



# FCC Test Report

## FCC ID: 2AD83POD-3

|                 |                                                                            |
|-----------------|----------------------------------------------------------------------------|
| Product Name:   | Pod 3 GPS Tracker and Activity Monitor                                     |
| Trademark:      | N/A                                                                        |
| Model Name:     | POD-003                                                                    |
| Prepared For:   | Pod Trackers Pty Ltd.                                                      |
| Address:        | Lvl 9, 61 Lavender St., Milsons Point NSW 2061, Australia                  |
| Prepared By:    | Shenzhen BCTC Technology Co., Ltd.                                         |
| Address:        | NO.101, Yousong Road, Longhua New District, Shenzhen, Guangdong, P.R.China |
| Test Date:      | Feb. 15 - Mar. 03, 2017                                                    |
| Date of Report: | Mar. 03, 2017                                                              |
| Report No.:     | BCTC-FY170200108-2E                                                        |



## VERIFICATION OF COMPLIANCE

**Applicant's name** ..... : Pod Trackers Pty Ltd.

**Address** ..... : Lvl 9, 61 Lavender St., Milsons Point NSW 2061, Australia

**Manufacturer's Name** ..... : Kaifa Technology Co., Ltd.

**Address** ..... : 7006 Caitain Rd., Futian Distric, Shenzhen, China

### Product description

**Product name** ..... : Pod 3 GPS Tracker and Activity Monitor

**Trademark:** N/A

**Model Name:** POD-003

**Test procedure** ..... :  
FCC CFR Title 47 Part 2: 2015  
FCC CFR Title 47 Part22 Subpart H: 2015  
FCC CFR Title 47 Part24 Subpart E: 2015  
ANSI/ TIA/ EIA-603-D-2010  
FCC KDB 971168 D01 Power Meas. License Digital Systems  
v02v02

This device described above has been tested by BCTC, and the test results show that the equipment under test (EUT) is in compliance with the requirements. And it is applicable only to the tested sample identified in the report.

This report shall not be reproduced except in full, without the written approval of BCTC, this document may be altered or revised by BCTC, personal only, and shall be noted in the revision of the document.

**Test Result** ..... : **Pass**

**Testing  
Engineer** :

Eric Yang

**Reviewer  
Supervisor** :

Jade Yang

**Approved &  
Authorized  
Manager** :

Carson Zhang



## TABLE OF CONTENTS

|                                                     | Page      |
|-----------------------------------------------------|-----------|
| Test Report Declaration                             |           |
| <b>1. TEST SUMMARY .....</b>                        | <b>4</b>  |
| <b>2. GENERAL PRODUCT INFORMATION.....</b>          | <b>5</b>  |
| 2.1. Description of Device (EUT) .....              | 5         |
| 2.2. Product Function .....                         | 6         |
| 2.3. Independent Operation Modes.....               | 6         |
| <b>3. TEST SITES.....</b>                           | <b>7</b>  |
| 3.1. Test Facilities .....                          | 7         |
| 3.2. List of Test and Measurement Instruments ..... | 8         |
| <b>4. TEST SET-UP AND OPERATION MODES.....</b>      | <b>10</b> |
| 4.1. Principle of Configuration Selection.....      | 10        |
| 4.2. Block Diagram of Test Set-up .....             | 10        |
| 4.3. Test Environment: .....                        | 10        |
| <b>5. EMISSION TEST RESULTS.....</b>                | <b>11</b> |
| 5.1. Conducted RF Output Power .....                | 11        |
| 5.2. -26dB and 99% Occupied Bandwidth .....         | 13        |
| 5.3. Peak to Average Ratio .....                    | 19        |
| 5.4. Frequency Stability.....                       | 21        |
| 5.5. Conducted Spurious Emissions.....              | 25        |
| 5.6. Conducted Out of Band Emissions.....           | 34        |
| 5.7. Transmitter Radiated Power (EIRP/ERP) .....    | 38        |
| 5.8. Radiated Out of Band Emissions.....            | 42        |
| <b>6. PHOTOGRAPHS OF TEST SET-UP .....</b>          | <b>56</b> |
| <b>7. PHOTOGRAPHS OF THE EUT .....</b>              | <b>57</b> |



## 1.TEST SUMMARY

| Test Items                            | Test Requirement                   | Result                                  |
|---------------------------------------|------------------------------------|-----------------------------------------|
| RF Exposure (SAR)                     | Part 1.1307<br>Part 2.1093         | Passed*<br>(Please refer to SAR Report) |
| Conducted RF Output Power             | 2.1046                             | PASS                                    |
| Peak to Average Ratio                 | 2.1055,22.355 24.235,27.54         | PASS                                    |
| 99% & -26 dB Occupied Bandwidth       | 2.1049,<br>22.917<br>24.238,       | PASS                                    |
| Frequency Stability                   | 2.1055,<br>22.355<br>24.235,       | PASS                                    |
| Conducted Out of Band Emissions       | 2.1051,2.1057<br>22.917,<br>24.238 | PASS                                    |
| Band Edge                             | 2.1051,2.1057<br>22.917,<br>24.238 | PASS                                    |
| Transmitter Radiated Power (EIPR/ERP) | 22.913,<br>24.232                  | PASS                                    |
| Radiated Out of Band Emissions        | 2.1053,2.1057<br>22.917,<br>24.238 | PASS                                    |



## 2.GENERAL PRODUCT INFORMATION

### 2.1. Description of Device (EUT)

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name:          | Pod 3 GPS Tracker and Activity Monitor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Trademark              | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Model No.:             | POD-003                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Model Difference       | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Operation Frequency:   | Bluetooth:2402~2480MHz<br>WIFI:2412MHz~2462MHz (802.11b/802.11g/802.11n(H20))<br>2422MHz~2452MHz (802.11n(H40))<br>GSM 850MHz:<br>Tx: 824.20 - 848.80MHz (at intervals of 200kHz);<br>Rx: 869.20 - 893.80MHz (at intervals of 200kHz)<br>GSM 1900MHz:<br>Tx: 1850.20 - 1909.80MHz (at intervals of 200kHz);<br>Rx: 1930.20 - 1989.80MHz (at intervals of 200kHz)<br>WCDMA Band II:<br>TX: 1852.4MHz - 1907.60MHz,<br>RX: 1932.4MHz - 1987.60MHz<br>WCDMA Band V:<br>Tx: 826.40 - 846.60MHz (at intervals of 200kHz);<br>Rx: 871.40 – 891.60MHz (at intervals of 200kHz) |
| Channel numbers:       | Bluetooth:40 Channels<br>WIFI:11 Channel for 802.11b/g/n(HT20),<br>9 Channel for 802.11n(HT40)                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Channel separation:    | Bluetooth:1M    WIFI:5M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Modulation technology: | Bluetooth: GFSK<br>WIFI:DBPSK/ DQPSK/CCK/BPSK/ QPSK/ 16QAM/ 64QAM<br>GSM/GPRS/EGPRS Mode with GMSK Modulation<br>WCDMA Mode with BPSK Modulation<br>HSDPA Mode with QPSK, 16QAM Modulation<br>HSUPA Mode with QPSK, 16QAM Modulation                                                                                                                                                                                                                                                                                                                                    |
| Antenna Type:          | Internal Antenna                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Antenna gain:          | 1.0dBi (BT &WIFI)<br>1.8dBi (GSM&WCDMA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Power supply:          | DC 3.7V from battery                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| GPRS Class:            | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| EGPRS Class:           | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |



## 2.2. Product Function

Refer to Technical Construction Form and User Manual.

## 2.3. Independent Operation Modes

During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission.

| Test modes    |                     |                     |
|---------------|---------------------|---------------------|
| Band          | Radiated            | Conducted           |
| GSM 850       | n GSM link          | n GSM link          |
|               | n EGPRS 8 link      | n EGPRS 8 link      |
| PCS 1900      | n GSM link          | n GSM link          |
|               | n EGPRS 8 link      | n EGPRS 8 link      |
| WCDMA Band II | n RMC 12.2Kbps link | n RMC 12.2Kbps link |
| WCDMA Band V  | n RMC 12.2Kbps link | n RMC 12.2Kbps link |

Note: The maximum power levels are GSM mode for GMSK link, EGPRS multi-slot class 8 mode for 8PSK link, RMC12.2Kbps mode for WCDMA Band II and V. only these modes were used for all tests.

The conducted average power tables are as follows:

| Conducted Average Power (dBm) |        |        |        |         |         |         |
|-------------------------------|--------|--------|--------|---------|---------|---------|
| Band                          | GSM850 |        |        | PCS1900 |         |         |
| Channel                       | 128    | 190    | 251    | 512     | 661     | 810     |
| Frequency (MHz)               | 824.20 | 836.60 | 848.80 | 1850.20 | 1880.00 | 1909.80 |
|                               | 32.25  | 32.28  | 32.50  | 29.78   | 29.62   | 29.69   |



### 3. TEST SITES

#### 3.1. Test Facilities

##### Site Description

Name of Firm : Shenzhen BCTC Technology Co., Ltd.

Site Location : NO.101, Yousong Road, Longhua New District,  
Shenzhen, Guangdong, P.R.China

Lab Qualifications : Certificated by Industry Canada  
Registration No.: 12655A  
Date of registration: January 19, 2015

Certificated by FCC, USA  
Registration No.: 187086  
Date of registration: November 28, 2014

Certificated by CNAS China  
Registration No.: CNAS L6046  
Date of registration: February 3, 2013

##### 3.1.1. Measurement Uncertainty

The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately **95** %.

| No. | Item                          | Uncertainty               |
|-----|-------------------------------|---------------------------|
| 1   | Conducted Emission Test       | $\pm 1.38\text{dB}$       |
| 2   | RF power, conducted           | $\pm 0.16\text{dB}$       |
| 3   | Spurious emissions, conducted | $\pm 0.21\text{dB}$       |
| 4   | All emissions, radiated (<1G) | $\pm 4.68\text{dB}$       |
| 5   | All emissions, radiated (>1G) | $\pm 4.89\text{dB}$       |
| 6   | Temperature                   | $\pm 0.5^{\circ}\text{C}$ |
| 7   | Humidity                      | $\pm 2\%$                 |



### 3.2. List of Test and Measurement Instruments

#### 3.2.1. For conducted emission at the mains terminals test

| Item | Equipment     | Manufacturer | Type No. | Serial No.                 | Last calibration | Calibrated until |
|------|---------------|--------------|----------|----------------------------|------------------|------------------|
| 1    | Test Receiver | R&S          | ESCI     | 1166.5950K03<br>-101165-ha | 2016.08.27       | 2017.08.26       |
| 2    | LISN          | SCHWARZBECK  | NSLK8127 | 8127739                    | 2016.08.27       | 2017.08.26       |
| 3    | LISN          | R&S          | NSLK8126 | 8126487                    | 2016.08.27       | 2017.08.26       |
| 4    | RF cables     | R&S          | R204     | R20X                       | 2016.08.27       | 2017.08.26       |
| 5    | Attenuator    | R&S          | ESH3-Z2  | 143206                     | 2016.08.27       | 2017.08.26       |

#### 3.2.2. For radiated test

| Item | Equipment                           | Manufacturer    | Type No.     | Serial No.       | Last calibration | Calibrated until |
|------|-------------------------------------|-----------------|--------------|------------------|------------------|------------------|
| 1    | Spectrum Analyzer<br>(9kHz-26.5GHz) | Agilent         | E4407B       | MY45108040       | 2016.08.27       | 2017.08.26       |
| 2    | Test Receiver<br>(9kHz-7GHz)        | R&S             | ESPI         | 101318           | 2016.08.27       | 2017.08.26       |
| 3    | Bilog Antenna<br>(30MHz-1GHz)       | R&S             | VULB<br>9168 | VULB91<br>68-438 | 2016.08.27       | 2017.08.26       |
| 4    | Horn Antenna<br>(1GHz-18GHz)        | SCHWARZBECK     | BBHA9120D    | 1201             | 2016.09.03       | 2017.09.03       |
| 5    | Horn Antenna<br>(14GHz-40GHz)       | SCHWARZBECK     | BBHA 9170    | 9170-181         | 2016.09.03       | 2017.09.03       |
| 6    | Amplifier<br>(9KHz-6GHz)            | SCHWARZBECK     | BBV9744      | 9744-0037        | 2016.08.27       | 2017.08.26       |
| 7    | Amplifier<br>(1GHz-18GHz)           | SCHWARZBECK     | BBV9718      | 9718-309         | 2016.08.27       | 2017.08.26       |
| 8    | Amplifier<br>(18GHz-40GHz)          | SCHWARZBECK     | BBV 9721     | 9721-205         | 2016.08.27       | 2017.08.26       |
| 9    | Loop Antenna<br>(9KHz-30MHz)        | SCHWARZBECK     | FMZB1519B    | 00014            | 2016.09.03       | 2017.09.03       |
| 10   | RF cables1<br>(9kHz-1GHz)           | R&S             | R203         | R20X             | 2016.08.27       | 2017.08.26       |
| 11   | RF cables2<br>(1GHz-40GHz)          | R&S             | R204         | R21X             | 2016.08.27       | 2017.08.26       |
| 12   | Antenna<br>connector                | Florida RF Labs | N/A          | RF 01#           | 2016.08.27       | 2017.08.26       |
| 13   | Power Metter                        | ANRITSU         | ML2487A      | 6K00001568       | 2016.08.27       | 2017.08.26       |
| 14   | Power Sensor<br>(AV)                | ANRITSU         | ML2491A      | 030989           | 2016.08.27       | 2017.08.26       |
| 15   | Signal Analyzer<br>9kHz-26.5GHz     | Agilent         | N9010A       | MY48030494       | 2016.08.27       | 2017.08.26       |
| 16   | Test Receiver<br>20kHz-40GHz        | R&S             | ESU 40       | 100376           | 2016.08.27       | 2017.08.26       |
| 17   | D.C. Power<br>Supply                | LongWei         | PS-305D      | 010964729        | 2016.08.27       | 2017.08.26       |
| 18   | Bilog Antenna                       | TESEQ           | CBL6111D     | 31217            | 2016.08.27       | 2017.08.26       |





|                   |                                       |         |                    |             |            |            |
|-------------------|---------------------------------------|---------|--------------------|-------------|------------|------------|
| 19                | System Simulator                      | Agilent | E5515C             | GB43130252  | 2016.08.27 | 2017.08.26 |
| 20                | High Pass filter                      | KANGMAI | WHKX1.0/1.5 G-10SS | 40          | 2016.08.27 | 2017.08.26 |
| 21                | Filter                                | COM-MW  | ZBSF-C836.5-25-X   | BCTC042     | 2016.08.27 | 2017.08.26 |
| 22                | Filter                                | COM-MW  | ZBSF-C1747.5-75-X2 | BCTC045     | 2016.08.27 | 2017.08.26 |
| 23                | Filter                                | COM-MW  | ZBSF-C1880-60-X2   | BCTC047     | 2016.08.27 | 2017.08.26 |
| 24                | Splitter                              | Agilent | 11435B             | 1125162     | 2016.08.27 | 2017.08.26 |
| RF CONDUCTED TEST |                                       |         |                    |             |            |            |
| 1                 | System Simulator                      | Agilent | E5515C             | GB43130252  | 2016.08.27 | 2017.08.26 |
| 2                 | Spectrum Analyzer                     | Agilent | E4407B             | MY45108040  | 2016.08.27 | 2017.08.26 |
| 3                 | DC Power Supply                       | LongWei | PS-305D            | 010965682   | 2016.08.27 | 2017.08.26 |
| 4                 | Constant temperature and humidity box | GF      | GTH-800-40-2 P     | MAA9906-012 | 2016.08.27 | 2017.08.26 |
| 5                 | Universal radio communication tester  | R&S     | CMU200             | 115295      | 2016.08.27 | 2017.08.26 |



## 4. TEST SET-UP

### 4.1. Principle of Configuration Selection

**Emission:** The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

### 4.2. Block Diagram of Test Set-up

System Diagram of Connections between EUT and Simulators



(EUT: Pod 3 GPS Tracker and Activity Monitor)

### 4.3. Test Environment:

Ambient conditions in the test laboratory:

| Items            | Actual |
|------------------|--------|
| Temperature (°C) | 21~23  |
| Humidity (%RH)   | 50~65  |



## 5. EMISSION TEST RESULTS

### 5.1. Conducted RF Output Power

#### 5.1.1. Limit

According to FCC section 2.1046(a) , FCC part 22.913(a) and FCC part 24.232(b) ,for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

#### 5.1.2. Test Setup

The EUT, which is powered by the adapter, is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power.

#### 5.1.3. Test Result

Here the lowest, middle and highest channels are selected to perform testing to verify the conducted RF output power of the EUT.

Measurement data



The conducted power tables are as follows:

| Average Conducted Power (dBm) |        |        |        |         |         |         |
|-------------------------------|--------|--------|--------|---------|---------|---------|
| Band                          | GSM850 |        |        | PCS1900 |         |         |
| Channel                       | 128    | 190    | 251    | 512     | 661     | 810     |
| Frequency (MHz)               | 824.20 | 836.60 | 848.80 | 1850.20 | 1880.00 | 1909.80 |
| GSM (GMSK, 1 TX slot)         | 32.25  | 32.28  | 32.50  | 29.78   | 29.62   | 29.69   |
| GPRS (GMSK, 1 TX slot)        | 32.26  | 32.27  | 32.47  | 28.76   | 28.21   | 28.67   |
| GPRS (GMSK, 2 TX slot)        | 31.41  | 31.52  | 31.72  | 28.00   | 27.45   | 27.92   |
| GPRS (GMSK, 3 TX slot)        | 29.35  | 29.54  | 29.74  | 26.34   | 26.48   | 26.54   |
| GPRS (GMSK, 4 TX slot)        | 27.46  | 27.43  | 27.63  | 24.35   | 24.37   | 24.83   |
| EGPRS(GMSK, 1 TX slot)        | 32.22  | 32.23  | 32.19  | 29.30   | 29.17   | 29.33   |
| EGPRS(GMSK, 2 TX slot)        | 31.49  | 31.50  | 31.70  | 27.38   | 27.43   | 27.40   |
| EGPRS(GMSK, 3 TX slot)        | 29.50  | 29.49  | 29.69  | 26.39   | 26.43   | 26.49   |
| EGPRS(GMSK, 4 TX slot)        | 27.47  | 27.44  | 27.64  | 24.46   | 24.38   | 24.44   |
| EGPRS (8PSK, 1 TX slot)       | 26.39  | 26.86  | 26.44  | 24.64   | 24.63   | 24.99   |
| EGPRS (8PSK, 2 TX slot)       | 25.44  | 25.58  | 25.50  | 23.47   | 23.41   | 23.73   |
| EGPRS (8PSK, 3 TX slot)       | 23.52  | 23.44  | 23.62  | 23.43   | 22.37   | 22.34   |
| EGPRS (8PSK, 4 TX slot)       | 22.49  | 22.36  | 22.58  | 21.33   | 21.11   | 21.43   |

| Average Conducted Power |                |        |        |               |       |       |
|-------------------------|----------------|--------|--------|---------------|-------|-------|
| Band                    | WCDMA Band II. |        |        | WCDMA Band V. |       |       |
| Frequency               | 1852.4         | 1880.0 | 1907.6 | 826.4         | 836.6 | 846.6 |
| RMC 12.2Kbps            | 24.14          | 24.66  | 24.27  | 22.80         | 22.69 | 22.67 |
| RMC 64kbps              | 24.10          | 24.60  | 24.23  | 22.74         | 22.57 | 22.59 |
| RMC 144kbps             | 24.11          | 24.62  | 24.20  | 22.68         | 22.46 | 22.51 |
| RMC 384kbps             | 24.08          | 24.58  | 24.18  | 22.62         | 22.35 | 22.42 |
| HSDPA Subtest-1         | 24.12          | 24.65  | 24.25  | 22.43         | 22.35 | 22.40 |
| HSDPA Subtest-2         | 24.11          | 24.63  | 24.24  | 22.37         | 22.34 | 22.40 |
| HSDPA Subtest-3         | 24.09          | 24.62  | 24.22  | 22.32         | 22.30 | 22.32 |
| HSDPA Subtest-4         | 24.08          | 24.60  | 24.20  | 22.29         | 22.21 | 22.34 |
| HSUPA Subtest-1         | 24.13          | 24.64  | 24.26  | 22.27         | 22.30 | 22.28 |
| HSUPA Subtest-2         | 24.10          | 24.63  | 24.24  | 22.24         | 22.19 | 22.30 |
| HSUPA Subtest-3         | 24.08          | 24.62  | 24.23  | 22.37         | 22.29 | 22.34 |
| HSUPA Subtest-4         | 24.14          | 24.66  | 24.27  | 22.19         | 22.22 | 22.30 |

Note: Measurement Uncertainty:  $\pm 2.6$  dB.



## 5.2. -26dB and 99% Occupied Bandwidth

### 5.2.1. Limit

According to FCC section 2.1049 and FCC part22.913(a) and FCC part24.232(b), the occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Occupied bandwidth is also known as the 99% emission bandwidth,

### 5.2.2. Test Setup

The EUT, which is powered by the adapter, is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power.

