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Shenzhen, Guangdong, China 518057

Telephone: +86 (0) 755 2601 2053 Report No.: SZEM180100088205

Fax: +86 (0) 755 2671 0594 Page: 1 of 27

### TEST REPORT

Application No.:SZEM1801000882RGApplicant:TCL Communication Ltd.

Address of Applicant: 7/F, Block F4, TCL Communication Technology Building, TCL International

E City, Zhong Shan Yuan Road, Nanshan District, Shenzhen, Guangdong,

P.R. China 518052

Manufacturer: TCL Communication Ltd.

Address of Manufacturer: 7/F, Block F4, TCL Communication Technology Building, TCL International

E City, Zhong Shan Yuan Road, Nanshan District, Shenzhen, Guangdong,

P.R. China 518052

Factory: TCL Mobile Communication Co., LTD. Huizhou

Address of Factory: No.86, Hechang 7th West Road, ZhongKai Hi-tech Development District,

Huizhou, Guangdong

**Equipment Under Test (EUT):** 

**EUT Name:** LTE / UMTS / GSM mobile phone

Model No.: T700A

Trade mark: handy

FCC ID: 2ACCJH085

Standard(s): 47 CFR Part 15, Subpart B

**Date of Receipt:** 2018-03-22

**Date of Test:** 2018-03-30 to 2018-04-02

**Date of Issue:** 2018-04-24

Test Result: Pass\*

Keny Xu

**EMC Laboratory Manager** 

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

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<sup>\*</sup> In the configuration tested, the EUT complied with the standards specified above.



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|         | Revision Record                      |            |  |          |  |  |  |  |
|---------|--------------------------------------|------------|--|----------|--|--|--|--|
| Version | Version Chapter Date Modifier Remark |            |  |          |  |  |  |  |
| 01      |                                      | 2018-04-24 |  | Original |  |  |  |  |
|         |                                      |            |  |          |  |  |  |  |
|         |                                      |            |  |          |  |  |  |  |

| Authorized for issue by: |                            |  |
|--------------------------|----------------------------|--|
|                          | Gray Gao                   |  |
|                          | Gray Gao /Project Engineer |  |
|                          | EvicFu                     |  |
|                          | Eric Fu /Reviewer          |  |



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### 2 Test Summary

| Emission Part                                               |                              |            |             |        |
|-------------------------------------------------------------|------------------------------|------------|-------------|--------|
| Item                                                        | Standard                     | Method     | Requirement | Result |
| Conducted Emissions<br>at Mains Terminals<br>(150kHz-30MHz) | 47 CFR Part 15,<br>Subpart B | ANSI C63.4 | Class B     | Pass   |
| Radiated Emissions (30MHz-1GHz)                             | 47 CFR Part 15,<br>Subpart B | ANSI C63.4 | Class B     | Pass   |
| Radiated Emissions (above 1GHz)                             | 47 CFR Part 15,<br>Subpart B | ANSI C63.4 | Class B     | Pass   |

| InternalSource     | UpperFrequency                                                     |
|--------------------|--------------------------------------------------------------------|
| Below 1.705MHz     | 30MHz                                                              |
| 1.705MHz to 108MHz | 1GHz                                                               |
| 108MHz to 500MHz   | 2GHz                                                               |
| 500MHz to 1GHz     | 5GHz                                                               |
| Above 1GHz         | 5th harmonic of the highest frequency or 40GHz, whichever is lower |



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#### 4 General Information

#### 4.1 Details of E.U.T.

| Power supply:              | AC input: 100-240V 50/60Hz<br>DC output: 5V 2A |
|----------------------------|------------------------------------------------|
| Cable:                     | charging cable:150cm shielded                  |
| Highest Internal Frequency | 1.5GHz                                         |

4.2 Description of Support Units

| Description | Manufacturer | Model No. | Serial No.      |
|-------------|--------------|-----------|-----------------|
| Laptop      | Lenovo       | T430u     | REF. No.SEA1800 |

#### 4.3 Measurement Uncertainty

| No. | Item                | Measurement Uncertainty |  |  |
|-----|---------------------|-------------------------|--|--|
| 1   | Conduction Emission | 3.0dB (150kHz to 30MHz) |  |  |
| 2   | Dadiated Emission   | 4.5dB (30MHz-1GHz)      |  |  |
| 2   | Radiated Emission   | 4.8dB (1GHz-6GHz)       |  |  |
| 3   | Temperature test    | 1°C                     |  |  |
| 4   | Humidity test       | 3%                      |  |  |



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#### 4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

#### 4.5 Test Facility

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

#### • CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC

Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

#### A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

#### VCCI

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

#### • FCC -Designation Number: CN1178

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

#### Industry Canada (IC)

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

#### 4.6 Deviation from Standards

None

#### 4.7 Abnormalities from Standard Conditions

None



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### 5 Equipment List

| Conducted Emissions at Mains Terminals (150kHz-30MHz) |                   |               |              |            |              |  |
|-------------------------------------------------------|-------------------|---------------|--------------|------------|--------------|--|
| Equipment                                             | Manufacturer      | Model No      | Inventory No | Cal Date   | Cal Due Date |  |
| Shielding Room                                        | ChangZhou ZhongYu | GB-88         | SEM001-06    | 2017-05-10 | 2020-05-09   |  |
| Measurement Software                                  | AUDIX             | e3 V5.4.1221d | N/A          | N/A        | N/A          |  |
| Coaxial Cable                                         | SGS               | N/A           | SEM024-01    | 2017-07-13 | 2018-07-12   |  |
| LISN                                                  | Rohde & Schwarz   | ENV216        | SEM007-01    | 2017-09-27 | 2018-09-26   |  |
| LISN                                                  | ETS-LINDGREN      | 3816/2        | SEM007-02    | 2018-04-02 | 2019-04-01   |  |
| EMI Test Receiver                                     | Rohde & Schwarz   | ESCI          | SEM004-02    | 2018-04-02 | 2019-04-01   |  |

