



Certificate # 2861.01

GRGTEST

Page 1 of 83

Test Report

Report No.: E202112291004-11

Verified code: 954086

Customer: Autel Intelligent Tech. Corp., Ltd.

Address: 7th-8th, 10th Floor, Bldg. B1, Zhiyuan, Xueyuan Rd. Xili, Nanshan, Shenzhen, 518055
China

Sample Name: Professional Key Tool

Sample Model: MaxiIM KM100

Receive Sample Date: Jan.06,2022

Test Date: Jan.10,2022 ~ Apr.08,2022

Reference Document: CFR 47, FCC Part 15 Subpart C
RADIO FREQUENCY DEVICES:Subpart C—Intentional Radiators

Test Result: Pass

Prepared by: Yang Zhaoyun

Reviewed by: Jiang Tao

Approved by: Xiao Liang

GUANGZHOU GRG METROLOGY & TEST CO., LTD

Issued Date: 2022-04-18

GUANGZHOU GRG METROLOGY & TEST CO., LTD.

Address: No.163,Pingyun Road, West of Huangpu Avenue, Guangzhou, Guangdong, China
Tel: (+86) 400-602-0999 FAX: (+86) 020-38698685 Web: <http://www.grgtest.com>



Statement

1. The report is invalid without "special seal for inspection and testing"; some copies are invalid; The report is invalid if it is altered or missing; The report is invalid without the signature of the person who prepared, reviewed and approved it.
2. The sample information is provided by the client and responsible for its authenticity; The content of the report is only valid for the samples sent this time.
3. When there are reports in both Chinese and English, the Chinese version will prevail when the language problems are inconsistent.
4. If there is any objection concerning the report, please inform us within 15 days from the date of receiving the report.
5. Without the agreement of the laboratory, the client is not authorized to use the test results for unapproved propaganda.

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

Table of Contents

1.	TEST RESULT SUMMARY.....	6
2.	GENERAL DESCRIPTION OF EUT.....	7
2.1	APPLICANT	7
2.2	MANUFACTURER.....	7
2.3	FACTORY	7
2.4	BASIC DESCRIPTION OF EQUIPMENT UNDER TEST	7
2.5	CHANNEL LIST	8
2.6	TEST OPERATION MODE	8
2.7	LOCAL SUPPORTIVE INSTRUMENTS.....	8
2.8	CONFIGURATION OF SYSTEM UNDER TEST	8
2.9	DUTY CYCLE.....	10
3.	LABORATORY AND ACCREDITATIONS	11
3.1	LABORATORY	11
3.2	ACCREDITATIONS	11
3.3	MEASUREMENT UNCERTAINTY	12
4.	LIST OF USED TEST EQUIPMENT AT GRGT	13
5.	CONDUCTED EMISSION MEASUREMENT	14
5.1	LIMITS.....	14
5.2	TEST PROCEDURES	14
5.3	TEST SETUP	15
5.4	DATA SAMPLE	15
5.5	TEST RESULTS	16
6.	RADIATED SPURIOUS EMISSIONS	18
6.1	LIMITS.....	18
6.2	TEST PROCEDURES	18
6.3	TEST SETUP	22
6.4	DATA SAMPLE	23
6.5	TEST RESULTS	24
7.	6DB BANDWIDTH.....	38
7.1	LIMITS.....	38
7.2	TEST PROCEDURES	38
7.3	TEST SETUP	38
7.4	TEST RESULTS	39
8.	MAXIMUM PEAK OUTPUT POWER	45
8.1	LIMITS.....	45
8.2	TEST PROCEDURES	45
8.3	TEST SETUP	45
8.4	TEST RESULT	46
9.	POWER SPECTRAL DENSITY	47
9.1	LIMITS.....	47
9.2	TEST PROCEDURES	47

9.3	TEST SETUP	47
9.4	TEST RESULTS	48
10.	CONDUCTED BAND EDGES AND SPURIOUS EMISSIONS	53
10.1	LIMITS.....	53
10.2	TEST PROCEDURES	53
10.3	TEST SETUP	53
10.4	TEST RESULTS	54
11.	RESTRICTED BANDS OF OPERATION.....	69
11.1	LIMITS.....	69
11.2	TEST PROCEDURES	70
11.3	TEST SETUP	70
11.4	TEST RESULTS	71
	APPENDIX A. PHOTOGRAPH OF THE TEST CONNECTION DIAGRAM	83
	APPENDIX B. PHOTOGRAPH OF THE EUT	83

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

REPORT ISSUED HISTORY

Report Version	Report No.	Description	Compile Date
1.0	E202112291004-11	Original Issue	2022/04/15

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

1. TEST RESULT SUMMARY

Standard	Item	Limit / Severity	Result
CFR 47, FCC Part 15 Subpart C (§15.247)	Antenna Requirement	§15.203	PASS
	Conducted Emissions	§15.207 (a)	PASS
	Radiated Spurious Emission	§15.247(d) §15.205 §15.209	PASS
	6 dB Bandwidth	§15.247 (a)(2)	PASS
	Maximum Peak Output Power	§15.247(b)(3)	PASS
	Power Spectral Density	§15.247(e)	PASS
	Conducted band edges and Spurious Emission	§15.247(d)	PASS
	Restricted bands of operation	§15.205 §15.209 §15.247(d)	PASS

The EUT have one antenna. The antenna is FPC antenna.

The max gain of Antenna is 3.3dBi ,which accordance 15.203is considered sufficient to comply with the provisions of this section.

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

2. GENERAL DESCRIPTION OF EUT

2.1 APPLICANT

Name: Autel Intelligent Tech. Corp., Ltd.
Address: 7th-8th, 10th Floor, Bldg. B1, Zhiyuan, Xueyuan Rd. Xili, Nanshan, Shenzhen, 518055
China

2.2 MANUFACTURER

Name: Autel Intelligent Tech. Corp., Ltd.
Address: 7th-8th, 10th Floor, Bldg. B1, Zhiyuan, Xueyuan Rd. Xili, Nanshan, Shenzhen, 518055
China

2.3 FACTORY

Name: Autel Intelligent Technology Corp., Ltd. Guangming Branch
Address: 7F&6F, East Wing, Building 2, and 6F of Electronical Building, Yanxiang Industrial
Zone, Gaoxin Rd, Dongzhou Community of Guangming New District, Shenzhen

2.4 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Product Name: Professional Key Tool
Product Model: MaxiIM KM100
Adding Model: /
Trade Name: AUTEL
FCC ID: WQ8IMKM100
Power Supply: 5Vdc power supplied by adapter
3.85Vdc power supplied by Rechargeable Li-ion battery
Adapter Specification:: Model: GME10C-050200FUu
Input: 100-240V~50-60Hz 0.28A
Output: 5.0V --- 2A 10W
Model:IBQ088GA
Battery Specification: Rated voltage:3.85Vdc
Limited charge voltage: 4.4Vdc
Rated capacity: 4950mAh, 19.06Wh
Frequency Band: 2412MHz-2462MHz for 802.11b/g/n HT20
Modulation Type: DSSS for 802.11b mode;
OFDM for 802.11g/n mode
Antenna Specification: FPC with 3.3dBi gain (Max)
Temperature Range: 0°C~55°C
Hardware Version: SM2031_MAIN_V5
Software Version: V1.20.24
Sample submitting way: Provided by customer Sampling
Sample No: E202112291004-0002, E202112291004-0003
Note: /

2.5 CHANNEL LIST

CH01 - CH11 for IEEE 802.11b, IEEE 802.11g, IEEE 802.11n HT20							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

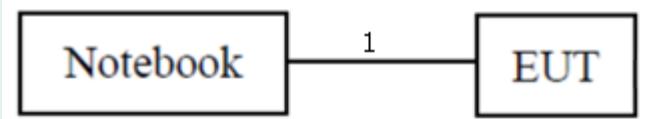
2.6 TEST OPERATION MODE

Mode No.	Description of the modes
1	2.4G Wi-Fi TX mode

2.7 LOCAL SUPPORTIVE INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Note
Notebook	LENOVO	TianYi 310-14ISK	MP18DLC6	/
Cable				
1	/	/	/	Unshielded 1.0m (USB Cable)

2.8 CONFIGURATION OF SYSTEM UNDER TEST



Test software:

Software version
ADB

Power Setting:

Mode	Date Rate	Frequency (MHz)	Power Setting
802.11b	1M	2412	14
		2437	14
		2462	14
802.11g	6M	2412	12
		2437	12
		2462	12
802.11n HT20	MCS0	2412	12
		2437	12
		2462	12

