FCC RF Test Report

APPLICANT	**: HTC Corporation**
EQUIPMENT	**: Smartphone**
MODEL NAME	**: 0P9O200**
FCC ID	**: NM80P9O200**
STANDARD	**: 47 CFR Part 2, 27**
CLASSIFICATION	**: PCS Licensed Transmitter Held to Ear (PCE)**

The product was received on Jan. 15, 2014 and testing was completed on Feb. 15, 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

SPORTON INTERNATIONAL INC.
No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG411535B	Rev. 01	Initial issue of report	Mar. 14, 2014

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	§2.1046	RSS-Gen(4.8) RSS-199 (4.4)	Conducted Output Power	Reporting Only	PASS	-
3.2	27.50(d)(5)	-	Peak-to-Average Ratio	<13 dB	PASS	-
3.3	§27.50(h)(2)	SRSP-510(5.1.2) RSS-199 (4.4)	Equivalent Isotropic Radiated Power	EIRP < 2Watt		
3.4	§2.1049 §27.53(l)(4)	RSS-GEN(4.6.1) RSS-199 (4.2)	Occupied Bandwidth	Reporting Only	PASS	-
3.5	§2.1051 §27.53(l)(4)	RSS-GEN(4.9) RSS-199 (4.5)	Conducted Band Edge Measurement	< 43+10log10(P[Watts])	PASS	-
3.6	§2.1051 §27.53(l)(4)	RSS-GEN(4.9) RSS-199 (4.5)	Conducted Spurious Emission	< 55+10log10(P[Watts])	PASS	-
3.7	§2.1053 §27.53(l)(4)	RSS-GEN(4.9) RSS-199 (4.5)	Radiated Spurious Emission	< 55+10log10(P[Watts])	PASS	Under limit 9.21 dB at 7620.000 MHz
3.8	§2.1055 §27.54	RSS-GEN(4.7) RSS-199 (4.3)	Frequency Stability Temperature & Voltage	< 2.5 ppm	PASS	-

1 General Description

1.1 Applicant

HTC Corporation
No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan.

1.2 Manufacturer

HTC Corporation
No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan.

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Smartphone
Model Name	0P9O200
FCC ID	NM80P9O200
Sample 1	EUT with LCM, Camera Front, Camera Back, and Battery 1
Sample 2	EUT with LCM, Camera Front, Camera Back, and Battery 2
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE/ WLAN 11bgn / Bluetooth 3.0 + HS/4.0 + LE / NFC
EUT Stage	Identical Prototype

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 7 : 2506.5 MHz ~ 2534.5 MHz and 2556 MHz ~ 2567.5 MHz
Rx Frequency	LTE Band 7 : 2626.5MHz ~ 2654.5 MHz and 2676 MHz ~ 2687.5 MHz
Bandwidth	5MHz/ 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	22.98 dBm / 0.1986 W
Antenna Type	PIFA Antenna
Type of Modulation	QPSK / 16QAM

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 EIRP
Part 27	LTE Band 7	QPSK	5MHz	4M51G7D	-	-
Part 27	LTE Band 7	16QAM	5MHz	4M50D7W	-	-
Part 27	LTE Band 7	QPSK	10MHz	9M06G7D	0.0049 ppm	-
Part 27	LTE Band 7	16QAM	10MHz	9M02D7W	-	-
Part 27	LTE Band 7	QPSK	15MHz	13M4G7D	-	-
Part 27	LTE Band 7	16QAM	15MHz	13M5D7W	-	-
Part 27	LTE Band 7	QPSK	20MHz	18M4G7D	-	0.15 W
Part 27	LTE Band 7	16QAM	20MHz	18M4D7W	-	0.15 W

1.7 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 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

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

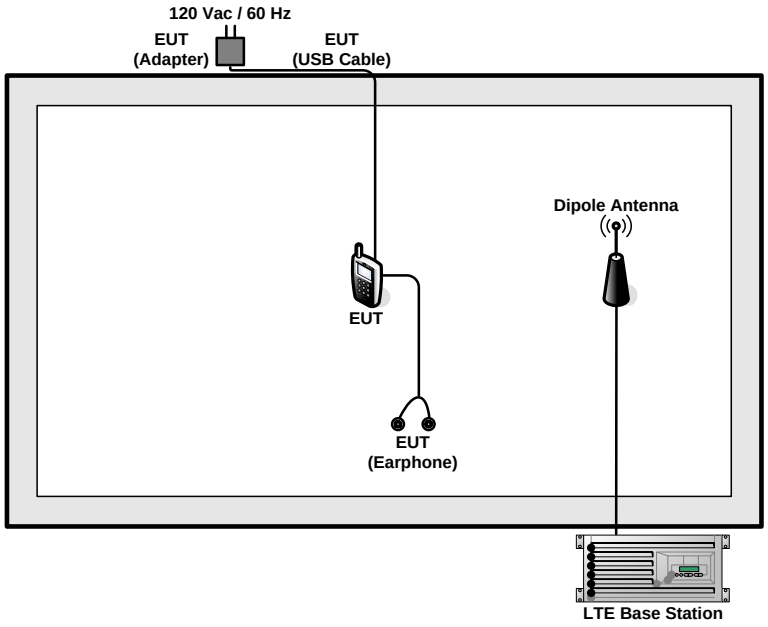
2.1 Test Mode

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 7	**BW 5MHz**	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 12) Link ■ LTE (RB Size 25) Link
	BW 10MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 25) Link ■ LTE (RB Size 50) Link
	BW 15MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 36) Link ■ LTE (RB Size 75) Link
	BW 20MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 50) Link ■ LTE (RB Size 100) Link
Remark: All test items were performed with Earphone 1, Adapter 1, USB 1 and Sample 1.			

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.

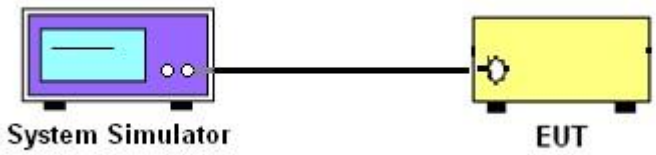
3.1.2 Measuring Instruments

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

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)				2510.0	2535.0	2560.0
20	QPSK	1	0	22.85	**22.98**	22.83
20	QPSK	1	49	22.91	22.85	22.93
20	QPSK	1	99	22.93	22.87	22.90
20	QPSK	50	0	21.93	21.99	21.96
20	QPSK	50	24	21.99	21.94	21.97
20	QPSK	50	49	21.93	21.95	21.99
20	QPSK	100	0	21.97	21.97	21.94
20	16QAM	1	0	21.85	21.85	21.83
20	16QAM	1	49	21.84	21.83	21.89
20	16QAM	1	99	21.83	21.84	21.86
20	16QAM	50	0	20.92	20.99	20.95
20	16QAM	50	24	20.94	20.96	20.95
20	16QAM	50	49	20.93	20.94	20.92
20	16QAM	100	0	20.95	20.99	21.00
Channel				20825	21100	21375
Frequency (MHz)				2507.5	2535.0	2562.5
15	QPSK	1	0	22.88	22.91	22.92
15	QPSK	1	37	22.87	22.88	22.88
15	QPSK	1	74	22.87	**22.96**	22.95
15	QPSK	36	0	21.96	21.96	21.94
15	QPSK	36	18	21.96	21.96	21.96
15	QPSK	36	37	21.94	21.95	21.98
15	QPSK	75	0	21.99	21.99	22.00
15	16QAM	1	0	21.86	21.91	21.96
15	16QAM	1	37	21.85	21.88	21.88
15	16QAM	1	74	21.84	21.96	21.91
15	16QAM	36	0	20.91	20.98	20.97
15	16QAM	36	18	20.91	20.99	20.97
15	16QAM	36	37	20.95	20.95	20.95
15	16QAM	75	0	20.98	21.00	20.89

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)				2505.0	2535.0	2565.0
10	QPSK	1	0	22.91	22.95	22.95
10	QPSK	1	24	22.88	22.89	22.87
10	QPSK	1	49	22.94	**22.96**	22.93
10	QPSK	25	0	21.92	22.00	21.99
10	QPSK	25	12	21.92	22.00	22.00
10	QPSK	25	24	21.93	21.99	21.99
10	QPSK	50	0	21.99	21.98	21.92
10	16QAM	1	0	21.86	21.99	21.88
10	16QAM	1	24	21.84	21.90	21.86
10	16QAM	1	49	21.90	21.96	21.95
10	16QAM	25	0	20.96	20.96	20.94
10	16QAM	25	12	20.95	20.94	20.95
10	16QAM	25	24	20.95	20.97	20.98
10	16QAM	50	0	20.96	20.91	20.97
Channel				20775	21100	21425
Frequency (MHz)				2502.5	2535.0	2567.5
5	QPSK	1	0	22.88	**22.97**	22.87
5	QPSK	1	12	22.87	22.96	22.86
5	QPSK	1	24	22.92	22.94	22.94
5	QPSK	12	0	21.97	21.95	21.96
5	QPSK	12	6	22.00	21.96	21.97
5	QPSK	12	11	21.94	21.94	21.95
5	QPSK	25	0	21.97	21.99	21.94
5	16QAM	1	0	21.88	21.97	21.87
5	16QAM	1	12	21.84	21.87	21.89
5	16QAM	1	24	21.94	21.91	21.91
5	16QAM	12	0	21.00	20.94	20.94
5	16QAM	12	6	20.99	20.91	20.95
5	16QAM	12	11	21.00	20.87	20.96
5	16QAM	25	0	21.00	20.85	20.92

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.

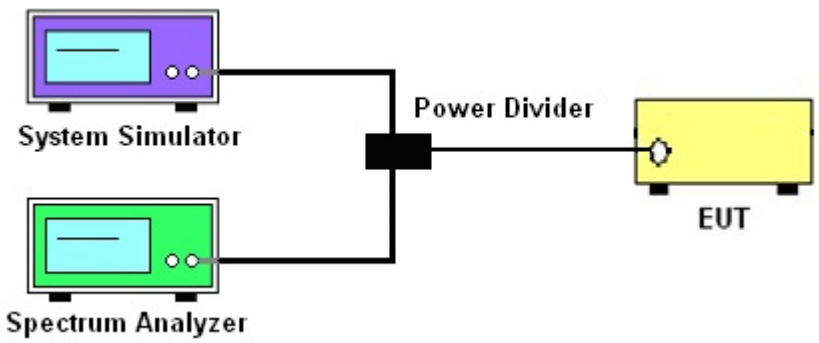
3.2.2 Measuring Instruments

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



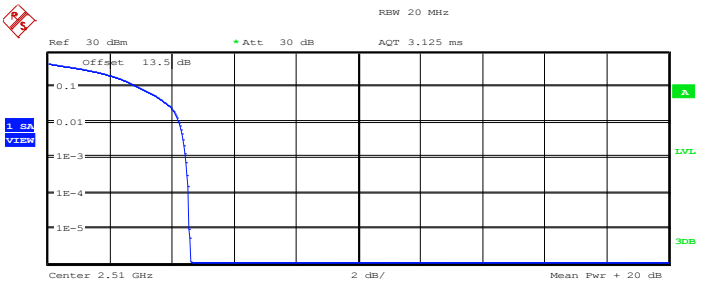
3.2.5 Test Result of Peak-to-Average Ratio

LTE Band 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	4.42	5.54	5.38
20	16QAM	100	0	5.80	5.93	6.06

3.2.6 Peak to Average Power Ratio

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	22.64 dBm
Peak	27.25 dBm
Crest	4.61 dB
10 %	2.92 dB
1 %	4.23 dB
.1 %	4.42 dB
.01 %	4.52 dB

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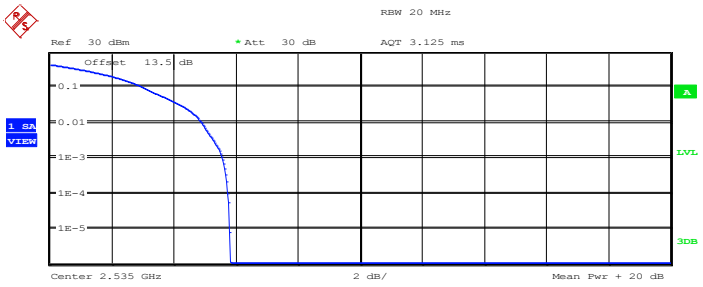
Peak-to-Average Ratio on LTE Band 7

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



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

	Trace 1
Mean	22.55 dBm
Peak	28.35 dBm
Crest	5.80 dB
10 %	2.98 dB
1 %	4.87 dB
.1 %	5.54 dB
.01 %	5.74 dB

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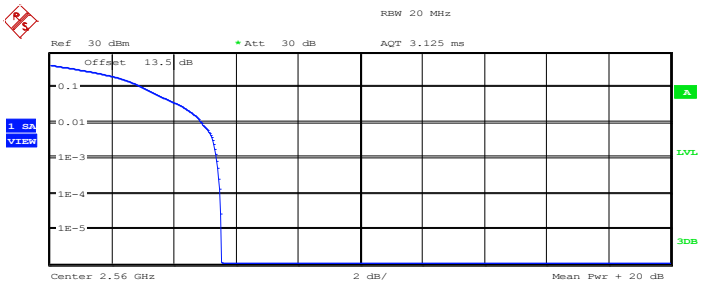
Peak-to-Average Ratio on LTE Band 7

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



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

	Trace 1
Mean	22.61 dBm
Peak	28.12 dBm
Crest	5.51 dB
10 %	2.98 dB
1 %	4.87 dB
.1 %	5.38 dB
.01 %	5.48 dB

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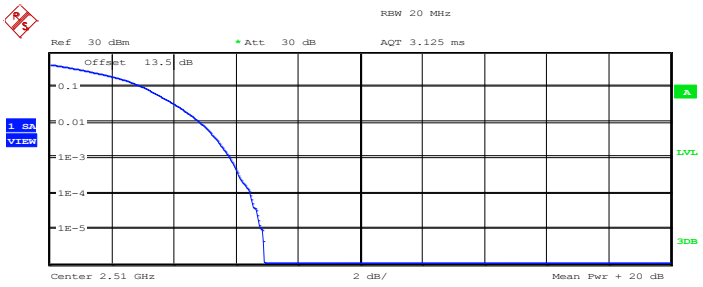
Peak-to-Average Ratio on LTE Band 7

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



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

	Trace 1
Mean	21.90 dBm
Peak	28.81 dBm
Crest	6.91 dB
10 %	3.01 dB
1 %	4.84 dB
.1 %	5.80 dB
.01 %	6.44 dB

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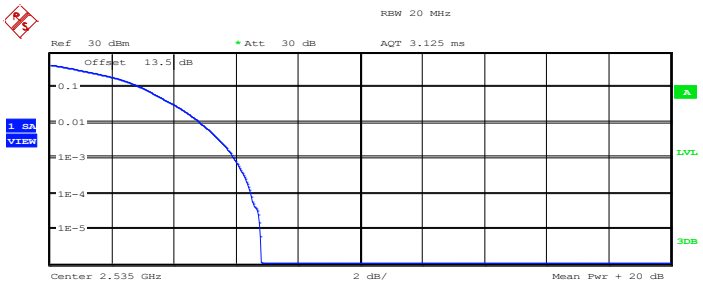
Peak-to-Average Ratio on LTE Band 7

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



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

	Trace 1
Mean	21.96 dBm
Peak	28.77 dBm
Crest	6.80 dB
10 %	2.95 dB
1 %	4.84 dB
.1 %	5.93 dB
.01 %	6.47 dB

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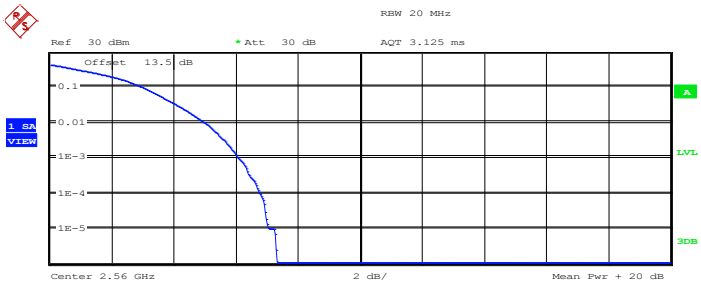
Peak-to-Average Ratio on LTE Band 7

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



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

	Trace 1
Mean	21.73 dBm
Peak	29.04 dBm
Crest	7.31 dB
10 %	2.98 dB
1 %	4.97 dB
.1 %	6.06 dB
.01 %	6.76 dB

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3.3 Equivalent Isotropic Radiated Power Measurement

3.3.1 Description of the EIRP Measurement

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 7.

3.3.2 Measuring Instruments

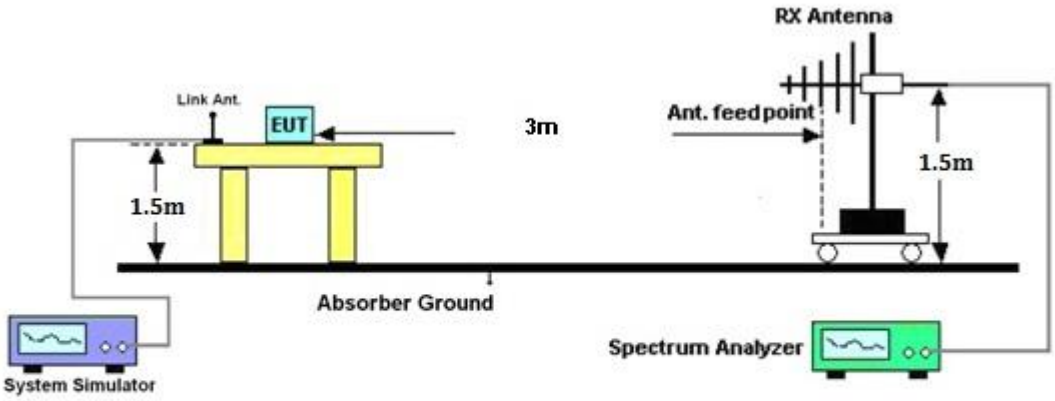
The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

1. The EUT was placed on a turntable with 1.5 meter height in a fully anechoic chamber.
2. The EUT was set at 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. GSM operating modes: Set RBW= 1MHz, VBW= 3MHz, RMS detector over burst;
   UMTS operating modes: Set RBW= 100 kHz, VBW= 300 kHz, RMS detector over frame, and use channel power option with bandwidth=5MHz, per KDB 971168 D01.
4. The table was rotated 360 degrees to determine the position of the highest radiated power.
5. The height of the receiving antenna is adjusted to look for the maximum ERP/EIRP.
6. Taking the record of maximum ERP/EIRP.
7. A dipole antenna was substituted in place of the EUT and was driven by a signal generator.
8. The conducted power at the terminal of the dipole antenna is measured.
9. Repeat step 3 to step 5 to get the maximum ERP/EIRP of the substitution antenna.
10. ERP/EIRP = Ps + Et – Es + Gs = Ps + Rt – Rs + Gs
    Ps (dBm)：Input power to substitution antenna.
    Gs (dBi or dBd)：Substitution antenna Gain.
    Et = Rt + AF
    Es = Rs + AF
    AF (dB/m)：Receive antenna factor
    Rt：The highest received signal in spectrum analyzer for EUT.
    Rs：The highest received signal in spectrum analyzer for substitution antenna.

3.3.4 Test Setup

For Equivalent Isotropic Radiated Power



3.3.5 Test Result of EIRP

LTE Band 7 Radiated Power EIRP for BW 20MHz / QPSK						
Horizontal Polarization						
Frequency (MHz)	**Rt (dBm)**	**Rs (dBm)**	**Ps (dBm)**	**Gs (dBd)**	**EIRP (dBm)**	**EIRP (W)**
2510.00	-59.34	-55.82	0.00	3.52	19.54	0.09
2535.00	-59.28	-55.73	0.00	3.55	20.48	0.11
2560.00	-59.24	-55.67	0.00	3.57	20.11	0.10
Vertical Polarization						
Frequency (MHz)	**Rt (dBm)**	**Rs (dBm)**	**Ps (dBm)**	**Gs (dBd)**	**EIRP (dBm)**	**EIRP (W)**
2510.00	-59.68	-56.17	0.00	3.51	20.04	0.10
2535.00	-60.03	-56.48	0.00	3.55	21.83	0.15
2560.00	-60.33	-56.76	0.00	3.57	20.78	0.12

LTE Band 7 Radiated Power EIRP for BW 20MHz / 16QAM						
Horizontal Polarization						
Frequency (MHz)	**Rt (dBm)**	**Rs (dBm)**	**Ps (dBm)**	**Gs (dBd)**	**EIRP (dBm)**	**EIRP (W)**
2510.00	-59.34	-55.82	0.00	3.52	18.47	0.07
2535.00	-59.28	-55.73	0.00	3.55	20.42	0.11
2560.00	-59.24	-55.67	0.00	3.57	19.01	0.08
Vertical Polarization						
Frequency (MHz)	**Rt (dBm)**	**Rs (dBm)**	**Ps (dBm)**	**Gs (dBd)**	**EIRP (dBm)**	**EIRP (W)**
2510.00	-59.68	-56.17	0.00	3.51	18.99	0.08
2535.00	-60.03	-56.48	0.00	3.55	21.72	0.15
2560.00	-60.33	-56.76	0.00	3.57	19.67	0.09

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.

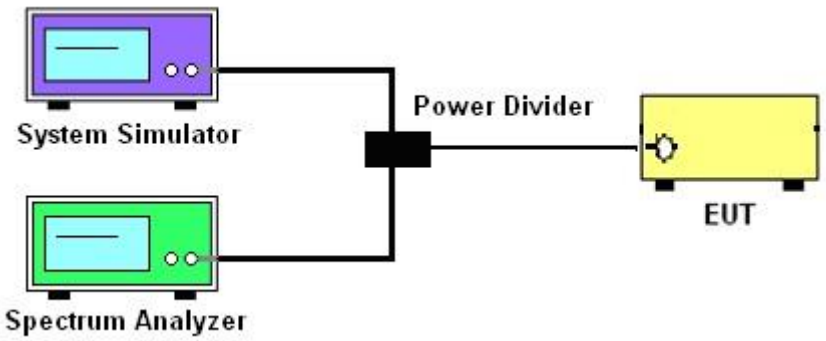
3.4.2 Measuring Instruments

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.

