

FCC REPORT (LTE)

Applicant: Telecell Mobile (H.K) Ltd.

Address of Applicant: RM 801 Metro Ctr II, 21 Lam Hing Street Kln Bay Hongkong

Equipment Under Test (EUT)

Product Name: LTE smartphone

Model No.: TRIO F40LT

Trade mark: FIGO

FCC ID: 2ADX3F40LT

FCC CFR Title 47 Part 2

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: 22 Nov., 2017

Date of Test: 22 Nov., to 07 Dec., 2017

Date of report issued: 08 Dec., 2017

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 | 08 Dec., 2017 | Original |
| | | |
| | | |
| | | |
| | | |

Tested by:

Date:

08 Dec., 2017

Test Engineer

Reviewed by:

Date:

08 Dec., 2017

Project Engineer

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4. Test Summary

| Test Items | Section in CFR 47 | Result |
|---|---|--|
| RF Exposure (SAR) | Part 1.1307 Part 2.1093 | Passed (Please refer to SAR Report) |
| RF Output Power | Part 2.1046 Part 24.232 (c) Part 27.50 (c)(10) Part 27.50 (d)(4) | Pass |
| Peak-to-Average Ratio | Part 24.232 (d) Part 27.50(d)(5) | Pass |
| Modulation Characteristics | Part 2.1047 | Pass |
| 99% & -26 dB Occupied Bandwidth | Part 2.1049 Part 24.238(b) Part 27.53(g) Part 27.53(h) | Pass |
| Spurious Emissions at Antenna Terminal | Part 2.1051 Part 24.238 (a) Part 27.53 (g) Part 27.53 (h) | Pass |
| Field Strength of Spurious Radiation | Part 2.1053 Part 24.238 (a) Part 27.53 (g) Part 27.53 (h) | Pass |
| Out of band emission, Band Edge | Part 24.238 (a) Part 27.53 (g) Part 27.53 (h) | Pass |
| Frequency stability vs. temperature | Part 24.235 Part 27.54 Part 2.1055(a)(1)(b) | Pass |
| Frequency stability vs. voltage | Part 24.235 Part 27.54 Part 2.1055(d)(2) | Pass |
| Pass: The EUT complies with the essential requirements in the standard. | | |

5. General Information

5.1 Client Information

| | |
|-----------------------|--|
| Applicant: | Telecell Mobile (H.K) Ltd |
| Address: | RM 801 Metro Ctr II, 21 Lam Hing Street Kln Bay Hongkong |
| Manufacturer/Factory: | Telecell Mobile (H.K) Ltd |
| Address: | RM 801 Metro Ctr II, 21 Lam Hing Street Kln Bay Hongkong |

5.2 General Description of E.U.T.

| | |
|----------------------------|--|
| Product Name: | LTE smartphone |
| Model No.: | TRIO F40LT |
| Operation Frequency range: | LTE Band 2: TX: 1850MHz-1910MHz, RX: 1930MHz-1990MHz LTE Band 4: TX: 1710MHz-1755MHz, RX: 2110MHz-2155MHz LTE Band 12: TX: 699MHz-716MHz, RX: 729MHz-746MHz LTE Band 17: TX: 704MHz-716MHz, RX: 734MHz-746MHz |
| Modulation type: | QPSK, 16QAM |
| Antenna type: | Internal Antenna |
| Antenna gain: | LTE Band 2: 3.4 dBi LTE Band 4: 3.5 dBi LTE Band 12: 2.9 dBi LTE Band 17: 3.0 dBi |
| AC adapter: | Model: TRIO F40LT Input: AC100-240V, 50/60Hz, 150mA Output: DC 5.0V, 700mA |
| Power supply: | Rechargeable Li-ion Battery DC3.7V-1300mAh |

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 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 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: 3.7Vdc, Extreme: Low 3.5 Vdc, High 4.2 Vdc |
| 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 with power adaptor, earphone and Data cable. 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) | 4.24 dB (k=2) |
| Radiated Emission (30MHz ~ 1000MHz) | 4.35 dB (k=2) |
| Radiated Emission (1GHz ~ 18GHz) | 4.44 dB (k=2) |
| Radiated Emission (18GHz ~ 26.5GHz) | 4.56 dB (k=2) |

5.6 Related Submittal(s) / Grant (s)

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

5.7 Laboratory Facility

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

- **FCC - Registration No.: 727551**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC (Federal Communications Commission). The Registration No. is 727551.

- **IC - Registration No.: 10106A-1**

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.

- **CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

- **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>

5.8 Laboratory Location

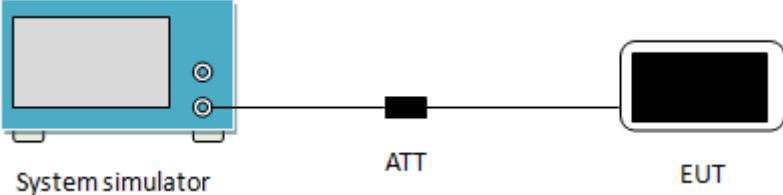
Shenzhen Zhongjian Nanfang Testing Co., Ltd.
 Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,
 Bao'an District, Shenzhen, Guangdong, China
 Tel: +86-755-23118282, Fax: +86-755-23116366
 Email: info@ccis-cb.com, Website: http://www.ccis-cb.com

5.9 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 | 02-25-2017 | 02-24-2018 |
| Biconical Antenna | SCHWARZBECK | VUBA9117 | 359 | 06-22-2017 | 06-21-2018 |
| Horn Antenna | SCHWARZBECK | BBHA9120D | 916 | 02-25-2017 | 02-24-2018 |
| Horn Antenna | SCHWARZBECK | BBHA9120D | 1805 | 02-25-2017 | 02-24-2018 |
| EMI Test Software | AUDIX | E3 | 6.110919b | N/A | N/A |
| Pre-amplifier | HP | 8447D | 2944A09358 | 02-25-2017 | 02-24-2018 |
| Pre-amplifier | CD | PAP-1G18 | 11804 | 02-25-2017 | 02-24-2018 |
| Spectrum analyzer | Rohde & Schwarz | FSP30 | 101454 | 02-25-2017 | 02-24-2018 |
| EMI Test Receiver | Rohde & Schwarz | ESRP7 | 101070 | 02-25-2017 | 02-24-2018 |
| Spectrum Analyzer | Agilent | N9020A | MY50510123 | 10-29-2017 | 10-28-2018 |
| Signal Generator | Rohde & Schwarz | SMX | 835454/016 | 02-25-2017 | 02-24-2018 |
| Signal Generator | R&S | SMR20 | 1008100050 | 02-25-2017 | 02-24-2018 |
| RF Switch Unit | MWRFTEST | MW200 | N/A | N/A | N/A |
| Cable | ZDECL | Z108-NJ-NJ-81 | 1608458 | 02-25-2017 | 02-24-2018 |
| Cable | MICRO-COAX | MFR64639 | K10742-5 | 02-25-2017 | 02-24-2018 |
| Cable | SUHNER | SUCOFLEX100 | 58193/4PE | 02-25-2017 | 02-24-2018 |
| DC Power Supply | XinNuoEr | WYK-10020K | 1409050110020 | 10-31-2017 | 10-30-2018 |
| Temperature Humidity Chamber | HengPu | HPGDS-500 | 20140828008 | 09-24-2017 | 09-23-2018 |
| Simulated Station | Rohde & Schwarz | CMW500 | 140493 | 06-24-2017 | 06-23-2018 |

6. Test results

6.1 Conducted Output Power

| | | | |
|-------------------|---|--|--|
| Test Requirement: | Part 24.232(c), part 27.50(c)(10), Part 27.50(d)(4) | | |
| Test Method: | ANSI/TIA-603-D 2010 | | |
| Limit: | LTE Band 2: 2W LTE Band 4: 1W LTE Band 12: 3W LTE Band 17: 3W | | |
| Test Setup: |  <p>The diagram illustrates the test setup. On the left is a blue rectangular box labeled "System simulator". A horizontal line extends from its right side to a small black square labeled "ATT". From the right side of the "ATT" square, another horizontal line extends to a black rectangular box labeled "EUT".</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 5.9 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 | 22.89 | 22.96 | 22.50 |
| | | | 1 | 2 | 22.88 | 22.88 | 22.29 |
| | | | 1 | 5 | 22.88 | 23.2 | 22.31 |
| | | | 3 | 0 | 22.97 | 22.98 | 22.49 |
| | | | 3 | 1 | 22.93 | 22.94 | 22.36 |
| | | | 3 | 2 | 23.01 | 22.96 | 22.31 |
| | | | 6 | 0 | 22.03 | 22.07 | 21.54 |
| | | 16QAM | 1 | 0 | 22.01 | 22.07 | 21.69 |
| | | | 1 | 2 | 21.97 | 21.94 | 21.42 |
| | | | 1 | 5 | 21.76 | 21.97 | 21.46 |
| | | | 3 | 0 | 21.86 | 21.96 | 21.62 |
| | | | 3 | 1 | 21.94 | 21.98 | 21.56 |
| | | | 3 | 2 | 21.95 | 21.90 | 21.45 |
| | | | 6 | 0 | 21.04 | 21.10 | 20.79 |
| LTE Band | Bandwidth (MHz) | Modulation | RB Size | RB Offset | Average Power (dBm) | | |
| | | | | | 18615 | 18900 | 19185 |
| | | | | | 1851.5MHz | 1880.0MHz | 1908.5MHz |
| | | | | | 22.66 | 22.79 | 22.69 |
| 2 | 3 | QPSK | 1 | 7 | 22.63 | 22.62 | 22.32 |
| | | | 1 | 14 | 22.71 | 22.60 | 21.99 |
| | | | 8 | 0 | 21.85 | 21.91 | 21.75 |
| | | | 8 | 4 | 21.89 | 21.90 | 21.59 |
| | | | 8 | 7 | 21.94 | 21.90 | 21.76 |
| | | | 15 | 0 | 21.81 | 21.91 | 21.60 |
| | | | 1 | 0 | 21.84 | 21.99 | 22.04 |
| | | 16QAM | 1 | 7 | 21.84 | 21.64 | 21.76 |
| | | | 1 | 14 | 22.14 | 21.89 | 21.16 |
| | | | 8 | 0 | 21.08 | 21.02 | 20.93 |
| | | | 8 | 4 | 20.92 | 20.97 | 20.78 |
| | | | 8 | 7 | 20.94 | 21.04 | 20.69 |
| | | | 15 | 0 | 20.86 | 21.00 | 20.67 |
| LTE Band | Bandwidth (MHz) | Modulation | RB Size | RB Offset | Average Power (dBm) | | |
| | | | | | 18625 | 18900 | 19175 |
| | | | | | 1852.5MHz | 1880.0MHz | 1907.5MHz |
| | | | | | 22.34 | 22.58 | 22.66 |
| 2 | 5 | QPSK | 1 | 12 | 21.98 | 22.02 | 21.94 |
| | | | 1 | 24 | 22.35 | 22.24 | 21.66 |
| | | | 12 | 0 | 21.29 | 21.37 | 21.40 |
| | | | 12 | 6 | 21.25 | 21.23 | 21.17 |
| | | | 12 | 11 | 21.35 | 21.28 | 21.03 |
| | | | 25 | 0 | 21.28 | 21.30 | 21.16 |
| | | | 1 | 0 | 21.28 | 21.67 | 21.65 |
| | | 16QAM | 1 | 12 | 21.51 | 21.66 | 21.02 |
| | | | 1 | 24 | 21.48 | 21.44 | 21.17 |
| | | | 12 | 0 | 20.32 | 20.44 | 20.52 |
| | | | 12 | 6 | 20.33 | 20.34 | 20.37 |
| | | | 12 | 11 | 20.48 | 20.49 | 20.31 |
| | | | 25 | 0 | 20.44 | 20.40 | 20.32 |

| 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 | 22.54 | 23.13 | 22.60 |
| | | | 1 | 24 | 22.61 | 22.99 | 22.90 |
| | | | 1 | 49 | 22.53 | 22.63 | 22.24 |
| | | | 25 | 0 | 21.81 | 22.08 | 21.91 |
| | | | 25 | 12 | 21.86 | 22.10 | 21.99 |
| | | | 25 | 24 | 21.88 | 22.09 | 21.91 |
| | | | 50 | 0 | 21.85 | 22.11 | 21.91 |
| | | 16QAM | 1 | 0 | 21.72 | 22.02 | 21.85 |
| | | | 1 | 24 | 21.92 | 22.47 | 22.28 |
| | | | 1 | 49 | 21.49 | 21.63 | 21.10 |
| | | | 25 | 0 | 20.89 | 21.12 | 20.91 |
| | | | 25 | 12 | 20.97 | 21.14 | 20.99 |
| | | | 25 | 24 | 20.99 | 21.03 | 21.04 |
| | | | 50 | 0 | 20.97 | 21.11 | 21.04 |
| 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 | 22.84 | 23.18 | 22.56 |
| | | | 1 | 37 | 22.69 | 22.61 | 22.44 |
| | | | 1 | 74 | 22.89 | 22.38 | 22.32 |
| | | | 36 | 0 | 21.92 | 21.98 | 21.51 |
| | | | 36 | 16 | 21.87 | 21.77 | 21.57 |
| | | | 36 | 35 | 21.98 | 21.98 | 21.72 |
| | | | 75 | 0 | 21.96 | 21.82 | 21.60 |
| | | 16QAM | 1 | 0 | 21.86 | 22.09 | 21.79 |
| | | | 1 | 37 | 21.67 | 21.88 | 22.07 |
| | | | 1 | 74 | 22.26 | 21.70 | 21.65 |
| | | | 36 | 0 | 20.97 | 21.04 | 20.61 |
| | | | 36 | 16 | 20.96 | 20.87 | 20.69 |
| | | | 36 | 35 | 21.03 | 20.76 | 20.85 |
| | | | 75 | 0 | 21.02 | 20.93 | 20.77 |
| 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 | 22.78 | 23.13 | 22.69 |
| | | | 1 | 49 | 22.65 | 22.57 | 22.36 |
| | | | 1 | 99 | 22.76 | 22.38 | 22.48 |
| | | | 50 | 0 | 21.85 | 22.02 | 21.51 |
| | | | 50 | 24 | 21.85 | 21.80 | 21.53 |
| | | | 50 | 49 | 21.86 | 21.64 | 21.71 |
| | | | 100 | 0 | 21.85 | 21.85 | 21.59 |
| | | 16QAM | 1 | 0 | 22.21 | 22.04 | 22.21 |
| | | | 1 | 49 | 22.42 | 22.31 | 21.60 |
| | | | 1 | 99 | 22.18 | 21.81 | 21.66 |
| | | | 50 | 0 | 20.93 | 21.08 | 20.66 |
| | | | 50 | 24 | 20.96 | 20.87 | 20.68 |
| | | | 50 | 49 | 21.04 | 20.75 | 20.85 |
| | | | 100 | 0 | 21.03 | 20.98 | 20.73 |

| 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 | 23.09 | 23.01 | 23.06 |
| | | | 1 | 2 | 23.07 | 22.71 | 23.05 |
| | | | 1 | 5 | 22.98 | 22.72 | 22.98 |
| | | | 3 | 0 | 23.10 | 22.73 | 23.10 |
| | | | 3 | 1 | 23.06 | 22.64 | 23.07 |
| | | | 3 | 2 | 22.93 | 22.67 | 23.08 |
| | | | 6 | 0 | 22.13 | 21.82 | 22.17 |
| | | 16QAM | 1 | 0 | 22.43 | 22.04 | 22.02 |
| | | | 1 | 2 | 21.97 | 22.13 | 22.10 |
| | | | 1 | 5 | 22.17 | 21.80 | 22.07 |
| | | | 3 | 0 | 21.96 | 21.80 | 21.93 |
| | | | 3 | 1 | 22.16 | 21.87 | 22.00 |
| | | | 3 | 2 | 22.08 | 21.95 | 22.11 |
| | | | 6 | 0 | 21.12 | 20.98 | 21.13 |
| LTE Band | Bandwidth (MHz) | Modulation | RB Size | RB Offset | Average Power (dBm) | | |
| | | | | | 19965 | 20175 | 20385 |
| | | | | | 1711.5MHz | 1732.5MHz | 1753.5MHz |
| | | | | | 22.90 | 23.02 | 23.04 |
| 4 | 3 | QPSK | 1 | 7 | 22.81 | 22.65 | 22.90 |
| | | | 1 | 14 | 22.93 | 22.63 | 22.99 |
| | | | 8 | 0 | 22.05 | 21.98 | 22.13 |
| | | | 8 | 4 | 22.06 | 21.90 | 22.11 |
| | | | 8 | 7 | 22.09 | 21.87 | 22.05 |
| | | | 15 | 0 | 22.05 | 21.91 | 22.14 |
| | | | 1 | 0 | 21.95 | 22.22 | 22.36 |
| | | 16QAM | 1 | 7 | 21.97 | 21.99 | 22.09 |
| | | | 1 | 14 | 21.93 | 21.96 | 22.00 |
| | | | 8 | 0 | 21.12 | 21.03 | 21.17 |
| | | | 8 | 4 | 21.09 | 21.10 | 21.14 |
| | | | 8 | 7 | 21.09 | 21.04 | 21.03 |
| | | | 15 | 0 | 21.16 | 21.13 | 21.10 |
| LTE Band | Bandwidth (MHz) | Modulation | RB Size | RB Offset | Average Power (dBm) | | |
| | | | | | 19975 | 20175 | 20375 |
| | | | | | 1712.5MHz | 1732.5MHz | 1752.5MHz |
| | | | | | 22.99 | 23.08 | 23.04 |
| 4 | 5 | QPSK | 1 | 12 | 22.51 | 22.24 | 22.95 |
| | | | 1 | 24 | 22.99 | 22.47 | 22.85 |
| | | | 12 | 0 | 21.73 | 21.65 | 22.19 |
| | | | 12 | 6 | 21.70 | 21.42 | 22.18 |
| | | | 12 | 11 | 21.82 | 21.43 | 22.13 |
| | | | 25 | 0 | 21.75 | 21.51 | 22.12 |
| | | | 1 | 0 | 22.13 | 22.22 | 22.17 |
| | | 16QAM | 1 | 12 | 21.79 | 21.47 | 22.14 |
| | | | 1 | 24 | 22.13 | 21.79 | 22.01 |
| | | | 12 | 0 | 20.76 | 20.72 | 21.11 |
| | | | 12 | 6 | 20.73 | 20.54 | 21.17 |
| | | | 12 | 11 | 20.94 | 20.53 | 21.07 |
| | | | 25 | 0 | 20.92 | 20.72 | 21.12 |

| 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 | 22.33 | 22.62 | 22.74 |
| | | | 1 | 24 | 22.71 | 22.22 | 22.99 |
| | | | 1 | 49 | 22.53 | 21.74 | 23.05 |
| | | | 25 | 0 | 21.74 | 21.64 | 22.12 |
| | | | 25 | 12 | 21.85 | 21.45 | 22.11 |
| | | | 25 | 24 | 21.85 | 21.27 | 22.14 |
| | | | 50 | 0 | 21.80 | 21.50 | 22.22 |
| | | 16QAM | 1 | 0 | 21.88 | 21.87 | 21.84 |
| | | | 1 | 24 | 21.78 | 21.47 | 21.15 |
| | | | 1 | 49 | 22.15 | 21.03 | 22.09 |
| | | | 25 | 0 | 20.92 | 20.72 | 21.17 |
| | | | 25 | 12 | 21.07 | 20.60 | 21.17 |
| | | | 25 | 24 | 21.04 | 20.42 | 21.09 |
| | | | 50 | 0 | 20.99 | 20.69 | 21.18 |
| LTE Band | Bandwidth (MHz) | Modulation | RB Size | RB Offset | Average Power (dBm) | | |
| | | | | | 20025 | 20175 | 20325 |
| | | | | | 1717.5MHz | 1732.5MHz | 1747.5MHz |
| | | | | | 22.53 | 23.01 | 22.57 |
| 4 | 15 | QPSK | 1 | 37 | 22.73 | 22.19 | 22.81 |
| | | | 1 | 74 | 22.64 | 22.07 | 22.97 |
| | | | 36 | 0 | 21.79 | 21.69 | 21.75 |
| | | | 36 | 16 | 21.88 | 21.36 | 22.02 |
| | | | 36 | 35 | 21.87 | 21.19 | 22.16 |
| | | | 75 | 0 | 21.83 | 21.45 | 22.05 |
| | | | 1 | 0 | 21.80 | 22.24 | 21.39 |
| | | 16QAM | 1 | 37 | 22.25 | 21.26 | 21.92 |
| | | | 1 | 74 | 21.75 | 21.89 | 22.52 |
| | | | 36 | 0 | 20.90 | 20.88 | 20.84 |
| | | | 36 | 16 | 21.05 | 20.57 | 21.11 |
| | | | 36 | 35 | 21.10 | 20.43 | 21.12 |
| | | | 75 | 0 | 21.01 | 20.65 | 21.15 |
| | | | 1 | 0 | 22.59 | 23.36 | 22.51 |
| LTE Band | Bandwidth (MHz) | QPSK | 1 | 49 | 22.74 | 22.15 | 22.51 |
| | | | 1 | 99 | 22.26 | 22.05 | 23.00 |
| | | | 50 | 0 | 21.85 | 21.76 | 21.53 |
| | | | 50 | 24 | 21.89 | 21.39 | 21.71 |
| | | | 50 | 49 | 21.75 | 21.18 | 22.11 |
| | | | 100 | 0 | 21.81 | 21.50 | 21.82 |
| | | | 1 | 0 | 22.01 | 22.37 | 21.82 |
| 4 | 20 | 16QAM | 1 | 49 | 22.57 | 21.53 | 22.25 |
| | | | 1 | 99 | 21.32 | 21.58 | 22.27 |
| | | | 50 | 0 | 21.04 | 20.93 | 20.66 |
| | | | 50 | 24 | 21.10 | 20.52 | 20.88 |
| | | | 50 | 49 | 20.93 | 20.37 | 21.09 |
| | | | 100 | 0 | 21.04 | 20.71 | 21.05 |

| 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 | 23.37 | 23.47 | 23.44 |
| | | | 1 | 2 | 23.48 | 23.47 | 23.50 |
| | | | 1 | 5 | 23.46 | 23.49 | 23.40 |
| | | | 3 | 0 | 22.49 | 22.40 | 22.43 |
| | | | 3 | 1 | 22.39 | 22.63 | 22.57 |
| | | | 3 | 2 | 22.47 | 22.59 | 22.63 |
| | | | 6 | 0 | 22.47 | 22.59 | 22.65 |
| | | 16QAM | 1 | 0 | 22.30 | 22.42 | 22.41 |
| | | | 1 | 2 | 22.77 | 22.47 | 22.38 |
| | | | 1 | 5 | 22.23 | 22.89 | 22.33 |
| | | | 3 | 0 | 22.39 | 22.59 | 22.60 |
| | | | 3 | 1 | 22.32 | 22.51 | 22.56 |
| | | | 3 | 2 | 22.52 | 22.59 | 22.58 |
| | | | 6 | 0 | 21.51 | 21.58 | 21.59 |
| 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 | 23.34 | 23.47 | 23.44 |
| | | | 1 | 7 | 23.40 | 23.56 | 23.58 |
| | | | 1 | 14 | 23.34 | 23.49 | 23.54 |
| | | | 8 | 0 | 22.48 | 22.60 | 22.58 |
| | | | 8 | 4 | 22.51 | 22.63 | 22.63 |
| | | | 8 | 7 | 22.51 | 22.65 | 22.60 |
| | | | 15 | 0 | 22.53 | 22.58 | 22.59 |
| | | 16QAM | 1 | 0 | 22.40 | 22.55 | 22.47 |
| | | | 1 | 7 | 22.29 | 22.98 | 22.41 |
| | | | 1 | 14 | 22.44 | 22.42 | 22.36 |
| | | | 8 | 0 | 21.45 | 21.61 | 21.53 |
| | | | 8 | 4 | 21.53 | 21.62 | 21.55 |
| | | | 8 | 7 | 21.70 | 21.65 | 21.55 |
| | | | 15 | 0 | 21.48 | 21.65 | 21.59 |
| 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 | 23.39 | 23.39 | 23.59 |
| | | | 1 | 12 | 23.42 | 23.35 | 23.12 |
| | | | 1 | 24 | 23.33 | 23.48 | 23.42 |
| | | | 12 | 0 | 22.51 | 22.62 | 22.50 |
| | | | 12 | 6 | 22.53 | 22.53 | 22.33 |
| | | | 12 | 11 | 22.56 | 22.58 | 22.33 |
| | | | 25 | 0 | 22.51 | 22.57 | 22.31 |
| | | 16QAM | 1 | 0 | 22.46 | 22.89 | 22.59 |
| | | | 1 | 12 | 22.42 | 22.90 | 22.37 |
| | | | 1 | 24 | 22.53 | 22.59 | 22.30 |
| | | | 12 | 0 | 21.50 | 21.64 | 21.56 |
| | | | 12 | 6 | 21.57 | 21.61 | 21.52 |
| | | | 12 | 11 | 21.60 | 21.68 | 21.53 |
| | | | 25 | 0 | 21.56 | 21.57 | 21.56 |

| 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 | 23.40 | 23.48 | 23.52 |
| | | | 1 | 24 | 23.34 | 23.34 | 23.13 |
| | | | 1 | 49 | 23.41 | 23.28 | 23.21 |
| | | | 25 | 0 | 22.57 | 22.60 | 22.66 |
| | | | 25 | 12 | 22.57 | 22.46 | 22.40 |
| | | | 25 | 24 | 22.56 | 22.48 | 22.44 |
| | | | 50 | 0 | 22.66 | 22.65 | 22.60 |
| | | 16QAM | 1 | 0 | 22.48 | 22.48 | 22.36 |
| | | | 1 | 24 | 22.81 | 22.85 | 22.67 |
| | | | 1 | 49 | 22.61 | 22.56 | 22.47 |
| | | | 25 | 0 | 21.58 | 21.51 | 21.58 |
| | | | 25 | 12 | 21.51 | 21.59 | 21.50 |
| | | | 25 | 24 | 21.59 | 21.62 | 21.63 |
| | | | 50 | 0 | 21.61 | 21.62 | 21.61 |

| 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 | 23.02 | 23.02 | 22.97 |
| | | | 1 | 12 | 23.09 | 23.04 | 23.09 |
| | | | 1 | 24 | 23.00 | 22.97 | 23.05 |
| | | | 12 | 0 | 22.04 | 22.15 | 22.12 |
| | | | 12 | 6 | 22.16 | 22.11 | 22.11 |
| | | | 12 | 11 | 22.17 | 22.14 | 22.18 |
| | | | 25 | 0 | 22.13 | 22.08 | 22.13 |
| | | 16QAM | 1 | 0 | 22.51 | 22.16 | 22.10 |
| | | | 1 | 12 | 22.54 | 21.89 | 22.15 |
| | | | 1 | 24 | 22.20 | 22.41 | 22.07 |
| | | | 12 | 0 | 21.19 | 21.16 | 21.17 |
| | | | 12 | 6 | 21.21 | 21.18 | 21.15 |
| | | | 12 | 11 | 21.19 | 21.18 | 21.14 |
| | | | 25 | 0 | 21.17 | 21.17 | 21.15 |
| 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 | 22.96 | 22.90 | 22.93 |
| | | | 1 | 24 | 23.02 | 22.94 | 22.98 |
| | | | 1 | 49 | 23.03 | 22.96 | 23.01 |
| | | | 25 | 0 | 22.09 | 22.01 | 22.01 |
| | | | 25 | 12 | 22.07 | 21.98 | 22.04 |
| | | | 25 | 24 | 22.12 | 22.03 | 22.05 |
| | | | 50 | 0 | 22.10 | 22.03 | 22.08 |
| | | 16QAM | 1 | 0 | 22.15 | 22.18 | 21.93 |
| | | | 1 | 24 | 22.18 | 22.13 | 22.43 |
| | | | 1 | 49 | 22.15 | 22.47 | 22.15 |
| | | | 25 | 0 | 21.12 | 21.04 | 21.08 |
| | | | 25 | 12 | 21.07 | 21.11 | 21.07 |
| | | | 25 | 24 | 21.11 | 21.00 | 21.19 |
| | | | 50 | 0 | 21.08 | 21.05 | 21.15 |

6.2 Peak-to-Average Ratio

| | |
|-------------------|--|
| Test Requirement: | Part 24.232 (d), Part 27.50(d)(5) |
| Test Method: | ANSI/TIA-603-D 2010 |
| Limit: | The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB. |
| Test Setup: | <p>System simulator</p> <p>Spectrum Analyzer</p> <p>EUT</p> <p>Splitter</p> <p>ATT</p> |
| Test Procedure: | <ol style="list-style-type: none"> 1 The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. 2 Set the CCDF option in spectrum analyzer, $RBW \geq OBW$, 3 Set the EUT working in highest power level, measured and recorded the 0.1% as PAPR level. 4 Repeat step 1~3 at other frequency and modulations. |
| Test Instruments: | Refer to section 5.9 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Passed |

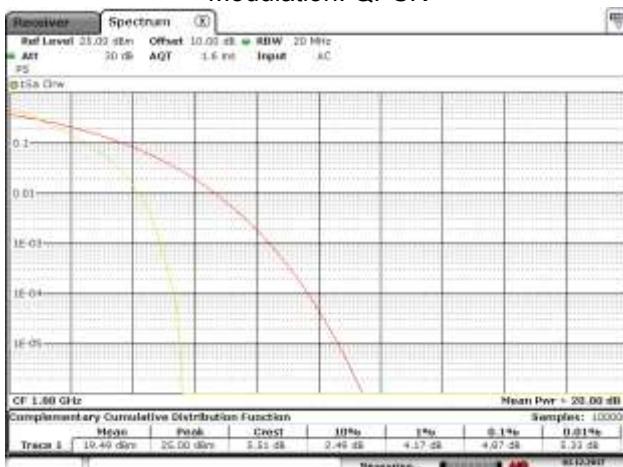
Measurement Data:

| Bandwidth | Modulation | RB Size | RB Offset | PAPR |
|------------------------------|------------|---------|-----------|------|
| LTE Band 2 (Middle Channel) | | | | |
| 20MHz | QPSK | 100 | 0 | 4.87 |
| | 16QAM | 100 | 0 | 5.86 |
| LTE Band 4 (Middle Channel) | | | | |
| 20MHz | QPSK | 100 | 0 | 4.96 |
| | 16QAM | 100 | 0 | 5.97 |
| LTE Band 12 (Middle Channel) | | | | |
| 10MHz | QPSK | 50 | 0 | 4.90 |
| | 16QAM | 50 | 0 | 5.74 |
| LTE Band 17 (Middle Channel) | | | | |
| 10MHz | QPSK | 50 | 0 | 5.04 |
| | 16QAM | 50 | 0 | 5.94 |

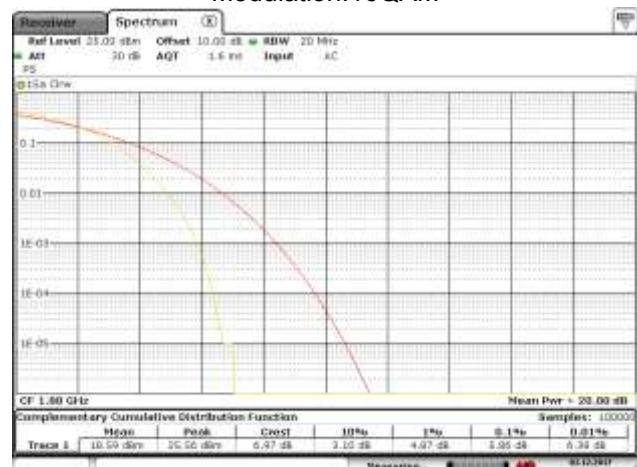
Test plots as below:

LTE Band 2 Middle channel

Modulation: QPSK

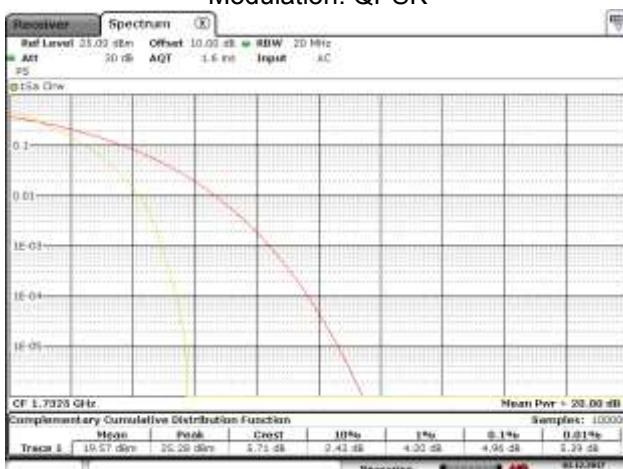


Modulation:16QAM

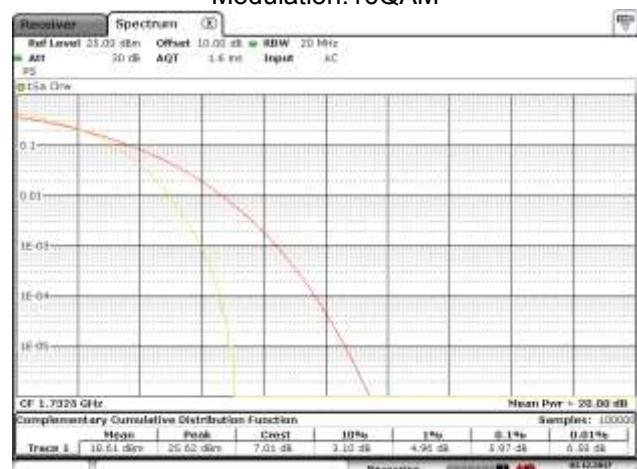


LTE Band 4 Middle channel

Modulation: QPSK



Modulation:16QAM



Date: 1.DEC.2017 16:57:19

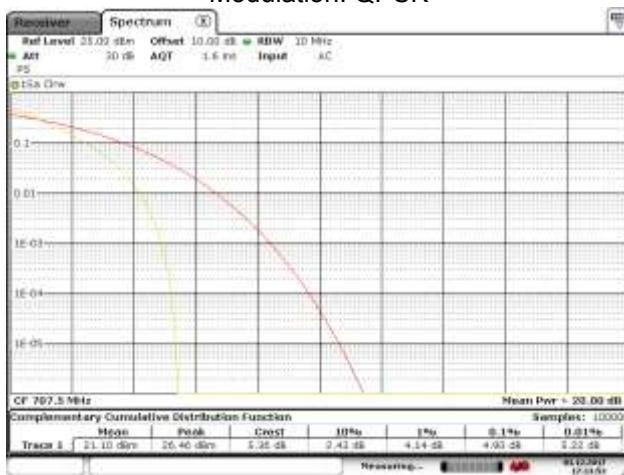
Date: 1.DEC.2017 16:57:12

Date: 1.DEC.2017 16:57:35

Date: 1.DEC.2017 16:57:43

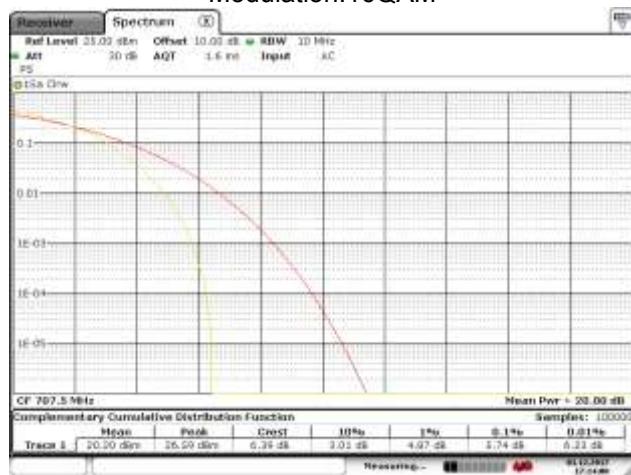
LTE Band 12 Middle channel

Modulation: QPSK



Date: 1.DEC.2017 17:13:53

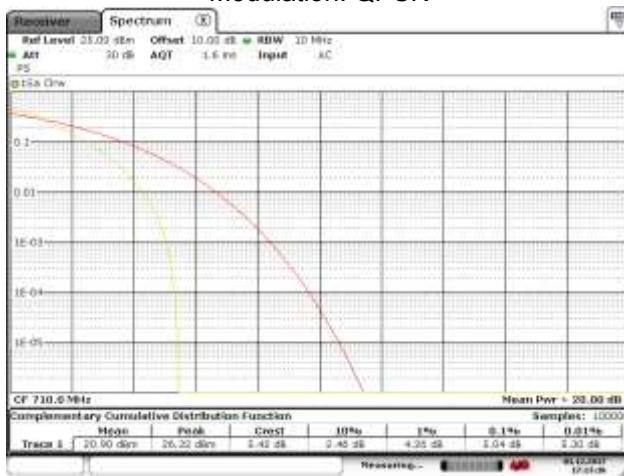
Modulation: 16QAM



Date: 1.DEC.2017 17:14:01

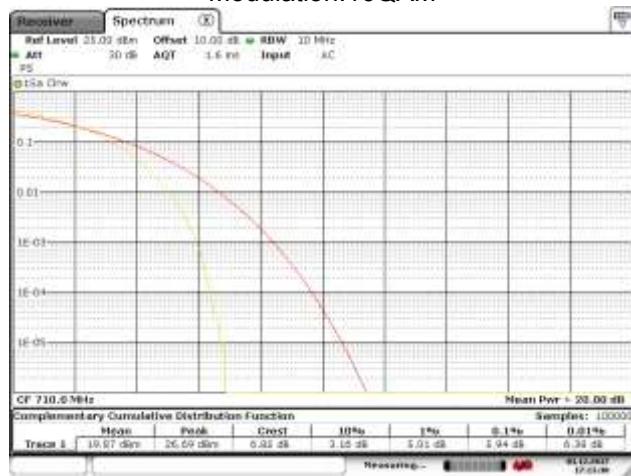
LTE Band 17 Middle channel

Modulation: QPSK



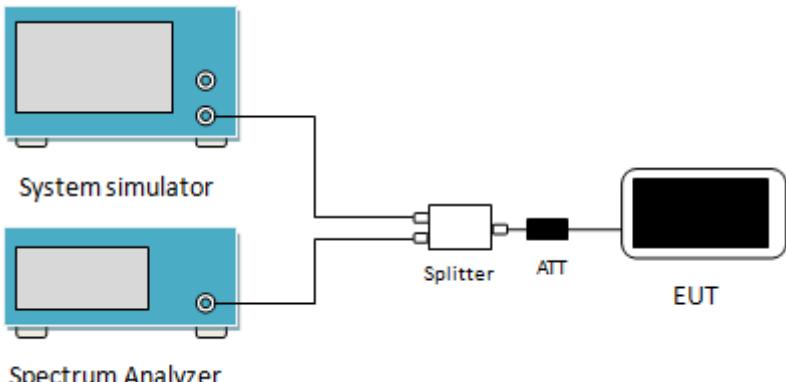
Date: 1.DEC.2017 17:13:17

Modulation: 16QAM



Date: 1.DEC.2017 17:13:31

6.3 Occupy Bandwidth

| | |
|-------------------|---|
| Test Requirement: | Part 24.238(b), Part 27.53(g), Part 27.53(h) |
| Test Method: | ANSI/TIA-603-D 2010 |
| Test Setup: |  <p>The diagram illustrates the test setup. A 'System simulator' (represented by a blue rectangle with two circular ports) is connected to a 'Spectrum Analyzer' (also represented by a blue rectangle with one circular port). A 'Splitter' (represented by a small rectangle) is connected between the two. An 'ATT' (Attenuator) is connected to the output of the Splitter. The 'EUT' (Equipment Under Test, represented by a black rectangle) is connected to the 'Spectrum Analyzer' through the ATT.</p> |
| Test Procedure: | <ol style="list-style-type: none"> 1. The EUT's output RF connector was connected with a short cable to the spectrum analyzer 2. RBW was set to about 1% ~ 5% of emission BW, VBW= 3 times RBW. 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. |
| Test Instruments: | Refer to section 5.9 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Passed |

Measurement Data:**LTE Band 2 part:**

| Bandwidth | Channel | Frequency(MHz) | Modulation | 99% OBW (kHz) | -26dBcEBW (kHz) |
|-----------|---------|----------------|------------|---------------|-----------------|
| 1.4MHz | 18607 | 1850.70 | 16QAM | 1098 | 1254 |
| | | | QPSK | 1092 | 1272 |
| | 18900 | 1880.00 | 16QAM | 1098 | 1236 |
| | | | QPSK | 1104 | 1260 |
| | 19193 | 1909.30 | 16QAM | 1092 | 1260 |
| | | | QPSK | 1104 | 1260 |
| 3MHz | 18615 | 1851.50 | 16QAM | 2724 | 3012 |
| | | | QPSK | 2736 | 3060 |
| | 18900 | 1880.00 | 16QAM | 2724 | 3000 |
| | | | QPSK | 2736 | 3060 |
| | 19185 | 1908.50 | 16QAM | 2724 | 3024 |
| | | | QPSK | 2736 | 3060 |
| 5MHz | 18625 | 1852.50 | 16QAM | 4520 | 4960 |
| | | | QPSK | 4520 | 4960 |
| | 18900 | 1880.00 | 16QAM | 4500 | 4960 |
| | | | QPSK | 4520 | 5020 |
| | 19175 | 1907.50 | 16QAM | 4500 | 4920 |
| | | | QPSK | 4520 | 5080 |
| 10MHz | 18650 | 1855.00 | 16QAM | 9080 | 10040 |
| | | | QPSK | 9120 | 10200 |
| | 18900 | 1880.00 | 16QAM | 9120 | 10080 |
| | | | QPSK | 9120 | 10160 |
| | 19150 | 1905.00 | 16QAM | 9080 | 10000 |
| | | | QPSK | 9080 | 10240 |
| 15MHz | 18675 | 1857.50 | 16QAM | 13500 | 14640 |
| | | | QPSK | 13620 | 14880 |
| | 18900 | 1880.00 | 16QAM | 13500 | 14820 |
| | | | QPSK | 13560 | 14820 |
| | 19125 | 1902.50 | 16QAM | 13560 | 14640 |
| | | | QPSK | 13560 | 14880 |
| 20MHz | 18700 | 1860.00 | 16QAM | 17920 | 19440 |
| | | | QPSK | 18000 | 19520 |
| | 18900 | 1880.00 | 16QAM | 17920 | 19040 |
| | | | QPSK | 18000 | 19520 |
| | 19100 | 1900.00 | 16QAM | 18000 | 19120 |
| | | | QPSK | 18000 | 19440 |

LTE Band 4 part:

| Bandwidth | Channel | Frequency(MHz) | Modulation | 99% OBW (kHz) | -26dBcEBW (kHz) |
|-----------|---------|----------------|------------|---------------|-----------------|
| 1.4MHz | 19957 | 1710.7 | 16QAM | 1092 | 1272 |
| | | | QPSK | 1098 | 1260 |
| | 20175 | 1732.5 | 16QAM | 1098 | 1248 |
| | | | QPSK | 1098 | 1260 |
| | 20393 | 1754.3 | 16QAM | 1092 | 1254 |
| | | | QPSK | 1098 | 1272 |
| 3MHz | 19965 | 1711.5 | 16QAM | 2724 | 2988 |
| | | | QPSK | 2736 | 3048 |
| | 20175 | 1732.5 | 16QAM | 2712 | 3012 |
| | | | QPSK | 2736 | 3036 |
| | 20385 | 1750.5 | 16QAM | 2712 | 2976 |
| | | | QPSK | 2736 | 3048 |
| 5MHz | 19975 | 1712.5 | 16QAM | 4520 | 4840 |
| | | | QPSK | 4520 | 4980 |
| | 20175 | 1732.5 | 16QAM | 4520 | 5020 |
| | | | QPSK | 4520 | 5060 |
| | 20375 | 1752.5 | 16QAM | 4520 | 4980 |
| | | | QPSK | 4540 | 5040 |
| 10MHz | 20000 | 1715.0 | 16QAM | 9040 | 10000 |
| | | | QPSK | 9080 | 10160 |
| | 20175 | 1732.5 | 16QAM | 9080 | 9960 |
| | | | QPSK | 9120 | 10080 |
| | 20350 | 1750.0 | 16QAM | 9080 | 10120 |
| | | | QPSK | 9080 | 10160 |
| 15MHz | 20025 | 1717.5 | 16QAM | 13500 | 14880 |
| | | | QPSK | 13560 | 15000 |
| | 20175 | 1732.5 | 16QAM | 13560 | 14700 |
| | | | QPSK | 13500 | 14940 |
| | 20325 | 1747.5 | 16QAM | 13560 | 14700 |
| | | | QPSK | 13560 | 14880 |
| 20MHz | 20050 | 1720.0 | 16QAM | 18000 | 19120 |
| | | | QPSK | 18080 | 19520 |
| | 20175 | 1732.5 | 16QAM | 17920 | 19200 |
| | | | QPSK | 18000 | 19440 |
| | 20300 | 1745.0 | 16QAM | 18000 | 19280 |
| | | | QPSK | 18000 | 19600 |

LTE Band 12 part:

| Bandwidth | Channel | Frequency(MHz) | Modulation | 99% OBW (kHz) | -26dBcEBW (kHz) |
|-----------|---------|----------------|------------|---------------|-----------------|
| 1.4MHz | 23017 | 699.7 | 16QAM | 1092 | 1254 |
| | | | QPSK | 1092 | 1254 |
| | 23095 | 707.5 | 16QAM | 1098 | 1278 |
| | | | QPSK | 1098 | 1254 |
| | 23173 | 715.3 | 16QAM | 1098 | 1260 |
| | | | QPSK | 1104 | 1260 |
| 3MHz | 23025 | 700.5 | 16QAM | 2724 | 2964 |
| | | | QPSK | 2736 | 3036 |
| | 23095 | 707.5 | 16QAM | 2724 | 2964 |
| | | | QPSK | 2724 | 3048 |
| | 23165 | 714.5 | 16QAM | 2724 | 2988 |
| | | | QPSK | 2736 | 3036 |
| 5MHz | 23035 | 701.5 | 16QAM | 4500 | 4860 |
| | | | QPSK | 4500 | 5000 |
| | 23095 | 707.5 | 16QAM | 4500 | 4920 |
| | | | QPSK | 4520 | 4920 |
| | 23155 | 713.5 | 16QAM | 4500 | 4900 |
| | | | QPSK | 4520 | 4940 |
| 10MHz | 23060 | 704.0 | 16QAM | 9120 | 10080 |
| | | | QPSK | 9120 | 10280 |
| | 23095 | 707.5 | 16QAM | 9120 | 10040 |
| | | | QPSK | 9080 | 10280 |
| | 23130 | 711.0 | 16QAM | 9080 | 10080 |
| | | | QPSK | 9080 | 10240 |

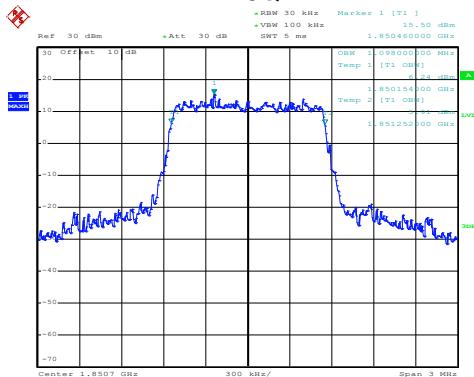
LTE Band 17 part:

| Bandwidth | Channel | Frequency (MHz) | Modulation | 99% OBW (kHz) | -26dB EBW (kHz) |
|-----------|---------|-----------------|------------|---------------|-----------------|
| 5MHz | 23755 | 706.5 | 16QAM | 4520 | 4940 |
| | | | QPSK | 4540 | 4920 |
| | 23790 | 710.0 | 16QAM | 4520 | 4980 |
| | | | QPSK | 4520 | 5040 |
| | 23825 | 713.5 | 16QAM | 4500 | 4900 |
| | | | QPSK | 4500 | 5020 |
| 10MHz | 23780 | 709.0 | 16QAM | 9080 | 10120 |
| | | | QPSK | 9040 | 10240 |
| | 23790 | 710.0 | 16QAM | 9120 | 10080 |
| | | | QPSK | 9080 | 10120 |
| | 23800 | 711.0 | 16QAM | 9080 | 10000 |
| | | | QPSK | 9080 | 10200 |

