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**HCT**

# TEST REPORT

EMI Test for FCC Certification of LM-G900TM Model

APPLICANT

LG Electronics USA, Inc.

REPORT NO.

HCT-EM-2007-FC003-R1

DATE OF ISSUE

July 31, 2020

**Tested by**

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(signature)

**Technical Manager**

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# TEST REPORT

EMI Test for  
FCC Certification

REPORT NO.  
HCT-EM-2007-FC003-R1

DATE OF ISSUE  
July 31, 2020

FCC ID.  
ZNFG900TM

Applicant	<b>LG Electronics USA, Inc.</b> 111 Sylvan Avenue, North Building , Englewood Cliffs NJ 07632 United States
Product Name	Multi-band CDMA/GSM/EDGE/WCDMA/LTE/5G NR Phone with WLAN, BT and RFID
Model Name	LM-G900TM
Series Model Name	Refer to the clause 1.1 Description of EUT
Travel Adaptor Information	Model name: MCS-H06WA Manufacturer: AOHA1
Date of Test	May 25, 2020 to July 07, 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.

This test results were applied only to the test methods required by the standard

## REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	July 08, 2020	Initial Release
1	July 31, 2020	Revised the Frequency Range

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), which signed the ILAC-MRA.

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## 1. GENERAL INFORMATION

### 1.1 Description of EUT

<b>FCC ID</b>	ZNFG900TM	
<b>Model Name</b>	LM-G900TM	
<b>Series Model Name</b>	LMG900TM, G900TM	
<b>Product Name</b>	Multi-band CDMA/GSM/EDGE/WCDMA/LTE/5G NR Phone with WLAN, BT and RFID	
<b>Frequency Range</b>	<b>RX Frequency</b>	<b>TX Frequency</b>
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
CDMA BC10	862.00 MHz to 894.00 MHz	817.90 MHz to 823.10 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 B12	729 MHz to 746 MHz	699 MHz to 716 MHz
LTE B13	746 MHz to 756 MHz	777 MHz to 787 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 B26	859 MHz to 894 MHz	814 MHz to 849 MHz
LTE B41	2 496 MHz to 2 690 MHz	2 496 MHz to 2 690 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 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-G900TM	-	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
Dual Screen Cover	LM-G906N	-	LG
Dual Screen Gender	EBX64329001	-	CRESYN
Data Cable	EAD64746102	-	LUXSHARE
Earphone	EAB64468445	-	BUJEON
Travel Adaptor	MCS-H06WA	-	AOHAI
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
Dual Screen Cover	Pogo Gender	N/A	N	(D) 0.09

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
Dual Screen Cover	Pogo Gender	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

- a. 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.
- b. The EUT was set 3 m away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. 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.
- d. 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.
- e. 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.
- f. 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.
- g. 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

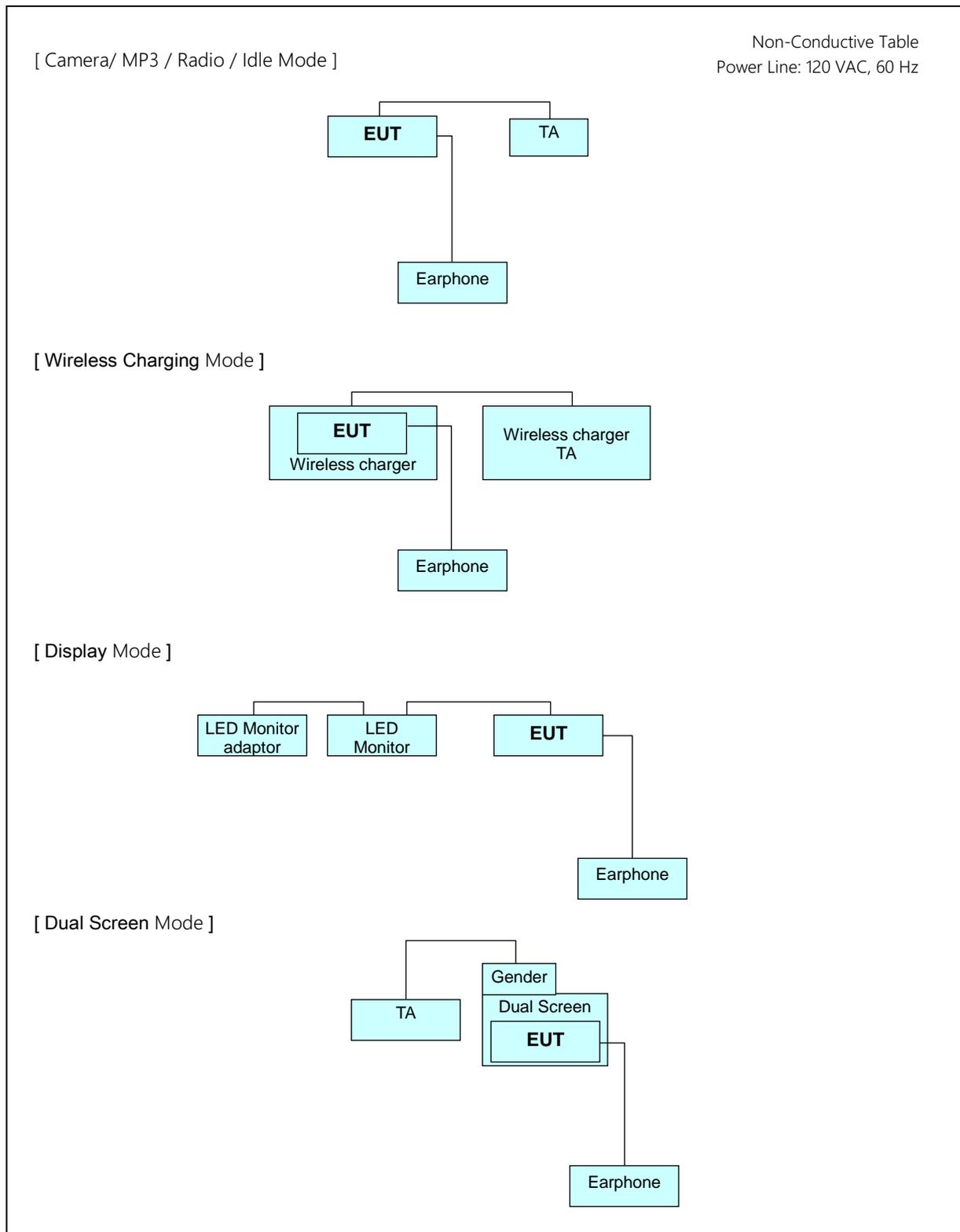
Frequency (MHz)	Class A			Class B		
	Antenna Distance (m)	Field Strength ( $\mu\text{V/m}$ )	Quasi-Peak ( $\text{dB}\mu\text{V/m}$ )	Antenna Distance (m)	Field Strength ( $\mu\text{V/m}$ )	Quasi-Peak ( $\text{dB}\mu\text{V/m}$ )
30 to 88	10	90	39.0	3	100	40.0
88 to 216	10	150	43.5	3	150	43.5
216 to 960	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 ( $\text{dB}\mu\text{V/m}$ )	Average ( $\text{dB}\mu\text{V/m}$ )	Peak ( $\text{dB}\mu\text{V/m}$ )	Average ( $\text{dB}\mu\text{V/m}$ )	
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