### 5.2.3. Test Result

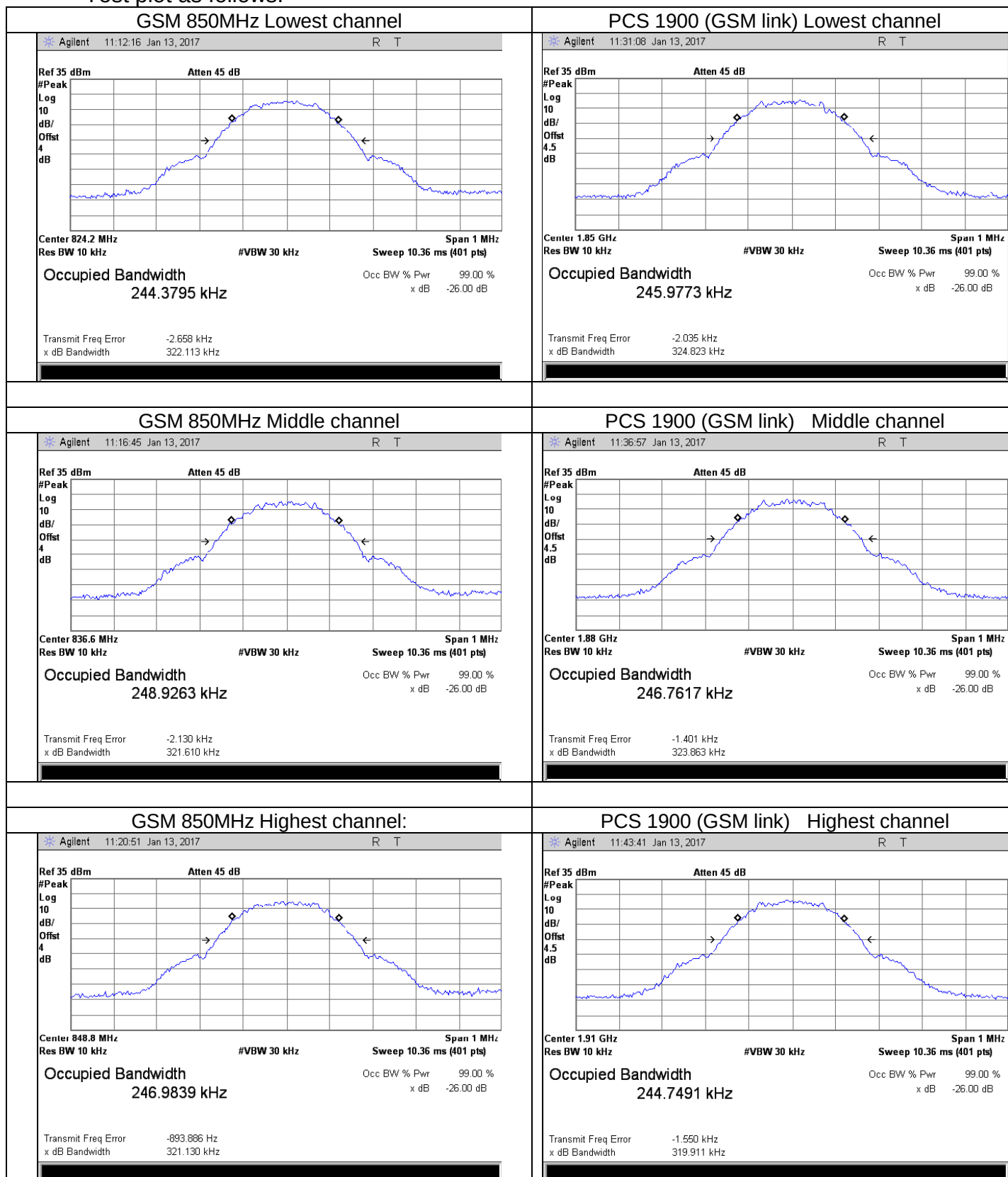
Measurement Data

| EUT Mode                             | Channel | Frequency (MHz) | 99% Occupy bandwidth (KHz) | -26dB bandwidth (KHz) |
|--------------------------------------|---------|-----------------|----------------------------|-----------------------|
| GSM 850<br>(GSM link)                | 128     | 824.20          | 244.380                    | 322.113               |
|                                      | 190     | 836.60          | <b>248.926</b>             | <b>321.610</b>        |
|                                      | 251     | 848.80          | 246.984                    | 321.130               |
| GSM 850<br>(GPRS 8 link)             | 128     | 824.20          | 243.435                    | 320.829               |
|                                      | 190     | 836.60          | 244.238                    | 318.408               |
|                                      | 251     | 848.80          | <b>245.565</b>             | <b>318.404</b>        |
| GSM 850<br>(EGPRS 8 link)            | 128     | 824.20          | 248.632                    | <b>324.102</b>        |
|                                      | 190     | 836.60          | 241.858                    | 320.675               |
|                                      | 251     | 848.80          | <b>249.164</b>             | 318.182               |
| PCS 1900<br>(GSM link)               | 512     | 1850.20         | 245.977                    | <b>324.823</b>        |
|                                      | 661     | 1880.00         | <b>246.762</b>             | 323.863               |
|                                      | 810     | 1909.80         | 244.749                    | 319.911               |
| PCS 1900<br>(GPRS 8 link)            | 512     | 1850.20         | <b>246.639</b>             | <b>324.536</b>        |
|                                      | 661     | 1880.00         | 245.427                    | 319.614               |
|                                      | 810     | 1909.80         | 245.843                    | 317.283               |
| PCS 1900<br>(EGPRS 8 link)           | 512     | 1850.20         | 246.626                    | 322.447               |
|                                      | 661     | 1880.00         | <b>247.350</b>             | <b>322.804</b>        |
|                                      | 810     | 1909.80         | 247.192                    | 320.172               |
| WCDMA Band V<br>(RMC 12.2Kbps link)  | 4132    | 826.4           | 4163.7                     | 4695.0                |
|                                      | 4175    | 836.0           | 4171.5                     | 4696.0                |
|                                      | 4233    | 846.6           | <b>4172.5</b>              | <b>4697.0</b>         |
| WCDMA Band II<br>(RMC 12.2Kbps link) | 9262    | 1852.4          | <b>4164.9</b>              | 4712.0                |
|                                      | 9400    | 1880.0          | 4164.2                     | 4705.0                |
|                                      | 9538    | 1907.6          | 4161.5                     | <b>4714.0</b>         |

Note: Measurement Uncertainty:  $\pm 20\text{Hz}$ .

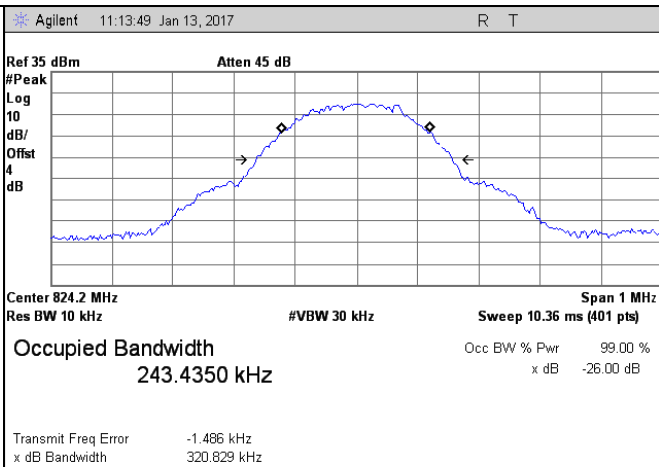


Test plot as follows:

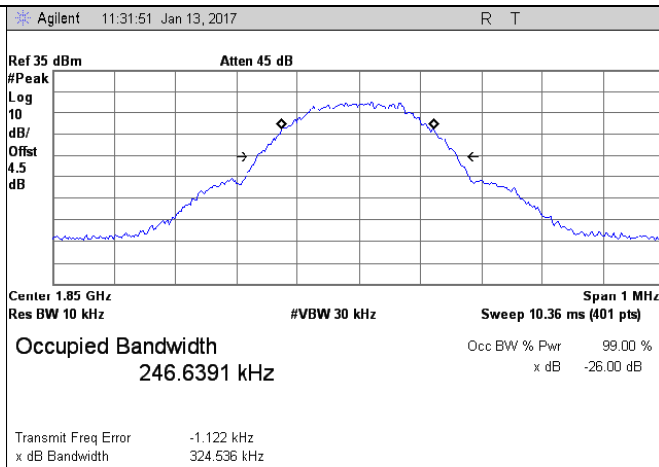




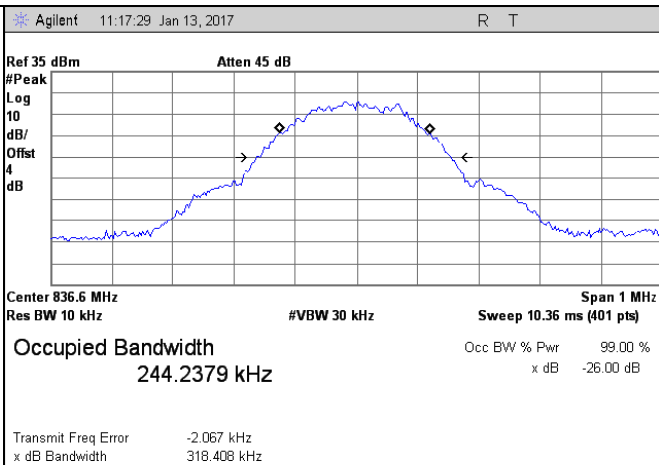
## GPRS 850MHz Lowest channel



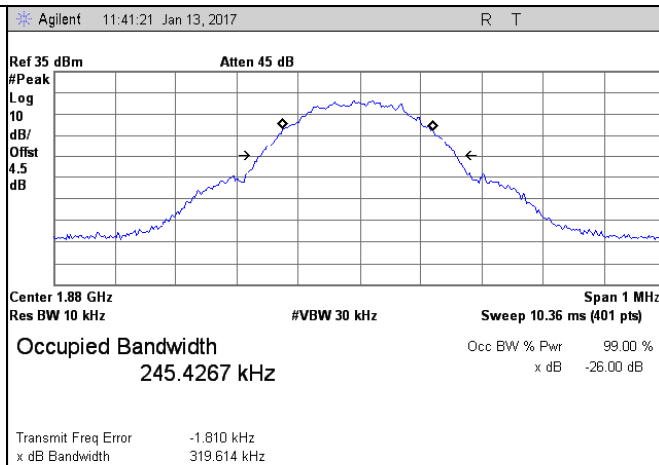
## GPRS 1900 Lowest channel



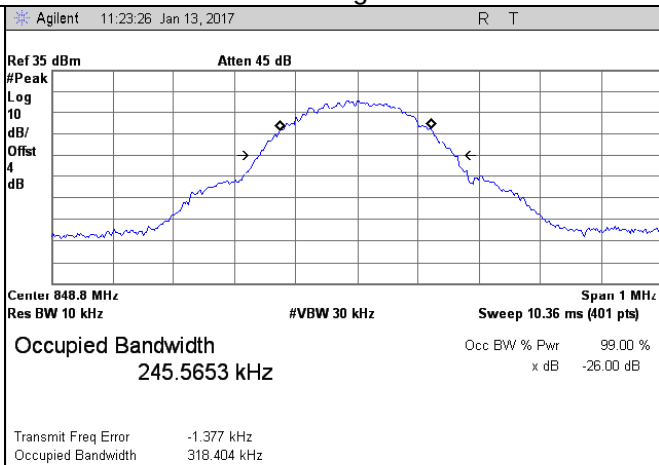
## GPRS 850MHz Middle channel



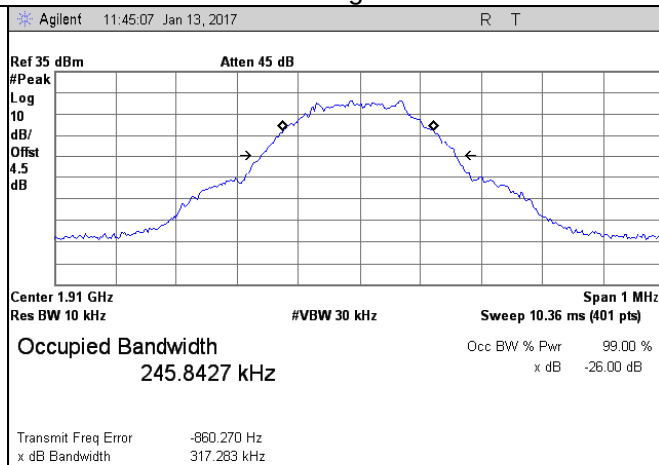
## GPRS 1900 Middle channel



## GPRS 850MHz Highest channel:



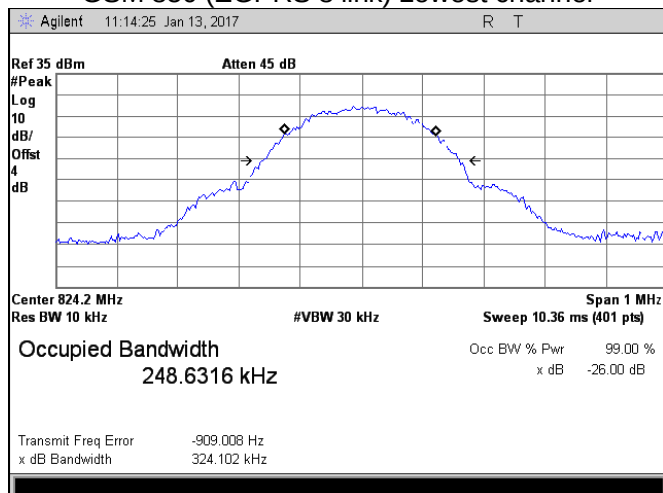
## GPRS 1900 Highest channel



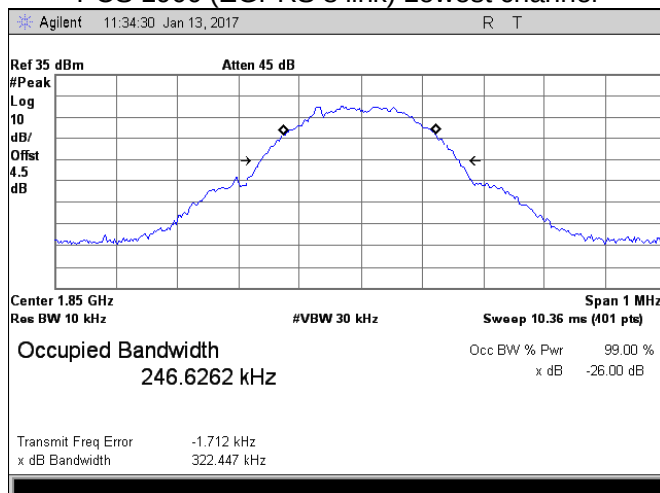




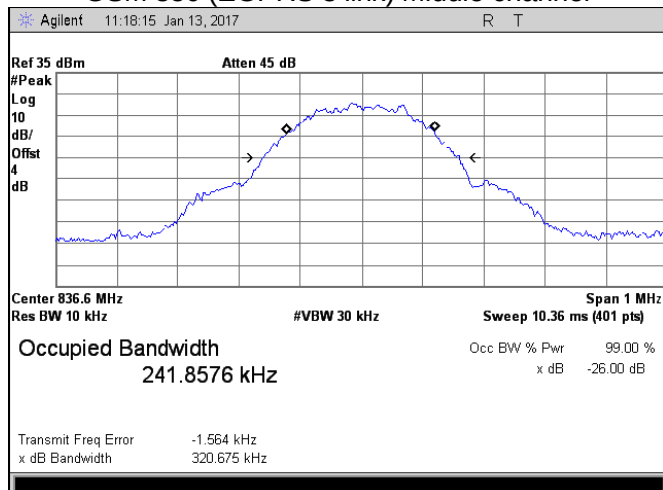
## GSM 850 (EGPRS 8 link) Lowest channel



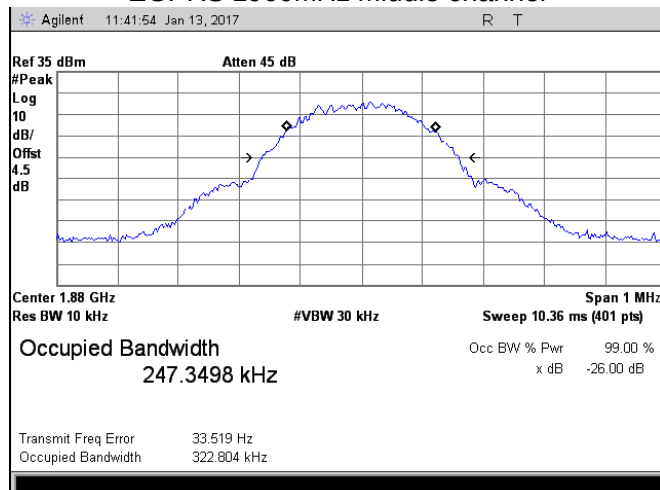
## PCS 1900 (EGPRS 8 link) Lowest channel



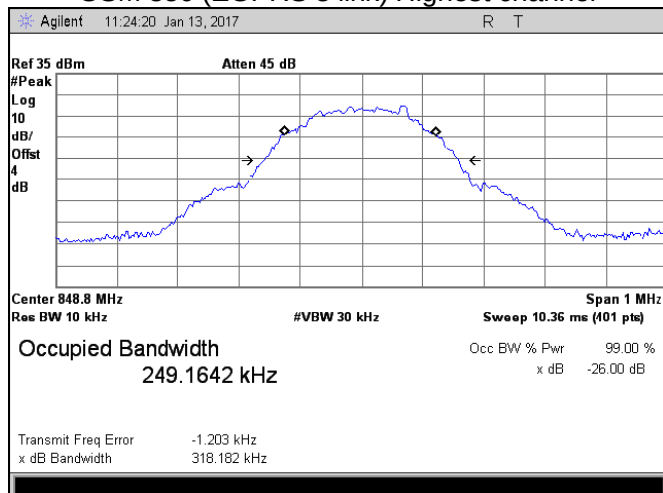
## GSM 850 (EGPRS 8 link) Middle channel



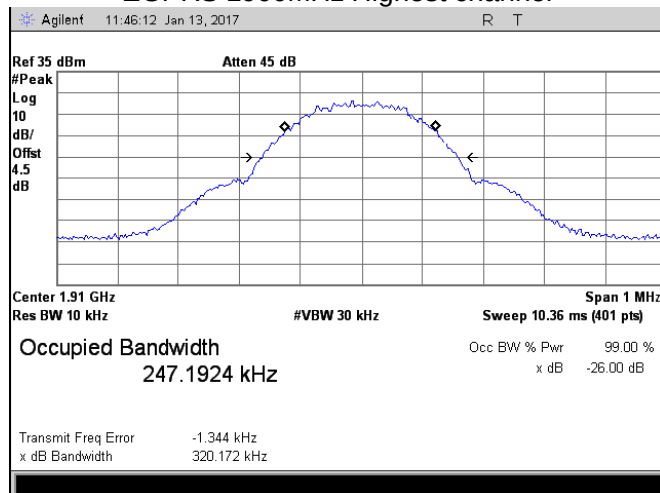
## EGPRS 1900MHz Middle channel



## GSM 850 (EGPRS 8 link) Highest channel

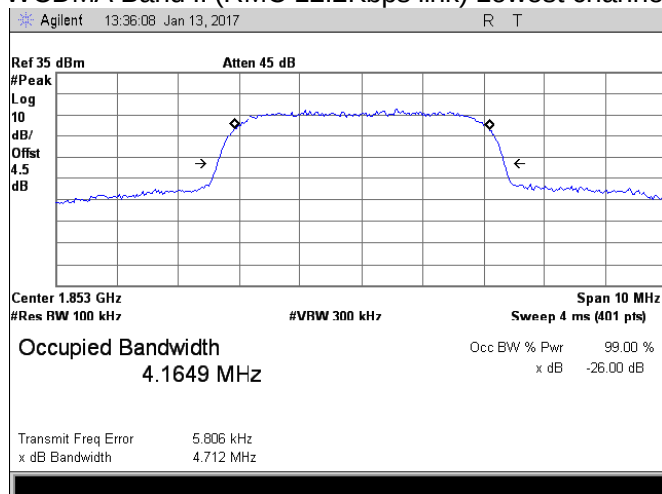


## EGPRS 1900MHz Highest channel

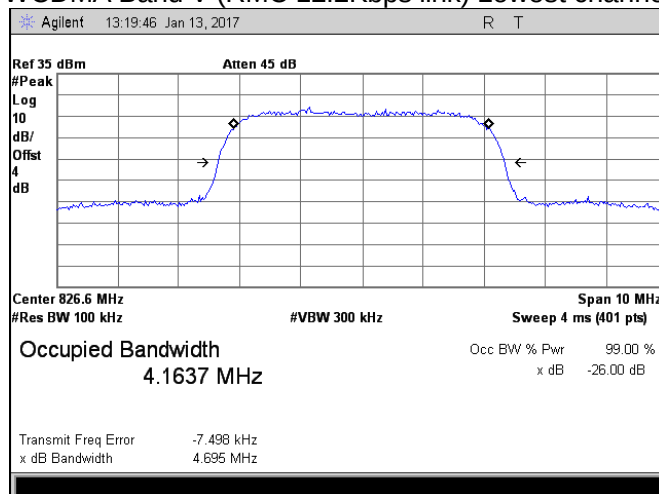




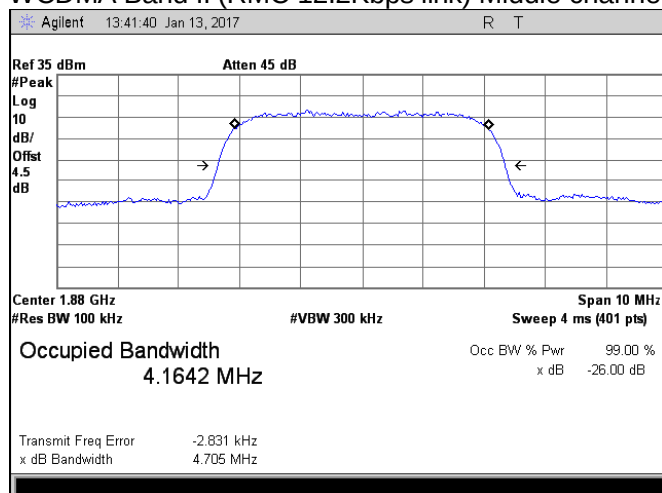
## WCDMA Band II (RMC 12.2Kbps link) Lowest channel



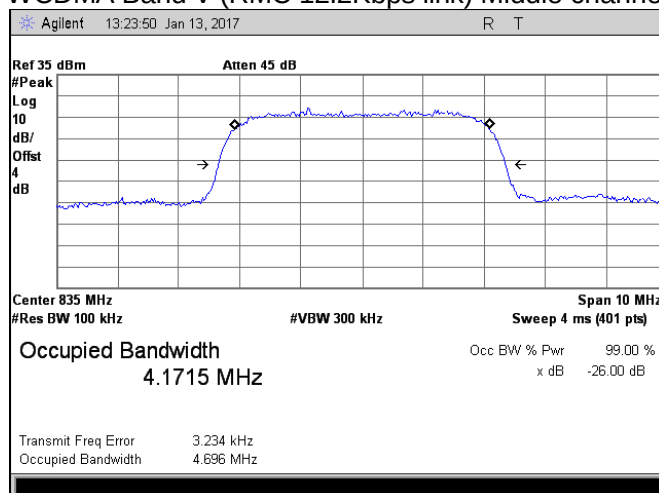
## WCDMA Band V (RMC 12.2Kbps link) Lowest channel



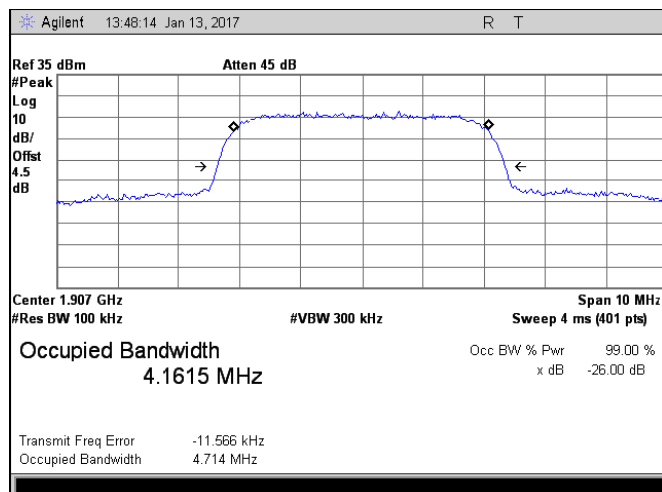
## WCDMA Band II (RMC 12.2Kbps link) Middle channel



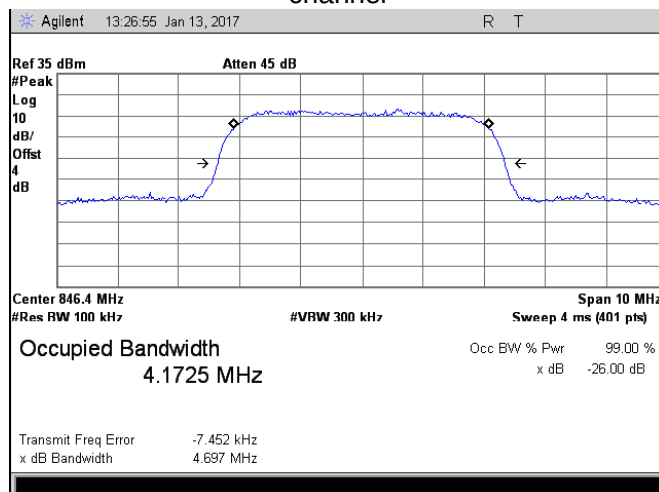
## WCDMA Band V (RMC 12.2Kbps link) Middle channel



## WCDMA Band II (RMC 12.2Kbps link) Highest channel



## WCDMA Band V (RMC 12.2Kbps link) Highest channel

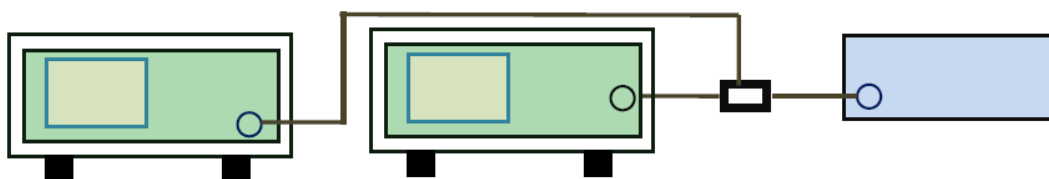


## 5.3. Peak to Average Ratio

### 5.3.1. Limit

According to FCC section 27.50(d)(5) , the peak to average ratio(PAR) of the transmission may not exceed 13dB.

