# FCC/IC RF Test Report

| | | |
|---|---|---|
| APPLICANT | : | Sony Mobile Communications AB |
| EQUIPMENT | : | Smart phone |
| BRAND NAME | : | SONY |
| MODEL NAME | : | D2306 |
| TYPE NAME | : | PM-0723-BV |
| FCC ID | : | PY7PM-0723 |
| IC | : | 4170B-PM0723 |
| STANDARD | : | 47 CFR Part 2, 24(E), 27<br>IC RSS-130 issue 1<br>IC RSS-133 issue 6<br>IC RSS-139 issue 2<br>IC RSS-199 issue 1 |
| CLASSIFICATION | : | PCS Licensed Transmitter Held to Ear (PCE) |

The product was received on Nov. 15, 2013 and testing was completed on Mar. 24, 2014. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI / TIA / EIA-603-C-2004 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

Testing Laboratory 1190

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# TABLE OF CONTENTS

**REVISION HISTORY** ..... **3**

**SUMMARY OF TEST RESULT** ..... **4**

**1 GENERAL DESCRIPTION** ..... **6**

1.1 Applicant ..... 6
1.2 Manufacturer ..... 6
1.3 Feature of Equipment Under Test ..... 6
1.4 Product Specification of Equipment Under Test ..... 7
1.5 Modification of EUT ..... 8
1.6 Emission Designator ..... 9
1.7 Testing Site ..... 11
1.8 Applied Standards ..... 11

**2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST** ..... **12**

2.1 Test Mode ..... 12
2.2 Connection Diagram of Test System ..... 14
2.3 Support Unit used in test configuration and system ..... 14
2.4 Measurement Results Explanation Example ..... 14

**3 TEST RESULT** ..... **15**

3.1 Conducted Output Power Measurement ..... 15
3.2 Peak-to-Average Ratio ..... 25
3.3 Effective Radiated Power and Equivalent Isotropic Radiated Power Measurement ..... 39
3.4 Occupied Bandwidth ..... 59
3.5 Conducted Band Edge Measurement ..... 168
3.6 Conducted Spurious Emission Measurement ..... 242
3.7 Radiated Spurious Emission Measurement ..... 298
3.8 Frequency Stability Measurement ..... 408

**4 LIST OF MEASURING EQUIPMENT** ..... **415**

**5 UNCERTAINTY OF EVALUATION** ..... **417**

# REVISION HISTORY

| REPORT NO. | VERSION | DESCRIPTION | ISSUED DATE |
|---|---|---|---|
| FG3N1535B | Rev. 01 | Initial issue of report | Jan. 24, 2014 |
| FG3N1535B | Rev. 02 | Adding description of LTE Rel. Version in section 1.3 | Feb. 25, 2014 |
| FG3N1535B | Rev. 03 | Adding LTE band 2 information. | Mar. 26, 2014 |
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# SUMMARY OF TEST RESULT

| Report Section | FCC Rule | IC Rule | Description | Limit | Result | Remark |
|---|---|---|---|---|---|---|
| 3.1 | §2.1046 | RSS-Gen(4.8)<br>RSS-130 (4.4)<br>RSS-133 (6.4)<br>RSS-139 (6.4)<br>RSS-199 (4.4) | Conducted Output Power | Reporting Only | PASS | - |
| 3.2 | 27.50(d)(5) | RSS-130 (4.4)<br>RSS-133 (6.4)<br>RSS-139 (6.4) | Peak-to-Average Ratio | <13 dB | PASS | - |
| 3.3 | §27.50(c)(10) | N/A | Effective Radiated Power (Band 17) | ERP < 3 Watts | PASS | - |
| | N/A | RSS-130 (4.4) | Equivalent Isotropic Radiated Power (Band 17) | EIRP < 5 Watts | | |
| | §24.232(c)<br>§27.50(h)(2) | SRSP-510(5.1.2)<br>RSS-133 (6.4)<br>RSS-199 (4.4) | Equivalent Isotropic Radiated Power (Band 2) (Band 7) | EIRP < 2Watt | | |
| | §27.50(d)(4) | RSS-139 (6.4)<br>SRSP-513(5.1.2) | Equivalent Isotropic Radiated Power (Band 4) | EIRP < 1Watt | PASS | |
| 3.4 | §2.1049<br>§24.238(b)<br>§27.53(h)(3) | RSS-GEN (4.6.1)<br>RSS-133 (3.1)<br>RSS-139 (3.1)<br>RSS-199 (4.2) | Occupied Bandwidth | Reporting Only | PASS | - |
| 3.5 | §2.1051<br>§24.238(a)<br>§27.53 (f)<br>§27.53(g)<br>§27.53(l)(4) | RSS-GEN(4.9)<br>RSS-130(4.6)<br>RSS-133 (6.5.1)<br>RSS-139 (6.5)<br>RSS-199 (4.5) | Conducted Band Edge Measurement (Band 2) (Band 4) (Band 17) (Band 7) | < 43+10log10(P[Watts]) | PASS | - |

| Report Section | FCC Rule | IC Rule | Description | Limit | Result | Remark |
|---|---|---|---|---|---|---|
| 3.6 | §2.1051<br>§24.238(a)<br>§27.53(f) (g) | RSS-GEN(4.9)<br>RSS-130 (4.6)<br>RSS-133 (6.5.1)<br>RSS-139 (6.5) | Conducted Spurious Emission<br>(Band 2) (Band 4) (Band 17) | < 43+10log10(P[Watts]) | PASS | - |
| | §2.1051<br>§27.53(l)(4) | RSS-GEN(4.9)<br>RSS-199 (4.5) | Conducted Spurious Emission<br>(Band 7) | < 55+10log10(P[Watts]) | | |
| 3.7 | §2.1053<br>§24.238(a)<br>§27.53(f) (g) | RSS-GEN(4.9)<br>RSS-130 (4.6)<br>RSS-133 (6.5.1)<br>RSS-139 (6.5) | Radiated Spurious Emission<br>(Band 2) (Band 4) (Band 17) | < 43+10log$_{10}$(P[Watts]) | PASS | Under limit<br>3.51 dB at<br>7545.000 MHz |
| | §2.1053<br>§27.53(l)(4) | RSS-GEN(4.9)<br>RSS-199 (4.5) | Radiated Spurious Emission<br>(Band 7) | < 55+10log10(P[Watts]) | | |
| 3.8 | §2.1055<br>§24.235<br>§27.54 | RSS-GEN(4.7)<br>RSS-130 (4.3)<br>RSS-133(6.3)<br>RSS-139 (6.3)<br>RSS-199 (4.3) | Frequency Stability<br>Temperature & Voltage | < 2.5 ppm | PASS | - |

# 1 General Description

## 1.1 Applicant

**Sony Mobile Communications AB**
Nya Vattentornet, 22188 Lund, Sweden

## 1.2 Manufacturer

**Compal Communications, INC.**
No. 385, Yangguang Street, Neihu, Taipei 11491, Taiwan

## 1.3 Feature of Equipment Under Test

The Equipment Under Test (hereafter called: EUT) is smart phone supporting, GSM / WCDMA / LTE / Wi-Fi 2.4GHz 802.11b/g/n, Wi-Fi 5GHz 802.11a/n, Bluetooth with FM Receiver, GPS, and NFC features, and below is details of information.

| Product Feature | |
|---|---|
| **Equipment** | Smart phone |
| **Brand Name** | SONY |
| **Model Name** | D2306 |
| **Type name** | PM-0723-BV |
| **FCC ID** | PY7PM-0723 |
| **IC** | 4170B-PM0723 |
| **GSM Operating Band(s)** | GSM 850/900/1800/1900MHz |
| **GPRS / EGPRS Multi Slot Class** | GPRS Class 33 , EGPRS Class 33 |
| **WCDMA Operating Band(s)** | FDD Band I / II / IV / V |
| **WCDMA Rel. Version** | Rel. 8 |
| **LTE Operating Band(s)** | FDD Band II / IV / VII / XVII |
| **LTE Rel. Version** | Rel. 9 |
| **Wi-Fi Specification** | 802.11b/g/n (HT20) 802.11a/n (HT20/HT40) |
| **Bluetooth Version** | v3.0 + EDR / v4.0 - LE |
| **NFC Specification** | ISO14443A / ISO14443B / Felica |
| **Power Supply** | Battery / AC Adapter / Car Charger |

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

## 1.4 Product Specification of Equipment Under Test

| Product Specification subjective to this standard | |
|---|---|
| **Tx Frequency** | LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz<br>LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz<br>LTE Band 17 : 706.5 MHz ~ 713.5 MHz<br>LTE Band 7 : 2506.5 MHz ~ 2534.5 MHz<br>and 2556 MHz ~ 2567.5 MHz |
| **Rx Frequency** | LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz<br>LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz<br>LTE Band 17 : 736.5 MHz ~ 743.5 MHz<br>LTE Band 7 : 2626.5MHz ~ 2654.5 MHz<br>and 2676 MHz ~ 2687.5 MHz |
| **Bandwidth** | 1.4MHz / 3MHz / 5MHz/ 10MHz / 15MHz / 20MHz (Band 2)<br>1.4MHz / 3MHz / 5MHz/ 10MHz / 15MHz / 20MHz (Band 4)<br>5MHz/ 10MHz / 15MHz / 20MHz (Band 7)<br>5MHz / 10MHz (Band 17) |
| **Maximum Output Power to Antenna** | **<LTE Band 2>**<br>1.4MHz: 23.29 dBm / 0.2133 W<br>3MHz: 23.16 dBm / 0.2070 W<br>5MHz: 23.16 dBm / 0.2070 W<br>10MHz: 23.34 dBm / 0.2158 W<br>15MHz: 23.86 dBm / 0.2432 W<br>20MHz: 23.85 dBm / 0.2427 W<br>**<LTE Band 4>**<br>1.4MHz: 23.76 dBm / 0.2377 W<br>3MHz: 23.67 dBm / 0.2328 W<br>5MHz: 23.70 dBm / 0.2344 W<br>10MHz: 23.68 dBm / 0.2333 W<br>15MHz: 23.72 dBm / 0.2355 W<br>20MHz: 23.86 dBm / 0.2432 W<br>**<LTE Band 7>**<br>5MHz: 23.98 dBm / 0.2500 W<br>10MHz: 23.96 dBm / 0.2489 W<br>15MHz: 23.98 dBm / 0.2500 W<br>20MHz: 23.99 dBm / 0.2506 W<br>**<LTE Band 17>**<br>5MHz: 23.54 dBm / 0.2259 W<br>10MHz: 23.60 dBm / 0.2291 W |
| **Antenna Type** | PIFA Antenna |
| **Type of Modulation** | QPSK / 16QAM |
| **EUT Serial Number** | IMEI : 004402451650745<br>S/N : 468191316BB |
| **H/W** | A |
| **S/W** | 18.0.C.0.30 |
| **EUT Stage** | Production Unit |

| Accessory List | |
|---|---|
| **AC Adapter** | Model No. : EP800 |
| | Type No. : CAA-0002016-US B |
| **Battery** | Model No. : LIS1502ERPC |
| | Type No. : LIS1502ERPC |
| **Earphone** | Model No. : MH410c |
| | Type No. : AG-1100 |
| **USB Cable** | Model No. : AHAB EC450 |
| | Part No. : 1242-6715.4 |

**Note:**

1. Above EUT list and accessory list used are electrically identical per declared by manufacturer.
2. Above the accessories list are used to exercise the EUT during test, and the serial number of each type of accessories is listed in each section of this report.
3. For other wireless features of this EUT, test report will be issued separately.

## 1.5 Modification of EUT

No modifications are made to the EUT during all test items.

## 1.6 Emission Designator

| FCC Rule | System | Type of Modulation | BW | Emission Designator | Frequency Tolerance (ppm) | Maximum ERP | Maximum EIRP |
|---|---|---|---|---|---|---|---|
| Part 24 | LTE Band 2 | QPSK | 1.4 MHz | 1M12G7D | - | - | 0.2438 W |
| Part 24 | LTE Band 2 | 16QAM | 1.4 MHz | 1M12D7W | - | - | 0.2265 W |
| Part 24 | LTE Band 2 | QPSK | 3 MHz | 2M73G7D | - | - | 0.2410 W |
| Part 24 | LTE Band 2 | 16QAM | 3 MHz | 2M74D7W | - | - | 0.2018 W |
| Part 24 | LTE Band 2 | QPSK | 5 MHz | 4M52G7D | - | - | 0.2254 W |
| Part 24 | LTE Band 2 | 16QAM | 5 MHz | 4M51D7W | - | - | 0.1837 W |
| Part 24 | LTE Band 2 | QPSK | 10 MHz | 9M13G7D | 0.0004 ppm | - | 0.2138 W |
| Part 24 | LTE Band 2 | 16QAM | 10 MHz | 9M07D7W | - | - | 0.1778 W |
| Part 24 | LTE Band 2 | QPSK | 15 MHz | 13M5G7D | - | - | 0.2415 W |
| Part 24 | LTE Band 2 | 16QAM | 15 MHz | 13M5D7W | - | - | 0.2046 W |
| Part 24 | LTE Band 2 | QPSK | 20 MHz | 18M3G7D | - | - | 0.2234 W |
| Part 24 | LTE Band 2 | 16QAM | 20 MHz | 18M5D7W | - | - | 0.1841 W |
| Part 27 | LTE Band 4 | QPSK | 1.4 MHz | 1M11G7D | - | - | 0.1611 W |
| Part 27 | LTE Band 4 | 16QAM | 1.4 MHz | 1M11D7W | - | - | 0.1419 W |
| Part 27 | LTE Band 4 | QPSK | 3 MHz | 2M74G7D | - | - | 0.1959 W |
| Part 27 | LTE Band 4 | 16QAM | 3 MHz | 2M73D7W | - | - | 0.1259 W |
| Part 27 | LTE Band 4 | QPSK | 5MHz | 4M51G7D | - | - | 0.1377 W |
| Part 27 | LTE Band 4 | 16QAM | 5MHz | 4M51D7W | - | - | 0.1197 W |
| Part 27 | LTE Band 4 | QPSK | 10MHz | 9M12G7D | 0.04 ppm | - | 0.1963 W |
| Part 27 | LTE Band 4 | 16QAM | 10MHz | 9M04D7W | - | - | 0.1690 W |
| Part 27 | LTE Band 4 | QPSK | 15MHz | 13M5G7D | - | - | 0.1742 W |
| Part 27 | LTE Band 4 | 16QAM | 15MHz | 13M5D7W | - | - | 0.1585 W |
| Part 27 | LTE Band 4 | QPSK | 20MHz | 18M5G7D | - | - | 0.1626 W |
| Part 27 | LTE Band 4 | 16QAM | 20MHz | 18M5D7W | - | - | 0.1303 W |

| FCC Rule | System | Type of Modulation | BW | Emission Designator | Frequency Tolerance (ppm) | Maximum ERP | Maximum EIRP |
|---|---|---|---|---|---|---|---|
| Part 27 | LTE Band 7 | QPSK | 5MHz | 4M51G7D | - | - | 0.5433 W |
| Part 27 | LTE Band 7 | 16QAM | 5MHz | 4M50D7W | - | - | 0.4266 W |
| Part 27 | LTE Band 7 | QPSK | 10MHz | 9M08G7D | 0.06 ppm | - | 0.5943 W |
| Part 27 | LTE Band 7 | 16QAM | 10MHz | 9M04D7W | - | - | 0.4111 W |
| Part 27 | LTE Band 7 | QPSK | 15MHz | 13M5G7D | - | - | 0.4305 W |
| Part 27 | LTE Band 7 | 16QAM | 15MHz | 13M5D7W | - | - | 0.3499 W |
| Part 27 | LTE Band 7 | QPSK | 20MHz | 18M5G7D | - | - | 0.3936 W |
| Part 27 | LTE Band 7 | 16QAM | 20MHz | 18M5D7W | - | - | 0.3289 W |
| Part 27 | LTE Band 17 | QPSK | 5MHz | 4M51G7D | - | 0.0413 W | 0.0678 W |
| Part 27 | LTE Band 17 | 16QAM | 5MHz | 4M51D7W | - | 0.0341 W | 0.0560 W |
| Part 27 | LTE Band 17 | QPSK | 10MHz | 9M12G7D | 0.04 ppm | 0.0473 W | 0.6776 W |
| Part 27 | LTE Band 17 | 16QAM | 10MHz | 9M06D7W | - | 0.0391 W | 0.0741 W |

## 1.7 Testing Site

| Test Site | SPORTON INTERNATIONAL INC. | | |
|---|---|---|---|
| Test Site Location | No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park,<br>Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.<br>TEL: +886-3-327-3456<br>FAX: +886-3-328-4978 | | |
| Test Site No. | Sporton Site No. | | FCC/IC Registration No. |
| | TH02-HY | 03CH07-HY | 722060/4086B-1 |

## 1.8 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 2, 27
- ANSI / TIA / EIA-603-C-2004
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r01
- IC RSS-130 Issue1
- IC RSS-133 Issue 6
- IC RSS-139 Issue 2
- IC RSS-199 Issue 1
- IC RSS-Gen Issue 3
- NOTICE 2012-DRS0126

**Remark:**

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. Per the section 2.2.3 of Notice of 2012-DRS0126, " Receivers Excluded from Industry Canada Requirements", only radiocommunication receivers operating in stand-alone mode within the band 30-960 MHz and scanner receivers are subject to Industry Canada requirements.

# 2 Test Configuration of Equipment Under Test

## 2.1 Test Mode

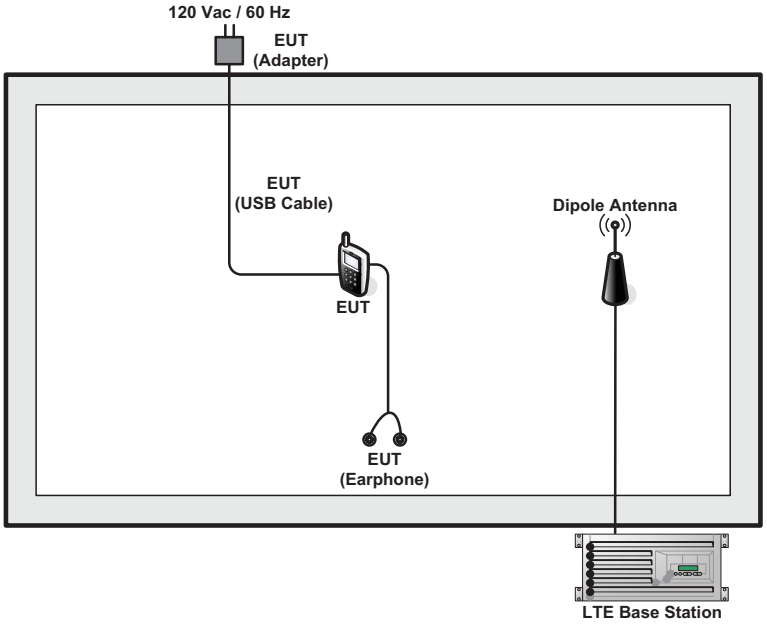
During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT was rotated on three test planes to find out the worst emission.

Frequency range investigated for radiated emission: 30MHz to 10th harmonic.

| Test Modes | | | |
|---|---|---|---|
| Band | | Radiated TCs | Conducted TCs |
| LTE Band 4 | BW 1.4MHz | ■ LTE (RB Size 1) Link | ■ LTE (RB Size 1) Link<br>■ LTE (RB Size 3) Link<br>■ LTE (RB Size 6) Link |
| | BW 3MHz | ■ LTE (RB Size 1) Link | ■ LTE (RB Size 1) Link<br>■ LTE (RB Size 8) Link<br>■ LTE (RB Size 15) Link |
| | BW 5MHz | ■ LTE (RB Size 1) Link | ■ LTE (RB Size 1) Link<br>■ LTE (RB Size 12) Link<br>■ LTE (RB Size 25) Link |
| | BW 10MHz | ■ LTE (RB Size 1) Link | ■ LTE (RB Size 1) Link<br>■ LTE (RB Size 25) Link<br>■ LTE (RB Size 50) Link |
| | BW 15MHz | ■ LTE (RB Size 1) Link | ■ LTE (RB Size 1) Link<br>■ LTE (RB Size 36) Link<br>■ LTE (RB Size 75) Link |
| | BW 20MHz | ■ LTE (RB Size 1) Link | ■ LTE (RB Size 1) Link<br>■ LTE (RB Size 50) Link<br>■ LTE (RB Size 100) Link |

| Test Modes | | | |
|---|---|---|---|
| Band | | Radiated TCs | Conducted TCs |
| LTE Band 2 | BW 1.4MHz | ■ LTE (RB Size 1) Link | ■ LTE (RB Size 1) Link<br>■ LTE (RB Size 3) Link<br>■ LTE (RB Size 6) Link |
| | BW 3MHz | ■ LTE (RB Size 1) Link | ■ LTE (RB Size 1) Link<br>■ LTE (RB Size 8) Link<br>■ LTE (RB Size 15) Link |
| | BW 5MHz | ■ LTE (RB Size 1) Link | ■ LTE (RB Size 1) Link<br>■ LTE (RB Size 12) Link<br>■ LTE (RB Size 25) Link |
| | BW 10MHz | ■ LTE (RB Size 1) Link | ■ LTE (RB Size 1) Link<br>■ LTE (RB Size 25) Link<br>■ LTE (RB Size 50) Link |
| | BW 15MHz | ■ LTE (RB Size 1) Link | ■ LTE (RB Size 1) Link<br>■ LTE (RB Size 36) Link<br>■ LTE (RB Size 75) Link |
| | BW 20MHz | ■ LTE (RB Size 50) Link | ■ LTE (RB Size 1) Link<br>■ LTE (RB Size 50) Link<br>■ LTE (RB Size 100) Link |
| LTE Band 7 | BW 5MHz | ■ LTE (RB Size 1) Link | ■ LTE (RB Size 1) Link<br>■ LTE (RB Size 12) Link<br>■ LTE (RB Size 25) Link |
| | BW 10MHz | ■ LTE (RB Size 1) Link | ■ LTE (RB Size 1) Link<br>■ LTE (RB Size 25) Link<br>■ LTE (RB Size 50) Link |
| | BW 15MHz | ■ LTE (RB Size 1) Link | ■ LTE (RB Size 1) Link<br>■ LTE (RB Size 36) Link<br>■ LTE (RB Size 75) Link |
| | BW 20MHz | ■ LTE (RB Size 1) Link | ■ LTE (RB Size 1) Link<br>■ LTE (RB Size 50) Link<br>■ LTE (RB Size 100) Link |
| LTE Band 17 | BW 5MHz | ■ LTE (RB Size 1) Link | ■ LTE (RB Size 1) Link<br>■ LTE (RB Size 12) Link<br>■ LTE (RB Size 25) Link |
| | BW 10MHz | ■ LTE (RB Size 1) Link | ■ LTE (RB Size 1) Link<br>■ LTE (RB Size 25) Link<br>■ LTE (RB Size 50) Link |

## 2.2 Connection Diagram of Test System




## 2.3 Support Unit used in test configuration and system

| Item | Equipment | Trade Name | Model No. | FCC ID | Data Cable | Power Cord |
|---|---|---|---|---|---|---|
| 1. | LTE Base Station | Anritsu | MT8820C | N/A | N/A | Unshielded, 1.8 m |

## 2.4 Measurement Results Explanation Example

**For all conducted test items:**

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

*Offset = RF cable loss + attenuator factor.*

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Example :

*Offset(dB) = RF cable loss(dB) + attenuator factor(dB).*

= 4.2 + 10 = 14.2 (dB)

# 3 Test Result

## 3.1 Conducted Output Power Measurement

### 3.1.1 Description of the Conducted Output Power Measurement

A base station simulator was used to establish communication with the EUT. Its parameters were set to transmit the maximum power on the EUT. The measured power in the radio frequency on the transmitter output terminals shall be reported.

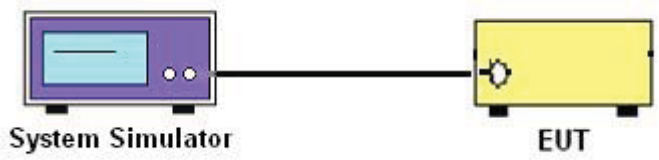
### 3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

### 3.1.3 Test Procedures

1. The transmitter output port was connected to base station.
2. Set EUT at maximum power through base station.
3. Select lowest, middle, and highest channels for each band and different modulation.

### 3.1.4 Test Setup



### 3.1.5 Test Result of Conducted Output Power

**<LTE Band 2 Conducted Power>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power (dBm) Low Ch. / Freq. | Power (dBm) Middle Ch. / Freq. | Power (dBm) High Ch. / Freq. |
|---|---|---|---|---|---|---|
| **Channel** | | | | **18700** | **18900** | **19100** |
| **Frequency (MHz)** | | | | **1860.0** | **1880.0** | **1900.0** |
| 20 | QPSK | 1 | 0 | 21.74 | 23.31 | 23.07 |
| 20 | QPSK | 1 | 49 | 23.15 | 23.14 | 22.89 |
| 20 | QPSK | 1 | 99 | 23.07 | 23.24 | 22.84 |
| 20 | QPSK | 50 | 0 | 22.92 | 23.25 | 23.11 |
| 20 | QPSK | 50 | 24 | 23.42 | 23.25 | 22.93 |
| 20 | QPSK | 50 | 49 | 23.24 | 23.23 | 22.92 |
| 20 | QPSK | 100 | 0 | 23.13 | 23.26 | 23.02 |
| 20 | 16QAM | 1 | 0 | 20.81 | 22.91 | 22.73 |
| 20 | 16QAM | 1 | 49 | 23.14 | 22.85 | 22.38 |
| 20 | 16QAM | 1 | 99 | 22.83 | 22.69 | 22.22 |
| 20 | 16QAM | 50 | 0 | 21.95 | 23.15 | 23.08 |
| 20 | 16QAM | 50 | 24 | 23.04 | 23.27 | 22.88 |
| 20 | 16QAM | 50 | 49 | 23.85 | 23.23 | 22.97 |
| 20 | 16QAM | 100 | 0 | 23.07 | 23.14 | 23.02 |
| **Channel** | | | | **18675** | **18900** | **19125** |
| **Frequency (MHz)** | | | | **1857.5** | **1880** | **1902.5** |
| 15 | QPSK | 1 | 0 | 22.22 | 23.22 | 23.08 |
| 15 | QPSK | 1 | 37 | 23.13 | 23.20 | 22.90 |
| 15 | QPSK | 1 | 74 | 23.15 | 23.23 | 22.86 |
| 15 | QPSK | 36 | 0 | 22.80 | 23.25 | 22.91 |
| 15 | QPSK | 36 | 18 | 23.11 | 23.19 | 22.83 |
| 15 | QPSK | 36 | 37 | 23.20 | 23.19 | 22.83 |
| 15 | QPSK | 75 | 0 | 23.18 | 23.28 | 22.81 |
| 15 | 16QAM | 1 | 0 | 21.45 | 23.01 | 23.19 |
| 15 | 16QAM | 1 | 37 | 22.60 | 23.13 | 22.96 |
| 15 | 16QAM | 1 | 74 | 23.86 | 22.98 | 23.00 |
| 15 | 16QAM | 36 | 0 | 21.86 | 23.10 | 22.89 |
| 15 | 16QAM | 36 | 18 | 22.49 | 23.20 | 22.79 |
| 15 | 16QAM | 36 | 37 | 23.11 | 23.15 | 22.90 |
| 15 | 16QAM | 75 | 0 | 22.61 | 23.27 | 22.95 |

| BW [MHz] | Modulation | RB Size | RB Offset | Power (dBm) Low Ch. / Freq. | Power (dBm) Middle Ch. / Freq. | Power (dBm) High Ch. / Freq. |
|---|---|---|---|---|---|---|
| Channel | | | | 18650 | 18900 | 19150 |
| Frequency (MHz) | | | | 1855 | 1880 | 1905 |
| 10 | QPSK | 1 | 0 | 22.31 | 23.21 | 22.91 |
| 10 | QPSK | 1 | 24 | 22.98 | 23.20 | 22.87 |
| 10 | QPSK | 1 | 49 | 23.12 | 23.15 | 22.93 |
| 10 | QPSK | 25 | 0 | 22.65 | 23.22 | 22.76 |
| 10 | QPSK | 25 | 12 | 22.96 | 23.18 | 22.81 |
| 10 | QPSK | 25 | 24 | 23.11 | 23.23 | 22.78 |
| 10 | QPSK | 50 | 0 | 22.92 | 23.33 | 22.91 |
| 10 | 16QAM | 1 | 0 | 21.78 | 23.34 | 23.04 |
| 10 | 16QAM | 1 | 24 | 22.49 | 23.33 | 22.88 |
| 10 | 16QAM | 1 | 49 | 22.96 | 23.27 | 22.77 |
| 10 | 16QAM | 25 | 0 | 21.71 | 23.14 | 22.74 |
| 10 | 16QAM | 25 | 12 | 22.03 | 23.20 | 22.78 |
| 10 | 16QAM | 25 | 24 | 22.23 | 23.23 | 22.76 |
| 10 | 16QAM | 50 | 0 | 22.03 | 23.21 | 22.90 |
| Channel | | | | 18625 | 18900 | 19175 |
| Frequency (MHz) | | | | 1852.5 | 1880 | 1907.5 |
| 5 | QPSK | 1 | 0 | 22.45 | 23.08 | 22.84 |
| 5 | QPSK | 1 | 12 | 22.78 | 23.16 | 22.70 |
| 5 | QPSK | 1 | 24 | 22.66 | 23.08 | 22.79 |
| 5 | QPSK | 12 | 0 | 21.66 | 21.89 | 21.59 |
| 5 | QPSK | 12 | 6 | 21.65 | 21.90 | 21.49 |
| 5 | QPSK | 12 | 11 | 21.75 | 21.95 | 21.49 |
| 5 | QPSK | 25 | 0 | 21.66 | 21.92 | 21.57 |
| 5 | 16QAM | 1 | 0 | 21.52 | 22.71 | 22.41 |
| 5 | 16QAM | 1 | 12 | 21.94 | 22.78 | 22.49 |
| 5 | 16QAM | 1 | 24 | 21.79 | 22.65 | 22.40 |
| 5 | 16QAM | 12 | 0 | 21.72 | 21.92 | 21.63 |
| 5 | 16QAM | 12 | 6 | 21.88 | 21.96 | 21.64 |
| 5 | 16QAM | 12 | 11 | 21.84 | 21.99 | 21.63 |
| 5 | 16QAM | 25 | 0 | 21.77 | 21.93 | 21.58 |

| BW [MHz] | Modulation | RB Size | RB Offset | Power (dBm) Low Ch. / Freq. | Power (dBm) Middle Ch. / Freq. | Power (dBm) High Ch. / Freq. |
|---|---|---|---|---|---|---|
| Channel | | | | 18615 | 18900 | 19185 |
| Frequency (MHz) | | | | 1851.5 | 1880 | 1908.5 |
| 3 | QPSK | 1 | 0 | 22.78 | 23.15 | 22.81 |
| 3 | QPSK | 1 | 7 | 22.81 | 23.16 | 22.72 |
| 3 | QPSK | 1 | 14 | 22.78 | 23.14 | 22.73 |
| 3 | QPSK | 8 | 0 | 21.57 | 21.82 | 21.38 |
| 3 | QPSK | 8 | 4 | 21.55 | 21.79 | 21.45 |
| 3 | QPSK | 8 | 7 | 21.53 | 21.77 | 21.41 |
| 3 | QPSK | 15 | 0 | 21.57 | 21.75 | 21.44 |
| 3 | 16QAM | 1 | 0 | 21.87 | 22.98 | 22.56 |
| 3 | 16QAM | 1 | 7 | 22.03 | 23.11 | 22.44 |
| 3 | 16QAM | 1 | 14 | 22.03 | 23.01 | 22.61 |
| 3 | 16QAM | 8 | 0 | 21.86 | 21.91 | 21.48 |
| 3 | 16QAM | 8 | 4 | 21.93 | 21.85 | 21.49 |
| 3 | 16QAM | 8 | 7 | 21.94 | 21.91 | 21.39 |
| 3 | 16QAM | 15 | 0 | 21.81 | 21.76 | 21.44 |
| Channel | | | | 18607 | 18900 | 19193 |
| Frequency (MHz) | | | | 1850.7 | 1880 | 1909.3 |
| 1.4 | QPSK | 1 | 0 | 22.45 | 23.11 | 22.65 |
| 1.4 | QPSK | 1 | 2 | 22.49 | 23.23 | 22.76 |
| 1.4 | QPSK | 1 | 5 | 22.45 | 23.29 | 22.87 |
| 1.4 | QPSK | 3 | 0 | 22.38 | 23.20 | 22.82 |
| 1.4 | QPSK | 3 | 1 | 22.40 | 23.20 | 22.81 |
| 1.4 | QPSK | 3 | 2 | 22.40 | 23.17 | 22.80 |
| 1.4 | QPSK | 6 | 0 | 22.36 | 23.26 | 22.80 |
| 1.4 | 16QAM | 1 | 0 | 21.75 | 23.14 | 22.63 |
| 1.4 | 16QAM | 1 | 2 | 21.78 | 23.09 | 22.75 |
| 1.4 | 16QAM | 1 | 5 | 21.68 | 23.12 | 22.62 |
| 1.4 | 16QAM | 3 | 0 | 21.59 | 23.17 | 22.71 |
| 1.4 | 16QAM | 3 | 1 | 21.63 | 23.19 | 22.81 |
| 1.4 | 16QAM | 3 | 2 | 21.62 | 23.14 | 22.79 |
| 1.4 | 16QAM | 6 | 0 | 21.60 | 23.13 | 22.69 |

<LTE Band 4 Conducted Power>

| BW [MHz] | Modulation | RB Size | RB Offset | Power (dBm) Low Ch. / Freq. | Power (dBm) Middle Ch. / Freq. | Power (dBm) High Ch. / Freq. |
|---|---|---|---|---|---|---|
| Channel | | | | 20050 | 20175 | 20300 |
| Frequency (MHz) | | | | 1720 | 1732.5 | 1745 |
| 20 | QPSK | 1 | 0 | 23.66 | 23.86 | 23.69 |
| 20 | QPSK | 1 | 49 | 23.58 | 23.64 | 23.66 |
| 20 | QPSK | 1 | 99 | 23.52 | 23.59 | 23.49 |
| 20 | QPSK | 50 | 0 | 22.67 | 22.62 | 22.75 |
| 20 | QPSK | 50 | 24 | 22.63 | 22.69 | 22.70 |
| 20 | QPSK | 50 | 49 | 22.51 | 22.72 | 22.62 |
| 20 | QPSK | 100 | 0 | 22.63 | 22.63 | 22.69 |
| 20 | 16QAM | 1 | 0 | 22.60 | 22.70 | 22.61 |
| 20 | 16QAM | 1 | 49 | 22.51 | 22.63 | 22.55 |
| 20 | 16QAM | 1 | 99 | 22.47 | 22.55 | 22.40 |
| 20 | 16QAM | 50 | 0 | 21.70 | 21.67 | 21.78 |
| 20 | 16QAM | 50 | 24 | 21.72 | 21.77 | 21.73 |
| 20 | 16QAM | 50 | 49 | 21.56 | 21.78 | 21.56 |
| 20 | 16QAM | 100 | 0 | 21.73 | 21.81 | 21.74 |
| Channel | | | | 20025 | 20175 | 20325 |
| Frequency (MHz) | | | | 1717.5 | 1732.5 | 1747.5 |
| 15 | QPSK | 1 | 0 | 23.67 | 23.70 | 23.72 |
| 15 | QPSK | 1 | 37 | 23.59 | 23.67 | 23.61 |
| 15 | QPSK | 1 | 74 | 23.61 | 23.65 | 23.49 |
| 15 | QPSK | 36 | 0 | 22.62 | 22.67 | 22.68 |
| 15 | QPSK | 36 | 18 | 22.60 | 22.62 | 22.62 |
| 15 | QPSK | 36 | 37 | 22.58 | 22.67 | 22.64 |
| 15 | QPSK | 75 | 0 | 22.65 | 22.73 | 22.64 |
| 15 | 16QAM | 1 | 0 | 22.60 | 22.62 | 22.70 |
| 15 | 16QAM | 1 | 37 | 22.52 | 22.66 | 22.53 |
| 15 | 16QAM | 1 | 74 | 22.54 | 22.56 | 22.45 |
| 15 | 16QAM | 36 | 0 | 21.69 | 21.68 | 21.66 |
| 15 | 16QAM | 36 | 18 | 21.62 | 21.66 | 21.63 |
| 15 | 16QAM | 36 | 37 | 21.66 | 21.70 | 21.61 |
| 15 | 16QAM | 75 | 0 | 21.72 | 21.79 | 21.67 |

| BW [MHz] | Modulation | RB Size | RB Offset | Power (dBm) Low Ch. / Freq. | Power (dBm) Middle Ch. / Freq. | Power (dBm) High Ch. / Freq. |
|---|---|---|---|---|---|---|
| Channel | | | | 20000 | 20175 | 20350 |
| Frequency (MHz) | | | | 1715 | 1732.5 | 1750 |
| 10 | QPSK | 1 | 0 | 23.62 | 23.62 | 23.68 |
| 10 | QPSK | 1 | 24 | 23.59 | 23.62 | 23.58 |
| 10 | QPSK | 1 | 49 | 23.60 | 23.62 | 23.51 |
| 10 | QPSK | 25 | 0 | 22.56 | 22.61 | 22.60 |
| 10 | QPSK | 25 | 12 | 22.55 | 22.58 | 22.63 |
| 10 | QPSK | 25 | 24 | 22.53 | 22.59 | 22.64 |
| 10 | QPSK | 50 | 0 | 22.60 | 22.71 | 22.64 |
| 10 | 16QAM | 1 | 0 | 22.59 | 22.60 | 22.66 |
| 10 | 16QAM | 1 | 24 | 22.50 | 22.59 | 22.50 |
| 10 | 16QAM | 1 | 49 | 22.49 | 22.50 | 22.42 |
| 10 | 16QAM | 25 | 0 | 21.72 | 21.69 | 21.61 |
| 10 | 16QAM | 25 | 12 | 21.70 | 21.73 | 21.65 |
| 10 | 16QAM | 25 | 24 | 21.71 | 21.74 | 21.62 |
| 10 | 16QAM | 50 | 0 | 21.70 | 21.72 | 21.67 |
| Channel | | | | 19975 | 20175 | 20375 |
| Frequency (MHz) | | | | 1712.5 | 1732.5 | 1752.5 |
| 5 | QPSK | 1 | 0 | 23.66 | 23.62 | 23.61 |
| 5 | QPSK | 1 | 12 | 23.59 | 23.63 | 23.62 |
| 5 | QPSK | 1 | 24 | 23.58 | 23.70 | 23.53 |
| 5 | QPSK | 12 | 0 | 22.58 | 22.63 | 22.61 |
| 5 | QPSK | 12 | 6 | 22.56 | 22.64 | 22.64 |
| 5 | QPSK | 12 | 11 | 22.56 | 22.66 | 22.57 |
| 5 | QPSK | 25 | 0 | 22.57 | 22.62 | 22.58 |
| 5 | 16QAM | 1 | 0 | 22.51 | 22.55 | 22.55 |
| 5 | 16QAM | 1 | 12 | 22.52 | 22.56 | 22.53 |
| 5 | 16QAM | 1 | 24 | 22.50 | 22.52 | 22.44 |
| 5 | 16QAM | 12 | 0 | 21.72 | 21.73 | 21.68 |
| 5 | 16QAM | 12 | 6 | 21.70 | 21.72 | 21.65 |
| 5 | 16QAM | 12 | 11 | 21.68 | 21.73 | 21.53 |
| 5 | 16QAM | 25 | 0 | 21.69 | 21.70 | 21.54 |

| BW [MHz] | Modulation | RB Size | RB Offset | Power (dBm) Low Ch. / Freq. | Power (dBm) Middle Ch. / Freq. | Power (dBm) High Ch. / Freq. |
|---|---|---|---|---|---|---|
| Channel | | | | 19965 | 20175 | 20385 |
| Frequency (MHz) | | | | 1711.5 | 1732.5 | 1753.5 |
| 3 | QPSK | 1 | 0 | 23.58 | 23.67 | 23.64 |
| 3 | QPSK | 1 | 7 | 23.61 | 23.66 | 23.48 |
| 3 | QPSK | 1 | 14 | 23.63 | 23.66 | 23.58 |
| 3 | QPSK | 8 | 0 | 22.61 | 22.63 | 22.67 |
| 3 | QPSK | 8 | 4 | 22.58 | 22.60 | 22.55 |
| 3 | QPSK | 8 | 7 | 22.58 | 22.65 | 22.54 |
| 3 | QPSK | 15 | 0 | 22.60 | 22.62 | 22.57 |
| 3 | 16QAM | 1 | 0 | 22.53 | 22.62 | 22.54 |
| 3 | 16QAM | 1 | 7 | 22.48 | 22.59 | 22.47 |
| 3 | 16QAM | 1 | 14 | 22.55 | 22.60 | 22.47 |
| 3 | 16QAM | 8 | 0 | 21.70 | 21.73 | 21.70 |
| 3 | 16QAM | 8 | 4 | 21.73 | 21.76 | 21.56 |
| 3 | 16QAM | 8 | 7 | 21.69 | 21.76 | 21.54 |
| 3 | 16QAM | 15 | 0 | 21.64 | 21.69 | 21.55 |
| Channel | | | | 19957 | 20175 | 20393 |
| Frequency (MHz) | | | | 1710.7 | 1732.5 | 1754.3 |
| 1.4 | QPSK | 1 | 0 | 23.68 | 23.72 | 23.57 |
| 1.4 | QPSK | 1 | 2 | 23.65 | 23.66 | 23.56 |
| 1.4 | QPSK | 1 | 5 | 23.63 | 23.69 | 23.60 |
| 1.4 | QPSK | 3 | 0 | 23.65 | 23.76 | 23.65 |
| 1.4 | QPSK | 3 | 1 | 23.63 | 23.73 | 23.62 |
| 1.4 | QPSK | 3 | 2 | 23.62 | 23.74 | 23.58 |
| 1.4 | QPSK | 6 | 0 | 22.58 | 22.68 | 22.64 |
| 1.4 | 16QAM | 1 | 0 | 22.56 | 22.65 | 22.61 |
| 1.4 | 16QAM | 1 | 2 | 22.56 | 22.68 | 22.50 |
| 1.4 | 16QAM | 1 | 5 | 22.57 | 22.64 | 22.56 |
| 1.4 | 16QAM | 3 | 0 | 22.49 | 22.60 | 22.54 |
| 1.4 | 16QAM | 3 | 1 | 22.55 | 22.59 | 22.49 |
| 1.4 | 16QAM | 3 | 2 | 22.53 | 22.58 | 22.49 |
| 1.4 | 16QAM | 6 | 0 | 21.58 | 21.63 | 21.51 |

<LTE Band 7 Conducted Power>

| BW [MHz] | Modulation | RB Size | RB Offset | Power (dBm) Low Ch. / Freq. | Power (dBm) Middle Ch. / Freq. | Power (dBm) High Ch. / Freq. |
|---|---|---|---|---|---|---|
| Channel | | | | 20850 | 21100 | 21350 |
| Frequency (MHz) | | | | 2510 | 2535 | 2560 |
| 20 | QPSK | 1 | 0 | 23.99 | 23.85 | 23.54 |
| 20 | QPSK | 1 | 49 | 23.98 | 23.67 | 23.56 |
| 20 | QPSK | 1 | 99 | 23.98 | 23.58 | 23.77 |
| 20 | QPSK | 50 | 0 | 22.98 | 22.83 | 22.53 |
| 20 | QPSK | 50 | 24 | 22.93 | 22.73 | 22.52 |
| 20 | QPSK | 50 | 49 | 22.96 | 22.68 | 22.59 |
| 20 | QPSK | 100 | 0 | 22.90 | 22.69 | 22.48 |
| 20 | 16QAM | 1 | 0 | 22.95 | 22.75 | 22.49 |
| 20 | 16QAM | 1 | 49 | 22.90 | 22.70 | 22.41 |
| 20 | 16QAM | 1 | 99 | 22.91 | 22.47 | 22.79 |
| 20 | 16QAM | 50 | 0 | 21.93 | 21.83 | 21.51 |
| 20 | 16QAM | 50 | 24 | 21.98 | 21.76 | 21.53 |
| 20 | 16QAM | 50 | 49 | 21.95 | 21.74 | 21.71 |
| 20 | 16QAM | 100 | 0 | 21.97 | 21.71 | 21.54 |
| Channel | | | | 20825 | 21100 | 21375 |
| Frequency (MHz) | | | | 2507.5 | 2535 | 2562.5 |
| 15 | QPSK | 1 | 0 | 23.96 | 23.84 | 23.57 |
| 15 | QPSK | 1 | 37 | 23.90 | 23.67 | 23.50 |
| 15 | QPSK | 1 | 74 | 23.98 | 23.68 | 23.78 |
| 15 | QPSK | 36 | 0 | 22.88 | 22.90 | 22.52 |
| 15 | QPSK | 36 | 18 | 22.89 | 22.78 | 22.58 |
| 15 | QPSK | 36 | 37 | 23.00 | 22.64 | 22.72 |
| 15 | QPSK | 75 | 0 | 22.82 | 22.74 | 22.58 |
| 15 | 16QAM | 1 | 0 | 22.85 | 22.86 | 22.43 |
| 15 | 16QAM | 1 | 37 | 22.81 | 22.63 | 22.47 |
| 15 | 16QAM | 1 | 74 | 22.94 | 22.57 | 22.70 |
| 15 | 16QAM | 36 | 0 | 21.92 | 21.83 | 21.47 |
| 15 | 16QAM | 36 | 18 | 21.83 | 21.77 | 21.59 |
| 15 | 16QAM | 36 | 37 | 21.94 | 21.66 | 21.75 |
| 15 | 16QAM | 75 | 0 | 21.99 | 21.75 | 21.56 |

| BW [MHz] | Modulation | RB Size | RB Offset | Power (dBm) Low Ch. / Freq. | Power (dBm) Middle Ch. / Freq. | Power (dBm) High Ch. / Freq. |
|---|---|---|---|---|---|---|
| Channel | | | | 20800 | 21100 | 21400 |
| Frequency (MHz) | | | | 2505 | 2535 | 2565 |
| 10 | QPSK | 1 | 0 | 23.96 | 23.76 | 23.55 |
| 10 | QPSK | 1 | 24 | 23.91 | 23.74 | 23.68 |
| 10 | QPSK | 1 | 49 | 23.94 | 23.60 | 23.83 |
| 10 | QPSK | 25 | 0 | 22.90 | 22.65 | 22.51 |
| 10 | QPSK | 25 | 12 | 22.92 | 22.66 | 22.68 |
| 10 | QPSK | 25 | 24 | 22.85 | 22.67 | 22.74 |
| 10 | QPSK | 50 | 0 | 22.90 | 22.71 | 22.57 |
| 10 | 16QAM | 1 | 0 | 22.84 | 22.74 | 22.44 |
| 10 | 16QAM | 1 | 24 | 22.82 | 22.59 | 22.54 |
| 10 | 16QAM | 1 | 49 | 22.91 | 22.63 | 22.80 |
| 10 | 16QAM | 25 | 0 | 21.78 | 21.74 | 21.53 |
| 10 | 16QAM | 25 | 12 | 21.89 | 21.77 | 21.68 |
| 10 | 16QAM | 25 | 24 | 21.86 | 21.74 | 21.75 |
| 10 | 16QAM | 50 | 0 | 21.82 | 21.82 | 21.55 |
| Channel | | | | 20775 | 21100 | 21425 |
| Frequency (MHz) | | | | 2502.5 | 2535 | 2567.5 |
| 5 | QPSK | 1 | 0 | 23.98 | 23.77 | 23.68 |
| 5 | QPSK | 1 | 12 | 23.85 | 23.66 | 23.66 |
| 5 | QPSK | 1 | 24 | 23.92 | 23.64 | 23.68 |
| 5 | QPSK | 12 | 0 | 22.94 | 22.75 | 22.64 |
| 5 | QPSK | 12 | 6 | 22.82 | 22.73 | 22.64 |
| 5 | QPSK | 12 | 11 | 22.94 | 22.73 | 22.74 |
| 5 | QPSK | 25 | 0 | 22.89 | 22.70 | 22.70 |
| 5 | 16QAM | 1 | 0 | 22.86 | 22.69 | 22.56 |
| 5 | 16QAM | 1 | 12 | 22.73 | 22.63 | 22.59 |
| 5 | 16QAM | 1 | 24 | 22.78 | 22.60 | 22.72 |
| 5 | 16QAM | 12 | 0 | 21.99 | 21.80 | 21.63 |
| 5 | 16QAM | 12 | 6 | 21.91 | 21.79 | 21.65 |
| 5 | 16QAM | 12 | 11 | 21.88 | 21.78 | 21.75 |
| 5 | 16QAM | 25 | 0 | 21.88 | 21.77 | 21.67 |

**<LTE Band 17 Conducted Power>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power (dBm) Low Ch. / Freq. | Power (dBm) Middle Ch. / Freq. | Power (dBm) High Ch. / Freq. |
|---|---|---|---|---|---|---|
| **Channel** | | | | **23780** | **23790** | **23800** |
| **Frequency (MHz)** | | | | **709** | **710** | **711** |
| 10 | QPSK | 1 | 0 | 23.41 | 23.42 | 23.40 |
| 10 | QPSK | 1 | 24 | 23.46 | 23.45 | 23.48 |
| 10 | QPSK | 1 | 49 | 23.56 | 23.60 | 23.59 |
| 10 | QPSK | 25 | 0 | 22.55 | 22.46 | 22.46 |
| 10 | QPSK | 25 | 12 | 22.49 | 22.46 | 22.54 |
| 10 | QPSK | 25 | 24 | 22.48 | 22.51 | 22.53 |
| 10 | QPSK | 50 | 0 | 22.52 | 22.51 | 22.48 |
| 10 | 16QAM | 1 | 0 | 22.35 | 22.41 | 22.41 |
| 10 | 16QAM | 1 | 24 | 22.43 | 22.40 | 22.41 |
| 10 | 16QAM | 1 | 49 | 22.54 | 22.52 | 22.53 |
| 10 | 16QAM | 25 | 0 | 21.59 | 21.60 | 21.56 |
| 10 | 16QAM | 25 | 12 | 21.57 | 21.58 | 21.60 |
| 10 | 16QAM | 25 | 24 | 21.61 | 21.59 | 21.64 |
| 10 | 16QAM | 50 | 0 | 21.54 | 21.57 | 21.58 |
| **Channel** | | | | **23755** | **23790** | **23825** |
| **Frequency (MHz)** | | | | **706.5** | **710** | **713.5** |
| 5 | QPSK | 1 | 0 | 23.45 | 23.47 | 23.44 |
| 5 | QPSK | 1 | 12 | 23.43 | 23.46 | 23.51 |
| 5 | QPSK | 1 | 24 | 23.49 | 23.51 | 23.54 |
| 5 | QPSK | 12 | 0 | 22.45 | 22.50 | 22.45 |
| 5 | QPSK | 12 | 6 | 22.45 | 22.48 | 22.49 |
| 5 | QPSK | 12 | 11 | 22.55 | 22.51 | 22.54 |
| 5 | QPSK | 25 | 0 | 22.58 | 22.50 | 22.54 |
| 5 | 16QAM | 1 | 0 | 22.45 | 22.39 | 22.38 |
| 5 | 16QAM | 1 | 12 | 22.42 | 22.38 | 22.45 |
| 5 | 16QAM | 1 | 24 | 22.46 | 22.44 | 22.46 |
| 5 | 16QAM | 12 | 0 | 21.55 | 21.60 | 21.56 |
| 5 | 16QAM | 12 | 6 | 21.54 | 21.55 | 21.59 |
| 5 | 16QAM | 12 | 11 | 21.63 | 21.59 | 21.62 |
| 5 | 16QAM | 25 | 0 | 21.61 | 21.59 | 21.57 |

**Note:** maximum average power for LTE.

## 3.2 Peak-to-Average Ratio

### 3.2.1 Description of the PAR Measurement

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. 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.

