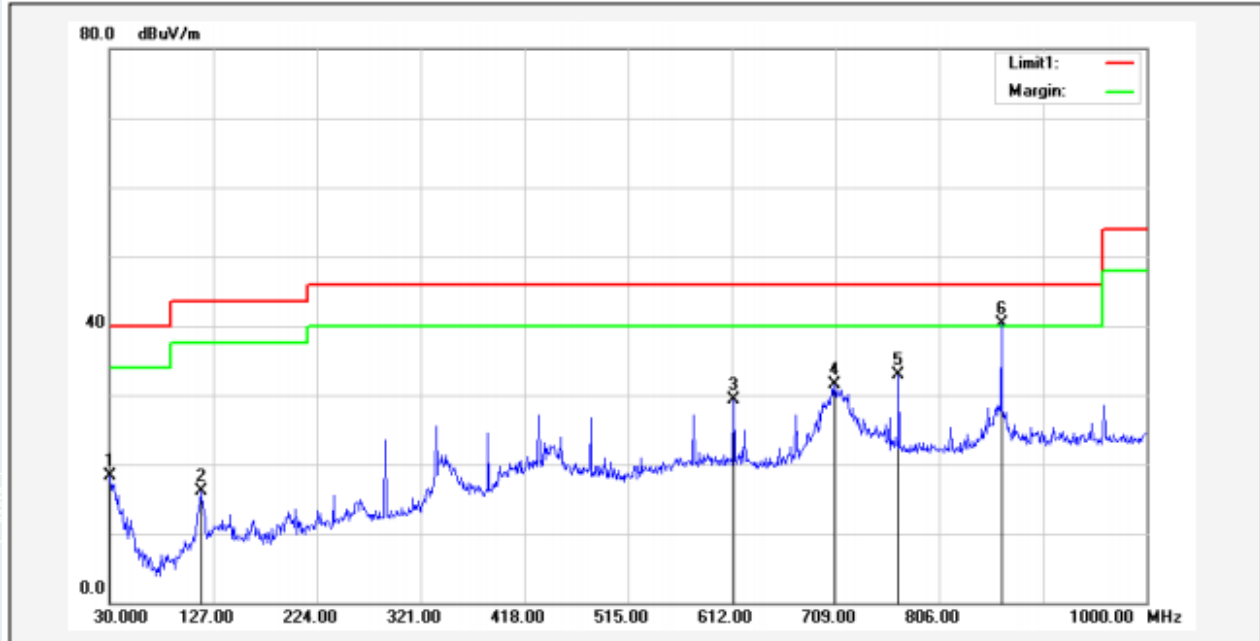
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	50.3700	49.24	-26.18	23.06	40.00	-16.94	38	100	QP
2	140.5800	48.06	-25.98	22.08	43.50	-21.42	313	100	QP
3	203.6300	48.60	-26.50	22.10	43.50	-21.40	344	100	QP
4	768.1700	44.89	-14.32	30.57	46.00	-15.43	277	200	QP
5*	864.2000	54.58	-13.61	40.97	46.00	-5.03	360	126	QP
6	960.2300	46.35	-12.64	33.71	54.00	-20.29	173	100	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5260MHz
 Power supply:AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Horizontal



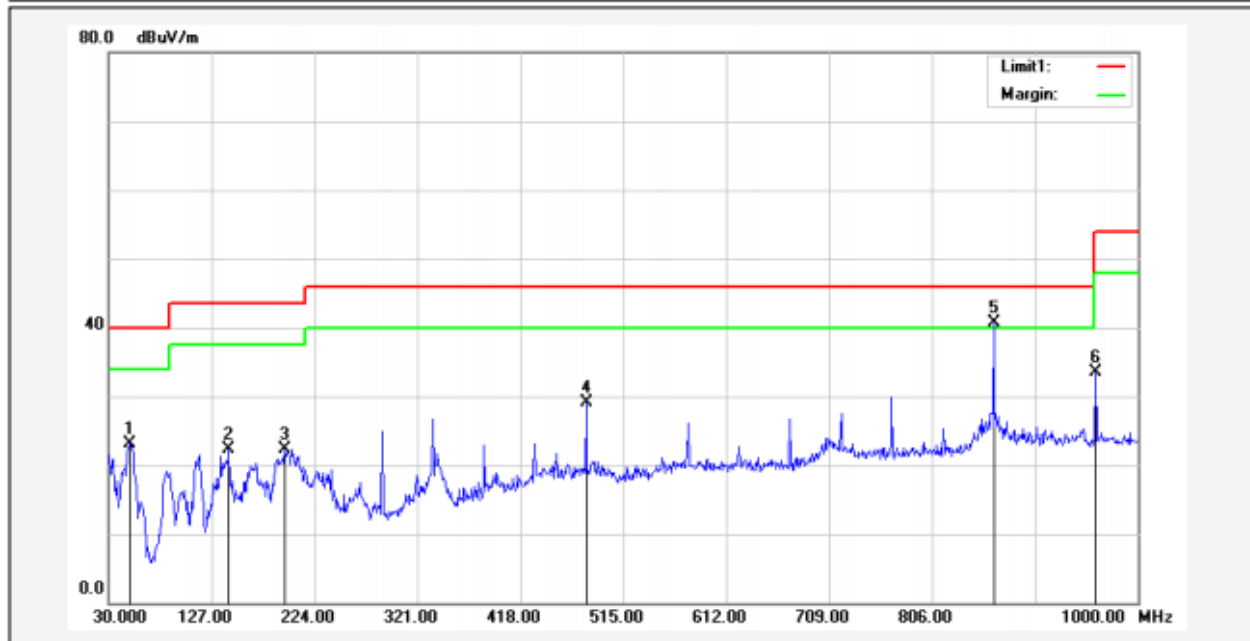
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	30.9700	35.50	-17.11	18.39	40.00	-21.61	360	373	QP
2	115.3600	42.73	-26.63	16.10	43.50	-27.40	0	273	QP
3	613.9400	45.42	-16.17	29.25	46.00	-16.75	161	200	QP
4	708.0300	46.99	-15.45	31.54	46.00	-14.46	263	100	QP
5	768.1700	47.17	-14.32	32.85	46.00	-13.15	297	100	QP
6*	864.2000	54.00	-13.61	40.39	46.00	-5.61	116	100	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5260MHz
 Power supply: AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Vertical