### 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

Dual Screen 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

Dual Screen 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
<input checked="" type="checkbox"/>	EMI test receiver	Rohde & Schwarz	ESCI	100584	1 year	06.10.2020
<input checked="" type="checkbox"/>	EMI test receiver	Rohde & Schwarz	ESCI	100584	1 year	06.18.2019
<input checked="" type="checkbox"/>	LISN	Rohde & Schwarz	ENV216	102245	1 year	09.11.2019
<input checked="" type="checkbox"/>	Radio communication analyzer	ANRITSU	MT8820C	6201138643	1 year	08.20.2019
<input checked="" type="checkbox"/>	Antenna (for Communication)	Schwarzbeck	USLP9142	VSLP 9142-200	-	-
<input checked="" type="checkbox"/>	Software	Rohde & Schwarz	EMC32	-	-	-

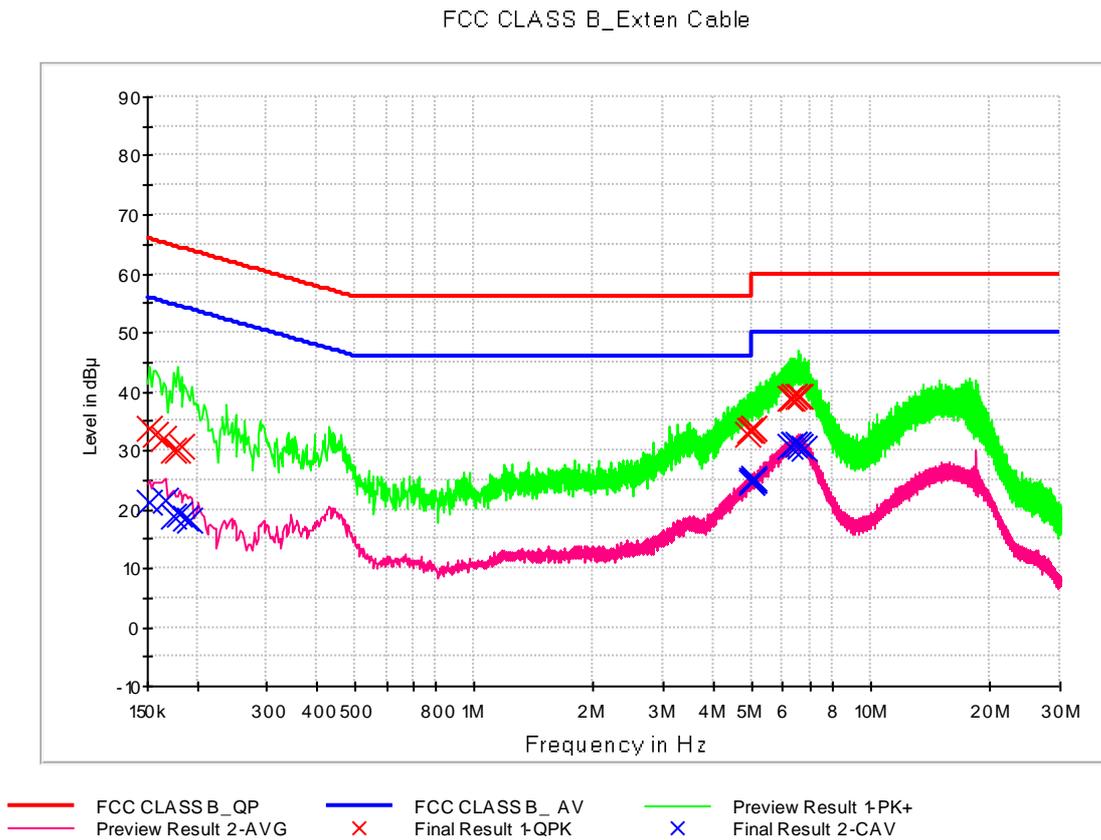
#### 4.1.2 Operating Condition

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	REAR CAMERA & FM RADIO mode Dual Screen mode
Kind of Test Site	EMI Shielded Room
Temperature	23.4 / 23.5 °C
Relative Humidity	43.3 / 45.4 %
Test Date	May 26 / July 06, 2020

