# FCC

# RF Test Report

| | | |
|---|---|---|
| Applicant | : | Hill-Rom Services (S) Pte. Ltd |
| Product Type | : | LTE DONGLE, USB |
| Trade Name | : | Hill-Rom |
| Model Number | : | 198657 |
| Test Specification | : | FCC 47 CFR PART 27<br>ANSI/TIA-603-D 2010 |
| Receive Date | : | Feb. 08, 2017 |
| Test Period | : | Feb. 10~ Feb. 13, 2016 |
| Issue Date | : | Apr. 12, 2017 |

**Issue by**

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Taiwan Accreditation Foundation accreditation number: 1330

# Revision History

| Rev. | Issue Date | Revisions | Revised By |
|---|---|---|---|
| 00 | Apr. 12, 2017 | Initial Issue | Snow Wang |
| | | | |
| | | | |
| | | | |

# Verification of Compliance

Issued Date: Apr. 12, 2017

| | | |
|---|---|---|
| Applicant | : | Hill-Rom Services (S) Pte. Ltd |
| Product Type | : | LTE DONGLE, USB |
| Trade Name | : | Hill-Rom |
| Model Number | : | 198657 |
| FCC ID | : | 2AJKO198657 |
| EUT Rated Voltage | : | DC 5V |
| Test Voltage | : | 120 Vac / 60 Hz |
| Applicable Standard | : | FCC 47 CFR PART 27<br>ANSI/TIA-603-D 2010 |
| Test Result | : | Complied |
| Performing Lab. | : | A Test Lab Techno Corp.<br>No. 140-1, Changan Street, Bade District,<br>Taoyuan City 33465, Taiwan (R.O.C)<br>Tel：+886-3-2710188 / Fax：+886-3-2710190<br>Taiwan Accreditation Foundation accreditation number: 1330<br>http://www.atl-lab.com.tw/e-index.htm |

A Test Lab Techno Corp. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by A Test Lab Techno Corp. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

| | | | | |
|---|---|---|---|---|
| Approved By | : Fly Lu | Reviewed By | : Eric Ou Yang | |
| (Manager) | (Fly Lu) | (Testing Engineer) | (Eric Ou Yang) | |

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# 1 General Information

## 1.1. EUT Description

| | | | |
|---|---|---|---|
| Applicant | Hill-Rom Services (S) Pte. Ltd<br>1 Yishun Ave 7, Singapore. 768923 | | |
| Manufacturer | Daviscomms (M) Sdn. Bhd<br>Plot 18, Lorong Perusahaan Maju 1. Kawasan Perusahaan Perai 4. 13600 Perai, Malaysia | | |
| Product Type | LTE DONGLE, USB | | |
| Trade Name | Hill-Rom | | |
| Model Number | 198657 | | |
| FCC ID | 2AJKO198657 | | |
| IMEI No. | 356278070077781 | | |
| Operate Band | Frequency Range (MHz) | Modulation | Channel Bandwidth |
| LTE Band 4 | UL: 1710.7 ~ 1754.3 | QPSK, 16QAM | 1.4M, 3M, 5MHz, 10MHz, 15MHz, 20MHz |
| | DL: 2110.7 ~ 2154.3 | QPSK, 16QAM | |
| LTE Band 13 | UL: 777 ~ 787 | QPSK, 16QAM | 5MHz, 10MHz |
| | DL: 746 ~ 756 | QPSK, 16QAM | |
| Type of Antenna | PCB Antenna | | |
| | LTE Band 4 | 3.37 dBi | |
| | LTE Band 13 | 1.56 dBi | |

| Frequency Band | Modulation | Max. RF Output Power (W) | E.R.P. /E.I.R.P. (W) | |
|---|---|---|---|---|
| LTE Band 4 (Channel Bandwidth 1.4MHz) | QPSK | 0.206 | 0.208 | (E.I.R.P.) |
| | 16QAM | 0.159 | 0.149 | (E.I.R.P.) |
| LTE Band 4 (Channel Bandwidth 3MHz) | QPSK | 0.205 | 0.207 | (E.I.R.P.) |
| | 16QAM | 0.155 | 0.143 | (E.I.R.P.) |
| LTE Band 4 (Channel Bandwidth 5MHz) | QPSK | 0.201 | 0.207 | (E.I.R.P.) |
| | 16QAM | 0.151 | 0.136 | (E.I.R.P.) |
| LTE Band 4 (Channel Bandwidth 10MHz) | QPSK | 0.210 | 0.208 | (E.I.R.P.) |
| | 16QAM | 0.168 | 0.132 | (E.I.R.P.) |
| LTE Band 4 (Channel Bandwidth 15MHz) | QPSK | 0.208 | 0.210 | (E.I.R.P.) |
| | 16QAM | 0.157 | 0.134 | (E.I.R.P.) |
| LTE Band 4 (Channel Bandwidth 20MHz) | QPSK | 0.207 | 0.207 | (E.I.R.P.) |
| | 16QAM | 0.160 | 0.132 | (E.I.R.P.) |
| LTE Band 13 (Channel Bandwidth 5MHz) | QPSK | 0.171 | 0.209 | (E.R.P.) |
| | 16QAM | 0.129 | 0.131 | (E.R.P.) |
| LTE Band 13 (Channel Bandwidth 10MHz) | QPSK | 0.163 | 0.200 | (E.R.P.) |
| | 16QAM | 0.120 | 0.138 | (E.R.P.) |

| Frequency Band | Emission Designator | |
|---|---|---|
| | QPSK | 16QAM |
| LTE Band 4 (Channel Bandwidth 1.4MHz) | 1M21G7D | 1M22W7D |
| LTE Band 4 (Channel Bandwidth 3MHz) | 2M98G7D | 2M94W7D |
| LTE Band 4 (Channel Bandwidth 5MHz) | 4M89G7D | 4M91W7D |
| LTE Band 4 (Channel Bandwidth 10MHz) | 9M71G7D | 9M72W7D |
| LTE Band 4 (Channel Bandwidth 15MHz) | 14M44G7D | 14M58W7D |
| LTE Band 4 (Channel Bandwidth 20MHz) | 19M41G7D | 19M21W7D |
| LTE Band 13 (Channel Bandwidth 5MHz) | 4M88G7D | 4M90W7D |
| LTE Band 13 (Channel Bandwidth 10MHz) | 8M89G7D | 8M87W7D |

## 1.2. Mode of Operation

Three channels had been tested for each channel bandwidth.

| LTE Band 4 | | | | | | |
|---|---|---|---|---|---|---|
| Channel Bandwidth | 1.4MHz | | 3MHz | | 5MHz | |
| | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| Low CH | 19957 | 1710.7 | 19965 | 1711.5 | 19975 | 1712.5 |
| Middle CH | 20175 | 1732.5 | 20175 | 1732.5 | 20175 | 1732.5 |
| High CH | 20393 | 1754.3 | 20385 | 1753.5 | 20375 | 1752.5 |
| Channel Bandwidth | 10MHz | | 15MHz | | 20MHz | |
| | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| Low CH | 20000 | 1715.0 | 20025 | 1717.5 | 20050 | 1720.0 |
| Middle CH | 20175 | 1732.5 | 20175 | 1732.5 | 20175 | 1732.5 |
| High CH | 20350 | 1750.0 | 20325 | 1747.5 | 20300 | 1745.0 |

| LTE Band 13 | | | | |
|---|---|---|---|---|
| Channel Bandwidth | 5MHz | | 10MHz | |
| | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| Low CH | 23205 | 779.5 | --- | --- |
| Middle CH | 23230 | 782.0 | 23230 | 782.0 |
| High CH | 23255 | 784.5 | --- | --- |

Note: Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.

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

Frequency range investigated for radiated emission: 30MHz to 19000 MHz.

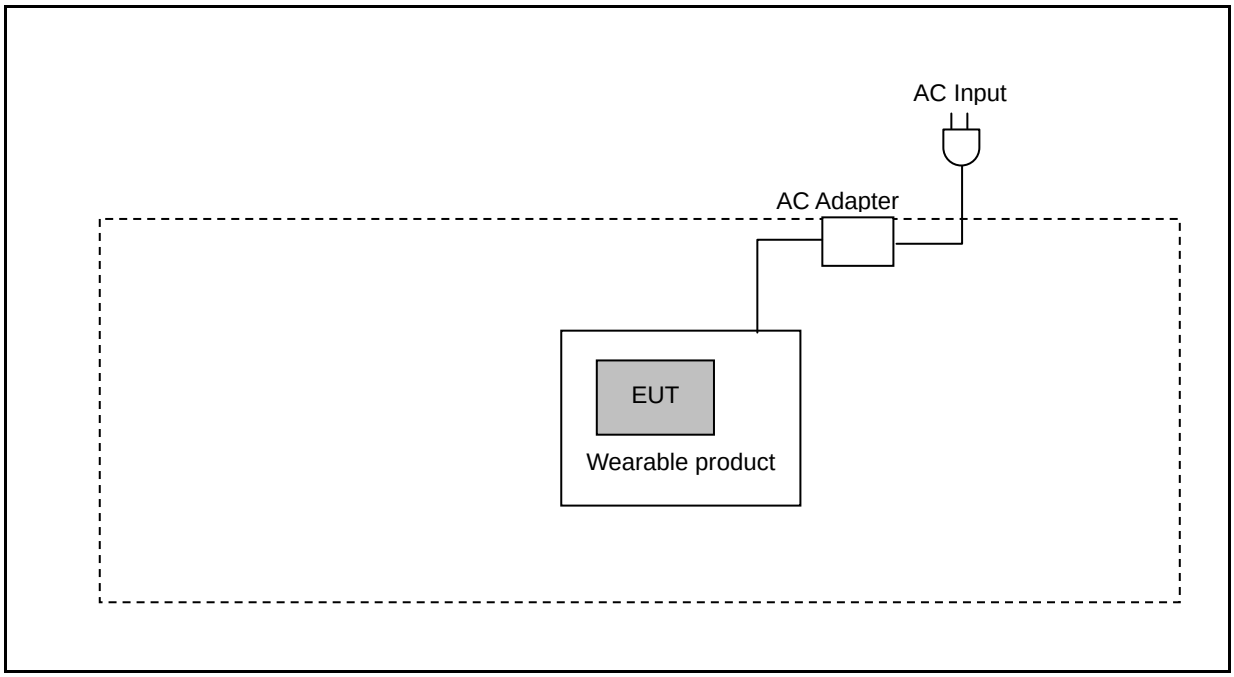
| Band | Channel Bandwidth | Test Modes | |
|---|---|---|---|
| LTE Band 4 | 1.4 MHz | ☐ LTE(RB Size 1, RB Offset 0) Link<br>☐ LTE(RB Size 1, RB Offset 2) Link<br>☐ LTE(RB Size 1, RB Offset 5) Link<br>☐ LTE(RB Size 3, RB Offset 0) Link<br>☑ LTE(RB Size 3, RB Offset 1) Link<br>☐ LTE(RB Size 3, RB Offset 3) Link<br>☐ LTE(RB Size 6, RB Offset 0) Link | QPSK |
| | 3 MHz | ☐ LTE(RB Size 1, RB Offset 0) Link<br>☑ LTE(RB Size 1, RB Offset 8) Link<br>☐ LTE(RB Size 1, RB Offset 14) Link<br>☐ LTE(RB Size 8, RB Offset 0) Link<br>☐ LTE(RB Size 8, RB Offset 4) Link<br>☐ LTE(RB Size 8, RB Offset 7) Link<br>☐ LTE(RB Size 15, RB Offset 0) Link | QPSK |
| | 5 MHz | ☑ LTE(RB Size 1, RB Offset 0) Link<br>☐ LTE(RB Size 1, RB Offset 12) Link<br>☐ LTE(RB Size 1, RB Offset 24) Link<br>☐ LTE(RB Size 12, RB Offset 0) Link<br>☐ LTE(RB Size 12, RB Offset 6) Link<br>☐ LTE(RB Size 12, RB Offset 13) Link<br>☐ LTE(RB Size 25, RB Offset 0) Link | QPSK |
| | 10 MHz | ☐ LTE(RB Size 1, RB Offset 0) Link<br>☐ LTE(RB Size 1, RB Offset 24) Link<br>☑ LTE(RB Size 1, RB Offset 49) Link<br>☐ LTE(RB Size 25, RB Offset 0) Link<br>☐ LTE(RB Size 25, RB Offset 12) Link<br>☐ LTE(RB Size 25, RB Offset 25) Link<br>☐ LTE(RB Size 50, RB Offset 0) Link | QPSK |
| | 15 MHz | ☐ LTE(RB Size 1, RB Offset 0) Link<br>☐ LTE(RB Size 1, RB Offset 38) Link<br>☑ LTE(RB Size 1, RB Offset 74) Link<br>☐ LTE(RB Size 36, RB Offset 0) Link<br>☐ LTE(RB Size 36, RB Offset 18) Link<br>☐ LTE(RB Size 36, RB Offset 39) Link<br>☐ LTE(RB Size 75, RB Offset 0) Link | QPSK |
| | 20 MHz | ☐ LTE(RB Size 1, RB Offset 0) Link<br>☑ LTE(RB Size 1, RB Offset 49) Link<br>☐ LTE(RB Size 1, RB Offset 99) Link<br>☐ LTE(RB Size 50, RB Offset 0) Link<br>☐ LTE(RB Size 50, RB Offset 25) Link<br>☐ LTE(RB Size 50, RB Offset 50) Link<br>☐ LTE(RB Size 100, RB Offset 0) Link | QPSK |

| Band | Channel Bandwidth | Test Modes | |
|---|---|---|---|
| LTE Band 13 | 5 MHz | ☐ LTE(RB Size 1, RB Offset 0) Link<br>☐ LTE(RB Size 1, RB Offset 12) Link<br>☑ LTE(RB Size 1, RB Offset 24) Link<br>☐ LTE(RB Size 12, RB Offset 0) Link<br>☐ LTE(RB Size 12, RB Offset 6) Link<br>☐ LTE(RB Size 12, RB Offset 13) Link<br>☐ LTE(RB Size 25, RB Offset 0) Link | QPSK |
| | 10 MHz | ☐ LTE(RB Size 1, RB Offset 0) Link<br>☐ LTE(RB Size 1, RB Offset 25) Link<br>☑ LTE(RB Size 1, RB Offset 49) Link<br>☐ LTE(RB Size 25, RB Offset 0) Link<br>☐ LTE(RB Size 25, RB Offset 12) Link<br>☐ LTE(RB Size 25, RB Offset 25) Link<br>☐ LTE(RB Size 50, RB Offset 0) Link | QPSK |

## 1.3. EUT Exercise Software

| | |
|---|---|
| 1 | Setup the EUT and Base Station (CMW500) as shown on 1.4. |
| 2 | Turn on the power of all equipment. |
| 3 | EUT run test program test. |

## 1.4. Configuration of Test System Details




## 1.5. Test Site Environment

| Items | Required (IEC 68-1) | Actual |
|---|---|---|
| Temperature (°C) | 15-35 | 26 |
| Humidity (%RH) | 25-75 | 60 |
| Barometric pressure (mbar) | 860-1060 | 950 |

## 1.6. Summary of Test Result

| FCC Rule | Description | Result |
|---|---|---|
| §2.1046 | Conducted Output Average Power | Pass |
| §27. 50 | Equivalent Isotropic Radiated Power / Equivalent Radiated Power | Pass |
| §2.1055 §27. 54 | Frequency Stability | Pass |
| §2.1049 | Emission Bandwidth & Occupied Bandwidth | Pass |
| §27.50 | Peak to average ratio | Pass |
| §27.53 | Band Edge | Pass |
| §2.1051 §27.53 | Conducted Spurious Emissions | Pass |
| §2.1053 §27.53 | Radiated Spurious Emissions | Pass |

# 2 Conducted Output Average Power Test

## Limit

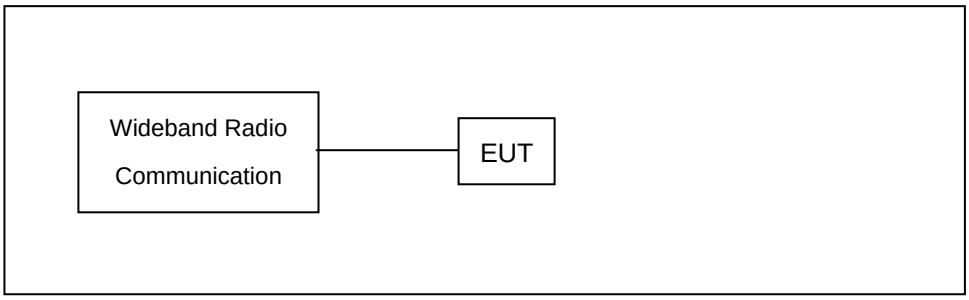
N/A

## Test Instruments

| Equipment | Manufacturer | Model No. | Serial No. | Cal. Date | Remark |
|---|---|---|---|---|---|
| Wideband Radio Communication Tester | R & S | CMW500 | 103168 | 11/04/2016 | 1 year |
| Test Site | ATL | TE05 | TE05 | N.C.R. | ----- |

Note: N.C.R. = No Calibration Request.

## Test Setup




## Test Procedure

a. The EUT was set up for the maximum power with simulator.

b. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

## Uncertainty

The measurement uncertainty is defined as for Conducted Power measurement is 1.2 dB.

■ **Test Result**

| Date of Test | 02/10/2017 |
|---|---|

| Band | Channel Bandwidth | Modulation | Channel | Frequency (MHz) | RB Configuration | | Average Power | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Size | Offset | (dBm) | (W) |
| LTE Band4 | 1.4MHz | QPSK | 19957 | 1710.7 | 1 | 0 | 22.80 | 0.191 |
| | | | | | 1 | 2 | 22.71 | 0.187 |
| | | | | | 1 | 5 | 22.72 | 0.187 |
| | | | | | 3 | 0 | 22.71 | 0.187 |
| | | | | | 3 | 1 | 22.69 | 0.186 |
| | | | | | 3 | 3 | 22.65 | 0.184 |
| | | | | | 6 | 0 | 21.57 | 0.144 |
| | | | 20175 | 1732.5 | 1 | 0 | 22.92 | 0.196 |
| | | | | | 1 | 2 | 22.93 | 0.196 |
| | | | | | 1 | 5 | 22.87 | 0.194 |
| | | | | | 3 | 0 | 22.91 | 0.195 |
| | | | | | 3 | 1 | 22.94 | 0.197 |
| | | | | | 3 | 3 | 22.86 | 0.193 |
| | | | | | 6 | 0 | 21.84 | 0.153 |
| | | | 20393 | 1754.3 | 1 | 0 | 23.07 | 0.203 |
| | | | | | 1 | 2 | 23.11 | 0.205 |
| | | | | | 1 | 5 | 23.11 | 0.205 |
| | | | | | 3 | 0 | 23.02 | 0.200 |
| | | | | | 3 | 1 | **23.14** | **0.206** |
| | | | | | 3 | 3 | 23.09 | 0.204 |
| | | | | | 6 | 0 | 22.02 | 0.159 |
| | | 16QAM | 19957 | 1710.7 | 1 | 0 | 21.69 | 0.148 |
| | | | | | 1 | 2 | 21.63 | 0.146 |
| | | | | | 1 | 5 | 21.64 | 0.146 |
| | | | | | 3 | 0 | 21.55 | 0.143 |
| | | | | | 3 | 1 | 21.60 | 0.145 |
| | | | | | 3 | 3 | 21.59 | 0.144 |
| | | | | | 6 | 0 | 20.72 | 0.118 |
| | | | 20175 | 1732.5 | 1 | 0 | 21.67 | 0.147 |
| | | | | | 1 | 2 | 21.58 | 0.144 |
| | | | | | 1 | 5 | 21.60 | 0.145 |
| | | | | | 3 | 0 | 21.79 | 0.151 |
| | | | | | 3 | 1 | 21.78 | 0.151 |
| | | | | | 3 | 3 | 21.76 | 0.150 |
| | | | | | 6 | 0 | 20.71 | 0.118 |
| | | | 20393 | 1754.3 | 1 | 0 | 21.95 | 0.157 |
| | | | | | 1 | 2 | 21.82 | 0.152 |
| | | | | | 1 | 5 | 21.90 | 0.155 |
| | | | | | 3 | 0 | 22.00 | 0.158 |
| | | | | | 3 | 1 | 22.02 | 0.159 |
| | | | | | 3 | 3 | 21.98 | 0.158 |
| | | | | | 6 | 0 | 20.87 | 0.122 |

| Band | Channel Bandwidth | Modulation | Channel | Frequency (MHz) | RB Configuration | | Average Power | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Size | Offset | (dBm) | (W) |
| LTE Band4 | 3MHz | QPSK | 19965 | 1711.5 | 1 | 0 | 22.65 | 0.184 |
| | | | | | 1 | 8 | 22.58 | 0.181 |
| | | | | | 1 | 14 | 22.57 | 0.181 |
| | | | | | 8 | 0 | 21.44 | 0.139 |
| | | | | | 8 | 4 | 21.44 | 0.139 |
| | | | | | 8 | 7 | 21.42 | 0.139 |
| | | | | | 15 | 0 | 21.47 | 0.140 |
| | | | 20175 | 1732.5 | 1 | 0 | 22.89 | 0.195 |
| | | | | | 1 | 8 | 22.89 | 0.195 |
| | | | | | 1 | 14 | 22.90 | 0.195 |
| | | | | | 8 | 0 | 21.82 | 0.152 |
| | | | | | 8 | 4 | 21.82 | 0.152 |
| | | | | | 8 | 7 | 21.83 | 0.152 |
| | | | | | 15 | 0 | 21.78 | 0.151 |
| | | | 20385 | 1753.5 | 1 | 0 | 23.08 | 0.203 |
| | | | | | 1 | 8 | **23.11** | **0.205** |
| | | | | | 1 | 14 | 23.10 | 0.204 |
| | | | | | 8 | 0 | 22.09 | 0.162 |
| | | | | | 8 | 4 | 22.08 | 0.161 |
| | | | | | 8 | 7 | 22.04 | 0.160 |
| | | | | | 15 | 0 | 22.07 | 0.161 |
| | | 16QAM | 19965 | 1711.5 | 1 | 0 | 21.31 | 0.135 |
| | | | | | 1 | 8 | 21.27 | 0.134 |
| | | | | | 1 | 14 | 21.26 | 0.134 |
| | | | | | 8 | 0 | 20.29 | 0.107 |
| | | | | | 8 | 4 | 20.30 | 0.107 |
| | | | | | 8 | 7 | 20.35 | 0.108 |
| | | | | | 15 | 0 | 20.33 | 0.108 |
| | | | 20175 | 1732.5 | 1 | 0 | 21.75 | 0.150 |
| | | | | | 1 | 8 | 21.63 | 0.146 |
| | | | | | 1 | 14 | 21.56 | 0.143 |
| | | | | | 8 | 0 | 20.69 | 0.117 |
| | | | | | 8 | 4 | 20.65 | 0.116 |
| | | | | | 8 | 7 | 20.63 | 0.116 |
| | | | | | 15 | 0 | 20.68 | 0.117 |
| | | | 20385 | 1753.5 | 1 | 0 | 21.88 | 0.154 |
| | | | | | 1 | 8 | 21.89 | 0.155 |
| | | | | | 1 | 14 | 21.88 | 0.154 |
| | | | | | 8 | 0 | 20.91 | 0.123 |
| | | | | | 8 | 4 | 20.92 | 0.124 |
| | | | | | 8 | 7 | 20.92 | 0.124 |
| | | | | | 15 | 0 | 20.98 | 0.125 |

