

On your side



TEST REPORT

EMI Test for FCC Certification of LM-G900UM Model

APPLICANT

LG Electronics USA, Inc.

REPORT NO.

HCT-EM-2004-FI004

DATE OF ISSUE

April 23, 2020

HCT Co., Ltd.

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FCC ID.

ZNFG900UM

Applicant

LG Electronics USA, Inc.

1000 Sylvan Avenue, Englewood Cliffs NJ 07632 United States

Product Name

Multi-band GSM/CDMA/WCDMA/LTE Phone with WLAN, Bluetooth and NFC

Model Name

LM-G900UM

Series Model Name

Refer to the clause 1.1 Description of EUT

Travel Adaptor Information

Model name: MCS-H06WR

Manufacturer: SUNLIN

Date of Test

April 04, 2020 to April 20, 2020

Test Standard Used

FCC CFR 47 PART 15 Subpart B Class B

ANSI C63.4-2014

Test Results

Refer to the present document

Manufacturer

LG Electronics Inc.

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.

Tested by

Ki-Min Lee

(signature)

Technical Manager

Kyoung-Hee Yoon

(signature)

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	April 23, 2020	Initial Release

The device bearing the trade name and model specified above, has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-2014. (See Test Report if any modifications were made for compliance)

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

HCT certifies that no party to application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C 862

This Test Report is not related to the accredited test result by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA(American Association for Laboratory Accreditation), which signed the ILAC-MRA.

CONTENTS

1. GENERAL INFORMATION	5
1.1 Description of EUT	5
1.2 Tested System Details	5
1.3 Cable Description	7
1.4 Noise Suppression Parts on Cable. (I/O Cable)	7
1.5 Test Facility	8
1.6 Calibration of Measuring Instrument	8
1.7 Measurement Uncertainty	8
2. DESCRIPTION OF TEST	9
2.1 Measurement of Conducted Emission	9
2.2 Measurement of Radiated Emission	10
2.3 Configuration of Tested System	12
3. PRELIMINARY TEST	13
3.1 Conducted Emission	13
3.2 Radiated Emission	13
4. CONDUCTED EMISSION AND RADIATED EMISSION TEST SUMMARY	14
4.1 Conducted Emission	14
4.2 Radiated Emission Below 1 GHz	21
4.3 Radiated Emission Above 1 GHz	24
5. CONCLUSION	28
6. APPENDIX A. TEST SETUP PHOTO	29

1. GENERAL INFORMATION

1.1 Description of EUT

FCC ID	ZNFG900UM	
Model Name	LM-G900UM	
Series Model Name	LM-G900UM, LMG900UM, G900UM, LM-G900QM, LMG900QM, G900QM, LM-G901V, LMG901V, G901V	
Product Name	Multi-band GSM/CDMA/WCDMA/LTE Phone with WLAN, Bluetooth and NFC	
Frequency Range	RX Frequency	TX Frequency
CDMA BC0	869.70 MHz to 893.31 MHz	824.70 MHz to 848.31 MHz
CDMA BC1	1 931.25 MHz to 1 988.75 MHz	1 851.25 MHz to 1 908.75 MHz
GSM 850	869.20 MHz to 893.80 MHz	824.20 MHz to 848.80 MHz
GSM 1 900	1 930.20 MHz to 1 989.80 MHz	1 850.20 MHz to 1 909.80 MHz
WCDMA B2	1 932.4 MHz to 1 987.6 MHz	1 852.4 MHz to 1 907.6 MHz
WCDMA B4	2 112.4 MHz to 2 152.6 MHz	1712.4 MHz to 1752.6 MHz
WCDMA B5	871.40 MHz to 891.60 MHz	826.40 MHz to 846.60 MHz
LTE B2	1 930 MHz to 1 990 MHz	1 850 MHz to 1 910 MHz
LTE B4	2 110 MHz to 2 155 MHz	1 710 MHz to 1 755 MHz
LTE B5	869 MHz to 894 MHz	824 MHz to 849 MHz
LTE B7	2 516 MHz to 2 690 MHz	2 496 MHz to 2 570 MHz
LTE B12	729 MHz to 746 MHz	699 MHz to 716 MHz
LTE B13	746 MHz to 756 MHz	777 MHz to 787 MHz
LTE B14	758 MHz to 768 MHz	788 MHz to 798 MHz
LTE B17	734 MHz to 746 MHz	704 MHz to 716 MHz
LTE B25	1 925 MHz to 1 990 MHz	1 850 MHz to 1 915 MHz
LTE B29	717 MHz to 728 MHz	-
LTE B30	2 350 MHz to 2 360 MHz	2 305 MHz to 2 315 MHz
LTE B41	2 496 MHz to 2 690 MHz	2 496 MHz to 2 690 MHz
LTE B46	5 150 MHz to 5 925 MHz	-
LTE B66	2 110 MHz to 2 200 MHz	1 710 MHz to 1 780 MHz
LTE B71	617 MHz to 652 MHz	663 MHz to 698 MHz
Bluetooth	2 402 MHz to 2 480 MHz	2 402 MHz to 2 480 MHz
WiFi 2.4 GHz	2 412 MHz to 2 462 MHz	2 412 MHz to 2 462 MHz
WiFi 5 GHz_UNII 1	5 180 MHz to 5 240 MHz	5 180 MHz to 5 240 MHz
WiFi 5 GHz_UNII 2A	5 260 MHz to 5 320 MHz	5 260 MHz to 5 320 MHz
WiFi 5 GHz_UNII 2C	5 500 MHz to 5 720 MHz	5 500 MHz to 5 720 MHz
WiFi 5 GHz_UNII 3	5 745 MHz to 5 825 MHz	5 745 MHz to 5 825 MHz
NFC	13.56 MHz	13.56 MHz
5G NR n2	1 930 MHz to 1 990 MHz	1 850 MHz to 1 910 MHz
5G NR n5	869 MHz to 894 MHz	824 MHz to 849 MHz
5G NR n25	1 930 MHz to 1 995 MHz	1 850 MHz to 1 915 MHz
5G NR n41	2 496 MHz to 2 690 MHz	2 496 MHz to 2 690 MHz
5G NR n66	2 110 MHz to 2 200 MHz	1 710 MHz to 1 780 MHz
5G NR n71	617 MHz to 652 MHz	663 MHz to 698 MHz