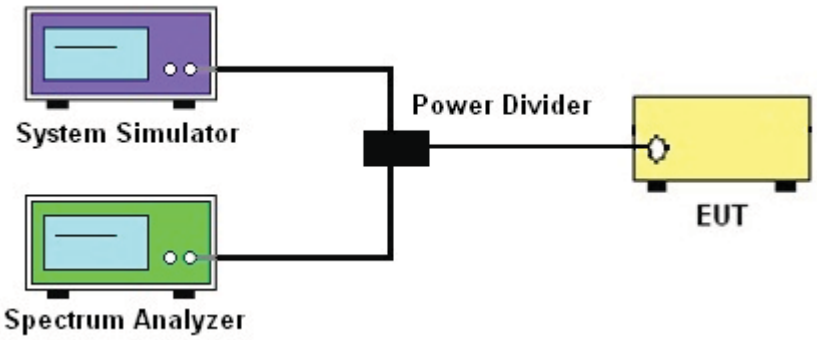
### 3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

### 3.2.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. For LTE operating modes:
   a. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
   b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
3. Record the deviation as Peak to Average Ratio.

### 3.2.4 Test Setup



### 3.2.5 Test Result of Peak-to-Average Ratio

| LTE Band 2 | | | | | | |
|---|---|---|---|---|---|---|
| BW [MHz] | Modulation | RB Size | RB Offset | Power (dBm) Low Ch. / Freq. | Power (dBm) Middle Ch. / Freq. | Power (dBm) High Ch. / Freq. |
| Channel | | | | 18700 | 18900 | 19100 |
| Frequency (MHz) | | | | 1860 | 1880 | 1900 |
| 20 | 16QAM | 1 | 0 | 5.88 | 6.32 | 6.03 |
| 20 | 16QAM | 100 | 0 | 5.97 | 6.12 | 5.94 |

| LTE Band 4 | | | | | | |
|---|---|---|---|---|---|---|
| BW [MHz] | Modulation | RB Size | RB Offset | Power (dBm) Low Ch. / Freq. | Power (dBm) Middle Ch. / Freq. | Power (dBm) High Ch. / Freq. |
| Channel | | | | 20050 | 20175 | 20300 |
| Frequency (MHz) | | | | 1720 | 1732.5 | 1745 |
| 20 | 16QAM | 1 | 0 | 5.80 | 5.06 | 6.15 |
| 20 | 16QAM | 100 | 0 | 6.09 | 6.22 | 6.15 |

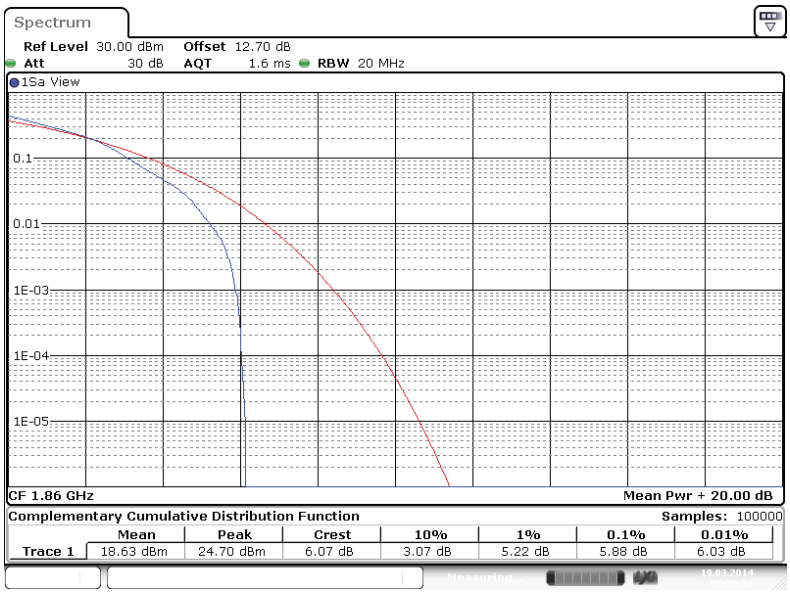
| LTE Band 7 | | | | | | |
|---|---|---|---|---|---|---|
| BW [MHz] | Modulation | RB Size | RB Offset | Power (dBm) Low Ch. / Freq. | Power (dBm) Middle Ch. / Freq. | Power (dBm) High Ch. / Freq. |
| Channel | | | | 20850 | 21100 | 21350 |
| Frequency (MHz) | | | | 2510 | 2535 | 2560 |
| 20 | 16QAM | 1 | 0 | 5.83 | 5.87 | 6.03 |
| 20 | 16QAM | 100 | 0 | 6.41 | 6.41 | 6.25 |

| LTE Band 17 | | | | | | |
|---|---|---|---|---|---|---|
| BW [MHz] | Modulation | RB Size | RB Offset | Power (dBm) Low Ch. / Freq. | Power (dBm) Middle Ch. / Freq. | Power (dBm) High Ch. / Freq. |
| Channel | | | | 23780 | 23790 | 23800 |
| Frequency (MHz) | | | | 709 | 710 | 711 |
| 10 | 16QAM | 1 | 0 | 5.32 | 5.42 | 5.74 |
| 10 | 16QAM | 50 | 0 | 5.93 | 5.90 | 5.83 |

## 3.2.6 Peak to Average Power Ratio

**Peak-to-Average Ratio on LTE Band 2**

**20MHz / 16QAM in Ch. 18700(1RB Size)**




Date: 19.MAR.2014 06:20:57

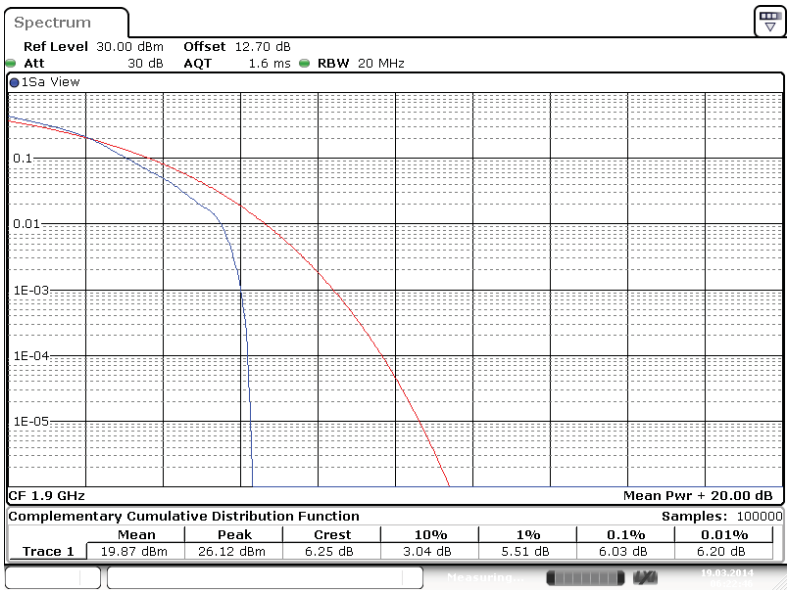
**Peak-to-Average Ratio on LTE Band 2**

**20MHz / 16QAM in Ch. 18900 (1RB Size)**

Date: 19.MAR.2014 06:21:49

**Peak-to-Average Ratio on LTE Band 2**

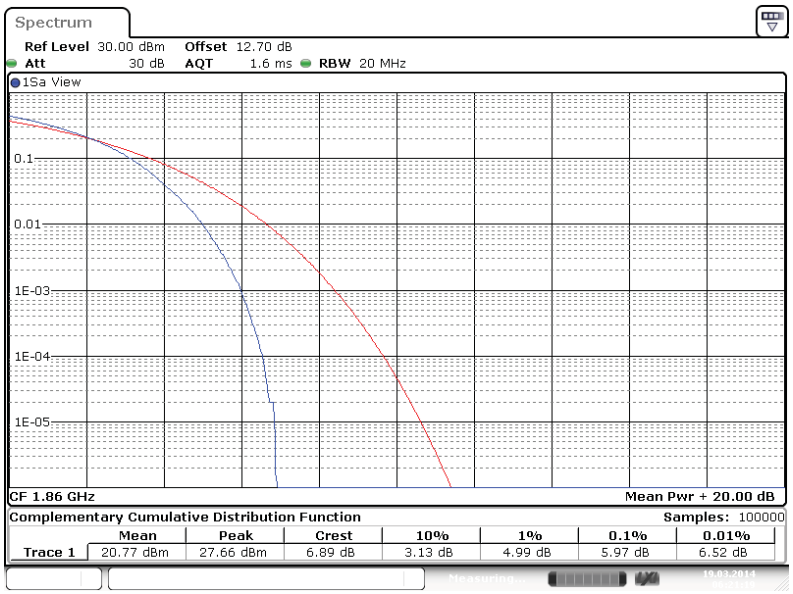
**20MHz / 16QAM in Ch. 19100 (1RB Size)**




Date: 19.MAR.2014 06:22:46

**Peak-to-Average Ratio on LTE Band 2**

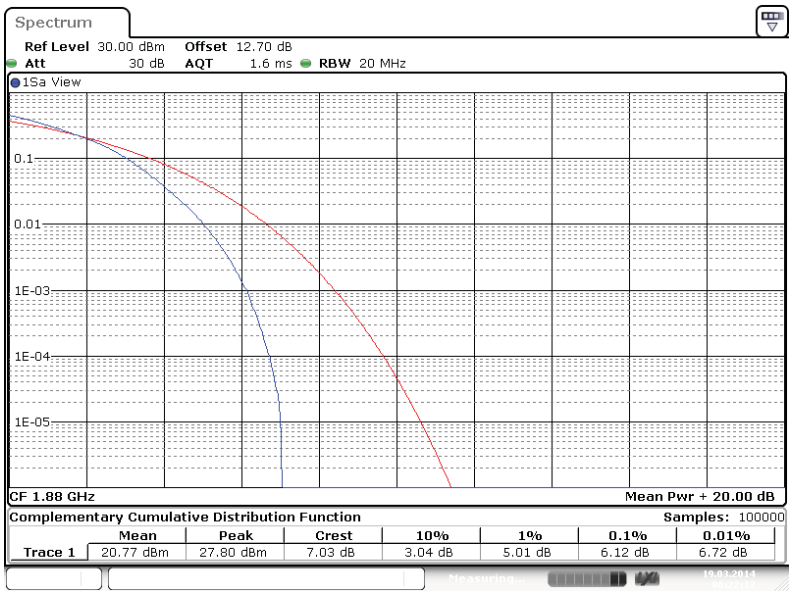
**20MHz / 16QAM in Ch. 18700 (100RB Size)**




Date: 19.MAR.2014 06:21:19

**Peak-to-Average Ratio on LTE Band 2**

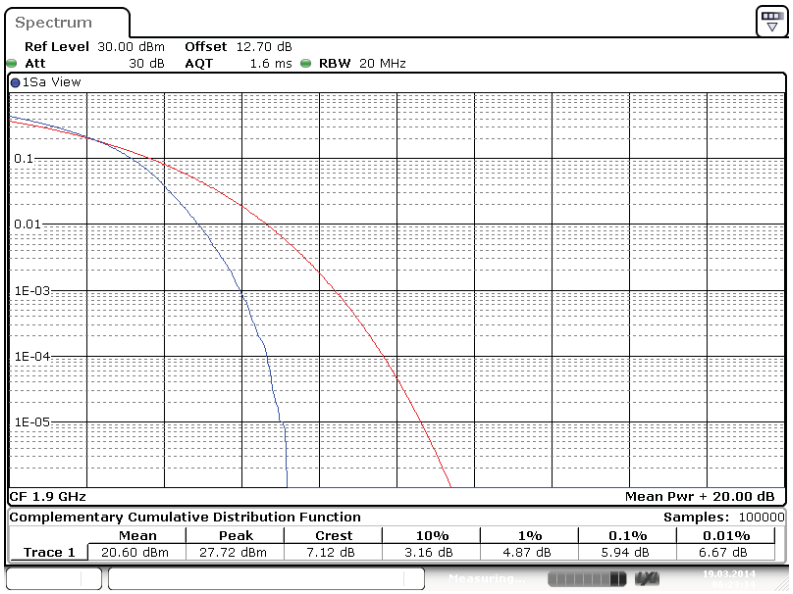
**20MHz / 16QAM in Ch. 18900 (100RB Size)**




Date: 19.MAR.2014 06:22:13

**Peak-to-Average Ratio on LTE Band 2**

**20MHz / 16QAM in Ch. 19100 (100RB Size)**

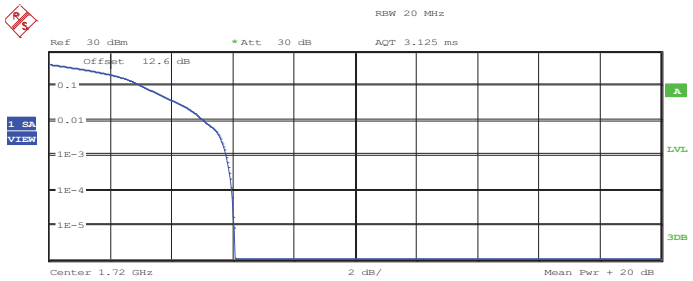



Date: 19.MAR.2014 06:23:14

***Note:*** *The total loss is 12.7 dB of the RF cable and attenuator for LTE Band 2, and has been compensated to the spectrum analyzer offset.*

**Peak-to-Average Ratio on LTE Band 4**

**20MHz / 16QAM in Ch. 20050 (1RB Size)**



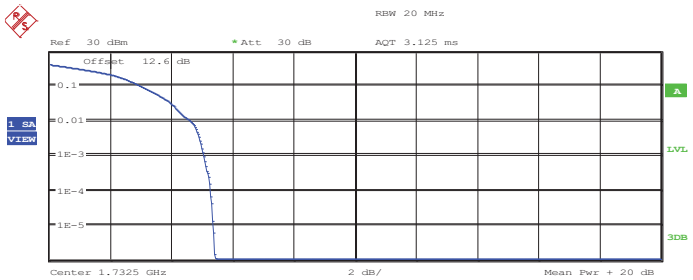

Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

| | Trace 1 |
|---|---|
| Mean | 22.07 dBm |
| Peak | 28.14 dBm |
| Crest | 6.08 dB |
| 10 % | 3.04 dB |
| 1 % | 5.03 dB |
| .1 % | 5.80 dB |
| .01 % | 5.96 dB |

Date: 26.DEC.2013 09:29:35

**Peak-to-Average Ratio on LTE Band 4**

**20MHz / 16QAM in Ch. 20175 (1RB Size)**



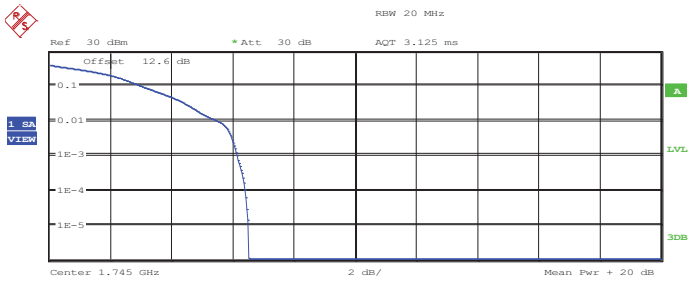

Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

| | Trace 1 |
|---|---|
| Mean | 22.08 dBm |
| Peak | 27.50 dBm |
| Crest | 5.42 dB |
| 10 % | 2.98 dB |
| 1 % | 4.62 dB |
| .1 % | 5.06 dB |
| .01 % | 5.29 dB |

Date: 26.DEC.2013 09:39:10

**Peak-to-Average Ratio on LTE Band 4**

**20MHz / 16QAM in Ch. 20300 (1RB Size)**



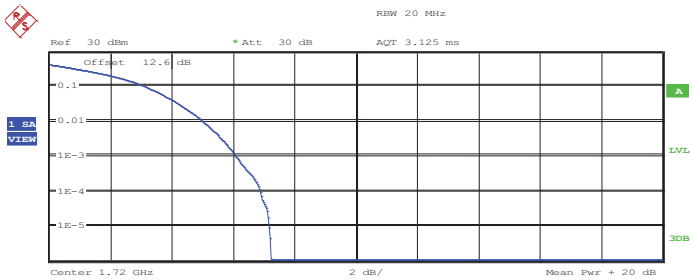

Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

| | Trace 1 |
|---|---|
| Mean | 22.02 dBm |
| Peak | 28.55 dBm |
| Crest | 6.53 dB |
| 10 % | 3.04 dB |
| 1 % | 5.51 dB |
| .1 % | 6.15 dB |
| .01 % | 6.41 dB |

Date: 26.DEC.2013 09:40:11

**Peak-to-Average Ratio on LTE Band 4**

**20MHz / 16QAM in Ch. 20050 (100RB Size)**



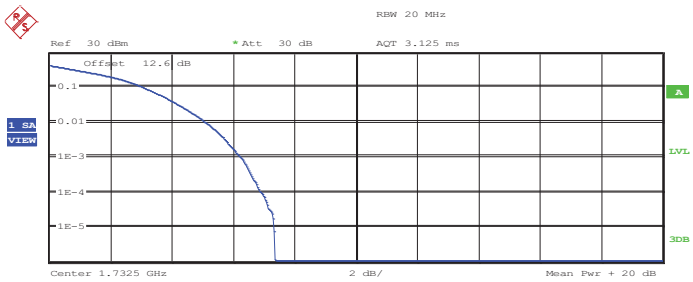

Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

| | Trace 1 |
|---|---|
| Mean | 21.12 dBm |
| Peak | 28.35 dBm |
| Crest | 7.23 dB |
| 10 % | 3.11 dB |
| 1 % | 5.00 dB |
| .1 % | 6.09 dB |
| .01 % | 6.86 dB |

Date: 26.DEC.2013 09:29:13

**Peak-to-Average Ratio on LTE Band 4**

**20MHz / 16QAM in Ch. 20175 (100RB Size)**



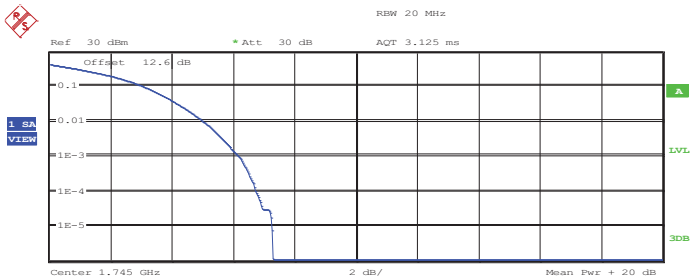

Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

| | Trace 1 |
|---|---|
| Mean | 21.20 dBm |
| Peak | 28.56 dBm |
| Crest | 7.35 dB |
| 10 % | 3.08 dB |
| 1 % | 5.06 dB |
| .1 % | 6.22 dB |
| .01 % | 6.89 dB |

Date: 26.DEC.2013 09:39:31

**Peak-to-Average Ratio on LTE Band 4**

**20MHz / 16QAM in Ch. 20300 (100RB Size)**




Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

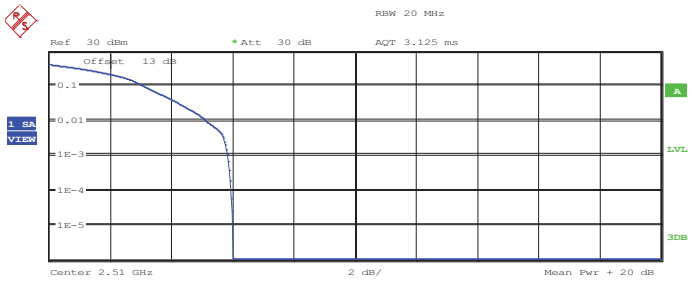
| | Trace 1 |
|---|---|
| Mean | 21.12 dBm |
| Peak | 28.41 dBm |
| Crest | 7.29 dB |
| 10 % | 3.08 dB |
| 1 % | 5.00 dB |
| .1 % | 6.15 dB |
| .01 % | 6.73 dB |

Date: 26.DEC.2013 09:39:53

***Note:*** *The total loss is 12.6 dB of the RF cable and attenuator for LTE Band 4, and has been compensated to the spectrum analyzer offset.*

**Peak-to-Average Ratio on LTE Band 7**

**20MHz / 16QAM in Ch. 20850 (1RB Size)**



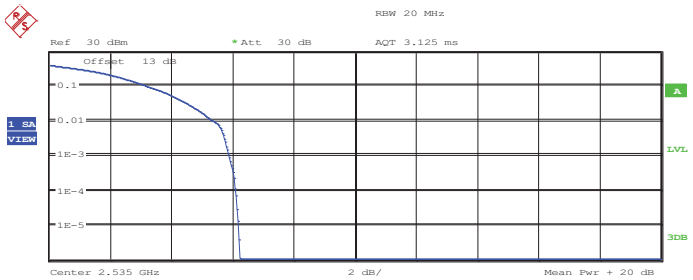

Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

| | Trace 1 |
|---|---|
| Mean | 21.51 dBm |
| Peak | 27.52 dBm |
| Crest | 6.01 dB |
| 10 % | 3.11 dB |
| 1 % | 5.13 dB |
| .1 % | 5.83 dB |
| .01 % | 5.96 dB |

Date: 17.DEC.2013 20:03:07

**Peak-to-Average Ratio on LTE Band 7**

**20MHz / 16QAM in Ch. 21100 (1RB Size)**



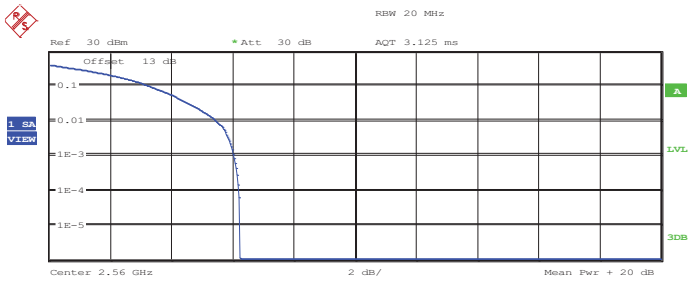

Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

| | Trace 1 |
|---|---|
| Mean | 21.72 dBm |
| Peak | 27.94 dBm |
| Crest | 6.22 dB |
| 10 % | 3.21 dB |
| 1 % | 5.35 dB |
| .1 % | 5.87 dB |
| .01 % | 6.09 dB |

Date: 17.DEC.2013 20:02:12

**Peak-to-Average Ratio on LTE Band 7**

**20MHz / 16QAM in Ch. 21350 (1RB Size)**



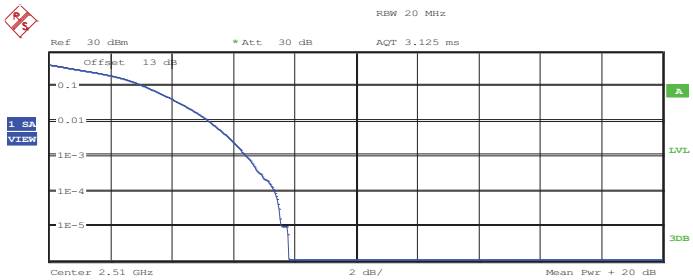

Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

| | Trace 1 |
|---|---|
| Mean | 21.62 dBm |
| Peak | 27.86 dBm |
| Crest | 6.23 dB |
| 10 % | 3.27 dB |
| 1 % | 5.45 dB |
| .1 % | 6.03 dB |
| .01 % | 6.22 dB |

Date: 17.DEC.2013 20:01:45

**Peak-to-Average Ratio on LTE Band 7**

**20MHz / 16QAM in Ch. 20850 (100RB Size)**



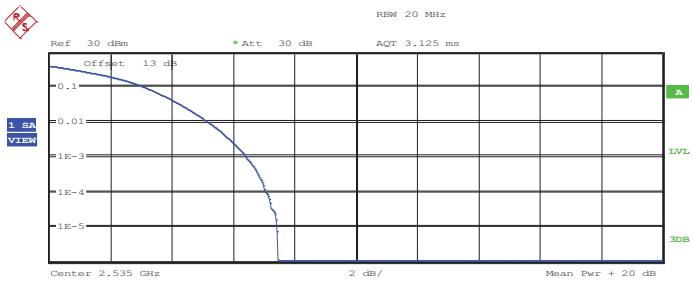

Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

| | Trace 1 |
|---|---|
| Mean | 20.62 dBm |
| Peak | 28.44 dBm |
| Crest | 7.82 dB |
| 10 % | 3.11 dB |
| 1 % | 5.19 dB |
| .1 % | 6.41 dB |
| .01 % | 7.34 dB |

Date: 17.DEC.2013 20:02:42

**Peak-to-Average Ratio on LTE Band 7**

**20MHz / 16QAM in Ch. 21100 (100RB Size)**



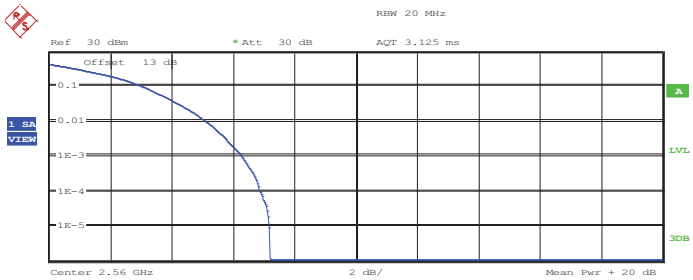

Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

| | Trace 1 |
|---|---|
| Mean | 20.92 dBm |
| Peak | 28.36 dBm |
| Crest | 7.45 dB |
| 10 % | 3.11 dB |
| 1 % | 5.16 dB |
| .1 % | 6.41 dB |
| .01 % | 7.05 dB |

Date: 17.DEC.2013 20:02:24

**Peak-to-Average Ratio on LTE Band 7**

**20MHz / 16QAM in Ch. 21350 (100RB Size)**




Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

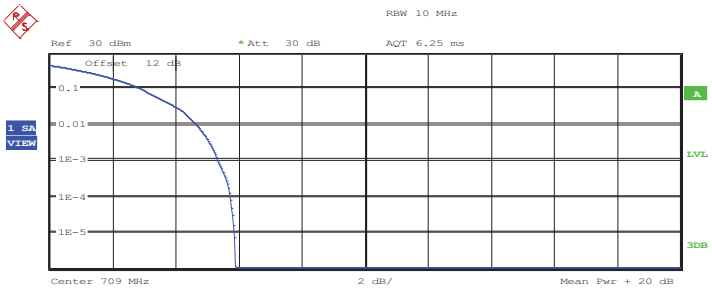
| | Trace 1 |
|---|---|
| Mean | 20.38 dBm |
| Peak | 27.57 dBm |
| Crest | 7.20 dB |
| 10 % | 3.04 dB |
| 1 % | 5.10 dB |
| .1 % | 6.25 dB |
| .01 % | 6.86 dB |

Date: 17.DEC.2013 20:00:56

***Note:*** *The total loss is 13 dB of the RF cable and attenuator for LTE Band 7, and has been compensated to the spectrum analyzer offset.*

**Peak-to-Average Ratio on LTE Band 17**

**10MHz / 16QAM in Ch. 23780 (1RB Size)**



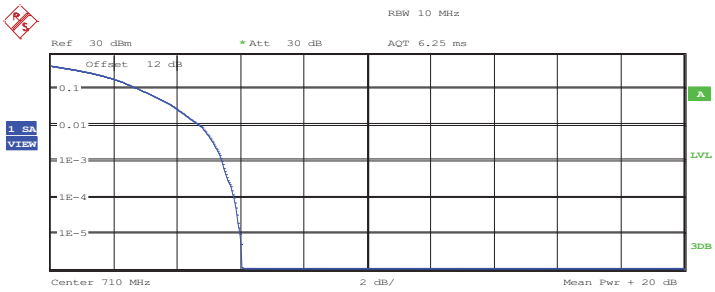

Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

| | Trace 1 |
|---|---|
| Mean | 22.13 dBm |
| Peak | 28.01 dBm |
| Crest | 5.88 dB |
| 10 % | 2.88 dB |
| 1 % | 4.65 dB |
| .1 % | 5.32 dB |
| .01 % | 5.74 dB |

Date: 26.DEC.2013 09:45:56

**Peak-to-Average Ratio on LTE Band 17**

**10MHz / 16QAM in Ch. 23790 (1RB Size)**



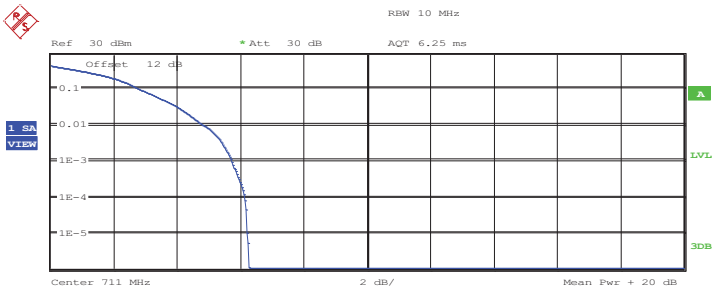

Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

| | Trace 1 |
|---|---|
| Mean | 22.31 dBm |
| Peak | 28.37 dBm |
| Crest | 6.05 dB |
| 10 % | 2.79 dB |
| 1 % | 4.71 dB |
| .1 % | 5.42 dB |
| .01 % | 5.80 dB |

Date: 26.DEC.2013 09:49:07

**Peak-to-Average Ratio on LTE Band 17**

**10MHz / 16QAM in Ch. 23800 (1RB Size)**



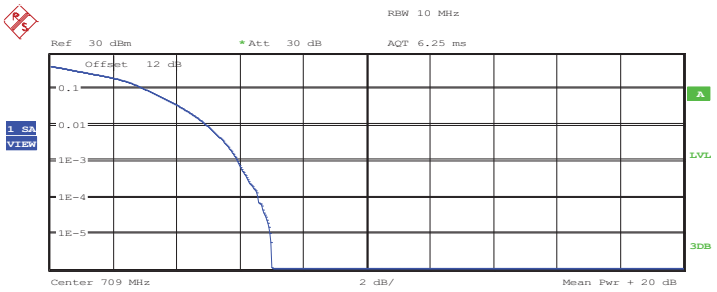

Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

| | Trace 1 |
|---|---|
| Mean | 22.31 dBm |
| Peak | 28.59 dBm |
| Crest | 6.28 dB |
| 10 % | 2.82 dB |
| 1 % | 4.84 dB |
| .1 % | 5.74 dB |
| .01 % | 6.12 dB |

Date: 26.DEC.2013 09:50:49

**Peak-to-Average Ratio on LTE Band 17**

**10MHz / 16QAM in Ch. 23780 (50RB Size)**



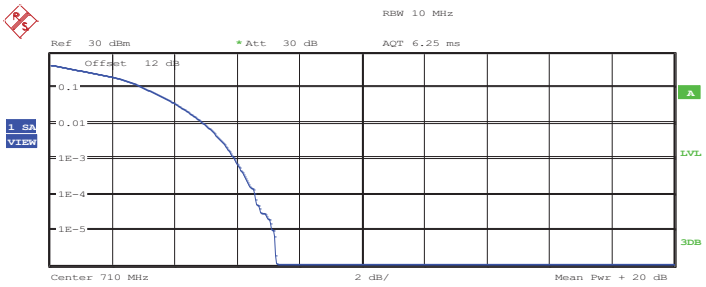

Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

| | Trace 1 |
|---|---|
| Mean | 21.63 dBm |
| Peak | 28.64 dBm |
| Crest | 7.01 dB |
| 10 % | 3.01 dB |
| 1 % | 4.94 dB |
| .1 % | 5.93 dB |
| .01 % | 6.57 dB |

Date: 26.DEC.2013 09:46:43

**Peak-to-Average Ratio on LTE Band 17**

**10MHz / 16QAM in Ch. 23790 (50RB Size)**



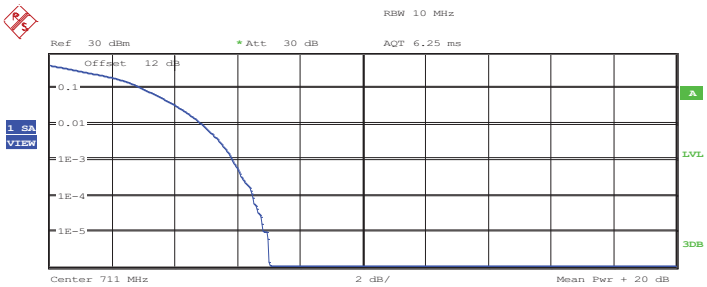

Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

| | Trace 1 |
|---|---|
| Mean | 21.62 dBm |
| Peak | 28.86 dBm |
| Crest | 7.24 dB |
| 10 % | 3.01 dB |
| 1 % | 4.90 dB |
| .1 % | 5.90 dB |
| .01 % | 6.57 dB |

Date: 26.DEC.2013 09:47:09

**Peak-to-Average Ratio on LTE Band 17**

**10MHz / 16QAM in Ch. 23800 (50RB Size)**




Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

| | Trace 1 |
|---|---|
| Mean | 21.64 dBm |
| Peak | 28.66 dBm |
| Crest | 7.02 dB |
| 10 % | 2.98 dB |
| 1 % | 4.84 dB |
| .1 % | 5.83 dB |
| .01 % | 6.47 dB |

Date: 26.DEC.2013 09:50:13

***Note:*** *The total loss is 12 dB of the RF cable and attenuator for LTE Band 17, and has been compensated to the spectrum analyzer offset.*

## 3.3 Effective Radiated Power and Equivalent Isotropic Radiated Power Measurement

### 3.3.1 Description of the ERP/EIRP Measurement

Effective radiated power output measurements by substitution method according to ANSI / TIA / EIA-603-C-2004, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v01. Mobile and portable (hand-held) stations operating are limited to average ERP of 3 watt with LTE band 17(FCC Only).

Equivalent isotropic radiated power output measurements by substitution method according to ANSI / TIA / EIA-603-C-2004, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v01. Mobile and portable (hand-held) stations operating are limited to average EIRP of 2 watts with LTE band 2, 7, and 1 watt with LTE band 4, and 5 watts with LTE band 17(IC Only).

### 3.3.2 Measuring Instruments

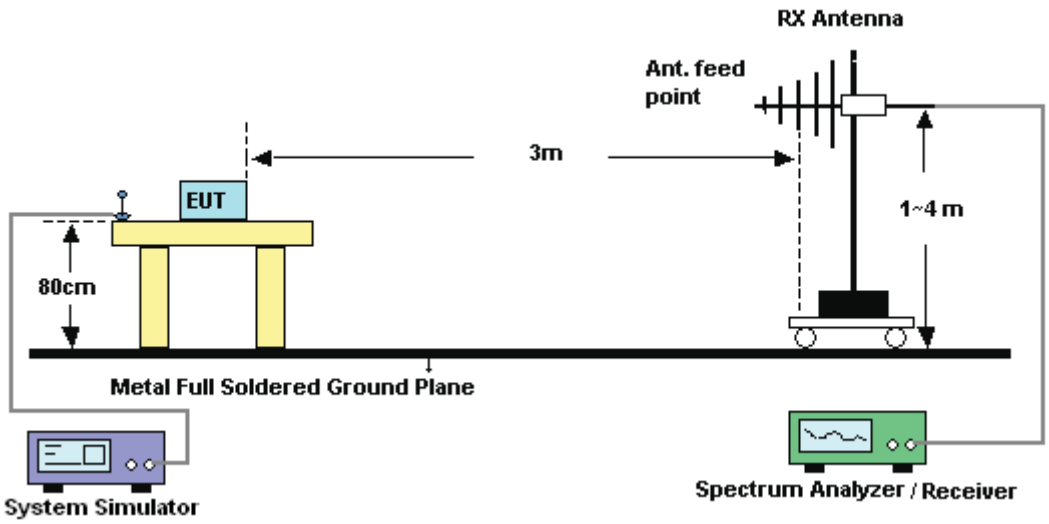
The measuring equipment is listed in the section 4 of this test report.

### 3.3.3 Test Procedures

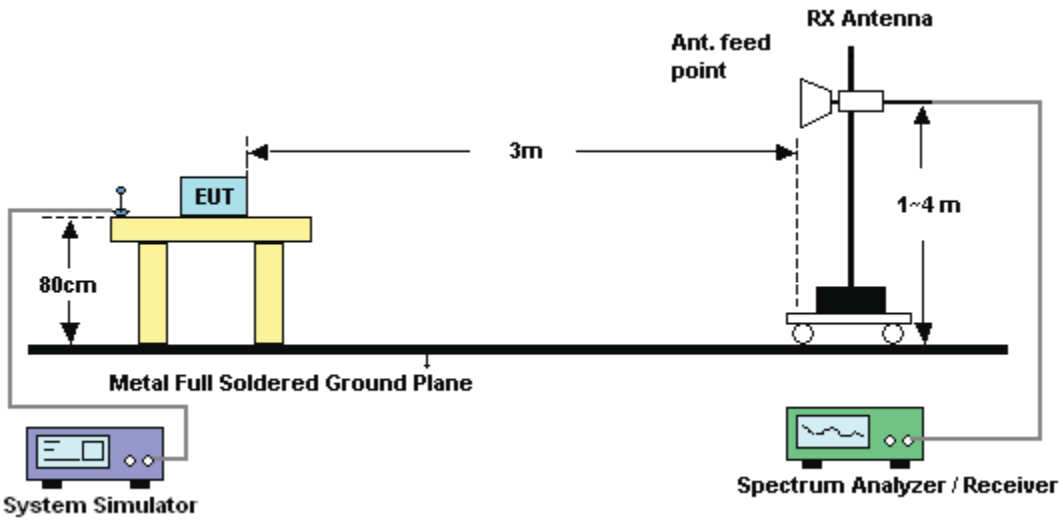
1. The EUT was placed on a non-conductive rotating platform with 0.8 meter height in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer which used a channel power option across EUT's signal bandwidth per section 4.0 of KDB 971168 D01.
2. During the measurement, the EUT was enforced in maximum power and linked with a base station. The highest emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
3. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by dipole antenna (substitution antenna) at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP was calculated with the correction factor, EIRP= LVL + Correction factor and ERP = EIRP – 2.15.

### 3.3.4 Test Setup

**For Effective Radiated Power**




**For Equivalent Isotropic Radiated Power**



### 3.3.5 Test Result of ERP/EIRP

| LTE Band 2 Radiated Power EIRP for BW 1.4MHz / QPSK | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1850.7 | -21.68 | 43.69 | 22.01 | 0.1589 |
| 1880.0 | -20.92 | 44.79 | 23.87 | 0.2438 |
| 1909.3 | -20.90 | 43.59 | 22.69 | 0.1858 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1850.7 | -32.90 | 45.72 | 12.82 | 0.0191 |
| 1880.0 | -32.56 | 46.78 | 14.22 | 0.0264 |
| 1909.3 | -33.60 | 46.77 | 13.17 | 0.0207 |

| LTE Band 2 Radiated Power EIRP for BW 1.4MHz / 16QAM | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1850.7 | -22.67 | 43.69 | 21.02 | 0.1265 |
| 1880.0 | -21.24 | 44.79 | 23.55 | 0.2265 |
| 1909.3 | -21.56 | 43.59 | 22.03 | 0.1596 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1850.7 | -33.27 | 45.72 | 12.45 | 0.0176 |
| 1880.0 | -33.05 | 46.78 | 13.73 | 0.0236 |
| 1909.3 | -34.33 | 46.77 | 12.44 | 0.0175 |

| LTE Band 2 Radiated Power EIRP for BW 3MHz / QPSK | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1851.5 | -21.83 | 43.69 | 21.86 | 0.1535 |
| 1880.0 | -20.97 | 44.79 | 23.82 | 0.2410 |
| 1908.5 | -21.60 | 43.59 | 21.99 | 0.1581 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1851.5 | -32.34 | 45.72 | 13.38 | 0.0218 |
| 1880.0 | -32.88 | 46.78 | 13.90 | 0.0245 |
| 1908.5 | -33.13 | 46.77 | 13.64 | 0.0231 |

| LTE Band 2 Radiated Power EIRP for BW 3MHz / 16QAM | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1851.5 | -22.47 | 43.69 | 21.22 | 0.1324 |
| 1880.0 | -21.74 | 44.79 | 23.05 | 0.2018 |
| 1908.5 | -22.20 | 43.59 | 21.39 | 0.1377 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1851.5 | -32.82 | 45.72 | 12.90 | 0.0195 |
| 1880.0 | -33.48 | 46.78 | 13.30 | 0.0214 |
| 1908.5 | -33.88 | 46.77 | 12.89 | 0.0195 |

| LTE Band 2 Radiated Power EIRP for BW 5MHz / QPSK | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1852.5 | -22.23 | 43.69 | 21.46 | 0.1400 |
| 1880.0 | -21.26 | 44.79 | 23.53 | 0.2254 |
| 1907.5 | -21.71 | 43.59 | 21.88 | 0.1542 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1852.5 | -32.79 | 45.72 | 12.93 | 0.0196 |
| 1880.0 | -33.34 | 46.78 | 13.44 | 0.0221 |
| 1907.5 | -34.06 | 46.77 | 12.71 | 0.0187 |

| LTE Band 2 Radiated Power EIRP for BW 5MHz / 16QAM | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1852.5 | -23.00 | 43.69 | 20.69 | 0.1172 |
| 1880.0 | -22.15 | 44.79 | 22.64 | 0.1837 |
| 1907.5 | -22.48 | 43.59 | 21.11 | 0.1291 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1852.5 | -33.39 | 45.72 | 12.33 | 0.0171 |
| 1880.0 | -33.80 | 46.78 | 12.98 | 0.0199 |
| 1907.5 | -34.88 | 46.77 | 11.89 | 0.0155 |

| LTE Band 2 Radiated Power EIRP for BW 10MHz / QPSK | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1855.0 | -21.28 | 43.69 | 22.41 | 0.1742 |
| 1880.0 | -21.49 | 44.79 | 23.30 | 0.2138 |
| 1905.0 | -21.30 | 43.59 | 22.29 | 0.1694 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1855.0 | -32.72 | 45.72 | 13.00 | 0.0200 |
| 1880.0 | -33.72 | 46.78 | 13.06 | 0.0202 |
| 1905.0 | -33.82 | 46.77 | 12.95 | 0.0197 |

| LTE Band 2 Radiated Power EIRP for BW 10MHz / 16QAM | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1855.0 | -21.90 | 43.69 | 21.79 | 0.1510 |
| 1880.0 | -22.29 | 44.79 | 22.50 | 0.1778 |
| 1905.0 | -22.13 | 43.59 | 21.46 | 0.1400 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1855.0 | -33.36 | 45.72 | 12.36 | 0.0172 |
| 1880.0 | -34.65 | 46.78 | 12.13 | 0.0163 |
| 1905.0 | -34.55 | 46.77 | 12.22 | 0.0167 |

| LTE Band 2 Radiated Power EIRP for BW 15MHz / QPSK | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1857.5 | -22.15 | 43.69 | 21.54 | 0.1426 |
| 1880.0 | -20.96 | 44.79 | 23.83 | 0.2415 |
| 1902.5 | -22.16 | 43.59 | 21.43 | 0.1390 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1857.5 | -32.83 | 45.72 | 12.89 | 0.0195 |
| 1880.0 | -33.46 | 46.78 | 13.32 | 0.0215 |
| 1902.5 | -33.45 | 46.77 | 13.32 | 0.0215 |

| LTE Band 2 Radiated Power EIRP for BW 15MHz / 16QAM | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1857.5 | -22.88 | 43.69 | 20.81 | 0.1205 |
| 1880.0 | -21.68 | 44.79 | 23.11 | 0.2046 |
| 1902.5 | -22.81 | 43.59 | 20.78 | 0.1197 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1857.5 | -33.24 | 45.72 | 12.48 | 0.0177 |
| 1880.0 | -34.29 | 46.78 | 12.49 | 0.0177 |
| 1902.5 | -34.02 | 46.77 | 12.75 | 0.0188 |

| LTE Band 2 Radiated Power EIRP for BW 20MHz / QPSK | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1860.0 | -22.78 | 43.69 | 20.91 | 0.1233 |
| 1880.0 | -21.30 | 44.79 | 23.49 | 0.2234 |
| 1900.0 | -22.08 | 43.59 | 21.51 | 0.1416 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1860.0 | -32.38 | 45.72 | 13.34 | 0.0216 |
| 1880.0 | -34.03 | 46.78 | 12.75 | 0.0188 |
| 1900.0 | -33.08 | 46.77 | 13.69 | 0.0234 |

| LTE Band 2 Radiated Power EIRP for BW 20MHz / 16QAM | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1860.0 | -23.29 | 43.69 | 20.40 | 0.1096 |
| 1880.0 | -22.14 | 44.79 | 22.65 | 0.1841 |
| 1900.0 | -22.77 | 43.59 | 20.82 | 0.1208 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1860.0 | -33.28 | 45.72 | 12.44 | 0.0175 |
| 1880.0 | -35.11 | 46.78 | 11.67 | 0.0147 |
| 1900.0 | -33.50 | 46.77 | 13.27 | 0.0212 |

| LTE Band 4 Radiated Power EIRP for BW 1.4MHz / QPSK | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1710.70 | -17.43 | 41.65 | 22.07 | 0.1611 |
| 1732.50 | -19.02 | 42.95 | 21.78 | 0.1507 |
| 1754.30 | -18.59 | 42.28 | 21.54 | 0.1426 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1710.70 | -23.04 | 43.57 | 18.38 | 0.0689 |
| 1732.50 | -22.97 | 45.94 | 20.82 | 0.1208 |
| 1754.30 | -23.46 | 45.2 | 19.59 | 0.0910 |

| LTE Band 4 Radiated Power EIRP for BW 1.4MHz / 16QAM | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1710.70 | -18.23 | 41.65 | 21.27 | 0.1340 |
| 1732.50 | -19.28 | 42.95 | 21.52 | 0.1419 |
| 1754.30 | -18.87 | 42.28 | 21.26 | 0.1337 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1710.70 | -23.99 | 43.57 | 17.43 | 0.0553 |
| 1732.50 | -23.77 | 45.94 | 20.02 | 0.1005 |
| 1754.30 | -23.82 | 45.2 | 19.23 | 0.0838 |

| LTE Band 4 Radiated Power EIRP for BW 3MHz / QPSK | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1711.50 | -16.67 | 41.58 | 22.76 | 0.1888 |
| 1732.50 | -17.88 | 42.95 | 22.92 | 0.1959 |
| 1753.50 | -18.22 | 42.12 | 21.75 | 0.1496 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1711.50 | -22.34 | 43.49 | 19.00 | 0.0794 |
| 1732.50 | -23.57 | 45.94 | 20.22 | 0.1052 |
| 1753.50 | -23.00 | 44.94 | 19.79 | 0.0953 |

| LTE Band 4 Radiated Power EIRP for BW 3MHz / 16QAM | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1711.50 | -18.43 | 41.58 | 21.00 | 0.1259 |
| 1732.50 | -20.70 | 42.95 | 20.10 | 0.1023 |
| 1753.50 | -19.55 | 42.12 | 20.42 | 0.1102 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1711.50 | -23.84 | 43.49 | 17.50 | 0.0562 |
| 1732.50 | -23.19 | 45.94 | 20.60 | 0.1148 |
| 1753.50 | -24.26 | 44.94 | 18.53 | 0.0713 |

| LTE Band 4 Radiated Power EIRP for BW 5MHz / QPSK | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1712.5 | -18.37 | 41.62 | 21.10 | 0.1288 |
| 1732.5 | -18.52 | 42.06 | 21.39 | 0.1377 |
| 1752.5 | -19.18 | 41.73 | 20.40 | 0.1096 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1712.5 | -23.18 | 43.45 | 18.12 | 0.0649 |
| 1732.5 | -22.90 | 45.68 | 20.63 | 0.1156 |
| 1752.5 | -24.25 | 44.88 | 18.48 | 0.0705 |

| LTE Band 4 Radiated Power EIRP for BW 5MHz / 16QAM | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1712.5 | -19.96 | 41.62 | 19.51 | 0.0893 |
| 1732.5 | -19.69 | 42.06 | 20.22 | 0.1052 |
| 1752.5 | -18.80 | 41.73 | 20.78 | 0.1197 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1712.5 | -23.76 | 43.45 | 17.54 | 0.0568 |
| 1732.5 | -23.91 | 45.68 | 19.62 | 0.0916 |
| 1752.5 | -24.58 | 44.88 | 18.15 | 0.0653 |

| LTE Band 4 Radiated Power EIRP for BW 10MHz / QPSK | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1715.0 | -18.21 | 42.12 | 21.76 | 0.1500 |
| 1732.5 | -16.98 | 42.06 | 22.93 | 0.1963 |
| 1750.0 | -17.60 | 41.57 | 21.82 | 0.1521 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1715.0 | -23.09 | 44.81 | 19.57 | 0.0906 |
| 1732.5 | -22.90 | 45.68 | 20.63 | 0.1156 |
| 1750.0 | -23.70 | 44.74 | 18.89 | 0.0774 |

| LTE Band 4 Radiated Power EIRP for BW 10MHz / 16QAM | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1715.0 | -19.35 | 42.12 | 20.62 | 0.1153 |
| 1732.5 | -17.63 | 42.06 | 22.28 | 0.1690 |
| 1750.0 | -18.57 | 41.57 | 20.85 | 0.1216 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1715.0 | -24.12 | 44.81 | 18.54 | 0.0714 |
| 1732.5 | -23.38 | 45.68 | 20.15 | 0.1035 |
| 1750.0 | -24.87 | 44.74 | 17.72 | 0.0592 |

| LTE Band 4 Radiated Power EIRP for BW 15MHz / QPSK | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1717.50 | -18.69 | 41.79 | 20.95 | 0.1245 |
| 1732.50 | -17.50 | 42.06 | 22.41 | 0.1742 |
| 1747.50 | -18.44 | 41.31 | 20.72 | 0.1180 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1717.50 | -23.15 | 44.99 | 19.69 | 0.0931 |
| 1732.50 | -23.25 | 45.68 | 20.28 | 0.1067 |
| 1747.50 | -23.64 | 44.95 | 19.16 | 0.0824 |

| LTE Band 4 Radiated Power EIRP for BW 15MHz / 16QAM | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1717.50 | -19.27 | 41.79 | 20.37 | 0.1089 |
| 1732.50 | -17.91 | 42.06 | 22.00 | 0.1585 |
| 1747.50 | -18.61 | 41.31 | 20.55 | 0.1135 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1717.50 | -24.22 | 44.99 | 18.62 | 0.0728 |
| 1732.50 | -24.48 | 45.68 | 19.05 | 0.0804 |
| 1747.50 | -24.26 | 44.95 | 18.54 | 0.0714 |

| LTE Band 4 Radiated Power EIRP for BW 20MHz / QPSK | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1720.00 | -18.38 | 41.43 | 20.90 | 0.1230 |
| 1732.50 | -17.80 | 42.06 | 22.11 | 0.1626 |
| 1745.00 | -18.61 | 41.15 | 20.39 | 0.1094 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1720.00 | -23.22 | 43.87 | 18.50 | 0.0708 |
| 1732.50 | -24.21 | 45.68 | 19.32 | 0.0855 |
| 1745.00 | -24.79 | 44.39 | 17.45 | 0.0556 |

| LTE Band 4 Radiated Power EIRP for BW 20MHz / 16QAM | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1720.00 | -19.39 | 41.43 | 19.89 | 0.0975 |
| 1732.50 | -18.76 | 42.06 | 21.15 | 0.1303 |
| 1745.00 | -18.68 | 41.15 | 20.32 | 0.1076 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 1720.00 | -24.09 | 43.87 | 17.63 | 0.0579 |
| 1732.50 | -25.22 | 45.68 | 18.31 | 0.0678 |
| 1745.00 | -25.02 | 44.39 | 17.22 | 0.0527 |

| LTE Band 7 Radiated Power EIRP for BW 5MHz / QPSK | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 2502.5 | -18.05 | 44.76 | 26.71 | 0.4688 |
| 2535.0 | -18.02 | 45.37 | 27.35 | 0.5433 |
| 2567.5 | -19.25 | 45.12 | 25.87 | 0.3864 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 2502.5 | -28.33 | 45.76 | 17.43 | 0.0553 |
| 2535.0 | -28.38 | 47.04 | 18.66 | 0.0735 |
| 2567.5 | -28.50 | 46.31 | 17.81 | 0.0604 |

| LTE Band 7 Radiated Power EIRP for BW 5MHz / 16QAM | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 2502.5 | -18.46 | 44.76 | 26.30 | 0.4266 |
| 2535.0 | -19.18 | 45.37 | 26.19 | 0.4159 |
| 2567.5 | -19.49 | 45.12 | 25.63 | 0.3656 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 2502.5 | -29.19 | 45.76 | 16.57 | 0.0454 |
| 2535.0 | -29.31 | 47.04 | 17.73 | 0.0593 |
| 2567.5 | -28.95 | 46.31 | 17.36 | 0.0545 |

| LTE Band 7 Radiated Power EIRP for BW 10MHz / QPSK | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 2505.0 | -17.23 | 44.97 | 27.74 | 0.5943 |
| 2535.0 | -17.63 | 45.37 | 27.74 | 0.5943 |
| 2565.0 | -19.76 | 45.11 | 25.35 | 0.3428 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 2505.0 | -27.99 | 45.97 | 17.98 | 0.0628 |
| 2535.0 | -27.37 | 47.04 | 19.67 | 0.0927 |
| 2565.0 | -28.26 | 46.30 | 18.04 | 0.0637 |

| LTE Band 7 Radiated Power EIRP for BW 10MHz / 16QAM | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 2505.0 | -18.83 | 44.97 | 26.14 | 0.4111 |
| 2535.0 | -19.87 | 45.37 | 25.50 | 0.3548 |
| 2565.0 | -20.95 | 45.11 | 24.16 | 0.2606 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 2505.0 | -28.24 | 45.97 | 17.73 | 0.0593 |
| 2535.0 | -27.68 | 47.04 | 19.36 | 0.0863 |
| 2565.0 | -28.60 | 46.30 | 17.70 | 0.0589 |

| LTE Band 7 Radiated Power EIRP for BW 15MHz / QPSK | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 2507.5 | -19.02 | 44.92 | 25.90 | 0.3890 |
| 2535.0 | -19.03 | 45.37 | 26.34 | 0.4305 |
| 2562.5 | -21.21 | 45.10 | 23.89 | 0.2449 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 2507.5 | -28.40 | 45.92 | 17.52 | 0.0565 |
| 2535.0 | -27.32 | 47.04 | 19.72 | 0.0938 |
| 2562.5 | -28.71 | 46.29 | 17.58 | 0.0573 |

| LTE Band 7 Radiated Power EIRP for BW 15MHz / 16QAM | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 2507.5 | -20.03 | 44.92 | 24.89 | 0.3083 |
| 2535.0 | -19.93 | 45.37 | 25.44 | 0.3499 |
| 2562.5 | -21.33 | 45.10 | 23.77 | 0.2382 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 2507.5 | -28.66 | 45.92 | 17.26 | 0.0532 |
| 2535.0 | -27.66 | 47.04 | 19.38 | 0.0867 |
| 2562.5 | -29.04 | 46.29 | 17.25 | 0.0531 |

| LTE Band 7 Radiated Power EIRP for BW 20MHz / QPSK | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 2510.0 | -18.99 | 44.94 | 25.95 | 0.3936 |
| 2535.0 | -19.47 | 45.37 | 25.90 | 0.3890 |
| 2560.0 | -19.52 | 45.10 | 25.58 | 0.3614 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 2510.0 | -28.08 | 45.94 | 17.86 | 0.0611 |
| 2535.0 | -28.72 | 47.04 | 18.32 | 0.0679 |
| 2560.0 | -28.18 | 46.29 | 18.11 | 0.0647 |

| LTE Band 7 Radiated Power EIRP for BW 20MHz / 16QAM | | | | |
|---|---|---|---|---|
| Horizontal Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 2510.0 | -20.90 | 44.94 | 24.04 | 0.2535 |
| 2535.0 | -20.20 | 45.37 | 25.17 | 0.3289 |
| 2560.0 | -21.75 | 45.10 | 23.35 | 0.2163 |
| Vertical Polarization | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (W) |
| 2510.0 | -29.39 | 45.94 | 16.55 | 0.0452 |
| 2535.0 | -30.24 | 47.04 | 16.80 | 0.0479 |
| 2560.0 | -29.37 | 46.29 | 16.92 | 0.0492 |

| LTE Band 17 Radiated Power ERP/EIRP for BW 5MHz / QPSK | | | | | | |
|---|---|---|---|---|---|---|
| Horizontal Polarization | | | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (W) | EIRP (dBm) | EIRP (W) |
| 706.50 | -12.62 | 30.84 | 16.07 | 0.0405 | 18.22 | 0.0664 |
| 710.00 | -12.55 | 30.86 | 16.16 | 0.0413 | 18.31 | 0.0678 |
| 713.50 | -12.53 | 30.81 | 16.13 | 0.0410 | 18.28 | 0.0673 |
| Vertical Polarization | | | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (W) | EIRP (dBm) | EIRP (W) |
| 706.50 | -26.82 | 34.59 | 5.62 | 0.0036 | 7.77 | 0.0060 |
| 710.00 | -26.48 | 34.03 | 5.40 | 0.0035 | 7.55 | 0.0057 |
| 713.50 | -25.77 | 33.68 | 5.76 | 0.0038 | 7.91 | 0.0062 |

| LTE Band 17 Radiated Power ERP/EIRP for BW 5MHz / 16QAM | | | | | | |
|---|---|---|---|---|---|---|
| Horizontal Polarization | | | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (W) | EIRP (dBm) | EIRP (W) |
| 706.50 | -13.49 | 30.84 | 15.20 | 0.0331 | 17.35 | 0.0543 |
| 710.00 | -13.38 | 30.86 | 15.33 | 0.0341 | 17.48 | 0.0560 |
| 713.50 | -13.45 | 30.81 | 15.21 | 0.0332 | 17.36 | 0.0545 |
| Vertical Polarization | | | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (W) | EIRP (dBm) | EIRP (W) |
| 706.50 | -27.15 | 34.59 | 5.29 | 0.0034 | 7.44 | 0.0055 |
| 710.00 | -26.85 | 34.03 | 5.03 | 0.0032 | 7.18 | 0.0052 |
| 713.50 | -26.24 | 33.68 | 5.29 | 0.0034 | 7.44 | 0.0055 |

