



# **FCC TEST REPORT**

**FCC ID: SY4-B01014**

**On Behalf of**

**Shanghai Huace Navigation Technology LTD.**

**Handheld GNSS Data Collector**

**Model No.: LT700H**

Prepared for : Shanghai Huace Navigation Technology LTD.

Address : 599 Gaojing Road, Building D, Shanghai 201702,  
China

Prepared By : Shenzhen Alpha Product Testing Co., Ltd.

Address : Building i, No.2, Lixin Road, Fuyong Street, Bao'an  
District, 518103, Shenzhen, Guangdong, China

Report Number : A2102055-C01-R08

Date of Receipt : February 27, 2021

Date of Test : February 27-March 25, 2021

Date of Report : April 6, 2021


Version Number : V0

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### TEST REPORT DECLARATION

Applicant : Shanghai Huace Navigation Technology LTD.  
 Address : 599 Gaojing Road, Building D, Shanghai 201702, China  
 Manufacturer : Shanghai Huace Navigation Technology LTD.  
 Address : 599 Gaojing Road, Building D, Shanghai 201702, China  
 EUT Description : Handheld GNSS Data Collector  
 (A) Model No. : LT700H  
 (B) Trademark : 

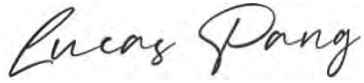
Measurement Standard Used:

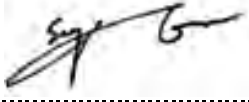
- FCC CFR Title 47 Part 2**
- FCC CFR Title 47 Part22 Subpart H**
- FCC CFR Title 47 Part24 Subpart E**
- FCC CFR Title 47 Part27**

The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits both conducted and radiated emissions. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After the test, our opinion is that EUT compliance with the requirement of the above standards.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

Tested by (name + signature).....: Lucas Pang  
 Project Engineer 

Approved by (name + signature).....: Simple Guan  
 Project Manager 

Date of issue.....: April 6, 2021

**Revision History**

| Revision | Issue Date    | Revisions              | Revised By  |
|----------|---------------|------------------------|-------------|
| V0       | April 6, 2021 | Initial released Issue | Simple Guan |

## 1 Test Summary

| Test Item                              | Section in CFR 47  | Result                                |
|--|--|---------------------------------------|
| RF Exposure (SAR)                      | Part 1.1307<br>Part 2.1093   | Pass*<br>(Please refer to SAR Report) |
| RF Output Power                        | Part 2.1046<br>part22.913(a)<br>Part 24.232 (c)<br>Part 27.50 (d)(4) | Pass                                  |
| Modulation Characteristics             | Part 2.1047  | Pass                                  |
| 99% & -26 dB Occupied Bandwidth        | Part 2.1049<br>part22.913(a)<br>Part 24.238<br>Part 27.53(a)         | Pass                                  |
| Spurious Emissions at Antenna Terminal | Part 2.1051<br>part22.913(a)<br>Part 24.238 (a)<br>Part 27.53 (h)    | Pass                                  |
| Field Strength of Spurious Radiation   | Part 2.1053<br>part22.913(a)<br>Part 24.238 (a)<br>Part 27.53 (h)    | Pass                                  |
| Out of band emission, Band Edge        | part22.913(a)<br>Part 24.238 (a)<br>Part 27.53(h)                    | Pass                                  |
| Frequency stability vs. temperature    | Part 2.1055(a)(1)(b)   | Pass                                  |
| Frequency stability vs. voltage        | Part 2.1055(d)(1)(2)   | Pass                                  |

*Pass: The EUT complies with the essential requirements in the standard.*

## 2 General Information

### 2.1 General Description of EUT

|                    |  |
|--------------------|--|
| Product Name:      | Handheld GNSS Data Collector   |
| Model No.:         | LT700H   |
| Support Networks:  | LTE  |
| Support Bands:     | LTE Band 2, LTE Band 4, LTE Band 5, LTE Band 7   |
| Channel Bandwidth: | LTE Band 2: 5MHz; 10MHz; 15MHz; 20MHz<br>LTE Band 4: 5MHz; 10MHz; 15MHz; 20MHz<br>LTE Band 5: 5MHz; 10MHz<br>LTE Band 7: 5MHz; 10MHz; 15MHz; 20MHz   |
| TX Frequency:      | LTE Band 2: 1850.7 MHz ~ 1909.3 MHz<br>LTE Band 4: 1710.7 MHz ~ 1754.3 MHz<br>LTE Band 5: 824.7 MHz ~ 848.3 MHz<br>LTE Band 7: 2502.50MHz-2567.50MHz |
| Modulation type:   | QPSK, 16QAM  |
| Antenna type:      | Internal antenna   |
| Antenna gain:      | 1.95dBi(max.) For LTE Band 2 4 7;<br>-1.66dBi(max.) For LTE Band 5;  |
| Power supply:      | DC 3.8V by battery or DC 5V from adapter input AC 120V, 60Hz   |

**2.2 Related Submittal(s) / Grant (s)**

This submittal(s) (test report) is filing to comply with Section Part 22 subpart H and Part 24 subpart E of the FCC CFR 47 Rules.

**2.3 Test Methodology**

Both conducted and radiated testing were performed according to the procedures document on TIA/EIA 603 and FCC CFR 47.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057

**2.4 Test Facility**

Shenzhen Alpha Product Testing Co., Ltd  
Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China

June 21, 2018 File on Federal Communication Commission  
Registration Number: 293961

July 25, 2017 Certificated by IC  
Registration Number: CN0085

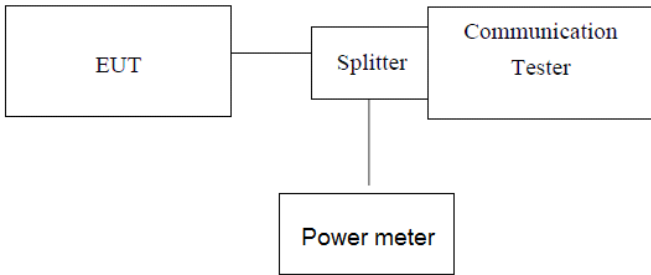
### 3 Test Instruments list

| Equipment                   | Manufacture   | Model No.        | Serial No.             | Last cal.  | Cal Interval |
|-----------------------------|---------------|------------------|------------------------|------------|--------------|
| 9*6*6 anechoic chamber      | CHENYU        | 9*6*6            | N/A                    | 2019.09.06 | 3Year        |
| Spectrum analyzer           | ROHDE&SCHWARZ | FSV40-N          | 102137                 | 2020.09.02 | 1Year        |
| Spectrum analyzer           | Agilent       | N9020A           | MY499100060            | 2020.09.02 | 1Year        |
| Receiver                    | ROHDE&SCHWARZ | ESR              | 1316.3003K03-102082-Wa | 2020.09.02 | 1Year        |
| Receiver                    | R&S           | ESCI             | 101165                 | 2020.09.02 | 1Year        |
| Bilog Antenna               | Schwarzbeck   | VULB 9168        | VULB9168-438           | 2020.04.12 | 2Year        |
| Horn Antenna                | SCHWARZBECK   | BBHA 9120 D      | BBHA 9120 D(1201)      | 2020.04.12 | 2Year        |
| Active Loop Antenna         | SCHWARZBECK   | FMZB 1519B       | 00059                  | 2019.09.07 | 2Year        |
| Cable                       | Resenberger   | N/A              | No.1                   | 2020.09.02 | 1Year        |
| Cable                       | Resenberger   | N/A              | No.2                   | 2020.09.02 | 1Year        |
| Cable                       | Resenberger   | N/A              | No.3                   | 2020.09.02 | 1Year        |
| Pre-amplifier               | HP            | HP8347A          | 2834A00455             | 2020.09.02 | 1Year        |
| Pre-amplifier               | Agilent       | 8449B            | 3008A02664             | 2020.09.02 | 1Year        |
| L.I.S.N.#1                  | Schwarzbeck   | NSLK8126         | 8126466                | 2020.09.02 | 1Year        |
| L.I.S.N.#2                  | ROHDE&SCHWARZ | ENV216           | 101043                 | 2020.09.02 | 1 Year       |
| 20db Attenuator             | ICPROBING     | IATS1            | 82347                  | 2020.09.02 | 1 Year       |
| Horn Antenna                | SCHWARZBECK   | BBHA9170         | 00946                  | 2019.09.07 | 2 Year       |
| Preamplifier                | SKET          | LNPA_1840-50     | SK2018101801           | 2020.09.02 | 1 Year       |
| Power Meter                 | Agilent       | E9300A           | MY41496625             | 2020.09.02 | 1 Year       |
| Temp. &Humid. Chamber       | Weihuang      | WHTH-1000-40-880 | 100631                 | 2020.09.02 | 1 Year       |
| Switching Mode Power Supply | JUNKE         | JK12010S         | 20140927-6             | 2020.09.02 | 1 Year       |





### 4.3 Conducted Peak Output Power

|                   |  |
|-------------------|--|
| Test Requirement: | FCC part22.913(a), FCC part24.232(b) and FCC part 27.50  |
| Test Method:      | FCC part2.1046   |
| Limit:            | LTE Band 2: 2W<br>LTE Band 4: 1W<br>LTE Band 5: 7W<br>LTE Band 7: 2W   |
| Test setup:       |  <pre> graph LR     EUT[EUT] --- Splitter[Splitter]     Splitter --- CT[Communication Tester]     Splitter --- PM[Power meter]   </pre> <p><i>Note: Measurement setup for testing on Antenna connector</i></p>   |
| Test Procedure:   | <ol style="list-style-type: none"> <li>1. The transmitter output port was connected to base station.</li> <li>2. The RF output of EUT was connected to the power meter by RF cable and attenuator, the path loss was compensated to the results for each measurement.</li> <li>3. Set EUT at maximum power through base station.</li> <li>4. Select lowest, middle, and highest channels for each band and different modulation.</li> <li>5. Measure the maximum burst average power.</li> </ol> |
| Test Instruments: | Refer to section 6.0 for details   |
| Test mode:        | Refer to section 7.1 for details   |
| Test results:     | Pass   |

## Measurement Data

| Band 2    |       |         |           |                            |                            |                            |
|-----------|-------|---------|-----------|----------------------------|----------------------------|----------------------------|
| Bandwidth | Mode  | RB Size | RB Offset | Actual output power(dBm)   |                            |                            |
|           |       |         |           | Channel 18625<br>1852.5MHz | Channel 18900<br>1880.0MHz | Channel 19175<br>1907.5MHz |
| 5MHz      | QPSK  | 1       | 0         | 23.67                      | 22.26                      | 22.19                      |
|           |       | 1       | 13        | 21.30                      | 20.18                      | 20.58                      |
|           |       | 1       | 24        | 20.85                      | 21.29                      | 22.12                      |
|           |       | 12      | 0         | 19.70                      | 22.05                      | 20.71                      |
|           |       | 12      | 6         | 20.99                      | 21.52                      | 21.57                      |
|           |       | 12      | 13        | 23.01                      | 20.37                      | 21.93                      |
|           |       | 25      | 0         | 22.54                      | 22.37                      | 20.46                      |
|           | 16QAM | 1       | 0         | 22.17                      | 23.85                      | 22.03                      |
|           |       | 1       | 13        | 21.53                      | 21.20                      | 21.14                      |
|           |       | 1       | 24        | 20.49                      | 20.32                      | 22.67                      |
|           |       | 12      | 0         | 21.22                      | 20.67                      | 19.84                      |
|           |       | 12      | 6         | 20.64                      | 21.42                      | 20.91                      |
|           |       | 12      | 13        | 19.35                      | 22.50                      | 21.03                      |
|           |       | 25      | 0         | 21.93                      | 21.91                      | 20.81                      |
| Bandwidth | Mode  | RB Size | RB Offset | Actual output power(dBm)   |                            |                            |
|           |       |         |           | Channel 18650<br>1855.0MHz | Channel 18900<br>1880.0MHz | Channel 19150<br>1905.0MHz |
| 10MHz     | QPSK  | 1       | 0         | 21.16                      | 21.93                      | 20.09                      |
|           |       | 1       | 25        | 19.75                      | 21.75                      | 21.03                      |
|           |       | 1       | 49        | 23.18                      | 21.78                      | 22.87                      |
|           |       | 25      | 0         | 19.82                      | 19.05                      | 20.45                      |
|           |       | 25      | 13        | 22.59                      | 20.27                      | 21.07                      |
|           |       | 25      | 25        | 20.97                      | 20.45                      | 21.36                      |
|           |       | 50      | 0         | 20.59                      | 23.21                      | 20.52                      |
|           | 16QAM | 1       | 0         | 21.78                      | 21.06                      | 21.83                      |
|           |       | 1       | 25        | 20.20                      | 21.48                      | 22.71                      |
|           |       | 1       | 49        | 21.43                      | 20.24                      | 20.41                      |
|           |       | 25      | 0         | 21.74                      | 20.67                      | 21.50                      |
|           |       | 25      | 13        | 19.92                      | 22.80                      | 22.09                      |
|           |       | 25      | 25        | 22.44                      | 22.81                      | 20.89                      |
|           |       | 50      | 0         | 21.66                      | 22.09                      | 20.90                      |

| Bandwidth | Mode  | RB Size | RB Offset | Actual output power(dBm)   |                            |                            |
|-----------|-------|---------|-----------|----------------------------|----------------------------|----------------------------|
|           |       |         |           | Channel 18675<br>1857.5MHz | Channel 18900<br>1880.0MHz | Channel 19125<br>1902.5MHz |
| 15MHz     | QPSK  | 1       | 0         | 22.98                      | 22.66                      | 21.74                      |
|           |       | 1       | 38        | 19.61                      | 21.65                      | 21.76                      |
|           |       | 1       | 74        | 20.51                      | 19.56                      | 21.07                      |
|           |       | 36      | 0         | 23.59                      | 22.73                      | 22.27                      |
|           |       | 36      | 18        | 23.52                      | 22.50                      | 22.88                      |
|           |       | 36      | 39        | 20.06                      | 21.36                      | 21.90                      |
|           |       | 75      | 0         | 21.05                      | 22.92                      | 21.06                      |
|           | 16QAM | 1       | 0         | 21.83                      | 21.19                      | 22.81                      |
|           |       | 1       | 38        | 20.93                      | 20.04                      | 19.79                      |
|           |       | 1       | 74        | 23.78                      | 20.28                      | 22.55                      |
|           |       | 36      | 0         | 20.17                      | 22.93                      | 22.18                      |
|           |       | 36      | 18        | 22.07                      | 21.37                      | 19.89                      |
|           |       | 36      | 39        | 22.82                      | 22.58                      | 20.38                      |
|           |       | 75      | 0         | 20.92                      | 23.60                      | 22.13                      |
| Bandwidth | Mode  | RB Size | RB Offset | Actual output power(dBm)   |                            |                            |
|           |       |         |           | Channel 18700<br>1860.0MHz | Channel 18900<br>1880.0MHz | Channel 19100<br>1900.0MHz |
| 20MHz     | QPSK  | 1       | 0         | 21.03                      | 23.11                      | 21.82                      |
|           |       | 1       | 50        | 23.02                      | 22.65                      | 21.14                      |
|           |       | 1       | 99        | 21.69                      | 21.33                      | 20.83                      |
|           |       | 50      | 0         | 22.22                      | 20.27                      | 22.18                      |
|           |       | 50      | 25        | 21.05                      | 21.76                      | 20.37                      |
|           |       | 50      | 50        | 21.07                      | 21.27                      | 21.80                      |
|           |       | 100     | 0         | 20.75                      | <b>23.15</b>               | 22.01                      |
|           | 16QAM | 1       | 0         | 22.33                      | 21.54                      | 22.68                      |
|           |       | 1       | 50        | 20.49                      | 19.83                      | 22.44                      |
|           |       | 1       | 99        | 22.51                      | 22.96                      | 23.21                      |
|           |       | 50      | 0         | 21.18                      | 22.38                      | 22.74                      |
|           |       | 50      | 25        | <b>23.30</b>               | 21.92                      | 22.66                      |
|           |       | 50      | 50        | 20.87                      | 20.15                      | 21.84                      |
|           |       | 100     | 0         | 20.10                      | 20.59                      | 22.23                      |

| Band 4    |       |         |           |                            |                            |                            |
|-----------|-------|---------|-----------|----------------------------|----------------------------|----------------------------|
| Bandwidth | Mode  | RB Size | RB Offset | Actual output power(dBm)   |                            |                            |
|           |       |         |           | Channel 19975<br>1712.5MHz | Channel 20175<br>1732.5MHz | Channel 20375<br>1752.5MHz |
| 5MHz      | QPSK  | 1       | 0         | 22.78                      | 22.09                      | 21.77                      |
|           |       | 1       | 13        | 22.84                      | 22.29                      | 22.29                      |
|           |       | 1       | 24        | 21.31                      | 21.56                      | 21.52                      |
|           |       | 12      | 0         | 23.88                      | 21.90                      | 21.27                      |
|           |       | 12      | 6         | 21.02                      | 21.61                      | 20.61                      |
|           |       | 12      | 13        | 21.74                      | 21.94                      | 21.53                      |
|           |       | 25      | 0         | 22.03                      | 21.89                      | 21.41                      |
|           | 16QAM | 1       | 0         | 21.54                      | 23.39                      | 21.34                      |
|           |       | 1       | 13        | 21.83                      | 22.06                      | 22.32                      |
|           |       | 1       | 24        | 23.12                      | 22.59                      | 21.19                      |
|           |       | 12      | 0         | 22.92                      | 23.73                      | 21.95                      |
|           |       | 12      | 6         | 21.41                      | 21.08                      | 20.67                      |
|           |       | 12      | 13        | 21.18                      | 22.15                      | 21.96                      |
|           |       | 25      | 0         | 21.98                      | 23.77                      | 20.38                      |
| Bandwidth | Mode  | RB Size | RB Offset | Actual output power(dBm)   |                            |                            |
|           |       |         |           | Channel 20000<br>1715.0MHz | Channel 20175<br>1732.5MHz | Channel 20350<br>1750.0MHz |
| 10MHz     | QPSK  | 1       | 0         | 21.13                      | 21.54                      | 21.12                      |
|           |       | 1       | 25        | 21.22                      | 22.57                      | 22.02                      |
|           |       | 1       | 49        | 20.48                      | 22.38                      | 22.06                      |
|           |       | 25      | 0         | 22.97                      | 21.90                      | 22.34                      |
|           |       | 25      | 13        | 21.80                      | 21.86                      | 21.97                      |
|           |       | 25      | 25        | 22.19                      | 23.17                      | 20.96                      |
|           |       | 50      | 0         | 22.09                      | 22.54                      | 22.08                      |
|           | 16QAM | 1       | 0         | 21.82                      | 22.16                      | 21.52                      |
|           |       | 1       | 25        | 22.01                      | 20.71                      | 22.26                      |
|           |       | 1       | 49        | 22.13                      | 22.16                      | 21.82                      |
|           |       | 25      | 0         | 22.93                      | 22.53                      | 23.29                      |
|           |       | 25      | 13        | 21.20                      | 21.93                      | 22.54                      |
|           |       | 25      | 25        | 22.14                      | 21.72                      | 20.47                      |
|           |       | 50      | 0         | 21.77                      | 21.88                      | 21.61                      |

| Bandwidth | Mode  | RB Size | RB Offset | Actual output power(dBm)   |                            |                            |
|-----------|-------|---------|-----------|----------------------------|----------------------------|----------------------------|
|           |       |         |           | Channel 20025<br>1717.5MHz | Channel 20175<br>1732.5MHz | Channel 20325<br>1747.5MHz |
| 15MHz     | QPSK  | 1       | 0         | 23.34                      | 23.33                      | 23.14                      |
|           |       | 1       | 38        | 21.46                      | 22.70                      | 21.12                      |
|           |       | 1       | 74        | 22.41                      | 21.95                      | 23.58                      |
|           |       | 36      | 0         | 22.51                      | 22.19                      | 22.42                      |
|           |       | 36      | 18        | 22.20                      | 22.65                      | 21.97                      |
|           |       | 36      | 39        | 21.97                      | 20.85                      | 21.74                      |
|           |       | 75      | 0         | 21.27                      | 21.01                      | 21.81                      |
|           | 16QAM | 1       | 0         | 21.36                      | 23.18                      | 22.97                      |
|           |       | 1       | 38        | 22.15                      | 22.07                      | 21.83                      |
|           |       | 1       | 74        | 22.71                      | 23.13                      | 21.78                      |
|           |       | 36      | 0         | 21.24                      | 23.31                      | 21.91                      |
|           |       | 36      | 18        | 22.45                      | 22.87                      | 21.83                      |
|           |       | 36      | 39        | 21.10                      | 22.14                      | 20.25                      |
|           |       | 75      | 0         | 23.60                      | 21.89                      | 22.06                      |
| Bandwidth | Mode  | RB Size | RB Offset | Actual output power(dBm)   |                            |                            |
|           |       |         |           | Channel 20050<br>1720.0MHz | Channel 20175<br>1732.5MHz | Channel 20300<br>1745.0MHz |
| 20MHz     | QPSK  | 1       | 0         | 23.00                      | 21.44                      | 23.12                      |
|           |       | 1       | 50        | 21.92                      | 22.14                      | 21.82                      |
|           |       | 1       | 99        | 21.48                      | 20.74                      | 20.34                      |
|           |       | 50      | 0         | 21.43                      | 21.36                      | 21.39                      |
|           |       | 50      | 25        | 22.53                      | 20.53                      | 22.08                      |
|           |       | 50      | 50        | 22.13                      | 22.74                      | 22.79                      |
|           |       | 100     | 0         | 21.86                      | 21.36                      | 23.12                      |
|           | 16QAM | 1       | 0         | 23.01                      | 20.62                      | 21.23                      |
|           |       | 1       | 50        | 21.98                      | 21.25                      | 22.71                      |
|           |       | 1       | 99        | 22.25                      | 21.62                      | 22.55                      |
|           |       | 50      | 0         | 22.41                      | 22.81                      | 22.21                      |
|           |       | 50      | 25        | 22.67                      | 21.63                      | 22.13                      |
|           |       | 50      | 50        | 23.04                      | 21.92                      | 21.29                      |
|           |       | 100     | 0         | 21.59                      | 22.74                      | 22.07                      |

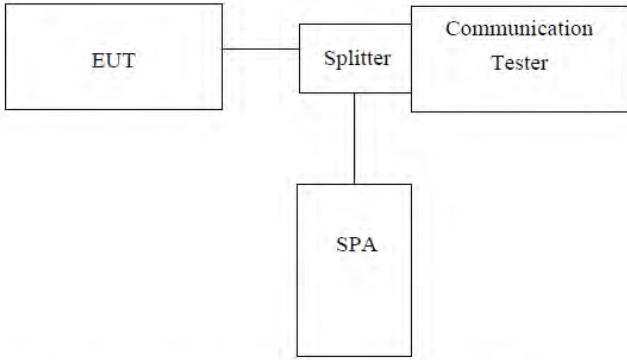
| Band 5    |       |         |           |                           |                           |                           |
|-----------|-------|---------|-----------|---------------------------|---------------------------|---------------------------|
| Bandwidth | Mode  | RB Size | RB Offset | Actual output power(dBm)  |                           |                           |
|           |       |         |           | Channel 20425<br>826.5MHz | Channel 20525<br>836.5MHz | Channel 20625<br>846.5MHz |
| 5MHz      | QPSK  | 1       | 0         | 22.59                     | 20.69                     | 22.16                     |
|           |       | 1       | 13        | 21.97                     | 21.06                     | 20.83                     |
|           |       | 1       | 24        | 21.73                     | 23.04                     | 22.08                     |
|           |       | 12      | 0         | 23.54                     | 23.03                     | 20.94                     |
|           |       | 12      | 6         | 21.55                     | 21.67                     | 20.00                     |
|           |       | 12      | 13        | 22.14                     | 22.26                     | 21.88                     |
|           |       | 25      | 0         | 21.14                     | 21.46                     | 23.33                     |
|           | 16QAM | 1       | 0         | 22.51                     | 24.16                     | 21.51                     |
|           |       | 1       | 13        | 23.03                     | 22.39                     | 22.38                     |
|           |       | 1       | 24        | 23.03                     | 22.65                     | 21.32                     |
|           |       | 12      | 0         | 22.65                     | 22.52                     | 20.78                     |
|           |       | 12      | 6         | 20.65                     | 22.33                     | 21.15                     |
|           |       | 12      | 13        | 22.05                     | 21.77                     | 22.52                     |
|           |       | 25      | 0         | 22.57                     | 22.71                     | 21.59                     |
| Bandwidth | Mode  | RB Size | RB Offset | Actual output power(dBm)  |                           |                           |
|           |       |         |           | Channel 20450<br>829MHz   | Channel 20525<br>836.5MHz | Channel 20600<br>844.0MHz |
| 10MHz     | QPSK  | 1       | 0         | 21.20                     | 20.93                     | 21.41                     |
|           |       | 1       | 25        | 21.71                     | 22.86                     | 22.29                     |
|           |       | 1       | 49        | 22.10                     | 22.22                     | 22.24                     |
|           |       | 25      | 0         | 22.39                     | 21.16                     | 21.76                     |
|           |       | 25      | 13        | 21.17                     | 20.92                     | 21.91                     |
|           |       | 25      | 25        | 21.36                     | 23.09                     | 21.85                     |
|           |       | 50      | 0         | 21.23                     | 22.14                     | 21.38                     |
|           | 16QAM | 1       | 0         | 21.18                     | 21.34                     | 21.55                     |
|           |       | 1       | 25        | 21.73                     | 21.81                     | 20.78                     |
|           |       | 1       | 49        | 21.38                     | 23.51                     | 22.70                     |
|           |       | 25      | 0         | 22.53                     | 20.79                     | 22.39                     |
|           |       | 25      | 13        | 22.72                     | 23.20                     | 22.88                     |
|           |       | 25      | 25        | 21.14                     | 21.31                     | 20.75                     |
|           |       | 50      | 0         | 22.07                     | 21.80                     | 21.27                     |

| Band 7    |       |         |           |                            |                          |                            |
|-----------|-------|---------|-----------|----------------------------|--------------------------|----------------------------|
| Bandwidth | Mode  | RB Size | RB Offset | Actual output power(dBm)   |                          |                            |
|           |       |         |           | Channel 20775<br>2502.5MHz | Channel 21100<br>2535MHz | Channel 21425<br>2567.5MHz |
| 5MHz      | QPSK  | 1       | 0         | 23.67                      | 22.53                    | 22.23                      |
|           |       | 1       | 13        | 20.89                      | 23.10                    | 21.38                      |
|           |       | 1       | 24        | 20.79                      | 21.77                    | 21.93                      |
|           |       | 12      | 0         | 22.10                      | 21.88                    | 22.50                      |
|           |       | 12      | 6         | 22.38                      | 23.10                    | 21.37                      |
|           |       | 12      | 13        | 22.24                      | 21.78                    | 20.86                      |
|           |       | 25      | 0         | 23.13                      | 21.83                    | 22.53                      |
|           | 16QAM | 1       | 0         | 22.33                      | 22.63                    | 23.78                      |
|           |       | 1       | 13        | 21.91                      | 21.67                    | 22.04                      |
|           |       | 1       | 24        | 21.63                      | 22.46                    | 21.52                      |
|           |       | 12      | 0         | 22.68                      | 23.66                    | 22.34                      |
|           |       | 12      | 6         | 21.07                      | 20.93                    | 22.37                      |
|           |       | 12      | 13        | 22.55                      | 21.53                    | 22.41                      |
|           |       | 25      | 0         | 23.21                      | 22.65                    | 21.18                      |
| Bandwidth | Mode  | RB Size | RB Offset | Actual output power(dBm)   |                          |                            |
|           |       |         |           | Channel 20800<br>2505MHz   | Channel 21100<br>2535MHz | Channel 21400<br>2565MHz   |
| 10MHz     | QPSK  | 1       | 0         | 21.33                      | 22.06                    | 22.38                      |
|           |       | 1       | 25        | 20.95                      | 22.97                    | 21.86                      |
|           |       | 1       | 49        | 20.88                      | 21.29                    | 21.73                      |
|           |       | 25      | 0         | 21.75                      | 21.68                    | 22.01                      |
|           |       | 25      | 13        | 22.08                      | 22.82                    | 21.75                      |
|           |       | 25      | 25        | 22.41                      | 22.11                    | 20.63                      |
|           |       | 50      | 0         | 23.19                      | 22.04                    | 22.29                      |
|           | 16QAM | 1       | 0         | 22.13                      | 22.93                    | 22.06                      |
|           |       | 1       | 25        | 22.07                      | 21.34                    | 22.01                      |
|           |       | 1       | 49        | 21.21                      | 22.70                    | 21.48                      |
|           |       | 25      | 0         | 22.57                      | 23.23                    | 22.83                      |
|           |       | 25      | 13        | 20.99                      | 20.68                    | 21.95                      |
|           |       | 25      | 25        | 22.28                      | 21.71                    | 22.22                      |
|           |       | 50      | 0         | 23.18                      | 23.15                    | 20.17                      |



| Bandwidth | Mode  | RB Size | RB Offset | Actual output power(dBm)   |                          |                            |
|-----------|-------|---------|-----------|----------------------------|--------------------------|----------------------------|
|           |       |         |           | Channel 20825<br>2507.5MHz | Channel 21100<br>2535MHz | Channel 21375<br>2562.5MHz |
| 15MHz     | QPSK  | 1       | 0         | 23.24                      | 23.11                    | 22.46                      |
|           |       | 1       | 38        | 22.20                      | 22.45                    | 23.02                      |
|           |       | 1       | 74        | 21.46                      | 21.54                    | 21.29                      |
|           |       | 36      | 0         | 21.47                      | 22.99                    | 20.63                      |
|           |       | 36      | 18        | 23.43                      | 21.60                    | 23.17                      |
|           |       | 36      | 39        | 21.94                      | 20.49                    | 20.46                      |
|           |       | 75      | 0         | 22.04                      | 22.40                    | 21.64                      |
|           | 16QAM | 1       | 0         | 21.66                      | 22.70                    | 22.80                      |
|           |       | 1       | 38        | 22.56                      | 21.29                    | 21.99                      |
|           |       | 1       | 74        | 22.87                      | 22.95                    | 22.09                      |
|           |       | 36      | 0         | 21.79                      | 22.78                    | 21.28                      |
|           |       | 36      | 18        | 22.18                      | 23.10                    | 22.53                      |
|           |       | 36      | 39        | 22.61                      | 21.41                    | 21.79                      |
|           |       | 75      | 0         | 21.65                      | 22.83                    | 22.20                      |
| Bandwidth | Mode  | RB Size | RB Offset | Actual output power(dBm)   |                          |                            |
|           |       |         |           | Channel 20850<br>2510MHz   | Channel 21100<br>2535MHz | Channel 21350<br>2560MHz   |
| 20MHz     | QPSK  | 1       | 0         | 21.83                      | 21.15                    | 22.43                      |
|           |       | 1       | 50        | 21.03                      | 22.56                    | 22.21                      |
|           |       | 1       | 99        | 21.75                      | 21.25                    | 22.91                      |
|           |       | 50      | 0         | 20.92                      | 20.68                    | 23.10                      |
|           |       | 50      | 25        | 23.24                      | 20.94                    | 21.98                      |
|           |       | 50      | 50        | 20.44                      | 20.19                    | 22.69                      |
|           |       | 100     | 0         | 21.91                      | 20.97                    | 21.77                      |
|           | 16QAM | 1       | 0         | 21.96                      | 22.43                    | 21.30                      |
|           |       | 1       | 50        | 22.33                      | 20.49                    | 20.73                      |
|           |       | 1       | 99        | 22.51                      | 21.98                    | 22.49                      |
|           |       | 50      | 0         | 23.29                      | 20.54                    | 21.72                      |
|           |       | 50      | 25        | 21.26                      | 23.48                    | 22.01                      |
|           |       | 50      | 50        | 22.52                      | 21.32                    | 22.82                      |
|           |       | 100     | 0         | 22.03                      | 22.90                    | 21.14                      |