1.2 Tested System Details

All equipment descriptions used in the tested system (including inserted cards) are:

Device Type	Model Name	Serial Number	Manufacturer
EUT	LM-G900UM	-	LG
LED Monitor	27UD88	-	LG
Monitor Adapter	LCAP31	-	LG
DP Cable	CDP2DPMM1MW	-	STARTECH
Wireless Charger	F7U082	-	belkin
Micro USB Cable	-	-	belkin
Wireless Charger TA	DSA-18QFB	-	belkin
Data Cable	EAD64746102	-	LUXSHARE
Earphone	EAB63728252	-	BUJEON
Travel Adaptor	MCS-H06WR	-	SUNLIN
Micro SD Card	SAMSUNG EVO+microSDXC CLASS10 UHS-I (256 GB)	-	SAMSUNG

1.3 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (m)
EUT	USB Type C (Data Cable)	Y	N/A	(P) 1.0
	USB Type C (Display Cable)	N/A	Y	(D) 1.0
	Earphone	N/A	N	(D) 1.2
LED Monitor	DC IN	N	N/A	(P) 1.8
	DP port	N/A	Y	(D) 1.2
Wireless Charger	Micro USB	Y	N/A	(P) 1.3

NOTE. The marked "(D)" means the data cable and "(P)" means the power cable.

1.4 Noise Suppression Parts on Cable (I/O Cable)

Product Name	Port	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
EUT	USB Type C (Data Cable)	N	N/A	Y	Both End
	USB Type C (Display Cable)	N	N/A	Y	Both End
	Earphone	N	N/A	Y	EUT End
LED Monitor	DP port	N	N/A	Y	Both End
Wireless Charger	Micro USB	N	N/A	Y	Both End

1.5 Test Facility

Test site is located at 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, South Korea. Those measurement facilities are constructed in conformance with the requirements of ANSI C63.4-2014. The Normalized site attenuations (30 MHz to 1 GHz) and Site validation (1 GHz to 18 GHz) were performed in accordance with the standard in ANSI C63.4-2014

Measurement Facilities	Designation No.
Radiated Field strength measurement facility 3 m Semi Anechoic chamber	KR0032
Radiated Field strength measurement facility 10 m Semi Anechoic chamber #1	
Radiated Field strength measurement facility 10 m Semi Anechoic chamber #2	

1.6 Calibration of Measuring Instrument

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturers recommendations for utilizing calibration equipment, which is traceable to recognized national standards. Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5:2017

1.7 Measurement Uncertainty

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014. All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95 % level of confidence. The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty
Conducted Emission (0.15 MHz to 30 MHz)	1.8 dB
3 m Radiated Emissions (30 MHz to 1 GHz)	4.8 dB
3 m Radiated Emissions (1 GHz to 18 GHz)	5.4 dB
3 m Radiated Emissions (18 GHz to 40 GHz)	5.7 dB

2. DESCRIPTION OF TEST

2.1 Measurement of Conducted Emission

The test procedure was in accordance with ANSI C63.4-2014, Clause 7.3

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN).

If the EUT is connected to the PC through USB, the AC power-line adapter of the PC is directly connected to a line impedance stabilization network (LISN).

Other support units were connected to the power mains through another LISN. The two LISNs provide 50 Ohm/50uH of coupling impedance for the measuring instrument.

b. Both conducted lines are measured in Quasi-Peak and Average mode, including the worst-case data points for each tested configuration.

c. The frequency range from 150 kHz to 30 MHz was searched.

Conducted Emission Limits

Frequency (MHz)	Resolution Bandwidth (kHz)	Class A		Class B	
		Quasi-Peak (dBμV)	Average (dBμV)	Quasi-Peak (dBμV)	Average (dBμV)
0.15 to 0.5	9	79	66	66 to 56*	56 to 46*
0.5 to 5	9	73	60	56	46
5 to 30	9	73	60	60	50

NOTE. Decreases with the logarithm of the frequency.

