

# RF TEST REPORT



Report No.: 15071166-FCC-R1

Supersede Report No.: N/A

|                                                                                                                                      |                                                                                     |                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Applicant                                                                                                                            | Telecell Mobile (H.K) Co. Ltd.                                                      |                                                                                       |
| Product Name                                                                                                                         | Mobile Phone                                                                        |                                                                                       |
| Model No.                                                                                                                            | F55L                                                                                |                                                                                       |
| Serial No.                                                                                                                           | N/A                                                                                 |                                                                                       |
| Test Standard                                                                                                                        | FCC Part 22(H):2014 ;FCC Part 24(E):2014; FCC Part 27:2014;<br>ANSI/TIA-603-D: 2010 |                                                                                       |
| Test Date                                                                                                                            | December 01 to December 28, 2015                                                    |                                                                                       |
| Issue Date                                                                                                                           | December 28, 2015                                                                   |                                                                                       |
| Test Result                                                                                                                          | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail              |                                                                                       |
| Equipment complied with the specification                                                                                            | <input checked="" type="checkbox"/>                                                 |                                                                                       |
| Equipment did not comply with the specification                                                                                      | <input type="checkbox"/>                                                            |                                                                                       |
|                                                   |  |  |
| Winnie Zhang<br>Test Engineer                                                                                                        | David Huang<br>Checked By                                                           |                                                                                       |
| This test report may be reproduced in full only<br>Test result presented in this test report is applicable to the tested sample only |                                                                                     |                                                                                       |

Issued by:

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### Accreditations for Conformity Assessment

| Country/Region | Scope                              |
|----------------|------------------------------------|
| USA            | EMC, RF/Wireless, SAR, Telecom     |
| Canada         | EMC, RF/Wireless, SAR, Telecom     |
| Taiwan         | EMC, RF, Telecom, SAR, Safety      |
| Hong Kong      | RF/Wireless, SAR, Telecom          |
| Australia      | EMC, RF, Telecom, SAR, Safety      |
| Korea          | EMI, EMS, RF, SAR, Telecom, Safety |
| Japan          | EMI, RF/Wireless, SAR, Telecom     |
| Singapore      | EMC, RF, SAR, Telecom              |
| Europe         | EMC, RF, SAR, Telecom, Safety      |

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|-------------|-----------------|
| Test Report | 15071166-FCC-R1 |
| Page        | 3 of 59         |

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## CONTENTS

|                                                                    |    |
|--------------------------------------------------------------------|----|
| 1. REPORT REVISION HISTORY .....                                   | 5  |
| 2. CUSTOMER INFORMATION .....                                      | 5  |
| 3. TEST SITE INFORMATION .....                                     | 5  |
| 4. EQUIPMENT UNDER TEST (EUT) INFORMATION .....                    | 6  |
| 5. TEST SUMMARY .....                                              | 9  |
| 6. MEASUREMENTS, EXAMINATION AND DERIVED RESULTS .....             | 10 |
| 6.1 RF EXPOSURE (SAR).....                                         | 10 |
| 6.2 RF OUTPUT POWER .....                                          | 11 |
| 6.3 PEAK-AVERAGE RATIO.....                                        | 19 |
| 6.4 OCCUPIED BANDWIDTH.....                                        | 21 |
| 6.5 SPURIOUS EMISSIONS AT ANTENNA TERMINALS .....                  | 26 |
| 6.6 SPURIOUS RADIATED EMISSIONS .....                              | 32 |
| 6.7 BAND EDGE.....                                                 | 39 |
| 6.8 FREQUENCY STABILITY .....                                      | 44 |
| ANNEX A. TEST INSTRUMENT.....                                      | 49 |
| ANNEX B. EUT AND TEST SETUP PHOTOGRAPHS.....                       | 50 |
| ANNEX C. TEST SETUP AND SUPPORTING EQUIPMENT.....                  | 55 |
| ANNEX C.II. EUT OPERATING CONKITIONS .....                         | 57 |
| ANNEX D. USER MANUAL / BLOCK DIAGRAM / SCHEMATICS / PARTLIST ..... | 58 |
| ANNEX E. DECLARATION OF SIMILARITY .....                           | 59 |

## 1. Report Revision History

| Report No.      | Report Version | Description | Issue Date        |
|-----------------|----------------|-------------|-------------------|
| 15071166-FCC-R1 | NONE           | Original    | December 28, 2015 |
|                 |                |             |                   |
|                 |                |             |                   |
|                 |                |             |                   |
|                 |                |             |                   |
|                 |                |             |                   |

## 2. Customer information

|                  |                                                                  |
|------------------|------------------------------------------------------------------|
| Applicant Name   | Telecell Mobile (H.K) Co. Ltd.                                   |
| Applicant Add    | RM 1, 8/F Metro Centre 2, 21 Lam Hing Street. Kln Bay. Hong Kong |
| Manufacturer     | Telecell Mobile (H.K) Co. Ltd.                                   |
| Manufacturer Add | RM 1, 8/F Metro Centre 2, 21 Lam Hing Street. Kln Bay. Hong Kong |

## 3. Test site information

|                      |                                                                                                                                              |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Lab performing tests | SIEMIC (Shenzhen-China) LABORATORIES                                                                                                         |
| Lab Address          | Zone A, Floor 1, Building 2 Wan Ye Long Technology Park<br>South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China<br>518108 |
| FCC Test Site No.    | 718246                                                                                                                                       |
| IC Test Site No.     | 4842E-1                                                                                                                                      |
| Test Software        | Radiated Emission Program-To Shenzhen v2.0                                                                                                   |

## 4. Equipment under Test (EUT) Information

|                      |                                                                                                                                                                                                                                                                                                                                  |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description of EUT:  | Mobile Phone                                                                                                                                                                                                                                                                                                                     |
| Main Model:          | F55L                                                                                                                                                                                                                                                                                                                             |
| Serial Model:        | N/A                                                                                                                                                                                                                                                                                                                              |
| Date EUT received:   | December 01, 2015                                                                                                                                                                                                                                                                                                                |
| Test Date(s):        | December 01 to December 28, 2015                                                                                                                                                                                                                                                                                                 |
| Equipment Category : | PCE                                                                                                                                                                                                                                                                                                                              |
| Antenna Gain:        | GSM850: 1.6 dBi<br>PCS1900: 3.8 dBi<br>UMTS-FDD Band V: 1.7 dBi<br>UMTS-FDD Band IV: 3.7 dBi<br>UMTS-FDD Band II: 3.8 dBi<br>Bluetooth/BLE: 3 dBi<br>WIFI: 2.9 dBi<br>LTE Band 2: 3.8 dBi<br>LTE Band 4: 3.95 dBi<br>LTE Band 5: 1.7 dBi<br>LTE Band 7: 4.3 dBi<br>LTE Band 12: 1.45 dBi<br>LTE Band 17: 1.5 dBi<br>GPS: 1.6 dBi |
| Type of Modulation:  | GSM / GPRS: GMSK<br>EGPRS: GMSK<br>UMTS-FDD: QPSK, 16QAM<br>802.11b/g/n: DSSS, OFDM<br>Bluetooth: GFSK, $\pi/4$ DQPSK, 8DPSK<br>BLE: GFSK<br>LTE Band: QPSK, 16QAM<br>GPS: BPSK                                                                                                                                                  |

|                               |                                                              |
|-------------------------------|--------------------------------------------------------------|
|                               | GSM850 TX: 824.2 ~ 848.8 MHz; RX: 869.2 ~ 893.8 MHz          |
|                               | PCS1900 TX: 1850.2 ~ 1909.8 MHz; RX: 1930.2 ~ 1989.8 MHz     |
|                               | UMTS-FDD Band V TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz |
|                               | UMTS-FDD Band IV TX:1712.4 ~ 1752.6 MHz;                     |
|                               | RX : 2112.4 ~ 2152.6 MHz                                     |
|                               | UMTS-FDD Band II TX:1852.4 ~ 1907.6 MHz;                     |
|                               | RX: 1932.4 ~ 1987.6 MHz                                      |
|                               | WiFi:802.11b/g/n(20M): 2412-2462 MHz                         |
| RF Operating Frequency (ies): | WiFi:802.11n(40M): 2422-2452 MHz                             |
|                               | Bluetooth& BLE: 2402-2480 MHz                                |
|                               | LTE Band 2 TX: 1852.5 ~ 1907.5 MHz; RX : 1932.5 ~ 1987.5 MHz |
|                               | LTE Band 4 TX: 1712.5 ~ 1752.5 MHz; RX : 2112.5 ~ 2152.5 MHz |
|                               | LTE Band 5 TX: 826.5 ~ 846.5 MHz; RX : 871.5 ~ 891.5 MHz     |
|                               | LTE Band 7 TX: 2502.5 ~ 2567.5 MHz; RX : 2622.5 ~ 2687.5 MHz |
|                               | LTE Band 12 TX:699.7 ~ 715.3 MHz; RX : 729.7~ 745.3MHz       |
|                               | LTE Band 17 TX: 706.5 ~ 713.5 MHz; RX : 736.5 ~ 743.5 MHz    |
|                               | GPS RX:1575.42 MHz                                           |
|                               | GSM850: 32.87 dBm                                            |
|                               | PCS1900:30.02 dBm                                            |
| Maximum Conducted             | UMTS-FDD Band V : 22.21 dBm                                  |
| AV Power to Antenna:          | UMTS-FDD Band II : 23.30 dBm                                 |
|                               | UMTS-FDD Band IV: 23.58 dBm                                  |
|                               | GSM850: 32.21 dBm / ERP                                      |
|                               | PCS1900: 32.86 dBm / EIRP                                    |
| ERP/EIRP:                     | UMTS-FDD Band V : 21.63 dBm / ERP                            |
|                               | UMTS-FDD Band II : 26.68 dBm / EIRP                          |
|                               | UMTS-FDD Band IV: 26.76 dBm/ EIRP                            |

|                             |                                                                                                                                                                                                                                                                     |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of Channels:         | <p>GSM 850: 124CH</p> <p>PCS1900: 299CH</p> <p>UMTS-FDD Band V : 102CH</p> <p>UMTS-FDD Band IV: 202CH</p> <p>UMTS-FDD Band II : 277CH</p> <p>WIFI :802.11b/g/n(20M): 11CH</p> <p>WIFI :802.11n(40M): 7CH</p> <p>Bluetooth: 79CH</p> <p>BLE: 40CH</p> <p>GPS:1CH</p> |
| Port:                       | Power Port, Earphone Port, USB Port                                                                                                                                                                                                                                 |
| Input Power:                | <p>Adapter:</p> <p>Model: SC/8WA050150US</p> <p>Input: AC 100-240V; 50/60Hz;0.3A</p> <p>Output: DC 5.0V,1.5A</p> <p>Battery:</p> <p>Model: C975339250P</p> <p>Spec:3.8V,2500mAh,9.5Wh</p>                                                                           |
| Trade Name :                | FIGO                                                                                                                                                                                                                                                                |
| GPRS/EGPRS Multi-slot class | 8/10/12                                                                                                                                                                                                                                                             |
| FCC ID:                     | 2ADX3F55L                                                                                                                                                                                                                                                           |

## 5. Test Summary

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

| FCC Rules                                                          | Description of Test                                                    | Result     |
|--------------------------------------------------------------------|------------------------------------------------------------------------|------------|
| § 1.1307; § 2.1093                                                 | RF Exposure (SAR)                                                      | Compliance |
| §2.1046; § 22.913(a); § 24.232(c);<br>§ 27.50(c.10) ; § 27.50(d.4) | RF Output Power                                                        | Compliance |
| § 24.232 (d) ; § 27.50(d)                                          | Peak-Average Ratio                                                     | Compliance |
| § 2.1049; § 22.905; § 22.917;<br>§ 24.238; § 27.53(a.5)            | 99% & -26 dB Occupied Bandwidth                                        | Compliance |
| § 2.1051; § 22.917(a);<br>§ 24.238(a); § 27.53(h)                  | Spurious Emissions at Antenna Terminal                                 | Compliance |
| § 2.1053; § 22.917(a);<br>§ 24.238(a); § 27.53(h)                  | Field Strength of Spurious Radiation                                   | Compliance |
| § 22.917(a); § 24.238(a);<br>§ 27.53(h)                            | Out of band emission, Band Edge                                        | Compliance |
| § 2.1055; § 22.355; § 24.235;<br>§ 27.5(h); § 27.54                | Frequency stability vs. temperature<br>Frequency stability vs. voltage | Compliance |

Note: Testing was performed by configuring EUT to maximum output power status, the declared output power class for different

### Measurement Uncertainty

| Emissions                                    |                                                                                                                                                 |               |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Test Item                                    | Description                                                                                                                                     | Uncertainty   |
| Band Edge and Radiated<br>Spurious Emissions | Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m) | +5.6dB/-4.5dB |
| -                                            | -                                                                                                                                               | -             |

## 6. MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

### 6.1 RF Exposure (SAR)

Test Result: Pass

The EUT is a portable device, thus requires SAR evaluation;

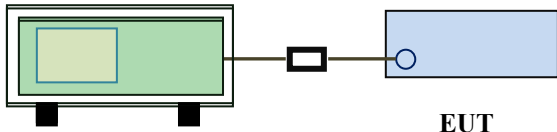
Please refer to RF Exposure Evaluation Report: 15071166-FCC-H.

## 6.2 RF Output Power

|                      |                   |
|----------------------|-------------------|
| Temperature          | 22°C              |
| Relative Humidity    | 53%               |
| Atmospheric Pressure | 1010mbar          |
| Test date :          | December 15, 2015 |
| Tested By :          | Winnie Zhang      |

### Requirement(s):

| Spec        | Item | Requirement  | Applicable                          |
|-------------|------|--------------|-------------------------------------|
| §22.913 (a) | a)   | ERP:38.45dBm | <input checked="" type="checkbox"/> |
| §24.232 (c) | b)   | EIRP:33dBm   | <input checked="" type="checkbox"/> |
| §27.50 (c)  | c)   | EIRP: 30dBm  | <input checked="" type="checkbox"/> |

|            |                                                                                                                                                               |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Setup |  <p style="text-align: center;">Base Station                      EUT</p> |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Procedure | <p>For Conducted Power:</p> <ul style="list-style-type: none"> <li>- The transmitter output port was connected to base station.</li> <li>- Set EUT at maximum power through base station.</li> <li>- Select lowest, middle, and highest channels for each band and different test mode.</li> </ul> <p>For ERP/EIRP:</p> <p>According with KDB 971168 v02r02</p> <ul style="list-style-type: none"> <li>- The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.</li> <li>- The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.</li> <li>- The frequency range up to tenth harmonic of the fundamental</li> </ul> |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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|-------------|-----------------|
| Test Report | 15071166-FCC-R1 |
| Page        | 12 of 59        |

|        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | <p>frequency was investigated.</p> <ul style="list-style-type: none"> <li>- Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.</li> <li>- Spurious emissions in dB = <math>10 \log (\text{TX power in Watts}/0.001)</math> – the absolute level</li> <li>- Spurious attenuation limit in dB = <math>43 + 10 \text{ Log}_{10} (\text{power out in Watts})</math>.</li> </ul> |
| Remark |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Result | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

Test Data ☒ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☒ N/A

## Conducted Power

### GSM Mode:

| Burst Average Power (dBm);                           |              |       |       |                              |              |       |        |                              |
|------------------------------------------------------|--------------|-------|-------|------------------------------|--------------|-------|--------|------------------------------|
| Band                                                 | GSM850       |       |       |                              | PCS1900      |       |        |                              |
| Channel                                              | 128          | 190   | 251   | Tune up<br>Power<br>tolerant | 512          | 661   | 810    | Tune up<br>Power<br>tolerant |
| Frequency (MHz)                                      | 824.2        | 836.6 | 848.8 | /                            | 1850.2       | 1880  | 1909.8 | /                            |
| GSM Voice<br>(1 uplink),GMSK                         | <b>32.87</b> | 32.86 | 32.85 | 32.5±1                       | <b>30.02</b> | 29.81 | 29.99  | 30±1                         |
| GPRS Multi-Slot Class<br>8 (1 uplink),GMSK           | 32.85        | 32.84 | 32.83 | 32.5±1                       | 29.80        | 30.01 | 29.98  | 30±1                         |
| GPRS Multi-Slot Class<br>10 (2 uplink) GMSK          | 32.21        | 32.27 | 32.26 | 32.5±1                       | 29.18        | 29.52 | 29.54  | 29±1                         |
| GPRS Multi-Slot Class<br>12 (4 uplink) GMSK          | 29.47        | 29.44 | 29.39 | 29±1                         | 26.27        | 26.89 | 27.08  | 27±1                         |
| EGPRS Multi-Slot<br>Class 8 (1 uplink)<br>GMSK MCS1  | 32.81        | 32.83 | 32.79 | 32.5±1                       | 29.79        | 30.02 | 30.01  | 30±1                         |
| EGPRS Multi-Slot<br>Class 10 (2 uplink)<br>GMSK MCS1 | 32.22        | 32.21 | 32.23 | 32.5±1                       | 29.19        | 29.51 | 29.53  | 29±1                         |
| EGPRS Multi-Slot<br>Class 12 (4 uplink)<br>GMSK MCS1 | 29.46        | 29.44 | 29.40 | 29±1                         | 26.26        | 26.87 | 27.04  | 27±1                         |

Remark :

GPRS, CS1 coding scheme.