#### 4.4 Occupy Bandwidth

|                   |  |
|-------------------|--|
| Test Requirement: | FCC part22.913(a), FCC part24.232(b) and FCC part27.53(a)  |
| Test Method:      | FCC part2.1049   |
| Test setup:       |  <p style="text-align: center;"><i>Note: Measurement setup for testing on Antenna connector</i></p>  |
| Test Procedure:   | <ol style="list-style-type: none"> <li>1. The EUT's output RF connector was connected with a short cable to the spectrum analyzer</li> <li>2. RBW was set to about 1% of emission BW, VBW= 3 times RBW.</li> <li>3. -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.</li> </ol> |
| Test Instruments: | Refer to section 6.0 for details   |
| Test mode:        | Refer to section 7.1 for details   |
| Test results:     | Pass   |

## QPSK Measurement Data

| EUT Mode   | Channel Bandwidth | Channel    | RB Configure |           | 99% Occupy bandwidth (KHz) | -26dB bandwidth (KHz) |
|------------|-------------------|------------|--------------|-----------|----------------------------|-----------------------|
|            |                   |            | RB Size      | RB Offset |                            |                       |
| LTE Band 2 | 5MHz              | Low range  | 25           | 0         | 4511.4                     | 5049                  |
|            |                   | Mid range  | 25           | 0         | 4493.2                     | 4973                  |
|            |                   | High range | 25           | 0         | 4507.6                     | 5014                  |
|            | 10MHz             | Low range  | 50           | 0         | 9012.0                     | 9994                  |
|            |                   | Mid range  | 50           | 0         | 9006.0                     | 10040                 |
|            |                   | High range | 50           | 0         | 9006.8                     | 10040                 |
|            | 15MHz             | Low range  | 75           | 0         | 13418.0                    | 14840                 |
|            |                   | Mid range  | 75           | 0         | 13403.0                    | 14620                 |
|            |                   | High range | 75           | 0         | 13403.0                    | 14570                 |
|            | 20MHz             | Low range  | 100          | 0         | 17865.0                    | 19330                 |
|            |                   | Mid range  | 100          | 0         | 17896.0                    | 19260                 |
|            |                   | High range | 100          | 0         | 17815.0                    | 19220                 |

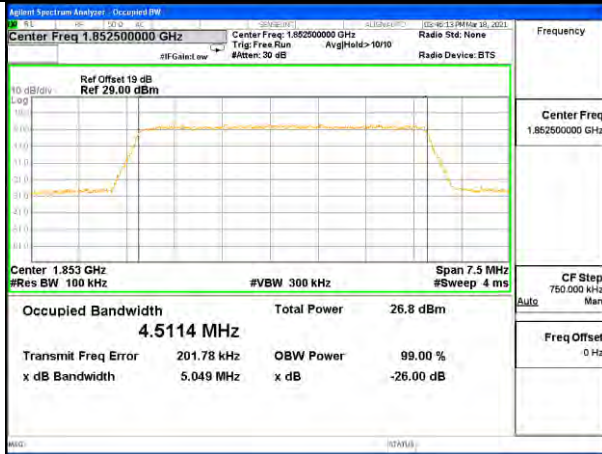
| EUT Mode   | Channel Bandwidth | Channel    | RB Configure |           | 99% Occupy bandwidth (KHz) | -26dB bandwidth (KHz) |
|------------|-------------------|------------|--------------|-----------|----------------------------|-----------------------|
|            |                   |            | RB Size      | RB Offset |                            |                       |
| LTE Band 4 | 5MHz              | Low range  | 25           | 0         | 4507.7                     | 5010                  |
|            |                   | Mid range  | 25           | 0         | 4487.2                     | 4970                  |
|            |                   | High range | 25           | 0         | 4487.8                     | 4999                  |
|            | 10MHz             | Low range  | 50           | 0         | 9019.0                     | 10060                 |
|            |                   | Mid range  | 50           | 0         | 9015.5                     | 10120                 |
|            |                   | High range | 50           | 0         | 9039.4                     | 10060                 |
|            | 15MHz             | Low range  | 75           | 0         | 13441.0                    | 14660                 |
|            |                   | Mid range  | 75           | 0         | 13389.0                    | 14660                 |
|            |                   | High range | 75           | 0         | 13441.0                    | 14680                 |
|            | 20MHz             | Low range  | 100          | 0         | 17856.0                    | 19280                 |
|            |                   | Mid range  | 100          | 0         | 17823.0                    | 19250                 |
|            |                   | High range | 100          | 0         | 17858.0                    | 19320                 |

| EUT Mode   | Channel Bandwidth | Channel    | RB Configure |           | 99% Occupy bandwidth (KHz) | -26dB bandwidth (KHz) |
|------------|-------------------|------------|--------------|-----------|----------------------------|-----------------------|
|            |                   |            | RB Size      | RB Offset |                            |                       |
| LTE Band 5 | 5MHz              | Low range  | 25           | 0         | 4503.7                     | 4978                  |
|            |                   | Mid range  | 25           | 0         | 4487.9                     | 4497                  |
|            |                   | High range | 25           | 0         | 4492.7                     | 4966                  |
|            | 10MHz             | Low range  | 50           | 0         | 9017.5                     | 10010                 |
|            |                   | Mid range  | 50           | 0         | 9045.6                     | 10200                 |
|            |                   | High range | 50           | 0         | 9006.8                     | 10100                 |

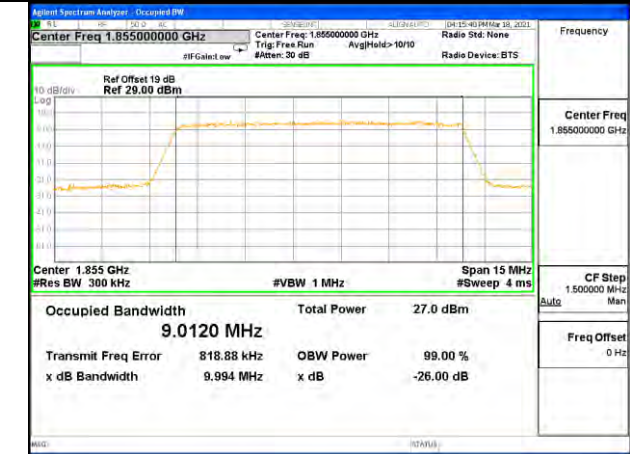
| EUT Mode   | Channel Bandwidth | Channel    | RB Configure |           | 99% Occupy bandwidth (KHz) | -26dB bandwidth (KHz) |
|------------|-------------------|------------|--------------|-----------|----------------------------|-----------------------|
|            |                   |            | RB Size      | RB Offset |                            |                       |
| LTE Band 7 | 5MHz              | Low range  | 25           | 0         | 4504.8                     | 4986                  |
|            |                   | Mid range  | 25           | 0         | 4488.7                     | 4975                  |
|            |                   | High range | 25           | 0         | 4492.8                     | 4975                  |
|            | 10MHz             | Low range  | 50           | 0         | 8992.6                     | 10100                 |
|            |                   | Mid range  | 50           | 0         | 9031.1                     | 10070                 |
|            |                   | High range | 50           | 0         | 9012.6                     | 10010                 |
|            | 15MHz             | Low range  | 75           | 0         | 13441.0                    | 14560                 |
|            |                   | Mid range  | 75           | 0         | 13420.0                    | 14660                 |
|            |                   | High range | 75           | 0         | 13437.0                    | 14640                 |
|            | 20MHz             | Low range  | 100          | 0         | 17868.0                    | 19270                 |
|            |                   | Mid range  | 100          | 0         | 17857.0                    | 19230                 |
|            |                   | High range | 100          | 0         | 17885.0                    | 19290                 |

Test plot as follows:

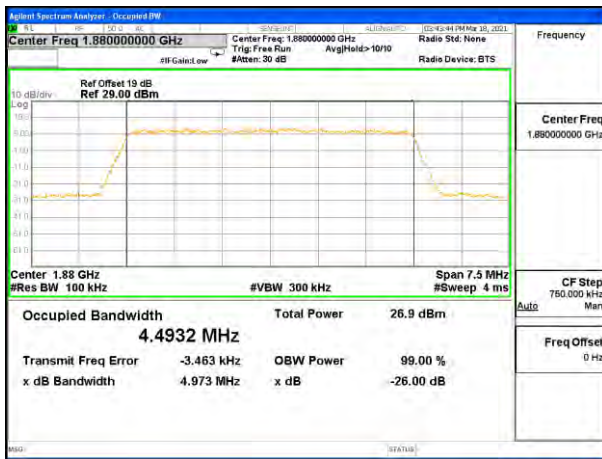
Test Mode: LTE Band 2  
Channel Bandwidth: 5MHz



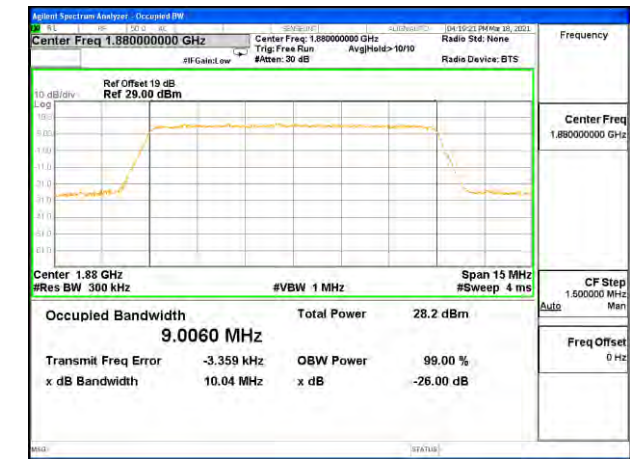
Lowest channel



Lowest channel



Middle channel



Middle channel

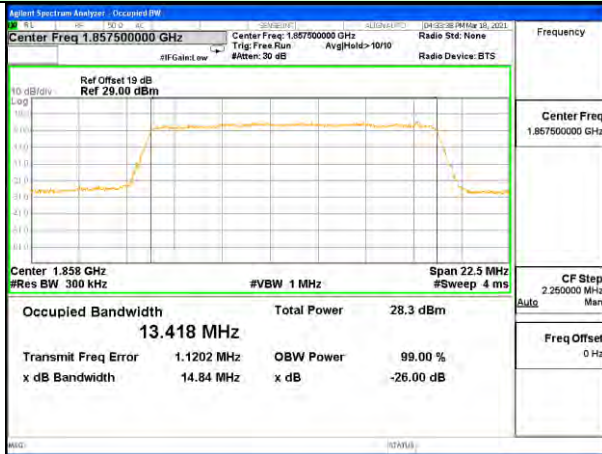


Highest channel



Highest channel

Test Mode: LTE Band 2  
Channel Bandwidth: 15MHz

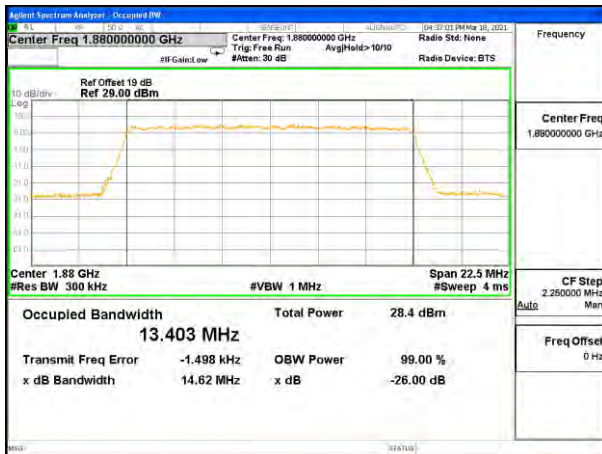


Lowest channel

Test Mode: LTE Band 2  
Channel Bandwidth: 20MHz



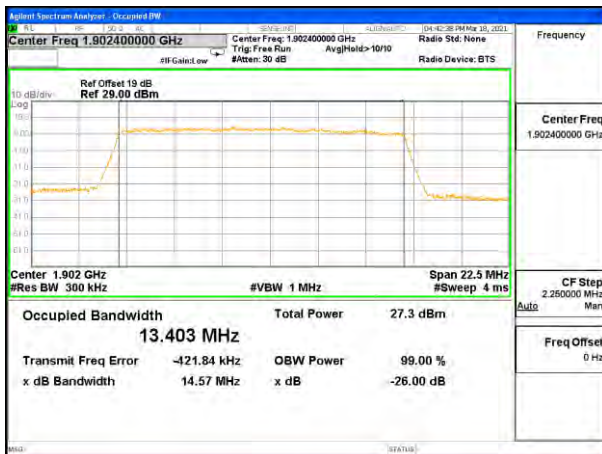
Lowest channel



Middle channel



Middle channel



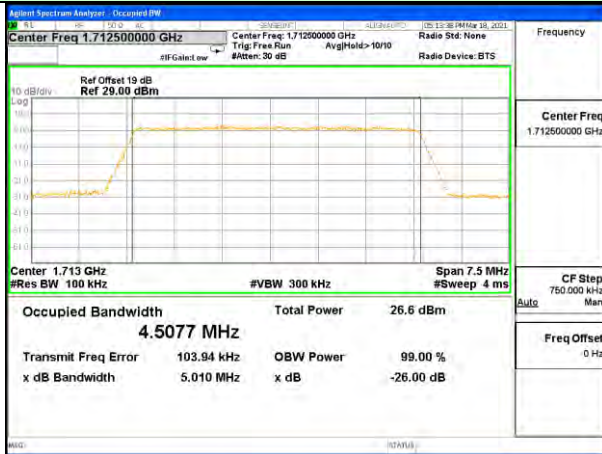
Highest channel



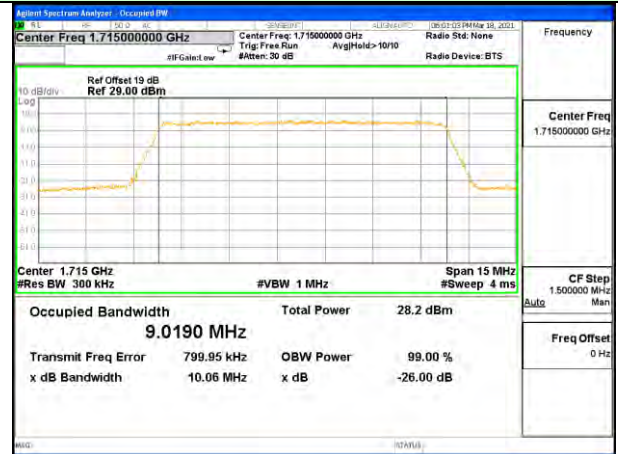
Highest channel

Test Mode: LTE Band 4  
Channel Bandwidth: 5MHz

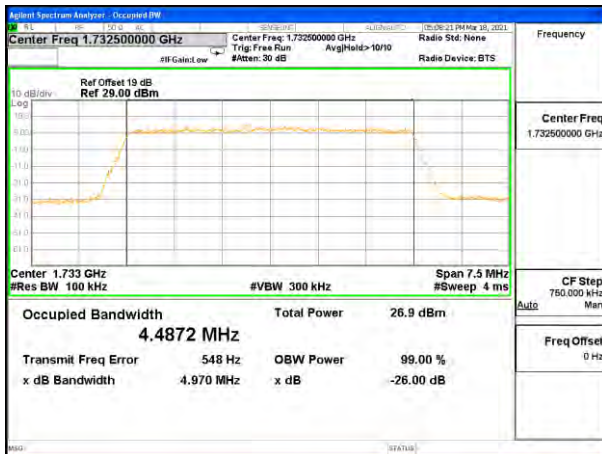
Test Mode: LTE Band 4  
Channel Bandwidth: 10MHz



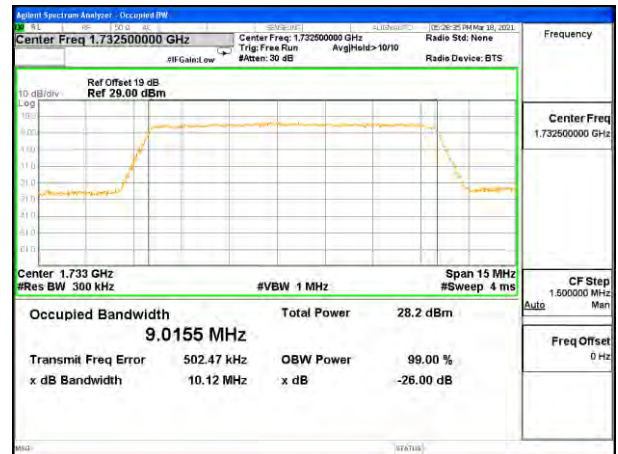
Lowest channel



Lowest channel



Middle channel



Middle channel



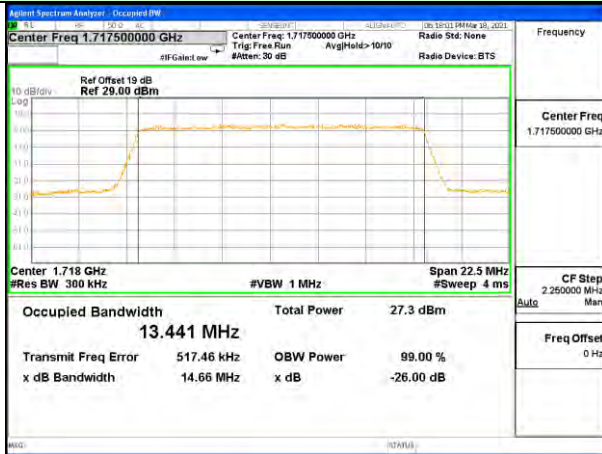
Highest channel



Highest channel

Test Mode: LTE Band 4  
Channel Bandwidth: 15MHz

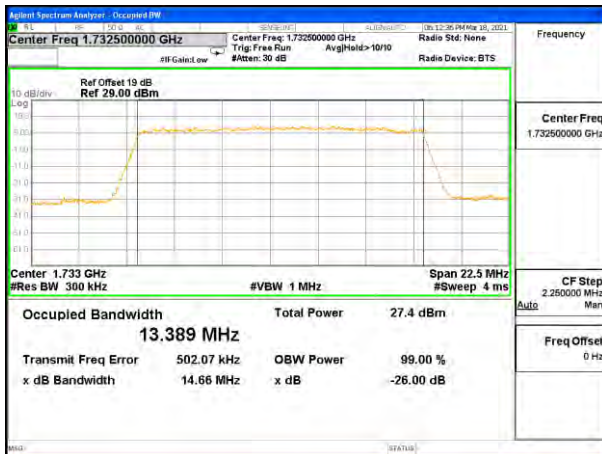
Test Mode: LTE Band 4  
Channel Bandwidth: 20MHz



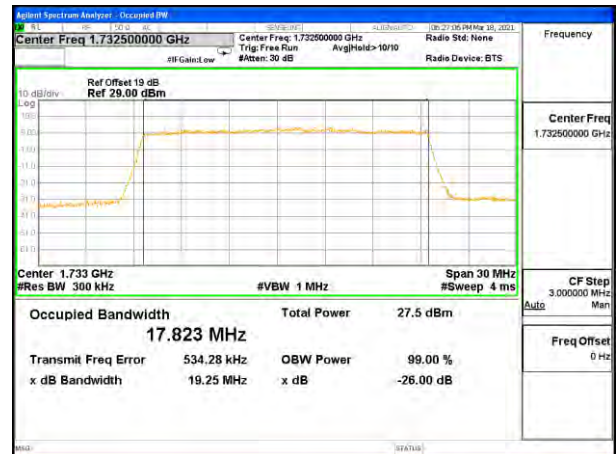
Lowest channel



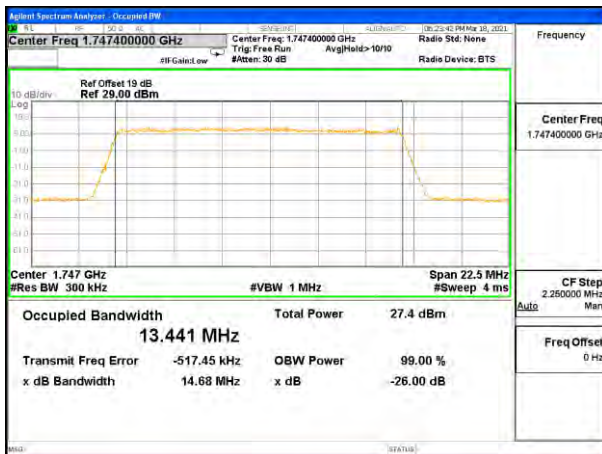
Lowest channel



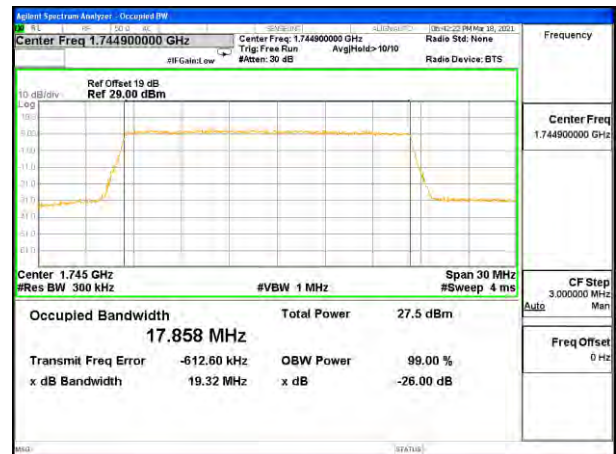
Middle channel



Middle channel



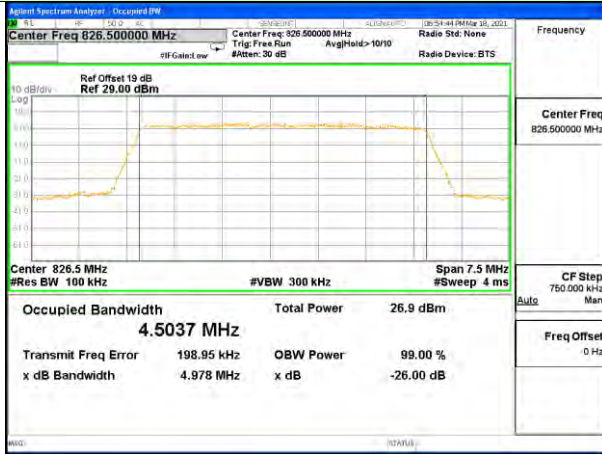
Highest channel



Highest channel



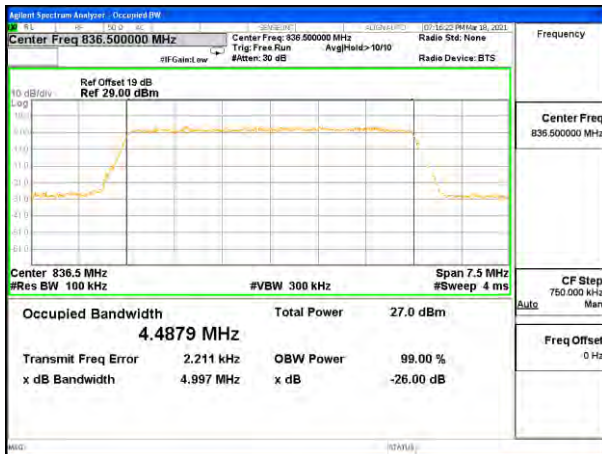
Test Mode: LTE Band 5  
Channel Bandwidth: 5MHz



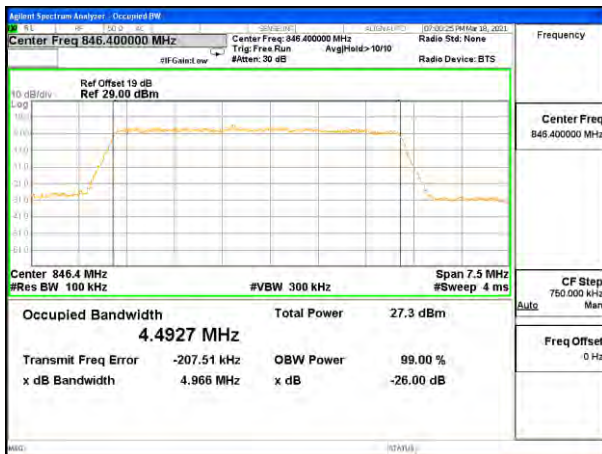
Test Mode: LTE Band 5  
Channel Bandwidth: 10MHz



Lowest channel

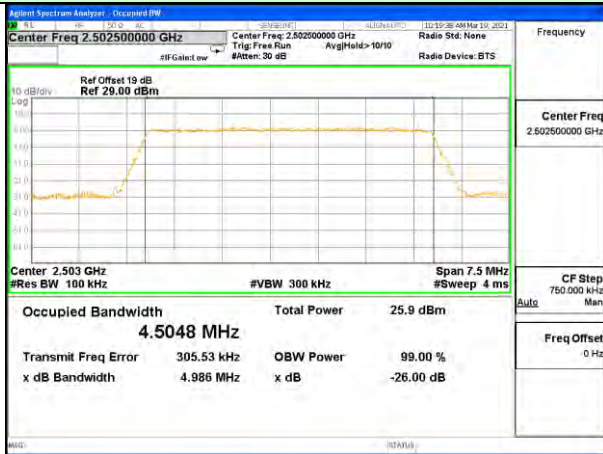


Middle channel



Highest channel

Test Mode: LTE Band 7 Channel Bandwidth: 5MHz

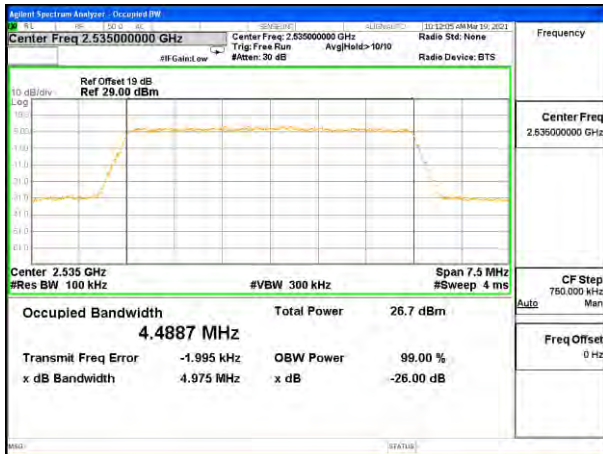


Lowest channel

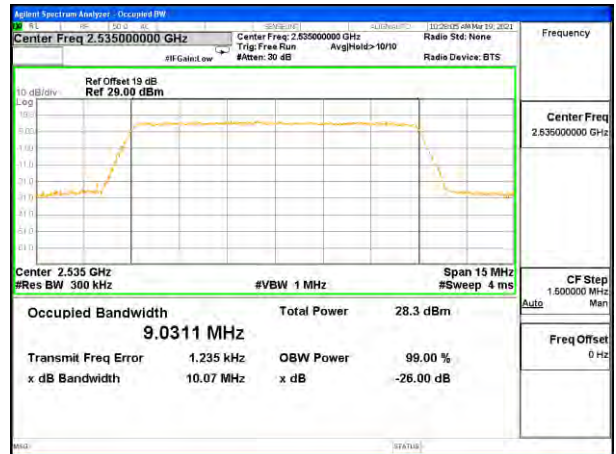
Test Mode: LTE Band 7 Channel Bandwidth: 10MHz



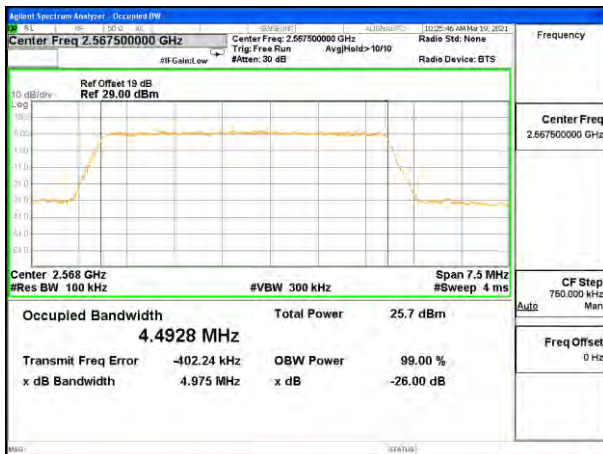
Lowest channel



Middle channel



Middle channel

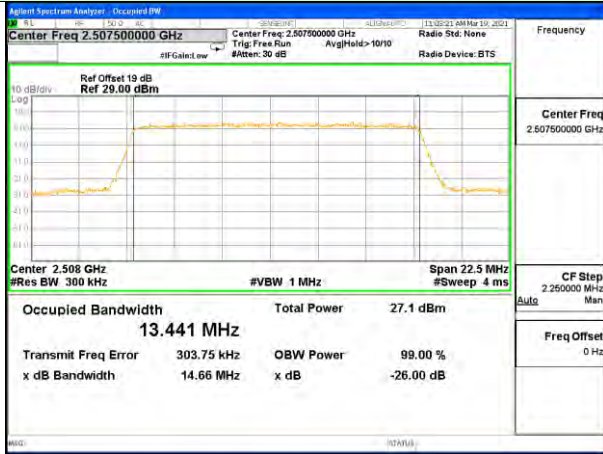


Highest channel

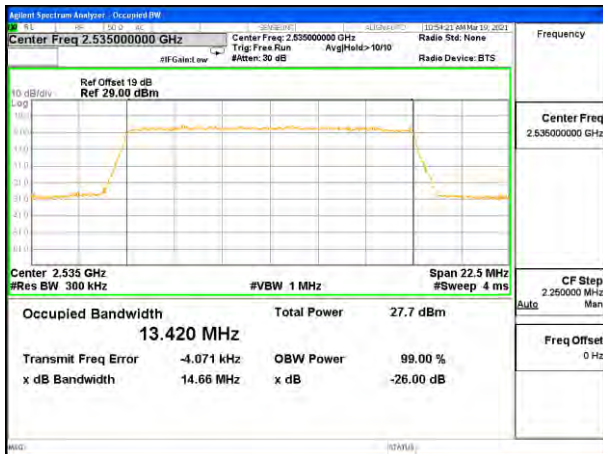


Highest channel

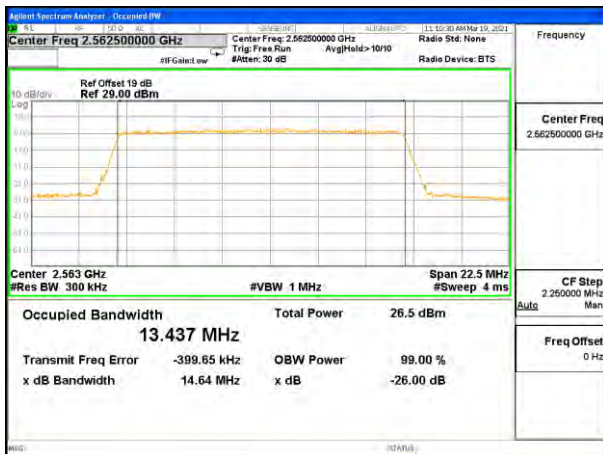
Test Mode: LTE Band 7  
Channel Bandwidth: 15MHz