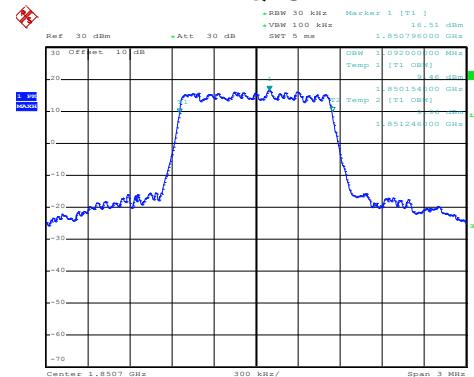
Test plot as follows:
LTE Band 2 part

99% Occupy bandwidth
 BW: 1.4MHz

16QAM



QPSK

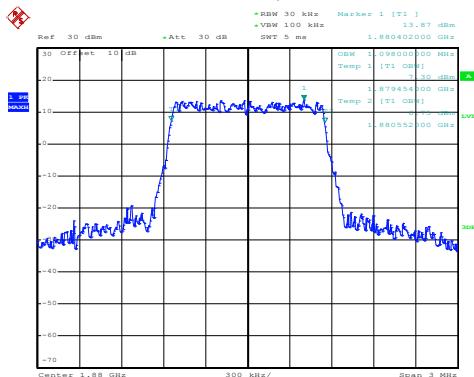


Date: 5.DEC.2017 14:17:02

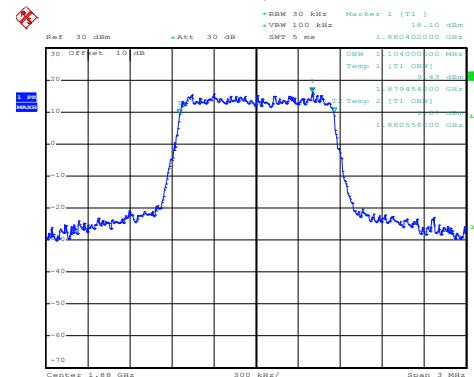
Date: 5.DEC.2017 14:16:57

Lowest channel

16QAM



QPSK

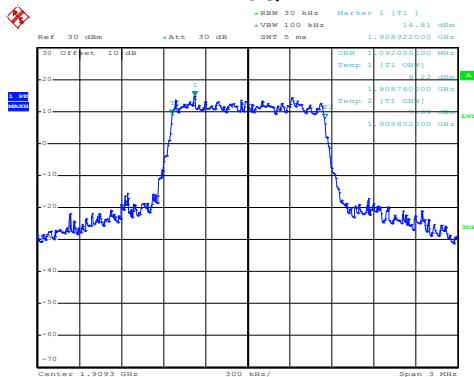


Date: 5.DEC.2017 14:17:58

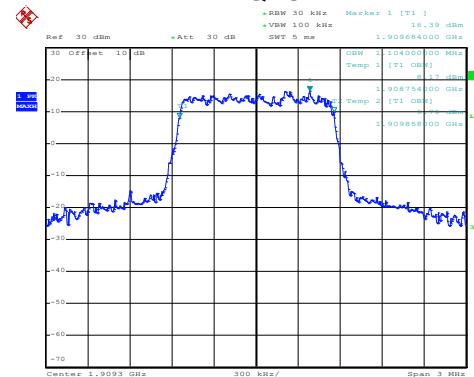
Date: 5.DEC.2017 14:17:55

Middle channel

16QAM



QPSK



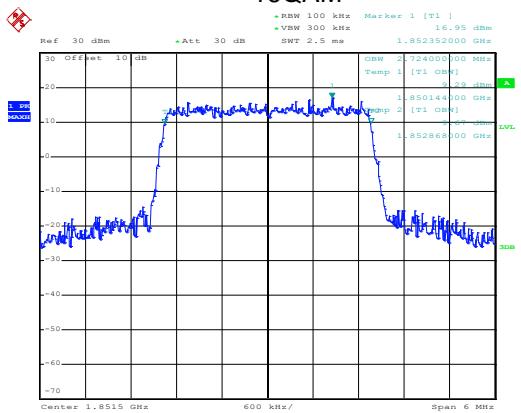
Date: 5.DEC.2017 14:18:17

Date: 5.DEC.2017 14:18:12

Highest channel

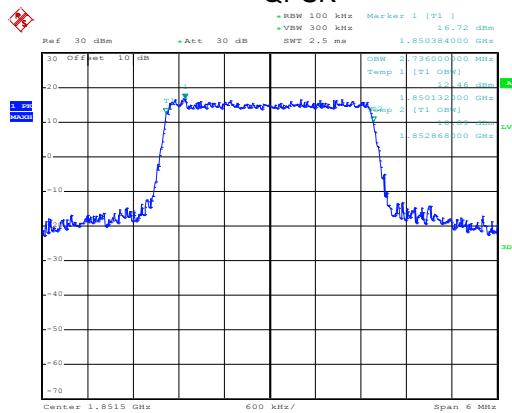
99% Occupy bandwidth
BW: 3MHz

16QAM



Date: 5.DEC.2017 14:19:15

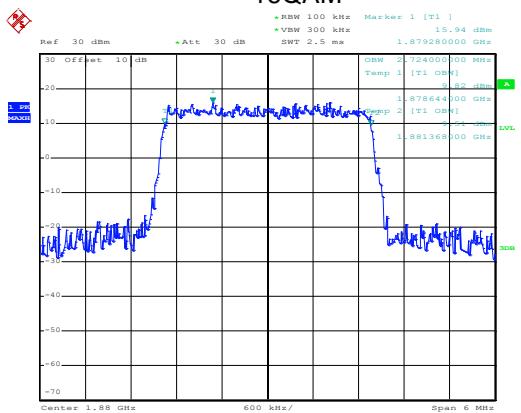
QPSK



Date: 5.DEC.2017 14:19:12

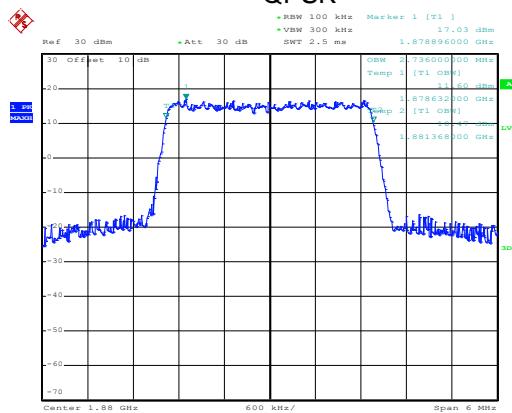
Lowest channel

16QAM



Date: 5.DEC.2017 14:19:32

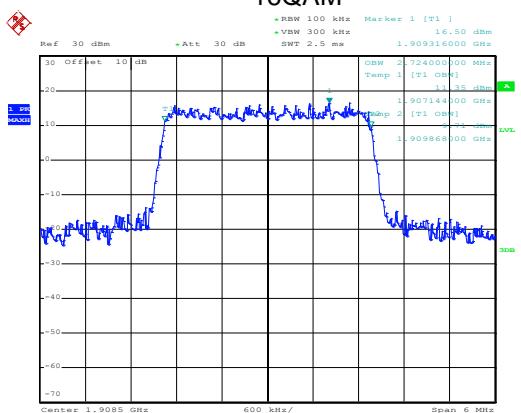
QPSK



Date: 5.DEC.2017 14:19:28

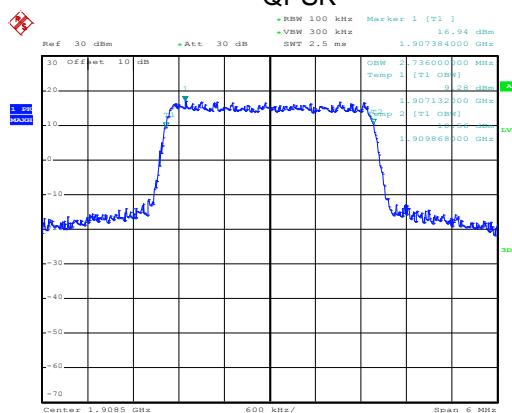
Middle channel

16QAM



Date: 5.DEC.2017 14:21:04

QPSK

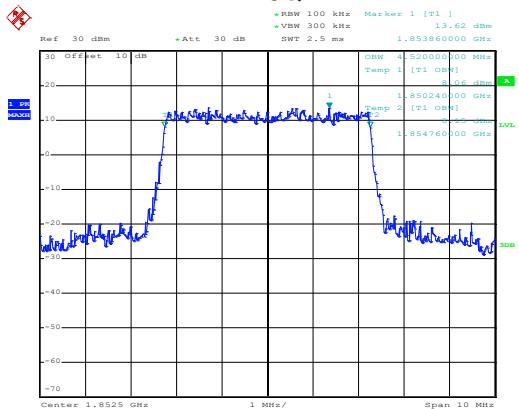


Date: 5.DEC.2017 14:21:00

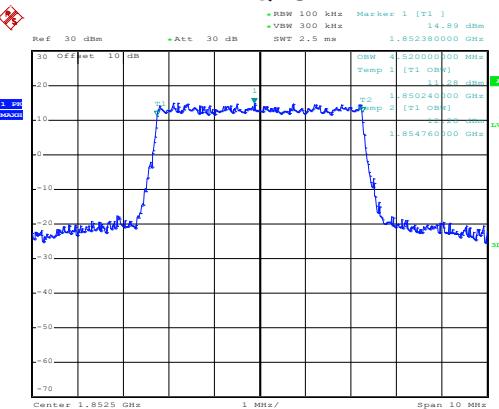
Highest channel

99% Occupy bandwidth
BW: 5MHz

16QAM



QPSK

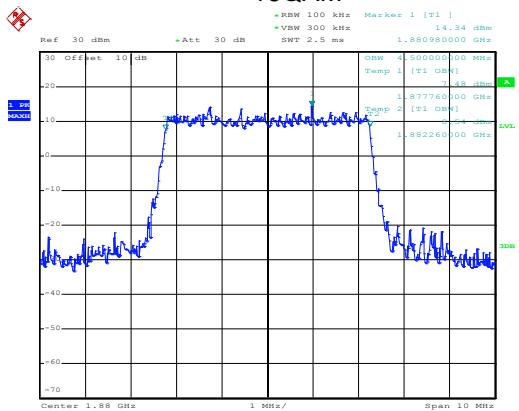


Date: 5.DEC.2017 14:21:45

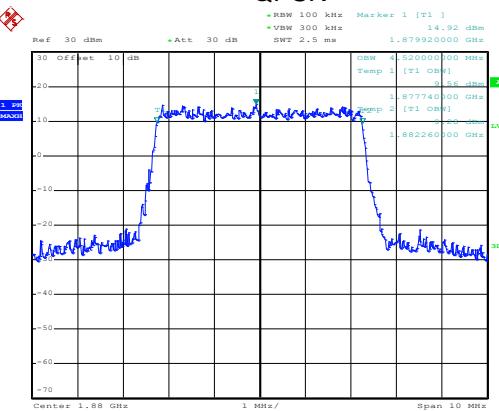
Date: 5.DEC.2017 14:21:41

Lowest channel

16QAM



QPSK

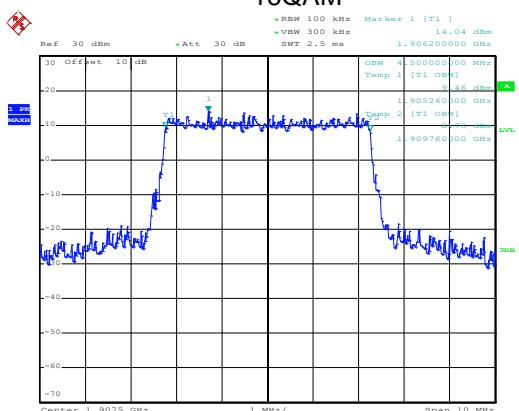


Date: 5.DEC.2017 14:22:24

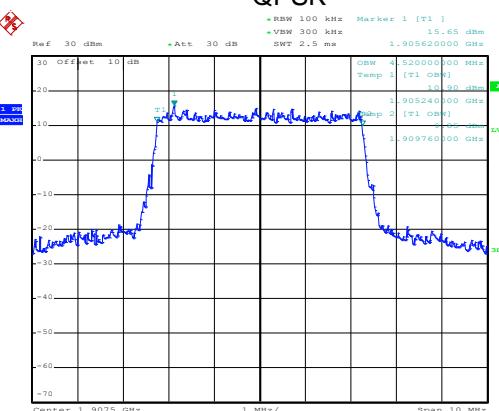
Date: 5.DEC.2017 14:22:21

Middle channel

16QAM



QPSK



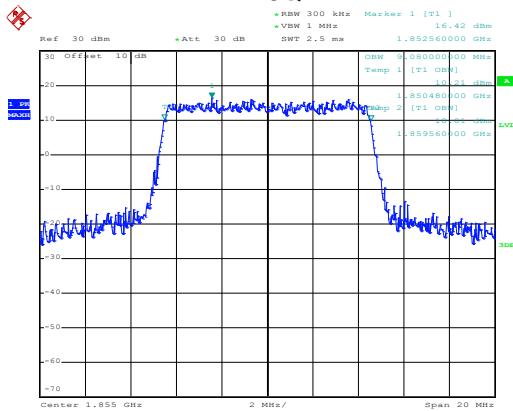
Date: 5.DEC.2017 14:22:51

Date: 5.DEC.2017 14:22:47

Highest channel

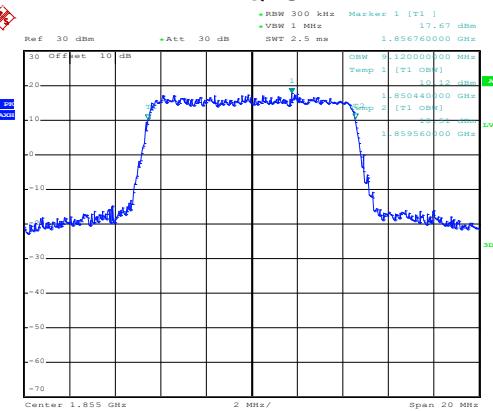
99% Occupy bandwidth
BW: 10MHz

16QAM



Date: 5.DEC.2017 14:23:48

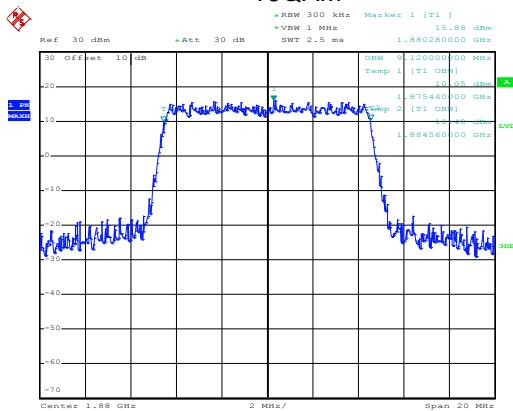
QPSK



Date: 5.DEC.2017 14:23:45

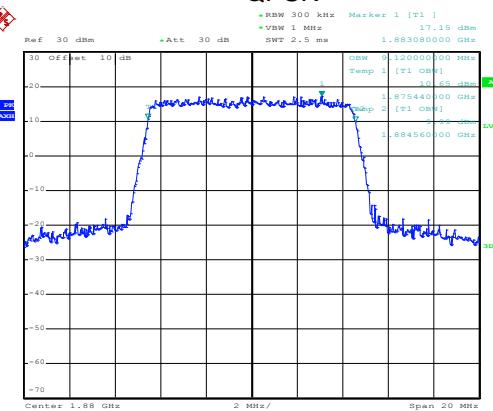
Lowest channel

16QAM



Date: 5.DEC.2017 14:24:03

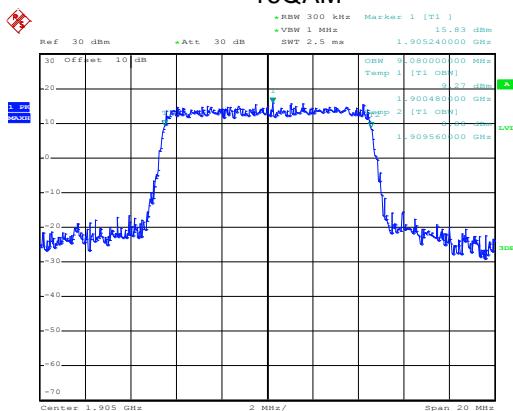
QPSK



Date: 5.DEC.2017 14:24:00

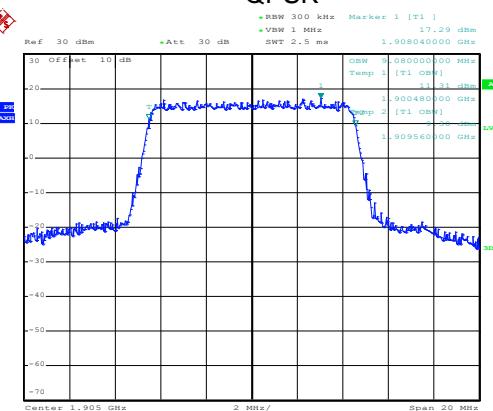
Middle channel

16QAM



Date: 5.DEC.2017 14:24:44

QPSK

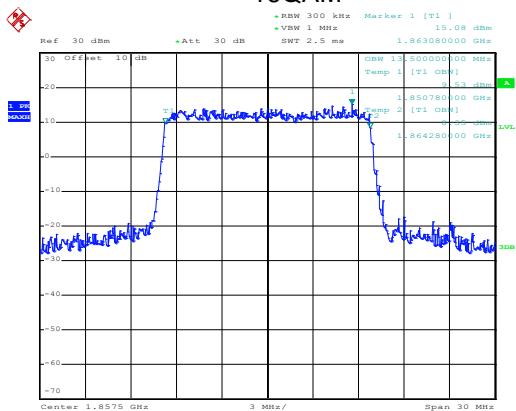


Date: 5.DEC.2017 14:24:40

Highest channel

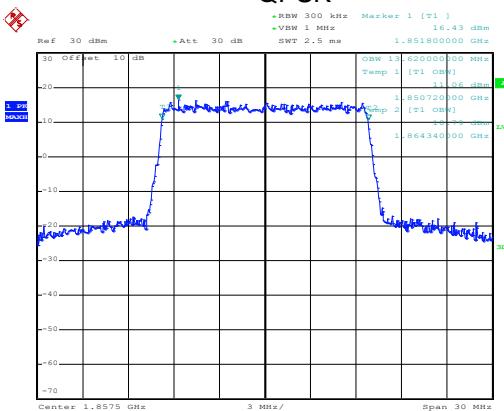
99% Occupy bandwidth
BW: 15MHz

16QAM



Date: 5.DEC.2017 14:25:11

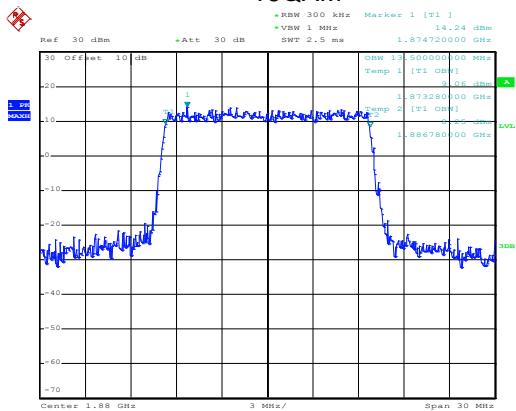
QPSK



Date: 5.DEC.2017 14:25:08

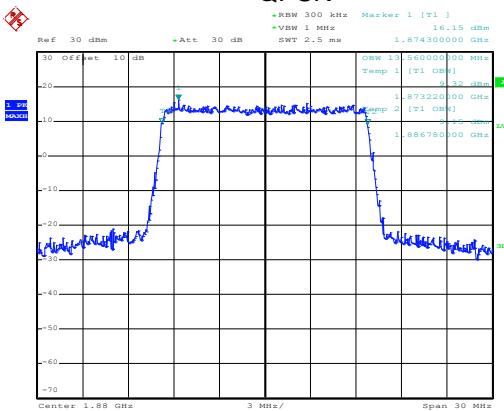
Lowest channel

16QAM



Date: 5.DEC.2017 14:25:47

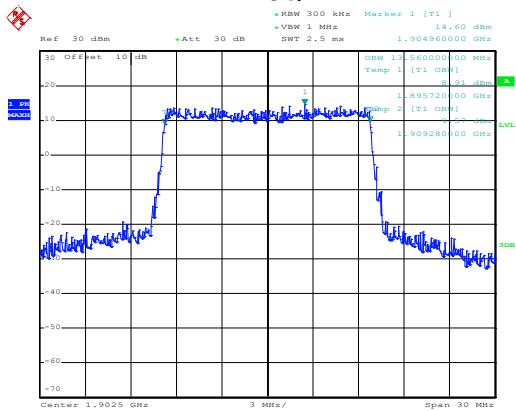
QPSK



Date: 5.DEC.2017 14:25:43

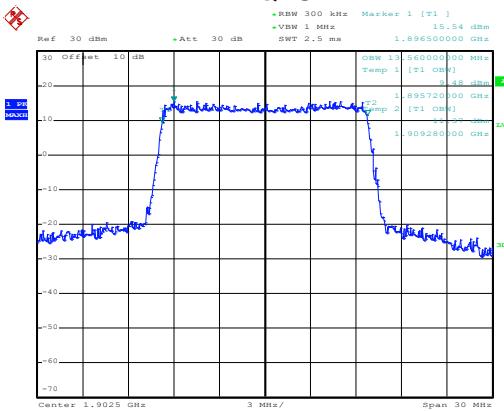
Middle channel

16QAM



Date: 5.DEC.2017 14:26:03

QPSK

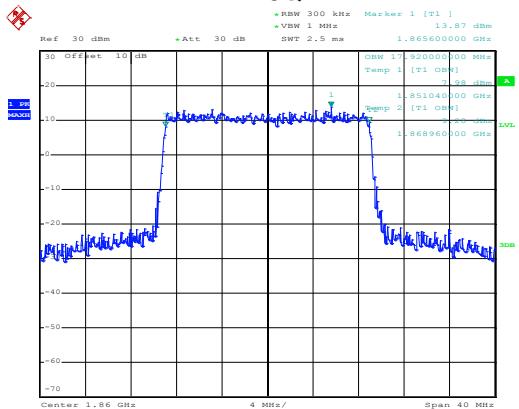


Date: 5.DEC.2017 14:26:00

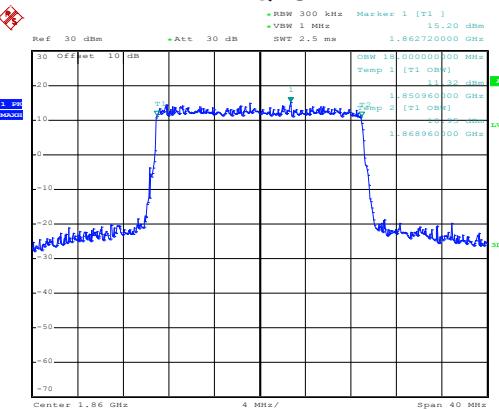
Highest channel

99% Occupy bandwidth
BW: 20MHz

16QAM



QPSK

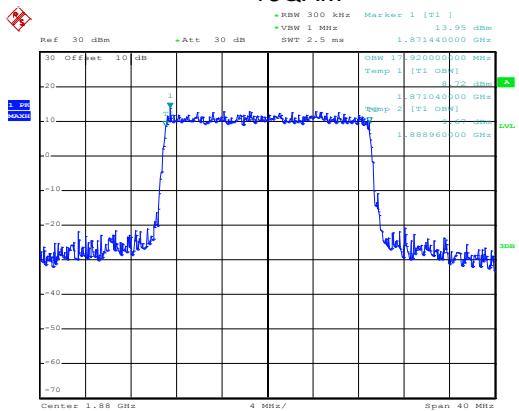


Date: 5.DEC.2017 14:30:58

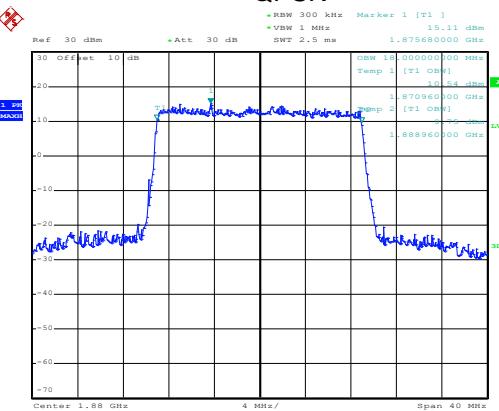
Date: 5.DEC.2017 14:30:55

Lowest channel

16QAM



QPSK

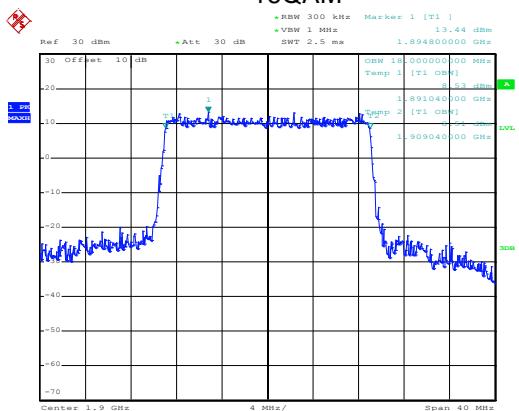


Date: 5.DEC.2017 14:31:14

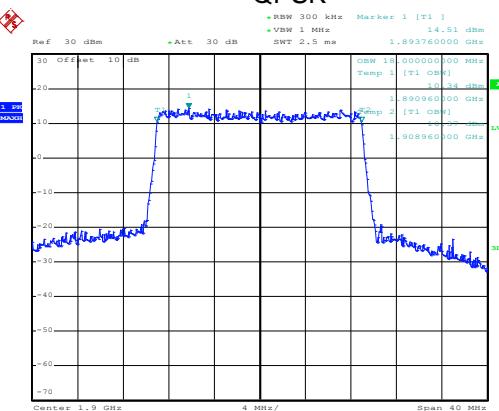
Date: 5.DEC.2017 14:31:10

Middle channel

16QAM



QPSK

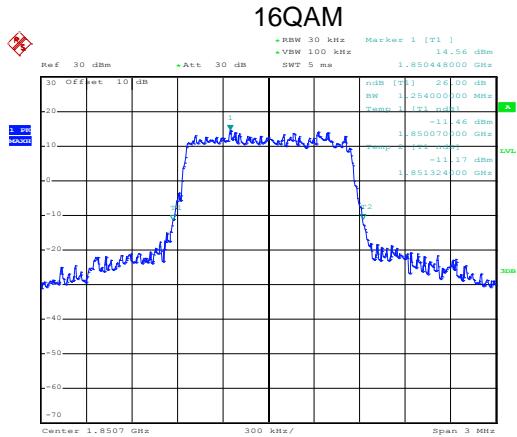


Date: 5.DEC.2017 14:31:49

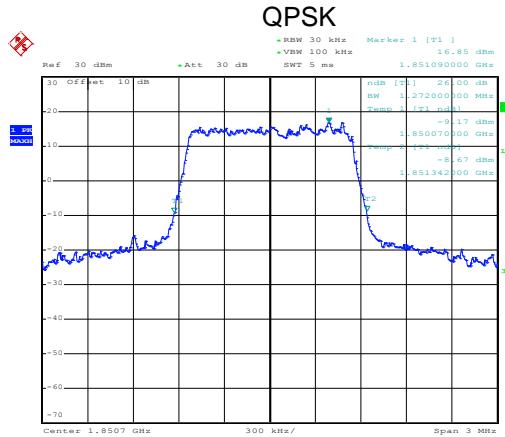
Date: 5.DEC.2017 14:31:46

Highest channel

-26dBc bandwidth
BW: 1.4MHz

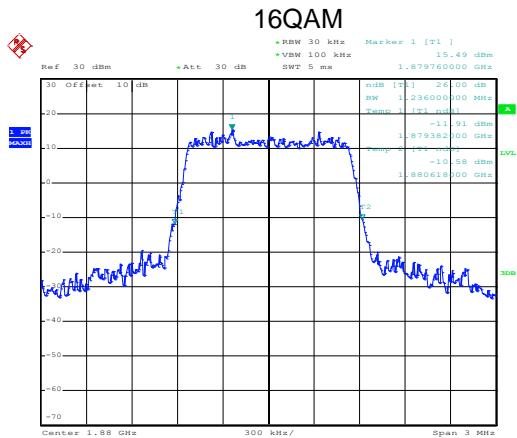


Date: 5.DEC.2017 14:17:31

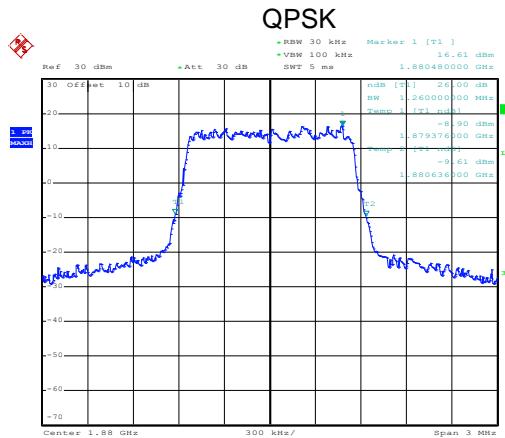


Date: 5.DEC.2017 14:17:27

Lowest channel

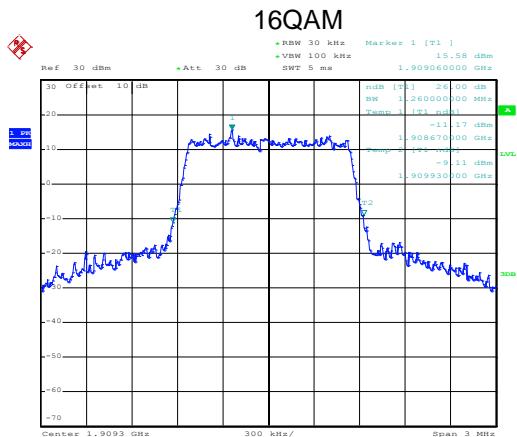


Date: 5.DEC.2017 14:17:48

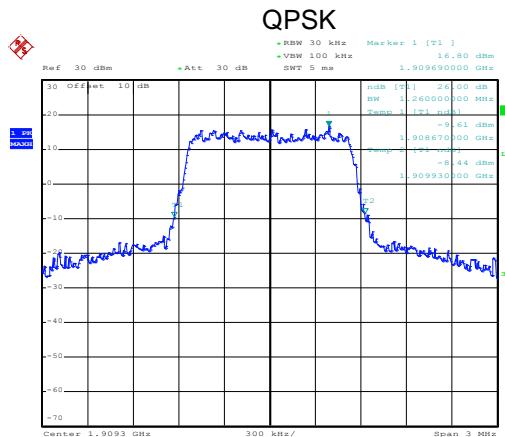


Date: 5.DEC.2017 14:17:44

Middle channel



Date: 5.DEC.2017 14:18:30

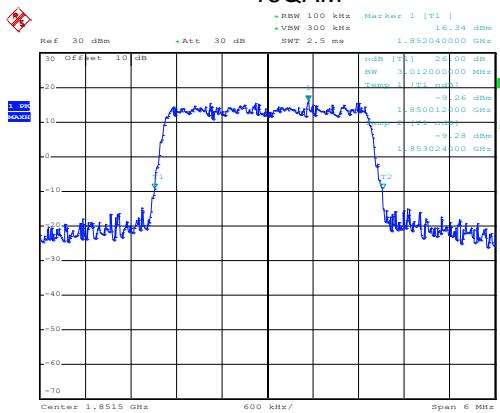


Date: 5.DEC.2017 14:18:24

Highest channel

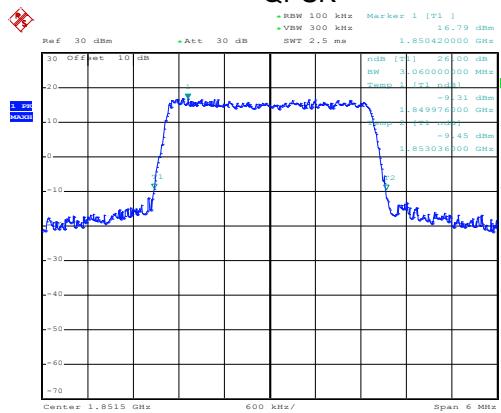
-26dBc bandwidth
BW: 3MHz

16QAM



Date: 5.DEC.2017 14:19:04

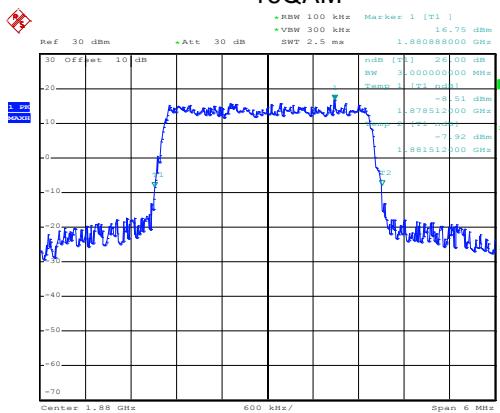
QPSK



Date: 5.DEC.2017 14:19:01

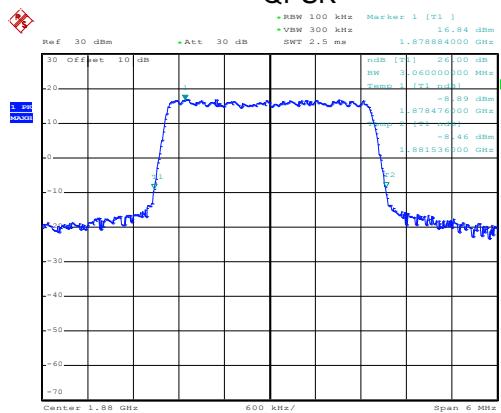
Lowest channel

16QAM



Date: 5.DEC.2017 14:20:15

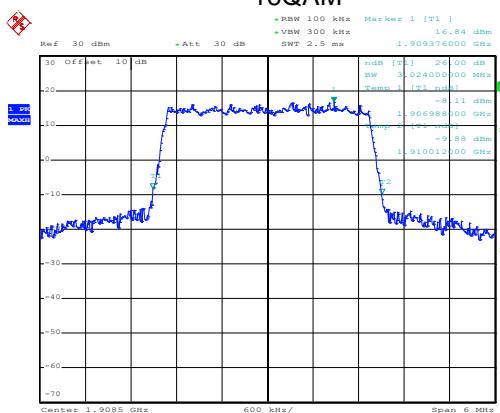
QPSK



