TESTING LABORATORY
CERTIFICATE #4820.01

# FCC PART 22H, PART 24E,PART 27, PART 90 MEASUREMENT AND TEST REPORT

For

## Hytera Communications Corporation Limited

Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road, Nanshan District, Shenzhen, 518057 China

**FCC ID: YAMVM780**

| **Report Type:** | **Product Type:** |
|---|---|
| Original Report | Body Worn Camera |

| | |
|---|---|
| **Report Number:** | RDG190606010-00D |
| **Report Date:** | 2019-08-26 |
| **Reviewed By:** | Jerry Zhang<br>EMC Manager |
| **Test Laboratory:** | Bay Area Compliance Laboratories Corp. (Dongguan)<br>No.69 Pulongcun, Puxinhu Industry Area,<br>Tangxia, Dongguan, Guangdong, China<br>Tel: +86-769-86858888<br>Fax: +86-769-86858891<br>www.baclcorp.com.cn |

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# GENERAL INFORMATION

## Product Description for Equipment under Test (EUT)

| | | |
|---|---|---|
| **EUT Name:** | | Body Worn Camera |
| **EUT Model:** | | VM780 |
| **Multiple Model:** | | DSJ-HYTH7A1 |
| **Rated Input Voltage:** | | DC 3.85V from battery or DC 5V charging from adapter |
| **Adapter Information** | **Model:** | S010WU0500200 |
| | **Input:** | AC 100-240V 50/60Hz 400mA |
| | **Output:** | DC 5V 2000mA |
| **External Dimension:** | | 115mm(L)*63mm(W)*26mm(H) |
| **Serial Number:** | | 190606010 |
| **EUT Received Date:** | | 2019.6.12 |

*Note: The series product model DSJ-HYTH7A1 is electrically identical with model VM780, we selected VM780 for fully testing, the differences details was explained in the declaration letter.*

## Objective

This report is prepared on behalf of ***Hytera Communications Corporation Limited*** in accordance with: Part 2-Subpart J, Part 22-Subpart H, Part 24-Subpart E, Part 27, Part 90 of the Federal Communication Commissions rules.

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

FCC Part 15C DTS submissions with FCC ID: YAMVM780.
FCC Part 15C DSS submissions with FCC ID: YAMVM780.
FCC Part 15C DXX submissions with FCC ID: YAMVM780.

## Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2, Sub-part J as well as the following parts:

Part 22 Subpart H - Public Mobile Services
Part 24 Subpart E - Personal Communication Services
Part 27 - Miscellaneous wireless communications services
Part 90 - PRIVATE LAND MOBILE RADIO SERVICES

TIA/EIA 603-D-2010.

All radiated and conducted emissions measurements were performed at Bay Area Compliance Laboratories Corp.(Dongguan).

## Measurement Uncertainty

| Parameter | Measurement Uncertainty |
|---|---|
| Occupied Channel Bandwidth | ±5 % |
| RF output power, conducted | ±0.61dB |
| Unwanted Emissions, radiated | 30MHz ~ 1GHz:5.85 dB<br>1G~26.5GHz: 5.23 dB |
| Unwanted Emissions, conducted | ±1.5 dB |
| Temperature | ±1℃ |
| Humidity | ±5% |
| DC and low frequency voltages | ±0.4% |
| Duty Cycle | 1% |

## Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 897218, the FCC Designation No. : CN1220.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier : CN0022.

# SYSTEM TEST CONFIGURATION

## Justification

The EUT was configured for testing according to TIA/EIA-603-D 2010.

The test items were performed with the EUT operating at testing mode. The device operates on GSM Band 850/1900MHz(only supports GPRS/EDGE),WCDMA Band 2/4/5, and LTE band 2/4/5/7/13/17/26/38/40/41, test was performed with channels as below table:

| Frequency Bands | Bandwidth (MHz) | Test Frequency(MHz) | | |
|---|---|---|---|---|
| | | Low | Middle | High |
| GPRS/EDGE850 | 0.25 | 824.2 | 836.6 | 848.8 |
| GPRS/EDGE1900 | 0.25 | 1850.2 | 1880 | 1909.8 |
| WCDMA Band 2 | 4.2 | 1852.4 | 1880 | 1907.6 |
| WCDMA Band 4 | 4.2 | 1712.4 | 1732.6 | 1752.6 |
| WCDMA Band 5 | 4.2 | 826.4 | 836.6 | 846.6 |
| LTE Band 2 | 1.4 | 1850.7 | 1880 | 1909.3 |
| | 3 | 1851.5 | 1880 | 1908.5 |
| | 5 | 1852.5 | 1880 | 1907.5 |
| | 10 | 1855 | 1880 | 1905 |
| | 15 | 1857.5 | 1880 | 1902.5 |
| | 20 | 1860 | 1880 | 1900 |
| LTE Band 4 | 1.4 | 1710.7 | 1732.5 | 1754.3 |
| | 3 | 1711.5 | 1732.5 | 1753.5 |
| | 5 | 1712.5 | 1732.5 | 1752.5 |
| | 10 | 1715 | 1732.5 | 1750 |
| | 15 | 1717.5 | 1732.5 | 1747.5 |
| | 20 | 1720 | 1732.5 | 1745 |
| LTE Band 5 | 1.4 | 824.7 | 836.5 | 848.3 |
| | 3 | 825.5 | 836.5 | 847.5 |
| | 5 | 826.5 | 836.5 | 846.5 |
| | 10 | 829 | 836.5 | 844 |
| LTE Band 7 | 5 | 2502.5 | 2535 | 2567.5 |
| | 10 | 2505 | 2535 | 2565 |
| | 15 | 2507.5 | 2535 | 2562.5 |
| | 20 | 2510 | 2535 | 2560 |
| LTE Band 12 | 1.4 | 699.7 | 707.5 | 715.3 |
| | 3 | 700.5 | 707.5 | 714.5 |
| | 5 | 701.5 | 707.5 | 713.5 |
| | 10 | 704 | 707.5 | 711 |
| LTE Band 13 | 5 | 779.5 | 782 | 784.5 |
| | 10 | / | 782 | / |
| LTE Band 17 | 5 | 706.5 | 710 | 713.5 |
| | 10 | 709 | 710 | 711 |

| Frequency Bands | Bandwidth (MHz) | Test Frequency(MHz) | | |
|---|---|---|---|---|
| | | Low | Middle | High |
| LTE Band 26 | 1.4 | 814.7 | 831.5 | 848.3 |
| | 3 | 815.5 | 831.5 | 847.5 |
| | 5 | 816.5 | 831.5 | 846.5 |
| | 10 | 819 | 831.5 | 844 |
| | 15 | 821.5 | 831.5 | 841.5 |
| LTE Band 38 | 5 | 2572.5 | 2595 | 2617.5 |
| | 10 | 2575 | 2595 | 2615 |
| | 15 | 2577.5 | 2595 | 2612.5 |
| | 20 | 2580 | 2595 | 2610 |
| LTE Band 40 2305-2315MHz | 5 | 2307.5 | 2310 | 2312.5 |
| | 10 | / | 2310 | / |
| LTE Band 40 2350-2360MHz | 5 | 2352.5 | 2355 | 2357.5 |
| | 10 | / | 2355 | / |
| LTE Band 41 | 5 | 2557.5 | 2595 | 2652.5 |
| | 10 | 2560 | 2595 | 2650 |
| | 15 | 2562.5 | 2595 | 2647.5 |
| | 20 | 2565 | 2595 | 2645 |

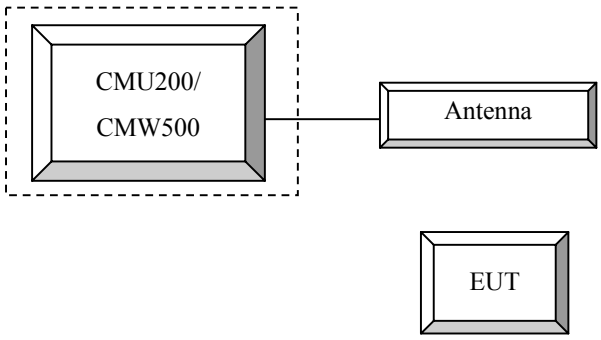
## Equipment Modifications

No modification was made to the EUT.

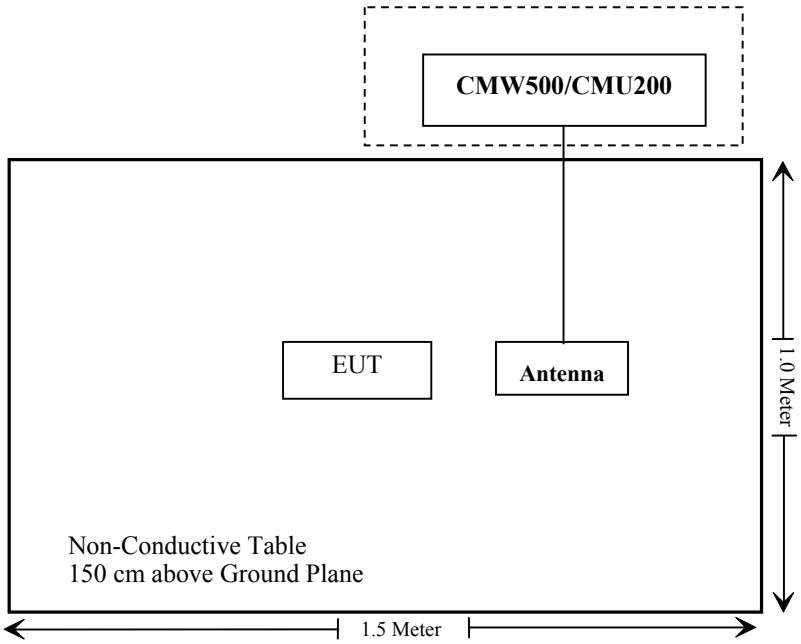
## Support Equipment List and Details

| Manufacturer | Description | Model | Serial Number |
|---|---|---|---|
| R&S | Universal Radio Communication Tester | CMU200 | 106 891 |
| R&S | Wideband Radio Communication Tester | CMW500 | 147473 |
| Unknown | ANTENNA | Unknown | / |

## Configuration of Test Setup



**Block Diagram of Test Setup**



# SUMMARY OF TEST RESULTS

| Rules | Description of Test | Result |
|---|---|---|
| FCC§1.1310, §2.1093; | RF Exposure | Compliance |
| FCC§2.1046;§ 22.913 (a); § 24.232 (c);§27.50; §90.635 | RF Output Power | Compliance |
| FCC§ 2.1047 | Modulation Characteristics | Not Applicable |
| FCC§ 2.1049; § 22.905; § 22.917; § 24.238; §27.53; §90.209 | Occupied Bandwidth | Compliance |
| FCC§ 2.1051, § 22.917 (a); § 24.238 (a); §27.53; §90.691 | Spurious Emissions at Antenna Terminal | Compliance |
| FCC§ 2.1053 § 22.917 (a); § 24.238 (a); §27.53; §90.691 | Spurious Radiation Emissions | Compliance |
| FCC§ 22.917 (a); § 24.238 (a); §27.53; §90.691 | Out of band emission, Band Edge | Compliance |
| FCC§ 2.1055;§ 22.355; § 24.235; §27.54; §90.213 | Frequency stability vs. temperature Frequency stability vs. voltage | Compliance |

# FCC §1.1310 & §2.1093- RF EXPOSURE

## Applicable Standard

FCC§1.1310 and §2.1093

## Test Result

Compliant, please refer to the SAR report: RDG190606010-20A.

# FCC §2.1047 - MODULATION CHARACTERISTIC

According to FCC § 2.1047(d), Part 22H & 24E, Part 27 there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

# FCC § 2.1046, § 22.913 (a) & § 24.232 (c) & § 27.50 - RF OUTPUT POWER

## Applicable Standard

According to FCC §2.1046 and §22.913 (a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC §2.1046 and §24.232 (C), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to §24.232 (d) Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

According to §27.50

(a) The following power limits and related requirements apply to stations transmitting in the 2305-2320 MHz band or the 2345-2360 MHz band.

(3) Mobile and portable stations. (i) For mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, except that for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth. For mobile and portable stations using time division duplexing (TDD) technology, the duty cycle must not exceed 38 percent in the 2305-2315 MHz and 2350-2360 MHz bands. Mobile and portable stations using FDD technology are restricted to transmitting in the 2305-2315 MHz band. Power averaging shall not include intervals in which the transmitter is off.

(ii) Mobile and portable stations are not permitted to transmit in the 2315-2320 MHz and 2345-2350 MHz bands.

(iii) Automatic transmit power control. Mobile and portable stations transmitting in the 2305-2315 MHz band or in the 2350-2360 MHz band must employ automatic transmit power control when operating so the stations operate with the minimum power necessary for successful communications.

(iv) Prohibition on external vehicle-mounted antennas. The use of external vehicle-mounted antennas for mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band is prohibited.

(b)(10) Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

(c) (10) Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

(d), (4) Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP. Fixed stations operating in the 1710-1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

(h),(2) Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

According to §90.635

(b) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

## Test Procedure

GSM/GPRS/EGPRS

Function: Menu select > GSM Mobile Station > GSM 850/1900
Press Connection control to choose the different menus
Press RESET > choose all the reset all settings
Connection Press Signal Off to turn off the signal and change settings
Network Support > GSM + GPRS or GSM + EGSM
Main Service > Packet Data
Service selection > Test Mode A – Auto Slot Config. off
MS Signal Press Slot Config Bottom on the right twice to select and change the number of time slots and power setting
> Slot configuration > Uplink/Gamma
> 33 dBm for GPRS 850
> 30 dBm for GPRS 1900
> 27 dBm for EGPRS 850
> 26 dBm for EGPRS 1900
BS Signal Enter the same channel number for TCH channel (test channel) and BCCH channel
Frequency Offset > + 0 Hz
Mode > BCCH and TCH
BCCH Level > -85 dBm (May need to adjust if link is not stable)
BCCH Channel > choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]

Channel Type > Off
P0 > 4 dB
Slot Config > Unchanged (if already set under MS signal)
TCH > choose desired test channel
Hopping > Off
Main Timeslot > 3
Network Coding Scheme > CS4 (GPRS) and MCS5 (EGPRS)

Bit Stream > 2E9-1 PSR Bit Stream
AF/RF Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input
Connection Press Signal on to turn on the signal and change settings

**WCDMA-Release 99**

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification. The EUT has a nominal maximum output power of 24dBm (+1.7/-3.7).

| | | |
|---|---|---|
| **WCDMA General Settings** | Loopback Mode | Test Mode 1 |
| | Rel99 RMC | 12.2kbps RMC |
| | Power Control Algorithm | Algorithm2 |
| | **βc / βd** | 8/15 |

**WCDMA HSDPA**

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

| | Mode | HSDPA | HSDPA | HSDPA | HSDPA |
|---|---|---|---|---|---|
| | Subset | 1 | 2 | 3 | 4 |
| WCDMA General Settings | Loopback Mode | Test Mode 1 | | | |
| | Rel99 RMC | 12.2kbps RMC | | | |
| | HSDPA FRC | H-Set1 | | | |
| | Power Control Algorithm | Algorithm2 | | | |
| | βc | 2/15 | 12/15 | 15/15 | 15/15 |
| | βd | 15/15 | 15/15 | 8/15 | 4/15 |
| | βd (SF) | 64 | | | |
| | βc/ βd | 2/15 | 12/15 | 15/8 | 15/4 |
| | βhs | 4/15 | 24/15 | 30/15 | 30/15 |
| | MPR(dB) | 0 | 0 | 0.5 | 0.5 |
| HSDPA Specific Settings | DACK | 8 | | | |
| | DNAK | 8 | | | |
| | DCQI | 8 | | | |
| | Ack-Nack repetition factor | 3 | | | |
| | CQI Feedback | 4ms | | | |
| | CQI Repetition Factor | 2 | | | |
| | Ahs=βhs/ βc | 30/15 | | | |

**WCDMA HSUPA**

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

| | Mode | HSUPA | HSUPA | HSUPA | HSUPA | HSUPA |
|---|---|---|---|---|---|---|
| | Subset | 1 | 2 | 3 | 4 | 5 |
| WCDMA General Settings | Loopback Mode | Test Mode 1 | | | | |
| | Rel99 RMC | 12.2kbps RMC | | | | |
| | HSDPA FRC | H-Set1 | | | | |
| | HSUPA Test | HSUPA Loopback | | | | |
| | Power Control Algorithm | Algorithm2 | | | | |
| | βc | 11/15 | 6/15 | 15/15 | 2/15 | 15/15 |
| | βd | 15/15 | 15/15 | 9/15 | 15/15 | 0 |
| | βec | 209/225 | 12/15 | 30/15 | 2/15 | 5/15 |
| | βc/ βd | 11/15 | 6/15 | 15/9 | 2/15 | - |
| | βhs | 22/15 | 12/15 | 30/15 | 4/15 | 5/15 |
| | CM(dB) | 1.0 | 3.0 | 2.0 | 3.0 | 1.0 |
| | MPR(dB) | 0 | 2 | 1 | 2 | 0 |
| HSDPA Specific Settings | DACK | 8 | | | | |
| | DNAK | 8 | | | | |
| | DCQI | 8 | | | | |
| | Ack-Nack repetition factor | 3 | | | | |
| | CQI Feedback | 4ms | | | | |
| | CQI Repetition Factor | 2 | | | | |
| | Ahs=βhs/ βc | 30/15 | | | | |
| HSUPA Specific Settings | DE-DPCCH | 6 | 8 | 8 | 5 | 7 |
| | DHARQ | 0 | 0 | 0 | 0 | 0 |
| | AG Index | 20 | 12 | 15 | 17 | 21 |
| | ETFCI | 75 | 67 | 92 | 71 | 81 |
| | Associated Max UL Data Rate kbps | 242.1 | 174.9 | 482.8 | 205.8 | 308.9 |
| | Reference E_FCIs | E-TFCI 11 E<br>E-TFCI PO 4<br>E-TFCI 67<br>E-TFCI PO 18<br>E-TFCI 71<br>E-TFCI PO23<br>E-TFCI 75<br>E-TFCI PO26<br>E-TFCI 81<br>E-TFCI PO 27 | | E-TFCI 11<br>E-TFCI PO4<br>E-TFCI 92<br>E-TFCI PO 18 | E-TFCI 11 E<br>E-TFCI PO 4<br>E-TFCI 67<br>E-TFCI PO 18<br>E-TFCI 71<br>E-TFCI PO23<br>E-TFCI 75<br>E-TFCI PO26<br>E-TFCI 81<br>E-TFCI PO 27 | |

**HSPA+**

The following tests were conducted according to the test requirements in Table C.11.1.4 of 3GPP TS 34.121-1

| Sub-test | $\beta_c$ (Note3) | $\beta_d$ | $\beta_{HS}$ (Note1) | $\beta_{ec}$ | $\beta_{ed}$ (2xSF2) (Note 4) | $\beta_{ed}$ (2xSF4) (Note 4) | CM (dB) (Note 2) | MPR (dB) (Note 2) | AG Index (Note 4) | E-TFCI (Note 5) | E-TFCI (boost) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 0 | 30/15 | 30/15 | $\beta_{ed}$1: 30/15<br>$\beta_{ed}$2: 30/15 | $\beta_{ed}$3: 24/15<br>$\beta_{ed}$4: 24/15 | 3.5 | 2.5 | 14 | 105 | 105 |

Note 1: $\Delta_{ACK}$, $\Delta_{NACK}$ and $\Delta_{CQI}$ = 30/15 with $\beta_{hs}$ = 30/15 * $\beta_c$ .
Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).
Note 3: DPDCH is not configured, therefore the $\beta_c$ is set to 1 and $\beta_d$ = 0 by default.
Note 4: $\beta_{ed}$ can not be set directly; it is set by Absolute Grant Value.
Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signalled to use the extrapolation algorithm.

**DC-HSDPA**

The following tests were conducted according to the test requirements in Table C.8.1.12 of 3GPP TS 34.121-1

**Table C.8.1.12: Fixed Reference Channel H-Set 12**

| Parameter | Unit | Value |
|---|---|---|
| Nominal Avg. Inf. Bit Rate | kbps | 60 |
| Inter-TTI Distance | TTI's | 1 |
| Number of HARQ Processes | Processes | 6 |
| Information Bit Payload ( $N_{INF}$ ) | Bits | 120 |
| Number Code Blocks | Blocks | 1 |
| Binary Channel Bits Per TTI | Bits | 960 |
| Total Available SML's in UE | SML's | 19200 |
| Number of SML's per HARQ Proc. | SML's | 3200 |
| Coding Rate | | 0.15 |
| Number of Physical Channel Codes | Codes | 1 |
| Modulation | | QPSK |

Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.
Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.

**LTE (FDD):**

The following tests were conducted according to the test requirements in 3GPP TS36.101

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

**Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3**

| Modulation | Channel bandwidth / Transmission bandwidth (RB) | | | | | | MPR (dB) |
|---|---|---|---|---|---|---|---|
| | 1.4 MHz | 3.0 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz | |
| QPSK | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 1 |
| 16 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 1 |
| 16 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 2 |

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS_01".

**Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)**

| Network Signalling value | Requirements (sub-clause) | E-UTRA Band | Channel bandwidth (MHz) | Resources Blocks ($N_{RB}$) | A-MPR (dB) |
|---|---|---|---|---|---|
| NS_01 | 6.6.2.1.1 | Table 5.5-1 | 1.4, 3, 5, 10, 15, 20 | Table 5.6-1 | NA |
| NS_03 | 6.6.2.2.1 | 2, 4,10, 23, 25, 35, 36 | 3 | >5 | ≤ 1 |
| | | | 5 | >6 | ≤ 1 |
| | | | 10 | >6 | ≤ 1 |
| | | | 15 | >8 | ≤ 1 |
| | | | 20 | >10 | ≤ 1 |
| NS_04 | 6.6.2.2.2 | 41 | 5 | >6 | ≤ 1 |
| | | | 10, 15, 20 | See Table 6.2.4-4 | |
| NS_05 | 6.6.3.3.1 | 1 | 10,15,20 | ≥ 50 | ≤ 1 |
| NS_06 | 6.6.2.2.3 | 12, 13, 14, 17 | 1.4, 3, 5, 10 | Table 5.6-1 | n/a |
| NS_07 | 6.6.2.2.3<br>6.6.3.3.2 | 13 | 10 | Table 6.2.4-2 | Table 6.2.4-2 |
| NS_08 | 6.6.3.3.3 | 19 | 10, 15 | > 44 | ≤ 3 |
| NS_09 | 6.6.3.3.4 | 21 | 10, 15 | > 40 | ≤ 1 |
| | | | | > 55 | ≤ 2 |
| NS_10 | | 20 | 15, 20 | Table 6.2.4-3 | Table 6.2.4-3 |
| NS_11 | 6.6.2.2.1 | 23[1] | 1.4, 3, 5, 10 | Table 6.2.4-5 | Table 6.2.4-5 |
| .. | | | | | |
| NS_32 | - | - | - | - | - |

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

**LTE(TDD):**

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

| Special subframe configuration | Normal cyclic prefix in downlink | | | Extended cyclic prefix in downlink | | |
|---|---|---|---|---|---|---|
| | DwPTS | UpPTS | | DwPTS | UpPTS | |
| | | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink | | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink |
| 0 | $6592 \cdot T_s$ | $2192 \cdot T_s$ | $2560 \cdot T_s$ | $7680 \cdot T_s$ | $2192 \cdot T_s$ | $2560 \cdot T_s$ |
| 1 | $19760 \cdot T_s$ | | | $20480 \cdot T_s$ | | |
| 2 | $21952 \cdot T_s$ | | | $23040 \cdot T_s$ | | |
| 3 | $24144 \cdot T_s$ | | | $25600 \cdot T_s$ | | |
| 4 | $26336 \cdot T_s$ | | | $7680 \cdot T_s$ | $4384 \cdot T_s$ | $5120 \cdot T_s$ |
| 5 | $6592 \cdot T_s$ | $4384 \cdot T_s$ | $5120 \cdot T_s$ | $20480 \cdot T_s$ | | |
| 6 | $19760 \cdot T_s$ | | | $23040 \cdot T_s$ | | |
| 7 | $21952 \cdot T_s$ | | | $12800 \cdot T_s$ | | |
| 8 | $24144 \cdot T_s$ | | | - | - | - |
| 9 | $13168 \cdot T_s$ | | | - | - | - |

Table 4.2-2: Uplink-downlink configurations.

| Uplink-downlink configuration | Downlink-to-Uplink Switch-point periodicity | Subframe number | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 5 ms | D | S | U | U | U | D | S | U | U | U |
| 1 | 5 ms | D | S | U | U | D | D | S | U | U | D |
| 2 | 5 ms | D | S | U | D | D | D | S | U | D | D |
| 3 | 10 ms | D | S | U | U | U | D | D | D | D | D |
| 4 | 10 ms | D | S | U | U | D | D | D | D | D | D |
| 5 | 10 ms | D | S | U | D | D | D | D | D | D | D |
| 6 | 5 ms | D | S | U | U | U | D | S | U | U | D |

**Calculated Duty Cycle**

| Uplink-Downlink Configuration | Downlink-to-Uplink Switch-point Periodicity | Subframe Number | | | | | | | | | | Calculated Duty Cycle (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| 0 | 5 ms | D | S | U | U | U | D | S | U | U | U | 63.33 |
| 1 | 5 ms | D | S | U | U | D | D | S | U | U | D | 43.33 |
| 2 | 5 ms | D | S | U | D | D | D | S | U | D | D | 23.33 |
| 3 | 10 ms | D | S | U | U | U | D | D | D | D | D | 31.67 |
| 4 | 10 ms | D | S | U | U | D | D | D | D | D | D | 21.67 |
| 5 | 10 ms | D | S | U | D | D | D | D | D | D | D | 11.67 |
| 6 | 5 ms | D | S | U | U | U | D | S | U | U | D | 53.33 |

Calculated Duty Cycle = Extended cyclic prefix in uplink x ($T_s$) x # of S + # of U

Example for Calculated Duty Cycle for Uplink-Downlink Configuration 0:
Calculated Duty Cycle = 5120 x [1/(15000 x 2048)] x 2 + 6 ms = 63.33%
where
$T_s$ = 1/(15000 x 2048) seconds

*Radiated method:*

ANSI/TIA-603-D section 2.2.17

## Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| R&S | EMI Test Receiver | ESCI | 100224 | 2018-12-10 | 2019-12-10 |
| Sunol Sciences | Antenna | JB3 | A060611-1 | 2017-11-10 | 2020-11-10 |
| EMCO | Adjustable Dipole Antenna | 3121C | 9109-753 | Not Required | / |
| Unknown | Coaxial Cable | C-NJNJ-50 | C-0400-01 | 2018-09-05 | 2019-09-05 |
| Unknown | Coaxial Cable | C-NJNJ-50 | C-0075-01 | 2018-09-05 | 2019-09-05 |
| Unknown | Coaxial Cable | C-NJNJ-50 | C-1400-01 | 2019-05-06 | 2020-05-06 |
| Unknown | Coaxial Cable | C-NJNJ-50 | C-0200-02 | 2018-09-05 | 2019-09-05 |
| ETS-Lindgren | Horn Antenna | 3115 | 000 527 35 | 2018-10-12 | 2021-10-12 |
| TDK RF | Horn Antenna | HRN-0118 | 130 084 | 2018-10-12 | 2021-10-12 |
| Unknown | Coaxial Cable | C-SJSJ-50 | C-0800-01 | 2018-09-05 | 2019-09-05 |
| Agilent | Signal Generator | E8247C | MY43321350 | 2018-12-10 | 2019-12-10 |
| R&S | Universal Radio Communication Tester | CMU200 | 110 822 | 2018-12-14 | 2019-12-14 |
| R&S | Wideband Radio Communication Tester | CMW500 | 147473 | 2018-08-03 | 2019-08-03 |

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

## Test Data

### Environmental Conditions

| | |
|---|---|
| **Temperature:** | 28.9°C |
| **Relative Humidity:** | 55 % |
| **ATM Pressure:** | 100.2 kPa |

** The testing was performed by Tyler Pan on 2019-06-18.*

## Conducted Output Power

### Cellular Band & PCS Band

| Band | Channel No. | Conducted Peak Output Power (dBm) | | | | Conducted Peak Output Power (dBm) | |
|---|---|---|---|---|---|---|---|
| | | GPRS 1 TX Slot | GPRS 2 TX Slot | GPRS 3 TX Slot | GPRS 4 TX Slot | EGPRS 1 uplink slot | EGPRS 2 uplink slot |
| Cellular | 128 | 30.29 | 29.96 | 28.09 | 26.16 | 25.27 | 23.85 |
| | 190 | 30.35 | 30.05 | 28.39 | 26.37 | 25.31 | 23.88 |
| | 251 | 30.38 | 30.06 | 28.5 | 26.38 | 25.38 | 23.94 |
| PCS | 512 | 29.62 | 29.52 | 28.11 | 26.47 | 25.09 | 23.22 |
| | 661 | 29.81 | 29.72 | 28.16 | 26.46 | 25.08 | 23.20 |
| | 810 | 29.78 | 29.54 | 28.4 | 26.56 | 25.21 | 23.37 |

### WCDMA Band II

| Mode | 3GPP Sub Test | Low Channel | | Middle Channel | | High Channel | |
|---|---|---|---|---|---|---|---|
| | | Ave. Power (dBm) | PAR (dB) | Ave. Power (dBm) | PAR (dB) | Ave. Power (dBm) | PAR (dB) |
| Rel 99 | 1 | 22.62 | 3.39 | 22.53 | 3.28 | 22.38 | 2.84 |
| HSDPA | 1 | 21.53 | 3.57 | 21.42 | 3.51 | 21.37 | 3.33 |
| | 2 | 21.18 | 3.51 | 21.08 | 3.44 | 21.03 | 3.31 |
| | 3 | 20.83 | 3.26 | 21.72 | 3.69 | 20.71 | 3.44 |
| | 4 | 20.55 | 3.46 | 21.44 | 3.2 | 20.38 | 3.29 |
| HSUPA | 1 | 21.07 | 3.45 | 20.85 | 3.28 | 20.87 | 3.97 |
| | 2 | 20.74 | 3.41 | 20.53 | 3.21 | 20.54 | 3.88 |
| | 3 | 20.45 | 3.56 | 20.24 | 3.45 | 20.17 | 3.81 |
| | 4 | 20.19 | 3.62 | 19.96 | 3.69 | 19.83 | 3.69 |
| | 5 | 19.88 | 3.22 | 19.78 | 3.14 | 19.67 | 3.54 |
| DC-HSDPA | 1 | 21.44 | 3.51 | 21.36 | 3.25 | 21.29 | 3.31 |
| | 2 | 21.05 | 3.16 | 21.01 | 3.26 | 21.03 | 3.26 |
| | 3 | 20.75 | 3.29 | 20.78 | 3.67 | 20.74 | 3.42 |
| | 4 | 20.41 | 3.37 | 20.43 | 3.44 | 20.56 | 3.29 |
| HSPA+ (16QAM) | 1 | 21.44 | 3.17 | 21.36 | 3.21 | 21.22 | 3.64 |

**WCDMA Band IV**

| Mode | 3GPP Sub Test | Low Channel | | Middle Channel | | High Channel | |
|---|---|---|---|---|---|---|---|
| | | Ave. Power (dBm) | PAR (dB) | Ave. Power (dBm) | PAR (dB) | Ave. Power (dBm) | PAR (dB) |
| Rel 99 | 1 | 23.55 | 2.72 | 22.57 | 2.52 | 23.14 | 2.61 |
| HSDPA | 1 | 22.97 | 3.04 | 21.8 | 3.01 | 22.24 | 2.87 |
| | 2 | 22.65 | 3.02 | 21.53 | 3.08 | 21.96 | 3.01 |
| | 3 | 22.31 | 2.99 | 21.18 | 2.95 | 21.68 | 2.89 |
| | 4 | 22.06 | 3.44 | 20.82 | 2.99 | 21.41 | 2.66 |
| HSUPA | 1 | 21.16 | 3.19 | 20.87 | 3.22 | 20.51 | 3.19 |
| | 2 | 20.87 | 3.26 | 20.61 | 3.11 | 20.13 | 3.14 |
| | 3 | 20.54 | 3.66 | 20.36 | 3.47 | 19.93 | 3.02 |
| | 4 | 20.16 | 3.14 | 20.07 | 2.96 | 19.74 | 3.63 |
| | 5 | 19.88 | 3.53 | 19.81 | 3.07 | 19.59 | 3.54 |
| DC-HSDPA | 1 | 22.65 | 3.08 | 21.53 | 3.44 | 21.96 | 3.28 |
| | 2 | 22.17 | 2.98 | 21.13 | 3.45 | 21.72 | 3.11 |
| | 3 | 21.83 | 3.01 | 20.86 | 3.51 | 21.36 | 3.26 |
| | 4 | 21.55 | 3.22 | 20.55 | 3.36 | 21.05 | 3.04 |
| HSPA+ (16QAM) | 1 | 22.86 | 3.14 | 21.78 | 3.49 | 22.18 | 3.21 |

**WCDMA Band V**

| Mode | 3GPP Sub Test | Low Channel | | Middle Channel | | High Channel | |
|---|---|---|---|---|---|---|---|
| | | Ave. Power (dBm) | PAR (dB) | Ave. Power (dBm) | PAR (dB) | Ave. Power (dBm) | PAR (dB) |
| Rel 99 | 1 | 21.68 | 3.28 | 21.51 | 3.04 | 21.54 | 2.93 |
| HSDPA | 1 | 20.49 | 3.42 | 20.31 | 3.3 | 20.38 | 3.45 |
| | 2 | 20.17 | 3.44 | 20.09 | 3.36 | 20.13 | 3.41 |
| | 3 | 19.96 | 3.47 | 19.88 | 3.29 | 19.91 | 3.29 |
| | 4 | 19.77 | 3.18 | 19.69 | 2.99 | 19.72 | 3.33 |
| HSUPA | 1 | 19.98 | 3.51 | 19.81 | 3.04 | 19.91 | 3.97 |
| | 2 | 19.77 | 3.44 | 19.56 | 3.17 | 19.77 | 3.87 |
| | 3 | 19.64 | 3.08 | 19.41 | 3.11 | 19.53 | 3.19 |
| | 4 | 19.48 | 3.97 | 19.26 | 3.69 | 19.32 | 3.97 |
| | 5 | 19.26 | 3.14 | 19.01 | 3.58 | 19.11 | 4.02 |
| DC-HSDPA | 1 | 20.41 | 3.16 | 20.22 | 3.18 | 20.28 | 3.17 |
| | 2 | 20.06 | 2.98 | 20.01 | 3.52 | 20.01 | 3.11 |
| | 3 | 19.86 | 2.69 | 19.75 | 2.97 | 19.77 | 3.09 |
| | 4 | 19.54 | 3.04 | 19.55 | 3.14 | 19.56 | 3.28 |
| HSPA+ (16QAM) | 1 | 20.44 | 3.47 | 20.33 | 3.19 | 20.29 | 3.41 |

**LTE Band 2**

| Channel Bandwidth | Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|
| 1.4MHz | QPSK | RB1#0 | 21.81 | 22.01 | 19.92 |
| | | RB1#3 | 22.09 | 22.35 | 22.17 |
| | | RB1#5 | 21.95 | 22.21 | 22.12 |
| | | RB3#0 | 21.80 | 21.86 | 21.81 |
| | | RB3#3 | 22.05 | 21.93 | 21.88 |
| | | RB6#0 | 21.12 | 20.96 | 20.95 |
| | 16QAM | RB1#0 | 20.61 | 21.12 | 21.36 |
| | | RB1#3 | 20.87 | 21.22 | 21.10 |
| | | RB1#5 | 20.67 | 21.13 | 21.03 |
| | | RB3#0 | 21.05 | 21.16 | 20.95 |
| | | RB3#3 | 21.21 | 21.20 | 21.10 |
| | | RB6#0 | 20.04 | 19.72 | 19.69 |
| 3MHz | QPSK | RB1#0 | 21.95 | 22.28 | 21.96 |
| | | RB1#8 | 21.89 | 22.20 | 21.70 |
| | | RB1#14 | 22.09 | 22.39 | 22.07 |
| | | RB6#0 | 21.08 | 21.00 | 20.98 |
| | | RB6#9 | 21.17 | 21.07 | 20.97 |
| | | RB15#0 | 21.13 | 21.03 | 20.98 |
| | 16QAM | RB1#0 | 21.25 | 21.71 | 20.91 |
| | | RB1#8 | 21.18 | 21.27 | 20.83 |
| | | RB1#14 | 21.31 | 21.89 | 20.98 |
| | | RB6#0 | 19.93 | 20.31 | 19.88 |
| | | RB6#9 | 20.00 | 20.26 | 19.93 |
| | | RB15#0 | 20.01 | 20.16 | 20.12 |
| 5MHz | QPSK | RB1#0 | 21.88 | 21.99 | 22.08 |
| | | RB1#13 | 22.02 | 22.02 | 21.94 |
| | | RB1#24 | 21.99 | 22.13 | 21.76 |
| | | RB15#0 | 21.10 | 21.05 | 21.00 |
| | | RB15#10 | 21.08 | 21.10 | 20.97 |
| | | RB25#0 | 21.03 | 21.15 | 20.98 |
| | 16QAM | RB1#0 | 20.53 | 21.40 | 20.81 |
| | | RB1#13 | 20.39 | 21.23 | 20.52 |
| | | RB1#24 | 20.40 | 21.31 | 20.64 |
| | | RB15#0 | 19.85 | 19.89 | 19.88 |
| | | RB15#10 | 19.91 | 20.00 | 19.90 |
| | | RB25#0 | 20.00 | 20.04 | 19.99 |

| | | | | | |
|---|---|---|---|---|---|
| 10MHz | QPSK | RB1#0 | 21.92 | 22.28 | 22.17 |
| | | RB1#25 | 22.18 | 22.18 | 22.19 |
| | | RB1#49 | 22.49 | 22.30 | 21.46 |
| | | RB25#0 | 21.15 | 21.10 | 21.13 |
| | | RB25#25 | 21.17 | 21.21 | 21.09 |
| | | RB50#0 | 21.13 | 21.18 | 21.12 |
| | 16QAM | RB1#0 | 21.41 | 21.56 | 21.16 |
| | | RB1#25 | 21.74 | 21.40 | 21.18 |
| | | RB1#49 | 21.49 | 21.78 | 20.54 |
| | | RB25#0 | 20.18 | 20.09 | 20.36 |
| | | RB25#25 | 20.20 | 20.06 | 20.27 |
| | | RB50#0 | 20.12 | 20.35 | 19.99 |
| 15MHz | QPSK | RB1#0 | 22.05 | 22.21 | 21.88 |
| | | RB1#38 | 22.05 | 21.99 | 21.83 |
| | | RB1#74 | 22.19 | 22.00 | 21.03 |
| | | RB36#0 | 21.17 | 21.18 | 20.98 |
| | | RB36#39 | 21.25 | 21.16 | 21.07 |
| | | RB75#0 | 21.20 | 21.08 | 21.11 |
| | 16QAM | RB1#0 | 21.49 | 21.45 | 21.04 |
| | | RB1#38 | 21.54 | 21.50 | 21.15 |
| | | RB1#74 | 21.56 | 21.39 | 20.48 |
| | | RB36#0 | 19.96 | 20.07 | 20.02 |
| | | RB36#39 | 20.15 | 20.03 | 20.04 |
| | | RB75#0 | 20.11 | 20.07 | 19.94 |
| 20MHz | QPSK | RB1#0 | 21.92 | 22.08 | 21.80 |
| | | RB1#50 | 22.41 | 22.14 | 22.43 |
| | | RB1#99 | 22.33 | 22.09 | 21.09 |
| | | RB50#0 | 21.24 | 21.14 | 21.34 |
| | | RB50#50 | 21.26 | 21.15 | 21.16 |
| | | RB100#0 | 21.24 | 21.19 | 21.15 |
| | 16QAM | RB1#0 | 21.17 | 21.20 | 21.34 |
| | | RB1#50 | 21.75 | 21.19 | 22.31 |
| | | RB1#99 | 21.68 | 21.23 | 20.71 |
| | | RB50#0 | 20.19 | 20.13 | 20.12 |
| | | RB50#50 | 20.27 | 20.17 | 20.08 |
| | | RB100#0 | 20.31 | 20.15 | 20.27 |

