

# TEST REPORT

**Applicant:** CT Cellutions, Inc

**Address of Applicant:** 5705 Commerce Blvd, Alpharetta, Georgia 30004, United States

**Manufacturer/Factory:** Z-TECH COMMUNICATION(SZ) Co., Ltd

**Address of Manufacturer/Factory:** 7/F BLK D ,BAO'AN ZHI'GU YIN'TIAN ROAD NO.4 XI'XIANG STR' BAO'AN SHENZHEN CITY ,CHINA

**Equipment Under Test (EUT)**

Product Name: MOBILE PHONE

Model No.: Cosmas

Trade Mark: CELLUTION

**FCC ID:** 2AT3DCOSMAS

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart B

**Date of sample receipt:** June 24, 2019

**Date of Test:** June 25, 2019-July 18, 2019

**Date of report issued:** July 18, 2019

**Test Result :** PASS \*

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



**Robinson Lo**

**Laboratory Manager**

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

## 2 Version

| Version No. | Date          | Description |
|-------------|---------------|-------------|
| 00          | July 18, 2019 | Original    |
|             |               |             |
|             |               |             |
|             |               |             |
|             |               |             |

Prepared By:

*Bill. Yuan*

Date:

July 18, 2019

Project Engineer

Check By:

*Robinson*

Date:

July 18, 2019

Reviewer

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## 4 Test Summary

| Test Item            | Test Requirement | Test Method | Class / Severity | Result |
|----------------------|------------------|-------------|------------------|--------|
| Conducted Emission   | FCC Part15.107   | ANSI C63.4  | Class B          | PASS   |
| Radiated Emissions # | FCC Part15.109   | ANSI C63.4  | Class B          | PASS   |

Remarks:

1. Pass: The EUT complies with the essential requirements in the standard.
2. # Refer to FCC Part 15.33 (b)(1) conditional testing procedure :

| The highest frequency generated or used in the EUT | Test frequency range of Radiated emission                                    |
|----------------------------------------------------|------------------------------------------------------------------------------|
| <108MHz                                            | 30MHz ~ 1GHz                                                                 |
| 108MHz ~ 500MHz                                    | 30MHz ~ 2GHz                                                                 |
| 500MHz ~ 1GHz                                      | 30MHz ~ 5GHz                                                                 |
| >1GHz                                              | 30MHz ~ 5th harmonic of the highest frequency or 40 GHz, whichever is lower. |

Note: the EUT Internal clock frequency above 108MHz.

### Measurement Uncertainty

| Test Item                        | Frequency Range | Measurement Uncertainty | Notes |
|----------------------------------|-----------------|-------------------------|-------|
| Radiated Emission                | 30MHz ~ 200MHz  | ±3.8039dB               | (1)   |
| Radiated Emission                | 200MHz~1000 MHz | ± 3.9679dB              | (1)   |
| Radiated Emission                | 1GHz ~ 6GHz     | ± 4.29dB                | (1)   |
| AC Power Line Conducted Emission | 0.15MHz ~ 30MHz | ± 3.44dB                | (1)   |

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

## 5 General Information

### 5.1 General Description of EUT

|                    |                                                                                                                          |
|--------------------|--------------------------------------------------------------------------------------------------------------------------|
| Product Name:      | MOBILE PHONE                                                                                                             |
| Model No.:         | Cosmas                                                                                                                   |
| Serial No.:        | VLCK0518192432                                                                                                           |
| Hardware Version:  | JY809I_MB_V2                                                                                                             |
| Software Version:  | Cosmas_Z4001T_.HW1.V01_20190622                                                                                          |
| Test sample(s) ID: | GTS201906000184-2                                                                                                        |
| Sample(s) Status:  | Normal sample                                                                                                            |
| Power Supply:      | Adaptor<br>Model: Cosmas<br>Input: AC 100-240V, 50-60Hz, 0.2A<br>Output: DC 5V, 700mA<br>Or<br>Battery: DC 3.8V, 1400mAh |

### 5.2 Test mode and Test voltage

|                     |                                       |
|---------------------|---------------------------------------|
| <b>Test mode:</b>   |                                       |
| PC mode             | Keep the EUT in exchanging data mode. |
| REC mode            | Keep the EUT in REC mode.             |
| Audio play mode     | Keep the EUT in Audio play mode.      |
| Video play mode     | Keep the EUT in Video play mode.      |
| <b>Test voltage</b> |                                       |
| AC 120V and DC 3.8V |                                       |

## 5.3 Description of Support Units

| Manufacturer | Description | Model   | Serial Number |
|--------------|-------------|---------|---------------|
| Lenovo       | Notebook PC | E40-80  | N/A           |
| Canon        | Printer     | IP1600  | N/A           |
| DELL         | KEYBOARD    | SK-8115 | GTS237-2      |
| DELL         | MOUSE       | MOC5UO  | GTS237-3      |
| SanDisk      | TF card     | 16GB    | N/A           |

## 5.4 Deviation from Standards

None.

## 5.5 Abnormalities from Standard Conditions

None.

## 5.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 381383.

- **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2.

- **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). LAB CODE:600179-0

## 5.7 Test Location

The test was performed at:

Global United Technology Services Co., Ltd.

