

FCC Test Report

(PART 22)

Report No.: RF150508C06A

FCC ID: A4R-WT2

Test Model: WT2

Received Date: Jul. 13, 2016

Test Date: Jul. 24, 2016 ~ Aug. 05, 2016

Issued Date: Aug. 25, 2016

Company Name: Google Inc.

Address: 1600 Amphitheatre Parkway Mountain View California United States 94043

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

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C)

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



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies



Table of Contents

| Re | ase Control Record | 3 | | | | | |
|----|--|---|--|--|--|--|--|
| 1 | Certificate of Conformity 4 | | | | | | |
| 2 | 2 Summary of Test Results | | | | | | |
| | Measurement Uncertainty Test Site and Instruments | | | | | | |
| 3 | eneral Information | 7 | | | | | |
| | General Description of EUT | 8 8 9 . 10 | | | | | |
| 4 | est Types and Results | 11 | | | | | |
| | Output Power Measurement | 11 11 .12 .12 .16 .16 .16 .16 .16 | | | | | |
| ~ | | | | | | | |
| 5 | ictures of Test Arrangements | . 23 | | | | | |



Release Control Record Description Issue No. Date Issued Original Release Aug. 25, 2016 RF150508C06A



1 Certificate of Conformity

| Product Name/Description: | Connectivity Bridge |
|---------------------------|-------------------------------|
| Brand: | Google |
| Test Model: | WT2 |
| Sample Status: | Identical Prototype |
| Company Name: | Google Inc. |
| Test Date: | Jul. 24, 2016 ~ Aug. 05, 2016 |
| Standards: | FCC Part 22, Subpart H |

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 EMC characteristics under the conditions specified in this report.

Prepared by :

Evonne Lin

Date: Aug. 25, 2016

Date:

Aug. 25, 2016

Evonne Liu / Specialist

Stonley Whe

Approved by :

Stanley Wu / Assistant Manager



2 Summary of Test Results

| | Applied Standard: FCC Part 22 & Part 2 | | | | | | |
|--|--|----------------|--|--|--|--|--|
| FCC Clause | Test Item | Result | Remarks | | | | |
| 2.1046 22.913 (a) Effective Radiated Power | | Pass | Meet the requirement of limit. | | | | |
| | Peak to Average Ratio | | Refer to Note | | | | |
| 2.1055 22.355 | Frequency Stability | | Refer to Note | | | | |
| 2.1049 | 2.1049 Occupied Bandwidth | | Refer to Note | | | | |
| 22.917 | Band Edge Measurements | Not Applicable | Refer to Note | | | | |
| 2.1051 22.917 Conducted Spurious Emissions | | Not Applicable | Refer to Note | | | | |
| 2.1053 22.917 | Radiated Spurious Emissions | Pass | Meet the requirement of limit. Minimum passing margin is -23.67 dB at 1672.80 MHz. | | | | |

NOTE: Only the test item for ERP Power and radiated emission had been tested for this addendum and the conducted data is referring to module report (Report No.: T140415W02-RP3/T140415W02-RP1).