EGPRS, MCS1 coding scheme.

Multi-Slot Class 8 , Support Max 4 downlink, 1 uplink , 5 working link

Multi-Slot Class 10 , Support Max 4 downlink, 2 uplink , 5 working link

Multi-Slot Class 12 , Support Max 4 downlink, 4 uplink , 5 working link

**Note: Since GSM mode has higher power, so the test items below were not performed to GPRS and EGPRS mode.**

## UMTS Mode:

### UMTS-FDD Band V

| Band/ Time Slot configuration | Channel | Frequency | Average power (dBm) | Tune up Power tolerant |
|-------------------------------|---------|-----------|---------------------|------------------------|
| RMC<br>12.2kbps               | 4132    | 826.4     | 22.04               | 22±1                   |
|                               | 4175    | 835       | 22.17               | 22±1                   |
|                               | 4233    | 846.6     | <b>22.21</b>        | 22±1                   |
| HSDPA<br>Subtest1             | 4132    | 826.4     | 21.01               | 21.3±1                 |
|                               | 4175    | 835       | 21.15               | 21.3±1                 |
|                               | 4233    | 846.6     | 21.18               | 21.3±1                 |
| HSDPA<br>Subtest2             | 4132    | 826.4     | 20.84               | 21.3±1                 |
|                               | 4175    | 835       | 20.91               | 21.3±1                 |
|                               | 4233    | 846.6     | 20.83               | 21.3±1                 |
| HSDPA<br>Subtest3             | 4132    | 826.4     | 20.55               | 21.3±1                 |
|                               | 4175    | 835       | 20.64               | 21.3±1                 |
|                               | 4233    | 846.6     | 20.71               | 21.3±1                 |
| HSDPA<br>Subtest4             | 4132    | 826.4     | 20.84               | 21.3±1                 |
|                               | 4175    | 835       | 20.98               | 21.3±1                 |
|                               | 4233    | 846.6     | 21.12               | 21.3±1                 |
| HSUPA<br>Subtest1             | 4132    | 826.4     | 20.56               | 21.3±1                 |
|                               | 4175    | 835       | 20.61               | 21.3±1                 |
|                               | 4233    | 846.6     | 20.68               | 21.3±1                 |
| HSUPA<br>Subtest2             | 4132    | 826.4     | 21.15               | 21.3±1                 |
|                               | 4175    | 835       | 21.24               | 21.3±1                 |
|                               | 4233    | 846.6     | 21.31               | 21.3±1                 |
| HSUPA<br>Subtest3             | 4132    | 826.4     | 20.68               | 21.3±1                 |
|                               | 4175    | 835       | 20.74               | 21.3±1                 |
|                               | 4233    | 846.6     | 20.81               | 21.3±1                 |
| HSUPA<br>Subtest4             | 4132    | 826.4     | 20.64               | 21.3±1                 |
|                               | 4175    | 835       | 20.68               | 21.3±1                 |
|                               | 4233    | 846.6     | 20.75               | 21.3±1                 |
| HSUPA<br>Subtest5             | 4132    | 826.4     | 20.53               | 21.3±1                 |
|                               | 4175    | 835       | 20.48               | 21.3±1                 |
|                               | 4233    | 846.6     | 20.62               | 21.3±1                 |

## UMTS-FDD Band II

| Band/ Time Slot configuration | Channel | Frequency | Average power (dBm) | Tune up Power tolerant |
|-------------------------------|---------|-----------|---------------------|------------------------|
| RMC<br>12.2kbps               | 9262    | 1852.4    | 23.22               | 23±1                   |
|                               | 9400    | 1880      | 23.19               | 23±1                   |
|                               | 9538    | 1907.6    | <b>23.30</b>        | 23±1                   |
| HSDPA<br>Subtest1             | 9262    | 1852.4    | 22.15               | 22±1                   |
|                               | 9400    | 1880      | 22.12               | 22±1                   |
|                               | 9538    | 1907.6    | 22.26               | 22±1                   |
| HSDPA<br>Subtest2             | 9262    | 1852.4    | 21.16               | 22±1                   |
|                               | 9400    | 1880      | 21.14               | 22±1                   |
|                               | 9538    | 1907.6    | 21.24               | 22±1                   |
| HSDPA<br>Subtest3             | 9262    | 1852.4    | 22.09               | 22±1                   |
|                               | 9400    | 1880      | 22.04               | 22±1                   |
|                               | 9538    | 1907.6    | 22.16               | 22±1                   |
| HSDPA<br>Subtest4             | 9262    | 1852.4    | 21.38               | 22±1                   |
|                               | 9400    | 1880      | 21.32               | 22±1                   |
|                               | 9538    | 1907.6    | 21.46               | 22±1                   |
| HSUPA<br>Subtest1             | 9262    | 1852.4    | 21.37               | 22±1                   |
|                               | 9400    | 1880      | 21.31               | 22±1                   |
|                               | 9538    | 1907.6    | 21.48               | 22±1                   |
| HSUPA<br>Subtest2             | 9262    | 1852.4    | 22.26               | 22±1                   |
|                               | 9400    | 1880      | 22.21               | 22±1                   |
|                               | 9538    | 1907.6    | 22.38               | 22±1                   |
| HSUPA<br>Subtest3             | 9262    | 1852.4    | 21.68               | 22±1                   |
|                               | 9400    | 1880      | 21.64               | 22±1                   |
|                               | 9538    | 1907.6    | 21.73               | 22±1                   |
| HSUPA<br>Subtest4             | 9262    | 1852.4    | 21.45               | 22±1                   |
|                               | 9400    | 1880      | 21.41               | 22±1                   |
|                               | 9538    | 1907.6    | 21.53               | 22±1                   |
| HSUPA<br>Subtest5             | 9262    | 1852.4    | 21.39               | 22±1                   |
|                               | 9400    | 1880      | 21.35               | 22±1                   |
|                               | 9538    | 1907.6    | 21.47               | 22±1                   |

## UMTS-FDD Band IV

| Band/ Time Slot configuration | Channel | Frequency | Average power (dBm) | Tune up Power tolerant |
|-------------------------------|---------|-----------|---------------------|------------------------|
| RMC<br>12.2kbps               | 1313    | 1712.6    | <b>23.58</b>        | 23±1                   |
|                               | 1413    | 1732.6    | 23.17               | 23±1                   |
|                               | 1512    | 1752.4    | 22.88               | 23±1                   |
| HSDPA<br>Subtest1             | 1313    | 1712.6    | 22.16               | 22±1                   |
|                               | 1413    | 1732.6    | 21.89               | 22±1                   |
|                               | 1512    | 1752.4    | 21.48               | 22±1                   |
| HSDPA<br>Subtest2             | 1313    | 1712.6    | 21.75               | 22±1                   |
|                               | 1413    | 1732.6    | 21.46               | 22±1                   |
|                               | 1512    | 1752.4    | 21.04               | 22±1                   |
| HSDPA<br>Subtest3             | 1313    | 1712.6    | 20.64               | 21.3±1                 |
|                               | 1413    | 1732.6    | 20.61               | 21.3±1                 |
|                               | 1512    | 1752.4    | 20.95               | 21.3±1                 |
| HSDPA<br>Subtest4             | 1313    | 1712.6    | 21.22               | 21.3±1                 |
|                               | 1413    | 1732.6    | 20.87               | 21.3±1                 |
|                               | 1512    | 1752.4    | 20.52               | 21.3±1                 |
| HSUPA<br>Subtest1             | 1313    | 1712.6    | 20.98               | 21.3±1                 |
|                               | 1413    | 1732.6    | 20.54               | 21.3±1                 |
|                               | 1512    | 1752.4    | 20.67               | 21.3±1                 |
| HSUPA<br>Subtest2             | 1313    | 1712.6    | 21.15               | 21.3±1                 |
|                               | 1413    | 1732.6    | 20.94               | 21.3±1                 |
|                               | 1512    | 1752.4    | 20.82               | 21.3±1                 |
| HSUPA<br>Subtest3             | 1313    | 1712.6    | 22.24               | 21.3±1                 |
|                               | 1413    | 1732.6    | 21.86               | 21.3±1                 |
|                               | 1512    | 1752.4    | 21.59               | 21.3±1                 |
| HSUPA<br>Subtest4             | 1313    | 1712.6    | 21.35               | 21.3±1                 |
|                               | 1413    | 1732.6    | 20.88               | 21.3±1                 |
|                               | 1512    | 1752.4    | 20.64               | 21.3±1                 |
| HSUPA<br>Subtest5             | 1313    | 1712.6    | 21.35               | 21.3±1                 |
|                               | 1413    | 1732.6    | 20.92               | 21.3±1                 |
|                               | 1512    | 1752.4    | 20.69               | 21.3±1                 |

## ERP & EIRP

### ERP for Cellular Band (Part 22H)

| Frequency (MHz) | Substituted level (dBm) | Antenna Polarization | Antenna Gain correction (dBi) | Cable Loss (dB) | Absolute Level (dBm) | Limit (dBm) |
|-----------------|-------------------------|----------------------|-------------------------------|-----------------|----------------------|-------------|
| 824.2           | 25.85                   | V                    | 6.8                           | 0.53            | 32.12                | 38.45       |
| 824.2           | 24.17                   | H                    | 6.8                           | 0.53            | 30.44                | 38.45       |
| 836.6           | 25.88                   | V                    | 6.8                           | 0.53            | 32.15                | 38.45       |
| 836.6           | 24.21                   | H                    | 6.8                           | 0.53            | 30.48                | 38.45       |
| 848.8           | 25.84                   | V                    | 6.9                           | 0.53            | <b>32.21</b>         | 38.45       |
| 848.8           | 24.16                   | H                    | 6.9                           | 0.53            | 30.53                | 38.45       |

### EIRP for PCS Band (Part 24E)

| Frequency (MHz) | Substituted level (dBm) | Antenna Polarization | Antenna Gain correction (dBi) | Cable Loss (dB) | Absolute Level (dBm) | Limit (dBm) |
|-----------------|-------------------------|----------------------|-------------------------------|-----------------|----------------------|-------------|
| 1850.2          | 25.73                   | V                    | 7.88                          | 0.85            | 32.76                | 33          |
| 1850.2          | 24.26                   | H                    | 7.88                          | 0.85            | 31.29                | 33          |
| 1880            | 25.81                   | V                    | 7.88                          | 0.85            | 32.84                | 33          |
| 1880            | 24.33                   | H                    | 7.88                          | 0.85            | 31.36                | 33          |
| 1909.8          | 25.85                   | V                    | 7.86                          | 0.85            | <b>32.86</b>         | 33          |
| 1909.8          | 24.29                   | H                    | 7.86                          | 0.85            | 31.30                | 33          |

### ERP for UMTS-FDD Band V (Part 22H)

| Frequency (MHz) | Substituted level (dBm) | Antenna Polarization | Antenna Gain correction (dBi) | Cable Loss (dB) | Absolute Level (dBm) | Limit (dBm) |
|-----------------|-------------------------|----------------------|-------------------------------|-----------------|----------------------|-------------|
| 826.4           | 15.19                   | V                    | 6.8                           | 0.53            | 21.46                | 38.45       |
| 826.4           | 13.75                   | H                    | 6.8                           | 0.53            | 20.02                | 38.45       |
| 835             | 15.22                   | V                    | 6.8                           | 0.53            | 21.49                | 38.45       |
| 835             | 13.84                   | H                    | 6.8                           | 0.53            | 20.11                | 38.45       |
| 846.6           | 15.26                   | V                    | 6.9                           | 0.53            | <b>21.63</b>         | 38.45       |
| 846.6           | 13.89                   | H                    | 6.9                           | 0.53            | 20.26                | 38.45       |

### EIRP for UMTS-FDD Band II (Part 24E)

| Frequency (MHz) | Substituted level (dBm) | Antenna Polarization | Antenna Gain correction (dBi) | Cable Loss (dB) | Absolute Level (dBm) | Limit (dBm) |
|-----------------|-------------------------|----------------------|-------------------------------|-----------------|----------------------|-------------|
| 1852.4          | 19.62                   | V                    | 7.88                          | 0.85            | 26.65                | 33          |
| 1852.4          | 18.16                   | H                    | 7.88                          | 0.85            | 25.19                | 33          |
| 1880            | 19.58                   | V                    | 7.88                          | 0.85            | 26.61                | 33          |
| 1880            | 18.14                   | H                    | 7.88                          | 0.85            | 25.17                | 33          |
| 1907.6          | 19.67                   | V                    | 7.86                          | 0.85            | <b>26.68</b>         | 33          |
| 1907.6          | 18.21                   | H                    | 7.86                          | 0.85            | 25.22                | 33          |

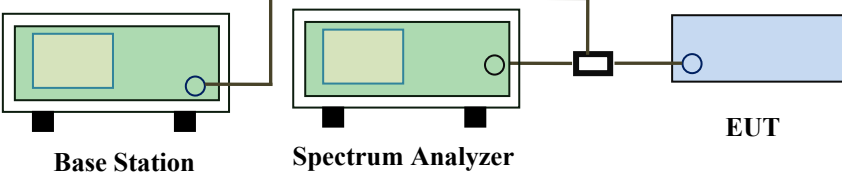
### EIRP for UMTS-FDD Band IV (Part 27H)

| Frequency (MHz) | Substituted level (dBm) | Antenna Polarization | Antenna Gain correction (dBi) | Cable Loss (dB) | Absolute Level (dBm) | Limit (dBm) |
|-----------------|-------------------------|----------------------|-------------------------------|-----------------|----------------------|-------------|
| 1712.4          | 19.82                   | V                    | 7.76                          | 0.82            | <b>26.76</b>         | 30          |
| 1712.4          | 18.15                   | H                    | 7.76                          | 0.82            | 25.09                | 30          |
| 1740            | 19.41                   | V                    | 7.76                          | 0.82            | 26.35                | 30          |
| 1740            | 17.83                   | H                    | 7.76                          | 0.82            | 24.77                | 30          |
| 1752.6          | 19.28                   | V                    | 7.74                          | 0.82            | 26.20                | 30          |
| 1752.6          | 17.56                   | H                    | 7.74                          | 0.82            | 24.48                | 30          |

### 6.3 Peak-Average Ratio

|                      |                   |
|----------------------|-------------------|
| Temperature          | 22°C              |
| Relative Humidity    | 53%               |
| Atmospheric Pressure | 1010mbar          |
| Test date :          | December 15, 2015 |
| Tested By :          | Winnie Zhang      |

Requirement(s):

| Spec                     | Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Requirement                                                               | Applicable                          |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------|
| §24.232(d)<br>§ 27.50(d) | a)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB. | <input checked="" type="checkbox"/> |
| Test Setup               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                           |                                     |
| Test Procedure           | <p><b>According with KDB 971168 v02r02</b></p> <ol style="list-style-type: none"> <li>1. The signal analyzer' s CCDF measurement profile is enabled</li> <li>2. Frequency = carrier center frequency</li> <li>3. Measurement BW &gt; Emission bandwidth of signal</li> <li>4. The signal analyzer was set to collect one million samples to generate the CCDF curve</li> <li>5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (&gt;98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal “ RF Burst” trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the “ on time” of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power</li> </ol> |                                                                           |                                     |
| Remark                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                           |                                     |
| Result                   | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                           |                                     |

Test Data    ☒ Yes      ☐ N/A

Test Plot    ☐ Yes (See below)      ☒ N/A

#### GSM 1900 PK-AV POWER(PART 24E)

| Frequency<br>(MHz) | Conducted power(dBm) |         | Peak-Average<br>Ratio(PAR) |
|--------------------|----------------------|---------|----------------------------|
|                    | Peak                 | Average |                            |
| 1850.2             | 30.3                 | 29.81   | 0.49                       |
| 1880               | 30.4                 | 30.02   | 0.38                       |
| 1909.8             | 30.4                 | 29.99   | 0.41                       |

#### UMTS-FDD Band II PK-AV POWER(PART 24E)

| Frequency<br>(MHz) | Conducted power(dBm) |         | Peak-Average<br>Ratio(PAR) |
|--------------------|----------------------|---------|----------------------------|
|                    | Peak                 | Average |                            |
| 1852.4             | 25.98                | 23.22   | 2.76                       |
| 1880               | 26.43                | 23.19   | 3.24                       |
| 1907.6             | 26.21                | 23.3    | 2.91                       |

