FCC/IC Test Report

FOR:

Intel Corporation

Model Number: DZ110

Product Description: Smartphone with GSM/GPRS/EDGE, UMTS/HSPA+, LTE, Wi-Fi, BT, NFC and GPS Radios

FCC ID: O2Z-DZ10
IC ID: 1000W – DZ110

47 CFR Part 2, 22, 24, 27

RSS-GEN Issue 3, RSS-132 Issue 3, RSS-133 Issue 6, RSS-139 Issue 2, RSS-130 Issue 1, RSS-199 Issue 1

TEST REPORT #: EMC_INTEL_039_14001_FCC22_24_27_LTE_WWAN_Rev1
DATE: 2014-06-30

FCC:
A2LA Accredited

IC recognized #
3462B-1

***CETECOM* Inc.**
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Table of Contents

1 Assessment

The following device was evaluated against the applicable criteria specified in FCC rules parts 2, 22, 24 and 27 of Title 47 of the Code of Federal Regulations and in Industry Canada Standards RSS-Gen, RSS-132, RSS-133, RSS -139, RSS-199.
No deviations were ascertained during the course of the tests performed.

Company	Description	Model #
Intel Corp	Smartphone with GSM/GPRS/EDGE, UMTS/HSPA+, LTE, Wi-Fi, BT, NFC and GPS Radios	DZ110

Responsible for Testing Laboratory:

Date	Section	Name	Signature
2014-06-30	Compliance	Josie Sabado (Test Lab Manager)	Signing on the behalf of Franz Engert (Compliance Manager)

Responsible for the Report:

Date	Section	Name	Signature
2013-06-30	Compliance	Danh Le (EMC Engineer)	Digitally signed by Danh Le DN: cn=Danh Le, o=Cetecom, ou=Compliance, email=danh.le@cetecom.com, c=US Date: 2014.07.07 23:28:10 -07'00'

The test results of this test report relate exclusively to the test item specified in Section3.
CETECOM Inc. USA does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of CETECOM Inc. USA.

2 Administrative Data

1.1 Identification of the Testing Laboratory Issuing the Test Report

Company Name:	CETECOM Inc.
Department:	Compliance
Address:	411 Dixon Landing Road Milpitas, CA 95035 U.S.A.
Telephone:	+1 (408) 586 6200
Fax:	+1 (408) 586 6299
Test Lab Manager:	Franz Engert
Responsible Project Leader:	Danh Le

1.2 Identification of the Client

Applicant's Name:	Intel Corporation
Street Address:	2200 Mission College Blvd
City/Zip Code	Santa Clara / 95054
Country	USA
Contact Person:	Christine Ryan
Phone No.	408 300 2167
Fax:	408-765-2336
e-mail:	Christine.m.ryan@intel.com

1.3 Identification of the Manufacturer

Manufacturer's Name:	Same as client.
Manufacturers Address:	
City/Zip Code	
Country	

3 Equipment under Test (EUT)

1.4 Specification of the Equipment under Test

Marketing Name:	Intel 4.5-inch Premium LTE Smartphone
Model Number:	DZ110
FCC-ID :	O2Z-DZ110
IC ID:	1000W-DZ110
Product Description:	Smartphone with GSM/GPRS/EDGE, UMTS/HSPA+, LTE, Wi-Fi, BT, NFC and GPS Radios
Operating Frequency Ranges (MHz) / Channels:	LTE Band 17 (700 MHz): 710 -716 MHz LTE Band 5 (850 MHz): 824.2-848.8 MHz LTE Band 2 (1900 MHz): 1850.2-1909.8 MHz LTE Band 4 (1700 MHz): 1712.4 -1752.5 MHz LTE Band 7 (2500MHz): 2500 MHz – 2570 MHz
Type(s) of Modulation:	QPSK, 16 QAM and 64 QAM
Antenna info (antenna presented for testing with the development board):	LTE Band 2 (1900): Antenna gain = 2.8dBi LTE Band 4 (1700): Antenna gain = 1.6dBi LTE Band 5 (850): Antenna gain = -4.1dBi LTE Band 17 (700): Antenna gain = -10.5dBi LTE Band 7 (2500): Antenna gain = 0.1dBi
Rated Operating Voltage Range:	AA lithium battery pack (dedicated) Vmin: 3.6V/ Vnom: 3.8V / Vmax: 4.2V
Rated Operating Temperature Range:	–10°C ~ +55°C
Test Sample Status:	Prototype
Other Radios included:	Intel XMM 7160 Radio Module GSM 850/900/1800/1900MHz GPRS / EDGE Multi-slot class 33 operation WCDMA / HSPA+ 850/900/1700/1900/2100 MHz LTE 700/800/850/900/1700/1800/1900/2100/2600 WLAN 802.11a/ac/b/g/n, BT Basic/EDR/LE (2.4 GHz and 5GHz band of operation) NFC NXP PN547 13.56 MHz GPS 1575.42 MHz

1.5 Identification of the Equipment under Test (EUT)

EUT #	Serial Number	Sample	HW/SW Version
1	INV133600934	Radiated/Conducted	PR2D.2

1.6 Identification of Accessory equipment

AE #	Type	Manufacturer	Model	Part Number
1	AC adapter	Salcomp	SC1402	1322100099636

1.7 Environmental conditions during Test

The following environmental conditions were maintained during the course of testing:

Ambient Temperature: 20-25°C
Relative Humidity: 40-60%

1.8 Dates of Testing

02/13/2014 – 04/01/2014

4 Subject of Investigation

The objective of the measurements applied by CETECOM Inc. was to establish compliance of the EUT as described under Ch. 3 of this Test Report, with the applicable criteria specified in

47 CFR Part 2: Title 47 of the Code of Federal Regulations: Chapter I-Federal Communications Commission Frequency allocations and radio treaty matters; general rules and regulations.

47 CFR Part 22: Title 47 of the Code of Federal Regulations: Chapter I-Federal Communications Commission subchapter B- common carrier services; Part 22- Public mobile services

47 CFR Part 24: Title 47 of the Code of Federal Regulations: Chapter I-Federal Communications Commission subchapter B- common carrier services; Part 24- Personal communication services

47 CFR Part 27: Title 47 of the Code of Federal Regulations: Chapter I-Federal Communications Commission subchapter B- common carrier services; Part 27-Miscellaneous wireless communication services

RSS-GEN- Issue 3: General Requirements and Information for the Certification of Radio Apparatus

RSS-132- Issue 3: Spectrum management and telecommunication policy- Radio Standards Specifications Cellular telephones employing new technologies operating in the bands 824-849MHz and 869-894MHz

RSS-133- Issue 6: Spectrum management and telecommunication policy- Radio Standards Specifications- 2GHz personal communication services

RSS-139- Issue 2: Spectrum management and telecommunication policy- Radio Standards Specifications- Advance wireless services equipment operating in the bands 1710-1755MHz and 2110-2155MHz

RSS-130, Issue 1: Mobile Broadband Services (MBS) Equipment Operating in the Frequency Bands 698-756 MHz and 777-787 MHz

RSS-199 — Broadband Radio Service (BRS) Equipment Operating in the Band 2500-2690 MHz

This test report is to support a request for new equipment authorization under the FCC ID: **O2Z-DZ110** and IC ID **1000W-DZ110.**

5 Summary of Measurement Results

5.1 LTE Band 17 (700 MHz):

Specifications	Test Case	Temperature and Voltage Conditions	Mode	Pass	Fail	NA	NP	Result
§2.1046 §27.50(d)(4) RSS-GEN, 4.8 RSS-130(4.4)	RF Output Power	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					
§27.50(d)(5) RSS-GEN, 4.8 RSS-130(4.4)	Peak-to-average Ratio	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					
§2.1055 §27.54 RSS-GEN, 4.7 RSS-130(4.3)	Frequency Stability	Extreme	QPSK	■	□	□	□	Complies
			16 QAM					
§2.1049 §27.53(h) RSS-Gen, 4.6	Occupied Bandwidth	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					
§2.1051 §27.53(h) RSS-GEN, 4.9 RSS-130 4.6.1	Band Edge Compliance	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					
§2.1053 §27.53(h) RSS-GEN, 4.9 RSS-130 4.6.2	Unwanted Emissions	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					

NA= Not Applicable; NP= Not Performed.

5.2 LTE Band 2 (1900 MHz):

Specifications	Test Case	Temperature and Voltage Conditions	Mode	Pass	Fail	NA	NP	Result
§2.1046 §24.232 (a) RSS-GEN, 4.8 RSS-133, 6.4	RF Output Power	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					
§24.232 (d) RSS-133, 6.4	Peak-to-average Ratio	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					
§2.1055 §24.235 RSS-GEN, 4.7 RSS-133, 6.3	Frequency Stability	Extreme	QPSK	■	□	□	□	Complies
			16 QAM					
§2.1049 RSS-GEN, 4.6	Occupied Bandwidth	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					
§2.1051 §24.238 RSS-GEN, 4.9 RSS-133, 6.5	Band Edge Compliance	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					
§2.1053 §24.238 RSS-GEN, 4.9 RSS-133, 6.5	Unwanted Emissions	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					

Note: NA= Not Applicable; NP= Not Performed.

5.3 LTE Band 4 (1700 MHz):

Specifications	Test Case	Temperature and Voltage Conditions	Mode	Pass	Fail	NA	NP	Result
§2.1046 §27.50(d)(4) RSS-GEN, 4.8 RSS-1RSS-139(6.4)	RF Output Power	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					
§27.50(d)(5) RSS-GEN, 4.8 RSS-1RSS-139(6.4)	Peak-to-average Ratio	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					
§2.1055 §27.54 RSS-GEN, 4.7 RSS-139(6.3)	Frequency Stability	Extreme	QPSK	■	□	□	□	Complies
			16 QAM					
§2.1049 §27.53(h) RSS-Gen, 4.6	Occupied Bandwidth	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					
§2.1051 §27.53(h) RSS-GEN, 4.9 RSS-139 6.5	Band Edge Compliance	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					
§2.1053 §27.53(h) RSS-GEN, 4.9 RSS-139 6.5	Unwanted Emissions	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					

NA= Not Applicable; NP= Not Performed.
Note1: Radiated test method is used for this test case, RF conducted is not required.

5.4 LTE Band 5 (850 MHz):

Specifications	Test Case	Temperature and Voltage Conditions	Mode	Pass	Fail	NA	NP	Result
§2.1046 §22.913 (a) RSS-GEN, 4.8 RSS-132, 5.4	RF Output Power	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					
RSS-GEN, 4.8 RSS-132 (5.4)	Peak-to-average Ratio	Nominal	QPSK	□	□	■	□	Complies
			16 QAM					
§2.1055 §22.355 RSS-GEN, 4.7 RSS-132 5.3	Frequency Stability	Extreme	QPSK	■	□	□	□	Complies
			16 QAM					
§2.1049 §22.917(b) RSS-GEN, 4.6	Occupied Bandwidth	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					
§2.1051 §22.917 RSS-GEN, 4.9 RSS-132, 5.5	Band Edge Compliance	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					
§2.1053 §22.917 RSS-GEN, 4.9 RSS-132, 5.5	Unwanted Emissions	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					

Note: NA= Not Applicable; NP= Not Performed.

5.5 LTE Band 7 (2500 MHz):

Specifications	Test Case	Temperature and Voltage Conditions	Mode	Pass	Fail	NA	NP	Result
§2.1046 §27.50(h)(2) RSS-GEN, 4.8 RSS-199, 4.4	RF Output Power	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					
27.50(d)(5) RSS-GEN, 4.8 RSS-130(4.4)	Peak-to-average Ratio	Nominal	QPSK	□	□	■	□	Complies
			16 QAM					
§2.1055 §27.54 RSS-GEN, 4.7 RSS-199, 3.4	Frequency Stability	Extreme	QPSK	■	□	□	□	Complies
			16 QAM					
§2.1049 §27.53(h) RSS-GEN, 4.6 RSS-199, 4.2	Occupied Bandwidth	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					
§2.1051 §27.53(h) RSS-GEN, 4.9 RSS-199, 4.5	Band Edge Compliance	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					
§2.1053 §27.53(h) RSS-GEN, 4.9 RSS-199, 4.5	Unwanted Emissions	Nominal	QPSK	■	□	□	□	Complies
			16 QAM					

Note: NA= Not Applicable; NP= Not Performed.

6 Measurements

6.1 Measurement Uncertainty

For Power Output, Peak-Average Ratio, Band Edge Unwanted Emissions and Radiated Spurious Emissions the measurement uncertainty has been determined to:

	Uncertainty in dB radiated <30MHz	Uncertainty in in dB radiated 30MHz - 1GHz	Uncertainty in dB radiated > 1GHz	Uncertainty in dB Conducted measurement
standard deviation k=1	2.48	1.94	2.16	0.64
95% confidence interval in dB	4.86	3.79	4.24	1.25
95% confidence interval in dB in delta to Result	+-2.5 dB	+-2.0 dB	+- 2.3dB	+-0.7dB

Assesment from 3-12-2014 including contributions (as applicable) for NSA of chamber, VSWR of chamber, Uncertainty contribution of the antennas, Uncertainty contributions of ESU40, Uncertainty contribution of non-conducting table and all mismatch uncertainties of the involved equipment.

For OBW and Frequency Stability the measurement uncertainty is only determined by the ESU40 receiver. Maximum uncertainty is 2Hz.

6.2 RF Power Output

6.2.1 References

FCC: CFR Part 2.1046, CFR Part 22.913, CFR Part 24.232, CFR Part 27.50
IC: RSS-Gen Section 4.8; RSS-132 Section 5.4; RSS-133 Section 6.4, RSS-139 Section 6.4, RSS-130 Section 4.4
971168 D01 Power Meas License Digital Systems v02r01

6.2.2 Measurement Requirements:

6.2.2.1 FCC 2.1046: RF power output.

Power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on circuit elements as specified. The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.

6.2.2.2 RSS-Gen 4.8: RF power output.

Transmitter output power measurements shall be carried out before the unwanted emissions test. The transmitter output power value, obtained from this test, serves as the reference level used to determine the unwanted emissions.

6.2.3 Limits:

6.2.3.1 Band5 (850MHz)

FCC Part 22.913 (a) & RSS-132 Section 5.4

FCC: Average ERP < 38.45 dBm (7W)
IC: Average EIRP < 40.60 dBm (11.5W)

6.2.3.2 Band2 (1900 MHz)

FCC Part 24.232 (c) (e) & RSS-133 Section 6.4/SRSP-510 Section 5.1.2

FCC: Average EIRP < 33 dBm (2W)
IC: Average EIRP < 33 dBm (2W)

6.2.3.3 Band4 1700 MHz

FCC Part 27.50 (d) (4) (6) & RSS-139 Section 6.4

FCC: Average EIRP < 30 dBm (1W)
IC: Average EIRP < 30 dBm (1W)

6.2.3.4 Band17 (700 MHz)

FCC Part 27.50 (c) (10) & RSS-130 Section 4.4

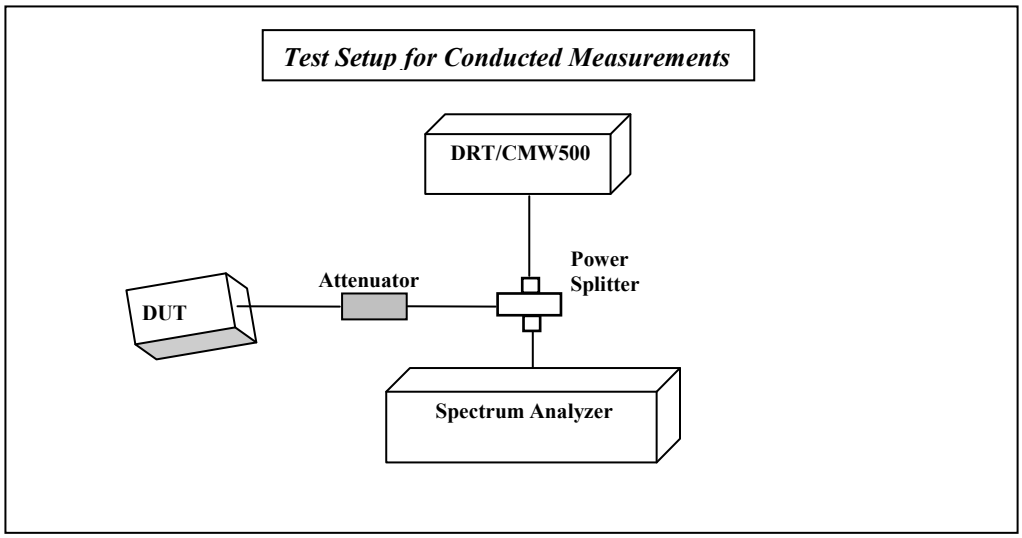
FCC: Average ERP < 34.8 dBm (3W)
IC: Average EIRP < 37 dBm (5W)

6.2.3.5 Band7 (2500 MHz)

FCC Part 27.50 (h) (2)
RSS-199 Section 4.4

FCC: Average EIRP < 33dBm (2W)
IC: Average EIRP < 33 dBm (2W)

6.2.4 Measurement Procedure:



The DUT is using as much total output power as permissible according to the standards independent of physical bandwidth used. In order to achieve this goal the amplifier gain or baseband signal level inside the DUT is dynamically adjusted when the bandwidth changes. To verify the capability of the DUT to perform this dynamic adjustment it was tested with one single RB and with the full RB configuration for each supported channel bandwidth for each band under test.

Different modulations have different peak to average ratios so 16QAM and QPSK have been tested.

Testing for Low, Mid and High channel is the basic procedure from all radio base standards to catch frequency response over the band.

The power measurements were carried out with the CMW500. It returns peak and average results. Internally it uses a time domain power measurement function for Peak and RMS power. The measurements are including a range of at least 25LTE frames to ensure stable and reproduceable results for peak and average. A spot check has been carried out comparing this method with the frequency domain methods described in 971168 D01 Power Meas License Digital Systems v02r01 - yielding results within 0.2dB.

The gains have been taken from the customer documentation.

The following attenuations have been determined for the bands under test. They have been entered in the RF config menu of the CMW500 to be able to take the final corrected reading

LTE Band	Frequency at center	Attenuation
Band 17	710MHz	4.2dB
Band 2	1880MHz	5.8dB
Band 4	1732MHz	5.4dB
Band 5	835MHz	4.0dB
Band 7	2535MHz	5.3dB

6.2.4.1 Test Conditions:

Tnom: 22°C; Vnom: 3.8 V

6.2.5 Test Results

6.2.5.1 Conducted Output Power LTE Band 17:

LTE Band 17 (704 MHz – 716 MHz)							
RB Size = 1		**RB Offset** = Low/Mid/High				**BW (MHz)** = 0.18	
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**ERP Average (dBm)**	**ERP Average Limit (dBm) FCC/IC**	**Results**
23780/709/Low	26.70	22.59	4.11	-10.5	9.94	34.8	Pass
23790/710/Mid	27.23	22.36	4.87	-10.5	9.71	34.8	Pass
23800/711/High	27.35	22.60	4.75	-10.5	**9.95**	34.8	Pass

LTE Band 17 (704 MHz – 716 MHz)							
RB Size = 25		**RB Offset** = Low				**BW (MHz)** = 5.0	
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**ERP Average (dBm)**	**ERP Average Limit (dBm) FCC/IC**	**Results**
23755/706.5/Low	27.65	21.44	6.21	-10.5	8.79	34.8	Pass
23790/710/Low	27.80	21.50	6.3	-10.5	8.85	34.8	Pass
23825/713.5/Low	27.75	21.56	6.19	-10.5	8.91	34.8	Pass

LTE Band 17 (704 MHz – 716 MHz)							
Resource Block Size = 50		**Resource Block Offset** = Low				**BW (MHz)** = 10	
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**ERP Average (dBm)**	**ERP Average Limit (dBm) FCC/IC**	**Results**
23780/709/Low	27.35	21.28	6.07	-10.5	8.63	34.8	Pass
23790/710/Low	27.51	21.56	5.95	-10.5	8.91	34.8	Pass
23800/711/Low	27.39	21.73	5.66	-10.5	9.08	34.8	Pass

LTE Band 17 (704 MHz – 716 MHz)							
Resource Block Size = 1	**Resource Block Offset** = Low/Mid/High					**BW (MHz)** = 0.18	
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**ERP Average (dBm)**	**ERP Average Limit (dBm) FCC/IC**	**Results**
23780/709/Low	27.19	21.18	6.01	-10.5	8.53	34.8	Pass
23790/710/Mid	26.55	21.65	4.9	-10.5	9	34.8	Pass
23800/711/High	26.87	21.77	5.1	-10.5	9.12	34.8	Pass

LTE Band 17 (704 MHz – 716 MHz)							
Resource Block Size = 25	**Resource Block Offset** = Low					**BW (MHz)** = 5.0	
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**ERP Average (dBm)**	**ERP Average Limit (dBm) FCC/IC**	**Results**
23755/706.5/Low	27.64	20.68	6.96	-10.5	8.03	34.8	Pass
23790/710/Low	27.82	20.71	7.11	-10.5	8.06	34.8	Pass
23825/713.5/Low	27.94	20.77	7.17	-10.5	8.12	34.8	Pass

LTE Band 17 (704 MHz – 716 MHz)							
Resource Block Size = 50		**Resource Block Offset** = Low				**BW (MHz)** = 10	
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**ERP Average (dBm)**	**ERP Average Limit (dBm) FCC/IC**	**Results**
23780/709/Low	27.50	20.50	7	-10.5	7.85	34.8	Pass
23790/710/Low	28.10	20.77	7.33	-10.5	8.12	34.8	Pass
23800/711/Low	27.77	20.51	7.26	-10.5	7.86	34.8	Pass

6.2.5.2 Conducted Output Power LTE Band 2:

LTE Band 2 (1850 MHz – 1910 MHz)							
RB Size = 1		**RB Offset** = Low/Mid/High				**BW (MHz)** = 0.18	
Modulation: QPSK							
Ch/Center Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
18700/1860/Low	26.46	21.81	4.65	2.8	24.61	33	Pass
18900/1880/Mid	25.22	22.53	2.69	2.8	25.33	33	Pass
19100/1900/High	25.09	22.45	2.64	2.8	25.25	33	Pass

LTE Band 2 (1850 MHz – 1910 MHz)							
RB Size = 6		**RB Offset** = Low				**BW (MHz)** = 1.4	
Modulation: QPSK							
Ch/Center Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
18607/1850.7/Low	27.16	21.00	6.16	2.8	23.80	33	Pass
18900/1880/Low	26.42	20.86	5.56	2.8	23.66	33	Pass
19193/1909.3/Low	26.35	20.29	6.06	2.8	23.09	33	Pass

LTE Band 2 (1850 MHz – 1910 MHz)							
RB Size = 15		**RB Offset** = Low				**BW (MHz)** = 3.0	
Modulation: QPSK							
Ch/Center Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
18615/1851.5/Low	27.26	21.11	6.15	2.8	23.91	33	Pass
18900/1880/Low	26.46	20.91	5.55	2.8	23.71	33	Pass
19185/1908.5/Low	26.56	20.42	6.14	2.8	23.22	33	Pass

LTE Band 2 (1850 MHz – 1910 MHz)							
RB Size = 25		**RB Offset** = Low				**BW (MHz)** = 5.0	
Modulation: QPSK							
Ch/Center Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
18625/1852.5/Low	27.44	21.22	6.22	2.8	24.02	33	Pass
18900/1880/Low	26.51	20.82	5.69	2.8	23.62	33	Pass
19175/1907.5/Low	26.67	20.39	6.28	2.8	23.19	33	Pass

LTE Band 2 (1850 MHz – 1910 MHz)							
RB Size = 50		**RB Offset** = Low				**BW (MHz)** = 10.0	
Modulation: QPSK							
Ch/Center Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
18650/1855/Low	27.42	20.96	6.46	2.8	23.76	33	Pass
18900/1880/Low	26.51	20.75	5.76	2.8	23.55	33	Pass
19150/1905/Low	27.46	21.02	6.44	2.8	23.82	33	Pass

LTE Band 2 (1850 MHz – 1910 MHz)							
RB Size = 75		**RB Offset** = Low				**BW (MHz)** = 15.0	
Modulation: QPSK							
Ch/Center Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
18675/1857.5/Low	27.68	21.38	6.3	2.8	24.18	33	Pass
18900/1880/Low	27.05	21.21	5.84	2.8	24.01	33	Pass
19125/1902.5/Low	27.15	20.78	6.37	2.8	23.58	33	Pass

LTE Band 2 (1850 MHz – 1910 MHz)							
RB Size = 100		**RB Offset** = Low				**BW (MHz)** = 20	
Modulation: QPSK							
Ch/Center Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
18700/1860/Low	28.11	22.03	6.08	2.8	24.83	33	Pass
18900/1880/Low	27	21.96	5.04	2.8	24.76	33	Pass
19100/1900/Low	27.05	21.57	5.48	2.8	24.75	33	Pass

LTE Band 2 (1850 MHz – 1910 MHz)							
RB Size = 1		**RB Offset** = Low/Mid/High				**BW (MHz)** = 0.18	
Modulation: 16 QAM							
Ch/Center Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
18700/1860/Low	26.38	21.51	4.87	2.8	24.31	33	Pass
18900/1880/Mid	25.25	21.98	3.27	2.8	24.78	33	Pass
19100/1900/High	25.27	21.92	3.35	2.8	24.72	33	Pass

LTE Band 2 (1850 MHz – 1910 MHz)							
RB Size = 6		**RB Offset** = Low				**BW (MHz)** = 1.4	
Modulation: 16 QAM							
Ch/Center Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
18607/1850.7/Low	27.23	20.25	6.98	2.8	23.05	33	Pass
18900/1880/Low	26.32	20	6.32	2.8	22.8	33	Pass
19193/1909.3/Low	26.5	19.41	7.09	2.8	22.21	33	Pass

LTE Band 2 (1850 MHz – 1910 MHz)							
RB Size = 15			**RB Offset** = Low			**BW (MHz)** = 3.0	
Modulation: 16 QAM							
Ch/Center Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
18615/1851.5/Low	27.43	20.31	7.12	2.8	23.11	33	Pass
18900/1880/Low	26.56	20.11	6.45	2.8	22.91	33	Pass
19185/1908.5/Low	26.49	19.58	6.91	2.8	22.38	33	Pass

LTE Band 2 (1850 MHz – 1910 MHz)							
RB Size = 25			**RB Offset** = Low			**BW (MHz)** = 5.0	
Modulation: 16 QAM							
Ch/Center Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
18625/1852.5/Low	27.38	20.42	6.96	2.8	23.22	33	Pass
18900/1880/Low	26.53	20.03	6.5	2.8	22.83	33	Pass
19175/1907.5/Low	26.73	19.77	6.96	2.8	22.57	33	Pass

LTE Band 2 (1850 MHz – 1910 MHz)							
RB Size = 50			**RB Offset** = Low			**BW (MHz)** = 10.0	
Modulation: 16 QAM							
Ch/Center Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
18650/1855/Low	27.35	20.15	7.2	2.8	22.95	33	Pass
18900/1880/Low	26.55	19.94	6.61	2.8	22.74	33	Pass
19150/1905/Low	26.73	19.53	7.2	2.8	22.33	33	Pass

LTE Band 2 (1850 MHz – 1910 MHz)							
RB Size = 75			**RB Offset** = Low			**BW (MHz)** = 15.0	
Modulation: 16 QAM							
Ch/Center Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
18675/1857.5/Low	27.61	20.51	7.1	2.8	23.31	33	Pass
18900/1880/Low	26.7	20.28	6.42	2.8	23.08	33	Pass
19125/1902.5/Low	26.96	19.95	7.01	2.8	22.75	33	Pass

LTE Band 2 (1850 MHz – 1910 MHz)							
RB Size = 100		**RB Offset** = Low		**BW (MHz)** = 20			
Modulation: 16 QAM							
Ch/Center Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
18700/1860/Low	28.18	21.27	6.91	2.8	24.07	33	Pass
18900/1880/Low	26.92	21.32	5.6	2.8	24.12	33	Pass
19100/1900/Low	27.08	20.8	6.28	2.8	23.6	33	Pass

6.2.5.3 Conducted Output Power LTE Band 4:

LTE Band 4 (1710 MHz – 1755 MHz)							
RB Size = 1		**RB Offset** = Low/Mid/High				**BW (MHz)** = 0.18	
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBd)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
20050/1720/Low	27.09	22.75	4.34	1.6	24.35	30/30	Pass
20175/1732.5/Mid	26.77	23.52	3.25	1.6	25.12	30/30	Pass
20300/1745/High	26.70	22.94	3.76	1.6	24.54	30/30	Pass

LTE Band 4 (1710 MHz – 1755 MHz)							
RB Size = 6		**RB Offset** = Low				**BW (MHz)** = 1.4	
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBd)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
19957/1710.7/Low	27.14	22.19	4.95	1.6	23.79	30/30	Pass
20175/1732.5/Low	27.85	21.95	5.9	1.6	23.55	30/30	Pass
20393/1754.3/Low	27.66	22.00	5.66	1.6	23.6	30/30	Pass

LTE Band 4 (1710 MHz – 1755 MHz)							
RB Size = 15			**RB Offset** = Low			**BW (MHz)** = 3.0	
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBd)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
19965/1711.5/Low	27.50	22.35	5.15	1.6	23.95	30/30	Pass
20175/1732.5/Low	27.66	22.12	5.54	1.6	23.72	30/30	Pass
20385/1753.5/Low	28.04	22.15	5.89	1.6	23.75	30/30	Pass

LTE Band 4 (1710 MHz – 1755 MHz)							
RB Size = 25			**RB Offset** = Low			**BW (MHz)** = 5.0	
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBd)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
19975/1712.5/Low	27.41	22.33	5.08	1.6	23.93	30/30	Pass
20175/1732.5/Low	28.07	22.13	5.94	1.6	23.73	30/30	Pass
20375/1752.5/Low	28.65	22.19	6.46	1.6	23.79	30/30	Pass

LTE Band 4 (1710 MHz – 1755 MHz)							
RB Size = 50			**RB Offset** = Low		**BW (MHz)** = 10.0		
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBd)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
20000/1715/Low	27.55	22.23	5.32	1.6	23.83	30/30	Pass
20175/1732.5/Low	27.74	21.94	5.8	1.6	23.54	30/30	Pass
20350/1750/Low	28.07	22.03	6.04	1.6	23.63	30/30	Pass

LTE Band 4 (1710 MHz – 1755 MHz)							
RB Size = 75			**RB Offset** = Low		**BW (MHz)** = 15.0		
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBd)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
20025/1717.5/Low	27.97	22.53	5.44	1.6	24.13	30/30	Pass
20175/1732.5/Low	28.23	22.36	5.87	1.6	23.96	30/30	Pass
20325/1747.5/Low	28.58	22.47	6.11	1.6	24.07	30/30	Pass

LTE Band 4 (1710 MHz – 1755 MHz)							
RB Size = 100			**RB Offset** = Low			**BW (MHz)** = 20	
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBd)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
20050/1720/Low	28.04	22.35	5.69	1.6	23.95	30/30	Pass
20175/1732.5/Low	28.19	22.68	5.51	1.6	24.28	30/30	Pass
20300/1745/Low	28.12	21.99	6.13	1.6	23.59	30/30	Pass

LTE Band 4 (1710 MHz – 1755 MHz)							
RB Size = 1		**RB Offset** = Low/Mid/High		**BW (MHz)** = 0.18			
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBd)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
20050/1720/Low	27.12	22.32	4.8	1.6	23.92	30	Pass
20175/1732.5/Mid	26.89	22.99	3.9	1.6	24.59	30	Pass
20300/1745/High	26.83	22.66	4.17	1.6	24.26	30	Pass

LTE Band 4 (1710 MHz – 1755 MHz)							
RB Size = 6		**RB Offset** = Low		**BW (MHz)** = 1.4			
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBd)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
19957/1710.7/Low	27.21	21.34	5.87	1.6	24.14	30	Pass
20175/1732.5/Low	27.80	21.15	6.65	1.6	23.95	30	Pass
20393/1754.3/Low	28.03	21.08	6.95	1.6	23.88	30	Pass

LTE Band 4 (1710 MHz – 1755 MHz)							
RB Size = 15			**RB Offset** = Low			**BW (MHz)** = 3.0	
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBd)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
19965/1711.5/Low	27.30	21.57	5.73	1.6	23.17	30	Pass
20175/1732.5/Low	28.07	21.11	6.96	1.6	22.71	30	Pass
20385/1753.5/Low	27.96	21.25	6.71	1.6	22.85	30	Pass

LTE Band 4 (1710 MHz – 1755 MHz)							
RB Size = 25			**RB Offset** = Low			**BW (MHz)** = 5.0	
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBd)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
19975/1712.5/Low	27.59	21.65	5.94	1.6	23.25	30	Pass
20175/1732.5/Low	27.74	21.30	6.44	1.6	22.90	30	Pass
20375/1752.5/Low	28.64	21.37	7.27	1.6	22.97	30	Pass

LTE Band 4 (1710 MHz – 1755 MHz)							
RB Size = 50			**RB Offset** = Low		**BW (MHz)** = 10.0		
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBd)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
20000/1715/Low	27.62	21.44	6.18	1.6	23.04	30	Pass
20175/1732.5/Low	27.53	21.18	6.35	1.6	22.78	30	Pass
20350/1750/Low	28.46	21.22	7.24	1.6	22.82	30	Pass

LTE Band 4 (1710 MHz – 1755 MHz)							
RB Size = 75			**RB Offset** = Low		**BW (MHz)** = 15.0		
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBd)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
20025/1717.5/Low	27.76	21.79	5.97	1.6	23.39	30	Pass
20175/1732.5/Low	28.13	21.55	6.58	1.6	23.15	30	Pass
20325/1747.5/Low	28.26	21.66	6.6	1.6	23.26	30	Pass

LTE Band 4 (1710 MHz – 1755 MHz)							
RB Size = 100			**RB Offset** = Low		**BW (MHz)** = 20		
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBd)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
20050/1720/Low	28.11	21.56	6.55	1.6	23.16	30	Pass
20175/1732.5/Low	28.24	21.95	6.29	1.6	23.55	30	Pass
20300/1745/Low	28.11	21.25	6.86	1.6	22.85	30	Pass

6.2.5.4 Conducted Output Power LTE Band 5:

LTE Band 5 (824 MHz – 849 MHz)							
RB Size = 1		**RB Offset** = Low/Mid/High		**BW (MHz)** = 0.18			
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**ERP Average (dBm)**	**ERP Average Limit (dBm) FCC/IC**	**Results**
20450/829/Low	26.50	23.19	3.31	-4.1	16.94	38.45	Pass
20525/836.5/Mid	26.68	21.78	4.9	-4.1	15.53	38.45	Pass
20600/844/High	26.14	21.00	5.14	-4.1	14.75	38.45	Pass

LTE Band 5 (824 MHz – 849 MHz)							
RB Size = 6		**RB Offset** = Low		**BW (MHz)** = 1.4			
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**ERP Average (dBm)**	**ERP Average Limit (dBm) FCC/IC**	**Results**
20407/824.7/Low	27.6	21.94	5.66	-4.1	15.69	38.45	Pass
20525/836.5/Low	27.20	21.51	5.69	-4.1	15.26	38.45	Pass
20643/848.3/Low	27.5	21.8	5.7	-4.1	15.55	38.45	Pass

LTE Band 5 (824 MHz – 849 MHz)							
RB Size = 15		**RB Offset** = Low		**BW (MHz)** = 3.0			
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**ERP Average (dBm)**	**ERP Average Limit (dBm) FCC/IC**	**Results**
20415/825.5/Low	27.82	22.13	5.69	-4.1	15.88	38.45	Pass
20525/836.5/Low	28.11	21.80	6.31	-4.1	15.55	38.45	Pass
20635/847.5/Low	28.22	22.09	6.13	-4.1	15.84	38.45	Pass

LTE Band 5 (824 MHz – 849 MHz)							
RB Size = 25		**RB Offset** = Low		**BW (MHz)** = 5.0			
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**ERP Average (dBm)**	**ERP Average Limit (dBm) FCC/IC**	**Results**
20425/826.5/Low	27.93	22.16	5.77	-4.1	15.91	38.45	Pass
20525/836.5/Low	27.78	21.81	5.97	-4.1	15.56	38.45	Pass
20625/846.5/Low	27.71	22.15	5.56	-4.1	15.90	38.45	Pass

LTE Band 5 (824 MHz – 849 MHz)							
RB Size = 50			**RB Offset** = Low		**BW (MHz)** = 10		
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**ERP Average (dBm)**	**ERP Average Limit (dBm) FCC/IC**	**Results**
20450/829/Low	27.08	21.4	5.68	-4.1	15.15	38.45	Pass
20525/836.5/Low	26.72	21.00	5.72	-4.1	14.75	38.45	Pass
20600/844/Low	26.83	21.49	5.34	-4.1	15.24	38.45	Pass

LTE Band 5 (824 MHz – 849 MHz)							
RB Size = 1		**RB Offset** = Low/Mid/High		**BW (MHz)** = 0.18			
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**ERP Average (dBm)**	**ERP Average Limit (dBm) FCC/IC**	**Results**
20450/829/Low	26.64	22.88	3.76	-4.1	16.63	38.45	Pass
20525/836.5/Mid	25.96	21.18	4.78	-4.1	14.93	38.45	Pass
20600/844/High	25.38	20.17	5.21	-4.1	13.92	38.45	Pass

