



RF TEST REPORT

Product Name: Smartphone

Model Name: A180

FCC ID: 2A9SN-A180

Issued For : INOI Limited

Office 302, Dominion Centre 43-59, Queens Road, East
Wanchai, Hong Kong, 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: LGT23C066RF04

Sample Received Date: Mar. 24, 2023

Date of Test: Mar. 24, 2023 ~ Apr. 17, 2023

Date of Issue: Apr. 17, 2023

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TEST REPORT CERTIFICATION

Applicant INOI Limited
Address Office 302, Dominion Centre 43-59, Queens Road, East Wanchai,
Hong Kong, China

Manufacturer INOI Limited
Address Office 302, Dominion Centre 43-59, Queens Road, East Wanchai,
Hong Kong, China

Product Name Smartphone

Trademark INOI

Model Name A180

Sample Status: Normal

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

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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	11
2.3 TEST SOFTWARE AND POWER LEVEL	12
2.4 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS	13
2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS	14
3 . EMC EMISSION TEST	15
3.1 CONDUCTED EMISSION MEASUREMENT	15
3.2 RADIATED EMISSION AND (BANDEDGE) MEASUREMENT	19
4. POWER SPECTRAL DENSITY TEST	44
4.1 LIMIT	44
4.2 TEST PROCEDURE	44
4.3 DEVIATION FROM STANDARD	44
4.4 TEST SETUP	45
4.5 EUT OPERATION CONDITIONS	45
4.6 TEST RESULTS	45
5. BANDWIDTH MEASUREMENT	46
5.1 EMISSION BANDWIDTH (EBW) 26 BANDWID PROCEDURES / LIMIT	46
5.2 OCCUPIED BANDWIDTH (99%) TEST APPLIED PROCEDURES / LIMIT	47
5.3 MINIMUM EMISSION BANDWIDTH(6 DB) PROCEDURES / LIMIT	48
6. MAXIMUM CONDUCTED OUTPUT POWER	49
6.1 LIMIT	49
6.2 TEST PROCEDURE	49
6.3 DEVIATION FROM STANDARD	49
6.4 TEST SETUP	49
6.5 EUT OPERATION CONDITIONS	49
6.6 TEST RESULTS	49
7. AUTOMATICALLY DISCONTINUE TRANSMISSION	50
7.1 LIMIT OF AUTOMATICALLY DISCONTINUE TRANSMISSION	50
7.2 TEST RESULT OF AUTOMATICALLY DISCONTINUE TRANSMISSION	50
8. ANTENNA REQUIREMENT	51



Table of Contents	Page
8.1 STANDARD REQUIREMENT	51
8.2 EUT ANTENNA	51
APPENDIX I:TEST RESULTS	52
DUTY CYCLE	52
MAXIMUM CONDUCTED OUTPUT POWER	74
-26DB BANDWIDTH	96
OCCUPIED CHANNEL BANDWIDTH	112
MAXIMUM POWER SPECTRAL DENSITY LEVEL	134
-6DB BANDWIDTH	156
APPENDIX II:PHOTOS OF TEST SETUP	162



Revision History

Rev.	Issue Date	Contents
00	Apr. 17, 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	Smartphone	
Trademark	INOI	
Model Name	A180	
Series Model	N/A	
Model Difference	There're have 128 +4GB and 258+8GB two kinds of memory configurations	
Product Description	The EUT is a Smartphone	
	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): 5.260GHz-5.320GHz IEEE 802.11 n(HT40)/ac(VHT40): 5.270GHz-5.310GHz IEEE 802.11ac(VHT80): 5.290GHz
		IEEE 802.11a/n(HT20)/ac(VHT20): 5.500GHz-5.700GHz IEEE 802.11 n(HT40)/ac(VHT40): 5.510GHz-5.670GHz IEEE 802.11ac(VHT80): 5.530GHz-5.610GHz
		IEEE 802.11a/n(HT20)/ac(VHT20): 5.745GHz-5.825GHz IEEE 802.11a/n(HT40)/ac(VHT40): 5.755GHz-5.795GHz IEEE 802.11ac(VHT80): 5.775GHz
	Modulation Type:	802.11a(OFDM): BPSK, QPSK, 16-QAM, 64-QAM 802.11n(OFDM): BPSK, QPSK, 16-QAM, 64-QAM 802.11ac (OFDM): BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
	Antenna Designation:	Please refer to the Note 3.
	Antenna Gain(dBi)	0.77
	More details of EUT technical specification, please refer to the User Manual.	
Test Channel	Please refer to the Note 2.	
Adapter	Model: IN-C01/19 Input: 100-240V, 50/60Hz, 0.25A Output: 5V, 2A	
Battery	Capacity: 5000mAh Rated Voltage: 3.85V	
Hardware Version	J535A_9230MB_MB_D4XEF_V1.3	
Software Version	TP1A.220624.014 release-keys	
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		5.260GHz-5.320GHz	
Channel	Frequency	Channel	Frequency
36	5180	52	5260
38	5190	54	5270
40	5200	56	5280
42	5210	58	5290
44	5220	60	5300
46	5230	62	5310
48	5240	64	5320
5.500GHz-5.720GHz		5.745GHz-5.825GHz	
Channel	Frequency	Channel	Frequency
100	5500	149	5745
102	5510	151	5755
104	5520	153	5765
108	5540	157	5785
110	5550	159	5795
112	5560	161	5805
116	5580	165	5825
118	5590		
120	5600		
124	5620		
126	5630		
128	5640		
132	5660		
134	5670		
136	5680		
140	5700		
142	5710		
144	5720		

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	52	5260	100	5500	149	5745
40	5200	60	5300	116	5580	157	5785
48	5240	64	5320	140	5700	165	5825



Channel List for 802.11n/ac(40MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	54	5270	102	5510	151	5755
46	5230	62	5310	110	5550	159	5795
134	5670						

Channel List for 802.11ac(80MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	58	5290	106	5530	155	5775
122	5610						

3.

