

# FCC REPORT

## (LTE)

**Applicant:** Shenzhen Youmi Intelligent Technology Co., Ltd.

**Address of Applicant:** 406-407 Jinqi Zhigu Building, 4/F, 1 Tangling Road, Nanshan District, Shenzhen City, China.

**Equipment Under Test (EUT)**

Product Name: Smart phone

Model No.: A7 Pro, A7, A7S, A3SE, F3, Power 3X

Trade mark: UMIDIGI

**FCC ID:** 2ATZ4A7PSF3X

FCC CFR Title 47 Part 2

**Applicable standards:** FCC CFR Title 47 Part 22 Subpart H  
FCC CFR Title 47 Part 24 Subpart E  
FCC CFR Title 47 Part 27 Subpart L  
FCC CFR Title 47 Part 27 Subpart H

**Date of sample receipt:** 16 Apr., 2020

**Date of Test:** 17 Apr., to 11 May, 2020

**Date of report issued:** 12 May, 2020

**Test Result:** PASS\*

\*In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Bruce Zhang  
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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## 2. Version

| Version No. | Date         | Description |
|-------------|--------------|-------------|
| 00          | 12 May, 2020 | Original    |
|             |              |             |
|             |              |             |
|             |              |             |
|             |              |             |

**Tested by:** YT Yang **Date:** 12 May, 2020  
**Test Engineer**

**Reviewed by:** Winner Zhang **Date:** 12 May, 2020  
**Project Engineer**

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## 4. Test Summary

| Test Items  | Section in CFR 47   | Result                                 |
|---|---|--|
| RF Exposure (SAR)   | Part 1.1307<br>Part 2.1093  | Passed<br>(Please refer to SAR Report) |
| RF Output Power   | Part 2.1046<br>Part 22.913 (a)(5)<br>Part 24.232 (c)<br>Part 27.50 (c)(10)<br>Part 27.50 (d)(4) | Pass                                   |
| Peak-to-Average Ratio   | Part 24.232 (d)<br>Part 27.50(d)(5)   | Pass                                   |
| Modulation Characteristics  | Part 2.1047   | Pass                                   |
| 99% & -26 dB Occupied Bandwidth   | Part 2.1049<br>Part 22.917(b)<br>Part 24.238(b)<br>Part 27.53(g)<br>Part 27.53(h)               | Pass                                   |
| Out of band emission at antenna terminals   | Part 2.1053<br>Part 22.917(a)<br>Part 24.238 (a)<br>Part 27.53 (g)<br>Part 27.53 (h)            | Pass                                   |
| Field strength of spurious radiation  | Part 22.917(a)<br>Part 24.238 (a)<br>Part 27.53 (g)<br>Part 27.53 (h)                           | Pass                                   |
| Frequency stability vs. temperature   | Part 22.355<br>Part 24.235<br>Part 27.54<br>Part 2.1055(a)(1)(b)                                | Pass                                   |
| Frequency stability vs. voltage   | Part 22.355<br>Part 24.235<br>Part 27.54<br>Part 2.1055(d)(2)                                   | Pass                                   |
| <p><b>Remark:</b></p> <ol style="list-style-type: none"> <li>1. Pass: The EUT complies with the essential requirements in the standard.</li> <li>2. The cable insertion loss used by "RF Output Power" and other conduction measurement items is 0.5dB(Fundamental Frequency below 1GHz)/1.0dB(Fundamental Frequency above 1GHz) (provided by the customer).</li> </ol> |   |  |
| <b>Test Method:</b>   | ANSI/TIA-603-E-2016<br>ANSI C63.26-2015   |  |

## 5. General Information

### 5.1 Client Information

|               |   |
|---------------|---|
| Applicant:    | Shenzhen Youmi Intelligent Technology Co., Ltd.   |
| Address:      | 406-407 Jinqi Zhigu Building, 4/F, 1 Tangling Road, Nanshan District, Shenzhen City, China. |
| Manufacturer: | Shenzhen Youmi Intelligent Technology Co., Ltd.   |
| Address:      | 406-407 Jinqi Zhigu Building, 4/F, 1 Tangling Road, Nanshan District, Shenzhen City, China. |

### 5.2 General Description of E.U.T.

|                            |  |
|----------------------------|--|
| Product Name:              | Smart phone  |
| Model No.:                 | A7 Pro, A7, A7S, A3SE, F3, Power 3X  |
| Operation Frequency range: | LTE Band 2: TX: 1850MHz-1910MHz, RX: 1930MHz-1990MHz<br>LTE Band 4: TX: 1710MHz-1755MHz, RX: 2110MHz-2155MHz<br>LTE Band 5: 824MHz-849MHz, RX: 869MHz-894MHz<br>LTE Band 12: TX: 699MHz-716MHz, RX: 729MHz-746MHz<br>LTE Band 17: TX: 704MHz-716MHz, RX: 734MHz-746MHz |
| Modulation type:           | QPSK, 16QAM  |
| Antenna type:              | Internal Antenna   |
| Antenna gain:              | LTE Band 2: 0.1dBi<br>LTE Band 4: -0.5dBi<br>LTE Band 5: -1.4dBi<br>LTE Band 12: -1.6dBi<br>LTE Band 17: -1.6dBi   |
| Power supply:              | Rechargeable Li-ion Battery DC3.85V, 4150mAh   |
| AC adapter:                | Model: HJ-0502000W2-US<br>Input: AC100-240V, 50/60Hz, 0.30A<br>Output: DC 5.0V, 2.0A   |
| Remark:                    | The No.: A7 Pro, A7, A7S, A3SE, F3, Power 3X were identical inside, the electrical circuit design, layout, components used and internal wiring, with only difference being model name.   |
| Test Sample Condition:     | The applicant provided engineering samples for staying in continuously transmitting for testing.   |

**Operation Frequency List:**

| LTE Band 2 (1.4MHz) |                 | LTE Band 2 (3MHz)  |                 |
|---------------------|-----------------|--------------------|-----------------|
| Channel             | Frequency (MHz) | Channel            | Frequency (MHz) |
| 18607               | 1850.70         | 18615              | 1851.50         |
| 18608               | 1850.80         | 18616              | 1851.60         |
| ....                | ....            | ....               | ....            |
| 18899               | 1879.90         | 18899              | 1879.90         |
| 18900               | 1880.00         | 18900              | 1880.00         |
| 18901               | 1880.10         | 18901              | 1880.10         |
| ...                 | ...             | ...                | ...             |
| 19193               | 1909.20         | 19185              | 1908.40         |
| 19194               | 1909.30         | 19186              | 1908.50         |
| LTE Band 2 (5MHz)   |                 | LTE Band 2 (10MHz) |                 |
| Channel             | Frequency (MHz) | Channel            | Frequency (MHz) |
| 18625               | 1852.50         | 18650              | 1855.00         |
| 18626               | 1852.60         | 18651              | 1855.10         |
| ....                | ....            | ....               | ....            |
| 18899               | 1879.90         | 18899              | 1879.90         |
| 18900               | 1880.00         | 18900              | 1880.00         |
| 18901               | 1880.10         | 18901              | 1880.10         |
| ...                 | ...             | ...                | ...             |
| 19175               | 1907.40         | 19150              | 1904.90         |
| 19176               | 1907.50         | 19151              | 1905.00         |
| LTE Band 2 (15MHz)  |                 | LTE Band 2 (20MHz) |                 |
| Channel             | Frequency (MHz) | Channel            | Frequency (MHz) |
| 18675               | 1857.50         | 18700              | 1860.00         |
| 18676               | 1857.60         | 18701              | 1860.10         |
| ....                | ....            | ....               | ....            |
| 18899               | 1879.90         | 18899              | 1879.90         |
| 18900               | 1880.00         | 18900              | 1880.00         |
| 18901               | 1880.10         | 18901              | 1880.10         |
| ...                 | ...             | ...                | ...             |
| 19125               | 1902.40         | 19100              | 1899.90         |
| 19126               | 1902.50         | 19101              | 1900.00         |

| LTE Band 4 (1.4MHz) |                 | LTE Band 4 (3MHz)  |                 |
|---------------------|-----------------|--------------------|-----------------|
| Channel             | Frequency (MHz) | Channel            | Frequency (MHz) |
| 19957               | 1710.70         | 19965              | 1711.50         |
| 19958               | 1710.80         | 19966              | 1711.60         |
| ....                | ....            | ....               | ....            |
| 20174               | 1732.40         | 20174              | 1732.40         |
| 20175               | 1732.50         | 20175              | 1732.50         |
| 20176               | 1732.60         | 20176              | 1732.60         |
| ...                 | ...             | ...                | ...             |
| 20392               | 1754.20         | 20384              | 1753.40         |
| 20393               | 1754.30         | 20385              | 1753.50         |
| LTE Band 4 (5MHz)   |                 | LTE Band 4 (10MHz) |                 |
| Channel             | Frequency (MHz) | Channel            | Frequency (MHz) |
| 19975               | 1712.50         | 20000              | 1715.00         |
| 19976               | 1712.60         | 20001              | 1715.10         |
| ....                | ....            | ....               | ....            |
| 20174               | 1732.40         | 20174              | 1732.40         |
| 20175               | 1732.50         | 20175              | 1732.50         |
| 20176               | 1732.60         | 20176              | 1732.60         |
| ...                 | ...             | ...                | ...             |
| 20374               | 1752.40         | 20349              | 1749.90         |
| 20375               | 1752.50         | 20350              | 1750.00         |
| LTE Band 4 (15MHz)  |                 | LTE Band 4 (20MHz) |                 |
| Channel             | Frequency (MHz) | Channel            | Frequency (MHz) |
| 20025               | 1717.50         | 20050              | 1720.00         |
| 20026               | 1717.60         | 20051              | 1720.10         |
| ....                | ....            | ....               | ....            |
| 20174               | 1732.40         | 20174              | 1732.40         |
| 20175               | 1732.50         | 20175              | 1732.50         |
| 20176               | 1732.60         | 20176              | 1732.60         |
| ...                 | ...             | ...                | ...             |
| 20324               | 1747.40         | 20299              | 1744.90         |
| 20325               | 1747.50         | 20300              | 1745.00         |

| LTE Band 5 (1.4MHz) |                 | LTE Band 5 (3MHz)  |                 |
|---------------------|-----------------|--------------------|-----------------|
| Channel             | Frequency (MHz) | Channel            | Frequency (MHz) |
| 20407               | 824.70          | 20415              | 825.50          |
| 20408               | 824.80          | 20416              | 825.60          |
| ....                | ....            | ....               | ....            |
| 20524               | 836.40          | 20524              | 836.40          |
| 20525               | 836.50          | 20525              | 836.50          |
| 20526               | 836.60          | 20526              | 836.60          |
| ...                 | ...             | ...                | ...             |
| 20642               | 848.20          | 20634              | 847.40          |
| 20643               | 848.30          | 20635              | 847.50          |
| LTE Band 5 (5MHz)   |                 | LTE Band 5 (10MHz) |                 |
| Channel             | Frequency (MHz) | Channel            | Frequency (MHz) |
| 20425               | 826.50          | 20450              | 829.00          |
| 20426               | 826.60          | 20451              | 829.10          |
| ....                | ....            | ....               | ....            |
| 20524               | 836.40          | 20524              | 836.40          |
| 20525               | 836.50          | 20525              | 836.50          |
| 20526               | 836.60          | 20526              | 836.60          |
| ...                 | ...             | ...                | ...             |
| 20624               | 846.40          | 20599              | 839.90          |
| 20625               | 846.50          | 20600              | 844.00          |

| LTE Band 12 (1.4MHz) |                 | LTE Band 12 (3MHz)  |                 |
|----------------------|-----------------|---------------------|-----------------|
| Channel              | Frequency (MHz) | Channel             | Frequency (MHz) |
| 23017                | 699.70          | 23025               | 700.50          |
| 23756                | 699.80          | 23026               | 700.60          |
| ....                 | ....            | ....                | ....            |
| 23094                | 707.40          | 23094               | 707.40          |
| 23095                | 707.50          | 23095               | 707.50          |
| 23096                | 707.60          | 23096               | 707.60          |
| ...                  | ...             | ...                 | ...             |
| 23172                | 715.20          | 23164               | 714.40          |
| 23173                | 715.30          | 23165               | 714.50          |
| LTE Band 12 (5MHz)   |                 | LTE Band 12 (10MHz) |                 |
| Channel              | Frequency (MHz) | Channel             | Frequency (MHz) |
| 23035                | 701.50          | 23060               | 704.00          |
| 23036                | 701.60          | 23061               | 704.10          |
| ....                 | ....            | ....                | ....            |
| 23094                | 707.40          | 23094               | 707.40          |
| 23095                | 707.50          | 23095               | 707.50          |
| 23096                | 707.60          | 23096               | 707.60          |
| ...                  | ...             | ...                 | ...             |
| 23154                | 713.40          | 23129               | 710.90          |
| 23155                | 713.50          | 23130               | 711.00          |



| LTE Band 17 (5MHz) |                 | LTE Band 17 (10MHz) |                 |
|--------------------|-----------------|---------------------|-----------------|
| Channel            | Frequency (MHz) | Channel             | Frequency (MHz) |
| 23755              | 706.50          | 23780               | 709.00          |
| 23756              | 706.60          | 23781               | 709.10          |
| ....               | ....            | ....                | ....            |
| 23789              | 709.90          | 23789               | 709.90          |
| 23790              | 710.00          | 23790               | 710.00          |
| 23791              | 710.10          | 23791               | 710.10          |
| ...                | ...             | ...                 | ...             |
| 23824              | 713.40          | 23799               | 710.90          |
| 23825              | 713.50          | 23800               | 711.00          |

Regards to the operating frequency range, the lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channels as below:

| LTE Band 2 (1.4MHz) |                 |         | LTE Band 2 (3MHz)  |                 |         |
|---------------------|-----------------|---------|--------------------|-----------------|---------|
| Channel             | Frequency (MHz) |         | Channel            | Frequency (MHz) |         |
| Lowest channel      | 18607           | 1850.70 | Lowest channel     | 18615           | 1851.50 |
| Middle channel      | 18900           | 1880.00 | Middle channel     | 18900           | 1880.00 |
| Highest channel     | 19193           | 1909.30 | Highest channel    | 19185           | 1908.50 |
| LTE Band 2 (5MHz)   |                 |         | LTE Band 2 (10MHz) |                 |         |
| Channel             | Frequency (MHz) |         | Channel            | Frequency (MHz) |         |
| Lowest channel      | 18625           | 1852.50 | Lowest channel     | 18650           | 1855.00 |
| Middle channel      | 18900           | 1880.00 | Middle channel     | 18900           | 1880.00 |
| Highest channel     | 19175           | 1907.50 | Highest channel    | 19150           | 1905.00 |
| LTE Band 2 (15MHz)  |                 |         | LTE Band 2 (20MHz) |                 |         |
| Channel             | Frequency (MHz) |         | Channel            | Frequency (MHz) |         |
| Lowest channel      | 18675           | 1857.50 | Lowest channel     | 18700           | 1860.00 |
| Middle channel      | 18900           | 1880.00 | Middle channel     | 18900           | 1880.00 |
| Highest channel     | 19125           | 1902.50 | Highest channel    | 19100           | 1900.00 |

| LTE Band 4 (1.4MHz) |                 |         | LTE Band 4 (3MHz)  |                 |         |
|---------------------|-----------------|---------|--------------------|-----------------|---------|
| Channel:            | Frequency (MHz) |         | Channel            | Frequency (MHz) |         |
| Lowest channel      | 19957           | 1710.70 | Lowest channel     | 19965           | 1711.50 |
| Middle channel      | 20175           | 1732.50 | Middle channel     | 20175           | 1732.50 |
| Highest channel     | 20393           | 1754.30 | Highest channel    | 20385           | 1753.50 |
| LTE Band 4 (5MHz)   |                 |         | LTE Band 4 (10MHz) |                 |         |
| Channel             | Frequency (MHz) |         | Channel            | Frequency (MHz) |         |
| Lowest channel      | 19975           | 1712.50 | Lowest channel     | 20000           | 1715.00 |
| Middle channel      | 20175           | 1732.50 | Middle channel     | 20175           | 1732.50 |
| Highest channel     | 20375           | 1752.50 | Highest channel    | 20350           | 1750.00 |
| LTE Band 4 (15MHz)  |                 |         | LTE Band 4 (20MHz) |                 |         |
| Channel             | Frequency (MHz) |         | Channel            | Frequency (MHz) |         |
| Lowest channel      | 20025           | 1717.50 | Lowest channel     | 20050           | 1720.00 |
| Middle channel      | 20175           | 1732.50 | Middle channel     | 20175           | 1732.50 |
| Highest channel     | 20325           | 1747.50 | Highest channel    | 20300           | 1745.00 |

| LTE Band 5 (1.4MHz) |                 |        | LTE Band 5 (3MHz)  |                 |        |
|---------------------|-----------------|--------|--------------------|-----------------|--------|
| Channel:            | Frequency (MHz) |        | Channel            | Frequency (MHz) |        |
| Lowest channel      | 20407           | 824.70 | Lowest channel     | 20415           | 825.50 |
| Middle channel      | 20525           | 836.50 | Middle channel     | 20525           | 836.50 |
| Highest channel     | 20643           | 848.30 | Highest channel    | 20635           | 847.50 |
| LTE Band 5 (5MHz)   |                 |        | LTE Band 5 (10MHz) |                 |        |
| Channel             | Frequency (MHz) |        | Channel            | Frequency (MHz) |        |
| Lowest channel      | 20425           | 826.50 | Lowest channel     | 20450           | 829.00 |
| Middle channel      | 20525           | 836.50 | Middle channel     | 20525           | 836.50 |
| Highest channel     | 20625           | 846.50 | Highest channel    | 20600           | 844.00 |

| LTE Band 12(1.4MHz) |       |                 | LTE Band 12(3MHz)  |       |                 |
|---------------------|-------|-----------------|--------------------|-------|-----------------|
| Channel             |       | Frequency (MHz) | Channel            |       | Frequency (MHz) |
| Lowest channel      | 23017 | 699.70          | Lowest channel     | 23025 | 700.50          |
| Middle channel      | 23095 | 707.50          | Middle channel     | 23095 | 707.50          |
| Highest channel     | 23173 | 715.30          | Highest channel    | 23165 | 714.50          |
| LTE Band 12(5MHz)   |       |                 | LTE Band 12(10MHz) |       |                 |
| Channel             |       | Frequency (MHz) | Channel            |       | Frequency (MHz) |
| Lowest channel      | 23035 | 701.50          | Lowest channel     | 23060 | 704.00          |
| Middle channel      | 23095 | 707.50          | Middle channel     | 23095 | 707.50          |
| Highest channel     | 23155 | 713.50          | Highest channel    | 23130 | 711.00          |

| LTE Band 17(5MHz) |       |                 | LTE Band 17(10MHz) |       |                 |
|-------------------|-------|-----------------|--------------------|-------|-----------------|
| Channel           |       | Frequency (MHz) | Channel            |       | Frequency (MHz) |
| Lowest channel    | 23755 | 706.50          | Lowest channel     | 23780 | 709.00          |
| Middle channel    | 23790 | 710.00          | Middle channel     | 23790 | 710.00          |
| Highest channel   | 23825 | 713.50          | Highest channel    | 23800 | 711.00          |

### 5.3 Test environment and mode

| Operating Environment:   |  |
|--|--|
| Temperature:   | Normal: 15°C ~ 35°C, Extreme: -30°C ~ +50°C                      |
| Humidity:  | 20 % ~ 75 % RH   |
| Atmospheric Pressure:  | 1008 mbar  |
| Voltage:   | Nominal: 3.85Vdc, Extreme: Low 3.5Vdc, High 4.40Vdc              |
| Test mode:   |  |
| LTE QPSK mode  | Keep the EUT communication with simulated station in QPSK mode   |
| LTE 16-QAM mode  | Keep the EUT communication with simulated station in 16-QAM mode |
| Remark: The EUT has been tested under continuous transmitting mode. Channel Low, Mid and High for each type band with rated data rate were chosen for full testing. The field strength of spurious radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for these modes. Just the worst case position (H mode) shown in report. |  |

### 5.4 Description of Support Units

| Test Equipment    | Manufacturer | Model No. | Serial No. |
|-------------------|--------------|-----------|------------|
| Simulated Station | Anritsu      | MT8820C   | 6201026545 |

### 5.5 Measurement Uncertainty

| Parameters                          | Expanded Uncertainty |
|-------------------------------------|----------------------|
| Radiated Emission (9kHz ~ 30MHz)    | ±3.12 dB (k=2)       |
| Radiated Emission (30MHz ~ 1000MHz) | ±4.32 dB (k=2)       |
| Radiated Emission (1GHz ~ 18GHz)    | ±5.16 dB (k=2)       |
| Radiated Emission (18GHz ~ 40GHz)   | ±3.20 dB (k=2)       |

### 5.6 Related Submittal(s) / Grant (s)

This is an original grant, no related submittals and grants.

### 5.7 Additions to, deviations, or exclusions from the method

No

### 5.8 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC - Designation No.: CN1211**  
Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC (Federal Communications Commission). The test firm Registration No. is 727551.
- **ISED – CAB identifier.: CN0021**  
The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.
- **A2LA - Registration No.: 4346.01**  
This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

## 5.9 Laboratory Location

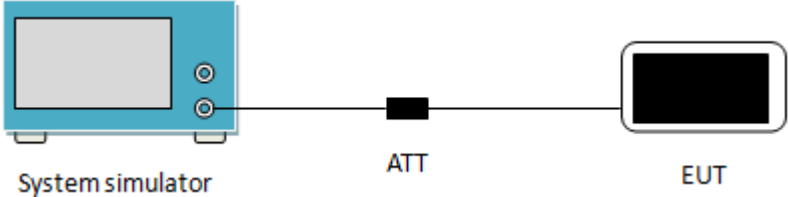
Shenzhen Zhongjian Nanfang Testing Co., Ltd.  
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 Tel: +86-755-23118282, Fax: +86-755-23116366  
 Email: info@ccis-cb.com, Website: <http://www.ccis-cb.com>

## 5.10 Test Instruments list

| Test Equipment               | Manufacturer    | Model No.     | Serial No.         | Cal. Date (mm-dd-yy) | Cal. Due date (mm-dd-yy) |
|------------------------------|-----------------|---------------|--------------------|----------------------|--------------------------|
| 3m SAC                       | SAEMC           | 9m*6m*6m      | 966                | 07-22-2017           | 07-21-2020               |
| BiConiLog Antenna            | SCHWARZBECK     | VULB9163      | 497                | 03-18-2019           | 03-17-2020               |
|                              |                 |               |                    | 03-18-2020           | 03-17-2021               |
| Biconical Antenna            | SCHWARZBECK     | VUBA9117      | 359                | 06-22-2017           | 06-21-2020               |
| Horn Antenna                 | SCHWARZBECK     | BBHA9120D     | 916                | 03-07-2020           | 03-06-2021               |
| Horn Antenna                 | SCHWARZBECK     | BBHA9120D     | 1805               | 06-22-2017           | 06-21-2020               |
| Horn Antenna                 | SCHWARZBECK     | BBHA 9170     | BBHA9170582        | 11-18-2019           | 11-17-2020               |
| EMI Test Software            | AUDIX           | E3            | Version: 6.110919b |                      |                          |
| Pre-amplifier                | HP              | 8447D         | 2944A09358         | 03-07-2020           | 03-06-2021               |
| Pre-amplifier                | CD              | PAP-1G18      | 11804              | 03-07-2020           | 03-06-2021               |
| Spectrum analyzer            | Rohde & Schwarz | FSP30         | 101454             | 03-05-2020           | 03-04-2021               |
| Spectrum analyzer            | Rohde & Schwarz | FSP40         | 100363             | 11-18-2019           | 11-17-2020               |
| EMI Test Receiver            | Rohde & Schwarz | ESRP7         | 101070             | 03-05-2020           | 03-04-2021               |
| Spectrum Analyzer            | Agilent         | N9020A        | MY50510123         | 11-18-2019           | 11-17-2020               |
| Signal Generator             | Rohde & Schwarz | SMX           | 835454/016         | 03-05-2020           | 03-04-2021               |
| Signal Generator             | R&S             | SMR20         | 1008100050         | 03-05-2020           | 03-04-2021               |
| RF Switch Unit               | MWRFTTEST       | MW200         | N/A                | N/A                  | N/A                      |
| Test Software                | MWRFTTEST       | MTS8200       | Version: 2.0.0.0   |                      |                          |
| Cable                        | ZDECL           | Z108-NJ-NJ-81 | 1608458            | 03-07-2020           | 03-06-2021               |
| Cable                        | MICRO-COAX      | MFR64639      | K10742-5           | 03-07-2020           | 03-06-2021               |
| Cable                        | SUHNER          | SUCOFLEX100   | 58193/4PE          | 03-07-2020           | 03-06-2021               |
| DC Power Supply              | XinNuoEr        | WYK-10020K    | 1409050110020      | 09-25-2019           | 09-24-2020               |
| Temperature Humidity Chamber | HengPu          | HPGDS-500     | 20140828008        | 11-01-2019           | 11-31-2020               |
| Simulated Station            | Rohde & Schwarz | CMW500        | 140493             | 07-22-2019           | 07-21-2020               |

## 6. Test results

### 6.1 Conducted Output Power, ERP and EIRP

|                   |   |
|-------------------|---|
| Test Requirement: | Part 22.913(a)(5), Part 24.232(c), part 27.50(c)(10), Part 27.50(d)(4)  |
| Limit:            | LTE Band 2: 2W, LTE Band 4: 1W, LTE Band 5: 7W, LTE Band 12: 3W, LTE Band 17: 3W  |
| Test Setup:       |  <p>The diagram illustrates the test setup. On the left is a blue 'System simulator' with a screen and two ports. A line connects it to a black 'ATT' (attenuator) block. Another line connects the 'ATT' to a black 'EUT' (Equipment Under Test) device.</p> |
| Test Procedure:   | The transmitter output was connected to a calibrated attenuator, the other end of which was connected to the CMW500. Transmitter output power was read off in dBm.  |
| Test Instruments: | Refer to section 5.10 for details   |
| Test mode:        | Refer to section 5.3 for details  |
| Test results:     | Passed  |

