

FCC REPORT

(GSM)

Applicant: 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

Equipment Under Test (EUT)

Product Name: LTE/UMTS/GSM mobile phone

Model No.: 5048A

Trade mark: alcatel

FCC ID: 2ACCJH107

Applicable standards: FCC CFR Title 47 Part 2
FCC CFR Title 47 Part 22 Subpart H
FCC CFR Title 47 Part 24 Subpart E

Date of sample receipt: 17 Jan., 2022

Date of Test: 18 Jan., to 01 Mar., 2022

Date of report issued: 04 Mar., 2022

Test Result: PASS*

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

Authorized Signature:



Bruce Zhang

Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the JYT product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. 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.

This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

2. Version

| Version No. | Date | Description |
|-------------|---------------|-------------|
| 00 | 04 Mar., 2022 | Original |
| | | |
| | | |
| | | |
| | | |

Tested by:Mike.Ou
Test Engineer**Date:** 04 Mar., 2022**Reviewed by:**Winner Zhang
Project Engineer**Date:** 04 Mar., 2022

3. Contents

| | Page |
|--|------|
| 1. COVER PAGE..... | 1 |
| 2. VERSION..... | 2 |
| 3. CONTENTS..... | 3 |
| 4. TEST SUMMARY..... | 4 |
| 5. GENERAL INFORMATION..... | 5 |
| 5.1 CLIENT INFORMATION..... | 5 |
| 5.2 GENERAL DESCRIPTION OF E.U.T..... | 5 |
| 5.3 TEST ENVIRONMENT AND MODE | 6 |
| 5.4 DESCRIPTION OF TEST AUXILIARY EQUIPMENT..... | 6 |
| 5.5 MEASUREMENT UNCERTAINTY..... | 6 |
| 5.6 ADDITIONS TO, DEVIATIONS, OR EXCLUSIONS FROM THE METHOD..... | 6 |
| 5.7 LABORATORY FACILITY..... | 6 |
| 5.8 LABORATORY LOCATION | 7 |
| 5.9 TEST INSTRUMENTS LIST..... | 7 |
| 6. TEST RESULTS..... | 8 |
| 6.1 CONDUCTED OUTPUT POWER | 8 |
| 6.1.1 RE-TEST STATEMENT | 8 |
| 6.1.2 TEST RESULTS | 8 |
| 6.2 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT..... | 9 |
| 7. APPENDIX | 22 |
| 8. TEST SETUP PHOTOGRAPH-PCE | 23 |
| 8.1 TEST SETUP OF JIANYAN TESTING GROUP SHENZHEN Co., LTD..... | 23 |

4. Test Summary

| Test Items | FCC Part Section(s) | Result |
|---|--|-------------------|
| RF Output Power | Part 2.1046 Part 22.913 (a)(5) Part 24.232 (c) | Pass ² |
| Peak-to-Average Power Ratio | Part 24.232 (d) | Pass ¹ |
| Modulation Characteristics | Part 2.1047 | Pass ¹ |
| 99% & -26 dB Occupied Bandwidth | Part 2.1049 Part 22.917(b) Part 24.238(b) | Pass ¹ |
| Out of band emission at antenna terminals | Part 2.1053 Part 22.917 (a) Part 24.238 (a) | Pass ¹ |
| Field strength of spurious radiation | Part 22.917 (a) Part 24.238 (a) | Pass ² |
| Frequency stability vs. temperature | Part 22.355 Part 24.235 Part 2.1055(a)(1)(b) | Pass ¹ |
| Frequency stability vs. voltage | Part 22.355 Part 24.235 Part 2.1055(d)(2) | Pass ¹ |

Remark:

1. Pass¹: Items data are refer from the original report issued by SGS-CSTC Standards Technical Services, Co., Ltd.Shenzhen Branch.(Date of Test: 2019/8/2-2019/8/21).The detailed data refer to Appendix B.1 of GSM850 & GSM1900.
2. Pass²: These items are tested by JianYan Testing Group Shenzhen Co., Ltd.
3. The cable insertion loss used by "RF Output Power" and other conduction measurement items is 0.5dB(Fundamental Frequency below 1GHz)/1.0dB(Fundamental Frequency above 1GHz) (provided by the customer).

| | |
|---------------------|---|
| Test Method: | ANSI/TIA-603-E-2016 ANSI C63.26-2015 |
|---------------------|---|

5. General Information

5.1 Client Information

| | |
|---------------|--|
| Applicant: | TCL Communication Ltd. |
| Address: | 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: | 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: | Huizhou TCL Mobile Communication Co, Ltd |
| Address: | No. 86, Hechang 7th West Road, Zhongkai Hi-Tech Development District, Huizhou, Guangdong |

5.2 General Description of E.U.T.

| | | | | | |
|----------------------------|---|---|--|---|--|
| Product Name: | LTE/UMTS/GSM mobile phone | | | | |
| Model No.: | 5048A | | | | |
| Operation Frequency range: | GSM 850: 824.20MHz-848.80MHz PCS1900: 1850.20MHz-1909.80MHz | | | | |
| Modulation type: | 2G | <input checked="" type="checkbox"/> Voice(GMSK) | <input checked="" type="checkbox"/> GPRS(GMSK) | <input checked="" type="checkbox"/> EGPRS(GMSK, 8PSK) | |
| Antenna type: | Integrated Antenna | | | | |
| Antenna gain: | GSM 850: | -3.12 dBi(declare by Applicant) | | | |
| | PCS 1900: | -1.13 dBi(declare by Applicant) | | | |
| Power supply: | <input checked="" type="checkbox"/> AC/DC Adapter | | | | |
| Test Sample Condition: | The test samples were provided in good working order with no visible defects. | | | | |

Operation Frequency List:

| GSM 850 | | PCS1900 | |
|---------|-----------------|---------|-----------------|
| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 128 | 824.20 | 512 | 1850.20 |
| 129 | 824.40 | 513 | 1850.40 |
| | | | |
| 189 | 836.40 | 660 | 1879.80 |
| 190 | 836.60 | 661 | 1880.00 |
| 191 | 836.80 | 662 | 1880.20 |
| ... | ... | ... | ... |
| 250 | 848.60 | 809 | 1909.60 |
| 251 | 848.80 | 810 | 1909.80 |

Regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

| GSM850 | | | PCS1900 | | |
|---------|----------------|---------|----------------|---------|----------------|
| Channel | Frequency(MHz) | Channel | Frequency(MHz) | Channel | Frequency(MHz) |
| Lowest | 128 | 824.20 | Lowest | 512 | 1850.20 |
| Middle | 190 | 836.60 | Middle | 661 | 1880.00 |
| Highest | 251 | 848.80 | Highest | 810 | 1909.80 |