LTE Band 5 (824 MHz – 849 MHz)							
RB Size = 6		**RB Offset** = Low		**BW (MHz)** = 1.4			
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**ERP Average (dBm)**	**ERP Average Limit (dBm) FCC/IC**	**Results**
20407/824.7/Low	28.07	21.22	6.85	-4.1	14.97	38.45	Pass
20525/836.5/Low	27.46	21.47	5.99	-4.1	15.22	38.45	Pass
20643/848.3/Low	28.15	21.83	6.32	-4.1	15.58	38.45	Pass

LTE Band 5 (824 MHz – 849 MHz)							
RB Size = 15		**RB Offset** = Low		**BW (MHz)** = 3.0			
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**ERP Average (dBm)**	**ERP Average Limit (dBm) FCC/IC**	**Results**
20415/825.5/Low	28.06	21.30	6.76	-4.1	15.05	38.45	Pass
20525/836.5/Low	27.45	21.73	5.72	-4.1	15.48	38.45	Pass
20635/847.5/Low	28.19	22.07	6.12	-4.1	15.82	38.45	Pass

LTE Band 5 (824 MHz – 849 MHz)							
RB Size = 25		**RB Offset** = Low		**BW (MHz)** = 5.0			
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**ERP Average (dBm)**	**ERP Average Limit (dBm) FCC/IC**	**Results**
20425/826.5/Low	27.75	21.39	6.36	-4.1	15.14	38.45	Pass
20525/836.5/Low	28.24	21.77	6.47	-4.1	15.52	38.45	Pass
20625/846.5/Low	27.80	22.17	5.63	-4.1	15.92	38.45	Pass

LTE Band 5 (824 MHz – 849 MHz)							
RB Size = 50		**RB Offset** = Low		**BW (MHz)** = 10			
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**ERP Average (dBm)**	**ERP Average Limit (dBm) FCC/IC**	**Results**
20450/829/Low	27.41	20.60	6.81	-4.1	14.35	38.45	Pass
20525/836.5/Low	27.33	20.23	7.1	-4.1	13.98	38.45	Pass
20600/844/Low	26.96	20.68	6.28	-4.1	14.43	38.45	Pass

6.2.5.5 Conducted Output Power LTE Band 7:

LTE Band 7 (2500 MHz – 2570 MHz)							
RB Size = 1		**RB Offset** = Low/Mid/High				**BW (MHz)** = 0.18	
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
20850/2510/Low	25.95	21.22	4.73	0.1	21.32	33	Pass
21100/2535/Mid	25.93	22.26	3.67	0.1	22.36	33	Pass
21350/2560/High	24.97	20.48	4.49	0.1	20.58	33	Pass

LTE Band 7 (2500 MHz – 2570 MHz)							
Resource Block Size = 25		**Resource Block Offset** = Low				**BW (MHz)** = 5.0	
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
20775/2502.5/Low	28.27	21.78	6.49	0.1	21.88	33	Pass
21100/2535/Low	27.67	22.30	5.37	0.1	22.40	33	Pass
21425/2567.5/Low	27.65	21.75	5.9	0.1	21.85	33	Pass

LTE Band 7 (2500 MHz – 2570 MHz)							
Resource Block Size = 50		**Resource Block Offset** = Low				**BW (MHz)** = 10.0	
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
20800/2505/Low	27.72	21.85	5.87	0.1	21.95	33	Pass
21100/2535/Low	27.63	22.18	5.45	0.1	22.23	33	Pass
21400/2565/Low	27.50	21.75	5.75	0.1	21.85	33	Pass

LTE Band 7 (2500 MHz – 2570 MHz)							
Resource Block Size = 75		**Resource Block Offset** = Low				**BW (MHz)** = 15.0	
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
20825/2507.5/Low	28.43	22.06	6.37	0.1	22.16	33	Pass
21100/2535/Low	28.47	22.53	5.94	0.1	22.63	33	Pass
21375/2562.5/Low	27.97	21.92	6.05	0.1	22.02	33	Pass

LTE Band 7 (2500 MHz – 2570 MHz)							
Resource Block Size = 100		**Resource Block Offset** = Low				**BW (MHz)** = 20	
Modulation: QPSK							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
20850/2510/Low	26.72	20.69	6.03	0.1	20.79	33	Pass
21100/2535/Low	26.77	21.47	5.3	0.1	21.57	33	Pass
21350/2560/Low	26.25	20.27	5.98	0.1	20.37	33	Pass

LTE Band 7 (2500 MHz – 2570 MHz)							
Resource Block Size = 1		**Resource Block Offset** = Low/Mid/High				**BW (MHz)** = 0.18	
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
20850/2510/Low	25.96	20.65	5.31	0.1	20.75	33	Pass
21100/2535/Mid	26.02	21.75	4.27	0.1	21.85	33	Pass
21350/2560/High	25.20	20.39	4.81	0.1	20.49	33	Pass

LTE Band 7 (2500 MHz – 2570 MHz)							
Resource Block Size = 25		**Resource Block Offset** = Low				**BW (MHz)** = 5.0	
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
20775/2502.5/Low	28.14	20.92	7.22	0.1	21.02	33	Pass
21100/2535/Low	27.82	21.53	6.29	0.1	21.63	33	Pass
21425/2567.5/Low	27.45	21.21	6.24	0.1	21.31	33	Pass

LTE Band 7 (2500 MHz – 2570 MHz)							
Resource Block Size = 50		**Resource Block Offset** = Low				**BW (MHz)** = 10.0	
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
20800/2505/Low	28.00	21.15	6.85	0.1	21.25	33	Pass
21100/2535/Low	27.83	21.37	6.46	0.1	21.47	33	Pass
21400/2565/Low	27.11	20.94	6.17	0.1	21.04	33	Pass

LTE Band 7 (2500 MHz – 2570 MHz)							
Resource Block Size = 75		**Resource Block Offset** = Low				**BW (MHz)** = 15.0	
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
20825/2507.5/Low	28.04	21.22	6.82	0.1	21.32	33	Pass
21100/2535/Low	27.69	21.59	6.1	0.1	21.69	33	Pass
21375/2562.5/Low	27.65	21.08	6.57	0.1	21.18	33	Pass

LTE Band 7 (2500 MHz – 2570 MHz)							
Resource Block Size = 100		**Resource Block Offset** = Low				**BW (MHz)** = 20	
Modulation: 16 QAM							
Ch/Frequency (MHz)/RB	**Conducted Output Power Peak(dBm)**	**Conducted Output Power Average(dBm)**	**PAR (limit 13dB)**	**Antenna Gain (dBi)**	**EIRP Average (dBm)**	**EIRP Average Limit (dBm) FCC/IC**	**Results**
20850/2510/Low	26.85	19.89	6.96	0.1	19.99	33	Pass
21100/2535/Low	26.90	20.70	6.2	0.1	20.80	33	Pass
21350/2560/Low	26.28	19.44	6.84	0.1	19.54	33	Pass

6.2.6 Test Verdict

Pass

6.3 PEAK-AVERAGE Ratio

6.3.1 References

FCC CFR 47 §24.232 (D); FCC CFR 47 §27.50 (D) (5)
RSS-132(5.4); RSS-133(6.4)

6.3.2 Limits:

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

6.3.3 Results:

The results are contained in the tables of the previous section

6.3.4 Verdict:

Pass

6.4 Occupied Bandwidth

6.4.1 References

FCC: CFR Part 2.1053, CFR Part 22.917, CFR Part 24.238 (b), CFR Part 27.53 (g)
IC: RSS-Gen Section 4.9; RSS-132 Section 4.5.1; RSS-133 Section 2.6, RSS-139 Section 6.5, RSS-199

6.4.2 Limits

RSS-199:
Channel bandwidth >=1MHz. Is fulfilled as 1.4MHz is the lowest implemented channel banwidth. The physical banwidth when using 4 resource blocks or less can be smaller.

6.4.3 Measurement Requirements:

99% bandwidth is the width of the emission signal such that, between the lower and the upper frequency from the top carrier, the mean powers emitted are each equal to 0.5% of the emitted power.

26 dB bandwidth is the width of the emission signal where the lower and the upper frequency of the signal is 26 dB down reference to the top carrier.

6.4.4 Spectrum Analyzer settings

Setting	26dB bandwidth	99% bandwidth
Frequency	Center of Channel	Center of Channel
Span	2-5xOBW iterativ	2-5xOBW iterativ
RBW	1-5% of OBW iterativ	1-5% of OBW iterativ
VBW	>3xRBW	
Reference level	>10dB down from top	>10dB down from top
Attenuation	Just enough to avoid overload	Just enough to avoid overload
Detector	Peak	Peak
Trace	Max Hold	Max Hold
Determine result	go to marker menu- select reference fixed – peak search – set ref point level offset -26dB- select marker one – select delta marker – move delta marker one to one intersection of trace with -26dBc line – select marker two – move it to other intersection with -26dBc line – calculate the OBW as the difference of both marker deltas to the reference point	use the macro of the SA

6.4.5 Test Results / Plots

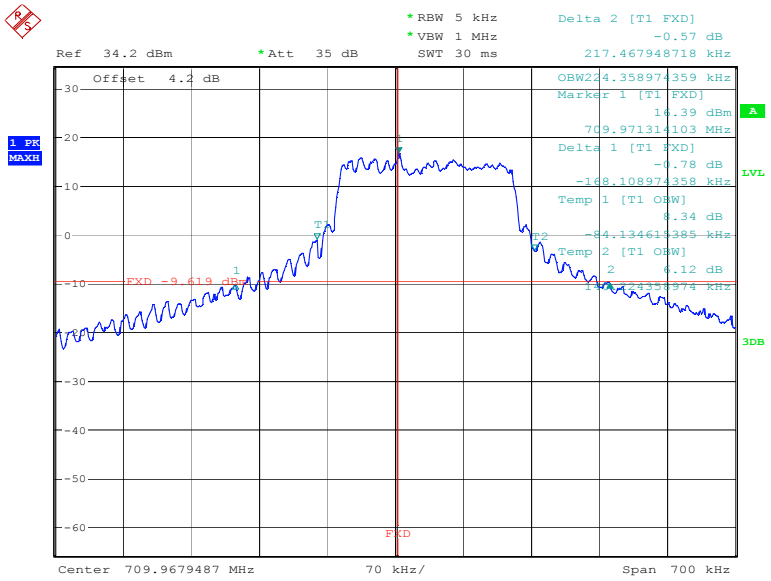
6.4.5.1 OBW LTE FDD Band 17 table:

LTE Band 17 (704 MHz – 716 MHz) - Modulation: QPSK			
Channel No.	**Frequency (MHz)**	**26 dB (MHz)**	**99% (MHz)**
RB Size = 1	**RB Offset** = 0		**BW (MHz)** = 0.18
23790	710	0.39	0.22
RB Size = 25	**RB Offset** = 0		**BW (MHz)** = 5
23790	710	5.14	4.53
RB Size = 50	**RB Offset** = 0		**BW (MHz)** = 10
23790	710	10.1	9.01

LTE Band 17 (704 MHz – 716 MHz) - Modulation: 16QAM			
Channel No.	**Frequency (MHz)**	**26 dB (MHz)**	**99% (MHz)**
RB Size = 1	**RB Offset** = 0		**BW (MHz)** = 0.18
23790	710	0.42	0.23
RB Size = 25	**RB Offset** = 0		**BW (MHz)** = 5
23790	710	5.11	4.51
RB Size = 50	**RB Offset** = 0		**BW (MHz)** = 10
23790	710	10.0	8.94

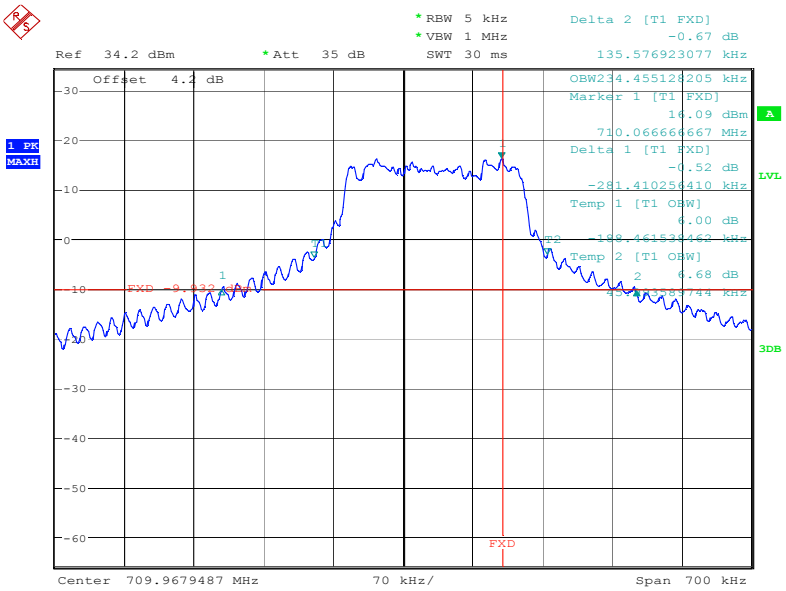
6.4.5.2 OBW LTE FDD Band 17 plots:

26 dB -99% BW (LTE Band 17) Channel **23790 (710 MHz)** – RB Size = **1**; RB Offset = 0; BW = **5 MHz**; Modulation = **QPSK**



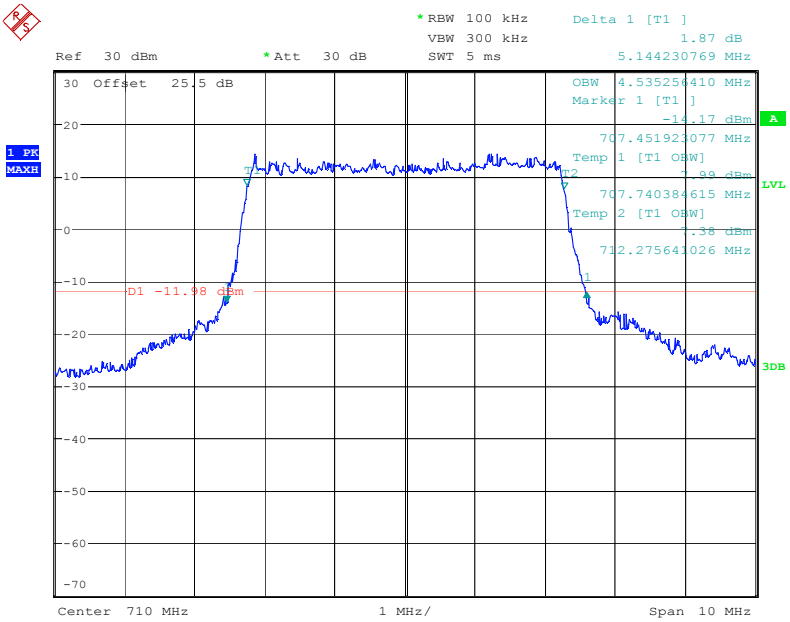
low
Date: 29.JUN.2014 16:33:50

26 dB -99% BW (LTE Band 17) Channel **23790 (710 MHz)** – RB Size = **1**; RB Offset = 0; BW = **5 MHz**; Modulation = **16QAM**



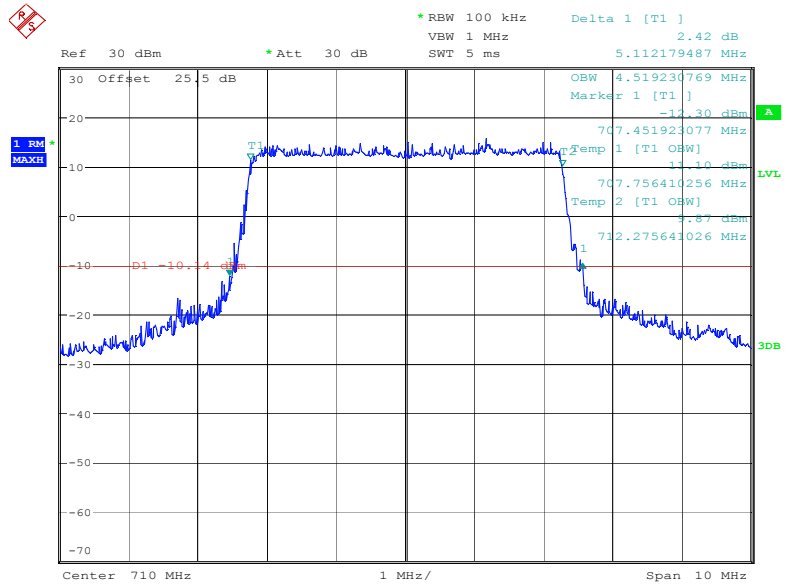
low
Date: 29.JUN.2014 16:31:34

26 dB -99% BW (LTE Band 17) Channel **23790 (710 MHz)** – RB Size = **1**; RB Offset = 0; BW = **5 MHz**; Modulation = **QPSK**



Date: 12.MAR.2014 00:37:21

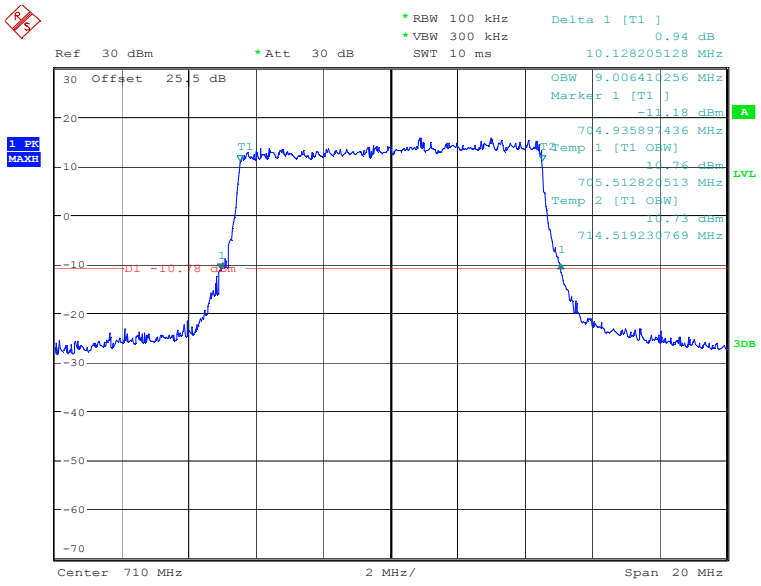
26 dB -99% BW (LTE Band 17) Channel **23790 (710 MHz)** – RB Size = **25**; RB Offset = 0; BW = **5 MHz**; Modulation = **16 QAM**



low

Date: 12.MAR.2014 19:00:11

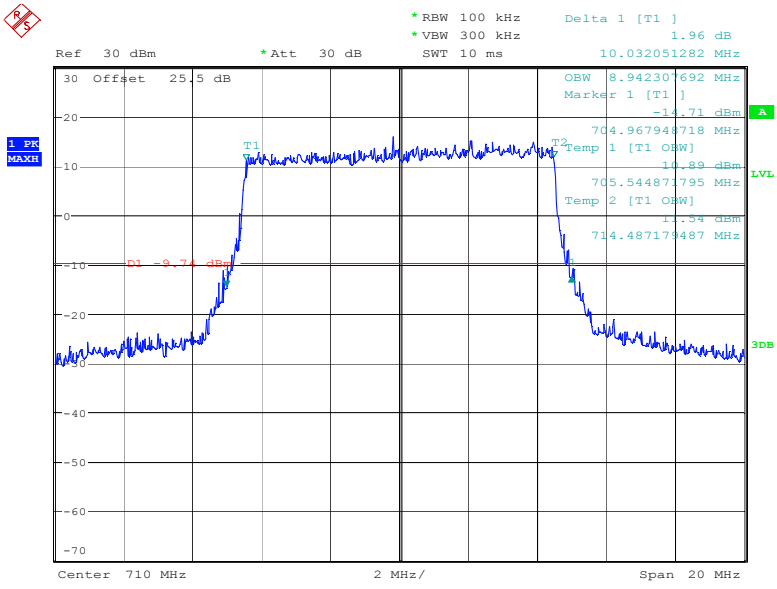
26 dB -99% BW (LTE Band 17) Channel **23790 (710 MHz)** – RB Size = **50**; RB Offset = 0; BW = **10 MHz**; Modulation = **QPSK**



low

Date: 28.FEB.2014 00:39:17

26 dB -99% BW (LTE Band 17) Channel **23790 (710 MHz)** – RB Size = **50**; RB Offset = 0; BW = **10 MHz**; Modulation = **16 QAM**



low

Date: 27.FEB.2014 23:25:26

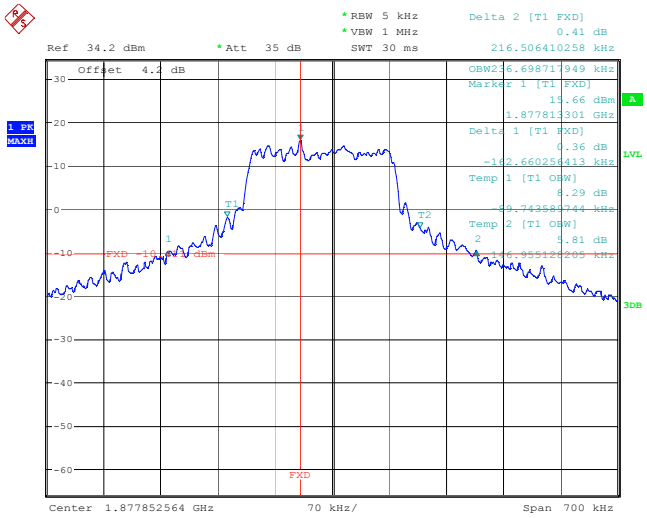
6.4.5.3 OBW LTE FDD Band 2 table:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: QPSK			
Channel No.	**Frequency (MHz)**	**26 dB (MHz)**	**99% (MHz)**
RB Size =1	**RB Offset** = 0		**BW (MHz)** = 0.18
18900	1880	0.38	0.24
RB Size = 6	**RB Offset** = 0		**BW (MHz)** = 1.4
18900	1880	1.45	1.14
RB Size = 15	**RB Offset** = 0		**BW (MHz)** = 3
18900	1880	3.08	2.72
RB Size = 25	**RB Offset** = 0		**BW (MHz)** = 5
18900	1880	5.14	4.51
RB Size = 50	**RB Offset** = 0		**BW (MHz)** = 10
18900	1880	10.2	8.97
RB Size = 75	**RB Offset** = 0		**BW (MHz)** = 15
20175	1732.5	14.92	13.41
RB Size = 100	**RB Offset** = 0		**BW (MHz)** = 20
20175	1732.5	19.30	17.82

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: 16QAM			
Channel No.	**Frequency (MHz)**	**26 dB (MHz)**	**99% (MHz)**
RB Size =1	**RB Offset** = 0		**BW (MHz)** = 0.18
18900	1880	0.38	0.24
RB Size = 6	**RB Offset** = 0		**BW (MHz)** = 1.4
18900	1880	1.44	1.14
RB Size = 15	**RB Offset** = 0		**BW (MHz)** = 3
18900	1880	3.06	2.71
RB Size = 25	**RB Offset** = 0		**BW (MHz)** = 5
18900	1880	5.17	4.53
RB Size = 50	**RB Offset** = 0		**BW (MHz)** = 10
18900	1880	10.1	8.97
RB Size = 75	**RB Offset** = 0		**BW (MHz)** = 15
20175	1732.5	15.26	13.41
RB Size = 100	**RB Offset** = 0		**BW (MHz)** = 20
20175	1732.5	19.10	17.88

6.4.5.4 OBW LTE FDD Band 2 plots:

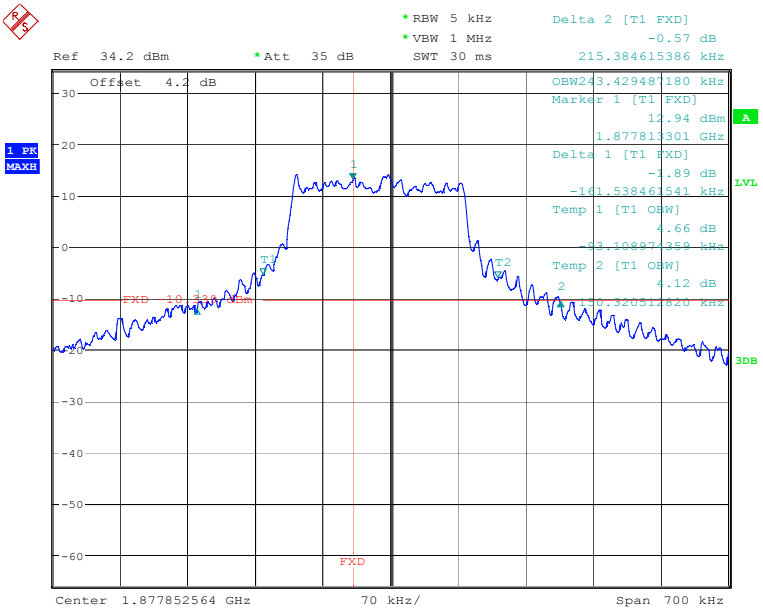
26 dB -99% BW (LTE Band 2) Channel **18900 (1880 MHz)** – RB Size = **1**; RB Offset = 0; BW = **1.4 MHz**; Modulation = **QPSK**



low

Date: 29.JUN.2014 16:40:16

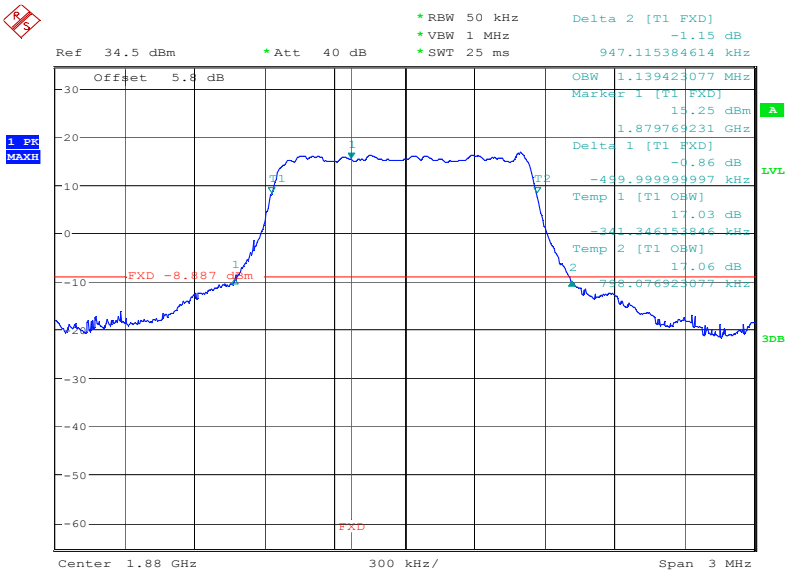
26 dB -99% BW (LTE Band 2) Channel **18900 (1880 MHz)** – RB Size = **1**; RB Offset = 0; BW = **1.4 MHz**; Modulation = **16QAM**



low

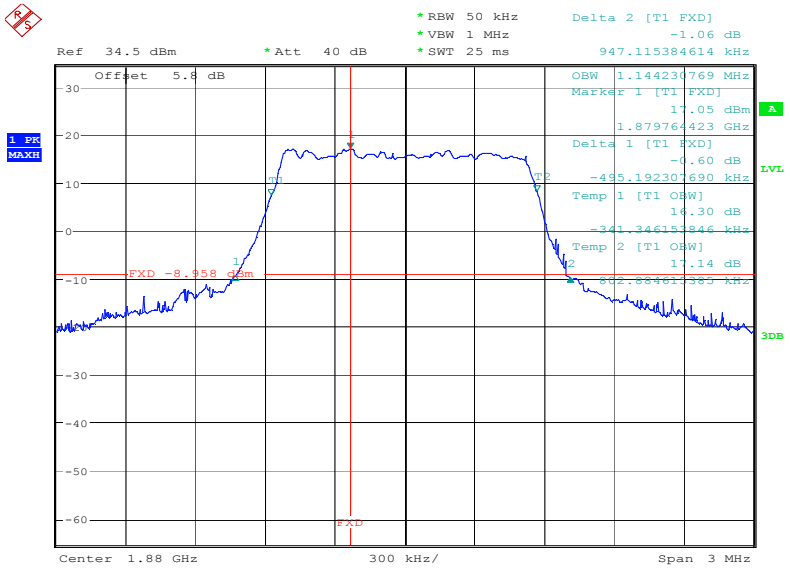
Date: 29.JUN.2014 16:42:47

26 dB -99% BW (LTE Band 2) Channel **18900 (1880 MHz)** – RB Size = **6**; RB Offset = 0; BW = **1.4 MHz**; Modulation = **QPSK**



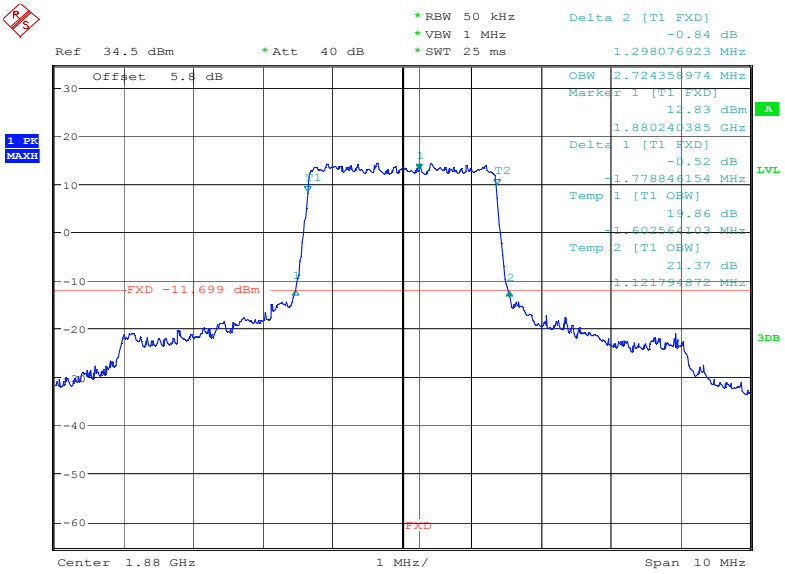
low
Date: 29.JUN.2014 16:01:52

26 dB -99% BW (LTE Band 2) Channel **18900 (1880 MHz)** – RB Size = **6**; RB Offset = 0; BW = **1.4 MHz**; Modulation = **16QAM**



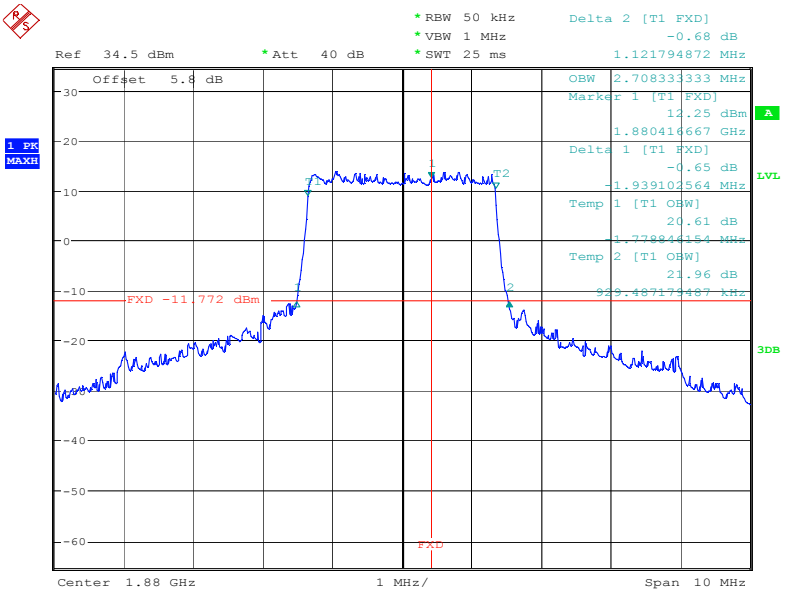
low
Date: 29.JUN.2014 15:59:19

26 dB -99% BW (LTE Band 2) Channel **18900 (1880 MHz)** – RB Size = **15**; RB Offset = 0; BW = **3 MHz**; Modulation = **QPSK**



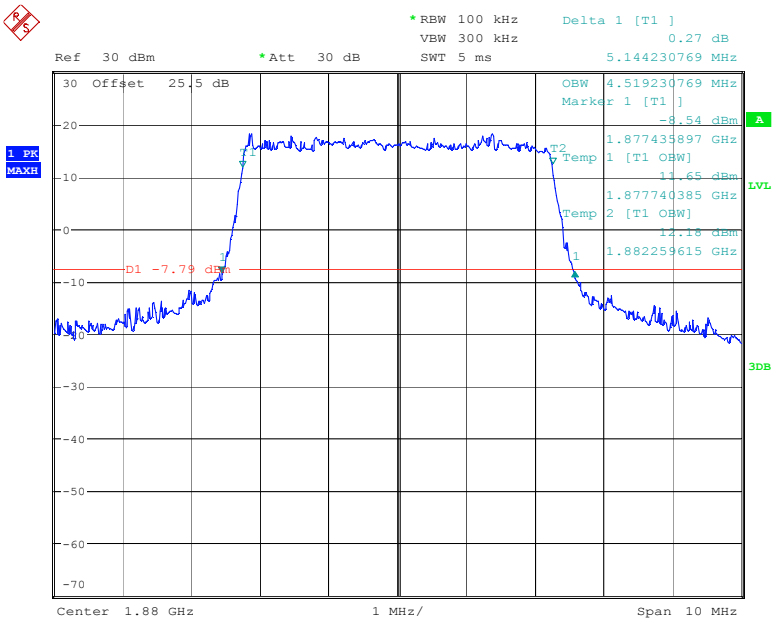
low
Date: 29.JUN.2014 15:53:05

26 dB -99% BW (LTE Band 2) Channel **18900 (1880 MHz)** – RB Size = **15**; RB Offset = 0; BW = **3 MHz**; Modulation = **16QAM**

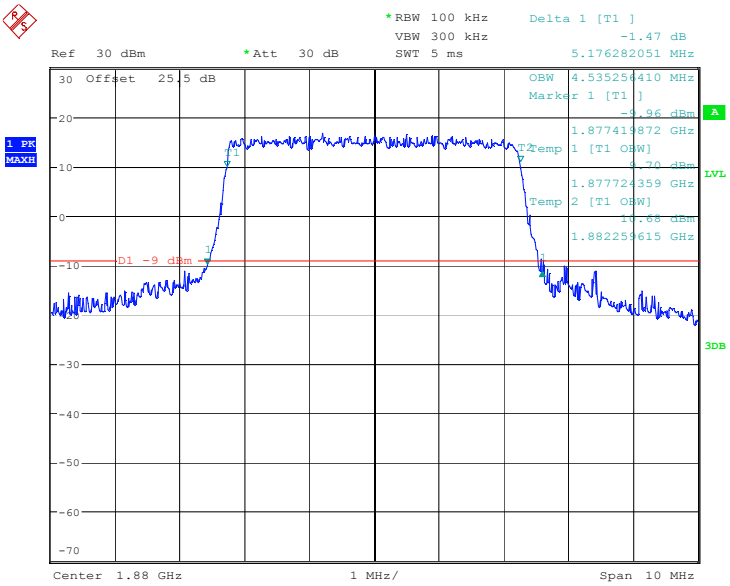


low
Date: 29.JUN.2014 15:55:21

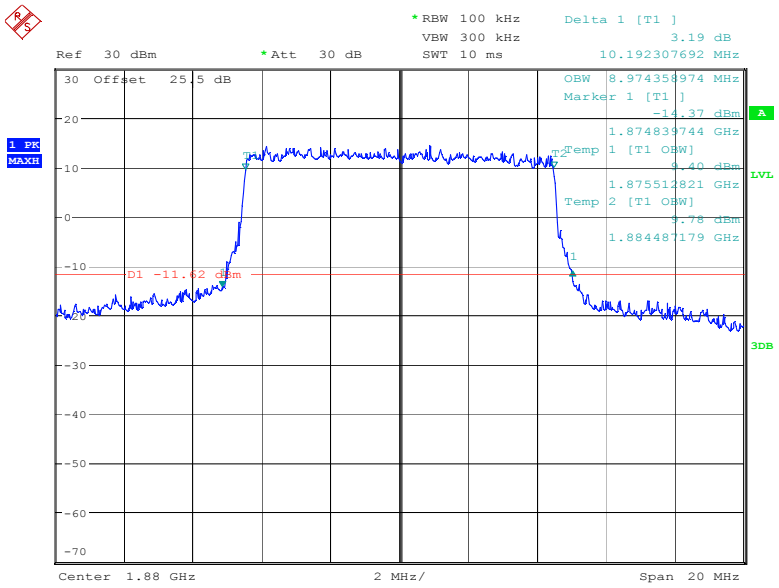
26 dB -99% BW (LTE Band 2) Channel **18900 (1880 MHz)** – RB Size = **25**; RB Offset = 0; BW = **5 MHz**; Modulation = **QPSK**



26 dB -99% BW (LTE Band 2) Channel **18900 (1880 MHz)** – RB Size = **25**; RB Offset = 0; BW = **5 MHz**; Modulation = **16 QAM**