**LTE Band 4**

| Channel Bandwidth | Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|
| 1.4MHz | QPSK | RB1#0 | 21.45 | 19.41 | 21.34 |
| | | RB1#3 | 21.52 | 21.53 | 21.66 |
| | | RB1#5 | 21.44 | 21.52 | 21.91 |
| | | RB3#0 | 21.48 | 21.68 | 21.37 |
| | | RB3#3 | 21.55 | 21.73 | 21.47 |
| | | RB6#0 | 20.54 | 20.67 | 20.53 |
| | 16QAM | RB1#0 | 20.84 | 20.94 | 20.58 |
| | | RB1#3 | 21.00 | 21.00 | 20.39 |
| | | RB1#5 | 20.84 | 21.13 | 20.29 |
| | | RB3#0 | 20.88 | 20.68 | 20.51 |
| | | RB3#3 | 20.58 | 20.59 | 20.53 |
| | | RB6#0 | 19.34 | 19.39 | 19.64 |
| 3MHz | QPSK | RB1#0 | 21.57 | 21.54 | 21.30 |
| | | RB1#8 | 21.55 | 21.49 | 21.25 |
| | | RB1#14 | 21.66 | 21.61 | 21.57 |
| | | RB6#0 | 20.62 | 20.68 | 20.32 |
| | | RB6#9 | 20.66 | 20.68 | 20.46 |
| | | RB15#0 | 20.70 | 20.73 | 20.44 |
| | 16QAM | RB1#0 | 20.84 | 21.18 | 20.52 |
| | | RB1#8 | 20.65 | 21.27 | 20.70 |
| | | RB1#14 | 20.99 | 21.38 | 20.72 |
| | | RB6#0 | 19.58 | 19.65 | 19.26 |
| | | RB6#9 | 19.52 | 19.78 | 19.41 |
| | | RB15#0 | 19.64 | 19.84 | 19.47 |
| 5MHz | QPSK | RB1#0 | 21.48 | 21.45 | 21.68 |
| | | RB1#13 | 21.55 | 21.44 | 21.40 |
| | | RB1#24 | 21.47 | 21.57 | 21.49 |
| | | RB15#0 | 20.56 | 20.63 | 20.28 |
| | | RB15#10 | 20.61 | 20.72 | 20.44 |
| | | RB25#0 | 20.67 | 20.59 | 20.33 |
| | 16QAM | RB1#0 | 19.88 | 20.19 | 20.73 |
| | | RB1#13 | 20.02 | 20.19 | 20.58 |
| | | RB1#24 | 19.43 | 20.18 | 20.86 |
| | | RB15#0 | 19.49 | 19.45 | 19.22 |
| | | RB15#10 | 19.65 | 19.70 | 19.36 |
| | | RB25#0 | 19.72 | 19.61 | 19.45 |

| | | | | | |
|---|---|---|---|---|---|
| 10MHz | QPSK | RB1#0 | 21.37 | 21.33 | 21.49 |
| | | RB1#25 | 21.28 | 21.40 | 21.61 |
| | | RB1#49 | 21.35 | 21.38 | 21.62 |
| | | RB25#0 | 20.57 | 20.53 | 20.43 |
| | | RB25#25 | 20.52 | 20.64 | 20.36 |
| | | RB50#0 | 20.54 | 20.53 | 20.46 |
| | 16QAM | RB1#0 | 20.76 | 21.10 | 20.37 |
| | | RB1#25 | 20.74 | 21.49 | 20.11 |
| | | RB1#49 | 20.57 | 21.74 | 20.20 |
| | | RB25#0 | 19.78 | 19.56 | 19.61 |
| | | RB25#25 | 19.58 | 19.68 | 19.38 |
| | | RB50#0 | 19.56 | 19.48 | 19.42 |
| 15MHz | QPSK | RB1#0 | 21.52 | 21.38 | 21.36 |
| | | RB1#38 | 21.34 | 21.56 | 21.39 |
| | | RB1#74 | 21.6 | 21.54 | 21.52 |
| | | RB36#0 | 20.68 | 20.56 | 20.48 |
| | | RB36#39 | 20.48 | 20.57 | 20.32 |
| | | RB75#0 | 20.53 | 20.63 | 20.37 |
| | 16QAM | RB1#0 | 20.79 | 21.08 | 20.76 |
| | | RB1#38 | 20.67 | 21.68 | 20.33 |
| | | RB1#74 | 20.46 | 21.12 | 20.37 |
| | | RB36#0 | 19.65 | 19.59 | 19.37 |
| | | RB36#39 | 19.47 | 19.64 | 19.35 |
| | | RB75#0 | 19.58 | 19.47 | 19.39 |
| 20MHz | QPSK | RB1#0 | 21.51 | 21.34 | 21.82 |
| | | RB1#50 | 21.28 | 21.91 | 21.80 |
| | | RB1#99 | 21.79 | 21.70 | 21.69 |
| | | RB50#0 | 20.73 | 20.58 | 20.70 |
| | | RB50#50 | 20.70 | 20.78 | 20.39 |
| | | RB100#0 | 20.71 | 20.86 | 20.63 |
| | 16QAM | RB1#0 | 21.55 | 20.87 | 21.63 |
| | | RB1#50 | 21.16 | 20.84 | 21.76 |
| | | RB1#99 | 21.29 | 20.85 | 21.31 |
| | | RB50#0 | 19.67 | 19.67 | 19.68 |
| | | RB50#50 | 19.54 | 19.78 | 19.37 |
| | | RB100#0 | 19.76 | 19.70 | 19.55 |

**LTE Band 5**

| Channel Bandwidth | Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|
| 1.4MHz | QPSK | RB1#0 | 21.50 | 21.65 | 19.83 |
| | | RB1#3 | 21.56 | 21.82 | 21.94 |
| | | RB1#5 | 21.62 | 21.83 | 21.65 |
| | | RB3#0 | 21.69 | 21.90 | 21.71 |
| | | RB3#3 | 21.73 | 21.71 | 21.77 |
| | | RB6#0 | 20.70 | 20.75 | 20.99 |
| | 16QAM | RB1#0 | 20.93 | 20.51 | 20.52 |
| | | RB1#3 | 21.32 | 20.59 | 20.66 |
| | | RB1#5 | 21.27 | 20.44 | 20.58 |
| | | RB3#0 | 20.69 | 20.79 | 20.92 |
| | | RB3#3 | 20.77 | 20.76 | 21.08 |
| | | RB6#0 | 19.77 | 19.90 | 20.00 |
| 3MHz | QPSK | RB1#0 | 21.54 | 21.63 | 22.01 |
| | | RB1#8 | 21.55 | 21.57 | 22.04 |
| | | RB1#14 | 21.89 | 21.88 | 22.20 |
| | | RB6#0 | 20.74 | 20.71 | 20.70 |
| | | RB6#9 | 20.82 | 20.77 | 20.91 |
| | | RB15#0 | 20.76 | 20.83 | 20.72 |
| | 16QAM | RB1#0 | 20.24 | 20.95 | 21.25 |
| | | RB1#8 | 20.36 | 20.96 | 21.33 |
| | | RB1#14 | 20.36 | 20.80 | 21.88 |
| | | RB6#0 | 19.73 | 19.65 | 19.86 |
| | | RB6#9 | 19.72 | 19.67 | 19.77 |
| | | RB15#0 | 19.93 | 19.91 | 19.55 |
| 5MHz | QPSK | RB1#0 | 21.58 | 21.63 | 21.83 |
| | | RB1#13 | 21.73 | 21.85 | 21.71 |
| | | RB1#24 | 21.73 | 21.51 | 21.60 |
| | | RB15#0 | 20.81 | 20.72 | 20.76 |
| | | RB15#10 | 20.84 | 20.76 | 20.90 |
| | | RB25#0 | 20.76 | 20.82 | 20.87 |
| | 16QAM | RB1#0 | 20.09 | 20.87 | 20.97 |
| | | RB1#13 | 20.32 | 21.26 | 20.24 |
| | | RB1#24 | 20.34 | 21.12 | 20.42 |
| | | RB15#0 | 19.74 | 19.60 | 19.76 |
| | | RB15#10 | 19.78 | 19.47 | 19.85 |
| | | RB25#0 | 19.79 | 19.53 | 19.94 |
| 10MHz | QPSK | RB1#0 | 21.59 | 21.58 | 21.67 |
| | | RB1#25 | 21.81 | 21.93 | 21.66 |
| | | RB1#49 | 21.82 | 22.09 | 21.76 |
| | | RB25#0 | 20.76 | 20.80 | 20.84 |
| | | RB25#25 | 20.79 | 20.74 | 20.93 |
| | | RB50#0 | 20.78 | 20.83 | 20.91 |
| | 16QAM | RB1#0 | 21.41 | 20.85 | 21.09 |
| | | RB1#25 | 21.60 | 20.58 | 21.22 |
| | | RB1#49 | 21.73 | 20.35 | 21.23 |
| | | RB25#0 | 19.99 | 19.92 | 19.89 |
| | | RB25#25 | 19.82 | 19.89 | 20.04 |
| | | RB50#0 | 19.75 | 19.81 | 19.83 |

**LTE Band 7**

| Channel Bandwidth | Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|
| 5MHz | QPSK | RB1#0 | 21.79 | 21.76 | 19.76 |
| | | RB1#13 | 21.88 | 21.71 | 21.89 |
| | | RB1#24 | 21.60 | 21.80 | 21.23 |
| | | RB15#0 | 20.84 | 20.86 | 20.89 |
| | | RB15#10 | 20.77 | 20.98 | 20.91 |
| | | RB25#0 | 20.67 | 20.89 | 20.92 |
| | 16QAM | RB1#0 | 20.79 | 20.25 | 20.83 |
| | | RB1#13 | 20.64 | 20.38 | 20.54 |
| | | RB1#24 | 20.60 | 20.21 | 20.56 |
| | | RB15#0 | 19.86 | 19.88 | 19.92 |
| | | RB15#10 | 19.82 | 19.93 | 19.87 |
| | | RB25#0 | 19.70 | 20.01 | 19.80 |
| 10MHz | QPSK | RB1#0 | 21.40 | 21.82 | 21.88 |
| | | RB1#25 | 21.75 | 22.00 | 21.93 |
| | | RB1#49 | 21.29 | 21.98 | 20.83 |
| | | RB25#0 | 20.93 | 21.01 | 21.03 |
| | | RB25#25 | 20.91 | 21.04 | 21.12 |
| | | RB50#0 | 21.10 | 21.02 | 21.03 |
| | 16QAM | RB1#0 | 20.77 | 21.50 | 21.27 |
| | | RB1#25 | 21.29 | 21.39 | 21.15 |
| | | RB1#49 | 20.87 | 21.41 | 20.13 |
| | | RB25#0 | 19.87 | 20.03 | 19.93 |
| | | RB25#25 | 19.90 | 19.99 | 20.07 |
| | | RB50#0 | 19.95 | 19.95 | 19.88 |
| 15MHz | QPSK | RB1#0 | 21.07 | 21.99 | 21.86 |
| | | RB1#38 | 21.60 | 21.79 | 21.98 |
| | | RB1#74 | 21.30 | 21.72 | 20.63 |
| | | RB36#0 | 21.00 | 21.01 | 21.12 |
| | | RB36#39 | 20.99 | 21.12 | 21.10 |
| | | RB75#0 | 20.96 | 20.97 | 20.93 |
| | 16QAM | RB1#0 | 20.44 | 21.42 | 21.15 |
| | | RB1#38 | 21.12 | 21.95 | 20.92 |
| | | RB1#74 | 20.88 | 21.18 | 20.19 |
| | | RB36#0 | 20.04 | 19.92 | 19.91 |
| | | RB36#39 | 19.78 | 19.85 | 19.99 |
| | | RB75#0 | 19.89 | 20.03 | 19.87 |
| 20MHz | QPSK | RB1#0 | 20.15 | 21.19 | 21.10 |
| | | RB1#50 | 21.25 | 22.17 | 22.03 |
| | | RB1#99 | 21.26 | 21.28 | 20.31 |
| | | RB50#0 | 21.04 | 21.17 | 21.08 |
| | | RB50#50 | 20.96 | 21.11 | 21.11 |
| | | RB100#0 | 21.00 | 21.13 | 21.04 |
| | 16QAM | RB1#0 | 19.43 | 20.50 | 20.40 |
| | | RB1#50 | 20.71 | 20.93 | 21.53 |
| | | RB1#99 | 20.72 | 20.75 | 19.81 |
| | | RB50#0 | 20.05 | 20.01 | 20.07 |
| | | RB50#50 | 19.98 | 19.99 | 20.16 |
| | | RB100#0 | 20.03 | 20.06 | 19.96 |

**LTE Band 12**

| Channel Bandwidth | Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|
| 1.4MHz | QPSK | RB1#0 | 22.08 | 20.28 | 20.37 |
| | | RB1#3 | 22.23 | 22.22 | 22.14 |
| | | RB1#5 | 22.19 | 22.14 | 22.03 |
| | | RB3#0 | 22.25 | 22.20 | 22.05 |
| | | RB3#3 | 22.14 | 22.24 | 22.16 |
| | | RB6#0 | 21.18 | 21.27 | 21.24 |
| | 16QAM | RB1#0 | 21.51 | 20.92 | 21.54 |
| | | RB1#3 | 21.68 | 20.92 | 21.58 |
| | | RB1#5 | 21.68 | 20.83 | 21.47 |
| | | RB3#0 | 21.24 | 20.77 | 20.83 |
| | | RB3#3 | 21.17 | 21.30 | 20.84 |
| | | RB6#0 | 19.87 | 20.37 | 19.97 |
| 3MHz | QPSK | RB1#0 | 22.07 | 22.42 | 22.03 |
| | | RB1#8 | 22.10 | 22.46 | 22.26 |
| | | RB1#14 | 22.10 | 22.09 | 21.96 |
| | | RB6#0 | 21.16 | 21.33 | 21.04 |
| | | RB6#9 | 21.17 | 21.23 | 21.11 |
| | | RB15#0 | 21.25 | 21.28 | 21.20 |
| | 16QAM | RB1#0 | 21.44 | 21.67 | 21.44 |
| | | RB1#8 | 21.29 | 21.89 | 21.37 |
| | | RB1#14 | 21.04 | 21.89 | 21.29 |
| | | RB6#0 | 19.98 | 20.62 | 20.07 |
| | | RB6#9 | 20.11 | 20.67 | 20.03 |
| | | RB15#0 | 20.31 | 20.51 | 20.07 |
| 5MHz | QPSK | RB1#0 | 21.88 | 22.21 | 22.19 |
| | | RB1#13 | 22.08 | 22.02 | 21.89 |
| | | RB1#24 | 21.90 | 21.93 | 21.97 |
| | | RB15#0 | 21.12 | 21.22 | 21.01 |
| | | RB15#10 | 21.19 | 21.25 | 21.06 |
| | | RB25#0 | 21.07 | 21.20 | 21.05 |
| | 16QAM | RB1#0 | 20.57 | 21.51 | 20.81 |
| | | RB1#13 | 21.18 | 21.65 | 20.83 |
| | | RB1#24 | 20.52 | 21.37 | 19.80 |
| | | RB15#0 | 19.93 | 20.38 | 19.95 |
| | | RB15#10 | 19.79 | 20.45 | 19.89 |
| | | RB25#0 | 20.09 | 20.12 | 20.02 |
| 10MHz | QPSK | RB1#0 | 21.86 | 22.07 | 22.32 |
| | | RB1#25 | 22.07 | 22.19 | 22.19 |
| | | RB1#49 | 22.07 | 21.88 | 21.69 |
| | | RB25#0 | 21.06 | 21.12 | 21.21 |
| | | RB25#25 | 21.23 | 21.19 | 21.11 |
| | | RB50#0 | 21.03 | 21.10 | 21.16 |
| | 16QAM | RB1#0 | 21.23 | 21.41 | 20.83 |
| | | RB1#25 | 22.11 | 22.27 | 21.74 |
| | | RB1#49 | 20.91 | 21.55 | 20.65 |
| | | RB25#0 | 20.17 | 20.21 | 20.26 |
| | | RB25#25 | 20.23 | 20.07 | 20.28 |
| | | RB50#0 | 20.08 | 20.12 | 20.18 |

**LTE Band 13**

| Channel Bandwidth | Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|
| 5MHz | QPSK | RB1#0 | 20.28 | 22.39 | 22.43 |
| | | RB1#13 | 22.15 | 22.21 | 22.38 |
| | | RB1#24 | 22.18 | 22.25 | 22.18 |
| | | RB15#0 | 21.51 | 21.37 | 21.29 |
| | | RB15#10 | 21.43 | 21.39 | 21.27 |
| | | RB25#0 | 21.32 | 21.36 | 21.32 |
| | 16QAM | RB1#0 | 20.85 | 21.59 | 21.06 |
| | | RB1#13 | 20.80 | 21.61 | 21.13 |
| | | RB1#24 | 20.61 | 21.78 | 21.27 |
| | | RB15#0 | 20.40 | 20.08 | 20.26 |
| | | RB15#10 | 20.32 | 19.99 | 20.26 |
| | | RB25#0 | 20.35 | 20.15 | 20.17 |
| 10MHz | QPSK | RB1#0 | / | 22.22 | / |
| | | RB1#25 | / | 22.32 | / |
| | | RB1#49 | / | 22.35 | / |
| | | RB25#0 | / | 21.40 | / |
| | | RB25#25 | / | 21.31 | / |
| | | RB50#0 | / | 21.39 | / |
| | 16QAM | RB1#0 | / | 21.57 | / |
| | | RB1#25 | / | 22.35 | / |
| | | RB1#49 | / | 21.76 | / |
| | | RB25#0 | / | 20.28 | / |
| | | RB25#25 | / | 20.15 | / |
| | | RB50#0 | / | 20.15 | / |

**LTE Band 17**

| Channel Bandwidth | Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|
| 5MHz | QPSK | RB1#0 | 19.60 | 21.43 | 21.53 |
| | | RB1#13 | 21.64 | 21.45 | 21.65 |
| | | RB1#24 | 21.30 | 21.26 | 21.46 |
| | | RB15#0 | 20.58 | 20.60 | 20.58 |
| | | RB15#10 | 20.59 | 20.56 | 20.60 |
| | | RB25#0 | 20.57 | 20.52 | 20.57 |
| | 16QAM | RB1#0 | 19.95 | 20.72 | 20.30 |
| | | RB1#13 | 19.78 | 21.05 | 20.38 |
| | | RB1#24 | 19.64 | 20.74 | 19.79 |
| | | RB15#0 | 19.58 | 19.73 | 19.68 |
| | | RB15#10 | 19.51 | 19.80 | 19.64 |
| | | RB25#0 | 19.82 | 19.57 | 19.60 |
| 10MHz | QPSK | RB1#0 | 21.65 | 21.30 | 21.40 |
| | | RB1#25 | 21.57 | 21.70 | 21.62 |
| | | RB1#49 | 21.52 | 21.38 | 21.38 |
| | | RB25#0 | 20.69 | 20.52 | 20.68 |
| | | RB25#25 | 20.70 | 20.58 | 20.59 |
| | | RB50#0 | 20.68 | 20.58 | 20.58 |
| | 16QAM | RB1#0 | 21.24 | 20.28 | 20.77 |
| | | RB1#25 | 21.21 | 20.52 | 21.16 |
| | | RB1#49 | 21.15 | 20.12 | 20.32 |
| | | RB25#0 | 19.78 | 19.40 | 19.59 |
| | | RB25#25 | 19.75 | 19.53 | 19.72 |
| | | RB50#0 | 19.63 | 19.57 | 19.66 |

**LTE Band 26**

| Channel Bandwidth | Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|
| 1.4MHz | QPSK | RB1#0 | 21.47 | 19.29 | 19.55 |
| | | RB1#3 | 21.64 | 21.35 | 21.39 |
| | | RB1#5 | 21.39 | 21.40 | 21.71 |
| | | RB3#0 | 21.36 | 21.65 | 21.39 |
| | | RB3#3 | 21.65 | 21.57 | 21.31 |
| | | RB6#0 | 20.47 | 20.37 | 20.49 |
| | 16QAM | RB1#0 | 20.74 | 20.55 | 20.62 |
| | | RB1#3 | 20.86 | 20.99 | 21.02 |
| | | RB1#5 | 20.89 | 20.87 | 20.74 |
| | | RB3#0 | 20.50 | 20.84 | 20.37 |
| | | RB3#3 | 20.62 | 20.80 | 20.45 |
| | | RB6#0 | 19.45 | 19.94 | 19.52 |
| 3MHz | QPSK | RB1#0 | 21.54 | 21.40 | 21.32 |
| | | RB1#8 | 21.34 | 21.27 | 21.35 |
| | | RB1#14 | 21.50 | 21.51 | 21.28 |
| | | RB6#0 | 20.51 | 20.44 | 20.37 |
| | | RB6#9 | 20.34 | 20.52 | 20.35 |
| | | RB15#0 | 20.56 | 20.42 | 20.47 |
| | 16QAM | RB1#0 | 20.70 | 20.58 | 20.04 |
| | | RB1#8 | 20.60 | 20.96 | 19.87 |
| | | RB1#14 | 20.59 | 21.58 | 19.93 |
| | | RB6#0 | 19.43 | 19.81 | 19.38 |
| | | RB6#9 | 19.26 | 19.43 | 19.37 |
| | | RB15#0 | 19.51 | 19.34 | 19.68 |
| 5MHz | QPSK | RB1#0 | 21.43 | 21.34 | 21.26 |
| | | RB1#13 | 21.39 | 21.36 | 21.48 |
| | | RB1#24 | 21.60 | 21.38 | 21.47 |
| | | RB15#0 | 20.49 | 20.44 | 20.47 |
| | | RB15#10 | 20.47 | 20.35 | 20.45 |
| | | RB25#0 | 20.52 | 20.45 | 20.41 |
| | 16QAM | RB1#0 | 19.60 | 20.67 | 19.84 |
| | | RB1#13 | 19.68 | 20.84 | 19.35 |
| | | RB1#24 | 19.79 | 20.64 | 19.22 |
| | | RB15#0 | 19.42 | 19.37 | 19.47 |
| | | RB15#10 | 19.47 | 19.34 | 19.43 |
| | | RB25#0 | 19.76 | 19.23 | 19.60 |
| 10MHz | QPSK | RB1#0 | 21.59 | 21.49 | 21.47 |
| | | RB1#25 | 21.43 | 21.35 | 21.70 |
| | | RB1#49 | 21.69 | 21.51 | 21.53 |
| | | RB25#0 | 20.54 | 20.42 | 20.50 |
| | | RB25#25 | 20.47 | 20.61 | 20.45 |
| | | RB50#0 | 20.52 | 20.43 | 20.52 |
| | 16QAM | RB1#0 | 20.42 | 21.12 | 20.40 |
| | | RB1#25 | 20.78 | 21.01 | 20.15 |
| | | RB1#49 | 20.92 | 21.26 | 20.02 |
| | | RB25#0 | 19.34 | 19.72 | 19.70 |
| | | RB25#25 | 19.58 | 19.54 | 19.54 |

| | | | | | |
|---|---|---|---|---|---|
| | | RB50#0 | 19.47 | 19.72 | 19.54 |
| 15MHz | QPSK | RB1#0 | 21.65 | 21.57 | 21.33 |
| | | RB1#38 | 21.55 | 21.19 | 21.36 |
| | | RB1#74 | 21.70 | 21.76 | 21.36 |
| | | RB36#0 | 20.45 | 20.49 | 20.50 |
| | | RB36#39 | 20.50 | 20.58 | 20.51 |
| | | RB75#0 | 20.50 | 20.46 | 20.45 |
| | 16QAM | RB1#0 | 20.83 | 20.96 | 20.41 |
| | | RB1#38 | 20.31 | 20.82 | 19.74 |
| | | RB1#74 | 20.28 | 21.08 | 19.83 |
| | | RB36#0 | 19.45 | 19.77 | 19.49 |
| | | RB36#39 | 19.51 | 19.63 | 19.39 |
| | | RB75#0 | 19.58 | 19.58 | 19.55 |

**LTE Band 38**

| Channel Bandwidth | Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|
| 5MHz | QPSK | RB1#0 | 21.66 | 19.35 | 21.10 |
| | | RB1#13 | 21.67 | 21.41 | 21.35 |
| | | RB1#24 | 21.67 | 21.41 | 21.14 |
| | | RB15#0 | 20.75 | 20.54 | 20.39 |
| | | RB15#10 | 20.69 | 20.42 | 20.43 |
| | | RB25#0 | 20.72 | 20.48 | 20.40 |
| | 16QAM | RB1#0 | 20.95 | 20.67 | 19.72 |
| | | RB1#13 | 21.01 | 20.60 | 19.99 |
| | | RB1#24 | 20.86 | 20.30 | 19.98 |
| | | RB15#0 | 19.62 | 19.44 | 19.13 |
| | | RB15#10 | 19.57 | 19.29 | 19.13 |
| | | RB25#0 | 19.47 | 19.36 | 19.40 |
| 10MHz | QPSK | RB1#0 | 21.74 | 21.50 | 21.35 |
| | | RB1#25 | 21.68 | 21.41 | 21.23 |
| | | RB1#49 | 21.50 | 21.43 | 21.32 |
| | | RB25#0 | 20.78 | 20.48 | 20.43 |
| | | RB25#25 | 20.81 | 20.69 | 20.40 |
| | | RB50#0 | 20.73 | 20.56 | 20.42 |
| | 16QAM | RB1#0 | 20.96 | 20.77 | 20.41 |
| | | RB1#25 | 21.31 | 20.98 | 20.48 |
| | | RB1#49 | 20.90 | 20.76 | 20.48 |
| | | RB25#0 | 19.61 | 19.68 | 19.27 |
| | | RB25#25 | 19.65 | 19.59 | 19.40 |
| | | RB50#0 | 19.63 | 19.65 | 19.32 |
| 15MHz | QPSK | RB1#0 | 22.26 | 22.14 | 22.05 |
| | | RB1#38 | 22.17 | 21.96 | 21.99 |
| | | RB1#74 | 22.31 | 21.90 | 22.03 |
| | | RB36#0 | 21.25 | 21.10 | 21.07 |
| | | RB36#39 | 21.26 | 21.15 | 21.05 |
| | | RB75#0 | 21.16 | 21.08 | 21.00 |
| | 16QAM | RB1#0 | 21.24 | 21.27 | 21.19 |
| | | RB1#38 | 21.63 | 20.85 | 21.06 |
| | | RB1#74 | 21.66 | 21.14 | 21.11 |
| | | RB36#0 | 20.18 | 19.88 | 19.91 |
| | | RB36#39 | 20.23 | 19.91 | 20.04 |
| | | RB75#0 | 20.41 | 20.05 | 20.05 |
| 20MHz | QPSK | RB1#0 | 22.24 | 22.11 | 22.26 |
| | | RB1#50 | 22.18 | 22.12 | 22.26 |
| | | RB1#99 | 22.21 | 22.00 | 22.11 |
| | | RB50#0 | 21.25 | 21.09 | 20.91 |
| | | RB50#50 | 21.09 | 21.13 | 21.29 |
| | | RB100#0 | 21.20 | 21.17 | 21.25 |
| | 16QAM | RB1#0 | 21.59 | 21.71 | 20.85 |
| | | RB1#50 | 21.88 | 21.54 | 20.86 |
| | | RB1#99 | 21.78 | 21.31 | 20.71 |
| | | RB50#0 | 20.07 | 20.06 | 20.13 |
| | | RB50#50 | 20.20 | 20.12 | 20.09 |
| | | RB100#0 | 20.28 | 20.10 | 20.03 |

**LTE Band 40(2305-2315 MHz)**

| Channel Bandwidth | Modulation | Resource Block & RB offset | Low Channel (dBm/5MHz) | Middle Channel (dBm/5MHz) | High Channel (dBm/5MHz) |
|---|---|---|---|---|---|
| 5MHz | QPSK | RB1#0 | 16.67 | 16.56 | 16.35 |
| | | RB1#13 | 16.73 | 16.56 | 16.40 |
| | | RB1#24 | 16.45 | 16.57 | 16.38 |
| | | RB15#0 | 15.86 | 15.62 | 15.62 |
| | | RB15#10 | 15.90 | 15.62 | 15.61 |
| | | RB25#0 | 15.74 | 15.60 | 15.61 |
| | 16QAM | RB1#0 | 15.97 | 15.59 | 15.05 |
| | | RB1#13 | 16.30 | 15.55 | 14.95 |
| | | RB1#24 | 16.20 | 15.45 | 15.26 |
| | | RB15#0 | 14.82 | 14.50 | 14.37 |
| | | RB15#10 | 14.74 | 14.49 | 14.36 |
| | | RB25#0 | 14.78 | 14.56 | 14.75 |
| 10MHz | QPSK | RB1#0 | / | 14.12 | / |
| | | RB1#25 | / | 14.03 | / |
| | | RB1#49 | / | 14.32 | / |
| | | RB25#0 | / | 13.76 | / |
| | | RB25#25 | / | 13.43 | / |
| | | RB50#0 | / | 13.12 | / |
| | 16QAM | RB1#0 | / | 13.32 | / |
| | | RB1#25 | / | 13.16 | / |
| | | RB1#49 | / | 13.23 | / |
| | | RB25#0 | / | 12.87 | / |
| | | RB25#25 | / | 12.12 | / |
| | | RB50#0 | / | 12.42 | / |
| | | RB100#0 | / | 12.33 | / |

Note: the device is a mobile station. For 5MHz mode, the channel power is equal to the test result in dBm/5MHz. For 10MHz mode, the channel power as below:

| Channel Bandwidth | Modulation | Resource Block & RB offset | Middle Channel (dBm) |
|---|---|---|---|
| 10MHz | QPSK | RB1#0 | 16.69 |
| | | RB1#25 | 16.63 |
| | | RB1#49 | 16.65 |
| | | RB25#0 | 15.69 |
| | | RB25#25 | 15.74 |
| | | RB50#0 | 15.70 |
| | 16QAM | RB1#0 | 15.84 |
| | | RB1#25 | 15.46 |
| | | RB1#49 | 15.21 |
| | | RB25#0 | 14.50 |
| | | RB25#25 | 14.50 |
| | | RB50#0 | 14.60 |
| | | RB100#0 | 14.62 |

**LTE Band 40(2350-2360 MHz)**

| Channel Bandwidth | Modulation | Resource Block & RB offset | Low Channel (dBm/5MHz) | Middle Channel (dBm/5MHz) | High Channel (dBm/5MHz) |
|---|---|---|---|---|---|
| 5MHz | QPSK | RB1#0 | 16.69 | 16.56 | 16.66 |
| | | RB1#13 | 16.59 | 16.56 | 16.77 |
| | | RB1#24 | 16.63 | 16.57 | 16.70 |
| | | RB15#0 | 15.91 | 15.62 | 15.56 |
| | | RB15#10 | 15.84 | 15.62 | 15.65 |
| | | RB25#0 | 15.87 | 15.60 | 15.63 |
| | 16QAM | RB1#0 | 15.55 | 15.59 | 15.94 |
| | | RB1#13 | 16.09 | 15.55 | 16.31 |
| | | RB1#24 | 16.06 | 15.45 | 16.11 |
| | | RB15#0 | 15.06 | 14.50 | 14.67 |
| | | RB15#10 | 15.01 | 14.49 | 14.58 |
| | | RB25#0 | 14.69 | 14.56 | 14.65 |
| 10MHz | QPSK | RB1#0 | / | 14.32 | / |
| | | RB1#25 | / | 14.12 | / |
| | | RB1#49 | / | 14.24 | / |
| | | RB25#0 | / | 13.43 | / |
| | | RB25#25 | / | 13.32 | / |
| | | RB50#0 | / | 13.12 | / |
| | 16QAM | RB1#0 | / | 13.10 | / |
| | | RB1#25 | / | 13.12 | / |
| | | RB1#49 | / | 13.22 | / |
| | | RB25#0 | / | 12.32 | / |
| | | RB25#25 | / | 12.27 | / |
| | | RB50#0 | / | 12.14 | / |
| | | RB100#0 | / | 12.23 | / |

Note: the device is a mobile station. For 5MHz mode, the channel power is equal to the test result in dBm/5MHz. For 10MHz mode, the channel power as below:

| Channel Bandwidth | Modulation | Resource Block & RB offset | Middle Channel (dBm) |
|---|---|---|---|
| 10MHz | QPSK | RB1#0 | 16.78 |
| | | RB1#25 | 16.57 |
| | | RB1#49 | 16.74 |
| | | RB25#0 | 15.70 |
| | | RB25#25 | 15.70 |
| | | RB50#0 | 15.72 |
| | 16QAM | RB1#0 | 15.40 |
| | | RB1#25 | 15.39 |
| | | RB1#49 | 15.77 |
| | | RB25#0 | 14.62 |
| | | RB25#25 | 14.62 |
| | | RB50#0 | 14.72 |
| | | RB100#0 | 14.72 |

**LTE Band 41**

| Channel Bandwidth | Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|
| 5MHz | QPSK | RB1#0 | 22.45 | 22.33 | 22.35 |
| | | RB1#13 | 22.64 | 22.52 | 22.50 |
| | | RB1#24 | 22.53 | 22.55 | 22.30 |
| | | RB15#0 | 21.64 | 21.54 | 21.71 |
| | | RB15#10 | 21.72 | 21.65 | 21.58 |
| | | RB25#0 | 21.69 | 21.54 | 21.52 |
| | 16QAM | RB1#0 | 21.74 | 21.44 | 21.24 |
| | | RB1#13 | 21.84 | 21.53 | 21.20 |
| | | RB1#24 | 21.80 | 21.51 | 21.08 |
| | | RB15#0 | 20.54 | 20.34 | 20.33 |
| | | RB15#10 | 20.56 | 20.43 | 20.20 |
| | | RB25#0 | 20.62 | 20.42 | 20.60 |
| 10MHz | QPSK | RB1#0 | 22.59 | 22.54 | 22.81 |
| | | RB1#25 | 22.76 | 22.45 | 22.72 |
| | | RB1#49 | 22.76 | 22.61 | 22.72 |
| | | RB25#0 | 21.83 | 21.51 | 21.98 |
| | | RB25#25 | 22.02 | 21.70 | 21.65 |
| | | RB50#0 | 22.06 | 21.89 | 21.80 |
| | 16QAM | RB1#0 | 22.01 | 21.72 | 21.84 |
| | | RB1#25 | 22.42 | 21.90 | 22.41 |
| | | RB1#49 | 21.96 | 21.79 | 22.07 |
| | | RB25#0 | 20.77 | 20.37 | 20.87 |
| | | RB25#25 | 20.71 | 20.64 | 20.64 |
| | | RB50#0 | 20.74 | 20.50 | 20.64 |
| 15MHz | QPSK | RB1#0 | 22.63 | 22.59 | 22.82 |
| | | RB1#38 | 22.55 | 22.48 | 22.83 |
| | | RB1#74 | 22.61 | 22.70 | 22.72 |
| | | RB36#0 | 21.84 | 21.54 | 21.79 |
| | | RB36#39 | 21.75 | 21.74 | 21.59 |
| | | RB75#0 | 21.74 | 21.68 | 21.78 |
| | 16QAM | RB1#0 | 21.76 | 21.46 | 21.90 |
| | | RB1#38 | 21.74 | 21.44 | 22.21 |
| | | RB1#74 | 21.76 | 21.83 | 21.97 |
| | | RB36#0 | 20.56 | 20.43 | 20.82 |
| | | RB36#39 | 20.58 | 20.64 | 20.74 |
| | | RB75#0 | 20.64 | 20.58 | 20.78 |

| | | | | | |
|---|---|---|---|---|---|
| 20MHz | QPSK | RB1#0 | 22.92 | 22.44 | 22.78 |
| | | RB1#50 | 22.92 | 22.80 | 22.93 |
| | | RB1#99 | 22.72 | 22.76 | 22.70 |
| | | RB50#0 | 21.91 | 21.79 | 21.80 |
| | | RB50#50 | 21.70 | 21.77 | 21.82 |
| | | RB100#0 | 21.83 | 21.73 | 21.96 |
| | 16QAM | RB1#0 | 22.26 | 21.79 | 21.50 |
| | | RB1#50 | 22.51 | 21.85 | 21.59 |
| | | RB1#99 | 22.01 | 21.99 | 21.29 |
| | | RB50#0 | 20.68 | 20.61 | 20.83 |
| | | RB50#50 | 20.49 | 20.69 | 20.77 |
| | | RB100#0 | 20.64 | 20.71 | 20.62 |

**PAR, Band 2**

| Test Modulation | | Channel Bandwidth | Low Channel PAR (dB) | Middle Channel PAR (dB) | High Channel PAR (dB) | Limit (dB) |
|---|---|---|---|---|---|---|
| QPSK | 1 RB | 20 MHz | 3.85 | 3.56 | 3.56 | 13 |
| | 100 RB | | 5.22 | 5.06 | 5.19 | 13 |
| 16QAM | 1 RB | 20 MHz | 4.55 | 4.49 | 4.20 | 13 |
| | 100 RB | | 6.06 | 5.93 | 6.09 | 13 |

**PAR, Band 4**

| Test Modulation | | Channel Bandwidth | Low Channel PAR (dB) | Middle Channel PAR (dB) | High Channel PAR (dB) | Limit (dB) |
|---|---|---|---|---|---|---|
| QPSK | 1 RB | 20 MHz | 4.49 | 3.65 | 4.33 | 13 |
| | 100 RB | | 5.22 | 5.00 | 5.06 | 13 |
| 16QAM | 1 RB | 20 MHz | 5.38 | 4.29 | 5.29 | 13 |
| | 100 RB | | 6.15 | 5.83 | 6.03 | 13 |

**PAR, Band 5**

| Test Modulation | | Channel Bandwidth | Low Channel PAR (dB) | Middle Channel PAR (dB) | High Channel PAR (dB) | Limit (dB) |
|---|---|---|---|---|---|---|
| QPSK | 1 RB | 10 MHz | 4.78 | 3.65 | 4.87 | 13 |
| | 50 RB | | 5.29 | 5.58 | 5.42 | 13 |
| 16QAM | 1 RB | 10 MHz | 5.74 | 4.55 | 5.74 | 13 |
| | 50 RB | | 6.25 | 6.35 | 6.28 | 13 |

**PAR, Band 7**

| Test Modulation | | Channel Bandwidth | Low Channel PAR (dB) | Middle Channel PAR (dB) | High Channel PAR (dB) | Limit (dB) |
|---|---|---|---|---|---|---|
| QPSK | 1 RB | 20 MHz | 4.25 | 3.33 | 4.23 | 13 |
| | 100 RB | | 5.19 | 5.75 | 5.65 | 13 |
| 16QAM | 1 RB | 20 MHz | 5.43 | 4.56 | 5.97 | 13 |
| | 100 RB | | 6.29 | 6.13 | 6.89 | 13 |

**PAR, LTE Band 12**

| Test Modulation | | Channel Bandwidth | Low Channel PAR (dB) | Middle Channel PAR (dB) | High Channel PAR (dB) | Limit (dB) |
|---|---|---|---|---|---|---|
| QPSK | 1 RB | 10 MHz | 3.55 | 4.59 | 4.65 | 13 |
| | 50 RB | | 5.65 | 5.65 | 5.28 | 13 |
| 16QAM | 1 RB | 10 MHz | 4.39 | 5.65 | 5.65 | 13 |
| | 50 RB | | 5.48 | 6.54 | 6.18 | 13 |

**PAR, LTE Band 13**

| Test Modulation | | Channel Bandwidth | Middle Channel PAR (dB) | Limit (dB) |
|---|---|---|---|---|
| QPSK | 1 RB | 10 MHz | 4.87 | 13 |
| | 50 RB | | 5.62 | 13 |
| 16QAM | 1 RB | 10 MHz | 5.02 | 13 |
| | 50 RB | | 6.04 | 13 |

**PAR, LTE Band 17**

| Test Modulation | | Channel Bandwidth | Low Channel PAR (dB) | Middle Channel PAR (dB) | High Channel PAR (dB) | Limit (dB) |
|---|---|---|---|---|---|---|
| QPSK | 1 RB | 10 MHz | 4.54 | 4.32 | 4.44 | 13 |
| | 50 RB | | 5.21 | 5.32 | 5.28 | 13 |
| 16QAM | 1 RB | 10 MHz | 5.32 | 5.75 | 5.56 | 13 |
| | 50 RB | | 6.48 | 6.38 | 6.56 | 13 |

**PAR, LTE Band 26**

| Test Modulation | | Channel Bandwidth | Low Channel PAR (dB) | Middle Channel PAR (dB) | High Channel PAR (dB) | Limit (dB) |
|---|---|---|---|---|---|---|
| QPSK | 1 RB | 10 MHz | 3.58 | 4.65 | 4.78 | 13 |
| | 50 RB | | 4.51 | 5.22 | 5.28 | 13 |
| 16QAM | 1 RB | 10 MHz | 3.56 | 5.68 | 5.87 | 13 |
| | 50RB | | 5.75 | 6.24 | 6.56 | 13 |

**PAR, Band 38**

| Test Modulation | | Channel Bandwidth | Low Channel PAR (dB) | Middle Channel PAR (dB) | High Channel PAR (dB) | Limit (dB) |
|---|---|---|---|---|---|---|
| QPSK | 1 RB | 20 MHz | 4.58 | 3.87 | 4.56 | 13 |
| | 100 RB | | 5.65 | 5.98 | 5.78 | 13 |
| 16QAM | 1 RB | 20 MHz | 5.59 | 4.58 | 5.98 | 13 |
| | 100 RB | | 6.28 | 6.53 | 6.88 | 13 |

**PAR, Band 41**

| Test Modulation | | Channel Bandwidth | Low Channel PAR (dB) | Middle Channel PAR (dB) | High Channel PAR (dB) | Limit (dB) |
|---|---|---|---|---|---|---|
| QPSK | 1 RB | 20 MHz | 4.78 | 3.98 | 4.74 | 13 |
| | 100 RB | | 5.59 | 5.89 | 5.88 | 13 |
| 16QAM | 1 RB | 20 MHz | 5.52 | 4.41 | 5.98 | 13 |
| | 100 RB | | 6.55 | 6.57 | 6.98 | 13 |

Note: peak-to-average ratio (PAR) <13 dB.

