

# EMI TEST REPORT

## FCC CERTIFICATION

**Applicant:**

**SAMSUNG Electronics Co., Ltd.**  
**129, Samsung-ro, Yeongtong-gu, Suwon-si,**  
**Gyeonggi-do, 16677, Korea**

**Date of Issue: February 11, 2019****Test Report No. HCT-EM-1902-FC001****Test Site: HCT CO., LTD.****FCC ID :****A3LSMM105G**

Applicable Standards : FCC CFR 47 PART 15 Subpart B Class B  
ANSI C63.4-2014

EUT Type : Mobile Phone

Model Name : SM-M105G/DS

Series Model Name : SM-M105G

Date of Test : January 23, 2019 to February 11, 2019

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

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## REVISION HISTORY

*The revision history for this document is shown in table.*

| Report No.        | Issue Date        | Information About Changes |
|-------------------|-------------------|---------------------------|
| HCT-EM-1902-FC001 | February 11, 2019 | Initial Release           |



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## 1. GENERAL INFORMATION

### 1.1 Description of EUT

Its basic purpose is used for communications.

|                   |                                                                                                                                                              |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FCC ID            | A3LSMM105G                                                                                                                                                   |
| Model name        | SM-M105G/DS                                                                                                                                                  |
| Series model name | SM-M105G                                                                                                                                                     |
| EUT type          | Mobile Phone                                                                                                                                                 |
| Frequency band    | GSM850, WCDMA850, LTE B5/41, BT BDR/EDR/LE 4.2, WLAN b/g/n                                                                                                   |
| Power rating      | Travel adaptor: Input: AC 100 to 240 V, 50/60 Hz, 0.15 A<br>Output: DC 5.0 V 1.0 A<br>Battery: Low : 3.6 V / Normal : 3.85 V / High : 4.35 V, Li-ion Battery |

### 1.2 Equipment Units Tested

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

| Device Type           | Model Name            | Serial Number | Manufacturer                   | FCC ID / DoC |
|-----------------------|-----------------------|---------------|--------------------------------|--------------|
| EUT                   | SM-M105G/DS           | -             | SAMSUNG                        | A3LSMM105G   |
| Notebook PC           | ProBook6560b          | 5CB2053MXF    | HP                             | -            |
| Notebook PC adaptor   | Series PPP009L-E      | -             | LITE-ON TECHNOLOGY (CHANGZHOU) | -            |
| Gateway               | TL-WR747N             | -             | TP Link                        | -            |
| Gateway adaptor       | T090060-2H1           | -             | TP Link                        | -            |
| Serial mouse          | Serial 2 Button mouse | 02031069      | Radio Shack                    | FSUGMZE3     |
| RJ45 cable            | -                     | -             | -                              | -            |
| TA                    | ETA0U84IWE            | -             | SALCOMP                        | -            |
| Data Cable            | ECB-DU68WE            | -             | RFTECH                         | -            |
| Earphone              | EHS61ASFWE            | -             | YOUNGBO                        | -            |
| Micro SD card (64 GB) | -                     | -             | SAMSUNG                        | -            |



### 1.3 Cable Description

| Product Name | Port          | Power Cord Shielded (Y/N) | I/O Cable Shielded (Y/N) | Length (m) |
|--------------|---------------|---------------------------|--------------------------|------------|
| EUT          | Micro USB     | Y                         | Y                        | (P,D) 1.0  |
|              | Earphone      | N/A                       | N                        | (D) 1.2    |
| Notebook PC  | RJ 45         | N/A                       | N                        | (D) 1.6    |
|              | Serial(Mouse) | N/A                       | Y                        | (D) 1.8    |
|              | DC IN         | N                         | N/A                      | (P) 1.8    |
| Gateway      | DC IN         | N                         | N/A                      | (P) 1.8    |

\* 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          | Micro USB     | N                  | N/A      | Y                | Both End     |
|              | Earphone      | N                  | N/A      | Y                | EUT End      |
| Notebook PC  | RJ 45         | N                  | N/A      | N                | N/A          |
|              | Serial(Mouse) | N                  | N/A      | Y                | Notebook 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                                                     | Registration Number |
|----------------------------------------------------------------------------|---------------------|
| Radiated Field strength measurement facility<br>3 m Semi Anechoic chamber  | 90661               |
| Radiated Field strength measurement facility<br>10 m Semi Anechoic chamber |                     |

## 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 (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  $U_{\text{CISPR}}$  measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

| Parameter                               | Expanded Uncertainty (dB) |
|-----------------------------------------|---------------------------|
| 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. LIST OF TEST EQUIPMENT

| <u>Type</u>                                                      | <u>Manufacturer</u>    | <u>Model Name</u> | <u>Serial Number</u>      | <u>Calibration Cycle</u> | <u>CAL Date</u> |
|------------------------------------------------------------------|------------------------|-------------------|---------------------------|--------------------------|-----------------|
| <u>Conducted Emission</u>                                        |                        |                   |                           |                          |                 |
| <input checked="" type="checkbox"/> EMI Test Receiver            | Rohde & Schwarz        | ESCI              | 100584                    | 1 year                   | 06.25.2018      |
| <input checked="" type="checkbox"/> LISN                         | Rohde & Schwarz        | ENV216            | 102245                    | 1 year                   | 12.12.2018      |
| <input checked="" type="checkbox"/> LISN                         | Rohde & Schwarz        | ENV216            | 100073                    | 1 year                   | 05.03.2018      |
| <input checked="" type="checkbox"/> Radio communication analyzer | ANRITSU                | MT8820C           | 6201138643                | 1 year                   | 08.21.2018      |
| <input checked="" type="checkbox"/> Antenna (for Communication)  | Schwarzbeck            | USLP9142          | VSLP 9142-200             | -                        | -               |
| <input checked="" type="checkbox"/> Software                     | Rohde & Schwarz        | EMC32 VER8.54.0   | -                         | -                        | -               |
| <u>Radiated Emission</u>                                         |                        |                   |                           |                          |                 |
| -For measurement below 1 GHz                                     |                        |                   |                           |                          |                 |
| <input checked="" type="checkbox"/> EMI Test Receiver            | Rohde & Schwarz        | ESU40             | 100524                    | 1 year                   | 07.27.2018      |
| <input checked="" type="checkbox"/> Trilog Antenna               | Schwarzbeck            | VULB 9168         | 00847                     | 2 year                   | 04.13.2018      |
| <input checked="" type="checkbox"/> Antenna master               | INNCO Systems          | MA4640-XP-ET      | -                         | N/A                      | -               |
| <input checked="" type="checkbox"/> Antenna master controller    | INNCO Systems          | CO 3000           | CO3000/870/<br>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/<br>7590304/L  | N/A                      | -               |
| <input checked="" type="checkbox"/> Radio communication analyzer | ANRITSU                | MT8820C           | 6201138643                | 1 year                   | 08.21.2018      |
| <input checked="" type="checkbox"/> Antenna (for Communication)  | Schwarzbeck            | USLP9142          | VSLP 9142-200             | -                        | -               |
| <input checked="" type="checkbox"/> Software                     | Rohde & Schwarz        | EMC32 VER8.40.0   | -                         | -                        | -               |
| -For measurement above 1 GHz                                     |                        |                   |                           |                          |                 |
| <input checked="" type="checkbox"/> EMI Test Receiver            | Rohde & Schwarz        | ESU40             | 100524                    | 1 year                   | 07.27.2018      |
| <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/<br>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/<br>7590304/L  | N/A                      | -               |
| <input checked="" type="checkbox"/> Horn Antenna                 | Schwarzbeck            | BBHA 9120D        | 01836                     | 2 year                   | 05.14.2018      |
| <input checked="" type="checkbox"/> Low Noise Amplifier          | TESTEK                 | TK-PA18H          | 170034-L                  | 1 year                   | 03.06.2018      |
| <input type="checkbox"/> Power Amplifier                         | TESTEK                 | TK-PA1840H        | 170030-L                  | 1 year                   | 12.17.2018      |
| <input type="checkbox"/> Horn Antenna                            | Schwarzbeck            | BBHA 9170         | BBHA9170#786              | 2 year                   | 12.05.2017      |
| <input checked="" type="checkbox"/> Radio communication analyzer | ANRITSU                | MT8820C           | 6201138643                | 1 year                   | 08.21.2018      |
| <input checked="" type="checkbox"/> Antenna (for Communication)  | Schwarzbeck            | USLP9142          | VSLP 9142-200             | -                        | -               |
| <input type="checkbox"/> Highpass Filter                         | Wainwright Instruments | WHKX1.0/15G-12SS  | 42                        | 1 year                   | 08.02.2018      |
| <input checked="" type="checkbox"/> Software                     | Rohde & Schwarz        | EMC32 VER8.40.0   | -                         | -                        | -               |



### 3. DESCRIPTION OF MEASUREMENTS

#### 3.1 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<br>(MHz) | Resolution Bandwidth<br>(kHz) | Quasi-Peak<br>(dB(μV)) | Average<br>(dB(μV)) |
|--------------------|-------------------------------|------------------------|---------------------|
| 0.15 to 0.5        | 9                             | 66 to 56*              | 56 to 46*           |
| 0.5 to 5           | 9                             | 56                     | 46                  |
| 5 to 30            | 9                             | 60                     | 50                  |

*\*Decreases with the logarithm of the frequency.*





### 3.2 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) | Antenna Distance (m) | Field Strength ( $\mu\text{V}/\text{m}$ )  | Quasi-Peak ( $\text{dB}(\mu\text{V})/\text{m}$ ) |
|-----------------|----------------------|--------------------------------------------|--------------------------------------------------|
| 30 to 88        | 3                    | 100                                        | 40.0                                             |
| 88 to 216       | 3                    | 150                                        | 43.5                                             |
| 216 to 960      | 3                    | 200                                        | 46.0                                             |
| Above 960       | 3                    | 500                                        | 54.0                                             |
| Frequency (MHz) | Antenna Distance (m) | Peak ( $\text{dB}(\mu\text{V})/\text{m}$ ) | Average ( $\text{dB}(\mu\text{V})/\text{m}$ )    |
| Above 1 000     | 3                    | 74                                         | 54                                               |

