TEST REPORT

EMI Test for FCC Certification / ISED of LG L322DL

APPLICANT LG Electronics USA, Inc.

REPORT NO. HCT-EM-1905-FI007

DATE OF ISSUE May 24, 2019

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REVISION HISTORY

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

| Revision No. | Date of Issue | Description |
|--------------|---------------|-----------------|
| 0 | May 24, 2019 | 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 denial the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C 862



CONTENTS

| 1.1 Description of EUT051.2 Tested System Details061.3 Cable Description061.4 Noise Suppression Parts on Cable. (I/O Cable)061.5 Test Facility071.6 Calibration of Measuring Instrument071.7 Measurement Uncertainty072. DESCRIPTION OF TEST082.1 Measurement of Conducted Emission082.2 Measurement of Radiated Emission092.3 Configuration of Tested System103. PRELIMINARY TEST113.1 Conducted Emission113.2 Radiated Emission113.2 Radiated Emission114.1 Conducted Emission124.1 Conducted Emission124.2 Radiated Emission124.3 Radiated Emission124.3 Radiated Emission Above 1 GHz215. CONCLUSION236. APPENDIX A. TEST SETUP PHOTOGRAPHS24 | 1. GENERAL INFORMATION | 05 |
|---|--|----|
| 1.3 Cable Description061.4 Noise Suppression Parts on Cable. (I/O Cable)061.5 Test Facility071.6 Calibration of Measuring Instrument071.7 Measurement Uncertainty072. DESCRIPTION OF TEST082.1 Measurement of Conducted Emission082.2 Measurement of Radiated Emission092.3 Configuration of Tested System103. PRELIMINARY TEST113.1 Conducted Emission113.2 Radiated Emission113.2 Radiated Emission114. CONDUCTED EMISSION AND RADIATED EMISSION TEST SUMMARY124.1 Conducted Emission124.2 Radiated Emission Below 1 GHz194.3 Radiated Emission Above 1 GHz215. CONCLUSION23 | 1.1 Description of EUT | 05 |
| 1.4 Noise Suppression Parts on Cable. (I/O Cable)061.5 Test Facility071.6 Calibration of Measuring Instrument071.7 Measurement Uncertainty072. DESCRIPTION OF TEST082.1 Measurement of Conducted Emission082.2 Measurement of Radiated Emission092.3 Configuration of Tested System103. PRELIMINARY TEST113.1 Conducted Emission113.2 Radiated Emission113.2 Radiated Emission114. CONDUCTED EMISSION AND RADIATED EMISSION TEST SUMMARY124.1 Conducted Emission124.2 Radiated Emission Below 1 GHz194.3 Radiated Emission Above 1 GHz215. CONCLUSION23 | 1.2 Tested System Details | 06 |
| 1.5 Test Facility071.6 Calibration of Measuring Instrument071.7 Measurement Uncertainty072. DESCRIPTION OF TEST082.1 Measurement of Conducted Emission082.2 Measurement of Radiated Emission092.3 Configuration of Tested System103. PRELIMINARY TEST113.1 Conducted Emission113.2 Radiated Emission113.2 Radiated Emission114. CONDUCTED EMISSION AND RADIATED EMISSION TEST SUMMARY124.1 Conducted Emission124.2 Radiated Emission Below 1 GHz194.3 Radiated Emission Above 1 GHz215. CONCLUSION23 | 1.3 Cable Description | 06 |
| 1.6 Calibration of Measuring Instrument071.7 Measurement Uncertainty072. DESCRIPTION OF TEST082.1 Measurement of Conducted Emission082.2 Measurement of Radiated Emission092.3 Configuration of Tested System103. PRELIMINARY TEST113.1 Conducted Emission113.2 Radiated Emission113.2 Radiated Emission114. CONDUCTED EMISSION AND RADIATED EMISSION TEST SUMMARY124.1 Conducted Emission124.2 Radiated Emission Below 1 GHz194.3 Radiated Emission Above 1 GHz215. CONCLUSION23 | 1.4 Noise Suppression Parts on Cable. (I/O Cable) | 06 |