**Band 40 Duty cycle:**
**2305-2315MHz**

| Test Modulation | Test Bandwidth | Ton (ms) | Total (ms) | Duty Cycle (%) | Limit (%) |
|---|---|---|---|---|---|
| QPSK | 5M | 3.216 | 10.030 | 32.06 | 38 |
| | 10M | 3.216 | 10.030 | 32.06 | |
| 16-QAM | 5M | 3.216 | 10.030 | 32.06 | |
| | 10M | 3.116 | 10.030 | 31.07 | |

**2350-2360MHz**

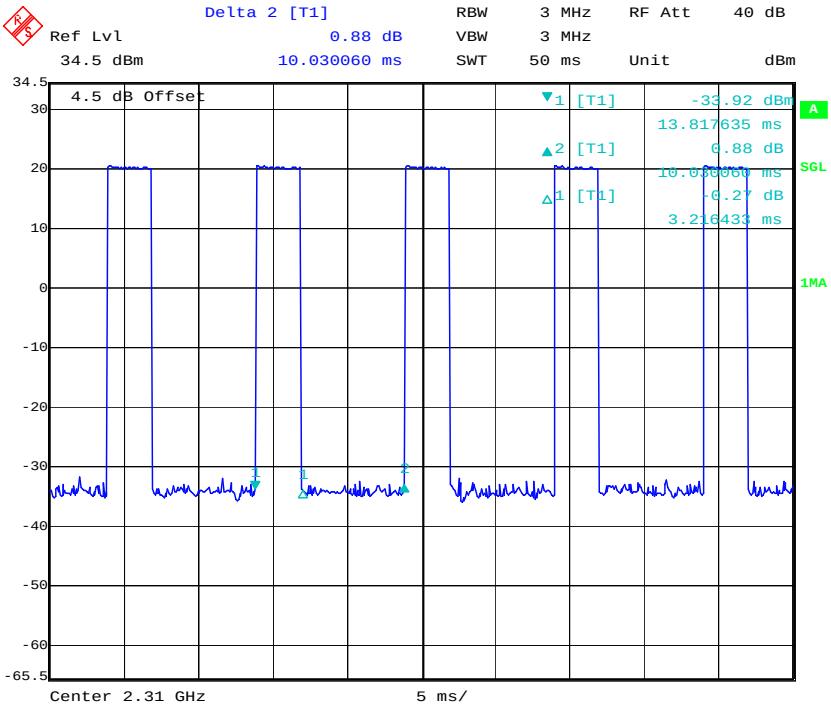
| Test Modulation | Test Bandwidth | Ton (ms) | Total (ms) | Duty Cycle (%) | Limit (%) |
|---|---|---|---|---|---|
| QPSK | 5M | 3.216 | 10.030 | 32.06 | 38 |
| | 10M | 3.216 | 10.030 | 32.06 | |
| 16-QAM | 5M | 3.216 | 10.030 | 32.06 | |
| | 10M | 3.216 | 10.030 | 32.06 | |

Note: EUT setup is as following:

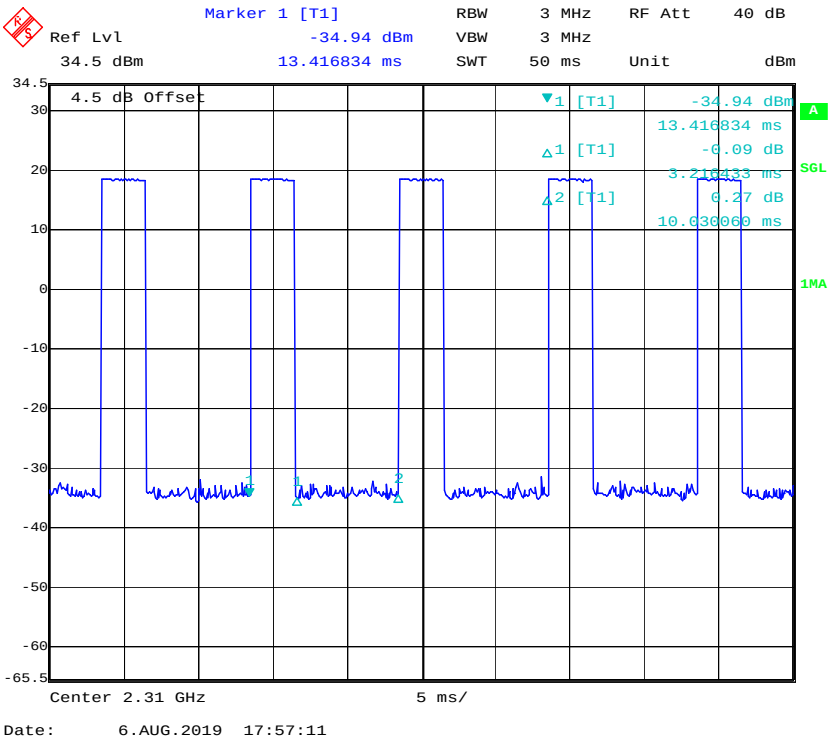
| Uplink Downlink configuration | Subframe number | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 3 | D | S | U | U | U | D | D | D | D | D |

**Band 40(2305-2315MHz)**

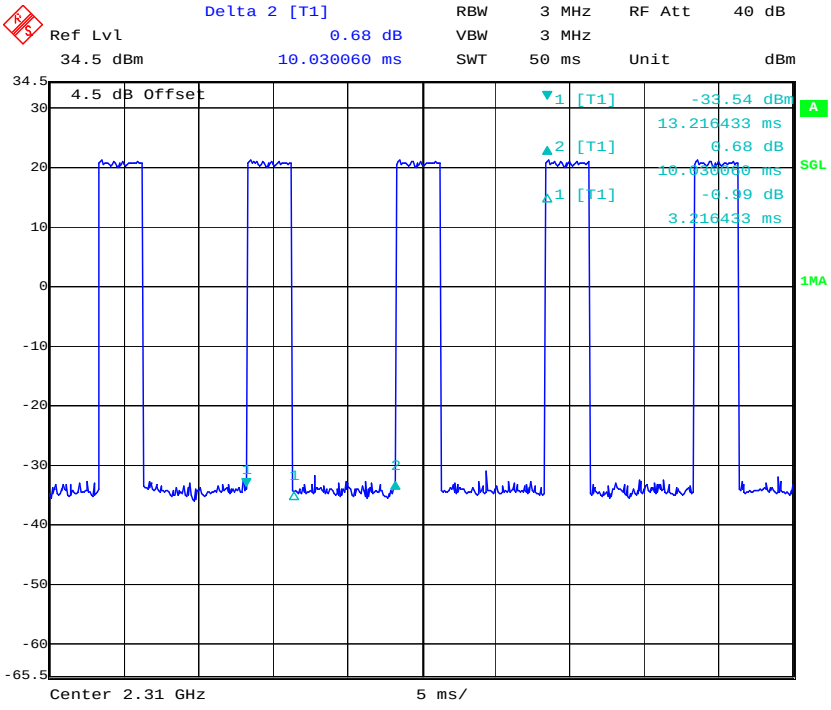
**QPSK, 5MHz**




**QPSK, 10MHz**

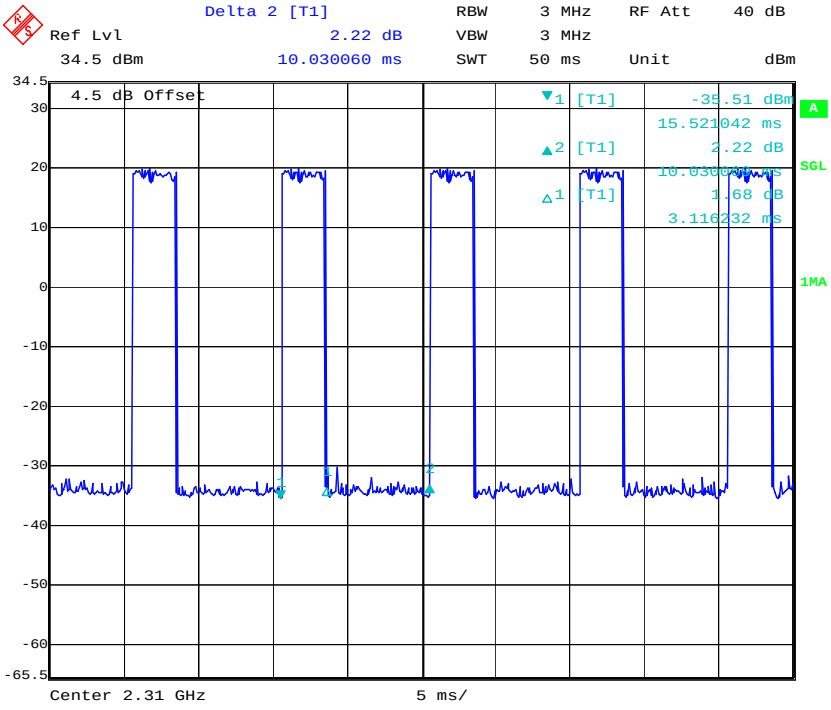


## 16-QAM, 5MHz




Date: 6.AUG.2019 18:04:54

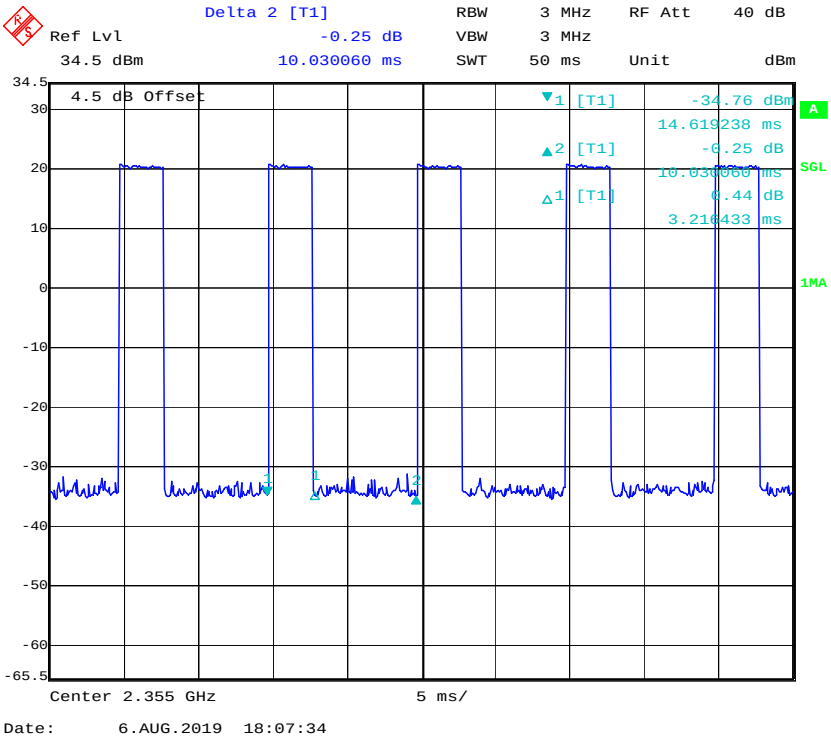
## 16-QAM, 10MHz



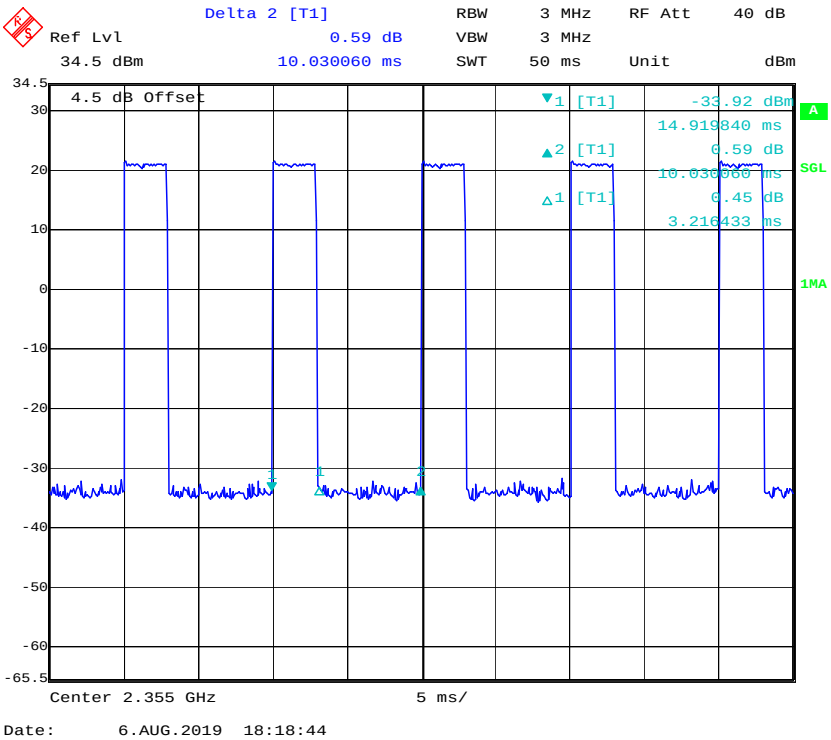

Date: 6.AUG.2019 18:01:08

**Band 40(2350-2360MHz)**

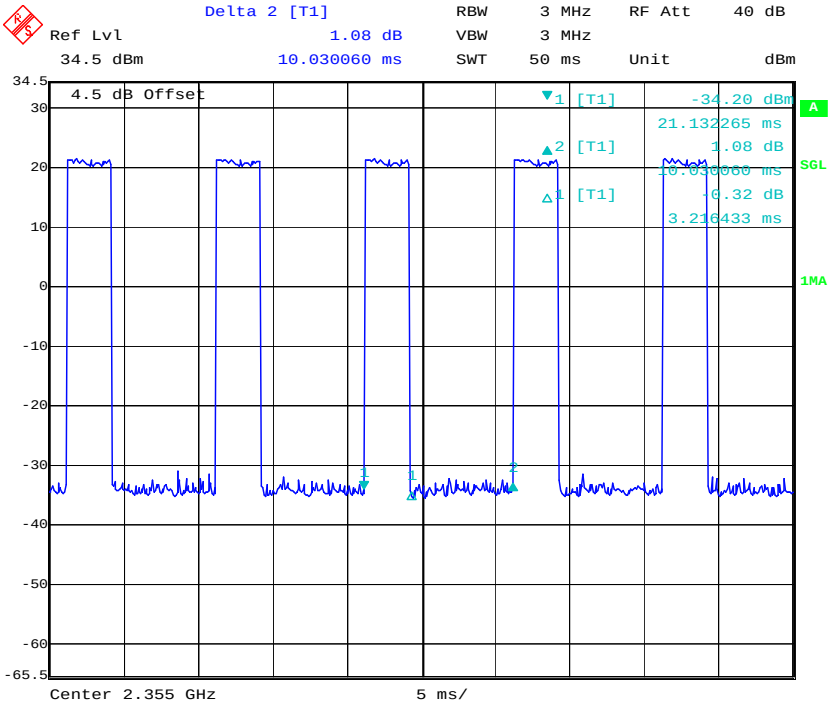
**QPSK, 5MHz**




**QPSK, 10MHz**

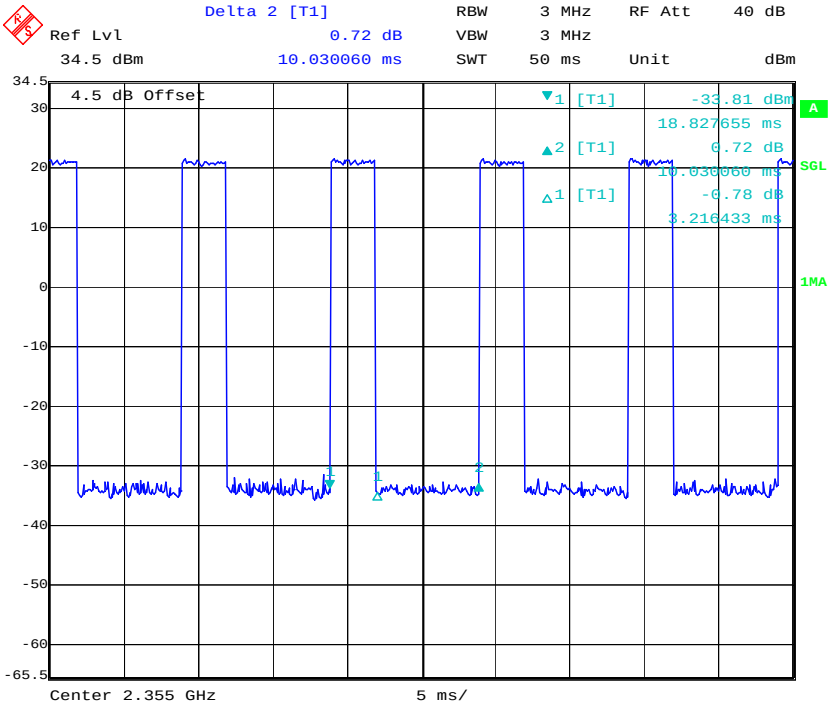


## 16-QAM, 5MHz




Date: 6.AUG.2019 18:08:20

## 16-QAM, 10MHz




Date: 6.AUG.2019 18:18:13

ERP & EIRP

| Frequency (MHz) | Polar (H/V) | Receiver Reading (dBμV) | Substituted Method | | | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|
| | | | Substituted Level (dBm) | Antenna Gain (dBd/dBi) | Cable Loss (dB) | | | |
| **GPRS 850 Middle Channel** | | | | | | | | |
| 836.60 | H | 87.53 | 12.61 | 0.00 | 0.97 | 11.64 | 38.45 | 26.81 |
| 836.60 | V | 99.27 | 27.48 | 0.00 | 0.97 | 26.51 | 38.45 | 11.94 |
| **EDGE 850 Middle Channel** | | | | | | | | |
| 836.60 | H | 84.23 | 9.31 | 0.00 | 0.97 | 8.34 | 38.45 | 30.11 |
| 836.60 | V | 96.78 | 24.99 | 0.00 | 0.97 | 24.02 | 38.45 | 14.43 |
| **WCDMA Band V Middle Channel** | | | | | | | | |
| 836.60 | H | 80.74 | 5.82 | 0.00 | 0.97 | 4.85 | 38.45 | 33.60 |
| 836.60 | V | 92.13 | 20.34 | 0.00 | 0.97 | 19.37 | 38.45 | 19.08 |
| **GPRS 1900 Middle Channel** | | | | | | | | |
| 1880.00 | H | 92.57 | 17.79 | 11.14 | 1.56 | 27.37 | 33.00 | 5.63 |
| 1880.00 | V | 89.74 | 14.77 | 11.14 | 1.56 | 24.35 | 33.00 | 8.65 |
| **EDGE 1900 Middle Channel** | | | | | | | | |
| 1880.00 | H | 89.13 | 14.35 | 11.14 | 1.56 | 23.93 | 33.00 | 9.07 |
| 1880.00 | V | 85.77 | 10.80 | 11.14 | 1.56 | 20.38 | 33.00 | 12.62 |
| **WCDMA Band II Middle Channel** | | | | | | | | |
| 1880.00 | H | 87.88 | 13.10 | 11.14 | 1.56 | 22.68 | 33.00 | 10.32 |
| 1880.00 | V | 83.68 | 8.71 | 11.14 | 1.56 | 18.29 | 33.00 | 14.71 |
| **WCDMA Band IV Middle Channel** | | | | | | | | |
| 1732.60 | H | 88.81 | 13.60 | 10.70 | 1.52 | 22.78 | 30.00 | 7.22 |
| 1732.60 | V | 86.07 | 10.56 | 10.70 | 1.52 | 19.74 | 30.00 | 10.26 |

Note:
1) The unit of Antenna Gain is dBd for frequency below 1GHz, and the unit of Antenna Gain is dBi for frequency above 1GHz.
2) Absolute Level = Substituted Level - Cable loss + Antenna Gain
3) Margin = Limit-Absolute Level

**LTE Band 2**

| Frequency (MHz) | BW (MHz) | Modulation | Polar (H/V) | Receiver Reading (dBμV) | Substituted Method | | | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Substituted Level (dBm) | Antenna Gain (dBd/dBi) | Cable Loss (dB) | | | |
| 1880.00 | 1.40 | QPSK | H | 87.84 | 13.06 | 11.14 | 1.56 | **22.64** | 33.00 | 10.36 |
| 1880.00 | | | V | 85.60 | 10.63 | 11.14 | 1.56 | 20.21 | 33.00 | 12.79 |
| 1880.00 | 3.00 | | H | 87.79 | 13.01 | 11.14 | 1.56 | 22.59 | 33.00 | 10.41 |
| 1880.00 | | | V | 85.63 | 10.66 | 11.14 | 1.56 | 20.24 | 33.00 | 12.76 |
| 1880.00 | 5.00 | | H | 87.64 | 12.86 | 11.14 | 1.56 | 22.44 | 33.00 | 10.56 |
| 1880.00 | | | V | 85.44 | 10.47 | 11.14 | 1.56 | 20.05 | 33.00 | 12.95 |
| 1880.00 | 10.00 | | H | 87.09 | 12.31 | 11.14 | 1.56 | 21.89 | 33.00 | 11.11 |
| 1880.00 | | | V | 84.89 | 9.92 | 11.14 | 1.56 | 19.50 | 33.00 | 13.50 |
| 1880.00 | 15.00 | | H | 87.65 | 12.87 | 11.14 | 1.56 | 22.45 | 33.00 | 10.55 |
| 1880.00 | | | V | 85.41 | 10.44 | 11.14 | 1.56 | 20.02 | 33.00 | 12.98 |
| 1880.00 | 20.00 | | H | 87.89 | 13.11 | 11.14 | 1.56 | **22.69** | 33.00 | 10.31 |
| 1880.00 | | | V | 85.74 | 10.77 | 11.14 | 1.56 | 20.35 | 33.00 | 12.65 |
| 1880.00 | 1.40 | 16QAM | H | 87.09 | 12.31 | 11.14 | 1.56 | **21.89** | 33.00 | 11.11 |
| 1880.00 | | | V | 84.77 | 9.80 | 11.14 | 1.56 | 19.38 | 33.00 | 13.62 |
| 1880.00 | 3.00 | | H | 87.02 | 12.24 | 11.14 | 1.56 | 21.82 | 33.00 | 11.18 |
| 1880.00 | | | V | 84.80 | 9.83 | 11.14 | 1.56 | 19.41 | 33.00 | 13.59 |
| 1880.00 | 5.00 | | H | 87.05 | 12.27 | 11.14 | 1.56 | 21.85 | 33.00 | 11.15 |
| 1880.00 | | | V | 84.69 | 9.72 | 11.14 | 1.56 | 19.30 | 33.00 | 13.70 |
| 1880.00 | 10.00 | | H | 86.74 | 11.96 | 11.14 | 1.56 | 21.54 | 33.00 | 11.46 |
| 1880.00 | | | V | 84.31 | 9.34 | 11.14 | 1.56 | 18.92 | 33.00 | 14.08 |
| 1880.00 | 15.00 | | H | 87.05 | 12.27 | 11.14 | 1.56 | 21.85 | 33.00 | 11.15 |
| 1880.00 | | | V | 84.66 | 9.69 | 11.14 | 1.56 | 19.27 | 33.00 | 13.73 |
| 1880.00 | 20.00 | | H | 87.18 | 12.40 | 11.14 | 1.56 | **21.98** | 33.00 | 11.02 |
| 1880.00 | | | V | 84.91 | 9.94 | 11.14 | 1.56 | 19.52 | 33.00 | 13.48 |

**LTE Band 4**

| Frequency (MHz) | BW (MHz) | Modulation | Polar (H/V) | Receiver Reading (dBμV) | Substituted Method | | | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Substituted Level (dBm) | Antenna Gain (dBd/dBi) | Cable Loss (dB) | | | |
| 1732.50 | 1.40 | QPSK | H | 85.76 | 10.55 | 10.70 | 1.52 | **19.73** | 30.00 | 10.27 |
| 1732.50 | | | V | 82.90 | 7.39 | 10.70 | 1.52 | 16.57 | 30.00 | 13.43 |
| 1732.50 | 3.00 | | H | 85.51 | 10.30 | 10.70 | 1.52 | 19.48 | 30.00 | 10.52 |
| 1732.50 | | | V | 82.77 | 7.26 | 10.70 | 1.52 | 16.44 | 30.00 | 13.56 |
| 1732.50 | 5.00 | | H | 85.41 | 10.20 | 10.70 | 1.52 | 19.38 | 30.00 | 10.62 |
| 1732.50 | | | V | 82.70 | 7.19 | 10.70 | 1.52 | 16.37 | 30.00 | 13.63 |
| 1732.50 | 10.00 | | H | 84.84 | 9.63 | 10.70 | 1.52 | 18.81 | 30.00 | 11.19 |
| 1732.50 | | | V | 81.93 | 6.42 | 10.70 | 1.52 | 15.60 | 30.00 | 14.40 |
| 1732.50 | 15.00 | | H | 85.45 | 10.24 | 10.70 | 1.52 | 19.42 | 30.00 | 10.58 |
| 1732.50 | | | V | 82.67 | 7.16 | 10.70 | 1.52 | 16.34 | 30.00 | 13.66 |
| 1732.50 | 20.00 | | H | 85.65 | 10.44 | 10.70 | 1.52 | **19.62** | 30.00 | 10.38 |
| 1732.50 | | | V | 82.78 | 7.27 | 10.70 | 1.52 | 16.45 | 30.00 | 13.55 |
| 1732.50 | 1.40 | 16QAM | H | 84.82 | 9.61 | 10.70 | 1.52 | **18.79** | 30.00 | 11.21 |
| 1732.50 | | | V | 81.99 | 6.48 | 10.70 | 1.52 | 15.66 | 30.00 | 14.34 |
| 1732.50 | 3.00 | | H | 84.63 | 9.42 | 10.70 | 1.52 | 18.60 | 30.00 | 11.40 |
| 1732.50 | | | V | 81.78 | 6.27 | 10.70 | 1.52 | 15.45 | 30.00 | 14.55 |
| 1732.50 | 5.00 | | H | 84.60 | 9.39 | 10.70 | 1.52 | 18.57 | 30.00 | 11.43 |
| 1732.50 | | | V | 81.74 | 6.23 | 10.70 | 1.52 | 15.41 | 30.00 | 14.59 |
| 1732.50 | 10.00 | | H | 83.90 | 8.69 | 10.70 | 1.52 | 17.87 | 30.00 | 12.13 |
| 1732.50 | | | V | 80.86 | 5.35 | 10.70 | 1.52 | 14.53 | 30.00 | 15.47 |
| 1732.50 | 15.00 | | H | 84.66 | 9.45 | 10.70 | 1.52 | 18.63 | 30.00 | 11.37 |
| 1732.50 | | | V | 81.71 | 6.20 | 10.70 | 1.52 | 15.38 | 30.00 | 14.62 |
| 1732.50 | 20.00 | | H | 84.68 | 9.47 | 10.70 | 1.52 | **18.65** | 30.00 | 11.35 |
| 1732.50 | | | V | 81.75 | 6.24 | 10.70 | 1.52 | 15.42 | 30.00 | 14.58 |

**LTE Band 5**

| Frequency (MHz) | BW (MHz) | Modulation | Polar (H/V) | Receiver Reading (dBµV) | Substituted Method | | | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Substituted Level (dBm) | Antenna Gain (dBd/dBi) | Cable Loss (dB) | | | |
| 836.50 | 1.40 | QPSK | H | 79.31 | 4.38 | 0.00 | 0.97 | 3.41 | 38.45 | 35.04 |
| 836.50 | | | V | 91.07 | 19.28 | 0.00 | 0.97 | **18.31** | 38.45 | 20.14 |
| 836.50 | 3.00 | | H | 79.29 | 4.36 | 0.00 | 0.97 | 3.39 | 38.45 | 35.06 |
| 836.50 | | | V | 91.03 | 19.24 | 0.00 | 0.97 | 18.27 | 38.45 | 20.18 |
| 836.50 | 5.00 | | H | 79.11 | 4.18 | 0.00 | 0.97 | 3.21 | 38.45 | 35.24 |
| 836.50 | | | V | 90.89 | 19.10 | 0.00 | 0.97 | 18.13 | 38.45 | 20.32 |
| 836.50 | 10.00 | | H | 78.76 | 3.83 | 0.00 | 0.97 | 2.86 | 38.45 | 35.59 |
| 836.50 | | | V | 90.32 | 18.53 | 0.00 | 0.97 | **17.56** | 38.45 | 20.89 |
| 836.50 | 1.40 | 16QAM | H | 78.54 | 3.61 | 0.00 | 0.97 | 2.64 | 38.45 | 35.81 |
| 836.50 | | | V | 90.10 | 18.31 | 0.00 | 0.97 | **17.34** | 38.45 | 21.11 |
| 836.50 | 3.00 | | H | 78.57 | 3.64 | 0.00 | 0.97 | 2.67 | 38.45 | 35.78 |
| 836.50 | | | V | 90.03 | 18.24 | 0.00 | 0.97 | 17.27 | 38.45 | 21.18 |
| 836.50 | 5.00 | | H | 78.26 | 3.33 | 0.00 | 0.97 | 2.36 | 38.45 | 36.09 |
| 836.50 | | | V | 89.69 | 17.90 | 0.00 | 0.97 | 16.93 | 38.45 | 21.52 |
| 836.50 | 10.00 | | H | 77.81 | 2.88 | 0.00 | 0.97 | 1.91 | 38.45 | 36.54 |
| 836.50 | | | V | 89.69 | 17.90 | 0.00 | 0.97 | **16.93** | 38.45 | 21.52 |

**LTE Band 7**

| Frequency (MHz) | BW (MHz) | Modulation | Polar (H/V) | Receiver Reading (dBµV) | Substituted Method | | | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Substituted Level (dBm) | Antenna Gain (dBd/dBi) | Cable Loss (dB) | | | |
| 2535.00 | 5.00 | QPSK | H | 81.94 | 8.85 | 12.21 | 1.79 | **19.27** | 33.00 | 13.73 |
| 2535.00 | | | V | 79.50 | 6.12 | 12.21 | 1.79 | 16.54 | 33.00 | 16.46 |
| 2535.00 | 10.00 | | H | 81.39 | 8.30 | 12.21 | 1.79 | 18.72 | 33.00 | 14.28 |
| 2535.00 | | | V | 79.33 | 5.95 | 12.21 | 1.79 | 16.37 | 33.00 | 16.63 |
| 2535.00 | 15.00 | | H | 81.84 | 8.75 | 12.21 | 1.79 | 19.17 | 33.00 | 13.83 |
| 2535.00 | | | V | 79.28 | 5.90 | 12.21 | 1.79 | 16.32 | 33.00 | 16.68 |
| 2535.00 | 20.00 | | H | 82.22 | 9.13 | 12.21 | 1.79 | **19.55** | 33.00 | 13.45 |
| 2535.00 | | | V | 79.63 | 6.25 | 12.21 | 1.79 | 16.67 | 33.00 | 16.33 |
| 2535.00 | 5.00 | 16QAM | H | 81.16 | 8.07 | 12.21 | 1.79 | **18.49** | 33.00 | 14.51 |
| 2535.00 | | | V | 78.46 | 5.08 | 12.21 | 1.79 | 15.50 | 33.00 | 17.50 |
| 2535.00 | 10.00 | | H | 80.77 | 7.68 | 12.21 | 1.79 | 18.10 | 33.00 | 14.90 |
| 2535.00 | | | V | 78.04 | 4.66 | 12.21 | 1.79 | 15.08 | 33.00 | 17.92 |
| 2535.00 | 15.00 | | H | 81.03 | 7.94 | 12.21 | 1.79 | 18.36 | 33.00 | 14.64 |
| 2535.00 | | | V | 78.23 | 4.85 | 12.21 | 1.79 | 15.27 | 33.00 | 17.73 |
| 2535.00 | 20.00 | | H | 81.10 | 8.01 | 12.21 | 1.79 | **18.43** | 33.00 | 14.57 |
| 2535.00 | | | V | 78.09 | 4.71 | 12.21 | 1.79 | 15.13 | 33.00 | 17.87 |

**LTE Band 12**

| Frequency (MHz) | BW (MHz) | Modulation | Polar (H/V) | Receiver Reading (dBµV) | Substituted Method | | | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Substituted Level (dBm) | Antenna Gain (dBd/dBi) | Cable Loss (dB) | | | |
| 707.50 | 1.40 | QPSK | H | 80.89 | 4.03 | 0.00 | 0.94 | 3.09 | 34.77 | 31.68 |
| 707.50 | | | V | 91.04 | 16.62 | 0.00 | 0.94 | **15.68** | 34.77 | 19.09 |
| 707.50 | 3.00 | | H | 80.8 | 3.94 | 0.00 | 0.94 | 3.00 | 34.77 | 31.77 |
| 707.50 | | | V | 91.01 | 16.59 | 0.00 | 0.94 | 15.65 | 34.77 | 19.12 |
| 707.50 | 5.00 | | H | 80.65 | 3.79 | 0.00 | 0.94 | 2.85 | 34.77 | 31.92 |
| 707.50 | | | V | 90.8 | 16.38 | 0.00 | 0.94 | 15.44 | 34.77 | 19.33 |
| 707.50 | 10.00 | | H | 80.09 | 3.23 | 0.00 | 0.94 | 2.29 | 34.77 | 32.48 |
| 707.50 | | | V | 90.34 | 15.92 | 0.00 | 0.94 | **14.98** | 34.77 | 19.79 |
| 707.50 | 1.40 | 16QAM | H | 79.06 | 2.2 | 0.00 | 0.94 | 1.26 | 34.77 | 33.51 |
| 707.50 | | | V | 90.14 | 15.72 | 0.00 | 0.94 | **14.78** | 34.77 | 19.99 |
| 707.50 | 3.00 | | H | 79.13 | 2.27 | 0.00 | 0.94 | 1.33 | 34.77 | 33.44 |
| 707.50 | | | V | 90.1 | 15.68 | 0.00 | 0.94 | 14.74 | 34.77 | 20.03 |
| 707.50 | 5.00 | | H | 78.93 | 2.07 | 0.00 | 0.94 | 1.13 | 34.77 | 33.64 |
| 707.50 | | | V | 89.87 | 15.45 | 0.00 | 0.94 | 14.51 | 34.77 | 20.26 |
| 707.50 | 10.00 | | H | 78.79 | 1.93 | 0.00 | 0.94 | 0.99 | 34.77 | 33.78 |
| 707.50 | | | V | 89.66 | 15.24 | 0.00 | 0.94 | **14.3** | 34.77 | 20.47 |

**LTE Band 13**

| Frequency (MHz) | BW (MHz) | Modulation | Polar (H/V) | Receiver Reading (dBµV) | Substituted Method | | | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Substituted Level (dBm) | Antenna Gain (dBd/dBi) | Cable Loss (dB) | | | |
| 782.00 | 5.00 | QPSK | H | 79.35 | 3.82 | 0.00 | 0.93 | 2.89 | 34.77 | 31.88 |
| 782.00 | | | V | 90.89 | 18.28 | 0.00 | 0.93 | 17.35 | 34.77 | 17.42 |
| 782.00 | 10.00 | | H | 79.03 | 3.5 | 0.00 | 0.93 | 2.57 | 34.77 | 32.2 |
| 782.00 | | | V | 90.21 | 17.6 | 0.00 | 0.93 | 16.67 | 34.77 | 18.1 |
| 782.00 | 5.00 | 16QAM | H | 78.22 | 2.69 | 0.00 | 0.93 | 1.76 | 34.77 | 33.01 |
| 782.00 | | | V | 89.14 | 16.53 | 0.00 | 0.93 | 15.6 | 34.77 | 19.17 |
| 782.00 | 10.00 | | H | 77.94 | 2.41 | 0.00 | 0.93 | 1.48 | 34.77 | 33.29 |
| 782.00 | | | V | 89.13 | 16.52 | 0.00 | 0.93 | 15.59 | 34.77 | 19.18 |

**LTE Band 17**

| Frequency (MHz) | BW (MHz) | Modulation | Polar (H/V) | Receiver Reading (dBµV) | Substituted Method | | | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Substituted Level (dBm) | Antenna Gain (dBd/dBi) | Cable Loss (dB) | | | |
| 710.00 | 5.00 | QPSK | H | 81.68 | 4.87 | 0.00 | 0.94 | 3.93 | 34.77 | 30.84 |
| 710.00 | | | V | 91.25 | 16.89 | 0.00 | 0.94 | 15.95 | 34.77 | 18.82 |
| 710.00 | 10.00 | | H | 81.23 | 4.42 | 0.00 | 0.94 | 3.48 | 34.77 | 31.29 |
| 710.00 | | | V | 91.01 | 16.65 | 0.00 | 0.94 | 15.71 | 34.77 | 19.06 |
| 710.00 | 5.00 | 16QAM | H | 80.46 | 3.65 | 0.00 | 0.94 | 2.71 | 34.77 | 32.06 |
| 710.00 | | | V | 90.34 | 15.98 | 0.00 | 0.94 | 15.04 | 34.77 | 19.73 |
| 710.00 | 10.00 | | H | 80.16 | 3.35 | 0.00 | 0.94 | 2.41 | 34.77 | 32.36 |
| 710.00 | | | V | 89.89 | 15.53 | 0.00 | 0.94 | 14.59 | 34.77 | 20.18 |

**LTE Band 26**

| Frequency (MHz) | BW (MHz) | Modulation | Polar (H/V) | Receiver Reading (dBμV) | Substituted Method | | | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Substituted Level (dBm) | Antenna Gain (dBd/dBi) | Cable Loss (dB) | | | |
| 831.50 | 1.40 | QPSK | H | 79.70 | 4.74 | 0.00 | 0.97 | 3.77 | 38.45 | 34.68 |
| 831.50 | | | V | 90.85 | 19.00 | 0.00 | 0.97 | 18.03 | 38.45 | 20.42 |
| 831.50 | 3.00 | | H | 79.49 | 4.53 | 0.00 | 0.97 | 3.56 | 38.45 | 34.89 |
| 831.50 | | | V | 90.57 | 18.72 | 0.00 | 0.97 | 17.75 | 38.45 | 20.70 |
| 831.50 | 5.00 | | H | 79.36 | 4.40 | 0.00 | 0.97 | 3.43 | 38.45 | 35.02 |
| 831.50 | | | V | 90.42 | 18.57 | 0.00 | 0.97 | 17.60 | 38.45 | 20.85 |
| 831.50 | 10.00 | | H | 78.87 | 3.91 | 0.00 | 0.97 | 2.94 | 38.45 | 35.51 |
| 831.50 | | | V | 89.13 | 17.28 | 0.00 | 0.97 | 16.31 | 38.45 | 22.14 |
| 831.50 | 15.00 | | H | 79.90 | 4.94 | 0.00 | 0.97 | 3.97 | 38.45 | 34.48 |
| 831.50 | | | V | 91.22 | 19.37 | 0.00 | 0.97 | 18.40 | 38.45 | 20.05 |
| 831.50 | 1.40 | 16QAM | H | 78.71 | 3.75 | 0.00 | 0.97 | 2.78 | 38.45 | 35.67 |
| 831.50 | | | V | 89.65 | 17.80 | 0.00 | 0.97 | 16.83 | 38.45 | 21.62 |
| 831.50 | 3.00 | | H | 78.44 | 3.48 | 0.00 | 0.97 | 2.51 | 38.45 | 35.94 |
| 831.50 | | | V | 89.52 | 17.67 | 0.00 | 0.97 | 16.70 | 38.45 | 21.75 |
| 831.50 | 5.00 | | H | 78.10 | 3.14 | 0.00 | 0.97 | 2.17 | 38.45 | 36.28 |
| 831.50 | | | V | 89.39 | 17.54 | 0.00 | 0.97 | 16.57 | 38.45 | 21.88 |
| 831.50 | 10.00 | | H | 77.88 | 2.92 | 0.00 | 0.97 | 1.95 | 38.45 | 36.50 |
| 831.50 | | | V | 88.28 | 16.43 | 0.00 | 0.97 | 15.46 | 38.45 | 22.99 |
| 831.50 | 15.00 | | H | 78.86 | 3.89 | 0.00 | 0.97 | 2.92 | 38.45 | 35.53 |
| 831.50 | | | V | 90.29 | 18.44 | 0.00 | 0.97 | 17.47 | 38.45 | 20.98 |

**LTE Band 38**

| Frequency (MHz) | BW (MHz) | Modulation | Polar (H/V) | Receiver Reading (dBμV) | Substituted Method | | | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Substituted Level (dBm) | Antenna Gain (dBd/dBi) | Cable Loss (dB) | | | |
| 2595.00 | 5.00 | QPSK | H | 83.63 | 10.70 | 12.24 | 1.80 | 21.14 | 33.00 | 11.86 |
| 2595.00 | | | V | 78.79 | 5.54 | 12.24 | 1.80 | 15.98 | 33.00 | 17.02 |
| 2595.00 | 10.00 | | H | 82.87 | 9.94 | 12.24 | 1.80 | 20.38 | 33.00 | 12.62 |
| 2595.00 | | | V | 78.23 | 4.98 | 12.24 | 1.80 | 15.42 | 33.00 | 17.58 |
| 2595.00 | 15.00 | | H | 83.69 | 10.76 | 12.24 | 1.80 | 21.20 | 33.00 | 11.80 |
| 2595.00 | | | V | 78.80 | 5.55 | 12.24 | 1.80 | 15.99 | 33.00 | 17.01 |
| 2595.00 | 20.00 | | H | 83.73 | 10.80 | 12.24 | 1.80 | 21.24 | 33.00 | 11.76 |
| 2595.00 | | | V | 78.86 | 5.61 | 12.24 | 1.80 | 16.05 | 33.00 | 16.95 |
| 2595.00 | 5.00 | 16QAM | H | 82.45 | 9.52 | 12.24 | 1.80 | 19.96 | 33.00 | 13.04 |
| 2595.00 | | | V | 77.81 | 4.56 | 12.24 | 1.80 | 15.00 | 33.00 | 18.00 |
| 2595.00 | 10.00 | | H | 81.90 | 8.97 | 12.24 | 1.80 | 19.41 | 33.00 | 13.59 |
| 2595.00 | | | V | 77.14 | 3.89 | 12.24 | 1.80 | 14.33 | 33.00 | 18.67 |
| 2595.00 | 15.00 | | H | 82.37 | 9.44 | 12.24 | 1.80 | 19.88 | 33.00 | 13.12 |
| 2595.00 | | | V | 77.65 | 4.40 | 12.24 | 1.80 | 14.84 | 33.00 | 18.16 |
| 2595.00 | 20.00 | | H | 82.56 | 9.63 | 12.24 | 1.80 | 20.07 | 33.00 | 12.93 |
| 2595.00 | | | V | 77.82 | 4.57 | 12.24 | 1.80 | 15.01 | 33.00 | 17.99 |

**LTE Band 40(2305-2315 MHz)**

| Frequency (MHz) | BW (MHz) | Modulation | Polar (H/V) | Receiver Reading (dBμV) | Substituted Method | | | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Substituted Level (dBm) | Antenna Gain (dBd/dBi) | Cable Loss (dB) | | | |
| 2310.00 | 5.00 | QPSK | H | 82.46 | 8.81 | 11.93 | 1.71 | 19.03 | 23.98 | 4.95 |
| 2310.00 | | | V | 73.31 | -0.56 | 11.93 | 1.71 | 9.66 | 23.98 | 14.32 |
| 2310.00 | 10.00 | | H | 81.63 | 7.98 | 11.93 | 1.71 | 18.20 | 23.98 | 5.78 |
| 2310.00 | | | V | 72.64 | -1.23 | 11.93 | 1.71 | 8.99 | 23.98 | 14.99 |
| 2310.00 | 5.00 | 16QAM | H | 81.50 | 7.85 | 11.93 | 1.71 | 18.07 | 23.98 | 5.91 |
| 2310.00 | | | V | 72.73 | -1.14 | 11.93 | 1.71 | 9.08 | 23.98 | 14.90 |
| 2310.00 | 10.00 | | H | 80.70 | 7.05 | 11.93 | 1.71 | 17.27 | 23.98 | 6.71 |
| 2310.00 | | | V | 71.64 | -2.23 | 11.93 | 1.71 | 7.99 | 23.98 | 15.99 |

**LTE Band 40(2350-2360 MHz)**

| Frequency (MHz) | BW (MHz) | Modulation | Polar (H/V) | Receiver Reading (dBμV) | Substituted Method | | | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Substituted Level (dBm) | Antenna Gain (dBd/dBi) | Cable Loss (dB) | | | |
| 2355.00 | 5.00 | QPSK | H | 82.46 | 8.92 | 12.00 | 1.73 | 19.19 | 23.98 | 4.79 |
| 2355.00 | | | V | 73.72 | -0.05 | 12.00 | 1.73 | 10.22 | 23.89 | 13.67 |
| 2355.00 | 10.00 | | H | 82.27 | 8.73 | 12.00 | 1.73 | 19.00 | 23.89 | 4.89 |
| 2355.00 | | | V | 73.21 | -0.56 | 12.00 | 1.73 | 9.71 | 23.89 | 14.18 |
| 2355.00 | 5.00 | 16QAM | H | 80.84 | 7.30 | 12.00 | 1.73 | 17.57 | 23.89 | 6.32 |
| 2355.00 | | | V | 72.10 | -1.67 | 12.00 | 1.73 | 8.60 | 23.89 | 15.29 |
| 2355.00 | 10.00 | | H | 80.78 | 7.24 | 12.00 | 1.73 | 17.51 | 23.89 | 6.38 |
| 2355.00 | | | V | 71.44 | -2.33 | 12.00 | 1.73 | 7.94 | 23.89 | 15.95 |

Note: the total power result meets the requirement EIRP less than 250mW/5MHz

**LTE Band 41**

| Frequency (MHz) | BW (MHz) | Modulation | Polar (H/V) | Receiver Reading (dBμV) | Substituted Method | | | Absolute Level (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Substituted Level (dBm) | Antenna Gain (dBd/dBi) | Cable Loss (dB) | | | |
| 2595.00 | 5.00 | QPSK | H | 83.71 | 11.70 | 12.38 | 1.89 | 22.19 | 33.00 | 10.81 |
| 2595.00 | | | V | 79.34 | 6.90 | 12.38 | 1.89 | 17.39 | 33.00 | 15.61 |
| 2595.00 | 10.00 | | H | 83.17 | 11.16 | 12.38 | 1.89 | 21.65 | 33.00 | 11.35 |
| 2595.00 | | | V | 78.86 | 6.42 | 12.38 | 1.89 | 16.91 | 33.00 | 16.09 |
| 2595.00 | 15.00 | | H | 83.55 | 11.54 | 12.38 | 1.89 | 22.03 | 33.00 | 10.97 |
| 2595.00 | | | V | 78.97 | 6.53 | 12.38 | 1.89 | 17.02 | 33.00 | 15.98 |
| 2595.00 | 20.00 | | H | 83.80 | 11.79 | 12.38 | 1.89 | 22.28 | 33.00 | 10.72 |
| 2595.00 | | | V | 79.21 | 6.77 | 12.38 | 1.89 | 17.26 | 33.00 | 15.74 |
| 2595.00 | 5.00 | 16QAM | H | 83.07 | 11.06 | 12.38 | 1.89 | 21.55 | 33.00 | 11.45 |
| 2595.00 | | | V | 78.52 | 6.08 | 12.38 | 1.89 | 16.57 | 33.00 | 16.43 |
| 2595.00 | 10.00 | | H | 82.87 | 10.86 | 12.38 | 1.89 | 21.35 | 33.00 | 11.65 |
| 2595.00 | | | V | 78.16 | 5.72 | 12.38 | 1.89 | 16.21 | 33.00 | 16.79 |
| 2595.00 | 15.00 | | H | 82.90 | 10.89 | 12.38 | 1.89 | 21.38 | 33.00 | 11.62 |
| 2595.00 | | | V | 78.20 | 5.76 | 12.38 | 1.89 | 16.25 | 33.00 | 16.75 |
| 2595.00 | 20.00 | | H | 83.21 | 11.20 | 12.38 | 1.89 | 21.69 | 33.00 | 11.31 |
| 2595.00 | | | V | 78.38 | 5.94 | 12.38 | 1.89 | 16.43 | 33.00 | 16.57 |

Note:
1) The unit of Antenna Gain is dBd for frequency below 1GHz, and the unit of Antenna Gain is dBi for frequency above 1GHz.
2) Absolute Level = Substituted Level - Cable loss + Antenna Gain
3) Margin = Limit-Absolute Level

# FCC §2.1049, §22.917, §22.905 & §24.238 & §27.53&§90.209- OCCUPIED BANDWIDTH

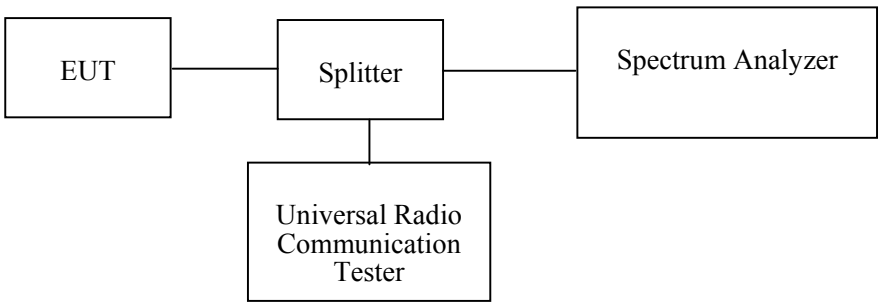
## Applicable Standard

FCC §2.1049, §22.917, §22.905, §24.238, §27.53, and§90.209

## Test Procedure

The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.