Ant	Brand	Model Name	Ant Type	Connector	Gain (dBi)	NOTE
1	INOI	A180	PIFA antenna	N/A	0.77	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 CH52&CH60&CH64	6 Mbps
Mode 3	TX IEEE 802.11a HT20 CH149&CH157&CH165	6 Mbps
Mode 4	TX IEEE 802.11n HT20 CH36&CH40&CH48	MCS 0
Mode 5	TX IEEE 802.11ac VHT20 CH36&CH40&CH48	NSS1 MCS0
Mode 6	TX IEEE 802.11n HT20 CH52&CH60&CH64	MCS 0
Mode 7	TX IEEE 802.11ac VHT20 CH52&CH60&CH64	NSS1 MCS0
Mode 8	TX IEEE 802.11n HT20 CH149&CH157&CH165	MCS 0
Mode 9	TX IEEE 802.11ac VHT20 CH149&CH157&CH165	NSS1 MCS0
Mode 10	TX IEEE 802.11n HT40 CH38&CH46	MCS 0
Mode 11	TX IEEE 802.11ac VHT40 CH38&CH46	NSS1 MCS0
Mode 12	TX IEEE 802.11n HT40 CH54 &CH62	MCS 0
Mode 13	TX IEEE 802.11ac VHT40 CH54 &CH62	NSS1 MCS0
Mode 14	TX IEEE 802.11n HT40 CH151&CH159	MCS 0
Mode 15	TX IEEE 802.11ac VHT40 CH151&CH159	NSS1 MCS0
Mode 16	TX IEEE 802.11ac VHT80 CH42	NSS1 MCS0
Mode 17	TX IEEE 802.11ac VHT80 CH58	NSS1 MCS0
Mode 18	TX IEEE 802.11ac VHT80 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 19: 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 *##83781##*	a	14
	n20	14
	n40	14
	ac20	14
	ac40	14
	ac80	14
Test software Version	Test program: 5G WIFI B2	
engineering mode *##83781##*	a	14
	n20	14
	n40	14
	ac20	14
	ac40	14
	ac80	14
Test software Version	Test program: 5G WIFI B3	
engineering mode *##83781##*	a	14
	n20	14
	n40	14
	ac20	14
	ac40	14
	ac80	14
Test software Version	Test program: 5G WIFI B4	
engineering mode *##83781##*	a	14
	n20	14
	n40	14
	ac20	14
	ac40	14
	ac80	14



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	INOI	IN-C01/19	N/A	Input: 100-240V ~ 50/60Hz 0.25A Output: 5V, 2A
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
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	2023.04.10	2024.04.09
LISN	COM-POWER	LI-115	02032	2023.04.10	2024.04.09
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	2023.04.10	2024.04.09
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 (9kHz-1GHz)	EMtrace	RP01A	02017	2023.04.10	2024.04.09
Pre-amplifier(1-26.5G)	Agilent	8449B	3008A4722	2023.04.10	2024.04.09
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)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	56.00	46.00	CISPR
5.0 -30.0	60.00	50.00	CISPR

0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

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



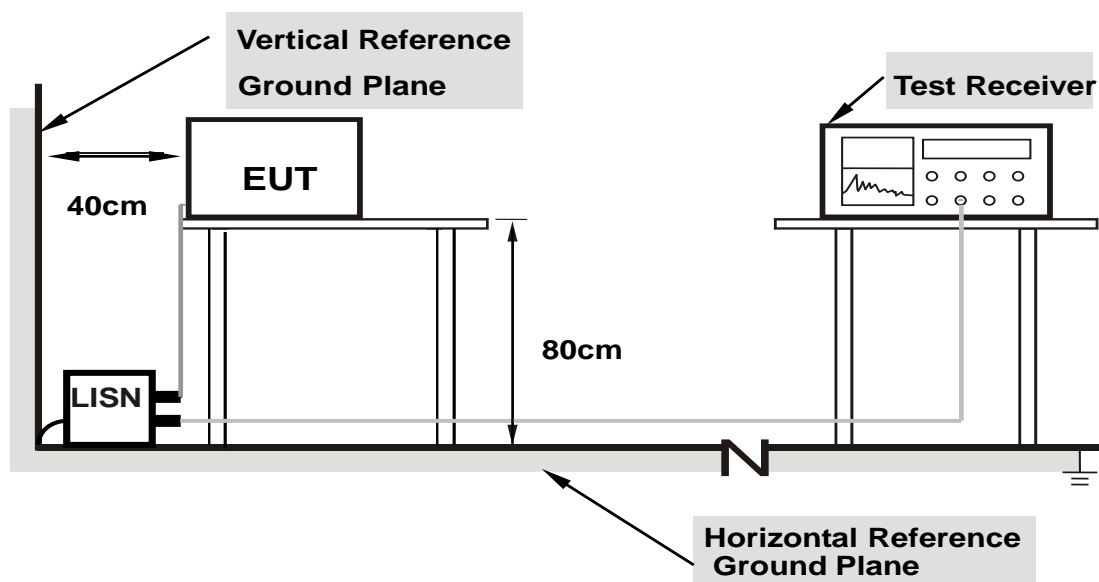
3.1.2 TEST PROCEDURE

- 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.