2.2 Measurement of Radiated Emission

The test procedure was in accordance with ANSI C63.4-2014, Clause 8.3

- The EUT was placed on the top of a turn table 0.8 meters above the ground at a semi-anechoic chamber.
The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 m away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna height is varied from 1 m to 4 m above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 m to 4 m and the turn table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Quasi-Peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- The test-receiver system was set to Peak and Average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.
- Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response.
(1 GHz to 40 GHz)

Radiated Emission Limits

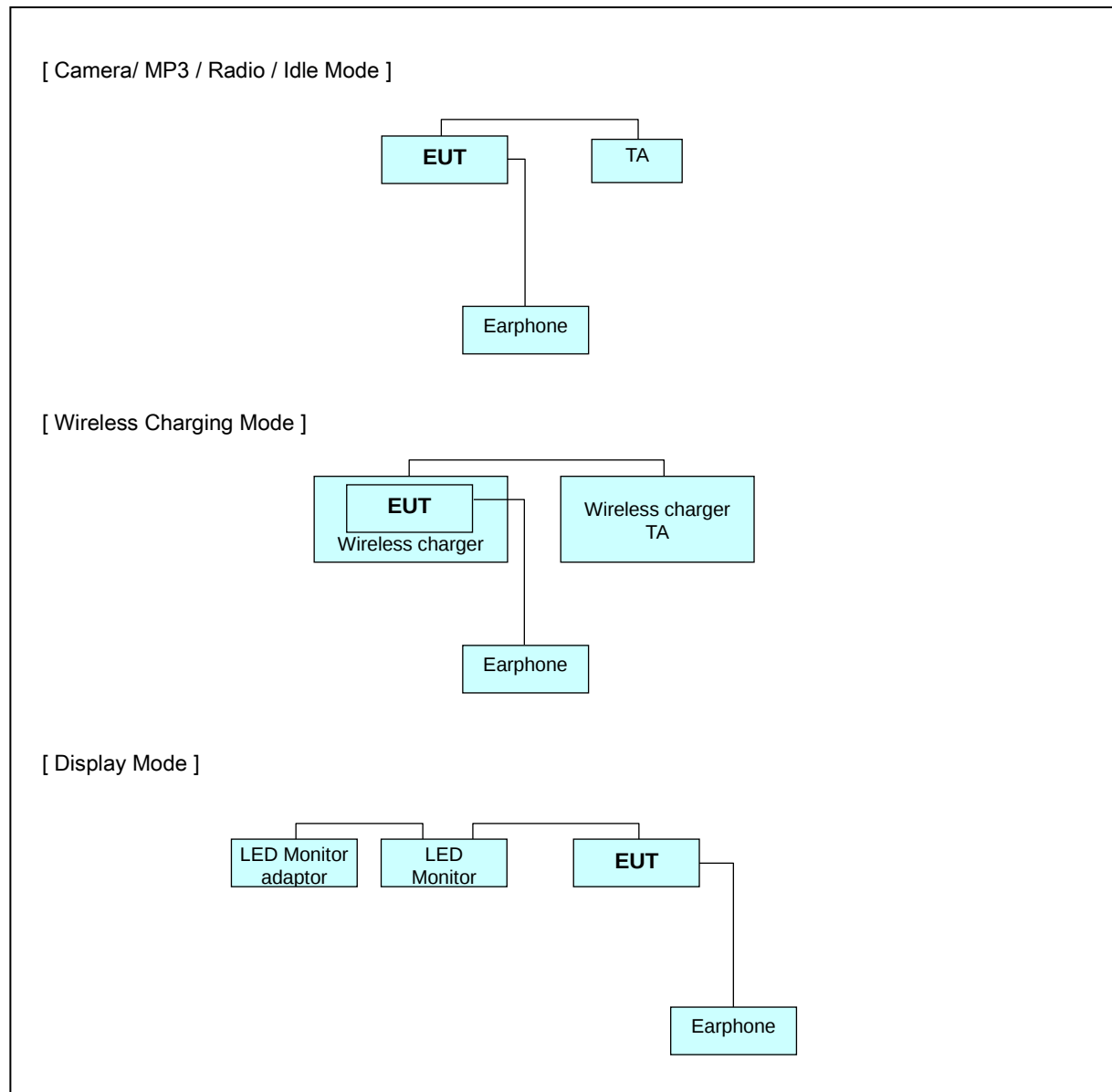
Frequency (MHz)	Class A			Class B		
	Antenna Distance (m)	Field Strength ($\mu\text{V/m}$)	Quasi-Peak (dB $\mu\text{V/m}$)	Antenna Distance (m)	Field Strength ($\mu\text{V/m}$)	Quasi-Peak (dB $\mu\text{V/m}$)
30 to 88	10	90	39.0	3	100	40.0
88 to 216	10	150	43.5	3	150	43.5
216 to 960	10	210	46.4	3	200	46.0
Above 960	10	300	49.5	3	500	54.0
Frequency (MHz)	Antenna Distance (m)	Class A		Class B		
		Peak (dB $\mu\text{V/m}$)	Average (dB $\mu\text{V/m}$)	Peak (dB $\mu\text{V/m}$)	Average (dB $\mu\text{V/m}$)	
Above 1 000	3	80	60	74	54	