The 26 dB & 99% bandwidth was recorded.




## Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| Rohde & Schwarz | Signal Analyzer | FSIQ26 | 831929/005 | 2018-08-03 | 2019-08-03 |
| Unknown | Coaxial Cable | C-SJ00-0010 | C0010/01 | Each time | / |
| E-Microwave | Two-way Spliter | ODP-1-6-2S | OE0120142 | Each Time | / |
| Unknown | Coaxial Cable | C-SJ00-0010 | C0010/03 | Each time | / |

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

## Test Data

### Environmental Conditions

| | |
|---|---|
| **Temperature:** | 28.1°C~28.9°C |
| **Relative Humidity:** | 51 %~55 % |
| **ATM Pressure:** | 100.3 kPa~100.5 kPa |

** The testing was performed by Blake Yang on 2019-06-18~2019-06-20.*

*Test Mode: Transmitting*
*Test Result: Compliant. Please refer to the following table and plots.*

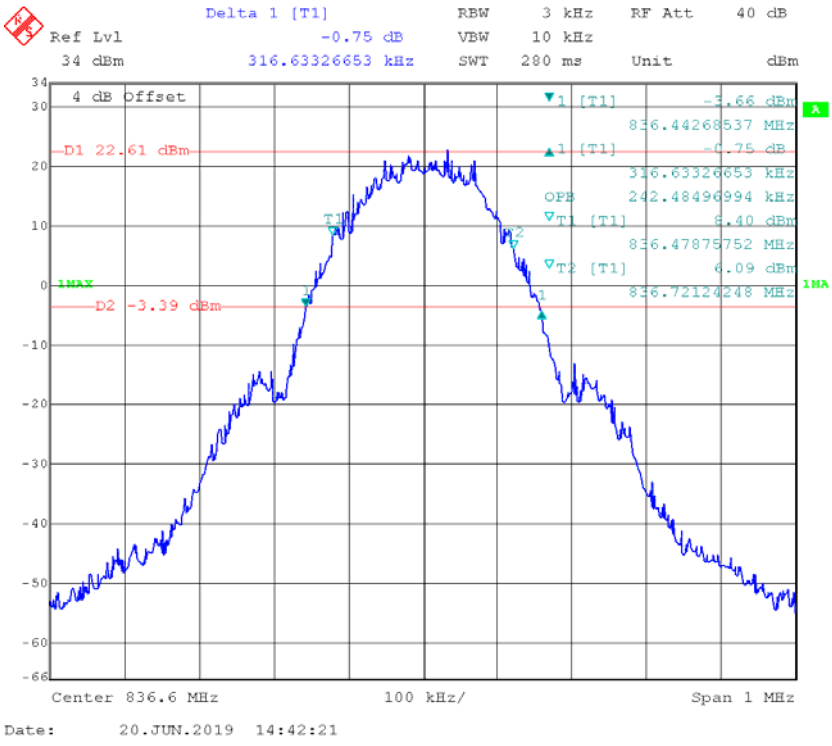
| Band | Test Channel | Mode | 99% Occupied Bandwidth (MHz) | 26 dB Occupied Bandwidth (MHz) |
|---|---|---|---|---|
| Cellular | M | GRRS | 0.24 | 0.32 |
| | | EDGE | 0.24 | 0.32 |
| PCS | | GRRS | 0.24 | 0.32 |
| | | EDGE | 0.25 | 0.32 |
| WCDMA Band II | | Rel 99 | 4.13 | 4.73 |
| | | HSDPA | 4.13 | 4.73 |
| | | HSUPA | 4.13 | 4.69 |
| WCDMA Band IV | | Rel 99 | 4.15 | 4.77 |
| | | HSDPA | 4.13 | 4.75 |
| | | HSUPA | 4.13 | 4.75 |
| WCDMA Band V | | Rel 99 | 4.15 | 4.75 |
| | | HSDPA | 4.13 | 4.77 |
| | | HSUPA | 4.13 | 4.75 |

| Band | Bandwidth | Modulation | 99% occupied bandwidth (MHz) | 26 dB bandwidth (MHz) |
|---|---|---|---|---|
| LTE Band 2 | 1.4 MHz | QPSK | 1.106 | 1.401 |
| | | 16QAM | 1.106 | 1.353 |
| | 3 MHz | QPSK | 2.705 | 2.970 |
| | | 16QAM | 2.693 | 2.946 |
| | 5 MHz | QPSK | 4.549 | 5.070 |
| | | 16QAM | 4.509 | 5.010 |
| | 10 MHz | QPSK | 8.938 | 9.860 |
| | | 16QAM | 8.938 | 9.780 |
| | 15 MHz | QPSK | 13.467 | 14.729 |
| | | 16QAM | 13.467 | 14.850 |
| | 20 MHz | QPSK | 17.956 | 19.319 |
| | | 16QAM | 17.956 | 19.559 |
| LTE Band 4 | 1.4 MHz | QPSK | 1.106 | 1.311 |
| | | 16QAM | 1.106 | 1.311 |
| | 3 MHz | QPSK | 2.693 | 2.970 |
| | | 16QAM | 2.693 | 2.946 |
| | 5 MHz | QPSK | 4.509 | 5.030 |
| | | 16QAM | 4.509 | 4.990 |
| | 10 MHz | QPSK | 8.978 | 9.739 |
| | | 16QAM | 8.938 | 9.659 |
| | 15 MHz | QPSK | 13.527 | 15.030 |
| | | 16QAM | 13.467 | 14.910 |
| | 20 MHz | QPSK | 17.956 | 19.319 |
| | | 16QAM | 17.956 | 19.399 |
| LTE Band 5 | 1.4 MHz | QPSK | 1.100 | 1.329 |
| | | 16QAM | 1.094 | 1.311 |
| | 3 MHz | QPSK | 2.693 | 2.946 |
| | | 16QAM | 2.693 | 2.922 |
| | 5 MHz | QPSK | 4.529 | 5.010 |
| | | 16QAM | 4.509 | 5.030 |
| | 10 MHz | QPSK | 8.978 | 9.780 |
| | | 16QAM | 8.978 | 9.699 |

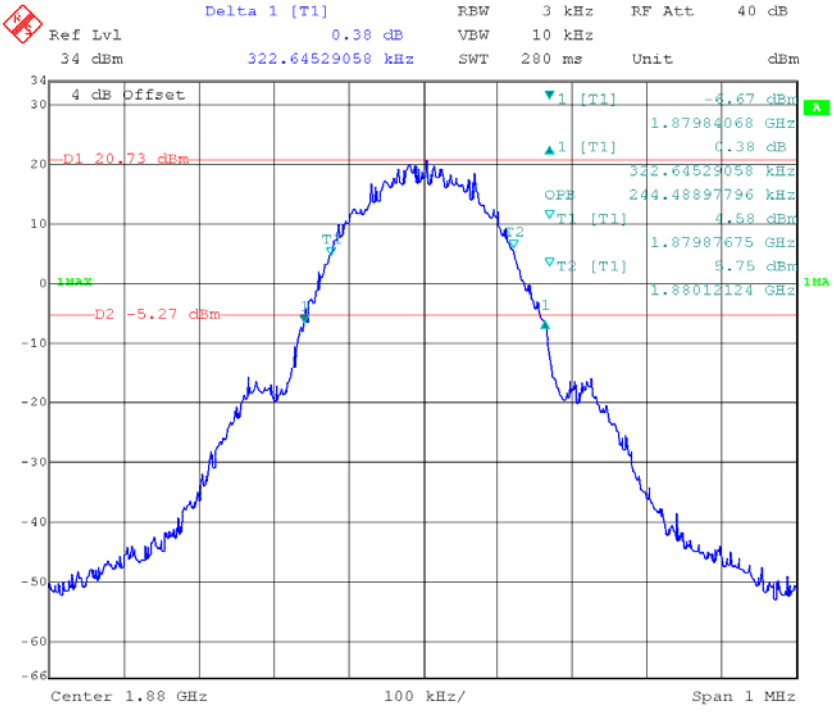
| Band | Bandwidth | Modulation | 99% occupied bandwidth (MHz) | 26 dB bandwidth (MHz) |
|---|---|---|---|---|
| LTE Band 7 | 5 MHz | QPSK | 4.529 | 5.070 |
| | | 16QAM | 4.529 | 5.030 |
| | 10 MHz | QPSK | 8.978 | 9.900 |
| | | 16QAM | 8.938 | 9.699 |
| | 15 MHz | QPSK | 13.527 | 14.850 |
| | | 16QAM | 13.467 | 14.910 |
| | 20 MHz | QPSK | 17.956 | 19.479 |
| | | 16QAM | 17.956 | 19.399 |
| LTE Band 12 | 1.4 MHz | QPSK | 1.106 | 1.299 |
| | | 16QAM | 1.106 | 1.281 |
| | 3 MHz | QPSK | 2.693 | 2.922 |
| | | 16QAM | 2.693 | 2.934 |
| | 5 MHz | QPSK | 4.529 | 5.030 |
| | | 16QAM | 4.509 | 5.030 |
| | 10 MHz | QPSK | 8.978 | 9.699 |
| | | 16QAM | 8.938 | 9.699 |
| LTE Band 13 | 5 MHz | QPSK | 4.529 | 5.050 |
| | | 16QAM | 4.529 | 5.030 |
| | 10 MHz | QPSK | 8.978 | 9.780 |
| | | 16QAM | 8.938 | 9.659 |
| LTE Band 17 | 5 MHz | QPSK | 4.509 | 5.010 |
| | | 16QAM | 4.509 | 5.010 |
| | 10 MHz | QPSK | 8.938 | 9.659 |
| | | 16QAM | 8.938 | 9.619 |
| LTE Band 26 | 1.4 MHz | QPSK | 1.106 | 1.311 |
| | | 16QAM | 1.100 | 1.287 |
| | 3 MHz | QPSK | 2.705 | 2.922 |
| | | 16QAM | 2.693 | 2.922 |
| | 5 MHz | QPSK | 4.529 | 5.010 |
| | | 16QAM | 4.509 | 5.030 |
| | 10 MHz | QPSK | 8.938 | 9.659 |
| | | 16QAM | 8.938 | 9.619 |
| | 15 MHz | QPSK | 13.467 | 14.910 |
| | | 16QAM | 13.467 | 14.790 |
| LTE Band 38 | 5 MHz | QPSK | 4.529 | 5.010 |
| | | 16QAM | 4.529 | 5.511 |
| | 10 MHz | QPSK | 8.978 | 10.381 |
| | | 16QAM | 8.978 | 9.619 |
| | 15 MHz | QPSK | 13.527 | 15.150 |
| | | 16QAM | 13.587 | 16.172 |
| | 20 MHz | QPSK | 17.956 | 19.399 |
| | | 16QAM | 17.876 | 19.479 |

| | | | | |
|---|---|---|---|---|
| LTE Band 40 2305 - 2315MHz | 5 MHz | QPSK | 4.520 | 4.910 |
| | | 16QAM | 4.520 | 5.150 |
| | 10 MHz | QPSK | 8.960 | 10.381 |
| | | 16QAM | 8.960 | 9.579 |
| LTE Band 40 2350 - 2360MHz | 5 MHz | QPSK | 4.500 | 4.910 |
| | | 16QAM | 4.500 | 5.010 |
| | 10 MHz | QPSK | 8.960 | 10.180 |
| | | 16QAM | 8.960 | 9.659 |
| LTE Band 41 | 5 MHz | QPSK | 4.509 | 4.990 |
| | | 16QAM | 4.509 | 5.190 |
| | 10 MHz | QPSK | 8.978 | 10.301 |
| | | 16QAM | 8.978 | 9.619 |
| | 15 MHz | QPSK | 13.527 | 15.752 |
| | | 16QAM | 13.527 | 16.112 |
| | 20 MHz | QPSK | 17.956 | 19.399 |
| | | 16QAM | 17.876 | 20.040 |

