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HCT

# TEST REPORT

## EMI Test for FCC Certification of LM-K735MM Model

APPLICANT
LG Electronics USA, Inc.

REPORT NO.
HCT-EM-2101-FC007-R1

DATE OF ISSUE
February 03, 2021

Tested by
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# TEST REPORT

EMI Test for FCC Certification

REPORT NO.
HCT-EM-2101-FC007-R1

DATE OF ISSUE
February 03, 2021

FCC ID.
ZNFK735MM

| | |
|---|---|
| Applicant | LG Electronics USA, Inc.<br>111 Sylvan Avenue, North Building , Englewood Cliffs NJ 07632 United States |
| Product Name<br>Model Name<br>Series Model Name | Multi-band GSM/WCDMA/LTE Phone with WLAN, Bluetooth, NFC<br>LM-K735MM<br>Refer to the clause 1.1 Description of EUT |
| Travel Adaptor Information | Model name: MCS-H07WA<br>Manufacturer: AOHAI |
| Date of Test | December 23, 2020 to January 06, 2021 |
| Test Standard Used | FCC CFR 47 PART 15 Subpart B Class B<br>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 | January 08, 2021 | Initial Release |
| 1 | February 03, 2021 | Revised the frequency range in clause 1.1 |

The above Test Report is not related to the accredited test result by (KS Q) ISO/IEC 17025 and KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation), which signed the ILAC-MRA.

# CONTENTS

# 1. GENERAL INFORMATION

## 1.1 Description of EUT

| | |
|---|---|
| FCC ID | ZNFK735MM |
| Model Name | LM-K735MM |
| Series Model Name | LM-K735PM, LMK735MM, LMK735PM, K735MM, K735PM |
| Product Name | Multi-band GSM/WCDMA/LTE Phone with WLAN, Bluetooth, NFC |
| Frequency Range (Downlink) | 869.20 MHz to 893.80 MHz (GSM 850)<br>1 930.20 MHz to 1 989.80 MHz (GSM 1 900)<br>1 932.4 MHz to 1 987.6 MHz (WCDMA B2)<br>2 112.4 MHz to 2 152.6 MHz (WCDMA B4)<br>871.40 MHz to 891.60 MHz (WCDMA B5)<br>1 930 MHz to 1 990 MHz (LTE B2)<br>2 110 MHz to 2 155 MHz (LTE B4)<br>869 MHz to 894 MHz (LTE B5)<br>729 MHz to 746 MHz (LTE B12)<br>746 MHz to 756 MHz (LTE B13)<br>1 925 MHz to 1 990 MHz (LTE B25)<br>859 MHz to 894 MHz (LTE B26)<br>2 496 MHz to 2 690 MHz (LTE B41)<br>2 496 MHz to 2 690 MHz (LTE B41 HPUE)<br>2 110 MHz to 2 200 MHz (LTE B66)<br>617 MHz to 652 MHz (LTE B71)<br>2 402 MHz to 2 480 MHz ( Bluetooth)<br>2 412 MHz to 2 462 MHz ( WiFi 2.4 GHz)<br>5 180 MHz to 5 240 MHz (WiFi 5 GHz_UNII 1)<br>5 260 MHz to 5 320 MHz (WiFi 5 GHz_UNII 2A)<br>5 500 MHz to 5 720 MHz (WiFi 5 GHz_UNII 2C)<br>5 745 MHz to 5 825 MHz (WiFi 5 GHz_UNII 3)<br>13.56 MHz (NFC) |