| Radiated Emissions (30MHz-1GHz)         |                         |                     |              |            |              |  |
|-----------------------------------------|-------------------------|---------------------|--------------|------------|--------------|--|
| Equipment                               | Manufacturer            | Model No            | Inventory No | Cal Date   | Cal Due Date |  |
| 10m Semi-Anechoic<br>Chamber            | SAEMC                   | FSAC1018            | SEM001-03    | 2018-03-31 | 2021-03-30   |  |
| Measurement Software                    | AUDIX                   | e3 V8.2014-6-<br>27 | N/A          | N/A        | N/A          |  |
| Coaxial Cable                           | SGS                     | N/A                 | SEM029-01    | 2017-07-13 | 2018-07-12   |  |
| EMI Test Receiver<br>(9kHz-3GHz)        | Rohde & Schwarz         | ESR                 | SEM004-03    | 2018-04-02 | 2019-04-01   |  |
| Trilog-Broadband<br>Antenna(30MHz-1GHz) | Schwarzbeck             | VULB9168            | SEM003-18    | 2016-06-29 | 2019-06-28   |  |
| Pre-amplifier                           | Sonoma Instrument<br>Co | 310N                | SEM005-04    | 2018-04-13 | 2019-04-12   |  |

| Radiated Emissions (above 1GHz)          |                         |                       |              |            |              |  |
|------------------------------------------|-------------------------|-----------------------|--------------|------------|--------------|--|
| Equipment                                | Manufacturer            | Model No              | Inventory No | Cal Date   | Cal Due Date |  |
| 3m Semi-Anechoic<br>Chamber              | AUDIX                   | N/A                   | SEM001-02    | 2018-03-13 | 2021-03-12   |  |
| Measurement Software                     | AUDIX                   | e3 V8.2014-6-<br>27   | N/A          | N/A        | N/A          |  |
| Coaxial Cable                            | SGS                     | N/A                   | SEM026-01    | 2017-07-13 | 2018-07-12   |  |
| EXA Spectrum Analyzer                    | AgilentTechnologies Inc | N9010A                | SEM004-09    | 2018-04-13 | 2019-04-12   |  |
| Horn Antenna(1-18GHz)                    | Rohde & Schwarz         | HF907                 | SEM003-07    | 2018-04-13 | 2021-04-12   |  |
| Low Noise<br>Amplifier(100MHz-<br>18GHz) | Black Diamond<br>Series | BDLNA-0118-<br>352810 | SEM005-05    | 2017-09-27 | 2018-09-26   |  |



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| General used equipmen              | t                                               |          |              |            |              |
|------------------------------------|-------------------------------------------------|----------|--------------|------------|--------------|
| Equipment                          | Manufacturer                                    | Model No | Inventory No | Cal Date   | Cal Due Date |
| Humidity/ Temperature<br>Indicator | Shanghai<br>Meteorological<br>Industry Factory  | ZJ1-2B   | SEM002-03    | 2017-09-29 | 2018-09-28   |
| Humidity/ Temperature<br>Indicator | Shanghai<br>Meteorological<br>Industry Factory  | ZJ1-2B   | SEM002-04    | 2017-09-29 | 2018-09-28   |
| Humidity/ Temperature Indicator    | Mingle                                          | N/A      | SEM002-08    | 2017-09-29 | 2018-09-28   |
| Barometer                          | Changchun<br>Meteorological<br>Industry Factory | DYM3     | SEM002-01    | 2018-04-08 | 2019-04-07   |



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#### 6 Emission Test Results

#### 6.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

Test Requirement: 47 CFR Part 15, Subpart B

Test Method: ANSI C63.4

Frequency Range: 150kHz to 30MHz

Limit:

0.15M-0.5MHz 66dB( $\mu$ V)-56dB( $\mu$ V) quasi-peak, 56dB( $\mu$ V)-46dB( $\mu$ V) average

0.5M-5MHz 56dB( $\mu$ V) quasi-peak, 46dB( $\mu$ V) average 5M-30MHz 60dB( $\mu$ V) quasi-peak, 50dB( $\mu$ V) average

Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz



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#### 6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 21.8 °C Humidity: 49.2 % RH Atmospheric Pressure: 1015 mbar

Pretest these modes to find the worst case:

a:Normal Working\_keep EUT single playing.

g: GSM (850M Traffic) + BT+WLAN+ GPS Rx + NFC + battery + adapter h: GSM (1900M Traffic) + BT+WLAN+ GPS Rx + NFC + earphone + battery +

adapter

i: WCDMA Band II + BT+WLAN+ GPS Rx + NFC + earphone + battery + adapter

j: WCDMA Band IV + BT+WLAN+ GPS Rx + NFC + earphone + battery + adapter

k: WCDMA Band V + BT+WLAN+ GPS Rx + NFC + battery + adapter

I: LTE band 2+ BT+WLAN+ GPS Rx + NFC + battery + adapter

m: LTE band 4+ BT+WLAN+ GPS Rx + NFC + battery + adapter

n: LTE band 7+ BT+WLAN+ GPS Rx + NFC + battery + adapter

o: LTE band 12+ BT+WLAN+ GPS Rx+ NFC + battery + adapter

O. LTE band 12: BT:WEAN: GPO B .. NEO ... I (1)

p: LTE band 13+ BT+WLAN+ GPS Rx + NFC + battery + adapter

q: LTE band 17+ BT+WLAN+ GPS Rx + NFC + battery + adapter r: LTE band 41+ BT+WLAN+ GPS Rx + NFC + battery + adapter