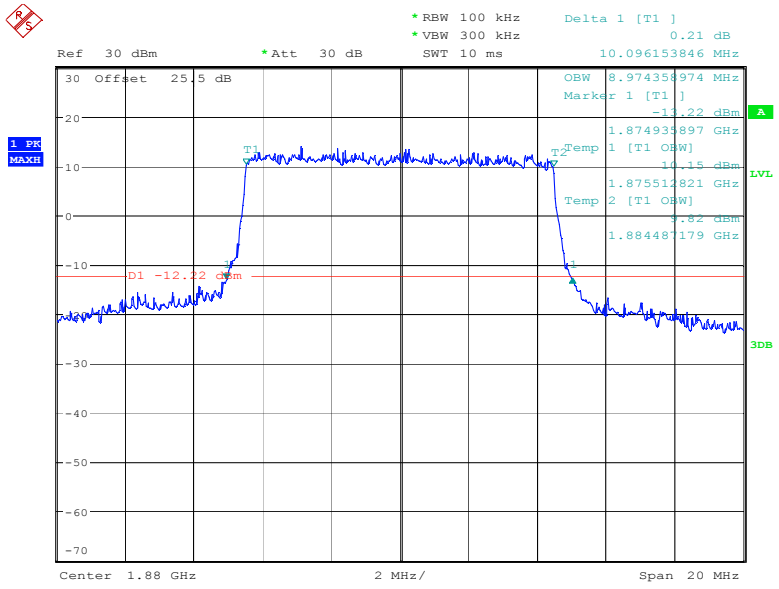


26 dB -99% BW (LTE Band 2) Channel **18900 (1880 MHz)** – RB Size = **50**; RB Offset = 0; BW = **10 MHz**; Modulation = **QPSK**



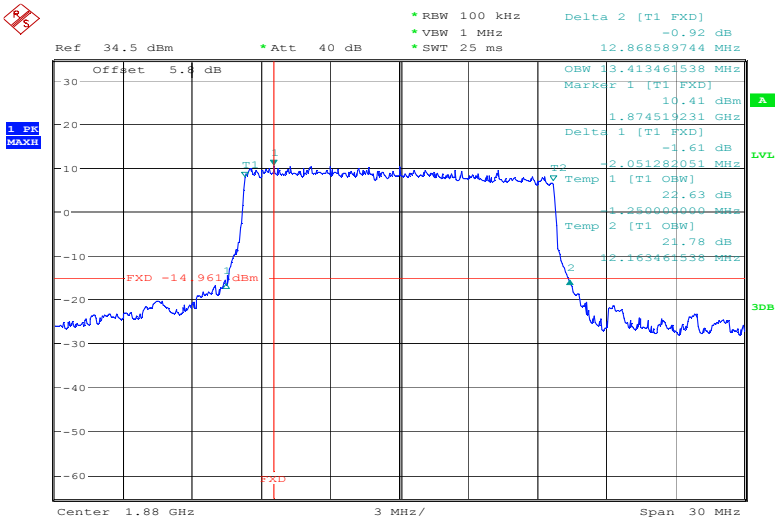
low
Date: 27.FEB.2014 18:46:53

26 dB -99% BW (LTE Band 2) Channel **18900 (1880 MHz)** – RB Size = **50**; RB Offset = 0; BW = **10 MHz**; Modulation = **16 QAM**



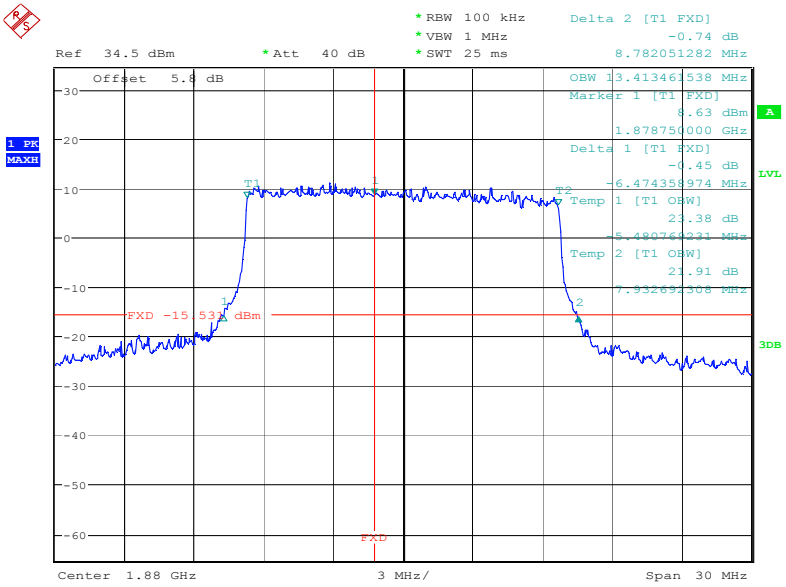
low
Date: 27.FEB.2014 20:58:28

26 dB -99% BW (LTE Band 2) Channel **18900 (1880 MHz)** – RB Size = **75**; RB Offset = 0; BW = **15 MHz**; Modulation = **QPSK**



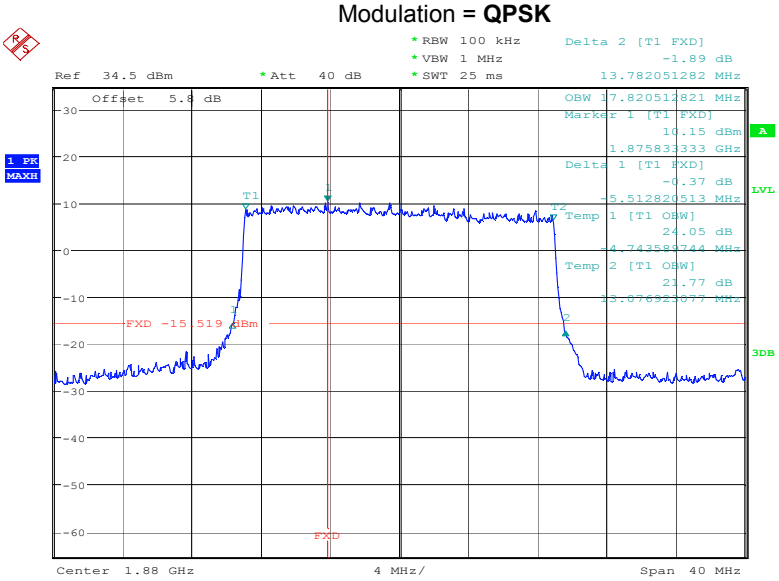
low
Date: 29.JUN.2014 15:21:07

26 dB -99% BW (LTE Band 2) Channel **18900 (1880 MHz)** – RB Size = **75**; RB Offset = 0; BW = **15 MHz**; Modulation = **16 QAM**



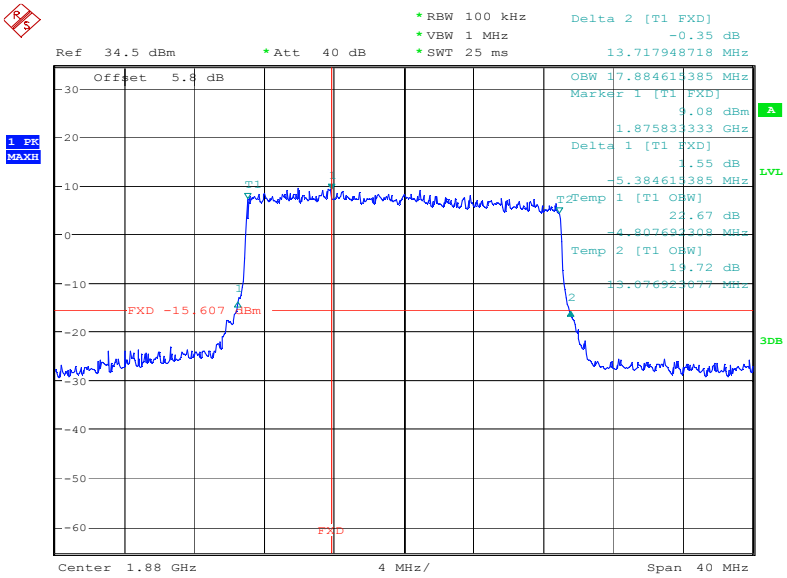
low
Date: 29.JUN.2014 15:17:46

26 dB -99% BW (LTE Band 2) Channel **18900 (1880 MHz)** – RB Size = **100**; RB Offset = 0; BW = **20 MHz**; Modulation = **QPSK**



low
Date: 29.JUN.2014 15:10:11

26 dB -99% BW (LTE Band 2) Channel **18900 (1880 MHz)** – RB Size = **100**; RB Offset = 0; BW = **20 MHz**; Modulation = **16QAM**



low
Date: 29.JUN.2014 15:14:36

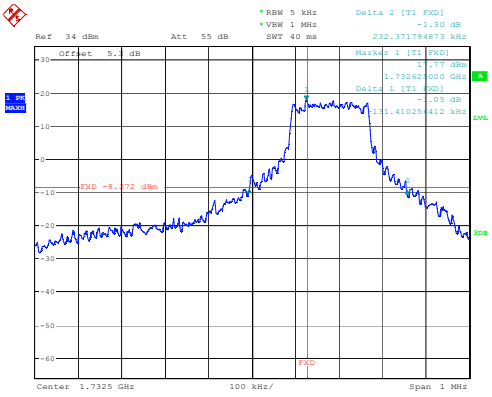
6.4.5.5 OBW LTE FDD Band 4 tables:

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: QPSK			
Channel No.	**Frequency (MHz)**	**26 dB (MHz)**	**99% (MHz)**
RB Size =1	**RB Offset** = 0		**BW (MHz)** = 0.18
20175	1732.5	0.36	0.22
RB Size = 6	**RB Offset** = 0		**BW (MHz)** = 1.4
20175	1732.5	1.43	1.12
RB Size = 15	**RB Offset** = 0		**BW (MHz)** = 3
20175	1732.5	3.63	2.76
RB Size = 25	**RB Offset** = 0		**BW (MHz)** = 5
20175	1732.5	5.17	4.52
RB Size = 50	**RB Offset** = 0		**BW (MHz)** = 10
20175	1732.5	10.1	8.97
RB Size = 75	**RB Offset** = 0		**BW (MHz)** = 15
20175	1732.5	16.53	13.62
RB Size = 100	**RB Offset** = 0		**BW (MHz)** = 20
20175	1732.5	20.43	17.95

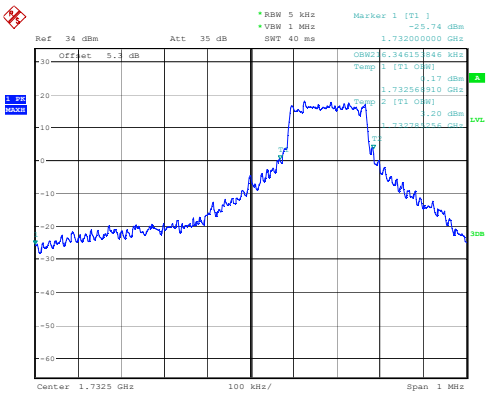
LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: 16 QAM			
Channel No.	**Frequency (MHz)**	**26 dB (MHz)**	**99% (MHz)**
RB Size =1	**RB Offset** = 0		**BW (MHz)** = 0.18
20175	1732.5	0.38	0.22
RB Size = 6	**RB Offset** = 0		**BW (MHz)** = 1.4
20175	1732.5	1.48	1.13
RB Size = 15	**RB Offset** = 0		**BW (MHz)** = 3
20175	1732.5	3.46	2.76
RB Size = 25	**RB Offset** = 0		**BW (MHz)** = 5
20175	1732.5	5.22	4.55
RB Size = 50	**RB Offset** = 0		**BW (MHz)** = 10
20175	1732.5	9.97	8.94
RB Size = 75	**RB Offset** = 0		**BW (MHz)** = 15
20175	1732.5	15.96	13.62
RB Size = 100	**RB Offset** = 0		**BW (MHz)** = 20
20175	1732.5	20.75	18.03

6.4.5.6 OBW LTE FDD Band 4 plots:

26 dB -99% BW (LTE Band 4) Channel **20175 (1732.5 MHz)** – RB Size = **1**; RB Offset = MID; BW = **5 MHz**; Modulation = **QPSK**

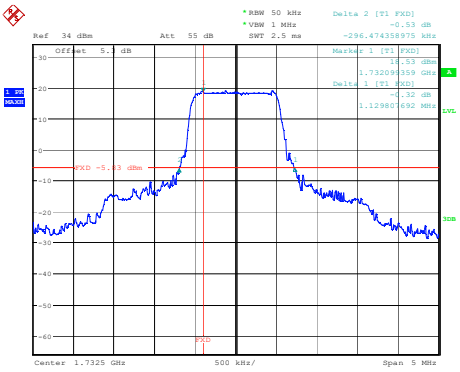


low
Date: 18.JUN.2014 19:10:16

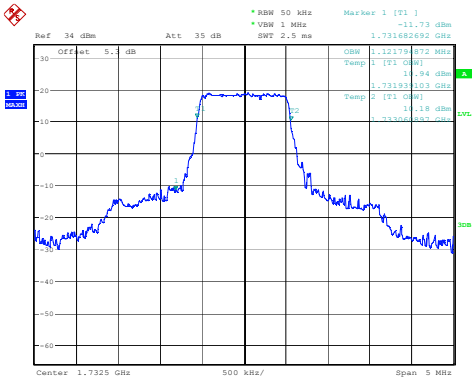


low
Date: 18.JUN.2014 19:05:24

26 dB -99% BW (LTE Band 4) Channel **20175 (1732.5 MHz)** – RB Size = **6**; RB Offset = 0; BW = **1.4 MHz**; Modulation = **QPSK**

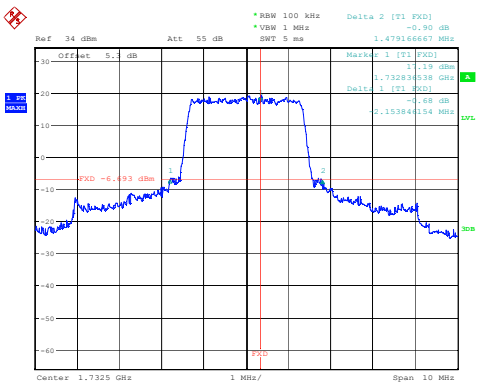


low
Date: 18.JUN.2014 19:23:31

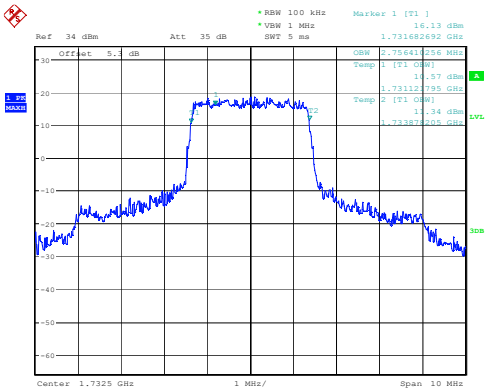


low
Date: 18.JUN.2014 19:19:46

26 dB -99% BW (LTE Band 4) Channel **20175 (1732.5 MHz)** – RB Size = **15**; RB Offset = 0; BW = **3.0 MHz**; Modulation = **QPSK**

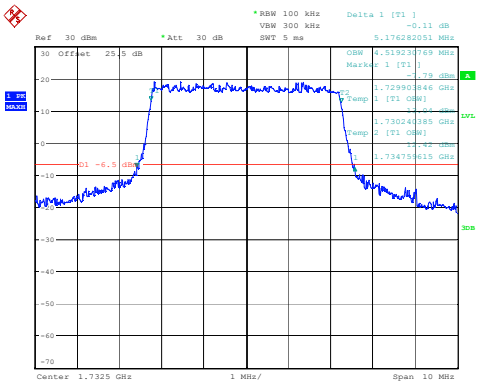


low
Date: 18.JUN.2014 19:14:07

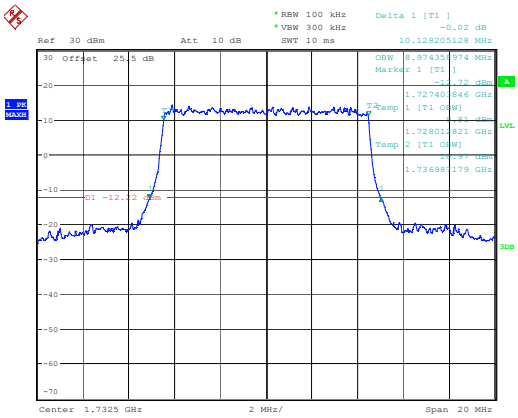


low
Date: 18.JUN.2014 19:18:19

26 dB -99% BW (LTE Band 4) Channel **20175 (1732.5 MHz)** – RB Size = **25/50**; RB Offset = 0; BW = **5 MHz/10MHz**; Modulation = **QPSK**

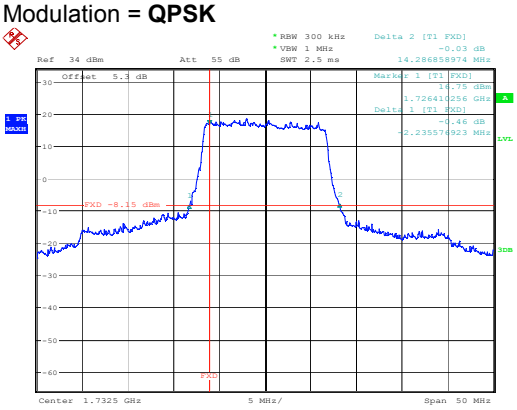


Date: 11.MAR.2014 18:50:54

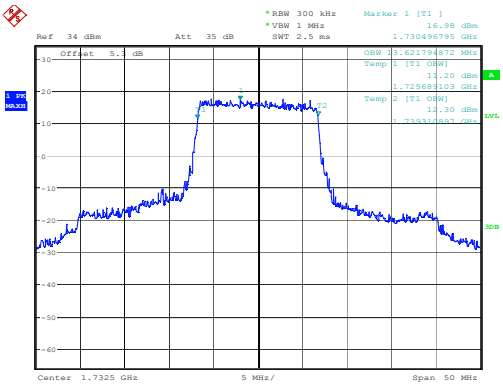


Date: 2.MAY.2014 22:06:05

26 dB -99% BW (LTE Band 4) Channel **20175 (1732.5 MHz)** – RB Size = **75**; RB Offset = 0; BW = **15.0 MHz**; Modulation = **QPSK**

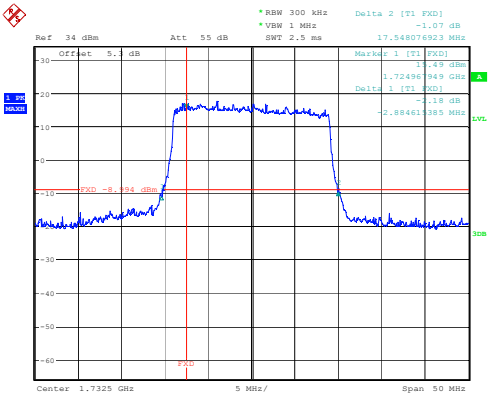


low
Date: 18.JUN.2014 19:26:22

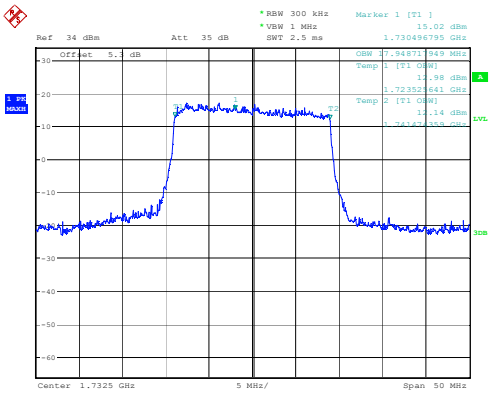


low
Date: 18.JUN.2014 19:29:16

26 dB -99% BW (LTE Band 4) Channel **20175 (1732.5 MHz)** – RB Size = **100**; RB Offset = 0; BW = **20.0 MHz**; Modulation = **QPSK**

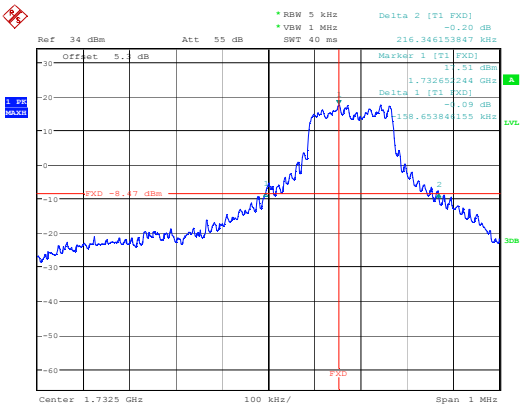


low
Date: 18.JUN.2014 19:32:50

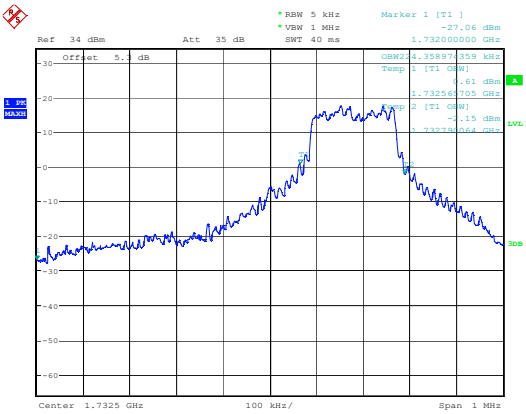


low
Date: 18.JUN.2014 19:30:08

26 dB -99% BW (LTE Band 4) Channel **20175 (1732.5 MHz)** – RB Size = **1**; RB Offset = MID; BW = **5 MHz**; Modulation = **16QAM**

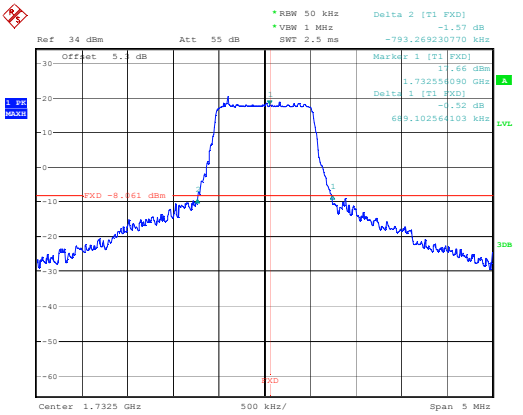


low
Date: 18.JUN.2014 19:08:50

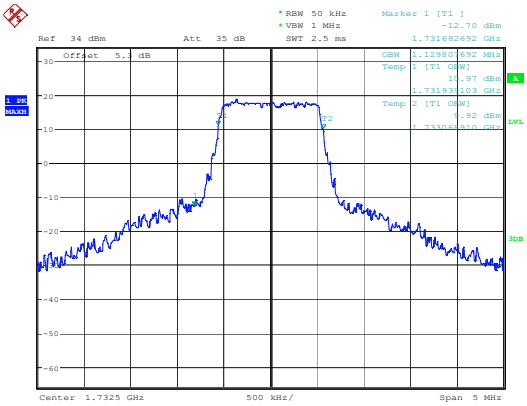


low
Date: 18.JUN.2014 19:06:55

26 dB -99% BW (LTE Band 4) Channel **20175 (1732.5 MHz)** – RB Size = **6**; RB Offset = 0; BW = **1.4 MHz**; Modulation = **16QAM**

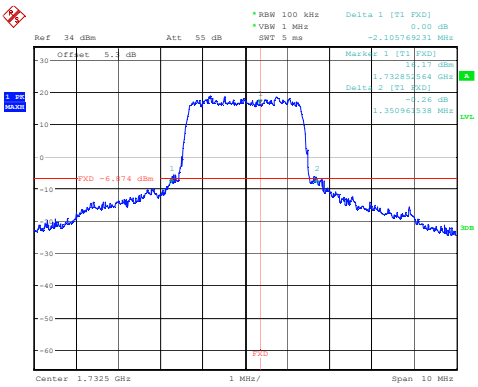


low
Date: 18.JUN.2014 19:21:38

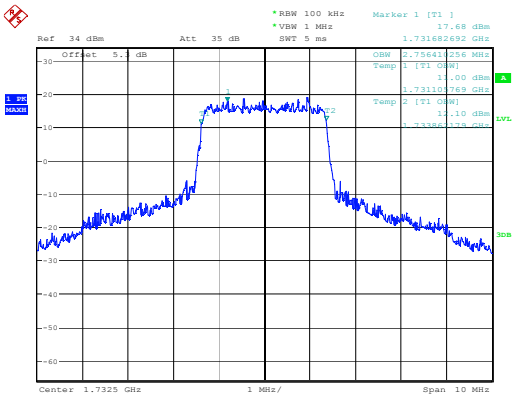


low
Date: 18.JUN.2014 19:20:38

26 dB -99% BW (LTE Band 4) Channel **20175 (1732.5 MHz)** – RB Size = **15**; RB Offset = 0; BW = **3.0 MHz**; Modulation = **16QAM**

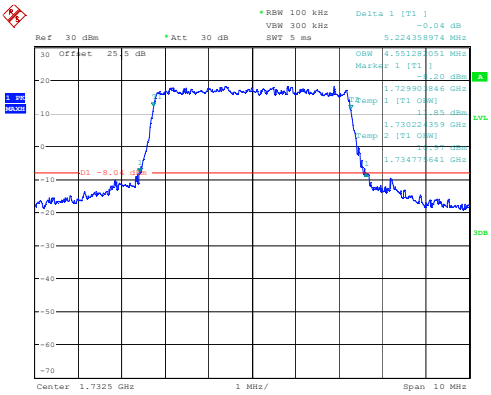


low
Date: 18.JUN.2014 19:16:21

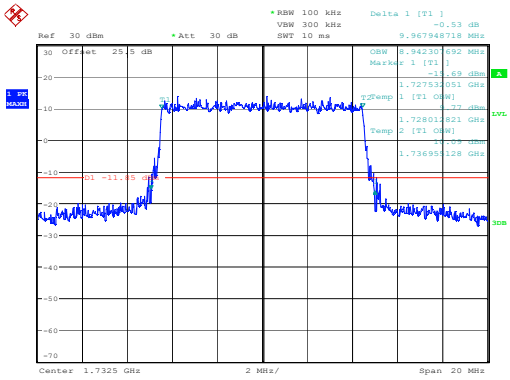


low
Date: 18.JUN.2014 19:17:34

26 dB -99% BW (LTE Band 4) Channel **20175 (1732.5 MHz)** – RB Size = **25/50**; RB Offset = 0; BW = **5 MHz/10MHz**; Modulation = **16 QAM**

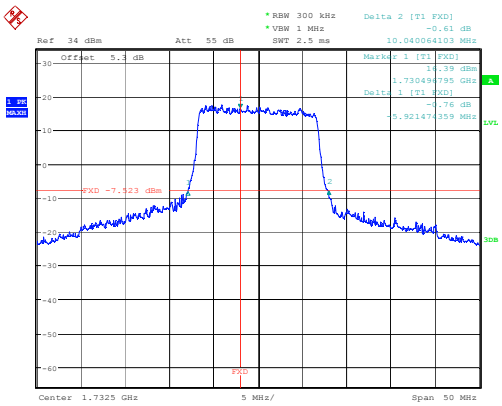


Date: 11.MAR.2014 22:29:42

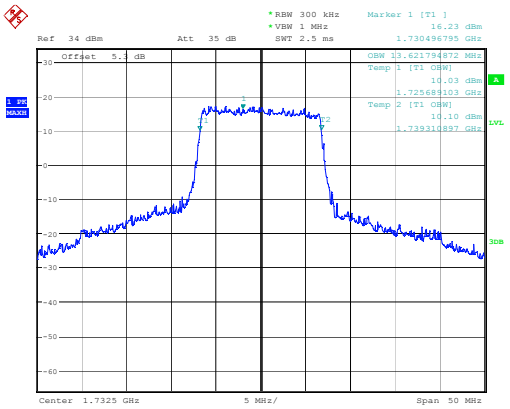


low
Date: 27.FEB.2014 22:33:27

26 dB -99% BW (LTE Band 4) Channel **20175 (1732.5 MHz)** – RB Size = **75**; RB Offset = 0; BW = **15.0 MHz**; Modulation = **16QAM**

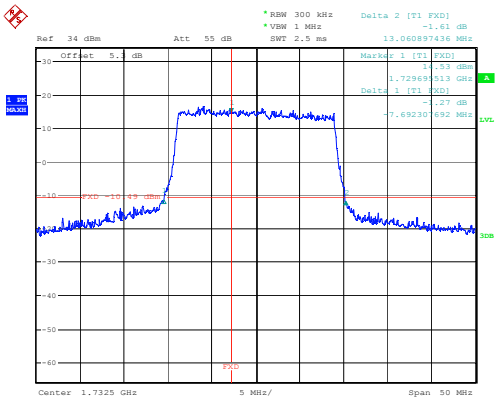


low
Date: 18.JUN.2014 19:27:40

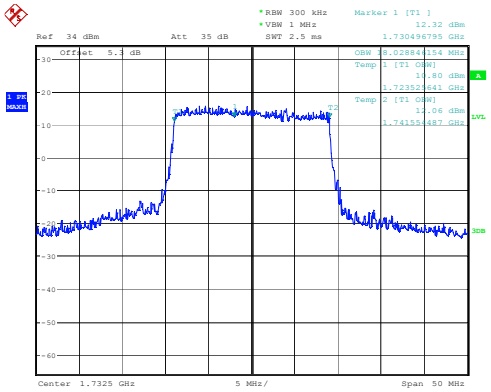


low
Date: 18.JUN.2014 19:28:46

26 dB -99% BW (LTE Band 4) Channel **20175 (1732.5 MHz)** – RB Size = **100**; RB Offset = 0; BW = **20.0 MHz**; Modulation = **16QAM**



low
Date: 18.JUN.2014 19:31:39



low
Date: 18.JUN.2014 19:30:46

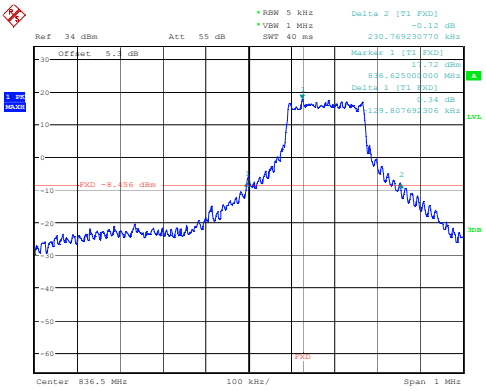
6.4.5.7 OBW LTE FDD Band 5 tables:

LTE Band 5 (824 MHz – 849 MHz) -Modulation: QPSK			
Channel No.	**Frequency (MHz)**	**26 dB (MHz)**	**99% (MHz)**
RB Size =1	**RB Offset** = 0		**BW (MHz)** = 0.18
20525	836.5	0.36	0.21
RB Size = 6	**RB Offset** = 0		**BW (MHz)** = 1.4
20525	836.5	1.43	1.11
RB Size = 15	**RB Offset** = 0		**BW (MHz)** = 3
20525	836.5	3.14	2.77
RB Size = 25	**RB Offset** = 0		**BW (MHz)** = 5
20525	836.5	5.09	4.53
RB Size = 50	**RB Offset** = 0		**BW (MHz)** = 10
20525	836.5	9.90	8.97

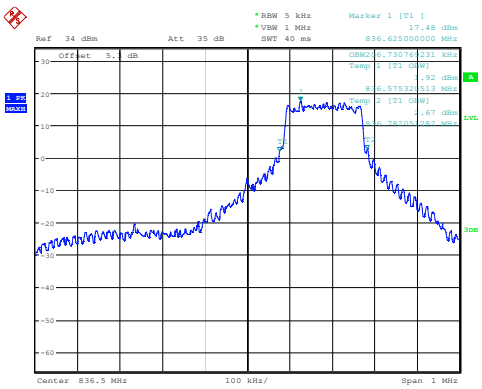
LTE Band 5 (824 MHz – 849 MHz) -Modulation: 16 QAM			
Channel No.	**Frequency (MHz)**	**26 dB (MHz)**	**99% (MHz)**
RB Size =1	**RB Offset** = 0		**BW (MHz)** = 0.18
20525	836.5	0.37	0.22
RB Size = 6	**RB Offset** = 0		**BW (MHz)** = 1.4
20525	836.5	1.42	1.12
RB Size = 15	**RB Offset** = 0		**BW (MHz)** = 3
20525	836.5	3.13	2.75
RB Size = 25	**RB Offset** = 0		**BW (MHz)** = 5
20525	836.5	5.19	4.55
RB Size = 50	**RB Offset** = 0		**BW (MHz)** = 10
20525	836.5	10.1	8.97

6.4.5.8 OBW LTE FDD Band 5 plots:

26 dB -99% BW (LTE Band 5) Channel **20525 (836.5 MHz)** – RB Size = **1**; RB Offset = MID; BW = **5 MHz**; Modulation = **QPSK**

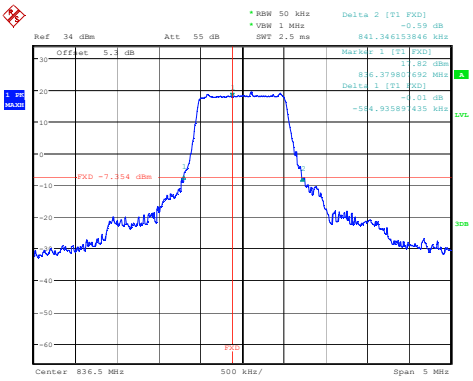


low
Date: 18.JUN.2014 18:52:40

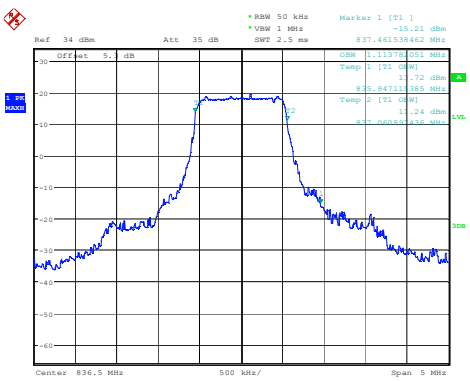


low
Date: 18.JUN.2014 18:53:58

26 dB -99% BW (LTE Band 5) Channel **20525 (836.5 MHz)** – RB Size = **6**; RB Offset = 0; BW = **1.4 MHz**; Modulation = **QPSK**

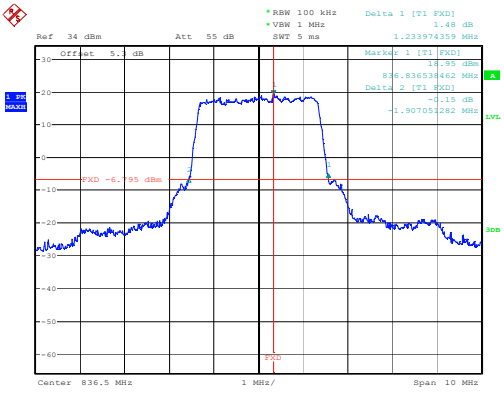


low
Date: 18.JUN.2014 18:44:18

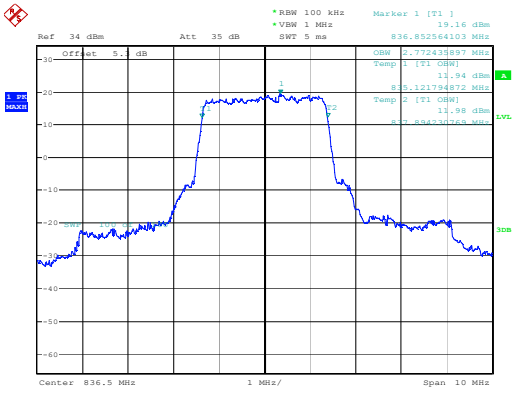


low
Date: 18.JUN.2014 18:37:47

26 dB -99% BW (LTE Band 5) Channel **20525 (836.5 MHz)** – RB Size = **15**; RB Offset = 0; BW = **3 MHz**; Modulation = **QPSK**

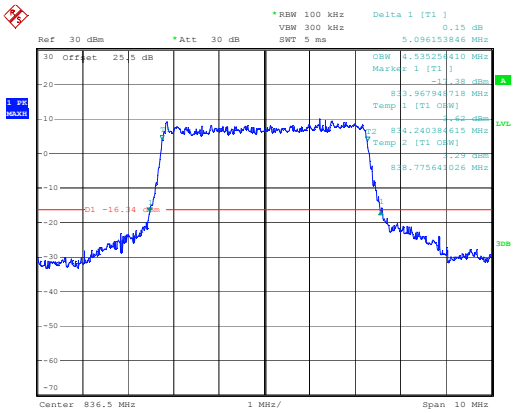


low
Date: 18.JUN.2014 15:40:39

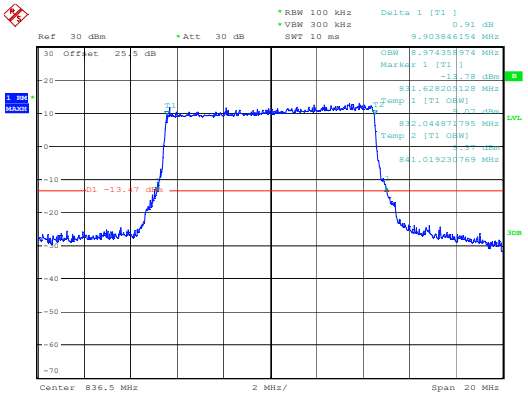


low
Date: 18.JUN.2014 15:23:46

26 dB -99% BW (LTE Band 5) Channel **20525 (836.5 MHz)** – RB Size = **25/50**; RB Offset = 0; BW = **5 MHz/10MHz**; Modulation = **QPSK**