| | |
|---|---|
| **Frequency Range (Uplink)** | 824.20 MHz to 848.80 MHz (GSM 850)<br>1 850.20 MHz to 1 909.80 MHz (GSM 1 900)<br>1 852.4 MHz to 1 907.6 MHz (WCDMA B2)<br>1712.4 MHz to 1752.6 MHz (WCDMA B4)<br>826.40 MHz to 846.60 MHz (WCDMA B5)<br>1 850 MHz to 1 910 MHz (LTE B2)<br>1 710 MHz to 1 755 MHz (LTE B4)<br>824 MHz to 849 MHz (LTE B5)<br>699 MHz to 716 MHz (LTE B12)<br>777 MHz to 787 MHz (LTE B13)<br>1 850 MHz to 1 915 MHz (LTE B25)<br>814 MHz to 849 MHz (LTE B26)<br>2 496 MHz to 2 690 MHz (LTE B41)<br>2 496 MHz to 2 690 MHz (LTE B41 HPUE)<br>1 710 MHz to 1 780 MHz (LTE B66)<br>663 MHz to 698 MHz (LTE B71)<br>2 402 MHz to 2 480 MHz ( Bluetooth)<br>2 412 MHz to 2 462 MHz ( WiFi 2.4 GHz)<br>5 180 MHz to 5 240 MHz (WiFi 5 GHz_UNII 1)<br>5 260 MHz to 5 320 MHz (WiFi 5 GHz_UNII 2A)<br>5 500 MHz to 5 720 MHz (WiFi 5 GHz_UNII 2C)<br>5 745 MHz to 5 825 MHz (WiFi 5 GHz_UNII 3)<br>13.56 MHz (NFC) |

## 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-K735MM | - | LG |
| DATA Cable | EAD64746105 | - | KSD |
| Earphone | EAB64468444 | - | CRESYN |
| Travel Adaptor | MCS-H07WA | - | 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 | Y | N/A | (P) 1.0 |
| | Earphone | N/A | N | (D) 1.2 |

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 | N | N/A | Y | Both End |
| | Earphone | N | N/A | Y | EUT End |

## 1.5 Test Facility

Test site is located at 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 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.
Our laboratories are accredited and designated in accordance with the provisions of Radio Waves ACT and International Standard ISO/IEC 17025:2017. (National Radio Research Agency, Designation No. KR0032)

## 1.6 Calibration of Measuring Instrument

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in ac cordance 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.

| Test Item | Test Site (Chamber) | Expanded Uncertainty |
|---|---|---|
| Conducted Emission (0.15 MHz to 30 MHz) | EMI Shield Room | 1.58 dB |
| Radiated Emissions (30 MHz to 1 GHz) | 3 m Semi Anechoic Chamber #1 | 4.86 dB |
| Radiated Emissions (1 GHz to 18 GHz) | 3 m Semi Anechoic Chamber #1 | 4.58 dB |
| Radiated Emissions (18 GHz to 40 GHz) | 3 m Semi Anechoic Chamber #1 | 5.54 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 (μV/m) | Quasi-Peak (dBμV/m) | Antenna Distance (m) | Field Strength (μV/m) | Quasi-Peak (dBμV/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 |

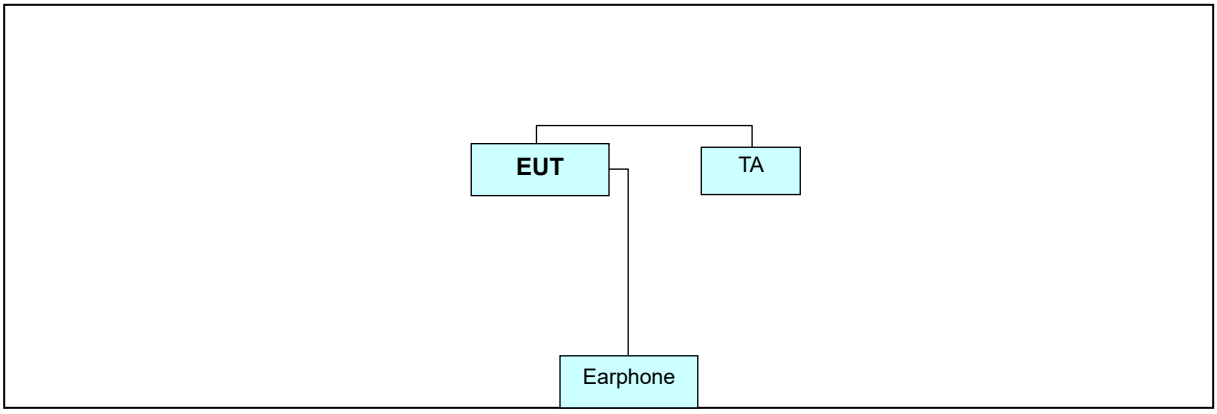
| Frequency (MHz) | Antenna Distance (m) | Class A | | Class B | |
|---|---|---|---|---|---|
| | | Peak (dBμV/m) | Average (dBμV/m) | Peak (dBμV/m) | Average (dBμV/m) |
| Above 1 000 | 3 | 80 | 60 | 74 | 54 |