2.2.1 Frequency Range of Radiated Measurements

An unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a Radiated Emission limit is specified, up to the frequency shown in the following table

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705 to 108	1 000
108 to 500	2 000
500 to 1 000	5 000
Above 1 000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

2.3 Configuration of Tested System



Non-Conductive Table

Power Line: 120 VAC, 60 Hz

3. PRELIMINARY TEST

3.1 Conducted Emission

It was tested the following operating mode, after connecting all peripheral devices.

Operating Modes: FRONT CAMERA & MP3 mode *

REAR CAMERA & FM RADIO mode

IDLE mode

NOTE. The worst-case emissions are reported. *

3.2 Radiated Emission

It was tested the following operating mode, after connecting all peripheral devices.

Operating Modes: FRONT CAMERA & MP3 mode *

REAR CAMERA & FM RADIO mode

IDLE mode

WIRELESS CHARGING mode *

DISPLAY mode *

NOTE. The worst-case emissions are reported.

4. CONDUCTED EMISSION AND RADIATED EMISSION TEST SUMMARY

4.1 Conducted Emission

4.1.1 Measuring instruments

	Type	Manufacturer	Model Name	Serial Number	Calibration Cycle	Calibration Date
☒	EMI test receiver	Rohde & Schwarz	ESCI	100584	1 year	06.18.2019
☒	LISN	Rohde & Schwarz	ENV216	102245	1 year	09.11.2019
☒	Radio communication analyzer	ANRITSU	MT8820C	6201138643	1 year	08.20.2019
☒	Antenna (for Communication)	Schwarzbeck	USLP9142	VSLP 9142-200	-	-
☒	Software	Rohde & Schwarz	EMC32	-	-	-

4.1.2 Operating Condition

The test results of conducted emission at mains ports provide the following information:

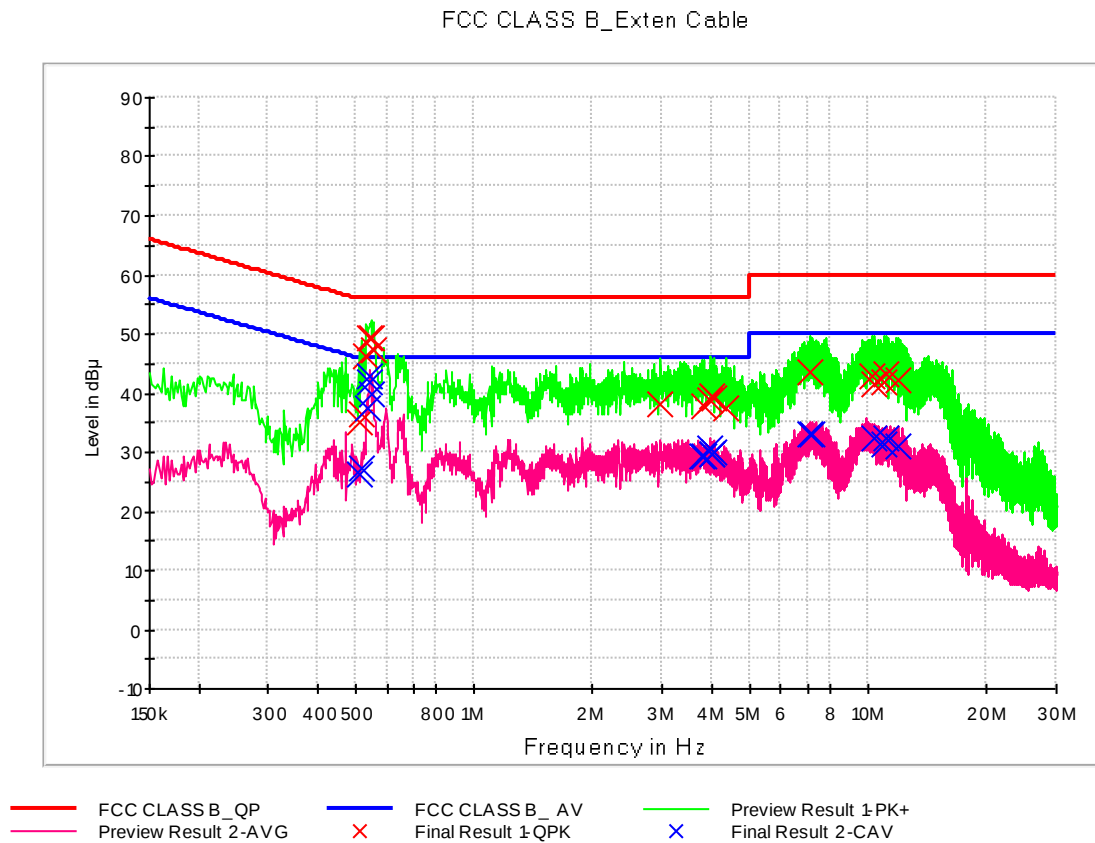
Test Standard Used	FCC CFR 47 PART 15 Subpart B Class B ANSI C63.4-2014
Frequency Range	150 kHz to 30 MHz
Detector	Quasi-Peak, CISPR-Average
Bandwidth	9 kHz (6 dB)
Worst Case of Operating Mode	FRONT CAMERA & MP3 mode
Kind of Test Site	EMI Shielded Room
Temperature	24.5 / 22.7 °C
Relative Humidity	45.4 / 45.2 %
Test Date	April 04 / April 16, 2020