Address: No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

## 6 Test Instruments list

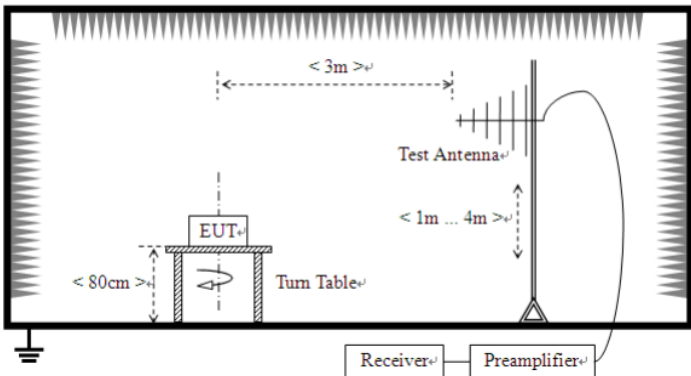
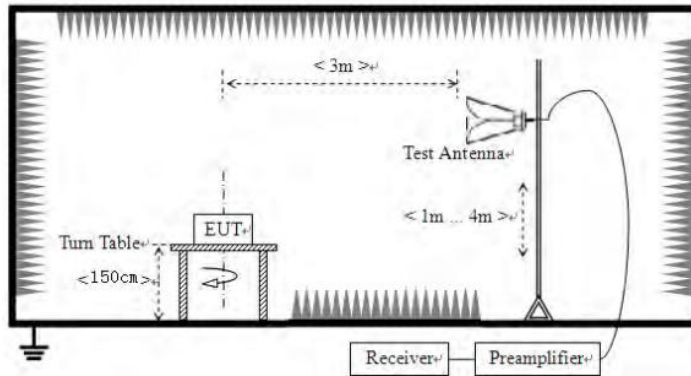
| Radiated Emission: |                                     |                                |                             |               |                     |                         |
|--------------------|-------------------------------------|--------------------------------|-----------------------------|---------------|---------------------|-------------------------|
| Item               | Test Equipment                      | Manufacturer                   | Model No.                   | Inventory No. | Cal.Date (mm-dd-yy) | Cal.Due date (mm-dd-yy) |
| 1                  | 3m Semi- Anechoic Chamber           | ZhongYu Electron               | 9.2(L)*6.2(W)* 6.4(H)       | GTS250        | July. 03 2015       | July. 02 2020           |
| 2                  | Control Room                        | ZhongYu Electron               | 6.2(L)*2.5(W)* 2.4(H)       | GTS251        | N/A                 | N/A                     |
| 3                  | EMI Test Receiver                   | Rohde & Schwarz                | ESU26                       | GTS203        | June. 26 2019       | June. 25 2020           |
| 4                  | BiConiLog Antenna                   | SCHWARZBECK<br>MESS-ELEKTRONIK | VULB9163                    | GTS214        | June. 26 2019       | June. 25 2020           |
| 5                  | Double -ridged waveguide horn       | SCHWARZBECK<br>MESS-ELEKTRONIK | BBHA 9120 D                 | GTS208        | June. 26 2019       | June. 25 2020           |
| 6                  | Horn Antenna                        | ETS-LINDGREN                   | 3160                        | GTS217        | June. 26 2019       | June. 25 2020           |
| 7                  | EMI Test Software                   | AUDIX                          | E3                          | N/A           | N/A                 | N/A                     |
| 8                  | Coaxial Cable                       | GTS                            | N/A                         | GTS213        | June. 26 2019       | June. 25 2020           |
| 9                  | Coaxial Cable                       | GTS                            | N/A                         | GTS211        | June. 26 2019       | June. 25 2020           |
| 10                 | Coaxial cable                       | GTS                            | N/A                         | GTS210        | June. 26 2019       | June. 25 2020           |
| 11                 | Coaxial Cable                       | GTS                            | N/A                         | GTS212        | June. 26 2019       | June. 25 2020           |
| 12                 | Amplifier(100kHz-3GHz)              | HP                             | 8347A                       | GTS204        | June. 26 2019       | June. 25 2020           |
| 13                 | Amplifier(2GHz-20GHz)               | HP                             | 84722A                      | GTS206        | June. 26 2019       | June. 25 2020           |
| 14                 | Amplifier (18-26GHz)                | Rohde & Schwarz                | AFS33-18002<br>650-30-8P-44 | GTS218        | June. 26 2019       | June. 25 2020           |
| 15                 | Band filter                         | Amindeon                       | 82346                       | GTS219        | June. 26 2019       | June. 25 2020           |
| 16                 | Power Meter                         | Anritsu                        | ML2495A                     | GTS540        | June. 26 2019       | June. 25 2020           |
| 17                 | Power Sensor                        | Anritsu                        | MA2411B                     | GTS541        | June. 26 2019       | June. 25 2020           |
| 18                 | Wideband Radio Communication Tester | Rohde & Schwarz                | CMW500                      | GTS575        | June. 26 2019       | June. 25 2020           |
| 19                 | Splitter                            | Agilent                        | 11636B                      | GTS237        | June. 26 2019       | June. 25 2020           |
| 20                 | Loop Antenna                        | ZHINAN                         | ZN30900A                    | GTS534        | June. 26 2019       | June. 25 2020           |
| 21                 | Breitband hornantenne               | SCHWARZBECK                    | BBHA 9170                   | GTS579        | Oct. 20 2018        | Oct. 19 2019            |
| 22                 | Amplifier                           | TDK                            | PA-02-02                    | GTS574        | Oct. 20 2018        | Oct. 19 2019            |
| 23                 | Amplifier                           | TDK                            | PA-02-03                    | GTS576        | Oct. 20 2018        | Oct. 19 2019            |
| 24                 | PSA Series Spectrum Analyzer        | Rohde & Schwarz                | FSP                         | GTS578        | June. 26 2019       | June. 25 2020           |