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 | Expended Uncertainty (k=2) (±) |
|---------------------------------|-------------------|-----------------------------------|
| Redicted Engineering to 4 Other | 30 MHz ~ 200 MHz | 2.93 dB |
| Radiated Emissions up to 1 GHz | 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 & Manaufacturer | Model No. | Serial No. | Date of Calibration | Due Date of Calibration |
|---|----------------|---------------------|---------------------|----------------------------|
| est Receiver N9038A gilent | | MY51210203 | Jan. 21, 2016 | Jan. 20, 2017 |
| Spectrum Analyzer Agilent | N9010A | MY52220314 | Sep. 03, 2015 | Sep. 02, 2016 |
| Spectrum Analyzer ROHDE & SCHWARZ | FSU43 | 101261 | Dec. 17, 2015 | Dec. 16, 2016 |
| BILOG Antenna SCHWARZBECK | VULB9168 | 9168-472 | Jan. 07, 2016 | Jan. 06, 2017 |
| HORN Antenna SCHWARZBECK | BBHA 9120 D | 9120D-969 | Jan. 04, 2016 | Jan. 03, 2017 |
| Double Ridge Guide Horn Antenna EMCO | 3115 | 5619 | Jan. 04, 2016 | Jan. 03, 2017 |
| BILOG Antenna SCHWARZBECK | VULB 9168 | 9168-153 | Jan. 07, 2016 | Jan. 06, 2017 |
| Agilent Communications Tester-Wireless | 8960 Series 10 | MY53201073 | Jul. 03, 2015 | Jul. 02, 2017 |
| Preamplifier EMCI | EMC 012645 | 980115 | Dec. 21, 2015 | Dec. 20, 2016 |
| Preamplifier EMCI | EMC 184045 | 980116 | Dec. 21, 2015 | Dec. 20, 2016 |
| Preamplifier EMCI | EMC 330H | 980112 | Dec. 28, 2015 | Dec. 27, 2016 |
| Power Meter Anritsu | ML2495A | 1232002 | Sep. 21, 2015 | Sep. 20, 2016 |
| Power Sensor Anritsu | MA2411B | 1207325 | Sep. 21, 2015 | Sep. 20, 2016 |
| RF signal cable HUBER+SUHNNER | SUCOFLEX 104 | 309219/4 2950114 | Oct. 12, 2015 | Oct. 11, 2016 |
| RF signal cable HUBER+SUHNNER | SUCOFLEX 104 | 250130/4 | Oct. 12, 2015 | Oct. 11, 2016 |
| RF Coaxial Cable Worken | 8D-FB | Cable-Ch10-01 | Oct. 12, 2015 | Oct. 11, 2016 |
| 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 |
| Radio Communication Analyzer | MT8820C | 6201300640 | Aug. 10, 2015 | Aug. 09, 2017 |

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 FCC Site Registration No. is 690701.
- 5. The IC Site Registration No. is IC7450F-10.



3 General Information

3.1 General Description of EUT

| Product Name/Description | Connectivity Bridge | | | |
|-----------------------------|------------------------------------|-------------------|--|--|
| Brand | Google | | | |
| Test Model | WT2 | | | |
| Status of EUT | Identical Prototype | | | |
| Power Supply Rating | 5.0 Vdc (adapter) | | | |
| | GSM/GPRS | GMSK | | |
| Modulation Type | WCDMA | BPSK | | |
| | LTE | QPSK, 16QAM | | |
| | GSM/GPRS/EDGE | 824.2 ~ 848.8 MHz | | |
| | WCDMA | 826.4 ~ 846.6 MHz | | |
| Francisco Danas | LTE 5 (Channel Bandwidth: 1.4 MHz) | 824.7 ~ 848.3 MHz | | |
| Frequency Range | LTE 5 (Channel Bandwidth: 3 MHz) | 825.5 ~ 847.5 MHz | | |
| | LTE 5 (Channel Bandwidth: 5 MHz) | 826.5 ~ 846.5 MHz | | |
| | LTE 5 (Channel Bandwidth: 10 MHz) | 829 ~ 844 MHz | | |
| | GSM/GPRS | 719.45 mW | | |
| | WCDMA | 157.40 mW | | |
| Max. ERP Power | LTE 5 (Channel Bandwidth: 1.4 MHz) | 103.51 mW | | |
| Max. ERP Power | LTE 5 (Channel Bandwidth: 3 MHz) | 106.41 mW | | |
| | LTE 5 (Channel Bandwidth: 5 MHz) | 110.15 mW | | |
| | LTE 5 (Channel Bandwidth: 10 MHz) | 113.50 mW | | |
| Antenna Type | Fixed Internal Antenna | | | |
| Accessory Device | Refer to Note as below | | | |
| Data Cable Supplied | Refer to Note as below | | | |

Note:

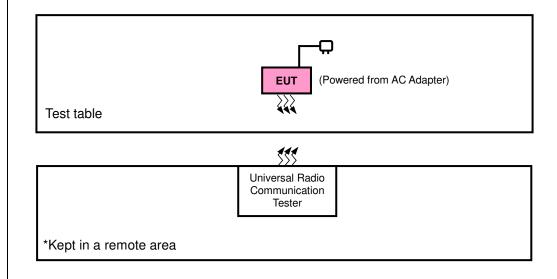
1. The EUT contains following accessory devices.

| Product | Brand | Model | Description |
|-------------|-----------|------------|---|
| Adapter | TPT | N/0050200 | I/P: 100-240Vac, 50-60Hz, 0.3A O/P: 5Vdc, 2A |
| WWAN Module | Telit | LE910-NAG | |
| WiFi Module | AzureWave | AW-CM389NF | |

2. 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



3.2.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units.