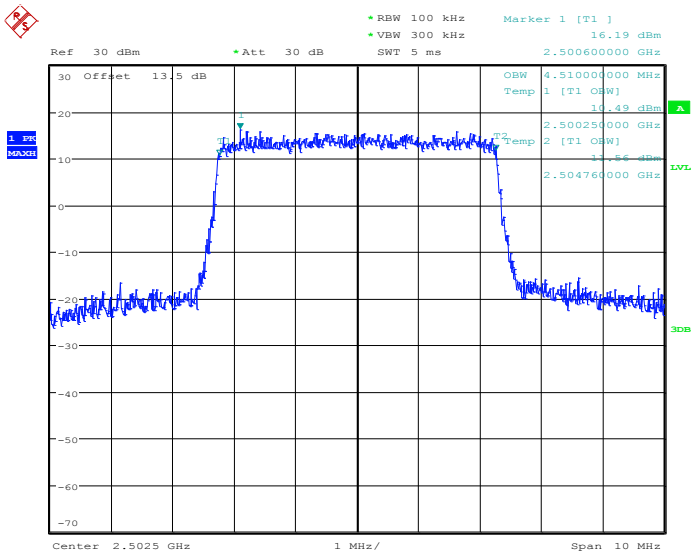
3.4.4 Test Setup



3.4.5 Test Result (Plots) of Occupied Bandwidth

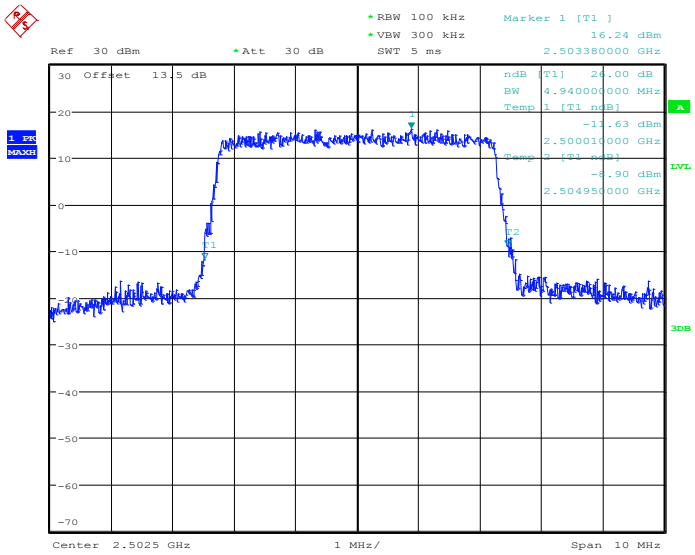
Band :	LTE Band 7	BW / Mod. :	5MHz / QPSK

99% Occupied Bandwidth Plot on Channel 20775



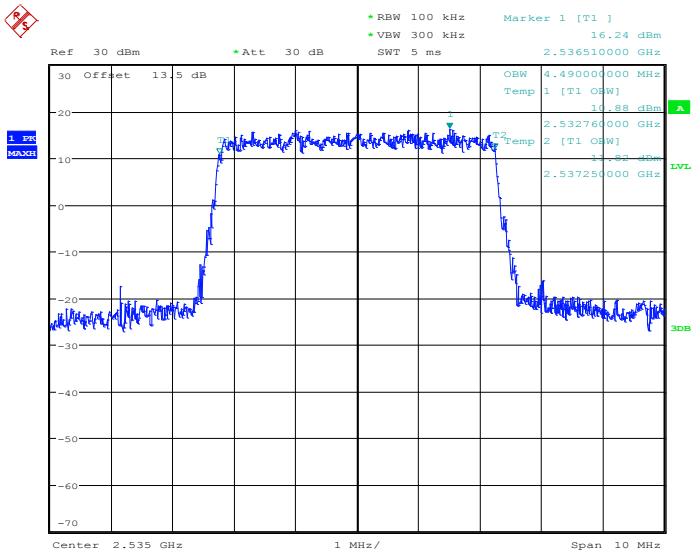
Date: 18.JAN.2014 07:21:34

26dB Bandwidth Plot on Channel 20775



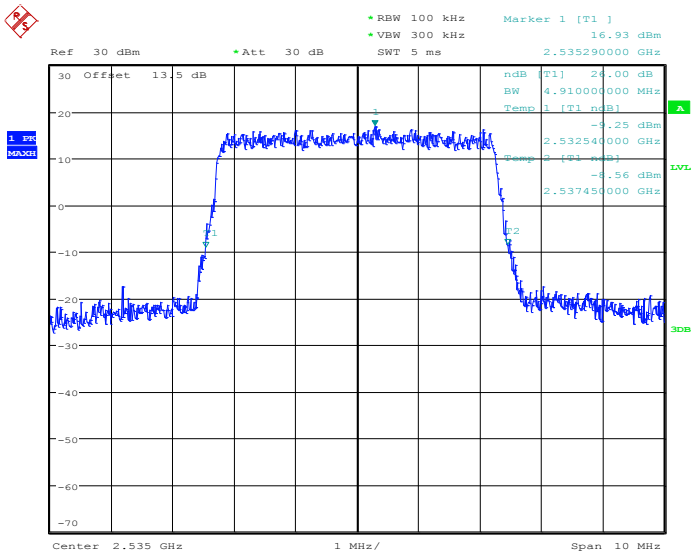
Date: 18.JAN.2014 07:21:59

99% Occupied Bandwidth Plot on Channel 21100



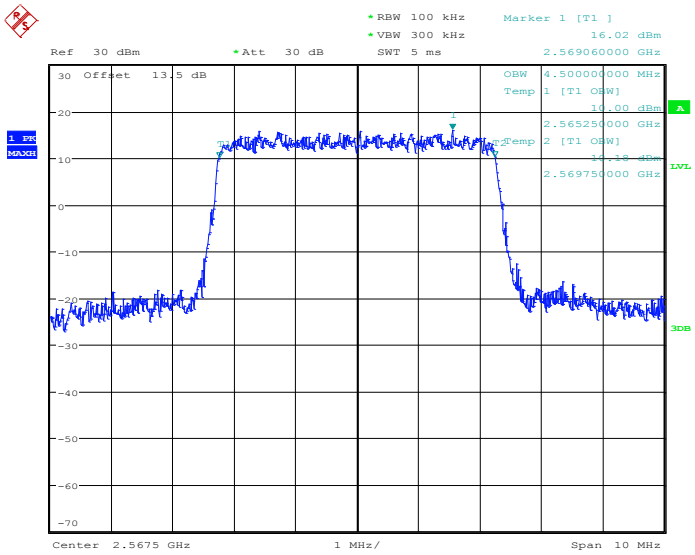
Date: 18.JAN.2014 07:27:14

26dB Bandwidth Plot on Channel 21100



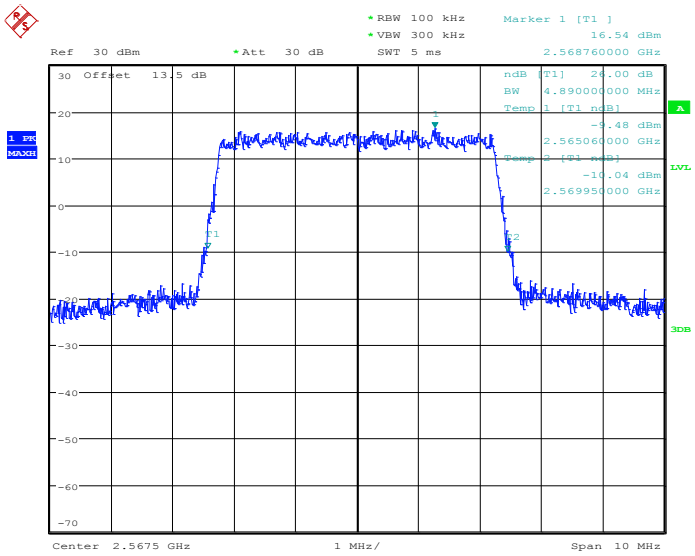
Date: 18.JAN.2014 07:27:39

99% Occupied Bandwidth Plot on Channel 21425



Date: 18.JAN.2014 07:30:02

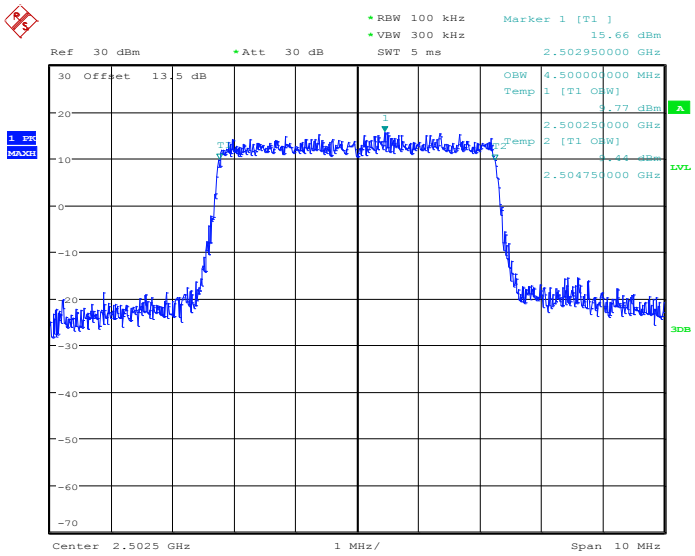
26dB Bandwidth Plot on Channel 21425



Date: 18.JAN.2014 07:30:27

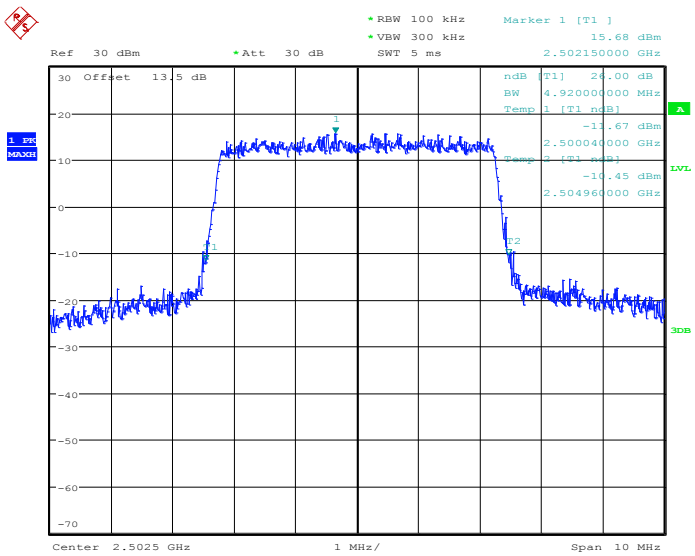
Band :	LTE Band 7	BW / Mod. :	5MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 20775



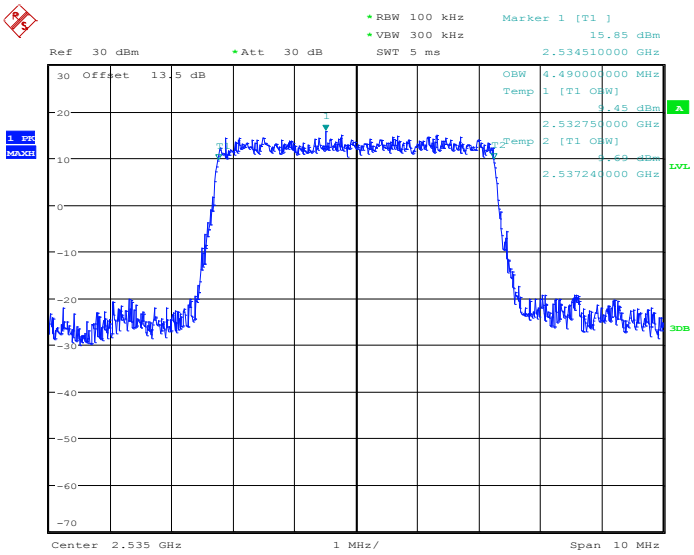
Date: 18.JAN.2014 07:21:46

26dB Bandwidth Plot on Channel 20775



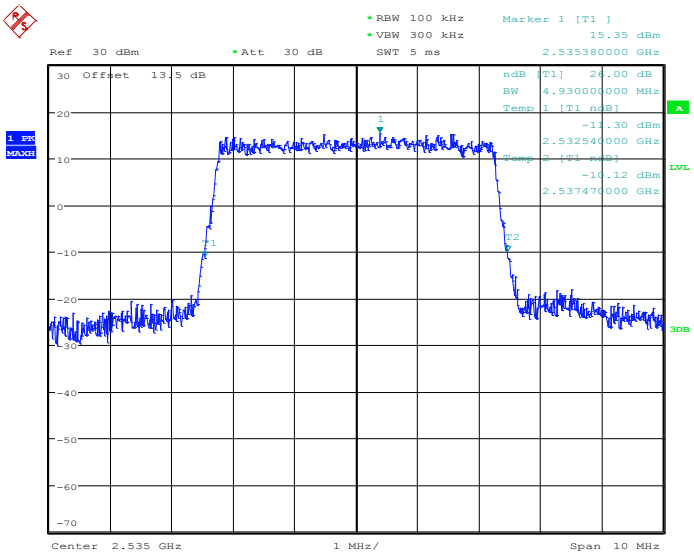
Date: 18.JAN.2014 07:22:13

99% Occupied Bandwidth Plot on Channel 21100



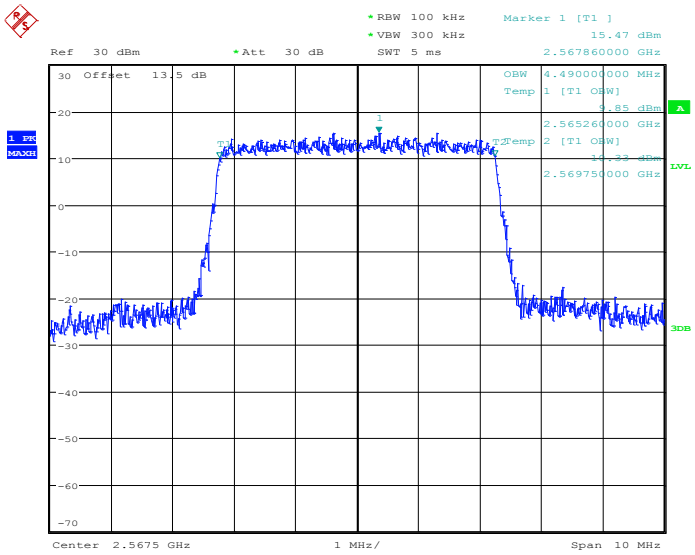
Date: 18.JAN.2014 07:27:26

26dB Bandwidth Plot on Channel 21100



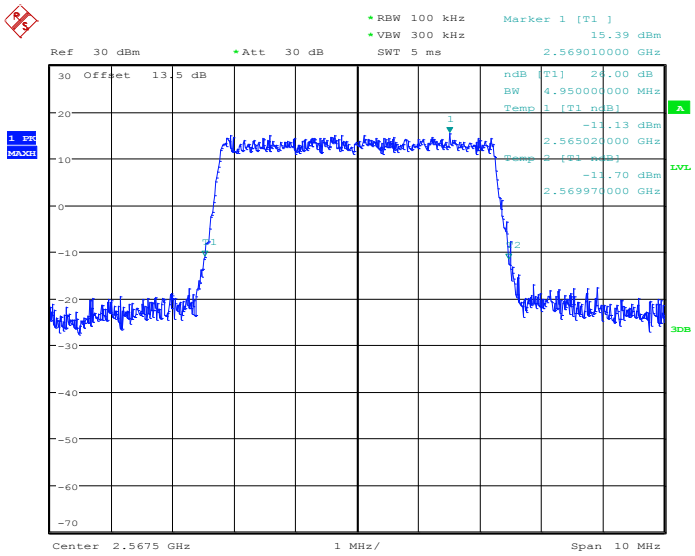
Date: 18.JAN.2014 07:27:53

99% Occupied Bandwidth Plot on Channel 21425



Date: 18.JAN.2014 07:30:14

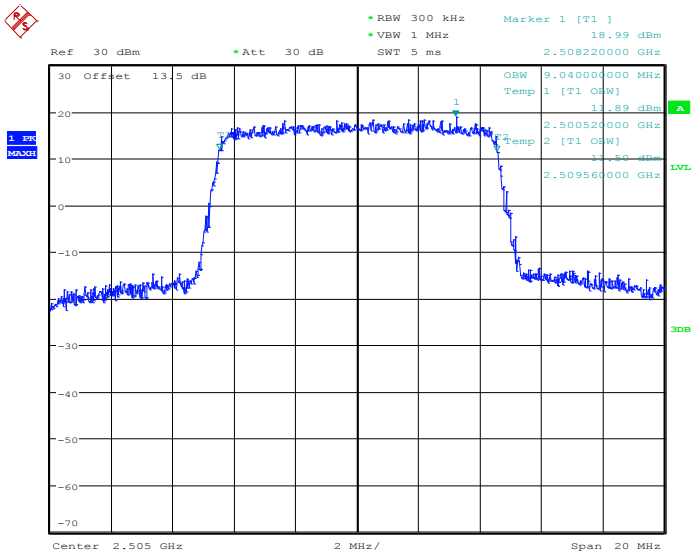
26dB Bandwidth Plot on Channel 21425



Date: 18.JAN.2014 07:30:41

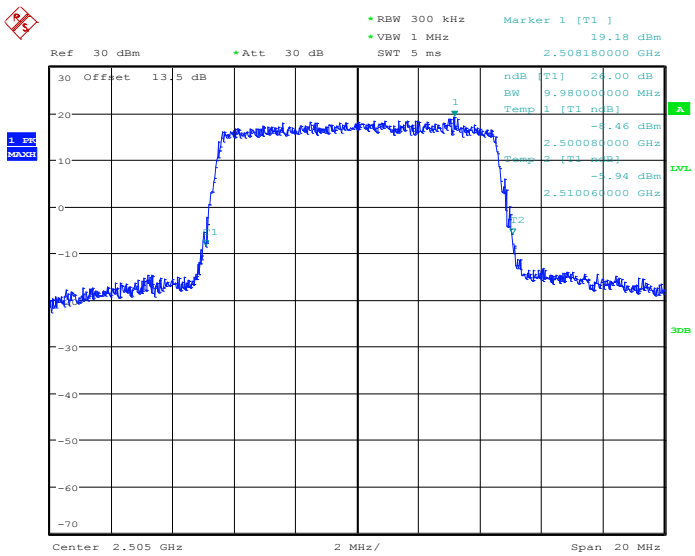
Band :	LTE Band 7	BW / Mod. :	10MHz / QPSK

99% Occupied Bandwidth Plot on Channel 20800



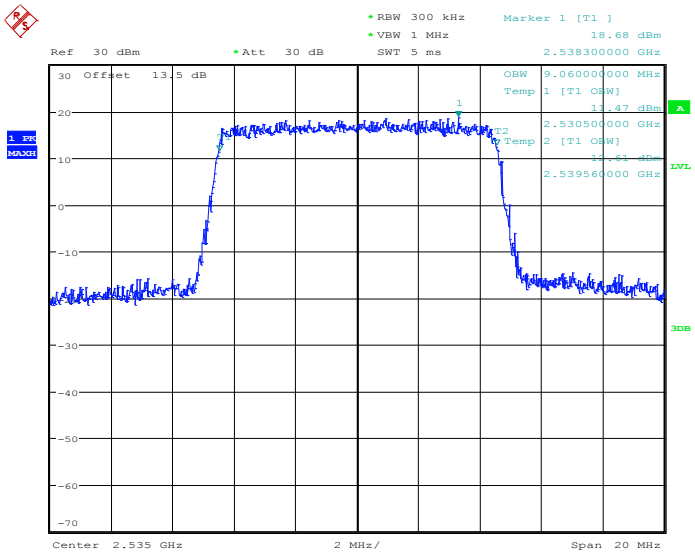
Date: 18.JAN.2014 07:46:22

26dB Bandwidth Plot on Channel 20800



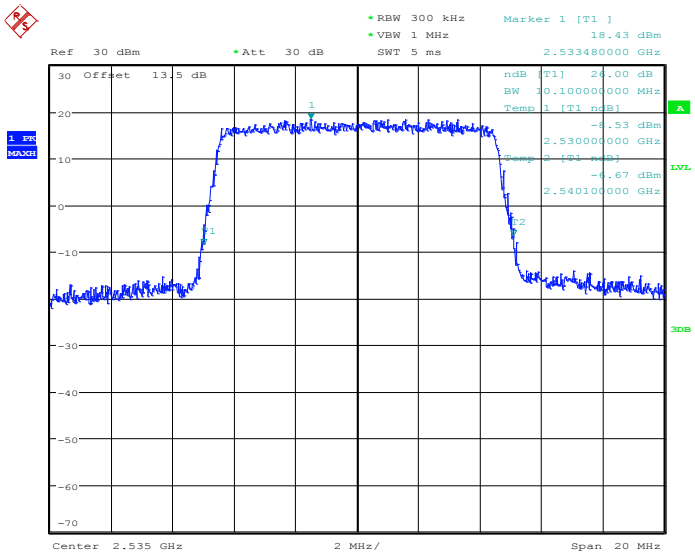
Date: 18.JAN.2014 07:46:47

99% Occupied Bandwidth Plot on Channel 21100



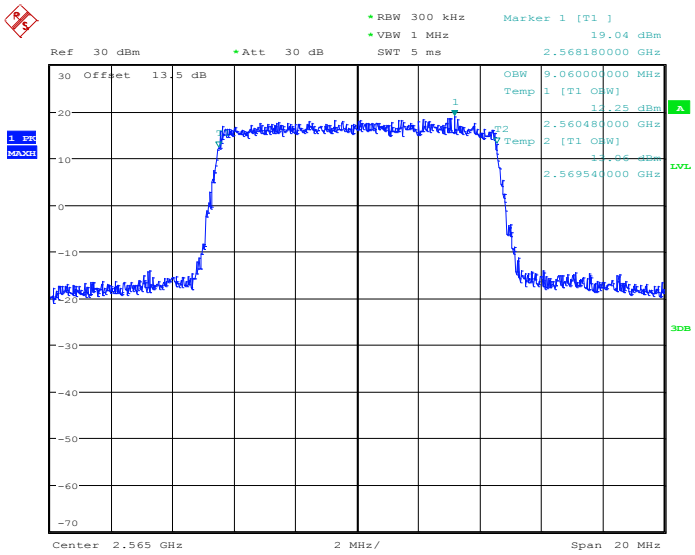
Date: 18.JAN.2014 07:51:59

26dB Bandwidth Plot on Channel 21100



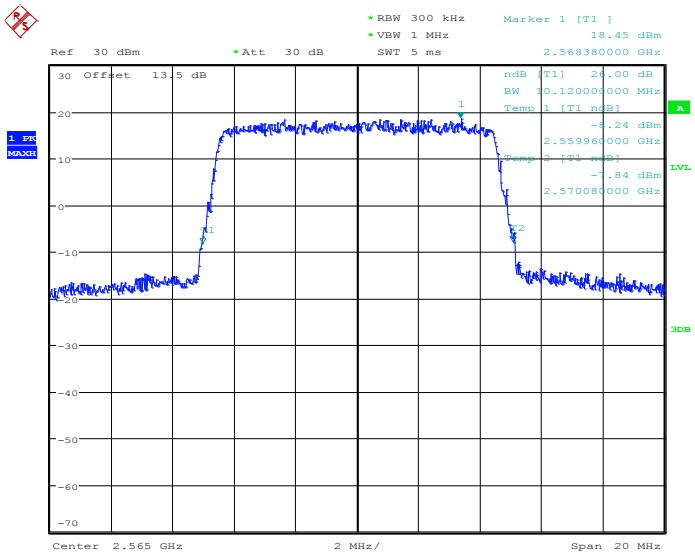
Date: 18.JAN.2014 07:52:24

99% Occupied Bandwidth Plot on Channel 21400



Date: 18.JAN.2014 07:54:47

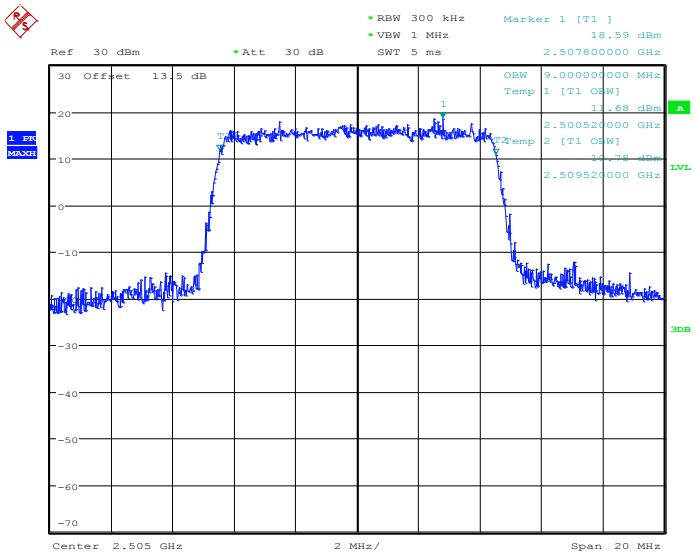
26dB Bandwidth Plot on Channel 21400



Date: 18.JAN.2014 07:55:12

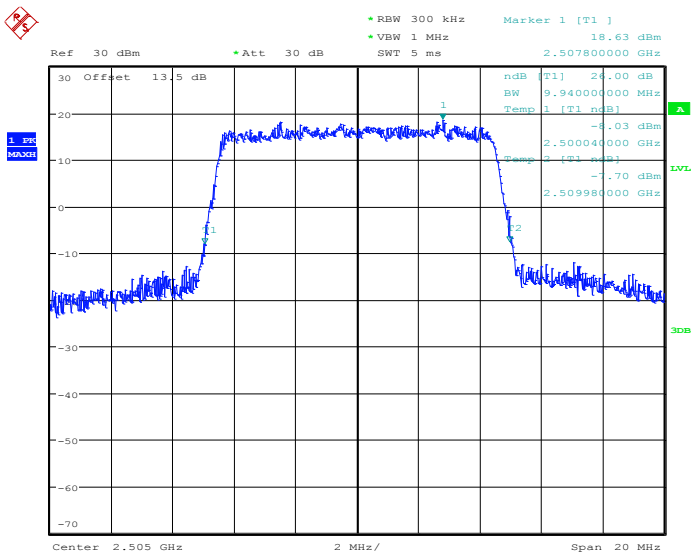
Band :	LTE Band 7	BW / Mod. :	10MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 20800