| 1.7 Measurement Uncertainty072. DESCRIPTION OF TEST082.1 Measurement of Conducted Emission082.2 Measurement of Radiated Emission092.3 Configuration of Tested System103. PRELIMINARY TEST113.1 Conducted Emission113.2 Radiated Emission113.2 Radiated Emission114. CONDUCTED EMISSION AND RADIATED EMISSION TEST SUMMARY124.1 Conducted Emission124.2 Radiated Emission Below 1 GHz194.3 Radiated Emission Above 1 GHz215. CONCLUSION23 | 1.5 Test Facility | 07 |
| 2. DESCRIPTION OF TEST082.1 Measurement of Conducted Emission082.2 Measurement of Radiated Emission092.3 Configuration of Tested System103. PRELIMINARY TEST113.1 Conducted Emission113.2 Radiated Emission113.2 Radiated Emission114. CONDUCTED EMISSION AND RADIATED EMISSION TEST SUMMARY124.1 Conducted Emission124.2 Radiated Emission Below 1 GHz194.3 Radiated Emission Above 1 GHz215. CONCLUSION23 | 1.6 Calibration of Measuring Instrument | 07 |
| 2.1 Measurement of Conducted Emission082.2 Measurement of Radiated Emission092.3 Configuration of Tested System103. PRELIMINARY TEST113.1 Conducted Emission113.2 Radiated Emission114. CONDUCTED EMISSION AND RADIATED EMISSION TEST SUMMARY124.1 Conducted Emission124.2 Radiated Emission Below 1 GHz194.3 Radiated Emission Above 1 GHz215. CONCLUSION23 | 1.7 Measurement Uncertainty | 07 |
| 2.2 Measurement of Radiated Emission092.3 Configuration of Tested System103. PRELIMINARY TEST113.1 Conducted Emission113.2 Radiated Emission114. CONDUCTED EMISSION AND RADIATED EMISSION TEST SUMMARY124.1 Conducted Emission124.2 Radiated Emission Below 1 GHz194.3 Radiated Emission Above 1 GHz215. CONCLUSION23 | 2. DESCRIPTION OF TEST | 08 |
| 2.3 Configuration of Tested System103. PRELIMINARY TEST113.1 Conducted Emission113.2 Radiated Emission114. CONDUCTED EMISSION AND RADIATED EMISSION TEST SUMMARY124.1 Conducted Emission124.2 Radiated Emission Below 1 GHz194.3 Radiated Emission Above 1 GHz215. CONCLUSION23 | 2.1 Measurement of Conducted Emission | 08 |
| 3. PRELIMINARY TEST113.1 Conducted Emission113.2 Radiated Emission114. CONDUCTED EMISSION AND RADIATED EMISSION TEST SUMMARY124.1 Conducted Emission124.2 Radiated Emission Below 1 GHz194.3 Radiated Emission Above 1 GHz215. CONCLUSION23 | 2.2 Measurement of Radiated Emission | 09 |
| 3.1 Conducted Emission113.2 Radiated Emission114. CONDUCTED EMISSION AND RADIATED EMISSION TEST SUMMARY124.1 Conducted Emission124.2 Radiated Emission Below 1 GHz194.3 Radiated Emission Above 1 GHz215. CONCLUSION23 | 2.3 Configuration of Tested System | 10 |
| 3.2 Radiated Emission114. CONDUCTED EMISSION AND RADIATED EMISSION TEST SUMMARY124.1 Conducted Emission124.2 Radiated Emission Below 1 GHz194.3 Radiated Emission Above 1 GHz215. CONCLUSION23 | 3. PRELIMINARY TEST | 11 |
| 4. CONDUCTED EMISSION AND RADIATED EMISSION TEST SUMMARY 12 4.1 Conducted Emission 12 4.2 Radiated Emission Below 1 GHz 19 4.3 Radiated Emission Above 1 GHz 21 5. CONCLUSION 23 | 3.1 Conducted Emission | 11 |
| 4.1 Conducted Emission124.2 Radiated Emission Below 1 GHz194.3 Radiated Emission Above 1 GHz215. CONCLUSION23 | 3.2 Radiated Emission | 11 |
| 4.2 Radiated Emission Below 1 GHz194.3 Radiated Emission Above 1 GHz215. CONCLUSION23 | 4. CONDUCTED EMISSION AND RADIATED EMISSION TEST SUMMARY | 12 |
| 4.3 Radiated Emission Above 1 GHz215. CONCLUSION23 | 4.1 Conducted Emission | 12 |
| 5. CONCLUSION 23 | 4.2 Radiated Emission Below 1 GHz | 19 |
| | 4.3 Radiated Emission Above 1 GHz | 21 |
| 6. APPENDIX A. TEST SETUP PHOTOGRAPHS 24 | 5. CONCLUSION | 23 |
| | 6. APPENDIX A. TEST SETUP PHOTOGRAPHS | 24 |