s: LTE band 66+ BT+WLAN+ GPS Rx + NFC + battery + adapter

t: Transfer data between the EUT and the PC

u: Telecom Idle + BT+ WLAN + GPS Rx + NFC+ playing MP4 + battery + adapter

v: Telecom Idle + BT + WLAN+ GPS Rx + NFC+ camera(Back) + battery +

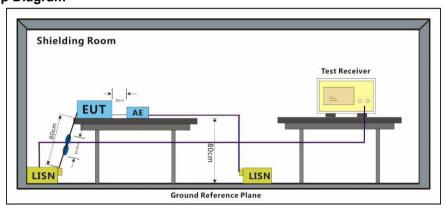
adapter

The worst case for final test:

i: WCDMA Band II + BT+WLAN+ GPS Rx + NFC + earphone + battery + adapter

t: Transfer data between the EUT and the PC

#### 6.1.2 Test Setup Diagram



#### 6.1.3 Measurement Data

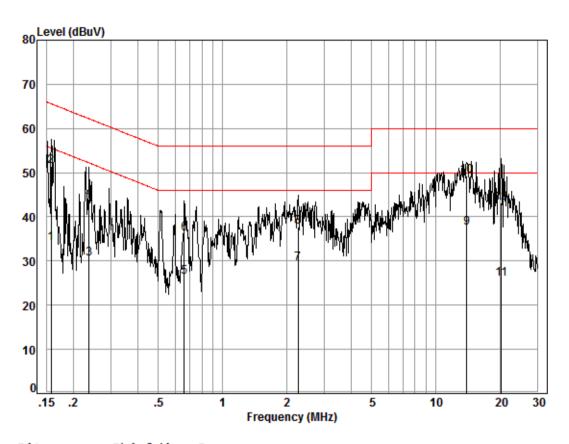
An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.



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Mode:i; Line:Live Line



Site : Shielding Room

Condition: Line Job No. : 01198RG

Test mode: i

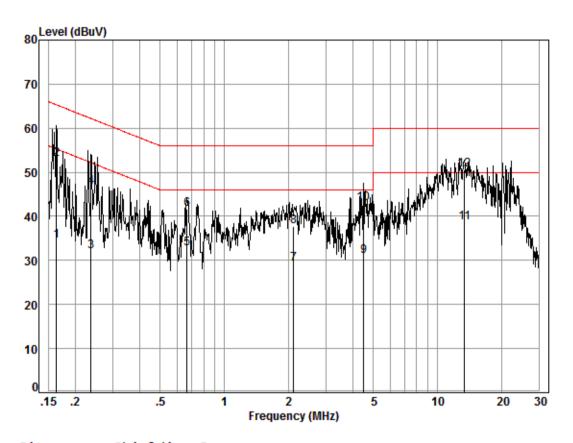
|    | Frea  | Cable | LISN<br>Factor | Read<br>Level | Level | Limit<br>Line | 0ver   | Remark   |
|----|-------|-------|----------------|---------------|-------|---------------|--------|----------|
|    | rreq  | LUSS  | ractor         | rever         | rever | LINE          | LIMIT  | Kelliark |
|    | MHz   | dB    | dB             | dBuV          | dBuV  | dBuV          | dB     |          |
| 1  | 0.16  | 0.02  | 9.51           | 24.43         | 33.96 | 55.60         | -21.64 | Average  |
| 2  | 0.16  | 0.02  | 9.51           | 41.89         | 51.42 | 65.60         | -14.18 | QP       |
| 3  | 0.24  | 0.03  | 9.51           | 21.08         | 30.62 | 52.22         | -21.60 | Average  |
| 4  | 0.24  | 0.03  | 9.51           | 34.40         | 43.94 | 62.22         | -18.28 | QP       |
| 5  | 0.66  | 0.06  | 9.50           | 16.79         | 26.35 | 46.00         | -19.65 | Average  |
| 6  | 0.66  | 0.06  | 9.50           | 26.61         | 36.17 | 56.00         | -19.83 | QP       |
| 7  | 2.26  | 0.16  | 9.52           | 19.66         | 29.34 | 46.00         | -16.66 | Average  |
| 8  | 2.26  | 0.16  | 9.52           | 28.12         | 37.80 | 56.00         | -18.20 | QP       |
| 9  | 13.99 | 0.24  | 9.70           | 27.57         | 37.51 | 50.00         | -12.49 | Average  |
| 10 | 13.99 | 0.24  | 9.70           | 39.43         | 49.37 | 60.00         | -10.63 | QP       |
| 11 | 20.27 | 0.27  | 9.75           | 15.99         | 26.01 | 50.00         | -23.99 | Average  |
| 12 | 20.27 | 0.27  | 9.75           | 33.15         | 43.17 | 60.00         | -16.83 | QP       |