* ERP = LVL (dBm) + Correction Factor (dB) - 2.15

| LTE Band 17 Radiated Power ERP/EIRP for BW 10MHz / QPSK | | | | | | |
|---|---|---|---|---|---|---|
| Horizontal Polarization | | | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (W) | EIRP (dBm) | EIRP (W) |
| 709.00 | -11.97 | 30.77 | 16.65 | 0.0462 | 18.80 | 0.0759 |
| 710.00 | -11.96 | 30.86 | 16.75 | 0.0473 | 18.90 | 0.0776 |
| 711.00 | -13.61 | 30.82 | 15.06 | 0.0321 | 17.21 | 0.0526 |
| Vertical Polarization | | | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (W) | EIRP (dBm) | EIRP (W) |
| 709.00 | -25.68 | 34.16 | 6.33 | 0.0043 | 8.48 | 0.0070 |
| 710.00 | -26.54 | 34.03 | 5.34 | 0.0034 | 7.49 | 0.0056 |
| 711.00 | -26.62 | 33.94 | 5.17 | 0.0033 | 7.32 | 0.0054 |

| LTE Band 17 Radiated Power ERP/EIRP for BW 10MHz / 16QAM | | | | | | |
|---|---|---|---|---|---|---|
| Horizontal Polarization | | | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (W) | EIRP (dBm) | EIRP (W) |
| 709.00 | -12.70 | 30.77 | 15.92 | 0.0391 | 18.07 | 0.0741 |
| 710.00 | -12.95 | 30.86 | 15.76 | 0.0377 | 17.91 | 0.0618 |
| 711.00 | -13.89 | 30.82 | 14.78 | 0.0301 | 16.93 | 0.0493 |
| Vertical Polarization | | | | | | |
| Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (W) | EIRP (dBm) | EIRP (W) |
| 709.00 | -26.04 | 34.16 | 5.97 | 0.0040 | 8.12 | 0.0065 |
| 710.00 | -26.86 | 34.03 | 5.02 | 0.0032 | 7.17 | 0.0052 |
| 711.00 | -27.19 | 33.94 | 4.60 | 0.0029 | 6.75 | 0.0047 |

* ERP = LVL (dBm) + Correction Factor (dB) - 2.15

## 3.4 Occupied Bandwidth

### 3.4.1 Description of Occupied Bandwidth Measurement

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

The 26dB occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal 26 dB.
The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

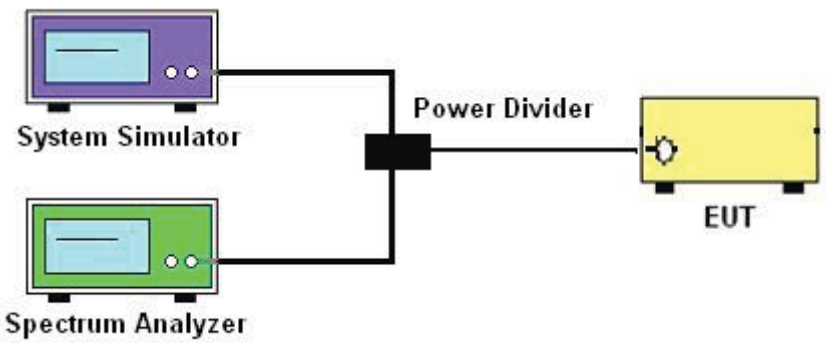
### 3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

### 3.4.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The 26dB and 99% occupied bandwidth (BW) of the middle channel for the highest RF powers with full RB sizes were measured.

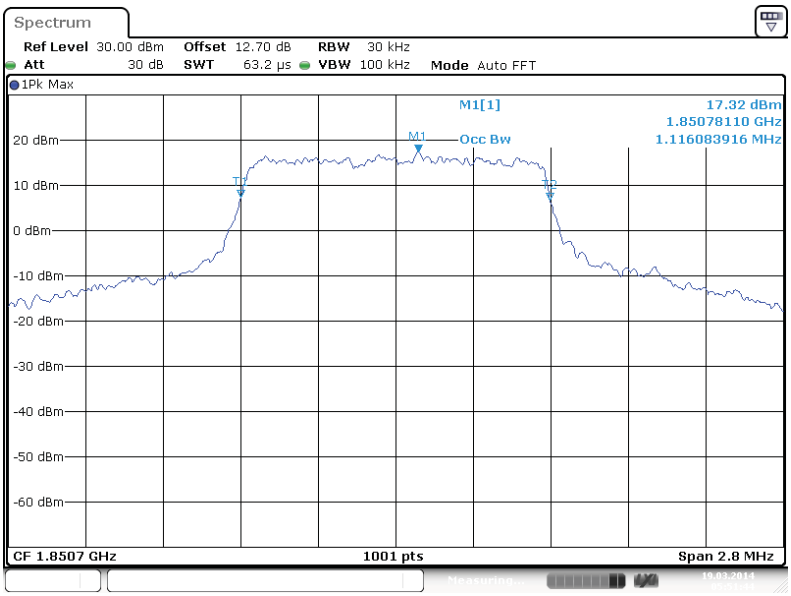
### 3.4.4 Test Setup



### 3.4.5 Test Result (Plots) of Occupied Bandwidth

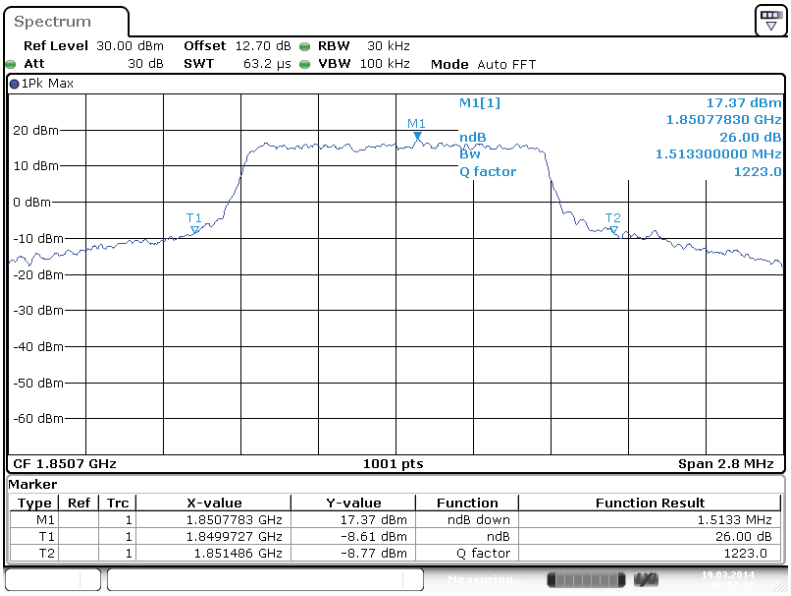
| Band : | LTE Band 2 | BW / Mod. : | 1.4MHz / QPSK |
|---|---|---|---|

**99% Occupied Bandwidth Plot on Channel 18607**



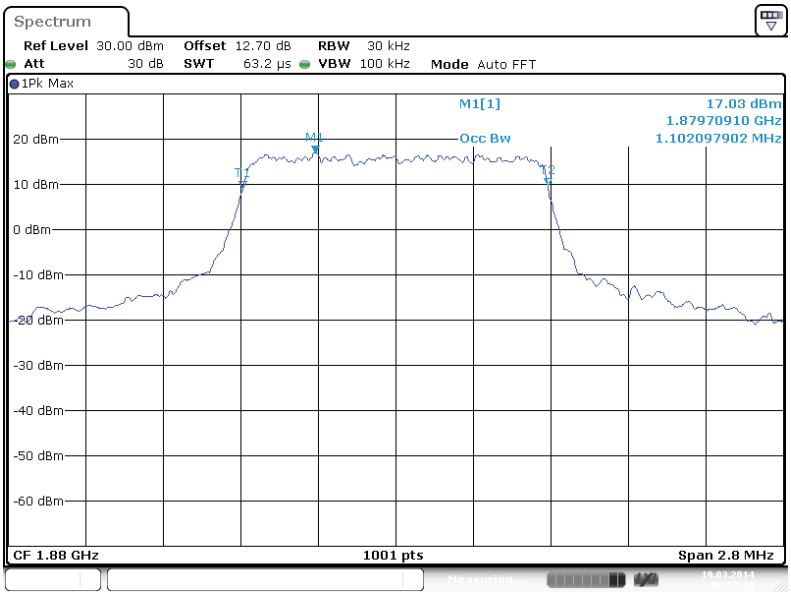

Date: 19.MAR.2014 05:51:44

**26dB Bandwidth Plot on Channel 18607**



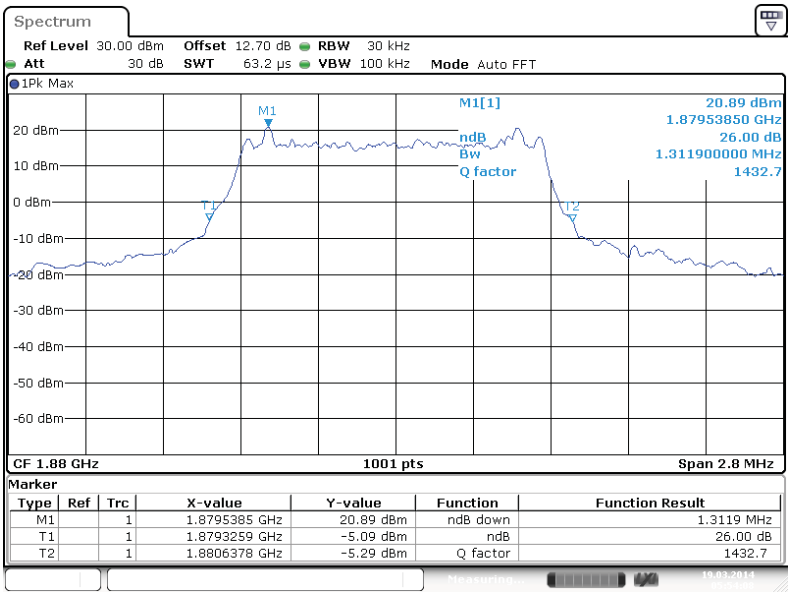

Date: 19.MAR.2014 05:52:32

## 99% Occupied Bandwidth Plot on Channel 18900




Date: 19.MAR.2014 05:53:21

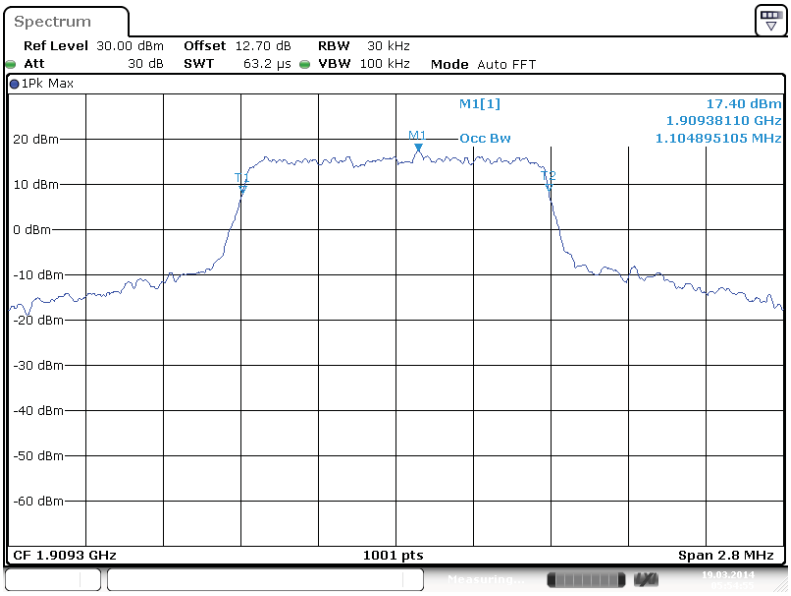
## 26dB Bandwidth Plot on Channel 18900




| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.8795385 GHz | 20.89 dBm | ndB down | 1.3119 MHz |
| T1 | | 1 | 1.8793259 GHz | -5.09 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.8806378 GHz | -5.29 dBm | Q factor | 1432.7 |

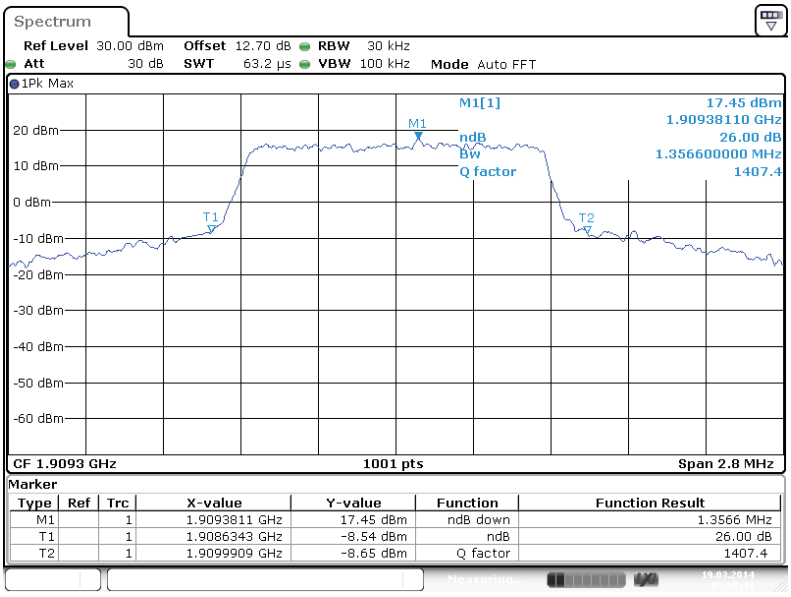
Date: 19.MAR.2014 05:54:08

## 99% Occupied Bandwidth Plot on Channel 19193




Date: 19.MAR.2014 05:54:56

## 26dB Bandwidth Plot on Channel 19193



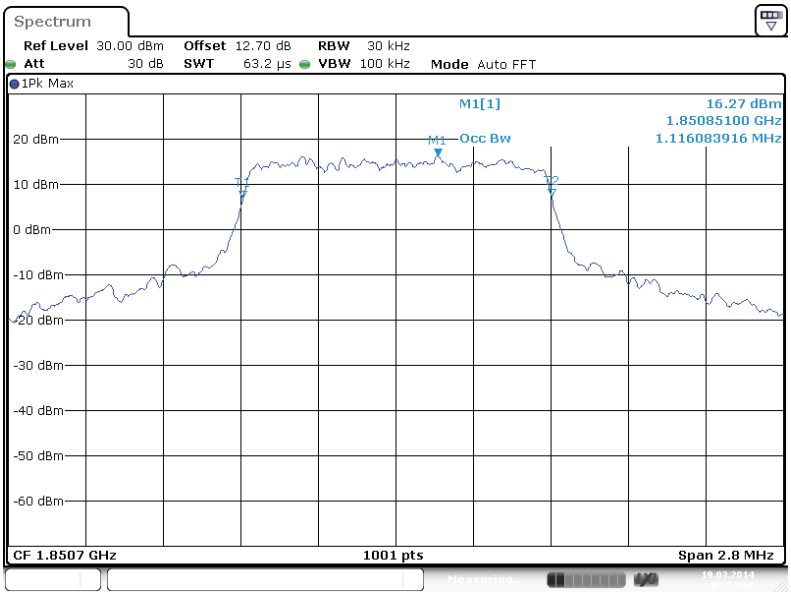

Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.9093811 GHz | 17.45 dBm | ndB down | 1.3566 MHz |
| T1 | | 1 | 1.9086343 GHz | -8.54 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.9099909 GHz | -8.65 dBm | Q factor | 1407.4 |

Date: 19.MAR.2014 05:55:43

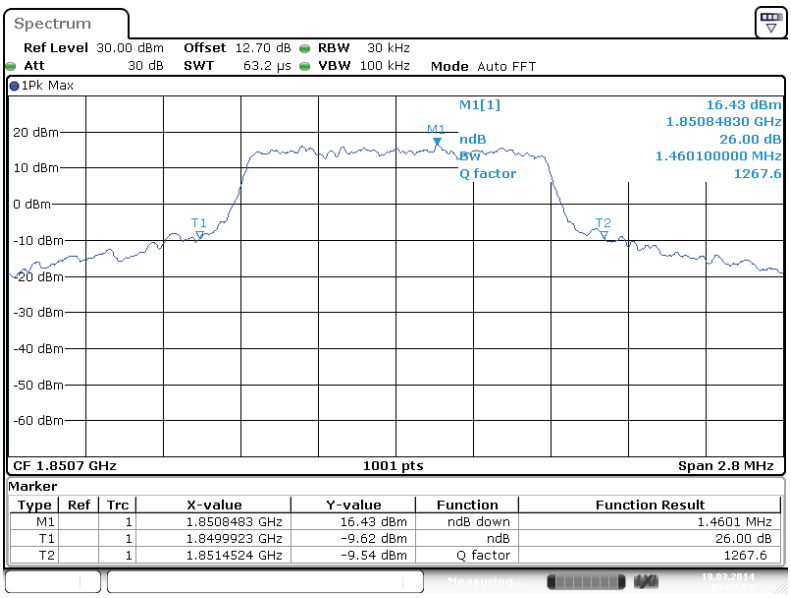
| Band : | LTE Band 2 | BW / Mod. : | 1.4MHz / 16QAM |
|---|---|---|---|

### 99% Occupied Bandwidth Plot on Channel 18607




Date: 19.MAR.2014 05:52:07

### 26dB Bandwidth Plot on Channel 18607

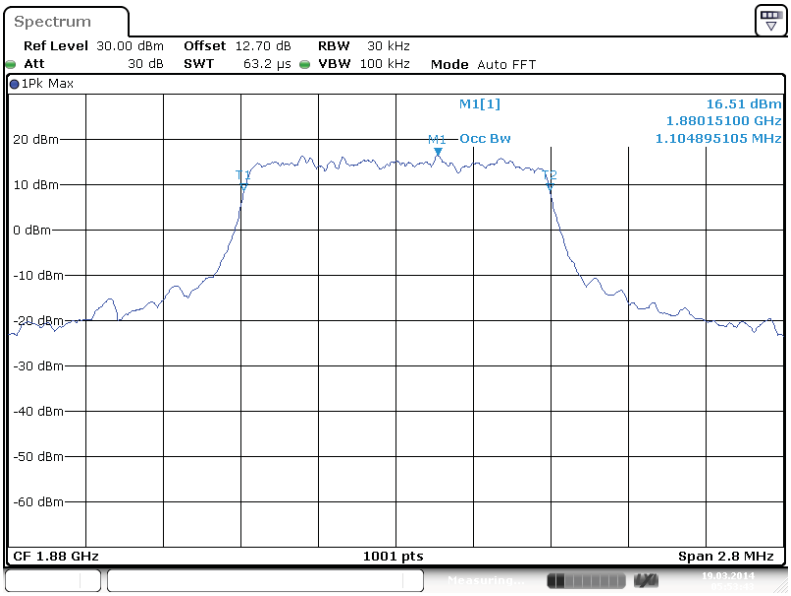



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.8508483 GHz | 16.43 dBm | ndB down | 1.4601 MHz |
| T1 | | 1 | 1.8499923 GHz | -9.62 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.8514524 GHz | -9.54 dBm | Q factor | 1267.6 |

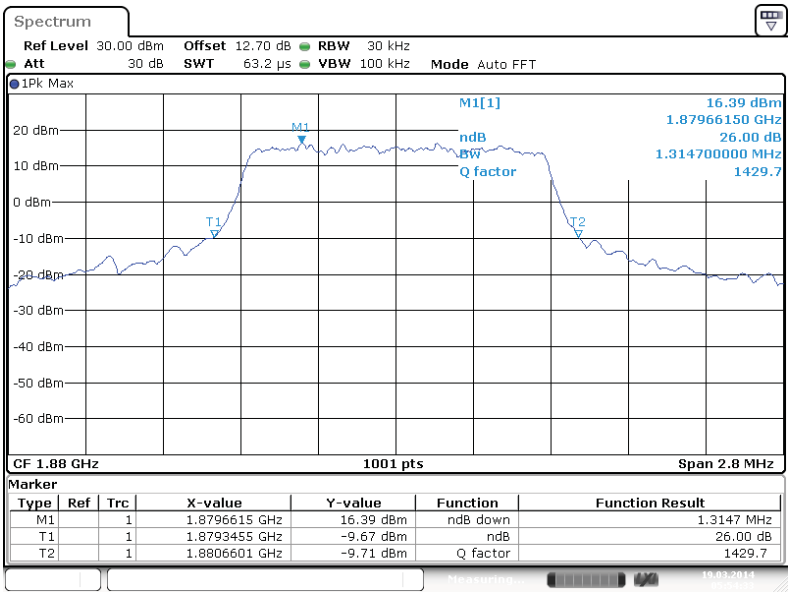
Date: 19.MAR.2014 05:52:57

## 99% Occupied Bandwidth Plot on Channel 18900




Date: 19.MAR.2014 05:53:43

## 26dB Bandwidth Plot on Channel 18900

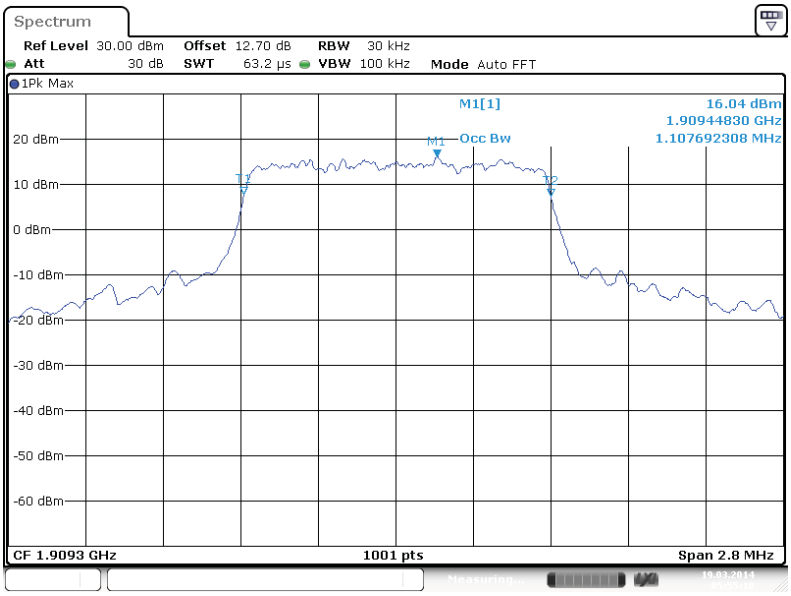



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.8796615 GHz | 16.39 dBm | ndB down | 1.3147 MHz |
| T1 | | 1 | 1.8793455 GHz | -9.67 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.8806601 GHz | -9.71 dBm | Q factor | 1429.7 |

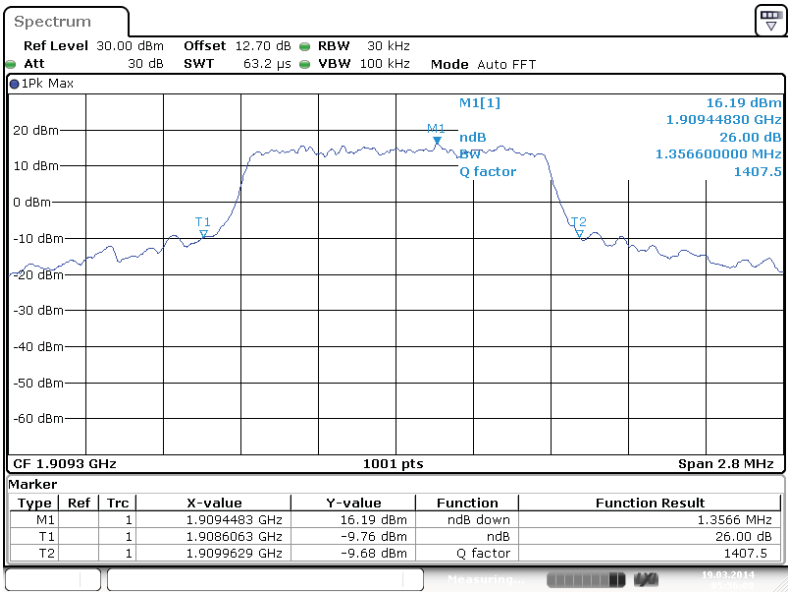
Date: 19.MAR.2014 05:54:33

## 99% Occupied Bandwidth Plot on Channel 19193




Date: 19.MAR.2014 05:55:18

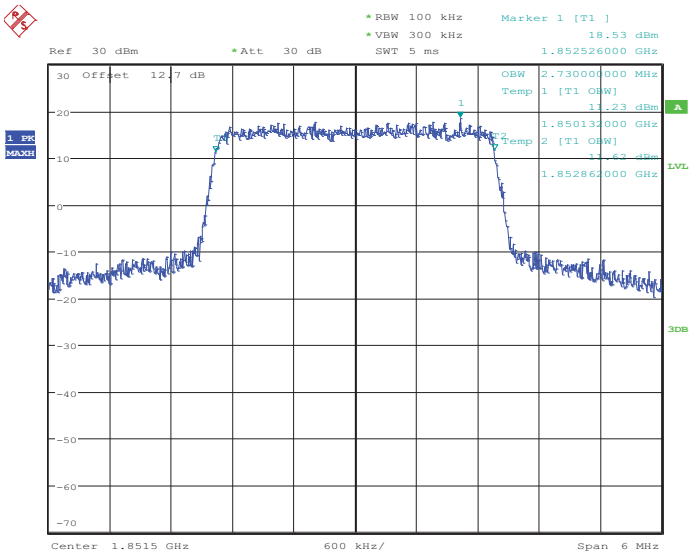
## 26dB Bandwidth Plot on Channel 19193




Date: 19.MAR.2014 05:56:08

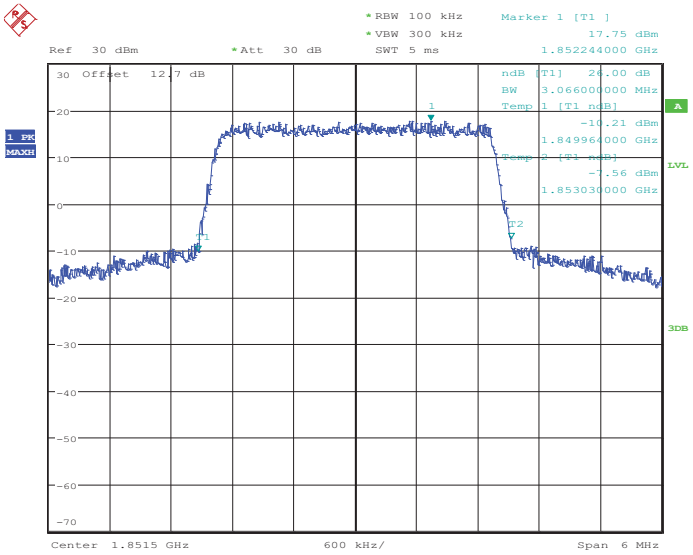
| Band : | LTE Band 2 | BW / Mod. : | 3MHz / QPSK |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 18615



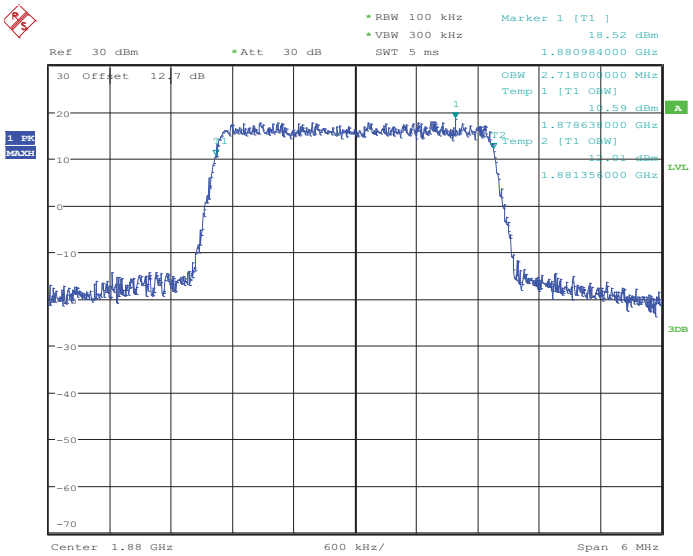

Date: 24.MAR.2014 15:55:55

## 26dB Bandwidth Plot on Channel 18615



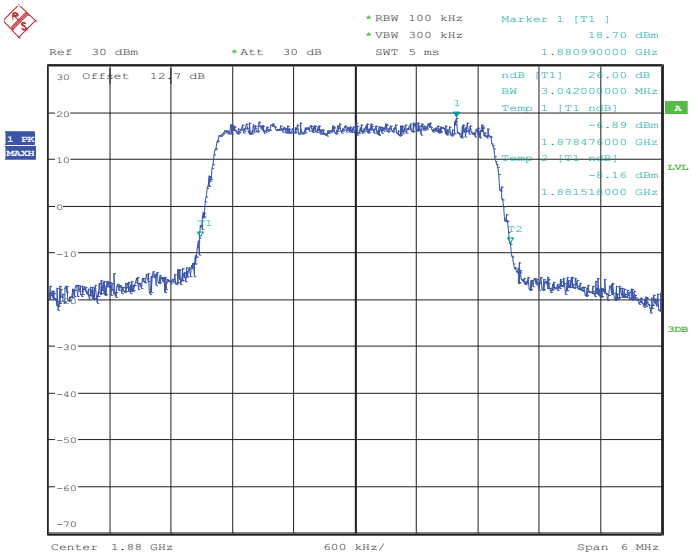

Date: 24.MAR.2014 15:56:27

## 99% Occupied Bandwidth Plot on Channel 18900



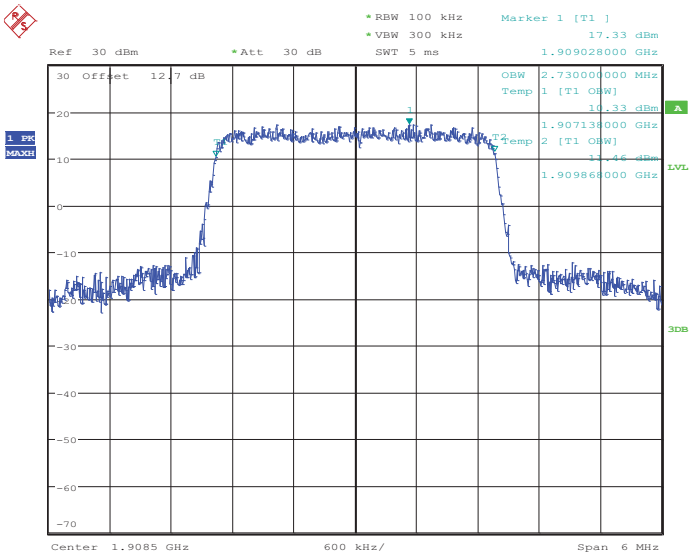

Date: 24.MAR.2014 16:02:02

## 26dB Bandwidth Plot on Channel 18900



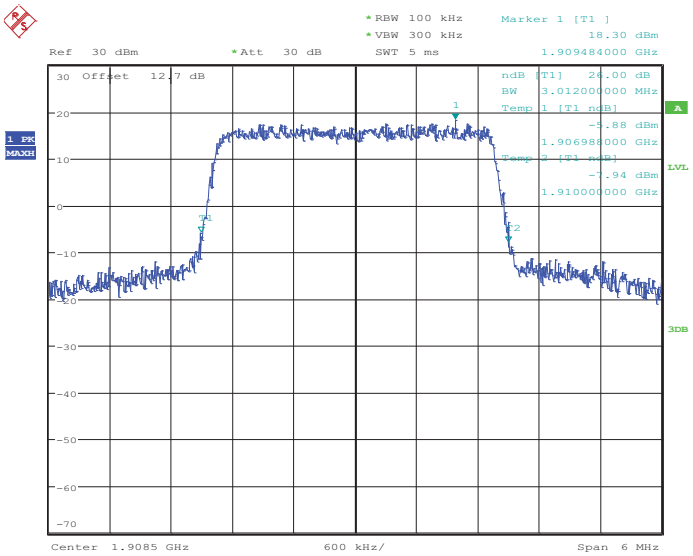

Date: 24.MAR.2014 16:02:33

## 99% Occupied Bandwidth Plot on Channel 19185




Date: 24.MAR.2014 16:05:05

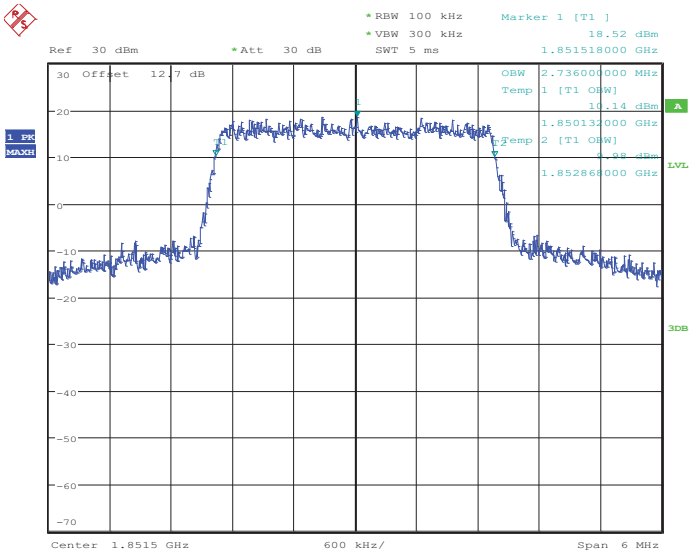
## 26dB Bandwidth Plot on Channel 19185




Date: 24.MAR.2014 16:05:37

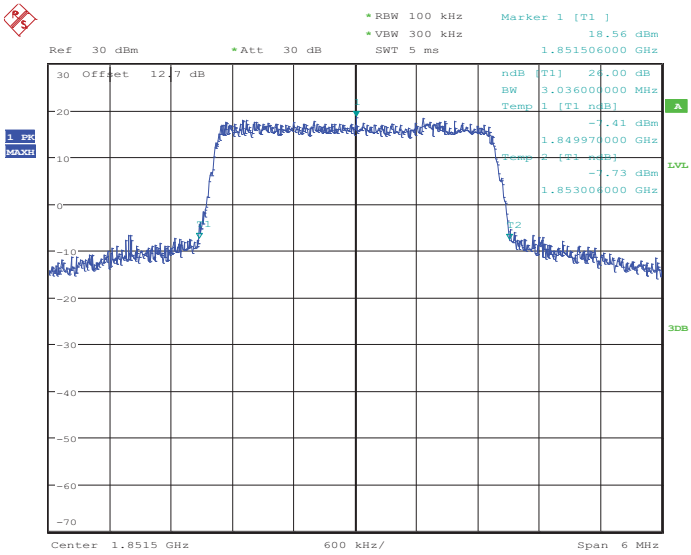
| Band : | LTE Band 2 | BW / Mod. : | 3MHz / 16QAM |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 18615



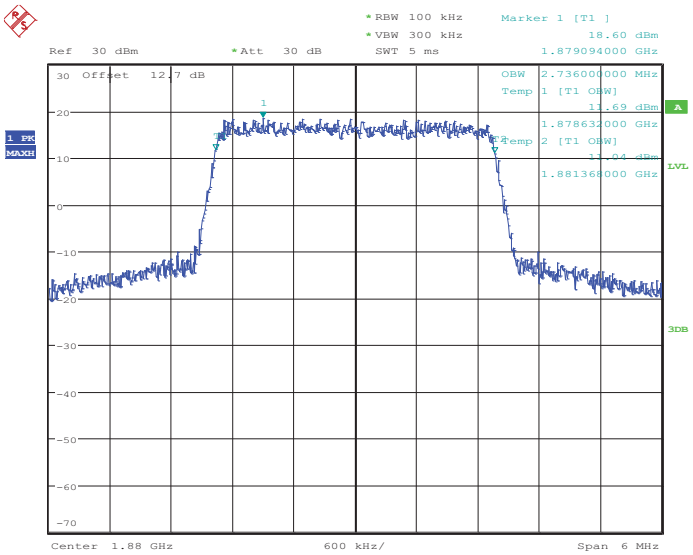

Date: 24.MAR.2014 15:56:10

## 26dB Bandwidth Plot on Channel 18615



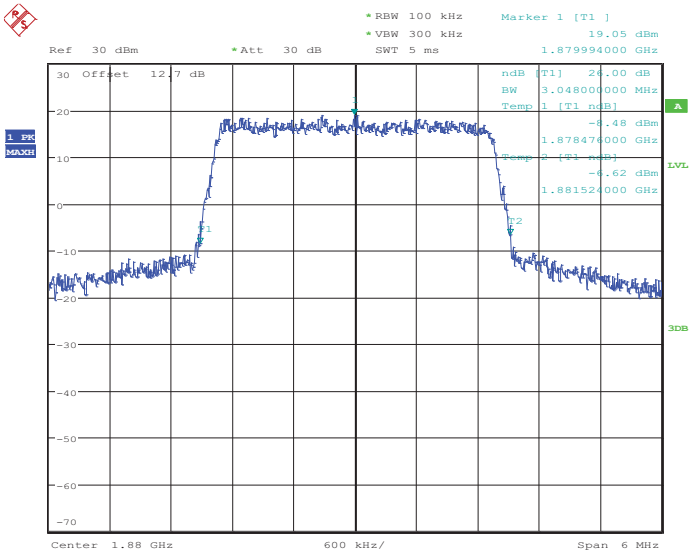

Date: 24.MAR.2014 15:56:44

## 99% Occupied Bandwidth Plot on Channel 18900



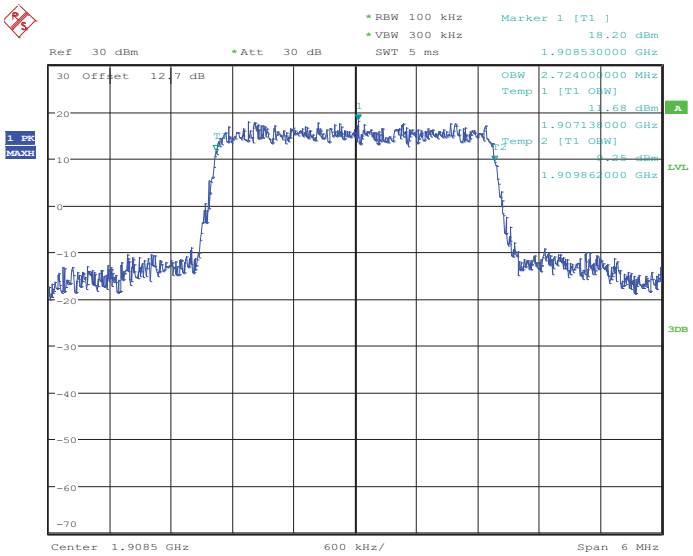

Date: 24.MAR.2014 16:02:16

## 26dB Bandwidth Plot on Channel 18900



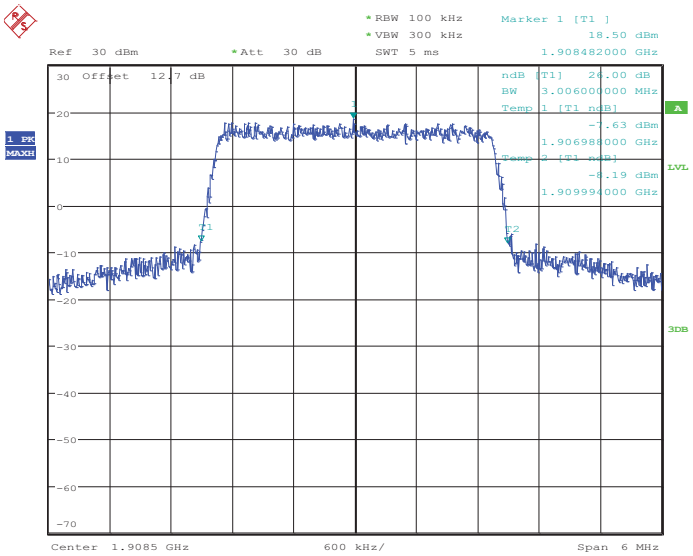

Date: 24.MAR.2014 16:02:50

## 99% Occupied Bandwidth Plot on Channel 19185




Date: 24.MAR.2014 16:05:20

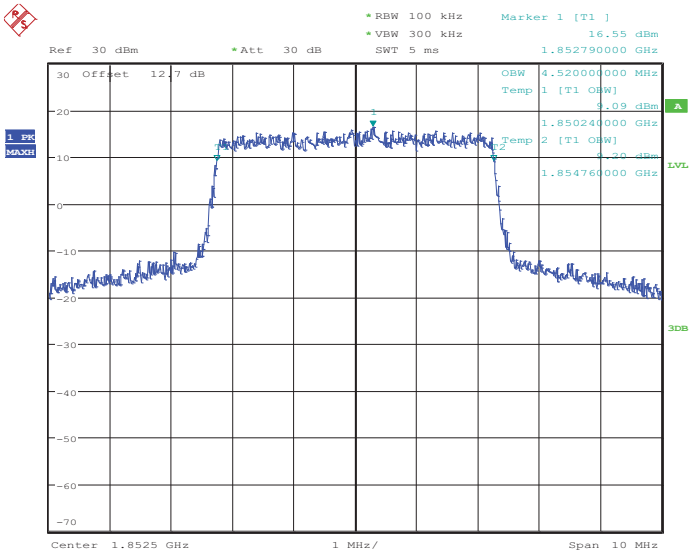
## 26dB Bandwidth Plot on Channel 19185




Date: 24.MAR.2014 16:05:54

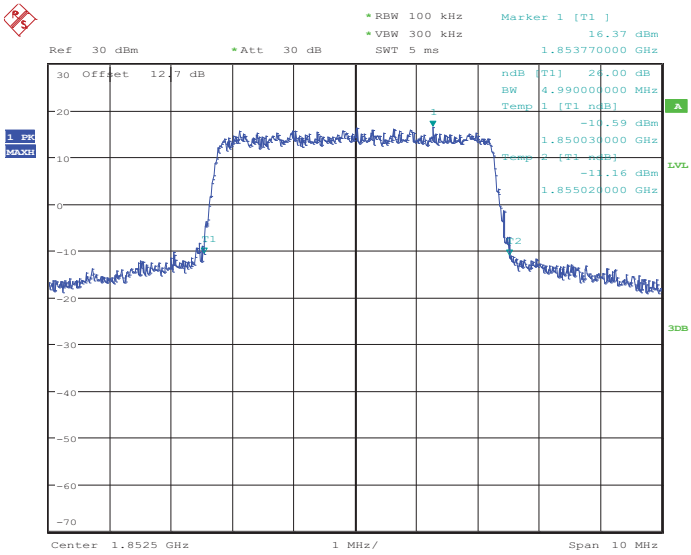
| Band : | LTE Band 2 | BW / Mod. : | 5MHz / QPSK |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 18625



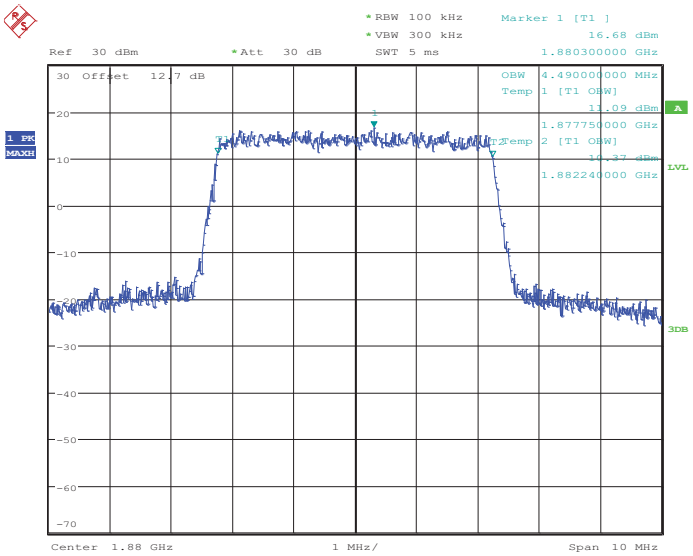

Date: 24.MAR.2014 16:19:35

## 26dB Bandwidth Plot on Channel 18625



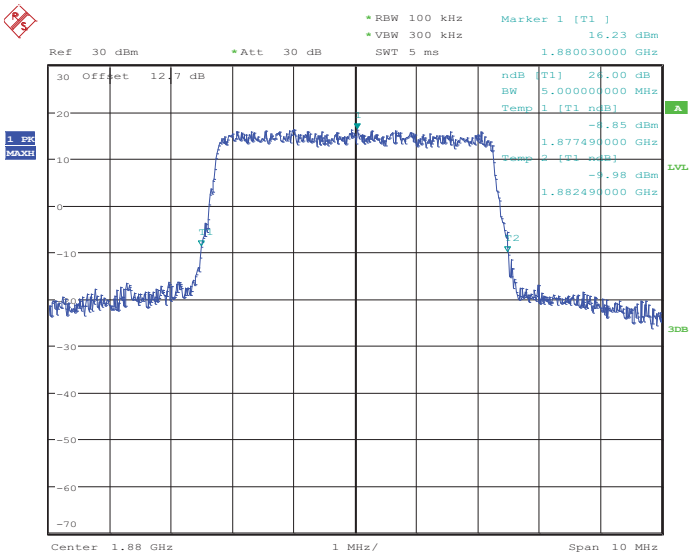

Date: 24.MAR.2014 16:20:07

## 99% Occupied Bandwidth Plot on Channel 18900



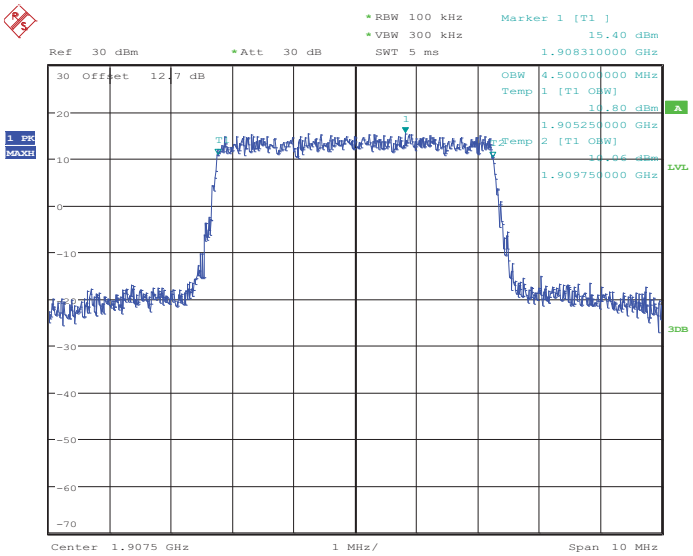

Date: 24.MAR.2014 16:25:43

## 26dB Bandwidth Plot on Channel 18900



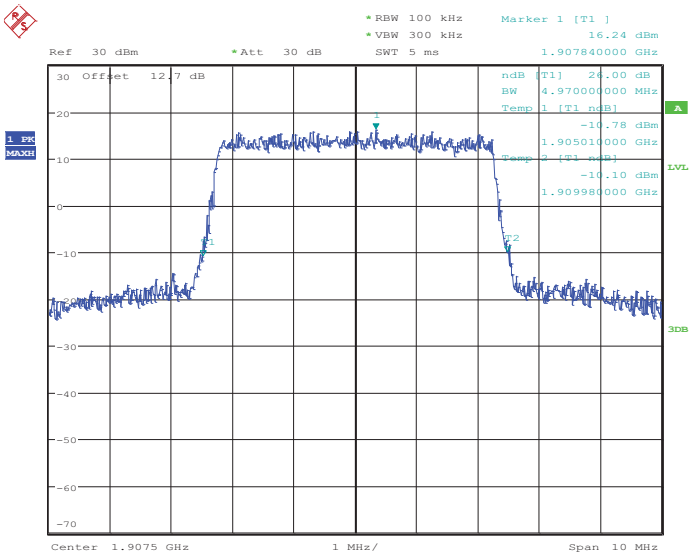

Date: 24.MAR.2014 16:26:16

## 99% Occupied Bandwidth Plot on Channel 19175




Date: 24.MAR.2014 16:28:47

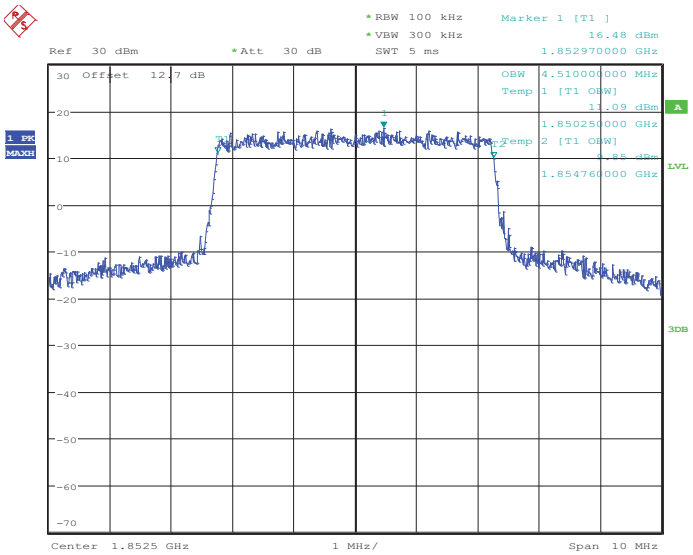
## 26dB Bandwidth Plot on Channel 19175




Date: 24.MAR.2014 16:29:19

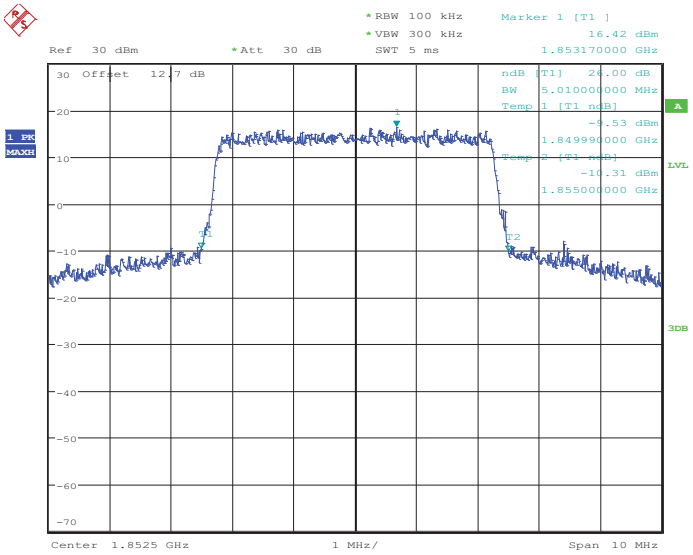
| Band : | LTE Band 2 | BW / Mod. : | 5MHz / 16QAM |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 18625