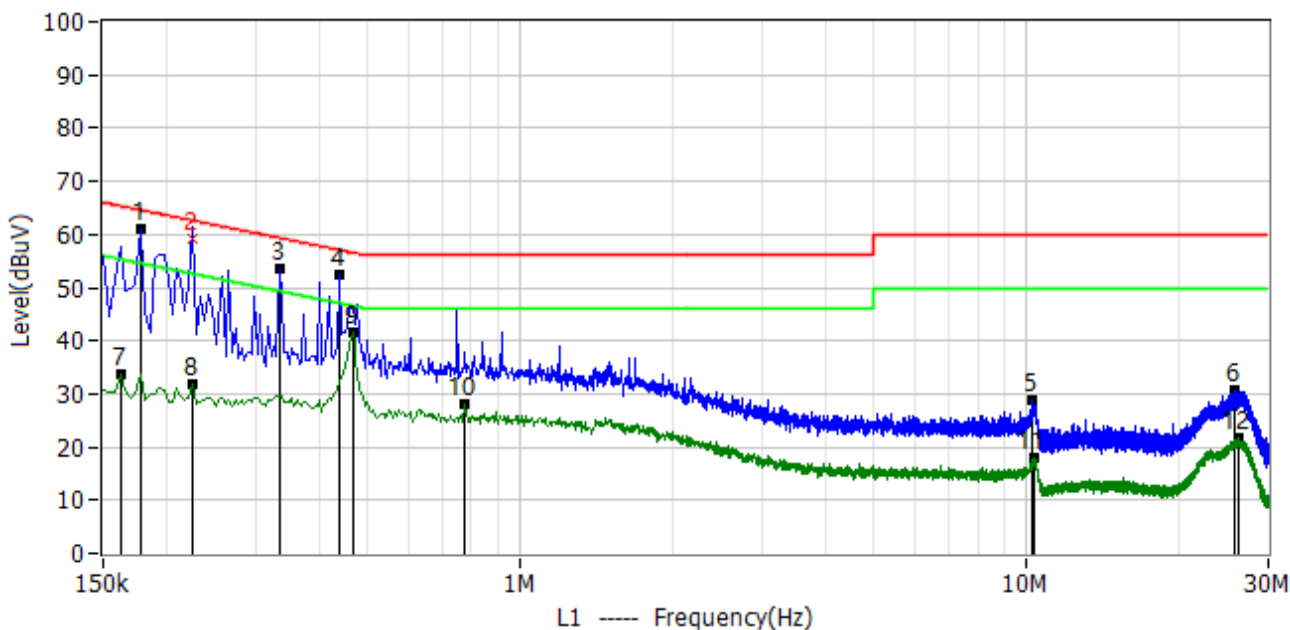
3.1.5 EUT OPERATING CONDITIONS

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

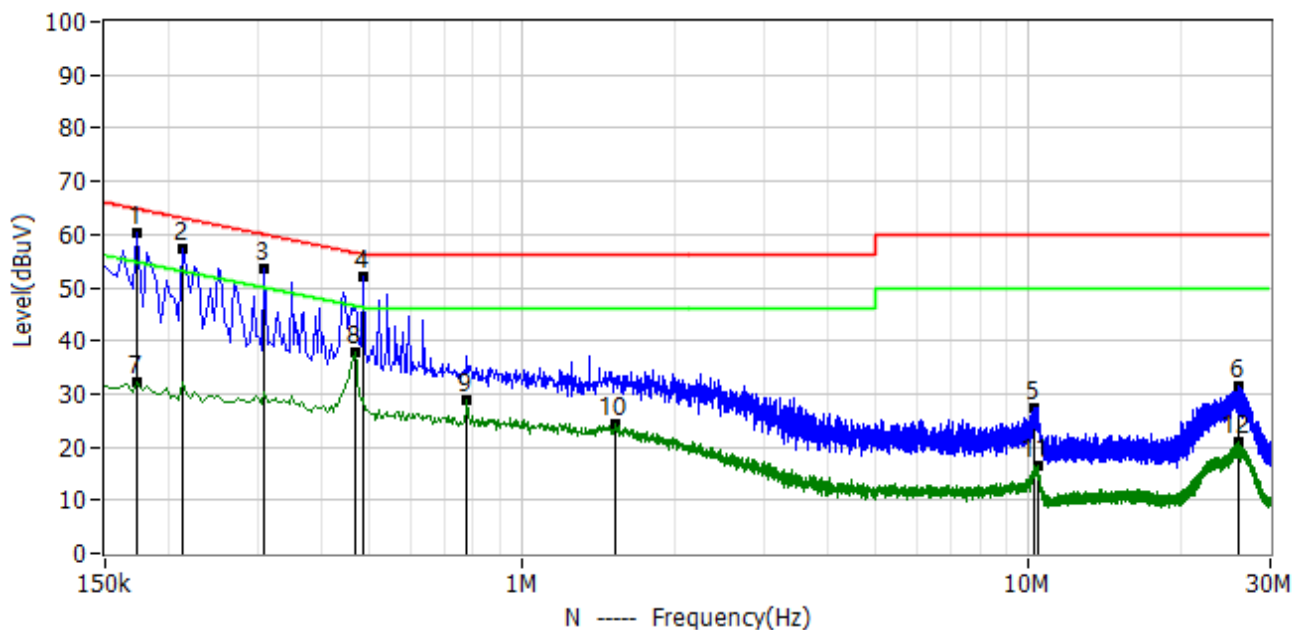
Project: LGT23C066	Test Engineer: Dylan.shi
EUT: Smartphone	Temperature: 26.3°C
M/N: A180	Humidity: 60%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-04-12
Test Mode: 5G Wi-Fi TX	
Note:	