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 | ERP | Radiated Emission |
|------------|---------|-------------------|
| GSM | Z-plane | Z-axis |
| WCDMA | Z-plane | Z-axis |
| LTE Band 5 | X-plane | X-axis |

GSM

| EUT Configure Mode | Test Item | Available Channel | Tested Channel | Mode |
|--------------------------|-------------------|-------------------|----------------|-----------|
| - | ERP | 128 to 251 | 128, 189, 251 | GSM, EDGE |
| - | Radiated Emission | 128 to 251 | 189 | GSM, EDGE |

WCDMA

| EUT Configure Mode | Test Item | Available Channel Tested Channel | | Mode | |
|--------------------------|-------------------|----------------------------------|------------------|-------|--|
| - | ERP | 4132 to 4233 | 4132, 4182, 4233 | WCDMA | |
| - | Radiated Emission | 4132 to 4233 | 4182 | WCDMA | |

LTE Band 5

| EUT Configure Mode | Test Item | Available Channel | Tested Channel | Channel Bandwidth | Modulation | Mode |
|--------------------------|----------------------|----------------------|---------------------|----------------------|-------------|---------------------|
| | ERP | 20407 to 20643 | 20407, 20525, 20643 | 1.4 MHz | QPSK, 16QAM | 1 RB / 2 RB Offset |
| | | 20415 to 20635 | 20415, 20525, 20635 | 3 MHz | QPSK, 16QAM | 1 RB / 7 RB Offset |
| - | | 20425 to 20625 | 20425, 20525, 20625 | 5 MHz | QPSK, 16QAM | 1 RB / 12 RB Offset |
| | | 20450 to 20600 | 20450, 20525, 20600 | 10 MHz | QPSK, 16QAM | 1 RB / 24 RB Offset |
| - | Radiated Emission | 20450 to 20600 | 20525 | 10 MHz | QPSK | 1 RB / 24 RB Offset |

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

Test Condition:

| Test Item | Test Item Environmental Conditions | | Tested By |
|-------------------|------------------------------------|----------------|------------|
| ERP | 25 deg. C, 65 % RH | 5 Vdc | Getaz Yang |
| 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 22 KDB 971168 D01 Power Meas License Digital Systems v02r02 ANSI/TIA/EIA-603-D 2010

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 7 watts e.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 & EDGE, and 5 MHz for WCDMA and CDMA, and 10 MHz for LTE mode.
- b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m 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 = Output power level of S.G TX cable loss + Antenna gain of substitution horn.E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power 2.15 dBi.

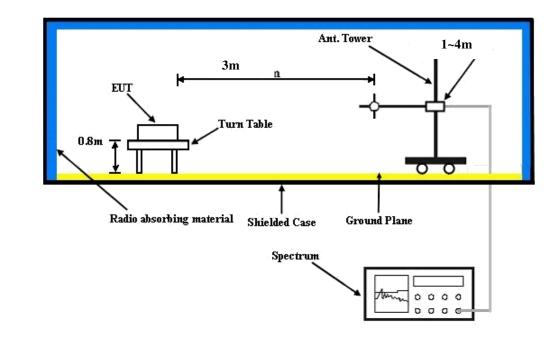
Conducted Power Measurement:

The EUT was set up for the maximum power with GSM, GPRS, EDGE, WCDMA, CDMA, and LTE 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.