#### UMTS-FDD BandIV PK-AV POWER (PART 27)

| Frequency<br>(MHz) | Conducted power(dBm) |         | Peak-Average<br>Ratio(PAR) |
|--------------------|----------------------|---------|----------------------------|
|                    | Peak                 | Average |                            |
| 1712.6             | 26.25                | 23.58   | 2.67                       |
| 1732.6             | 25.82                | 23.17   | 2.65                       |
| 1752.4             | 25.61                | 22.88   | 2.73                       |

## 6.4 Occupied Bandwidth

|                      |                   |
|----------------------|-------------------|
| Temperature          | 22°C              |
| Relative Humidity    | 53%               |
| Atmospheric Pressure | 1010mbar          |
| Test date :          | December 15, 2015 |
| Tested By :          | Winnie Zhang      |

### Requirement(s):

| Spec                                                    | Item                                                                                                                                                                                                                                     | Requirement                 | Applicable                          |
|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------|
| §2.1049,<br>§22.917,<br>§22.905<br>§24.238<br>§27.53(a) | a)                                                                                                                                                                                                                                       | 99% Occupied Bandwidth(kHz) | <input checked="" type="checkbox"/> |
|                                                         | b)                                                                                                                                                                                                                                       | 26 dB Bandwidth(kHz)        | <input checked="" type="checkbox"/> |
| Test Setup                                              | <p>Base Station      Spectrum Analyzer      EUT</p>                                                                                                                                                                                      |                             |                                     |
| Test Procedure                                          | <ul style="list-style-type: none"> <li>- The EUT was connected to Spectrum Analyzer and Base Station via power divider.</li> <li>- The 99% and 26 dB occupied bandwidth (BW) of the middle channel for the highest RF powers.</li> </ul> |                             |                                     |
| Remark                                                  |                                                                                                                                                                                                                                          |                             |                                     |
| Result                                                  | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail                                                                                                                                                                   |                             |                                     |

Test Data    ☒ Yes      ☐ N/A

Test Plot    ☒ Yes (See below)      ☐ N/A

### Cellular Band (Part 22H) result

| Channel | Frequency (MHz) | 99% Occupied Bandwidth (kHz) | 26 dB Bandwidth (kHz) |
|---------|-----------------|------------------------------|-----------------------|
| 128     | 824.2           | 246.5794                     | 322.741               |
| 190     | 836.6           | 245.8424                     | 312.715               |
| 251     | 848.8           | 244.1608                     | 316.531               |

### PCS Band (Part 24E) result

| Channel | Frequency (MHz) | 99% Occupied Bandwidth (kHz) | 26 dB Bandwidth (kHz) |
|---------|-----------------|------------------------------|-----------------------|
| 512     | 1850.2          | 243.6725                     | 313.756               |
| 661     | 1880.0          | 248.5525                     | 315.223               |
| 810     | 1909.8          | 246.6684                     | 314.502               |

### UMTS-FDD Band V (Part 22H)

| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|---------|-----------------|------------------------------|-----------------------|
| 4132    | 826.4           | 4.2295                       | 4.894                 |
| 4175    | 835.0           | 4.2126                       | 4.884                 |
| 4233    | 846.6           | 4.2062                       | 4.897                 |

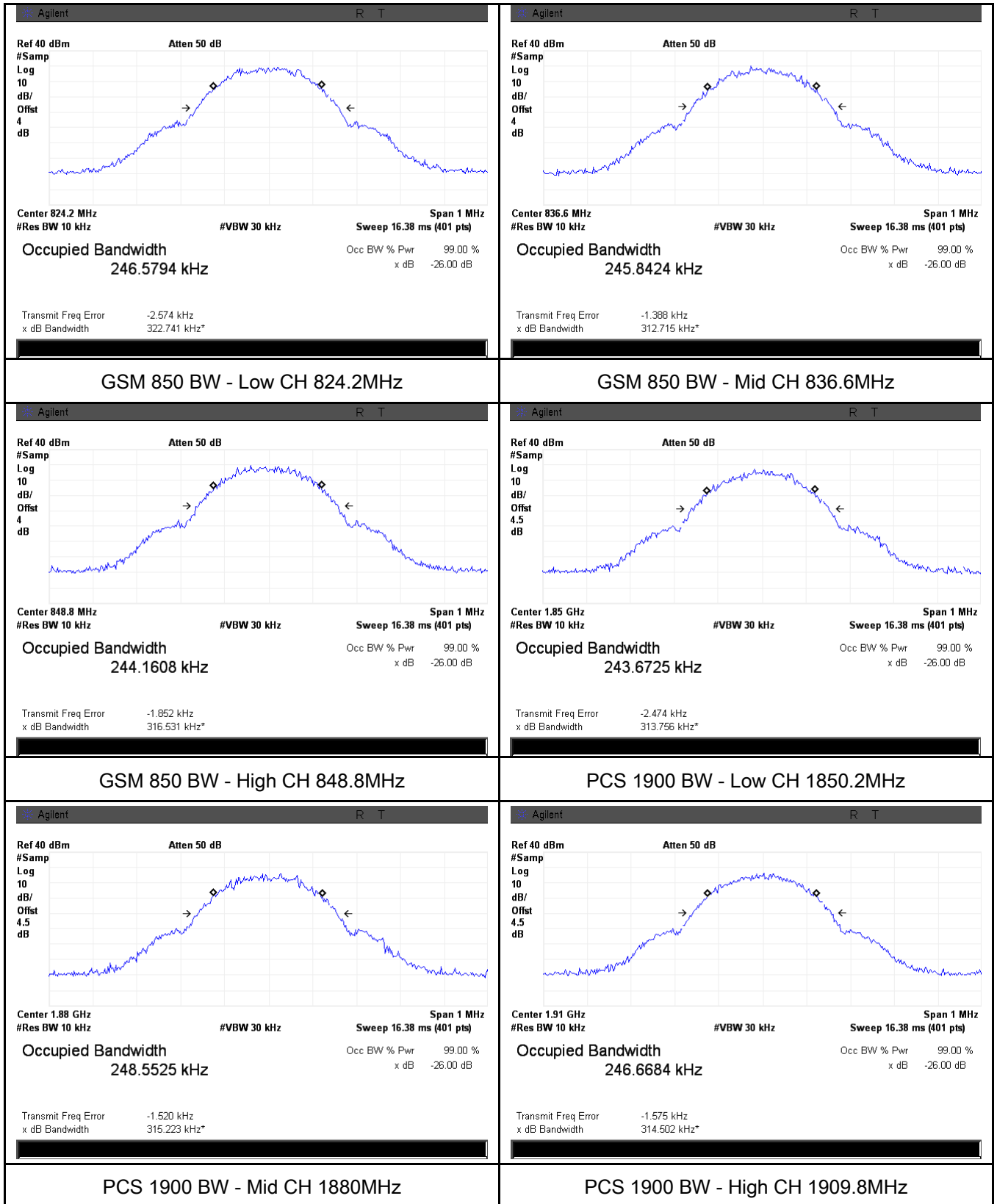
### UMTS-FDD Band II (Part 24E)

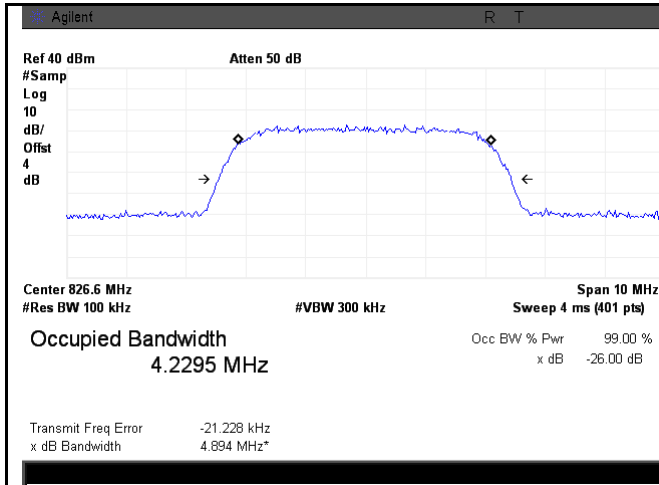
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|---------|-----------------|------------------------------|-----------------------|
| 9262    | 1852.4          | 4.2265                       | 4.872                 |
| 9400    | 1880.0          | 4.2385                       | 4.908                 |
| 9538    | 1907.6          | 4.2077                       | 4.866                 |

### UMTS-FDD Band IV (Part 27)

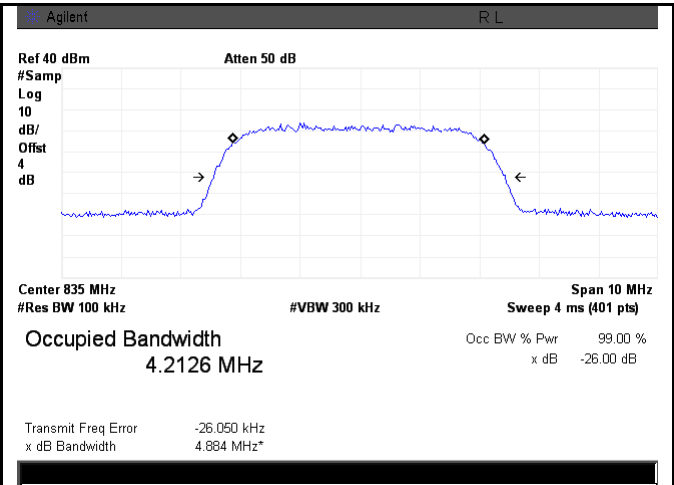
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|---------|-----------------|------------------------------|-----------------------|
| 1313    | 1712.6          | 4.2066                       | 4.876                 |
| 1413    | 1732.6          | 4.1996                       | 4.891                 |
| 1512    | 1752.4          | 4.2242                       | 4.858                 |

## Test Plots

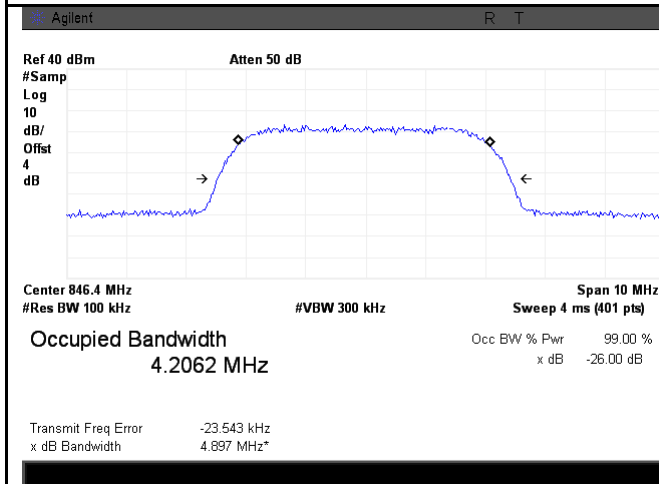




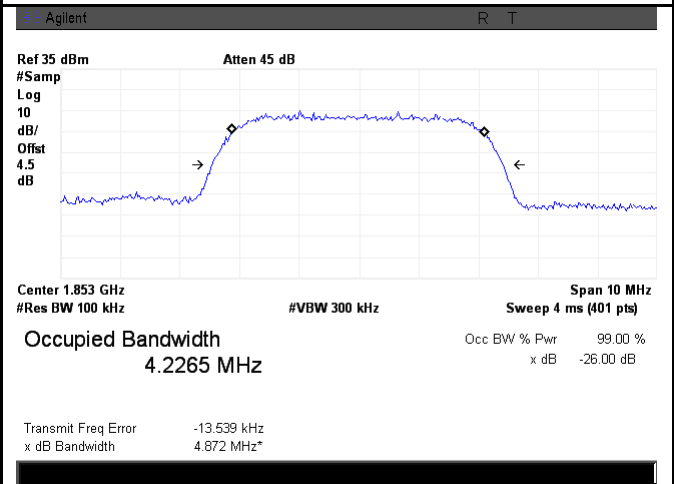
Band V BW - Low CH 826.6 MHz



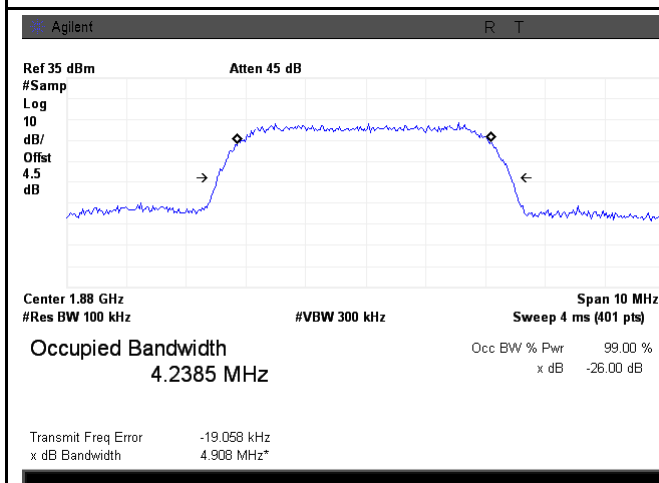
Band V BW - Mid CH 835.0 MHz



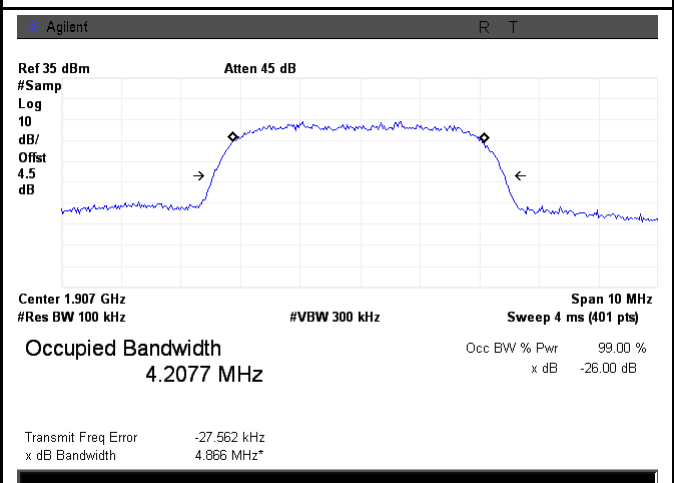
Band V BW - High CH 846.4 MHz



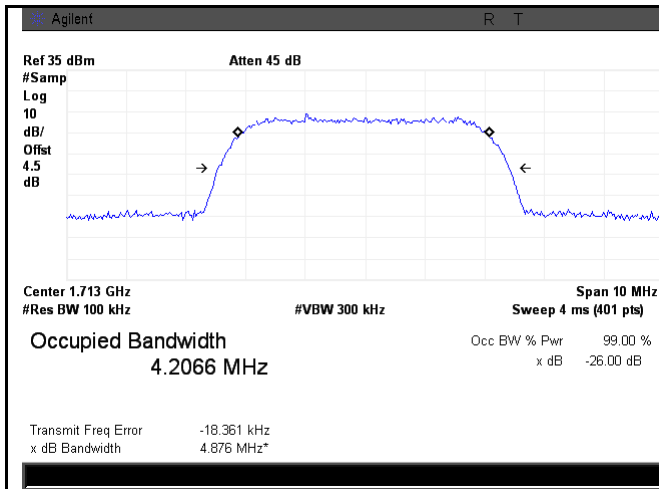
Band II BW - Low CH 1852.4MHz



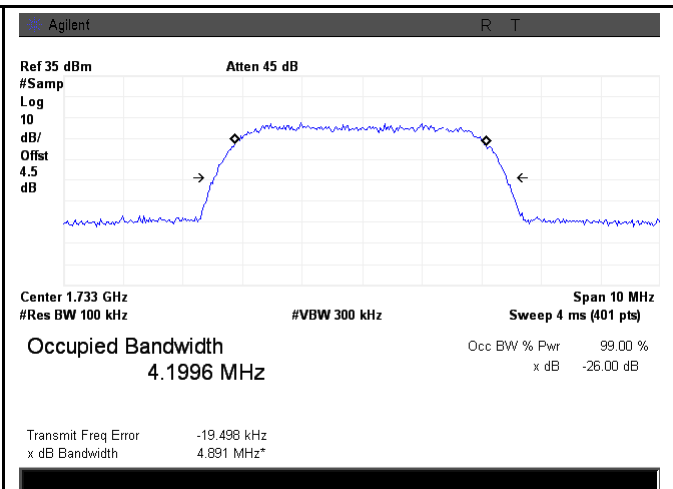
Band II BW - Mid CH 1880MHz



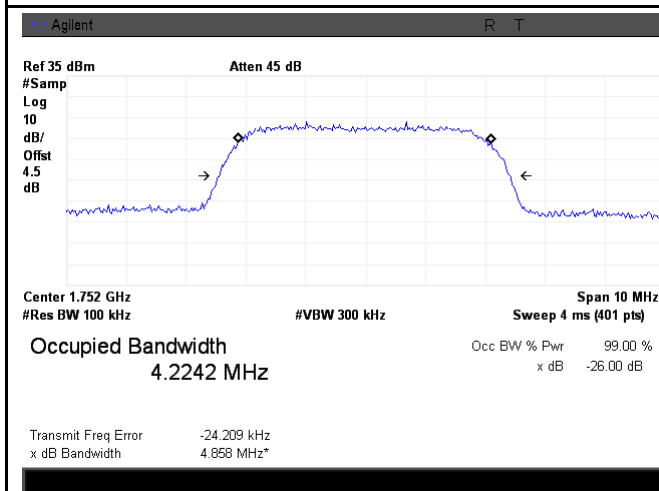
Band II BW - High CH 1907.6MHz



Band IV BW - Low CH 1852.4MHz



Band IVBW - Mid CH 1880MHz



Band IV BW - High CH 1907.6MHz

## 6.5 Spurious Emissions at Antenna Terminals

|                      |                   |
|----------------------|-------------------|
| Temperature          | 25°C              |
| Relative Humidity    | 54%               |
| Atmospheric Pressure | 1012mbar          |
| Test date :          | December 12, 2015 |
| Tested By :          | Winnie Zhang      |