No.	Frequency	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	178.000kHz	50.57	10.58	61.15	64.58	-3.43	QP	L1
2	226.000kHz	48.64	10.60	59.24	62.60	-3.36	QP	L1
3*	334.000kHz	42.96	10.59	53.55	59.35	-5.80	QP	L1
4*	438.000kHz	41.89	10.58	52.47	57.10	-4.63	QP	L1
5*	10.246MHz	17.93	10.86	28.79	60.00	-31.21	QP	L1
6*	25.766MHz	19.48	11.32	30.80	60.00	-29.20	QP	L1
7*	162.000kHz	23.18	10.57	33.75	55.36	-21.61	AV	L1
8*	226.000kHz	21.24	10.60	31.84	52.60	-20.76	AV	L1
9*	466.000kHz	31.16	10.58	41.74	46.58	-4.85	AV	L1
10*	778.000kHz	17.50	10.58	28.08	46.00	-17.92	AV	L1
11*	10.374MHz	7.26	10.86	18.12	50.00	-31.88	AV	L1
12*	26.130MHz	10.28	11.32	21.60	50.00	-28.40	AV	L1



Project: LGT23C066	Test Engineer: Dylan.shi
EUT: Smartphone	Temperature: 26.3°C
M/N: A180	Humidity: 60%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-04-12
Test Mode: 5G Wi-Fi TX	
Note:	



No.	Frequency	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	174.000kHz	49.73	10.58	60.31	64.77	-4.46	QP	N
2*	214.000kHz	46.64	10.60	57.24	63.05	-5.81	QP	N
3*	310.000kHz	43.07	10.59	53.66	59.97	-6.31	QP	N
4*	486.000kHz	41.55	10.58	52.13	56.24	-4.11	QP	N
5*	10.294MHz	16.61	10.88	27.49	60.00	-32.51	QP	N
6*	26.074MHz	19.91	11.45	31.36	60.00	-28.64	QP	N
7*	174.000kHz	21.79	10.58	32.37	54.77	-22.40	AV	N
8*	466.000kHz	27.07	10.58	37.65	46.58	-8.94	AV	N
9*	778.000kHz	18.22	10.58	28.80	46.00	-17.20	AV	N
10*	1.522MHz	13.78	10.67	24.45	46.00	-21.55	AV	N
11*	10.402MHz	5.47	10.88	16.35	50.00	-33.65	AV	N
12*	25.970MHz	9.36	11.45	20.81	50.00	-29.19	AV	N



3.2 RADIATED EMISSION AND (BANDEGE) 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 = $-27\text{dBm/MHz} + 95.3 = 68.3$ 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

- The measuring distance at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.
- 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.
- 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.
- 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.
- 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.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

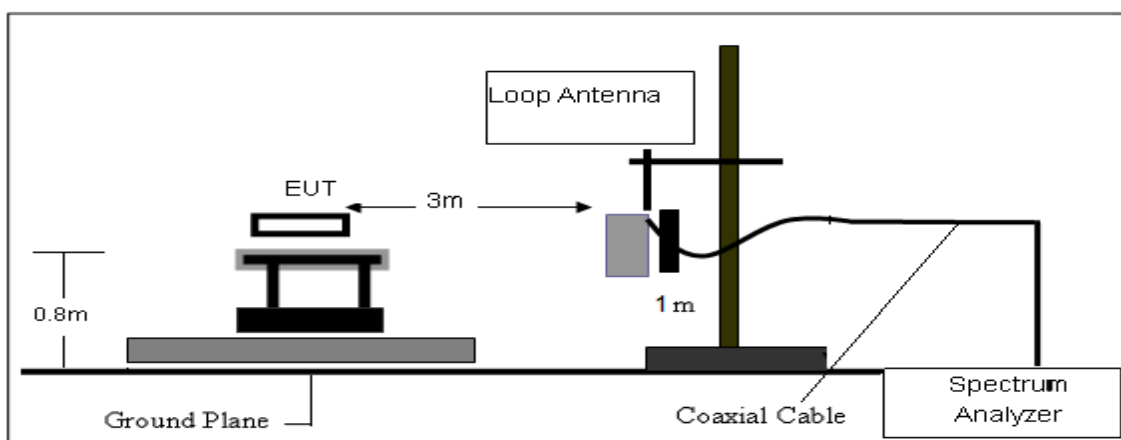
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