Date: 5.DEC.2017 14:20:10

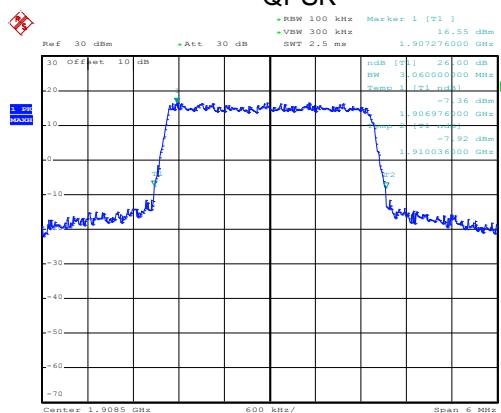
Middle channel

16QAM



Date: 5.DEC.2017 14:20:44

QPSK

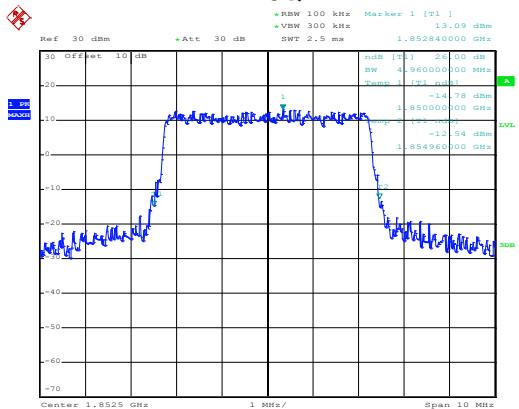


Date: 5.DEC.2017 14:20:33

Highest channel

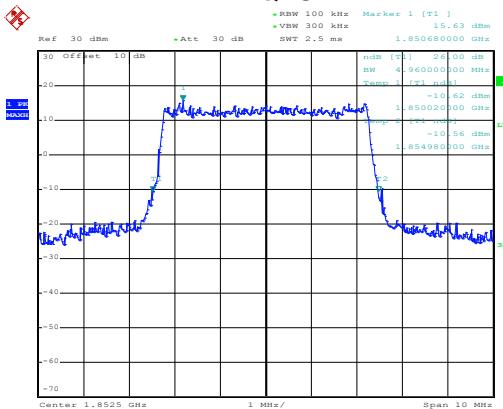
-26dBc bandwidth
BW: 5MHz

16QAM



Date: 5.DEC.2017 14:21:56

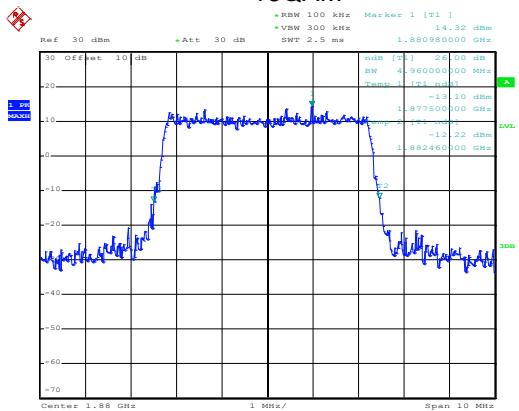
QPSK



Date: 5.DEC.2017 14:21:53

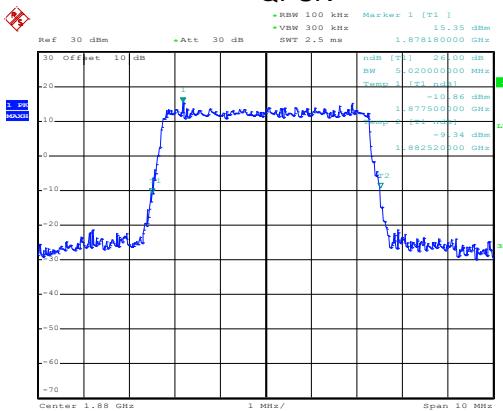
Lowest channel

16QAM



Date: 5.DEC.2017 14:22:13

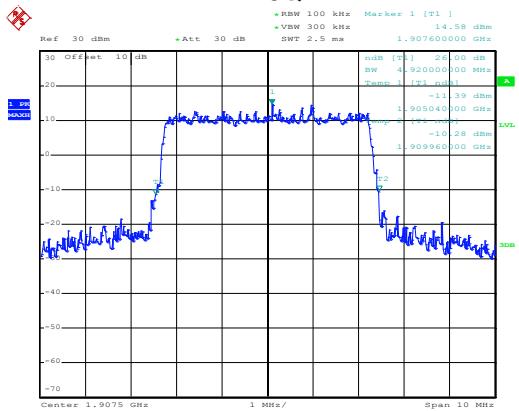
QPSK



Date: 5.DEC.2017 14:22:10

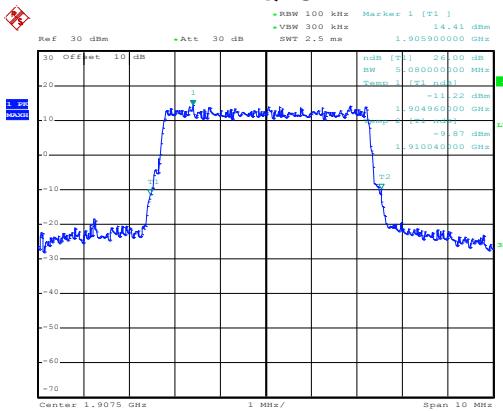
Middle channel

16QAM



Date: 5.DEC.2017 14:23:00

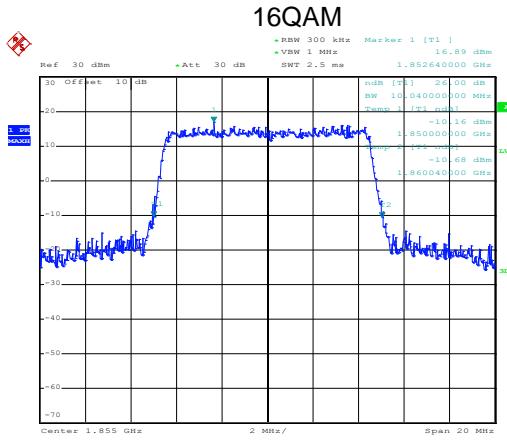
QPSK



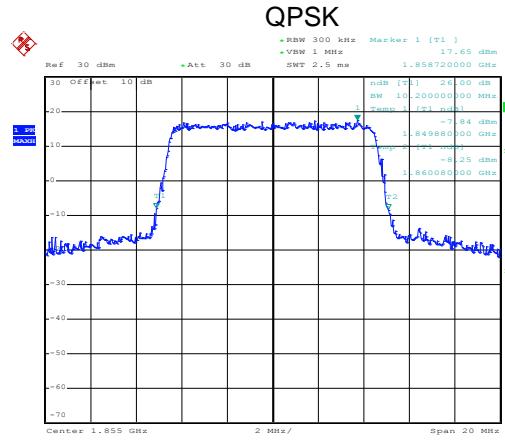
Date: 5.DEC.2017 14:22:57

Highest channel

-26dBc bandwidth
BW: 10MHz

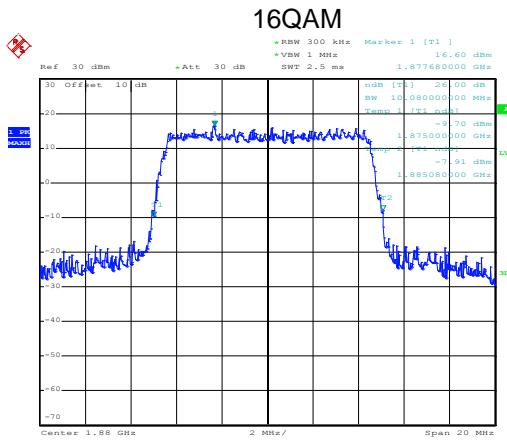


Date: 5.DEC.2017 14:23:38

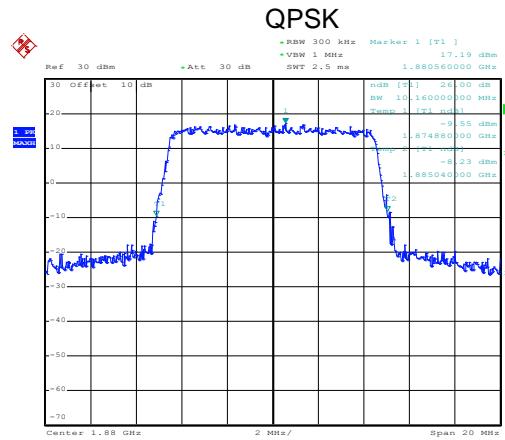


Date: 5.DEC.2017 14:23:34

Lowest channel

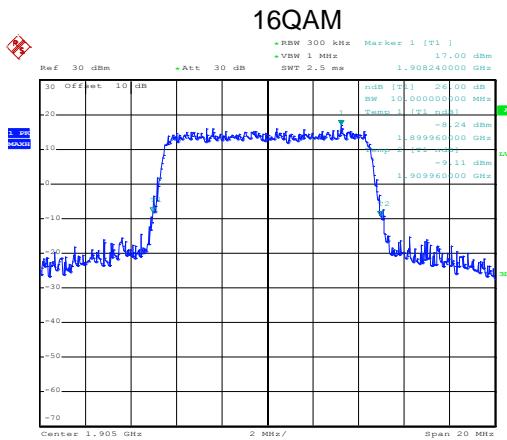


Date: 5.DEC.2017 14:24:13

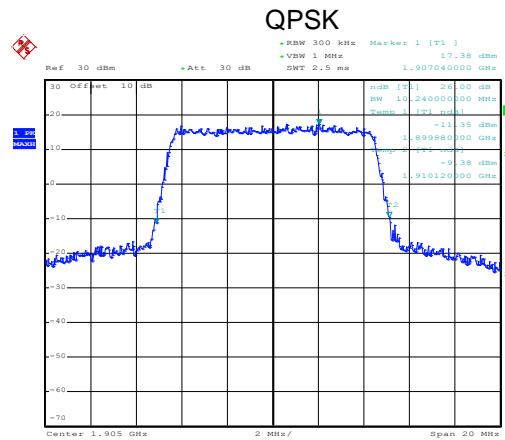


Date: 5.DEC.2017 14:24:09

Middle channel



Date: 5.DEC.2017 14:24:33

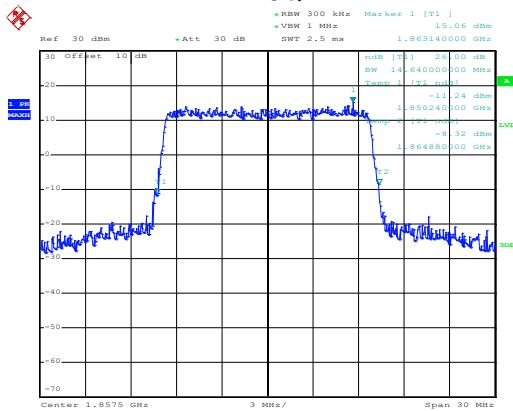


Date: 5.DEC.2017 14:24:28

Highest channel

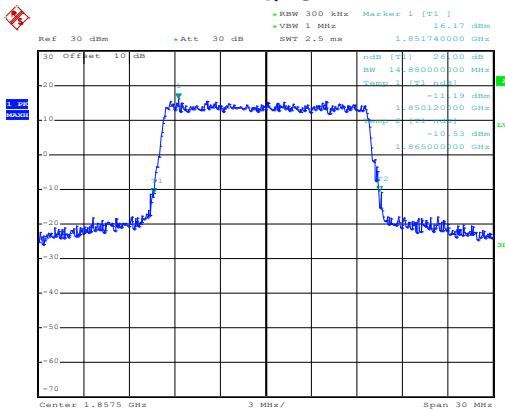
-26dBc bandwidth
BW: 15MHz

16QAM



Date: 5.DEC.2017 14:25:20

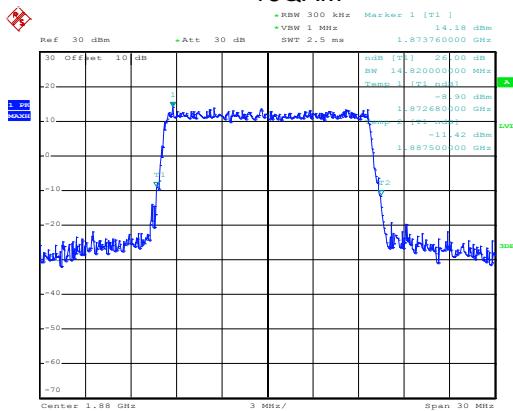
QPSK



Date: 5.DEC.2017 14:25:17

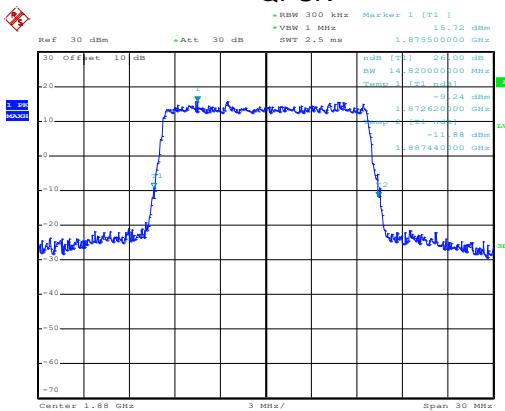
Lowest channel

16QAM



Date: 5.DEC.2017 14:25:36

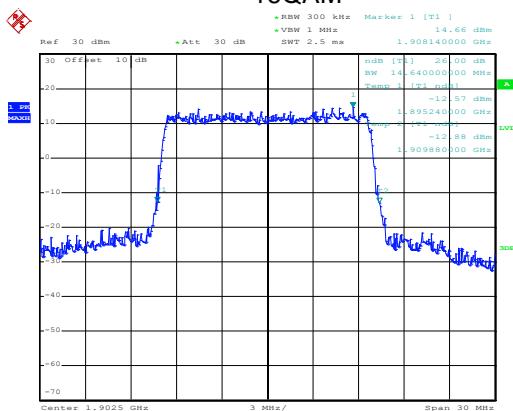
QPSK



Date: 5.DEC.2017 14:25:33

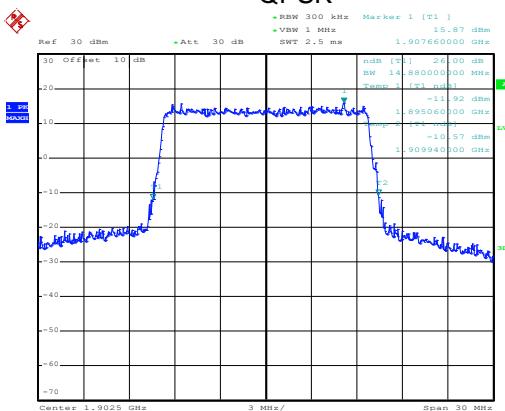
Middle channel

16QAM



Date: 5.DEC.2017 14:26:15

QPSK

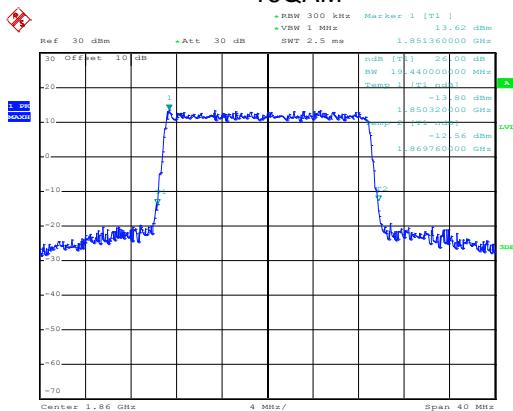


Date: 5.DEC.2017 14:26:11

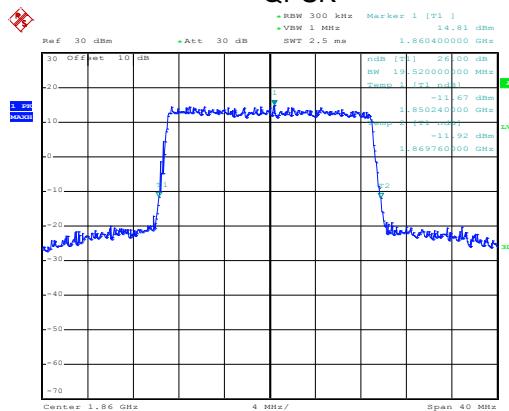
Highest channel

-26dBc bandwidth
BW: 20MHz

16QAM



QPSK

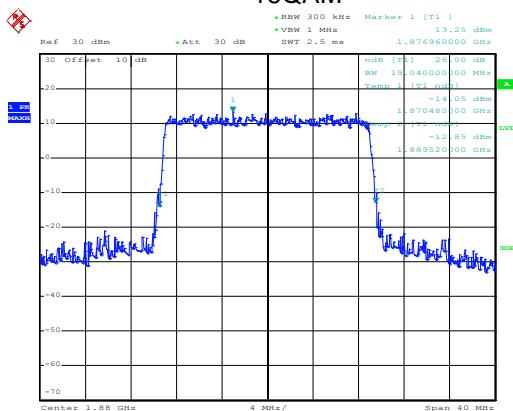


Date: 5.DEC.2017 14:30:48

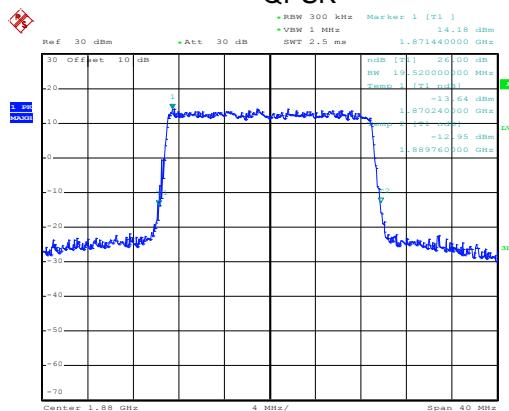
Date: 5.DEC.2017 14:30:39

Lowest channel

16QAM



QPSK

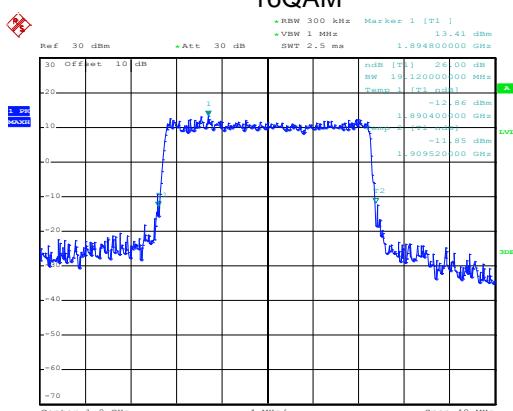


Date: 5.DEC.2017 14:31:24

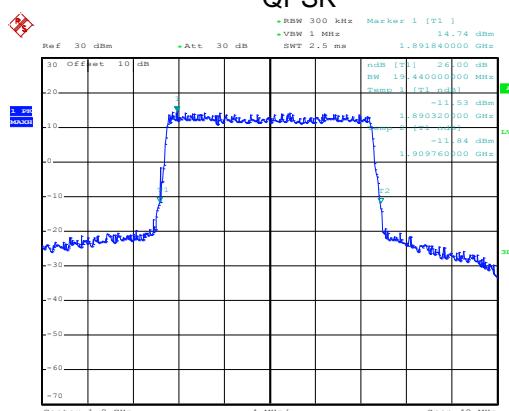
Date: 5.DEC.2017 14:31:20

Middle channel

16QAM



QPSK



Date: 5.DEC.2017 14:31:40

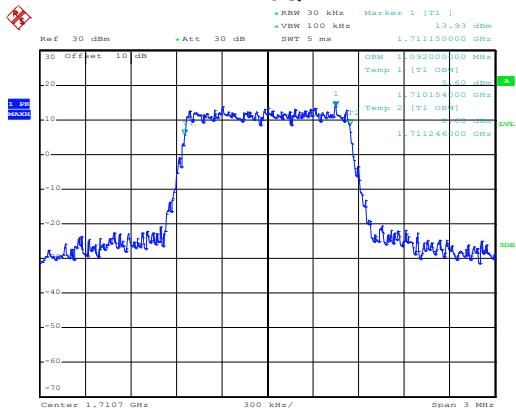
Date: 5.DEC.2017 14:31:37

Highest channel

LTE Band 4 part

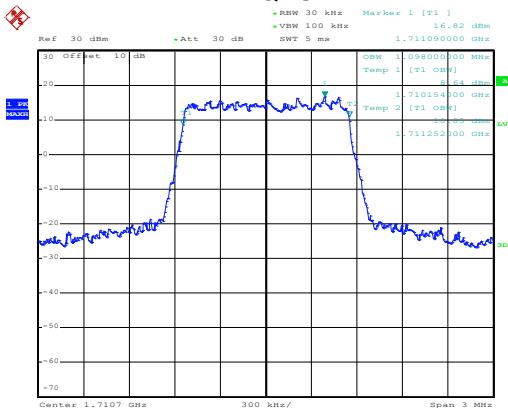
99% Occupy bandwidth
BW: 1.4MHz

16QAM



Date: 5.DEC.2017 14:32:32

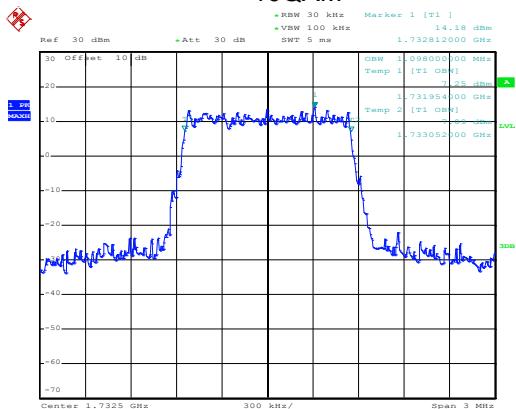
QPSK



Date: 5.DEC.2017 14:32:29

Lowest channel

16QAM



Date: 5.DEC.2017 14:33:07

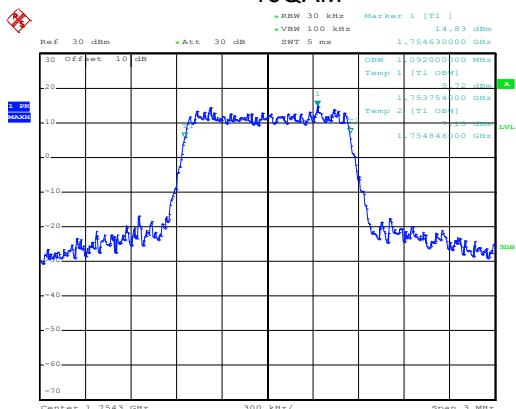
QPSK



Date: 5.DEC.2017 14:33:05

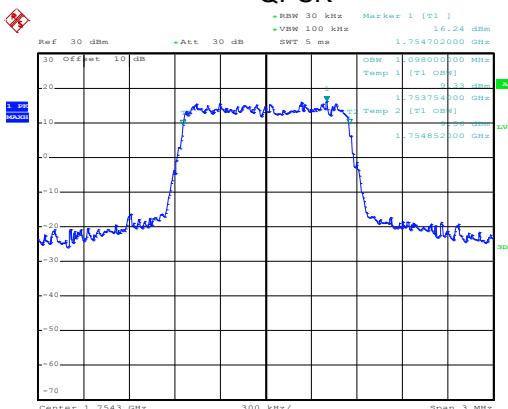
Middle channel

16QAM



Date: 5.DEC.2017 14:33:23

QPSK

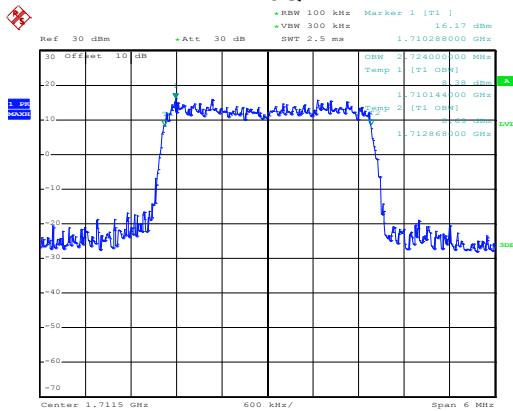


Date: 5.DEC.2017 14:33:20

Highest channel

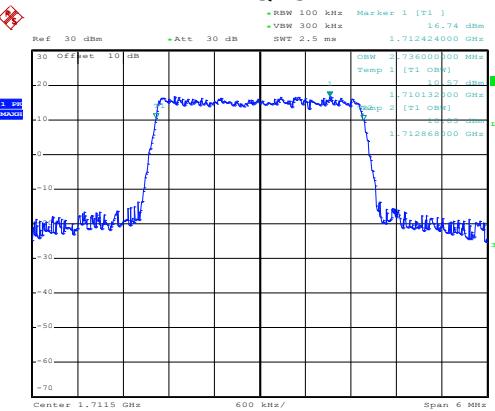
99% Occupy bandwidth
BW: 3MHz

16QAM



Date: 5.DEC.2017 14:34:14

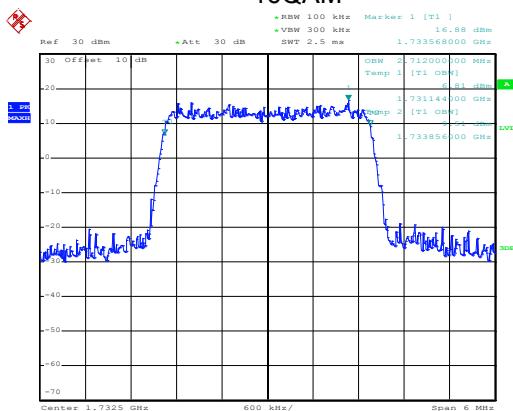
QPSK



Date: 5.DEC.2017 14:34:10

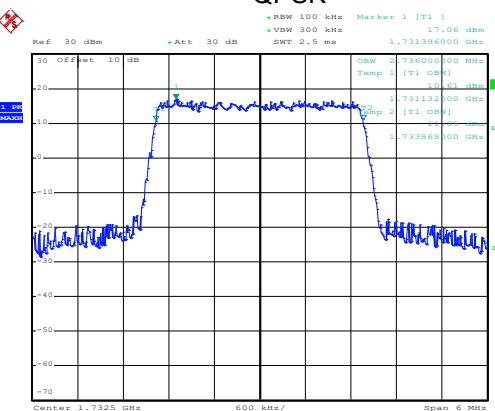
Lowest channel

16QAM



Date: 5.DEC.2017 14:35:48

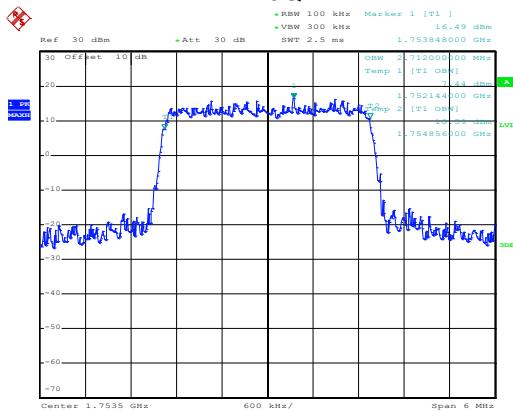
QPSK



Date: 5.DEC.2017 14:35:44

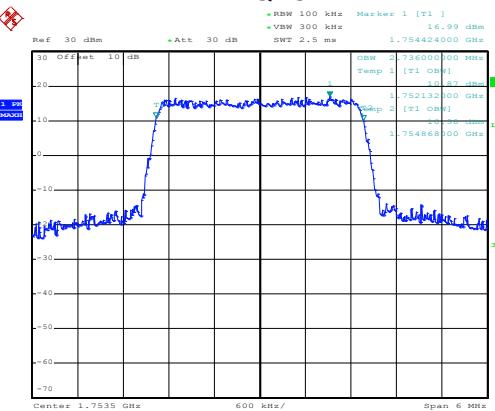
Middle channel

16QAM



Date: 5.DEC.2017 14:36:26

QPSK



Date: 5.DEC.2017 14:36:23

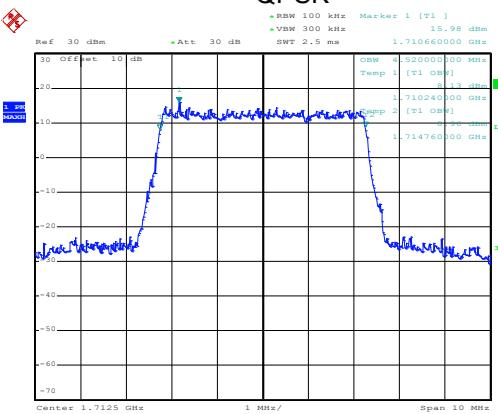
Highest channel

99% Occupy bandwidth
BW: 5MHz

16QAM



QPSK

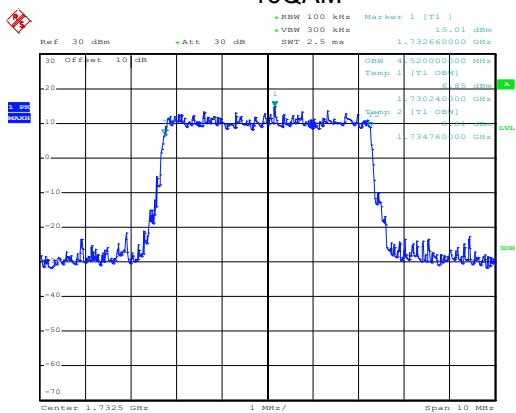


Date: 5.DEC.2017 14:36:55

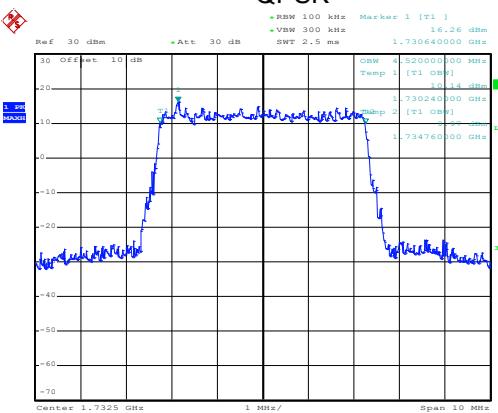
Date: 5.DEC.2017 14:36:49

Lowest channel

16QAM



QPSK

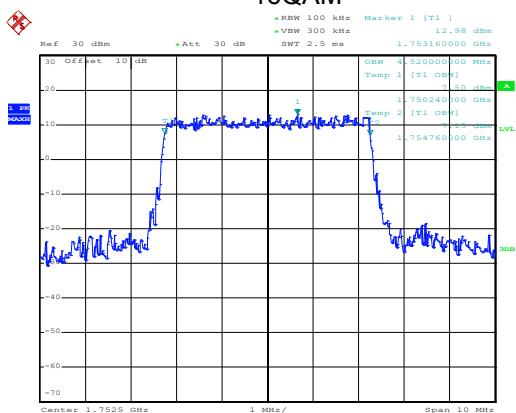


Date: 5.DEC.2017 14:37:43

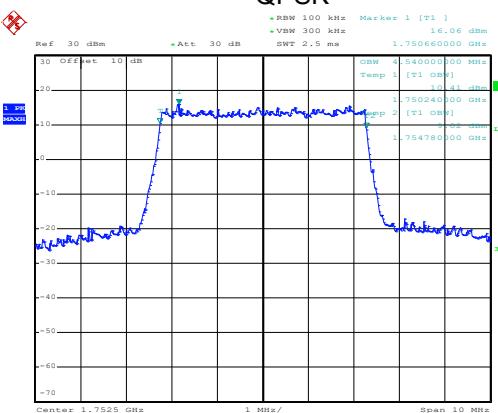
Date: 5.DEC.2017 14:37:39

Middle channel

16QAM



QPSK



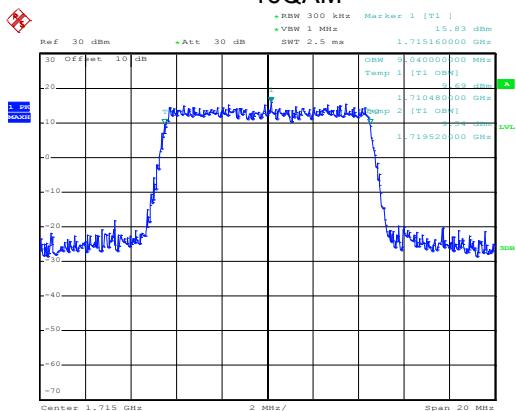
Date: 5.DEC.2017 14:38:15

Date: 5.DEC.2017 14:38:11

Highest channel

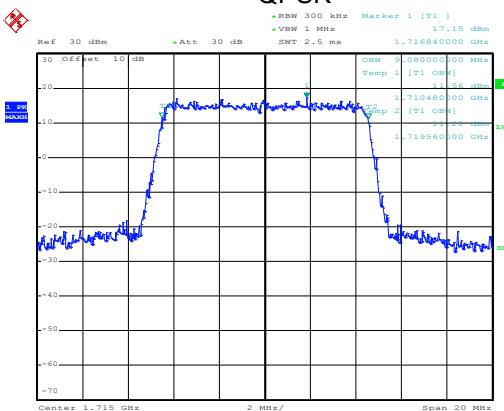
99% Occupy bandwidth
BW: 10MHz

16QAM



Date: 5.DEC.2017 14:39:02

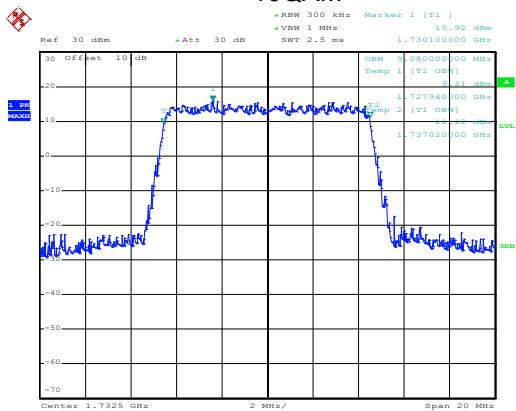
QPSK



Date: 5.DEC.2017 14:38:59

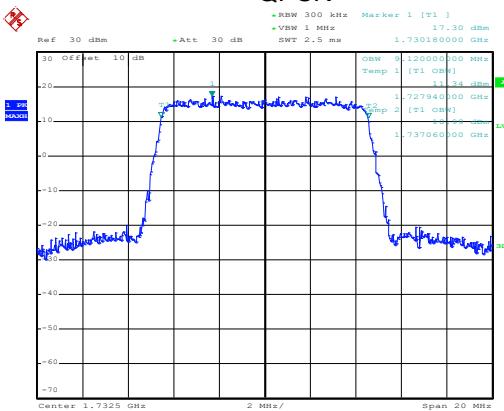
Lowest channel

16QAM