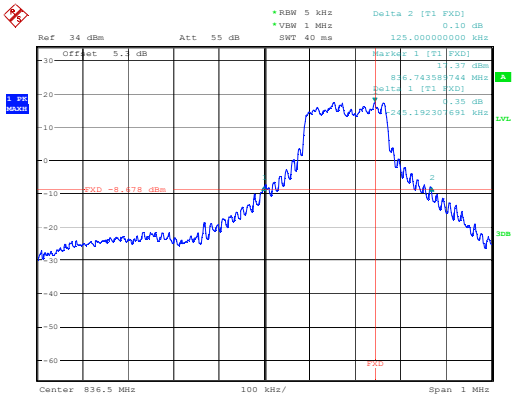


Date: 11.MAR.2014 23:19:23

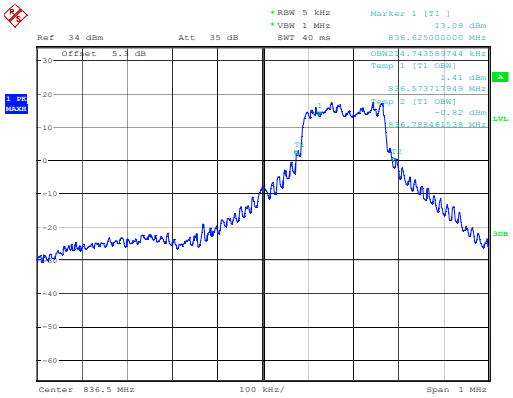


low
Date: 25.FEB.2014 22:51:40

26 dB -99% BW (LTE Band 5) Channel **20525 (836.5 MHz)** – RB Size = **1**; RB Offset = MID; BW = **5 MHz**; Modulation = **16QAM**

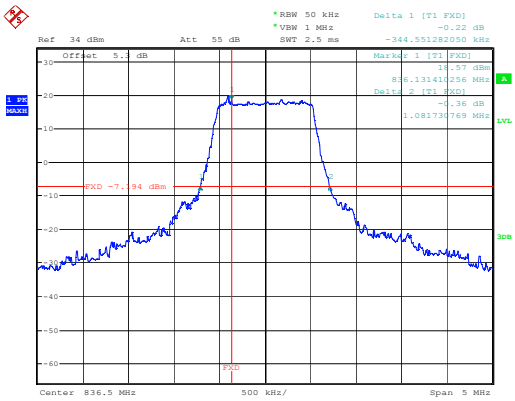


low
Date: 18.JUN.2014 18:49:57

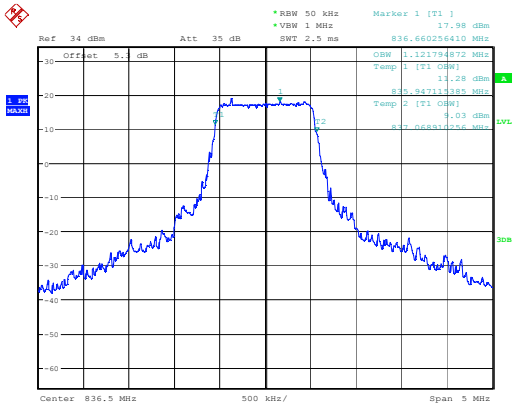


low
Date: 18.JUN.2014 18:55:02

26 dB -99% BW (LTE Band 5) Channel **20525 (836.5 MHz)** – RB Size = **6**; RB Offset = 0; BW = **1.4 MHz**; Modulation = 16QAM

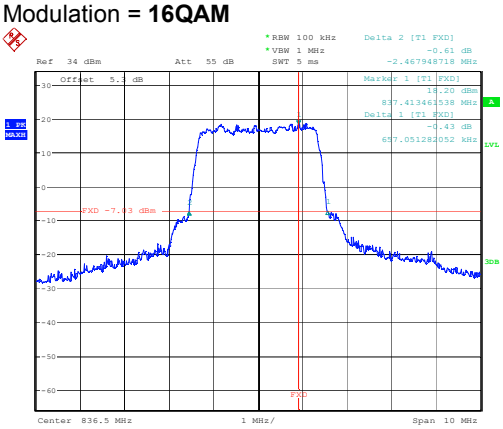


low
Date: 18.JUN.2014 18:42:10

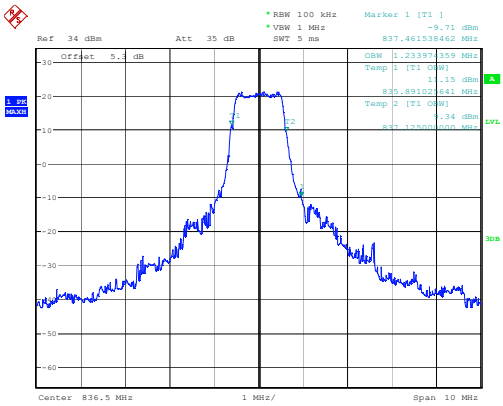


low
Date: 18.JUN.2014 18:40:02

26 dB -99% BW (LTE Band 5) Channel **20525 (836.5 MHz)** – RB Size = **15**; RB Offset = 0; BW = **3 MHz**; Modulation = **16QAM**

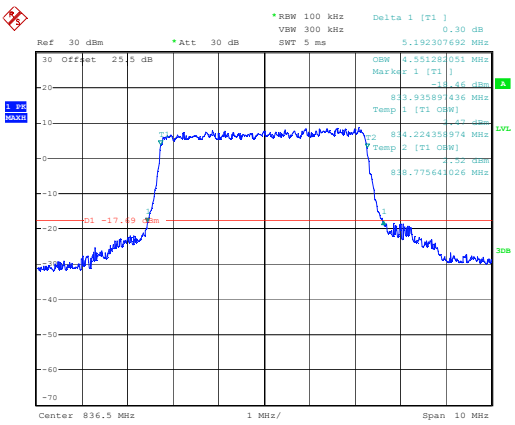


low
Date: 18.JUN.2014 15:44:06

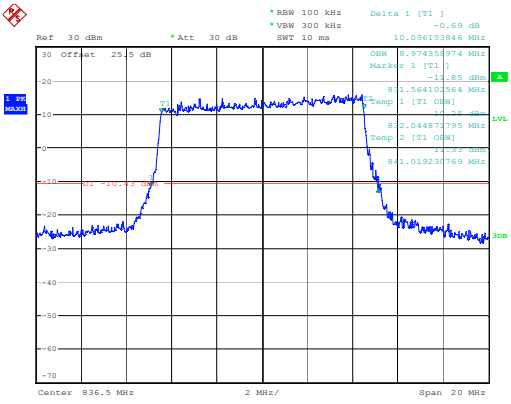


low
Date: 18.JUN.2014 18:35:48

26 dB -99% BW (LTE Band 5) Channel **20525 (836.5 MHz)** – RB Size = **25/50**; RB Offset = 0; BW = **5 MHz/10MHz**; Modulation = **16QAM**



Date: 12.MAR.2014 00:05:46



low
Date: 27.FEB.2014 23:01:00

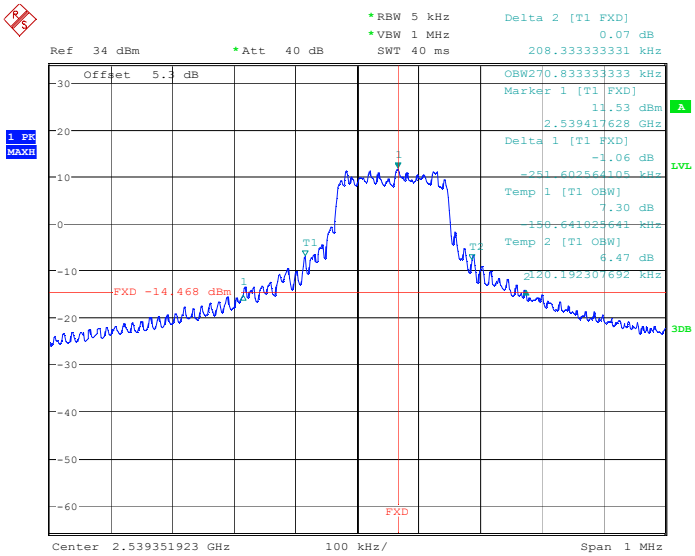
6.4.5.9 OBW LTE FDD Band 7 tables:

LTE Band 7 (2500 MHz – 2690 MHz) -Modulation: QPSK			
Channel No.	**Frequency (MHz)**	**26 dB (MHz)**	**99% (MHz)**
RB Size = 1	**RB Offset** = 0		**BW (MHz)** = 0.18
21100	2535	0.46	0.27
RB Size = 25	**RB Offset** = 0		**BW (MHz)** = 5
21100	2535	5.19	4.54
RB Size = 50	**RB Offset** = 0		**BW (MHz)** = 10
21100	2535	9.55	8.94
RB Size = 75	**RB Offset** = 0		**BW (MHz)** = 15
21100	2535	15.85	13.46
RB Size = 100	**RB Offset** = 0		**BW (MHz)** = 20
21100	2535	19.23	17.88

LTE Band 7 (2500 MHz – 2690 MHz) -Modulation: 16QAM			
Channel No.	**Frequency (MHz)**	**26 dB (MHz)**	**99% (MHz)**
RB Size = 1	**RB Offset** = 0		**BW (MHz)** = 0.18
21100	2535	0.47	0.25
RB Size = 25	**RB Offset** = 0		**BW (MHz)** = 5
21100	2535	4.84	4.54
RB Size = 50	**RB Offset** = 0		**BW (MHz)** = 10
21100	2535	10.38	8.97
RB Size = 75	**RB Offset** = 0		**BW (MHz)** = 15
21100	2535	15.32	13.46
RB Size = 100	**RB Offset** = 0		**BW (MHz)** = 20
21100	2535	19.75	17.88

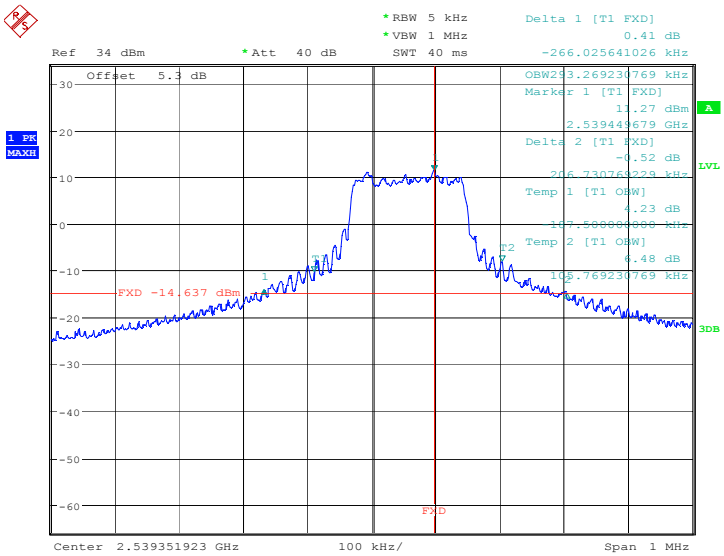
6.4.5.10 OBW LTE FDD Band 7 plots:

26dB and 99% BW (LTE Band 7) Channel **21100 (2535 MHz)** – RB Size = **1**; RB Offset = 49; BW = **10 MHz**; Modulation = **QPSK**



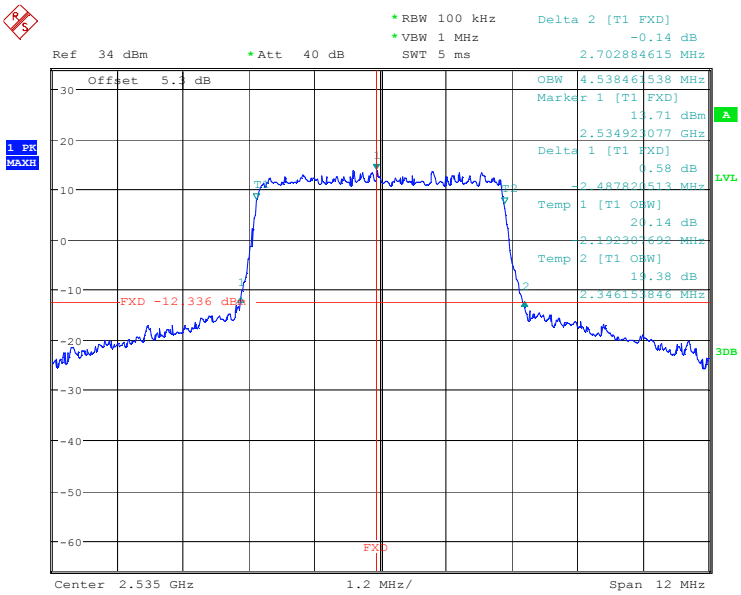
low
Date: 29.JUN.2014 14:03:25

26dB and 99% BW (LTE Band 7) Channel **21100 (2535 MHz)** – RB Size = **1**; RB Offset = 49; BW = **10 MHz**; Modulation = **16QAM**



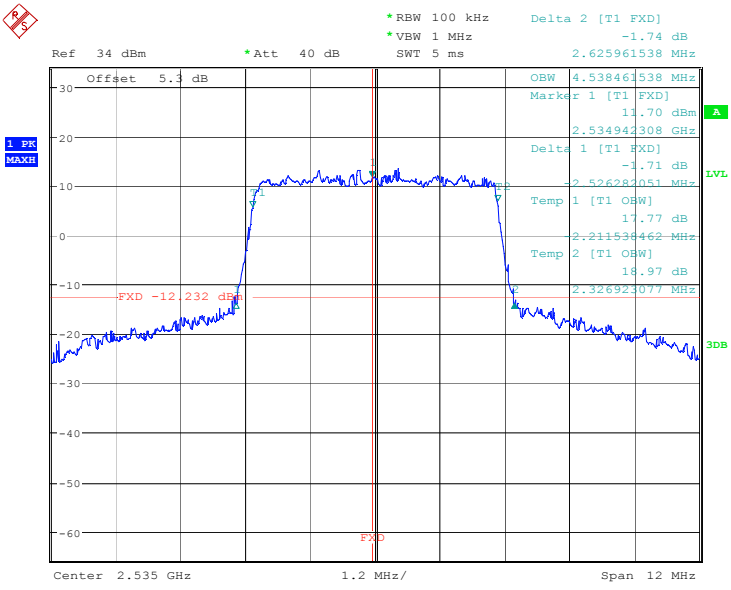
low
Date: 29.JUN.2014 13:58:07

26dB and 99% BW (LTE Band 7) Channel **21100 (2535 MHz)** – RB Size = 25; RB Offset = 0; BW = **5 MHz**; Modulation = **QPSK**



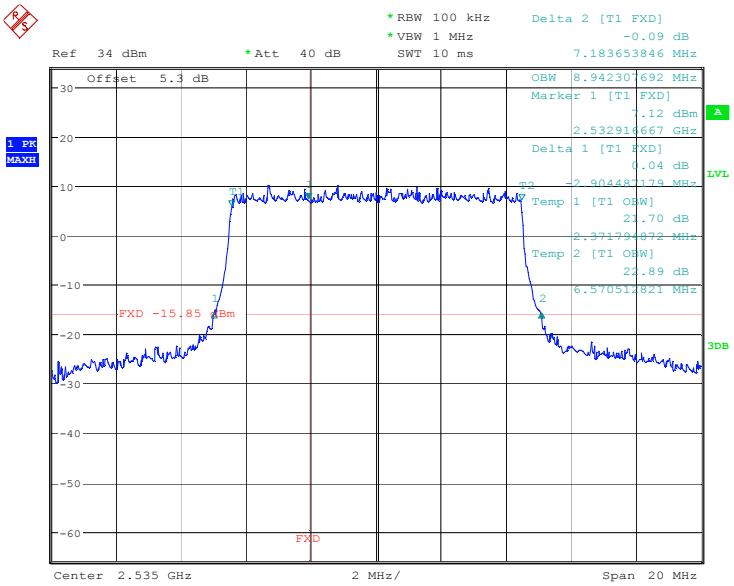
low
Date: 29.JUN.2014 14:22:02

26dB and 99% BW (LTE Band 7) Channel **21100 (2535 MHz)** – RB Size = 25; RB Offset = 0; BW = **5 MHz**; Modulation = **16QAM**



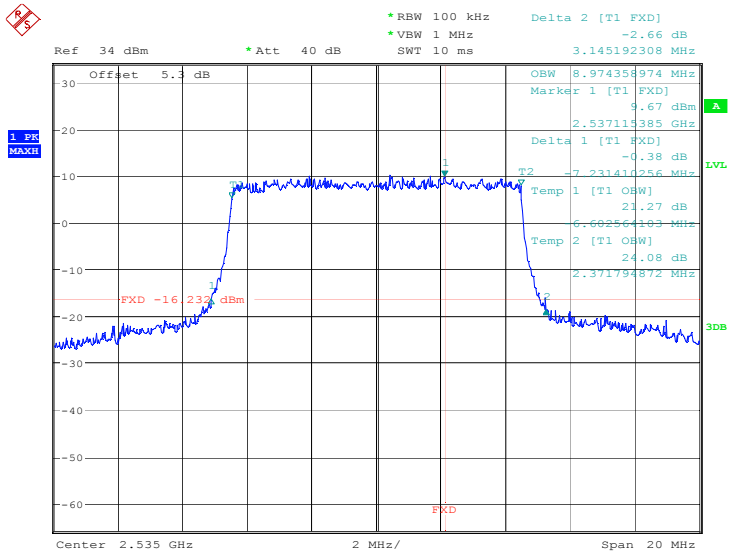
low
Date: 29.JUN.2014 14:23:41

26dB and 99% BW (LTE Band 7) Channel **21100 (2535 MHz)** – RB Size = **50**; RB Offset = 0; BW = **10 MHz**; Modulation = **QPSK**



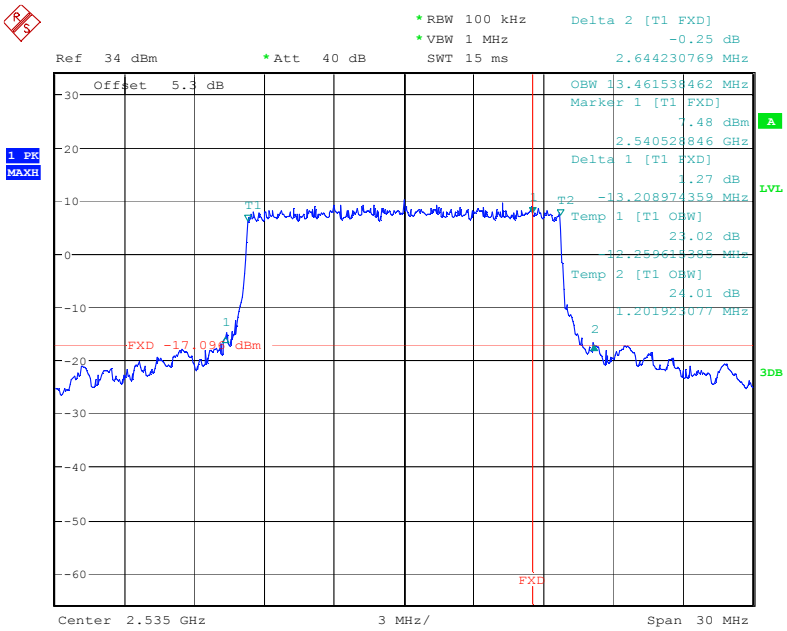
low
Date: 29.JUN.2014 14:36:05

26dB and 99% BW (LTE Band 7) Channel **21100 (2535 MHz)** – RB Size = **50**; RB Offset = 0; BW = **10 MHz**; Modulation = 16QAM



low
Date: 29.JUN.2014 14:33:22

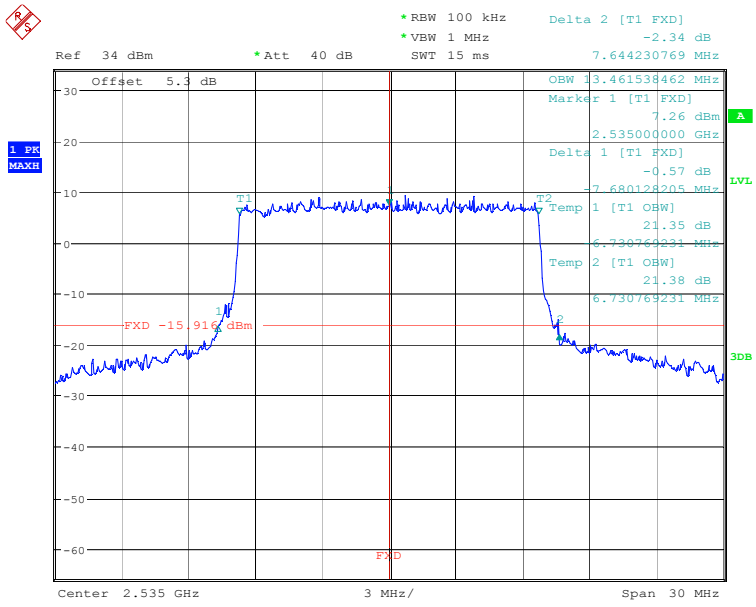
26dB and 99% BW (LTE Band 7) Channel **21100 (2535 MHz)** – RB Size = **75**; RB Offset = 0; BW = **15 MHz**; Modulation = **QPSK**



low

Date: 29.JUN.2014 14:41:59

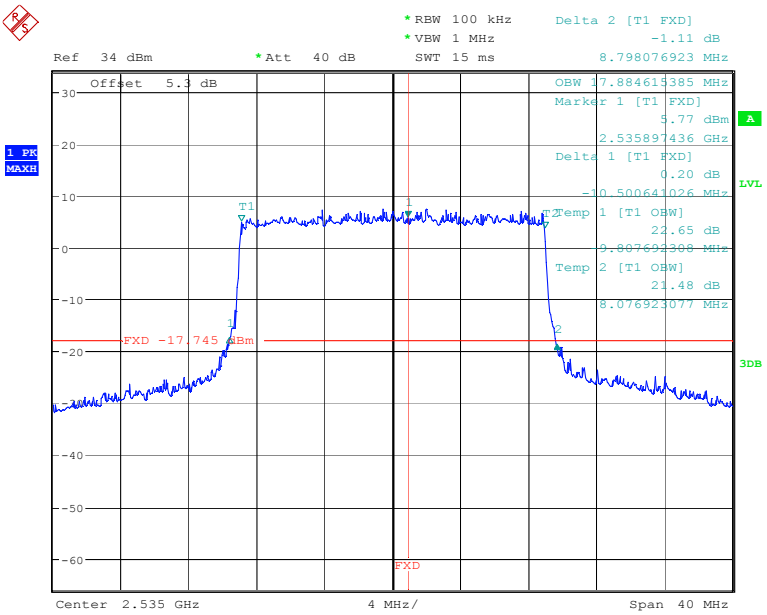
26dB and 99% BW (LTE Band 7) Channel **21100 (2535 MHz)** – RB Size = **75**; RB Offset = 0; BW = **15 MHz**; Modulation = **16QAM**



low

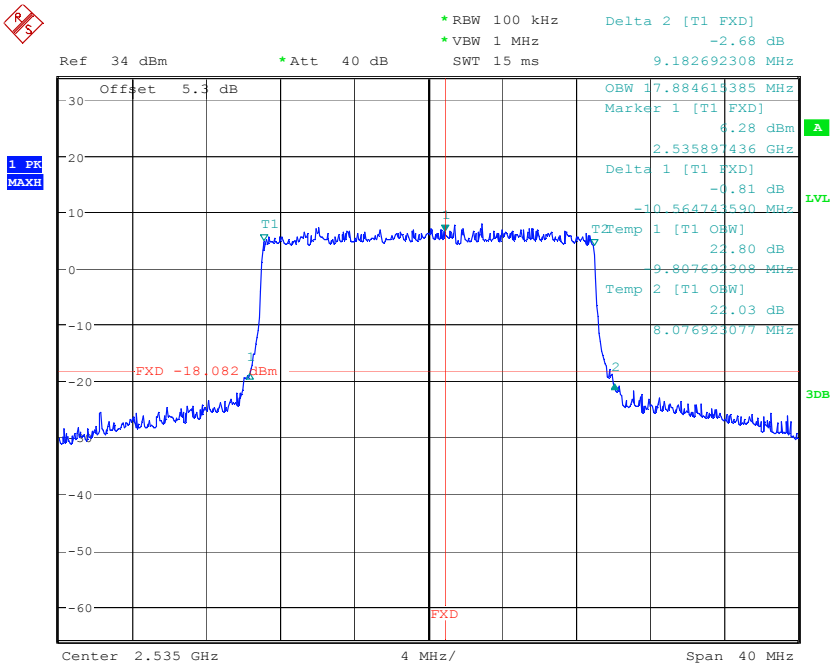
Date: 29.JUN.2014 14:45:47

26dB and 99% BW (LTE Band 7) Channel **21100 (2535 MHz)** – RB Size = **100**; RB Offset = 0; BW = **20 MHz**; Modulation = **QPSK**



low
Date: 29.JUN.2014 14:52:27

26dB and 99% BW (LTE Band 7) Channel **21100 (2535 MHz)** – RB Size = **100**; RB Offset = 0; BW = **20 MHz**; Modulation = **16QAM**



low
Date: 29.JUN.2014 14:49:51

6.5 Frequency Stability

6.5.1 References

FCC: CFR Part 2.1055, CFR Part 22.355, CFR Part 24.235, CFR Part 27.54
IC: RSS-Gen Section 4.7; RSS 132 Section 4.3; RSS 133 Section 6.3, RSS-139 Section 6.3, RSS-199 Section 4.3

6.5.2 Measurement requirements:

Frequency stability is a measure of frequency drift due to temperature and supply voltage variations with reference to the frequency measured at an appropriate reference temperature and the rated supply voltage.
A hand-held device that is only capable of operating using internal batteries shall be tested using a new battery without any further requirement to vary the supply voltage. Alternatively, an external supply voltage can be used and set at the battery nominal voltage, and again at the battery operating end point voltage which shall be specified by the equipment manufacturer.

6.5.3 Limits

NOTE: Freq. Error (ppm) = Freq. Error (Hz) / Declared Freq (MHz)

Limit is +/- 1.5ppm for base stations
Limit is +/- 2.5ppm for mobile devices

For Hand carried battery powered equipment:

According to the JTC standard the frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec. 24.235/22.355 Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.
As this transceiver is considered "Hand carried, battery powered equipment" Section 2.1055(d)(2) applies. This requires that the lower voltage for frequency stability testing be specified by the manufacturer. This transceiver is specified to operate with an input voltage of between 3.6VDC and 4.2VDC, with a nominal voltage of 3.8VDC. Operation above or below these voltage limits is prohibited by transceiver software in order to prevent improper operation as well as to protect components from overstress. These voltages represent a tolerance of –5.0% and +10.5%. For the purposes of measuring frequency stability these voltage limits are to be used.

§2.1055 (D)(1)
For devices that operated with an external AC supply, DC supply, and are battery operated (AFC FREQ ERROR vs. VOLTAGE) – Voltage shall be varied between 85% and 115% of the nominal voltage.

6.5.4 Test Data:

6.5.4.1 LTE FDD Band 17

Mode: LTE (Band 17), High Channel, Highest output power **Modulation = QPSK** **BW = 1 RB**		
Channel No. 23800	Frequency: 711 MHz	
	Freq. Error (Hz)	Freq. Error (ppm)
Min. voltage = 3.6 Vdc	13	0.018
Max. voltage = 4.2 Vdc	11	0.015
Battery End Point:	**3.5 Vdc**	

§2.1055 (A)(1)
AFC FREQ ERROR vs. TEMPERATURE

Channel No. 23800	711	**Nom Vol: 3.8V**
Temperature (°C)	Freq. Error (Hz)	Freq. Error (ppm)
-10	-19	-0.027
0	-14	-0.020
+10	-10	-0.014
+20	-11	-0.015
+30	12	0.017
+40	11	0.015
+50	-8	-0.011

6.5.4.2 LTE FDD Band 2

Mode: LTE (Band 2), Mid Channel, Highest output power Modulation = QPSK		
Channel No. 18900	Frequency: 1880 MHz	
	Freq. Error (Hz)	Freq. Error (ppm)
Min. voltage = 3.6 Vdc	13	0.007
Max. voltage = 4.2 Vdc	13	0.007
Battery End Point: = 3.4 Vdc		

§2.1055 (A)(1)
AFC FREQ ERROR vs. TEMPERATURE

Channel No. 18900	Frequency:1880 MHz	**Nom Vol: 3.8V**
Temperature (°C)	Freq. Error (Hz)	Freq. Error (ppm)
-10	-15	-0.008
0	-20	-0.011
+10	-14	-0.007
+20	11	0.006
+30	7	0.004
+40	-10	-0.005
+50	-14	-0.007

6.5.4.3 LTE FDD Band 4

Mode: LTE (Band 4), Low Channel, Highest output power Modulation = 16 QAM		
Channel No. 20175	1732.5 MHz	
	Freq. Error (Hz)	Freq. Error (ppm)
Min. voltage = 3.6 Vdc	11	0.006
Max. voltage = 4.2 Vdc	11	0.006
Battery End Point:	**3.4 Vdc**	

§2.1055 (A)(1)
AFC FREQ ERROR vs. TEMPERATURE

Channel No. 20175	1732.5 MHz	**Nom Vol: 3.8V**
Temperature (°C)	Freq. Error (Hz)	Freq. Error (ppm)
-10	-20	-0.012
0	-26	-0.015
+10	-11	-0.006
+20	11	0.006
+30	18	0.010
+40	-15	-0.009
+50	20	0.012

6.5.4.4 LTE FDD Band 5

Mode: LTE (Band 5), Low Channel, Highest output power		
Channel No. 20450	Frequency: 829 MHz	
	Freq. Error (Hz)	Freq. Error (ppm)
Min. voltage = 3.6 Vdc	17	0.021
Max. voltage = 4.2 Vdc	11	0.013
Battery End Point: =	**3.4 Vdc**	

§2.1055 (A)(1)
AFC FREQ ERROR vs. TEMPERATURE

Channel No. 20450	Frequency: 829 MHz	**Nom Vol: 3.8V**
Temperature (°C)	Freq. Error (Hz)	Freq. Error (ppm)
-10	-15	-0.018
0	-19	-0.023
+10	-12	-0.014
+20	-2	-0.002
+30	17	0.021
+40	17	0.021
+50	20	0.024

6.5.4.5 LTE FDD Band 7

Mode: LTE (Band 7), Mid Channel, Highest output power Modulation = QPSK		
Channel No. 21100	Frequency: 2535 MHz	
	Freq. Error (Hz)	Freq. Error (ppm)
Min. voltage = 3.6 Vdc	21	0.008
Max. voltage = 4.2 Vdc	23	0.009
Battery End Point: =	**3.4 Vdc**	

§2.1055 (A)(1)
AFC FREQ ERROR vs. TEMPERATURE

Channel No. 21100	Frequency: 2535 MHz	**Nom Vol: 3.8V**
Temperature (°C)	Freq. Error (Hz)	Freq. Error (ppm)
-10	-27	-0.011
0	-27	-0.011
+10	-12	-0.005
+20	-3	-0.001
+30	26	0.010
+40	25	0.010
+50	31	0.012

6.5.5 Test Verdict:

PASS

6.6 Band Edge (Conducted) / Transmitter Unwanted Emissions

6.6.1 References

FCC: CFR Part 2.1053, CFR Part 22.917 (a) (b), CFR Part 24.238 (a) (b), CFR Part 27.53 (g), CFR Part 27.53 (f), CFR Part 27.53 (l)
IC: RSS-132 Section 4.5.1.1, RSS 133 Section 6.5, RSS 133 Section 6.5, RSS-199 Section 4.5

6.6.2 Limits

Note: The text below is taken from the FCC rules. For all bands the FCC rules are equally or more stringent then the IC rules and are thus be considered as a worst case for both.

6.6.2.1 LTE Band 5

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.
(b) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed

6.6.2.2 LTE Band 2

Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.
(b) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed

6.6.2.3 LTE Band 4

(g) AWS emission limits—(1) General protection levels. Except as otherwise specified below, for operations in the 1710-1755 MHz, 2110-2155 MHz, 2000-2020 MHz, 2180-2200 MHz, 1915-1920 MHz, and 1995-2000 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dB.
(3) Measurement procedure. (i) Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

6.6.2.4 LTE Band 7

(4) For mobile digital stations, the attenuation factor shall be not less than 43 + 10 log (P) dB at the channel edge and 55 + 10 log (P) dB at 5.5 megahertz from the channel edges.
(6) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed

6.6.2.5 LTE Band 17

(f) For operations in the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

6.6.3 Measurement Procedure:

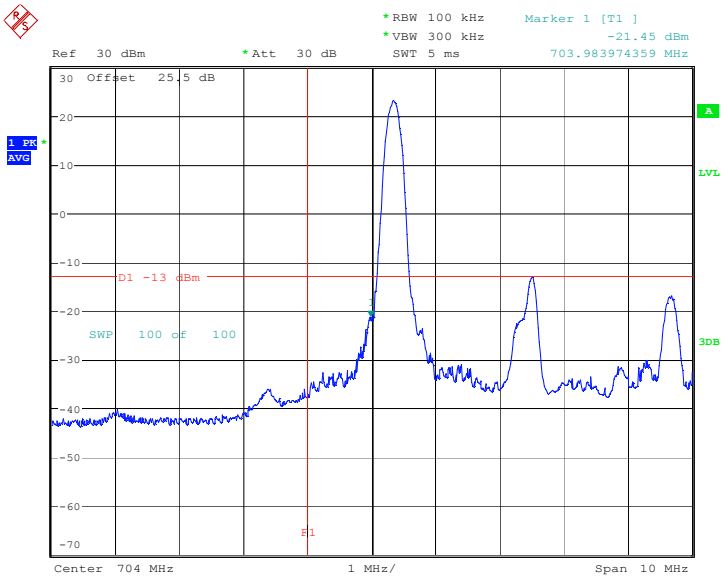
Frequency: lower or upper band edge frequency
Span: 10MHz
RBW: 100kHz below 1GHz, 1MHz above 1GHz
VBW: 3x RBW
Detector: RMS (because the fundamental limits are RMS and nothing stated otherwise according to 971168 D01 Power Meas License Digital Systems v02r01 section 6.0)
Trace: AVG over at least 100 sweeps
Sweeptime: AUTO

In case the result should be above the limit choose RBW to 1% of the emission bandwidth as measured above and repeat the measurement.