3.2.2 DEVIATION FROM TEST STANDARD

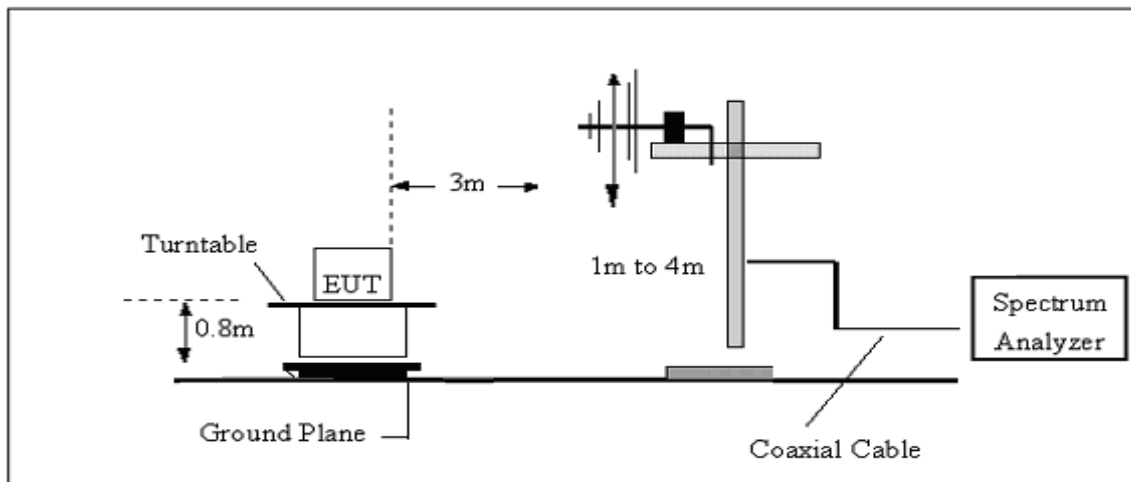
No deviation

3.2.3 TEST SETUP

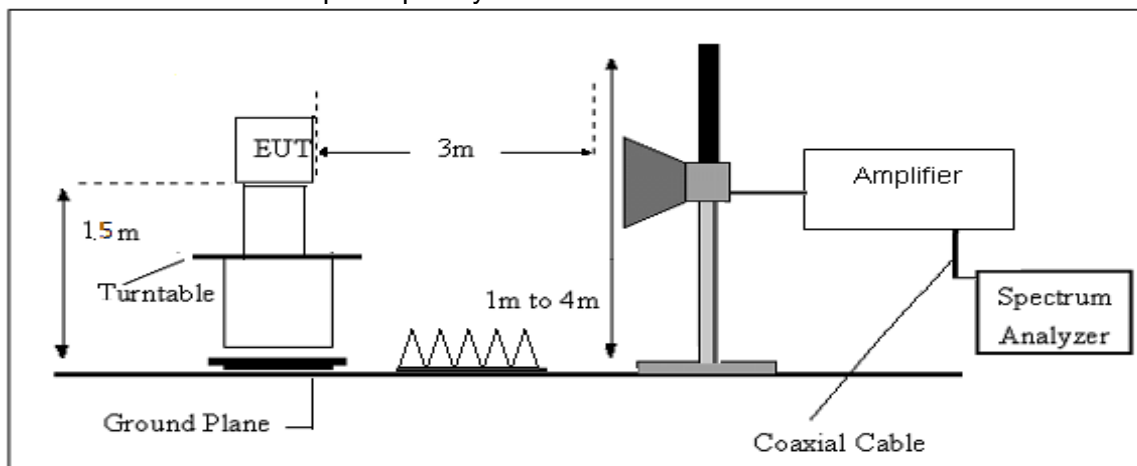
(A) Radiated Emission Test-Up Frequency Below 30MHz



(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

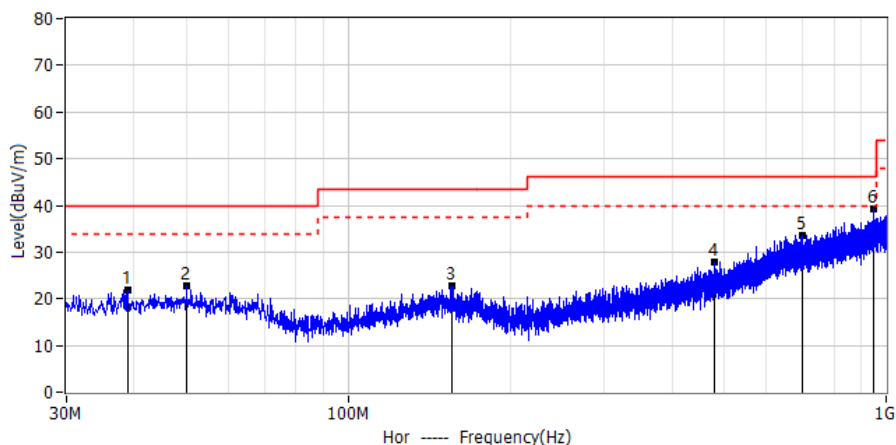
Frequency (MHz)	FS (dB μ V/m)	RA (dB μ V/m)	AF (dB)	CL (dB)	AG (dB)	Factor (dB)
300	40	58.1	12.2	1.6	31.9	-18.1