1. GENERAL INFORMATION

1.1 Description of EUT

Its basic purpose is used for communications.

| FCC ID | ZNFL322DL |
|-------------------|--|
| IC | 2703C-X320WM |
| Model | LG L322DL |
| | LGL322DL, L322DL, LM-X320WM, LMX320WM, X320WM, |
| Series Model Name | LM-X320QMG, LMX320QMG, X320QMG, LM-X320QML, |
| | LMX320QML, X320QML, LM-X320QM6, LMX320QM6, X320QM6 |
| EUT Type | Multi-band CDMA/GSM/EDGE/WCDMA/LTE Phone with WLAN and Bluetooth |
| | 824.70 MHz to 848.31 MHz (CDMA BC0) |
| | 1 851.25 MHz to 1 908.75 MHz (CDMA BC1) |
| | 824.20 MHz to 848.80 MHz (GSM 850) |
| | 1 850.20 MHz to 1 909.80 MHz (GSM 1 900) |
| | 1 852.4 MHz to 1 907.6 MHz (WCDMA B2) |
| | 1712.4 MHz to 1752.6 MHz (WCDMA B4) |
| | 826.40 MHz to 846.60 MHz (WCDMA B5) |
| | 1 850 MHz to 1 910 MHz (LTE B2) |
| TX Frequency | 1 710 MHz to 1 755 MHz (LTE B4) |
| | 824 MHz to 849 MHz (LTE B5) |
| | 699 MHz to 716 MHz (LTE B12) |
| | 777 MHz to 787 MHz (LTE B13) |
| | 704 MHz to 716 MHz (LTE B17) |
| | 1 710 MHz to 1 780 MHz (LTE B66) |
| | 663 MHz to 698 MHz (LTE B71) |
| | 2 402 MHz to 2 480 MHz (Bluetooth) |
| | 2 412 MHz to 2 462 MHz (WiFi 2.4 GHz) |
| | 869.70 MHz to 893.31 MHz (CDMA BC0) |
| | 1 931.25 MHz to 1 988.75 MHz (CDMA BC1) |
| | 869.20 MHz to 893.80 MHz (GSM 850) |
| RX Frequency | 1 930.20 MHz to 1 989.80 MHz (GSM 1 900) |
| whequency | 1 932.4 MHz to 1 987.6 MHz (WCDMA B2) |
| | 2 112.4 MHz to 2 152.6 MHz (WCDMA B4) |
| | 871.40 MHz to 891.60 MHz (WCDMA B5) |
| | 1 930 MHz to 1 990 MHz (LTE B2) |



| 2 110 MHz to 2 155 MHz (LTE B4) |
|---------------------------------------|
| 869 MHz to 894 MHz (LTE B5) |
| 729 MHz to 746 MHz (LTE B12) |
| 746 MHz to 756 MHz (LTE B13) |
| 734 MHz to 746 MHz (LTE B17) |
| 2 110 MHz to 2 200 MHz (LTE B66) |
| 617 MHz to 652 MHz (LTE B71) |
| 2 402 MHz to 2 480 MHz (Bluetooth) |
| 2 412 MHz to 2 462 MHz (WiFi 2.4 GHz) |
| |