### Requirement(s):

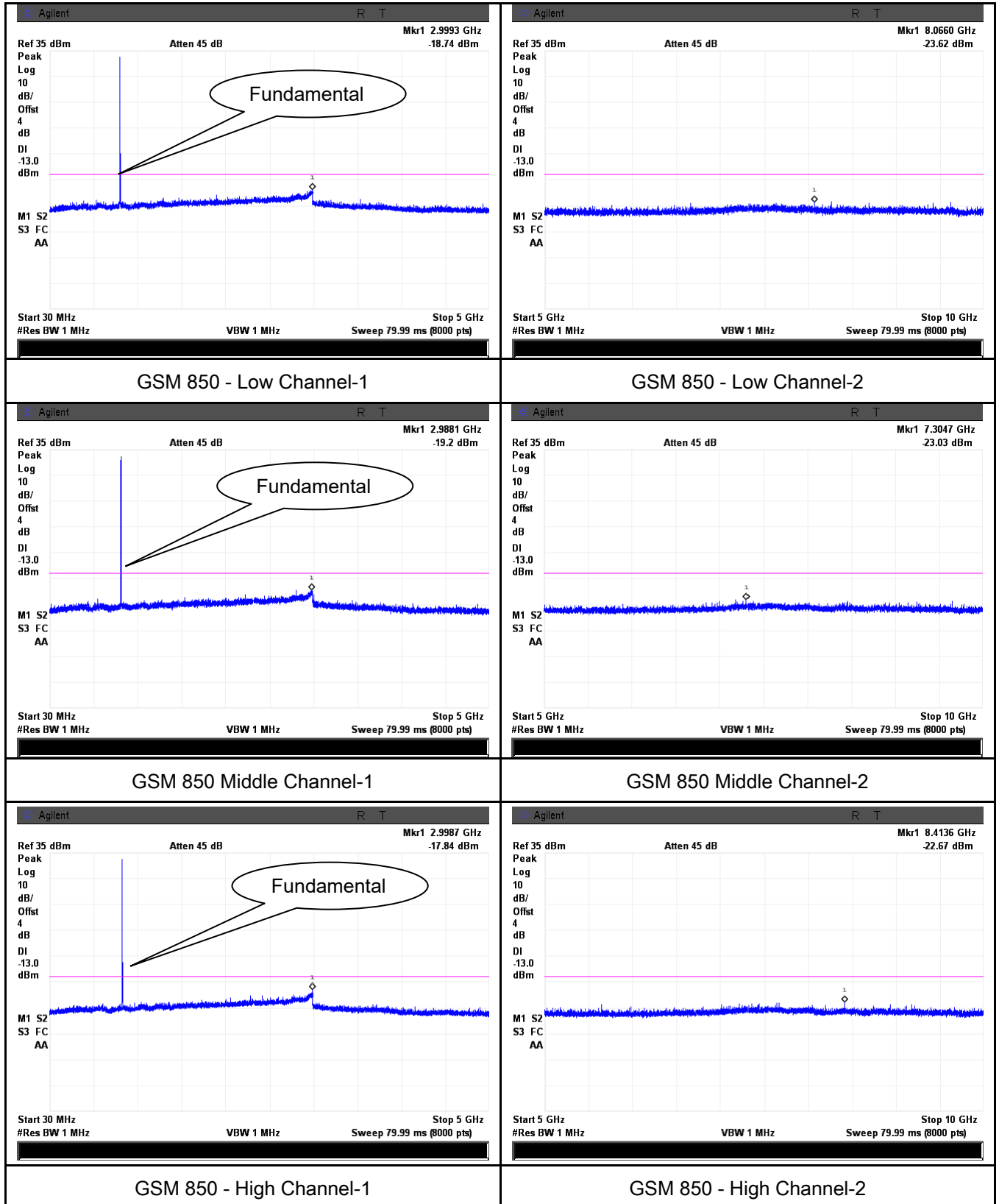
| Spec                                                | Item                                                                                                                                                                                                                                                                     | Requirement                                                                                                                                                               | Applicable                          |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| §2.1051,<br>§22.917(a)&<br>§24.238(a)<br>§ 27.53(h) | a)                                                                                                                                                                                                                                                                       | The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB | <input checked="" type="checkbox"/> |
| Test Setup                                          | <p style="text-align: center;">Base Station      Spectrum Analyzer      EUT</p>                                                                                                                                                                                          |                                                                                                                                                                           |                                     |
| Test Procedure                                      | <ul style="list-style-type: none"> <li>- The EUT was connected to Spectrum Analyzer and Base Station via power divider.</li> <li>- The Band Edges of low and high channels for the highest RF powers were measured.</li> <li>- Setting RBW as roughly BW/100.</li> </ul> |                                                                                                                                                                           |                                     |
| Remark                                              |                                                                                                                                                                                                                                                                          |                                                                                                                                                                           |                                     |
| Result                                              | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail                                                                                                                                                                                                   |                                                                                                                                                                           |                                     |

Test Data    ☒ Yes      ☐ N/A

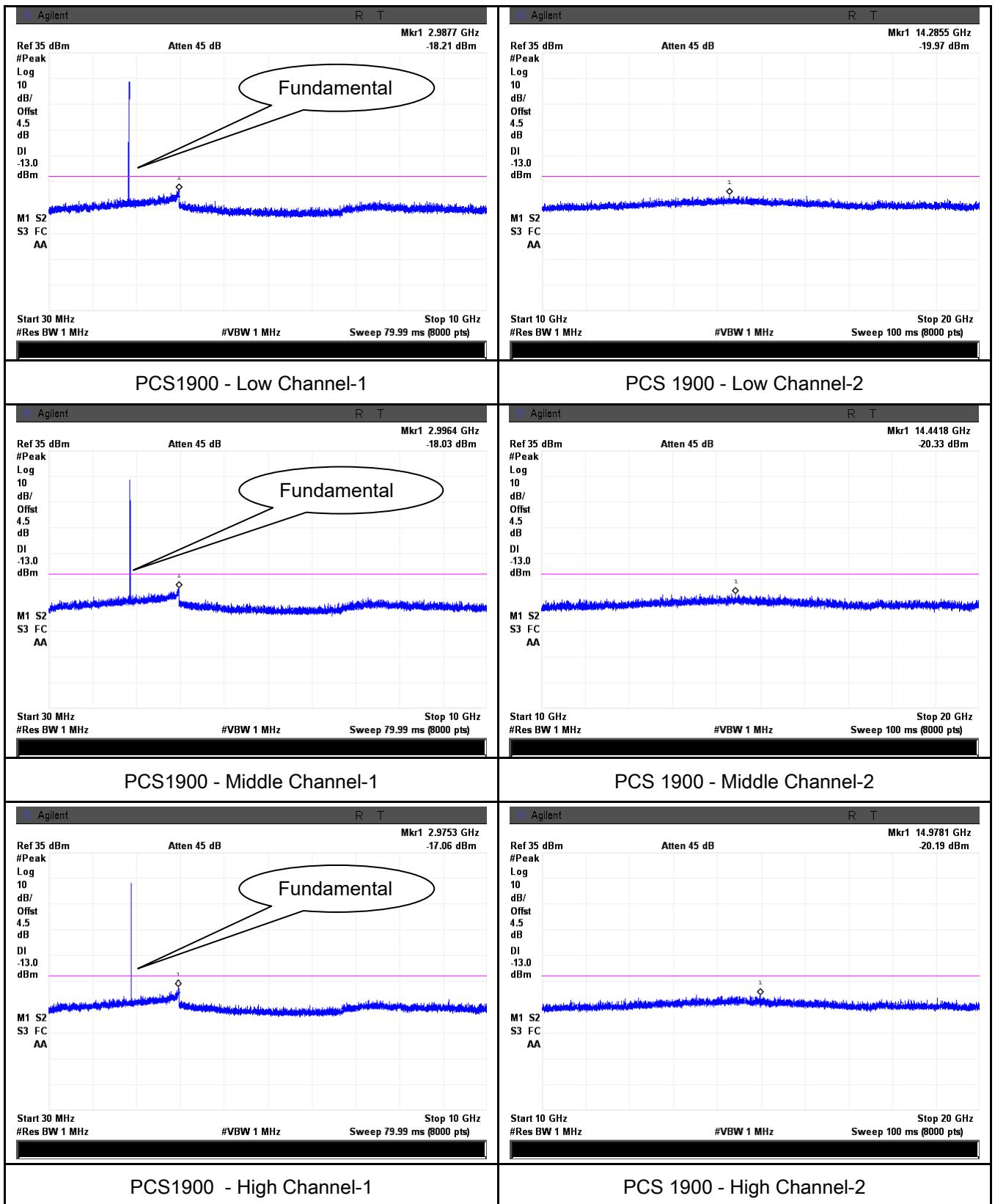
Test Plot    ☒ Yes (See below)      ☐ N/A

