

FCC Test Report

(PART 24)

Report No.: RF171221C06-7

FCC ID: VQK-F04K

Test Model: F-04K

Received Date: Dec. 21, 2017

Test Date: Feb. 18, 2018 ~ Feb. 23, 2018

Issued Date: Mar. 05, 2018

Applicant: Fujitsu Limited

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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(R.O.C)

Test Location (1): No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan
Hsien 333, Taiwan, R.O.C.

**FCC Registration /
Designation Number:** 788550 / TW0003



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Release Control Record

| Issue No. | Description | Date Issued |
|---------------|------------------|---------------|
| RF171221C06-7 | Original Release | Mar. 05, 2018 |

1 Certificate of Conformity

Product: Smart Phone

Brand: FUJITSU

Test Model: F-04K

Sample Status: Identical Prototype

Applicant: Fujitsu Limited

Test Date: Feb. 18, 2018 ~ Feb. 23, 2018

Standards: FCC Part 24, Subpart E

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by :



Date:

Mar. 05, 2018

Ivonne Wu / Supervisor

Approved by :



Date:

Mar. 05, 2018

Dylan Chiou / Project Engineer

2 Summary of Test Results

| Applied Standard: FCC Part 24 & Part 2 | | | |
|--|------------------------------------|--------|---|
| FCC Clause | Test Item | Result | Remarks |
| 2.1046 24.232 | Effective Isotropic Radiated Power | Pass | Meet the requirement of limit. |
| 2.1046 24.232(d) | Peak to Average Ratio | Pass | Meet the requirement of limit. |
| 2.1055 24.235 | Frequency Stability | Pass | Meet the requirement of limit. |
| 2.1049 24.238(b) | Occupied Bandwidth | Pass | Meet the requirement of limit. |
| 24.238(b) | Band Edge Measurements | Pass | Meet the requirement of limit. |
| 2.1051 24.238 | Conducted Spurious Emissions | Pass | Meet the requirement of limit. |
| 2.1053 24.238 | Radiated Spurious Emissions | Pass | Meet the requirement of limit. Minimum passing margin is -24.05 dB at 3819.60 MHz. |

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

| Measurement | Frequency | Expanded Uncertainty (k=2) (±) |
|--------------------------------|--------------------|--------------------------------|
| Radiated Emissions up to 1 GHz | 30 MHz ~ 200 MHz | 2.93 dB |
| | 200 MHz ~ 1000 MHz | 2.95 dB |
| Radiated Emissions above 1 GHz | 1 GHz ~ 18 GHz | 2.26 dB |
| | 18 GHz ~ 40 GHz | 1.94 dB |

2.2 Test Site And Instruments

| Description & Manufacturer | Model No. | Serial No. | Date of Calibration | Due Date of Calibration |
|--|----------------------------|---|---------------------|-------------------------|
| Test Receiver Agilent | N9038A | MY52260177 | Jul. 05, 2017 | Jul. 04, 2018 |
| Spectrum Analyzer Agilent | N9010A | MY52220314 | Nov. 24, 2017 | Nov. 23, 2018 |
| Spectrum Analyzer ROHDE & SCHWARZ | FSU43 | 100115 | Nov. 23, 2017 | Nov. 22, 2018 |
| Double Ridge Guide Horn Antenna EMCO | 3115 | 5619 | Nov. 30, 2017 | Nov. 29, 2018 |
| BILOG Antenna SCHWARZBECK | VULB 9168 | 9168-153 | Dec. 06, 2017 | Dec. 05, 2018 |
| RF signal cable ETS-LINDGREN | 5D-FB | Cable-CH1-01(R FC-SMS-100-SM S-120+RFC-SMS -100-SMS-400) | Jun. 23, 2017 | Jun. 22, 2018 |
| MXG Vector signal generator Agilent | N5182B | MY53050430 | Oct. 24, 2017 | Oct. 23, 2018 |
| Preamplifier EMCI | EMC 012645 | 980115 | Oct. 20, 2017 | Oct. 19, 2018 |
| Preamplifier EMCI | EMC 184045 | 980116 | Oct. 20, 2017 | Oct. 19, 2018 |
| Preamplifier EMCI | EMC 330H | 980112 | Oct. 13, 2017 | Oct. 12, 2018 |
| Power Meter Anritsu | ML2495A | 1012010 | Aug. 15, 2017 | Aug. 14, 2018 |
| Power Sensor Anritsu | MA2411B | 1315050 | Aug. 15, 2017 | Aug. 14, 2018 |
| RF Coaxial Cable HUBER+SUHNNER | EMC104-SM-SM-8 000&3000 | 140811+170717 | Oct. 20, 2017 | Oct. 19, 2018 |
| RF Coaxial Cable HUBER+SUHNNER | SUCOFLEX 104 | EMC104-SM-SM- 1000(140807) | Oct. 20, 2017 | Oct. 19, 2018 |
| RF Coaxial Cable Worken | 8D-FB | Cable-Ch10-01 | Oct. 20, 2017 | Oct. 19, 2018 |
| Software BV ADT | E3 6.120103 | NA | NA | NA |
| Antenna Tower MF | MFA-440H | NA | NA | NA |
| Turn Table MF | MFT-201SS | NA | NA | NA |
| Antenna Tower & Turn Table Controller MF | MF-7802 | NA | NA | NA |
| Temperature & Humidity Chamber | GTH-120-40-CP-A R | MAA1306-019 | Sep. 08, 2017 | Sep. 07, 2018 |
| DC Power Supply Topward | 33010D | 807748 | Oct. 25, 2016 | Oct. 24, 2018 |
| Digital Multimeter Fluke | 87-III | 70360742 | Jun. 30, 2017 | Jun. 29, 2018 |

- Note: 1. The calibration interval of the above test instruments is 12 / 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 10.
3. The horn antenna and preamplifier (model: EMC 184045) are used only for the measurement of emission frequency above 1 GHz if tested.
4. The IC Site Registration No. is IC7450F-10.

3 General Information

3.1 General Description of EUT

| | | |
|-------------------------------|--|---------------------|
| Product | Smart Phone | |
| Brand | FUJITSU | |
| Test Model | F-04K | |
| Status of EUT | Identical Prototype | |
| Power Supply Rating | 5.0 Vdc (adapter or host equipment) 3.75 Vdc (Li-ion battery) | |
| Normal Testing Voltage | 3.9 Vdc | |
| Modulation Type | GSM/GPRS | GMSK |
| Frequency Range | GSM/GPRS | 1850.2 ~ 1909.8 MHz |
| Max. EIRP Power | GSM/GPRS | 781.63 mW |
| Emission Designator | GSM/GPRS | 247KGXW |
| Antenna Type | λ /4 Monopole Antenna | |
| Accessory Device | Refer to Note as below | |
| Data Cable Supplied | Refer to Note as below | |

Note:

1. The EUT contains following accessory devices.

| Product | Brand | Model | Description |
|---------|-------------------------------------|--------------|--------------------|
| Battery | FUJITSU CONNECTED TECHNOLOGIES Ltd. | CA54310-0067 | 3.75 Vdc, 2850 mAh |