### 5.3.2. Test Setup



### 5.3.3. Test Procedure

According with KDB 971168 v02r02

1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW > Emission bandwidth of signal
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>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

### 5.3.4. Test Result



Measurement data as follows:

| Band          | Channel | Conducted power(dBm) |         | Peak-Average Ratio(PAR) |
|---------------|---------|----------------------|---------|-------------------------|
|               |         | Peak                 | Average |                         |
| PCS1900       | Low     | 30.92                | 29.78   | 1.14                    |
|               | Middle  | 30.79                | 29.62   | 1.17                    |
|               | High    | 30.92                | 29.69   | 1.23                    |
| EGPRS 1900    | Low     | 30.87                | 29.30   | 1.57                    |
|               | Middle  | 31.01                | 29.17   | 1.84                    |
|               | High    | 30.96                | 29.33   | 1.63                    |
| WCDMA Band II | Low     | 26.46                | 24.14   | 2.32                    |
|               | Middle  | 27.07                | 24.66   | 2.41                    |
|               | High    | 26.64                | 24.27   | 2.37                    |

Note: Measurement Uncertainty:  $\pm 0.2$  dB.

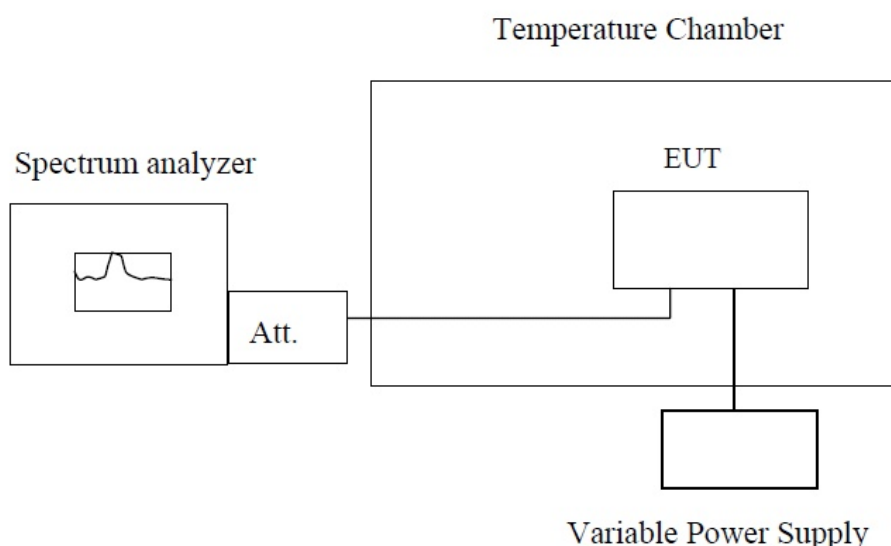
## 5.4. Frequency Stability

### 5.4.1. Limit

According to FCC section 22.355 and FCC section 24.235, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

- (a) The temperature is varied from  $-30^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  at intervals of not more than  $10^{\circ}\text{C}$ .
- (b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

### 5.4.2. Test Setup



**Note :** Measurement setup for testing on Antenna connector

The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber.

The EUT is commanded by the System Simulator (SS) to operate at the maximum output power

### 5.4.3. Test Result

The nominal, highest and lowest extreme voltages are separately 3.8VDC, 4.25VDC and 3.6VDC which are specified by the applicant; the normal temperature here used is  $25^{\circ}\text{C}$ . The frequency deviation limit of 850MHz band is  $\pm 2.5\text{ppm}$ , and 1900MHz is  $\pm 1\text{ppm}$



| Test Conditions                                            |            |                  | Frequency Deviation |               |       | Result |
|------------------------------------------------------------|------------|------------------|---------------------|---------------|-------|--------|
| Band                                                       | Power(Vdc) | Temperature (°C) | Frequency Error(Hz) | ppm           | Limit |        |
| GSM850<br>(GSM link)<br>Middle<br>channel<br>=836.6MHz     | 3.7        | -30              | <b>66</b>           | <b>0.0789</b> | ±2.5  | PASS   |
|                                                            | 3.7        | -20              | 41                  | 0.0490        |       |        |
|                                                            | 3.7        | -10              | 43                  | 0.0514        |       |        |
|                                                            | 3.7        | 0                | 33                  | 0.0394        |       |        |
|                                                            | 3.7        | 10               | 24                  | 0.0287        |       |        |
|                                                            | 3.7        | 20               | 26                  | 0.0311        |       |        |
|                                                            | 3.7        | 30               | 27                  | 0.0323        |       |        |
|                                                            | 3.7        | 40               | 43                  | 0.0514        |       |        |
|                                                            | 3.7        | 50               | 28                  | 0.0335        |       |        |
|                                                            | 4.25       | 25               | 36                  | 0.0430        |       |        |
|                                                            | 3.70       | 25               | 25                  | 0.0299        |       |        |
|                                                            | 3.40       | 25               | 27                  | 0.0323        |       |        |
|                                                            |            |                  |                     |               |       |        |
| GPRS850<br>(Middle<br>channel<br>=836.6MHz                 | 3.7        | -30              | <b>53</b>           | <b>0.0634</b> | ±2.5  | PASS   |
|                                                            | 3.7        | -20              | 34                  | 0.0406        |       |        |
|                                                            | 3.7        | -10              | 26                  | 0.0311        |       |        |
|                                                            | 3.7        | 0                | 33                  | 0.0394        |       |        |
|                                                            | 3.7        | 10               | 24                  | 0.0287        |       |        |
|                                                            | 3.7        | 20               | 21                  | 0.0251        |       |        |
|                                                            | 3.7        | 30               | 28                  | 0.0335        |       |        |
|                                                            | 3.7        | 40               | 35                  | 0.0418        |       |        |
|                                                            | 3.7        | 50               | 37                  | 0.0442        |       |        |
|                                                            | 4.25       | 25               | 29                  | 0.0347        |       |        |
|                                                            | 3.70       | 25               | 25                  | 0.0299        |       |        |
|                                                            | 3.40       | 25               | 31                  | 0.0371        |       |        |
|                                                            |            |                  |                     |               |       |        |
| GSM850<br>(EGPRS 8<br>link) Middle<br>channel<br>=836.6MHz | 3.7        | -30              | <b>51</b>           | <b>0.0610</b> | ±2.5  | PASS   |
|                                                            | 3.7        | -20              | 32                  | 0.0383        |       |        |
|                                                            | 3.7        | -10              | 26                  | 0.0311        |       |        |
|                                                            | 3.7        | 0                | 19                  | 0.0227        |       |        |
|                                                            | 3.7        | 10               | 27                  | 0.0323        |       |        |
|                                                            | 3.7        | 20               | 43                  | 0.0514        |       |        |
|                                                            | 3.7        | 30               | 32                  | 0.0383        |       |        |
|                                                            | 3.7        | 40               | 28                  | 0.0335        |       |        |
|                                                            | 3.7        | 50               | 36                  | 0.0430        |       |        |
|                                                            | 4.25       | 25               | 29                  | 0.0347        |       |        |
|                                                            | 3.70       | 25               | 31                  | 0.0371        |       |        |
|                                                            | 3.40       | 25               | 27                  | 0.0323        |       |        |
|                                                            |            |                  |                     |               |       |        |



| Test Conditions                                            |            |                 | Frequency Deviation |               |       | Result |
|------------------------------------------------------------|------------|-----------------|---------------------|---------------|-------|--------|
| Band                                                       | Power(Vdc) | Temperature(°C) | Frequency Error(Hz) | ppm           | Limit |        |
| PCS1900<br>(GSM link)<br>Middle<br>channel<br>=1880MHz     | 3.7        | -30             | <b>72</b>           | <b>0.0383</b> | ±1    | PASS   |
|                                                            | 3.7        | -20             | 51                  | 0.0271        |       |        |
|                                                            | 3.7        | -10             | 38                  | 0.0202        |       |        |
|                                                            | 3.7        | 0               | 41                  | 0.0218        |       |        |
|                                                            | 3.7        | 10              | 35                  | 0.0186        |       |        |
|                                                            | 3.7        | 20              | 40                  | 0.0213        |       |        |
|                                                            | 3.7        | 30              | 28                  | 0.0149        |       |        |
|                                                            | 3.7        | 40              | 34                  | 0.0181        |       |        |
|                                                            | 3.7        | 50              | 41                  | 0.0218        |       |        |
|                                                            | 4.25       | 25              | 33                  | 0.0176        |       |        |
|                                                            | 3.70       | 25              | 27                  | 0.0144        |       |        |
|                                                            | 3.40       | 25              | 29                  | 0.0154        |       |        |
| GPRS1900<br>Middle<br>channel<br>=1880MHz                  | 3.7        | -30             | <b>68</b>           | <b>0.0362</b> | ±1    | PASS   |
|                                                            | 3.7        | -20             | 42                  | 0.0223        |       |        |
|                                                            | 3.7        | -10             | 21                  | 0.0112        |       |        |
|                                                            | 3.7        | 0               | 35                  | 0.0186        |       |        |
|                                                            | 3.7        | 10              | 37                  | 0.0197        |       |        |
|                                                            | 3.7        | 20              | 42                  | 0.0223        |       |        |
|                                                            | 3.7        | 30              | 36                  | 0.0191        |       |        |
|                                                            | 3.7        | 40              | 28                  | 0.0149        |       |        |
|                                                            | 3.7        | 50              | 41                  | 0.0218        |       |        |
|                                                            | 4.25       | 25              | 27                  | 0.0144        |       |        |
|                                                            | 3.70       | 25              | 26                  | 0.0138        |       |        |
|                                                            | 3.40       | 25              | 28                  | 0.0149        |       |        |
| PCS1900<br>(EGPRS 8<br>link) Middle<br>channel<br>=1880MHz | 3.7        | -30             | <b>62</b>           | <b>0.0330</b> | ±1    | PASS   |
|                                                            | 3.7        | -20             | 36                  | 0.0191        |       |        |
|                                                            | 3.7        | -10             | 42                  | 0.0223        |       |        |
|                                                            | 3.7        | 0               | 31                  | 0.0165        |       |        |
|                                                            | 3.7        | 10              | 34                  | 0.0181        |       |        |
|                                                            | 3.7        | 20              | 29                  | 0.0154        |       |        |
|                                                            | 3.7        | 30              | 46                  | 0.0245        |       |        |
|                                                            | 3.7        | 40              | 28                  | 0.0149        |       |        |
|                                                            | 3.7        | 50              | 33                  | 0.0176        |       |        |
|                                                            | 4.25       | 25              | 29                  | 0.0154        |       |        |
|                                                            | 3.70       | 25              | 42                  | 0.0223        |       |        |
|                                                            | 3.40       | 25              | 39                  | 0.0207        |       |        |



| Test Conditions                                     |            |                 | Frequency Deviation |               |       | Result |
|-----------------------------------------------------|------------|-----------------|---------------------|---------------|-------|--------|
| Band                                                | Power(Vdc) | Temperature(°C) | Frequency Error(Hz) | ppm           | Limit |        |
| WCDMA<br>Band II<br>Middle<br>channel=188<br>0.0MHz | 3.7        | -30             | <b>85</b>           | <b>0.0452</b> | ±1    | PASS   |
|                                                     | 3.7        | -20             | 36                  | 0.0191        |       |        |
|                                                     | 3.7        | -10             | 43                  | 0.0229        |       |        |
|                                                     | 3.7        | 0               | 61                  | 0.0324        |       |        |
|                                                     | 3.7        | 10              | 48                  | 0.0255        |       |        |
|                                                     | 3.7        | 20              | 63                  | 0.0335        |       |        |
|                                                     | 3.7        | 30              | 78                  | 0.0415        |       |        |
|                                                     | 3.7        | 40              | 49                  | 0.0261        |       |        |
|                                                     | 3.7        | 50              | 27                  | 0.0144        |       |        |
|                                                     | 4.25       | 25              | 42                  | 0.0223        |       |        |
|                                                     | 3.70       | 25              | 38                  | 0.0202        |       |        |
|                                                     | 3.40       | 25              | 41                  | 0.0218        |       |        |
|                                                     | 3.7        | -30             | <b>75</b>           | <b>0.0898</b> | ±2.5  | PASS   |
| WCDMA<br>Band V<br>Middle<br>channel=835.<br>0MHz   | 3.7        | -20             | 34                  | 0.0407        |       |        |
|                                                     | 3.7        | -10             | 38                  | 0.0455        |       |        |
|                                                     | 3.7        | 0               | 46                  | 0.0551        |       |        |
|                                                     | 3.7        | 10              | 29                  | 0.0347        |       |        |
|                                                     | 3.7        | 20              | 37                  | 0.0443        |       |        |
|                                                     | 3.7        | 30              | 42                  | 0.0503        |       |        |
|                                                     | 3.7        | 40              | 26                  | 0.0311        |       |        |
|                                                     | 3.7        | 50              | 31                  | 0.0371        |       |        |
|                                                     | 4.25       | 25              | 29                  | 0.0347        |       |        |
|                                                     | 3.70       | 25              | 35                  | 0.0419        |       |        |
|                                                     | 3.40       | 25              | 42                  | 0.0503        |       |        |

Note: Measurement Uncertainty: ±20Hz.

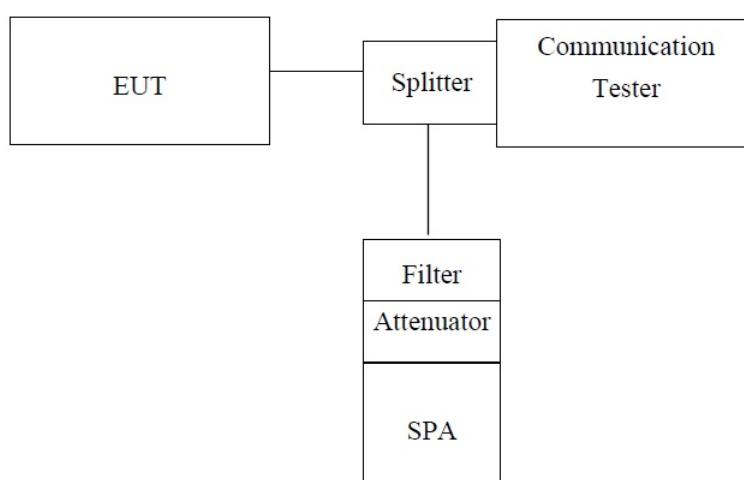


## 5.5. Conducted Spurious Emissions

### 5.5.1. Limit

According to FCC section 22.917(a) and FCC section 24.238(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43+10\log(P)$ dB. This calculated to be -13dBm.

### 5.5.2. Test Setup



*Note: Measurement setup for testing on Antenna connector*

### 5.5.3. Measurement Procedure

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.

For the out of band: Set the RBW, VBW = 100KHz, Start=30MHz, Stop= 10th harmonic.

Limit = -13dBm

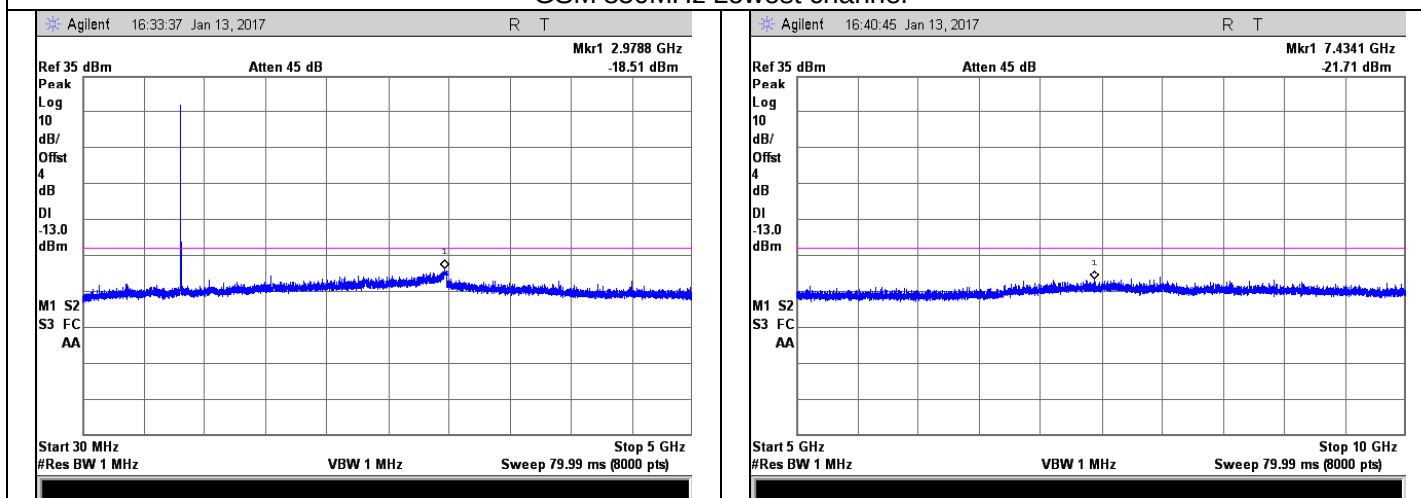
### 5.5.4. Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

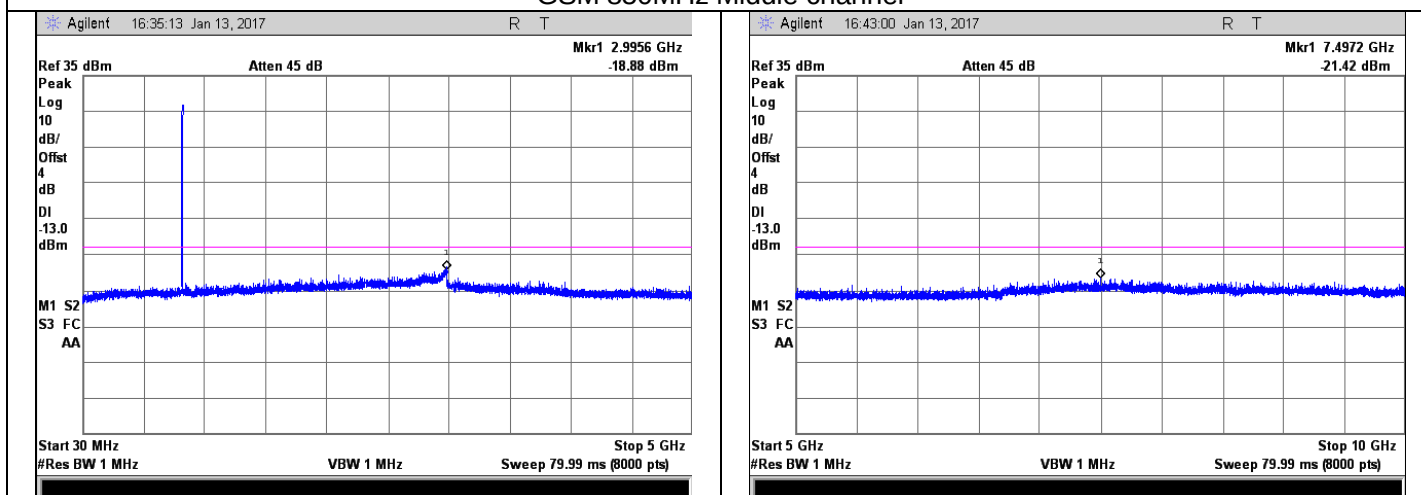
Test plot as follows:



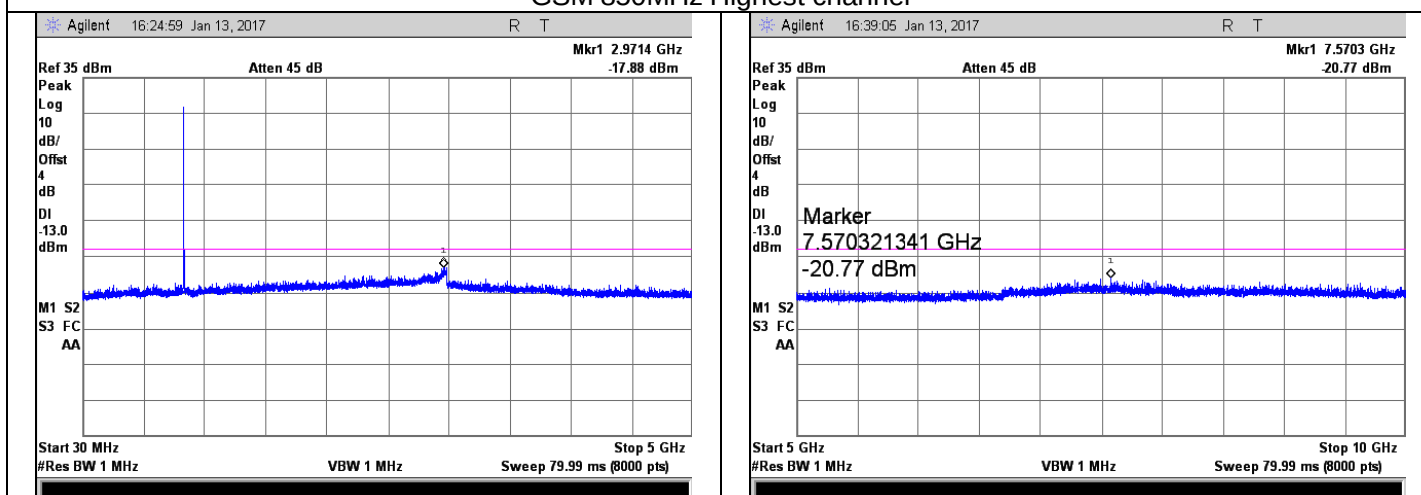
## GSM 850MHz Lowest channel



## GSM 850MHz Middle channel

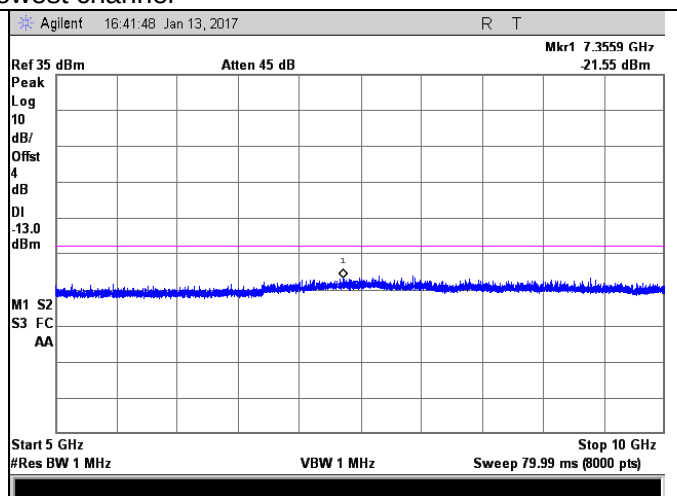
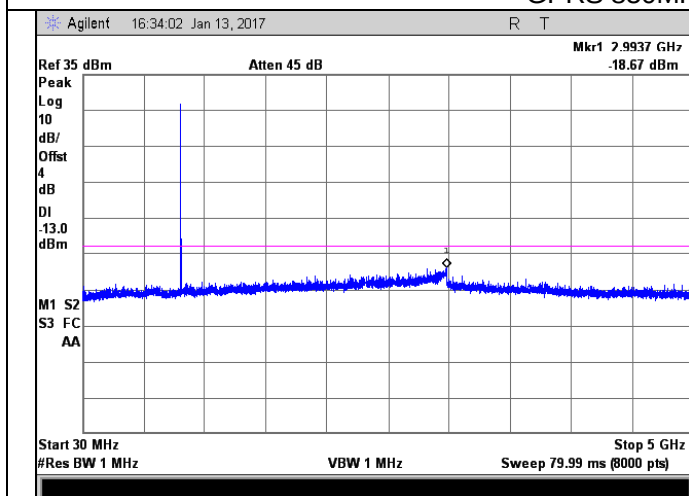


## GSM 850MHz Highest channel

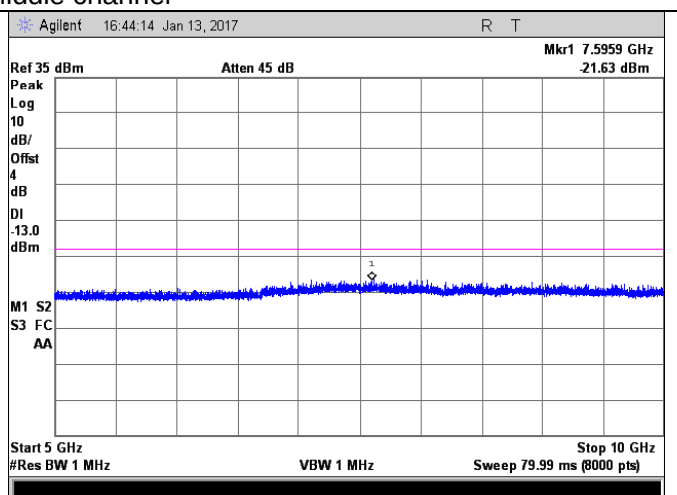
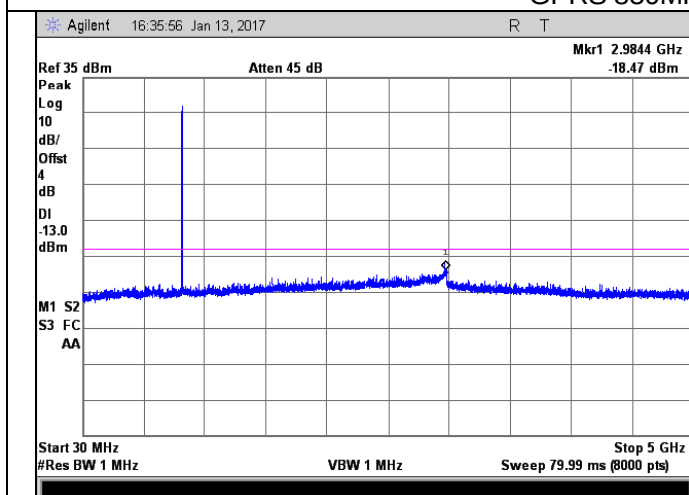




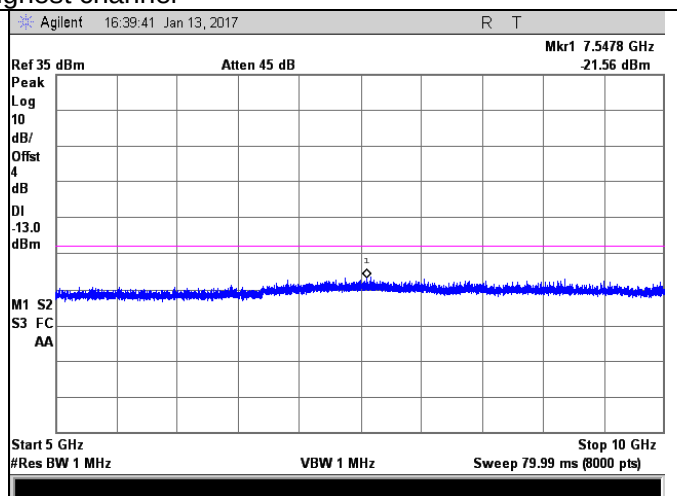
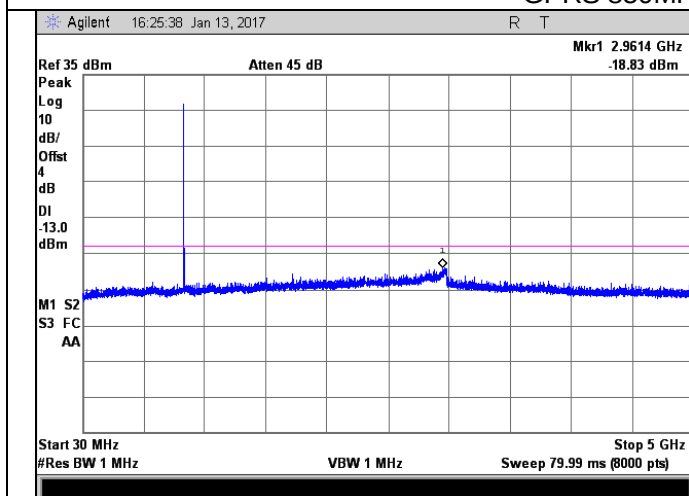
## GPRS 850MHz Lowest channel



## GPRS 850MHz Middle channel

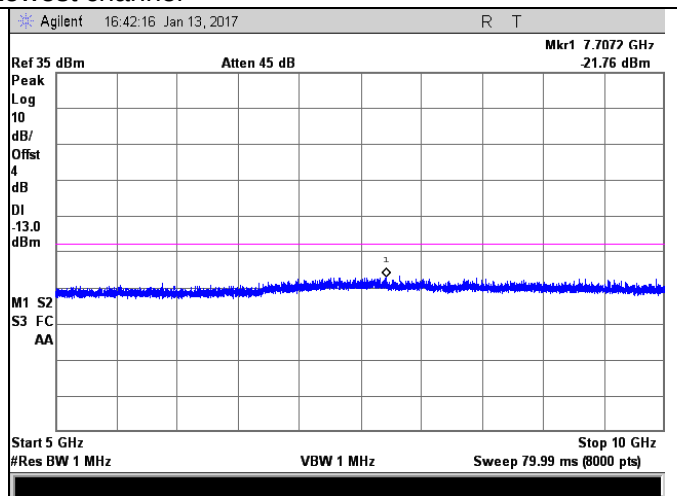
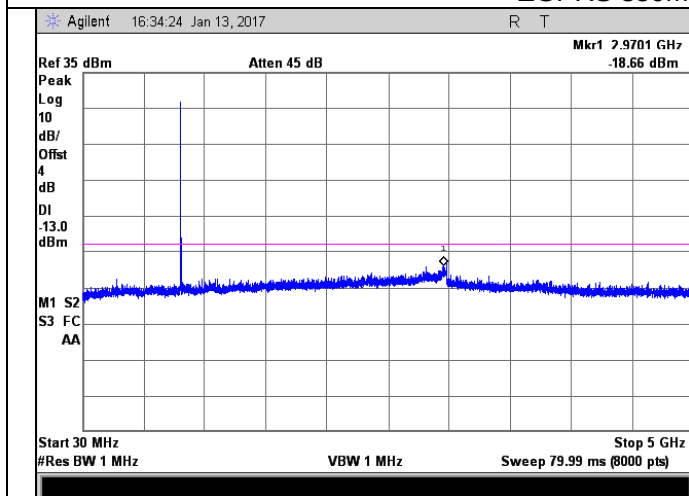


## GPRS 850MHz Highest channel

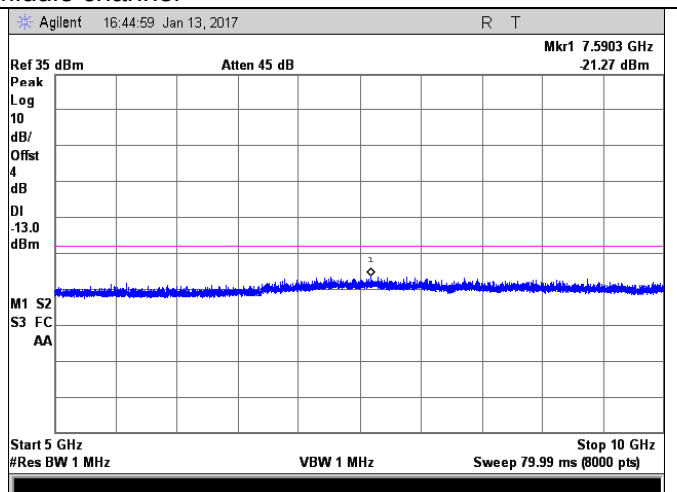
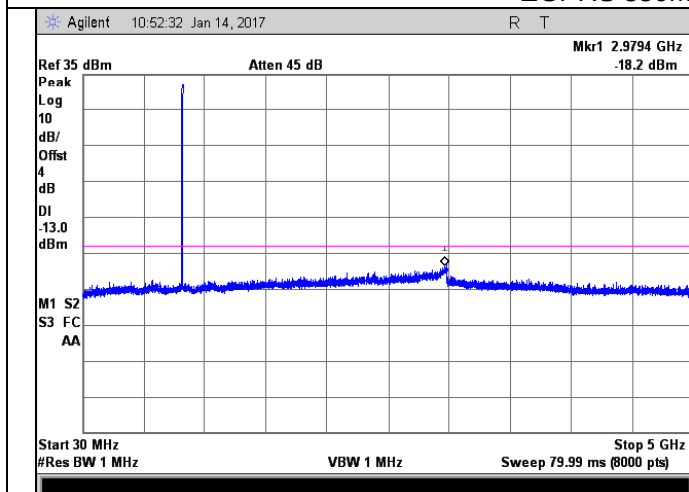




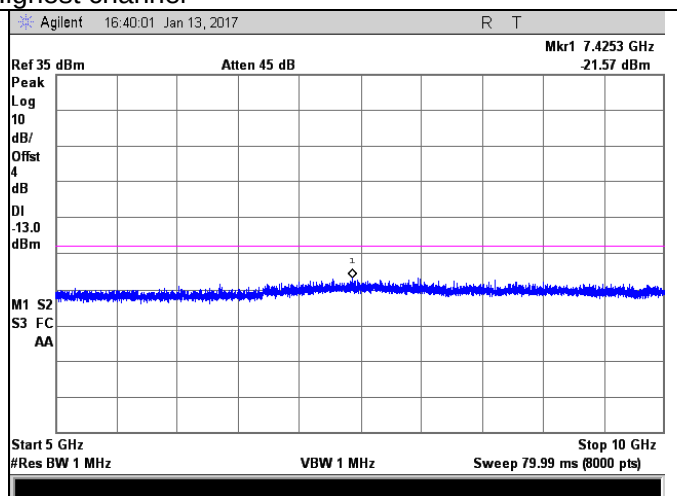
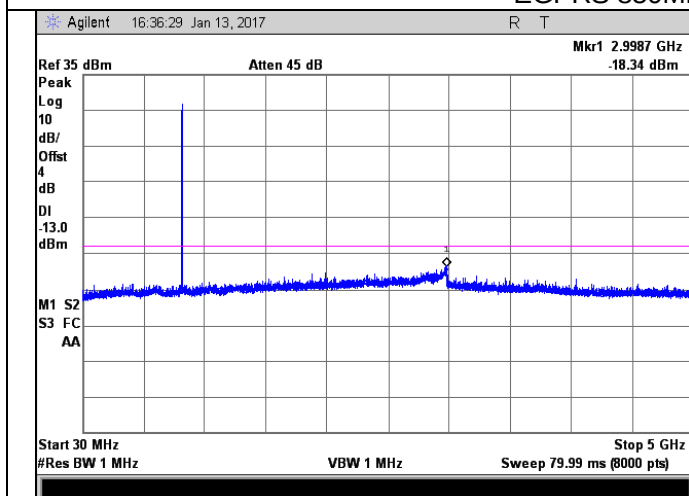
## EGPRS 850MHz Lowest channel



## EGPRS 850MHz Middle channel

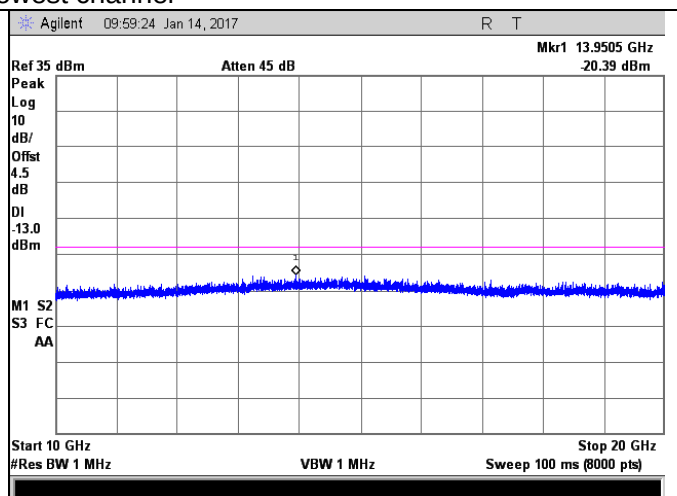
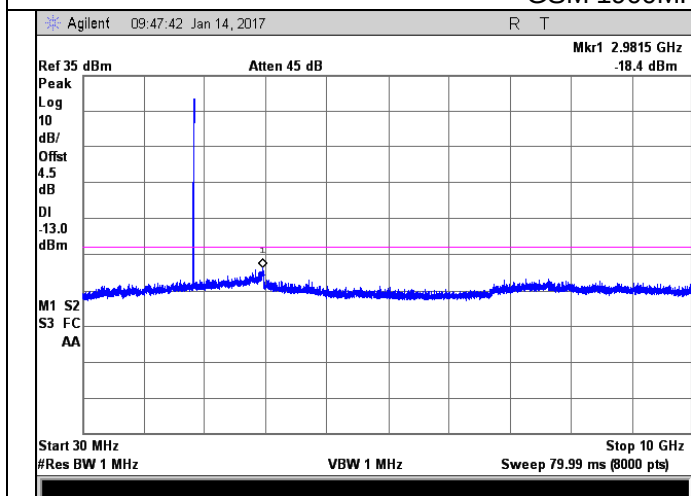


## EGPRS 850MHz Highest channel

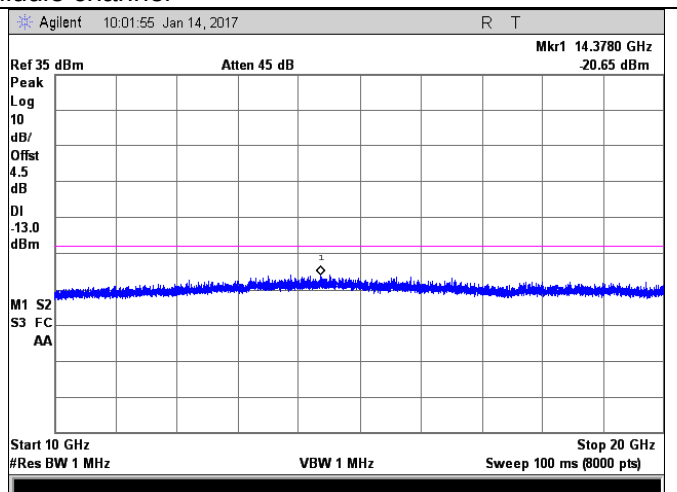
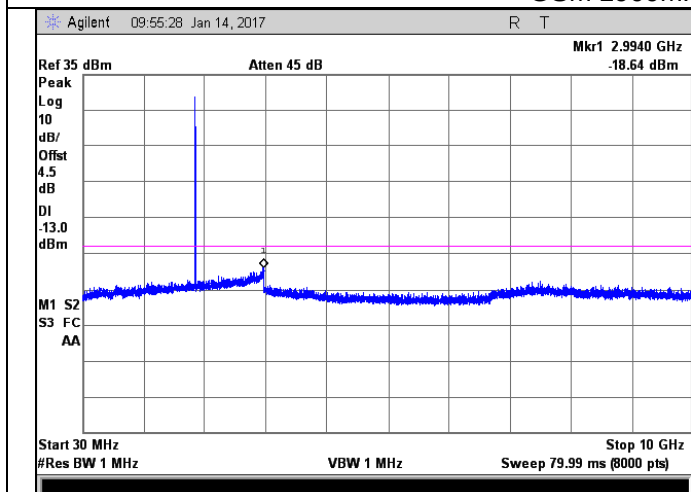




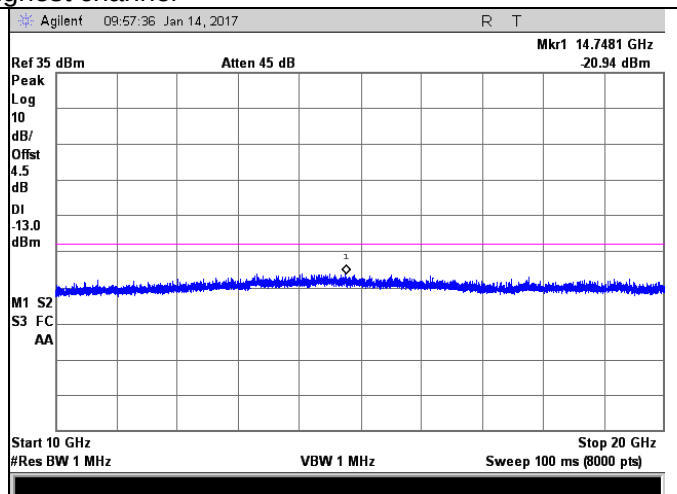
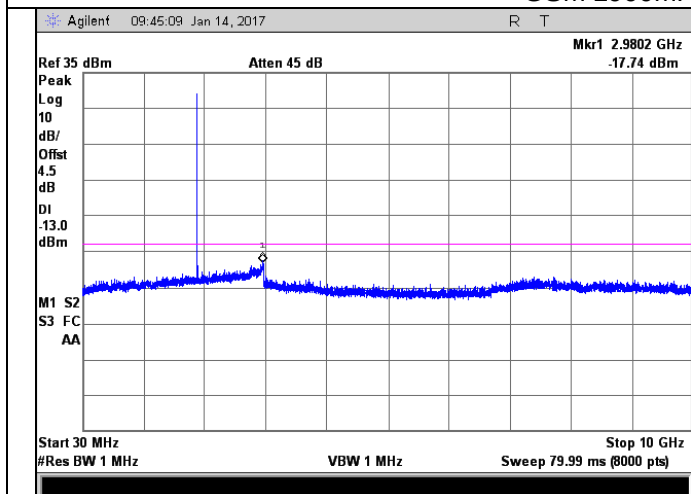
## GSM 1900MHz Lowest channel



## GSM 1900MHz Middle channel

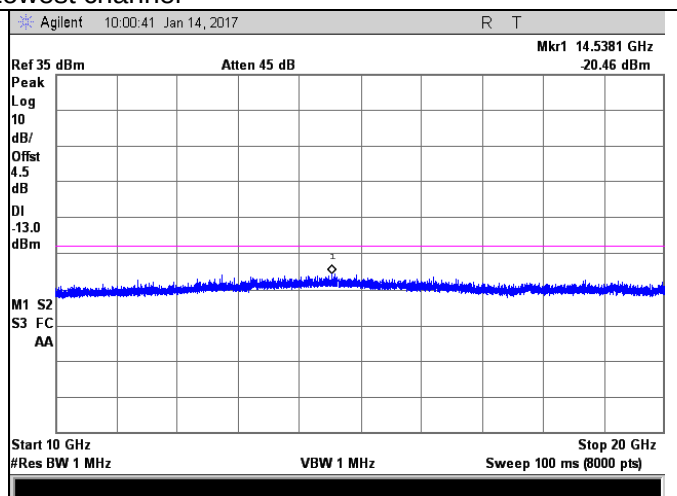
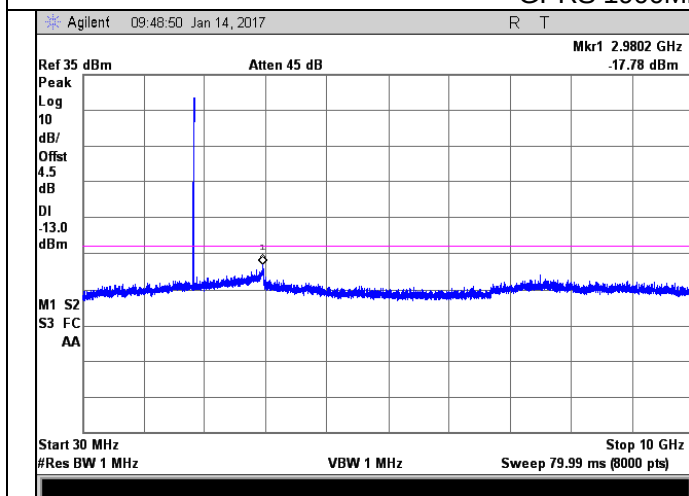