**Measurement Data:**

| LTE Band | Bandwidth (MHz) | Modulation          | RB Size | RB Offset | Average Power (dBm) |           |           |  |  |
|----------|-----------------|---------------------|---------|-----------|---------------------|-----------|-----------|--|--|
|          |                 |                     |         |           | 18607               | 18900     | 19193     |  |  |
|          |                 |                     |         |           | 1850.7MHz           | 1880.0MHz | 1909.3MHz |  |  |
| 2        | 1.4             | QPSK                | 1       | 0         | 22.45               | 22.46     | 22.43     |  |  |
|          |                 |                     | 1       | 2         | 22.50               | 22.56     | 22.52     |  |  |
|          |                 |                     | 1       | 5         | 22.52               | 22.43     | 22.39     |  |  |
|          |                 |                     | 3       | 0         | 21.53               | 21.35     | 21.41     |  |  |
|          |                 |                     | 3       | 1         | 21.49               | 21.40     | 21.43     |  |  |
|          |                 |                     | 3       | 2         | 21.46               | 21.41     | 21.32     |  |  |
|          |                 |                     | 6       | 0         | 21.67               | 21.49     | 21.43     |  |  |
|          |                 | Antenna Gain (dBi): |         |           |                     |           | 0.1       |  |  |
|          |                 | Max. EIRP (dBm):    |         |           |                     |           | 22.66     |  |  |
|          |                 | EIRP Limit (dBm):   |         |           |                     |           | 33.00     |  |  |
|          |                 | 16QAM               | 1       | 0         | 21.94               | 21.36     | 21.54     |  |  |
|          |                 |                     | 1       | 2         | 21.85               | 21.50     | 21.70     |  |  |
|          |                 |                     | 1       | 5         | 21.59               | 21.43     | 21.42     |  |  |
|          |                 |                     | 3       | 0         | 20.88               | 20.59     | 20.53     |  |  |
|          |                 |                     | 3       | 1         | 20.53               | 20.70     | 20.65     |  |  |
|          |                 |                     | 3       | 2         | 20.60               | 20.35     | 20.45     |  |  |
|          |                 |                     | 6       | 0         | 20.59               | 20.56     | 20.58     |  |  |
|          |                 | Antenna Gain (dBi): |         |           |                     |           | 0.1       |  |  |
|          |                 | Max. EIRP (dBm):    |         |           |                     |           | 22.04     |  |  |
|          |                 | EIRP Limit (dBm):   |         |           |                     |           | 33.00     |  |  |

| LTE Band | Bandwidth (MHz) | Modulation          | RB Size | RB Offset | Average Power (dBm) |           |           |  |  |
|----------|-----------------|---------------------|---------|-----------|---------------------|-----------|-----------|--|--|
|          |                 |                     |         |           | 18615               | 18900     | 19185     |  |  |
|          |                 |                     |         |           | 1851.5MHz           | 1880.0MHz | 1908.5MHz |  |  |
| 2        | 3               | QPSK                | 1       | 0         | 22.53               | 22.45     | 22.39     |  |  |
|          |                 |                     | 1       | 7         | 22.49               | 22.39     | 22.45     |  |  |
|          |                 |                     | 1       | 14        | 22.49               | 22.51     | 22.39     |  |  |
|          |                 |                     | 8       | 0         | 21.59               | 21.34     | 21.36     |  |  |
|          |                 |                     | 8       | 4         | 21.65               | 21.50     | 21.55     |  |  |
|          |                 |                     | 8       | 7         | 21.51               | 21.42     | 21.56     |  |  |
|          |                 |                     | 15      | 0         | 21.55               | 21.47     | 21.32     |  |  |
|          |                 | Antenna Gain (dBi): |         |           |                     |           | 0.1       |  |  |
|          |                 | Max. EIRP (dBm):    |         |           |                     |           | 22.63     |  |  |
|          |                 | EIRP Limit (dBm):   |         |           |                     |           | 33.00     |  |  |
|          |                 | 16QAM               | 1       | 0         | 21.72               | 21.65     | 21.59     |  |  |
|          |                 |                     | 1       | 7         | 21.54               | 21.56     | 21.64     |  |  |
|          |                 |                     | 1       | 14        | 21.56               | 21.59     | 21.42     |  |  |
|          |                 |                     | 8       | 0         | 20.56               | 20.62     | 20.69     |  |  |
|          |                 |                     | 8       | 4         | 20.79               | 20.45     | 20.53     |  |  |
|          |                 |                     | 8       | 7         | 20.63               | 20.47     | 20.64     |  |  |
|          |                 |                     | 15      | 0         | 20.49               | 20.49     | 20.49     |  |  |
|          |                 | Antenna Gain (dBi): |         |           |                     |           | 0.1       |  |  |
|          |                 | Max. EIRP (dBm):    |         |           |                     |           | 21.82     |  |  |
|          |                 | EIRP Limit (dBm):   |         |           |                     |           | 33.00     |  |  |

Note: EIRP (dBm) = Average power (dBm) + Antenna Gain (dBi).

| LTE Band  | Bandwidth (MHz) | Modulation          | RB Size         | RB Offset  | Average Power (dBm) |           |                     |  |  |
|-----------|-----------------|---------------------|-----------------|------------|---------------------|-----------|---------------------|--|--|
|           |                 |                     |                 |            | 18625               | 18900     | 19175               |  |  |
|           |                 |                     |                 |            | 1852.5MHz           | 1880.0MHz | 1907.5MHz           |  |  |
| 2         | 5               | QPSK                | 1               | 0          | 22.54               | 22.50     | 22.32               |  |  |
|           |                 |                     | 1               | 12         | 22.63               | 22.63     | 22.46               |  |  |
|           |                 |                     | 1               | 24         | 22.48               | 22.54     | 22.35               |  |  |
|           |                 |                     | 12              | 0          | 21.42               | 21.47     | 21.35               |  |  |
|           |                 |                     | 12              | 6          | 21.49               | 21.59     | 21.39               |  |  |
|           |                 |                     | 12              | 11         | 21.65               | 21.60     | 21.44               |  |  |
|           |                 |                     | 25              | 0          | 21.55               | 21.52     | 21.41               |  |  |
|           |                 | Antenna Gain (dBi): |                 |            |                     |           | 0.1                 |  |  |
|           |                 | Max. EIRP (dBm):    |                 |            |                     |           | 22.73               |  |  |
|           |                 | EIRP Limit (dBm):   |                 |            |                     |           | 33.00               |  |  |
|           |                 | 16QAM               | 1               | 0          | 21.62               | 21.43     | 21.77               |  |  |
|           |                 |                     | 1               | 12         | 21.85               | 21.85     | 21.48               |  |  |
|           |                 |                     | 1               | 24         | 21.41               | 21.92     | 21.42               |  |  |
|           |                 |                     | 12              | 0          | 21.45               | 20.63     | 20.56               |  |  |
|           |                 |                     | 12              | 6          | 20.56               | 20.64     | 20.57               |  |  |
|           |                 |                     | 12              | 11         | 20.76               | 20.67     | 20.43               |  |  |
|           |                 |                     | 25              | 0          | 20.51               | 20.61     | 20.46               |  |  |
|           |                 | Antenna Gain (dBi): |                 |            |                     |           | 0.1                 |  |  |
|           |                 | Max. EIRP (dBm):    |                 |            |                     |           | 22.02               |  |  |
|           |                 | EIRP Limit (dBm):   |                 |            |                     |           | 33.00               |  |  |
|           |                 | LTE Band            | Bandwidth (MHz) | Modulation | RB Size             | RB Offset | Average Power (dBm) |  |  |
| 18650     | 18900           |                     |                 |            |                     |           | 19150               |  |  |
| 1855.0MHz | 1880.0MHz       |                     |                 |            |                     |           | 1905.0MHz           |  |  |
| 2         | 10              | QPSK                | 1               | 0          | 22.56               | 22.43     | 22.42               |  |  |
|           |                 |                     | 1               | 24         | 22.63               | 22.56     | 22.63               |  |  |
|           |                 |                     | 1               | 49         | 22.52               | 22.36     | 22.35               |  |  |
|           |                 |                     | 25              | 0          | 21.60               | 21.56     | 21.58               |  |  |
|           |                 |                     | 25              | 12         | 21.61               | 21.41     | 21.42               |  |  |
|           |                 |                     | 25              | 24         | 21.55               | 21.47     | 21.48               |  |  |
|           |                 |                     | 50              | 0          | 21.52               | 21.53     | 21.57               |  |  |
|           |                 | Antenna Gain (dBi): |                 |            |                     |           | 0.1                 |  |  |
|           |                 | Max. EIRP (dBm):    |                 |            |                     |           | 22.73               |  |  |
|           |                 | EIRP Limit (dBm):   |                 |            |                     |           | 33.00               |  |  |
|           |                 | 16QAM               | 1               | 0          | 21.35               | 21.58     | 21.80               |  |  |
|           |                 |                     | 1               | 24         | 21.55               | 21.77     | 21.64               |  |  |
|           |                 |                     | 1               | 49         | 21.92               | 21.63     | 21.43               |  |  |
|           |                 |                     | 25              | 0          | 20.63               | 20.56     | 20.59               |  |  |
|           |                 |                     | 25              | 12         | 20.75               | 20.56     | 20.41               |  |  |
|           |                 |                     | 25              | 24         | 20.54               | 20.50     | 20.43               |  |  |
|           |                 |                     | 50              | 0          | 20.55               | 20.62     | 20.53               |  |  |
|           |                 | Antenna Gain (dBi): |                 |            |                     |           | 0.1                 |  |  |
|           |                 | Max. EIRP (dBm):    |                 |            |                     |           | 22.02               |  |  |
|           |                 | EIRP Limit (dBm):   |                 |            |                     |           | 33.00               |  |  |

Note: EIRP (dBm) = Average power (dBm) + Antenna Gain (dBi).



| LTE Band  | Bandwidth (MHz) | Modulation  | RB Size         | RB Offset  | Average Power (dBm) |           |                     |  |  |
|-----------|-----------------|---|-----------------|------------|---------------------|-----------|---------------------|--|--|
|           |                 |   |                 |            | 18675               | 18900     | 19125               |  |  |
|           |                 |   |                 |            | 1857.5MHz           | 1880.0MHz | 1902.5MHz           |  |  |
| 2         | 15              | QPSK  | 1               | 0          | 22.56               | 22.43     | 22.35               |  |  |
|           |                 |   | 1               | 37         | 22.51               | 22.39     | 22.41               |  |  |
|           |                 |   | 1               | 74         | 22.37               | 22.38     | 22.38               |  |  |
|           |                 |   | 36              | 0          | 21.59               | 21.48     | 21.55               |  |  |
|           |                 |   | 36              | 16         | 21.45               | 21.51     | 21.47               |  |  |
|           |                 |   | 36              | 35         | 21.58               | 21.42     | 21.34               |  |  |
|           |                 |   | 75              | 0          | 21.55               | 21.47     | 21.55               |  |  |
|           |                 | Antenna Gain (dBi):   |                 |            |                     |           | 0.1                 |  |  |
|           |                 | Max. EIRP (dBm):  |                 |            |                     |           | 22.66               |  |  |
|           |                 | EIRP Limit (dBm):   |                 |            |                     |           | 33.00               |  |  |
|           |                 | 16QAM   | 1               | 0          | 21.44               | 21.74     | 21.30               |  |  |
|           |                 |   | 1               | 37         | 21.37               | 21.69     | 21.39               |  |  |
|           |                 |   | 1               | 74         | 21.41               | 21.58     | 21.55               |  |  |
|           |                 |   | 36              | 0          | 20.59               | 20.53     | 20.63               |  |  |
|           |                 |   | 36              | 16         | 20.61               | 20.63     | 20.51               |  |  |
|           |                 |   | 36              | 35         | 20.53               | 20.50     | 20.47               |  |  |
|           |                 |   | 75              | 0          | 20.54               | 20.48     | 20.45               |  |  |
|           |                 | Antenna Gain (dBi):   |                 |            |                     |           | 0.1                 |  |  |
|           |                 | Max. EIRP (dBm):  |                 |            |                     |           | 21.84               |  |  |
|           |                 | EIRP Limit (dBm):   |                 |            |                     |           | 33.00               |  |  |
|           |                 | LTE Band  | Bandwidth (MHz) | Modulation | RB Size             | RB Offset | Average Power (dBm) |  |  |
| 18700     | 18900           |   |                 |            |                     |           | 19100               |  |  |
| 1860.0MHz | 1880.0MHz       |   |                 |            |                     |           | 1900.0MHz           |  |  |
| 2         | 20              | QPSK  | 1               | 0          | 22.48               | 22.45     | 22.35               |  |  |
|           |                 |   | 1               | 49         | 22.53               | 22.63     | 22.51               |  |  |
|           |                 |   | 1               | 99         | 22.23               | 22.35     | 22.26               |  |  |
|           |                 |   | 50              | 0          | 21.41               | 21.47     | 21.45               |  |  |
|           |                 |   | 50              | 24         | 21.59               | 21.45     | 21.47               |  |  |
|           |                 |   | 50              | 49         | 21.45               | 21.39     | 21.27               |  |  |
|           |                 |   | 100             | 0          | 21.34               | 21.38     | 21.48               |  |  |
|           |                 | Antenna Gain (dBi):   |                 |            |                     |           | 0.1                 |  |  |
|           |                 | Max. EIRP (dBm):  |                 |            |                     |           | 22.73               |  |  |
|           |                 | EIRP Limit (dBm):   |                 |            |                     |           | 33.00               |  |  |
|           |                 | 16QAM   | 1               | 0          | 21.46               | 21.63     | 21.54               |  |  |
|           |                 |   | 1               | 49         | 21.44               | 21.82     | 21.32               |  |  |
|           |                 |   | 1               | 99         | 21.32               | 21.66     | 21.23               |  |  |
|           |                 |   | 50              | 0          | 20.48               | 20.53     | 20.63               |  |  |
|           |                 |   | 50              | 24         | 20.53               | 20.49     | 20.54               |  |  |
|           |                 |   | 50              | 49         | 20.39               | 20.51     | 20.33               |  |  |
|           |                 |   | 100             | 0          | 20.42               | 20.50     | 20.40               |  |  |
|           |                 | Antenna Gain (dBi):   |                 |            |                     |           | 0.1                 |  |  |
|           |                 | Max. EIRP (dBm):  |                 |            |                     |           | 21.92               |  |  |
|           |                 | EIRP Limit (dBm):   |                 |            |                     |           | 33.00               |  |  |
|           |                 | <i>Note: EIRP (dBm) = Average power (dBm) + Antenna Gain (dBi).</i> |                 |            |                     |           |                     |  |  |

| LTE Band  | Bandwidth (MHz) | Modulation  | RB Size         | RB Offset  | Average Power (dBm) |           |                     |  |  |
|-----------|-----------------|---|-----------------|------------|---------------------|-----------|---------------------|--|--|
|           |                 |   |                 |            | 19957               | 20175     | 20393               |  |  |
|           |                 |   |                 |            | 1710.7MHz           | 1732.5MHz | 1754.3MHz           |  |  |
| 4         | 1.4             | QPSK  | 1               | 0          | 22.56               | 22.65     | 22.56               |  |  |
|           |                 |   | 1               | 2          | 22.68               | 22.63     | 22.72               |  |  |
|           |                 |   | 1               | 5          | 22.54               | 22.58     | 22.53               |  |  |
|           |                 |   | 3               | 0          | 21.72               | 21.59     | 21.71               |  |  |
|           |                 |   | 3               | 1          | 21.73               | 21.62     | 21.68               |  |  |
|           |                 |   | 3               | 2          | 21.57               | 21.57     | 21.59               |  |  |
|           |                 |   | 6               | 0          | 21.71               | 21.66     | 21.62               |  |  |
|           |                 | Antenna Gain (dBi):   |                 |            |                     |           | -0.5                |  |  |
|           |                 | Max. EIRP (dBm):  |                 |            |                     |           | 22.22               |  |  |
|           |                 | EIRP Limit (dBm):   |                 |            |                     |           | 30.00               |  |  |
|           |                 | 16QAM   | 1               | 0          | 21.68               | 21.69     | 21.95               |  |  |
|           |                 |   | 1               | 2          | 21.67               | 21.64     | 21.83               |  |  |
|           |                 |   | 1               | 5          | 21.70               | 21.74     | 21.72               |  |  |
|           |                 |   | 3               | 0          | 20.64               | 20.64     | 20.72               |  |  |
|           |                 |   | 3               | 1          | 20.56               | 20.63     | 20.81               |  |  |
|           |                 |   | 3               | 2          | 20.46               | 20.60     | 20.75               |  |  |
|           |                 |   | 6               | 0          | 20.77               | 20.73     | 20.72               |  |  |
|           |                 | Antenna Gain (dBi):   |                 |            |                     |           | -0.5                |  |  |
|           |                 | Max. EIRP (dBm):  |                 |            |                     |           | 21.45               |  |  |
|           |                 | EIRP Limit (dBm):   |                 |            |                     |           | 30.00               |  |  |
|           |                 | LTE Band  | Bandwidth (MHz) | Modulation | RB Size             | RB Offset | Average Power (dBm) |  |  |
| 19965     | 20175           |   |                 |            |                     |           | 20385               |  |  |
| 1711.5MHz | 1732.5MHz       |   |                 |            |                     |           | 1753.5MHz           |  |  |
| 4         | 3               | QPSK  | 1               | 0          | 22.65               | 22.53     | 22.63               |  |  |
|           |                 |   | 1               | 7          | 22.63               | 22.61     | 22.58               |  |  |
|           |                 |   | 1               | 14         | 22.51               | 22.59     | 22.61               |  |  |
|           |                 |   | 8               | 0          | 21.53               | 21.53     | 21.57               |  |  |
|           |                 |   | 8               | 4          | 21.58               | 21.68     | 21.63               |  |  |
|           |                 |   | 8               | 7          | 21.60               | 21.54     | 21.59               |  |  |
|           |                 |   | 15              | 0          | 21.52               | 21.59     | 21.52               |  |  |
|           |                 | Antenna Gain (dBi):   |                 |            |                     |           | -0.5                |  |  |
|           |                 | Max. EIRP (dBm):  |                 |            |                     |           | 22.15               |  |  |
|           |                 | EIRP Limit (dBm):   |                 |            |                     |           | 30.00               |  |  |
|           |                 | 16QAM   | 1               | 0          | 21.43               | 21.64     | 21.67               |  |  |
|           |                 |   | 1               | 7          | 21.65               | 21.71     | 21.81               |  |  |
|           |                 |   | 1               | 14         | 21.44               | 21.56     | 21.66               |  |  |
|           |                 |   | 8               | 0          | 20.63               | 20.63     | 20.82               |  |  |
|           |                 |   | 8               | 4          | 20.65               | 20.84     | 20.71               |  |  |
|           |                 |   | 8               | 7          | 20.63               | 20.53     | 20.61               |  |  |
|           |                 |   | 15              | 0          | 20.68               | 20.55     | 20.53               |  |  |
|           |                 | Antenna Gain (dBi):   |                 |            |                     |           | -0.5                |  |  |
|           |                 | Max. EIRP (dBm):  |                 |            |                     |           | 21.31               |  |  |
|           |                 | EIRP Limit (dBm):   |                 |            |                     |           | 30.00               |  |  |
|           |                 | <i>Note: EIRP (dBm) = Average power (dBm) + Antenna Gain (dBi).</i> |                 |            |                     |           |                     |  |  |

| LTE Band  | Bandwidth (MHz) | Modulation   | RB Size         | RB Offset  | Average Power (dBm) |           |                     |  |  |
|-----------|-----------------|--|-----------------|------------|---------------------|-----------|---------------------|--|--|
|           |                 |  |                 |            | 19975               | 20175     | 20375               |  |  |
|           |                 |  |                 |            | 1712.5MHz           | 1732.5MHz | 1752.5MHz           |  |  |
| 4         | 5               | QPSK   | 1               | 0          | 22.63               | 22.36     | 22.36               |  |  |
|           |                 |  | 1               | 12         | 22.52               | 22.45     | 22.42               |  |  |
|           |                 |  | 1               | 24         | 22.39               | 22.39     | 22.39               |  |  |
|           |                 |  | 12              | 0          | 21.56               | 21.42     | 21.51               |  |  |
|           |                 |  | 12              | 6          | 21.46               | 21.53     | 21.53               |  |  |
|           |                 |  | 12              | 11         | 21.52               | 21.47     | 21.47               |  |  |
|           |                 |  | 25              | 0          | 21.47               | 21.54     | 21.51               |  |  |
|           |                 | Antenna Gain (dBi):  |                 |            |                     |           | -0.5                |  |  |
|           |                 | Max. EIRP (dBm):   |                 |            |                     |           | 22.13               |  |  |
|           |                 | EIRP Limit (dBm):  |                 |            |                     |           | 30.00               |  |  |
|           |                 | 16QAM  | 1               | 0          | 21.83               | 21.53     | 21.36               |  |  |
|           |                 |  | 1               | 12         | 21.59               | 21.61     | 21.73               |  |  |
|           |                 |  | 1               | 24         | 21.46               | 21.46     | 21.90               |  |  |
|           |                 |  | 12              | 0          | 20.39               | 20.56     | 20.51               |  |  |
|           |                 |  | 12              | 6          | 20.47               | 20.41     | 20.58               |  |  |
|           |                 |  | 12              | 11         | 20.59               | 20.46     | 20.42               |  |  |
|           |                 |  | 25              | 0          | 20.43               | 20.54     | 20.41               |  |  |
|           |                 | Antenna Gain (dBi):  |                 |            |                     |           | -0.5                |  |  |
|           |                 | Max. EIRP (dBm):   |                 |            |                     |           | 21.40               |  |  |
|           |                 | EIRP Limit (dBm):  |                 |            |                     |           | 30.00               |  |  |
|           |                 | LTE Band   | Bandwidth (MHz) | Modulation | RB Size             | RB Offset | Average Power (dBm) |  |  |
| 20000     | 20175           |  |                 |            |                     |           | 20350               |  |  |
| 1715.0MHz | 1732.5MHz       |  |                 |            |                     |           | 1750.0MHz           |  |  |
| 4         | 10              | QPSK   | 1               | 0          | 22.52               | 22.56     | 22.49               |  |  |
|           |                 |  | 1               | 24         | 22.63               | 22.51     | 22.51               |  |  |
|           |                 |  | 1               | 49         | 22.45               | 22.43     | 22.43               |  |  |
|           |                 |  | 25              | 0          | 21.49               | 21.51     | 21.72               |  |  |
|           |                 |  | 25              | 12         | 21.49               | 21.52     | 21.63               |  |  |
|           |                 |  | 25              | 24         | 21.48               | 21.57     | 21.54               |  |  |
|           |                 |  | 50              | 0          | 21.44               | 21.50     | 21.54               |  |  |
|           |                 | Antenna Gain (dBi):  |                 |            |                     |           | -0.5                |  |  |
|           |                 | Max. EIRP (dBm):   |                 |            |                     |           | 22.13               |  |  |
|           |                 | EIRP Limit (dBm):  |                 |            |                     |           | 30.00               |  |  |
|           |                 | 16QAM  | 1               | 0          | 21.64               | 21.65     | 21.69               |  |  |
|           |                 |  | 1               | 24         | 21.59               | 21.42     | 21.58               |  |  |
|           |                 |  | 1               | 49         | 21.81               | 21.78     | 21.57               |  |  |
|           |                 |  | 25              | 0          | 20.59               | 20.54     | 20.64               |  |  |
|           |                 |  | 25              | 12         | 20.42               | 20.52     | 20.48               |  |  |
|           |                 |  | 25              | 24         | 20.43               | 20.53     | 20.45               |  |  |
|           |                 |  | 50              | 0          | 20.43               | 20.47     | 20.60               |  |  |
|           |                 | Antenna Gain (dBi):  |                 |            |                     |           | -0.5                |  |  |
|           |                 | Max. EIRP (dBm):   |                 |            |                     |           | 21.31               |  |  |
|           |                 | EIRP Limit (dBm):  |                 |            |                     |           | 30.00               |  |  |
|           |                 | Note: EIRP (dBm) = Average power (dBm) + Antenna Gain (dBi). |                 |            |                     |           |                     |  |  |

| LTE Band  | Bandwidth (MHz) | Modulation   | RB Size         | RB Offset  | Average Power (dBm) |           |                     |  |  |
|-----------|-----------------|--|-----------------|------------|---------------------|-----------|---------------------|--|--|
|           |                 |  |                 |            | 20025               | 20175     | 20325               |  |  |
|           |                 |  |                 |            | 1717.5MHz           | 1732.5MHz | 1747.5MHz           |  |  |
| 4         | 15              | QPSK   | 1               | 0          | 22.49               | 22.49     | 22.51               |  |  |
|           |                 |  | 1               | 37         | 22.51               | 22.51     | 22.53               |  |  |
|           |                 |  | 1               | 74         | 22.39               | 22.39     | 22.39               |  |  |
|           |                 |  | 36              | 0          | 21.57               | 21.54     | 21.59               |  |  |
|           |                 |  | 36              | 16         | 21.54               | 21.63     | 21.50               |  |  |
|           |                 |  | 36              | 35         | 21.51               | 21.61     | 21.49               |  |  |
|           |                 |  | 75              | 0          | 21.61               | 21.60     | 21.53               |  |  |
|           |                 | Antenna Gain (dBi):  |                 |            |                     |           | -0.5                |  |  |
|           |                 | Max. EIRP (dBm):   |                 |            |                     |           | 22.03               |  |  |
|           |                 | EIRP Limit (dBm):  |                 |            |                     |           | 30.00               |  |  |
|           |                 | 16QAM  | 1               | 0          | 21.52               | 21.51     | 21.78               |  |  |
|           |                 |  | 1               | 37         | 21.83               | 21.62     | 21.69               |  |  |
|           |                 |  | 1               | 74         | 21.77               | 21.34     | 21.57               |  |  |
|           |                 |  | 36              | 0          | 20.70               | 20.59     | 20.69               |  |  |
|           |                 |  | 36              | 16         | 20.63               | 20.53     | 20.65               |  |  |
|           |                 |  | 36              | 35         | 20.53               | 20.51     | 20.52               |  |  |
|           |                 |  | 75              | 0          | 20.54               | 20.50     | 20.61               |  |  |
|           |                 | Antenna Gain (dBi):  |                 |            |                     |           | -0.5                |  |  |
|           |                 | Max. EIRP (dBm):   |                 |            |                     |           | 21.33               |  |  |
|           |                 | EIRP Limit (dBm):  |                 |            |                     |           | 30.00               |  |  |
|           |                 | LTE Band   | Bandwidth (MHz) | Modulation | RB Size             | RB Offset | Average Power (dBm) |  |  |
| 20050     | 20175           |  |                 |            |                     |           | 20300               |  |  |
| 1720.0MHz | 1732.5MHz       |  |                 |            |                     |           | 1745.0MHz           |  |  |
| 4         | 20              | QPSK   | 1               | 0          | 22.53               | 22.59     | 22.59               |  |  |
|           |                 |  | 1               | 49         | 22.63               | 22.65     | 22.53               |  |  |
|           |                 |  | 1               | 99         | 22.39               | 22.39     | 22.37               |  |  |
|           |                 |  | 50              | 0          | 21.54               | 21.61     | 21.59               |  |  |
|           |                 |  | 50              | 24         | 21.55               | 21.55     | 21.63               |  |  |
|           |                 |  | 50              | 49         | 21.51               | 21.64     | 21.40               |  |  |
|           |                 |  | 100             | 0          | 21.49               | 21.56     | 21.52               |  |  |
|           |                 | Antenna Gain (dBi):  |                 |            |                     |           | -0.5                |  |  |
|           |                 | Max. EIRP (dBm):   |                 |            |                     |           | 22.15               |  |  |
|           |                 | EIRP Limit (dBm):  |                 |            |                     |           | 30.00               |  |  |
|           |                 | 16QAM  | 1               | 0          | 21.43               | 21.72     | 21.79               |  |  |
|           |                 |  | 1               | 49         | 21.51               | 21.58     | 21.39               |  |  |
|           |                 |  | 1               | 99         | 21.32               | 21.26     | 21.72               |  |  |
|           |                 |  | 50              | 0          | 20.58               | 20.53     | 20.57               |  |  |
|           |                 |  | 50              | 24         | 20.55               | 20.56     | 20.64               |  |  |
|           |                 |  | 50              | 49         | 20.54               | 20.59     | 20.43               |  |  |
|           |                 |  | 100             | 0          | 20.63               | 20.59     | 20.49               |  |  |
|           |                 | Antenna Gain (dBi):  |                 |            |                     |           | -0.5                |  |  |
|           |                 | Max. EIRP (dBm):   |                 |            |                     |           | 21.29               |  |  |
|           |                 | EIRP Limit (dBm):  |                 |            |                     |           | 30.00               |  |  |
|           |                 | Note: EIRP (dBm) = Average power (dBm) + Antenna Gain (dBi). |                 |            |                     |           |                     |  |  |