| Conducted Emission |                          |                         |                      |               |                     |                         |
|--------------------|--------------------------|-------------------------|----------------------|---------------|---------------------|-------------------------|
| Item               | Test Equipment           | Manufacturer            | Model No.            | Inventory No. | Cal.Date (mm-dd-yy) | Cal.Due date (mm-dd-yy) |
| 1                  | Shielding Room           | ZhongYu Electron        | 7.3(L)x3.1(W)x2.9(H) | GTS252        | May.15 2019         | May.14 2022             |
| 2                  | EMI Test Receiver        | R&S                     | ESCI 7               | GTS552        | June. 26 2019       | June. 25 2020           |
| 3                  | Coaxial Switch           | ANRITSU CORP            | MP59B                | GTS225        | June. 26 2019       | June. 25 2020           |
| 4                  | Artificial Mains Network | SCHWARZBECK MESS        | NSLK8127             | GTS226        | June. 26 2019       | June. 25 2020           |
| 5                  | Coaxial Cable            | GTS                     | N/A                  | GTS227        | N/A                 | N/A                     |
| 6                  | EMI Test Software        | AUDIX                   | E3                   | N/A           | N/A                 | N/A                     |
| 7                  | Thermo meter             | KTJ                     | TA328                | GTS233        | June. 26 2019       | June. 25 2020           |
| 8                  | Absorbing clamp          | Elektronik-Feinmechanik | MDS21                | GTS229        | June. 26 2019       | June. 25 2020           |
| 9                  | ISN                      | SCHWARZBECK             | NTFM 8158            | GTD565        | June. 26 2019       | June. 25 2020           |

| General used equipment: |                                 |              |           |               |                     |                         |
|-------------------------|---------------------------------|--------------|-----------|---------------|---------------------|-------------------------|
| Item                    | Test Equipment                  | Manufacturer | Model No. | Inventory No. | Cal.Date (mm-dd-yy) | Cal.Due date (mm-dd-yy) |
| 1                       | Humidity/ Temperature Indicator | KTJ          | TA328     | GTS243        | June. 26 2019       | June. 25 2020           |
| 2                       | Barometer                       | ChangChun    | DYM3      | GTS255        | June. 26 2019       | June. 25 2020           |

## 7 Test Results and Measurement Data

### 7.1 Radiated Emission

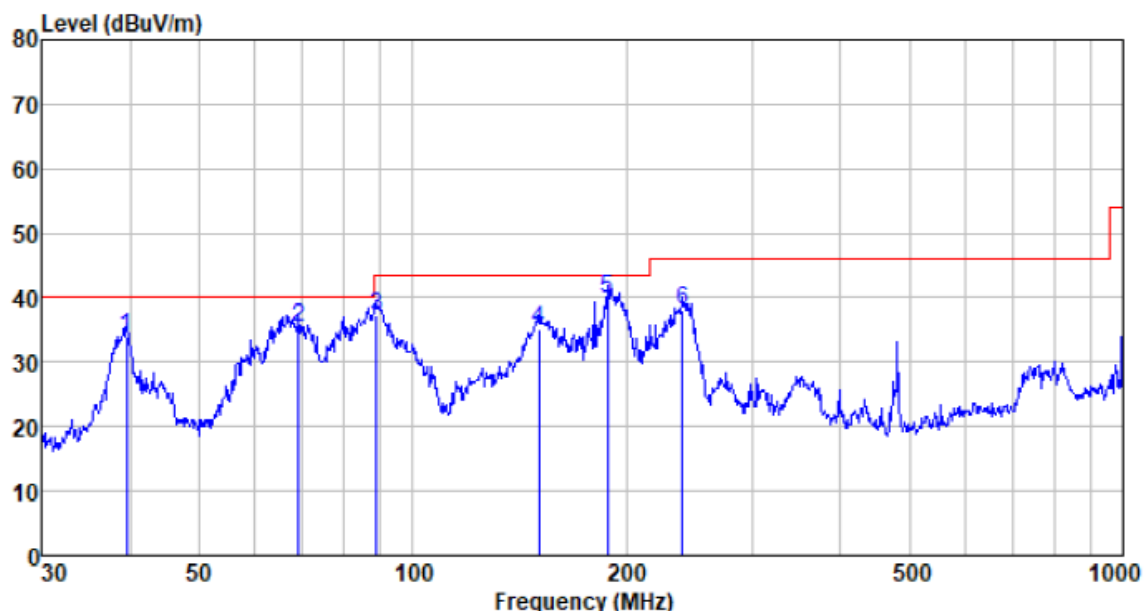
|                       |                                                                                      |            |                    |        |                  |
|-----------------------|--------------------------------------------------------------------------------------|------------|--------------------|--------|------------------|
| Test Requirement:     | FCC Part15 B Section 15.109                                                          |            |                    |        |                  |
| Test Method:          | ANSI C63.4:2014                                                                      |            |                    |        |                  |
| Test Frequency Range: | 30MHz to 6000MHz                                                                     |            |                    |        |                  |
| Test site:            | Measurement Distance: 3m (Semi-Anechoic Chamber)                                     |            |                    |        |                  |
| Receiver setup:       | Frequency                                                                            | Detector   | RBW                | VBW    | Remark           |
|                       | 30MHz-1GHz                                                                           | Quasi-peak | 120kHz             | 300kHz | Quasi-peak Value |
|                       | Above 1GHz                                                                           | Peak       | 1MHz               | 3MHz   | Peak Value       |
|                       |                                                                                      | Peak       | 1MHz               | 10Hz   | Average Value    |
| Limit:                | Frequency                                                                            |            | Limit (dBuV/m @3m) |        | Remark           |
|                       | 30MHz-88MHz                                                                          |            | 40.00              |        | Quasi-peak Value |
|                       | 88MHz-216MHz                                                                         |            | 43.50              |        | Quasi-peak Value |
|                       | 216MHz-960MHz                                                                        |            | 46.00              |        | Quasi-peak Value |
|                       | 960MHz-1GHz                                                                          |            | 54.00              |        | Quasi-peak Value |
|                       | Above 1GHz                                                                           |            | 54.00              |        | Average Value    |
| 74.00                 |                                                                                      |            | Peak Value         |        |                  |
| Test setup:           | For radiated emissions from 30MHz to1GHz                                             |            |                    |        |                  |
|                       |  |            |                    |        |                  |
| Test setup:           | For radiated emissions above 1GHz                                                    |            |                    |        |                  |
|                       |  |            |                    |        |                  |
|                       |                                                                                      |            |                    |        |                  |