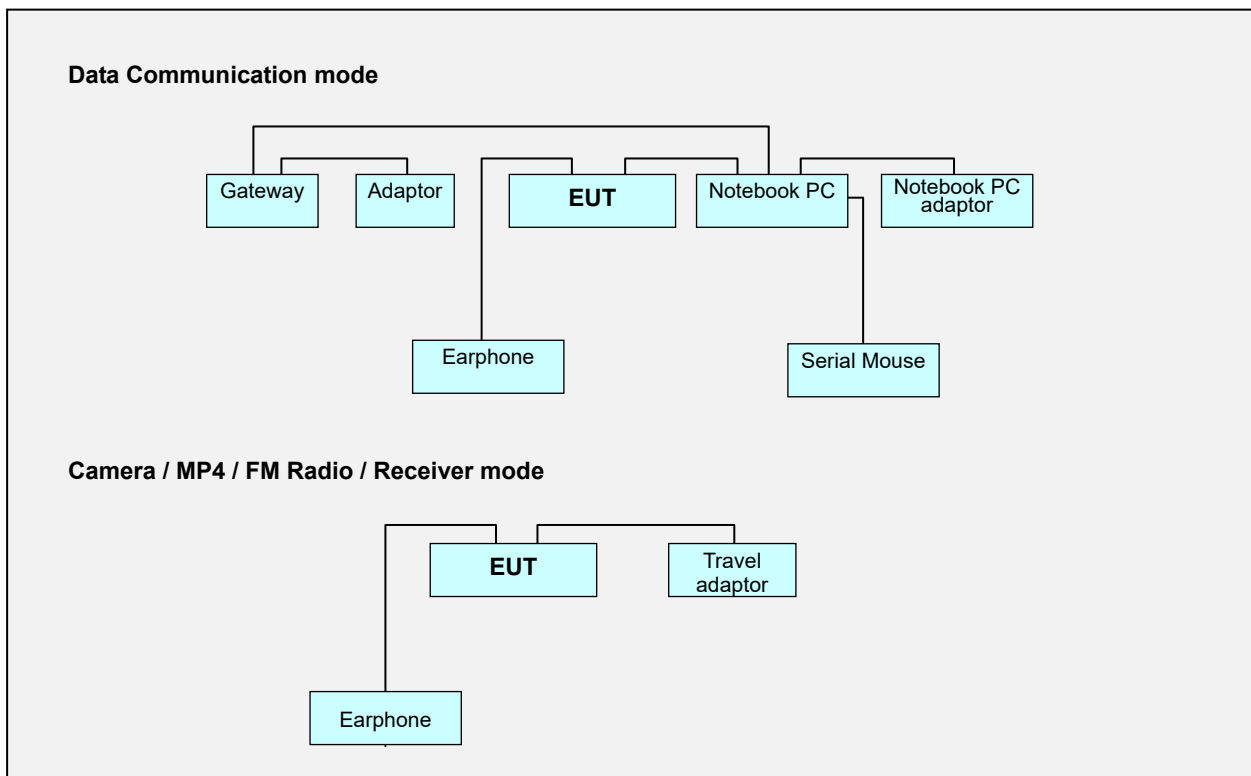


### 3.2.1 Frequency Range of Radiated Measurements

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                                                                                      | 5 <sup>th</sup> harmonic of the highest frequency or 40 GHz, whichever is lower |

### 3.3 Configuration of Tested System



Non-Conductive Table  
Power Line: 120 VAC, 60 Hz



## 4. PRELIMINARY TEST

During preliminary tests, the following operating mode was investigated.

- Data Communication
- Rear Camera(Preview/Recording)
- Front Camera(Preview/Recording)
- MP4 Play
- FM Radio mode (Low/Middle/High CH)
- LTE B5 Idle (Middle CH)
- WCDMA 850 Idle (Middle CH)
- GSM 850 Idle (Middle CH)

### 4.1 Conducted Emission

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

#### Operating Modes:

- DATA Communication
- Rear Camera Preview +FM Radio (Low CH)
- Front Camera Preview + FM Radio (Middle CH)
- FM Radio (High CH)
- MP4 Play
- Receiver mode (LTE B5 Low CH Idle) + Rear Camera Recording
- Receiver mode (LTE B5 Middle CH Idle) + Front Camera Recording
- Receiver mode (LTE B5 High CH Idle)

#### NOTE.

1. The worst case of operating mode is reported.

### 4.2 Radiated Emission

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

#### Operating Modes:

- DATA Communication
- Rear Camera Preview +FM Radio (Low CH)
- Front Camera Preview + FM Radio (Middle CH)
- FM Radio (High CH)
- MP4 Play
- Receiver mode (LTE B5 Low CH Idle) + Rear Camera Recording
- Receiver mode (LTE B5 Middle CH Idle) + Front Camera Recording
- Receiver mode (LTE B5 High CH Idle)

#### NOTE.

1. Three orientations have been investigated and the worst case orientation is reported.
2. The worst case of operating mode is reported.



## 5. CONDUCTED AND RADIATED EMISSION TEST SUMMARY

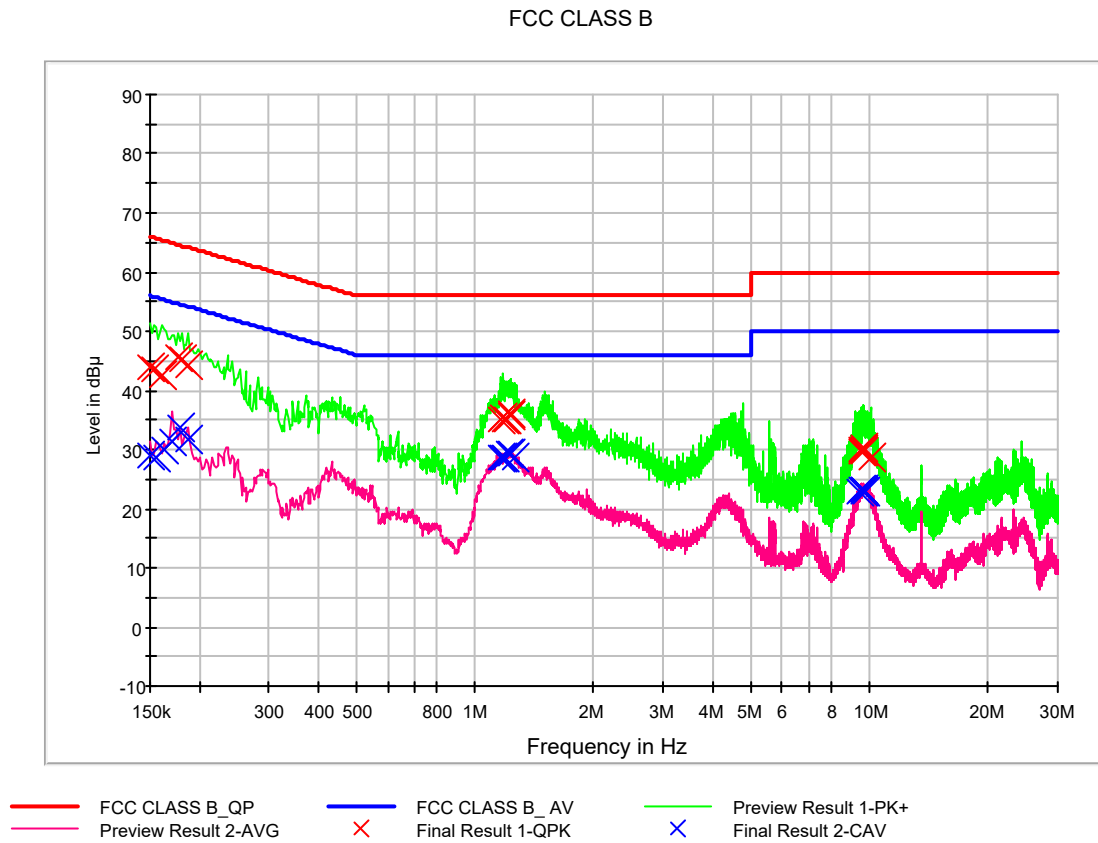
### 5.1 Conducted Emission

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

|                              |                                                                                                                                                 |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Applicable Standards         | FCC PART 15 Subpart B Class B<br>ANSI C63.4-2014                                                                                                |
| Detector                     | Quasi-Peak, CISPR-Average                                                                                                                       |
| Bandwidth                    | 9 kHz (6 dB)                                                                                                                                    |
| Worst Case of Operating Mode | DATA Communication<br>Front Camera Preview + FM Radio (Middle CH)<br>MP4 Play<br>Receiver mode (LTE B5 Middle CH Idle) + Front Camera Recording |
| Kind of Test Site            | Shielded Room                                                                                                                                   |
| Temperature                  | 21.8 / 22.0 / 20.8 °C                                                                                                                           |
| Relative Humidity            | 44.3 / 43.6 / 41.4 %                                                                                                                            |
| Test Date                    | January 23 / January 29 / January 31, 2019                                                                                                      |

#### - 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

**Figure 1: Conducted Emission, Data Communication, Line (L1)**



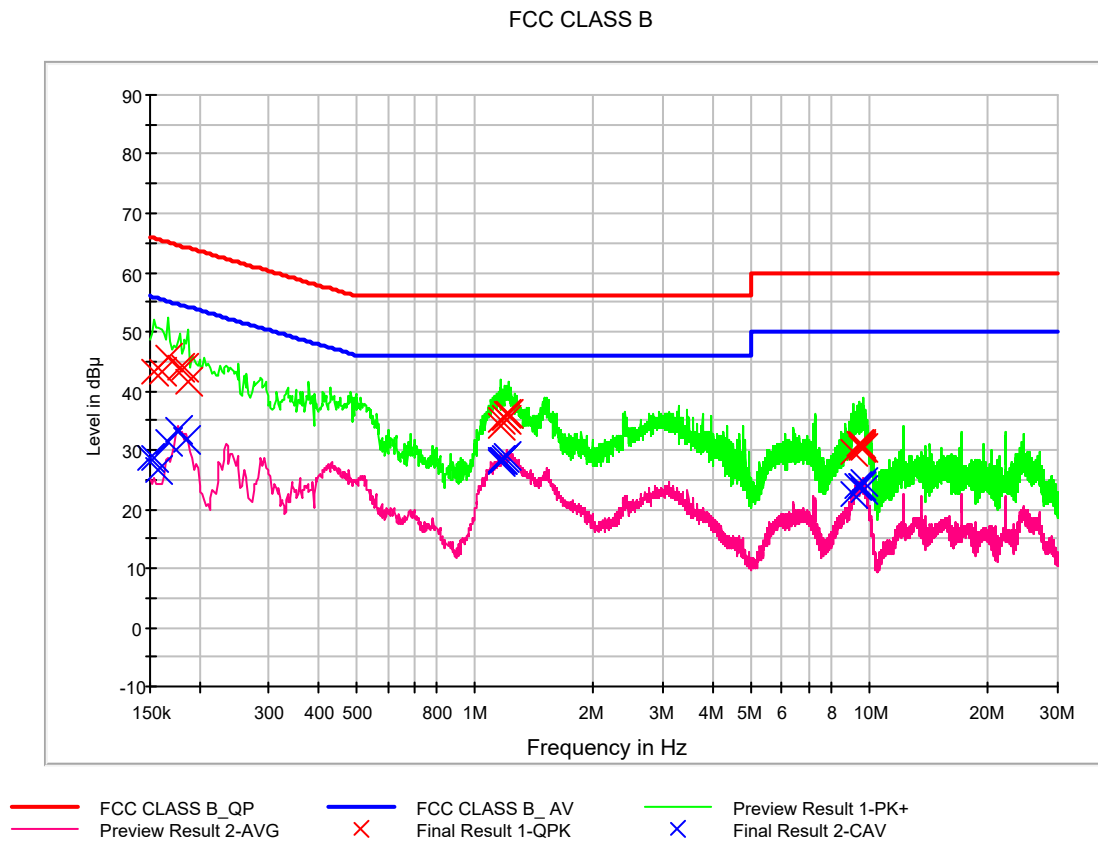
### QuasiPeak Final Result, Line (L1)