| LTE Band | Bandwidth (MHz) | Modulation  | RB Size         | RB Offset  | Average Power (dBm) |           |                     |  |  |
|----------|-----------------|---|-----------------|------------|---------------------|-----------|---------------------|--|--|
|          |                 |   |                 |            | 20407               | 20525     | 20643               |  |  |
|          |                 |   |                 |            | 824.7MHz            | 836.5MHz  | 848.3MHz            |  |  |
| 5        | 1.4             | QPSK  | 1               | 0          | 22.79               | 22.81     | 22.76               |  |  |
|          |                 |   | 1               | 2          | 22.85               | 22.94     | 22.89               |  |  |
|          |                 |   | 1               | 5          | 22.81               | 22.76     | 22.75               |  |  |
|          |                 |   | 3               | 0          | 21.70               | 21.86     | 21.85               |  |  |
|          |                 |   | 3               | 1          | 21.76               | 21.85     | 21.84               |  |  |
|          |                 |   | 3               | 2          | 21.65               | 21.81     | 21.82               |  |  |
|          |                 |   | 6               | 0          | 21.85               | 21.92     | 21.84               |  |  |
|          |                 | Antenna Gain(dBi):  |                 |            |                     |           | -1.4                |  |  |
|          |                 | Max. ERP (dBm):   |                 |            |                     |           | 19.39               |  |  |
|          |                 | ERP Limit (dBm):  |                 |            |                     |           | 38.45               |  |  |
|          |                 | 16QAM   | 1               | 0          | 21.98               | 21.95     | 21.96               |  |  |
|          |                 |   | 1               | 2          | 21.76               | 22.05     | 21.98               |  |  |
|          |                 |   | 1               | 5          | 21.91               | 21.98     | 21.79               |  |  |
|          |                 |   | 3               | 0          | 20.87               | 20.93     | 20.71               |  |  |
|          |                 |   | 3               | 1          | 20.76               | 20.95     | 20.79               |  |  |
|          |                 |   | 3               | 2          | 20.81               | 20.84     | 20.86               |  |  |
|          |                 |   | 6               | 0          | 20.99               | 21.01     | 20.99               |  |  |
|          |                 | Antenna Gain(dBi):  |                 |            |                     |           | -1.4                |  |  |
|          |                 | Max. ERP (dBm):   |                 |            |                     |           | 18.50               |  |  |
|          |                 | ERP Limit (dBm):  |                 |            |                     |           | 38.45               |  |  |
|          |                 | LTE Band  | Bandwidth (MHz) | Modulation | RB Size             | RB Offset | Average Power (dBm) |  |  |
| 20415    | 20525           |   |                 |            |                     |           | 20635               |  |  |
| 825.5MHz | 836.5MHz        |   |                 |            |                     |           | 847.50MHz           |  |  |
| 5        | 3               | QPSK  | 1               | 0          | 22.85               | 22.78     | 22.68               |  |  |
|          |                 |   | 1               | 7          | 22.79               | 22.63     | 22.75               |  |  |
|          |                 |   | 1               | 14         | 22.82               | 22.69     | 22.74               |  |  |
|          |                 |   | 8               | 0          | 21.86               | 21.80     | 21.87               |  |  |
|          |                 |   | 8               | 4          | 21.83               | 21.89     | 21.93               |  |  |
|          |                 |   | 8               | 7          | 21.89               | 21.70     | 21.82               |  |  |
|          |                 |   | 15              | 0          | 21.82               | 21.88     | 21.76               |  |  |
|          |                 | Antenna Gain(dBi):  |                 |            |                     |           | -1.4                |  |  |
|          |                 | Max. ERP (dBm):   |                 |            |                     |           | 19.30               |  |  |
|          |                 | ERP Limit (dBm):  |                 |            |                     |           | 38.45               |  |  |
|          |                 | 16QAM   | 1               | 0          | 21.97               | 21.98     | 21.99               |  |  |
|          |                 |   | 1               | 7          | 21.88               | 21.90     | 21.78               |  |  |
|          |                 |   | 1               | 14         | 21.72               | 21.80     | 21.85               |  |  |
|          |                 |   | 8               | 0          | 20.82               | 20.68     | 20.78               |  |  |
|          |                 |   | 8               | 4          | 20.89               | 20.76     | 20.85               |  |  |
|          |                 |   | 8               | 7          | 20.79               | 20.77     | 20.86               |  |  |
|          |                 |   | 15              | 0          | 20.66               | 20.83     | 20.78               |  |  |
|          |                 | Antenna Gain(dBi):  |                 |            |                     |           | -1.4                |  |  |
|          |                 | Max. ERP (dBm):   |                 |            |                     |           | 18.44               |  |  |
|          |                 | ERP Limit (dBm):  |                 |            |                     |           | 38.45               |  |  |
|          |                 | Note: EIRP (dBm) = Average power (dBm) + Antenna Gain (dBi).<br>ERP (dBm) = EIRP (dBm) - 2.15 (dB). |                 |            |                     |           |                     |  |  |

| LTE Band | Bandwidth (MHz) | Modulation  | RB Size         | RB Offset  | Average Power (dBm) |           |                     |  |  |
|----------|-----------------|---|-----------------|------------|---------------------|-----------|---------------------|--|--|
|          |                 |   |                 |            | 20425               | 20525     | 20625               |  |  |
|          |                 |   |                 |            | 826.5MHz            | 836.5MHz  | 846.5MHz            |  |  |
| 5        | 5               | QPSK  | 1               | 0          | 22.65               | 22.56     | 22.68               |  |  |
|          |                 |   | 1               | 12         | 22.74               | 22.78     | 22.63               |  |  |
|          |                 |   | 1               | 24         | 22.69               | 22.53     | 22.58               |  |  |
|          |                 |   | 12              | 0          | 21.83               | 21.81     | 21.78               |  |  |
|          |                 |   | 12              | 6          | 21.88               | 21.84     | 21.85               |  |  |
|          |                 |   | 12              | 11         | 21.79               | 21.79     | 21.76               |  |  |
|          |                 |   | 25              | 0          | 21.84               | 21.73     | 21.81               |  |  |
|          |                 | Antenna Gain(dBi):  |                 |            |                     |           | -1.4                |  |  |
|          |                 | Max. ERP (dBm):   |                 |            |                     |           | 19.23               |  |  |
|          |                 | ERP Limit (dBm):  |                 |            |                     |           | 38.45               |  |  |
|          |                 | 16QAM   | 1               | 0          | 21.67               | 21.87     | 22.13               |  |  |
|          |                 |   | 1               | 12         | 21.98               | 21.98     | 21.85               |  |  |
|          |                 |   | 1               | 24         | 21.89               | 21.85     | 21.84               |  |  |
|          |                 |   | 12              | 0          | 20.93               | 20.99     | 20.91               |  |  |
|          |                 |   | 12              | 6          | 20.88               | 20.85     | 20.81               |  |  |
|          |                 |   | 12              | 11         | 20.67               | 20.83     | 20.84               |  |  |
|          |                 |   | 25              | 0          | 20.82               | 20.73     | 20.87               |  |  |
|          |                 | Antenna Gain(dBi):  |                 |            |                     |           | -1.4                |  |  |
|          |                 | Max. ERP (dBm):   |                 |            |                     |           | 18.58               |  |  |
|          |                 | ERP Limit (dBm):  |                 |            |                     |           | 38.45               |  |  |
|          |                 | LTE Band  | Bandwidth (MHz) | Modulation | RB Size             | RB Offset | Average Power (dBm) |  |  |
| 20450    | 20525           |   |                 |            |                     |           | 20600               |  |  |
| 829.0MHz | 836.5MHz        |   |                 |            |                     |           | 844.0MHz            |  |  |
| 5        | 10              | QPSK  | 1               | 0          | 22.78               | 22.75     | 22.65               |  |  |
|          |                 |   | 1               | 24         | 22.85               | 22.86     | 22.75               |  |  |
|          |                 |   | 1               | 49         | 22.69               | 22.65     | 22.49               |  |  |
|          |                 |   | 25              | 0          | 21.97               | 21.85     | 21.90               |  |  |
|          |                 |   | 25              | 12         | 21.86               | 21.79     | 21.83               |  |  |
|          |                 |   | 25              | 24         | 21.90               | 21.81     | 21.70               |  |  |
|          |                 |   | 50              | 0          | 21.92               | 21.93     | 21.75               |  |  |
|          |                 | Antenna Gain(dBi):  |                 |            |                     |           | -1.4                |  |  |
|          |                 | Max. ERP (dBm):   |                 |            |                     |           | 19.31               |  |  |
|          |                 | ERP Limit (dBm):  |                 |            |                     |           | 38.45               |  |  |
|          |                 | 16QAM   | 1               | 0          | 21.86               | 21.70     | 21.92               |  |  |
|          |                 |   | 1               | 24         | 21.89               | 21.89     | 21.88               |  |  |
|          |                 |   | 1               | 49         | 21.91               | 21.85     | 21.84               |  |  |
|          |                 |   | 25              | 0          | 20.91               | 20.86     | 20.96               |  |  |
|          |                 |   | 25              | 12         | 20.87               | 20.74     | 20.84               |  |  |
|          |                 |   | 25              | 24         | 20.94               | 20.90     | 20.86               |  |  |
|          |                 |   | 50              | 0          | 20.92               | 20.95     | 20.72               |  |  |
|          |                 | Antenna Gain(dBi):  |                 |            |                     |           | -1.4                |  |  |
|          |                 | Max. ERP (dBm):   |                 |            |                     |           | 18.37               |  |  |
|          |                 | ERP Limit (dBm):  |                 |            |                     |           | 38.45               |  |  |
|          |                 | Note: EIRP (dBm) = Average power (dBm) + Antenna Gain (dBi).<br>ERP (dBm) = EIRP (dBm) - 2.15 (dB). |                 |            |                     |           |                     |  |  |

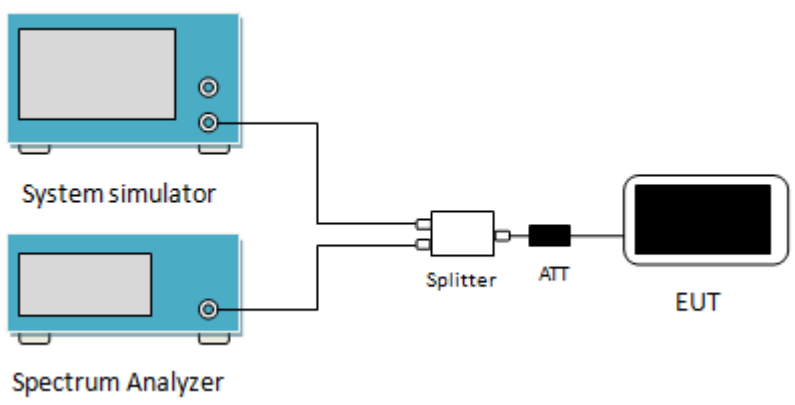
| LTE Band | Bandwidth (MHz) | Modulation   | RB Size         | RB Offset  | Average Power (dBm) |           |                     |  |  |
|----------|-----------------|--|-----------------|------------|---------------------|-----------|---------------------|--|--|
|          |                 |  |                 |            | 23017               | 23095     | 23173               |  |  |
|          |                 |  |                 |            | 699.7MHz            | 707.5MHz  | 715.3MHz            |  |  |
| 12       | 1.4             | QPSK   | 1               | 0          | 22.84               | 22.75     | 22.79               |  |  |
|          |                 |  | 1               | 2          | 22.86               | 22.86     | 22.83               |  |  |
|          |                 |  | 1               | 5          | 22.87               | 22.84     | 22.82               |  |  |
|          |                 |  | 3               | 0          | 21.92               | 21.91     | 21.91               |  |  |
|          |                 |  | 3               | 1          | 21.84               | 21.86     | 21.84               |  |  |
|          |                 |  | 3               | 2          | 21.87               | 21.81     | 21.92               |  |  |
|          |                 |  | 6               | 0          | 21.94               | 21.98     | 21.85               |  |  |
|          |                 | Antenna Gain(dBi):   |                 |            |                     |           | -1.6                |  |  |
|          |                 | Max. ERP (dBm):  |                 |            |                     |           | 19.12               |  |  |
|          |                 | ERP Limit (dBm):   |                 |            |                     |           | 34.77               |  |  |
|          |                 | 16QAM  | 1               | 0          | 21.82               | 21.93     | 21.78               |  |  |
|          |                 |  | 1               | 2          | 21.76               | 21.85     | 21.17               |  |  |
|          |                 |  | 1               | 5          | 21.77               | 21.75     | 21.63               |  |  |
|          |                 |  | 3               | 0          | 20.88               | 20.89     | 20.91               |  |  |
|          |                 |  | 3               | 1          | 20.93               | 20.94     | 21.01               |  |  |
|          |                 |  | 3               | 2          | 20.85               | 20.91     | 20.88               |  |  |
|          |                 |  | 6               | 0          | 20.96               | 20.92     | 20.93               |  |  |
|          |                 | Antenna Gain(dBi):   |                 |            |                     |           | -1.6                |  |  |
|          |                 | Max. ERP (dBm):  |                 |            |                     |           | 18.18               |  |  |
|          |                 | ERP Limit (dBm):   |                 |            |                     |           | 34.77               |  |  |
|          |                 | LTE Band   | Bandwidth (MHz) | Modulation | RB Size             | RB Offset | Average Power (dBm) |  |  |
| 23025    | 23095           |  |                 |            |                     |           | 23165               |  |  |
| 700.5MHz | 707.5MHz        |  |                 |            |                     |           | 714.5MHz            |  |  |
| 12       | 3               | QPSK   | 1               | 0          | 22.98               | 22.85     | 22.98               |  |  |
|          |                 |  | 1               | 7          | 22.96               | 22.92     | 22.85               |  |  |
|          |                 |  | 1               | 14         | 22.84               | 22.93     | 22.93               |  |  |
|          |                 |  | 8               | 0          | 21.96               | 21.95     | 21.92               |  |  |
|          |                 |  | 8               | 4          | 22.04               | 21.93     | 21.97               |  |  |
|          |                 |  | 8               | 7          | 21.93               | 21.96     | 21.95               |  |  |
|          |                 |  | 15              | 0          | 21.86               | 21.87     | 21.99               |  |  |
|          |                 | Antenna Gain(dBi):   |                 |            |                     |           | -1.6                |  |  |
|          |                 | Max. ERP (dBm):  |                 |            |                     |           | 19.23               |  |  |
|          |                 | ERP Limit (dBm):   |                 |            |                     |           | 34.77               |  |  |
|          |                 | 16QAM  | 1               | 0          | 21.88               | 21.87     | 22.12               |  |  |
|          |                 |  | 1               | 7          | 21.69               | 21.87     | 21.98               |  |  |
|          |                 |  | 1               | 14         | 21.86               | 21.86     | 21.85               |  |  |
|          |                 |  | 8               | 0          | 20.90               | 20.88     | 21.09               |  |  |
|          |                 |  | 8               | 4          | 20.96               | 20.84     | 21.05               |  |  |
|          |                 |  | 8               | 7          | 20.98               | 20.87     | 20.98               |  |  |
|          |                 |  | 15              | 0          | 20.91               | 20.95     | 20.88               |  |  |
|          |                 | Antenna Gain(dBi):   |                 |            |                     |           | -1.6                |  |  |
|          |                 | Max. ERP (dBm):  |                 |            |                     |           | 18.37               |  |  |
|          |                 | ERP Limit (dBm):   |                 |            |                     |           | 34.77               |  |  |
|          |                 | <p>Note: EIRP (dBm) = Average power (dBm) + Antenna Gain (dBi).<br/> ERP (dBm) = EIRP (dBm) - 2.15 (dB).</p> |                 |            |                     |           |                     |  |  |

| LTE Band | Bandwidth (MHz) | Modulation   | RB Size         | RB Offset  | Average Power (dBm) |           |                     |  |  |
|----------|-----------------|--|-----------------|------------|---------------------|-----------|---------------------|--|--|
|          |                 |  |                 |            | 23035               | 23095     | 23155               |  |  |
|          |                 |  |                 |            | 701.5MHz            | 707.5MHz  | 713.5MHz            |  |  |
| 12       | 5               | QPSK   | 1               | 0          | 22.91               | 22.78     | 22.78               |  |  |
|          |                 |  | 1               | 12         | 22.89               | 22.86     | 22.69               |  |  |
|          |                 |  | 1               | 24         | 22.86               | 22.84     | 22.91               |  |  |
|          |                 |  | 12              | 0          | 21.84               | 21.93     | 21.92               |  |  |
|          |                 |  | 12              | 6          | 21.89               | 21.97     | 21.96               |  |  |
|          |                 |  | 12              | 11         | 22.06               | 21.87     | 21.90               |  |  |
|          |                 |  | 25              | 0          | 21.98               | 21.94     | 21.97               |  |  |
|          |                 | Antenna Gain(dBi):   |                 |            |                     |           | -1.6                |  |  |
|          |                 | Max. ERP (dBm):  |                 |            |                     |           | 19.16               |  |  |
|          |                 | ERP Limit (dBm):   |                 |            |                     |           | 34.77               |  |  |
|          |                 | 16QAM  | 1               | 0          | 21.70               | 21.80     | 21.93               |  |  |
|          |                 |  | 1               | 12         | 21.89               | 21.58     | 22.13               |  |  |
|          |                 |  | 1               | 24         | 21.48               | 21.98     | 21.82               |  |  |
|          |                 |  | 12              | 0          | 20.89               | 21.05     | 20.91               |  |  |
|          |                 |  | 12              | 6          | 20.87               | 20.77     | 20.96               |  |  |
|          |                 |  | 12              | 11         | 20.85               | 20.86     | 20.94               |  |  |
|          |                 |  | 25              | 0          | 21.09               | 20.82     | 20.95               |  |  |
|          |                 | Antenna Gain(dBi):   |                 |            |                     |           | -1.6                |  |  |
|          |                 | Max. ERP (dBm):  |                 |            |                     |           | 18.38               |  |  |
|          |                 | ERP Limit (dBm):   |                 |            |                     |           | 34.77               |  |  |
|          |                 | LTE Band   | Bandwidth (MHz) | Modulation | RB Size             | RB Offset | Average Power (dBm) |  |  |
| 23060    | 23095           |  |                 |            |                     |           | 23130               |  |  |
| 704.0MHz | 707.5MHz        |  |                 |            |                     |           | 711.0MHz            |  |  |
| 12       | 10              | QPSK   | 1               | 0          | 22.85               | 22.86     | 22.74               |  |  |
|          |                 |  | 1               | 24         | 22.86               | 22.94     | 22.96               |  |  |
|          |                 |  | 1               | 49         | 22.84               | 22.85     | 22.95               |  |  |
|          |                 |  | 25              | 0          | 21.96               | 21.99     | 22.15               |  |  |
|          |                 |  | 25              | 12         | 21.93               | 21.90     | 22.03               |  |  |
|          |                 |  | 25              | 24         | 21.89               | 21.97     | 22.05               |  |  |
|          |                 |  | 50              | 0          | 21.99               | 21.86     | 21.95               |  |  |
|          |                 | Antenna Gain(dBi):   |                 |            |                     |           | -1.6                |  |  |
|          |                 | Max. ERP (dBm):  |                 |            |                     |           | 19.21               |  |  |
|          |                 | ERP Limit (dBm):   |                 |            |                     |           | 34.77               |  |  |
|          |                 | 16QAM  | 1               | 0          | 21.96               | 21.89     | 21.64               |  |  |
|          |                 |  | 1               | 24         | 21.89               | 21.17     | 22.05               |  |  |
|          |                 |  | 1               | 49         | 21.81               | 22.05     | 22.10               |  |  |
|          |                 |  | 25              | 0          | 21.01               | 20.98     | 20.98               |  |  |
|          |                 |  | 25              | 12         | 20.96               | 20.89     | 20.95               |  |  |
|          |                 |  | 25              | 24         | 20.94               | 20.93     | 20.88               |  |  |
|          |                 |  | 50              | 0          | 20.89               | 20.90     | 20.89               |  |  |
|          |                 | Antenna Gain(dBi):   |                 |            |                     |           | -1.6                |  |  |
|          |                 | Max. ERP (dBm):  |                 |            |                     |           | 18.35               |  |  |
|          |                 | ERP Limit (dBm):   |                 |            |                     |           | 34.77               |  |  |
|          |                 | <p>Note: EIRP (dBm) = Average power (dBm) + Antenna Gain (dBi).<br/> ERP (dBm) = EIRP (dBm) - 2.15 (dB).</p> |                 |            |                     |           |                     |  |  |



| LTE Band | Bandwidth (MHz) | Modulation  | RB Size         | RB Offset  | Average Power (dBm) |           |                     |  |  |
|----------|-----------------|---|-----------------|------------|---------------------|-----------|---------------------|--|--|
|          |                 |   |                 |            | 23755               | 23790     | 23825               |  |  |
|          |                 |   |                 |            | 706.5MHz            | 710.0MHz  | 713.5MHz            |  |  |
| 17       | 5               | QPSK  | 1               | 0          | 22.85               | 22.65     | 22.56               |  |  |
|          |                 |   | 1               | 12         | 22.96               | 22.84     | 22.74               |  |  |
|          |                 |   | 1               | 24         | 22.84               | 22.56     | 22.69               |  |  |
|          |                 |   | 12              | 0          | 21.92               | 21.95     | 21.87               |  |  |
|          |                 |   | 12              | 6          | 21.89               | 21.88     | 21.85               |  |  |
|          |                 |   | 12              | 11         | 21.93               | 21.87     | 21.44               |  |  |
|          |                 |   | 25              | 0          | 21.95               | 21.63     | 21.59               |  |  |
|          |                 | Antenna Gain(dBi):  |                 |            |                     |           | -1.6                |  |  |
|          |                 | Max. ERP (dBm):   |                 |            |                     |           | 19.21               |  |  |
|          |                 | ERP Limit (dBm):  |                 |            |                     |           | 34.77               |  |  |
|          |                 | 16QAM   | 1               | 0          | 22.05               | 21.55     | 21.35               |  |  |
|          |                 |   | 1               | 12         | 21.63               | 21.78     | 21.78               |  |  |
|          |                 |   | 1               | 24         | 21.85               | 21.45     | 21.44               |  |  |
|          |                 |   | 12              | 0          | 20.91               | 21.63     | 21.56               |  |  |
|          |                 |   | 12              | 6          | 21.03               | 20.69     | 20.59               |  |  |
|          |                 |   | 12              | 11         | 20.95               | 20.88     | 20.66               |  |  |
|          |                 |   | 25              | 0          | 20.98               | 20.67     | 20.47               |  |  |
|          |                 | Antenna Gain(dBi):  |                 |            |                     |           | -1.6                |  |  |
|          |                 | Max. ERP (dBm):   |                 |            |                     |           | 18.30               |  |  |
|          |                 | ERP Limit (dBm):  |                 |            |                     |           | 34.77               |  |  |
|          |                 | LTE Band  | Bandwidth (MHz) | Modulation | RB Size             | RB Offset | Average Power (dBm) |  |  |
| 23780    | 23790           |   |                 |            |                     |           | 23800               |  |  |
| 709.0MHz | 710.0MHz        |   |                 |            |                     |           | 711.0MHz            |  |  |
| 17       | 10              | QPSK  | 1               | 0          | 22.98               | 22.86     | 22.89               |  |  |
|          |                 |   | 1               | 24         | 22.85               | 22.95     | 22.63               |  |  |
|          |                 |   | 1               | 49         | 22.49               | 22.48     | 22.86               |  |  |
|          |                 |   | 25              | 0          | 22.10               | 22.06     | 22.26               |  |  |
|          |                 |   | 25              | 12         | 22.13               | 22.02     | 22.16               |  |  |
|          |                 |   | 25              | 24         | 22.06               | 22.01     | 22.28               |  |  |
|          |                 |   | 50              | 0          | 22.13               | 22.26     | 22.12               |  |  |
|          |                 | Antenna Gain(dBi):  |                 |            |                     |           | -1.6                |  |  |
|          |                 | Max. ERP (dBm):   |                 |            |                     |           | 19.23               |  |  |
|          |                 | ERP Limit (dBm):  |                 |            |                     |           | 34.77               |  |  |
|          |                 | 16QAM   | 1               | 0          | 22.05               | 22.02     | 22.16               |  |  |
|          |                 |   | 1               | 24         | 22.14               | 22.11     | 22.34               |  |  |
|          |                 |   | 1               | 49         | 22.03               | 22.03     | 22.25               |  |  |
|          |                 |   | 25              | 0          | 21.03               | 21.25     | 21.05               |  |  |
|          |                 |   | 25              | 12         | 21.11               | 21.06     | 21.05               |  |  |
|          |                 |   | 25              | 24         | 21.16               | 21.05     | 21.06               |  |  |
|          |                 |   | 50              | 0          | 21.05               | 20.98     | 20.88               |  |  |
|          |                 | Antenna Gain(dBi):  |                 |            |                     |           | -1.6                |  |  |
|          |                 | Max. ERP (dBm):   |                 |            |                     |           | 18.59               |  |  |
|          |                 | ERP Limit (dBm):  |                 |            |                     |           | 34.77               |  |  |
|          |                 | Note: EIRP (dBm) = Average power (dBm) + Antenna Gain (dBi).<br>ERP (dBm) = EIRP (dBm) - 2.15 (dB). |                 |            |                     |           |                     |  |  |

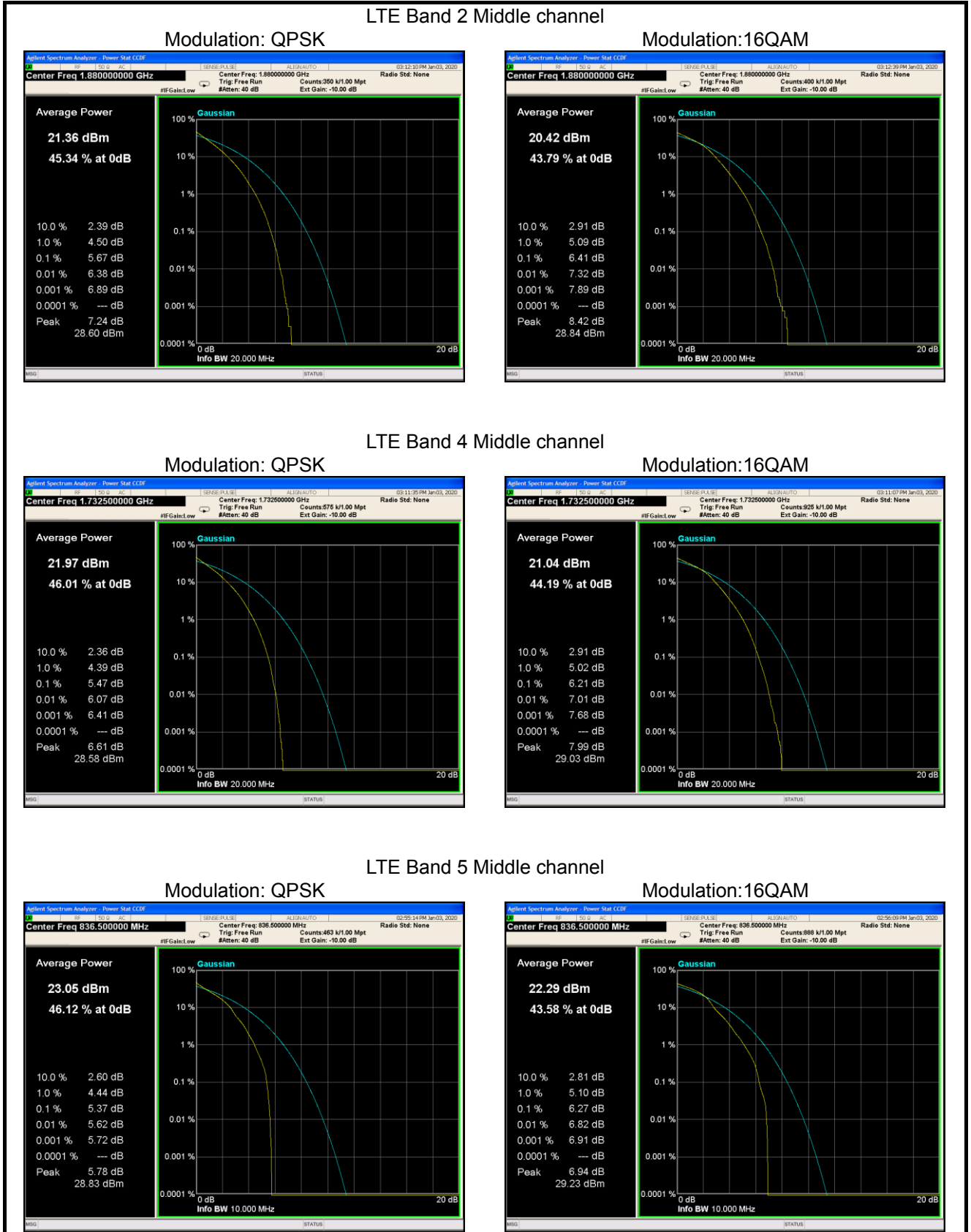
## 6.2 Peak-to-Average Ratio

|                   |  |
|-------------------|--|
| Test Requirement: | Part 24.232 (d), Part 27.50(d)(5)  |
| Limit:            | The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.  |
| Test Setup:       |  <p>The diagram shows a test setup for measuring Peak-to-Average Ratio (PAR). It consists of a System simulator and a Spectrum Analyzer connected to a Splitter. The Splitter is connected to an ATT (Attenuator) and an EUT (Equipment Under Test).</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 Set the CCDF option in spectrum analyzer, <math>RBW \geq OBW</math>,</li> <li>3 Set the EUT working in highest power level, measured and recorded the 0.1% as PAPR level.</li> <li>4 Repeat step 1~3 at other frequency and modulations.</li> </ol> |
| Test Instruments: | Refer to section 5.10 for details  |
| Test mode:        | Refer to section 5.3 for details   |
| Test results:     | Passed   |