Date: 5.DEC.2017 14:39:16

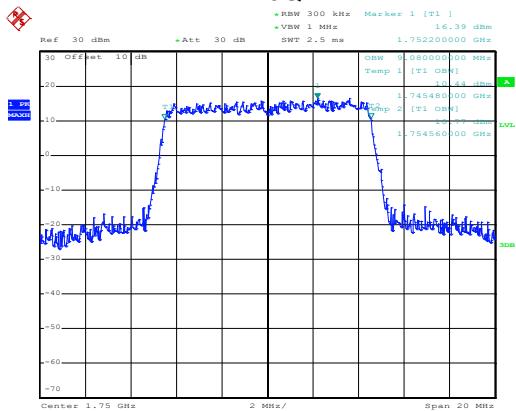
QPSK



Date: 5.DEC.2017 14:39:13

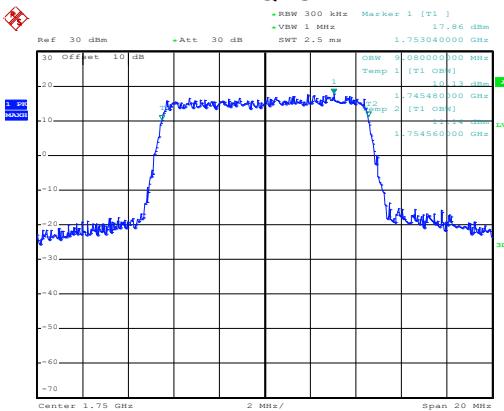
Middle channel

16QAM



Date: 5.DEC.2017 14:39:54

QPSK

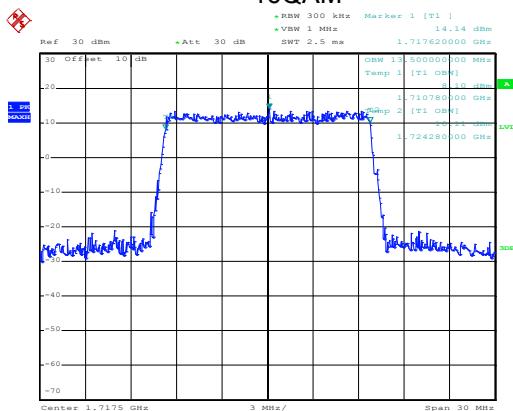


Date: 5.DEC.2017 14:39:50

Highest channel

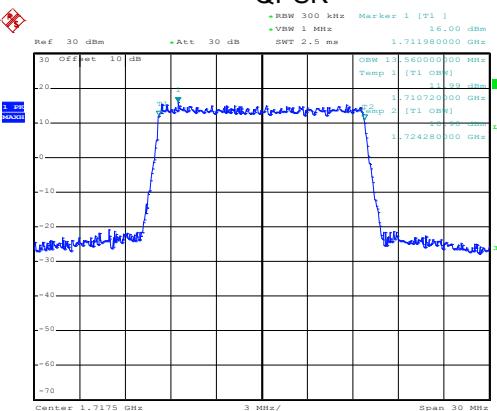
99% Occupy bandwidth
BW: 15MHz

16QAM



Date: 5.DEC.2017 14:40:29

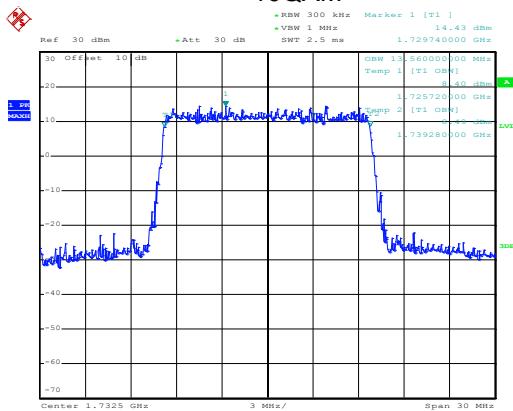
QPSK



Date: 5.DEC.2017 14:40:26

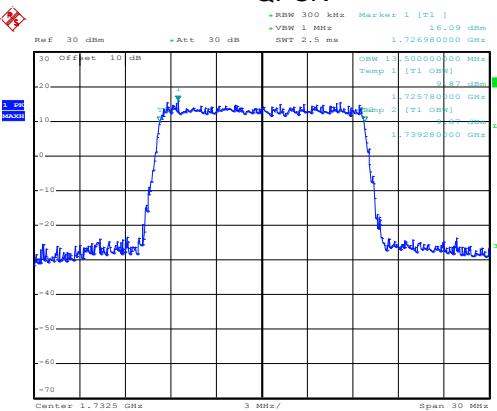
Lowest channel

16QAM



Date: 5.DEC.2017 14:41:25

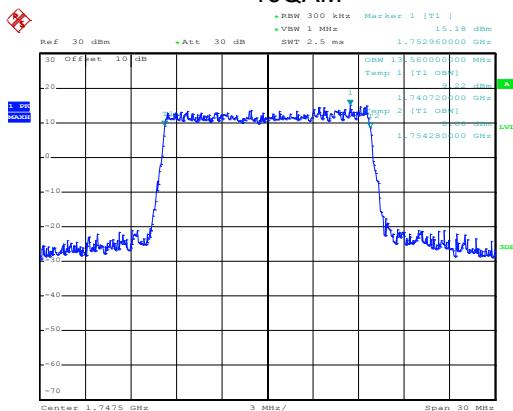
QPSK



Date: 5.DEC.2017 14:41:22

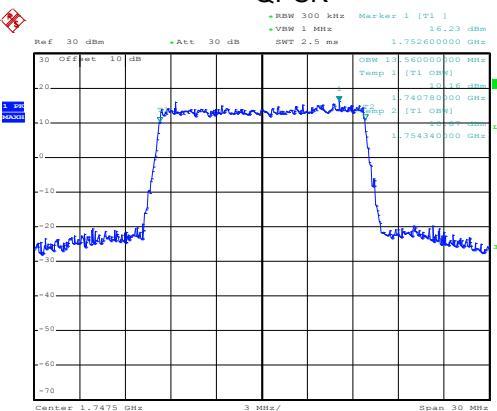
Middle channel

16QAM



Date: 5.DEC.2017 14:42:14

QPSK

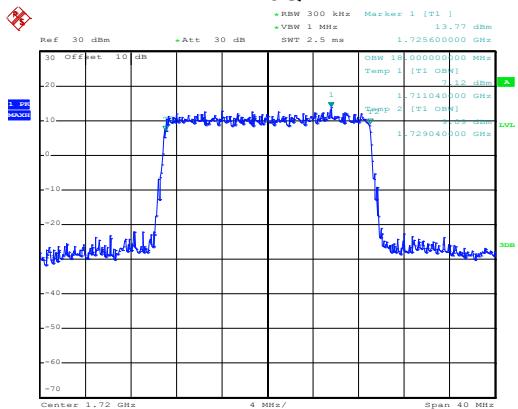


Date: 5.DEC.2017 14:42:10

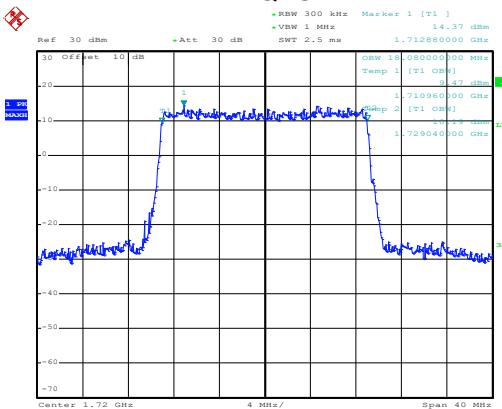
Highest channel

99% Occupy bandwidth
BW: 20MHz

16QAM



QPSK

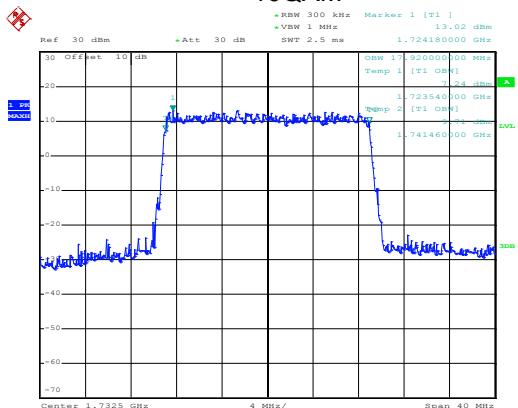


Date: 5.DEC.2017 14:43:10

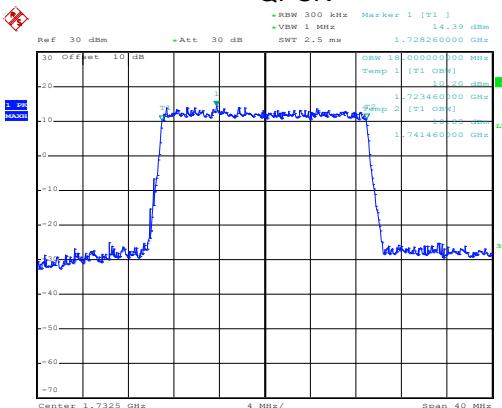
Date: 5.DEC.2017 14:43:06

Lowest channel

16QAM



QPSK

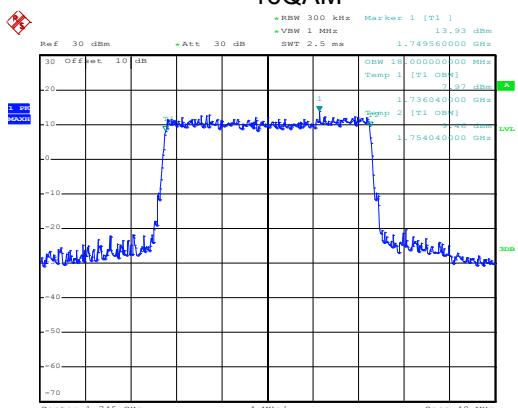


Date: 5.DEC.2017 14:43:25

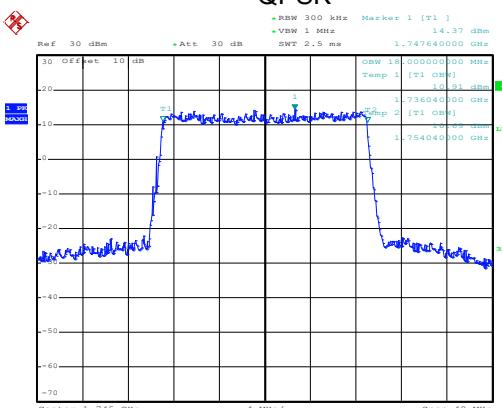
Date: 5.DEC.2017 14:43:21

Middle channel

16QAM



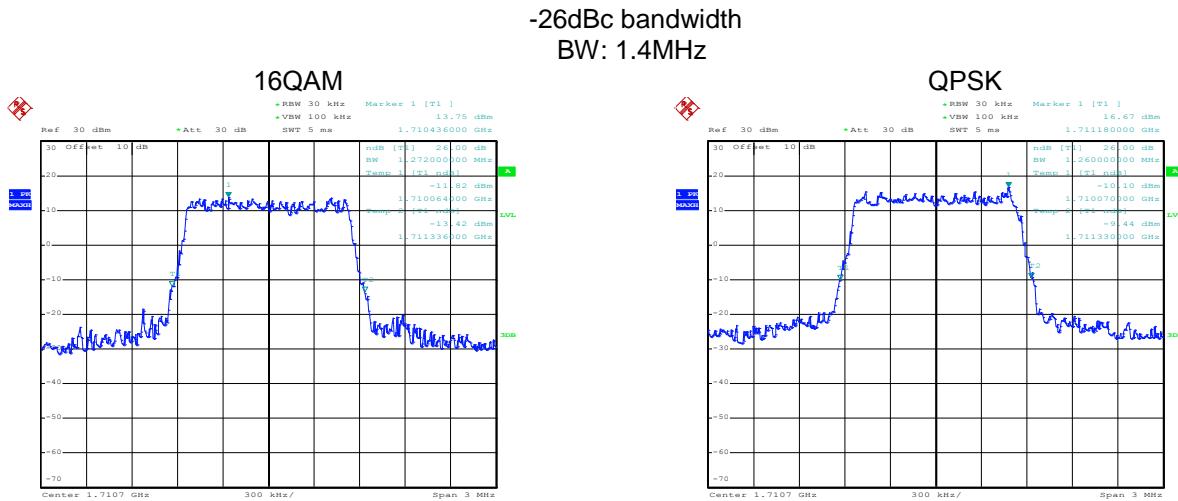
QPSK



Date: 5.DEC.2017 14:44:01

Date: 5.DEC.2017 14:43:57

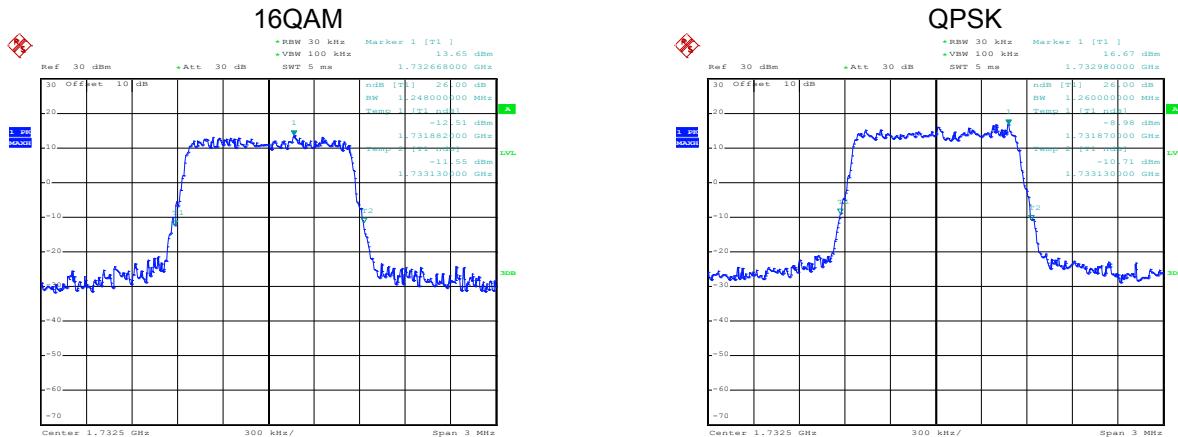
Highest channel



Date: 5.DEC.2017 14:32:40

Date: 5.DEC.2017 14:32:37

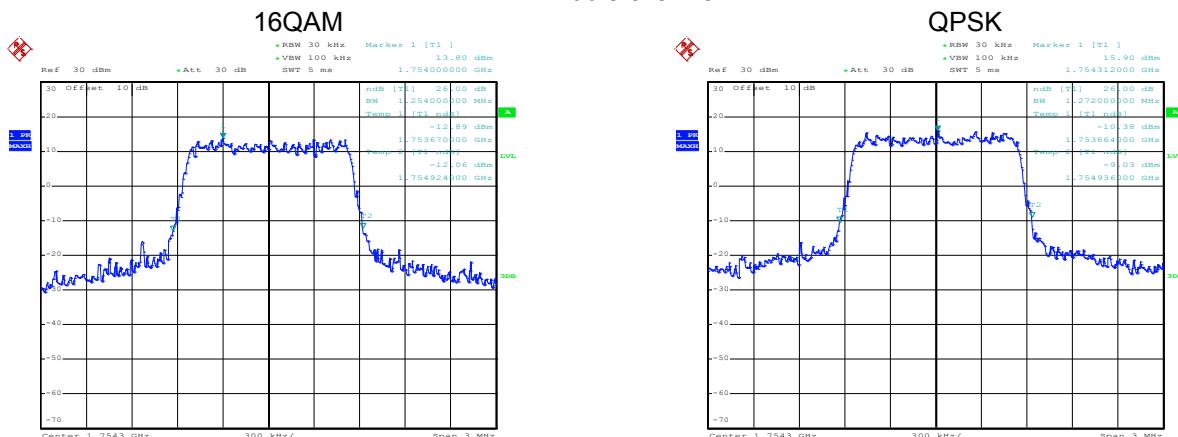
Lowest channel



Date: 5.DEC.2017 14:32:58

Date: 5.DEC.2017 14:32:55

Middle channel



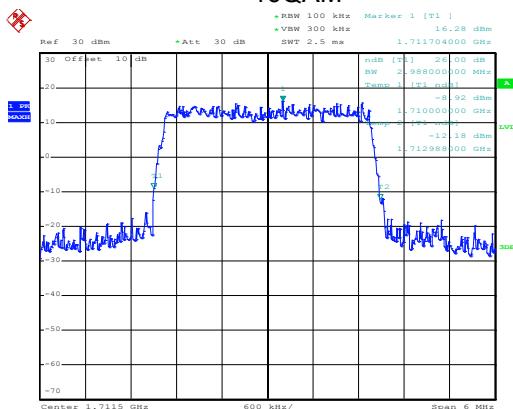
Date: 5.DEC.2017 14:33:30

Date: 5.DEC.2017 14:33:28

Highest channel

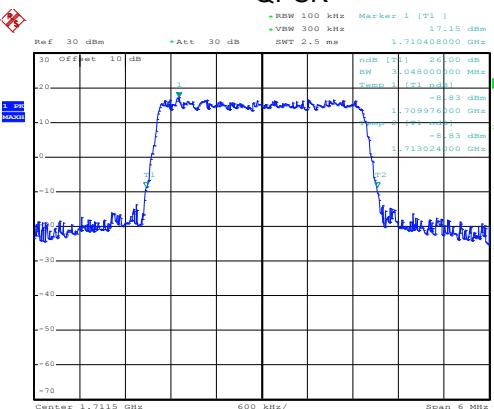
-26dBc bandwidth
BW: 3MHz

16QAM



Date: 5.DEC.2017 14:34:00

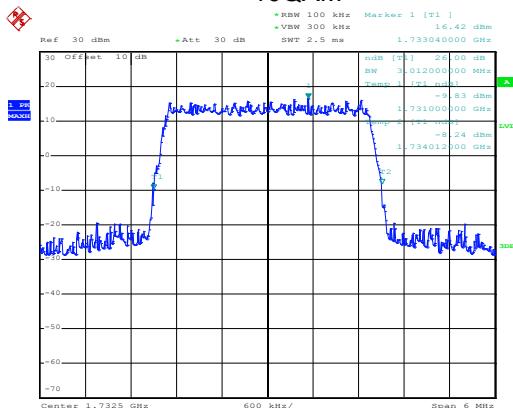
QPSK



Date: 5.DEC.2017 14:33:56

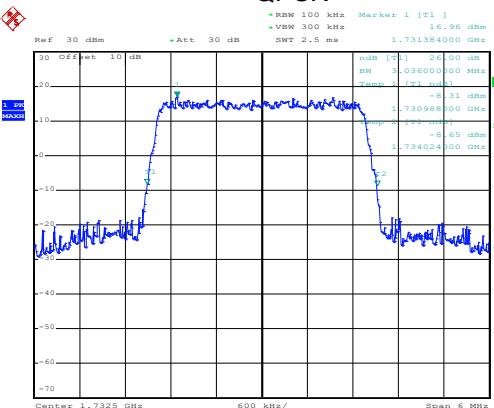
Lowest channel

16QAM



Date: 5.DEC.2017 14:35:57

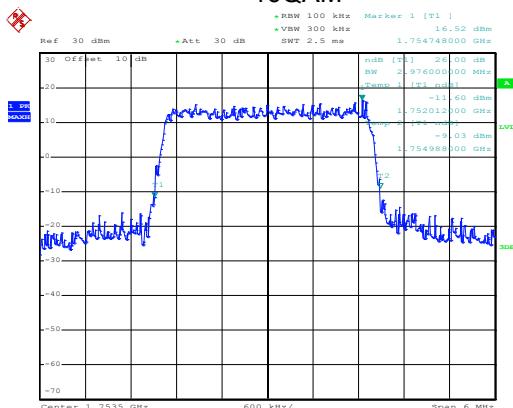
QPSK



Date: 5.DEC.2017 14:35:53

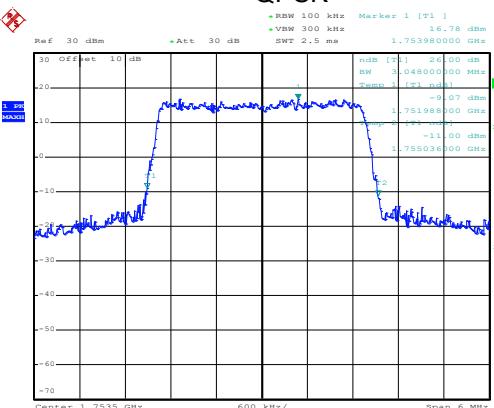
Middle channel

16QAM



Date: 5.DEC.2017 14:36:13

QPSK

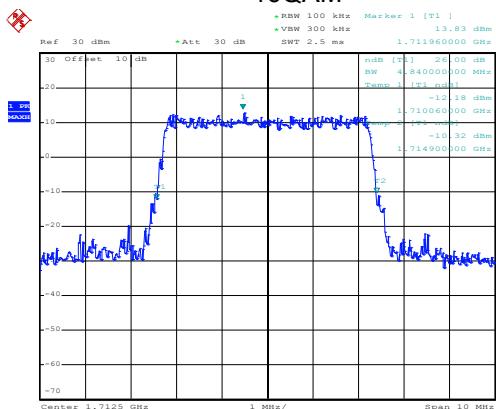


Date: 5.DEC.2017 14:36:10

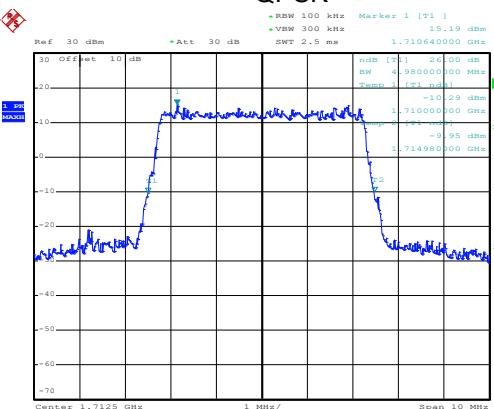
Highest channel

-26dBc bandwidth
BW: 5MHz

16QAM



QPSK

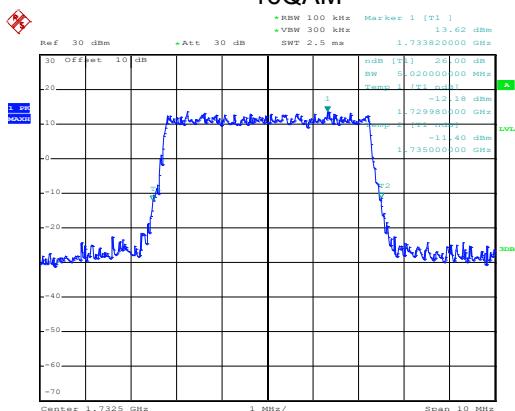


Date: 5.DEC.2017 14:37:18

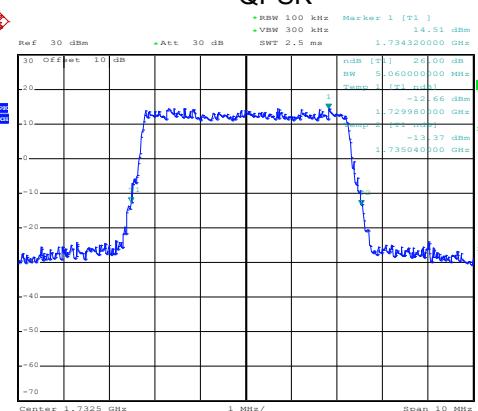
Date: 5.DEC.2017 14:37:13

Lowest channel

16QAM



QPSK

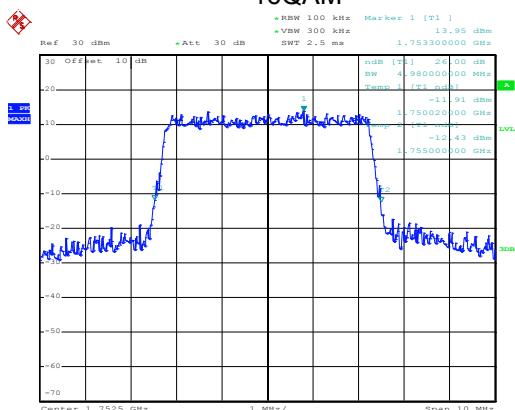


Date: 5.DEC.2017 14:37:33

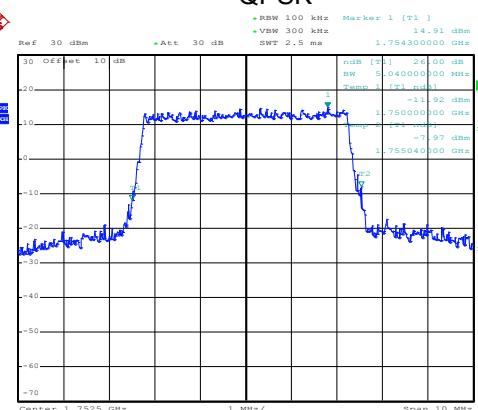
Date: 5.DEC.2017 14:37:29

Middle channel

16QAM



QPSK

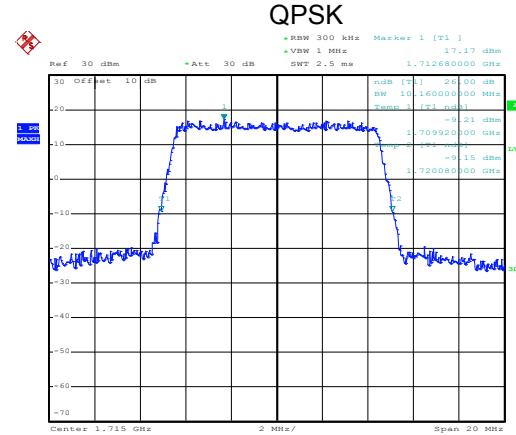
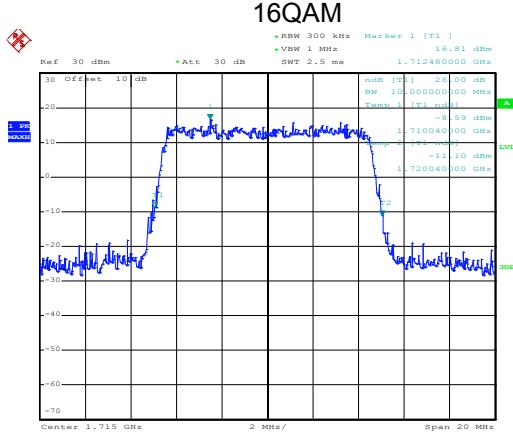


Date: 5.DEC.2017 14:38:26

Date: 5.DEC.2017 14:38:22

Highest channel

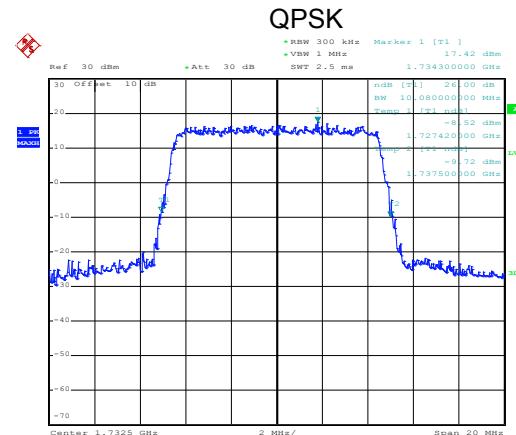
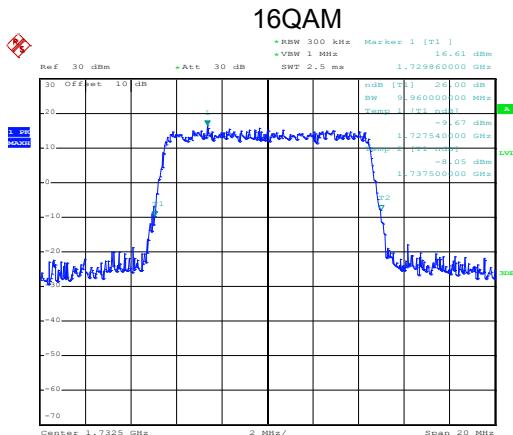
-26dBc bandwidth
BW: 10MHz



Date: 5.DEC.2017 14:38:54

Date: 5.DEC.2017 14:38:51

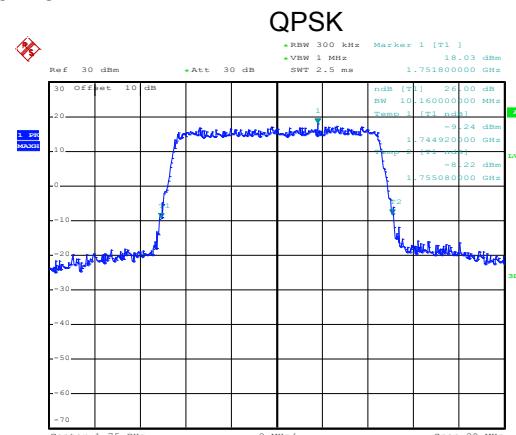
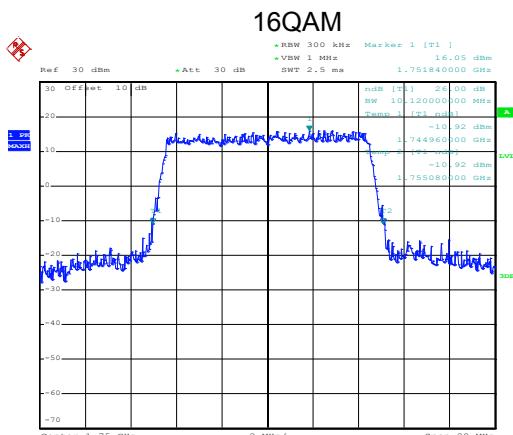
Lowest channel



Date: 5.DEC.2017 14:39:26

Date: 5.DEC.2017 14:39:22

Middle channel



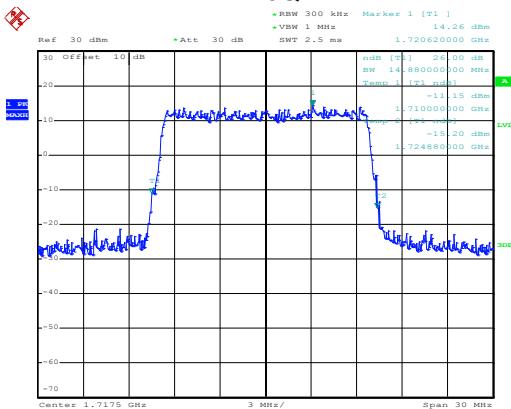
Date: 5.DEC.2017 14:39:43

Date: 5.DEC.2017 14:39:40

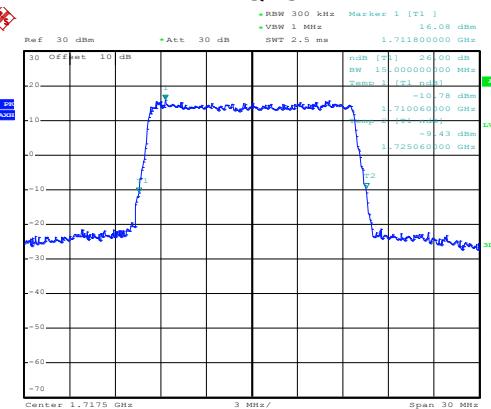
Highest channel

-26dBc bandwidth
BW: 15MHz

16QAM



QPSK

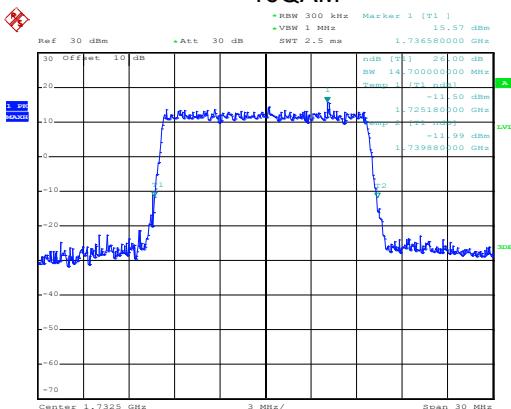


Date: 5.DEC.2017 14:40:56

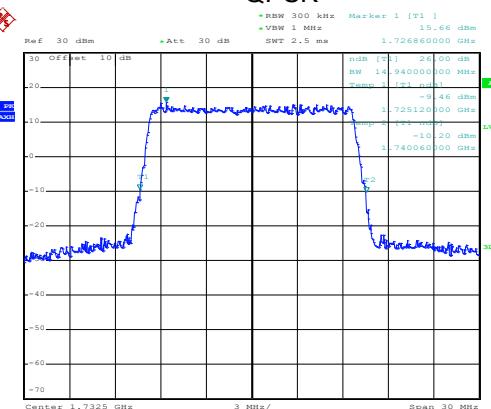
Date: 5.DEC.2017 14:40:53

Lowest channel

16QAM



QPSK

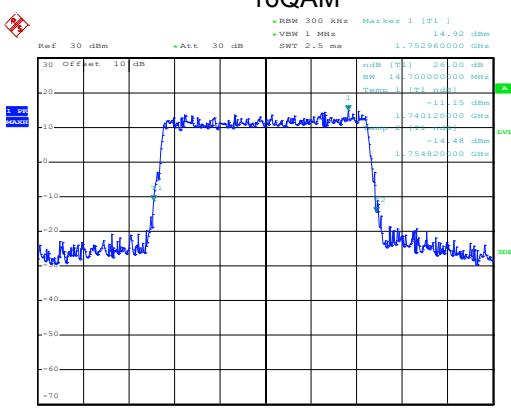


Date: 5.DEC.2017 14:41:16

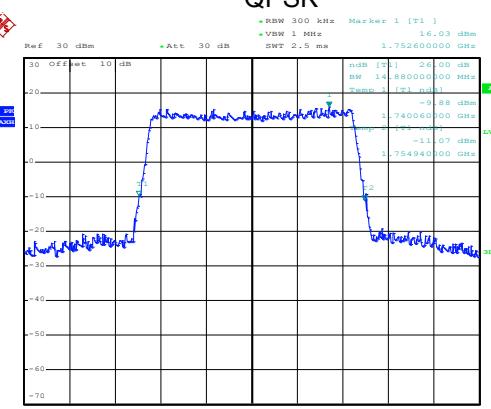
Date: 5.DEC.2017 14:41:12

Middle channel

16QAM



QPSK

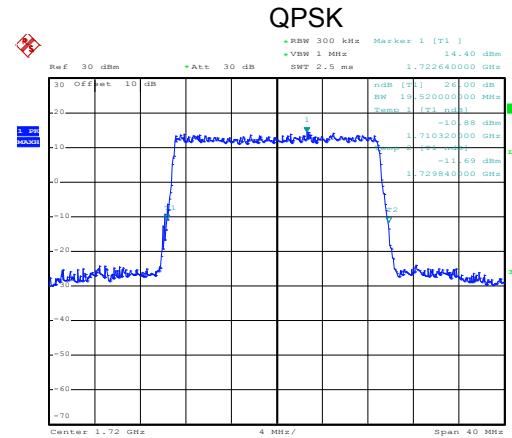
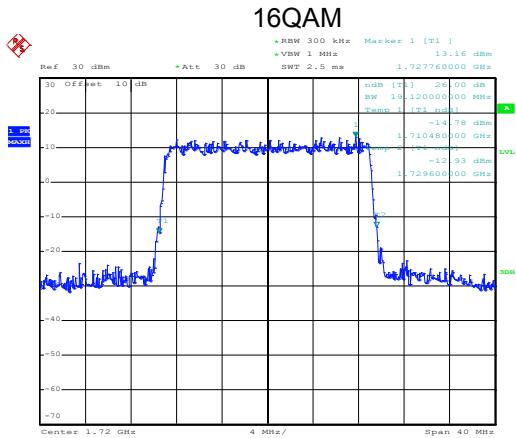


Date: 5.DEC.2017 14:42:26

Date: 5.DEC.2017 14:42:22

Highest channel

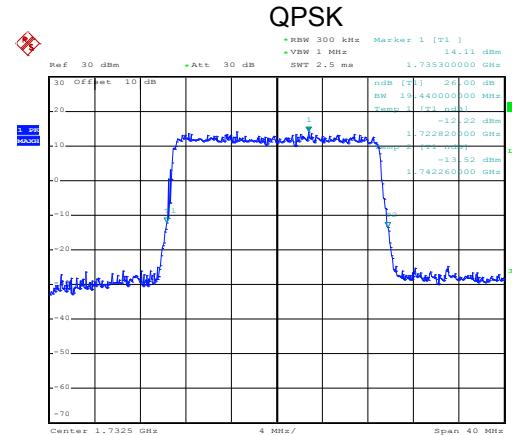
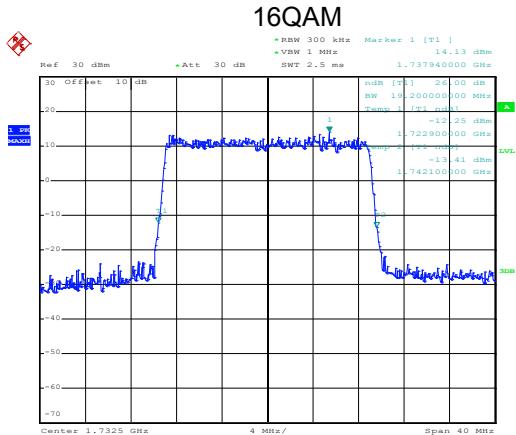
-26dBc bandwidth
BW: 20MHz



Date: 5.DEC.2017 14:43:02

Date: 5.DEC.2017 14:42:58

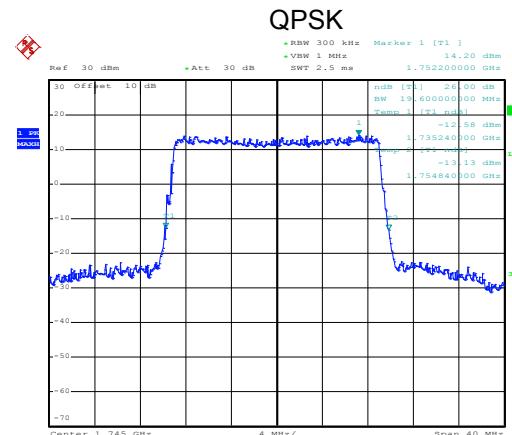
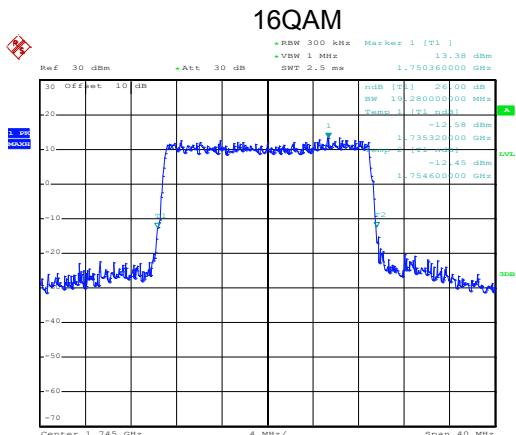
Lowest channel



