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FCC TEST REPORT (PART 27)

REPORT NO.: RF130716C20-2

MODEL NO.: 0P4E200

FCC ID: NM80P4E200

RECEIVED: Jul. 16, 2013

TESTED: Aug. 01, 2013 ~ Aug. 09, 2013

ISSUED: Aug. 16, 2013

APPLICANT: HTC Corporation

ADDRESS: No. 23, Xinghua Rd., Taoyuan City, Taiwan

ISSUED BY: Bureau Veritas Consumer Products Services
(H.K.) Ltd., Taoyuan Branch

LAB ADDRESS: No. 47, 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.

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RELEASE CONTROL RECORD

| ISSUE NO. | REASON FOR CHANGE | DATE ISSUED |
|---------------|-------------------|---------------|
| RF130716C20-2 | Original release | Aug. 16, 2013 |



1 CERTIFICATION

PRODUCT: Smartphone
MODEL NO.: 0P4E200
BRAND: HTC
APPLICANT: HTC Corporation
TESTED: Aug. 01, 2013 ~ Aug. 09, 2013
TEST SAMPLE: ENGINEERING SAMPLE
TEST STANDARDS: **FCC Part 27, Subpart C, L**
FCC Part 2
ANSI C63.4-2003

The above equipment (model: 0P4E200) 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 : Ivonne Wu , **DATE:** Aug. 16, 2013
Ivonne Wu / Senior Specialist

APPROVED BY : Sam Chen , **DATE:** Aug. 16, 2013
Sam Chen / Assistant Manager

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

| LTE BAND 17 | | | |
|-----------------------------|------------------------------|--------|--|
| OPERATING BAND: 704–716 MHz | | | |
| STANDARD SECTION | TEST TYPE AND LIMIT | RESULT | REMARK |
| 2.1046 27.50(C)(10) | Maximum Peak Output Power | PASS | Meet the requirement of limit. |
| 2.1055 27.54 | Frequency Stability | PASS | Meet the requirement of limit. |
| 2.1049 27.53(g) | Occupied Bandwidth | PASS | Meet the requirement of limit. |
| 27.50(d)(5) | Peak to average ratio | PASS | Meet the requirement of limit. |
| 27.53(g) | Band Edge Measurements | PASS | Meet the requirement of limit. |
| 2.1051 27.53(g) | Conducted Spurious Emissions | PASS | Meet the requirement of limit. |
| 2.1053 27.53(g) | Radiated Spurious Emissions | PASS | Meet the requirement of limit. Minimum passing margin is -29.27dB at 211.17MHz. |

| LTE BAND 4 | | | |
|-------------------------------|------------------------------|--------|---|
| OPERATING BAND: 1710~1755 MHz | | | |
| STANDARD SECTION | TEST TYPE AND LIMIT | RESULT | REMARK |
| 2.1046 27.50(d)(4) | Maximum Peak Output Power | PASS | Meet the requirement of limit. |
| 2.1055 27.54 | Frequency Stability | PASS | Meet the requirement of limit. |
| 2.1049 27.53(h) | Occupied Bandwidth | PASS | Meet the requirement of limit. |
| 27.50(d)(5) | Peak to average ratio | PASS | Meet the requirement of limit. |
| 27.53(h) | Band Edge Measurements | PASS | Meet the requirement of limit. |
| 2.1051 27.53(h) | Conducted Spurious Emissions | PASS | Meet the requirement of limit. |
| 2.1053 27.53(h) | Radiated Spurious Emissions | PASS | Meet the requirement of limit. Minimum passing margin is -14.70dB at 8662.50MHz. |

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 | UNCERTAINTY |
|---------------------|-----------------|-------------|
| Conducted emissions | 150kHz~30MHz | 2.44 dB |
| Radiated emissions | 30MHz ~ 200MHz | 2.93 dB |
| | 200MHz ~1000MHz | 2.95 dB |
| | 1GHz ~ 18GHz | 2.26 dB |
| | 18GHz ~ 40GHz | 1.94 dB |

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

2.2 TEST SITE AND INSTRUMENTS

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | DATE OF CALIBRATION | DUE DATE OF CALIBRATION |
|--|----------------|------------|---------------------|-------------------------|
| Test Receiver ROHDE & SCHWARZ | ESCI | 100744 | Apr. 15, 2013 | Apr. 14, 2014 |
| Spectrum Analyzer ROHDE & SCHWARZ | FSU43 | 101261 | Dec. 17, 2012 | Dec. 16, 2013 |
| BILOG Antenna SCHWARZBECK | VULB9168 | 9168-472 | Mar. 25, 2013 | Mar. 24, 2014 |
| HORN Antenna SCHWARZBECK | BBHA 9120 D | 9120D-969 | Jan. 07, 2013 | Jan. 06, 2014 |
| HORN Antenna SCHWARZBECK | BBHA 9170 | 9170-480 | Dec. 25, 2012 | Dec. 24, 2013 |
| Loop Antenna | HFH2-Z2 | 100070 | Jan. 31, 2012 | Jan. 30, 2014 |
| Preamplifier EMCI | EMC 012645 | 980115 | Dec. 28, 2012 | Dec. 27, 2013 |
| Preamplifier EMCI | EMC 184045 | 980116 | Dec. 28, 2012 | Dec. 27, 2013 |
| Preamplifier EMCI | EMC 330H | 980112 | Dec. 28, 2012 | Dec. 27, 2013 |
| RF signal cable HUBER+SUHNNER | SUCOFLEX 104 | 309219/4 | Oct. 19, 2012 | Oct. 18, 2013 |
| RF signal cable HUBER+SUHNNER | SUCOFLEX 104 | 250130/4 | Oct. 19, 2012 | Oct. 18, 2013 |
| RF signal cable Worken | RG-213 | NA | Dec. 29, 2012 | Dec. 28, 2013 |
| 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 |
| Mini-Circuits Power Splitter | ZN2PD-9G | NA | Jul. 18, 2013 | Jul. 17, 2014 |
| JFW 20dB attenuation | 50HF-020-SMA | NA | NA | NA |
| Communications Tester-Wireless | E5515C | MY52102544 | Sep. 05, 2012 | Sep. 04, 2013 |
| Radio Communication Analyzer | MT8820C | 6201300640 | Aug. 01, 2013 | Jul. 31, 2014 |

- NOTE:** 1. The calibration interval of the above test instruments is 12 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 HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 690701.
5. The IC Site Registration No. is IC 7450F-10.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

| | | |
|---|--|--|
| PRODUCT | Smartphone | |
| MODEL NO. | 0P4E200 | |
| POWER SUPPLY | 5Vdc (adapter or host equipment) 3.8Vdc (battery) | |
| MODULATION TECHNOLOGY | LTE Band 17 | QPSK, 16QAM |
| | LTE Band 4 | QPSK, 16QAM |
| FREQUENCY RANGE | LTE Band 17 Channel Bandwidth: 5MHz | 706.5MHz ~ 713.5MHz |
| | LTE Band 17 Channel Bandwidth: 10MHz | 709MHz ~ 711MHz |
| | LTE Band 4 Channel Bandwidth: 1.4MHz | 1710.7MHz ~ 1754.3MHz |
| | LTE Band 4 Channel Bandwidth: 3MHz | 1711.5MHz ~ 1753.5MHz |
| | LTE Band 4 Channel Bandwidth: 5MHz | 1712.5MHz ~1752.5MHz |
| | LTE Band 4 Channel Bandwidth: 10MHz | 1715.0MHz ~1750.0MHz |
| | LTE Band 4 Channel Bandwidth: 15MHz | 1717.5MHz ~ 1747.5MHz |
| | LTE Band 4 Channel Bandwidth: 20MHz | 1720.0MHz ~ 1745.0MHz |
| | EMISSION DESIGNATOR | LTE Band 17 Channel Bandwidth: 5MHz |
| LTE Band 17 Channel Bandwidth: 10MHz | | 8M89G7D |
| LTE Band 4 Channel Bandwidth: 1.4MHz | | 1M08G7D |
| LTE Band 4 Channel Bandwidth: 3MHz | | 2M68G7D |
| LTE Band 4 Channel Bandwidth: 5MHz | | 4M49G7D |
| LTE Band 4 Channel Bandwidth: 10MHz | | 8M92G7D |
| LTE Band 4 Channel Bandwidth: 15MHz | | 13M4G7D |
| LTE Band 4 Channel Bandwidth: 20MHz | | 17M8G7D |



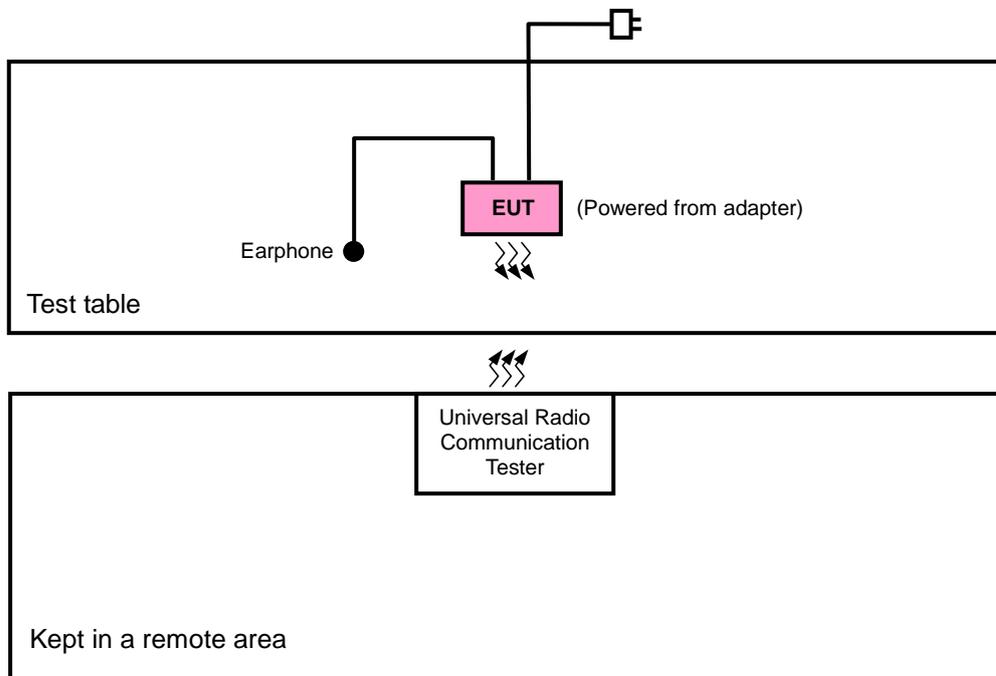
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| | | |
|--------------------------|---|----------|
| MAX. ERP POWER | LTE Band 17 Channel Bandwidth: 5MHz | 78.70mW |
| | LTE Band 17 Channel Bandwidth: 10MHz | 76.38mW |
| MAX. EIRP POWER | LTE Band 4 Channel Bandwidth: 1.4MHz | 142.99mW |
| | LTE Band 4 Channel Bandwidth: 3MHz | 147.57mW |
| | LTE Band 4 Channel Bandwidth: 5MHz | 147.57mW |
| | LTE Band 4 Channel Bandwidth: 10MHz | 129.42mW |
| | LTE Band 4 Channel Bandwidth: 15MHz | 161.81mW |
| | LTE Band 4 Channel Bandwidth: 20MHz | 148.25mW |
| | CATEGORY | 3 |
| ANTENNA TYPE | Fixed Internal Antenna | |
| DATA CABLE | Refer to Note as below | |
| I/O PORTS | Refer to users' manual | |
| ACCESSORY DEVICES | Refer to Note as below | |

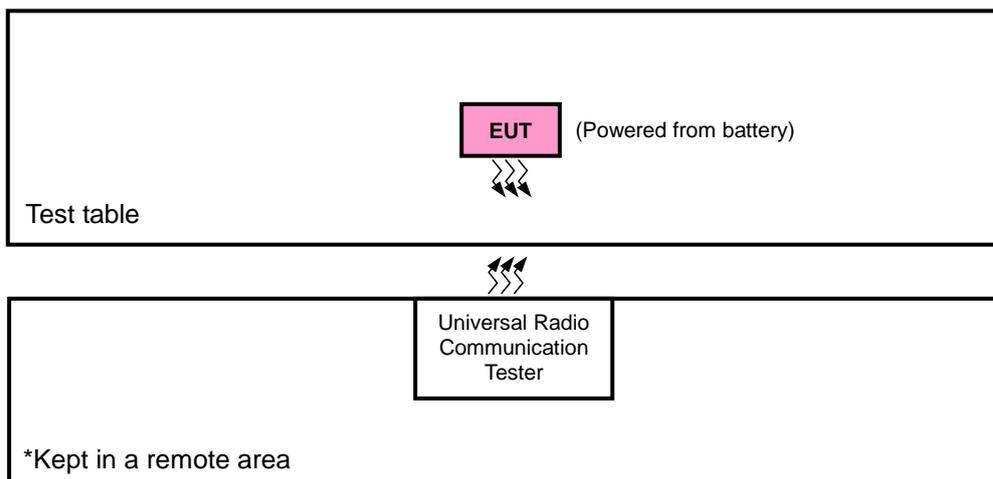
NOTE:

1. The EUT's accessories list refers to Ext. Pho.
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 FOR RADIATION EMISSION TEST



FOR E.R.P. / E.I.R.P. TEST



3.3 DESCRIPTION OF SUPPORT UNITS

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

3.4 DESCRIPTION OF TEST MODES

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 on Y-plane for ERP and X-axis for LTE band 17 and Y-axis for LTE band 4 for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

LTE Band 17

| EUT CONFIGURE MODE | TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | CHANNEL BANDWIDTH | MODULATION | MODE |
|--------------------|-----------------------|-------------------|---------------------|-------------------|-------------|---------------------|
| - | ERP | 23755 to 23825 | 23755, 23790, 23825 | 5MHz | QPSK, 16QAM | 1 RB / 0 RB Offset |
| | | 23780 to 23800 | 23780, 23790, 23800 | 10MHz | QPSK, 16QAM | 1 RB / 0 RB Offset |
| - | FREQUENCY STABILITY | 23755 to 23825 | 23790 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | | 23780 to 23800 | 23790 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| - | OCCUPIED BANDWIDTH | 23755 to 23825 | 23755, 23790, 23825 | 5MHz | QPSK, 16QAM | 25 RB / 0 RB Offset |
| | | 23780 to 23800 | 23780, 23790, 23800 | 10MHz | QPSK, 16QAM | 50 RB / 0 RB Offset |
| - | PEAK TO AVERAGE RATIO | 23755 to 23825 | 23755, 23790, 23825 | 5MHz | QPSK, 16QAM | 1 RB / 24 RB Offset |
| | | 23780 to 23800 | 23780, 23790, 23800 | 10MHz | QPSK, 16QAM | 1 RB / 49 RB Offset |
| - | BAND EDGE | 23755 to 23825 | 23755 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | | | 23825 | 5MHz | QPSK | 25 RB / 0 RB Offset |
| | | 23780 to 23800 | 23780 | 10MHz | QPSK | 1 RB / 24 RB Offset |
| | | | 23780 | 10MHz | QPSK | 25 RB / 0 RB Offset |
| | | | 23800 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| | | | 23800 | 10MHz | QPSK | 50 RB / 0 RB Offset |
| - | CONDUCTED EMISSION | 23755 to 23825 | 23790 | 5MHz | QPSK | 1 RB / 49 RB Offset |
| | | 23780 to 23800 | 23790 | 10MHz | QPSK | 1 RB / 24 RB Offset |
| - | RADIATED EMISSION | 23755 to 23825 | 23790 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | | 23780 to 23800 | 23790 | 10MHz | QPSK | 1 RB / 0 RB Offset |

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



LTE Band 4

| EUT CONFIGURE MODE | TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | CHANNEL BANDWIDTH | MODULATION | MODE |
|--------------------|-----------------------|-------------------|---------------------|-------------------|-------------|----------------------|
| - | EIRP | 19957 to 20393 | 19957, 20175, 20393 | 1.4MHz | QPSK, 16QAM | 3 RB / 0 RF Offset |
| | | 19965 to 20385 | 19965, 20175, 20385 | 3MHz | QPSK, 16QAM | 8 RB / 0 RB Offset |
| | | 19975 to 20375 | 19975, 20175, 20375 | 5MHz | QPSK, 16QAM | 12 RB / 0 RB Offset |
| | | 20000 to 20350 | 20000, 20175, 20350 | 10MHz | QPSK, 16QAM | 25 RB / 0 RB Offset |
| | | 20025 to 20325 | 20025, 20175, 20325 | 15MHz | QPSK, 16QAM | 36 RB / 0 RB Offset |
| | | 20050 to 20300 | 20050, 20175, 20300 | 20MHz | QPSK, 16QAM | 50 RB / 0 RB Offset |
| - | FREQUENCY STABILITY | 19957 to 20393 | 20175 | 1.4MHz | QPSK | 3 RB / 0 RF Offset |
| | | 19965 to 20385 | 20175 | 3MHz | QPSK | 8 RB / 0 RB Offset |
| | | 19975 to 20375 | 20175 | 5MHz | QPSK | 12 RB / 0 RB Offset |
| | | 20000 to 20350 | 20175 | 10MHz | QPSK | 25 RB / 0 RB Offset |
| | | 20025 to 20325 | 20175 | 15MHz | QPSK | 36 RB / 0 RB Offset |
| | | 20050 to 20300 | 20175 | 20MHz | QPSK | 50 RB / 0 RB Offset |
| - | OCCUPIED BANDWIDTH | 19957 to 20393 | 19957, 20175, 20393 | 1.4MHz | QPSK, 16QAM | 6 RB / 0 RB Offset |
| | | 19965 to 20385 | 19965, 20175, 20385 | 3MHz | QPSK, 16QAM | 15 RB / 0 RB Offset |
| | | 19975 to 20375 | 19975, 20175, 20375 | 5MHz | QPSK, 16QAM | 25 RB / 0 RB Offset |
| | | 20000 to 20350 | 20000, 20175, 20350 | 10MHz | QPSK, 16QAM | 50 RB / 0 RB Offset |
| | | 20025 to 20325 | 20025, 20175, 20325 | 15MHz | QPSK, 16QAM | 75 RB / 0 RB Offset |
| | | 20050 to 20300 | 20050, 20175, 20300 | 20MHz | QPSK, 16QAM | 100 RB / 0 RB Offset |
| - | PEAK TO AVERAGE RATIO | 19957 to 20393 | 19957, 20175, 20393 | 1.4MHz | QPSK, 16QAM | 6 RB / 0 RB Offset |
| | | 19965 to 20385 | 19965, 20175, 20385 | 3MHz | QPSK, 16QAM | 8 RB / 0 RB Offset |
| | | 19975 to 20375 | 19975, 20175, 20375 | 5MHz | QPSK, 16QAM | 12 RB / 0 RB Offset |
| | | 20000 to 20350 | 20000, 20175, 20350 | 10MHz | QPSK, 16QAM | 25 RB / 0 RB Offset |
| | | 20025 to 20325 | 20025, 20175, 20325 | 15MHz | QPSK, 16QAM | 36 RB / 0 RB Offset |
| | | 20050 to 20300 | 20050, 20175, 20300 | 20MHz | QPSK, 16QAM | 50 RB / 0 RB Offset |



| EUT CONFIGURE MODE | TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | CHANNEL BANDWIDTH | MODULATION | MODE | | |
|--------------------|-------------------|-------------------|---------------------|-------------------|------------|----------------------|------|---------------------|
| - | BAND EDGE | 19957 to 20393 | 19957 | 1.4MHz | QPSK | 1 RB / 0 RB Offset | | |
| | | | 20395 | 1.4MHz | QPSK | 6 RB / 0 RB Offset | | |
| | | 19965 to 20385 | 19965 | 3MHz | QPSK | 1 RB / 5 RB Offset | | |
| | | | 20385 | 3MHz | QPSK | 6 RB / 0 RB Offset | | |
| | | 19975 to 20375 | 19975 | 5MHz | QPSK | 1 RB / 0 RB Offset | | |
| | | | 20375 | 5MHz | QPSK | 15 RB / 0 RB Offset | | |
| | | 20000 to 20350 | 20000 | 10MHz | QPSK | 1 RB / 14 RB Offset | | |
| | | | 20350 | 10MHz | QPSK | 15 RB / 0 RB Offset | | |
| | | 20025 to 20325 | 20025 | 15MHz | QPSK | 1 RB / 0 RB Offset | | |
| | | | 20325 | 15MHz | QPSK | 25 RB / 0 RB Offset | | |
| | | 20050 to 20300 | 20050 | 20MHz | QPSK | 1 RB / 24 RB Offset | | |
| | | | 20300 | 20MHz | QPSK | 25 RB / 0 RB Offset | | |
| | | - | CONDCUETED EMISSION | 19957 to 20393 | 20175 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | 19965 to 20385 | 20175 | 3MHz | QPSK | 50 RB / 0 RB Offset |
| | | | | 19975 to 20375 | 20175 | 5MHz | QPSK | 1 RB / 49 RB Offset |
| | | | | 20000 to 20350 | 20175 | 10MHz | QPSK | 50 RB / 0 RB Offset |
| | | | | 20025 to 20325 | 20175 | 15MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | 20050 to 20300 | 20175 | 20MHz | QPSK | 75 RB / 0 RB Offset |
| - | RADIATED EMISSION | 19957 to 20393 | 20175 | 1.4MHz | QPSK | 1 RB / 74 RB Offset | | |
| | | 19965 to 20385 | 20175 | 3MHz | QPSK | 75 RB / 0 RB Offset | | |
| | | 19975 to 20375 | 20175 | 5MHz | QPSK | 1 RB / 0 RB Offset | | |
| | | 20000 to 20350 | 20175 | 10MHz | QPSK | 100 RB / 0 RB Offset | | |
| | | 20025 to 20325 | 20175 | 15MHz | QPSK | 1 RB / 99 RB Offset | | |
| | | 20050 to 20300 | 20175 | 20MHz | QPSK | 100 RB / 0 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 | ENVIRONMENTAL CONDITIONS | INPUT POWER | TESTED BY |
|---------------------|--------------------------|--------------|-------------|
| ERP/EIRP | 26deg. C, 58%RH | 3.8Vdc | Howard Kao |
| FREQUENCY STABILITY | 26deg. C, 58%RH | 3.8Vdc | Howard Kao |
| OCCUPIED BANDWIDTH | 26deg. C, 58%RH | 3.8Vdc | Howard Kao |
| BAND EDGE | 26deg. C, 58%RH | 3.8Vdc | Howard Kao |
| CONDCUDED EMISSION | 26deg. C, 58%RH | 3.8Vdc | Howard Kao |
| RADIATED EMISSION | 25deg. C, 65%RH | 120Vac, 60Hz | David Huang |

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 27

ANSI C63.4-2003

ANSI/TIA/EIA-603-C 2004

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

Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.