Lowest channel



Middle channel



Highest channel

Test Mode: LTE Band 7  
Channel Bandwidth: 20MHz



## 16QAM Measurement Data

| EUT Mode   | Channel Bandwidth | Channel    | RB Configure |           | 99% Occupy bandwidth (KHz) | -26dB bandwidth (KHz) |
|------------|-------------------|------------|--------------|-----------|----------------------------|-----------------------|
|            |                   |            | RB Size      | RB Offset |                            |                       |
| LTE Band 2 | 5MHz              | Low range  | 25           | 0         | 4515.5                     | 4997                  |
|            |                   | Mid range  | 25           | 0         | 4503.9                     | 5016                  |
|            |                   | High range | 25           | 0         | 4492.2                     | 4998                  |
|            | 10MHz             | Low range  | 50           | 0         | 9024.7                     | 10080                 |
|            |                   | Mid range  | 50           | 0         | 9002.5                     | 10010                 |
|            |                   | High range | 50           | 0         | 9017.3                     | 10020                 |
|            | 15MHz             | Low range  | 75           | 0         | 13412.0                    | 14710                 |
|            |                   | Mid range  | 75           | 0         | 13401.0                    | 14680                 |
|            |                   | High range | 75           | 0         | 13408.0                    | 14650                 |
|            | 20MHz             | Low range  | 100          | 0         | 17872.0                    | 19210                 |
|            |                   | Mid range  | 100          | 0         | 17897.0                    | 19260                 |
|            |                   | High range | 100          | 0         | 17806.0                    | 19190                 |

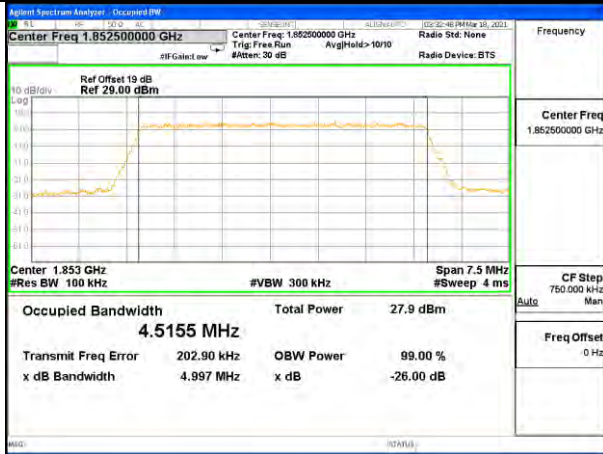
| EUT Mode   | Channel Bandwidth | Channel    | RB Configure |           | 99% Occupy bandwidth (KHz) | -26dB bandwidth (KHz) |
|------------|-------------------|------------|--------------|-----------|----------------------------|-----------------------|
|            |                   |            | RB Size      | RB Offset |                            |                       |
| LTE Band 4 | 5MHz              | Low range  | 25           | 0         | 4506.1                     | 5006                  |
|            |                   | Mid range  | 25           | 0         | 4490.5                     | 4974                  |
|            |                   | High range | 25           | 0         | 4492.3                     | 4999                  |
|            | 10MHz             | Low range  | 50           | 0         | 9009.1                     | 10090                 |
|            |                   | Mid range  | 50           | 0         | 9028.3                     | 10060                 |
|            |                   | High range | 50           | 0         | 9035.7                     | 10060                 |
|            | 15MHz             | Low range  | 75           | 0         | 13450.0                    | 14680                 |
|            |                   | Mid range  | 75           | 0         | 13408.0                    | 14640                 |
|            |                   | High range | 75           | 0         | 13420.0                    | 14680                 |
|            | 20MHz             | Low range  | 100          | 0         | 17880.0                    | 19230                 |
|            |                   | Mid range  | 100          | 0         | 17836.0                    | 19200                 |
|            |                   | High range | 100          | 0         | 17858.0                    | 19230                 |

| EUT Mode   | Channel Bandwidth | Channel    | RB Configure |           | 99% Occupy bandwidth (KHz) | -26dB bandwidth (KHz) |
|------------|-------------------|------------|--------------|-----------|----------------------------|-----------------------|
|            |                   |            | RB Size      | RB Offset |                            |                       |
| LTE Band 5 | 5MHz              | Low range  | 25           | 0         | 4504.8                     | 4988                  |
|            |                   | Mid range  | 25           | 0         | 4495.7                     | 4993                  |
|            |                   | High range | 25           | 0         | 4487.4                     | 4971                  |
|            | 10MHz             | Low range  | 50           | 0         | 9020.4                     | 10070                 |
|            |                   | Mid range  | 50           | 0         | 9049.5                     | 10230                 |
|            |                   | High range | 50           | 0         | 8992.4                     | 9975                  |

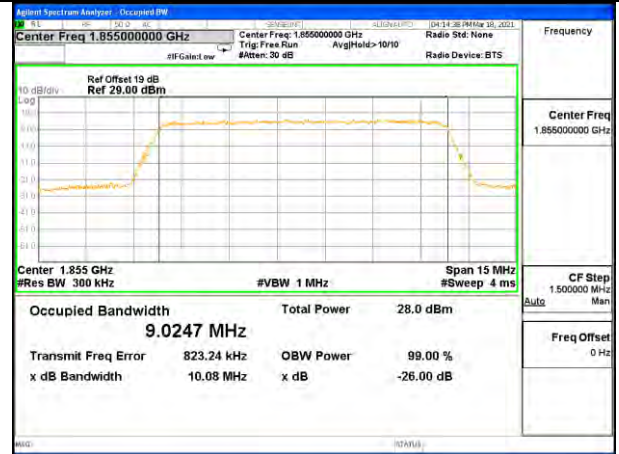
| EUT Mode   | Channel Bandwidth | Channel    | RB Configure |           | 99% Occupy bandwidth (KHz) | -26dB bandwidth (KHz) |
|------------|-------------------|------------|--------------|-----------|----------------------------|-----------------------|
|            |                   |            | RB Size      | RB Offset |                            |                       |
| LTE Band 7 | 5MHz              | Low range  | 25           | 0         | 4504.8                     | 5000                  |
|            |                   | Mid range  | 25           | 0         | 4491.1                     | 4921                  |
|            |                   | High range | 25           | 0         | 4487.4                     | 4972                  |
|            | 10MHz             | Low range  | 50           | 0         | 9000.3                     | 9983                  |
|            |                   | Mid range  | 50           | 0         | 9023.4                     | 10070                 |
|            |                   | High range | 50           | 0         | 9016.2                     | 10050                 |
|            | 15MHz             | Low range  | 75           | 0         | 13441.0                    | 14600                 |
|            |                   | Mid range  | 75           | 0         | 13428.0                    | 14640                 |
|            |                   | High range | 75           | 0         | 13441.0                    | 14650                 |
|            | 20MHz             | Low range  | 100          | 0         | 17880.0                    | 19340                 |
|            |                   | Mid range  | 100          | 0         | 17845.0                    | 19310                 |
|            |                   | High range | 100          | 0         | 17863.0                    | 19340                 |

Test plot as follows:

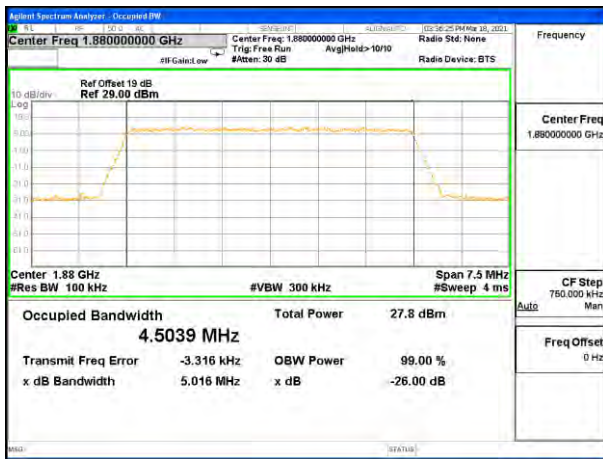
Test Mode: LTE Band 2  
Channel Bandwidth: 5MHz



Lowest channel



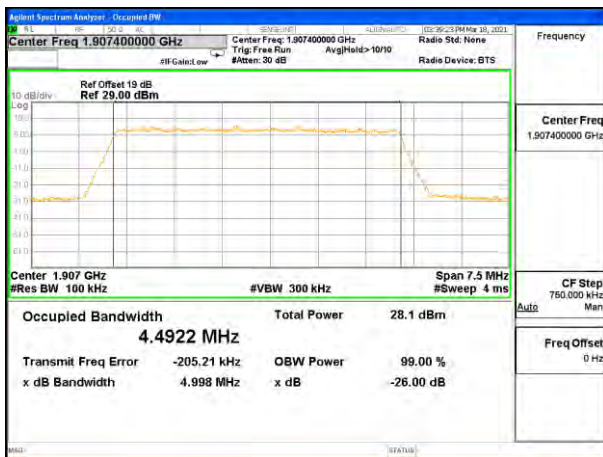
Lowest channel



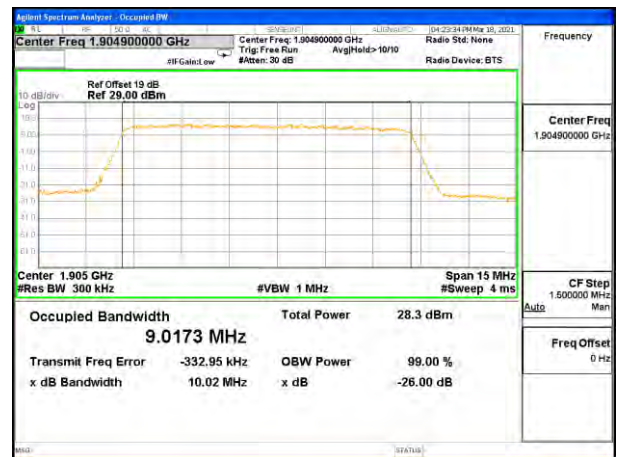
Middle channel



Middle channel

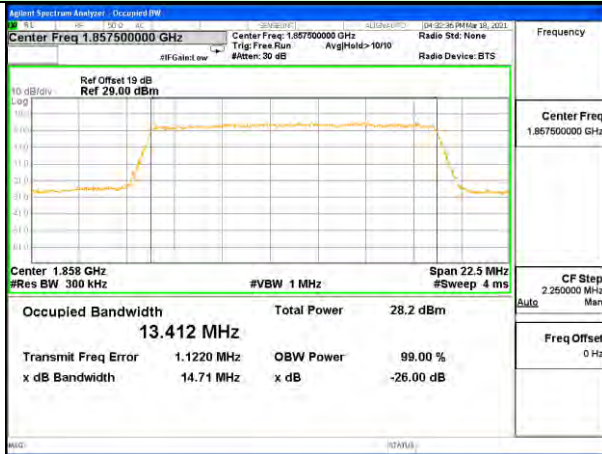


Highest channel



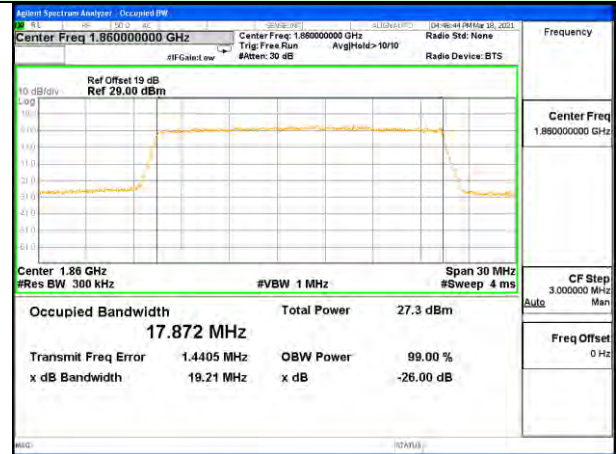
Highest channel

Test Mode: LTE Band 2  
Channel Bandwidth: 15MHz

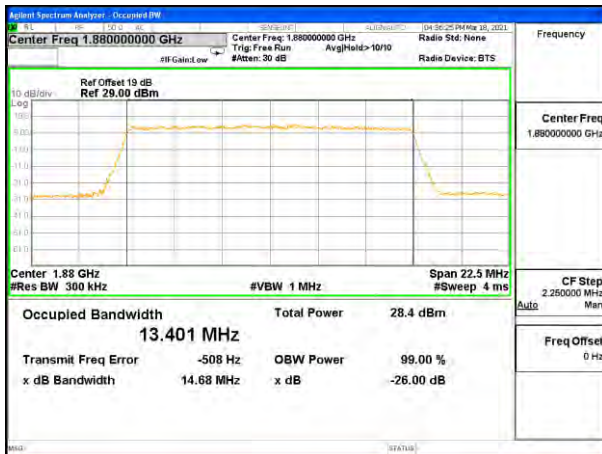


Lowest channel

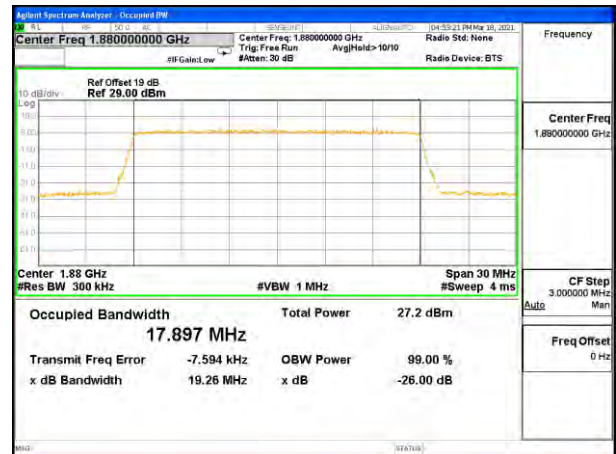
Test Mode: LTE Band 2  
Channel Bandwidth: 20MHz



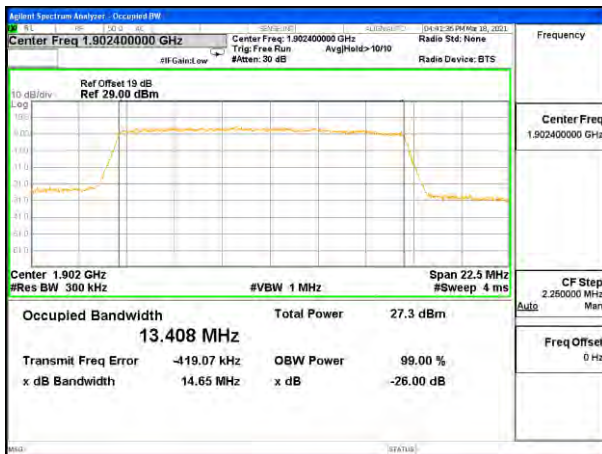
Lowest channel



Middle channel



Middle channel



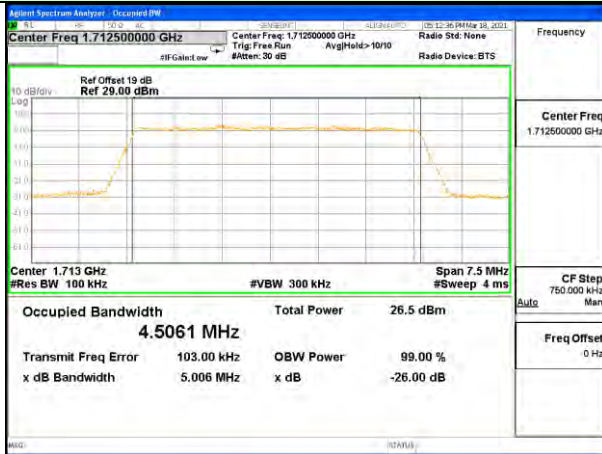
Highest channel



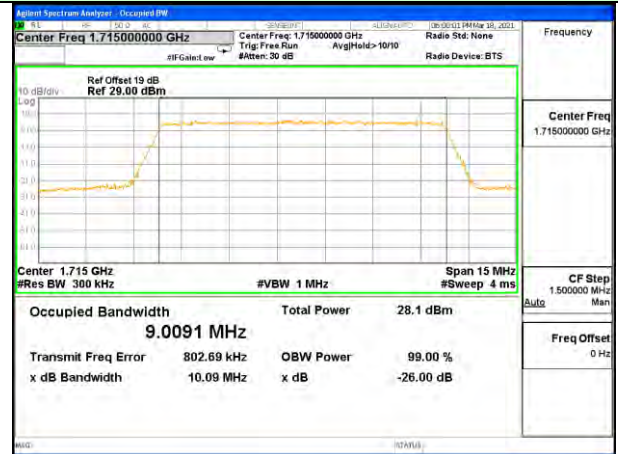
Highest channel

Test Mode: LTE Band 4  
Channel Bandwidth: 5MHz

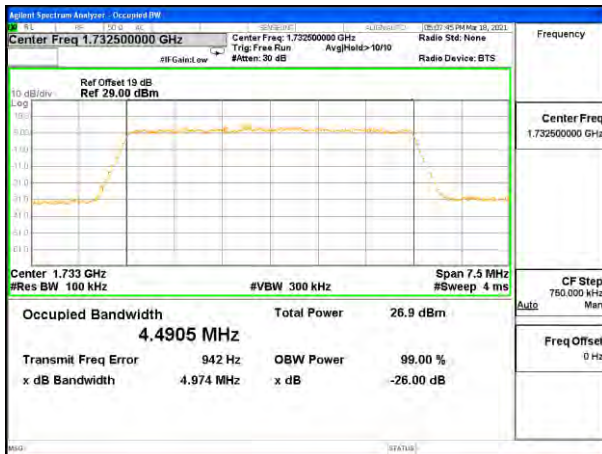
Test Mode: LTE Band 4  
Channel Bandwidth: 10MHz



Lowest channel



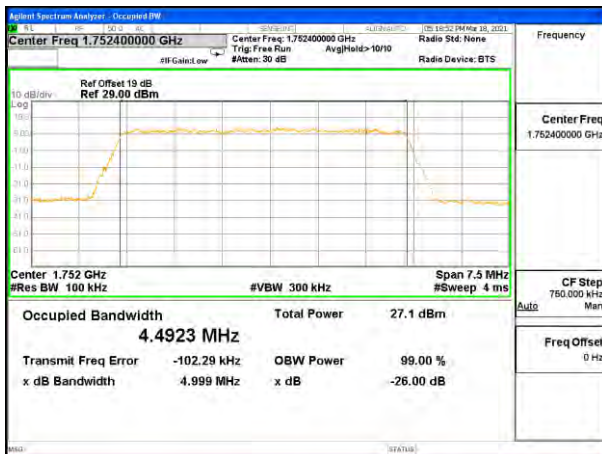
Lowest channel



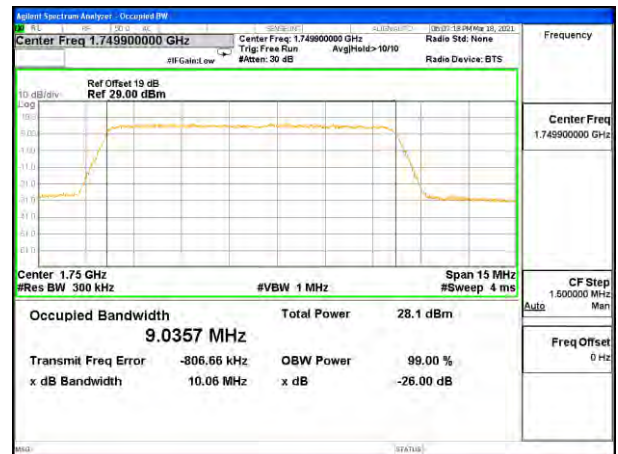
Middle channel



Middle channel



Highest channel

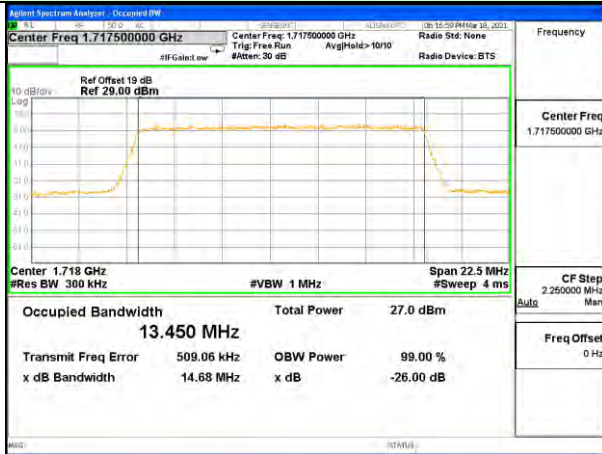


Highest channel



Test Mode: LTE Band 4  
Channel Bandwidth: 15MHz

Test Mode: LTE Band 4  
Channel Bandwidth: 20MHz



Lowest channel



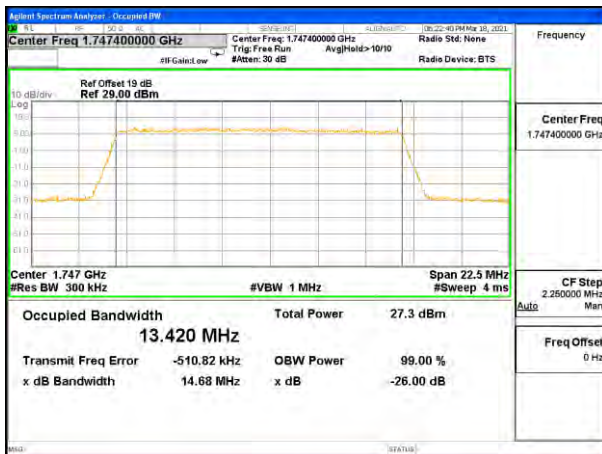
Lowest channel



Middle channel



Middle channel



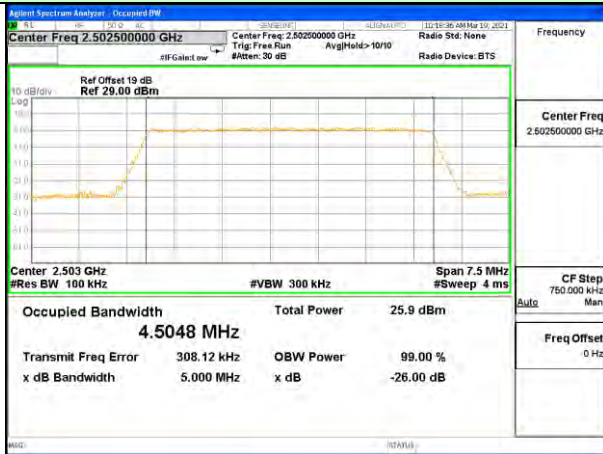
Highest channel



Highest channel



Test Mode: LTE Band 7 Channel Bandwidth: 5MHz

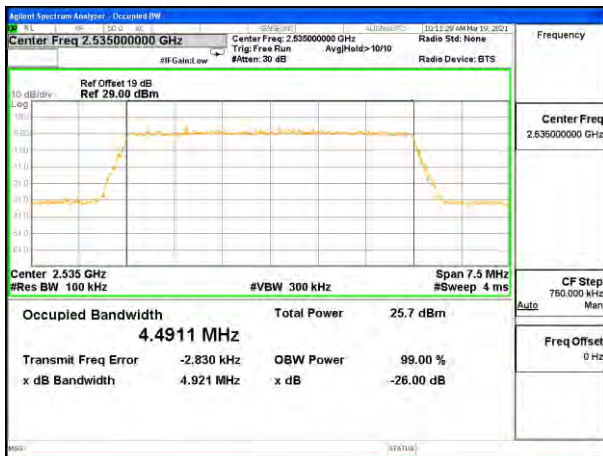


Lowest channel

Test Mode: LTE Band 7 Channel Bandwidth: 10MHz



Lowest channel



Middle channel



Middle channel

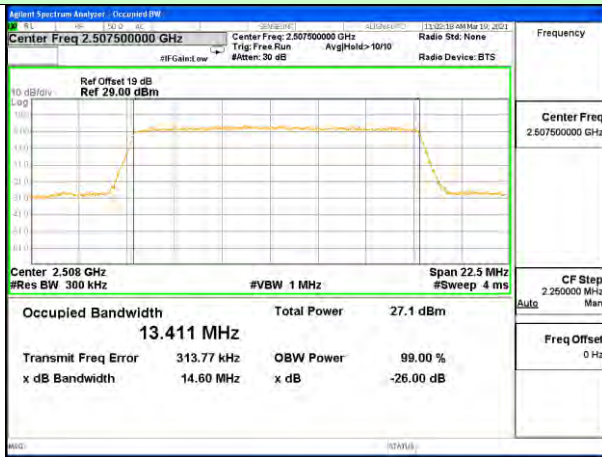


Highest channel



Highest channel

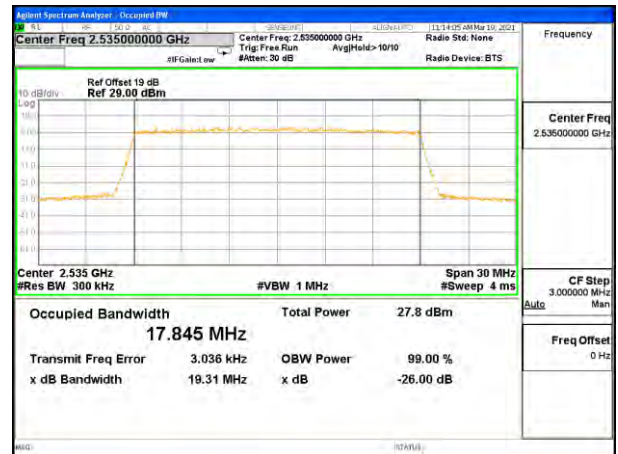
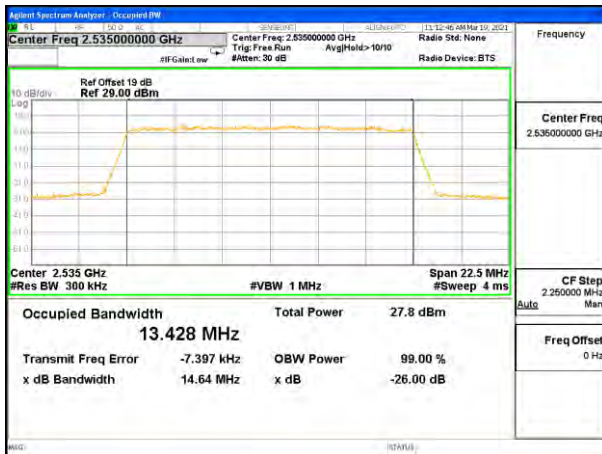
Test Mode: LTE Band 7  
Channel Bandwidth: 15MHz



Test Mode: LTE Band 7  
Channel Bandwidth: 20MHz



Lowest channel



Middle channel



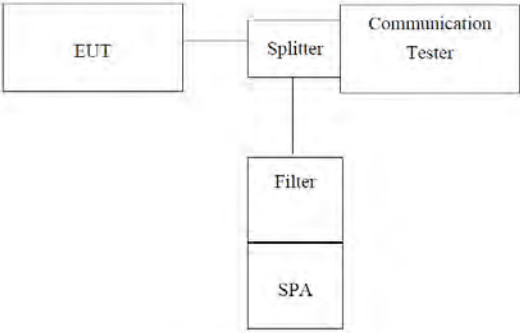
Highest channel

Note: All bandwidth and modulation are tested, only the worst result is reported.