1.2 Tested System Details

| Device Type | Model Name | Serial Number | Manufacturer |
|---------------|--|---------------|--------------|
| EUT | LG L322DL | - | LG |
| Data Cable | EAD62377921 | - | LEAGTECH |
| Earphone | EAB64468444 | - | CRESYN |
| TA | MCS-01WAE | - | AOHAI |
| Micro SD card | Extreme Micro SDHC UHS-1 CLASS 10 (32 GB) | - | SanDisk |

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

1.3 Cable Description

| Product Name | Port | Power Cord Shielded (Y/N) | I/O Cable Shielded (Y/N) | Length (m) |
|----------------------|-----------|------------------------------|-----------------------------|---------------|
| 5 11 7 | Micro USB | Υ | N/A | (P)1.0 |
| EUT | Earphone | N/A | Ν | (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 |
|-----------------|-----------|-----------------------|----------|---------------------|----------|
| ELLT. | Micro USB | N | N/A | Y | Both End |
| EUT | Earphone | Ν | 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, 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 | |
| Radiated Field strength measurement facility 10 m Semi Anechoic chamber #1 | KR0032 |
| 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 ac cordance with the manufacturers recommendations for utilizing calibration equipment, which is traceable to recognized national standards.Espectially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2006).

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) | 1.82 dB |
| Radiated Emissions (30 MHz to 1 GHz) | 5.20 dB |
| Radiated Emissions (1 GHz to 18 GHz) | 5.24 dB |
| Radiated Emissions (18 GHz to 40 GHz) | 5.40 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.

| Frequency | Resolution | | ss A | Class B | | |
|--------------------|--------------------|----------------------|-------------------|----------------------|-------------------|--|
| Frequency (MHz) | Bandwidth (kHz) | 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 | |

Conducted Emission Limits

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)

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

Radiated Emission Limits

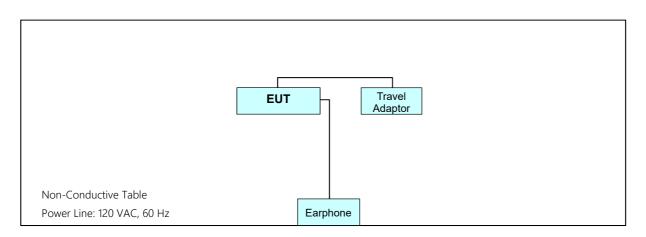


2.2.1 Frequency Range of Radiated Measurements

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 | |
| Below 1.705 | 30 | |

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 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

| | Туре | Manufacturer | Model Name | Serial Number | Calibration Cycle | Calibration Date |
|-------------|-------------------|-----------------|-----------------|------------------|----------------------|---------------------|
| | EMI Test Receiver | Rohde & Schwarz | ESCI | 100584 | 1 year | 06.25.2018 |
| \square | LISN | Rohde & Schwarz | ENV216 | 102245 | 1 year | 12.12.2018 |
| \boxtimes | Software | Rohde & Schwarz | EMC32 VER8.54.0 | - | _ | - |

4.1.2 Operating Condition

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

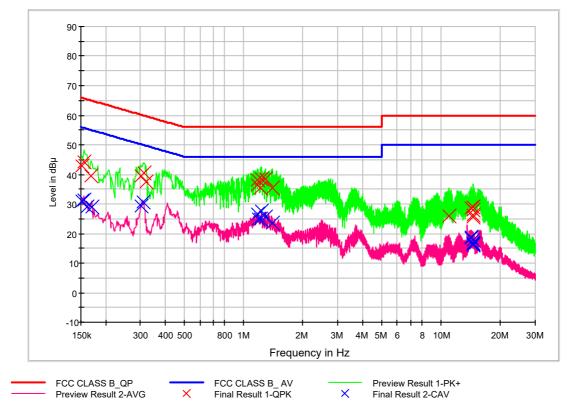
| Test Standard Used | FCC CFR 47 PART 15 Subpart B Class B ICES-003 Issue 6 Class B ANSI C63.4-2014 |
|--------------------|---|
| Detector | Quasi-Peak, CISPR-Average |
| Bandwidth | 9 kHz (6 dB) |
| Operating Mode | FRONT CAMERA & MP3 mode |
| Kind of Test Site | Shielded Room |
| Temperature | 23.5 ℃ |
| Relative Humidity | 43.2 % |
| Test Date | May 15, 2019 |