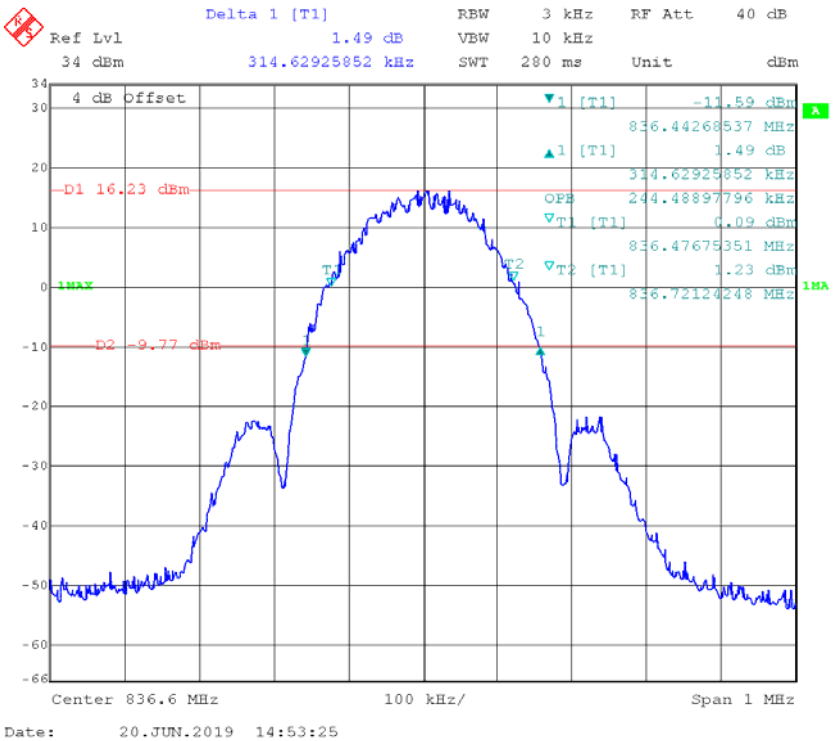
**GPRS 850 Cellular Band**



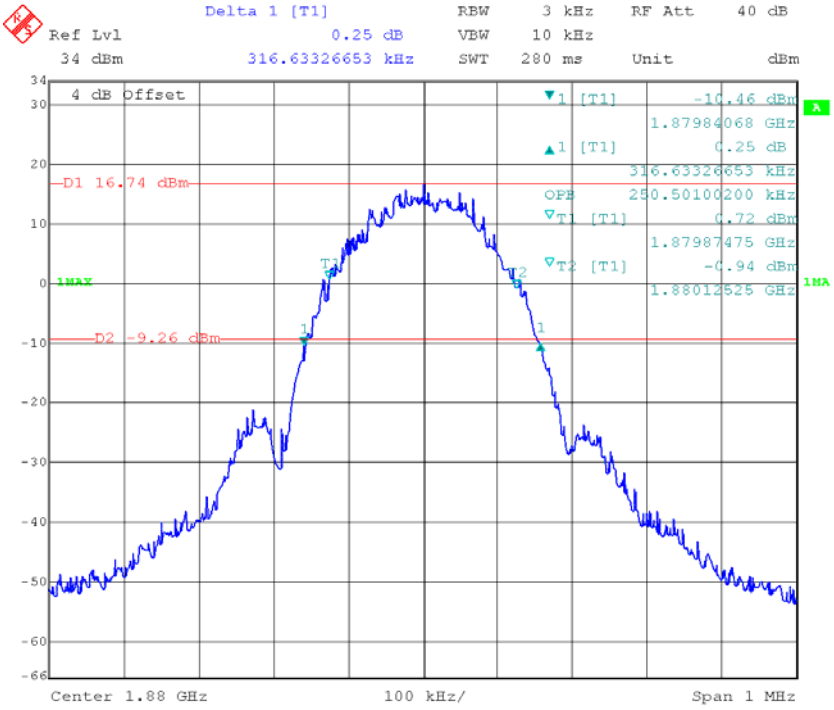
**GPRS PCS1900 Cellular Band**



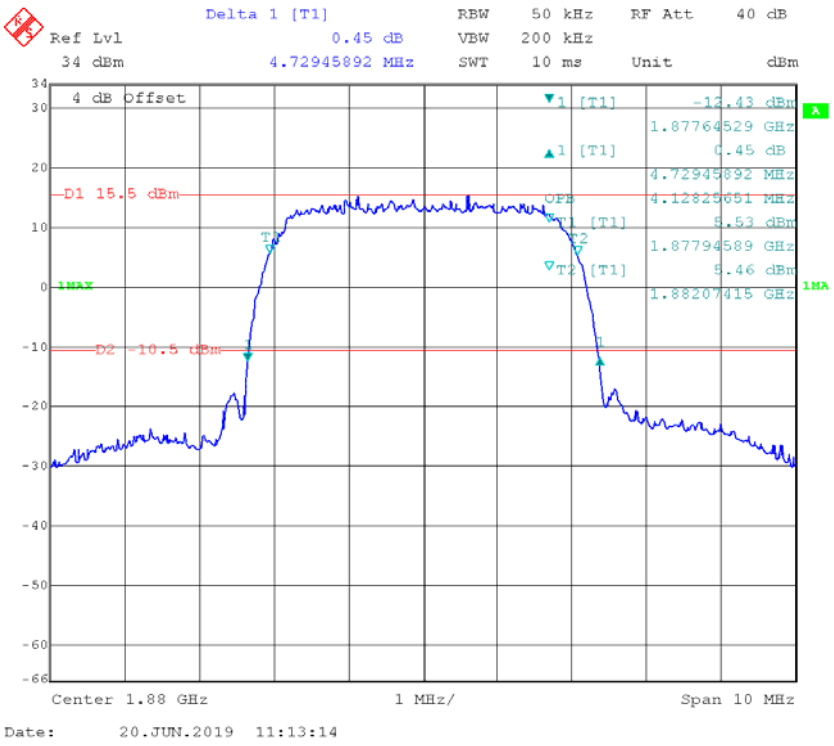

**EDGE 850 Cellular Band**



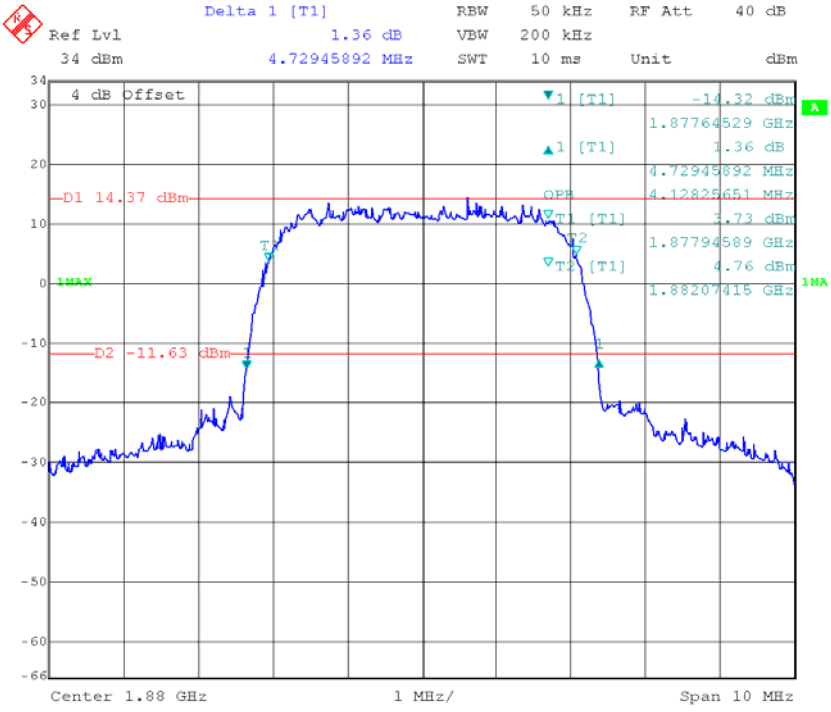
**EDGE PCS1900 Cellular Band**



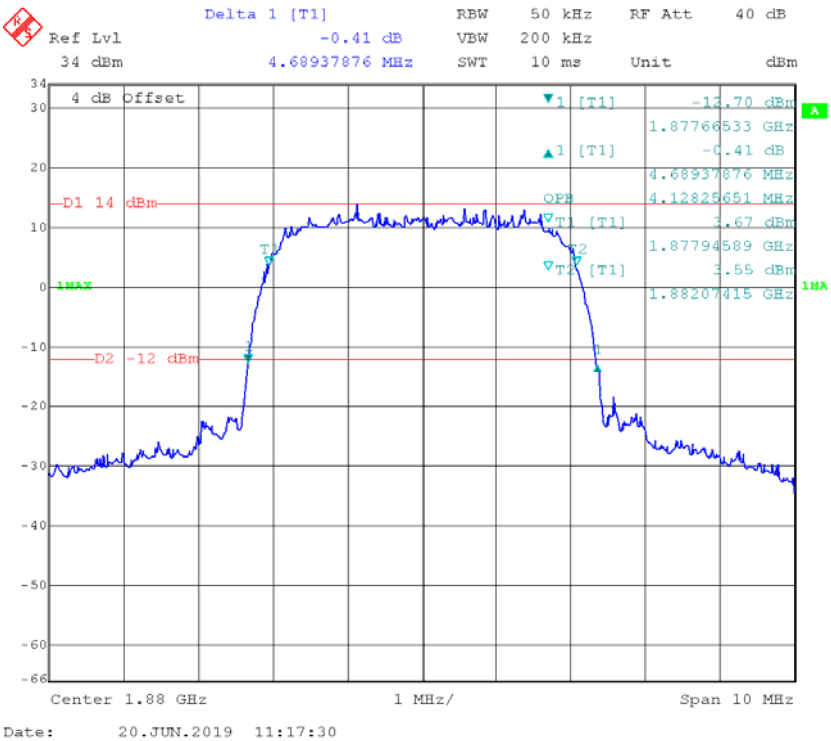

**WCDMA Band II, Rel 99**



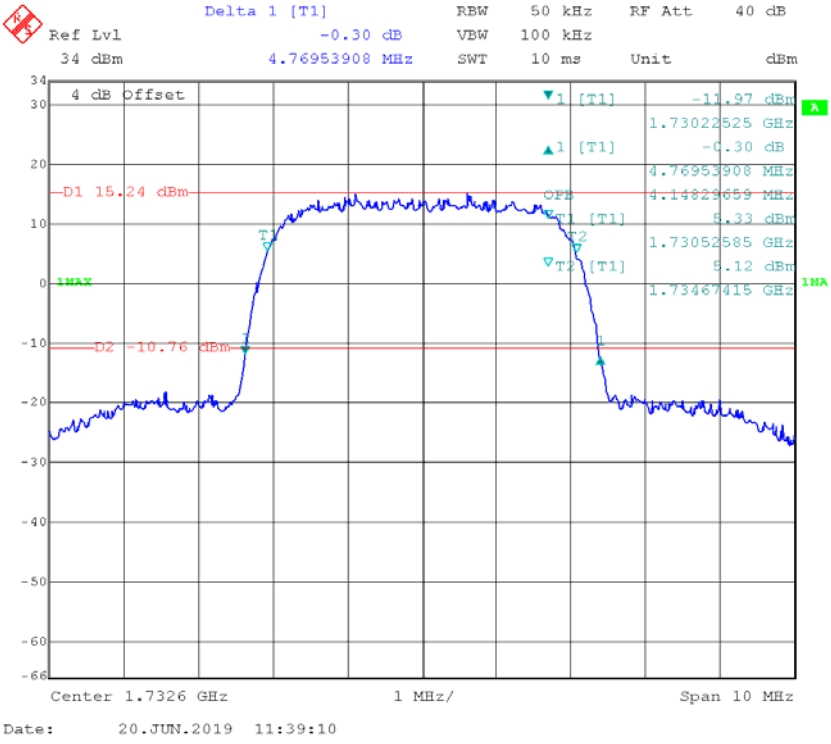
**WCDMA Band II, HSDPA**



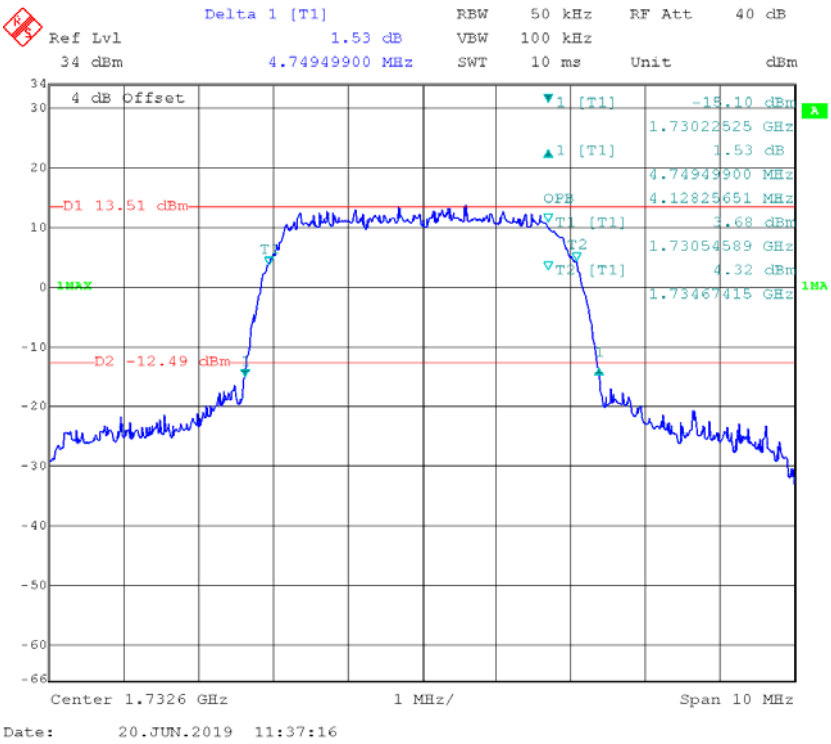

**WCDMA Band II, HSUPA**



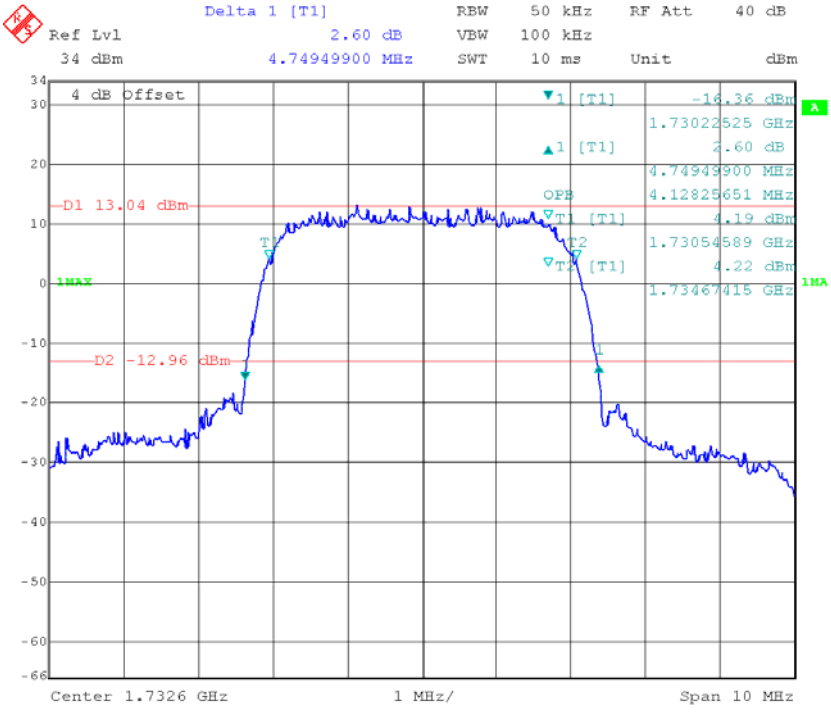
**WCDMA Band IV, Rel 99**



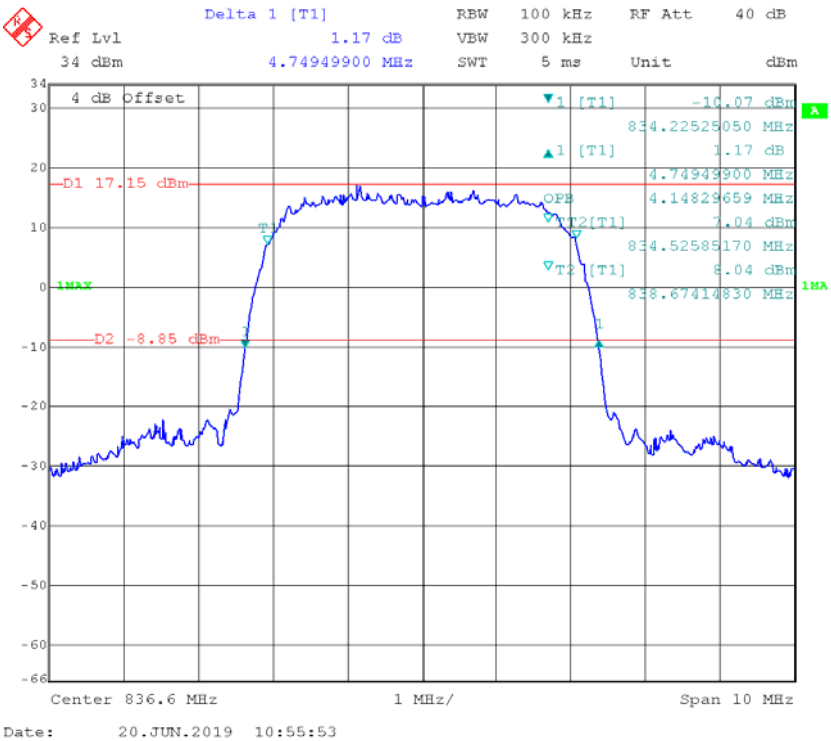

**WCDMA Band IV, HSDPA**



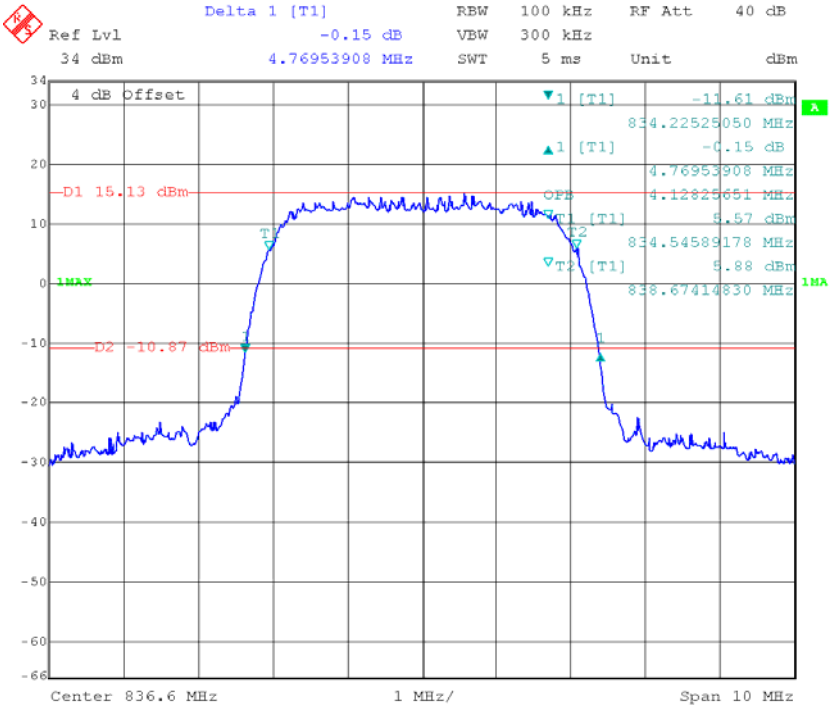
**WCDMA Band IV, HSUPA**



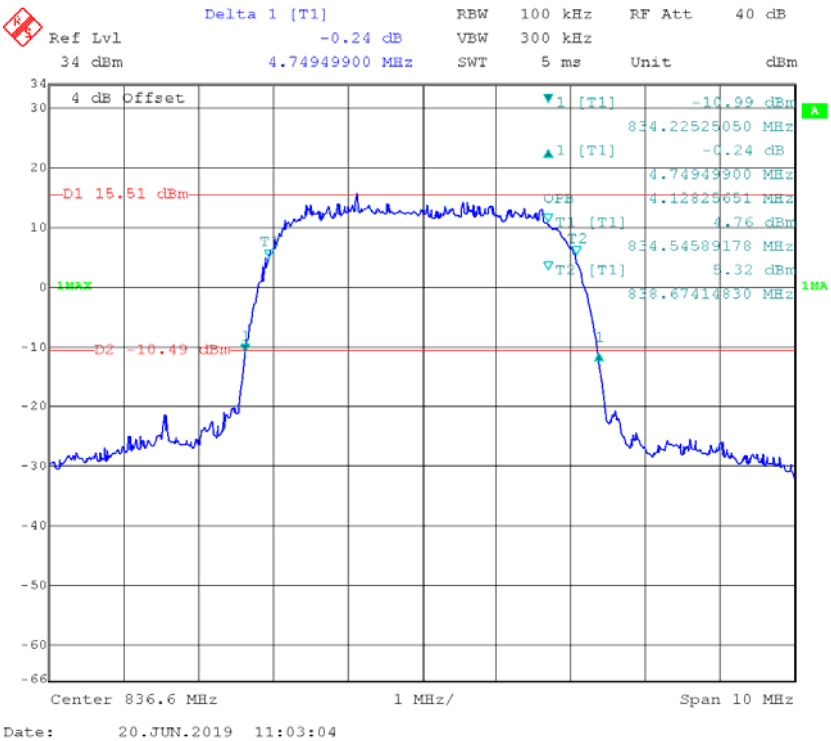

**WCDMA Band V, Rel 99**



**WCDMA Band V, HSDPA**

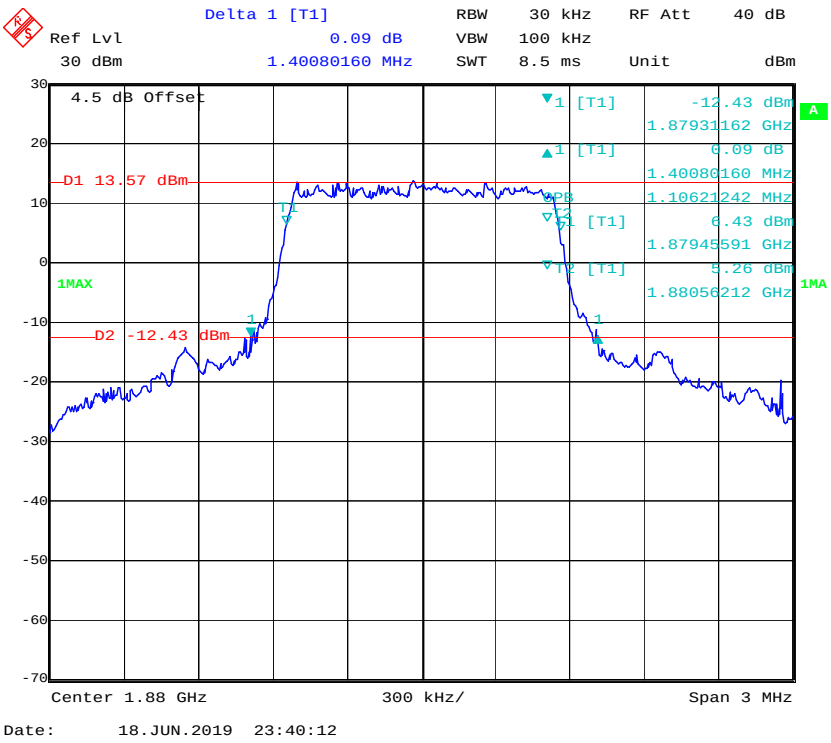



**WCDMA Band V, HSUPA**

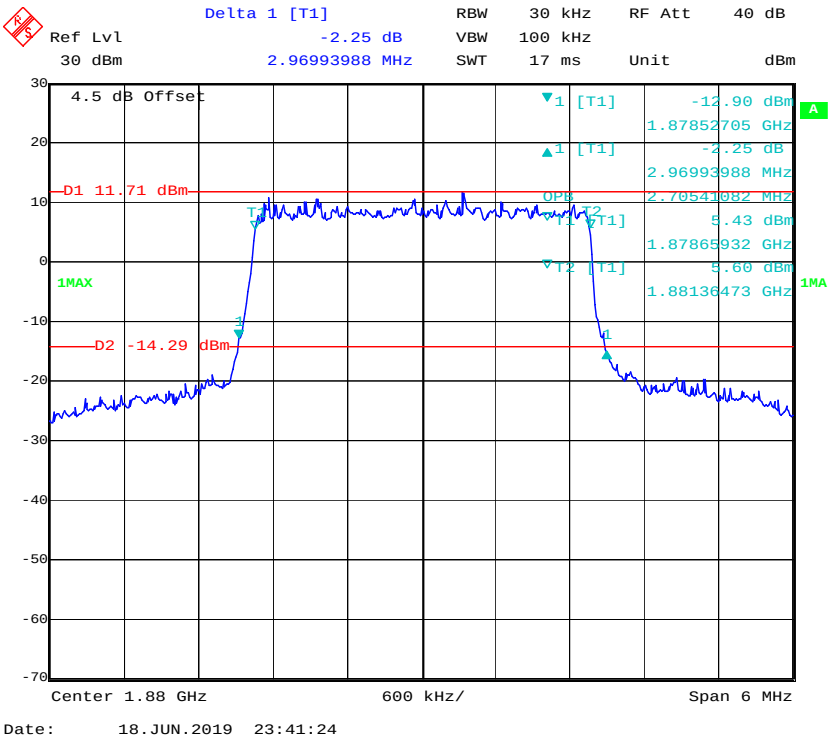


**LTE Band 2**

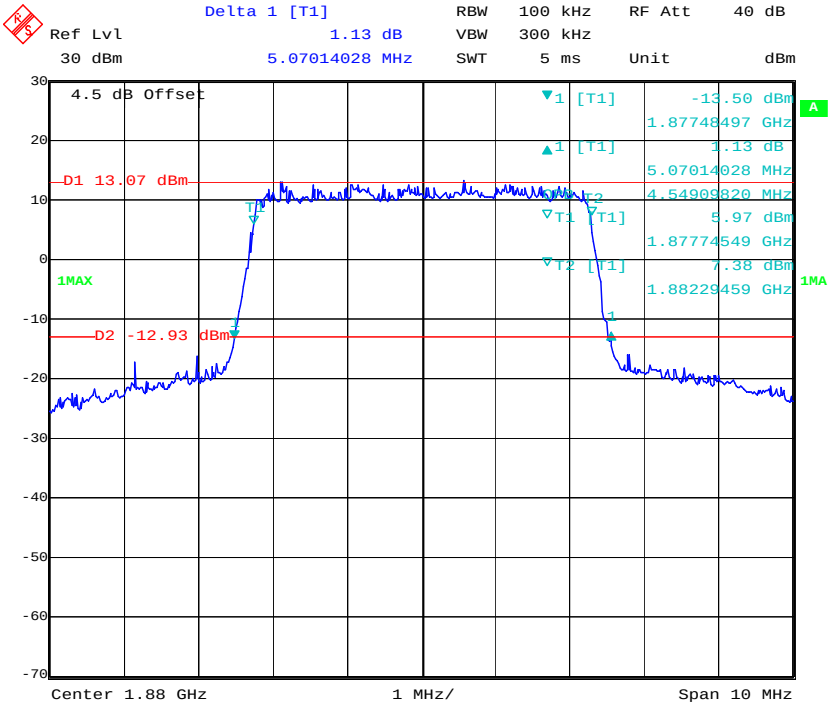
**QPSK_1.4 MHz**




**QPSK_3 MHz**

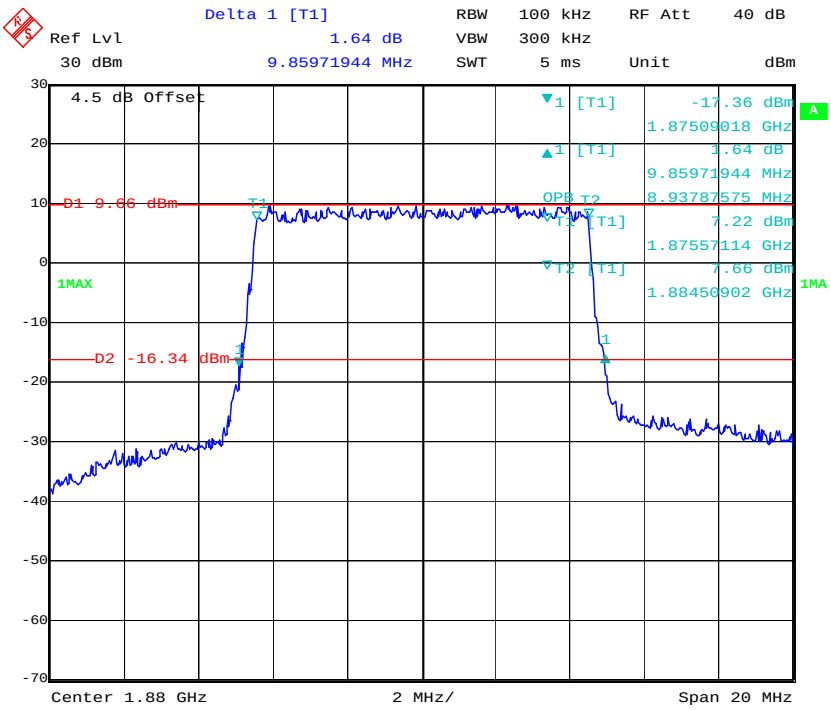


## QPSK_5 MHz



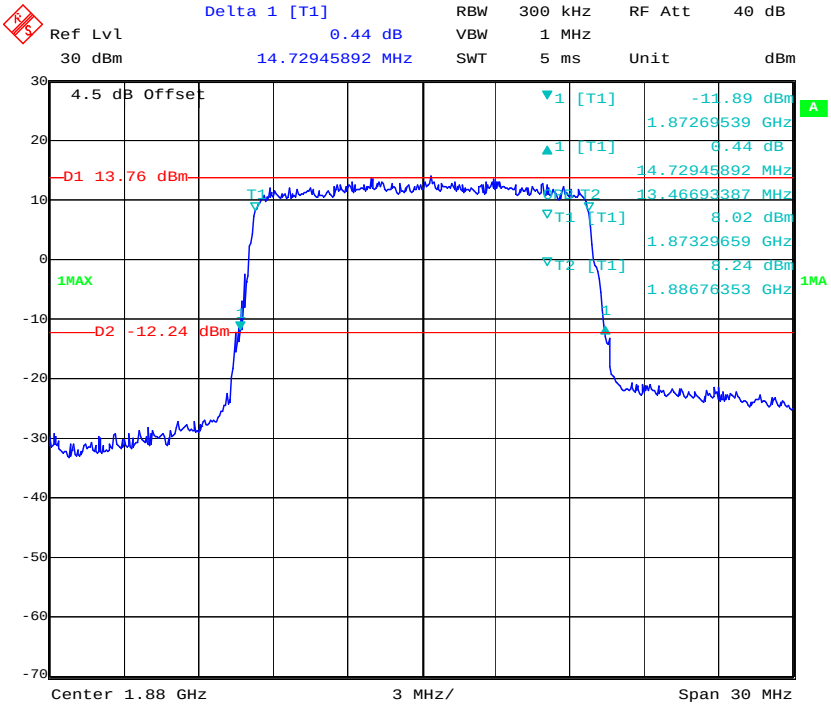

Date: 18.JUN.2019 23:42:19

## QPSK_10 MHz

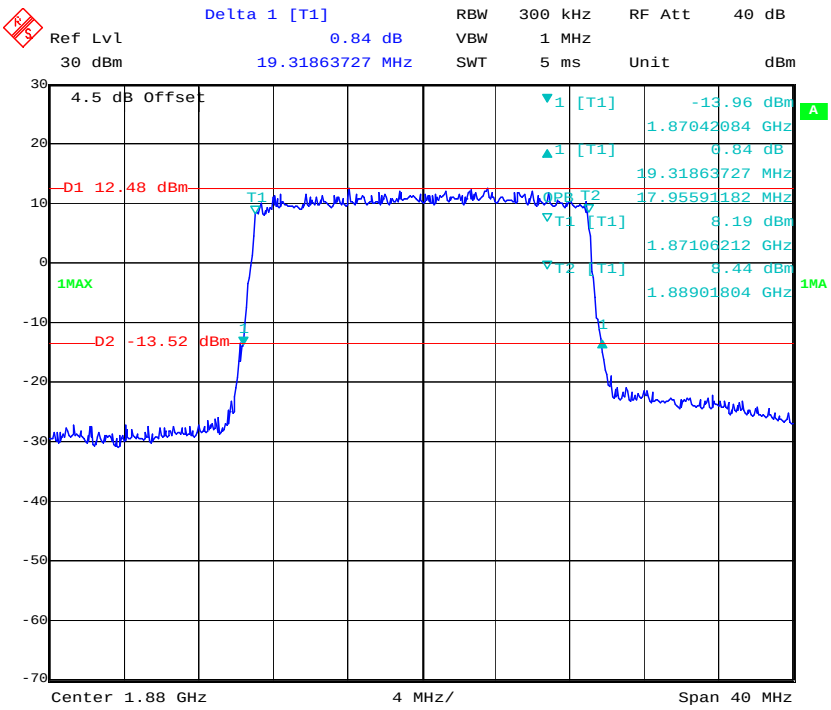



Date: 18.JUN.2019 23:43:28

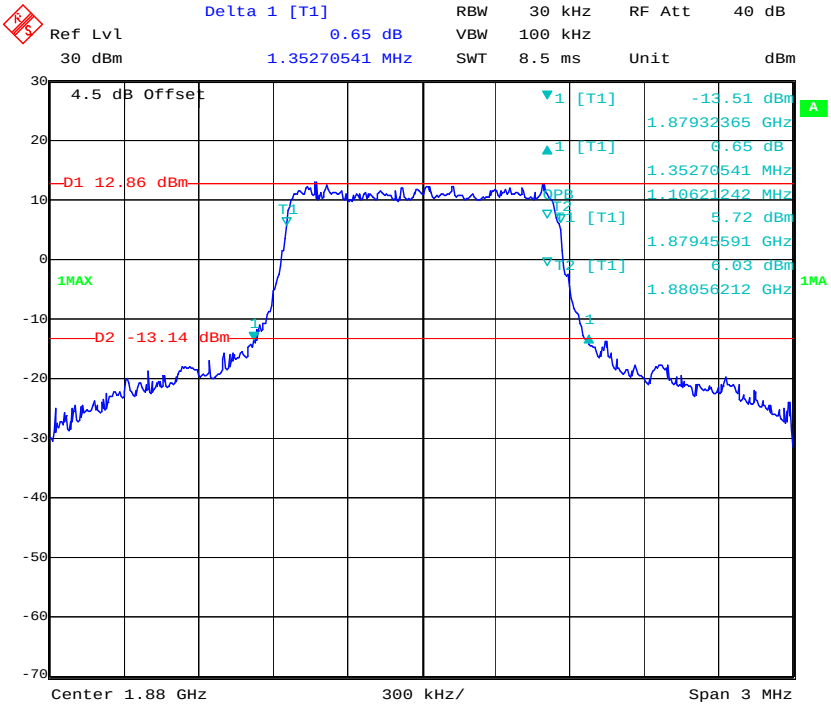
## QPSK_15 MHz




## QPSK_20 MHz

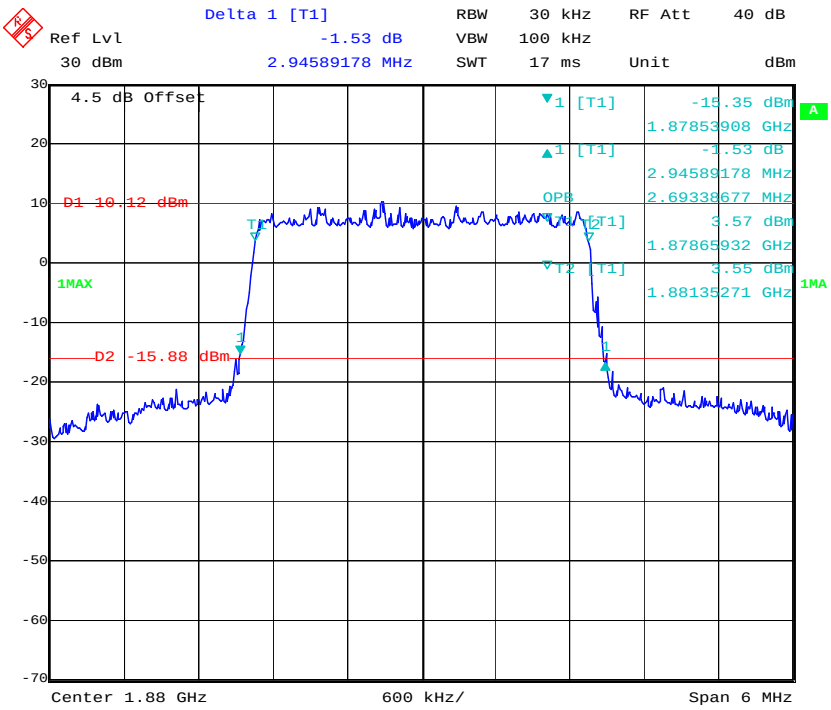


## 16QAM_1.4 MHz



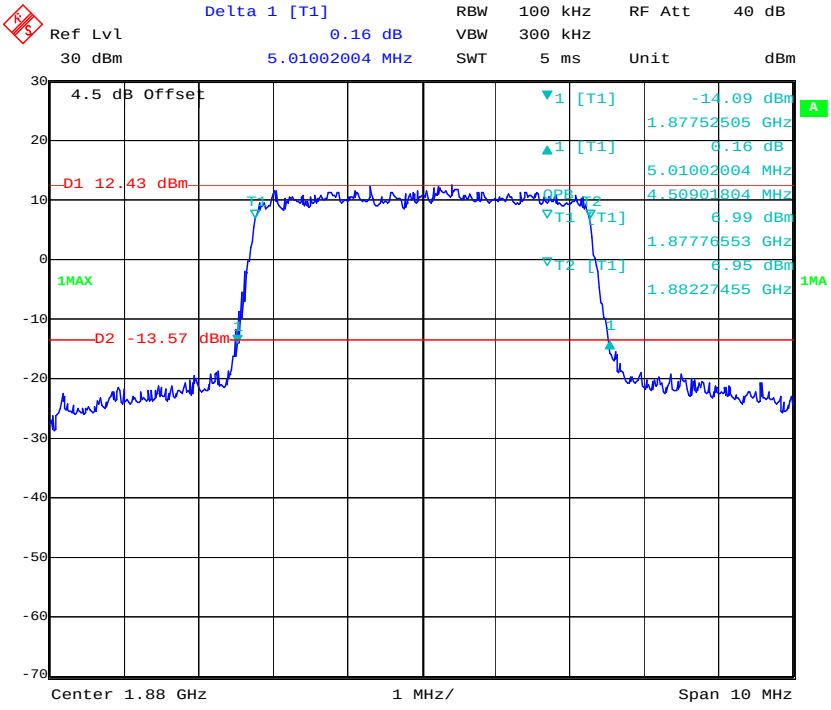

Date: 18.JUN.2019 23:40:46

## 16QAM_3 MHz



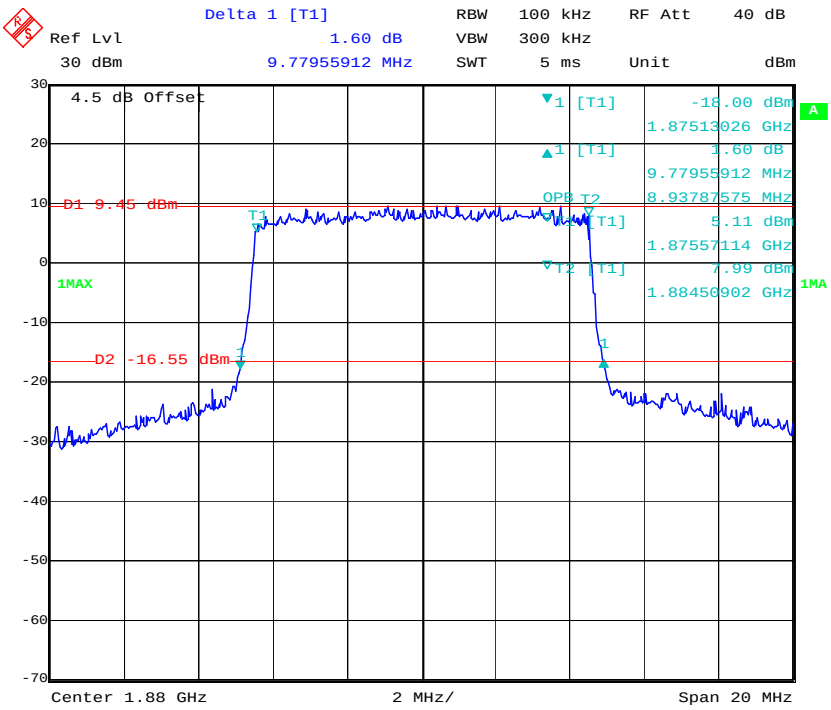

Date: 18.JUN.2019 23:41:47

## 16QAM_5 MHz



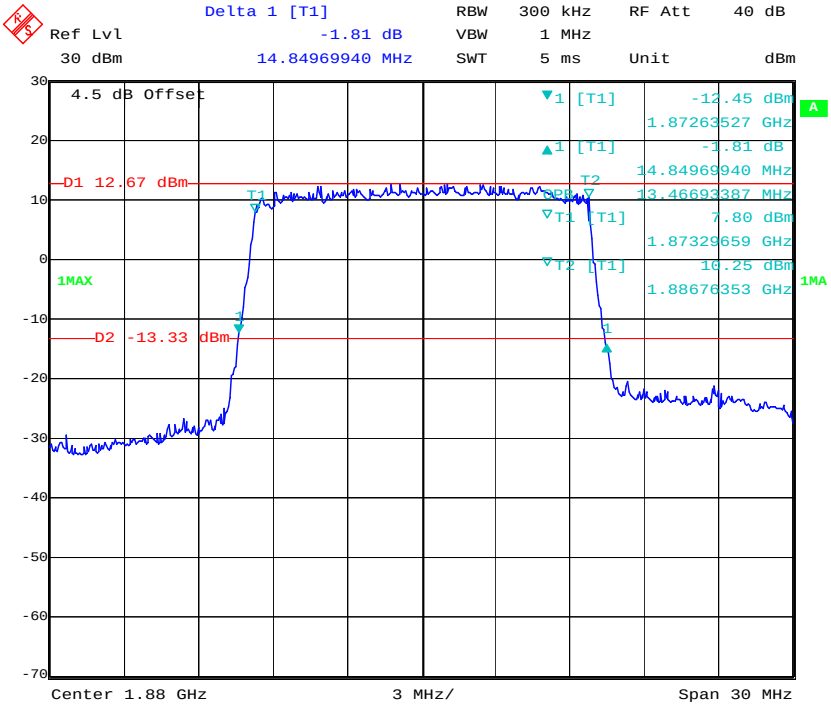

Date: 18.JUN.2019 23:42:48

## 16QAM_10 MHz



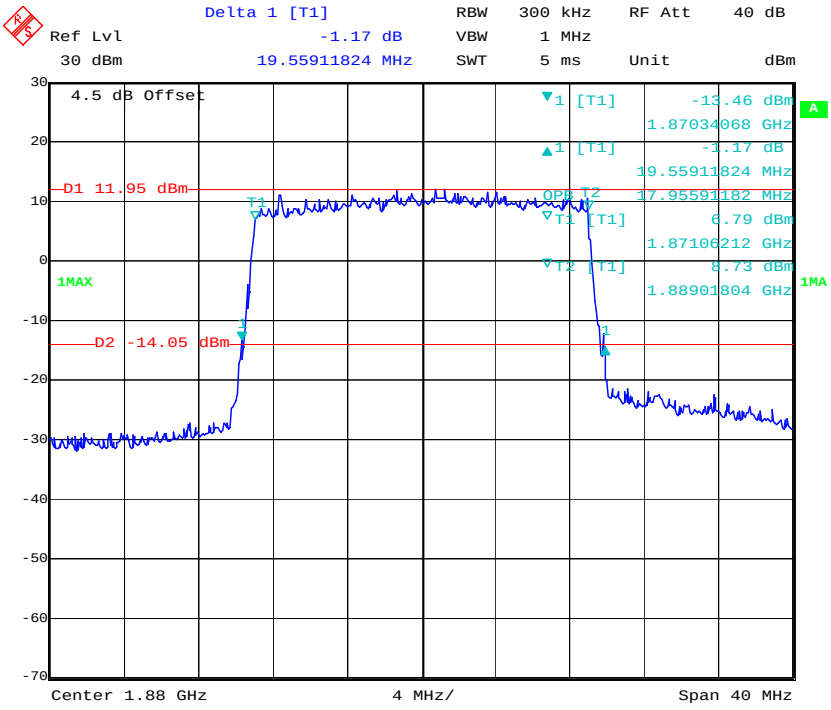

Date: 18.JUN.2019 23:44:33

## 16QAM_15 MHz




Date: 18.JUN.2019 23:45:51

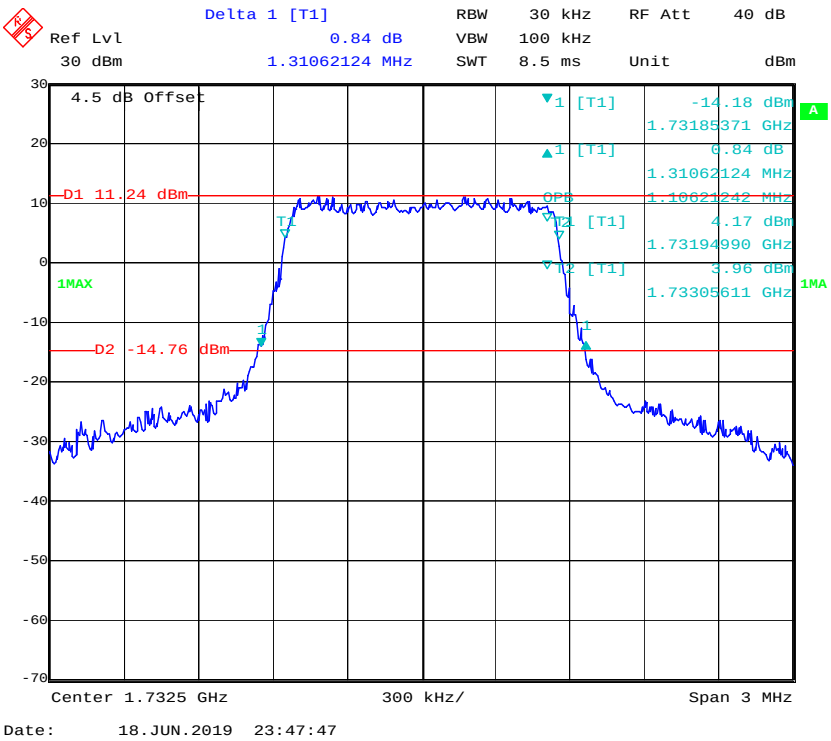
## 16QAM_20 MHz



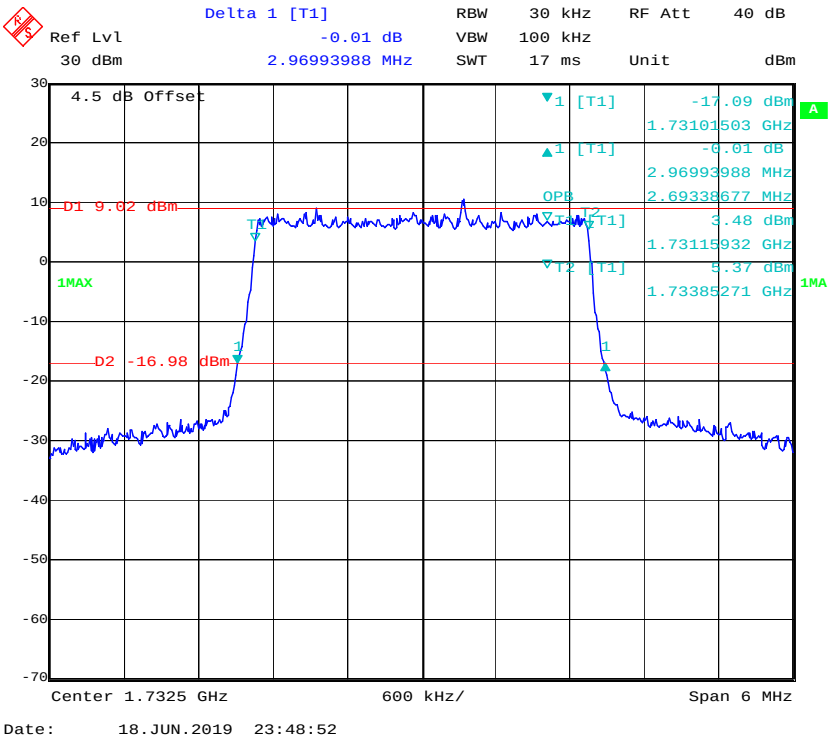

Date: 18.JUN.2019 23:46:56

**LTE Band 4**

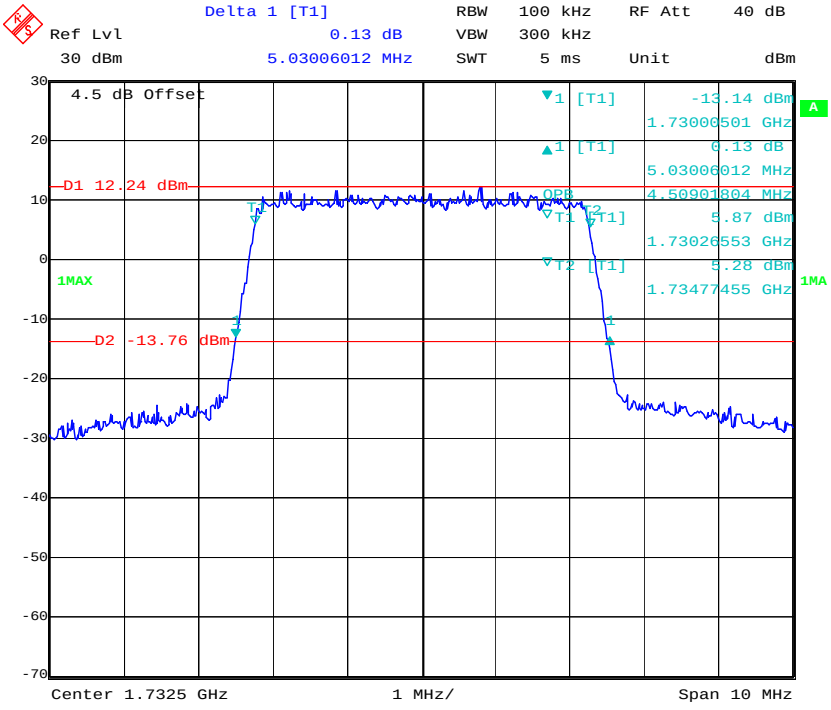
**QPSK_1.4 MHz**




**QPSK_3 MHz**

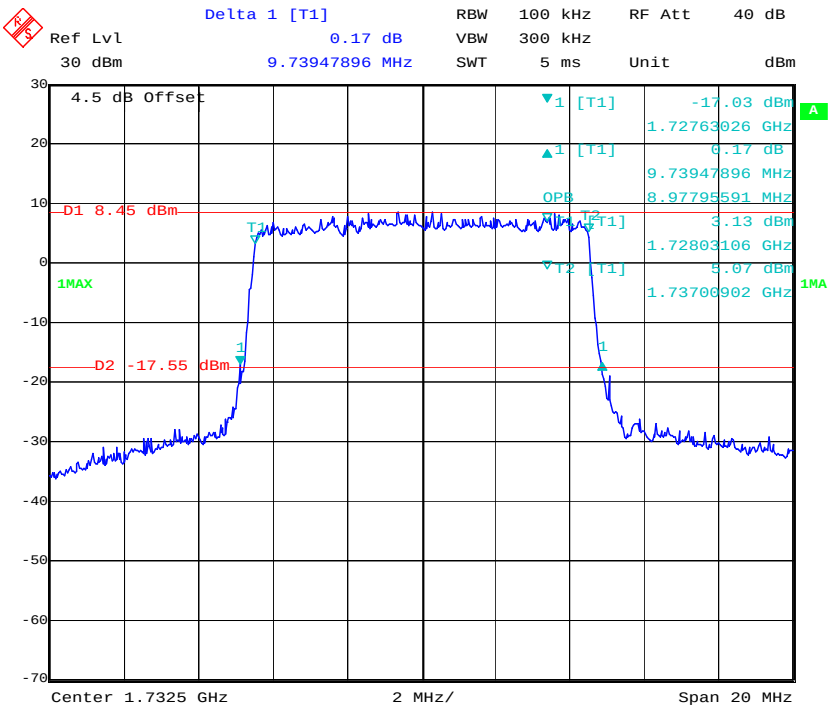


## QPSK_5 MHz



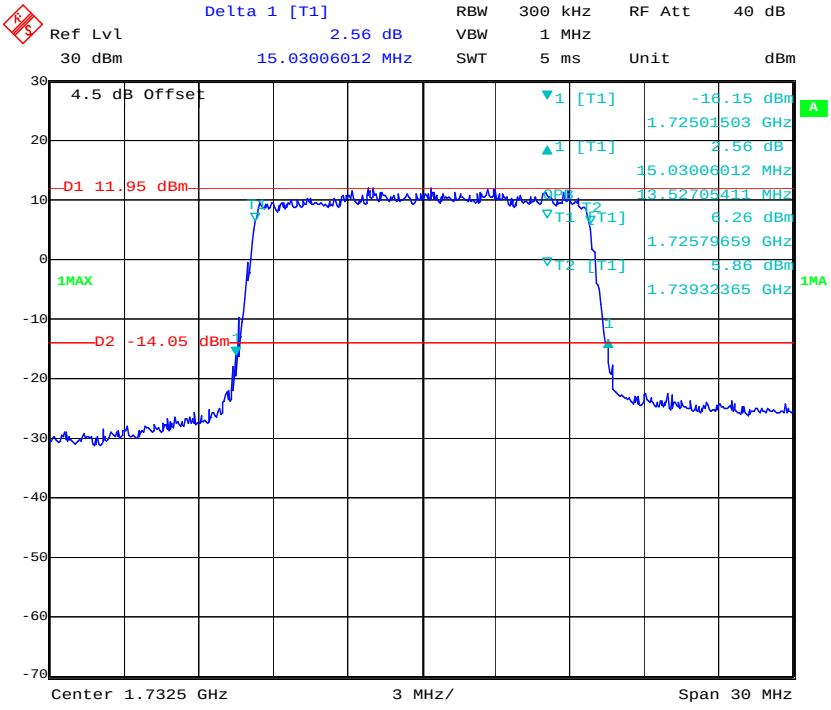

Date: 18.JUN.2019 23:50:12

## QPSK_10 MHz

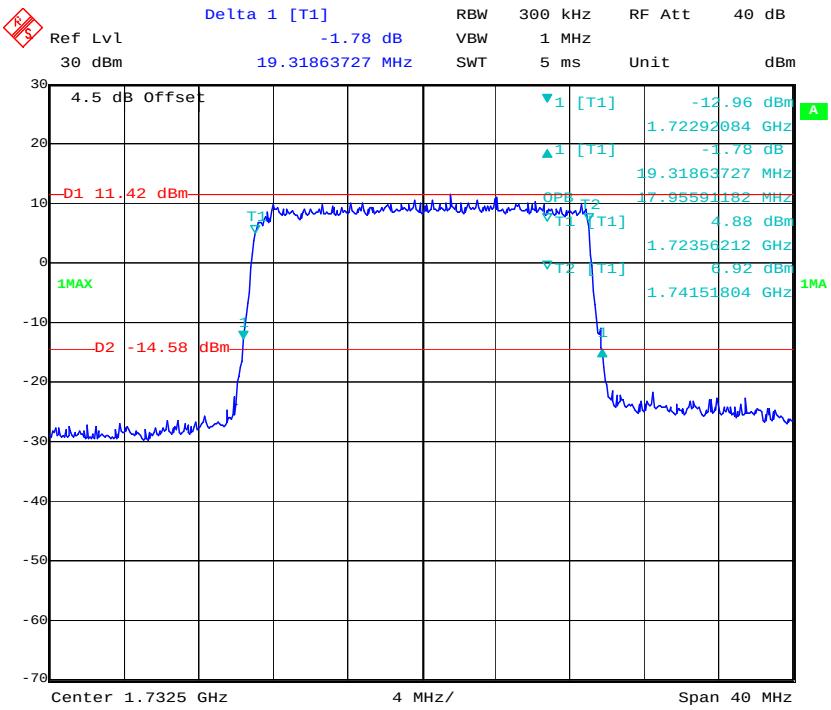



Date: 18.JUN.2019 23:51:21

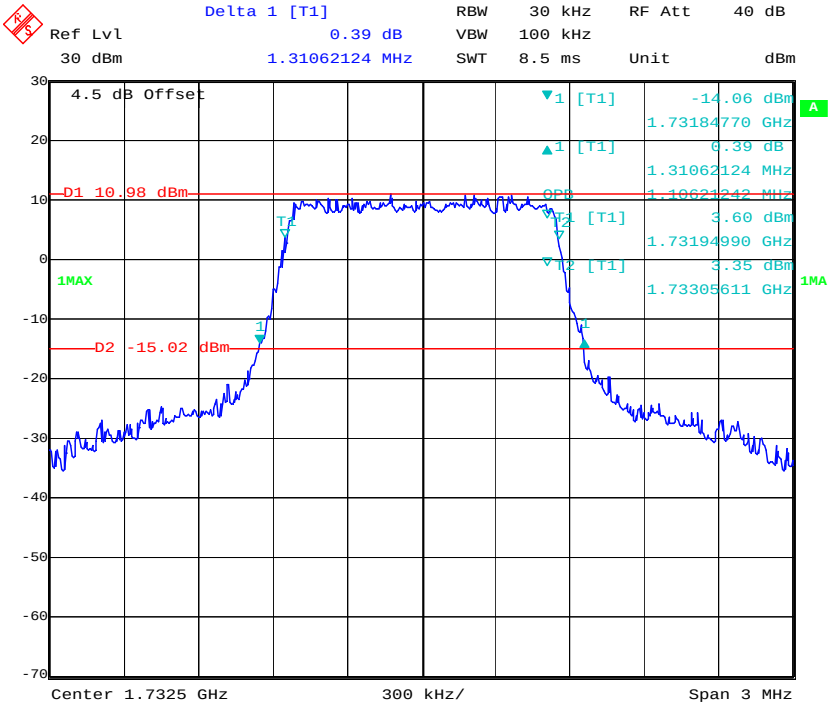
## QPSK_15 MHz




## QPSK_20 MHz

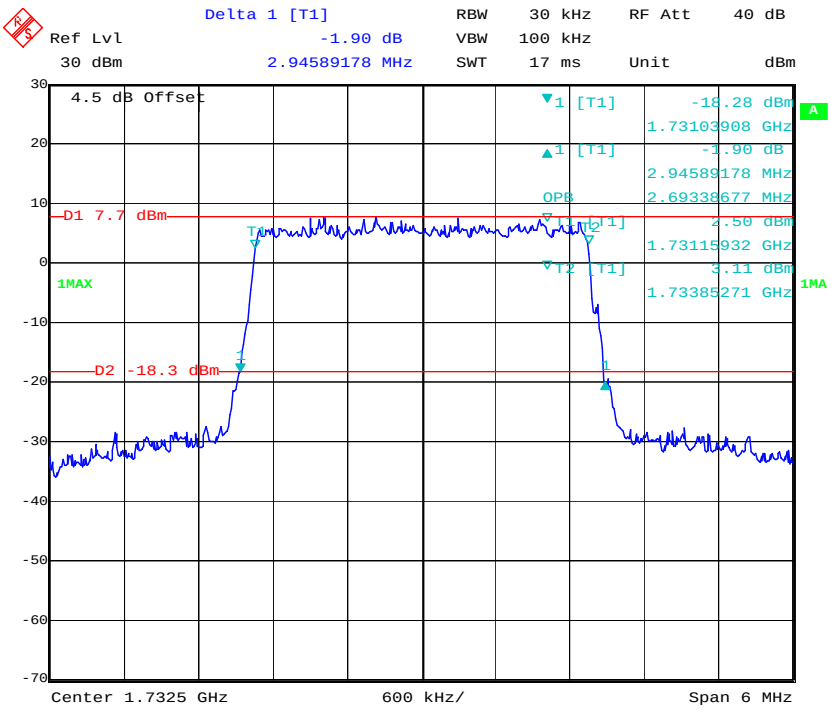


## 16QAM_1.4 MHz



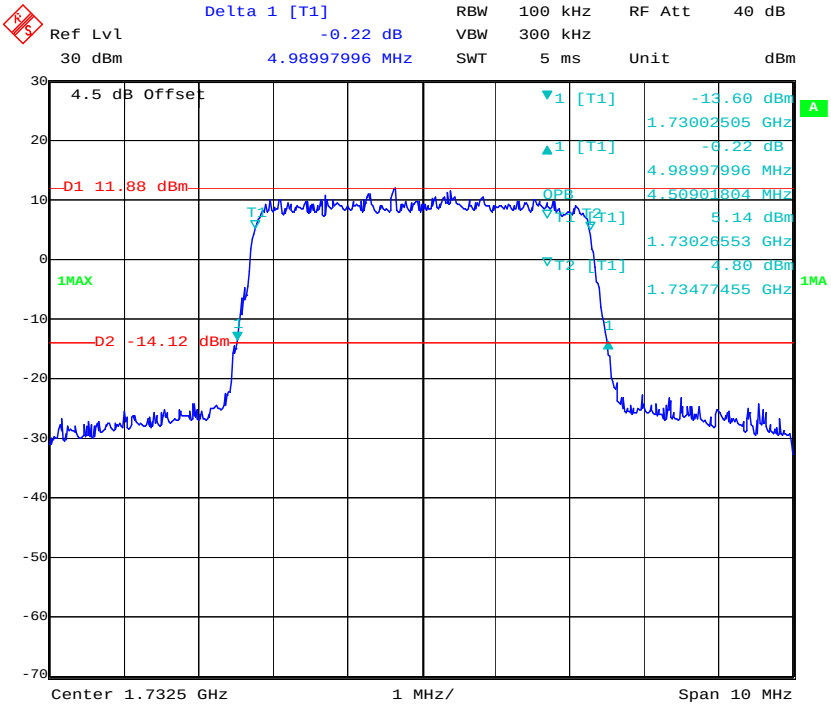

Date: 18.JUN.2019 23:48:13

## 16QAM_3 MHz




Date: 18.JUN.2019 23:49:24

## 16QAM_5 MHz

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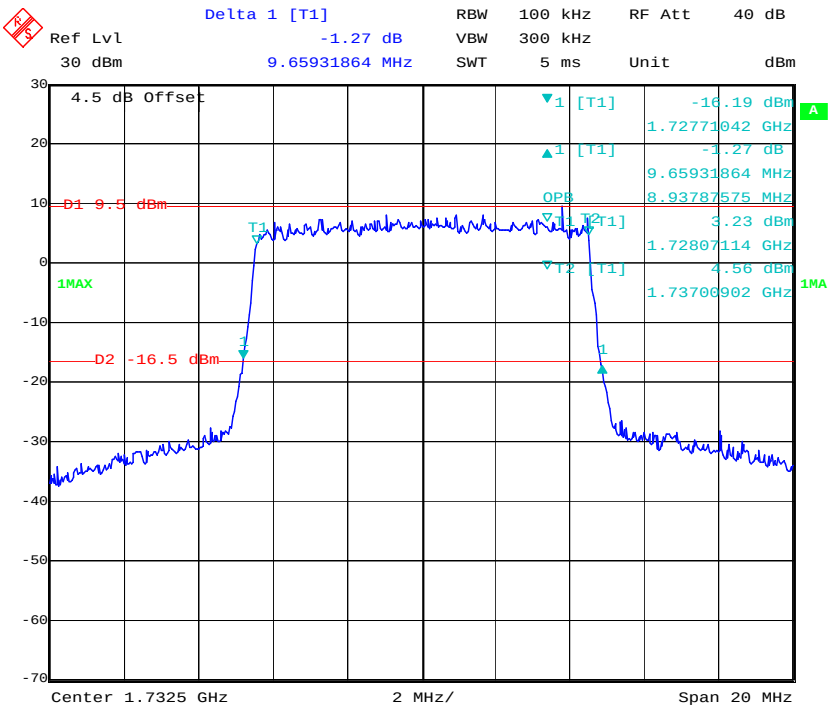
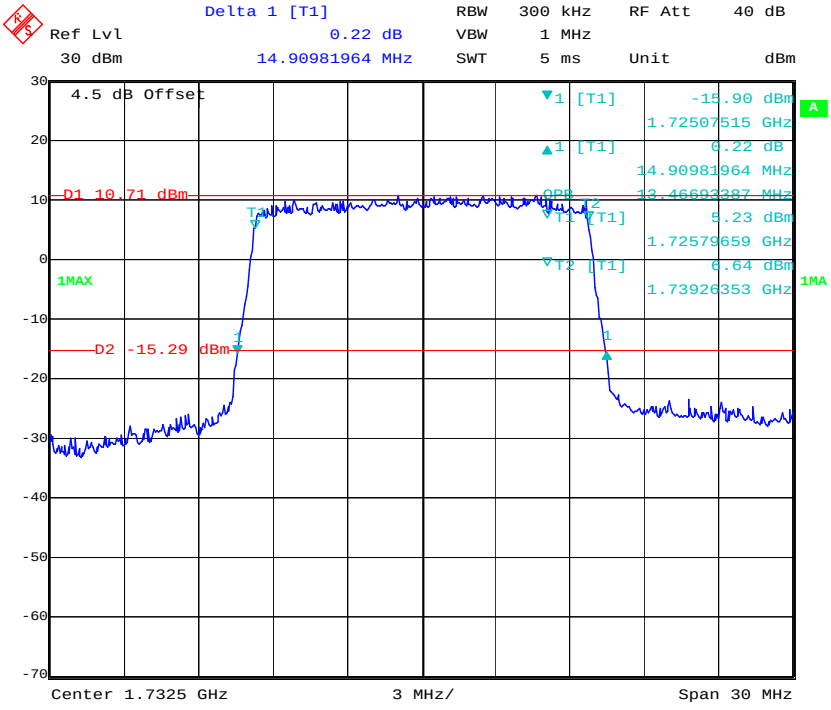
## 16QAM_10 MHz