Portable stations (hand-held devices) operating in the 706-716 MHz band are limited to 3 watts ERP

4.1.2 TEST PROCEDURES

EIRP MEASUREMENT:

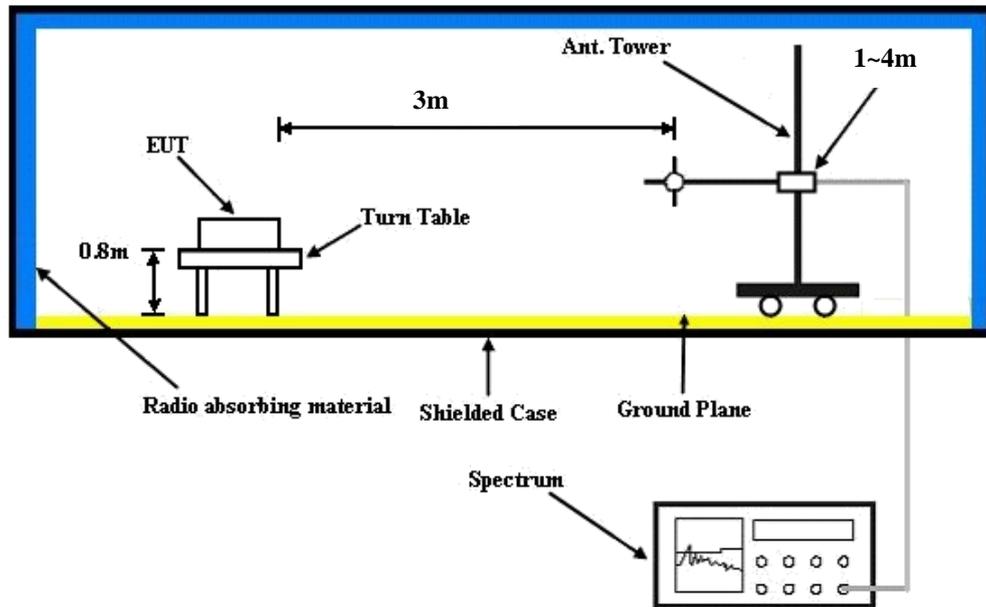
- a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 10MHz for LTE mode.
- b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m 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. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn.}$

CONDUCTED POWER MEASUREMENT:

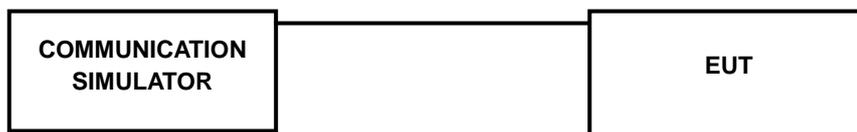
- a. The EUT was set up for the maximum power with LTE link data modulation and link up with simulator.
- b. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

4.1.3 TEST SETUP

EIRP / ERP MEASUREMENT:



CONDUCTED POWER MEASUREMENT:



4.1.4 TEST RESULTS

AVERAGE CONDUCTED OUTPUT POWER (dBm)

| Band / BW | Modulation | RB Size | RB Offset | Low CH 23755 | Mid CH 23790 | High CH 23825 | 3PGG MPR (dB) |
|-----------|------------|---------|-----------|------------------------|------------------------|------------------------|---------------------|
| | | | | Frequency 706.5 MHz | Frequency 710.0 MHz | Frequency 713.5 MHz | |
| 17 / 5M | QPSK | 1 | 0 | 23.69 | 23.81 | 23.84 | 0 |
| | | 1 | 12 | 23.93 | 23.94 | 24.19 | 0 |
| | | 1 | 24 | 23.82 | 24.3 | 24.46 | 0 |
| | | 12 | 0 | 22.71 | 22.73 | 22.82 | 1 |
| | | 12 | 6 | 22.88 | 22.91 | 22.95 | 1 |
| | | 12 | 13 | 22.97 | 23.08 | 23 | 1 |
| | 16QAM | 25 | 0 | 22.7 | 22.69 | 22.76 | 1 |
| | | 1 | 0 | 22.69 | 22.81 | 22.84 | 1 |
| | | 1 | 12 | 22.93 | 22.94 | 23.19 | 1 |
| | | 1 | 24 | 22.82 | 23.3 | 23.46 | 1 |
| | | 12 | 0 | 21.71 | 21.73 | 21.82 | 2 |
| | | 12 | 6 | 21.88 | 21.91 | 21.95 | 2 |
| | | 12 | 13 | 21.97 | 22.08 | 22 | 2 |
| | | 25 | 0 | 21.7 | 21.69 | 21.76 | 2 |

| Band / BW | Modulation | RB Size | RB Offset | Low CH 23780 | Mid CH 23790 | High CH 23800 | 3PGG MPR (dB) |
|-----------|------------|---------|-----------|------------------------|------------------------|------------------------|---------------------|
| | | | | Frequency 709.0 MHz | Frequency 710.0 MHz | Frequency 711.0 MHz | |
| 17 / 10M | QPSK | 1 | 0 | 23.71 | 23.83 | 23.86 | 0 |
| | | 1 | 24 | 23.95 | 23.96 | 24.21 | 0 |
| | | 1 | 49 | 23.84 | 24.32 | 24.48 | 0 |
| | | 25 | 0 | 22.73 | 22.75 | 22.84 | 1 |
| | | 25 | 12 | 22.9 | 22.93 | 22.97 | 1 |
| | | 25 | 25 | 22.99 | 23.1 | 23.02 | 1 |
| | | 50 | 0 | 22.72 | 22.71 | 22.78 | 1 |
| | 16QAM | 1 | 0 | 22.71 | 22.83 | 22.86 | 1 |
| | | 1 | 24 | 22.95 | 22.96 | 23.21 | 1 |
| | | 1 | 49 | 22.84 | 23.32 | 23.48 | 1 |
| | | 25 | 0 | 21.73 | 21.75 | 21.84 | 2 |
| | | 25 | 12 | 21.9 | 21.93 | 21.97 | 2 |
| | | 25 | 25 | 21.99 | 22.1 | 22.02 | 2 |
| | | 50 | 0 | 21.72 | 21.71 | 21.78 | 2 |



| Band / BW | Modulation | RB Size | RB Offset | Low CH 19957 | Mid CH 20175 | High CH 20393 | 3PGG MPR (dB) |
|-----------|------------|---------|-----------|----------------------|----------------------|----------------------|---------------|
| | | | | Frequency 1710.7 MHz | Frequency 1732.5 MHz | Frequency 1754.3 MHz | |
| 4 / 1.4M | QPSK | 1 | 0 | 23.95 | 23.93 | 23.96 | 0 |
| | | 1 | 2 | 24.08 | 24.04 | 24.09 | 0 |
| | | 1 | 5 | 23.79 | 23.75 | 23.35 | 0 |
| | | 3 | 0 | 22.7 | 22.65 | 24.1 | 0 |
| | | 3 | 1 | 22.61 | 22.6 | 22.79 | 0 |
| | | 3 | 3 | 22.37 | 22.52 | 22.85 | 0 |
| | | 6 | 0 | 22.74 | 22.68 | 22.8 | 1 |
| | 16QAM | 1 | 0 | 22.95 | 22.93 | 22.96 | 1 |
| | | 1 | 2 | 23.08 | 23.04 | 23.09 | 1 |
| | | 1 | 5 | 22.79 | 22.75 | 22.35 | 1 |
| | | 3 | 0 | 21.7 | 21.65 | 23.1 | 1 |
| | | 3 | 1 | 21.61 | 21.6 | 21.79 | 1 |
| | | 3 | 3 | 21.37 | 21.52 | 21.85 | 1 |
| | | 6 | 0 | 21.74 | 21.68 | 21.8 | 2 |

| Band / BW | Modulation | RB Size | RB Offset | Low CH 19965 | Mid CH 20175 | High CH 20385 | 3PGG MPR (dB) |
|-----------|------------|---------|-----------|----------------------|----------------------|----------------------|---------------|
| | | | | Frequency 1711.5 MHz | Frequency 1732.5 MHz | Frequency 1753.5 MHz | |
| 4 / 3M | QPSK | 1 | 0 | 23.96 | 23.94 | 23.97 | 0 |
| | | 1 | 7 | 24.09 | 24.05 | 24.1 | 0 |
| | | 1 | 14 | 23.8 | 23.76 | 23.36 | 0 |
| | | 8 | 0 | 22.71 | 22.66 | 24.11 | 1 |
| | | 8 | 3 | 22.62 | 22.61 | 22.8 | 1 |
| | | 8 | 7 | 22.38 | 22.53 | 22.86 | 1 |
| | | 15 | 0 | 22.75 | 22.69 | 22.81 | 1 |
| | 16QAM | 1 | 0 | 22.96 | 22.94 | 22.97 | 1 |
| | | 1 | 7 | 23.09 | 23.05 | 23.1 | 1 |
| | | 1 | 14 | 22.8 | 22.76 | 22.36 | 1 |
| | | 8 | 0 | 21.71 | 21.66 | 23.11 | 2 |
| | | 8 | 3 | 21.62 | 21.61 | 21.8 | 2 |
| | | 8 | 7 | 21.38 | 21.53 | 21.86 | 2 |
| | | 15 | 0 | 21.75 | 21.69 | 21.81 | 2 |

| Band / BW | Modulation | RB Size | RB Offset | Low CH 19975 | Mid CH 20175 | High CH 20375 | 3PGG MPR (dB) |
|-----------|------------|---------|-----------|----------------------|----------------------|----------------------|---------------|
| | | | | Frequency 1712.5 MHz | Frequency 1732.5 MHz | Frequency 1752.5 MHz | |
| 4 / 5M | QPSK | 1 | 0 | 23.97 | 23.95 | 23.98 | 0 |
| | | 1 | 12 | 24.1 | 24.06 | 24.11 | 0 |
| | | 1 | 24 | 23.81 | 23.77 | 23.37 | 0 |
| | | 12 | 0 | 22.72 | 22.67 | 24.12 | 1 |
| | | 12 | 6 | 22.63 | 22.62 | 22.81 | 1 |
| | | 12 | 13 | 22.39 | 22.54 | 22.87 | 1 |
| | | 25 | 0 | 22.76 | 22.7 | 22.82 | 1 |
| | 16QAM | 1 | 0 | 22.97 | 22.95 | 22.98 | 1 |
| | | 1 | 12 | 23.1 | 23.06 | 23.11 | 1 |
| | | 1 | 24 | 22.81 | 22.77 | 22.37 | 1 |
| | | 12 | 0 | 21.72 | 21.67 | 23.12 | 2 |
| | | 12 | 6 | 21.63 | 21.62 | 21.81 | 2 |
| | | 12 | 13 | 21.39 | 21.54 | 21.87 | 2 |
| | | 25 | 0 | 21.76 | 21.7 | 21.82 | 2 |



A D T

| Band / BW | Modulation | RB Size | RB Offset | Low CH | Mid CH | High CH | 3PGG MPR (dB) |
|-----------|------------|---------|-----------|------------|------------|------------|---------------|
| | | | | 20000 | 20175 | 20350 | |
| | | | | Frequency | Frequency | Frequency | |
| | | | | 1715.0 MHz | 1732.5 MHz | 1750.0 MHz | |
| 4 / 10M | QPSK | 1 | 0 | 23.99 | 23.97 | 24 | 0 |
| | | 1 | 24 | 24.12 | 24.08 | 24.13 | 0 |
| | | 1 | 49 | 23.83 | 23.79 | 23.39 | 0 |
| | | 25 | 0 | 22.74 | 22.69 | 24.14 | 1 |
| | | 25 | 12 | 22.65 | 22.64 | 22.83 | 1 |
| | | 25 | 25 | 22.41 | 22.56 | 22.89 | 1 |
| | | 50 | 0 | 22.78 | 22.72 | 22.84 | 1 |
| | 16QAM | 1 | 0 | 22.99 | 22.97 | 23 | 1 |
| | | 1 | 24 | 23.12 | 23.08 | 23.13 | 1 |
| | | 1 | 49 | 22.83 | 22.79 | 22.39 | 1 |
| | | 25 | 0 | 21.74 | 21.69 | 23.14 | 2 |
| | | 25 | 12 | 21.65 | 21.64 | 21.83 | 2 |
| | | 25 | 25 | 21.41 | 21.56 | 21.89 | 2 |
| | | 50 | 0 | 21.78 | 21.72 | 21.84 | 2 |

| Band / BW | Modulation | RB Size | RB Offset | Low CH | Mid CH | High CH | 3PGG MPR (dB) |
|-----------|------------|---------|-----------|------------|------------|------------|---------------|
| | | | | 20025 | 20175 | 20325 | |
| | | | | Frequency | Frequency | Frequency | |
| | | | | 1717.5 MHz | 1732.5 MHz | 1747.5 MHz | |
| 4 / 15M | QPSK | 1 | 0 | 24 | 23.98 | 24.01 | 0 |
| | | 1 | 37 | 24.13 | 24.09 | 24.14 | 0 |
| | | 1 | 74 | 23.84 | 23.8 | 23.4 | 0 |
| | | 36 | 0 | 22.75 | 22.7 | 24.15 | 1 |
| | | 36 | 19 | 22.66 | 22.65 | 22.84 | 1 |
| | | 36 | 39 | 22.42 | 22.57 | 22.9 | 1 |
| | | 75 | 0 | 22.79 | 22.73 | 22.85 | 1 |
| | 16QAM | 1 | 0 | 23 | 22.98 | 23.01 | 1 |
| | | 1 | 37 | 23.13 | 23.09 | 23.14 | 1 |
| | | 1 | 74 | 22.84 | 22.8 | 22.4 | 1 |
| | | 36 | 0 | 21.75 | 21.7 | 23.15 | 2 |
| | | 36 | 19 | 21.66 | 21.65 | 21.84 | 2 |
| | | 36 | 39 | 21.42 | 21.57 | 21.9 | 2 |
| | | 75 | 0 | 21.79 | 21.73 | 21.85 | 2 |

| Band / BW | Modulation | RB Size | RB Offset | Low CH | Mid CH | High CH | 3PGG MPR (dB) |
|-----------|------------|---------|-----------|------------|------------|------------|---------------|
| | | | | 20050 | 20175 | 20300 | |
| | | | | Frequency | Frequency | Frequency | |
| | | | | 1720.0 MHz | 1732.5 MHz | 1745.0 MHz | |
| 4 / 20M | QPSK | 1 | 0 | 24.02 | 24 | 24.03 | 0 |
| | | 1 | 50 | 24.15 | 24.11 | 24.16 | 0 |
| | | 1 | 99 | 23.86 | 23.82 | 23.42 | 0 |
| | | 50 | 0 | 22.77 | 22.72 | 24.17 | 1 |
| | | 50 | 25 | 22.68 | 22.67 | 22.86 | 1 |
| | | 50 | 50 | 22.44 | 22.59 | 22.92 | 1 |
| | | 100 | 0 | 22.81 | 22.75 | 22.87 | 1 |
| | 16QAM | 1 | 0 | 23.02 | 23 | 23.03 | 1 |
| | | 1 | 50 | 23.15 | 23.11 | 23.16 | 1 |
| | | 1 | 99 | 22.86 | 22.82 | 22.42 | 1 |
| | | 50 | 0 | 21.77 | 21.72 | 23.17 | 2 |
| | | 50 | 25 | 21.68 | 21.67 | 21.86 | 2 |
| | | 50 | 50 | 21.44 | 21.59 | 21.92 | 2 |
| | | 100 | 0 | 21.81 | 21.75 | 21.87 | 2 |



A D T

AVERAGE ERP (dBm)

LTE BAND 17

CHANNEL BANDWIDTH: 5MHz QPSK

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) | Polarization (H/V) |
|-------|---------|-----------------|-----------|-----------------------|----------|---------|--------------------|
| Y | 23755 | 706.5 | -9.25 | 30.36 | 18.96 | 78.70 | H |
| | 23790 | 710.0 | -9.78 | 30.17 | 18.24 | 66.68 | |
| | 23825 | 713.5 | -9.08 | 30.17 | 18.94 | 78.34 | |
| | 23755 | 706.5 | -20.26 | 32.03 | 9.62 | 9.16 | V |
| | 23790 | 710.0 | -20.61 | 31.98 | 9.22 | 8.36 | |
| | 23825 | 713.5 | -20.77 | 32.06 | 9.14 | 8.20 | |

CHANNEL BANDWIDTH: 5MHz 16QAM

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) | Polarization (H/V) |
|-------|---------|-----------------|-----------|-----------------------|----------|---------|--------------------|
| Y | 23755 | 706.5 | -10.42 | 30.36 | 17.79 | 60.12 | H |
| | 23790 | 710.0 | -10.10 | 30.17 | 17.92 | 61.94 | |
| | 23825 | 713.5 | -10.10 | 30.17 | 17.92 | 61.94 | |
| | 23755 | 706.5 | -19.40 | 32.03 | 10.48 | 11.17 | V |
| | 23790 | 710.0 | -19.96 | 31.98 | 9.87 | 9.71 | |
| | 23825 | 713.5 | -20.83 | 32.06 | 9.08 | 8.09 | |



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CHANNEL BANDWIDTH: 10MHz QPSK

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) | Polarization (H/V) |
|-------|---------|-----------------|-----------|-----------------------|----------|---------|--------------------|
| Y | 23780 | 709.0 | -9.19 | 30.17 | 18.83 | 76.38 | H |
| | 23790 | 710.0 | -9.29 | 30.17 | 18.73 | 74.64 | |
| | 23800 | 711.0 | -9.46 | 30.18 | 18.57 | 71.94 | |
| | 23780 | 709.0 | -20.22 | 31.96 | 9.59 | 9.10 | V |
| | 23790 | 710.0 | -20.35 | 31.98 | 9.48 | 8.87 | |
| | 23800 | 711.0 | -20.39 | 32.03 | 9.49 | 8.89 | |

CHANNEL BANDWIDTH: 10MHz 16QAM

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | ERP(dBm) | ERP(mW) | Polarization (H/V) |
|-------|---------|-----------------|-----------|-----------------------|----------|---------|--------------------|
| Y | 23780 | 709.0 | -10.45 | 30.17 | 17.57 | 57.15 | H |
| | 23790 | 710.0 | -10.70 | 30.17 | 17.32 | 53.95 | |
| | 23800 | 711.0 | -10.99 | 30.18 | 17.04 | 50.58 | |
| | 23780 | 709.0 | -19.42 | 31.96 | 10.39 | 10.94 | V |
| | 23790 | 710.0 | -19.55 | 31.98 | 10.28 | 10.67 | |
| | 23800 | 711.0 | -19.88 | 32.03 | 10.00 | 10.00 | |

AVERAGE EIRP (dBm)
LTE BAND 4
CHANNEL BANDWIDTH: 1.4MHz QPSK

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | EIRP(dBm) | EIRP(mW) | Polarization (H/V) |
|-------|---------|-----------------|-----------|-----------------------|-----------|----------|--------------------|
| Y | 19957 | 1710.7 | -15.41 | 36.45 | 21.04 | 127.06 | H |
| | 20175 | 1732.5 | -16.01 | 36.80 | 20.79 | 119.92 | |
| | 20393 | 1754.3 | -15.39 | 36.94 | 21.55 | 142.99 | |
| | 19957 | 1712.5 | -19.25 | 37.28 | 18.03 | 63.49 | V |
| | 20175 | 1732.5 | -20.14 | 37.63 | 17.49 | 56.10 | |
| | 20393 | 1754.3 | -19.71 | 37.64 | 17.93 | 62.09 | |

CHANNEL BANDWIDTH: 1.4MHz 16QAM

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | EIRP(dBm) | EIRP(mW) | Polarization (H/V) |
|-------|---------|-----------------|-----------|-----------------------|-----------|----------|--------------------|
| Y | 19957 | 1712.5 | -15.99 | 36.45 | 20.46 | 111.17 | H |
| | 20175 | 1732.5 | -16.49 | 36.80 | 20.31 | 107.37 | |
| | 20393 | 1754.3 | -15.78 | 36.94 | 21.16 | 130.71 | |
| | 19957 | 1712.5 | -19.45 | 37.28 | 17.83 | 60.63 | V |
| | 20175 | 1732.5 | -20.66 | 37.63 | 16.97 | 49.77 | |
| | 20393 | 1754.3 | -20.10 | 37.64 | 17.54 | 56.75 | |