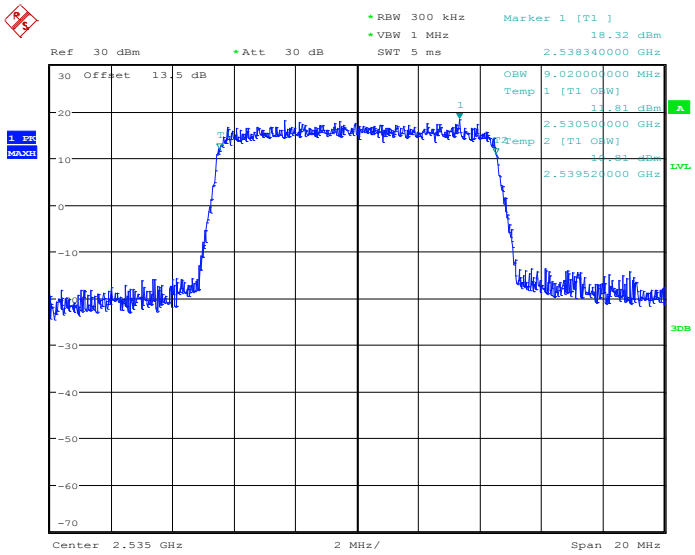
Date: 18.JAN.2014 07:46:33

26dB Bandwidth Plot on Channel 20800



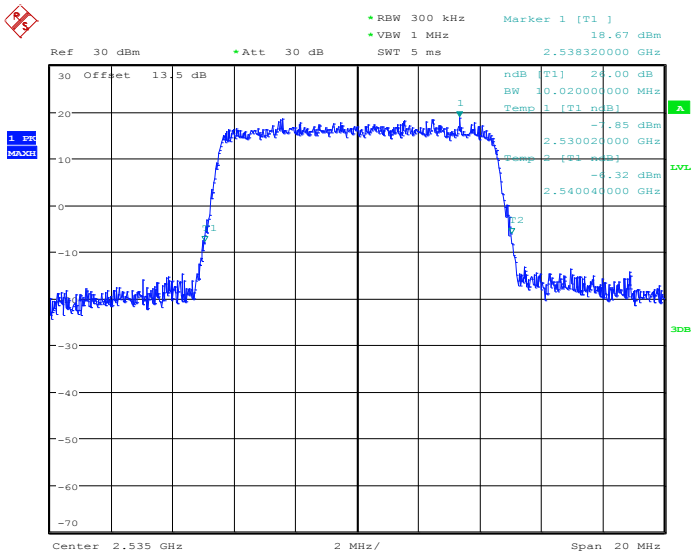
Date: 18.JAN.2014 07:47:00

99% Occupied Bandwidth Plot on Channel 21100



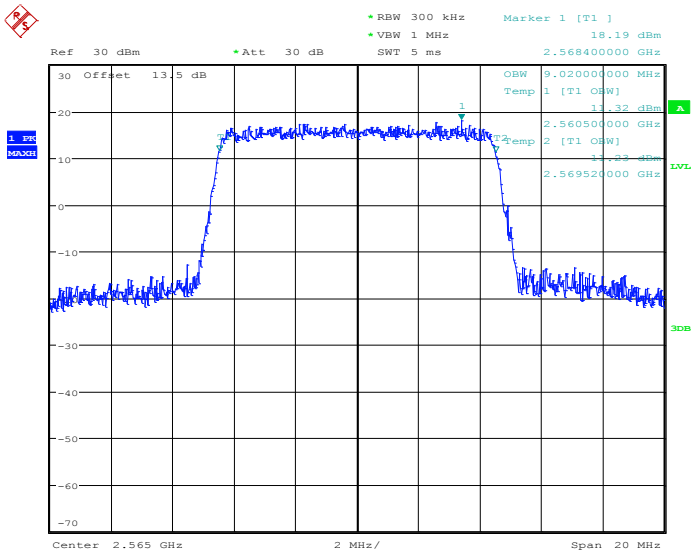
Date: 18.JAN.2014 07:52:11

26dB Bandwidth Plot on Channel 21100



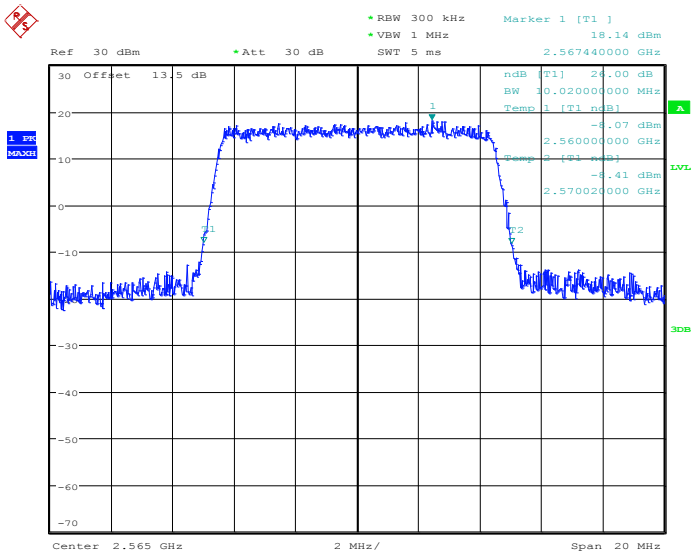
Date: 18.JAN.2014 07:52:38

99% Occupied Bandwidth Plot on Channel 21400



Date: 18.JAN.2014 07:54:58

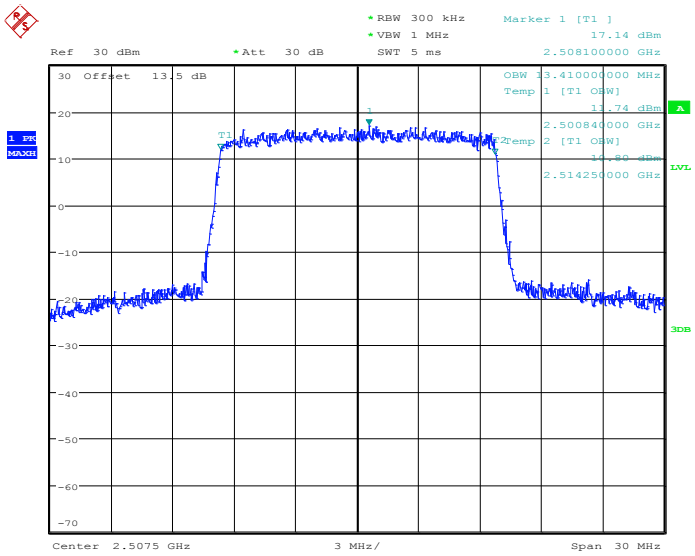
26dB Bandwidth Plot on Channel 21400



Date: 18.JAN.2014 07:55:25

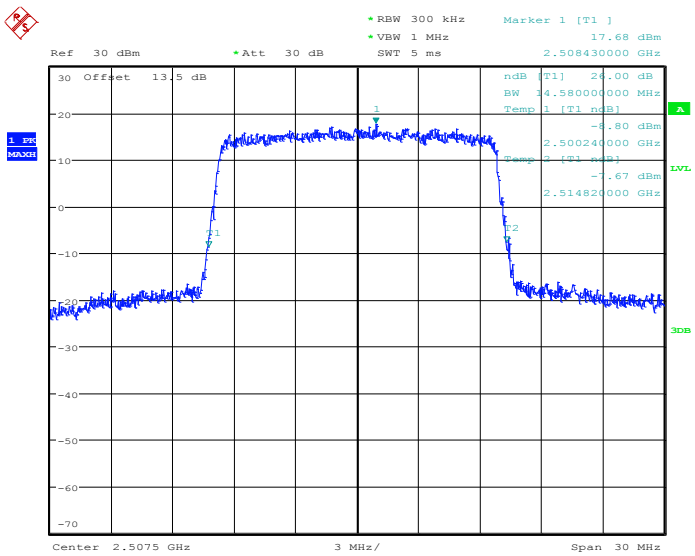
Band :	LTE Band 7	BW / Mod. :	15MHz / QPSK

99% Occupied Bandwidth Plot on Channel 20825



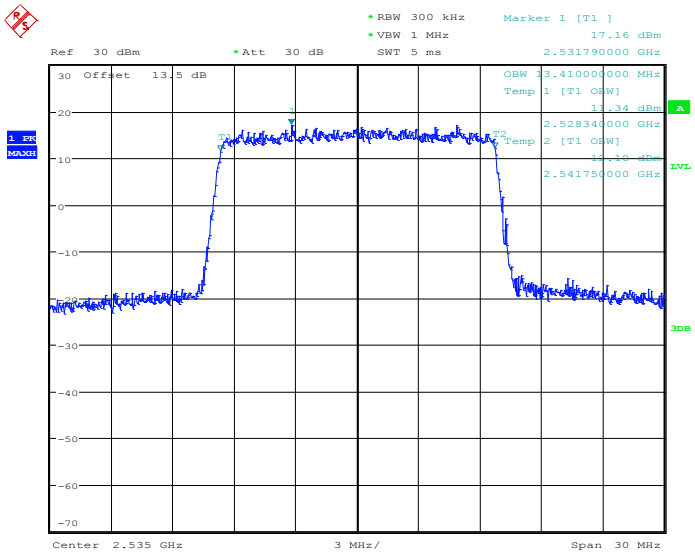
Date: 18.JAN.2014 08:00:28

26dB Bandwidth Plot on Channel 20825



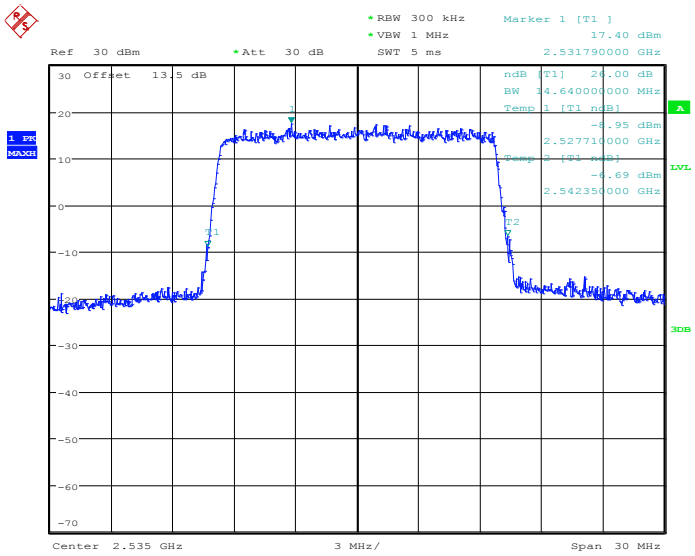
Date: 18.JAN.2014 08:00:54

99% Occupied Bandwidth Plot on Channel 21100



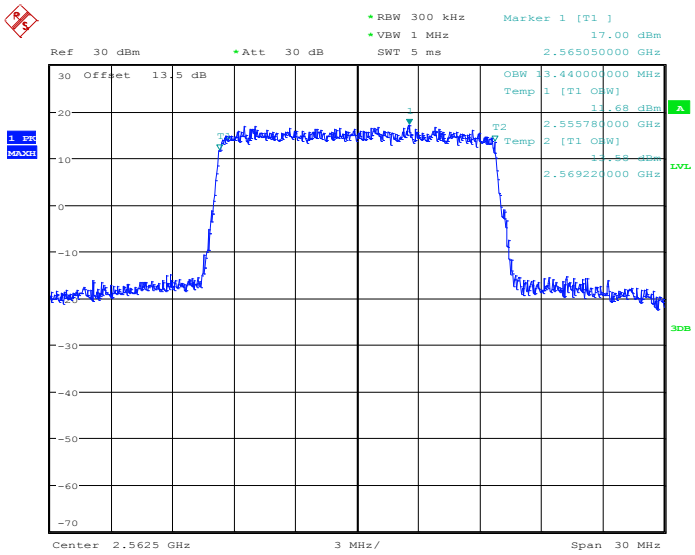
Date: 18.JAN.2014 08:06:06

26dB Bandwidth Plot on Channel 21100



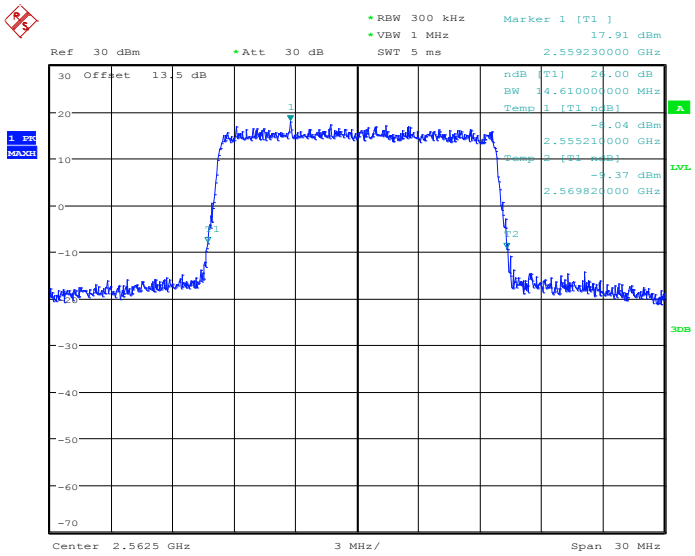
Date: 18.JAN.2014 08:06:31

99% Occupied Bandwidth Plot on Channel 21375



Date: 18.JAN.2014 08:08:54

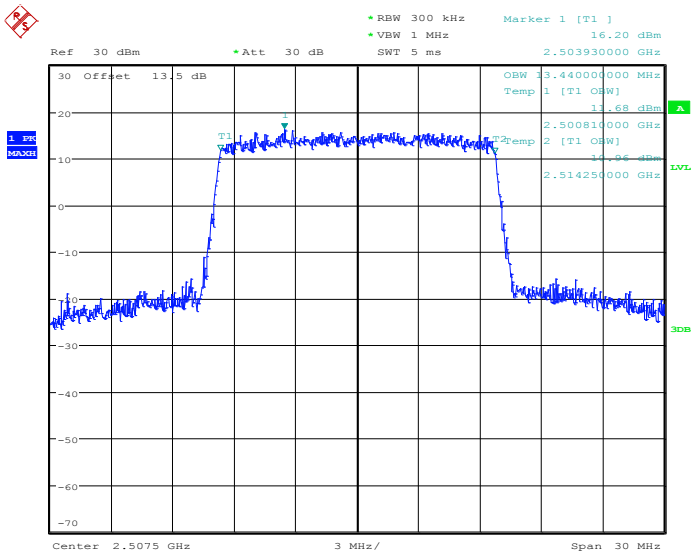
26dB Bandwidth Plot on Channel 21375



Date: 18.JAN.2014 08:09:19

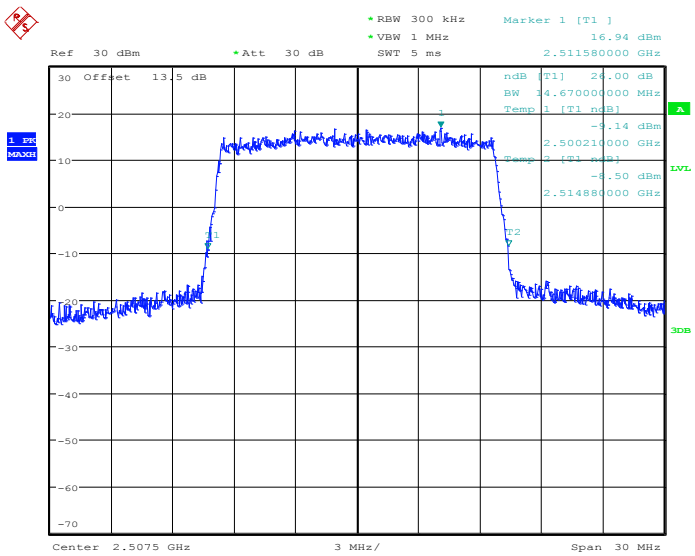
Band :	LTE Band 7	BW / Mod. :	15MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 20825



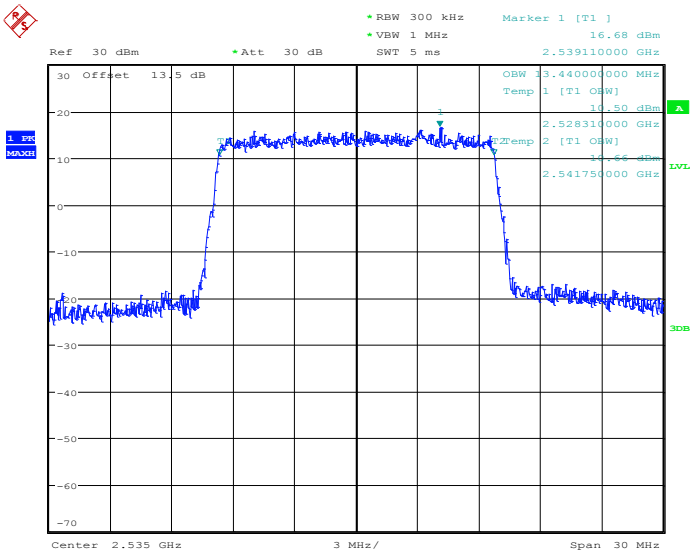
Date: 18.JAN.2014 08:00:40

26dB Bandwidth Plot on Channel 20825



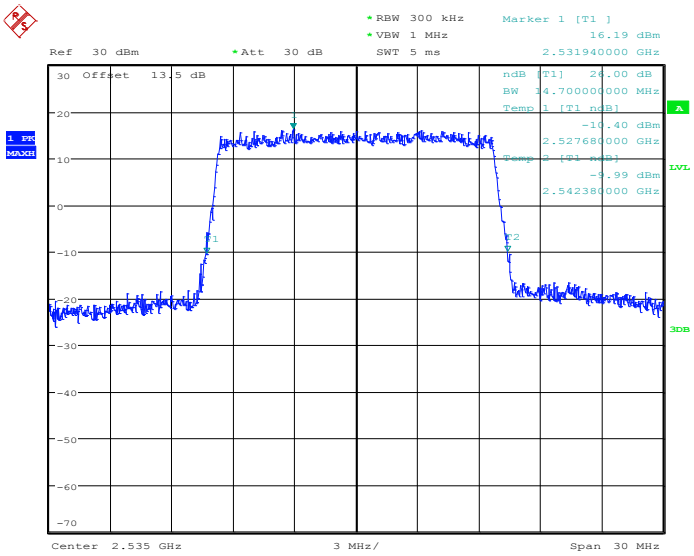
Date: 18.JAN.2014 08:01:07

99% Occupied Bandwidth Plot on Channel 21100



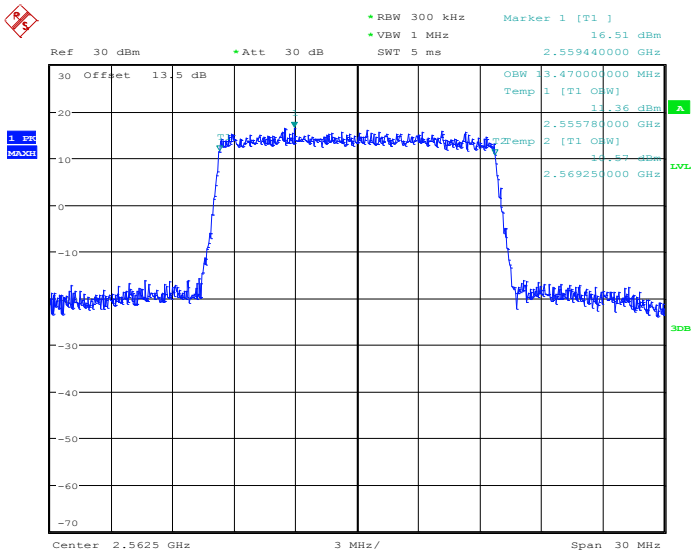
Date: 18.JAN.2014 08:06:18

26dB Bandwidth Plot on Channel 21100



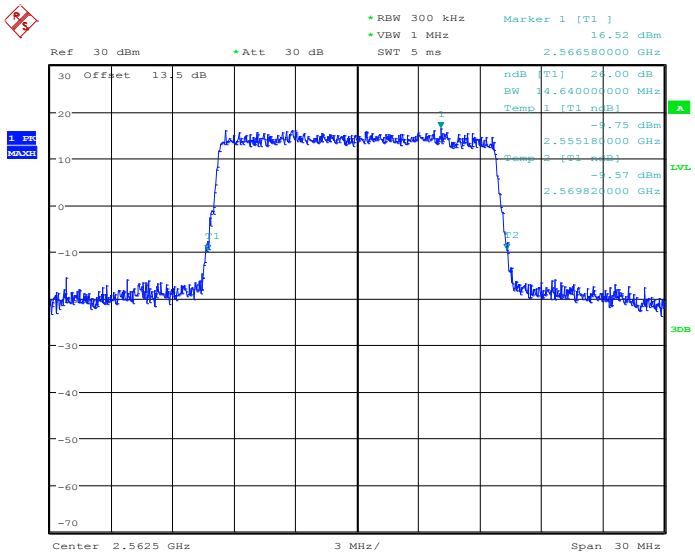
Date: 18.JAN.2014 08:06:45

99% Occupied Bandwidth Plot on Channel 21375



Date: 18.JAN.2014 08:09:06

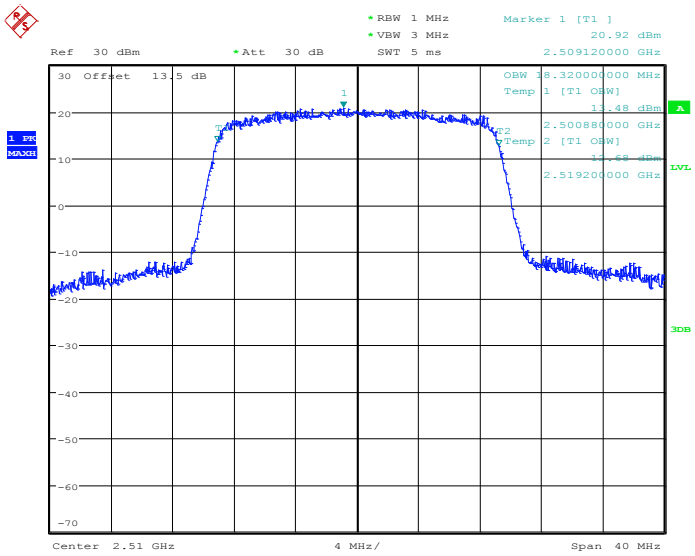
26dB Bandwidth Plot on Channel 21375



Date: 18.JAN.2014 08:09:33

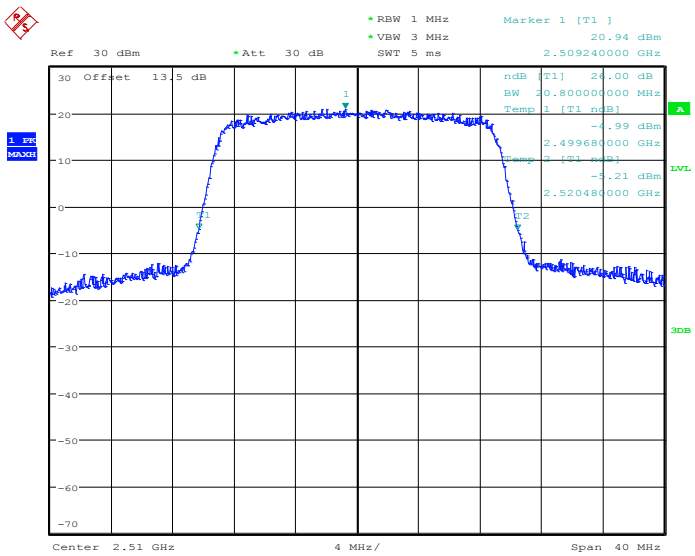
Band :	LTE Band 7	BW / Mod. :	20MHz / QPSK