6.6.4 Test Results / Plots

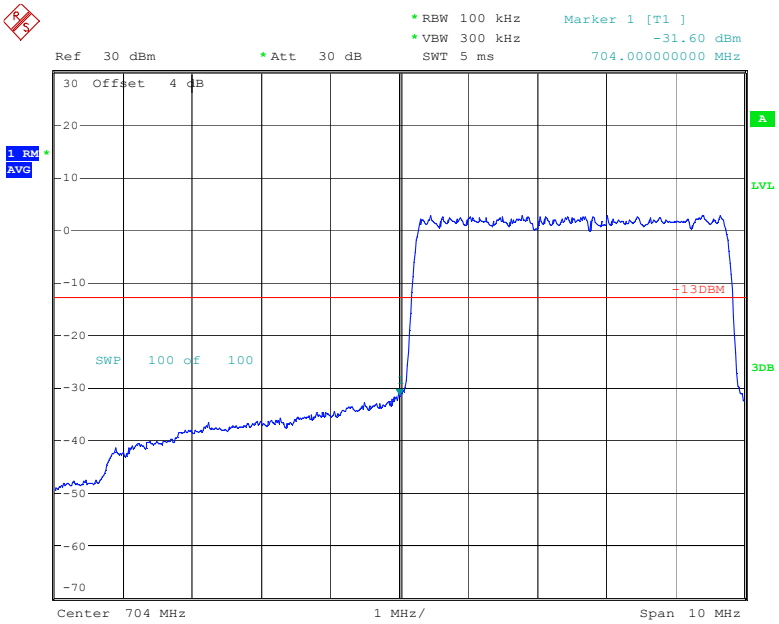
6.6.4.1 LTE Band 17 (704 MHz – 716 MHz)

Lower BE (LTE Band 17) Channel **23755 (706.5 MHz)** – RB Size = **1** ; RB Offset = 0; BW = **5 MHz**; Modulation = **QPSK**



Date: 13.MAR.2014 22:08:43

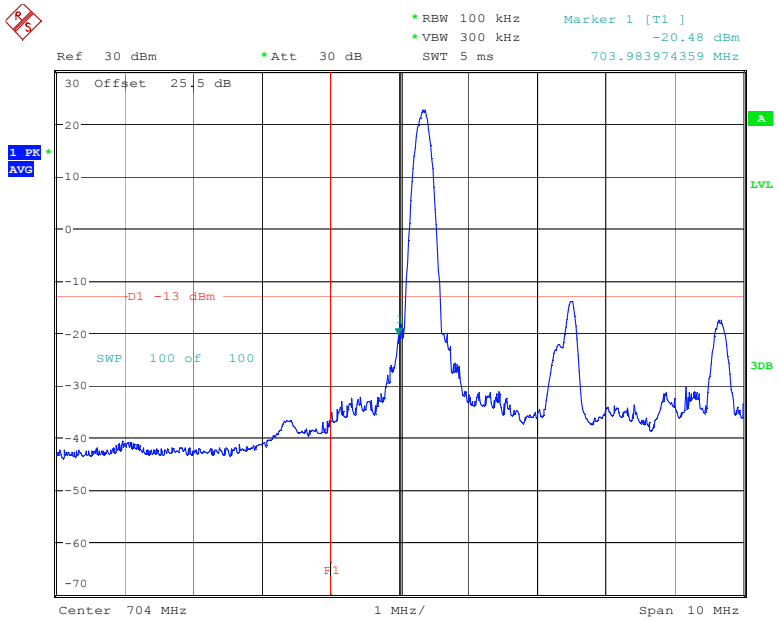
Lower BE (LTE Band 17) Channel **23755 (706.5 MHz)** – RB Size = **25** ; RB Offset = 0; BW = **5 MHz**; Modulation = **QPSK**



low

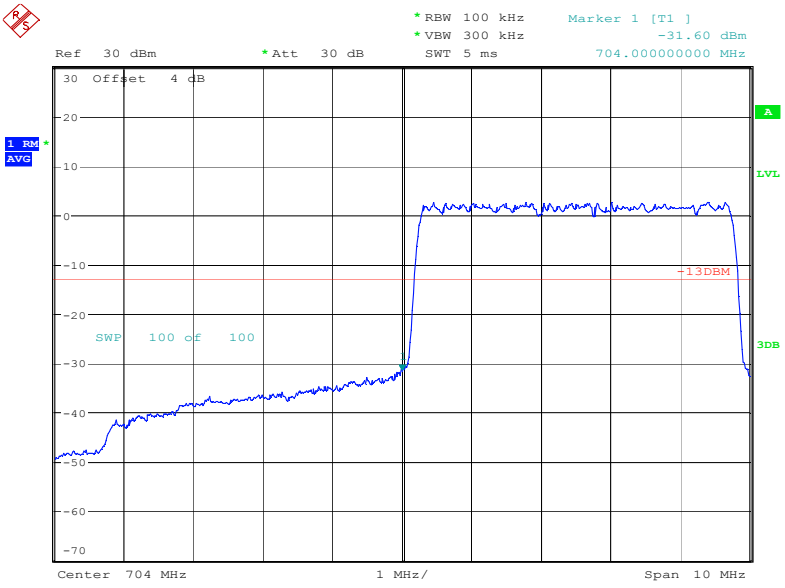
Date: 10.JUN.2014 23:39:18

Lower BE (LTE Band 17) Channel **23755 (706.5 MHz)** – RB Size = **1** ; RB Offset = 0; BW = **5 MHz**; Modulation = **16 QAM**



Date: 13.MAR.2014 22:14:28

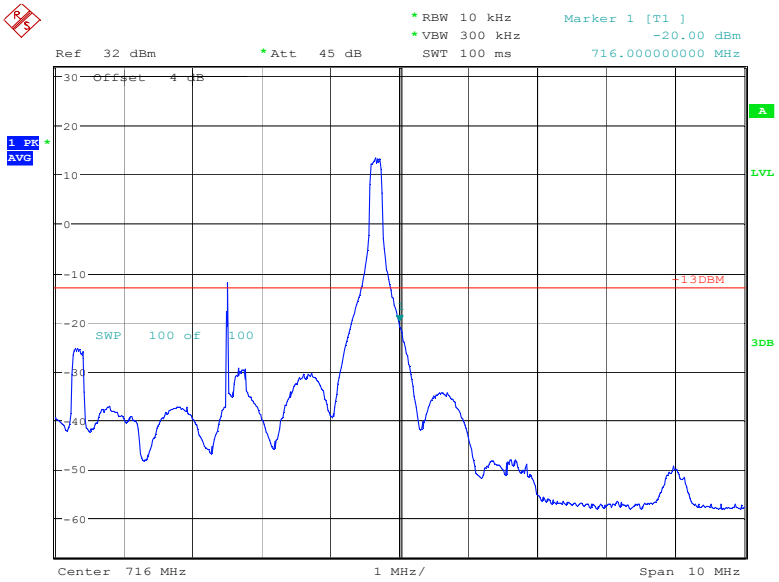
Lower BE (LTE Band 17) Channel **23755 (706.5 MHz)** – RB Size = **25** ; RB Offset = 0; BW = **5 MHz**; Modulation = **16 QAM**



low

Date: 10.JUN.2014 23:39:18

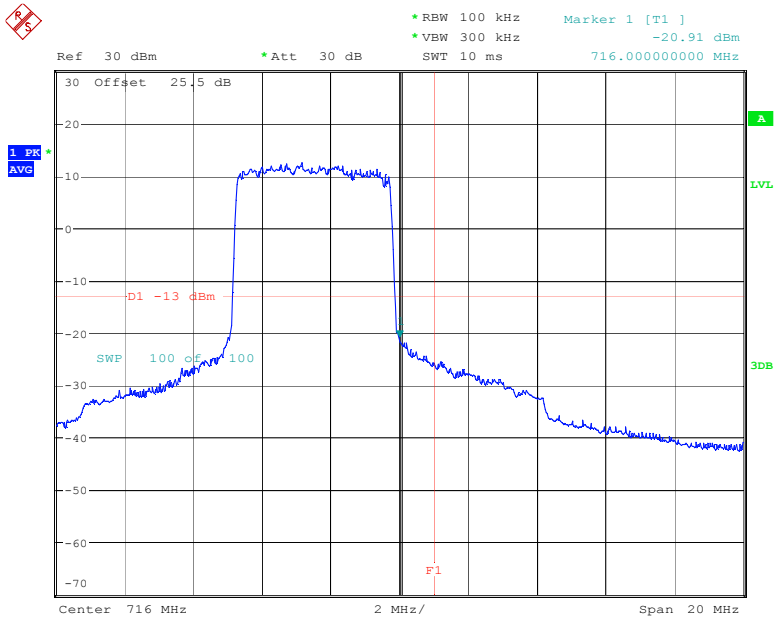
Upper BE (LTE Band 17) Channel **23825 (713.5 MHz)** – RB Size = **1** ; RB Offset = 24; BW = **5 MHz**; Modulation = **QPSK**



low
Date: 4.JUN.2014 15:09:31

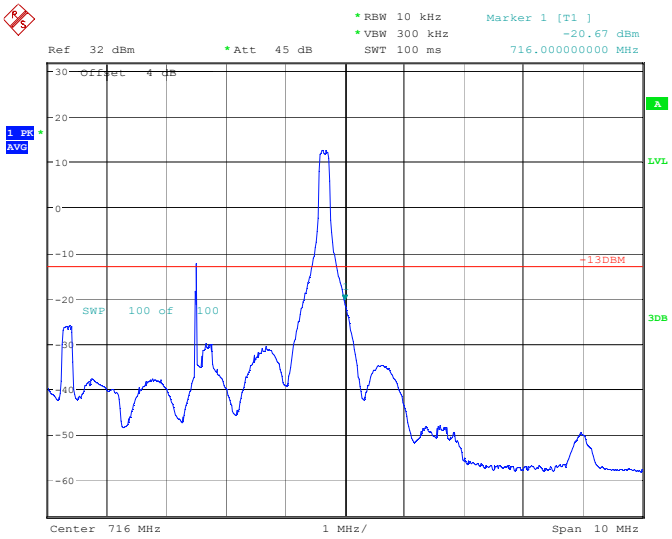
Note: The OBW of one resource block is 150kHz. Within 1MHz of band edge RBW of 1.5kHz is allowed.

Upper BE (LTE Band 17) Channel **23825 (713.5 MHz)** – RB Size = **25** ; RB Offset = 0; BW = **5 MHz**; Modulation = **QPSK**



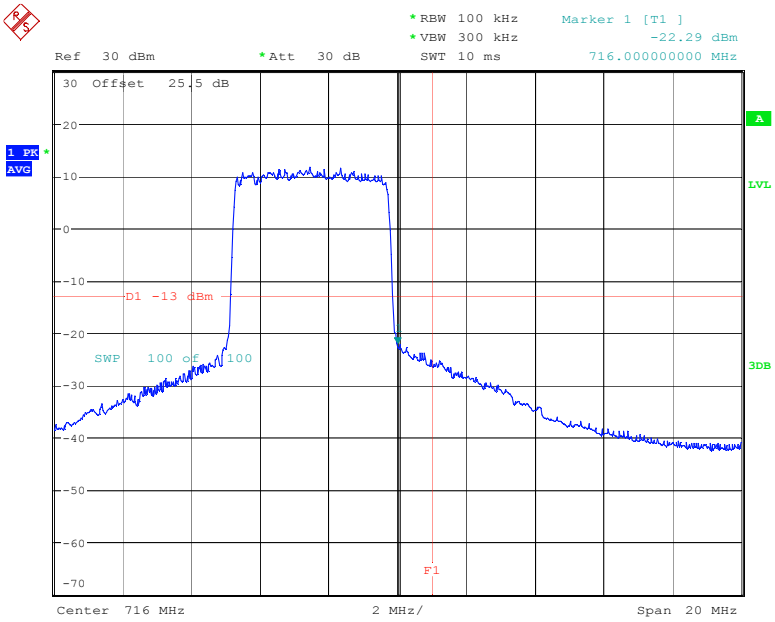
Date: 13.MAR.2014 18:43:04

Upper BE (LTE Band 17) Channel **23825 (713.5 MHz)** – RB Size = **1** ; RB Offset = 24;
BW = **5 MHz**; Modulation = **16 QAM**

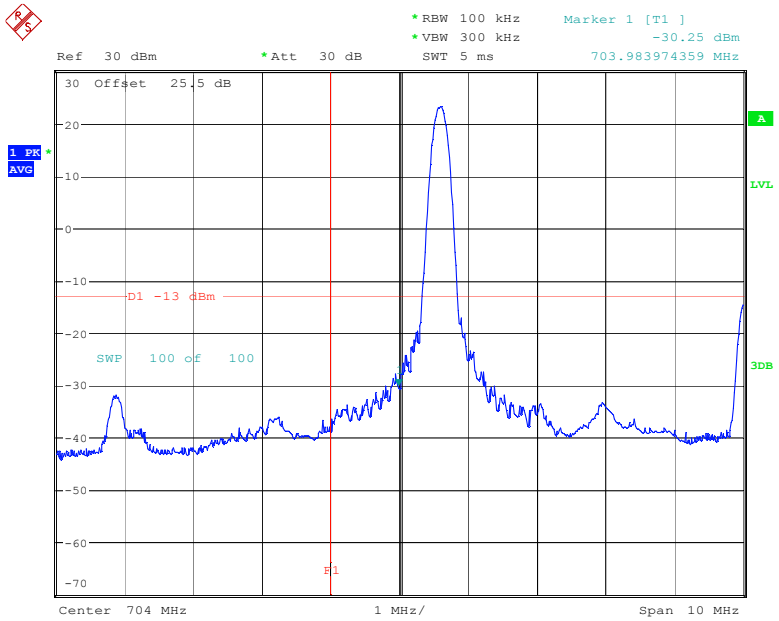


Note: The OBW of one resource block is 150kHz. Within 1MHz of band edge RBW of 1.5kHz is allowed.

Upper BE (LTE Band 17) Channel **23825 (713.5 MHz)** – RB Size = **25** ; RB Offset = 0;
BW = **5 MHz**; Modulation = **16 QAM**

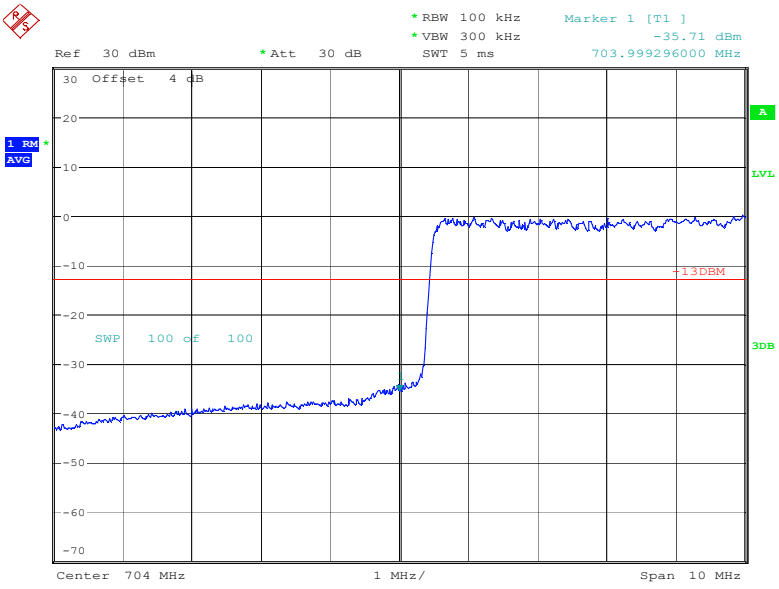


Lower BE (LTE Band 17) Channel **23780 (709 MHz)** – RB Size = **1** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **QPSK**



Date: 13.MAR.2014 22:22:13

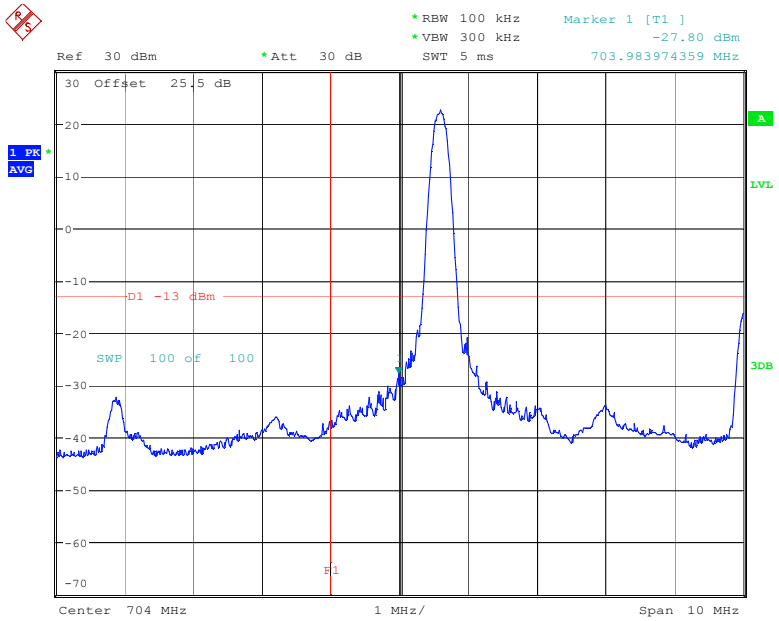
Lower BE (LTE Band 17) Channel **23780 (709 MHz)** – RB Size = **50** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **QPSK**



low

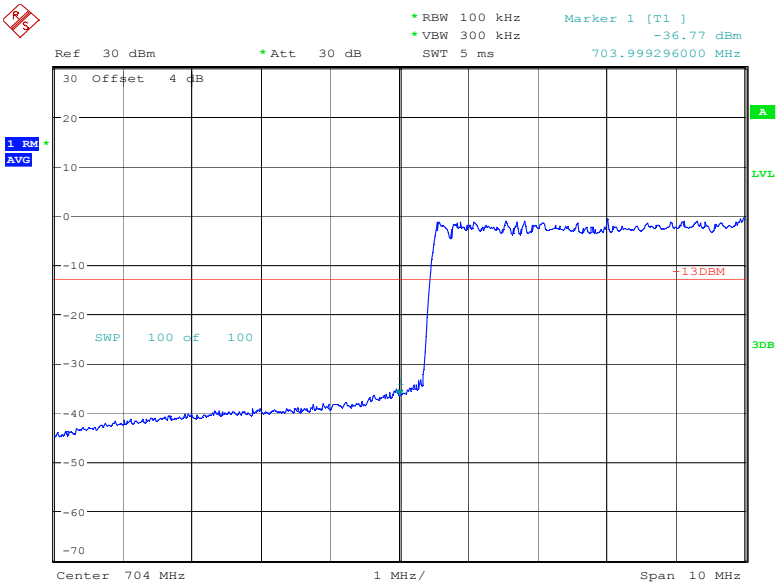
Date: 11.JUN.2014 00:27:02

Lower BE (LTE Band 17) Channel **23780 (709 MHz)** – RB Size = **1** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **16 QAM**



Date: 13.MAR.2014 22:29:21

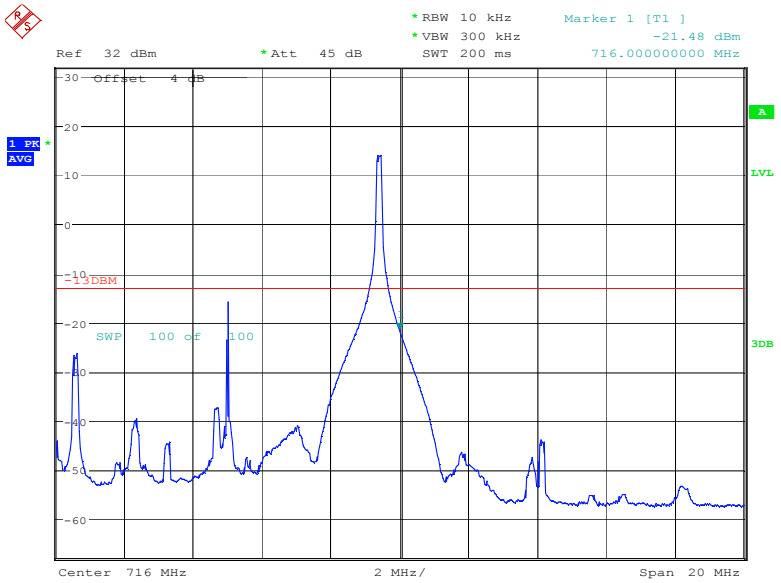
Lower BE (LTE Band 17) Channel **23780 (709 MHz)** – RB Size = **50** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **16 QAM**



low

Date: 11.JUN.2014 00:31:02

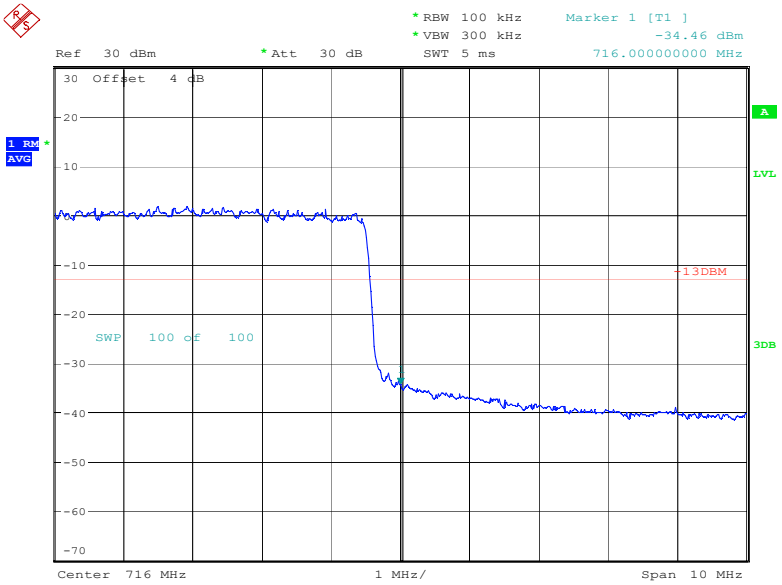
Upper BE (LTE Band 17) Channel **23800 (711 MHz)** – RB Size = **1** ; RB Offset = 49;
BW = **10 MHz**; Modulation = **QPSK**



low
Date: 4.JUN.2014 15:25:17

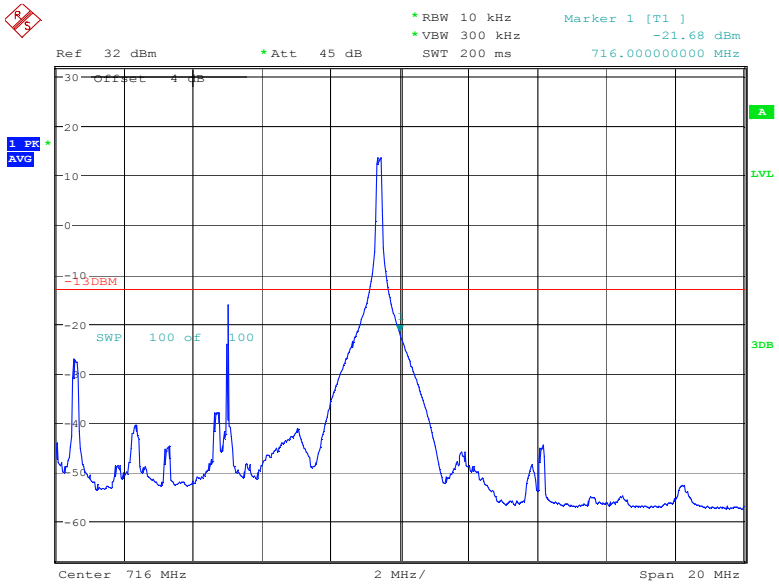
Note: The OBW of one resource block is 180kHz. Within 1MHz of band edge RBW of 1.8kHz is allowed.

Upper BE (LTE Band 17) Channel **23800 (711 MHz)** – RB Size = **50** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **QPSK**



low
Date: 11.JUN.2014 00:48:07

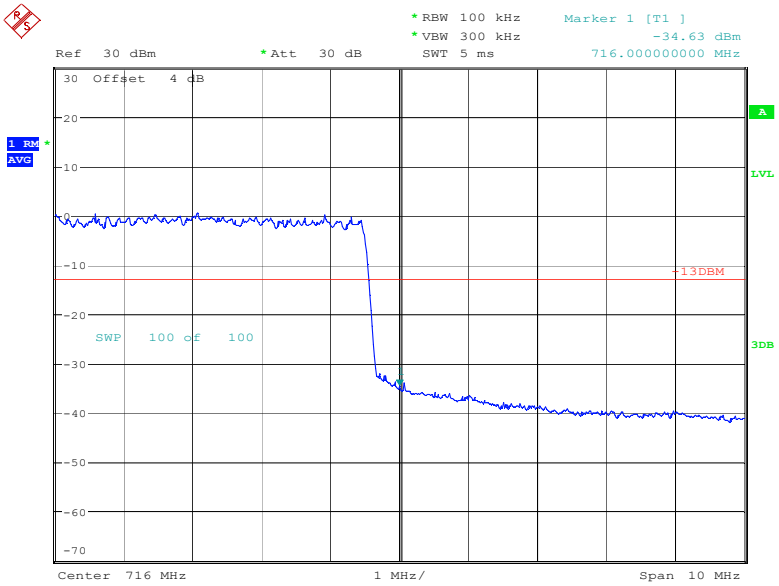
Upper BE (LTE Band 17) Channel **23800 (711 MHz)** – RB Size = **1** ; RB Offset = 49;
BW = **10 MHz**; Modulation = **16 QAM**



low
Date: 4.JUN.2014 15:26:36

Note: The OBW of one resource block is 150kHz. Within 1MHz of band edge RBW of 1.5kHz is allowed.

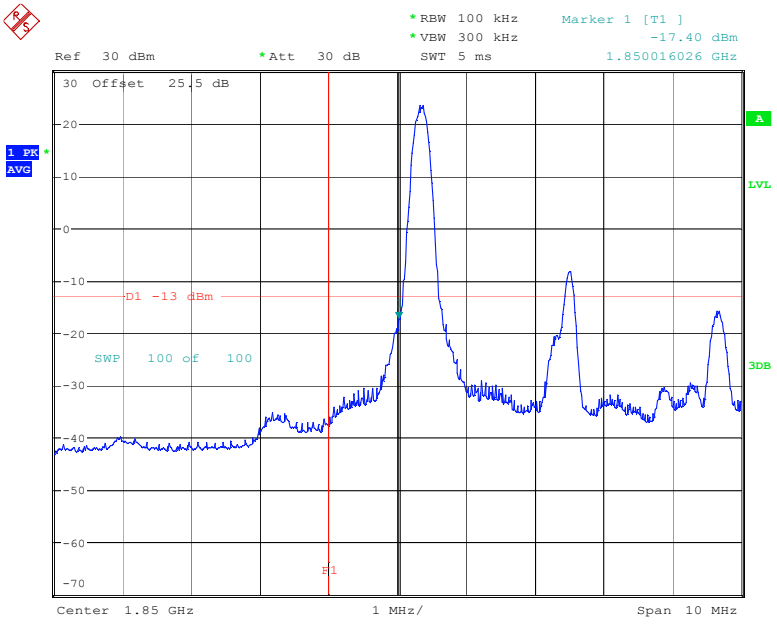
Upper BE (LTE Band 17) Channel **23800 (711 MHz)** – RB Size = **50** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **16 QAM**



low
Date: 11.JUN.2014 00:54:28

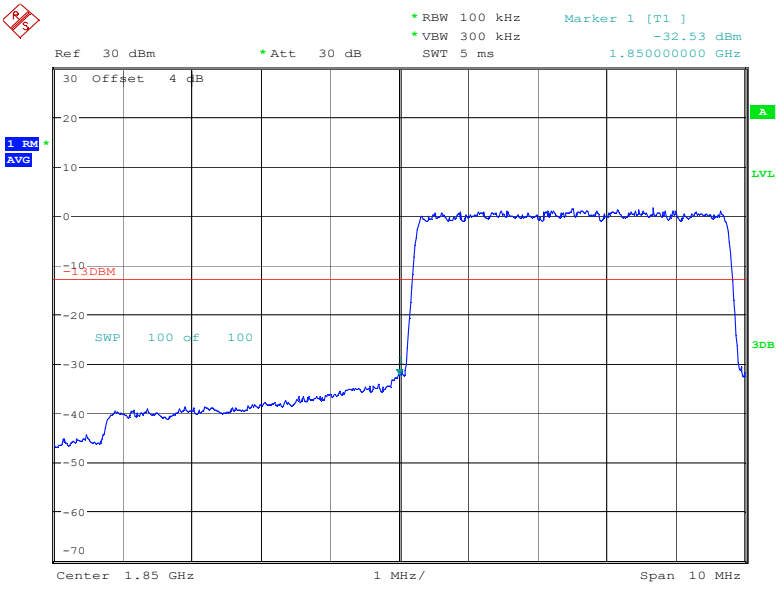
6.6.4.2 LTE Band 2 (1850 MHz – 1910 MHz)

Lower BE (LTE Band 2) Channel **18625 (1852.5 MHz)** – RB Size = **1** ; RB Offset = 0; BW = **5 MHz**; Modulation = **QPSK**



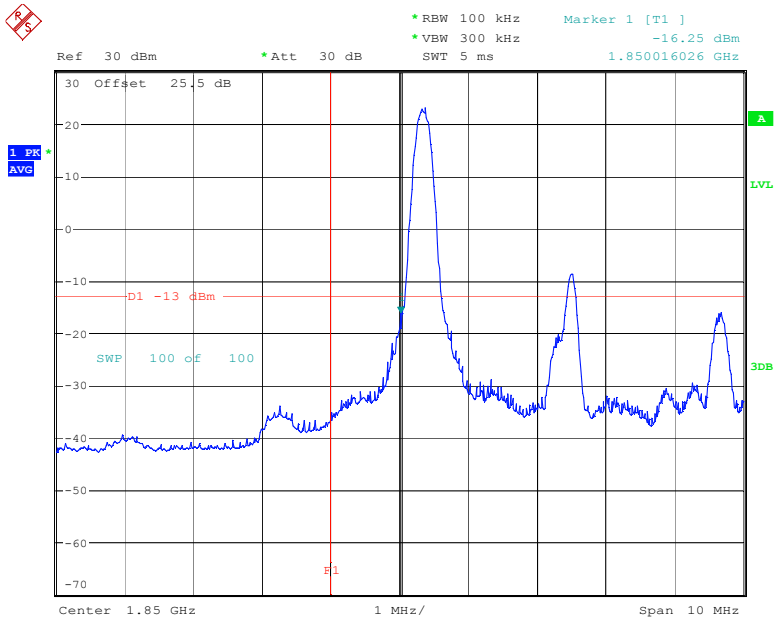
Date: 13.MAR.2014 20:51:51

Lower BE (LTE Band 2) Channel **18625 (1852.5 MHz)** – RB Size = **25** ; RB Offset = 0; BW = **5 MHz**; Modulation = **QPSK**

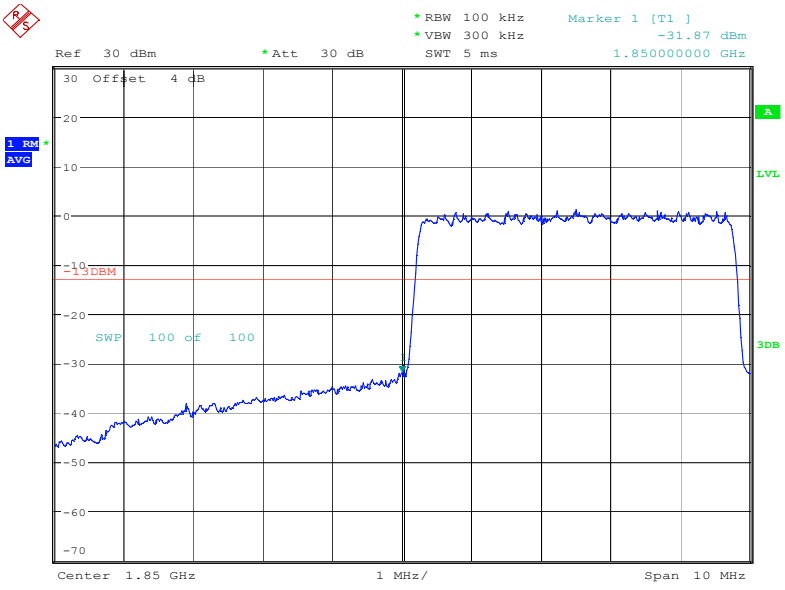


low
Date: 11.JUN.2014 01:02:24

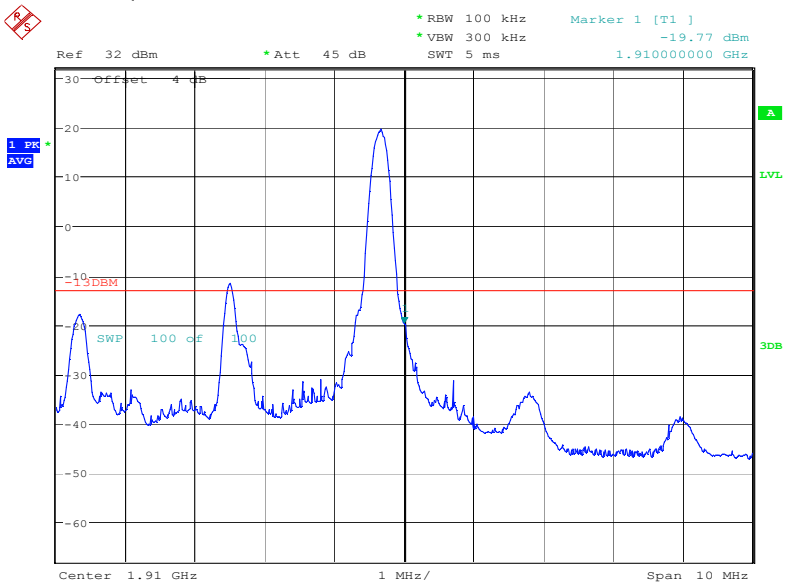
Lower BE (LTE Band 2) Channel **18625 (1852.5 MHz)** – RB Size = **1** ; RB Offset = 0; BW = **5 MHz**; Modulation = **16 QAM**



Lower BE (LTE Band 2) Channel **18625 (1852.5 MHz)** – RB Size = **25** ; RB Offset = 0; BW = **5 MHz**; Modulation = **16 QAM**

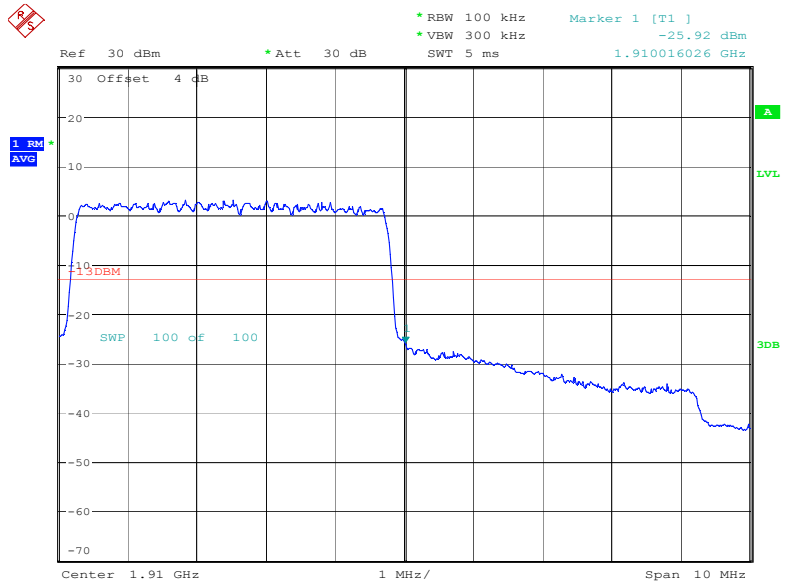


Upper BE (LTE Band 2) Channel **19175 (1907.5 MHz)** – RB Size = **1** ; RB Offset = 24; BW = **5 MHz**; Modulation = **QPSK**



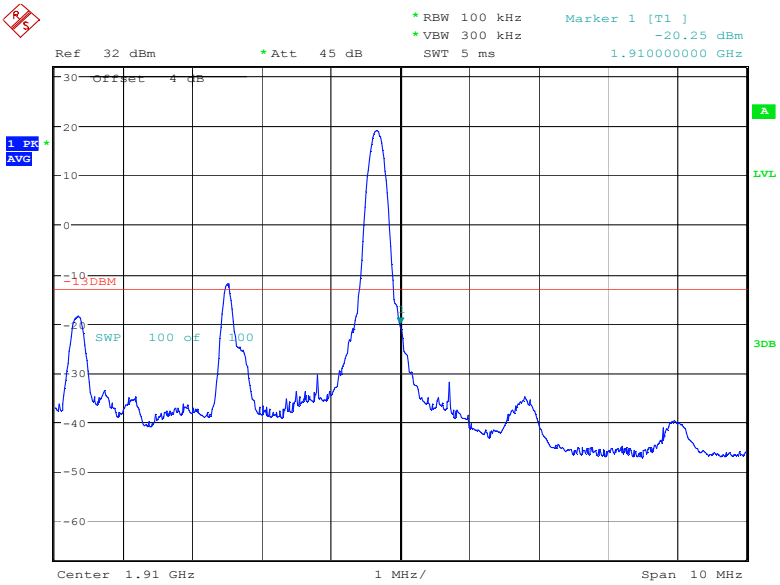
low
Date: 4.JUN.2014 15:38:30

Upper BE (LTE Band 2) Channel **19175 (1907.5 MHz)** – RB Size = **25** ; RB Offset = 0; BW = **5 MHz**; Modulation = **QPSK**



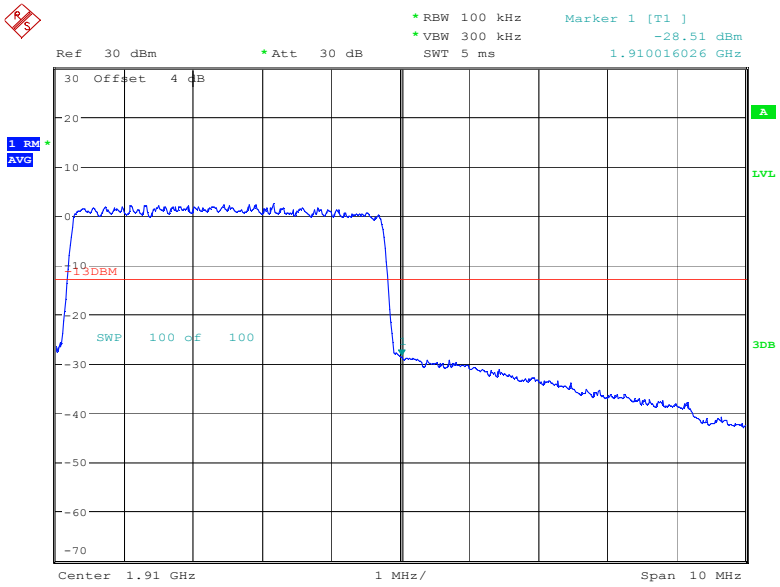
low
Date: 11.JUN.2014 01:11:10

Upper BE (LTE Band 2) Channel **19175 (1907.5 MHz)** – RB Size = **1** ; RB Offset = 24; BW = **5 MHz**; Modulation = **16 QAM**



