

FCC CERTIFICATION TEST REPORT

Report No.: DDT-B211111105-1E04

Applicant	:	GREAT TALENT TECHNOLOGY LIMITED
Address	:	RM602,T3 Software Park,Hi-Tech Park South,Nanshan,Shenzhen,China
Equipment under Test	:	Smartphone
Model No.	:	L51
Trade Mark	:	ANS
FCC ID	:	2ALZM-L51
Manufacturer	:	GREAT TALENT TECHNOLOGY LIMITED
Address	:	RM602,T3 Software Park,Hi-Tech Park South,Nanshan,Shenzhen,China

Issued By: Tianjin Dongdian Testing Service Co., Ltd.

Address: Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park
Development Area, Tianjin, China.

Tel: +86-22-58038033, E-mail: ddt@ddt.com, <http://www.ddttest.com>



REPORT

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Test Report Declare

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Test Standard Used:

FCC Rules and Regulations Part 15 Subpart C.

Test Procedure Used:

ANSI C63.10:2013, 558074 D01 15.247 Meas Guidance v05r02

We Declare:

The equipment described above is tested by Tianjin Dongdian Testing Service Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Tianjin Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.

Report No.:	DDT-B21111105-1E04		
Date of Receipt:	Nov. 11, 2021	Date of Test:	Nov. 18, 2021 ~ Nov. 25, 2021

Prepared By:

Sunny Zhang

Sunny Zhang/Engineer

Approved By:

Aaron Zhang

Aaron Zhang/EMC Manager



Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Tianjin Dongdian Testing Service Co., Ltd.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Nov. 25, 2021	

1. Summary of Test Results

Description of Test Item	Standard	Verdict
Radiated Emission	FCC Part 15: 15.205 FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.10:2013	Pass
Band Edge Compliance	FCC Part 15: 15.205 FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.10:2013	Pass

2. General Test Information

2.1. Description of EUT

EUT* Name	: Smartphone
Model Number	: L51
EUT Function Description	: Please reference user manual of this device
Power Supply	: DC 3.8V Polymer Li-ion built-in battery DC 5V by AC/DC Adapter
Radio Specification	: IEEE 802.11b/g/n
Operation Frequency	: IEEE 802.11b: 2412MHz-2462MHz IEEE 802.11g: 2412MHz-2462MHz IEEE 802.11n HT20: 2412MHz-2462MHz
Modulation	: IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK, BPSK)
Data Rate	: IEEE 802.11b: 1, 2, 5.5, 11 Mbps IEEE 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps IEEE 802.11n HT20: MCS0~MCS7
Antenna Type	: Integrated antenna, maximum PK gain: 2.35 dBi
Sample Type	: N/A

Note: EUT is the ab. of equipment under test.

Channel information					
CH	Frequency (MHz)	CH	Frequency (MHz)	CH	Frequency (MHz)
1	2412	5	2432	9	2452
2	2417	6	2437	10	2457
3	2422	7	2442	11	2462
4	2427	8	2447	/	/

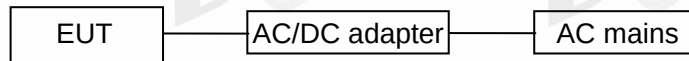
2.2. Accessories of EUT

Description of Accessories	Manufacturer	Model number	Description	SN
N/A	N/A	N/A	N/A	N/A

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	EMC Compliance	SN
N/A	N/A	N/A	N/A	N/A

2.4. Block diagram of EUT configuration for test



Test software: QRCT.EXE

The test software was used to control EUT work in Continuous Tx mode, and select test channel, wireless mode as below table.

Tested mode, channel, information			
Mode	Data rate (Mbps) (see Note)	Channel	Frequency (MHz)
IEEE 802.11b	1	CH0	2412
	1	CH6	2437
	1	CH11	2462
IEEE 802.11g	6	CH0	2412
	6	CH6	2437
	6	CH11	2462
IEEE 802.11n HT20	MCS0	CH0	2412
	MCS0	CH6	2437
	MCS0	CH11	2462
Note: According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.			

2.5. Deviations of test standard

No deviation.

2.6. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature range:	21-25 °C
Humidity range:	40-75%
Pressure range:	86-106 kPa

2.7. Test laboratory

Tianjin Dongdian Testing Service Co., Ltd.

Address: Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park Development Area, Tianjin, China.

Tel: +86-22-58038033, <http://www.ddttest.com>, Email: ddt@dgddt.com

NVLAP (National Voluntary Laboratory Accreditation Program) CODE: 500036-0

CNAS (China National Accreditation Service for Conformity Assessment) CODE: L13402

FCC Designation Number: CN5004; FCC Test Firm Registration Number: 368676

ISED (Innovation, Science and Economic Development Canada) Company Number: 27768

Conformity Assessment Body Identifier: CN0125

VCCI Facility Registration Number: C-20089, T-20093, R-20125, G-20122

2.8. Measurement uncertainty

Test Item	Uncertainty
Bandwidth	0.14%
Peak Output Power (Conducted) (Spectrum Analyzer)	0.12 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$);
	0.32 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
Peak Output Power (Conducted) (Power Sensor)	0.51 dB
Power Spectral Density	0.12 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$);
	0.32 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
Frequencies Stability	6.7×10^{-8} (Antenna couple method)
	3.4×10^{-8} (Conducted method)
Conducted Spurious Emissions	0.12 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$);
	0.32 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
	0.52 dB ($8 \text{ GHz} \leq f < 22 \text{ GHz}$)
Uncertainty for Radio Frequency (RBW < 20 kHz)	3×10^{-7}
Temperature	$\pm 2^{\circ}\text{C}$
Humidity	$\pm 1\%$
Uncertainty for Radiation Emission Test (30 MHz - 1 GHz)	2.72 dB (Antenna Polarize: V)
	2.72 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission Test (1 GHz - 40 GHz)	2.74 dB (1 - 6 GHz)
	2.72 dB (6 GHz - 18 GHz)
	3.54 dB (18 GHz - 26 GHz)
	4.30 dB (26 GHz - 40 GHz)
Uncertainty for Power Line Conduction Emission Test	3.40 dB (150 kHz - 30 MHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

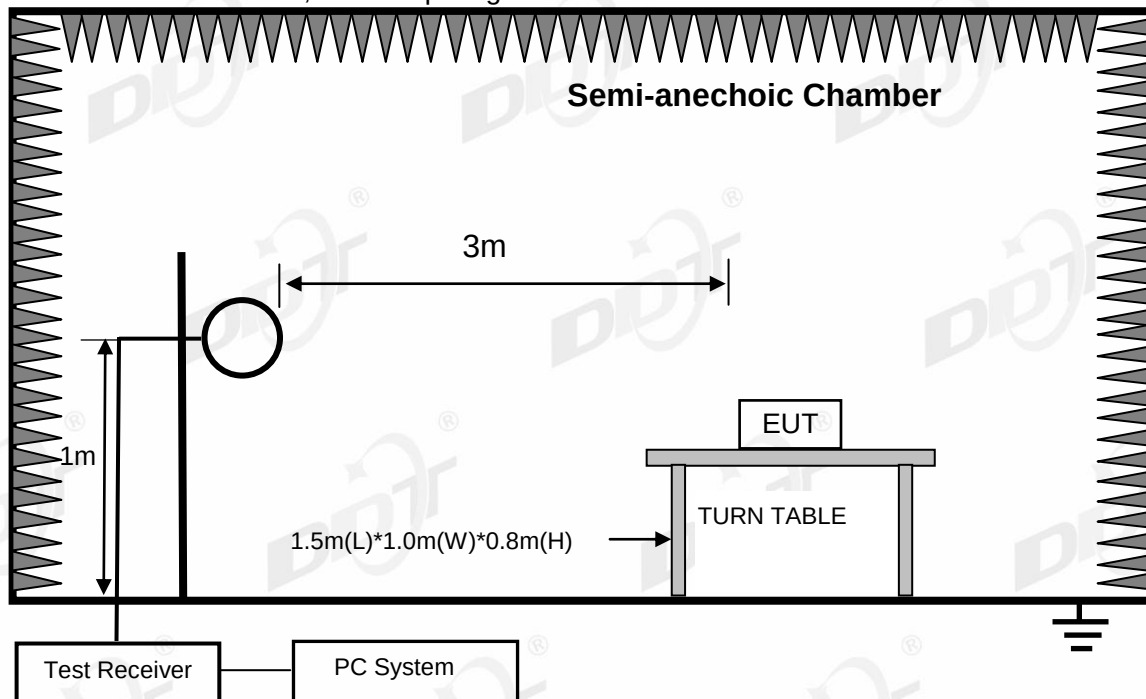
3. Equipment Used During Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
RF Connected Test (MWRFTest system)					
Microwave Signal Generator	R&S	SMF100A	101396	2021/06/08	1 Year
MXG Vector Signal Generator	Agilent	N5182A	MY50143288	2021/03/08	1 Year
EMI Test Receiver	R&S	ESU26	100243	2021/03/03	1 Year
Wideband Radio Communication Tester	R&S	CMW500	158800	2021/05/25	1 Year
Power Detector	MWRFTest	MW100-PS B	MW201203008	2021/03/31	1 Year
DC Power Supply	inSTEK	PSP-2010	EH131319	2021/02/27	1 Year
MULTIMETER	FLUKE	15B+	44752963WS	2021/11/17	1 Year
High and low temperature damp heat test chamber	Tinghua	RCR1000-060SE	THS20202015	2021/07/07	1 Year
Test Software	MWRFTest	MTS8310	V03	N/A	N/A
Radiated Emission -10m EMI Chamber					
EXA Signal Analyzer	Keysight	N9010A	MY53281492	2021/03/31	1 Year
Active Loop Antenna	R&S	HFH2-Z2	100269	2021/05/08	1 Year
Double-Ridged Guide Horn Antenna	ETS-LINDGR EN	3115	00102808	2021/03/16	1 Year
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	2021/04/21	1 Year
Broadband Horn Antenna	TESEQ	BHA 9118	31754	2021/10/12	1 Year
Low noise amplifier	MITEQ	TPA0118-36	0914	2021/02/03	1 Year
EMI Test Receiver	R&S	ESCI	101024	2021/03/03	1 Year
EMI Test Receiver	R&S	ESCI	101030	2021/05/15	1 Year
Bilog Antenna	TESEQ	CBL6112D	29068	2020/10/12	2 Year
Bilog Antenna	TESEQ	CBL6112D	29069	2020/10/12	2 Year
Amplifier	Sonoma	310N	300913	2021/03/03	1 Year
Amplifier	Sonoma	310N	300914	2021/03/03	1 Year
Ant Mast	Innco	MA4000	N/A	N/A	N/A
Ant Mast	Innco	MA4000	N/A	N/A	N/A
Mast Controller	Innco	CO2000	N/A	N/A	N/A
Mast Controller	Innco	CO2000	N/A	N/A	N/A
RF Selector 4CH	TOYO	NS4904N	Selector1	N/A	N/A
RF Selector 4CH	TOYO	NS4904N	Selector2	N/A	N/A
Test software	TOYO	EP5/RSE	Ver 1.9.1	N/A	N/A
Test software	Audix	E3	V 6.11111b	N/A	N/A
Power Line Conducted Emissions Test					
Test Receiver	R&S	ESCI	101397	2021/03/03	1 Year
LISN	R&S	ENV216	101122	2021/03/31	1 Year
Test software	TOYO	EP5/CE	V 5.4.40	N/A	N/A