4.1.3 Measuring Data

Figure 1: Conducted Emission (150 kHz to 30 MHz), REAR CAMERA & FM RADIO mode, Line (L1)



## QuasiPeak Final Result, Line (L1)

Frequency (MHz)	QuasiPeak (dB $\mu$ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)
0.152000	33.7	9.000	L1	9.8	32.2	65.9
0.158000	32.7	9.000	L1	9.8	32.9	65.6
0.164000	32.2	9.000	L1	9.8	33.1	65.3
0.174000	30.1	9.000	L1	9.8	34.7	64.8
0.178000	30.1	9.000	L1	9.8	34.4	64.6
0.182000	30.7	9.000	L1	9.8	33.7	64.4
4.870000	32.7	9.000	L1	10.0	23.3	56.0
4.936000	33.4	9.000	L1	10.0	22.6	56.0
4.986000	33.5	9.000	L1	10.0	22.5	56.0
5.032000	33.5	9.000	L1	10.0	26.5	60.0
5.072000	33.8	9.000	L1	10.0	26.2	60.0
5.094000	33.9	9.000	L1	10.0	26.1	60.0
6.228000	38.8	9.000	L1	10.1	21.2	60.0
6.354000	38.9	9.000	L1	10.1	21.1	60.0
6.378000	39.2	9.000	L1	10.1	20.8	60.0
6.396000	39.2	9.000	L1	10.1	20.8	60.0
6.564000	39.0	9.000	L1	10.1	21.0	60.0
6.624000	39.1	9.000	L1	10.1	20.9	60.0

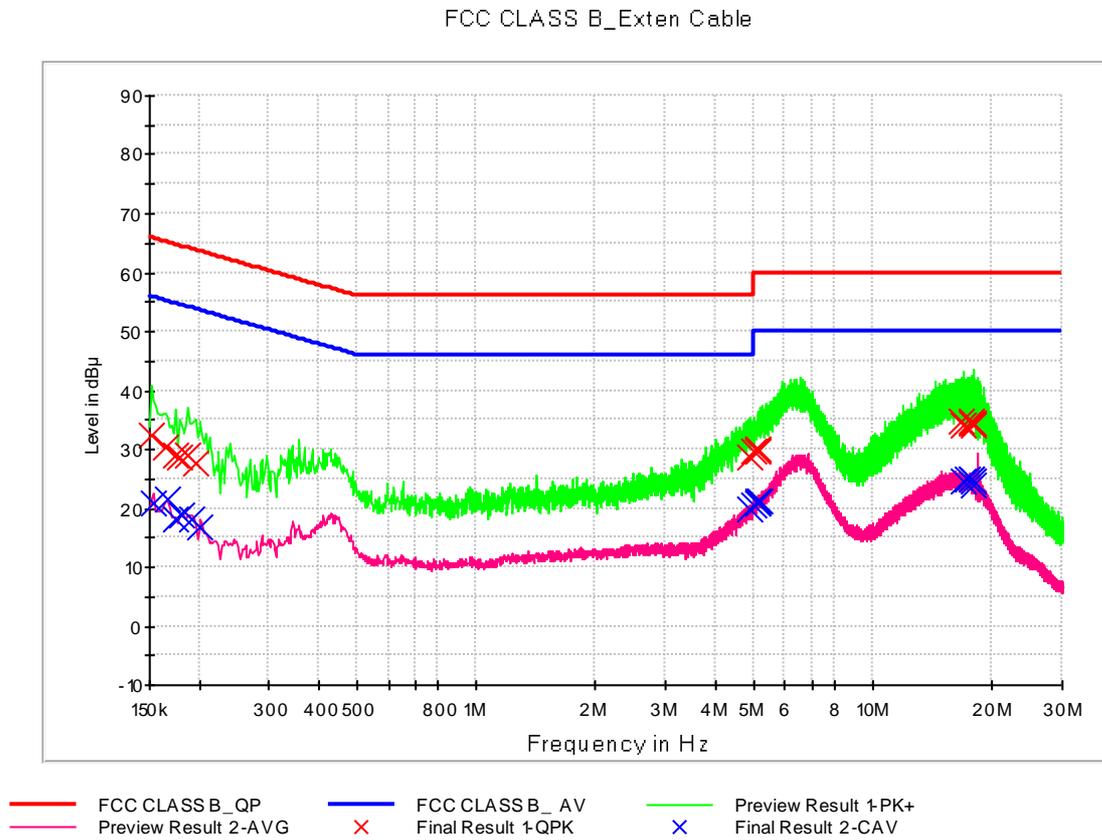
## Calculation Formula:

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

## CAverage Final Result, Line (L1)

Frequency (MHz)	CAverage (dB $\mu$ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)
0.152000	21.3	9.000	L1	9.8	34.6	55.9
0.166000	21.6	9.000	L1	9.8	33.6	55.2
0.174000	18.8	9.000	L1	9.8	36.0	54.8
0.180000	19.3	9.000	L1	9.8	35.2	54.5
0.188000	18.4	9.000	L1	9.8	35.7	54.1
0.192000	18.3	9.000	L1	9.8	35.7	53.9
4.986000	24.6	9.000	L1	10.0	21.4	46.0
5.020000	24.7	9.000	L1	10.0	25.3	50.0
5.032000	24.8	9.000	L1	10.0	25.2	50.0
5.044000	24.9	9.000	L1	10.0	25.1	50.0
5.072000	25.0	9.000	L1	10.0	25.0	50.0
5.094000	25.1	9.000	L1	10.0	24.9	50.0
6.228000	30.6	9.000	L1	10.1	19.4	50.0
6.378000	30.9	9.000	L1	10.1	19.1	50.0
6.396000	30.9	9.000	L1	10.1	19.1	50.0
6.560000	31.0	9.000	L1	10.1	19.0	50.0
6.624000	30.8	9.000	L1	10.1	19.2	50.0
6.768000	30.3	9.000	L1	10.1	19.7	50.0