4.1.3 Measuring Data

Figure 1: Conducted Emission, AC Main Port, Line (L1)

FCC CLASS B_Exten Cable





QuasiPeak Final Result, Line (L1)

| Frequency (MHz) | QuasiPeak (dBµV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|--------------------|---------------------|--------------------|------|---------------|----------------|-----------------|
| 0.152000 | 43.0 | 9.000 | L1 | 9.7 | 22.9 | 65.9 |
| 0.156000 | 44.2 | 9.000 | L1 | 9.7 | 21.4 | 65.7 |
| 0.168000 | 39.6 | 9.000 | L1 | 9.7 | 25.5 | 65.1 |
| 0.302000 | 39.5 | 9.000 | L1 | 9.7 | 20.7 | 60.2 |
| 0.312000 | 40.4 | 9.000 | L1 | 9.7 | 19.5 | 59.9 |
| 0.320000 | 37.4 | 9.000 | L1 | 9.7 | 22.3 | 59.7 |
| 1.176000 | 38.1 | 9.000 | L1 | 9.8 | 17.9 | 56.0 |
| 1.182000 | 36.5 | 9.000 | L1 | 9.8 | 19.5 | 56.0 |
| 1.220000 | 35.6 | 9.000 | L1 | 9.8 | 20.4 | 56.0 |
| 1.232000 | 38.3 | 9.000 | L1 | 9.8 | 17.7 | 56.0 |
| 1.288000 | 38.5 | 9.000 | L1 | 9.9 | 17.5 | 56.0 |
| 1.406000 | 35.3 | 9.000 | L1 | 9.9 | 20.7 | 56.0 |
| 10.938000 | 26.0 | 9.000 | L1 | 10.3 | 34.0 | 60.0 |
| 14.180000 | 28.6 | 9.000 | L1 | 10.4 | 31.4 | 60.0 |
| 14.486000 | 28.9 | 9.000 | L1 | 10.4 | 31.1 | 60.0 |
| 14.514000 | 28.0 | 9.000 | L1 | 10.4 | 32.0 | 60.0 |
| 14.556000 | 26.3 | 9.000 | L1 | 10.4 | 33.7 | 60.0 |
| 14.566000 | 25.7 | 9.000 | L1 | 10.4 | 34.3 | 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

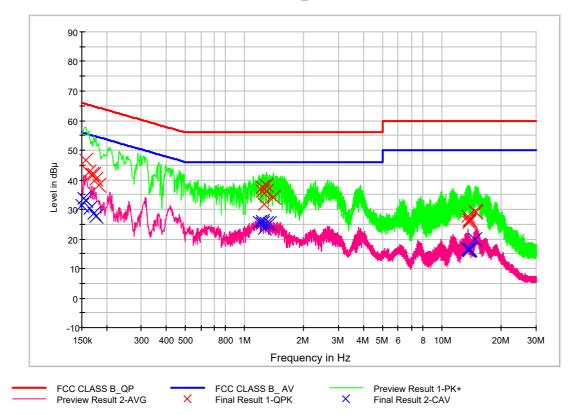


CAverage Final Result, Line (L1)