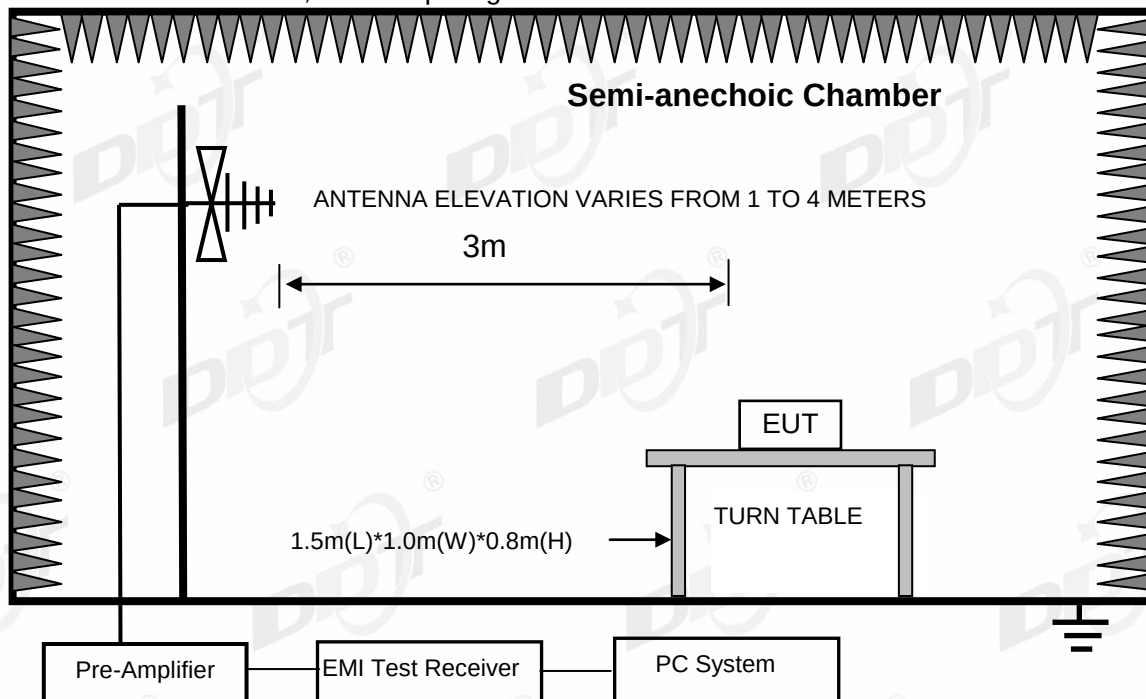
4. Radiated Emission

4.1. Block diagram of test setup

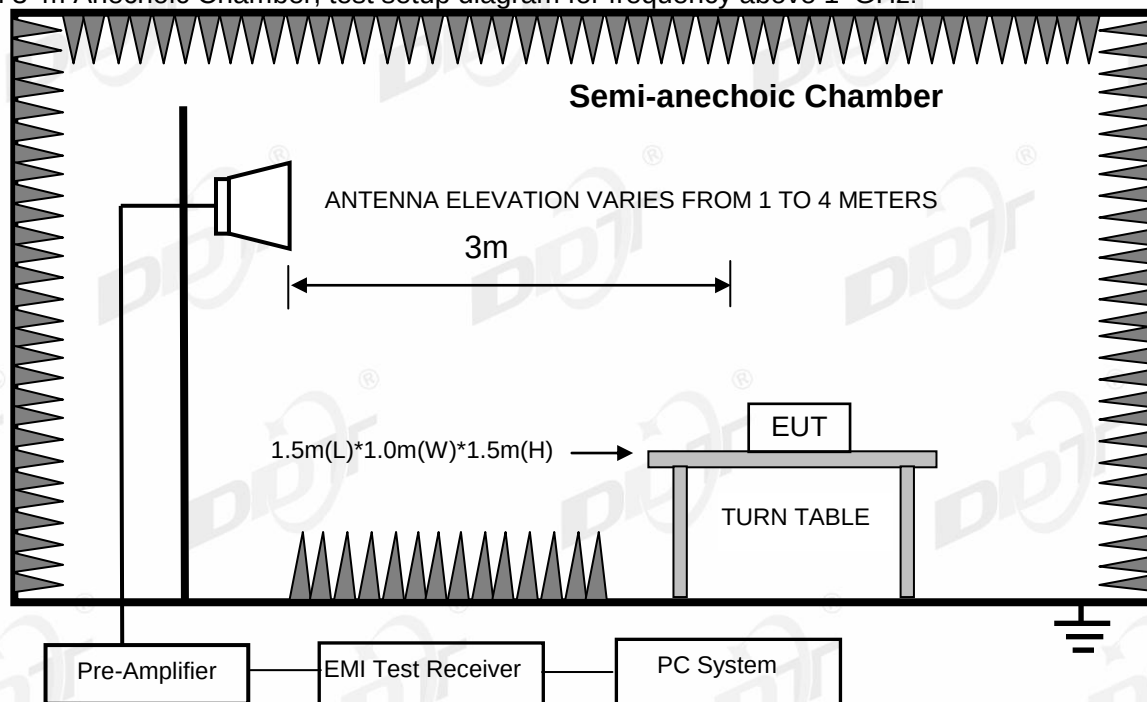
In 3 m Anechoic Chamber, test setup diagram for 9 kHz - 30 MHz:



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



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



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

4.2. Limit

(1) FCC 15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.1772&4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.2072&4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			

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

²Above 38.6

(2) FCC 15.209 Limit.

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V})/\text{m}$
0.009 ~ 0.490	300	2400/F(kHz)	67.6-20log(F)
0.490 ~ 1.705	30	24000/F(kHz)	87.6-20log(F)
1.705 ~ 30.0	30	30	29.54
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

Note: (1) The emission limits shown in the above table are based on measurements employing a CISPR QP detector except for the frequency bands 9 - 90 kHz, 110 - 490 kHz and above 1000 MHz, radiated emissions limits in these three bands are based on measurements employing an average detector.

(2) At frequencies below 30 MHz, measurement may be performed at a distance closer than that specified, and the limit at closer measurement distance can be extrapolated by below formula:

$$\text{Limit}_{3\text{m}}(\text{dB}\mu\text{V}/\text{m}) = \text{Limit}_{30\text{m}}(\text{dB}\mu\text{V}/\text{m}) + 40\text{Log}(30\text{m}/3\text{m})$$

(3) Limit for this EUT

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20 dB below the fundamental emissions or comply with 15.209 limits.

4.3. Test Procedure

(1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber for below 1G and 150 cm above the ground plane inside a fully-anechoic chamber for above 1G.

(2) Test antenna was located 3 m from the EUT on an adjustable mast, and the antenna used as below table.

Test frequency range	Test antenna used	Test antenna distance
9 kHz - 30 MHz	Active Loop antenna	3 m
30 MHz - 1 GHz	Trilog Broadband Antenna	3 m
1 GHz - 18 GHz	Double Ridged Horn Antenna (1 GHz - 18 GHz)	3 m
18 GHz - 40 GHz	Horn Antenna (18 GHz - 40 GHz)	3 m

According ANSI C63.10:2013 clause 6.4.4.2 and 6.5.3, for measurements below 30 MHz, the loop antenna was positioned with its plane vertical from the EUT and rotated about its vertical axis for maximum response at each azimuth position around the EUT. And the loop antenna also

is positioned with its plane horizontal at the specified distance from the EUT. The center of the loop is 1 m above the ground. For measurement above 30 MHz, the trilob Broadband Antenna or Horn Antenna was located 3 m from EUT, Measurements were made with the antenna positioned in both the horizontal and vertical planes of Polarization, and the measurement antenna was varied from 1 m to 4 m. in height above the reference ground plane to obtain the maximum signal strength.

(3) Below pre-scan procedure was first performed in order to find prominent frequency spectrum radiated emissions from 9 kHz to 25 GHz:

(a) Scanning the peak frequency spectrum with the antenna specified in step (3), and the EUT was rotated 360 degree, the antenna height was varied from 1 m to 4 m (Except loop antenna, it's fixed 1 m above ground.)

(b) Change work frequency or channel of device if practicable.

(c) Change modulation type of device if practicable.

(d) Change power supply range from 85% to 115% of the rated supply voltage

(e) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions.

Spectrum frequency from 9 kHz to 25 GHz (tenth harmonic of fundamental frequency) was investigated, and no any obvious emission were detected from 18 GHz to 25 GHz, so below final test was performed with frequency range from 9 kHz to 18 GHz.

(4) For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1 m and 4 m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed according to ANSI C63.10:2013 on Radiated Emission test.