#### 4.5 MODULATION CHARACTERISTIC

According to FCC § 2.1047(d), Part 24E & Part 27 there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

#### 4.6 Out of band emission at antenna terminals

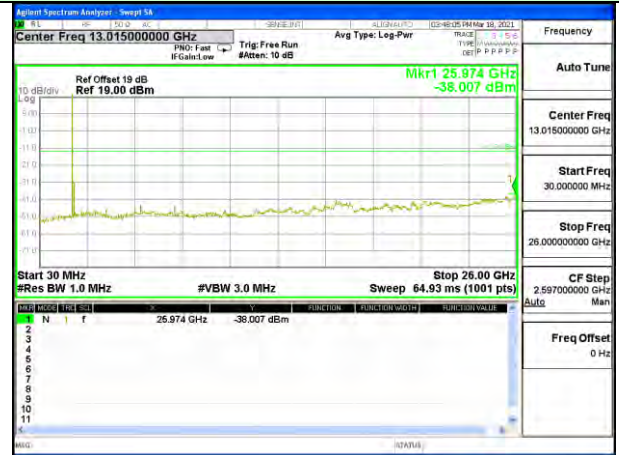
|                   |  |
|-------------------|--|
| Test Requirement: | FCC part22.913(a), FCC part24.238(a) and FCC part27.53(h)  |
| Test Method:      | FCC part2.1051   |
| Limit:            | -13dBm   |
| Test setup:       |  <p><i>Note: Measurement setup for testing on Antenna connector</i></p>  |
| Test Procedure:   | <ol style="list-style-type: none"> <li>1 The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.</li> <li>2 The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.</li> <li>3 For the out of band: Set the RBW, VBW = 1MHz, Start=30MHz, Stop= 10th harmonic.</li> <li>4 Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions.</li> </ol> |
| Test Instruments: | Refer to section 6.0 for details   |
| Test mode:        | Refer to section 7.1 for details   |
| Test results:     | Pass   |

Test plot as follows:

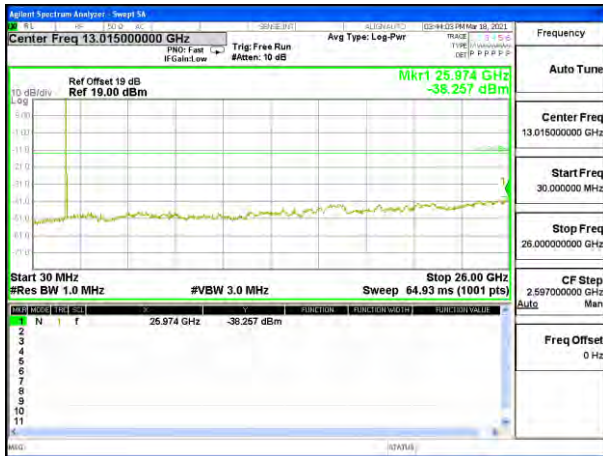
### Conducted Spurious Emission:

Test Mode: LTE Band 2 / 5MHz /1RB

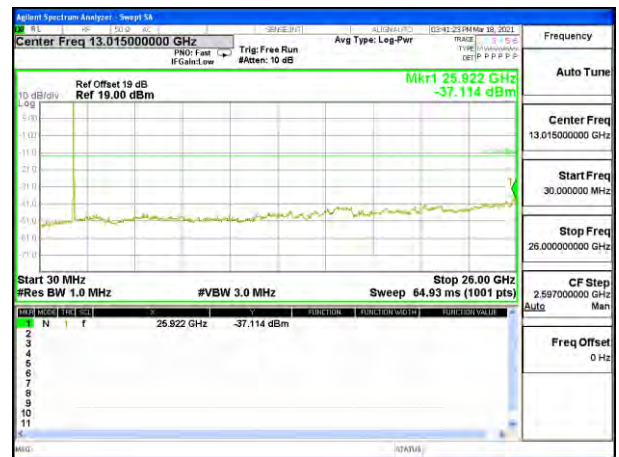
Test Mode: LTE Band 2 / 5MHz /25RB



Lowest channel



Middle channel



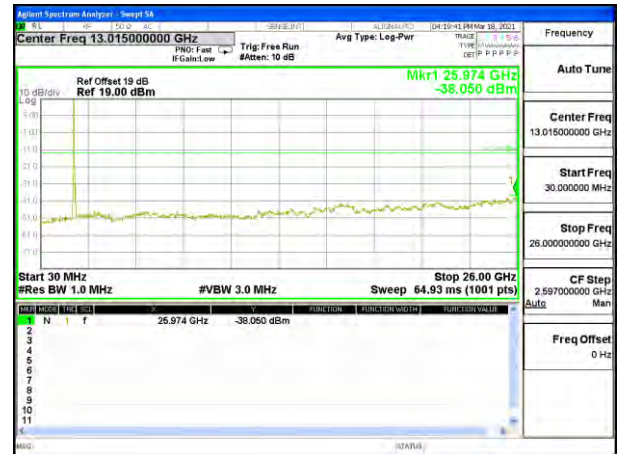
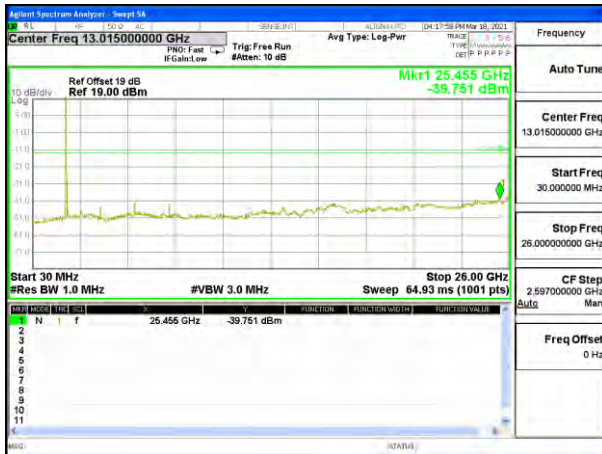
Highest channel

Test Mode: LTE Band 2 / 10MHz /1RB

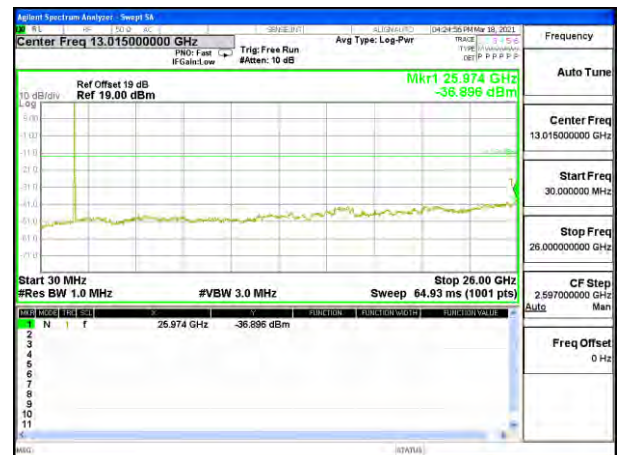
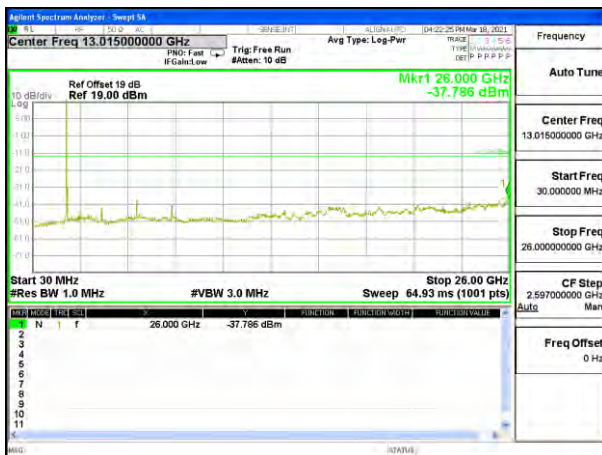
Test Mode: LTE Band 2 / 10MHz /50RB



Lowest channel

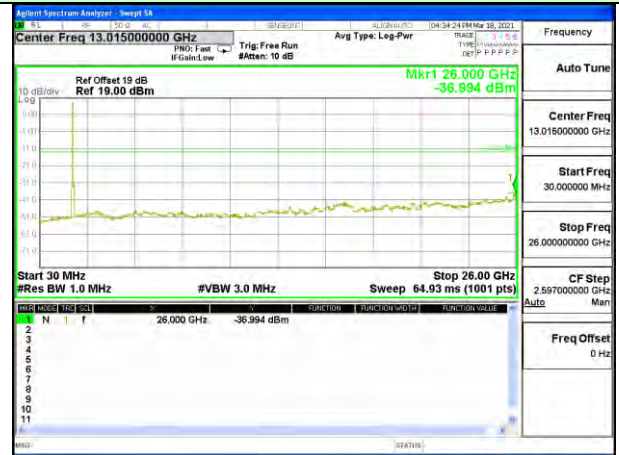
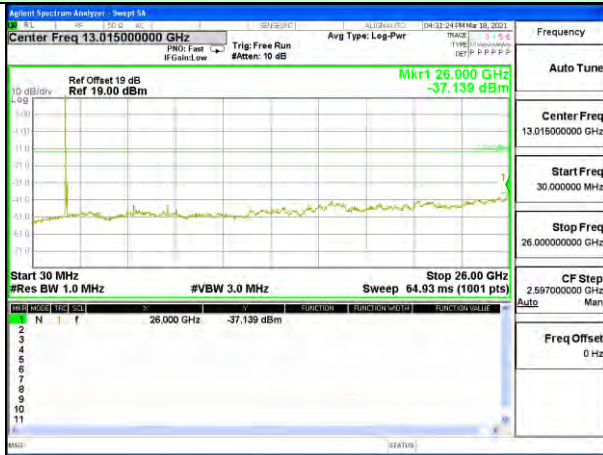


Middle channel

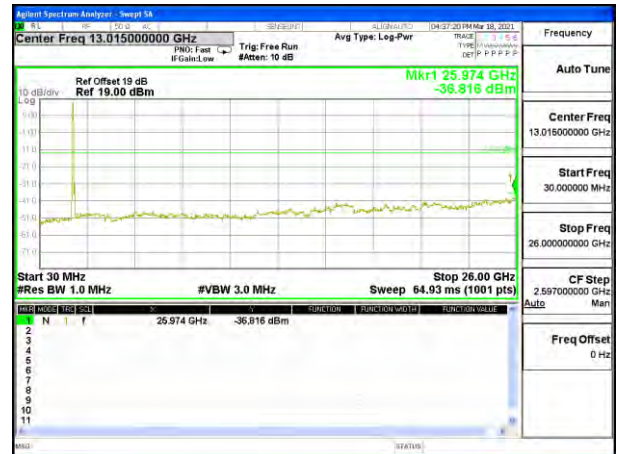
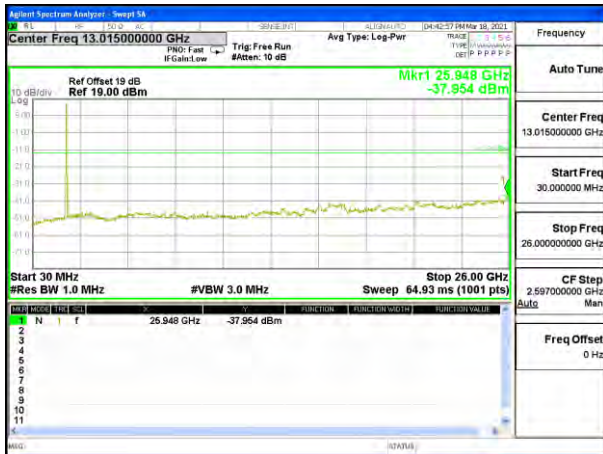


Highest channel

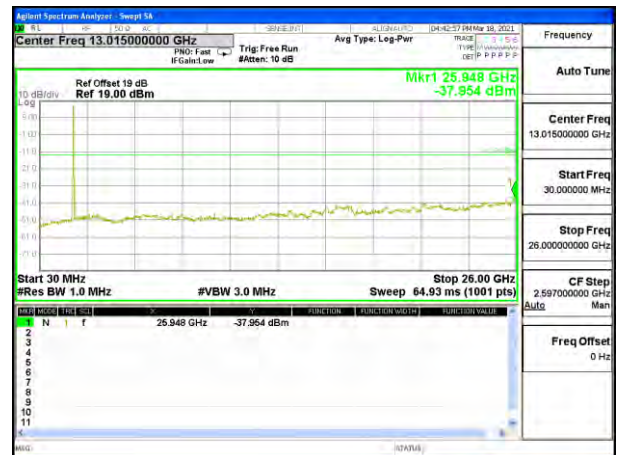
Test Mode: LTE Band 2 / 15MHz /1RB      Test Mode: LTE Band 2 / 15MHz /75RB



Lowest channel



Middle channel

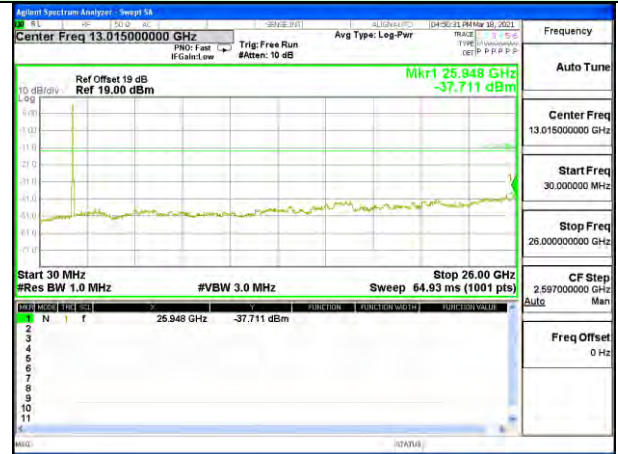
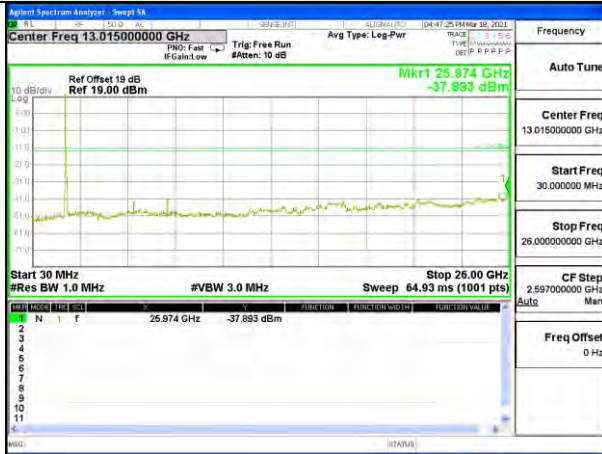


Highest channel

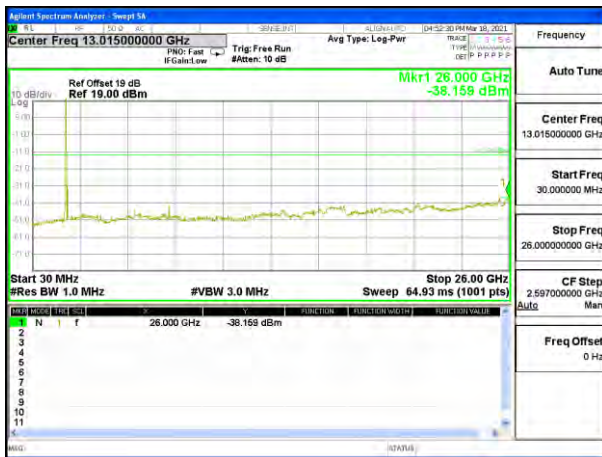


Test Mode: LTE Band 2 / 20MHz /1RB

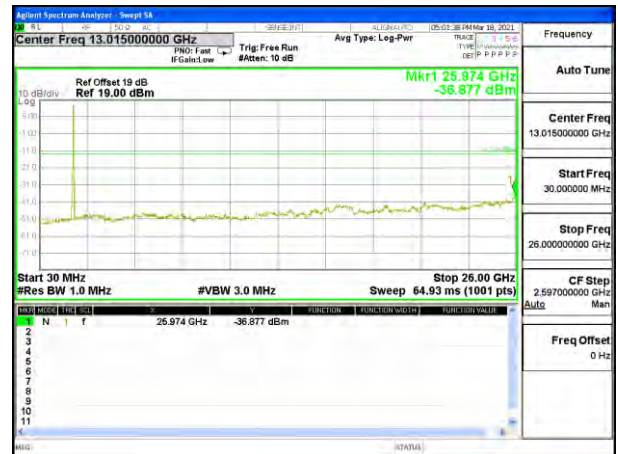
Test Mode: LTE Band 2 / 20MHz /100RB



Lowest channel

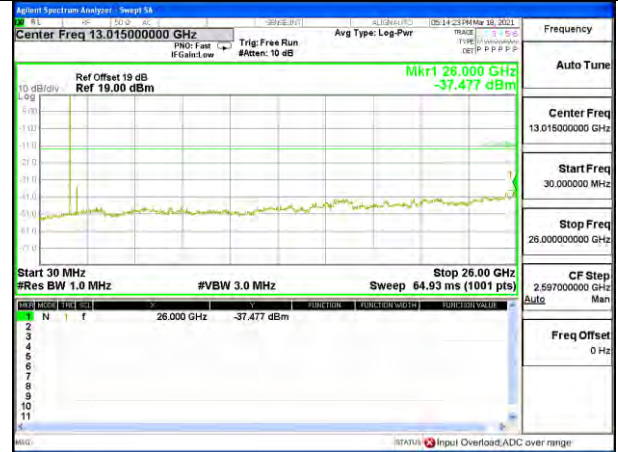
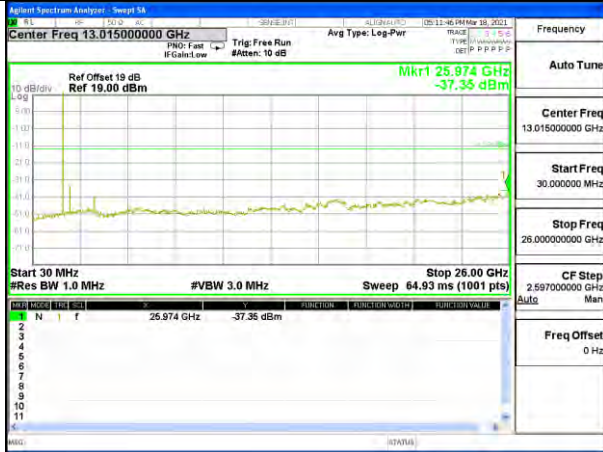


Middle channel

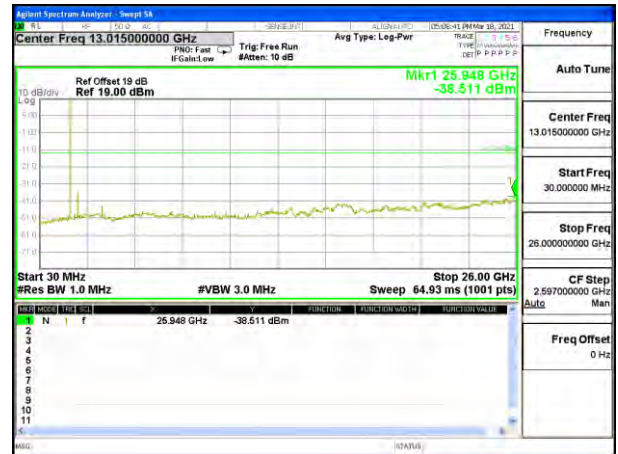
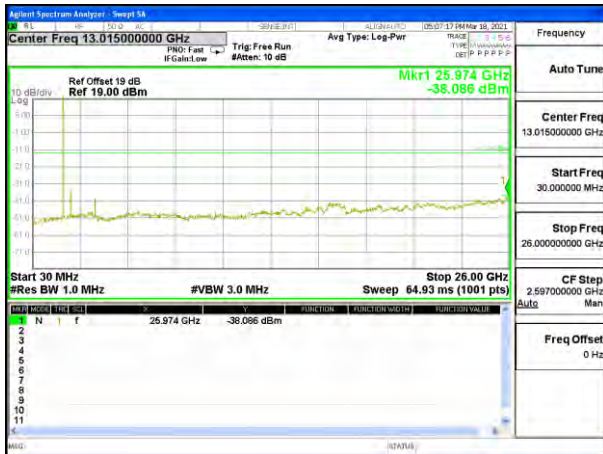


Highest channel

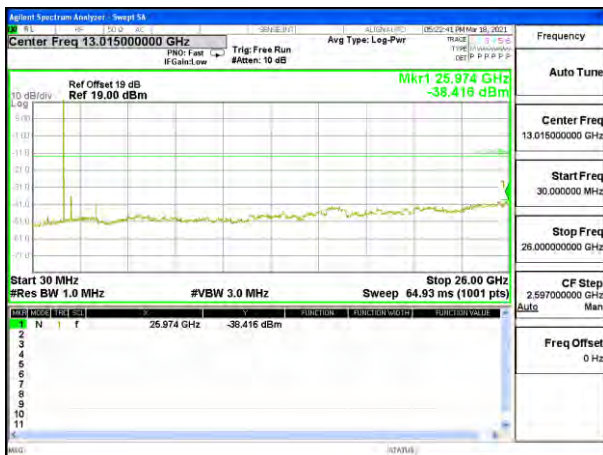
Test Mode: LTE Band 4 / 5MHz /1RB      Test Mode: LTE Band 4 / 5MHz /25RB



Lowest channel



Middle channel



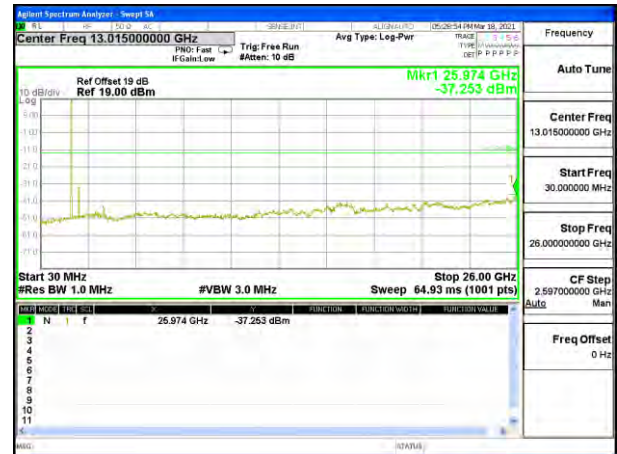
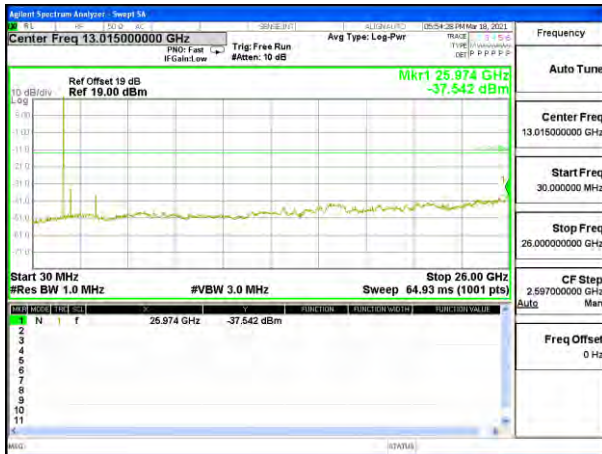
Highest channel

Test Mode: LTE Band 4 / 10MHz /1RB

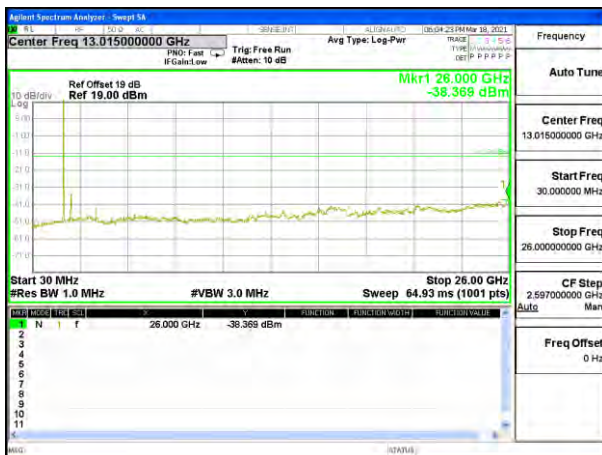
Test Mode: LTE Band 4 / 10MHz /50RB



Lowest channel

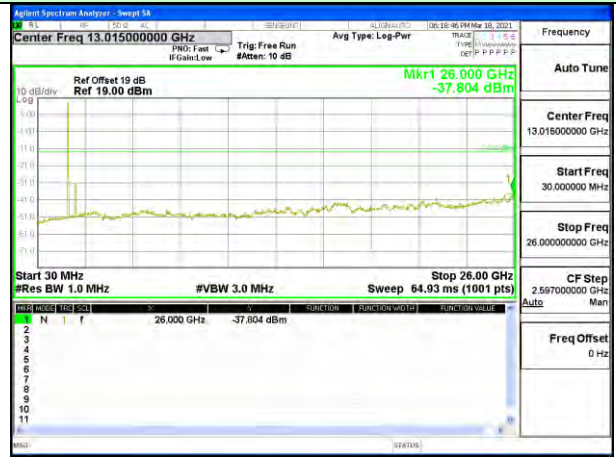
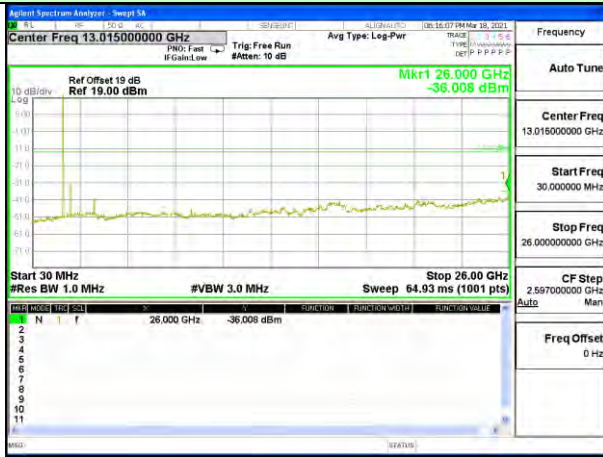


Middle channel

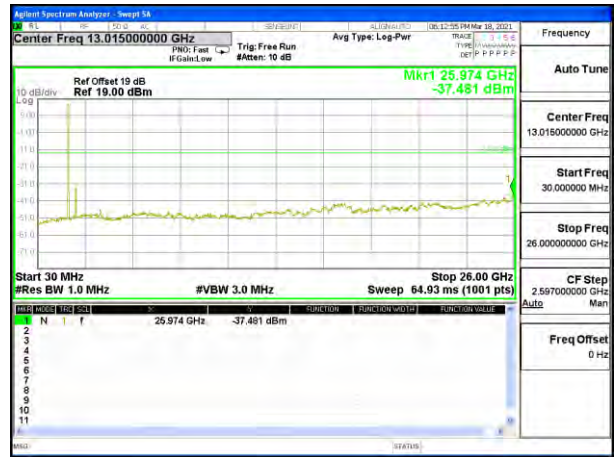


Highest channel

Test Mode: LTE Band 4 / 15MHz /1RB      Test Mode: LTE Band 4 / 15MHz /75RB



Lowest channel

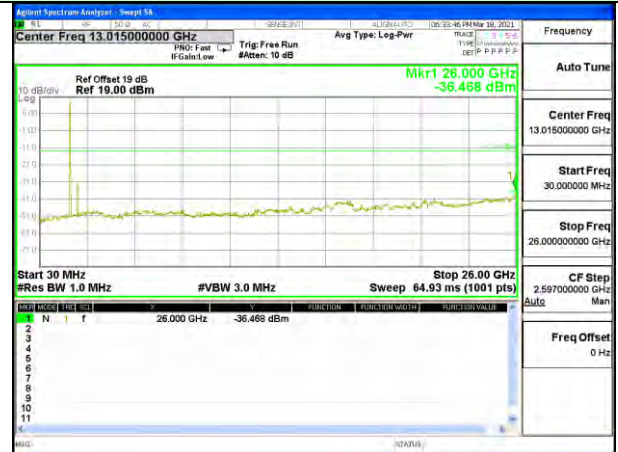
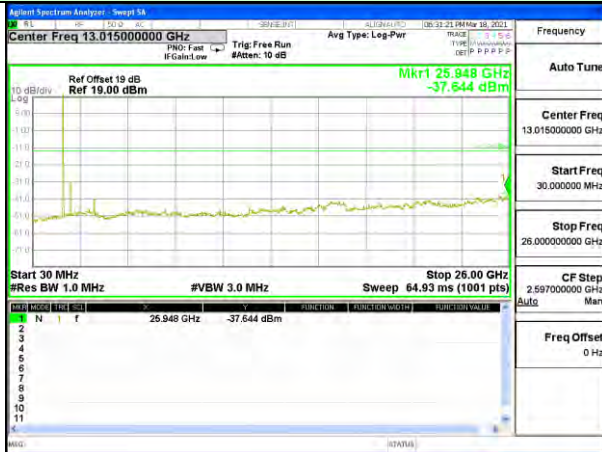


Middle channel

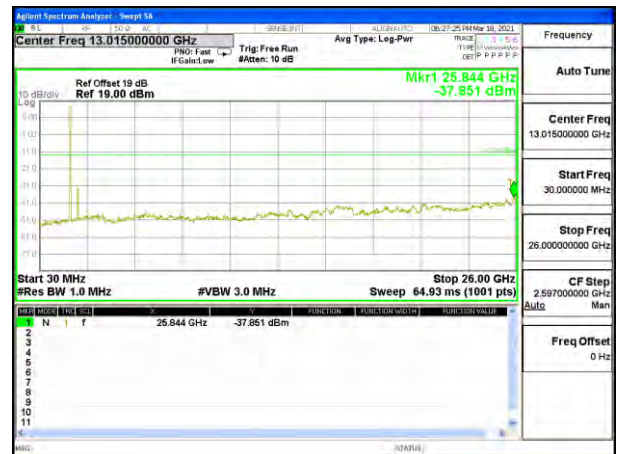
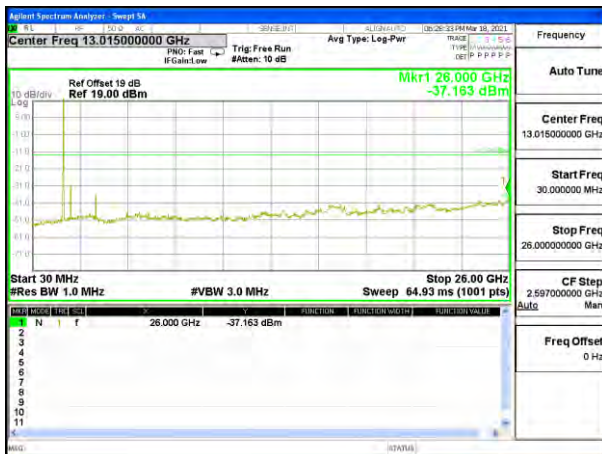


Highest channel

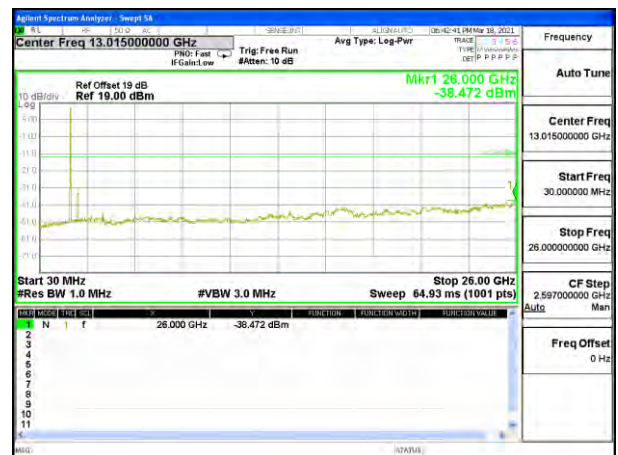
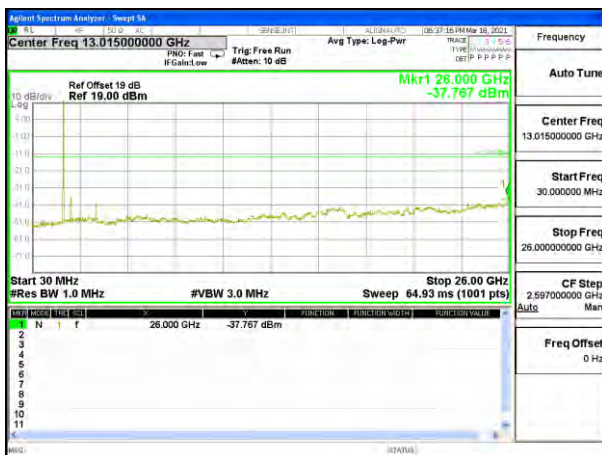
Test Mode: LTE Band 4 / 20MHz /1RB      Test Mode: LTE Band 4 / 20MHz /100RB