5.3 Test environment and mode

| Operating Environment: | |
|--|---|
| Temperature: | Normal: 15°C ~ 35°C, Extreme: -30°C ~ +50°C |
| Humidity: | 20 % ~ 75 % RH |
| Atmospheric Pressure: | 1008 mbar |
| Test mode: | |
| GSM mode | Keep the EUT communication with simulated station in GSM mode |
| GPRS mode | Keep the EUT communication with simulated station in GPRS mode |
| EGPRS mode | Keep the EUT communication with simulated station in EGPRS mode |
| Remark: The EUT has been tested under continuous transmitting mode. Channel Low, Mid and High for each type band with rated data rate were chosen for full testing. The field strength of spurious radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for these modes. Just the worst case position (H mode) shown in report. | |
| <i>Remark: JianYan Testing Group Shenzhen Co., Ltd. is only responsible for the test project data of the above samples, and will keep the above samples for a month.</i> | |

5.4 Description of Test Auxiliary Equipment

| Test Equipment | Manufacturer | Model No. | Serial No. |
|-------------------|--------------|-----------|------------|
| Simulated Station | Anritsu | MT8820C | 6201026545 |

5.5 Measurement Uncertainty

| Parameter | Expanded Uncertainty (Confidence of 95%) |
|--|--|
| Radiated Emission (9kHz ~ 30MHz electric field) for 3m SAC | 3.13 dB |
| Radiated Emission (9kHz ~ 30MHz magnetic field) for 3m SAC | 3.13 dB |
| Radiated Emission (30MHz ~ 1GHz) for 3m SAC | 4.45 dB |
| Radiated Emission (1GHz ~ 18GHz) for 3m SAC | 5.34 dB |
| Radiated Emission (18GHz ~ 40GHz) for 3m SAC | 5.34 dB |

5.6 Additions to, deviations, or exclusions from the method

| |
|----|
| No |
|----|

5.7 Laboratory Facility

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

● **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

● **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **CNAS - Registration No.: CNAS L15527**

JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.

● **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

5.8 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.

Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info-JYTee@lets.com, Website: <http://jyt.lets.com>

5.9 Test Instruments list

| Radiated Emission: | | | | | |
|-------------------------------|-----------------|-----------------|------------------|---------------------|--------------------------|
| Test Equipment | Manufacturer | Model No. | Manage No. | Cal.Date (mm-dd-yy) | Cal. Due date (mm-dd-yy) |
| 3m SAC | ETS | 9m*6m*6m | WXJ001-1 | 01-19-2021 | 01-18-2024 |
| BiConiLog Antenna | Schwarzbeck | VULB9163 | WXJ002 | 03-03-2021 | 03-02-2022 |
| | | | | 02-17-2022 | 02-16-2023 |
| Biconical Antenna | Schwarzbeck | VUBA9117 | WXJ002-1 | 06-20-2021 | 06-19-2022 |
| Horn Antenna | Schwarzbeck | BBHA9120D | WXJ002-2 | 03-03-2021 | 03-02-2022 |
| | | | | 02-17-2022 | 02-16-2023 |
| Horn Antenna | Schwarzbeck | BBHA9120D | WXJ002-3 | 06-18-2021 | 06-17-2022 |
| Pre-amplifier (30MHz ~ 1GHz) | Schwarzbeck | BBV9743B | WXG001-7 | 03-07-2021 | 03-06-2022 |
| | | | | 02-17-2022 | 02-16-2023 |
| Pre-amplifier (1GHz ~ 18GHz) | SKET | LNPA_0118G-50 | WXG001-3 | 03-07-2021 | 03-06-2022 |
| | | | | 02-17-2022 | 02-16-2023 |
| Pre-amplifier (18GHz ~ 40GHz) | RF System | TRLA-180400G45B | WXG001-9 | 03-07-2021 | 03-06-2022 |
| | | | | 02-17-2022 | 02-16-2023 |
| EMI Test Receiver | Rohde & Schwarz | ESRP7 | WXJ003-1 | 03-03-2021 | 03-02-2022 |
| | | | | 02-17-2022 | 02-16-2023 |
| Spectrum Analyzer | KEYSIGHT | N9010B | WXJ004-2 | 10-27-2022 | 10-26-2022 |
| Simulated Station | Anritsu | MT8820C | WXJ008-4 | 03-03-2021 | 03-02-2023 |
| Band Reject Filter Group | Tonscend | JS0806 | 21B8060367 | 04-06-2021 | 04-05-2022 |
| Coaxial Cable (30MHz ~ 1GHz) | JYT | JYT3M-1G-NN-8M | WXG001-4 | 03-07-2021 | 03-06-2022 |
| | | | | 02-17-2022 | 02-16-2023 |
| Coaxial Cable (1GHz ~ 18GHz) | JYT | JYT3M-18G-NN-8M | WXG001-5 | 03-07-2021 | 03-06-2022 |
| | | | | 02-17-2022 | 02-16-2023 |
| Coaxial Cable (18GHz ~ 40GHz) | JYT | JYT3M-40G-SS-8M | WXG001-7 | 03-07-2021 | 03-06-2022 |
| | | | | 02-17-2022 | 02-16-2023 |
| Test Software | Tonscend | TS+ | Version: 3.0.0.1 | | |

| Conducted Method: | | | | | |
|------------------------------|-----------------|-----------|---------------------|----------------------|--------------------------|
| Test Equipment | Manufacturer | Model No. | Manage No. | Cal. Date (mm-dd-yy) | Cal. Due date (mm-dd-yy) |
| Simulated Station | Rohde & Schwarz | CMW500 | WXJ081 | 07-02-2021 | 07-01-2022 |
| DC Power Supply | Keysight | E3642A | WXJ025-2 | 10-25-2021 | 10-24-2022 |
| Temperature Humidity Chamber | HONG ZHI | CZ-A-80D | WXJ032-3 | 03-19-2021 | 03-18-2022 |
| RF Control Unit | Tonscend | JS0806-1 | WXG010 | N/A | |
| Test Software | Tonscend | TS+ | Version: 2.6.9.0526 | | |

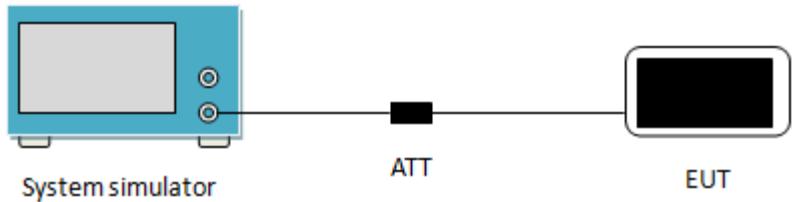
6. Test Results

6.1 Conducted Output Power

6.1.1 Re-test statement

Re-test statement: The EUT is operating at the same power level with the original testing of SGS-CSTC Standards Technical Services, Co Ltd. Shenzhen Branch.