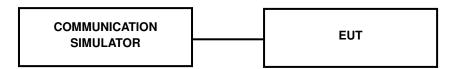
4.1.3 Test Setup

EIRP / ERP Measurement:



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

Conducted Power Measurement:



4.1.4 Test Results

ERP Power (dBm)

| GSM | | | | | | | | | |
|-------|---------|--------------------|--------------|---------------------------|-----------|----------|-----------------------|--|--|
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) | | |
| | 128 | 824.2 | -2.12 | 32.62 | 28.35 | 683.91 | | | |
| | 189 | 836.4 | -1.80 | 32.52 | 28.57 | 719.45 | н | | |
| Z | 251 | 848.8 | -2.34 | 32.65 | 28.16 | 654.64 | | | |
| | 128 | 824.2 | -10.58 | 32.76 | 20.03 | 100.69 | | | |
| | 189 | 836.4 | -10.09 | 32.39 | 20.15 | 103.51 | V | | |
| | 251 | 848.8 | -10.32 | 32.54 | 20.07 | 101.62 | | | |



| WCDMA | | | | | | | | | |
|-------|---------|--------------------|--------------|---------------------------|-----------|----------|-----------------------|--|--|
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) | | |
| | 4132 | 826.4 | -8.63 | 32.62 | 21.84 | 152.76 | | | |
| | 4182 | 836.4 | -8.40 | 32.52 | 21.97 | 157.40 | н | | |
| Z | 4233 | 846.6 | -8.99 | 32.65 | 21.51 | 141.58 | | | |
| 2 | 4132 | 826.4 | -18.42 | 32.76 | 12.19 | 16.56 | | | |
| | 4182 | 836.4 | -18.11 | 32.39 | 12.13 | 16.33 | V | | |
| | 4233 | 846.6 | -18.57 | 32.54 | 11.82 | 15.21 | | | |

| | LTE Band 5 | | | | | | | | | |
|-----------------------------------|------------|--------------------|--------------|---------------------------|-----------|----------|-----------------------|--|--|--|
| Channel Bandwidth: 1.4 MHz / QPSK | | | | | | | | | | |
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) | | | |
| | 20407 | 824.7 | -10.38 | 32.62 | 20.09 | 102.09 | | | | |
| | 20525 | 836.5 | -10.22 | 32.52 | 20.15 | 103.51 | Н | | | |
| x | 20643 | 848.3 | -10.41 | 32.65 | 20.09 | 102.09 | | | | |
| ^ | 20407 | 824.7 | -19.92 | 32.76 | 10.69 | 11.72 | | | | |
| | 20525 | 836.5 | -19.53 | 32.39 | 10.71 | 11.78 | V | | | |
| | 20643 | 848.3 | -19.78 | 32.54 | 10.61 | 11.51 | | | | |
| | | C | hannel Ban | dwidth: 1.4 MHz | / 16QAM | | | | | |
| | 20407 | 824.7 | -11.42 | 32.62 | 19.05 | 80.35 | | | | |
| | 20525 | 836.5 | -11.29 | 32.52 | 19.08 | 80.91 | Н | | | |
| v | 20643 | 848.3 | -11.43 | 32.65 | 19.07 | 80.72 | | | | |
| Х | 20407 | 824.7 | -20.99 | 32.76 | 9.62 | 9.16 | | | | |
| | 20525 | 836.5 | -20.55 | 32.39 | 9.69 | 9.31 | V | | | |
| | 20643 | 848.3 | -20.82 | 32.54 | 9.57 | 9.06 | | | | |



| | | | | LTE Band 5 | | | | | |
|---------------------------------|---------|--------------------|--------------|---------------------------|-----------|----------|-----------------------|--|--|
| Channel Bandwidth: 3 MHz / QPSK | | | | | | | | | |
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) | | |
| | 20415 | 825.5 | -10.24 | 32.62 | 20.23 | 105.44 | | | |
| | 20525 | 836.5 | -10.10 | 32.52 | 20.27 | 106.41 | Н | | |
| х | 20635 | 847.5 | -10.29 | 32.65 | 20.21 | 104.95 | | | |
| ^ | 20415 | 825.5 | -19.88 | 32.76 | 10.73 | 11.83 | | | |
| | 20525 | 836.5 | -19.49 | 32.39 | 10.75 | 11.89 | V | | |
| | 20635 | 847.5 | -19.67 | 32.54 | 10.72 | 11.80 | | | |
| | - | | Channel Ba | ndwidth: 3 MHz | / 16QAM | | | | |
| | 20415 | 825.5 | -11.31 | 32.62 | 19.16 | 82.41 | | | |
| | 20525 | 836.5 | -11.17 | 32.52 | 19.20 | 83.18 | Н | | |
| v | 20635 | 847.5 | -11.32 | 32.65 | 19.18 | 82.79 | | | |
| Х | 20415 | 825.5 | -20.87 | 32.76 | 9.74 | 9.42 | | | |
| | 20525 | 836.5 | -20.44 | 32.39 | 9.80 | 9.55 | V | | |
| | 20635 | 847.5 | -20.70 | 32.54 | 9.69 | 9.31 | | | |