Lowest channel



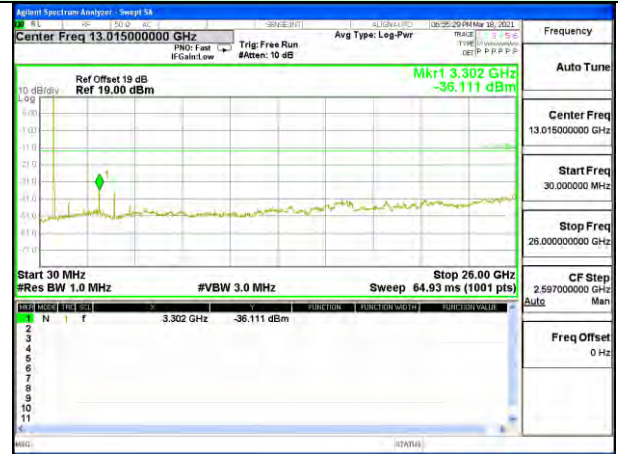
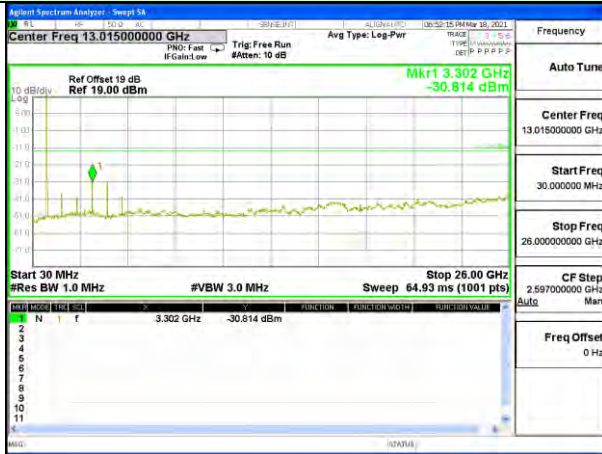
Middle channel



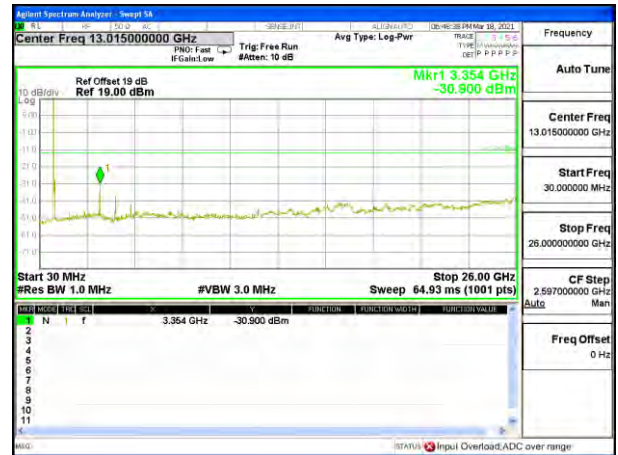
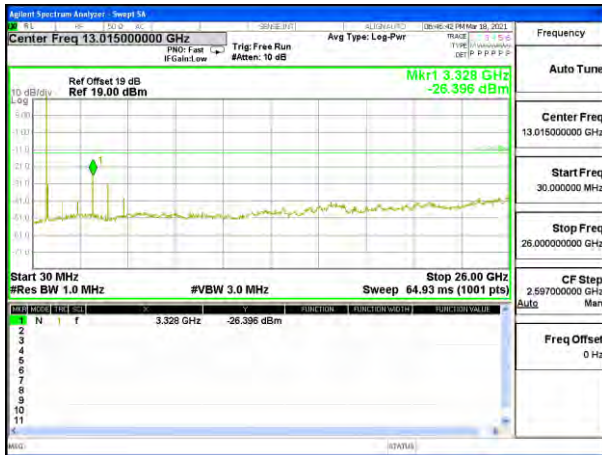
Highest channel

Test Mode: LTE Band 5 / 5MHz /1RB

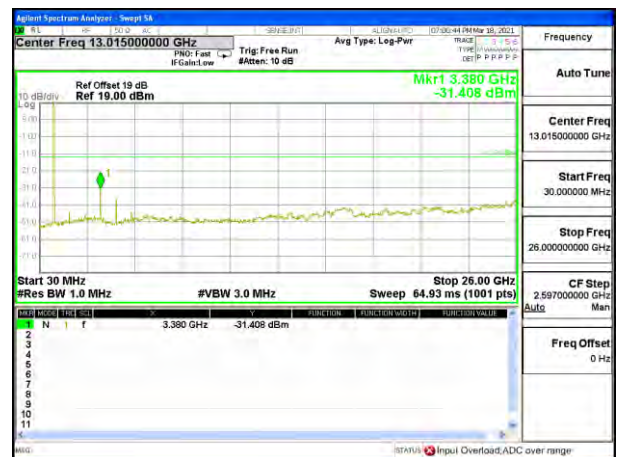
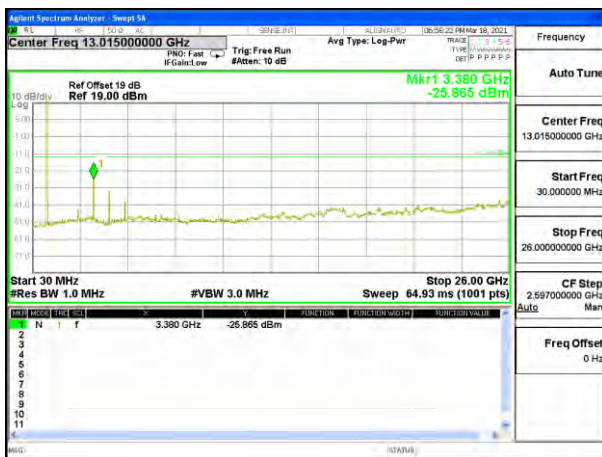
Test Mode: LTE Band 5 / 5MHz /25RB



Lowest channel



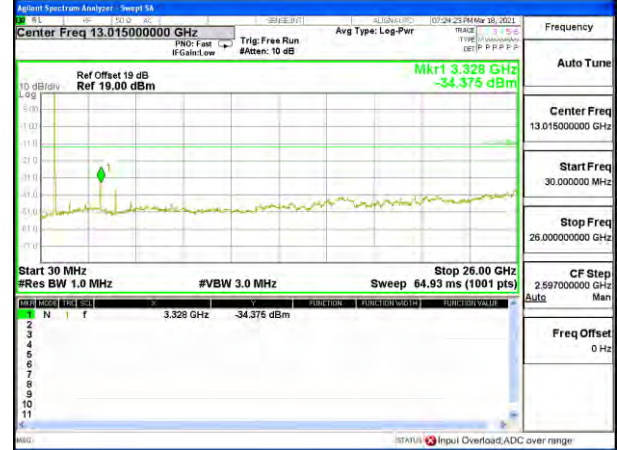
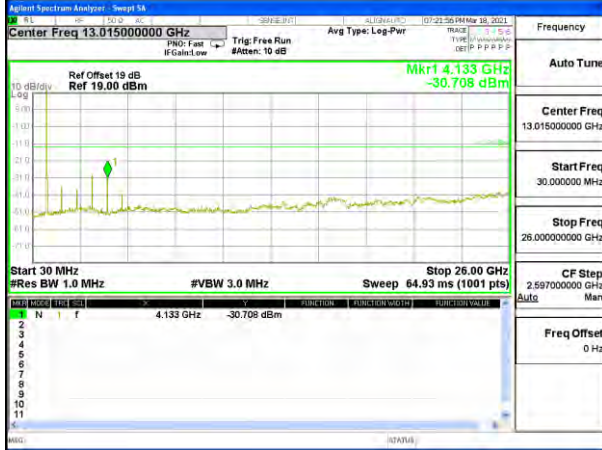
Middle channel



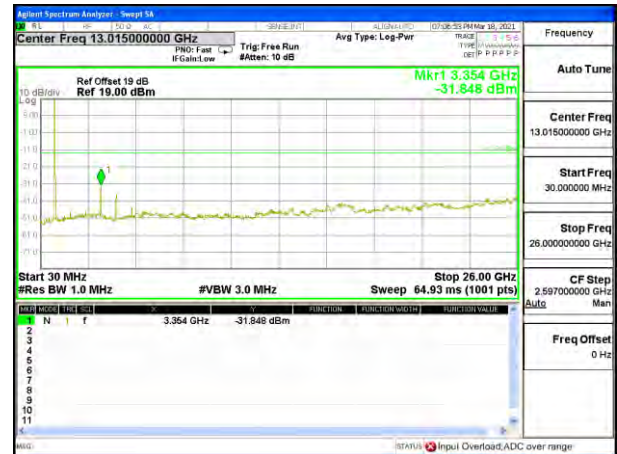
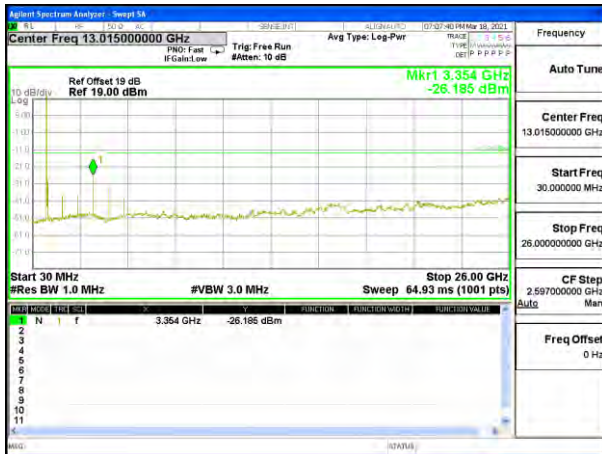
Highest channel

Test Mode: LTE Band 5 / 10MHz /1RB

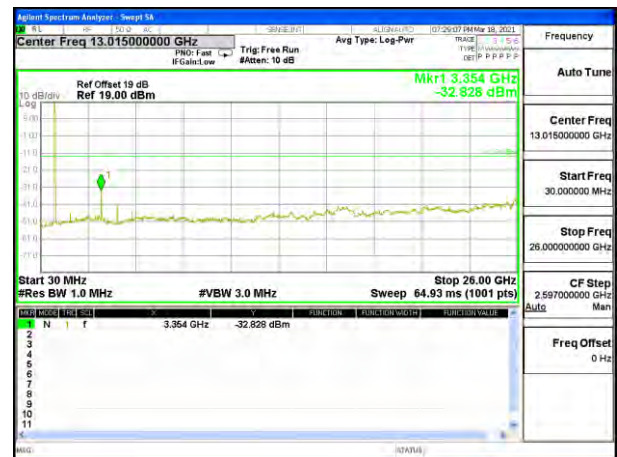
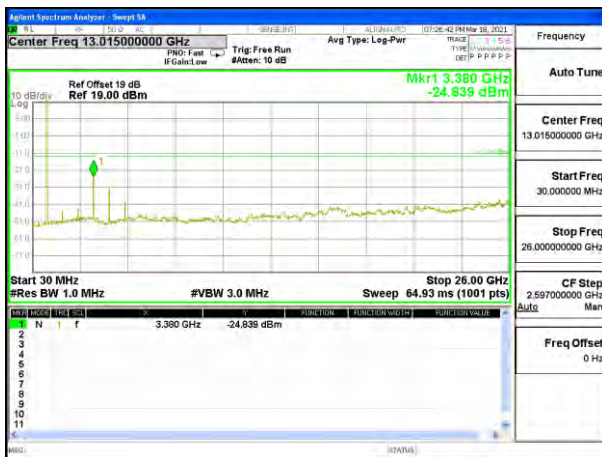
Test Mode: LTE Band 5 / 10MHz /50RB



Lowest channel



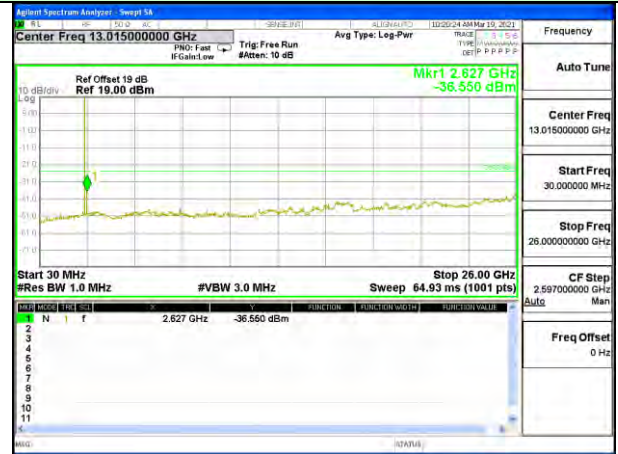
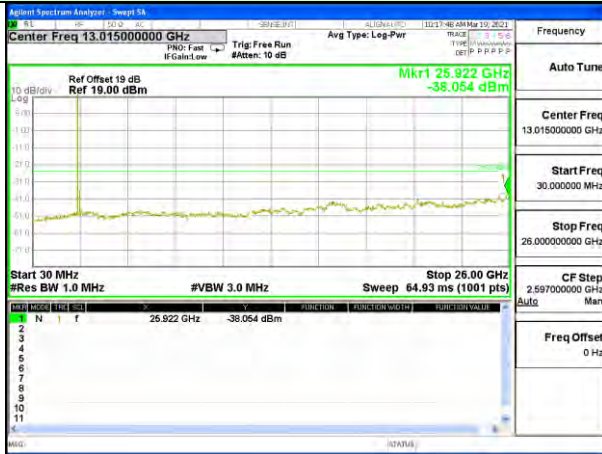
Middle channel



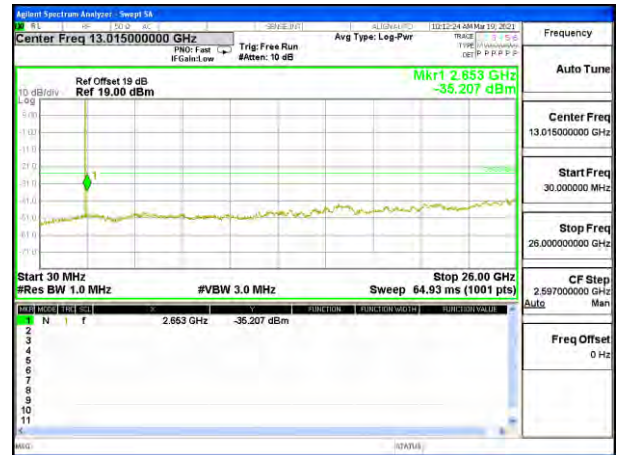
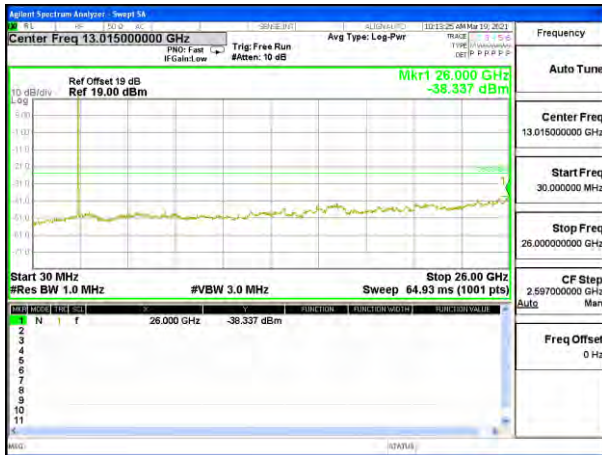
Highest channel

Test Mode: LTE Band 7 / 5MHz /1RB

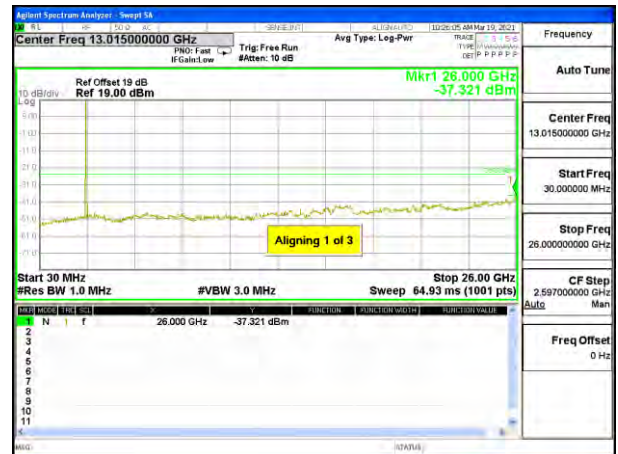
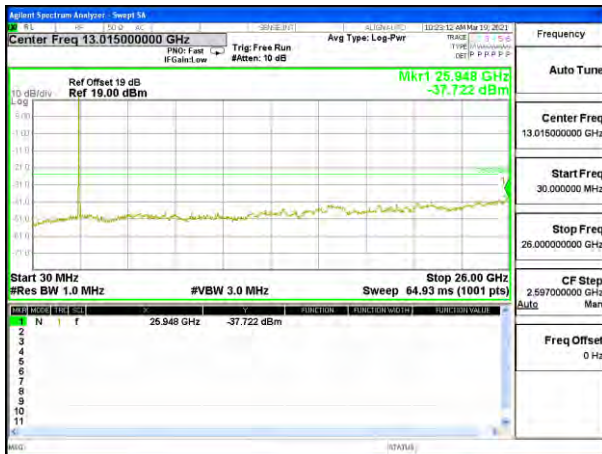
Test Mode: LTE Band 7 / 5MHz /25RB



Lowest channel



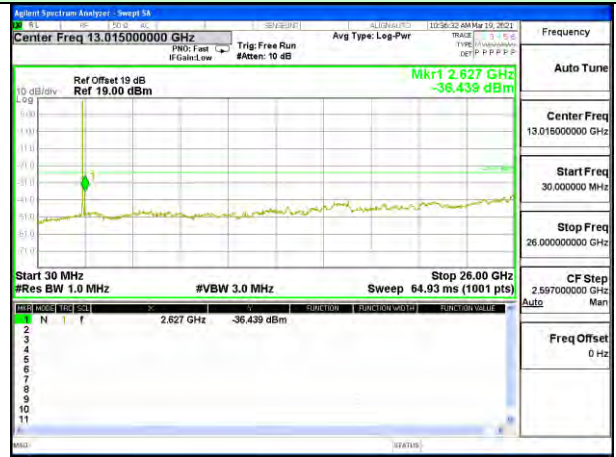
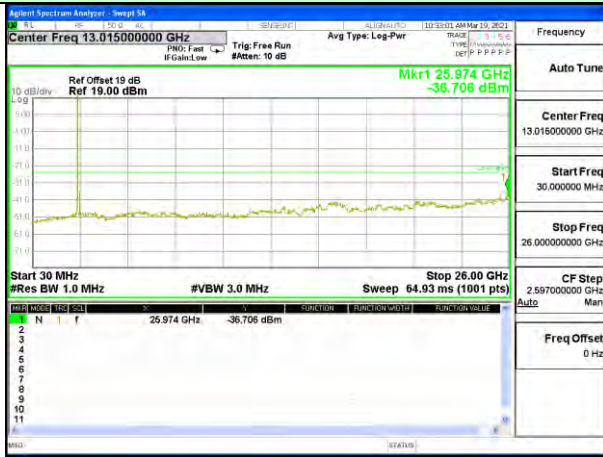
Middle channel



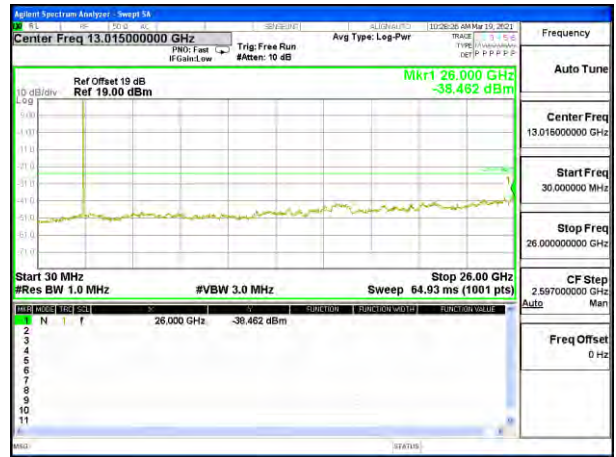
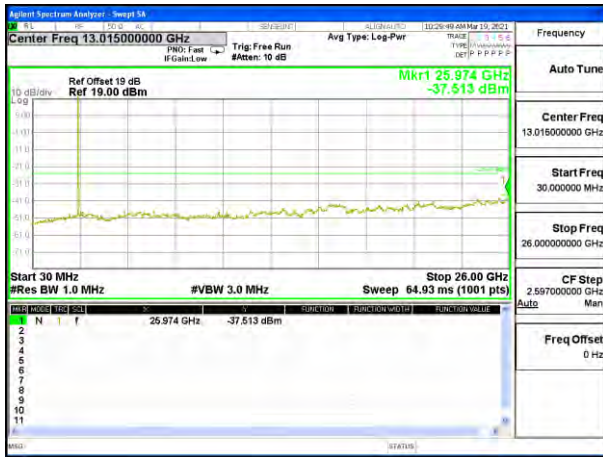
Highest channel



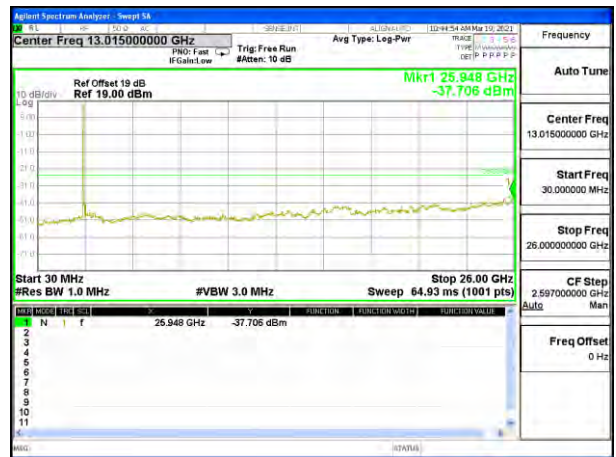
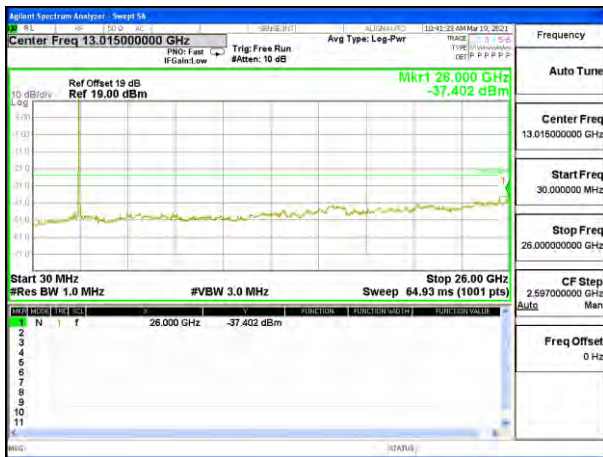
Test Mode: LTE Band 7 / 10MHz /1RB      Test Mode: LTE Band 7 / 10MHz /50RB



Lowest channel



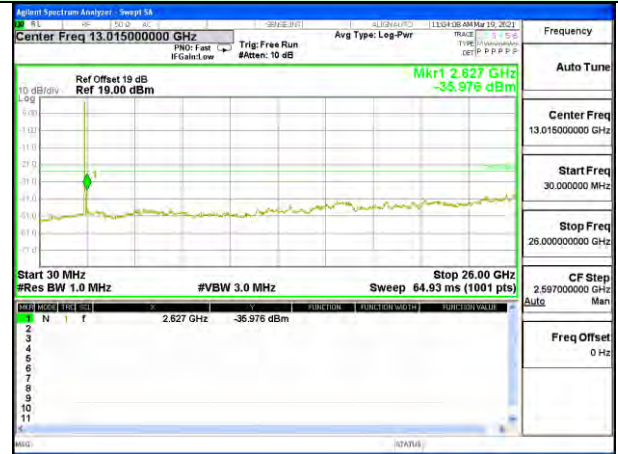
Middle channel



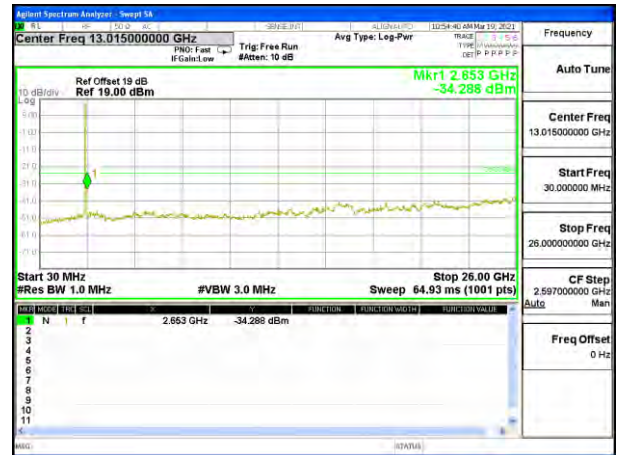
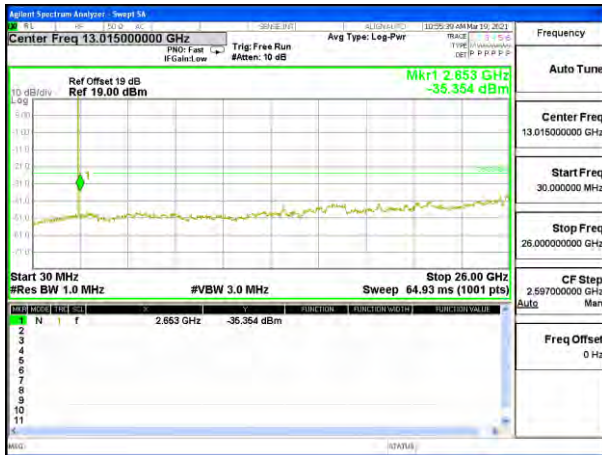
Highest channel

Test Mode: LTE Band 7 / 15MHz /1RB

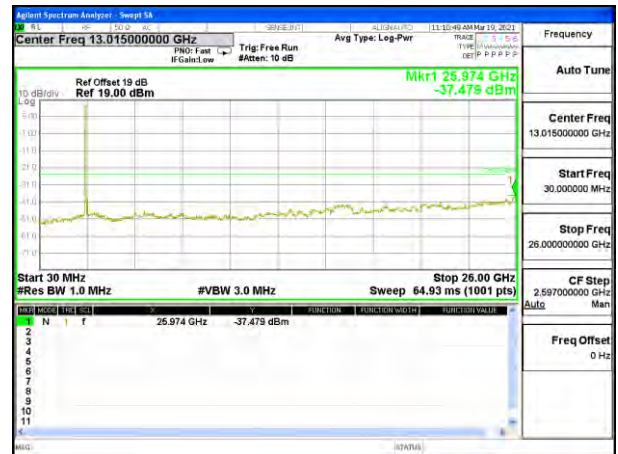
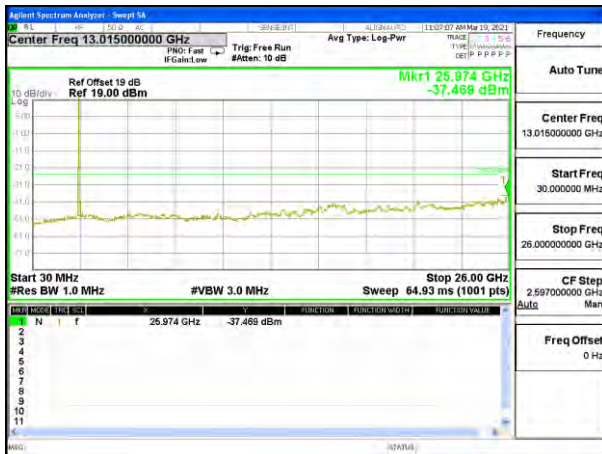
Test Mode: LTE Band 7 / 15MHz /75RB



Lowest channel



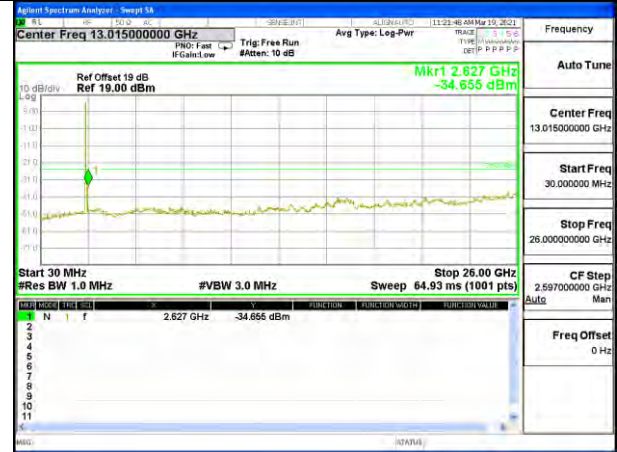
Middle channel



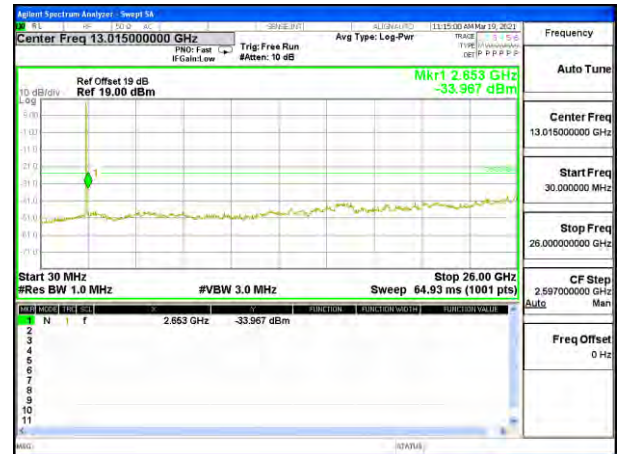
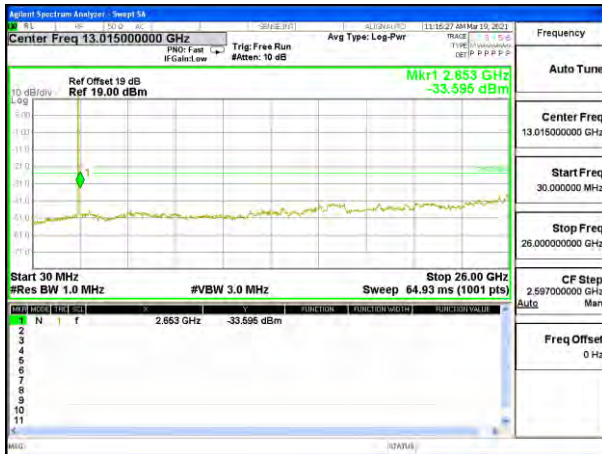
Highest channel