(5) The emissions from 9 kHz to 1 GHz were measured based on CISPR QP detector except for the frequency bands 9 - 90 kHz, 110 - 490 kHz, for emissions from 9 kHz - 90 kHz, 110 kHz - 490 kHz and above 1 GHz were measured based on average detector, for emissions above 1 GHz, peak emissions also be measured and need comply with Peak limit.

(6) The emissions from 9 kHz to 1 GHz, QP or average values were measured with EMI receiver with below RBW.

Frequency band	RBW
9 kHz - 150 kHz	200 Hz
150 kHz - 30 MHz	9 kHz
30 MHz - 1 GHz	120 kHz

(7) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1 MHz, VBW is set at 3 MHz for Peak measure; According ANSI C63.10:2013 clause 4.1.4.2.2 procedure for average measure.

(8) X axis, Y axis, Z axis are tested, and worse setup X axis is reported.

4.4. Test result

Pass. (See below detailed test result)

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

Note1: According exploratory test, the emission levels are 20 dB below the limit detected from 9 kHz to 30 MHz and 18 GHz to 25 GHz, so the final test was performed with frequency range from 30 MHz to 18 GHz and recorded in below.

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

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

Radiated Emission test (below 1 GHz)

Radiated Emission Test Result

Test Site : DDT 10m Chamber

Test Date : 2021-11-24

Tested By : Sunny

EUT : Smartphone

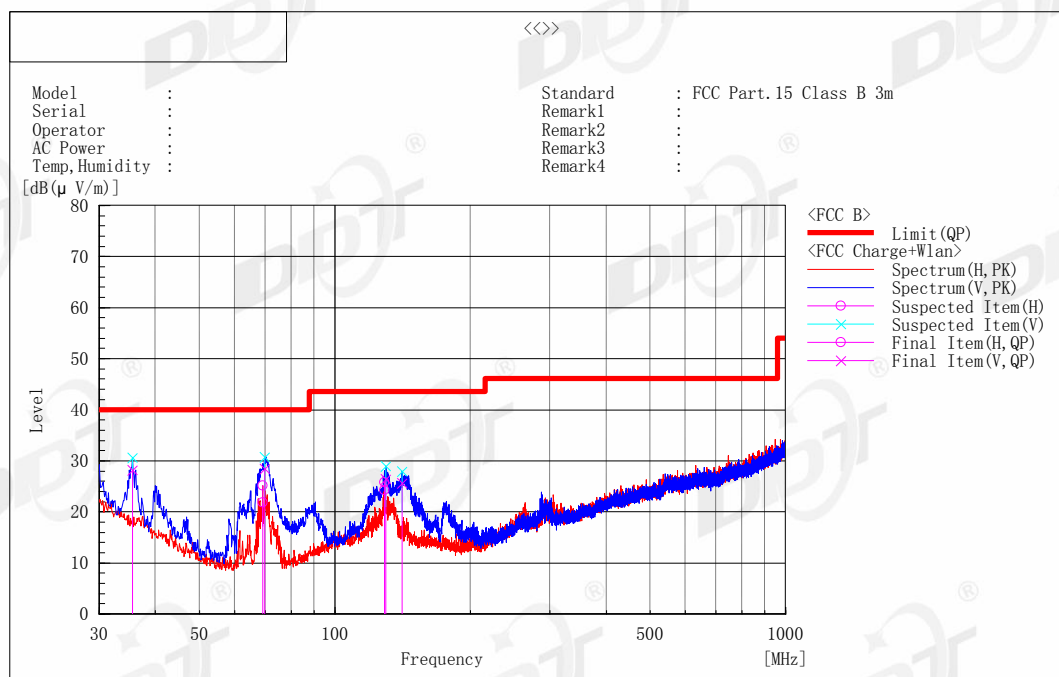
Model Number : L51

Power Supply : AC 120V/60Hz

Test Mode : WIFI mode

Condition : Temp:24.5°,Humi:55%,Press:100.1kPa

Memo :



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(μV)]	c. f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [°]	System	Remark
1	35.578	V	36.1	-7.9	28.2	40.0	11.8	299.0	10.4	2	
2	69.770	V	45.2	-16.7	28.5	40.0	11.5	105.0	352.9	2	
3	129.789	V	36.7	-10.3	26.4	43.5	17.1	115.0	214.6	2	
4	140.823	V	36.3	-10.7	25.6	43.5	17.9	120.0	172.2	2	
5	69.043	H	38.7	-16.9	21.8	40.0	18.2	386.0	124.1	1	
6	128.940	H	34.9	-10.7	24.2	43.5	19.3	237.0	83.9	1	

Note) Receiving antenna polarization : Horizontal and/or Vertical

Test Distance : 3 m, Antenna Height : 1 m to 4 m

Level QP (Quasi-Peak) = Reading QP + Factor (Antenna Factor + Cable Loss - Amp. Gain)

Margin QP (Quasi-Peak) = Limit - Level QP

Radiated Emission test (above 1 GHz)

Freq. (MHz)	Factor (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector type	Polarization
Tx mode 11b 1M 2412 MHz								
4824	0.23	48.75	74	-25.25	156	38	Peak	HORIZONTAL
7236	5.07	48.89	74	-25.11	178	113	Peak	HORIZONTAL
10690	8.35	45.03	74	-28.97	179	150	Peak	HORIZONTAL
12611	8.52	46.31	74	-27.69	166	324	Peak	HORIZONTAL
14141	12.14	48.75	74	-25.25	178	30	Peak	HORIZONTAL
17320	14.47	52.03	74	-21.97	199	100	Peak	HORIZONTAL
4824	0.23	50.13	74	-23.87	183	106	Peak	VERTICAL
7236	5.07	50.59	74	-23.41	156	160	Peak	VERTICAL
9976	7.26	44.78	74	-29.22	161	126	Peak	VERTICAL
11659	9.27	46.36	74	-27.64	180	26	Peak	VERTICAL
14039	12.13	49.58	74	-24.42	161	123	Peak	VERTICAL
17235	14.45	51.23	74	-22.77	190	246	Peak	VERTICAL
Tx mode 11b 1M 2437 MHz								
4874	0.19	49.96	74	-24.04	162	64	Peak	HORIZONTAL
7311	5.36	48.15	74	-25.85	185	124	Peak	HORIZONTAL
10350	7.79	45.62	74	-28.38	163	60	Peak	HORIZONTAL
13019	9.11	46.65	74	-27.35	166	64	Peak	HORIZONTAL
13954	11.99	49.85	74	-24.15	192	191	Peak	HORIZONTAL
17150	14.24	50.55	74	-23.45	197	275	Peak	HORIZONTAL
4874	0.19	49.81	74	-24.19	165	330	Peak	VERTICAL
7311	5.36	49.07	74	-24.93	175	68	Peak	VERTICAL
10639	8.23	45.89	74	-28.11	187	288	Peak	VERTICAL
13359	10.03	48.04	74	-25.96	162	244	Peak	VERTICAL
14056	12.11	49.70	74	-24.30	183	11	Peak	VERTICAL
17269	14.48	50.65	74	-23.35	152	250	Peak	VERTICAL
Tx mode 11b 1M 2462 MHz								
4924	0.36	49.91	74	-24.09	171	306	Peak	HORIZONTAL
7386	5.51	50.77	74	-23.23	159	267	Peak	HORIZONTAL
10350	7.79	44.72	74	-29.28	169	259	Peak	HORIZONTAL
12424	8.28	46.07	74	-27.93	169	148	Peak	HORIZONTAL
13410	10.19	50.06	74	-23.94	185	336	Peak	HORIZONTAL
17320	14.47	50.58	74	-23.42	150	37	Peak	HORIZONTAL
4924	0.36	49.14	74	-24.86	165	141	Peak	VERTICAL
7386	5.51	47.71	74	-26.29	194	104	Peak	VERTICAL
9500	6.78	44.95	74	-29.05	192	230	Peak	VERTICAL
12135	8.85	46.19	74	-27.81	194	199	Peak	VERTICAL
14124	12.11	49.09	74	-24.91	169	131	Peak	VERTICAL
16929	14.14	49.89	74	-24.11	159	199	Peak	VERTICAL
Verdict: Pass								

Note: 1. Scan with all modes, the worst case was recorded in this report.

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

Freq. (MHz)	Factor (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector type	Polarization
Tx mode 11g 6M 2412 MHz								
4824	0.23	47.57	74	-26.43	174	295	Peak	HORIZONTAL
7236	5.07	48.30	74	-25.70	159	165	Peak	HORIZONTAL
9160	6.25	45.98	74	-28.02	155	248	Peak	HORIZONTAL
12101	8.85	46.93	74	-27.07	194	247	Peak	HORIZONTAL
14056	12.11	48.48	74	-25.52	181	290	Peak	HORIZONTAL
17456	14.39	50.85	74	-23.15	172	24	Peak	HORIZONTAL
4824	0.23	49.37	74	-24.63	192	37	Peak	VERTICAL
7236	5.07	49.68	74	-24.32	191	125	Peak	VERTICAL
9466	6.98	45.29	74	-28.71	179	181	Peak	VERTICAL
11676	9.20	46.61	74	-27.39	189	356	Peak	VERTICAL
14481	12.24	49.24	74	-24.76	156	240	Peak	VERTICAL
16946	14.28	50.99	74	-23.01	184	234	Peak	VERTICAL
Tx mode 11g 6M 2437 MHz								
4874	0.19	49.07	74	-24.93	173	341	Peak	HORIZONTAL
7311	5.36	50.45	74	-23.55	156	258	Peak	HORIZONTAL
9748	7.29	46.01	74	-27.99	184	182	Peak	HORIZONTAL
12101	8.85	47.36	74	-26.64	183	188	Peak	HORIZONTAL
13699	11.27	50.40	74	-23.60	178	70	Peak	HORIZONTAL
16844	13.72	51.10	74	-22.90	179	318	Peak	HORIZONTAL
4874	0.19	49.93	74	-24.07	198	38	Peak	VERTICAL
7311	5.36	50.75	74	-23.25	176	333	Peak	VERTICAL
9585	7.13	44.82	74	-29.18	171	123	Peak	VERTICAL
11676	9.20	45.86	74	-28.14	196	189	Peak	VERTICAL
13410	10.19	48.19	74	-25.81	196	6	Peak	VERTICAL
17371	14.35	50.61	74	-23.39	163	214	Peak	VERTICAL
Tx mode 11g 6M 2462 MHz								
4924	0.36	49.18	74	-24.82	160	273	Peak	HORIZONTAL
7386	5.51	48.98	74	-25.02	155	106	Peak	HORIZONTAL
9670	7.29	44.87	74	-29.13	154	22	Peak	HORIZONTAL
11149	9.09	46.02	74	-27.98	172	40	Peak	HORIZONTAL
14039	12.13	50.50	74	-23.50	183	67	Peak	HORIZONTAL
17524	14.43	51.41	74	-22.59	199	316	Peak	HORIZONTAL
4924	0.36	49.16	74	-24.84	171	15	Peak	VERTICAL
7386	5.51	46.31	74	-27.69	190	165	Peak	VERTICAL
10010	7.30	45.14	74	-28.86	168	216	Peak	VERTICAL
12645	8.44	48.24	74	-25.76	182	245	Peak	VERTICAL
15841	9.76	46.19	74	-27.81	199	170	Peak	VERTICAL
16844	13.72	51.22	74	-22.78	174	63	Peak	VERTICAL
Verdict: Pass								

