



RF TEST REPORT

Product Name: Smart Phone

Model Name: CP12p

FCC ID: R38YLCP12P

Issued For : Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd
Floor 21, Block A, Coolpad Building, Intersection of Keyuan Avenue and Baoshen Road, North High-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, China

Issued By : Shenzhen LGT Test Service Co., Ltd.
Room 205, Building 13, Zone B, Chen Hsong Industrial Park, No.177 Renmin West Road, Jinsha Community, Kengzi Street, Pingshan New District, Shenzhen, China

Report Number: LGT23C004RF04

Sample Received Date: Mar. 02, 2023

Date of Test: Mar. 02, 2023 ~ Mar. 23, 2023

Date of Issue: Mar. 23, 2023

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TEST REPORT CERTIFICATION

Applicant Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd
Address Floor 21, Block A, Coolpad Building, Intersection of Keyuan Avenue and Baoshen Road, North High-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, China

Manufacturer Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd
Address Floor 21, Block A, Coolpad Building, Intersection of Keyuan Avenue and Baoshen Road, North High-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, China

Product Name Smart Phone

Trademark coolpad

Model Name CP12p

Sample Status: Normal

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC Part 15.407, Subpart E ANSI C63.10-2013	PASS

Prepared by:

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Zane Shan
Engineer

Approved by:

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Vita Li
Technical Director





Table of Contents

Page

1 . SUMMARY OF TEST RESULTS	6
1.1 TEST FACTORY	7
1.2 MEASUREMENT UNCERTAINTY	7
2 . GENERAL INFORMATION	8
2.1 GENERAL DESCRIPTION OF THE EUT	8
2.2 DESCRIPTION OF TEST MODES	10
2.3 TEST SOFTWARE AND POWER LEVEL	11
2.4 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS	11
2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS	12
3 . EMC EMISSION TEST	13
3.1 CONDUCTED EMISSION MEASUREMENT	13
3.2 RADIATED EMISSION AND (BANDEDGE) MEASUREMENT	17
4. POWER SPECTRAL DENSITY TEST	29
4.1 LIMIT	29
4.2 TEST PROCEDURE	29
4.3 DEVIATION FROM STANDARD	29
4.4 TEST SETUP	29
4.5 EUT OPERATION CONDITIONS	30
4.6 TEST RESULTS	30
5. BANDWIDTH MEASUREMENT	31
5.1 EMISSION BANDWIDTH (EBW) 26 BANDWID PROCEDURES / LIMIT	31
5.2 OCCUPIED BANDWIDTH (99%) TEST APPLIED PROCEDURES / LIMIT	32
5.3 MINIMUM EMISSION BANDWIDTH(6 DB) PROCEDURES / LIMIT	33
6. MAXIMUM CONDUCTED OUTPUT POWER	34
6.1 LIMIT	34
6.2 TEST PROCEDURE	34
6.3 DEVIATION FROM STANDARD	34
6.4 TEST SETUP	34
6.5 EUT OPERATION CONDITIONS	34
6.6 TEST RESULTS	34
7. AUTOMATICALLY DISCONTINUE TRANSMISSION	35
7.1 LIMIT OF AUTOMATICALLY DISCONTINUE TRANSMISSION	35
7.2 TEST RESULT OF AUTOMATICALLY DISCONTINUE TRANSMISSION	35
8. ANTENNA REQUIREMENT	36



Table of Contents	Page
8.1 STANDARD REQUIREMENT	36
8.2 EUT ANTENNA	36
APPENDIX I:TEST RESULTS	37
DUTY CYCLE	37
MAXIMUM CONDUCTED OUTPUT POWER	44
-26DB BANDWIDTH	45
OCCUPIED CHANNEL BANDWIDTH	49
MAXIMUM POWER SPECTRAL DENSITY LEVEL	56
-6DB BANDWIDTH	63
APPENDIX II:PHOTOS OF TEST SETUP	67



Revision History

Rev.	Issue Date	Contents
00	Mar. 23, 2023	Initial Issue



1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

Part 15.407, KDB 789033 D02 General U-NII Test Procedures New Rules v02r01

FCC Part 15.407		
FCC standard	Test Item	Results
15.207	AC Conducted Emission	PASS
15.407 (a) /15.407 (e)	26dB/6dB &99% Bandwidth	PASS
15.407(a)	Maximum Conducted Output Power	PASS
15.407(b)/15.205/15.209	Radiated Emission And (bandedge Emissions) Measurement	PASS
15.407(a)	Power Spectral Density	PASS
15.407(c)	Automatically Discontinue Transmission	PASS
15.203/15.204	Antenna Requirement	PASS

NOTE:

(1) 'N/A' denotes test is not applicable in this Test Report.

(2) All tests are according to ANSI C63.10-2013.