| Band | Channel Bandwidth | Modulation | Channel | Frequency (MHz) | RB Configuration | | Average Power | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Size | Offset | (dBm) | (W) |
| LTE Band4 | 5MHz | QPSK | 19975 | 1712.5 | 1 | 0 | 22.77 | 0.189 |
| | | | | | 1 | 12 | 22.74 | 0.188 |
| | | | | | 1 | 24 | 22.71 | 0.187 |
| | | | | | 12 | 0 | 21.65 | 0.146 |
| | | | | | 12 | 6 | 21.59 | 0.144 |
| | | | | | 12 | 13 | 21.59 | 0.144 |
| | | | | | 25 | 0 | 21.62 | 0.145 |
| | | | 20175 | 1732.5 | 1 | 0 | 23.02 | 0.200 |
| | | | | | 1 | 12 | 22.96 | 0.198 |
| | | | | | 1 | 24 | 22.96 | 0.198 |
| | | | | | 12 | 0 | 21.80 | 0.151 |
| | | | | | 12 | 6 | 21.80 | 0.151 |
| | | | | | 12 | 13 | 21.82 | 0.152 |
| | | | | | 25 | 0 | 21.86 | 0.153 |
| | | | 20375 | 1752.5 | 1 | 0 | **23.04** | **0.201** |
| | | | | | 1 | 12 | 23.01 | 0.200 |
| | | | | | 1 | 24 | 22.96 | 0.198 |
| | | | | | 12 | 0 | 21.85 | 0.153 |
| | | | | | 12 | 6 | 21.86 | 0.153 |
| | | | | | 12 | 13 | 21.87 | 0.154 |
| | | | | | 25 | 0 | 21.86 | 0.153 |
| | | 16QAM | 19975 | 1712.5 | 1 | 0 | 21.53 | 0.142 |
| | | | | | 1 | 12 | 21.37 | 0.137 |
| | | | | | 1 | 24 | 21.43 | 0.139 |
| | | | | | 12 | 0 | 20.49 | 0.112 |
| | | | | | 12 | 6 | 20.48 | 0.112 |
| | | | | | 12 | 13 | 20.50 | 0.112 |
| | | | | | 25 | 0 | 20.54 | 0.113 |
| | | | 20175 | 1732.5 | 1 | 0 | 21.70 | 0.148 |
| | | | | | 1 | 12 | 21.74 | 0.149 |
| | | | | | 1 | 24 | 21.63 | 0.146 |
| | | | | | 12 | 0 | 20.73 | 0.118 |
| | | | | | 12 | 6 | 20.71 | 0.118 |
| | | | | | 12 | 13 | 20.70 | 0.117 |
| | | | | | 25 | 0 | 20.73 | 0.118 |
| | | | 20375 | 1752.5 | 1 | 0 | 21.78 | 0.151 |
| | | | | | 1 | 12 | 21.65 | 0.146 |
| | | | | | 1 | 24 | 21.65 | 0.146 |
| | | | | | 12 | 0 | 20.72 | 0.118 |
| | | | | | 12 | 6 | 20.75 | 0.119 |
| | | | | | 12 | 11 | 20.73 | 0.118 |
| | | | | | 25 | 0 | 20.79 | 0.120 |

| Band | Channel Bandwidth | Modulation | Channel | Frequency (MHz) | RB Configuration | | Average Power | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Size | Offset | (dBm) | (W) |
| LTE Band4 | 10MHz | QPSK | 20000 | 1715.0 | 1 | 0 | 22.91 | 0.195 |
| | | | | | 1 | 24 | 22.83 | 0.192 |
| | | | | | 1 | 49 | 22.81 | 0.191 |
| | | | | | 25 | 0 | 21.75 | 0.150 |
| | | | | | 25 | 12 | 21.72 | 0.149 |
| | | | | | 25 | 25 | 21.75 | 0.150 |
| | | | | | 50 | 0 | 21.66 | 0.147 |
| | | | 20175 | 1732.5 | 1 | 0 | 23.00 | 0.200 |
| | | | | | 1 | 24 | 22.98 | 0.199 |
| | | | | | 1 | 49 | 22.91 | 0.195 |
| | | | | | 25 | 0 | 21.83 | 0.152 |
| | | | | | 25 | 12 | 21.81 | 0.152 |
| | | | | | 25 | 25 | 21.79 | 0.151 |
| | | | | | 50 | 0 | 21.83 | 0.152 |
| | | | 20350 | 1750.0 | 1 | 0 | 23.18 | 0.208 |
| | | | | | 1 | 24 | 23.18 | 0.208 |
| | | | | | 1 | 49 | **23.22** | **0.210** |
| | | | | | 25 | 0 | 22.18 | 0.165 |
| | | | | | 25 | 12 | 22.18 | 0.165 |
| | | | | | 25 | 25 | 22.20 | 0.166 |
| | | | | | 50 | 0 | 22.22 | 0.167 |
| | | 16QAM | 20000 | 1715.0 | 1 | 0 | 21.61 | 0.145 |
| | | | | | 1 | 24 | 21.54 | 0.143 |
| | | | | | 1 | 49 | 21.55 | 0.143 |
| | | | | | 25 | 0 | 20.66 | 0.116 |
| | | | | | 25 | 12 | 20.60 | 0.115 |
| | | | | | 25 | 25 | 20.61 | 0.115 |
| | | | | | 50 | 0 | 20.58 | 0.114 |
| | | | 20175 | 1732.5 | 1 | 0 | 21.92 | 0.156 |
| | | | | | 1 | 24 | 21.76 | 0.150 |
| | | | | | 1 | 49 | 21.67 | 0.147 |
| | | | | | 25 | 0 | 20.72 | 0.118 |
| | | | | | 25 | 12 | 20.66 | 0.116 |
| | | | | | 25 | 25 | 20.68 | 0.117 |
| | | | | | 50 | 0 | 20.76 | 0.119 |
| | | | 20350 | 1750.0 | 1 | 0 | 22.25 | 0.168 |
| | | | | | 1 | 24 | 22.11 | 0.163 |
| | | | | | 1 | 49 | 22.02 | 0.159 |
| | | | | | 25 | 0 | 21.05 | 0.127 |
| | | | | | 25 | 12 | 21.04 | 0.127 |
| | | | | | 25 | 25 | 21.08 | 0.128 |
| | | | | | 50 | 0 | 21.13 | 0.130 |

| Band | Channel Bandwidth | Modulation | Channel | Frequency (MHz) | RB Configuration | | Average Power | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Size | Offset | (dBm) | (W) |
| LTE Band4 | 15MHz | QPSK | 20025 | 1717.5 | 1 | 0 | 22.80 | 0.191 |
| | | | | | 1 | 38 | 22.70 | 0.186 |
| | | | | | 1 | 74 | 22.71 | 0.187 |
| | | | | | 36 | 0 | 21.71 | 0.148 |
| | | | | | 36 | 18 | 21.66 | 0.147 |
| | | | | | 36 | 39 | 21.57 | 0.144 |
| | | | | | 75 | 0 | 21.56 | 0.143 |
| | | | 20175 | 1732.5 | 1 | 0 | 22.86 | 0.193 |
| | | | | | 1 | 38 | 22.93 | 0.196 |
| | | | | | 1 | 74 | 22.99 | 0.199 |
| | | | | | 36 | 0 | 21.76 | 0.150 |
| | | | | | 36 | 18 | 21.75 | 0.150 |
| | | | | | 36 | 39 | 21.80 | 0.151 |
| | | | | | 75 | 0 | 21.79 | 0.151 |
| | | | 20325 | 1747.5 | 1 | 0 | 23.16 | 0.207 |
| | | | | | 1 | 38 | 23.16 | 0.207 |
| | | | | | 1 | 74 | **23.19** | **0.208** |
| | | | | | 36 | 0 | 22.11 | 0.163 |
| | | | | | 36 | 18 | 22.14 | 0.164 |
| | | | | | 36 | 39 | 22.15 | 0.164 |
| | | | | | 75 | 0 | 22.11 | 0.163 |
| | | 16QAM | 20025 | 1717.5 | 1 | 0 | 21.59 | 0.144 |
| | | | | | 1 | 38 | 21.56 | 0.143 |
| | | | | | 1 | 74 | 21.48 | 0.141 |
| | | | | | 36 | 0 | 20.53 | 0.113 |
| | | | | | 36 | 18 | 20.50 | 0.112 |
| | | | | | 36 | 39 | 20.47 | 0.111 |
| | | | | | 75 | 0 | 20.47 | 0.111 |
| | | | 20175 | 1732.5 | 1 | 0 | 21.63 | 0.146 |
| | | | | | 1 | 38 | 21.67 | 0.147 |
| | | | | | 1 | 74 | 21.68 | 0.147 |
| | | | | | 36 | 0 | 20.68 | 0.117 |
| | | | | | 36 | 18 | 20.71 | 0.118 |
| | | | | | 36 | 39 | 20.74 | 0.119 |
| | | | | | 75 | 0 | 20.72 | 0.118 |
| | | | 20325 | 1747.5 | 1 | 0 | 21.86 | 0.153 |
| | | | | | 1 | 38 | 21.95 | 0.157 |
| | | | | | 1 | 74 | 21.95 | 0.157 |
| | | | | | 36 | 0 | 21.00 | 0.126 |
| | | | | | 36 | 18 | 21.03 | 0.127 |
| | | | | | 36 | 39 | 20.99 | 0.126 |
| | | | | | 75 | 0 | 20.99 | 0.126 |

| Band | Channel Bandwidth | Modulation | Channel | Frequency (MHz) | RB Configuration | | Average Power | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Size | Offset | (dBm) | (W) |
| LTE Band4 | 20MHz | QPSK | 20050 | 1720.0 | 1 | 0 | 22.78 | 0.190 |
| | | | | | 1 | 49 | 22.67 | 0.185 |
| | | | | | 1 | 99 | 22.66 | 0.185 |
| | | | | | 50 | 0 | 21.65 | 0.146 |
| | | | | | 50 | 25 | 21.56 | 0.143 |
| | | | | | 50 | 50 | 21.54 | 0.143 |
| | | | | | 100 | 0 | 21.52 | 0.142 |
| | | | 20175 | 1732.5 | 1 | 0 | 22.82 | 0.191 |
| | | | | | 1 | 49 | 22.92 | 0.196 |
| | | | | | 1 | 99 | 22.97 | 0.198 |
| | | | | | 50 | 0 | 21.73 | 0.149 |
| | | | | | 50 | 25 | 21.81 | 0.152 |
| | | | | | 50 | 50 | 21.82 | 0.152 |
| | | | | | 100 | 0 | 21.73 | 0.149 |
| | | | 20300 | 1745.0 | 1 | 0 | 23.11 | 0.205 |
| | | | | | 1 | 49 | **23.17** | **0.207** |
| | | | | | 1 | 99 | 23.16 | 0.207 |
| | | | | | 50 | 0 | 22.03 | 0.160 |
| | | | | | 50 | 25 | 22.06 | 0.161 |
| | | | | | 50 | 50 | 22.07 | 0.161 |
| | | | | | 100 | 0 | 22.06 | 0.161 |
| | | 16QAM | 20050 | 1720.0 | 1 | 0 | 21.51 | 0.142 |
| | | | | | 1 | 49 | 21.40 | 0.138 |
| | | | | | 1 | 99 | 21.46 | 0.140 |
| | | | | | 50 | 0 | 20.49 | 0.112 |
| | | | | | 50 | 25 | 20.45 | 0.111 |
| | | | | | 50 | 50 | 20.45 | 0.111 |
| | | | | | 100 | 0 | 20.41 | 0.110 |
| | | | 20175 | 1732.5 | 1 | 0 | 21.58 | 0.144 |
| | | | | | 1 | 49 | 21.71 | 0.148 |
| | | | | | 1 | 99 | 21.65 | 0.146 |
| | | | | | 50 | 0 | 20.66 | 0.116 |
| | | | | | 50 | 25 | 20.71 | 0.118 |
| | | | | | 50 | 50 | 20.77 | 0.119 |
| | | | | | 100 | 0 | 20.63 | 0.116 |
| | | | 20300 | 1745.0 | 1 | 0 | 21.87 | 0.154 |
| | | | | | 1 | 49 | 22.01 | 0.159 |
| | | | | | 1 | 99 | 22.03 | 0.160 |
| | | | | | 50 | 0 | 20.98 | 0.125 |
| | | | | | 50 | 25 | 20.99 | 0.126 |
| | | | | | 50 | 50 | 20.95 | 0.124 |
| | | | | | 100 | 0 | 20.95 | 0.124 |

| Band | Channel Bandwidth | Modulation | Channel | Frequency (MHz) | RB Configuration | | Average Power | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Size | Offset | (dBm) | (W) |
| LTE Band13 | 5MHz | QPSK | 23205 | 779.5 | 1 | 0 | 22.11 | 0.163 |
| | | | | | 1 | 12 | 22.08 | 0.161 |
| | | | | | 1 | 24 | 22.09 | 0.162 |
| | | | | | 12 | 0 | 20.84 | 0.121 |
| | | | | | 12 | 6 | 20.79 | 0.120 |
| | | | | | 12 | 13 | 20.81 | 0.121 |
| | | | | | 25 | 0 | 20.78 | 0.120 |
| | | | 23230 | 782.0 | 1 | 0 | 22.06 | 0.161 |
| | | | | | 1 | 12 | 22.07 | 0.161 |
| | | | | | 1 | 24 | 22.12 | 0.163 |
| | | | | | 12 | 0 | 20.97 | 0.125 |
| | | | | | 12 | 6 | 20.94 | 0.124 |
| | | | | | 12 | 13 | 20.96 | 0.125 |
| | | | | | 25 | 0 | 21.00 | 0.126 |
| | | | 23255 | 784.5 | 1 | 0 | 22.28 | 0.169 |
| | | | | | 1 | 12 | 22.27 | 0.169 |
| | | | | | 1 | 24 | **22.33** | **0.171** |
| | | | | | 12 | 0 | 21.16 | 0.131 |
| | | | | | 12 | 6 | 21.14 | 0.130 |
| | | | | | 12 | 13 | 21.18 | 0.131 |
| | | | | | 25 | 0 | 21.22 | 0.132 |
| | | 16QAM | 23205 | 779.5 | 1 | 0 | 20.89 | 0.123 |
| | | | | | 1 | 12 | 20.93 | 0.124 |
| | | | | | 1 | 24 | 20.85 | 0.122 |
| | | | | | 12 | 0 | 19.94 | 0.099 |
| | | | | | 12 | 6 | 19.97 | 0.099 |
| | | | | | 12 | 13 | 19.96 | 0.099 |
| | | | | | 25 | 0 | 19.93 | 0.098 |
| | | | 23230 | 782.0 | 1 | 0 | 20.94 | 0.124 |
| | | | | | 1 | 12 | 20.86 | 0.122 |
| | | | | | 1 | 24 | 20.84 | 0.121 |
| | | | | | 12 | 0 | 19.78 | 0.095 |
| | | | | | 12 | 6 | 19.75 | 0.094 |
| | | | | | 12 | 13 | 19.70 | 0.093 |
| | | | | | 25 | 0 | 19.87 | 0.097 |
| | | | 23255 | 784.5 | 1 | 0 | 21.09 | 0.129 |
| | | | | | 1 | 12 | 21.09 | 0.129 |
| | | | | | 1 | 24 | 21.11 | 0.129 |
| | | | | | 12 | 0 | 19.90 | 0.098 |
| | | | | | 12 | 6 | 19.91 | 0.098 |
| | | | | | 12 | 13 | 19.96 | 0.099 |
| | | | | | 25 | 0 | 19.90 | 0.098 |

| Band | Channel Bandwidth | Modulation | Channel | Frequency (MHz) | RB Configuration | | Average Power | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Size | Offset | (dBm) | (W) |
| LTE Band13 | 10MHz | QPSK | 23230 | 782.0 | 1 | 0 | 22.08 | 0.161 |
| | | | | | 1 | 24 | 22.11 | 0.163 |
| | | | | | 1 | 49 | 22.12 | 0.163 |
| | | | | | 25 | 0 | 20.99 | 0.126 |
| | | | | | 25 | 12 | 20.96 | 0.125 |
| | | | | | 25 | 25 | 20.95 | 0.124 |
| | | | | | 50 | 0 | 20.98 | 0.125 |
| | | 16QAM | 23230 | 782.0 | 1 | 0 | 20.76 | 0.119 |
| | | | | | 1 | 24 | 20.78 | 0.120 |
| | | | | | 1 | 49 | 20.66 | 0.116 |
| | | | | | 25 | 0 | 19.75 | 0.094 |
| | | | | | 25 | 12 | 19.73 | 0.094 |
| | | | | | 25 | 25 | 19.70 | 0.093 |
| | | | | | 50 | 0 | 19.80 | 0.095 |

# 3 Effective Radiated Power / Equivalent Isotropic Radiated Power Test

## ■ Limit

For FCC Part 27.50(d)(4): The EIRP of mobile transmitters and auxiliary test transmitters must not exceed 1 Watts.
For FCC Part 27.50(b)(10): Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.
For FCC Part 27.50(b)(9): Control stations and mobile stations transmitting in the 746-757 MHz, and 776-788 MHz bands are limited to 30 watts ERP.

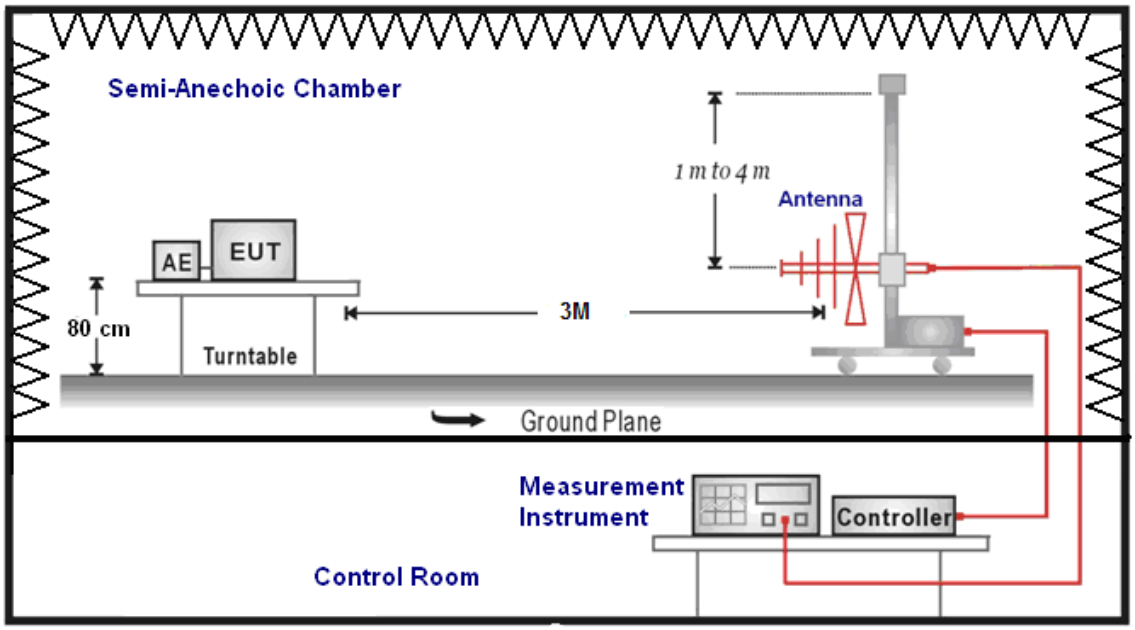
## ■ Test Instruments

| 3 Meter Chamber | | | | | |
|---|---|---|---|---|---|
| Equipment | Manufacturer | Model Number | Serial Number | Cal. Date | Remark |
| RF Pre-selector | Agilent | N9039A | MY46520256 | 03/22/2016 | 1 year |
| Spectrum Analyzer | Agilent | E4446A | MY46180578 | 03/22/2016 | 1 year |
| Pre Amplifier | Agilent | 8449B | 3008A02237 | 10/11/2016 | 1 year |
| Pre Amplifier | Agilent | 8447D | 2944A11119 | 01/12/2017 | 1 year |
| Broadband Antenna (30MHz~1GHz) | SCHWARZBECK MESS-ELEKTRONIK | VULB9168 | 416 | 10/13/2016 | 1 year |
| Broadband Antenna (30MHz~1GHz) | SCHWARZBECK MESS-ELEKTRONIK | VULB 9168 | 419 | 11/03/2016 | 1 year |
| Horn Antenna (1~18GHz) | SCHWARZBECK MESS-ELEKTRONIK | BBHA9120D | 9120D-550 | 06/06/2016 | 1 year |
| Horn Antenna (18~40GHz) | ETS | 3116 | 00086467 | 09/05/2016 | 1 year |
| Horn Antenna (18~40GHz) | SCHWARZBECK MESS-ELEKTRONIK | BBHA9170 | 9170-320 | 07/18/2016 | 1 year |
| Microwave Cable | EMCI | EMC102-KM-KM-14000 | 151001 | 02/23/2016 | 1 year |
| Microwave Cable | EMCI | EMC-104-SM-SM-14000 | 140202 | 02/23/2016 | 1 year |
| Microwave Cable | EMCI | EMC104-SM-SM-600 | 140301 | 02/23/2016 | 1 year |
| Signal Generator | Agilent | E8257D | MY44320425 | 02/25/2016 | 1 year |
| Test Site | ATL | TE01 | 888001 | 08/29/2016 | 1 year |

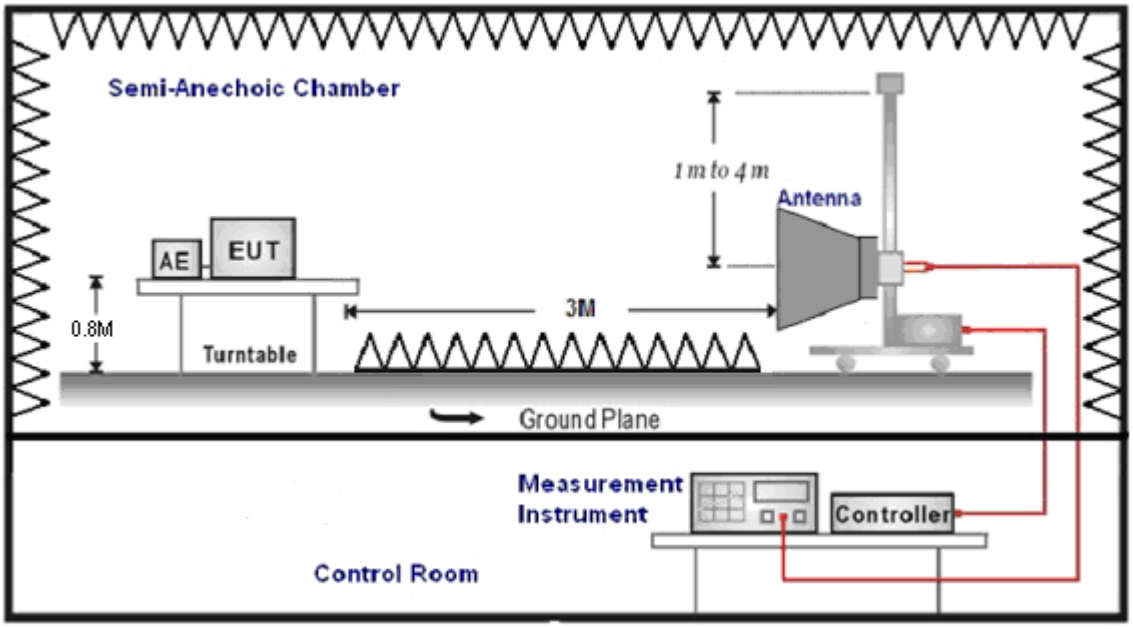
Note: N.C.R. = No Calibration Request.

■ **Test Setup**

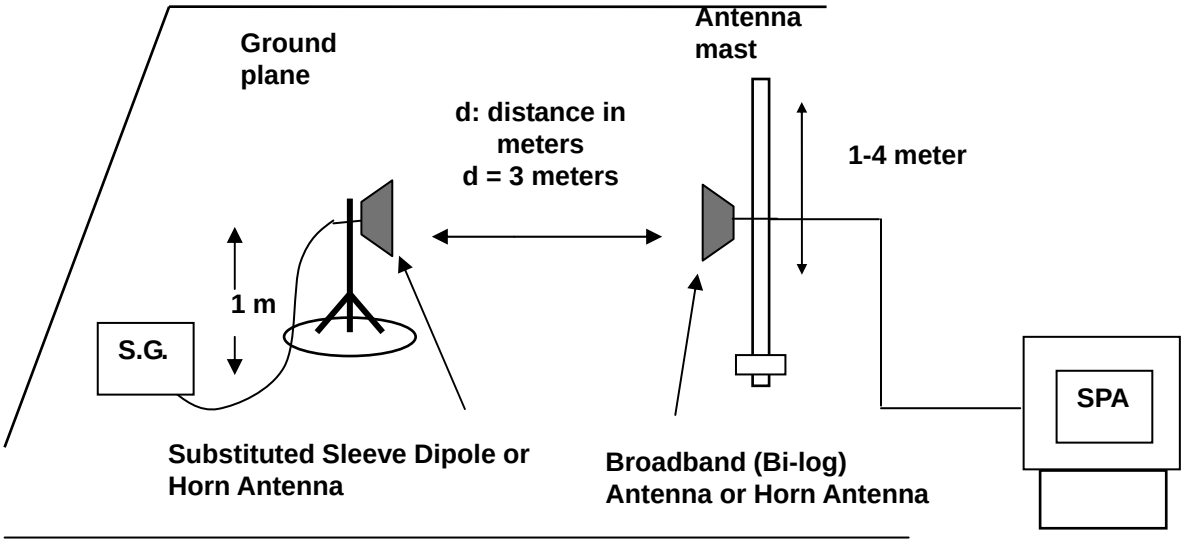
**Below 1 GHz**




**Above 1 GHz**



**For Substituted Method Test Set-UP**




## ■ Test Procedure

a. The EUT was set up for the maximum power with LTE link data modulation. The power was measured with Spectrum Analyzer. All measurements were done at 3 channels (low, middle and high operational frequency range). RWB and VBW is 5MHz for LTE mode.

b. E.I.R.P power 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 antenna (Note:1 & 2) 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.

d. E.I.R.P. = Output power level of S.G - TX cable loss + Antenna gain of substitution horn

e. E.R.P. = E.I.R.P- 2.15 dB

Note: 1. Below 1 GHz Substituted Method Test：Sleeve dipole antenna to Bi-Log Antenna

2. Above 1 GHz Substituted Method Test：Horn antenna to Horn Antenna

## ■ Uncertainty

The measurement uncertainty is defined as for Field Strength of Spurious Radiation measurement is ± 3.072 dB.