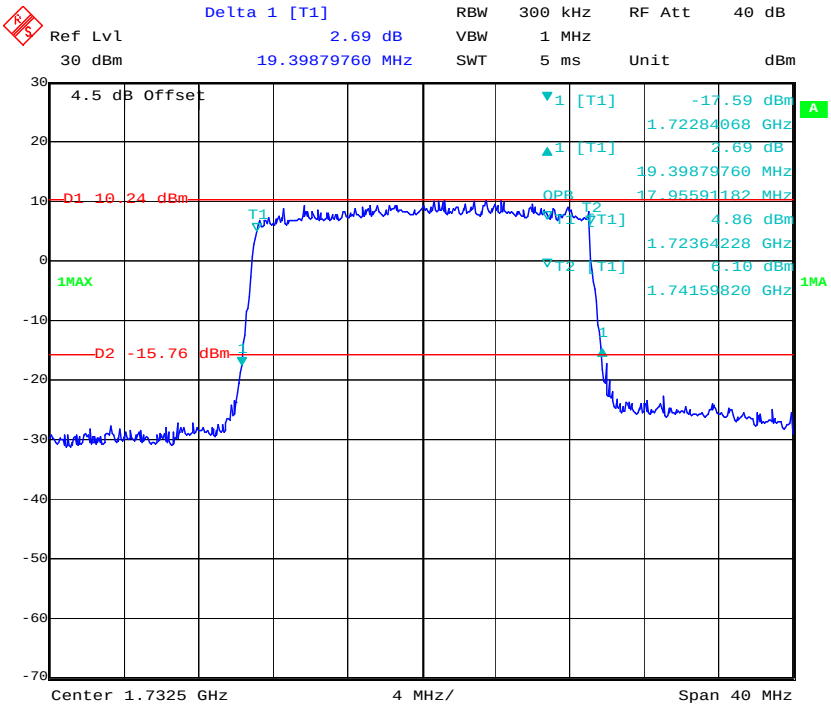



Date: 18.JUN.2019 23:52:10

## 16QAM_15 MHz

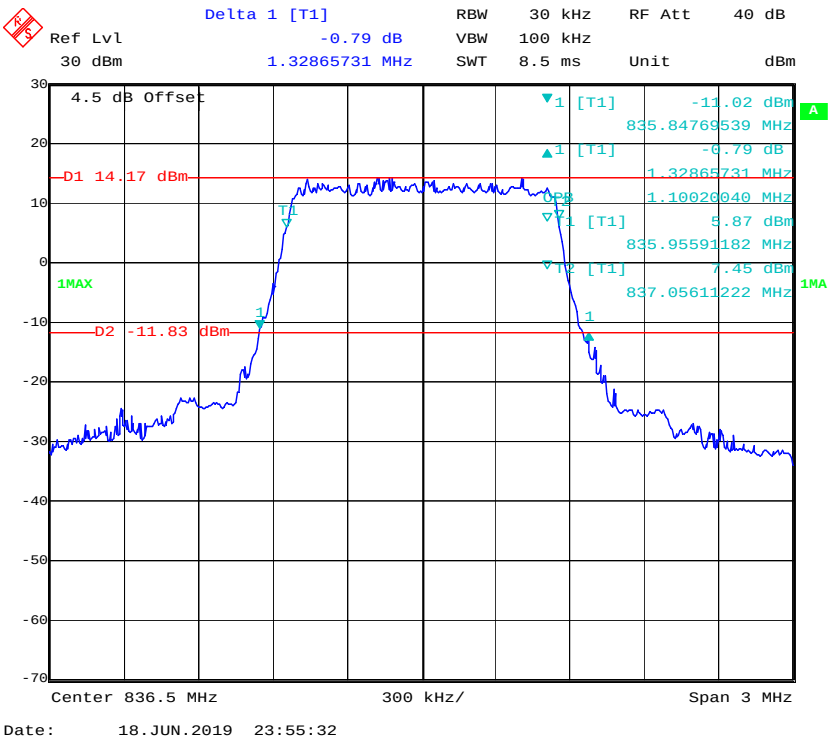



## 16QAM_20 MHz



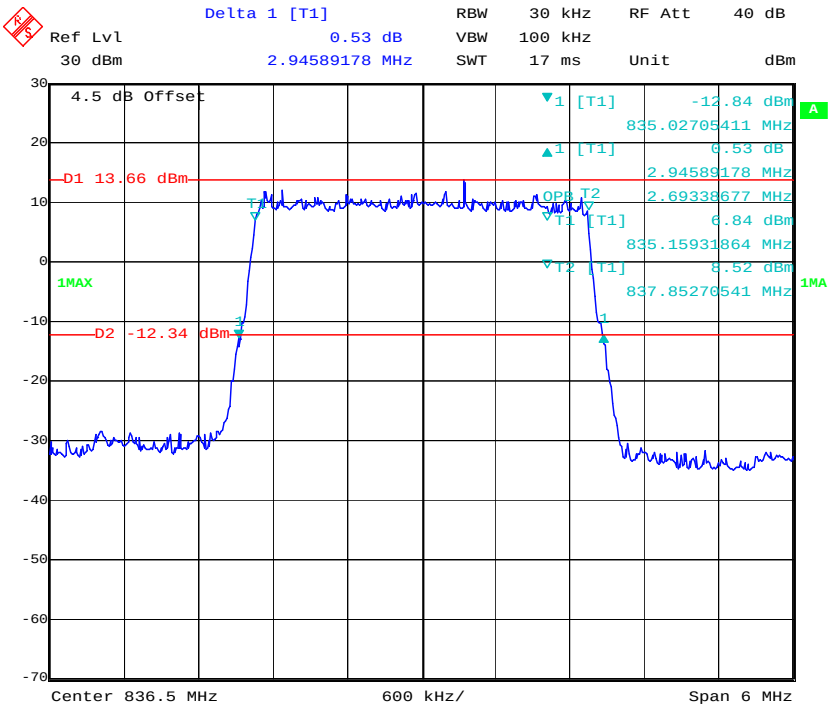
**LTE Band 5:**

**QPSK_1.4 MHz**



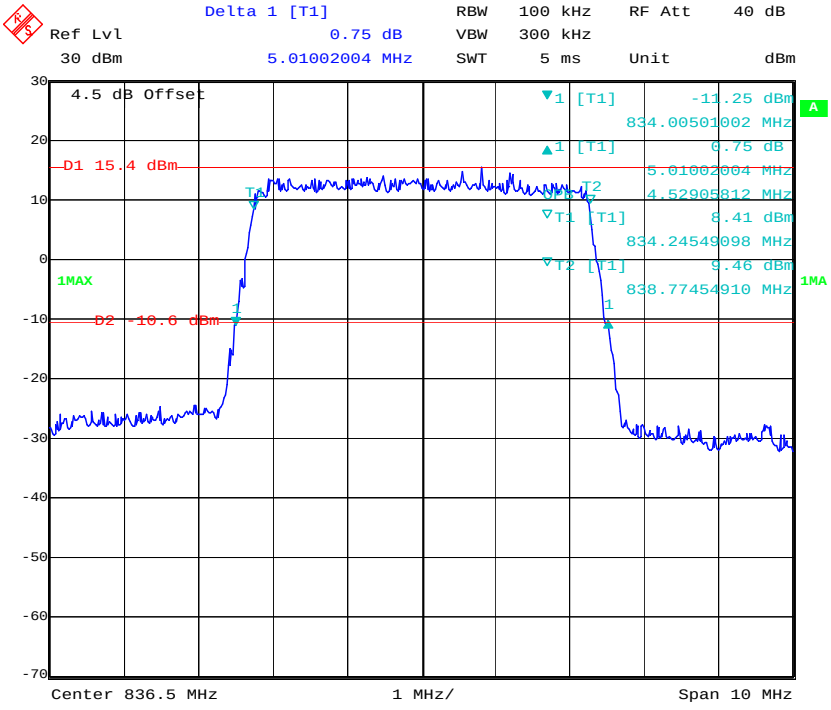

Date: 18.JUN.2019 23:55:32

**QPSK_3 MHz**



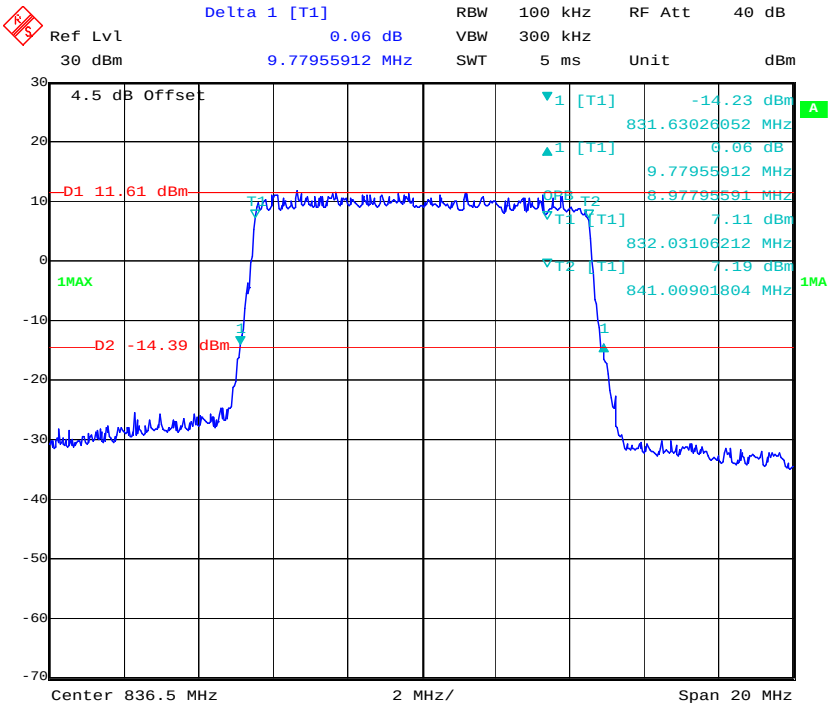

Date: 18.JUN.2019 23:56:39

## QPSK_5 MHz



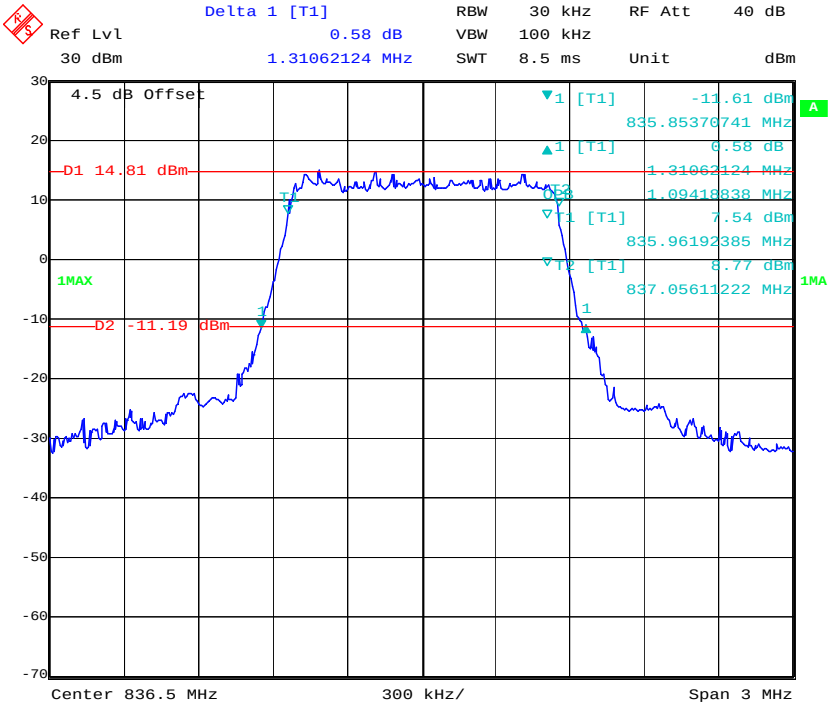

Date: 18.JUN.2019 23:57:37

## QPSK_10 MHz



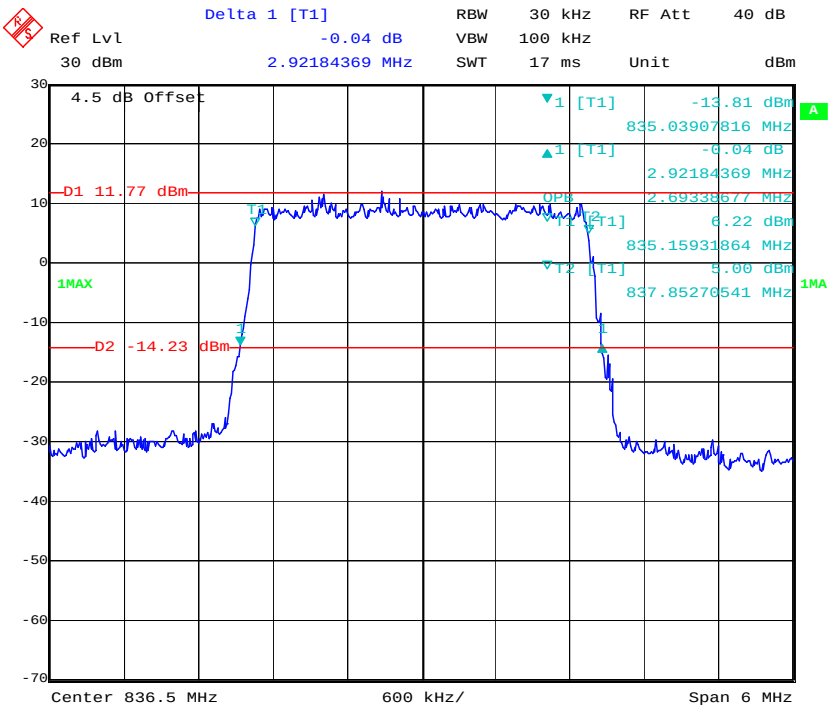

Date: 18.JUN.2019 23:58:49

## 16QAM_1.4 MHz



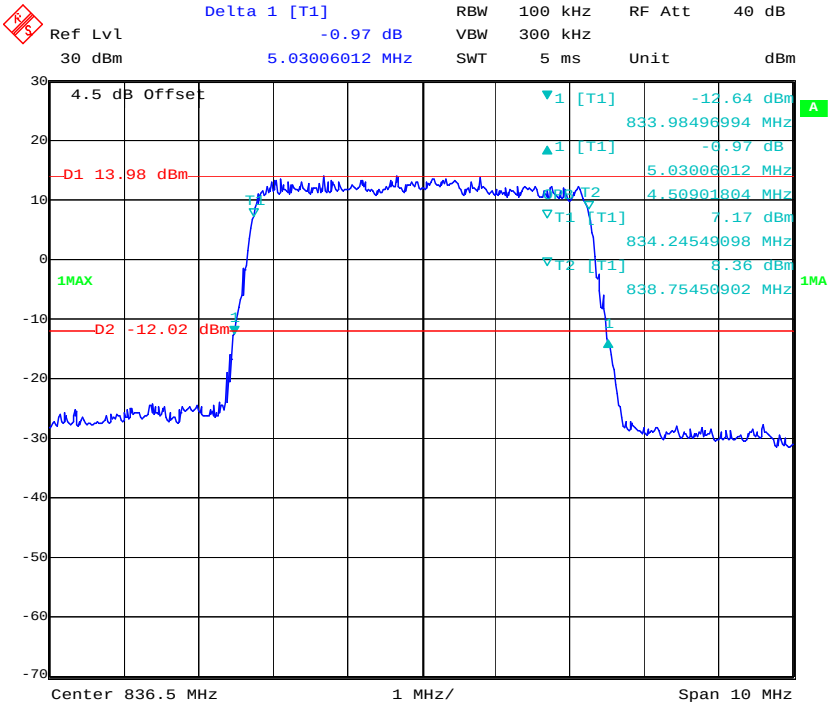

Date: 18.JUN.2019 23:56:14

## 16QAM_3 MHz



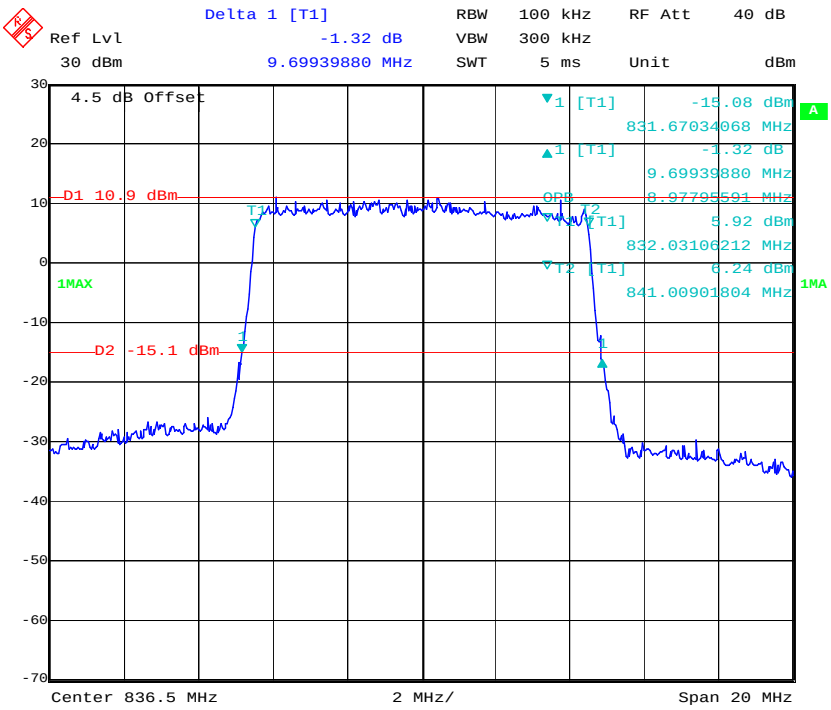

Date: 18.JUN.2019 23:57:08

## 16QAM_5 MHz




Date: 18.JUN.2019 23:58:16

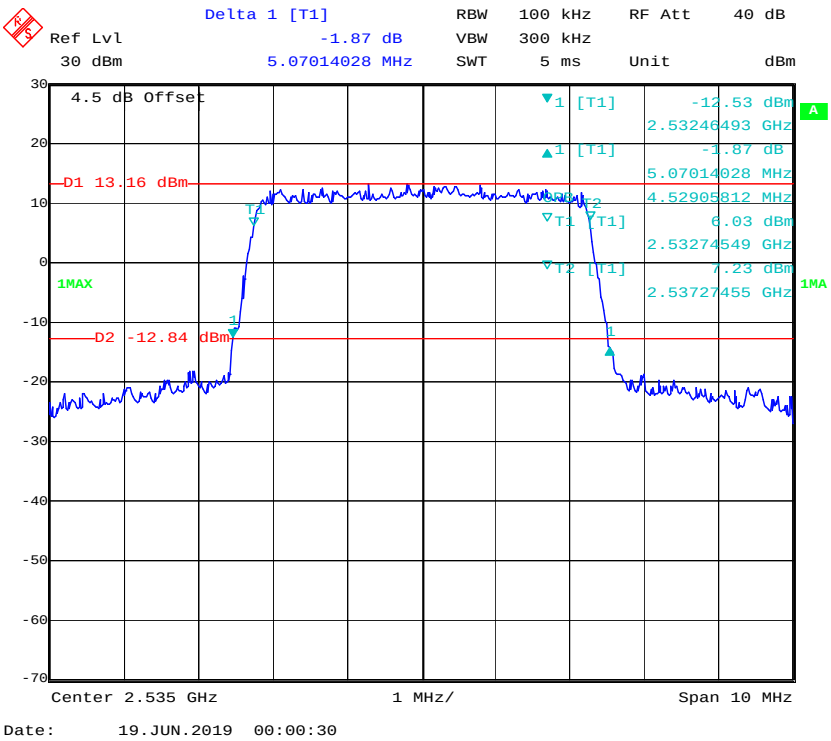
## 16QAM_10 MHz



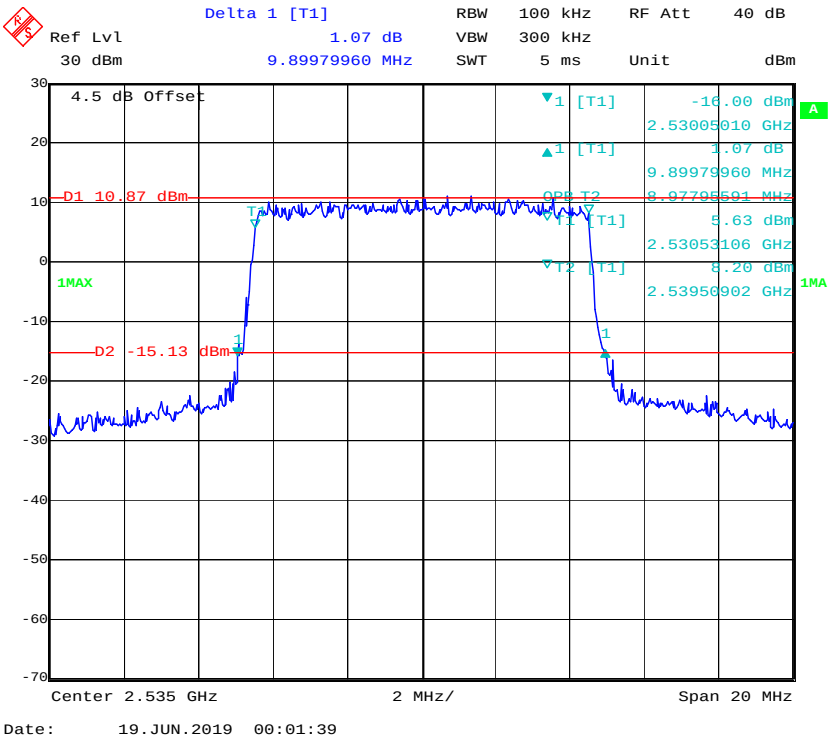

Date: 18.JUN.2019 23:59:26

**LTE Band 7:**

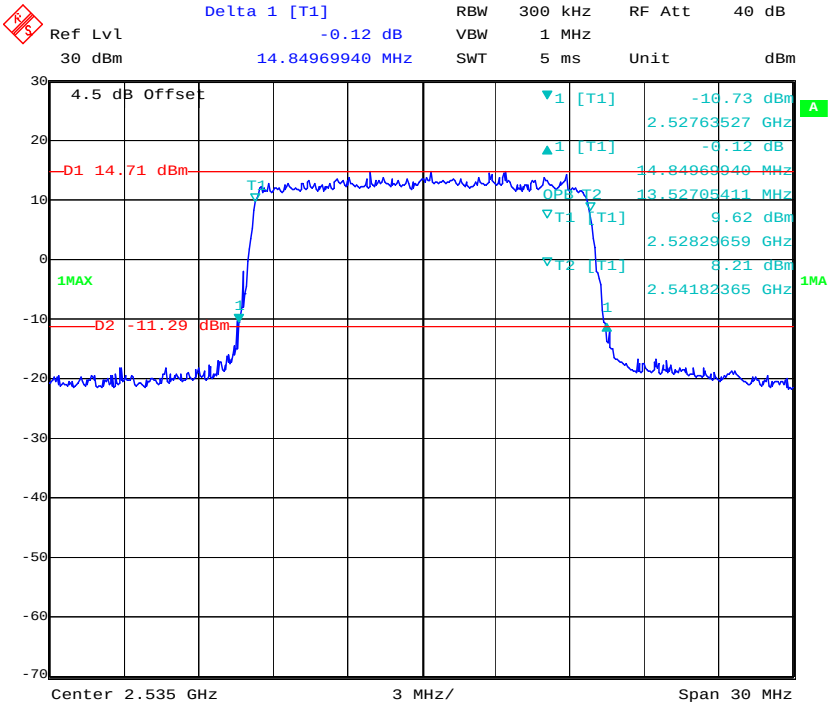
**QPSK_5 MHz**



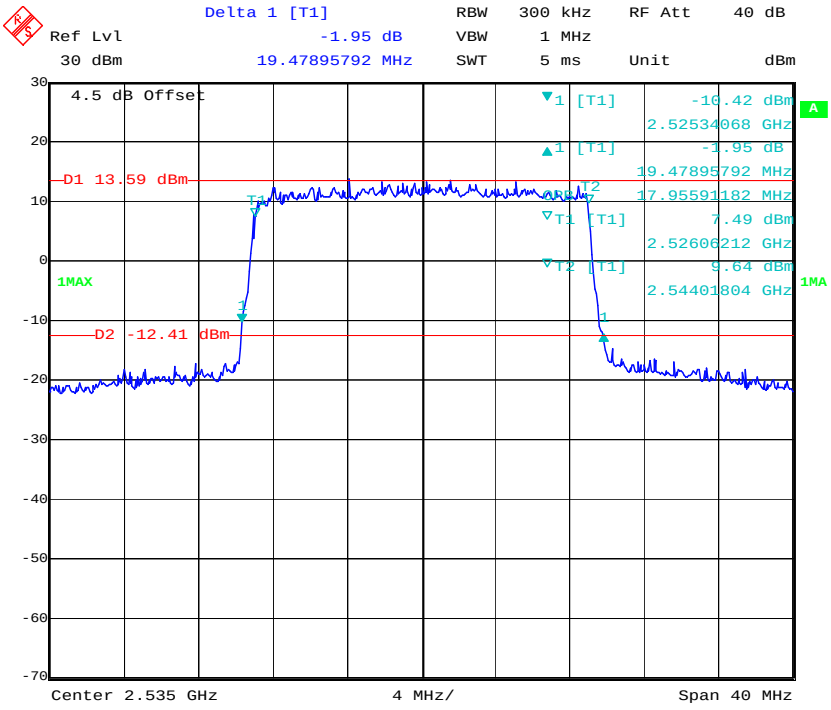

**QPSK_10 MHz**



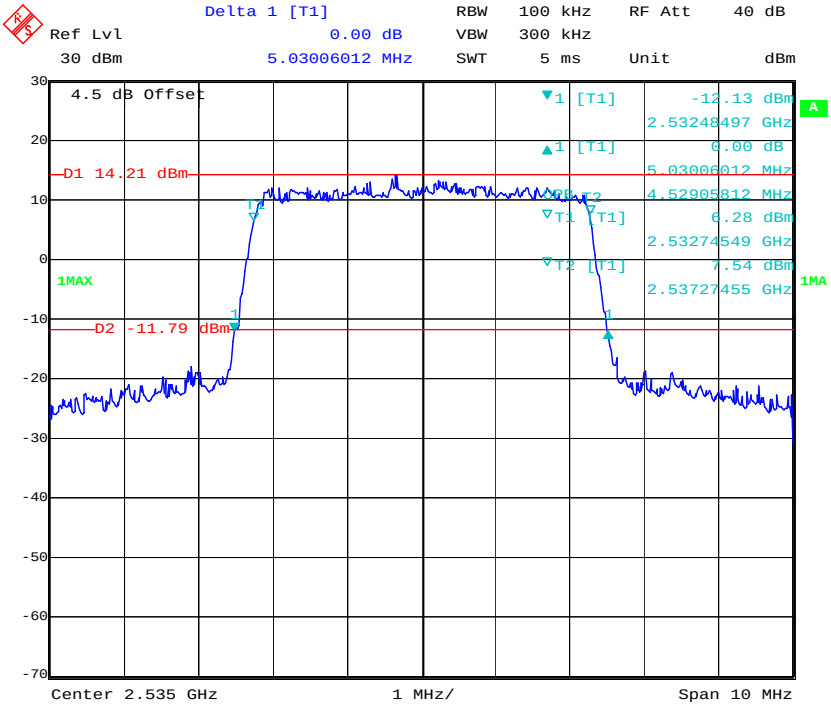
## QPSK_15 MHz




## QPSK_20 MHz

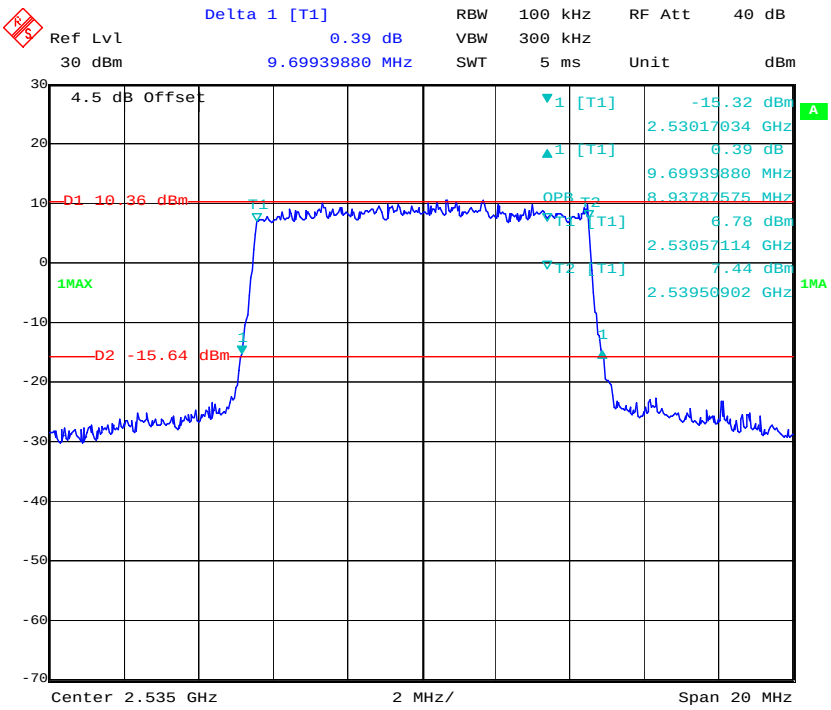


## 16QAM_5 MHz



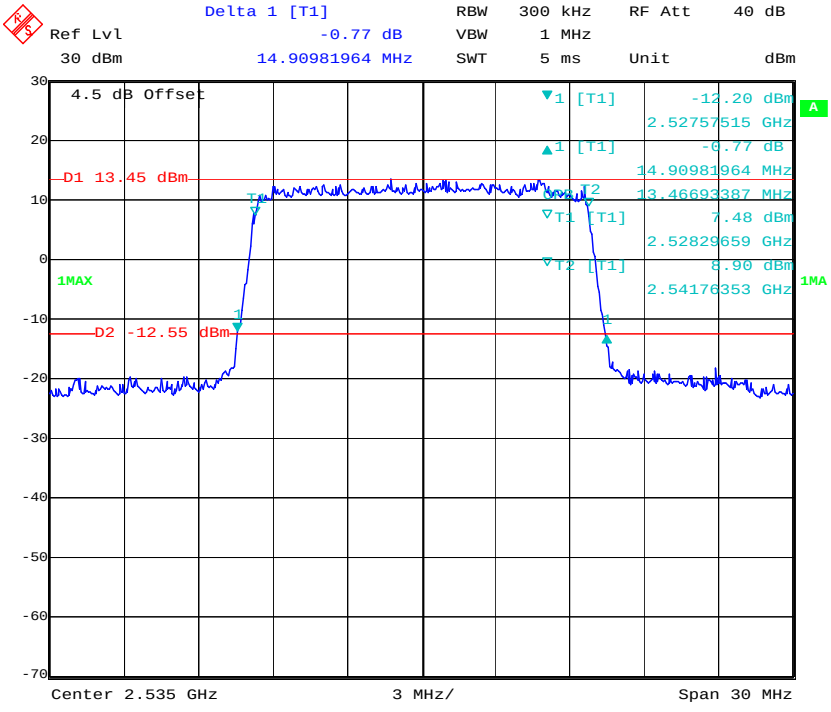

Date: 19.JUN.2019 00:01:09

## 16QAM_10 MHz

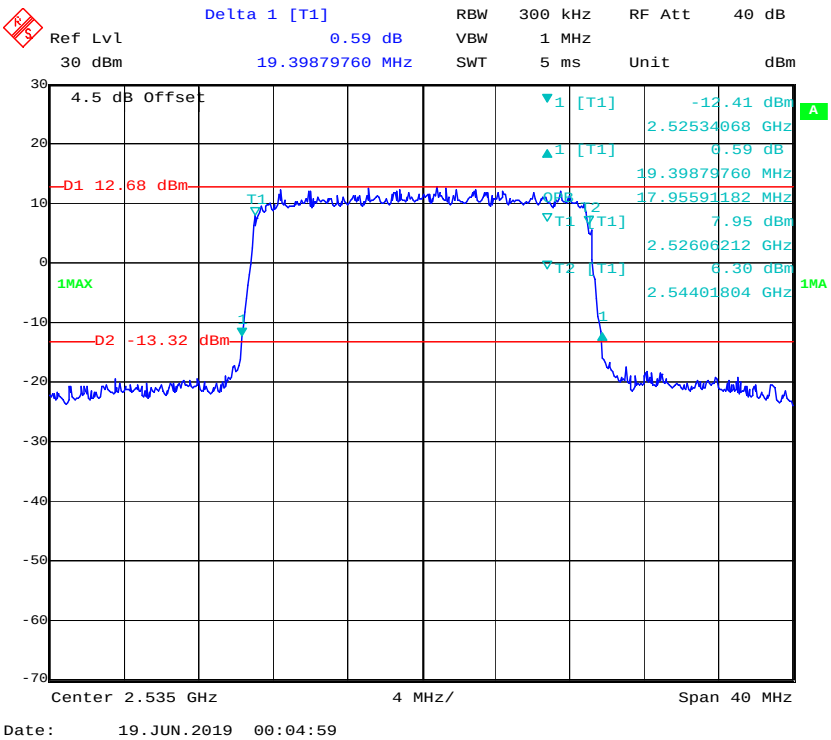



Date: 19.JUN.2019 00:02:26

## 16QAM_15 MHz

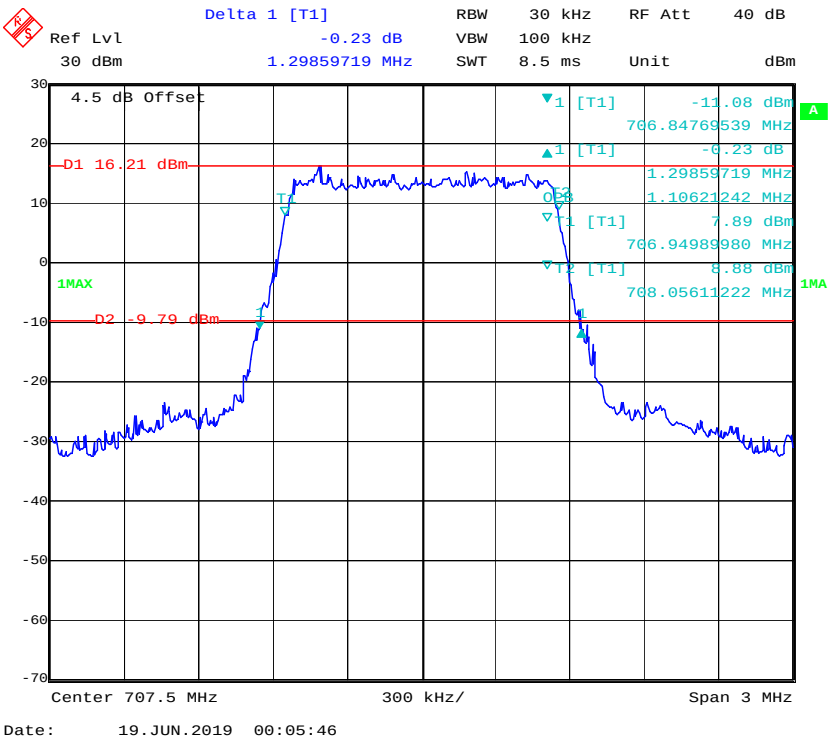



## 16QAM_20 MHz

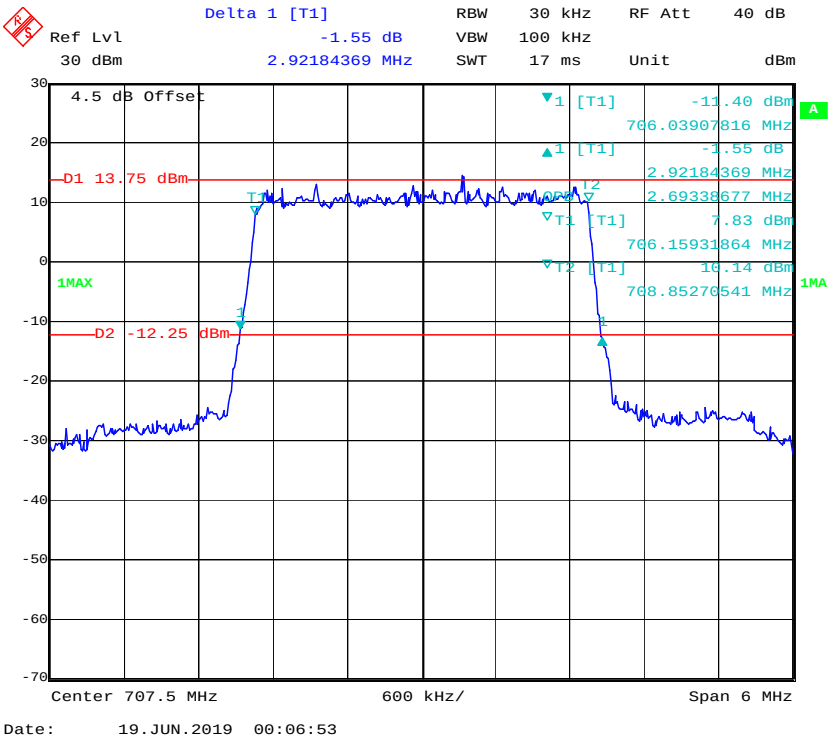


**LTE Band 12:**

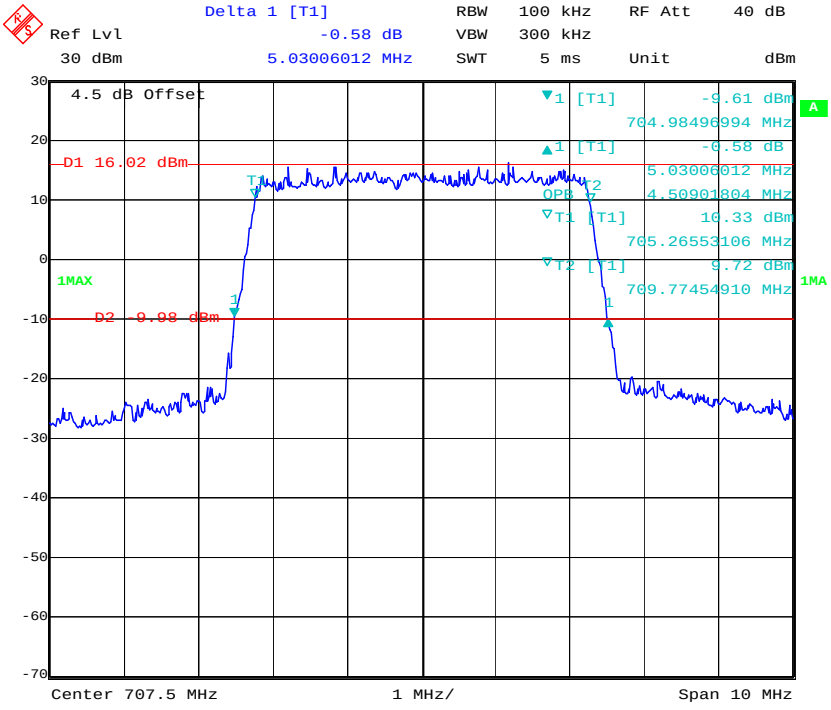
**QPSK_1.4 MHz**



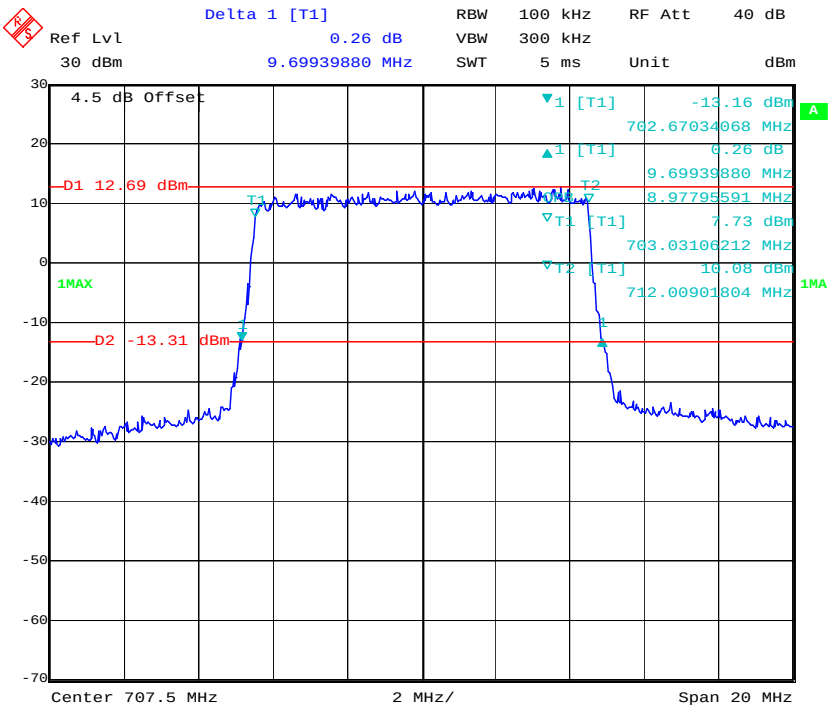

**QPSK_3 MHz**



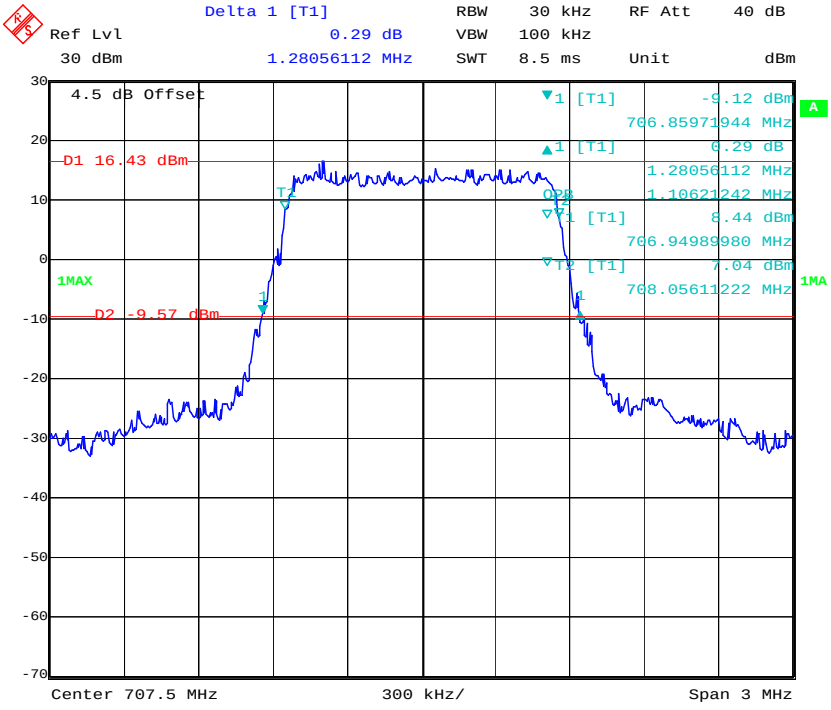
## QPSK_5 MHz




## QPSK_10 MHz

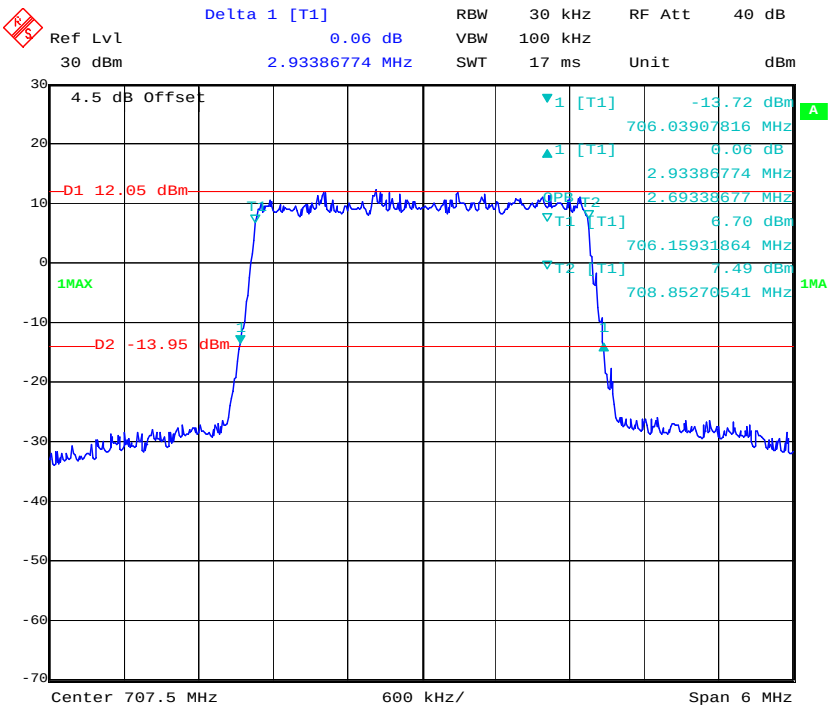