1.1 TEST FACTORY

Company Name:	Shenzhen LGT Test Service Co., Ltd.
Address:	Room 205, Building 13, Zone B, Chen Hsong Industrial Park, No.177 Renmin West Road, Jinsha Community, Kengzi Street, Pingshan New District, Shenzhen, China
Accreditation Certificate:	A2LA Certificate No.: 6727.01
	FCC Registration No.: 746540
	CAB ID: CN0136

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately **95** %.

No.	Item	Uncertainty
1	RF output power, conducted	$\pm 0.68\text{dB}$
2	Unwanted Emissions, conducted	$\pm 2.988\text{dB}$
3	All emissions, radiated 9K-30MHz	$\pm 2.84\text{dB}$
4	All emissions, radiated 30M-1GHz	$\pm 4.39\text{dB}$
5	All emissions, radiated 1G-6GHz	$\pm 5.10\text{dB}$
6	All emissions, radiated >6G	$\pm 5.48\text{dB}$
7	Conducted Emission (9KHz-150KHz)	$\pm 2.79\text{dB}$
8	Conducted Emission (150KHz-30MHz)	$\pm 2.80\text{dB}$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Smart Phone																
Trademark	coolpad																
Model Name	CP12p																
Series Model	N/A																
Model Difference	N/A																
Product Description	The EUT is a Smart Phone																
	<table border="1"> <tr> <td rowspan="4">Operation Frequency:</td> <td>IEEE 802.11a/n(HT20)/ac(VHT20): 5.180GHz-5.240GHz</td> </tr> <tr> <td>IEEE 802.11n(HT40)/ac(VHT40): 5.190GHz-5.230GHz</td> </tr> <tr> <td>IEEE 802.11ac(VHT80): 5.210GHz</td> </tr> <tr> <td>IEEE 802.11a/n(HT20)/ac(VHT20): 5.745GHz-5.825GHz</td> </tr> <tr> <td rowspan="2">Modulation Type:</td> <td>IEEE 802.11a/n(HT40)/ac(VHT40): 5.755GHz-5.795GHz</td> </tr> <tr> <td>IEEE 802.11ac(VHT80): 5.775GHz</td> </tr> <tr> <td rowspan="2">Antenna Designation:</td> <td>802.11a(OFDM): BPSK, QPSK, 16-QAM, 64-QAM</td> </tr> <tr> <td>802.11n(OFDM): BPSK, QPSK, 16-QAM, 64-QAM</td> </tr> <tr> <td rowspan="2">Antenna Gain(dBi)</td> <td>802.11ac (OFDM): BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM</td> </tr> <tr> <td>Please refer to the Note 3.</td> </tr> <tr> <td></td> <td>-1.7</td> </tr> </table>	Operation Frequency:	IEEE 802.11a/n(HT20)/ac(VHT20): 5.180GHz-5.240GHz	IEEE 802.11n(HT40)/ac(VHT40): 5.190GHz-5.230GHz	IEEE 802.11ac(VHT80): 5.210GHz	IEEE 802.11a/n(HT20)/ac(VHT20): 5.745GHz-5.825GHz	Modulation Type:	IEEE 802.11a/n(HT40)/ac(VHT40): 5.755GHz-5.795GHz	IEEE 802.11ac(VHT80): 5.775GHz	Antenna Designation:	802.11a(OFDM): BPSK, QPSK, 16-QAM, 64-QAM	802.11n(OFDM): BPSK, QPSK, 16-QAM, 64-QAM	Antenna Gain(dBi)	802.11ac (OFDM): BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM	Please refer to the Note 3.		-1.7
	Operation Frequency:		IEEE 802.11a/n(HT20)/ac(VHT20): 5.180GHz-5.240GHz														
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			IEEE 802.11ac(VHT80): 5.210GHz														
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Antenna Gain(dBi)	802.11ac (OFDM): BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM																
	Please refer to the Note 3.																
	-1.7																
More details of EUT technical specification, please refer to the User Manual.																	
Test Channel	Please refer to the Note 2.																
Adapter	Input: 100-240V, 50/60Hz, 0.3A Output: 5V, 2A																
Battery	Capacity: 4500mAh Rated Voltage: 3.85V																
Hardware Version	V1.0																
Software Version	CP12p.230327.0S.SE																
Connecting I/O Port(s)	Please refer to the Note 1.																

Note

1. For a more detailed features description, please refer to the manufacturer's specifications or the User Manual.



2. Operation Frequency of channel	
5.180GHz-5.240GHz	
Channel	Frequency
36	5180
38	5190
40	5200
42	5210
44	5220
46	5230
48	5240
5.745GHz-5.825GHz	
Channel	Frequency
149	5745
151	5755
153	5765
157	5785
159	5795
161	5805
165	5825

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Carrier Frequency Channel

Channel List for 802.11a/n/ac(20MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	40	5200	44	5220	48	5240
149	5745	153	5765	157	5785	161	5805
165	5825						

Channel List for 802.11n/ac(40MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230	151	5755	159	5795

Channel List for 802.11ac(80MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	155	5775				

3KDB 662911 D01 Multiple Transmitter Output v02r01

2) Directional Gain Calculations for In-Band Measurements

a) Basic methodology with NANT transmit antennas, each with the same directional gain G_{ANT} dBi, being driven by NANT transmitter outputs of equal power. Directional gain is to be computed

Ant	Brand	Model Name	Ant Type	Connector	Gain (dBi)	NOTE
1	coolpad	CP12p	FPC antenna	N/A	-1.7	WLAN Ant

Note: The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report.