Calculation Formula:

1. Conductor L1 = Hot, Conductor N = Neutral
2. Corr. = LISN Factor + Cable Loss
3. QuasiPeak or CAverage= Receiver Reading + Corr.
4. Margin = Limit – QuasiPeak or CAverage

4.1.3 Measuring Data

Figure 1: Conducted Emission (150 kHz to 30 MHz), Line (L1)



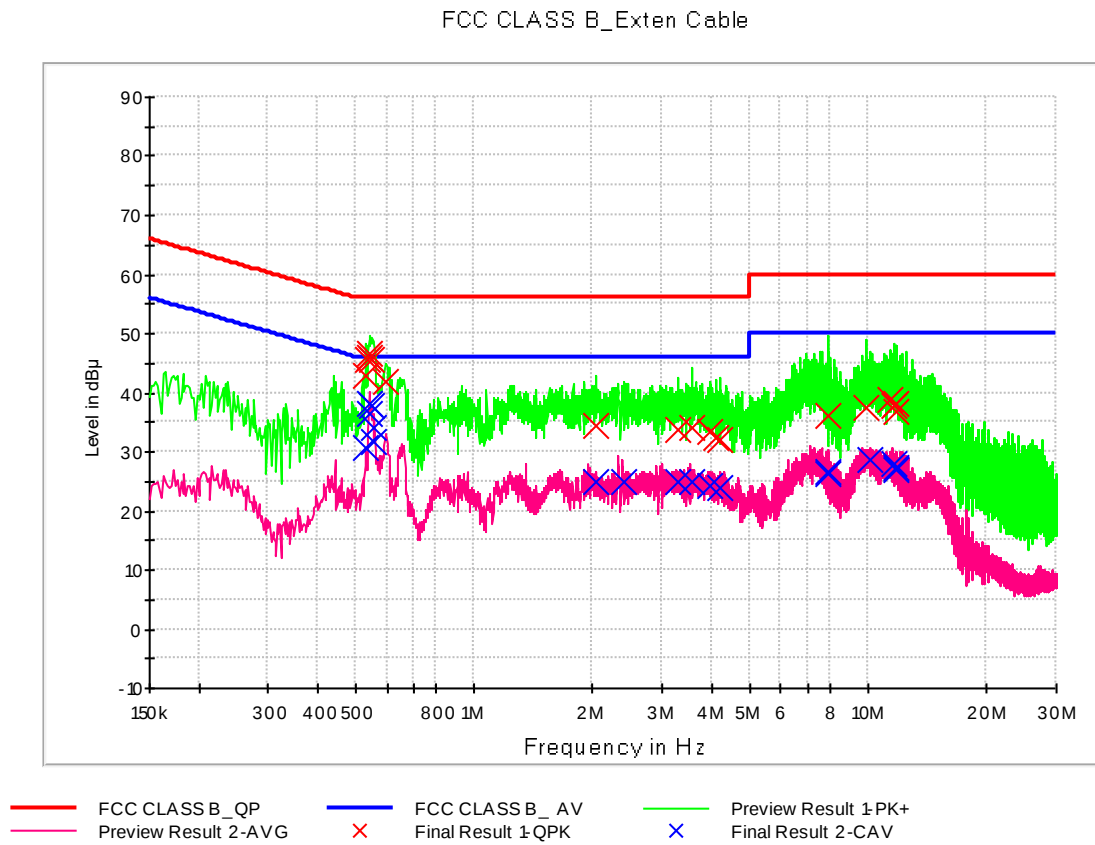
QuasiPeak Final Result, Line (L1)

Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.510000	35.2	9.000	L1	9.8	20.8	56.0
0.516000	36.5	9.000	L1	9.8	19.5	56.0
0.532000	46.2	9.000	L1	9.8	9.8	56.0
0.542000	49.5	9.000	L1	9.8	6.5	56.0
0.548000	49.3	9.000	L1	9.8	6.7	56.0
0.554000	47.4	9.000	L1	9.8	8.6	56.0
2.976000	38.0	9.000	L1	9.9	18.0	56.0
3.820000	37.8	9.000	L1	10.0	18.2	56.0
3.988000	38.7	9.000	L1	10.0	17.3	56.0
3.992000	39.6	9.000	L1	10.0	16.4	56.0
4.052000	39.1	9.000	L1	10.0	16.9	56.0
4.374000	37.4	9.000	L1	10.0	18.6	56.0
7.106000	43.7	9.000	L1	10.1	16.3	60.0
10.228000	42.9	9.000	L1	10.2	17.1	60.0
10.338000	41.4	9.000	L1	10.2	18.6	60.0
11.034000	41.7	9.000	L1	10.3	18.3	60.0
11.116000	43.3	9.000	L1	10.3	16.7	60.0
11.858000	42.1	9.000	L1	10.3	17.9	60.0