6.1.2 Test Results

| | | | |
|-------------------|--|--|--|
| Test Requirement: | FCC part 22.913(a)(5), FCC part 24.232(c) | | |
| Limit: | GSM 850: 7W, PCS 1900: 2W | | |
| Test setup: |  <p>The diagram illustrates the test setup. On the left is a 'System simulator' represented by a blue rectangle with a white square inside. Two circular ports are on its right side. A horizontal line extends from the right side of the simulator to a small black square labeled 'ATT'. From the right side of the 'ATT' square, another horizontal line extends to a black rectangle labeled 'EUT'.</p> | | |
| Test Procedure: | The transmitter output was connected to a calibrated attenuator, the other end of which was connected to the simulated station. Transmitter output power was read off in dBm. | | |
| Test Instruments: | Refer to section 5.9 for details | | |
| Test mode: | Refer to section 5.3 for details | | |
| Test results: | Passed | | |

Measurement Data:

| BAND | Channel | Test Original Reports Level(dBm) | Re-Test Reports Level(dBm) |
|---------|---------|----------------------------------|----------------------------|
| GSM850 | 128 | 32.44 | 32.28 |
| GSM850 | 190 | 32.48 | 32.33 |
| GSM850 | 251 | 32.52 | 32.37 |
| BAND | Channel | Test Original Reports Level(dBm) | Re-Test Reports Level(dBm) |
| GSM1900 | 512 | 29.54 | 29.26 |
| GSM1900 | 661 | 29.63 | 29.46 |
| GSM1900 | 810 | 29.64 | 29.58 |

Remark:

| | The Original Reports | Re-Test Reports |
|----------------|--|--|
| File name: | test report GSM | Test Report GSM rev1 |
| Test location: | SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch | JianYan Testing Group Shenzhen Co., Ltd. |

The output power is re-test at JianYan Testing Group Shenzhen Co., Ltd.

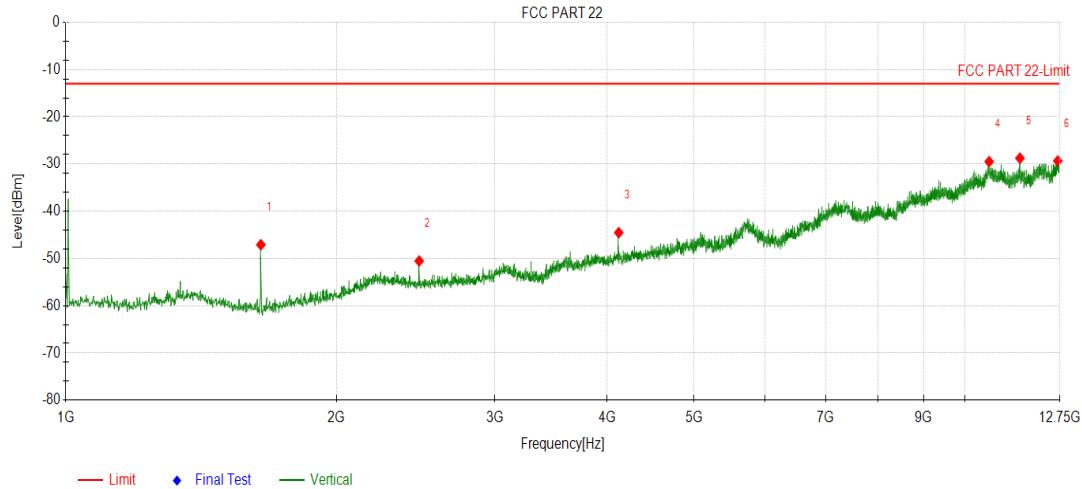
6.2 Field strength of spurious radiation measurement

| | |
|-------------------|---|
| Test Requirement: | FCC part 22.917(a), FCC part 24.238(a) |
| Limit: | -13dBm |
| Test setup: | <p>Below 1GHz</p> <p>Above 1GHz</p> |
| Test Procedure: | <ol style="list-style-type: none"> 1. The EUT was placed on the top of a rotating table 0.8m(below 1GHz)/1.5m(above 1GHz) above the ground at a 3 meter camber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. 2. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. 3. The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method. 4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency. $\text{ERP / EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain(dB/dBi)} - \text{Cable Loss (dB)}$ |
| Test Instruments: | Refer to section 5.9 for details |
| Test mode: | Refer to section 5.3 for details. |
| Environment: | Temp: 24.8°C, Huni: 59% |
| Test results: | Passed |

Measurement Data (worst case):

Remark: During the test, use Band Reject Filter Group to filter out fundamental signal

| | | | |
|----------------------|---------------------------|-----------------------|------------------|
| Product Name: | LTE/UMTS/GSM mobile phone | Product model: | 5048A |
| Test By: | Mike | Test mode: | GSM850 Tx Low CH |
| Test Voltage: | DC 3.85V | Polarization: | Vertical |

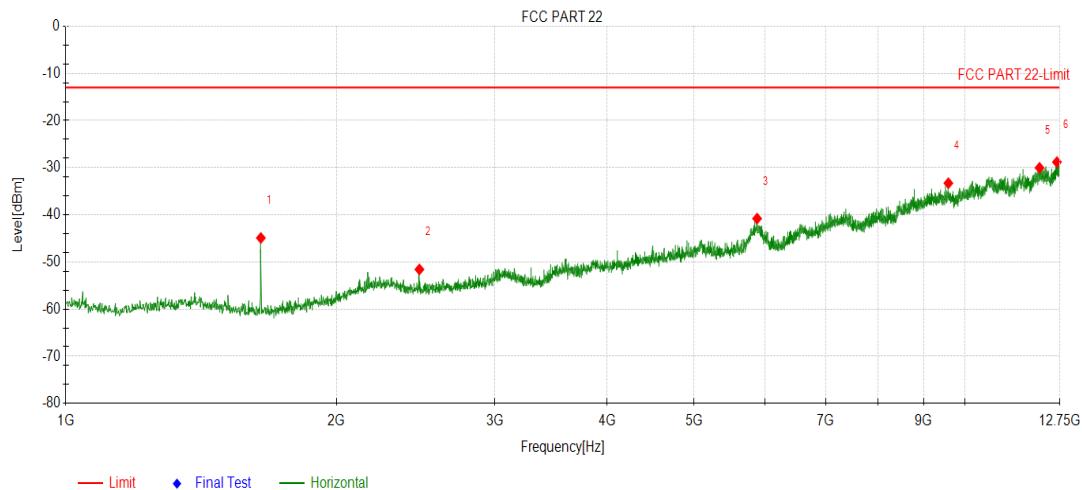


| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Height [cm] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|-------------|----------|
| 1 | 1647.71 | -35.99 | -47.09 | -13.00 | 34.09 | -11.10 | 224 | 133 | Vertical |
| 2 | 2471.68 | -44.33 | -50.52 | -13.00 | 37.52 | -6.19 | 206 | 155 | Vertical |
| 3 | 4121.09 | -44.79 | -44.52 | -13.00 | 31.52 | 0.27 | 329 | 141 | Vertical |
| 4 | 10645.2 | -50.13 | -29.49 | -13.00 | 16.49 | 20.64 | 84 | 158 | Vertical |
| 5 | 11517.7 | -49.67 | -28.76 | -13.00 | 15.76 | 20.91 | 326 | 165 | Vertical |
| 6 | 12691.2 | -51.41 | -29.35 | -13.00 | 16.35 | 22.06 | 69 | 132 | Vertical |