99% Occupied Bandwidth Plot on Channel 20850



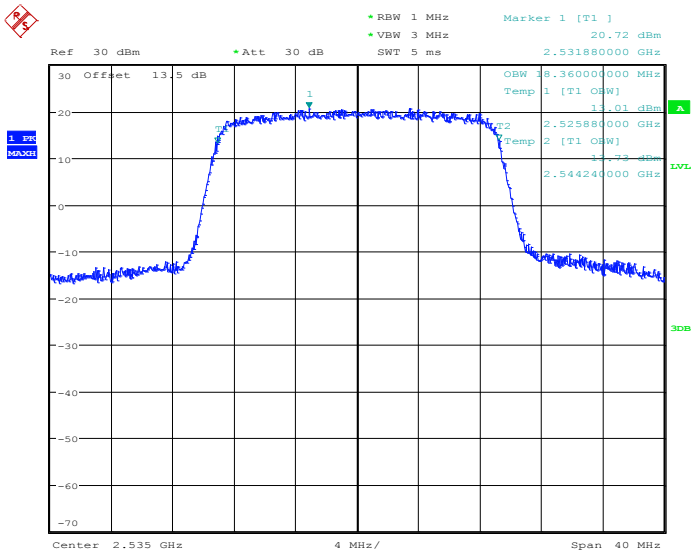
Date: 18.JAN.2014 08:14:35

26dB Bandwidth Plot on Channel 20850



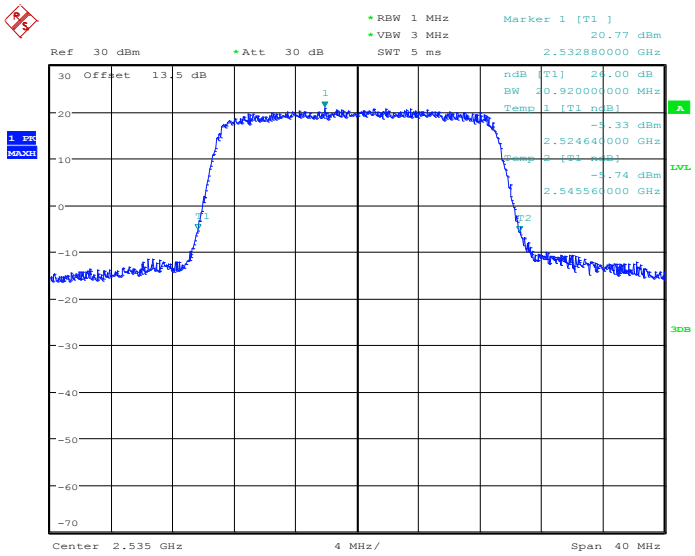
Date: 18.JAN.2014 08:15:01

99% Occupied Bandwidth Plot on Channel 21100



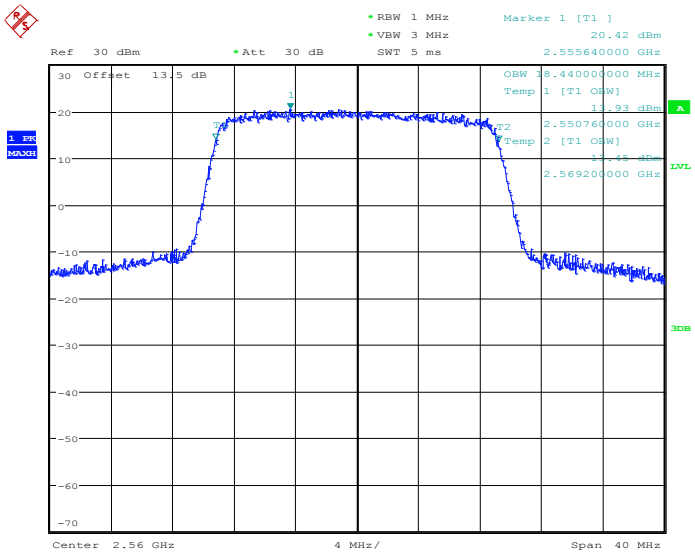
Date: 18.JAN.2014 08:20:12

26dB Bandwidth Plot on Channel 21100



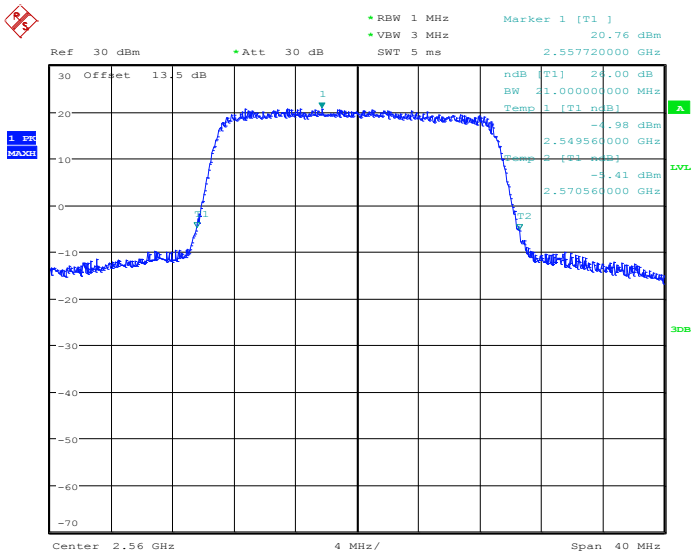
Date: 18.JAN.2014 08:20:37

99% Occupied Bandwidth Plot on Channel 21350



Date: 18.JAN.2014 08:23:00

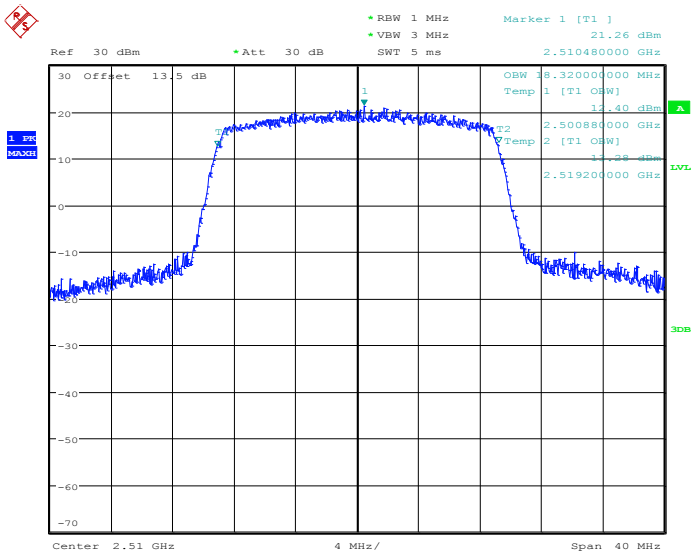
26dB Bandwidth Plot on Channel 21350



Date: 18.JAN.2014 08:23:25

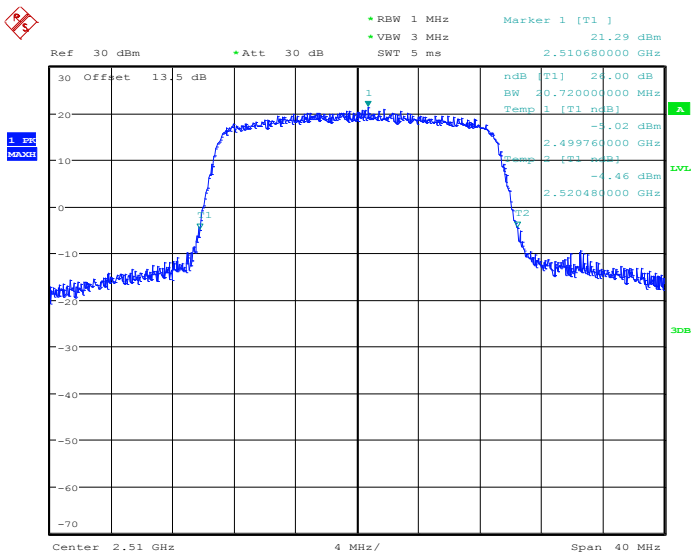
Band :	LTE Band 7	BW / Mod. :	20MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 20850



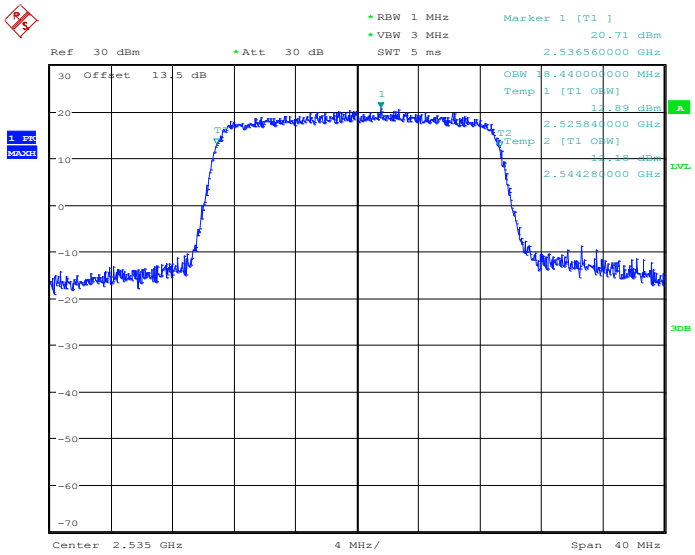
Date: 18.JAN.2014 08:14:47

26dB Bandwidth Plot on Channel 20850



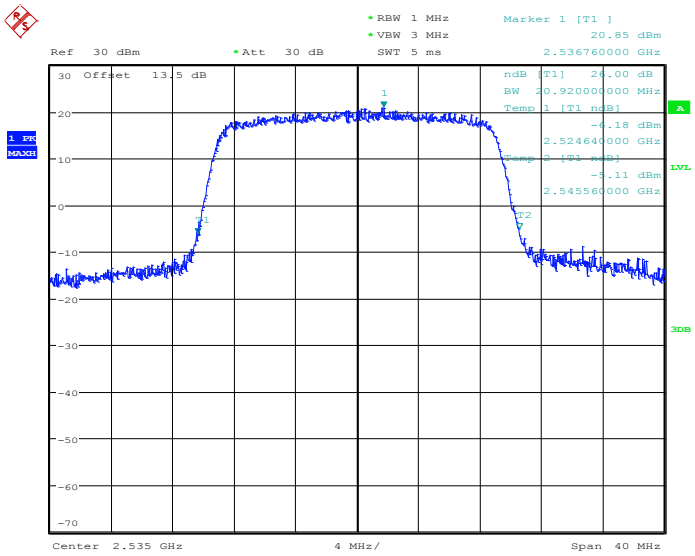
Date: 18.JAN.2014 08:15:14

99% Occupied Bandwidth Plot on Channel 21100



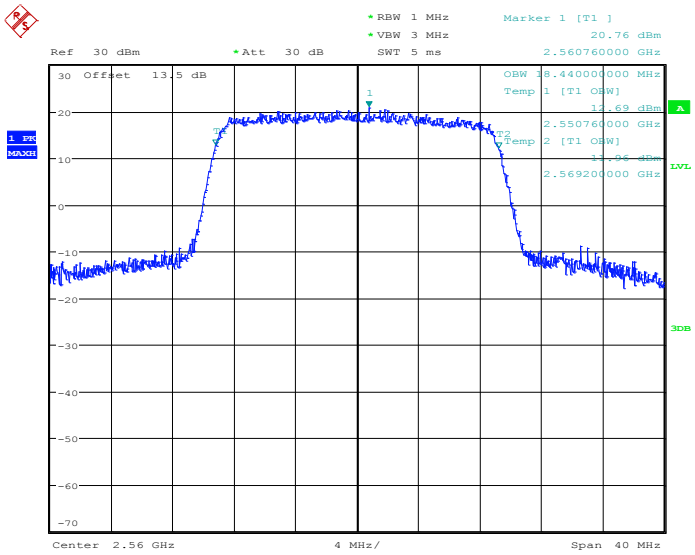
Date: 18.JAN.2014 08:20:24

26dB Bandwidth Plot on Channel 21100



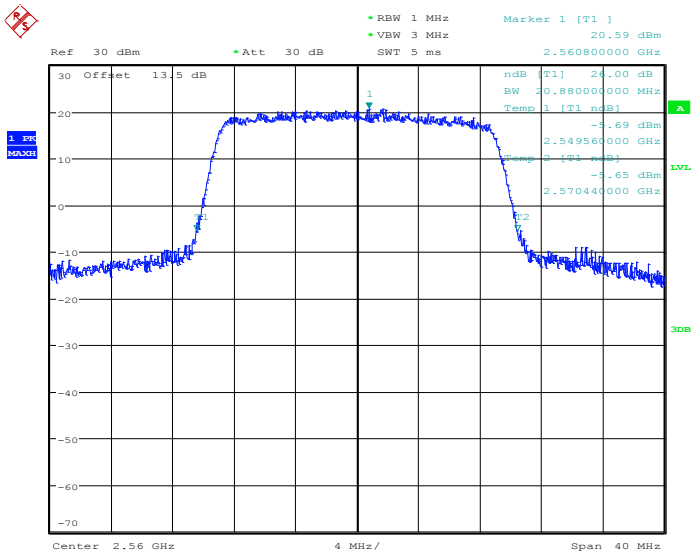
Date: 18.JAN.2014 08:20:51

99% Occupied Bandwidth Plot on Channel 21350



Date: 18.JAN.2014 08:23:11

26dB Bandwidth Plot on Channel 21350



Date: 18.JAN.2014 08:23:38

3.5 Conducted Band Edge Measurement

3.5.1 Description of Conducted Band Edge Measurement

27.53(l) (4)

The emissions be operated in the 2496-2690 MHz band, the attenuation factor of transmitter Power (P) shall be not less than 43 + 10 log (P) dB at the channel edge and 55 + 10 log (P) dB at 5.5 MHz from the channel edges.

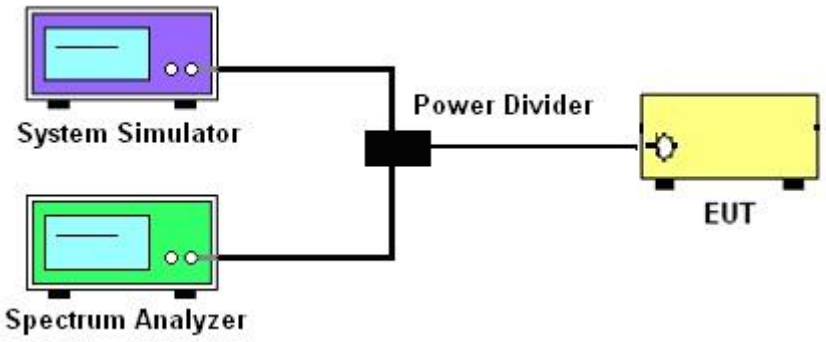
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The band edges of low and high channels for the highest RF powers were measured. Setting RBW ≥ 1% EBW, and measuring bandwidth = 1MHz.
3. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
4. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
   = P(W)- [43 + 10log(P)] (dB)
   = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
   = -13dBm.
   And The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)
   = P(W)- [55 + 10log(P)] (dB)
   = [30 + 10log(P)] (dBm) - [55 + 10log(P)] (dB)
   = -25dBm.

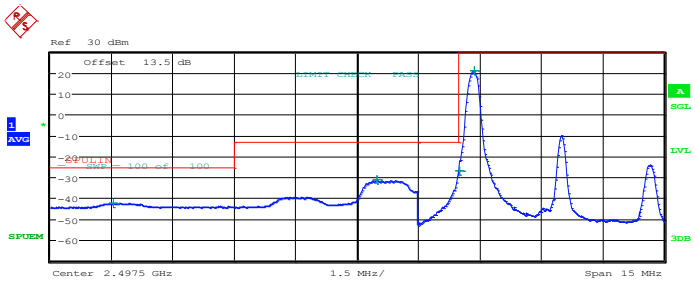
3.5.4 Test Setup



3.5.5 Test Result (Plots) of Conducted Band Edge

Band :	LTE Band 7	Band Width :	5MHz / QPSK

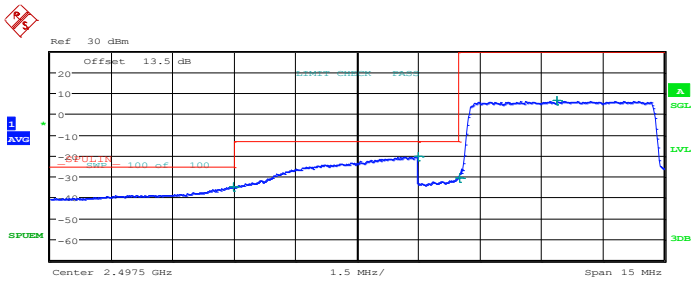
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.490 G	2.494 G	1.00 M	2.491530 G	-42.45	-17.45
2.494 G	2.499 G	1.00 M	2.497974 G	-31.31	-18.31
2.499 G	2.500 G	50.00 k	2.499989 G	-27.15	-14.15
2.500 G	2.505 G	100.00 k	2.500350 G	20.68	-9.32

Date: 18.JAN.2014 07:22:56

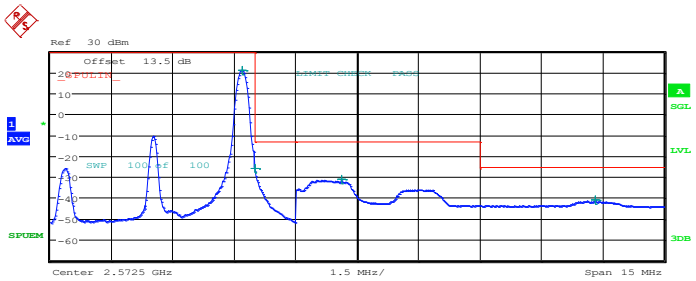
Lower Band Edge Plot for QPSK-RB Size 25, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.490 G	2.494 G	1.00 M	2.494469 G	-35.02	-10.02
2.494 G	2.499 G	1.00 M	2.499000 G	-20.36	-7.36
2.499 G	2.500 G	50.00 k	2.499999 G	-30.60	-17.60
2.500 G	2.505 G	100.00 k	2.502385 G	6.11	-23.89

Date: 18.JAN.2014 07:24:22

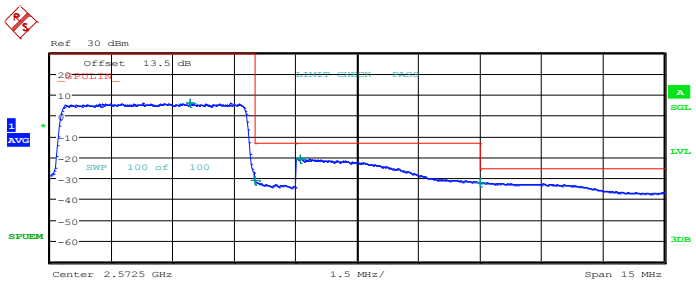
Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 24



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.565 G	2.570 G	100.00 k	2.569690 G	20.64	-9.36
2.570 G	2.571 G	50.00 k	2.570003 G	-26.03	-13.03
2.571 G	2.575 G	1.00 M	2.572116 G	-31.45	-18.45
2.575 G	2.580 G	1.00 M	2.578321 G	-41.30	-16.30