■ **Test Result**

| Date of Test | 02/11/2017 |
|---|---|

| LTE Band 4 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Channel Bandwidth | Modulation | Frequency (MHz) | Ant. Polar. | Read Level (dBm) | Correction Factor (dBm) | E.I.R.P. | | Limit (W) |
| | | | | | | (dBm) | (W) | |
| 1.4 M | QPSK | 1710.7 | H | 11.71 | 9.00 | 20.71 | 0.118 | < 1 |
| | | | V | 14.00 | 9.00 | 23.00 | 0.200 | < 1 |
| | | 1732.5 | H | 11.56 | 9.09 | 20.65 | 0.116 | < 1 |
| | | | V | 13.87 | 9.09 | 22.96 | 0.198 | < 1 |
| | | 1754.3 | H | 11.55 | 9.18 | 20.73 | 0.118 | < 1 |
| | | | V | 14.00 | 9.18 | **23.18** | **0.208** | < 1 |
| | 16QAM | 1732.5 | H | 9.70 | 9.09 | 18.79 | 0.076 | < 1 |
| | | | V | 12.63 | 9.09 | 21.72 | 0.149 | < 1 |
| 3 MHz | QPSK | 1711.5 | H | 11.43 | 9.00 | 20.43 | 0.110 | < 1 |
| | | | V | 14.03 | 9.00 | 23.03 | 0.201 | < 1 |
| | | 1732.5 | H | 11.42 | 9.09 | 20.51 | 0.112 | < 1 |
| | | | V | 13.87 | 9.08 | 22.95 | 0.197 | < 1 |
| | | 1753.5 | H | 11.41 | 9.16 | 20.57 | 0.114 | < 1 |
| | | | V | 14.00 | 9.16 | **23.16** | **0.207** | < 1 |
| | 16QAM | 1732.5 | H | 9.94 | 9.09 | 19.03 | 0.080 | < 1 |
| | | | V | 12.46 | 9.09 | 21.55 | 0.143 | < 1 |
| 5 MHz | QPSK | 1712.5 | H | 11.62 | 9.00 | 20.62 | 0.115 | < 1 |
| | | | V | 13.94 | 9.00 | 22.94 | 0.197 | < 1 |
| | | 1732.5 | H | 11.32 | 9.08 | 20.40 | 0.110 | < 1 |
| | | | V | 14.02 | 9.08 | 23.10 | 0.204 | < 1 |
| | | 1752.5 | H | 11.47 | 9.16 | 20.63 | 0.116 | < 1 |
| | | | V | 13.99 | 9.16 | **23.15** | **0.207** | < 1 |
| | 16QAM | 1732.5 | H | 9.84 | 9.08 | 18.92 | 0.078 | < 1 |
| | | | V | 12.26 | 9.08 | 21.34 | 0.136 | < 1 |

| LTE Band 4 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Channel Bandwidth | Modulation | Frequency (MHz) | Ant. Polar. | Read Level (dBm) | Correction Factor (dBm) | E.I.R.P. | | Limit (W) |
| | | | | | | (dBm) | (W) | |
| 10 M | QPSK | 1715.0 | H | 11.50 | 9.00 | 20.50 | 0.112 | < 1 |
| | | | V | 13.35 | 9.00 | 22.35 | 0.172 | < 1 |
| | | 1732.5 | H | 11.49 | 9.07 | 20.56 | 0.114 | < 1 |
| | | | V | 14.04 | 9.07 | 23.11 | 0.205 | < 1 |
| | | 1750.0 | H | 11.30 | 9.15 | 20.45 | 0.111 | < 1 |
| | | | V | 14.04 | 9.14 | **23.18** | **0.208** | < 1 |
| | 16QAM | 1732.5 | H | 10.06 | 9.07 | 19.13 | 0.082 | < 1 |
| | | | V | 12.14 | 9.07 | 21.21 | 0.132 | < 1 |
| 15 MHz | QPSK | 1717.5 | H | 11.62 | 9.00 | 20.62 | 0.115 | < 1 |
| | | | V | 14.14 | 9.00 | 23.14 | 0.206 | < 1 |
| | | 1732.5 | H | 11.43 | 9.06 | 20.49 | 0.112 | < 1 |
| | | | V | 14.17 | 9.06 | **23.23** | **0.210** | < 1 |
| | | 1747.5 | H | 11.33 | 9.11 | 20.44 | 0.111 | < 1 |
| | | | V | 13.98 | 9.11 | 23.09 | 0.204 | < 1 |
| | 16QAM | 1732.5 | H | 10.07 | 9.06 | 19.13 | 0.082 | < 1 |
| | | | V | 12.20 | 9.06 | 21.26 | 0.134 | < 1 |
| 20 MHz | QPSK | 1720.0 | H | 11.81 | 9.00 | 20.81 | 0.121 | < 1 |
| | | | V | 14.01 | 9.00 | 23.01 | 0.200 | < 1 |
| | | 1732.5 | H | 11.70 | 9.06 | 20.76 | 0.119 | < 1 |
| | | | V | 14.10 | 9.06 | **23.16** | **0.207** | < 1 |
| | | 1745.0 | H | 11.65 | 9.10 | 20.75 | 0.119 | < 1 |
| | | | V | 14.07 | 9.10 | **23.17** | **0.207** | < 1 |
| | 16QAM | 1732.5 | H | 10.06 | 9.05 | 19.11 | 0.081 | < 1 |
| | | | V | 12.14 | 9.05 | 21.19 | 0.132 | < 1 |

| LTE Band 13 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Channel Bandwidth | Modulation | Frequency (MHz) | Ant. Polar. | Read Level (dBm) | Correction Factor (dBm) | E.R.P. | | Limit (W) |
| | | | | | | (dBm) | (W) | |
| 5 M | QPSK | 779.5 | H | 9.95 | 10.64 | 20.59 | 0.115 | < 3 |
| | | | V | 12.50 | 10.64 | 23.14 | 0.206 | < 3 |
| | | 782.0 | H | 9.73 | 10.68 | 20.41 | 0.110 | < 3 |
| | | | V | 12.22 | 10.69 | 22.91 | 0.195 | < 3 |
| | | 784.5 | H | 10.00 | 10.71 | 20.71 | 0.118 | < 3 |
| | | | V | 12.48 | 10.72 | **23.20** | **0.209** | < 3 |
| | 16QAM | 782.0 | H | 8.41 | 10.68 | 19.09 | 0.081 | < 3 |
| | | | V | 10.48 | 10.68 | 21.16 | 0.131 | < 3 |
| 10 MHz | QPSK | 782.0 | H | 9.65 | 10.66 | 20.31 | 0.107 | < 3 |
| | | | V | 12.34 | 10.66 | 23.00 | 0.200 | < 3 |
| | 16QAM | 782.0 | H | 8.16 | 10.67 | 18.83 | 0.076 | < 3 |
| | | | V | 10.75 | 10.65 | 21.40 | 0.138 | < 3 |

# 4 Frequency Stability Test

## Limit

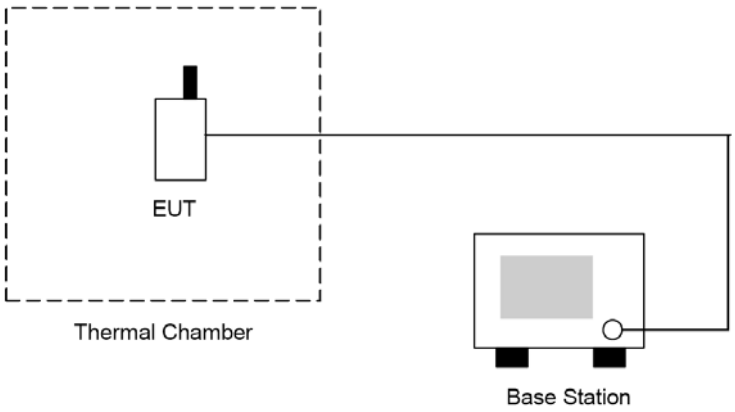
According to the FCC rule shall be tested the frequency stability. The rule is defined that" The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation. The test extreme voltage is according to the 2.1055(d)(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment and the extreme temperature rule is comply with the 2.1055(a)(1) -30℃ ~ 50℃.

## Test Instruments

| Equipment | Manufacturer | Model No. | Serial No. | Cal. Date | Remark |
|---|---|---|---|---|---|
| Wideband Radio Communication Test | R & S | CMW500 | 103168 | 11/04/2016 | 1 year |
| Temperature & Humidity Chamber | TAICHY | MHU-225LA | 980729 | 04/18/2016 | 1 year |
| Test Site | ATL | TE05 | TE05 | N.C.R. | ----- |

Note: N.C.R. = No Calibration Request.

## Setup



## Test Procedure

The measurement is made according to FCC rules:

1. The EUT and test equipment were set up as shown on the following section.
2. With all power removed, the temperature was decreased to -30℃ and permitted to stabilize for three hours. Power was applied and the maximum change in frequency was note within one minute.
3. With power OFF, the temperature was raised in 10℃ steps. The sample was permitted to stabilize at each step for at least one-half hour. Power was applied and the maximum frequency change was noted within one minute.
4. The EUT was placed in a temperature chamber at 25±5 ℃ and connected as the following section.
5. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
6. The temperature tests were performed for the worst case.
7. Test data was recorded.

## Uncertainty

The measurement uncertainty is defined as for Frequency Stability measurement is ± 10Hz.

■ **Test Result**

| Date of Test | 02/11/2017 |
|---|---|

| LTE Band 4 _ QPSK | | | | | | |
|---|---|---|---|---|---|---|
| Voltage | | | | | | |
| Channel Bandwidth | Frequency (MHz) | Voltage [Vdc] | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) |
| 20 MHz | 1732.5 | 4.25 | 20 | -4.16 | -0.0022 | ± 2.5 |
| | | 5.00 | 20 | 1.11 | 0.0006 | ± 2.5 |
| | | 5.75 | 20 | 1.76 | 0.0009 | ± 2.5 |
| Temperature | | | | | | |
| Channel Bandwidth | Frequency (MHz) | Voltage [Vdc] | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) |
| 20 MHz | 1732.5 | 5.00 | 0 | -3.72 | -0.0044 | ± 2.5 |
| | | 5.00 | 10 | -1.02 | -0.0012 | ± 2.5 |
| | | 5.00 | 20 | 13.8 | 0.0165 | ± 2.5 |
| | | 5.00 | 30 | 1.16 | 0.0014 | ± 2.5 |
| | | 5.00 | 40 | -5.02 | -0.0060 | ± 2.5 |
| | | 5.00 | 45 | 3.43 | 0.0041 | ± 2.5 |

| LTE Band 13 _ QPSK | | | | | | |
|---|---|---|---|---|---|---|
| Voltage | | | | | | |
| Channel Bandwidth | Frequency (MHz) | Voltage [Vdc] | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) |
| 10 MHz | 782.0 | 4.25 | 20 | -2.86 | -0.002 | ± 2.5 |
| | | 5.00 | 20 | -2.03 | -0.001 | ± 2.5 |
| | | 5.75 | 20 | -2.37 | -0.001 | ± 2.5 |
| Temperature | | | | | | |
| Channel Bandwidth | Frequency (MHz) | Voltage [Vdc] | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) |
| 10 MHz | 782.0 | 5.00 | 0 | -16.2 | -0.009 | ± 2.5 |
| | | 5.00 | 10 | -9.7 | -0.005 | ± 2.5 |
| | | 5.00 | 20 | -9.61 | -0.005 | ± 2.5 |
| | | 5.00 | 30 | 5.85 | 0.003 | ± 2.5 |
| | | 5.00 | 40 | 8.33 | 0.004 | ± 2.5 |
| | | 5.00 | 45 | -6.17 | -0.003 | ± 2.5 |

Note: The manufacturer declared that the EUT could work properly between temperatures 0℃ ~ 45℃.

# 5 Emission Bandwidth & Occupied Bandwidth Test

## ■ Limit

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.

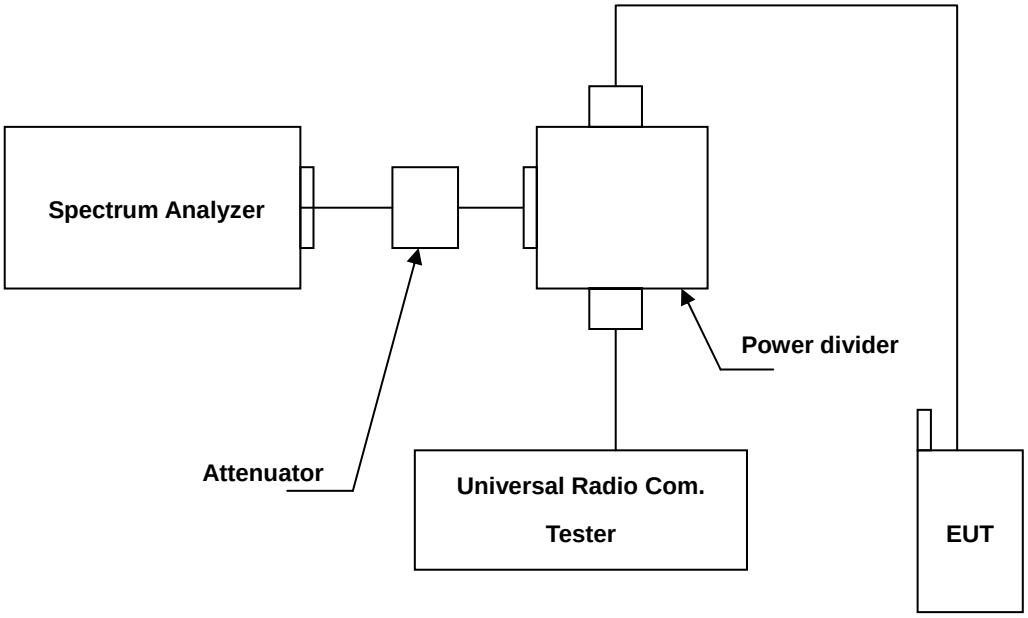
The emission bandwidth is defined as the width of the signal between two points, located at the 2 sides of the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

## ■ Test Instruments

| Equipment | Manufacturer | Model No. | Serial No. | Cal. Date | Remark |
|---|---|---|---|---|---|
| Spectrum Analyzer | Agilent | E4445A | MY45300744 | 12/19/2016 | 1 year |
| Wideband Radio Communication Test | R & S | CMW500 | 103168 | 11/04/2016 | 1 year |
| Attenuator | RADIALL | R41572000 | 0603033073 | N.C.R. | ----- |
| Power divider | Agilent | 87302C | 3239A00760 | N.C.R. | ----- |
| Test Site | ATL | TE05 | TE05 | N.C.R. | ----- |

Note: N.C.R. = No Calibration Request.

## ■ Setup



## Test Procedure

The measurement is made according to FCC rules:

a. The EUT makes a phone call to the communication simulator. The power was measured with R&S Spectrum Analyzer. All measurements were done at 3 channels. (low, middle and high operational frequency range.)

b. The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

c. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

## Uncertainty

The measurement uncertainty is defined as ± 10Hz

■ **Test Result**

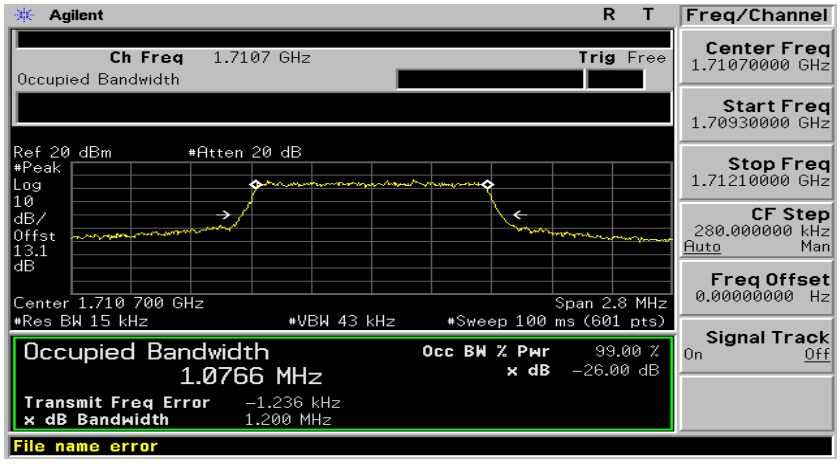
| Date of Test | 02/11/2017 |
|---|---|

| LTE Band 4 | | | | |
|---|---|---|---|---|
| Modulation | Channel Bandwidth | Frequency (MHz) | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) |
| 1.4 MHz | QPSK | 1710.7 | 1.0766 | 1.200 |
| | | 1732.5 | 1.0772 | 1.207 |
| | | 1754.3 | 1.0768 | 1.206 |
| | 16QAM | 1710.7 | 1.0765 | 1.213 |
| | | 1732.5 | 1.0768 | 1.217 |
| | | 1754.3 | 1.0754 | 1.213 |
| 3 MHz | QPSK | 1711.5 | 2.6831 | 2.975 |
| | | 1732.5 | 2.6797 | 2.960 |
| | | 1753.5 | 2.6860 | 2.967 |
| | 16QAM | 1711.5 | 2.6809 | 2.936 |
| | | 1732.5 | 2.6766 | 2.936 |
| | | 1753.5 | 2.6822 | 2.927 |
| 5 MHz | QPSK | 1712.5 | 4.4739 | 4.872 |
| | | 1732.5 | 4.4747 | 4.891 |
| | | 1752.5 | 4.4698 | 4.885 |
| | 16QAM | 1712.5 | 4.4677 | 4.896 |
| | | 1732.5 | 4.4669 | 4.898 |
| | | 1752.5 | 4.4676 | 4.913 |
| 10 MHz | QPSK | 1715.0 | 8.9248 | 9.655 |
| | | 1732.5 | 8.8975 | 9.607 |
| | | 1750.0 | 8.9372 | 9.709 |
| | 16QAM | 1715.0 | 8.9230 | 9.711 |
| | | 1732.5 | 8.9110 | 9.722 |
| | | 1750.0 | 8.9292 | 9.676 |
| 15 MHz | QPSK | 1717.5 | 13.4004 | 14.437 |
| | | 1732.5 | 13.3891 | 14.332 |
| | | 1747.5 | 13.4171 | 14.424 |
| | 16QAM | 1717.5 | 13.3874 | 14.459 |
| | | 1732.5 | 13.3728 | 14.495 |
| | | 1747.5 | 13.3818 | 14.582 |
| 20 MHz | QPSK | 1720.0 | 17.8597 | 19.409 |
| | | 1732.5 | 17.7913 | 19.128 |
| | | 1745.0 | 17.8223 | 19.244 |
| | 16QAM | 1720.0 | 17.8691 | 19.211 |
| | | 1732.5 | 17.8014 | 19.159 |
| | | 1745.0 | 17.8561 | 19.167 |

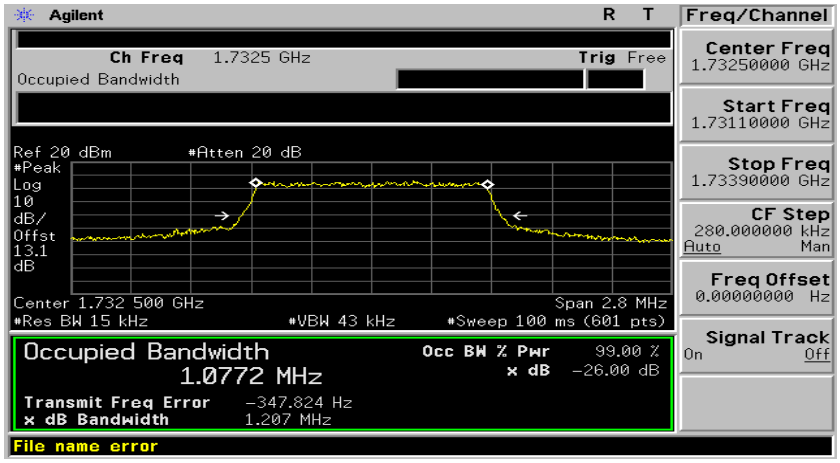
| LTE Band 13 | | | | |
|---|---|---|---|---|
| Modulation | Channel Bandwidth | Frequency (MHz) | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) |
| 5 MHz | QPSK | 779.5 | 4.4742 | 4.860 |
| | | 782.0 | 4.4632 | 4.856 |
| | | 784.5 | 4.4721 | 4.880 |
| | 16QAM | 779.5 | 4.4717 | 4.900 |
| | | 782.0 | 4.4607 | 4.894 |
| | | 784.5 | 4.4640 | 4.902 |
| 10 MHz | QPSK | 782.0 | 8.8862 | 9.603 |
| | 16QAM | 782.0 | 8.8705 | 9.566 |

■ **Test Graphs**

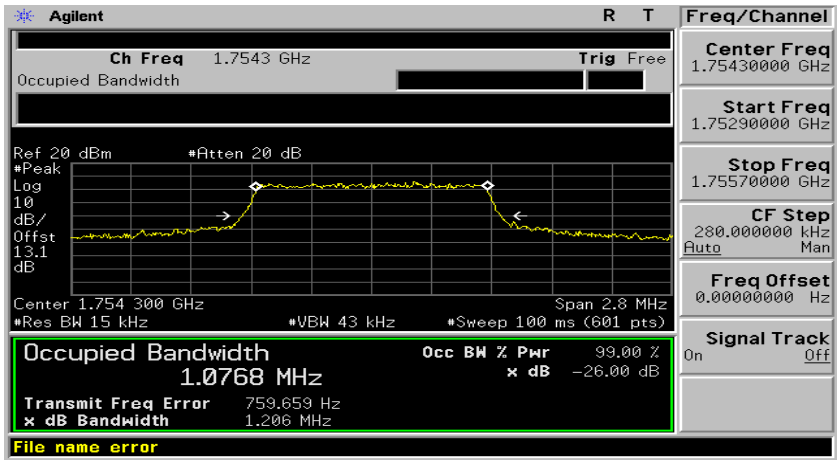
(LTE band 4_Channel Bandwidth: 1.4 MHz)_LCH_QPSK_6RB#0