**Measurement Data (Worst case):**

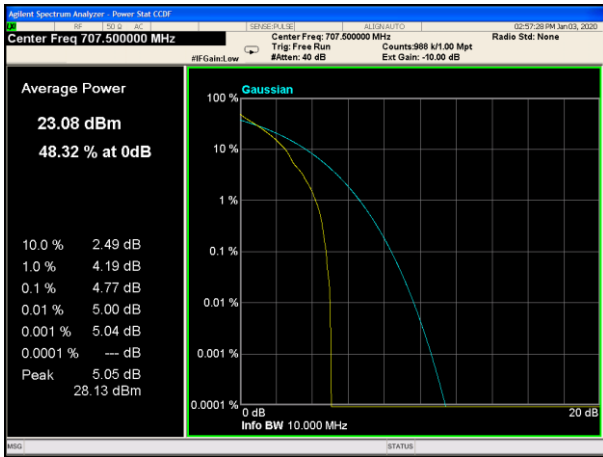
| Bandwidth                    | Modulation | RB Size | RB Offset | PAPR |
|------------------------------|------------|---------|-----------|------|
| LTE Band 2 (Middle Channel)  |            |         |           |      |
| 20MHz                        | QPSK       | 100     | 0         | 5.67 |
|                              | 16QAM      | 100     | 0         | 6.41 |
| LTE Band 4 (Middle Channel)  |            |         |           |      |
| 20MHz                        | QPSK       | 100     | 0         | 5.47 |
|                              | 16QAM      | 100     | 0         | 6.21 |
| LTE Band 5 (Middle Channel)  |            |         |           |      |
| 10MHz                        | QPSK       | 50      | 0         | 5.37 |
|                              | 16QAM      | 50      | 0         | 6.27 |
| LTE Band 12 (Middle Channel) |            |         |           |      |
| 10MHz                        | QPSK       | 50      | 0         | 4.77 |
|                              | 16QAM      | 50      | 0         | 5.38 |
| LTE Band 17 (Middle Channel) |            |         |           |      |
| 10MHz                        | QPSK       | 50      | 0         | 4.64 |
|                              | 16QAM      | 50      | 0         | 5.64 |

Test plots as below:

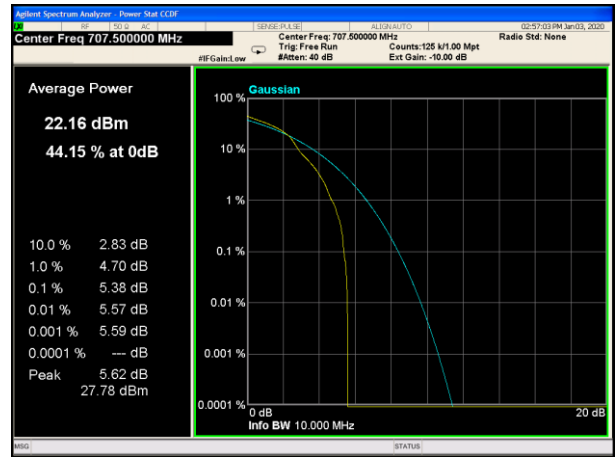


### LTE Band 12 Middle channel

Modulation: QPSK

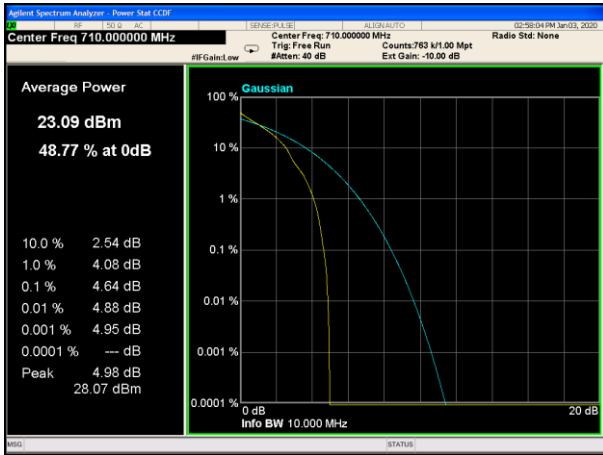


Modulation: 16QAM

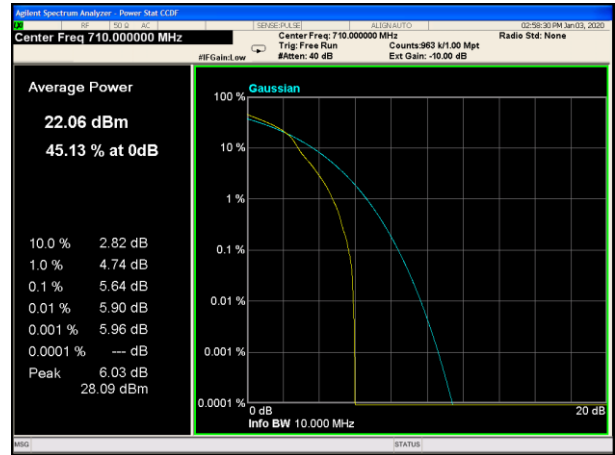


### LTE Band 17 Middle channel

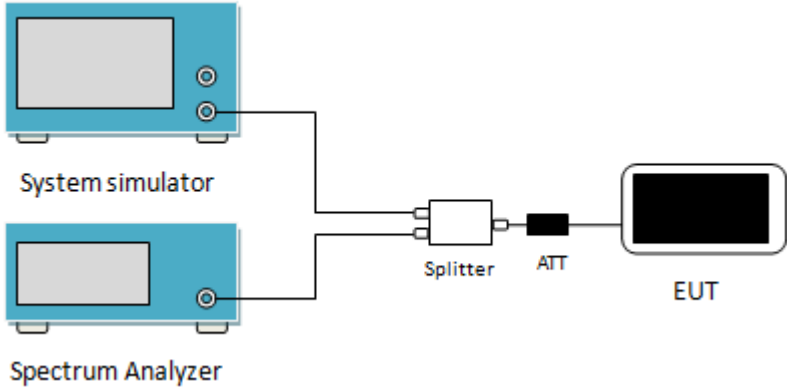
Modulation: QPSK



Modulation: 16QAM



## 6.3 Occupy Bandwidth

|                   |  |
|-------------------|--|
| Test Requirement: | Part 22.917(b), Part 24.238(b), Part 27.53(g), Part 27.53(h)   |
| Test Setup:       |  <p>The diagram shows a test setup. On the left, there are two blue rectangular units: the top one is labeled 'System simulator' and the bottom one is labeled 'Spectrum Analyzer'. Both have a screen and two ports on the right side. A single line connects the top port of the System simulator to the top port of the Spectrum Analyzer. From the bottom port of the System simulator, a line goes to the top port of a white rectangular 'Splitter'. From the bottom port of the Spectrum Analyzer, a line goes to the top port of the same 'Splitter'. From the right port of the 'Splitter', a line goes to a black rectangular 'ATT' (Attenuator). From the right port of the 'ATT', a line goes to the left side of a white rectangular 'EUT' (Equipment Under Test) which has a screen on its right side.</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% ~ 5% 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 5.10 for details  |
| Test mode:        | Refer to section 5.3 for details   |
| Test results:     | Passed   |

**Measurement Data:**

| LTE Band 2 |         |                 |            |               |                 |
|------------|---------|-----------------|------------|---------------|-----------------|
| Bandwidth  | Channel | Frequency (MHz) | Modulation | 99% OBW (kHz) | -26dBcEBW (kHz) |
| 1.4MHz     | 18607   | 1850.70         | 16QAM      | 1098          | 1278            |
|            |         |                 | QPSK       | 1098          | 1308            |
|            | 18900   | 1880.00         | 16QAM      | 1092          | 1266            |
|            |         |                 | QPSK       | 1098          | 1290            |
|            | 19193   | 1909.30         | 16QAM      | 1098          | 1308            |
|            |         |                 | QPSK       | 1104          | 1266            |
| 3MHz       | 18615   | 1851.50         | 16QAM      | 2712          | 2964            |
|            |         |                 | QPSK       | 2712          | 3000            |
|            | 18900   | 1880.00         | 16QAM      | 2712          | 2976            |
|            |         |                 | QPSK       | 2736          | 3012            |
|            | 19185   | 1908.50         | 16QAM      | 2724          | 2952            |
|            |         |                 | QPSK       | 2736          | 3012            |
| 5MHz       | 18625   | 1852.50         | 16QAM      | 4520          | 4940            |
|            |         |                 | QPSK       | 4520          | 5120            |
|            | 18900   | 1880.00         | 16QAM      | 4520          | 4980            |
|            |         |                 | QPSK       | 4520          | 5100            |
|            | 19175   | 1907.50         | 16QAM      | 4520          | 4960            |
|            |         |                 | QPSK       | 4540          | 5080            |
| 10MHz      | 18650   | 1855.00         | 16QAM      | 9120          | 10280           |
|            |         |                 | QPSK       | 9120          | 10360           |
|            | 18900   | 1880.00         | 16QAM      | 9120          | 10280           |
|            |         |                 | QPSK       | 9120          | 10400           |
|            | 19150   | 1905.00         | 16QAM      | 9160          | 10280           |
|            |         |                 | QPSK       | 9120          | 10240           |
| 15MHz      | 18675   | 1857.50         | 16QAM      | 13500         | 14880           |
|            |         |                 | QPSK       | 13620         | 15240           |
|            | 18900   | 1880.00         | 16QAM      | 13560         | 14880           |
|            |         |                 | QPSK       | 13560         | 15060           |
|            | 19125   | 1902.50         | 16QAM      | 13500         | 15060           |
|            |         |                 | QPSK       | 13500         | 14940           |
| 20MHz      | 18700   | 1860.00         | 16QAM      | 17920         | 19360           |
|            |         |                 | QPSK       | 18000         | 19600           |
|            | 18900   | 1880.00         | 16QAM      | 17920         | 19520           |
|            |         |                 | QPSK       | 18080         | 19680           |
|            | 19100   | 1900.00         | 16QAM      | 17920         | 19360           |
|            |         |                 | QPSK       | 18000         | 19440           |

| LTE Band 4 |         |                 |            |               |                 |
|------------|---------|-----------------|------------|---------------|-----------------|
| Bandwidth  | Channel | Frequency (MHz) | Modulation | 99% OBW (kHz) | -26dBcEBW (kHz) |
| 1.4MHz     | 19957   | 1710.7          | 16QAM      | 1098          | 1278            |
|            |         |                 | QPSK       | 1098          | 1278            |
|            | 20175   | 1732.5          | 16QAM      | 1098          | 1296            |
|            |         |                 | QPSK       | 1098          | 1266            |
|            | 20393   | 1754.3          | 16QAM      | 1104          | 1278            |
|            |         |                 | QPSK       | 1098          | 1284            |
| 3MHz       | 19965   | 1711.5          | 16QAM      | 2712          | 2964            |
|            |         |                 | QPSK       | 2724          | 3000            |
|            | 20175   | 1732.5          | 16QAM      | 2724          | 3000            |
|            |         |                 | QPSK       | 2724          | 3012            |
|            | 20385   | 1750.5          | 16QAM      | 2712          | 2952            |
|            |         |                 | QPSK       | 2724          | 3000            |
| 5MHz       | 19975   | 1712.5          | 16QAM      | 4520          | 5060            |
|            |         |                 | QPSK       | 4540          | 5140            |
|            | 20175   | 1732.5          | 16QAM      | 4500          | 5080            |
|            |         |                 | QPSK       | 4520          | 5140            |
|            | 20375   | 1752.5          | 16QAM      | 4520          | 5080            |
|            |         |                 | QPSK       | 4520          | 5060            |
| 10MHz      | 20000   | 1715.0          | 16QAM      | 9120          | 10320           |
|            |         |                 | QPSK       | 9120          | 10440           |
|            | 20175   | 1732.5          | 16QAM      | 9080          | 10320           |
|            |         |                 | QPSK       | 9120          | 10520           |
|            | 20350   | 1750.0          | 16QAM      | 9120          | 10240           |
|            |         |                 | QPSK       | 9120          | 10440           |
| 15MHz      | 20025   | 1717.5          | 16QAM      | 13560         | 14940           |
|            |         |                 | QPSK       | 13560         | 15180           |
|            | 20175   | 1732.5          | 16QAM      | 13500         | 14940           |
|            |         |                 | QPSK       | 13560         | 15180           |
|            | 20325   | 1747.5          | 16QAM      | 13560         | 15060           |
|            |         |                 | QPSK       | 13560         | 15120           |
| 20MHz      | 20050   | 1720.0          | 16QAM      | 17920         | 19600           |
|            |         |                 | QPSK       | 18080         | 19600           |
|            | 20175   | 1732.5          | 16QAM      | 18000         | 19440           |
|            |         |                 | QPSK       | 18080         | 19600           |
|            | 20300   | 1745.0          | 16QAM      | 17920         | 19440           |
|            |         |                 | QPSK       | 18000         | 19680           |



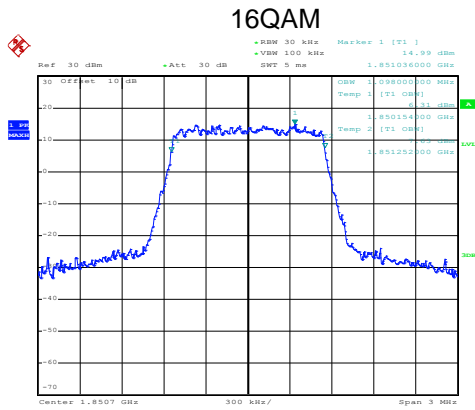
| TE Band 5 |         |                 |            |               |                 |
|-----------|---------|-----------------|------------|---------------|-----------------|
| Bandwidth | Channel | Frequency (MHz) | Modulation | 99% OBW (kHz) | -26dBcEBW (kHz) |
| 1.4MHz    | 20407   | 824.7           | 16QAM      | 1098          | 1260            |
|           |         |                 | QPSK       | 1098          | 1278            |
|           | 20525   | 836.5           | 16QAM      | 1098          | 1278            |
|           |         |                 | QPSK       | 1098          | 1278            |
|           | 20643   | 848.3           | 16QAM      | 1092          | 1296            |
|           |         |                 | QPSK       | 1098          | 1284            |
| 3MHz      | 20415   | 825.5           | 16QAM      | 2724          | 2976            |
|           |         |                 | QPSK       | 2724          | 2988            |
|           | 20525   | 836.50          | 16QAM      | 2700          | 2940            |
|           |         |                 | QPSK       | 2724          | 3000            |
|           | 20635   | 847.50          | 16QAM      | 2712          | 3000            |
|           |         |                 | QPSK       | 2724          | 2988            |
| 5MHz      | 20425   | 826.50          | 16QAM      | 4520          | 5040            |
|           |         |                 | QPSK       | 4520          | 5100            |
|           | 20525   | 836.50          | 16QAM      | 4520          | 5120            |
|           |         |                 | QPSK       | 4540          | 5080            |
|           | 20625   | 846.50          | 16QAM      | 4480          | 5040            |
|           |         |                 | QPSK       | 4520          | 5120            |
| 10MHz     | 20450   | 829.00          | 16QAM      | 9120          | 10240           |
|           |         |                 | QPSK       | 9120          | 10560           |
|           | 20525   | 836.50          | 16QAM      | 9120          | 10400           |
|           |         |                 | QPSK       | 9120          | 10360           |
|           | 20600   | 844.00          | 16QAM      | 9080          | 10360           |
|           |         |                 | QPSK       | 9080          | 10400           |

| LTE Band 12 |         |                 |            |               |                 |
|-------------|---------|-----------------|------------|---------------|-----------------|
| Bandwidth   | Channel | Frequency (MHz) | Modulation | 99% OBW (kHz) | -26dBcEBW (kHz) |
| 1.4MHz      | 23017   | 699.7           | 16QAM      | 1098          | 1284            |
|             |         |                 | QPSK       | 1098          | 1290            |
|             | 23095   | 707.5           | 16QAM      | 1092          | 1290            |
|             |         |                 | QPSK       | 1092          | 1290            |
|             | 23173   | 715.3           | 16QAM      | 1092          | 1248            |
|             |         |                 | QPSK       | 1098          | 1266            |
| 3MHz        | 23025   | 700.5           | 16QAM      | 2712          | 2976            |
|             |         |                 | QPSK       | 2712          | 3000            |
|             | 23095   | 707.5           | 16QAM      | 2712          | 2976            |
|             |         |                 | QPSK       | 2712          | 3012            |
|             | 23165   | 714.5           | 16QAM      | 2712          | 2940            |
|             |         |                 | QPSK       | 2724          | 3000            |
| 5MHz        | 23035   | 701.5           | 16QAM      | 4500          | 5020            |
|             |         |                 | QPSK       | 4520          | 5060            |
|             | 23095   | 707.5           | 16QAM      | 4500          | 5040            |
|             |         |                 | QPSK       | 4520          | 5100            |
|             | 23155   | 713.5           | 16QAM      | 4520          | 4980            |
|             |         |                 | QPSK       | 4520          | 5060            |
| 10MHz       | 23060   | 704.0           | 16QAM      | 9120          | 10240           |
|             |         |                 | QPSK       | 9080          | 10360           |
|             | 23095   | 707.5           | 16QAM      | 9120          | 10240           |
|             |         |                 | QPSK       | 9120          | 10360           |
|             | 23130   | 711.0           | 16QAM      | 9080          | 10320           |
|             |         |                 | QPSK       | 9120          | 10280           |

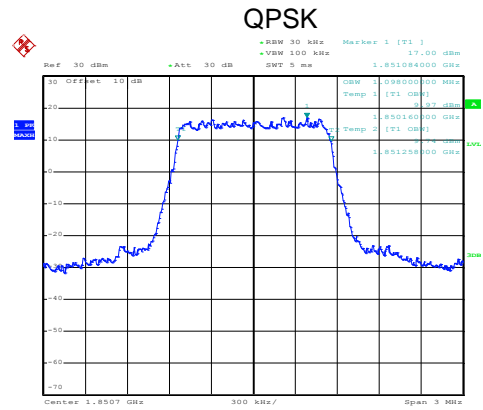
| LTE Band 17 |         |                 |            |               |                 |
|-------------|---------|-----------------|------------|---------------|-----------------|
| Bandwidth   | Channel | Frequency (MHz) | Modulation | 99% OBW (kHz) | -26dBcEBW (kHz) |
| 5MHz        | 23755   | 706.5           | 16QAM      | 4520          | 5020            |
|             |         |                 | QPSK       | 4520          | 5140            |
|             | 23790   | 710.0           | 16QAM      | 4500          | 5100            |
|             |         |                 | QPSK       | 4520          | 5120            |
|             | 23825   | 713.5           | 16QAM      | 4500          | 4980            |
|             |         |                 | QPSK       | 4520          | 5100            |
| 10MHz       | 23780   | 709.0           | 16QAM      | 9120          | 10120           |
|             |         |                 | QPSK       | 9120          | 10400           |
|             | 23790   | 710.0           | 16QAM      | 9080          | 10240           |
|             |         |                 | QPSK       | 9120          | 10320           |
|             | 23130   | 711.0           | 16QAM      | 9080          | 10160           |
|             |         |                 | QPSK       | 9120          | 10480           |

Test plot as follows:  
LTE Band 2 part:

LTE Band 2: 99% Occupancy bandwidth  
BW: 1.4MHz

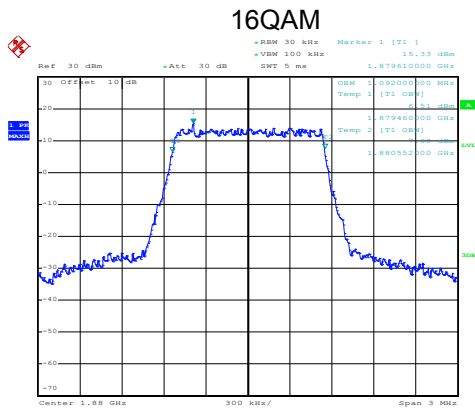


Date: 23.APR.2020 09:14:45

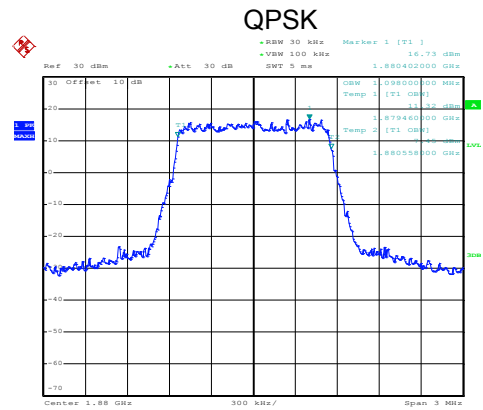


Date: 23.APR.2020 09:14:38

Lowest channel

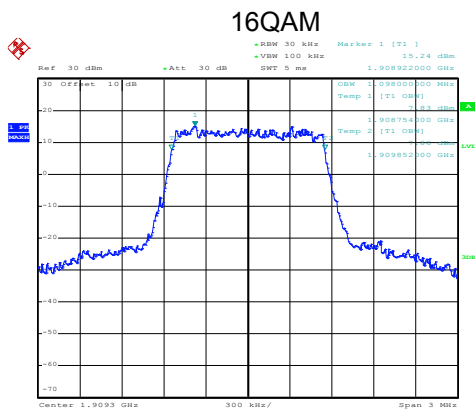


Date: 23.APR.2020 09:15:07

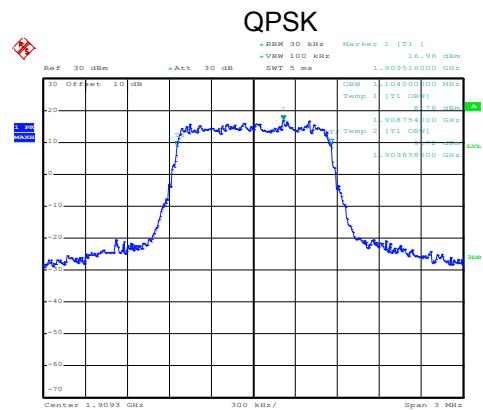


Date: 23.APR.2020 09:15:02

Middle channel



Date: 23.APR.2020 09:16:03

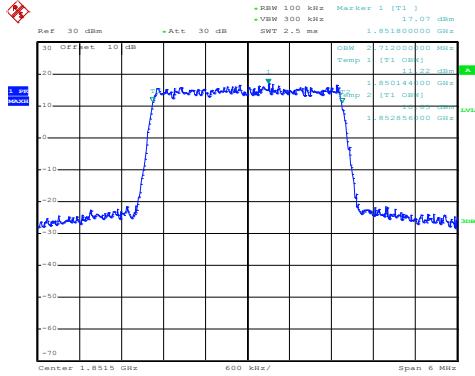


Date: 23.APR.2020 09:15:56

Highest channel

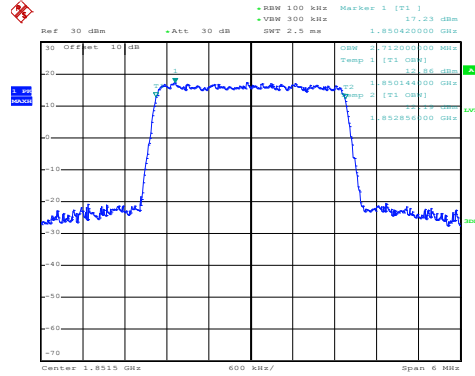
LTE Band 2: 99% Occupancy bandwidth  
BW: 3MHz

16QAM



Date: 23.APR.2020 09:17:00

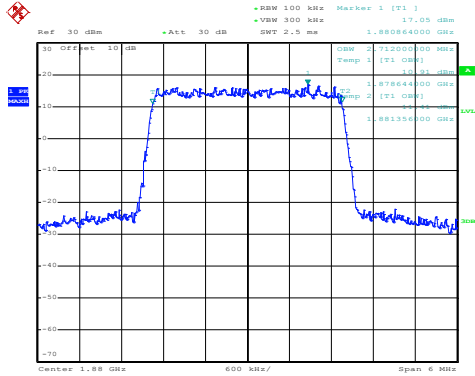
QPSK



Date: 23.APR.2020 09:16:53

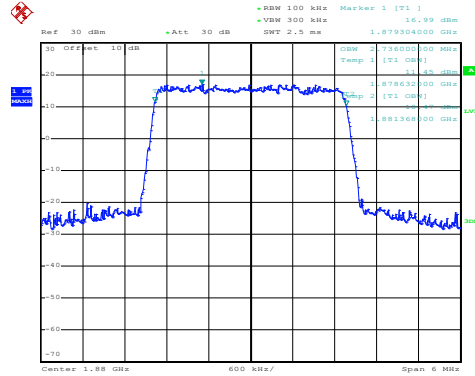
Lowest channel

16QAM



Date: 23.APR.2020 09:18:15

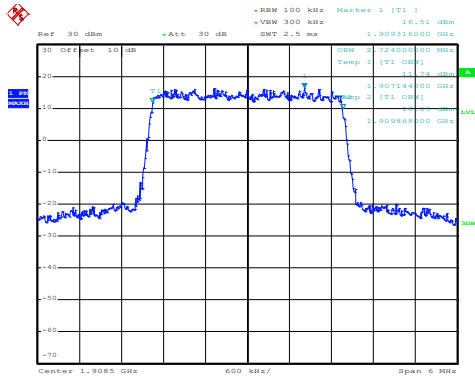
QPSK



Date: 23.APR.2020 09:18:09

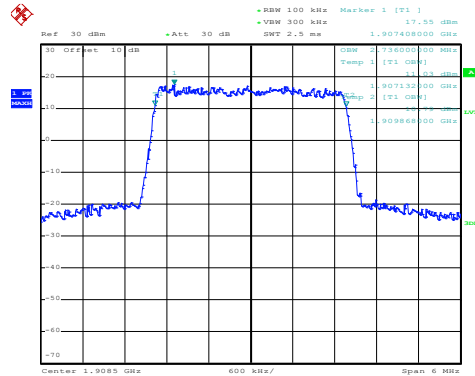
Middle channel

16QAM



Date: 23.APR.2020 09:18:39

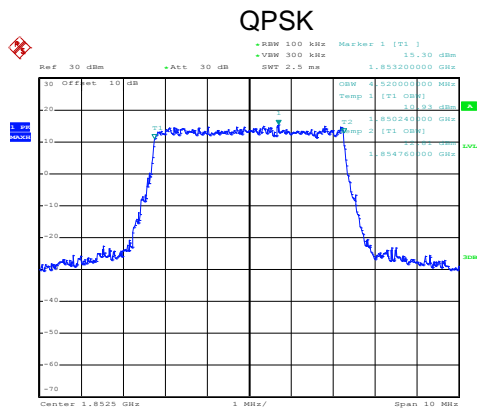
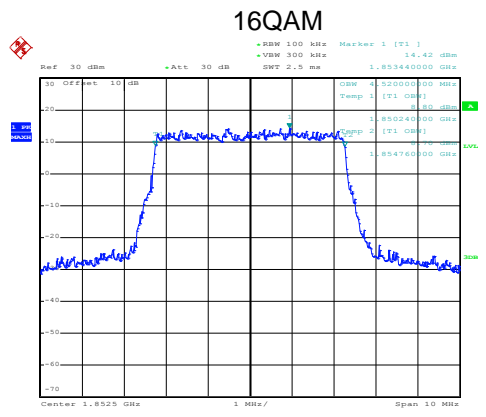
QPSK



Date: 23.APR.2020 09:18:34

Highest channel

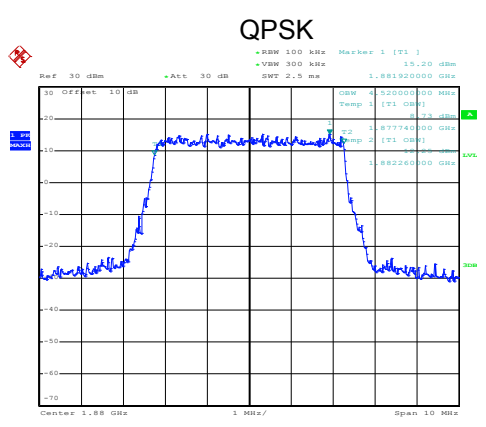
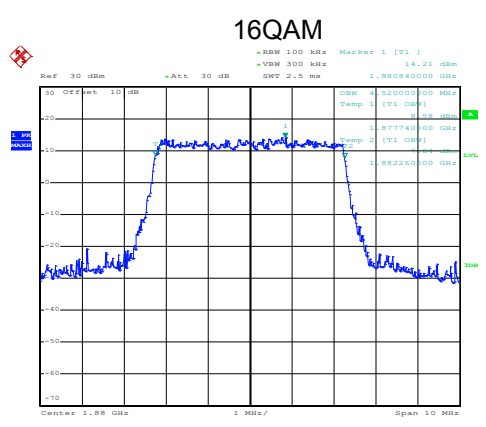
LTE Band 2: 99% Occupancy bandwidth  
BW: 5MHz