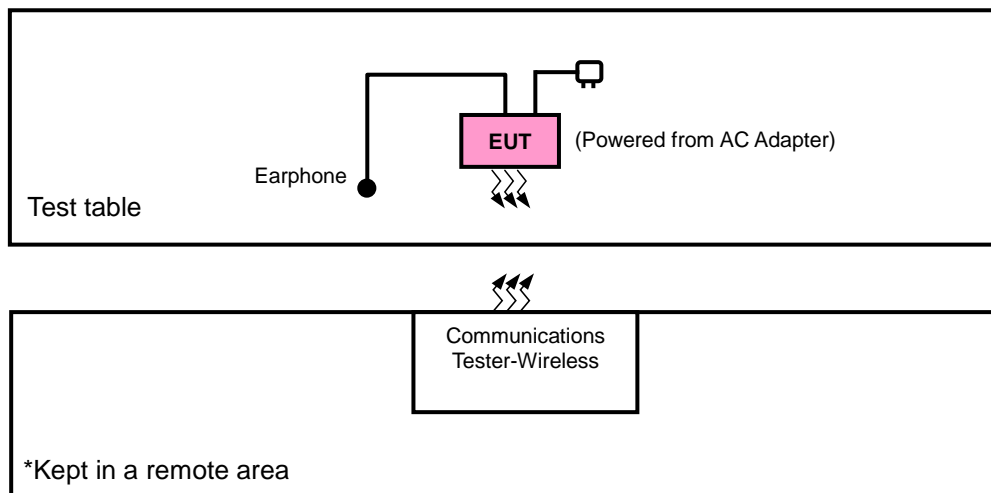
2. The EUT uses following adapter which provided by client as support unit.

| Product | Brand | Model | Description |
|---------|------------|---------------|---|
| Adapter | NTT docomo | AC Adapter 01 | I/P: 100-240Vac, 0.8A, O/P: 5.0Vdc, 3.0A |

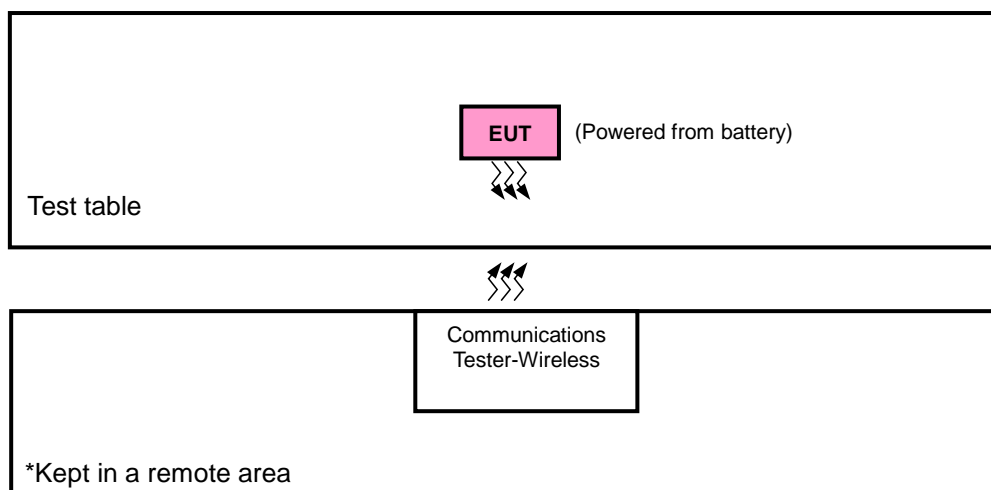
3. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 Configuration of System under Test

<Radiated Emission Test>



<E.I.R.P. Test>



3.2.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| No. | Product | Brand | Model No. | Serial No. | FCC ID |
|-----|--------------------------------|---------|----------------|------------|--------|
| 1. | Communications Tester-Wireless | Agilent | 8960 Series 10 | MY53201073 | N/A |
| 2. | Earphone | Apple | MD827FE | N/A | N/A |

| No. | Signal Cable Description Of The Above Support Units |
|-----|---|
| 1. | N/A |
| 2. | N/A |

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item 1 acted as communication partners to transfer data.

3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis, and antenna ports.

The worst case was found when positioned as the table below. Following channel(s) was (were) selected for the final test as listed below:

| Band | EIRP | Radiated Emission |
|------|---------|-------------------|
| GSM | Y-plane | Y-axis |

GSM

| EUT Configure Mode | Test Item | Available Channel | Tested Channel | Mode |
|--------------------|-----------------------|-------------------|----------------|------|
| - | EIRP | 512 to 810 | 512, 661, 810 | GSM |
| - | Frequency Stability | 512 to 810 | 512, 810 | GSM |
| - | Occupied Bandwidth | 512 to 810 | 512, 661, 810 | GSM |
| - | Band Edge | 512 to 810 | 512, 810 | GSM |
| - | Peak to Average Ratio | 512 to 810 | 512, 661, 810 | GSM |
| - | Conducted Emission | 512 to 810 | 512, 661, 810 | GSM |
| - | Radiated Emission | 512 to 810 | 512, 661, 810 | GSM |

Test Condition:

| Test Item | Environmental Conditions | Input Power | Tested By |
|-----------------------|--------------------------|----------------|-------------|
| EIRP | 26 deg. C, 58 % RH | 3.9 Vdc | Getaz Yang |
| Frequency Stability | 26 deg. C, 58 % RH | 3.9 Vdc | Carlos Chen |
| Occupied Bandwidth | 26 deg. C, 58 % RH | 3.9 Vdc | Carlos Chen |
| Band Edge | 26 deg. C, 58 % RH | 3.9 Vdc | Carlos Chen |
| Peak to Average Ratio | 26 deg. C, 58 % RH | 3.9 Vdc | Carlos Chen |
| Conducted Emission | 26 deg. C, 58 % RH | 3.9 Vdc | Carlos Chen |
| Radiated Emission | 25 deg. C, 65 % RH | 120 Vac, 60 Hz | Getaz Yang |

3.4 EUT Operating Conditions

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

3.5 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 24

KDB 971168 D01 Power Meas License Digital Systems v02r02

ANSI/TIA/EIA-603-E 2016

ANSI 63.26-2015

NOTE: All test items have been performed and recorded as per the above standards.

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

Mobile / Portable station are limited to 2 watts e.i.r.p.

4.1.2 Test Procedures

EIRP / ERP Measurement:

- a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 1 MHz for GSM & GPRS mode.
- b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step b. Record the power level of S.G.
- d. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$. E.R.P power can be calculated from E.I.R.P power by subtracting the gain of dipole, $E.R.P \text{ power} = E.I.P.R \text{ power} - 2.15 \text{ dBi}$.

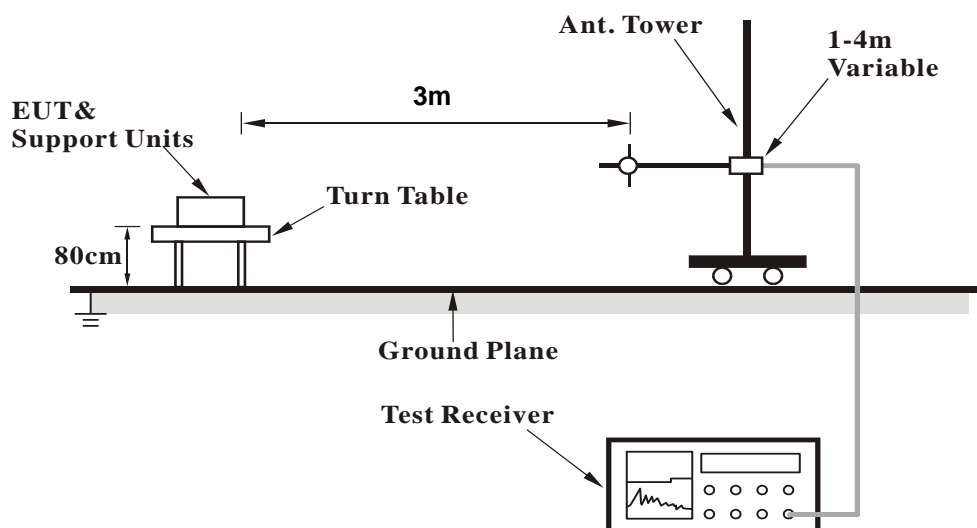
Conducted Power Measurement:

The EUT was set up for the maximum power with GSM & GPRS link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