CHANNEL BANDWIDTH: 3MHz QPSK

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | EIRP(dBm) | EIRP(mW) | Polarization (H/V) |
|-------|---------|-----------------|-----------|-----------------------|-----------|----------|--------------------|
| Y | 19965 | 1711.5 | -16.64 | 36.64 | 20.00 | 100.00 | H |
| | 20175 | 1732.5 | -16.17 | 36.80 | 20.63 | 115.48 | |
| | 20385 | 1753.5 | -15.11 | 36.80 | 21.69 | 147.57 | |
| | 19965 | 1711.5 | -19.58 | 37.44 | 17.86 | 61.08 | V |
| | 20175 | 1732.5 | -20.37 | 37.63 | 17.26 | 53.20 | |
| | 20385 | 1753.5 | -20.75 | 37.64 | 16.89 | 48.81 | |



CHANNEL BANDWIDTH: 3MHz 16QAM

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | EIRP(dBm) | EIRP(mW) | Polarization (H/V) |
|-------|---------|-----------------|-----------|-----------------------|-----------|----------|--------------------|
| Y | 19965 | 1711.5 | -17.37 | 36.64 | 19.27 | 84.53 | H |
| | 20175 | 1732.5 | -17.82 | 36.80 | 18.98 | 78.98 | |
| | 20385 | 1753.5 | -16.69 | 36.80 | 20.11 | 102.57 | |
| | 19965 | 1711.5 | -20.65 | 37.44 | 16.79 | 47.74 | V |
| | 20175 | 1732.5 | -21.90 | 37.63 | 15.73 | 37.40 | |
| | 20385 | 1753.5 | -21.29 | 37.64 | 16.35 | 43.10 | |

CHANNEL BANDWIDTH: 5MHz QPSK

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | EIRP(dBm) | EIRP(mW) | Polarization (H/V) |
|-------|---------|-----------------|-----------|-----------------------|-----------|----------|--------------------|
| Y | 19975 | 1712.5 | -16.70 | 36.64 | 19.94 | 98.63 | H |
| | 20175 | 1732.5 | -17.18 | 36.80 | 19.62 | 91.52 | |
| | 20375 | 1752.5 | -15.11 | 36.80 | 21.69 | 147.57 | |
| | 19975 | 1712.5 | -20.66 | 37.44 | 16.78 | 47.63 | V |
| | 20175 | 1732.5 | -21.32 | 37.63 | 16.31 | 42.75 | |
| | 20375 | 1752.5 | -20.92 | 37.64 | 16.72 | 46.94 | |

CHANNEL BANDWIDTH: 5MHz 16QAM

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | EIRP(dBm) | EIRP(mW) | Polarization (H/V) |
|-------|---------|-----------------|-----------|-----------------------|-----------|----------|--------------------|
| Y | 19975 | 1712.5 | -17.20 | 36.64 | 19.44 | 87.90 | H |
| | 20175 | 1732.5 | -17.82 | 36.80 | 18.98 | 78.98 | |
| | 20375 | 1752.5 | -16.64 | 36.80 | 20.16 | 103.75 | |
| | 19975 | 1712.5 | -21.16 | 37.44 | 16.28 | 42.45 | V |
| | 20175 | 1732.5 | -21.94 | 37.63 | 15.69 | 37.06 | |
| | 20375 | 1752.5 | -21.41 | 37.64 | 16.23 | 41.93 | |



CHANNEL BANDWIDTH: 10MHz QPSK

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | EIRP(dBm) | EIRP(mW) | Polarization (H/V) |
|-------|---------|-----------------|-----------|-----------------------|-----------|----------|--------------------|
| Y | 20000 | 1715.0 | -17.51 | 36.64 | 19.13 | 81.85 | H |
| | 20175 | 1732.5 | -17.74 | 36.80 | 19.06 | 80.45 | |
| | 20350 | 1750.0 | -15.68 | 36.80 | 21.12 | 129.42 | |
| | 20000 | 1715.0 | -21.38 | 37.44 | 16.06 | 40.36 | V |
| | 20175 | 1732.5 | -21.81 | 37.63 | 15.82 | 38.19 | |
| | 20350 | 1750.0 | -21.70 | 37.64 | 15.94 | 39.22 | |

CHANNEL BANDWIDTH: 10MHz 16QAM

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | EIRP(dBm) | EIRP(mW) | Polarization (H/V) |
|-------|---------|-----------------|-----------|-----------------------|-----------|----------|--------------------|
| Y | 20000 | 1715.0 | -17.95 | 36.64 | 18.69 | 73.96 | H |
| | 20175 | 1732.5 | -18.45 | 36.80 | 18.35 | 68.31 | |
| | 20350 | 1750.0 | -16.20 | 36.80 | 20.60 | 114.82 | |
| | 20000 | 1715.0 | -22.12 | 37.44 | 15.32 | 34.03 | V |
| | 20175 | 1732.5 | -22.61 | 37.63 | 15.02 | 31.76 | |
| | 20350 | 1750.0 | -22.43 | 37.64 | 15.21 | 33.15 | |

CHANNEL BANDWIDTH: 15MHz QPSK

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | EIRP(dBm) | EIRP(mW) | Polarization (H/V) |
|-------|---------|-----------------|-----------|-----------------------|-----------|----------|--------------------|
| Y | 20025 | 1717.5 | -17.35 | 36.64 | 19.29 | 84.92 | H |
| | 20175 | 1732.5 | -17.67 | 36.80 | 19.13 | 81.75 | |
| | 20325 | 1747.5 | -14.71 | 36.80 | 22.09 | 161.81 | |
| | 20025 | 1717.5 | -22.31 | 37.44 | 15.13 | 32.58 | V |
| | 20175 | 1732.5 | -22.71 | 37.63 | 14.92 | 31.04 | |
| | 20325 | 1747.5 | -22.70 | 37.64 | 14.94 | 31.15 | |



CHANNEL BANDWIDTH: 15MHz 16QAM

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | EIRP(dBm) | EIRP(mW) | Polarization (H/V) |
|-------|---------|-----------------|-----------|-----------------------|-----------|----------|--------------------|
| Y | 20025 | 1717.5 | -17.30 | 36.64 | 19.34 | 85.90 | H |
| | 20175 | 1732.5 | -17.52 | 36.80 | 19.28 | 84.63 | |
| | 20325 | 1747.5 | -16.69 | 36.80 | 20.11 | 102.57 | |
| | 20025 | 1717.5 | -23.19 | 37.44 | 14.25 | 26.60 | V |
| | 20175 | 1732.5 | -23.57 | 37.63 | 14.06 | 25.46 | |
| | 20325 | 1747.5 | -23.72 | 37.64 | 13.92 | 24.63 | |

CHANNEL BANDWIDTH: 20MHz QPSK

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | EIRP(dBm) | EIRP(mW) | Polarization (H/V) |
|-------|---------|-----------------|-----------|-----------------------|-----------|----------|--------------------|
| Y | 20050 | 1720.0 | -16.80 | 36.64 | 19.84 | 96.38 | H |
| | 20175 | 1732.5 | -16.86 | 36.80 | 19.94 | 98.51 | |
| | 20300 | 1745.5 | -15.09 | 36.80 | 21.71 | 148.25 | |
| | 20050 | 1720.0 | -22.74 | 37.44 | 14.70 | 29.51 | V |
| | 20175 | 1732.5 | -23.86 | 37.63 | 13.77 | 23.82 | |
| | 20300 | 1745.5 | -23.06 | 37.64 | 14.58 | 28.67 | |

CHANNEL BANDWIDTH: 20MHz 16QAM

| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor(dB) | EIRP(dBm) | EIRP(mW) | Polarization (H/V) |
|-------|---------|-----------------|-----------|-----------------------|-----------|----------|--------------------|
| Y | 20050 | 1720.0 | -17.71 | 36.64 | 18.93 | 78.16 | H |
| | 20175 | 1732.5 | -17.64 | 36.80 | 19.16 | 82.32 | |
| | 20300 | 1745.5 | -15.09 | 36.80 | 21.71 | 148.25 | |
| | 20050 | 1720.0 | -24.69 | 37.44 | 12.75 | 18.83 | V |
| | 20175 | 1732.5 | -24.73 | 37.63 | 12.90 | 19.49 | |
| | 20300 | 1745.5 | -24.97 | 37.64 | 12.67 | 18.47 | |

4.2 FREQUENCY STABILITY MEASUREMENT

4.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

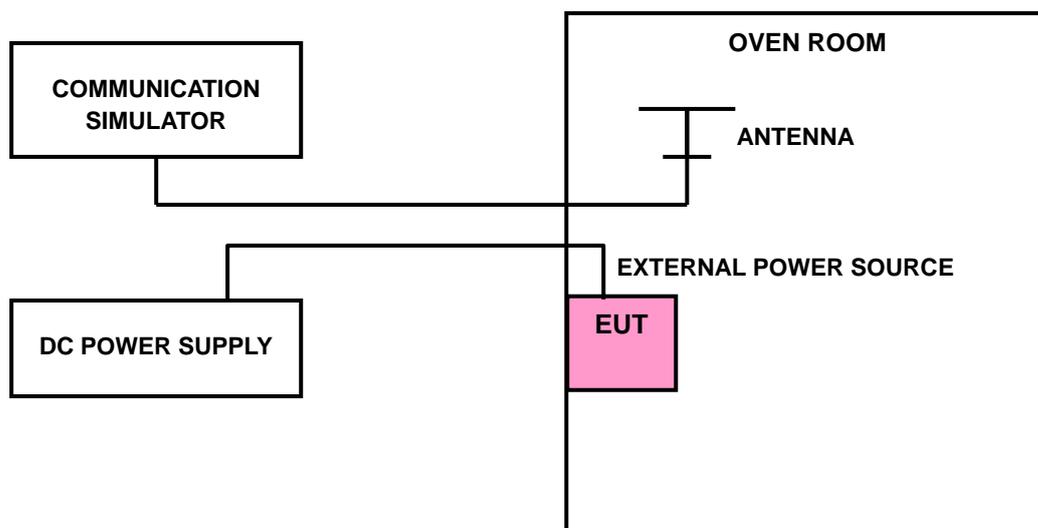
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

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 $\pm 0.5^{\circ}\text{C}$ 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

| VOLTAGE (Volts) | FREQUENCY ERROR (ppm) | | | | | | | | LIMIT (ppm) |
|--------------------|-----------------------|--------|------------|--------|--------|-------|-------|--------|-------------|
| | LTE BAND 17 | | LTE BAND 4 | | | | | | |
| | 5MHz | 10MHz | 1.4MHz | 3MHz | 5MHz | 10MHz | 15MHz | 20MHz | |
| 3.8 | -0.004 | 0.003 | 0.005 | 0.002 | 0.003 | 0.001 | 0.003 | 0.002 | 2.5 |
| 3.6 | 0.006 | -0.007 | -0.008 | -0.001 | -0.002 | 0.002 | 0.001 | 0.003 | 2.5 |
| 4.34 | -0.002 | -0.007 | -0.009 | -0.003 | 0.004 | 0.001 | 0.001 | -0.002 | 2.5 |

NOTE: The applicant defined the normal working voltage of the battery is from 3.6Vdc to 4.34Vdc.

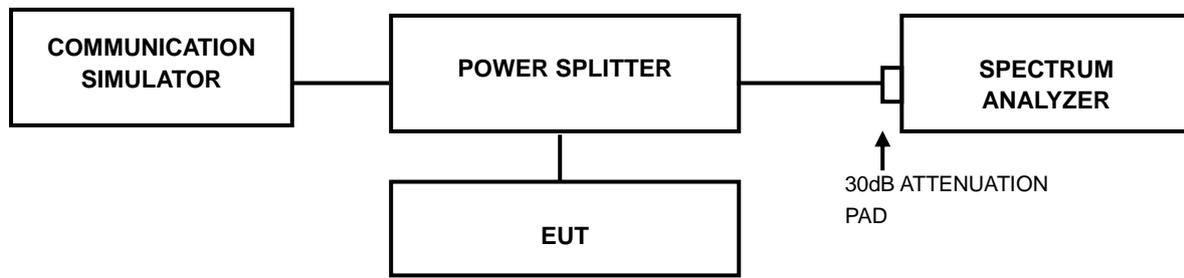
| TEMP. (°C) | FREQUENCY ERROR (ppm) | | | | | | | | LIMIT (ppm) |
|------------|-----------------------|---------|------------|---------|---------|---------|---------|---------|-------------|
| | LTE BAND 17 | | LTE BAND 4 | | | | | | |
| | 5MHz | 10MHz | 1.4MHz | 3MHz | 5MHz | 10MHz | 15MHz | 20MHz | |
| -30 | 0.0062 | 0.0017 | 0.0002 | 0.0083 | 0.0040 | -0.0024 | -0.0037 | 0.0021 | 2.5 |
| -20 | -0.0025 | -0.0046 | 0.0025 | -0.0017 | -0.0087 | -0.0009 | 0.0051 | -0.0012 | 2.5 |
| -10 | -0.0054 | 0.0010 | 0.0057 | 0.0008 | 0.0038 | -0.0020 | -0.0043 | 0.0015 | 2.5 |
| 0 | -0.0058 | -0.0018 | 0.0063 | 0.0061 | 0.0027 | 0.0026 | 0.0062 | 0.0029 | 2.5 |
| 10 | -0.0044 | -0.0061 | 0.0024 | 0.0027 | 0.0018 | -0.0010 | 0.0020 | 0.0029 | 2.5 |
| 20 | -0.0030 | -0.0018 | -0.0010 | 0.0009 | 0.0032 | 0.0006 | 0.0038 | 0.0011 | 2.5 |
| 30 | 0.0038 | 0.0024 | 0.0027 | 0.0001 | -0.0034 | -0.0001 | 0.0019 | 0.0014 | 2.5 |
| 40 | 0.0032 | -0.0025 | -0.0017 | -0.0007 | 0.0065 | 0.0003 | 0.0072 | 0.0025 | 2.5 |
| 50 | -0.0056 | -0.0042 | -0.0069 | 0.0070 | 0.0046 | 0.0034 | 0.0010 | -0.0006 | 2.5 |
| 60 | 0.0059 | -0.0035 | -0.0132 | -0.0032 | 0.0053 | -0.0032 | 0.0011 | 0.0018 | 2.5 |

4.3 OCCUPIED BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

4.3.2 TEST SETUP

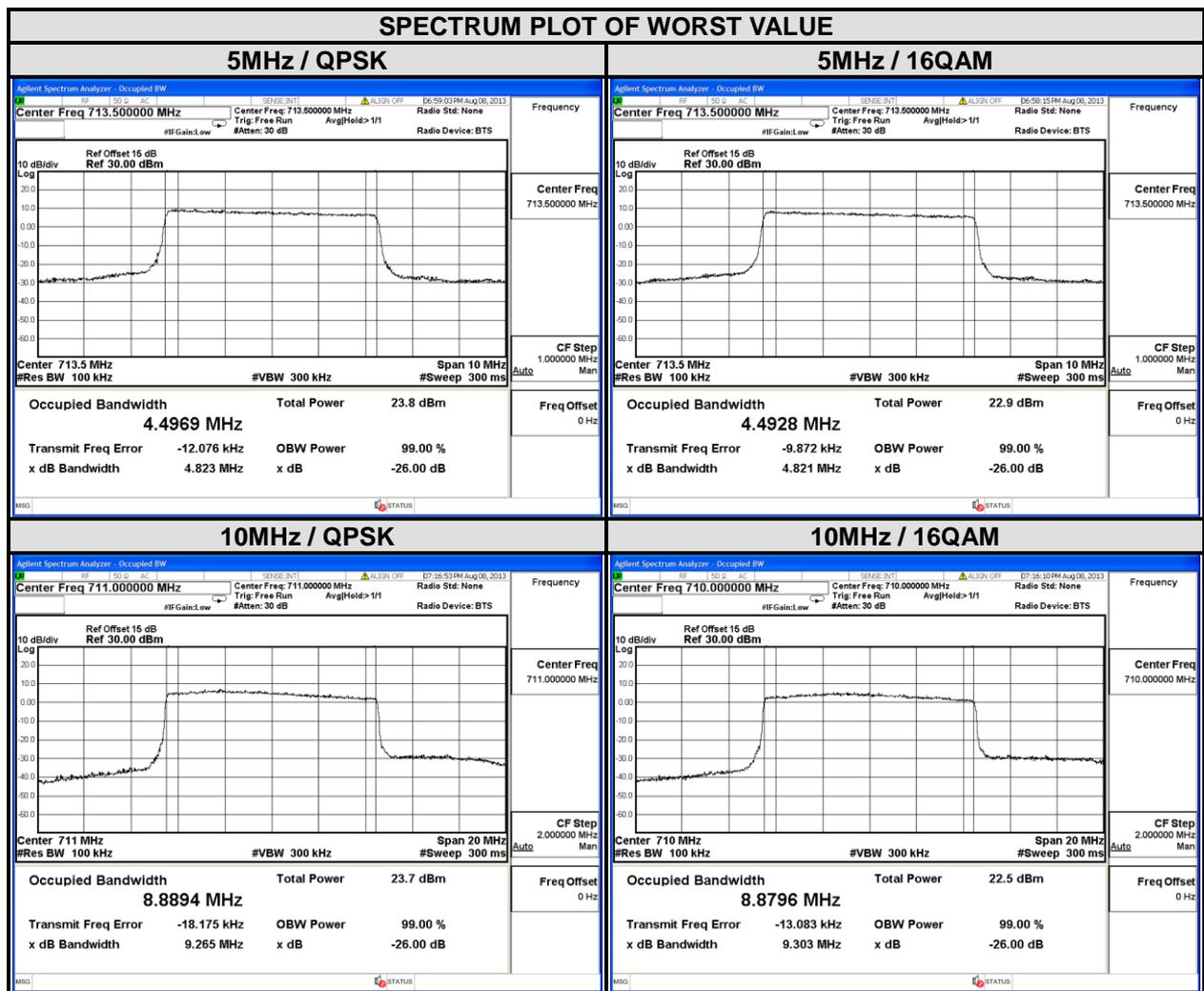


4.3.3 TEST PROCEDURES

- The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

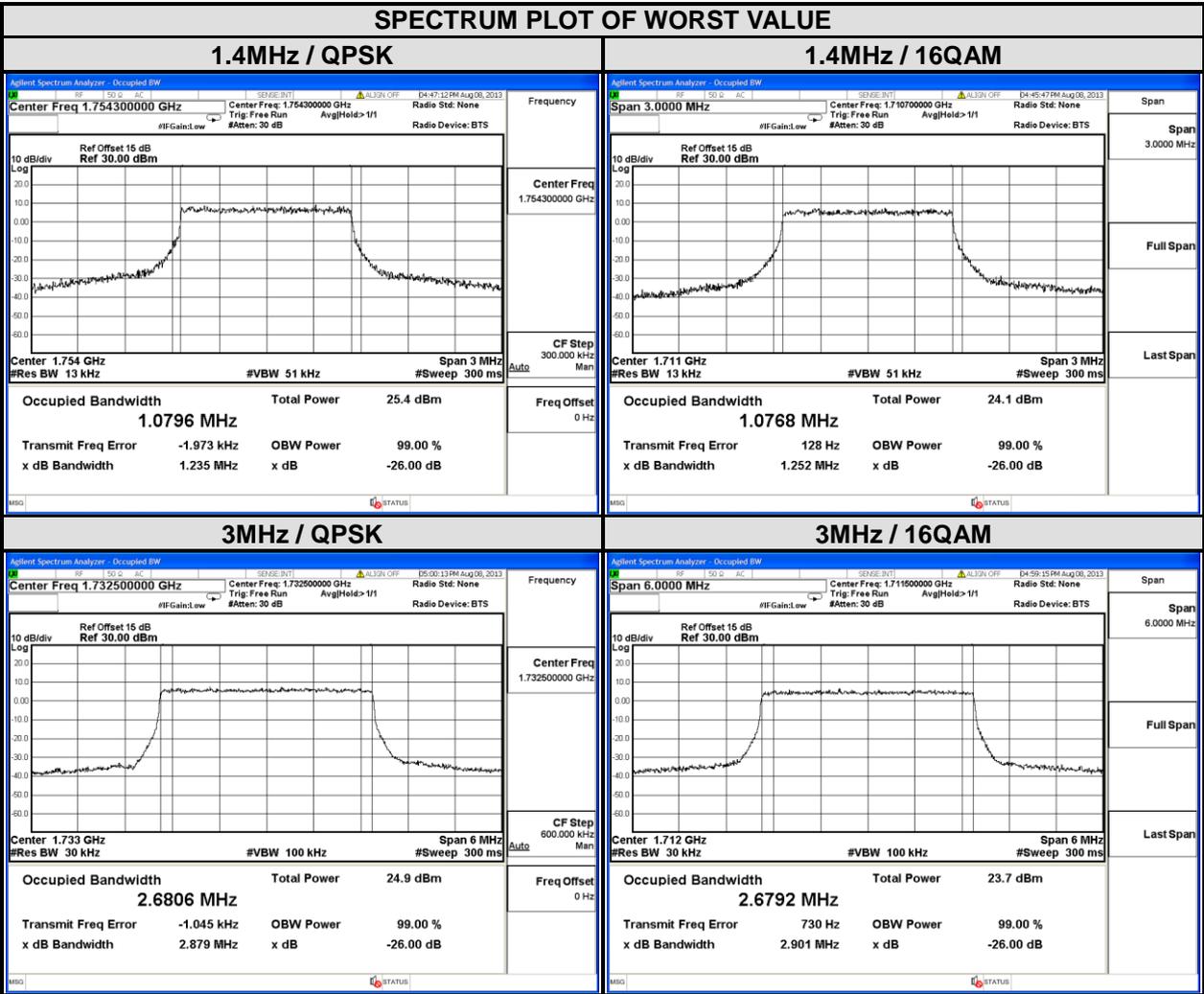
4.3.4 TEST RESULTS

| LTE BAND 17 | | | | | | | |
|-------------------------|-----------------|------------------------------|--------|--------------------------|-----------------|------------------------------|--------|
| CHANNEL BANDWIDTH: 5MHz | | | | CHANNEL BANDWIDTH: 10MHz | | | |
| CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | | CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 23755 | 706.5 | 4.4929 | 4.4919 | 23780 | 709.0 | 8.8879 | 8.8785 |
| 23790 | 710.0 | 4.4837 | 4.4821 | 23790 | 710.0 | 8.8841 | 8.8796 |
| 23825 | 713.5 | 4.4969 | 4.4928 | 23800 | 711.0 | 8.8894 | 8.8771 |





| LTE BAND 4 | | | | | | | |
|---------------------------|-----------------|------------------------------|--------|-------------------------|-----------------|------------------------------|--------|
| CHANNEL BANDWIDTH: 1.4MHz | | | | CHANNEL BANDWIDTH: 3MHz | | | |
| CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | | CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 19957 | 1710.7 | 1.0789 | 1.0768 | 19965 | 1711.5 | 2.6799 | 2.6792 |
| 20175 | 1732.5 | 1.0792 | 1.0767 | 20175 | 1732.5 | 2.6806 | 2.6773 |
| 20393 | 1754.3 | 1.0796 | 1.0767 | 20385 | 1753.5 | 2.6802 | 2.6786 |