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

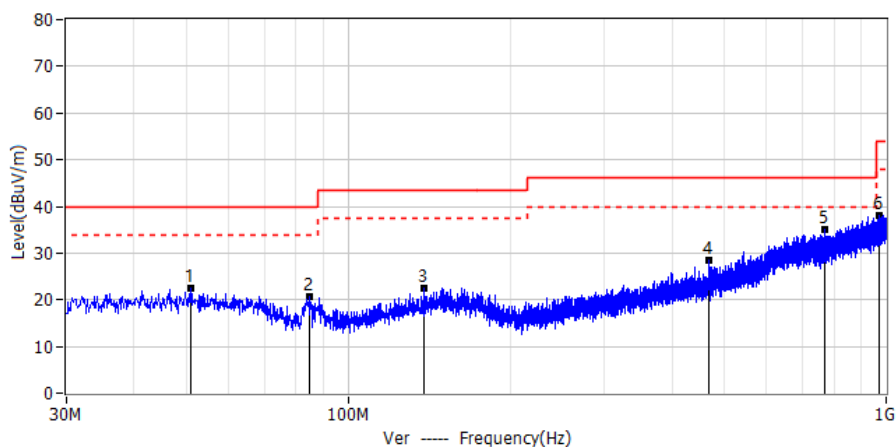


3.2.6 TEST RESULTS

Project: LGT23C066	Test Engineer: Dylan.shi
EUT: Smartphone	Temperature: 23.4°C
M/N: A180	Humidity: 65%RH
Test Voltage: Battery	Test Data: 2023-03-31
Test Mode: 5G Wi-Fi TX	
Note:	



No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	38.973MHz	2.78	19.21	21.99	40.00	-18.01	QP	Hor
2*	50.128MHz	3.46	19.35	22.81	40.00	-17.19	QP	Hor
3*	155.858MHz	3.01	19.90	22.91	43.50	-20.59	QP	Hor
4*	479.474MHz	3.39	24.54	27.93	46.00	-18.07	QP	Hor
5*	697.360MHz	3.77	29.84	33.61	46.00	-12.39	QP	Hor
6*	947.256MHz	5.29	33.89	39.18	46.00	-6.82	QP	Hor



No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	51.098MHz	3.23	19.28	22.51	40.00	-17.49	QP	Ver
2*	84.805MHz	5.56	15.13	20.69	40.00	-19.31	QP	Ver
3*	138.761MHz	3.60	18.98	22.58	43.50	-20.92	QP	Ver
4*	468.925MHz	4.17	24.31	28.48	46.00	-17.52	QP	Ver
5*	769.868MHz	4.26	30.78	35.04	46.00	-10.96	QP	Ver
6*	969.324MHz	3.67	34.33	38.00	54.00	-16.00	QP	Ver



3.2.7 TEST RESULTS(Above 1GHz)

Project: LGT23C066	Test Engineer: Dylan.shi
EUT: Smartphone	Temperature: 25°C
M/N: A180	Humidity: 62%RH
Test Voltage: Battery	Test Data: 2023-04-08
Test Mode: 802.11n20 5180	
Note:	

No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.476GHz	60.93	-20.97	39.96	74.00	-34.04	PK	Hor
2*	2.092GHz	58.13	-15.26	42.87	74.00	-31.13	PK	Hor
3*	3.321GHz	53.77	-8.45	45.32	74.00	-28.68	PK	Hor
4*	4.802GHz	53.88	-5.99	47.89	74.00	-26.11	PK	Hor
5*	9.020GHz	54.71	-1.17	53.54	74.00	-20.46	PK	Hor
6*	17.569GHz	48.78	8.22	57.00	74.00	-17.00	PK	Hor
7*	17.569GHz	38.08	8.22	46.30	54.00	-7.70	AV	Hor
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.342GHz	61.44	-21.84	39.60	74.00	-34.40	PK	Ver
2*	3.231GHz	54.05	-8.42	45.63	74.00	-28.37	PK	Ver
3*	4.793GHz	53.48	-5.98	47.50	74.00	-26.50	PK	Ver
4*	8.941GHz	54.28	-1.34	52.94	74.00	-21.06	PK	Ver
5*	11.391GHz	53.19	1.86	55.05	74.00	-18.95	PK	Ver
6*	17.726GHz	48.80	8.33	57.13	74.00	-16.87	PK	Ver
7*	11.391GHz	42.94	1.86	44.80	54.00	-9.20	AV	Ver
8*	17.726GHz	38.77	8.33	47.10	54.00	-6.90	AV	Ver



Project: LGT23C066	Test Engineer: Dylan.shi
EUT: Smartphone	Temperature: 25°C
M/N: A180	Humidity: 62%RH
Test Voltage: Battery	Test Data: 2023-04-08
Test Mode: 802.11n20 5200	
Note:	

No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.385GHz	60.66	-21.50	39.16	74.00	-34.84	PK	Hor
2*	1.927GHz	58.57	-16.97	41.60	74.00	-32.40	PK	Hor
3*	2.738GHz	54.55	-9.72	44.83	74.00	-29.17	PK	Hor
4*	4.859GHz	53.98	-6.03	47.95	74.00	-26.05	PK	Hor
5*	8.705GHz	55.09	-2.00	53.09	74.00	-20.91	PK	Hor
6*	16.464GHz	50.19	6.98	57.17	74.00	-16.83	PK	Hor
7*	16.464GHz	40.12	6.98	47.10	54.00	-6.90	AV	Hor
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.623GHz	60.46	-19.96	40.50	74.00	-33.50	PK	Ver
2*	2.621GHz	54.43	-10.34	44.09	74.00	-29.91	PK	Ver
3*	3.097GHz	53.80	-8.37	45.43	74.00	-28.57	PK	Ver
4*	5.004GHz	54.36	-6.15	48.21	74.00	-25.79	PK	Ver
5*	9.417GHz	55.76	-1.17	54.59	74.00	-19.41	PK	Ver
6*	17.839GHz	49.53	8.41	57.94	74.00	-16.06	PK	Ver
7*	9.417GHz	44.97	-1.17	43.80	54.00	-10.20	AV	Ver
8*	17.839GHz	39.79	8.41	48.20	54.00	-5.80	AV	Ver