2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Worst Mode	Description	Data Rate
Mode 1	TX IEEE 802.11a HT20 CH36&CH40&CH48	6 Mbps
Mode 2	TX IEEE 802.11a HT20 CH149&CH157&CH165	6 Mbps
Mode 3	TX IEEE 802.11n HT20 CH36&CH40&CH48	MCS 0
Mode 4	TX IEEE 802.11ac HT20 CH36&CH40&CH48	NSS1 MCS0
Mode 5	TX IEEE 802.11n HT20 CH149&CH157&CH165	MCS 0
Mode 6	TX IEEE 802.11ac HT20 CH149&CH157&CH165	NSS1 MCS0
Mode 7	TX IEEE 802.11n HT40 CH38&CH46	MCS 0
Mode 8	TX IEEE 802.11ac HT40 CH38&CH46	NSS1 MCS0
Mode 9	TX IEEE 802.11n HT40 CH151&CH159	MCS 0
Mode 10	TX IEEE 802.11ac HT40 CH151&CH159	NSS1 MCS0
Mode 11	TX IEEE 802.11ac HT80 CH42	NSS1 MCS0
Mode 12	TX IEEE 802.11ac HT80 CH155	NSS1 MCS0

- Note: (1) The measurements are performed at the highest, middle, lowest available channels.
 (2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.
 (3) We have been tested for all available U.S. voltage and frequencies (For 120V, 50/60Hz and 240V, 50/60Hz) for which the device is capable of operation.
 (4) The battery is fully-charged during the radiated and RF conducted test.

AC Conducted Emission

Test Case	
AC Conducted Emission	Mode 13: TX Mode



2.3 TEST SOFTWARE AND POWER LEVEL

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

Test software Version	Test program: 5G WIFI B1	
engineering mode	a	18
	n/ac20	18
	n/ac40	18
	ac80	18
Test software Version	Test program: 5G WIFI B4	
engineering mode	a	18
	n/ac20	18
	n/ac40	18
	ac80	18

2.4 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Accessories Equipment

Description	Manufacturer	Model	S/N	Rating
Adapter	SHENZHEN TIANYIN ELECTRONICS CO., LTD.	TPA-23A050200UU01	N/A	Input:100-240V ~ 50/60Hz 0.3A Output:5V, 2000mA
USB-A to USB-C Cable	N/A	N/A	N/A	1m, unshielded, without ferrite core

Auxiliary Equipment

Description	Manufacturer	Model	S/N	Rating
Earphone	N/A	39630078	N/A	N/A
Laptop	HUAWEI	HKF-16	N/A	N/A

Note:

- (1) For detachable type I/O cable should be specified the length in cm in 『Length』 column.



2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Conducted Emission

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
EMI Test Receiver	R&S	ESU	100372	2022.04.12	2023.04.11
LISN	COM-POWER	LI-115	02032	2022.04.13	2023.04.12
LISN	SCHWARZBECK	NNLK 8121	00847	2022.08.19	2023.08.18
CE Cable	N.A	C01	N.A	2022.05.05	2023.05.04
Transient Limiter	CYBERTEK	EM5010A	E2250100049	2022.08.19	2023.08.18
Temperature & Humidity	KTJ	TA218B	N.A	2022.05.05	2023.05.04
Testing Software	EMC-I_V1.4.0.3_SKET				

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
EMI Test Receiver	R&S	ESU	100372	2022.04.12	2023.04.11
Spectrum Analyzer	Keysight	N9010B	MY60242508	2022.04.29	2023.04.28
Bilog Antenna	SCHWARZBECK	VULB 9168	01447	2022.12.12	2025.12.11
Horn Antenna(18GHz)	SCHWARZBECK	3115	10SL0060	2022.06.02	2025.06.01
Horn Antenna(40 GHz)	A-INFO	LB-180400-KF	J211060273	2022.03.28	2025.03.27
Pre-amplifier(3GHz)	HP	8447D	2727A05655	2022.04.11	2023.04.10
Pre-amplifier(26.5G)	Agilent	8449B	3008A4722	2022.04.12	2023.04.11
Pre-amplifier(40 GHz)	com-mw	LNPA_18-40-01	18050001	2022.06.08	2023.06.07
RE Cable (9K-1G)	N.A	R01	N.A	2022.05.05	2023.05.04
RE Cable (1-26G)	N.A	R02	N.A	2022.05.05	2023.05.04
Temperature & Humidity	KTJ	TA218B	N.A	2022.05.05	2023.05.04
Testing Software	EMC-I_V1.4.0.3_SKET				