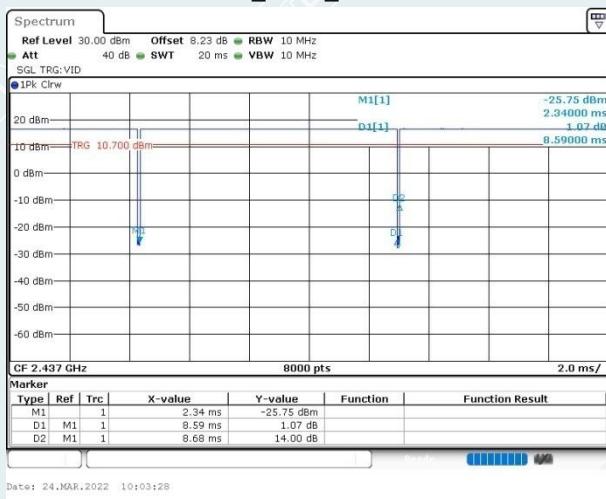
----- The following blanks -----

2.9 DUTY CYCLE

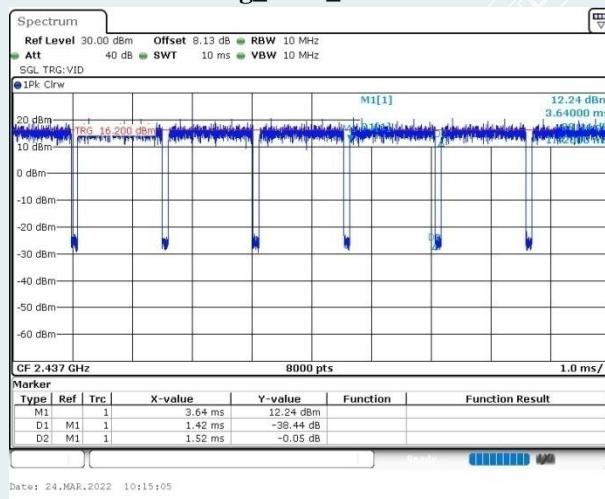
EUT Name	Professional Key Tool	Model	MaxiIM KM100
Environmental Conditions	23.5 °C/48%RH	Test Voltage	DC 3.85V
Tested By	Lu Wei	Tested Date	2022/3/24

TestMode	Antenna	Frequency (MHz)	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	T [s]
802.11b	Ant1	2437	8.59	8.68	98.96	0.00859
802.11g	Ant1	2437	1.42	1.52	93.42	0.00142
802.11n HT20	Ant1	2437	1.33	1.43	93.01	0.00133

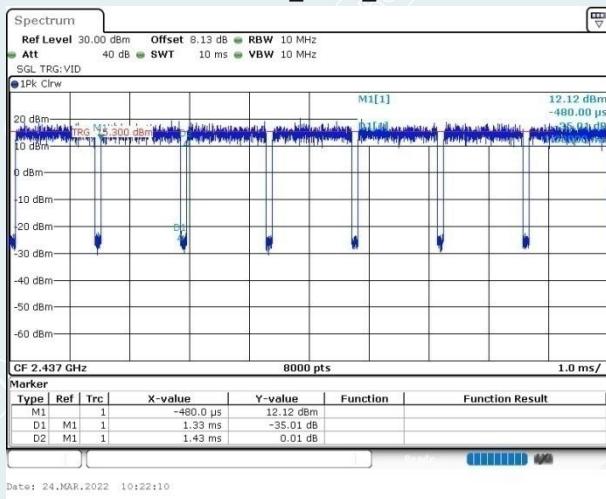
802.11b_Ant1_2437MHz



802.11g_Ant1_2437MHz



802.11n HT20_Ant1_2437MHz



3. LABORATORY AND ACCREDITATIONS

3.1 LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of Guangzhou GRG Metrology & Test Co., Ltd.

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

P.C. : 518000

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,
<http://www.grgtest.com>

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

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	9kHz~30MHz	4.46dB	
		30MHz~1000MHz	4.30dB	
		1GHz~18GHz	5.60dB	
		18GHz~26.5GHz	3.65dB	
	Vertical	9kHz~30MHz	4.46dB	
		30MHz~1000MHz	4.30dB	
		1GHz~18GHz	5.60dB	
		18GHz~26.5GHz	3.65dB	
Conduction Emission		9 kHz~150kHz	2.80dB	
		150kHz~10MHz	2.80dB	
		10MHz~30MHz	2.20dB	

Measurement	Uncertainty
RF frequency	6.0×10^{-6}
RF power conducted	0.78 dB
Occupied channel bandwidth	0.4 dB
Unwanted emission, conducted	0.68 dB
Humidity	6 %
Temperature	2 °C

This uncertainty represents an expanded uncertainty factor of k=2.

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

4. LIST OF USED TEST EQUIPMENT AT GRGT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Conducted Emissions				
EZ-EMC	EZ	CCS-3A1-CE	/	/
EMI Receiver	R&S	ESCI	100783	2022-09-13
LISN(EUT)	R&S	ENV216	101543	2022-09-14
Radiated Spurious Emission&Restricted bands of operation				
Test S/W	EZ	CCS-2ANT		
Loop Antenna	TESEQ	HLA6121	52599	2022-04-21
Test Receiver	R&S	ESR7	102444	2022-09-22
Preamplifier	EMEC	EM330	/	2023-03-05
Bi-log Antenna	TESEQ	CBL6143A	32399	2022-11-25
Spectrum Analyzer	Agilent	N9020B	MY59050667	2022-12-10
Horn Antenna	Schwarzbeck	BBHA9120D(1201)	02143	2022-10-22
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	BBHA 9170-497	2022-10-16
Amplifier	Tonscend	TAP01018048	AP20E8060075	2022-06-07
Amplifier	Tonscend	TAP184050	AP20E806071	2022-05-17
Test S/W	Tonscend	JS32-RE/2.5.1.5		
6 dB Bandwidth				
Spectrum Analyzer	R&S	FSV30	104381	2022-12-10
Output Power				
Pulse power sensor	Agilent	MA2411B	1126150	2023-03-01
Power meter	Anritsu	ML2495A	1204003	2023-02-28
Conducted band edges and Spurious Emission				
Spectrum Analyzer	R&S	FSV30	104381	2022-12-10
Power Spectral Density				
Spectrum Analyzer	R&S	FSV30	104381	2022-12-10

Note: The calibration interval of the above test instruments is 12 months.

5. CONDUCTED EMISSION MEASUREMENT

5.1 LIMITS

Frequency range	Limits (dB μ V)	
	Quasi-peak	Average
150kHz~0.5MHz	66~56	56~46
0.5MHz~5MHz	56	46
5MHz~30MHz	60	50

NOTE: (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases in line with the logarithm of the frequency in the range of 150 kHz to 0.5MHz.

5.2 TEST PROCEDURES

Procedure of Preliminary Test

Test procedures follow ANSI C63.10:2013.

For measurement of the disturbance voltage the equipment under test (EUT) is connected to the power supply mains and any other extended network via one or more artificial network(s). An EUT, whether intended to be grounded or not, and which is to be used on a table is configured as follows:

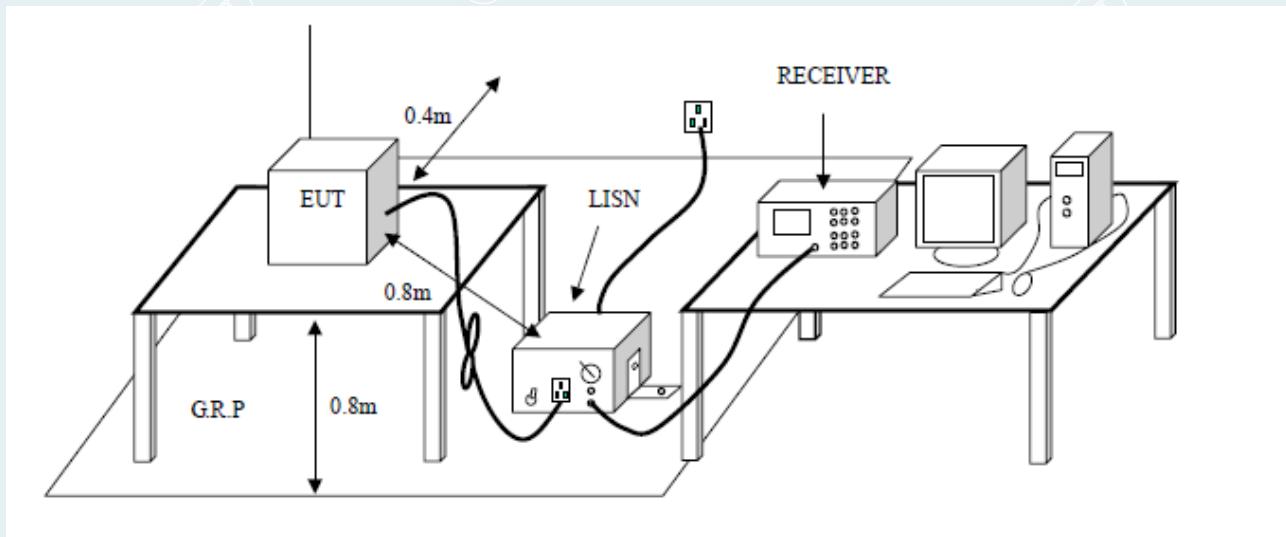
- Either the bottom or the rear of the EUT shall be at a controlled distance of 40 cm from a reference ground plane. This ground plane is normally the wall or floor of a shielded room. It may also be a grounded metal plane of at least 2 m by 2 m. This is physically accomplished as follows:
 - 1) place the EUT on a table of non-conducting material which is at least 80 cm high. Place the EUT so that it is 40 cm from the wall of the shielded room, or
 - 2) place the EUT on a table of non-conducting material which is 40 cm high so that the bottom of the EUT is 40 cm above the ground plane;
- All other conductive surfaces of the EUT shall be at least 80 cm from the reference ground plane;
- The EUT are placed on the floor that one side of the housings is 40 cm from the vertical reference ground plane and other metallic parts;
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 cm to 40 cm long, hanging approximately in the middle between the ground plane and the table.
- I/O cables that are connected to a peripheral shall be bundled in the centre. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1 m.
- Use serial board or connecting line to make EUT and notebook to communicate, according to the actual need to make EUT send constant frequency signal continuously.

The test mode(s) described in Item 2.6 were scanned during the preliminary test. After the preliminary scan, we found the test mode described in Item 2.6 producing the highest emission level. The EUT configuration and cable configuration of the above highest emission levels were recorded for reference of the final test.

Procedure of 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, 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.

5.3 TEST SETUP



5.4 DATA SAMPLE

Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XXXX	32.69	25.65	11.52	44.21	37.17	65.78	55.79	-21.57	-18.62	Pass

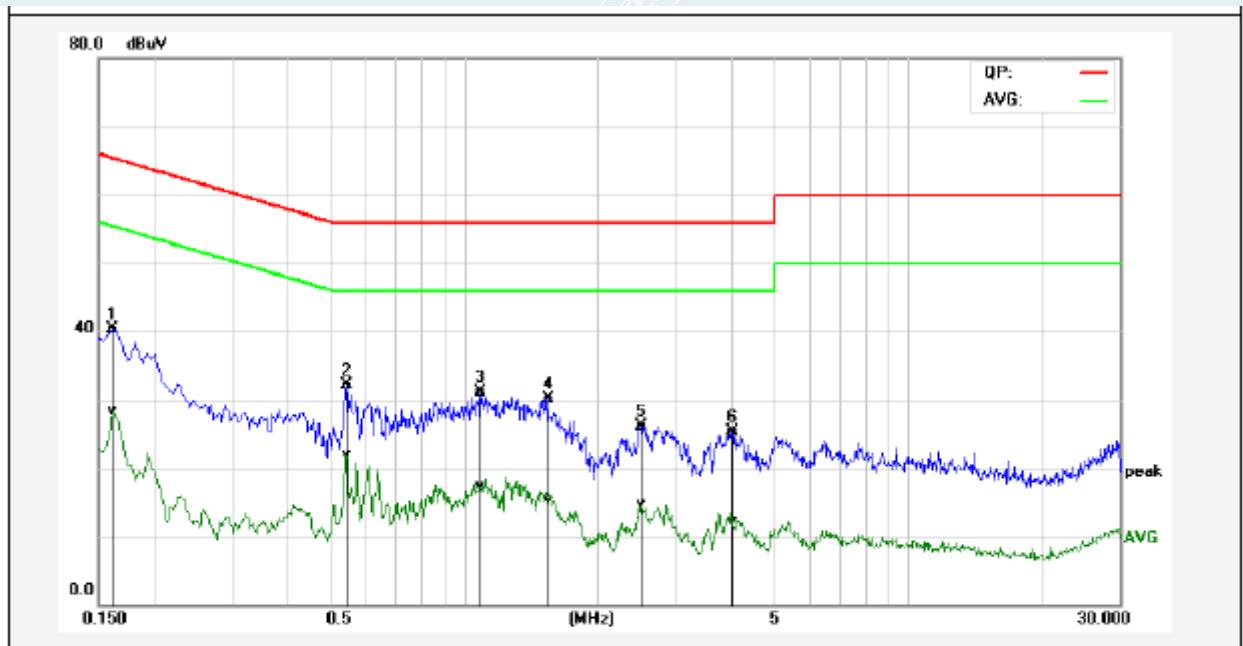
Factor = Insertion loss of LISN + Cable Loss
 Result = Quasi-peak Reading/ Average Reading + Factor
 Limit = Limit stated in standard
 Margin = Result (dBuV) – Limit (dBuV)

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

5.5 TEST RESULTS

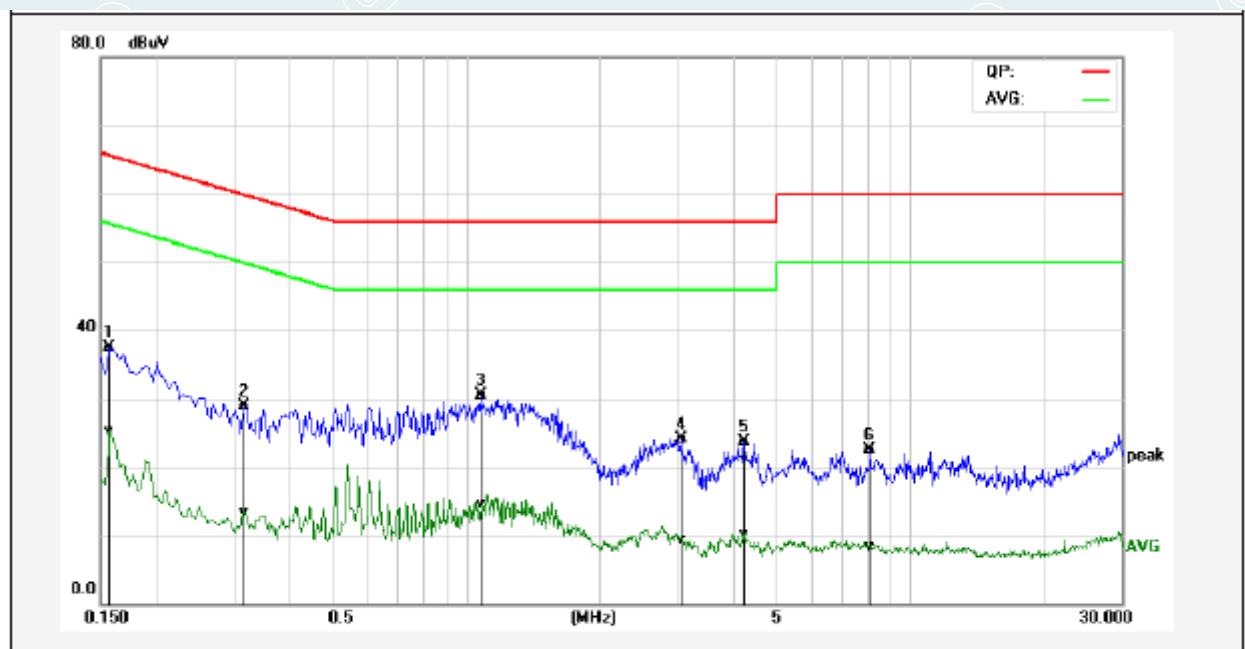
All models were pretested and only the worst modes and channels were recorded in this report. (IEEE 802.11g 2437MHz)

EUT Name	Professional Key Tool	Model	MaxiIM KM100
Environmental Conditions	21.7°C/41%RH	Test Mode	Mode 1
Tested By	Tang Shenghui	Line	L1
Tested Date	2022/04/08	Test Voltage	AC 120V/60Hz