Note: 1. Scan with all modes, the worst case was recorded in this report.

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

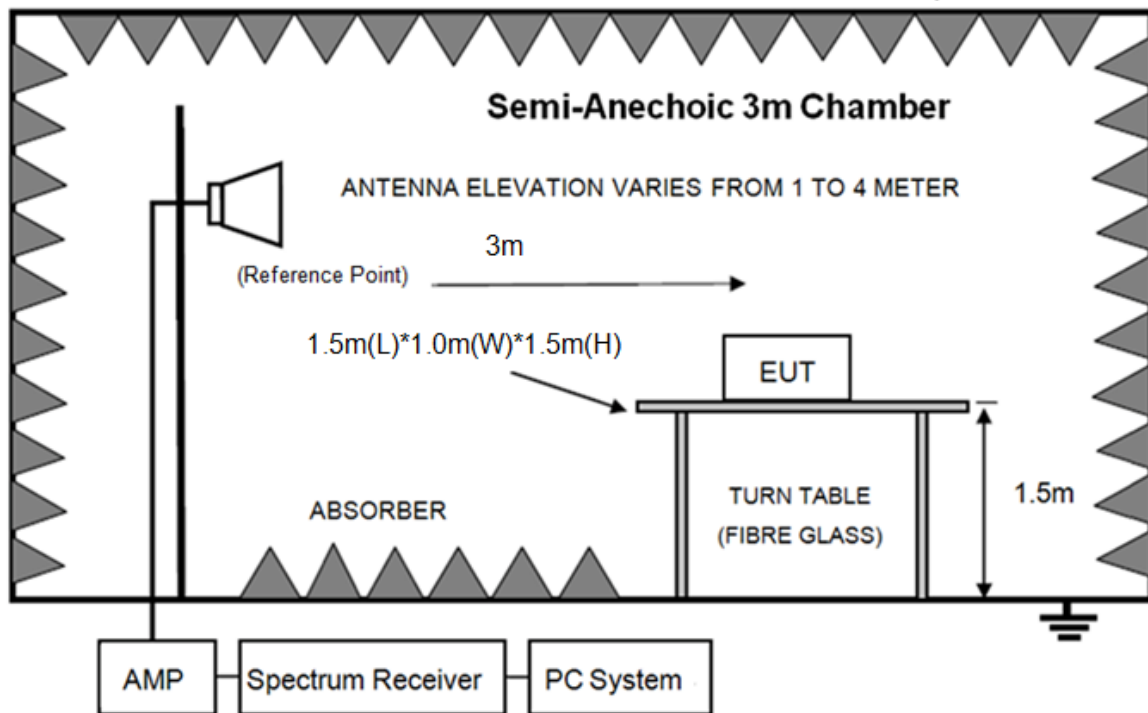
Freq. (MHz)	Factor (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector type	Polarization
Tx mode 11n20 MCS0 2412 MHz								
4824	0.23	45.52	74	-28.48	158	187	Peak	HORIZONTAL
7236	5.07	46.73	74	-27.27	190	134	Peak	HORIZONTAL
9670	7.29	45.61	74	-28.39	157	251	Peak	HORIZONTAL
12645	8.44	47.19	74	-26.81	173	241	Peak	HORIZONTAL
14719	11.72	48.27	74	-25.73	187	69	Peak	HORIZONTAL
17456	14.39	50.38	74	-23.62	188	298	Peak	HORIZONTAL
4824	0.23	49.53	74	-24.47	181	105	Peak	VERTICAL
7236	5.07	50.08	74	-23.92	160	325	Peak	VERTICAL
10469	7.97	44.90	74	-29.10	184	153	Peak	VERTICAL
12101	8.85	46.41	74	-27.59	165	190	Peak	VERTICAL
13954	11.99	49.70	74	-24.30	160	252	Peak	VERTICAL
17439	14.35	51.65	74	-22.35	196	238	Peak	VERTICAL
Tx mode 11n20 MCS0 2437 MHz								
4874	0.19	49.65	74	-24.35	154	22	Peak	HORIZONTAL
7311	5.36	49.20	74	-24.80	181	114	Peak	HORIZONTAL
9748	7.29	46.37	74	-27.63	163	63	Peak	HORIZONTAL
13410	10.19	48.60	74	-25.40	166	285	Peak	HORIZONTAL
14039	12.13	50.95	74	-23.05	157	144	Peak	HORIZONTAL
17269	14.48	50.91	74	-23.09	152	78	Peak	HORIZONTAL
4874	0.19	49.44	74	-24.56	171	210	Peak	VERTICAL
7311	5.36	49.27	74	-24.73	179	296	Peak	VERTICAL
9748	7.29	49.58	74	-24.42	162	241	Peak	VERTICAL
13274	9.75	47.99	74	-26.01	150	325	Peak	VERTICAL
16181	10.38	46.27	74	-27.73	163	267	Peak	VERTICAL
17609	14.22	51.56	74	-22.44	169	10	Peak	VERTICAL
Tx mode 11n20 MCS0 2462 MHz								
4924	0.36	50.28	74	-23.72	187	64	Peak	HORIZONTAL
7386	5.51	50.20	74	-23.80	178	278	Peak	HORIZONTAL
9848	7.26	45.54	74	-28.46	157	268	Peak	HORIZONTAL
13325	9.91	48.12	74	-25.88	172	111	Peak	HORIZONTAL
15331	9.99	46.86	74	-27.14	184	244	Peak	HORIZONTAL
17524	14.43	51.11	74	-22.89	194	39	Peak	HORIZONTAL
4924	0.36	49.80	74	-24.20	157	82	Peak	VERTICAL
7386	5.51	48.43	74	-25.57	199	276	Peak	VERTICAL
9670	7.29	44.55	74	-29.45	184	248	Peak	VERTICAL
13750	11.31	49.53	74	-24.47	164	132	Peak	VERTICAL
16249	10.6	46.80	74	-27.20	172	229	Peak	VERTICAL
17830	13.8	51.57	74	-22.43	168	301	Peak	VERTICAL
Verdict: Pass								

Note: 1. Scan with all modes, the worst case was recorded in this report.

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

5. Band Edge Compliance (Radiated Method)

5.1. Block diagram of test setup



5.2. Limit

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

5.3. Test Procedure

Same with clause 10.3 except change investigated frequency range from 2310 MHz to 2430 MHz and 2445 MHz to 2550 MHz.

Remark: All restriction band have been tested, and only the worst case is shown in report.

5.4. Test result

Pass. (See below detailed test result)

Radiated Emission Test Result

Test Site : 10m Chamber

E:\E3_Report\TestData\H21111105-1E L51\RF.EM6

Test Date : 2021/11/24

Tested By : Sunny

EUT : Smartphone

Model Number : L51

Power Supply : AC 120V/60Hz

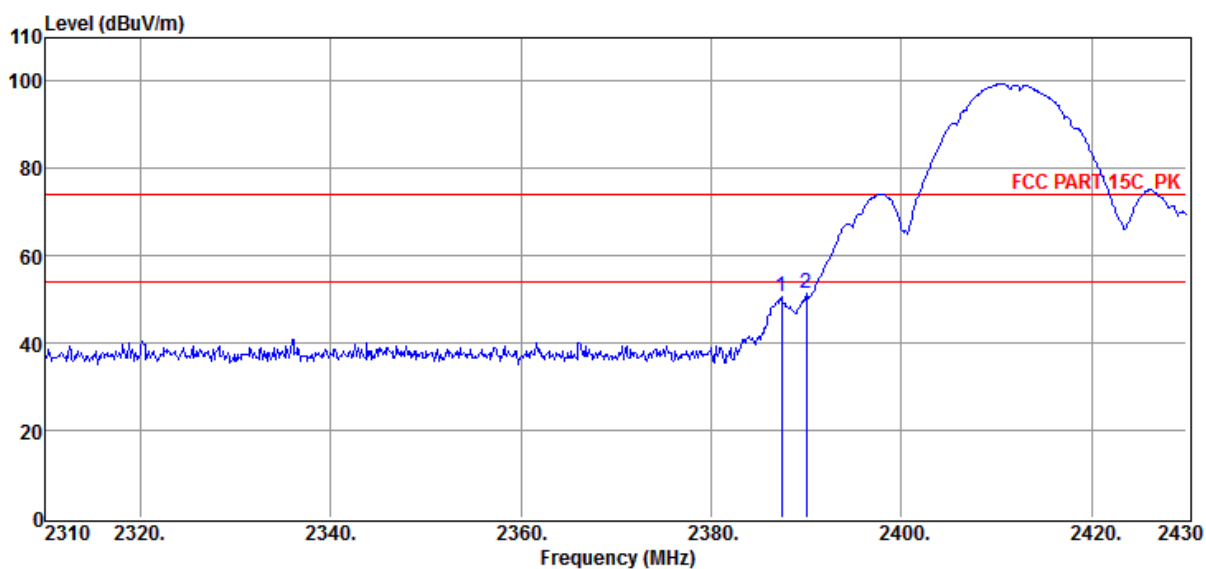
Test Mode : Tx mode

Condition : Temp:21.8±2°C,Humi:23±1%,Press:101
.7±0.2kPa

Antenna/Distance : 3m/HORIZONTAL

Memo : 11b 1M 2412MHz

Data: 7



Item	Freq.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector type	Polarization
1	2387.4	-5.95	50.83	74	-23.17	175	110	Peak	HORIZONTAL
2	2390	-5.97	51.29	74	-22.71	163	70	Peak	HORIZONTAL