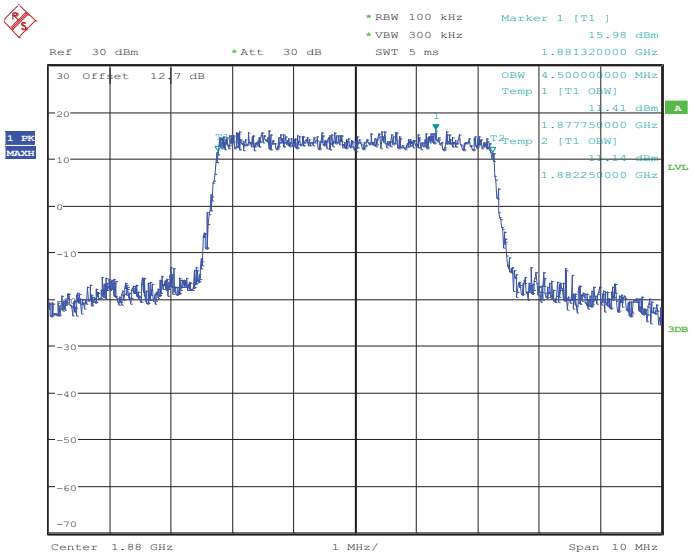

Date: 24.MAR.2014 16:19:50

## 26dB Bandwidth Plot on Channel 18625



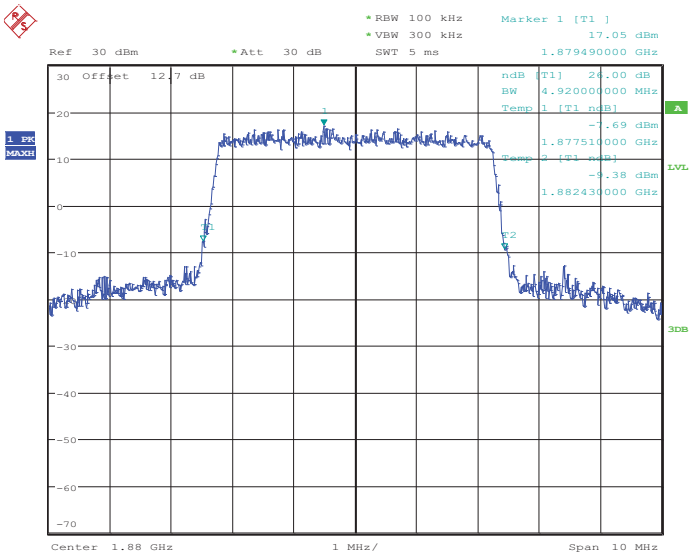

Date: 24.MAR.2014 16:20:24

## 99% Occupied Bandwidth Plot on Channel 18900



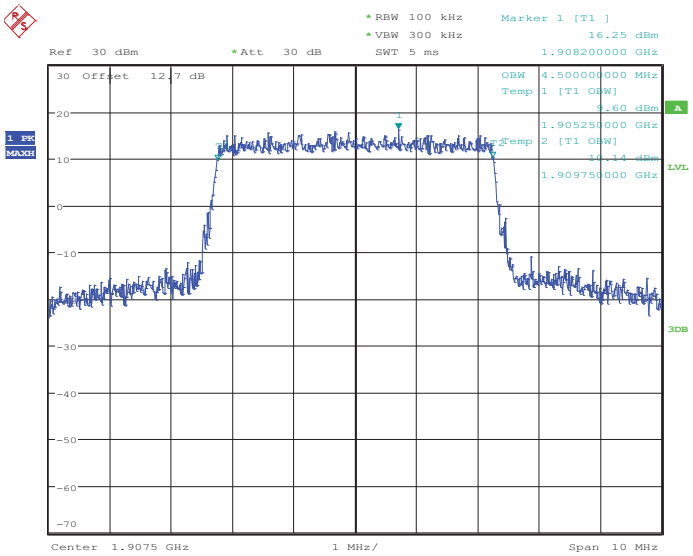

Date: 24.MAR.2014 16:25:59

## 26dB Bandwidth Plot on Channel 18900



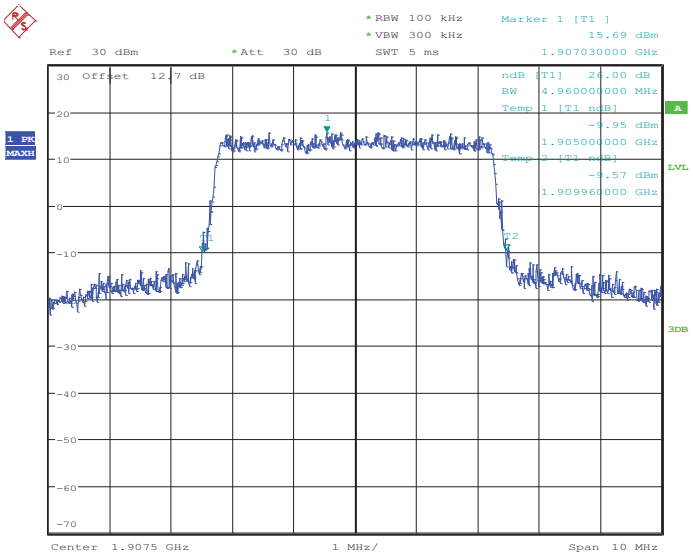

Date: 24.MAR.2014 16:26:33

## 99% Occupied Bandwidth Plot on Channel 19175




Date: 24.MAR.2014 16:29:02

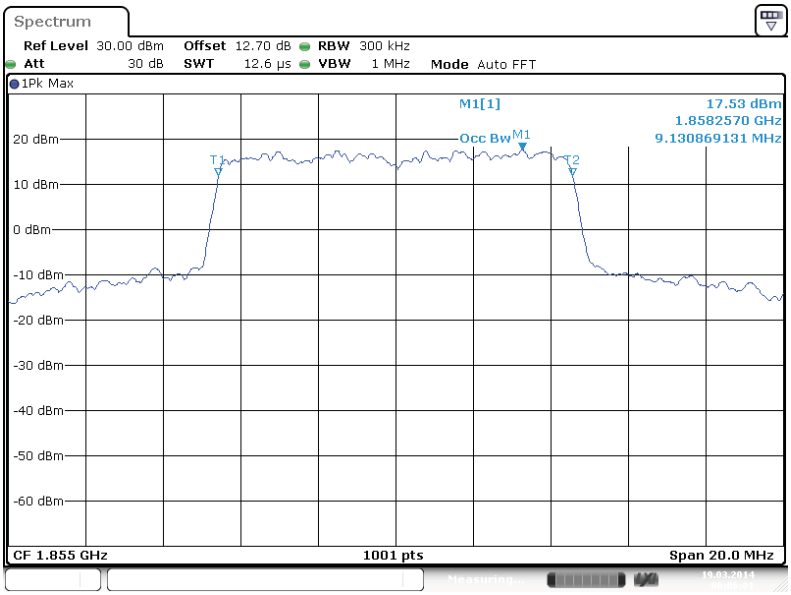
## 26dB Bandwidth Plot on Channel 19175




Date: 24.MAR.2014 16:29:36

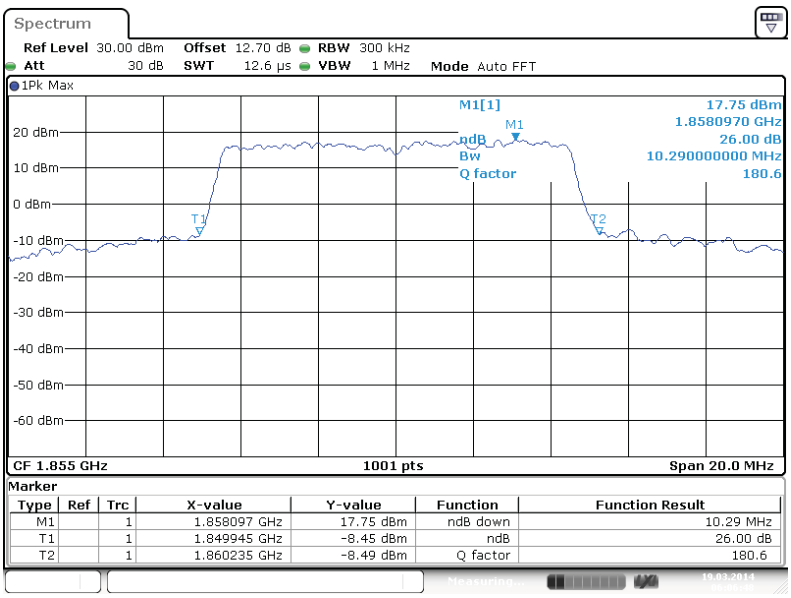
| Band : | LTE Band 2 | BW / Mod. : | 10MHz / QPSK |
|---|---|---|---|

### 99% Occupied Bandwidth Plot on Channel 18650




Date: 19.MAR.2014 06:06:01

### 26dB Bandwidth Plot on Channel 18650

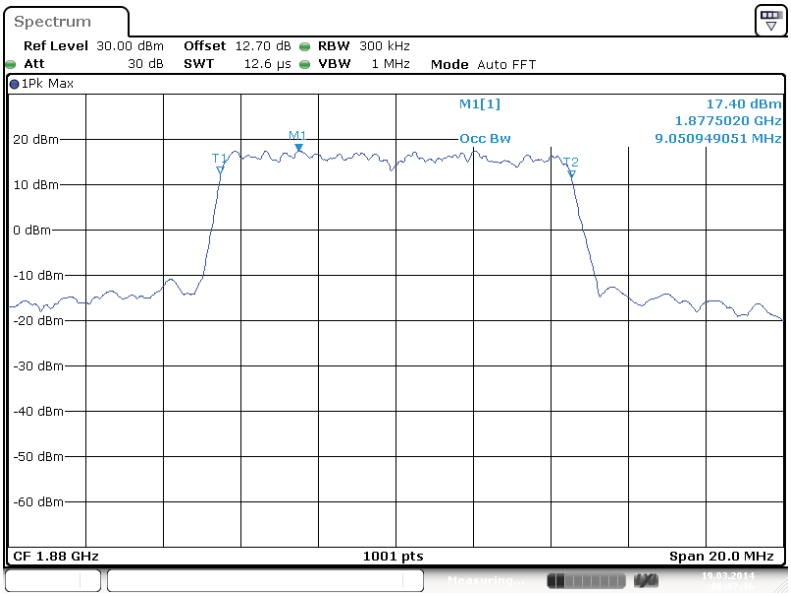



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.858097 GHz | 17.75 dBm | ndB down | 10.29 MHz |
| T1 | | 1 | 1.849945 GHz | -8.45 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.860235 GHz | -8.49 dBm | Q factor | 180.6 |

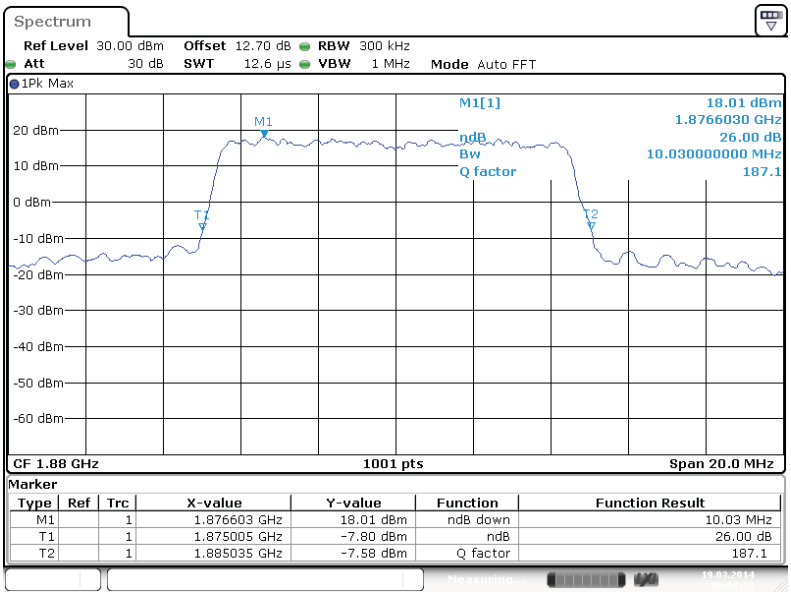
Date: 19.MAR.2014 06:06:49

## 99% Occupied Bandwidth Plot on Channel 18900




Date: 19.MAR.2014 06:07:36

## 26dB Bandwidth Plot on Channel 18900

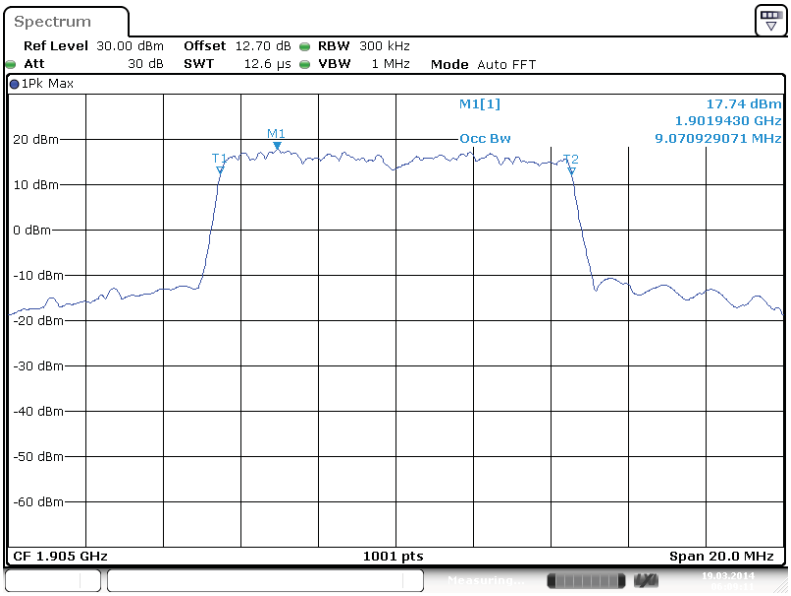



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.876603 GHz | 18.01 dBm | ndB down | 10.03 MHz |
| T1 | | 1 | 1.875005 GHz | -7.80 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.885035 GHz | -7.58 dBm | Q factor | 187.1 |

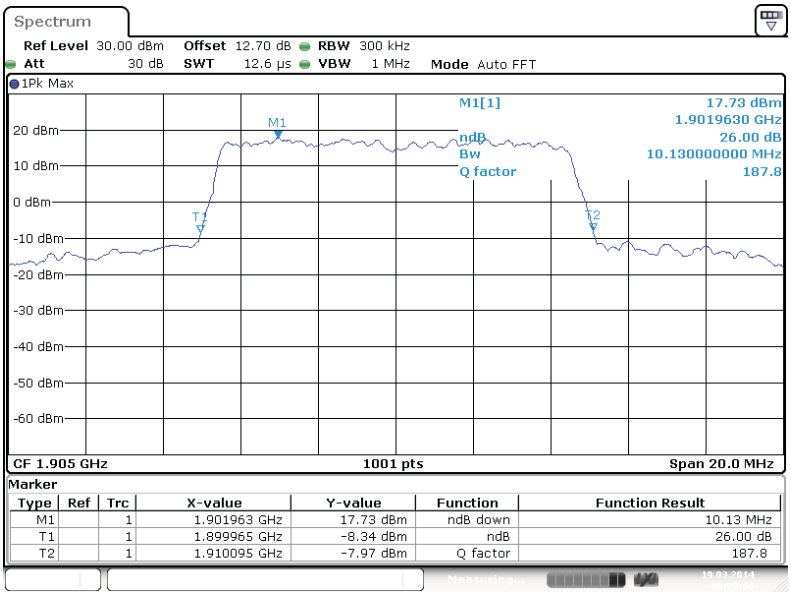
Date: 19.MAR.2014 06:08:24

## 99% Occupied Bandwidth Plot on Channel 19150




Date: 19.MAR.2014 06:09:11

## 26dB Bandwidth Plot on Channel 19150



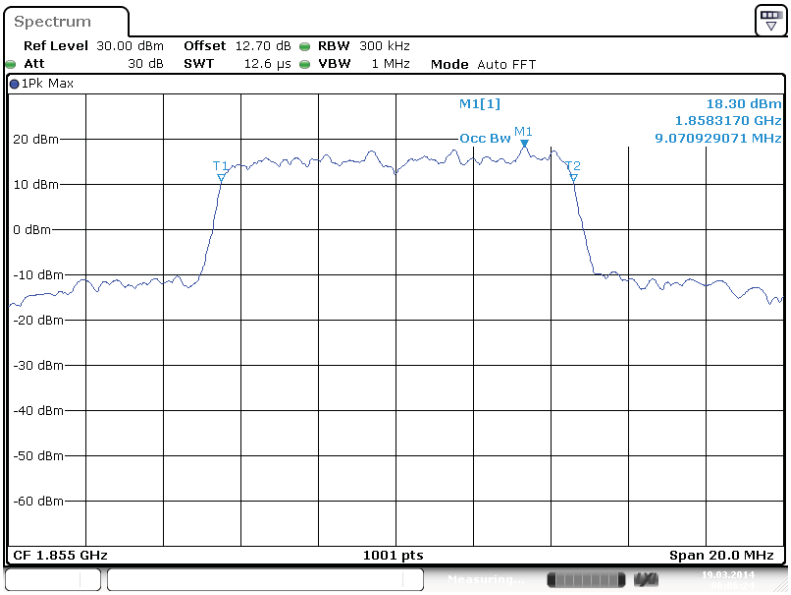

Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.901963 GHz | 17.73 dBm | ndB down | 10.13 MHz |
| T1 | | 1 | 1.899965 GHz | -8.34 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.910095 GHz | -7.97 dBm | Q factor | 187.8 |

Date: 19.MAR.2014 06:09:59

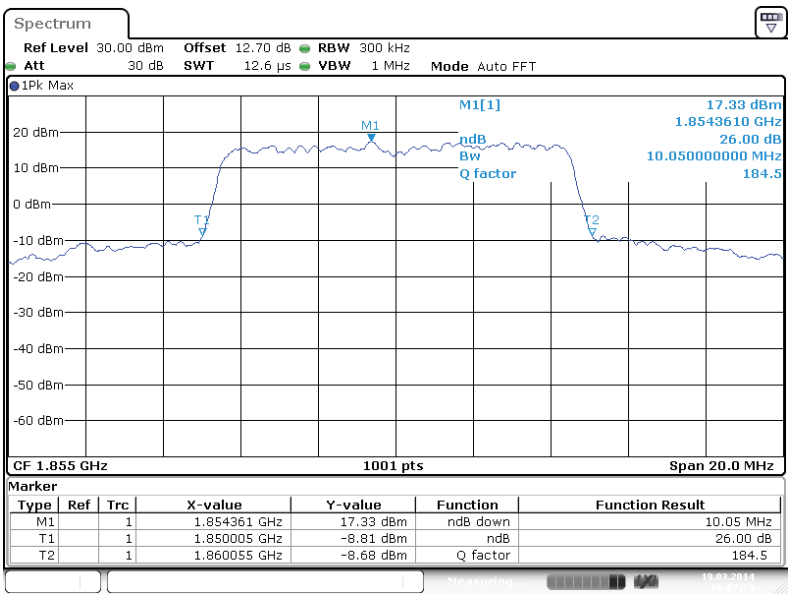
| Band : | LTE Band 2 | BW / Mod. : | 10MHz / 16QAM |
|---|---|---|---|

### 99% Occupied Bandwidth Plot on Channel 18650




Date: 19.MAR.2014 06:06:24

### 26dB Bandwidth Plot on Channel 18650

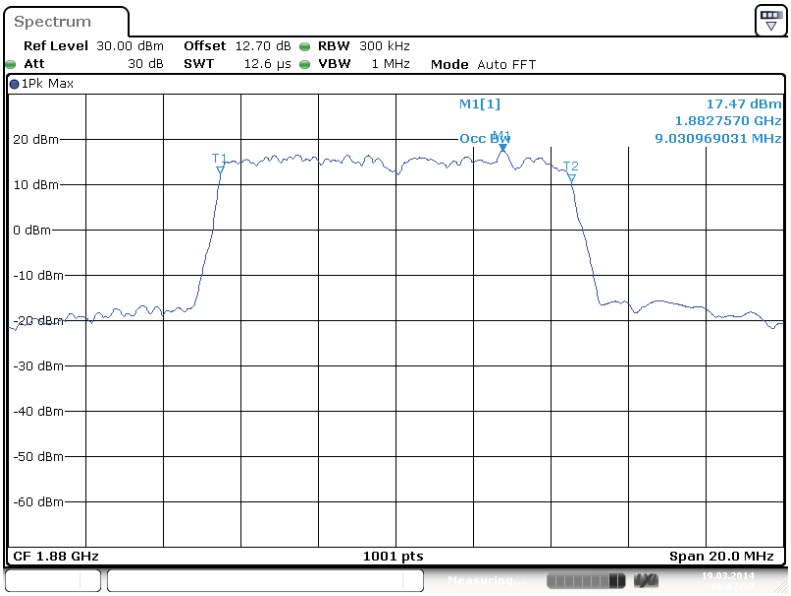



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.854361 GHz | 17.33 dBm | ndB down | 10.05 MHz |
| T1 | | 1 | 1.850005 GHz | -8.81 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.860055 GHz | -8.68 dBm | Q factor | 184.5 |

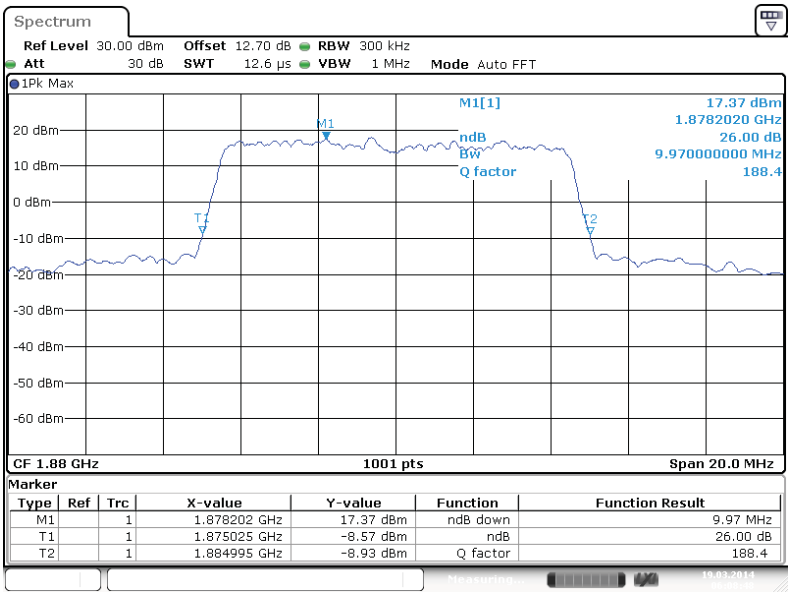
Date: 19.MAR.2014 06:07:13

## 99% Occupied Bandwidth Plot on Channel 18900




Date: 19.MAR.2014 06:07:59

## 26dB Bandwidth Plot on Channel 18900

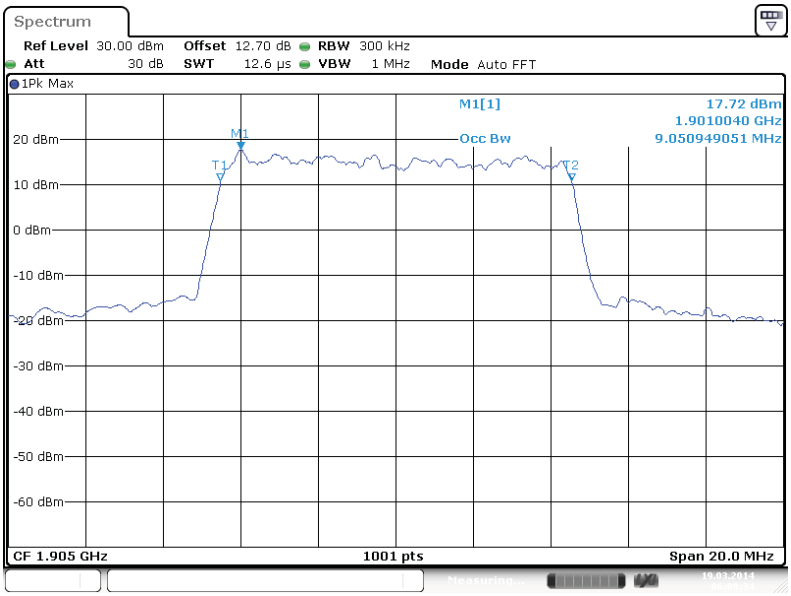



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.878202 GHz | 17.37 dBm | ndB down | 9.97 MHz |
| T1 | | 1 | 1.875025 GHz | -8.57 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.884995 GHz | -8.93 dBm | Q factor | 188.4 |

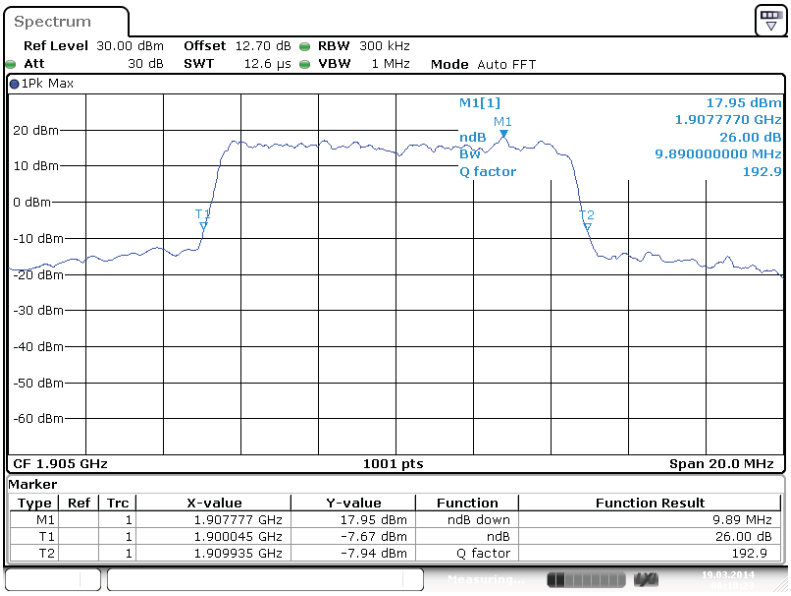
Date: 19.MAR.2014 06:08:48

## 99% Occupied Bandwidth Plot on Channel 19150




Date: 19.MAR.2014 06:09:34

## 26dB Bandwidth Plot on Channel 19150



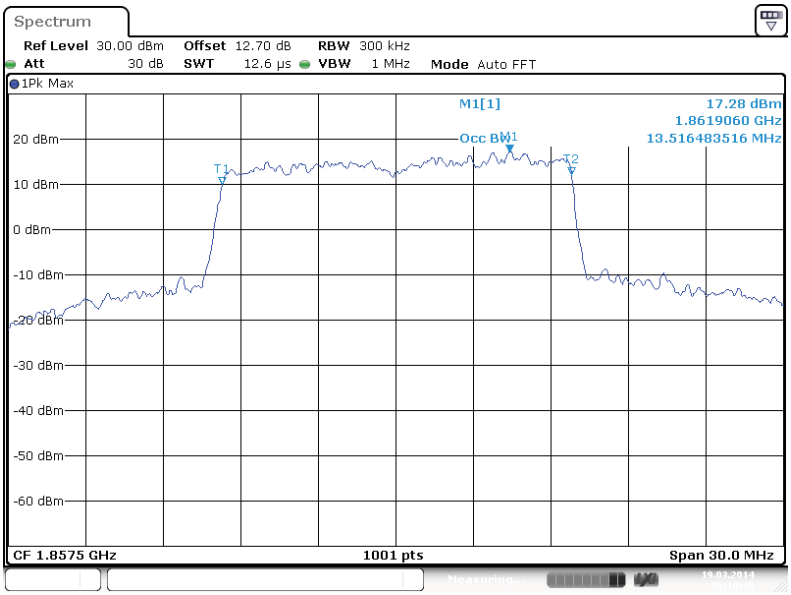

Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.907777 GHz | 17.95 dBm | ndB down | 9.89 MHz |
| T1 | | 1 | 1.900045 GHz | -7.67 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.909935 GHz | -7.94 dBm | Q factor | 192.9 |

Date: 19.MAR.2014 06:10:23

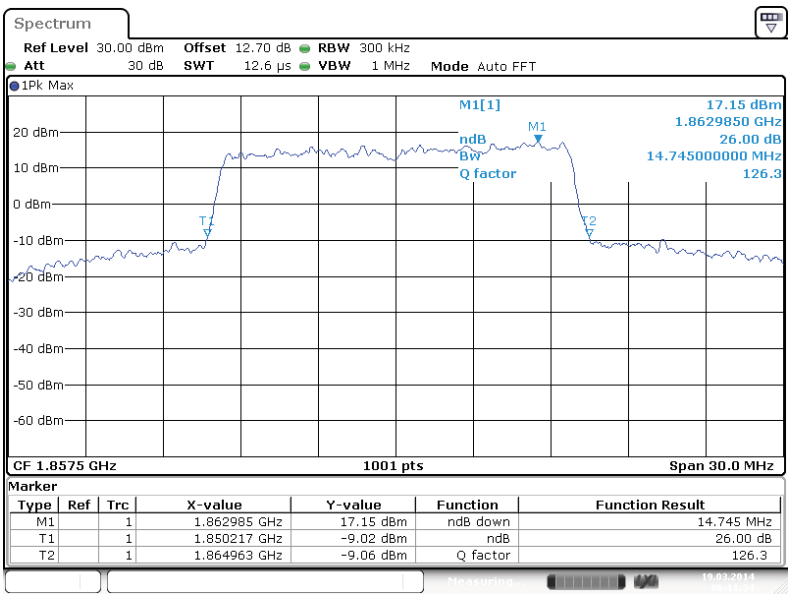
| Band : | LTE Band 2 | BW / Mod. : | 15MHz / QPSK |
|---|---|---|---|

### 99% Occupied Bandwidth Plot on Channel 18675



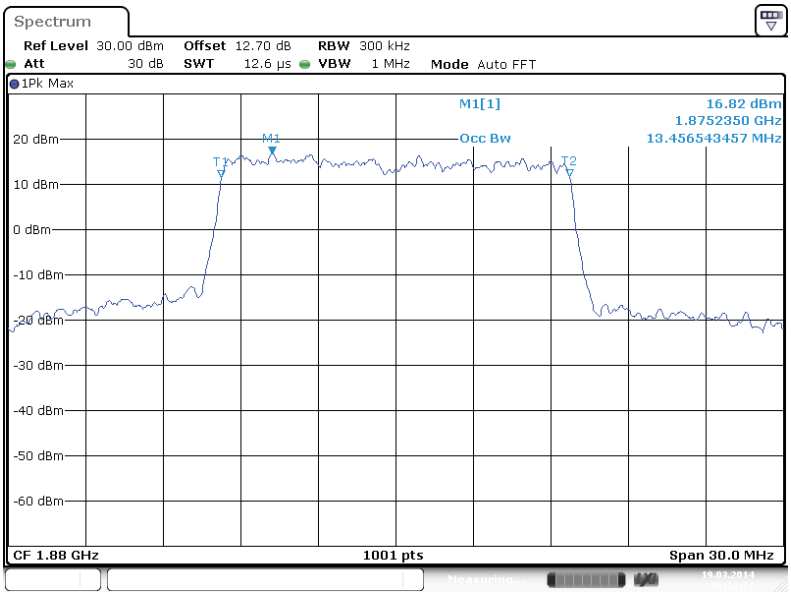

Date: 19.MAR.2014 06:10:46

### 26dB Bandwidth Plot on Channel 18675



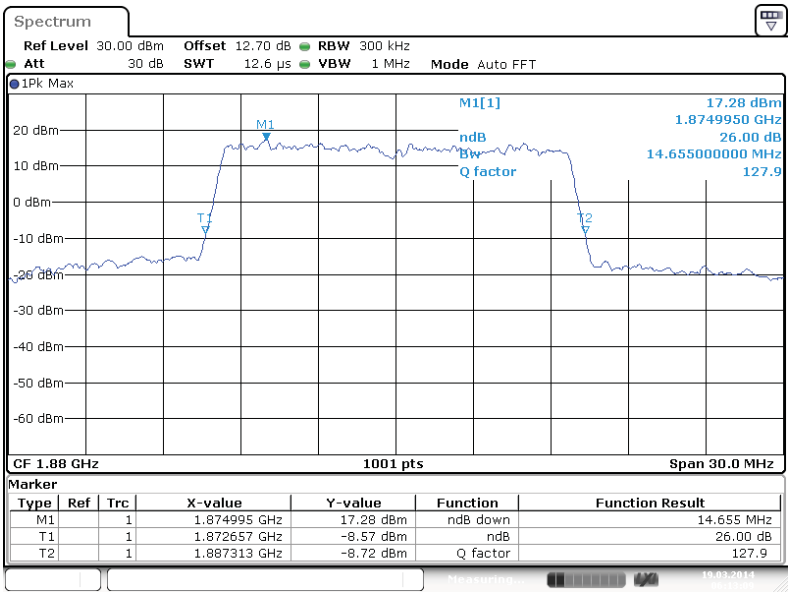

Date: 19.MAR.2014 06:11:34

## 99% Occupied Bandwidth Plot on Channel 18900




Date: 19.MAR.2014 06:12:21

## 26dB Bandwidth Plot on Channel 18900

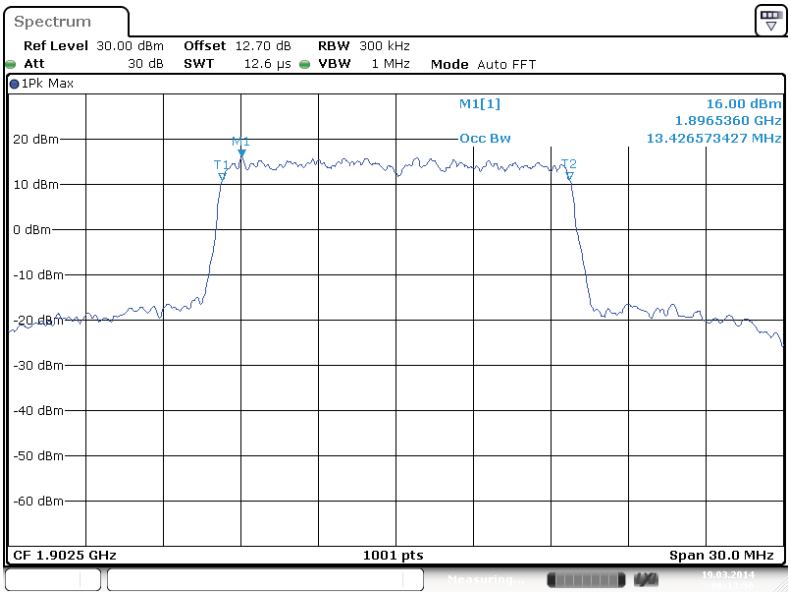



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.874995 GHz | 17.28 dBm | ndB down | 14.655 MHz |
| T1 | | 1 | 1.872657 GHz | -8.57 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.887313 GHz | -8.72 dBm | Q factor | 127.9 |

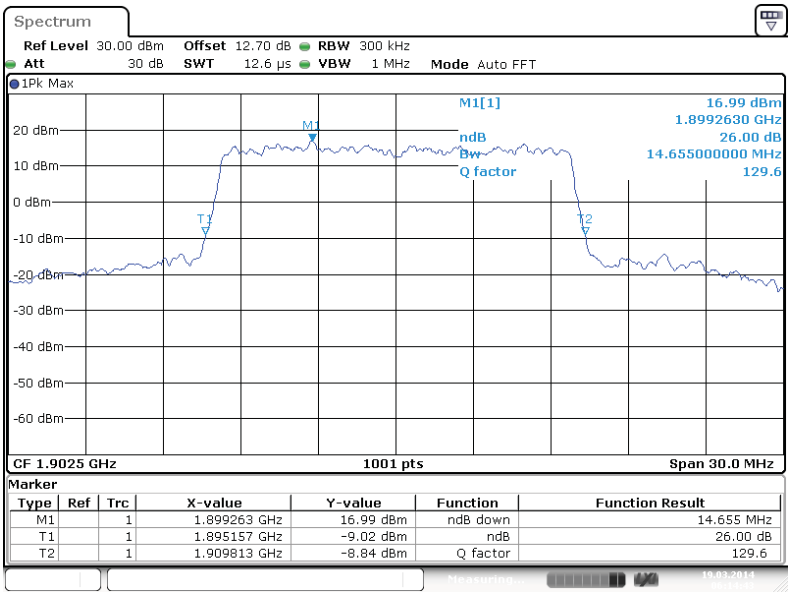
Date: 19.MAR.2014 06:13:09

## 99% Occupied Bandwidth Plot on Channel 19125




Date: 19.MAR.2014 06:13:56

## 26dB Bandwidth Plot on Channel 19125



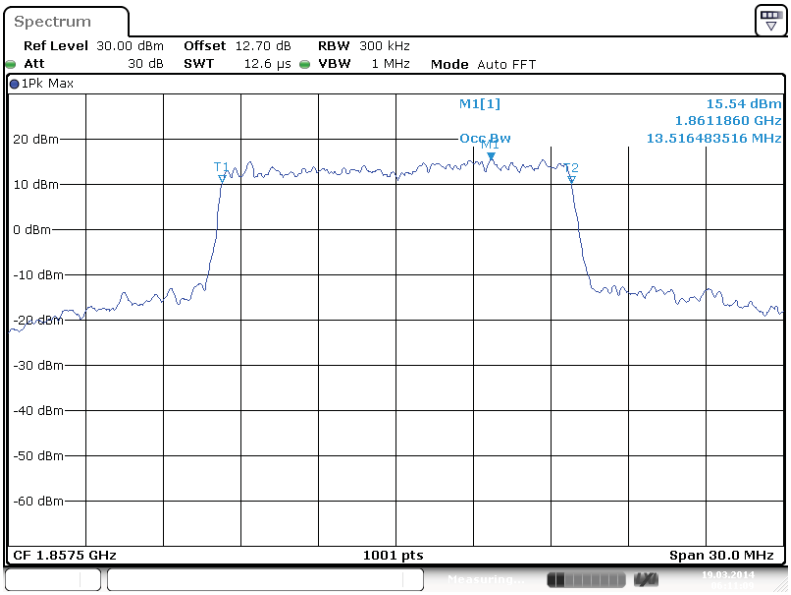

Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.899263 GHz | 16.99 dBm | ndB down | 14.655 MHz |
| T1 | | 1 | 1.895157 GHz | -9.02 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.909813 GHz | -8.84 dBm | Q factor | 129.6 |

Date: 19.MAR.2014 06:14:44

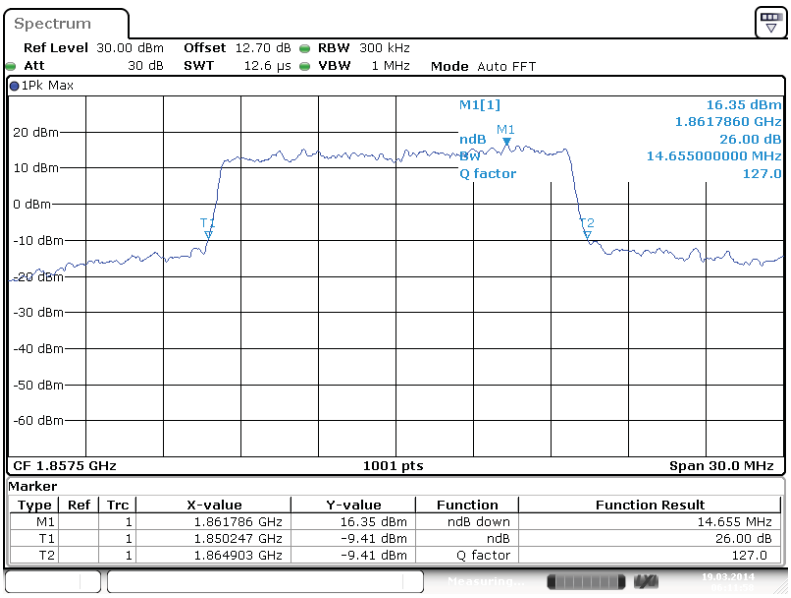
| Band : | LTE Band 2 | BW / Mod. : | 15MHz / 16QAM |
|---|---|---|---|

### 99% Occupied Bandwidth Plot on Channel 18675




Date: 19.MAR.2014 06:11:09

### 26dB Bandwidth Plot on Channel 18675

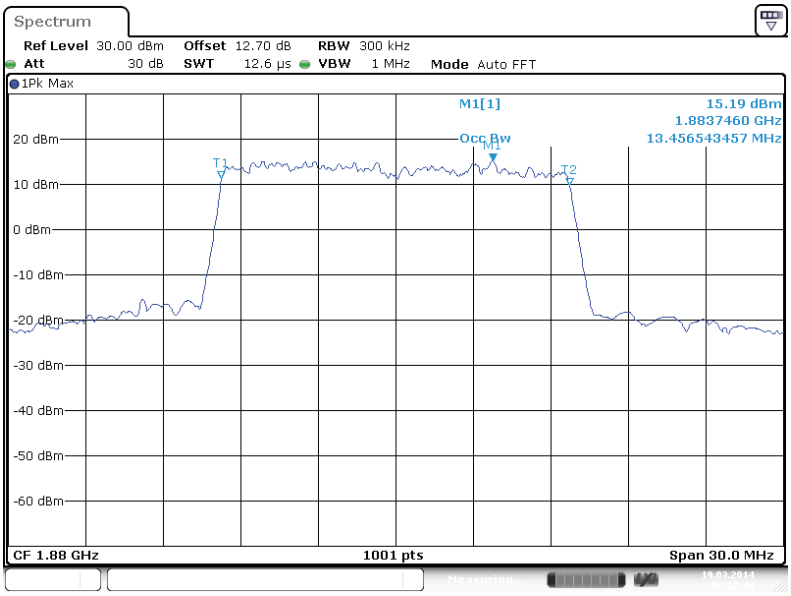



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.861786 GHz | 16.35 dBm | ndB down | 14.655 MHz |
| T1 | | 1 | 1.850247 GHz | -9.41 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.864903 GHz | -9.41 dBm | Q factor | 127.0 |

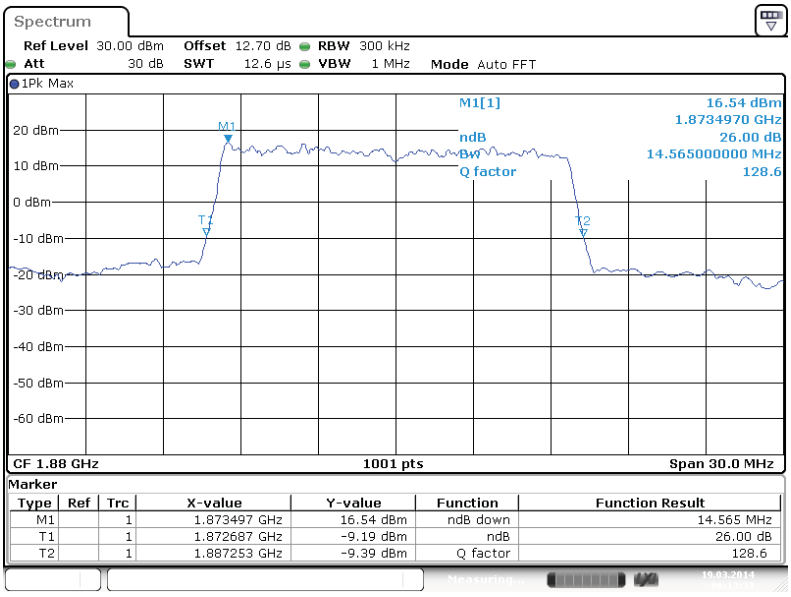
Date: 19.MAR.2014 06:11:59

## 99% Occupied Bandwidth Plot on Channel 18900




Date: 19.MAR.2014 06:12:44

## 26dB Bandwidth Plot on Channel 18900

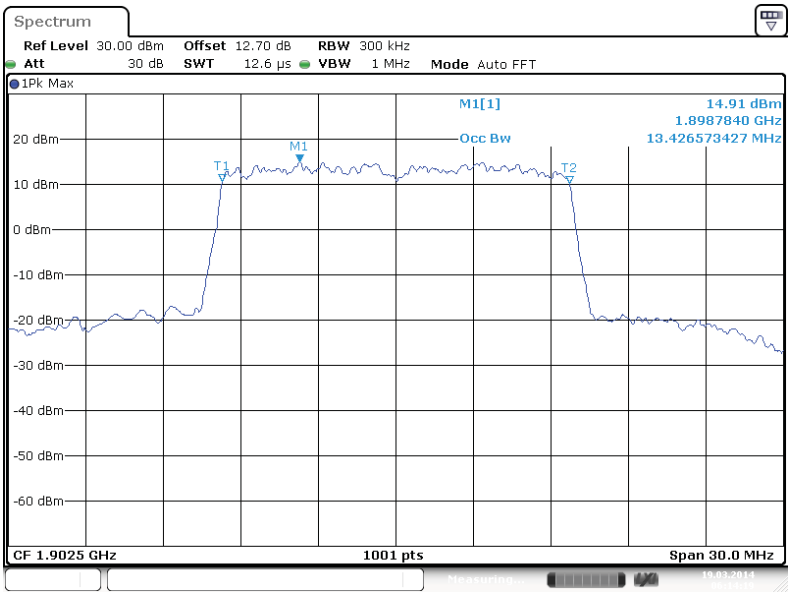



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.873497 GHz | 16.54 dBm | ndB down | 14.565 MHz |
| T1 | | 1 | 1.872687 GHz | -9.19 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.887253 GHz | -9.39 dBm | Q factor | 128.6 |

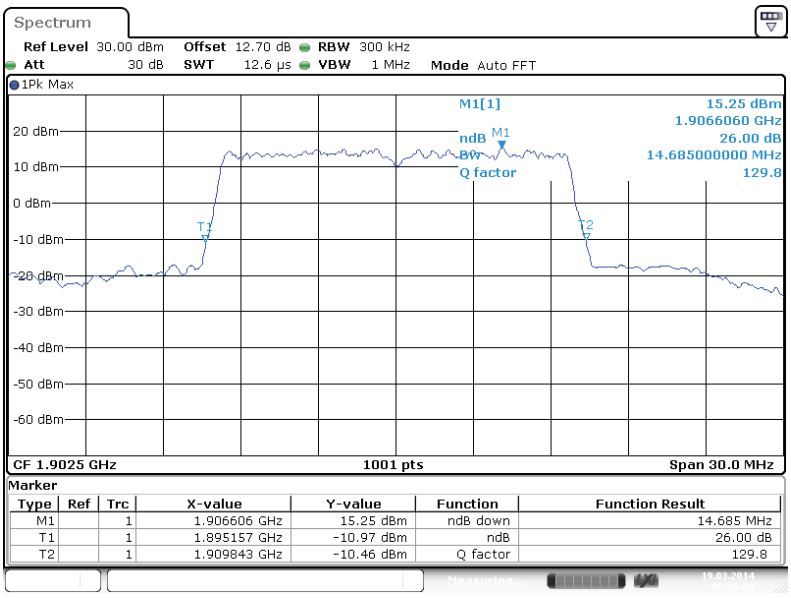
Date: 19.MAR.2014 06:13:34

## 99% Occupied Bandwidth Plot on Channel 19125




Date: 19.MAR.2014 06:14:19

## 26dB Bandwidth Plot on Channel 19125



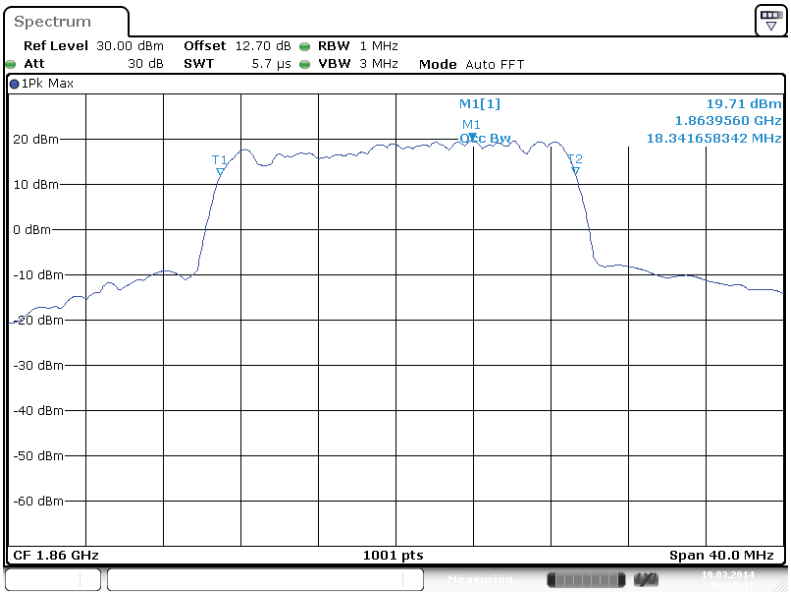

Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.906606 GHz | 15.25 dBm | ndB down | 14.685 MHz |
| T1 | | 1 | 1.895157 GHz | -10.97 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.909843 GHz | -10.46 dBm | Q factor | 129.8 |