Project: LGT23C066	Test Engineer: Dylan.shi
EUT: Smartphone	Temperature: 25°C
M/N: A180	Humidity: 62%RH
Test Voltage: Battery	Test Data: 2023-04-08
Test Mode: 802.11n20 5240	
Note:	

No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	2.009GHz	57.35	-16.13	41.22	74.00	-32.78	PK	Hor
2*	3.357GHz	54.08	-8.46	45.62	74.00	-28.38	PK	Hor
3*	4.704GHz	52.98	-5.91	47.07	74.00	-26.93	PK	Hor
4*	8.074GHz	55.49	-3.79	51.70	74.00	-22.30	PK	Hor
5*	14.281GHz	50.13	5.90	56.03	74.00	-17.97	PK	Hor
6*	17.911GHz	49.28	8.46	57.74	74.00	-16.26	PK	Hor
7*	14.281GHz	38.80	5.90	44.70	54.00	-9.30	AV	Hor
8*	17.911GHz	38.24	8.46	46.70	54.00	-7.30	AV	Hor
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.389GHz	60.85	-21.47	39.38	74.00	-34.62	PK	Ver
2*	2.358GHz	57.49	-12.48	45.01	74.00	-28.99	PK	Ver
3*	3.144GHz	53.74	-8.39	45.35	74.00	-28.65	PK	Ver
4*	4.842GHz	53.45	-6.02	47.43	74.00	-26.57	PK	Ver
5*	11.338GHz	52.67	1.83	54.50	74.00	-19.50	PK	Ver
6*	14.303GHz	51.02	5.90	56.92	74.00	-17.08	PK	Ver
7*	11.338GHz	43.17	1.83	45.00	54.00	-9.00	AV	Ver
8*	14.303GHz	40.00	5.90	45.90	54.00	-8.10	AV	Ver



Project: LGT23C066	Test Engineer: Dylan.shi
EUT: Smartphone	Temperature: 25°C
M/N: A180	Humidity: 62%RH
Test Voltage: Battery	Test Data: 2023-04-08
Test Mode: 802.11n20 5260	
Note:	

No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.682GHz	59.48	-19.39	40.09	74.00	-33.91	PK	Hor
2*	2.475GHz	55.34	-11.25	44.09	74.00	-29.91	PK	Hor
3*	4.902GHz	53.90	-6.06	47.84	74.00	-26.16	PK	Hor
4*	8.091GHz	55.80	-3.74	52.06	74.00	-21.94	PK	Hor
5*	11.491GHz	52.55	1.92	54.47	74.00	-19.53	PK	Hor
6*	17.779GHz	48.76	8.37	57.13	74.00	-16.87	PK	Hor
7*	11.491GHz	41.68	1.92	43.60	54.00	-10.40	AV	Hor
8*	17.779GHz	39.13	8.37	47.50	54.00	-6.50	AV	Hor
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.427GHz	61.51	-21.23	40.28	74.00	-33.72	PK	Ver
2*	2.492GHz	55.69	-11.07	44.62	74.00	-29.38	PK	Ver
3*	3.350GHz	55.00	-8.46	46.54	74.00	-27.46	PK	Ver
4*	4.370GHz	53.94	-6.30	47.64	74.00	-26.36	PK	Ver
5*	8.960GHz	54.63	-1.28	53.35	74.00	-20.65	PK	Ver
6*	17.949GHz	49.39	8.48	57.87	74.00	-16.13	PK	Ver
7*	17.949GHz	39.52	8.48	48.00	54.00	-6.00	AV	Ver



Project: LGT23C066	Test Engineer: Dylan.shi
EUT: Smartphone	Temperature: 25°C
M/N: A180	Humidity: 62%RH
Test Voltage: Battery	Test Data: 2023-04-08
Test Mode: 802.11n20 5300	
Note:	

No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.421GHz	60.99	-21.27	39.72	74.00	-34.28	PK	Hor
2*	2.545GHz	55.42	-10.75	44.67	74.00	-29.33	PK	Hor
3*	3.369GHz	53.78	-8.46	45.32	74.00	-28.68	PK	Hor
4*	4.840GHz	54.05	-6.02	48.03	74.00	-25.97	PK	Hor
5*	8.943GHz	54.66	-1.33	53.33	74.00	-20.67	PK	Hor
6*	17.958GHz	49.67	8.49	58.16	74.00	-15.84	PK	Hor
7*	17.958GHz	38.81	8.49	47.30	54.00	-6.70	AV	Hor
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	2.275GHz	56.52	-13.35	43.17	74.00	-30.83	PK	Ver
2*	3.015GHz	54.27	-8.34	45.93	74.00	-28.07	PK	Ver
3*	4.774GHz	53.44	-5.97	47.47	74.00	-26.53	PK	Ver
4*	8.761GHz	54.81	-1.85	52.96	74.00	-21.04	PK	Ver
5*	14.424GHz	51.38	5.91	57.29	74.00	-16.71	PK	Ver
6*	17.894GHz	49.19	8.45	57.64	74.00	-16.36	PK	Ver
7*	14.424GHz	40.69	5.91	46.60	54.00	-7.40	AV	Ver
8*	17.894GHz	38.65	8.45	47.10	54.00	-6.90	AV	Ver