Remark:

- Final Level = Receiver Read level + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of below 1GHz are lower than the limit 20dB and not show in test report.

| | | | |
|----------------------|---------------------------|-----------------------|------------------|
| Product Name: | LTE/UMTS/GSM mobile phone | Product model: | 5048A |
| Test By: | Mike | Test mode: | GSM850 Tx Low CH |
| Test Voltage: | DC 3.85V | Polarization: | Horizontal |

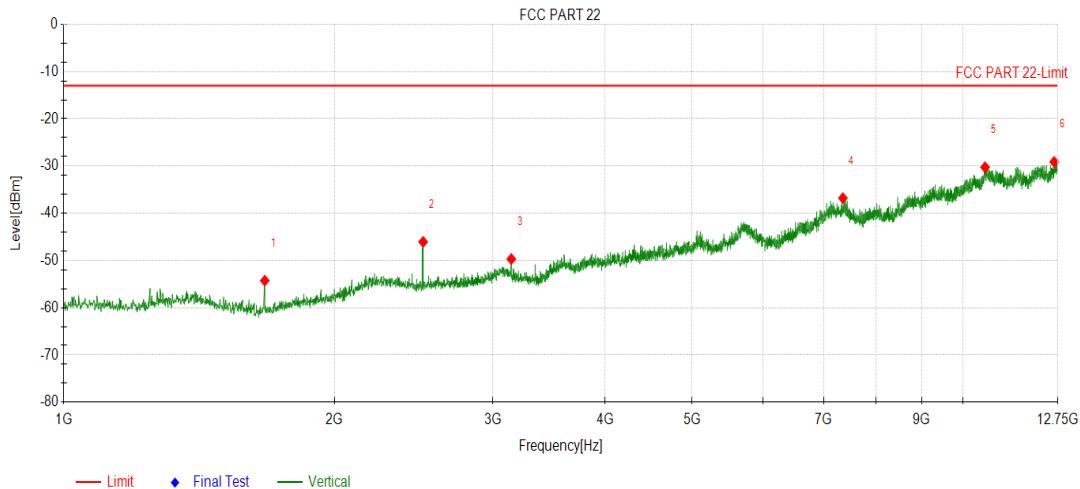


| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Height [cm] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|-------------|------------|
| 1 | 1647.71 | -33.90 | -44.90 | -13.00 | 31.90 | -11.00 | 221 | 132 | Horizontal |
| 2 | 2473.15 | -45.04 | -51.58 | -13.00 | 38.58 | -6.54 | 207 | 151 | Horizontal |
| 3 | 5874.78 | -49.64 | -40.80 | -13.00 | 27.80 | 8.84 | 30 | 148 | Horizontal |
| 4 | 9589.25 | -49.75 | -33.28 | -13.00 | 20.28 | 16.47 | 350 | 154 | Horizontal |
| 5 | 12111.0 | -51.08 | -30.02 | -13.00 | 17.02 | 21.06 | 326 | 162 | Horizontal |
| 6 | 12664.8 | -50.85 | -28.81 | -13.00 | 15.81 | 22.04 | 69 | 131 | Horizontal |

Remark:

1. Final Level = Receiver Read level + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).
2. The emission levels of below 1GHz are lower than the limit 20dB and not show in test report.

| | | | |
|----------------------|---------------------------|-----------------------|------------------|
| Product Name: | LTE/UMTS/GSM mobile phone | Product model: | 5048A |
| Test By: | Mike | Test mode: | GSM850 Tx Mid CH |
| Test Voltage: | DC 3.85V | Polarization: | Vertical |

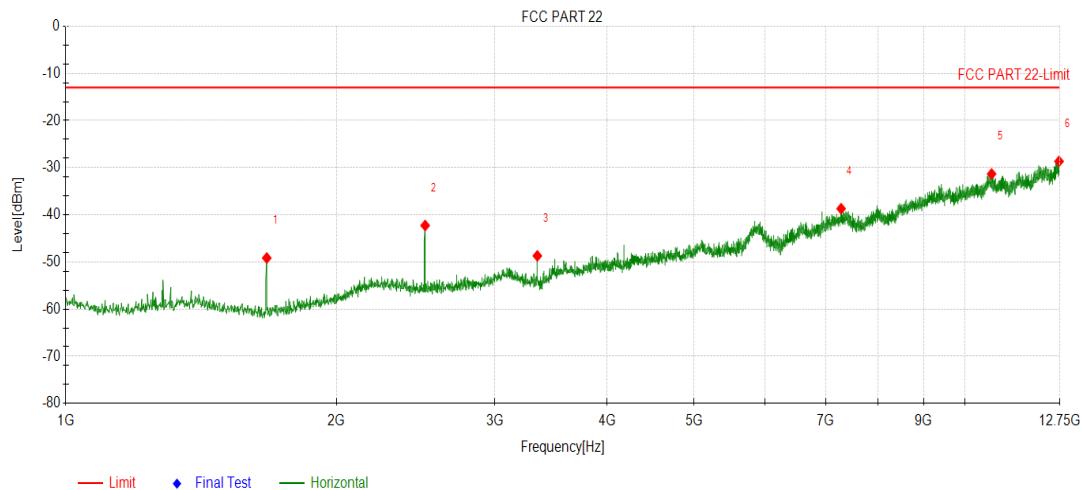


| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Height [cm] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|-------------|----------|
| 1 | 1672.68 | -43.13 | -54.26 | -13.00 | 41.26 | -11.13 | 224 | 133 | Vertical |
| 2 | 2509.87 | -39.86 | -46.06 | -13.00 | 33.06 | -6.20 | 206 | 155 | Vertical |
| 3 | 3145.84 | -45.77 | -49.68 | -13.00 | 36.68 | -3.91 | 329 | 141 | Vertical |
| 4 | 7355.28 | -49.70 | -36.78 | -13.00 | 23.78 | 12.92 | 84 | 158 | Vertical |
| 5 | 10589.4 | -50.73 | -30.25 | -13.00 | 17.25 | 20.48 | 326 | 165 | Vertical |
| 6 | 12638.3 | -50.98 | -29.11 | -13.00 | 16.11 | 21.87 | 69 | 132 | Vertical |