Date: 19.MAR.2014 06:15:08

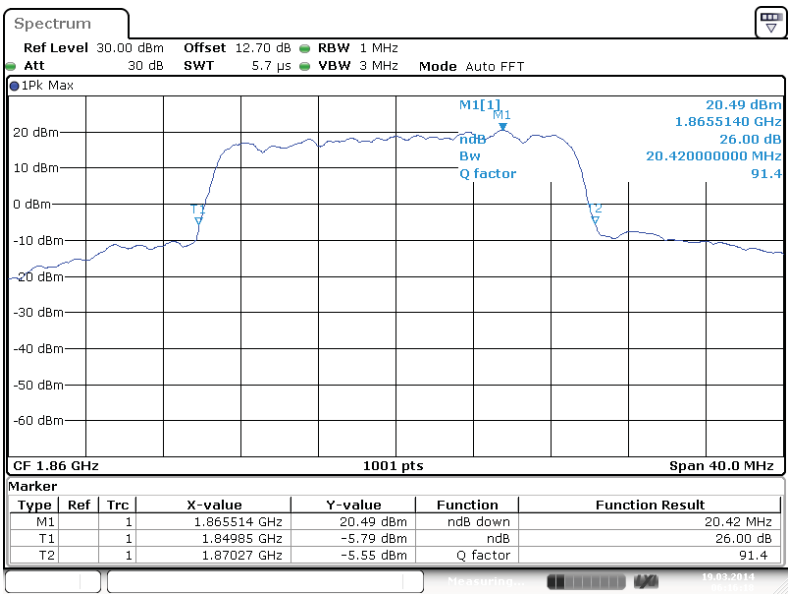
| Band : | LTE Band 2 | BW / Mod. : | 20MHz / QPSK |
|---|---|---|---|

### 99% Occupied Bandwidth Plot on Channel 18700




Date: 19.MAR.2014 06:15:31

### 26dB Bandwidth Plot on Channel 18700

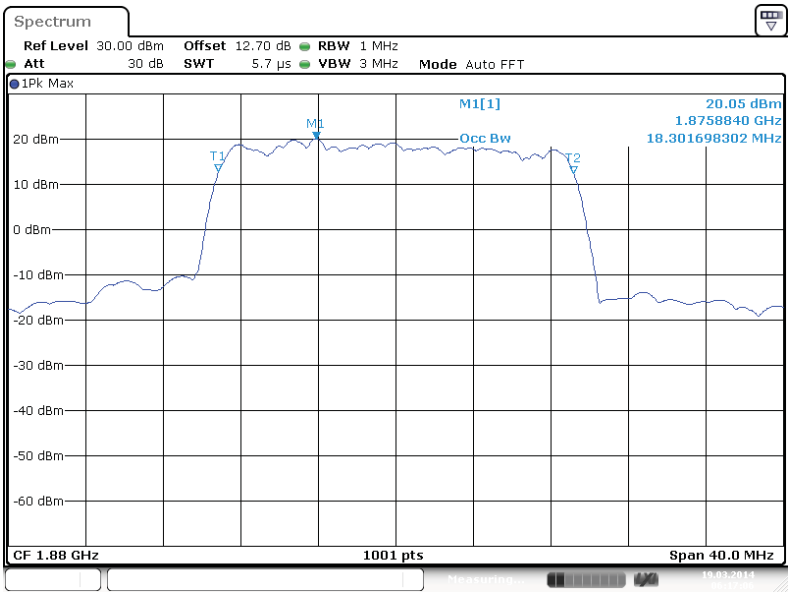



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.865514 GHz | 20.49 dBm | ndB down | 20.42 MHz |
| T1 | | 1 | 1.84985 GHz | -5.79 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.87027 GHz | -5.55 dBm | Q factor | 91.4 |

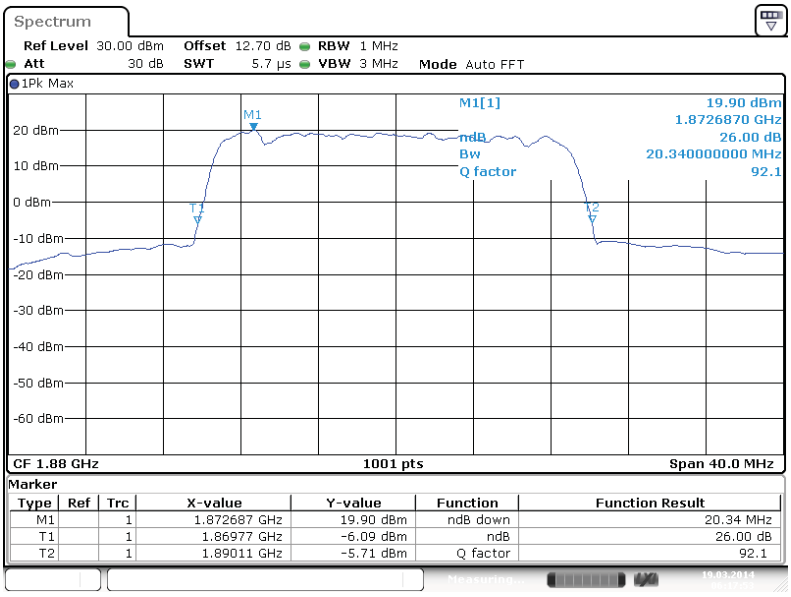
Date: 19.MAR.2014 06:16:18

## 99% Occupied Bandwidth Plot on Channel 18900




Date: 19.MAR.2014 06:17:06

## 26dB Bandwidth Plot on Channel 18900

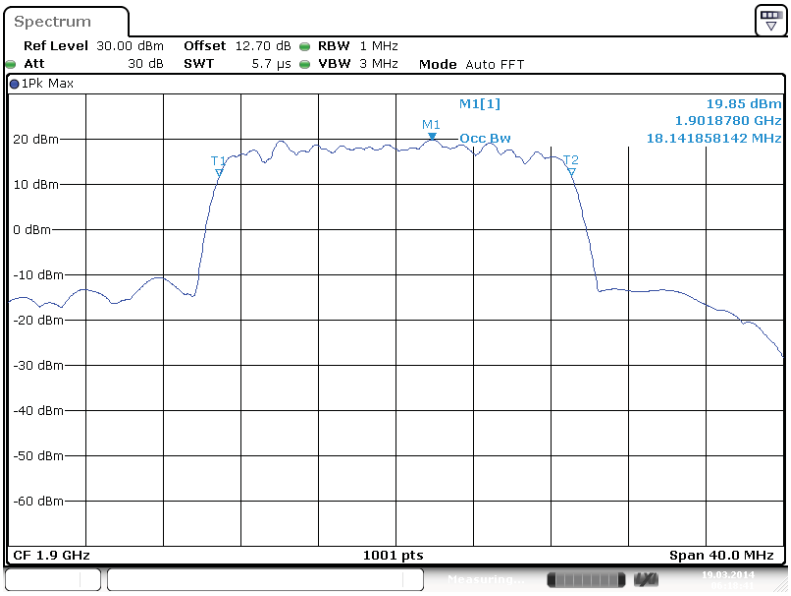



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.872687 GHz | 19.90 dBm | ndB down | 20.34 MHz |
| T1 | | 1 | 1.86977 GHz | -6.09 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.89011 GHz | -5.71 dBm | Q factor | 92.1 |

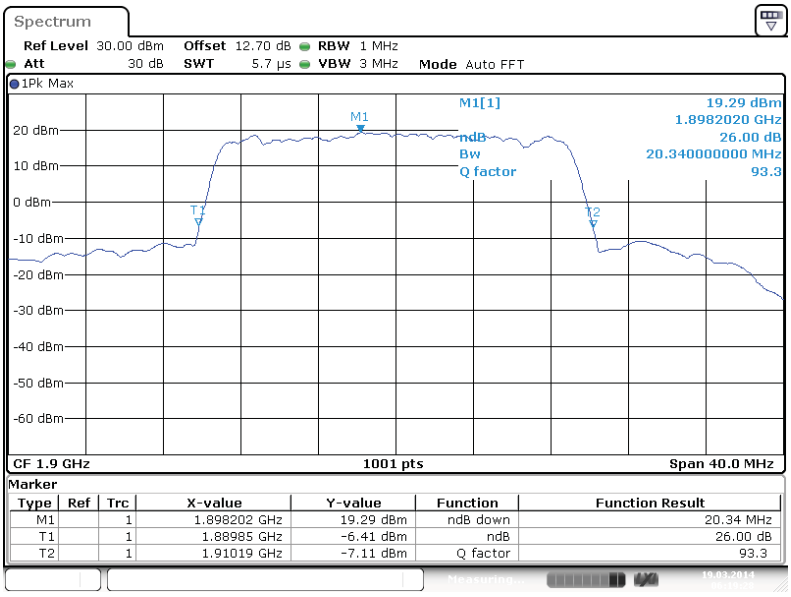
Date: 19.MAR.2014 06:17:53

## 99% Occupied Bandwidth Plot on Channel 19100




Date: 19.MAR.2014 06:18:41

## 26dB Bandwidth Plot on Channel 19100



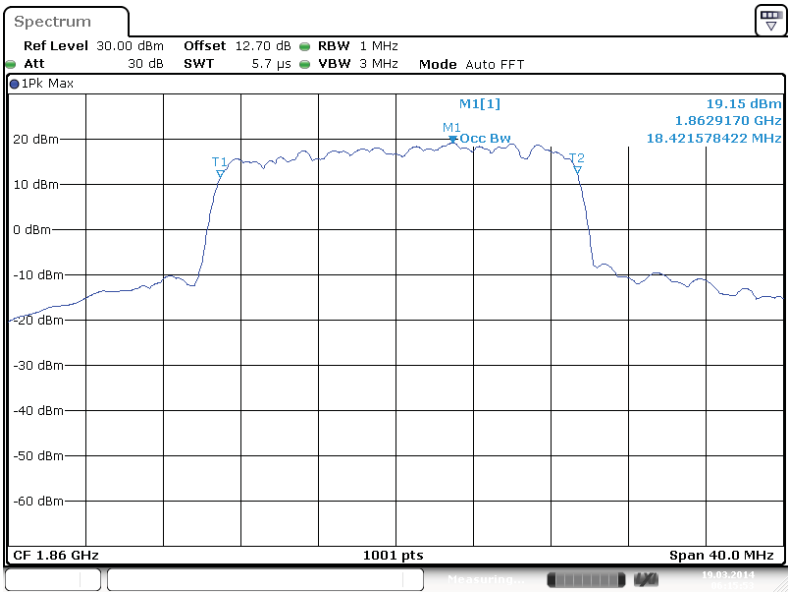

Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.898202 GHz | 19.29 dBm | ndB down | 20.34 MHz |
| T1 | | 1 | 1.88985 GHz | -6.41 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.91019 GHz | -7.11 dBm | Q factor | 93.3 |

Date: 19.MAR.2014 06:19:28

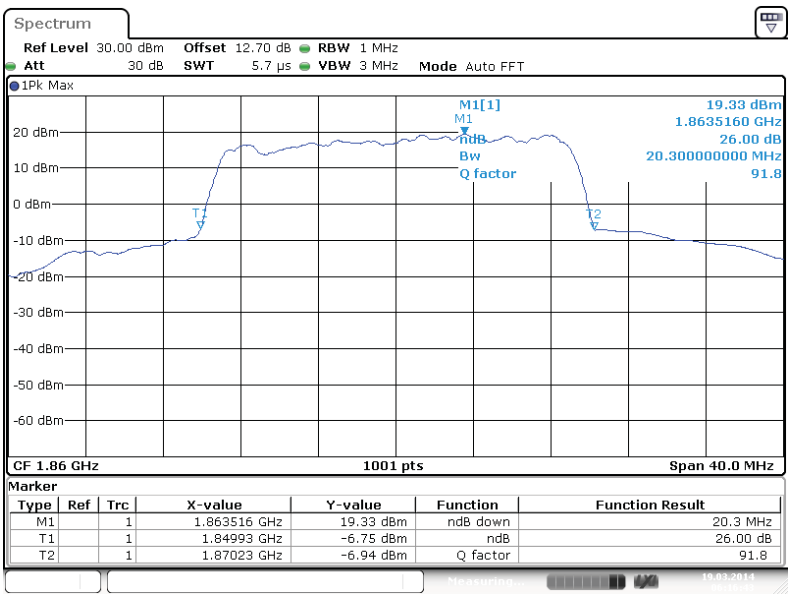
| Band : | LTE Band 2 | BW / Mod. : | 20MHz / 16QAM |
|---|---|---|---|

### 99% Occupied Bandwidth Plot on Channel 18700




Date: 19.MAR.2014 06:15:54

### 26dB Bandwidth Plot on Channel 18700

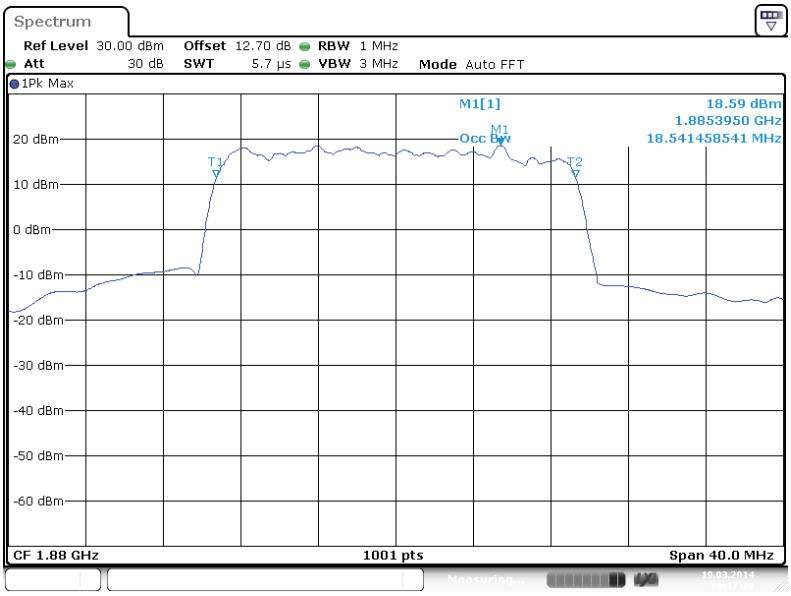



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.863516 GHz | 19.33 dBm | ndB down | 20.3 MHz |
| T1 | | 1 | 1.84993 GHz | -6.75 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.87023 GHz | -6.94 dBm | Q factor | 91.8 |

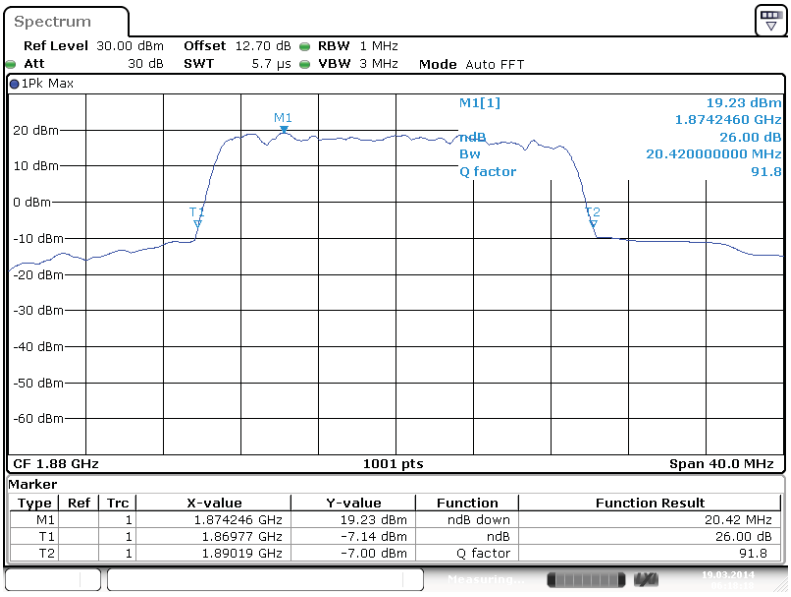
Date: 19.MAR.2014 06:16:43

## 99% Occupied Bandwidth Plot on Channel 18900




Date: 19.MAR.2014 06:17:29

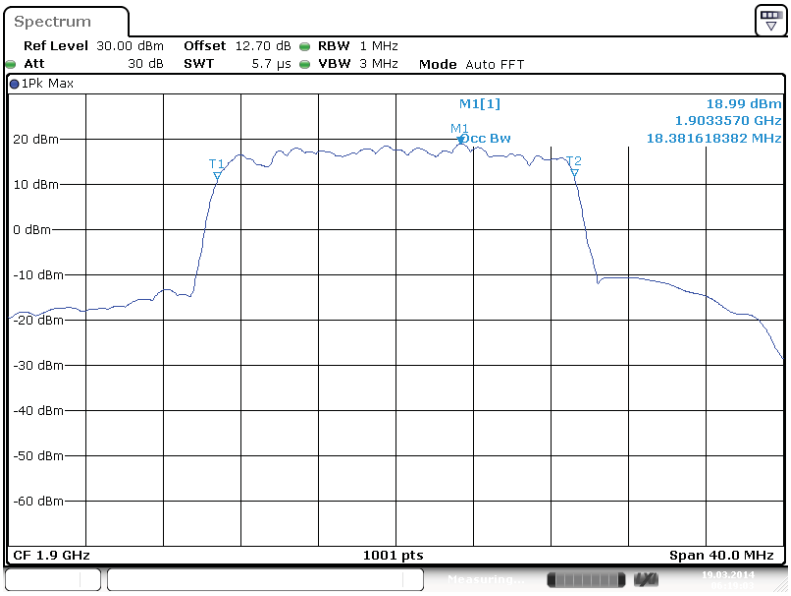
## 26dB Bandwidth Plot on Channel 18900




| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.874246 GHz | 19.23 dBm | ndB down | 20.42 MHz |
| T1 | | 1 | 1.86977 GHz | -7.14 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.89019 GHz | -7.00 dBm | Q factor | 91.8 |

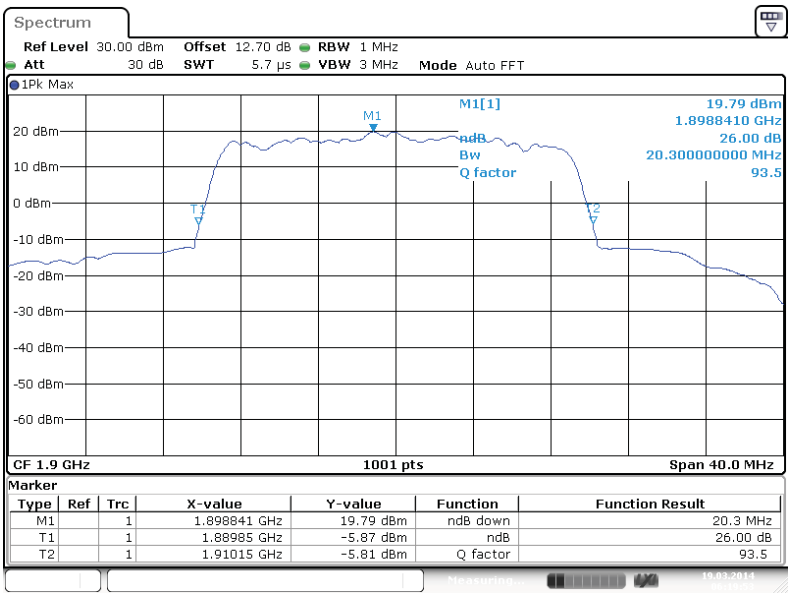
Date: 19.MAR.2014 06:18:18

### 99% Occupied Bandwidth Plot on Channel 19100




Date: 19.MAR.2014 06:19:04

### 26dB Bandwidth Plot on Channel 19100

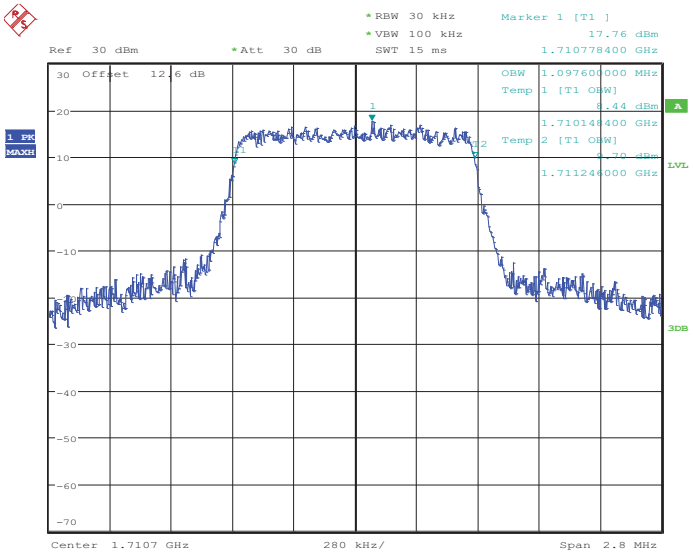



Date: 19.MAR.2014 06:19:53

***Note:*** *The total loss is 12.7 dB of the RF cable and attenuator of LTE Band 2, and has been compensated to the spectrum analyzer offset.*

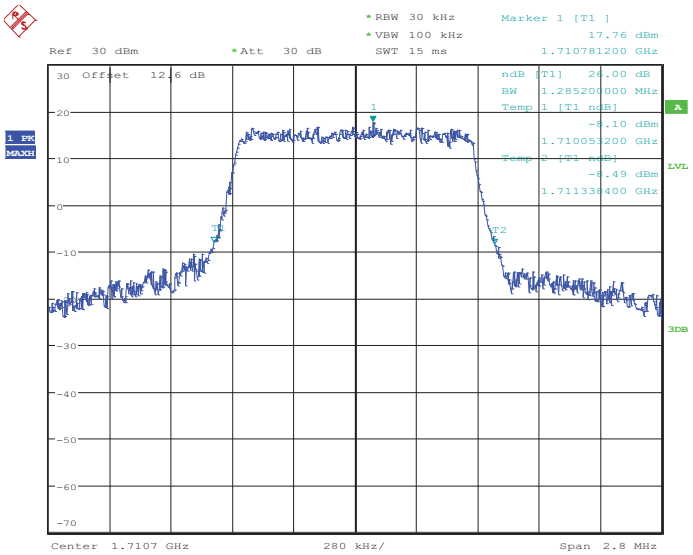
| Band : | LTE Band 4 | BW / Mod. : | 1.4MHz / QPSK |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 19957



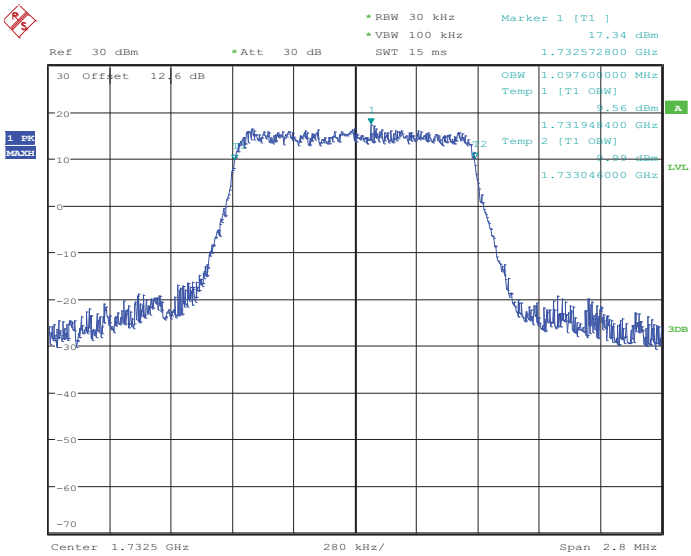

Date: 17.DEC.2013 20:03:39

## 26dB Bandwidth Plot on Channel 19957



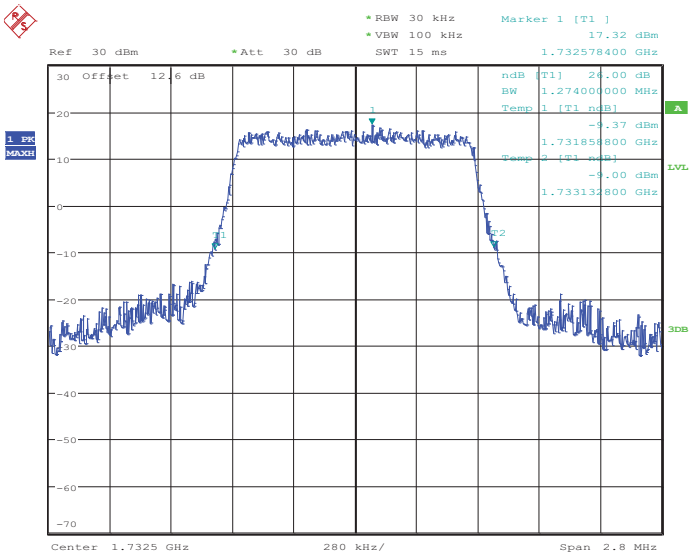

Date: 17.DEC.2013 20:03:53

## 99% Occupied Bandwidth Plot on Channel 20175



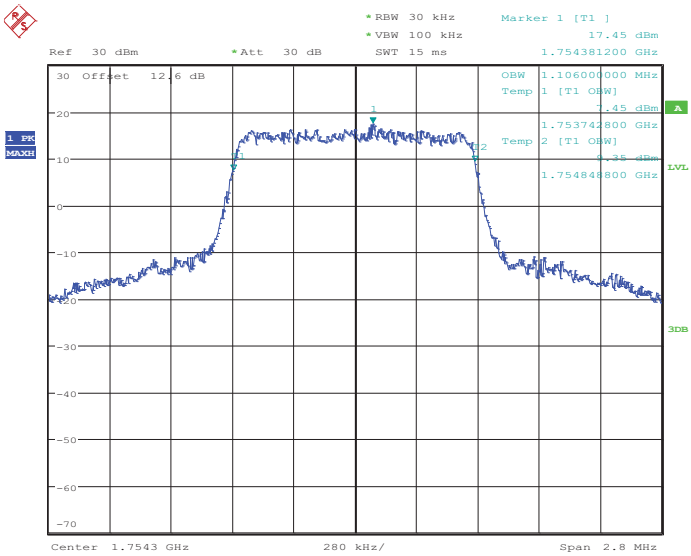

Date: 17.DEC.2013 20:06:37

## 26dB Bandwidth Plot on Channel 20175



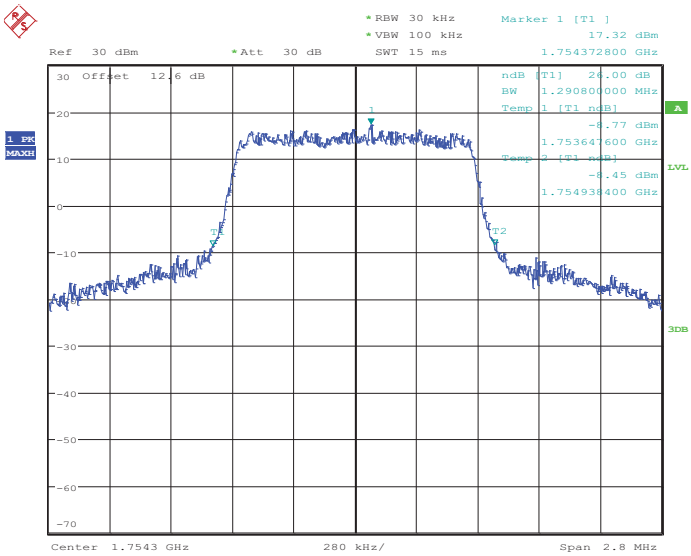

Date: 17.DEC.2013 20:06:46

## 99% Occupied Bandwidth Plot on Channel 20393




Date: 17.DEC.2013 20:09:20

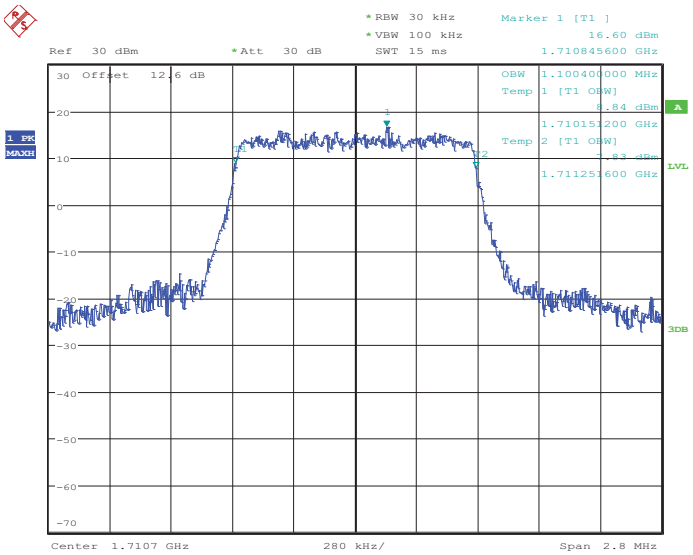
## 26dB Bandwidth Plot on Channel 20393




Date: 17.DEC.2013 20:09:07

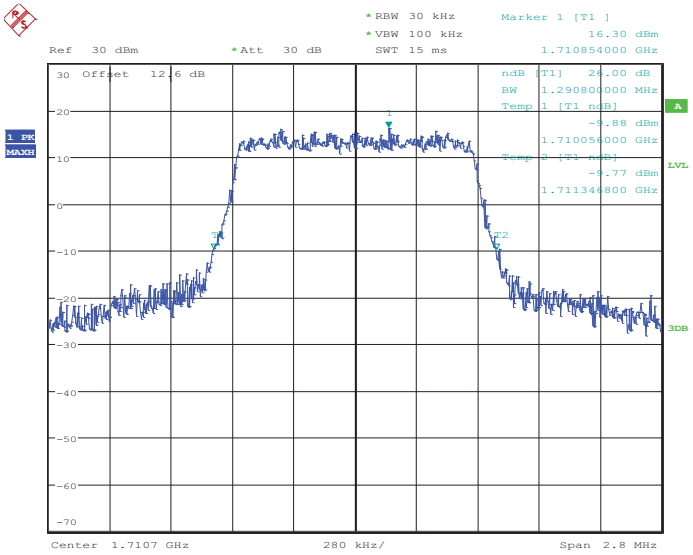
| Band : | LTE Band 4 | BW / Mod. : | 1.4MHz / 16QAM |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 19957



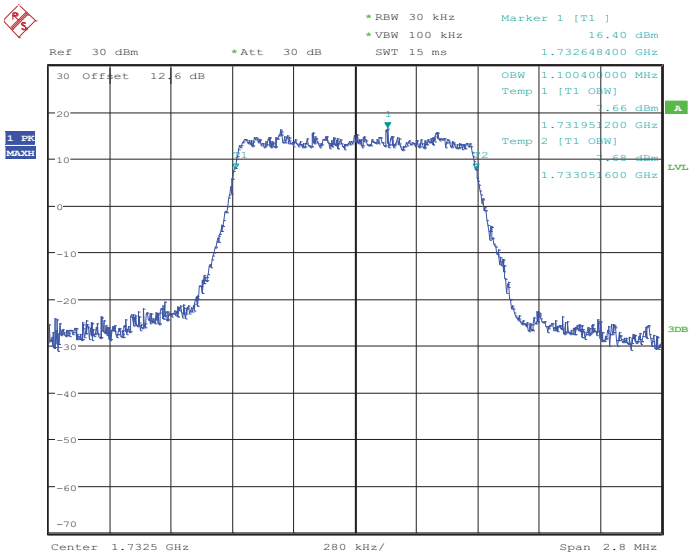

Date: 17.DEC.2013 20:05:17

## 26dB Bandwidth Plot on Channel 19957



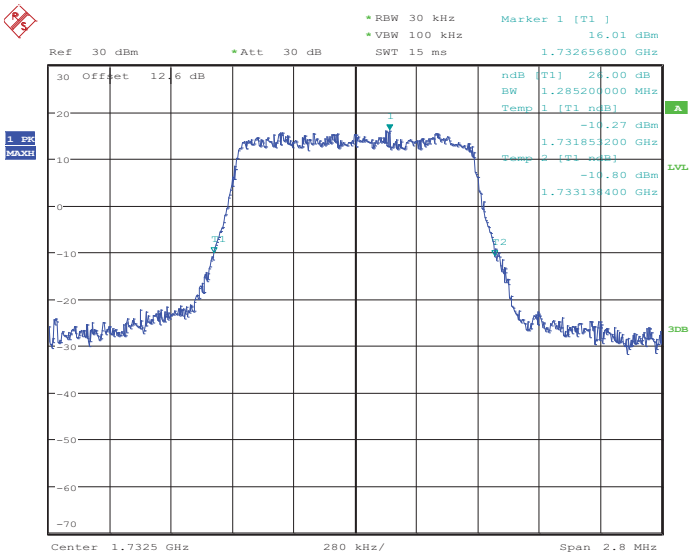

Date: 17.DEC.2013 20:05:06

## 99% Occupied Bandwidth Plot on Channel 20175



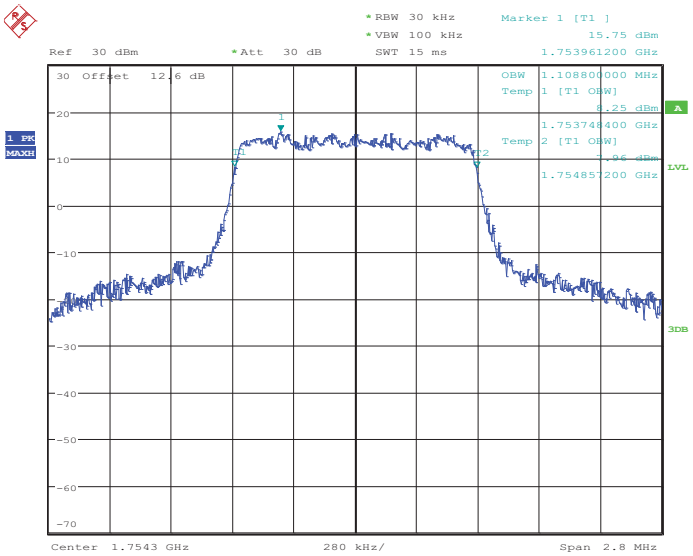

Date: 17.DEC.2013 20:07:00

## 26dB Bandwidth Plot on Channel 20175



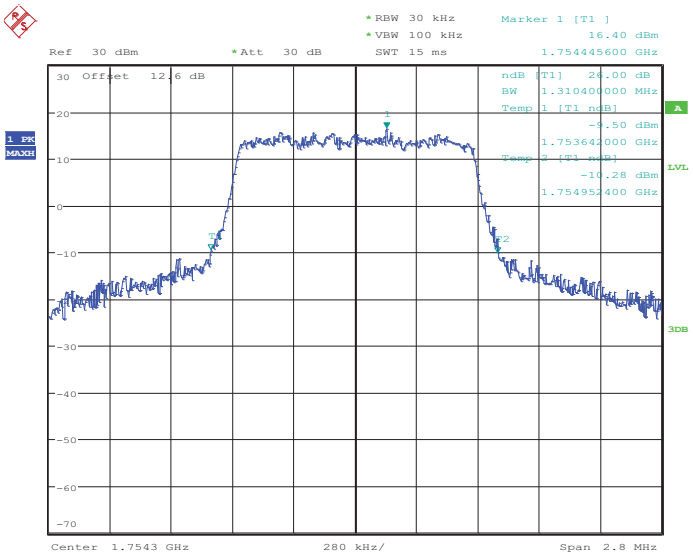

Date: 17.DEC.2013 20:07:12

## 99% Occupied Bandwidth Plot on Channel 20393




Date: 17.DEC.2013 20:07:30

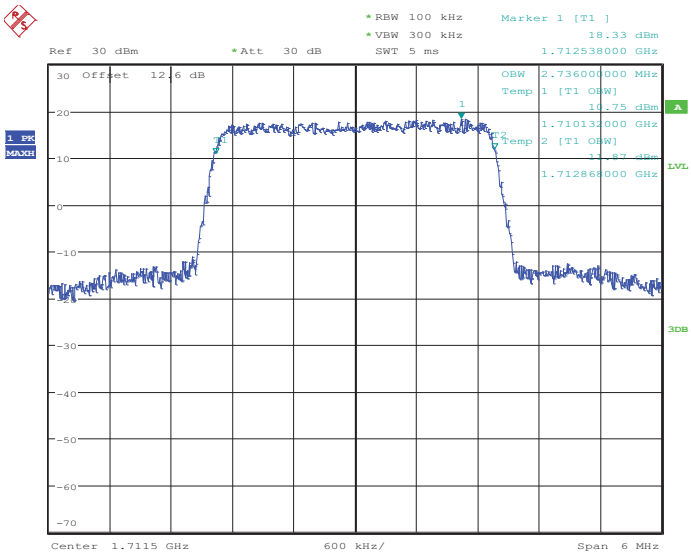
## 26dB Bandwidth Plot on Channel 20393




Date: 17.DEC.2013 20:07:47

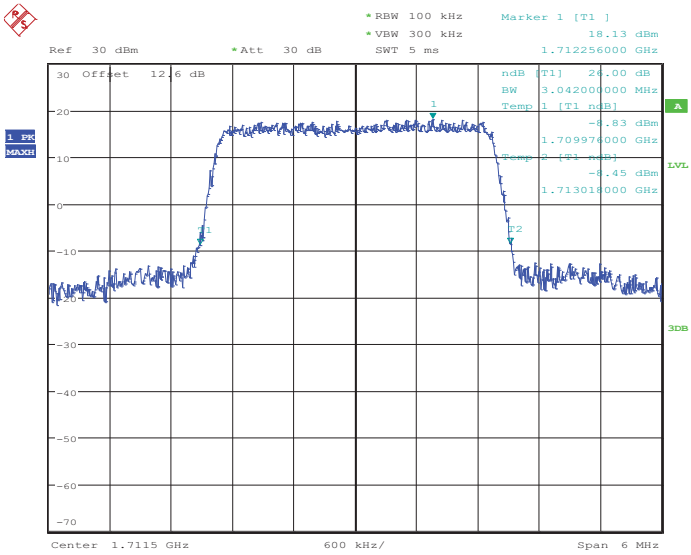
| Band : | LTE Band 4 | BW / Mod. : | 3MHz / QPSK |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 19965



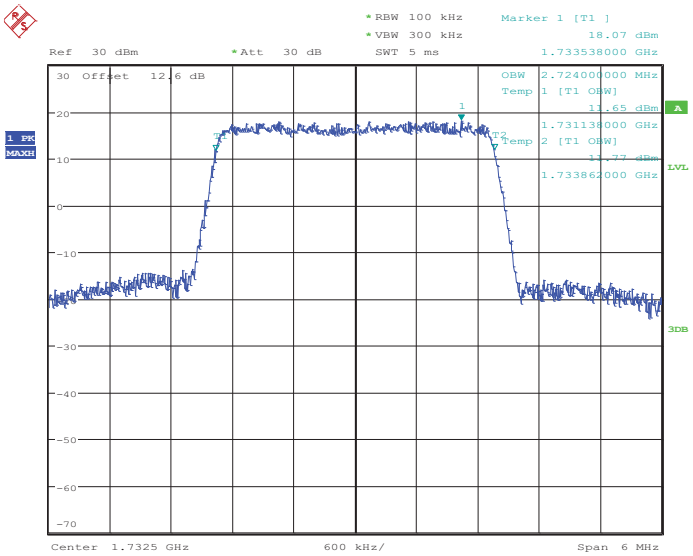

Date: 21.DEC.2013 14:18:59

## 26dB Bandwidth Plot on Channel 19965



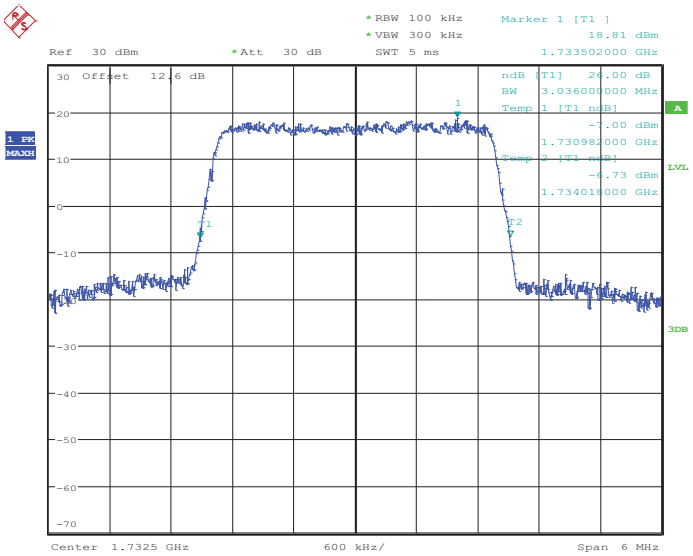

Date: 21.DEC.2013 14:19:26

## 99% Occupied Bandwidth Plot on Channel 20175



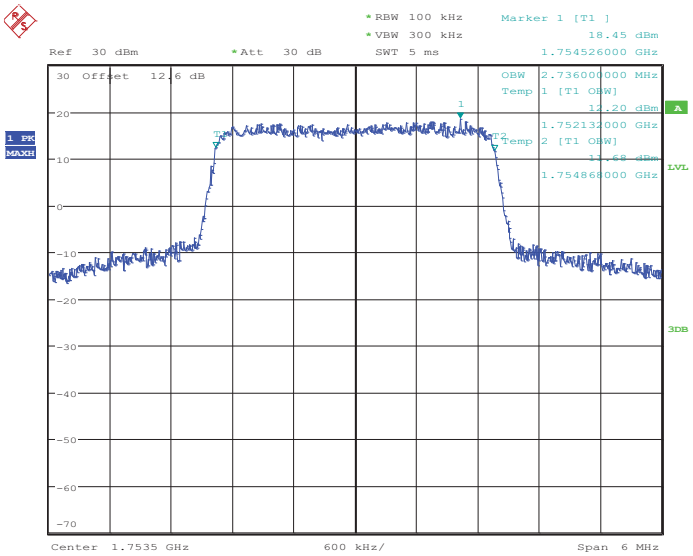

Date: 21.DEC.2013 14:23:18

## 26dB Bandwidth Plot on Channel 20175



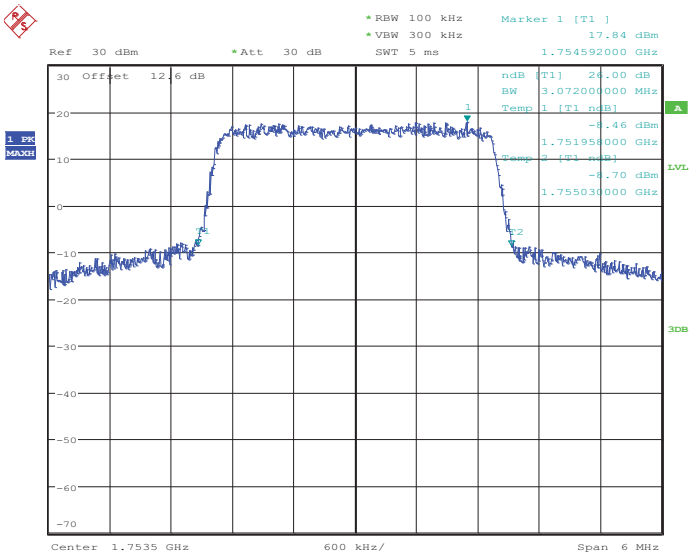

Date: 21.DEC.2013 14:23:50

## 99% Occupied Bandwidth Plot on Channel 20385




Date: 21.DEC.2013 14:26:04

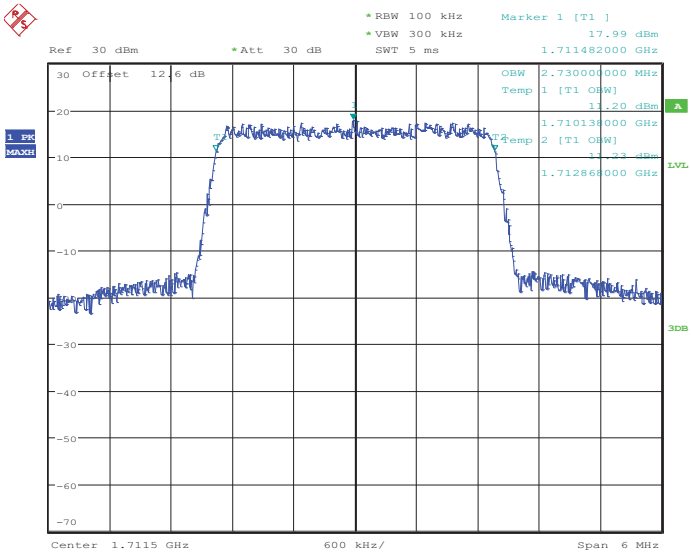
## 26dB Bandwidth Plot on Channel 20385




Date: 21.DEC.2013 14:26:27

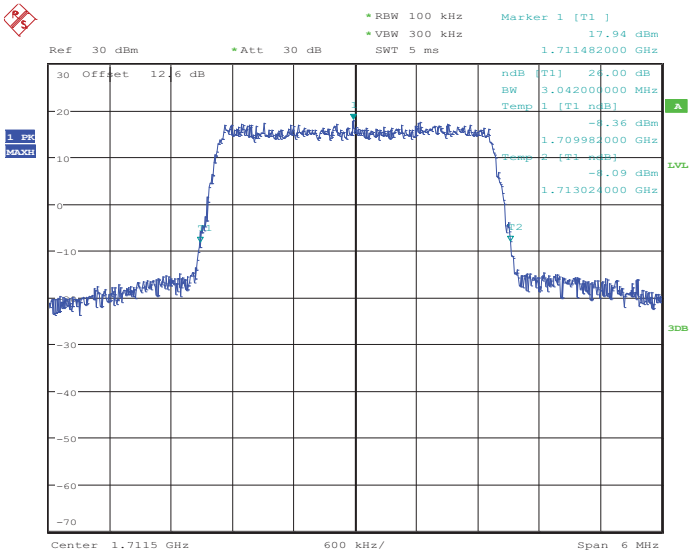
| Band : | LTE Band 4 | BW / Mod. : | 3MHz / 16QAM |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 19965



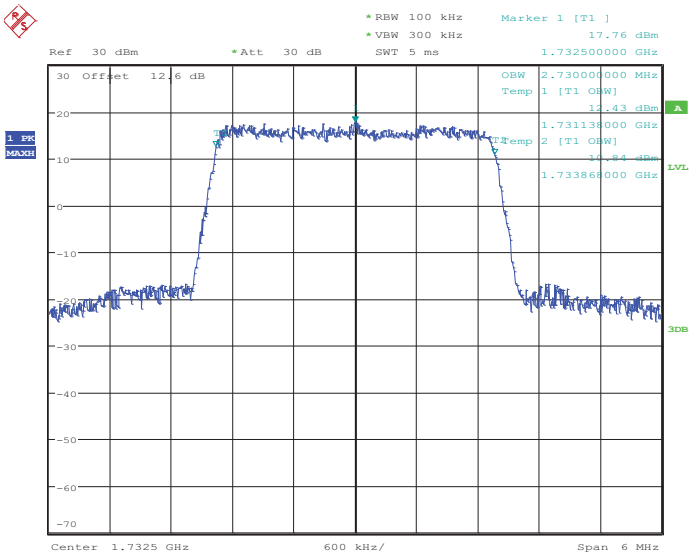

Date: 21.DEC.2013 14:19:14

## 26dB Bandwidth Plot on Channel 19965



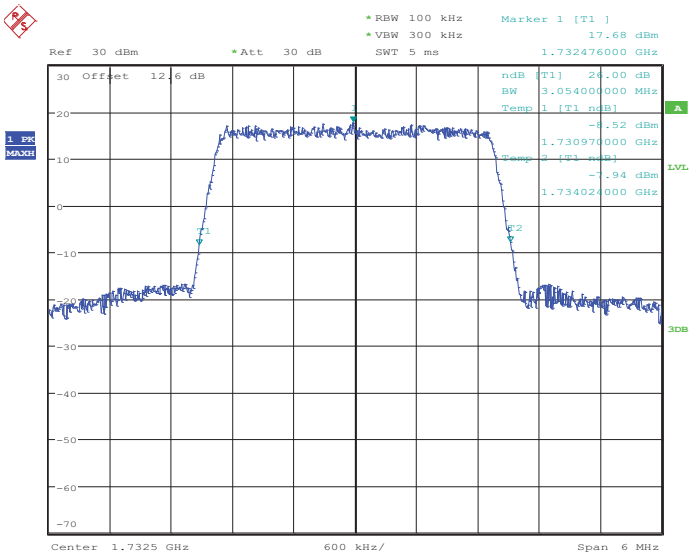

Date: 21.DEC.2013 14:19:40

## 99% Occupied Bandwidth Plot on Channel 20175



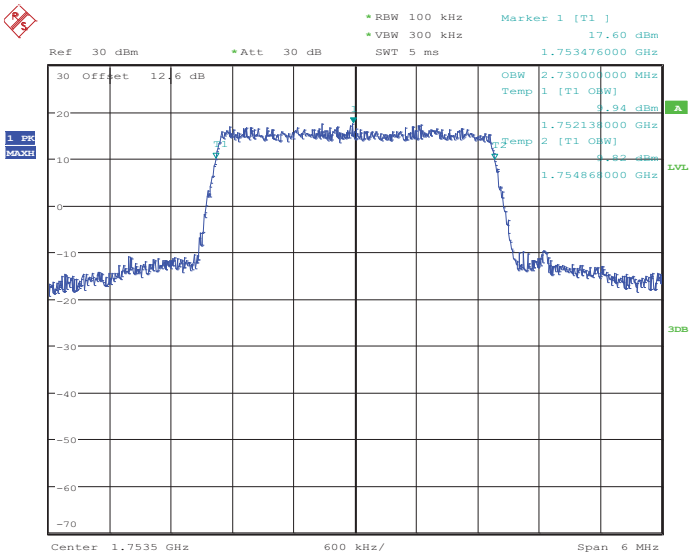

Date: 21.DEC.2013 14:23:34

## 26dB Bandwidth Plot on Channel 20175



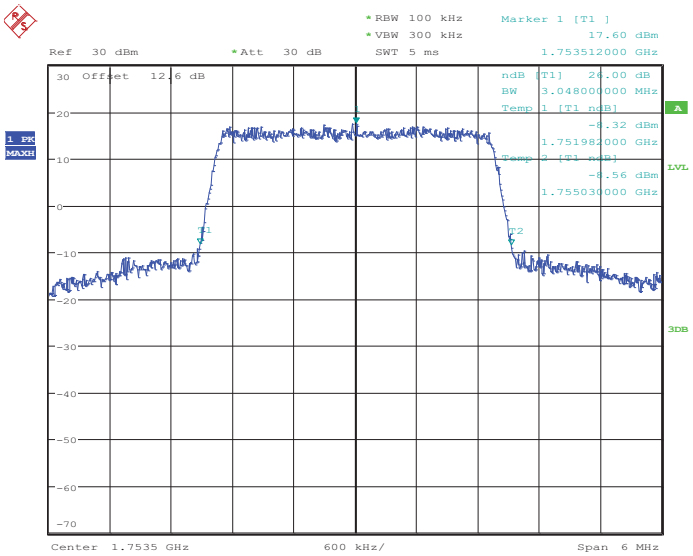

Date: 21.DEC.2013 14:24:08

## 99% Occupied Bandwidth Plot on Channel 20385




Date: 21.DEC.2013 14:26:15

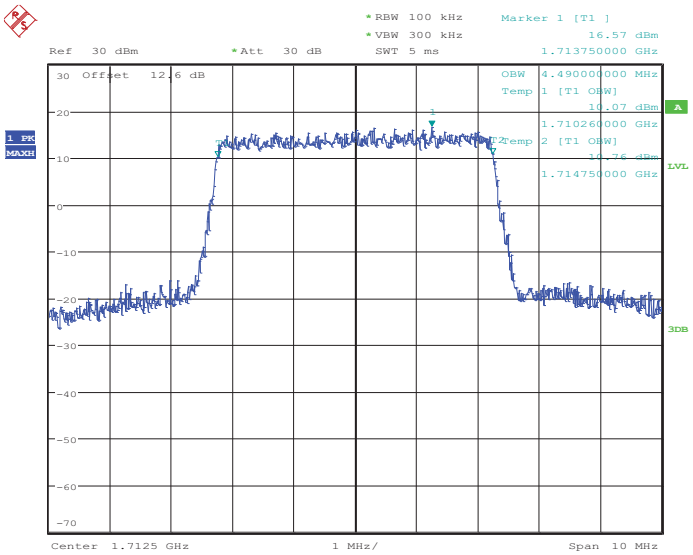
## 26dB Bandwidth Plot on Channel 20385




Date: 21.DEC.2013 14:26:40

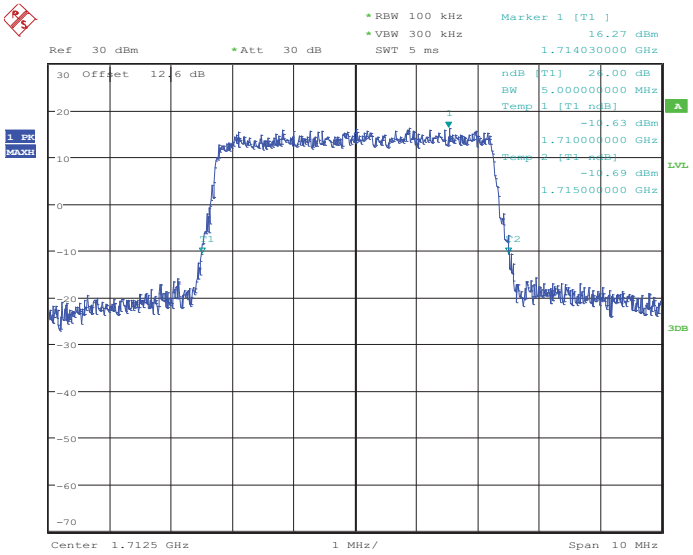
| Band : | LTE Band 4 | BW / Mod. : | 5MHz / QPSK |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 19975