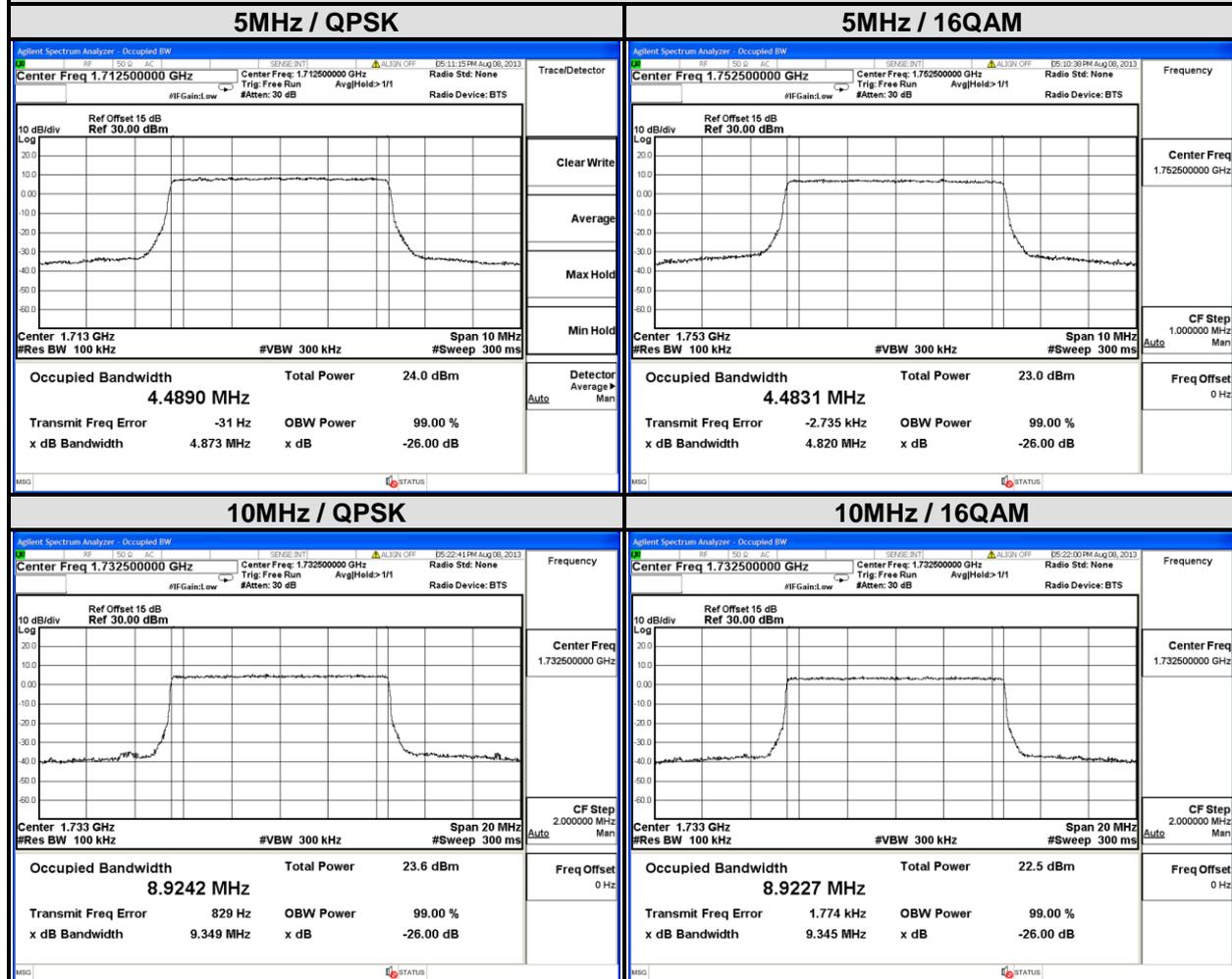




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| LTE BAND 4 | | | | | | | |
|-------------------------|-----------------|------------------------------|--------|--------------------------|-----------------|------------------------------|--------|
| CHANNEL BANDWIDTH: 5MHz | | | | CHANNEL BANDWIDTH: 10MHz | | | |
| CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | | CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 19975 | 1712.5 | 4.489 | 4.48 | 20000 | 1715.0 | 8.9125 | 8.9092 |
| 20175 | 1732.5 | 4.4827 | 4.483 | 20175 | 1732.5 | 8.9242 | 8.9227 |
| 20375 | 1752.5 | 4.4864 | 4.4831 | 20350 | 1750.0 | 8.9206 | 8.9197 |

SPECTRUM PLOT OF WORST VALUE





| LTE BAND 4 | | | | | | | |
|--------------------------|-----------------|------------------------------|--------|--------------------------|-----------------|------------------------------|--------|
| CHANNEL BANDWIDTH: 15MHz | | | | CHANNEL BANDWIDTH: 20MHz | | | |
| CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | | CHANNEL | FREQUENCY (MHz) | 99% OCCUPIED BANDWIDTH (MHz) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 20025 | 1717.5 | 13.371 | 13.366 | 20050 | 1720.0 | 17.82 | 17.823 |
| 20175 | 1732.5 | 13.378 | 13.373 | 20175 | 1732.5 | 17.824 | 17.821 |
| 20325 | 1747.5 | 13.349 | 13.368 | 20300 | 1745.5 | 17.793 | 17.809 |

SPECTRUM PLOT OF WORST VALUE

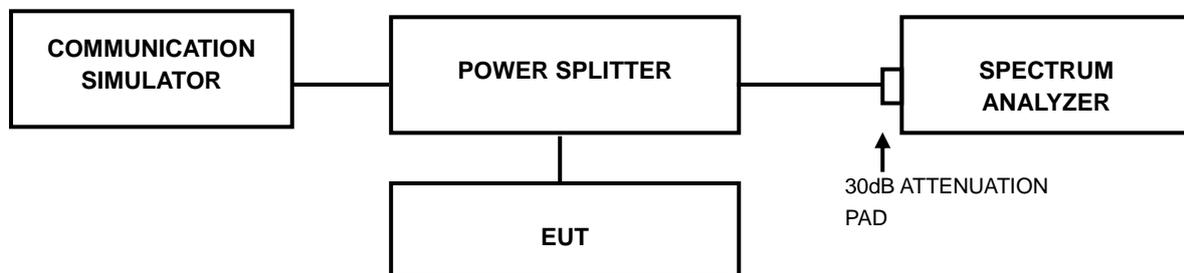
| 15MHz / QPSK | | 15MHz / 16QAM | |
|---|---|---------------|--|
| <p>Agilent Spectrum Analyzer - Occupied BW Center Freq: 1.732500000 GHz #Res BW: 150 kHz #VBW: 470 kHz Span: 30 MHz #Sweep: 300 ms</p> <p>Occupied Bandwidth: 13.378 MHz Total Power: 23.5 dBm Transmit Freq Error: 3.474 kHz OBW Power: 99.00 % x dB Bandwidth: 14.00 MHz</p> | <p>Agilent Spectrum Analyzer - Occupied BW Center Freq: 1.732500000 GHz #Res BW: 150 kHz #VBW: 470 kHz Span: 30 MHz #Sweep: 300 ms</p> <p>Occupied Bandwidth: 13.373 MHz Total Power: 22.4 dBm Transmit Freq Error: 3.403 kHz OBW Power: 99.00 % x dB Bandwidth: 14.00 MHz</p> | | |
| <p>Agilent Spectrum Analyzer - Occupied BW Center Freq: 1.732500000 GHz #Res BW: 180 kHz #VBW: 560 kHz Span: 40 MHz #Sweep: 300 ms</p> <p>Occupied Bandwidth: 17.824 MHz Total Power: 23.3 dBm Transmit Freq Error: -3.884 kHz OBW Power: 99.00 % x dB Bandwidth: 18.52 MHz</p> | <p>Agilent Spectrum Analyzer - Occupied BW Center Freq: 1.720000000 GHz #Res BW: 180 kHz #VBW: 560 kHz Span: 40 MHz #Sweep: 300 ms</p> <p>Occupied Bandwidth: 17.823 MHz Total Power: 22.4 dBm Transmit Freq Error: -5.819 kHz OBW Power: 99.00 % x dB Bandwidth: 18.55 MHz</p> | | |

4.4 PEAK TO AVERAGE RATIO

4.4.1 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

4.4.2 TEST SETUP



4.4.3 TEST PROCEDURES

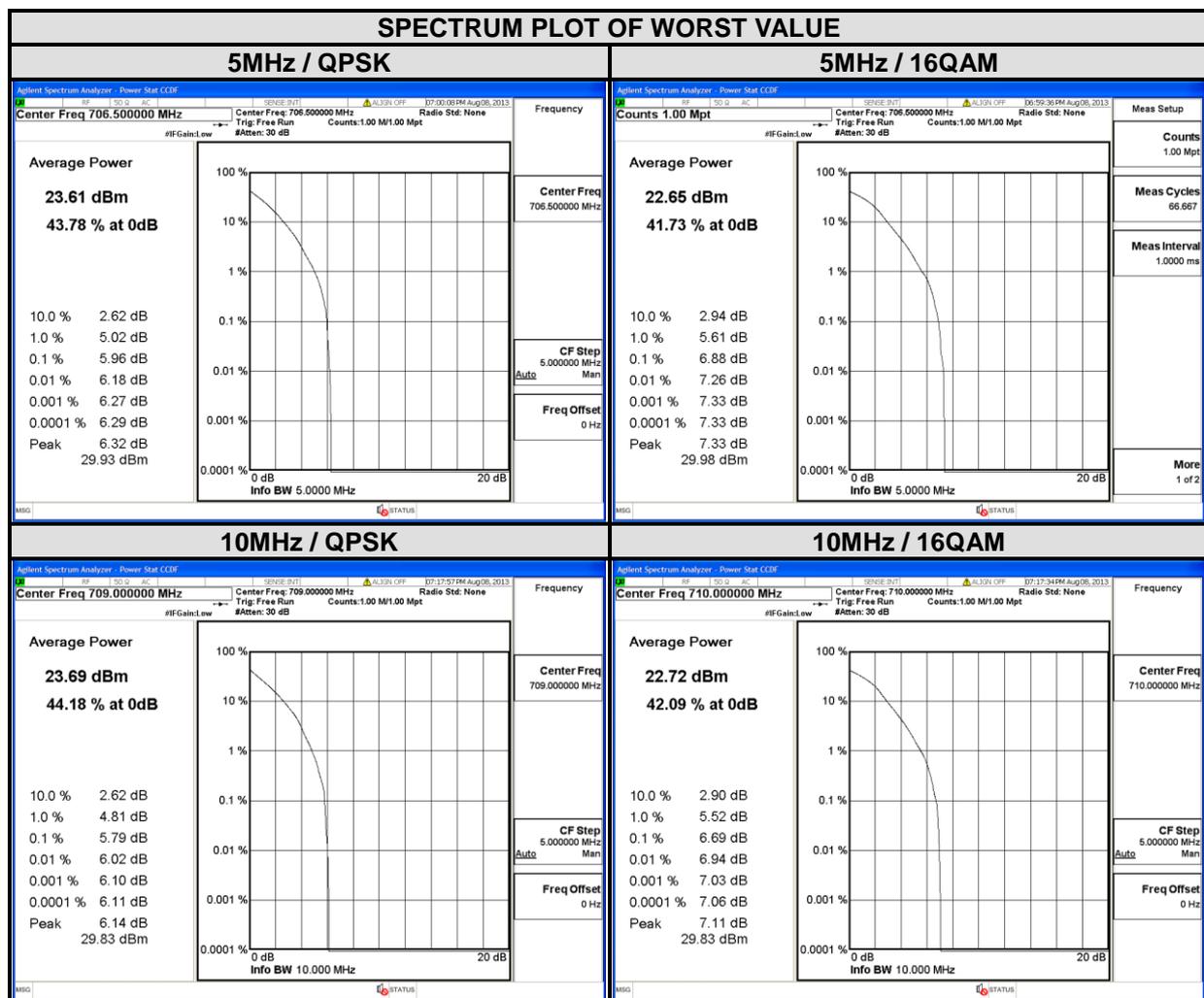
1. Set resolution/measurement bandwidth \geq signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.



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4.4.4 TEST RESULTS

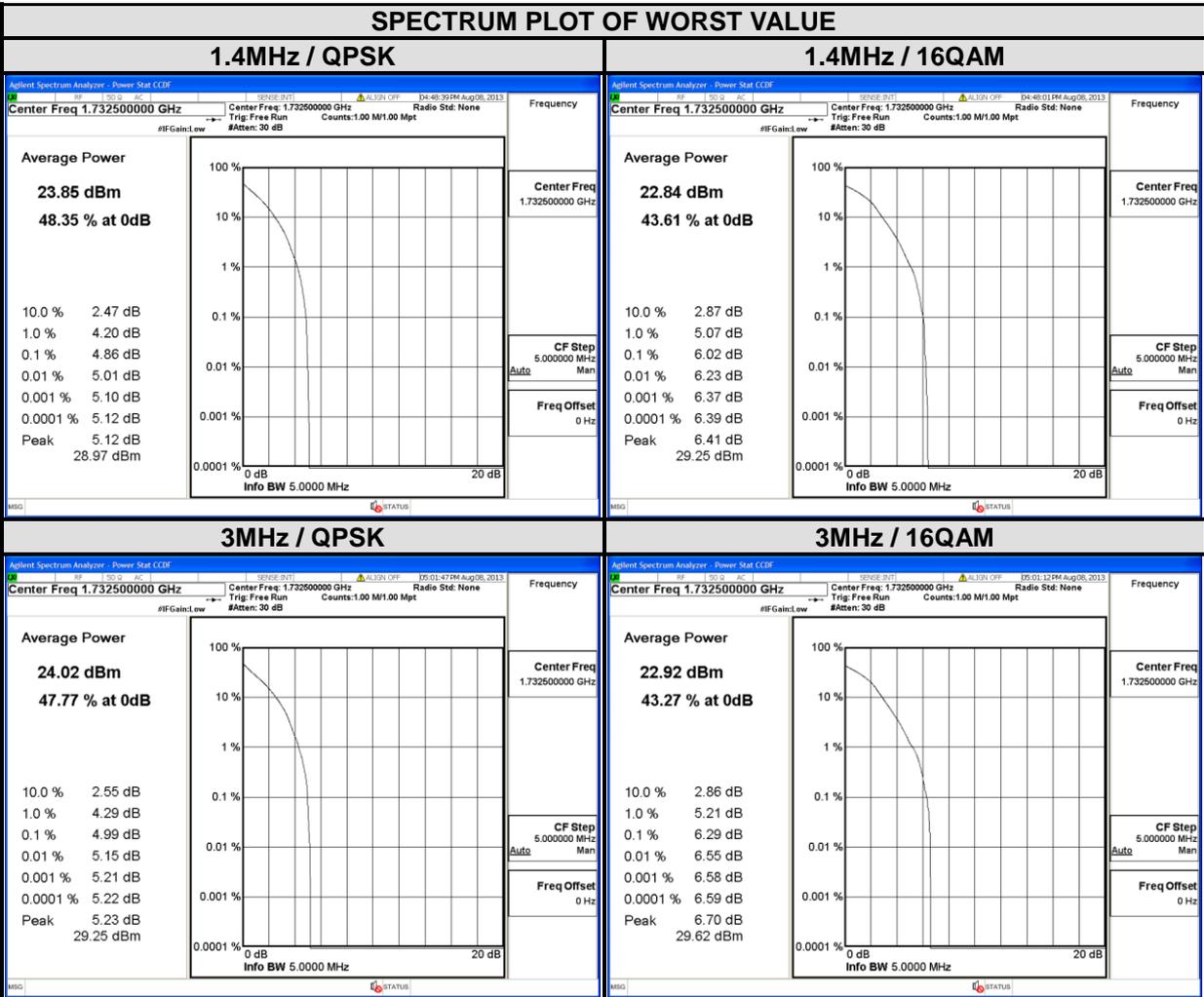
| LTE BAND 17 | | | | | | | |
|-------------------------|-----------------|----------------------------|-------|--------------------------|-----------------|----------------------------|-------|
| CHANNEL BANDWIDTH: 5MHz | | | | CHANNEL BANDWIDTH: 10MHz | | | |
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | | CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 23755 | 706.5 | 5.96 | 6.88 | 23780 | 709.0 | 5.79 | 6.57 |
| 23790 | 710.0 | 4.31 | 5.71 | 23790 | 710.0 | 5.39 | 6.69 |
| 23825 | 713.5 | 4.16 | 5.87 | 23800 | 711.0 | 4.98 | 6.15 |





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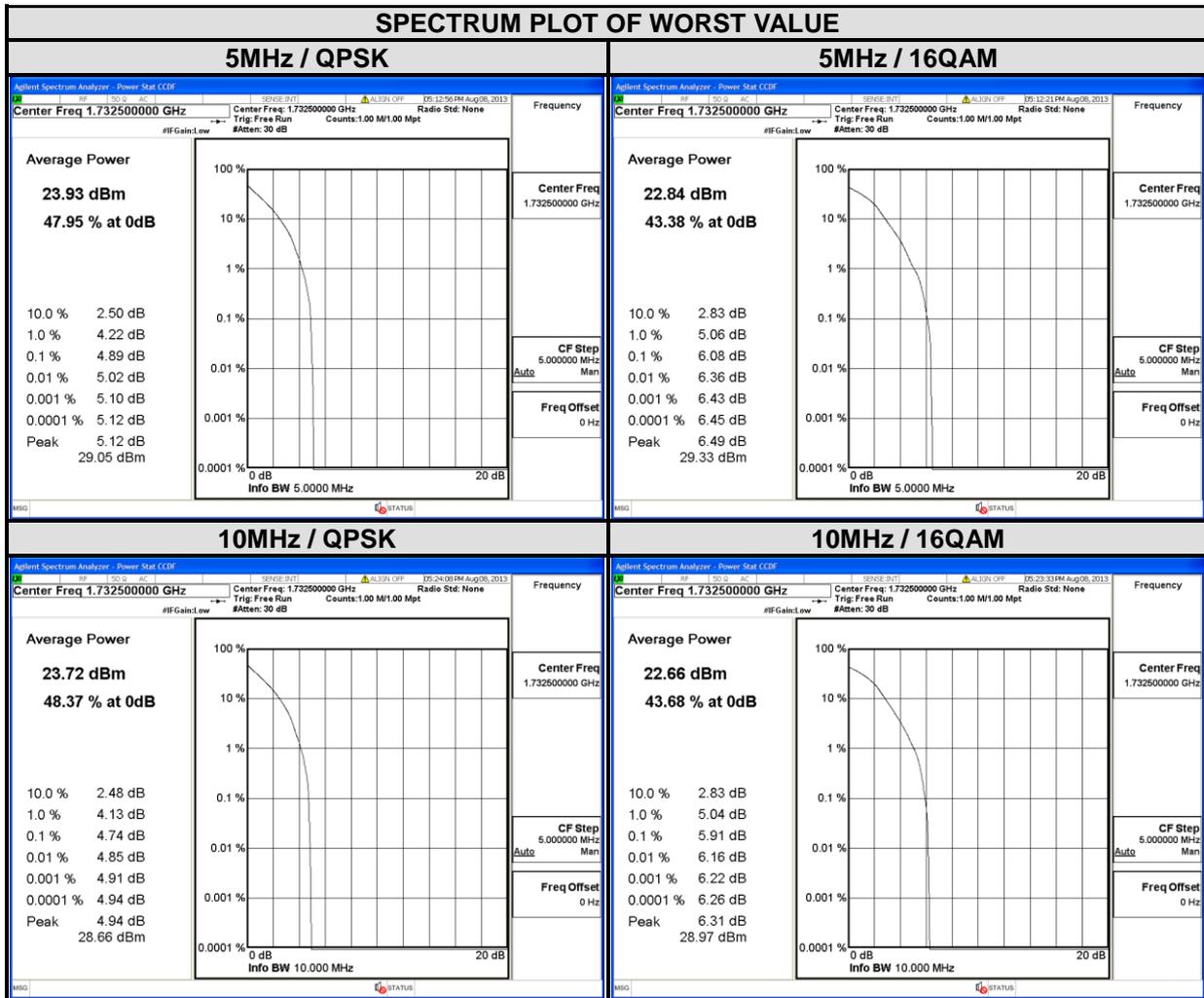
| LTE BAND 4 | | | | | | | |
|---------------------------|-----------------|----------------------------|-------|-------------------------|-----------------|----------------------------|-------|
| CHANNEL BANDWIDTH: 1.4MHz | | | | CHANNEL BANDWIDTH: 3MHz | | | |
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | | CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 19957 | 1710.7 | 4.45 | 5.41 | 19965 | 1711.5 | 4.53 | 5.75 |
| 20175 | 1732.5 | 4.86 | 6.02 | 20175 | 1732.5 | 4.99 | 6.29 |
| 20393 | 1754.3 | 3.83 | 5.02 | 20385 | 1753.5 | 3.97 | 4.87 |