RF Connected Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Signal Generator	Keysight	N5182B	MY59100717	2022.04.30	2023.04.29
Signal Analyzer	Keysight	N9010B	MY60242508	2022.04.29	2023.04.28
Temperature & Humidity	KTJ	TA218B	N/A	2022.05.05	2023.05.04
Temperature & Humidity test chamber	AISRY	LX-1000L	171200018	2022.05.10	2023.05.09
Attenuator	eastsheep	90db	N/A	2022.04.29	2023.04.28
Testing Software	MTS 8310_2.0.0.0_MWRF-TEST				



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

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

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of “ * ” marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz



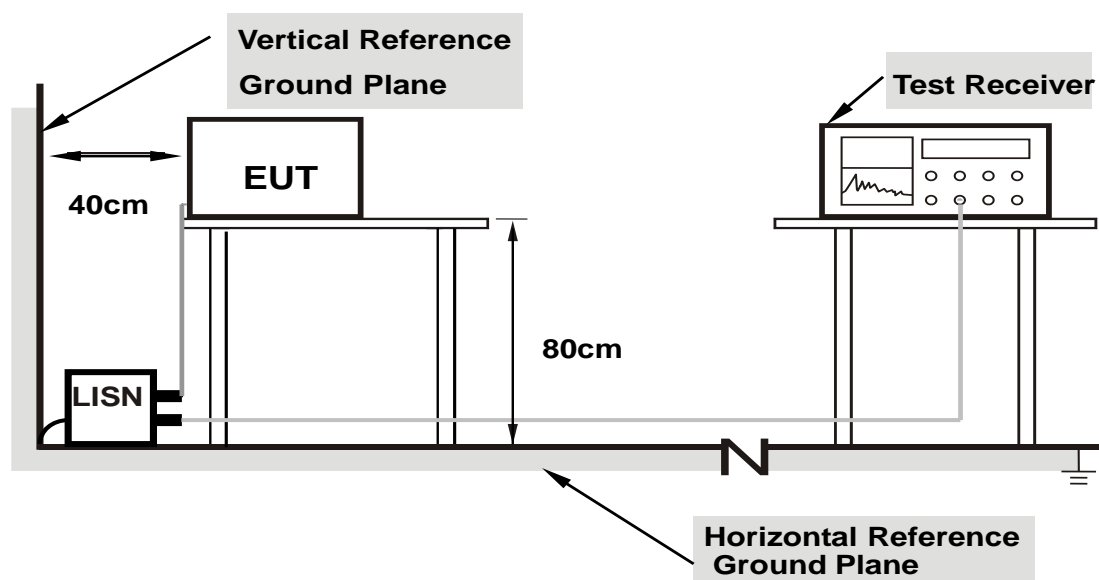
3.1.2 TEST PROCEDURE

- a. The EUT is 0.8 m from the horizontal ground plane and 0.4 m from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments are powered from additional LISN(s). The LISN provides 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN is at least 80 cm from the nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 TEST SETUP



Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes support units.

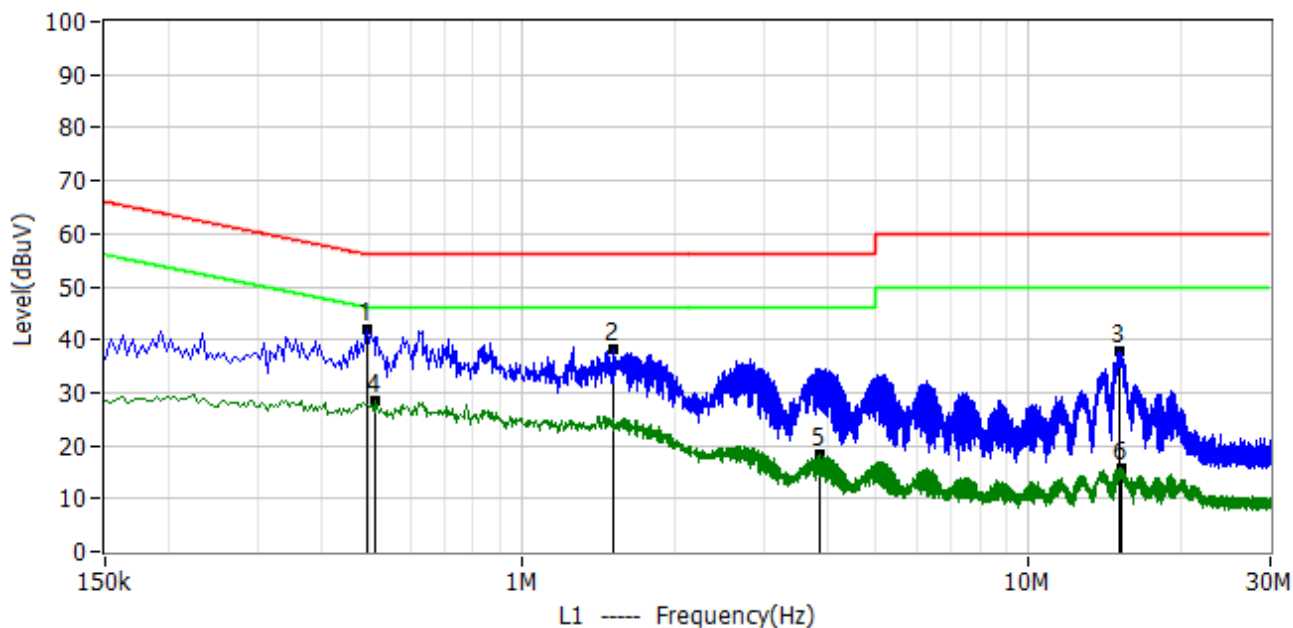
3.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