| Frequency (MHz) | QuasiPeak (dBuV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBuV) |
|-----------------|------------------|-----------------|------|------------|-------------|--------------|
| 0.150000        | 44.0             | 9.000           | L1   | 9.6        | 22.0        | 66.0         |
| 0.154000        | 43.4             | 9.000           | L1   | 9.6        | 22.4        | 65.8         |
| 0.160000        | 42.6             | 9.000           | L1   | 9.6        | 22.8        | 65.5         |
| 0.176000        | 45.6             | 9.000           | L1   | 9.6        | 19.1        | 64.7         |
| 0.180000        | 45.3             | 9.000           | L1   | 9.6        | 19.2        | 64.5         |
| 0.188000        | 44.2             | 9.000           | L1   | 9.7        | 19.9        | 64.1         |
| 1.160000        | 35.2             | 9.000           | L1   | 9.7        | 20.8        | 56.0         |
| 1.182000        | 35.4             | 9.000           | L1   | 9.7        | 20.6        | 56.0         |
| 1.190000        | 35.2             | 9.000           | L1   | 9.7        | 20.8        | 56.0         |
| 1.210000        | 35.2             | 9.000           | L1   | 9.7        | 20.8        | 56.0         |
| 1.230000        | 35.7             | 9.000           | L1   | 9.7        | 20.3        | 56.0         |
| 1.234000        | 36.1             | 9.000           | L1   | 9.7        | 19.9        | 56.0         |
| 9.576000        | 29.7             | 9.000           | L1   | 10.0       | 30.3        | 60.0         |
| 9.582000        | 29.9             | 9.000           | L1   | 10.0       | 30.1        | 60.0         |
| 9.592000        | 29.9             | 9.000           | L1   | 10.0       | 30.1        | 60.0         |
| 9.602000        | 29.8             | 9.000           | L1   | 10.0       | 30.2        | 60.0         |
| 9.692000        | 30.3             | 9.000           | L1   | 10.0       | 29.7        | 60.0         |
| 10.052000       | 28.6             | 9.000           | L1   | 10.0       | 31.4        | 60.0         |



## CAverage Final Result, Line (L1)

| Frequency (MHz) | CAverage (dBuV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBuV) |
|-----------------|-----------------|-----------------|------|------------|-------------|--------------|
| 0.150000        | 29.0            | 9.000           | L1   | 9.6        | 27.0        | 56.0         |
| 0.156000        | 28.8            | 9.000           | L1   | 9.6        | 26.9        | 55.7         |
| 0.162000        | 30.1            | 9.000           | L1   | 9.6        | 25.2        | 55.4         |
| 0.170000        | 31.5            | 9.000           | L1   | 9.6        | 23.4        | 55.0         |
| 0.178000        | 33.6            | 9.000           | L1   | 9.6        | 20.9        | 54.6         |
| 0.188000        | 31.8            | 9.000           | L1   | 9.7        | 22.4        | 54.1         |
| 1.160000        | 28.5            | 9.000           | L1   | 9.7        | 17.5        | 46.0         |
| 1.182000        | 28.6            | 9.000           | L1   | 9.7        | 17.4        | 46.0         |
| 1.190000        | 28.7            | 9.000           | L1   | 9.7        | 17.3        | 46.0         |
| 1.218000        | 29.2            | 9.000           | L1   | 9.7        | 16.8        | 46.0         |
| 1.232000        | 29.2            | 9.000           | L1   | 9.7        | 16.8        | 46.0         |
| 1.260000        | 28.7            | 9.000           | L1   | 9.8        | 17.3        | 46.0         |
| 9.476000        | 22.8            | 9.000           | L1   | 10.0       | 27.2        | 50.0         |
| 9.582000        | 23.2            | 9.000           | L1   | 10.0       | 26.8        | 50.0         |
| 9.602000        | 23.0            | 9.000           | L1   | 10.0       | 27.0        | 50.0         |
| 9.668000        | 23.3            | 9.000           | L1   | 10.0       | 26.7        | 50.0         |
| 9.692000        | 23.3            | 9.000           | L1   | 10.0       | 26.7        | 50.0         |
| 9.710000        | 22.8            | 9.000           | L1   | 10.0       | 27.2        | 50.0         |

**Figure 2: Conducted Emission, Data Communication, Line (N)**





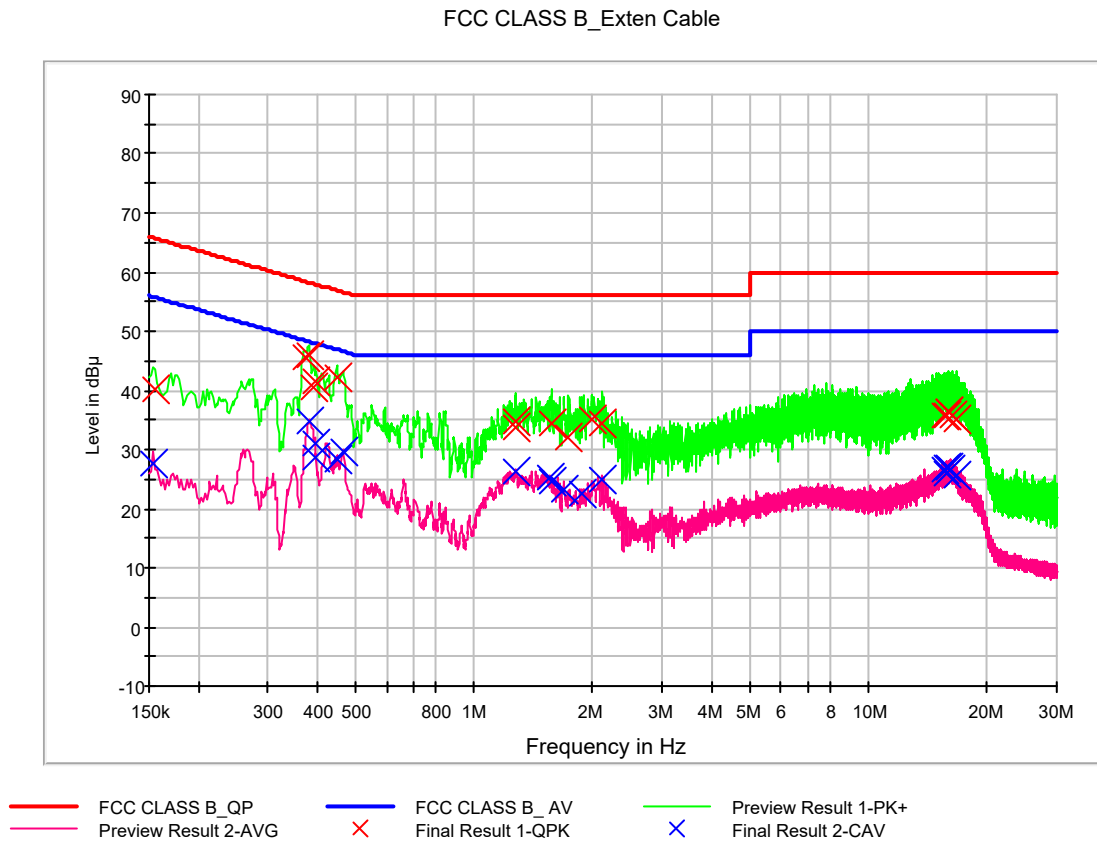
### QuasiPeak Final Result, Line (N)

| Frequency (MHz) | QuasiPeak (dBuV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBuV) |
|-----------------|------------------|-----------------|------|------------|-------------|--------------|
| 0.154000        | 43.4             | 9.000           | N    | 9.6        | 22.4        | 65.8         |
| 0.160000        | 43.4             | 9.000           | N    | 9.6        | 22.1        | 65.5         |
| 0.166000        | 45.5             | 9.000           | N    | 9.6        | 19.7        | 65.2         |
| 0.178000        | 43.9             | 9.000           | N    | 9.6        | 20.7        | 64.6         |
| 0.184000        | 43.9             | 9.000           | N    | 9.6        | 20.4        | 64.3         |
| 0.188000        | 41.7             | 9.000           | N    | 9.6        | 22.4        | 64.1         |
| 1.162000        | 34.2             | 9.000           | N    | 9.7        | 21.8        | 56.0         |
| 1.166000        | 35.0             | 9.000           | N    | 9.7        | 21.0        | 56.0         |
| 1.190000        | 35.4             | 9.000           | N    | 9.7        | 20.6        | 56.0         |
| 1.196000        | 36.0             | 9.000           | N    | 9.7        | 20.0        | 56.0         |
| 1.210000        | 35.0             | 9.000           | N    | 9.7        | 21.0        | 56.0         |
| 1.220000        | 36.1             | 9.000           | N    | 9.7        | 19.9        | 56.0         |
| 9.142000        | 29.7             | 9.000           | N    | 9.9        | 30.3        | 60.0         |
| 9.438000        | 30.9             | 9.000           | N    | 9.9        | 29.1        | 60.0         |
| 9.512000        | 30.8             | 9.000           | N    | 9.9        | 29.2        | 60.0         |
| 9.552000        | 30.9             | 9.000           | N    | 9.9        | 29.1        | 60.0         |
| 9.588000        | 30.3             | 9.000           | N    | 9.9        | 29.7        | 60.0         |
| 9.662000        | 30.2             | 9.000           | N    | 9.9        | 29.8        | 60.0         |



## CAverage Final Result, Line (N)

| Frequency (MHz) | CAverage (dBuV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBuV) |
|-----------------|-----------------|-----------------|------|------------|-------------|--------------|
| 0.150000        | 28.7            | 9.000           | N    | 9.6        | 27.3        | 56.0         |
| 0.154000        | 28.7            | 9.000           | N    | 9.6        | 27.1        | 55.8         |
| 0.158000        | 26.6            | 9.000           | N    | 9.6        | 28.9        | 55.6         |
| 0.166000        | 31.5            | 9.000           | N    | 9.6        | 23.7        | 55.2         |
| 0.176000        | 33.4            | 9.000           | N    | 9.6        | 21.3        | 54.7         |
| 0.186000        | 31.6            | 9.000           | N    | 9.6        | 22.6        | 54.2         |
| 1.162000        | 28.1            | 9.000           | N    | 9.7        | 17.9        | 46.0         |
| 1.166000        | 28.1            | 9.000           | N    | 9.7        | 17.9        | 46.0         |
| 1.176000        | 28.5            | 9.000           | N    | 9.7        | 17.5        | 46.0         |
| 1.180000        | 28.3            | 9.000           | N    | 9.7        | 17.7        | 46.0         |
| 1.188000        | 28.5            | 9.000           | N    | 9.7        | 17.5        | 46.0         |
| 1.198000        | 28.9            | 9.000           | N    | 9.7        | 17.1        | 46.0         |
| 9.142000        | 22.5            | 9.000           | N    | 9.9        | 27.5        | 50.0         |
| 9.296000        | 23.8            | 9.000           | N    | 9.9        | 26.2        | 50.0         |
| 9.512000        | 23.9            | 9.000           | N    | 9.9        | 26.1        | 50.0         |
| 9.552000        | 24.0            | 9.000           | N    | 9.9        | 26.0        | 50.0         |
| 9.644000        | 24.5            | 9.000           | N    | 9.9        | 25.5        | 50.0         |
| 9.662000        | 23.4            | 9.000           | N    | 9.9        | 26.6        | 50.0         |