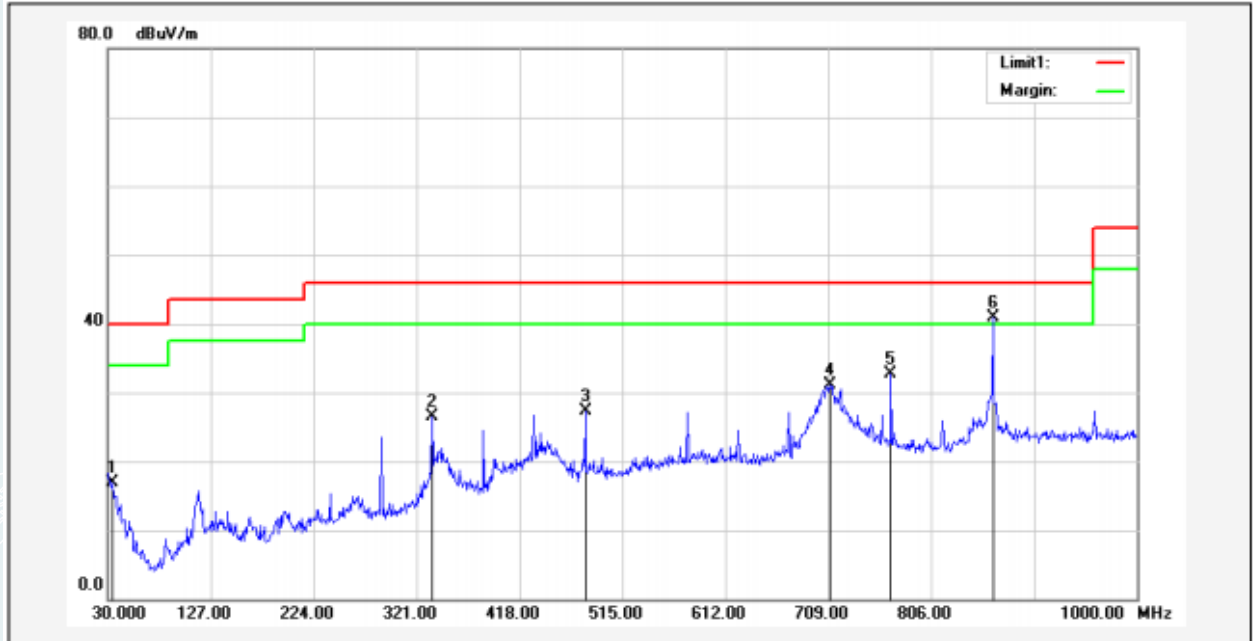
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	50.3700	49.38	-26.18	23.20	40.00	-16.80	98	100	QP
2	143.4900	48.56	-26.20	22.36	43.50	-21.14	126	100	QP
3	195.8700	49.24	-26.85	22.39	43.50	-21.11	269	100	QP
4	480.0800	47.79	-18.68	29.11	46.00	-16.89	135	200	QP
5*	864.2000	54.37	-13.61	40.76	46.00	-5.24	360	127	QP
6	960.2300	46.21	-12.64	33.57	54.00	-20.43	188	100	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5300MHz
 Power supply:AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Horizontal



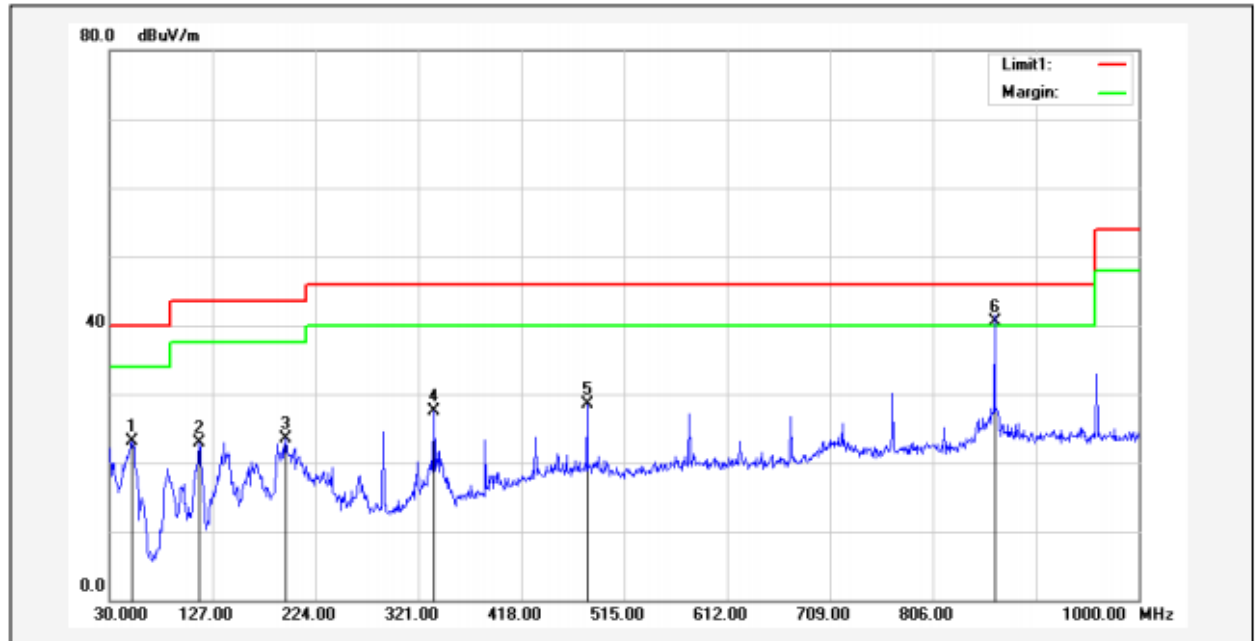
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	34.8500	35.87	-18.99	16.88	40.00	-23.12	71	100	QP
2	335.5500	49.30	-22.79	26.51	46.00	-19.49	233	100	QP
3	480.0800	45.94	-18.68	27.26	46.00	-18.74	26	100	QP
4	710.9400	46.42	-15.38	31.04	46.00	-14.96	264	100	QP
5	768.1700	47.02	-14.32	32.70	46.00	-13.30	320	100	QP
6*	864.2000	54.51	-13.61	40.90	46.00	-5.10	115	100	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5300MHz
 Power supply: AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Vertical