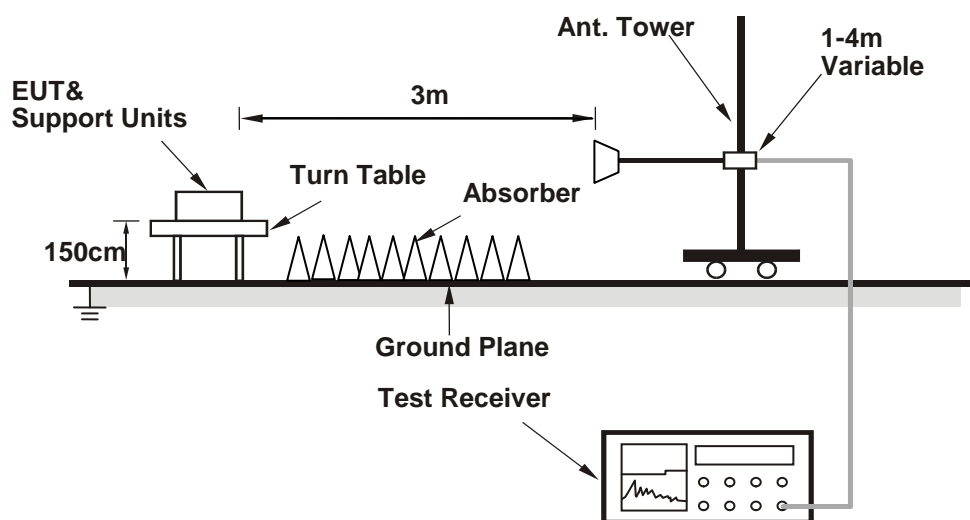
4.1.3 Test Setup

EIRP / ERP Measurement:

<Radiated Emission below or equal 1 GHz>

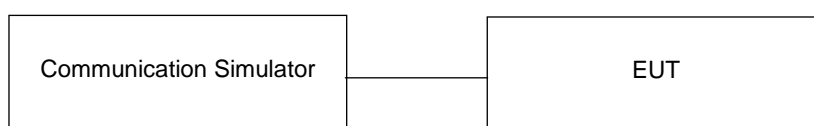


<Radiated Emission above 1 GHz>



For the actual test configuration, please refer to the attached file (Test Setup Photo).

Conducted Power Measurement:



4.1.4 Test Results

Conducted Output Power (dBm)

| Band | GSM1900 | | |
|-----------------------|---------|--------|--------|
| Channel | 512 | 661 | 810 |
| Frequency (MHz) | 1850.2 | 1880.0 | 1909.8 |
| GSM (GMSK, 1Tx-slot) | 29.04 | 29.35 | 29.50 |
| GPRS (GMSK, 1Tx-slot) | 29.02 | 29.33 | 29.48 |
| GPRS (GMSK, 2Tx-slot) | 25.79 | 26.10 | 26.25 |
| GPRS (GMSK, 3Tx-slot) | 23.84 | 24.15 | 24.30 |
| GPRS (GMSK, 4Tx-slot) | 22.50 | 22.81 | 22.96 |
| DTM (GMSK, 2Tx-slot) | 25.87 | 26.18 | 26.03 |
| DTM (GMSK, 3Tx-slot) | 24.14 | 24.45 | 24.60 |

EIRP Power (dBm)

| GSM | | | | | | | |
|-------|---------|-----------------|-----------|------------------------|------------|-----------|--------------------|
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization (H/V) |
| Y | 512 | 1850.2 | -7.64 | 36.57 | 28.93 | 781.63 | H |
| | 661 | 1880.0 | -8.77 | 37.22 | 28.45 | 699.84 | |
| | 810 | 1909.8 | -9.26 | 37.18 | 27.92 | 619.44 | |
| | 512 | 1850.2 | -15.72 | 37.65 | 21.93 | 155.96 | V |
| | 661 | 1880.0 | -16.14 | 37.58 | 21.44 | 139.32 | |
| | 810 | 1909.8 | -17.54 | 37.48 | 19.94 | 98.63 | |

4.2 Frequency Stability Measurement

4.2.1 Limits of Frequency Stability Measurement

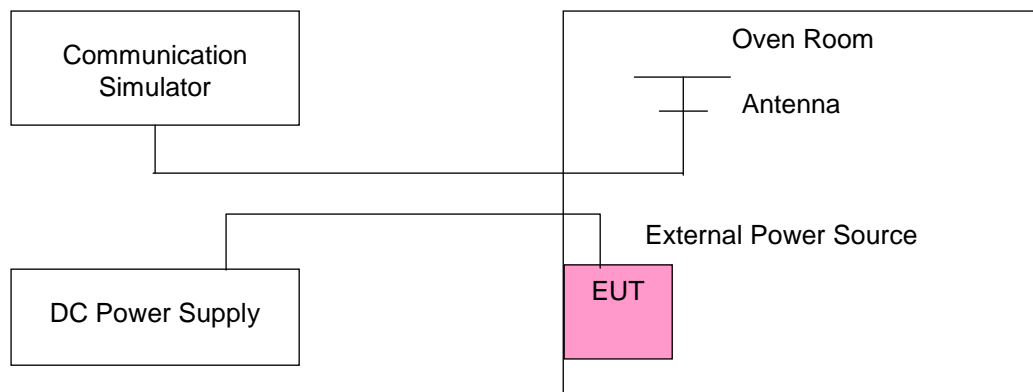
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

4.2.2 Test Procedure

- Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ± 0.5 °C during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

4.2.3 Test Setup



4.2.4 Test Results

Frequency Error vs. Voltage

| Voltage (Volts) | GSM | | | | Limit (ppm) |
|--------------------|-----------------|-----------------------|-----------------|-----------------------|-------------|
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| 3.9 | 1850.200003 | 0.002 | 1909.800003 | 0.002 | 2.5 |
| 3.51 | 1850.200003 | 0.002 | 1909.800002 | 0.001 | 2.5 |
| 4.29 | 1850.200002 | 0.001 | 1909.800001 | 0.001 | 2.5 |

Note: The applicant defined the normal working voltage of the battery is from 3.51 Vdc to 4.29 Vdc.

Frequency Error vs. Temperature

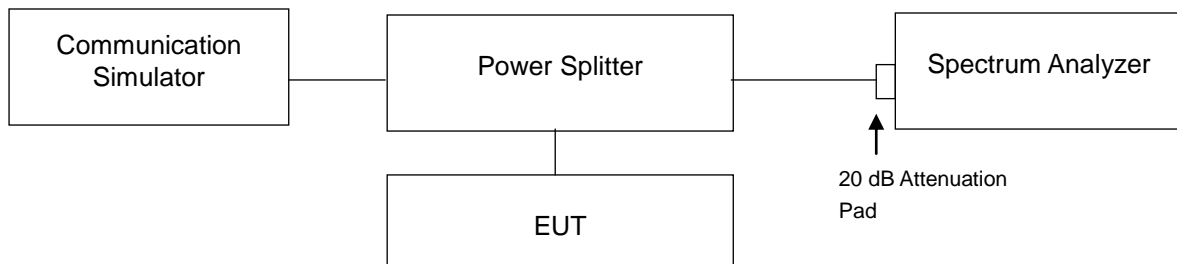
| Temp. (°C) | GSM | | | | Limit (ppm) |
|------------|-----------------|-----------------------|-----------------|-----------------------|-------------|
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| -30 | 1850.200004 | 0.002 | 1909.800002 | 0.001 | 2.5 |
| -20 | 1850.200002 | 0.001 | 1909.800003 | 0.001 | 2.5 |
| -10 | 1850.200002 | 0.001 | 1909.800002 | 0.001 | 2.5 |
| 0 | 1850.200003 | 0.002 | 1909.800002 | 0.001 | 2.5 |
| 10 | 1850.200001 | 0.001 | 1909.800003 | 0.002 | 2.5 |
| 20 | 1850.199998 | -0.001 | 1909.799997 | -0.002 | 2.5 |
| 30 | 1850.199998 | -0.001 | 1909.799998 | -0.001 | 2.5 |
| 40 | 1850.199996 | -0.002 | 1909.799998 | -0.001 | 2.5 |
| 50 | 1850.199999 | -0.001 | 1909.799997 | -0.002 | 2.5 |
| 55 | 1850.199997 | -0.002 | 1909.799999 | -0.001 | 2.5 |