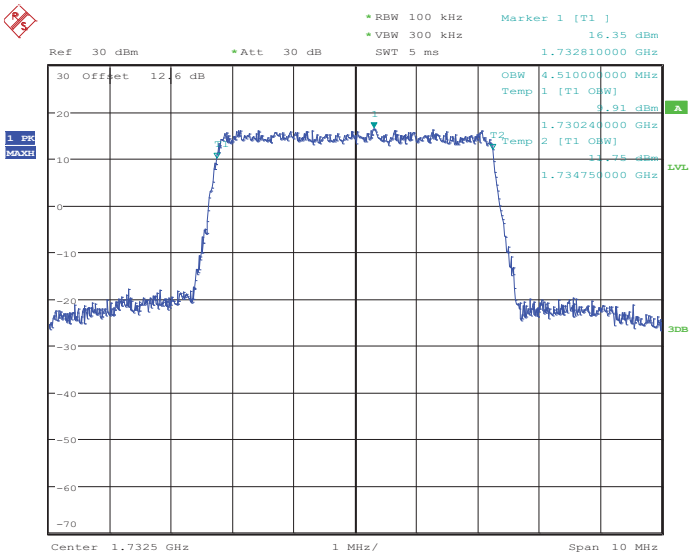

Date: 21.DEC.2013 14:30:40

## 26dB Bandwidth Plot on Channel 19975



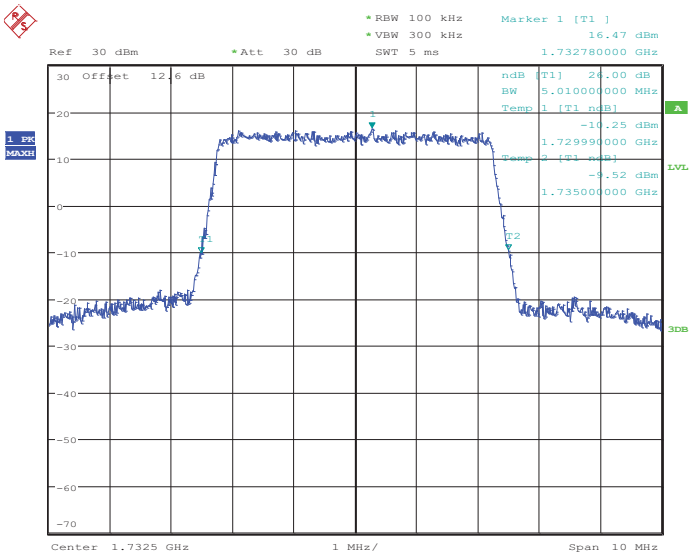

Date: 21.DEC.2013 14:30:59

## 99% Occupied Bandwidth Plot on Channel 20175



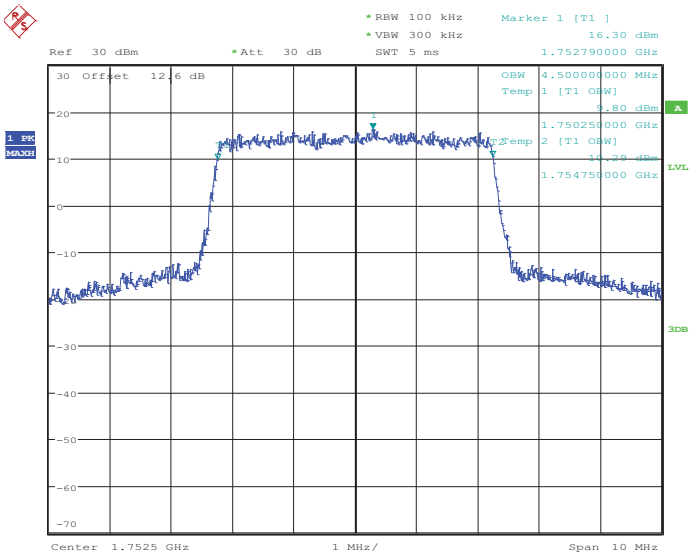

Date: 21.DEC.2013 14:34:44

## 26dB Bandwidth Plot on Channel 20175



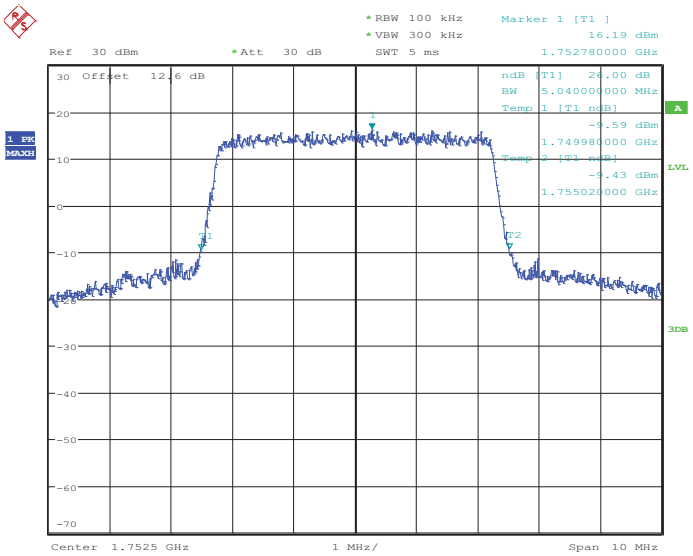

Date: 21.DEC.2013 14:35:14

## 99% Occupied Bandwidth Plot on Channel 20375




Date: 21.DEC.2013 14:37:23

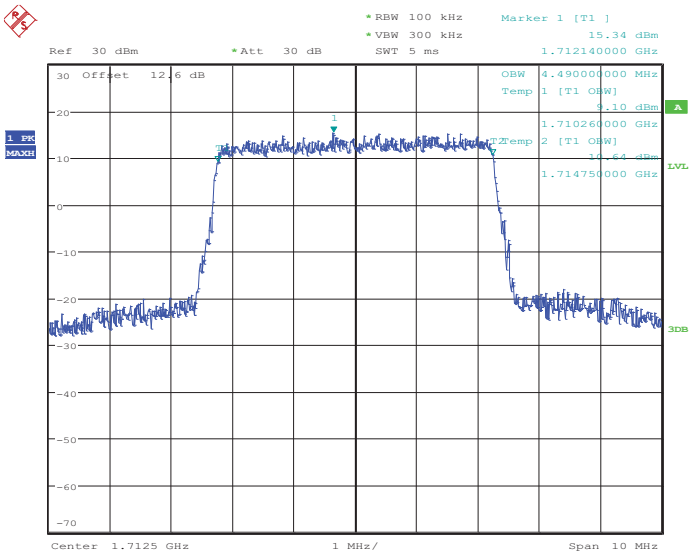
## 26dB Bandwidth Plot on Channel 20375




Date: 21.DEC.2013 14:37:51

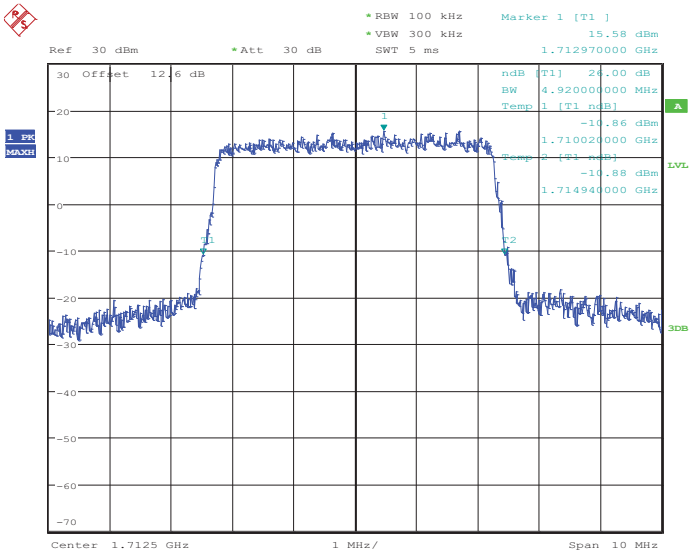
| Band : | LTE Band 4 | BW / Mod. : | 5MHz / 16QAM |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 19975



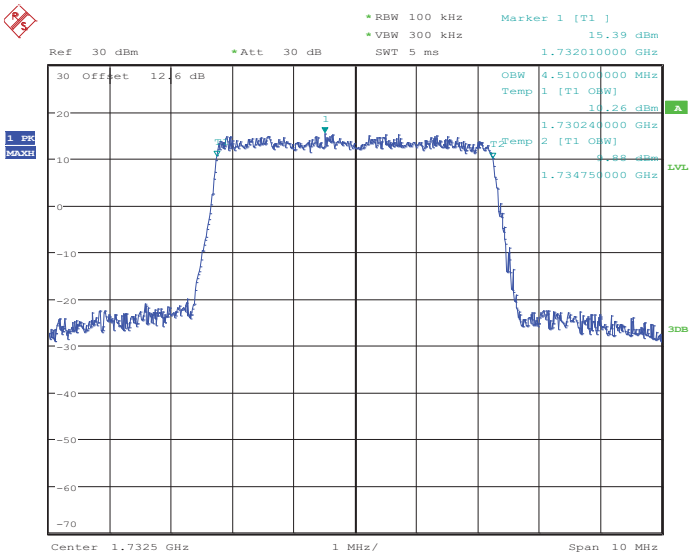

Date: 21.DEC.2013 14:30:50

## 26dB Bandwidth Plot on Channel 19975



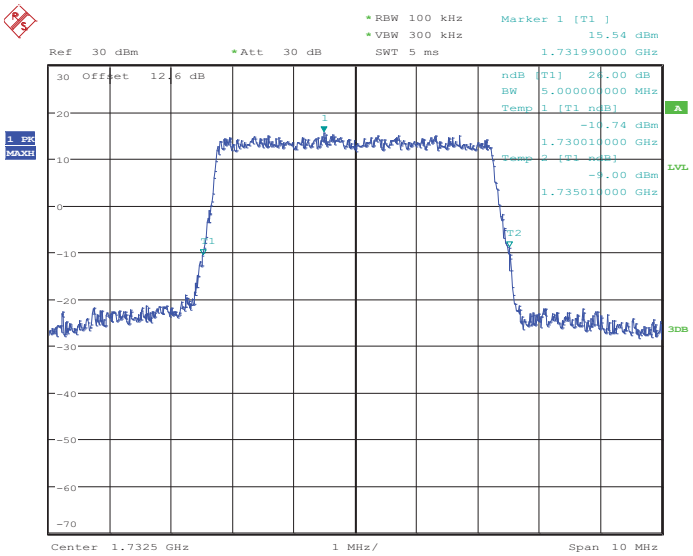

Date: 21.DEC.2013 14:31:09

## 99% Occupied Bandwidth Plot on Channel 20175



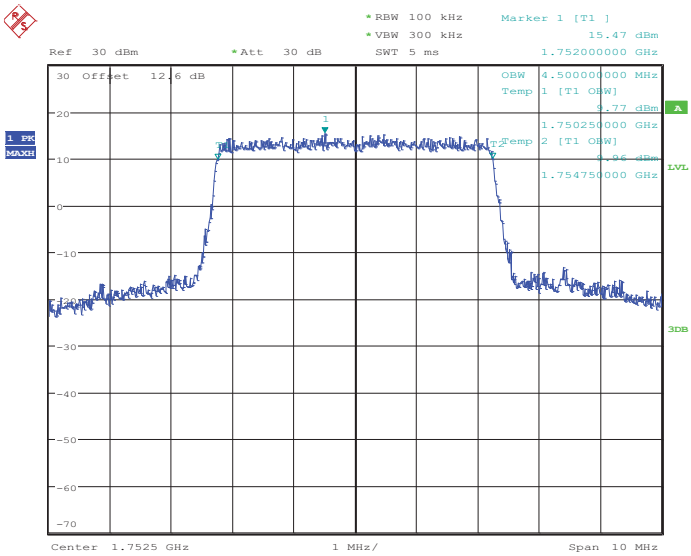

Date: 21.DEC.2013 14:34:56

## 26dB Bandwidth Plot on Channel 20175



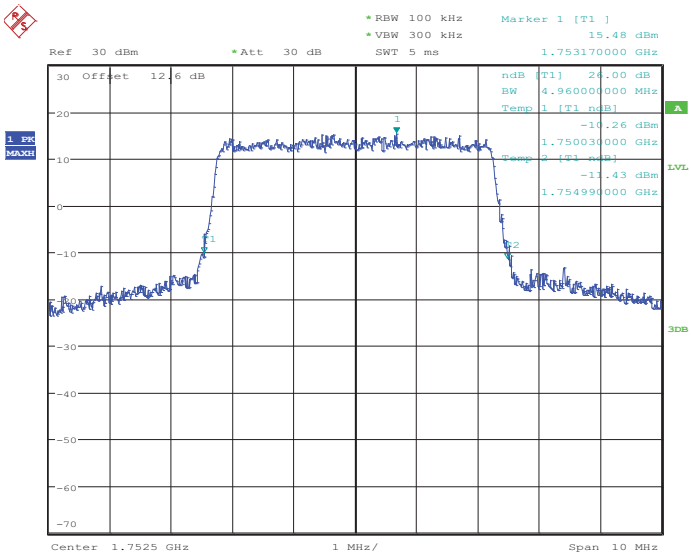

Date: 21.DEC.2013 14:35:28

## 99% Occupied Bandwidth Plot on Channel 20375




Date: 21.DEC.2013 14:37:37

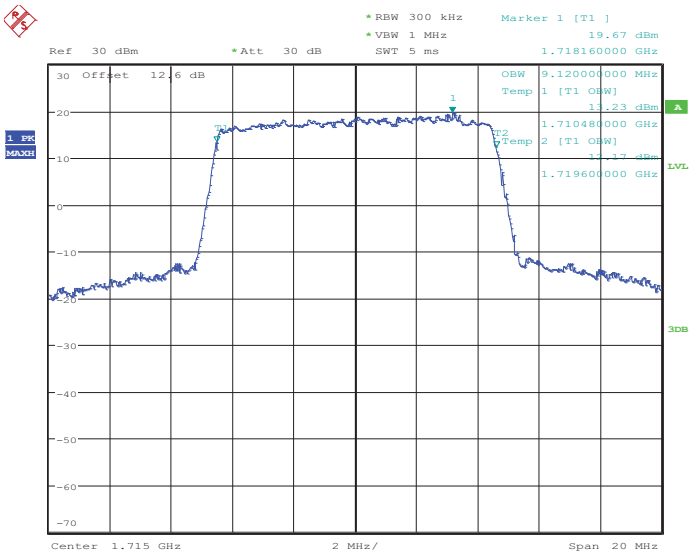
## 26dB Bandwidth Plot on Channel 20375




Date: 21.DEC.2013 14:38:04

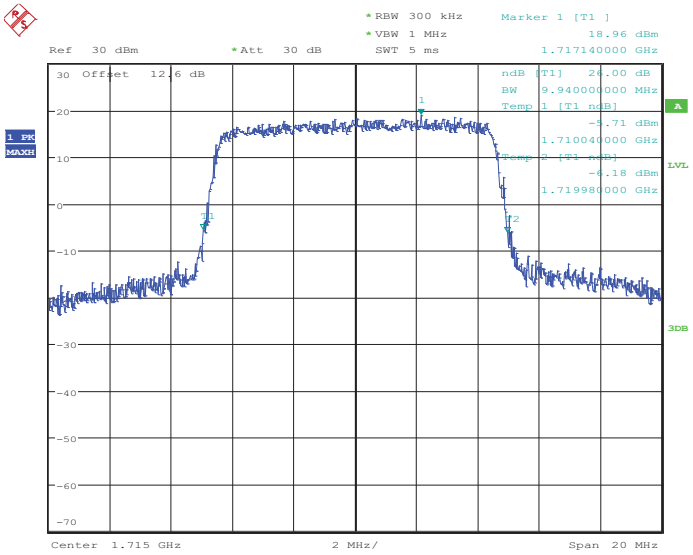
| Band : | LTE Band 4 | BW / Mod. : | 10MHz / QPSK |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 20000



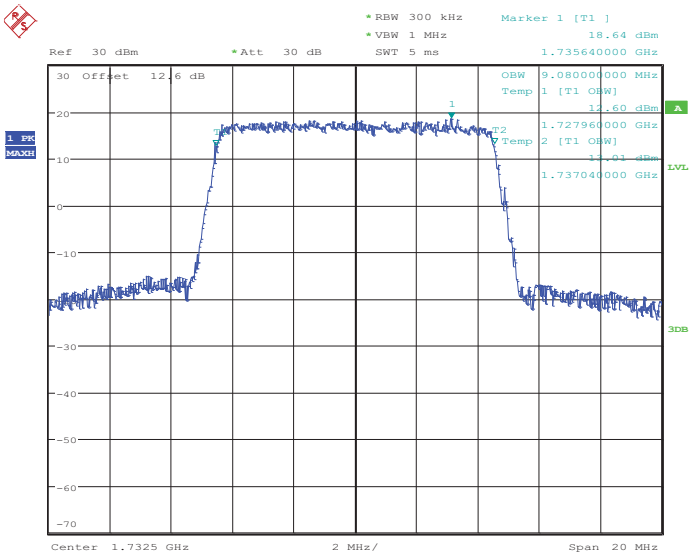

Date: 21.DEC.2013 14:42:46

## 26dB Bandwidth Plot on Channel 20000



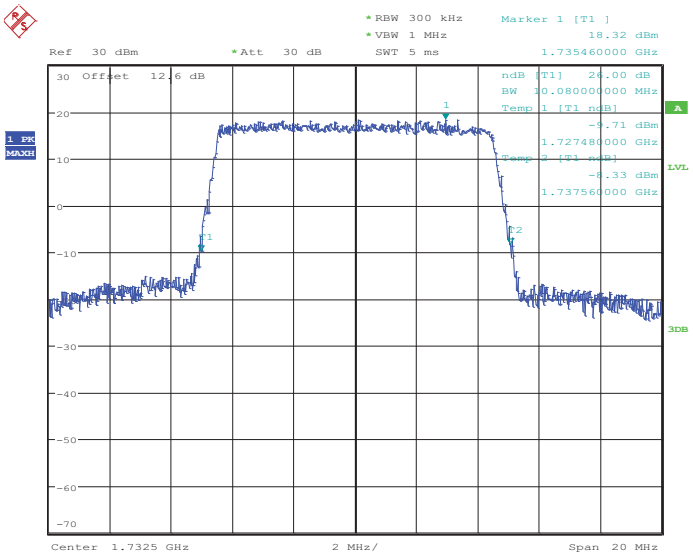

Date: 21.DEC.2013 14:43:14

## 99% Occupied Bandwidth Plot on Channel 20175



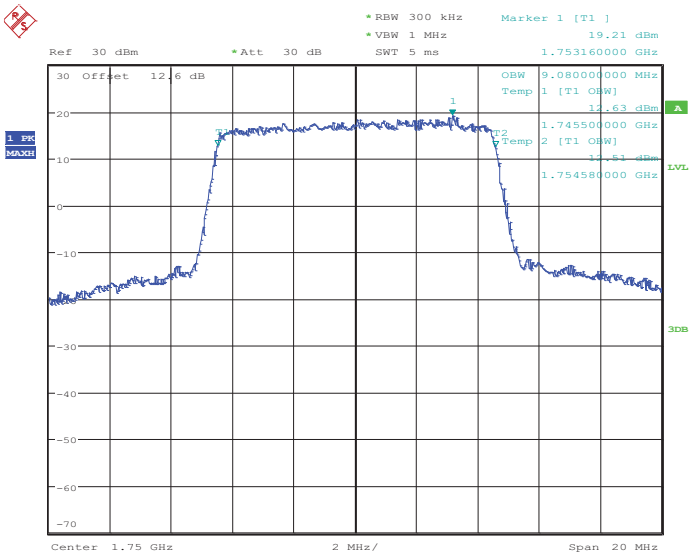

Date: 21.DEC.2013 14:47:21

## 26dB Bandwidth Plot on Channel 20175



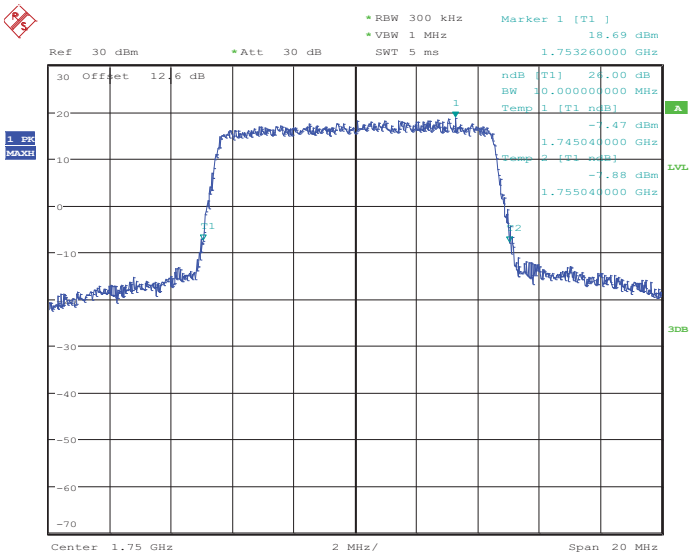

Date: 21.DEC.2013 14:47:47

## 99% Occupied Bandwidth Plot on Channel 20350




Date: 21.DEC.2013 14:50:16

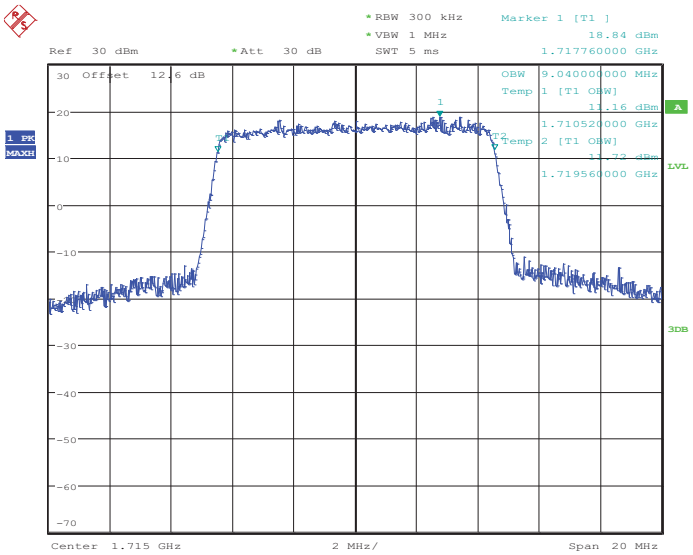
## 26dB Bandwidth Plot on Channel 20350




Date: 21.DEC.2013 14:50:39

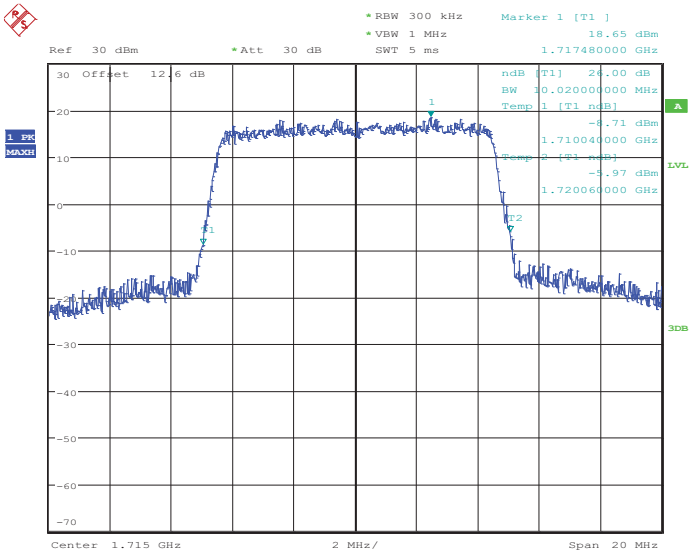
| Band : | LTE Band 4 | BW / Mod. : | 10MHz / 16QAM |
|---|---|---|---|

### 99% Occupied Bandwidth Plot on Channel 20000



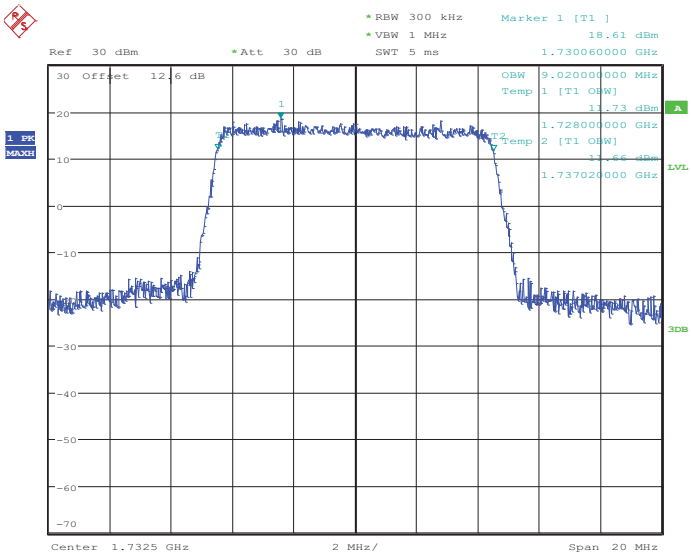

Date: 21.DEC.2013 14:43:00

### 26dB Bandwidth Plot on Channel 20000



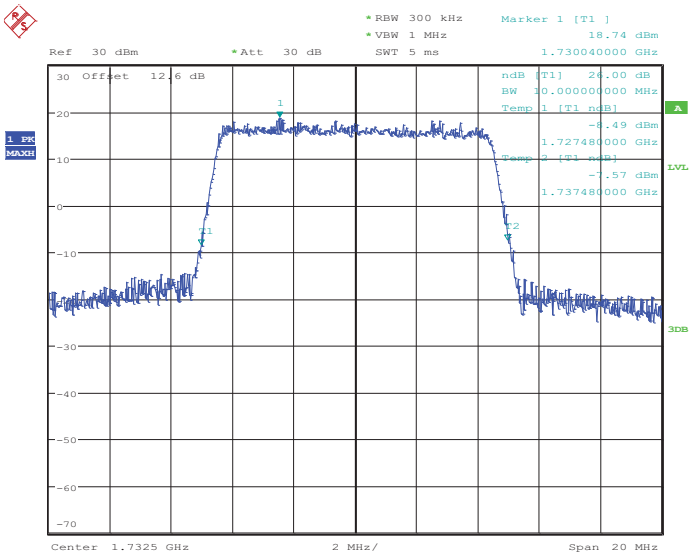

Date: 21.DEC.2013 14:43:25

## 99% Occupied Bandwidth Plot on Channel 20175



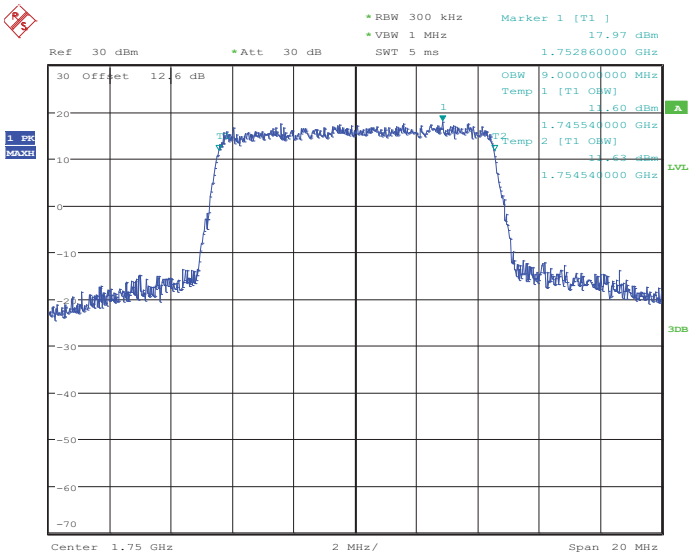

Date: 21.DEC.2013 14:47:35

## 26dB Bandwidth Plot on Channel 20175



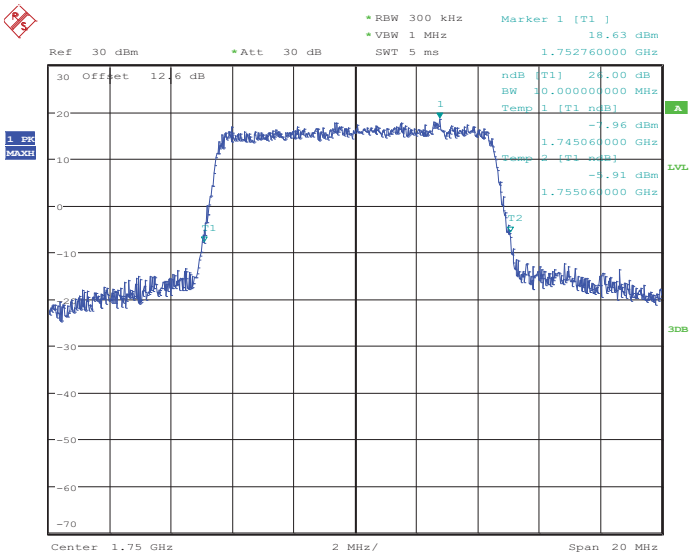

Date: 21.DEC.2013 14:48:02

## 99% Occupied Bandwidth Plot on Channel 20350




Date: 21.DEC.2013 14:50:27

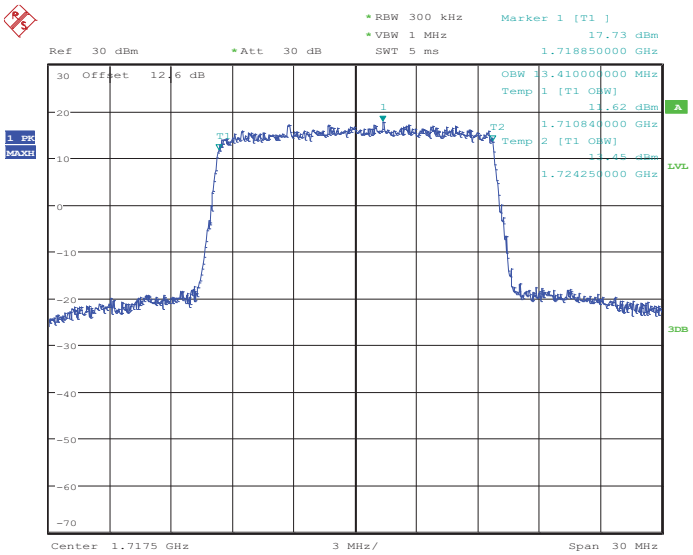
## 26dB Bandwidth Plot on Channel 20350




Date: 21.DEC.2013 14:50:50

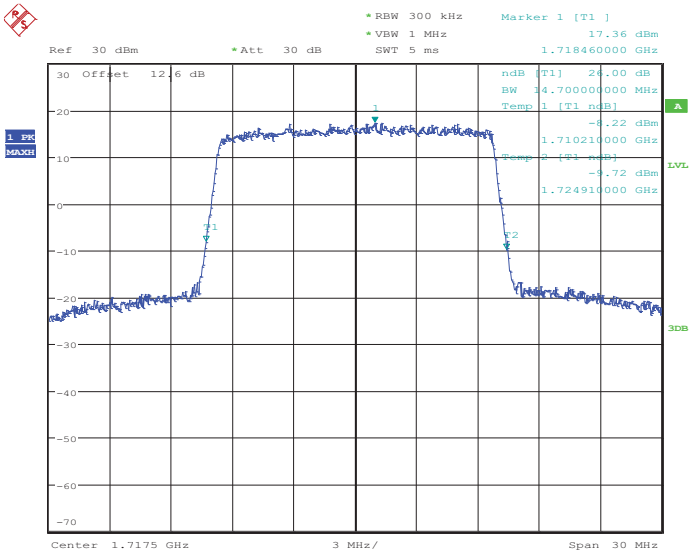
| Band : | LTE Band 4 | BW / Mod. : | 15MHz / QPSK |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 20025



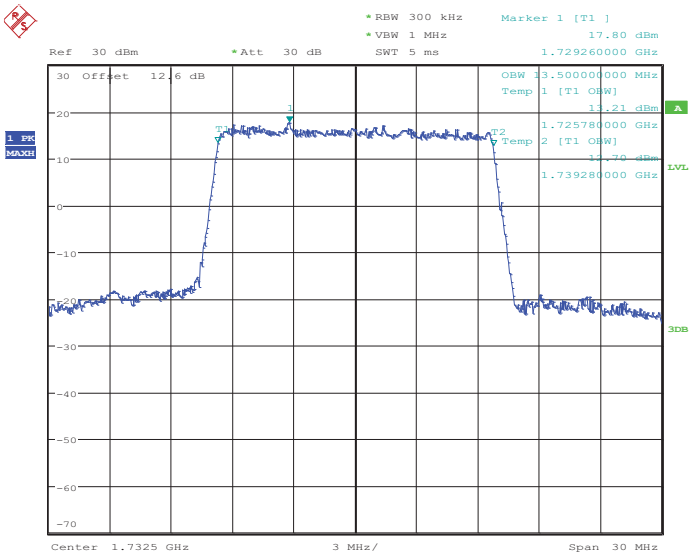

Date: 21.DEC.2013 14:54:49

## 26dB Bandwidth Plot on Channel 20025



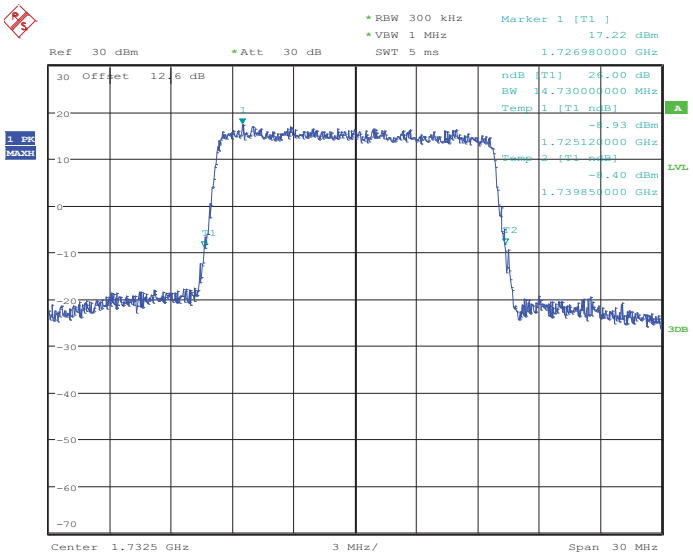

Date: 21.DEC.2013 14:55:27

## 99% Occupied Bandwidth Plot on Channel 20175



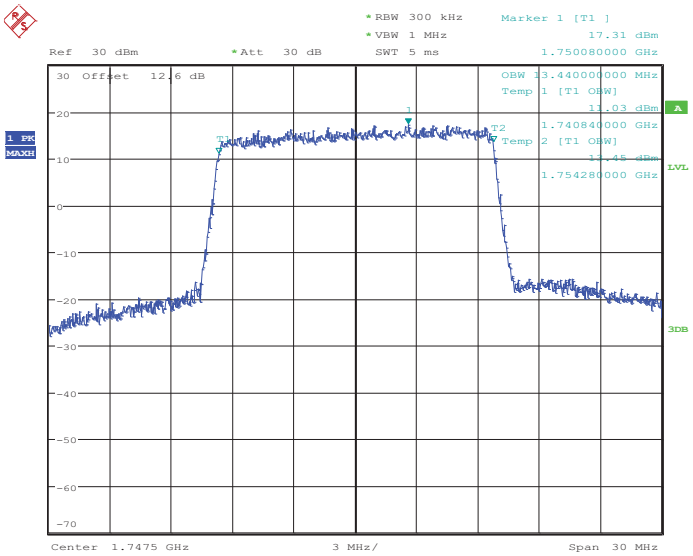

Date: 21.DEC.2013 14:59:30

## 26dB Bandwidth Plot on Channel 20175



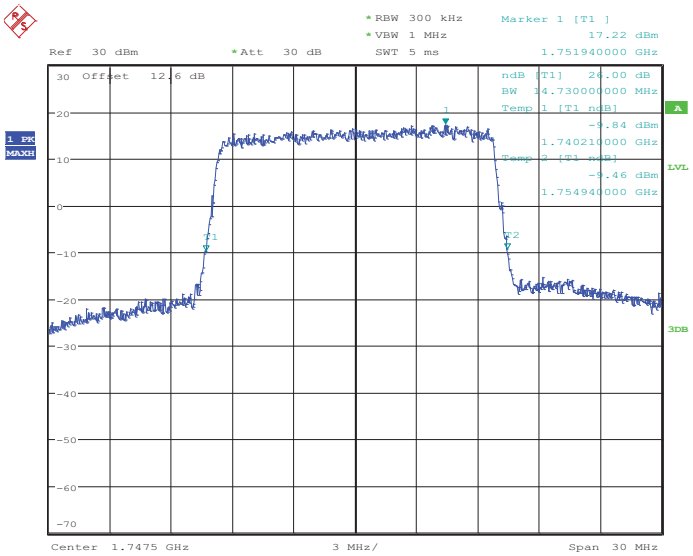

Date: 21.DEC.2013 14:59:53

## 99% Occupied Bandwidth Plot on Channel 20325




Date: 21.DEC.2013 15:07:21

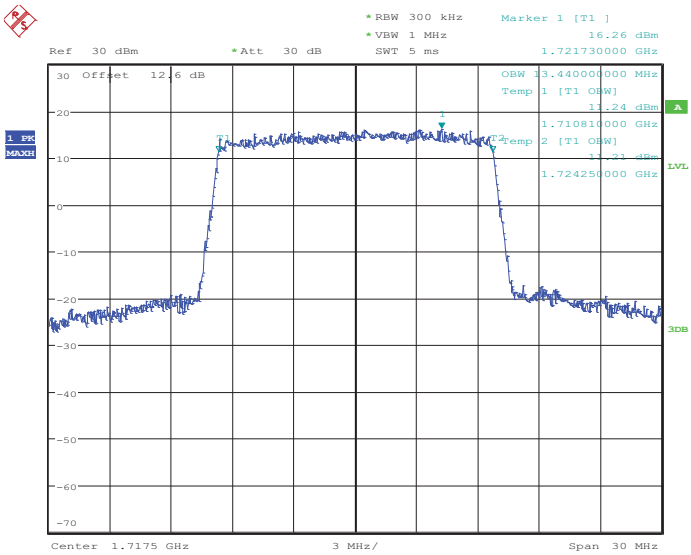
## 26dB Bandwidth Plot on Channel 20325




Date: 21.DEC.2013 15:07:35

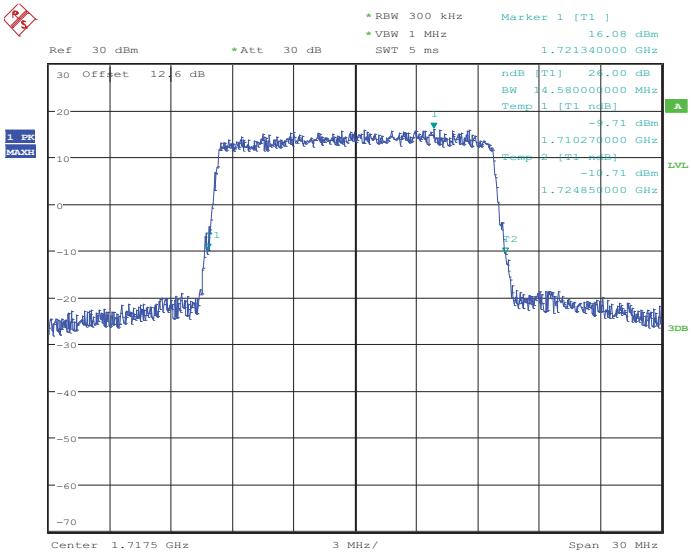
| Band : | LTE Band 4 | BW / Mod. : | 15MHz / 16QAM |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 20025



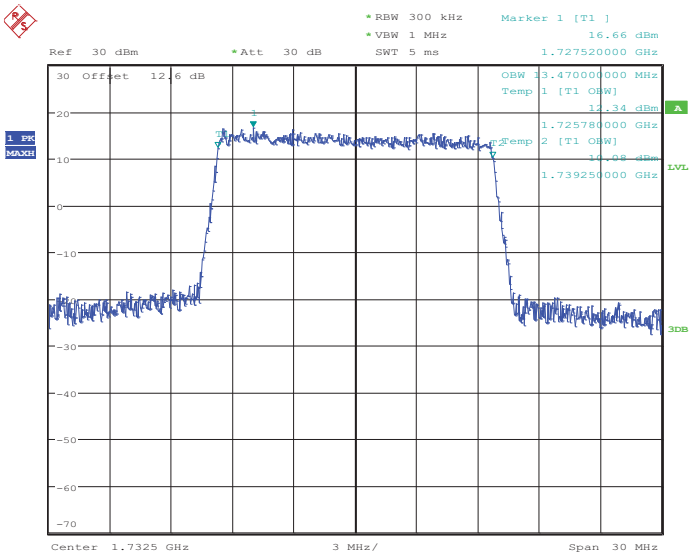

Date: 21.DEC.2013 14:55:06

## 26dB Bandwidth Plot on Channel 20025



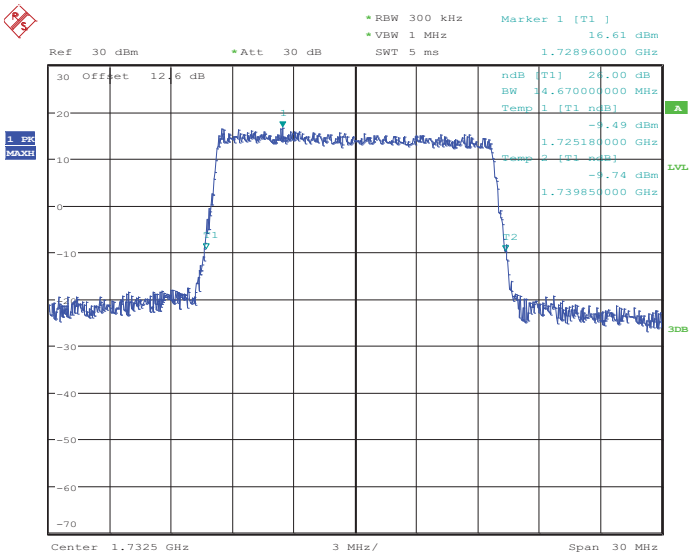

Date: 21.DEC.2013 14:55:36

## 99% Occupied Bandwidth Plot on Channel 20175



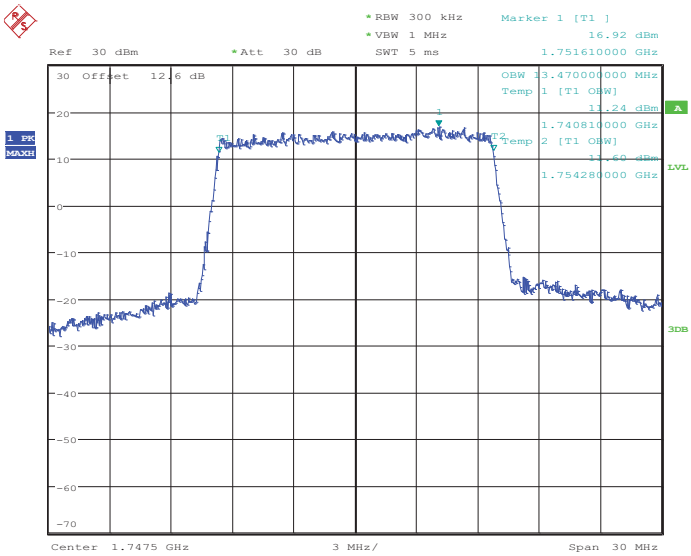

Date: 21.DEC.2013 14:59:41

## 26dB Bandwidth Plot on Channel 20175



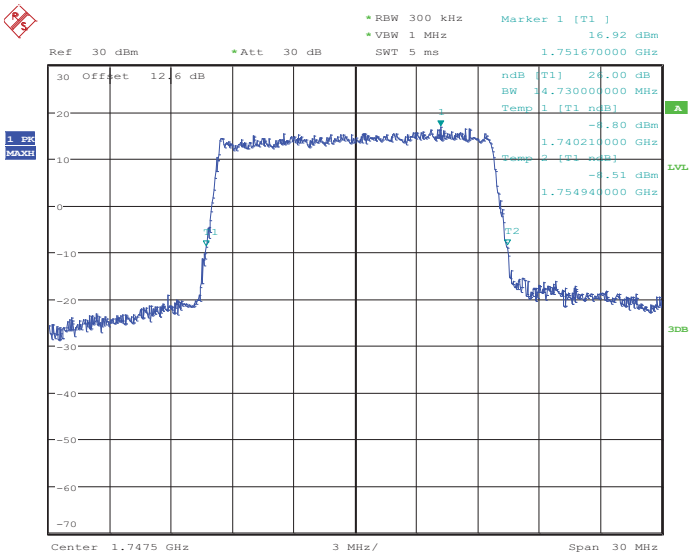

Date: 21.DEC.2013 15:00:07

## 99% Occupied Bandwidth Plot on Channel 20325




Date: 21.DEC.2013 15:08:56

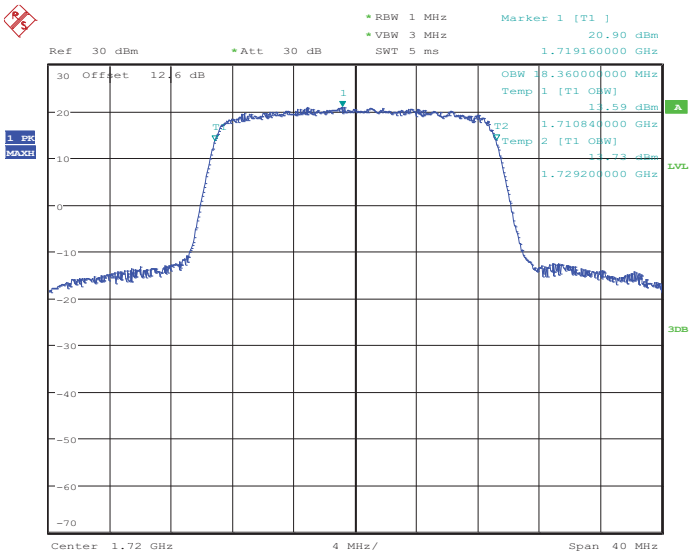
## 26dB Bandwidth Plot on Channel 20325




Date: 21.DEC.2013 15:09:14

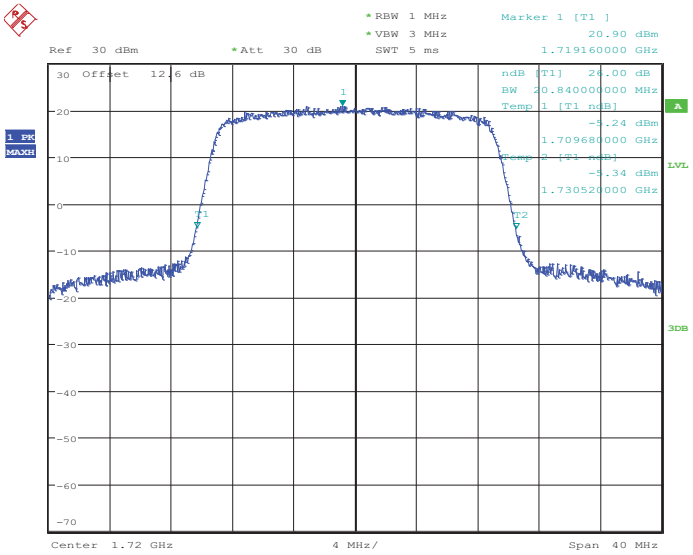
| Band : | LTE Band 4 | BW / Mod. : | 20MHz / QPSK |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 20050