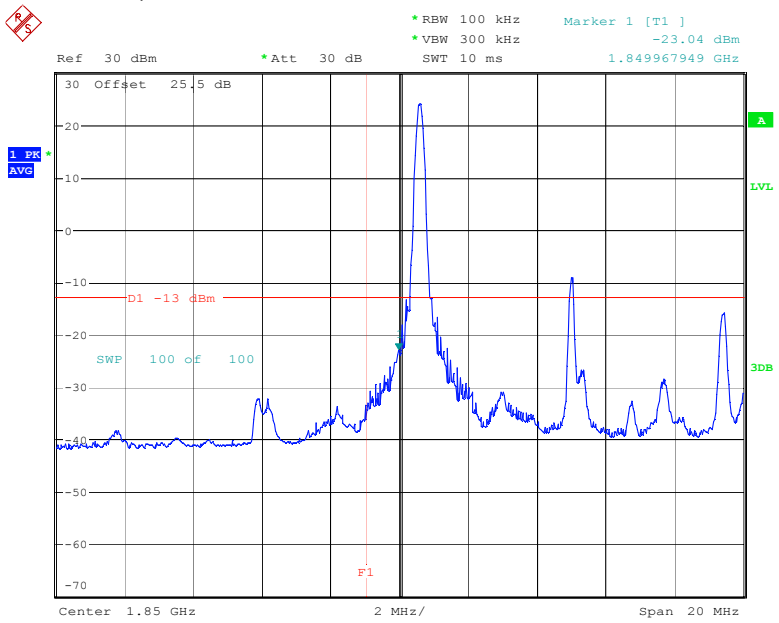
low
Date: 4.JUN.2014 15:39:25

Upper BE (LTE Band 2) Channel **19175 (1907.5 MHz)** – RB Size = **25** ; RB Offset = 0; BW = **5 MHz**; Modulation = **16 QAM**



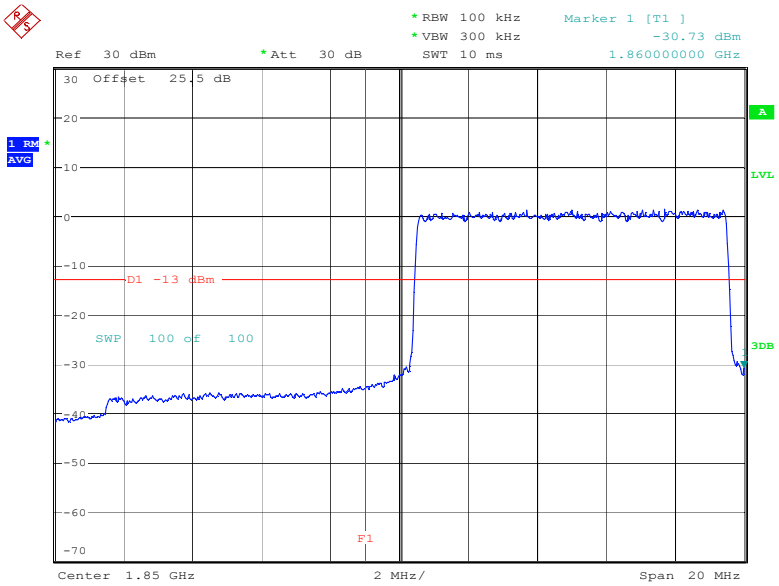
low
Date: 11.JUN.2014 01:13:30

Lower BE (LTE Band 2) Channel **18650 (1855 MHz)** – RB Size = **1** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **QPSK**



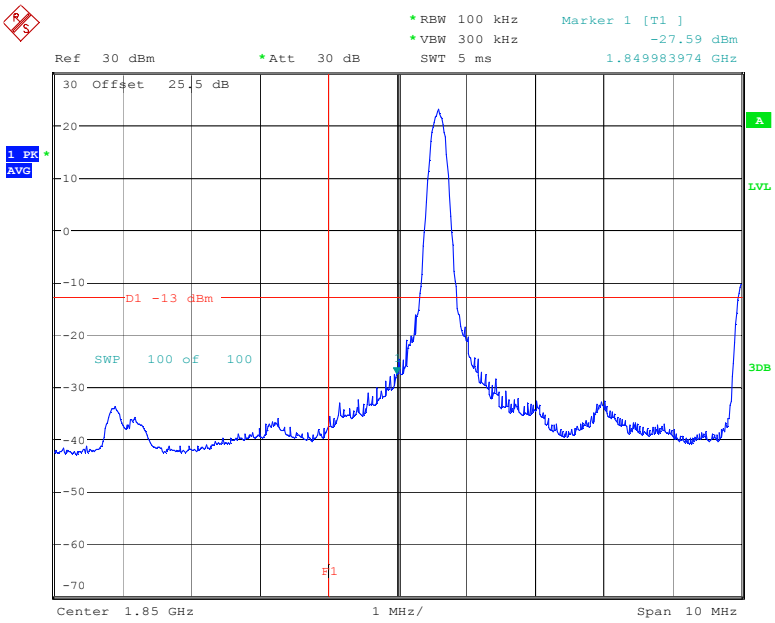
Date: 14.MAR.2014 16:05:11

Lower BE (LTE Band 2) Channel **18650 (1855 MHz)** – RB Size = **50** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **QPSK**



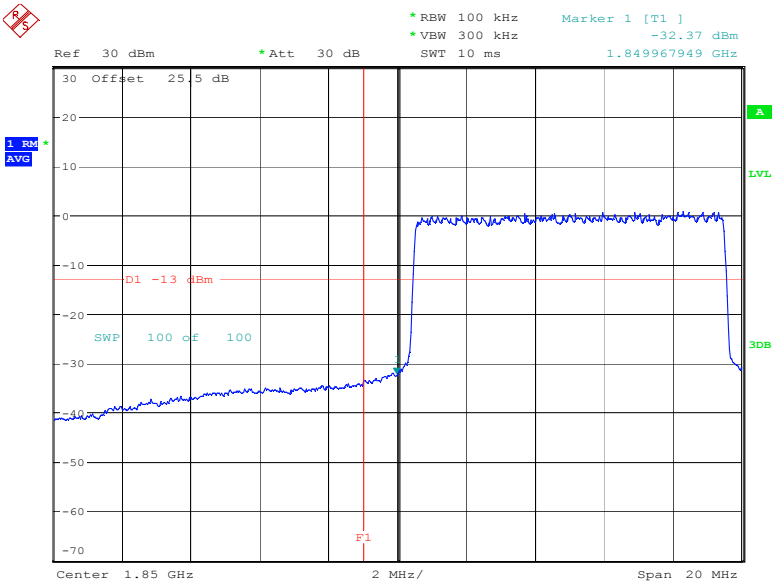
low
Date: 27.FEB.2014 19:17:25

Lower BE (LTE Band 2) Channel **18650 (1855 MHz)** – RB Size = **1** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **16 QAM**



Date: 14.MAR.2014 16:10:04

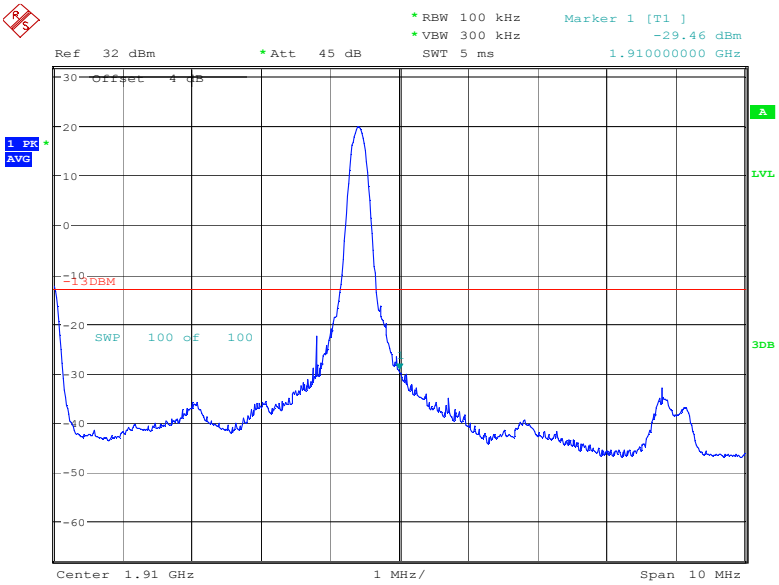
Lower BE (LTE Band 2) Channel **18650 (1855 MHz)** – RB Size = **50** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **16 QAM**



low

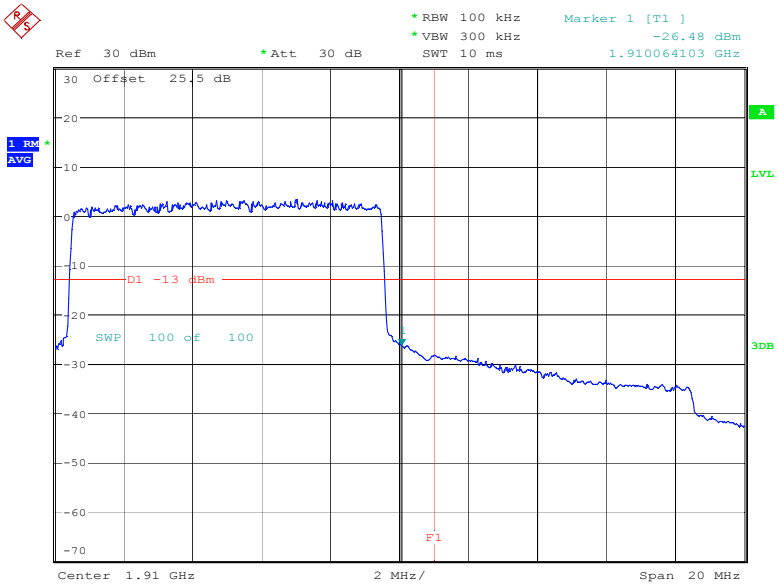
Date: 27.FEB.2014 19:20:06

Upper BE (LTE Band 2) Channel **19150 (1905 MHz)** – RB Size = **1** ; RB Offset = 49;
BW = **10 MHz**; Modulation = **QPSK**



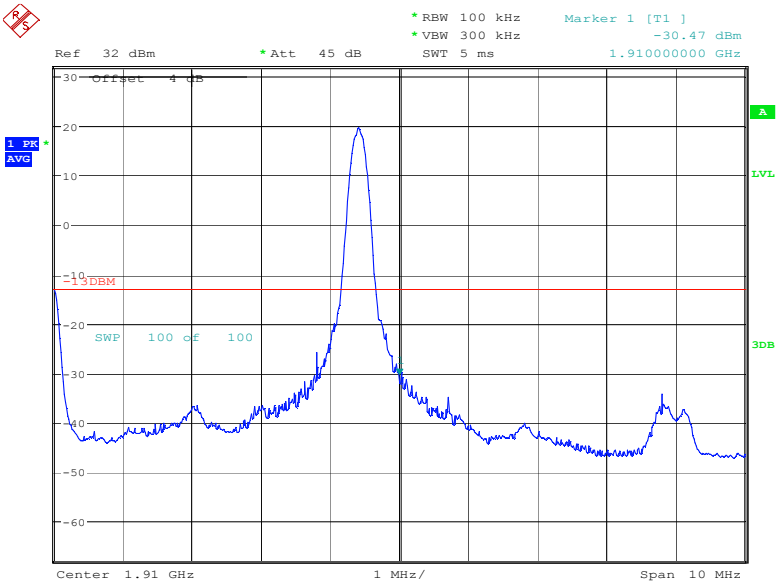
low
Date: 4.JUN.2014 15:35:19

Upper BE (LTE Band 2) Channel **19150 (1905 MHz)** – RB Size = **50** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **QPSK**



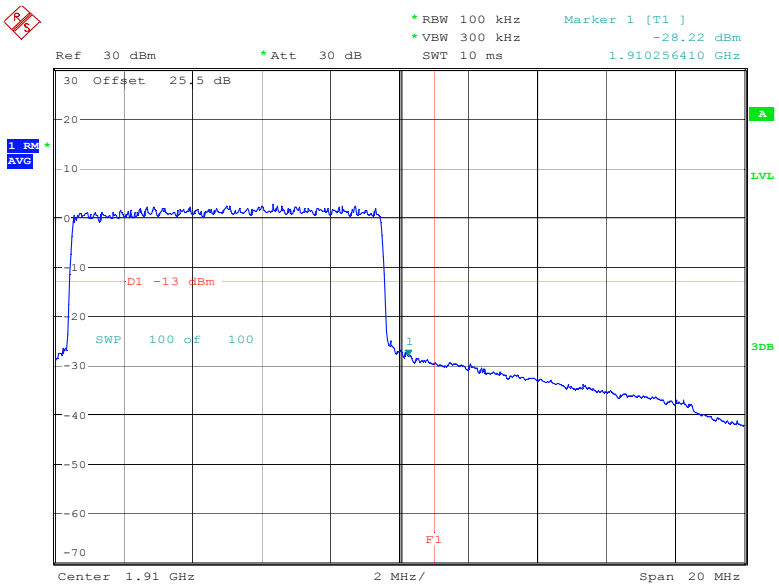
low
Date: 27.FEB.2014 21:20:37

Upper BE (LTE Band 2) Channel **19150 (1905 MHz)** – RB Size = **1** ; RB Offset = 49;
BW = **10 MHz**; Modulation = **16 QAM**



low
Date: 4.JUN.2014 15:36:30

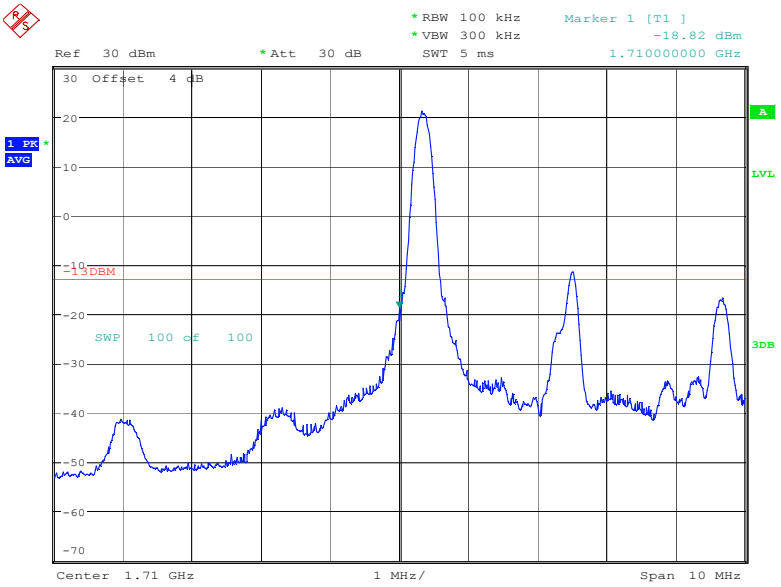
Upper BE (LTE Band 2) Channel **19150 (1905 MHz)** – RB Size = **50** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **16 QAM**



low
Date: 27.FEB.2014 21:18:58

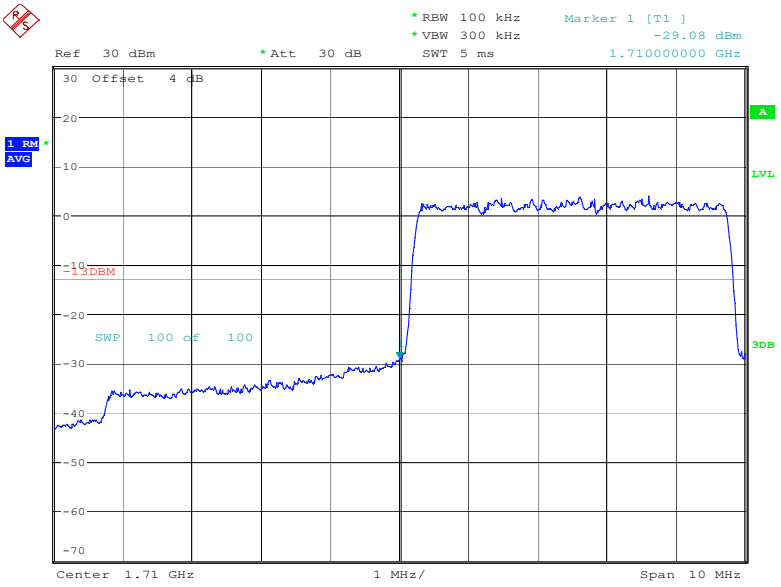
6.6.4.3 LTE Band 4 (1710 MHz – 1755 MHz)

Lower BE (LTE Band 4) Channel **19975 (1712.5 MHz)** – RB Size = **1** ; RB Offset = 0;
BW = **5 MHz**; Modulation = **QPSK**



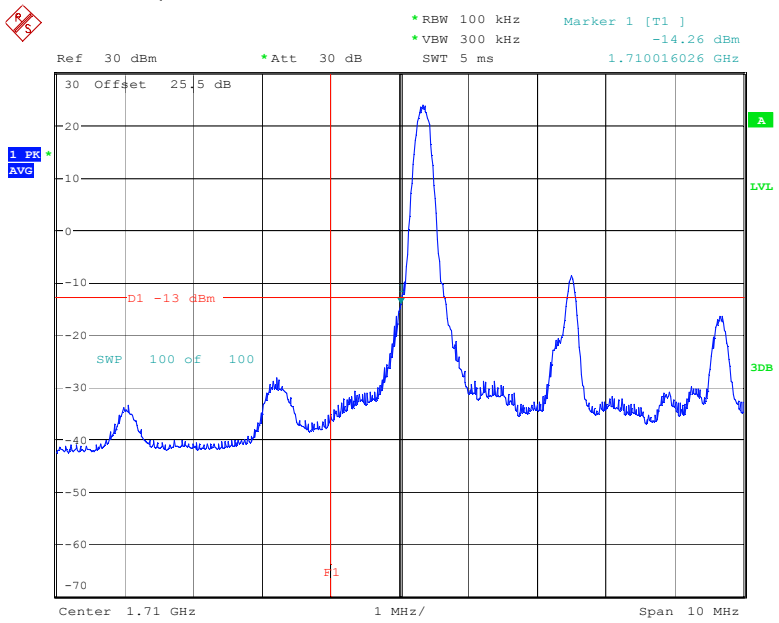
low
Date: 11.JUN.2014 01:19:07

Lower BE (LTE Band 4) Channel **19975 (1712.5 MHz)** – RB Size = **25** ; RB Offset = 0;
BW = **5 MHz**; Modulation = **QPSK**



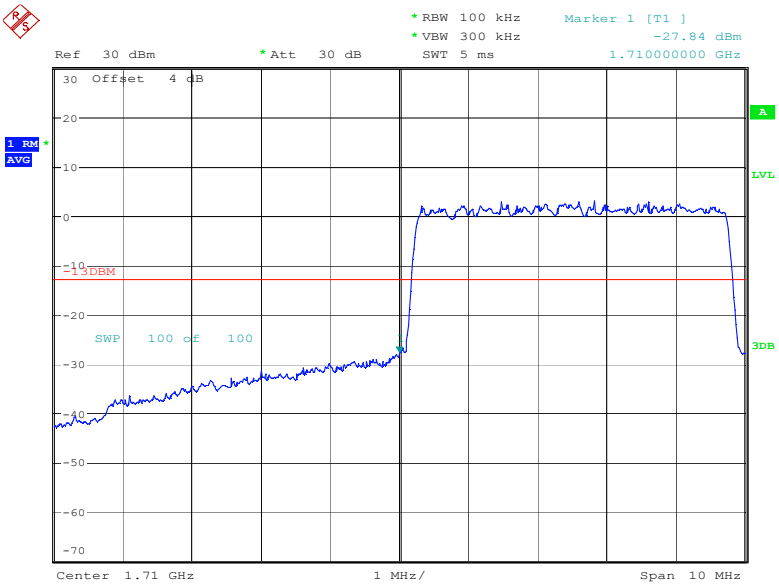
low
Date: 11.JUN.2014 01:22:31

Lower BE (LTE Band 4) Channel **19975 (1712.5 MHz)** – RB Size = **1** ; RB Offset = 0; BW = **5 MHz**; Modulation = **16 QAM**



Date: 13.MAR.2014 21:25:35

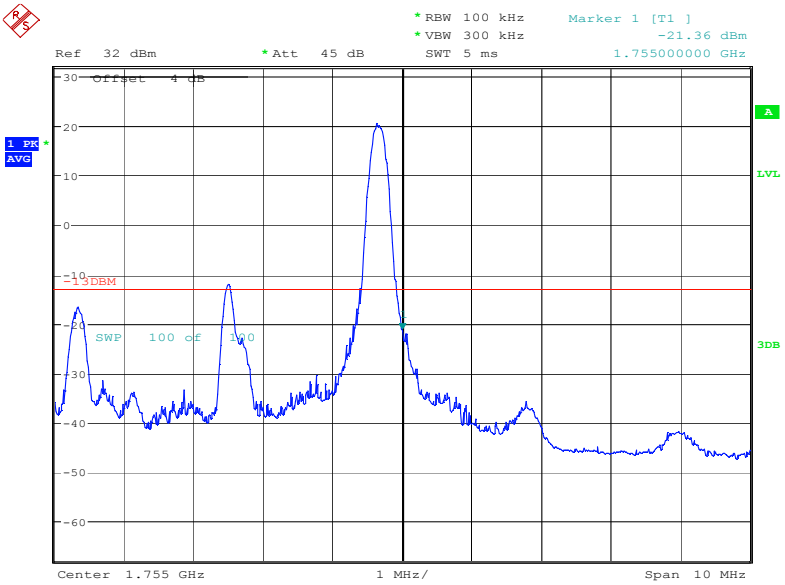
Lower BE (LTE Band 4) Channel **19975 (1712.5 MHz)** – RB Size = **25** ; RB Offset = 0; BW = **5 MHz**; Modulation = **16 QAM**



low

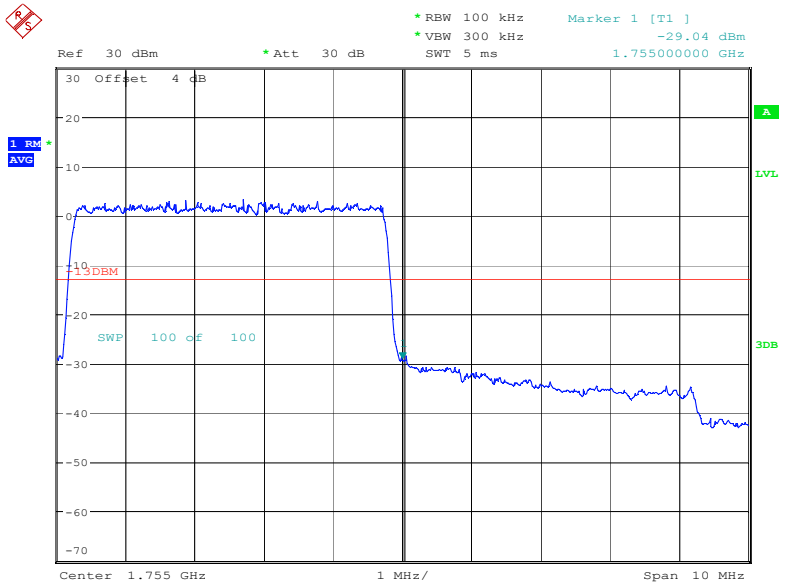
Date: 11.JUN.2014 01:27:25

Upper BE (LTE Band 4) Channel **20375 (1752.5 MHz)** – RB Size = **1** ; RB Offset = 24; BW = **5 MHz**; Modulation = **QPSK**



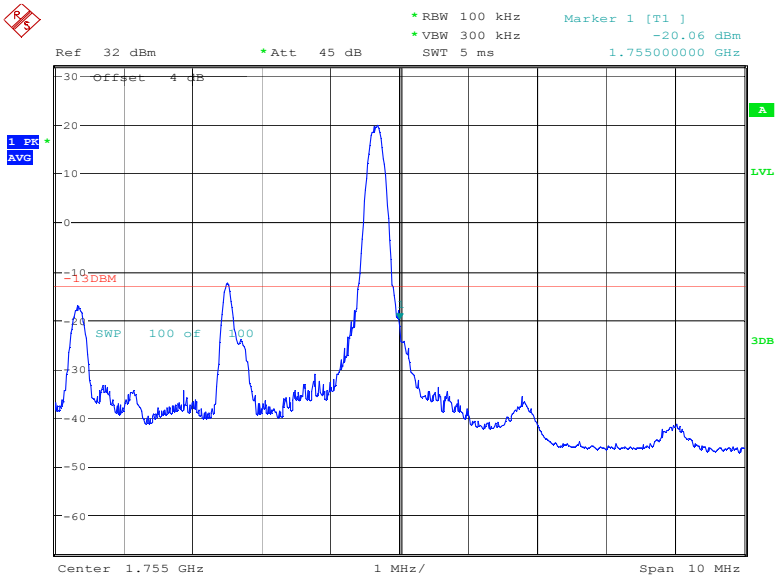
low
Date: 4.JUN.2014 15:43:24

Upper BE (LTE Band 4) Channel **20375 (1752.5 MHz)** – RB Size = **25** ; RB Offset = 0; BW = **5 MHz**; Modulation = **QPSK**



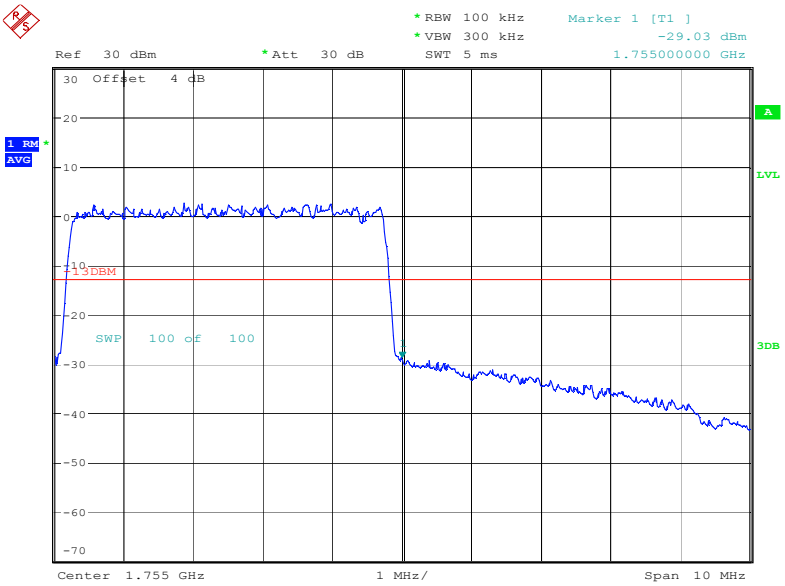
low
Date: 11.JUN.2014 01:29:47

Upper BE (LTE Band 4) Channel **20375 (1752.5 MHz)** – RB Size = **1** ; RB Offset = 24; BW = **5 MHz**; Modulation = **16 QAM**



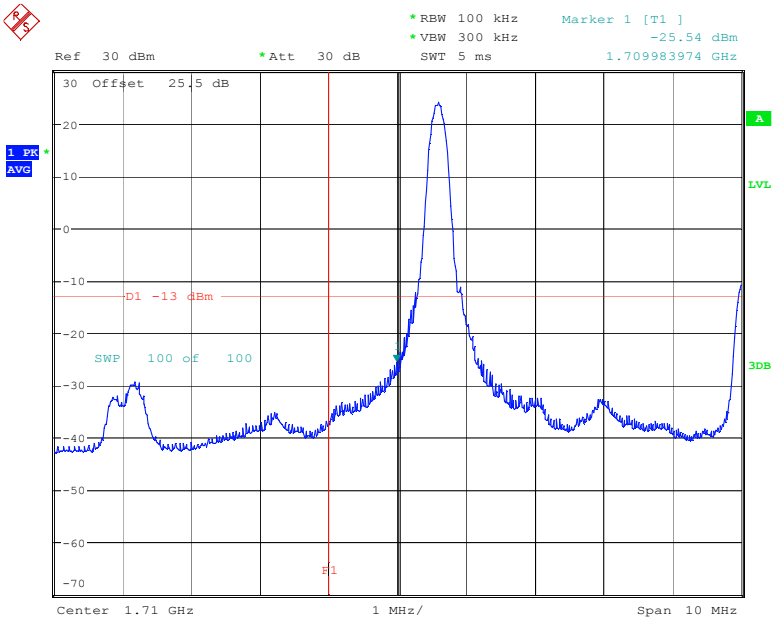
low
Date: 4.JUN.2014 15:43:59

Upper BE (LTE Band 4) Channel **20375 (1752.5 MHz)** – RB Size = **25** ; RB Offset = 0; BW = **5 MHz**; Modulation = **16 QAM**



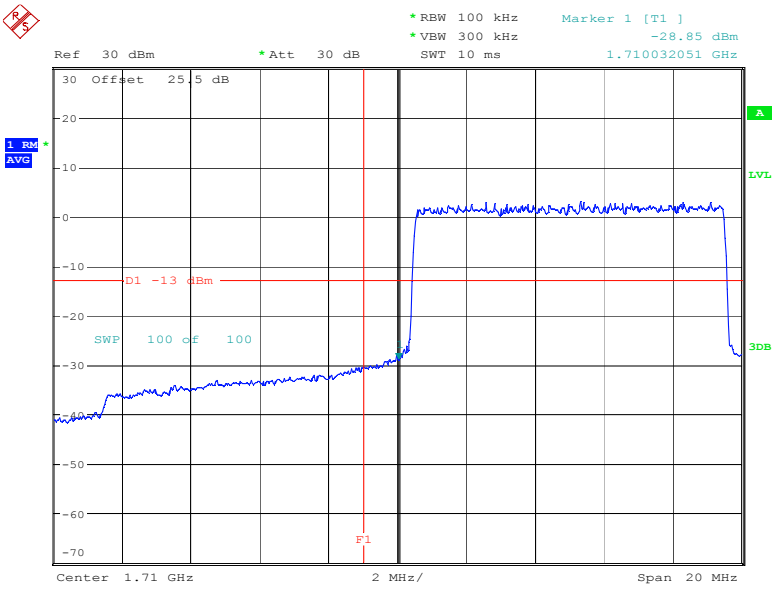
low
Date: 11.JUN.2014 01:32:04

Lower BE (LTE Band 4) Channel **20000 (1715 MHz)** – RB Size = **1** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **QPSK**



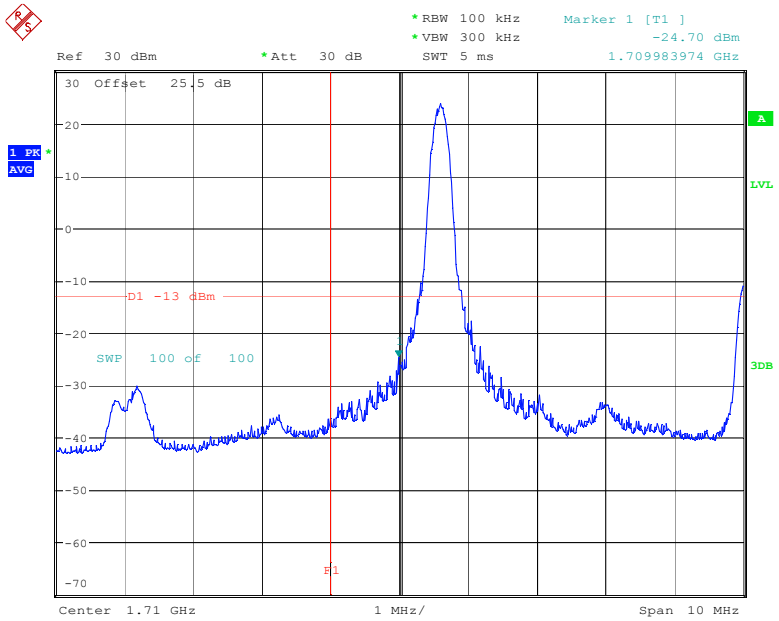
Date: 14.MAR.2014 16:15:04

Lower BE (LTE Band 4) Channel **20000 (1715 MHz)** – RB Size = **50** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **QPSK**



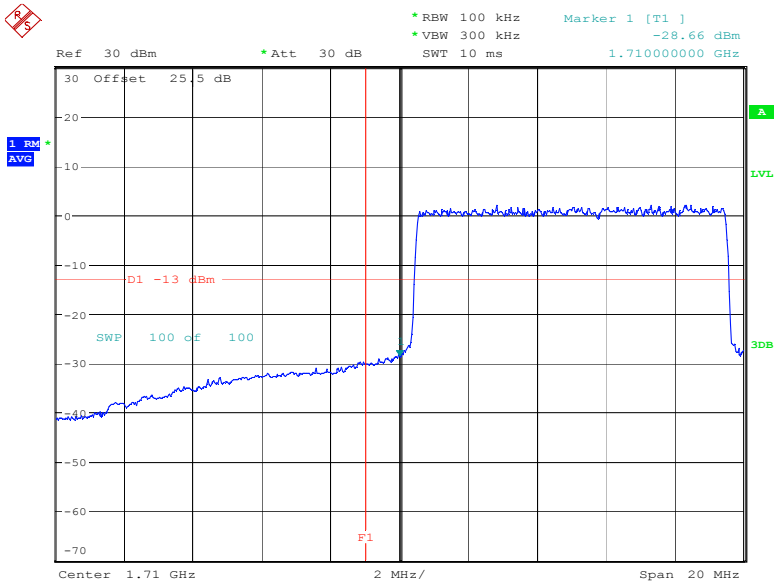
low
Date: 27.FEB.2014 22:49:41

Lower BE (LTE Band 4) Channel **20000 (1715 MHz)** – RB Size = **1** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **16 QAM**



Date: 14.MAR.2014 16:19:51

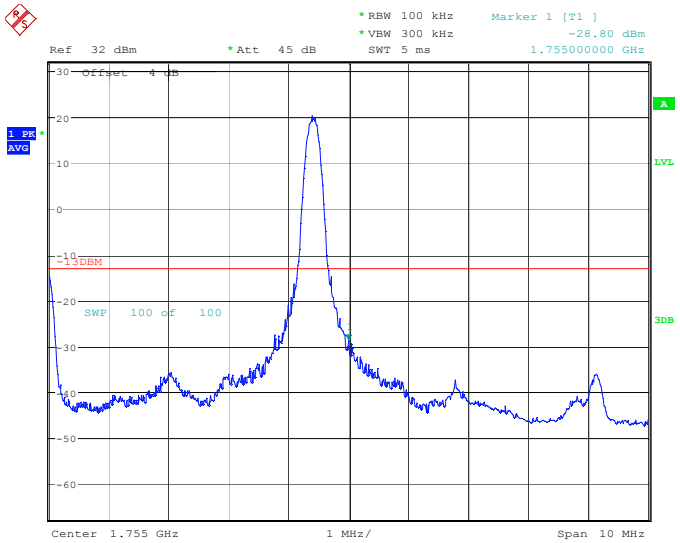
Lower BE (LTE Band 4) Channel **20000 (1715 MHz)** – RB Size = **50** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **16 QAM**



low

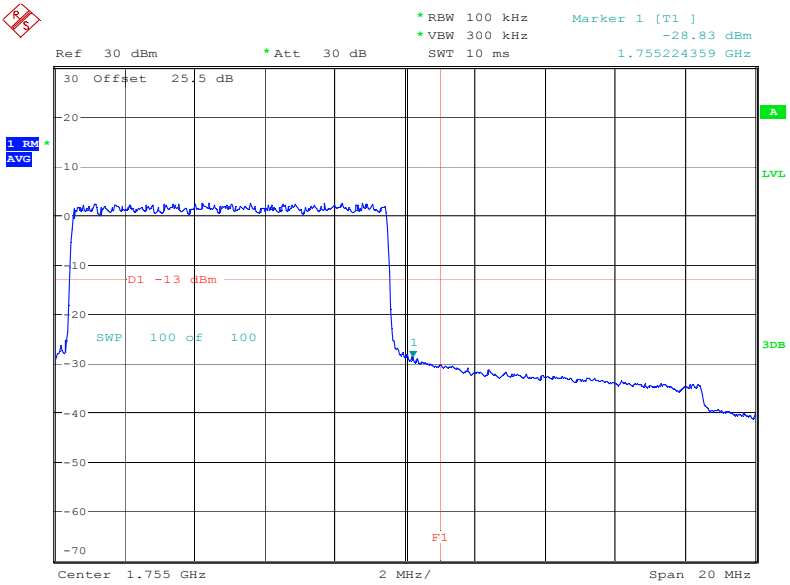
Date: 27.FEB.2014 22:47:59

Upper BE (LTE Band 4) Channel **20350 (1750 MHz)** – RB Size = **1** ; RB Offset = 49;
BW = **10 MHz**; Modulation = **QPSK**



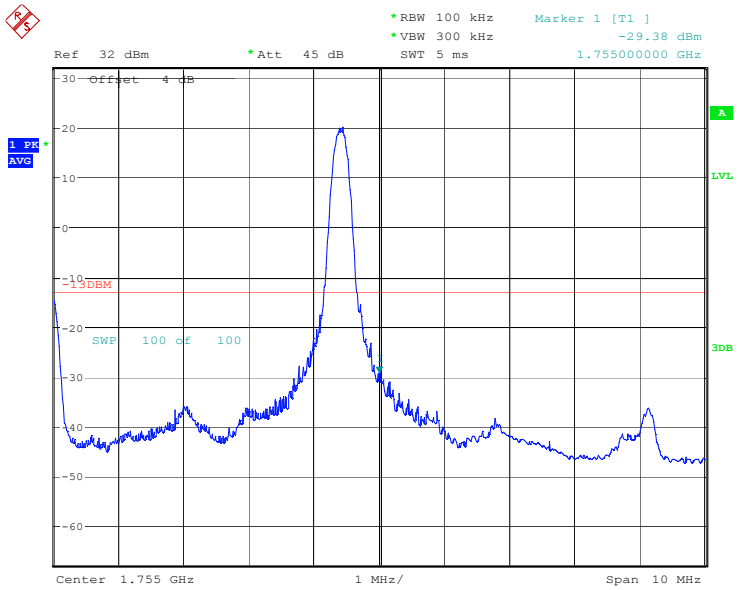
low
Date: 4.JUN.2014 15:45:38

Upper BE (LTE Band 4) Channel **20350 (1750 MHz)** – RB Size = **50** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **QPSK**