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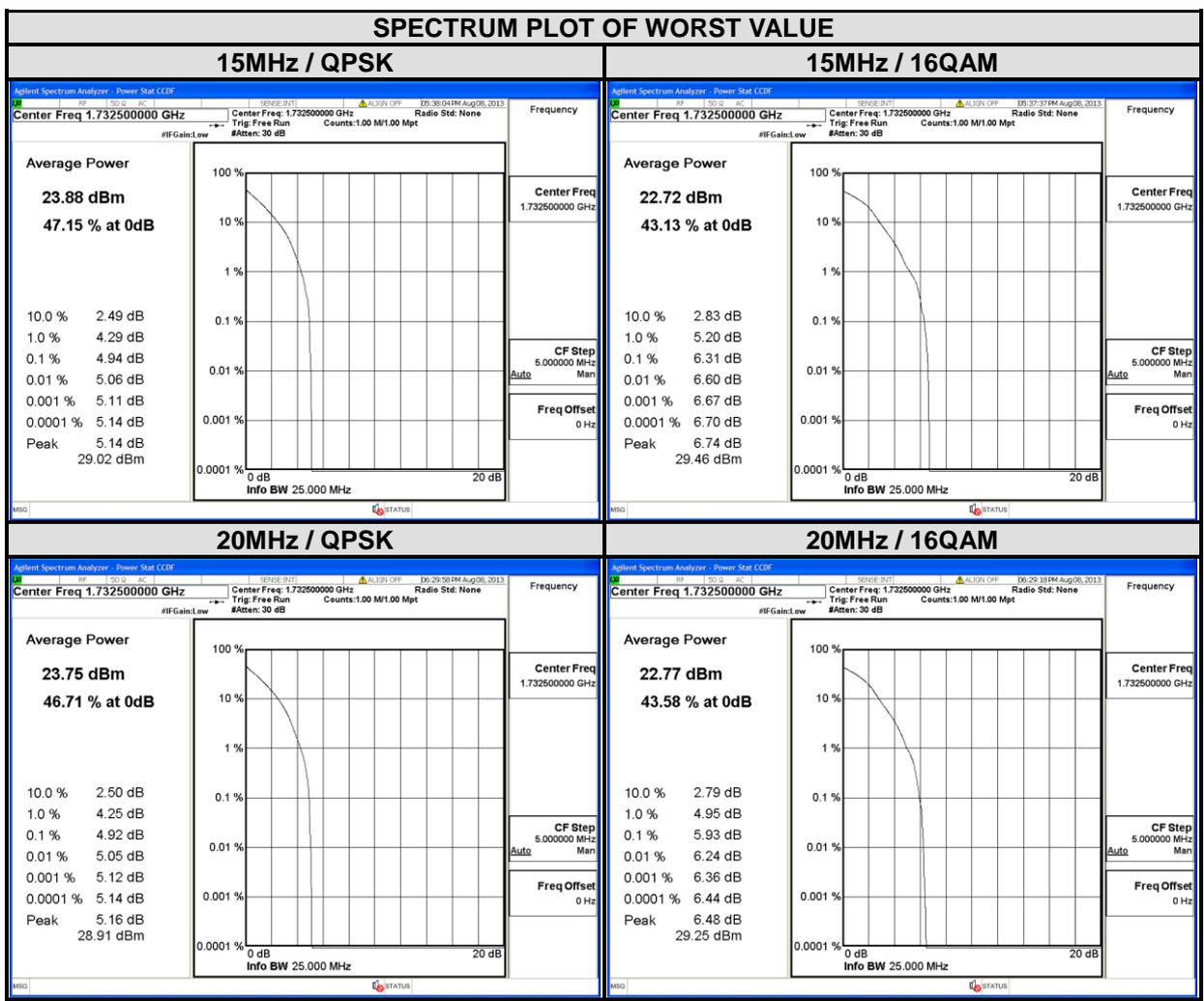
| LTE BAND 4 | | | | | | | |
|-------------------------|-----------------|----------------------------|-------|--------------------------|-----------------|----------------------------|-------|
| CHANNEL BANDWIDTH: 5MHz | | | | CHANNEL BANDWIDTH: 10MHz | | | |
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | | CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 19975 | 1712.5 | 4.35 | 5.61 | 20000 | 1715.0 | 4.15 | 5.27 |
| 20175 | 1732.5 | 4.89 | 6.08 | 20175 | 1732.5 | 4.74 | 5.91 |
| 20375 | 1752.5 | 3.77 | 5.02 | 20350 | 1750.0 | 3.74 | 4.85 |





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| LTE BAND 4 | | | | | | | |
|--------------------------|-----------------|----------------------------|-------|--------------------------|-----------------|----------------------------|-------|
| CHANNEL BANDWIDTH: 15MHz | | | | CHANNEL BANDWIDTH: 20MHz | | | |
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | | CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 20025 | 1717.5 | 4.48 | 5.67 | 20050 | 1720.0 | 4.44 | 5.51 |
| 20175 | 1732.5 | 4.94 | 6.31 | 20175 | 1732.5 | 4.92 | 5.93 |
| 20325 | 1747.5 | 4.45 | 5.62 | 20300 | 1745.5 | 4.74 | 5.80 |



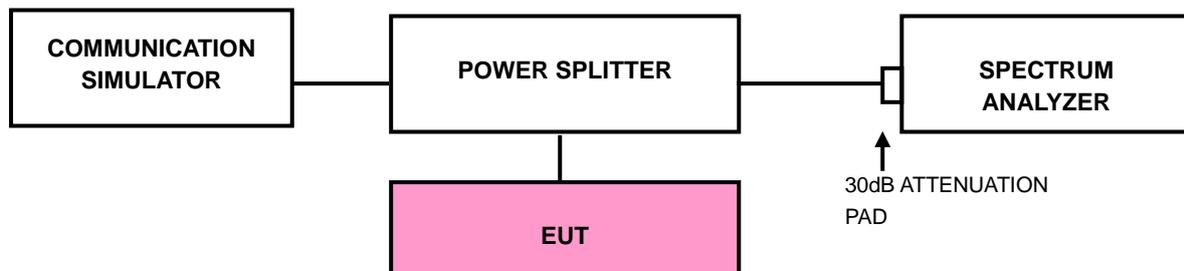
4.5 BAND EDGE MEASUREMENT

4.5.1 LIMITS OF BAND EDGE MEASUREMENT

For operations in the 704-716 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

For operations in the 1710 - 1755 MHz MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB.

4.5.2 TEST SETUP



4.5.3 TEST PROCEDURES

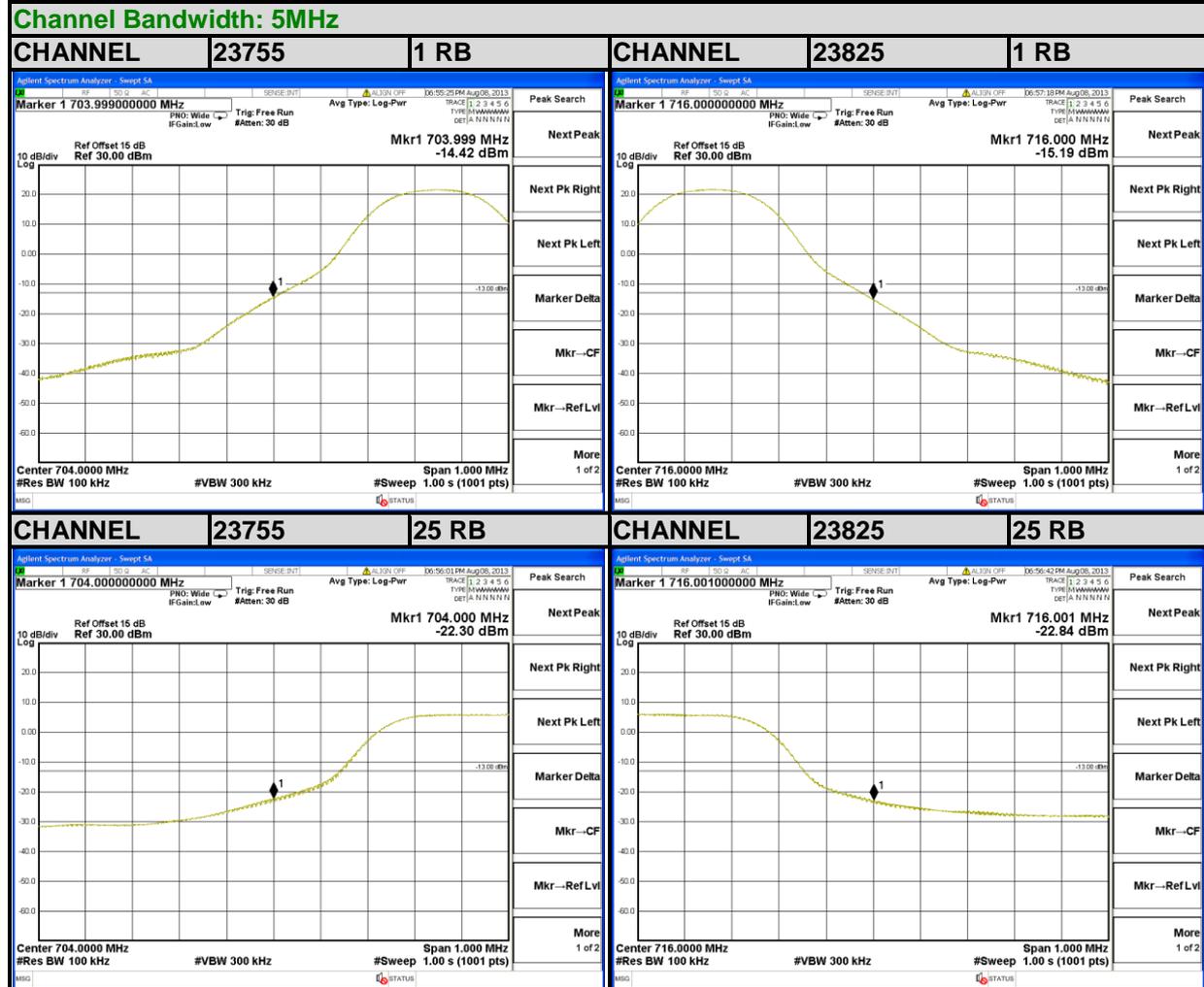
- a. The EUT was set up for the maximum peak power with LTE link data modulation. The power was measured with R&S Spectrum Analyzer. All measurements were done at 2 channels (low and high operational frequency range.).
- b. The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- c. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (LTE Band 17 / LTE Band 4 Bandwidth 5MHz & 10MHz).
- d. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 13kHz and VB of the spectrum is 51kHz (LTE Band 4 Bandwidth 1.4MHz).
- e. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 30kHz and VB of the spectrum is 100kHz (LTE Band 4 Bandwidth 3MHz).
- f. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 150kHz and VB of the spectrum is 470kHz (LTE Band 4 Bandwidth 15MHz).
- g. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 180kHz and VB of the spectrum is 560kHz (LTE Band 4 Bandwidth 20MHz).
- h. Record the max trace plot into the test report.



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4.5.4 TEST RESULTS

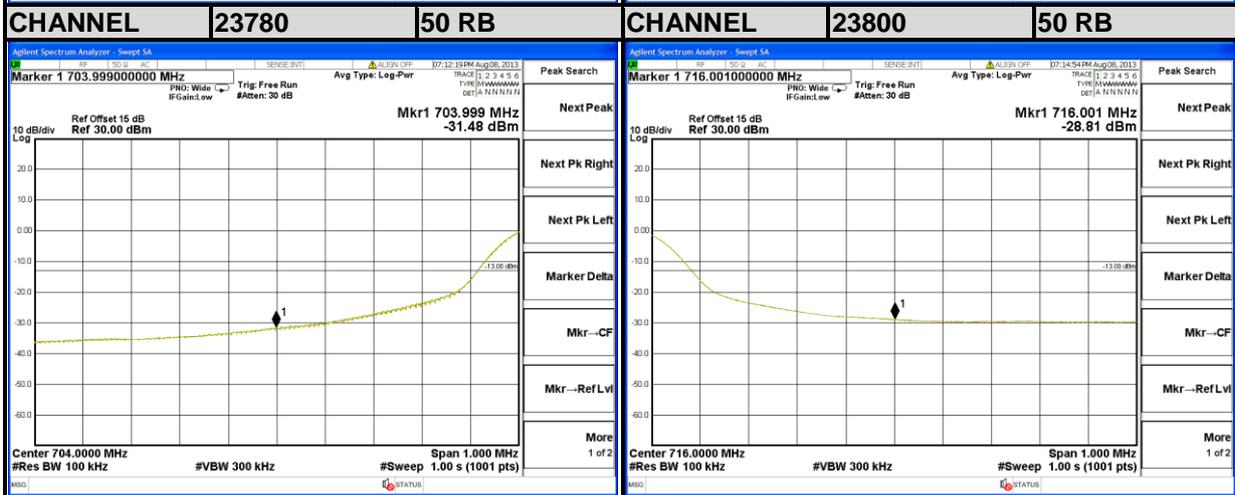
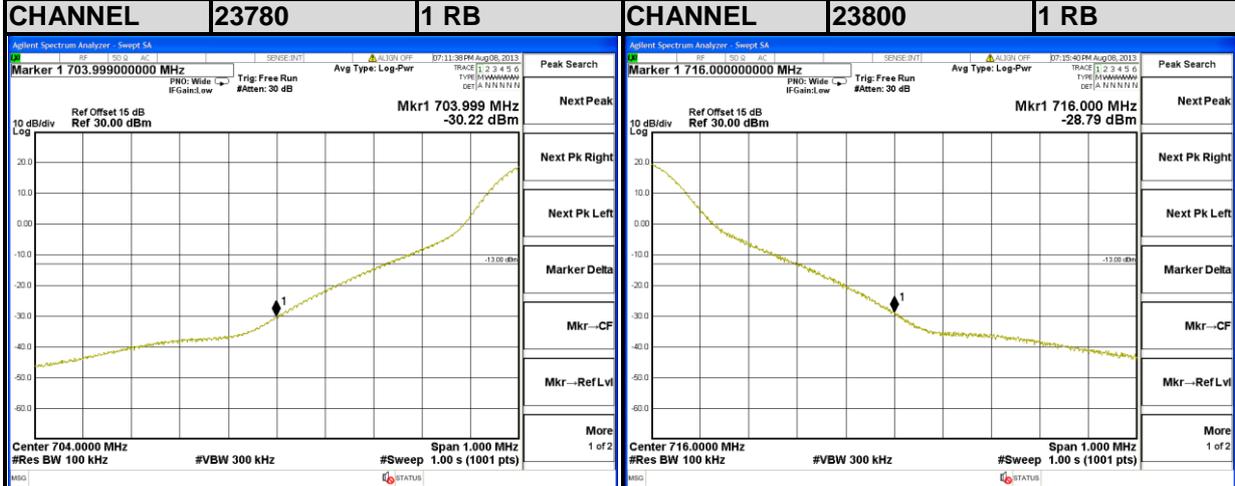
LTE BAND 17