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

Radiated Emission Test Result

Test Site : 10m Chamber

E:\E3_Report\TestData\H21111105-1E L51\RF.EM6

Test Date : 2021/11/24

Tested By : Sunny

EUT : Smartphone

Model Number : L51

Power Supply : AC 120V/60Hz

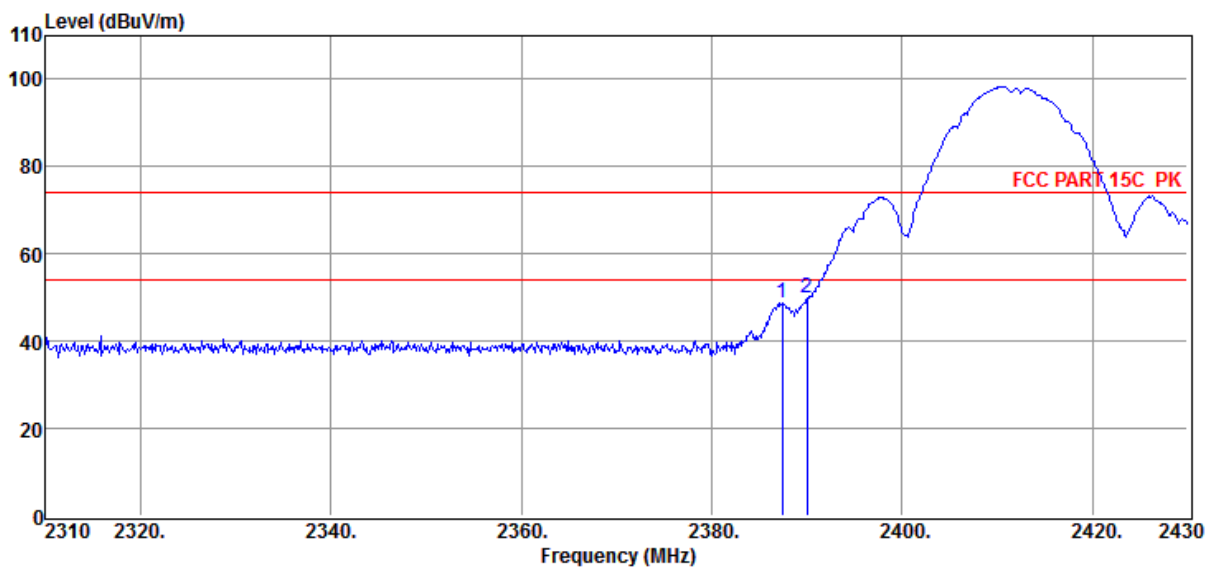
Test Mode : Tx mode

Condition : Temp:21.8±2°C,Humi:23±1%,Press:101
.7±0.2kPa

Antenna/Distance : 3m/VERTICAL

Memo : 11b 1M 2412MHz

Data: 8



Item	Freq.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector type	Polarization
1	2387.4	-5.95	48.84	74	-25.16	176	344	Peak	VERTICAL
2	2390	-5.97	49.79	74	-24.21	163	307	Peak	VERTICAL

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

Radiated Emission Test Result

Test Site : 10m Chamber

E:\E3_Report\TestData\H21111105-1E L51\RF.EM6

Test Date : 2021/11/24

Tested By : Sunny

EUT : Smartphone

Model Number : L51

Power Supply : AC 120V/60Hz

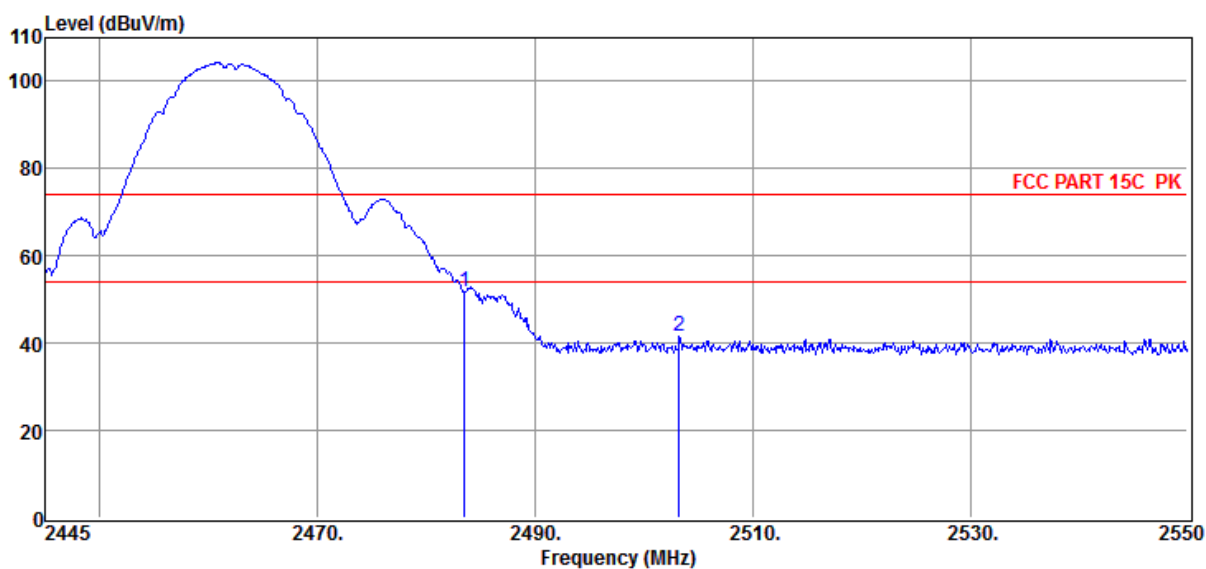
Test Mode : Tx mode

Condition : Temp:21.8±2°C,Humi:23±1%,Press:101
: 7±0.2kPa

Antenna/Distance : 3m/VERTICAL

Memo : 11B 1M 2462MHz

Data: 9



Item	Freq.	Factor (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector type	Polarization
1	2483.5	-5.87	51.73	74	-22.27	174	178	Peak	VERTICAL
2	2503.28	-5.62	41.52	74	-32.48	176	290	Peak	VERTICAL

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

Radiated Emission Test Result

Test Site : 10m Chamber

E:\E3_Report\TestData\H21111105-1E L51\RF.EM6

Test Date : 2021/11/24

Tested By : Sunny

EUT : Smartphone

Model Number : L51

Power Supply : AC 120V/60Hz

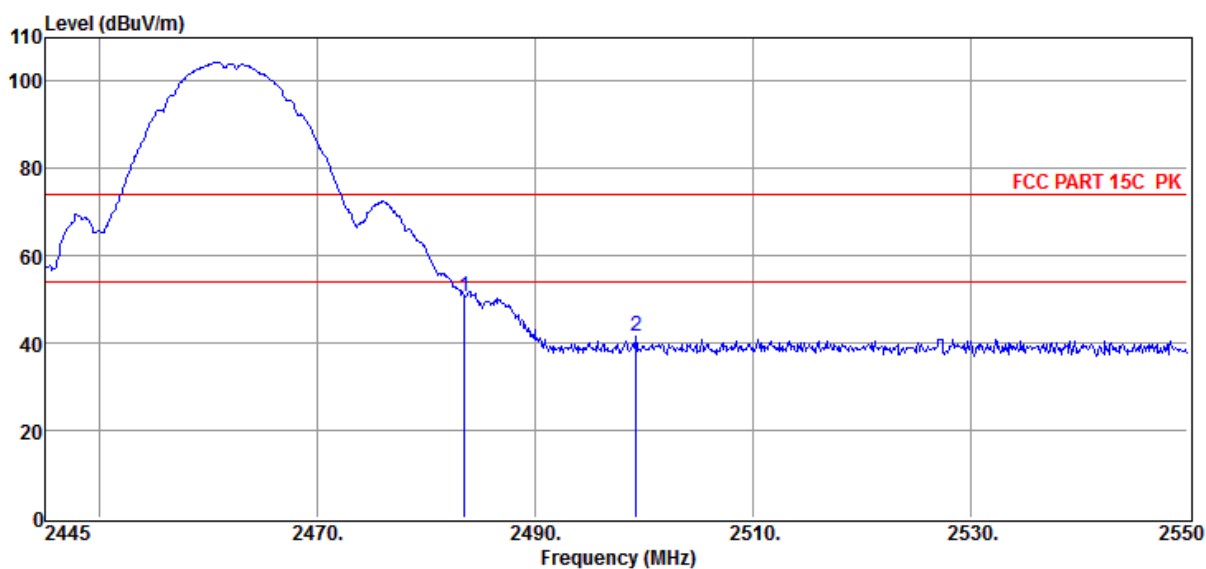
Test Mode : Tx mode

Condition : Temp:21.8±2°C,Humi:23±1%,Press:101
: 7±0.2kPa

Antenna/Distance : 3m/HORIZONTAL

Memo : 11B 1M 2462MHz

Data: 10



Item	Freq.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector type	Polarization
1	2483.5	-5.87	50.65	74	-23.35	185	222	Peak	HORIZONTAL
2	2499.29	-5.64	41.56	74	-32.44	191	78	Peak	HORIZONTAL