Test Mode: LTE Band 7 / 20MHz /1RB

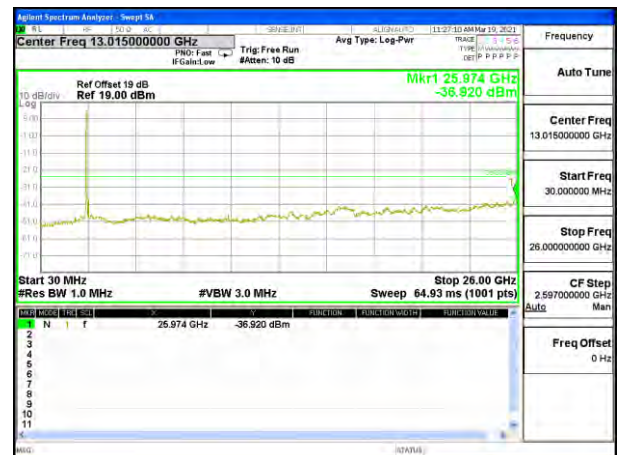
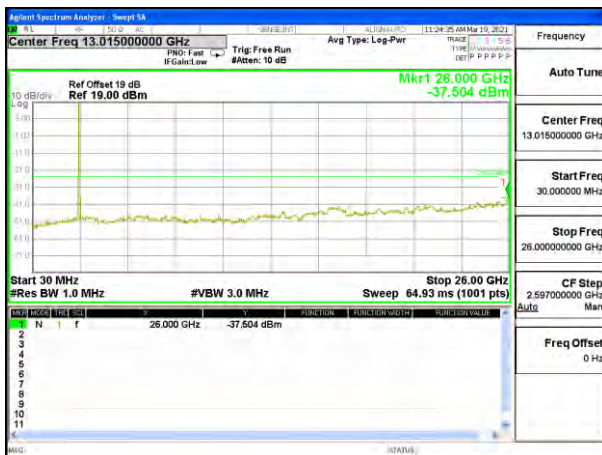
Test Mode: LTE Band 7 / 20MHz /100RB