3.1.6 TEST RESULTS

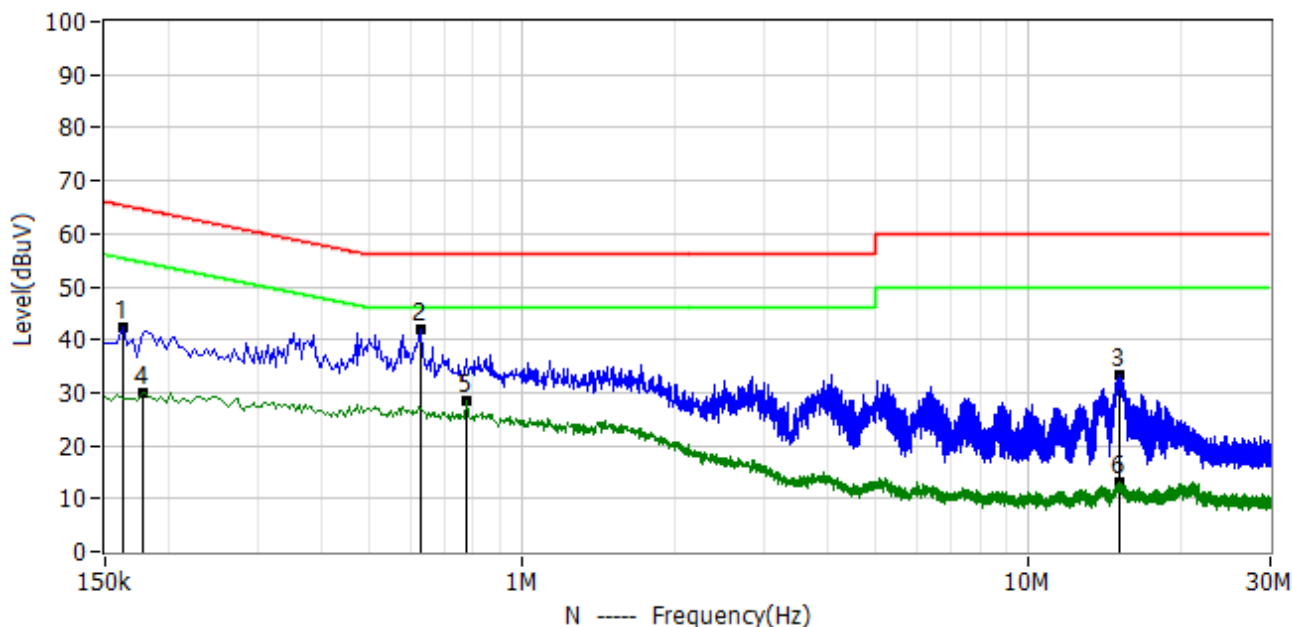
Project: LGT23C004	Test Engineer: Dylan.shi
EUT: Smart Phone	Temperature: 22.7°C
M/N: CP12p	Humidity: 49%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-03-04
Test Mode: TX 5G WIFI	
Note:	



No.	Frequency	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	494.000kHz	31.47	10.58	42.05	56.10	-14.05	PK	L1
2*	1.514MHz	27.46	10.67	38.13	56.00	-17.87	PK	L1
3*	15.138MHz	26.90	11.10	38.00	60.00	-22.00	PK	L1
4*	510.000kHz	17.90	10.58	28.48	46.00	-17.52	AV	L1
5*	3.870MHz	7.61	10.72	18.33	46.00	-27.67	AV	L1
6*	15.206MHz	4.74	11.10	15.84	50.00	-34.16	AV	L1



Project: LGT23C004	Test Engineer: Dylan.shi
EUT: Smart Phone	Temperature: 22.7°C
M/N: CP12p	Humidity: 49%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-03-04
Test Mode: TX 5G WIFI	
Note:	