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

Radiated Emission Test Result

Test Site : 10m Chamber

E:\E3_Report\TestData\H21111105-1E L51\RF.EM6

Test Date : 2021/11/24

Tested By : Sunny

EUT : Smartphone

Model Number : L51

Power Supply : AC 120V/60Hz

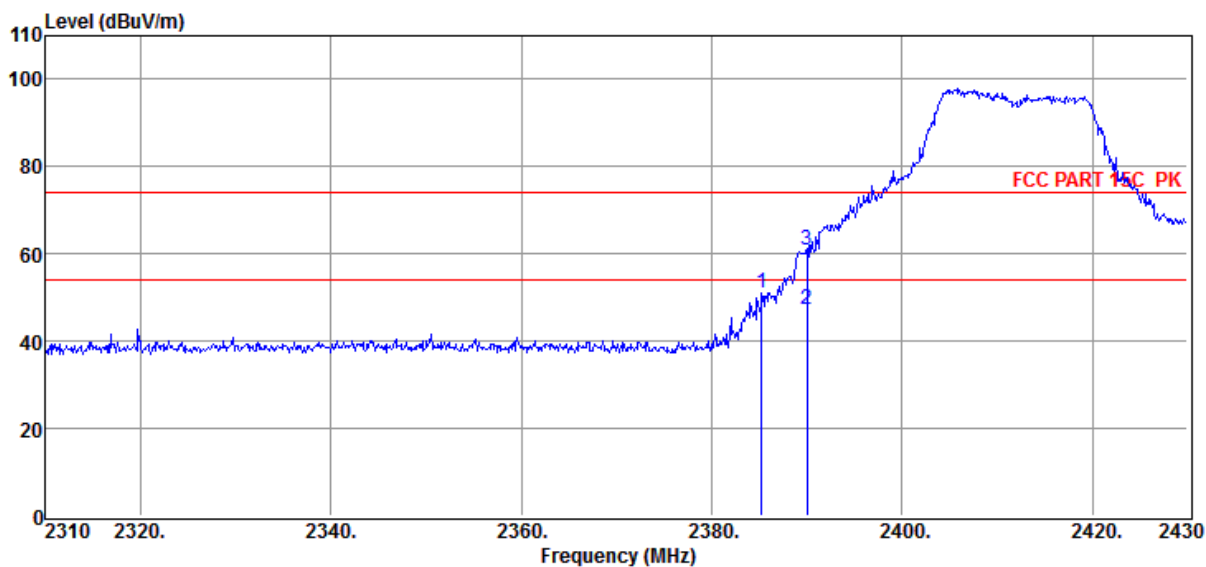
Test Mode : Tx mode

Condition : Temp:21.8±2°C,Humi:23±1%,Press:101
.7±0.2kPa

Antenna/Distance : 3m/VERTICAL

Memo : 11G 6M 2412MHz

Data: 11



Item	Freq.	Factor (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector type	Polarization
1	2385.24	-5.95	50.91	74	-23.09	198	31	Peak	VERTICAL
2	2390	-5.97	47.28	54	-6.72	166	141	Average	VERTICAL
3	2390	-5.97	60.86	74	-13.14	171	140	Peak	VERTICAL

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

Radiated Emission Test Result

Test Site : 10m Chamber

E:\E3_Report\TestData\H21111105-1E L51\RF.EM6

Test Date : 2021/11/24

Tested By : Sunny

EUT : Smartphone

Model Number : L51

Power Supply : AC 120V/60Hz

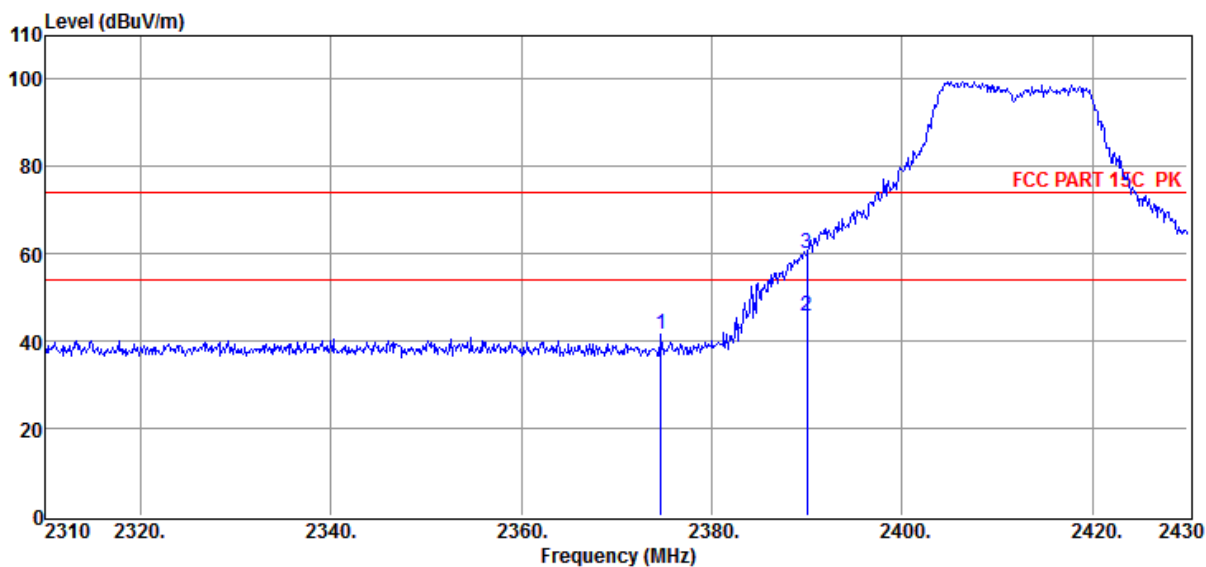
Test Mode : Tx mode

Condition : Temp:21.8±2°C,Humi:23±1%,Press:101
.7±0.2kPa

Antenna/Distance : 3m/HORIZONTAL

Memo : 11G 6M 2412MHz

Data: 12



Item	Freq.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector type	Polarization
1	2374.68	-5.91	41.63	74	-32.37	153	255	Peak	HORIZONTAL
2	2390	-5.97	45.67	54	-8.33	158	13	Average	HORIZONTAL
3	2390	-5.97	60.11	74	-13.89	164	53	Peak	HORIZONTAL

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

Radiated Emission Test Result

Test Site : 10m Chamber

E:\E3_Report\TestData\H21111105-1E L51\RF.EM6

Test Date : 2021/11/24

Tested By : Sunny

EUT : Smartphone

Model Number : L51

Power Supply : AC 120V/60Hz

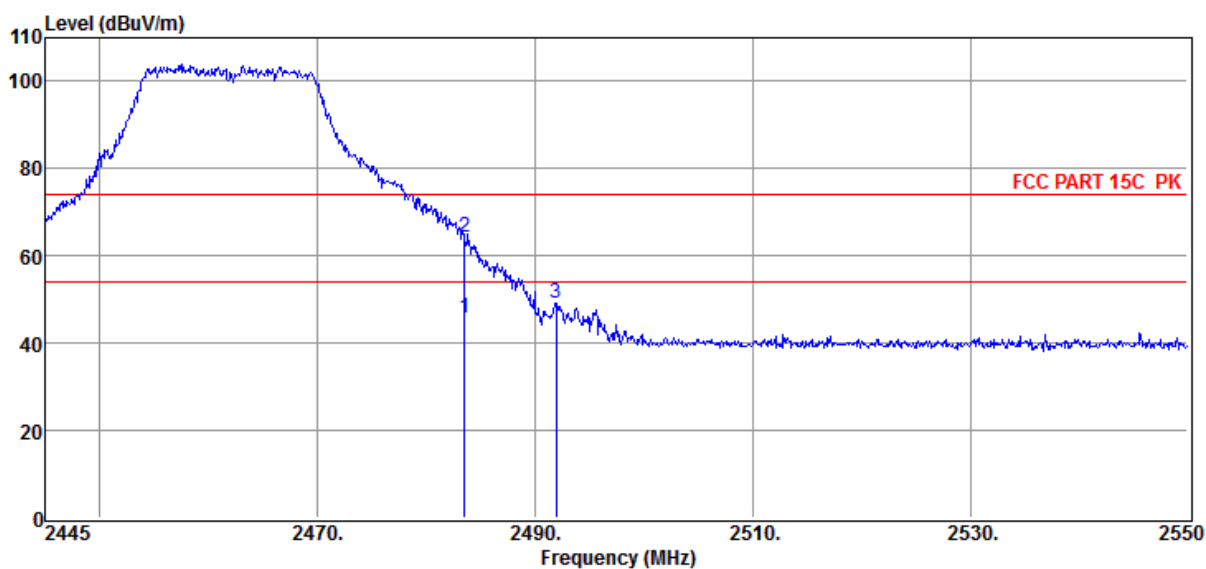
Test Mode : Tx mode

Condition : Temp:21.8±2°C,Humi:23±1%,Press:101
: 7±0.2kPa

Antenna/Distance : 3m/HORIZONTAL

Memo : 11G 6M 2462MHz

Data: 13



Item	Freq.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector type	Polarization
1	2483.5	-5.87	45.8	54	-8.2	154	90	Average	HORIZONTAL
2	2483.5	-5.87	64.23	74	-9.77	174	86	Peak	HORIZONTAL
3	2491.94	-5.75	49.26	74	-24.74	167	340	Peak	HORIZONTAL