## Test Plots

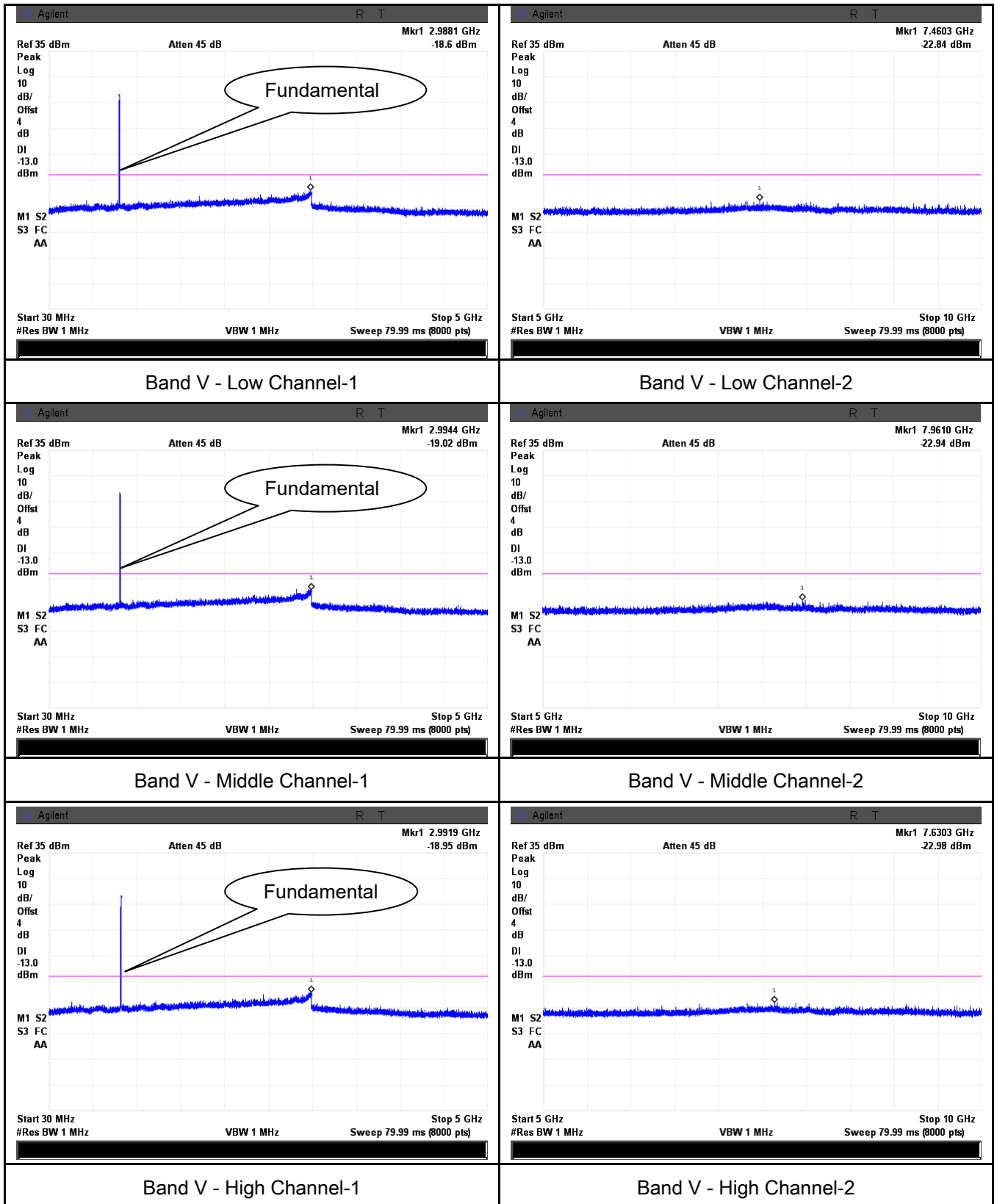
### Cellular Band (Part 22H) result



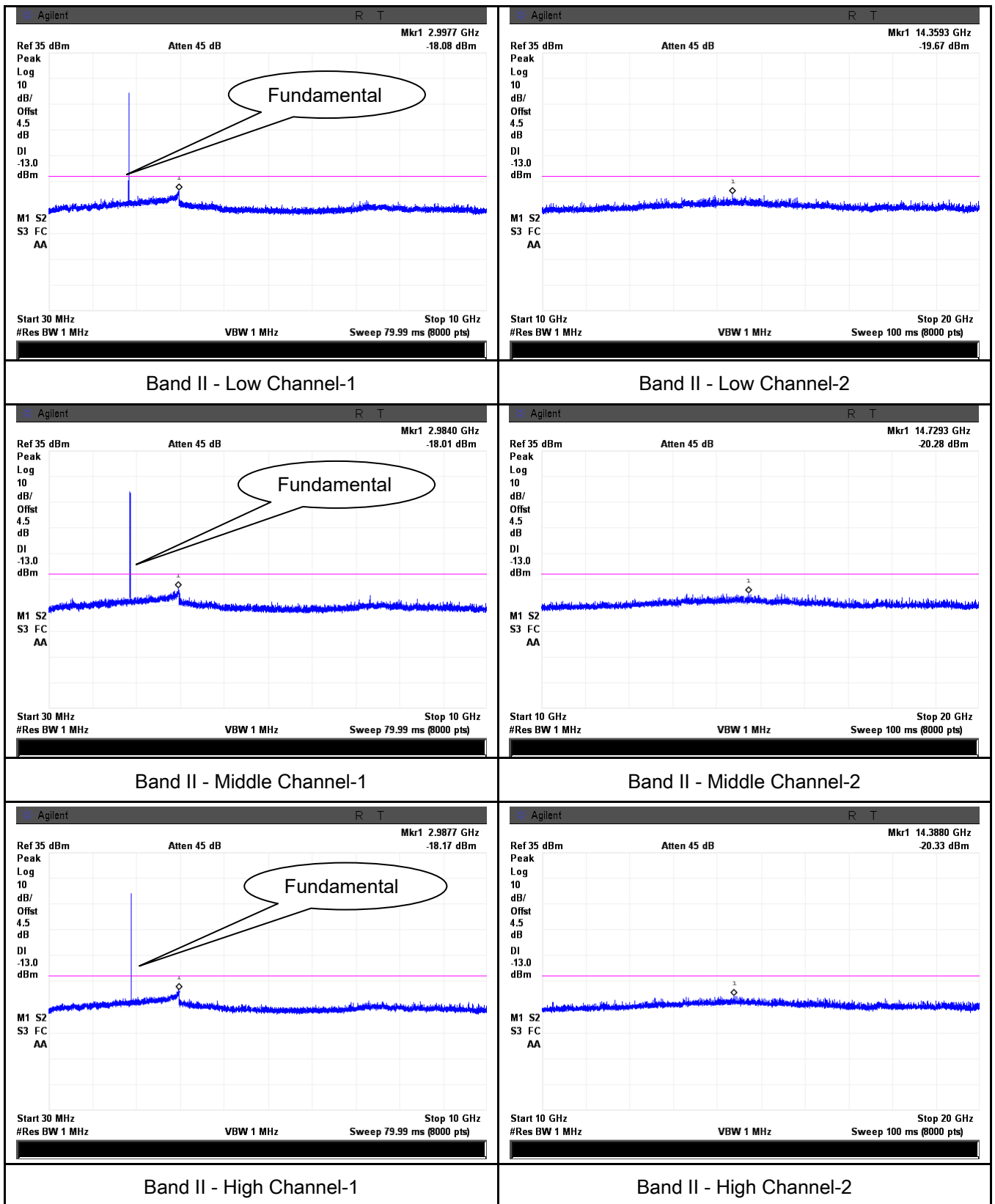
## PCS Band (Part24E) result



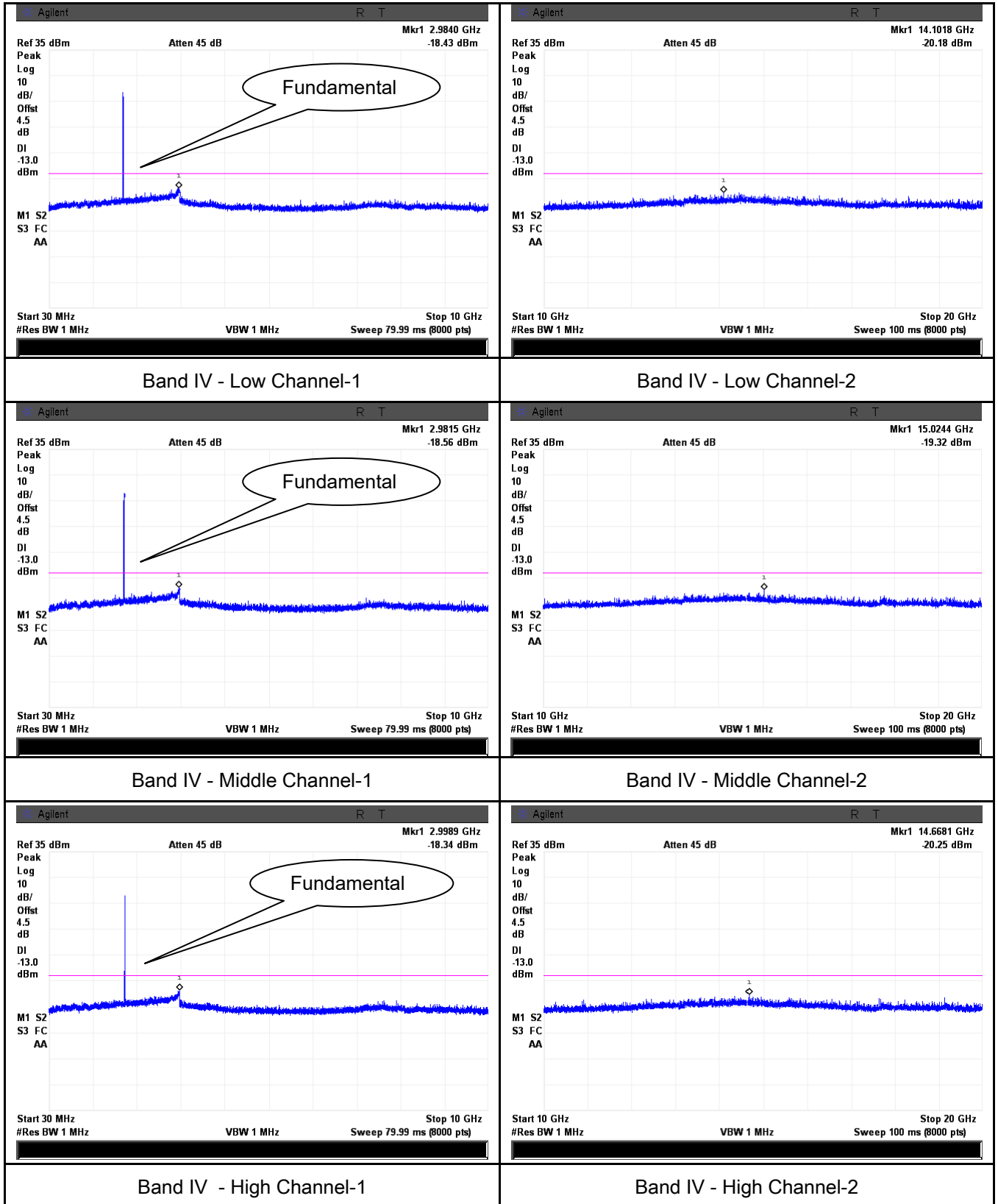
## UMTS-FDD Band V (Part 22H)



## UMTS-FDD Band II (Part 24E)



## UMTS-FDD Band IV (Part 27)

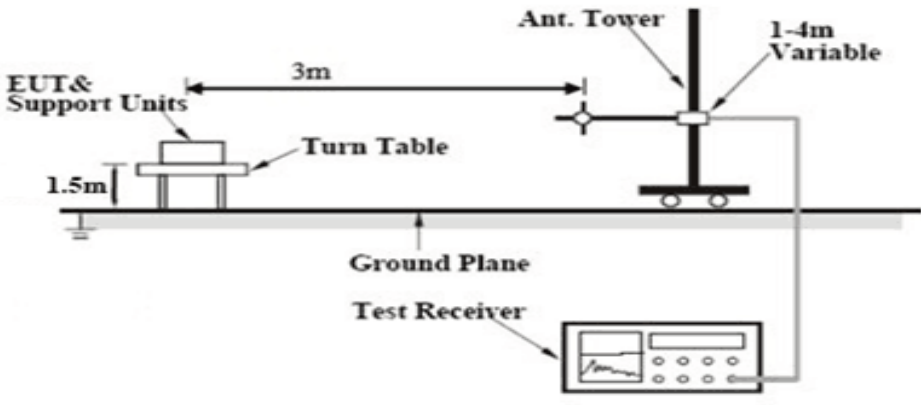


## 6.6 Spurious Radiated Emissions

|                      |                   |
|----------------------|-------------------|
| Temperature          | 25°C              |
| Relative Humidity    | 54%               |
| Atmospheric Pressure | 1012mbar          |
| Test date :          | December 12, 2015 |
| Tested By :          | Winnie Zhang      |

### Requirement(s):

| Spec                                           | Item | Requirement                                                                                                                                                                                                                                                         | Applicable                          |
|------------------------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| §2.1053,<br>§22.917 &<br>§24.238<br>§ 27.53(h) | a)   | The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic. | <input checked="" type="checkbox"/> |

|            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test setup |  <p>The diagram illustrates the test setup. A turntable is placed on a ground plane, with EUT &amp; Support Units on top. The turntable is 1.5m high. A distance of 3m is marked between the turntable and an antenna tower. The antenna tower has a 1-4m variable height. A test receiver is connected to the antenna tower.</p> |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Procedure | <ol style="list-style-type: none"> <li>The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.</li> <li>The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.</li> <li>Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.</li> </ol> <p>Sample Calculation:</p> <p>EUT Field Strength = Raw Amplitude (dBμV/m) – Amplifier Gain (dB) + Antenna Factor (dB) + Cable Loss (dB) + Filter Attenuation (dB, if used)</p> |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|             |                 |
|-------------|-----------------|
| Test Report | 15071166-FCC-R1 |
| Page        | 33 of 59        |

|        |                                                                        |
|--------|------------------------------------------------------------------------|
| Remark |                                                                        |
| Result | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail |

Test Data ☒ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☒ N/A

## Cellular Band (Part 22H) result

### Low channel

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|-----------------|-------------------------|----------------|------------------------------|-----------------|-------------------------|-------------|-------------|
| 1648.4          | -45.21                  | V              | 7.95                         | 0.78            | -38.04                  | -13         | -25.04      |
| 1648.4          | -45.66                  | H              | 7.95                         | 0.78            | -38.49                  | -13         | -25.49      |
| 146.5           | -46.38                  | V              | 0.85                         | 0.19            | -45.72                  | -13         | -32.72      |
| 358.2           | -51.75                  | H              | 6.7                          | 0.28            | -45.33                  | -13         | -32.33      |

### Middle channel

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|-----------------|-------------------------|----------------|------------------------------|-----------------|-------------------------|-------------|-------------|
| 1673.2          | -45.16                  | V              | 7.95                         | 0.78            | -37.99                  | -13         | -24.99      |
| 1673.2          | -45.73                  | H              | 7.95                         | 0.78            | -38.56                  | -13         | -25.56      |
| 146.3           | -46.41                  | V              | 0.85                         | 0.19            | -45.75                  | -13         | -32.75      |
| 358.9           | -51.82                  | H              | 6.7                          | 0.28            | -45.4                   | -13         | -32.40      |

### High channel

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|-----------------|-------------------------|----------------|------------------------------|-----------------|-------------------------|-------------|-------------|
| 1697.6          | -45.23                  | V              | 7.95                         | 0.78            | -38.06                  | -13         | -25.06      |
| 1697.6          | -45.85                  | H              | 7.95                         | 0.78            | -38.68                  | -13         | -25.68      |
| 146.8           | -46.57                  | V              | 0.85                         | 0.19            | -45.91                  | -13         | -32.91      |
| 358.4           | -51.72                  | H              | 6.7                          | 0.28            | -45.3                   | -13         | -32.30      |

#### Note:

- 1, The testing has been conformed to  $10 \times 848.8 \text{ MHz} = 8,488 \text{ MHz}$
- 2, All other emissions more than 30 dB below the limit

## PCS Band (Part24E) result

### Low channel

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|-----------------|-------------------------|----------------|------------------------------|-----------------|-------------------------|-------------|-------------|
| 3700.4          | -45.88                  | V              | 10.25                        | 2.73            | -38.36                  | -13         | -25.36      |
| 3700.4          | -46.34                  | H              | 10.25                        | 2.73            | -38.82                  | -13         | -25.82      |
| 145.9           | -45.71                  | V              | 0.85                         | 0.19            | -45.05                  | -13         | -32.05      |
| 359.2           | -51.64                  | H              | 6.7                          | 0.28            | -45.22                  | -13         | -32.22      |

### Middle channel

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|-----------------|-------------------------|----------------|------------------------------|-----------------|-------------------------|-------------|-------------|
| 3760            | -45.76                  | V              | 10.25                        | 2.73            | -38.24                  | -13         | -25.24      |
| 3760            | -46.52                  | H              | 10.25                        | 2.73            | -39                     | -13         | -26         |
| 145.6           | -45.63                  | V              | 0.85                         | 0.19            | -44.97                  | -13         | -31.97      |
| 359.7           | -51.77                  | H              | 6.7                          | 0.28            | -45.35                  | -13         | -32.35      |

### High channel

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|-----------------|-------------------------|----------------|------------------------------|-----------------|-------------------------|-------------|-------------|
| 3819.6          | -45.94                  | V              | 10.36                        | 2.73            | -38.31                  | -13         | -25.31      |
| 3819.6          | -46.58                  | H              | 10.36                        | 2.73            | -38.95                  | -13         | -25.95      |
| 145.5           | -45.72                  | V              | 0.85                         | 0.19            | -45.06                  | -13         | -32.06      |
| 359.1           | -51.69                  | H              | 6.7                          | 0.28            | -45.27                  | -13         | -32.27      |

#### Note:

- 1, The testing has been conformed to  $10 \times 1909.8 \text{ MHz} = 19,098 \text{ MHz}$
- 2, All other emissions more than 30 dB below the limit

## UMTS-FDD Band V (Part 22H)

### Low channel

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|-----------------|-------------------------|----------------|------------------------------|-----------------|-------------------------|-------------|-------------|
| 1652.8          | -46.23                  | V              | 7.95                         | 0.78            | -39.06                  | -13         | -26.06      |
| 1652.8          | -46.51                  | H              | 7.95                         | 0.78            | -39.34                  | -13         | -26.34      |
| 146.5           | -46.49                  | V              | 0.85                         | 0.19            | -45.83                  | -13         | -32.83      |
| 358.1           | -52.34                  | H              | 6.7                          | 0.28            | -45.92                  | -13         | -32.92      |

### Middle channel

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|-----------------|-------------------------|----------------|------------------------------|-----------------|-------------------------|-------------|-------------|
| 1670            | -46.31                  | V              | 7.95                         | 0.78            | -39.14                  | -13         | -26.14      |
| 1670            | -46.58                  | H              | 7.95                         | 0.78            | -39.41                  | -13         | -26.41      |
| 146.7           | -46.55                  | V              | 0.85                         | 0.19            | -45.89                  | -13         | -32.89      |
| 358.6           | -52.41                  | H              | 6.7                          | 0.28            | -45.99                  | -13         | -32.99      |

### High channel

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|-----------------|-------------------------|----------------|------------------------------|-----------------|-------------------------|-------------|-------------|
| 1693.2          | -46.35                  | V              | 7.95                         | 0.78            | -39.18                  | -13         | -26.18      |
| 1693.2          | -46.62                  | H              | 7.95                         | 0.78            | -39.45                  | -13         | -26.45      |
| 146.3           | -46.49                  | V              | 0.85                         | 0.19            | -45.83                  | -13         | -32.83      |
| 358.7           | -52.36                  | H              | 6.7                          | 0.28            | -45.94                  | -13         | -32.94      |

#### Note:

1, The testing has been conformed to  $10 \times 846.6 \text{ MHz} = 8,466 \text{ MHz}$

2, All other emissions more than 30 dB below the limit

## UMTS-FDD Band II (Part 24E)

### Low channel

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|-----------------|-------------------------|----------------|------------------------------|-----------------|-------------------------|-------------|-------------|
| 3704.8          | -48.34                  | V              | 10.25                        | 2.73            | -40.82                  | -13         | -27.82      |
| 3704.8          | -48.58                  | H              | 10.25                        | 2.73            | -41.06                  | -13         | -28.06      |
| 145.2           | -47.13                  | V              | 0.85                         | 0.19            | -46.47                  | -13         | -33.47      |
| 359.1           | -52.29                  | H              | 6.7                          | 0.28            | -45.87                  | -13         | -32.87      |

### Middle channel

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|-----------------|-------------------------|----------------|------------------------------|-----------------|-------------------------|-------------|-------------|
| 3760            | -48.27                  | V              | 10.25                        | 2.73            | -40.75                  | -13         | -27.75      |
| 3760            | -48.63                  | H              | 10.25                        | 2.73            | -41.11                  | -13         | -28.11      |
| 145.6           | -47.24                  | V              | 0.85                         | 0.19            | -46.58                  | -13         | -33.58      |
| 359.8           | -52.41                  | H              | 6.7                          | 0.28            | -45.99                  | -13         | -32.99      |

### High channel

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|-----------------|-------------------------|----------------|------------------------------|-----------------|-------------------------|-------------|-------------|
| 3815.2          | -48.33                  | V              | 10.36                        | 2.73            | -40.7                   | -13         | -27.70      |
| 3815.2          | -48.59                  | H              | 10.36                        | 2.73            | -40.96                  | -13         | -27.96      |
| 145.7           | -47.18                  | V              | 0.85                         | 0.19            | -46.52                  | -13         | -33.52      |
| 359.4           | -52.36                  | H              | 6.7                          | 0.28            | -45.94                  | -13         | -32.94      |

#### Note:

- 1, The testing has been conformed to  $10 \times 1907.6 \text{ MHz} = 19,076 \text{ MHz}$
- 2, All other emissions more than 30 dB below the limit

## UMTS-FDD Band IV (Part 27)

### Low channel

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|-----------------|-------------------------|----------------|------------------------------|-----------------|-------------------------|-------------|-------------|
| 3424.8          | -47.15                  | V              | 10.07                        | 2.52            | -39.6                   | -13         | -26.60      |
| 3424.8          | -47.38                  | H              | 10.07                        | 2.52            | -39.83                  | -13         | -26.83      |
| 145.2           | -46.22                  | V              | 0.85                         | 0.19            | -45.56                  | -13         | -32.56      |
| 359.7           | -52.36                  | H              | 6.7                          | 0.28            | -45.94                  | -13         | -32.94      |

### Middle channel

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|-----------------|-------------------------|----------------|------------------------------|-----------------|-------------------------|-------------|-------------|
| 3480            | -47.08                  | V              | 10.09                        | 2.52            | -39.51                  | -13         | -26.51      |
| 3480            | -47.24                  | H              | 10.09                        | 2.52            | -39.67                  | -13         | -26.67      |
| 145.3           | -46.19                  | V              | 0.85                         | 0.19            | -45.53                  | -13         | -32.53      |
| 359.4           | -52.31                  | H              | 6.7                          | 0.28            | -45.89                  | -13         | -32.89      |