Remark:

1. Final Level = Receiver Read level + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).
2. The emission levels of below 1GHz are lower than the limit 20dB and not show in test report.

| | | | |
|----------------------|---------------------------|-----------------------|------------------|
| Product Name: | LTE/UMTS/GSM mobile phone | Product model: | 5048A |
| Test By: | Mike | Test mode: | GSM850 Tx Mid CH |
| Test Voltage: | DC 3.85V | Polarization: | Horizontal |

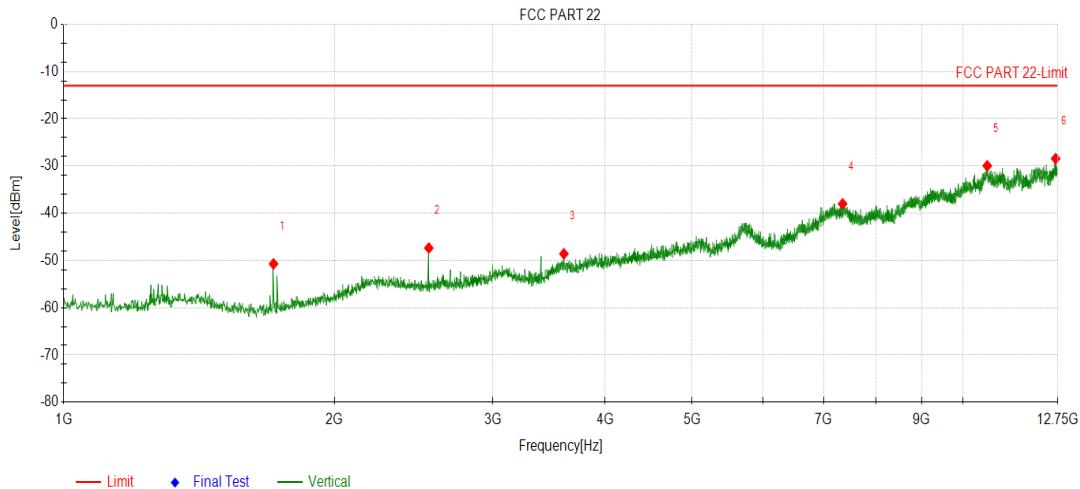


| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Height [cm] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|-------------|------------|
| 1 | 1672.68 | -38.12 | -49.16 | -13.00 | 36.16 | -11.04 | 139 | 136 | Horizontal |
| 2 | 2509.87 | -35.75 | -42.26 | -13.00 | 29.26 | -6.51 | 256 | 159 | Horizontal |
| 3 | 3345.59 | -43.47 | -48.70 | -13.00 | 35.70 | -5.23 | 302 | 148 | Horizontal |
| 4 | 7284.78 | -49.75 | -38.69 | -13.00 | 25.69 | 11.06 | 29 | 158 | Horizontal |
| 5 | 10712.8 | -50.69 | -31.32 | -13.00 | 18.32 | 19.37 | 346 | 169 | Horizontal |
| 6 | 12732.3 | -50.98 | -28.66 | -13.00 | 15.66 | 22.32 | 29 | 134 | Horizontal |

Remark:

1. Final Level = Receiver Read level + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).
2. The emission levels of below 1GHz are lower than the limit 20dB and not show in test report.

| | | | |
|----------------------|---------------------------|-----------------------|-------------------|
| Product Name: | LTE/UMTS/GSM mobile phone | Product model: | 5048A |
| Test By: | Mike | Test mode: | GSM850 Tx High CH |
| Test Voltage: | DC 3.85V | Polarization: | Vertical |

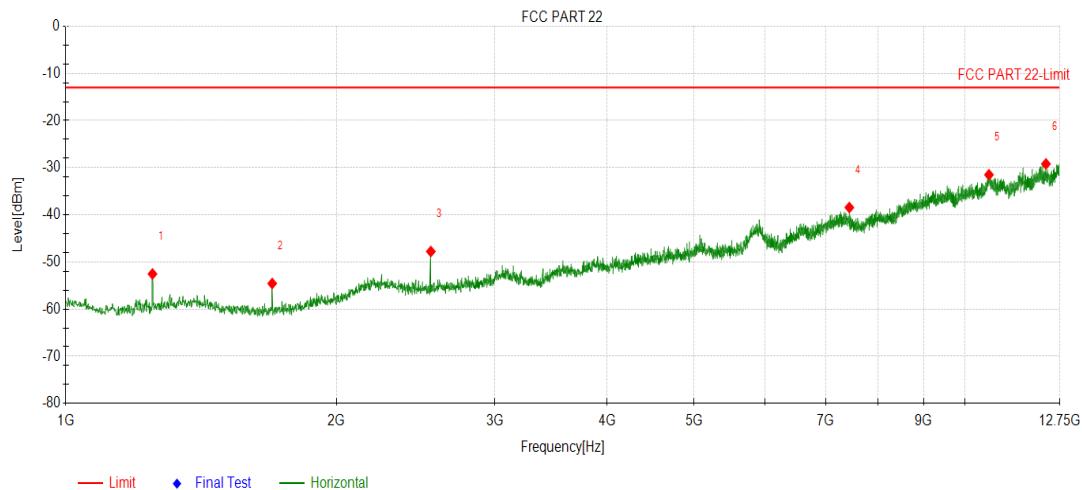


| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Height [cm] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|-------------|----------|
| 1 | 1710.87 | -39.70 | -50.71 | -13.00 | 37.71 | -11.01 | 169 | 131 | Vertical |
| 2 | 2546.59 | -41.30 | -47.36 | -13.00 | 34.36 | -6.06 | 259 | 158 | Vertical |
| 3 | 3599.68 | -46.90 | -48.58 | -13.00 | 35.58 | -1.68 | 259 | 142 | Vertical |
| 4 | 7350.87 | -50.88 | -38.00 | -13.00 | 25.00 | 12.88 | 59 | 159 | Vertical |
| 5 | 10648.2 | -50.59 | -29.95 | -13.00 | 16.95 | 20.64 | 302 | 165 | Vertical |
| 6 | 12686.8 | -50.48 | -28.44 | -13.00 | 15.44 | 22.04 | 65 | 135 | Vertical |

Remark:

1. Final Level = Receiver Read level + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).
2. The emission levels of below 1GHz are lower than the limit 20dB and not show in test report.

| | | | |
|----------------------|---------------------------|-----------------------|-------------------|
| Product Name: | LTE/UMTS/GSM mobile phone | Product model: | 5048A |
| Test By: | Mike | Test mode: | GSM850 Tx High CH |
| Test Voltage: | DC 3.85V | Polarization: | Horizontal |