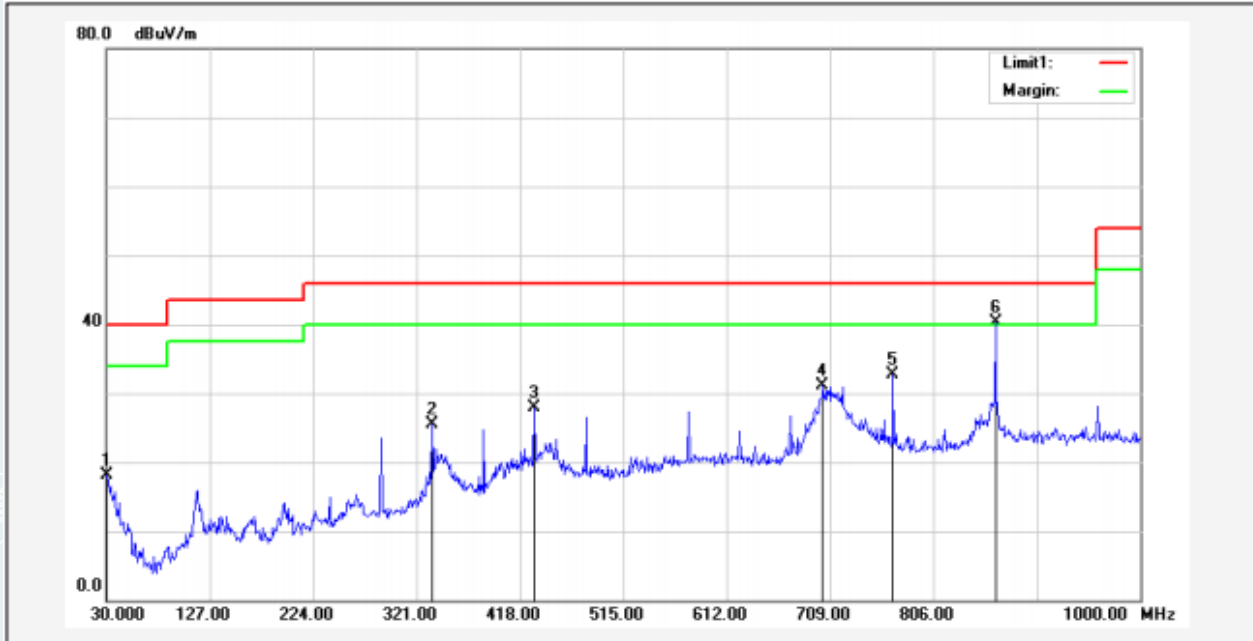
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	51.3400	49.51	-26.48	23.03	40.00	-16.97	125	100	QP
2	114.3900	49.54	-26.70	22.84	43.50	-20.66	81	100	QP
3	195.8700	50.31	-26.85	23.46	43.50	-20.04	172	100	QP
4	335.5500	50.22	-22.79	27.43	46.00	-18.57	236	100	QP
5	480.0800	47.16	-18.68	28.48	46.00	-17.52	170	200	QP
6*	864.2000	54.20	-13.61	40.59	46.00	-5.41	360	124	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5320MHz
 Power supply:AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Horizontal



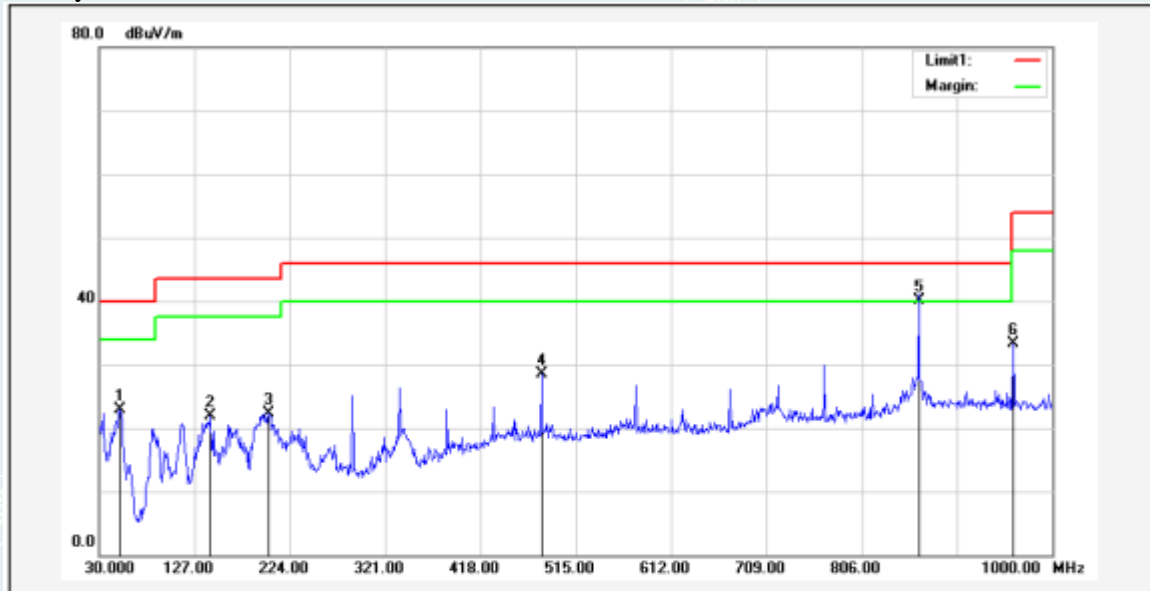
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	30.0000	34.81	-16.65	18.16	40.00	-21.84	360	197	QP
2	335.5500	48.37	-22.79	25.58	46.00	-20.42	225	100	QP
3	431.5800	47.47	-19.53	27.94	46.00	-18.06	1	100	QP
4	702.2100	46.63	-15.57	31.06	46.00	-14.94	263	100	QP
5	768.1700	47.07	-14.32	32.75	46.00	-13.25	299	100	QP
6*	864.2000	53.86	-13.61	40.25	46.00	-5.75	133	100	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5320MHz
 Power supply: AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Vertical



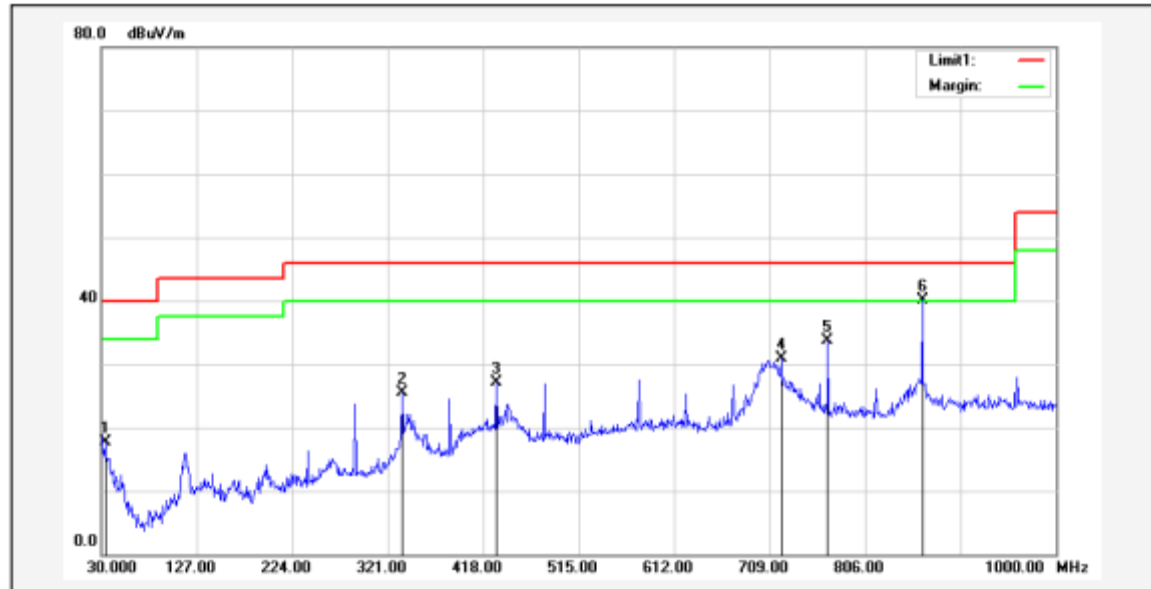
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	51.3400	49.29	-26.48	22.81	40.00	-17.19	138	100	QP
2	143.4900	48.11	-26.20	21.91	43.50	-21.59	118	100	QP
3	202.6600	48.80	-26.54	22.26	43.50	-21.24	186	100	QP
4	480.0800	47.13	-18.68	28.45	46.00	-17.55	155	200	QP
5*	864.2000	53.62	-13.61	40.01	46.00	-5.99	360	127	QP
6	960.2300	45.98	-12.64	33.34	54.00	-20.66	179	100	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5500MHz
 Power supply:AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Horizontal