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |         |     |         |           |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------|-----|---------|-----------|
| Test Procedure:   | <ol style="list-style-type: none"> <li>1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li> <li>3. The antenna height is varied from one meter to four meters 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.</li> <li>4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.</li> <li>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</li> </ol> |       |         |     |         |           |
| Test environment: | Temp.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 25 °C | Humid.: | 52% | Press.: | 1 012mbar |
| Test Instruments: | Refer to section 6 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       |         |     |         |           |
| Test mode:        | Refer to section 5.2 for details, only show the worst case.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |         |     |         |           |
| Test results:     | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |         |     |         |           |

## Measurement Data

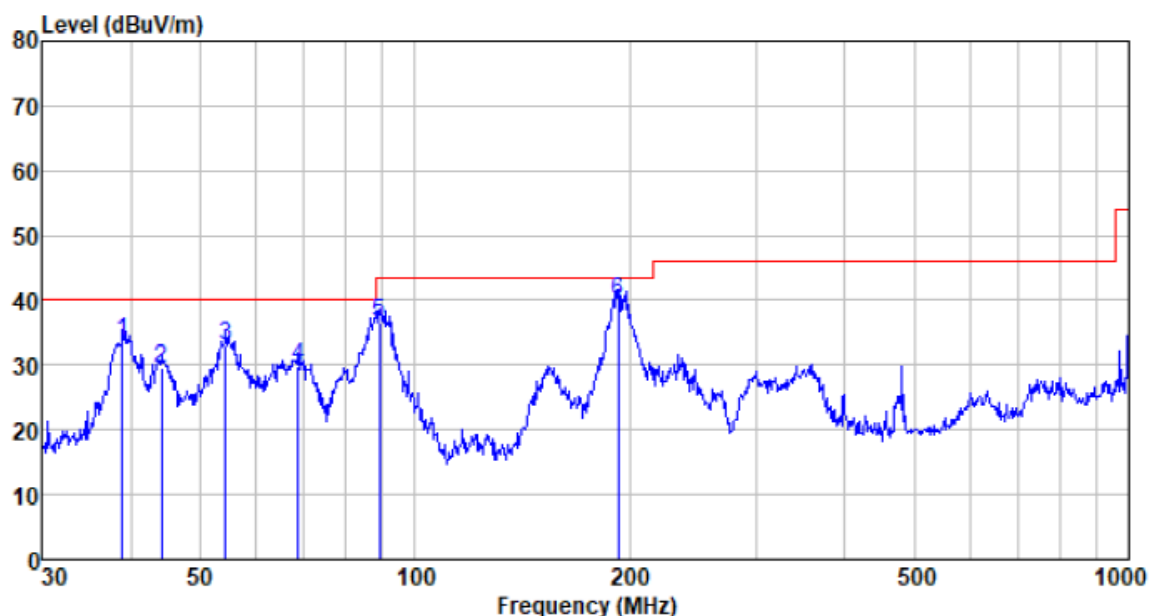
### Below 1GHz

|            |         |                   |            |
|------------|---------|-------------------|------------|
| Test mode: | PC mode | Antenna Polarity: | Horizontal |
|------------|---------|-------------------|------------|



| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|---------------|--------------------------|---------------------|--------|
| 39.576      | 56.71                    | 12.14                     | 0.66                | 35.64                  | 33.87         | 40.00                    | -6.13               | QP     |
| 69.114      | 63.02                    | 7.85                      | 0.93                | 36.43                  | 35.37         | 40.00                    | -4.63               | QP     |
| 88.964      | 62.52                    | 10.32                     | 1.10                | 36.63                  | 37.31         | 43.50                    | -6.19               | QP     |
| 150.538     | 63.11                    | 7.65                      | 1.57                | 37.08                  | 35.25         | 43.50                    | -8.25               | QP     |
| 187.753     | 65.69                    | 9.65                      | 1.78                | 37.27                  | 39.85         | 43.50                    | -3.65               | QP     |
| 239.987     | 61.50                    | 11.85                     | 2.07                | 37.37                  | 38.05         | 46.00                    | -7.95               | QP     |