Date: 18.JAN.2014 07:31:23

Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0

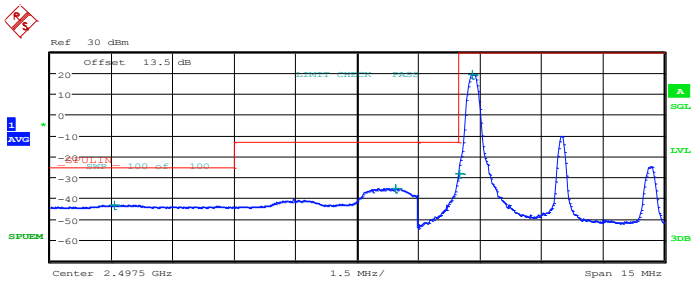


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.565 G	2.570 G	100.00 k	2.568405 G	5.67	-24.33
2.570 G	2.571 G	50.00 k	2.570001 G	-31.47	-18.47
2.571 G	2.575 G	1.00 M	2.571099 G	-20.89	-7.89
2.575 G	2.580 G	1.00 M	2.575509 G	-32.23	-7.23

Date: 18.JAN.2014 08:38:25

Band :	LTE Band 7	Band Width :	5MHz / 16QAM

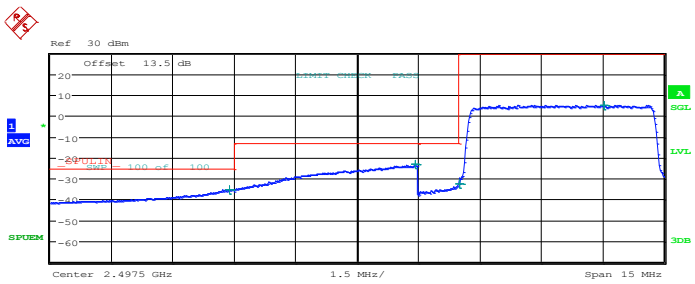
Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.490 G	2.494 G	1.00 M	2.491570 G	-43.50	-18.50
2.494 G	2.499 G	1.00 M	2.498442 G	-35.26	-22.26
2.499 G	2.500 G	50.00 k	2.499998 G	-28.53	-15.53
2.500 G	2.505 G	100.00 k	2.500320 G	19.15	-10.85

Date: 18.JAN.2014 07:23:39

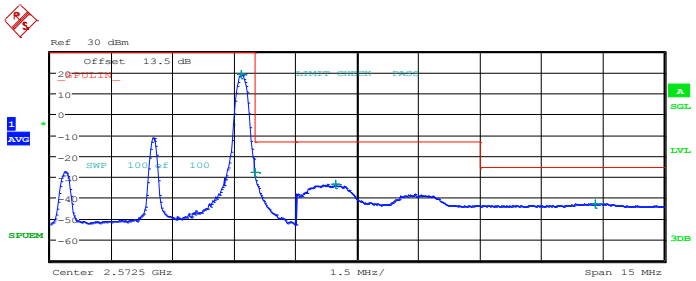
Lower Band Edge Plot for 16QAM-RB Size 25, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.490 G	2.494 G	1.00 M	2.494378 G	-35.35	-10.35
2.494 G	2.499 G	1.00 M	2.498910 G	-23.51	-10.51
2.499 G	2.500 G	50.00 k	2.499990 G	-32.88	-19.88
2.500 G	2.505 G	100.00 k	2.503525 G	5.10	-24.90

Date: 18.JAN.2014 07:25:05

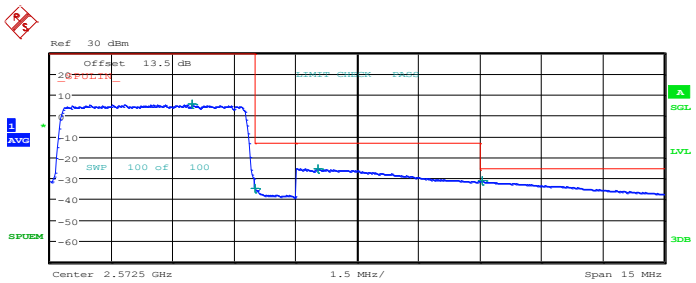
Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 24



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.565 G	2.570 G	100.00 k	2.569675 G	18.79	-11.21
2.570 G	2.571 G	50.00 k	2.570001 G	-28.08	-15.08
2.571 G	2.575 G	1.00 M	2.571976 G	-33.60	-20.60
2.575 G	2.580 G	1.00 M	2.578308 G	-42.95	-17.95

Date: 18.JAN.2014 08:39:40

Higher Band Edge Plot for 16QAM-RB Size 25, RB Offset 0

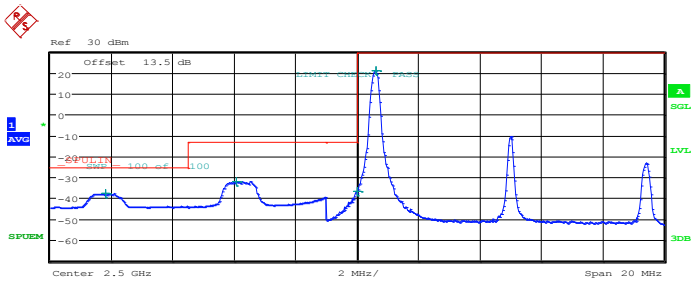


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.565 G	2.570 G	100.00 k	2.568465 G	5.39	-24.61
2.570 G	2.571 G	50.00 k	2.570005 G	-35.09	-22.09
2.571 G	2.575 G	1.00 M	2.571544 G	-25.59	-12.59
2.575 G	2.580 G	1.00 M	2.575545 G	-31.47	-6.47

Date: 18.JAN.2014 07:41:23

Band :	LTE Band 7	Band Width :	10MHz / QPSK

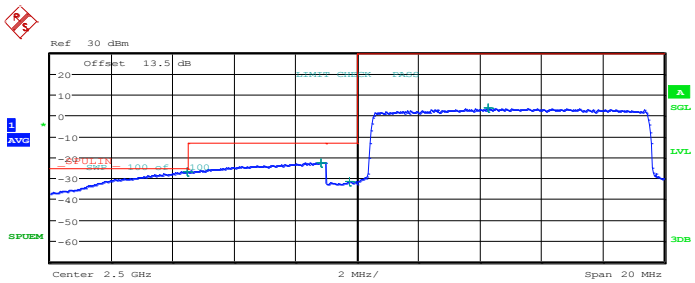
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.490 G	2.494 G	1.00 M	2.491809 G	-37.78	-12.78
2.494 G	2.499 G	1.00 M	2.496066 G	-32.16	-19.16
2.499 G	2.500 G	100.00 k	2.499997 G	-36.82	-23.82
2.500 G	2.510 G	100.00 k	2.500600 G	20.70	-9.30

Date: 18.JAN.2014 07:47:43

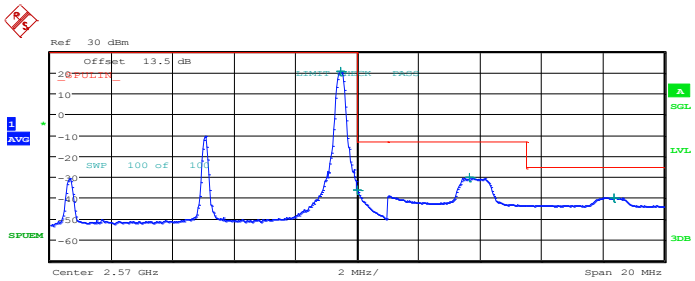
Lower Band Edge Plot for QPSK-RB Size 50, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.490 G	2.494 G	1.00 M	2.494469 G	-27.01	-2.01
2.494 G	2.499 G	1.00 M	2.498807 G	-22.79	-9.79
2.499 G	2.500 G	100.00 k	2.499746 G	-31.71	-18.71
2.500 G	2.510 G	100.00 k	2.504260 G	3.48	-26.52

Date: 18.JAN.2014 07:49:07

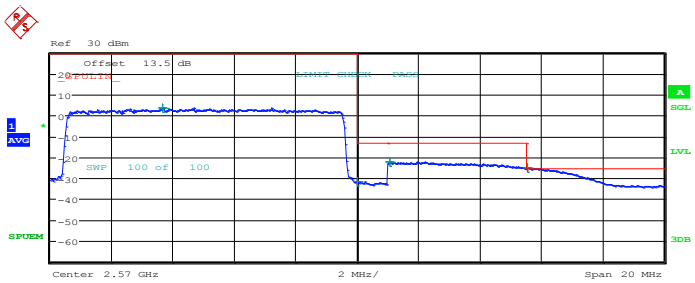
Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 49



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.560 G	2.570 G	100.00 k	2.569460 G	20.56	-9.44
2.570 G	2.571 G	100.00 k	2.570014 G	-36.42	-23.42
2.571 G	2.575 G	1.00 M	2.573669 G	-30.19	-17.19
2.575 G	2.580 G	1.00 M	2.578371 G	-40.11	-15.11

Date: 18.JAN.2014 07:56:08

Higher Band Edge Plot for QPSK-RB Size 50, RB Offset 0

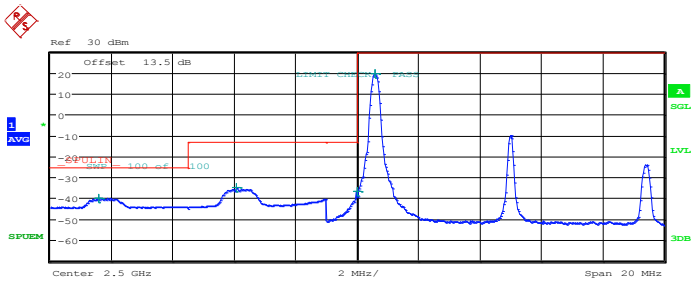


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.560 G	2.570 G	100.00 k	2.563660 G	3.40	-26.60
2.570 G	2.571 G	100.00 k	2.570009 G	-31.92	-18.92
2.571 G	2.575 G	1.00 M	2.571063 G	-22.35	-9.35
2.575 G	2.580 G	1.00 M	2.575554 G	-25.25	-0.25

Date: 18.JAN.2014 07:57:33

Band :	LTE Band 7	Band Width :	10MHz / 16QAM

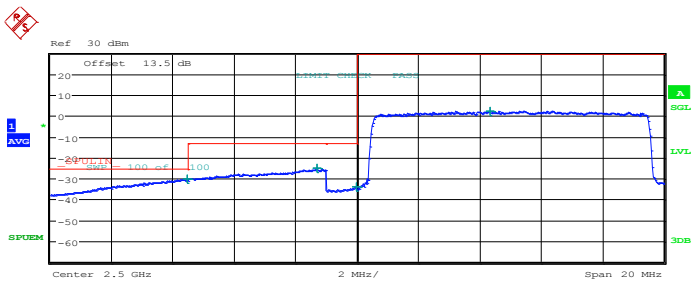
Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.490 G	2.494 G	1.00 M	2.491570 G	-40.21	-15.21
2.494 G	2.499 G	1.00 M	2.496043 G	-34.97	-21.97
2.499 G	2.500 G	100.00 k	2.499992 G	-37.05	-24.05
2.500 G	2.510 G	100.00 k	2.500580 G	19.38	-10.62

Date: 18.JAN.2014 07:48:25

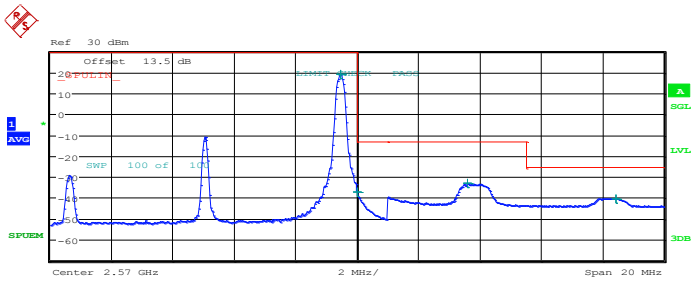
Lower Band Edge Plot for 16QAM-RB Size 50, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.490 G	2.494 G	1.00 M	2.494460 G	-30.43	-5.43
2.494 G	2.499 G	1.00 M	2.498671 G	-25.34	-12.34
2.499 G	2.500 G	100.00 k	2.499975 G	-34.10	-21.10
2.500 G	2.510 G	100.00 k	2.504330 G	2.10	-27.90

Date: 18.JAN.2014 07:49:50

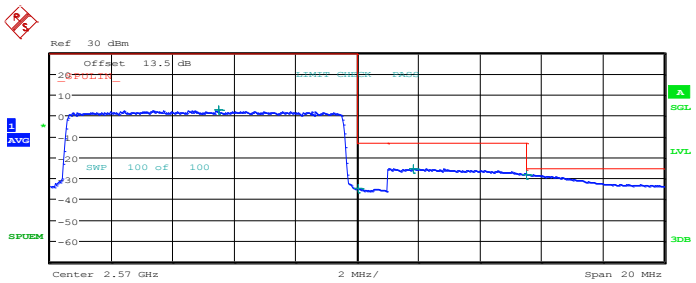
Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 49



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.560 G	2.570 G	100.00 k	2.569470 G	19.03	-10.97
2.570 G	2.571 G	100.00 k	2.570012 G	-37.22	-24.22
2.571 G	2.575 G	1.00 M	2.573587 G	-33.18	-20.18
2.575 G	2.580 G	1.00 M	2.578438 G	-40.47	-15.47

Date: 18.JAN.2014 07:56:50

Higher Band Edge Plot for 16QAM-RB Size 50, RB Offset 0

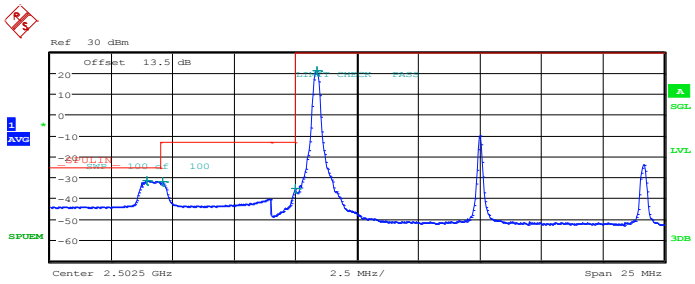


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.560 G	2.570 G	100.00 k	2.565470 G	2.37	-27.63
2.570 G	2.571 G	100.00 k	2.570018 G	-34.80	-21.80
2.571 G	2.575 G	1.00 M	2.571819 G	-25.63	-12.63
2.575 G	2.580 G	1.00 M	2.575509 G	-28.26	-3.26

Date: 18.JAN.2014 07:58:15

Band :	LTE Band 7	Band Width :	15MHz / QPSK

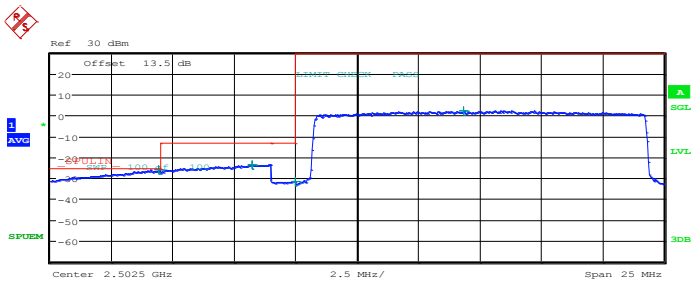
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.490 G	2.494 G	1.00 M	2.493933 G	-31.76	-6.76
2.494 G	2.499 G	1.00 M	2.494559 G	-32.28	-19.28
2.499 G	2.500 G	150.00 k	2.499986 G	-35.38	-22.38
2.500 G	2.515 G	100.00 k	2.500840 G	20.96	-9.04

Date: 18.JAN.2014 08:01:50

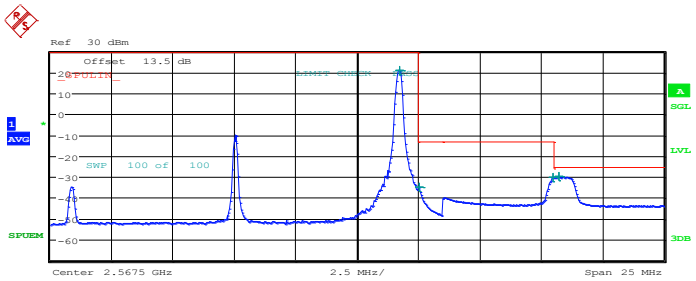
Lower Band Edge Plot for QPSK-RB Size 75, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.490 G	2.494 G	1.00 M	2.494406 G	-26.29	-1.29
2.494 G	2.499 G	1.00 M	2.498222 G	-23.53	-10.53
2.499 G	2.500 G	150.00 k	2.499970 G	-31.53	-18.53
2.500 G	2.515 G	100.00 k	2.506840 G	2.26	-27.74

Date: 18.JAN.2014 08:03:14

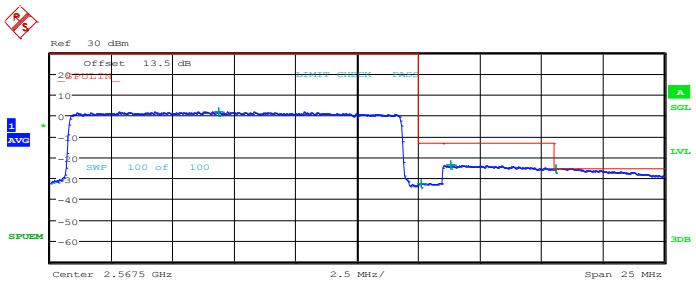
Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 74



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.555 G	2.570 G	100.00 k	2.569205 G	20.78	-9.22
2.570 G	2.571 G	150.00 k	2.570006 G	-35.24	-22.24
2.571 G	2.575 G	1.00 M	2.575491 G	-30.50	-17.50
2.575 G	2.580 G	1.00 M	2.575693 G	-29.68	-4.68

Date: 18.JAN.2014 08:10:15

Higher Band Edge Plot for QPSK-RB Size 75, RB Offset 0

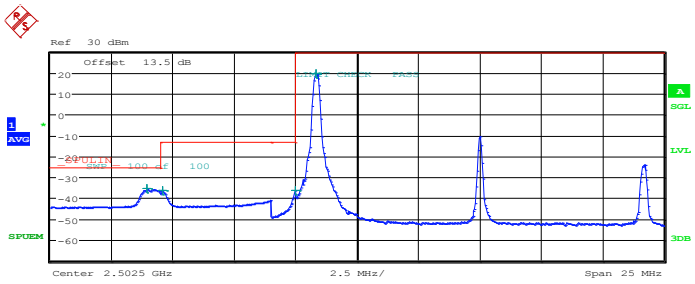


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.555 G	2.570 G	100.00 k	2.561840 G	1.53	-28.47
2.570 G	2.571 G	150.00 k	2.570104 G	-32.49	-19.49
2.571 G	2.575 G	1.00 M	2.571311 G	-23.84	-10.84
2.575 G	2.580 G	1.00 M	2.575576 G	-25.45	-0.45

Date: 18.JAN.2014 09:21:47

Band :	LTE Band 7	Band Width :	15MHz / 16QAM

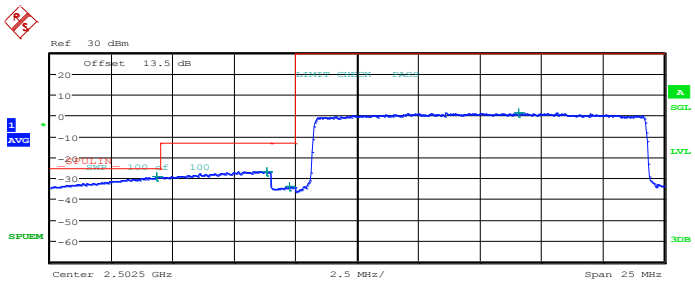
Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.490 G	2.494 G	1.00 M	2.493942 G	-35.54	-10.54
2.494 G	2.499 G	1.00 M	2.494581 G	-36.50	-23.50
2.499 G	2.500 G	150.00 k	2.499994 G	-36.31	-23.31
2.500 G	2.515 G	100.00 k	2.500810 G	19.56	-10.44

Date: 18.JAN.2014 08:02:32

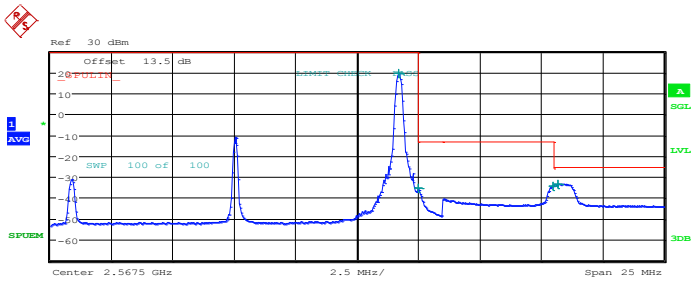
Lower Band Edge Plot for 16QAM-RB Size 75, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.490 G	2.494 G	1.00 M	2.494329 G	-29.18	-4.18
2.494 G	2.499 G	1.00 M	2.498807 G	-26.82	-13.82
2.499 G	2.500 G	150.00 k	2.499755 G	-34.26	-21.26
2.500 G	2.515 G	100.00 k	2.509060 G	1.00	-29.00

Date: 18.JAN.2014 08:03:57

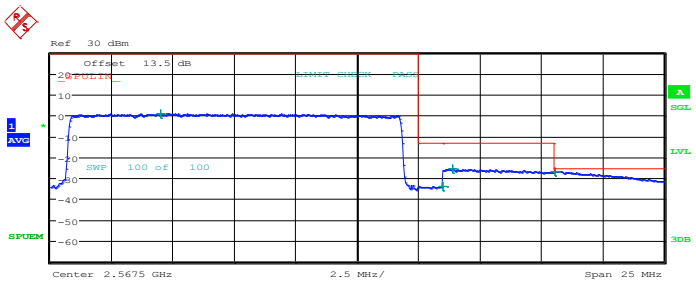
Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 74



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.555 G	2.570 G	100.00 k	2.569175 G	19.36	-10.64
2.570 G	2.571 G	150.00 k	2.570002 G	-35.60	-22.60
2.571 G	2.575 G	1.00 M	2.575477 G	-34.36	-21.36
2.575 G	2.580 G	1.00 M	2.575680 G	-33.50	-8.50

Date: 18.JAN.2014 08:10:58

Higher Band Edge Plot for 16QAM-RB Size 75, RB Offset 0

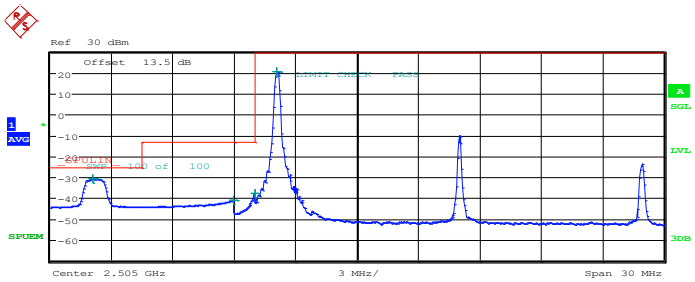


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.555 G	2.570 G	100.00 k	2.559500 G	0.79	-29.21
2.570 G	2.571 G	150.00 k	2.570997 G	-34.19	-21.19
2.571 G	2.575 G	1.00 M	2.571396 G	-25.76	-12.76
2.575 G	2.580 G	1.00 M	2.575568 G	-26.85	-1.85