Date: 5.DEC.2017 14:43:34

Date: 5.DEC.2017 14:43:30

Middle channel



Date: 5.DEC.2017 14:43:51

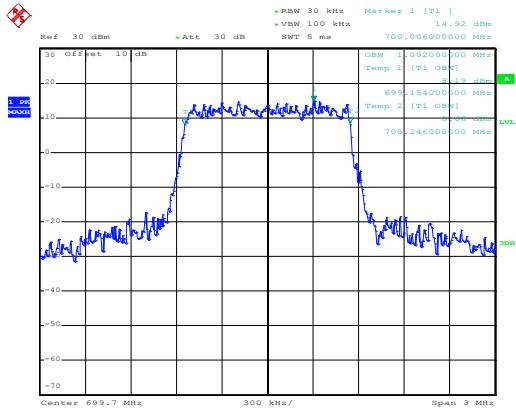
Date: 5.DEC.2017 14:43:47

Highest channel

LTE Band 12 part

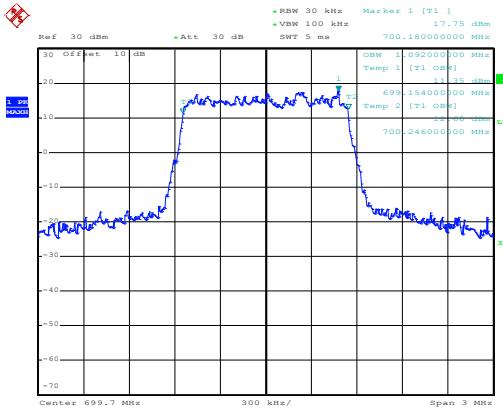
99% Occupy bandwidth
BW: 1.4MHz

16QAM



Date: 5.DEC.2017 14:44:45

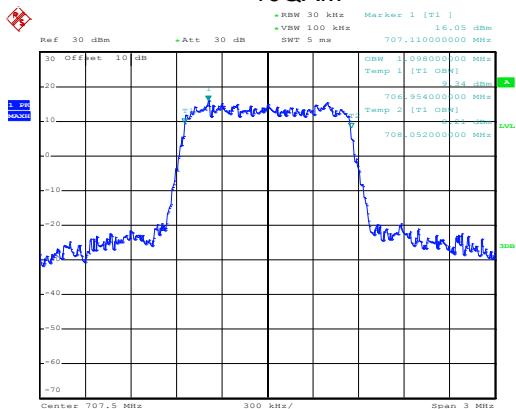
QPSK



Date: 5.DEC.2017 14:44:41

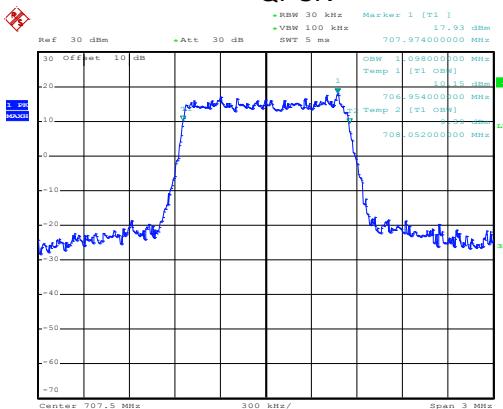
Lowest channel

16QAM



Date: 5.DEC.2017 14:45:25

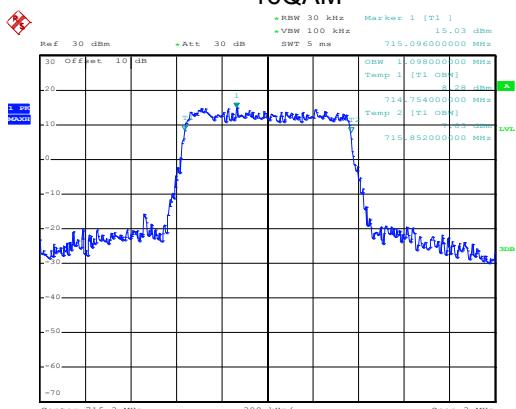
QPSK



Date: 5.DEC.2017 14:45:21

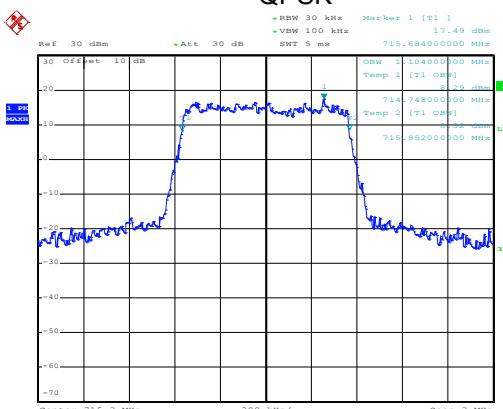
Middle channel

16QAM



Date: 5.DEC.2017 14:45:41

QPSK

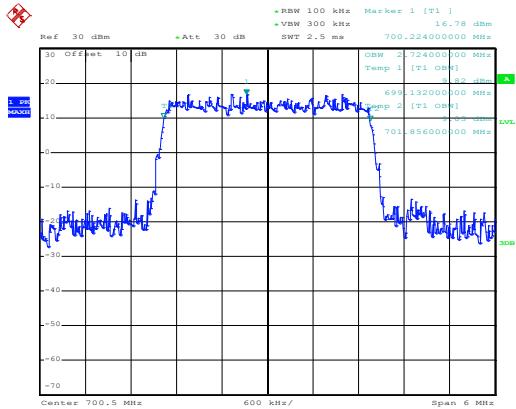


Date: 5.DEC.2017 14:45:38

Highest channel

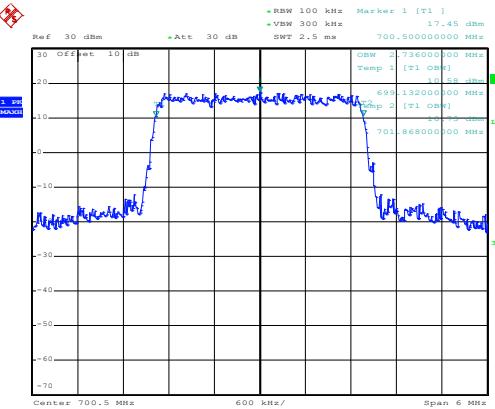
99% Occupy bandwidth
BW: 3MHz

16QAM



Date: 5.DEC.2017 14:46:27

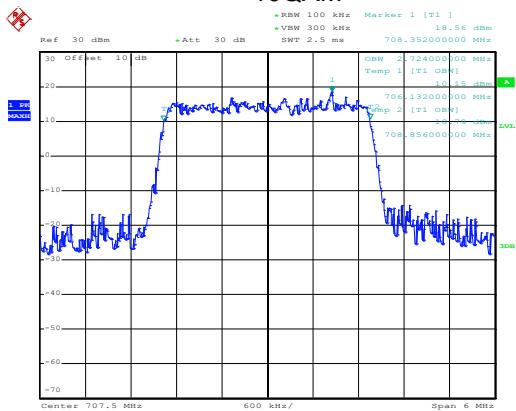
QPSK



Date: 5.DEC.2017 14:46:24

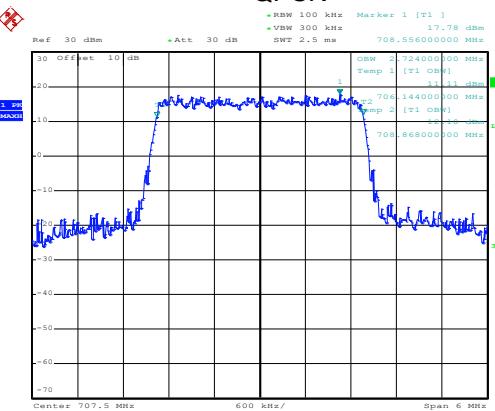
Lowest channel

16QAM



Date: 5.DEC.2017 14:47:22

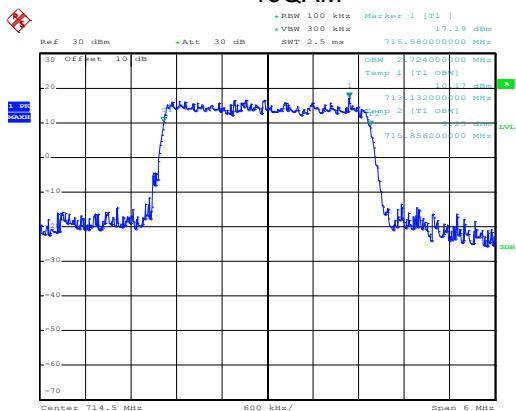
QPSK



Date: 5.DEC.2017 14:47:18

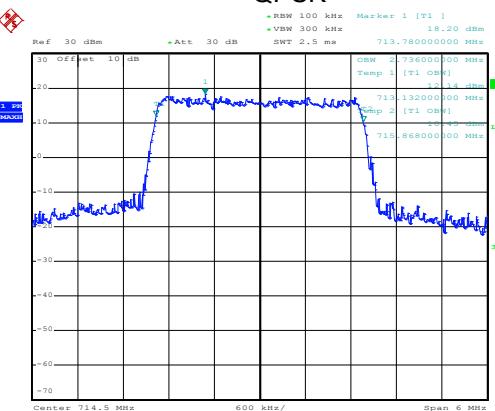
Middle channel

16QAM



Date: 5.DEC.2017 14:47:38

QPSK

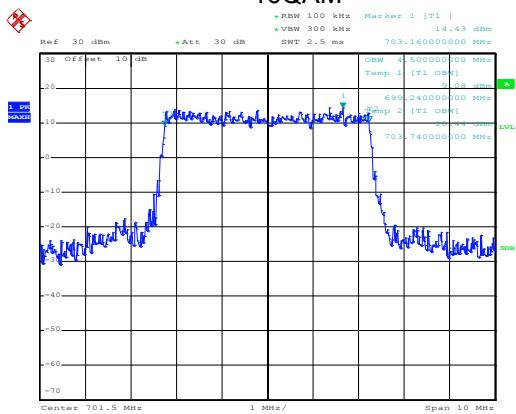


Date: 5.DEC.2017 14:47:34

Highest channel

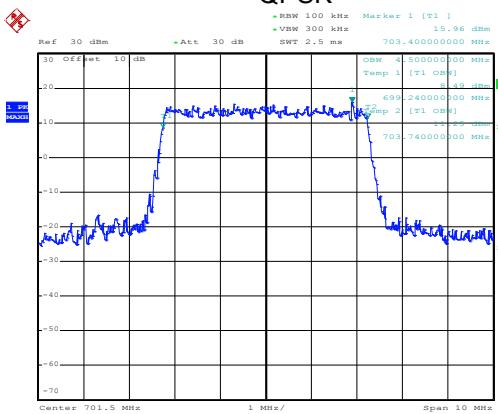
99% Occupy bandwidth
BW: 5MHz

16QAM



Date: 5.DEC.2017 14:48:26

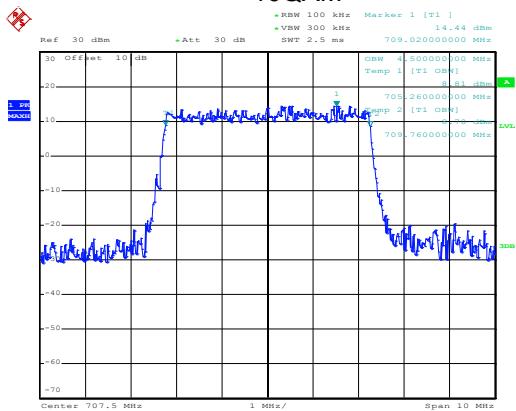
QPSK



Date: 5.DEC.2017 14:48:22

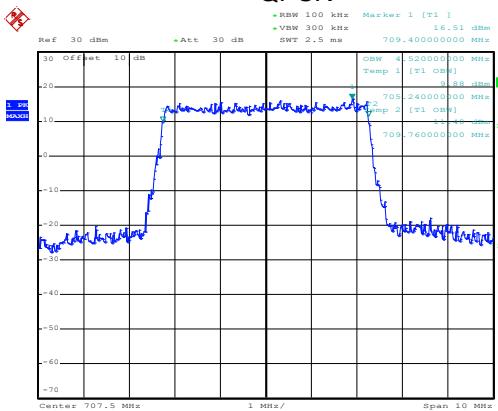
Lowest channel

16QAM



Date: 5.DEC.2017 14:48:43

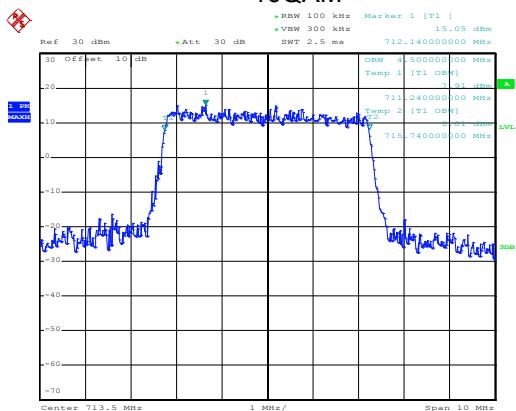
QPSK



Date: 5.DEC.2017 14:48:39

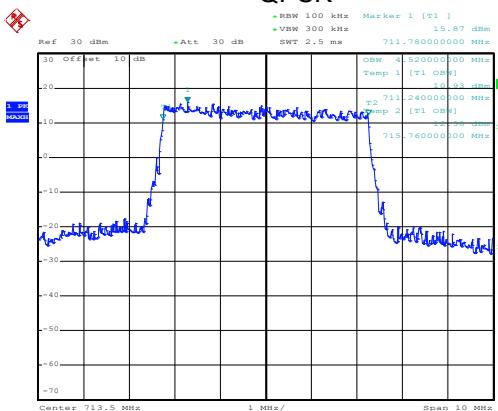
Middle channel

16QAM



Date: 5.DEC.2017 14:49:20

QPSK

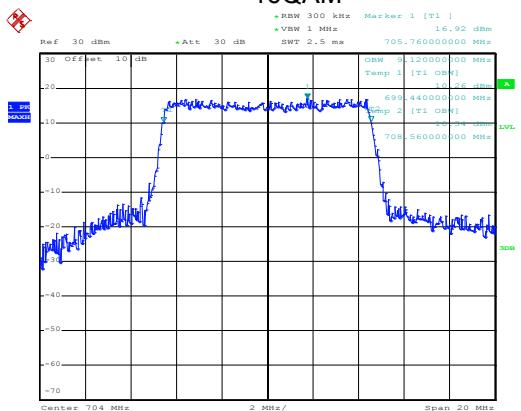


Date: 5.DEC.2017 14:49:15

Highest channel

99% Occupy bandwidth
BW: 10MHz

16QAM



Date: 5.DEC.2017 14:49:51

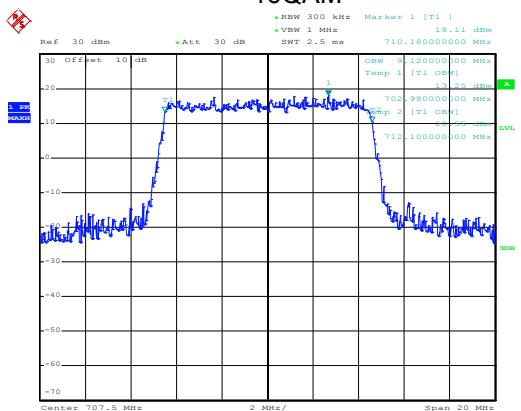
QPSK



Date: 5.DEC.2017 14:49:47

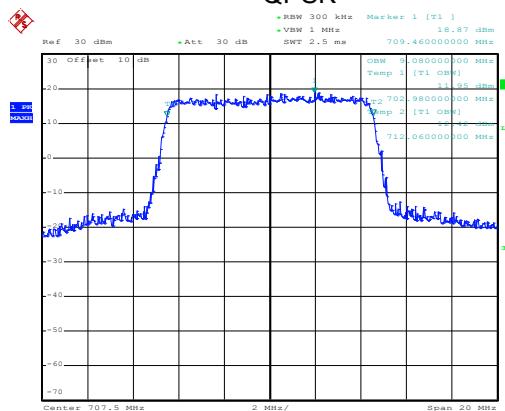
Lowest channel

16QAM



Date: 5.DEC.2017 14:50:28

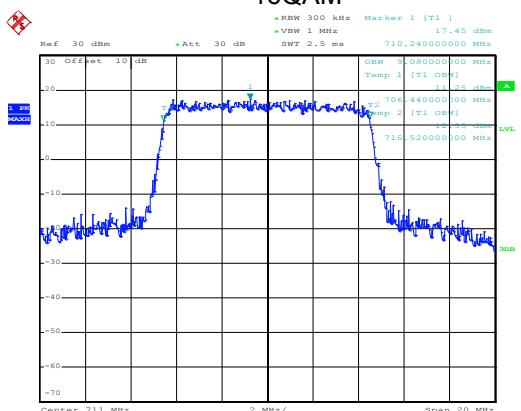
QPSK



Date: 5.DEC.2017 14:50:23

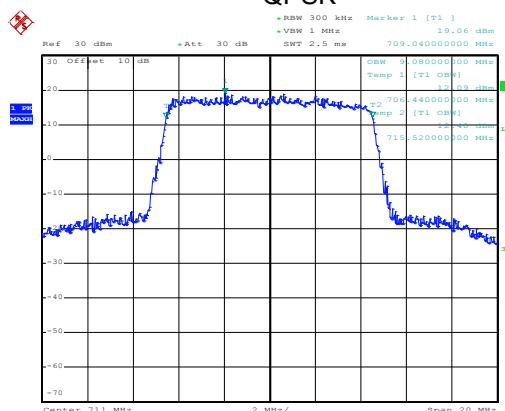
Middle channel

16QAM



Date: 5.DEC.2017 14:50:44

QPSK

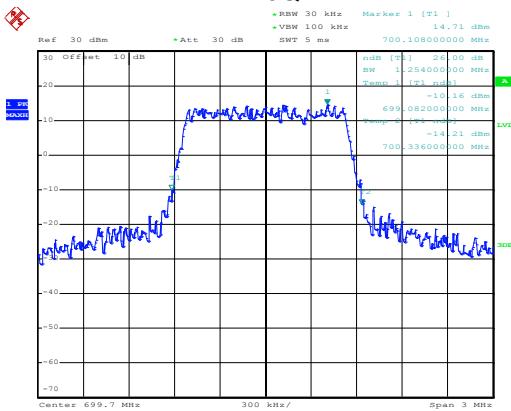


Date: 5.DEC.2017 14:50:40

Highest channel

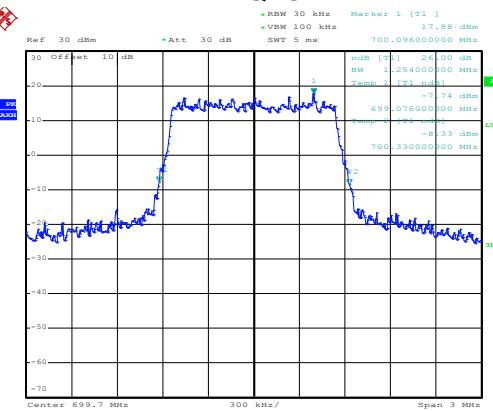
-26dBc bandwidth
BW: 1.4MHz

16QAM



Date: 5.DEC.2017 14:44:54

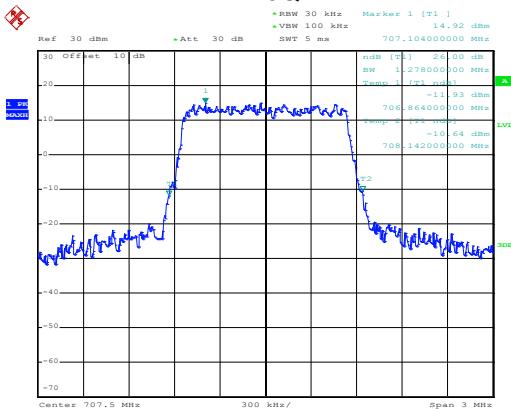
QPSK



Date: 5.DEC.2017 14:44:51

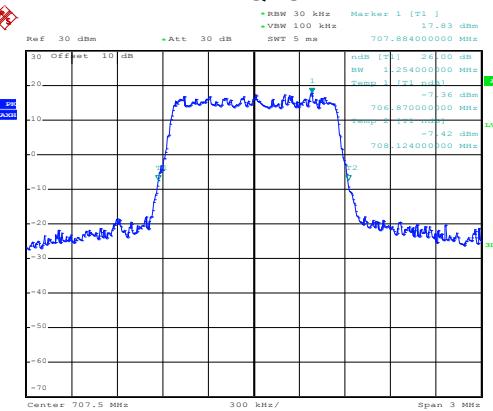
Lowest channel

16QAM



Date: 5.DEC.2017 14:45:15

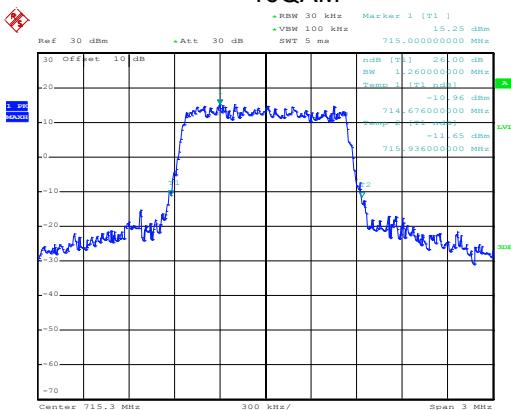
QPSK



Date: 5.DEC.2017 14:45:11

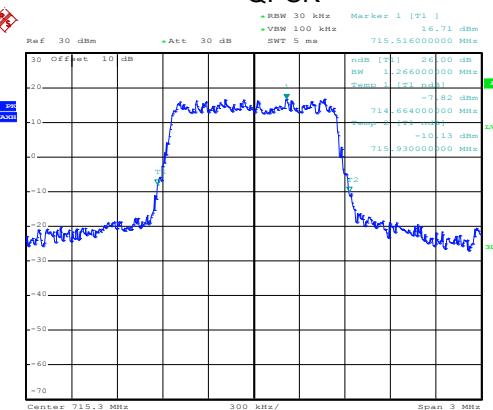
Middle channel

16QAM



Date: 5.DEC.2017 14:45:51

QPSK

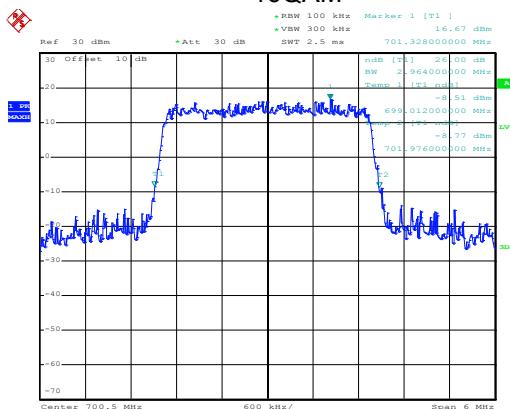


Date: 5.DEC.2017 14:45:47

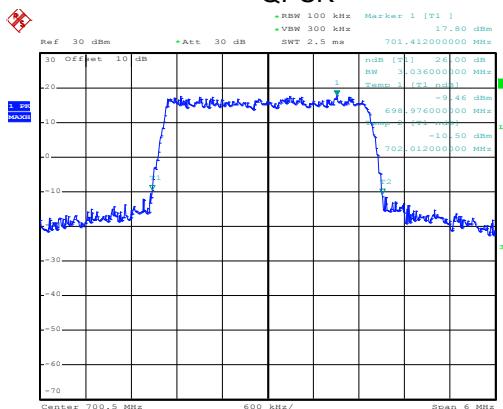
Highest channel

-26dBc bandwidth
BW: 3MHz

16QAM



QPSK

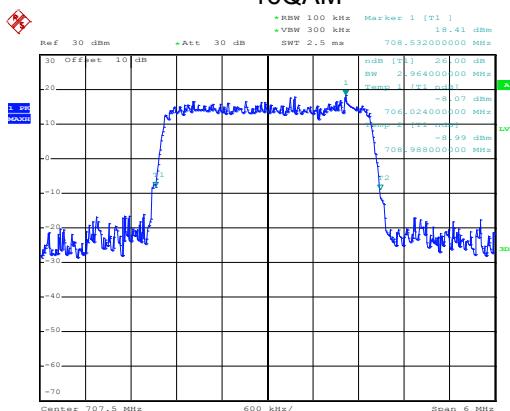


Date: 5.DEC.2017 14:46:18

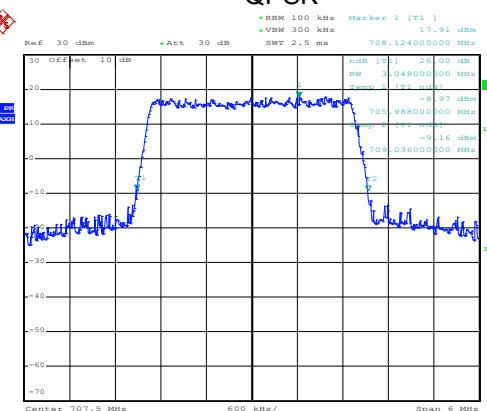
Date: 5.DEC.2017 14:46:50

Lowest channel

16QAM



QPSK

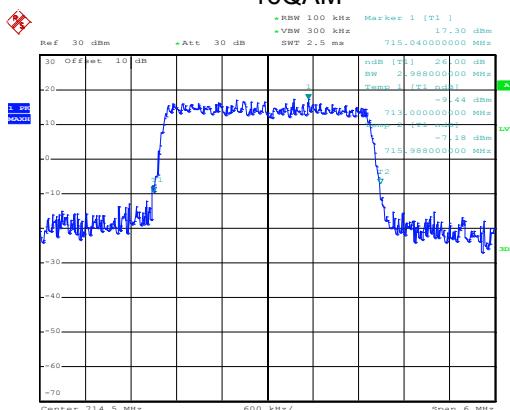


Date: 5.DEC.2017 14:47:12

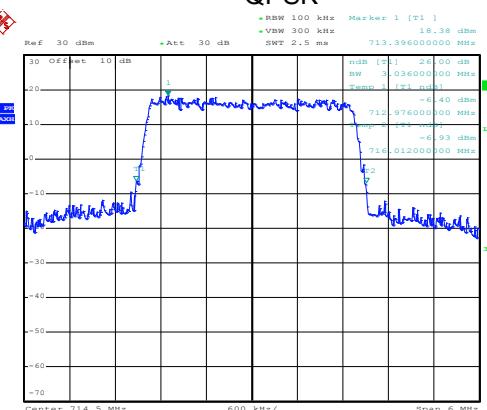
Date: 5.DEC.2017 14:47:08

Middle channel

16QAM



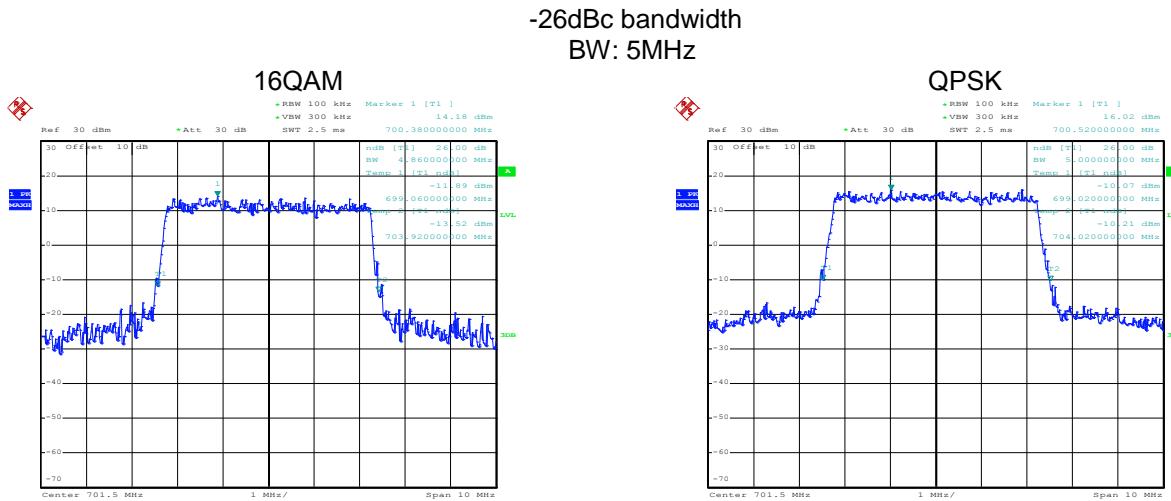
QPSK



Date: 5.DEC.2017 14:47:47

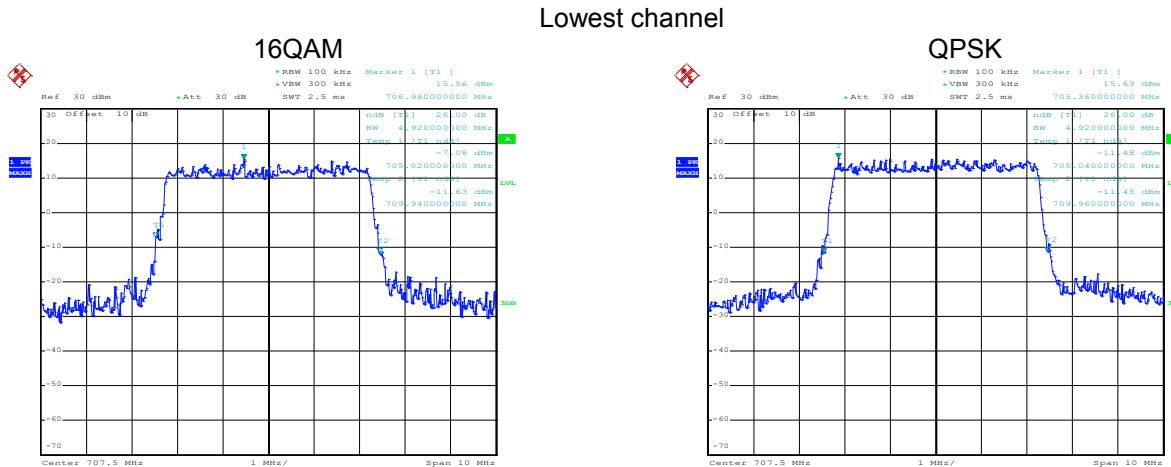
Date: 5.DEC.2017 14:47:44

Highest channel



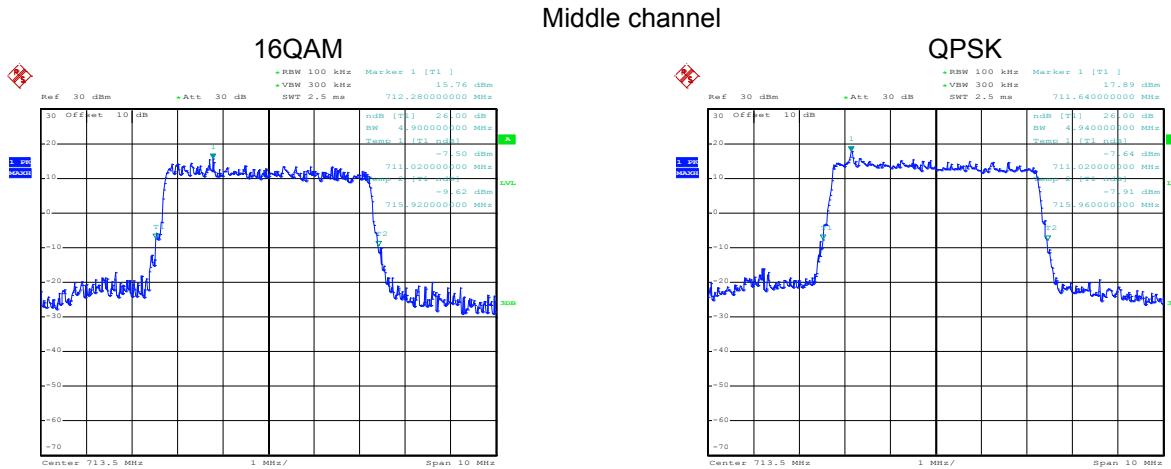
Date: 5.DEC.2017 14:48:16

Date: 5.DEC.2017 14:48:12



Date: 5.DEC.2017 14:48:52

Date: 5.DEC.2017 14:48:48

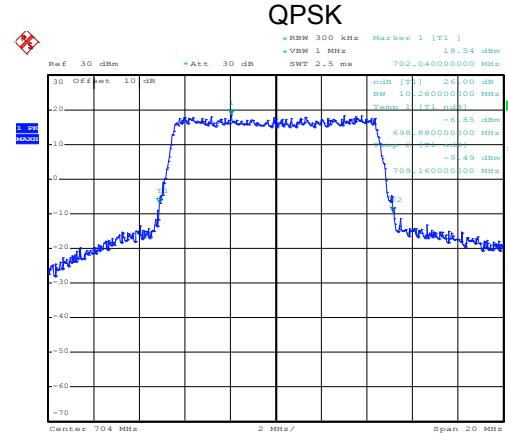
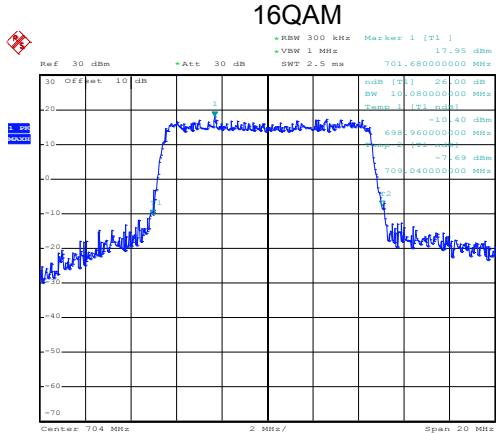


Date: 5.DEC.2017 14:49:09

Date: 5.DEC.2017 14:49:05

Highest channel

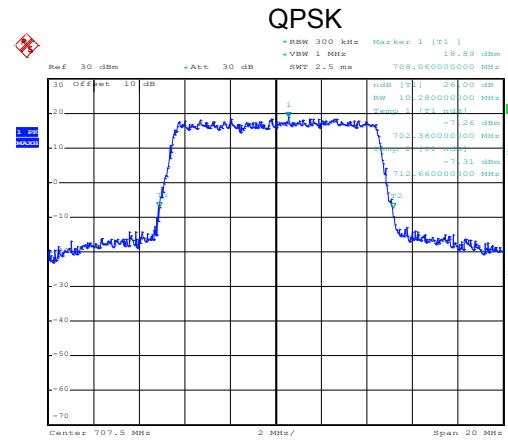
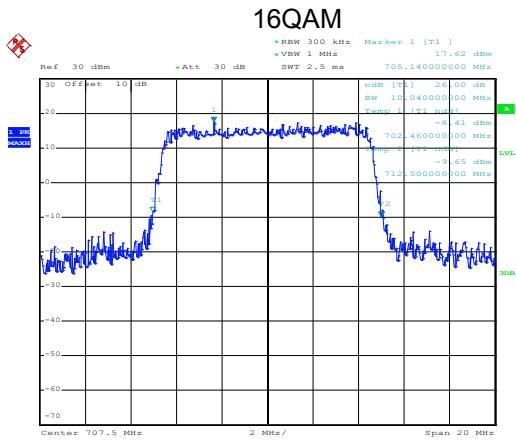
-26dBc bandwidth
BW: 10MHz



Date: 5.DEC.2017 14:50:01

Date: 5.DEC.2017 14:49:57

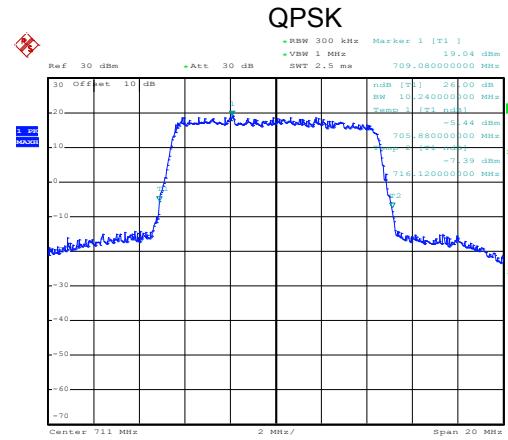
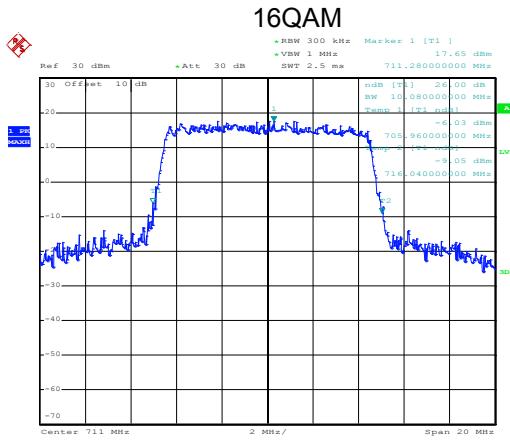
Lowest channel