4.3 Occupied Bandwidth Measurement

4.3.1 Test Procedure

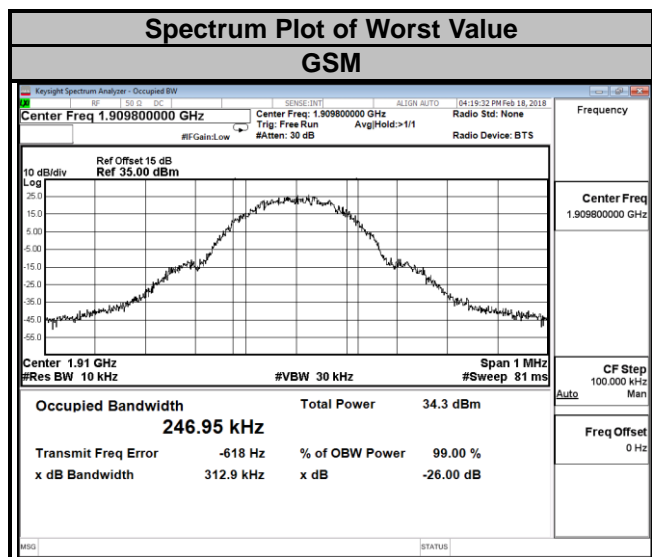
The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

4.3.2 Test Setup



4.3.3 Test Result

| Channel | Frequency (MHz) | 99 % Occupied Bandwidth (kHz) |
|---------|-----------------|-------------------------------|
| | | GSM |
| 512 | 1850.2 | 245.84 |
| 661 | 1880.0 | 246.50 |
| 810 | 1909.8 | 246.95 |

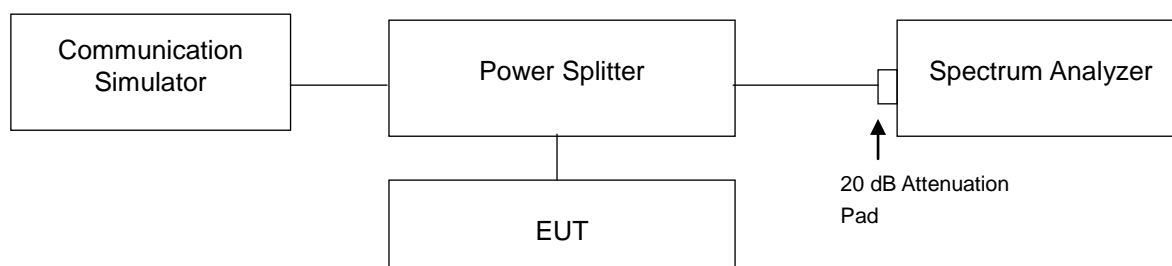


4.4 Band Edge Measurement

4.4.1 Limits of Band Edge Measurement

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. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

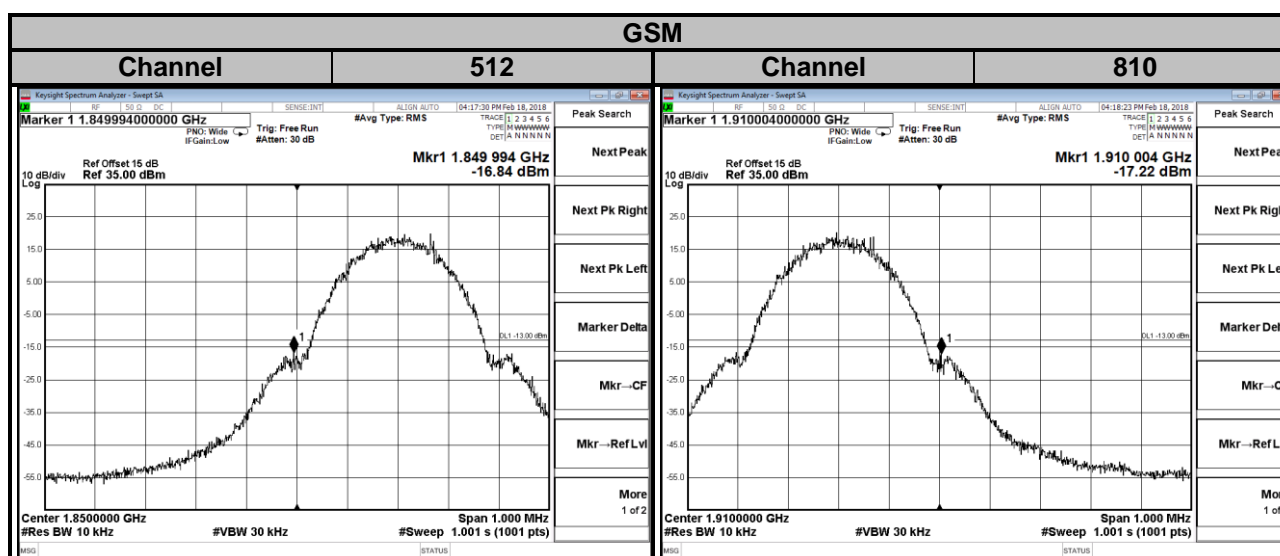
4.4.2 Test Setup



4.4.3 Test Procedures

- All measurements were done at low and high operational frequency range.
- The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 10 kHz and VB of the spectrum is 30 kHz (GSM/GPRS).
- Record the max trace plot into the test report.

4.4.4 Test Results

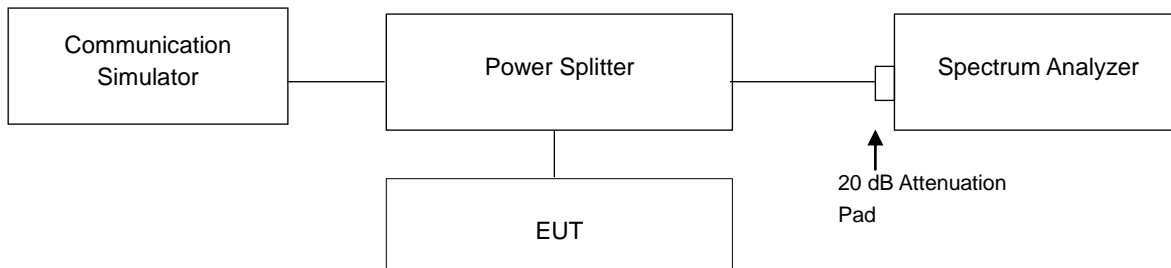


4.5 Peak to Average Ratio

4.5.1 Limits of Peak to Average Ratio Measurement

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB.