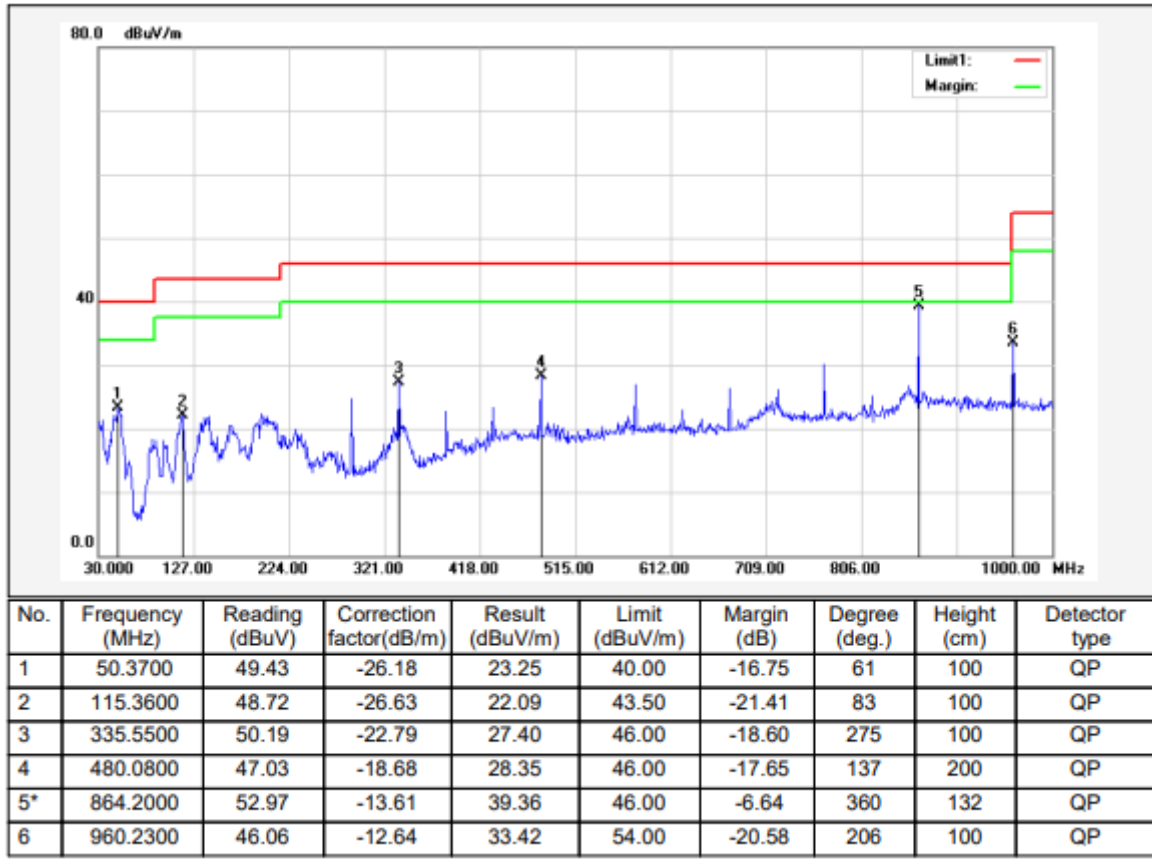
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	33.8800	36.19	-18.52	17.67	40.00	-22.33	358	400	QP
2	335.5500	48.31	-22.79	25.52	46.00	-20.48	222	100	QP
3	431.5800	46.61	-19.53	27.08	46.00	-18.92	8	100	QP
4	720.6400	46.10	-15.18	30.92	46.00	-15.08	278	100	QP
5	768.1700	48.06	-14.32	33.74	46.00	-12.26	300	100	QP
6*	864.2000	53.66	-13.61	40.05	46.00	-5.95	123	100	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5500MHz
 Power supply: AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Vertical

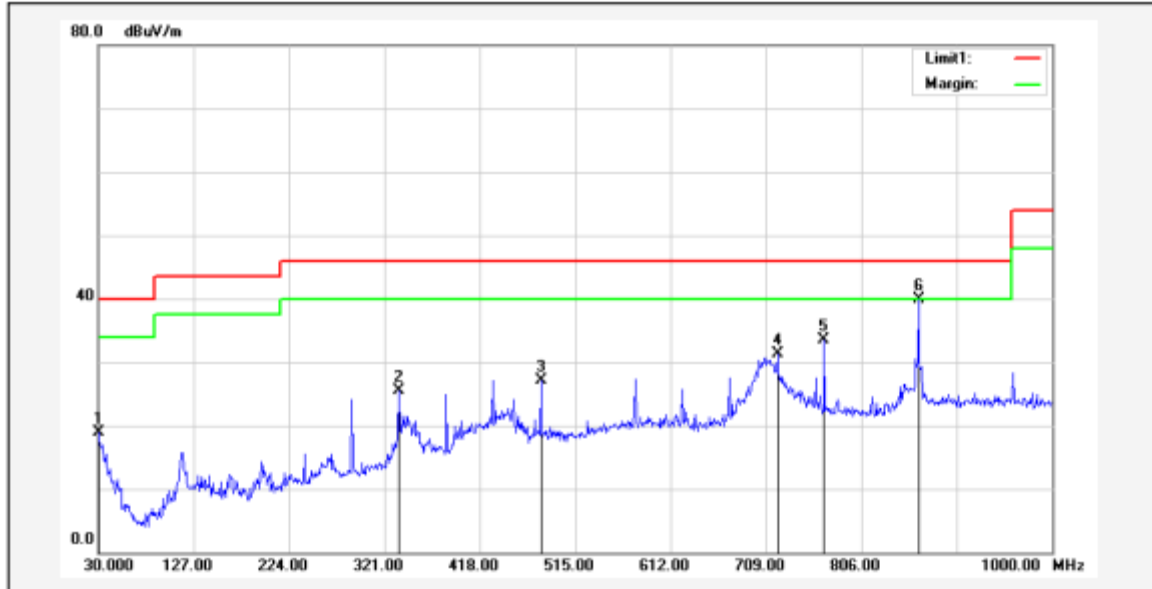


----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5580MHz
 Power supply:AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Horizontal