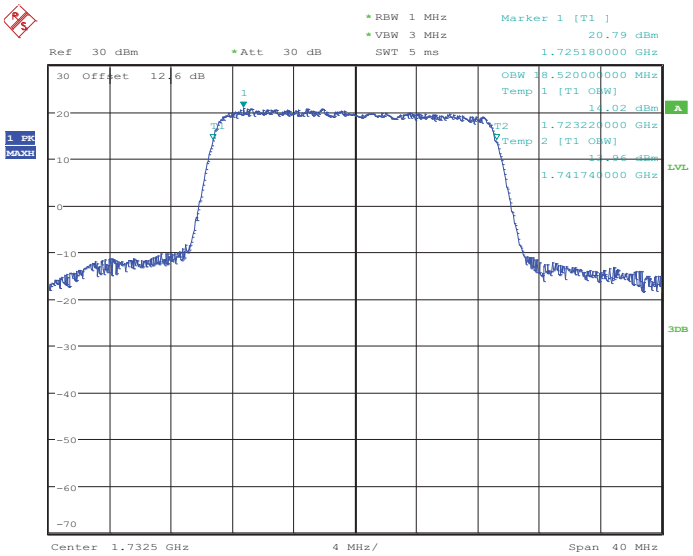

Date: 21.DEC.2013 15:14:32

## 26dB Bandwidth Plot on Channel 20050



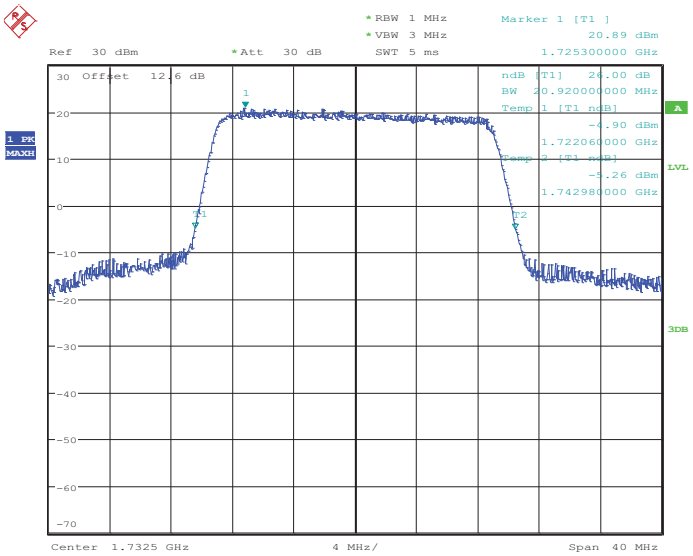

Date: 21.DEC.2013 15:15:00

## 99% Occupied Bandwidth Plot on Channel 20175



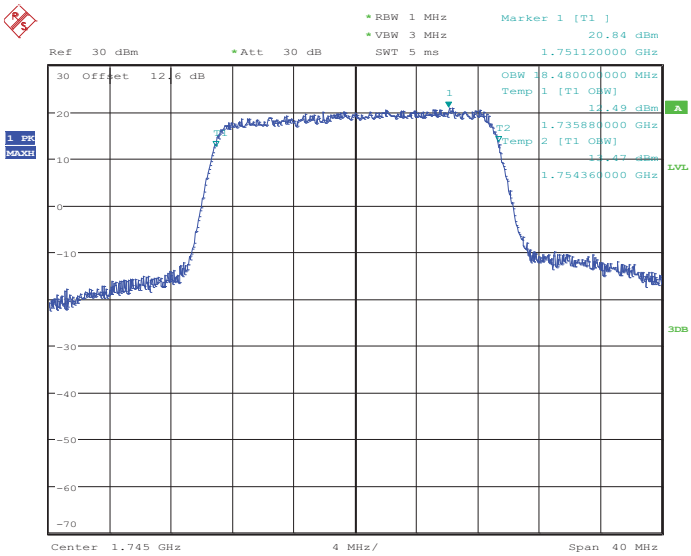

Date: 21.DEC.2013 15:19:42

## 26dB Bandwidth Plot on Channel 20175



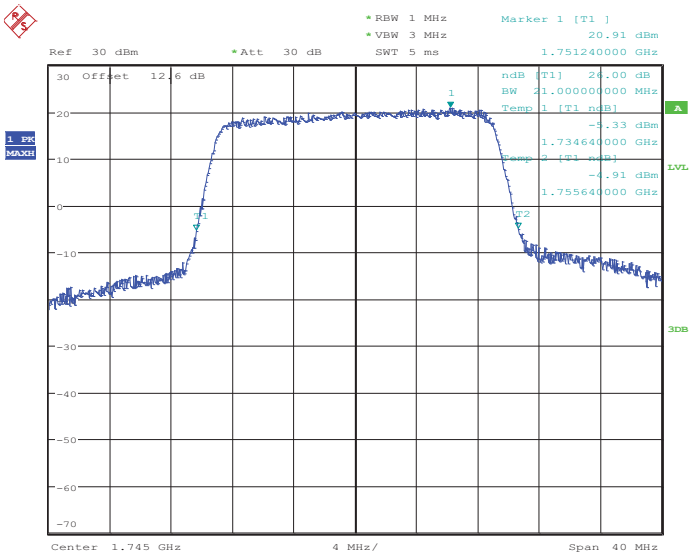

Date: 21.DEC.2013 15:20:05

## 99% Occupied Bandwidth Plot on Channel 20300




Date: 21.DEC.2013 15:22:33

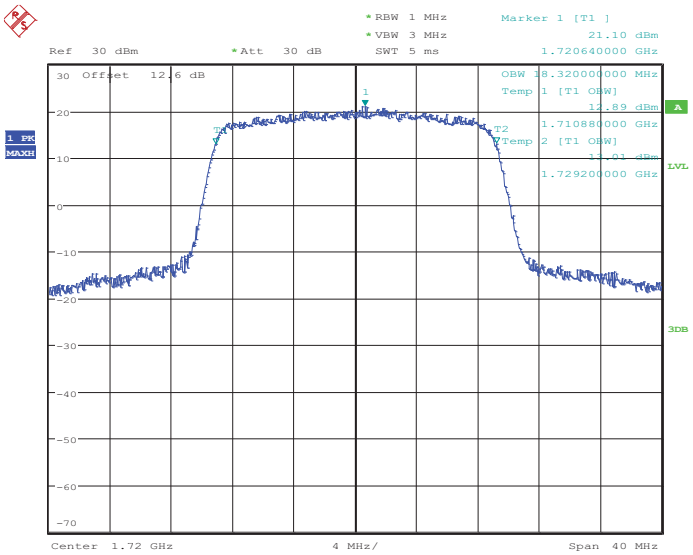
## 26dB Bandwidth Plot on Channel 20300




Date: 21.DEC.2013 15:22:59

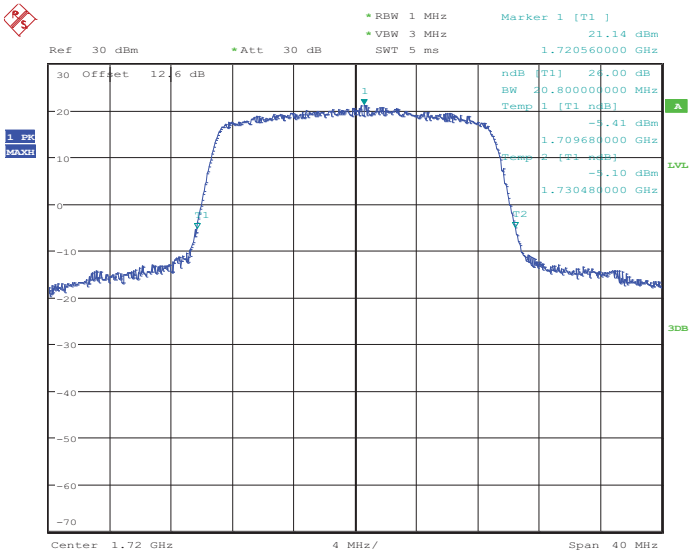
| Band : | LTE Band 4 | BW / Mod. : | 20MHz / 16QAM |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 20050



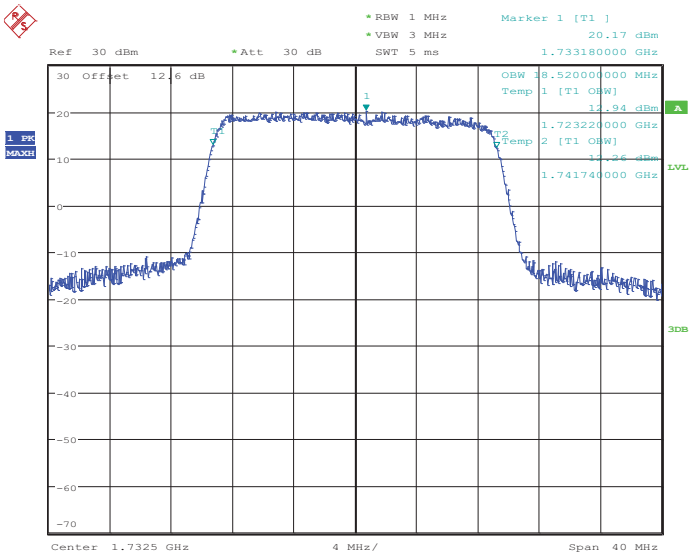

Date: 21.DEC.2013 15:14:46

## 26dB Bandwidth Plot on Channel 20050



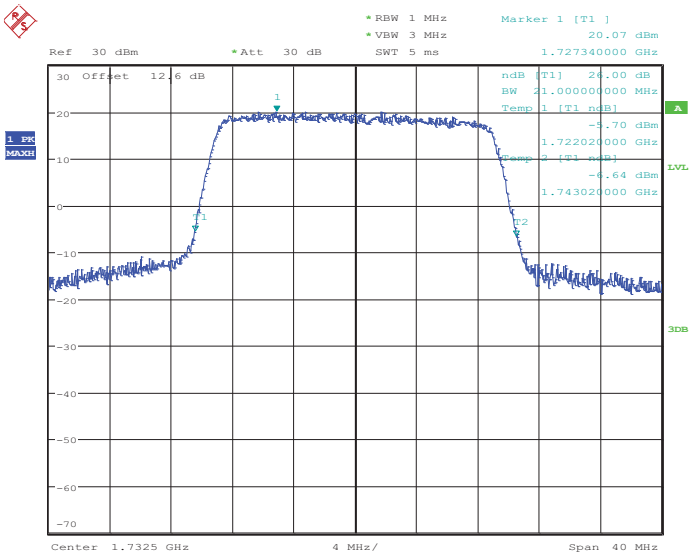

Date: 21.DEC.2013 15:15:21

## 99% Occupied Bandwidth Plot on Channel 20175



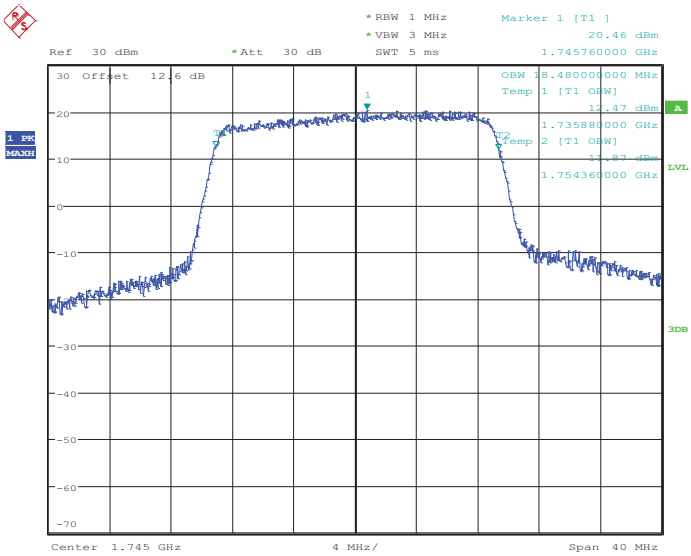

Date: 21.DEC.2013 15:19:53

## 26dB Bandwidth Plot on Channel 20175



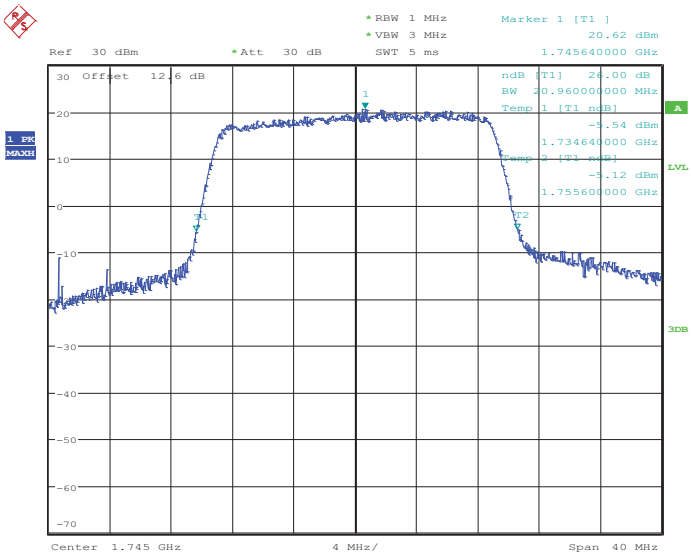

Date: 21.DEC.2013 15:20:17

### 99% Occupied Bandwidth Plot on Channel 20300




Date: 21.DEC.2013 15:22:46

### 26dB Bandwidth Plot on Channel 20300

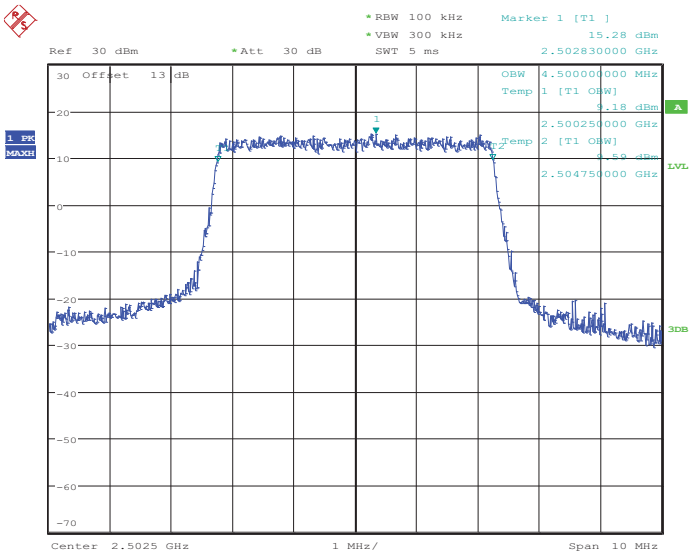



Date: 21.DEC.2013 15:23:14

***Note:*** *The total loss is 12.6 dB of the RF cable and attenuator of LTE Band 4, and has been compensated to the spectrum analyzer offset.*

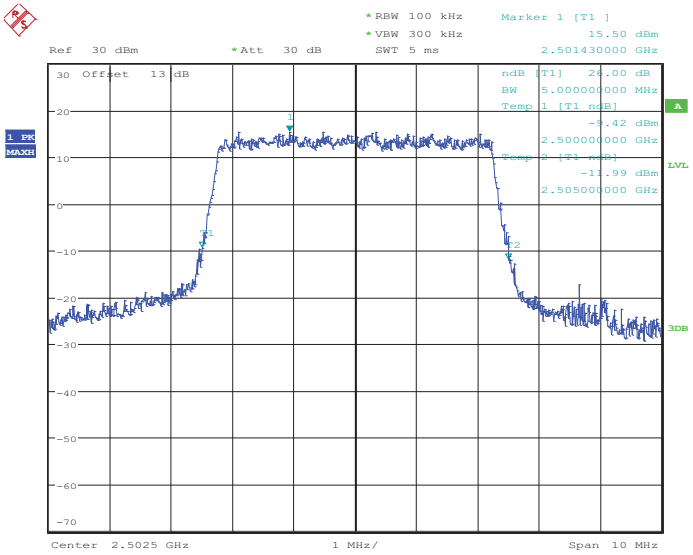
| Band : | LTE Band 7 | BW / Mod. : | 5MHz / QPSK |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 20775



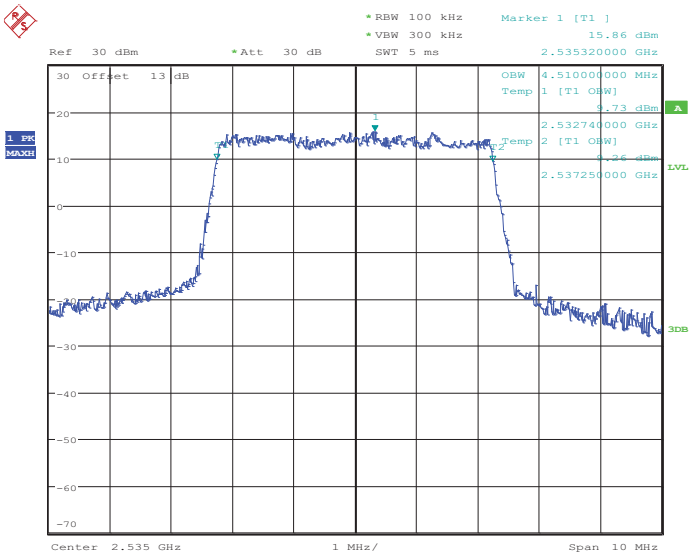

Date: 17.DEC.2013 18:57:31

## 26dB Bandwidth Plot on Channel 20775



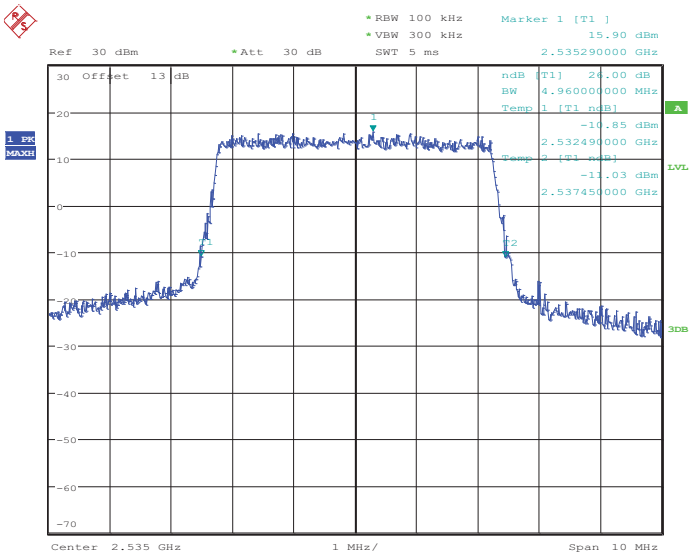

Date: 17.DEC.2013 19:00:23

## 99% Occupied Bandwidth Plot on Channel 21100



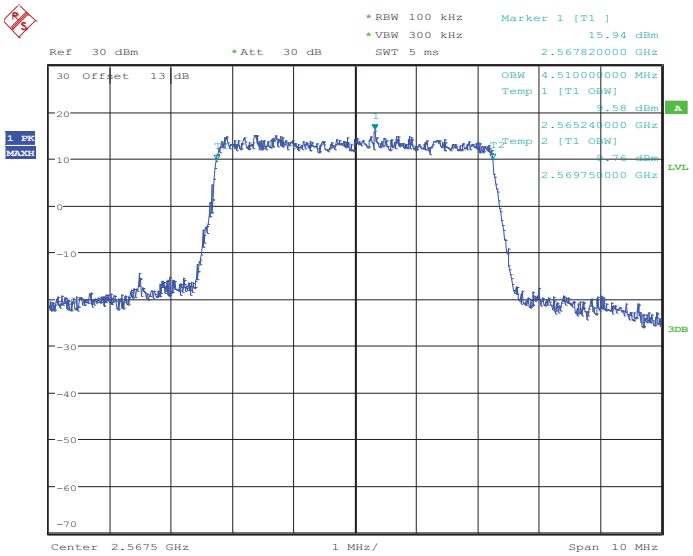

Date: 17.DEC.2013 19:08:40

## 26dB Bandwidth Plot on Channel 21100



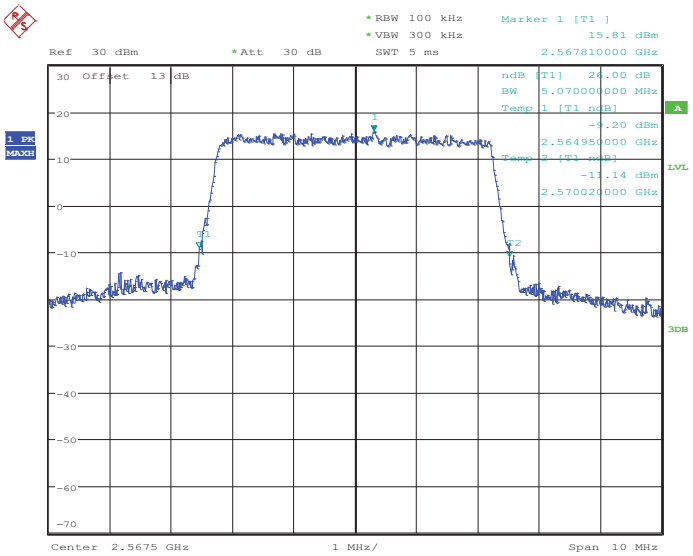

Date: 17.DEC.2013 19:08:55

## 99% Occupied Bandwidth Plot on Channel 21425




Date: 17.DEC.2013 19:13:29

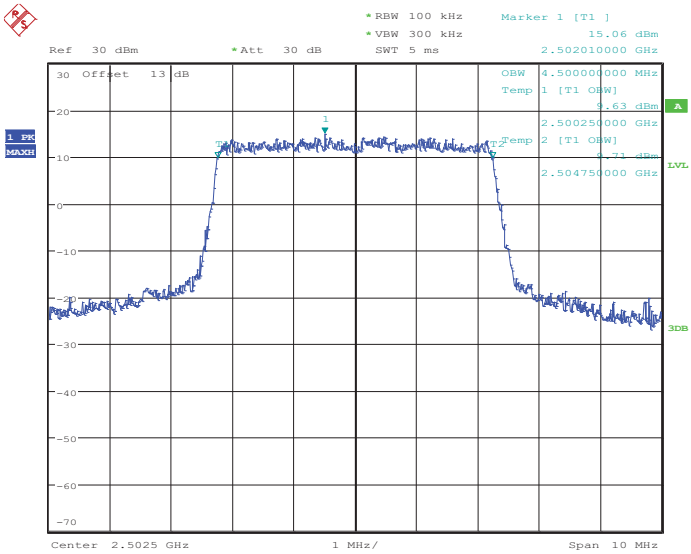
## 26dB Bandwidth Plot on Channel 21425




Date: 17.DEC.2013 19:14:24

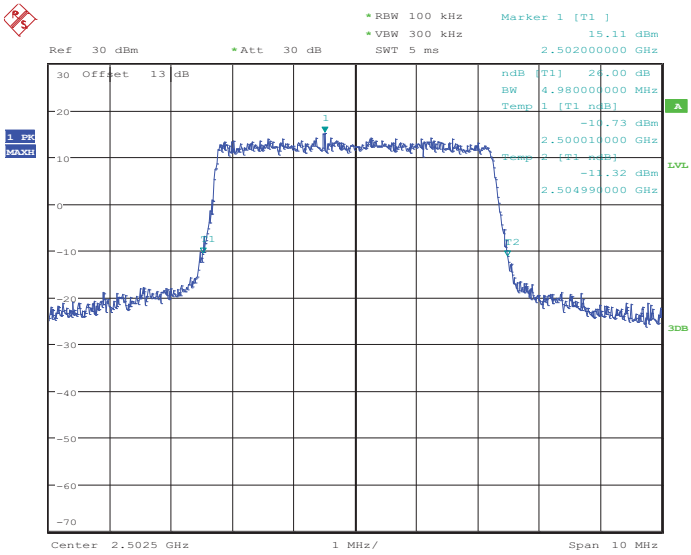
| Band : | LTE Band 7 | BW / Mod. : | 5MHz / 16QAM |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 20775



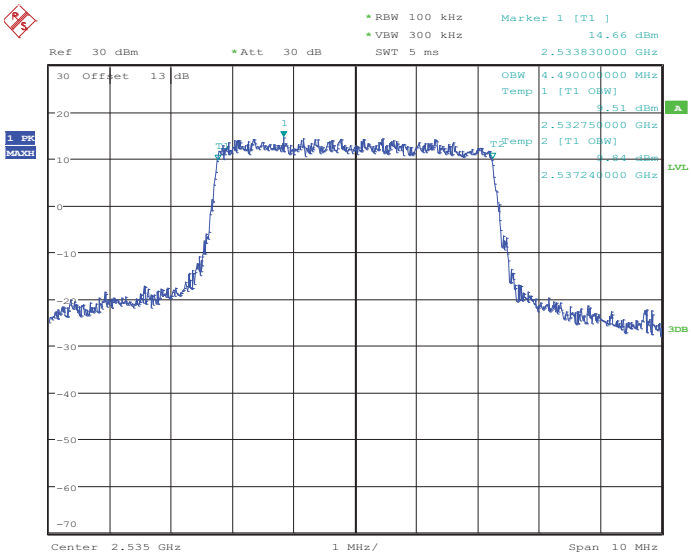

Date: 17.DEC.2013 18:58:47

## 26dB Bandwidth Plot on Channel 20775



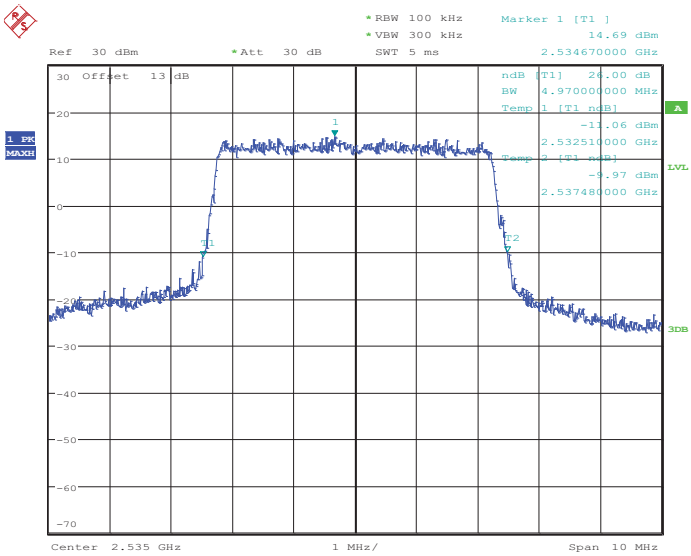

Date: 17.DEC.2013 18:58:29

## 99% Occupied Bandwidth Plot on Channel 21100



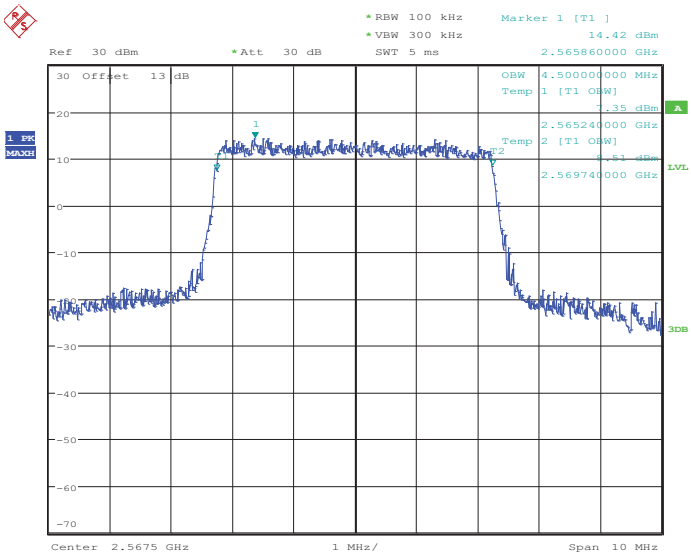

Date: 17.DEC.2013 19:02:00

## 26dB Bandwidth Plot on Channel 21100



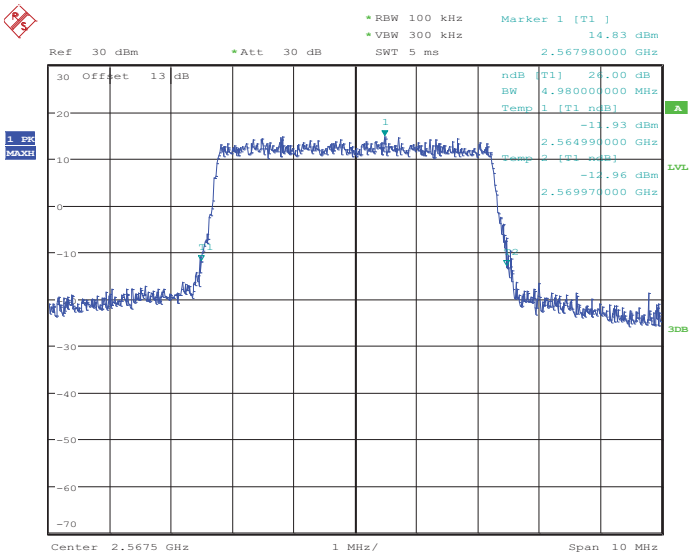

Date: 17.DEC.2013 19:02:16

## 99% Occupied Bandwidth Plot on Channel 21425




Date: 17.DEC.2013 19:16:13

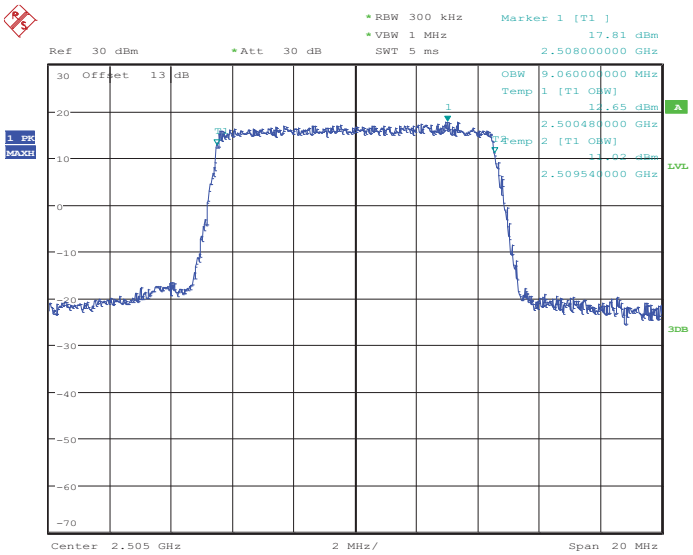
## 26dB Bandwidth Plot on Channel 21425




Date: 17.DEC.2013 19:16:01

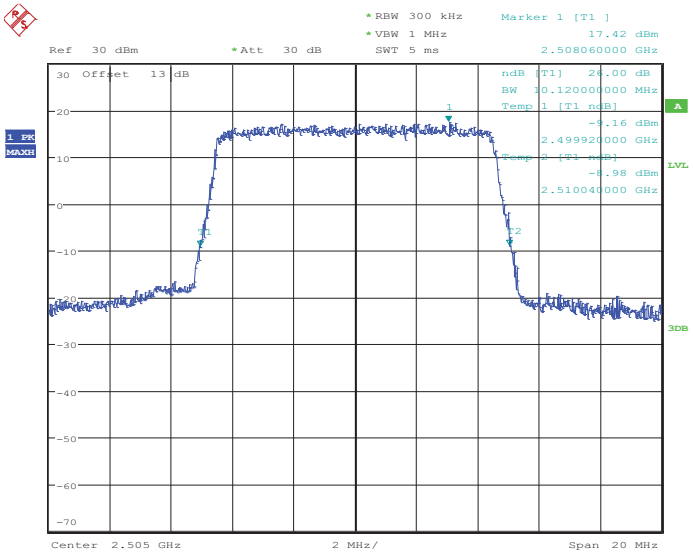
| Band : | LTE Band 7 | BW / Mod. : | 10MHz / QPSK |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 20800



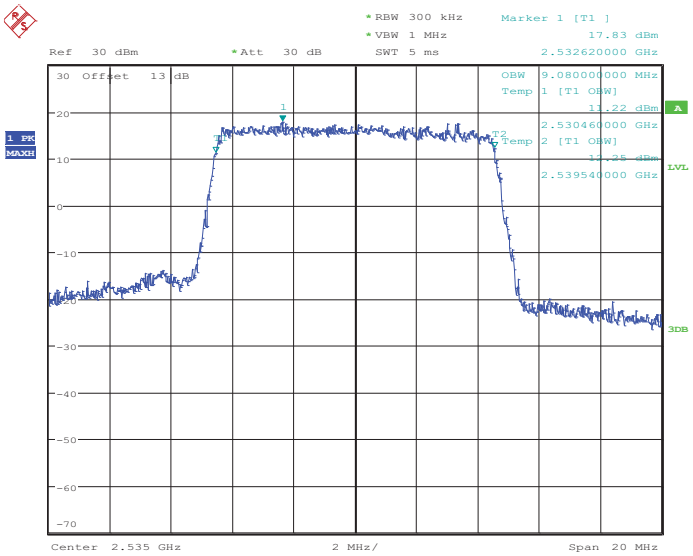

Date: 17.DEC.2013 19:17:58

## 26dB Bandwidth Plot on Channel 20800



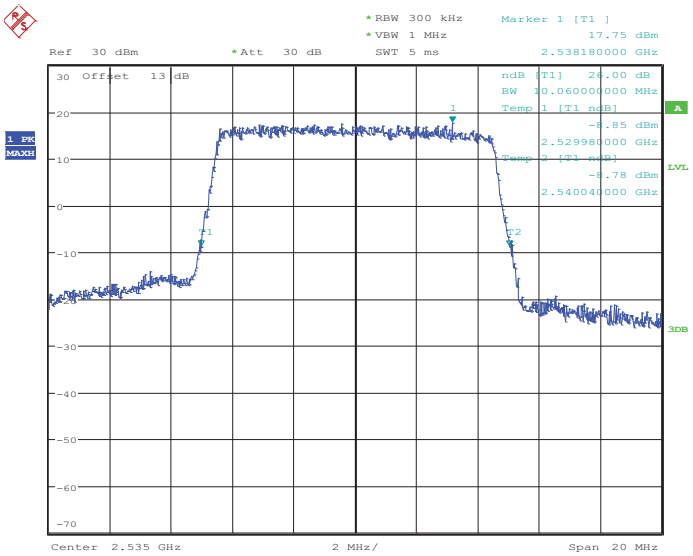

Date: 17.DEC.2013 19:18:10

## 99% Occupied Bandwidth Plot on Channel 21100



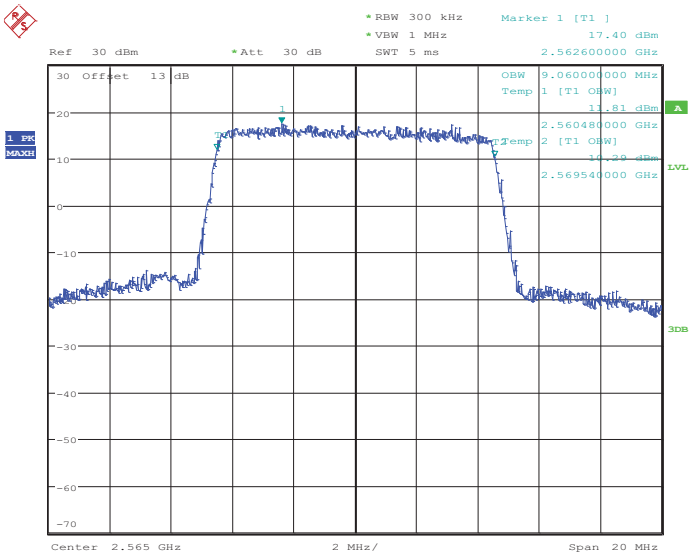

Date: 17.DEC.2013 19:31:18

## 26dB Bandwidth Plot on Channel 21100



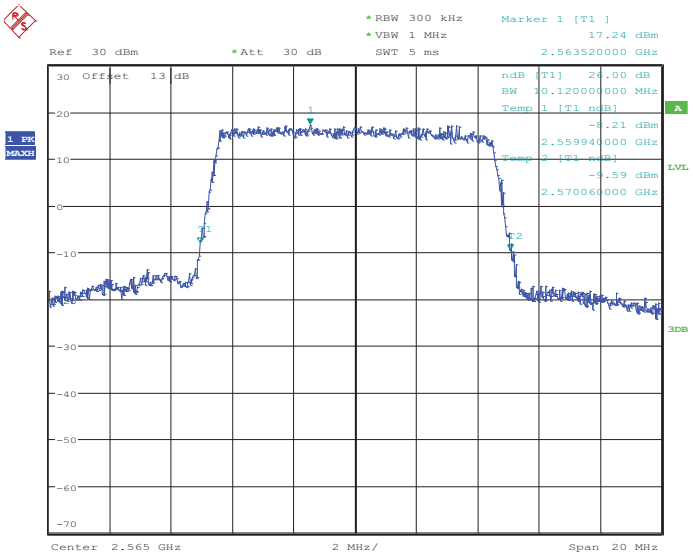

Date: 17.DEC.2013 19:31:46

## 99% Occupied Bandwidth Plot on Channel 21400




Date: 17.DEC.2013 19:32:01

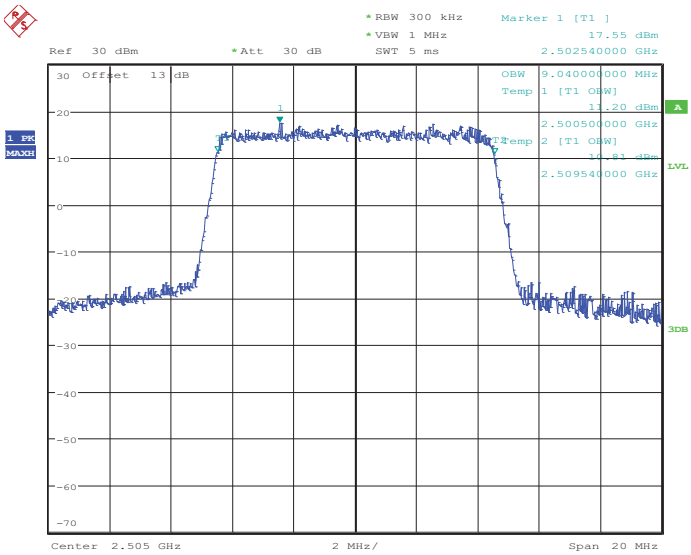
## 26dB Bandwidth Plot on Channel 21400




Date: 17.DEC.2013 19:32:13

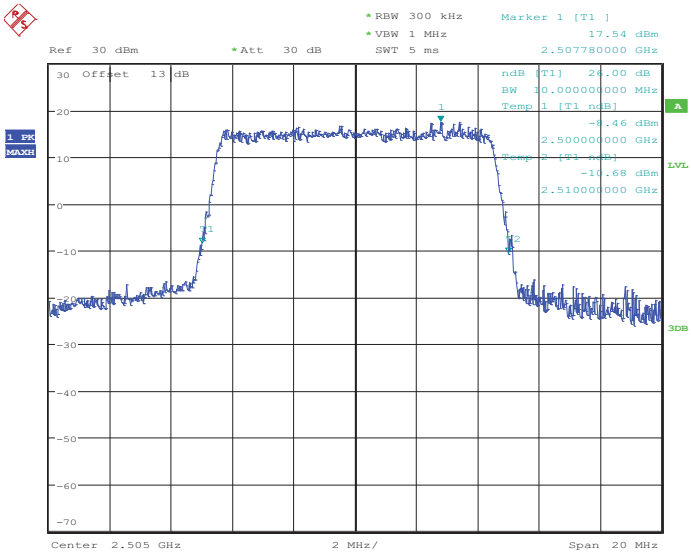
| Band : | LTE Band 7 | BW / Mod. : | 10MHz / 16QAM |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 20800



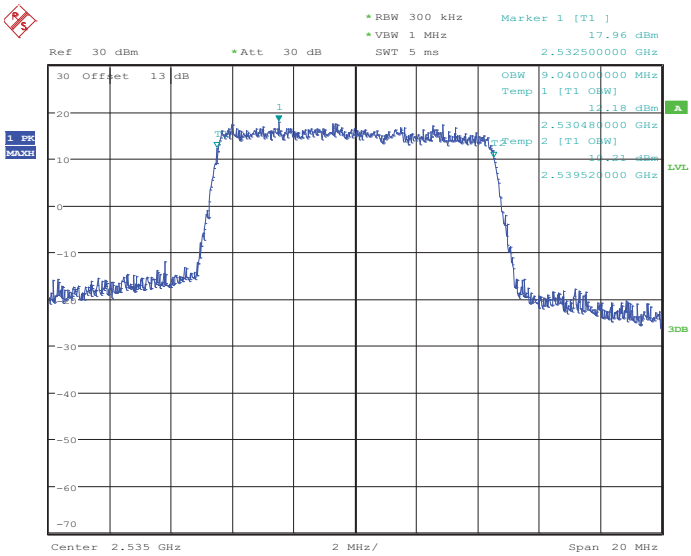

Date: 17.DEC.2013 19:19:36

## 26dB Bandwidth Plot on Channel 20800



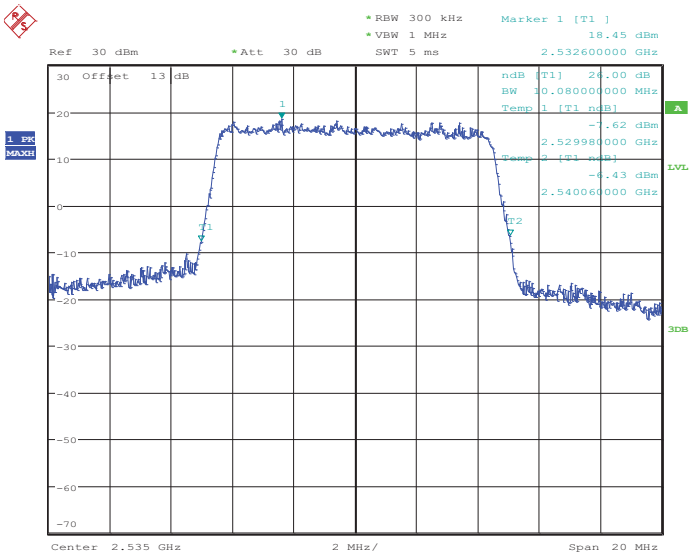

Date: 17.DEC.2013 19:19:21

## 99% Occupied Bandwidth Plot on Channel 21100



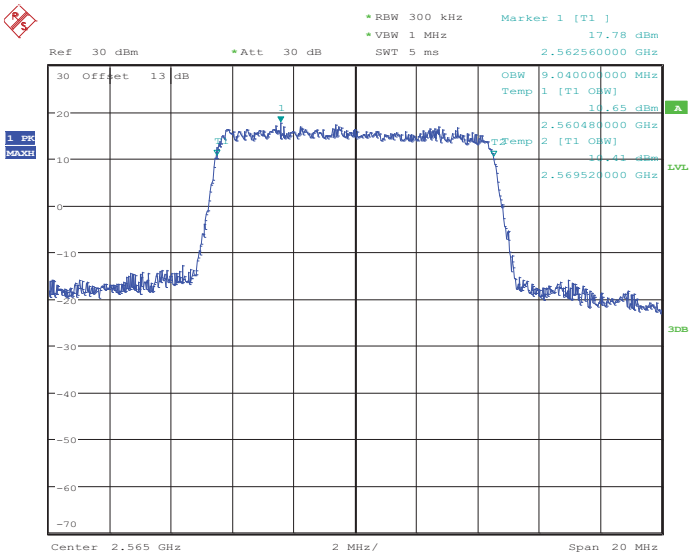

Date: 17.DEC.2013 19:31:01

## 26dB Bandwidth Plot on Channel 21100



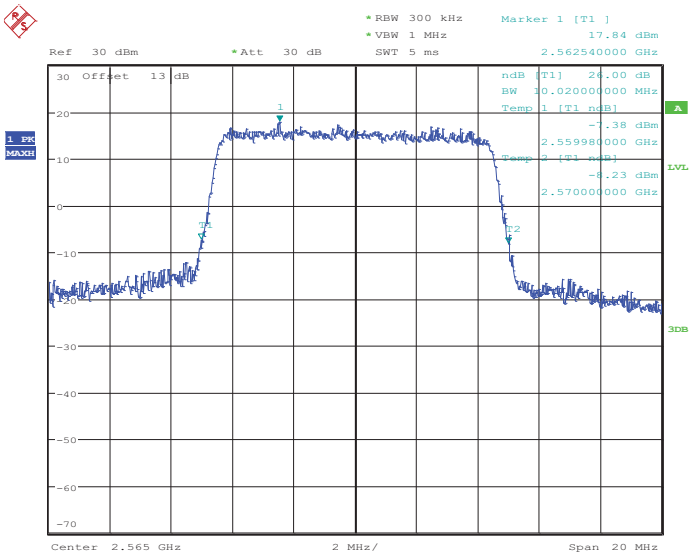

Date: 17.DEC.2013 19:30:48

## 99% Occupied Bandwidth Plot on Channel 21400




Date: 17.DEC.2013 19:33:49

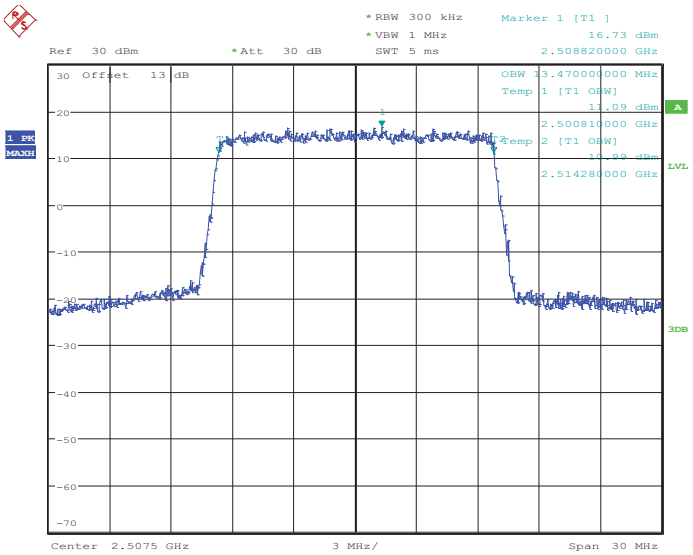
## 26dB Bandwidth Plot on Channel 21400




Date: 17.DEC.2013 19:33:31

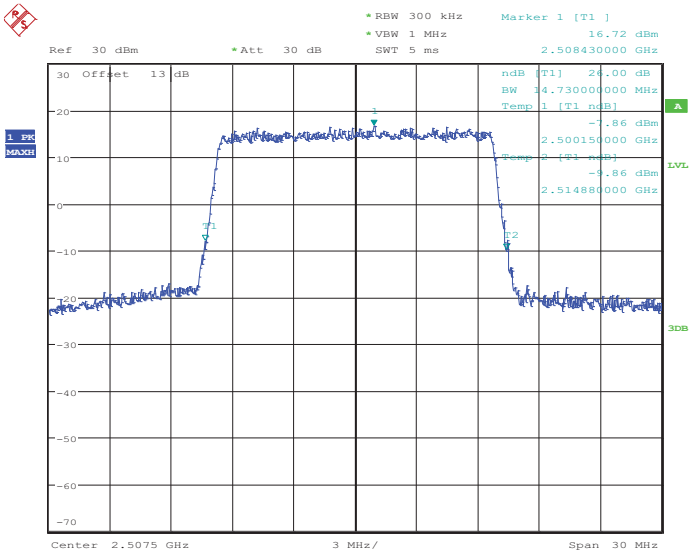
| Band : | LTE Band 7 | BW / Mod. : | 15MHz / QPSK |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 20825



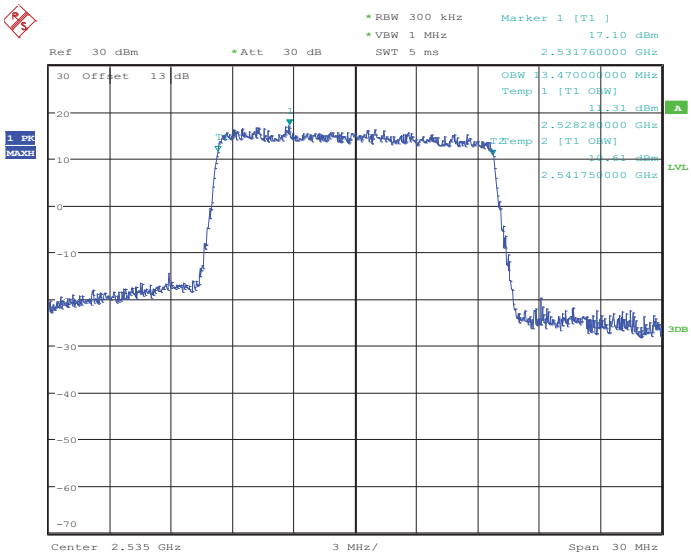

Date: 17.DEC.2013 19:41:08

## 26dB Bandwidth Plot on Channel 20825



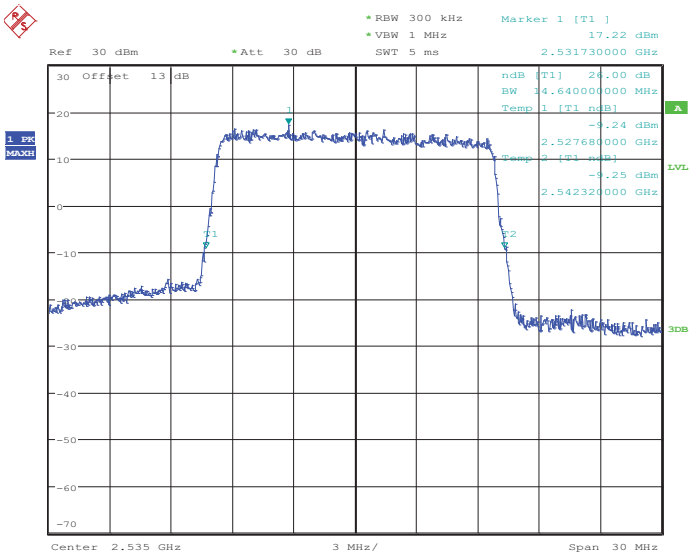

Date: 17.DEC.2013 19:41:26

## 99% Occupied Bandwidth Plot on Channel 21100



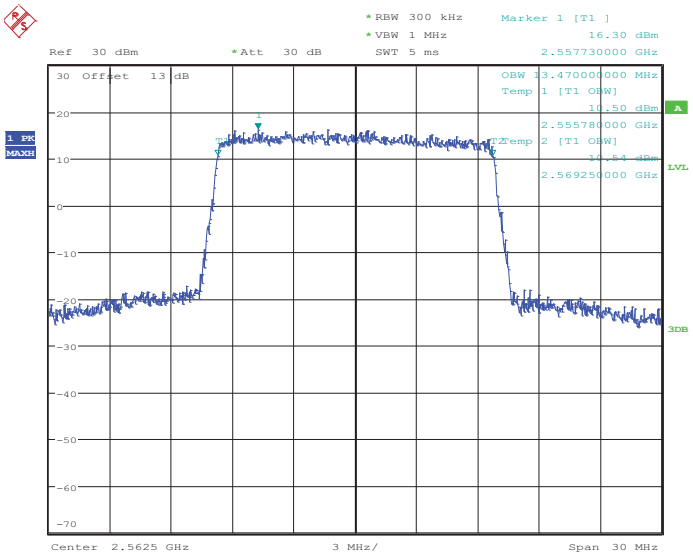

Date: 17.DEC.2013 19:42:22

## 26dB Bandwidth Plot on Channel 21100



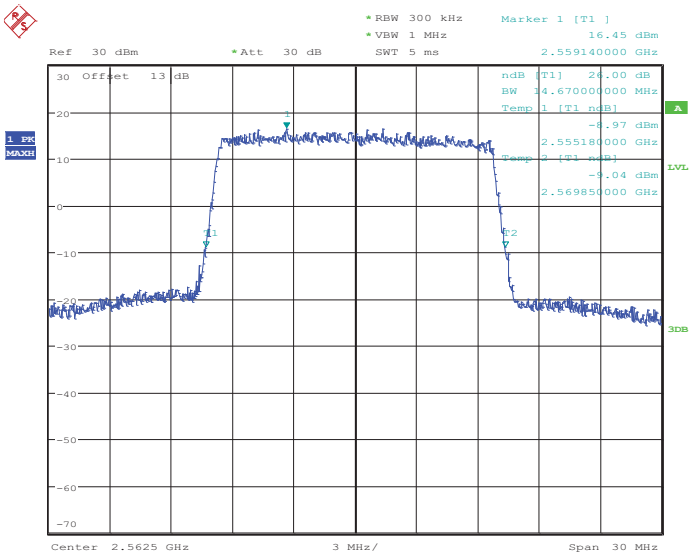

Date: 17.DEC.2013 19:42:36

## 99% Occupied Bandwidth Plot on Channel 21375




Date: 17.DEC.2013 19:46:16

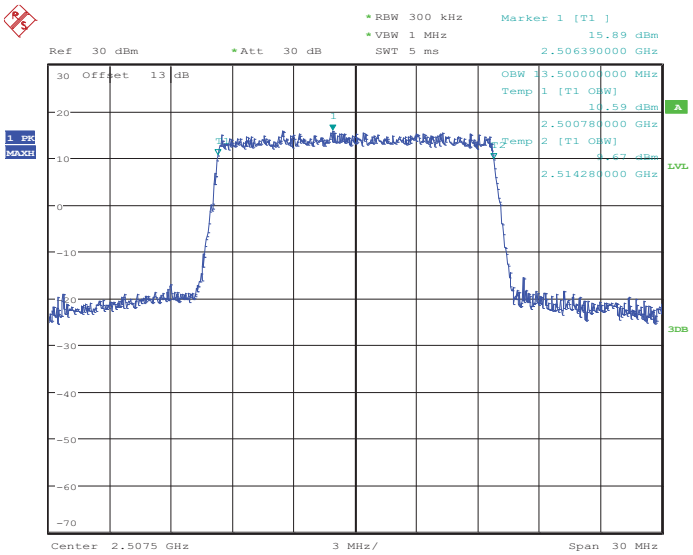
## 26dB Bandwidth Plot on Channel 21375




Date: 17.DEC.2013 19:46:31

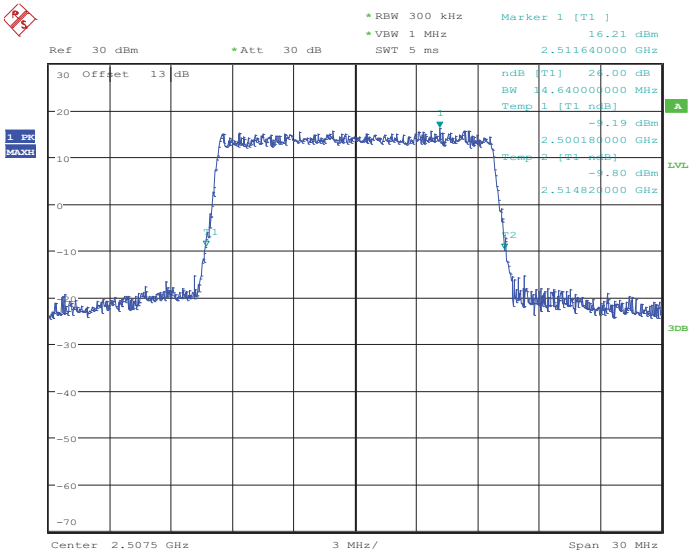
| Band : | LTE Band 7 | BW / Mod. : | 15MHz / 16QAM |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 20825