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.1620	30.79	18.87	9.53	40.32	28.40	65.36	55.36	-25.04	-26.96	Pass
2*	0.5460	22.48	12.37	9.57	32.05	21.94	56.00	46.00	-23.95	-24.06	Pass
3	1.0900	21.51	7.80	9.59	31.10	17.39	56.00	46.00	-24.90	-28.61	Pass
4	1.5500	20.49	5.74	9.60	30.09	15.34	56.00	46.00	-25.91	-30.66	Pass
5	2.5100	16.48	5.03	9.61	26.09	14.64	56.00	46.00	-29.91	-31.36	Pass
6	4.0100	15.74	2.60	9.65	25.39	12.25	56.00	46.00	-30.61	-33.75	Pass

EUT Name	Professional Key Tool	Model	MaxiIM KM100
Environmental Conditions	21.7°C/41%RH	Test Mode	Mode 1
Tested By	Tang Shenghui	Line	N
Tested Date	2022/04/08	Test Voltage	AC 120V/60Hz



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.1580	27.95	15.72	9.51	37.46	25.23	65.56	55.57	-28.10	-30.34	Pass
2	0.3180	19.23	3.67	9.62	28.85	13.29	59.76	49.76	-30.91	-36.47	Pass
3*	1.0820	20.85	4.97	9.63	30.48	14.60	56.00	46.00	-25.52	-31.40	Pass
4	3.0460	14.46	-0.28	9.60	24.06	9.32	56.00	46.00	-31.94	-36.68	Pass
5	4.2420	13.97	0.54	9.64	23.61	10.18	56.00	46.00	-32.39	-35.82	Pass
6	8.1140	12.82	-1.54	9.75	22.57	8.21	60.00	50.00	-37.43	-41.79	Pass

6. RADIATED SPURIOUS EMISSIONS

6.1 LIMITS

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

Frequency (MHz)	Quasi-peak(μ V/m)	Measurement distance(m)	Quasi-peak(dB μ V/m)@distance 3m
0.009-0.490	2400/F(kHz)	300	128.5~93.8
0.490-1.705	24000/F(kHz)	30	73.8~63
1.705-30.0	30	30	69.5
30~88	100	3	40
88~216	150	3	43.5
216~960	200	3	46
Above 960	500	3	54

NOTE:

- (1) The emission limits for the ranges 9-90kHz and 110-490kHz are based on measurements employing a linear average detector.
- (2) The lower limit shall apply at the transition frequencies.
- (3) Above 18GHz test distance is 1m, so the PeakLimit=74+20*log(3/1)=83.54 (dB μ V/m).
The Avg Limit=54+20*log(3/1)=63.54 (dB μ V/m).

6.2 TEST PROCEDURES

1) Sequence of testing 9kHz to 30MHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.
- If the EUT is a floor standing device, it is placed on the ground.
- Use serial board or connecting line to make EUT and notebook to communicate, according to the actual need to make EUT send constant frequency signal continuously.
- The EUT is placed on a desktop position in the center of the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Pre measurement:

- The turntable rotates from 0 ° to 360 °.
- The antenna height is 1.0 meter.
- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

Final measurement:

- Identified emissions during the pre measurement the software maximizes by rotating the turntable position (0 ° to 360 °) and by rotating the elevation axes (0 ° to 360 °).
- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QP detector.
- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement and the limit will be stored.

2) Sequence of testing 30MHz to 1GHz**Setup:**

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Use serial board or connecting line to make EUT and notebook to communicate, according to the actual need to make EUT send constant frequency signal continuously.
- The EUT is placed on a desktop position in the center of the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Pre measurement:

- The turntable rotates from 0 ° to 360 °.
- The antenna is polarized vertical and horizontal.
- The antenna height changes from 1 to 4 meter.
- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement:

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable rotates from 0 ° to 360 ° and antenna movement between 1 and 4 meter.
- The final measurement will be done with QP detector with an EMI receiver.
- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

3) Sequence of testing 1GHz to 18GHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Use serial board or connecting line to make EUT and notebook to communicate, according to the actual need to make EUT send constant frequency signal continuously.
- The EUT is placed on a desktop position in the center of the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Pre measurement:

- The turntable rotates from 0 ° to 360 °.
- The antenna is polarized vertical and horizontal.
- The antenna height scan range is 1 meter to 4 meter.
- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

Final measurement:

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable rotates from 0 ° to 360 ° and antenna movement between 1 and 4 meter. This procedure is repeated for both antenna polarizations.
- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.
- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement with marked maximum final measurements and the limit will be stored.

4) Sequence of testing above 18GHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Use serial board or connecting line to make EUT and notebook to communicate, according to the actual need to make EUT send constant frequency signal continuously.
- The EUT is placed on a desktop position in the center of the turntable.
- The measurement distance is 1 meter.
- The EUT was set into operation.

Pre measurement:

--- The antenna is moved spherical over the EUT in different polarisations of the antenna.

Final measurement:

--- The final measurement will be performed at the position and antenna orientation for all detected emissions that were found during the premeasurements with Peak and Average detector.

--- The final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

NOTE:

(a).The frequency from 9kHz to 150kHz, Set RBW=300Hz(for Peak&AVG), RBW=300Hz(for Peak&AVG). the frequency from 150kHz to 30MHz, Set RBW=9kHz, RBW=9kHz,(for QP Detector).

(b).The frequency from 30MHz to 1GHz, Set RBW=120kHz, RBW=300kHz,(for QP Detector).

(c).The frequency above 1GHz, for Peak detector: Set RBW=1MHz, RBW=3MHz.

(d).The frequency above 1GHz, for Avg detector: Set RBW=1MHz, if the EUT is configured to transmit with duty cycle $\geq 98\%$, set $VBW \leq RBW/100$ (i.e.,10kHz) but not less than 10Hz. if the EUT duty cycle is $< 98\%$, set $VBW \geq 1/T$, Where T is defined in section 2.9.