Date: 5.DEC.2017 14:50:17

Date: 5.DEC.2017 14:50:14

Middle channel



Date: 5.DEC.2017 14:58:44

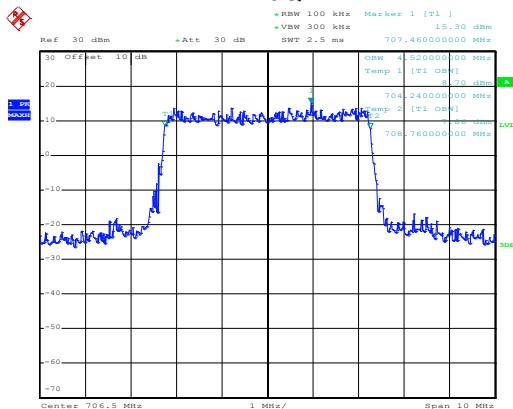
Date: 5.DEC.2017 14:58:38

Highest channel

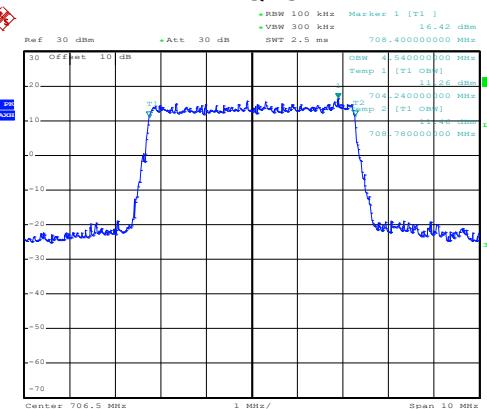
LTE-Band 17 part

99% Occupy bandwidth
BW: 5MHz

16QAM



QPSK

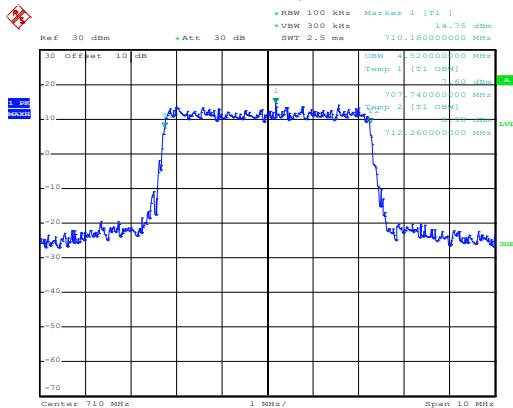


Date: 5.DEC.2017 14:51:21

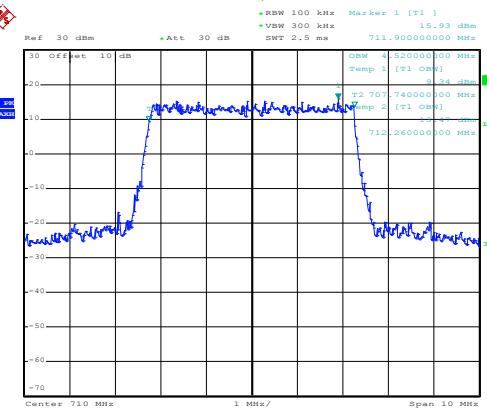
Date: 5.DEC.2017 14:51:16

Lowest channel

16QAM



QPSK

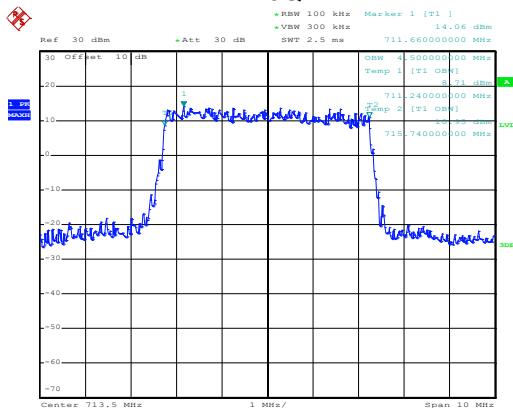


Date: 5.DEC.2017 14:51:59

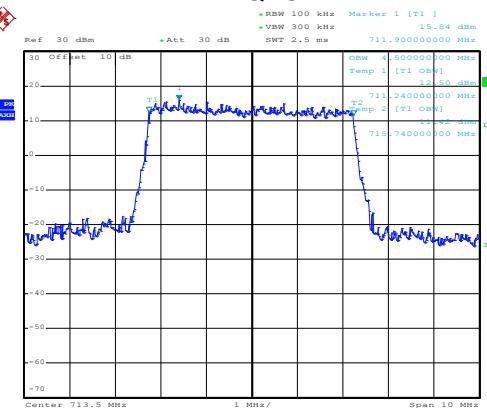
Date: 5.DEC.2017 14:51:54

Middle channel

16QAM



QPSK



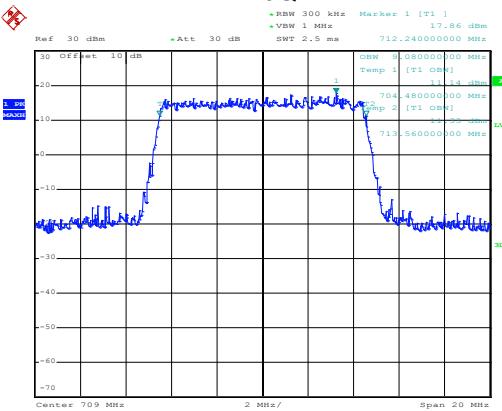
Date: 5.DEC.2017 14:52:16

Date: 5.DEC.2017 14:52:12

Highest channel

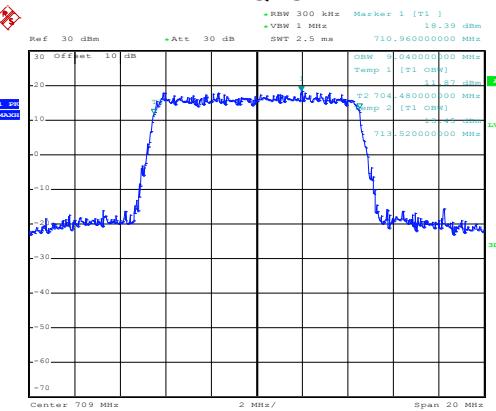
99% Occupy bandwidth
BW: 10MHz

16QAM



Date: 5.DEC.2017 14:53:10

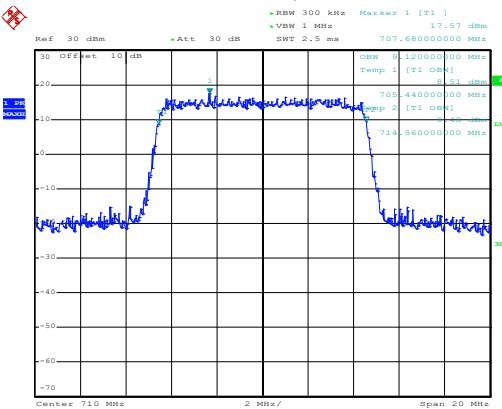
QPSK



Date: 5.DEC.2017 14:53:05

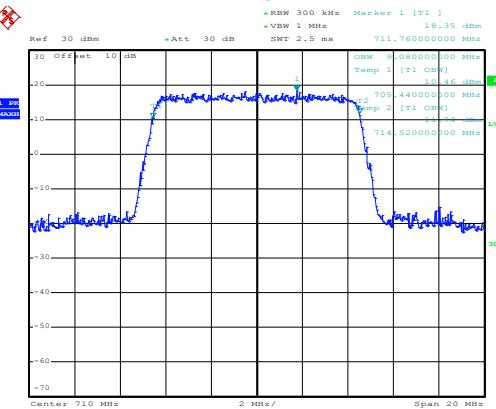
Lowest channel

16QAM



Date: 5.DEC.2017 14:53:26

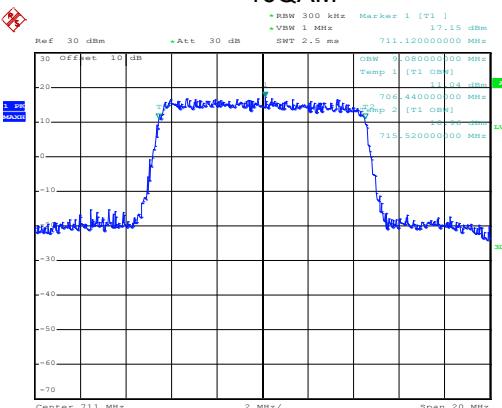
QPSK



Date: 5.DEC.2017 14:53:21

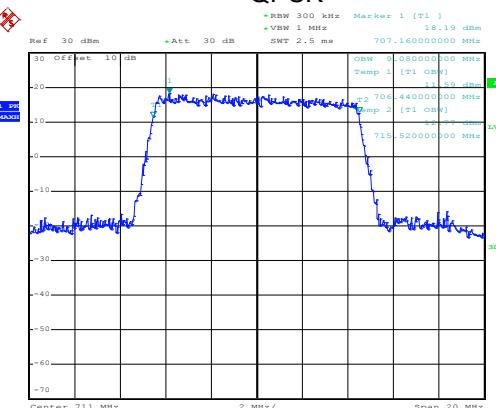
Middle channel

16QAM



Date: 5.DEC.2017 14:54:04

QPSK

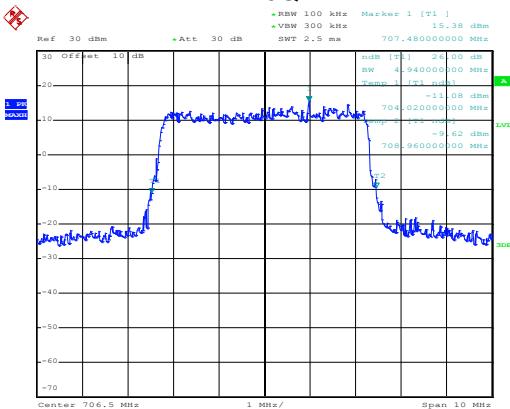


Date: 5.DEC.2017 14:53:59

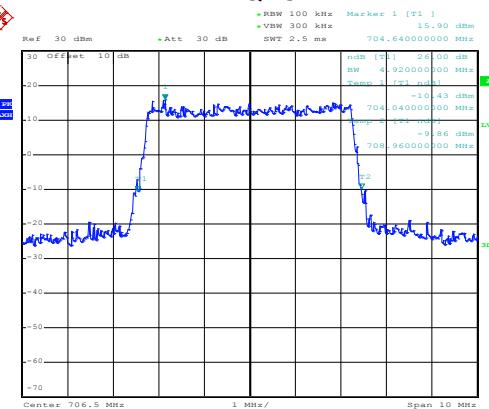
Highest channel

-26dBc bandwidth
BW: 5MHz

16QAM



QPSK

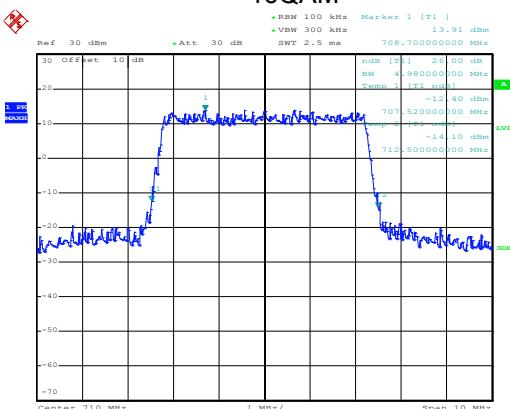


Date: 5.DEC.2017 14:51:32

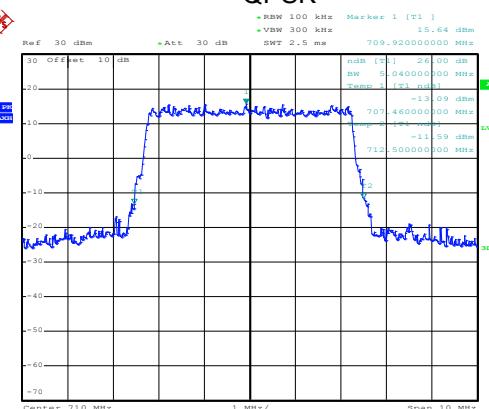
Date: 5.DEC.2017 14:51:28

Lowest channel

16QAM



QPSK

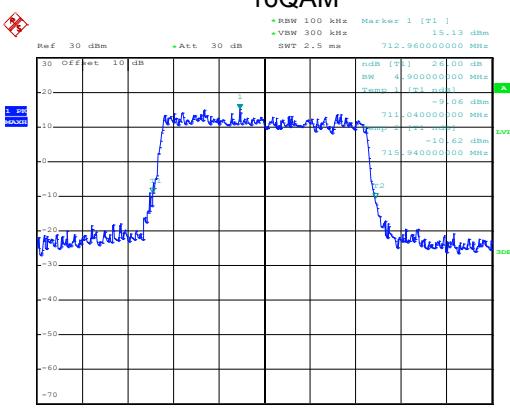


Date: 5.DEC.2017 14:51:48

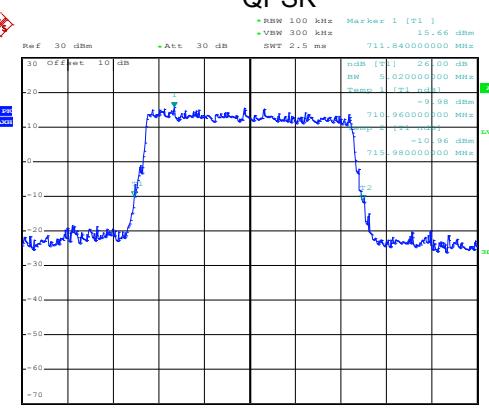
Date: 5.DEC.2017 14:51:44

Middle channel

16QAM



QPSK



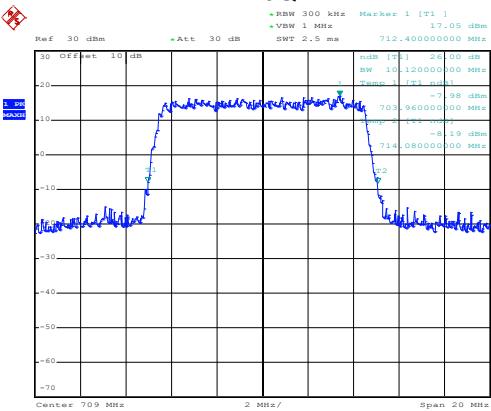
Date: 5.DEC.2017 14:52:27

Date: 5.DEC.2017 14:52:23

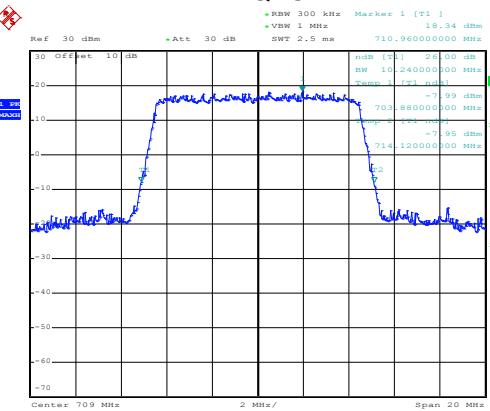
Highest channel

-26dBc bandwidth
BW: 10MHz

16QAM



QPSK

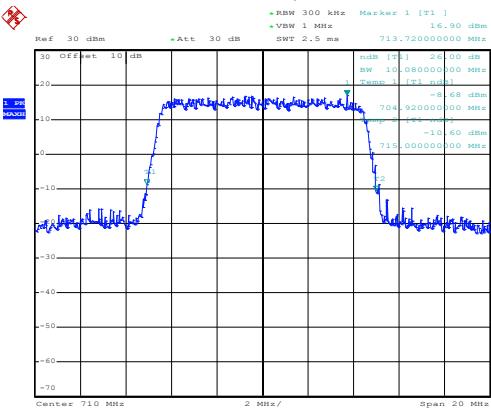


Date: 5.DEC.2017 14:52:59

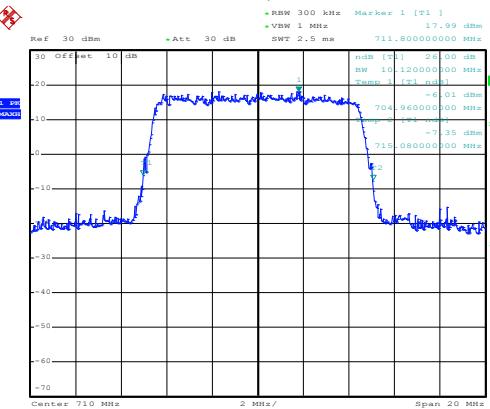
Date: 5.DEC.2017 14:52:55

Lowest channel

16QAM



QPSK

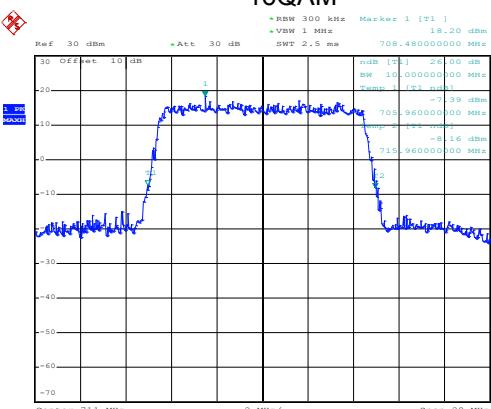


Date: 5.DEC.2017 14:53:37

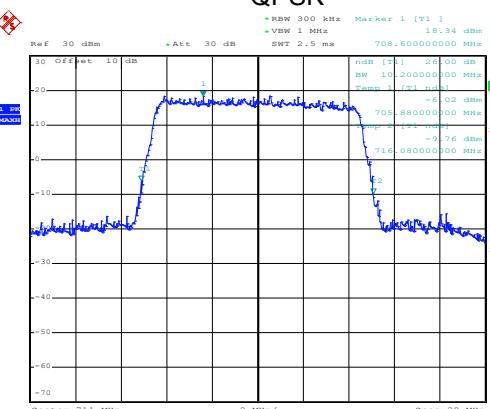
Date: 5.DEC.2017 14:53:32

Middle channel

16QAM



QPSK

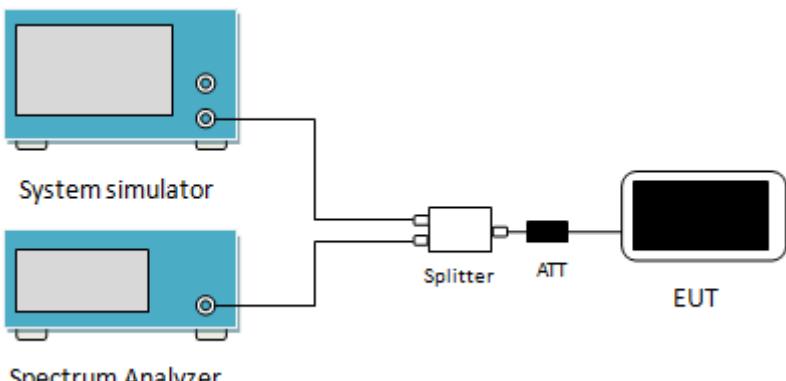


Date: 5.DEC.2017 14:53:52

Date: 5.DEC.2017 14:53:48

Highest channel

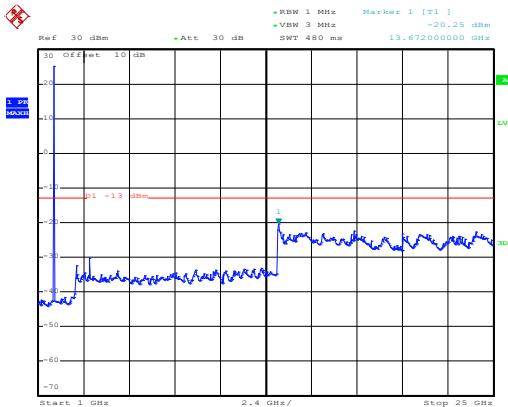
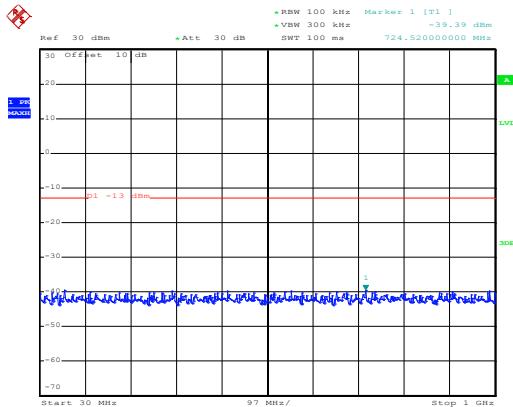
6.4 Out of band emission at antenna terminals

| | |
|-------------------|--|
| Test Requirement: | Part 24.238 (a), part 27.53(g), part 27.53(h) |
| Test Method: | ANSI/TIA-603-D 2010 |
| Limit: | LTE Band 2 & 4 & 12 & 17: The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB (-13 dBm). |
| Test Setup: |  <p>The diagram illustrates the test setup. A blue rectangular block labeled "System simulator" has two circular ports on its right side. One port is connected to a blue rectangular block labeled "Spectrum Analyzer" via a line. The other port is connected to a "Splitter" (represented by a small rectangle with three ports) via a line. From the Splitter, one port goes to an "EUT" (Equipment Under Test, represented by a black rectangle) and another port goes to an "ATT" (Attenuator, represented by a small black rectangle). Both the EUT and ATT are connected to the "Splitter". All components are connected to a common ground plane.</p> |
| Test Procedure: | <ol style="list-style-type: none"> 1 The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. 2 The resolution bandwidth of the spectrum analyzer was set at 100 kHz when below 1GHz, 1MHz when above 1 GHz; sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic. 3 For the out of band: Set the RBW=100 kHz, VBW=300 kHz when below 1 GHz, RBW =1 MHz, VBW=3 MHz when above 1 GHz, Start=30MHz, Stop= 10th harmonic. 4 Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions. |
| Test Instruments: | Refer to section 5.9 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Passed |

Test plots as follows:
Conducted spurious emission
LTE band 2, 1.4MHz

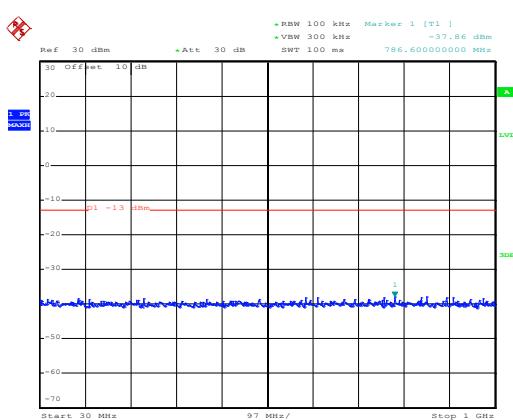
16 QAM & RB Size 1

Lowest channel



Date: 4.DEC.2017 14:38:11

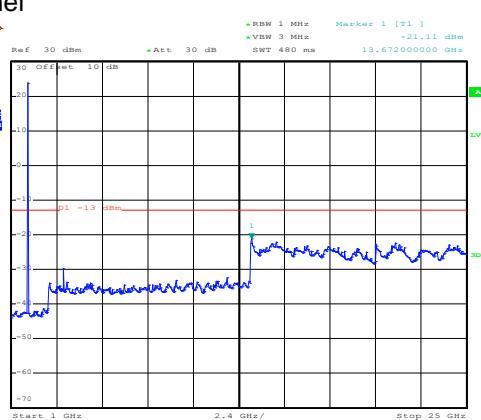
30MHz~1GHz



Date: 1.DEC.2017 15:06:04

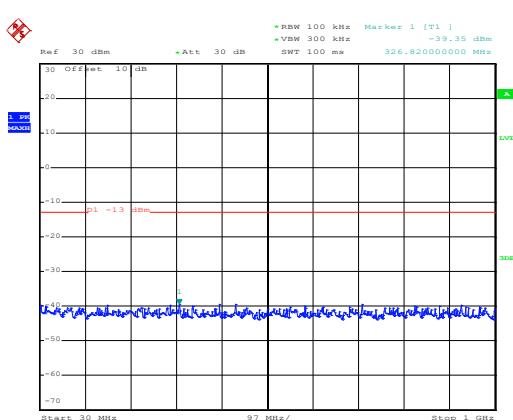
1GHz~25GHz

Middle channel



Date: 4.DEC.2017 14:39:37

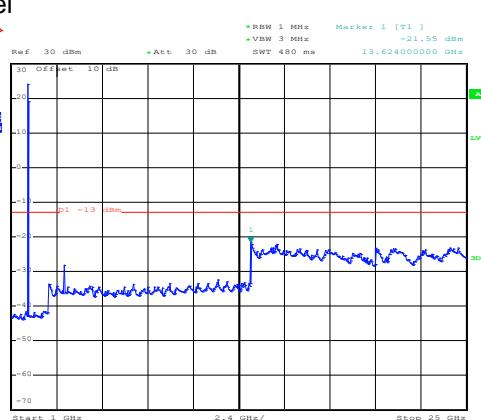
30MHz~1GHz



Date: 1.DEC.2017 15:06:58

1GHz~25GHz

High channel



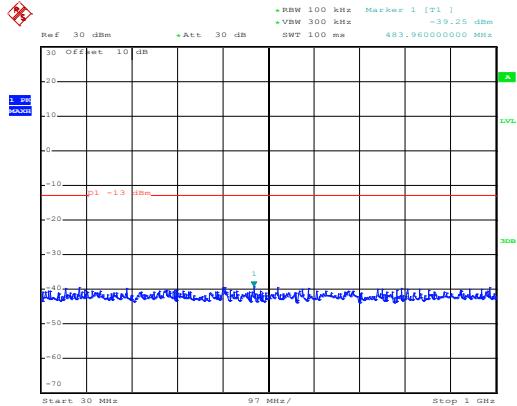
Date: 4.DEC.2017 14:40:38

30MHz~1GHz

Date: 1.DEC.2017 15:07:55

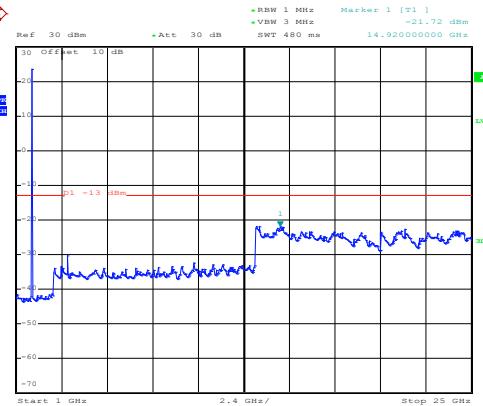
1GHz~25GHz

16 QAM & RB Size 6 Lowest channel



Date: 4.DEC.2017 14:38:25

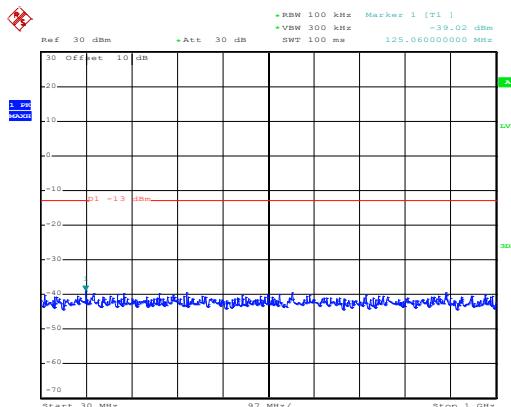
30MHz~1GHz



Date: 1.DEC.2017 15:06:25

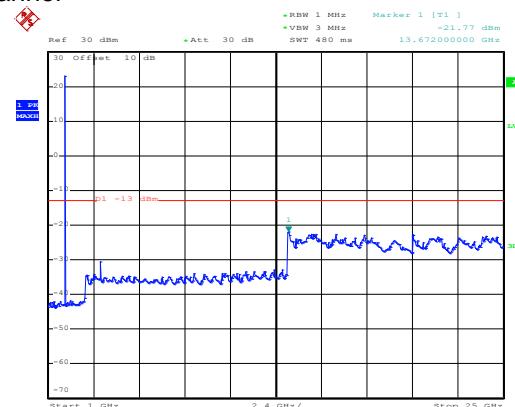
1GHz~25GHz

Middle channel



Date: 4.DEC.2017 14:39:46

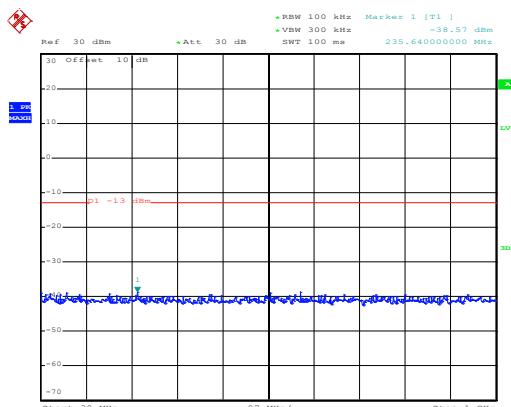
30MHz~1GHz



Date: 1.DEC.2017 15:07:18

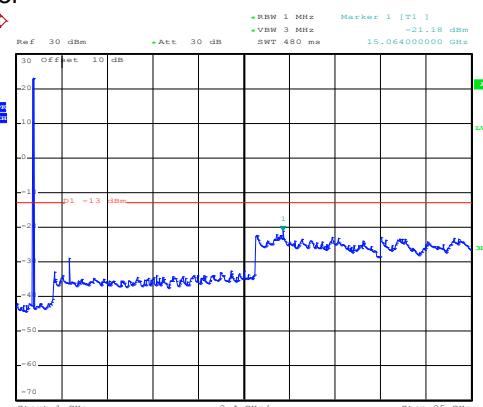
1GHz~25GHz

High channel



Date: 4.DEC.2017 14:40:55

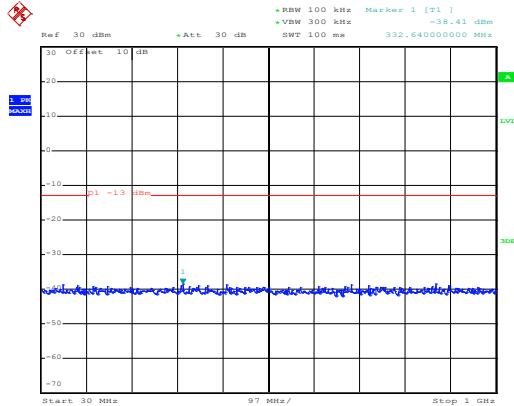
30MHz~1GHz



Date: 1.DEC.2017 15:08:16

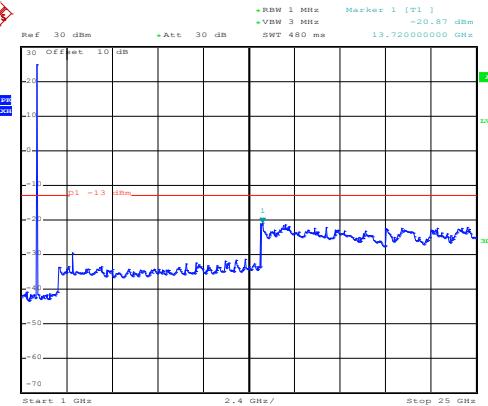
1GHz~25GHz

QPSK & RB Size 1 Lowest channel



Date: 4.DEC.2017 14:38:03

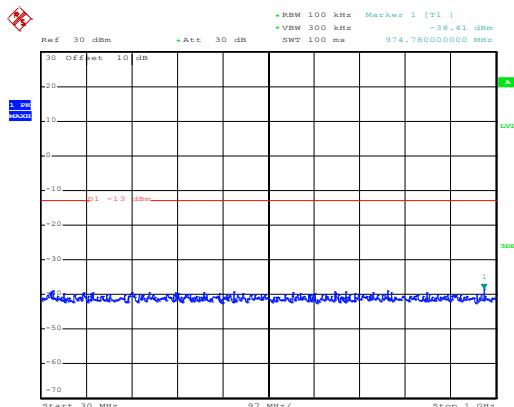
30MHz~1GHz



Date: 1.DEC.2017 15:05:50

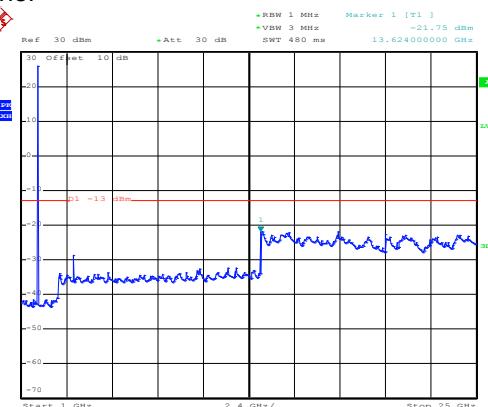
1GHz~25GHz

Middle channel



Date: 4.DEC.2017 14:38:58

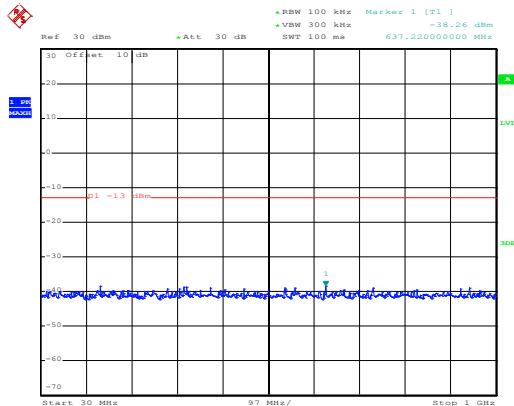
30MHz~1GHz



Date: 1.DEC.2017 15:06:45

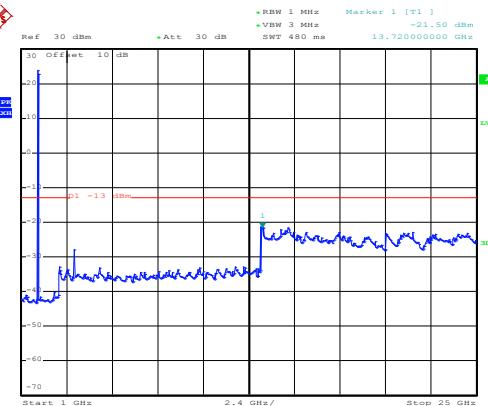
1GHz~25GHz

High channel



Date: 4.DEC.2017 14:39:56

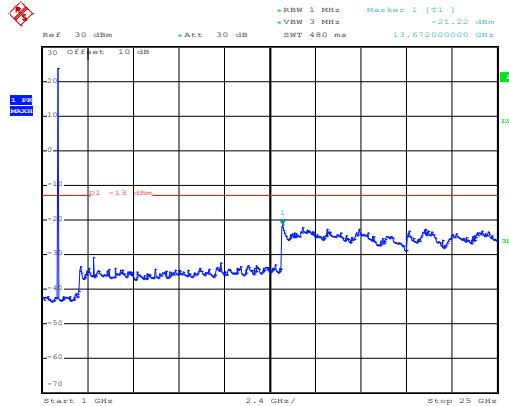
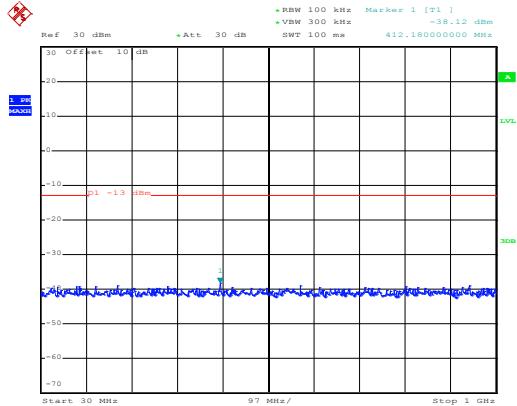
30MHz~1GHz



Date: 1.DEC.2017 15:07:46

1GHz~25GHz

**QPSK & RB Size 6
Lowest channel**



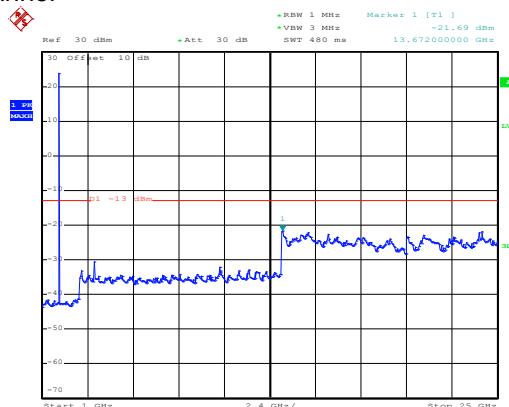
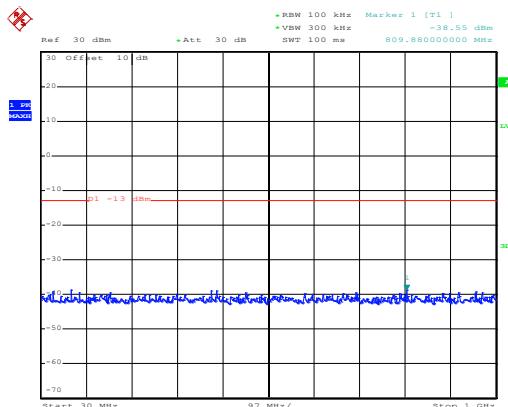
Date: 4.DEC.2017 14:38:21

30MHz~1GHz

Date: 1.DEC.2017 15:06:14

1GHz~25GHz

Middle channel



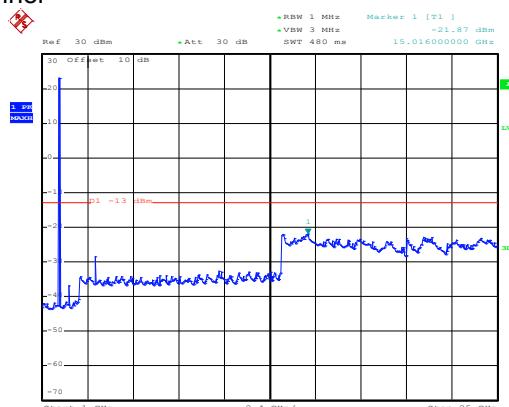
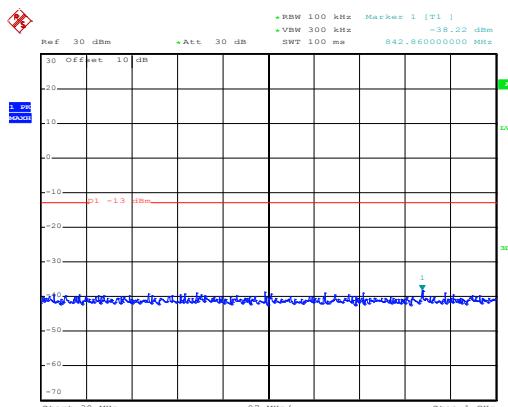
Date: 4.DEC.2017 14:39:43

30MHz~1GHz

Date: 1.DEC.2017 15:07:10

1GHz~25GHz

High channel



Date: 4.DEC.2017 14:40:46

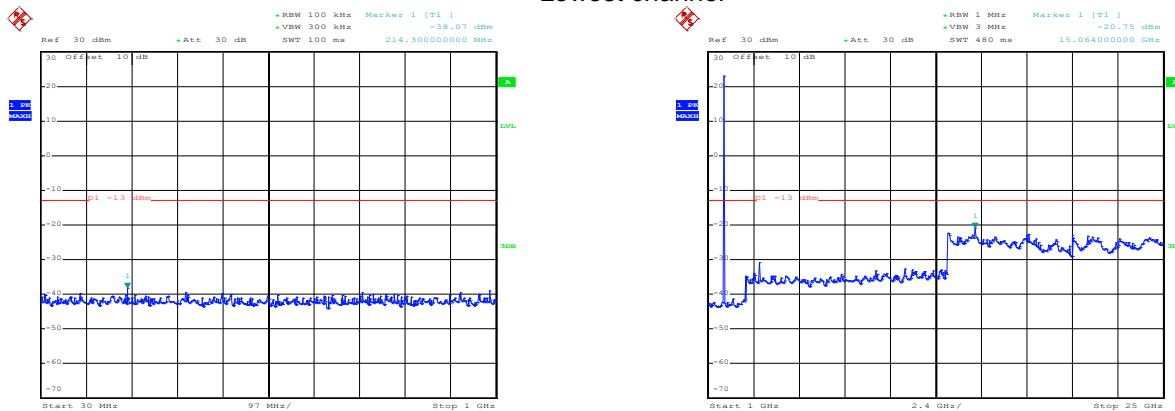
30MHz~1GHz

Date: 1.DEC.2017 15:08:08

1GHz~25GHz

3MHz

16 QAM & RB Size 1 Lowest channel



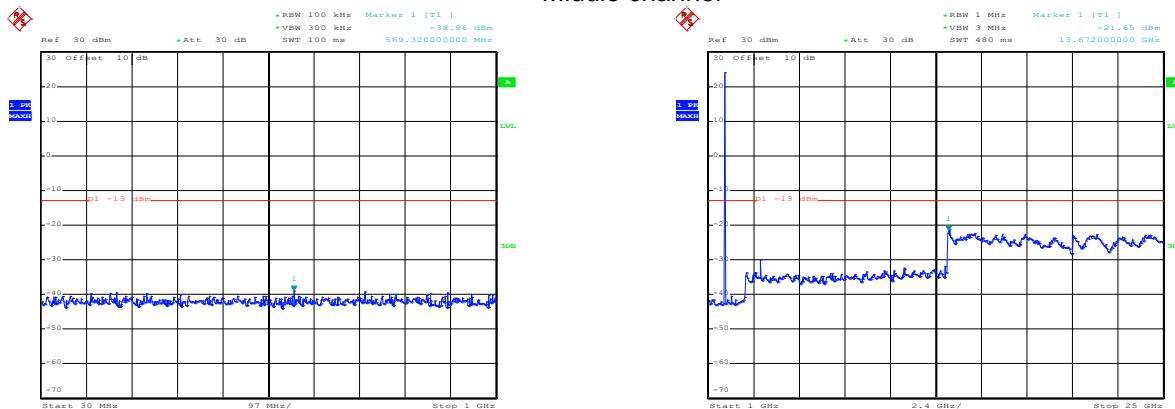
Date: 4.DEC.2017 14:41:11

Date: 1.DEC.2017 15:09:06

30MHz~1GHz

1GHz~25GHz

Middle channel



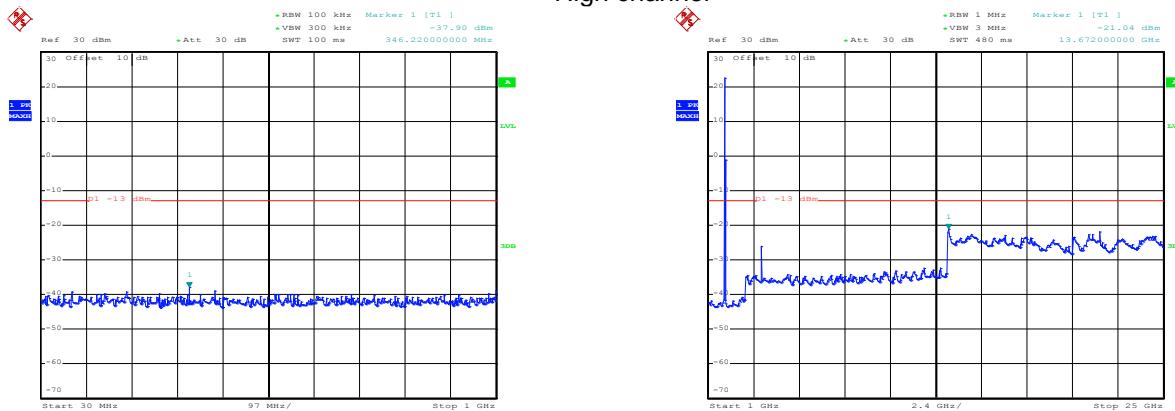
Date: 4.DEC.2017 14:41:35

Date: 1.DEC.2017 15:09:58

30MHz~1GHz

1GHz~25GHz

High channel



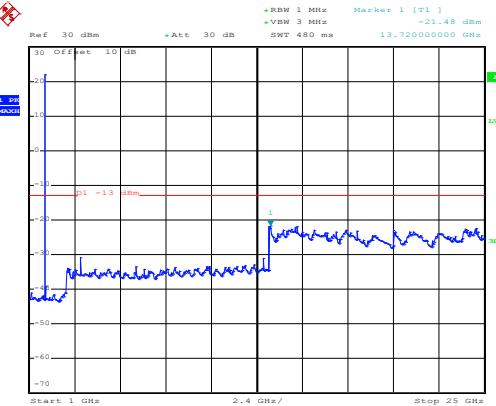
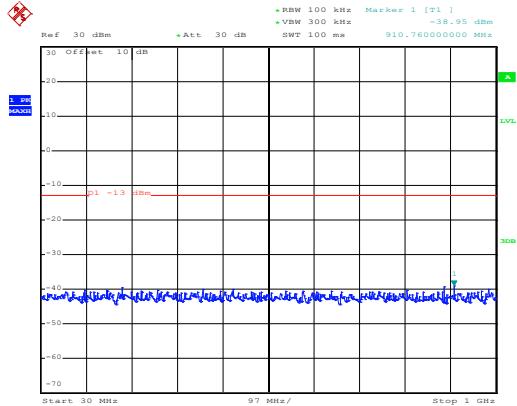
Date: 4.DEC.2017 14:41:59