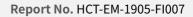
| Frequency (MHz) | CAverage (dBµV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|--------------------|--------------------|--------------------|------|---------------|----------------|-----------------|
| 0.152000 | 30.9 | 9.000 | L1 | 9.7 | 25.0 | 55.9 |
| 0.156000 | 31.4 | 9.000 | L1 | 9.7 | 24.3 | 55.7 |
| 0.160000 | 29.0 | 9.000 | L1 | 9.7 | 26.5 | 55.5 |
| 0.170000 | 29.0 | 9.000 | L1 | 9.7 | 25.9 | 55.0 |
| 0.302000 | 29.4 | 9.000 | L1 | 9.7 | 20.8 | 50.2 |
| 0.310000 | 30.6 | 9.000 | L1 | 9.7 | 19.4 | 50.0 |
| 1.176000 | 26.8 | 9.000 | L1 | 9.8 | 19.2 | 46.0 |
| 1.184000 | 25.0 | 9.000 | L1 | 9.8 | 21.0 | 46.0 |
| 1.220000 | 24.9 | 9.000 | L1 | 9.8 | 21.1 | 46.0 |
| 1.230000 | 27.6 | 9.000 | L1 | 9.8 | 18.4 | 46.0 |
| 1.290000 | 25.6 | 9.000 | L1 | 9.9 | 20.4 | 46.0 |
| 1.406000 | 23.7 | 9.000 | L1 | 9.9 | 22.3 | 46.0 |
| 14.132000 | 18.3 | 9.000 | L1 | 10.4 | 31.7 | 50.0 |
| 14.180000 | 18.9 | 9.000 | L1 | 10.4 | 31.1 | 50.0 |
| 14.486000 | 17.8 | 9.000 | L1 | 10.4 | 32.2 | 50.0 |
| 14.556000 | 16.4 | 9.000 | L1 | 10.4 | 33.6 | 50.0 |
| 14.564000 | 16.2 | 9.000 | L1 | 10.4 | 33.8 | 50.0 |
| 14.574000 | 16.8 | 9.000 | L1 | 10.4 | 33.2 | 50.0 |



Figure 2: Conducted Emission, AC Main Port, Line (N)



FCC CLASS B_Exten Cable





QuasiPeak Final Result, Line (N)

| Frequency (MHz) | QuasiPeak (dBµV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|--------------------|---------------------|--------------------|------|---------------|----------------|-----------------|
| 0.158000 | 46.8 | 9.000 | Ν | 9.8 | 18.8 | 65.6 |
| 0.162000 | 42.4 | 9.000 | Ν | 9.8 | 22.9 | 65.4 |
| 0.168000 | 41.8 | 9.000 | Ν | 9.8 | 23.3 | 65.1 |
| 0.172000 | 42.0 | 9.000 | Ν | 9.8 | 22.9 | 64.9 |
| 0.176000 | 40.0 | 9.000 | Ν | 9.8 | 24.6 | 64.7 |
| 0.182000 | 38.3 | 9.000 | Ν | 9.8 | 26.1 | 64.4 |
| 1.228000 | 37.6 | 9.000 | Ν | 10.0 | 18.4 | 56.0 |
| 1.236000 | 36.1 | 9.000 | Ν | 10.0 | 19.9 | 56.0 |
| 1.262000 | 31.7 | 9.000 | Ν | 10.0 | 24.3 | 56.0 |
| 1.290000 | 36.0 | 9.000 | Ν | 10.0 | 20.0 | 56.0 |
| 1.296000 | 38.0 | 9.000 | Ν | 10.0 | 18.0 | 56.0 |
| 1.404000 | 34.1 | 9.000 | Ν | 10.1 | 21.9 | 56.0 |
| 13.516000 | 27.8 | 9.000 | Ν | 10.6 | 32.2 | 60.0 |
| 13.644000 | 26.4 | 9.000 | Ν | 10.6 | 33.6 | 60.0 |
| 13.662000 | 25.6 | 9.000 | Ν | 10.6 | 34.4 | 60.0 |
| 13.850000 | 26.4 | 9.000 | Ν | 10.6 | 33.6 | 60.0 |
| 14.694000 | 29.4 | 9.000 | Ν | 10.7 | 30.6 | 60.0 |
| 14.842000 | 29.0 | 9.000 | Ν | 10.7 | 31.0 | 60.0 |