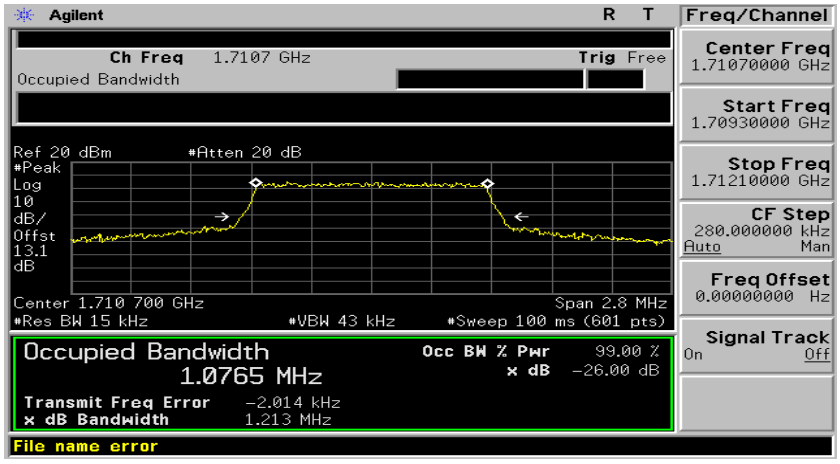

(LTE band 4_Channel Bandwidth: 1.4 MHz)_MCH_QPSK_6RB#0



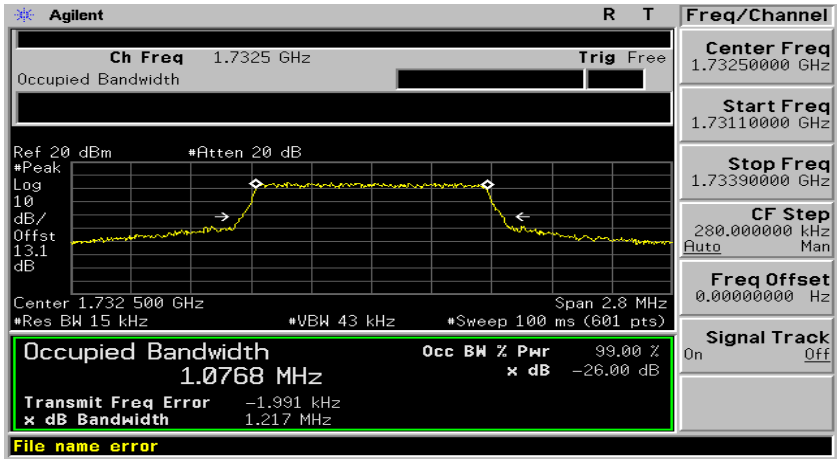

(LTE band 4_Channel Bandwidth: 1.4 MHz)_HCH_QPSK_6RB#0



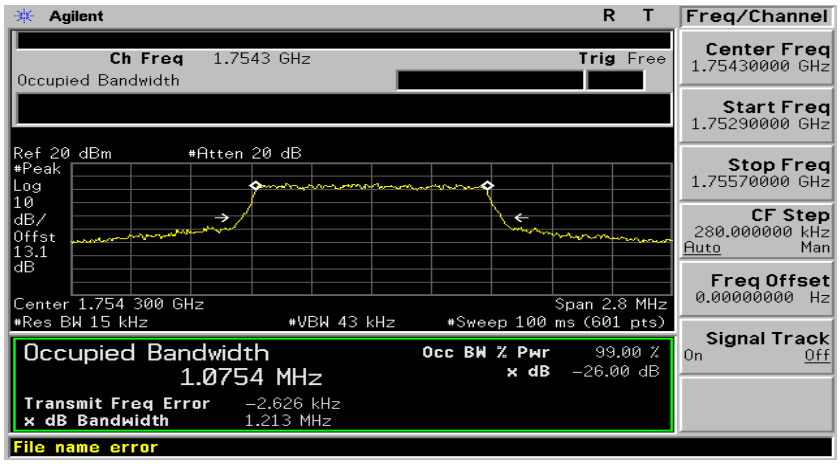
(LTE band 4_Channel Bandwidth: 1.4 MHz)_LCH_16QAM_6RB#0



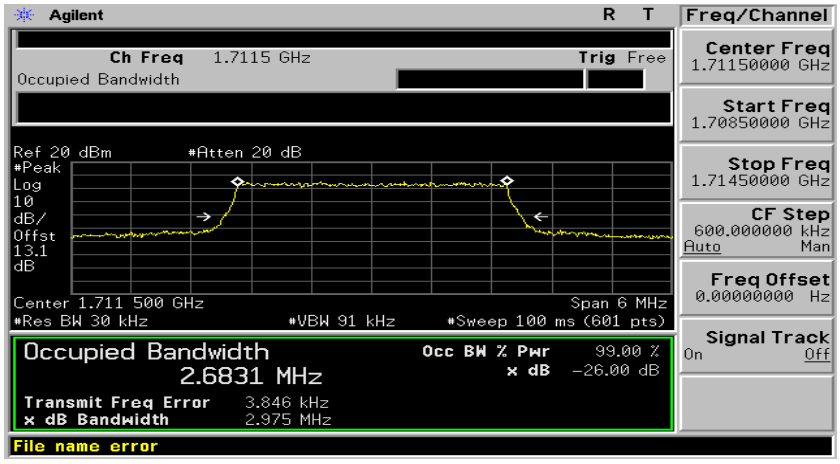

(LTE band 4_Channel Bandwidth: 1.4 MHz)_MCH_16QAM_6RB#0



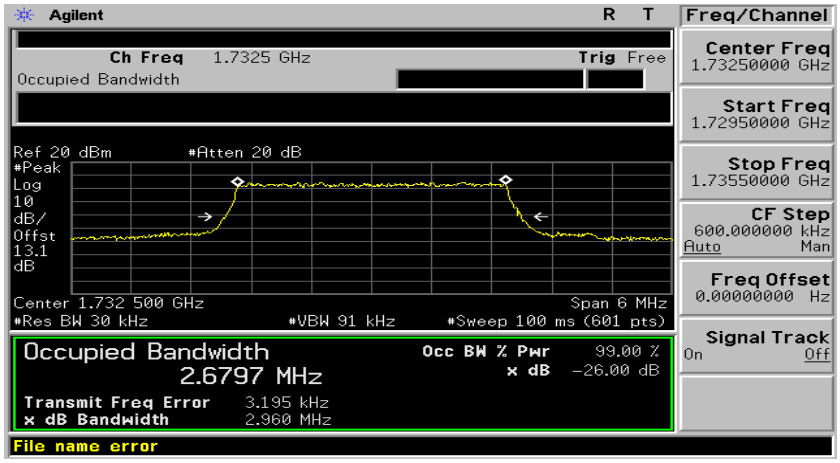

(LTE band 4_Channel Bandwidth: 1.4 MHz)_HCH_16QAM_6RB#0



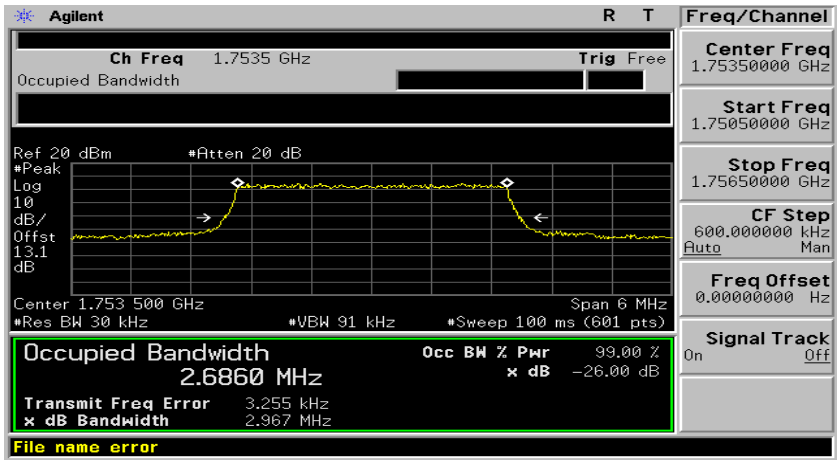
(LTE band 4_Channel Bandwidth: 3 MHz)_LCH_QPSK_15RB#0



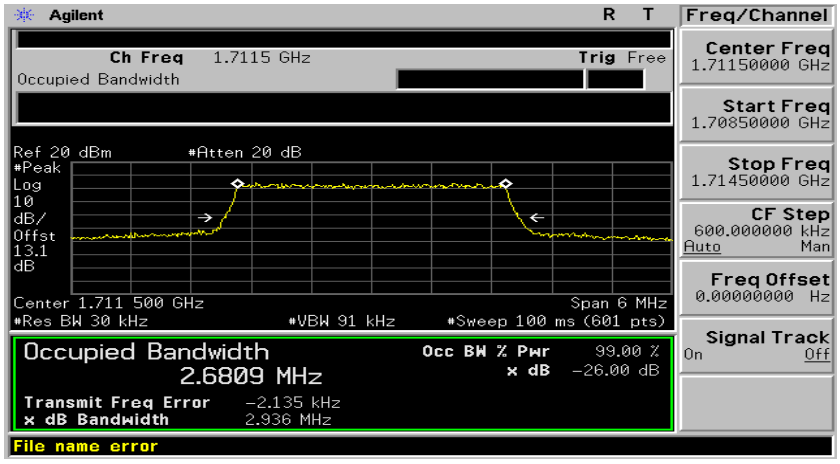

(LTE band 4_Channel Bandwidth: 3 MHz)_MCH_QPSK_15RB#0



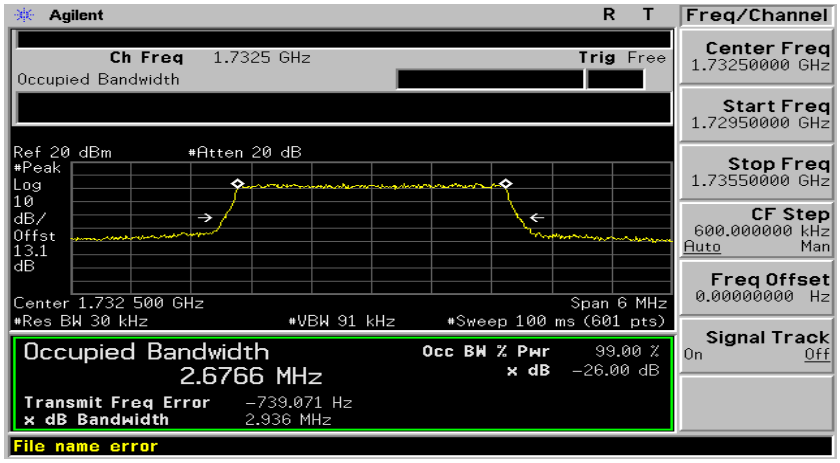

(LTE band 4_Channel Bandwidth: 3 MHz)_HCH_QPSK_15RB#0



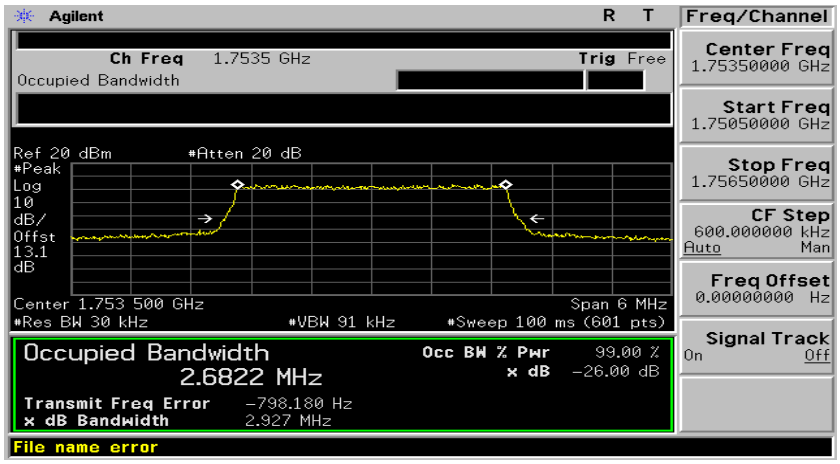
(LTE band 4_Channel Bandwidth: 3 MHz)_LCH_16QAM_15RB#0



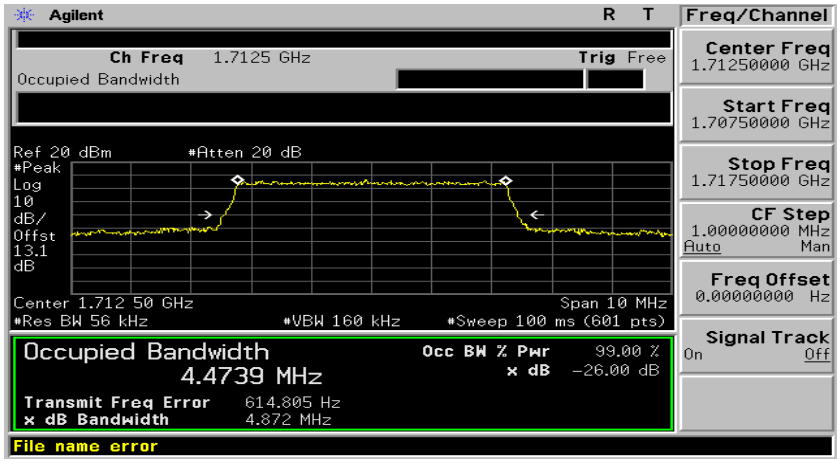

(LTE band 4_Channel Bandwidth: 3 MHz)_MCH_16QAM_15RB#0



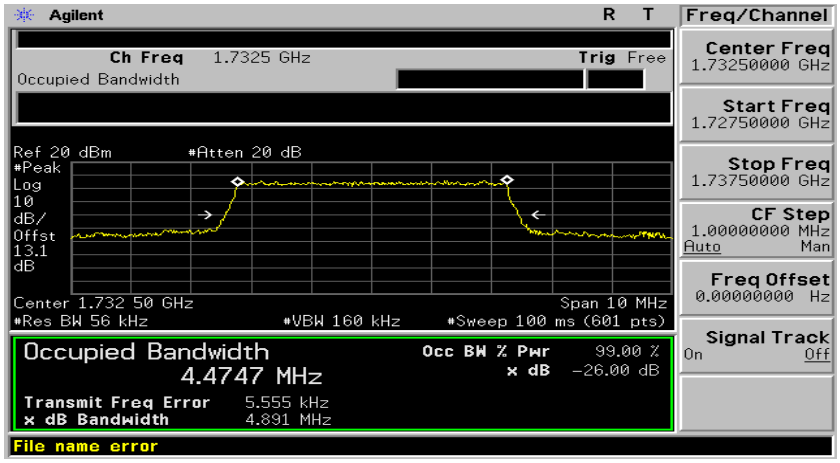

(LTE band 4_Channel Bandwidth: 3 MHz)_HCH_16QAM_15RB#0



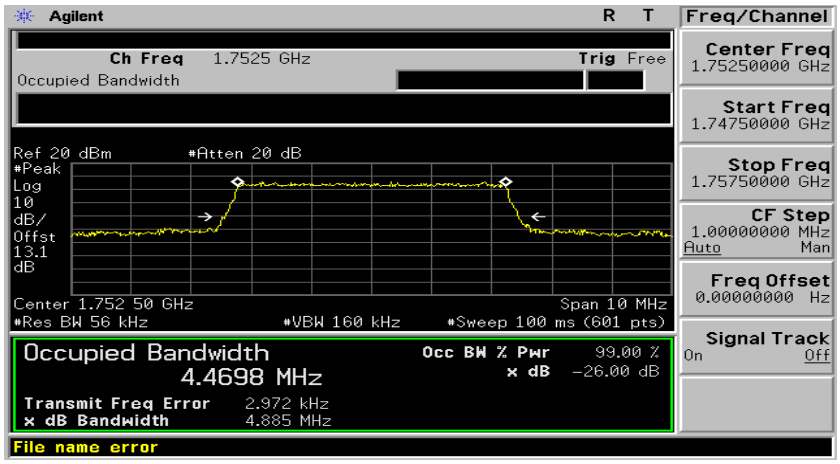
(LTE band 4_Channel Bandwidth: 5 MHz)_LCH_QPSK_25RB#0



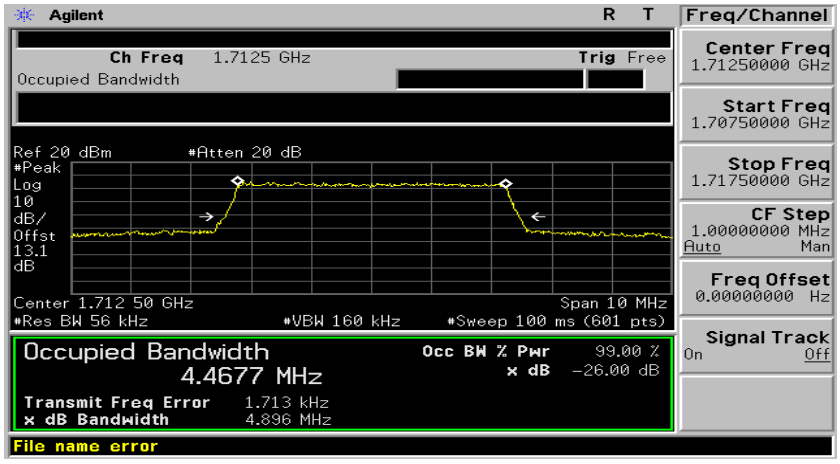

(LTE band 4_Channel Bandwidth: 5 MHz)_MCH_QPSK_25RB#0




(LTE band 4_Channel Bandwidth: 5 MHz)_HCH_QPSK_25RB#0



(LTE band 4_Channel Bandwidth: 5 MHz)_LCH_16QAM_25RB#0

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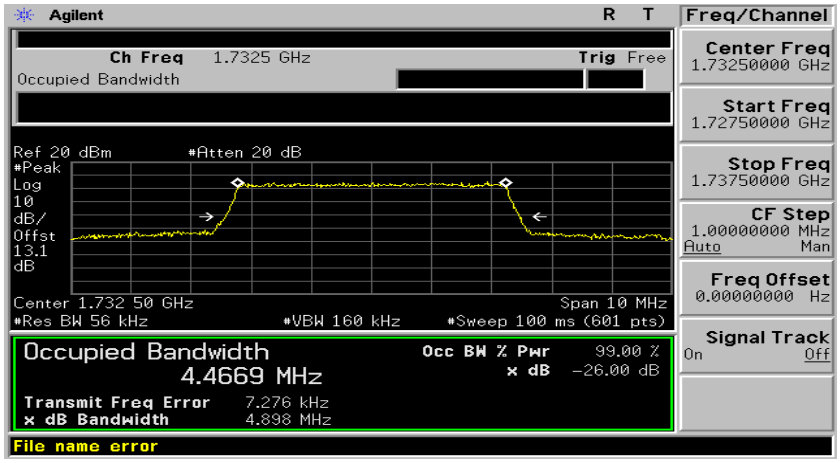
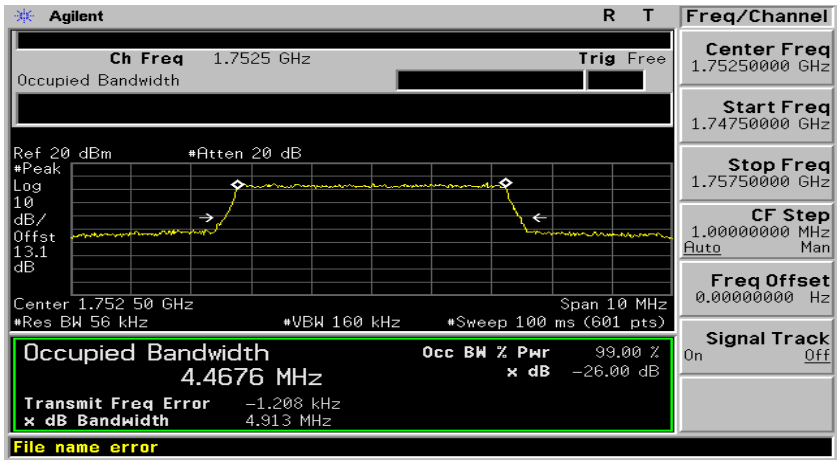
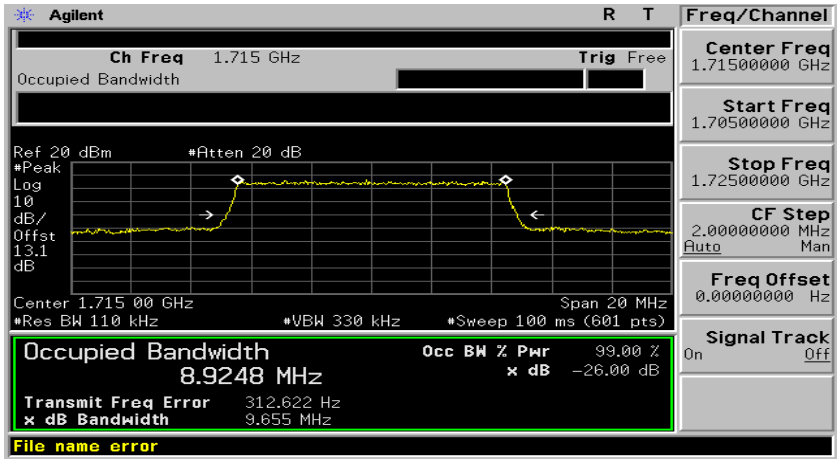



(LTE band 4_Channel Bandwidth: 5 MHz)_HCH_16QAM_25RB#0



| LTE band 4_Channel Bandwidth: 10 MHz_LCH_QPSK_50RB#0 |
|---|
|  |



| LTE band 4_Channel Bandwidth: 10 MHz_MCH_QPSK_50RB#0 |
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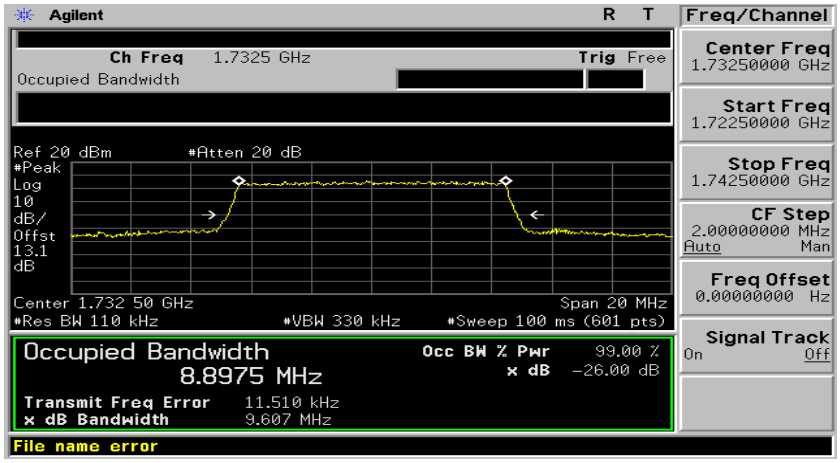
|  |



| LTE band 4_Channel Bandwidth: 10 MHz_HCH_QPSK_50RB#0 |
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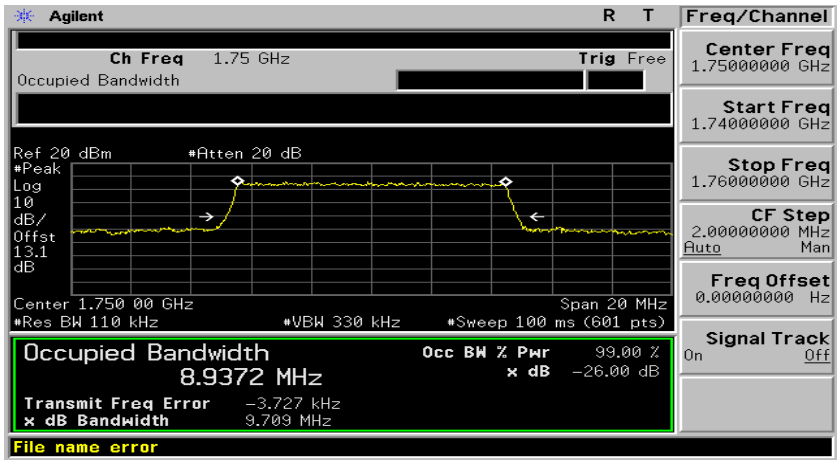
|  |

| LTE band 4_Channel Bandwidth: 10 MHz_LCH_16QAM_50RB#0 |
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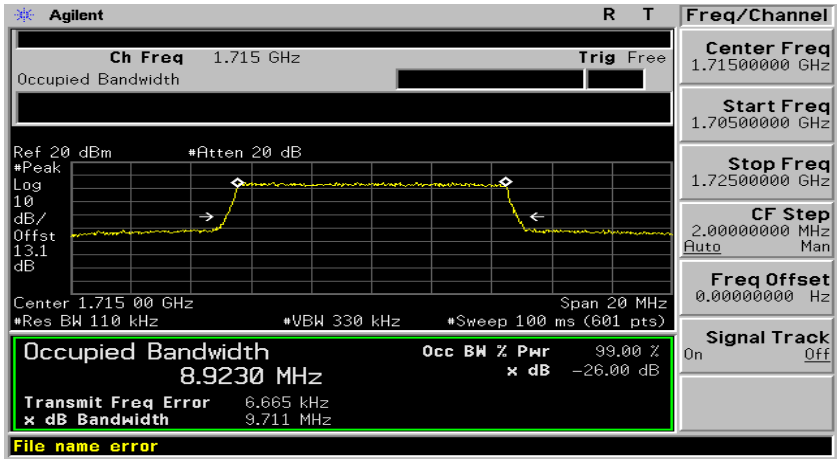
|  |



| LTE band 4_Channel Bandwidth: 10 MHz_MCH_16QAM_50RB#0 |
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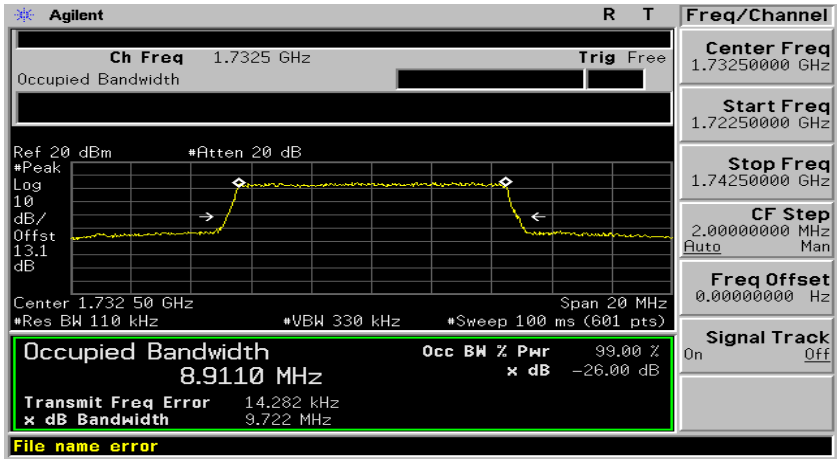
|  |