## GSM 1900MHz Highest channel

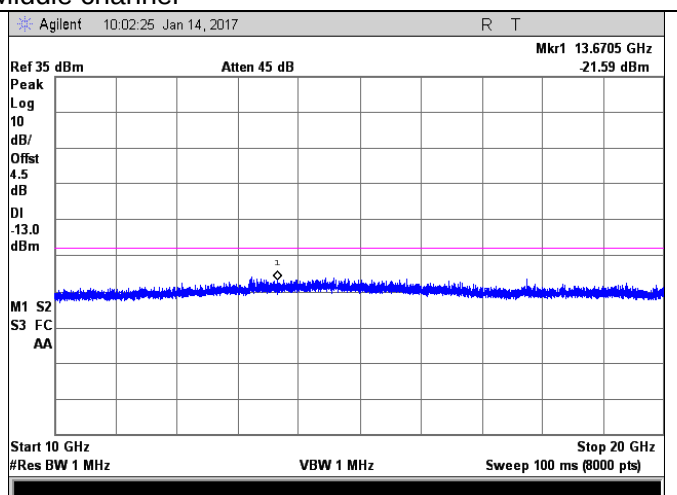
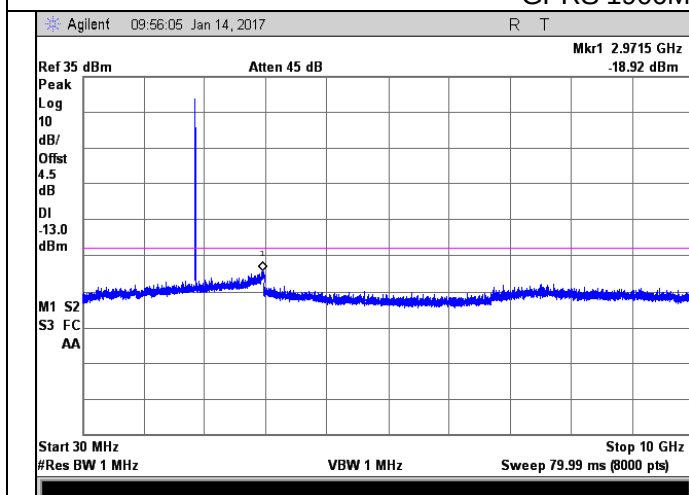




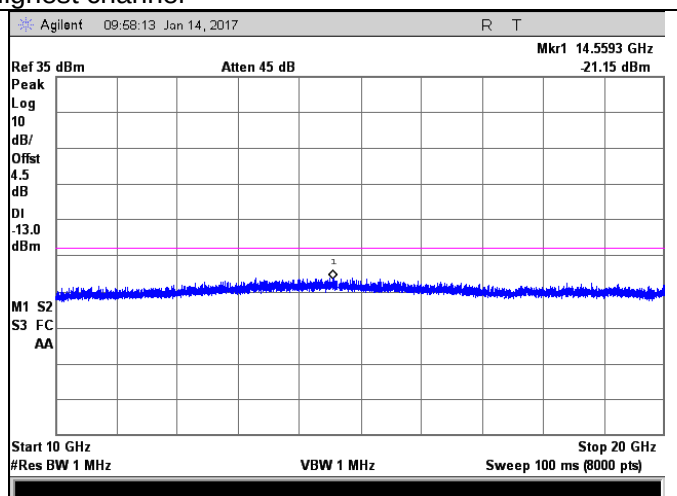
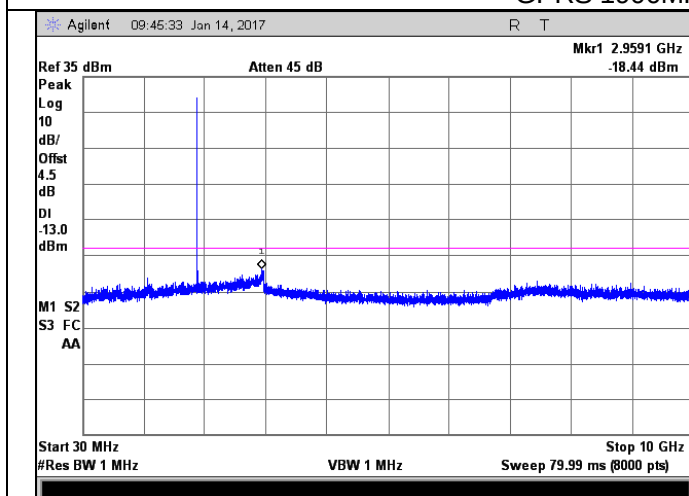
## GPRS 1900MHz Lowest channel



## GPRS 1900MHz Middle channel

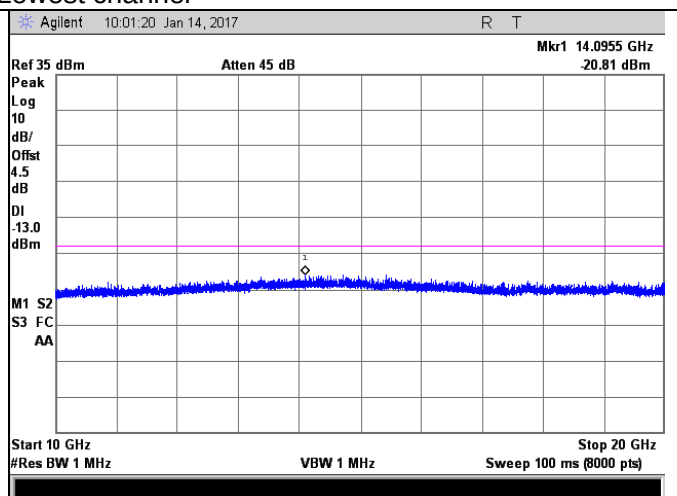
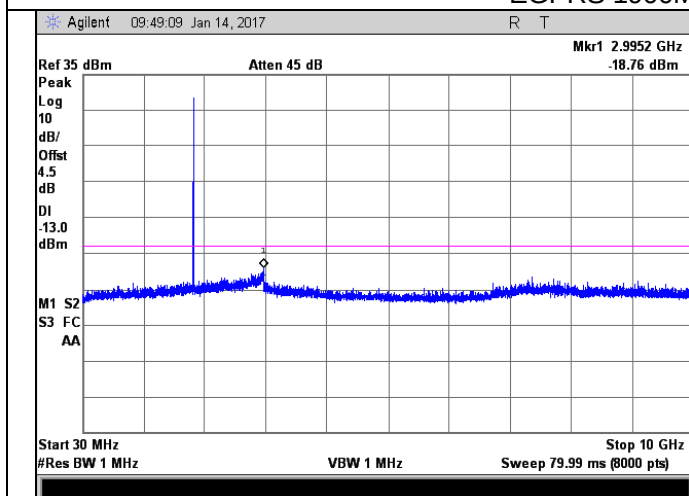


## GPRS 1900MHz Highest channel

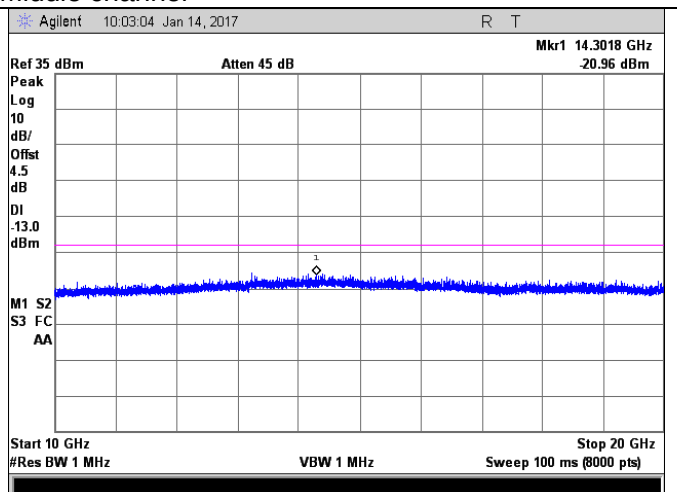
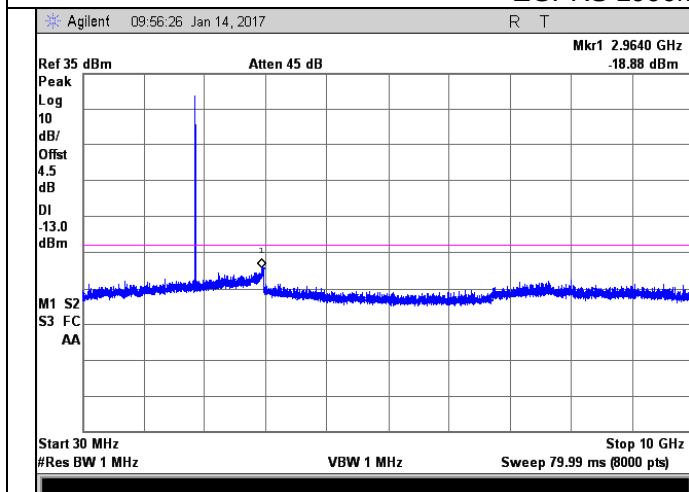




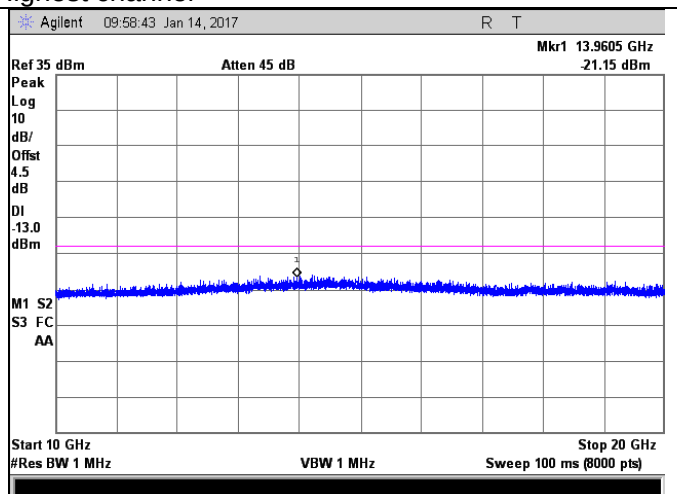
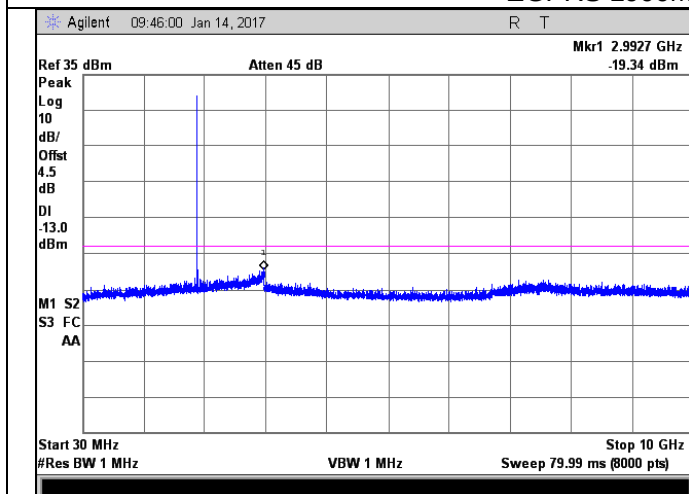
## EGPRS 1900MHz Lowest channel



## EGPRS 1900MHz Middle channel

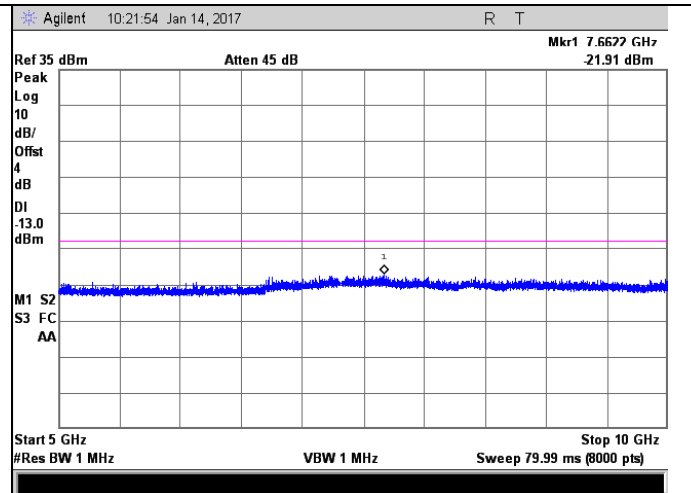
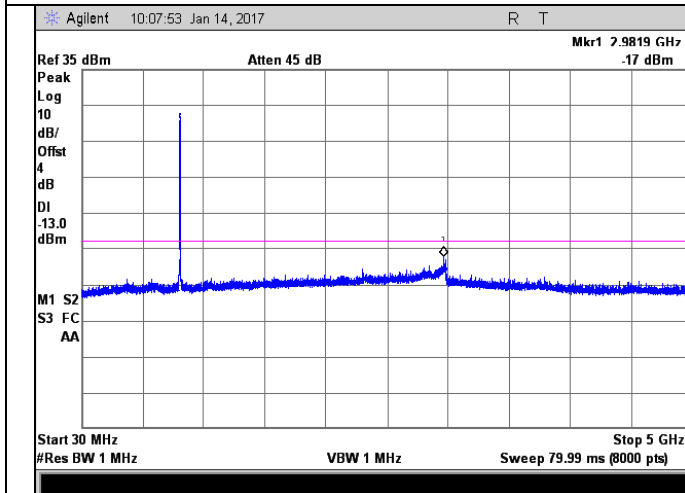


## EGPRS 1900MHz Highest channel

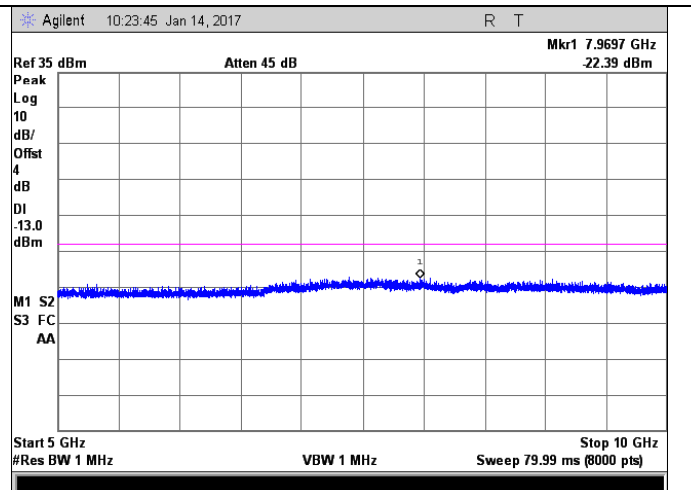
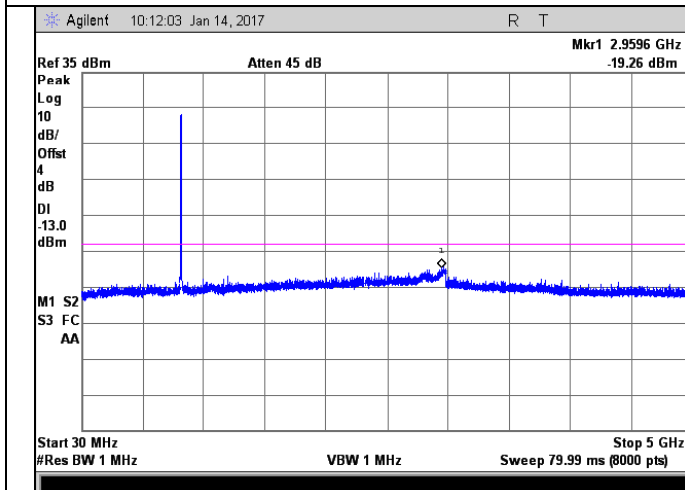




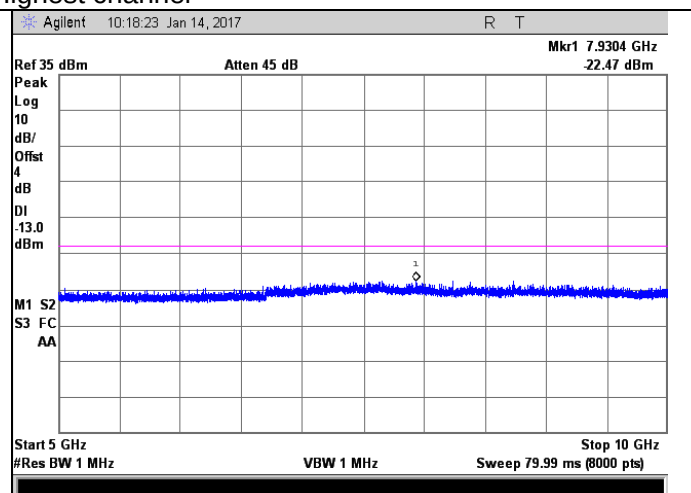
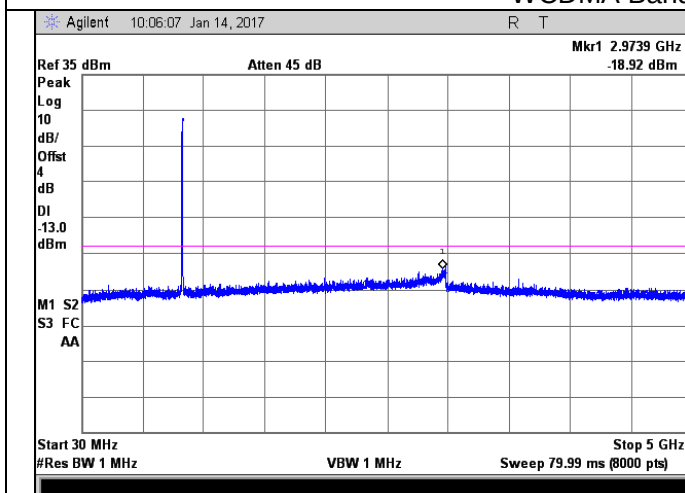
## WCDMA Band V Lowest channel



## WCDMA Band V Middle channel



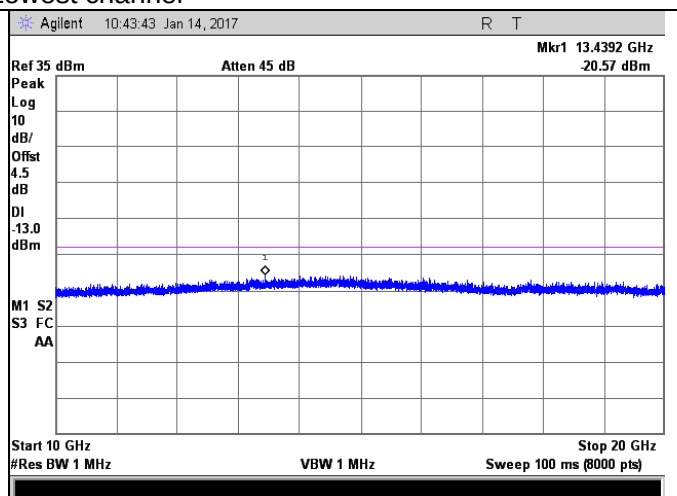
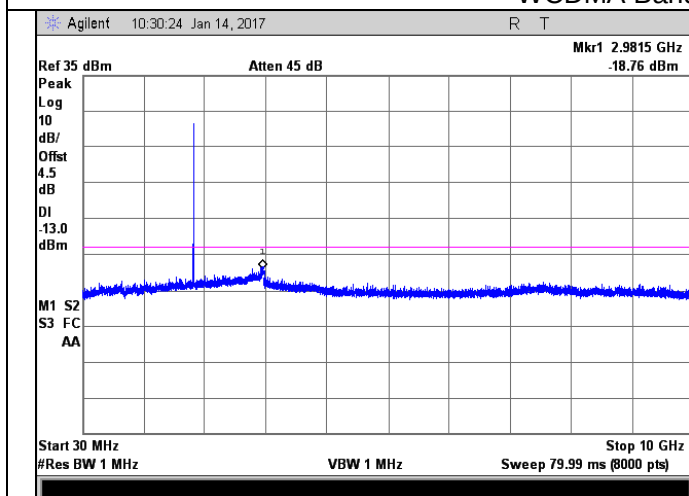
## WCDMA Band V Highest channel



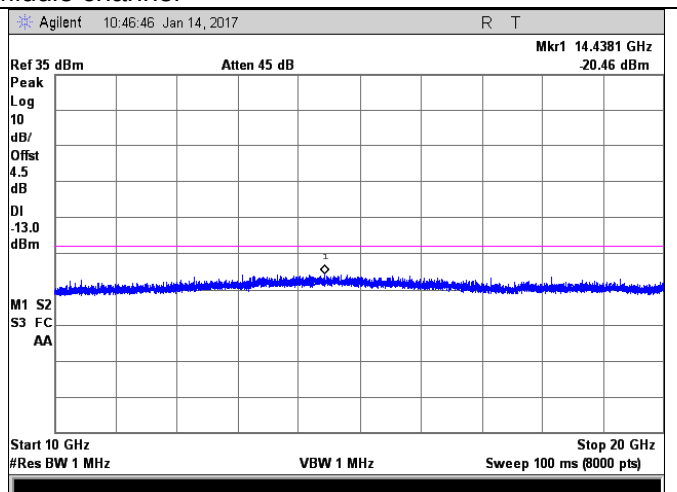
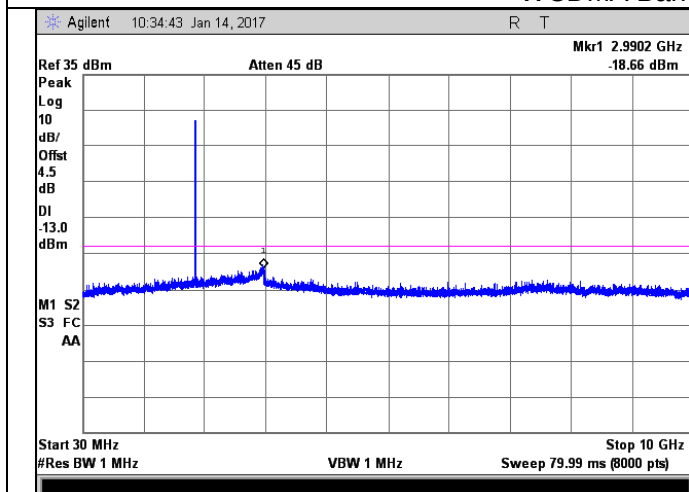




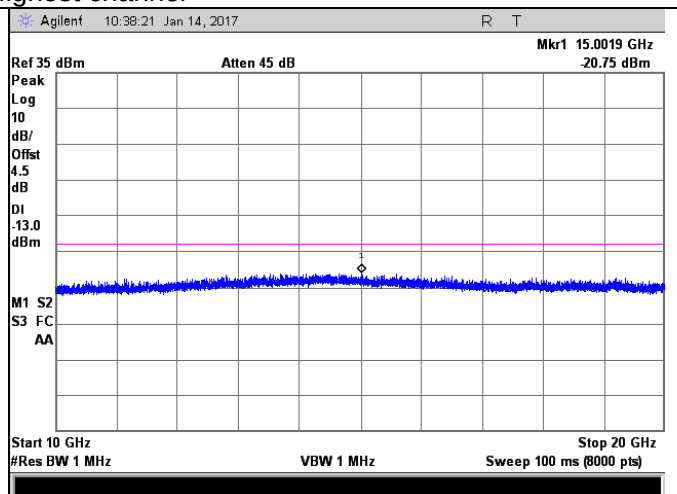
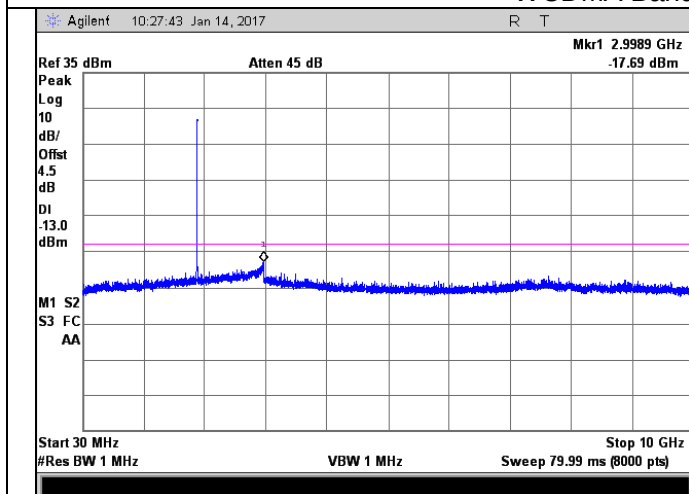
## WCDMA Band II Lowest channel



## WCDMA Band II Middle channel



## WCDMA Band II Highest channel

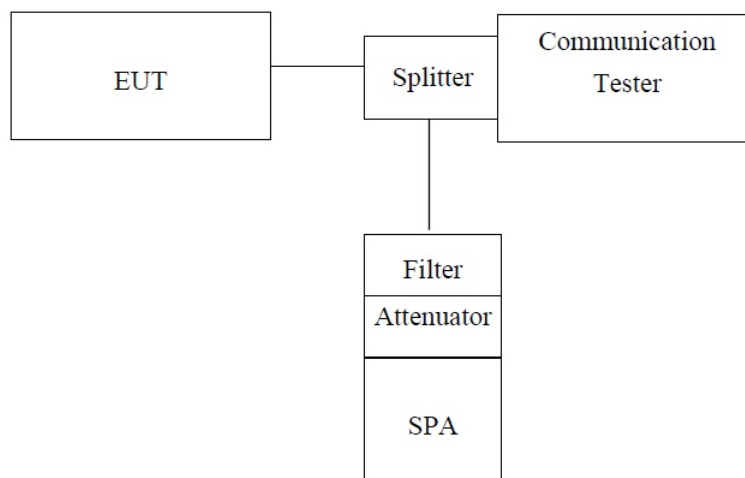


## 5.6. Conducted Out of Band Emissions

### 5.6.1. Limit

According to FCC section 22.917(b) and FCC section 24.238(b), 27.53(g)(h) in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth (26dB emission bandwidth) of the fundamental emission of the transmitter may be employed.