Date: 1.DEC.2017 15:11:43

30MHz~1GHz

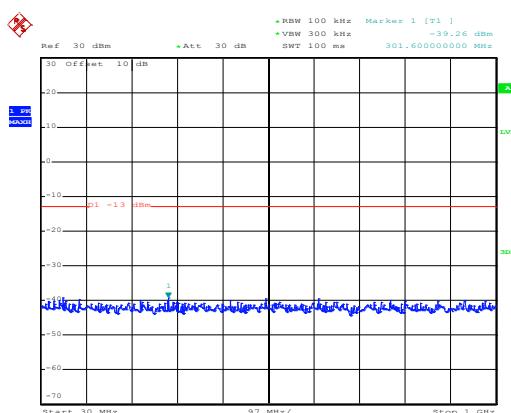
1GHz~25GHz

16 QAM & RB Size 15 Lowest channel

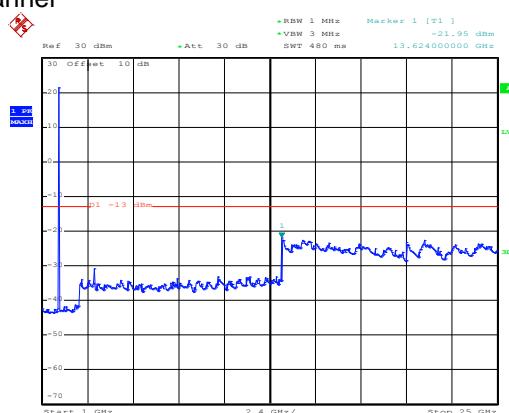


Date: 4.DEC.2017 14:41:22

30MHz~1GHz

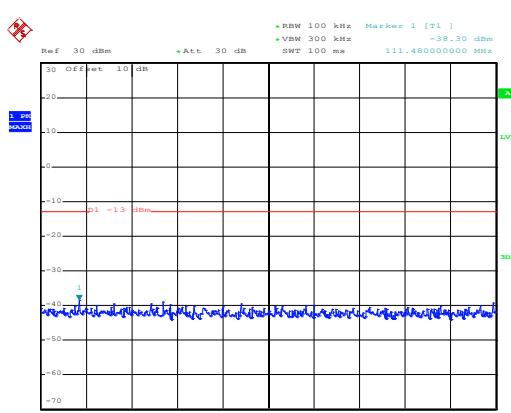


Middle channel

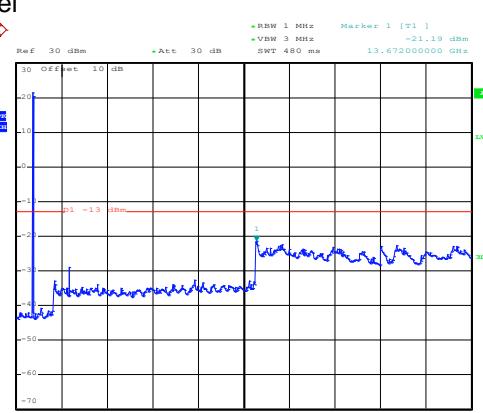


Date: 4.DEC.2017 14:41:47

30MHz~1GHz



High channel



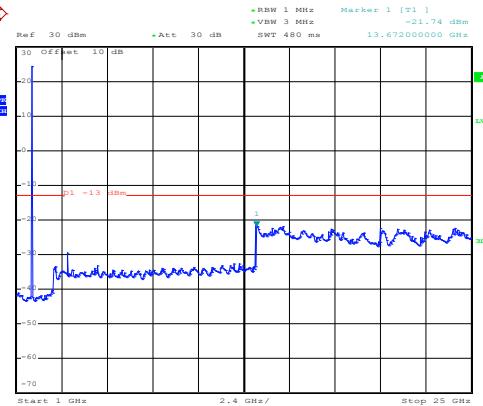
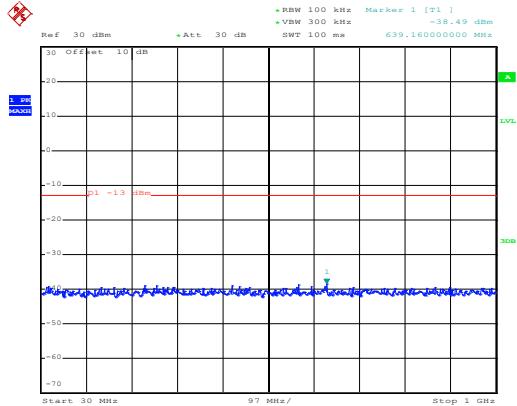
Date: 4.DEC.2017 14:42:10

30MHz~1GHz

Date: 1.DEC.2017 15:11:59

1GHz~25GHz

**QPSK & RB Size 1
Lowest channel**



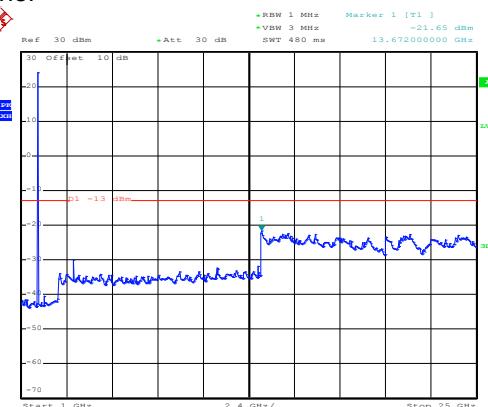
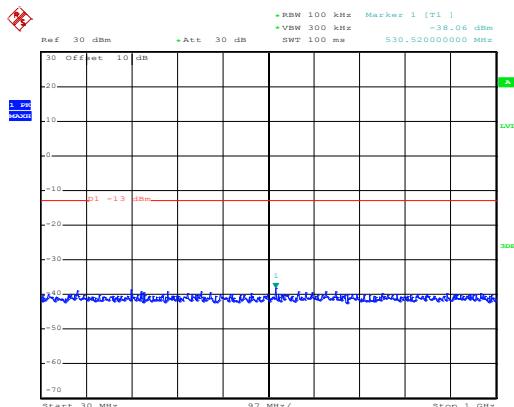
Date: 4.DEC.2017 14:41:07

30MHz~1GHz

Date: 1.DEC.2017 15:08:57

1GHz~25GHz

Middle channel



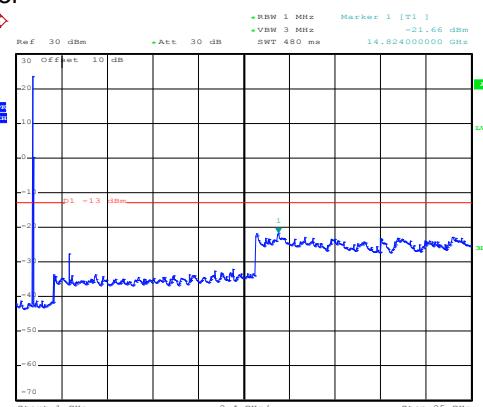
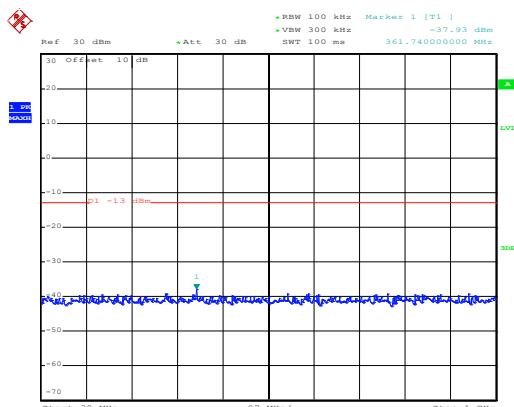
Date: 4.DEC.2017 14:41:31

30MHz~1GHz

Date: 1.DEC.2017 15:09:44

1GHz~25GHz

High channel



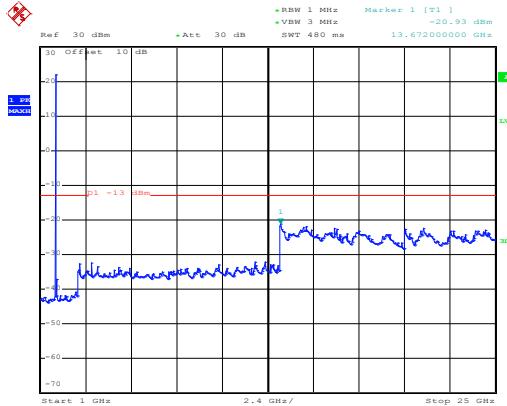
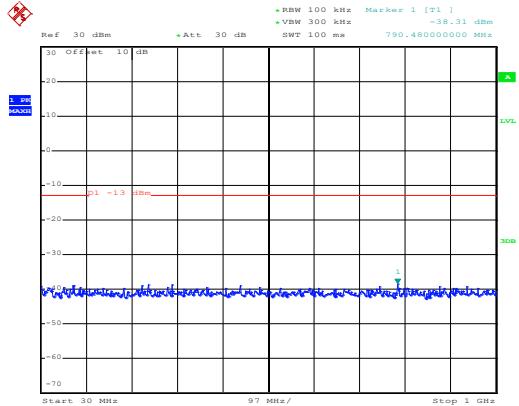
Date: 4.DEC.2017 14:41:56

30MHz~1GHz

Date: 1.DEC.2017 15:11:34

1GHz~25GHz

**QPSK & RB Size 15
Lowest channel**



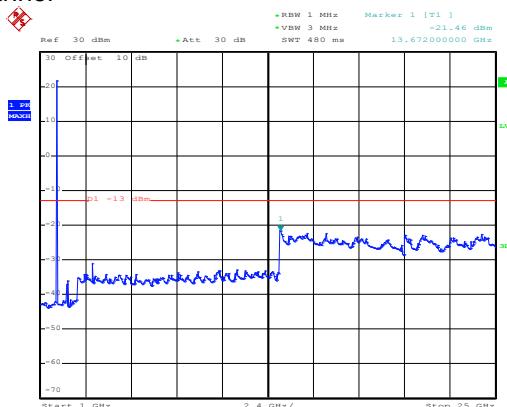
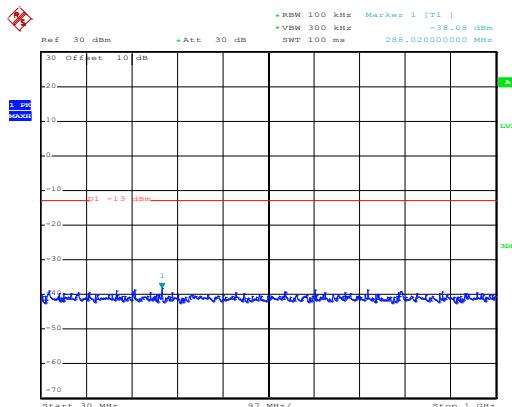
Date: 4.DEC.2017 14:41:19

30MHz~1GHz

Date: 1.DEC.2017 15:09:18

1GHz~25GHz

Middle channel



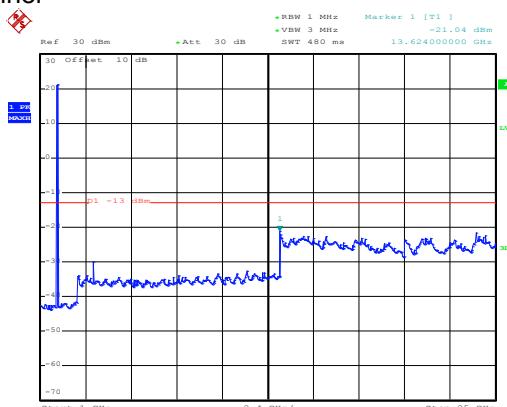
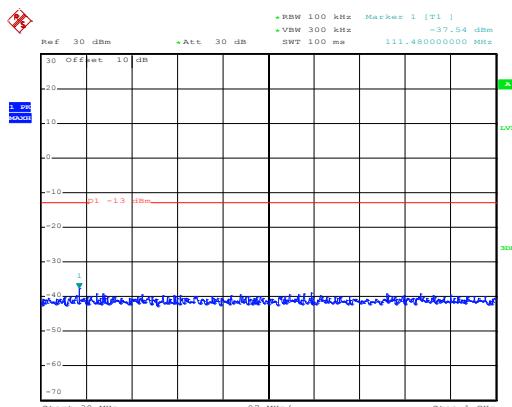
Date: 4.DEC.2017 14:41:43

30MHz~1GHz

Date: 1.DEC.2017 15:11:09

1GHz~25GHz

High channel



Date: 4.DEC.2017 14:42:06

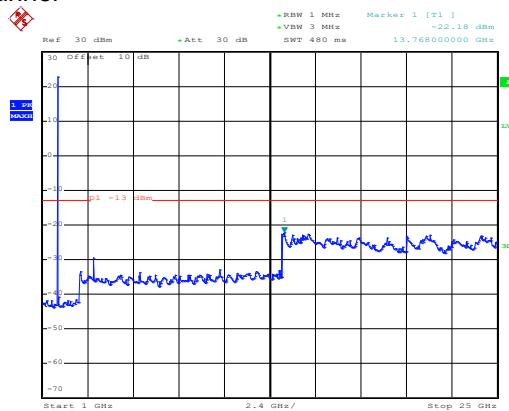
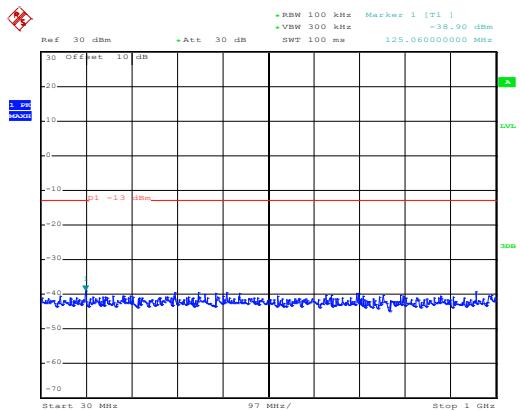
30MHz~1GHz

Date: 1.DEC.2017 15:11:52

1GHz~25GHz

5MHz

16 QAM & RB Size 1 Lowest channel



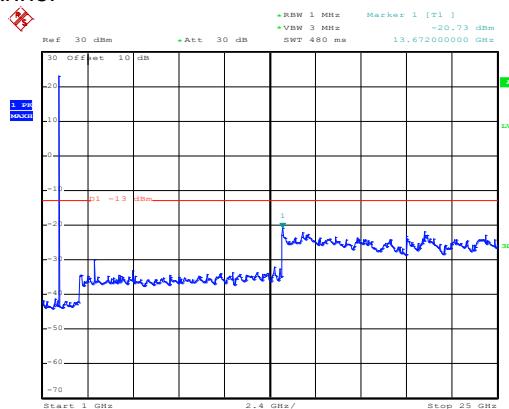
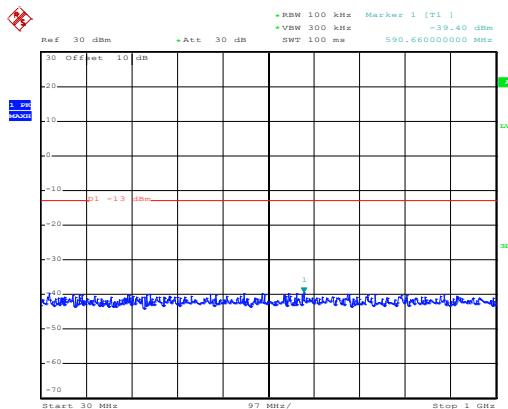
Date: 4.DEC.2017 14:42:22

Date: 1.DEC.2017 15:12:38

30MHz~1GHz

1GHz~25GHz

Middle channel



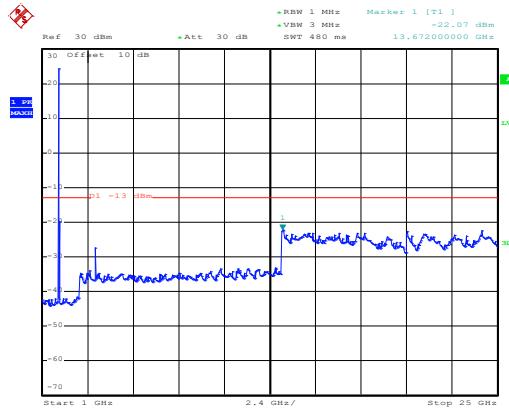
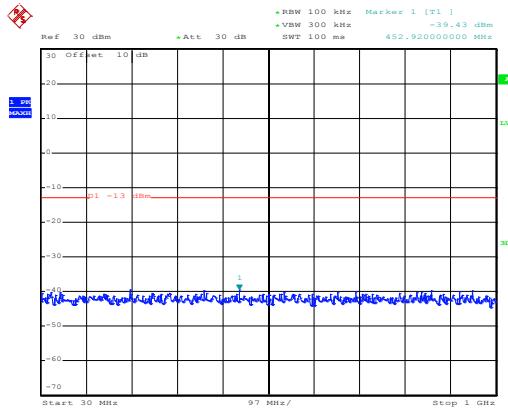
Date: 4.DEC.2017 14:42:44

Date: 1.DEC.2017 15:13:16

30MHz~1GHz

1GHz~25GHz

High channel



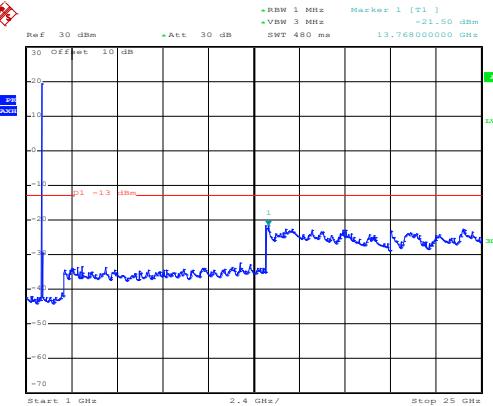
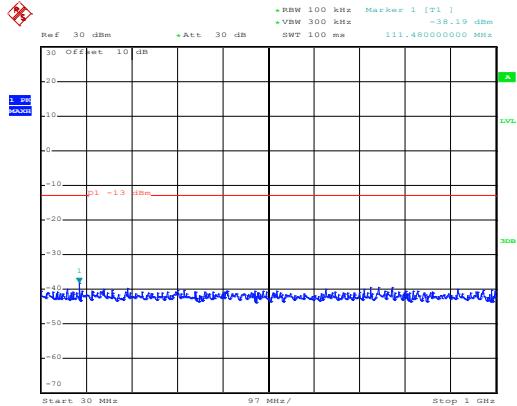
Date: 4.DEC.2017 14:43:11

Date: 1.DEC.2017 15:19:36

30MHz~1GHz

1GHz~25GHz

16 QAM & RB Size 25 Lowest channel



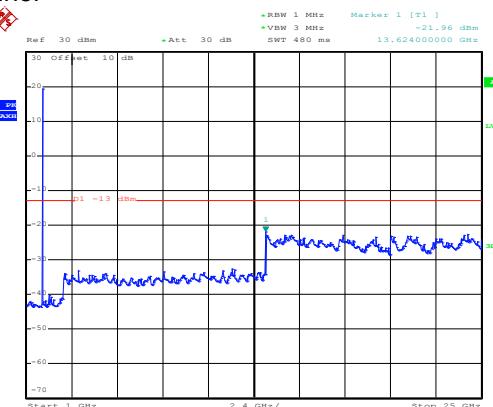
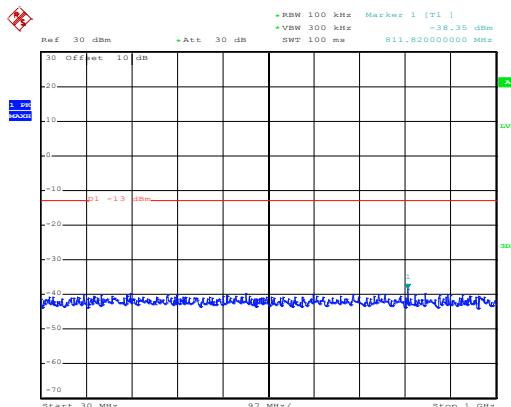
Date: 4.DEC.2017 14:42:32

Date: 1.DEC.2017 15:12:54

30MHz~1GHz

1GHz~25GHz

Middle channel



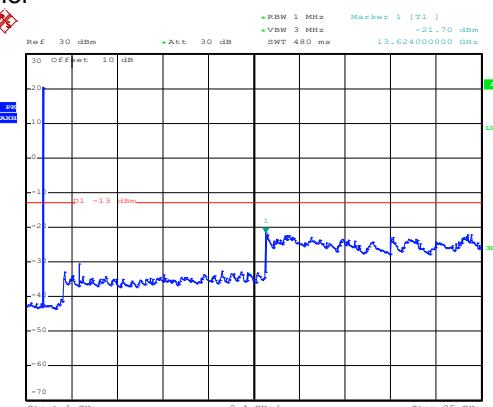
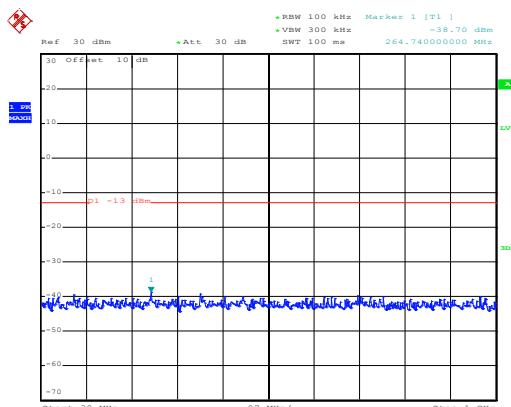
Date: 4.DEC.2017 14:42:58

Date: 1.DEC.2017 15:13:32

30MHz~1GHz

1GHz~25GHz

High channel



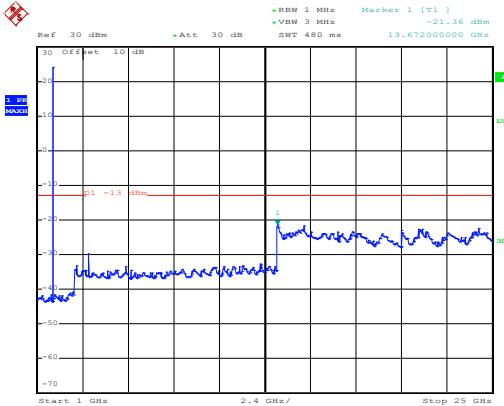
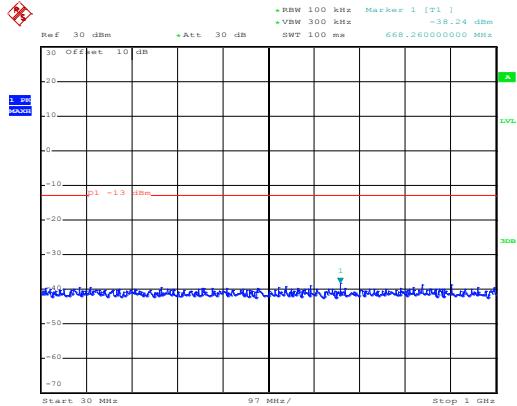
Date: 4.DEC.2017 14:43:20

Date: 1.DEC.2017 15:19:59

30MHz~1GHz

1GHz~25GHz

**QPSK & RB Size 1
Lowest channel**



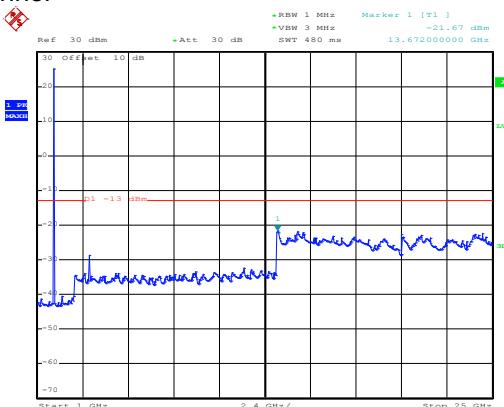
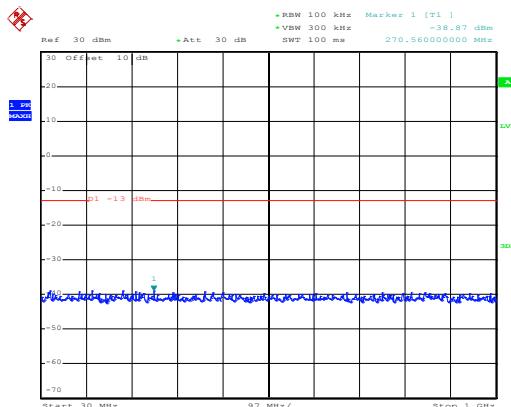
Date: 4.DEC.2017 14:42:19

30MHz~1GHz

Date: 1.DEC.2017 15:12:30

1GHz~25GHz

Middle channel



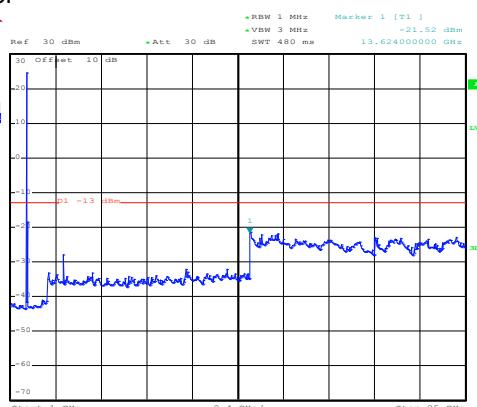
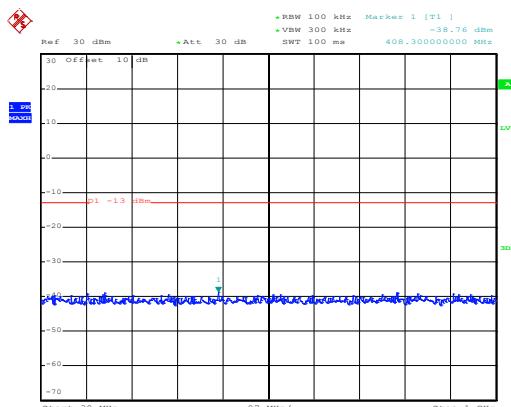
Date: 4.DEC.2017 14:42:41

30MHz~1GHz

Date: 1.DEC.2017 15:13:10

1GHz~25GHz

High channel



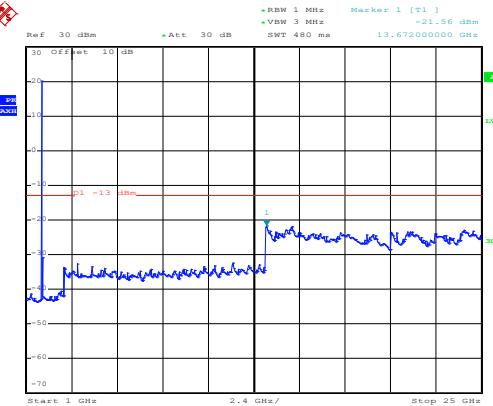
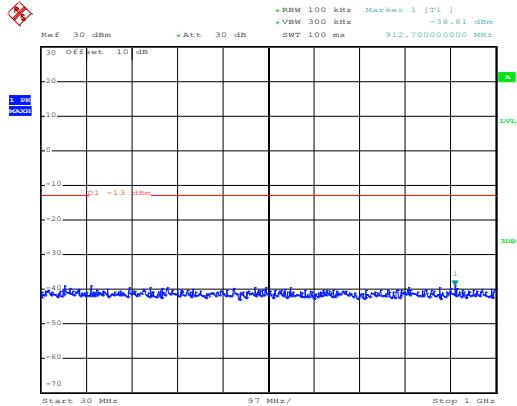
Date: 4.DEC.2017 14:43:07

30MHz~1GHz

Date: 1.DEC.2017 15:13:48

1GHz~25GHz

**QPSK & RB Size 25
Lowest channel**



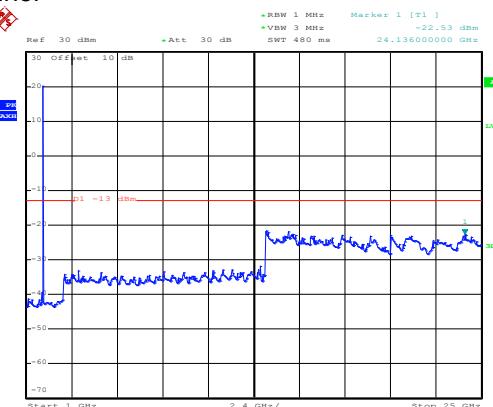
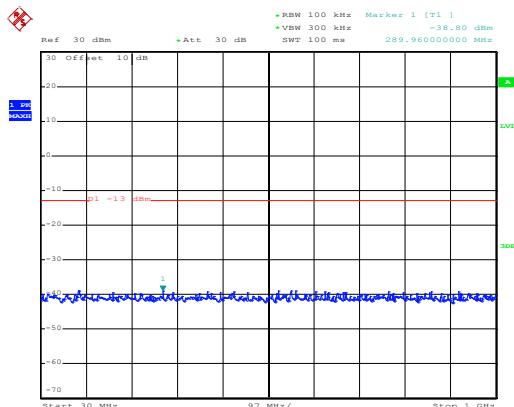
Date: 4.DEC.2017 14:42:28

30MHz~1GHz

Date: 1.DEC.2017 15:12:47

1GHz~25GHz

Middle channel



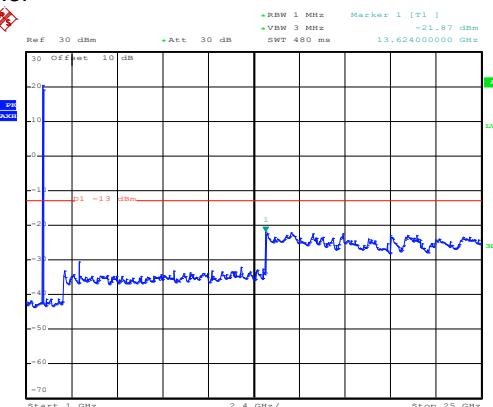
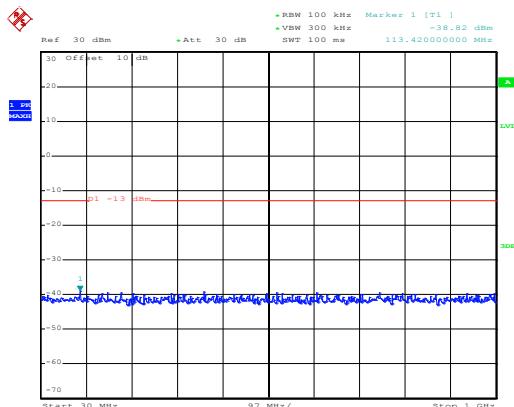
Date: 4.DEC.2017 14:42:54

30MHz~1GHz

Date: 1.DEC.2017 15:13:25

1GHz~25GHz

High channel



Date: 4.DEC.2017 14:43:17

30MHz~1GHz

Date: 1.DEC.2017 15:19:49

1GHz~25GHz