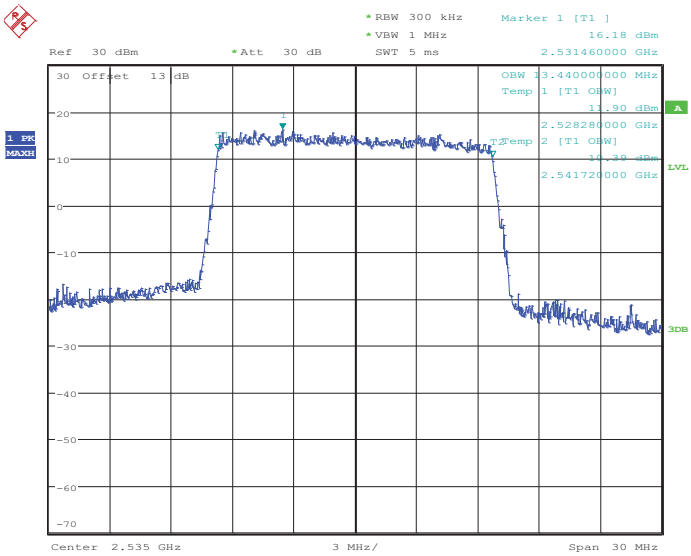

Date: 17.DEC.2013 19:40:51

## 26dB Bandwidth Plot on Channel 20825



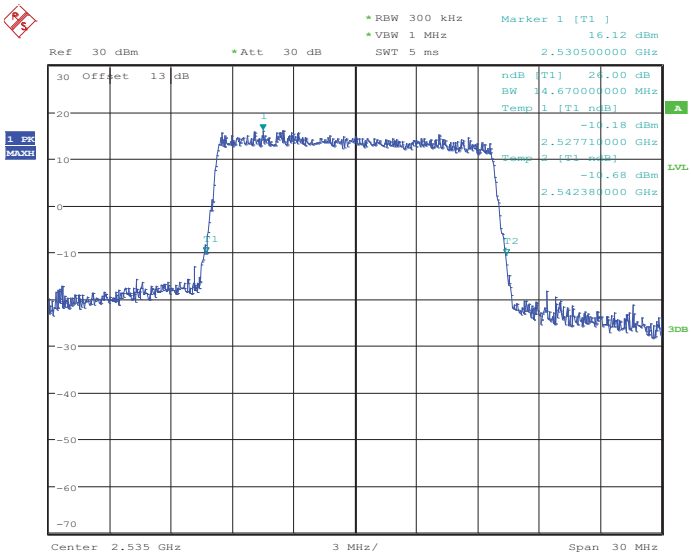

Date: 17.DEC.2013 19:40:35

## 99% Occupied Bandwidth Plot on Channel 21100



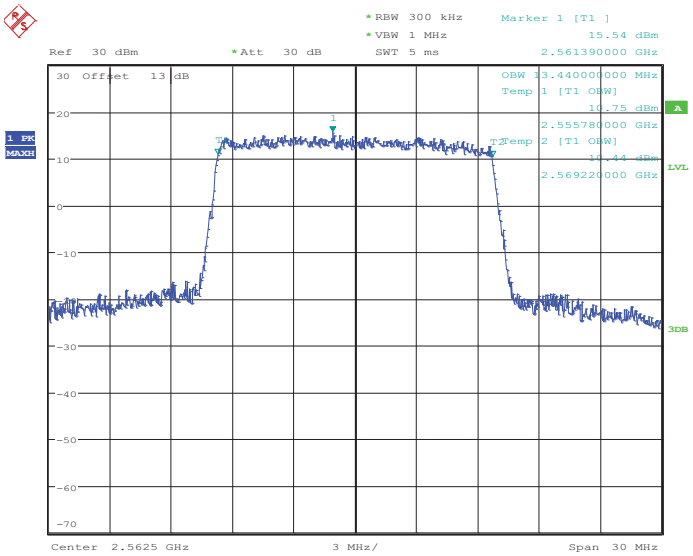

Date: 17.DEC.2013 19:43:11

## 26dB Bandwidth Plot on Channel 21100



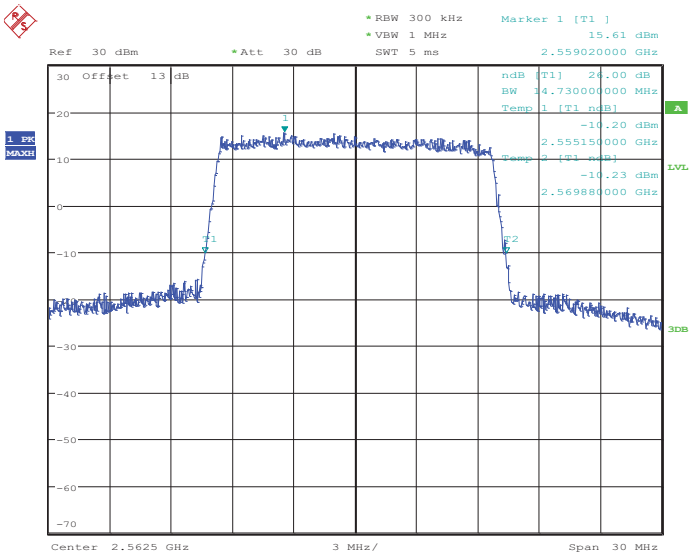

Date: 17.DEC.2013 19:42:54

## 99% Occupied Bandwidth Plot on Channel 21375




Date: 17.DEC.2013 19:43:29

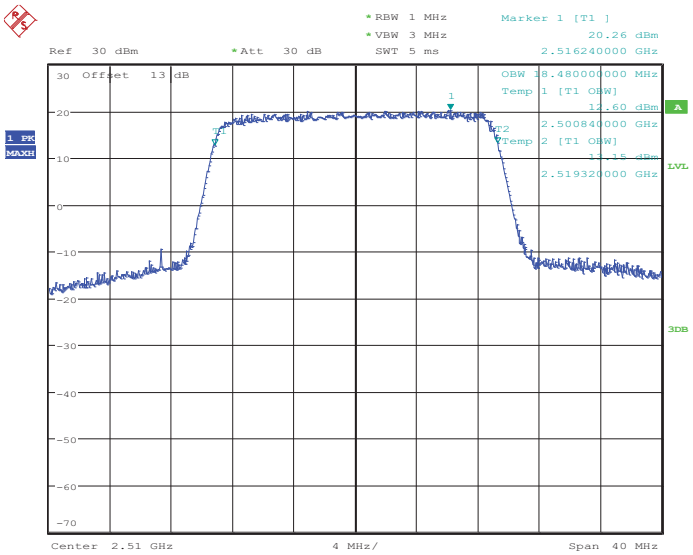
## 26dB Bandwidth Plot on Channel 21375




Date: 17.DEC.2013 19:43:43

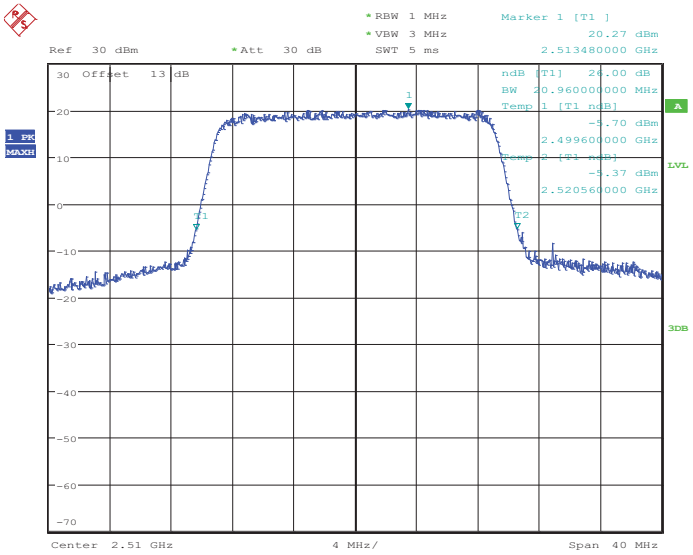
| Band : | LTE Band 7 | BW / Mod. : | 20MHz / QPSK |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 20850



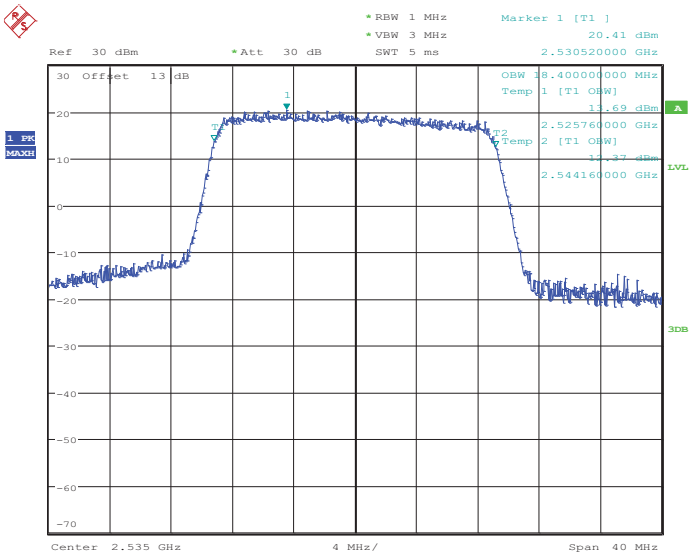

Date: 17.DEC.2013 19:50:09

## 26dB Bandwidth Plot on Channel 20850



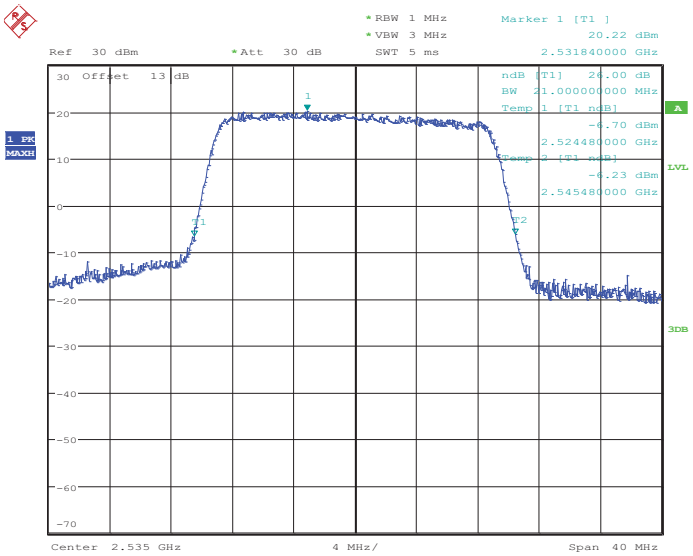

Date: 17.DEC.2013 19:49:45

## 99% Occupied Bandwidth Plot on Channel 21100



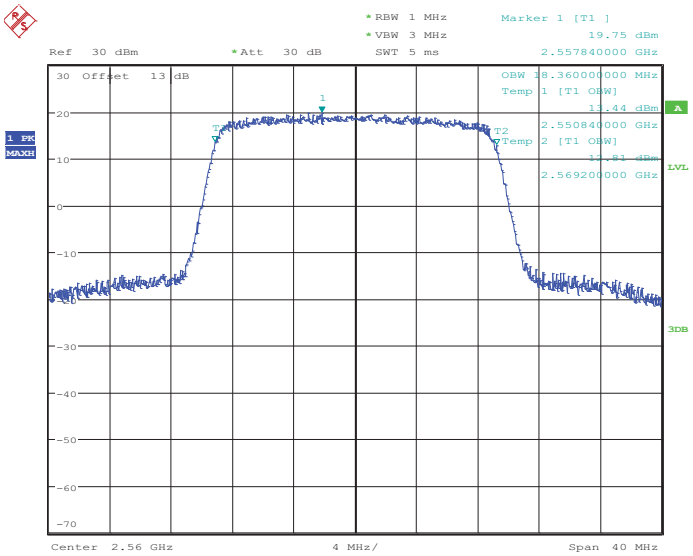

Date: 17.DEC.2013 19:54:14

## 26dB Bandwidth Plot on Channel 21100



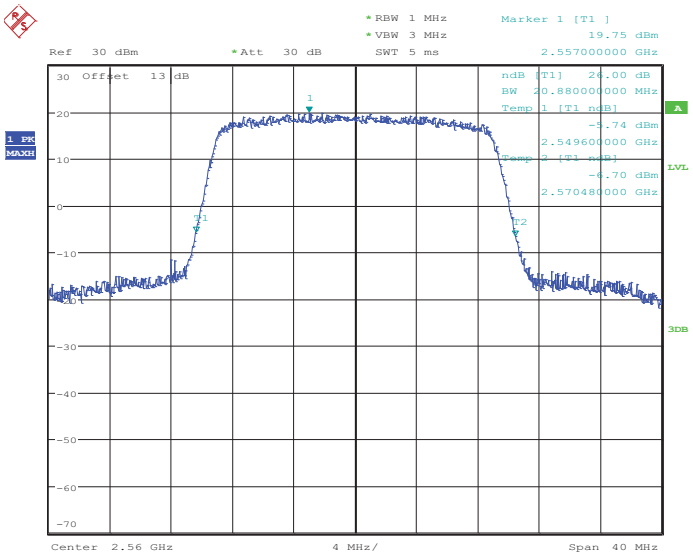

Date: 17.DEC.2013 19:54:01

## 99% Occupied Bandwidth Plot on Channel 21350




Date: 17.DEC.2013 19:55:46

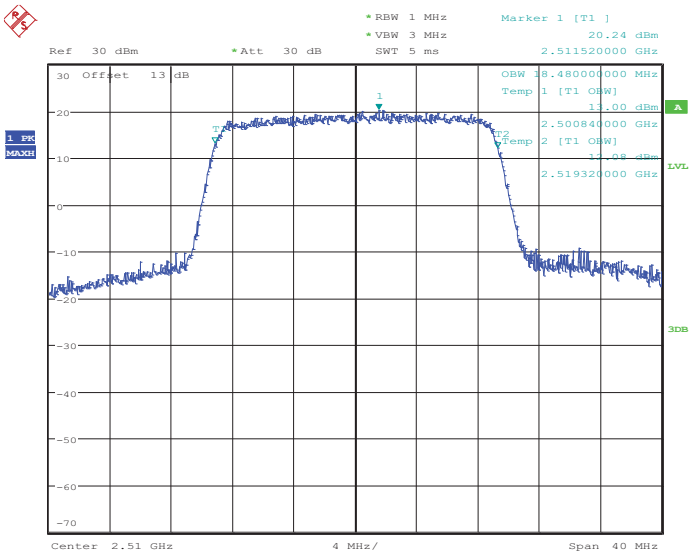
## 26dB Bandwidth Plot on Channel 21350




Date: 17.DEC.2013 19:55:32

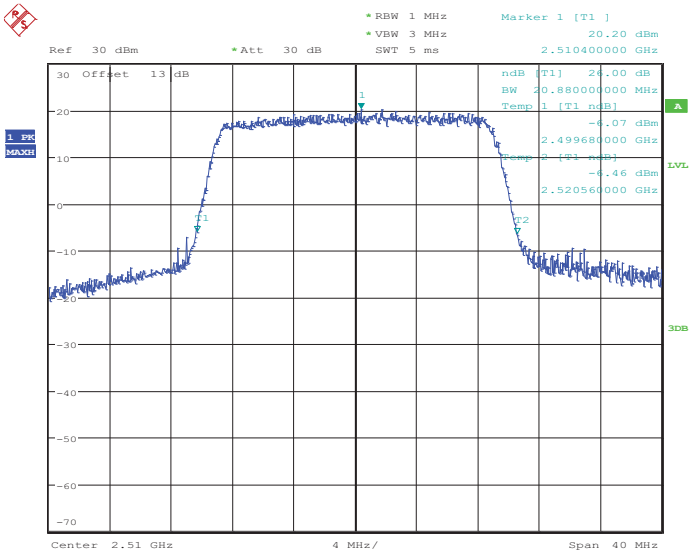
| Band : | LTE Band 7 | BW / Mod. : | 20MHz / 16QAM |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 20850



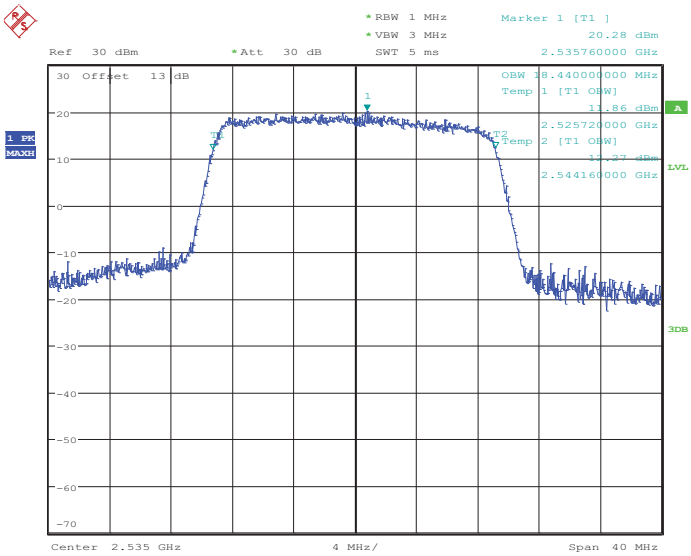

Date: 17.DEC.2013 19:48:03

## 26dB Bandwidth Plot on Channel 20850



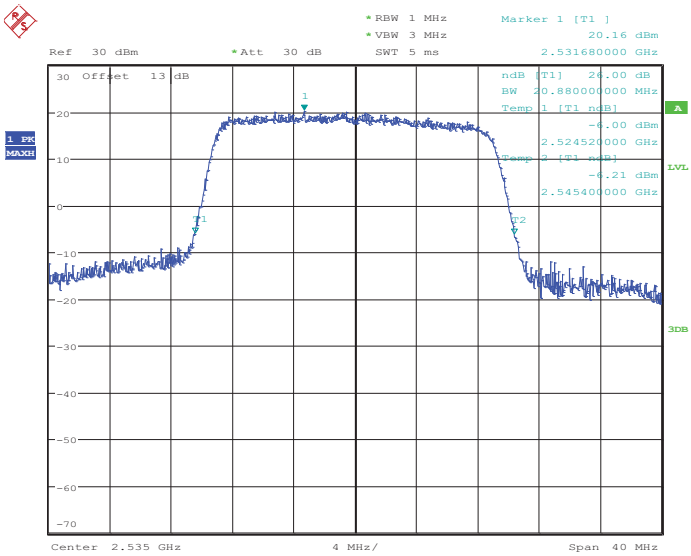

Date: 17.DEC.2013 19:48:15

## 99% Occupied Bandwidth Plot on Channel 21100



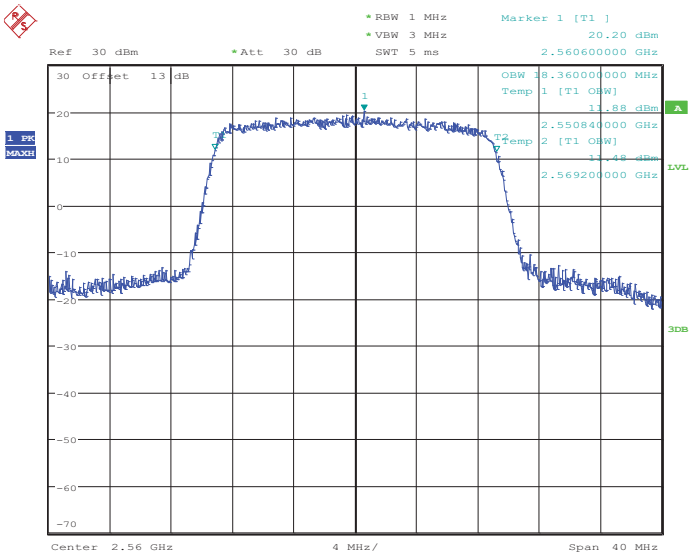

Date: 17.DEC.2013 19:54:28

## 26dB Bandwidth Plot on Channel 21100



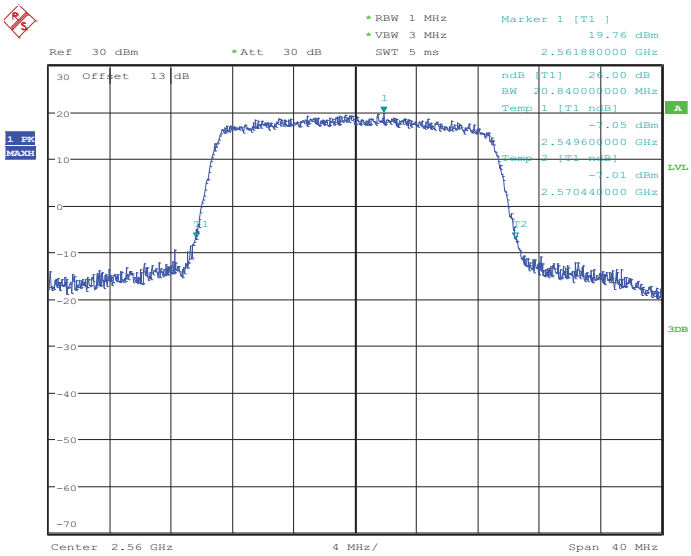

Date: 17.DEC.2013 19:54:49

## 99% Occupied Bandwidth Plot on Channel 21350




Date: 17.DEC.2013 19:55:03

## 26dB Bandwidth Plot on Channel 21350

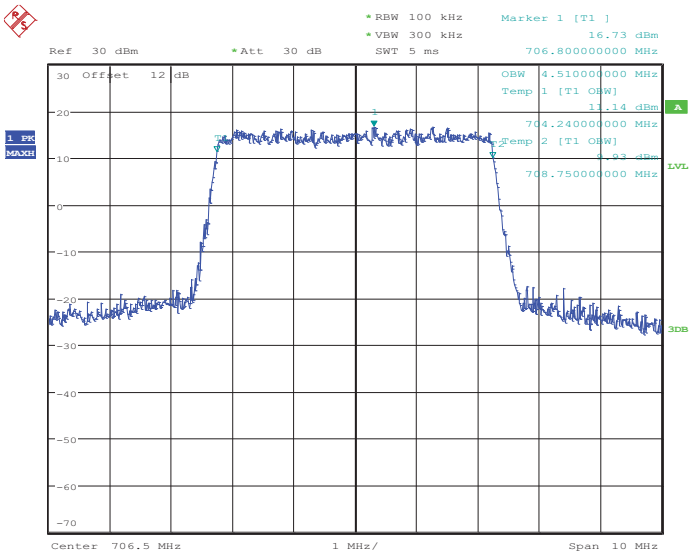



Date: 17.DEC.2013 19:55:15

***Note:*** *The total loss is 13 dB of the RF cable and attenuator of LTE Band 7, and has been compensated to the spectrum analyzer offset.*

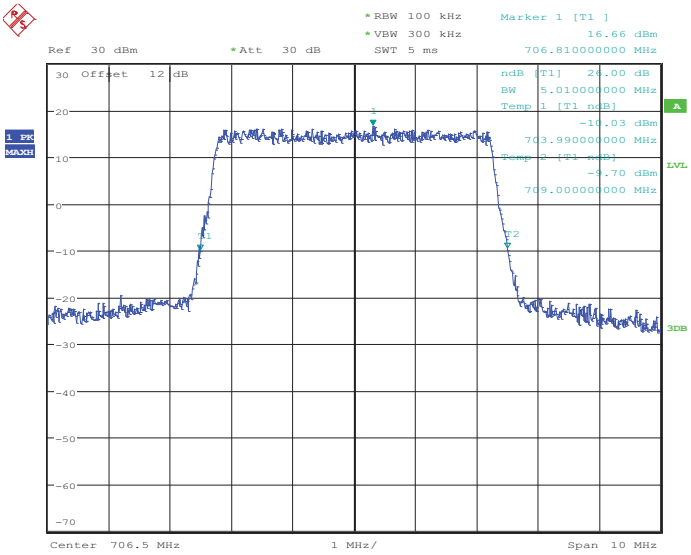
| Band : | LTE Band 17 | BW / Mod. : | 5MHz / QPSK |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 23755



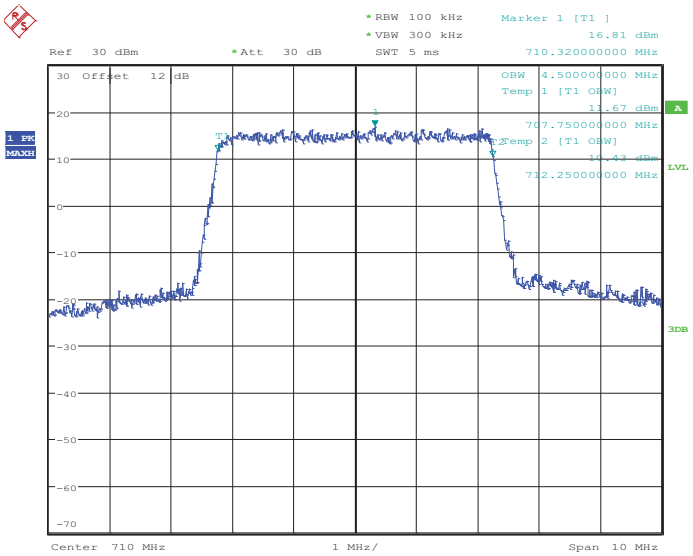

Date: 21.DEC.2013 15:33:00

## 26dB Bandwidth Plot on Channel 23755



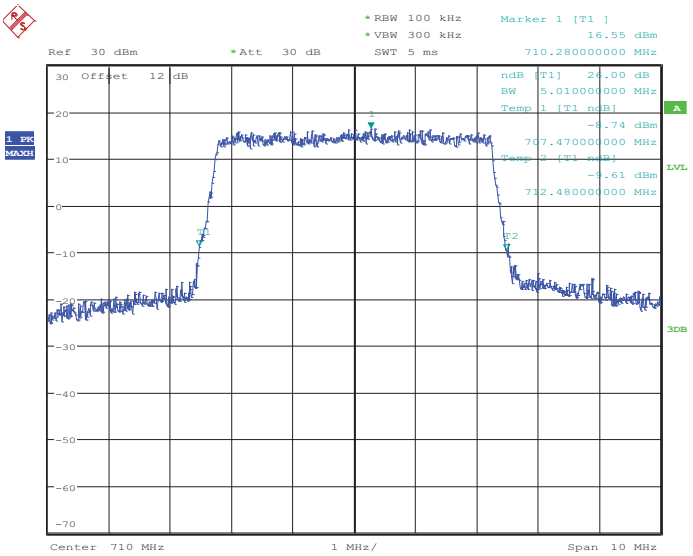

Date: 21.DEC.2013 15:33:33

## 99% Occupied Bandwidth Plot on Channel 23790



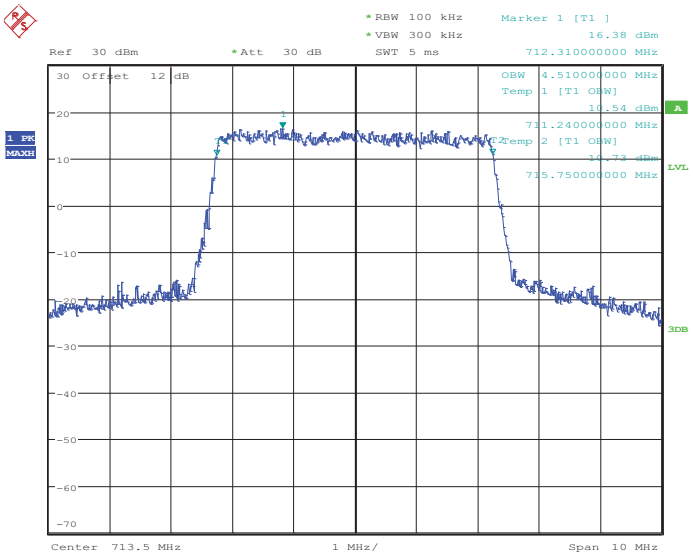

Date: 21.DEC.2013 15:37:55

## 26dB Bandwidth Plot on Channel 23790



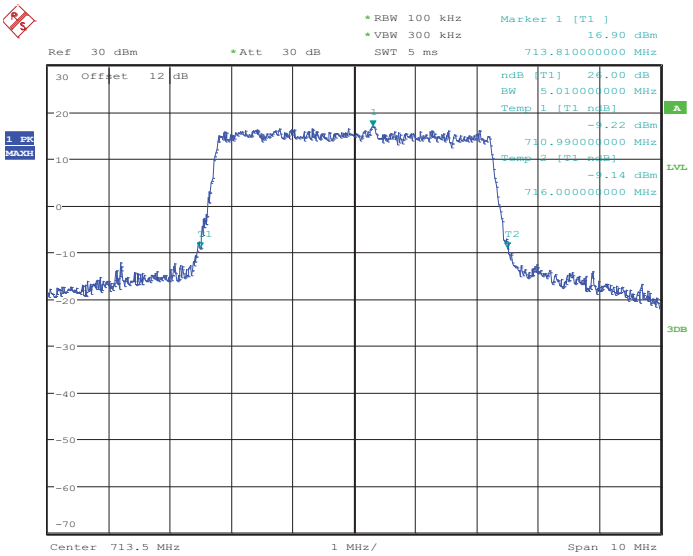

Date: 21.DEC.2013 15:38:21

## 99% Occupied Bandwidth Plot on Channel 23825




Date: 21.DEC.2013 15:41:45

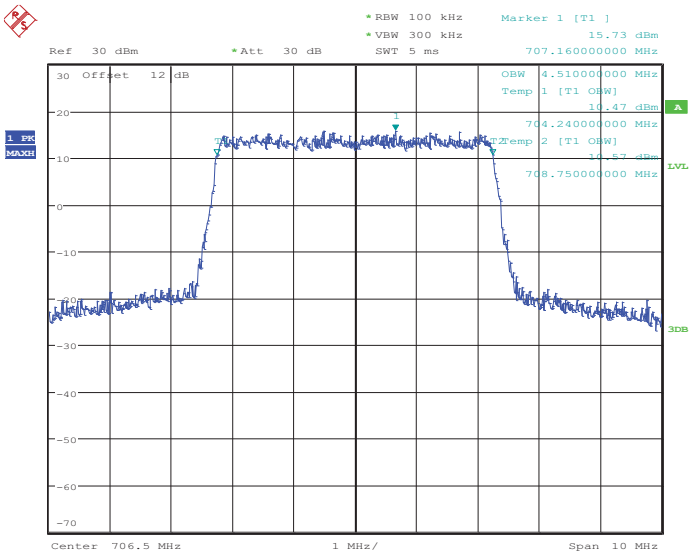
## 26dB Bandwidth Plot on Channel 23825




Date: 21.DEC.2013 15:42:24

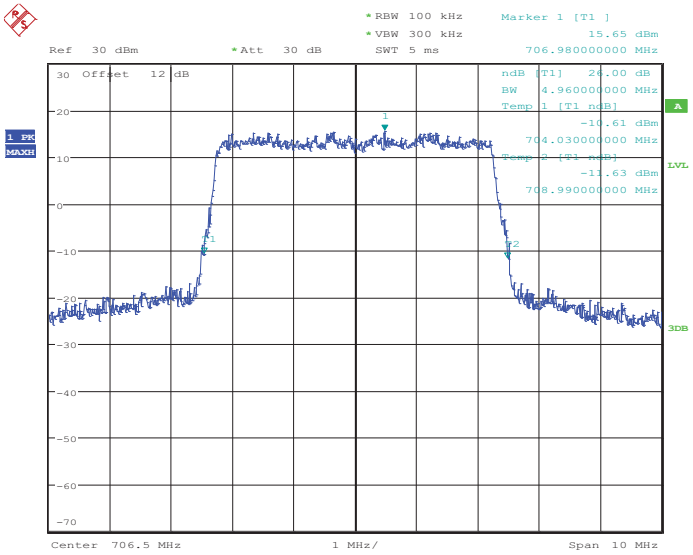
| Band : | LTE Band 17 | BW / Mod. : | 5MHz / 16QAM |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 23755



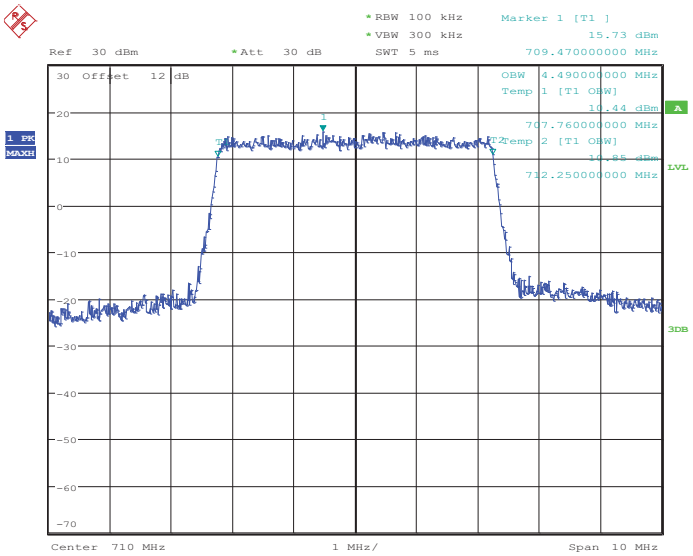

Date: 21.DEC.2013 15:33:17

## 26dB Bandwidth Plot on Channel 23755



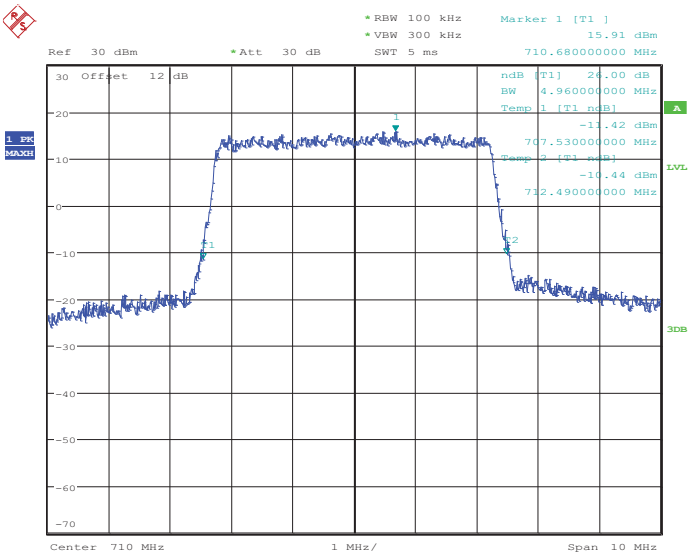

Date: 21.DEC.2013 15:33:46

## 99% Occupied Bandwidth Plot on Channel 23790



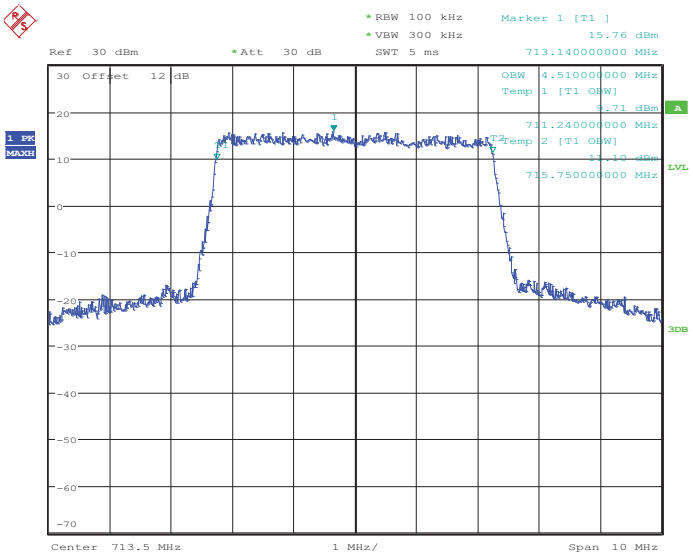

Date: 21.DEC.2013 15:38:09

## 26dB Bandwidth Plot on Channel 23790



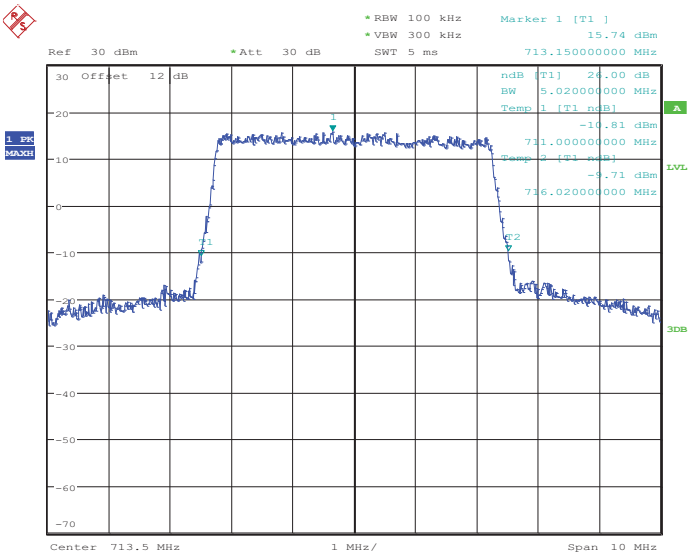

Date: 21.DEC.2013 15:38:37

## 99% Occupied Bandwidth Plot on Channel 23825




Date: 21.DEC.2013 15:42:06

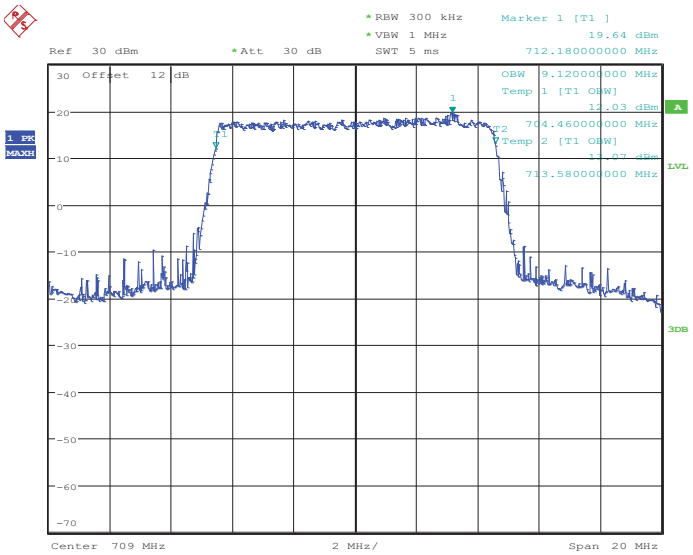
## 26dB Bandwidth Plot on Channel 23825




Date: 21.DEC.2013 15:42:47

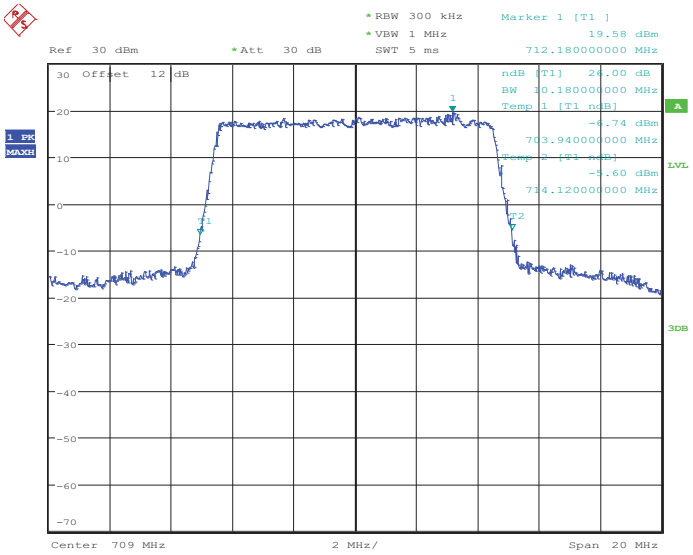
| Band : | LTE Band 17 | BW / Mod. : | 10MHz / QPSK |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 23780



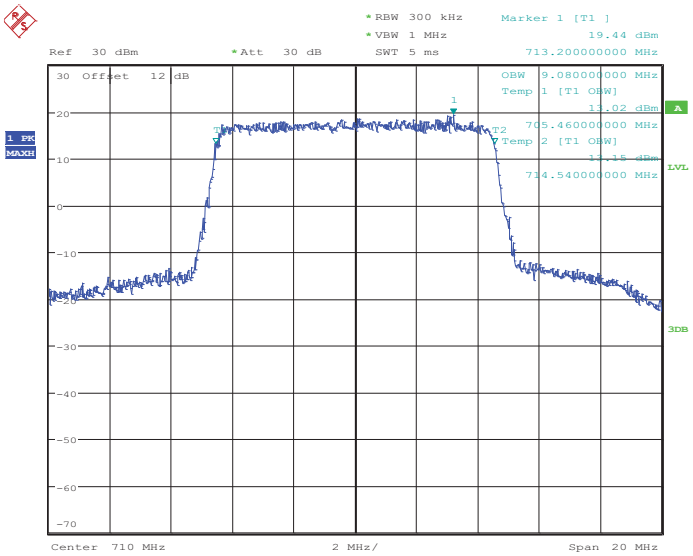

Date: 21.DEC.2013 15:47:14

## 26dB Bandwidth Plot on Channel 23780



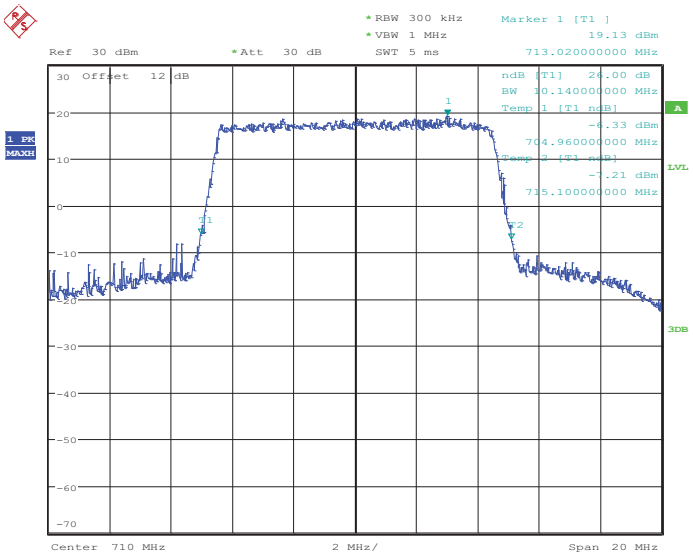

Date: 21.DEC.2013 15:47:53

## 99% Occupied Bandwidth Plot on Channel 23790



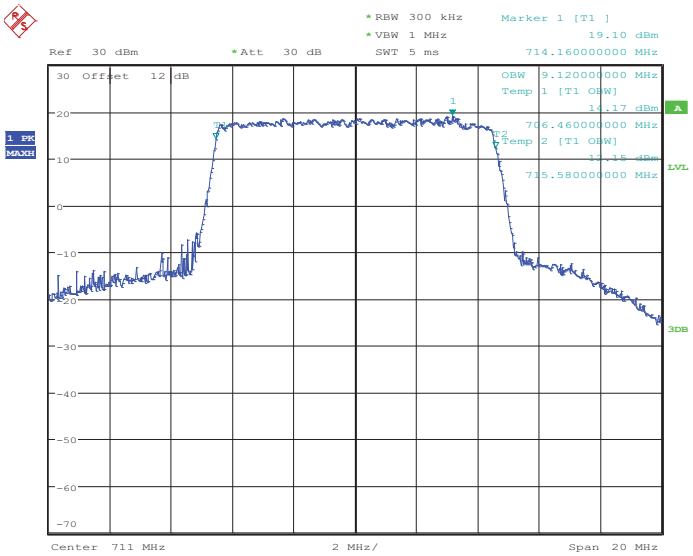

Date: 21.DEC.2013 15:51:43

## 26dB Bandwidth Plot on Channel 23790



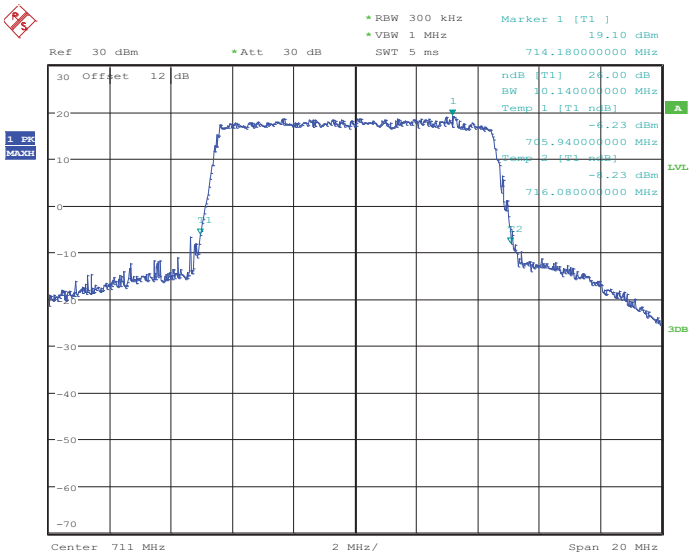

Date: 21.DEC.2013 15:52:22

## 99% Occupied Bandwidth Plot on Channel 23800




Date: 21.DEC.2013 16:00:01

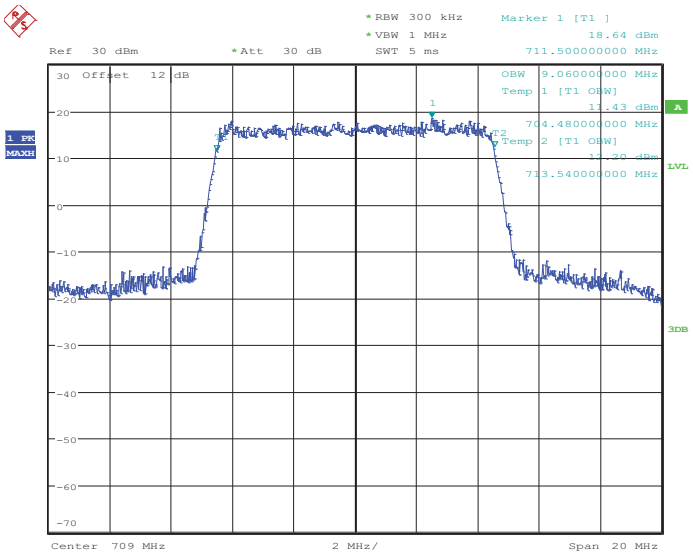
## 26dB Bandwidth Plot on Channel 23800




Date: 21.DEC.2013 16:00:59

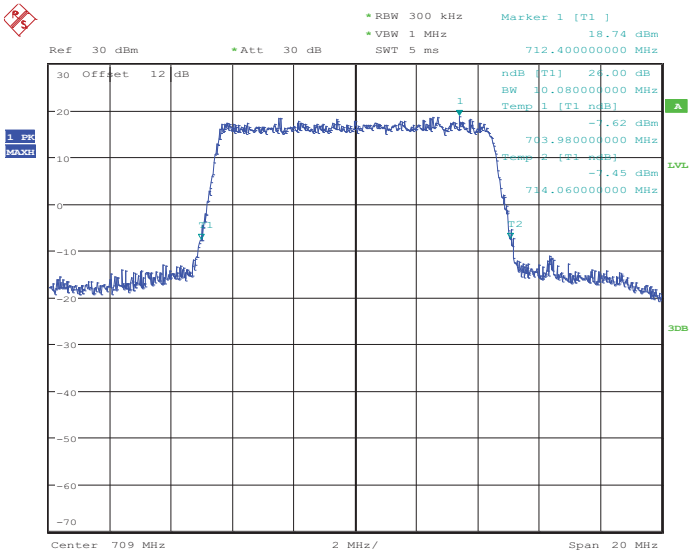
| Band : | LTE Band 17 | BW / Mod. : | 10MHz / 16QAM |
|---|---|---|---|

## 99% Occupied Bandwidth Plot on Channel 23780



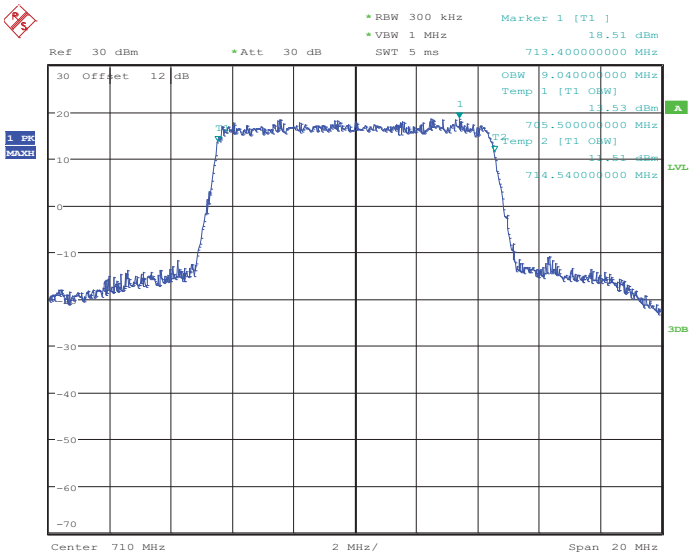

Date: 21.DEC.2013 15:47:26

## 26dB Bandwidth Plot on Channel 23780



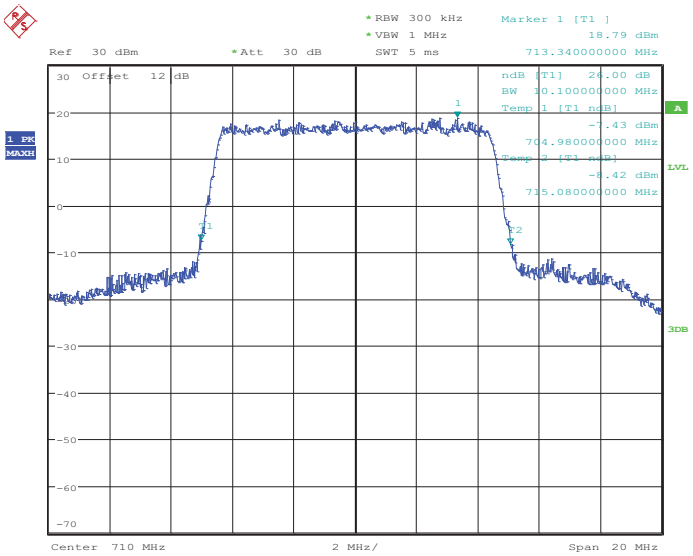

Date: 21.DEC.2013 15:48:08

## 99% Occupied Bandwidth Plot on Channel 23790



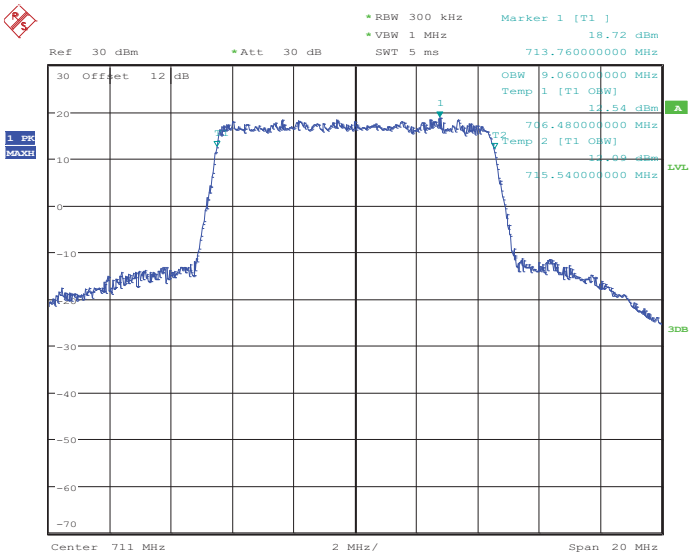

Date: 21.DEC.2013 15:52:03

## 26dB Bandwidth Plot on Channel 23790



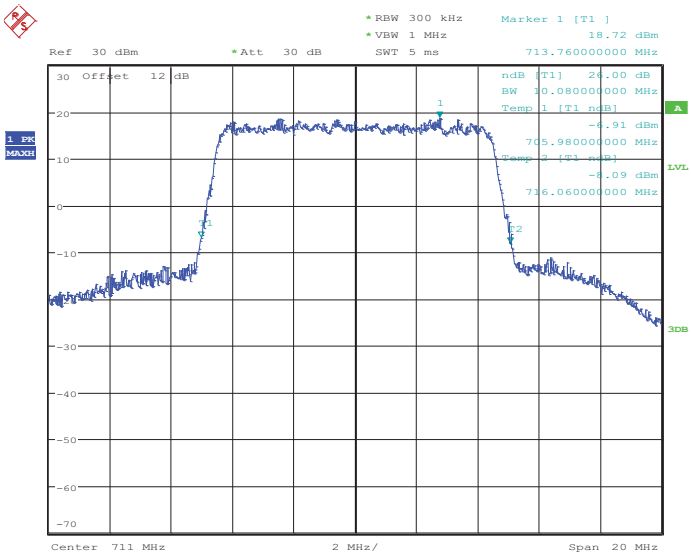

Date: 21.DEC.2013 15:52:40

### 99% Occupied Bandwidth Plot on Channel 23800




Date: 21.DEC.2013 16:00:32

### 26dB Bandwidth Plot on Channel 23800




Date: 21.DEC.2013 16:01:20

***Note:*** *The total loss is 12 dB of the RF cable and attenuator of LTE Band 17, and has been compensated to the spectrum analyzer offset.*