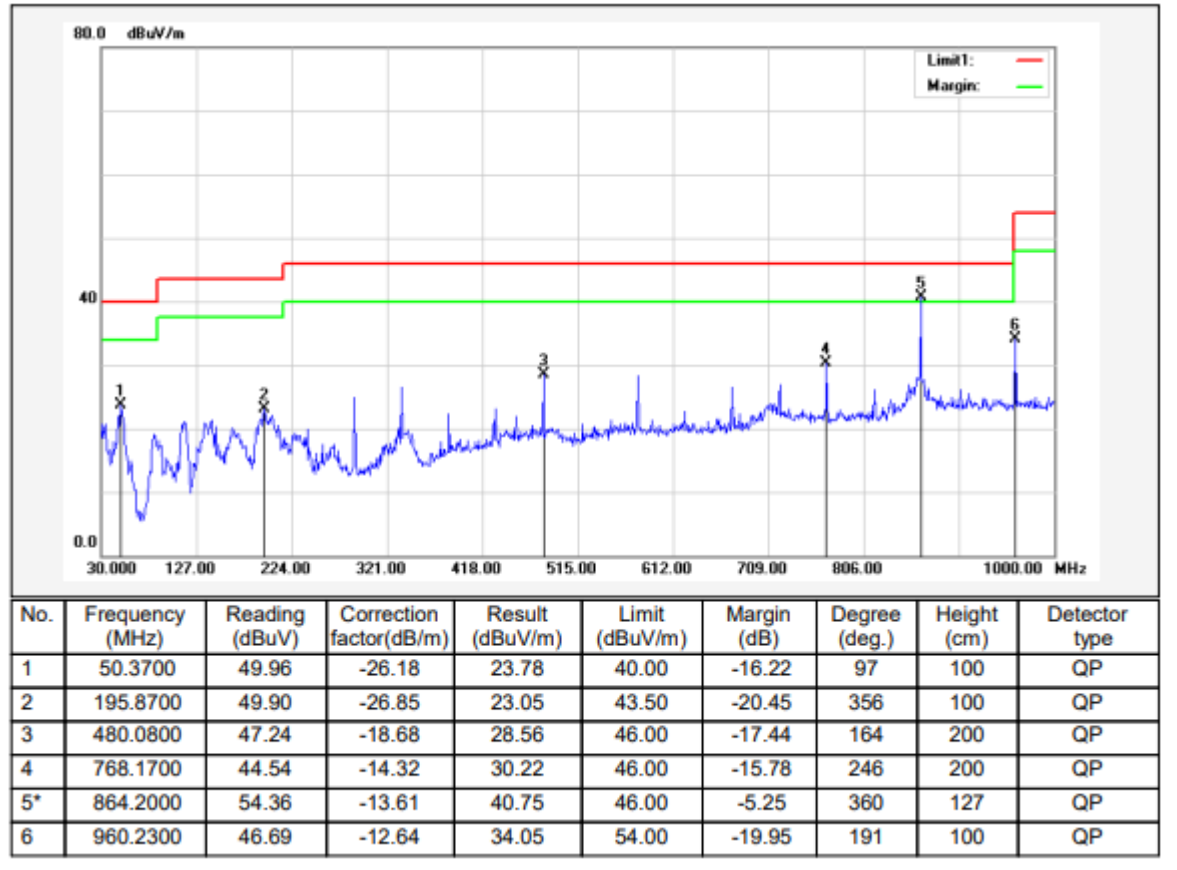
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	30.0000	35.46	-16.65	18.81	40.00	-21.19	24	100	QP
2	335.5500	48.23	-22.79	25.44	46.00	-20.56	238	100	QP
3	480.0800	45.85	-18.68	27.17	46.00	-18.83	51	100	QP
4	720.6400	46.51	-15.18	31.33	46.00	-14.67	288	100	QP
5	768.1700	47.81	-14.32	33.49	46.00	-12.51	296	100	QP
6*	864.2000	53.56	-13.61	39.95	46.00	-6.05	123	100	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5580MHz
 Power supply: AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Vertical

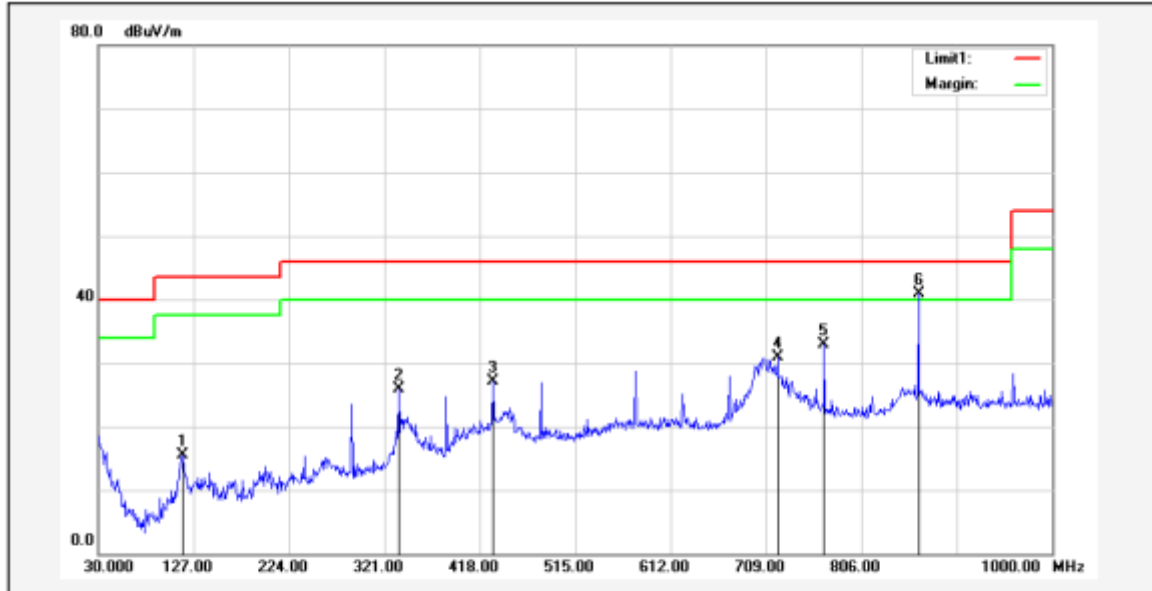


----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5700MHz
 Power supply:AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Horizontal