### 5.6.2. Test Setup



*Note: Measurement setup for testing on Antenna connector*

### 5.6.3. Measurement Procedure

The EUT, which is powered by the adapter, is coupled to the Spectrum Analyzer and the System Simulator with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the System Simulator to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the System Simulator.

and reference KDB 971168 D01 Power Meas. License Digital Systems v02v02

### 5.6.4. Test Result

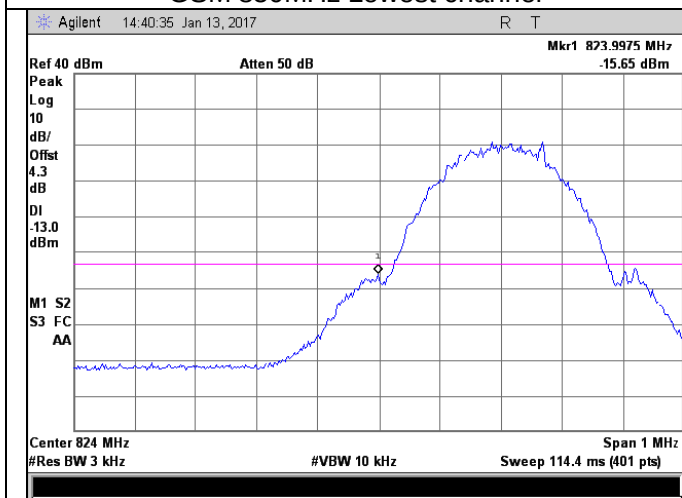
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

Note:  $\text{Offset} = \text{Cable loss} + 10\log((-26\text{dB bandwidth}/100)/\text{RBW})$

Test plot as follows:

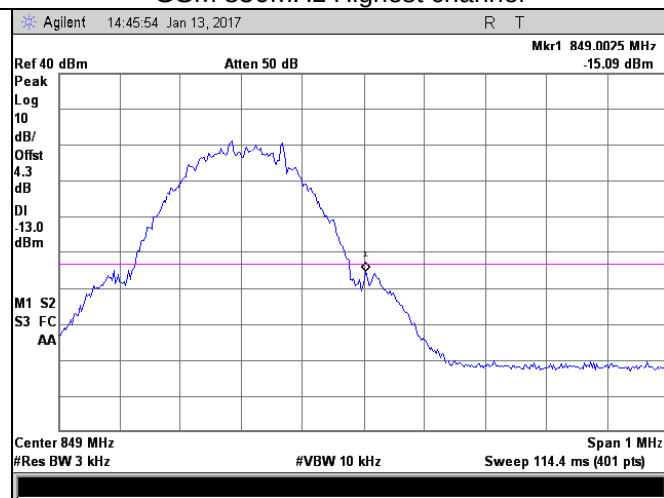


## GSM 850MHz Lowest channel



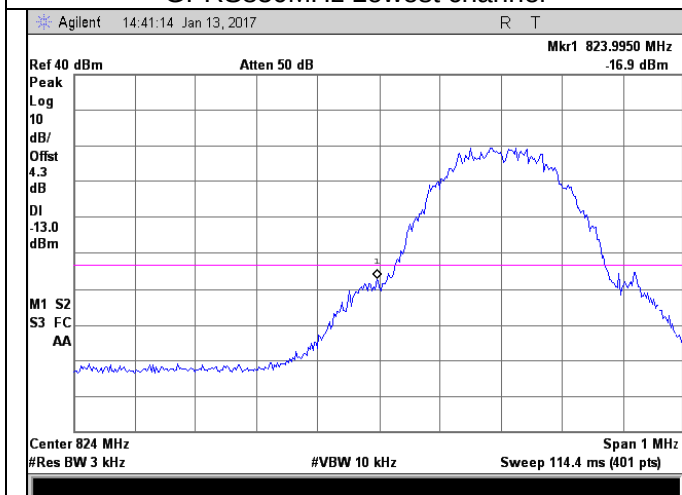
Note: Offset=Cable loss (4.0) + 10log(3.22/3)=4.0+0.3=4.3dB

## GSM 850MHz Highest channel



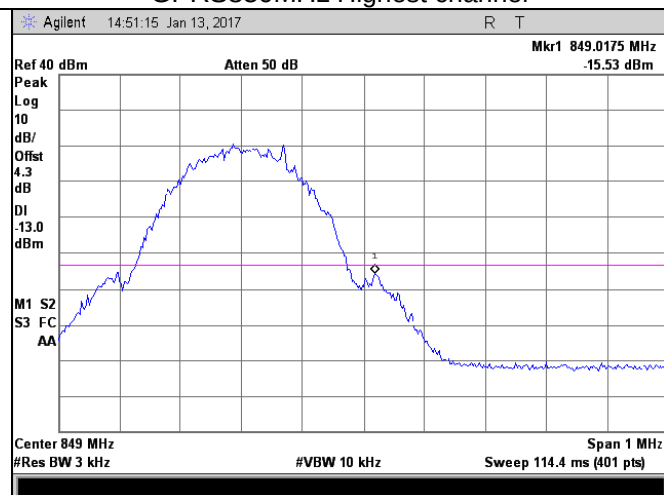
Note: Offset=Cable loss (4.0) + 10log(3.21/3)=4.0+0.3=4.3dB

## GPRS850MHz Lowest channel



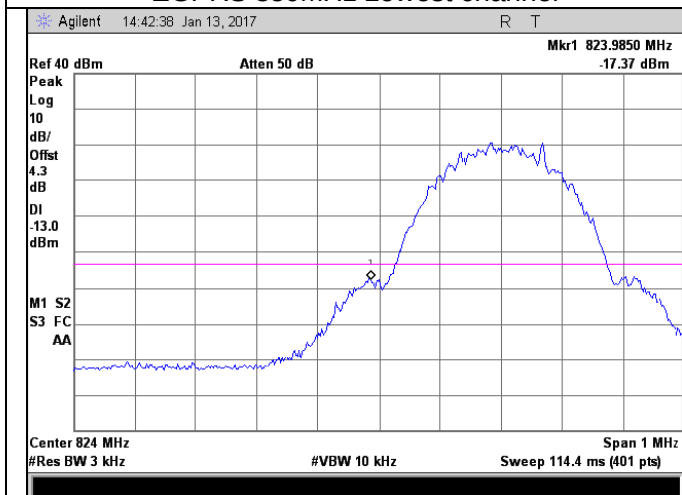
Note: Offset=Cable loss (4.0) + 10log(3.20/3)=4.0+0.3=4.3dB

## GPRS850MHz Highest channel



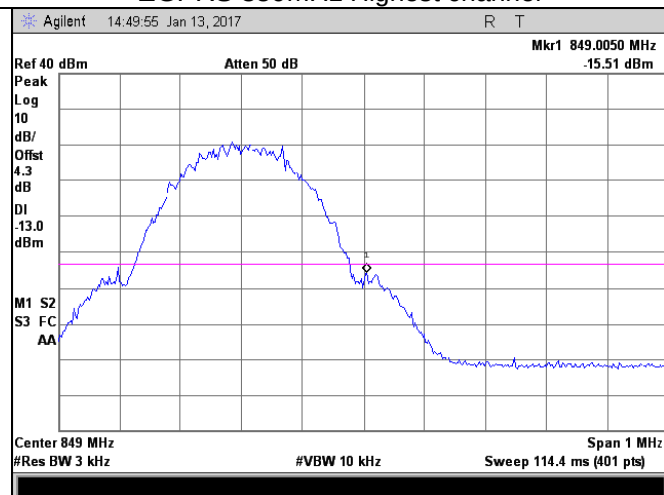
Note: Offset=Cable loss (4.0) + 10log(3.18/3)=4.0+0.3=4.3dB

## EGPRS 850MHz Lowest channel



Note: Offset=Cable loss (4.0) + 10log(3.24/3)=4.0+0.3=4.3dB

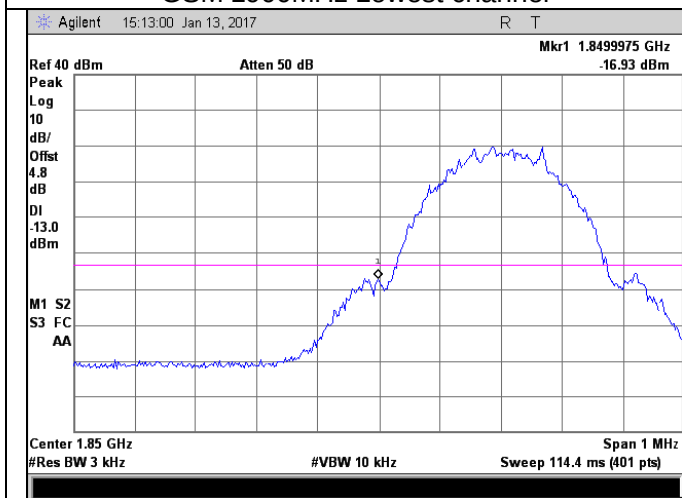
## EGPRS 850MHz Highest channel



Note: Offset=Cable loss (4.0) + 10log(3.18/3)=4.0+0.3=4.3dB

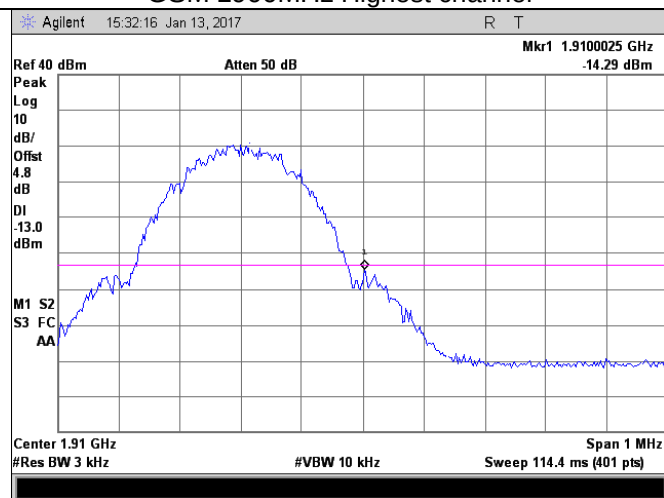


## GSM 1900MHz Lowest channel



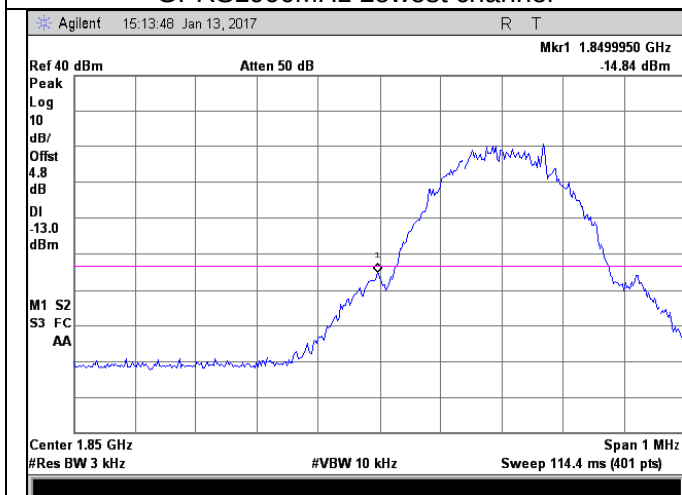
Note: Offset=Cable loss (4.5) + 10log (3.24/3)=4.5+0.3=4.8dB

## GSM 1900MHz Highest channel



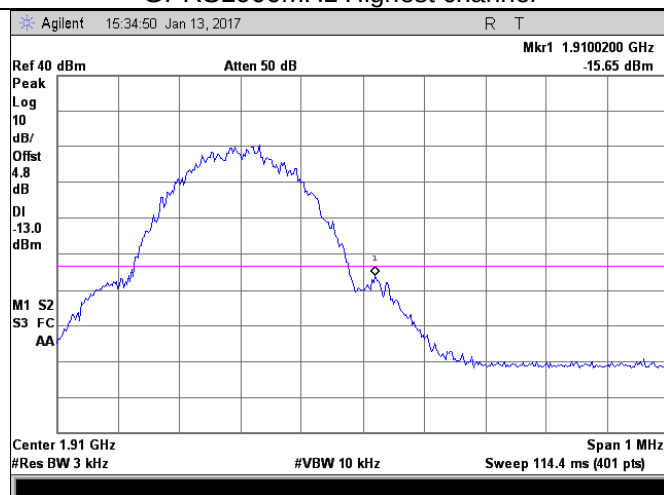
Note: Offset=Cable loss (4.5) + 10log (3.19 /3)=4.5+0.3=4.8dB

## GPRS1900MHz Lowest channel



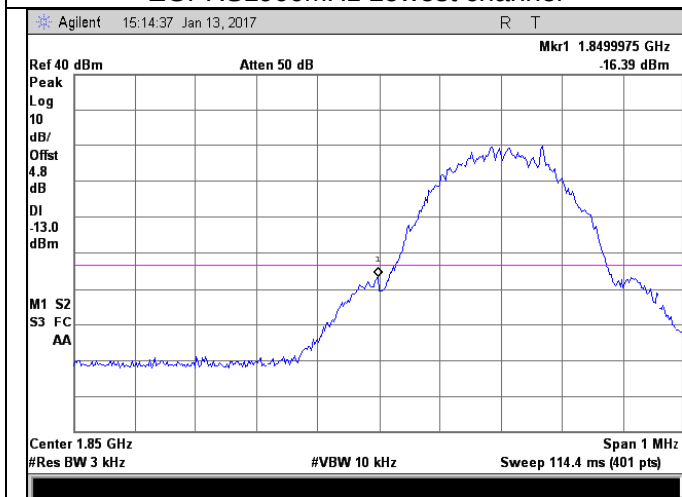
Note: Offset=Cable loss (4.5) + 10log (3.24/3)=4.5+0.3=4.8dB

## GPRS1900MHz Highest channel



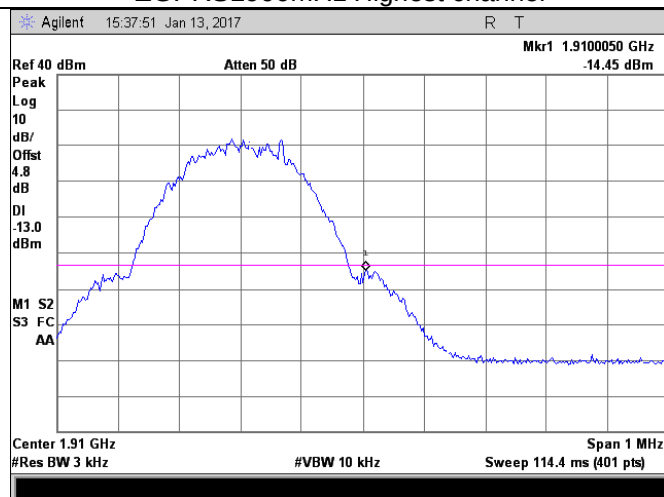
Note: Offset=Cable loss (4.5) + 10log (3.17/3)=4.5+0.3=4.8dB

## EGPRS1900MHz Lowest channel



Note: Offset=Cable loss (4.5) + 10log (3.22/3)=4.5+0.3=4.8dB

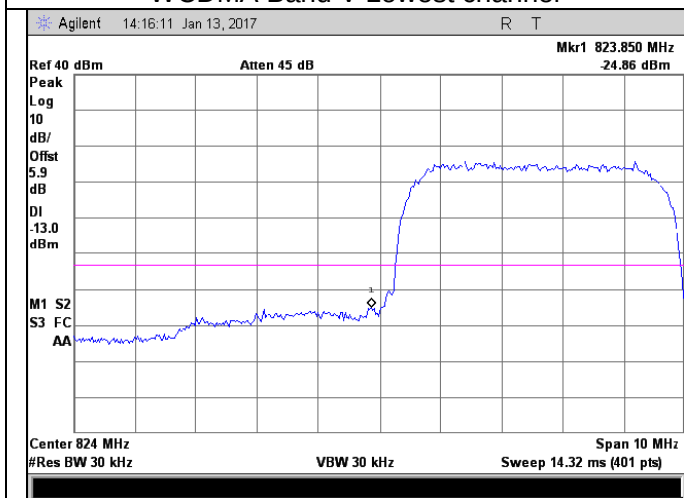
## EGPRS1900MHz Highest channel



Note: Offset=Cable loss (4.5) + 10log (3.20/3)=4.5+0.3=4.8dB

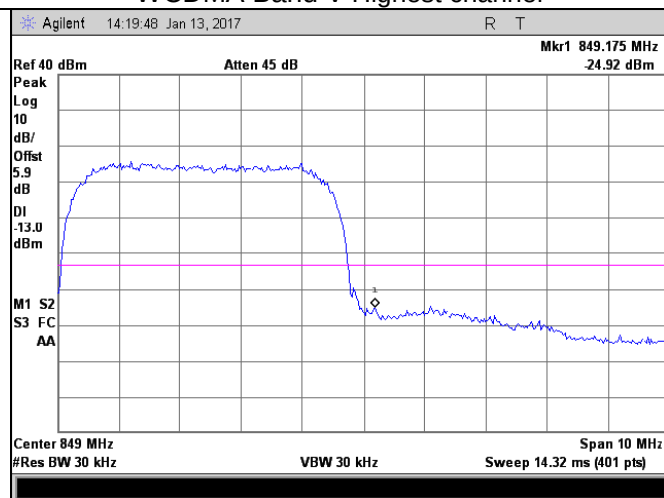


## WCDMA Band V Lowest channel



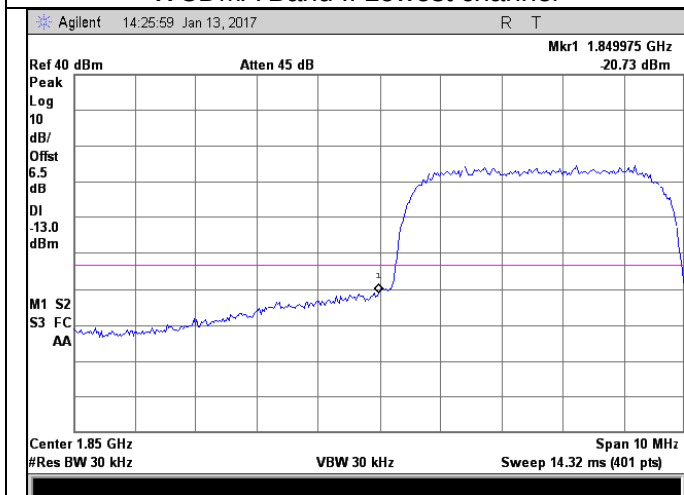
Note: Offset=Cable loss (4.0) + 10log (46.95/30)=4.0+1.9=5.9 dB

## WCDMA Band V Highest channel



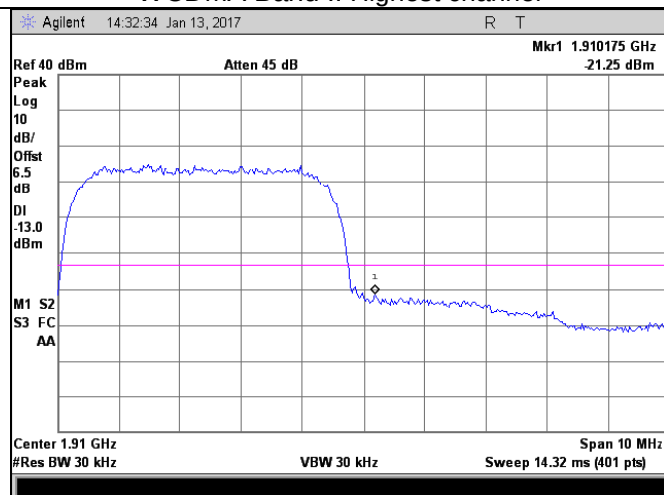
Note: Offset=Cable loss (4.0) + 10log (46.97/30)=4.0+1.9=5.9 dB

## WCDMA Band II Lowest channel



Note: Offset=Cable loss (4.5) + 10log (47.12/30)=4.5+2.0=6.5dB

## WCDMA Band II Highest channel



Note: Offset=Cable loss (4.5) + 10log (47.14/30)=4.5+2.0=6.5dB

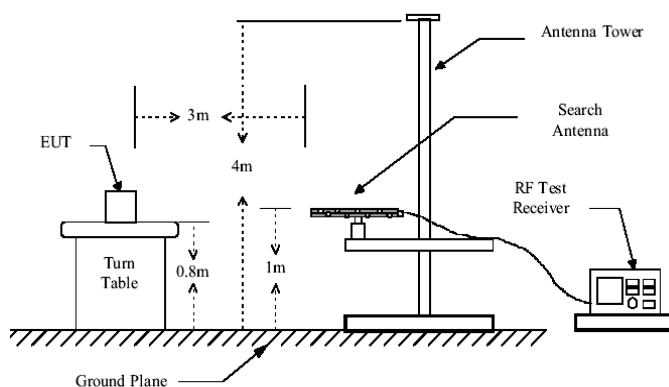
## 5.7. Transmitter Radiated Power (EIRP/ERP)

### 5.7.1. Limit

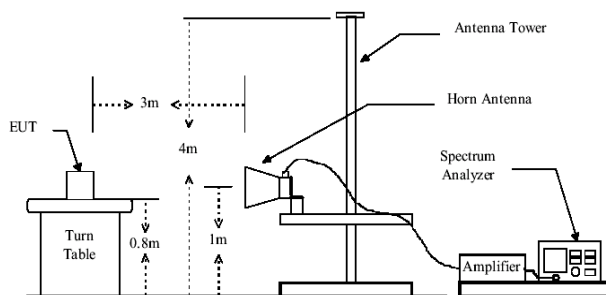
According to FCC section 22.913, the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7Watts, and FCC section 24.232, the broadband PCS mobile station is limited to 2 Watts e.i.r.p. peak power.