### 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
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 | ESR7 | 101910 | 1 year | 09.16.2020 |
| ☒ | LISN | Rohde & Schwarz | ENV216 | 102245 | 1 year | 09.04.2020 |
| ☒ | Radio communication analyzer | ANRITSU | MT8820C | 6201138643 | 1 year | 08.19.2020 |
| ☒ | Antenna (for Communication) | Schwarzbeck | USLP9142 | USLP 9142-200 | - | - |
| ☒ | Software | Rohde & Schwarz | EMC32 | - | - | - |

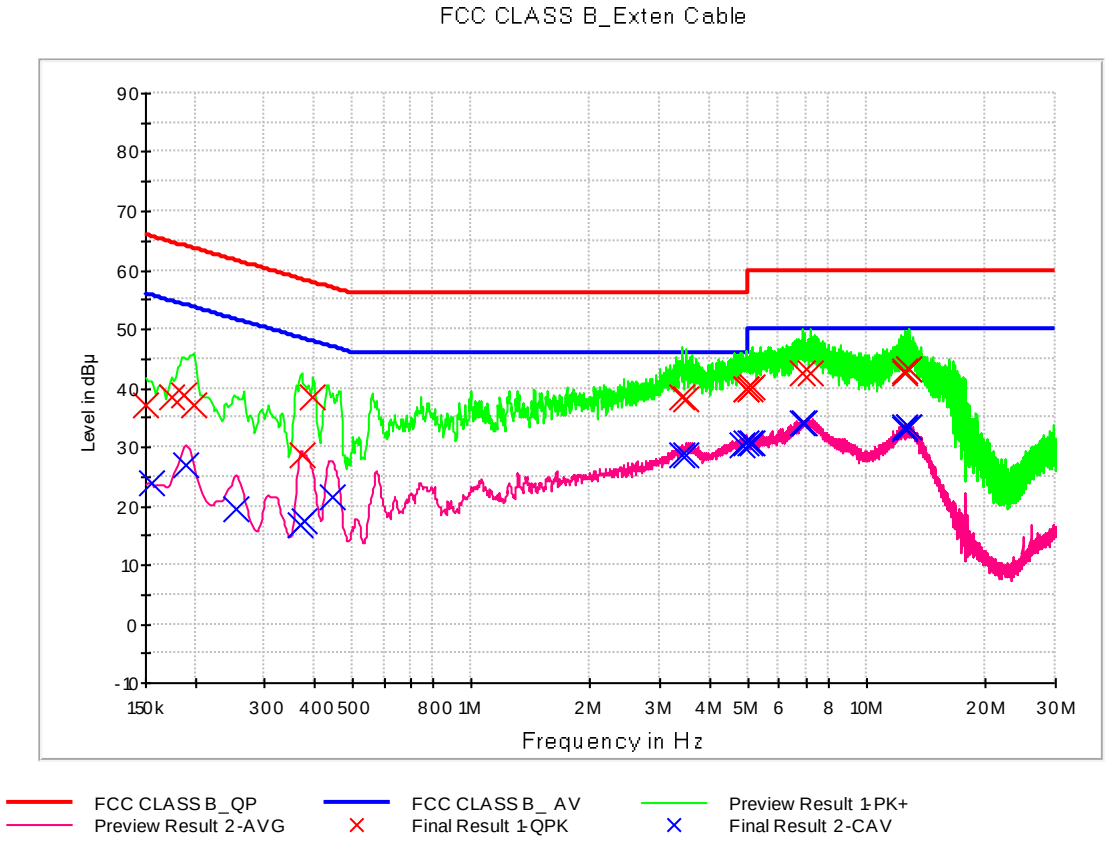
### 4.1.2 Operating Condition

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<br>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 |
| **Test Site** | EMI Shield Room |
| **Temperature** | 22.8 / 22.9 °C |
| **Relative Humidity** | 44.6 / 46.0 % |
| **Test Date** | December 23, 2020 / January 05, 2021 |