Date: 18.JAN.2014 08:12:22

Band :	LTE Band 7	Band Width :	20MHz / QPSK

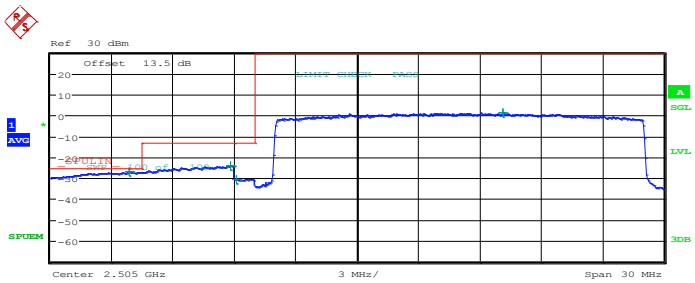
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.490 G	2.494 G	1.00 M	2.492052 G	-30.58	-5.58
2.494 G	2.499 G	1.00 M	2.498950 G	-41.22	-28.22
2.499 G	2.500 G	200.00 k	2.499997 G	-38.00	-25.00
2.500 G	2.520 G	100.00 k	2.501080 G	20.51	-9.49

Date: 18.JAN.2014 08:15:56

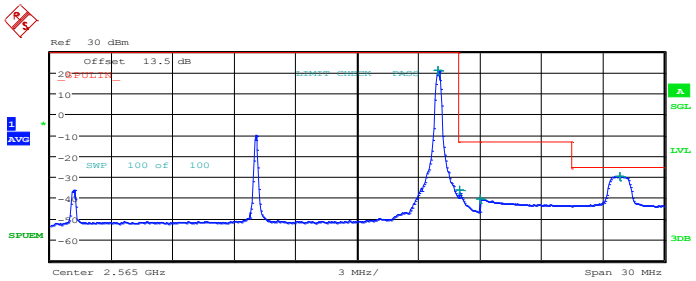
Lower Band Edge Plot for QPSK-RB Size 100, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.490 G	2.494 G	1.00 M	2.493834 G	-27.13	-2.13
2.494 G	2.499 G	1.00 M	2.498820 G	-24.29	-11.29
2.499 G	2.500 G	200.00 k	2.499082 G	-30.61	-17.61
2.500 G	2.520 G	100.00 k	2.512120 G	1.22	-28.78

Date: 18.JAN.2014 08:17:21

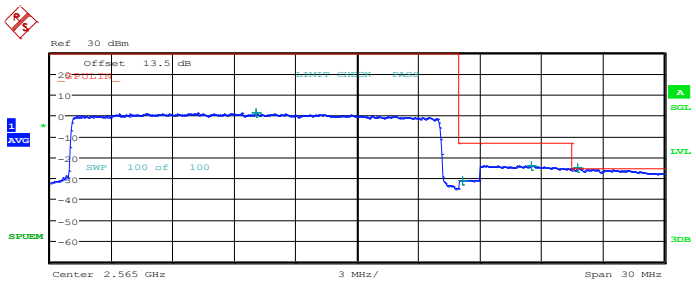
Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 99



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.550 G	2.570 G	100.00 k	2.568940 G	20.87	-9.13
2.570 G	2.571 G	200.00 k	2.570005 G	-36.58	-23.58
2.571 G	2.575 G	1.00 M	2.571013 G	-40.67	-27.67
2.575 G	2.580 G	1.00 M	2.577858 G	-29.68	-4.68

Date: 18.JAN.2014 08:24:20

Higher Band Edge Plot for QPSK-RB Size 100, RB Offset 0

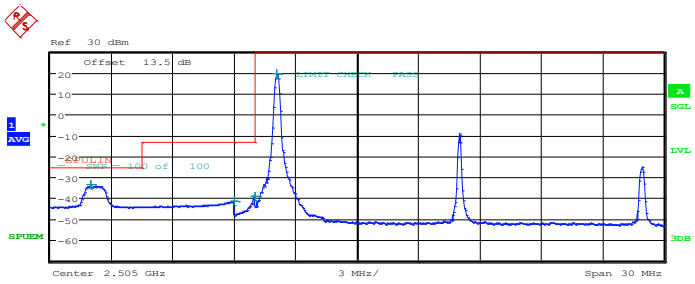


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.550 G	2.570 G	100.00 k	2.560040 G	0.98	-29.02
2.570 G	2.571 G	200.00 k	2.570131 G	-31.05	-18.05
2.571 G	2.575 G	1.00 M	2.573516 G	-24.02	-11.02
2.575 G	2.580 G	1.00 M	2.575779 G	-25.31	-0.31

Date: 18.JAN.2014 08:26:26

Band :	LTE Band 7	Band Width :	20MHz / 16QAM

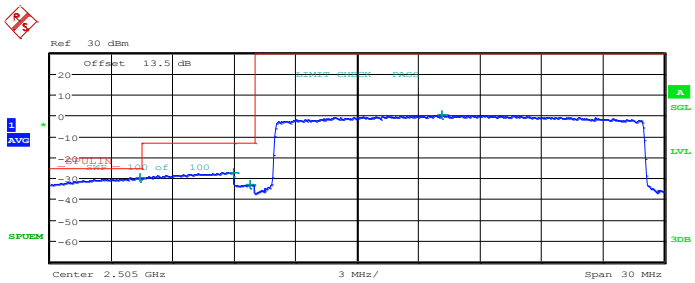
Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.490 G	2.494 G	1.00 M	2.491957 G	-33.79	-8.79
2.494 G	2.499 G	1.00 M	2.498978 G	-41.59	-28.59
2.499 G	2.500 G	200.00 k	2.499997 G	-39.26	-26.26
2.500 G	2.520 G	100.00 k	2.501080 G	19.28	-10.72

Date: 18.JAN.2014 08:16:39

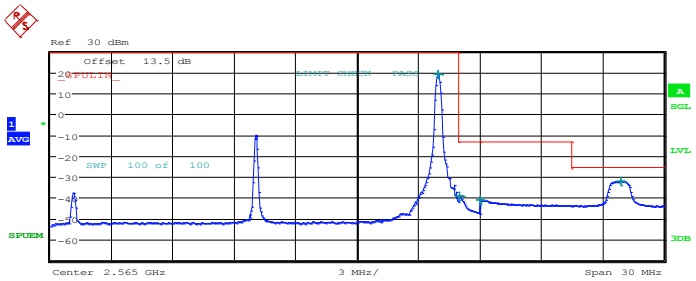
Lower Band Edge Plot for 16QAM-RB Size 100, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.490 G	2.494 G	1.00 M	2.494365 G	-29.78	-4.78
2.494 G	2.499 G	1.00 M	2.498933 G	-27.29	-14.29
2.499 G	2.500 G	200.00 k	2.499742 G	-33.27	-20.27
2.500 G	2.520 G	100.00 k	2.509140 G	0.09	-29.91

Date: 18.JAN.2014 08:18:03

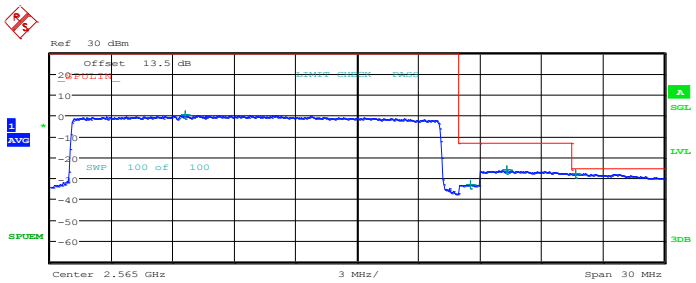
Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 99



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.550 G	2.570 G	100.00 k	2.568940 G	19.09	-10.91
2.570 G	2.571 G	200.00 k	2.570018 G	-39.05	-26.05
2.571 G	2.575 G	1.00 M	2.571004 G	-41.28	-28.28
2.575 G	2.580 G	1.00 M	2.577907 G	-31.98	-6.98

Date: 18.JAN.2014 08:25:02

Higher Band Edge Plot for 16QAM-RB Size 100, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
2.550 G	2.570 G	100.00 k	2.556580 G	0.03	-29.97
2.570 G	2.571 G	200.00 k	2.570548 G	-33.26	-20.26
2.571 G	2.575 G	1.00 M	2.572305 G	-26.23	-13.23
2.575 G	2.580 G	1.00 M	2.575693 G	-27.83	-2.83

Date: 18.JAN.2014 08:25:44

3.6 Conducted Spurious Emission Measurement

3.6.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 55 + 10 log (P) dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 9 kHz up to a frequency including its 10^{th} harmonic.

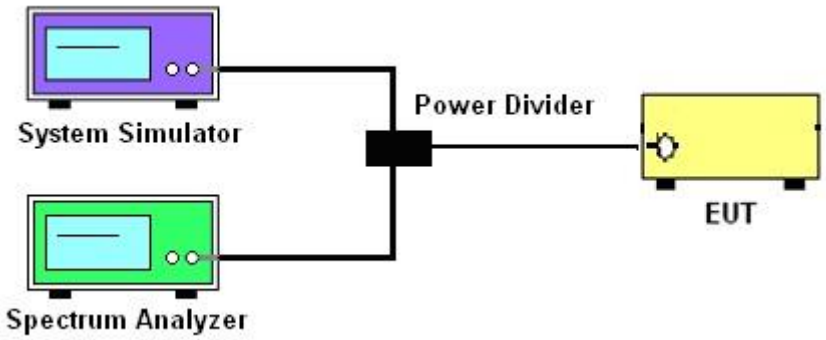
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

1. The EUT was connected to spectrum analyzer and base station via power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. The middle channel for the highest RF power within the transmitting frequency was measured.
4. The conducted spurious emission for the whole frequency range was taken.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)
   = P(W)- [55 + 10log(P)] (dB)
   = [30 + 10log(P)] (dBm) - [55 + 10log(P)] (dB)
   = -25dBm.

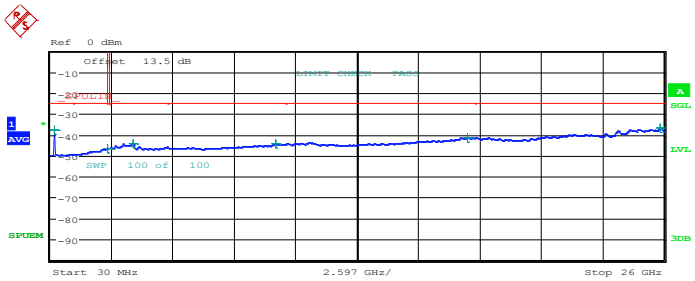
3.6.4 Test Setup



3.6.5 Test Result (Plots) of Conducted Spurious Emission

Band :	LTE Band 7	Channel :	CH20775 (Low)
Band Width :	5MHz		

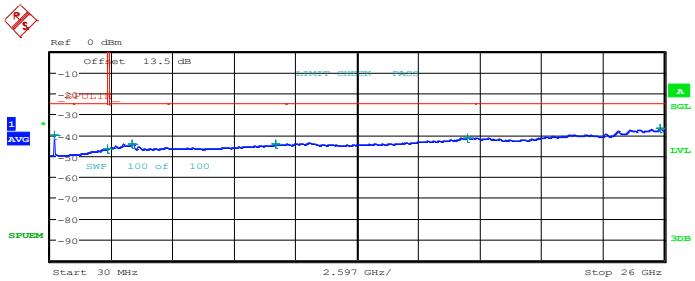
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	186.170000 M	-37.68	-12.68
1.000 G	2.490 G	1.00 M	2.448280 G	-46.65	-21.65
2.580 G	5.000 G	1.00 M	3.509280 G	-44.41	-19.41
5.000 G	10.000 G	1.00 M	9.560000 G	-44.59	-19.59
10.000 G	18.000 G	1.00 M	17.656000 G	-41.48	-16.48
18.000 G	26.000 G	1.00 M	25.832000 G	-36.99	-11.99

Date: 18.JAN.2014 07:26:03

16QAM (RB Size 1, RB Offset 0)

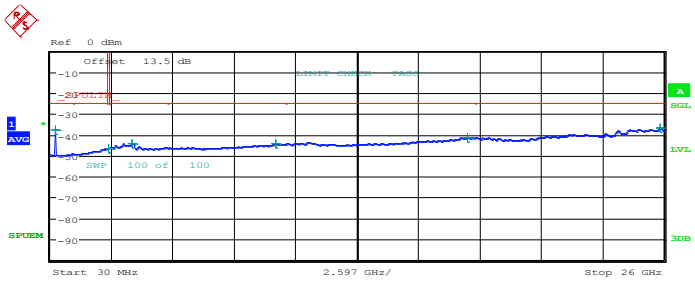


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	186.170000 M	-40.11	-15.11
1.000 G	2.490 G	1.00 M	2.464670 G	-46.67	-21.67
2.580 G	5.000 G	1.00 M	3.504440 G	-44.36	-19.36
5.000 G	10.000 G	1.00 M	9.560000 G	-44.58	-19.58
10.000 G	18.000 G	1.00 M	17.656000 G	-41.46	-16.46
18.000 G	26.000 G	1.00 M	25.832000 G	-36.96	-11.96

Date: 18.JAN.2014 07:27:02

Band :	LTE Band 7	Channel :	CH21100 (Middle)
Band Width :	5MHz		

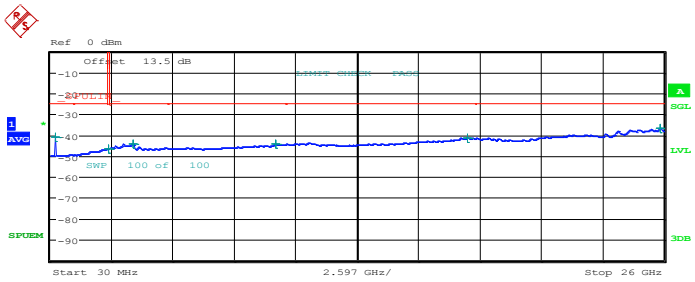
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	219.150000 M	-37.72	-12.72
1.000 G	2.490 G	1.00 M	2.469140 G	-46.72	-21.72
2.580 G	5.000 G	1.00 M	3.504440 G	-44.32	-19.32
5.000 G	10.000 G	1.00 M	9.540000 G	-44.58	-19.58
10.000 G	18.000 G	1.00 M	17.656000 G	-41.43	-16.43
18.000 G	26.000 G	1.00 M	25.832000 G	-37.03	-12.03

Date: 18.JAN.2014 07:28:51

16QAM (RB Size 1, RB Offset 0)

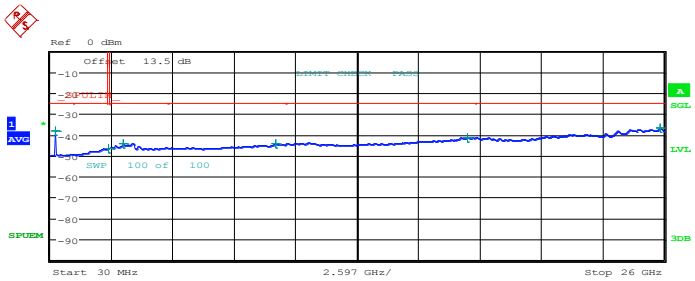


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	219.150000 M	-40.89	-15.89
1.000 G	2.490 G	1.00 M	2.472120 G	-46.59	-21.59
2.580 G	5.000 G	1.00 M	3.506860 G	-44.41	-19.41
5.000 G	10.000 G	1.00 M	9.560000 G	-44.57	-19.57
10.000 G	18.000 G	1.00 M	17.672000 G	-41.43	-16.43
18.000 G	26.000 G	1.00 M	25.848000 G	-37.05	-12.05

Date: 18.JAN.2014 07:29:50

Band :	LTE Band 7	Channel :	CH21425 (High)
Band Width :	5MHz		

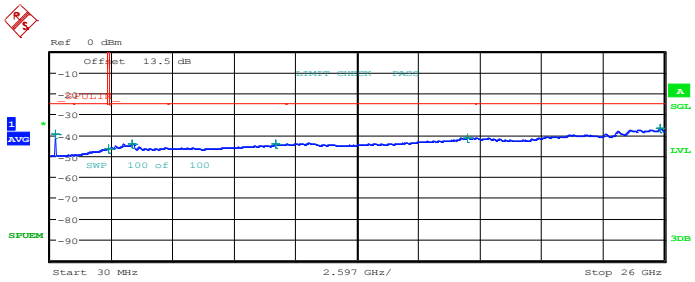
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	251.160000 M	-38.10	-13.10
1.000 G	2.490 G	1.00 M	2.472120 G	-46.64	-21.64
2.580 G	5.000 G	1.00 M	3.112400 G	-44.46	-19.46
5.000 G	10.000 G	1.00 M	9.545000 G	-44.53	-19.53
10.000 G	18.000 G	1.00 M	17.656000 G	-41.44	-16.44
18.000 G	26.000 G	1.00 M	25.824000 G	-36.96	-11.96

Date: 18.JAN.2014 08:42:40

16QAM (RB Size 1, RB Offset 0)

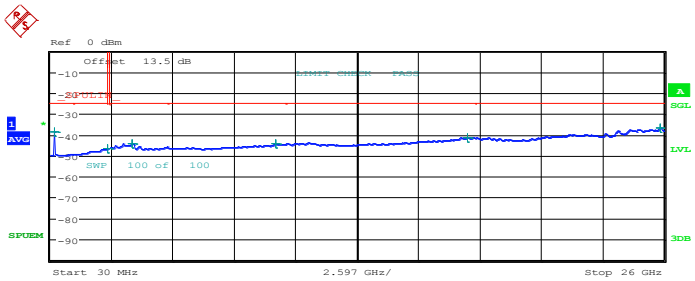


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	251.160000 M	-39.73	-14.73
1.000 G	2.490 G	1.00 M	2.488510 G	-46.69	-21.69
2.580 G	5.000 G	1.00 M	3.492340 G	-44.32	-19.32
5.000 G	10.000 G	1.00 M	9.560000 G	-44.58	-19.58
10.000 G	18.000 G	1.00 M	17.656000 G	-41.47	-16.47
18.000 G	26.000 G	1.00 M	25.832000 G	-37.05	-12.05

Date: 18.JAN.2014 07:46:06

Band :	LTE Band 7	Channel :	CH20800 (Low)
Band Width :	10MHz		

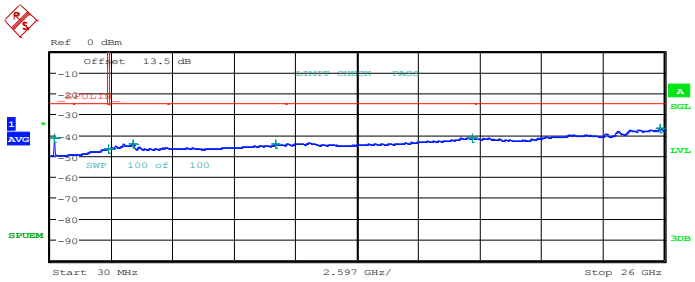
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	186.170000 M	-38.75	-13.75
1.000 G	2.490 G	1.00 M	2.458710 G	-46.65	-21.65
2.580 G	5.000 G	1.00 M	3.494760 G	-44.38	-19.38
5.000 G	10.000 G	1.00 M	9.570000 G	-44.54	-19.54
10.000 G	18.000 G	1.00 M	17.656000 G	-41.49	-16.49
18.000 G	26.000 G	1.00 M	25.840000 G	-37.02	-12.02

Date: 18.JAN.2014 07:50:48

16QAM (RB Size 1, RB Offset 0)

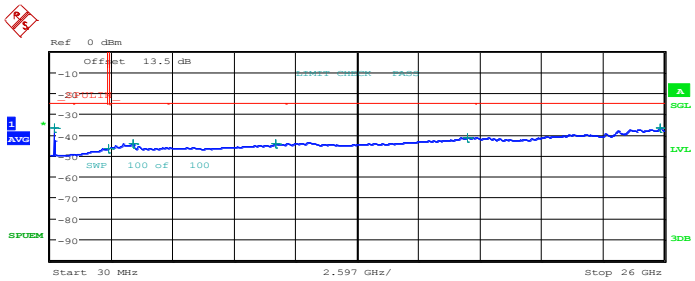


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	186.170000 M	-41.43	-16.43
1.000 G	2.490 G	1.00 M	2.485530 G	-46.72	-21.72
2.580 G	5.000 G	1.00 M	3.523800 G	-44.45	-19.45
5.000 G	10.000 G	1.00 M	9.545000 G	-44.57	-19.57
10.000 G	18.000 G	1.00 M	17.896000 G	-41.45	-16.45
18.000 G	26.000 G	1.00 M	25.824000 G	-36.93	-11.93

Date: 18.JAN.2014 07:51:47

Band :	LTE Band 7	Channel :	CH21100 (Middle)
Band Width :	10MHz		

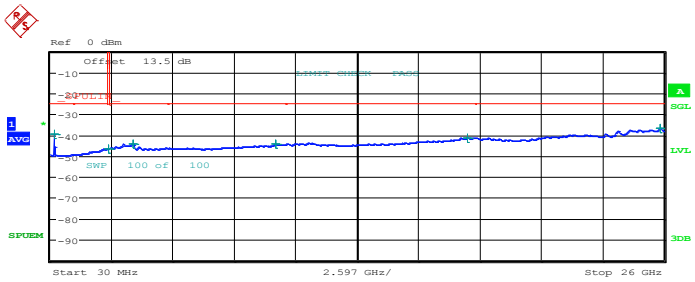
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	216.240000 M	-36.72	-11.72
1.000 G	2.490 G	1.00 M	2.488510 G	-46.77	-21.77
2.580 G	5.000 G	1.00 M	3.511700 G	-44.37	-19.37
5.000 G	10.000 G	1.00 M	9.560000 G	-44.57	-19.57
10.000 G	18.000 G	1.00 M	17.664000 G	-41.43	-16.43
18.000 G	26.000 G	1.00 M	25.832000 G	-36.97	-11.97

Date: 18.JAN.2014 07:53:36

16QAM (RB Size 1, RB Offset 0)

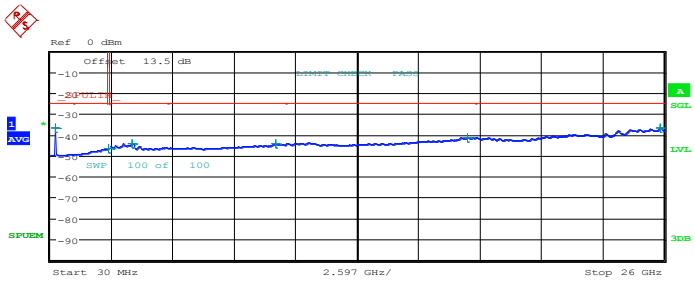


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	216.240000 M	-39.86	-14.86
1.000 G	2.490 G	1.00 M	2.485530 G	-46.79	-21.79
2.580 G	5.000 G	1.00 M	3.506860 G	-44.46	-19.46
5.000 G	10.000 G	1.00 M	9.550000 G	-44.54	-19.54
10.000 G	18.000 G	1.00 M	17.664000 G	-41.50	-16.50
18.000 G	26.000 G	1.00 M	25.832000 G	-36.94	-11.94