Date: 23.APR.2020 09:19:56

Date: 23.APR.2020 09:19:49

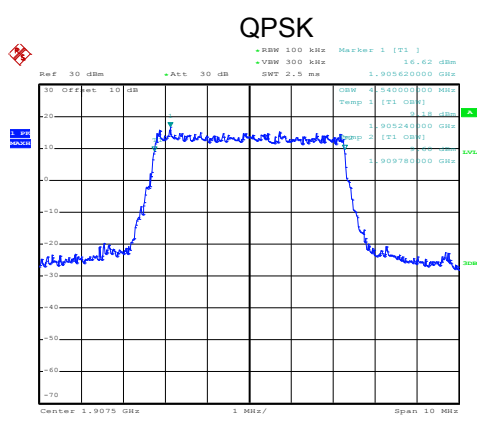
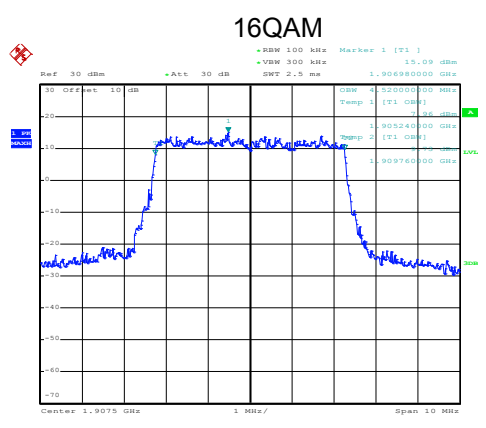
Lowest channel



Date: 23.APR.2020 09:20:18

Date: 23.APR.2020 09:20:11

Middle channel



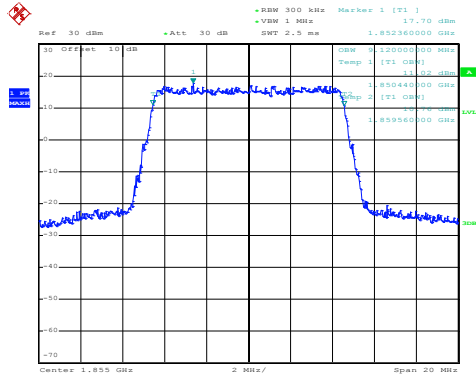
Date: 23.APR.2020 09:21:15

Date: 23.APR.2020 09:21:10

Highest channel

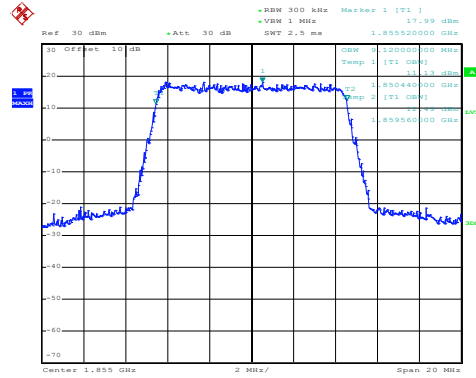
## LTE Band 2: 99% Occupancy bandwidth BW: 10MHz

### 16QAM



Date: 23.APR.2020 09:24:03

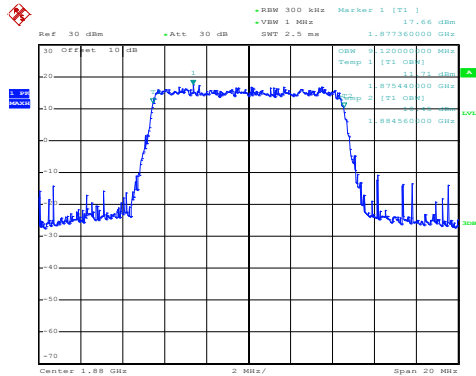
### QPSK



Date: 23.APR.2020 09:23:55

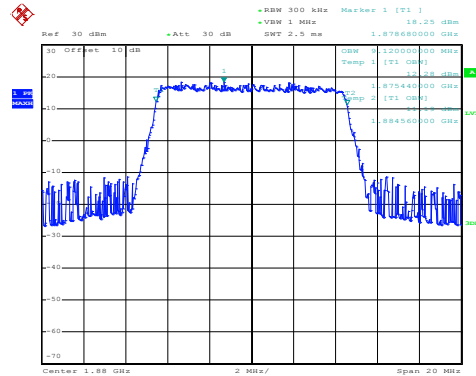
### Lowest channel

### 16QAM



Date: 23.APR.2020 09:23:37

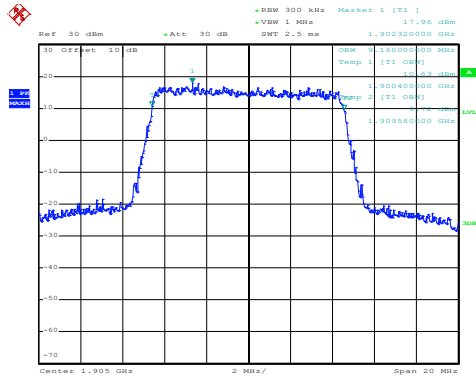
### QPSK



Date: 23.APR.2020 09:23:29

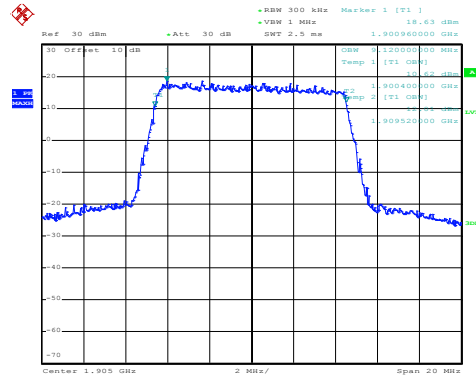
### Middle channel

### 16QAM



Date: 23.APR.2020 09:25:05

### QPSK

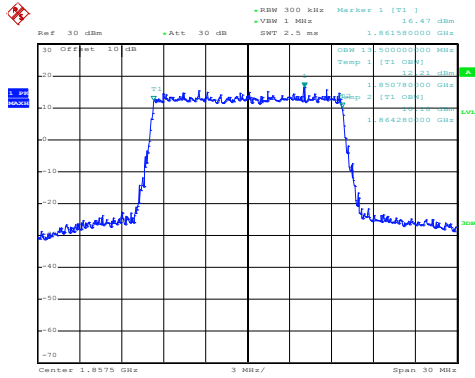


Date: 23.APR.2020 09:24:59

### Highest channel

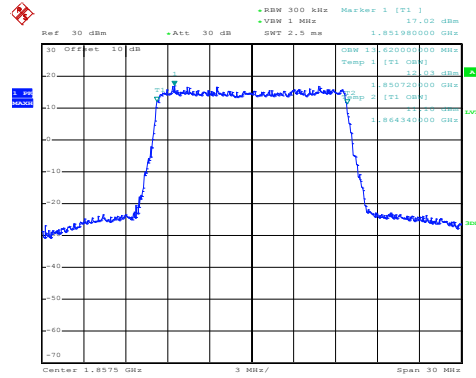
## LTE Band 2: 99% Occupancy bandwidth BW: 15MHz

### 16QAM



Date: 23.APR.2020 09:25:57

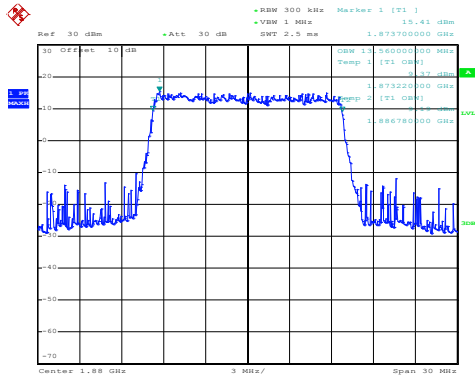
### QPSK



Date: 23.APR.2020 09:25:52

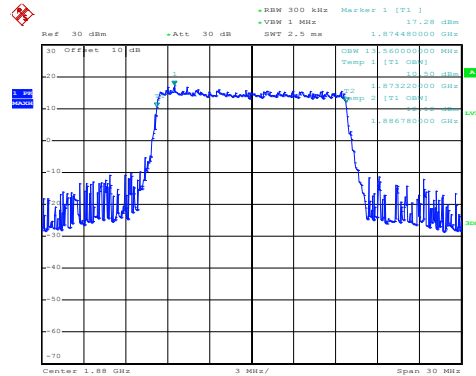
### Lowest channel

### 16QAM



Date: 23.APR.2020 09:26:59

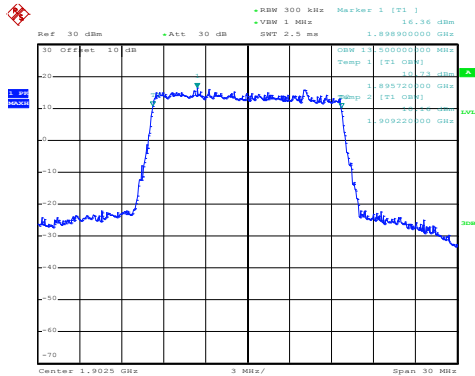
### QPSK



Date: 23.APR.2020 09:26:52

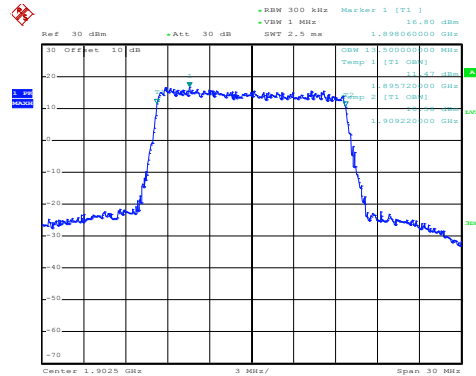
### Middle channel

### 16QAM



Date: 23.APR.2020 09:27:23

### QPSK

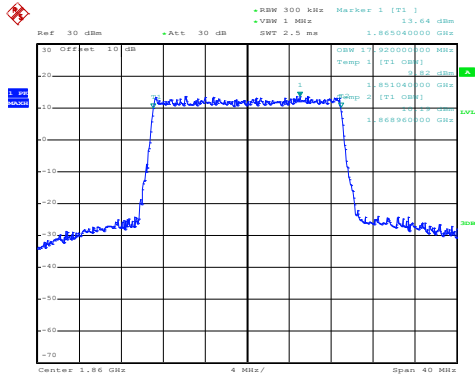


Date: 23.APR.2020 09:27:14

### Highest channel

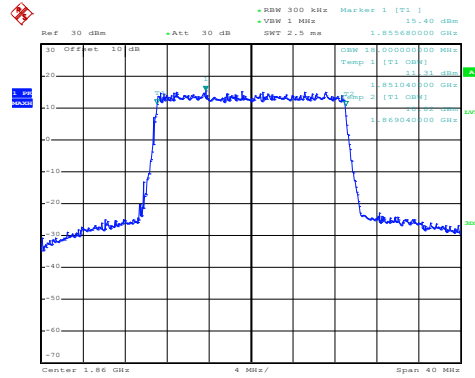
### LTE Band 2: 99% Occupancy bandwidth BW: 20MHz

#### 16QAM



Date: 23.APR.2020 09:28:49

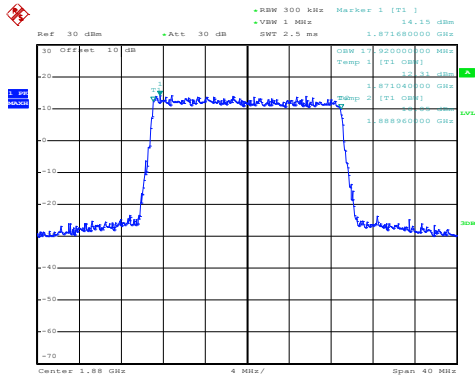
#### QPSK



Date: 23.APR.2020 09:28:42

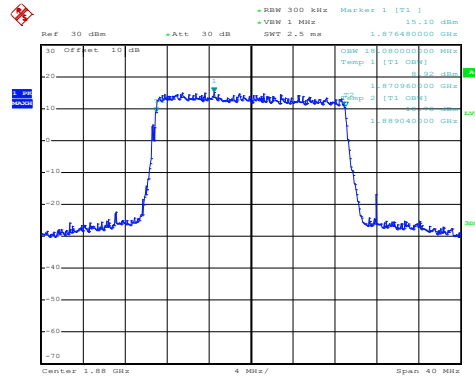
#### Lowest channel

#### 16QAM



Date: 23.APR.2020 09:29:09

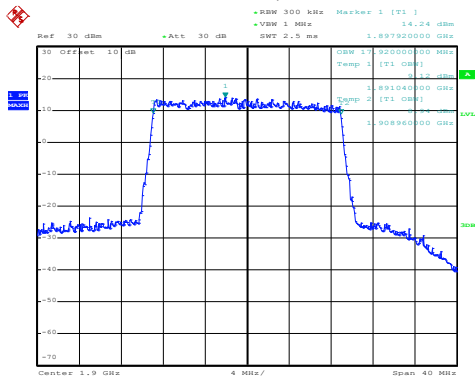
#### QPSK



Date: 23.APR.2020 09:29:02

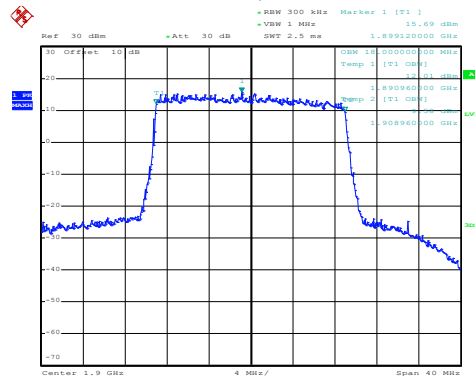
#### Middle channel

#### 16QAM



Date: 23.APR.2020 09:30:05

#### QPSK



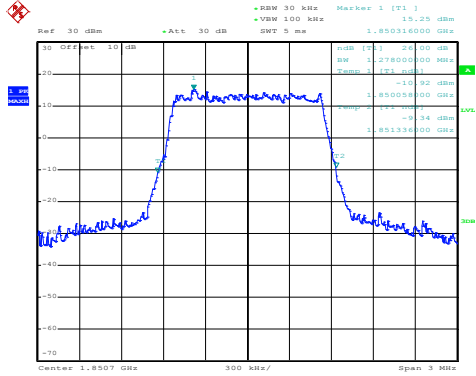
Date: 23.APR.2020 09:29:59

#### Highest channel



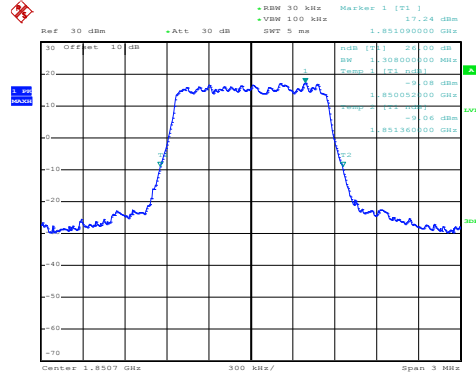
## LTE Band 2: -26dBc bandwidth BW: 1.4MHz

16QAM



Date: 23.APR.2020 09:14:24

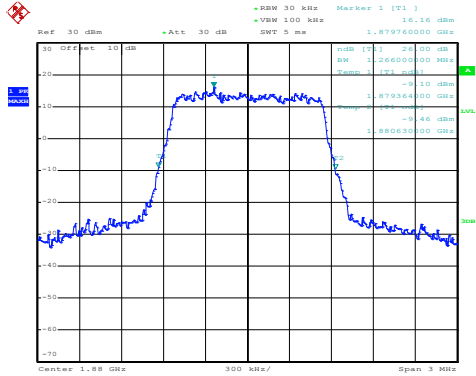
QPSK



Date: 23.APR.2020 09:14:18

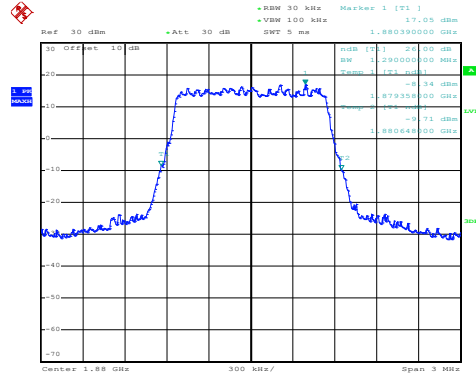
Lowest channel

16QAM



Date: 23.APR.2020 09:15:24

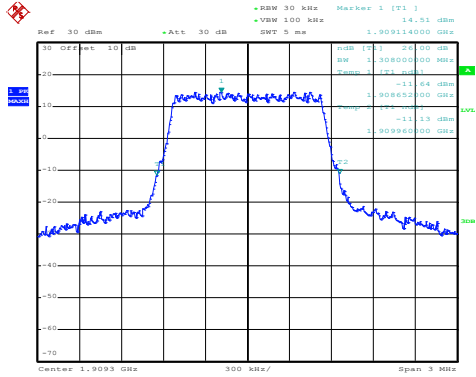
QPSK



Date: 23.APR.2020 09:15:17

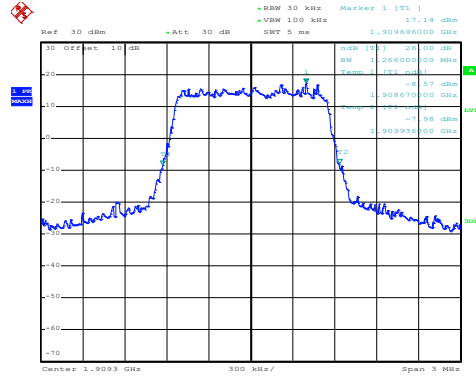
Middle channel

16QAM



Date: 23.APR.2020 09:15:47

QPSK

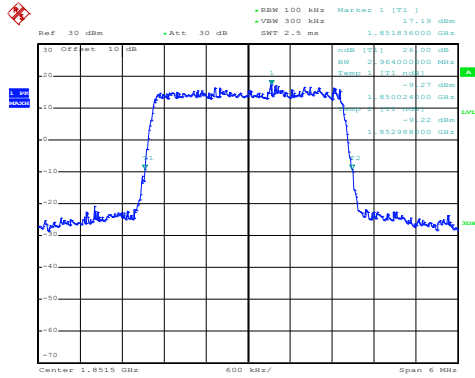


Date: 23.APR.2020 09:15:41

Highest channel

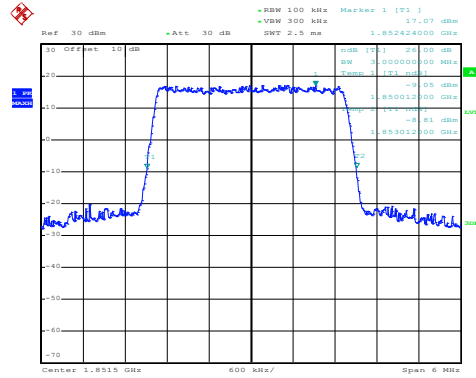
LTE Band 2: -26dBc bandwidth  
BW: 3MHz

16QAM



Date: 23.APR.2020 09:17:24

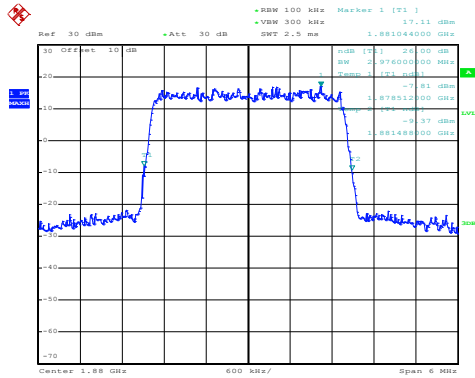
QPSK



Date: 23.APR.2020 09:17:14

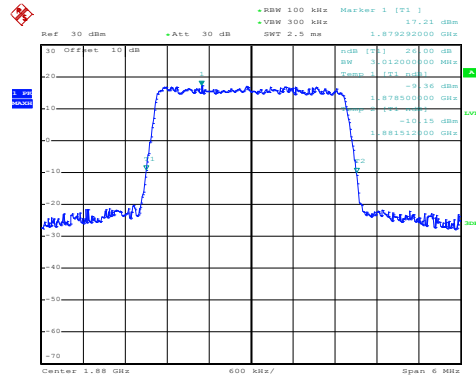
Lowest channel

16QAM



Date: 23.APR.2020 09:18:00

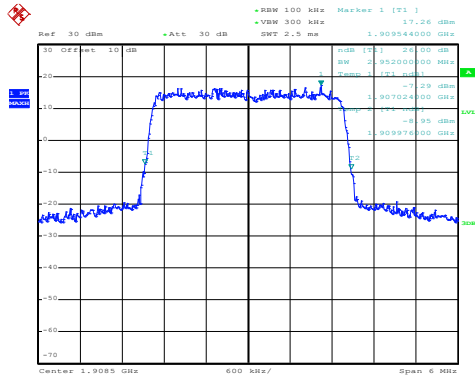
QPSK



Date: 23.APR.2020 09:17:53

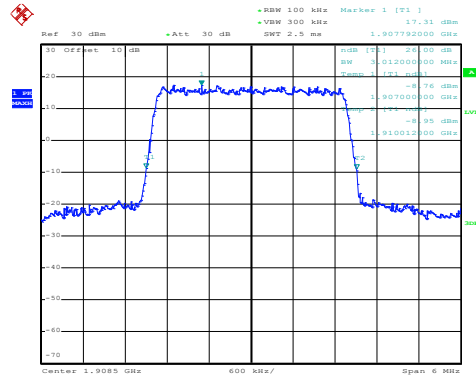
Middle channel

16QAM



Date: 23.APR.2020 09:18:55

QPSK

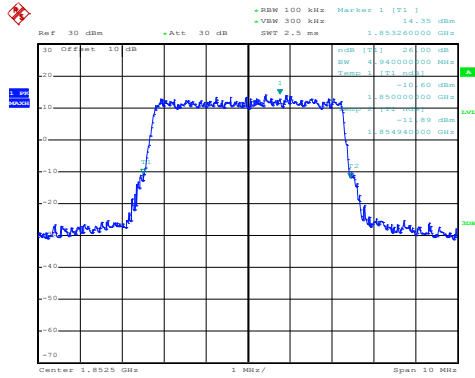


Date: 23.APR.2020 09:18:48

Highest channel

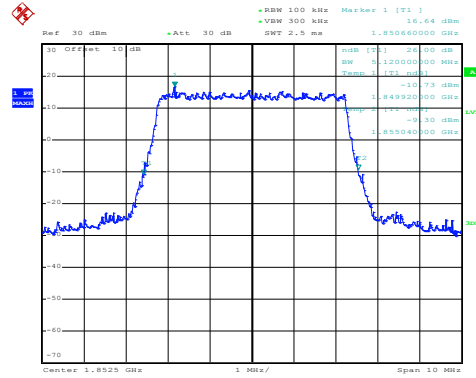
LTE Band 2: -26dBc bandwidth  
BW: 5MHz

16QAM



Date: 23.APR.2020 09:19:40

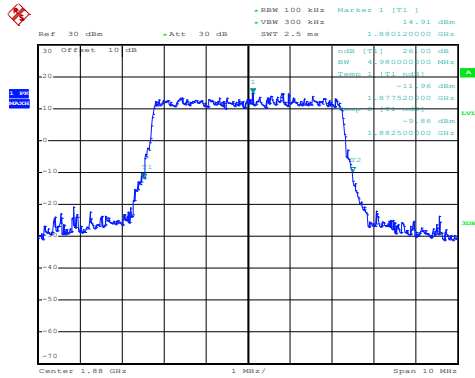
QPSK



Date: 23.APR.2020 09:19:35

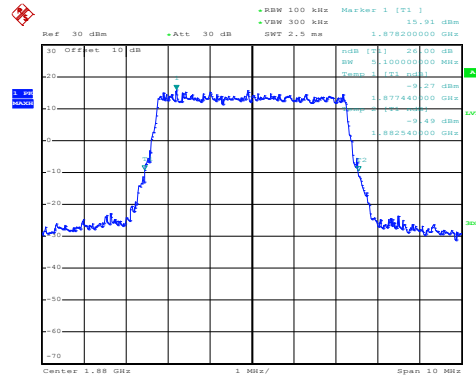
Lowest channel

16QAM



Date: 23.APR.2020 09:20:39

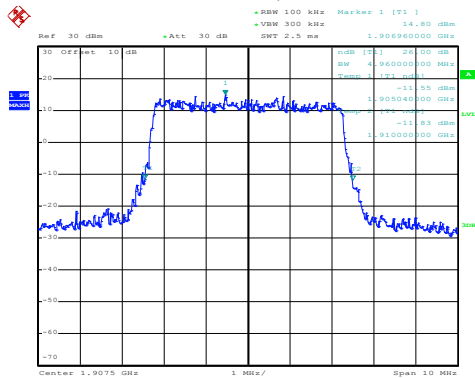
QPSK



Date: 23.APR.2020 09:20:31

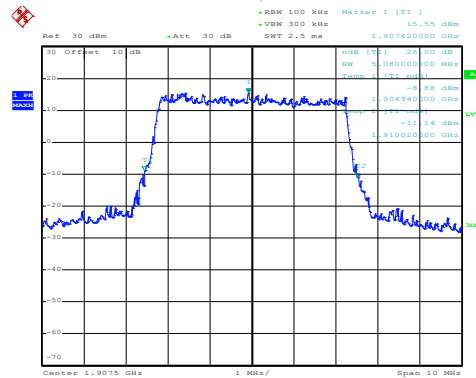
Middle channel

16QAM



Date: 23.APR.2020 09:21:00

QPSK

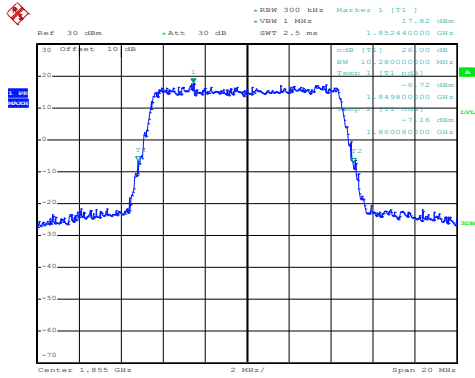


Date: 23.APR.2020 09:20:55

Highest channel

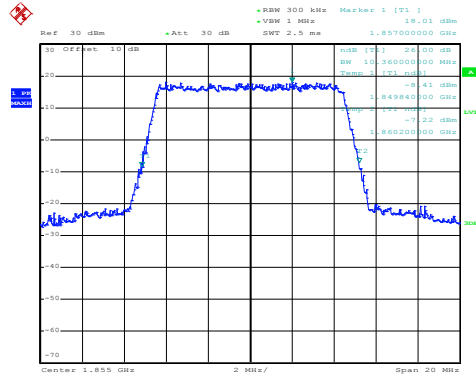
### LTE Band 2: -26dBc bandwidth BW: 10MHz