### High channel

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|-----------------|-------------------------|----------------|------------------------------|-----------------|-------------------------|-------------|-------------|
| 3505.2          | -47.14                  | V              | 10.09                        | 2.52            | -39.57                  | -13         | -26.57      |
| 3505.2          | -47.39                  | H              | 10.09                        | 2.52            | -39.82                  | -13         | -26.82      |
| 145.9           | -46.22                  | V              | 0.85                         | 0.19            | -45.56                  | -13         | -32.56      |
| 359.6           | -52.38                  | H              | 6.7                          | 0.28            | -45.96                  | -13         | -32.96      |

#### Note:

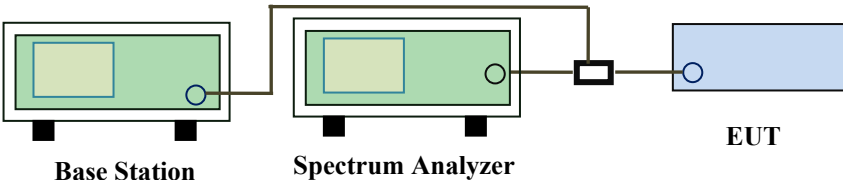
1, The testing has been conformed to  $10 \times 1752.6 \text{ MHz} = 17.526 \text{ MHz}$

2, All other emissions more than 30 dB below the limit

## 6.7 Band Edge

|                      |                   |
|----------------------|-------------------|
| Temperature          | 25°C              |
| Relative Humidity    | 54%               |
| Atmospheric Pressure | 1012mbar          |
| Test date :          | December 12, 2015 |
| Tested By :          | Winnie Zhang      |

### Requirement(s):

| Spec                                   | Item                                                                                                                                                                                                                                                          | Requirement                                                                                                                                                                | Applicable                          |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| §22.917(a)<br>§24.238(a)<br>§ 27.53(h) | a)                                                                                                                                                                                                                                                            | The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB. | <input checked="" type="checkbox"/> |
| Test setup                             |  <p style="text-align: center;">Base Station      Spectrum Analyzer      EUT</p>                                                                                          |                                                                                                                                                                            |                                     |
| Procedure                              | <ul style="list-style-type: none"> <li>- The EUT was connected to Spectrum Analyzer and Base Station via power divider.</li> <li>- The Band Edges of low and high channels for the highest RF powers were measured. Setting RBW as roughly BW/100.</li> </ul> |                                                                                                                                                                            |                                     |
| Remark                                 |                                                                                                                                                                                                                                                               |                                                                                                                                                                            |                                     |
| Result                                 | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail                                                                                                                                                                                        |                                                                                                                                                                            |                                     |

Test Data    ☒ Yes      ☐ N/A

Test Plot    ☒ Yes (See below)      ☐ N/A

#### Cellular Band (Part 22H) result

| Frequency (MHz) | Emission (dBm) | Limit (dBm) |
|-----------------|----------------|-------------|
| 823.9950        | -17.28         | -13         |
| 849.0175        | -17.63         | -13         |

#### PCS Band (Part24E) result

| Frequency (MHz) | Emission (dBm) | Limit (dBm) |
|-----------------|----------------|-------------|
| 1849.9950       | -19.12         | -13         |
| 1910.0175       | -21.64         | -13         |

#### UMTS-FDD Band V (Part 22H)

| Frequency (MHz) | Emission (dBm) | Limit (dBm) |
|-----------------|----------------|-------------|
| 823.9000        | -31.09         | -13         |
| 849.2000        | -30.91         | -13         |

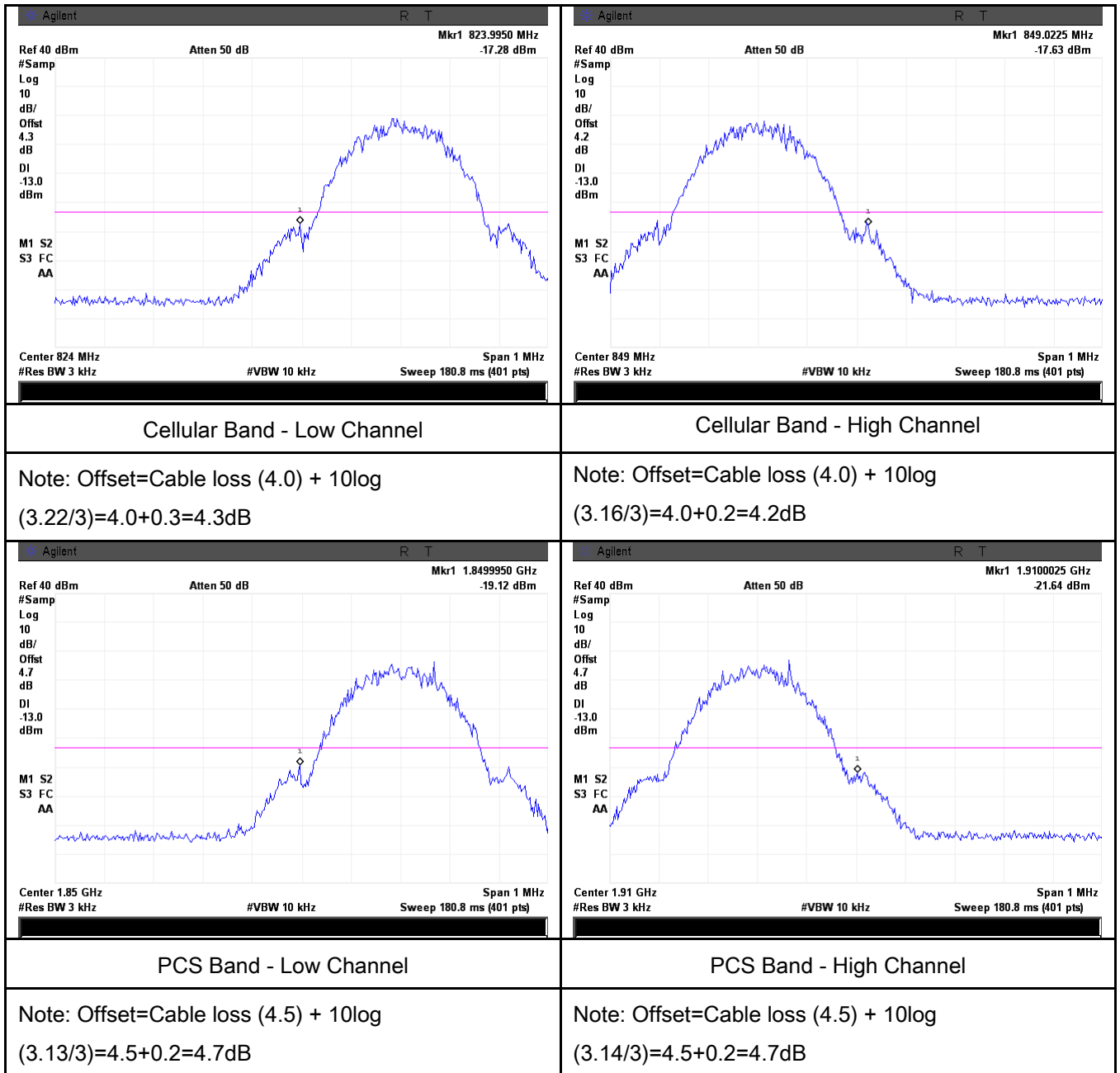
#### UMTS-FDD Band II (Part 24E)

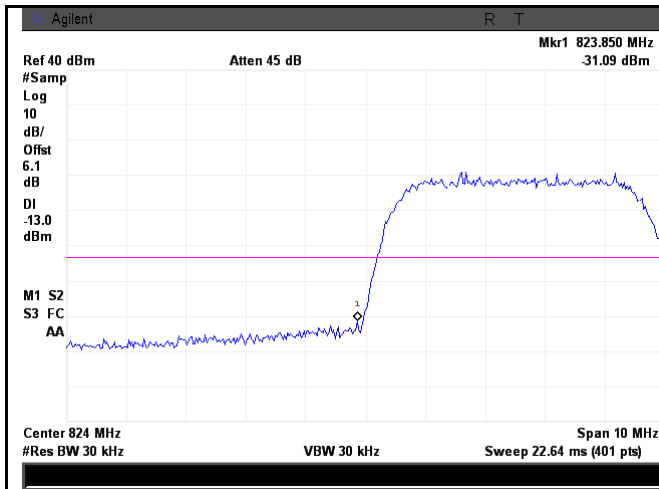
| Frequency (MHz) | Emission (dBm) | Limit (dBm) |
|-----------------|----------------|-------------|
| 1849.8500       | -27.80         | -13         |
| 1910.0500       | -30.73         | -13         |

#### UMTS-FDD Band IV (Part 27)

| Frequency (MHz) | Emission (dBm) | Limit (dBm) |
|-----------------|----------------|-------------|
| 1849.8500       | -36.38         | -13         |
| 1910.0500       | -32.45         | -13         |

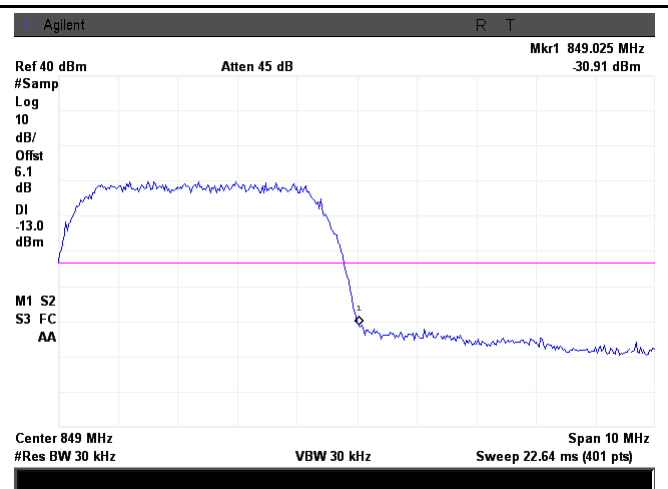
## Test Plots





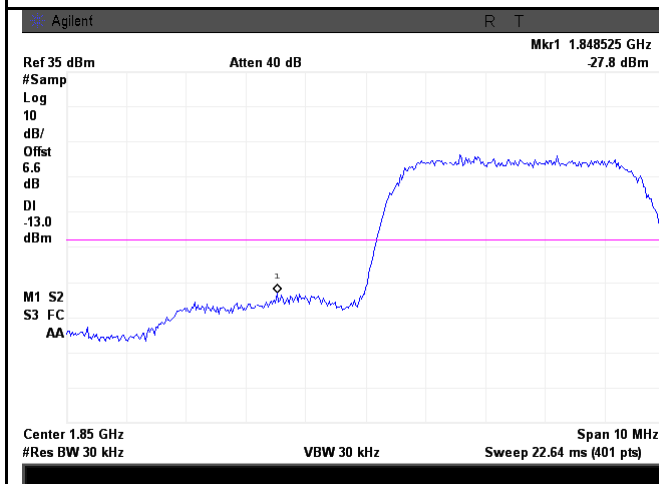
UMTS-FDD Band V - Low Channel

Note: Offset=Cable loss (4.0) + 10log  
(48.94/30)=4.0+2.1=6.1 dB



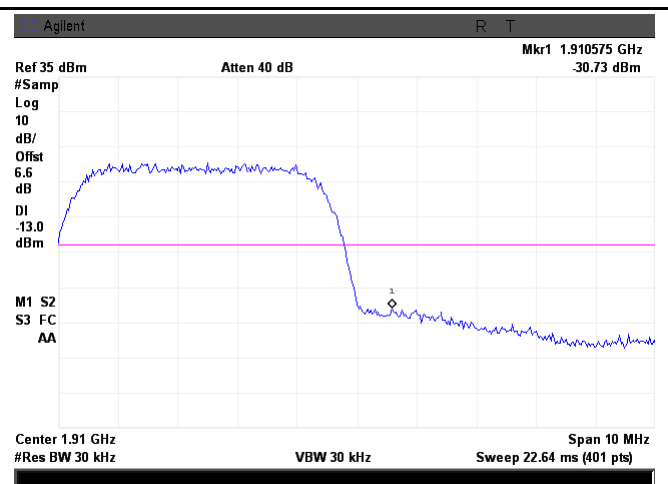
UMTS-FDD Band V - High Channel

Note: Offset=Cable loss (4.0) + 10log  
(48.97/30)=4.0+2.1=6.1 dB



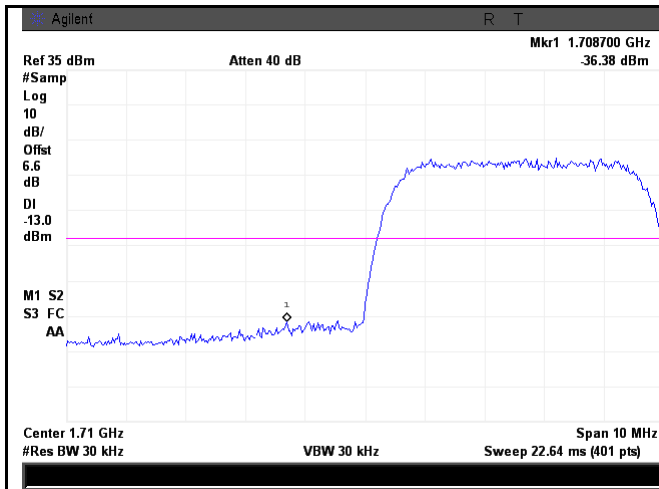
UMTS-FDD Band II - Low Channel

Note: Offset=Cable loss (4.5) + 10log  
(48.72/30)=4.5+2.1=6.6 dB



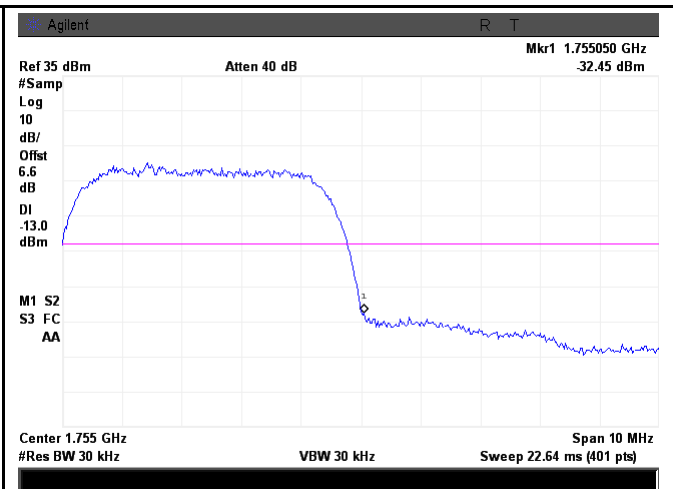
UMTS-FDD Band II - High Channel

Note: Offset=Cable loss (4.5) + 10log  
(48.66/30)=4.5+2.1=6.6 dB



UMTS-FDD Band IV - Low Channel

Note: Offset=Cable loss (4.5) + 10log  
(48.76/30)=4.5+2.1=6.6 dB



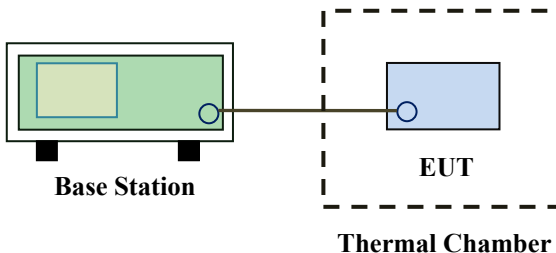
UMTS-FDD Band IV - High Channel

Note: Offset=Cable loss (4.5) + 10log  
(48.58/30)=4.5+2.1=6.6 dB

## 6.8 Frequency Stability

|                      |                   |
|----------------------|-------------------|
| Temperature          | 25°C              |
| Relative Humidity    | 54%               |
| Atmospheric Pressure | 1012mbar          |
| Test date :          | December 12, 2015 |
| Tested By :          | Winnie Zhang      |