Project: LGT23C066	Test Engineer: Dylan.shi
EUT: Smartphone	Temperature: 25°C
M/N: A180	Humidity: 62%RH
Test Voltage: Battery	Test Data: 2023-04-08
Test Mode: 802.11n20 5320	
Note:	

No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.842GHz	57.66	-17.83	39.83	74.00	-34.17	PK	Hor
2*	2.851GHz	54.12	-9.13	44.99	74.00	-29.01	PK	Hor
3*	4.313GHz	52.69	-6.55	46.14	74.00	-27.86	PK	Hor
4*	5.705GHz	56.44	-7.66	48.78	74.00	-25.22	PK	Hor
5*	7.590GHz	56.44	-4.24	52.20	74.00	-21.80	PK	Hor
6*	17.898GHz	48.64	8.45	57.09	74.00	-16.91	PK	Hor
7*	17.898GHz	39.15	8.45	47.60	54.00	-6.40	AV	Hor
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.999GHz	58.77	-16.24	42.53	74.00	-31.47	PK	Ver
2*	3.272GHz	54.79	-8.43	46.36	74.00	-27.64	PK	Ver
3*	4.795GHz	55.42	-5.98	49.44	74.00	-24.56	PK	Ver
4*	8.999GHz	55.82	-1.17	54.65	74.00	-19.35	PK	Ver
5*	11.391GHz	52.91	1.86	54.77	74.00	-19.23	PK	Ver
6*	17.709GHz	49.86	8.32	58.18	74.00	-15.82	PK	Ver
7*	11.391GHz	42.94	1.86	44.80	54.00	-9.20	AV	Ver
8*	17.709GHz	38.58	8.32	46.90	54.00	-7.10	AV	Ver



Project: LGT23C066	Test Engineer: Dylan.shi
EUT: Smartphone	Temperature: 25°C
M/N: A180	Humidity: 62%RH
Test Voltage: Battery	Test Data: 2023-04-08
Test Mode: 802.11ac20 5500	
Note:	

No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.451GHz	60.00	-21.11	38.89	74.00	-35.11	PK	Hor
2*	2.881GHz	53.41	-8.97	44.44	74.00	-29.56	PK	Hor
3*	4.247GHz	53.00	-6.83	46.17	74.00	-27.83	PK	Hor
4*	7.581GHz	56.59	-4.25	52.34	74.00	-21.66	PK	Hor
5*	11.340GHz	52.53	1.83	54.36	74.00	-19.64	PK	Hor
6*	17.828GHz	47.99	8.40	56.39	74.00	-17.61	PK	Hor
7*	11.340GHz	42.47	1.83	44.30	54.00	-9.70	AV	Hor
8*	17.828GHz	38.80	8.40	47.20	54.00	-6.80	AV	Hor
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.852GHz	58.29	-17.73	40.56	74.00	-33.44	PK	Ver
2*	2.983GHz	53.62	-8.43	45.19	74.00	-28.81	PK	Ver
3*	4.831GHz	53.17	-6.01	47.16	74.00	-26.84	PK	Ver
4*	7.585GHz	56.55	-4.24	52.31	74.00	-21.69	PK	Ver
5*	11.196GHz	52.59	1.75	54.34	74.00	-19.66	PK	Ver
6*	17.941GHz	49.76	8.48	58.24	74.00	-15.76	PK	Ver
7*	11.196GHz	41.55	1.75	43.30	54.00	-10.70	AV	Ver
8*	17.941GHz	38.42	8.48	46.90	54.00	-7.10	AV	Ver



Project: LGT23C066	Test Engineer: Dylan.shi
EUT: Smartphone	Temperature: 25°C
M/N: A180	Humidity: 62%RH
Test Voltage: Battery	Test Data: 2023-04-08
Test Mode: 802.11ac20 5580	
Note:	

No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.927GHz	59.22	-16.97	42.25	74.00	-31.75	PK	Hor
2*	2.966GHz	54.23	-8.52	45.71	74.00	-28.29	PK	Hor
3*	5.652GHz	55.41	-7.68	47.73	74.00	-26.27	PK	Hor
4*	8.990GHz	54.00	-1.20	52.80	74.00	-21.20	PK	Hor
5*	11.415GHz	51.89	1.87	53.76	74.00	-20.24	PK	Hor
6*	17.720GHz	48.97	8.32	57.29	74.00	-16.71	PK	Hor
7*	17.720GHz	39.38	8.32	47.70	54.00	-6.30	AV	Hor
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	2.041GHz	56.86	-15.80	41.06	74.00	-32.94	PK	Ver
2*	3.323GHz	53.93	-8.45	45.48	74.00	-28.52	PK	Ver
3*	4.840GHz	52.87	-6.02	46.85	74.00	-27.15	PK	Ver
4*	8.969GHz	53.85	-1.26	52.59	74.00	-21.41	PK	Ver
5*	11.272GHz	52.12	1.79	53.91	74.00	-20.09	PK	Ver
6*	17.979GHz	48.29	8.51	56.80	74.00	-17.20	PK	Ver
7*	17.979GHz	37.89	8.51	46.40	54.00	-7.60	AV	Ver