## 16QAM_1.4 MHz



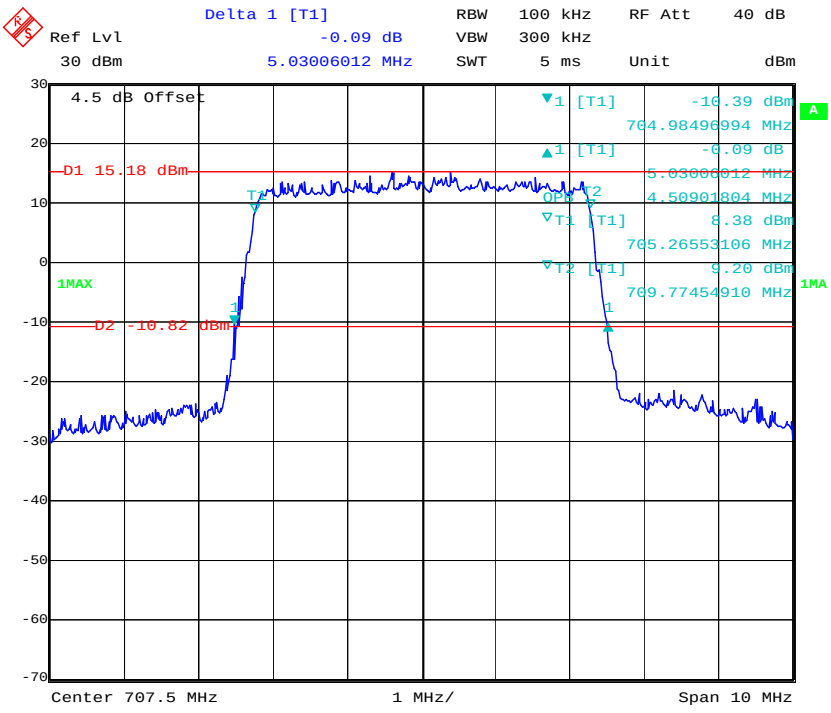

Date: 19.JUN.2019 00:06:21

## 16QAM_3 MHz

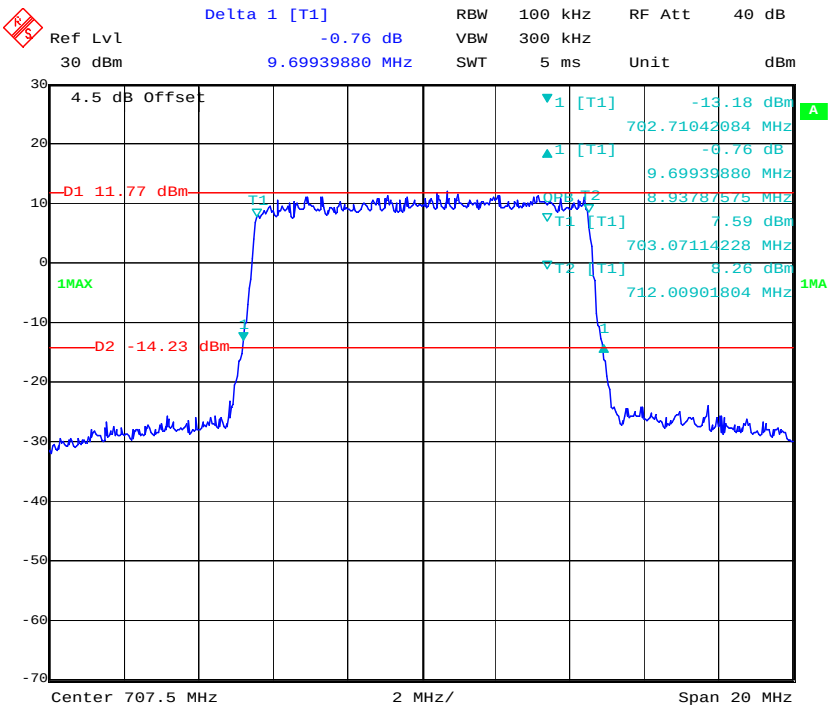



Date: 19.JUN.2019 00:07:31

## 16QAM_5 MHz

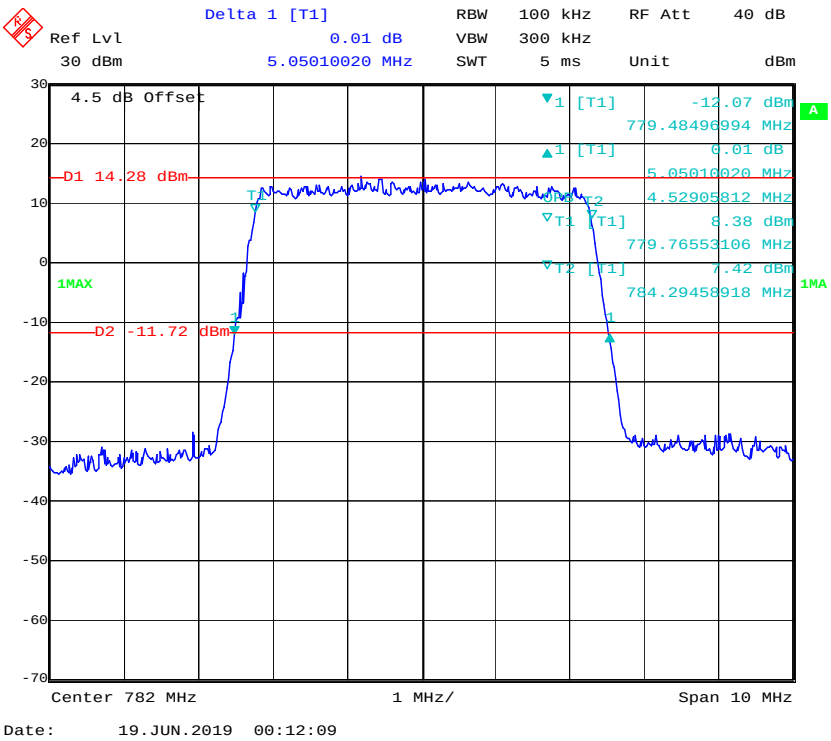



## 16QAM_10 MHz

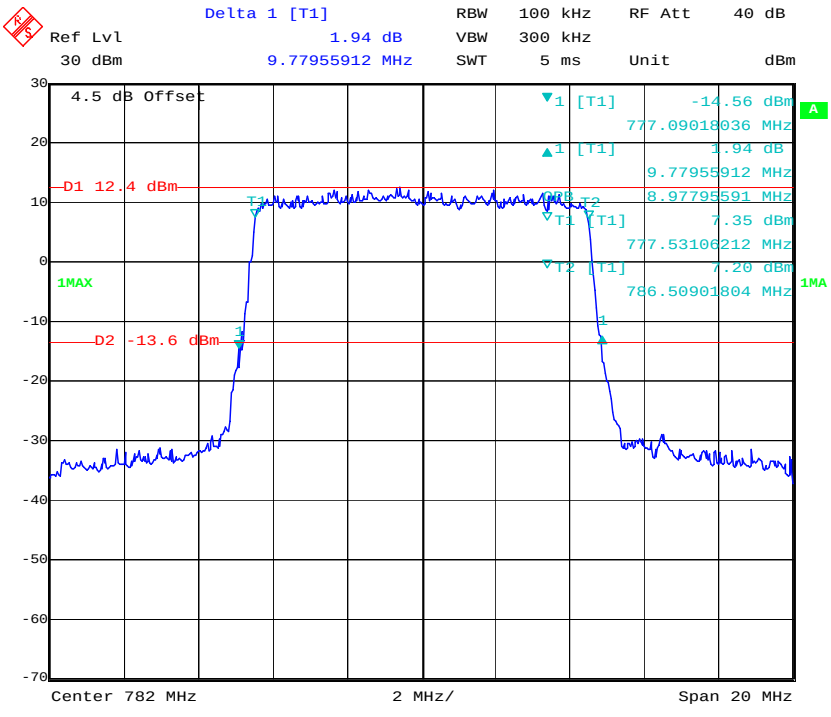


**LTE Band 13:**

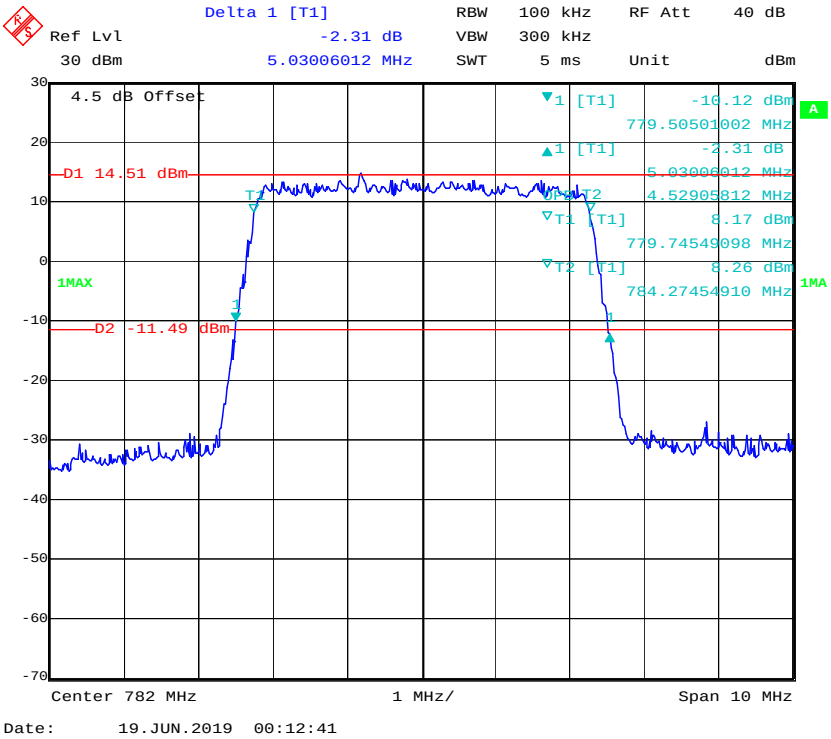
**QPSK_5 MHz**



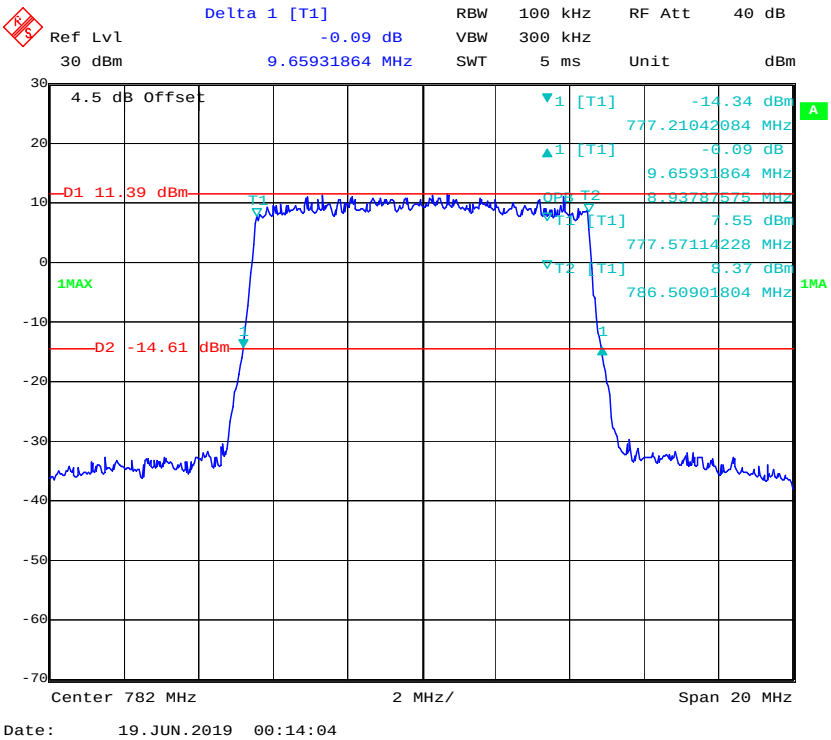

**QPSK_10 MHz**



## 16QAM_5 MHz

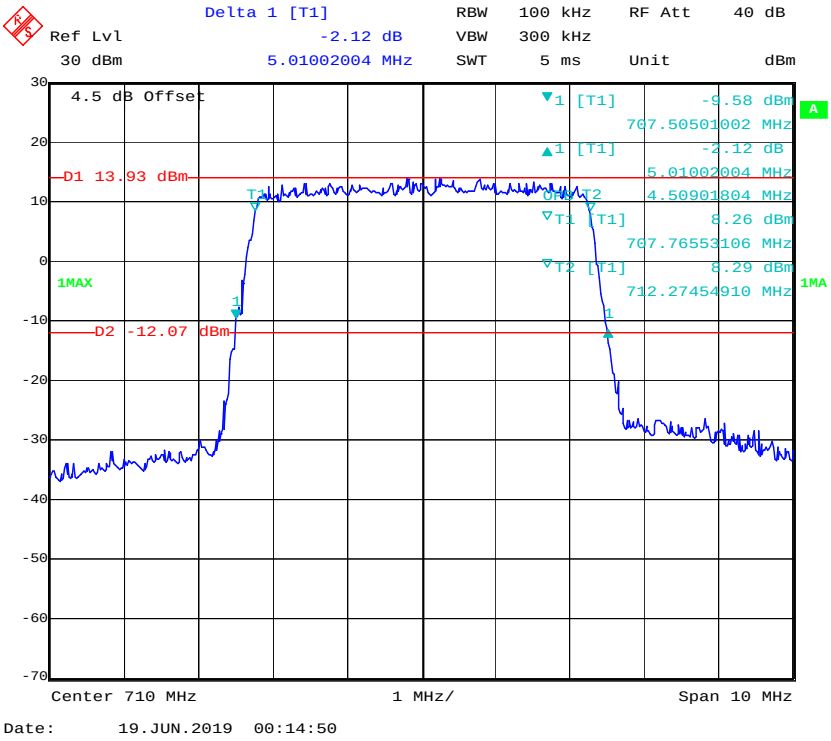



## 16QAM_10MHz



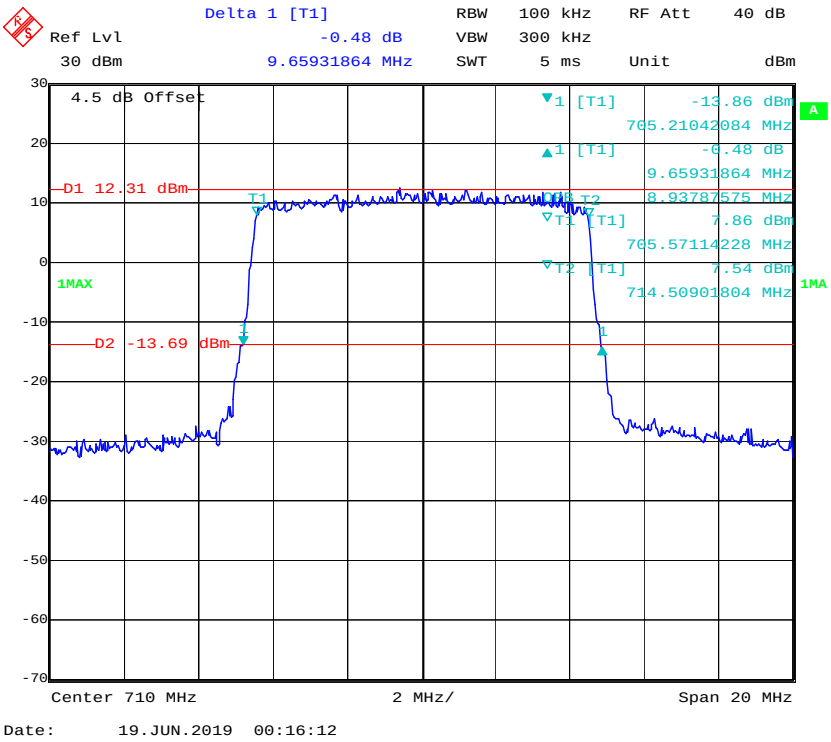
**LTE Band 17:**

**QPSK_5 MHz**



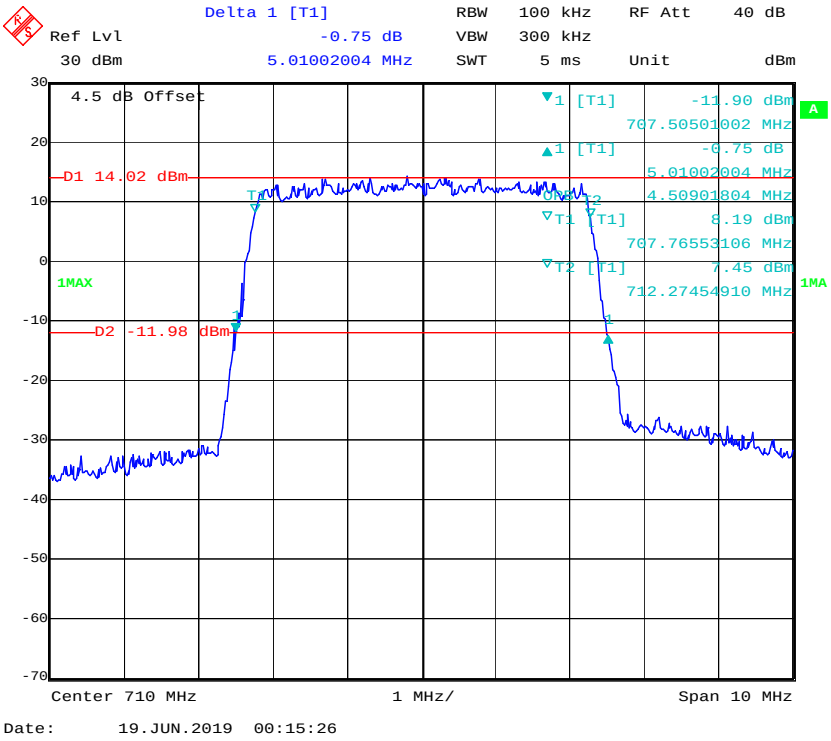

Date: 19.JUN.2019 00:14:50

**QPSK_10 MHz**

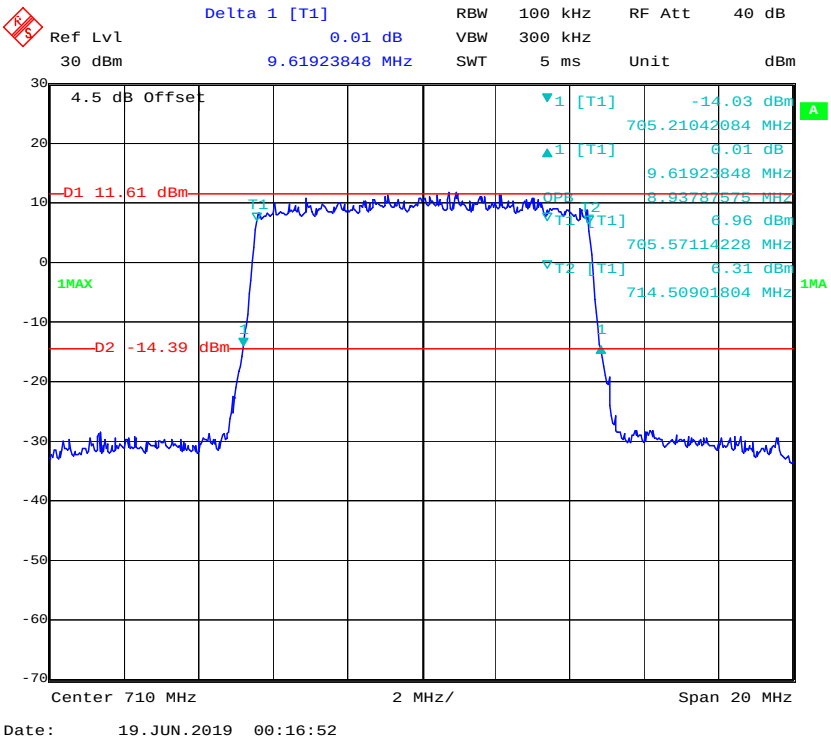



Date: 19.JUN.2019 00:16:12

## 16QAM_5 MHz

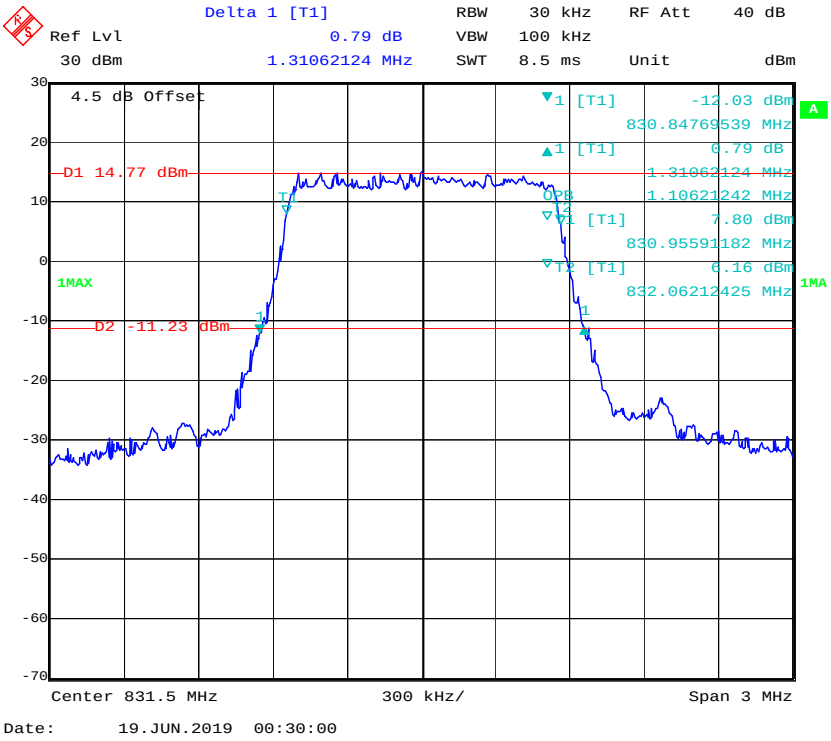



## 16QAM_10MHz

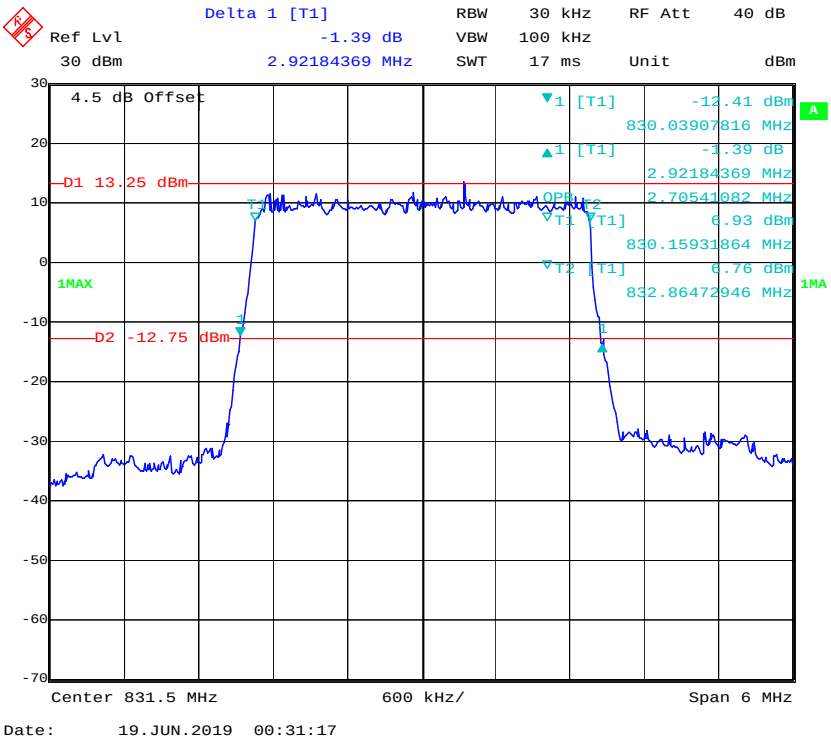


**LTE Band 26:**

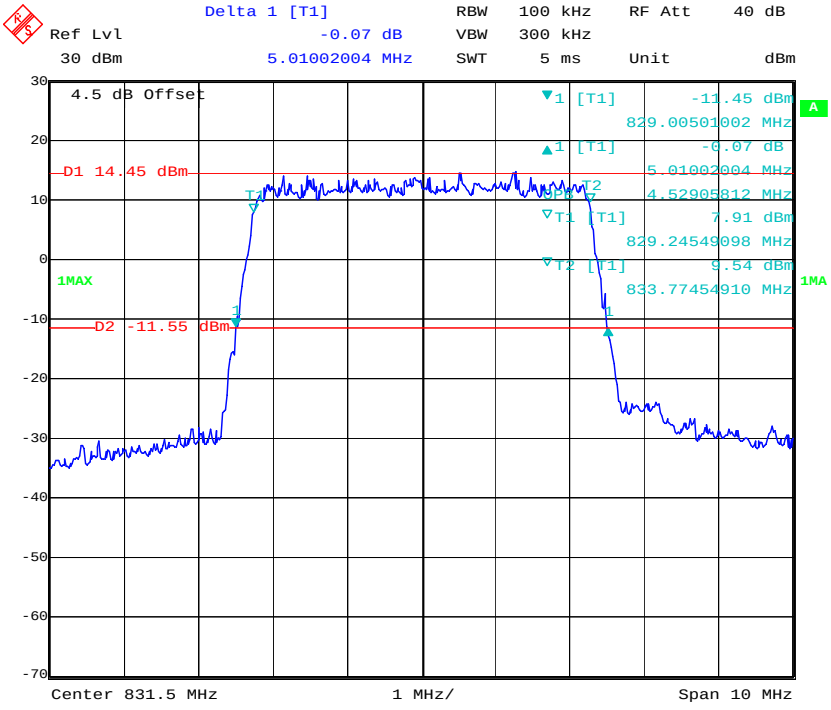
**QPSK_1.4 MHz**



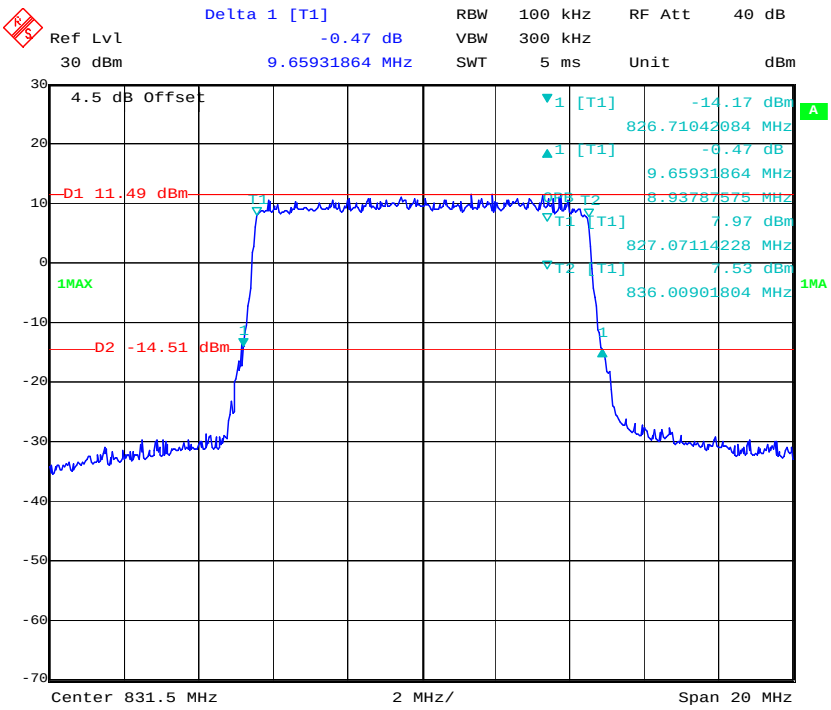

**QPSK_3 MHz**



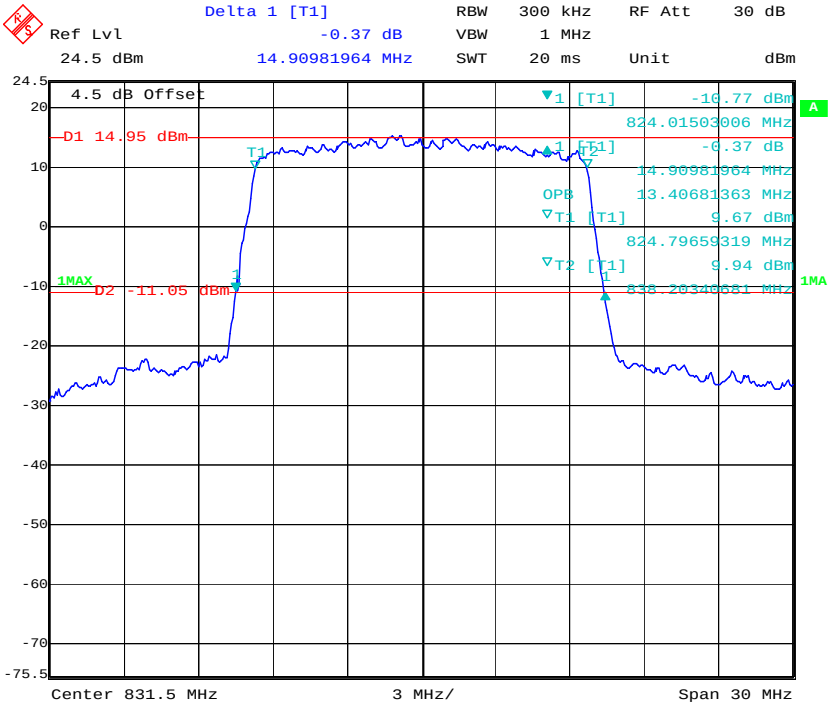
## QPSK_5 MHz



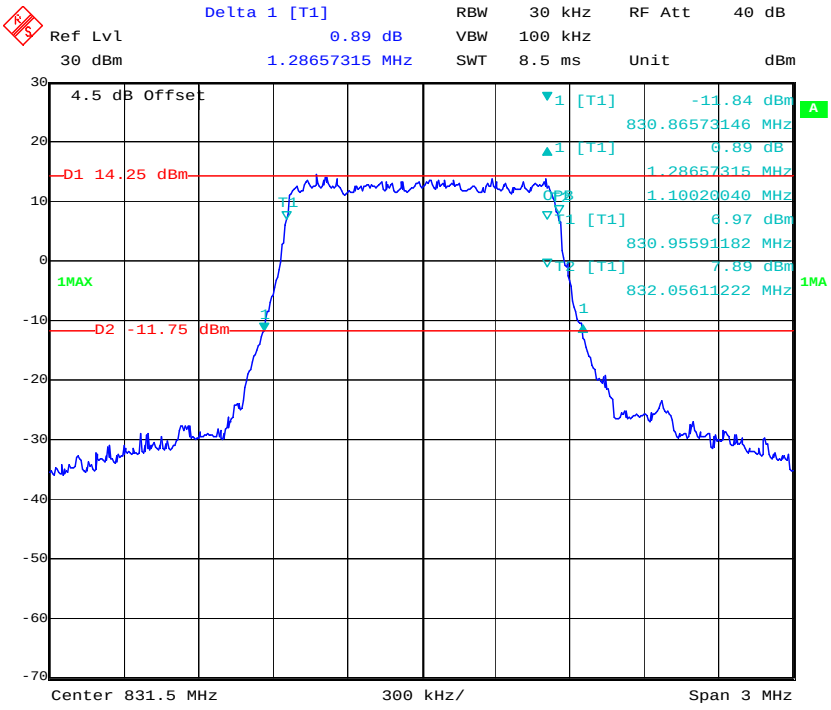

## QPSK_10 MHz



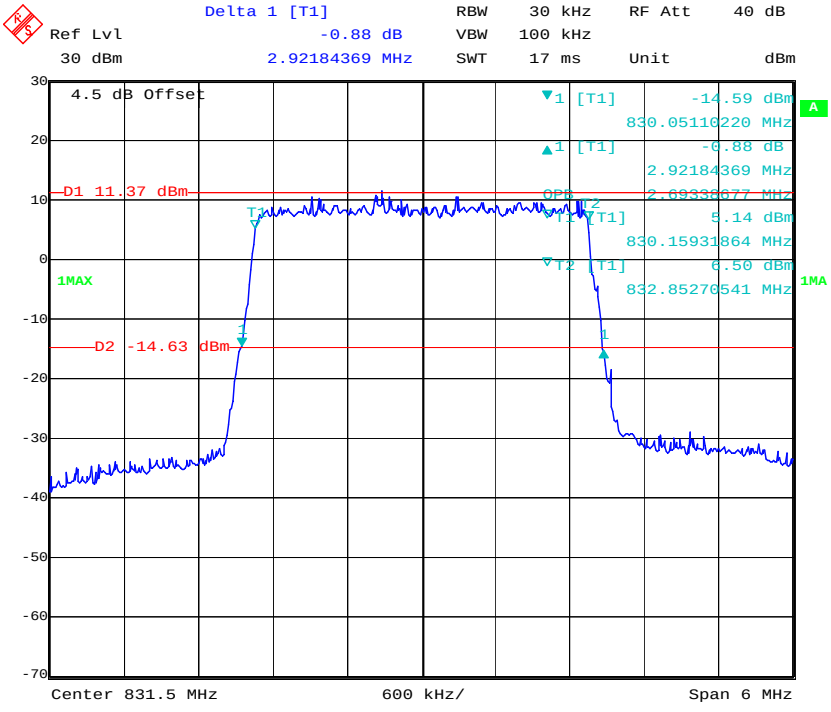
## QPSK_15 MHz



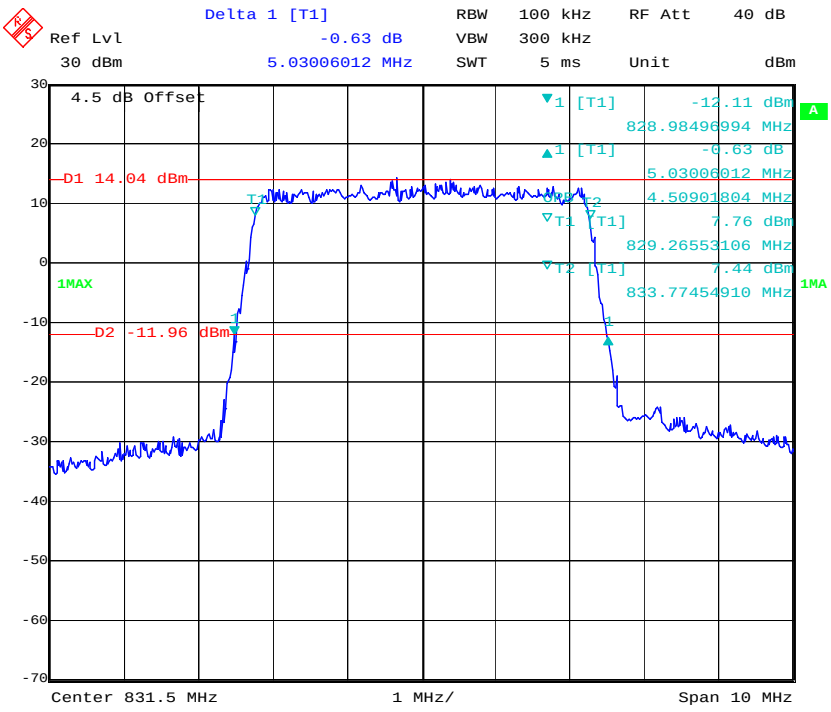

## 16QAM_1.4 MHz



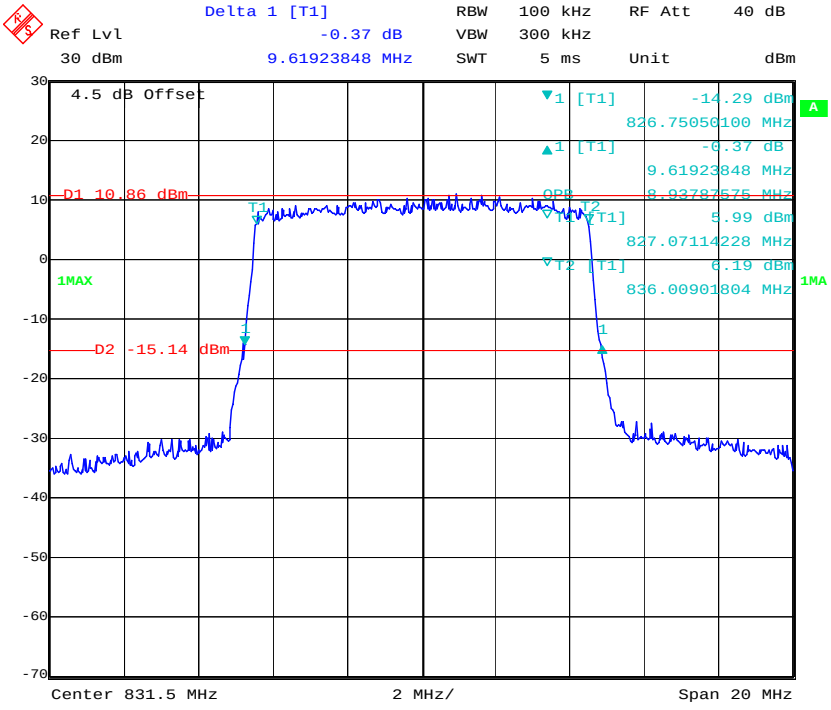
## 16QAM_3 MHz




## 16QAM_5 MHz

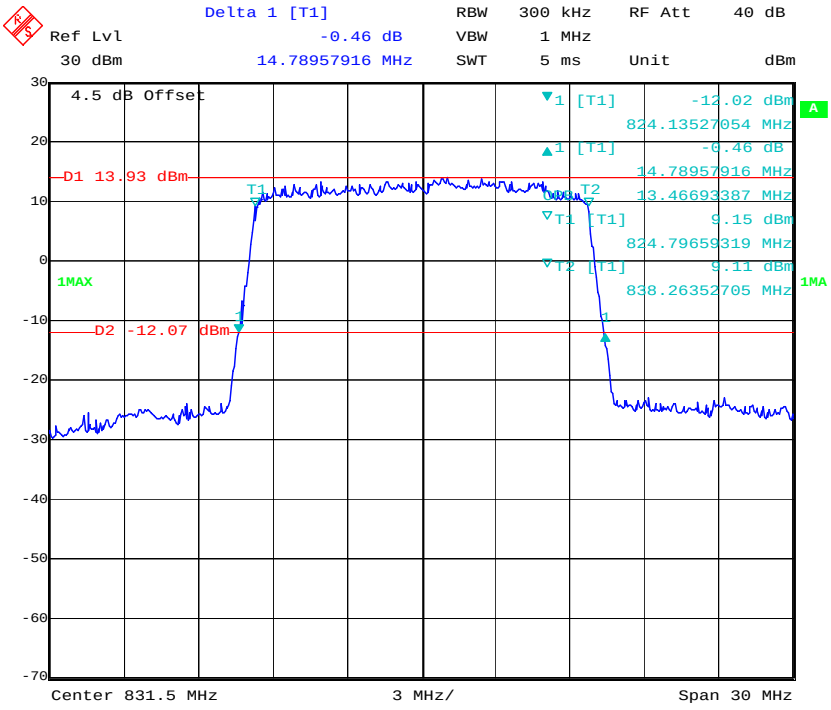


## 16QAM_10 MHz




Date: 19.JUN.2019 00:34:14

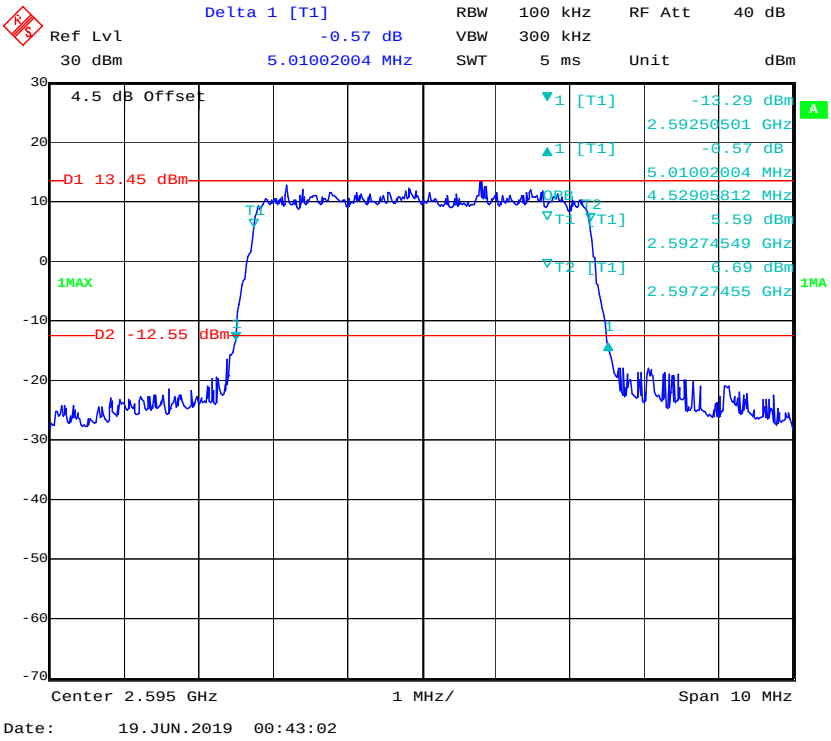
## 16QAM_15 MHz



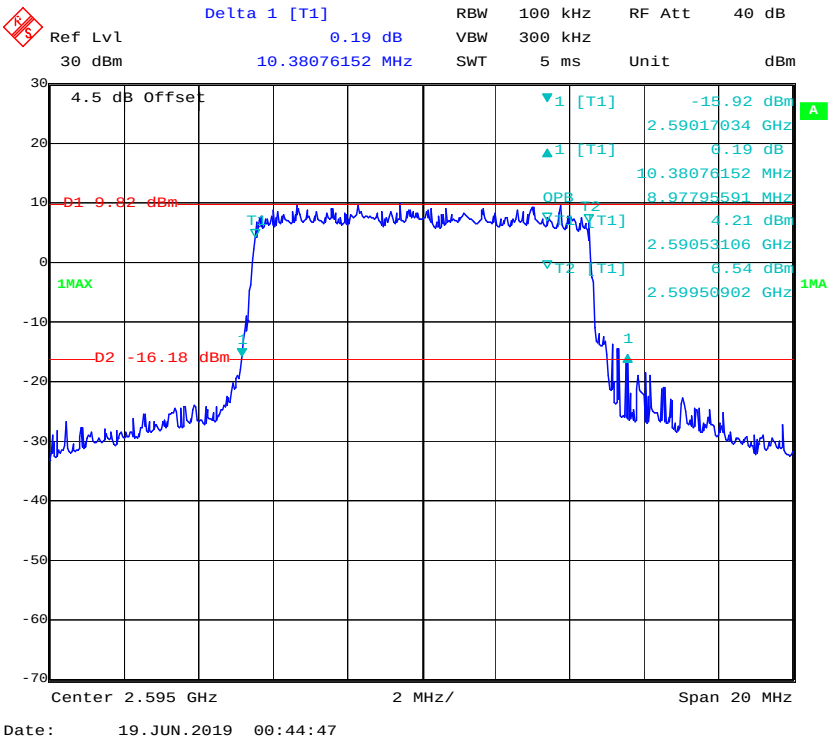

Date: 19.JUN.2019 00:35:29

**LTE Band 38:**

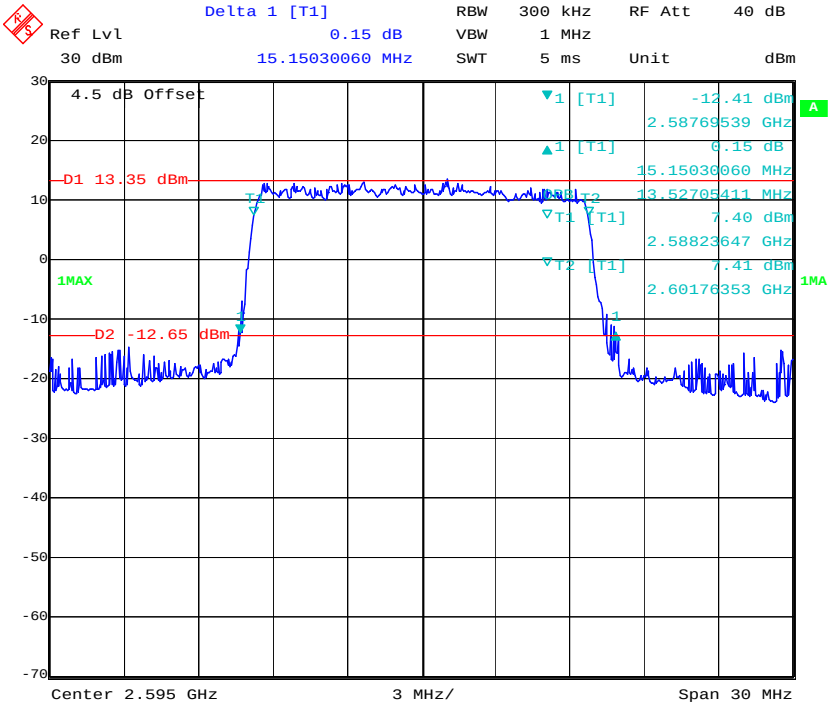
**QPSK_5 MHz**




**QPSK_10 MHz**

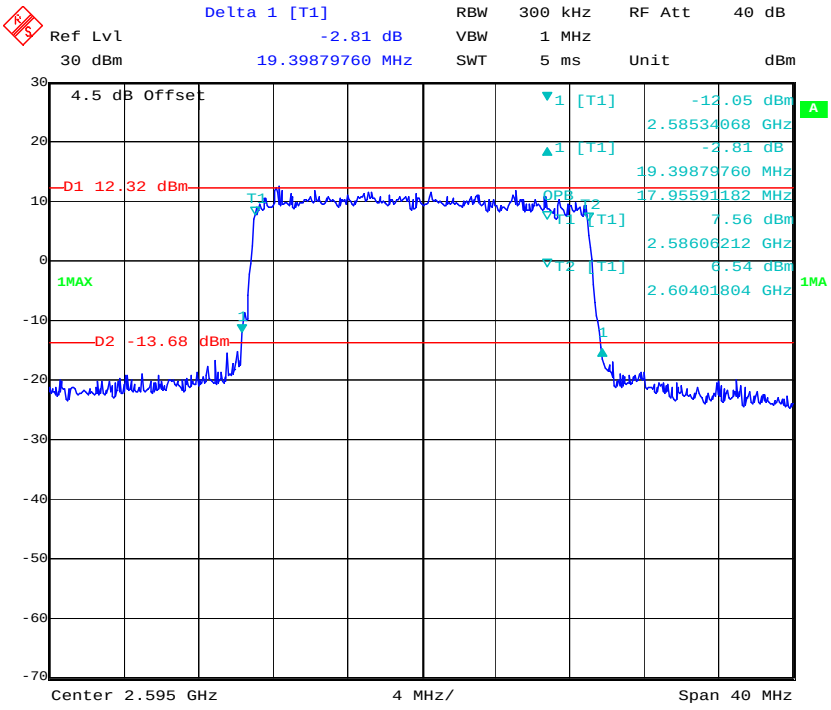