**Figure 3: Conducted Emission, Front Camera Preview + FM Radio (Middle CH), Line (L1)**



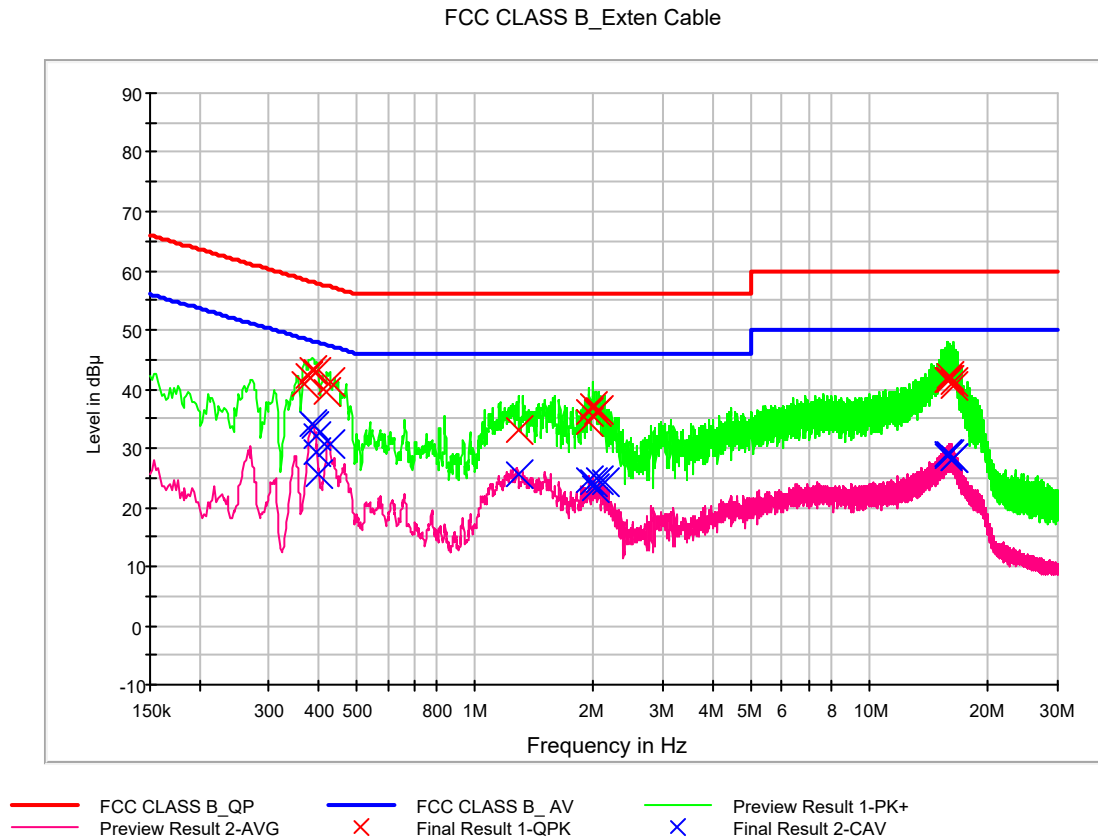
### QuasiPeak Final Result, Line (L1)

| Frequency (MHz) | QuasiPeak (dBuV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBuV) |
|-----------------|------------------|-----------------|------|------------|-------------|--------------|
| 0.156000        | 40.2             | 9.000           | L1   | 9.7        | 25.4        | 65.7         |
| 0.372000        | 45.5             | 9.000           | L1   | 9.7        | 13.0        | 58.5         |
| 0.382000        | 45.9             | 9.000           | L1   | 9.7        | 12.3        | 58.2         |
| 0.392000        | 40.7             | 9.000           | L1   | 9.7        | 17.4        | 58.0         |
| 0.398000        | 41.5             | 9.000           | L1   | 9.7        | 16.4        | 57.9         |
| 0.448000        | 42.2             | 9.000           | L1   | 9.7        | 14.7        | 56.9         |
| 1.270000        | 34.7             | 9.000           | L1   | 9.9        | 21.3        | 56.0         |
| 1.274000        | 33.7             | 9.000           | L1   | 9.9        | 22.3        | 56.0         |
| 1.568000        | 34.4             | 9.000           | L1   | 9.9        | 21.6        | 56.0         |
| 1.738000        | 32.2             | 9.000           | L1   | 9.9        | 23.8        | 56.0         |
| 1.988000        | 35.1             | 9.000           | L1   | 9.8        | 20.9        | 56.0         |
| 2.120000        | 34.3             | 9.000           | L1   | 9.9        | 21.7        | 56.0         |
| 15.628000       | 35.7             | 9.000           | L1   | 10.4       | 24.3        | 60.0         |
| 15.844000       | 35.7             | 9.000           | L1   | 10.4       | 24.3        | 60.0         |
| 15.918000       | 36.6             | 9.000           | L1   | 10.4       | 23.4        | 60.0         |
| 15.960000       | 36.4             | 9.000           | L1   | 10.4       | 23.6        | 60.0         |
| 16.356000       | 35.8             | 9.000           | L1   | 10.5       | 24.2        | 60.0         |
| 16.652000       | 35.1             | 9.000           | L1   | 10.5       | 24.9        | 60.0         |



## CAverage Final Result, Line (L1)

| Frequency (MHz) | CAverage (dBuV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBuV) |
|-----------------|-----------------|-----------------|------|------------|-------------|--------------|
| 0.154000        | 27.7            | 9.000           | L1   | 9.7        | 28.1        | 55.8         |
| 0.384000        | 34.8            | 9.000           | L1   | 9.7        | 13.4        | 48.2         |
| 0.394000        | 31.0            | 9.000           | L1   | 9.7        | 17.0        | 48.0         |
| 0.398000        | 28.5            | 9.000           | L1   | 9.7        | 19.4        | 47.9         |
| 0.448000        | 28.5            | 9.000           | L1   | 9.7        | 18.5        | 46.9         |
| 0.464000        | 29.8            | 9.000           | L1   | 9.8        | 16.8        | 46.6         |
| 1.274000        | 26.2            | 9.000           | L1   | 9.9        | 19.8        | 46.0         |
| 1.558000        | 25.2            | 9.000           | L1   | 9.9        | 20.8        | 46.0         |
| 1.566000        | 24.5            | 9.000           | L1   | 9.9        | 21.5        | 46.0         |
| 1.692000        | 23.3            | 9.000           | L1   | 9.9        | 22.7        | 46.0         |
| 1.868000        | 22.6            | 9.000           | L1   | 9.9        | 23.4        | 46.0         |
| 2.118000        | 25.0            | 9.000           | L1   | 9.9        | 21.0        | 46.0         |
| 15.530000       | 26.6            | 9.000           | L1   | 10.4       | 23.4        | 50.0         |
| 15.818000       | 26.9            | 9.000           | L1   | 10.4       | 23.1        | 50.0         |
| 15.844000       | 26.0            | 9.000           | L1   | 10.4       | 24.0        | 50.0         |
| 15.918000       | 26.9            | 9.000           | L1   | 10.4       | 23.1        | 50.0         |
| 16.142000       | 26.7            | 9.000           | L1   | 10.5       | 23.3        | 50.0         |
| 16.652000       | 25.8            | 9.000           | L1   | 10.5       | 24.2        | 50.0         |

**Figure 4: Conducted Emission, Front Camera Preview + FM Radio (Middle CH), Line (N)**



### QuasiPeak Final Result, Line (N)

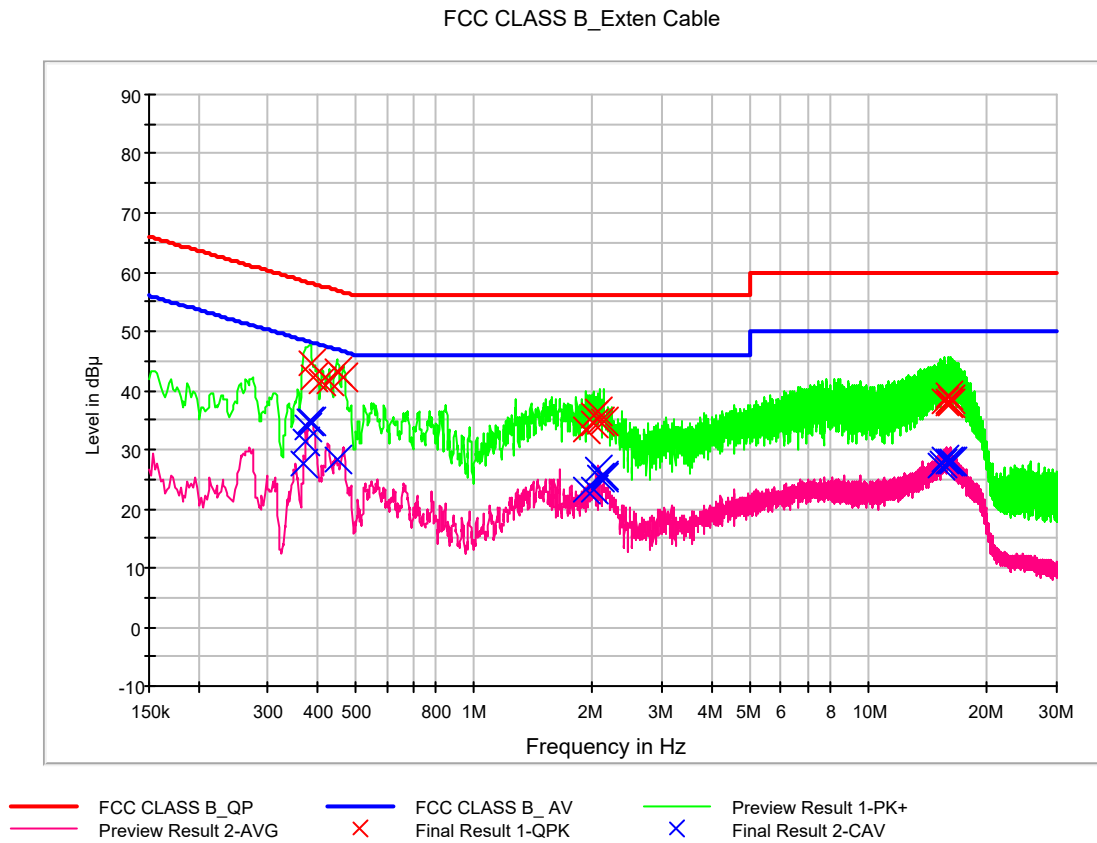
| Frequency (MHz) | QuasiPeak (dBuV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBuV) |
|-----------------|------------------|-----------------|------|------------|-------------|--------------|
| 0.370000        | 40.8             | 9.000           | N    | 9.9        | 17.7        | 58.5         |
| 0.380000        | 42.3             | 9.000           | N    | 9.9        | 16.0        | 58.3         |
| 0.388000        | 43.1             | 9.000           | N    | 9.9        | 15.0        | 58.1         |
| 0.398000        | 43.0             | 9.000           | N    | 9.9        | 14.9        | 57.9         |
| 0.422000        | 39.5             | 9.000           | N    | 9.9        | 17.9        | 57.4         |
| 0.428000        | 41.3             | 9.000           | N    | 9.9        | 16.0        | 57.3         |
| 1.288000        | 33.1             | 9.000           | N    | 10.0       | 22.9        | 56.0         |
| 1.944000        | 34.3             | 9.000           | N    | 10.0       | 21.7        | 56.0         |
| 1.950000        | 36.0             | 9.000           | N    | 10.0       | 20.0        | 56.0         |
| 1.994000        | 37.0             | 9.000           | N    | 10.0       | 19.0        | 56.0         |
| 2.026000        | 36.2             | 9.000           | N    | 10.0       | 19.8        | 56.0         |
| 2.064000        | 36.3             | 9.000           | N    | 10.0       | 19.7        | 56.0         |
| 15.738000       | 41.4             | 9.000           | N    | 10.7       | 18.6        | 60.0         |
| 15.796000       | 41.5             | 9.000           | N    | 10.7       | 18.5        | 60.0         |
| 15.982000       | 42.3             | 9.000           | N    | 10.7       | 17.7        | 60.0         |
| 16.042000       | 41.5             | 9.000           | N    | 10.7       | 18.5        | 60.0         |
| 16.364000       | 40.7             | 9.000           | N    | 10.7       | 19.3        | 60.0         |
| 16.418000       | 41.1             | 9.000           | N    | 10.7       | 18.9        | 60.0         |