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

Radiated Emission Test Result

Test Site : 10m Chamber

E:\E3_Report\TestData\H21111105-1E L51\RF.EM6

Test Date : 2021/11/24

Tested By : Sunny

EUT : Smartphone

Model Number : L51

Power Supply : AC 120V/60Hz

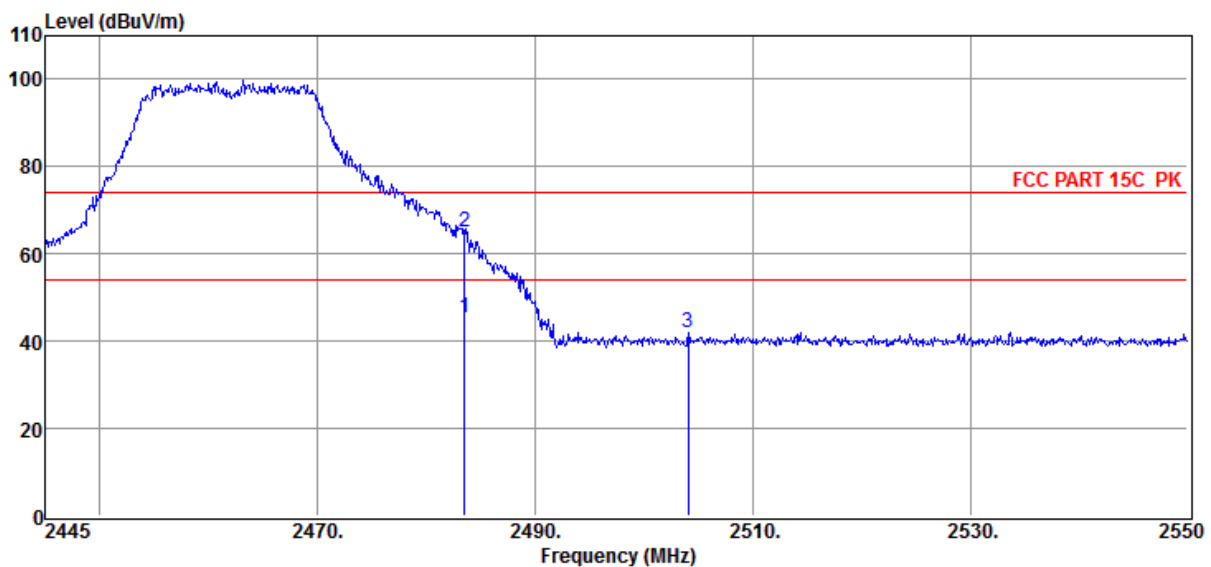
Test Mode : Tx mode

Condition : Temp:21.8±2°C,Humi:23±1%,Press:101
: 7±0.2kPa

Antenna/Distance : 3m/VERTICAL

Memo : 11G 6M 2462MHz

Data: 14



Item	Freq.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector type	Polarization
1	2483.5	-5.87	45.27	54	-8.73	176	158	Average	VERTICAL
2	2483.5	-5.87	64.96	74	-9.04	172	338	Peak	VERTICAL
3	2504.12	-5.62	41.91	74	-32.09	167	294	Peak	VERTICAL

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

Radiated Emission Test Result

Test Site : 10m Chamber

E:\E3_Report\TestData\H21111105-1E L51\RF.EM6

Test Date : 2021/11/24

Tested By : Sunny

EUT : L51

Model Number : L51

Power Supply : Smartphone

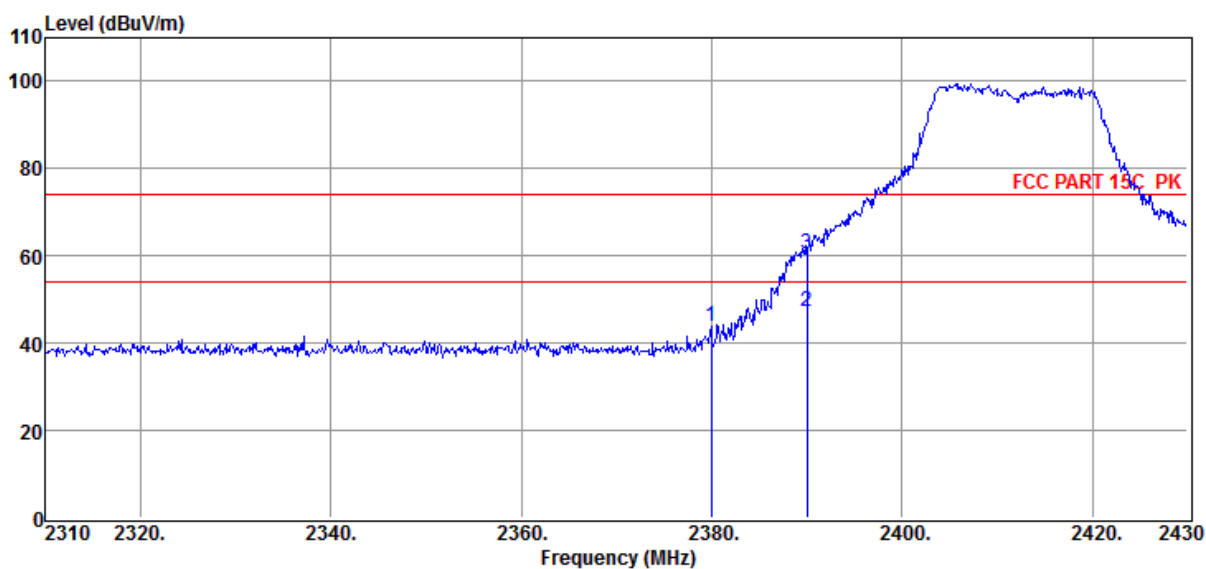
Test Mode : Tx mode

Condition : Temp:21.8±2°C,Humi:23±1%,Press:101
.7±0.2kPa

Antenna/Distance : 3m/HORIZONTAL

Memo : 11N20 MCS0 2412MHz

Data: 15



Item	Freq.	Factor (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector type	Polarization
1	2379.96	-5.92	43.76	74	-30.24	163	312	Peak	HORIZONTAL
2	2390	-5.97	47.39	54	-6.61	160	210	Average	HORIZONTAL
3	2390	-5.97	60.66	74	-13.34	192	51	Peak	HORIZONTAL

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

Radiated Emission Test Result

Test Site : 10m Chamber

E:\E3_Report\TestData\H21111105-1E L51\RF.EM6

Test Date : 2021/11/24

Tested By : Sunny

EUT : L51

Model Number : L51

Power Supply : Smartphone

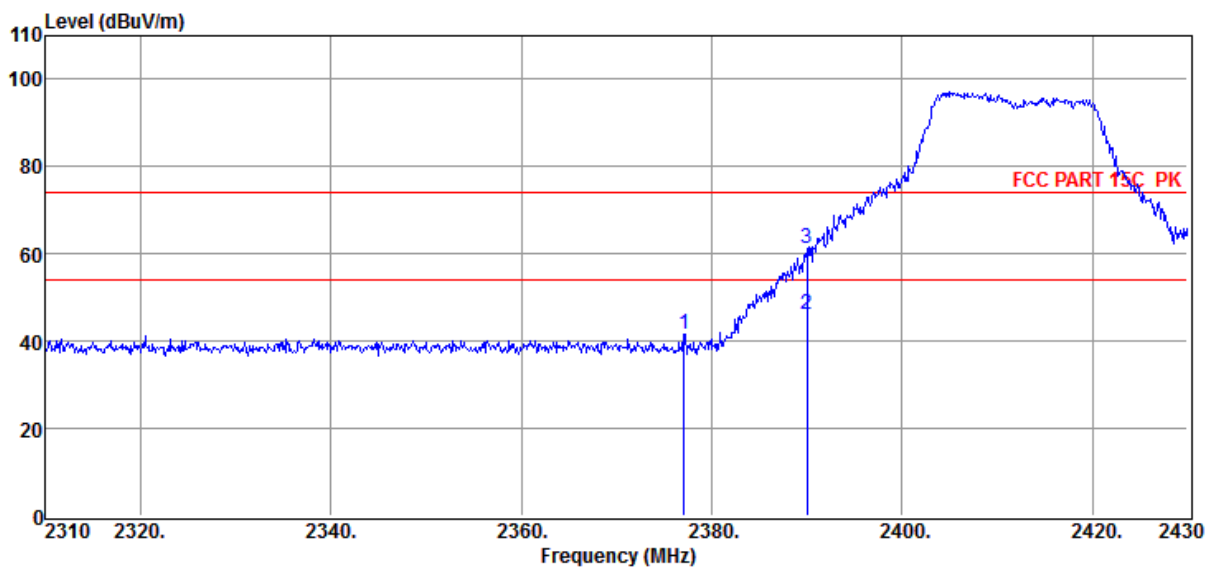
Test Mode : Tx mode

Condition : Temp:21.8±2°C,Humi:23±1%,Press:101
.7±0.2kPa

Antenna/Distance : 3m/VERTICAL

Memo : 11N20 MCS0 2412MHz

Data: 16



Item	Freq.	Factor (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector type	Polarization
1	2377.08	-5.92	41.61	74	-32.39	157	169	Peak	VERTICAL
2	2390	-5.97	46.24	54	-7.76	158	304	Average	VERTICAL
3	2390	-5.97	61.28	74	-12.72	165	211	Peak	VERTICAL