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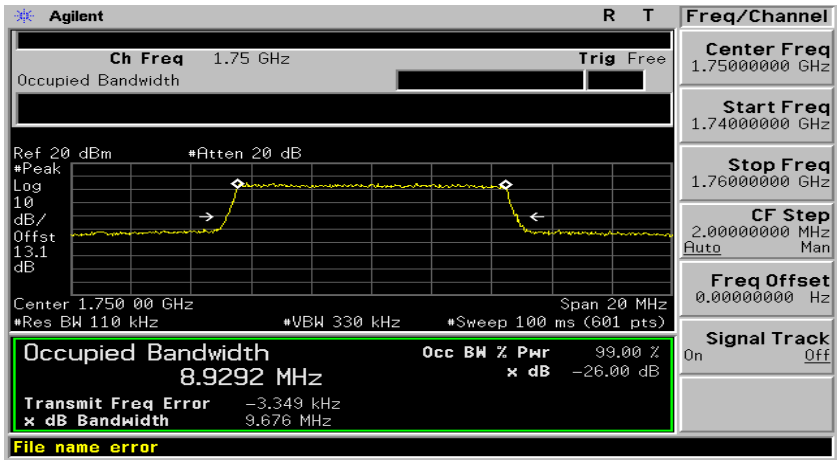
|  |

| (LTE band 4_Channel Bandwidth:15 MHz)_LCH_QPSK_75RB#0 |
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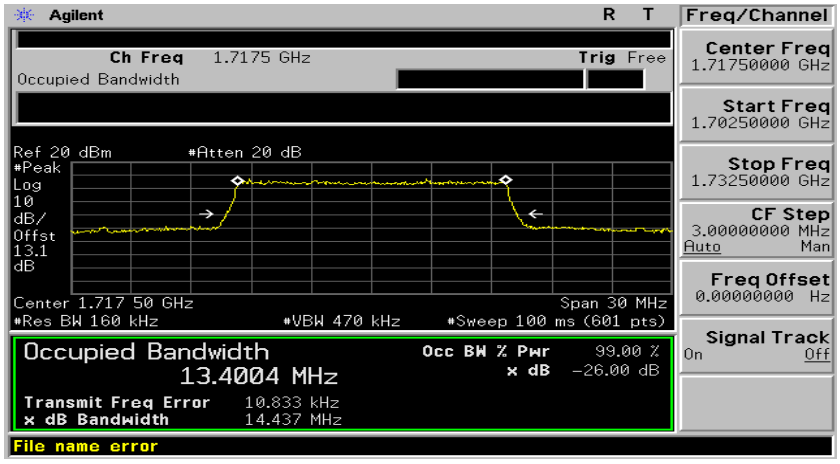
|  |



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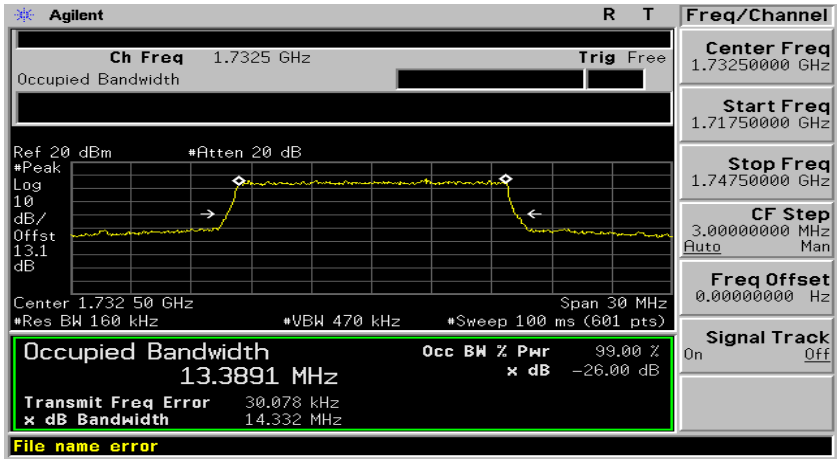
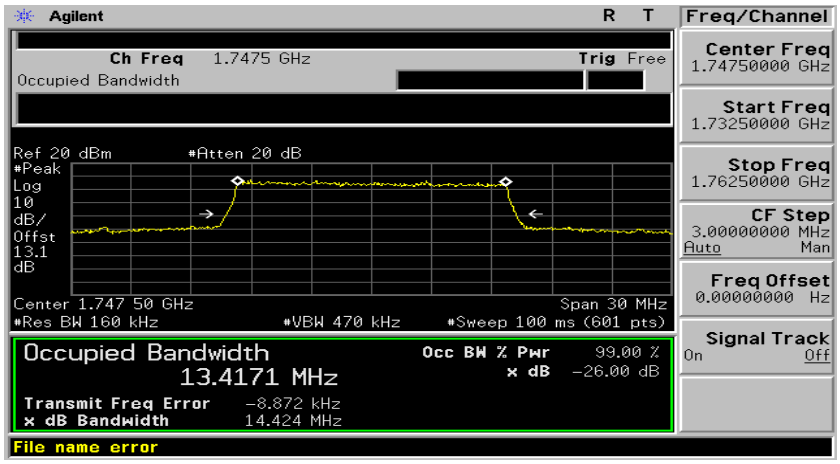
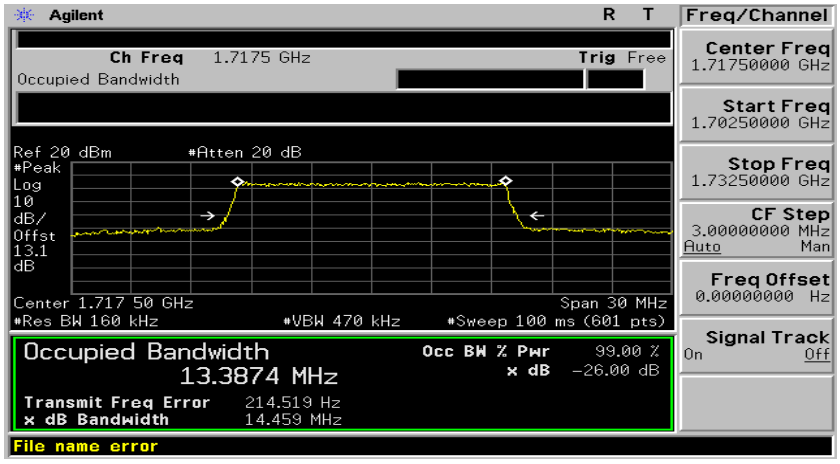
|  |



| (LTE band 4_Channel Bandwidth:15 MHz)_HCH_QPSK_75RB#0 |
|---|
|  |

(LTE band 4_Channel Bandwidth:15 MHz)_LCH_16QAM_75RB#0

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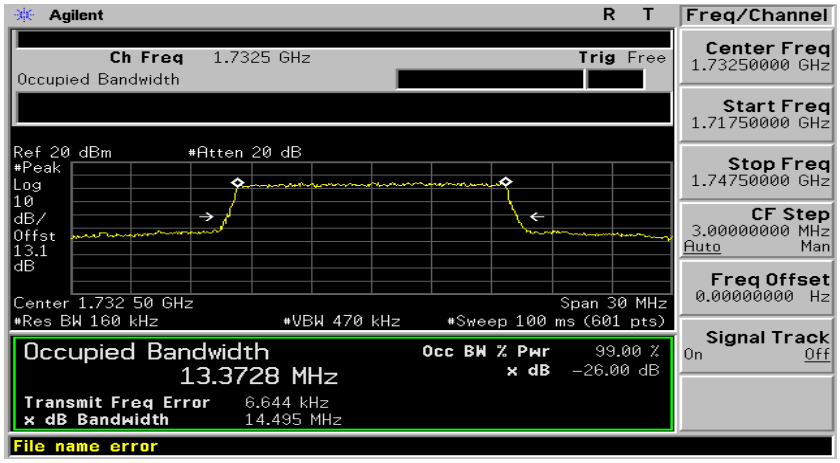


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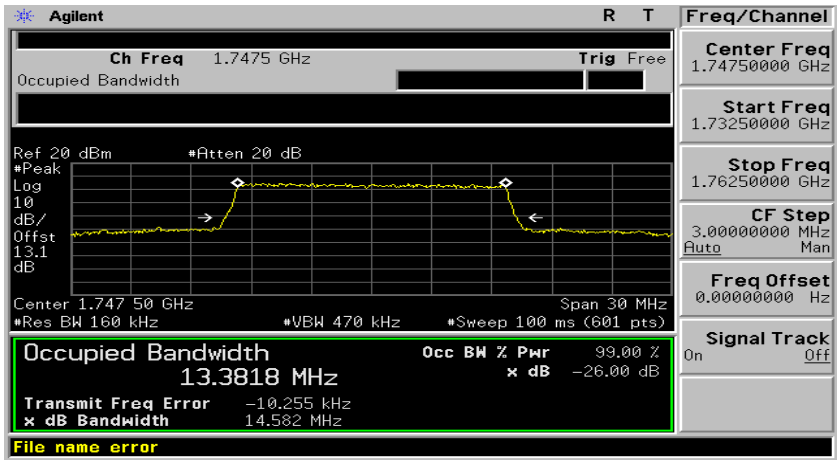
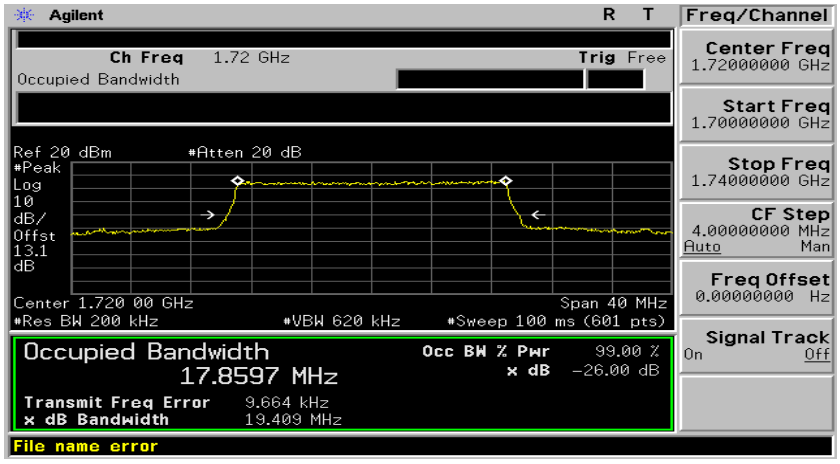
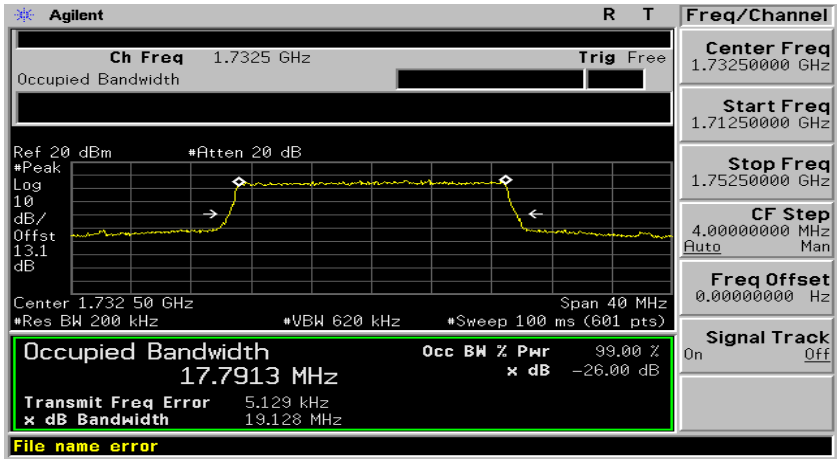


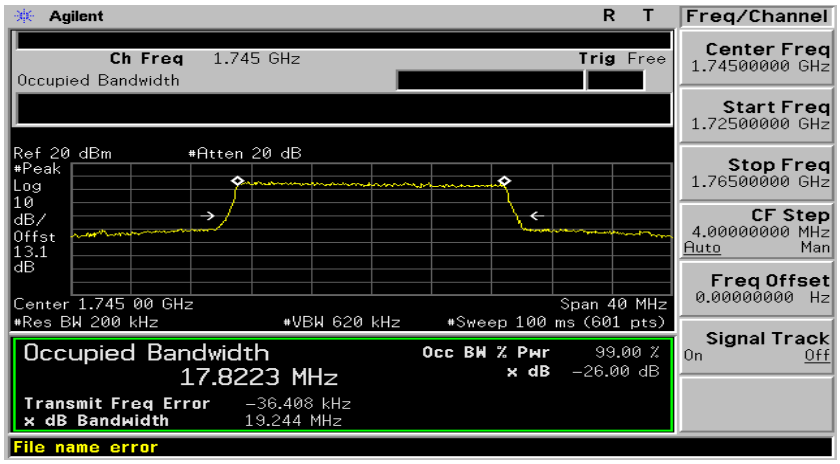
(LTE band 4_Channel Bandwidth:20 MHz)_LCH_QPSK_100RB#0




(LTE band 4_Channel Bandwidth:20 MHz)_MCH_QPSK_100RB#0




(LTE band 4_Channel Bandwidth:20 MHz)_HCH_QPSK_100RB#0



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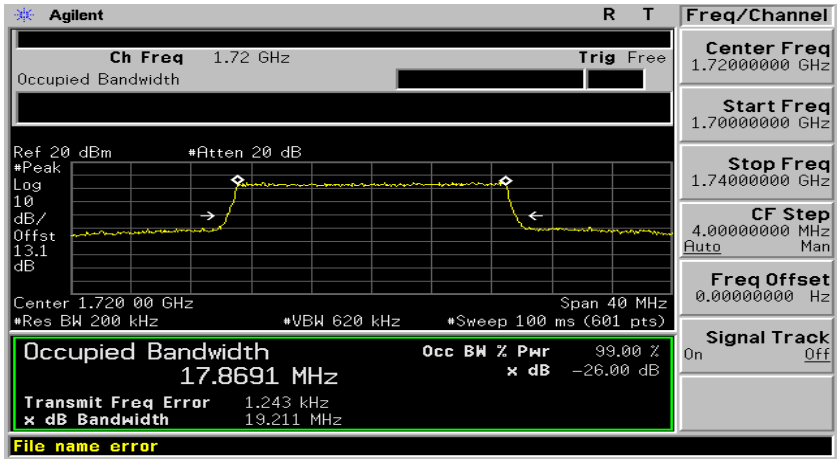
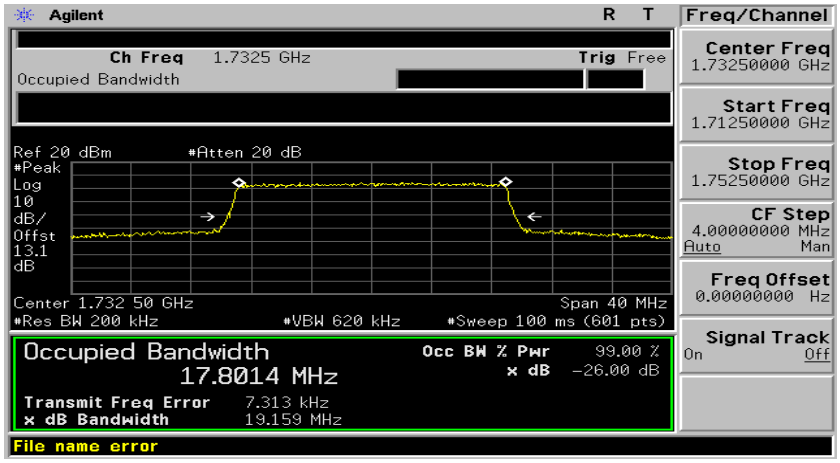
|---|
|  |



| (LTE band 4_Channel Bandwidth:20 MHz)_MCH_16QAM_100RB#0 |
|---|
|  |



| (LTE band 4_Channel Bandwidth:20 MHz)_HCH_16QAM_100RB#0 |
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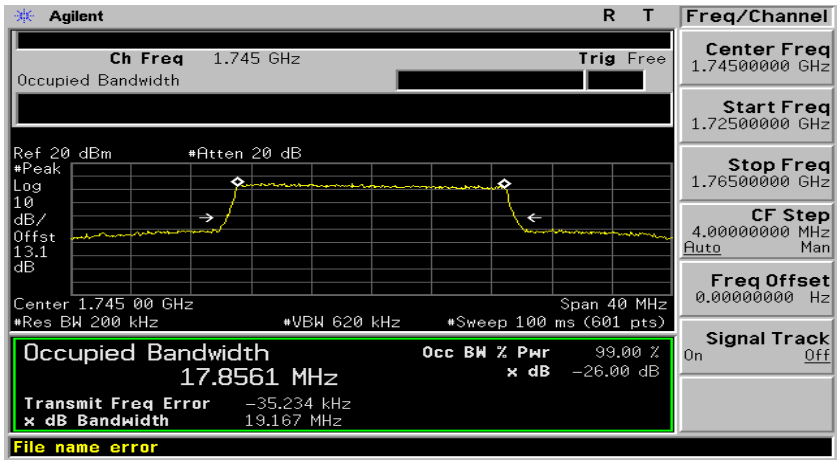
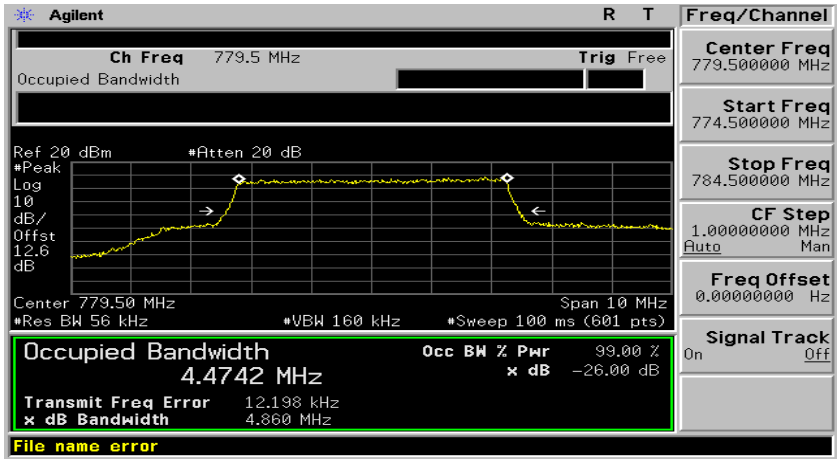
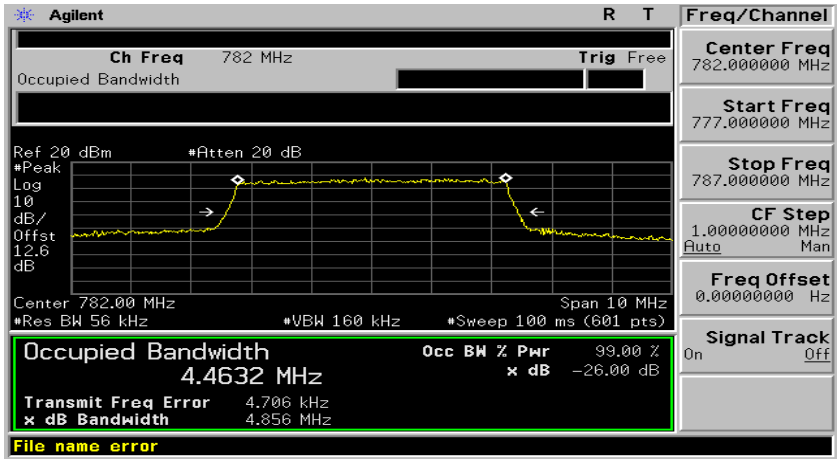
|  |

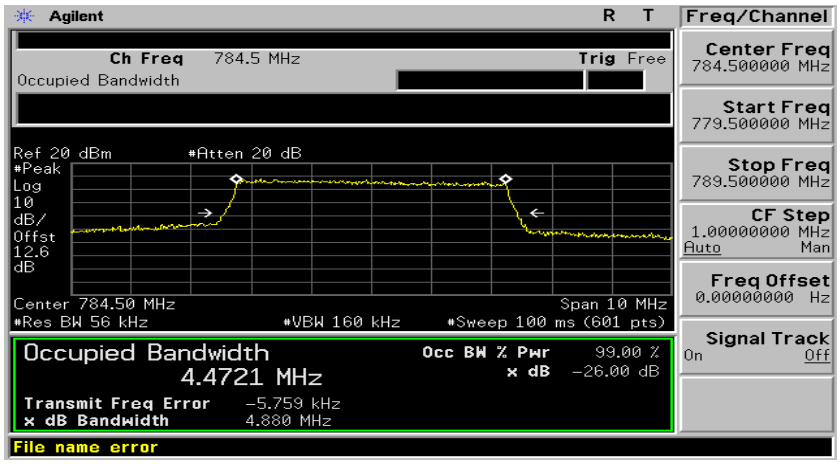
(LTE band 13_Channel Bandwidth: 5 MHz)_LCH_QPSK_25RB#0



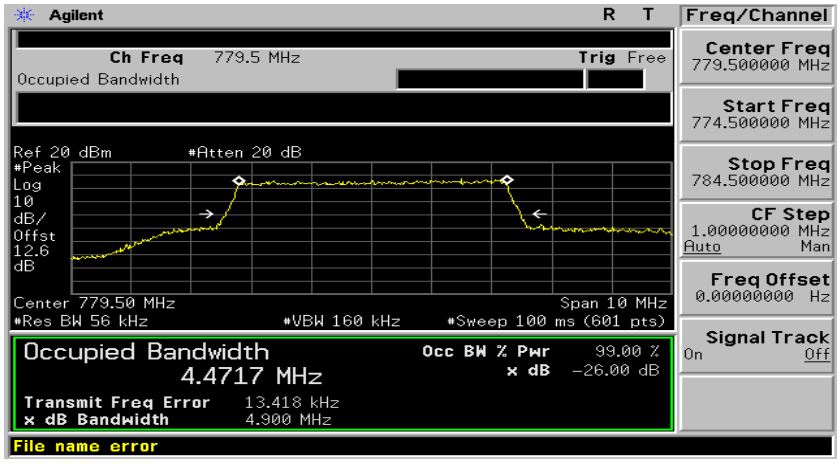

(LTE band 13_Channel Bandwidth: 5 MHz)_MCH_QPSK_25RB#0



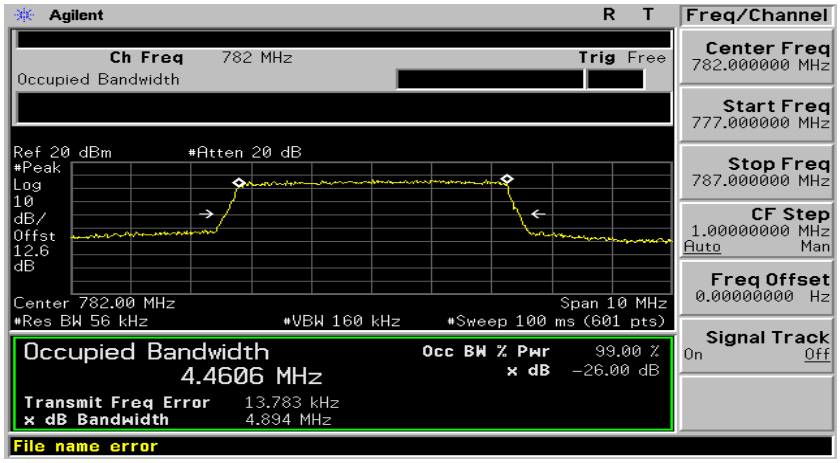

(LTE band 13_Channel Bandwidth: 5 MHz)_HCH_QPSK_25RB#0



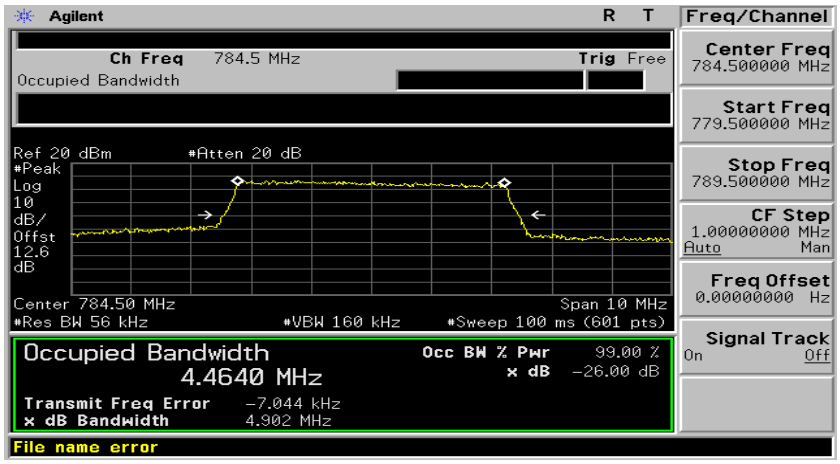
(LTE band 13_Channel Bandwidth: 5 MHz)_LCH_16QAM_25RB#0