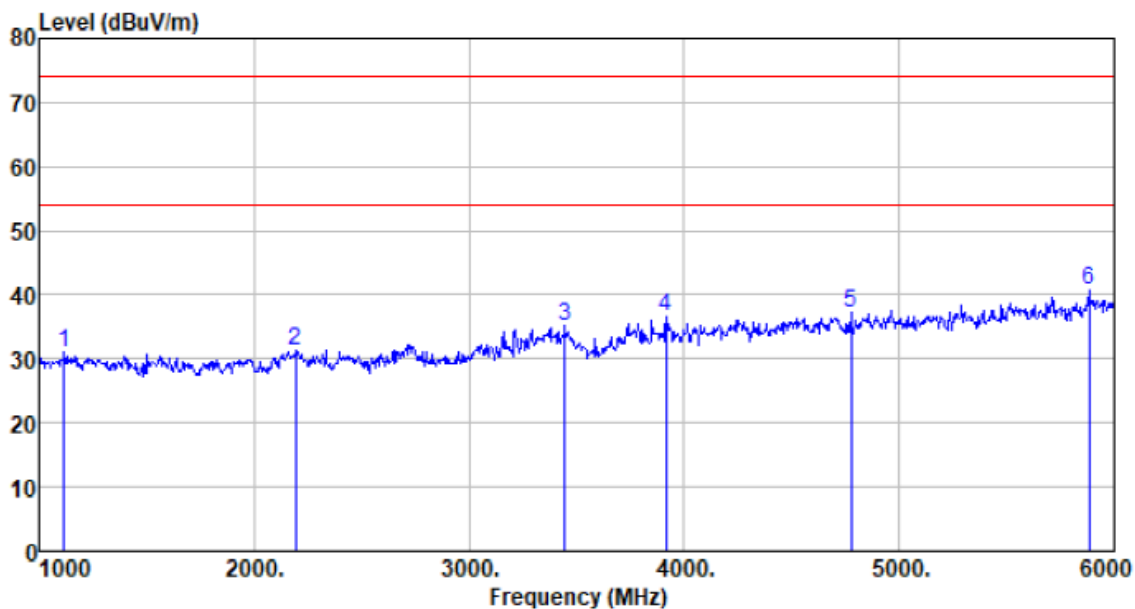
|            |         |                   |          |
|------------|---------|-------------------|----------|
| Test mode: | PC mode | Antenna Polarity: | Vertical |
|------------|---------|-------------------|----------|



| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|---------------|--------------------------|---------------------|--------|
| 38.888      | 56.47                    | 12.01                     | 0.65                | 35.60                  | 33.53         | 40.00                    | -6.47               | QP     |
| 44.120      | 52.50                    | 12.24                     | 0.71                | 35.89                  | 29.56         | 40.00                    | -10.44              | QP     |
| 54.261      | 56.75                    | 11.85                     | 0.81                | 36.24                  | 33.17         | 40.00                    | -6.83               | QP     |
| 68.631      | 57.34                    | 7.96                      | 0.93                | 36.43                  | 29.80         | 40.00                    | -10.20              | QP     |
| 89.276      | 61.62                    | 10.45                     | 1.10                | 36.63                  | 36.54         | 43.50                    | -6.96               | QP     |
| 192.419     | 65.19                    | 10.04                     | 1.80                | 37.30                  | 39.73         | 43.50                    | -3.77               | QP     |