Figure 2: Conducted Emission (150 kHz to 30 MHz), REAR CAMERA &amp; FM RADIO mode, Line (N)



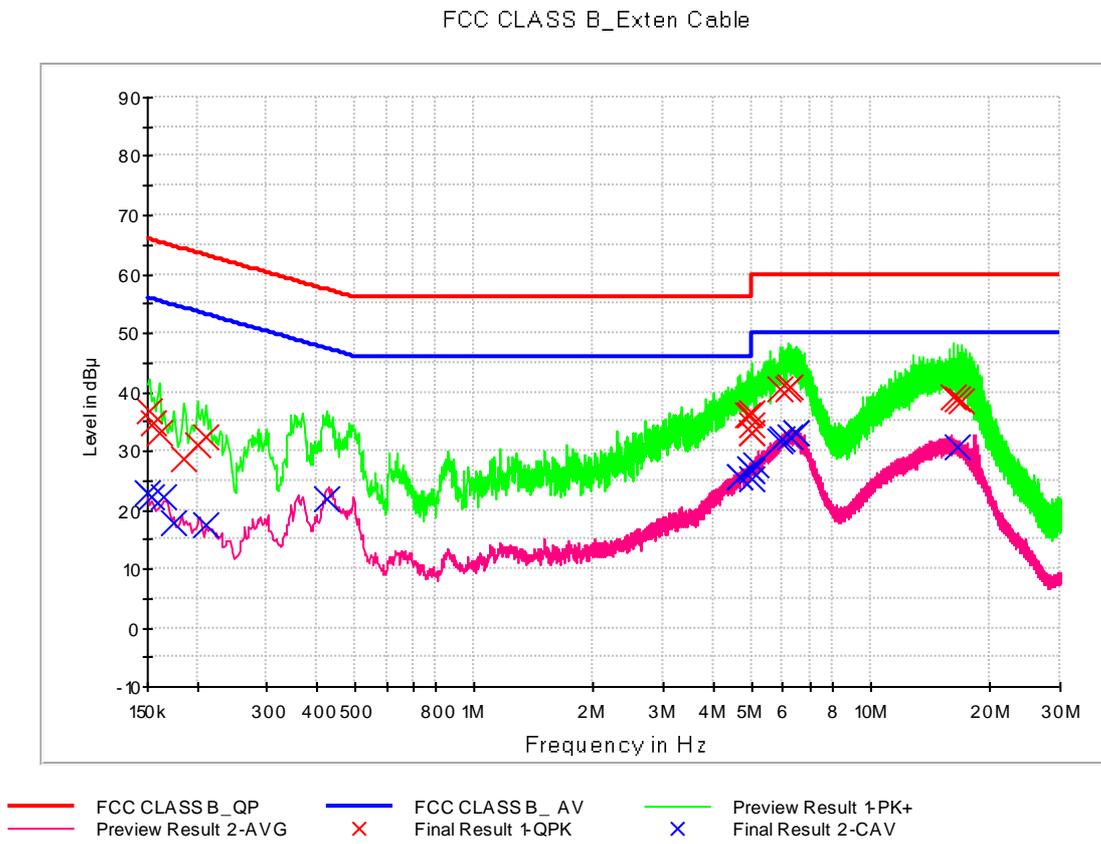
## QuasiPeak Final Result, Line (N)

Frequency (MHz)	QuasiPeak (dB $\mu$ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)
0.152000	32.2	9.000	N	9.8	33.6	65.9
0.164000	30.3	9.000	N	9.8	34.9	65.3
0.174000	29.1	9.000	N	9.8	35.7	64.8
0.178000	28.7	9.000	N	9.8	35.8	64.6
0.188000	29.1	9.000	N	9.8	35.0	64.1
0.196000	27.5	9.000	N	9.8	36.2	63.8
4.914000	28.8	9.000	N	10.0	27.2	56.0
5.036000	29.6	9.000	N	10.0	30.4	60.0
5.106000	29.7	9.000	N	10.0	30.3	60.0
5.110000	29.8	9.000	N	10.0	30.2	60.0
5.136000	30.0	9.000	N	10.0	30.0	60.0
5.144000	29.9	9.000	N	10.0	30.1	60.0
16.664000	34.7	9.000	N	10.5	25.3	60.0
16.996000	34.2	9.000	N	10.5	25.8	60.0
17.620000	34.6	9.000	N	10.5	25.4	60.0
17.802000	34.4	9.000	N	10.6	25.6	60.0
17.828000	34.1	9.000	N	10.6	25.9	60.0
18.028000	34.5	9.000	N	10.6	25.5	60.0

CAverage Final Result, Line (N)