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

Radiated Emission Test Result

Test Site : 10m Chamber

E:\E3_Report\TestData\H21111105-1E L51\RF.EM6

Test Date : 2021/11/24

Tested By : Sunny

EUT : Smartphone

Model Number : L51

Power Supply : AC 120V/60Hz

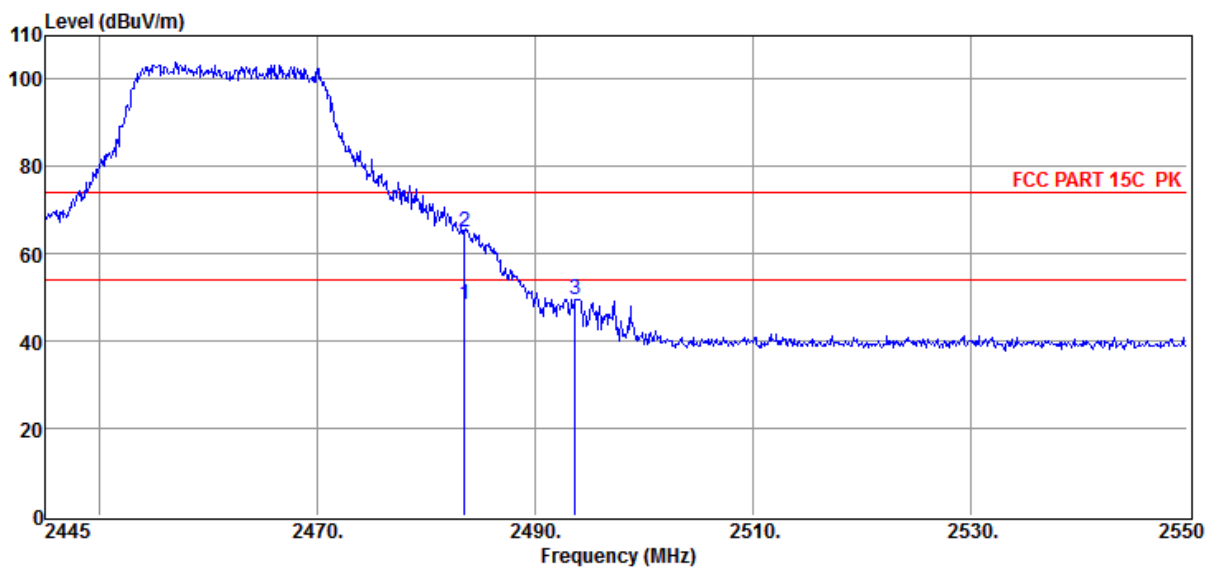
Test Mode : Tx mode

Condition : Temp:21.8±2°C,Humi:23±1%,Press:101
: 7±0.2kPa

Antenna/Distance : 3m/VERTICAL

Memo : 11N20 MCS0 2462MHz

Data: 17



Item	Freq.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector type	Polarization
1	2483.5	-5.87	48.44	54	-5.56	198	88	Average	VERTICAL
2	2483.5	-5.87	64.99	74	-9.01	177	223	Peak	VERTICAL
3	2493.72	-5.72	49.67	74	-24.33	155	339	Peak	VERTICAL

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

Radiated Emission Test Result

Test Site : 10m Chamber

E:\E3_Report\TestData\H21111105-1E L51\RF.EM6

Test Date : 2021/11/24

Tested By : Sunny

EUT : Smartphone

Model Number : L51

Power Supply : AC 120V/60Hz

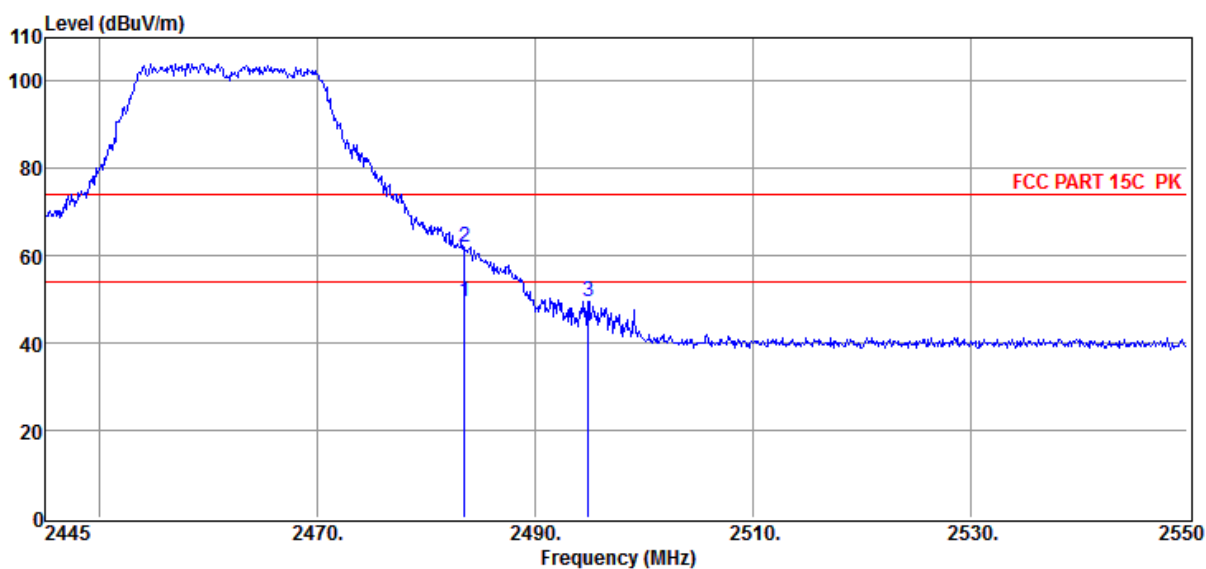
Test Mode : Tx mode

Condition : Temp:21.8±2°C,Humi:23±1%,Press:101
: 7±0.2kPa

Antenna/Distance : 3m/HORIZONTAL

Memo : 11N20 MCS0 2462MHz

Data: 18

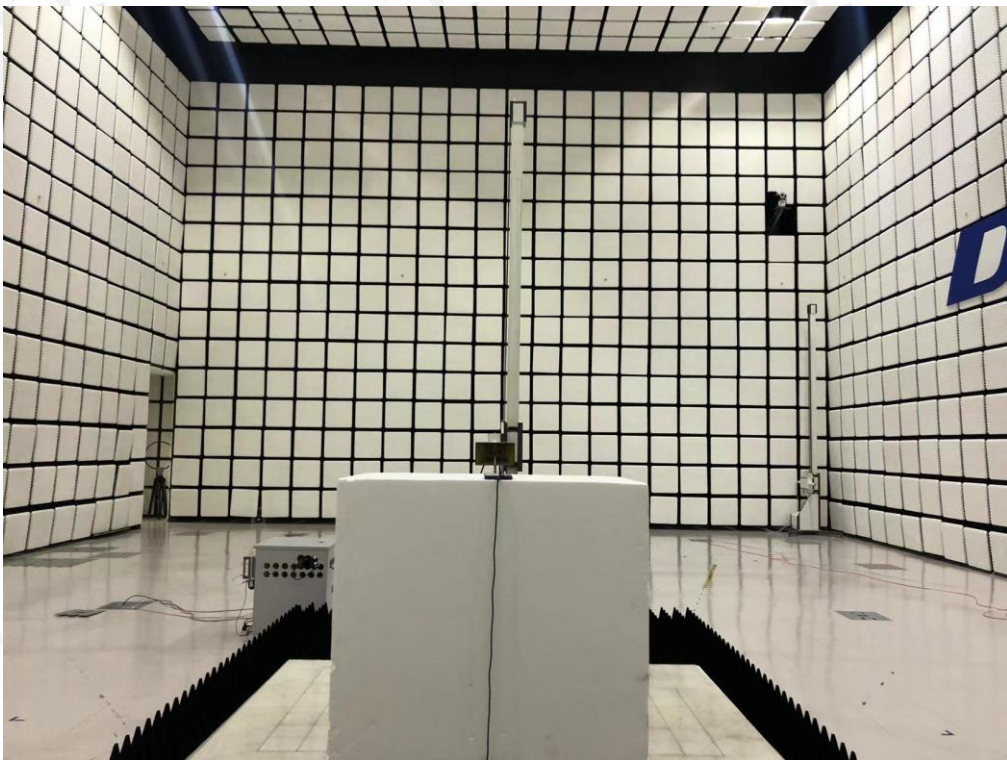


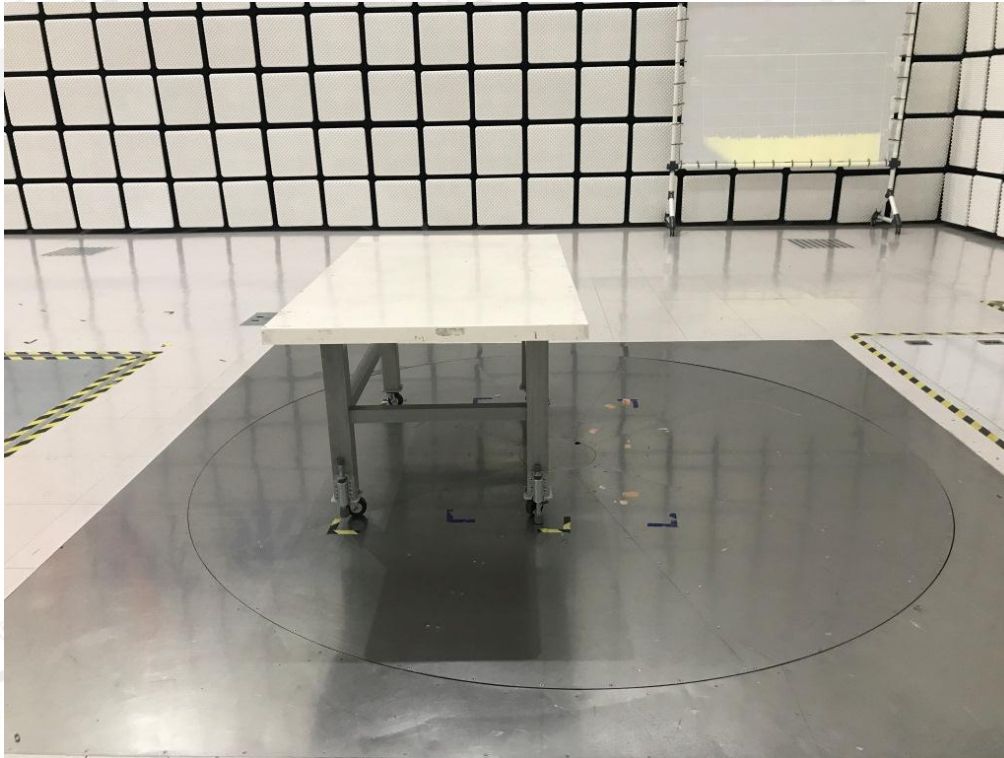
Item	Freq.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector type	Polarization
1	2483.5	-5.87	49.47	54	-4.53	172	142	Average	HORIZONTAL
2	2483.5	-5.87	62.07	74	-11.93	160	323	Peak	HORIZONTAL
3	2494.88	-5.7	49.45	74	-24.55	164	10	Peak	HORIZONTAL

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

6. Test Setup Photograph





END OF REPORT