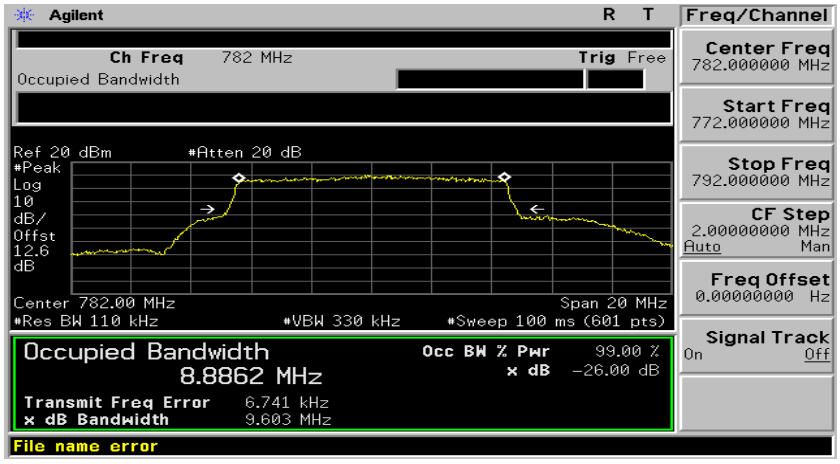

(LTE band 13_Channel Bandwidth: 5 MHz)_MCH_16QAM_25RB#0



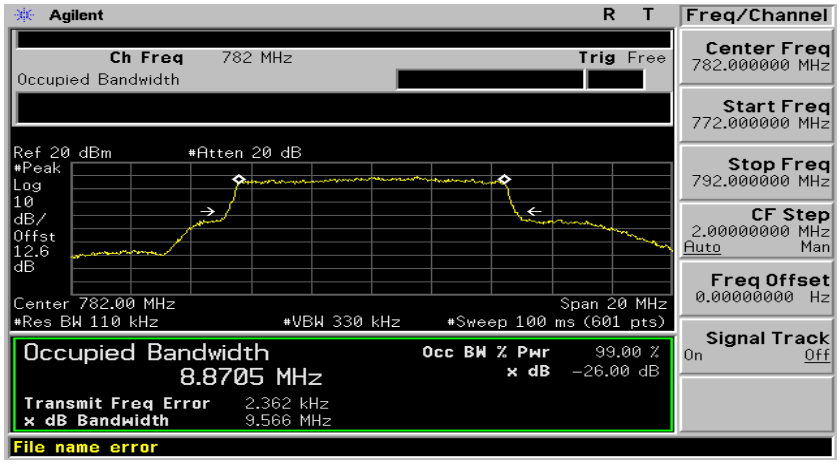

(LTE band 13_Channel Bandwidth: 5 MHz)_HCH_16QAM_25RB#0



| LTE band 13_Channel Bandwidth: 10 MHz_MCH_QPSK_50RB#0 |
|---|




| LTE band 13_Channel Bandwidth: 10 MHz_MCH_16QAM_50RB#0 |
|---|



# 6 Peak to Average Ratio Test

## ■ Limit

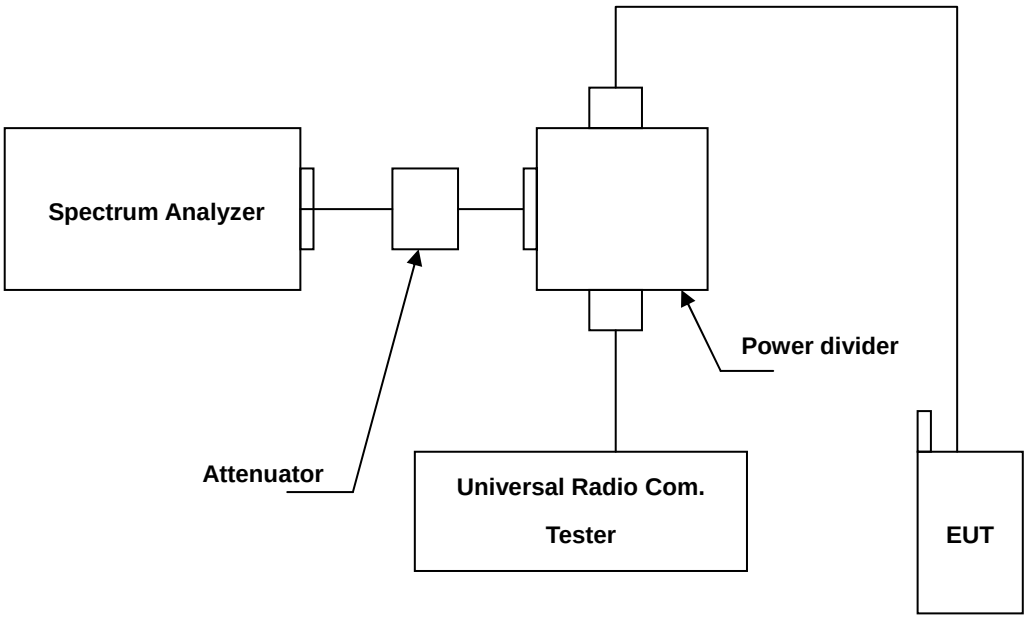
In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB.

## ■ Test Instruments

| Equipment | Manufacturer | Model No. | Serial No. | Cal. Date | Remark |
|---|---|---|---|---|---|
| Spectrum Analyzer | Agilent | E4445A | MY45300744 | 12/19/2016 | 1 year |
| Wideband Radio Communication Test | R & S | CMW500 | 103168 | 11/04/2016 | 1 year |
| Attenuator | RADIALL | R41572000 | 0603033073 | N.C.R. | ----- |
| Power divider | Agilent | 87302C | 3239A00760 | N.C.R. | ----- |
| Test Site | ATL | TE05 | TE05 | N.C.R. | ----- |

Note: N.C.R. = No Calibration Request.

## ■ Setup



- **Test Procedure**

  The measurement is made according to FCC rules:

  a. Set resolution/measurement bandwidth  signal's occupied bandwidth;

  b. Set the number of counts to a value that stabilizes the measured CCDF curve;

  c. Record the maximum PAPR level associated with a probability of 0.1%.

- **Uncertainty**

  The measurement uncertainty is defined as for Conducted Power measurement is 1.2 dB.

■ **Test Result**

| Date of Test | 02/10/2017 |
|---|---|

| LTE Band 4 | | | | | | |
|---|---|---|---|---|---|---|
| Channel Bandwidth: 1.4 MHz | | | | | | |
| Modulation | Channel | RB Configuration | | Peak-to-Average Ratio (dB) | Limit (dB) | Verdict |
| | | Size | Offset | | | |
| QPSK | LCH | 1 | 0 | 5.2 | <13 | PASS |
| | | 1 | 3 | 5.26 | <13 | PASS |
| | | 1 | 5 | 5.27 | <13 | PASS |
| | | 3 | 0 | 5.06 | <13 | PASS |
| | | 3 | 2 | 5.04 | <13 | PASS |
| | | 3 | 3 | 5.07 | <13 | PASS |
| | | 6 | 0 | 5.88 | <13 | PASS |
| | MCH | 1 | 0 | 5.9 | <13 | PASS |
| | | 1 | 3 | 5.91 | <13 | PASS |
| | | 1 | 5 | 5.99 | <13 | PASS |
| | | 3 | 0 | 5.61 | <13 | PASS |
| | | 3 | 2 | 5.64 | <13 | PASS |
| | | 3 | 3 | 5.58 | <13 | PASS |
| | | 6 | 0 | 5.87 | <13 | PASS |
| | HCH | 1 | 0 | 5.92 | <13 | PASS |
| | | 1 | 3 | 5.91 | <13 | PASS |
| | | 1 | 5 | 5.95 | <13 | PASS |
| | | 3 | 0 | 5.61 | <13 | PASS |
| | | 3 | 2 | 5.53 | <13 | PASS |
| | | 3 | 3 | 5.54 | <13 | PASS |
| | | 6 | 0 | 5.78 | <13 | PASS |

| LTE Band 4 | | | | | | |
|---|---|---|---|---|---|---|
| Channel Bandwidth: 1.4 MHz | | | | | | |
| Modulation | Channel | RB Configuration | | Peak-to-Average Ratio (dB) | Limit (dB) | Verdict |
| | | Size | Offset | | | |
| 16QAM | LCH | 1 | 0 | 5.91 | <13 | PASS |
| | | 1 | 3 | 6.02 | <13 | PASS |
| | | 1 | 5 | 5.91 | <13 | PASS |
| | | 3 | 0 | 5.93 | <13 | PASS |
| | | 3 | 2 | 5.93 | <13 | PASS |
| | | 3 | 3 | 5.96 | <13 | PASS |
| | | 6 | 0 | 5.94 | <13 | PASS |
| | MCH | 1 | 0 | 5.81 | <13 | PASS |
| | | 1 | 3 | 6.02 | <13 | PASS |
| | | 1 | 5 | 5.89 | <13 | PASS |
| | | 3 | 0 | 5.86 | <13 | PASS |
| | | 3 | 2 | 5.84 | <13 | PASS |
| | | 3 | 3 | 5.88 | <13 | PASS |
| | | 6 | 0 | 5.92 | <13 | PASS |
| | HCH | 1 | 0 | 5.72 | <13 | PASS |
| | | 1 | 3 | 5.81 | <13 | PASS |
| | | 1 | 5 | 5.88 | <13 | PASS |
| | | 3 | 0 | 5.75 | <13 | PASS |
| | | 3 | 2 | 5.81 | <13 | PASS |
| | | 3 | 3 | 5.79 | <13 | PASS |
| | | 6 | 0 | 5.8 | <13 | PASS |

| LTE Band 4 | | | | | | |
|---|---|---|---|---|---|---|
| Channel Bandwidth: 3 MHz | | | | | | |
| Modulation | Channel | RB Configuration | | Peak-to-Average Ratio | Limit | Verdict |
| | | Size | Offset | [dB] | [dB] | |
| QPSK | LCH | 1 | 0 | 5.32 | <13 | PASS |
| | | 1 | 7 | 5.26 | <13 | PASS |
| | | 1 | 14 | 5.29 | <13 | PASS |
| | | 8 | 0 | 5.78 | <13 | PASS |
| | | 8 | 4 | 5.89 | <13 | PASS |
| | | 8 | 7 | 5.9 | <13 | PASS |
| | | 15 | 0 | 5.88 | <13 | PASS |
| | MCH | 1 | 0 | 5.85 | <13 | PASS |
| | | 1 | 7 | 5.91 | <13 | PASS |
| | | 1 | 14 | 5.91 | <13 | PASS |
| | | 8 | 0 | 5.87 | <13 | PASS |
| | | 8 | 4 | 5.86 | <13 | PASS |
| | | 8 | 7 | 5.86 | <13 | PASS |
| | | 15 | 0 | 5.89 | <13 | PASS |
| | HCH | 1 | 0 | 5.88 | <13 | PASS |
| | | 1 | 7 | 5.87 | <13 | PASS |
| | | 1 | 14 | 5.93 | <13 | PASS |
| | | 8 | 0 | 5.75 | <13 | PASS |
| | | 8 | 4 | 5.75 | <13 | PASS |
| | | 8 | 7 | 5.79 | <13 | PASS |
| | | 15 | 0 | 5.84 | <13 | PASS |
| 16QAM | LCH | 1 | 0 | 5.94 | <13 | PASS |
| | | 1 | 7 | 5.83 | <13 | PASS |
| | | 1 | 14 | 5.78 | <13 | PASS |
| | | 8 | 0 | 5.93 | <13 | PASS |
| | | 8 | 4 | 5.89 | <13 | PASS |
| | | 8 | 7 | 5.92 | <13 | PASS |
| | | 15 | 0 | 6 | <13 | PASS |
| | MCH | 1 | 0 | 5.98 | <13 | PASS |
| | | 1 | 7 | 5.95 | <13 | PASS |
| | | 1 | 14 | 5.88 | <13 | PASS |
| | | 8 | 0 | 5.92 | <13 | PASS |
| | | 8 | 4 | 5.84 | <13 | PASS |
| | | 8 | 7 | 5.89 | <13 | PASS |
| | | 15 | 0 | 5.97 | <13 | PASS |
| | HCH | 1 | 0 | 5.69 | <13 | PASS |
| | | 1 | 7 | 5.98 | <13 | PASS |
| | | 1 | 14 | 5.82 | <13 | PASS |
| | | 8 | 0 | 5.92 | <13 | PASS |
| | | 8 | 4 | 5.86 | <13 | PASS |
| | | 8 | 7 | 5.88 | <13 | PASS |
| | | 15 | 0 | 5.88 | <13 | PASS |

| LTE Band 4 | | | | | | |
|---|---|---|---|---|---|---|
| Channel Bandwidth: 5 MHz | | | | | | |
| Modulation | Channel | RB Configuration | | Peak-to-Average Ratio | Limit | Verdict |
| | | Size | Offset | [dB] | [dB] | |
| QPSK | LCH | 1 | 0 | 5.52 | <13 | PASS |
| | | 1 | 12 | 5.45 | <13 | PASS |
| | | 1 | 24 | 5.5 | <13 | PASS |
| | | 12 | 0 | 5.75 | <13 | PASS |
| | | 12 | 6 | 5.77 | <13 | PASS |
| | | 12 | 13 | 5.82 | <13 | PASS |
| | | 25 | 0 | 5.77 | <13 | PASS |
| | MCH | 1 | 0 | 5.92 | <13 | PASS |
| | | 1 | 12 | 5.89 | <13 | PASS |
| | | 1 | 24 | 5.86 | <13 | PASS |
| | | 12 | 0 | 5.97 | <13 | PASS |
| | | 12 | 6 | 5.91 | <13 | PASS |
| | | 12 | 13 | 5.92 | <13 | PASS |
| | | 25 | 0 | 5.87 | <13 | PASS |
| | HCH | 1 | 0 | 5.84 | <13 | PASS |
| | | 1 | 12 | 5.79 | <13 | PASS |
| | | 1 | 24 | 5.85 | <13 | PASS |
| | | 12 | 0 | 5.74 | <13 | PASS |
| | | 12 | 6 | 5.76 | <13 | PASS |
| | | 12 | 13 | 5.81 | <13 | PASS |
| | | 25 | 0 | 5.73 | <13 | PASS |
| 16QAM | LCH | 1 | 0 | 5.75 | <13 | PASS |
| | | 1 | 12 | 5.8 | <13 | PASS |
| | | 1 | 24 | 5.69 | <13 | PASS |
| | | 12 | 0 | 5.85 | <13 | PASS |
| | | 12 | 6 | 5.81 | <13 | PASS |
| | | 12 | 13 | 5.9 | <13 | PASS |
| | | 25 | 0 | 5.89 | <13 | PASS |
| | MCH | 1 | 0 | 5.76 | <13 | PASS |
| | | 1 | 12 | 5.78 | <13 | PASS |
| | | 1 | 24 | 5.66 | <13 | PASS |
| | | 12 | 0 | 6.03 | <13 | PASS |
| | | 12 | 6 | 5.99 | <13 | PASS |
| | | 12 | 13 | 5.96 | <13 | PASS |
| | | 25 | 0 | 6.14 | <13 | PASS |
| | HCH | 1 | 0 | 5.7 | <13 | PASS |
| | | 1 | 12 | 5.77 | <13 | PASS |
| | | 1 | 24 | 5.95 | <13 | PASS |
| | | 12 | 0 | 5.81 | <13 | PASS |
| | | 12 | 6 | 5.8 | <13 | PASS |
| | | 12 | 13 | 5.91 | <13 | PASS |
| | | 25 | 0 | 5.98 | <13 | PASS |

| LTE Band 4 | | | | | | |
|---|---|---|---|---|---|---|
| Channel Bandwidth: 10 MHz | | | | | | |
| Modulation | Channel | RB Configuration | | Peak-to-Average Ratio | Limit | Verdict |
| | | Size | Offset | [dB] | [dB] | |
| QPSK | LCH | 1 | 0 | 5.2 | <13 | PASS |
| | | 1 | 24 | 5.29 | <13 | PASS |
| | | 1 | 49 | 5.57 | <13 | PASS |
| | | 25 | 0 | 5.75 | <13 | PASS |
| | | 25 | 12 | 5.69 | <13 | PASS |
| | | 25 | 25 | 5.89 | <13 | PASS |
| | | 50 | 0 | 5.76 | <13 | PASS |
| | MCH | 1 | 0 | 5.98 | <13 | PASS |
| | | 1 | 24 | 5.98 | <13 | PASS |
| | | 1 | 49 | 5.9 | <13 | PASS |
| | | 25 | 0 | 6.13 | <13 | PASS |
| | | 25 | 12 | 6.07 | <13 | PASS |
| | | 25 | 25 | 5.99 | <13 | PASS |
| | | 50 | 0 | 5.92 | <13 | PASS |
| | HCH | 1 | 0 | 5.5 | <13 | PASS |
| | | 1 | 24 | 5.54 | <13 | PASS |
| | | 1 | 49 | 5.84 | <13 | PASS |
| | | 25 | 0 | 5.63 | <13 | PASS |
| | | 25 | 12 | 5.68 | <13 | PASS |
| | | 25 | 25 | 5.77 | <13 | PASS |
| | | 50 | 0 | 5.6 | <13 | PASS |
| 16QAM | LCH | 1 | 0 | 6.17 | <13 | PASS |
| | | 1 | 24 | 5.81 | <13 | PASS |
| | | 1 | 49 | 5.96 | <13 | PASS |
| | | 25 | 0 | 5.93 | <13 | PASS |
| | | 25 | 12 | 6.01 | <13 | PASS |
| | | 25 | 25 | 6.07 | <13 | PASS |
| | | 50 | 0 | 5.9 | <13 | PASS |
| | MCH | 1 | 0 | 6.32 | <13 | PASS |
| | | 1 | 24 | 6.2 | <13 | PASS |
| | | 1 | 49 | 6.3 | <13 | PASS |
| | | 25 | 0 | 6.35 | <13 | PASS |
| | | 25 | 12 | 6.29 | <13 | PASS |
| | | 25 | 25 | 6.23 | <13 | PASS |
| | | 50 | 0 | 6.14 | <13 | PASS |
| | HCH | 1 | 0 | 5.75 | <13 | PASS |
| | | 1 | 24 | 5.58 | <13 | PASS |
| | | 1 | 49 | 5.83 | <13 | PASS |
| | | 25 | 0 | 5.7 | <13 | PASS |
| | | 25 | 12 | 5.71 | <13 | PASS |
| | | 25 | 25 | 5.83 | <13 | PASS |
| | | 50 | 0 | 5.73 | <13 | PASS |

| LTE Band 4 | | | | | | |
|---|---|---|---|---|---|---|
| Channel Bandwidth: 15 MHz | | | | | | |
| Modulation | Channel | RB Configuration | | Peak-to-Average Ratio | Limit | Verdict |
| | | Size | Offset | [dB] | [dB] | |
| QPSK | LCH | 1 | 0 | 5 | <13 | PASS |
| | | 1 | 37 | 5.18 | <13 | PASS |
| | | 1 | 74 | 5.45 | <13 | PASS |
| | | 37 | 0 | 5.64 | <13 | PASS |
| | | 37 | 18 | 5.75 | <13 | PASS |
| | | 37 | 38 | 5.85 | <13 | PASS |
| | | 75 | 0 | 5.68 | <13 | PASS |
| | MCH | 1 | 0 | 5.34 | <13 | PASS |
| | | 1 | 37 | 5.53 | <13 | PASS |
| | | 1 | 74 | 5.28 | <13 | PASS |
| | | 37 | 0 | 5.99 | <13 | PASS |
| | | 37 | 18 | 5.91 | <13 | PASS |
| | | 37 | 38 | 5.82 | <13 | PASS |
| | | 75 | 0 | 5.73 | <13 | PASS |
| | HCH | 1 | 0 | 5.19 | <13 | PASS |
| | | 1 | 37 | 5.17 | <13 | PASS |
| | | 1 | 74 | 5.38 | <13 | PASS |
| | | 37 | 0 | 5.54 | <13 | PASS |
| | | 37 | 18 | 5.58 | <13 | PASS |
| | | 37 | 38 | 5.72 | <13 | PASS |
| | | 75 | 0 | 5.54 | <13 | PASS |
| 16QAM | LCH | 1 | 0 | 5.83 | <13 | PASS |
| | | 1 | 37 | 6.12 | <13 | PASS |
| | | 1 | 74 | 6.39 | <13 | PASS |
| | | 37 | 0 | 5.94 | <13 | PASS |
| | | 37 | 18 | 6 | <13 | PASS |
| | | 37 | 38 | 6.15 | <13 | PASS |
| | | 75 | 0 | 6 | <13 | PASS |
| | MCH | 1 | 0 | 6.17 | <13 | PASS |
| | | 1 | 37 | 6.13 | <13 | PASS |
| | | 1 | 74 | 6.17 | <13 | PASS |
| | | 37 | 0 | 6.35 | <13 | PASS |
| | | 37 | 18 | 6.19 | <13 | PASS |
| | | 37 | 38 | 6.16 | <13 | PASS |
| | | 75 | 0 | 6.11 | <13 | PASS |
| | HCH | 1 | 0 | 5.94 | <13 | PASS |
| | | 1 | 37 | 5.53 | <13 | PASS |
| | | 1 | 74 | 6.05 | <13 | PASS |
| | | 37 | 0 | 5.81 | <13 | PASS |
| | | 37 | 18 | 5.75 | <13 | PASS |
| | | 37 | 38 | 5.97 | <13 | PASS |
| | | 75 | 0 | 5.79 | <13 | PASS |