4.5.2 Test Setup

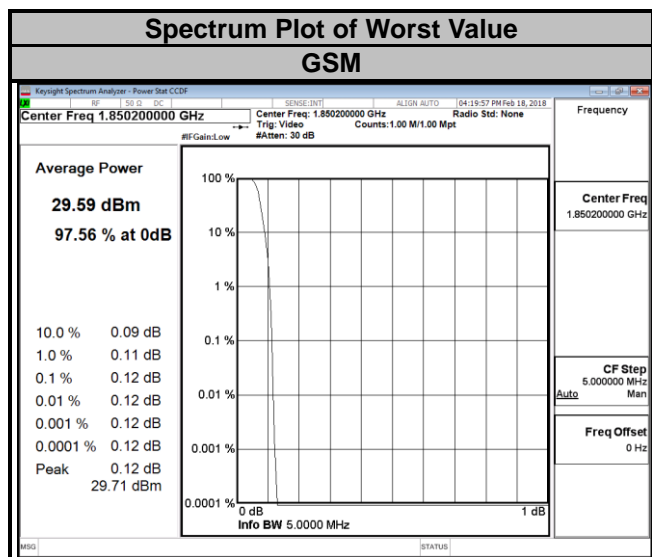


4.5.3 Test Procedures

1. Set resolution/measurement bandwidth \geq signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1 %.

4.5.4 Test Results

| Channel | Frequency (MHz) | Peak to Average Ratio (dB) |
|---------|-----------------|----------------------------|
| | | GSM |
| 512 | 1850.2 | 0.12 |
| 661 | 1880.0 | 0.12 |
| 810 | 1909.8 | 0.12 |

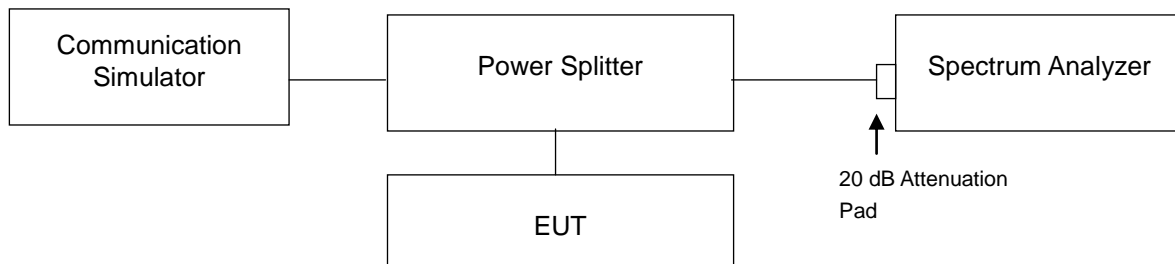


4.6 Conducted Spurious Emissions

4.6.1 Limits of Conducted Spurious Emissions Measurement

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. The emission limit equal to -13 dBm.

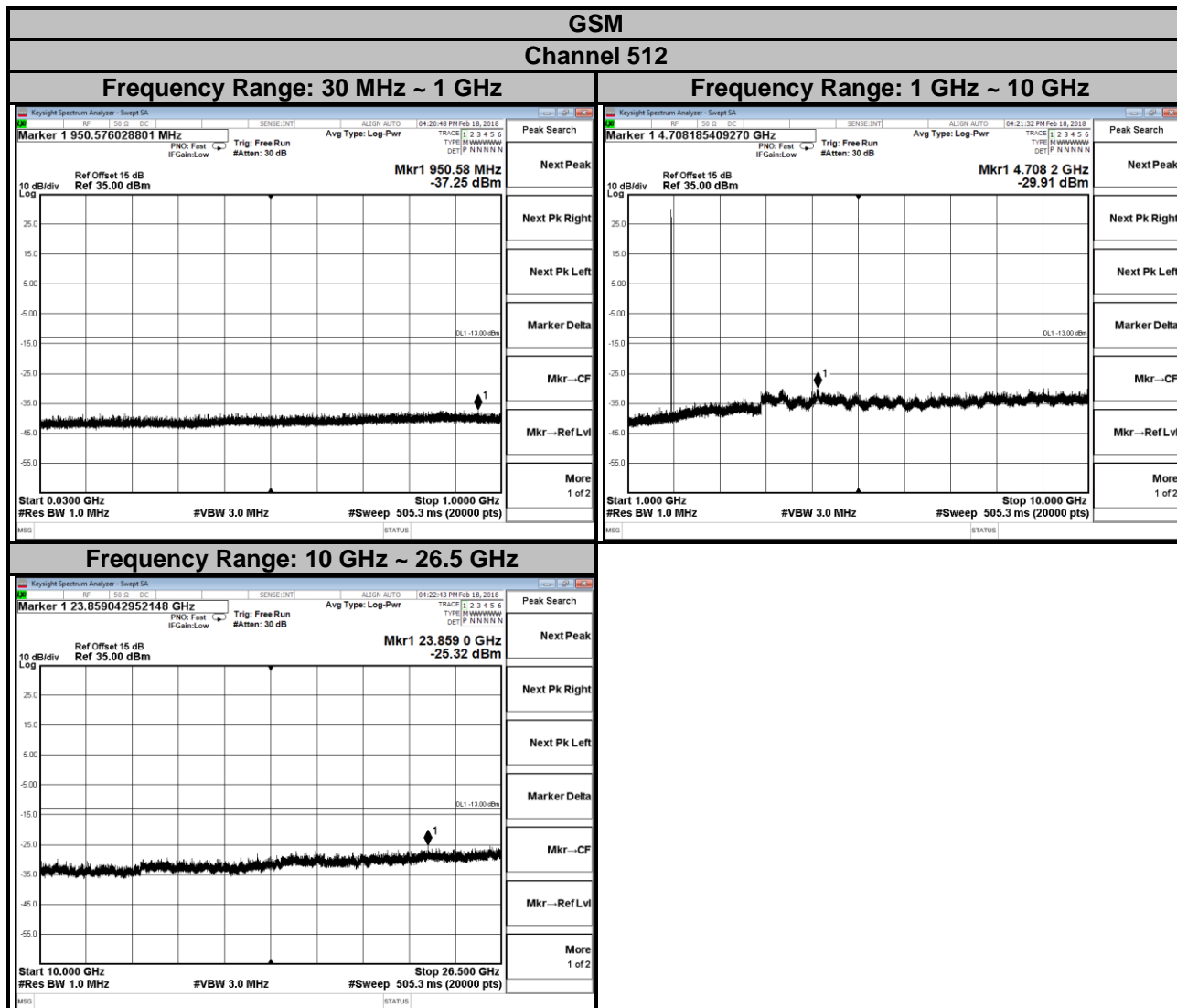
4.6.2 Test Setup



4.6.3 Test Procedure

- The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- Measuring frequency range is from 30 MHz to 26.5 GHz. 20 dB attenuation pad is connected with spectrum. RBW = 1 MHz and VBW = 3 MHz is used for conducted emission measurement.