No.	Frequency	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	162.000kHz	31.82	10.57	42.39	65.36	-22.97	PK	N
2*	630.000kHz	31.33	10.58	41.91	56.00	-14.09	PK	N
3*	15.082MHz	22.09	11.15	33.24	60.00	-26.76	PK	N
4*	178.000kHz	19.51	10.58	30.09	54.58	-24.49	AV	N
5*	778.000kHz	17.90	10.58	28.48	46.00	-17.52	AV	N
6*	15.142MHz	2.00	11.15	13.15	50.00	-36.85	AV	N



3.2 RADIATED EMISSION AND (BANDEDGE) MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

In case the emission fall within the restricted band specified on 15.407(b)7&15.205/209(a), then the limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	68.2	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15E.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

LIMITS OF RESTRICTED FREQUENCY BANDS

FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (GHz)
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	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	Above 38.6
13.36-13.41			

Note: In case the emission radiated emission above 1000MHz fall within the restricted band the restricted frequency bands, the peak limit is 74 dBuV/m.



LIMITS OF EMISSIONS OUTSIDE OF THE FREQUENCY BANDS

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, 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:
 - (i) 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.

Note: $\text{dBuV/m(at 3M)} = \text{EIRP(dBm)} + 95.3$.

Peak Limit = $-27\text{dBm/MHz} + 95.3 = 68.3 \text{ dBuV/m}$.

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak
Start Frequency	1000 MHz(Peak/AV)
Stop Frequency	10th carrier harmonic (Peak/AV)
RB / VB (emission in restricted band)	1 MHz / 1 MHz, AV=1 MHz /3 MHz

For Band edge

Spectrum Parameter	Setting
Detector	Peak
RB / VB (emission in restricted band)	1 MHz / 1 MHz, AV=1 MHz /3 MHz

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	90kHz~110kHz / RB 200Hz for QP
Start ~ Stop Frequency	110kHz~490kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	490kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

- a. The measuring distance at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.
- b. The EUT was placed on the top of a rotating table 0.8 m (above 1GHz is 1.5 m) above the ground at a 3 m anechoic chamber test site. The table was rotated 360 degree to determine the position of the highest radiation.
- c. The height of the equipment shall be 0.8 m (above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. Horizontal and vertical polarization of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and QuasiPeak detector mode will be re-measured.
- e. If the Peak Mode measured value is compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and no additional QP Mode measurement was performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

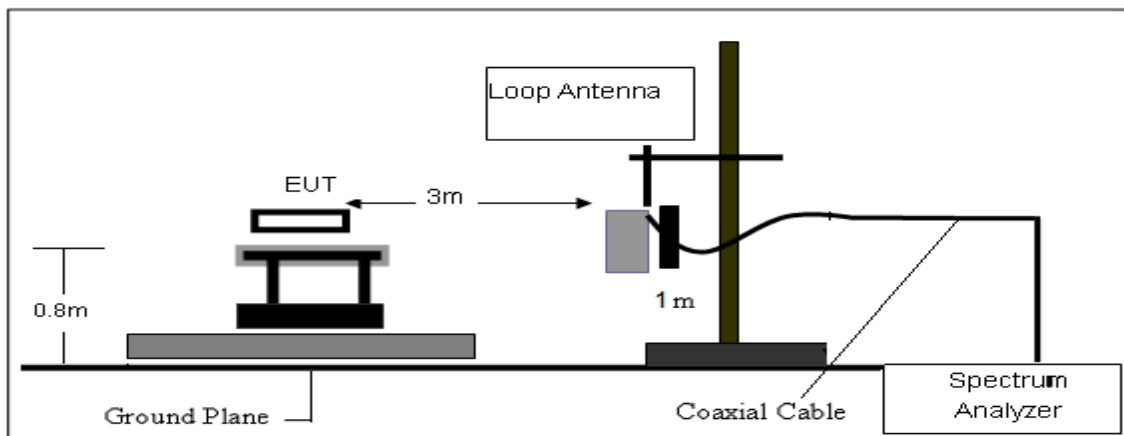
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