Lowest channel



Middle channel



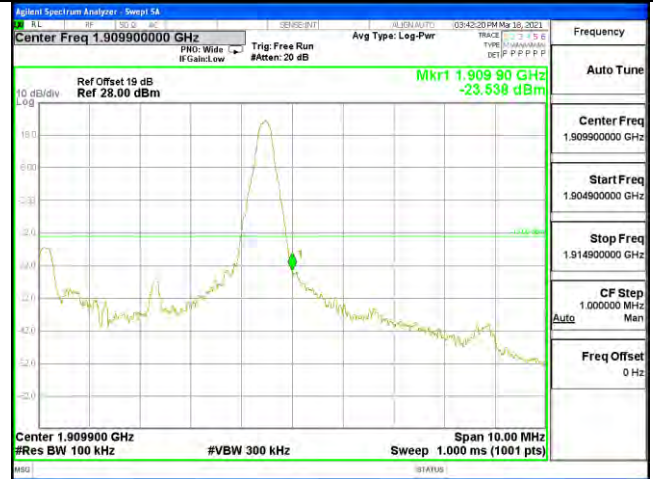
Highest channel

# Band Edge

## Test Mode: LTE Band 2 / 5MHz / 1RB

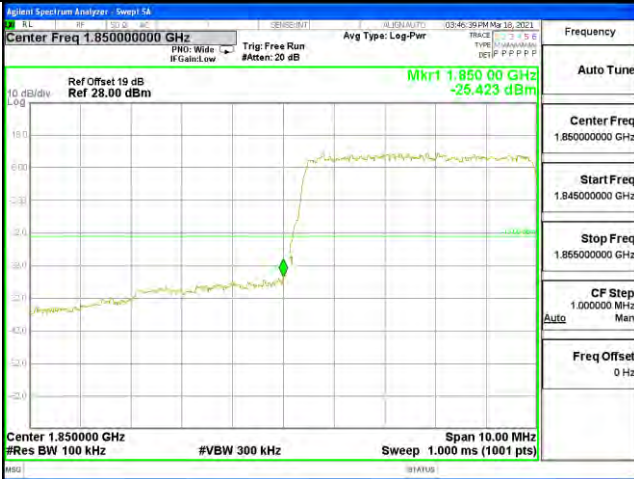


Lowest channel



Highest channel

## Test Mode: LTE Band 2 / 5MHz / 25RB

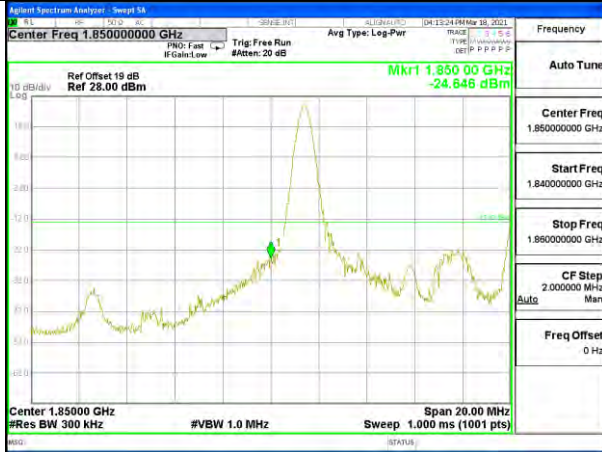


Lowest channel



Highest channel

Test Mode: LTE Band 2 / 10MHz / 1RB

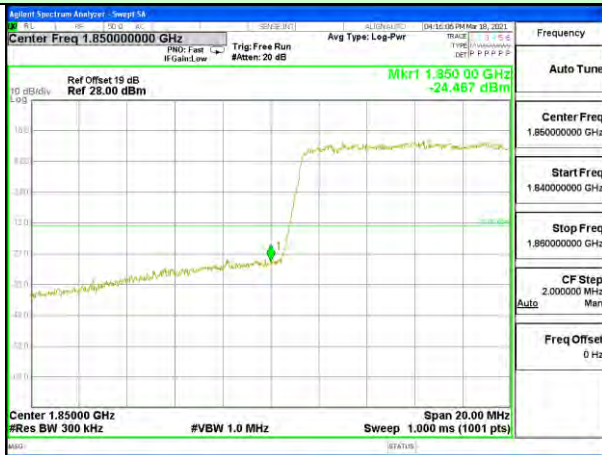


Lowest channel



Highest channel

Test Mode: LTE Band 2 / 10MHz / 50RB

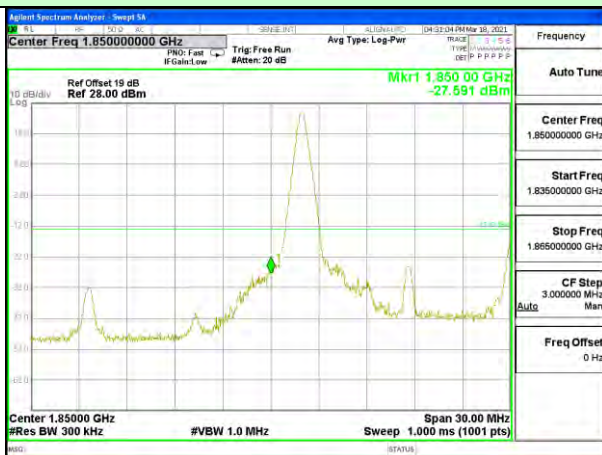


Lowest channel

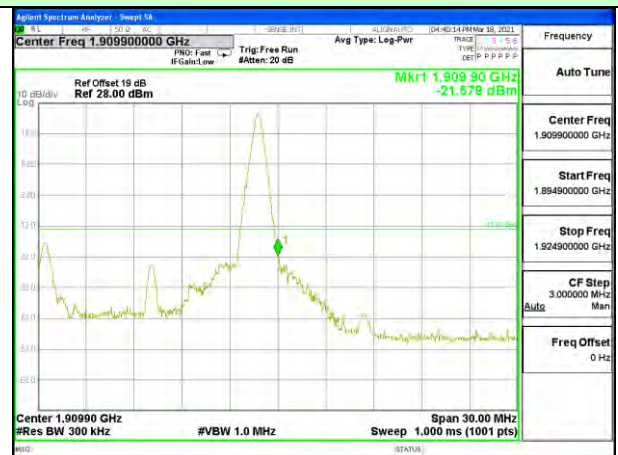


Highest channel

Test Mode: LTE Band 2 / 15MHz / 1RB



Lowest channel



Highest channel

Test Mode: LTE Band 2 / 15MHz / 75RB



Lowest channel

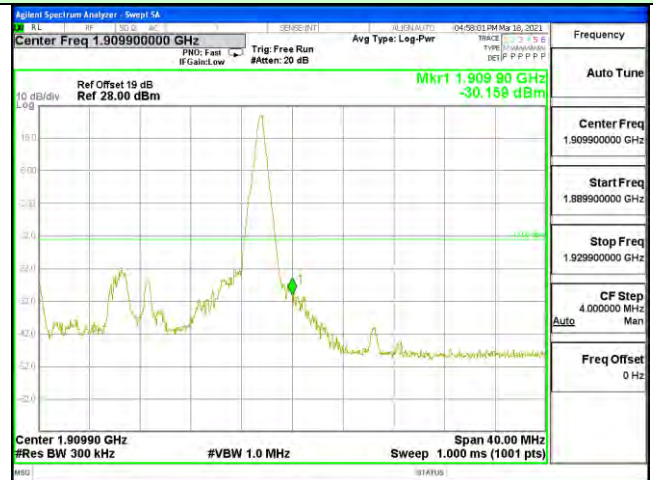


Highest channel

Test Mode: LTE Band 2 / 20MHz / 1RB



Lowest channel

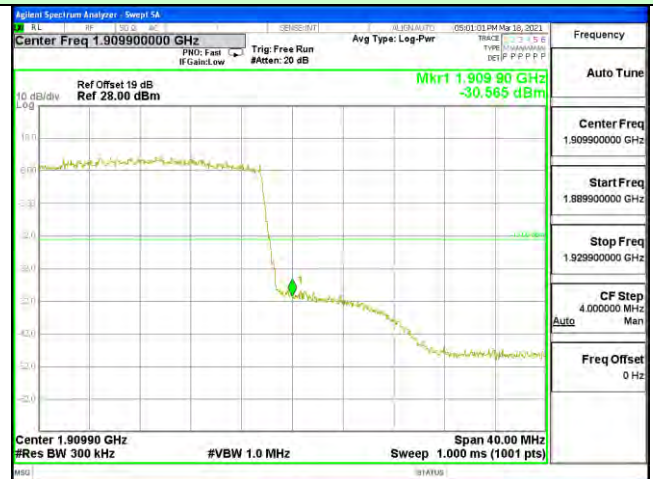


Highest channel

Test Mode: LTE Band 2 / 20MHz / 100RB

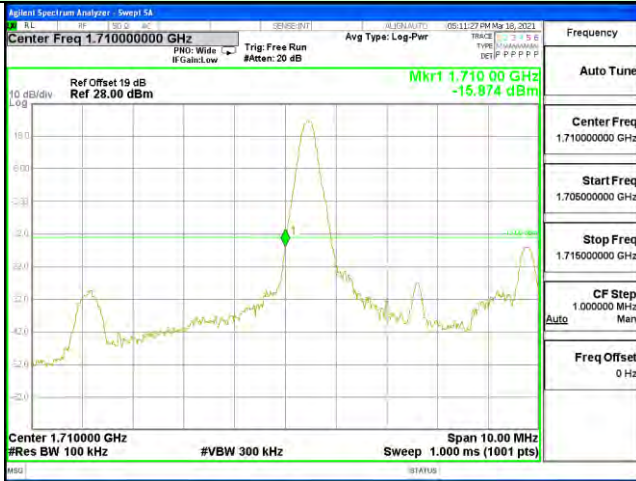


Lowest channel

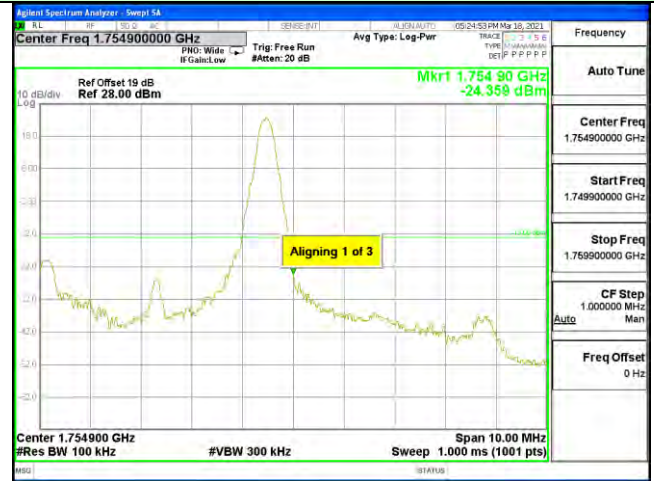


Highest channel

Test Mode: LTE Band 4 / 5MHz / 1RB



Lowest channel

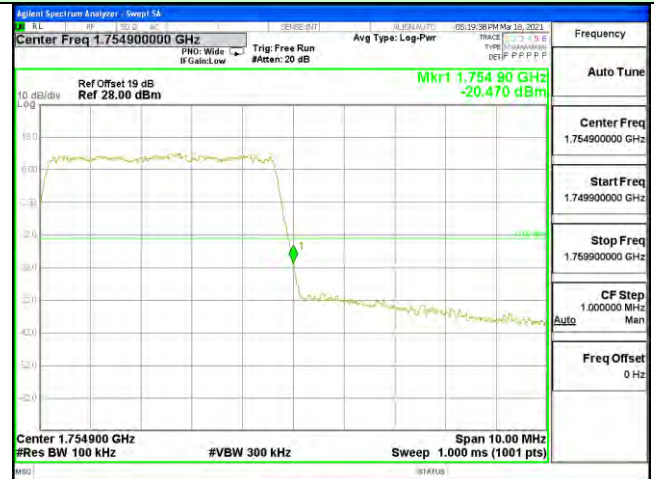


Highest channel

Test Mode: LTE Band 4 / 5MHz / 25RB

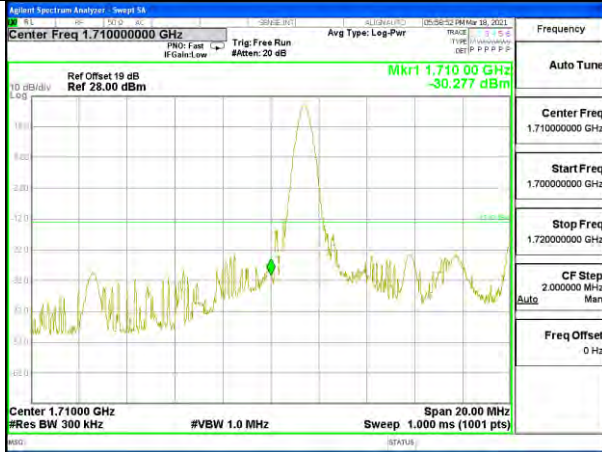


Lowest channel



Highest channel

Test Mode: LTE Band 4 / 10MHz / 1RB

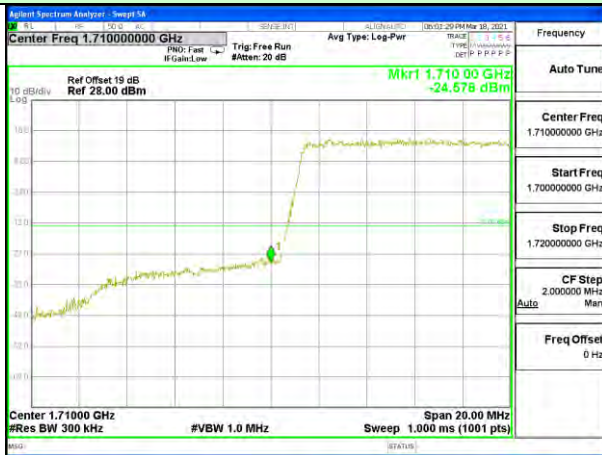


Lowest channel



Highest channel

Test Mode: LTE Band 4 / 10MHz / 50RB

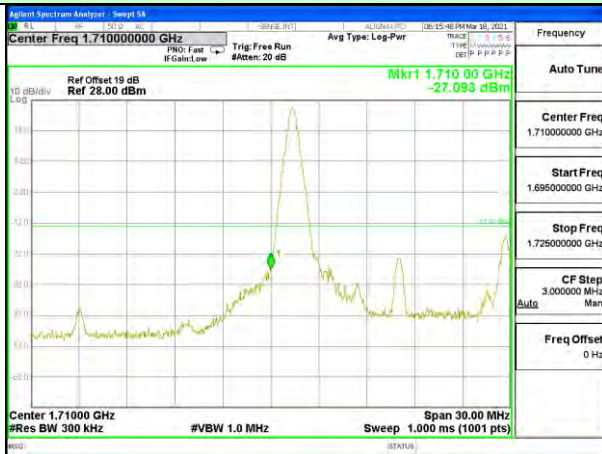


Lowest channel

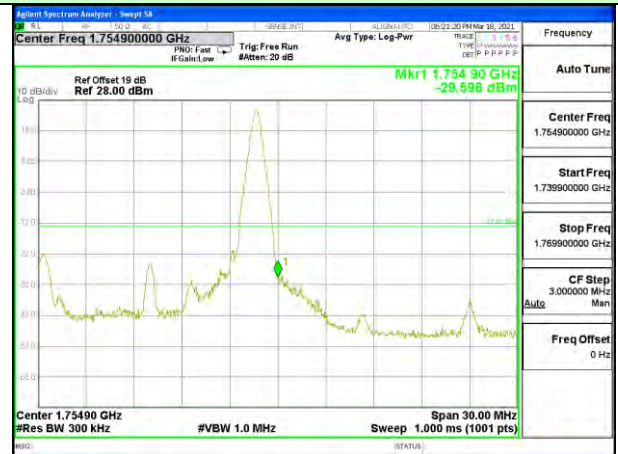


Highest channel

Test Mode: LTE Band 4 / 15MHz / 1RB



Lowest channel



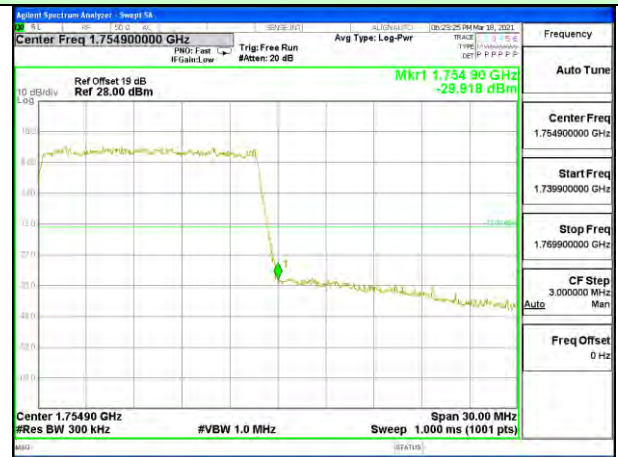
Highest channel



Test Mode: LTE Band 4 / 15MHz / 75RB



Lowest channel

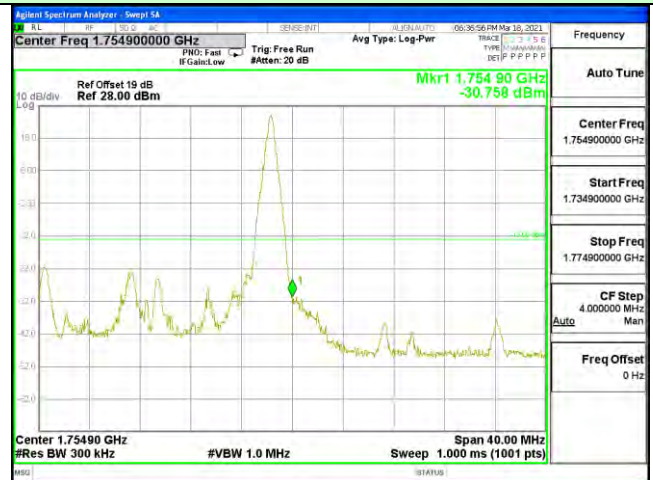


Highest channel

Test Mode: LTE Band 4 / 20MHz / 1RB



Lowest channel



Highest channel

Test Mode: LTE Band 4 / 20MHz / 100RB



Lowest channel

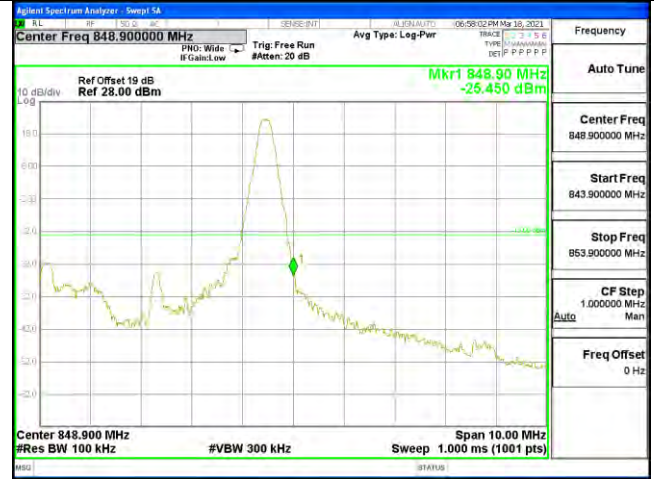


Highest channel

Test Mode: LTE Band 5 / 5MHz / 1RB

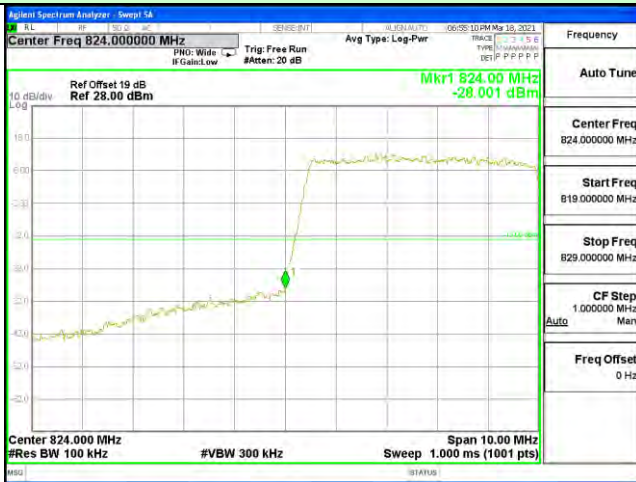


Lowest channel



Highest channel

Test Mode: LTE Band 5 / 5MHz / 25RB



Lowest channel

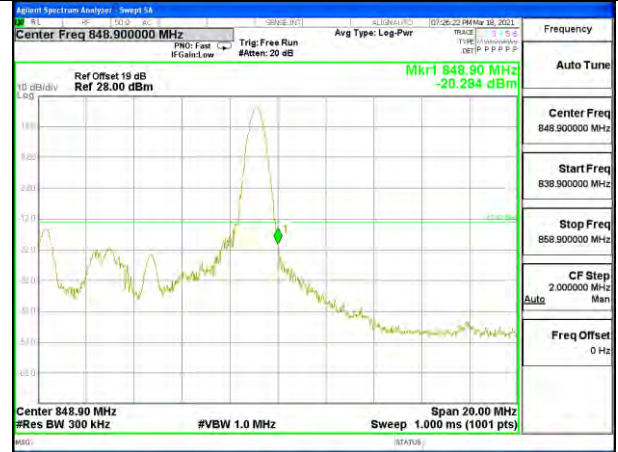


Highest channel

Test Mode: LTE Band 5 / 10MHz / 1RB



Lowest channel

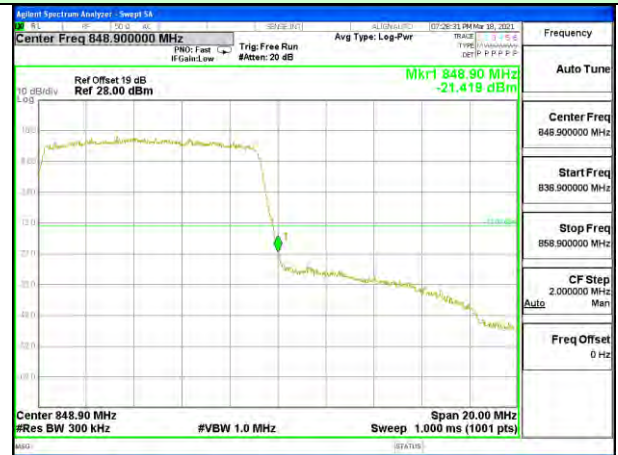


Highest channel

Test Mode: LTE Band 5 / 10MHz / 50RB

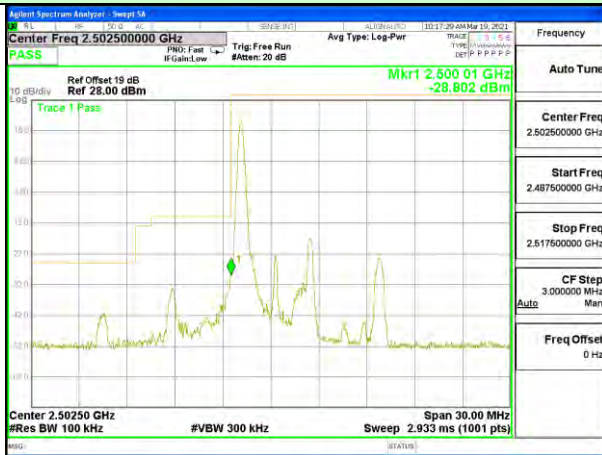


Lowest channel

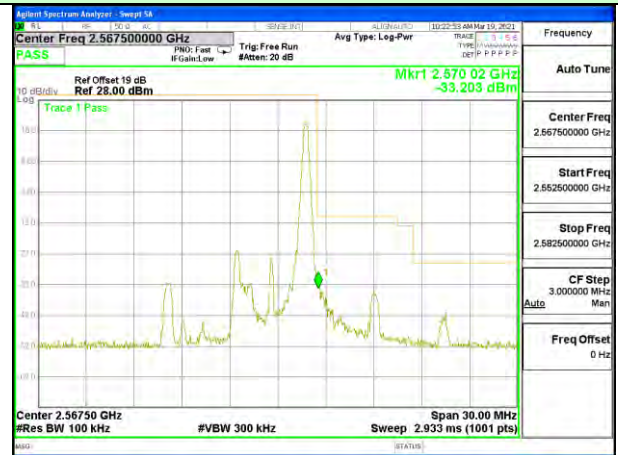


Highest channel

Test Mode: LTE Band 7 / 5MHz / 1RB

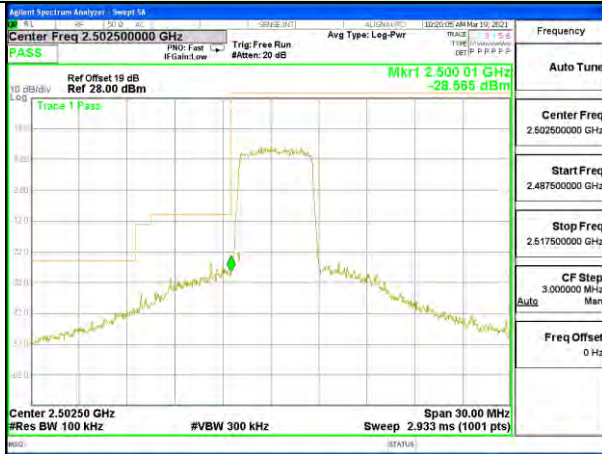


Lowest channel

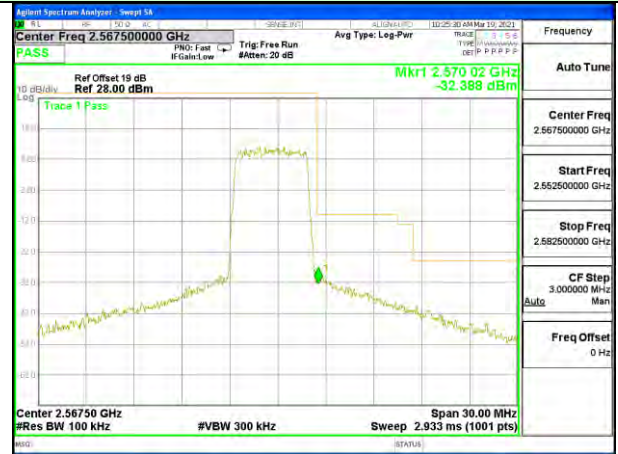


Highest channel

Test Mode: LTE Band 7 / 5MHz / 25RB

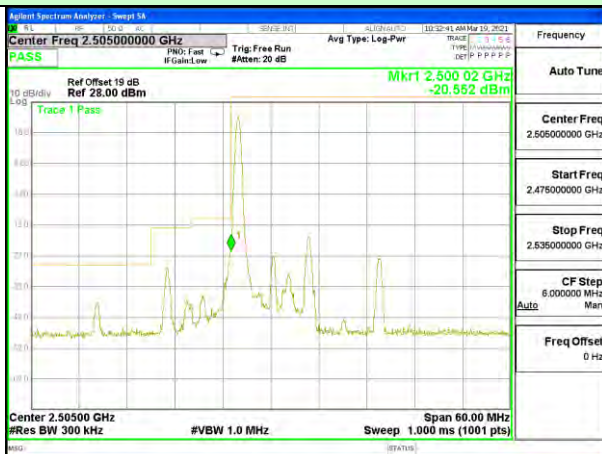


Lowest channel

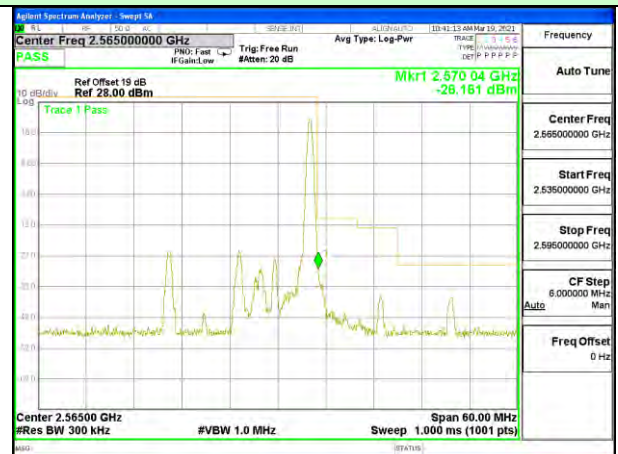


Highest channel

Test Mode: LTE Band 7 / 10MHz / 1RB

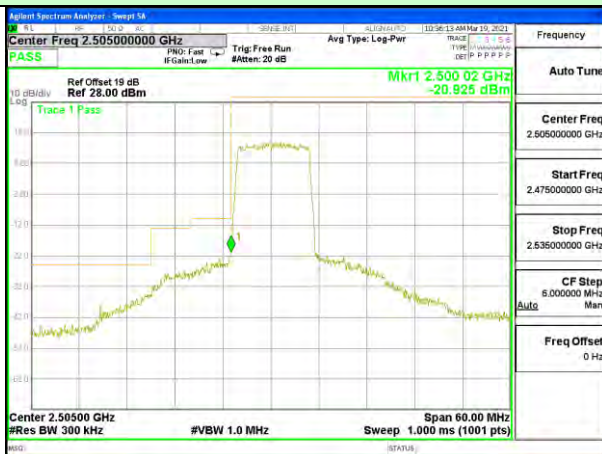


Lowest channel

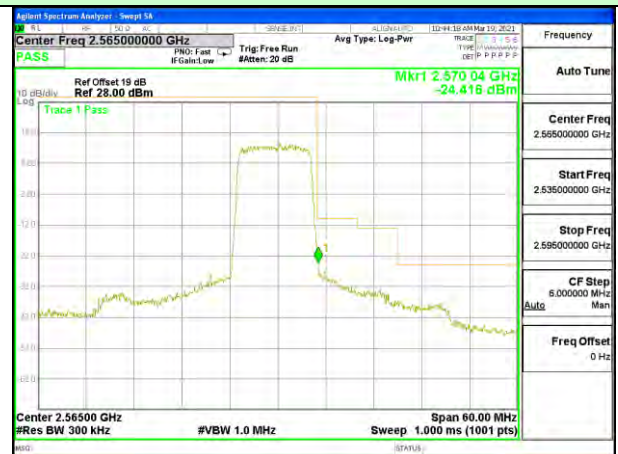


Highest channel

Test Mode: LTE Band 7 / 10MHz / 50RB

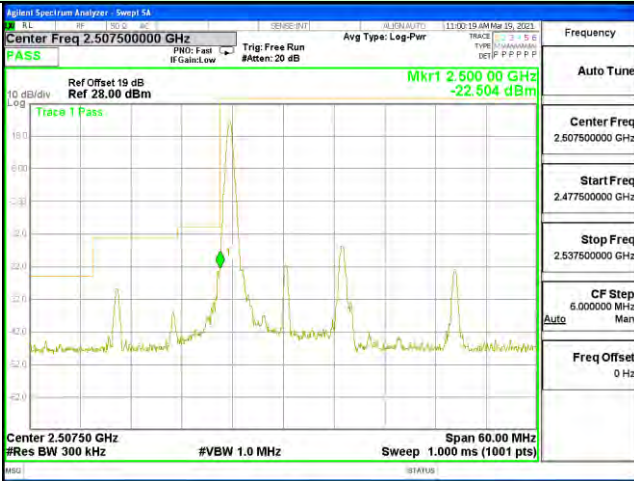


Lowest channel

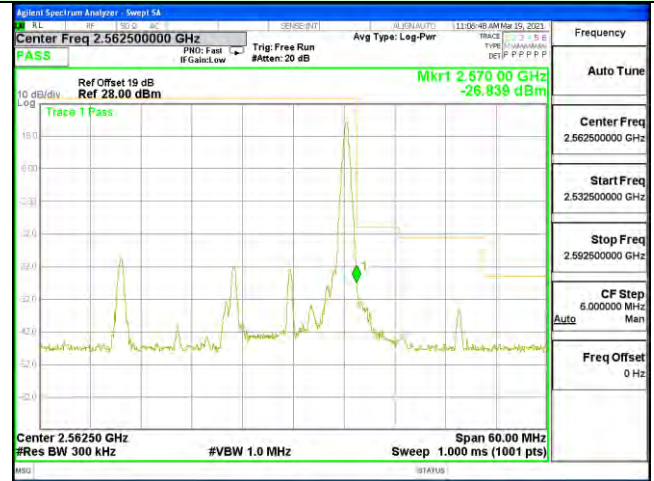


Highest channel

Test Mode: LTE Band 7 / 15MHz / 1RB

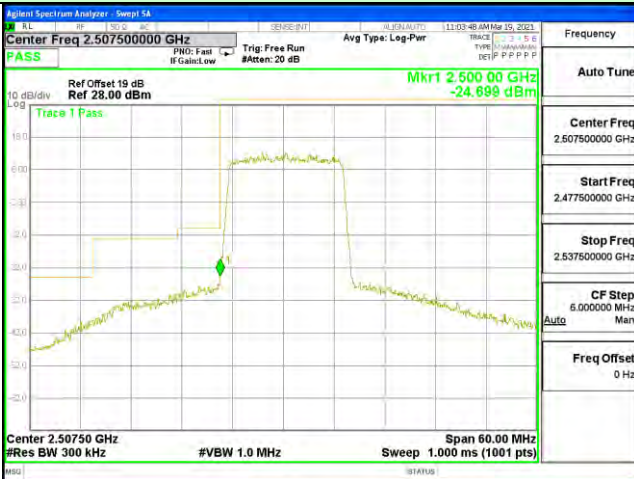


Lowest channel



Highest channel

Test Mode: LTE Band 7 / 15MHz / 75RB

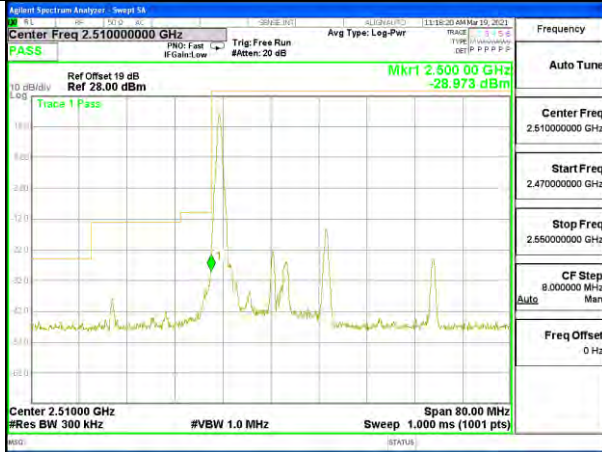


Lowest channel

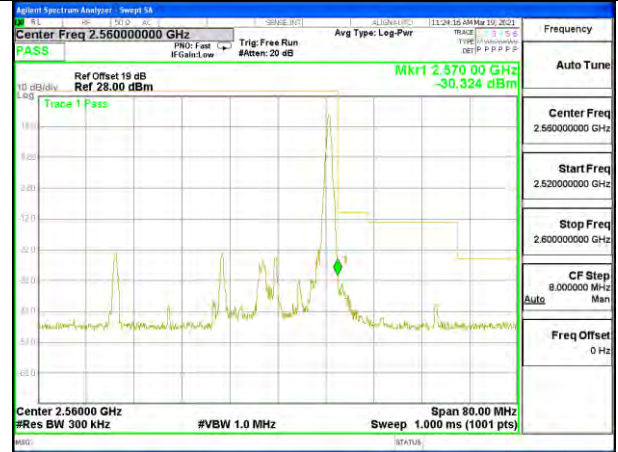


Highest channel

Test Mode: LTE Band 7 / 20MHz / 1RB



Lowest channel

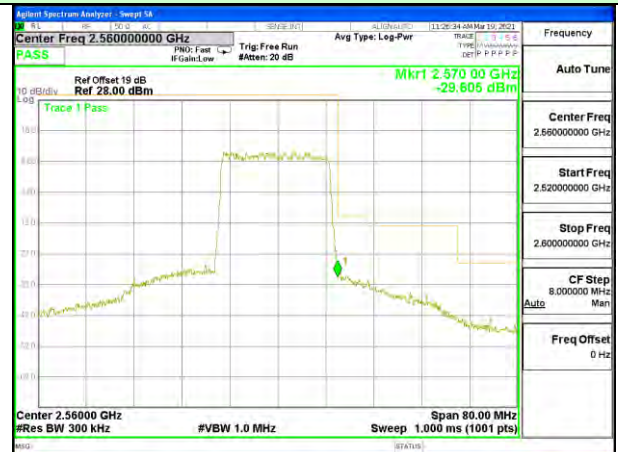


Highest channel

Test Mode: LTE Band 7 / 20MHz / 100RB



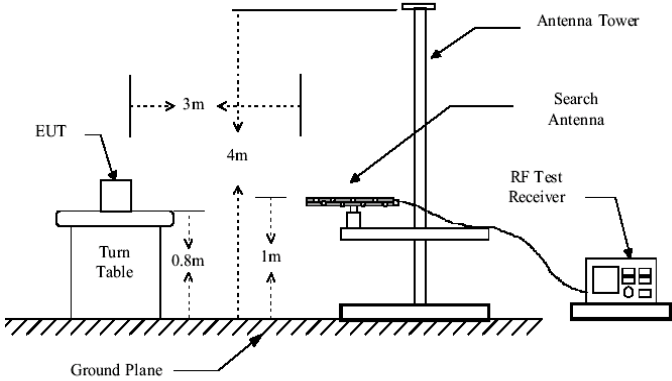
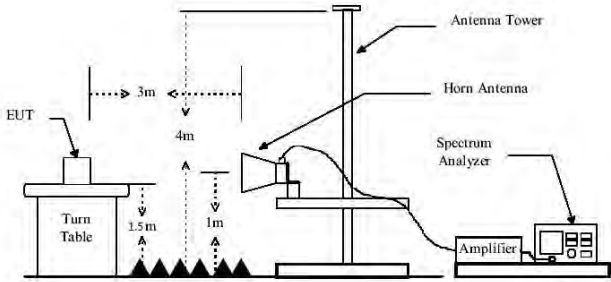
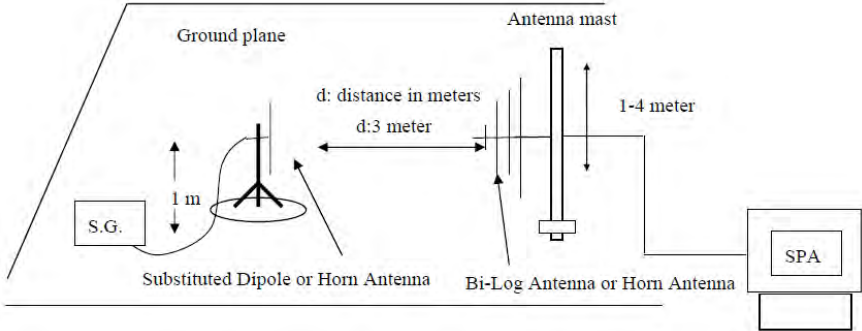
Lowest channel



Highest channel

Note: All bandwidth and modulation are tested, only the worst result is reported.

### 4.7 ERP, EIRP Measurement

|                   |  |
|-------------------|--|
| Test Requirement: | FCC part22.913(a), FCC part24.232(b) and FCC part 27.53  |
| Test Method:      | FCC part2.1046   |
| Limit:            | LTE Band 2: 2W (EIRP)<br>LTE Band 4/7: 1W (EIRP)<br>LTE Band 5: 7W (ERP)<br>LTE Band 17: 3W (ERP)  |
| Test setup:       | <p>Below 1GHz</p>  <p>Above 1GHz</p>  <p>Substituted method:</p>  |

|                   |   |
|-------------------|---|
| Test Procedure:   | <ol style="list-style-type: none"> <li>1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.</li> <li>2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.</li> <li>3. ERP in frequency band 824.2 –848.80.8MHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated asfollows:<br/> <math display="block">\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable Loss (dB)}</math> </li> <li>4. EIRP in frequency band 1850.2 –1909.8MHz were measured using a substitution method. The EUT was replaced by or horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:<br/> <math display="block">\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable Loss (dB)}</math> </li> </ol> |
| Test Instruments: | Refer to section 6.0 for details  |
| Test mode:        | Refer to section 7.1 for details  |
| Test results:     | Pass  |

## Measurement Data



| EUT mode             | Channel | RB Size | RB Offset | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|----------------------|---------|---------|-----------|----------|--------------|-----------|-------------|--------|
| LTE Band 2<br>(5MHz) | Lowest  | 25      | 0         | H        | V            | 21.47     | 33.00       | Pass   |
|                      |         |         |           |          | H            | 20.84     |             |        |
|                      |         |         |           | E1       | V            | 22.16     |             |        |
|                      |         |         |           |          | H            | 20.14     |             |        |
|                      |         |         |           | E2       | V            | 21.59     |             |        |
|                      |         |         |           |          | H            | 17.63     |             |        |
|                      | Middle  | 25      | 0         | H        | V            | 23.33     | 33.00       | Pass   |
|                      |         |         |           |          | H            | 19.22     |             |        |
|                      |         |         |           | E1       | V            | 23.04     |             |        |
|                      |         |         |           |          | H            | 19.57     |             |        |
|                      |         |         |           | E2       | V            | 22.73     |             |        |
|                      |         |         |           |          | H            | 19.38     |             |        |
|                      | Highest | 25      | 0         | H        | V            | 22.81     | 33.00       | Pass   |
|                      |         |         |           |          | H            | 20.74     |             |        |
|                      |         |         |           | E1       | V            | 21.86     |             |        |
|                      |         |         |           |          | H            | 19.54     |             |        |
|                      |         |         |           | E2       | V            | 21.27     |             |        |
|                      |         |         |           |          | H            | 19.87     |             |        |

| EUT mode              | Channel | RB Size | RB Offset | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|-----------------------|---------|---------|-----------|----------|--------------|-----------|-------------|--------|
| LTE Band 2<br>(10MHz) | Lowest  | 50      | 0         | H        | V            | 22.31     | 33.00       | Pass   |
|                       |         |         |           |          | H            | 20.99     |             |        |
|                       |         |         |           | E1       | V            | 22.33     |             |        |
|                       |         |         |           |          | H            | 19.74     |             |        |
|                       |         |         |           | E2       | V            | 20.75     |             |        |
|                       |         |         |           |          | H            | 18.55     |             |        |
|                       | Middle  | 50      | 0         | H        | V            | 21.75     | 33.00       | Pass   |
|                       |         |         |           |          | H            | 20.14     |             |        |
|                       |         |         |           | E1       | V            | 21.92     |             |        |
|                       |         |         |           |          | H            | 19.75     |             |        |
|                       |         |         |           | E2       | V            | 21.66     |             |        |
|                       |         |         |           |          | H            | 20.09     |             |        |
|                       | Highest | 50      | 0         | H        | V            | 22.49     | 33.00       | Pass   |
|                       |         |         |           |          | H            | 19.48     |             |        |
|                       |         |         |           | E1       | V            | 22.36     |             |        |
|                       |         |         |           |          | H            | 20.15     |             |        |
|                       |         |         |           | E2       | V            | 21.69     |             |        |
|                       |         |         |           |          | H            | 20.82     |             |        |

| EUT mode              | Channel | RB Size | RB Offset | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|-----------------------|---------|---------|-----------|----------|--------------|-----------|-------------|--------|
| LTE Band 2<br>(15MHz) | Lowest  | 75      | 0         | H        | V            | 22.04     | 33.00       | Pass   |
|                       |         |         |           |          | H            | 19.83     |             |        |
|                       |         |         |           | E1       | V            | 22.24     |             |        |
|                       |         |         |           |          | H            | 20.21     |             |        |
|                       |         |         |           | E2       | V            | 20.79     |             |        |
|                       |         |         |           |          | H            | 19.05     |             |        |
|                       | Middle  | 75      | 0         | H        | V            | 22.93     | 33.00       | Pass   |
|                       |         |         |           |          | H            | 19.82     |             |        |
|                       |         |         |           | E1       | V            | 21.54     |             |        |
|                       |         |         |           |          | H            | 20.21     |             |        |
|                       |         |         |           | E2       | V            | 20.61     |             |        |
|                       |         |         |           |          | H            | 20.37     |             |        |
|                       | Highest | 75      | 0         | H        | V            | 21.98     | 33.00       | Pass   |
|                       |         |         |           |          | H            | 19.60     |             |        |
|                       |         |         |           | E1       | V            | 22.29     |             |        |
|                       |         |         |           |          | H            | 20.58     |             |        |
|                       |         |         |           | E2       | V            | 21.65     |             |        |
|                       |         |         |           |          | H            | 21.21     |             |        |

| EUT mode              | Channel | RB Size | RB Offset | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|-----------------------|---------|---------|-----------|----------|--------------|-----------|-------------|--------|
| LTE Band 2<br>(20MHz) | Lowest  | 100     | 0         | H        | V            | 22.29     | 33.00       | Pass   |
|                       |         |         |           |          | H            | 20.12     |             |        |
|                       |         |         |           | E1       | V            | 22.20     |             |        |
|                       |         |         |           |          | H            | 20.29     |             |        |
|                       |         |         |           | E2       | V            | 21.01     |             |        |
|                       |         |         |           |          | H            | 20.42     |             |        |
|                       | Middle  | 100     | 0         | H        | V            | 22.59     | 33.00       | Pass   |
|                       |         |         |           |          | H            | 19.85     |             |        |
|                       |         |         |           | E1       | V            | 22.05     |             |        |
|                       |         |         |           |          | H            | 20.28     |             |        |
|                       |         |         |           | E2       | V            | 23.05     |             |        |
|                       |         |         |           |          | H            | 20.94     |             |        |
|                       | Highest | 100     | 0         | H        | V            | 23.39     | 33.00       | Pass   |
|                       |         |         |           |          | H            | 19.81     |             |        |
|                       |         |         |           | E1       | V            | 22.56     |             |        |
|                       |         |         |           |          | H            | 20.00     |             |        |
|                       |         |         |           | E2       | V            | 22.01     |             |        |
|                       |         |         |           |          | H            | 19.74     |             |        |

| EUT mode             | Channel | RB Size | RB Offset | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|----------------------|---------|---------|-----------|----------|--------------|-----------|-------------|--------|
| LTE Band 4<br>(5MHz) | Lowest  | 25      | 0         | H        | V            | 22.36     | 30.00       | Pass   |
|                      |         |         |           |          | H            | 19.97     |             |        |
|                      |         |         |           | E1       | V            | 21.59     |             |        |
|                      |         |         |           |          | H            | 20.07     |             |        |
|                      |         |         |           | E2       | V            | 21.21     |             |        |
|                      |         |         |           |          | H            | 17.35     |             |        |
|                      | Middle  | 25      | 0         | H        | V            | 21.50     | 30.00       | Pass   |
|                      |         |         |           |          | H            | 20.59     |             |        |
|                      |         |         |           | E1       | V            | 21.41     |             |        |
|                      |         |         |           |          | H            | 19.42     |             |        |
|                      |         |         |           | E2       | V            | 21.81     |             |        |
|                      |         |         |           |          | H            | 18.25     |             |        |
|                      | Highest | 25      | 0         | H        | V            | 22.01     | 30.00       | Pass   |
|                      |         |         |           |          | H            | 20.50     |             |        |
|                      |         |         |           | E1       | V            | 22.36     |             |        |
|                      |         |         |           |          | H            | 19.94     |             |        |
|                      |         |         |           | E2       | V            | 22.74     |             |        |
|                      |         |         |           |          | H            | 19.72     |             |        |

| EUT mode              | Channel | RB Size | RB Offset | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|-----------------------|---------|---------|-----------|----------|--------------|-----------|-------------|--------|
| LTE Band 4<br>(10MHz) | Lowest  | 50      | 0         | H        | V            | 21.05     | 30.00       | Pass   |
|                       |         |         |           |          | H            | 19.59     |             |        |
|                       |         |         |           | E1       | V            | 22.50     |             |        |
|                       |         |         |           |          | H            | 20.86     |             |        |
|                       |         |         |           | E2       | V            | 21.05     |             |        |
|                       |         |         |           |          | H            | 17.95     |             |        |
|                       | Middle  | 50      | 0         | H        | V            | 22.31     | 30.00       | Pass   |
|                       |         |         |           |          | H            | 20.13     |             |        |
|                       |         |         |           | E1       | V            | 20.87     |             |        |
|                       |         |         |           |          | H            | 19.55     |             |        |
|                       |         |         |           | E2       | V            | 21.27     |             |        |
|                       |         |         |           |          | H            | 18.44     |             |        |
|                       | Highest | 50      | 0         | H        | V            | 21.21     | 30.00       | Pass   |
|                       |         |         |           |          | H            | 20.01     |             |        |
|                       |         |         |           | E1       | V            | 20.22     |             |        |
|                       |         |         |           |          | H            | 19.96     |             |        |
|                       |         |         |           | E2       | V            | 21.79     |             |        |
|                       |         |         |           |          | H            | 18.72     |             |        |

| EUT mode              | Channel | RB Size | RB Offset | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|-----------------------|---------|---------|-----------|----------|--------------|-----------|-------------|--------|
| LTE Band 4<br>(15MHz) | Lowest  | 75      | 0         | H        | V            | 21.20     | 30.00       | Pass   |
|                       |         |         |           |          | H            | 20.51     |             |        |
|                       |         |         |           | E1       | V            | 21.80     |             |        |
|                       |         |         |           |          | H            | 20.90     |             |        |
|                       |         |         |           | E2       | V            | 20.85     |             |        |
|                       |         |         |           |          | H            | 17.21     |             |        |
|                       | Middle  | 75      | 0         | H        | V            | 21.70     | 30.00       | Pass   |
|                       |         |         |           |          | H            | 19.75     |             |        |
|                       |         |         |           | E1       | V            | 20.97     |             |        |
|                       |         |         |           |          | H            | 18.47     |             |        |
|                       |         |         |           | E2       | V            | 21.03     |             |        |
|                       |         |         |           |          | H            | 18.09     |             |        |
|                       | Highest | 75      | 0         | H        | V            | 21.24     | 30.00       | Pass   |
|                       |         |         |           |          | H            | 20.19     |             |        |
|                       |         |         |           | E1       | V            | 21.28     |             |        |
|                       |         |         |           |          | H            | 19.82     |             |        |
|                       |         |         |           | E2       | V            | 21.67     |             |        |
|                       |         |         |           |          | H            | 18.99     |             |        |

| EUT mode              | Channel | RB Size | RB Offset | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|-----------------------|---------|---------|-----------|----------|--------------|-----------|-------------|--------|
| LTE Band 4<br>(20MHz) | Lowest  | 100     | 0         | H        | V            | 22.62     | 30.00       | Pass   |
|                       |         |         |           |          | H            | 20.76     |             |        |
|                       |         |         |           | E1       | V            | 22.25     |             |        |
|                       |         |         |           |          | H            | 19.31     |             |        |
|                       |         |         |           | E2       | V            | 22.30     |             |        |
|                       |         |         |           |          | H            | 19.54     |             |        |
|                       | Middle  | 100     | 0         | H        | V            | 22.28     | 30.00       | Pass   |
|                       |         |         |           |          | H            | 19.50     |             |        |
|                       |         |         |           | E1       | V            | 22.68     |             |        |
|                       |         |         |           |          | H            | 20.57     |             |        |
|                       |         |         |           | E2       | V            | 22.42     |             |        |
|                       |         |         |           |          | H            | 19.90     |             |        |
|                       | Highest | 100     | 0         | H        | V            | 22.81     | 30.00       | Pass   |
|                       |         |         |           |          | H            | 20.83     |             |        |
|                       |         |         |           | E1       | V            | 22.72     |             |        |
|                       |         |         |           |          | H            | 19.89     |             |        |
|                       |         |         |           | E2       | V            | 21.71     |             |        |
|                       |         |         |           |          | H            | 19.83     |             |        |



| EUT mode             | Channel | RB Size | RB Offset | EUT Pol. | Antenna Pol. | ERP(dBm) | Limit (dBm) | Result |
|----------------------|---------|---------|-----------|----------|--------------|----------|-------------|--------|
| LTE Band 5<br>(5MHz) | Lowest  | 25      | 0         | H        | V            | 21.49    | 38.00       | Pass   |
|                      |         |         |           |          | H            | 21.29    |             |        |
|                      |         |         |           | E1       | V            | 23.05    |             |        |
|                      |         |         |           |          | H            | 19.52    |             |        |
|                      |         |         |           | E2       | V            | 20.83    |             |        |
|                      |         |         |           |          | H            | 17.55    |             |        |
|                      | Middle  | 25      | 0         | H        | V            | 22.31    | 38.00       | Pass   |
|                      |         |         |           |          | H            | 19.64    |             |        |
|                      |         |         |           | E1       | V            | 22.03    |             |        |
|                      |         |         |           |          | H            | 19.56    |             |        |
|                      |         |         |           | E2       | V            | 21.81    |             |        |
|                      |         |         |           |          | H            | 19.58    |             |        |
|                      | Highest | 25      | 0         | H        | V            | 22.07    | 38.00       | Pass   |
|                      |         |         |           |          | H            | 20.62    |             |        |
|                      |         |         |           | E1       | V            | 21.83    |             |        |
|                      |         |         |           |          | H            | 20.23    |             |        |
|                      |         |         |           | E2       | V            | 22.25    |             |        |
|                      |         |         |           |          | H            | 20.25    |             |        |

| EUT mode              | Channel | RB Size | RB Offset | EUT Pol. | Antenna Pol. | ERP(dBm) | Limit (dBm) | Result |
|-----------------------|---------|---------|-----------|----------|--------------|----------|-------------|--------|
| LTE Band 5<br>(10MHz) | Lowest  | 50      | 0         | H        | V            | 22.34    | 38.00       | Pass   |
|                       |         |         |           |          | H            | 20.39    |             |        |
|                       |         |         |           | E1       | V            | 22.32    |             |        |
|                       |         |         |           |          | H            | 20.60    |             |        |
|                       |         |         |           | E2       | V            | 21.52    |             |        |
|                       |         |         |           |          | H            | 18.34    |             |        |
|                       | Middle  | 50      | 0         | H        | V            | 21.94    | 38.00       | Pass   |
|                       |         |         |           |          | H            | 20.15    |             |        |
|                       |         |         |           | E1       | V            | 22.37    |             |        |
|                       |         |         |           |          | H            | 20.60    |             |        |
|                       |         |         |           | E2       | V            | 22.38    |             |        |
|                       |         |         |           |          | H            | 19.88    |             |        |
|                       | Highest | 50      | 0         | H        | V            | 22.21    | 38.00       | Pass   |
|                       |         |         |           |          | H            | 19.90    |             |        |
|                       |         |         |           | E1       | V            | 22.67    |             |        |
|                       |         |         |           |          | H            | 19.71    |             |        |
|                       |         |         |           | E2       | V            | 21.08    |             |        |
|                       |         |         |           |          | H            | 20.29    |             |        |