### 4.1.3 Measuring Data

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



QuasiPeak Final Result

| Frequency (MHz) | QuasiPeak (dBµV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|---|---|---|---|---|---|---|
| 0.150000 | 37.1 | 9.000 | L1 | 9.8 | 28.9 | 66.0 |
| 0.174750 | 38.4 | 9.000 | L1 | 9.8 | 26.3 | 64.7 |
| 0.188250 | 38.8 | 9.000 | L1 | 9.8 | 25.3 | 64.1 |
| 0.199500 | 37.0 | 9.000 | L1 | 9.8 | 26.7 | 63.6 |
| 0.372750 | 28.6 | 9.000 | L1 | 9.8 | 29.8 | 58.4 |
| 0.397500 | 38.4 | 9.000 | L1 | 9.8 | 19.5 | 57.9 |
| 3.422750 | 38.6 | 9.000 | L1 | 9.9 | 17.4 | 56.0 |
| 3.488000 | 38.1 | 9.000 | L1 | 9.9 | 17.9 | 56.0 |
| 4.961750 | 39.7 | 9.000 | L1 | 10.0 | 16.3 | 56.0 |
| 4.973000 | 39.9 | 9.000 | L1 | 10.0 | 16.1 | 56.0 |
| 5.078750 | 39.9 | 9.000 | L1 | 10.0 | 20.1 | 60.0 |
| 5.110250 | 40.2 | 9.000 | L1 | 10.0 | 19.8 | 60.0 |
| 6.865250 | 42.6 | 9.000 | L1 | 10.1 | 17.4 | 60.0 |
| 7.182500 | 42.5 | 9.000 | L1 | 10.1 | 17.5 | 60.0 |
| 12.449750 | 42.7 | 9.000 | L1 | 10.3 | 17.3 | 60.0 |
| 12.510500 | 42.7 | 9.000 | L1 | 10.3 | 17.3 | 60.0 |
| 12.701750 | 43.2 | 9.000 | L1 | 10.3 | 16.8 | 60.0 |
| 12.767000 | 43.1 | 9.000 | L1 | 10.3 | 16.9 | 60.0 |