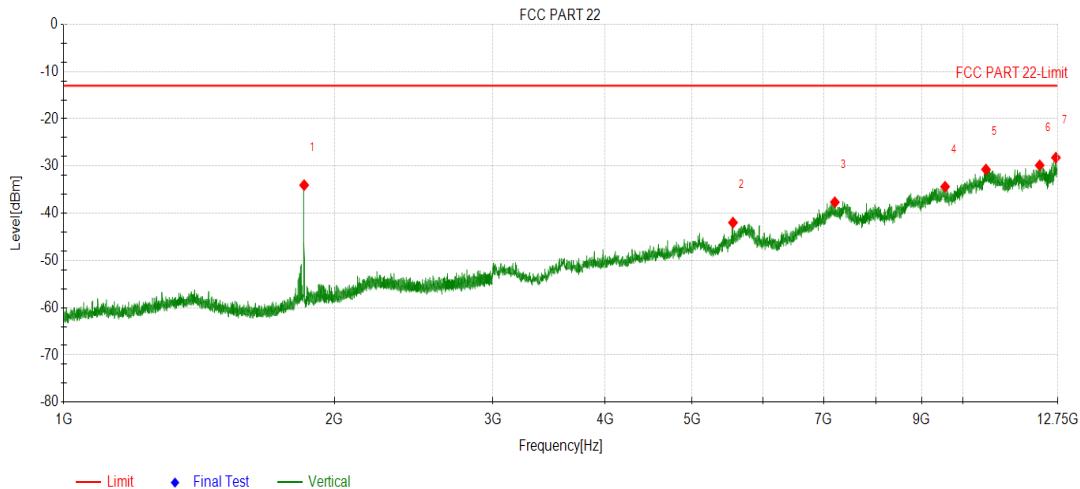


| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Height [cm] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|-------------|------------|
| 1 | 1248.21 | -42.49 | -52.54 | -13.00 | 39.54 | -10.05 | 168 | 132 | Horizontal |
| 2 | 1696.18 | -43.48 | -54.56 | -13.00 | 41.56 | -11.08 | 251 | 159 | Horizontal |
| 3 | 2546.59 | -41.39 | -47.77 | -13.00 | 34.77 | -6.38 | 289 | 144 | Horizontal |
| 4 | 7440.46 | -49.60 | -38.44 | -13.00 | 25.44 | 11.16 | 69 | 152 | Horizontal |
| 5 | 10639.4 | -50.67 | -31.50 | -13.00 | 18.50 | 19.17 | 334 | 161 | Horizontal |
| 6 | 12312.3 | -50.35 | -29.20 | -13.00 | 16.20 | 21.15 | 44 | 139 | Horizontal |

Remark:

1. Final Level = Receiver Read level + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).
2. The emission levels of below 1GHz are lower than the limit 20dB and not show in test report.

| | | | |
|----------------------|---------------------------|-----------------------|-------------------|
| Product Name: | LTE/UMTS/GSM mobile phone | Product model: | 5048A |
| Test By: | Mike | Test mode: | PCS1900 Tx Low CH |
| Test Voltage: | DC 3.85V | Polarization: | Vertical |

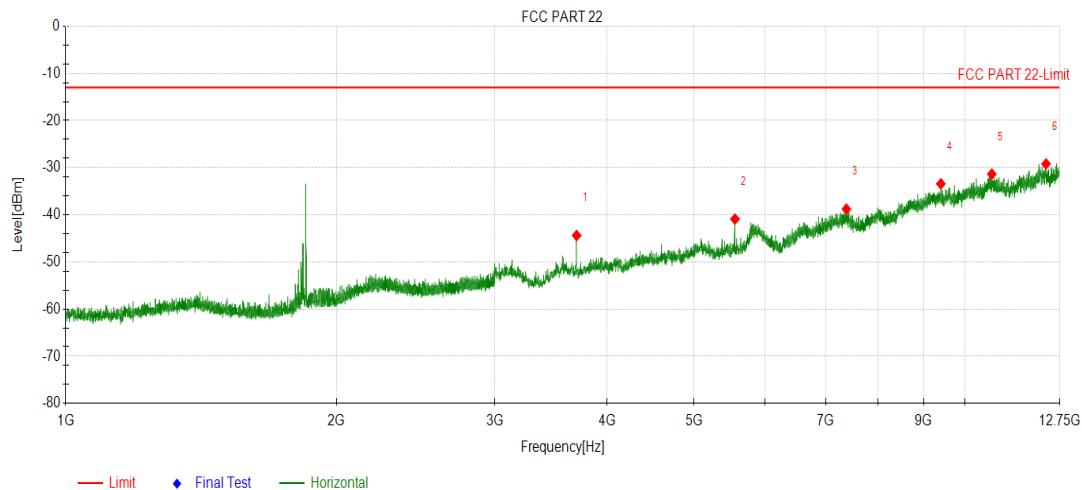


| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Height [cm] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|-------------|----------|
| 1 | 1850.25 | -26.75 | -34.04 | -13.00 | 21.04 | -7.29 | 139 | 132 | Vertical |
| 2 | 5550.84 | -47.37 | -41.97 | -13.00 | 28.97 | 5.40 | 241 | 153 | Vertical |
| 3 | 7205.90 | -50.72 | -37.65 | -13.00 | 24.65 | 13.07 | 297 | 149 | Vertical |
| 4 | 9558.09 | -50.16 | -34.37 | -13.00 | 21.37 | 15.79 | 89 | 155 | Vertical |
| 5 | 10613.5 | -51.02 | -30.72 | -13.00 | 17.72 | 20.30 | 340 | 160 | Vertical |
| 6 | 12178.4 | -51.01 | -29.84 | -13.00 | 16.84 | 21.17 | 16 | 132 | Vertical |

Remark:

1. Final Level = Receiver Read level + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).
2. The emission levels of below 1GHz and above 12.75GHz are lower than the limit 20dB and not show in test report.

| | | | |
|----------------------|---------------------------|-----------------------|-------------------|
| Product Name: | LTE/UMTS/GSM mobile phone | Product model: | 5048A |
| Test By: | Mike | Test mode: | PCS1900 Tx Low CH |
| Test Voltage: | DC 3.85V | Polarization: | Horizontal |