CAverage Final Result, Line (L1)

Frequency (MHz)	CAverage (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.510000	26.3	9.000	L1	9.8	19.7	46.0
0.516000	27.2	9.000	L1	9.8	18.8	46.0
0.534000	37.4	9.000	L1	9.8	8.6	46.0
0.540000	41.8	9.000	L1	9.8	4.2	46.0
0.544000	43.0	9.000	L1	9.8	3.0	46.0
0.552000	39.8	9.000	L1	9.8	6.2	46.0
3.784000	29.4	9.000	L1	10.0	16.6	46.0
3.820000	29.3	9.000	L1	10.0	16.7	46.0
3.988000	30.5	9.000	L1	10.0	15.5	46.0
3.992000	29.8	9.000	L1	10.0	16.2	46.0
4.010000	29.6	9.000	L1	10.0	16.4	46.0
4.052000	30.1	9.000	L1	10.0	15.9	46.0
7.144000	33.2	9.000	L1	10.1	16.8	50.0
7.172000	33.0	9.000	L1	10.1	17.0	50.0
10.338000	32.3	9.000	L1	10.2	17.7	50.0
11.034000	31.5	9.000	L1	10.3	18.5	50.0
11.116000	32.3	9.000	L1	10.3	17.7	50.0
11.858000	31.1	9.000	L1	10.3	18.9	50.0

Figure 2: Conducted Emission (150 kHz to 30 MHz), Line (N)



QuasiPeak Final Result, Line (N)

Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.530000	42.7	9.000	N	9.8	13.3	56.0
0.536000	45.5	9.000	N	9.8	10.5	56.0
0.540000	45.8	9.000	N	9.8	10.2	56.0
0.546000	46.6	9.000	N	9.8	9.4	56.0
0.552000	45.7	9.000	N	9.8	10.3	56.0
0.594000	41.9	9.000	N	9.8	14.1	56.0
2.034000	34.5	9.000	N	9.9	21.5	56.0
3.292000	33.8	9.000	N	9.9	22.2	56.0
3.560000	33.9	9.000	N	10.0	22.1	56.0
3.966000	33.5	9.000	N	10.0	22.5	56.0
4.108000	32.2	9.000	N	10.0	23.8	56.0
4.202000	32.1	9.000	N	10.0	23.9	56.0
7.874000	36.2	9.000	N	10.2	23.8	60.0
9.928000	37.6	9.000	N	10.2	22.4	60.0
11.430000	38.7	9.000	N	10.3	21.3	60.0
11.694000	37.9	9.000	N	10.3	22.1	60.0
11.786000	36.7	9.000	N	10.3	23.3	60.0
11.808000	38.1	9.000	N	10.3	21.9	60.0

CAverage Final Result, Line (N)

Frequency (MHz)	CAverage (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.530000	30.7	9.000	N	9.8	15.3	46.0
0.540000	36.5	9.000	N	9.8	9.5	46.0
0.544000	38.2	9.000	N	9.8	7.8	46.0
0.550000	37.6	9.000	N	9.8	8.4	46.0
0.554000	33.9	9.000	N	9.8	12.1	46.0
0.558000	31.7	9.000	N	9.8	14.3	46.0
2.034000	24.8	9.000	N	9.9	21.2	46.0
2.392000	25.1	9.000	N	9.9	20.9	46.0
3.292000	24.8	9.000	N	9.9	21.2	46.0
3.560000	24.9	9.000	N	10.0	21.1	46.0
3.966000	24.1	9.000	N	10.0	21.9	46.0
4.202000	23.8	9.000	N	10.0	22.2	46.0
7.874000	26.7	9.000	N	10.2	23.3	50.0
7.896000	26.4	9.000	N	10.2	23.6	50.0
10.164000	28.8	9.000	N	10.3	21.2	50.0
11.694000	27.9	9.000	N	10.3	22.1	50.0
11.786000	27.1	9.000	N	10.3	22.9	50.0
11.808000	27.4	9.000	N	10.3	22.6	50.0