Frequency (MHz)	CAverage (dB $\mu$ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)
0.154000	20.7	9.000	N	9.8	35.0	55.8
0.166000	21.4	9.000	N	9.8	33.8	55.2
0.174000	18.3	9.000	N	9.8	36.5	54.8
0.180000	18.8	9.000	N	9.8	35.7	54.5
0.192000	18.2	9.000	N	9.8	35.7	53.9
0.202000	16.9	9.000	N	9.8	36.6	53.5
4.914000	19.8	9.000	N	10.0	26.2	46.0
5.036000	20.4	9.000	N	10.0	29.6	50.0
5.106000	20.9	9.000	N	10.0	29.1	50.0
5.110000	20.8	9.000	N	10.0	29.2	50.0
5.136000	21.1	9.000	N	10.0	28.9	50.0
5.172000	21.3	9.000	N	10.0	28.7	50.0
16.962000	24.7	9.000	N	10.5	25.3	50.0
17.300000	24.8	9.000	N	10.5	25.2	50.0
17.620000	24.8	9.000	N	10.5	25.2	50.0
17.802000	25.0	9.000	N	10.6	25.0	50.0
17.828000	24.7	9.000	N	10.6	25.3	50.0
17.982000	23.9	9.000	N	10.6	26.1	50.0

Figure 3: Conducted Emission (150 kHz to 30 MHz), Dual Screen mode, Line (L1)



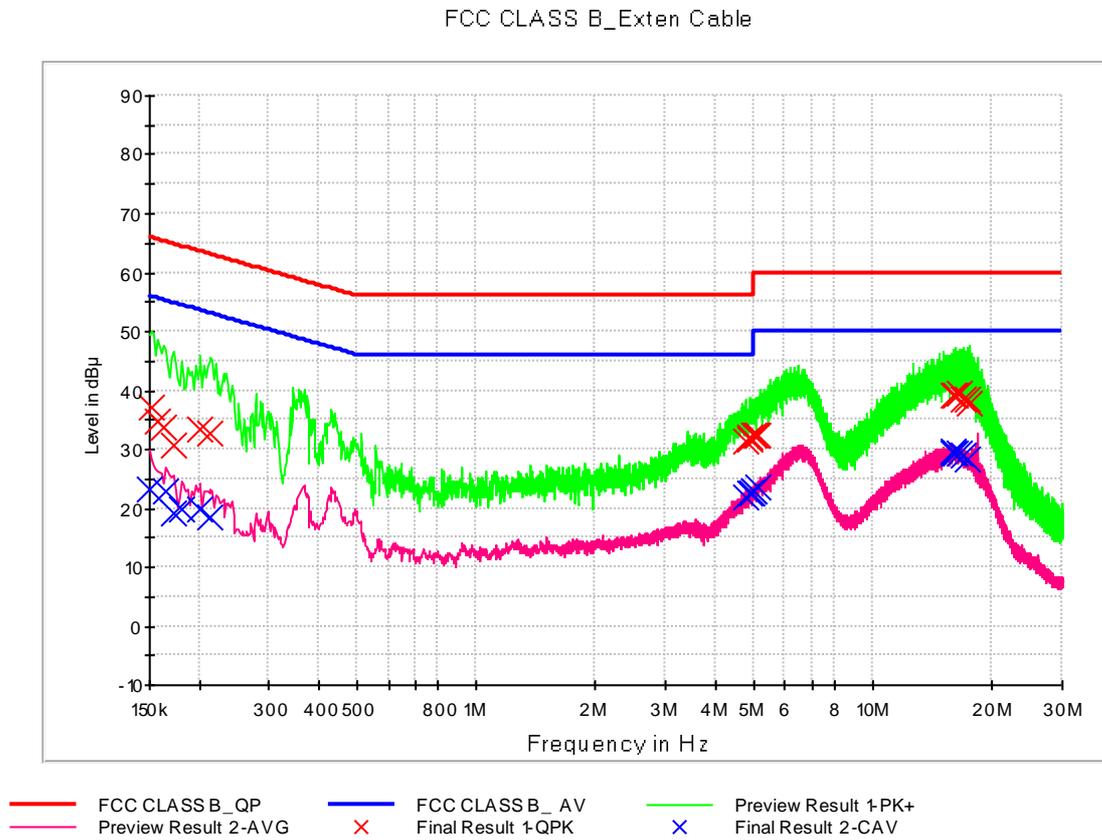
## QuasiPeak Final Result, Line (L1)

Frequency (MHz)	QuasiPeak (dB $\mu$ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)
0.152000	36.7	9.000	L1	9.8	29.2	65.9
0.156000	34.8	9.000	L1	9.8	30.9	65.7
0.160000	33.1	9.000	L1	9.8	32.3	65.5
0.186000	28.6	9.000	L1	9.8	35.6	64.2
0.200000	31.1	9.000	L1	9.8	32.5	63.6
0.210000	32.3	9.000	L1	9.8	30.9	63.2
4.902000	36.0	9.000	L1	10.0	20.0	56.0
4.930000	36.2	9.000	L1	10.0	19.8	56.0
4.990000	34.3	9.000	L1	10.0	21.7	56.0
4.994000	33.2	9.000	L1	10.0	22.8	56.0
5.000000	33.2	9.000	L1	10.0	22.8	56.0
5.024000	36.6	9.000	L1	10.0	23.4	60.0
5.886000	40.4	9.000	L1	10.0	19.6	60.0
6.156000	40.6	9.000	L1	10.1	19.4	60.0
6.258000	40.8	9.000	L1	10.1	19.2	60.0
16.136000	39.0	9.000	L1	10.4	21.0	60.0
16.528000	38.8	9.000	L1	10.4	21.2	60.0
16.984000	38.5	9.000	L1	10.4	21.5	60.0