#### 16QAM



Date: 23.APR.2020 09:24:22

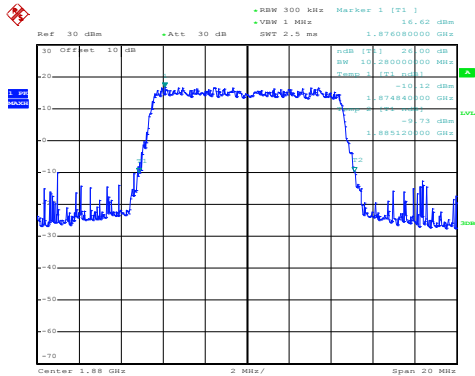
#### QPSK



Date: 23.APR.2020 09:24:14

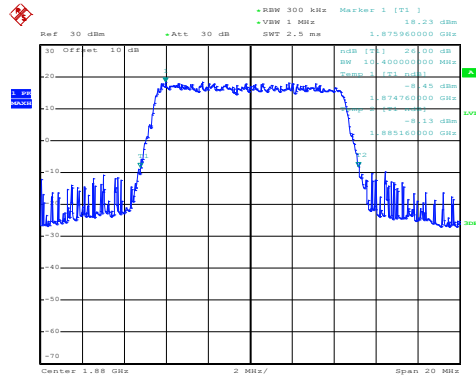
#### Lowest channel

#### 16QAM



Date: 23.APR.2020 09:23:18

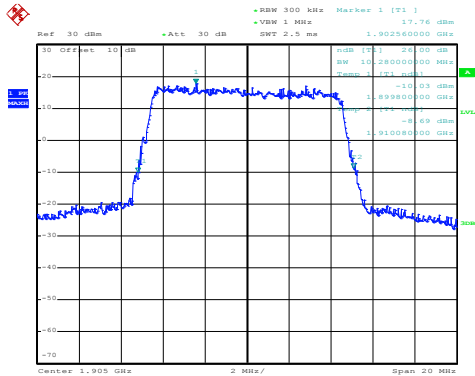
#### QPSK



Date: 23.APR.2020 09:23:12

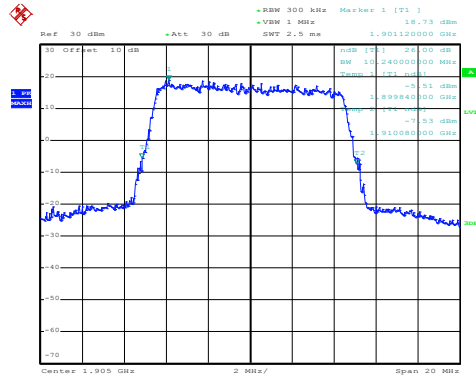
#### Middle channel

#### 16QAM



Date: 23.APR.2020 09:24:49

#### QPSK

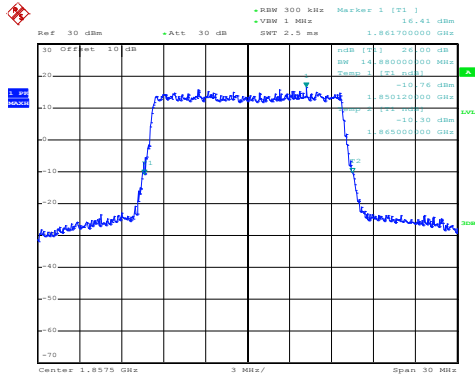


Date: 23.APR.2020 09:24:42

#### Highest channel

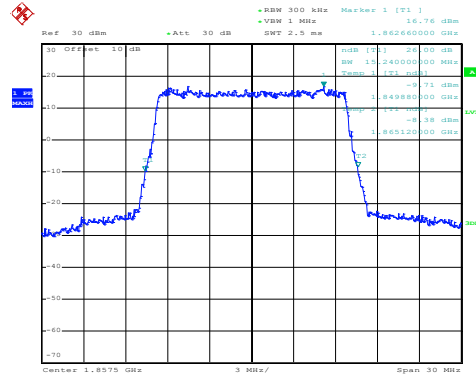
LTE Band 2: -26dBc bandwidth  
BW: 15MHz

16QAM



Date: 23.APR.2020 09:26:17

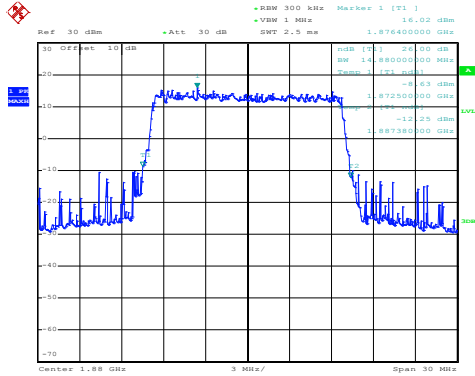
QPSK



Date: 23.APR.2020 09:26:10

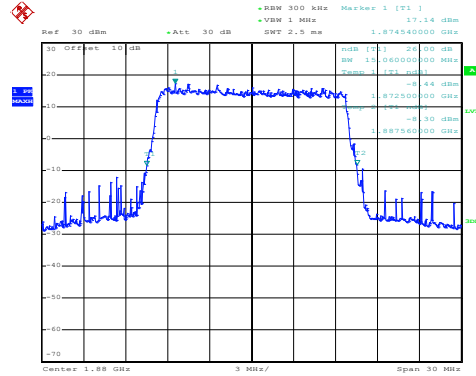
Lowest channel

16QAM



Date: 23.APR.2020 09:26:39

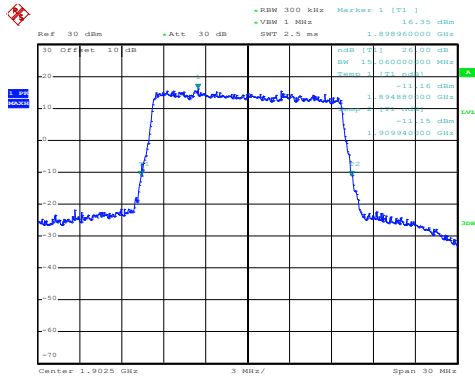
QPSK



Date: 23.APR.2020 09:26:33

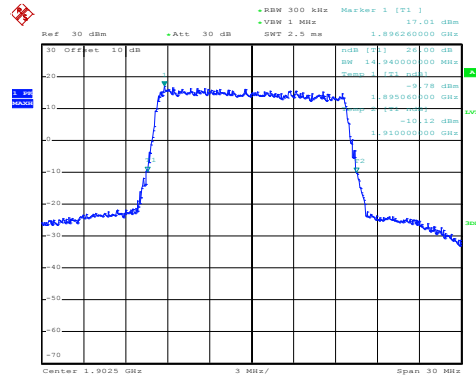
Middle channel

16QAM



Date: 23.APR.2020 09:27:46

QPSK

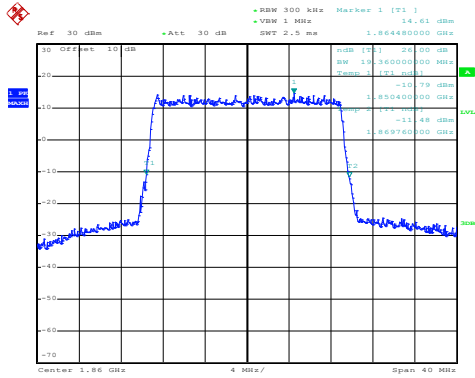


Date: 23.APR.2020 09:27:34

Highest channel

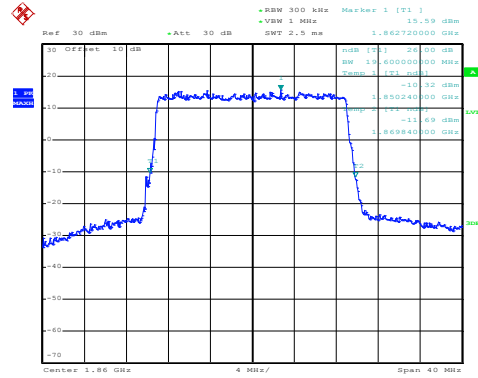
LTE Band 2: -26dBc bandwidth  
BW: 20MHz

16QAM



Date: 23.APR.2020 09:28:32

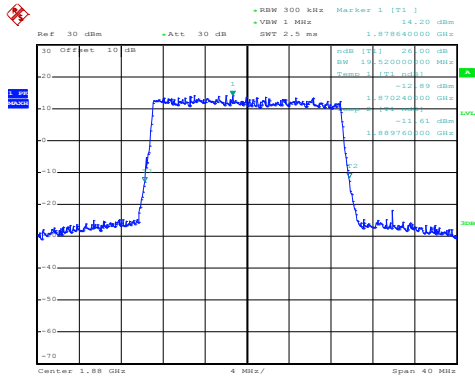
QPSK



Date: 23.APR.2020 09:28:24

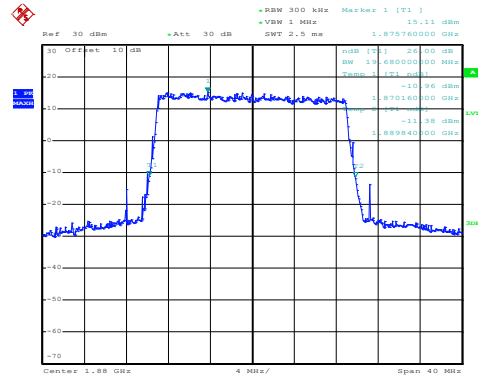
Lowest channel

16QAM



Date: 23.APR.2020 09:29:27

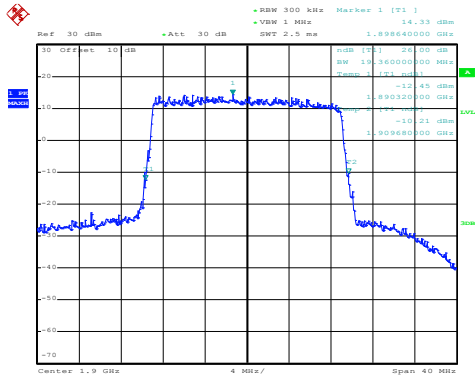
QPSK



Date: 23.APR.2020 09:29:20

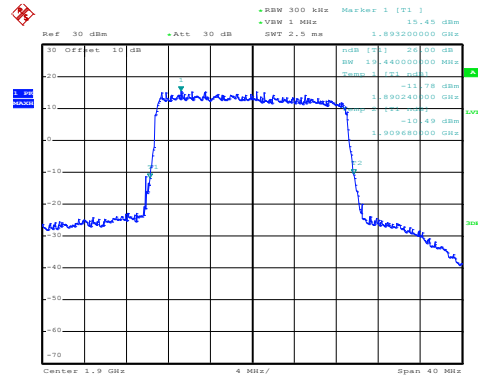
Middle channel

16QAM



Date: 23.APR.2020 09:29:49

QPSK

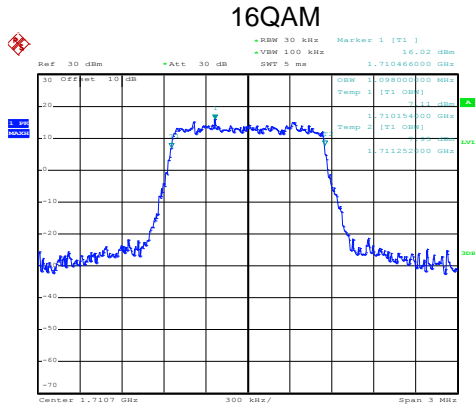


Date: 23.APR.2020 09:29:42

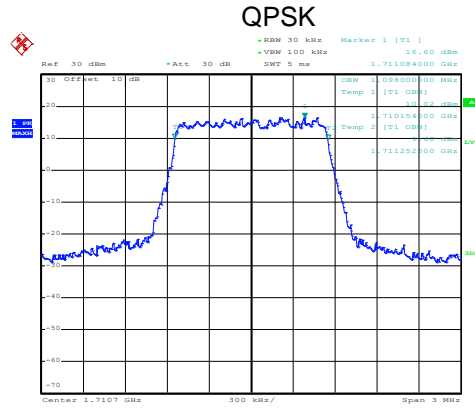
Highest channel

LTE Band 4 part:

LTE Band 4: 99% Occupy bandwidth  
BW: 1.4MHz

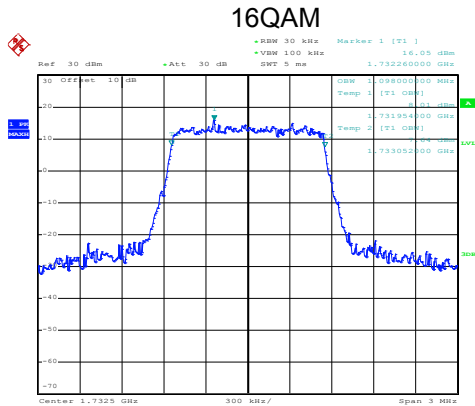


Date: 23.APR.2020 09:30:57

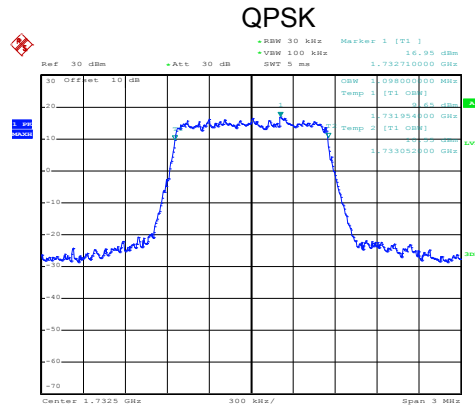


Date: 23.APR.2020 09:30:50

Lowest channel

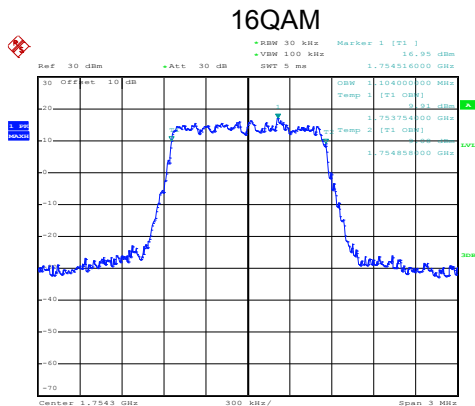


Date: 23.APR.2020 09:31:57

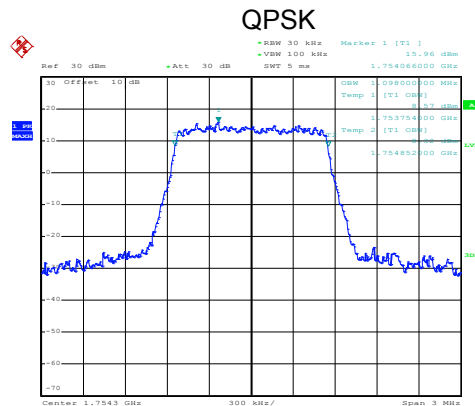


Date: 23.APR.2020 09:31:48

Middle channel



Date: 23.APR.2020 09:33:00

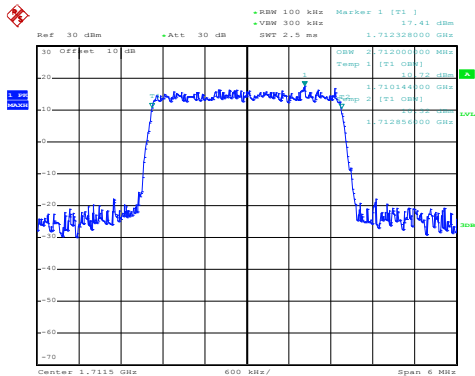


Date: 23.APR.2020 09:32:53

Highest channel

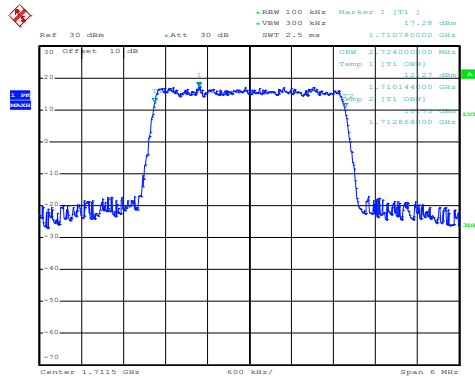
### LTE Band 4: 99% Occupancy bandwidth BW: 3MHz

#### 16QAM



Date: 23.APR.2020 09:33:43

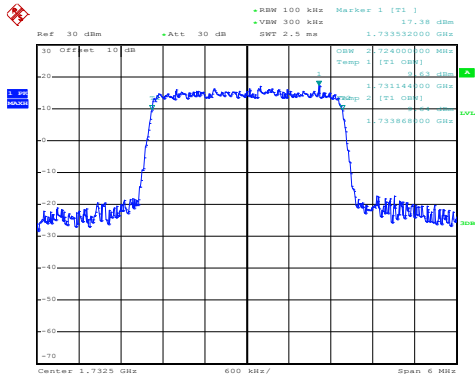
#### QPSK



Date: 23.APR.2020 09:33:37

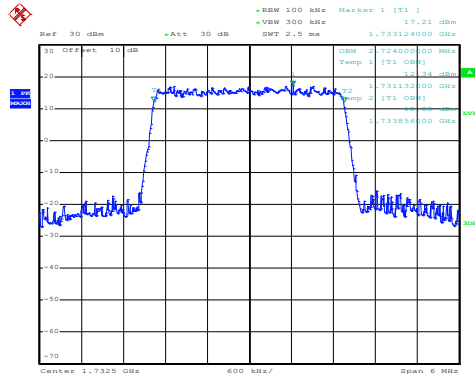
#### Lowest channel

#### 16QAM



Date: 23.APR.2020 09:34:11

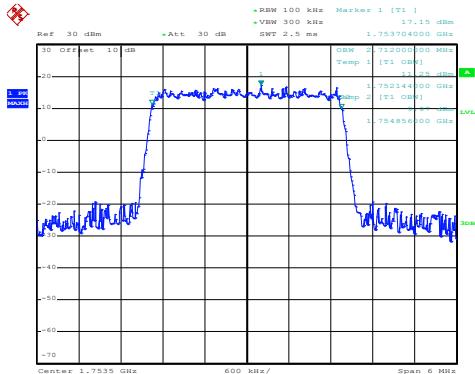
#### QPSK



Date: 23.APR.2020 09:34:33

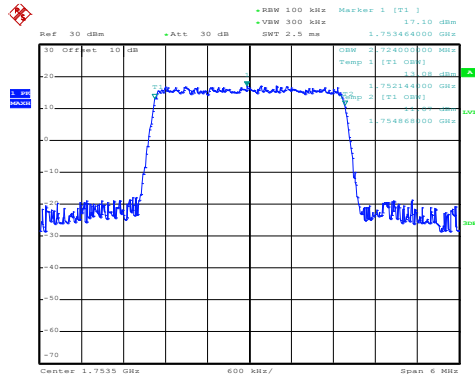
#### Middle channel

#### 16QAM



Date: 23.APR.2020 09:35:19

#### QPSK



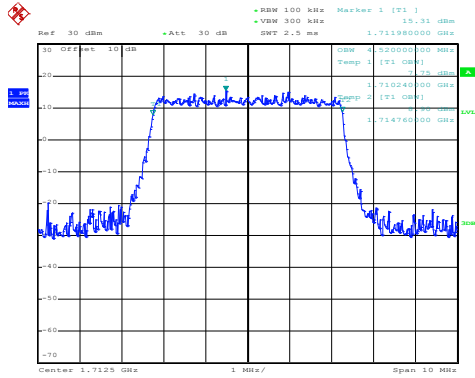
Date: 23.APR.2020 09:35:33

#### Highest channel



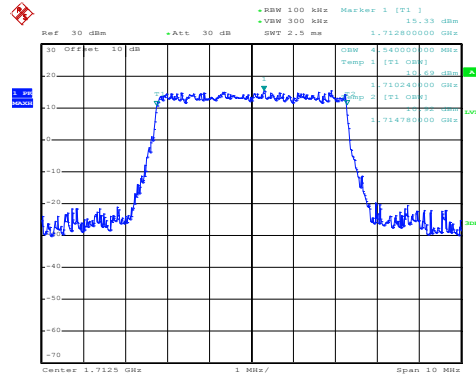
LTE Band 4: 99% Occupancy bandwidth  
BW: 5MHz

16QAM



Date: 23.APR.2020 09:37:16

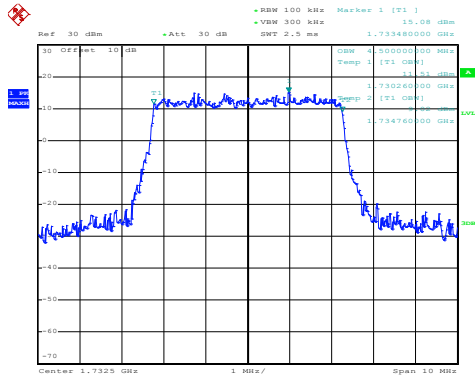
QPSK



Date: 23.APR.2020 09:37:07

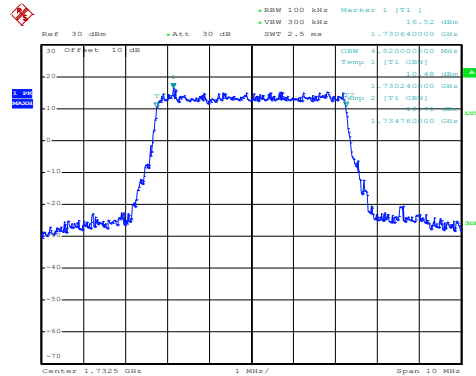
Lowest channel

16QAM



Date: 23.APR.2020 09:37:38

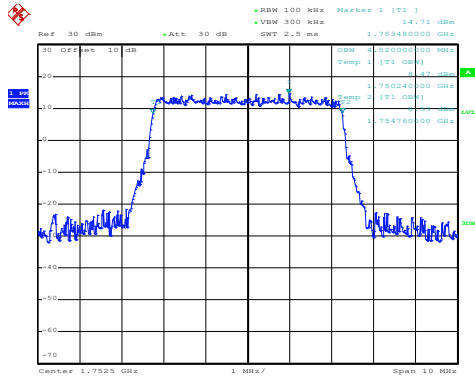
QPSK



Date: 23.APR.2020 09:37:31

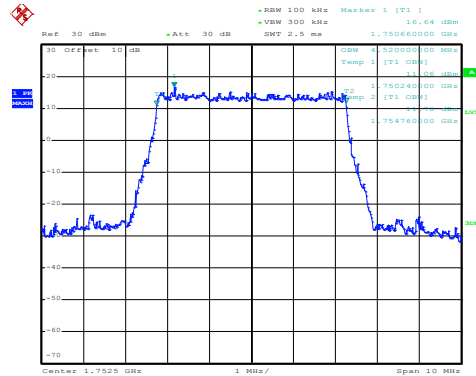
Middle channel

16QAM



Date: 23.APR.2020 09:38:44

QPSK

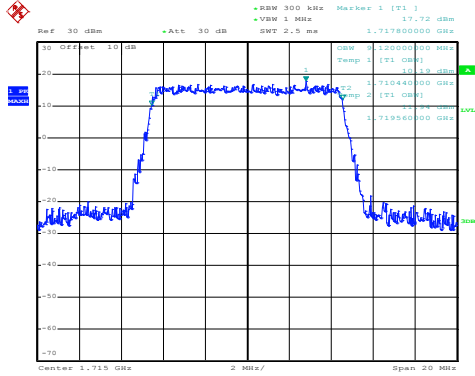


Date: 23.APR.2020 09:38:36

Highest channel

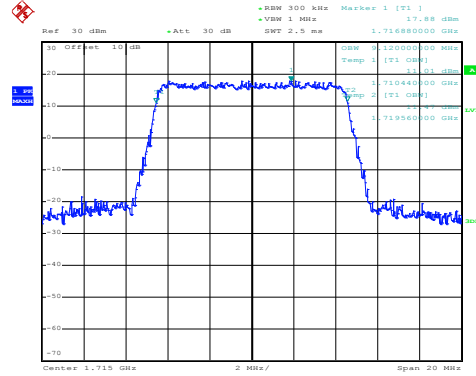
## LTE Band 4: 99% Occupancy bandwidth BW: 10MHz

### 16QAM



Date: 23.APR.2020 09:39:40

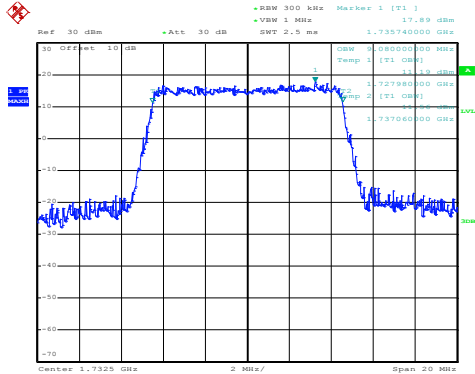
### QPSK



Date: 23.APR.2020 09:39:35

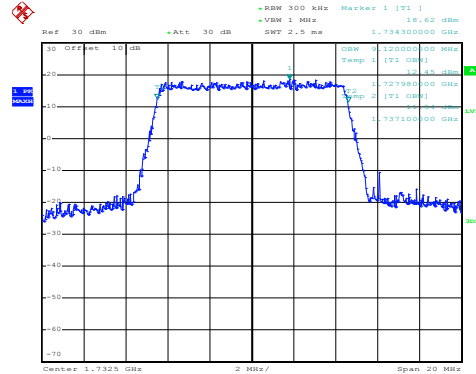
### Lowest channel

### 16QAM



Date: 23.APR.2020 09:40:39

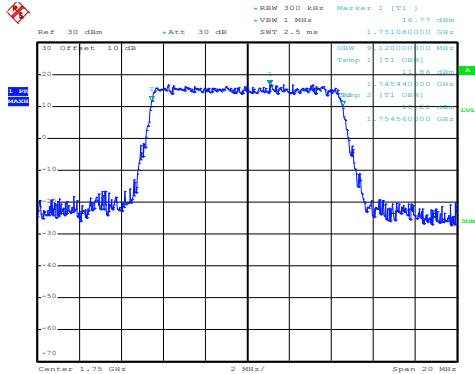
### QPSK



Date: 23.APR.2020 09:40:32

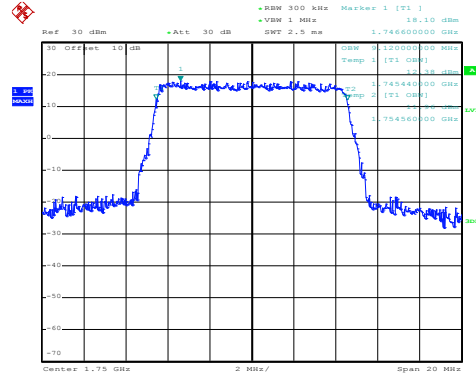
### Middle channel

### 16QAM



Date: 23.APR.2020 09:41:03

### QPSK

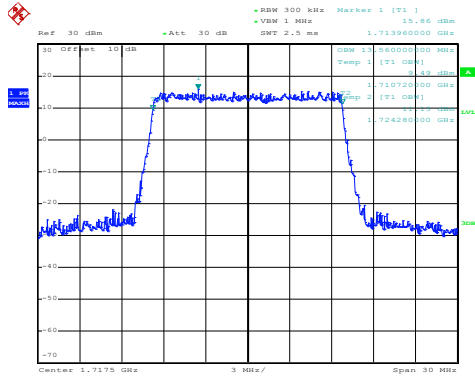


Date: 23.APR.2020 09:40:56

### Highest channel

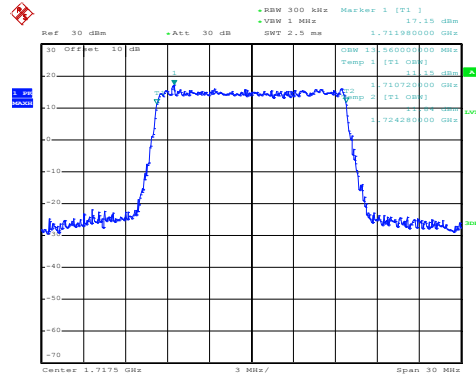
## LTE Band 4: 99% Occupancy bandwidth BW: 15MHz

### 16QAM



Date: 23.APR.2020 09:42:33

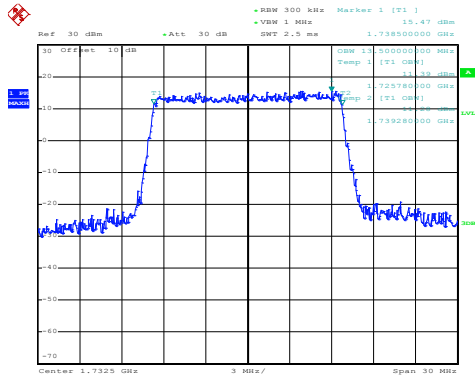
### QPSK



Date: 23.APR.2020 09:42:26

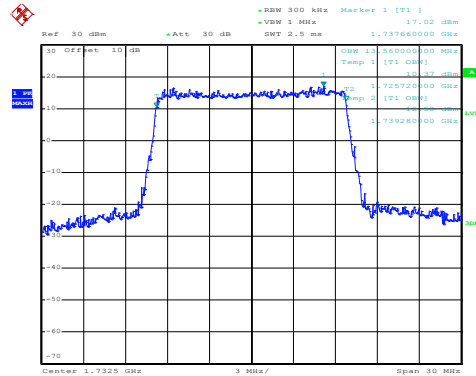
### Lowest channel

### 16QAM



Date: 23.APR.2020 09:43:05

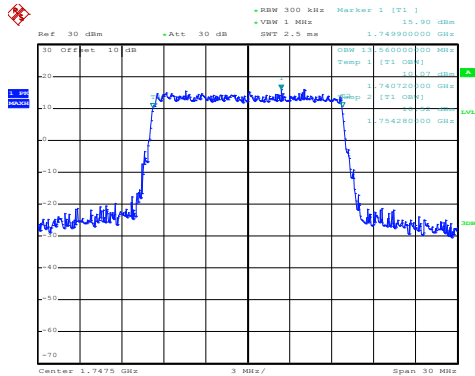
### QPSK



Date: 23.APR.2020 09:42:59

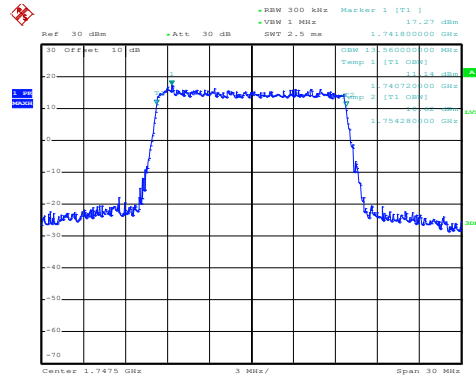
### Middle channel

### 16QAM



Date: 23.APR.2020 09:44:08

### QPSK

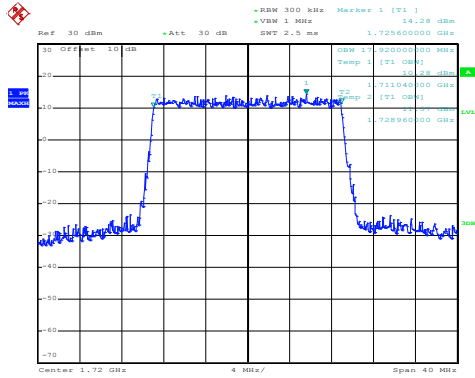


Date: 23.APR.2020 09:44:01

### Highest channel

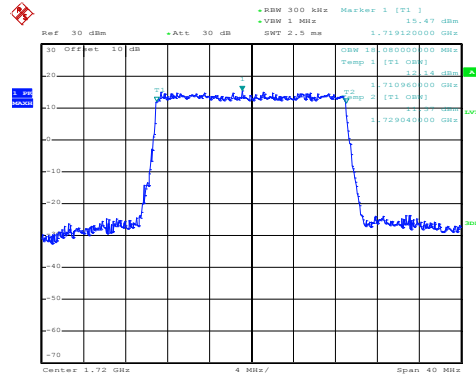
## LTE Band 4: 99% Occupancy bandwidth BW: 20MHz