4.2 Radiated Emission Below 1 GHz

4.2.1 Measuring instruments

	Type	Manufacturer	Model Name	Serial Number	Calibration Cycle	Calibration Date
☒	EMI test receiver	Rohde & Schwarz	ESU40	100524	1 year	05.17.2019
☒	Bi-Log antenna	Schwarzbeck	VULB 9168	255	2 year	03.26.2019
☒	Antenna master	INNCO Systems	MA4640-XP-ET	-	N/A	-
☒	Antenna master controller	INNCO Systems	CO3000	CO3000/870/ 35990515/L	N/A	-
☒	Turn table	INNCO Systems	1060	-	N/A	-
☒	Turn table controller	INNCO Systems	CO2000	CO2000/095/ 7590304/L	N/A	-
☒	Radio communication analyzer	ANRITSU	MT8820C	6201138643	1 year	08.20.2019
☒	Antenna (for Communication)	Schwarzbeck	USLP9142	VSLP 9142-200	-	-
☒	Radio communication test station	ANRITSU	MT8000A	6262036812	1 year	01.06.2020
☒	Radio communication analyzer	ANRITSU	MT8821C	6262044720	1 year	01.06.2020
☒	Antenna (for Communication)	Schwarzbeck	USLP9142	VSLP 9142-201	-	-
☒	Software	Rohde & Schwarz	EMC32	-	-	-

4.2.2 Operating Condition

The test results of radiated emission provide the following information:

Used Test Standard	FCC CFR 47 PART 15 Subpart B Class B ANSI C63.4-2014
Frequency Range	30 MHz to 1 000 MHz
Detector	Quasi-Peak
Bandwidth	120 kHz (6 dB)
Worst Case of Operating Mode	FRONT CAMERA & MP3 mode DISPLAY mode WIRELESS CHARGING mode
Kind of Test Site	3 m semi anechoic chamber
Temperature	25.5 / 28.5 / 25.9 / 23.1 / 22.3 °C
Relative Humidity	48.9 / 46.9 / 45.1 / 42.6 / 44.6 %
Test Date	April 07 / April 09 / April 14 / April 16 / April 20, 2020

- Calculation Formula:

1. POL. H = Horizontal, POL. V = Vertical
2. QuasiPeak = Reading (Receiver Reading) + Corr.
3. Corr. (Correction Factor) = Antenna Factor + Cable Loss
4. Margin = Limit - QuasiPeak

4.2.3 Measuring Data

FRONT CAMERA & MP3 mode

Frequency (MHz)	Quasi Peak (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
40.771200	21.9	100.0	V	35.0	19.0	18.1	40.0
82.530200	15.6	174.9	H	95.0	15.4	24.4	40.0
114.484000	16.3	225.3	V	331.0	16.8	27.2	43.5
150.366400	20.1	274.8	V	17.0	19.5	23.5	43.5
247.911200	17.2	100.0	V	48.0	18.7	28.8	46.0
928.370400	31.9	174.9	V	319.0	31.8	14.1	46.0

DISPLAY mode

Frequency (MHz)	Quasi Peak (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
41.445400	25.3	100.0	V	334.0	19.1	14.7	40.0
91.038600	27.0	175.0	H	306.0	14.3	16.5	43.5
172.213600	38.4	174.9	H	88.0	18.9	5.1	43.5
189.544000	39.1	125.2	H	319.0	17.5	4.4	43.5
302.815400	33.9	100.0	H	307.0	20.6	12.1	46.0
410.526400	31.4	100.0	H	92.0	23.1	14.6	46.0

WIRELESS CHARGING mode

Frequency (MHz)	Quasi Peak (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
53.379600	24.5	100.0	V	60.0	19.7	15.5	40.0
62.494600	23.7	100.0	V	35.0	19.0	16.3	40.0
91.270400	27.5	208.0	H	108.0	14.3	16.0	43.5
160.024200	29.5	100.0	V	286.0	19.8	14.0	43.5
213.366200	27.0	100.0	V	270.0	17.2	16.5	43.5
910.240600	31.7	307.7	H	26.0	31.5	14.3	46.0

4.3 Radiated Emission Above 1 GHz

4.3.1 Measuring instruments

	Type	Manufacturer	Model Name	Serial Number	Calibration Cycle	Calibration Date
☒	EMI test receiver	Rohde & Schwarz	ESU40	100524	1 year	05.17.2019
☒	Antenna master	INNCO Systems	MA4640-XP-ET	-	N/A	-
☒	Antenna master controller	INNCO Systems	CO3000	CO3000/870/ 35990515/L	N/A	-
☒	Turn table	INNCO Systems	1060	-	N/A	-
☒	Turn table controller	INNCO Systems	CO2000	CO2000/095/ 7590304/L	N/A	-
☒	Low noise amplifier	TESTEK	TK-PA18H	170034-L	1 year	03.03.2020
☒	Low noise amplifier	TESTEK	TK-PA1840H	170030-L	1 year	02.13.2020
☒	Horn antenna	Schwarzbeck	BBHA 9120D	01836	1 year	07.19.2019
☒	Horn antenna	Schwarzbeck	BBHA 9170	BBHA9170#786	1 year	12.03.2019
☒	Radio communication analyzer	ANRITSU	MT8820C	6201138643	1 year	08.20.2019
☒	Antenna (for Communication)	Schwarzbeck	USLP9142	VSLP 9142-200	-	-
☐	Radio communication test station	ANRITSU	MT8000A	6262036812	1 year	01.06.2020
☐	Radio communication analyzer	ANRITSU	MT8821C	6262044720	1 year	01.06.2020
☐	Antenna (for Communication)	Schwarzbeck	USLP9142	VSLP 9142-201	-	-
☒	Software	Rohde & Schwarz	EMC32	-	-	-