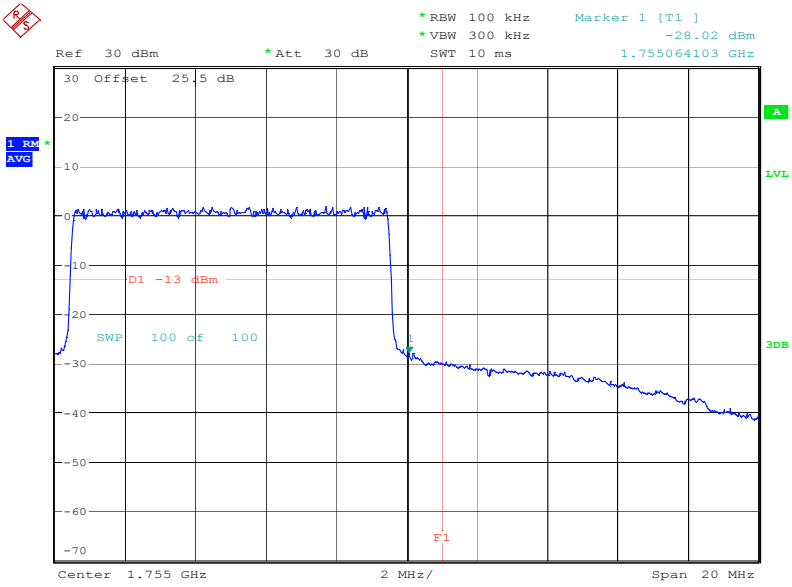
low
Date: 27.FEB.2014 22:51:29

Upper BE (LTE Band 4) Channel **20350 (1750 MHz)** – RB Size = **1** ; RB Offset = 49;
BW = **10 MHz**; Modulation = **16 QAM**



low
Date: 4.JUN.2014 15:46:23

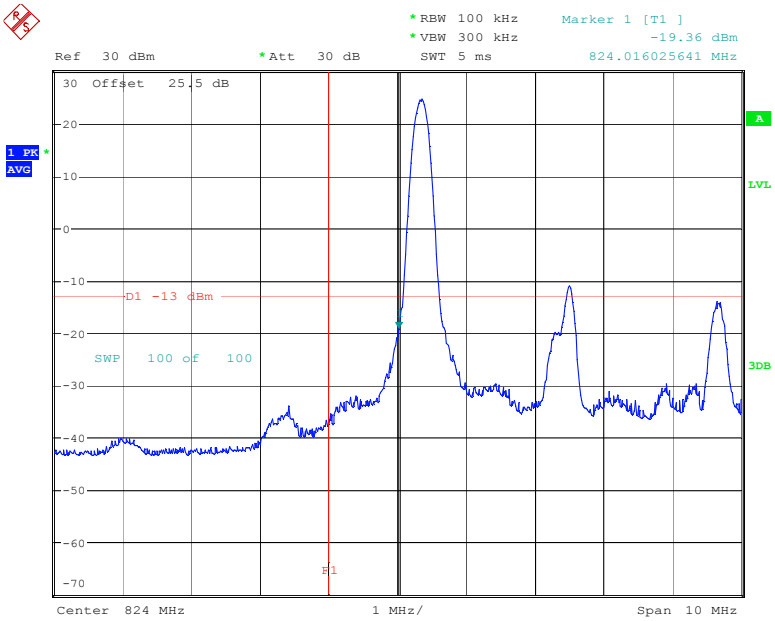
Upper BE (LTE Band 4) Channel **20350 (1750 MHz)** – RB Size = **50** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **16 QAM**



low
Date: 27.FEB.2014 22:52:48

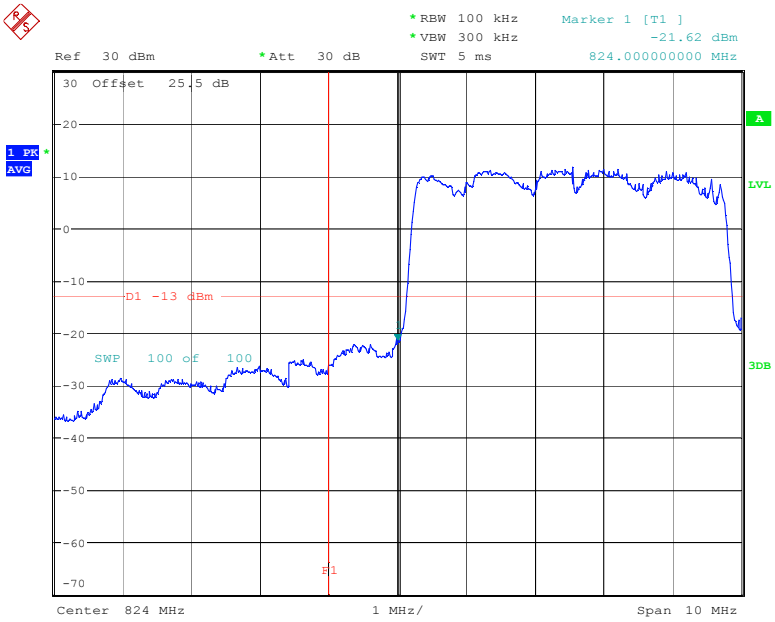
6.6.4.4 LTE Band 5 (824 MHz – 849 MHz)

Lower BE (LTE Band 5) Channel **20425 (826.5 MHz)** – RB Size = **1** ; RB Offset = 0; BW = **5 MHz**; Modulation = **QPSK**



Date: 13.MAR.2014 21:49:16

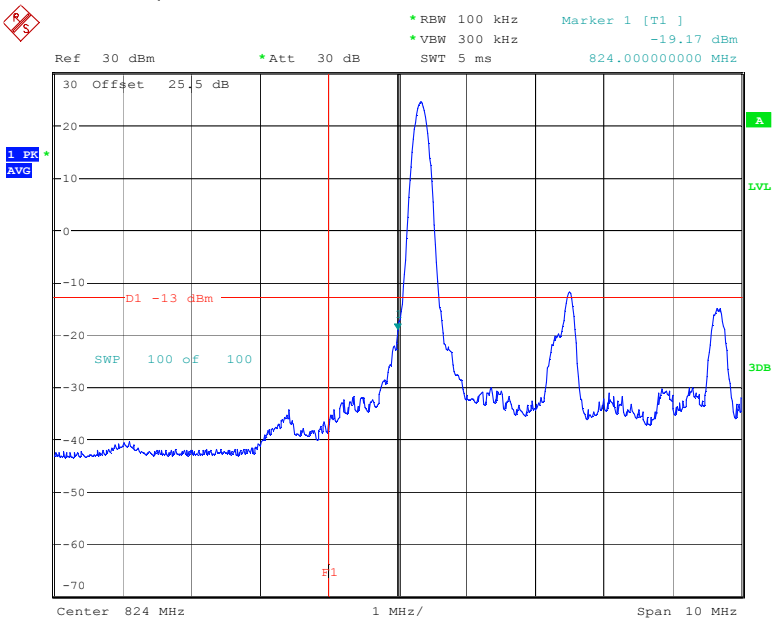
Lower BE (LTE Band 5) Channel **20425 (826.5 MHz)** – RB Size = **25** ; RB Offset = 0; BW = **5 MHz**; Modulation = **QPSK**



Date: 13.MAR.2014 21:59:34

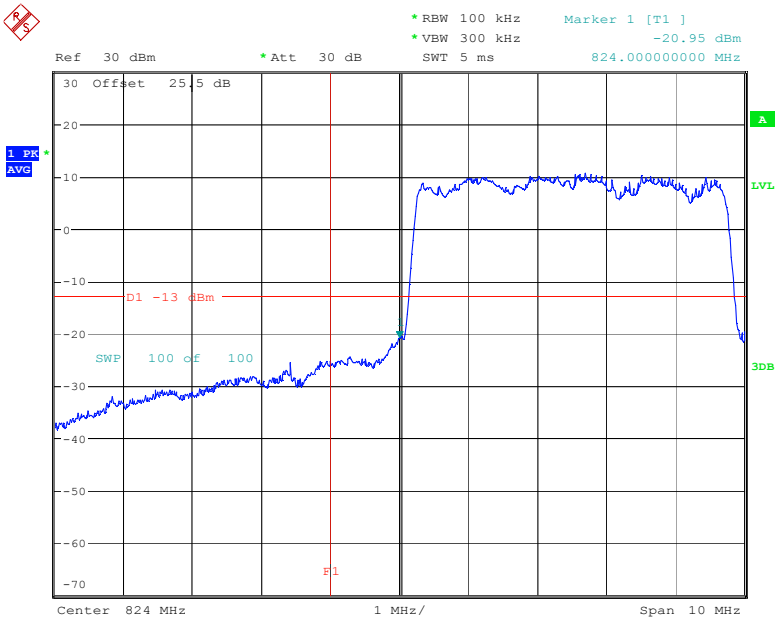
LTE Band 5 (824 MHz – 849 MHz)

Lower BE (LTE Band 5) Channel **20425 (826.5 MHz)** – RB Size = **1** ; RB Offset = 0; BW = **5 MHz**; Modulation = **16 QAM**



Date: 13.MAR.2014 21:56:26

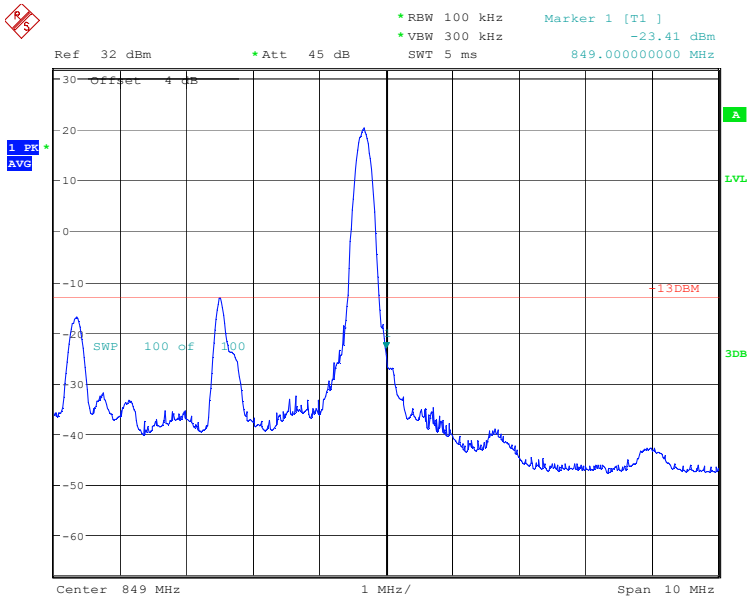
Lower BE (LTE Band 5) Channel **20425 (826.5 MHz)** – RB Size = **25** ; RB Offset = 0; BW = **5 MHz**; Modulation = **16 QAM**



Date: 13.MAR.2014 22:03:01

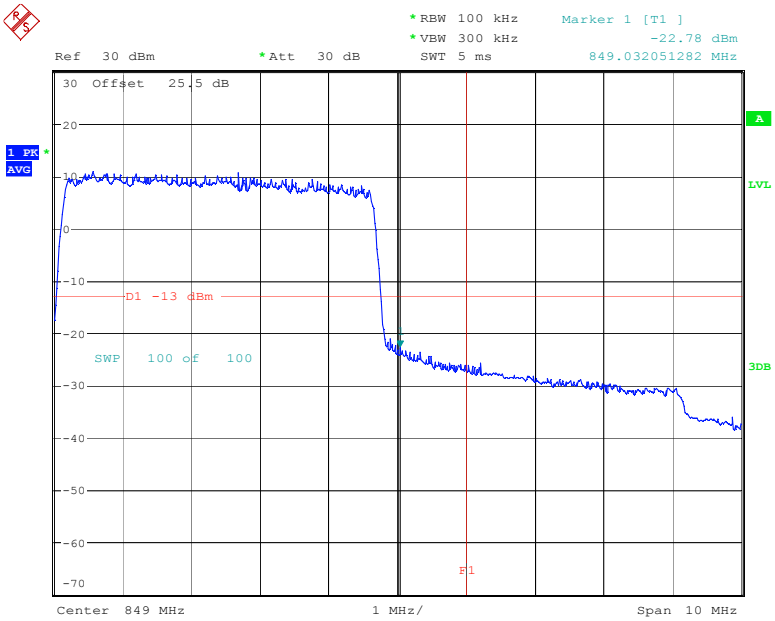
LTE Band 5 (824 MHz – 849 MHz)

Upper BE (LTE Band 5) Channel **20625 (846.5 MHz)** – RB Size = **1** ; RB Offset = 24; BW = **5 MHz**; Modulation = **QPSK**



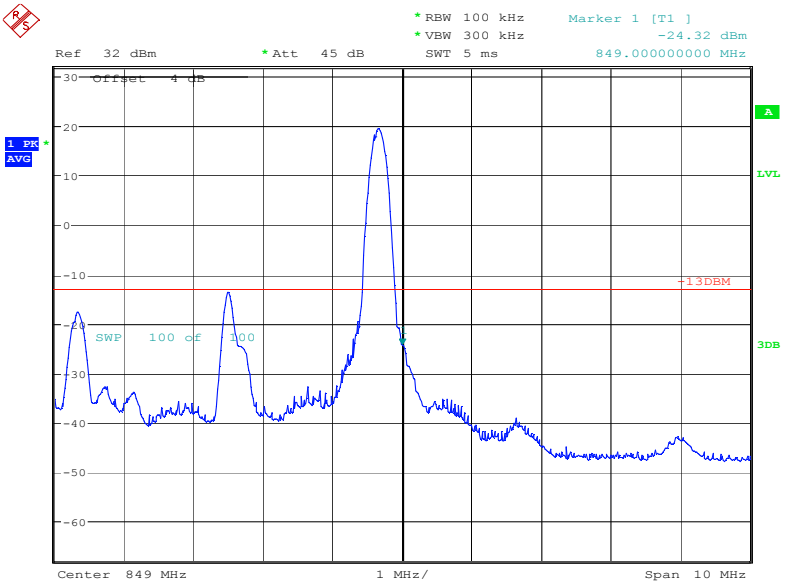
low
Date: 4.JUN.2014 15:51:53

Upper BE (LTE Band 5) Channel **20625 (846.5 MHz)** – RB Size = **25** ; RB Offset = 0; BW = **5 MHz**; Modulation = **QPSK**



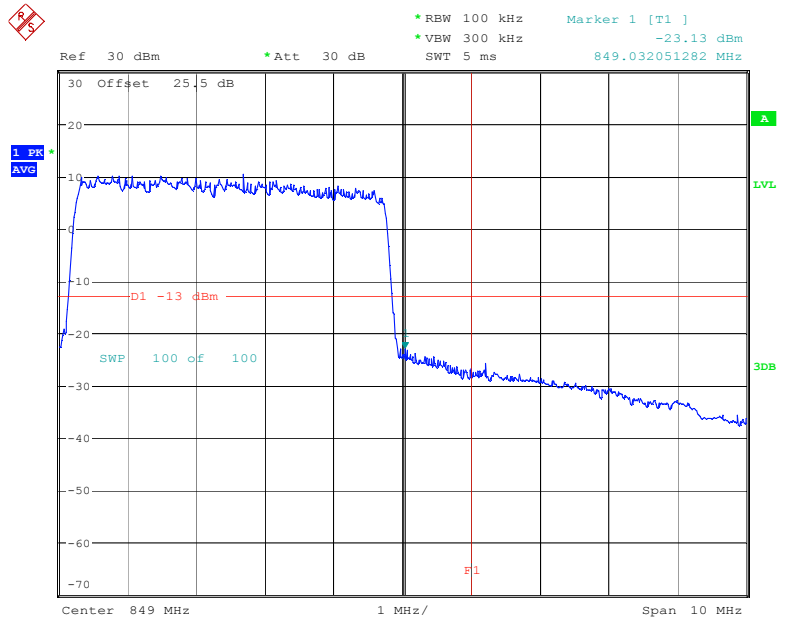
Date: 13.MAR.2014 22:00:36

Upper BE (LTE Band 5) Channel **20625 (846.5 MHz)** – RB Size = **1** ; RB Offset = 49; BW = **5 MHz**; Modulation = **16 QAM**



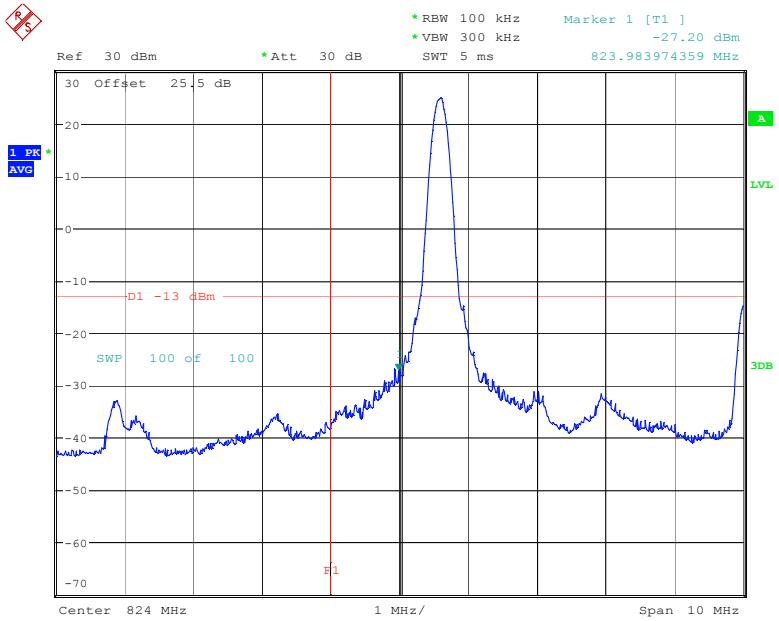
low
Date: 4.JUN.2014 15:53:29

Upper BE (LTE Band 5) Channel **20625 (846.5 MHz)** – RB Size = **25** ; RB Offset = 0; BW = **5 MHz**; Modulation = **16 QAM**



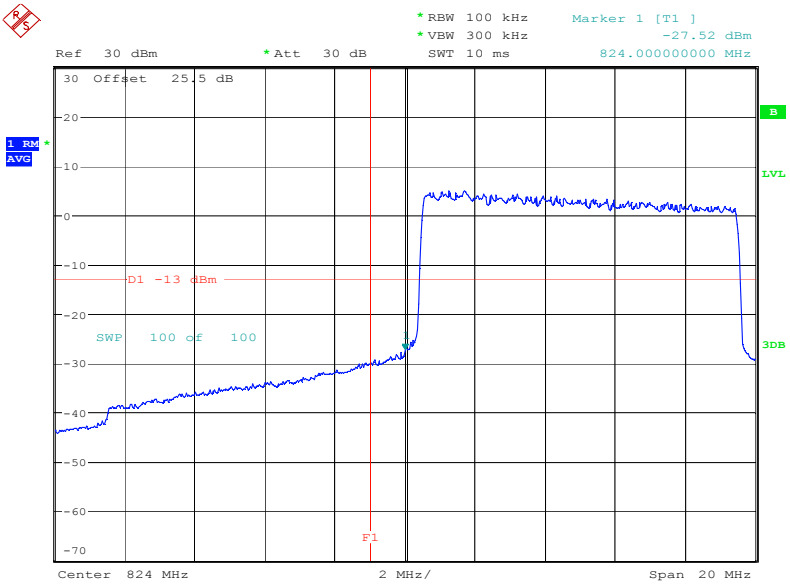
Date: 13.MAR.2014 22:04:04

Lower BE (LTE Band 5) Channel **20450 (829 MHz)** – RB Size = **1** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **QPSK**



Date: 14.MAR.2014 16:25:41

Lower BE (LTE Band 5) Channel **20450 (829 MHz)** – RB Size = **50** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **QPSK**

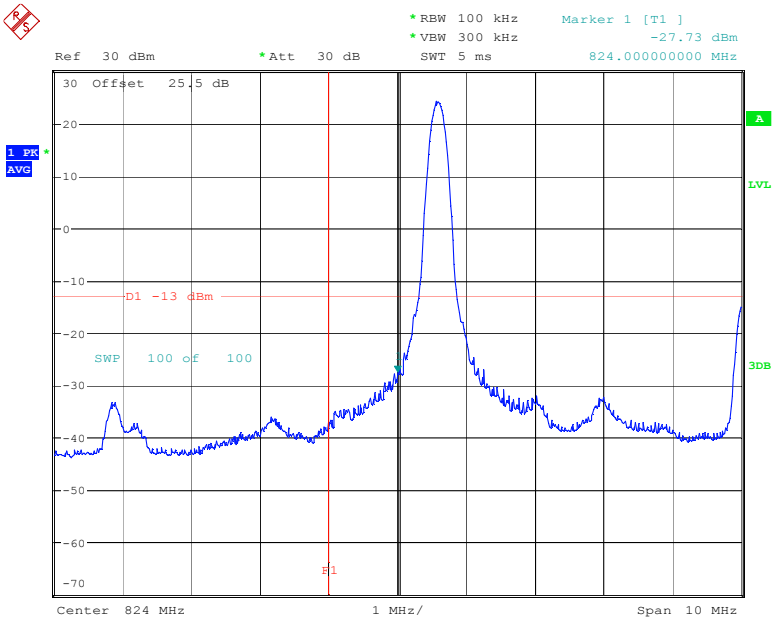


low

Date: 25.FEB.2014 23:09:33

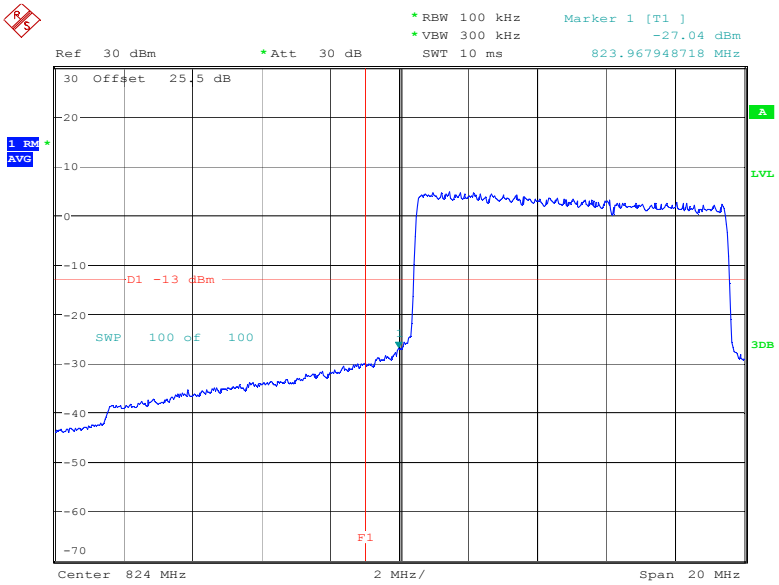
LTE Band 5 (824 MHz – 849 MHz)

Lower BE (LTE Band 5) Channel **20450 (829 MHz)** – RB Size = **1** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **16 QAM**



Date: 14.MAR.2014 16:28:57

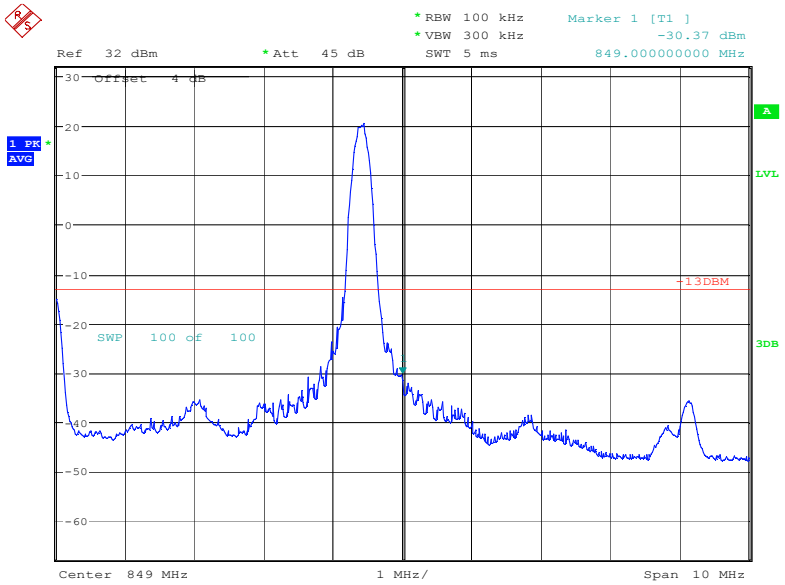
Lower BE (LTE Band 5) Channel **20450 (829 MHz)** – RB Size = **50** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **16 QAM**



low

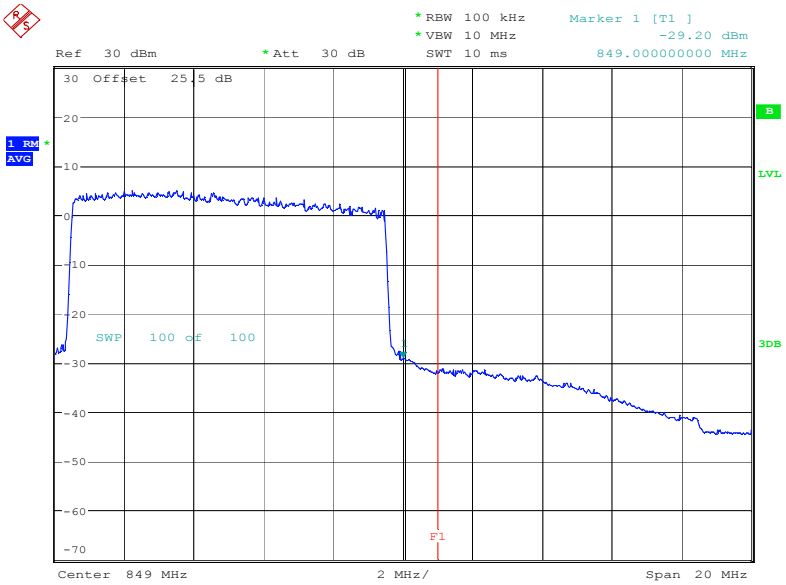
Date: 27.FEB.2014 22:55:26

Upper BE (LTE Band 5) Channel **20600 (844 MHz)** – RB Size = **1** ; RB Offset = 49;
BW = **10 MHz**; Modulation = **QPSK**



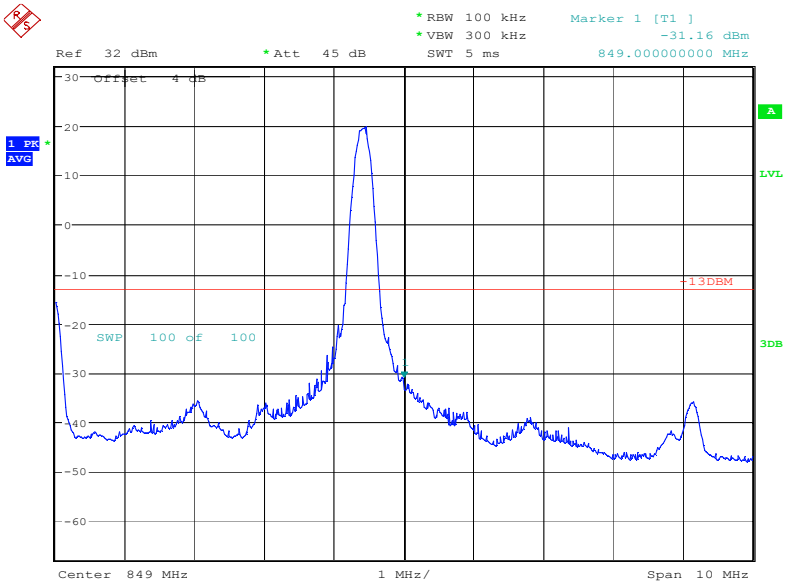
low
Date: 4.JUN.2014 15:56:15

Upper BE (LTE Band 5) Channel **20600 (844 MHz)** – RB Size = **50** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **QPSK**



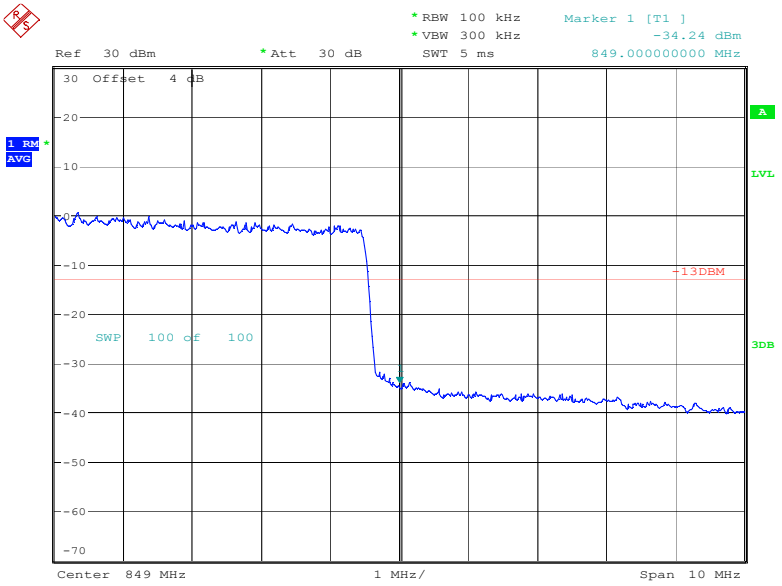
low
Date: 25.FEB.2014 23:44:17

Upper BE (LTE Band 5) Channel **20600 (844 MHz)** – RB Size = **1** ; RB Offset = 49;
BW = **10 MHz**; Modulation = **16 QAM**



low
Date: 4.JUN.2014 15:57:25

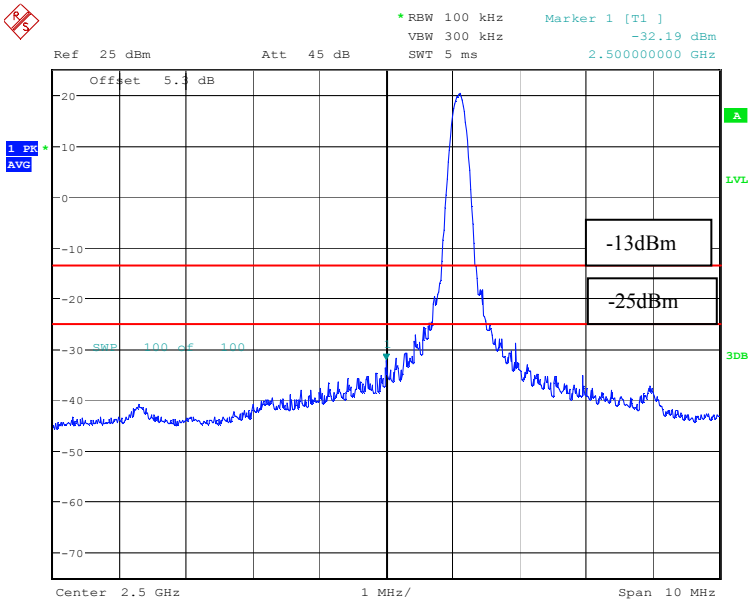
Upper BE (LTE Band 5) Channel **20600 (844 MHz)** – RB Size = **50** ; RB Offset = 0;
BW = **10 MHz**; Modulation = **16 QAM**



low
Date: 11.JUN.2014 01:59:55

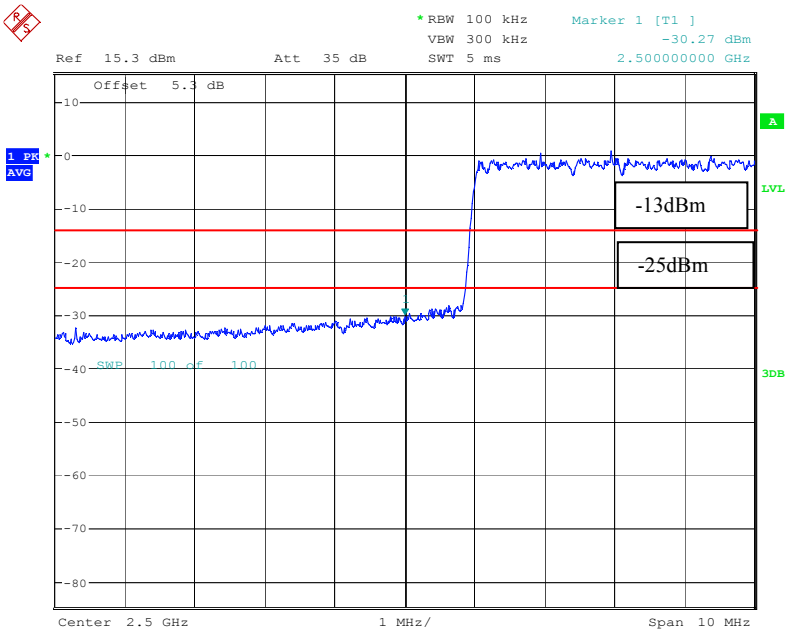
6.6.4.5 LTE Band 7 (2500 MHz – 2570 MHz)

Lower BE (LTE Band 7) Channel **20850 (2510 MHz)** – RB Size = **1** ; RB Offset = 0;
BW = **20 MHz**; Modulation = **QPSK**



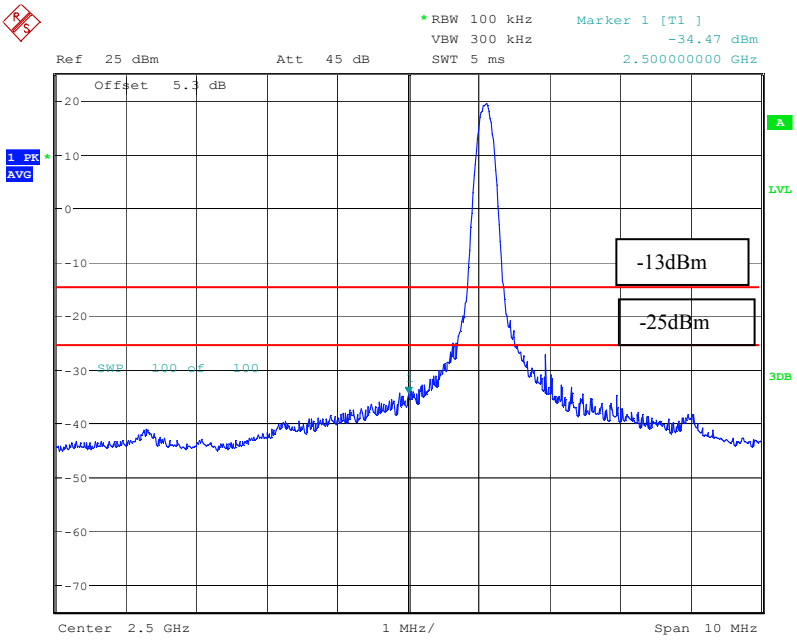
Note: The tighter limit of -25dBm applies 5.5MHz away from the band edge
Note: The band edge is in the center of the graph

Lower BE (LTE Band 7) Channel **20850 (2510 MHz)** – RB Size = **100** ; RB Offset = 0;
BW = **20 MHz**; Modulation = **QPSK**



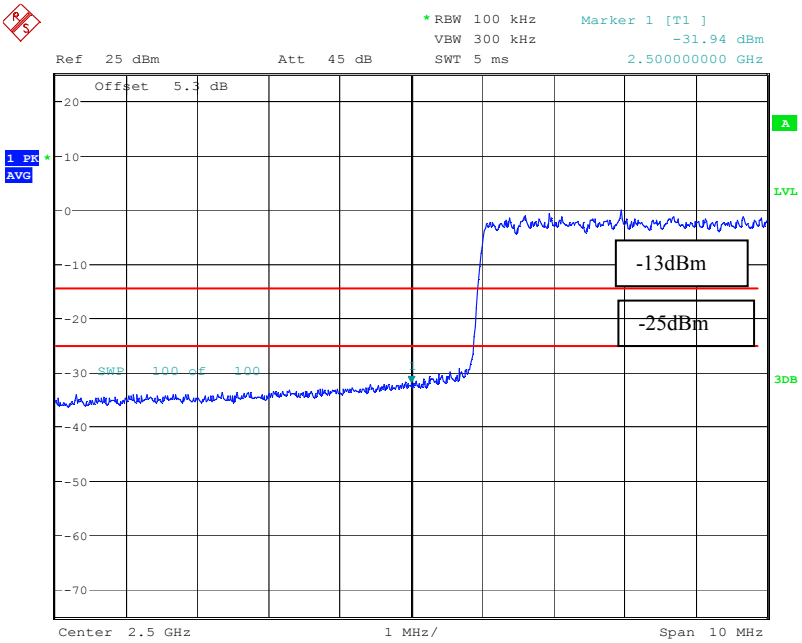
Note: The tighter limit of -25dBm applies 5.5MHz away from the band edge
Note: The band edge is in the center of the graph

Lower BE (LTE Band 7) Channel **20850 (2510 MHz)** – RB Size = **1** ; RB Offset = 0;
BW = **20 MHz**; Modulation = **16 QAM**