## QPSK_15 MHz



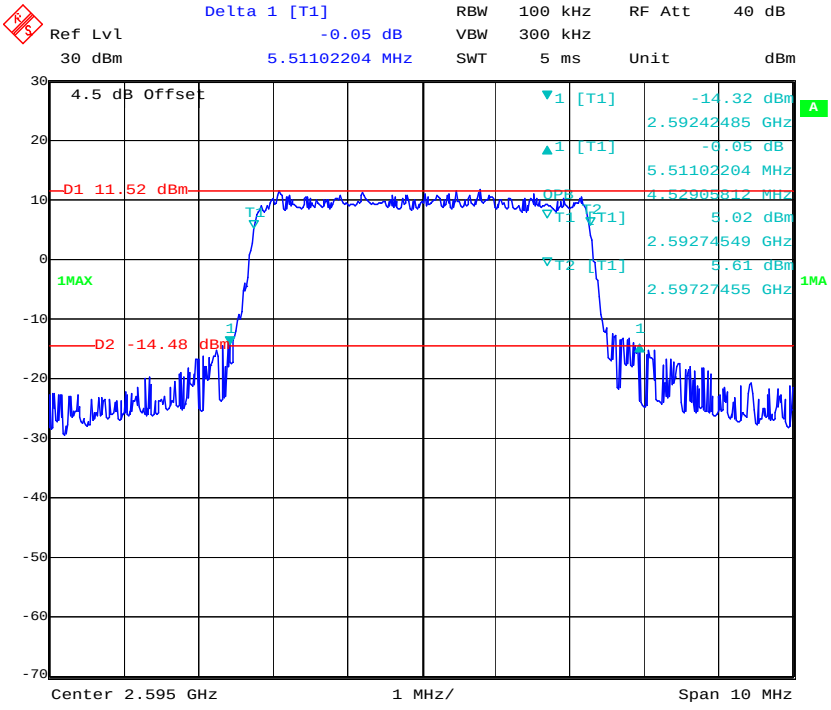

Date: 20.JUN.2019 17:43:00

## QPSK_20 MHz



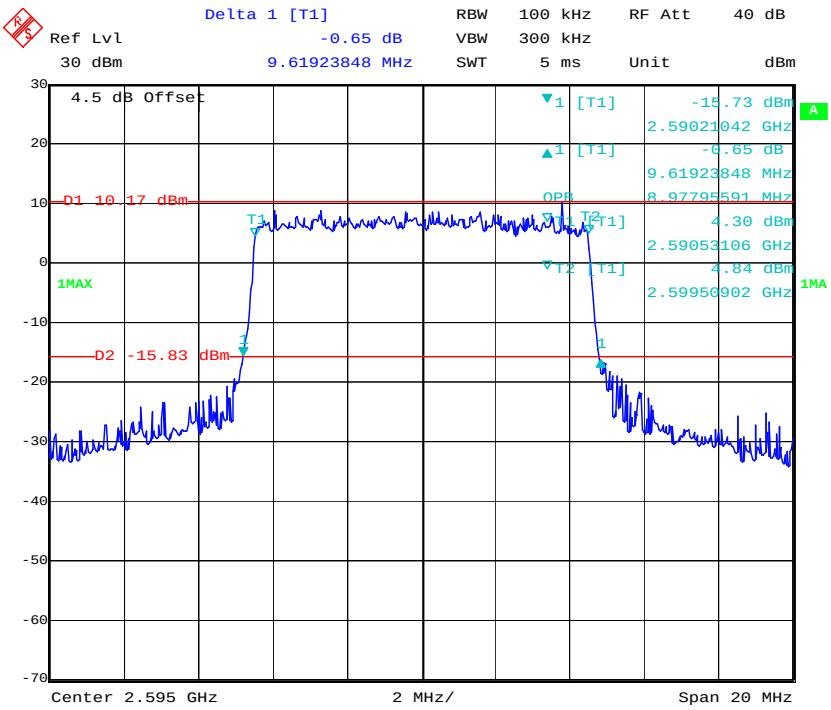

Date: 20.JUN.2019 17:44:16

## 16QAM_5 MHz



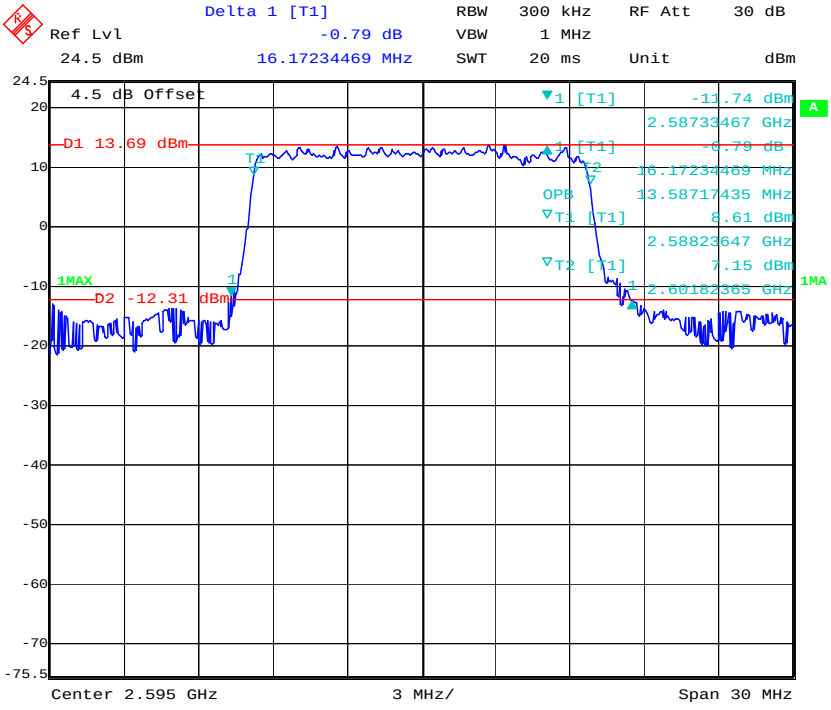

Date: 19.JUN.2019 00:44:00

## 16QAM_10 MHz



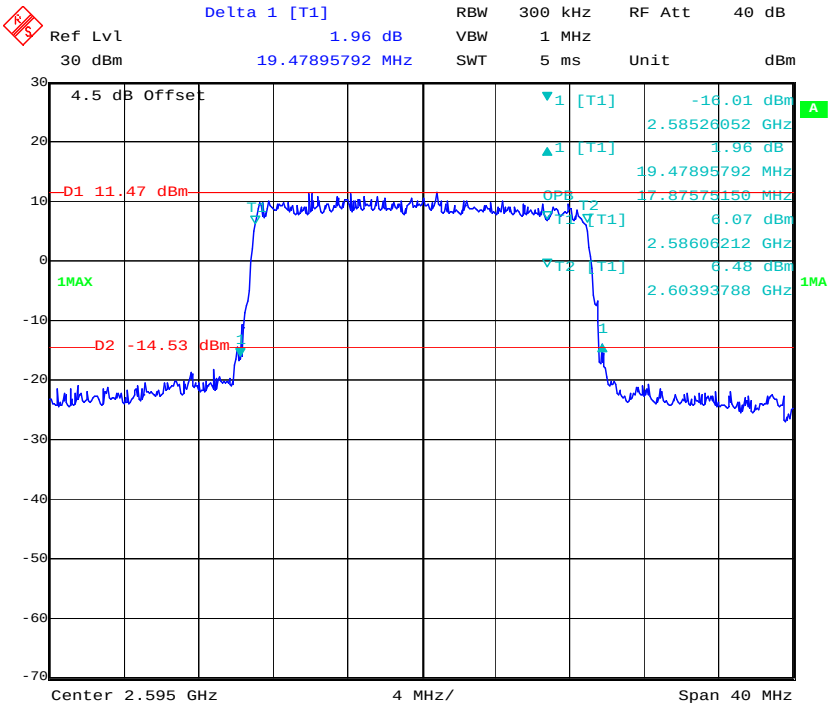

Date: 19.JUN.2019 00:45:30

## 16QAM_15 MHz




Date: 21.JUN.2019 18:29:13

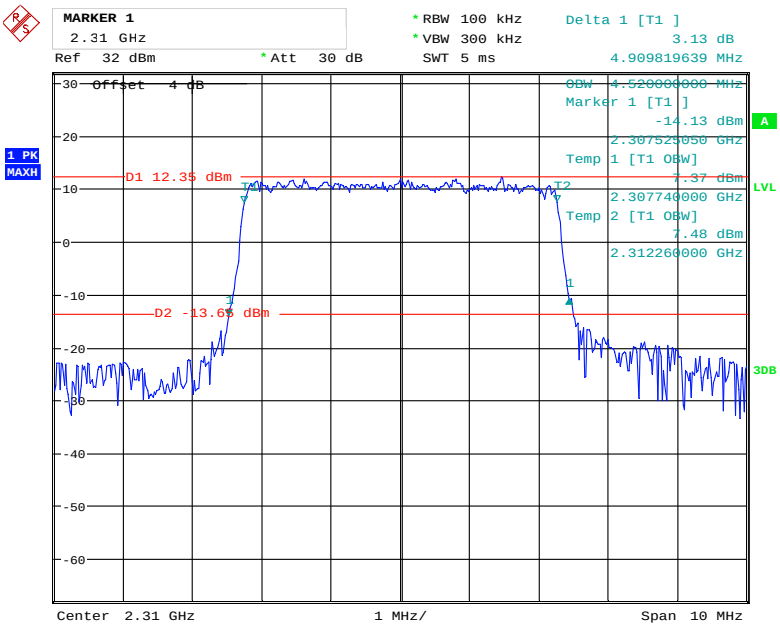
## 16QAM_20 MHz




Date: 20.JUN.2019 17:44:51

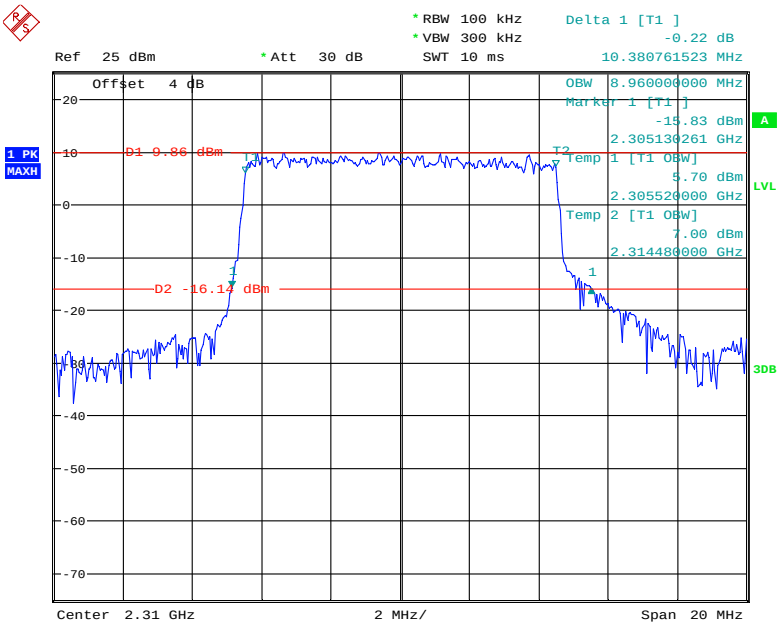
**LTE Band 40(2305-2325 MHz):**

## QPSK_5 MHz



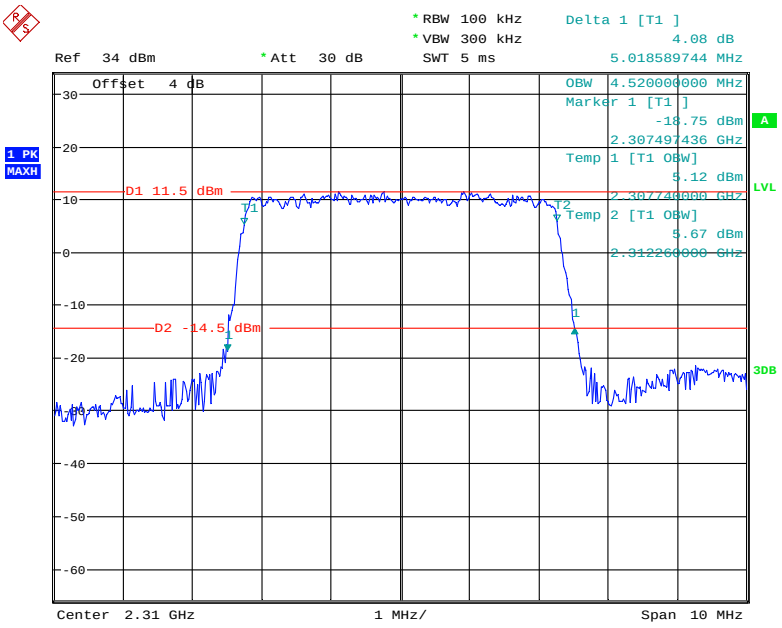

Date: 31.JUL.2019 14:18:01

## QPSK_10 MHz



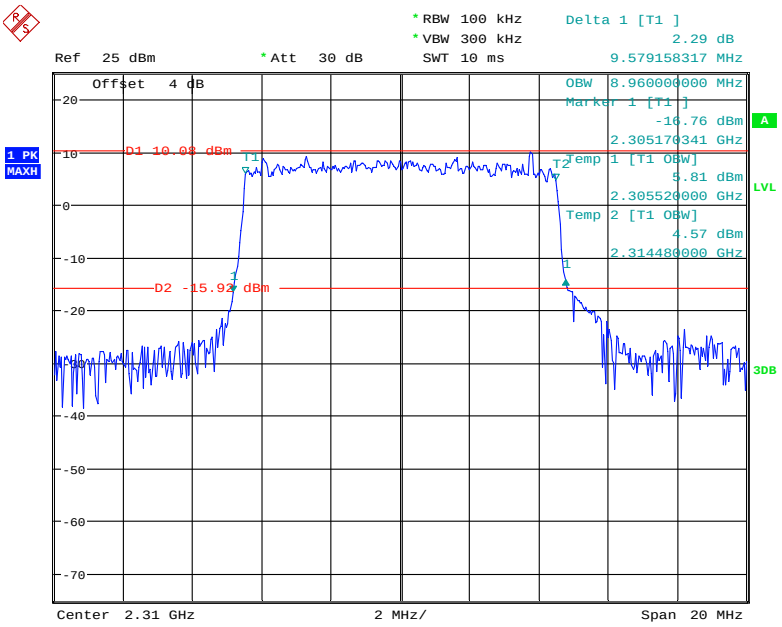

Date: 31.JUL.2019 14:19:59

## 16QAM_5 MHz




Date: 31.JUL.2019 16:05:49

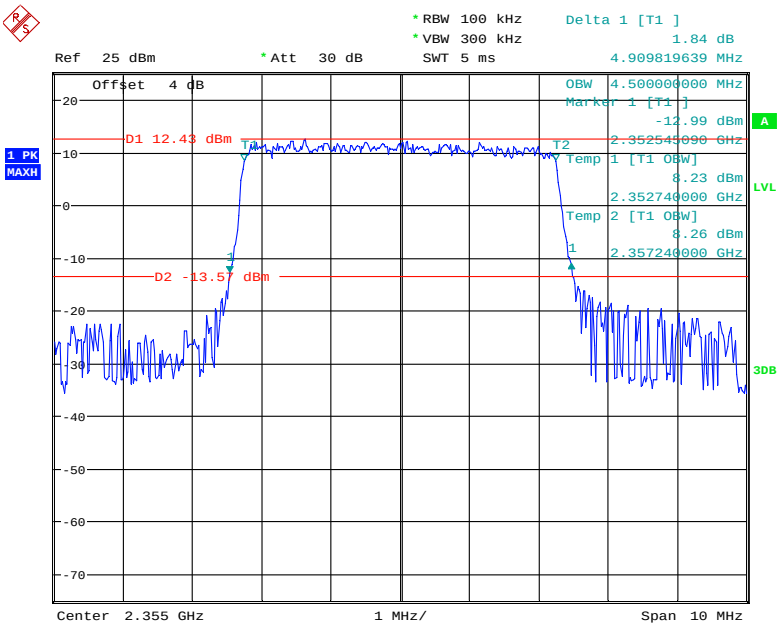
## 16QAM _10 MHz




Date: 31.JUL.2019 14:20:53

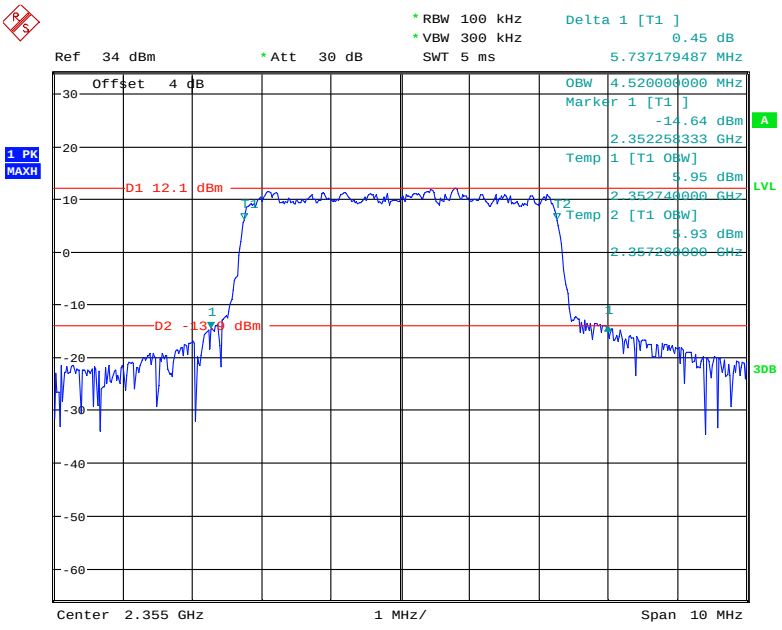
**LTE Band 40(2350-2360 MHz):**

**QPSK_5 MHz**



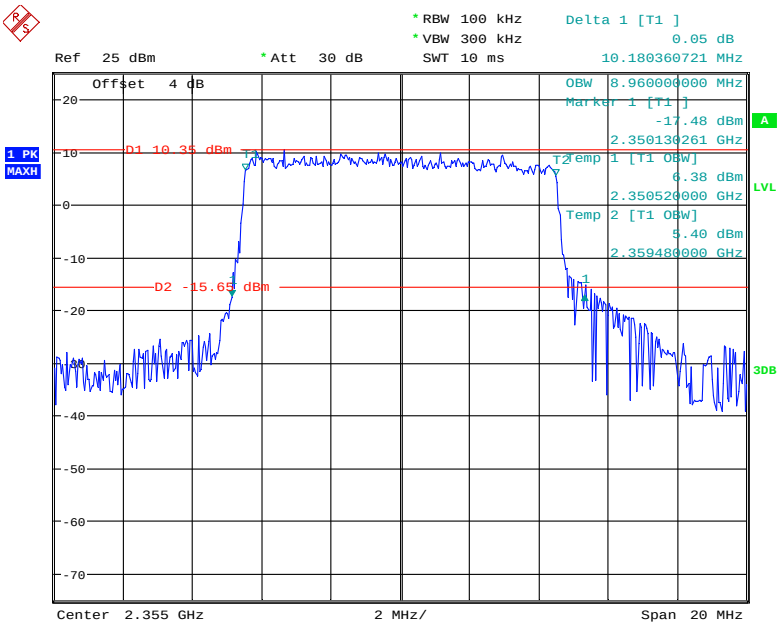

Date: 31.JUL.2019 14:37:47

**QPSK_10 MHz**



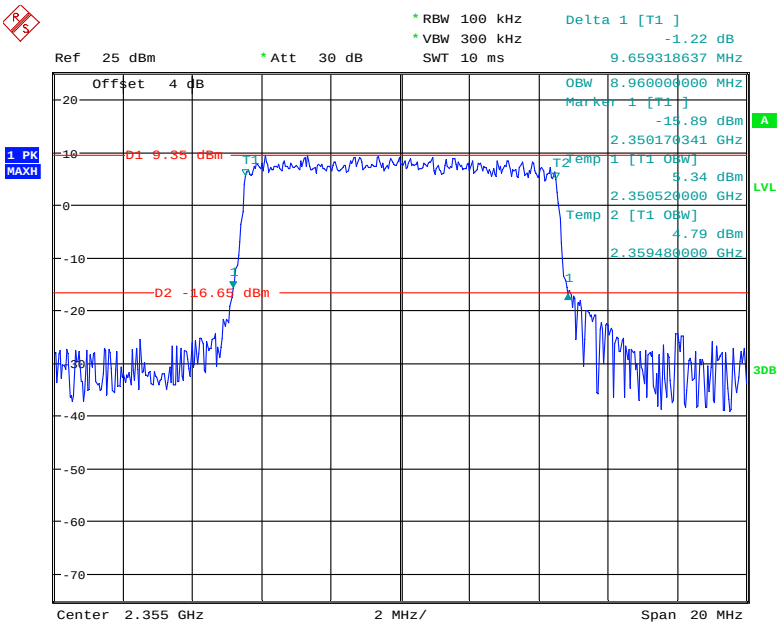

Date: 31.JUL.2019 15:54:46

## 16QAM _5 MHz




Date: 31.JUL.2019 14:38:46

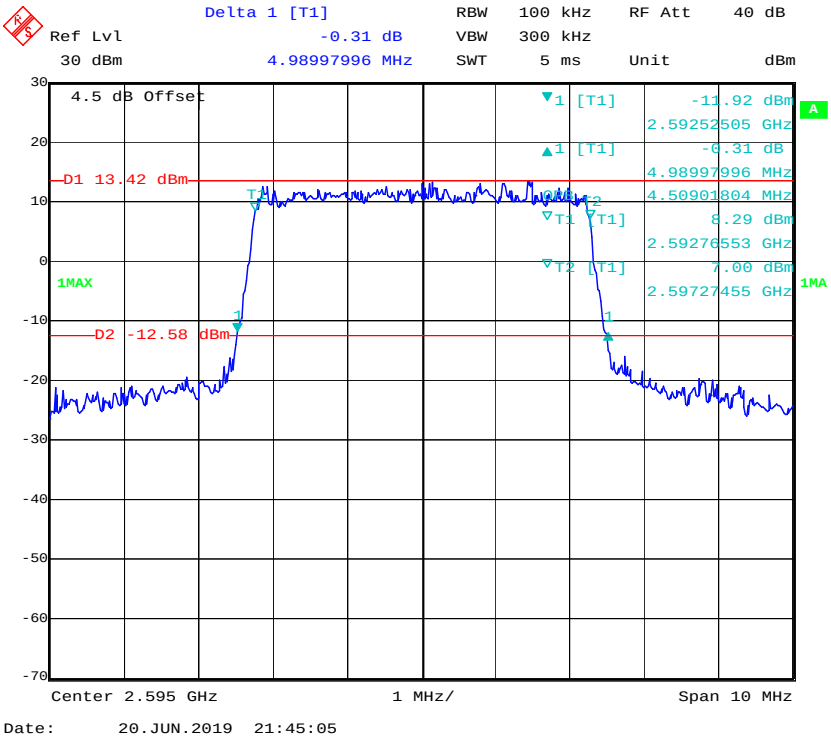
## 16QAM _10 MHz



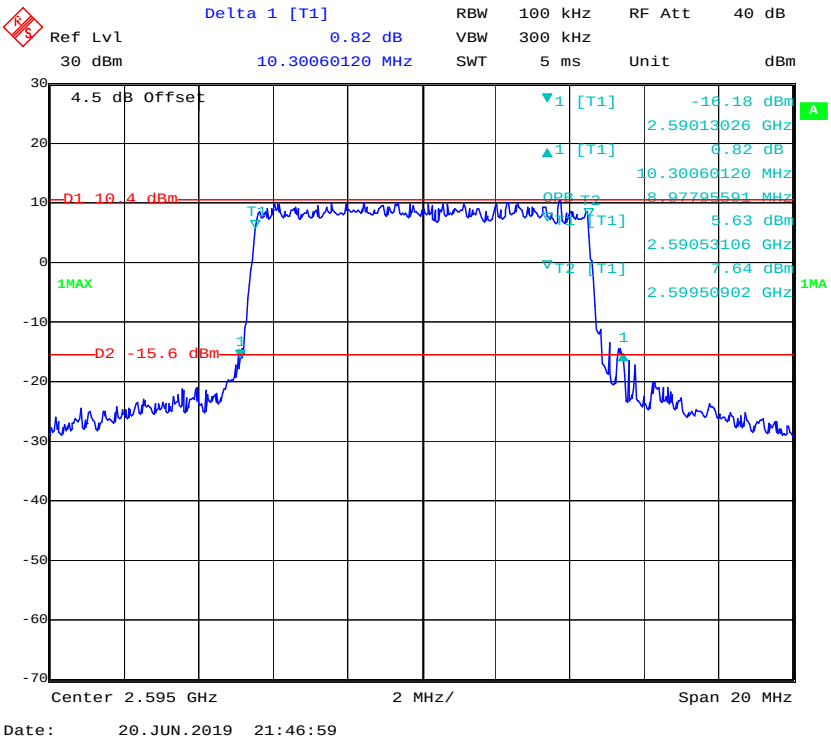

Date: 31.JUL.2019 14:39:14

**LTE Band 41:**

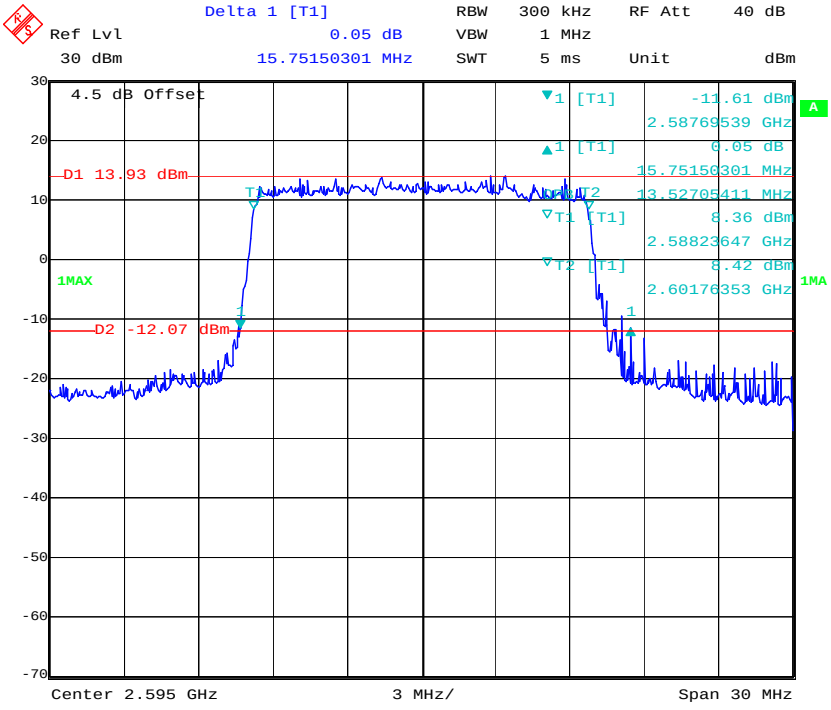
**QPSK_5 MHz**




**QPSK_10 MHz**

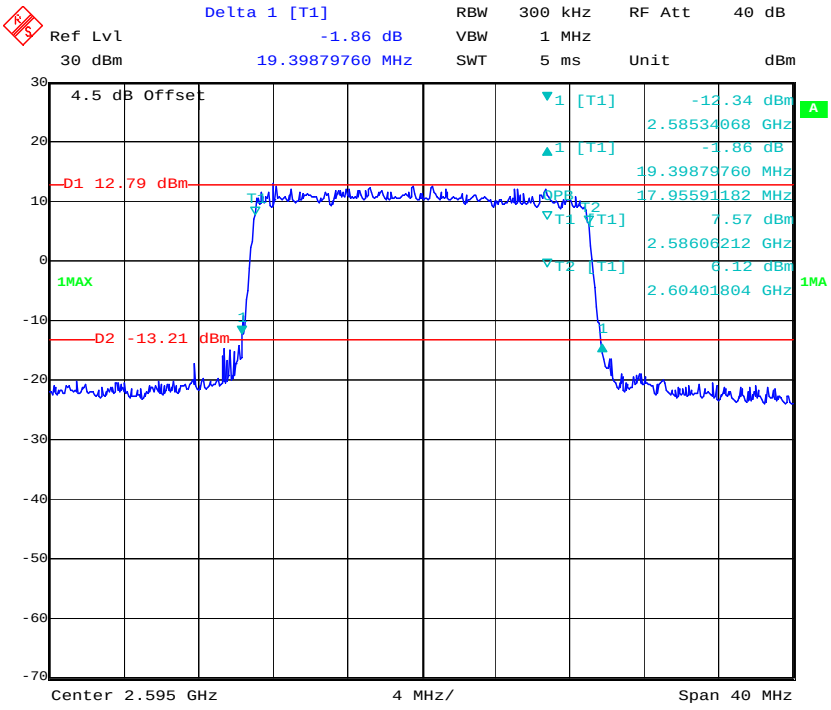


## QPSK_15 MHz



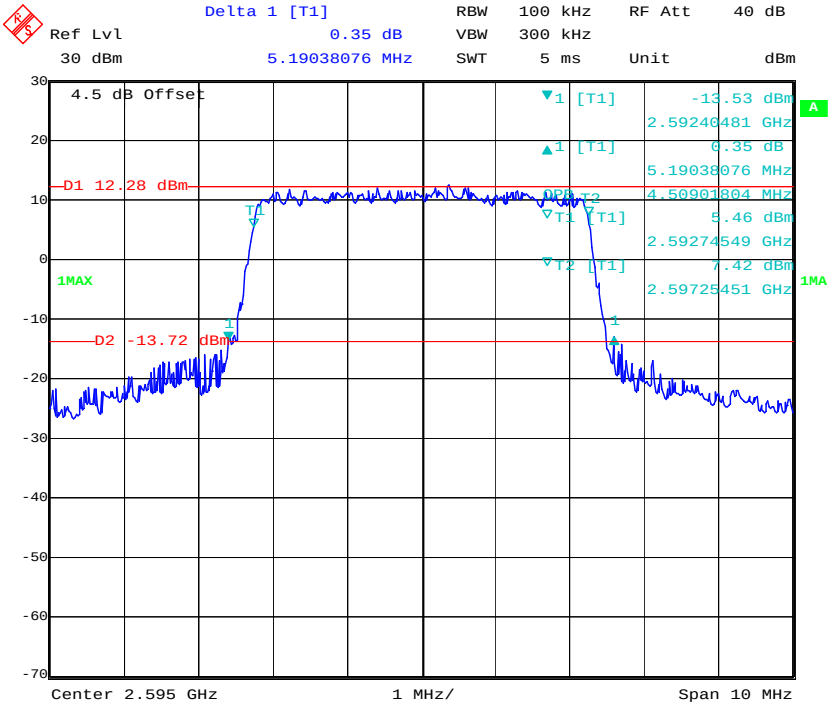

Date: 20.JUN.2019 21:48:15

## QPSK_20 MHz

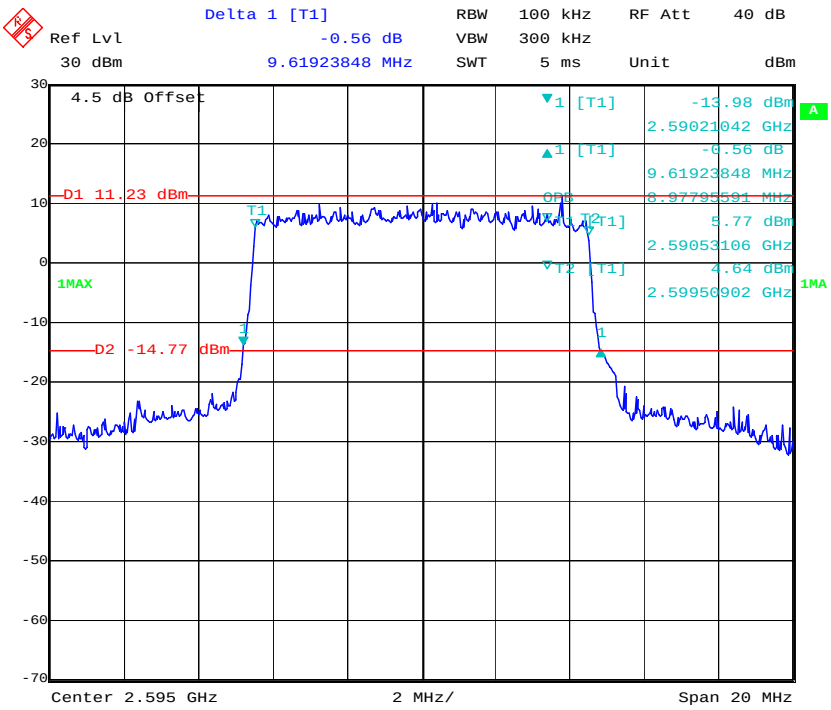



Date: 20.JUN.2019 21:49:37

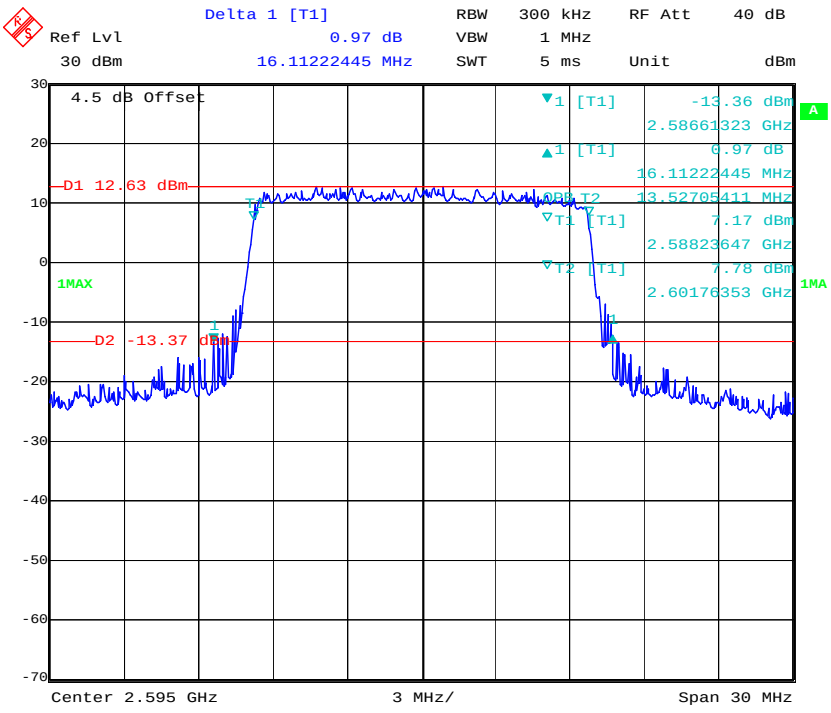
## 16QAM_5 MHz




## 16QAM_10 MHz



## 16QAM_15 MHz




## 16QAM_20 MHz