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Channel Bandwidth: 10MHz

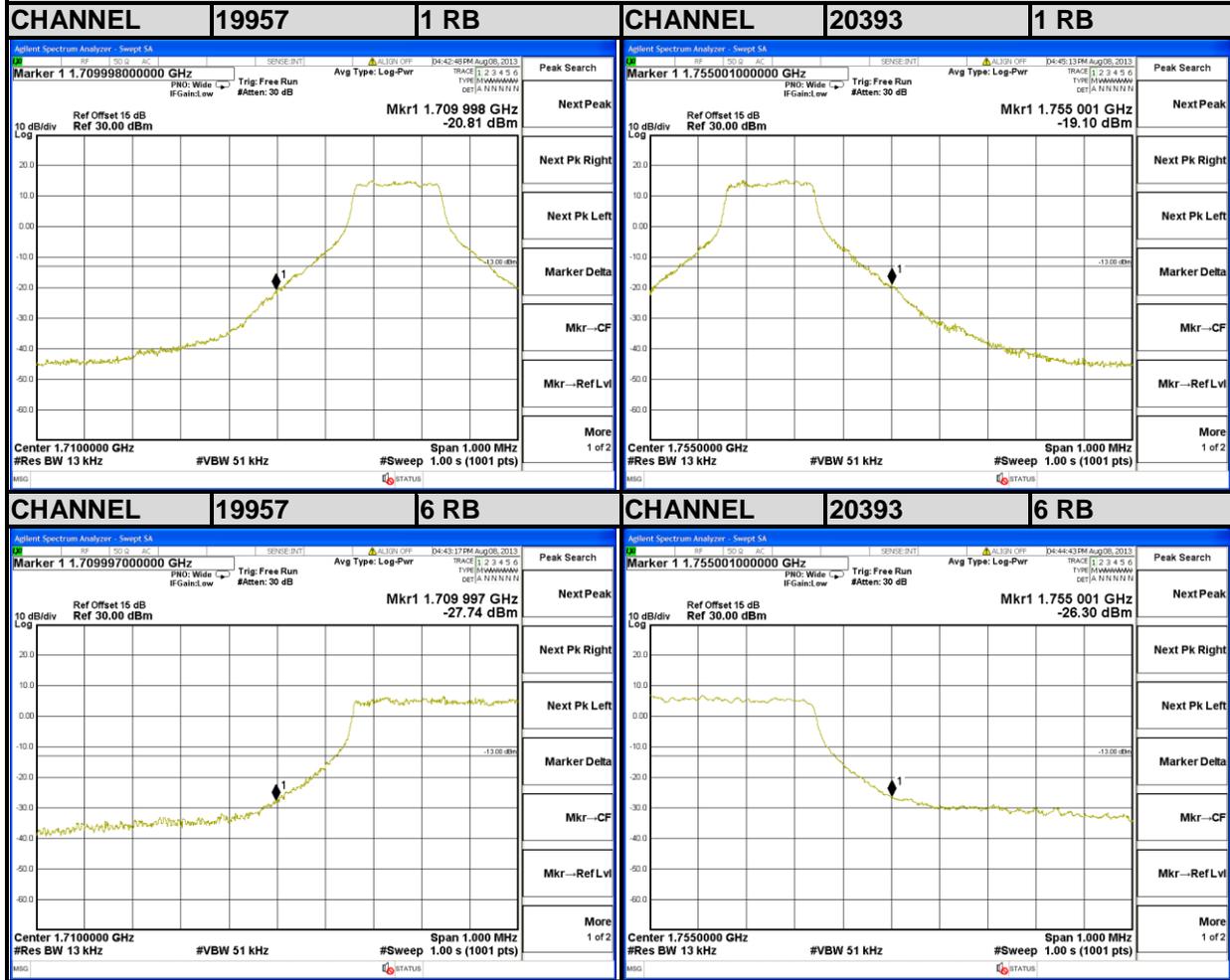




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LTE BAND 4

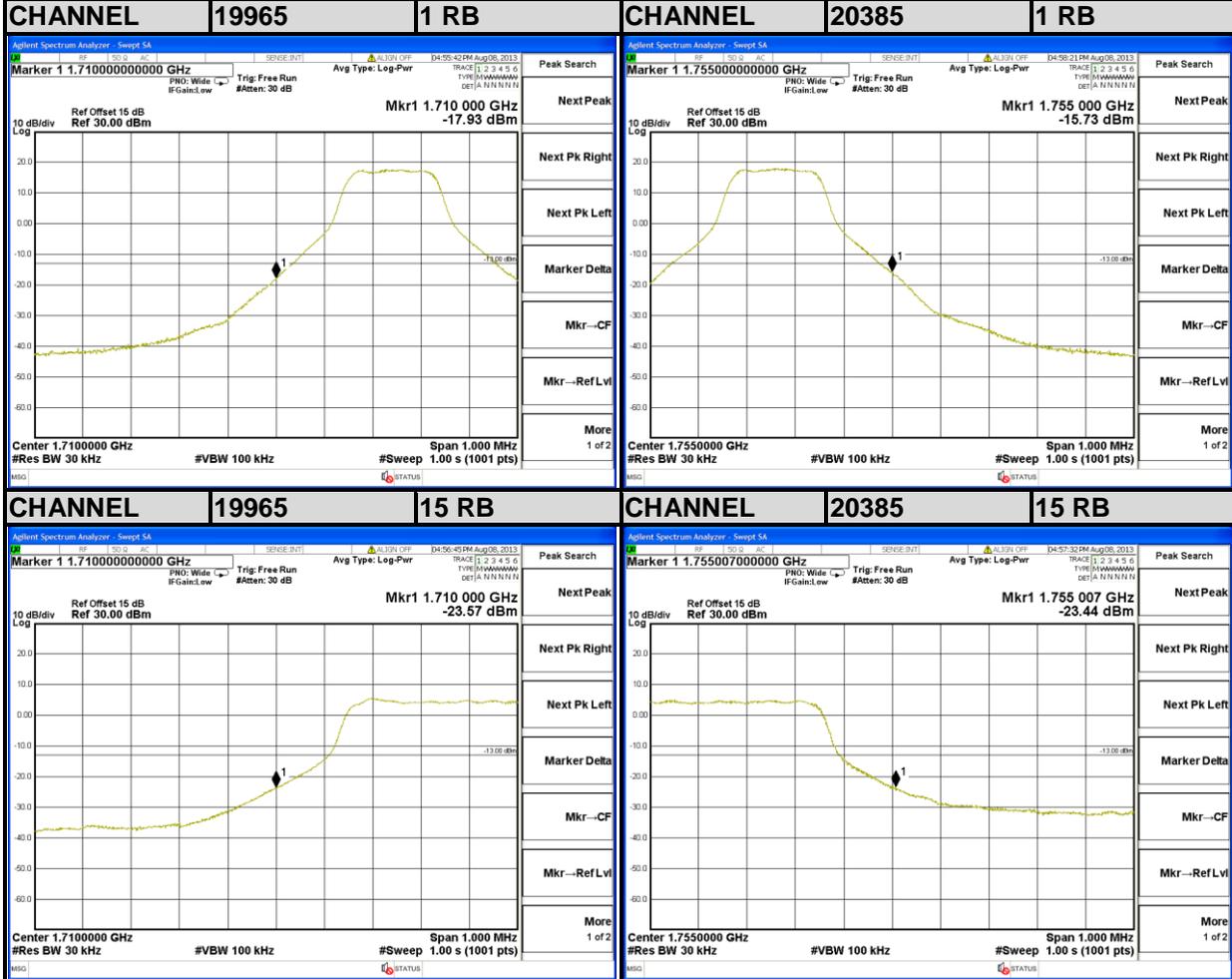
Channel Bandwidth: 1.4MHz





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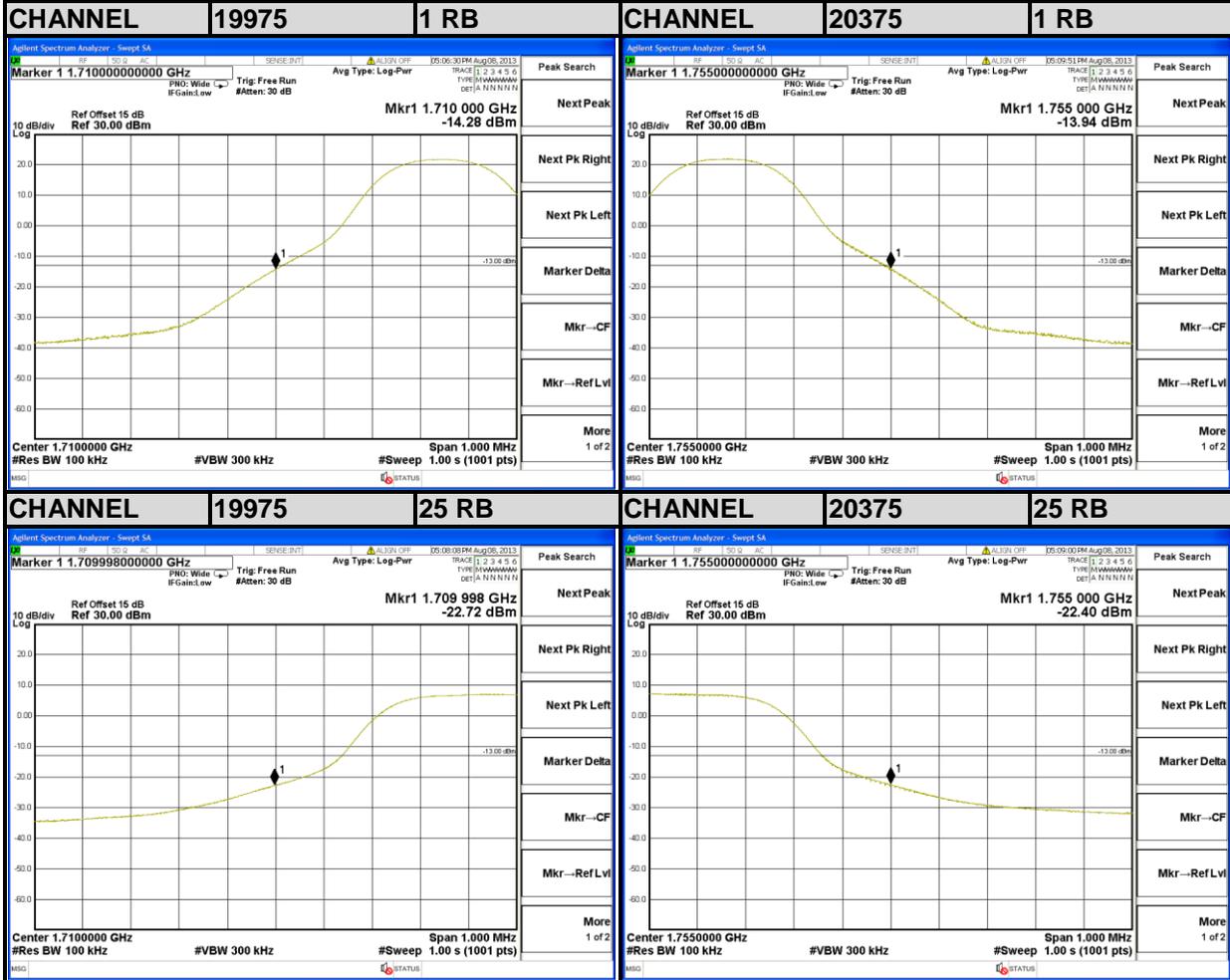
Channel Bandwidth: 3MHz





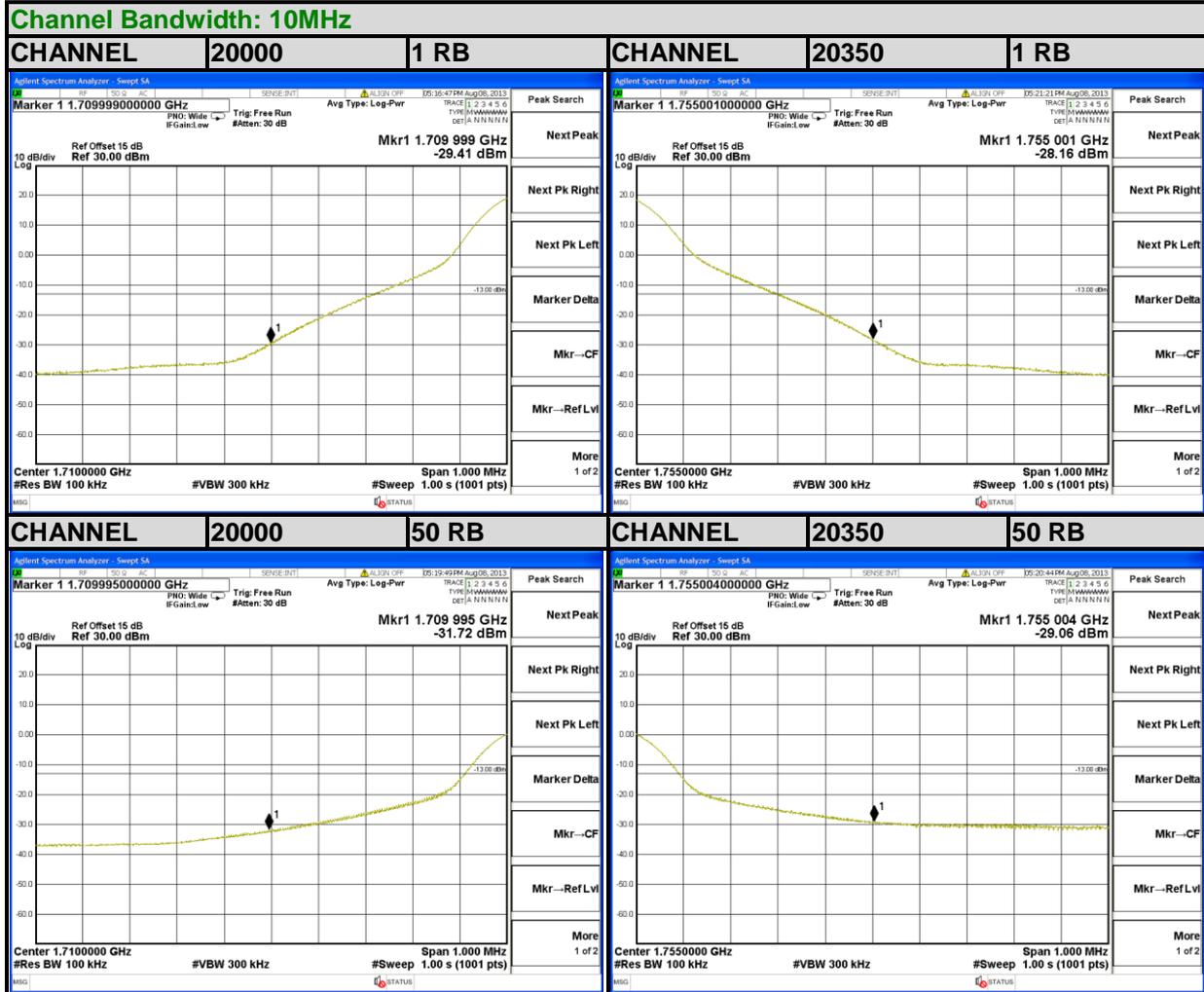
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Channel Bandwidth: 5MHz





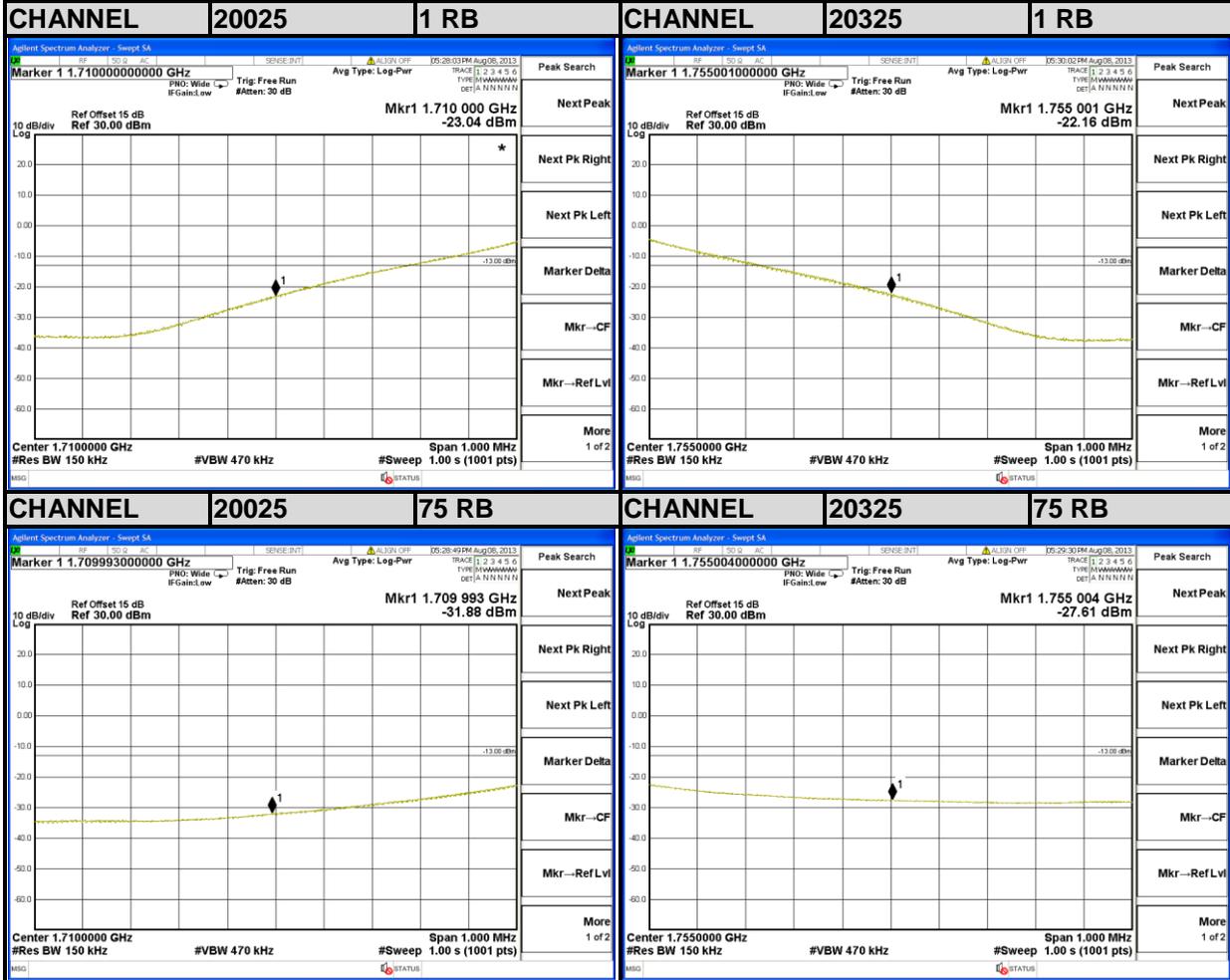
A D T





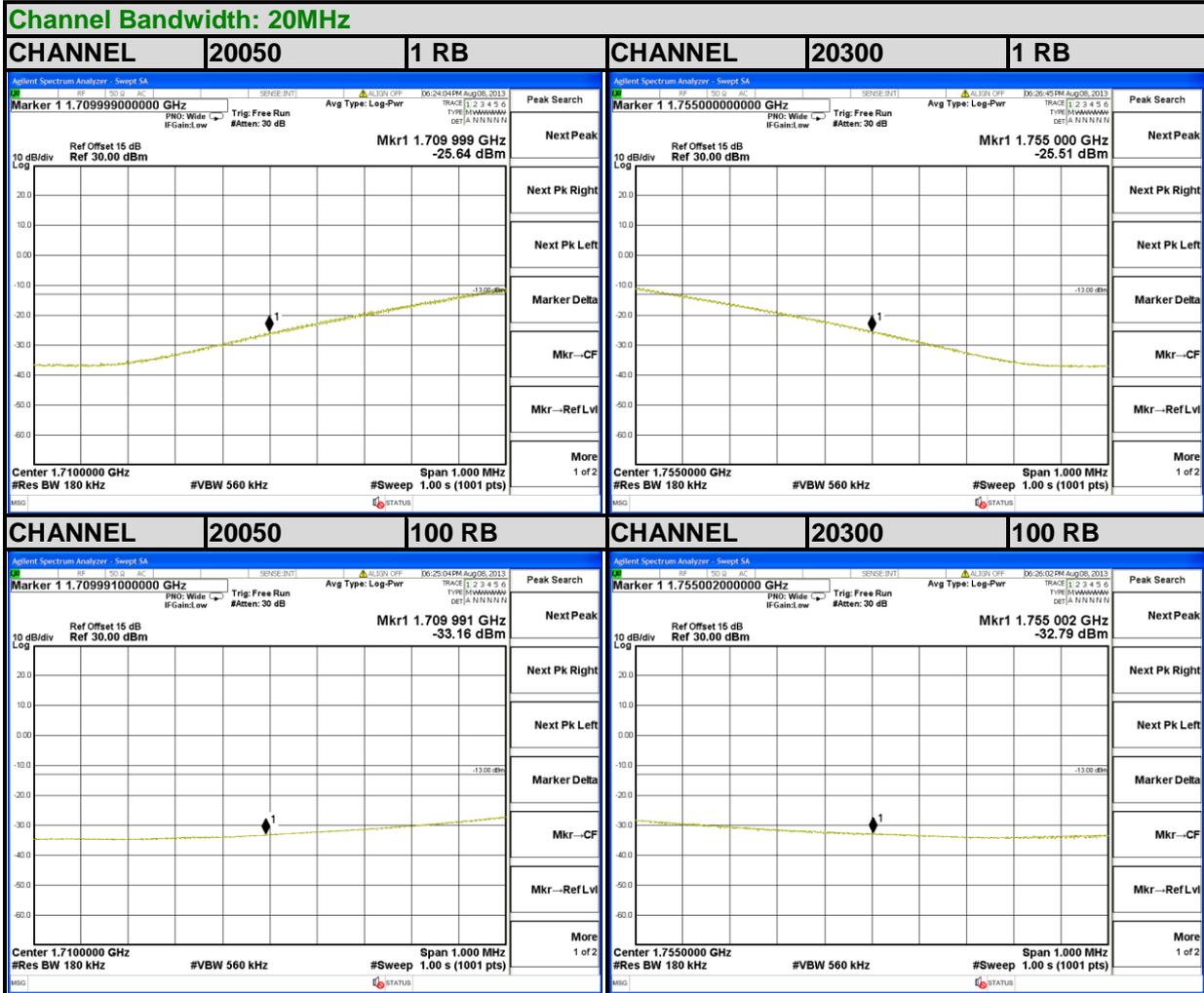
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Channel Bandwidth: 15MHz





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4.6 CONDUCTED SPURIOUS EMISSIONS

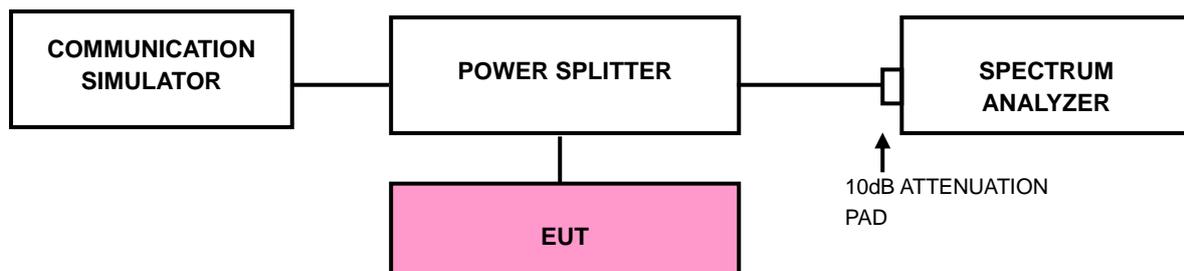
4.6.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB. The limit of emission equal to -13dBm

4.6.2 TEST PROCEDURE

- a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- b. Measuring frequency range is from 30 MHz to 8GHz for LTE Band 17 and from 30MHz to 18GHz for LTE Band 4. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz are used for conducted emission measurement.

4.6.3 TEST SETUP

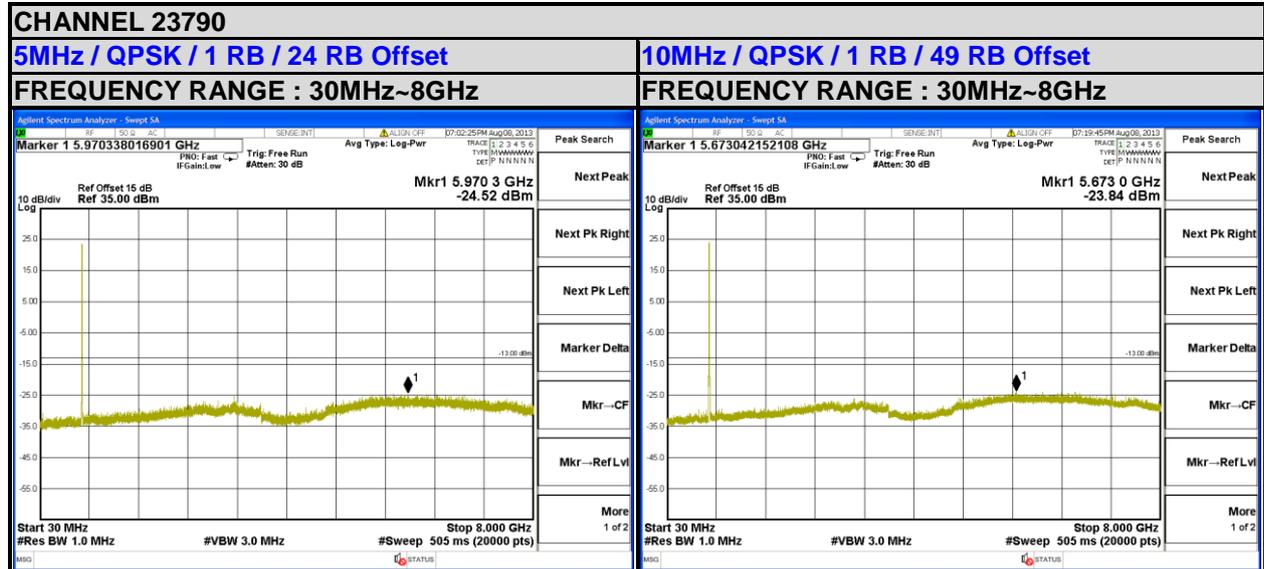




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4.6.4 TEST RESULTS

LTE BAND 17





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LTE BAND 4

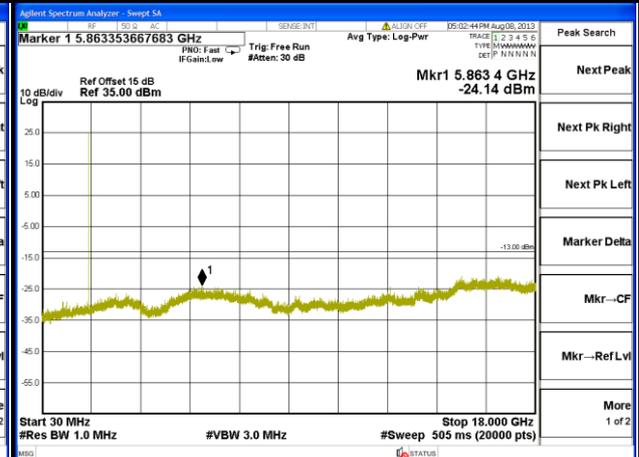
CHANNEL 20175

1.4MHz / QPSK / 1 RB / 2 RB Offset

3MHz / QPSK / 8 RB / 0 RB Offset

FREQUENCY RANGE : 30MHz~18GHz

FREQUENCY RANGE : 30MHz~18GHz

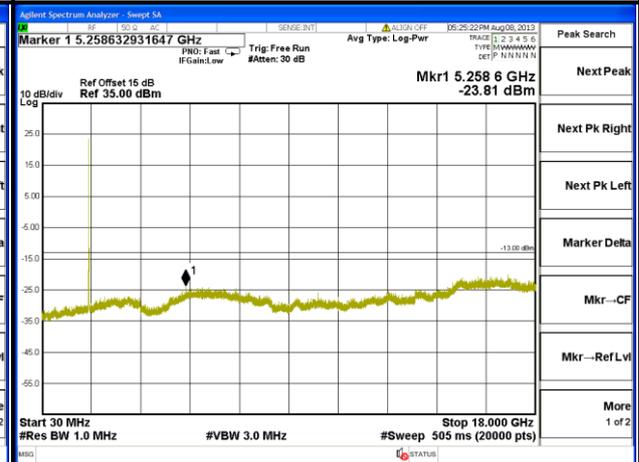


5MHz / QPSK / 12 RB / 0 RB Offset

10MHz / QPSK / 25 RB / 0 RB Offset

FREQUENCY RANGE : 30MHz~18GHz

FREQUENCY RANGE : 30MHz~18GHz

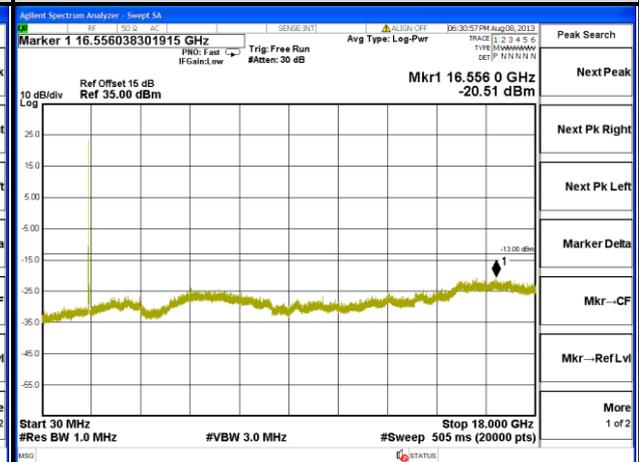


15MHz / QPSK / 36 RB / 0 RB Offset

20MHz / QPSK / 50 RB / 0 RB Offset

FREQUENCY RANGE : 30MHz~18GHz

FREQUENCY RANGE : 30MHz~18GHz



4.7 RADIATED EMISSION MEASUREMENT

4.7.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB. The limit of emission equal to -13dBm