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Mode:i; Line:Neutral Line



Site : Shielding Room

Condition: Neutral Job No. : 01198RG

Test mode: i

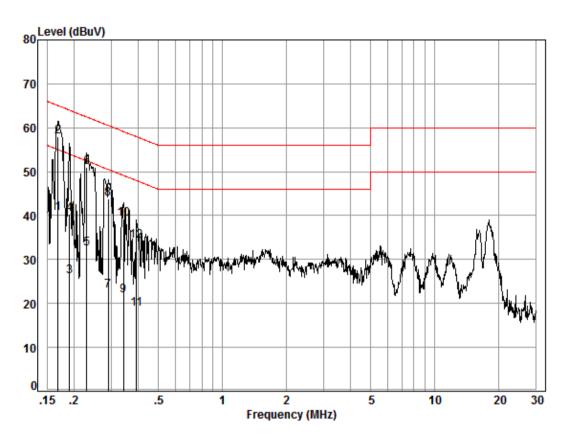
|    | Freq  | Cable<br>Loss | LISN<br>Factor | Read<br>Level | Level | Limit<br>Line | Over<br>Limit | Remark  |
|----|-------|---------------|----------------|---------------|-------|---------------|---------------|---------|
|    | MHz   | dB            | dB             | dBuV          | dBuV  | dBuV          | dB            |         |
| 1  | 0.16  | 0.02          | 9.59           | 24.74         | 34.35 | 55.30         | -20.95        | Average |
| 2  | 0.16  | 0.02          | 9.59           | 43.36         | 52.97 | 65.30         | -12.33        | QP      |
| 3  | 0.24  | 0.03          | 9.58           | 22.38         | 31.99 | 52.22         | -20.23        | Average |
| 4  | 0.24  | 0.03          | 9.58           | 37.13         | 46.74 | 62.22         | -15.48        | QP      |
| 5  | 0.67  | 0.07          | 9.62           | 22.98         | 32.67 | 46.00         | -13.33        | Average |
| 6  | 0.67  | 0.07          | 9.62           | 31.85         | 41.54 | 56.00         | -14.46        | QP      |
| 7  | 2.12  | 0.15          | 9.65           | 19.38         | 29.18 | 46.00         | -16.82        | Average |
| 8  | 2.12  | 0.15          | 9.65           | 27.94         | 37.74 | 56.00         | -18.26        | QP      |
| 9  | 4.50  | 0.20          | 9.68           | 21.00         | 30.88 | 46.00         | -15.12        | Average |
| 10 | 4.50  | 0.20          | 9.68           | 33.01         | 42.89 | 56.00         | -13.11        | QP      |
| 11 | 13.41 | 0.24          | 9.89           | 28.37         | 38.50 | 50.00         | -11.50        | Average |
| 12 | 13.41 | 0.24          | 9.89           | 40.50         | 50.63 | 60.00         | -9.37         | QP      |



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Mode:t; Line:Live Line



Site : Shielding Room

Condition: Line Job No. : 01198RG

Test mode: t

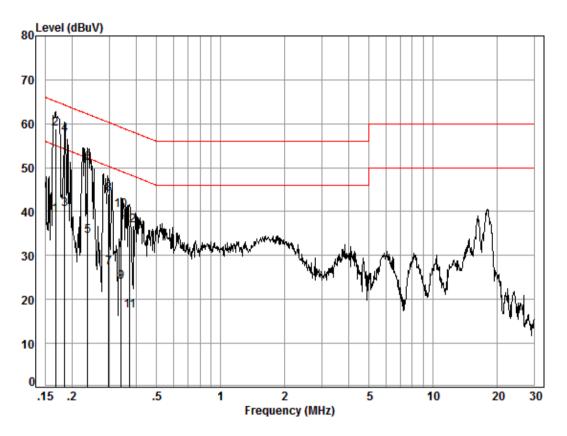
|    | Freq | Cable<br>Loss | LISN<br>Factor | Read<br>Level | Level | Limit<br>Line | Over<br>Limit | Remark  |
|----|------|---------------|----------------|---------------|-------|---------------|---------------|---------|
|    | MHz  | dB            | dB             | dBuV          | dBuV  | dBuV          | dB            |         |
| 1  | 0.17 | 0.02          | 9.52           | 30.93         | 40.47 | 55.03         | -14.56        | Average |
| 2  | 0.17 | 0.02          | 9.52           | 48.54         | 58.08 | 65.03         | -6.95         | QP      |
| 3  | 0.19 | 0.03          | 9.51           | 16.59         | 26.13 | 54.02         | -27.89        | Average |
| 4  | 0.19 | 0.03          | 9.51           | 30.78         | 40.32 | 64.02         | -23.70        | QP      |
| 5  | 0.23 | 0.03          | 9.51           | 22.92         | 32.46 | 52.48         | -20.02        | Average |
| 6  | 0.23 | 0.03          | 9.51           | 41.40         | 50.94 | 62.48         | -11.54        | QP      |
| 7  | 0.29 | 0.03          | 9.51           | 13.37         | 22.91 | 50.54         | -27.63        | Average |
| 8  | 0.29 | 0.03          | 9.51           | 34.38         | 43.92 | 60.54         | -16.62        | QP      |
| 9  | 0.34 | 0.03          | 9.50           | 12.35         | 21.88 | 49.13         | -27.25        | Average |
| 10 | 0.34 | 0.03          | 9.50           | 29.69         | 39.22 | 59.13         | -19.91        | QP      |
| 11 | 0.39 | 0.04          | 9.49           | 9.29          | 18.82 | 47.99         | -29.17        | Average |
| 12 | 0.39 | 0.04          | 9.49           | 24.69         | 34.22 | 57.99         | -23.77        | QP      |