## CAverage Final Result, Line (L1)

Frequency (MHz)	CAverage (dB $\mu$ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)
0.150000	22.8	9.000	L1	9.8	33.2	56.0
0.154000	22.1	9.000	L1	9.8	33.7	55.8
0.164000	22.3	9.000	L1	9.8	32.9	55.3
0.174000	17.8	9.000	L1	9.8	36.9	54.8
0.210000	17.5	9.000	L1	9.8	35.7	53.2
0.424000	21.8	9.000	L1	9.8	25.6	47.4
4.652000	25.6	9.000	L1	10.0	20.4	46.0
4.664000	25.7	9.000	L1	10.0	20.3	46.0
4.954000	27.0	9.000	L1	10.0	19.0	46.0
4.994000	25.3	9.000	L1	10.0	20.7	46.0
5.024000	26.6	9.000	L1	10.0	23.4	50.0
5.124000	27.7	9.000	L1	10.0	22.3	50.0
5.886000	31.7	9.000	L1	10.0	18.3	50.0
5.996000	32.0	9.000	L1	10.0	18.0	50.0
6.228000	32.5	9.000	L1	10.1	17.5	50.0
6.486000	33.0	9.000	L1	10.1	17.0	50.0
6.508000	33.0	9.000	L1	10.1	17.0	50.0
16.528000	30.7	9.000	L1	10.4	19.3	50.0

Figure 4: Conducted Emission (150 kHz to 30 MHz), Dual Screen mode, Line (N)



## QuasiPeak Final Result, Line (N)

Frequency (MHz)	QuasiPeak (dB $\mu$ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)
0.152000	37.2	9.000	N	9.8	28.7	65.9
0.158000	34.8	9.000	N	9.8	30.8	65.6
0.162000	33.8	9.000	N	9.8	31.5	65.4
0.172000	30.5	9.000	N	9.8	34.3	64.9
0.202000	33.5	9.000	N	9.8	30.0	63.5
0.214000	32.6	9.000	N	9.8	30.5	63.0
4.788000	31.4	9.000	N	10.0	24.6	56.0
4.898000	31.6	9.000	N	10.0	24.4	56.0
4.920000	32.1	9.000	N	10.0	23.9	56.0
5.014000	32.4	9.000	N	10.0	27.6	60.0
5.062000	32.4	9.000	N	10.0	27.6	60.0
5.114000	32.5	9.000	N	10.0	27.5	60.0
16.030000	39.0	9.000	N	10.5	21.0	60.0
16.204000	39.1	9.000	N	10.5	20.9	60.0
16.566000	39.6	9.000	N	10.5	20.4	60.0
16.992000	38.6	9.000	N	10.5	21.4	60.0
17.382000	38.4	9.000	N	10.5	21.6	60.0
17.584000	37.9	9.000	N	10.5	22.1	60.0

CAverage Final Result, Line (N)

Frequency (MHz)	CAverage (dB $\mu$ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)
0.150000	23.3	9.000	N	9.8	32.7	56.0
0.164000	22.9	9.000	N	9.8	32.4	55.3
0.172000	19.2	9.000	N	9.8	35.7	54.9
0.180000	19.9	9.000	N	9.8	34.6	54.5
0.202000	19.7	9.000	N	9.8	33.8	53.5
0.214000	18.6	9.000	N	9.8	34.4	53.0
4.778000	21.7	9.000	N	10.0	24.3	46.0
4.920000	22.5	9.000	N	10.0	23.5	46.0
4.972000	22.5	9.000	N	10.0	23.5	46.0
5.028000	22.9	9.000	N	10.0	27.1	50.0
5.038000	23.0	9.000	N	10.0	27.0	50.0
5.110000	23.4	9.000	N	10.0	26.6	50.0
16.006000	29.4	9.000	N	10.5	20.6	50.0
16.030000	29.6	9.000	N	10.5	20.4	50.0
16.204000	29.5	9.000	N	10.5	20.5	50.0
16.566000	29.3	9.000	N	10.5	20.7	50.0
16.868000	28.9	9.000	N	10.5	21.1	50.0
17.382000	28.5	9.000	N	10.5	21.5	50.0

## 4.2 Radiated Emission Below 1 GHz

### 4.2.1 Measuring instruments

	Type	Manufacturer	Model Name	Serial Number	Calibration Cycle	Calibration Date
<input checked="" type="checkbox"/>	EMI test receiver	Rohde & Schwarz	ESU40	100524	1 year	05.12.2020
<input checked="" type="checkbox"/>	Bi-Log antenna	Schwarzbeck	VULB 9168	255	2 year	03.26.2019
<input checked="" type="checkbox"/>	Antenna master	INNCO Systems	MA4640-XP-ET	-	N/A	-
<input checked="" type="checkbox"/>	Antenna master controller	INNCO Systems	CO3000	CO3000/870/ 35990515/L	N/A	-
<input checked="" type="checkbox"/>	Turn table	INNCO Systems	1060	-	N/A	-
<input checked="" type="checkbox"/>	Turn table controller	INNCO Systems	CO2000	CO2000/095/ 7590304/L	N/A	-
<input checked="" type="checkbox"/>	Radio communication analyzer	ANRITSU	MT8820C	6201138643	1 year	08.20.2019
<input checked="" type="checkbox"/>	Antenna (for Communication)	Schwarzbeck	USLP9142	VSLP 9142-200	-	-
<input checked="" type="checkbox"/>	Radio communication test station	ANRITSU	MT8000A	6262036812	1 year	01.06.2020
<input checked="" type="checkbox"/>	Radio communication analyzer	ANRITSU	MT8821C	6262044720	1 year	01.06.2020
<input checked="" type="checkbox"/>	Antenna (for Communication)	Schwarzbeck	USLP9142	VSLP 9142-201	-	-
<input checked="" type="checkbox"/>	Software	Rohde & Schwarz	EMC32	-	-	-

#### 4.2.2 Operating Condition

The test results of radiated emission provide the following information:

<b>Used Test Standard</b>	FCC CFR 47 PART 15 Subpart B Class B ANSI C63.4-2014
<b>Frequency Range</b>	30 MHz to 1 000 MHz
<b>Detector</b>	Quasi-Peak
<b>Bandwidth</b>	120 kHz (6 dB)
<b>Worst Case of Operating Mode</b>	REAR CAMERA & FM RADIO mode DISPLAY mode WIRELESS CHARGING mode DUAL SCREEN mode
<b>Kind of Test Site</b>	3 m semi anechoic chamber
<b>Temperature</b>	22.6 / 24.5 / 24.5 / 23.5 °C
<b>Relative Humidity</b>	44.1 / 45.2 / 45.7 / 47.2 %
<b>Test Date</b>	May 25 / June 04 / June 06 / July 02, 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

REAR CAMERA &amp; FM RADIO mode

Frequency (MHz)	Quasi Peak (dB $\mu$ V/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
44.639200	23.1	100.0	V	50.0	19.6	16.9	40.0
61.822200	22.6	325.2	V	27.0	19.1	17.4	40.0
92.069200	16.7	191.8	H	103.0	14.4	26.8	43.5
114.576600	21.2	207.8	V	309.0	16.8	22.3	43.5
163.305400	18.7	116.8	V	124.0	19.6	24.8	43.5
696.023800	33.2	125.1	H	312.0	28.6	12.8	46.0

DISPLAY mode

Frequency (MHz)	Quasi Peak (dB $\mu$ V/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
39.783600	18.9	100.0	V	313.0	19.0	21.1	40.0
88.327800	21.0	225.1	H	324.0	14.5	22.5	43.5
169.313600	39.3	174.7	H	70.0	19.1	4.2	43.5
302.619600	32.8	100.0	H	230.0	20.6	13.2	46.0
424.048600	34.6	100.0	H	87.0	23.4	11.4	46.0
913.586800	31.6	125.3	H	0.0	31.6	14.4	46.0

## WIRELESS CHARGING mode

Frequency (MHz)	Quasi Peak (dB $\mu$ V/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
64.028600	23.9	100.0	V	130.0	18.8	16.1	40.0
84.152400	20.9	274.7	H	296.0	15.1	19.1	40.0
151.237400	23.3	100.0	V	302.0	19.5	20.2	43.5
213.317000	26.8	100.0	V	309.0	17.2	16.7	43.5
266.715000	22.8	100.0	V	85.0	19.3	23.2	46.0
956.307200	32.1	191.7	V	48.0	31.9	13.9	46.0

## DUAL SCREEN mode

Frequency (MHz)	Quasi Peak (dB $\mu$ V/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
33.860600	24.3	100.0	V	334.0	18.6	15.7	40.0
66.750000	25.3	100.0	V	331.0	18.5	14.7	40.0
197.757000	32.6	117.8	H	314.0	16.8	10.9	43.5
306.596800	32.9	100.0	H	254.0	20.7	13.1	46.0
566.441200	36.7	174.8	H	307.0	26.6	9.3	46.0
635.829600	33.9	100.0	V	166.0	27.8	12.1	46.0

### 4.3 Radiated Emission Above 1 GHz

#### 4.3.1 Measuring instruments

	Type	Manufacturer	Model Name	Serial Number	Calibration Cycle	Calibration Date
<input checked="" type="checkbox"/>	EMI test receiver	Rohde & Schwarz	ESU40	100524	1 year	05.12.2020
<input checked="" type="checkbox"/>	Antenna master	INNCO Systems	MA4640-XP-ET	-	N/A	-
<input checked="" type="checkbox"/>	Antenna master controller	INNCO Systems	CO3000	CO3000/870/ 35990515/L	N/A	-
<input checked="" type="checkbox"/>	Turn table	INNCO Systems	1060	-	N/A	-
<input checked="" type="checkbox"/>	Turn table controller	INNCO Systems	CO2000	CO2000/095/ 7590304/L	N/A	-
<input checked="" type="checkbox"/>	Low noise amplifier	TESTEK	TK-PA18H	170034-L	1 year	03.03.2020
<input checked="" type="checkbox"/>	Low noise amplifier	TESTEK	TK-PA1840H	170030-L	1 year	02.13.2020
<input checked="" type="checkbox"/>	Horn antenna	Schwarzbeck	BBHA 9120D	01836	1 year	07.19.2019
<input checked="" type="checkbox"/>	Horn antenna	Schwarzbeck	BBHA 9170	BBHA9170#786	1 year	12.03.2019
<input checked="" type="checkbox"/>	Radio communication analyzer	ANRITSU	MT8820C	6201138643	1 year	08.20.2019
<input checked="" type="checkbox"/>	Antenna (for Communication)	Schwarzbeck	USLP9142	VSLP 9142-200	-	-
<input type="checkbox"/>	Radio communication test station	ANRITSU	MT8000A	6262036812	1 year	01.06.2020
<input type="checkbox"/>	Radio communication analyzer	ANRITSU	MT8821C	6262044720	1 year	01.06.2020
<input type="checkbox"/>	Antenna (for Communication)	Schwarzbeck	USLP9142	VSLP 9142-201	-	-
<input checked="" type="checkbox"/>	Software	Rohde & Schwarz	EMC32	-	-	-

#### 4.3.2 Operating Condition

The test results of radiated emission provide the following information:

<b>Used Test Standard</b>	FCC CFR 47 PART 15 Subpart B Class B ICES-003 Issue 6 Class B ANSI C63.4-2014
<b>Detector</b>	Peak mode: Peak (RBW: 1 MHz, VBW: 3 MHz) CISPR-Average mode: Peak (RBW: 1 MHz, VBW: 10 Hz)
<b>Highest Frequency</b>	5 825 MHz
<b>Tested Frequency Range</b>	1 GHz to 30 GHz
<b>Worst Case of Operating Mode</b>	REAR CAMERA & FM RADIO mode DISPLAY mode WIRELESS CHARGING mode DUAL SCREEN mode
<b>Kind of Test Site</b>	3 m semi anechoic chamber
<b>Temperature</b>	23.8 / 23.5 / 22.4 / 23.6 °C
<b>Relative Humidity</b>	46.5 / 47.2 / 46.8 / 45.2 %
<b>Test Date</b>	June 05 / July 02 / July 03 / July 07, 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

## REAR CAMERA &amp; FM RADIO mode

Frequency (MHz)	Peak (dB $\mu$ V/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
1097.545000	31.8	100.0	V	74.0	-29.2	42.2	74.0
2824.275000	34.9	249.5	V	0.0	-23.2	39.1	74.0
6979.775000	39.8	150.1	H	50.0	-13.3	34.2	74.0
11267.225000	45.0	299.5	H	50.0	-4.8	29.0	74.0
14458.970000	47.3	100.0	V	83.0	-1.1	26.7	74.0
17978.439400	55.1	350.0	H	193.0	9.3	18.9	74.0

Frequency (MHz)	CAverage (dB $\mu$ V/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
1097.545000	18.6	100.0	V	74.0	-29.2	35.4	54.0
2824.275000	19.8	249.5	V	0.0	-23.2	34.2	54.0
6979.775000	27.2	150.1	H	50.0	-13.3	26.8	54.0
11267.225000	32.5	299.5	H	50.0	-4.8	21.5	54.0
14458.970000	34.8	100.0	V	83.0	-1.1	19.2	54.0
17978.439400	42.8	350.0	H	193.0	9.3	11.2	54.0

## DISPLAY mode

Frequency (MHz)	Peak (dB $\mu$ V/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
1642.560000	42.4	100.0	H	244.0	-27.5	31.6	74.0
2399.230000	41.9	113.4	H	151.0	-24.6	32.1	74.0
5400.015000	46.0	149.5	H	200.0	-17.3	28.0	74.0
11260.400000	45.5	150.1	V	47.0	-4.8	28.5	74.0
14502.295000	47.6	111.5	V	302.0	-1.1	26.4	74.0
17967.240000	55.7	100.0	V	50.0	9.1	18.3	74.0

Frequency (MHz)	CAverage (dB $\mu$ V/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
1642.560000	28.8	100.0	H	244.0	-27.5	25.2	54.0
2399.230000	28.9	113.4	H	151.0	-24.6	25.1	54.0
5400.015000	42.2	149.5	H	200.0	-17.3	11.8	54.0
11260.400000	32.4	150.1	V	47.0	-4.8	21.6	54.0
14502.295000	34.6	111.5	V	302.0	-1.1	19.4	54.0
17967.240000	42.7	100.0	V	50.0	9.1	11.3	54.0

## WIRELESS CHARGING mode

Frequency (MHz)	Peak (dB $\mu$ V/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
2063.055000	31.7	175.6	H	317.0	-26.2	42.3	74.0
4926.175000	36.0	149.9	V	50.0	-17.9	38.0	74.0
7381.590000	40.7	149.5	V	42.0	-12.4	33.3	74.0
11360.980000	45.2	100.0	V	0.0	-4.6	28.8	74.0
14357.535000	46.1	350.1	H	215.0	-1.4	27.9	74.0
17995.414600	55.9	249.7	V	345.0	9.6	18.1	74.0

Frequency (MHz)	CAverage (dB $\mu$ V/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
2063.055000	18.7	175.6	H	317.0	-26.2	35.3	54.0
4926.175000	23.6	149.9	V	50.0	-17.9	30.4	54.0
7381.590000	28.1	149.5	V	42.0	-12.4	25.9	54.0
11360.980000	32.2	100.0	V	0.0	-4.6	21.8	54.0
14357.535000	33.6	350.1	H	215.0	-1.4	20.4	54.0
17995.414600	42.9	249.7	V	345.0	9.6	11.1	54.0

## DUAL SCREEN mode

Frequency (MHz)	Peak (dB $\mu$ V/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
1131.040000	46.3	276.6	H	303.0	-29.1	27.7	74.0
2688.715000	39.0	202.4	H	260.0	-23.6	35.0	74.0
5385.650000	41.0	100.0	V	291.0	-17.4	33.0	74.0
7202.335000	40.2	149.6	V	58.0	-12.8	33.8	74.0
9567.045000	43.1	100.0	V	0.0	-9.9	30.9	74.0
17996.782280	56.0	160.5	V	332.0	9.6	18.0	74.0

Frequency (MHz)	CAverage (dB $\mu$ V/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
1131.040000	33.6	276.6	H	303.0	-29.1	20.4	54.0
2688.715000	22.0	202.4	H	260.0	-23.6	32.0	54.0
5385.650000	25.0	100.0	V	291.0	-17.4	29.0	54.0
7202.335000	27.0	149.6	V	58.0	-12.8	27.0	54.0
9567.045000	30.5	100.0	V	0.0	-9.9	23.5	54.0
17996.782280	42.9	160.5	V	332.0	9.6	11.1	54.0

## 5. CONCLUSION

The data collected shows that the **Product Name: Multi-band CDMA/GSM/EDGE/WCDMA/LTE/5G NR Phone with WLAN, BT and RFID, Model Name: LM-G900TM** 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-2007-FC003-R1-P	July 08, 2020	Initial Release

End of report