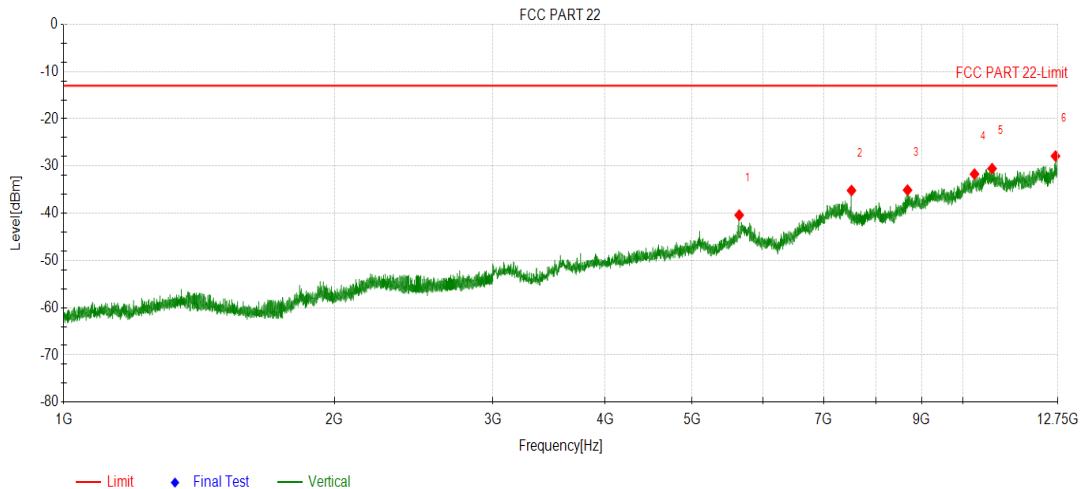


| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Height [cm] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|-------------|------------|
| 1 | 3699.56 | -42.28 | -44.38 | -13.00 | 31.38 | -2.10 | 132 | 139 | Horizontal |
| 2 | 5550.84 | -44.69 | -40.90 | -13.00 | 27.90 | 3.79 | 245 | 152 | Horizontal |
| 3 | 7385.06 | -50.14 | -38.78 | -13.00 | 25.78 | 11.36 | 221 | 141 | Horizontal |
| 4 | 9405.75 | -49.60 | -33.41 | -13.00 | 20.41 | 16.19 | 79 | 158 | Horizontal |
| 5 | 10718.3 | -50.29 | -31.36 | -13.00 | 18.36 | 18.93 | 323 | 166 | Horizontal |
| 6 | 12314.9 | -50.09 | -29.19 | -13.00 | 16.19 | 20.90 | 12 | 132 | Horizontal |

Remark:

1. Final Level = Receiver Read level + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).
2. The emission levels of below 1GHz and above 12.75GHz are lower than the limit 20dB and not show in test report.

| | | | |
|----------------------|---------------------------|-----------------------|-------------------|
| Product Name: | LTE/UMTS/GSM mobile phone | Product model: | 5048A |
| Test By: | Mike | Test mode: | PCS1900 Tx Mid CH |
| Test Voltage: | DC 3.85V | Polarization: | Vertical |

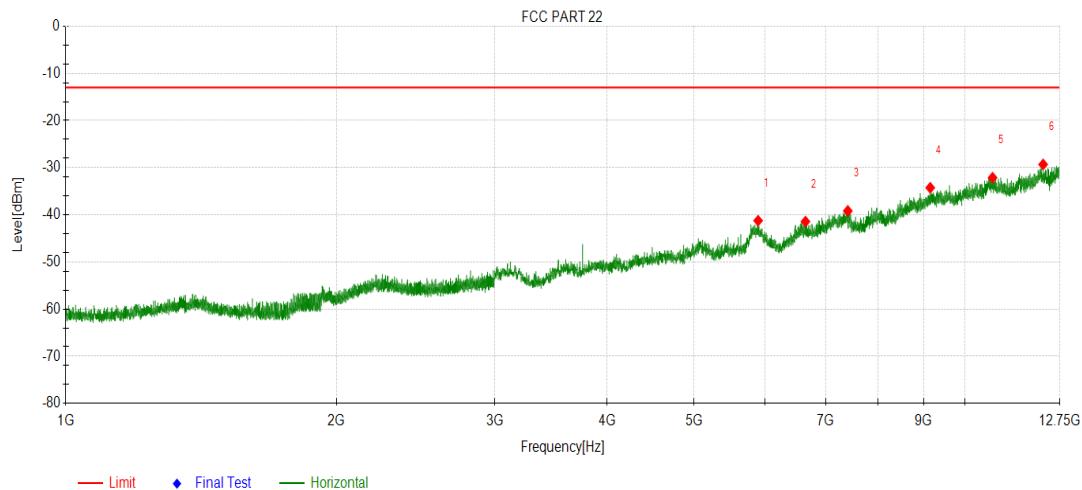


| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Height [cm] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|-------------|----------|
| 1 | 5639.81 | -47.35 | -40.39 | -13.00 | 27.39 | 6.96 | 195 | 130 | Vertical |
| 2 | 7520.34 | -46.92 | -35.18 | -13.00 | 22.18 | 11.74 | 222 | 155 | Vertical |
| 3 | 8681.81 | -49.30 | -35.09 | -13.00 | 22.09 | 14.21 | 200 | 145 | Vertical |
| 4 | 10305.1 | -51.02 | -31.70 | -13.00 | 18.70 | 19.32 | 126 | 155 | Vertical |
| 5 | 10780.5 | -50.65 | -30.54 | -13.00 | 17.54 | 20.11 | 320 | 167 | Vertical |
| 6 | 12681.7 | -49.63 | -27.89 | -13.00 | 14.89 | 21.74 | 40 | 139 | Vertical |

Remark:

1. Final Level = Receiver Read level + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).
2. The emission levels of below 1GHz and above 12.75GHz are lower than the limit 20dB and not show in test report.

| | | | |
|----------------------|---------------------------|-----------------------|-------------------|
| Product Name: | LTE/UMTS/GSM mobile phone | Product model: | 5048A |
| Test By: | Mike | Test mode: | PCS1900 Tx Mid CH |
| Test Voltage: | DC 3.85V | Polarization: | Horizontal |