16QAM



Date: 23.APR.2020 09:44:46

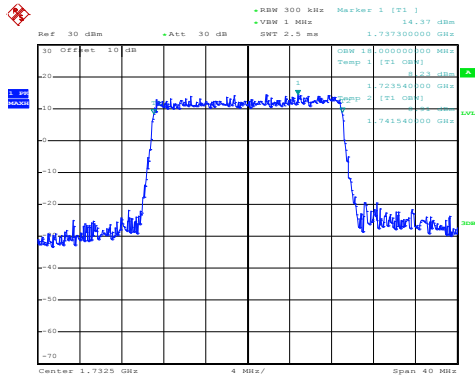
QPSK



Date: 23.APR.2020 09:44:41

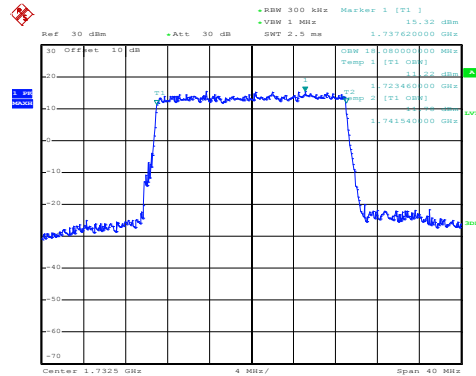
### Lowest channel

16QAM



Date: 23.APR.2020 09:45:54

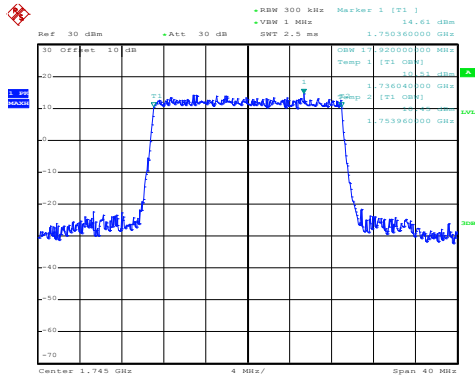
QPSK



Date: 23.APR.2020 09:45:49

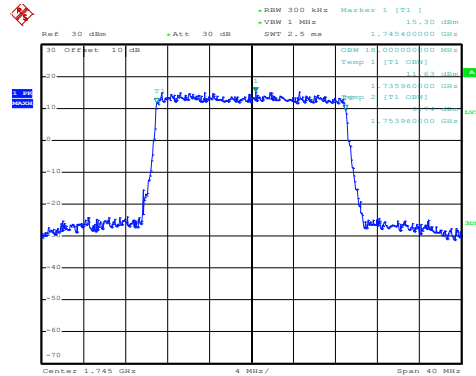
### Middle channel

16QAM



Date: 23.APR.2020 09:46:16

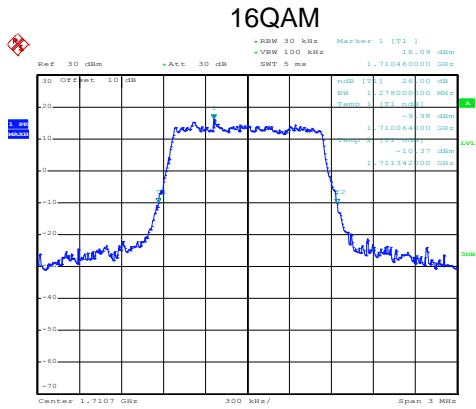
QPSK



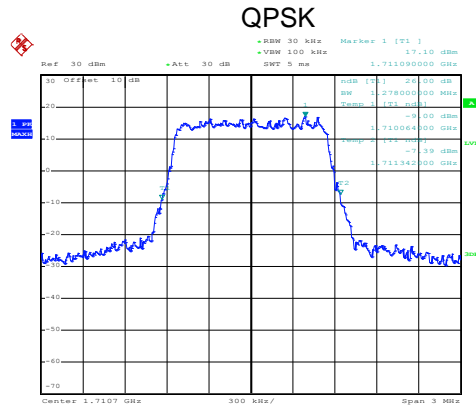
Date: 23.APR.2020 09:46:09

### Highest channel

## LTE Band 4: -26dBc bandwidth BW: 1.4MHz

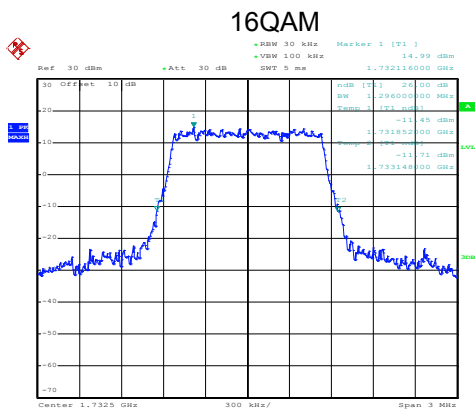


Date: 23.APR.2020 09:31:16

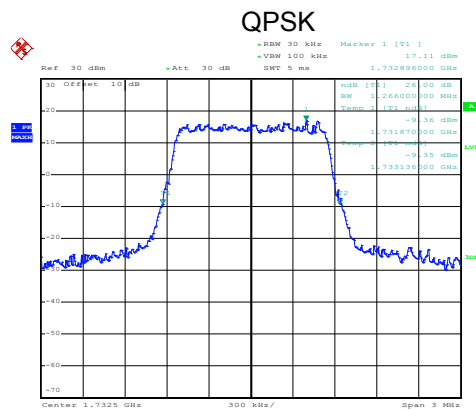


Date: 23.APR.2020 09:31:07

### Lowest channel

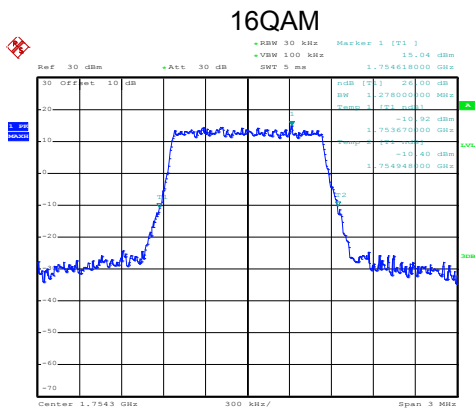


Date: 23.APR.2020 09:32:14

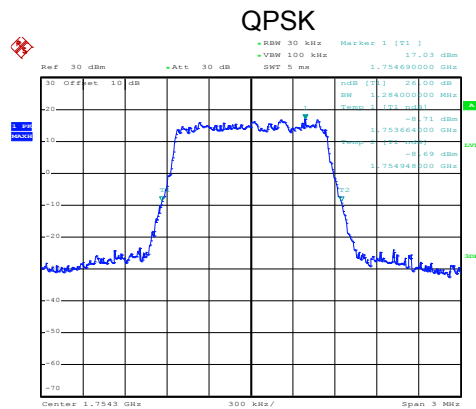


Date: 23.APR.2020 09:32:08

### Middle channel



Date: 23.APR.2020 09:32:14

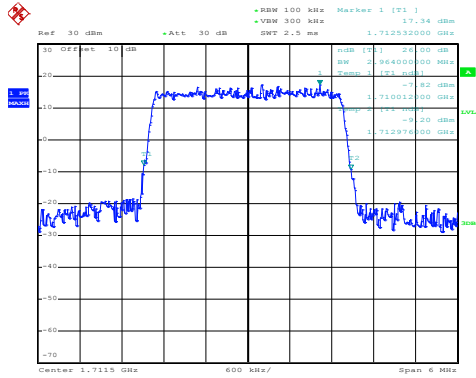


Date: 23.APR.2020 09:32:34

### Highest channel

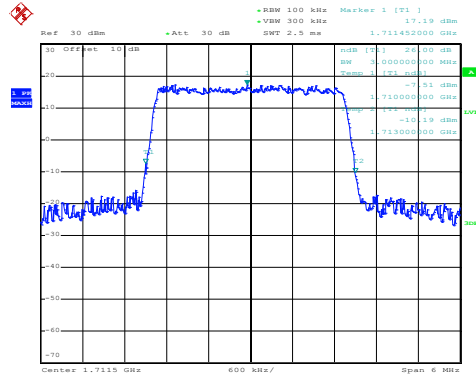
### LTE Band 4: -26dBc bandwidth BW: 3MHz

#### 16QAM



Date: 23.APR.2020 09:34:01

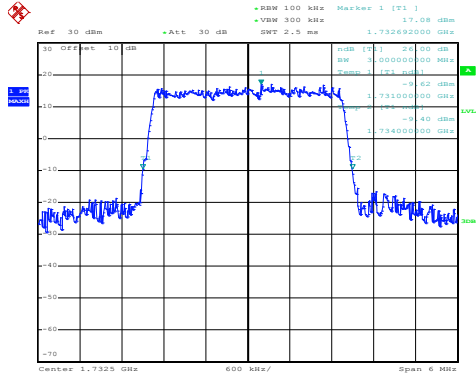
#### QPSK



Date: 23.APR.2020 09:33:55

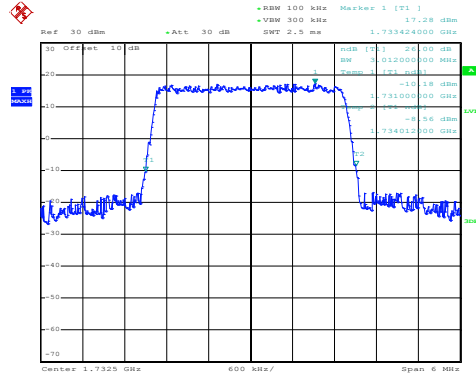
#### Lowest channel

#### 16QAM



Date: 23.APR.2020 09:34:59

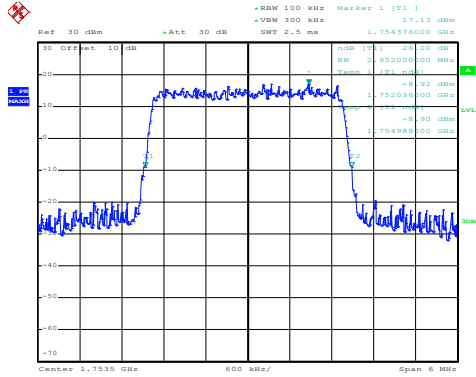
#### QPSK



Date: 23.APR.2020 09:34:52

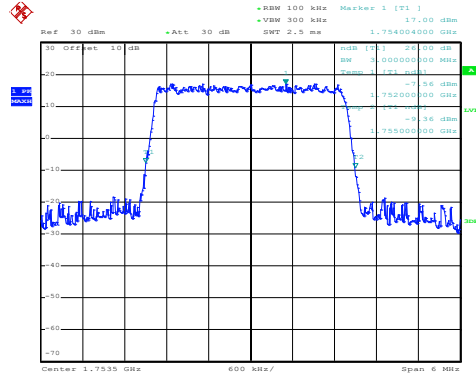
#### Middle channel

#### 16QAM



Date: 23.APR.2020 09:35:22

#### QPSK

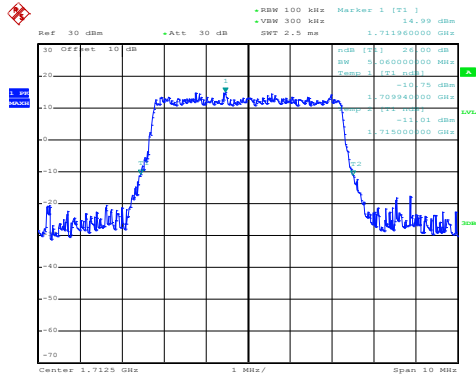


Date: 23.APR.2020 09:35:17

#### Highest channel

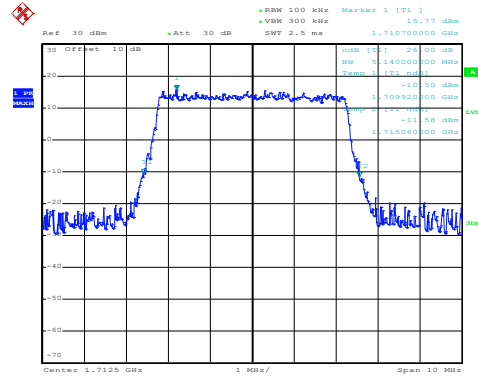
LTE Band 4: -26dBc bandwidth  
BW: 5MHz

16QAM



Date: 23.APR.2020 09:36:53

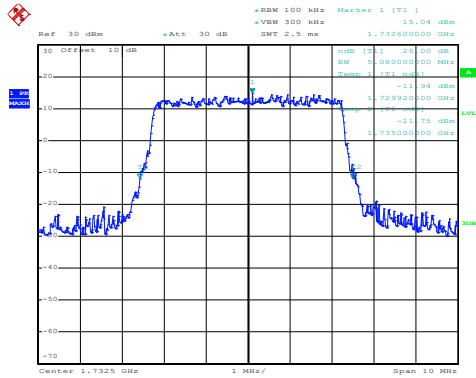
QPSK



Date: 23.APR.2020 09:36:45

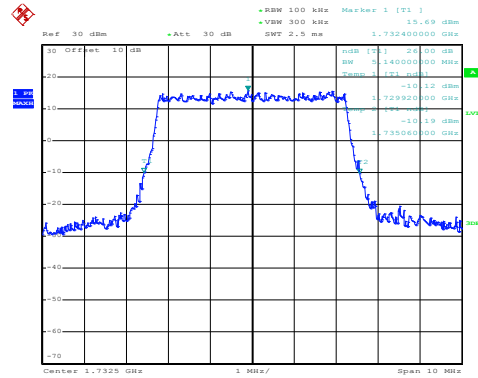
Lowest channel

16QAM



Date: 23.APR.2020 09:37:58

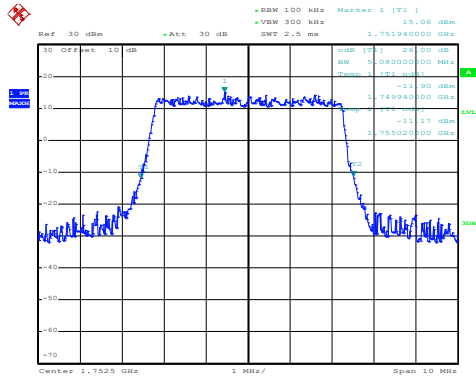
QPSK



Date: 23.APR.2020 09:37:50

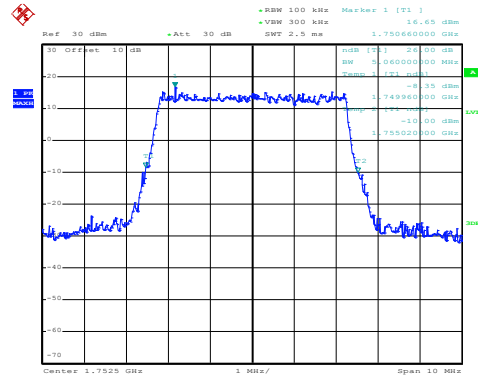
Middle channel

16QAM



Date: 23.APR.2020 09:38:25

QPSK

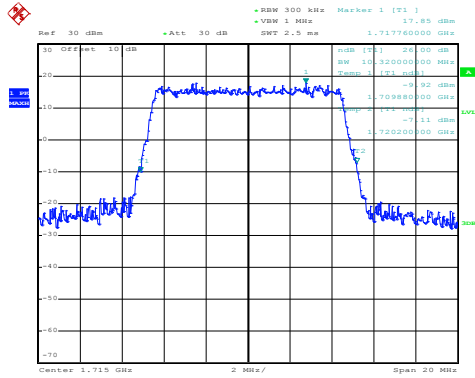


Date: 23.APR.2020 09:38:17

Highest channel

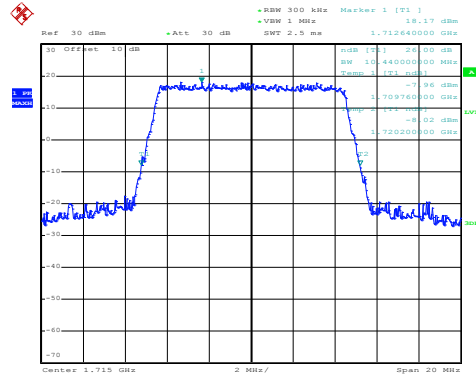
### LTE Band 4: -26dBc bandwidth BW: 10MHz

#### 16QAM



Date: 23.APR.2020 09:39:59

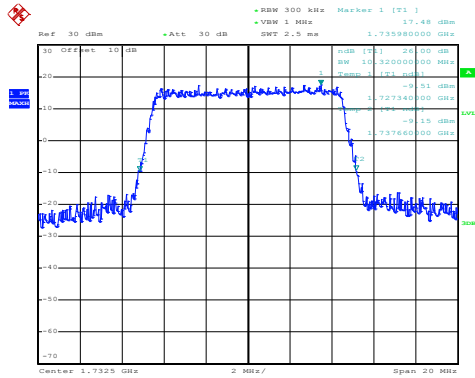
#### QPSK



Date: 23.APR.2020 09:39:51

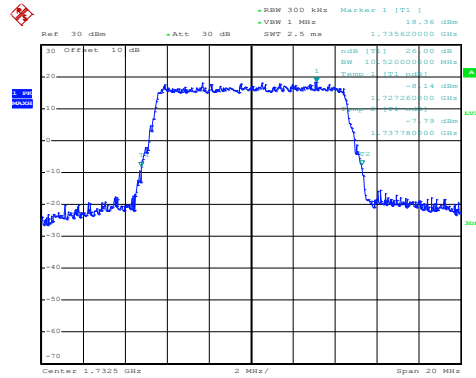
### Lowest channel

#### 16QAM



Date: 23.APR.2020 09:40:22

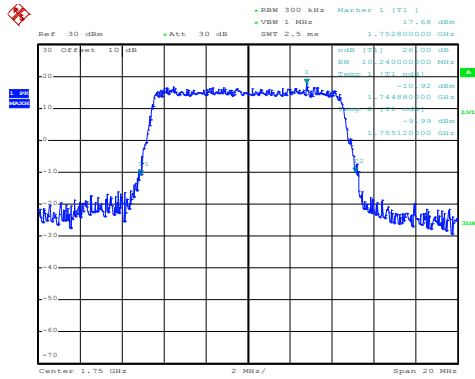
#### QPSK



Date: 23.APR.2020 09:40:14

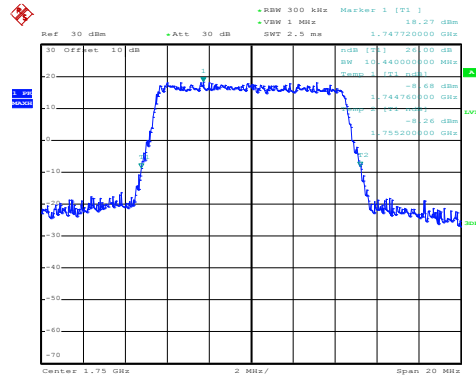
### Middle channel

#### 16QAM



Date: 23.APR.2020 09:41:21

#### QPSK



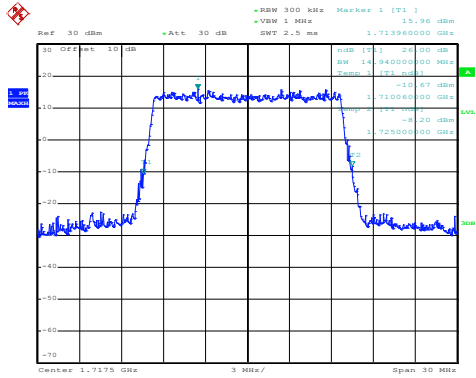
Date: 23.APR.2020 09:41:14

### Highest channel



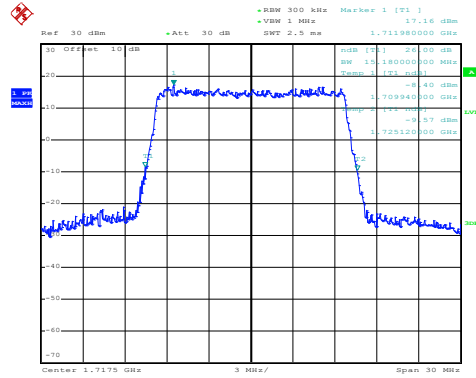
LTE Band 4: -26dBc bandwidth  
BW: 15MHz

16QAM



Date: 23.APR.2020 09:42:14

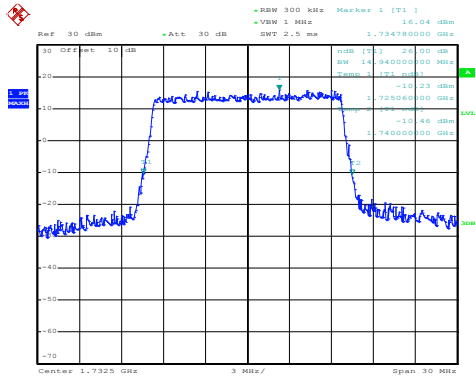
QPSK



Date: 23.APR.2020 09:42:08

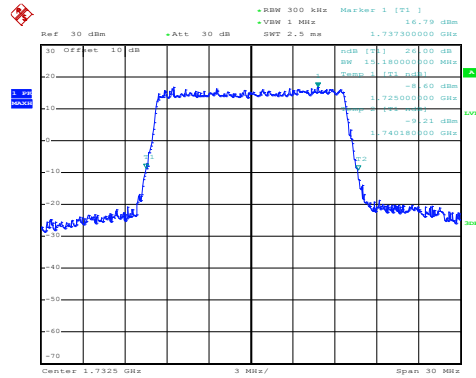
Lowest channel

16QAM



Date: 23.APR.2020 09:43:24

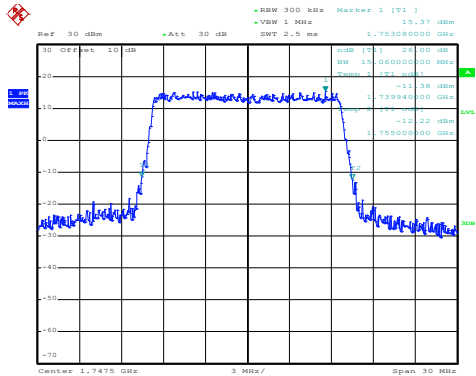
QPSK



Date: 23.APR.2020 09:43:17

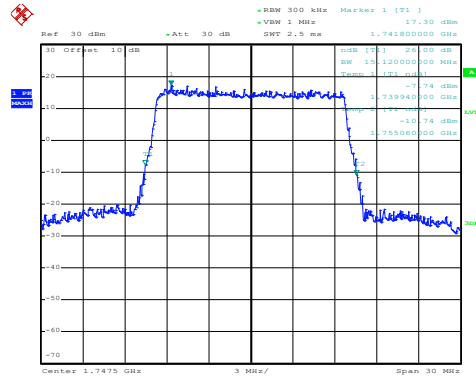
Middle channel

16QAM



Date: 23.APR.2020 09:43:49

QPSK

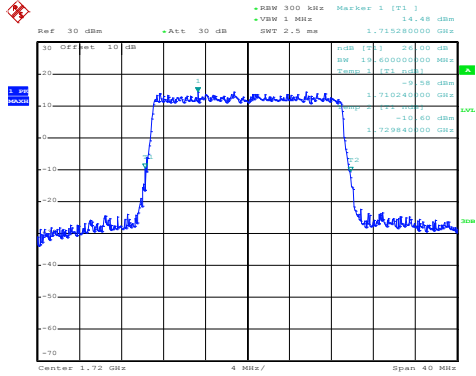


Date: 23.APR.2020 09:43:42

Highest channel

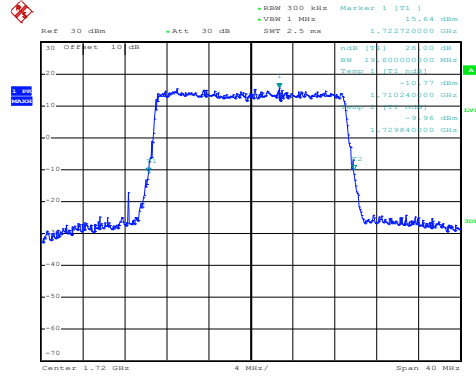
LTE Band 4: -26dBc bandwidth  
BW: 20MHz

16QAM



Date: 23.APR.2020 09:45:04

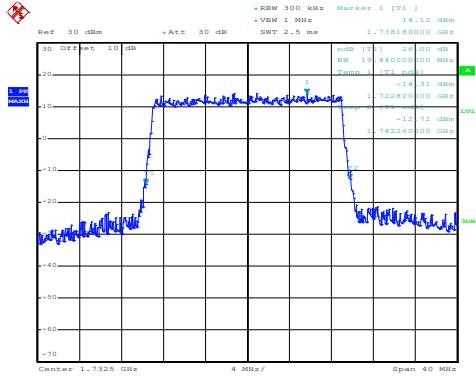
QPSK



Date: 23.APR.2020 09:44:56

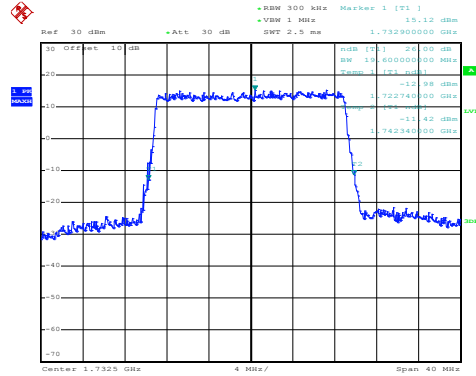
Lowest channel

16QAM



Date: 23.APR.2020 09:45:37

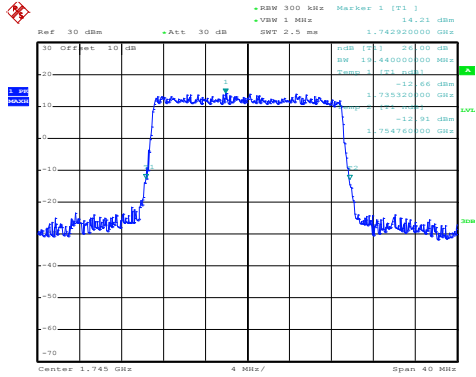
QPSK



Date: 23.APR.2020 09:45:31

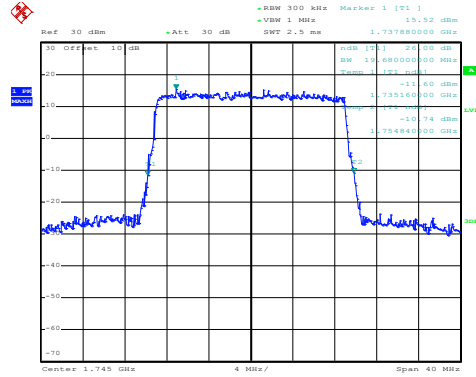
Middle channel

16QAM



Date: 23.APR.2020 09:46:31

QPSK

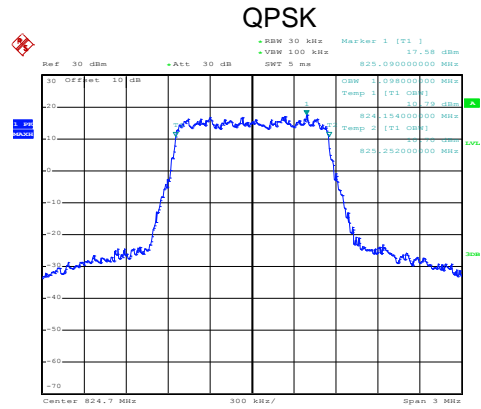
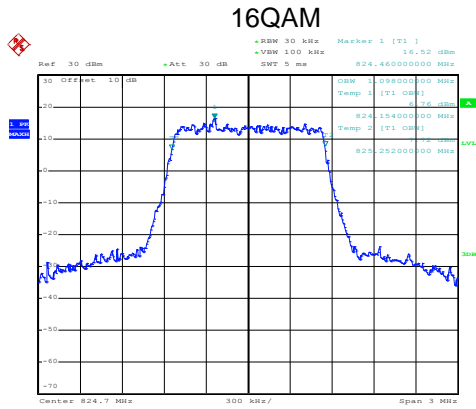