4.7.2 TEST PROCEDURES

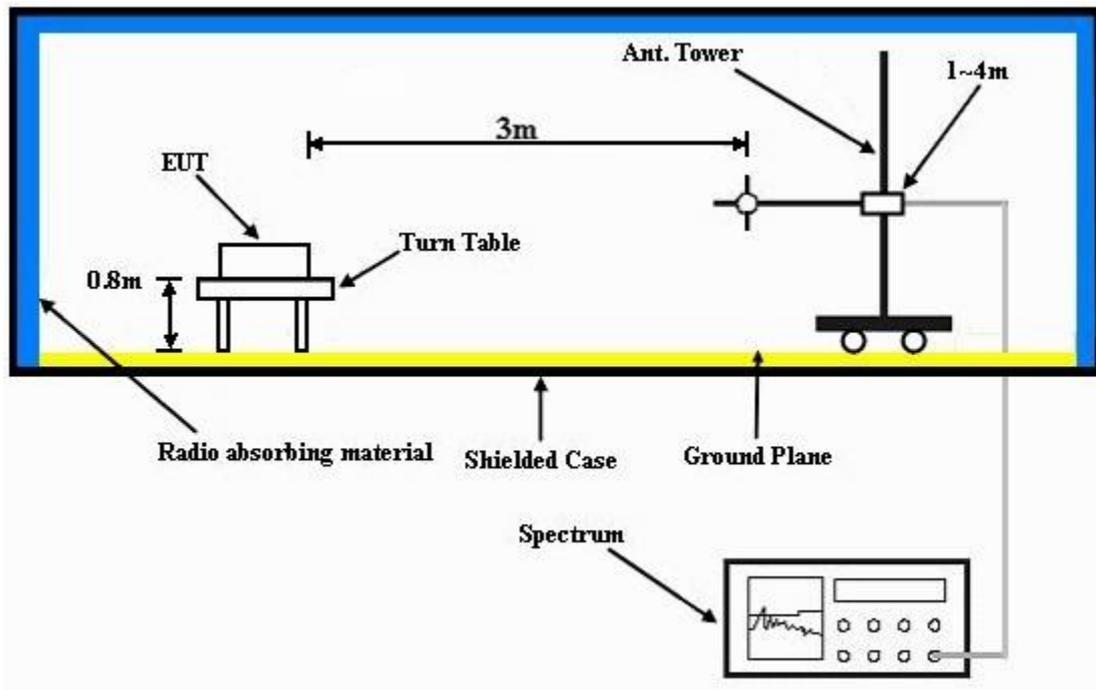
- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m 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. $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn.}$
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $\text{E.R.P power} = \text{E.I.P.R power} - 2.15\text{dBi.}$

NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

4.7.3 DEVIATION FROM TEST STANDARD

No deviation

4.7.4 TEST SETUP



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



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4.7.5 TEST RESULTS

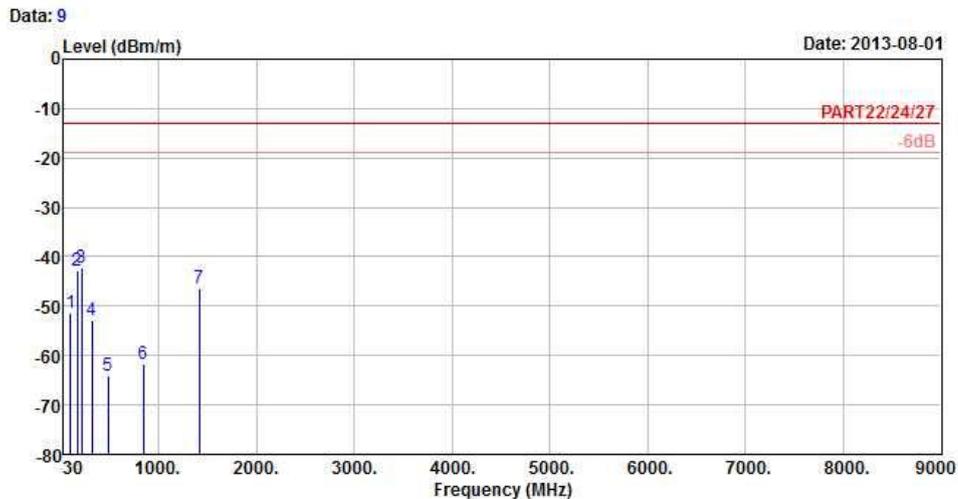
LTE BAND 17

CHANNEL BANDWIDTH: 5MHz / QPSK



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T



Site : 966 Chamber 5
 Condition : PART22/24/27 3m HORIZONTAL
 Brand/Model: 0P4E200
 Remark : LTE Band 17_5M QPSK(1,0) Link
 Tested by : Anson Lin
 Temperature : 25°C
 Humidity : 65%
 Plane : X

| | Freq | Level | Read | Limit | Over | |
|------|---------|--------|--------|--------|--------|---------------|
| | MHz | dBm/m | Level | Line | Limit | Factor Remark |
| | | | dBm | dBm/m | dB | dB/m |
| 1 | 98.85 | -51.34 | -40.92 | -13.00 | -38.34 | -10.42 Peak |
| 2 | 169.32 | -42.69 | -35.99 | -13.00 | -29.69 | -6.70 Peak |
| 3 pp | 211.17 | -42.27 | -34.84 | -13.00 | -29.27 | -7.43 Peak |
| 4 | 316.10 | -52.77 | -46.51 | -13.00 | -39.77 | -6.26 Peak |
| 5 | 479.90 | -64.19 | -60.59 | -13.00 | -51.19 | -3.60 Peak |
| 6 | 845.30 | -61.81 | -64.20 | -13.00 | -48.81 | 2.39 Peak |
| 7 | 1415.60 | -46.23 | -32.64 | -13.00 | -33.23 | -13.59 Peak |



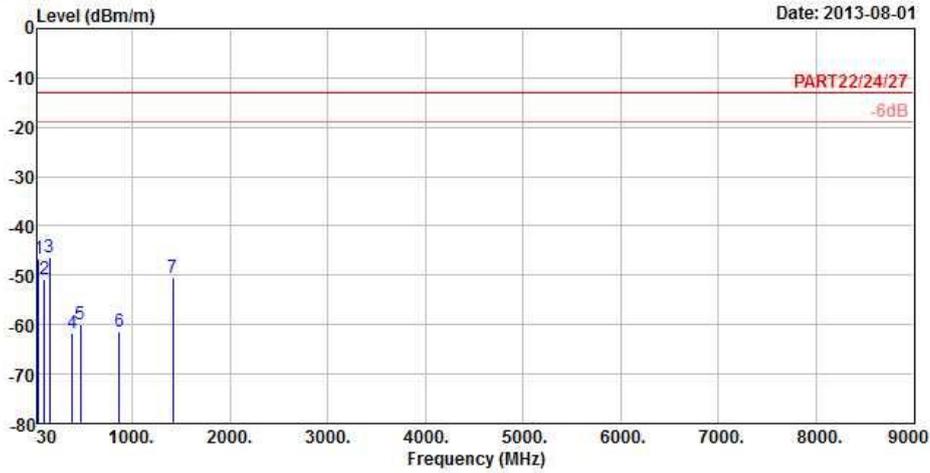
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Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 10



Site : 966 Chamber 5
 Condition : PART22/24/27 3m VERTICAL
 Brand/Model: 0P4E200
 Remark : LTE Band 17_5M QPSK(1,0) Link
 Tested by : Anson Lin
 Temperature : 25°C
 Humidity : 65%
 Plane : X

| | Read | Limit | Over | | | | |
|------|---------|--------|--------|--------|--------|--------|------|
| Freq | Level | Level | Line | Limit | Factor | Remark | |
| MHz | dBm/m | dBm | dBm/m | dB | dB/m | | |
| 1 | 37.83 | -46.57 | -44.62 | -13.00 | -33.57 | -1.95 | Peak |
| 2 | 98.85 | -50.76 | -40.34 | -13.00 | -37.76 | -10.42 | Peak |
| 3 pp | 150.15 | -46.29 | -39.93 | -13.00 | -33.29 | -6.36 | Peak |
| 4 | 387.50 | -61.72 | -55.99 | -13.00 | -48.72 | -5.73 | Peak |
| 5 | 471.50 | -59.81 | -55.98 | -13.00 | -46.81 | -3.83 | Peak |
| 6 | 869.80 | -61.36 | -63.89 | -13.00 | -48.36 | 2.53 | Peak |
| 7 | 1415.60 | -50.50 | -36.91 | -13.00 | -37.50 | -13.59 | Peak |

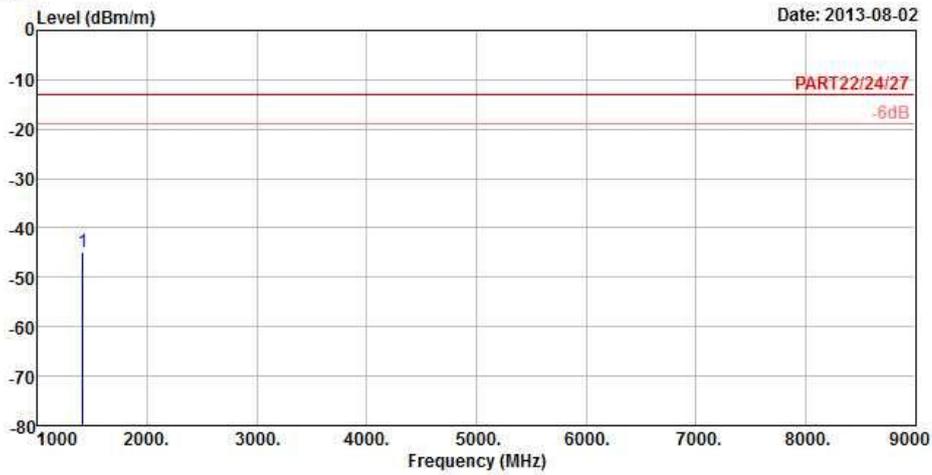
CHANNEL BANDWIDTH: 10MHz / QPSK



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5



Site : 966 Chamber 5
 Condition : PART22/24/27 3m HORIZONTAL
 Brand/Model: 0P4E200
 Remark : LTE Band 17_10M QPSK(1,0) Link
 Tested by : Anson Lin
 Temperature : 25°C
 Humidity : 65%
 Plane : X

| Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|--------------|--------|------------|------------|------------|--------|--------|
| MHz | dBm/m | dBm | dBm/m | dB | dB/m | |
| 1 pp 1411.20 | -44.89 | -31.30 | -13.00 | -31.89 | -13.59 | Peak |



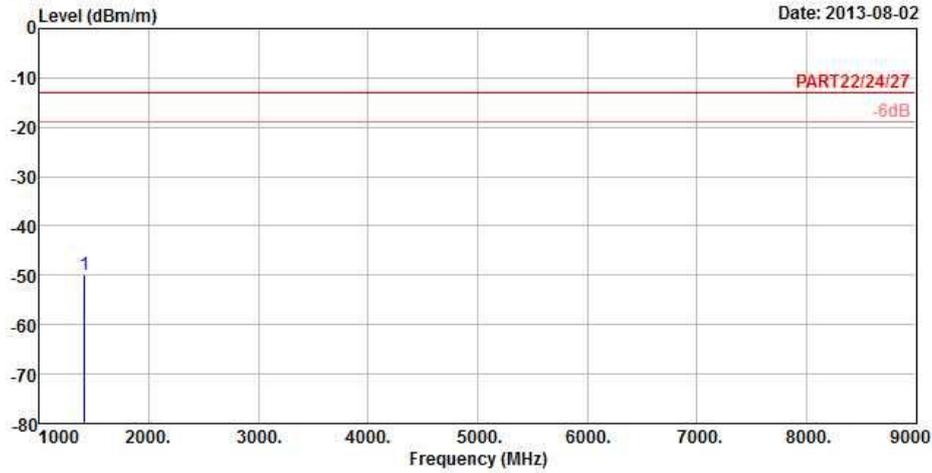
A D T



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6



Site : 966 Chamber 5
 Condition : PART22/24/27 3m VERTICAL
 Brand/Model: 0P4E200
 Remark : LTE Band 17_10M QPSK(1,0) Link
 Tested by : Anson Lin
 Temperature : 25°C
 Humidity : 65%
 Plane : X

| Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|--------------|--------|------------|------------|------------|--------|--------|
| MHz | dBm/m | dBm | dBm/m | dB | dB/m | |
| 1 pp 1411.20 | -49.89 | -36.30 | -13.00 | -36.89 | -13.59 | Peak |



A D T

LTE BAND 4

CHANNEL BANDWIDTH: 1.4MHz / QPSK

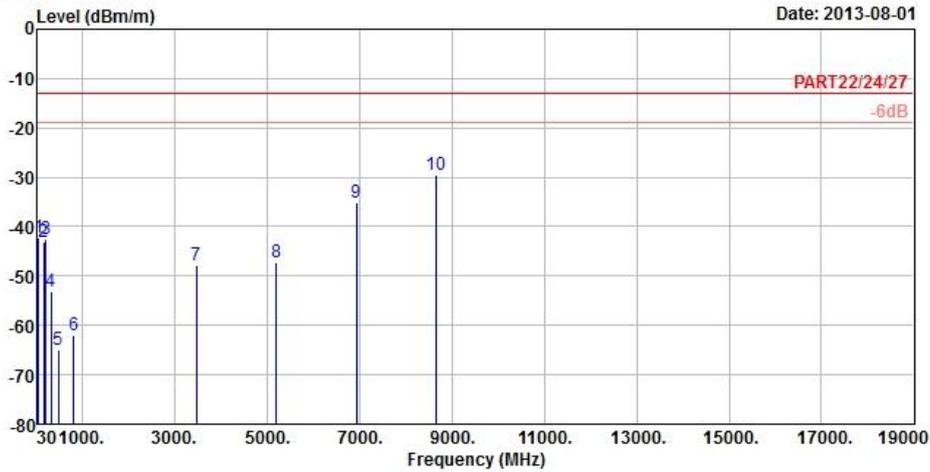


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 15

Date: 2013-08-01



Site : 966 Chamber 5
 Condition : PART22/24/27 3m HORIZONTAL
 Brand/Model: 0P4E200
 Remark : LTE Band 4 1.4M QPSK(3,0) Link
 Tested by : David Huang
 Temperature : 25°C
 Humidity : 65%
 Plane : Y

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|-------|---------|--------|------------|------------|------------|--------|--------|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | |
| 1 | 56.46 | -42.28 | -36.78 | -13.00 | -29.28 | -5.50 | Peak |
| 2 | 165.00 | -43.09 | -36.49 | -13.00 | -30.09 | -6.60 | Peak |
| 3 | 210.90 | -42.62 | -35.15 | -13.00 | -29.62 | -7.47 | Peak |
| 4 | 317.50 | -53.05 | -46.80 | -13.00 | -40.05 | -6.25 | Peak |
| 5 | 477.80 | -64.85 | -61.20 | -13.00 | -51.85 | -3.65 | Peak |
| 6 | 808.20 | -61.94 | -64.11 | -13.00 | -48.94 | 2.17 | Peak |
| 7 | 3465.00 | -47.71 | -38.69 | -13.00 | -34.71 | -9.02 | Peak |
| 8 | 5197.50 | -47.17 | -44.11 | -13.00 | -34.17 | -3.06 | Peak |
| 9 | 6930.00 | -35.08 | -37.38 | -13.00 | -22.08 | 2.30 | Peak |
| 10 pp | 8662.50 | -29.53 | -34.48 | -13.00 | -16.53 | 4.95 | Peak |



A D T

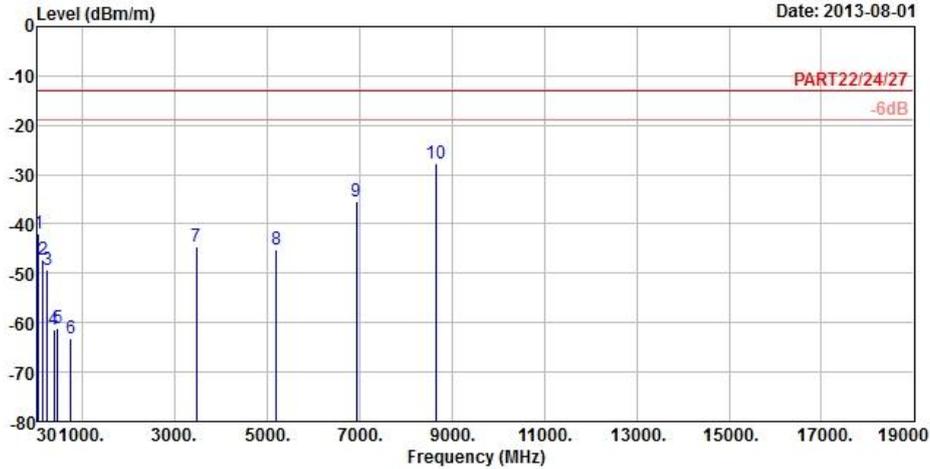


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 16

Date: 2013-08-01



Site : 966 Chamber 5
 Condition : PART22/24/27 3m VERTICAL
 Brand/Model: 0P4E200
 Remark : LTE Band 4 1.4M QPSK(3,0) Link
 Tested by : David Huang
 Temperature : 25°C
 Humidity : 65%
 Plane : Y

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|-------|---------|--------|------------|------------|------------|--------|--------|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | |
| 1 | 56.46 | -42.05 | -36.55 | -13.00 | -29.05 | -5.50 | Peak |
| 2 | 150.42 | -47.29 | -40.93 | -13.00 | -34.29 | -6.36 | Peak |
| 3 | 235.20 | -49.28 | -42.95 | -13.00 | -36.28 | -6.33 | Peak |
| 4 | 390.30 | -61.43 | -55.72 | -13.00 | -48.43 | -5.71 | Peak |
| 5 | 468.70 | -61.24 | -57.34 | -13.00 | -48.24 | -3.90 | Peak |
| 6 | 748.00 | -63.26 | -65.03 | -13.00 | -50.26 | 1.77 | Peak |
| 7 | 3465.00 | -44.54 | -35.52 | -13.00 | -31.54 | -9.02 | Peak |
| 8 | 5197.50 | -45.27 | -42.21 | -13.00 | -32.27 | -3.06 | Peak |
| 9 | 6930.00 | -35.51 | -37.81 | -13.00 | -22.51 | 2.30 | Peak |
| 10 pp | 8662.50 | -27.70 | -32.65 | -13.00 | -14.70 | 4.95 | Peak |