### Requirement(s):

| Spec                                                      | Item                                                                                                                                                                                                                                                                                                                                                                                        | Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Applicable             |                   |                        |                        |          |      |      |      |           |     |     |      |           |     |     |    |            |     |     |     |            |     |     |     |             |     |     |     |              |      |     |     |                                     |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------|------------------------|------------------------|----------|------|------|------|-----------|-----|-----|------|-----------|-----|-----|----|------------|-----|-----|-----|------------|-----|-----|-----|-------------|-----|-----|-----|--------------|------|-----|-----|-------------------------------------|
| §2.1055,<br>§22.355 &<br>§24.235<br>§ 27.5(h);<br>§ 27.54 | a)                                                                                                                                                                                                                                                                                                                                                                                          | <p>According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table below:</p> <p>Frequency Tolerance for Transmitters in the Public Mobile Services</p> <table border="1"> <thead> <tr> <th>Frequency Range (MHz)</th><th>Base, fixed (ppm)</th><th>Mobile ≤ 3 watts (ppm)</th><th>Mobile ≤ 3 watts (ppm)</th></tr> </thead> <tbody> <tr> <td>25 to 50</td><td>20.0</td><td>20.0</td><td>50.0</td></tr> <tr> <td>50 to 450</td><td>5.0</td><td>5.0</td><td>50.0</td></tr> <tr> <td>45 to 512</td><td>2.5</td><td>5.0</td><td>.0</td></tr> <tr> <td>821 to 896</td><td>1.5</td><td>2.5</td><td>2.5</td></tr> <tr> <td>928 to 29.</td><td>5.0</td><td>N/A</td><td>N/A</td></tr> <tr> <td>929 to 960.</td><td>1.5</td><td>N/A</td><td>N/A</td></tr> <tr> <td>2110 to 2220</td><td>10.0</td><td>N/A</td><td>N/A</td></tr> </tbody> </table> <p>According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized frequency block.</p> | Frequency Range (MHz)  | Base, fixed (ppm) | Mobile ≤ 3 watts (ppm) | Mobile ≤ 3 watts (ppm) | 25 to 50 | 20.0 | 20.0 | 50.0 | 50 to 450 | 5.0 | 5.0 | 50.0 | 45 to 512 | 2.5 | 5.0 | .0 | 821 to 896 | 1.5 | 2.5 | 2.5 | 928 to 29. | 5.0 | N/A | N/A | 929 to 960. | 1.5 | N/A | N/A | 2110 to 2220 | 10.0 | N/A | N/A | <input checked="" type="checkbox"/> |
| Frequency Range (MHz)                                     | Base, fixed (ppm)                                                                                                                                                                                                                                                                                                                                                                           | Mobile ≤ 3 watts (ppm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Mobile ≤ 3 watts (ppm) |                   |                        |                        |          |      |      |      |           |     |     |      |           |     |     |    |            |     |     |     |            |     |     |     |             |     |     |     |              |      |     |     |                                     |
| 25 to 50                                                  | 20.0                                                                                                                                                                                                                                                                                                                                                                                        | 20.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 50.0                   |                   |                        |                        |          |      |      |      |           |     |     |      |           |     |     |    |            |     |     |     |            |     |     |     |             |     |     |     |              |      |     |     |                                     |
| 50 to 450                                                 | 5.0                                                                                                                                                                                                                                                                                                                                                                                         | 5.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 50.0                   |                   |                        |                        |          |      |      |      |           |     |     |      |           |     |     |    |            |     |     |     |            |     |     |     |             |     |     |     |              |      |     |     |                                     |
| 45 to 512                                                 | 2.5                                                                                                                                                                                                                                                                                                                                                                                         | 5.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | .0                     |                   |                        |                        |          |      |      |      |           |     |     |      |           |     |     |    |            |     |     |     |            |     |     |     |             |     |     |     |              |      |     |     |                                     |
| 821 to 896                                                | 1.5                                                                                                                                                                                                                                                                                                                                                                                         | 2.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 2.5                    |                   |                        |                        |          |      |      |      |           |     |     |      |           |     |     |    |            |     |     |     |            |     |     |     |             |     |     |     |              |      |     |     |                                     |
| 928 to 29.                                                | 5.0                                                                                                                                                                                                                                                                                                                                                                                         | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | N/A                    |                   |                        |                        |          |      |      |      |           |     |     |      |           |     |     |    |            |     |     |     |            |     |     |     |             |     |     |     |              |      |     |     |                                     |
| 929 to 960.                                               | 1.5                                                                                                                                                                                                                                                                                                                                                                                         | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | N/A                    |                   |                        |                        |          |      |      |      |           |     |     |      |           |     |     |    |            |     |     |     |            |     |     |     |             |     |     |     |              |      |     |     |                                     |
| 2110 to 2220                                              | 10.0                                                                                                                                                                                                                                                                                                                                                                                        | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | N/A                    |                   |                        |                        |          |      |      |      |           |     |     |      |           |     |     |    |            |     |     |     |            |     |     |     |             |     |     |     |              |      |     |     |                                     |
| Test setup                                                |  <p>The diagram illustrates the test setup. On the left, a green rectangular box represents the 'Base Station'. A horizontal line connects it to a blue rectangular box labeled 'EUT' (Equipment Under Test). The 'EUT' is enclosed within a dashed-line rectangular box labeled 'Thermal Chamber'.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                        |                   |                        |                        |          |      |      |      |           |     |     |      |           |     |     |    |            |     |     |     |            |     |     |     |             |     |     |     |              |      |     |     |                                     |

|             |                 |
|-------------|-----------------|
| Test Report | 15071166-FCC-R1 |
| Page        | 45 of 59        |

|           |                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Procedure | A communication link was established between EUT and base station. The frequency error was monitored and measured by base station under variation of ambient temperature and variation of primary supply voltage.<br>Limit: The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ ( $\pm 2.5\text{ppm}$ ) of the center frequency. |
| Remark    |                                                                                                                                                                                                                                                                                                                                                                    |
| Result    | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail                                                                                                                                                                                                                                                                                             |

Test Data ☒ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☒ N/A

### Cellular Band (Part 22H) result

| Middle Channel, $f_0 = 836.6$ MHz |                                   |                      |                       |             |
|-----------------------------------|-----------------------------------|----------------------|-----------------------|-------------|
| Temperature (°C)                  | Power Supplied (V <sub>DC</sub> ) | Frequency Error (Hz) | Frequency Error (ppm) | Limit (ppm) |
| -10                               | 3.7                               | 17                   | 0.0203                | 2.5         |
| 0                                 |                                   | 19                   | 0.0227                | 2.5         |
| 10                                |                                   | 20                   | 0.0239                | 2.5         |
| 20                                |                                   | 15                   | 0.0179                | 2.5         |
| 30                                |                                   | 16                   | 0.0191                | 2.5         |
| 40                                |                                   | 18                   | 0.0215                | 2.5         |
| 50                                |                                   | 14                   | 0.0167                | 2.5         |
| 55                                |                                   | 29                   | 0.0347                | 2.5         |
| 25                                | 4.2                               | 25                   | 0.0299                | 2.5         |
|                                   | 3.5                               | 27                   | 0.0323                | 2.5         |

### PCS Band (Part 24E) result

| Middle Channel, $f_0 = 1880$ MHz |                                   |                      |                       |             |
|----------------------------------|-----------------------------------|----------------------|-----------------------|-------------|
| Temperature (°C)                 | Power Supplied (V <sub>DC</sub> ) | Frequency Error (Hz) | Frequency Error (ppm) | Limit (ppm) |
| -10                              | 3.7                               | 25                   | 0.0133                | 2.5         |
| 0                                |                                   | 22                   | 0.0117                | 2.5         |
| 10                               |                                   | 24                   | 0.0128                | 2.5         |
| 20                               |                                   | 18                   | 0.0096                | 2.5         |
| 30                               |                                   | 14                   | 0.0074                | 2.5         |
| 40                               |                                   | 16                   | 0.0085                | 2.5         |
| 50                               |                                   | 17                   | 0.0090                | 2.5         |
| 55                               |                                   | 21                   | 0.0112                | 2.5         |
| 25                               | 4.2                               | 20                   | 0.0106                | 2.5         |
|                                  | 3.5                               | 24                   | 0.0128                | 2.5         |

### UMTS-FDD Band V (Part 22H)

| Middle Channel, $f_0 = 835$ MHz |                                   |                      |                       |             |
|---------------------------------|-----------------------------------|----------------------|-----------------------|-------------|
| Temperature (°C)                | Power Supplied (V <sub>DC</sub> ) | Frequency Error (Hz) | Frequency Error (ppm) | Limit (ppm) |
| -10                             | 3.7                               | 17                   | 0.0204                | 2.5         |
| 0                               |                                   | 15                   | 0.0180                | 2.5         |
| 10                              |                                   | 12                   | 0.0144                | 2.5         |
| 20                              |                                   | 14                   | 0.0168                | 2.5         |
| 30                              |                                   | 13                   | 0.0156                | 2.5         |
| 40                              |                                   | 16                   | 0.0192                | 2.5         |
| 50                              |                                   | 11                   | 0.0132                | 2.5         |
| 55                              |                                   | 18                   | 0.0216                | 2.5         |
| 25                              | 4.2                               | 19                   | 0.0228                | 2.5         |
|                                 | 3.5                               | 22                   | 0.0263                | 2.5         |

### UMTS-FDD Band II (Part 24E)

| Middle Channel, $f_0 = 1880$ MHz |                                   |                      |                       |             |
|----------------------------------|-----------------------------------|----------------------|-----------------------|-------------|
| Temperature (°C)                 | Power Supplied (V <sub>DC</sub> ) | Frequency Error (Hz) | Frequency Error (ppm) | Limit (ppm) |
| -10                              | 3.7                               | 12                   | 0.0064                | 2.5         |
| 0                                |                                   | 10                   | 0.0053                | 2.5         |
| 10                               |                                   | 13                   | 0.0069                | 2.5         |
| 20                               |                                   | 7                    | 0.0037                | 2.5         |
| 30                               |                                   | 8                    | 0.0043                | 2.5         |
| 40                               |                                   | 9                    | 0.0048                | 2.5         |
| 50                               |                                   | 7                    | 0.0037                | 2.5         |
| 55                               |                                   | 15                   | 0.0080                | 2.5         |
| 25                               | 4.2                               | 10                   | 0.0053                | 2.5         |
|                                  | 3.5                               | 12                   | 0.0064                | 2.5         |

### UMTS-FDD Band IV (Part 27)

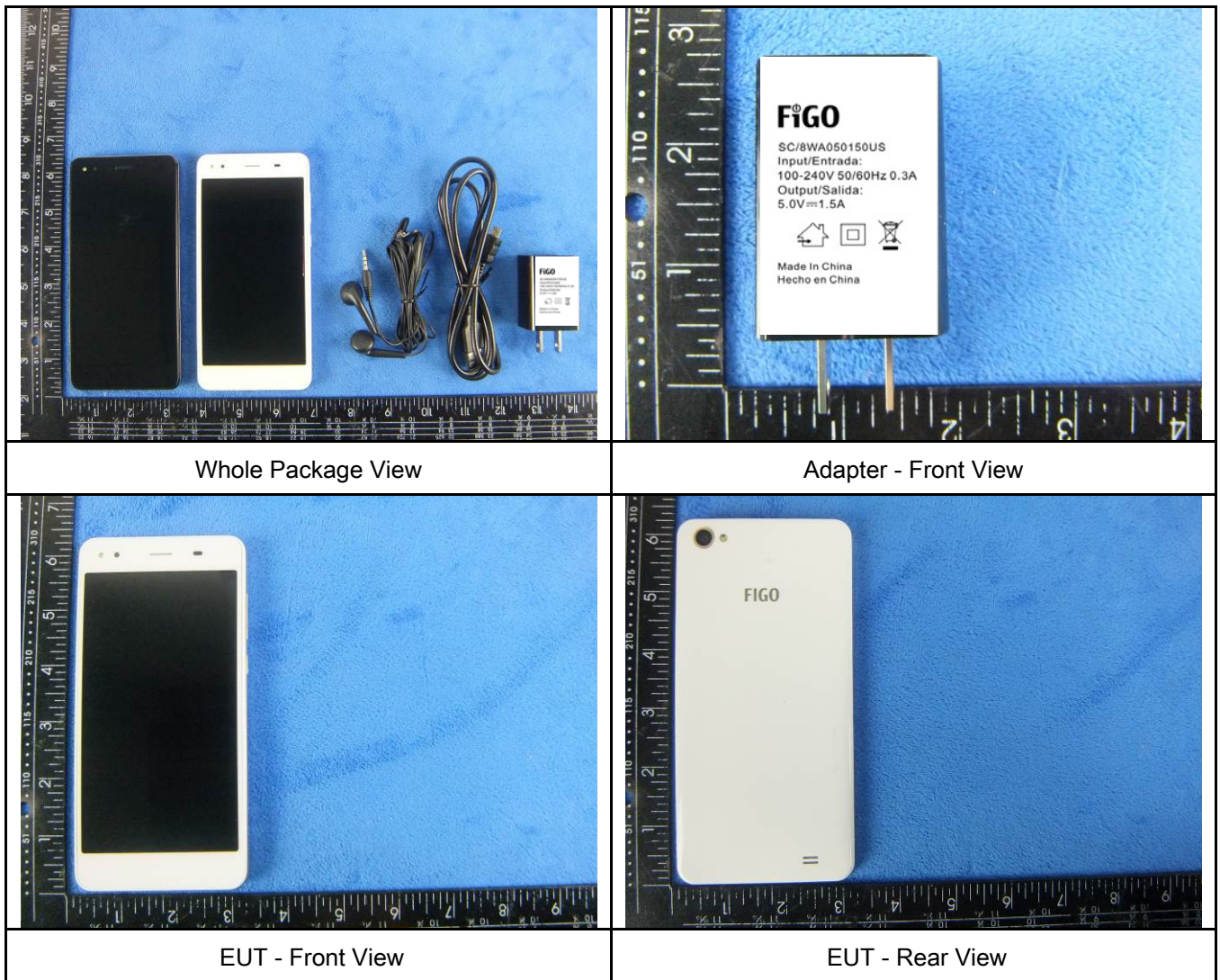
| Middle Channel, $f_0 = 1880$ MHz |                                   |                      |                       |             |
|----------------------------------|-----------------------------------|----------------------|-----------------------|-------------|
| Temperature (°C)                 | Power Supplied (V <sub>DC</sub> ) | Frequency Error (Hz) | Frequency Error (ppm) | Limit (ppm) |
| -10                              | 3.7                               | 8                    | 0.0043                | 2.5         |
| 0                                |                                   | 9                    | 0.0048                | 2.5         |
| 10                               |                                   | 6                    | 0.0032                | 2.5         |
| 20                               |                                   | 7                    | 0.0037                | 2.5         |
| 30                               |                                   | 5                    | 0.0027                | 2.5         |
| 40                               |                                   | 4                    | 0.0021                | 2.5         |
| 50                               |                                   | 10                   | 0.0053                | 2.5         |
| 55                               |                                   | 12                   | 0.0064                | 2.5         |
| 25                               | 4.2                               | 8                    | 0.0043                | 2.5         |
|                                  | 3.5                               | 12                   | 0.0064                | 2.5         |

## Annex A. TEST INSTRUMENT

| Instrument                             | Model           | Serial #   | Cal Date   | Cal Due    | In use                              |
|----------------------------------------|-----------------|------------|------------|------------|-------------------------------------|
| <b>RF Conducted Test</b>               |                 |            |            |            |                                     |
| Agilent ESA-E SERIES SPECTRUM ANALYZER | E4407B          | MY45108319 | 09/16/2015 | 09/15/2016 | <input checked="" type="checkbox"/> |
| Power Splitter                         | 1#              | 1#         | 09/01/2015 | 08/31/2016 | <input checked="" type="checkbox"/> |
| Universal Radio Communication Tester   | CMU200          | 121393     | 09/25/2015 | 09/24/2016 | <input checked="" type="checkbox"/> |
| Temperature/Humidity Chamber           | UHL-270         | 001        | 10/09/2015 | 10/08/2016 | <input checked="" type="checkbox"/> |
| DC Power Supply                        | E3640A          | MY40004013 | 09/17/2015 | 09/16/2016 | <input checked="" type="checkbox"/> |
| <b>Radiated Emissions</b>              |                 |            |            |            |                                     |
| EMI test receiver                      | ESL6            | 100262     | 09/17/2015 | 09/16/2016 | <input checked="" type="checkbox"/> |
| OPT 010 AMPLIFIER (0.1-1300MHz)        | 8447E           | 2727A02430 | 09/01/2015 | 08/31/2016 | <input checked="" type="checkbox"/> |
| Microwave Preamplifier (1 ~ 26.5GHz)   | 8449B           | 3008A02402 | 03/25/2015 | 03/24/2016 | <input checked="" type="checkbox"/> |
| Bilog Antenna (30MHz~6GHz)             | JB6             | A110712    | 09/21/2015 | 09/20/2016 | <input checked="" type="checkbox"/> |
| Bilog Antenna (30MHz~2GHz)             | JB1             | A112017    | 09/21/2015 | 09/20/2016 | <input checked="" type="checkbox"/> |
| Double Ridge Horn Antenna (1 ~18GHz)   | AH-118          | 71259      | 09/24/2015 | 09/23/2016 | <input checked="" type="checkbox"/> |
| Double Ridge Horn Antenna (1 ~18GHz)   | AH-118          | 71283      | 09/24/2015 | 09/23/2016 | <input checked="" type="checkbox"/> |
| SYNTHESIZED SIGNAL GENERATOR           | 8665B           | 3744A01293 | 09/17/2015 | 09/16/2016 | <input checked="" type="checkbox"/> |
| Tunable Notch Filter                   | 3NF-800/1000-S  | AA4        | 09/01/2015 | 08/31/2016 | <input checked="" type="checkbox"/> |
| Tunable Notch Filter                   | 3NF-1000/2000-S | AM 4       | 09/01/2015 | 08/31/2016 | <input checked="" type="checkbox"/> |