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Mode:t; Line:Neutral Line



Site : Shielding Room

Condition: Neutral Job No. : 01198RG

Test mode: t

|    | Freq | Cable<br>Loss | LISN<br>Factor | Read<br>Level | Level | Limit<br>Line | Over<br>Limit | Remark  |
|----|------|---------------|----------------|---------------|-------|---------------|---------------|---------|
|    | MHz  | dB            | dB             | dBuV          | dBuV  | dBuV          | dB            |         |
| 1  | 0.17 | 0.02          | 9.59           | 29.56         | 39.17 | 55.08         | -15.91        | Average |
| 2  | 0.17 | 0.02          | 9.59           | 49.32         | 58.93 | 65.08         | -6.15         | QP      |
| 3  | 0.18 | 0.03          | 9.58           | 30.84         | 40.45 | 54.28         | -13.83        | Average |
| 4  | 0.18 | 0.03          | 9.58           | 48.02         | 57.63 | 64.28         | -6.65         | QP      |
| 5  | 0.24 | 0.03          | 9.58           | 24.83         | 34.44 | 52.22         | -17.78        | Average |
| 6  | 0.24 | 0.03          | 9.58           | 41.35         | 50.96 | 62.22         | -11.26        | QP      |
| 7  | 0.30 | 0.03          | 9.58           | 17.61         | 27.22 | 50.32         | -23.10        | Average |
| 8  | 0.30 | 0.03          | 9.58           | 34.51         | 44.12 | 60.32         | -16.20        | QP      |
| 9  | 0.34 | 0.03          | 9.58           | 14.38         | 23.99 | 49.18         | -25.19        | Average |
| 10 | 0.34 | 0.03          | 9.58           | 30.66         | 40.27 | 59.18         | -18.91        | QP      |
| 11 | 0.37 | 0.03          | 9.58           | 7.74          | 17.35 | 48.43         | -31.08        | Average |
| 12 | 0.37 | 0.03          | 9.58           | 27.31         | 36.92 | 58.43         | -21.51        | QP      |



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#### 6.2 Radiated Emissions (30MHz-1GHz)

Test Requirement: 47 CFR Part 15, Subpart B

Test Method: ANSI C63.4 Frequency Range: 30MHz to 1GHz

Measurement Distance: 10m

Limit:

30 MHz - 88 MHz  $29.5 (\text{dB}\mu\text{V/m}) \text{ quasi-peak}$  88 MHz - 216 MHz  $33.1 (\text{dB}\mu\text{V/m}) \text{ quasi-peak}$  216 MHz - 960 MHz  $35.6 (\text{dB}\mu\text{V/m}) \text{ quasi-peak}$   $43.5 (\text{dB}\mu\text{V/m}) \text{ quasi-peak}$ 

Detector: Peak for pre-scan (120kHz resolution bandwidth) 30M to1000MHz



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#### 6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 51 % RH Atmospheric Pressure: 1015 mbar

Pretest these a:Normal Working\_keep EUT single playing.

modes to find g: GSM (850M Traffic) + BT+WLAN+ GPS Rx + NFC + battery + adapter the worst case:

h: GSM (1900M Traffic) + BT+WLAN+ GPS Rx + NFC + earphone + battery + adapter

i: WCDMA Band II + BT+WLAN+ GPS Rx + NFC + earphone + battery + adapter

j: WCDMA Band IV + BT+WLAN+ GPS Rx + NFC + earphone + battery + adapter

k: WCDMA Band V + BT+WLAN+ GPS Rx + NFC + battery + adapter

I: LTE band 2+ BT+WLAN+ GPS Rx + NFC + battery + adapter

m: LTE band 4+ BT+WLAN+ GPS Rx + NFC + battery + adapter

n: LTE band 7+ BT+WLAN+ GPS Rx + NFC + battery + adapter

o: LTE band 12+ BT+WLAN+ GPS Rx+ NFC + battery + adapter

p: LTE band 13+ BT+WLAN+ GPS Rx + NFC + battery + adapter

q: LTE band 17+ BT+WLAN+ GPS Rx + NFC + battery + adapter

r: LTE band 41+ BT+WLAN+ GPS Rx + NFC + battery + adapter

s: LTE band 66+ BT+WLAN+ GPS Rx + NFC + battery + adapter

t: Transfer data between the EUT and the PC

u: Telecom Idle + BT+ WLAN + GPS Rx + NFC+ playing MP4 + battery + adapter

v: Telecom Idle + BT + WLAN+ GPS Rx + NFC+ camera(Back) + battery +

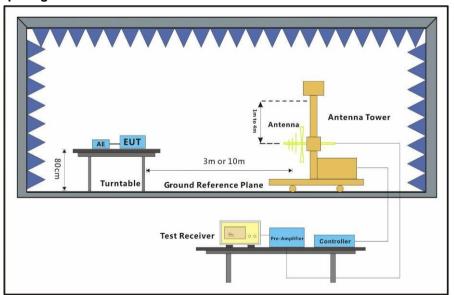
adapter

The worst case for final test:

I: LTE band 2+ BT+WLAN+ GPS Rx + NFC + battery + adapter

t: Transfer data between the EUT and the PC

#### 6.2.2 Test Setup Diagram



#### 6.2.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

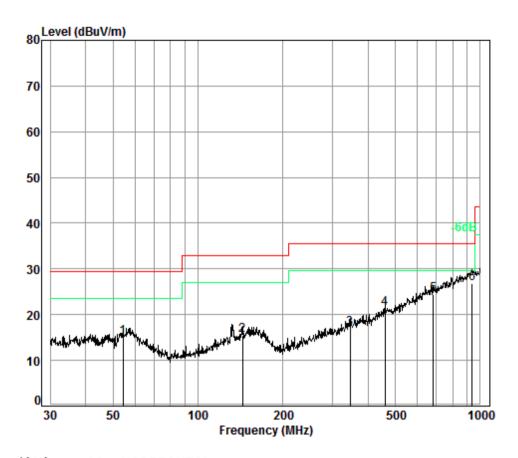
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Mode:I; Polarization:Horizontal