3.2.2 DEVIATION FROM TEST STANDARD

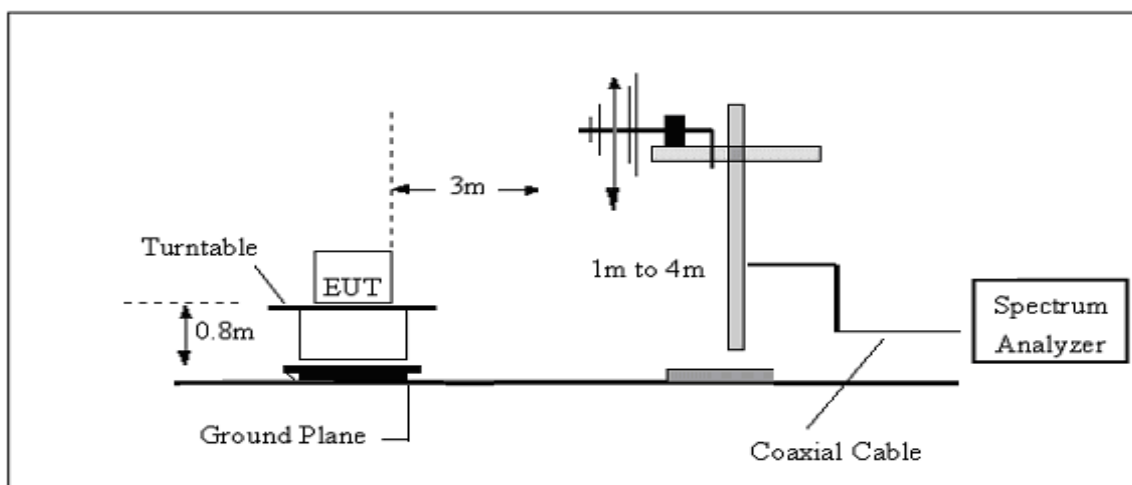
No deviation

3.2.3 TEST SETUP

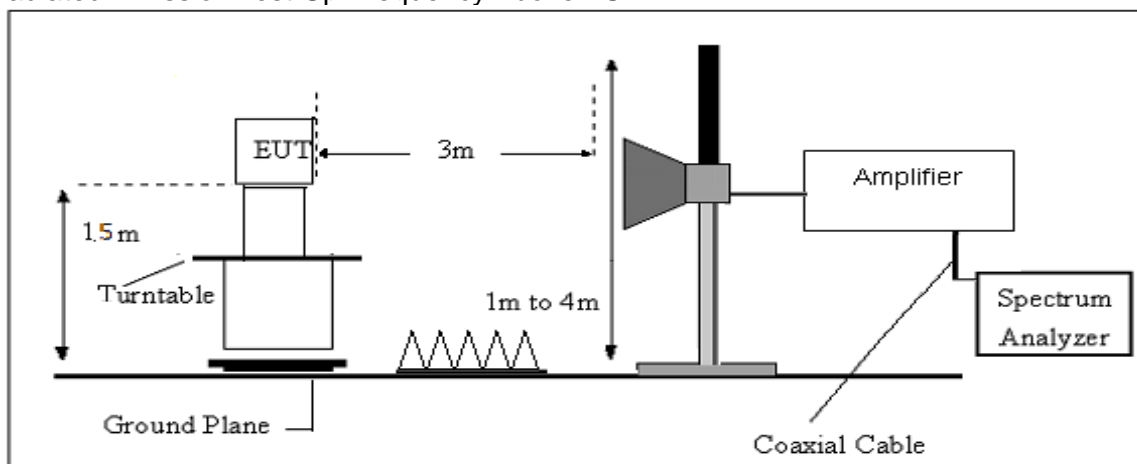
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz





3.2.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where

FS = Field Strength

CL = Cable Attenuation Factor (Cable Loss)

RA = Reading Amplitude

AG = Amplifier Gain

AF = Antenna Factor

For example

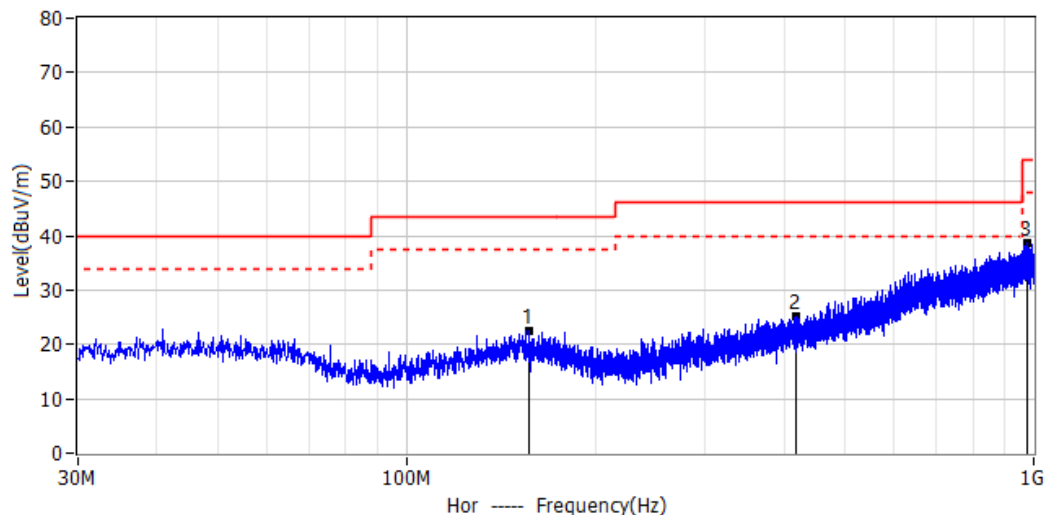
Frequency (MHz)	FS (dB μ V/m)	RA (dB μ V/m)	AF (dB)	CL (dB)	AG (dB)	Factor (dB)
300	40	58.1	12.2	1.6	31.9	-18.1