4.3.2 Operating Condition

The test results of radiated emission provide the following information:

Used Test Standard	FCC CFR 47 PART 15 Subpart B Class B ANSI C63.4-2014
Detector	Peak mode: Peak (RBW: 1 MHz, VBW: 3 MHz) CISPR-Average mode: Peak (RBW: 1 MHz, VBW: 10 Hz)
Highest Frequency	5 825 MHz
Tested Frequency Range	1 GHz to 30 GHz
Worst Case of Operating Mode	FRONT CAMERA & MP3 mode DISPLAY mode WIRELESS CHARGING mode
Kind of Test Site	3 m semi anechoic chamber
Temperature	27.8 / 28.5 / 25.9 / 23.1 °C
Relative Humidity	45.2 / 46.9 / 45.1 / 42.6 %
Test Date	April 08 / April 09 / April 14 / April 16, 2020

- Calculation Formula:

1. POL. H = Horizontal, POL. V = Vertical
2. Peak or CAverage = Reading (Receiver Reading) + Corr.
3. Corr. (Correction Factor) = Antenna Factor+ Cable Loss –Amplifier Gain
4. Margin = Limit - Peak or CAverage

4.3.3 Measuring Data

FRONT CAMERA & MP3 mode

Frequency (MHz)	Peak (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1419.740000	31.0	100.0	V	0.0	-28.2	43.0	74.0
2139.045000	30.9	229.5	H	327.0	-26.0	43.1	74.0
2776.715000	32.5	150.0	V	84.0	-23.4	41.5	74.0
4084.190000	34.8	276.4	V	3.0	-20.3	39.2	74.0
7143.135000	40.8	322.6	H	330.0	-12.9	33.2	74.0
11226.925000	45.4	140.8	H	0.0	-4.9	28.6	74.0

Frequency (MHz)	CAverage (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1419.740000	18.0	100.0	V	0.0	-28.2	36.0	54.0
2139.045000	18.2	229.5	H	327.0	-26.0	35.8	54.0
2776.715000	19.9	150.0	V	84.0	-23.4	34.2	54.0
4084.190000	21.8	276.4	V	3.0	-20.3	32.2	54.0
7143.135000	27.4	322.6	H	330.0	-12.9	26.6	54.0
11226.925000	32.8	140.8	H	0.0	-4.9	21.2	54.0

DISPLAY mode

Frequency (MHz)	Peak (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1333.775000	41.3	199.4	V	232.0	-28.4	32.7	74.0
1861.715000	36.0	199.6	H	268.0	-26.9	38.0	74.0
2413.730000	41.1	111.4	H	152.0	-24.5	32.9	74.0
5400.005000	48.4	249.8	H	159.0	-17.3	25.6	74.0
14627.710000	47.2	149.6	V	121.0	-1.1	26.8	74.0
17958.625000	55.7	249.9	H	148.0	9.0	18.3	74.0

Frequency (MHz)	CAverage (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1333.775000	27.8	199.4	V	232.0	-28.4	26.2	54.0
1861.715000	23.0	199.6	H	268.0	-26.9	31.0	54.0
2413.730000	28.4	111.4	H	152.0	-24.5	25.6	54.0
5400.005000	45.8	249.8	H	159.0	-17.3	8.2	54.0
14627.710000	34.3	149.6	V	121.0	-1.1	19.7	54.0
17958.625000	43.3	249.9	H	148.0	9.0	10.7	54.0

WIRELESS CHARGING mode

Frequency (MHz)	Peak (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1398.570000	31.3	125.8	V	246.0	-28.2	42.7	74.0
2014.285000	31.7	150.0	V	4.0	-26.5	42.4	74.0
4008.355000	34.7	215.4	V	90.0	-20.4	39.3	74.0
7321.015000	41.0	231.4	V	135.0	-12.5	33.0	74.0
11310.480000	45.7	100.0	V	154.0	-4.7	28.3	74.0
14219.125000	47.2	100.0	V	154.0	-1.7	26.8	74.0

Frequency (MHz)	CAverage (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1398.570000	18.5	125.8	V	246.0	-28.2	35.5	54.0
2014.285000	18.8	150.0	V	4.0	-26.5	35.2	54.0
4008.355000	22.4	215.4	V	90.0	-20.4	31.6	54.0
7321.015000	28.0	231.4	V	135.0	-12.5	26.0	54.0
11310.480000	33.0	100.0	V	154.0	-4.7	21.0	54.0
14219.125000	34.3	100.0	V	154.0	-1.7	19.7	54.0

5. CONCLUSION

The data collected shows that the **Product Name: Multi-band GSM/CDMA/WCDMA/LTE Phone with WLAN, Bluetooth and NFC and Model: LM-G900UM** complies with §15.107 and §15.109 of the FCC rules.

6. APPENDIX A. TEST SETUP PHOTO

Please refer to Appendix. A and test setup photo file no. as follows;

File No.	Date of Issue	Description
HCT-EM-2004-FI004-P	April 23, 2020	Initial Release

End of report