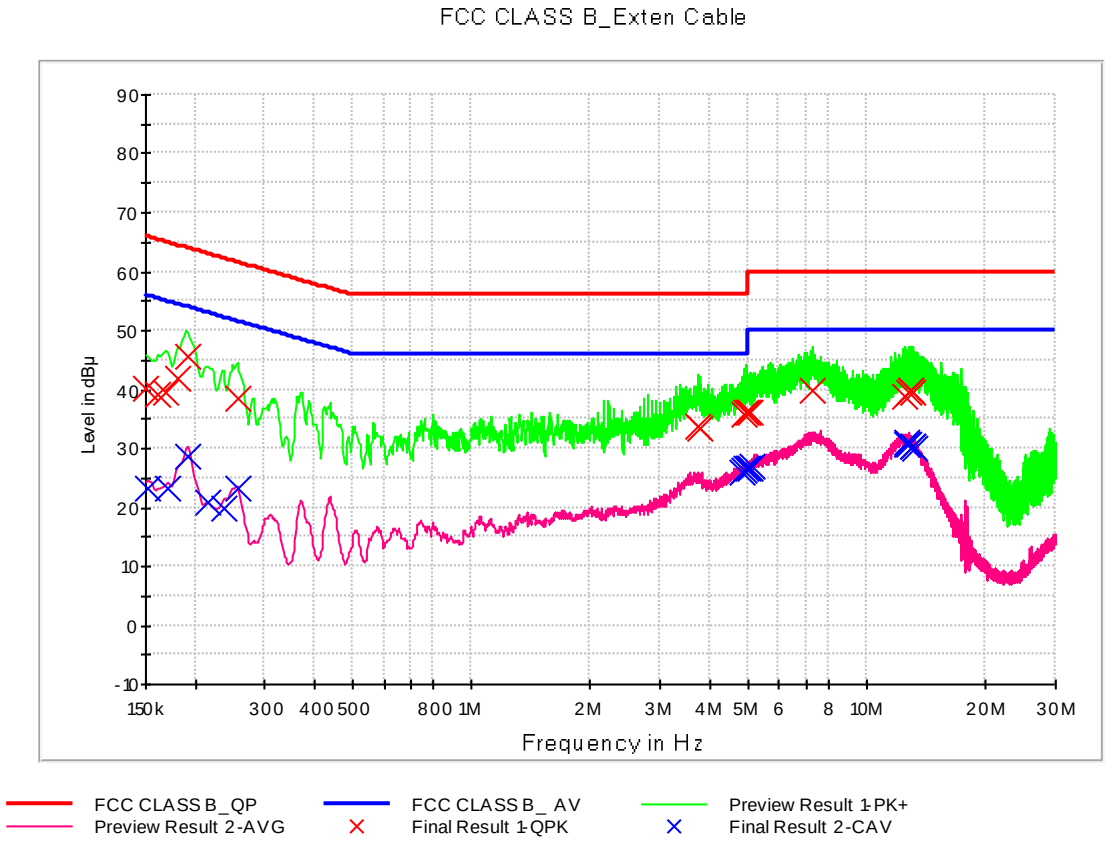
Calculation Formula:

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

| Frequency (MHz) | CAverage (dBµV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|---|---|---|---|---|---|---|
| 0.154500 | 23.9 | 9.000 | L1 | 9.8 | 31.8 | 55.8 |
| 0.190500 | 26.9 | 9.000 | L1 | 9.8 | 27.1 | 54.0 |
| 0.253500 | 19.6 | 9.000 | L1 | 9.8 | 32.1 | 51.6 |
| 0.370500 | 16.7 | 9.000 | L1 | 9.8 | 31.8 | 48.5 |
| 0.379500 | 17.4 | 9.000 | L1 | 9.8 | 30.9 | 48.3 |
| 0.444750 | 21.6 | 9.000 | L1 | 9.8 | 25.4 | 47.0 |
| 3.422750 | 28.8 | 9.000 | L1 | 9.9 | 17.2 | 46.0 |
| 3.490250 | 28.7 | 9.000 | L1 | 9.9 | 17.3 | 46.0 |
| 4.811000 | 30.4 | 9.000 | L1 | 10.0 | 15.6 | 46.0 |
| 4.970750 | 30.6 | 9.000 | L1 | 10.0 | 15.4 | 46.0 |
| 5.045000 | 30.8 | 9.000 | L1 | 10.0 | 19.2 | 50.0 |
| 5.139500 | 30.6 | 9.000 | L1 | 10.0 | 19.4 | 50.0 |
| 6.865250 | 34.2 | 9.000 | L1 | 10.1 | 15.8 | 50.0 |
| 6.928250 | 34.1 | 9.000 | L1 | 10.1 | 15.9 | 50.0 |
| 12.447500 | 33.2 | 9.000 | L1 | 10.3 | 16.8 | 50.0 |
| 12.512750 | 33.2 | 9.000 | L1 | 10.3 | 16.8 | 50.0 |
| 12.704000 | 33.5 | 9.000 | L1 | 10.3 | 16.5 | 50.0 |
| 12.830000 | 33.4 | 9.000 | L1 | 10.3 | 16.6 | 50.0 |