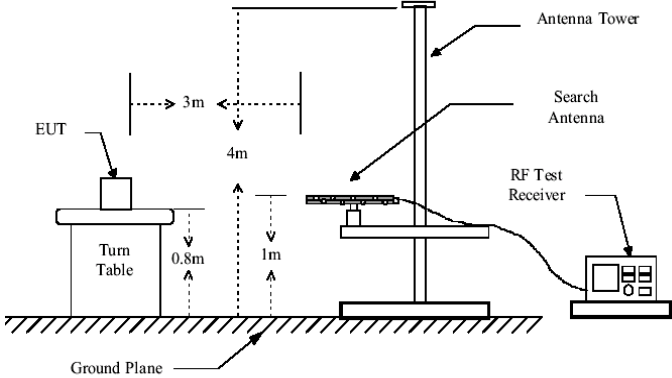
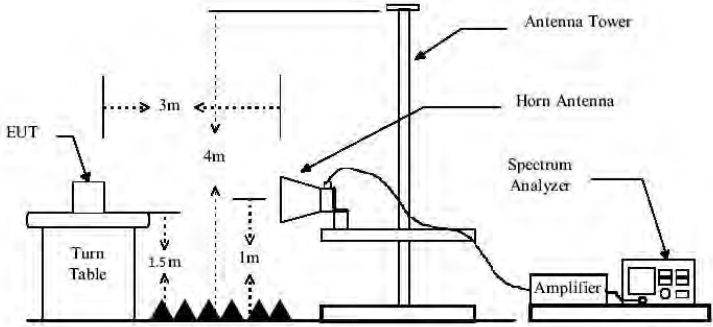
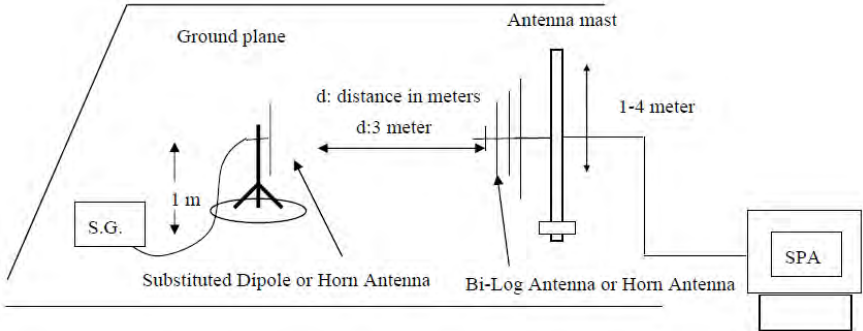
| EUT mode             | Channel | RB Size | RB Offset | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|----------------------|---------|---------|-----------|----------|--------------|-----------|-------------|--------|
| LTE Band 7<br>(5MHz) | Lowest  | 25      | 0         | H        | V            | 22.39     | 30.00       | Pass   |
|                      |         |         |           |          | H            | 20.52     |             |        |
|                      |         |         |           | E1       | V            | 21.60     |             |        |
|                      |         |         |           |          | H            | 20.05     |             |        |
|                      |         |         |           | E2       | V            | 22.37     |             |        |
|                      |         |         |           |          | H            | 18.32     |             |        |
|                      | Middle  | 25      | 0         | H        | V            | 22.04     | 30.00       | Pass   |
|                      |         |         |           |          | H            | 19.50     |             |        |
|                      |         |         |           | E1       | V            | 22.71     |             |        |
|                      |         |         |           |          | H            | 19.64     |             |        |
|                      |         |         |           | E2       | V            | 22.87     |             |        |
|                      |         |         |           |          | H            | 20.05     |             |        |
|                      | Highest | 25      | 0         | H        | V            | 22.43     | 30.00       | Pass   |
|                      |         |         |           |          | H            | 19.57     |             |        |
|                      |         |         |           | E1       | V            | 22.33     |             |        |
|                      |         |         |           |          | H            | 20.67     |             |        |
|                      |         |         |           | E2       | V            | 21.27     |             |        |
|                      |         |         |           |          | H            | 20.94     |             |        |

| EUT mode              | Channel | RB Size | RB Offset | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|-----------------------|---------|---------|-----------|----------|--------------|-----------|-------------|--------|
| LTE Band 7<br>(10MHz) | Lowest  | 50      | 0         | H        | V            | 22.31     | 30.00       | Pass   |
|                       |         |         |           |          | H            | 20.49     |             |        |
|                       |         |         |           | E1       | V            | 22.99     |             |        |
|                       |         |         |           |          | H            | 19.64     |             |        |
|                       |         |         |           | E2       | V            | 21.41     |             |        |
|                       |         |         |           |          | H            | 19.10     |             |        |
|                       | Middle  | 50      | 0         | H        | V            | 22.23     | 30.00       | Pass   |
|                       |         |         |           |          | H            | 20.30     |             |        |
|                       |         |         |           | E1       | V            | 21.61     |             |        |
|                       |         |         |           |          | H            | 19.29     |             |        |
|                       |         |         |           | E2       | V            | 21.46     |             |        |
|                       |         |         |           |          | H            | 20.30     |             |        |
|                       | Highest | 50      | 0         | H        | V            | 22.14     | 30.00       | Pass   |
|                       |         |         |           |          | H            | 20.53     |             |        |
|                       |         |         |           | E1       | V            | 22.62     |             |        |
|                       |         |         |           |          | H            | 19.43     |             |        |
|                       |         |         |           | E2       | V            | 22.38     |             |        |
|                       |         |         |           |          | H            | 20.78     |             |        |

| EUT mode              | Channel | RB Size | RB Offset | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|-----------------------|---------|---------|-----------|----------|--------------|-----------|-------------|--------|
| LTE Band 7<br>(15MHz) | Lowest  | 75      | 0         | H        | V            | 22.24     | 30.00       | Pass   |
|                       |         |         |           |          | H            | 20.80     |             |        |
|                       |         |         |           | E1       | V            | 22.79     |             |        |
|                       |         |         |           |          | H            | 20.49     |             |        |
|                       |         |         |           | E2       | V            | 21.81     |             |        |
|                       |         |         |           |          | H            | 20.52     |             |        |
|                       | Middle  | 75      | 0         | H        | V            | 22.36     | 30.00       | Pass   |
|                       |         |         |           |          | H            | 20.50     |             |        |
|                       |         |         |           | E1       | V            | 22.09     |             |        |
|                       |         |         |           |          | H            | 20.41     |             |        |
|                       |         |         |           | E2       | V            | 22.21     |             |        |
|                       |         |         |           |          | H            | 20.47     |             |        |
|                       | Highest | 75      | 0         | H        | V            | 22.44     | 30.00       | Pass   |
|                       |         |         |           |          | H            | 19.99     |             |        |
|                       |         |         |           | E1       | V            | 22.33     |             |        |
|                       |         |         |           |          | H            | 20.31     |             |        |
|                       |         |         |           | E2       | V            | 21.17     |             |        |
|                       |         |         |           |          | H            | 20.20     |             |        |

| EUT mode              | Channel | RB Size | RB Offset | EUT Pol. | Antenna Pol. | EIRP(dBm) | Limit (dBm) | Result |
|-----------------------|---------|---------|-----------|----------|--------------|-----------|-------------|--------|
| LTE Band 7<br>(20MHz) | Lowest  | 100     | 0         | H        | V            | 22.07     | 30.00       | Pass   |
|                       |         |         |           |          | H            | 20.90     |             |        |
|                       |         |         |           | E1       | V            | 21.77     |             |        |
|                       |         |         |           |          | H            | 20.09     |             |        |
|                       |         |         |           | E2       | V            | 21.56     |             |        |
|                       |         |         |           |          | H            | 19.90     |             |        |
|                       | Middle  | 100     | 0         | H        | V            | 22.36     | 30.00       | Pass   |
|                       |         |         |           |          | H            | 20.13     |             |        |
|                       |         |         |           | E1       | V            | 22.26     |             |        |
|                       |         |         |           |          | H            | 20.87     |             |        |
|                       |         |         |           | E2       | V            | 22.36     |             |        |
|                       |         |         |           |          | H            | 19.79     |             |        |
|                       | Highest | 100     | 0         | H        | V            | 21.48     | 30.00       | Pass   |
|                       |         |         |           |          | H            | 19.60     |             |        |
|                       |         |         |           | E1       | V            | 21.47     |             |        |
|                       |         |         |           |          | H            | 20.38     |             |        |
|                       |         |         |           | E2       | V            | 21.89     |             |        |
|                       |         |         |           |          | H            | 19.99     |             |        |

### 4.8 Field strength of spurious radiation measurement

|                   |  |
|-------------------|--|
| Test Requirement: | FCC part22.913(a), FCC part24.238(a) and FCC part27.53   |
| Test Method:      | FCC part2.1053   |
| Limit:            | Band 2/4/5/17:-13dBm<br>Band 7:-25dBm  |
| Test setup:       | <p><b>Below 1GHz</b></p>  <p><b>Above 1GHz</b></p>  <p><b>Substituted method:</b></p>  |

|                   |   |
|-------------------|---|
| Test Procedure:   | <ol style="list-style-type: none"> <li>1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.</li> <li>2. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.</li> <li>3. The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.</li> <li>4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.<br/> <math display="block">\text{ERP / EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain(dB/dBi)} - \text{Cable Loss (dB)}</math> </li> </ol> |
| Test Instruments: | Refer to section 6.0 for details  |
| Test mode:        | Refer to section 7.1 for details  |
| Test results:     | Pass  |

## Measurement Data



| Test mode:      | LTE Band 2(1.4MHz) |             | Test channel: | Lowest  |
|-----------------|--------------------|-------------|---------------|---------|
| Frequency (MHz) | Spurious Emission  |             | Limit (dBm)   | Result  |
|                 | Polarization       | Level (dBm) |               |         |
| 3701.40         | Vertical           | -38.70      | -13.00        | Pass    |
| 5552.10         | V                  | -41.50      |               |         |
| 7402.80         | V                  | -43.77      |               |         |
| 9253.50         | V                  | -46.51      |               |         |
| 11104.20        | V                  | ---         |               |         |
| 3701.40         | Horizontal         | -44.30      | -13.00        | Pass    |
| 5552.10         | H                  | -48.53      |               |         |
| 7402.80         | H                  | -50.24      |               |         |
| 9253.50         | H                  | -53.96      |               |         |
| 11104.20        | H                  | ---         |               |         |
| Test mode:      | LTE Band 2(1.4MHz) |             | Test channel: | Middle  |
| Frequency (MHz) | Spurious Emission  |             | Limit (dBm)   | Result  |
|                 | Polarization       | Level (dBm) |               |         |
| 3760.00         | Vertical           | -34.63      | -13.00        | Pass    |
| 5640.00         | V                  | -38.17      |               |         |
| 7520.00         | V                  | -39.75      |               |         |
| 9400.00         | V                  | -41.98      |               |         |
| 11280.00        | V                  | ---         |               |         |
| 3760.00         | Horizontal         | -39.85      | -13.00        | Pass    |
| 5640.00         | H                  | -43.82      |               |         |
| 7520.00         | H                  | -44.47      |               |         |
| 9400.00         | H                  | -46.62      |               |         |
| 11280.00        | H                  | ---         |               |         |
| Test mode:      | LTE Band 2(1.4MHz) |             | Test channel: | Highest |
| Frequency (MHz) | Spurious Emission  |             | Limit (dBm)   | Result  |
|                 | Polarization       | Level (dBm) |               |         |
| 3818.60         | Vertical           | -35.85      | -13.00        | Pass    |
| 5727.90         | V                  | -36.68      |               |         |
| 7637.20         | V                  | -39.06      |               |         |
| 9546.50         | V                  | -41.02      |               |         |
| 11455.80        | V                  | ---         |               |         |
| 3818.60         | Horizontal         | -40.56      | -13.00        | Pass    |
| 5727.90         | H                  | -41.20      |               |         |
| 7637.20         | H                  | -43.67      |               |         |
| 9546.50         | H                  | -46.03      |               |         |
| 11455.80        | H                  | ---         |               |         |

Remark :

1. The emission behaviour belongs to narrowband spurious emission.
2. Remark"---" means that the emission level is too low to be measured
3. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

| Test mode:      |                   | LTE Band 4(1.4MHz) |             | Test channel: | Lowest  |
|-----------------|-------------------|--------------------|-------------|---------------|---------|
| Frequency (MHz) | Spurious Emission |                    | Limit (dBm) | Result        |         |
|                 | Polarization      | Level (dBm)        |             |               |         |
| 3421.40         | Vertical          | -35.44             | -13.00      | Pass          |         |
| 5132.10         | V                 | -36.96             |             |               |         |
| 6842.80         | V                 | -39.14             |             |               |         |
| 8553.50         | V                 | -40.76             |             |               |         |
| 10264.20        | V                 | ---                |             |               |         |
| 3421.40         | Horizontal        | -40.52             | -13.00      | Pass          |         |
| 5132.10         | H                 | -41.09             |             |               |         |
| 6842.80         | H                 | -43.64             |             |               |         |
| 8553.50         | H                 | -45.57             |             |               |         |
| 10264.20        | H                 | ---                |             |               |         |
| Test mode:      |                   | LTE Band 4(1.4MHz) |             | Test channel: | Middle  |
| Frequency (MHz) | Spurious Emission |                    | Limit (dBm) | Result        |         |
|                 | Polarization      | Level (dBm)        |             |               |         |
| 3465.00         | Vertical          | -35.63             | -13.00      | Pass          |         |
| 5197.50         | V                 | -36.80             |             |               |         |
| 6930.00         | V                 | -39.60             |             |               |         |
| 8662.50         | V                 | -41.61             |             |               |         |
| 10395.00        | V                 | ---                |             |               |         |
| 3465.00         | Horizontal        | -40.37             | -13.00      | Pass          |         |
| 5197.50         | H                 | -41.92             |             |               |         |
| 6930.00         | H                 | -43.68             |             |               |         |
| 8662.50         | H                 | -46.14             |             |               |         |
| 10395.00        | H                 | ---                |             |               |         |
| Test mode:      |                   | LTE Band 4(1.4MHz) |             | Test channel: | Highest |
| Frequency (MHz) | Spurious Emission |                    | Limit (dBm) | Result        |         |
|                 | Polarization      | Level (dBm)        |             |               |         |
| 3508.60         | Vertical          | -35.39             | -13.00      | Pass          |         |
| 5262.90         | V                 | -37.12             |             |               |         |
| 7017.20         | V                 | -39.12             |             |               |         |
| 8771.50         | V                 | -40.92             |             |               |         |
| 10525.80        | V                 | ---                |             |               |         |
| 3508.60         | Horizontal        | -40.04             | -13.00      | Pass          |         |
| 5262.90         | H                 | -41.97             |             |               |         |
| 7017.20         | H                 | -43.19             |             |               |         |
| 8771.50         | H                 | -46.43             |             |               |         |
| 10525.80        | H                 | ---                |             |               |         |

## Remark:

1. The emission behaviour belongs to narrowband spurious emission.
2. Remark"---" means that the emission level is too low to be measured
3. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

| Test mode:      | LTE Band 5(1.4MHz) |             | Test channel: | Lowest  |
|-----------------|--------------------|-------------|---------------|---------|
| Frequency (MHz) | Spurious Emission  |             | Limit (dBm)   | Result  |
|                 | Polarization       | Level (dBm) |               |         |
| 1649.40         | Vertical           | -35.54      | -13.00        | Pass    |
| 2474.10         | V                  | -36.97      |               |         |
| 3298.80         | V                  | -39.44      |               |         |
| 4123.50         | V                  | -41.24      |               |         |
| 4948.20         | V                  | ---         |               |         |
| 1649.40         | Horizontal         | -40.1       | -13.00        | Pass    |
| 2474.10         | H                  | -41.53      |               |         |
| 3298.80         | H                  | -43.33      |               |         |
| 4123.50         | H                  | -46.03      |               |         |
| 4948.20         | H                  | ---         |               |         |
| Test mode:      | LTE Band 5(1.4MHz) |             | Test channel: | Middle  |
| Frequency (MHz) | Spurious Emission  |             | Limit (dBm)   | Result  |
|                 | Polarization       | Level (dBm) |               |         |
| 1673.00         | Vertical           | -34.64      | -13.00        | Pass    |
| 2509.50         | V                  | -37.70      |               |         |
| 3346.00         | V                  | -39.50      |               |         |
| 4182.50         | V                  | -40.53      |               |         |
| 5019.00         | V                  | ---         |               |         |
| 1673.00         | Horizontal         | -39.67      | -13.00        | Pass    |
| 2509.50         | H                  | -43.51      |               |         |
| 3346.00         | H                  | -44.13      |               |         |
| 4182.50         | H                  | -46.05      |               |         |
| 5019.00         | H                  | ---         |               |         |
| Test mode:      | LTE Band 5(1.4MHz) |             | Test channel: | Highest |
| Frequency (MHz) | Spurious Emission  |             | Limit (dBm)   | Result  |
|                 | Polarization       | Level (dBm) |               |         |
| 1696.60         | Vertical           | -34.91      | -13.00        | Pass    |
| 2544.90         | V                  | -37.85      |               |         |
| 3393.20         | V                  | -39.62      |               |         |
| 4241.50         | V                  | -40.74      |               |         |
| 5089.80         | V                  | ---         |               |         |
| 1696.60         | Horizontal         | -39.76      | -13.00        | Pass    |
| 2544.90         | H                  | -41.45      |               |         |
| 3393.20         | H                  | -43.19      |               |         |
| 4241.50         | H                  | -46.26      |               |         |
| 5089.80         | H                  | ---         |               |         |

Remark :

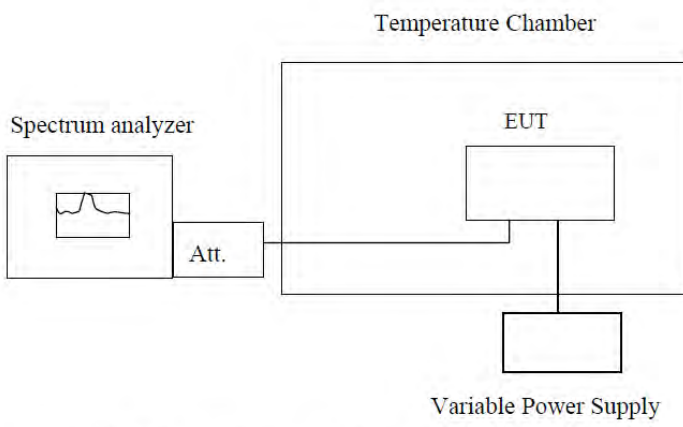
4. The emission behaviour belongs to narrowband spurious emission.
5. Remark"---" means that the emission level is too low to be measured
4. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

| Test mode:      | LTE Band 7(5MHz)  |             | Test channel: | Lowest  |
|-----------------|-------------------|-------------|---------------|---------|
| Frequency (MHz) | Spurious Emission |             | Limit (dBm)   | Result  |
|                 | Polarization      | Level (dBm) |               |         |
| 5005.00         | Vertical          | -32.97      | -25.00        | Pass    |
| 7507.50         | V                 | -37.58      |               |         |
| 10010.00        | V                 | -40.25      |               |         |
| 12512.50        | V                 | -42.04      |               |         |
| 15015.00        | V                 | ---         |               |         |
| 5005.00         | Horizontal        | -40.49      | -25.00        | Pass    |
| 7507.50         | H                 | -44.79      |               |         |
| 10010.00        | H                 | -46.62      |               |         |
| 12512.50        | H                 | -50.34      |               |         |
| 15015.00        | H                 | ---         |               |         |
| Test mode:      | LTE Band 7(5MHz)  |             | Test channel: | Middle  |
| Frequency (MHz) | Spurious Emission |             | Limit (dBm)   | Result  |
|                 | Polarization      | Level (dBm) |               |         |
| 5070.00         | Vertical          | -34.71      | -25.00        | Pass    |
| 7605.00         | V                 | -37.95      |               |         |
| 10140.00        | V                 | -40.96      |               |         |
| 12675.00        | V                 | -42.69      |               |         |
| 15210.00        | V                 | ---         |               |         |
| 5070.00         | Horizontal        | -40.36      | -25.00        | Pass    |
| 7605.00         | H                 | -44.68      |               |         |
| 10140.00        | H                 | -46.33      |               |         |
| 12675.00        | H                 | -50.46      |               |         |
| 15210.00        | H                 | ---         |               |         |
| Test mode:      | LTE Band 7(5MHz)  |             | Test channel: | Highest |
| Frequency (MHz) | Spurious Emission |             | Limit (dBm)   | Result  |
|                 | Polarization      | Level (dBm) |               |         |
| 5135.00         | Vertical          | -33.41      | -25.00        | Pass    |
| 7702.50         | V                 | -36.91      |               |         |
| 10270.00        | V                 | -38.96      |               |         |
| 12837.50        | V                 | -41.09      |               |         |
| 15405.00        | V                 | ---         |               |         |
| 5135.00         | Horizontal        | -38.33      | -25.00        | Pass    |
| 7702.50         | H                 | -42.74      |               |         |
| 10270.00        | H                 | -46.10      |               |         |
| 12837.50        | H                 | -48.86      |               |         |
| 15405.00        | H                 | ---         |               |         |

Remark :

1. The emission behaviour belongs to narrowband spurious emission.
2. Remark"---" means that the emission level is too low to be measured
3. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

#### 4.9 Frequency stability V.S. Temperature measurement

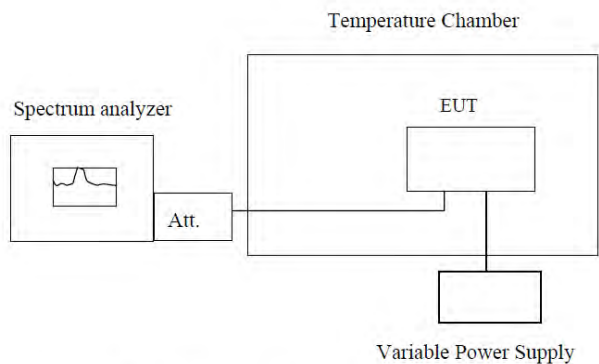
|                   |   |
|-------------------|---|
| Test Requirement: | FCC Part2.1055(a)(1)(b)   |
| Test Method:      | FCC Part2.1055(a)(1)(b)   |
| Limit:            | 2.5ppm  |
| Test setup:       |  <p style="text-align: center;"><b>Note :</b> Measurement setup for testing on Antenna connector</p>  |
| Test procedure:   | <ol style="list-style-type: none"> <li>1. The equipment under test was connected to an external DC power supply and input rated voltage.</li> <li>2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.</li> <li>3. The EUT was placed inside the temperature chamber.</li> <li>4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency.</li> <li>5. Turn EUT off and set the chamber temperature to –20°C . After the temperature stabilized for approximately 30 minutes recorded the frequency.</li> <li>6. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.</li> </ol> |
| Test Instruments: | Refer to section 6.0 for details  |
| Test mode:        | Refer to section 7.1 for details  |
| Test results:     | Pass  |

## Measurement Data

| Reference Frequency: LTE Band 2 Middle channel=18900 channel=1880MHz   |                  |                 |        |             |        |
|--|------------------|-----------------|--------|-------------|--------|
| Power supplied (Vdc)   | Temperature (°C) | Frequency error |        | Limit (ppm) | Result |
|  |                  | Hz              | ppm    |             |        |
| 3.80   | -30              | 32              | 0.0171 | 2.5         | Pass   |
|  | -20              | 23              | 0.0122 |             |        |
|  | -10              | 31              | 0.0167 |             |        |
|  | 0                | 27              | 0.0144 |             |        |
|  | 10               | 35              | 0.0188 |             |        |
|  | 20               | 29              | 0.0154 |             |        |
|  | 30               | 37              | 0.0195 |             |        |
|  | 40               | 36              | 0.0190 |             |        |
|  | 50               | 34              | 0.0180 |             |        |
| Reference Frequency: LTE Band 4 Middle channel=20175 channel=1732.5MHz |                  |                 |        |             |        |
| Power supplied (Vdc)   | Temperature (°C) | Frequency error |        | Limit (ppm) | Result |
|  |                  | Hz              | ppm    |             |        |
| 3.80   | -30              | 34              | 0.0196 | 2.5         | Pass   |
|  | -20              | 23              | 0.0133 |             |        |
|  | -10              | 33              | 0.0190 |             |        |
|  | 0                | 27              | 0.0154 |             |        |
|  | 10               | 34              | 0.0199 |             |        |
|  | 20               | 27              | 0.0153 |             |        |
|  | 30               | 36              | 0.0207 |             |        |
|  | 40               | 39              | 0.0224 |             |        |
|  | 50               | 35              | 0.0200 |             |        |
| Reference Frequency: LTE Band 5 Middle channel=20175 channel=836.5MHz  |                  |                 |        |             |        |
| Power supplied (Vdc)   | Temperature (°C) | Frequency error |        | Limit (ppm) | Result |
|  |                  | Hz              | ppm    |             |        |
| 3.80   | -30              | 38              | 0.0453 | 2.5         | Pass   |
|  | -20              | 23              | 0.0275 |             |        |
|  | -10              | 35              | 0.0414 |             |        |
|  | 0                | 30              | 0.0353 |             |        |
|  | 10               | 36              | 0.0432 |             |        |
|  | 20               | 28              | 0.0339 |             |        |
|  | 30               | 39              | 0.0470 |             |        |
|  | 40               | 36              | 0.0426 |             |        |
|  | 50               | 34              | 0.0409 |             |        |

| Reference Frequency: LTE Band 7 Middle channel=21100 channel=2535MHz |                  |                 |        |             |        |
|--|------------------|-----------------|--------|-------------|--------|
| Power supplied (Vdc)   | Temperature (°C) | Frequency error |        | Limit (ppm) | Result |
|  |                  | Hz              | ppm    |             |        |
| 3.80   | -30              | 37              | 0.0147 | 2.5         | Pass   |
|  | -20              | 23              | 0.0091 |             |        |
|  | -10              | 34              | 0.0132 |             |        |
|  | 0                | 32              | 0.0126 |             |        |
|  | 10               | 32              | 0.0127 |             |        |
|  | 20               | 29              | 0.0114 |             |        |
|  | 30               | 38              | 0.0149 |             |        |
|  | 40               | 36              | 0.0142 |             |        |
|  | 50               | 33              | 0.0132 |             |        |

#### 4.10 Frequency stability V.S. Voltage measurement

|                   |   |
|-------------------|---|
| Test Requirement: | FCC Part2.1055(d)(1)(2)   |
| Test Method:      | FCC Part2.1055(d)(1)(2)   |
| Limit:            | 2.5ppm  |
| Test setup:       |  <p style="text-align: center;">Temperature Chamber</p> <p style="text-align: center;">Spectrum analyzer</p> <p style="text-align: center;">Att.</p> <p style="text-align: center;">EUT</p> <p style="text-align: center;">Variable Power Supply</p> <p><b>Note :</b> Measurement setup for testing on Antenna connector</p>                                    |
| Test procedure:   | <ol style="list-style-type: none"> <li>1. Set chamber temperature to 25°C . Use a variable DC power source to power the EUT and set the voltage to rated voltage.</li> <li>2. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.</li> <li>3. Reduce the input voltage to specified extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.</li> </ol> |
| Test Instruments: | Refer to section 6.0 for details  |
| Test mode:        | Refer to section 7.1 for details  |
| Test results:     | Pass  |

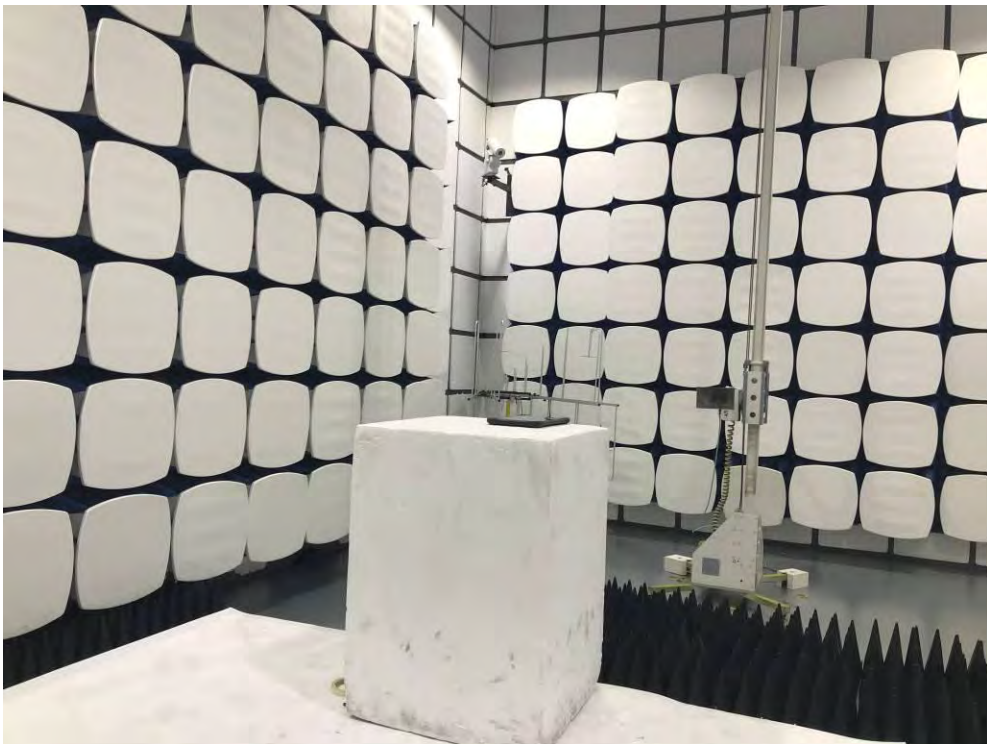
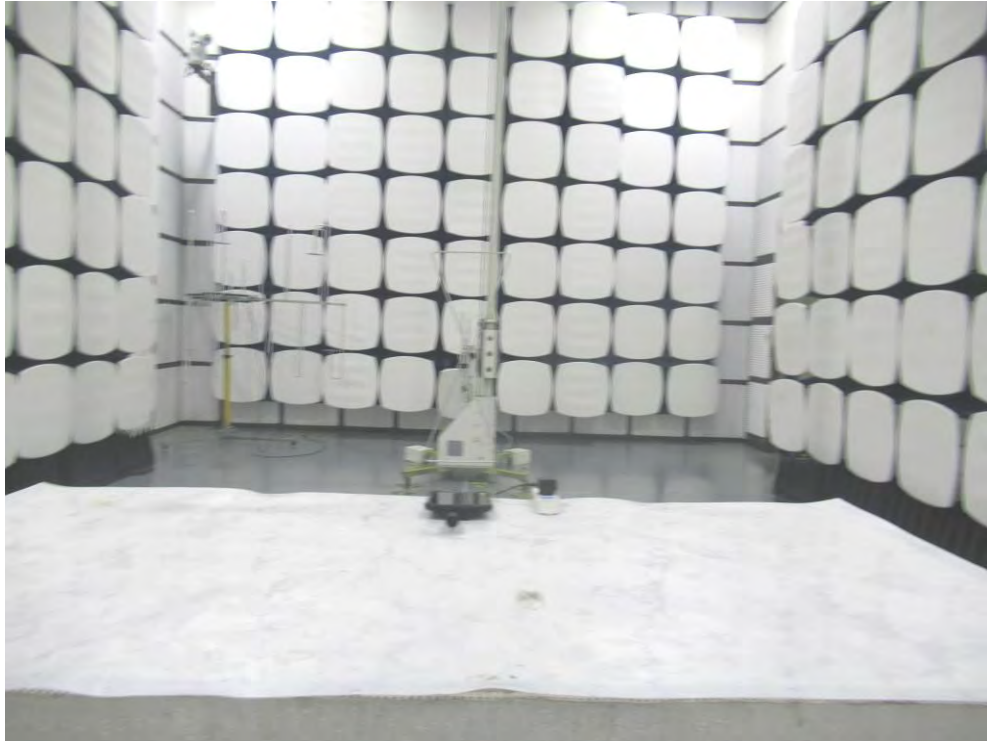


## Measurement Data

| Reference Frequency: LTE Band 2 Middle channel=18900 channel=1880MHz   |                      |                 |        |             |        |
|--|----------------------|-----------------|--------|-------------|--------|
| Temperature (°C)   | Power supplied (Vdc) | Frequency error |        | Limit (ppm) | Result |
|  |                      | Hz              | ppm    |             |        |
| 25   | 4.38                 | 34              | 0.0180 | 2.5         | Pass   |
|  | 3.80                 | 26              | 0.0139 |             |        |
|  | 3.23                 | 41              | 0.0217 |             |        |
| Reference Frequency: LTE Band 4 Middle channel=20175 channel=1732.5MHz |                      |                 |        |             |        |
| Temperature (°C)   | Power supplied (Vdc) | Frequency error |        | Limit (ppm) | Result |
|  |                      | Hz              | ppm    |             |        |
| 25   | 4.38                 | 23              | 0.0133 | 2.5         | Pass   |
|  | 3.80                 | 35              | 0.0204 |             |        |
|  | 3.23                 | 29              | 0.0167 |             |        |
| Reference Frequency: LTE Band 5 Middle channel=20175 channel=836.5MHz  |                      |                 |        |             |        |
| Temperature (°C)   | Power supplied (Vdc) | Frequency error |        | Limit (ppm) | Result |
|  |                      | Hz              | ppm    |             |        |
| 25   | 4.38                 | 36              | 0.0431 | 2.5         | Pass   |
|  | 3.80                 | 28              | 0.0330 |             |        |
|  | 3.23                 | 37              | 0.0441 |             |        |
| Reference Frequency: LTE Band 7 Middle channel=21100 channel=2535MHz   |                      |                 |        |             |        |
| Temperature (°C)   | Power supplied (Vdc) | Frequency error |        | Limit (ppm) | Result |
|  |                      | Hz              | ppm    |             |        |
| 25   | 4.38                 | 33              | 0.0130 | 2.5         | Pass   |
|  | 3.80                 | 23              | 0.0091 |             |        |
|  | 3.23                 | 34              | 0.0133 |             |        |

## 5 Test Setup Photo

Radiated Emission



## **6 EUT Constructional Details**

Reference to the test report No. A2102055-C01-R01

-----End-----