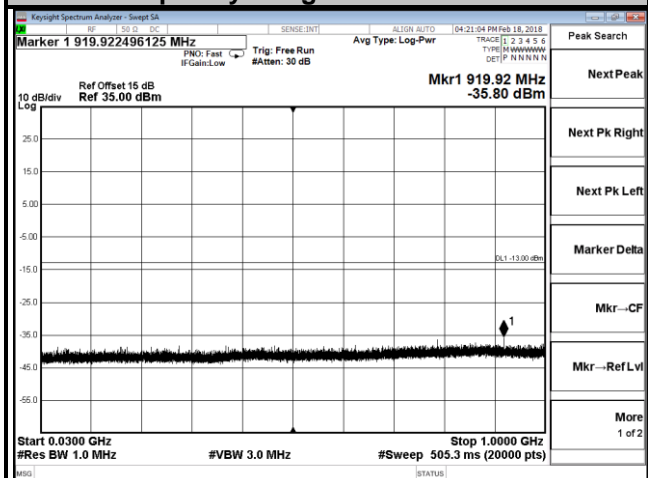
4.6.4 Test Results



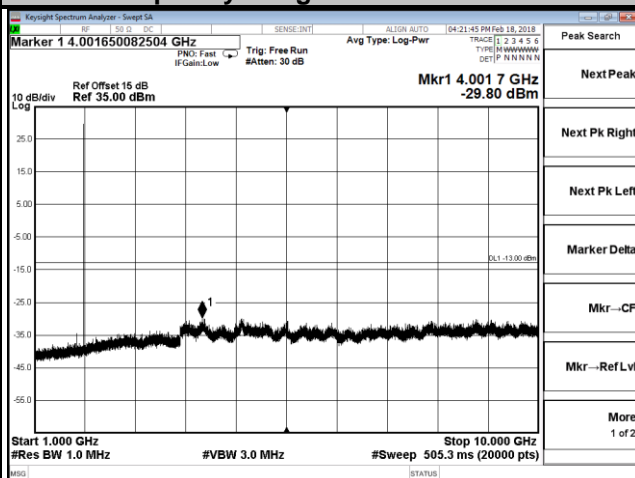
GSM

Channel 661

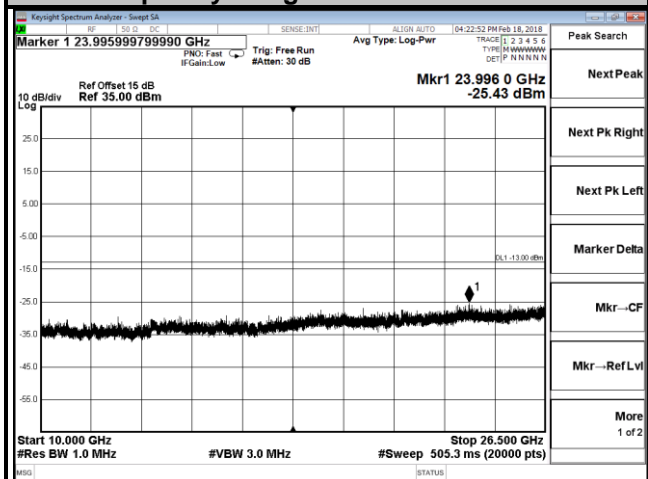
Frequency Range: 30 MHz ~ 1 GHz



Frequency Range: 1 GHz ~ 10 GHz



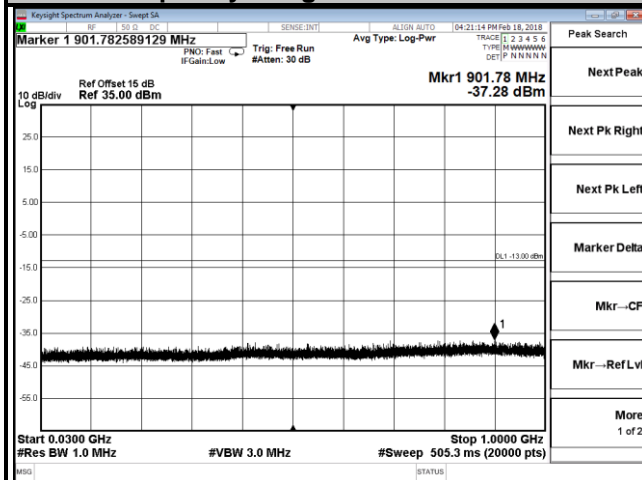
Frequency Range: 10 GHz ~ 26.5 GHz



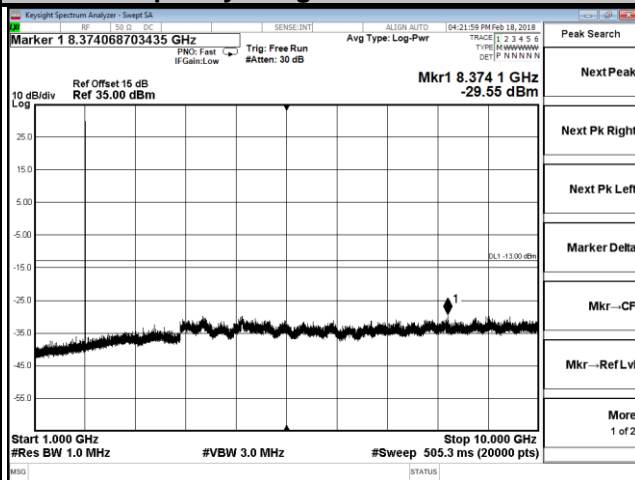
GSM

Channel 810

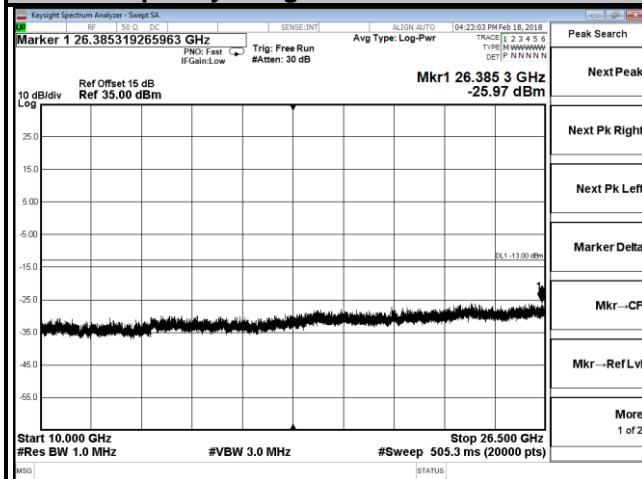
Frequency Range: 30 MHz ~ 1 GHz



Frequency Range: 1 GHz ~ 10 GHz



Frequency Range: 10 GHz ~ 26.5 GHz



4.7 Radiated Emission Measurement

4.7.1 Limits of Radiated Emission Measurement

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. The emission limit is equal to -13 dBm.

4.7.2 Test Procedure

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G.
- c. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$.
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $E.R.P \text{ power} = E.I.P.R \text{ power} - 2.15 \text{ dBi}$.

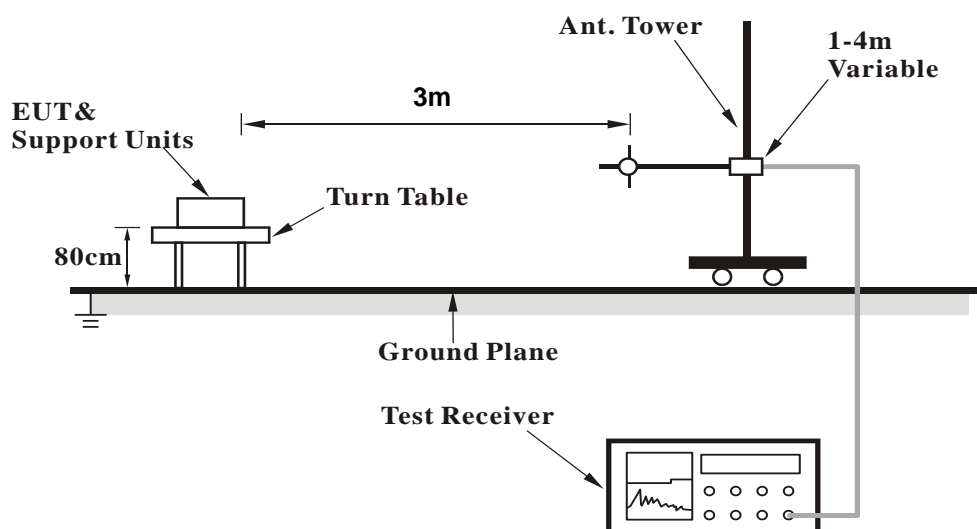
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz.

4.7.3 Deviation from Test Standard

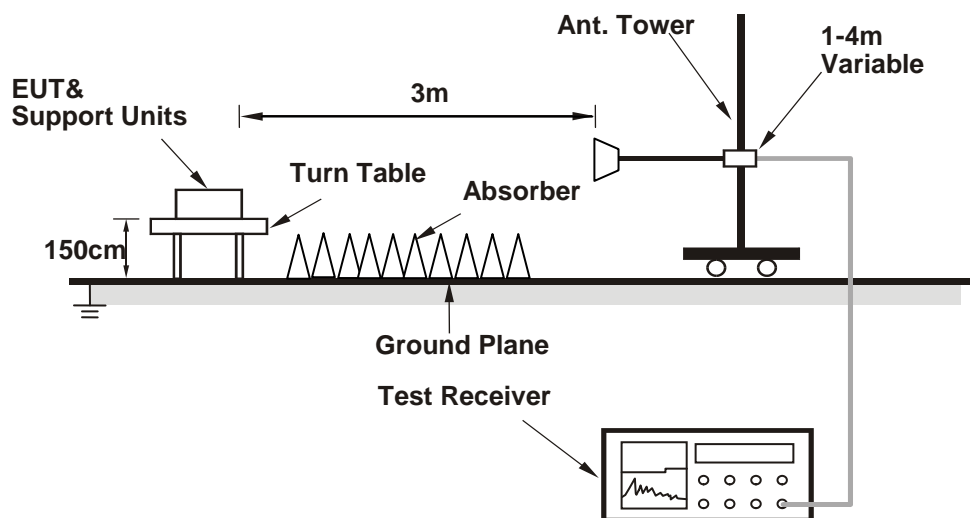
No deviation.