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

6.3 TEST SETUP

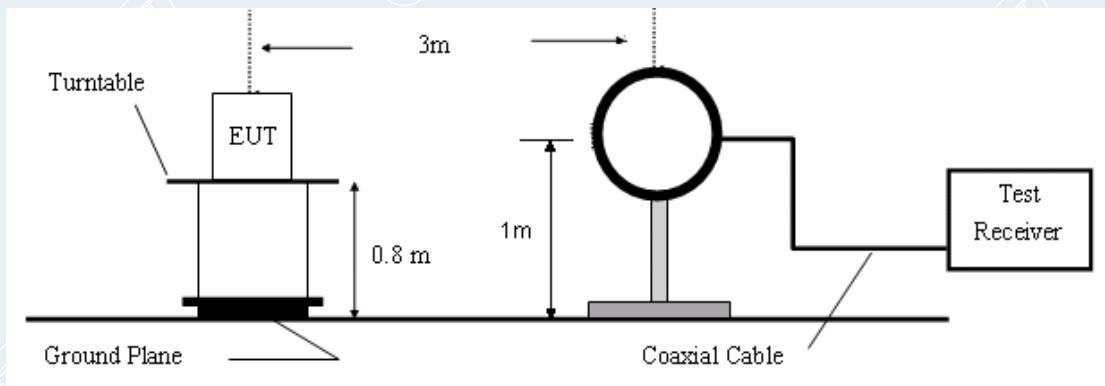


Figure 1. 9kHz to 30MHz radiated emissions test configuration

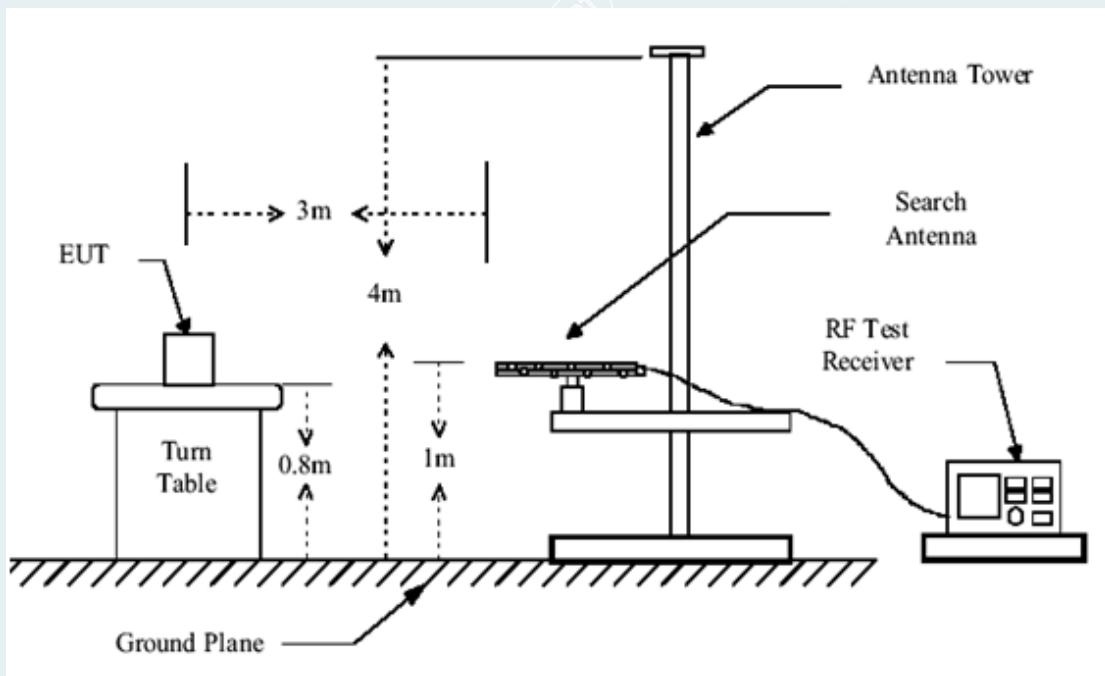


Figure 2. 30MHz to 1GHz radiated emissions test configuration

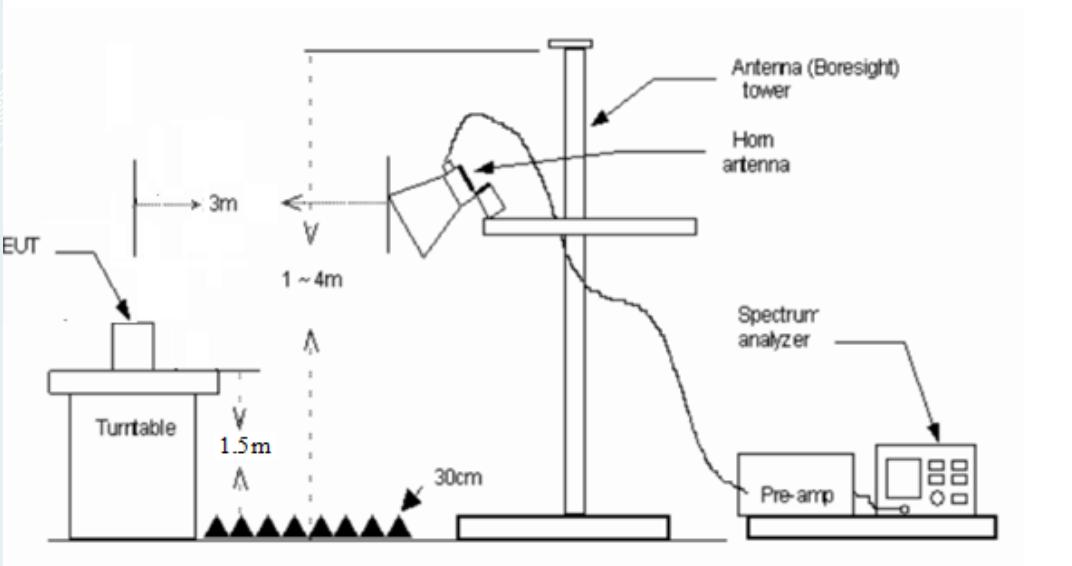


Figure 3. 1GHz to 18GHz radiated emissions test configuration

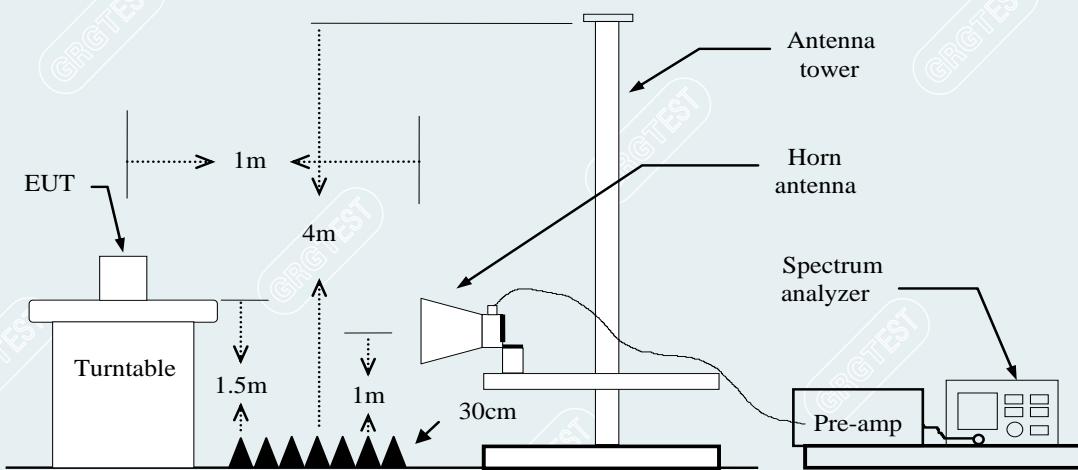


Figure 4.18GHz to 26.5GHz radiated emissions test configuration

6.4 DATA SAMPLE

30MHz to 1GHz

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

1GHz-18GHz

No.	Frequency	Reading	Factor	Level	Limit	Margin	Remark	Pole
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)		
xxx	xxx	65.45	-11.12	54.33	74.00	-19.67	peak	Vertical
xxx	xxx	63.00	-11.12	51.88	54.00	-2.12	AVG	Vertical

Above 18GHz

No.	Frequency	Reading	Factor	Level	Limit	Margin	Remark	Pole
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)		
xxx	xxx	68.86	57.66	-11.20	83.54	25.88	peak	Vertical
xxx	xxx	68.89	-11.20	57.69	63.54	5.85	AVG	Vertical