### 5.7.2. Test Setup

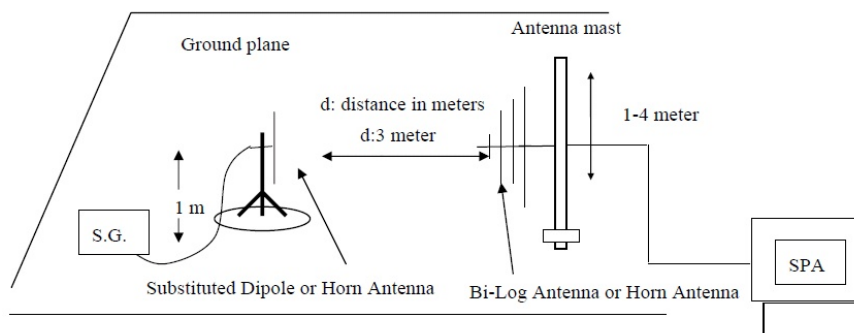
Below 1GHz



Above 1GHz



Substituted method:





### 5.7.3. Measurement Procedure

The EUT was placed on a non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. All test in Full-Anechoic Chamber.

During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.

ERP in frequency band 824.2 –848.80.8MHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:

EIRP in frequency band 1850.2 –1909.8MHz were measured using a substitution method. The EUT was replaced by or horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:

For BAND II:  $ERP = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable Loss (dB)}$

For BAND V:  $EIRP = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable Loss (dB)}$

### 5.7.4. Test Result



| EUT mode              | Channel | Antenna Pol. | S.G. output (dBm) | Antenna Gain (dBd) | Cable Loss (dB) | ERP (dBm)    | Limit (dBm) | Result |
|-----------------------|---------|--------------|-------------------|--------------------|-----------------|--------------|-------------|--------|
| GSM850 (GSM link)     | Lowest  | V            | 17.06             | 15.68              | 1.65            | 31.09        | 38.45       | Pass   |
|                       |         | H            | 15.08             | 15.68              | 1.65            | 29.11        |             |        |
|                       | Middle  | V            | 17.62             | 15.70              | 1.67            | 31.65        | 38.45       | Pass   |
|                       |         | H            | 15.49             | 15.70              | 1.67            | 29.52        |             |        |
|                       | Highest | V            | <b>18.28</b>      | <b>15.70</b>       | <b>1.71</b>     | <b>32.27</b> | 38.45       | Pass   |
|                       |         | H            | 15.05             | 15.70              | 1.71            | 29.04        |             |        |
| GPRS850               | Lowest  | V            | 16.90             | 15.68              | 1.65            | 30.93        | 38.45       | Pass   |
|                       |         | H            | 14.94             | 15.68              | 1.65            | 28.97        |             |        |
|                       | Middle  | V            | 17.45             | 15.70              | 1.67            | 31.48        | 38.45       | Pass   |
|                       |         | H            | 15.34             | 15.70              | 1.67            | 29.37        |             |        |
|                       | Highest | V            | <b>18.11</b>      | <b>15.70</b>       | <b>1.71</b>     | <b>32.10</b> | 38.45       | Pass   |
|                       |         | H            | 14.91             | 15.70              | 1.71            | 28.90        |             |        |
| GSM850 (EGPRS 8 link) | Lowest  | V            | 16.99             | 15.68              | 1.65            | 31.02        | 38.45       | Pass   |
|                       |         | H            | 15.02             | 15.68              | 1.65            | 29.05        |             |        |
|                       | Middle  | V            | 17.55             | 15.70              | 1.67            | 31.58        | 38.45       | Pass   |
|                       |         | H            | 15.43             | 15.70              | 1.67            | 29.46        |             |        |
|                       | Highest | V            | <b>18.20</b>      | <b>15.70</b>       | <b>1.71</b>     | <b>32.19</b> | 38.45       | Pass   |
|                       |         | H            | 17.00             | 15.70              | 1.71            | 30.99        |             |        |
| WCDMA Band V          | Lowest  | V            | 6.88              | 15.68              | 1.65            | 20.91        | 38.45       | Pass   |
|                       |         | H            | 5.93              | 15.68              | 1.65            | 19.96        |             |        |
|                       | Middle  | V            | 7.43              | 15.70              | 1.67            | 21.46        | 38.45       | Pass   |
|                       |         | H            | 6.33              | 15.70              | 1.67            | 20.36        |             |        |
|                       | Highest | V            | <b>8.09</b>       | <b>15.70</b>       | <b>1.71</b>     | <b>22.08</b> | 38.45       | Pass   |
|                       |         | H            | 7.90              | 15.70              | 1.71            | 21.89        |             |        |





| EUT mode                 | Channel | Antenna Pol. | S.G. output (dBm) | Antenna Gain (dBd) | Cable Loss (dB) | EIRP (dBm)   | Limit (dBm) | Result |
|--------------------------|---------|--------------|-------------------|--------------------|-----------------|--------------|-------------|--------|
| PCS1900 (GSM link)       | Lowest  | V            | 12.62             | 19.35              | 2.54            | 29.43        | 38.45       | Pass   |
|                          |         | H            | 10.70             | 19.35              | 2.54            | 27.51        |             |        |
|                          | Middle  | V            | <b>13.56</b>      | <b>19.51</b>       | <b>2.62</b>     | <b>30.45</b> | 38.45       | Pass   |
|                          |         | H            | 11.39             | 19.51              | 2.62            | 28.28        |             |        |
|                          | Highest | V            | 12.82             | 19.96              | 2.69            | 30.09        | 38.45       | Pass   |
|                          |         | H            | 10.78             | 19.96              | 2.69            | 28.05        |             |        |
| GPRS1900                 | Lowest  | V            | 12.50             | 19.35              | 2.54            | 29.31        | 38.45       | Pass   |
|                          |         | H            | 10.60             | 19.35              | 2.54            | 27.41        |             |        |
|                          | Middle  | V            | <b>13.43</b>      | <b>19.51</b>       | <b>2.62</b>     | <b>30.32</b> | 38.45       | Pass   |
|                          |         | H            | 11.28             | 19.51              | 2.62            | 28.17        |             |        |
|                          | Highest | V            | 12.70             | 19.96              | 2.69            | 29.97        | 38.45       | Pass   |
|                          |         | H            | 10.69             | 19.96              | 2.69            | 27.96        |             |        |
| EGPRS1900 (EGPRS 8 link) | Lowest  | V            | 12.60             | 19.35              | 2.54            | 29.41        | 38.45       | Pass   |
|                          |         | H            | 11.69             | 19.35              | 2.54            | 28.50        |             |        |
|                          | Middle  | V            | <b>13.54</b>      | <b>19.51</b>       | <b>2.62</b>     | <b>30.43</b> | 38.45       | Pass   |
|                          |         | H            | 11.38             | 19.51              | 2.62            | 28.27        |             |        |
|                          | Highest | V            | 12.80             | 19.96              | 2.69            | 30.07        | 38.45       | Pass   |
|                          |         | H            | 11.77             | 19.96              | 2.69            | 29.04        |             |        |
| WCDMA Band II            | Lowest  | V            | 7.17              | 19.33              | 2.52            | 23.98        | 38.45       | Pass   |
|                          |         | H            | 7.33              | 19.33              | 2.52            | 24.14        |             |        |
|                          | Middle  | V            | <b>7.59</b>       | <b>19.50</b>       | <b>2.60</b>     | <b>24.49</b> | 38.45       | Pass   |
|                          |         | H            | 7.42              | 19.50              | 2.60            | 24.32        |             |        |
|                          | Highest | V            | 6.87              | 19.94              | 2.71            | 24.10        | 38.45       | Pass   |
|                          |         | H            | 6.80              | 19.94              | 2.71            | 24.03        |             |        |

## 5.8. Radiated Out of Band Emissions

### 5.8.1. Limit

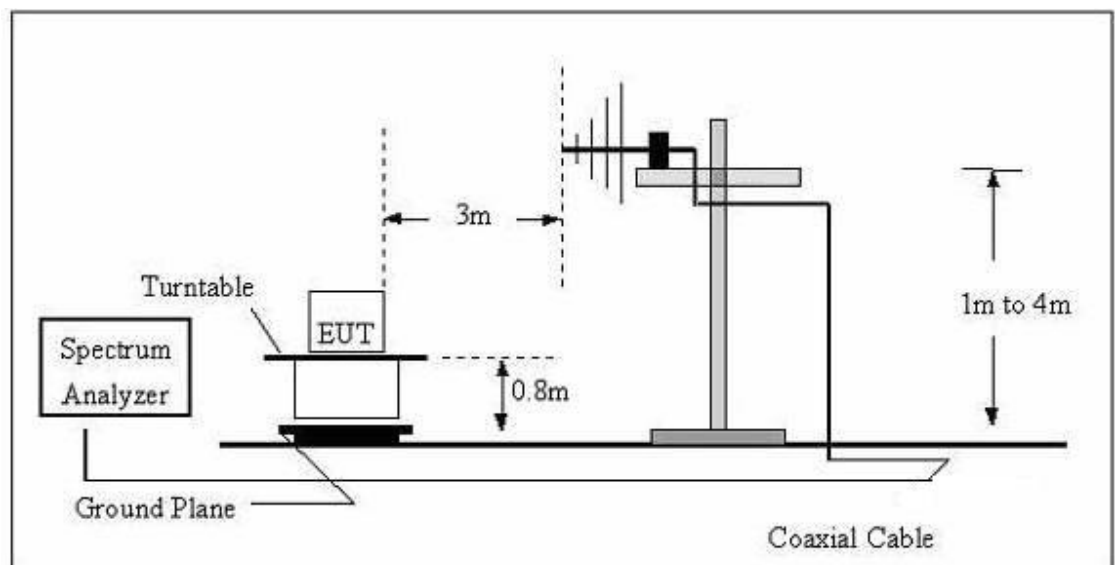
According to FCC section 22.917(a) and section 24.238(a), 27.53(g) the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power

(P) by a factor of at least  $43+10*\log(P)$ dB. This calculated to be -13dBm.

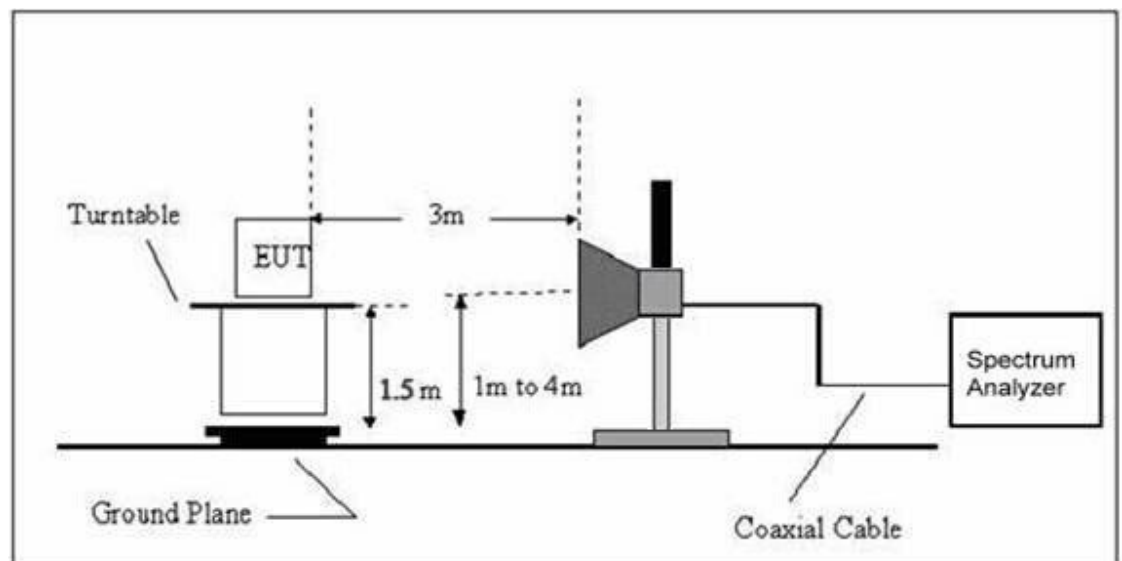
The spurious emission with frequency band 1900 according to FCC section 2.1057.

### 5.8.2. Test Setup

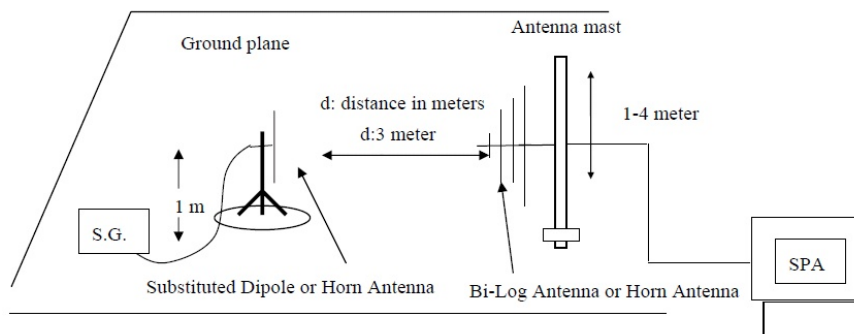
Below 1GHz



Above 1GHz



Substituted method:



### 5.8.3. Measurement Procedure

The EUT was placed on a non-conductive, The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. all test in Full-Anechoic Chamber.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

$EIRP (Level) = S.G. \text{ output (dBm)} + \text{Antenna Gain(dBi)} - \text{Cable Loss (dB)}$

Note: Measurement Uncertainty:  $\pm 3.6 \text{ dB}$ .

The data show only the worst results, and the other results are very low and not shown in the report.



| Band              | Frequency (MHz) | Spurious Emission |                   |                    |                 |             | Limit (dBm) | Result |
|-------------------|-----------------|-------------------|-------------------|--------------------|-----------------|-------------|-------------|--------|
|                   |                 | Polarization      | S.G. output (dBm) | Antenna Gain (dBd) | Cable Loss (dB) | Level (dBm) |             |        |
| GSM 850<br>Lowest | 88.37           | Vertical          | -75.62            | 3.35               | 0.38            | -72.65      | -13         | PASS   |
|                   | 1648.40         | Vertical          | -29.27            | 6.51               | 1.35            | -24.11      |             |        |
|                   | 2472.60         | Vertical          | -35.47            | 6.88               | 2.53            | -31.12      |             |        |
|                   | 3296.80         | Vertical          | -37.32            | 7.61               | 3.67            | -33.38      |             |        |
|                   | 4121.00         | Vertical          | -45.43            | 8.67               | 4.06            | -40.82      |             |        |
|                   | 4945.20         | Vertical          | -39.98            | 9.35               | 4.38            | -35.01      |             |        |
|                   | 138.26          | Horizontal        | -75.74            | 4.12               | 0.51            | -72.13      |             |        |
|                   | 2472.40         | Horizontal        | -34.01            | 6.51               | 1.35            | -28.85      |             |        |
|                   | 3296.80         | Horizontal        | -37.26            | 6.88               | 2.53            | -32.91      |             |        |
|                   | 4121.00         | Horizontal        | -45.88            | 7.61               | 3.67            | -41.94      |             |        |
|                   | 4945.20         | Horizontal        | -49.18            | 8.67               | 4.06            | -44.57      |             |        |
|                   | 5769.40         | Horizontal        | -43.41            | 9.35               | 4.38            | -38.44      |             |        |



| Band           | Frequency (MHz) | Spurious Emission |                   |                    |                 |             | Limit (dBm) | Result |
|----------------|-----------------|-------------------|-------------------|--------------------|-----------------|-------------|-------------|--------|
|                |                 | Polarization      | S.G. output (dBm) | Antenna Gain (dBd) | Cable Loss (dB) | Level (dBm) |             |        |
| GSM 850 Middle | 87.96           | Vertical          | -75.57            | 3.35               | 0.38            | -72.60      | -13         | PASS   |
|                | 1648.70         | Vertical          | -32.22            | 6.51               | 1.35            | -27.06      |             |        |
|                | 2472.10         | Vertical          | -32.76            | 6.88               | 2.53            | -28.41      |             |        |
|                | 3296.50         | Vertical          | -40.24            | 7.61               | 3.67            | -36.30      |             |        |
|                | 4121.30         | Vertical          | -47.81            | 8.67               | 4.06            | -43.20      |             |        |
|                | 4945.70         | Vertical          | -43.32            | 9.35               | 4.38            | -38.35      |             |        |
|                | 137.69          | Horizontal        | -76.06            | 4.12               | 0.51            | -72.45      |             |        |
|                | 2472.10         | Horizontal        | -29.54            | 6.51               | 1.35            | -24.38      |             |        |
|                | 3296.20         | Horizontal        | -32.21            | 6.88               | 2.53            | -27.86      |             |        |
|                | 4121.70         | Horizontal        | -48.50            | 7.61               | 3.67            | -44.56      |             |        |
|                | 4945.00         | Horizontal        | -49.89            | 8.67               | 4.06            | -45.28      |             |        |
|                | 5769.60         | Horizontal        | -39.91            | 9.35               | 4.38            | -34.94      |             |        |



| Band            | Frequency (MHz) | Spurious Emission |                   |                    |                 |             | Limit (dBm) | Result |
|-----------------|-----------------|-------------------|-------------------|--------------------|-----------------|-------------|-------------|--------|
|                 |                 | Polarization      | S.G. output (dBm) | Antenna Gain (dBd) | Cable Loss (dB) | Level (dBm) |             |        |
| GSM 850 Highest | 88.69           | Vertical          | -75.24            | 3.35               | 0.38            | -72.27      | -13         | PASS   |
|                 | 1648.30         | Vertical          | -31.11            | 6.51               | 1.35            | -25.95      |             |        |
|                 | 2472.10         | Vertical          | -33.02            | 6.88               | 2.53            | -28.67      |             |        |
|                 | 3296.50         | Vertical          | -36.17            | 7.61               | 3.67            | -32.23      |             |        |
|                 | 4121.40         | Vertical          | -41.49            | 8.67               | 4.06            | -36.88      |             |        |
|                 | 4945.20         | Vertical          | -46.92            | 9.35               | 4.38            | -41.95      |             |        |
|                 | 138.22          | Horizontal        | -76.26            | 4.12               | 0.51            | -72.65      |             |        |
|                 | 2472.90         | Horizontal        | -29.93            | 6.51               | 1.35            | -24.77      |             |        |
|                 | 3296.30         | Horizontal        | -32.82            | 6.88               | 2.53            | -28.47      |             |        |
|                 | 4121.20         | Horizontal        | -38.54            | 7.61               | 3.67            | -34.60      |             |        |
|                 | 4945.70         | Horizontal        | -47.17            | 8.67               | 4.06            | -42.56      |             |        |
|                 | 5769.60         | Horizontal        | -53.41            | 9.35               | 4.38            | -48.44      |             |        |



| Band           | Frequency (MHz) | Spurious Emission |                   |                    |                 |             | Limit (dBm) | Result |
|----------------|-----------------|-------------------|-------------------|--------------------|-----------------|-------------|-------------|--------|
|                |                 | Polarization      | S.G. output (dBm) | Antenna Gain (dBi) | Cable Loss (dB) | Level (dBm) |             |        |
| PCS1900 Lowest | 89.03           | Vertical          | -75.46            | 3.35               | 0.38            | -72.49      | -13         | PASS   |
|                | 3700.40         | Vertical          | -46.18            | 7.76               | 3.75            | -42.17      |             |        |
|                | 5550.60         | Vertical          | -47.30            | 9.84               | 4.94            | -42.40      |             |        |
|                | 7400.80         | Vertical          | -39.74            | 10.21              | 5.32            | -34.85      |             |        |
|                | 9251.00         | Vertical          | -43.12            | 11.36              | 6.02            | -37.78      |             |        |
|                | 11101.20        | Vertical          | -44.65            | 14.52              | 6.68            | -36.81      |             |        |
|                | 137.21          | Horizontal        | -75.58            | 4.12               | 0.51            | -71.97      |             |        |
|                | 3700.40         | Horizontal        | -48.40            | 7.76               | 3.75            | -44.39      |             |        |
|                | 5550.60         | Horizontal        | -47.67            | 9.84               | 4.94            | -42.77      |             |        |
|                | 7400.80         | Horizontal        | -42.34            | 10.21              | 5.32            | -37.45      |             |        |
|                | 9251.00         | Horizontal        | -47.56            | 11.36              | 6.02            | -42.22      |             |        |
|                | 11101.20        | Horizontal        | -47.34            | 14.52              | 6.68            | -39.50      |             |        |



| Band           | Frequency (MHz) | Spurious Emission |                   |                    |                 |             | Limit (dBm) | Result |
|----------------|-----------------|-------------------|-------------------|--------------------|-----------------|-------------|-------------|--------|
|                |                 | Polarization      | S.G. output (dBm) | Antenna Gain (dBi) | Cable Loss (dB) | Level (dBm) |             |        |
| PCS1900 Middle | 88.14           | Vertical          | -75.46            | 3.35               | 0.38            | -72.49      | -13         | PASS   |
|                | 3760.00         | Vertical          | -47.51            | 7.76               | 3.75            | -43.50      |             |        |
|                | 5640.00         | Vertical          | -47.11            | 9.84               | 4.94            | -42.21      |             |        |
|                | 7520.00         | Vertical          | -42.73            | 10.21              | 5.32            | -37.84      |             |        |
|                | 9400.00         | Vertical          | -42.13            | 11.36              | 6.02            | -36.79      |             |        |
|                | 11280.00        | Vertical          | -46.08            | 14.52              | 6.68            | -38.24      |             |        |
|                | 137.56          | Horizontal        | -75.58            | 4.12               | 0.51            | -71.97      |             |        |
|                | 3760.00         | Horizontal        | -45.93            | 7.76               | 3.75            | -41.92      |             |        |
|                | 5640.00         | Horizontal        | -46.67            | 9.84               | 4.94            | -41.77      |             |        |
|                | 7520.00         | Horizontal        | -39.33            | 10.21              | 5.32            | -34.44      |             |        |
|                | 9400.00         | Horizontal        | -43.22            | 11.36              | 6.02            | -37.88      |             |        |
|                | 11280.00        | Horizontal        | -45.09            | 14.52              | 6.68            | -37.25      |             |        |