Condition: 10m HORIZONTAL

Job No. : 00882RG

Test Mode: 1

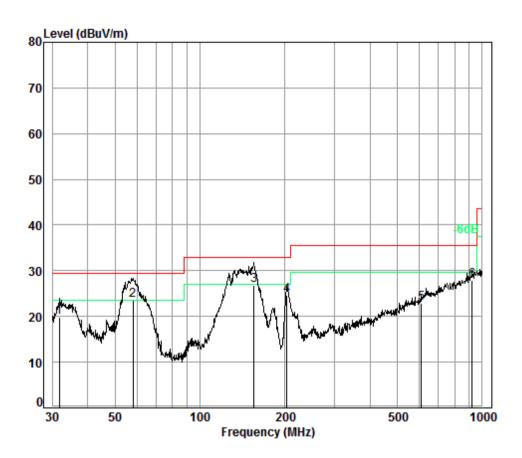
|      |        | Cable | Ant    | Preamp | Read  |        | Limit  | 0ver   |
|------|--------|-------|--------|--------|-------|--------|--------|--------|
|      | Freq   | Loss  | Factor | Factor | Level | Level  | Line   | Limit  |
|      |        |       |        |        |       |        |        |        |
|      | MHz    | dB    | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB     |
|      |        |       |        |        |       |        |        |        |
| 1    | 54.26  | 6.99  | 12.43  | 32.53  | 28.15 | 15.04  | 29.50  | -14.46 |
| 2    | 143.83 | 7.42  | 13.01  | 32.52  | 27.50 | 15.41  | 33.00  | -17.59 |
| 3    | 345.60 | 8.23  | 13.76  | 32.43  | 27.53 | 17.09  | 35.60  | -18.51 |
| 4    | 460.73 | 8.45  | 16.30  | 32.42  | 28.96 | 21.29  | 35.60  | -14.31 |
| 5    | 682.35 | 9.11  | 19.92  | 32.39  | 27.74 | 24.38  | 35.60  | -11.22 |
| 6 pp | 935.55 | 9.54  | 22.63  | 31.26  | 25.90 | 26.81  | 35.60  | -8.79  |



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Mode:I; Polarization:Vertical



Condition: 10m VERTICAL

Job No. : 00882RG

Test Mode: 1

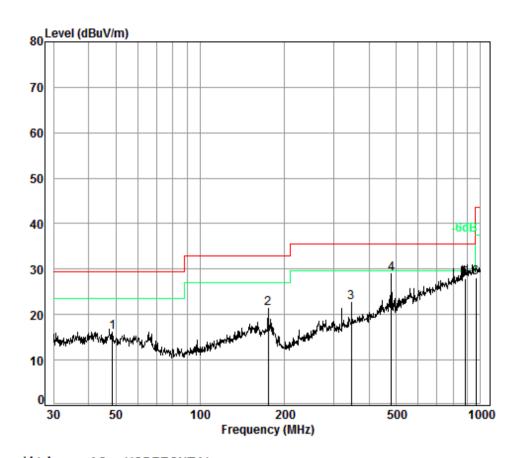
|      |        | Cable | Ant    | Preamp | Read  |        | Limit  | 0ver   |
|------|--------|-------|--------|--------|-------|--------|--------|--------|
|      | Freq   | Loss  | Factor | Factor | Level | Level  | Line   | Limit  |
| -    | MHz    | dB    | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB     |
| 1    | 31.73  | 6.70  | 12.53  | 32.60  | 33.31 | 19.94  | 29.50  | -9.56  |
| 2 pp | 58.00  | 7.00  | 12.15  | 32.54  | 36.90 | 23.51  | 29.50  | -5.99  |
| 3    | 155.36 | 7.48  | 13.40  | 32.51  | 38.43 | 26.80  | 33.00  | -6.20  |
| 4    | 203.52 | 7.62  | 9.38   | 32.53  | 40.14 | 24.61  | 33.00  | -8.39  |
| 5    | 609.92 | 8.93  | 18.91  | 32.40  | 27.43 | 22.87  | 35.60  | -12.73 |
| 6    | 919.29 | 9.50  | 22.48  | 31.39  | 27.41 | 28.00  | 35.60  | -7.60  |



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Mode:t; Polarization:Horizontal



Condition: 10m HORIZONTAL

Job No. : 00882RG

Test Mode: t : 06

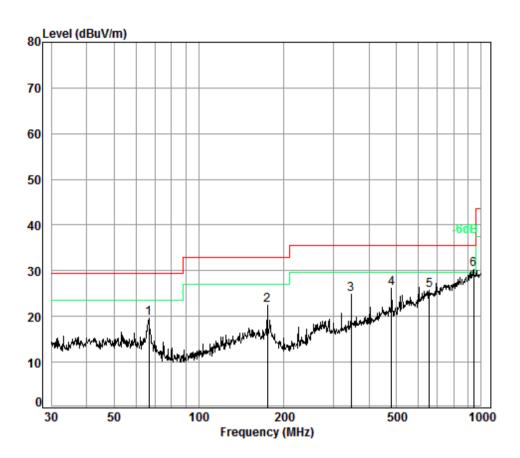
|      |        | Cable | Ant    | Preamp | Read  |        | Limit  | 0ver   |
|------|--------|-------|--------|--------|-------|--------|--------|--------|
|      | Freq   | Loss  | Factor | Factor | Level | Level  | Line   | Limit  |
|      | MHz    | dB    | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB     |
| 1    | 48.67  | 6.87  | 12.81  | 32.52  | 29.06 | 16.22  | 29.50  | -13.28 |
| 2    | 175.04 | 7.50  | 11.65  | 32.52  | 34.84 | 21.47  | 33.00  | -11.53 |
| 3    | 346.81 | 8.24  | 13.78  | 32.43  | 33.15 | 22.74  | 35.60  | -12.86 |
| 4 pp | 480.53 | 8.50  | 16.53  | 32.42  | 36.35 | 28.96  | 35.60  | -6.64  |
| 5 qp | 881.41 | 9.50  | 21.98  | 31.69  | 28.20 | 27.99  | 35.60  | -7.61  |
| 6    | 962.16 | 9.60  | 22.77  | 31.06  | 26.91 | 28.22  | 43.50  | -15.28 |