| LTE Band 4 | | | | | | |
|---|---|---|---|---|---|---|
| Channel Bandwidth: 20 MHz | | | | | | |
| Modulation | Channel | RB Configuration | | Peak-to-Average Ratio | Limit | Verdict |
| | | Size | Offset | [dB] | [dB] | |
| QPSK | LCH | 1 | 0 | 4.79 | <13 | PASS |
| | | 1 | 49 | 5.32 | <13 | PASS |
| | | 1 | 99 | 5.54 | <13 | PASS |
| | | 50 | 0 | 5.71 | <13 | PASS |
| | | 50 | 25 | 5.95 | <13 | PASS |
| | | 50 | 50 | 6.11 | <13 | PASS |
| | | 100 | 0 | 5.65 | <13 | PASS |
| | MCH | 1 | 0 | 4.92 | <13 | PASS |
| | | 1 | 49 | 5.62 | <13 | PASS |
| | | 1 | 99 | 5.17 | <13 | PASS |
| | | 50 | 0 | 6.08 | <13 | PASS |
| | | 50 | 25 | 6.09 | <13 | PASS |
| | | 50 | 50 | 6 | <13 | PASS |
| | | 100 | 0 | 5.6 | <13 | PASS |
| | HCH | 1 | 0 | 5.4 | <13 | PASS |
| | | 1 | 49 | 5.28 | <13 | PASS |
| | | 1 | 99 | 5.33 | <13 | PASS |
| | | 50 | 0 | 5.68 | <13 | PASS |
| | | 50 | 25 | 5.61 | <13 | PASS |
| | | 50 | 50 | 5.69 | <13 | PASS |
| | | 100 | 0 | 5.42 | <13 | PASS |
| 16QAM | LCH | 1 | 0 | 5.63 | <13 | PASS |
| | | 1 | 49 | 6.18 | <13 | PASS |
| | | 1 | 99 | 6.34 | <13 | PASS |
| | | 50 | 0 | 6.13 | <13 | PASS |
| | | 50 | 25 | 6.29 | <13 | PASS |
| | | 50 | 50 | 6.48 | <13 | PASS |
| | | 100 | 0 | 6.09 | <13 | PASS |
| | MCH | 1 | 0 | 6.1 | <13 | PASS |
| | | 1 | 49 | 6.38 | <13 | PASS |
| | | 1 | 99 | 5.87 | <13 | PASS |
| | | 50 | 0 | 6.45 | <13 | PASS |
| | | 50 | 25 | 6.36 | <13 | PASS |
| | | 50 | 50 | 6.28 | <13 | PASS |
| | | 100 | 0 | 6.13 | <13 | PASS |
| | HCH | 1 | 0 | 6.32 | <13 | PASS |
| | | 1 | 49 | 5.66 | <13 | PASS |
| | | 1 | 99 | 5.73 | <13 | PASS |
| | | 50 | 0 | 5.88 | <13 | PASS |
| | | 50 | 25 | 5.77 | <13 | PASS |
| | | 50 | 50 | 5.92 | <13 | PASS |
| | | 100 | 0 | 5.75 | <13 | PASS |

| LTE Band 13 | | | | | | |
|---|---|---|---|---|---|---|
| Channel Bandwidth: 5 MHz | | | | | | |
| Modulation | Channel | RB Configuration | | Peak-to-Average Ratio | Limit | Verdict |
| | | Size | Offset | [dB] | [dB] | |
| QPSK | LCH | 1 | 0 | 6.09 | <13 | PASS |
| | | 1 | 12 | 6.53 | <13 | PASS |
| | | 1 | 24 | 6.45 | <13 | PASS |
| | | 12 | 0 | 6.32 | <13 | PASS |
| | | 12 | 6 | 6.48 | <13 | PASS |
| | | 12 | 13 | 6.48 | <13 | PASS |
| | | 25 | 0 | 6.14 | <13 | PASS |
| | MCH | 1 | 0 | 5.87 | <13 | PASS |
| | | 1 | 12 | 5.76 | <13 | PASS |
| | | 1 | 24 | 6.04 | <13 | PASS |
| | | 12 | 0 | 6 | <13 | PASS |
| | | 12 | 6 | 5.83 | <13 | PASS |
| | | 12 | 13 | 5.95 | <13 | PASS |
| | | 25 | 0 | 5.84 | <13 | PASS |
| | HCH | 1 | 0 | 5.66 | <13 | PASS |
| | | 1 | 12 | 5.84 | <13 | PASS |
| | | 1 | 24 | 6.24 | <13 | PASS |
| | | 12 | 0 | 5.74 | <13 | PASS |
| | | 12 | 6 | 5.86 | <13 | PASS |
| | | 12 | 13 | 6.17 | <13 | PASS |
| | | 25 | 0 | 5.95 | <13 | PASS |
| 16QAM | LCH | 1 | 0 | 6.55 | <13 | PASS |
| | | 1 | 12 | 6.44 | <13 | PASS |
| | | 1 | 24 | 6.58 | <13 | PASS |
| | | 12 | 0 | 6.57 | <13 | PASS |
| | | 12 | 6 | 6.53 | <13 | PASS |
| | | 12 | 13 | 6.59 | <13 | PASS |
| | | 25 | 0 | 6.47 | <13 | PASS |
| | MCH | 1 | 0 | 6.19 | <13 | PASS |
| | | 1 | 12 | 5.97 | <13 | PASS |
| | | 1 | 24 | 6.02 | <13 | PASS |
| | | 12 | 0 | 6.39 | <13 | PASS |
| | | 12 | 6 | 6.39 | <13 | PASS |
| | | 12 | 13 | 6.44 | <13 | PASS |
| | | 25 | 0 | 6.47 | <13 | PASS |
| | HCH | 1 | 0 | 5.97 | <13 | PASS |
| | | 1 | 12 | 5.81 | <13 | PASS |
| | | 1 | 24 | 6.14 | <13 | PASS |
| | | 12 | 0 | 6.37 | <13 | PASS |
| | | 12 | 6 | 6.5 | <13 | PASS |
| | | 12 | 13 | 6.62 | <13 | PASS |
| | | 25 | 0 | 6.51 | <13 | PASS |

| LTE Band 13 | | | | | | |
|---|---|---|---|---|---|---|
| Channel Bandwidth: 10 MHz | | | | | | |
| Modulation | Channel | RB Configuration | | Peak-to-Average Ratio [dB] | Limit [dB] | Verdict |
| | | Size | Offset | | | |
| QPSK | MCH | 1 | 0 | 5.91 | <13 | PASS |
| | | 1 | 24 | 5.7 | <13 | PASS |
| | | 1 | 49 | 6.56 | <13 | PASS |
| | | 25 | 0 | 5.79 | <13 | PASS |
| | | 25 | 12 | 5.78 | <13 | PASS |
| | | 25 | 25 | 6.12 | <13 | PASS |
| | | 50 | 0 | 5.82 | <13 | PASS |
| 16QAM | MCH | 1 | 0 | 5.63 | <13 | PASS |
| | | 1 | 24 | 5.93 | <13 | PASS |
| | | 1 | 49 | 6.5 | <13 | PASS |
| | | 25 | 0 | 6.32 | <13 | PASS |
| | | 25 | 12 | 6.36 | <13 | PASS |
| | | 25 | 25 | 6.46 | <13 | PASS |
| | | 50 | 0 | 6.34 | <13 | PASS |

■ **Test Graphs**

(LTE band 4_Channel Bandwidth: 1.4 MHz)_LCH_QPSK_1RB#0


(LTE band 4_Channel Bandwidth: 1.4 MHz)_LCH_QPSK_1RB#3


(LTE band 4_Channel Bandwidth: 1.4 MHz)_LCH_QPSK_1RB#5

| (LTE band 4_Channel Bandwidth: 1.4 MHz)_LCH_QPSK_3RB#0 |
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| (LTE band 4_Channel Bandwidth: 1.4 MHz)_LCH_QPSK_3RB#2 |
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| (LTE band 4_Channel Bandwidth: 1.4 MHz)_LCH_QPSK_3RB#3 |
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| (LTE band 4_Channel Bandwidth: 1.4 MHz)_LCH_QPSK_6RB#0 |
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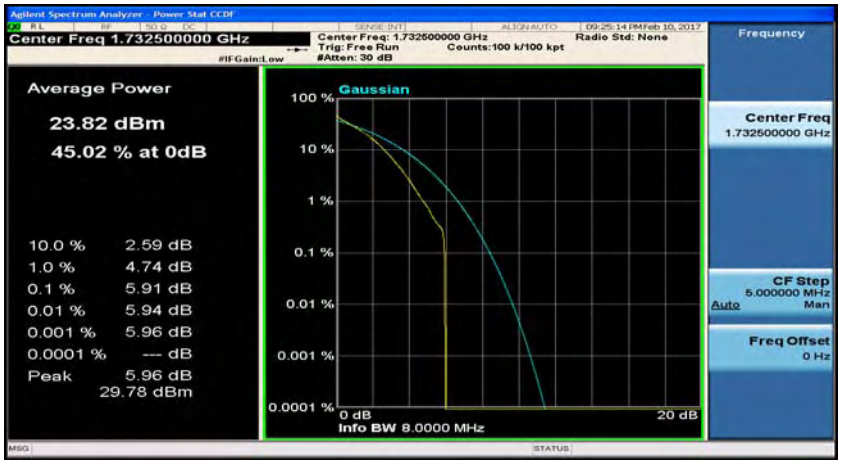
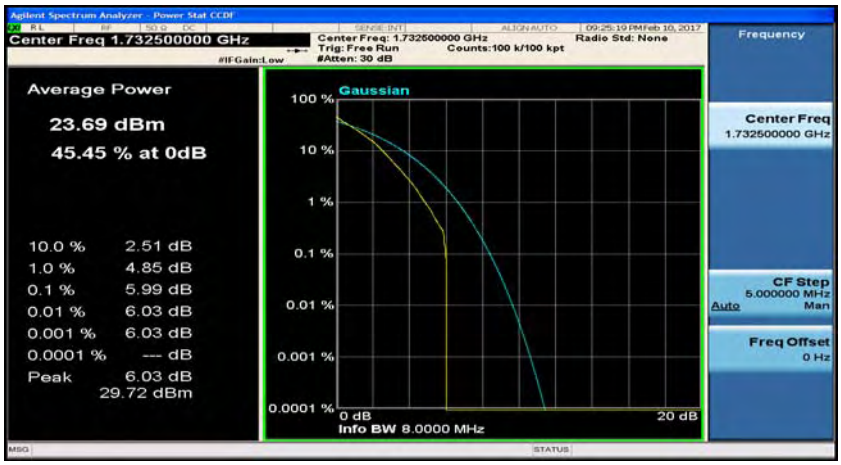
(LTE band 4_Channel Bandwidth: 1.4 MHz)_MCH_QPSK_1RB#0


(LTE band 4_Channel Bandwidth: 1.4 MHz)_MCH_QPSK_1RB#3

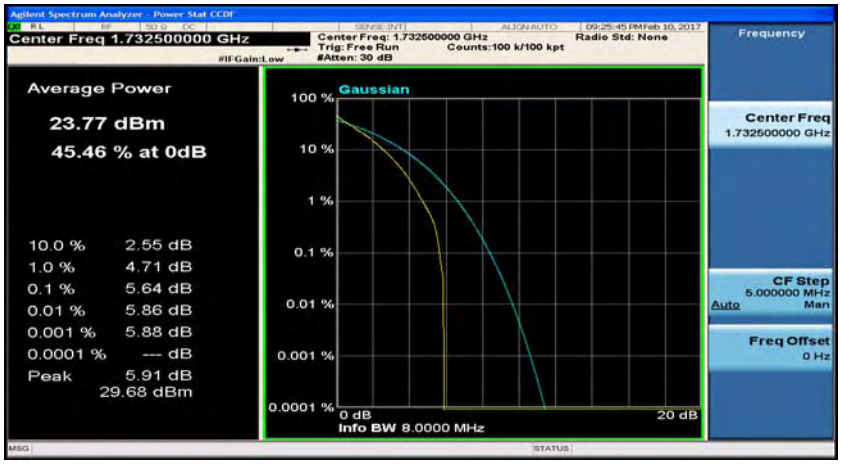



(LTE band 4_Channel Bandwidth: 1.4 MHz)_MCH_QPSK_1RB#5



(LTE band 4_Channel Bandwidth: 1.4 MHz)_MCH_QPSK_3RB#0


(LTE band 4_Channel Bandwidth: 1.4 MHz)_MCH_QPSK_3RB#2




(LTE band 4_Channel Bandwidth: 1.4 MHz)_MCH_QPSK_3RB#3

| (LTE band 4_Channel Bandwidth: 1.4 MHz)_MCH_QPSK_6RB#0 |
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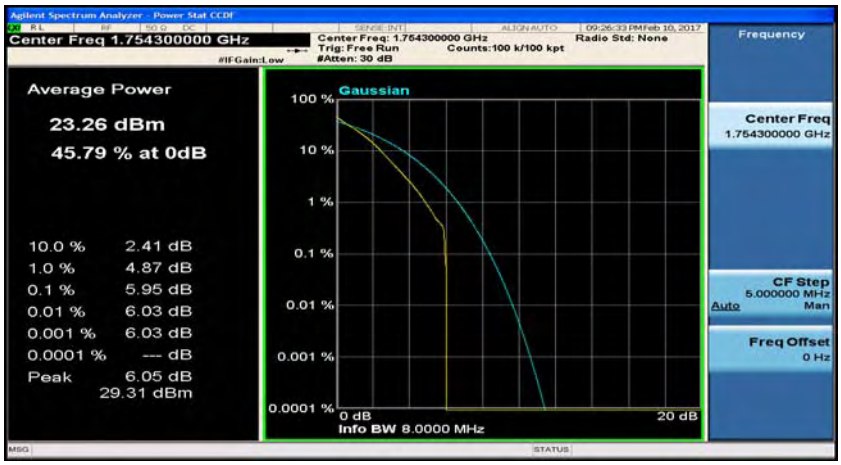
(LTE band 4_Channel Bandwidth: 1.4 MHz)_HCH_QPSK_1RB#0

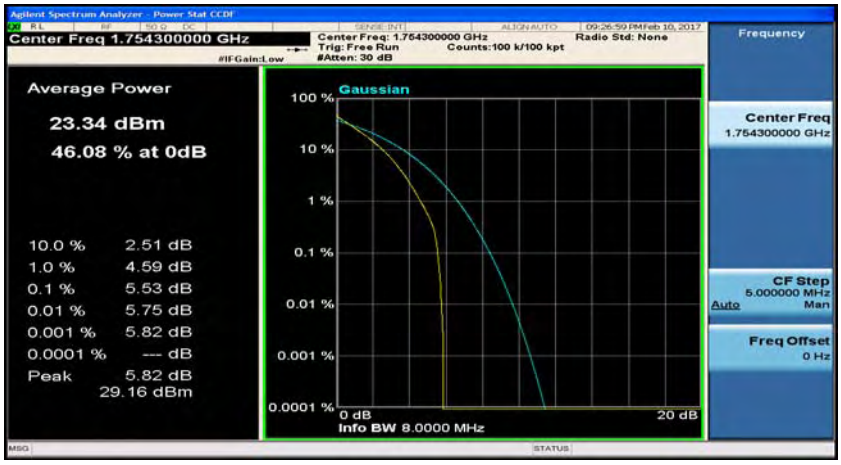

(LTE band 4_Channel Bandwidth: 1.4 MHz)_HCH_QPSK_1RB#3


(LTE band 4_Channel Bandwidth: 1.4 MHz)_HCH_QPSK_1RB#5



(LTE band 4_Channel Bandwidth: 1.4 MHz)_HCH_QPSK_3RB#0


(LTE band 4_Channel Bandwidth: 1.4 MHz)_HCH_QPSK_3RB#2




(LTE band 4_Channel Bandwidth: 1.4 MHz)_HCH_QPSK_3RB#3

| (LTE band 4_Channel Bandwidth: 1.4 MHz)_HCH_QPSK_6RB#0 |
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| (LTE band 4_Channel Bandwidth: 1.4 MHz)_LCH_16QAM_1RB#0 |
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| (LTE band 4_Channel Bandwidth: 1.4 MHz)_LCH_16QAM_1RB#3 |
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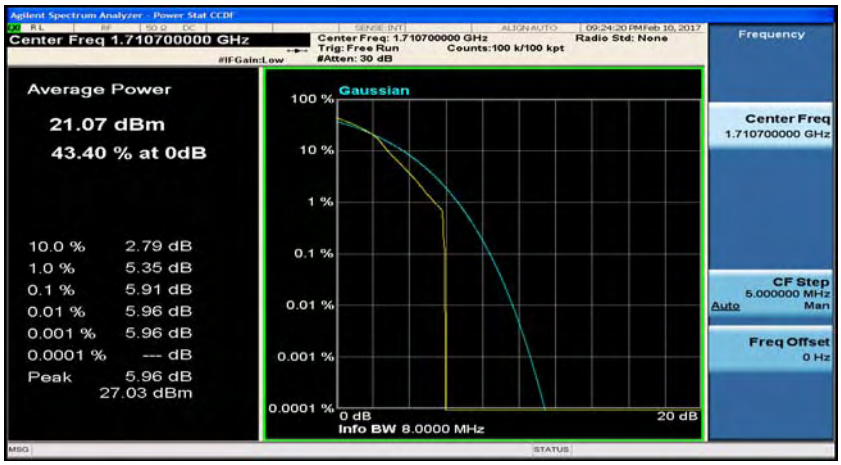
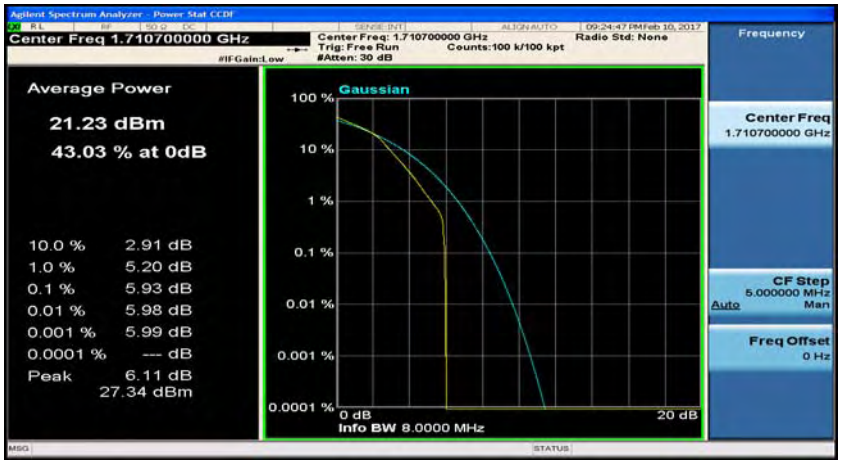
| (LTE band 4_Channel Bandwidth: 1.4 MHz)_LCH_16QAM_1RB#5 |
|  |

(LTE band 4_Channel Bandwidth: 1.4 MHz)_LCH_16QAM_3RB#0


(LTE band 4_Channel Bandwidth: 1.4 MHz)_LCH_16QAM_3RB#2




(LTE band 4_Channel Bandwidth: 1.4 MHz)_LCH_16QAM_3RB#3

| (LTE band 4_Channel Bandwidth: 1.4 MHz)_LCH_16QAM_6RB#0 |
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| (LTE band 4_Channel Bandwidth: 1.4 MHz)_MCH_16QAM_1RB#0 |
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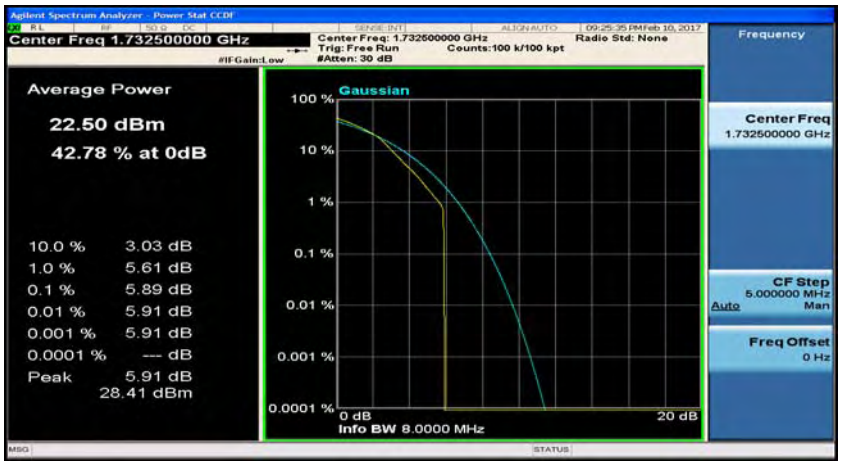
| (LTE band 4_Channel Bandwidth: 1.4 MHz)_MCH_16QAM_1RB#3 |
|  |
| (LTE band 4_Channel Bandwidth: 1.4 MHz)_MCH_16QAM_1RB#5 |
|  |

| (LTE band 4_Channel Bandwidth: 1.4 MHz)_MCH_16QAM_3RB#0 |
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| (LTE band 4_Channel Bandwidth: 1.4 MHz)_MCH_16QAM_3RB#2 |
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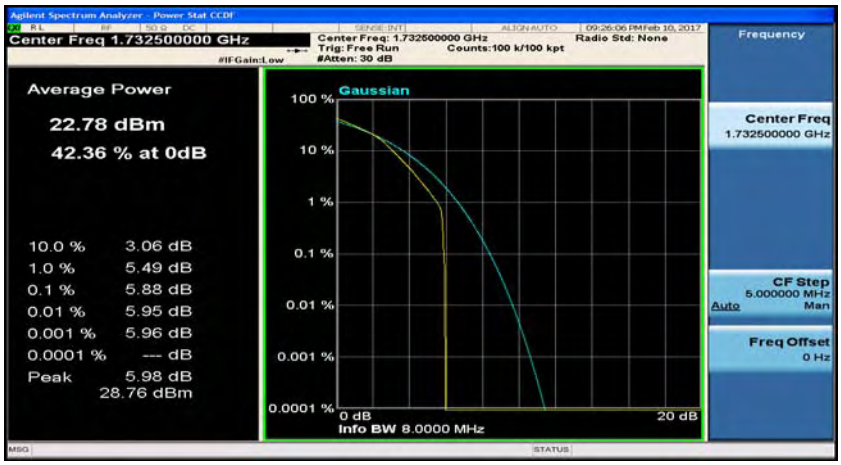
| (LTE band 4_Channel Bandwidth: 1.4 MHz)_MCH_16QAM_3RB#3 |
|---|
|  |

| (LTE band 4_Channel Bandwidth: 1.4 MHz)_MCH_16QAM_6RB#0 |
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| (LTE band 4_Channel Bandwidth: 1.4 MHz)_HCH_16QAM_1RB#0 |
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| (LTE band 4_Channel Bandwidth: 1.4 MHz)_HCH_16QAM_1RB#3 |
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| (LTE band 4_Channel Bandwidth: 1.4 MHz)_HCH_16QAM_1RB#5 |
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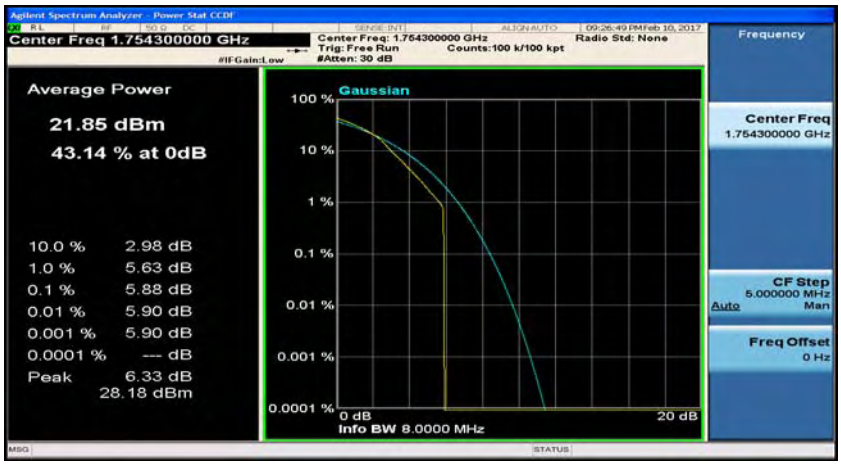
|  |

| (LTE band 4_Channel Bandwidth: 1.4 MHz)_HCH_16QAM_3RB#0 |
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| (LTE band 4_Channel Bandwidth: 1.4 MHz)_HCH_16QAM_3RB#2 |
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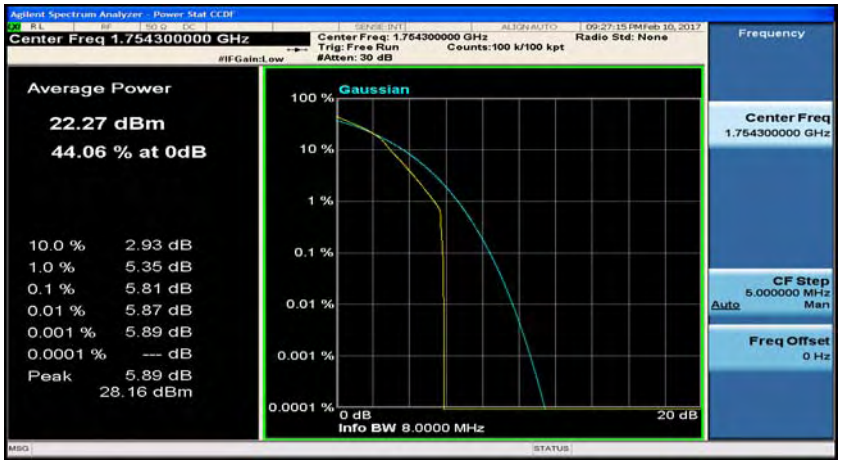
|  |