Date: 23.APR.2020 09:46:25

Highest channel

### LTE Band 5 part:

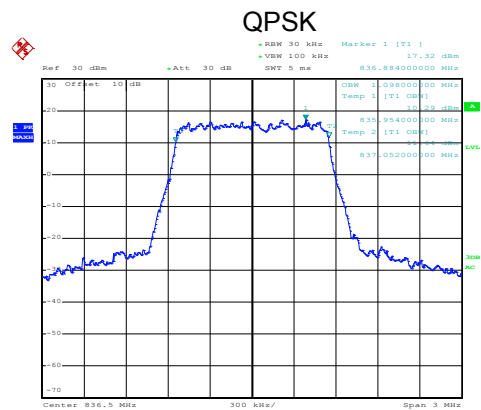
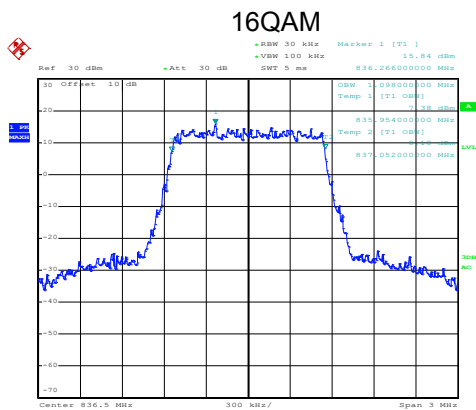
LTE Band 5: 99% Occupancy bandwidth  
BW: 1.4MHz



Date: 23.APR.2020 09:52:17

Date: 23.APR.2020 09:52:12

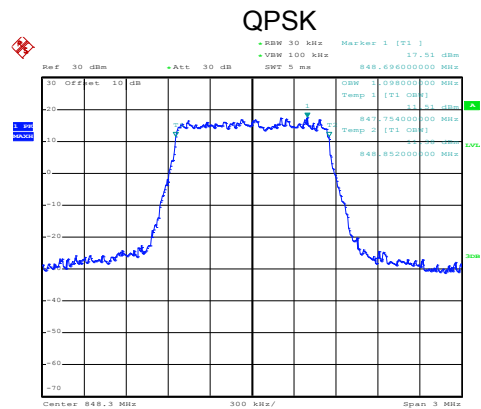
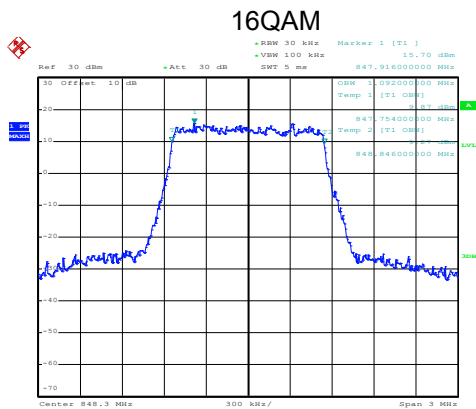
### Lowest channel



Date: 23.APR.2020 15:44:47

Date: 23.APR.2020 15:44:43

### Middle channel



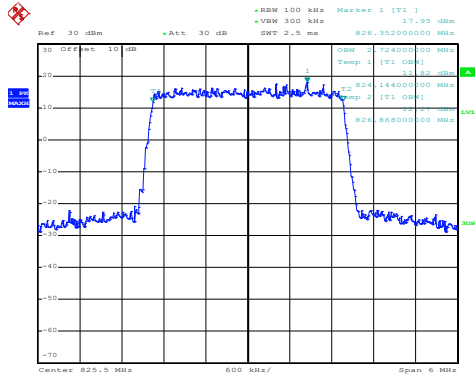
Date: 23.APR.2020 09:53:31

Date: 23.APR.2020 09:53:25

### Highest channel

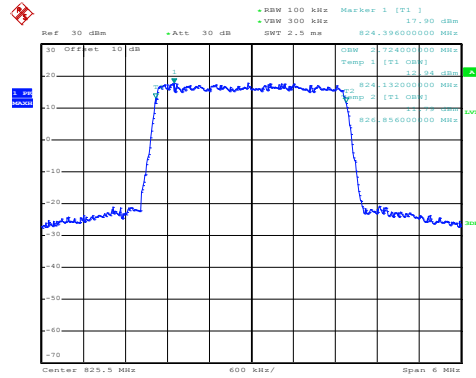
## LTE Band 5: 99% Occupy bandwidth BW: 3MHz

### 16QAM



Date: 23.APR.2020 09:54:24

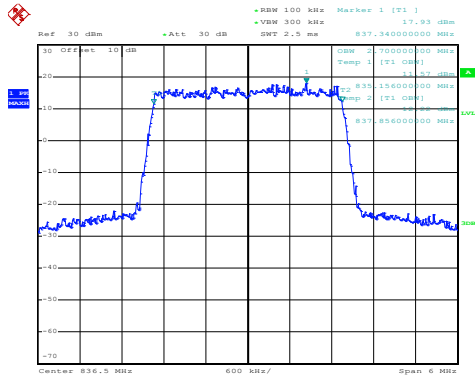
### QPSK



Date: 23.APR.2020 09:54:19

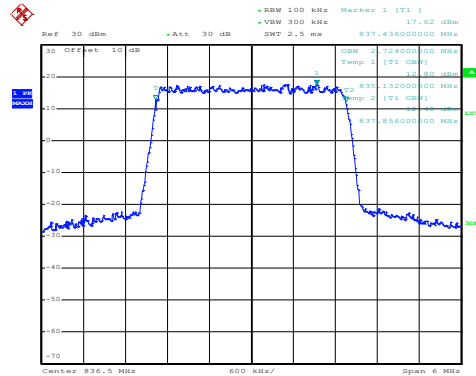
### Lowest channel

### 16QAM



Date: 23.APR.2020 09:55:24

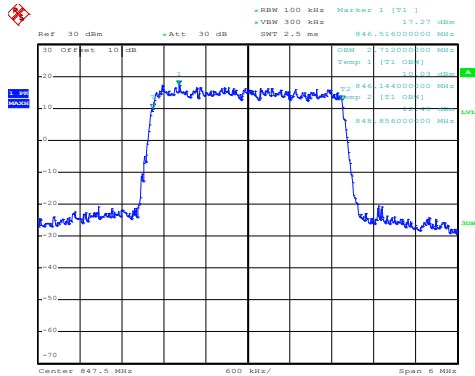
### QPSK



Date: 23.APR.2020 09:55:16

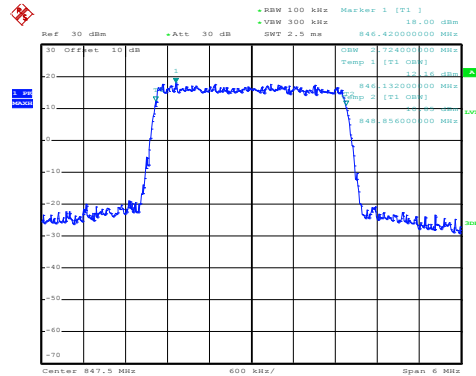
### Middle channel

### 16QAM



Date: 23.APR.2020 09:55:52

### QPSK

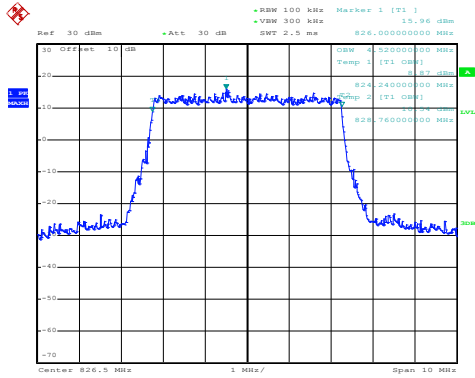


Date: 23.APR.2020 09:55:46

### Highest channel

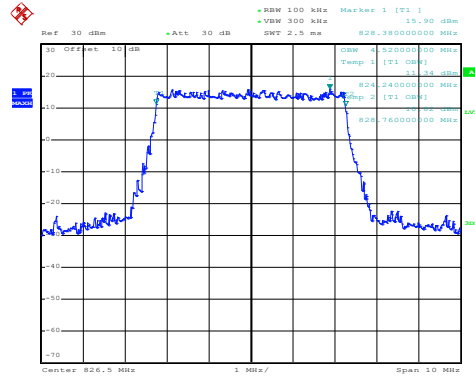
### LTE Band 5: 99% Occupancy bandwidth BW: 5MHz

#### 16QAM



Date: 23.APR.2020 09:57:15

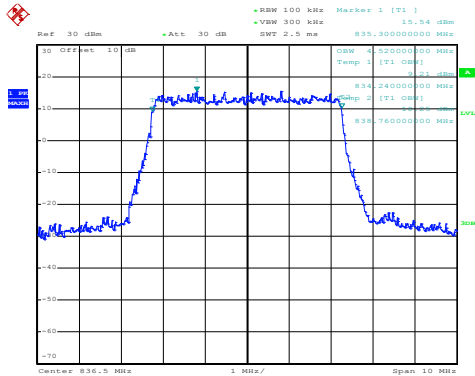
#### QPSK



Date: 23.APR.2020 09:57:08

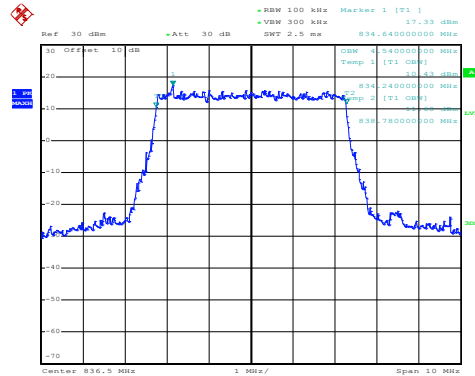
#### Lowest channel

#### 16QAM



Date: 23.APR.2020 09:58:27

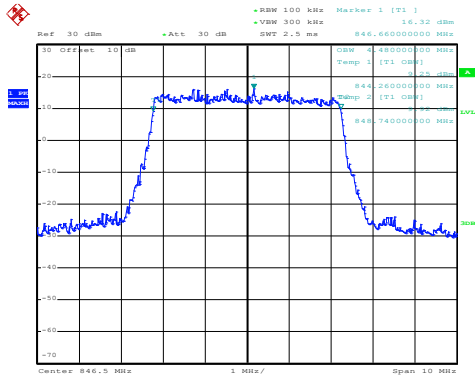
#### QPSK



Date: 23.APR.2020 09:58:17

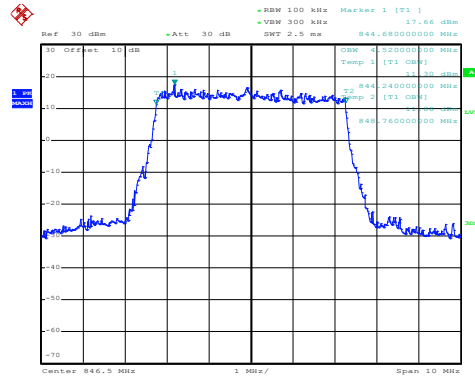
#### Middle channel

#### 16QAM



Date: 23.APR.2020 09:58:52

#### QPSK

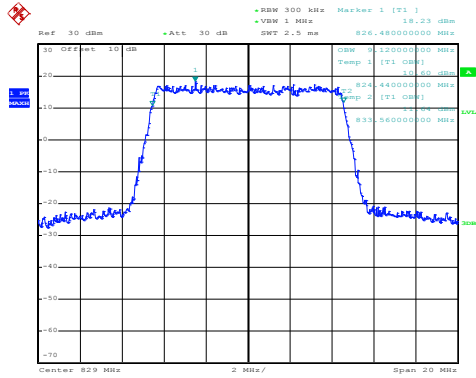


Date: 23.APR.2020 09:58:44

#### Highest channel

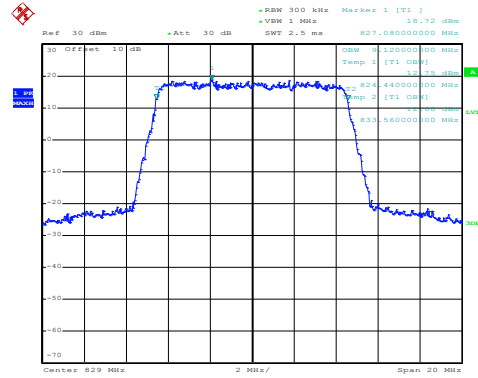
## LTE Band 5: 99% Occupancy bandwidth BW: 10MHz

16QAM



Date: 23.APR.2020 10:00:13

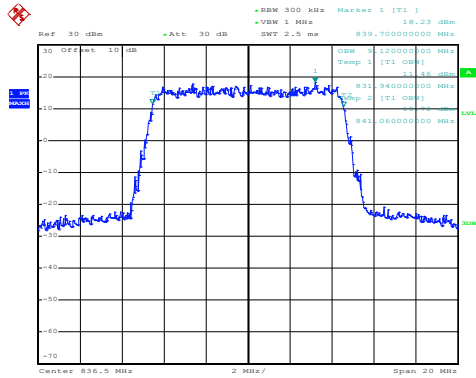
QPSK



Date: 23.APR.2020 10:00:06

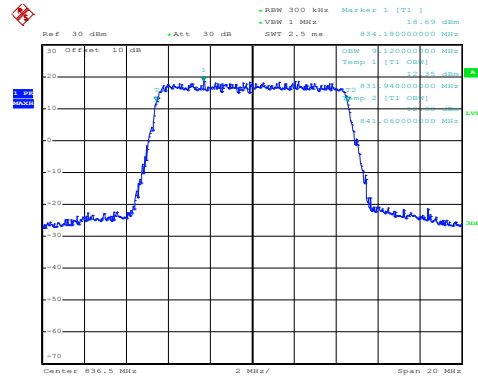
### Lowest channel

16QAM



Date: 23.APR.2020 10:00:35

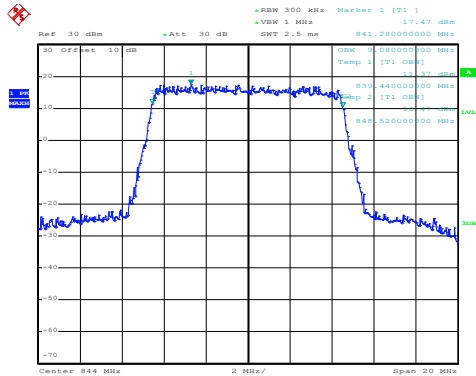
QPSK



Date: 23.APR.2020 10:00:30

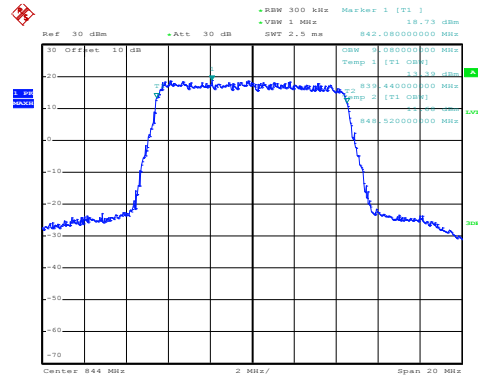
### Middle channel

16QAM



Date: 23.APR.2020 10:01:29

QPSK

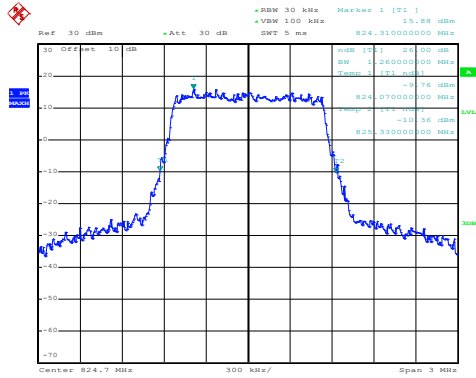


Date: 23.APR.2020 10:01:23

### Highest channel

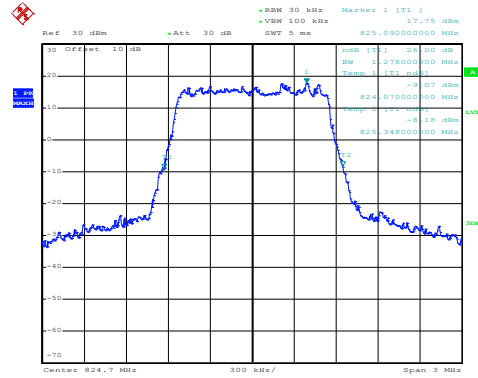
LTE Band 5: -26dBc bandwidth  
BW: 1.4MHz

16QAM



Date: 23.APR.2020 09:52:03

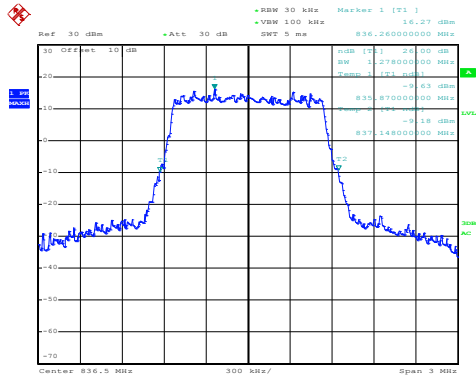
QPSK



Date: 23.APR.2020 09:51:58

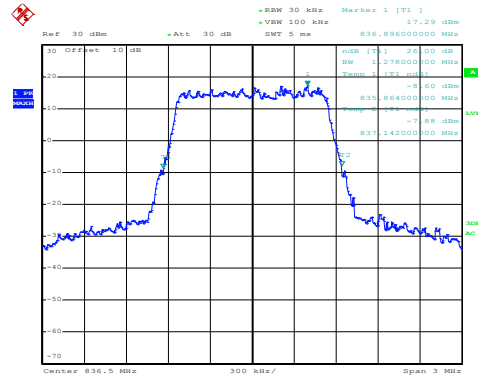
Lowest channel

16QAM



Date: 23.APR.2020 15:45:01

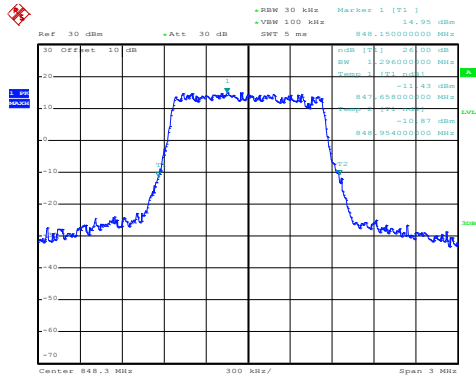
QPSK



Date: 23.APR.2020 15:44:57

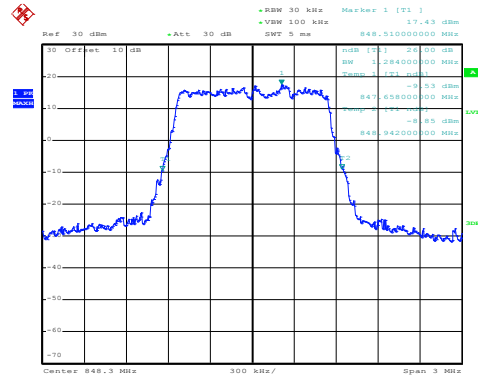
Middle channel

16QAM



Date: 23.APR.2020 09:53:15

QPSK

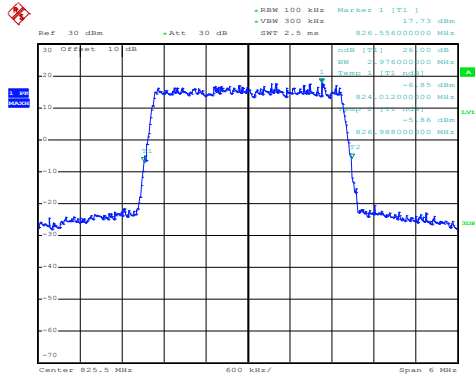


Date: 23.APR.2020 09:53:08

Highest channel

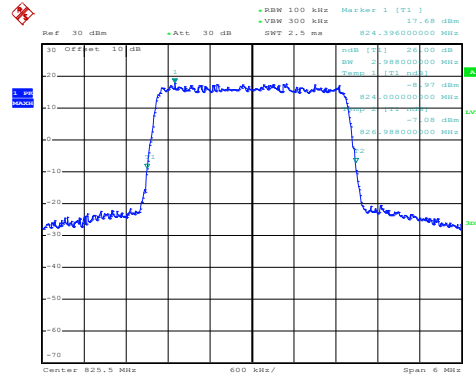
## LTE Band 5: -26dBc bandwidth BW: 3MHz

16QAM



Date: 23.APR.2020 09:54:42

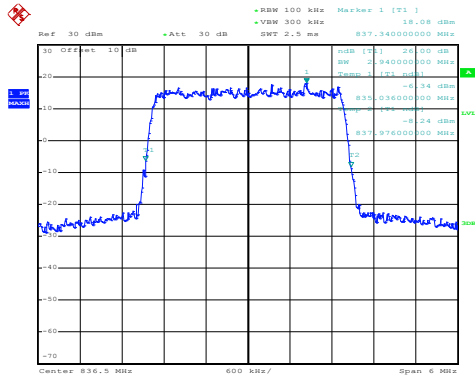
QPSK



Date: 23.APR.2020 09:54:34

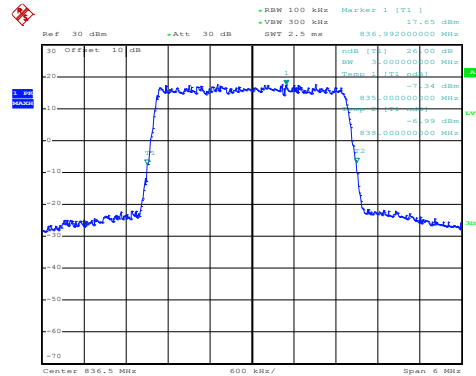
Lowest channel

16QAM



Date: 23.APR.2020 09:55:06

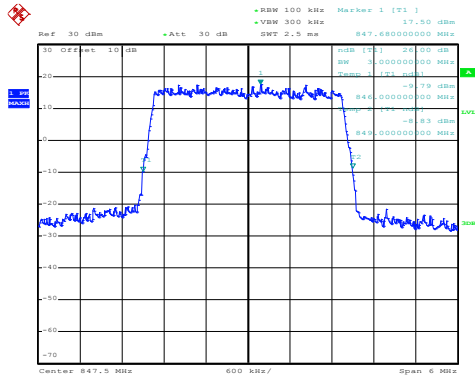
QPSK



Date: 23.APR.2020 09:55:00

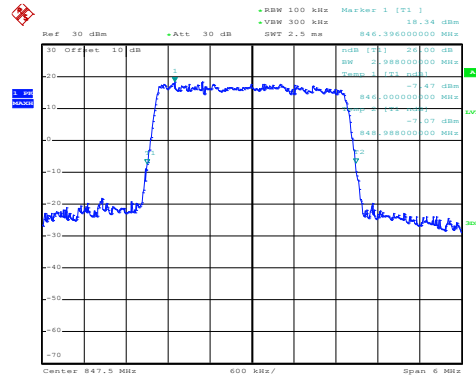
Middle channel

16QAM



Date: 23.APR.2020 09:56:10

QPSK



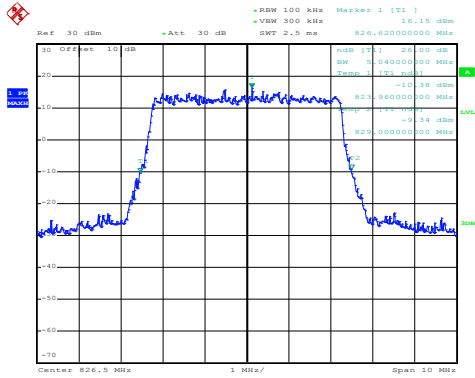
Date: 23.APR.2020 09:56:04

Highest channel



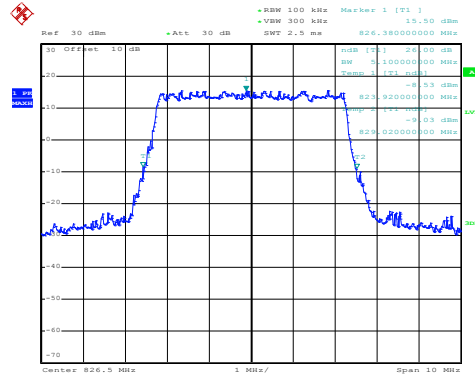
LTE Band 5: -26dBc bandwidth  
BW: 5MHz

16QAM



Date: 23.APR.2020 09:56:57

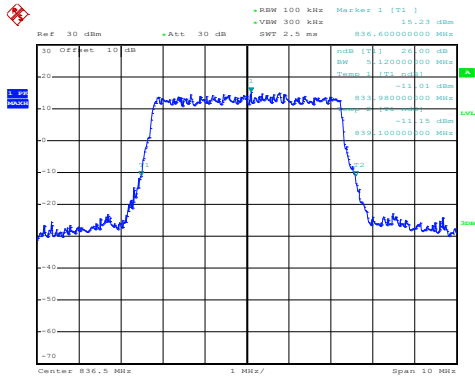
QPSK



Date: 23.APR.2020 09:56:48

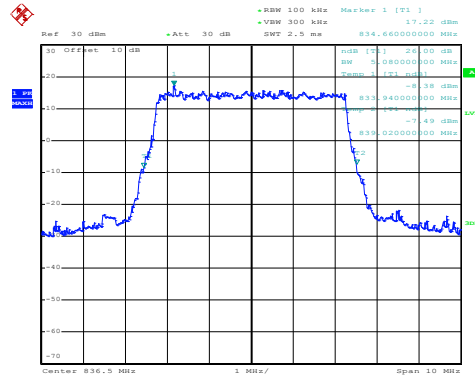
Lowest channel

16QAM



Date: 23.APR.2020 09:58:05

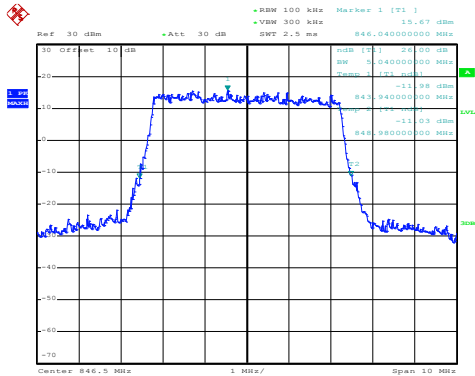
QPSK



Date: 23.APR.2020 09:57:57

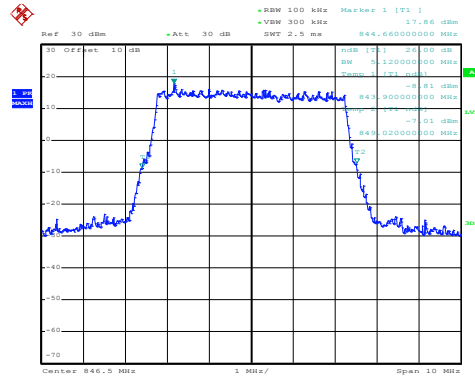
Middle channel

16QAM



Date: 23.APR.2020 09:59:12

QPSK



Date: 23.APR.2020 09:59:04

Highest channel