| Band                   | Frequency (MHz) | Spurious Emission |                   |                    |                 |             | Limit (dBm) | Result |
|------------------------|-----------------|-------------------|-------------------|--------------------|-----------------|-------------|-------------|--------|
|                        |                 | Polarization      | S.G. output (dBm) | Antenna Gain (dBi) | Cable Loss (dB) | Level (dBm) |             |        |
| PCS190<br>0<br>Highest | 89.06           | Vertical          | -75.50            | 3.35               | 0.38            | -72.53      | -13         | PASS   |
|                        | 3819.60         | Vertical          | -47.16            | 7.79               | 3.53            | -42.90      |             |        |
|                        | 5729.40         | Vertical          | -41.60            | 9.88               | 5.02            | -36.74      |             |        |
|                        | 7639.20         | Vertical          | -37.81            | 10.25              | 5.54            | -33.10      |             |        |
|                        | 9549.00         | Vertical          | -44.67            | 11.38              | 6.16            | -39.45      |             |        |
|                        | 11458.80        | Vertical          | -47.11            | 14.56              | 6.72            | -39.27      |             |        |
|                        | 137.29          | Horizontal        | -75.62            | 4.12               | 0.51            | -72.01      |             |        |
|                        | 3819.60         | Horizontal        | -45.51            | 7.79               | 3.53            | -41.25      |             |        |
|                        | 5729.40         | Horizontal        | -41.51            | 9.88               | 5.02            | -36.65      |             |        |
|                        | 7639.20         | Horizontal        | -37.18            | 10.25              | 5.54            | -32.47      |             |        |
|                        | 9549.00         | Horizontal        | -42.77            | 11.38              | 6.16            | -37.55      |             |        |
|                        | 11458.80        | Horizontal        | -44.67            | 14.56              | 6.72            | -36.83      |             |        |



| Band                       | Frequency (MHz) | Spurious Emission |                   |                    |                 |             | Limit (dBm) | Result |
|----------------------------|-----------------|-------------------|-------------------|--------------------|-----------------|-------------|-------------|--------|
|                            |                 | Polarization      | S.G. output (dBm) | Antenna Gain (dBi) | Cable Loss (dB) | Level (dBm) |             |        |
| WCDMA<br>Band II<br>Lowest | 87.21           | Vertical          | -75.46            | 3.35               | 0.38            | -72.49      | -13         | PASS   |
|                            | 3700.40         | Vertical          | -46.18            | 7.76               | 3.75            | -42.17      |             |        |
|                            | 5550.60         | Vertical          | -47.30            | 9.84               | 4.94            | -42.40      |             |        |
|                            | 7400.80         | Vertical          | -39.74            | 10.21              | 5.32            | -34.85      |             |        |
|                            | 9251.00         | Vertical          | -43.12            | 11.36              | 6.02            | -37.78      |             |        |
|                            | 11101.20        | Vertical          | -44.65            | 14.52              | 6.68            | -36.81      |             |        |
|                            | 137.26          | Horizontal        | -75.58            | 4.12               | 0.51            | -71.97      |             |        |
|                            | 3700.40         | Horizontal        | -48.40            | 7.76               | 3.75            | -44.39      |             |        |
|                            | 5550.60         | Horizontal        | -47.67            | 9.84               | 4.94            | -42.77      |             |        |
|                            | 7400.80         | Horizontal        | -42.34            | 10.21              | 5.32            | -37.45      |             |        |
|                            | 9251.00         | Horizontal        | -47.56            | 11.36              | 6.02            | -42.22      |             |        |
|                            | 11101.20        | Horizontal        | -47.34            | 14.52              | 6.68            | -39.50      |             |        |



| Band                 | Frequency (MHz) | Spurious Emission |                   |                    |                 |             | Limit (dBm) | Result |
|----------------------|-----------------|-------------------|-------------------|--------------------|-----------------|-------------|-------------|--------|
|                      |                 | Polarization      | S.G. output (dBm) | Antenna Gain (dBi) | Cable Loss (dB) | Level (dBm) |             |        |
| WCDMA Band II Middle | 88.39           | Vertical          | -75.46            | 3.35               | 0.38            | -72.49      | -13         | PASS   |
|                      | 3760.00         | Vertical          | -47.51            | 7.76               | 3.75            | -43.50      |             |        |
|                      | 5640.00         | Vertical          | -47.11            | 9.84               | 4.94            | -42.21      |             |        |
|                      | 7520.00         | Vertical          | -42.73            | 10.21              | 5.32            | -37.84      |             |        |
|                      | 9400.00         | Vertical          | -42.13            | 11.36              | 6.02            | -36.79      |             |        |
|                      | 11280.00        | Vertical          | -46.08            | 14.52              | 6.68            | -38.24      |             |        |
|                      | 137.43          | Horizontal        | -75.58            | 4.12               | 0.51            | -71.97      |             |        |
|                      | 3760.00         | Horizontal        | -45.93            | 7.76               | 3.75            | -41.92      |             |        |
|                      | 5640.00         | Horizontal        | -46.67            | 9.84               | 4.94            | -41.77      |             |        |
|                      | 7520.00         | Horizontal        | -39.33            | 10.21              | 5.32            | -34.44      |             |        |
|                      | 9400.00         | Horizontal        | -43.22            | 11.36              | 6.02            | -37.88      |             |        |
|                      | 11280.00        | Horizontal        | -45.09            | 14.52              | 6.68            | -37.25      |             |        |



| Band                  | Frequency (MHz) | Spurious Emission |                   |                    |                 |             | Limit (dBm) | Result |
|-----------------------|-----------------|-------------------|-------------------|--------------------|-----------------|-------------|-------------|--------|
|                       |                 | Polarization      | S.G. output (dBm) | Antenna Gain (dBi) | Cable Loss (dB) | Level (dBm) |             |        |
| WCDMA Band II Highest | 88.24           | Vertical          | -75.42            | 3.35               | 0.38            | -72.45      | -13         | PASS   |
|                       | 3819.60         | Vertical          | -47.11            | 7.79               | 3.53            | -42.85      |             |        |
|                       | 5729.40         | Vertical          | -41.56            | 9.88               | 5.02            | -36.70      |             |        |
|                       | 7639.20         | Vertical          | -37.76            | 10.25              | 5.54            | -33.05      |             |        |
|                       | 9549.00         | Vertical          | -44.62            | 11.38              | 6.16            | -39.40      |             |        |
|                       | 11458.80        | Vertical          | -47.06            | 14.56              | 6.72            | -39.22      |             |        |
|                       | 139.04          | Horizontal        | -75.54            | 4.12               | 0.51            | -71.93      |             |        |
|                       | 3819.60         | Horizontal        | -45.46            | 7.79               | 3.53            | -41.20      |             |        |
|                       | 5729.40         | Horizontal        | -41.47            | 9.88               | 5.02            | -36.61      |             |        |
|                       | 7639.20         | Horizontal        | -37.14            | 10.25              | 5.54            | -32.43      |             |        |
|                       | 9549.00         | Horizontal        | -42.73            | 11.38              | 6.16            | -37.51      |             |        |
|                       | 11458.80        | Horizontal        | -44.62            | 14.56              | 6.72            | -36.78      |             |        |



| Band                      | Frequency (MHz) | Spurious Emission |                   |                    |                 |             | Limit (dBm) | Result |
|---------------------------|-----------------|-------------------|-------------------|--------------------|-----------------|-------------|-------------|--------|
|                           |                 | Polarization      | S.G. output (dBm) | Antenna Gain (dBd) | Cable Loss (dB) | Level (dBm) |             |        |
| WCDMA<br>Band V<br>Lowest | 87.48           | Vertical          | -75.66            | 3.35               | 0.38            | -72.69      | -13         | PASS   |
|                           | 1652.80         | Vertical          | -29.29            | 6.51               | 1.35            | -24.13      |             |        |
|                           | 2479.20         | Vertical          | -35.49            | 6.88               | 2.53            | -31.14      |             |        |
|                           | 3305.60         | Vertical          | -37.34            | 7.61               | 3.67            | -33.40      |             |        |
|                           | 4132.00         | Vertical          | -45.46            | 8.67               | 4.06            | -40.85      |             |        |
|                           | 4958.40         | Vertical          | -40.01            | 9.35               | 4.38            | -35.04      |             |        |
|                           | 138.21          | Horizontal        | -75.78            | 4.12               | 0.51            | -72.17      |             |        |
|                           | 1652.80         | Horizontal        | -34.03            | 6.51               | 1.35            | -28.87      |             |        |
|                           | 2479.20         | Horizontal        | -37.28            | 6.88               | 2.53            | -32.93      |             |        |
|                           | 3305.60         | Horizontal        | -45.91            | 7.61               | 3.67            | -41.97      |             |        |
|                           | 4132.00         | Horizontal        | -49.21            | 8.67               | 4.06            | -44.60      |             |        |
|                           | 4958.40         | Horizontal        | -43.43            | 9.35               | 4.38            | -38.46      |             |        |



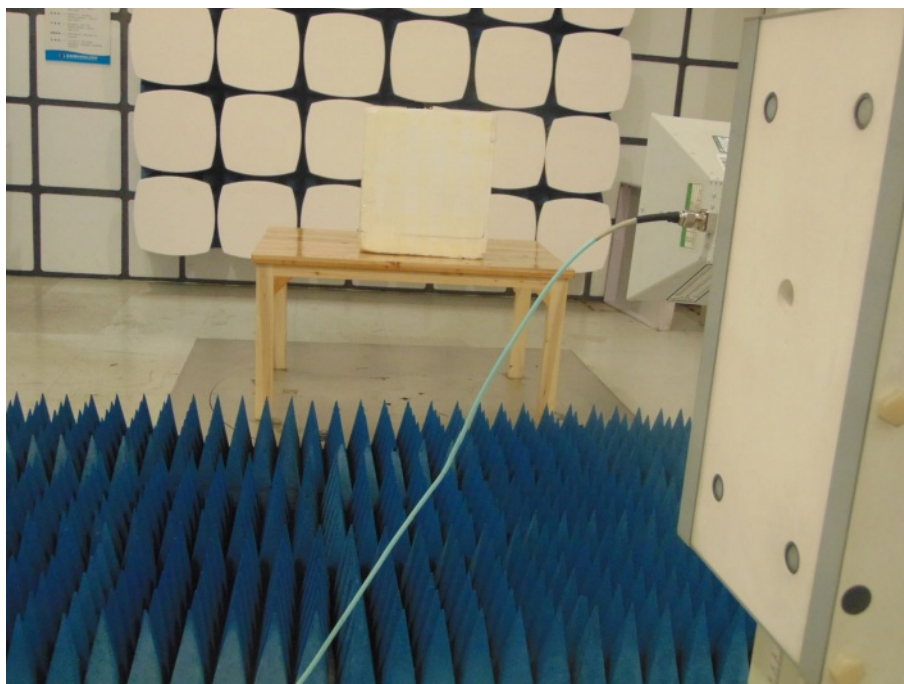
| Band                      | Frequency (MHz) | Spurious Emission |                   |                    |                 |             | Limit (dBm) | Result |
|---------------------------|-----------------|-------------------|-------------------|--------------------|-----------------|-------------|-------------|--------|
|                           |                 | Polarization      | S.G. output (dBm) | Antenna Gain (dBd) | Cable Loss (dB) | Level (dBm) |             |        |
| WCDMA<br>Band V<br>Middle | 87.69           | Vertical          | -75.61            | 3.35               | 0.38            | -72.64      | -13         | PASS   |
|                           | 1670.00         | Vertical          | -32.24            | 6.58               | 1.38            | -27.04      |             |        |
|                           | 2505.00         | Vertical          | -32.78            | 6.92               | 2.57            | -28.43      |             |        |
|                           | 3340.00         | Vertical          | -40.27            | 7.67               | 3.72            | -36.32      |             |        |
|                           | 4175.00         | Vertical          | -47.83            | 8.75               | 4.19            | -43.27      |             |        |
|                           | 5010.00         | Vertical          | -43.34            | 9.48               | 4.45            | -38.31      |             |        |
|                           | 139.86          | Horizontal        | -76.10            | 4.12               | 0.51            | -72.49      |             |        |
|                           | 1670.00         | Horizontal        | -29.56            | 6.58               | 1.38            | -24.36      |             |        |
|                           | 2505.00         | Horizontal        | -32.23            | 6.92               | 2.57            | -27.88      |             |        |
|                           | 3340.00         | Horizontal        | -48.53            | 7.67               | 3.72            | -44.58      |             |        |
|                           | 4175.00         | Horizontal        | -49.92            | 8.75               | 4.19            | -45.36      |             |        |
|                           | 5010.00         | Horizontal        | -39.94            | 9.48               | 4.45            | -34.91      |             |        |



| Band                       | Frequency (MHz) | Spurious Emission |                   |                    |                 |             | Limit (dBm) | Result |
|----------------------------|-----------------|-------------------|-------------------|--------------------|-----------------|-------------|-------------|--------|
|                            |                 | Polarization      | S.G. output (dBm) | Antenna Gain (dBd) | Cable Loss (dB) | Level (dBm) |             |        |
| WCDMA<br>Band V<br>Highest | 88.26           | Vertical          | -75.29            | 3.35               | 0.38            | -72.32      | -13         | PASS   |
|                            | 1693.20         | Vertical          | -31.12            | 6.57               | 1.48            | -26.03      |             |        |
|                            | 2539.80         | Vertical          | -33.04            | 6.96               | 2.67            | -28.75      |             |        |
|                            | 3386.40         | Vertical          | -36.20            | 7.68               | 3.78            | -32.30      |             |        |
|                            | 4233.00         | Vertical          | -41.52            | 8.76               | 4.24            | -37.00      |             |        |
|                            | 5079.60         | Vertical          | -46.95            | 9.47               | 4.63            | -42.11      |             |        |
|                            | 137.65          | Horizontal        | -76.30            | 4.12               | 0.51            | -72.69      |             |        |
|                            | 1693.20         | Horizontal        | -29.95            | 6.57               | 1.48            | -24.86      |             |        |
|                            | 2539.80         | Horizontal        | -32.84            | 6.96               | 2.67            | -28.55      |             |        |
|                            | 3386.40         | Horizontal        | -38.56            | 7.68               | 3.78            | -34.66      |             |        |
|                            | 4233.00         | Horizontal        | -47.20            | 8.76               | 4.24            | -42.68      |             |        |
|                            | 5079.60         | Horizontal        | -53.44            | 9.47               | 4.63            | -48.60      |             |        |

## 6. PHOTOGRAPHS OF TEST SET-UP

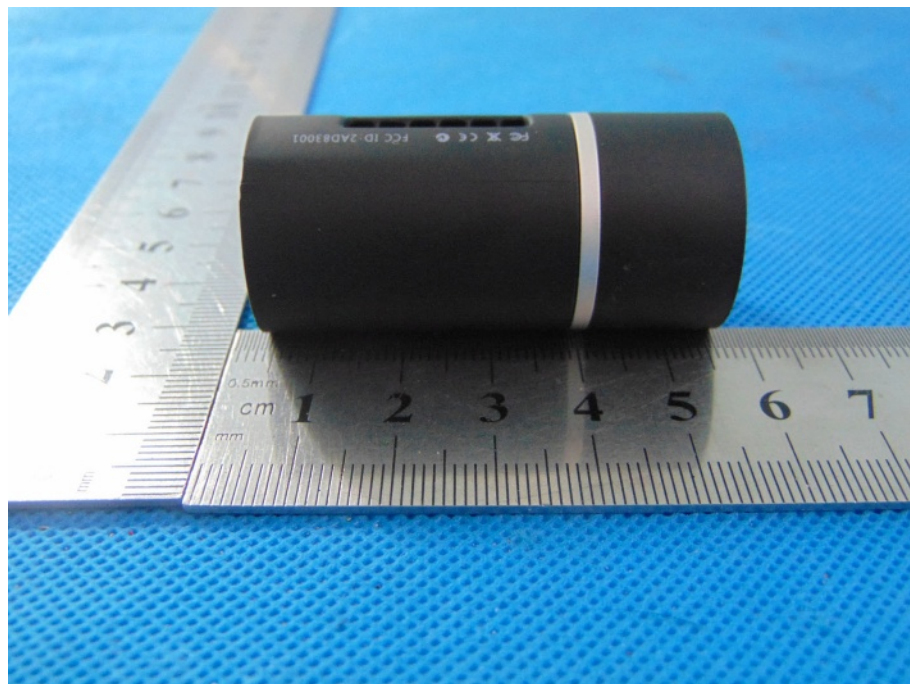
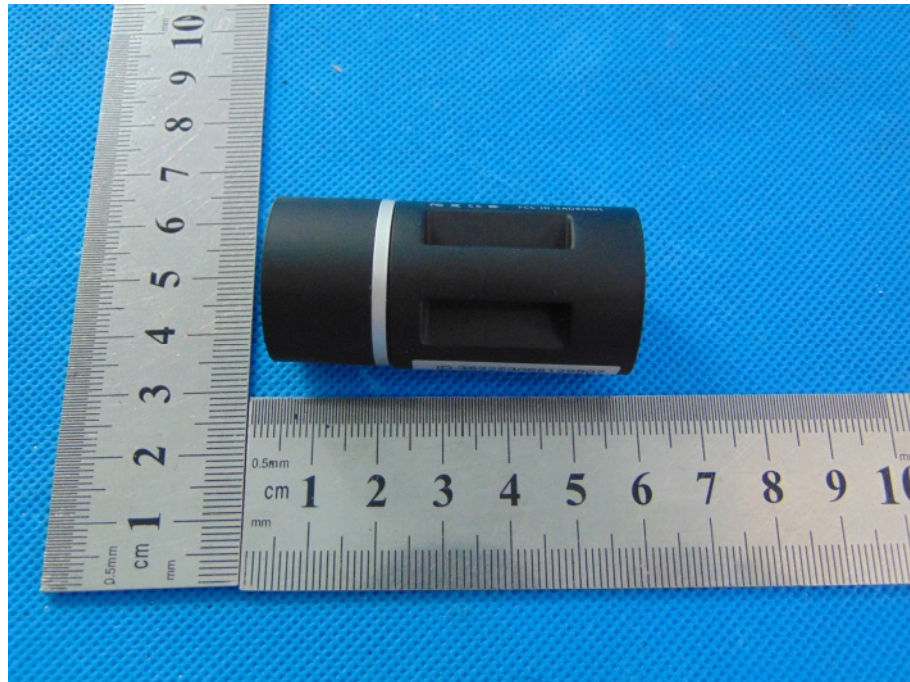
RE



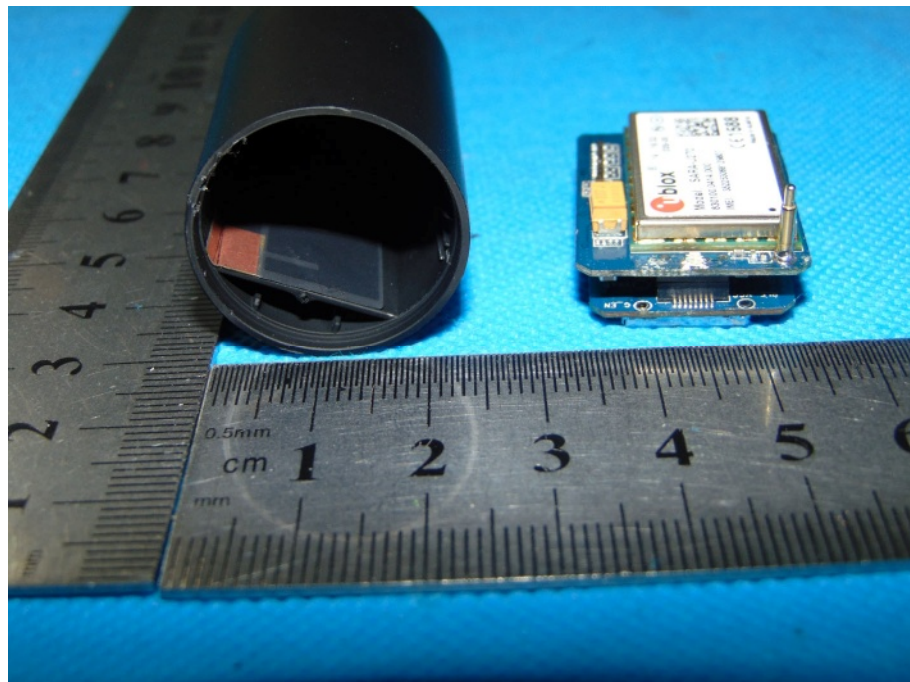
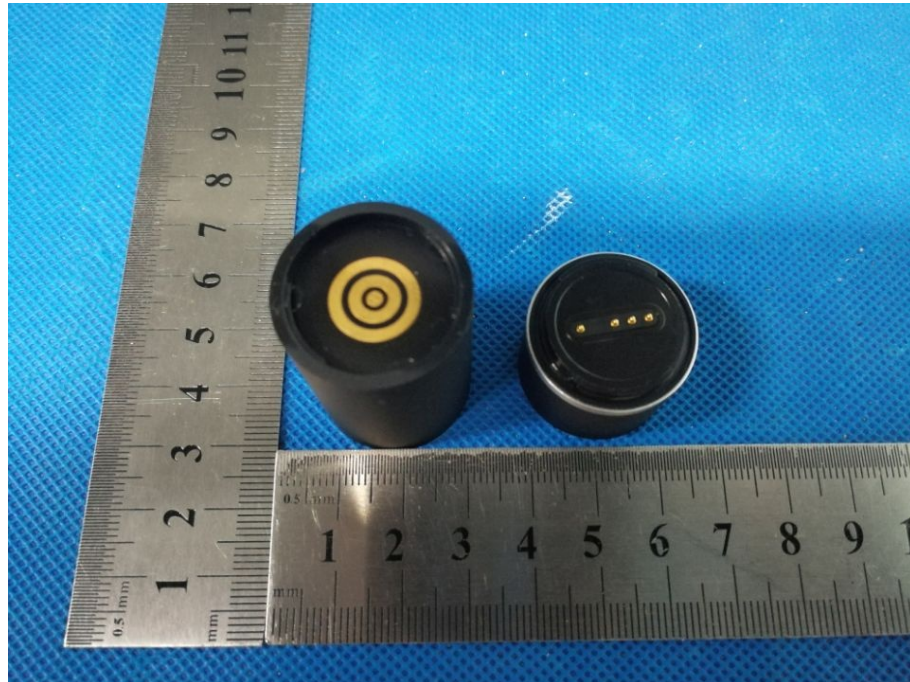


## 7. PHOTOGRAPHS OF THE EUT









\*\*\*\*\* END OF REPORT \*\*\*\*\*