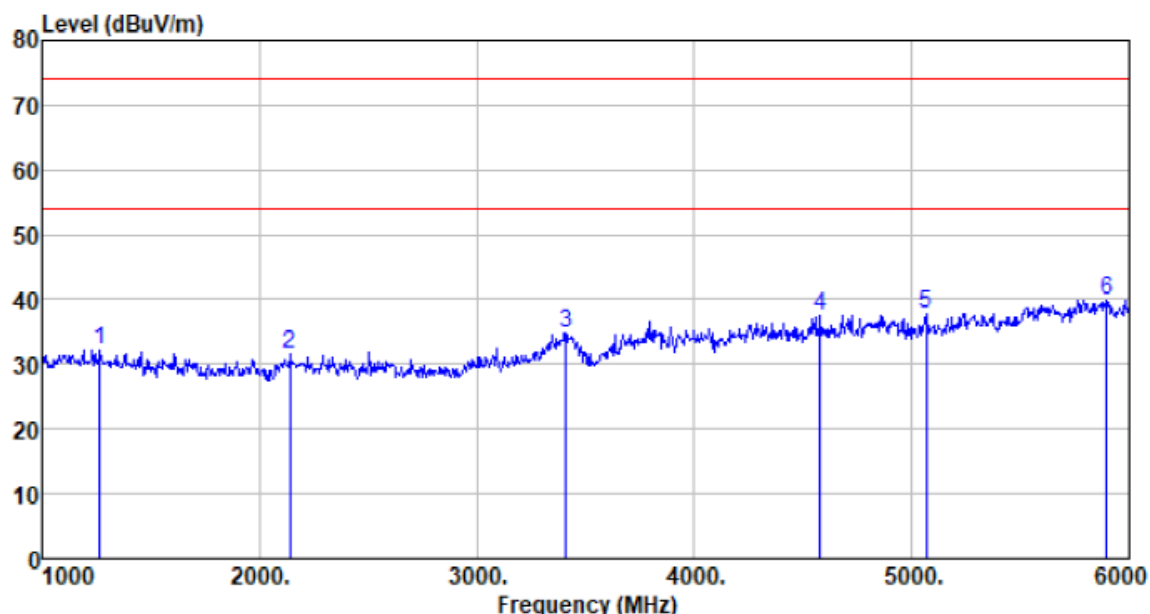
## Above 1GHz

|            |         |                   |            |
|------------|---------|-------------------|------------|
| Test mode: | PC mode | Antenna Polarity: | Horizontal |
|------------|---------|-------------------|------------|



| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|---------------|--------------------------|---------------------|--------|
| 1115.000    | 37.90                    | 24.58                     | 4.40                | 35.83                  | 31.05         | 74.00                    | -42.95              | Peak   |
| 2195.000    | 36.02                    | 26.91                     | 5.18                | 36.68                  | 31.43         | 74.00                    | -42.57              | Peak   |
| 3445.000    | 37.18                    | 28.33                     | 6.86                | 37.35                  | 35.02         | 74.00                    | -38.98              | Peak   |
| 3915.000    | 36.88                    | 29.38                     | 7.71                | 37.39                  | 36.58         | 74.00                    | -37.42              | Peak   |
| 4775.000    | 35.07                    | 31.30                     | 8.58                | 37.72                  | 37.23         | 74.00                    | -36.77              | Peak   |
| 5885.000    | 34.60                    | 32.52                     | 10.04               | 36.56                  | 40.60         | 74.00                    | -33.40              | Peak   |

|            |         |                   |          |
|------------|---------|-------------------|----------|
| Test mode: | PC mode | Antenna Polarity: | Vertical |
|------------|---------|-------------------|----------|



| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|---------------|--------------------------|---------------------|--------|
| 1265.000    | 38.82                    | 24.94                     | 4.52                | 35.97                  | 32.31         | 74.00                    | -41.69              | Peak   |
| 2140.000    | 36.44                    | 26.76                     | 5.12                | 36.63                  | 31.69         | 74.00                    | -42.31              | Peak   |
| 3410.000    | 36.92                    | 28.35                     | 6.78                | 37.34                  | 34.71         | 74.00                    | -39.29              | Peak   |
| 4580.000    | 35.77                    | 30.94                     | 8.40                | 37.64                  | 37.47         | 74.00                    | -36.53              | Peak   |
| 5065.000    | 35.04                    | 31.69                     | 8.85                | 37.71                  | 37.87         | 74.00                    | -36.13              | Peak   |
| 5895.000    | 33.88                    | 32.55                     | 10.06               | 36.53                  | 39.96         | 74.00                    | -34.04              | Peak   |

## Note:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

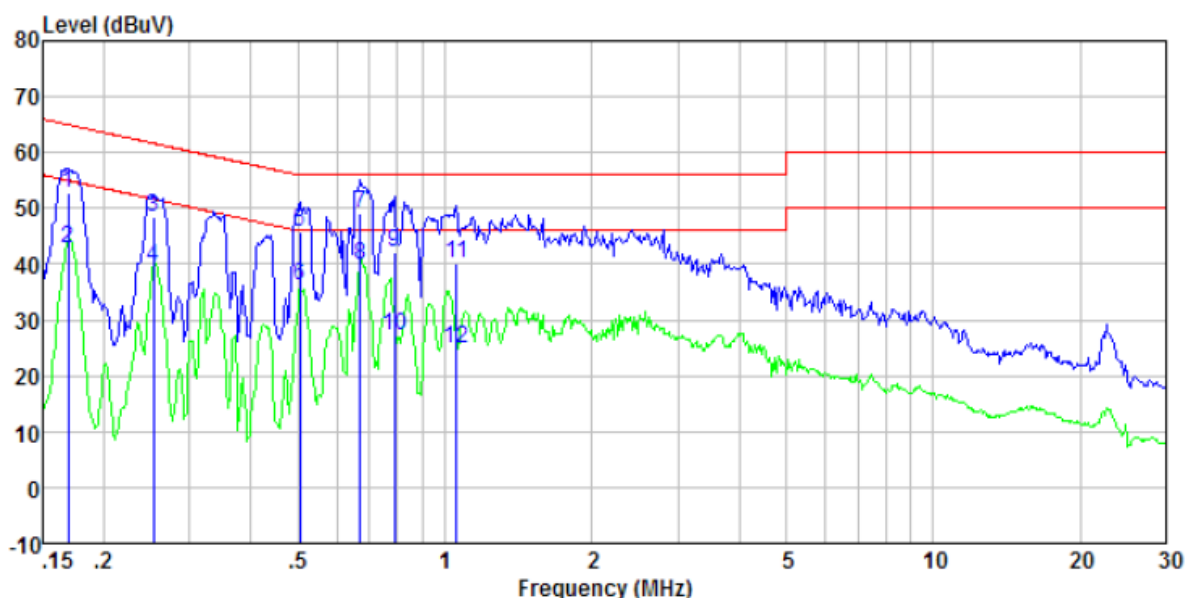
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