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



QuasiPeak Final Result

| Frequency (MHz) | QuasiPeak (dBµV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|---|---|---|---|---|---|---|
| 0.150000 | 40.3 | 9.000 | N | 9.8 | 25.7 | 66.0 |
| 0.161250 | 39.2 | 9.000 | N | 9.8 | 26.2 | 65.4 |
| 0.168000 | 39.6 | 9.000 | N | 9.8 | 25.5 | 65.1 |
| 0.181500 | 41.8 | 9.000 | N | 9.8 | 22.6 | 64.4 |
| 0.192750 | 45.5 | 9.000 | N | 9.8 | 18.4 | 63.9 |
| 0.255750 | 38.3 | 9.000 | N | 9.8 | 23.3 | 61.6 |
| 3.735500 | 33.8 | 9.000 | N | 9.9 | 22.2 | 56.0 |
| 3.800750 | 33.4 | 9.000 | N | 9.9 | 22.6 | 56.0 |
| 4.887500 | 35.6 | 9.000 | N | 10.0 | 20.4 | 56.0 |
| 4.952750 | 36.0 | 9.000 | N | 10.0 | 20.0 | 56.0 |
| 5.006750 | 36.0 | 9.000 | N | 10.0 | 24.0 | 60.0 |
| 5.072000 | 36.1 | 9.000 | N | 10.0 | 23.9 | 60.0 |
| 7.250000 | 39.7 | 9.000 | N | 10.1 | 20.3 | 60.0 |
| 12.472250 | 39.0 | 9.000 | N | 10.4 | 21.0 | 60.0 |
| 12.794000 | 39.6 | 9.000 | N | 10.4 | 20.4 | 60.0 |
| 12.859250 | 39.7 | 9.000 | N | 10.4 | 20.3 | 60.0 |
| 12.989750 | 39.8 | 9.000 | N | 10.4 | 20.2 | 60.0 |
| 13.057250 | 39.5 | 9.000 | N | 10.4 | 20.5 | 60.0 |

CAverage Final Result

| Frequency (MHz) | CAverage (dBµV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|---|---|---|---|---|---|---|
| 0.152250 | 23.4 | 9.000 | N | 9.8 | 32.5 | 55.9 |
| 0.170250 | 23.4 | 9.000 | N | 9.8 | 31.6 | 54.9 |
| 0.192750 | 28.7 | 9.000 | N | 9.8 | 25.2 | 53.9 |
| 0.215250 | 20.7 | 9.000 | N | 9.8 | 32.3 | 53.0 |
| 0.237750 | 19.7 | 9.000 | N | 9.8 | 32.4 | 52.2 |
| 0.255750 | 23.2 | 9.000 | N | 9.8 | 28.3 | 51.6 |
| 4.824500 | 26.0 | 9.000 | N | 10.0 | 20.0 | 46.0 |
| 4.885250 | 26.4 | 9.000 | N | 10.0 | 19.6 | 46.0 |
| 4.952750 | 26.5 | 9.000 | N | 10.0 | 19.5 | 46.0 |
| 5.006750 | 26.5 | 9.000 | N | 10.0 | 23.5 | 50.0 |
| 5.072000 | 26.7 | 9.000 | N | 10.0 | 23.3 | 50.0 |
| 5.141750 | 26.9 | 9.000 | N | 10.0 | 23.1 | 50.0 |
| 12.600500 | 30.9 | 9.000 | N | 10.4 | 19.1 | 50.0 |
| 12.661250 | 30.8 | 9.000 | N | 10.4 | 19.2 | 50.0 |
| 12.791750 | 30.8 | 9.000 | N | 10.4 | 19.2 | 50.0 |
| 13.057250 | 30.3 | 9.000 | N | 10.4 | 19.7 | 50.0 |
| 13.122500 | 30.3 | 9.000 | N | 10.4 | 19.7 | 50.0 |
| 13.185500 | 30.0 | 9.000 | N | 10.4 | 20.0 | 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 | 05.12.2020 |
| ☒ | 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 | 08.19.2020 |
| ☒ | Antenna (for communication) | Schwarzbeck | USLP9142 | USLP 9142-200 | - | - |
| ☒ | 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<br>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** | REAR CAMERA & FM RADIO mode |
| **Measurement Distance** | 3 m |
| **Test Site** | 3 m Semi Anechoic Chamber #1 |
| **Temperature** | 22.9 / 22.2 °C |
| **Relative Humidity** | 45.8 / 45.4 % |
| **Test Date** | December 29 / December 30, 2020 |