Frequency (MHz) = Emission frequency in MHz

Ant.Pol. (H/V) = Antenna polarization

Reading (dBuV) = Uncorrected Analyzer / Receiver reading

Correction Factor (dB/m) = 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

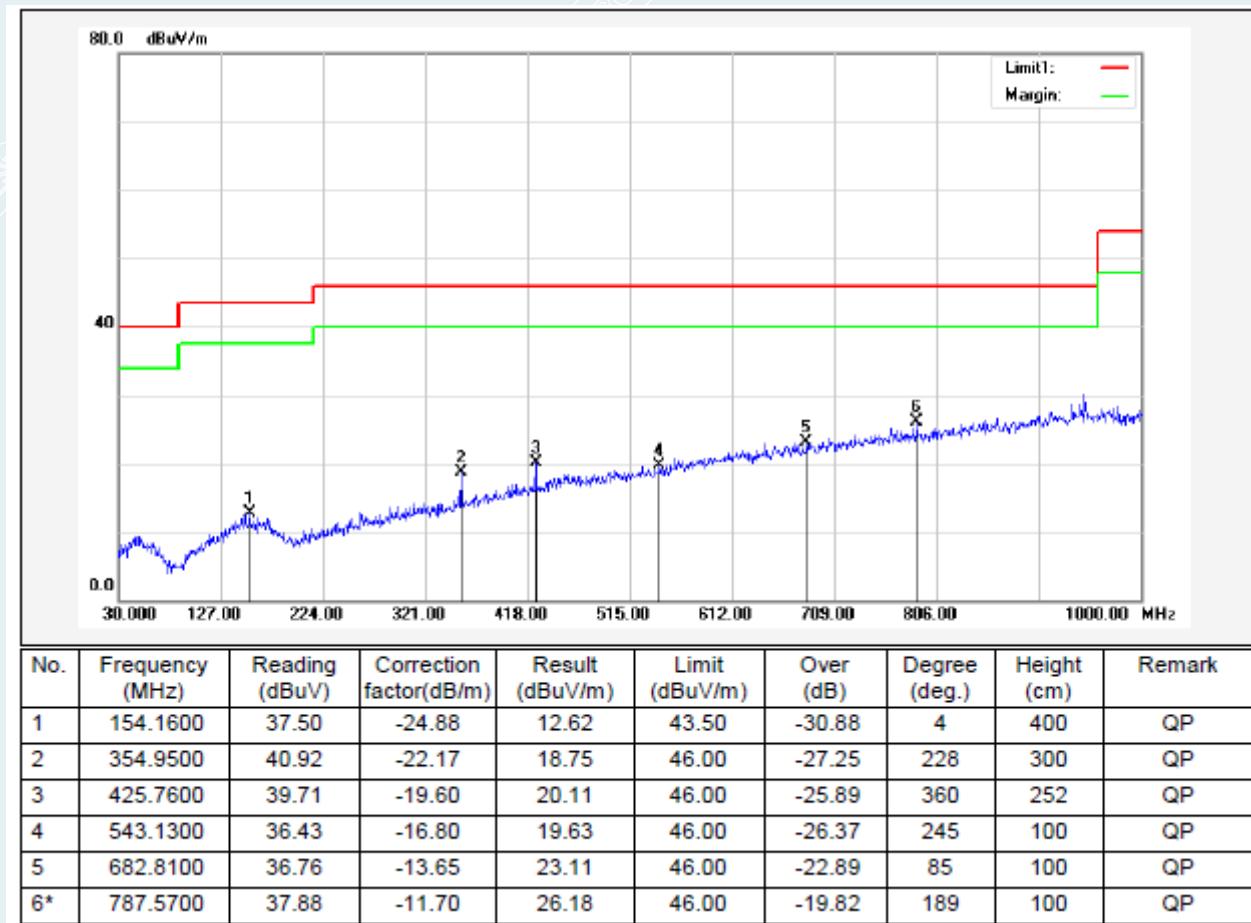
6.5 TEST RESULTS

Below 1GHz

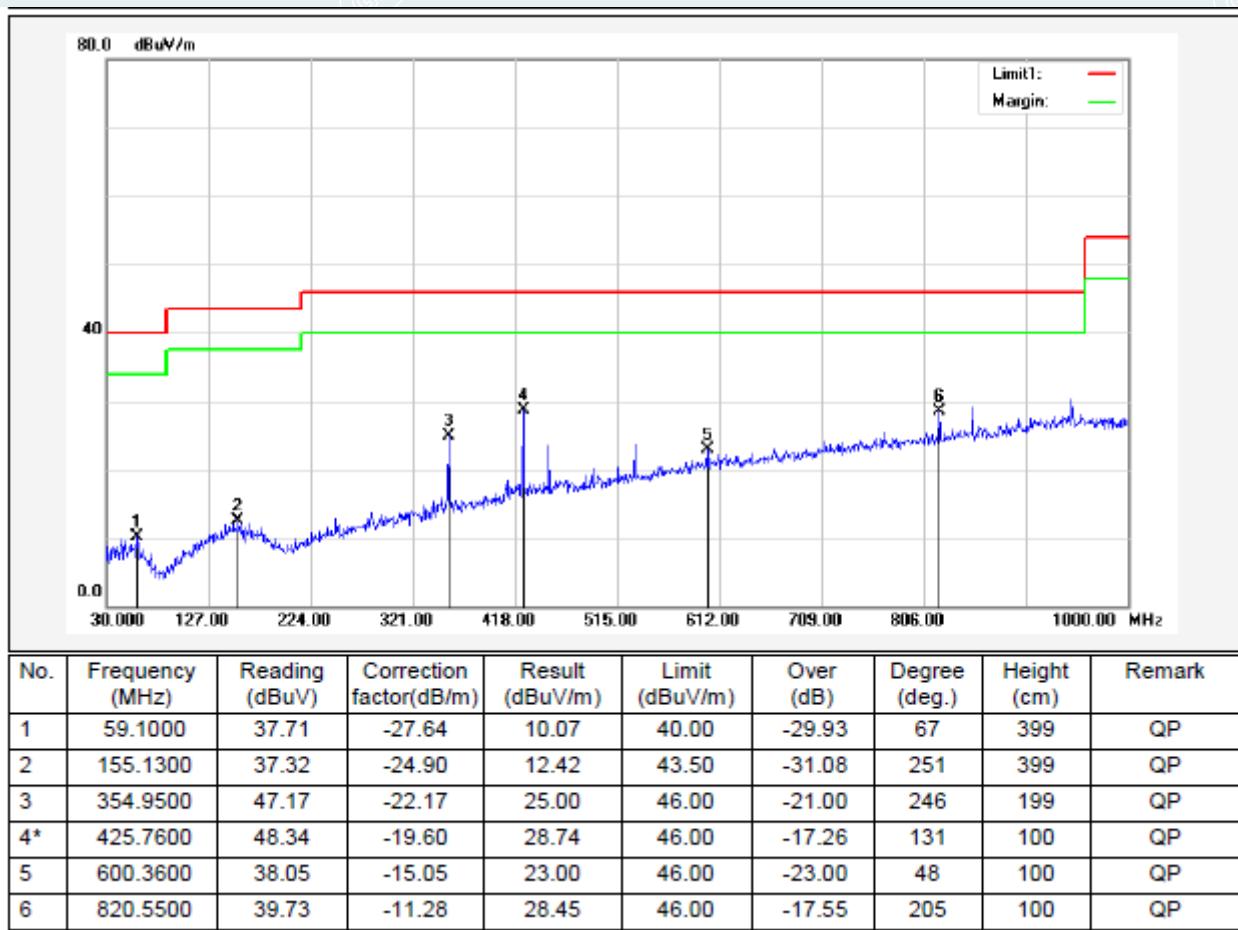
All models were pretested and only the worst modes and channels were recorded in this report. (IEEE 802.11g 2412MHz)

Pre-scanned in three orthogonal panels,X,Y,Z.The worst cases mode (Z plane) were recorded in this report.

EUT Name	Professional Key Tool	Model	MaxiIM KM100
Environmental Conditions	24.1 °C/51%RH	Test Voltage	DC 3.85V
Test Mode	IEEE 802.11g Frequency (2412MHz)	Polarity	Horizontal
Tested By	Tang Shenghui	Tested Date	2022/04/01



EUT Name	Professional Key Tool	Model	MaxiIM KM100
Environmental Conditions	24.1 °C/51%RH	Test Voltage	DC 3.85V
Test Mode	IEEE 802.11g Frequency (2412MHz)	Polarity	Vertical
Tested By	Tang Shenghui	Tested Date	2022/04/01

**Remark:**

- 1 No emission found between lowest internal used/generated frequency to 30MHz.
- 2 Radiated emissions measured in frequency range from 9 kHz to 1GHz were made with an instrument using Quasi-peak detector mode.
- 3 Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 4 The IF bandwidth of Receiver between 30MHz to 1GHz was 120 kHz.

1GHz-18GHz:

Pre-scanned in three orthogonal panels,X,Y,Z.The worst cases mode (Z plane) were recorded in this report.

Mode: IEEE 802.11b

Lowest Frequency (2412MHz)

Environment: 25°C/60%RH

Tested By:Lu Qiang

Date: 2022-03-17

Voltage:DC 3.85V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1899.8625	64.49	43.89	-20.60	74.00	30.11	100	291	Horizontal
2	2564.1955	58.90	40.83	-18.07	74.00	33.17	200	22	Horizontal
3	4524.5656	53.52	39.23	-14.29	74.00	34.77	200	214	Horizontal
4	7238.0298	50.26	44.94	-5.32	74.00	29.06	100	290	Horizontal
5	9827.7285	45.48	46.90	1.42	74.00	27.10	200	104	Horizontal
6	14722.0903	41.35	49.58	8.23	74.00	24.42	100	315	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dB μ V/m]	AV Value [dB μ V/m]	AV Limit [dB μ V/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	7237.0889	-5.32	44.39	39.07	54.00	14.93	192	298.6	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1206.5258	59.42	34.71	-24.71	74.00	39.29	200	166	Vertical
2	1893.1116	61.83	39.67	-22.16	74.00	34.33	100	322	Vertical
3	3616.9521	63.16	47.13	-16.03	74.00	26.87	100	196	Vertical
4	5036.5046	50.13	39.71	-10.42	74.00	34.29	200	211	Vertical
5	7234.2793	50.15	45.71	-4.44	74.00	28.29	200	219	Vertical
6	11327.9160	44.16	48.15	3.99	74.00	25.85	200	92	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dB μ V/m]	AV Value [dB μ V/m]	AV Limit [dB μ V/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	7236.7390	-4.45	44.79	40.34	54.00	13.66	200	156.5	Vertical

Mode: IEEE 802.11b
 Middle Frequency (2437MHz)
 Environment: 25°C/60%RH
 Tested By:Lu Qiang