CAverage Final Result, Line (N)

| Frequency (MHz) | CAverage (dBµV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|--------------------|--------------------|--------------------|------|---------------|----------------|-----------------|
| 0.150000 | 31.5 | 9.000 | Ν | 9.8 | 24.5 | 56.0 |
| 0.154000 | 33.7 | 9.000 | Ν | 9.8 | 22.1 | 55.8 |
| 0.158000 | 33.0 | 9.000 | Ν | 9.8 | 22.6 | 55.6 |
| 0.164000 | 30.4 | 9.000 | Ν | 9.8 | 24.9 | 55.3 |
| 0.172000 | 28.7 | 9.000 | Ν | 9.8 | 26.2 | 54.9 |
| 0.176000 | 27.6 | 9.000 | Ν | 9.8 | 27.1 | 54.7 |
| 1.186000 | 25.5 | 9.000 | Ν | 10.0 | 20.5 | 46.0 |
| 1.226000 | 25.8 | 9.000 | Ν | 10.0 | 20.2 | 46.0 |
| 1.236000 | 25.3 | 9.000 | Ν | 10.0 | 20.7 | 46.0 |
| 1.262000 | 23.5 | 9.000 | Ν | 10.0 | 22.5 | 46.0 |
| 1.290000 | 25.1 | 9.000 | Ν | 10.0 | 20.9 | 46.0 |
| 1.342000 | 25.4 | 9.000 | Ν | 10.1 | 20.6 | 46.0 |
| 13.508000 | 16.6 | 9.000 | Ν | 10.6 | 33.4 | 50.0 |
| 13.644000 | 16.3 | 9.000 | Ν | 10.6 | 33.7 | 50.0 |
| 13.648000 | 16.2 | 9.000 | Ν | 10.6 | 33.8 | 50.0 |
| 13.662000 | 16.1 | 9.000 | Ν | 10.6 | 33.9 | 50.0 |
| 13.850000 | 16.3 | 9.000 | Ν | 10.6 | 33.7 | 50.0 |
| 14.770000 | 19.8 | 9.000 | Ν | 10.7 | 30.2 | 50.0 |



4.2 Radiated Emission Below 1 GHz

4.2.1 Measuring instruments

| | Туре | Manufacturer | Model Name | Serial Number | Calibration Cycle | Calibration Date |
|-------------|------------------------------|-----------------|-----------------|--------------------------------------|----------------------|---------------------|
| | EMI test receiver | Rohde & Schwarz | ESI40 | 831564103 | 1 year | 10.31.2018 |
| \boxtimes | Trilog antenna | Schwarzbeck | VULB 9168 | 255 | 2 year | 03.26.2019 |
| \boxtimes | Antenna master | INNCO Systems | MA4640-XP-ET | - | N/A | - |
| \boxtimes | Antenna master controller | INNCO Systems | CO 3000 | O 3000 CO3000/870/ 35990515/L N/A | | - |
| \boxtimes | Turn Table | INNCO Systems | 1060 | - | N/A | - |
| | Turn table controller | INNCO Systems | CO2000 | CO2000/095/ 7590304/L | N/A | - |
| \boxtimes | Software | Rohde & Schwarz | EMC32 VER8.40.0 | - | - | - |

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 ICES-003 Issue 6 Class B ANSI C63.4-2014 |
|--------------------|---|
| Detector | Quasi-Peak |
| Bandwidth | 120 kHz (6 dB) |
| Operating Mode | FRONT CAMERA & MP3 mode |
| Kind of Test Site | 3 m semi anechoic chamber |
| Temperature | 23.8 ℃ |
| Relative Humidity | 45.2 % |
| Test Date | May 16, 2019 |



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) |
|--------------------|------------------------|---------------------------|---------------|------------------|---------------|----------------|-------------------|
| 30.038076 | 19.2 | 100.0 | V | 311.0 | 18.3 | 20.8 | 40.0 |
| 51.809620 | 18.2 | 125.3 | V | 188.0 | 19.7 | 21.8 | 40.0 |
| 61.044088 | 16.6 | 117.7 | V | 268.0 | 19.2 | 23.4 | 40.0 |
| 125.312625 | 23.7 | 100.0 | V | 236.0 | 17.8 | 19.8 | 43.5 |
| 150.338677 | 24.2 | 307.8 | V | 58.0 | 19.4 | 19.3 | 43.5 |
| 854.695391 | 30.0 | 274.9 | V | 92.0 | 30.8 | 16.0 | 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