## CAverage Final Result, Line (N)

| Frequency (MHz) | CAverage (dBuV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBuV) |
|-----------------|-----------------|-----------------|------|------------|-------------|--------------|
| 0.386000        | 34.0            | 9.000           | N    | 9.9        | 14.1        | 48.1         |
| 0.390000        | 33.6            | 9.000           | N    | 9.9        | 14.4        | 48.1         |
| 0.394000        | 31.9            | 9.000           | N    | 9.9        | 16.1        | 48.0         |
| 0.398000        | 29.5            | 9.000           | N    | 9.9        | 18.4        | 47.9         |
| 0.402000        | 25.7            | 9.000           | N    | 9.9        | 22.1        | 47.8         |
| 0.428000        | 30.5            | 9.000           | N    | 9.9        | 16.8        | 47.3         |
| 1.288000        | 25.4            | 9.000           | N    | 10.0       | 20.6        | 46.0         |
| 1.950000        | 24.7            | 9.000           | N    | 10.0       | 21.3        | 46.0         |
| 1.994000        | 24.3            | 9.000           | N    | 10.0       | 21.7        | 46.0         |
| 2.024000        | 23.4            | 9.000           | N    | 10.0       | 22.6        | 46.0         |
| 2.066000        | 24.6            | 9.000           | N    | 10.0       | 21.4        | 46.0         |
| 2.122000        | 24.3            | 9.000           | N    | 10.0       | 21.7        | 46.0         |
| 15.738000       | 29.0            | 9.000           | N    | 10.7       | 21.0        | 50.0         |
| 15.796000       | 28.8            | 9.000           | N    | 10.7       | 21.2        | 50.0         |
| 15.804000       | 29.1            | 9.000           | N    | 10.7       | 20.9        | 50.0         |
| 16.042000       | 29.0            | 9.000           | N    | 10.7       | 21.0        | 50.0         |
| 16.364000       | 28.4            | 9.000           | N    | 10.7       | 21.6        | 50.0         |
| 16.418000       | 28.3            | 9.000           | N    | 10.7       | 21.7        | 50.0         |



**Figure 5: Conducted Emission, MP4 Play Mode, Line (L1)**



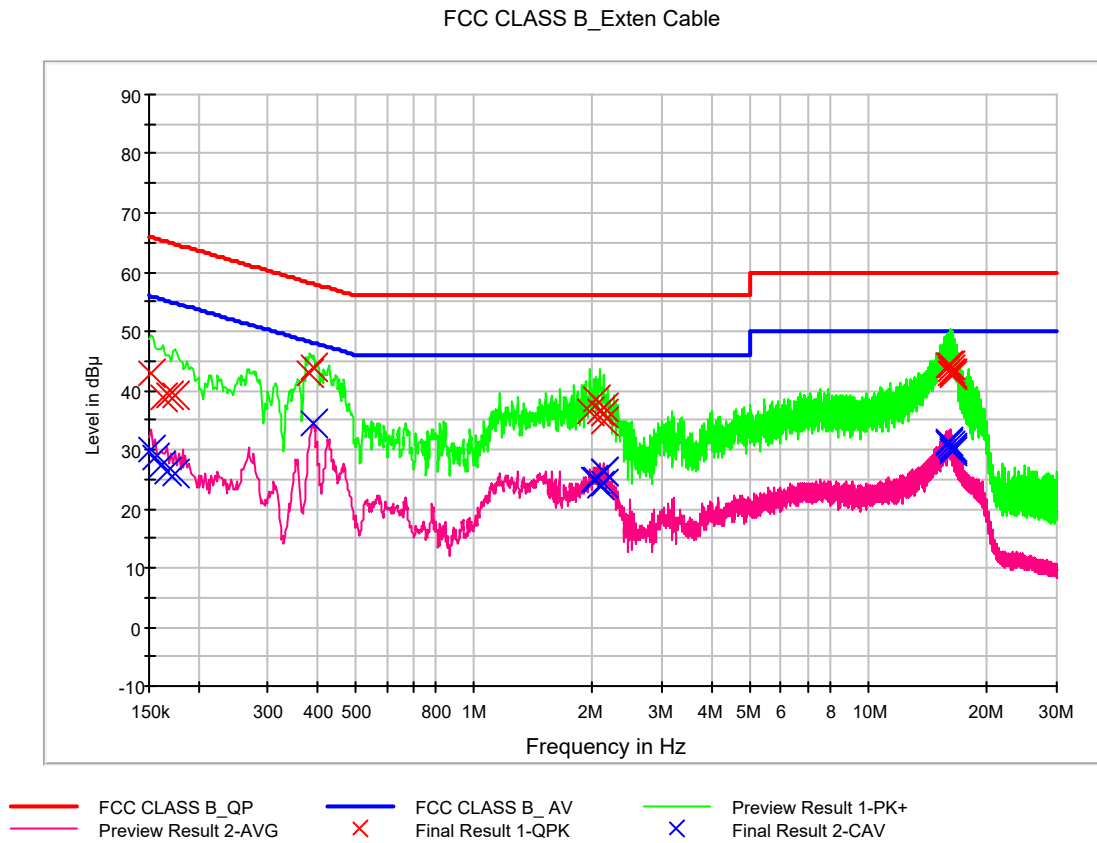
### QuasiPeak Final Result, Line (L1)

| Frequency (MHz) | QuasiPeak (dBuV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBuV) |
|-----------------|------------------|-----------------|------|------------|-------------|--------------|
| 0.386000        | 44.5             | 9.000           | L1   | 9.7        | 13.6        | 58.1         |
| 0.392000        | 42.2             | 9.000           | L1   | 9.7        | 15.8        | 58.0         |
| 0.412000        | 41.5             | 9.000           | L1   | 9.7        | 16.1        | 57.6         |
| 0.430000        | 41.5             | 9.000           | L1   | 9.7        | 15.8        | 57.3         |
| 0.450000        | 43.3             | 9.000           | L1   | 9.8        | 13.6        | 56.9         |
| 0.466000        | 42.3             | 9.000           | L1   | 9.8        | 14.2        | 56.6         |
| 1.914000        | 33.4             | 9.000           | L1   | 9.8        | 22.6        | 56.0         |
| 2.002000        | 35.6             | 9.000           | L1   | 9.8        | 20.4        | 56.0         |
| 2.020000        | 34.4             | 9.000           | L1   | 9.8        | 21.6        | 56.0         |
| 2.072000        | 36.3             | 9.000           | L1   | 9.8        | 19.7        | 56.0         |
| 2.084000        | 34.7             | 9.000           | L1   | 9.8        | 21.3        | 56.0         |
| 2.128000        | 34.8             | 9.000           | L1   | 9.9        | 21.2        | 56.0         |
| 15.594000       | 38.2             | 9.000           | L1   | 10.4       | 21.8        | 60.0         |
| 15.872000       | 39.3             | 9.000           | L1   | 10.4       | 20.7        | 60.0         |
| 15.880000       | 38.0             | 9.000           | L1   | 10.4       | 22.0        | 60.0         |
| 15.930000       | 37.9             | 9.000           | L1   | 10.4       | 22.1        | 60.0         |
| 16.056000       | 37.6             | 9.000           | L1   | 10.5       | 22.4        | 60.0         |
| 16.060000       | 38.4             | 9.000           | L1   | 10.5       | 21.6        | 60.0         |



## CAverage Final Result, Line (L1)

| Frequency (MHz) | CAverage (dBuV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBuV) |
|-----------------|-----------------|-----------------|------|------------|-------------|--------------|
| 0.370000        | 27.5            | 9.000           | L1   | 9.7        | 21.0        | 48.5         |
| 0.374000        | 31.2            | 9.000           | L1   | 9.7        | 17.2        | 48.4         |
| 0.378000        | 33.6            | 9.000           | L1   | 9.7        | 14.7        | 48.3         |
| 0.382000        | 34.7            | 9.000           | L1   | 9.7        | 13.5        | 48.2         |
| 0.386000        | 34.9            | 9.000           | L1   | 9.7        | 13.3        | 48.1         |
| 0.450000        | 28.3            | 9.000           | L1   | 9.8        | 18.6        | 46.9         |
| 1.914000        | 23.3            | 9.000           | L1   | 9.8        | 22.7        | 46.0         |
| 2.020000        | 23.4            | 9.000           | L1   | 9.8        | 22.6        | 46.0         |
| 2.072000        | 26.6            | 9.000           | L1   | 9.8        | 19.4        | 46.0         |
| 2.084000        | 25.1            | 9.000           | L1   | 9.8        | 20.9        | 46.0         |
| 2.126000        | 25.1            | 9.000           | L1   | 9.9        | 20.9        | 46.0         |
| 2.130000        | 25.5            | 9.000           | L1   | 9.9        | 20.5        | 46.0         |
| 15.256000       | 27.4            | 9.000           | L1   | 10.4       | 22.6        | 50.0         |
| 15.378000       | 27.8            | 9.000           | L1   | 10.4       | 22.2        | 50.0         |
| 15.624000       | 28.3            | 9.000           | L1   | 10.4       | 21.7        | 50.0         |
| 15.930000       | 28.1            | 9.000           | L1   | 10.4       | 22.0        | 50.0         |
| 16.056000       | 28.1            | 9.000           | L1   | 10.5       | 21.9        | 50.0         |
| 16.352000       | 27.9            | 9.000           | L1   | 10.5       | 22.1        | 50.0         |