Date: 2022-03-17
 Voltage:DC 3.85V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1894.6118	59.37	38.64	-20.73	74.00	35.36	200	54	Horizontal
2	3311.2889	55.70	38.20	-17.50	74.00	35.80	100	64	Horizontal
3	3648.8311	60.17	44.19	-15.98	74.00	29.81	200	124	Horizontal
4	5053.3817	49.53	39.19	-10.34	74.00	34.81	100	189	Horizontal
5	7680.5851	48.21	43.75	-4.46	74.00	30.25	200	252	Horizontal
6	11487.3109	43.88	47.84	3.96	74.00	26.16	200	62	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1899.3624	62.26	40.25	-22.01	74.00	33.75	200	327	Vertical
2	3646.9559	62.21	46.88	-15.33	74.00	27.12	100	191	Vertical
3	4863.9830	52.96	40.53	-12.43	74.00	33.47	200	201	Vertical
4	7215.5269	48.10	44.27	-3.83	74.00	29.73	200	89	Vertical
5	9222.0278	46.44	46.80	0.36	74.00	27.20	100	60	Vertical
6	12659.3324	43.34	47.50	4.16	74.00	26.50	200	176	Vertical

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

Mode: IEEE 802.11b
 Highest Frequency (2462MHz)
 Environment: 25°C/60%RH
 Tested By:Lu Qiang

Date: 2022-03-17
 Voltage:DC 3.85V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1231.5289	60.10	37.54	-22.56	74.00	36.46	100	204	Horizontal
2	1902.1128	61.29	40.69	-20.60	74.00	33.31	100	78	Horizontal
3	3693.8367	61.45	45.67	-15.78	74.00	28.33	200	131	Horizontal
4	4997.1246	50.99	39.95	-11.04	74.00	34.05	200	309	Horizontal
5	8511.3139	46.82	44.34	-2.48	74.00	29.66	200	287	Horizontal
6	14742.7178	41.33	49.61	8.28	74.00	24.39	200	156	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1230.0288	60.53	35.62	-24.91	74.00	38.38	200	154	Vertical
2	1746.3433	68.20	46.72	-21.48	74.00	27.28	100	49	Vertical
3	1951.8690	66.58	45.22	-21.36	74.00	28.78	200	223	Vertical
4	3693.8367	63.86	48.25	-15.61	74.00	25.75	100	181	Vertical
5	4923.9905	52.00	40.66	-11.34	74.00	33.34	200	199	Vertical
6	10399.6750	45.57	48.22	2.65	74.00	25.78	200	51	Vertical

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

Mode: IEEE 802.11g
 Lowest Frequency (2412MHz)
 Environment: 25°C/60%RH
 Tested By:Lu Qiang

Date: 2022-03-17
 Voltage:DC 3.85V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1240.2800	57.92	35.63	-22.29	74.00	38.37	200	64	Horizontal
2	1496.5621	57.03	34.50	-22.53	74.00	39.50	100	193	Horizontal
3	3618.8274	60.42	43.92	-16.50	74.00	30.08	200	135	Horizontal
4	5075.8845	49.94	39.70	-10.24	74.00	34.30	100	342	Horizontal
5	7232.4041	51.00	45.85	-5.15	74.00	28.15	100	112	Horizontal
6	9827.7285	45.17	46.59	1.42	74.00	27.41	100	24	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1393.2992	57.22	35.78	-21.44	74.00	38.22	100	337	Vertical
2	1712.5891	56.46	35.01	-21.45	74.00	38.99	100	73	Vertical
3	3620.7026	62.49	46.55	-15.94	74.00	27.45	200	156	Vertical
4	5000.8751	50.97	40.35	-10.62	74.00	33.65	100	70	Vertical
5	7234.2793	49.30	44.86	-4.44	74.00	29.14	200	156	Vertical
6	8490.6863	47.03	44.85	-2.18	74.00	29.15	200	284	Vertical

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

Mode: IEEE 802.11g
 Middle Frequency (2437MHz)
 Environment: 25°C/60%RH
 Tested By:Lu Qiang

Date: 2022-03-17
 Voltage:DC 3.85V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1280.5351	57.08	34.96	-22.12	74.00	39.04	100	306	Horizontal
2	1928.1160	57.48	36.88	-20.60	74.00	37.12	200	153	Horizontal
3	3654.4568	57.88	41.94	-15.94	74.00	32.06	200	131	Horizontal
4	4447.6810	52.59	38.64	-13.95	74.00	35.36	100	28	Horizontal
5	5996.6246	51.15	40.84	-10.31	74.00	33.16	200	40	Horizontal
6	7183.6480	48.60	43.96	-4.64	74.00	30.04	100	180	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1357.2947	57.43	35.88	-21.55	74.00	38.12	100	215	Vertical
2	1896.1120	59.87	37.78	-22.09	74.00	36.22	100	75	Vertical
3	3654.4568	61.21	45.91	-15.30	74.00	28.09	100	185	Vertical
4	4417.6772	52.69	38.69	-14.00	74.00	35.31	200	339	Vertical
5	6017.2522	50.62	40.60	-10.02	74.00	33.40	200	278	Vertical
6	7198.6498	48.13	44.76	-3.37	74.00	29.24	200	18	Vertical

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

Mode: IEEE 802.11g
 Highest Frequency (2462MHz)
 Environment: 25°C/60%RH
 Tested By:Lu Qiang

Date: 2022-03-17
 Voltage:DC 3.85V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1231.5289	58.54	35.98	-22.56	74.00	38.02	200	337	Horizontal
2	1908.8636	57.35	36.75	-20.60	74.00	37.25	200	128	Horizontal
3	3693.8367	59.54	43.76	-15.78	74.00	30.24	200	143	Horizontal
4	5040.2550	50.44	39.96	-10.48	74.00	34.04	100	330	Horizontal
5	6733.5917	49.93	41.66	-8.27	74.00	32.34	100	357	Horizontal
6	7678.7098	48.18	43.72	-4.46	74.00	30.28	100	197	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1050.0063	59.40	36.45	-22.95	74.00	37.55	200	6	Vertical
2	1718.0898	56.54	35.09	-21.45	74.00	38.91	200	31	Vertical
3	3691.9615	62.01	46.41	-15.60	74.00	27.59	100	185	Vertical
4	5051.5064	50.14	39.79	-10.35	74.00	34.21	200	293	Vertical
5	6643.5804	49.30	42.08	-7.22	74.00	31.92	200	355	Vertical
6	8151.2689	46.82	44.40	-2.42	74.00	29.60	200	226	Vertical

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

Mode: IEEE 802.11n HT20
 Lowest Frequency (2412MHz)
 Environment: 25°C/60%RH
 Tested By:Lu Qiang

Date: 2022-03-17
 Voltage:DC 3.85V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1267.5334	57.22	35.16	-22.06	74.00	38.84	200	195	Horizontal
2	3618.8274	58.53	42.03	-16.50	74.00	31.97	200	116	Horizontal
3	4663.3329	53.43	39.54	-13.89	74.00	34.46	200	143	Horizontal
4	5923.4904	50.53	40.64	-9.89	74.00	33.36	200	44	Horizontal
5	7230.5288	50.79	45.69	-5.10	74.00	28.31	100	299	Horizontal
6	8931.3664	48.49	46.85	-1.64	74.00	27.15	200	191	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1347.7935	57.12	35.49	-21.63	74.00	38.51	100	314	Vertical
2	3618.8274	62.40	46.42	-15.98	74.00	27.58	200	161	Vertical
3	4989.6237	51.14	40.43	-10.71	74.00	33.57	200	245	Vertical
4	7198.6498	47.85	44.48	-3.37	74.00	29.52	100	310	Vertical
5	9143.2679	45.52	46.30	0.78	74.00	27.70	200	144	Vertical
6	10776.5971	45.24	47.81	2.57	74.00	26.19	200	122	Vertical

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

Mode: IEEE 802.11n HT20
 Middle Frequency (2437 MHz)
 Environment: 25°C/60%RH
 Tested By:Lu Qiang

Date: 2022-03-17
 Voltage:DC 3.85V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1261.5327	56.67	34.64	-22.03	74.00	39.36	200	175	Horizontal
2	1944.6181	60.74	40.14	-20.60	74.00	33.86	100	359	Horizontal
3	3654.4568	56.97	41.03	-15.94	74.00	32.97	200	133	Horizontal
4	5135.8920	49.28	39.27	-10.01	74.00	34.73	100	132	Horizontal
5	7689.9612	48.14	43.71	-4.43	74.00	30.29	100	299	Horizontal
6	9150.7688	47.02	47.36	0.34	74.00	26.64	200	236	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1428.3035	57.67	35.86	-21.81	74.00	38.14	100	352	Vertical
2	2063.3829	56.08	36.01	-20.07	74.00	37.99	100	256	Vertical
3	3654.4568	59.77	44.47	-15.30	74.00	29.53	100	175	Vertical
4	4329.5412	52.91	39.09	-13.82	74.00	34.91	100	69	Vertical
5	5835.3544	50.82	40.37	-10.45	74.00	33.63	200	14	Vertical
6	7200.5251	47.89	44.55	-3.34	74.00	29.45	100	222	Vertical