4.2.3 Measuring Data

| Frequency (MHz) | Quasi Peak (dBμV/m) | Antenna Height (cm) | POL. (H/V) | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|---|---|---|---|---|---|---|---|
| **30.692280** | **20.3** | **191.7** | **V** | **249.0** | **18.3** | **19.7** | **40.0** |
| **84.667840** | **23.6** | **205.8** | **H** | **124.0** | **15.0** | **16.4** | **40.0** |
| **94.512240** | **19.9** | **174.7** | **H** | **85.0** | **14.6** | **23.6** | **43.5** |
| **173.438680** | **25.2** | **100.0** | **V** | **128.0** | **18.8** | **18.3** | **43.5** |
| **314.902400** | **23.1** | **100.0** | **H** | **98.0** | **20.8** | **22.9** | **46.0** |
| **445.407480** | **25.0** | **100.0** | **H** | **320.0** | **23.9** | **21.0** | **46.0** |

- 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

## 4.3 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 | 05.12.2020 |
| ☒ | 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 | 08.19.2020 |
| ☒ | Antenna (for Communication) | Schwarzbeck | USLP9142 | USLP 9142-200 | - | - |
| ☒ | 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 | 07.23.2020 |
| ☒ | Horn antenna | Schwarzbeck | BBHA 9170 | BBHA9170#786 | 1 year | 11.18.2020 |
| ☒ | 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<br>ANSI C63.4-2014 |
| **Detector** | Peak mode: Peak (RBW: 1 MHz, VBW: 3 MHz)<br>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** | REAR CAMERA & FM RADIO mode |
| **Measurement Distance** | 3 m |
| **Test Site** | 3 m Semi Anechoic Chamber #1 |
| **Temperature** | 20.5 / 21.4 °C |
| **Relative Humidity** | 45.3 / 45.9 % |
| **Test Date** | January 05 / January 06, 2021 |

4.3.3 Measuring Data

| Frequency (MHz) | Peak (dBµV/m) | Antenna Height (cm) | POL. (H/V) | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|
| 2931.265000 | 33.6 | 100.0 | H | 11.0 | -22.7 | 40.4 | 74.0 |
| 4232.085000 | 34.9 | 113.3 | V | 161.0 | -19.8 | 39.1 | 74.0 |
| 5267.480000 | 36.1 | 248.4 | V | 294.0 | -17.4 | 37.9 | 74.0 |
| 9905.795000 | 43.5 | 150.0 | H | 116.0 | -8.7 | 30.5 | 74.0 |
| 14215.230000 | 46.8 | 187.4 | H | 38.0 | -1.2 | 27.2 | 74.0 |
| 17998.969420 | 55.1 | 189.4 | H | 43.0 | 9.6 | 18.9 | 74.0 |

| Frequency (MHz) | CAverage (dBµV/m) | Antenna Height (cm) | POL. (H/V) | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|---|---|---|---|---|---|---|---|
| 2931.265000 | 20.7 | 100.0 | H | 11.0 | -22.7 | 33.3 | 54.0 |
| 4232.085000 | 22.1 | 113.3 | V | 161.0 | -19.8 | 31.9 | 54.0 |
| 5267.480000 | 23.6 | 248.4 | V | 294.0 | -17.4 | 30.4 | 54.0 |
| 9905.795000 | 30.8 | 150.0 | H | 116.0 | -8.7 | 23.2 | 54.0 |
| 14215.230000 | 34.2 | 187.4 | H | 38.0 | -1.2 | 19.8 | 54.0 |
| 17998.969420 | 42.9 | 189.4 | H | 43.0 | 9.6 | 11.1 | 54.0 |

- 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

## 5. CONCLUSION

The data collected shows that the **Product Name: Multi-band GSM/WCDMA/LTE Phone with WLAN, Bluetooth, NFC / Model: LM-K735MM** 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-2101-FC007-P | January 08, 2021 | Initial Release |

End of report