Report No.: SZEM180100088205

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Mode:t; Polarization:Vertical



Condition: 10m VERTICAL

Job No. : 00882RG

Test Mode: t : 06

|      | Freq   |      |       | Preamp<br>Factor |       |        |        | Over<br>Limit |
|------|--------|------|-------|------------------|-------|--------|--------|---------------|
|      | MHz    | dB   | dB/m  | dB               | dBuV  | dBuV/m | dBuV/m | dB            |
| 1    | 66.50  | 6.97 | 10.71 | 32.56            | 34.44 | 19.56  | 29.50  | -9.94         |
| 2    | 175.04 | 7.50 | 11.65 | 32.52            | 35.81 | 22.44  | 33.00  | -10.56        |
| 3    | 346.81 | 8.24 | 13.78 | 32.43            | 35.37 | 24.96  | 35.60  | -10.64        |
| 4    | 480.53 | 8.50 | 16.53 | 32.42            | 33.52 | 26.13  | 35.60  | -9.47         |
| 5    | 654.23 | 9.04 | 19.59 | 32.40            | 29.53 | 25.76  | 35.60  | -9.84         |
| 6 pp | 938.83 | 9.55 | 22.65 | 31.24            | 29.30 | 30.26  | 35.60  | -5.34         |



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#### 6.3 Radiated Emissions (above 1GHz)

Test Requirement: 47 CFR Part 15, Subpart B

Test Method: ANSI C63.4 Frequency Range: Above 1GHz

Measurement Distance: 3m

Limit:

Above 1GHz 74(dBµV/m) peak, 54(dBµV/m) average

Detector: Peak for pre-scan (1000kHz resolution bandwidth) 1000M to18000MHz



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#### 6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 21.4 °C Humidity: 56.3 % RH Atmospheric Pressure: 1015 mbar

Pretest these a:Normal Working\_keep EUT single playing.

modes to find g: GSM (850M Traffic) + BT+WLAN+ GPS Rx + NFC + battery + adapter the worst case:

h: GSM (1900M Traffic) + BT+WLAN+ GPS Rx + NFC + earphone + battery +

adapter

i: WCDMA Band II + BT+WLAN+ GPS Rx + NFC + earphone + battery + adapter

j: WCDMA Band IV + BT+WLAN+ GPS Rx + NFC + earphone + battery + adapter

k: WCDMA Band V + BT+WLAN+ GPS Rx + NFC + battery + adapter

I: LTE band 2+ BT+WLAN+ GPS Rx + NFC + battery + adapter

m: LTE band 4+ BT+WLAN+ GPS Rx + NFC + battery + adapter

n: LTE band 7+ BT+WLAN+ GPS Rx + NFC + battery + adapter

o: LTE band 12+ BT+WLAN+ GPS Rx+ NFC + battery + adapter

p: LTE band 13+ BT+WLAN+ GPS Rx + NFC + battery + adapter

g: LTE band 17+ BT+WLAN+ GPS Rx + NFC + battery + adapter

r: LTE band 41+ BT+WLAN+ GPS Rx + NFC + battery + adapter

s: LTE band 66+ BT+WLAN+ GPS Rx + NFC + battery + adapter

t: Transfer data between the EUT and the PC

u: Telecom Idle + BT+ WLAN + GPS Rx + NFC+ playing MP4 + battery + adapter

v: Telecom Idle + BT + WLAN+ GPS Rx + NFC+ camera(Back) + battery +

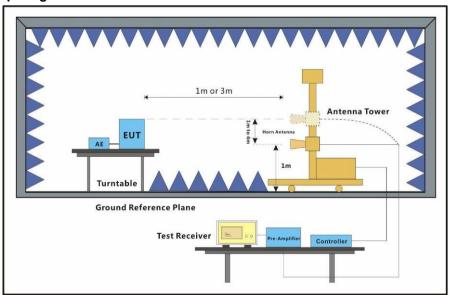
adapter

The worst case

I: LTE band 2+ BT+WLAN+ GPS Rx + NFC + battery + adapter

for final test: t: Transfer data between the EUT and the PC

#### 6.3.2 Test Setup Diagram



#### 6.3.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

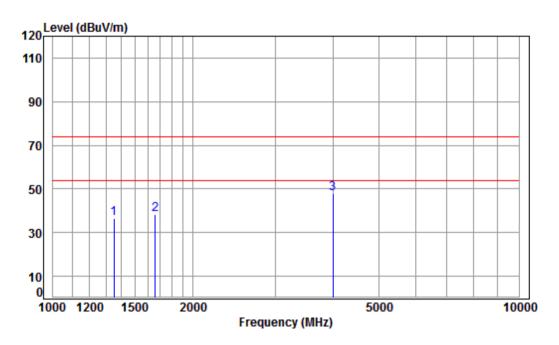
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Mode:I; Polarization:Horizontal