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

Mode: IEEE 802.11n HT20
 Highest Frequency (2462MHz)
 Environment: 25°C/60%RH
 Tested By:Lu Qiang

Date: 2022-03-17
 Voltage:DC 3.85V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1232.0290	57.96	35.42	-22.54	74.00	38.58	100	201	Horizontal
2	1736.8421	58.88	36.16	-22.72	74.00	37.84	100	196	Horizontal
3	3691.9615	58.94	43.15	-15.79	74.00	30.85	200	131	Horizontal
4	5038.3798	50.32	39.81	-10.51	74.00	34.19	200	262	Horizontal
5	5900.9876	49.53	39.96	-9.57	74.00	34.04	200	158	Horizontal
6	7779.9725	47.91	43.62	-4.29	74.00	30.38	200	286	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1956.8696	63.98	42.73	-21.25	74.00	31.27	100	360	Vertical
2	3691.9615	60.69	45.09	-15.60	74.00	28.91	100	194	Vertical
3	4485.1856	53.73	39.23	-14.50	74.00	34.77	100	192	Vertical
4	6022.8779	50.09	40.07	-10.02	74.00	33.93	100	239	Vertical
5	7196.7746	47.36	43.91	-3.45	74.00	30.09	200	254	Vertical
6	9193.8992	46.16	46.83	0.67	74.00	27.17	100	96	Vertical

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

18GHz-26.5GHz:

Pre-scan all modes and recorded the worst case results in this report (IEEE 802.11g)

The peak test results is less than the average limits, so the average test results had not reported.

Pre-scanned in three orthogonal panels,X,Y,Z.The worst cases mode (Z plane) were recorded in this report.

Mode: IEEE 802.11g

Lowest Frequency (2412MHz)

Environment: 25°C/60%RH

Tested By:Lu Qiang

Date: 2022-03-26

Voltage:DC 3.85V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18010.6250	56.20	44.54	-11.66	83.54	39.00	150	1	Horizontal
2	19451.3750	57.13	46.18	-10.95	83.54	37.36	150	233	Horizontal
3	20729.3500	54.62	44.27	-10.35	83.54	39.27	150	149	Horizontal
4	22800.8000	54.72	45.65	-9.07	83.54	37.89	150	350	Horizontal
5	23867.9750	54.61	46.21	-8.40	83.54	37.33	150	149	Horizontal
6	26259.8750	53.93	46.14	-7.79	83.54	37.40	150	223	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18553.7750	56.92	45.48	-11.44	83.54	38.06	150	95	Vertical
2	19479.8500	56.45	45.52	-10.93	83.54	38.02	150	263	Vertical
3	20527.0500	55.06	44.59	-10.47	83.54	38.95	150	211	Vertical
4	21247.0000	54.84	44.60	-10.24	83.54	38.94	150	200	Vertical
5	22769.3500	53.92	44.82	-9.10	83.54	38.72	150	200	Vertical
6	25699.7250	54.43	46.42	-8.01	83.54	37.12	150	318	Vertical

Note:

Above 18G test distance is 1m, so the Peak Limit=74+20*log(3/1)=83.54 (dB μ V/m).

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

Mode: IEEE 802.11g
 Middle Frequency (2437MHz)
 Environment: 25°C/60%RH
 Tested By:Lu Qiang

Date: 2022-03-26
 Voltage:DC 3.85V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18435.2000	56.97	45.46	-11.51	83.54	38.08	150	254	Horizontal
2	20500.7000	55.63	45.14	-10.49	83.54	38.40	150	212	Horizontal
3	21240.2000	55.05	44.81	-10.24	83.54	38.73	150	277	Horizontal
4	22908.7500	53.79	44.79	-9.00	83.54	38.75	150	169	Horizontal
5	25053.3000	53.44	45.62	-7.82	83.54	37.92	150	201	Horizontal
6	26186.7750	53.80	45.85	-7.95	83.54	37.69	150	201	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18433.9250	56.44	44.93	-11.51	83.54	38.61	150	296	Vertical
2	18927.7750	57.16	45.99	-11.17	83.54	37.55	150	0	Vertical
3	21213.4250	54.89	44.62	-10.27	83.54	38.92	150	244	Vertical
4	23456.5750	54.45	45.72	-8.73	83.54	37.82	150	9	Vertical
5	24431.5250	54.77	46.62	-8.15	83.54	36.92	150	201	Vertical
6	26270.9250	53.43	45.67	-7.76	83.54	37.87	150	84	Vertical

Note:

Above 18G test distance is 1m, so the Peak Limit=74+20*log(3/1)=83.54 (dB μ V/m).

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

Mode: IEEE 802.11g
 Highest Frequency (2462MHz)
 Environment: 25°C/60%RH
 Tested By:Lu Qiang

Date: 2022-03-26
 Voltage:DC 3.85V

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18405.8750	56.97	45.44	-11.53	83.54	38.10	150	52	Horizontal
2	19064.6250	57.00	45.91	-11.09	83.54	37.63	150	148	Horizontal
3	20636.7000	55.74	45.33	-10.41	83.54	38.21	150	234	Horizontal
4	22197.7250	54.69	44.96	-9.73	83.54	38.58	150	234	Horizontal
5	24401.3500	54.75	46.59	-8.16	83.54	36.95	150	115	Horizontal
6	26266.2500	53.46	45.69	-7.77	83.54	37.85	150	94	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18440.3000	57.32	45.81	-11.51	83.54	37.73	150	63	Vertical
2	20034.0500	56.03	45.20	-10.83	83.54	38.34	150	255	Vertical
3	21628.6500	54.63	44.71	-9.92	83.54	38.83	150	319	Vertical
4	22995.4500	54.38	45.44	-8.94	83.54	38.10	150	255	Vertical
5	23909.6250	54.13	45.78	-8.35	83.54	37.76	150	275	Vertical
6	26009.5500	53.92	45.57	-8.35	83.54	37.97	150	190	Vertical

Note:

Above 18G test distance is 1m, so the Peak Limit=74+20*log(3/1)=83.54 (dB μ V/m).

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

7. 6DB BANDWIDTH

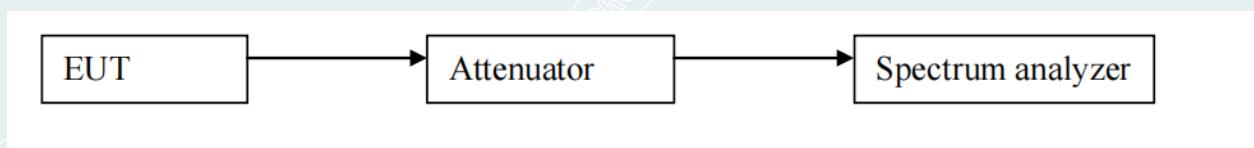
7.1 LIMITS

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

7.2 TEST PROCEDURES

- 1) Remove the antenna from the EUT, and then connect a low loss RF cable from antenna port to the spectrum analyzer.
- 2) Set resolution bandwidth (RBW) = 100kHz. Set the video bandwidth (VBW) $\geq 3 \times$ RBW. Detector = Peak. Trace mode = max hold. Sweep = auto couple. Allow the trace to stabilize, record 6dB bandwidth value.
- 3) Repeat above procedures until all frequencies measured were complete.

7.3 TEST SETUP



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

7.4 TEST RESULTS

Environment: 23.5°C/48%RH

Tested By:Lu Wei

Voltage:DC 3.85V

Date: 2022-03-24

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	Limit[MHz]	Verdict
802.11b	Ant1	2412	8.080	≥ 0.5	PASS
		2437	8.040	≥ 0.5	PASS
		2462	8.080	≥ 0.5	PASS
802.11g	Ant1	2412	15.480	≥ 0.5	PASS
		2437	16.280	≥ 0.5	PASS
		2462	15.480	≥ 0.5	PASS
802.11n HT20	Ant1	2412	15.360	≥ 0.5	PASS
		2437	17.560	≥ 0.5	PASS
		2462	15.160	≥ 0.5	PASS

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



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