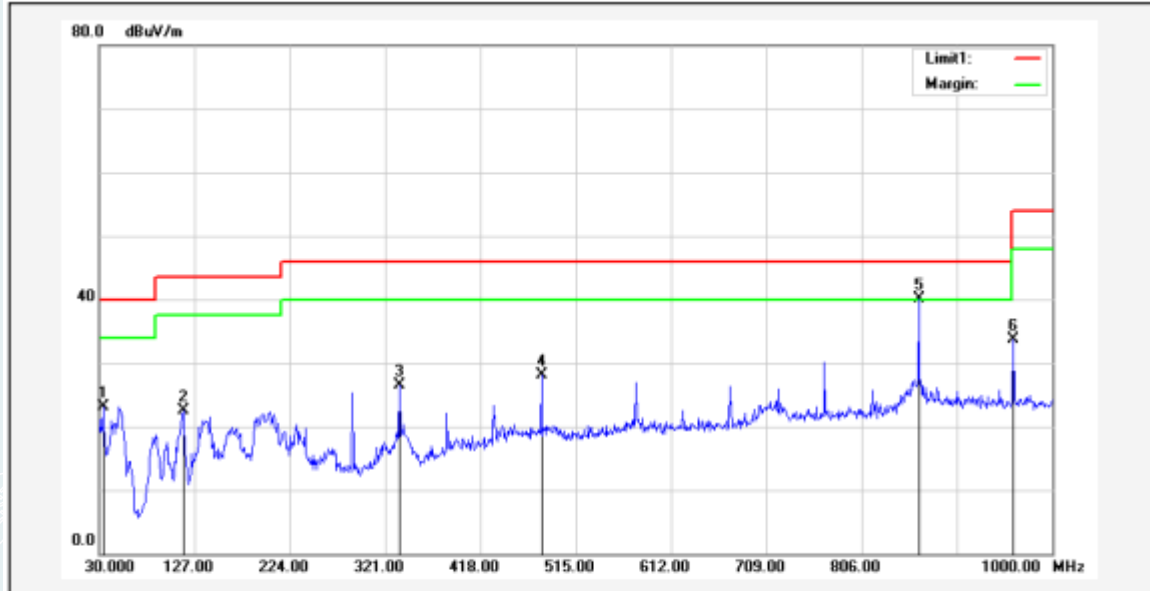
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	115.3600	42.21	-26.63	15.58	43.50	-27.92	177	400	QP
2	335.5500	48.66	-22.79	25.87	46.00	-20.13	219	100	QP
3	431.5800	46.60	-19.53	27.07	46.00	-18.93	1	100	QP
4	720.6400	46.16	-15.18	30.98	46.00	-15.02	267	100	QP
5	768.1700	47.16	-14.32	32.84	46.00	-13.16	292	100	QP
6*	864.2000	54.50	-13.61	40.89	46.00	-5.11	115	100	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5700MHz
 Power supply: AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Vertical



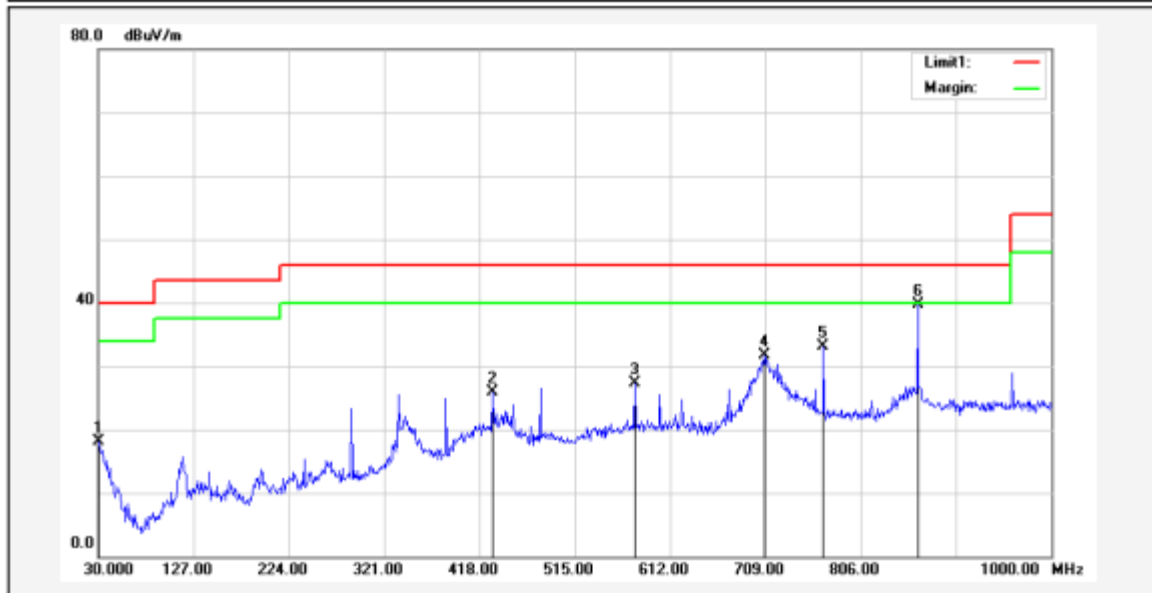
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	33.8800	41.70	-18.52	23.18	40.00	-16.82	273	100	QP
2	115.3600	49.17	-26.63	22.54	43.50	-20.96	77	100	QP
3	335.5500	49.32	-22.79	26.53	46.00	-19.47	244	100	QP
4	480.0800	46.73	-18.68	28.05	46.00	-17.95	158	200	QP
5*	864.2000	53.76	-13.61	40.15	46.00	-5.85	360	126	QP
6	960.2300	46.35	-12.64	33.71	54.00	-20.29	193	100	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5745MHz
 Power supply:AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Horizontal



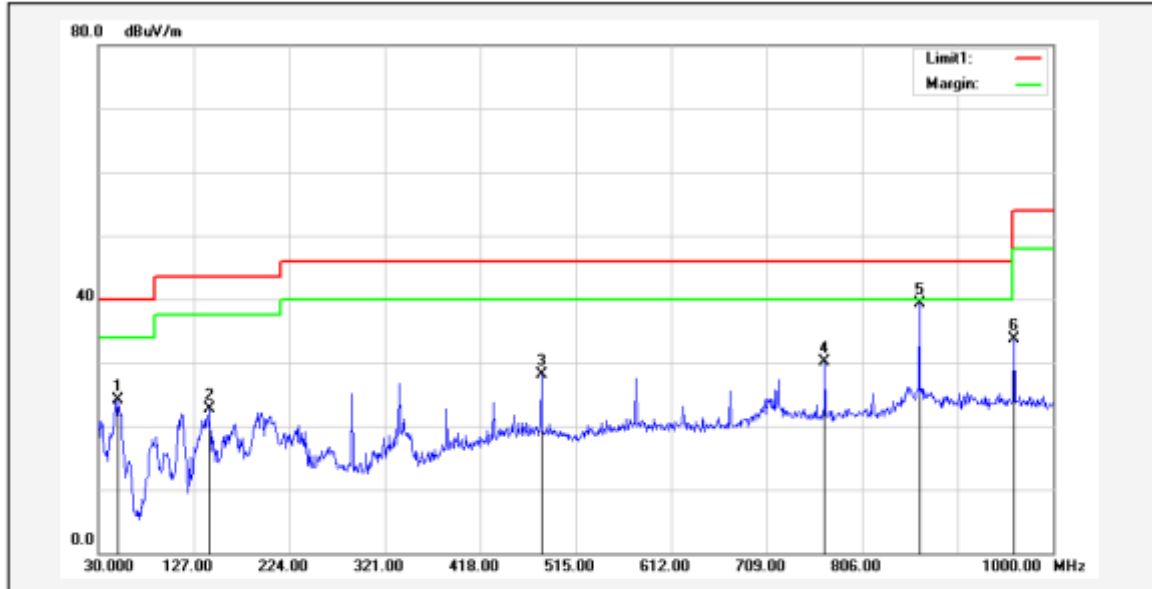
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	30.0000	34.85	-16.65	18.20	40.00	-21.80	249	300	QP
2	431.5800	45.52	-19.53	25.99	46.00	-20.01	360	102	QP
3	576.1100	43.68	-16.43	27.25	46.00	-18.75	360	139	QP
4	708.0300	47.20	-15.45	31.75	46.00	-14.25	283	100	QP
5	768.1700	47.38	-14.32	33.06	46.00	-12.94	312	100	QP
6*	864.2000	53.38	-13.61	39.77	46.00	-6.23	116	100	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5745MHz
 Power supply: AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Vertical