| (LTE band 4_Channel Bandwidth: 1.4 MHz)_HCH_16QAM_3RB#3 |
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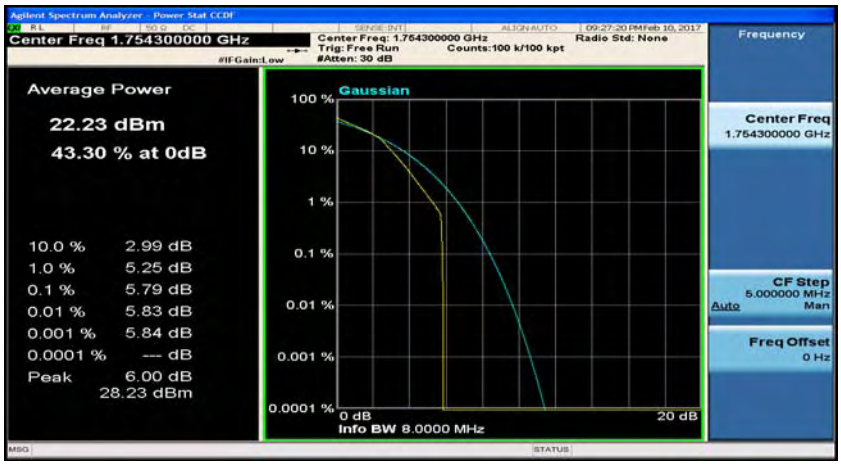
|  |

| (LTE band 4_Channel Bandwidth: 1.4 MHz)_HCH_16QAM_6RB#0 |
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| (LTE band 4_Channel Bandwidth: 3 MHz)_LCH_QPSK_1RB#0 |
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| (LTE band 4_Channel Bandwidth: 3 MHz)_LCH_QPSK_1RB#7 |
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| (LTE band 4_Channel Bandwidth: 3 MHz)_LCH_QPSK_1RB#14 |
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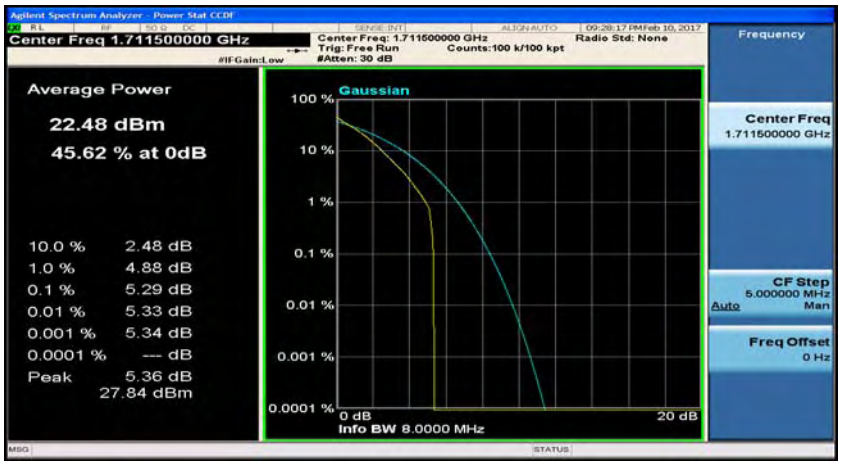
|  |

| (LTE band 4_Channel Bandwidth: 3 MHz)_LCH_QPSK_8RB#0 |
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| (LTE band 4_Channel Bandwidth: 3 MHz)_LCH_QPSK_8RB#4 |
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| (LTE band 4_Channel Bandwidth: 3 MHz)_LCH_QPSK_8RB#7 |
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| (LTE band 4_Channel Bandwidth: 3 MHz)_LCH_QPSK_15RB#0 |
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| (LTE band 4_Channel Bandwidth: 3 MHz)_MCH_QPSK_1RB#0 |
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| (LTE band 4_Channel Bandwidth: 3 MHz)_MCH_QPSK_1RB#7 |
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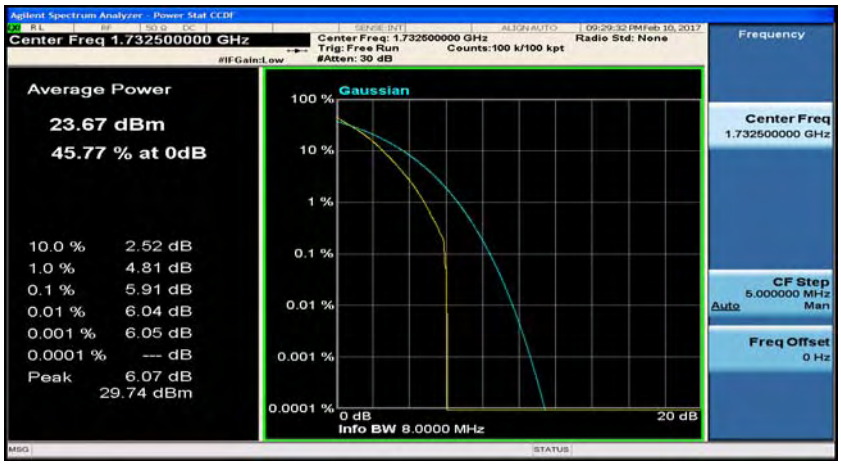
| (LTE band 4_Channel Bandwidth: 3 MHz)_MCH_QPSK_1RB#14 |
|  |

| (LTE band 4_Channel Bandwidth: 3 MHz)_MCH_QPSK_8RB#0 |
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| (LTE band 4_Channel Bandwidth: 3 MHz)_MCH_QPSK_8RB#4 |
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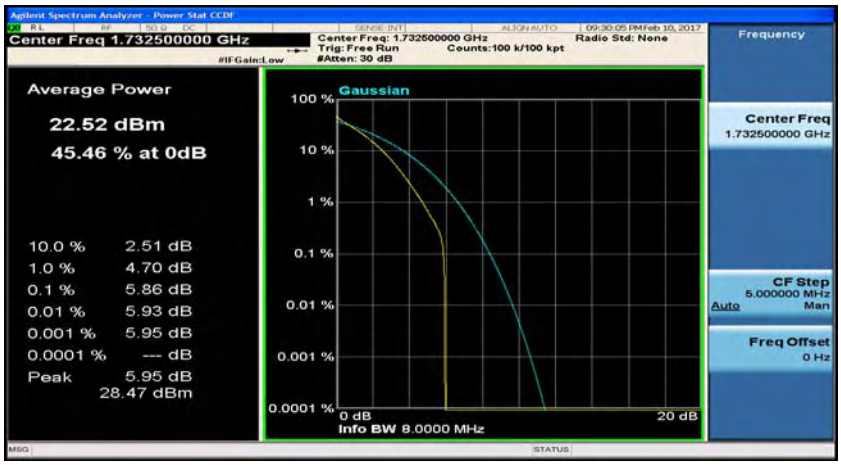
| (LTE band 4_Channel Bandwidth: 3 MHz)_MCH_QPSK_8RB#7 |
|---|
|  |

| (LTE band 4_Channel Bandwidth: 3 MHz)_MCH_QPSK_15RB#0 |
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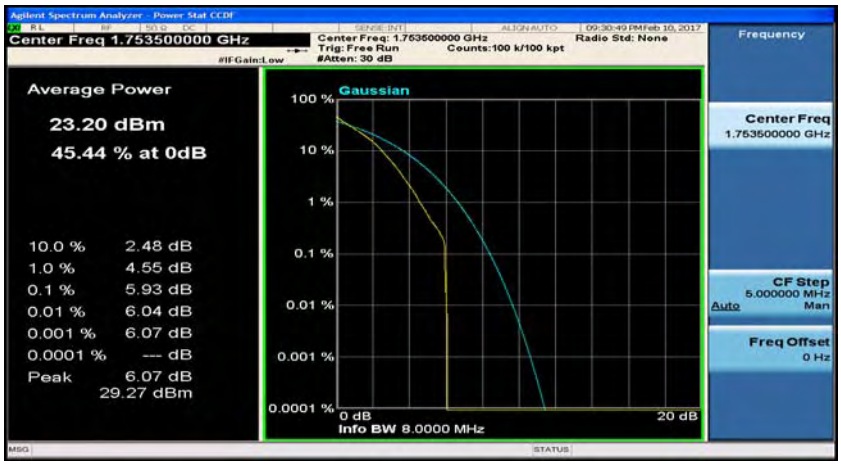
(LTE band 4_Channel Bandwidth: 3 MHz)_HCH_QPSK_1RB#0


(LTE band 4_Channel Bandwidth: 3 MHz)_HCH_QPSK_1RB#7

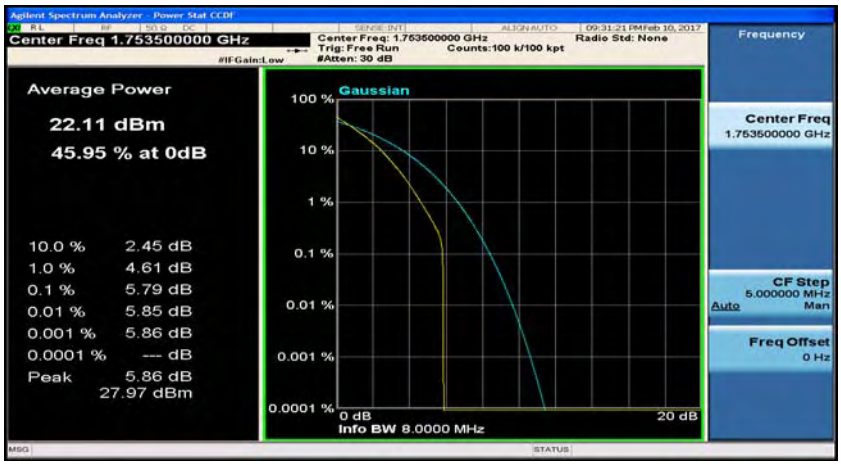

(LTE band 4_Channel Bandwidth: 3 MHz)_HCH_QPSK_1RB#14



(LTE band 4_Channel Bandwidth: 3 MHz)_HCH_QPSK_8RB#0


(LTE band 4_Channel Bandwidth: 3 MHz)_HCH_QPSK_8RB#4


(LTE band 4_Channel Bandwidth: 3 MHz)_HCH_QPSK_8RB#7



| (LTE band 4_Channel Bandwidth: 3 MHz)_HCH_QPSK_15RB#0 |
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| (LTE band 4_Channel Bandwidth: 3 MHz)_LCH_16QAM_1RB#0 |
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| (LTE band 4_Channel Bandwidth: 3 MHz)_LCH_16QAM_1RB#7 |
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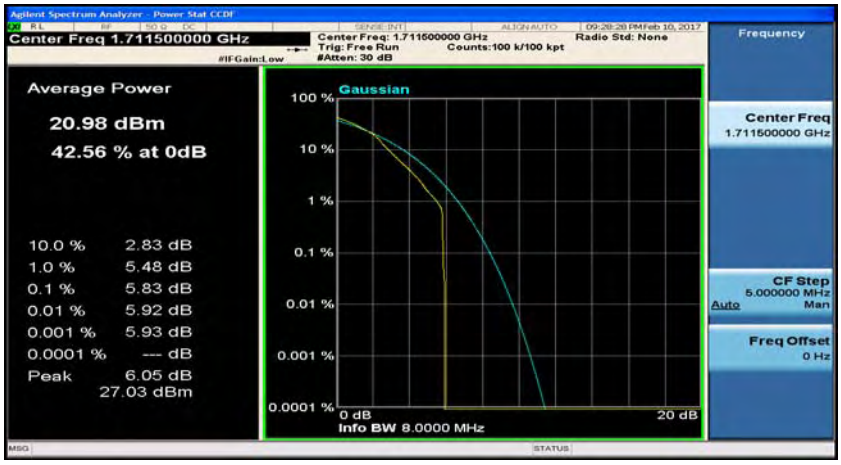
|  |



| (LTE band 4_Channel Bandwidth: 3 MHz)_LCH_16QAM_1RB#14 |
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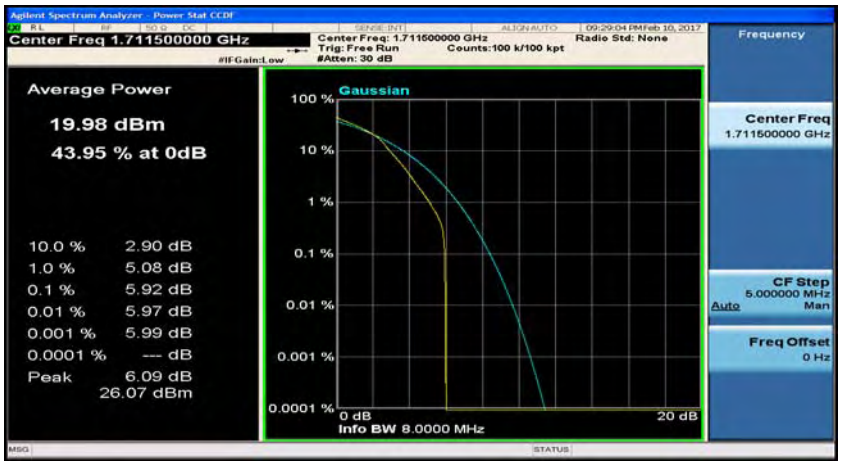
(LTE band 4_Channel Bandwidth: 3 MHz)_LCH_16QAM_8RB#0


(LTE band 4_Channel Bandwidth: 3 MHz)_LCH_16QAM_8RB#4


(LTE band 4_Channel Bandwidth: 3 MHz)_LCH_16QAM_8RB#7



| (LTE band 4_Channel Bandwidth: 3 MHz)_LCH_16QAM_15RB#0 |
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| (LTE band 4_Channel Bandwidth: 3 MHz)_MCH_16QAM_1RB#0 |
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| (LTE band 4_Channel Bandwidth: 3 MHz)_MCH_16QAM_1RB#7 |
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| (LTE band 4_Channel Bandwidth: 3 MHz)_MCH_16QAM_1RB#14 |
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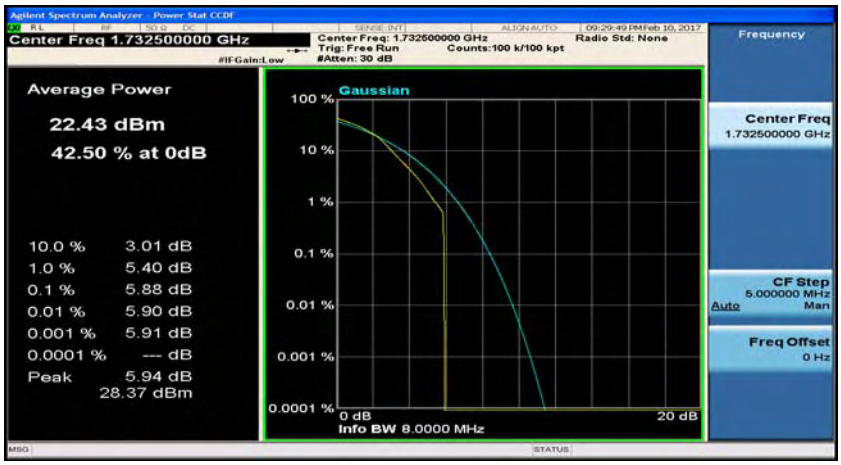
|  |

| (LTE band 4_Channel Bandwidth: 3 MHz)_MCH_16QAM_8RB#0 |
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| (LTE band 4_Channel Bandwidth: 3 MHz)_MCH_16QAM_8RB#4 |
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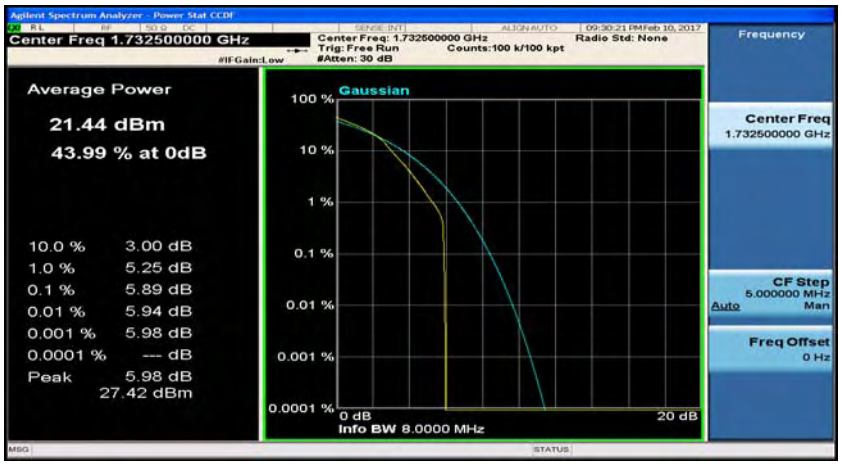
| (LTE band 4_Channel Bandwidth: 3 MHz)_MCH_16QAM_8RB#7 |
|---|
|  |

| (LTE band 4_Channel Bandwidth: 3 MHz)_MCH_16QAM_15RB#0 |
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| (LTE band 4_Channel Bandwidth: 3 MHz)_HCH_16QAM_1RB#0 |
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| (LTE band 4_Channel Bandwidth: 3 MHz)_HCH_16QAM_1RB#7 |
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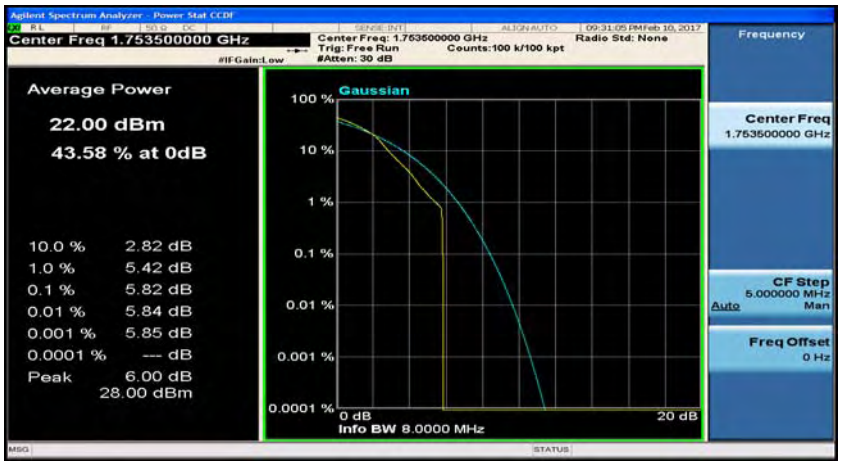
| (LTE band 4_Channel Bandwidth: 3 MHz)_HCH_16QAM_1RB#14 |
|  |

| (LTE band 4_Channel Bandwidth: 3 MHz)_HCH_16QAM_8RB#0 |
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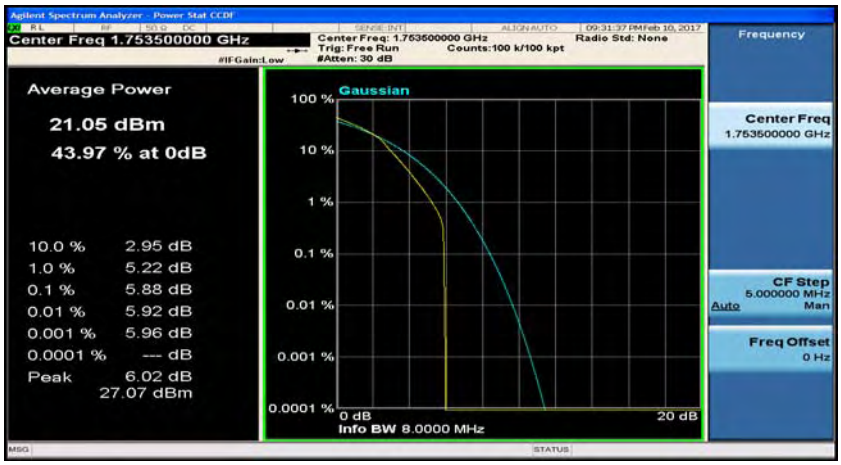
|  |
| (LTE band 4_Channel Bandwidth: 3 MHz)_HCH_16QAM_8RB#4 |
|  |
| (LTE band 4_Channel Bandwidth: 3 MHz)_HCH_16QAM_8RB#7 |
|  |

| (LTE band 4_Channel Bandwidth: 3 MHz)_HCH_16QAM_15RB#0 |
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| (LTE band 4_Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#0 |
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| (LTE band 4_Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#12 |
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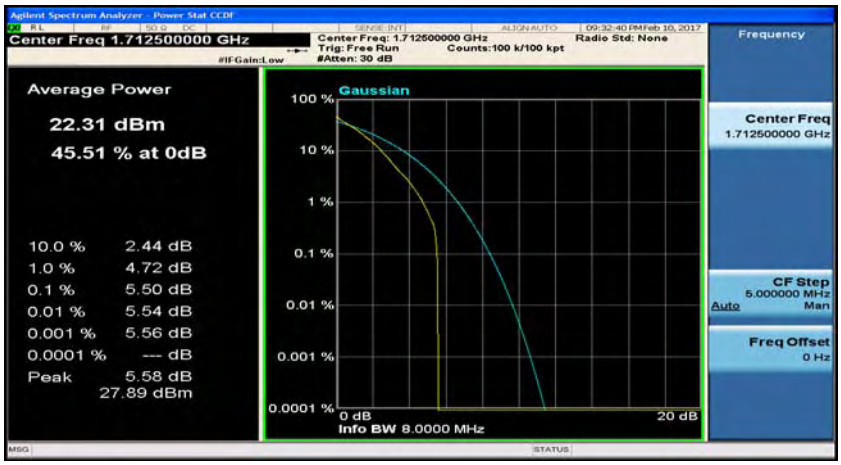
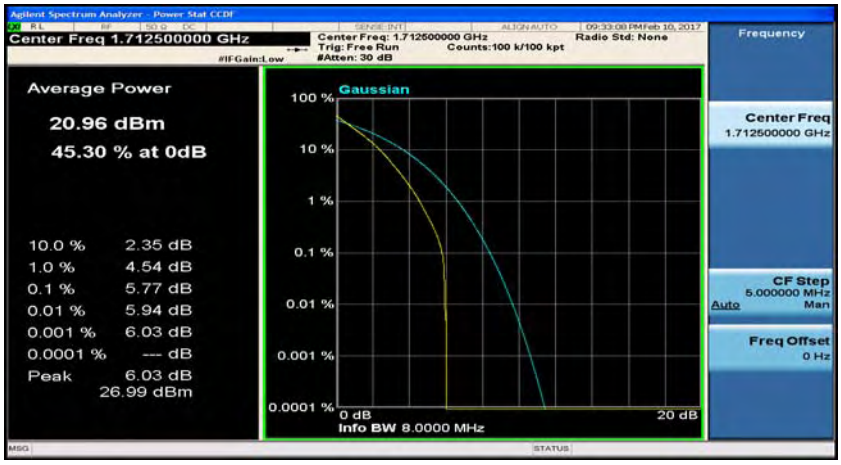
| (LTE band 4_Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#24 |
|  |

(LTE band 4_Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#0


(LTE band 4_Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#6




(LTE band 4_Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#13

| (LTE band 4_Channel Bandwidth: 5 MHz)_LCH_QPSK_25RB#0 |
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| (LTE band 4_Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#0 |
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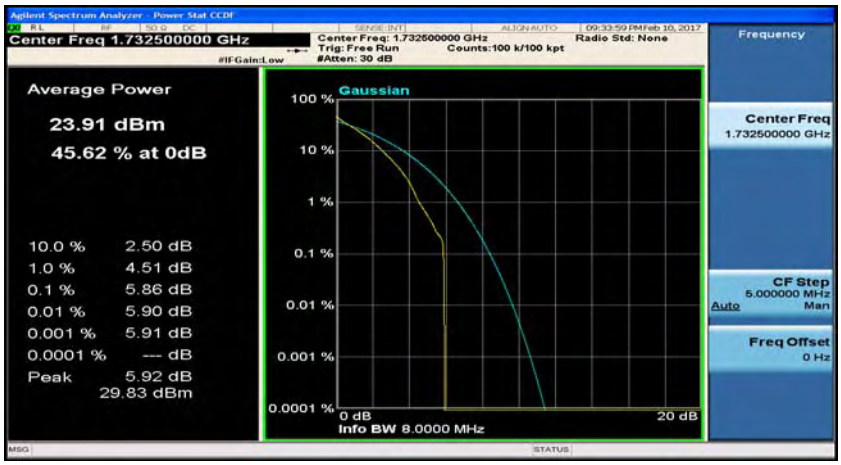
| (LTE band 4_Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#12 |
|  |
| (LTE band 4_Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#24 |
|  |

(LTE band 4_Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#0


(LTE band 4_Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#6


(LTE band 4_Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#13