**Figure 6: Conducted Emission, MP4 Play Mode, Line (N)**



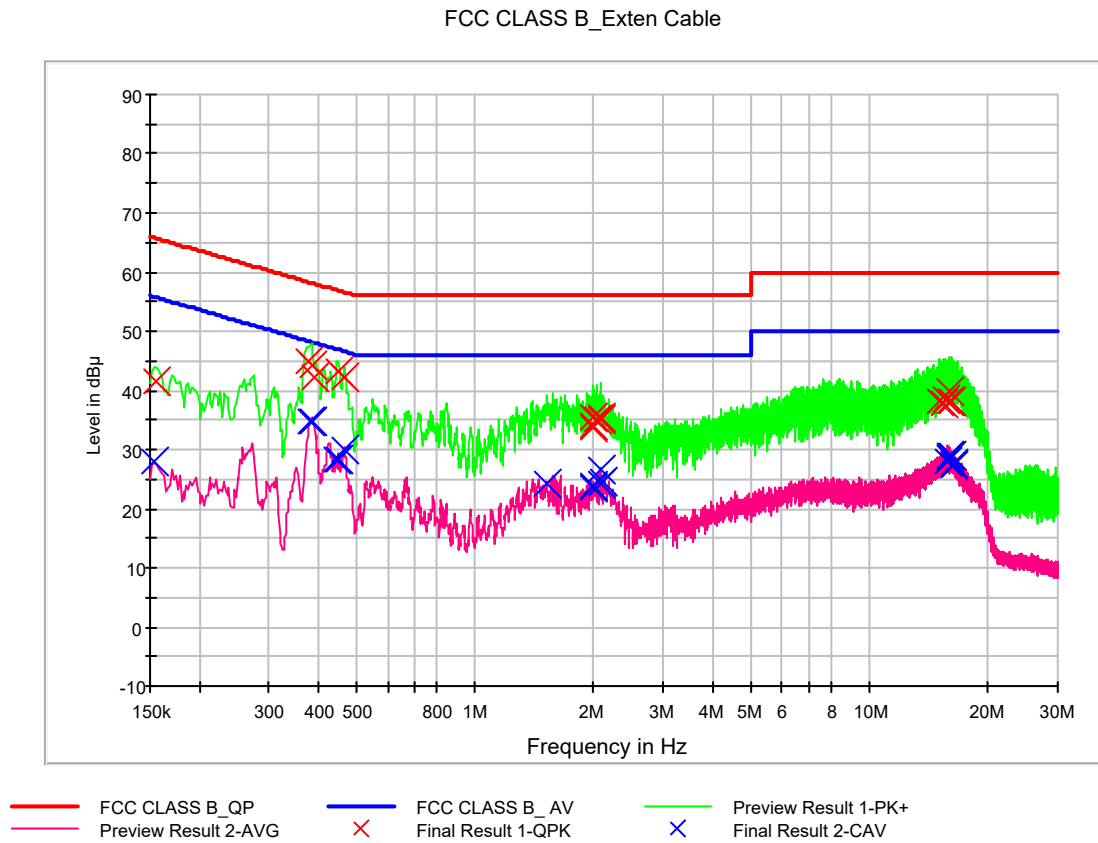
### QuasiPeak Final Result, Line (N)

| Frequency (MHz) | QuasiPeak (dBuV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBuV) |
|-----------------|------------------|-----------------|------|------------|-------------|--------------|
| 0.152000        | 43.0             | 9.000           | N    | 9.8        | 22.9        | 65.9         |
| 0.162000        | 38.9             | 9.000           | N    | 9.8        | 26.5        | 65.4         |
| 0.168000        | 39.0             | 9.000           | N    | 9.8        | 26.0        | 65.1         |
| 0.174000        | 39.1             | 9.000           | N    | 9.8        | 25.7        | 64.8         |
| 0.384000        | 42.7             | 9.000           | N    | 9.9        | 15.5        | 58.2         |
| 0.392000        | 44.0             | 9.000           | N    | 9.9        | 14.0        | 58.0         |
| 1.958000        | 36.5             | 9.000           | N    | 10.0       | 19.5        | 56.0         |
| 2.034000        | 38.4             | 9.000           | N    | 10.0       | 17.6        | 56.0         |
| 2.092000        | 36.6             | 9.000           | N    | 10.0       | 19.4        | 56.0         |
| 2.126000        | 36.0             | 9.000           | N    | 10.1       | 20.0        | 56.0         |
| 2.130000        | 37.0             | 9.000           | N    | 10.1       | 19.0        | 56.0         |
| 2.140000        | 34.8             | 9.000           | N    | 10.1       | 21.2        | 56.0         |
| 15.978000       | 44.2             | 9.000           | N    | 10.7       | 15.8        | 60.0         |
| 16.132000       | 43.5             | 9.000           | N    | 10.7       | 16.5        | 60.0         |
| 16.156000       | 44.1             | 9.000           | N    | 10.7       | 15.9        | 60.0         |
| 16.198000       | 43.0             | 9.000           | N    | 10.7       | 17.0        | 60.0         |
| 16.270000       | 42.6             | 9.000           | N    | 10.7       | 17.4        | 60.0         |
| 16.320000       | 42.8             | 9.000           | N    | 10.7       | 17.2        | 60.0         |



## CAverage Final Result, Line (N)

| Frequency (MHz) | CAverage (dBuV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBuV) |
|-----------------|-----------------|-----------------|------|------------|-------------|--------------|
| 0.152000        | 29.9            | 9.000           | N    | 9.8        | 26.0        | 55.9         |
| 0.156000        | 28.6            | 9.000           | N    | 9.8        | 27.0        | 55.7         |
| 0.160000        | 27.2            | 9.000           | N    | 9.8        | 28.3        | 55.5         |
| 0.166000        | 26.4            | 9.000           | N    | 9.8        | 28.7        | 55.2         |
| 0.174000        | 25.9            | 9.000           | N    | 9.8        | 28.9        | 54.8         |
| 0.392000        | 34.5            | 9.000           | N    | 9.9        | 13.6        | 48.0         |
| 2.008000        | 25.1            | 9.000           | N    | 10.0       | 20.9        | 46.0         |
| 2.034000        | 24.9            | 9.000           | N    | 10.0       | 21.1        | 46.0         |
| 2.092000        | 24.1            | 9.000           | N    | 10.0       | 21.9        | 46.0         |
| 2.126000        | 26.1            | 9.000           | N    | 10.1       | 19.9        | 46.0         |
| 2.130000        | 26.3            | 9.000           | N    | 10.1       | 19.7        | 46.0         |
| 2.140000        | 24.3            | 9.000           | N    | 10.1       | 21.7        | 46.0         |
| 15.910000       | 31.0            | 9.000           | N    | 10.7       | 19.0        | 50.0         |
| 15.926000       | 31.4            | 9.000           | N    | 10.7       | 18.6        | 50.0         |
| 16.132000       | 30.5            | 9.000           | N    | 10.7       | 19.5        | 50.0         |
| 16.302000       | 30.2            | 9.000           | N    | 10.7       | 19.8        | 50.0         |
| 16.320000       | 30.1            | 9.000           | N    | 10.7       | 19.9        | 50.0         |
| 16.360000       | 29.8            | 9.000           | N    | 10.7       | 20.2        | 50.0         |

**Figure 7: Conducted Emission, Receiver mode (LTE B5 Middle CH Idle) + Front Camera Recording, Line (L1)**



### QuasiPeak Final Result, Line (L1)

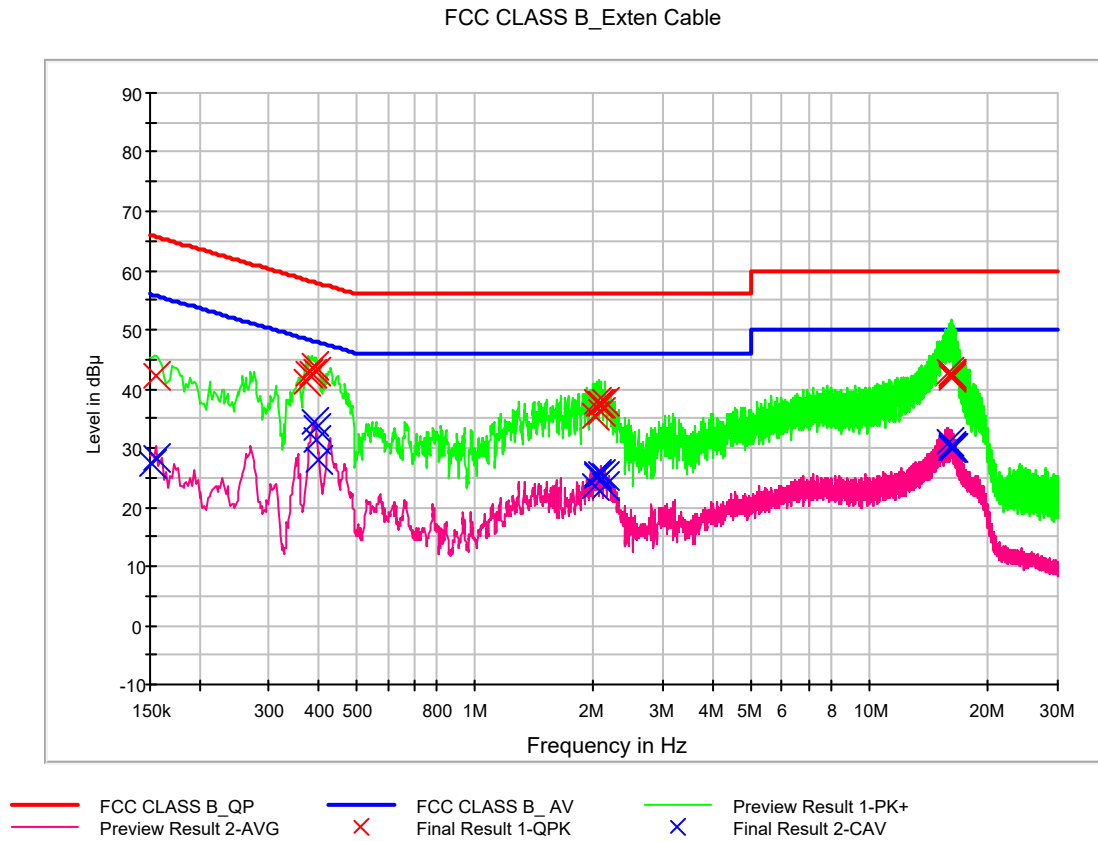
| Frequency (MHz) | QuasiPeak (dBuV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBuV) |
|-----------------|------------------|-----------------|------|------------|-------------|--------------|
| 0.156000        | 41.5             | 9.000           | L1   | 9.7        | 24.2        | 65.7         |
| 0.376000        | 45.1             | 9.000           | L1   | 9.7        | 13.3        | 58.4         |
| 0.386000        | 44.1             | 9.000           | L1   | 9.7        | 14.0        | 58.1         |
| 0.392000        | 42.2             | 9.000           | L1   | 9.7        | 15.8        | 58.0         |
| 0.450000        | 43.3             | 9.000           | L1   | 9.8        | 13.6        | 56.9         |
| 0.466000        | 42.4             | 9.000           | L1   | 9.8        | 14.2        | 56.6         |
| 1.988000        | 33.6             | 9.000           | L1   | 9.8        | 22.4        | 56.0         |
| 1.992000        | 34.2             | 9.000           | L1   | 9.8        | 21.8        | 56.0         |
| 2.000000        | 35.4             | 9.000           | L1   | 9.8        | 20.6        | 56.0         |
| 2.036000        | 35.0             | 9.000           | L1   | 9.8        | 21.0        | 56.0         |
| 2.076000        | 35.3             | 9.000           | L1   | 9.8        | 20.7        | 56.0         |
| 2.088000        | 35.2             | 9.000           | L1   | 9.8        | 20.8        | 56.0         |
| 15.096000       | 38.0             | 9.000           | L1   | 10.4       | 22.0        | 60.0         |
| 15.430000       | 37.8             | 9.000           | L1   | 10.4       | 22.2        | 60.0         |
| 15.646000       | 38.6             | 9.000           | L1   | 10.4       | 21.4        | 60.0         |
| 15.876000       | 39.7             | 9.000           | L1   | 10.4       | 20.3        | 60.0         |
| 15.902000       | 38.1             | 9.000           | L1   | 10.4       | 21.9        | 60.0         |
| 16.118000       | 38.1             | 9.000           | L1   | 10.5       | 21.9        | 60.0         |