## 7.2 Conducted Emissions

| Test Requirement:     | FCC Part15 B Section 15.107                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |         |     |         |           |                       |              |  |            |         |          |           |           |       |    |    |        |    |    |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------|-----|---------|-----------|-----------------------|--------------|--|------------|---------|----------|-----------|-----------|-------|----|----|--------|----|----|
| Test Method:          | ANSI C63.4:2014                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |         |     |         |           |                       |              |  |            |         |          |           |           |       |    |    |        |    |    |
| Test Frequency Range: | 150kHz to 30MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |         |     |         |           |                       |              |  |            |         |          |           |           |       |    |    |        |    |    |
| Class / Severity:     | Class B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |         |     |         |           |                       |              |  |            |         |          |           |           |       |    |    |        |    |    |
| Receiver setup:       | RBW=9kHz, VBW=30kHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |         |     |         |           |                       |              |  |            |         |          |           |           |       |    |    |        |    |    |
| Limit:                | <table><tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBμV)</th></tr><tr><th>Quasi-peak</th><th>Average</th></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>0.5-30</td><td>60</td><td>50</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |         |     |         |           | Frequency range (MHz) | Limit (dBμV) |  | Quasi-peak | Average | 0.15-0.5 | 66 to 56* | 56 to 46* | 0.5-5 | 56 | 46 | 0.5-30 | 60 | 50 |
| Frequency range (MHz) | Limit (dBμV)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |         |     |         |           |                       |              |  |            |         |          |           |           |       |    |    |        |    |    |
|                       | Quasi-peak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Average   |         |     |         |           |                       |              |  |            |         |          |           |           |       |    |    |        |    |    |
| 0.15-0.5              | 66 to 56*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 56 to 46* |         |     |         |           |                       |              |  |            |         |          |           |           |       |    |    |        |    |    |
| 0.5-5                 | 56                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 46        |         |     |         |           |                       |              |  |            |         |          |           |           |       |    |    |        |    |    |
| 0.5-30                | 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 50        |         |     |         |           |                       |              |  |            |         |          |           |           |       |    |    |        |    |    |
| Test setup:           | <div><p style="text-align: center;"><b>Reference Plane</b></p><p style="text-align: center;">Test table/Insulation plane</p><p><i>Remark</i><br/>E.U.T: Equipment Under Test<br/>LISN: Line Impedance Stabilization Network<br/>Test table height=0.8m</p></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |         |     |         |           |                       |              |  |            |         |          |           |           |       |    |    |        |    |    |
| Test procedure        | <div><div>1.</div><div>The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment.</div></div> <div><div>2.</div><div>The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs).</div></div> <div><div>3.</div><div>Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.</div></div> |           |         |     |         |           |                       |              |  |            |         |          |           |           |       |    |    |        |    |    |
| Test environment:     | Temp.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 25 °C     | Humid.: | 52% | Press.: | 1 012mbar |                       |              |  |            |         |          |           |           |       |    |    |        |    |    |
| Test Instruments:     | Refer to section 6 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           |         |     |         |           |                       |              |  |            |         |          |           |           |       |    |    |        |    |    |
| Test mode:            | Refer to section 5.2 for details, only show the worst case.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |         |     |         |           |                       |              |  |            |         |          |           |           |       |    |    |        |    |    |
| Test results:         | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |         |     |         |           |                       |              |  |            |         |          |           |           |       |    |    |        |    |    |