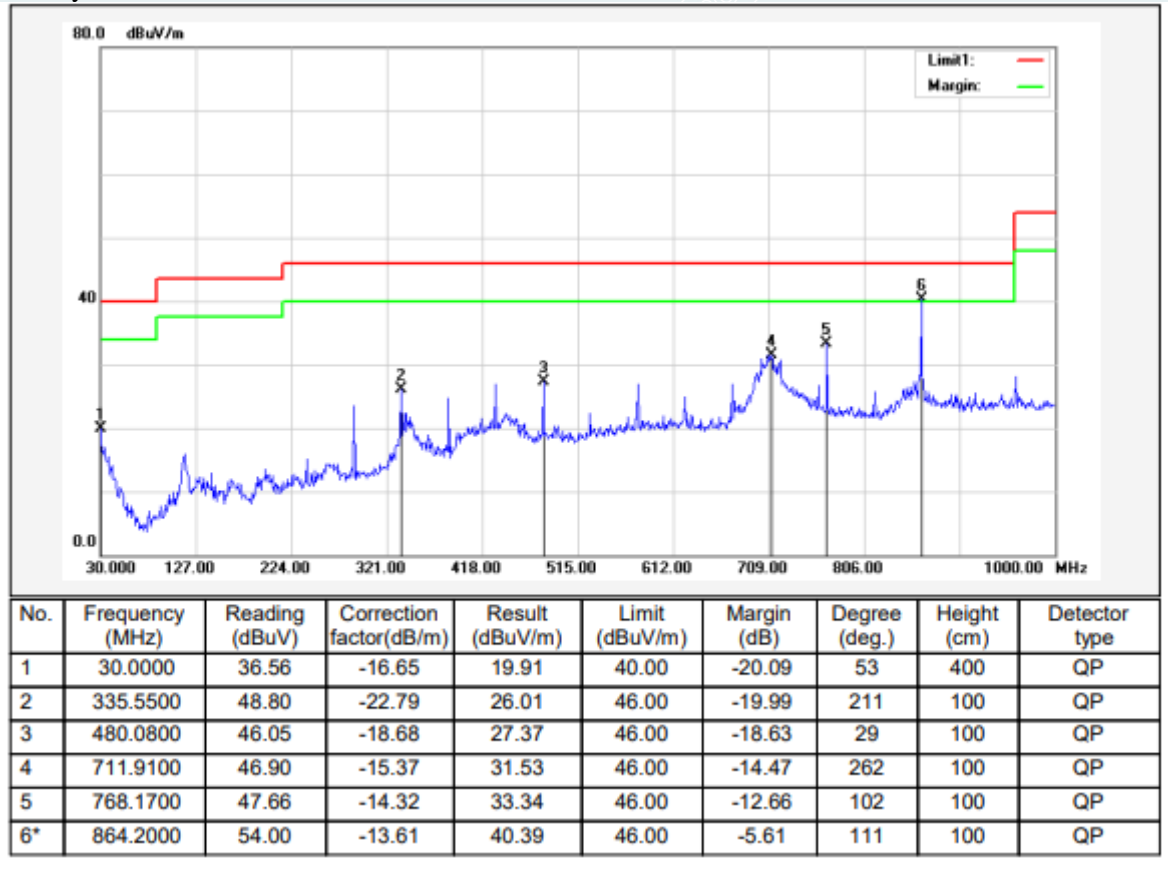
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	49.4000	49.90	-25.80	24.10	40.00	-15.90	108	100	QP
2	143.4900	48.83	-26.20	22.63	43.50	-20.87	144	100	QP
3	480.0800	46.71	-18.68	28.03	46.00	-17.97	214	200	QP
4	768.1700	44.33	-14.32	30.01	46.00	-15.99	282	200	QP
5*	864.2000	53.01	-13.61	39.40	46.00	-6.60	360	123	QP
6	960.2300	46.41	-12.64	33.77	54.00	-20.23	182	100	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5785MHz
 Power supply:AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Horizontal

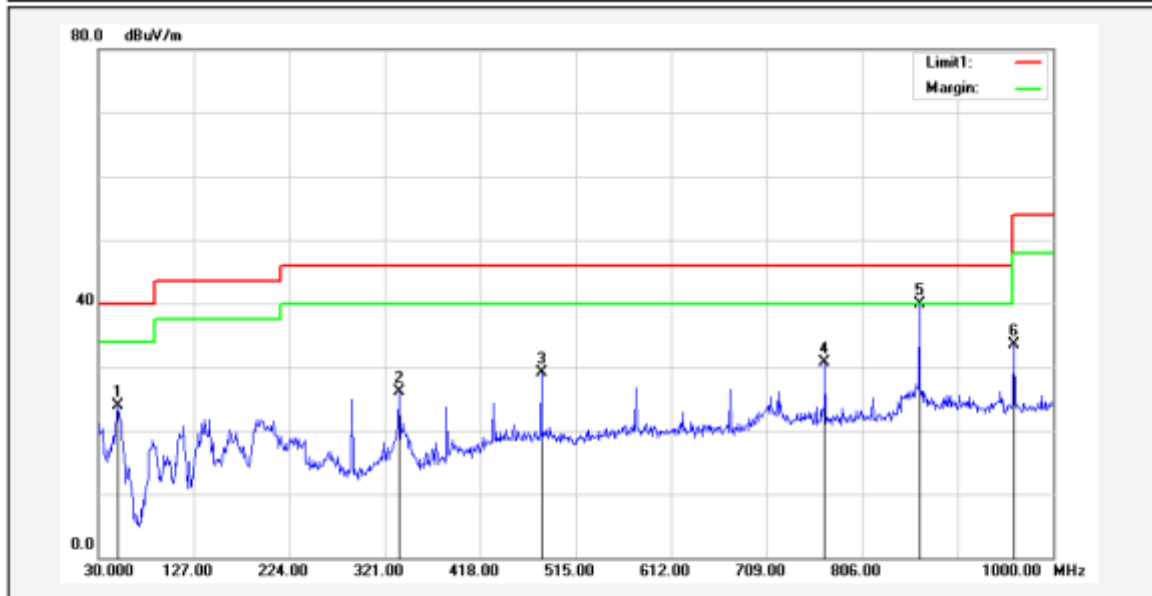


----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5785MHz
 Power supply: AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Vertical