| | LTE Band 5 | | | | | | | | | |
|---------------------------------|------------|--------------------|--------------|---------------------------|-----------|----------|-----------------------|--|--|--|
| Channel Bandwidth: 5 MHz / QPSK | | | | | | | | | | |
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) | | | |
| | 20425 | 826.5 | -10.12 | 32.62 | 20.35 | 108.39 | | | | |
| | 20525 | 836.5 | -9.95 | 32.52 | 20.42 | 110.15 | Н | | | |
| х | 20625 | 846.5 | -10.16 | 32.65 | 20.34 | 108.14 | | | | |
| ^ | 20425 | 826.5 | -19.80 | 32.76 | 10.81 | 12.05 | | | | |
| | 20525 | 836.5 | -19.34 | 32.39 | 10.90 | 12.30 | V | | | |
| | 20625 | 846.5 | -19.57 | 32.54 | 10.82 | 12.08 | | | | |
| | | | Channel Ba | ndwidth: 5 MHz / | / 16QAM | | | | | |
| | 20425 | 826.5 | -11.19 | 32.62 | 19.28 | 84.72 | | | | |
| | 20525 | 836.5 | -11.05 | 32.52 | 19.32 | 85.51 | Н | | | |
| V | 20625 | 846.5 | -11.21 | 32.65 | 19.29 | 84.92 | | | | |
| Х | 20425 | 826.5 | -20.76 | 32.76 | 9.85 | 9.66 | | | | |
| | 20525 | 836.5 | -20.32 | 32.39 | 9.92 | 9.82 | V | | | |
| | 20625 | 846.5 | -20.58 | 32.54 | 9.81 | 9.57 | | | | |



| | LTE Band 5 | | | | | | | | | | |
|----------------------------------|------------|--------------------|--------------|---------------------------|-----------|----------|-----------------------|--|--|--|--|
| Channel Bandwidth: 10 MHz / QPSK | | | | | | | | | | | |
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) | | | | |
| | 20450 | 829.0 | -10.01 | 32.62 | 20.46 | 111.17 | | | | | |
| | 20525 | 836.5 | -9.82 | 32.52 | 20.55 | 113.50 | Н | | | | |
| x | 20600 | 844.0 | -9.99 | 32.65 | 20.51 | 112.46 | | | | | |
| ~ | 20450 | 829.0 | -19.69 | 32.76 | 10.92 | 12.36 | | | | | |
| | 20525 | 836.5 | -19.22 | 32.39 | 11.02 | 12.65 | V | | | | |
| | 20600 | 844.0 | -19.43 | 32.54 | 10.96 | 12.47 | | | | | |
| | | C | Channel Bar | ndwidth: 10 MHz | / 16QAM | | | | | | |
| | 20450 | 829.0 | -11.08 | 32.62 | 19.39 | 86.90 | | | | | |
| | 20525 | 836.5 | -10.92 | 32.52 | 19.45 | 88.10 | Н | | | | |
| v | 20600 | 844.0 | -11.13 | 32.65 | 19.37 | 86.50 | | | | | |
| Х | 20450 | 829.0 | -20.61 | 32.76 | 10.00 | 10.00 | | | | | |
| | 20525 | 836.5 | -20.16 | 32.39 | 10.08 | 10.19 | V | | | | |
| | 20600 | 844.0 | -20.43 | 32.54 | 9.96 | 9.91 | | | | | |



4.2 Radiated Emission Measurement

4.2.1 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.