4.7.4 Test Setup

<Radiated Emission below or equal 1 GHz>



<Radiated Emission above 1 GHz>



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.7.5 Test Results

GSM:

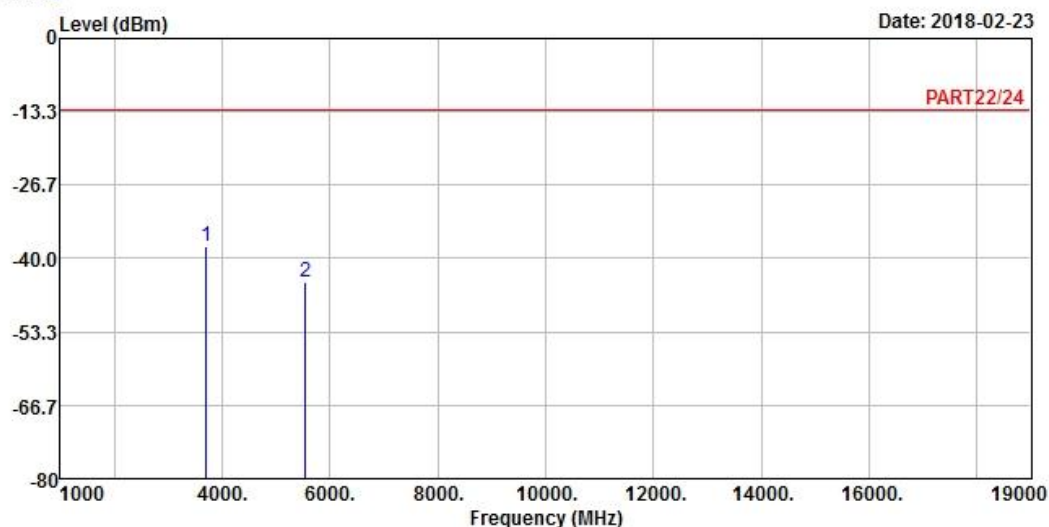
Low Channel



Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch

A D T

Data: 5



Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL

Remak : PCS 1900 Link_L-CH

Tested by: Getaz Yang

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|------|---------|--------|------------|------------|------------|--------|--------|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 pp | 3700.40 | -37.75 | -29.58 | -13.00 | -24.75 | -8.17 | Peak |
| 2 | 5550.60 | -44.37 | -42.92 | -13.00 | -31.37 | -1.45 | Peak |

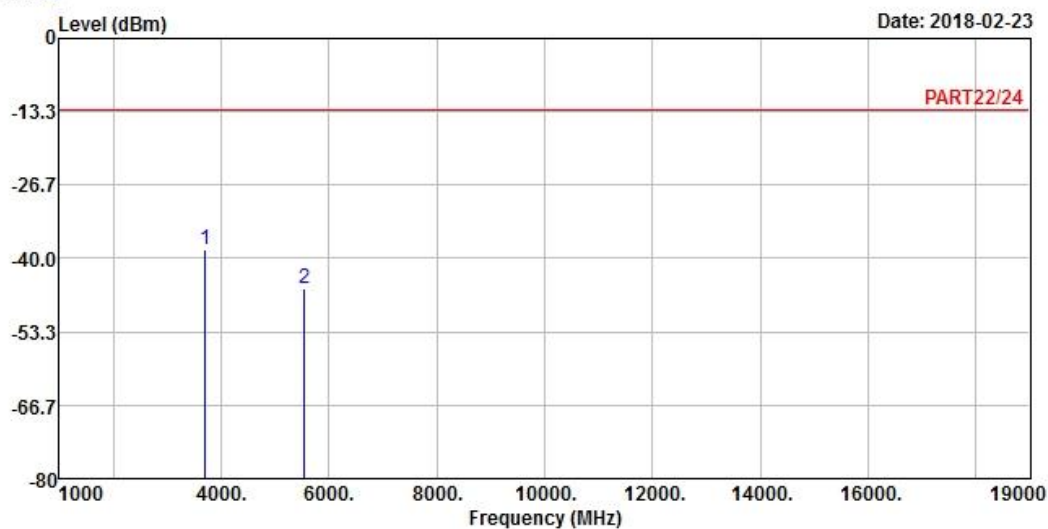


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A D T

Data: 6

Date: 2018-02-23



Site : 966 Chamber 5

Condition: PART22/24 VERTICAL

Remak : PCS 1900 Link_L-CH

Tested by: Getaz Yang

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|------|---------|--------|------------|------------|------------|--------|--------|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 pp | 3700.40 | -38.30 | -30.13 | -13.00 | -25.30 | -8.17 | Peak |
| 2 | 5550.60 | -45.53 | -44.08 | -13.00 | -32.53 | -1.45 | Peak |

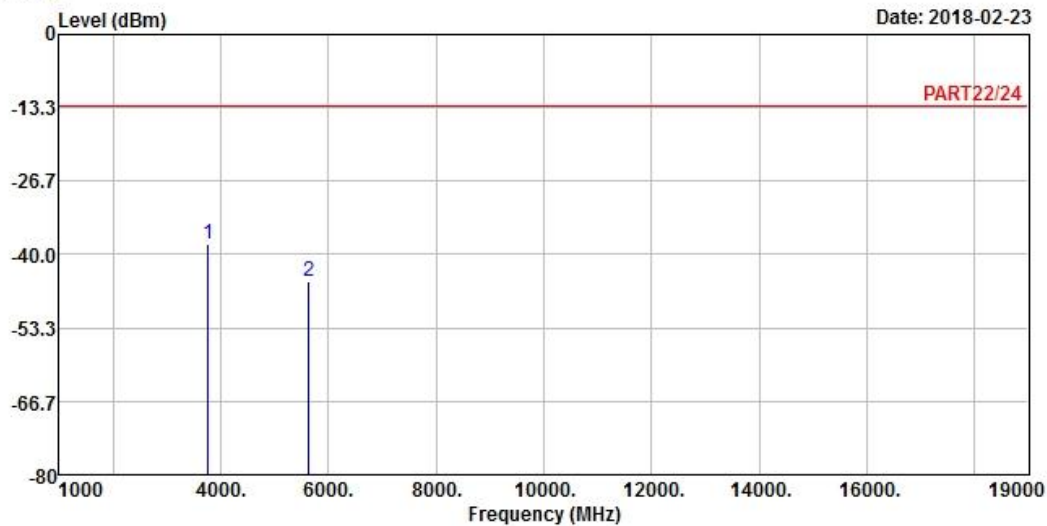
Middle Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5



Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL

Remak : PCS 1900 Link_M-CH

Tested by: Getaz Yang

| | | | Read | Limit | Over | | |
|------|---------|--------|--------|--------|--------|--------|--------|
| | Freq | Level | Level | Line | Limit | Factor | Remark |
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 pp | 3760.00 | -38.12 | -30.06 | -13.00 | -25.12 | -8.06 | Peak |
| 2 | 5640.00 | -44.76 | -42.82 | -13.00 | -31.76 | -1.94 | Peak |