Date: 18.JAN.2014 07:54:35

Band :	LTE Band 7	Channel :	CH21400 (High)
Band Width :	10MHz		

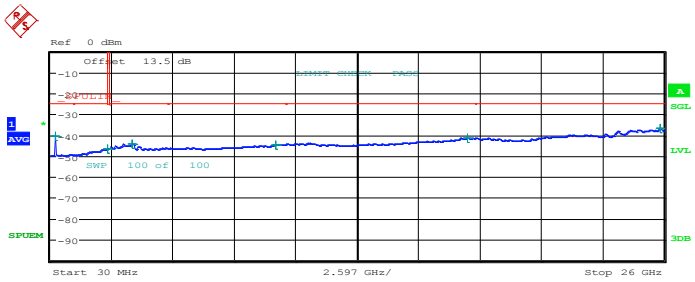
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	246.310000 M	-37.05	-12.05
1.000 G	2.490 G	1.00 M	2.488510 G	-46.67	-21.67
2.580 G	5.000 G	1.00 M	3.502020 G	-44.40	-19.40
5.000 G	10.000 G	1.00 M	9.550000 G	-44.49	-19.49
10.000 G	18.000 G	1.00 M	17.680000 G	-41.45	-16.45
18.000 G	26.000 G	1.00 M	25.832000 G	-36.98	-11.98

Date: 18.JAN.2014 07:59:13

16QAM (RB Size 1, RB Offset 0)

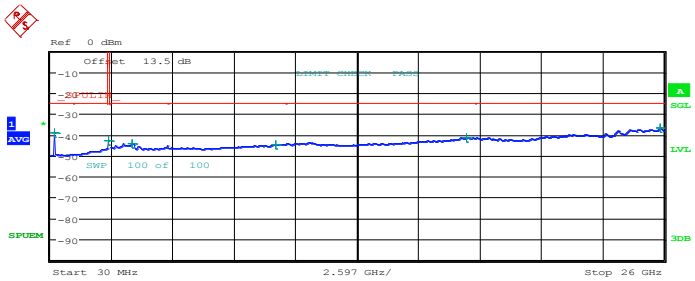


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	246.310000 M	-40.59	-15.59
1.000 G	2.490 G	1.00 M	2.464670 G	-46.74	-21.74
2.580 G	5.000 G	1.00 M	3.494760 G	-44.40	-19.40
5.000 G	10.000 G	1.00 M	9.565000 G	-44.61	-19.61
10.000 G	18.000 G	1.00 M	17.664000 G	-41.43	-16.43
18.000 G	26.000 G	1.00 M	25.832000 G	-37.00	-12.00

Date: 18.JAN.2014 08:00:12

Band :	LTE Band 7	Channel :	CH20825 (Low)
Band Width :	15MHz		

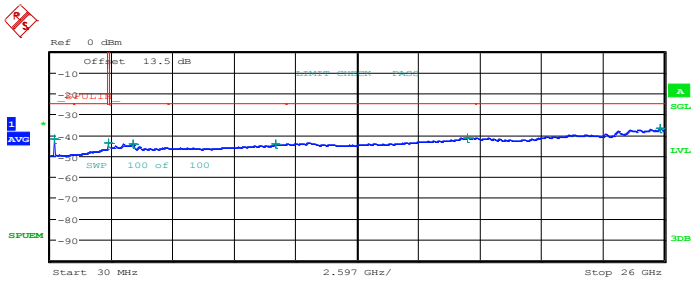
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	187.140000 M	-39.38	-14.38
1.000 G	2.490 G	1.00 M	2.488510 G	-42.81	-17.81
2.580 G	5.000 G	1.00 M	3.487500 G	-44.37	-19.37
5.000 G	10.000 G	1.00 M	9.570000 G	-44.62	-19.62
10.000 G	18.000 G	1.00 M	17.648000 G	-41.42	-16.42
18.000 G	26.000 G	1.00 M	25.832000 G	-36.88	-11.88

Date: 18.JAN.2014 08:04:55

16QAM (RB Size 1, RB Offset 0)

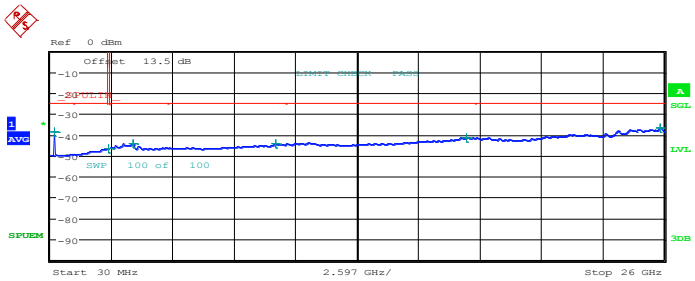


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	187.140000 M	-41.94	-16.94
1.000 G	2.490 G	1.00 M	2.488510 G	-44.07	-19.07
2.580 G	5.000 G	1.00 M	3.521380 G	-44.36	-19.36
5.000 G	10.000 G	1.00 M	9.550000 G	-44.60	-19.60
10.000 G	18.000 G	1.00 M	17.680000 G	-41.51	-16.51
18.000 G	26.000 G	1.00 M	25.848000 G	-37.02	-12.02

Date: 18.JAN.2014 08:05:54

Band :	LTE Band 7	Channel :	CH21100 (Middle)
Band Width :	15MHz		

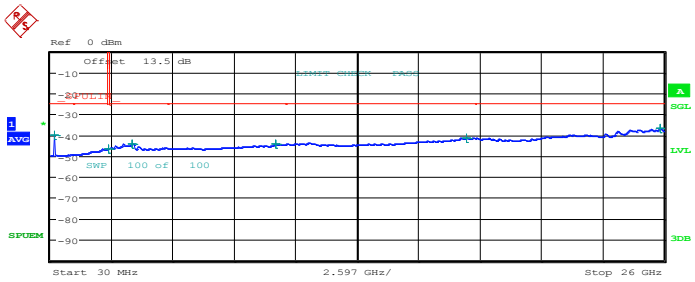
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	214.300000 M	-38.61	-13.61
1.000 G	2.490 G	1.00 M	2.475100 G	-46.67	-21.67
2.580 G	5.000 G	1.00 M	3.511700 G	-44.40	-19.40
5.000 G	10.000 G	1.00 M	9.545000 G	-44.56	-19.56
10.000 G	18.000 G	1.00 M	17.648000 G	-41.50	-16.50
18.000 G	26.000 G	1.00 M	25.840000 G	-36.98	-11.98

Date: 18.JAN.2014 08:07:43

16QAM (RB Size 1, RB Offset 0)

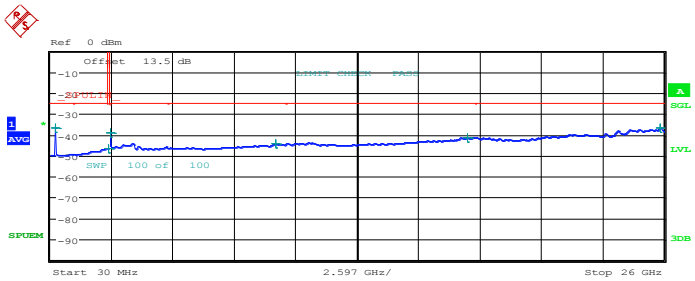


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	214.300000 M	-40.20	-15.20
1.000 G	2.490 G	1.00 M	2.487020 G	-46.66	-21.66
2.580 G	5.000 G	1.00 M	3.502020 G	-44.32	-19.32
5.000 G	10.000 G	1.00 M	9.545000 G	-44.53	-19.53
10.000 G	18.000 G	1.00 M	17.648000 G	-41.47	-16.47
18.000 G	26.000 G	1.00 M	25.832000 G	-36.99	-11.99

Date: 18.JAN.2014 08:08:42

Band :	LTE Band 7	Channel :	CH21375 (High)
Band Width :	15MHz		

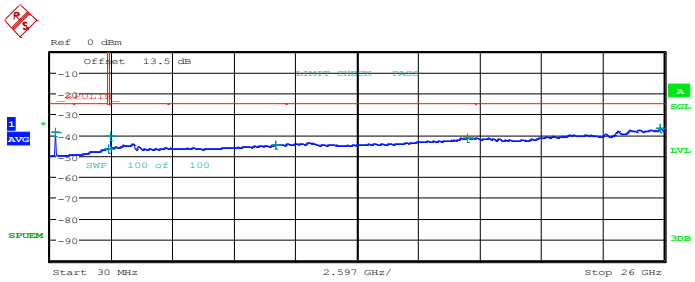
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	241.460000 M	-36.93	-11.93
1.000 G	2.490 G	1.00 M	2.484040 G	-46.72	-21.72
2.580 G	5.000 G	1.00 M	2.582420 G	-39.12	-14.12
5.000 G	10.000 G	1.00 M	9.555000 G	-44.57	-19.57
10.000 G	18.000 G	1.00 M	17.656000 G	-41.46	-16.46
18.000 G	26.000 G	1.00 M	25.832000 G	-37.00	-12.00

Date: 18.JAN.2014 08:13:21

16QAM (RB Size 1, RB Offset 0)

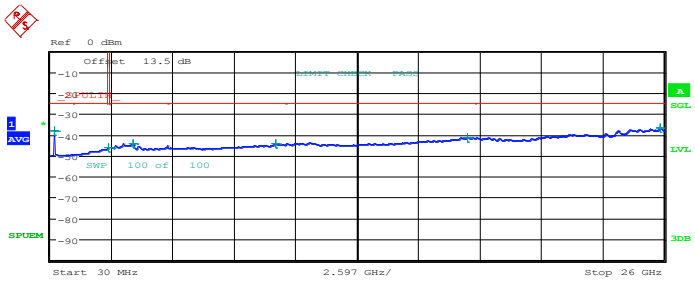


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	241.460000 M	-38.76	-13.76
1.000 G	2.490 G	1.00 M	2.479570 G	-46.71	-21.71
2.580 G	5.000 G	1.00 M	2.582420 G	-40.49	-15.49
5.000 G	10.000 G	1.00 M	9.545000 G	-44.62	-19.62
10.000 G	18.000 G	1.00 M	17.664000 G	-41.45	-16.45
18.000 G	26.000 G	1.00 M	25.840000 G	-36.99	-11.99

Date: 18.JAN.2014 08:14:19

Band :	LTE Band 7	Channel :	CH20850 (Low)
Band Width :	20MHz		

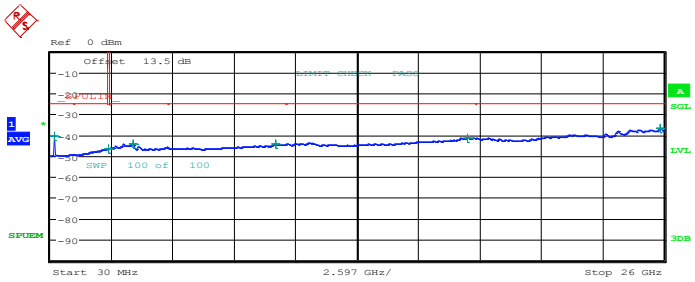
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	187.140000 M	-38.22	-13.22
1.000 G	2.490 G	1.00 M	2.484040 G	-46.37	-21.37
2.580 G	5.000 G	1.00 M	3.518960 G	-44.34	-19.34
5.000 G	10.000 G	1.00 M	9.565000 G	-44.55	-19.55
10.000 G	18.000 G	1.00 M	17.664000 G	-41.47	-16.47
18.000 G	26.000 G	1.00 M	25.840000 G	-36.97	-11.97

Date: 18.JAN.2014 08:19:02

16QAM (RB Size 1, RB Offset 0)

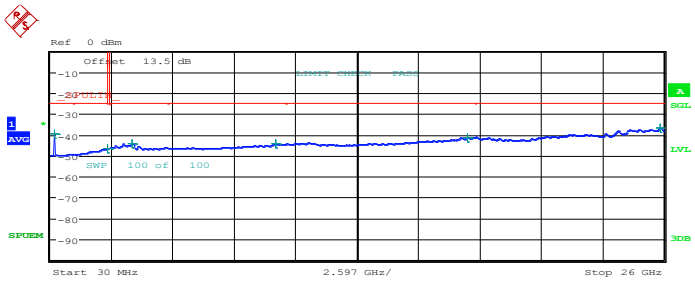


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	187.140000 M	-40.67	-15.67
1.000 G	2.490 G	1.00 M	2.484040 G	-46.67	-21.67
2.580 G	5.000 G	1.00 M	3.511700 G	-44.42	-19.42
5.000 G	10.000 G	1.00 M	9.545000 G	-44.59	-19.59
10.000 G	18.000 G	1.00 M	17.664000 G	-41.47	-16.47
18.000 G	26.000 G	1.00 M	25.832000 G	-36.93	-11.93

Date: 18.JAN.2014 08:20:01

Band :	LTE Band 7	Channel :	CH21100 (Middle)
Band Width :	20MHz		

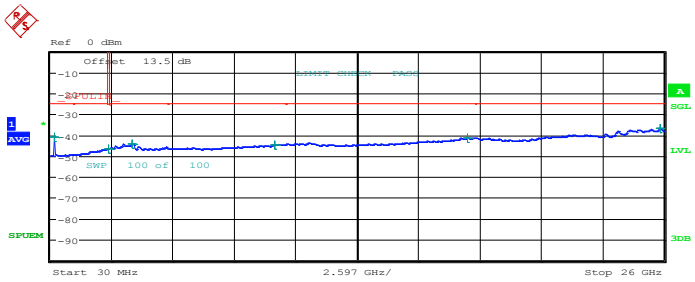
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	212.360000 M	-39.53	-14.53
1.000 G	2.490 G	1.00 M	2.457220 G	-46.77	-21.77
2.580 G	5.000 G	1.00 M	3.492340 G	-44.38	-19.38
5.000 G	10.000 G	1.00 M	9.570000 G	-44.60	-19.60
10.000 G	18.000 G	1.00 M	17.664000 G	-41.47	-16.47
18.000 G	26.000 G	1.00 M	25.840000 G	-37.05	-12.05

Date: 18.JAN.2014 08:21:49

16QAM (RB Size 1, RB Offset 0)

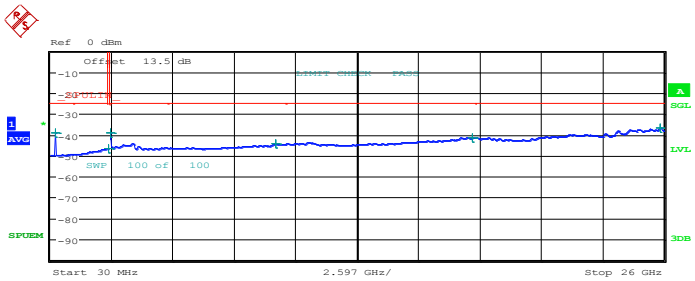


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	212.360000 M	-41.03	-16.03
1.000 G	2.490 G	1.00 M	2.485530 G	-46.57	-21.57
2.580 G	5.000 G	1.00 M	3.494760 G	-44.42	-19.42
5.000 G	10.000 G	1.00 M	9.520000 G	-44.63	-19.63
10.000 G	18.000 G	1.00 M	17.672000 G	-41.46	-16.46
18.000 G	26.000 G	1.00 M	25.824000 G	-37.02	-12.02

Date: 18.JAN.2014 08:22:48

Band :	LTE Band 7	Channel :	CH21350 (High)
Band Width :	20MHz		

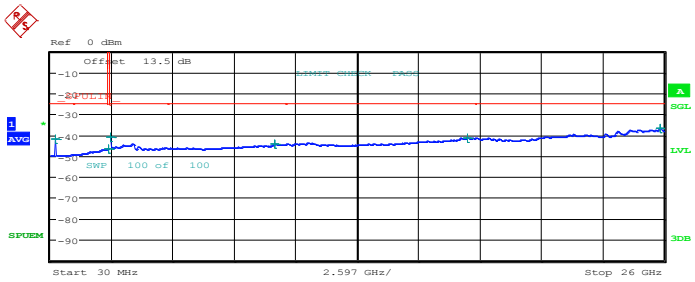
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	236.610000 M	-39.13	-14.13
1.000 G	2.490 G	1.00 M	2.485530 G	-46.68	-21.68
2.580 G	5.000 G	1.00 M	2.584840 G	-39.36	-14.36
5.000 G	10.000 G	1.00 M	9.545000 G	-44.51	-19.51
10.000 G	18.000 G	1.00 M	17.904000 G	-41.48	-16.48
18.000 G	26.000 G	1.00 M	25.840000 G	-36.98	-11.98

Date: 18.JAN.2014 08:27:25

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	236.610000 M	-42.18	-17.18
1.000 G	2.490 G	1.00 M	2.481060 G	-46.56	-21.56
2.580 G	5.000 G	1.00 M	2.584840 G	-41.06	-16.06
5.000 G	10.000 G	1.00 M	9.530000 G	-44.59	-19.59
10.000 G	18.000 G	1.00 M	17.664000 G	-41.50	-16.50
18.000 G	26.000 G	1.00 M	25.840000 G	-36.98	-11.98

Date: 18.JAN.2014 08:28:24

3.7 Radiated Spurious Emission Measurement

3.7.1 Description of Radiated Spurious Emission

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 55 + 10 log (P) dB.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

3.7.2 Measuring Instruments

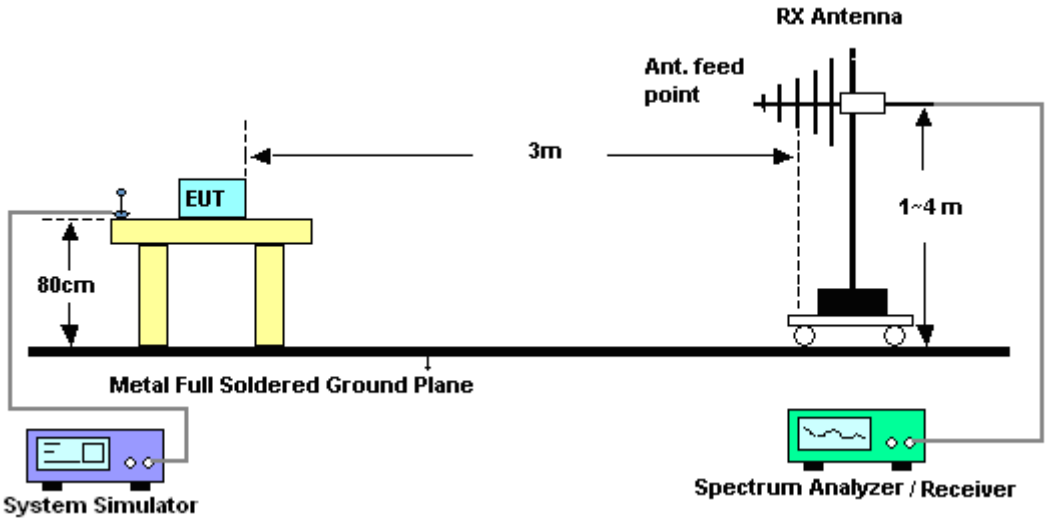
The measuring equipment is listed in the section 4 of this test report.

3.7.3 Test Procedures

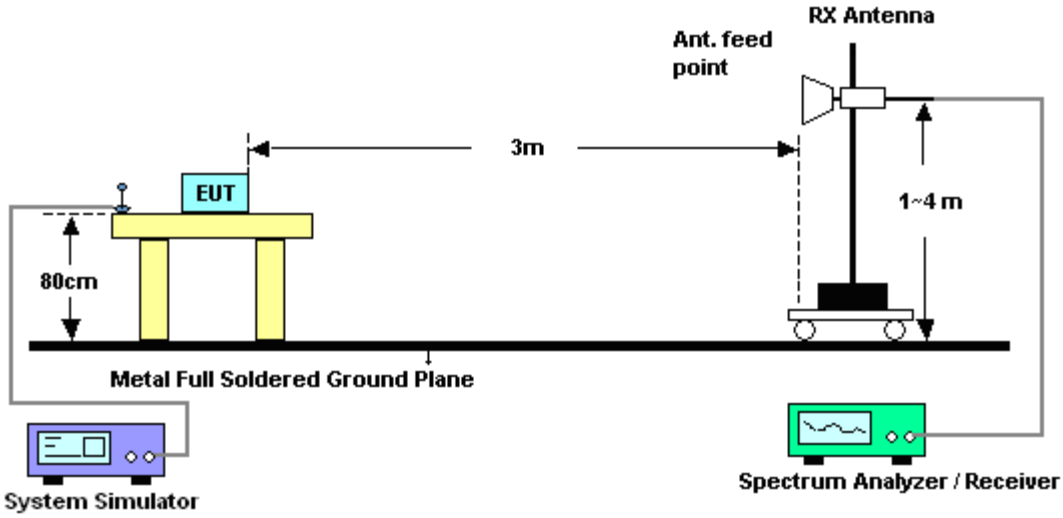
1. The EUT was placed on a rotatable wooden table with 0.8 meter above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
    The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)
11. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
12. ERP (dBm) = EIRP - 2.15