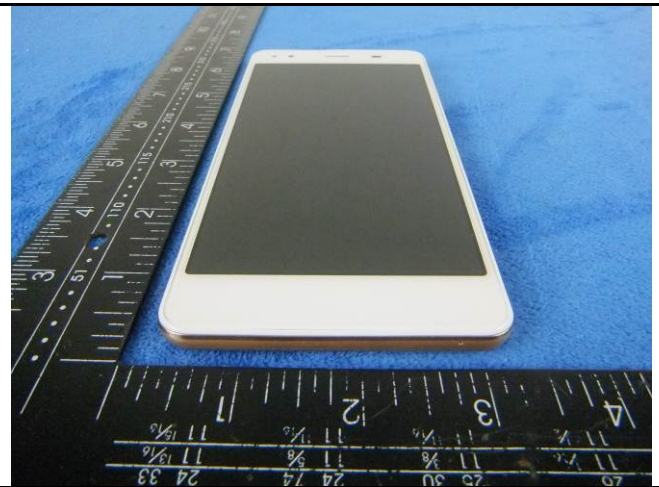
## Annex B. EUT And Test Setup Photographs

### Annex B.i. Photograph: EUT External Photo





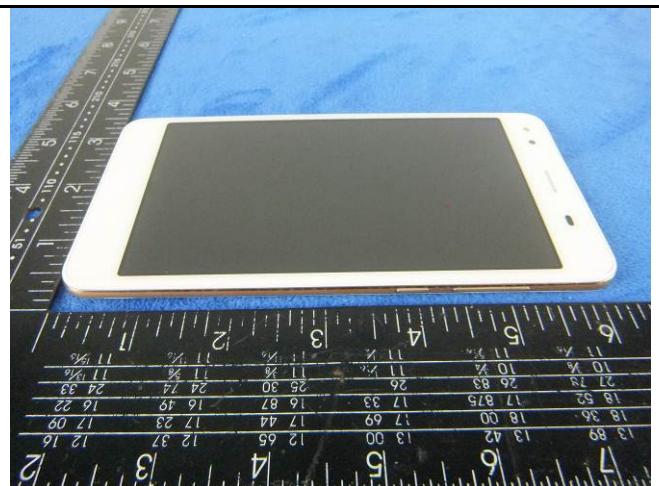
EUT - Top View



EUT - Bottom View



EUT - Left View



EUT - Right View

**Annex B.ii. Photograph: EUT Internal Photo**



Cover Off - Top View 1



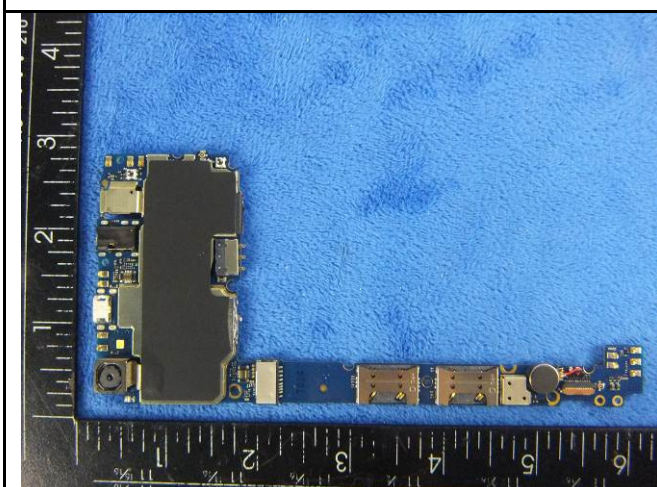
Cover Off - Top View 2



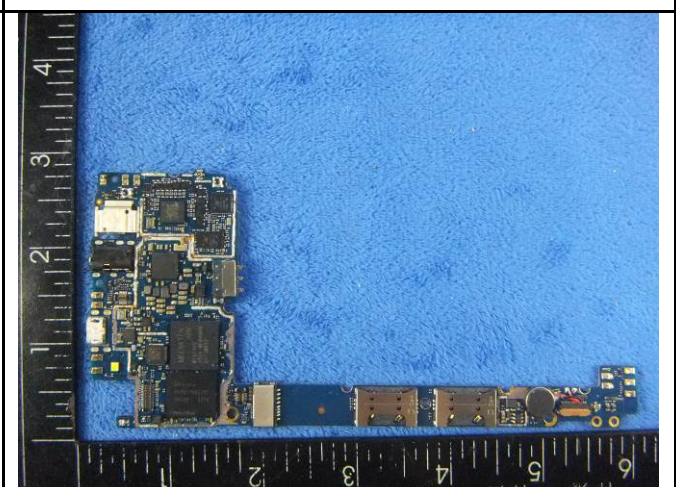
Battery - Front View



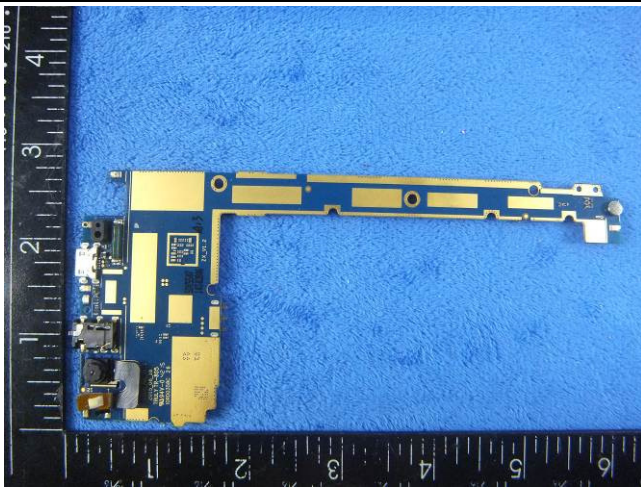
Battery - Rear View



Mainboard with Shielding - Front View



Mainboard without Shielding - Front View



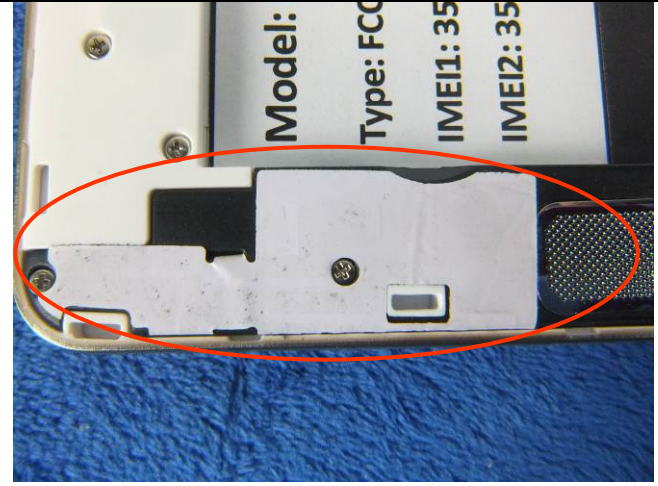
Mainboard – Rear View



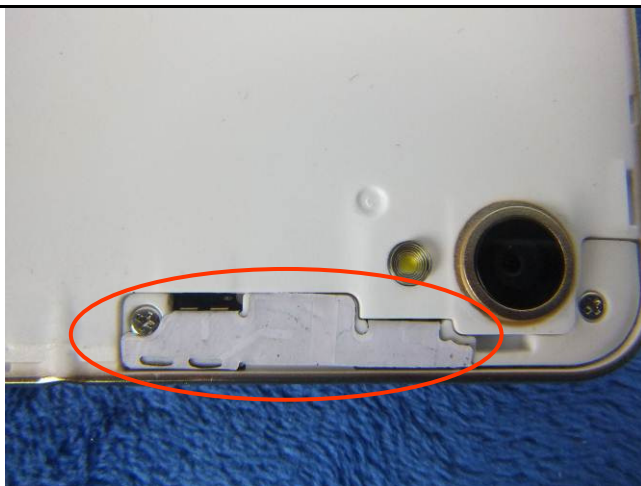
LCD – Front View



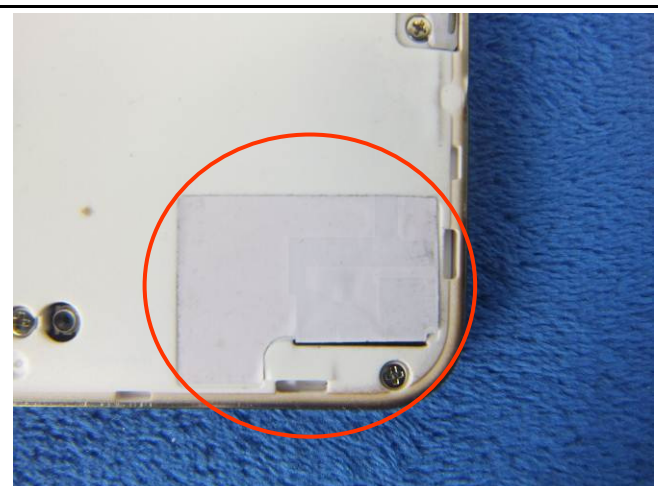
LCD – Rear View



GSM/PCS/UMTS-FDD/LTE Antenna View

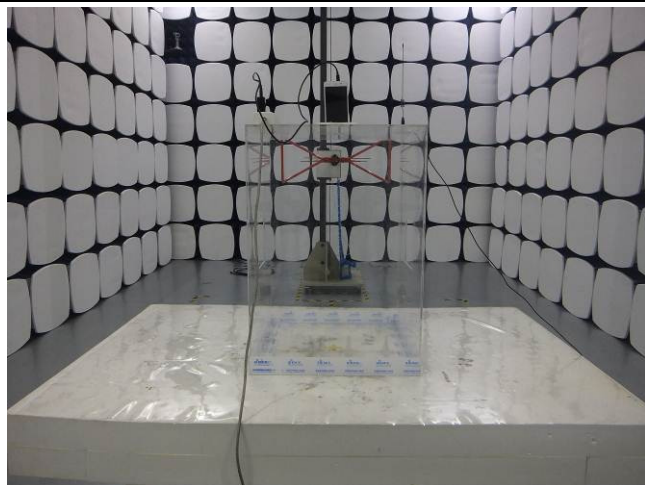


WIFI/BT/BLE - Antenna View

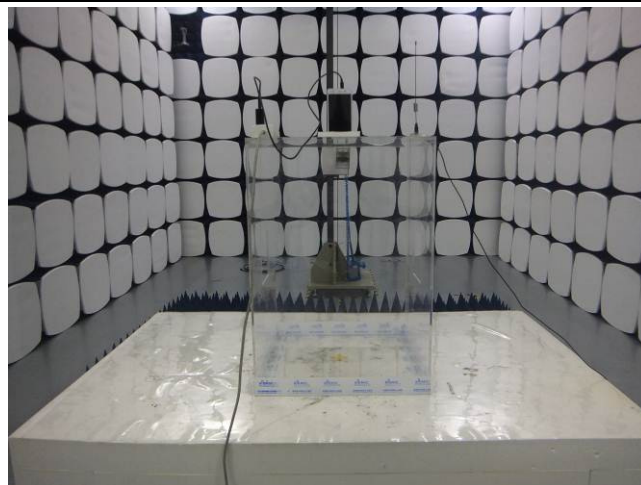


GPS - Antenna View

**Annex B.iii. Photograph: Test Setup Photo**



Radiated Spurious Emissions Test Setup Below 1GHz

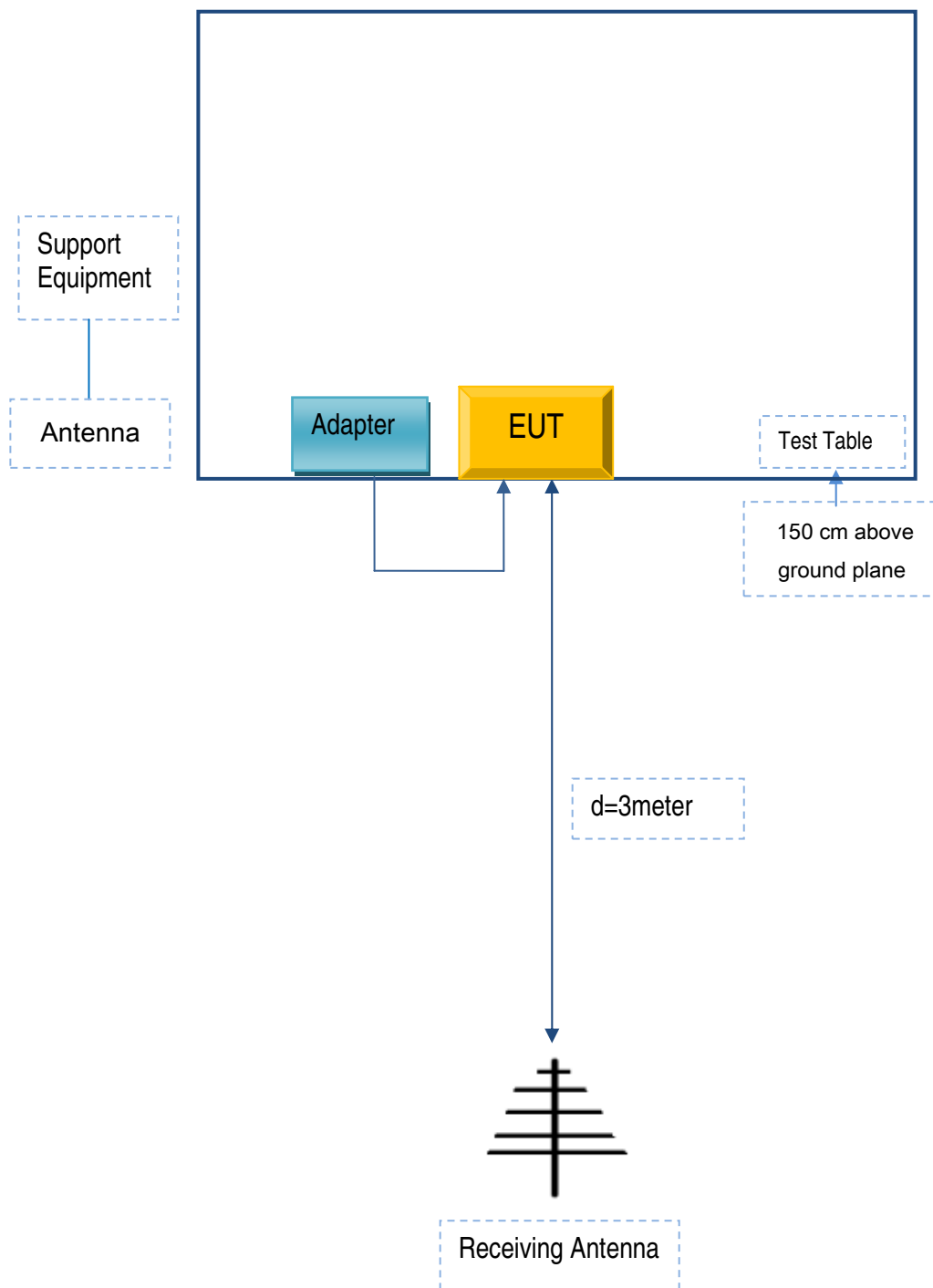


Radiated Spurious Emissions Test Setup Above  
1GHz

## Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

### Annex C.ii. TEST SET UP BLOCK

#### Block Configuration Diagram for Radiated Emissions



## **Annex C. ii. SUPPORTING EQUIPMENT DESCRIPTION**

The following is a description of supporting equipment and details of cables used with the EUT.

### **Supporting Equipment:**

| Manufacturer                   | Equipment Description | Model          | Serial No |
|--------------------------------|-----------------------|----------------|-----------|
| Telecell Mobile (H.K) Co. Ltd. | Adapter               | SC/8WA050150US | SR0037241 |

### **Supporting Cable:**

| Cable type | Shield Type  | Ferrite Core | Length | Serial No |
|------------|--------------|--------------|--------|-----------|
| USB Cable  | Un-shielding | No           | 0.8m   | SR0037241 |

|             |                 |
|-------------|-----------------|
| Test Report | 15071166-FCC-R1 |
| Page        | 57 of 59        |

## Annex C.ii. EUT OPERATING CONKITIONS

N/A

|             |                 |
|-------------|-----------------|
| Test Report | 15071166-FCC-R1 |
| Page        | 58 of 59        |

## Annex D. User Manual / Block Diagram / Schematics / Partlist

Please see attachment

|             |                 |
|-------------|-----------------|
| Test Report | 15071166-FCC-R1 |
| Page        | 59 of 59        |

## Annex E. DECLARATION OF SIMILARITY

N/A