$$\text{Factor} = \text{AF} + \text{CL} - \text{AG}$$

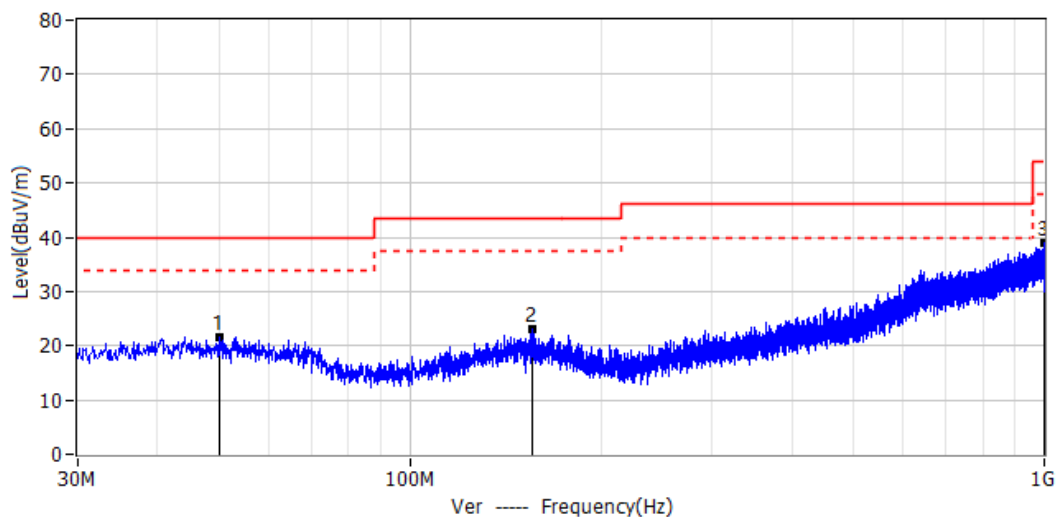


3.2.6 TEST RESULTS

Project: LGT23C004	Test Engineer: Dylan.shi
EUT: Smart Phone	Temperature: 26.9°C
M/N: CP12p	Humidity: 42%RH
Test Voltage: Battery	Test Data: 2023-03-10
Test Mode: TX 5G WIFI	
Note:	



No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	156.706MHz	2.72	19.89	22.61	43.50	-20.89	PK	Hor
2*	417.394MHz	2.05	23.10	25.15	46.00	-20.85	PK	Hor
3*	975.750MHz	4.09	34.45	38.54	54.00	-15.46	PK	Hor



No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	50.006MHz	2.22	19.36	21.58	40.00	-18.42	PK	Ver
2*	155.615MHz	3.26	19.91	23.17	43.50	-20.33	PK	Ver
3*	998.303MHz	4.47	34.56	39.03	54.00	-14.97	PK	Ver



1-18GHz

Project: LGT23C004	Test Engineer: Dylan.shi
EUT: Smart Phone	Temperature: 26.7°C
M/N: CP12p	Humidity: 52%RH
Test Voltage: Battery	Test Data: 2023-03-12
Test Mode: 802.11a 5180	
Note:	

No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	4.787GHz	52.09	-5.98	46.11	74.00	-27.89	PK	Hor
2*	11.393GHz	51.36	1.86	53.22	74.00	-20.78	PK	Hor
3*	17.964GHz	45.64	8.49	54.13	74.00	-19.87	PK	Hor
4*	17.964GHz	35.41	8.49	43.90	54.00	-10.10	AV	Hor
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	4.795GHz	51.72	-5.98	45.74	74.00	-28.26	PK	Ver
2*	8.988GHz	52.95	-1.20	51.75	74.00	-22.25	PK	Ver
3*	17.907GHz	46.52	8.45	54.97	74.00	-19.03	PK	Ver
4*	17.907GHz	37.45	8.45	45.90	54.00	-8.10	AV	Ver

Project: LGT23C004	Test Engineer: Dylan.shi
EUT: Smart Phone	Temperature: 26.7°C
M/N: CP12p	Humidity: 52%RH
Test Voltage: Battery	Test Data: 2023-03-12
Test Mode: 802.11a 5200	
Note:	

No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	4.749GHz	52.44	-5.95	46.49	74.00	-27.51	PK	Hor
2*	8.926GHz	53.42	-1.38	52.04	74.00	-21.96	PK	Hor
3*	17.805GHz	45.85	8.38	54.23	74.00	-19.77	PK	Hor
4*	17.805GHz	36.22	8.38	44.60	54.00	-9.40	AV	Hor
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	4.559GHz	51.58	-5.80	45.78	74.00	-28.22	PK	Ver
2*	11.281GHz	51.17	1.80	52.97	74.00	-21.03	PK	Ver
3*	17.902GHz	46.90	8.45	55.35	74.00	-18.65	PK	Ver
4*	17.902GHz	37.35	8.45	45.80	54.00	-8.20	AV	Ver