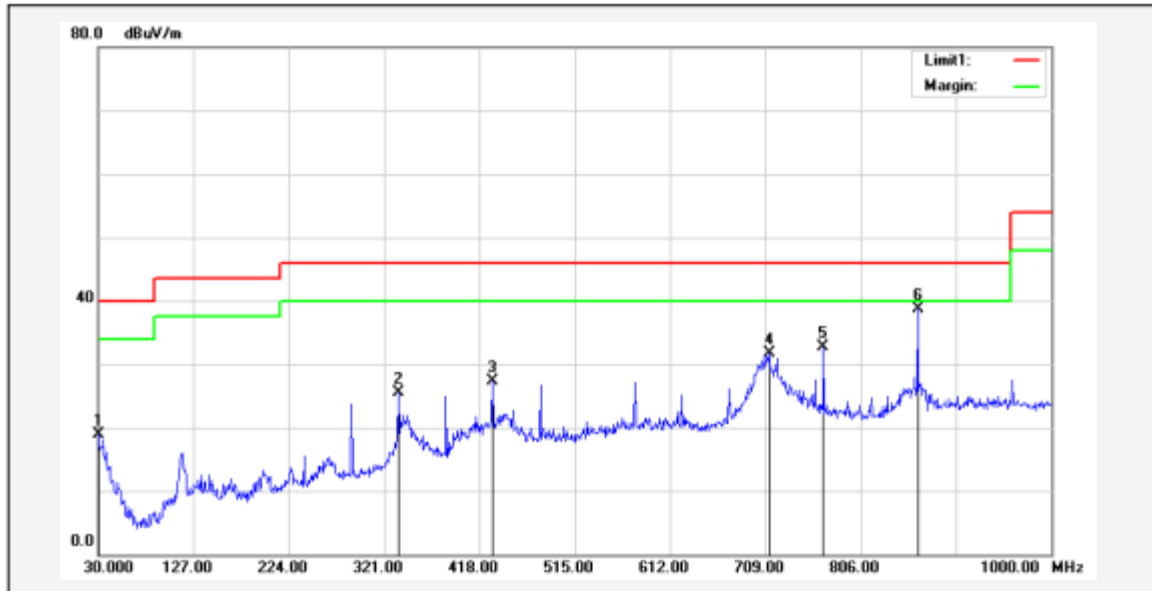
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	49.4000	49.62	-25.80	23.82	40.00	-16.18	23	100	QP
2	335.5500	48.85	-22.79	26.06	46.00	-19.94	290	100	QP
3	480.0800	47.74	-18.68	29.06	46.00	-16.94	170	100	QP
4	768.1700	45.08	-14.32	30.76	46.00	-15.24	249	200	QP
5*	864.2000	53.50	-13.61	39.89	46.00	-6.11	360	126	QP
6	960.2300	46.08	-12.64	33.44	54.00	-20.56	360	105	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5825MHz
 Power supply:AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Horizontal



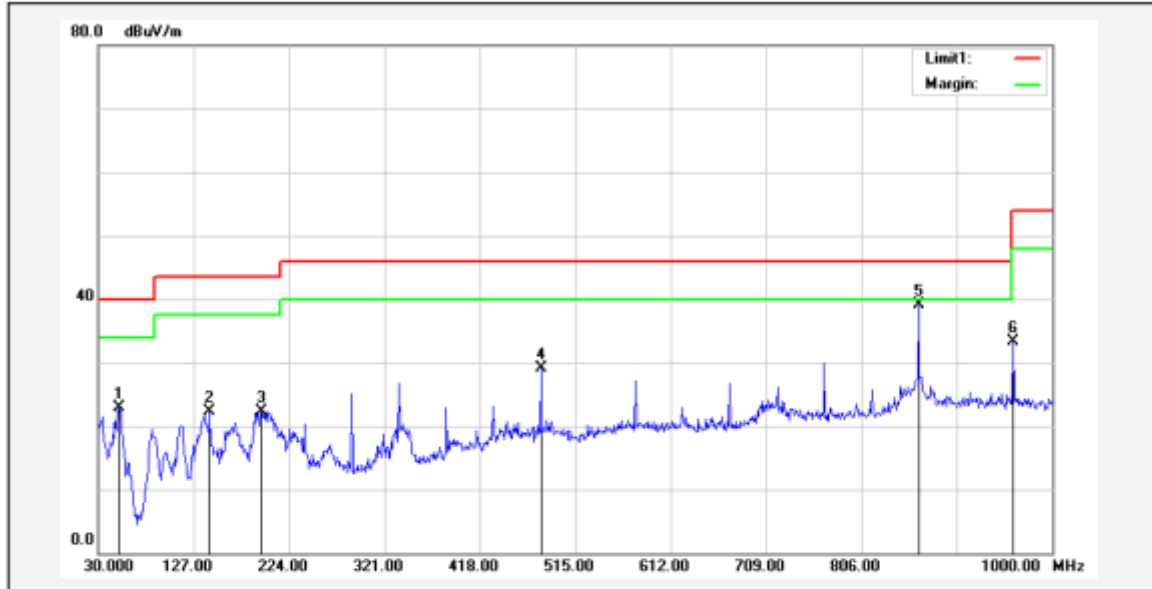
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	30.0000	35.53	-16.65	18.88	40.00	-21.12	2	300	QP
2	335.5500	48.30	-22.79	25.51	46.00	-20.49	213	100	QP
3	431.5800	46.91	-19.53	27.38	46.00	-18.62	25	100	QP
4	712.8800	46.98	-15.34	31.64	46.00	-14.36	272	100	QP
5	768.1700	47.04	-14.32	32.72	46.00	-13.28	103	100	QP
6*	864.2000	52.38	-13.61	38.77	46.00	-7.23	116	100	QP

----- The following blanks -----

Mode: Mode 1/ IEEE 802.11a
 Temp. /Hum.:22.3°C/49%RH/101.0kPa
 Test Engineer: Huang Xinlong

Frequency:5825MHz
 Power supply: AC 120V/60Hz
 Test Date: 2023-01-12

Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Detector type
1	51.3400	49.44	-26.48	22.96	40.00	-17.04	179	100	QP
2	143.4900	48.46	-26.20	22.26	43.50	-21.24	119	100	QP
3	195.8700	49.21	-26.85	22.36	43.50	-21.14	237	100	QP
4	480.0800	47.69	-18.68	29.01	46.00	-16.99	144	200	QP
5*	864.2000	52.77	-13.61	39.16	46.00	-6.84	360	127	QP
6	960.2300	46.02	-12.64	33.38	54.00	-20.62	179	100	QP

Remark:

- 1 Radiated emissions measured in frequency range from 30MHz to 1GHz were made with an instrument using Quasi-peak detector mode.
- 2 The IF bandwidth of Receiver between 30MHz to 1GHz was 120 kHz.

APPENDIX A. PHOTOGRAPH OF THE TEST CONNECTION DIAGRAM

Please refer to the attached document E20221227602901-18-Test photo-FCC+IC.

APPENDIX B. PHOTOGRAPH OF THE EUT

Please refer to the attached document E20221227602901-17 EUT photo-FCC+IC.

----- End of Report -----