A D T

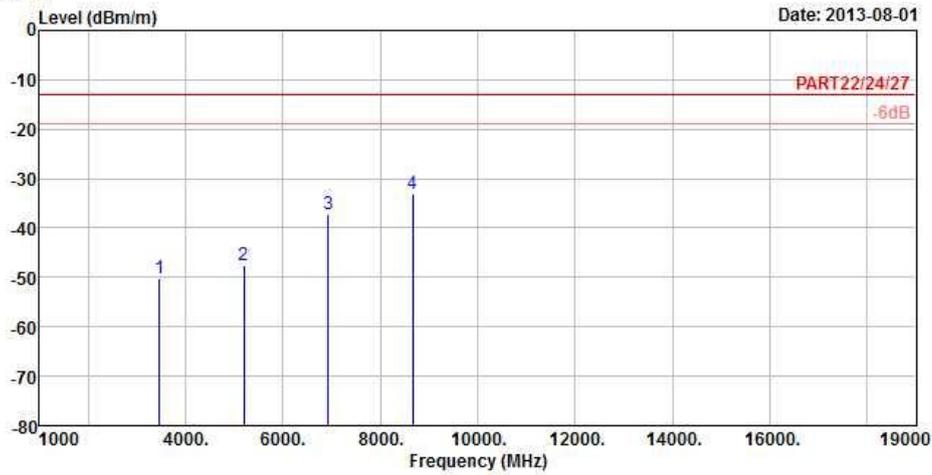
CHANNEL BANDWIDTH: 3MHz / QPSK



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 11



Site : 966 Chamber 5
 Condition : PART22/24/27 3m HORIZONTAL
 Brand/Model: 0P4E200
 Remark : LTE Band 4 3M QPSK(8,0) Link
 Tested by : David Huang
 Temperature : 25°C
 Humidity : 65%
 Plane : Y

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|------|---------|--------|------------|------------|------------|--------|--------|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | |
| 1 | 3465.00 | -50.32 | -41.30 | -13.00 | -37.32 | -9.02 | Peak |
| 2 | 5197.50 | -47.55 | -44.49 | -13.00 | -34.55 | -3.06 | Peak |
| 3 | 6930.00 | -37.30 | -39.60 | -13.00 | -24.30 | 2.30 | Peak |
| 4 pp | 8662.50 | -32.98 | -37.93 | -13.00 | -19.98 | 4.95 | Peak |



A D T

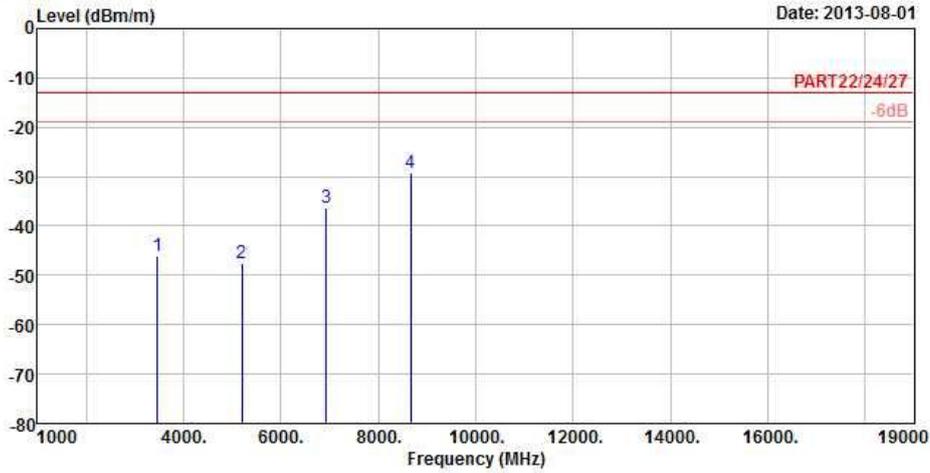


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 12

Date: 2013-08-01



Site : 966 Chamber 5
 Condition : PART22/24/27 3m VERTICAL
 Brand/Model: 0P4E200
 Remark : LTE Band 4 3M QPSK(8,0) Link
 Tested by : David Huang
 Temperature : 25°C
 Humidity : 65%
 Plane : Y

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|------|---------|--------|------------|------------|------------|--------|--------|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | |
| 1 | 3465.00 | -46.05 | -37.03 | -13.00 | -33.05 | -9.02 | Peak |
| 2 | 5197.50 | -47.58 | -44.52 | -13.00 | -34.58 | -3.06 | Peak |
| 3 | 6930.00 | -36.39 | -38.69 | -13.00 | -23.39 | 2.30 | Peak |
| 4 pp | 8662.50 | -29.16 | -34.11 | -13.00 | -16.16 | 4.95 | Peak |



A D T

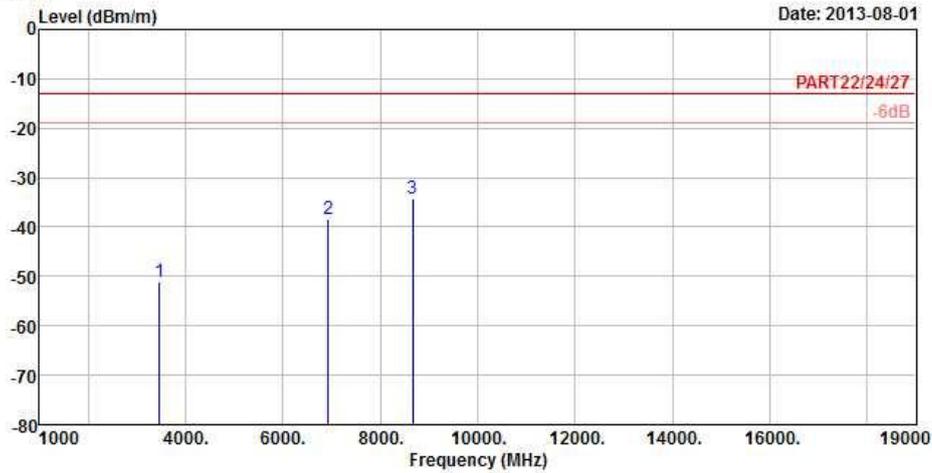
CHANNEL BANDWIDTH: 5MHz / QPSK



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 11



Site : 966 Chamber 5
 Condition : PART22/24/27 3m HORIZONTAL
 Brand/Model: 0P4E200
 Remark : LTE Band 4 5M QPSK(12,0) Link
 Tested by : David Huang
 Temperature : 25°C
 Humidity : 65%
 Plane : Y

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|------|---------|--------|------------|------------|------------|--------|--------|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | |
| 1 | 3465.00 | -51.00 | -41.98 | -13.00 | -38.00 | -9.02 | Peak |
| 2 | 6930.00 | -38.49 | -40.79 | -13.00 | -25.49 | 2.30 | Peak |
| 3 pp | 8662.50 | -34.16 | -39.11 | -13.00 | -21.16 | 4.95 | Peak |



A D T

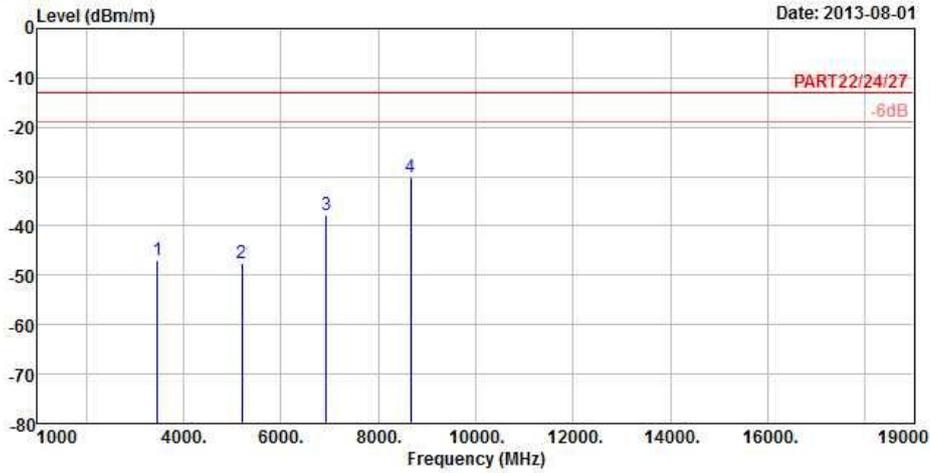


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 12

Date: 2013-08-01



Site : 966 Chamber 5
 Condition : PART22/24/27 3m VERTICAL
 Brand/Model: 0P4E200
 Remark : LTE Band 4 5M QPSK(12,0) Link
 Tested by : David Huang
 Temperature : 25°C
 Humidity : 65%
 Plane : Y

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|------|---------|--------|------------|------------|------------|--------|--------|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | |
| 1 | 3465.00 | -46.95 | -37.93 | -13.00 | -33.95 | -9.02 | Peak |
| 2 | 5197.50 | -47.56 | -44.50 | -13.00 | -34.56 | -3.06 | Peak |
| 3 | 6930.00 | -37.90 | -40.20 | -13.00 | -24.90 | 2.30 | Peak |
| 4 pp | 8662.50 | -30.02 | -34.97 | -13.00 | -17.02 | 4.95 | Peak |



A D T

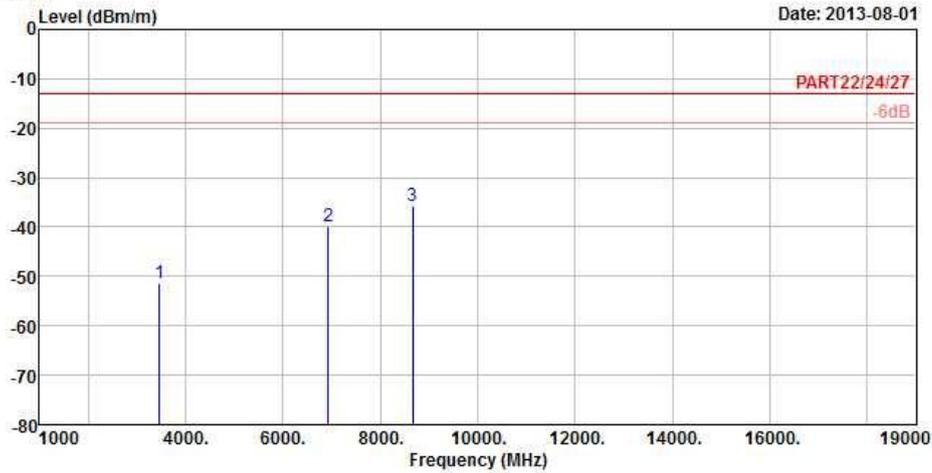
CHANNEL BANDWIDTH: 10MHz / QPSK



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 11



Site : 966 Chamber 5
 Condition : PART22/24/27 3m HORIZONTAL
 Brand/Model: 0P4E200
 Remark : LTE Band 4 10M QPSK(25,0) Link
 Tested by : David Huang
 Temperature : 25°C
 Humidity : 65%
 Plane : Y

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|------|---------|--------|------------|------------|------------|--------|--------|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | |
| 1 | 3465.00 | -51.49 | -42.47 | -13.00 | -38.49 | -9.02 | Peak |
| 2 | 6930.00 | -39.81 | -42.11 | -13.00 | -26.81 | 2.30 | Peak |
| 3 pp | 8662.50 | -35.74 | -40.69 | -13.00 | -22.74 | 4.95 | Peak |



A D T

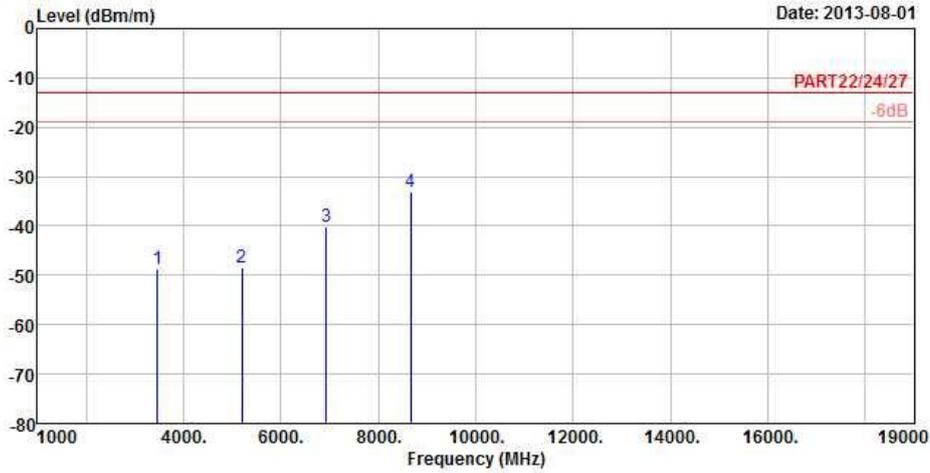


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 12

Date: 2013-08-01



Site : 966 Chamber 5
 Condition : PART22/24/27 3m VERTICAL
 Brand/Model: 0P4E200
 Remark : LTE Band 4 10M QPSK(25,0) Link
 Tested by : David Huang
 Temperature : 25°C
 Humidity : 65%
 Plane : Y

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|------|---------|--------|------------|------------|------------|--------|--------|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | |
| 1 | 3465.00 | -48.57 | -39.55 | -13.00 | -35.57 | -9.02 | Peak |
| 2 | 5197.50 | -48.33 | -45.27 | -13.00 | -35.33 | -3.06 | Peak |
| 3 | 6930.00 | -40.26 | -42.56 | -13.00 | -27.26 | 2.30 | Peak |
| 4 pp | 8662.50 | -33.06 | -38.01 | -13.00 | -20.06 | 4.95 | Peak |



A D T

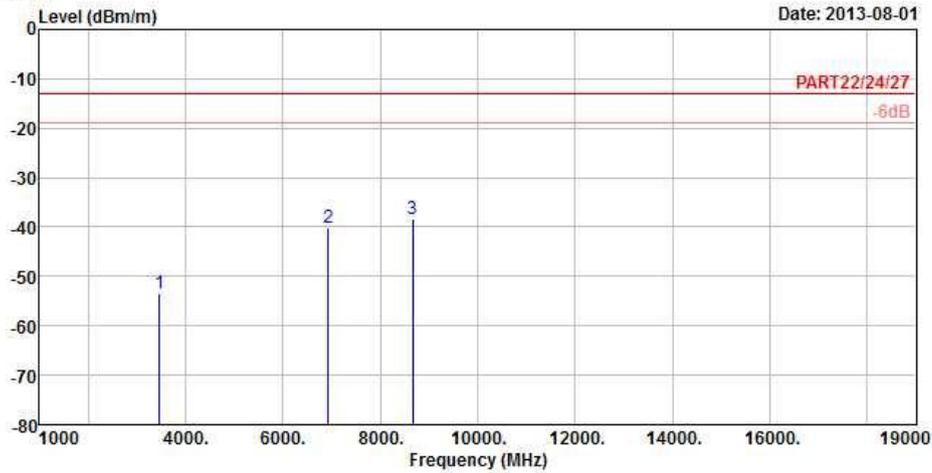
CHANNEL BANDWIDTH: 15MHz / QPSK



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 11



Site : 966 Chamber 5
 Condition : PART22/24/27 3m HORIZONTAL
 Brand/Model: 0P4E200
 Remark : LTE Band 4 15M QPSK(36,0) Link
 Tested by : David Huang
 Temperature : 25°C
 Humidity : 65%
 Plane : Y

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|------|---------|--------|------------|------------|------------|--------|--------|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | |
| 1 | 3465.00 | -53.33 | -44.31 | -13.00 | -40.33 | -9.02 | Peak |
| 2 | 6930.00 | -40.28 | -42.58 | -13.00 | -27.28 | 2.30 | Peak |
| 3 pp | 8662.50 | -38.46 | -43.41 | -13.00 | -25.46 | 4.95 | Peak |



A D T

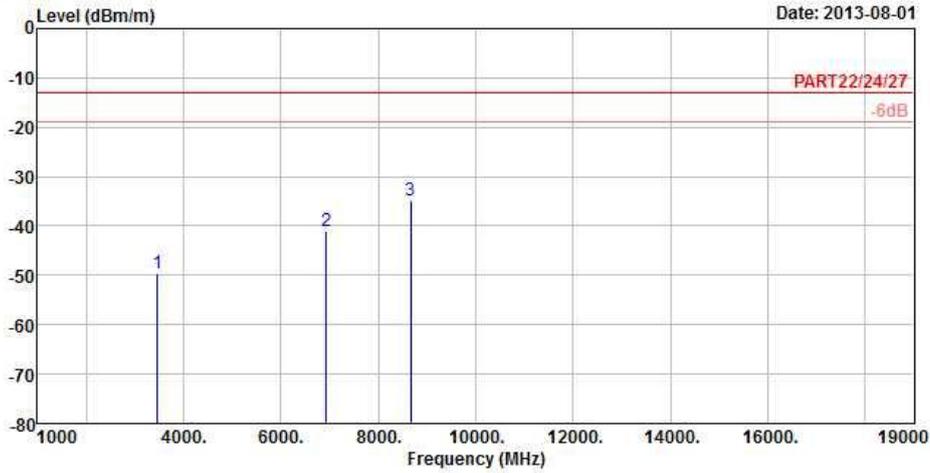


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 12

Date: 2013-08-01



Site : 966 Chamber 5
 Condition : PART22/24/27 3m VERTICAL
 Brand/Model: 0P4E200
 Remark : LTE Band 4 15M QPSK(36,0) Link
 Tested by : David Huang
 Temperature : 25°C
 Humidity : 65%
 Plane : Y

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|------|---------|--------|------------|------------|------------|--------|--------|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | |
| 1 | 3465.00 | -49.55 | -40.53 | -13.00 | -36.55 | -9.02 | Peak |
| 2 | 6930.00 | -41.13 | -43.43 | -13.00 | -28.13 | 2.30 | Peak |
| 3 pp | 8662.50 | -34.73 | -39.68 | -13.00 | -21.73 | 4.95 | Peak |



A D T

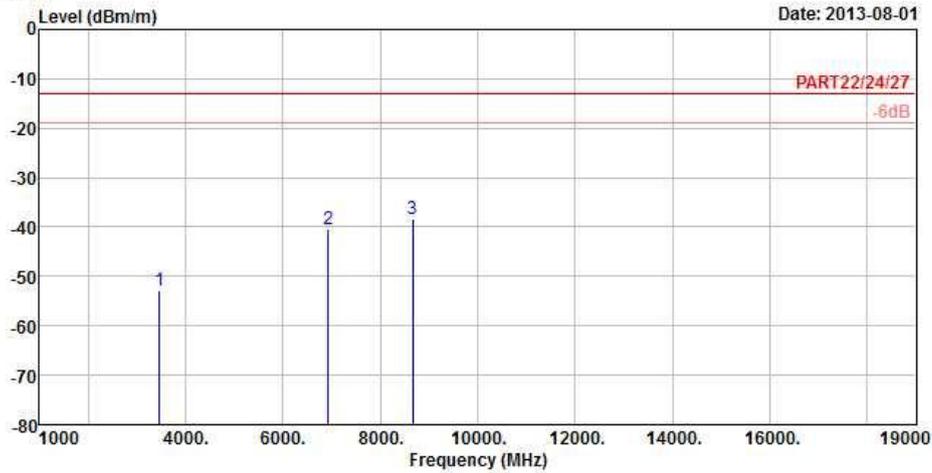
CHANNEL BANDWIDTH: 20MHz / QPSK



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 11



Site : 966 Chamber 5
 Condition : PART22/24/27 3m HORIZONTAL
 Brand/Model: 0P4E200
 Remark : LTE Band 4 20M QPSK(50,0) Link
 Tested by : David Huang
 Temperature : 25°C
 Humidity : 65%
 Plane : Y

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|------|---------|--------|------------|------------|------------|--------|--------|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | |
| 1 | 3465.00 | -52.95 | -43.93 | -13.00 | -39.95 | -9.02 | Peak |
| 2 | 6930.00 | -40.35 | -42.65 | -13.00 | -27.35 | 2.30 | Peak |
| 3 pp | 8662.50 | -38.36 | -43.31 | -13.00 | -25.36 | 4.95 | Peak |



A D T

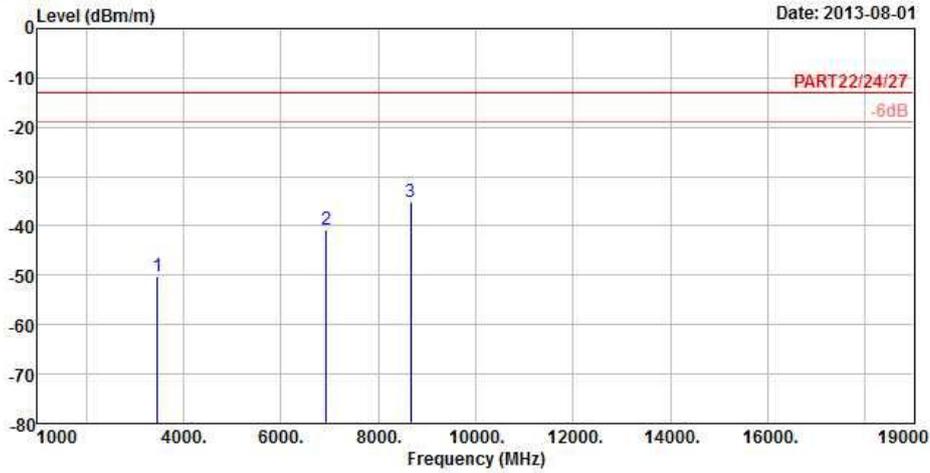


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 12

Date: 2013-08-01



Site : 966 Chamber 5
 Condition : PART22/24/27 3m VERTICAL
 Brand/Model: 0P4E200
 Remark : LTE Band 4 20M QPSK(50,0) Link
 Tested by : David Huang
 Temperature : 25°C
 Humidity : 65%
 Plane : Y

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|------|---------|--------|------------|------------|------------|--------|--------|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | |
| 1 | 3465.00 | -50.25 | -41.23 | -13.00 | -37.25 | -9.02 | Peak |
| 2 | 6930.00 | -40.80 | -43.10 | -13.00 | -27.80 | 2.30 | Peak |
| 3 pp | 8662.50 | -35.22 | -40.17 | -13.00 | -22.22 | 4.95 | Peak |

5 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 Lab:

Tel: 886-3-5935343

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Hwa Ya EMC/RF/Safety/Telecom Lab:

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.adt.com.tw

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



A D T

6 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

---END---