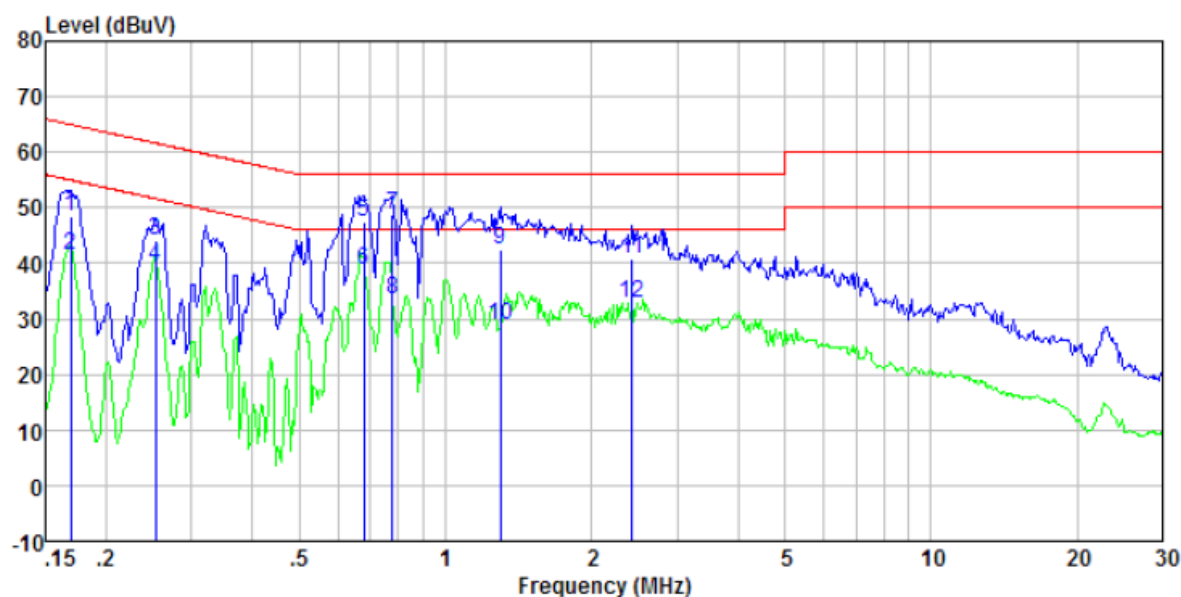
## Measurement Data

|            |          |                 |      |
|------------|----------|-----------------|------|
| Test mode: | REC mode | Phase Polarity: | Line |
|------------|----------|-----------------|------|



| Freq<br>MHz | Reading<br>level<br>dBuV | LISN/ISN<br>factor<br>dB/m | Cable<br>loss<br>dB | Level<br>dBuV | Limit<br>level<br>dBuV | Over<br>limit<br>dB | Remark  |
|-------------|--------------------------|----------------------------|---------------------|---------------|------------------------|---------------------|---------|
| 0.17        | 52.18                    | 0.40                       | 0.09                | 52.67         | 64.99                  | -12.32              | QP      |
| 0.17        | 42.15                    | 0.40                       | 0.09                | 42.64         | 54.99                  | -12.35              | Average |
| 0.25        | 47.95                    | 0.40                       | 0.10                | 48.45         | 61.64                  | -13.19              | QP      |
| 0.25        | 39.08                    | 0.40                       | 0.10                | 39.58         | 51.64                  | -12.06              | Average |
| 0.50        | 45.33                    | 0.31                       | 0.11                | 45.75         | 56.00                  | -10.25              | QP      |
| 0.50        | 35.62                    | 0.31                       | 0.11                | 36.04         | 46.00                  | -9.96               | Average |
| 0.67        | 48.73                    | 0.27                       | 0.13                | 49.13         | 56.00                  | -6.87               | QP      |
| 0.67        | 39.45                    | 0.27                       | 0.13                | 39.85         | 46.00                  | -6.15               | Average |
| 0.79        | 41.83                    | 0.24                       | 0.14                | 42.21         | 56.00                  | -13.79              | QP      |
| 0.79        | 26.76                    | 0.24                       | 0.14                | 27.14         | 46.00                  | -18.86              | Average |
| 1.05        | 39.68                    | 0.20                       | 0.15                | 40.03         | 56.00                  | -15.97              | QP      |
| 1.05        | 24.36                    | 0.20                       | 0.15                | 24.71         | 46.00                  | -21.29              | Average |

|            |          |                 |         |
|------------|----------|-----------------|---------|
| Test mode: | REC mode | Phase Polarity: | Neutral |
|------------|----------|-----------------|---------|



| Freq<br>MHz | Reading<br>level<br>dBuV | LISN/ISN<br>factor<br>dB/m | Cable<br>loss<br>dB | Level<br>dBuV | Limit<br>level<br>dBuV | Over<br>limit<br>dB | Remark  |
|-------------|--------------------------|----------------------------|---------------------|---------------|------------------------|---------------------|---------|
| 0.17        | 48.09                    | 0.40                       | 0.09                | 48.58         | 64.99                  | -16.41              | QP      |
| 0.17        | 40.88                    | 0.40                       | 0.09                | 41.37         | 54.99                  | -13.62              | Average |
| 0.25        | 43.78                    | 0.40                       | 0.10                | 44.28         | 61.64                  | -17.36              | QP      |
| 0.25        | 39.02                    | 0.40                       | 0.10                | 39.52         | 51.64                  | -12.12              | Average |
| 0.68        | 47.04                    | 0.26                       | 0.13                | 47.43         | 56.00                  | -8.57               | QP      |
| 0.68        | 38.49                    | 0.26                       | 0.13                | 38.88         | 46.00                  | -7.12               | Average |
| 0.78        | 48.30                    | 0.24                       | 0.14                | 48.68         | 56.00                  | -7.32               | QP      |
| 0.78        | 33.22                    | 0.24                       | 0.14                | 33.60         | 46.00                  | -12.40              | Average |
| 1.30        | 42.25                    | 0.20                       | 0.16                | 42.61         | 56.00                  | -13.39              | QP      |
| 1.30        | 28.44                    | 0.20                       | 0.16                | 28.80         | 46.00                  | -17.20              | Average |
| 2.42        | 40.49                    | 0.20                       | 0.18                | 40.87         | 56.00                  | -15.13              | QP      |
| 2.42        | 32.31                    | 0.20                       | 0.18                | 32.69         | 46.00                  | -13.31              | Average |

## Notes:

- The following Quasi-Peak and Average measurements were performed on the EUT:
- Final Test Level = Receiver Reading + LISN Factor + Cable Loss.

## 8 Test Setup Photo

Reference to the **appendix I** for details.

## 9 EUT Constructional Details

Reference to the **appendix II** for details.

-----End-----