Condition: 3m HORIZONTAL

Job No : 00882RG

Mode : 1

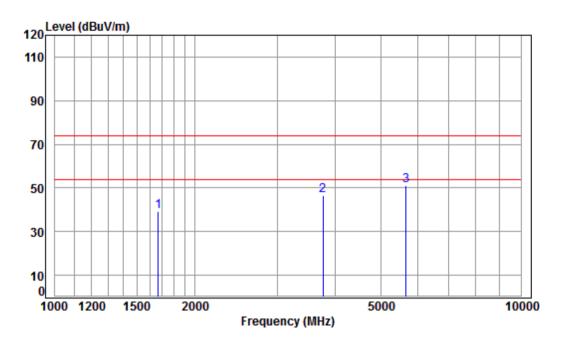
|      | Freq     |      |       | Preamp<br>Factor |       |        |        |        | Remark |
|------|----------|------|-------|------------------|-------|--------|--------|--------|--------|
|      | MHz      | dB   | dB/m  | dB               | dBuV  | dBuV/m | dBuV/m | dB     |        |
| 1    | 1353.654 | 4.99 | 25.19 | 41.30            | 47.50 | 36.38  | 74.00  | -37.62 | Peak   |
| 2    | 1657.443 | 5.28 | 26.49 | 41.51            | 48.05 | 38.31  | 74.00  | -35.69 | Peak   |
| 3 рр | 3987.794 | 6.97 | 33.57 | 42.32            | 49.74 | 47.96  | 74.00  | -26.04 | Peak   |



Report No.: SZEM180100088205

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Mode:I; Polarization:Vertical



Condition: 3m VERTICAL

Job No : 00882RG

Mode : 1

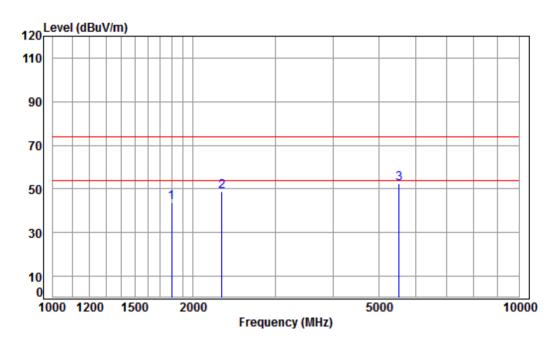
|      | Freq     |      |       | Preamp<br>Factor |       |        |        |        | Remark |
|------|----------|------|-------|------------------|-------|--------|--------|--------|--------|
|      | MHz      | dB   | dB/m  | dB               | dBuV  | dBuV/m | dBuV/m | dB     |        |
| 1    | 1666.376 | 5.27 | 26.53 | 41.51            | 48.74 | 39.03  | 74.00  | -34.97 | Peak   |
| 2    | 3758.839 | 6.74 | 32.95 | 42.28            | 49.02 | 46.43  | 74.00  | -27.57 | Peak   |
| 3 рр | 5675.819 | 9.47 | 34.51 | 41.88            | 49.00 | 51.10  | 74.00  | -22.90 | Peak   |



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Mode:t; Polarization:Horizontal



Condition: 3m Horizontal

Job No : 00882RG

Mode : t

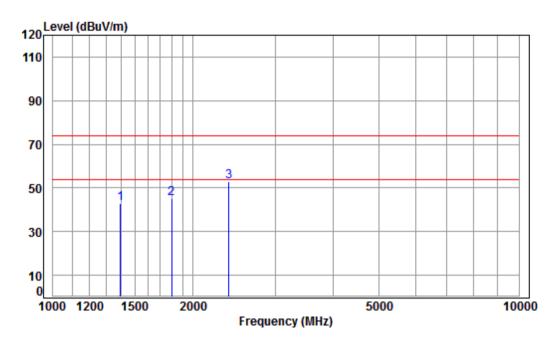
|      | Freq     |      |       | Preamp<br>Factor |       |        |        |        | Remark |
|------|----------|------|-------|------------------|-------|--------|--------|--------|--------|
|      | MHz      | dB   | dB/m  | dB               | dBuV  | dBuV/m | dBuV/m | dB     |        |
| 1    | 1796.617 | 5.12 | 27.05 | 41.59            | 53.38 | 43.96  | 74.00  | -30.04 | Peak   |
| 2    | 2304.722 | 5.36 | 28.82 | 41.84            | 56.31 | 48.65  | 74.00  | -25.35 | Peak   |
| 3 рр | 5535.214 | 8.98 | 34.42 | 42.00            | 51.10 | 52.50  | 74.00  | -21.50 | Peak   |



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Mode:t; Polarization:Vertical



Condition: 3m VERTICAL Job No : 00882RG

Mode : t

2

Cable Ant Preamp Read Limit 0ver Loss Factor Factor Level Level Freq Line Limit Remark dBuV dBuV/m dBuV/m MHz dB dB/m dΒ dB 1395.520 5.14 25.37 41.33 53.84 43.02 74.00 -30.98 Peak 45.06 74.00 -28.94 Peak 1799.839 5.11 27.07 41.59 54.47 3 pp 2388.809 5.47 29.07 41.87 60.16 52.83 74.00 -21.17 Peak



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### 7 Photographs

- 7.1 Conducted Emissions at Mains Terminals (150kHz-30MHz) Test Setup
- 7.2 Radiated Emissions (30MHz-1GHz) Test Setup
- 7.3 EUT Constructional Details (EUT Photos)

Refer to Appendix A - Photographs of EUT Constructional Details for SZEM1801000882RG.

- End of the Report -