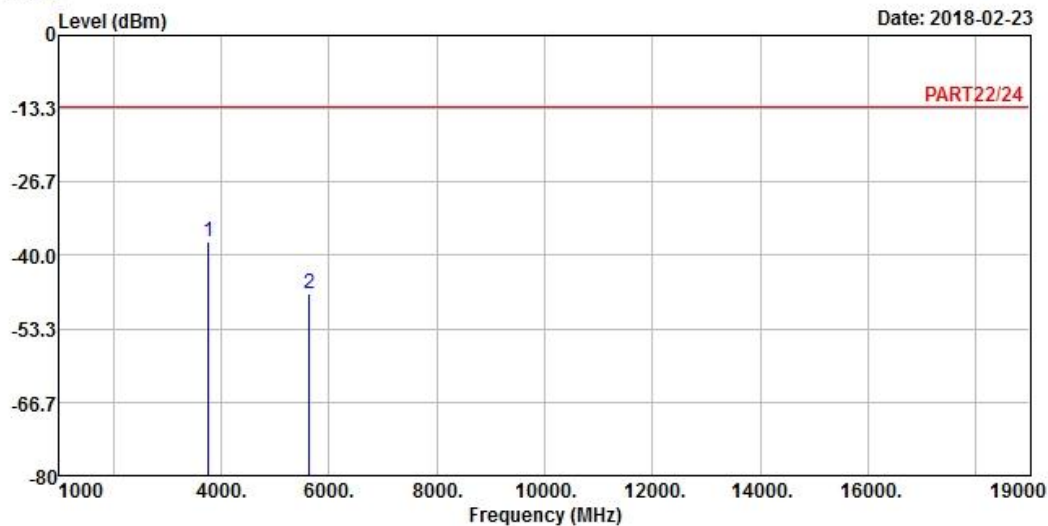


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6

Date: 2018-02-23



Site : 966 Chamber 5

Condition: PART22/24 VERTICAL

Remak : PCS 1900 Link_M-CH

Tested by: Getaz Yang

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|------|---------|--------|------------|------------|------------|--------|--------|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 pp | 3760.00 | -37.38 | -29.32 | -13.00 | -24.38 | -8.06 | Peak |
| 2 | 5640.00 | -46.80 | -44.86 | -13.00 | -33.80 | -1.94 | Peak |

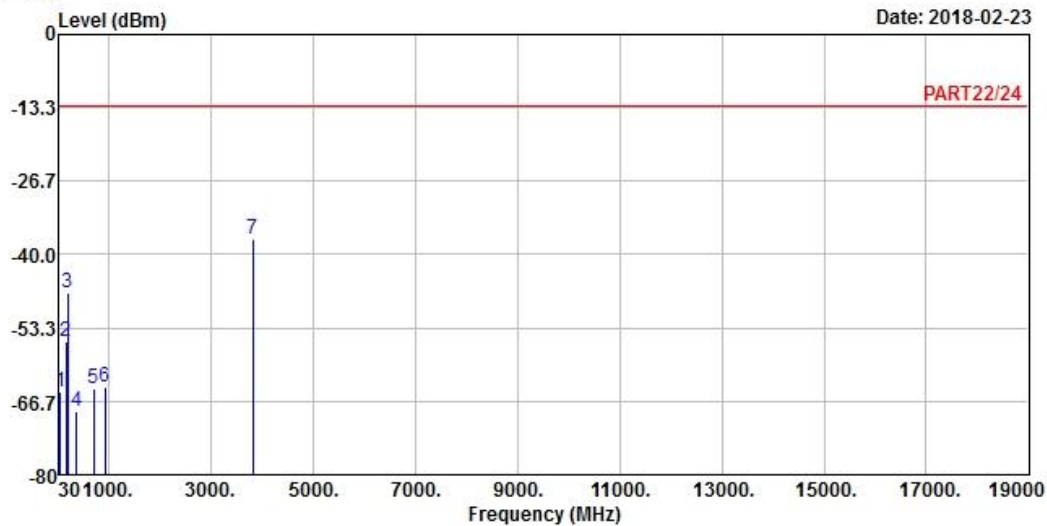
High Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 9



Site : 966 Chamber 5
 Condition: PART22/24 HORIZONTAL
 Remak : PCS 1900 Link_H-CH
 Tested by: Getaz Yang

| | | | Read | Limit | Over | | |
|------|---------|--------|--------|--------|--------|--------|--------|
| | Freq | Level | Level | Line | Limit | Factor | Remark |
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 54.03 | -64.82 | -58.75 | -13.00 | -51.82 | -6.07 | Peak |
| 2 | 169.86 | -55.74 | -50.21 | -13.00 | -42.74 | -5.53 | Peak |
| 3 | 194.97 | -46.81 | -39.26 | -13.00 | -33.81 | -7.55 | Peak |
| 4 | 372.10 | -68.48 | -62.37 | -13.00 | -55.48 | -6.11 | Peak |
| 5 | 708.10 | -64.42 | -64.47 | -13.00 | -51.42 | 0.05 | Peak |
| 6 | 929.30 | -64.19 | -65.48 | -13.00 | -51.19 | 1.29 | Peak |
| 7 pp | 3819.60 | -37.05 | -29.37 | -13.00 | -24.05 | -7.68 | Peak |

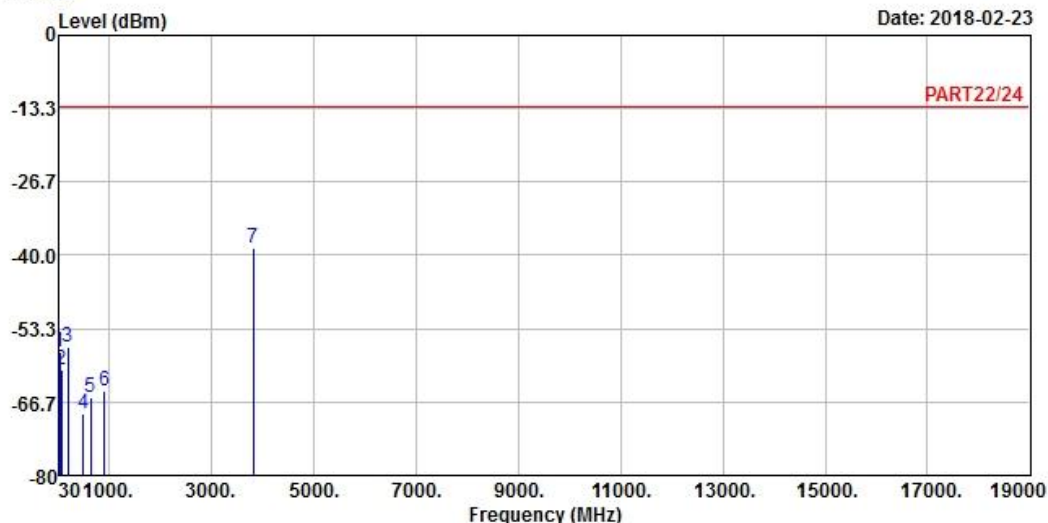


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 10

Date: 2018-02-23



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : PCS 1900 Link_H-CH
Tested by: Getaz Yang

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|------|---------|--------|------------|------------|------------|--------|--------|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 32.43 | -57.66 | -56.57 | -13.00 | -44.66 | -1.09 | Peak |
| 2 | 68.07 | -60.94 | -52.69 | -13.00 | -47.94 | -8.25 | Peak |
| 3 | 191.73 | -56.81 | -49.53 | -13.00 | -43.81 | -7.28 | Peak |
| 4 | 500.90 | -68.87 | -64.26 | -13.00 | -55.87 | -4.61 | Peak |
| 5 | 638.80 | -65.76 | -64.90 | -13.00 | -52.76 | -0.86 | Peak |
| 6 | 903.40 | -64.77 | -65.41 | -13.00 | -51.77 | 0.64 | Peak |
| 7 pp | 3819.60 | -38.62 | -30.94 | -13.00 | -25.62 | -7.68 | Peak |

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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The address and road map of all our labs can be found in our web site also.

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