3.7.4 Test Setup

For radiated emissions from 30MHz to 1GHz

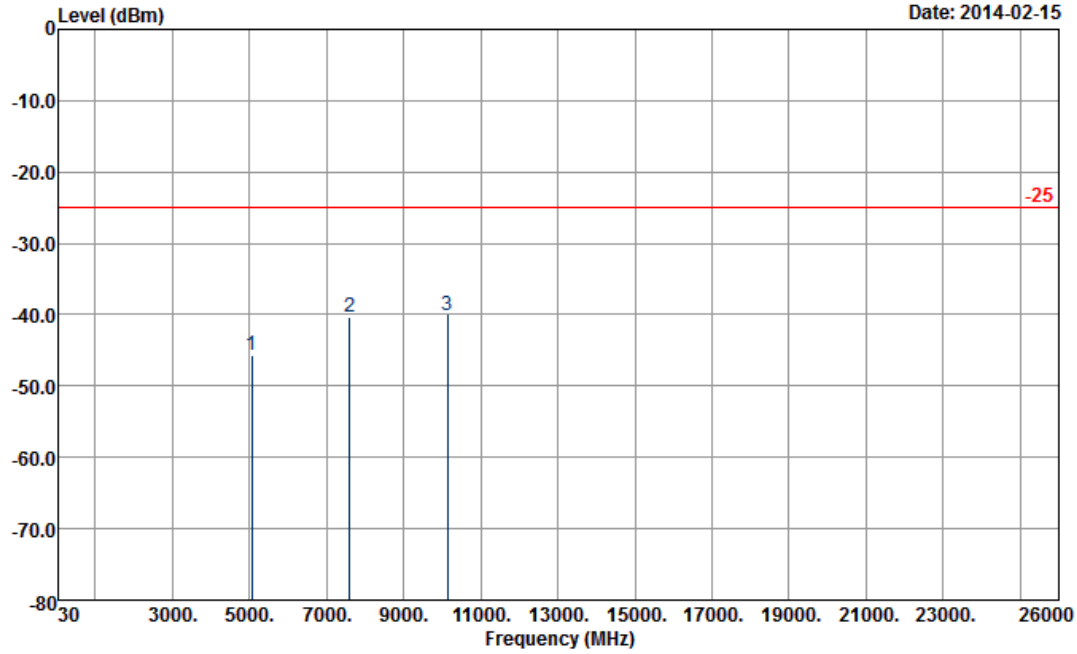


For radiated emissions above 1GHz



3.7.5 Test Result of Field Strength of Spurious Radiated

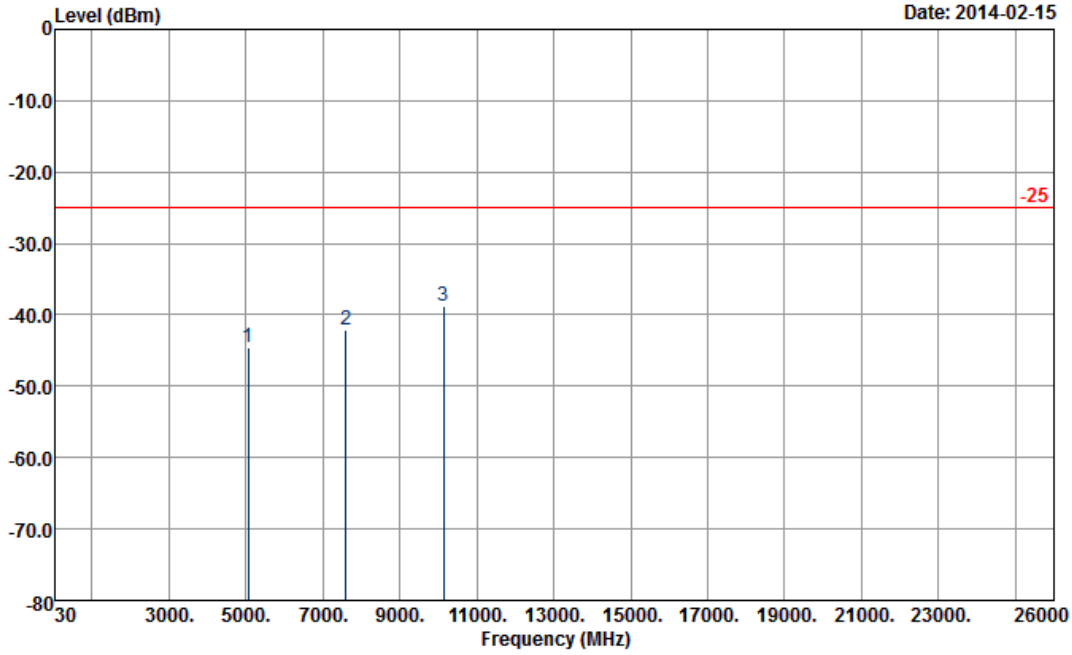
Band :	LTE Band 7	**Temperature :**	20~22°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	43~45%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -25 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5065	-45.61	-25	-20.61	-64.1	-49.1	6.86	10.35	H	Pass
7598	-40.31	-25	-15.31	-67.61	-43.2	9.34	12.23	H	Pass
10130	-40.00	-25	-15.00	-68.74	-44.1	8.64	12.74	H	Pass

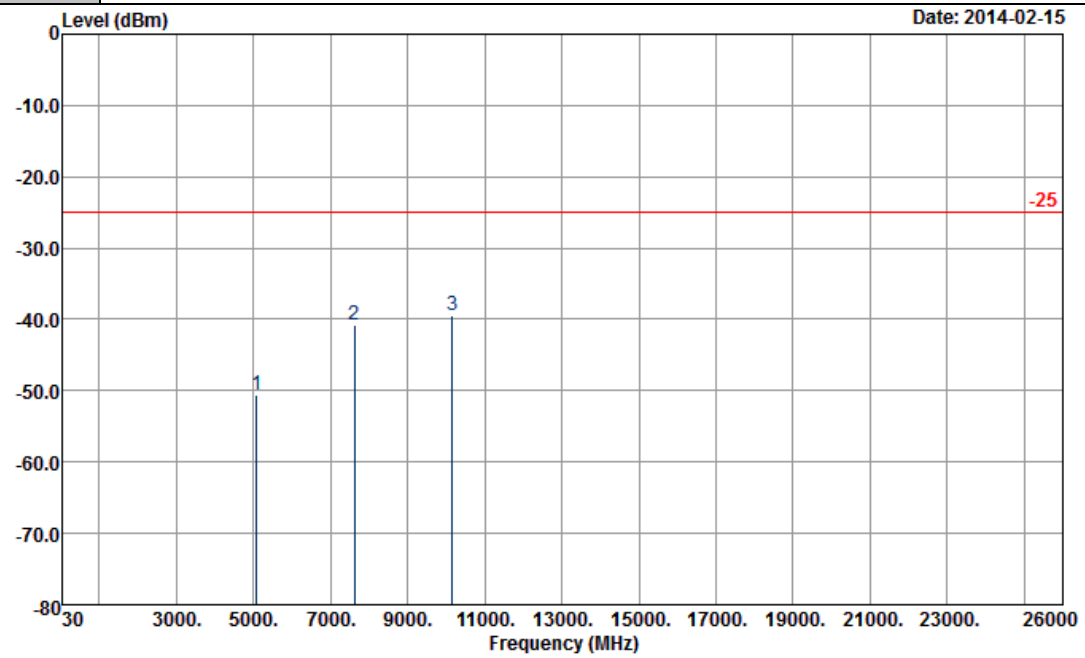
Band :	LTE Band 7	Temperature :	20~22°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	Relative Humidity :	43~45%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -25 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5065	-44.61	-25	-19.61	-63.97	-48.1	6.86	10.35	V	Pass
7598	-42.11	-25	-17.11	-62.09	-45	9.34	12.23	V	Pass
10130	-38.70	-25	-13.70	-66.61	-42.8	8.64	12.74	V	Pass

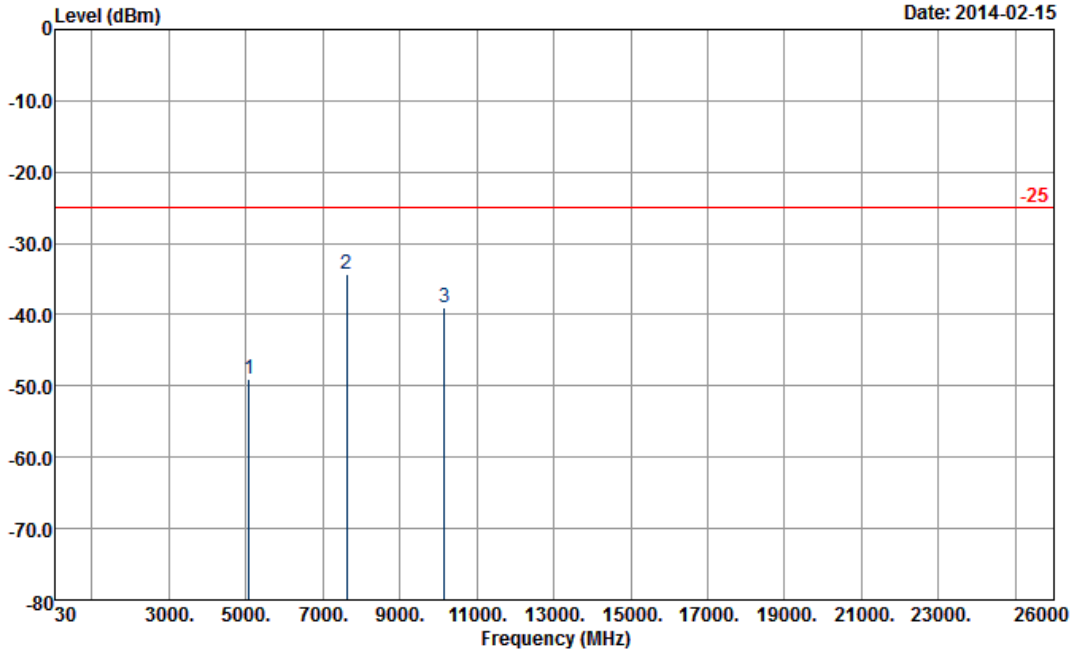
Band :	LTE Band 7	**Temperature :**	20~22°C
Test Mode :	10MHz QPSK RB Size 1 Offset 49	**Relative Humidity :**	43~45%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -25 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5080	-50.61	-25	-25.61	-69	-54.1	6.86	10.35	H	Pass
7620	-40.71	-25	-15.71	-67.54	-43.6	9.34	12.23	H	Pass
10160	-39.40	-25	-14.40	-69.11	-43.5	8.64	12.74	H	Pass

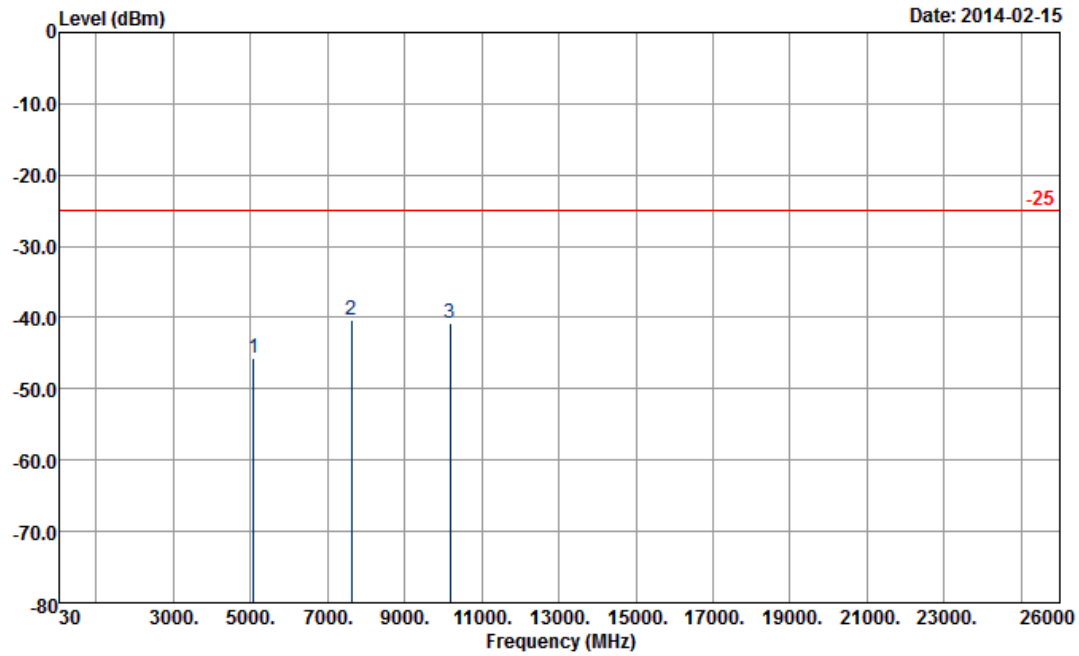
Band :	LTE Band 7	Temperature :	20~22°C
Test Mode :	10MHz QPSK RB Size 1 Offset 49	Relative Humidity :	43~45%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -25 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5080	-49.01	-25	-24.01	-68.23	-52.5	6.86	10.35	V	Pass
7620	-34.21	-25	-9.21	-61.12	-37.1	9.34	12.23	V	Pass
10160	-39.00	-25	-14.00	-67.87	-43.1	8.64	12.74	V	Pass

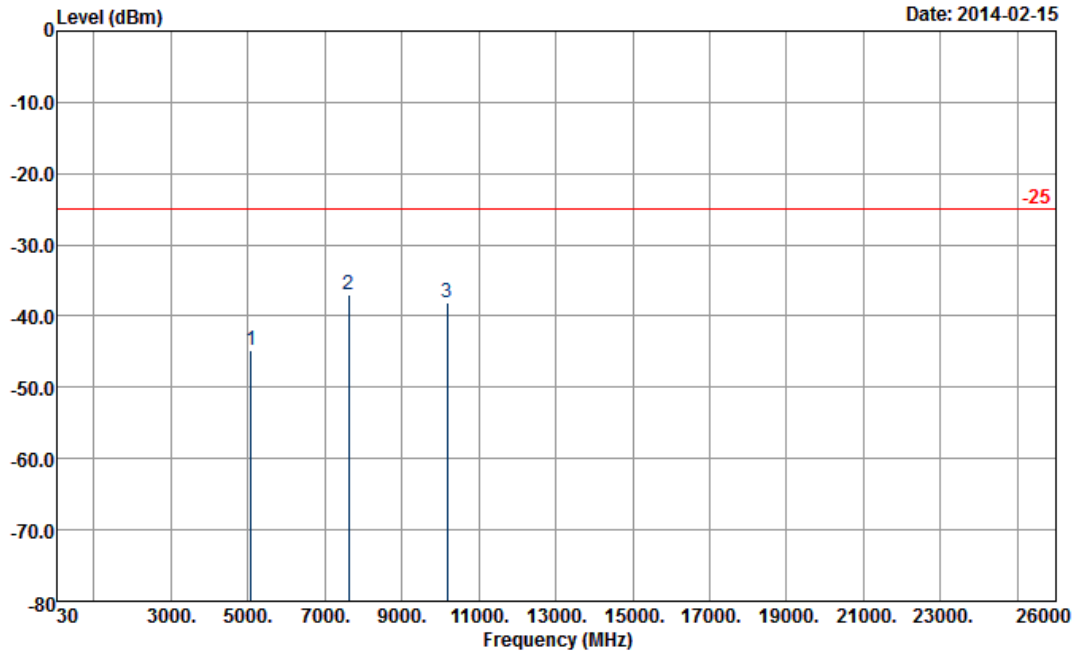
Band :	LTE Band 7	**Temperature :**	20~22°C
Test Mode :	15MHz QPSK RB Size 1 Offset 74	**Relative Humidity :**	43~45%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -25 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5084	-45.79	-25	-20.79	-63.66	-49.28	6.86	10.35	H	Pass
7624	-40.44	-25	-15.44	-66.99	-43.33	9.34	12.23	H	Pass
10168	-40.75	-25	-15.75	-68.95	-44.85	8.64	12.74	H	Pass

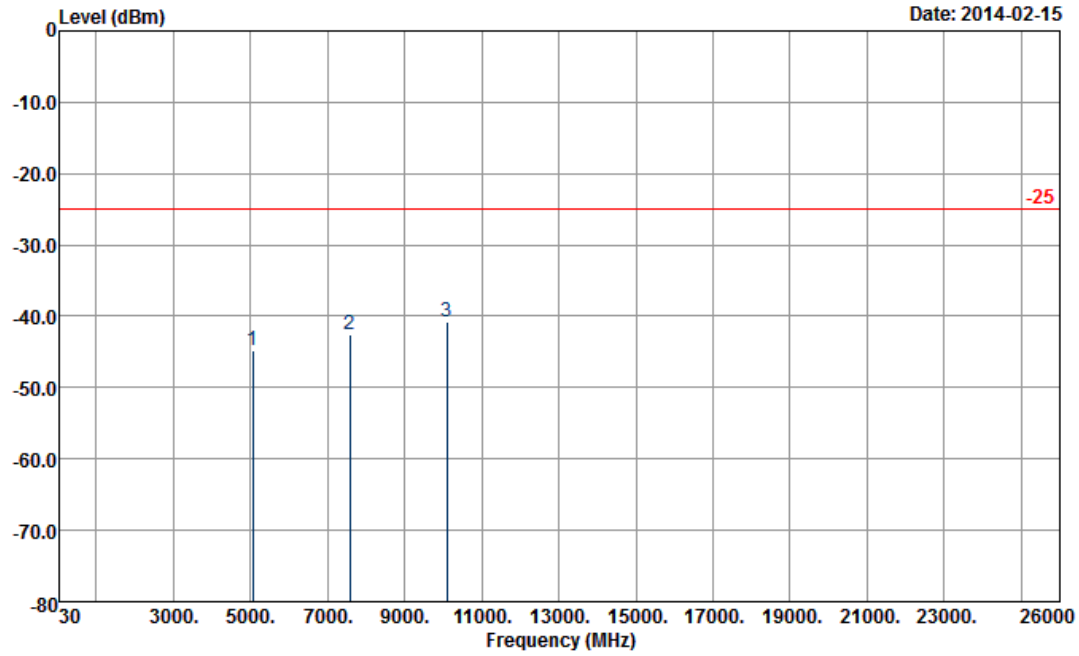
Band :	LTE Band 7	Temperature :	20~22°C
Test Mode :	15MHz QPSK RB Size 1 Offset 74	Relative Humidity :	43~45%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -25 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5084	-44.74	-25	-19.74	-63.04	-48.23	6.86	10.35	V	Pass
7624	-37.07	-25	-12.07	-63.54	-39.96	9.34	12.23	V	Pass
10168	-38.19	-25	-13.19	-66.46	-42.29	8.64	12.74	V	Pass

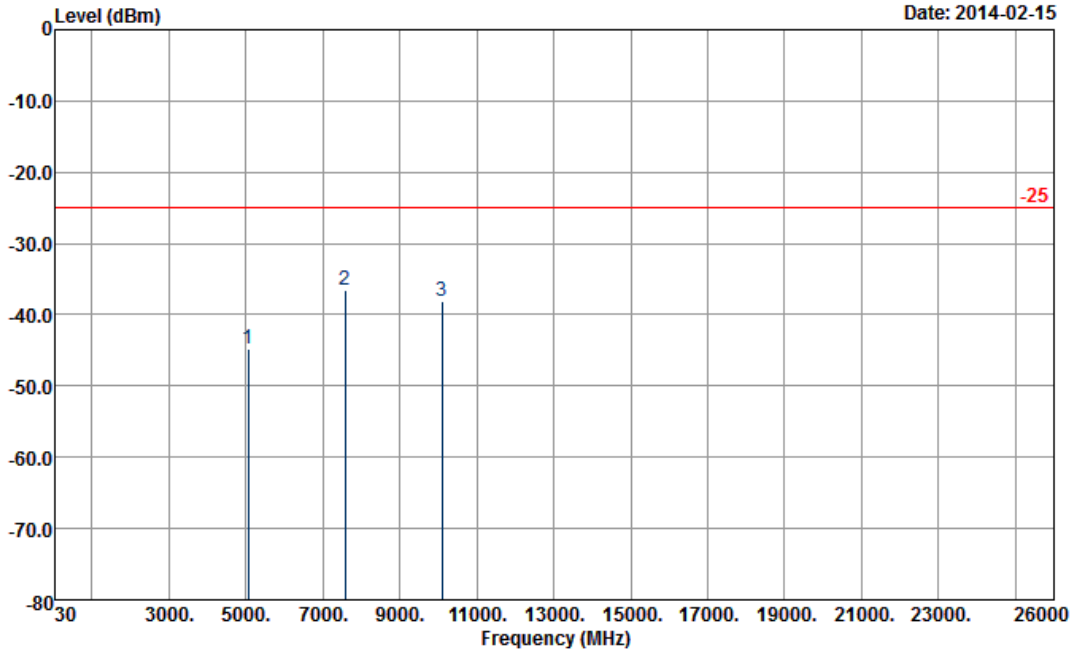
Band :	LTE Band 7	**Temperature :**	20~22°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	43~45%
Test Engineer :	Eric Shih	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -25 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5052	-44.75	-25	-19.75	-62.98	-48.24	6.86	10.35	H	Pass
7578	-42.50	-25	-17.50	-69.06	-45.39	9.34	12.23	H	Pass
10104	-40.71	-25	-15.71	-69.19	-44.81	8.64	12.74	H	Pass

Band :	LTE Band 7	Temperature :	20~22°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	Relative Humidity :	43~45%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -25 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5052	-44.84	-25	-19.84	-62.25	-48.33	6.86	10.35	V	Pass
7578	-36.55	-25	-11.55	-63.12	-39.44	9.34	12.23	V	Pass
10104	-38.12	-25	-13.12	-66.27	-42.22	8.64	12.74	V	Pass

3.8 Frequency Stability Measurement

3.8.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency.

3.8.2 Measuring Instruments

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

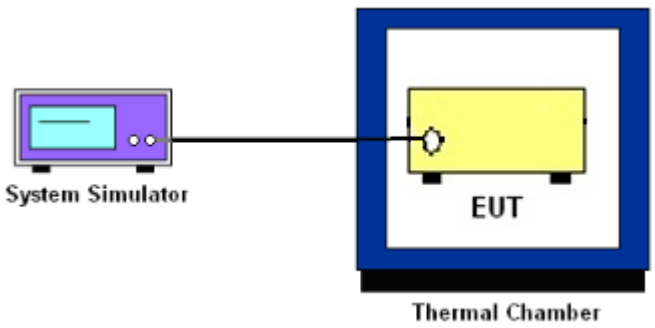
3.8.3 Test Procedures for Temperature Variation

1. The EUT was set up in the thermal chamber and connected with the base station.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.8.4 Test Procedures for Voltage Variation

1. The EUT was placed in a temperature chamber at 25±5° C and connected with the base station.
2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

3.8.5 Test Setup



3.8.6 Test Result of Temperature Variation (FCC)

Band :	LTE Band 7 (QPSK)	Limit (ppm) :	2.5

Temperature (°C)	BW 10MHz	Result
	Deviation (ppm)	
50	0.0015	PASS
40	0.0002	
30	0.0012	
20	0.0036	
10	0.0017	
0	0.0023	
-10	0.0049	
-20	0.0030	
-30	0.0034	

3.8.7 Test Result of Voltage Variation (FCC)

Band	Bandwidth	Voltage (Volt)	Deviation (ppm)	Limit (ppm)	Result
LTE Band 7	10M	4.35	0.0006	2.5	PASS
		Normal	0.0006		
		3.60	0.0000		

Remark:
1. Normal Voltage = 3.80V.
2. The manufacturer declared that the EUT could work properly between voltage 3.60V ~ 4.35V.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 07, 2013	Jan. 18, 2014	Jun. 06, 2014	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D3SP	TBN-930701	N/A	Jul. 19, 2013	Jan. 18, 2014	Jul. 18, 2014	Conducted (TH02-HY)
LTE Base Station	Anritsu	MT8820C	6201026480	30MHz~2.7GHz SISO	Jan. 07, 2013	Jan. 18, 2014	Jan. 06, 2015	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9KHz ~ 30GHz	Nov. 20, 2013	Feb. 15, 2014	Nov. 19, 2014	Radiation (03CH07-HY
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Oct. 10, 2013	Feb. 15, 2014	Oct. 09, 2014	Radiation (03CH07-HY
Double Ridge Horn Antenna	ESCO	3117	75962	1GHz~18GHz	Aug. 22, 2013	Feb. 15, 2014	Aug. 21, 2014	Radiation (03CH07-HY
Preamplifier	COM-POWER	PA-103A	161241	30MHz~1GHz	Feb. 26, 2013	Feb. 15, 2014	Feb. 25, 2014	Radiation (03CH07-HY
Preamplifier	Agilent	8449B	3008A02362	1 GHz~26.5 GHz	Nov. 29, 2013	Feb. 15, 2014	Nov. 28, 2014	Radiation (03CH07-HY
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 03, 2013	Feb. 15, 2014	Oct. 02, 2014	Radiation (03CH07-HY
Turn Table	ChainTek	ChainTek 3000	N/A	0 ~ 360 degree	N/A	Feb. 15, 2014	N/A	Radiation (03CH07-HY
Antenna Mast	ChainTek	M-400-0	114/8000604/L	N/A	N/A	Feb. 15, 2014	N/A	Radiation (03CH07-HY

5 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.50**