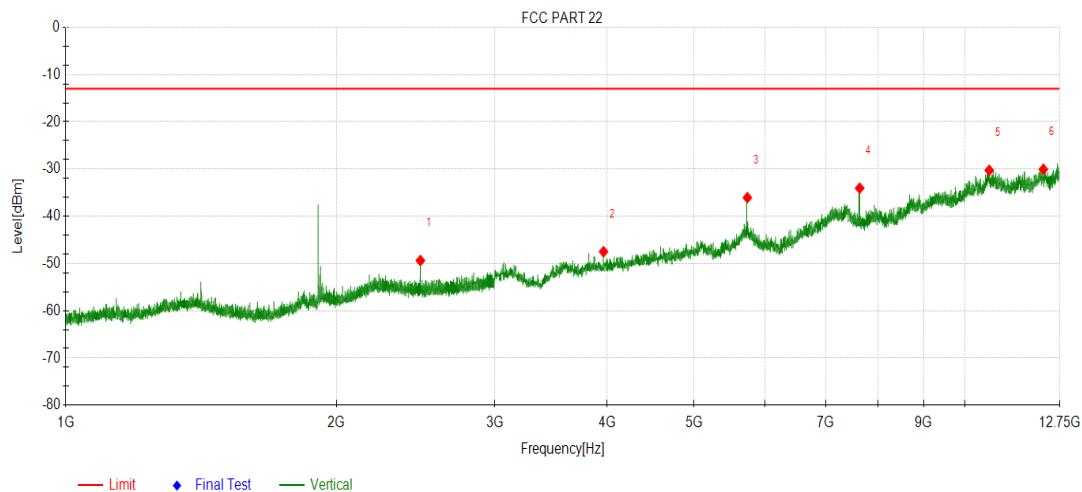


| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Height [cm] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|-------------|------------|
| 1 | 5889.65 | -49.75 | -41.23 | -13.00 | 28.23 | 8.52 | 159 | 133 | Horizontal |
| 2 | 6648.93 | -50.20 | -41.43 | -13.00 | 28.43 | 8.77 | 206 | 158 | Horizontal |
| 3 | 7410.65 | -50.46 | -39.16 | -13.00 | 26.16 | 11.30 | 236 | 141 | Horizontal |
| 4 | 9153.46 | -49.81 | -34.25 | -13.00 | 21.25 | 15.56 | 159 | 153 | Horizontal |
| 5 | 10737.8 | -51.03 | -32.11 | -13.00 | 19.11 | 18.92 | 279 | 162 | Horizontal |
| 6 | 12223.5 | -50.47 | -29.30 | -13.00 | 16.30 | 21.17 | 129 | 138 | Horizontal |

Remark:

1. Final Level = Receiver Read level + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).
2. The emission levels of below 1GHz and above 12.75GHz are lower than the limit 20dB and not show in test report.

| | | | |
|----------------------|---------------------------|-----------------------|--------------------|
| Product Name: | LTE/UMTS/GSM mobile phone | Product model: | 5048A |
| Test By: | Mike | Test mode: | PCS1900 Tx High CH |
| Test Voltage: | DC 3.85V | Polarization: | Vertical |

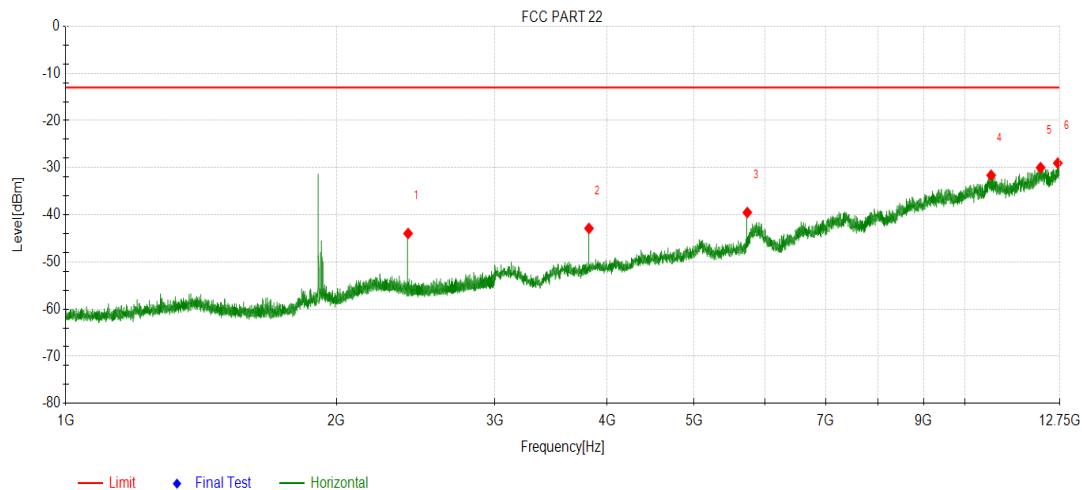


| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Height [cm] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|-------------|----------|
| 1 | 2479.75 | -43.59 | -49.37 | -13.00 | 36.37 | -5.78 | 188 | 133 | Vertical |
| 2 | 3964.03 | -46.99 | -47.50 | -13.00 | 34.50 | -0.51 | 259 | 158 | Vertical |
| 3 | 5730.00 | -44.25 | -36.05 | -13.00 | 23.05 | 8.20 | 269 | 141 | Vertical |
| 4 | 7639.78 | -45.21 | -34.05 | -13.00 | 21.05 | 11.16 | 158 | 150 | Vertical |
| 5 | 10648.8 | -50.50 | -30.27 | -13.00 | 17.27 | 20.23 | 245 | 162 | Vertical |
| 6 | 12229.5 | -51.21 | -30.06 | -13.00 | 17.06 | 21.15 | 106 | 138 | Vertical |

Remark:

1. Final Level = Receiver Read level + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).
2. The emission levels of below 1GHz and above 12.75GHz are lower than the limit 20dB and not show in test report.

| | | | |
|----------------------|---------------------------|-----------------------|--------------------|
| Product Name: | LTE/UMTS/GSM mobile phone | Product model: | 5048A |
| Test By: | Mike | Test mode: | PCS1900 Tx High CH |
| Test Voltage: | DC 3.85V | Polarization: | Horizontal |



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Height [cm] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|-------------|------------|
| 1 | 2402.50 | -37.83 | -43.95 | -13.00 | 30.95 | -6.12 | 179 | 136 | Horizontal |
| 2 | 3819.00 | -41.38 | -42.87 | -13.00 | 29.87 | -1.49 | 205 | 159 | Horizontal |
| 3 | 5728.78 | -45.19 | -39.51 | -13.00 | 26.51 | 5.68 | 233 | 142 | Horizontal |
| 4 | 10698.8 | -50.55 | -31.60 | -13.00 | 18.60 | 18.95 | 158 | 158 | Horizontal |
| 5 | 12143.0 | -51.02 | -29.98 | -13.00 | 16.98 | 21.04 | 226 | 160 | Horizontal |
| 6 | 12691.5 | -50.91 | -29.02 | -13.00 | 16.02 | 21.89 | 136 | 139 | Horizontal |

Remark:

1. Final Level = Receiver Read level + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).
2. The emission levels of below 1GHz and above 12.75GHz are lower than the limit 20dB and not show in test report.

7. Appendix

The below Appendix was detail result tested by SGS-CSTC Standards Technical Services, Co., Ltd.Shenzhen Branch.

(Date of Test: 2019/8/2-2019/8/21).

| <i>Appendix</i> | <i>Item</i> |
|---|-------------|
| <i>Appendix B.1 of GSM850 & GSM1900</i> | <i>GSM</i> |