## CAverage Final Result, Line (L1)

| Frequency (MHz) | CAverage (dBuV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBuV) |
|-----------------|-----------------|-----------------|------|------------|-------------|--------------|
| 0.154000        | 27.8            | 9.000           | L1   | 9.7        | 28.0        | 55.8         |
| 0.382000        | 34.8            | 9.000           | L1   | 9.7        | 13.4        | 48.2         |
| 0.386000        | 34.8            | 9.000           | L1   | 9.7        | 13.3        | 48.1         |
| 0.446000        | 28.2            | 9.000           | L1   | 9.7        | 18.7        | 46.9         |
| 0.450000        | 28.4            | 9.000           | L1   | 9.8        | 18.5        | 46.9         |
| 0.466000        | 29.9            | 9.000           | L1   | 9.8        | 16.7        | 46.6         |
| 1.522000        | 24.1            | 9.000           | L1   | 9.9        | 21.9        | 46.0         |
| 1.992000        | 23.9            | 9.000           | L1   | 9.8        | 22.1        | 46.0         |
| 2.000000        | 23.7            | 9.000           | L1   | 9.8        | 22.3        | 46.0         |
| 2.074000        | 26.8            | 9.000           | L1   | 9.8        | 19.2        | 46.0         |
| 2.088000        | 24.4            | 9.000           | L1   | 9.8        | 21.6        | 46.0         |
| 2.120000        | 24.5            | 9.000           | L1   | 9.9        | 21.5        | 46.0         |
| 15.808000       | 28.0            | 9.000           | L1   | 10.4       | 22.0        | 50.0         |
| 15.868000       | 28.6            | 9.000           | L1   | 10.4       | 21.4        | 50.0         |
| 15.958000       | 29.0            | 9.000           | L1   | 10.4       | 21.0        | 50.0         |
| 16.110000       | 29.0            | 9.000           | L1   | 10.5       | 21.0        | 50.0         |
| 16.316000       | 27.4            | 9.000           | L1   | 10.5       | 22.6        | 50.0         |
| 16.360000       | 27.6            | 9.000           | L1   | 10.5       | 22.4        | 50.0         |

**Figure 8: Conducted Emission, Receiver mode (LTE B5 Middle CH Idle) + Front Camera Recording, Line (N)**



### QuasiPeak Final Result, Line (N)

| Frequency (MHz) | QuasiPeak (dBuV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBuV) |
|-----------------|------------------|-----------------|------|------------|-------------|--------------|
| 0.156000        | 42.1             | 9.000           | N    | 9.8        | 23.6        | 65.7         |
| 0.372000        | 41.2             | 9.000           | N    | 9.9        | 17.3        | 58.5         |
| 0.380000        | 42.7             | 9.000           | N    | 9.9        | 15.6        | 58.3         |
| 0.386000        | 42.7             | 9.000           | N    | 9.9        | 15.5        | 58.1         |
| 0.392000        | 44.0             | 9.000           | N    | 9.9        | 14.1        | 58.0         |
| 0.398000        | 42.9             | 9.000           | N    | 9.9        | 15.0        | 57.9         |
| 2.008000        | 35.5             | 9.000           | N    | 10.0       | 20.5        | 56.0         |
| 2.032000        | 37.8             | 9.000           | N    | 10.0       | 18.2        | 56.0         |
| 2.072000        | 37.4             | 9.000           | N    | 10.0       | 18.6        | 56.0         |
| 2.082000        | 36.1             | 9.000           | N    | 10.0       | 19.9        | 56.0         |
| 2.086000        | 37.5             | 9.000           | N    | 10.0       | 18.5        | 56.0         |
| 2.134000        | 37.6             | 9.000           | N    | 10.1       | 18.4        | 56.0         |
| 15.910000       | 43.0             | 9.000           | N    | 10.7       | 17.0        | 60.0         |
| 16.098000       | 42.3             | 9.000           | N    | 10.7       | 17.7        | 60.0         |
| 16.106000       | 42.4             | 9.000           | N    | 10.7       | 17.6        | 60.0         |
| 16.142000       | 42.4             | 9.000           | N    | 10.7       | 17.6        | 60.0         |
| 16.148000       | 42.0             | 9.000           | N    | 10.7       | 18.0        | 60.0         |
| 16.152000       | 42.5             | 9.000           | N    | 10.7       | 17.5        | 60.0         |



## CAverage Final Result, Line (N)

| Frequency (MHz) | CAverage (dBuV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBuV) |
|-----------------|-----------------|-----------------|------|------------|-------------|--------------|
| 0.152000        | 27.4            | 9.000           | N    | 9.8        | 28.5        | 55.9         |
| 0.156000        | 28.2            | 9.000           | N    | 9.8        | 27.5        | 55.7         |
| 0.390000        | 34.5            | 9.000           | N    | 9.9        | 13.6        | 48.1         |
| 0.394000        | 33.3            | 9.000           | N    | 9.9        | 14.7        | 48.0         |
| 0.398000        | 31.3            | 9.000           | N    | 9.9        | 16.6        | 47.9         |
| 0.402000        | 28.0            | 9.000           | N    | 9.9        | 19.8        | 47.8         |
| 2.008000        | 23.6            | 9.000           | N    | 10.0       | 22.4        | 46.0         |
| 2.032000        | 25.7            | 9.000           | N    | 10.0       | 20.3        | 46.0         |
| 2.036000        | 25.2            | 9.000           | N    | 10.0       | 20.8        | 46.0         |
| 2.082000        | 25.4            | 9.000           | N    | 10.0       | 20.6        | 46.0         |
| 2.134000        | 25.1            | 9.000           | N    | 10.1       | 20.9        | 46.0         |
| 2.138000        | 23.6            | 9.000           | N    | 10.1       | 22.4        | 46.0         |
| 15.952000       | 31.1            | 9.000           | N    | 10.7       | 18.9        | 50.0         |
| 16.098000       | 30.0            | 9.000           | N    | 10.7       | 20.0        | 50.0         |
| 16.106000       | 30.2            | 9.000           | N    | 10.7       | 19.8        | 50.0         |
| 16.148000       | 29.9            | 9.000           | N    | 10.7       | 20.1        | 50.0         |
| 16.152000       | 30.1            | 9.000           | N    | 10.7       | 19.9        | 50.0         |
| 16.338000       | 29.9            | 9.000           | N    | 10.7       | 20.1        | 50.0         |



## 5.2 Radiated Emission

The test results of radiated emission provide the following information:

### -For Measurement Below 1 GHz

|                              |                                                                                                                                                 |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Applicable Standards         | FCC PART 15 Subpart B Class B<br>ANSI C63.4-2014                                                                                                |
| Detector                     | Quasi-Peak                                                                                                                                      |
| Bandwidth                    | 120 kHz (6 dB)                                                                                                                                  |
| Worst Case of Operating Mode | DATA Communication<br>Front Camera Preview + FM Radio (Middle CH)<br>MP4 Play<br>Receiver mode (LTE B5 Middle CH Idle) + Front Camera Recording |
| Kind of Test Site            | 3 m semi anechoic chamber                                                                                                                       |
| Temperature                  | 23.1 / 22.0 °C                                                                                                                                  |
| Relative Humidity            | 44.2 / 41.7 %                                                                                                                                   |
| Test Date                    | January 23, 2019 / February 11, 2019                                                                                                            |

### - 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



### Data Communication

| Frequency (MHz) | Quasi Peak (dBμV/m) | Antenna Height (cm) | POL. (H/V) | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|-----------------|---------------------|---------------------|------------|---------------|------------|-------------|----------------|
| 30.828000       | 21.7                | 207.9               | V          | 273.0         | 18.4       | 18.3        | 40.0           |
| 133.260800      | 29.3                | 225.1               | H          | 290.0         | 19.0       | 14.2        | 43.5           |
| 199.900000      | 30.4                | 117.8               | H          | 30.0          | 16.8       | 13.1        | 43.5           |
| 266.527200      | 34.5                | 125.1               | H          | 144.0         | 19.4       | 11.5        | 46.0           |
| 600.019200      | 35.4                | 225.2               | V          | 355.0         | 27.4       | 10.6        | 46.0           |
| 800.014400      | 38.6                | 192.8               | H          | 44.0          | 30.1       | 7.4         | 46.0           |

### Front Camera Preview + FM Radio (Middle CH)

| Frequency (MHz) | Quasi Peak (dBμV/m) | Antenna Height (cm) | POL. (H/V) | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|-----------------|---------------------|---------------------|------------|---------------|------------|-------------|----------------|
| 30.263165       | 24.2                | 100.0               | V          | 7.0           | 18.3       | 15.8        | 40.0           |
| 44.268000       | 18.1                | 100.0               | V          | 244.0         | 20.1       | 21.9        | 40.0           |
| 65.606400       | 16.7                | 325.2               | H          | 299.0         | 18.8       | 23.3        | 40.0           |
| 105.341600      | 19.0                | 100.0               | V          | 321.0         | 16.0       | 24.5        | 43.5           |
| 156.976800      | 18.4                | 225.1               | V          | 252.0         | 20.1       | 25.1        | 43.5           |
| 685.028000      | 28.2                | 274.8               | V          | 91.0          | 28.6       | 17.8        | 46.0           |