| | Туре | Manufacturer | Model Name | Serial Number | Calibration Cycle | Calibration Date |
|-------------|------------------------------|-----------------|-----------------|-------------------------------|----------------------|---------------------|
| \boxtimes | EMI test receiver | Rohde & Schwarz | ESI40 | 831564103 | 1 year | 10.31.2018 |
| \boxtimes | Antenna master | INNCO Systems | MA4640-XP-ET | - | N/A | - |
| \boxtimes | Antenna master controller | INNCO Systems | CO3000 | CO3000/870/ 35990515/L N/A | | - |
| \boxtimes | Turn table | INNCO Systems | 1060 | - | N/A | - |
| \boxtimes | Turn table controller | INNCO Systems | CO2000 | CO2000/095/ 7590304/L | 2000/095/ N/A | |
| \boxtimes | Horn antenna | Schwarzbeck | BBHA 9120D | 01836 | 2 year | 07.20.2018 |
| \boxtimes | Low Noise amplifier | TESTEK | TK-PA18H | 170034-L | 1 year | 03.04.2019 |
| \boxtimes | Software | Rohde & Schwarz | EMC32 VER8.40.0 | - | - | - |

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 ICES-003 Issue 6 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 | 2 480 MHz |
| Tested Frequency Range | 1 GHz to 18 GHz |
| Operation Mode | FRONT CAMERA & MP3 mode |
| Kind of Test Site | 3 m semi anechoic chamber |
| Temperature | 22.1 °C |
| Relative Humidity | 41.9 % |
| Test Date | May 14, 2019 |
| | |



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) |
|--------------------|------------------|---------------------------|---------------|------------------|---------------|----------------|-------------------|
| 4241.733467 | 36.3 | 127.6 | Н | 0.0 | -18.7 | 37.7 | 74.0 |
| 5557.364730 | 39.6 | 299.6 | V | 4.0 | -15.3 | 34.4 | 74.0 |
| 7371.292585 | 44.8 | 249.4 | Н | 320.0 | -9.8 | 29.2 | 74.0 |
| 9566.282565 | 48.4 | 100.0 | V | 0.0 | -5.4 | 25.6 | 74.0 |
| 11003.056112 | 49.3 | 149.5 | V | 106.0 | -2.6 | 24.7 | 74.0 |
| 14821.292586 | 50.2 | 100.0 | Н | 69.0 | 0.9 | 23.8 | 74.0 |

| Frequency (MHz) | CAverage (dBµV/m) | Antenna Height (cm) | POL. (H/V) | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|--------------------|----------------------|---------------------------|---------------|------------------|---------------|----------------|-------------------|
| 4241.733467 | 23.8 | 127.6 | Н | 0.0 | -18.7 | 30.2 | 54.0 |
| 5557.364730 | 26.2 | 299.6 | V | 4.0 | -15.3 | 27.8 | 54.0 |
| 7371.292585 | 32.0 | 249.4 | Н | 320.0 | -9.8 | 22.0 | 54.0 |
| 9566.282565 | 35.8 | 100.0 | V | 0.0 | -5.4 | 18.2 | 54.0 |
| 11003.056112 | 35.8 | 149.5 | V | 106.0 | -2.6 | 18.2 | 54.0 |
| 14821.292586 | 36.9 | 100.0 | Н | 69.0 | 0.9 | 17.1 | 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 EUT Type: Multi-band CDMA/GSM/EDGE/WCDMA/LTE Phone with WLAN and Bluetooth, Model: LG L322DL complies with §15.107 and §15.109 of the FCC rules and ICES-003 Issue 6 of the IC rules.



6. APPENDIX A. TEST SETUP PHOTO

Please refer to Appendix. A

| File No. | Date of Issue | Description | | |
|---------------------|---------------|-----------------|--|--|
| HCT-EM-1905-FI007-P | May 24, 2019 | Initial Release | | |

End of report