4.2.2 Test Procedure

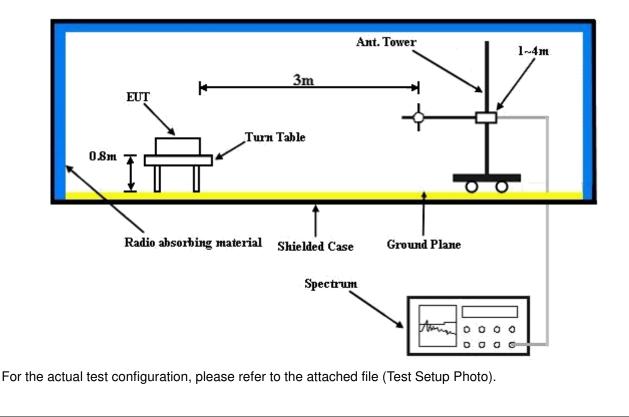
- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height 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 = Output power level of S.G TX cable loss + 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 power = E.I.P.R power 2.15 dBi.

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

4.2.3 Deviation from Test Standard

No deviation.

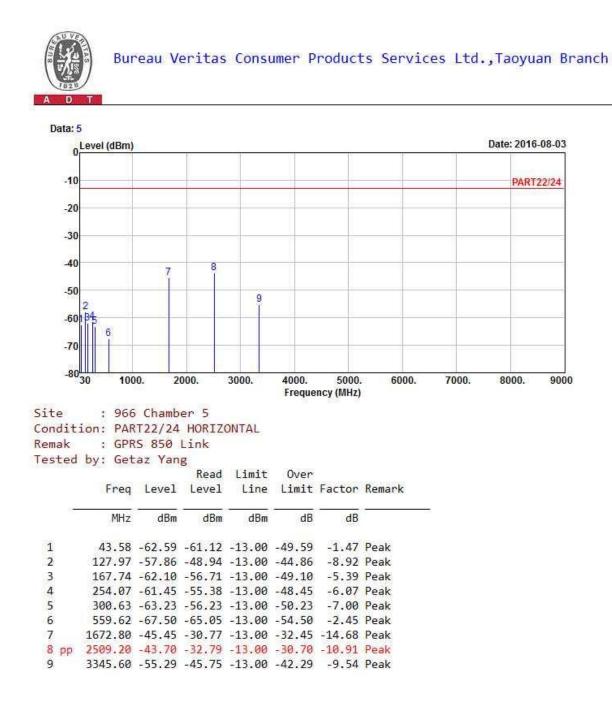
4.2.4 Test Setup





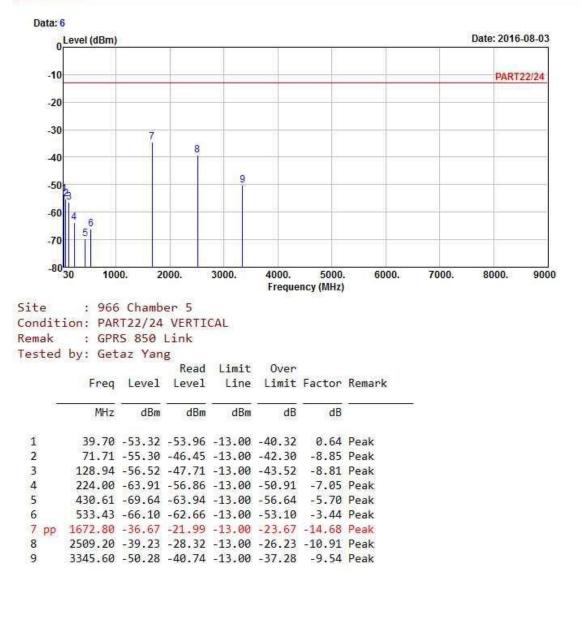
4.2.5 Test Results

GSM:





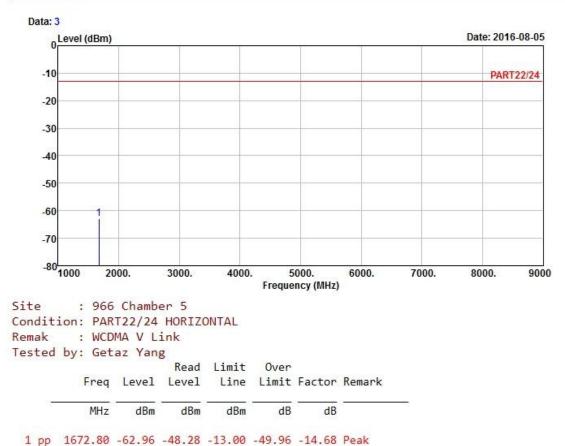






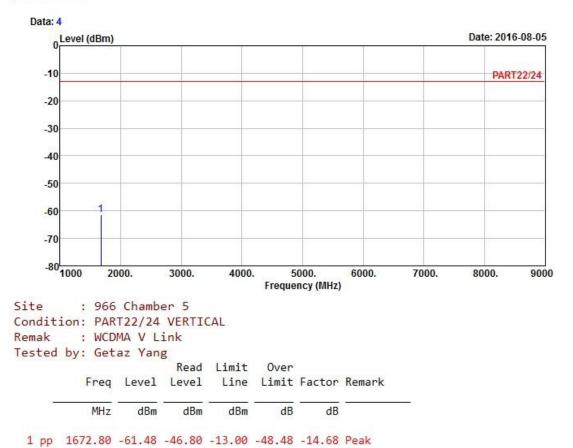
WCDMA:





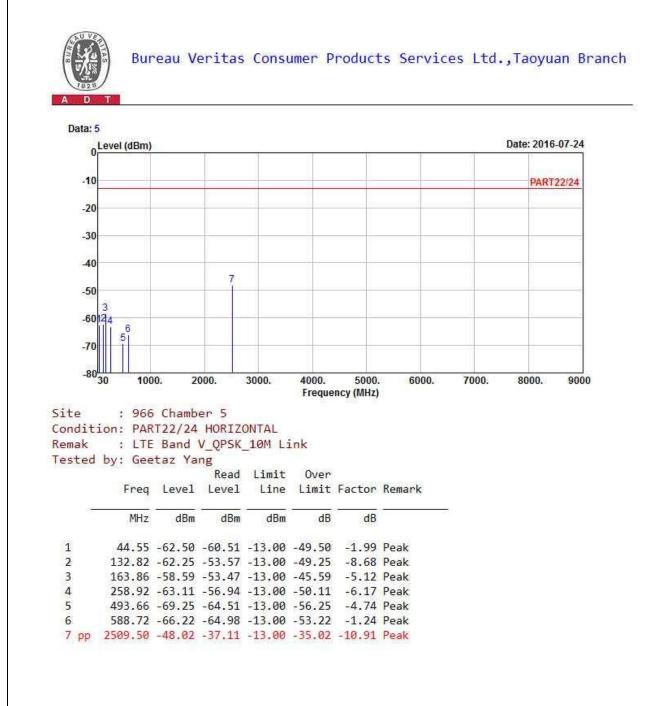






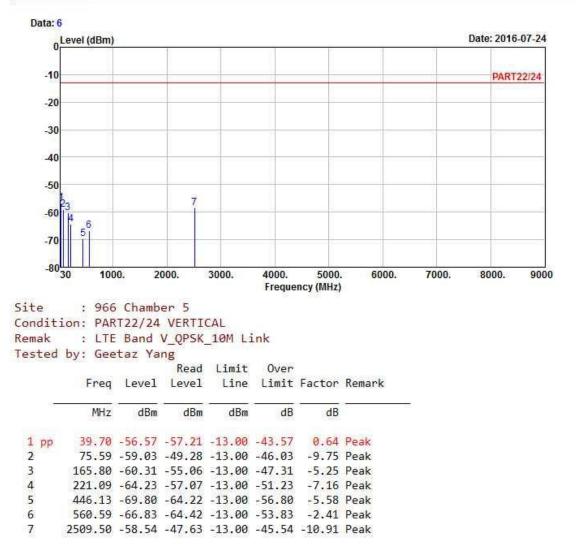


LTE Band 5 Channel Bandwidth: 10 MHz / QPSK











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 accredited and approved according to ISO/IEC 17025.

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

Linko EMC/RF Lab Tel: 886-2-26052180 Fax: 886-2-26051924 Hsin Chu EMC/RF/Telecom Lab Tel: 886-3-6668565 Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Tel: 886-3-3183232 Fax: 886-3-3270892

Email: <u>service.adt@tw.bureauveritas.com</u> Web Site: <u>www.bureauveritas-adt.com</u>

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

--- END ----