### MP4 Play

| Frequency (MHz) | Quasi Peak (dBμV/m) | Antenna Height (cm) | POL. (H/V) | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|-----------------|---------------------|---------------------|------------|---------------|------------|-------------|----------------|
| 45.413600       | 17.6                | 117.9               | V          | 236.0         | 20.2       | 22.4        | 40.0           |
| 59.839200       | 17.2                | 175.0               | H          | 112.0         | 19.6       | 22.8        | 40.0           |
| 108.764800      | 14.7                | 99.9                | V          | 323.0         | 16.4       | 28.8        | 43.5           |
| 291.019200      | 18.3                | 175.0               | V          | 0.0           | 20.2       | 27.7        | 46.0           |
| 701.942400      | 28.6                | 274.8               | H          | 17.0          | 28.8       | 17.4        | 46.0           |
| 954.216000      | 31.9                | 174.9               | H          | 30.0          | 31.9       | 14.1        | 46.0           |


**Receiver mode (LTE B5 Middle CH Idle) + Front Camera Recording**

| Frequency<br>(MHz) | Quasi Peak<br>(dBμV/m) | Antenna<br>Height<br>(cm) | POL.<br>(H/V) | Azimuth<br>(deg) | Corr.<br>(dB) | Margin<br>(dB) | Limit<br>(dBμV/m) |
|--------------------|------------------------|---------------------------|---------------|------------------|---------------|----------------|-------------------|
| 30.548538          | 29.7                   | 100.0                     | V             | 8.0              | 18.3          | 10.3           | 40.0              |
| 41.913600          | 25.5                   | 100.0                     | V             | 68.0             | 20.0          | 14.5           | 40.0              |
| 121.568000         | 16.4                   | 274.9                     | H             | 0.0              | 17.8          | 27.1           | 43.5              |
| 142.588000         | 17.4                   | 174.7                     | V             | 345.0            | 19.8          | 26.1           | 43.5              |
| 294.271200         | 18.7                   | 174.8                     | V             | 263.0            | 20.3          | 27.3           | 46.0              |
| 716.050400         | 28.9                   | 274.7                     | V             | 49.0             | 29.2          | 17.1           | 46.0              |



**-For Measurement Above 1 GHz**

|                              |                                                                                                                                                 |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Applicable Standards         | FCC 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            | 2 690 MHz                                                                                                                                       |
| Tested Frequency Range       | 1 GHz to 18 GHz                                                                                                                                 |
| Worst Case of Operating Mode | DATA Communication<br>Front Camera Preview + FM Radio (Middle CH)<br>MP4 Play<br>Receiver mode (LTE B5 Middle CH Idle) + Front Camera Recording |
| Kind of Test Site            | 3 m semi anechoic chamber                                                                                                                       |
| Temperature                  | 21.7 / 22.5 °C                                                                                                                                  |
| Relative Humidity            | 43.5 / 42.5 %                                                                                                                                   |
| Test Date                    | January 25 / January 28, 2019                                                                                                                   |

**- 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





## Data Communication

| Frequency (MHz) | Peak (dBμV/m) | Antenna Height (cm) | POL. (H/V) | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|-----------------|---------------|---------------------|------------|---------------|------------|-------------|----------------|
| 1400.035000     | 47.2          | 322.5               | H          | 346.0         | -28.2      | 26.8        | 74.0           |
| 2016.120000     | 49.0          | 100.0               | V          | 54.0          | -26.7      | 25.0        | 74.0           |
| 2666.420000     | 49.7          | 100.0               | V          | 0.0           | -24.2      | 24.3        | 74.0           |
| 4481.695000     | 43.4          | 219.4               | V          | 38.0          | -19.6      | 30.6        | 74.0           |
| 5998.150000     | 46.5          | 349.8               | V          | 106.0         | -17.1      | 27.5        | 74.0           |
| 10967.950000    | 45.9          | 205.4               | V          | 313.0         | -5.7       | 28.1        | 74.0           |

| Frequency (MHz) | CAverage (dBμV/m) | Antenna Height (cm) | POL. (H/V) | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|-----------------|-------------------|---------------------|------------|---------------|------------|-------------|----------------|
| 1400.035000     | 45.7              | 322.5               | H          | 346.0         | -28.2      | 8.3         | 54.0           |
| 2016.120000     | 33.5              | 100.0               | V          | 54.0          | -26.7      | 20.5        | 54.0           |
| 2666.420000     | 21.9              | 100.0               | V          | 0.0           | -24.2      | 32.1        | 54.0           |
| 4481.695000     | 27.1              | 219.4               | V          | 38.0          | -19.6      | 26.9        | 54.0           |
| 5998.150000     | 28.9              | 349.8               | V          | 106.0         | -17.1      | 25.1        | 54.0           |
| 10967.950000    | 33.0              | 205.4               | V          | 313.0         | -5.7       | 21.0        | 54.0           |

## Front Camera Preview + FM Radio (Middle CH)

| Frequency (MHz) | Peak (dBμV/m) | Antenna Height (cm) | POL. (H/V) | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|-----------------|---------------|---------------------|------------|---------------|------------|-------------|----------------|
| 1491.315000     | 29.9          | 231.0               | V          | 255.0         | -27.8      | 44.1        | 74.0           |
| 5380.405000     | 36.3          | 284.9               | H          | 51.0          | -18.0      | 37.7        | 74.0           |
| 7379.370000     | 42.5          | 133.7               | V          | 132.0         | -13.1      | 31.5        | 74.0           |
| 9531.240000     | 44.5          | 150.2               | V          | 130.0         | -10.0      | 29.5        | 74.0           |
| 11349.375000    | 44.8          | 149.8               | H          | 234.0         | -5.0       | 29.2        | 74.0           |
| 14738.825000    | 46.5          | 299.7               | V          | 50.0          | -1.4       | 27.5        | 74.0           |

| Frequency (MHz) | CAverage (dBμV/m) | Antenna Height (cm) | POL. (H/V) | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|-----------------|-------------------|---------------------|------------|---------------|------------|-------------|----------------|
| 1491.315000     | 17.5              | 231.0               | V          | 255.0         | -27.8      | 36.5        | 54.0           |
| 5380.405000     | 23.7              | 284.9               | H          | 51.0          | -18.0      | 30.3        | 54.0           |
| 7379.370000     | 28.4              | 133.7               | V          | 132.0         | -13.1      | 25.6        | 54.0           |
| 9531.240000     | 31.6              | 150.2               | V          | 130.0         | -10.0      | 22.4        | 54.0           |
| 11349.375000    | 32.4              | 149.8               | H          | 234.0         | -5.0       | 21.6        | 54.0           |
| 14738.825000    | 34.0              | 299.7               | V          | 50.0          | -1.4       | 20.0        | 54.0           |

**MP4 Play**

| Frequency (MHz) | Peak (dBμV/m) | Antenna Height (cm) | POL. (H/V) | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|-----------------|---------------|---------------------|------------|---------------|------------|-------------|----------------|
| 2100.085000     | 34.9          | 150.0               | H          | 46.0          | -26.4      | 39.1        | 74.0           |
| 4960.105000     | 37.1          | 160.5               | V          | 311.0         | -18.6      | 36.9        | 74.0           |
| 7378.160000     | 41.3          | 100.0               | V          | 241.0         | -13.2      | 32.7        | 74.0           |
| 9164.895000     | 43.1          | 198.4               | H          | 178.0         | -10.9      | 30.9        | 74.0           |
| 10906.445000    | 45.5          | 175.7               | V          | 310.0         | -5.9       | 28.5        | 74.0           |
| 14781.375000    | 46.8          | 124.8               | H          | 216.0         | -1.4       | 27.2        | 74.0           |

| Frequency (MHz) | CAverage (dBμV/m) | Antenna Height (cm) | POL. (H/V) | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|-----------------|-------------------|---------------------|------------|---------------|------------|-------------|----------------|
| 2100.085000     | 24.3              | 150.0               | H          | 46.0          | -26.4      | 29.7        | 54.0           |
| 4960.105000     | 23.4              | 160.5               | V          | 311.0         | -18.6      | 30.6        | 54.0           |
| 7378.160000     | 28.3              | 100.0               | V          | 241.0         | -13.2      | 25.7        | 54.0           |
| 9164.895000     | 30.7              | 198.4               | H          | 178.0         | -10.9      | 23.3        | 54.0           |
| 10906.445000    | 32.7              | 175.7               | V          | 310.0         | -5.9       | 21.3        | 54.0           |
| 14781.375000    | 34.0              | 124.8               | H          | 216.0         | -1.4       | 20.0        | 54.0           |

**Receiver mode (LTE B5 Middle CH Idle) + Front Camera Recording**

| Frequency (MHz) | Peak (dBμV/m) | Antenna Height (cm) | POL. (H/V) | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|-----------------|---------------|---------------------|------------|---------------|------------|-------------|----------------|
| 3065.680000     | 34.0          | 349.8               | V          | 135.0         | -22.7      | 40.0        | 74.0           |
| 5620.145000     | 37.3          | 147.7               | H          | 157.0         | -17.6      | 36.7        | 74.0           |
| 7276.155000     | 40.6          | 113.4               | V          | 215.0         | -13.6      | 33.4        | 74.0           |
| 9803.000000     | 43.6          | 140.6               | V          | 30.0          | -9.6       | 30.4        | 74.0           |
| 11322.880000    | 45.5          | 138.8               | H          | 218.0         | -5.1       | 28.5        | 74.0           |
| 14779.780000    | 46.4          | 249.9               | V          | 72.0          | -1.4       | 27.6        | 74.0           |

| Frequency (MHz) | CAverage (dBμV/m) | Antenna Height (cm) | POL. (H/V) | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|-----------------|-------------------|---------------------|------------|---------------|------------|-------------|----------------|
| 3065.680000     | 21.2              | 349.8               | V          | 135.0         | -22.7      | 32.8        | 54.0           |
| 5620.145000     | 24.4              | 147.7               | H          | 157.0         | -17.6      | 29.6        | 54.0           |
| 7276.155000     | 27.5              | 113.4               | V          | 215.0         | -13.6      | 26.5        | 54.0           |
| 9803.000000     | 30.8              | 140.6               | V          | 30.0          | -9.6       | 23.2        | 54.0           |
| 11322.880000    | 32.9              | 138.8               | H          | 218.0         | -5.1       | 21.1        | 54.0           |
| 14779.780000    | 34.0              | 249.9               | V          | 72.0          | -1.4       | 20.0        | 54.0           |



## 6. CONCLUSION

The data collected shows that the **EUT Type: Mobile Phone, FCC ID: A3LSMM105G, Model: SM-M105G/DS** complies with §15.107 and §15.109 of the FCC rules.



## 7. APPENDIX A. TEST SETUP PHOTOGRAPHS

Please refer to Appendix A