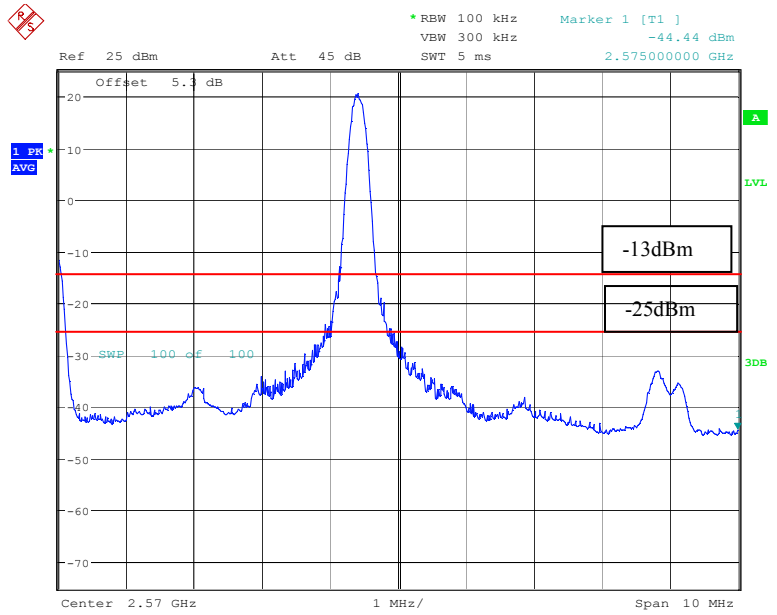
Note: The tighter limit of -25dBm applies 5.5MHz away from the band edge
Note: The band edge is in the center of the graph

Lower BE (LTE Band 7) Channel **20850 (2510 MHz)** – RB Size = **100** ; RB Offset = 0;
BW = **20 MHz**; Modulation = **16 QAM**



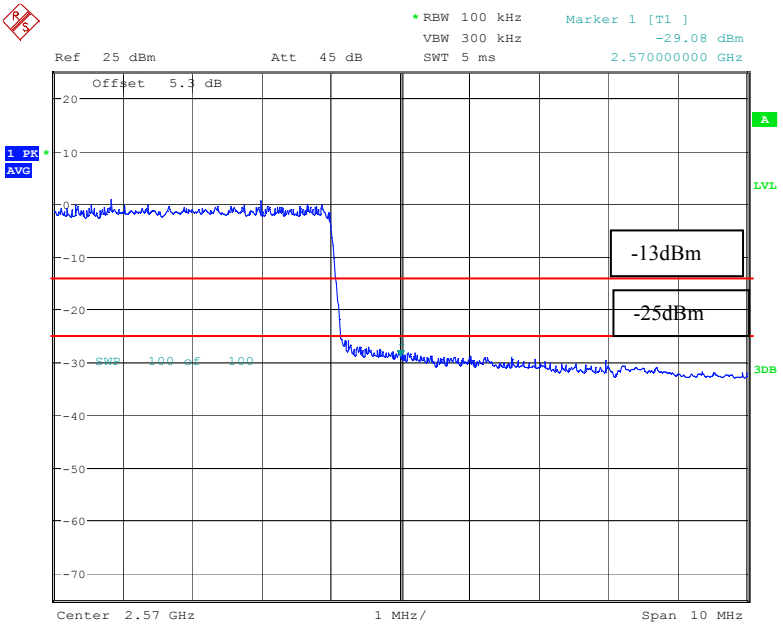
Note: The tighter limit of -25dBm applies 5.5MHz away from the band edge
Note: The band edge is in the center of the graph

Higher BE (LTE Band 7) Channel **21350 (2560 MHz)** – RB Size = **1** ; RB Offset = 99; BW = **20 MHz**; Modulation = **QPSK**



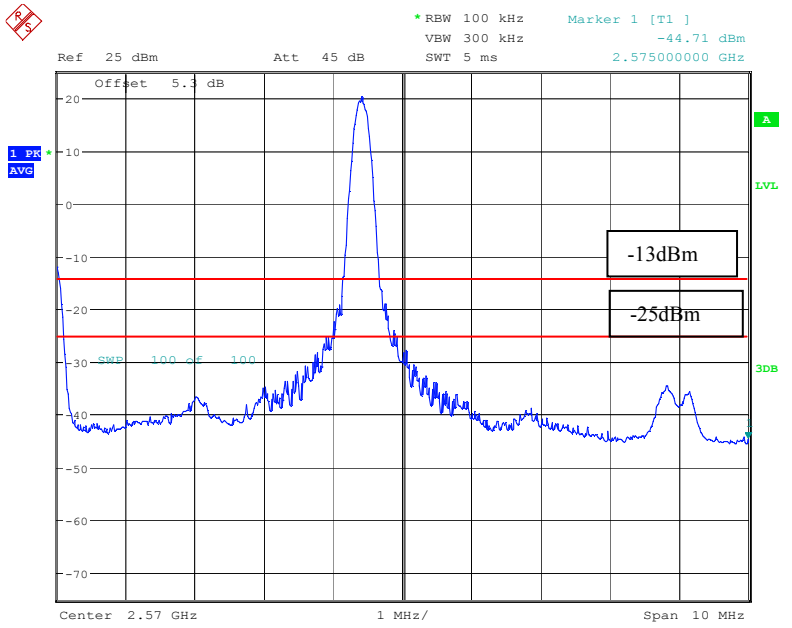
Note: The tighter limit of -25dBm applies 5.5MHz away from the band edge
Note: The band edge is in the center of the graph

Higher BE (LTE Band 7) Channel **21350 (2560 MHz)** – RB Size = **100** ; RB Offset = 0; BW = **20 MHz**; Modulation = **QPSK**



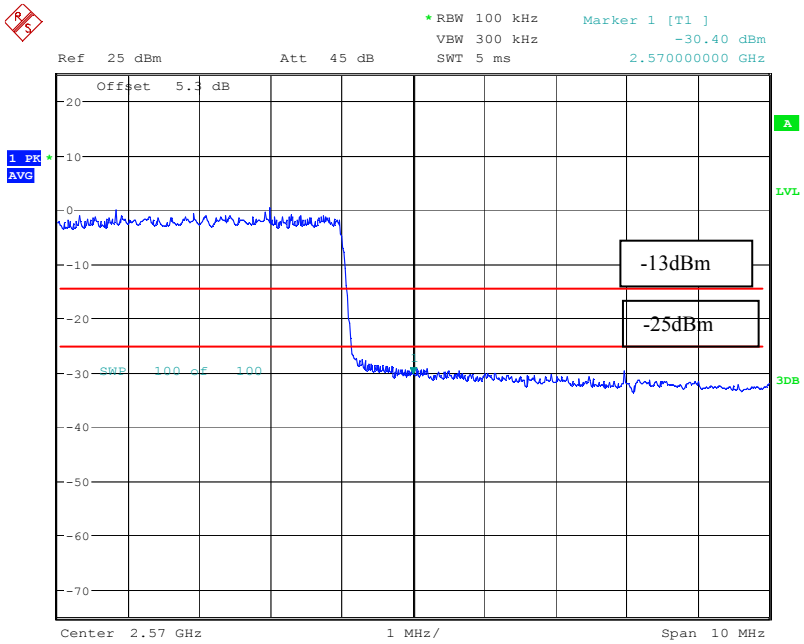
Note: The tighter limit of -25dBm applies 5.5MHz away from the band edge
Note: The band edge is in the center of the graph

Higher BE (LTE Band 7) Channel **21350 (2560 MHz)** – RB Size = **1** ; RB Offset = 99; BW = **20 MHz**; Modulation = **16 QAM**



Note: The tighter limit of -25dBm applies 5.5MHz away from the band edge
Note: The band edge is in the center of the graph

Higher BE (LTE Band 7) Channel **21350 (2560 MHz)** – RB Size = **100** ; RB Offset = 0; BW = **20 MHz**; Modulation = **16 QAM**



Note: The tighter limit of -25dBm applies 5.5MHz away from the band edge
Note: The band edge is in the center of the graph

6.7 TX Radiated Spurious Emissions

6.7.1 References

See chapter with Band Edge measurements

6.7.2 Limits

See chapter with Band Edge measurements

6.7.3 Measurement requirements:

6.7.3.1 FCC §2.1057 Frequency spectrum to be investigated.

(a) In all of the measurements set forth in §§2.1051 and 2.1053, the spectrum shall be investigated from the lowest radio frequency signal generated in the equipment, without going below 9 kHz, up to at least the frequency shown below:
(1) If the equipment operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
(2) If the equipment operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.
(3) If the equipment operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower.
(b) Particular attention should be paid to harmonics and subharmonics of the carrier frequency as well as to those frequencies removed from the carrier by multiples of the oscillator frequency. Radiation at the frequencies of multiplier stages should also be checked.
(c) The amplitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be reported.
(d) Unless otherwise specified, measurements above 40 GHz shall be performed using a minimum resolution bandwidth of 1 MHz.

6.7.3.2 FCC 2.1053: Field strength of spurious radiation.

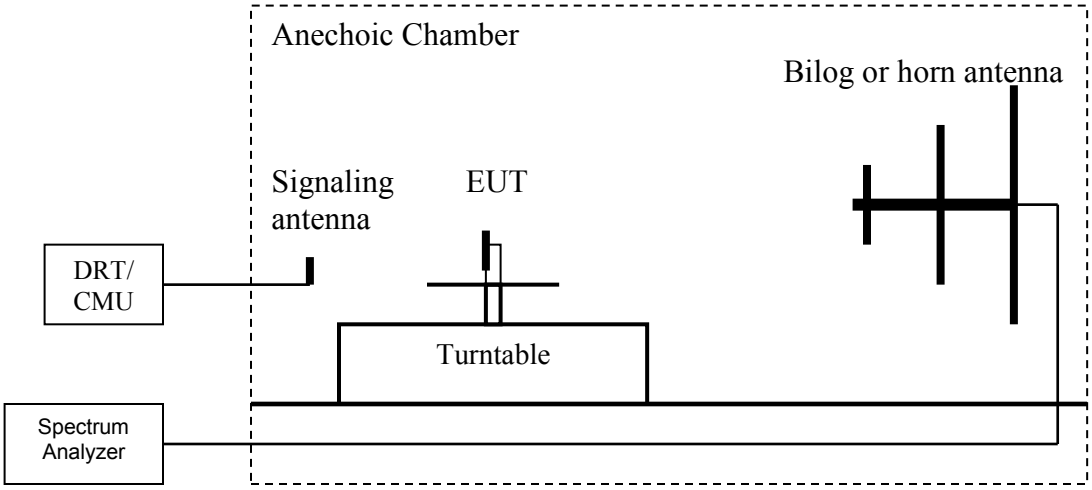
Measurements shall be made to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads or intermediate circuit elements under normal conditions of installation and operation. Curves or equivalent data shall be supplied showing the magnitude of each harmonic and other spurious emission.

6.7.3.3 RSS-Gen 4.9: Transmitter unwanted spurious emissions

The same parameter, peak power or average power, used for the transmitter output power measurement shall be used for unwanted emission measurements.
The search for unwanted emissions shall be from the lowest frequency internally generated or used in the device (local oscillator, intermediate or carrier frequency), or from 30 MHz, whichever is the lower, to the 5th harmonic of the highest frequency generated without exceeding 40 GHz.

6.7.4 Radiated out of band measurement procedure:

Ref: TIA-603C 2004- 2.2.12 Unwanted emissions: Radiated Spurious



Connect the equipment as shown in the above diagram with the EUT's antenna in a horizontal orientation.

Adjust the settings of the Digital Radio Communication Tester (DRT) to set the EUT to its maximum power at the required channel.

Set the spectrum analyzer to measure peak hold with the required settings.

Place the measurement antenna in a horizontal orientation. Rotate the EUT 360°. Raise the measurement antenna up to 4 meters in 0.5 meters increments and rotate the EUT 360° at each height to maximize all emissions. Measure and record all spurious emissions (**LVL**) up to the tenth harmonic of the carrier frequency.

Replace the EUT with a horizontally polarized half wave dipole or known gain antenna. The center of the antenna should be at the same location as the center of the EUT's antenna.

Connect the antenna to a signal generator with known output power and record the path loss in dB (**LOSS)**. **LOSS** = Generator Output Power (dBm) – Analyzer reading (dBm).

Determine the level of spurious emissions using the following equation:

Spurious (dBm) = **LVL** (dBm) + **LOSS** (dB):

Repeat steps 4, 5 and 6 with all antennas vertically polarized.

Determine the level of spurious emissions using the following equation:

Spurious (dBm) = **LVL** (dBm) + **LOSS** (dB):

Measurements are to be performed with the EUT set to the low, middle and high channel of each frequency band.

(N**ote:** Steps 5 and 6 above are performed prior to testing and **LOSS** is recorded by test software. Steps 3, 4 and 7 above are performed with test software.)

6.7.5 Sample Calculations for Radiated Measurements

6.7.5.1 Power Measurements using Substitution Procedure:

The measurement on the Spectrum Analyzer is used as a basis for the Substitution procedure.
The EUT is replaced with a Signal Generator and an antenna. The setting on the Signal Generator is varied until the Spectrum Analyzer displays the original reading. EIRP is calculated as-

EIRP (dBm)= Signal Generator setting (dBm)- Cable Loss (dB)+ Antenna Gain (dBi)

Example:

Frequency (MHz)	Measured SA (dBµV)	Signal Generator setting (dBm)	Antenna Gain (dBi)	Dipole Gain (dBd)	Cable Loss (dB)	EIRP (dBm)
1000	95.5	24.5	6.5	0	3.5	27.5

6.7.6 Measurement Survey:

The site is constructed in accordance with ANSI C63.4 requirements and is recognized by the FCC to be in compliance for a 3m site. The spectrum is scanned from 30MHz to the 10th harmonic of the highest frequency generated by the EUT.

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of the 700 MHz, 850 MHz, 1700MHz and 1900 MHz and 2500 MHz bands of operation.

The configuration with 1 Resource Block has been chosen as a worst case configuration because 1RB represents the highest power density and thus the highest peak powers of all supported bandwidth configurations.
QPSK has been shown to deliver the Peak Power for Band 7 so QPSK modulation is chosen for the radiated emission measurements in Band 7.
For the other Bands both modulations showed similar result so emissions have been tested for both modulations.

For low channel the lowest resource block has been chosen and for high channel the highest to represent the worst case in terms of band edge proximity.

For radiated measurements, all data in this report shows the worst case emissions data between H/V antenna polarizations and for all 3 orthogonal orientations of the EUT.

Unless mentioned otherwise, the emission signals above the limit line in the plots are from the carrier.

During TX mode the EUTs clock is running on frequencies above 30MHz to cope with the MIPS requirement of decoding radio signal and other real time tasks. Thus 30MHz was chosen as the lowest frequency for emission testing.

6.7.7 Test Conditions:

Tnom: 20°C; Vnom: 3.6 V

6.7.8 Test Results:

6.7.8.1 Spurious Emission LTE FDD 2:

6.7.8.1.1 LTE FDD 2 Summary Tables

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: QPSK						
RB Size = 1			**RB Offset** = 0		**BW (MHz)** = 5	
Harmonic	**Tx ch-18625 Freq. (MHz)**	**Level (dBm)**	**Tx ch-18900 Freq. (MHz)**	**Level (dBm)**	**Tx ch-19175 Freq. (MHz)**	**Level (dBm)**
1	**1852.5**	20.913	**1880**	22.873	**1907.5**	21.947
2	**3705**	NF	**3600**	NF	**3815**	NF
3	**5557.5**	NF	**5400**	NF	**5722.5**	NF
4	**7410**	NF	**7200**	NF	**7630**	NF
5	**9262.5**	NF	**9000**	NF	**9537.5**	NF
6	**11115**	NF	**10800**	NF	**11445**	NF
7	**12967.5**	NF	**13160**	NF	**13352.5**	NF
8	**14820**	NF	**15040**	NF	**15260**	NF
9	**16672.5**	NF	**16920**	NF	**17167.5**	NF
10	**18525**	NF	**18800**	NF	**19075**	NF
NF= Noise Floor						

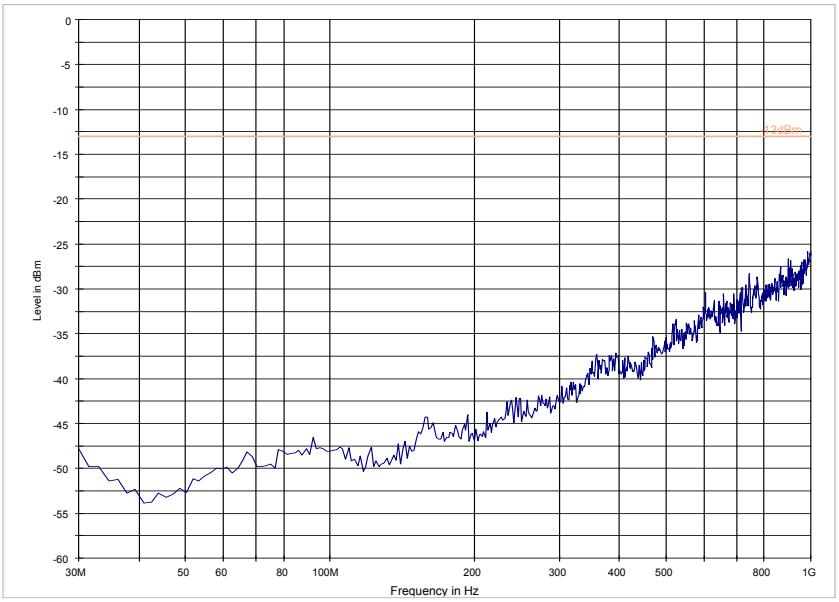
LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: QPSK						
RB Size = 1			**RB Offset** = 0		**BW (MHz)** = 10	
Harmonic	**Tx ch-18650 Freq. (MHz)**	**Level (dBm)**	**Tx ch-18900 Freq. (MHz)**	**Level (dBm)**	**Tx ch-19150 Freq. (MHz)**	**Level (dBm)**
1	**1855**	20.393	**1880**	22.972	**1905**	22.675
2	**3710**	NF	**3600**	NF	**3810**	NF
3	**5565**	NF	**5400**	NF	**5715**	NF
4	**7420**	NF	**7200**	NF	**7620**	NF
5	**9275**	NF	**9000**	NF	**9525**	NF
6	**11130**	NF	**10800**	NF	**11430**	NF
7	**130550**	NF	**13160**	NF	**13335**	NF
8	**14840**	NF	**15040**	NF	**15240**	NF
9	**16695**	NF	**16920**	NF	**16245**	NF
10	**18550**	NF	**18800**	NF	**19050**	NF
NF= Noise Floor						

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: 16 QAM						
RB Size = 1			**RB Offset** = 0		**BW (MHz)** = 5	
Harmonic	**Tx ch-18625 Freq. (MHz)**	**Level (dBm)**	**Tx ch-18900 Freq. (MHz)**	**Level (dBm)**	**Tx ch-19175 Freq. (MHz)**	**Level (dBm)**
1	**1852.5**	20.309	**1880**	23.080	**1907.5**	-19.429
2	**3705**	NF	**3600**	NF	**3815**	NF
3	**5557.5**	NF	**5400**	NF	**5722.5**	NF
4	**7410**	NF	**7200**	NF	**7630**	NF
5	**9262.5**	NF	**9000**	NF	**9537.5**	NF
6	**11115**	NF	**10800**	NF	**11445**	NF
7	**12967.5**	NF	**13160**	NF	**13352.5**	NF
8	**14820**	NF	**15040**	NF	**15260**	NF
9	**16672.5**	NF	**16920**	NF	**17167.5**	NF
10	**18525**	NF	**18800**	NF	**19075**	NF
NF= Noise Floor						

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: 16 QAM						
RB Size = 1			**RB Offset** = 0		**BW (MHz)** = 10	
Harmonic	**Tx ch-18650 Freq. (MHz)**	**Level (dBm)**	**Tx ch-18900 Freq. (MHz)**	**Level (dBm)**	**Tx ch-19150 Freq. (MHz)**	**Level (dBm)**
1	**1855**	5.575	**1880**	23.023	**1905**	-21.412
2	**3710**	NF	**3600**	NF	**3810**	NF
3	**5565**	NF	**5400**	NF	**5715**	NF
4	**7420**	NF	**7200**	NF	**7620**	NF
5	**9275**	NF	**9000**	NF	**9525**	NF
6	**11130**	NF	**10800**	NF	**11430**	NF
7	**130550**	NF	**13160**	NF	**13335**	NF
8	**14840**	NF	**15040**	NF	**15240**	NF
9	**16695**	NF	**16920**	NF	**16245**	NF
10	**18550**	NF	**18800**	NF	**19050**	NF
NF= Noise Floor						

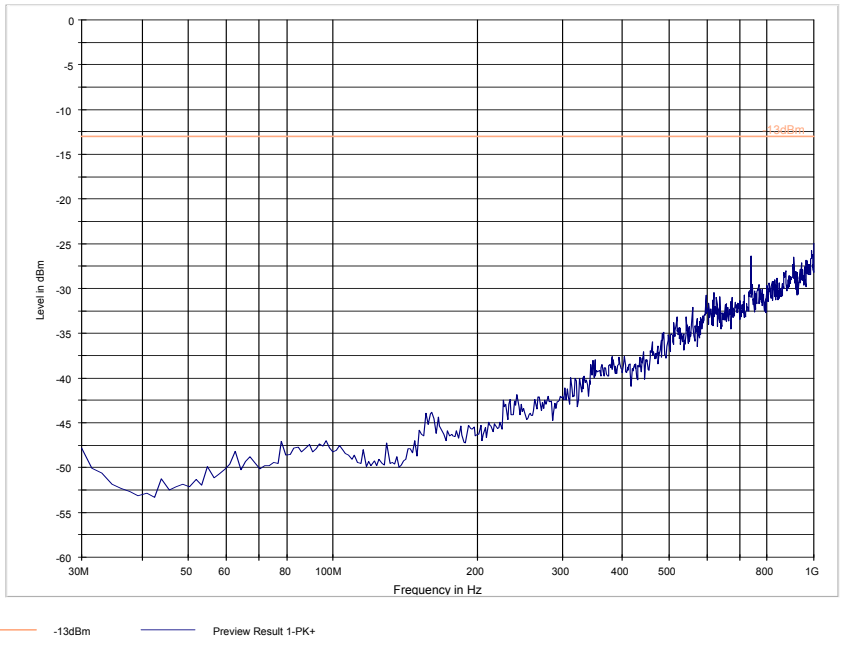
6.7.8.1.2 QPSK/ 5MHz/ Low Channel/ 30MHz to 1GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1GHz -Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



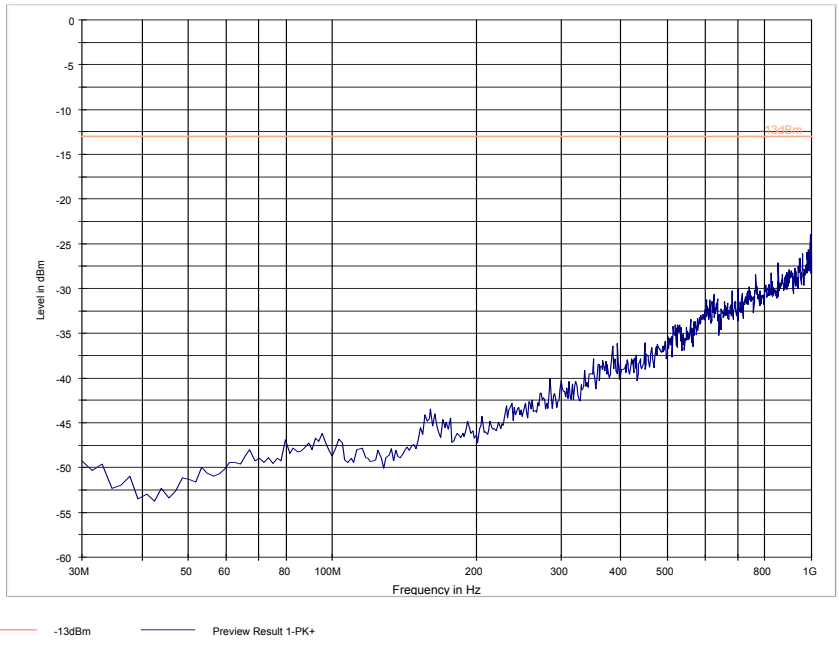
6.7.8.1.3 QPSK/ 5MHz/ Mid Channel/ 30MHz to 1GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1GHz -Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



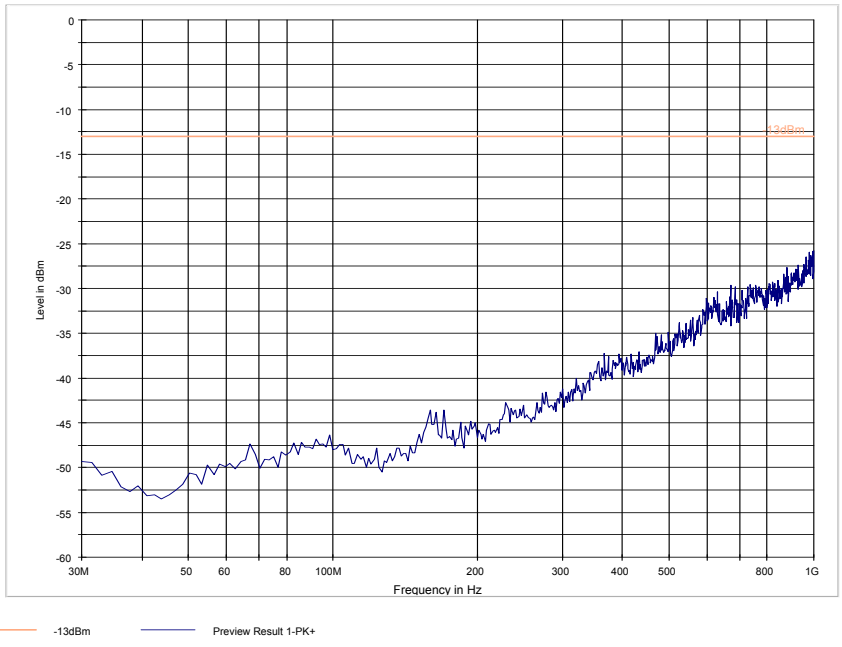
6.7.8.1.4 QPSK/ 5MHz/ High Channel/ 30MHz to 1GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1GHz -High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



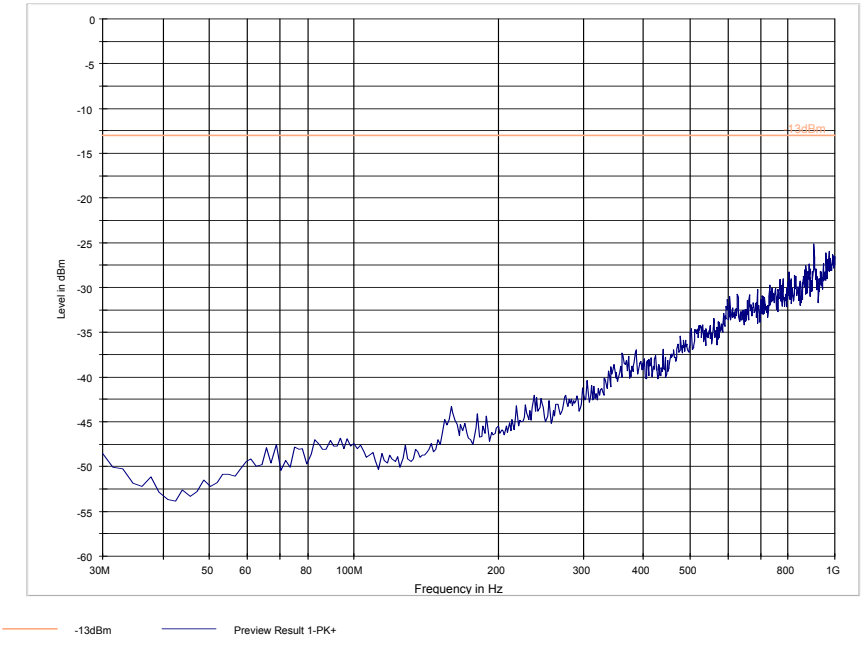
6.7.8.1.5 QPSK/ 10MHz/ Low Channel/ 30MHz to 1GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1 GHz –Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



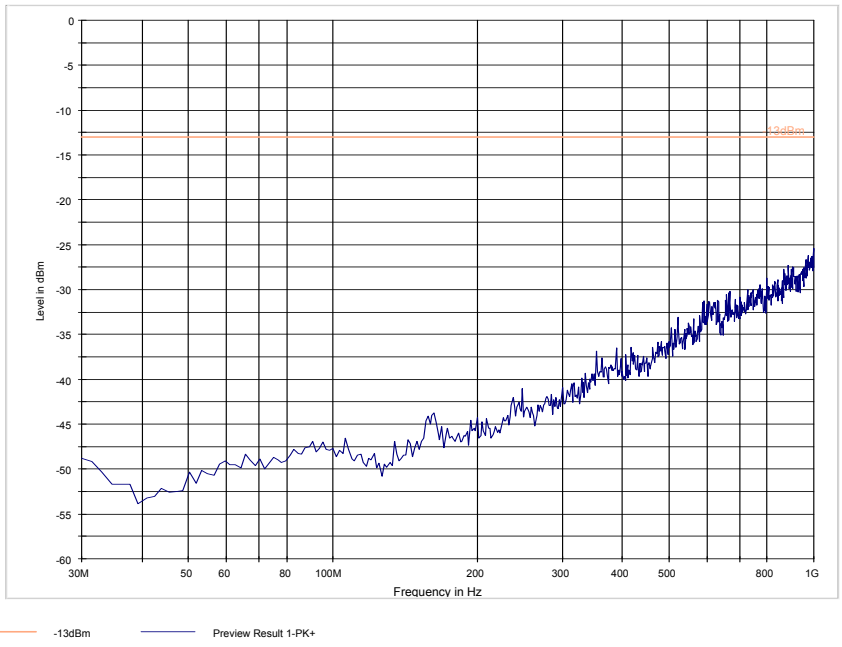
6.7.8.1.6 QPSK/ 10MHz/ Mid Channel/ 30MHz to 1GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1 GHz –Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



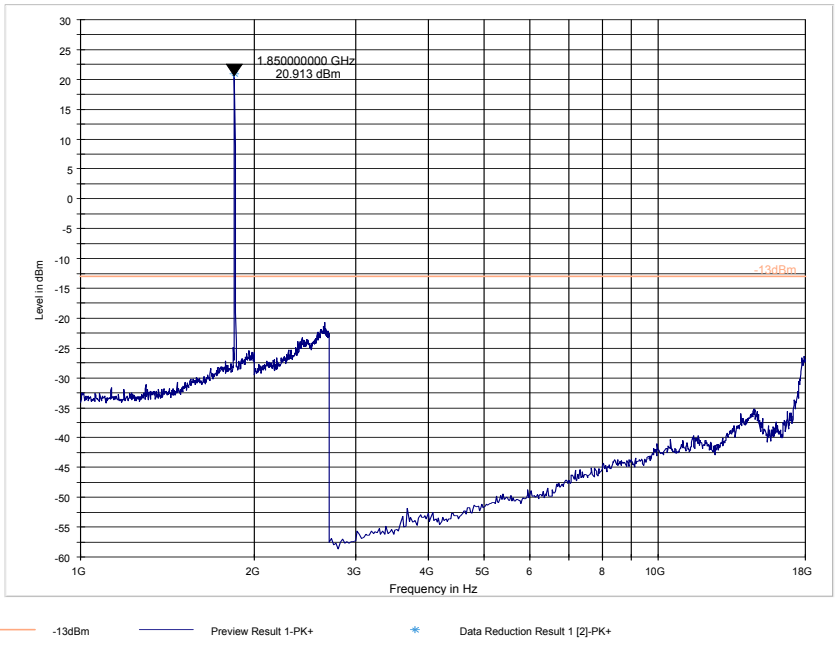
6.7.8.1.7 QPSK/ 10MHz/ High Channel/ 30MHz to 1GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1 GHz –High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



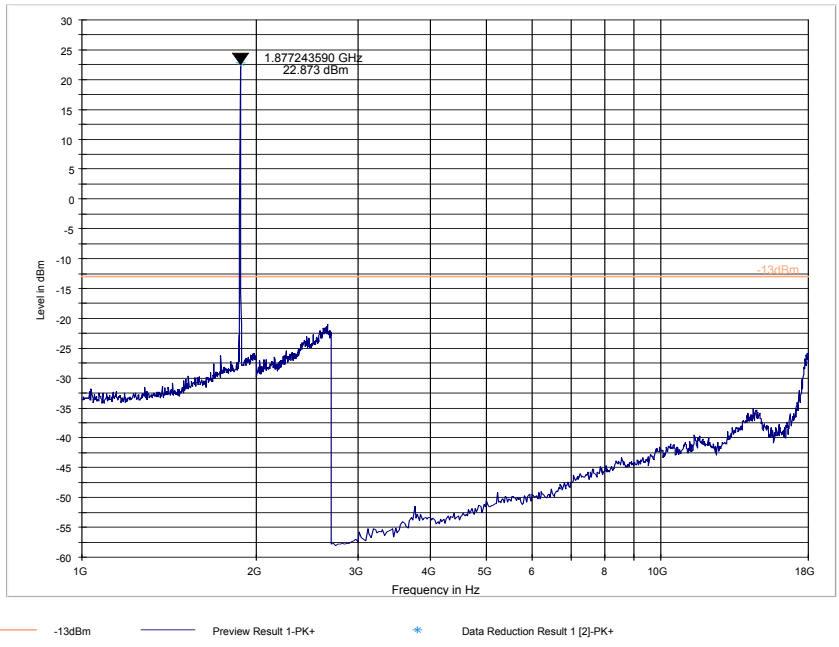
6.7.8.1.8 QPSK/ 5MHz/ Low Channel/ 1GHz to 18GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: QPSK		
Measurement results - 1 GHz – 18 GHz –Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



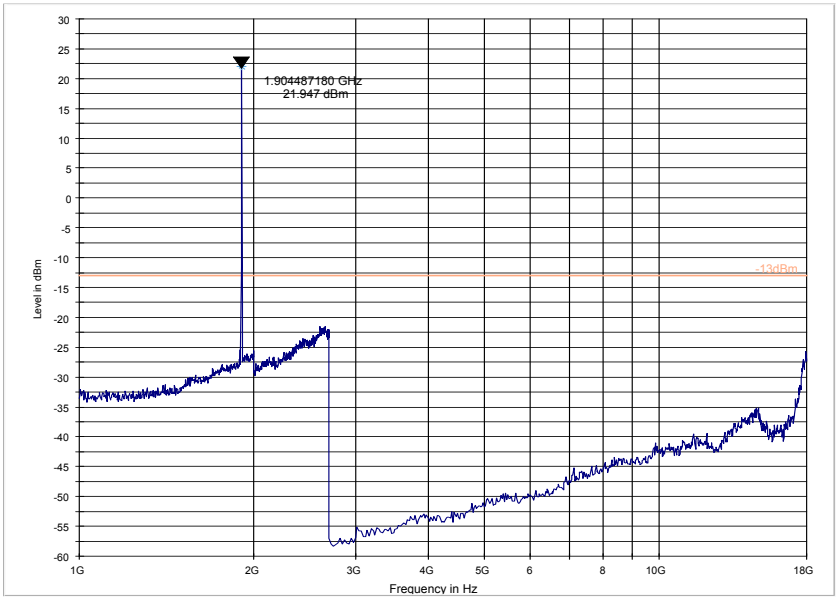
6.7.8.1.9 QPSK/ 5MHz/ Mid Channel/ 1GHz to 18GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: QPSK		
Measurement results - 1 GHz – 18 GHz –Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



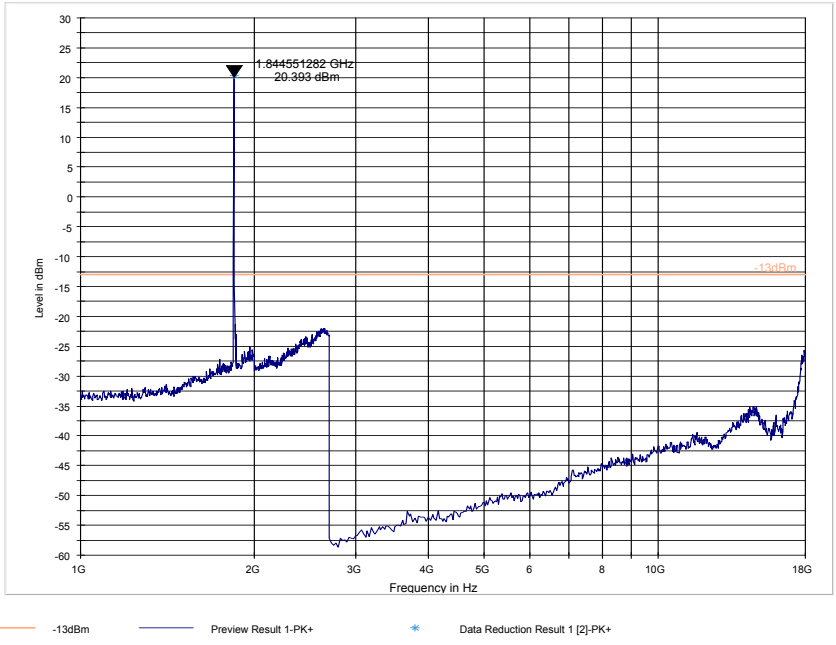
6.7.8.1.10 QPSK/ 5MHz/ High Channel/ 1GHz to 18GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: QPSK		
Measurement results - 1 GHz – 18 GHz –High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



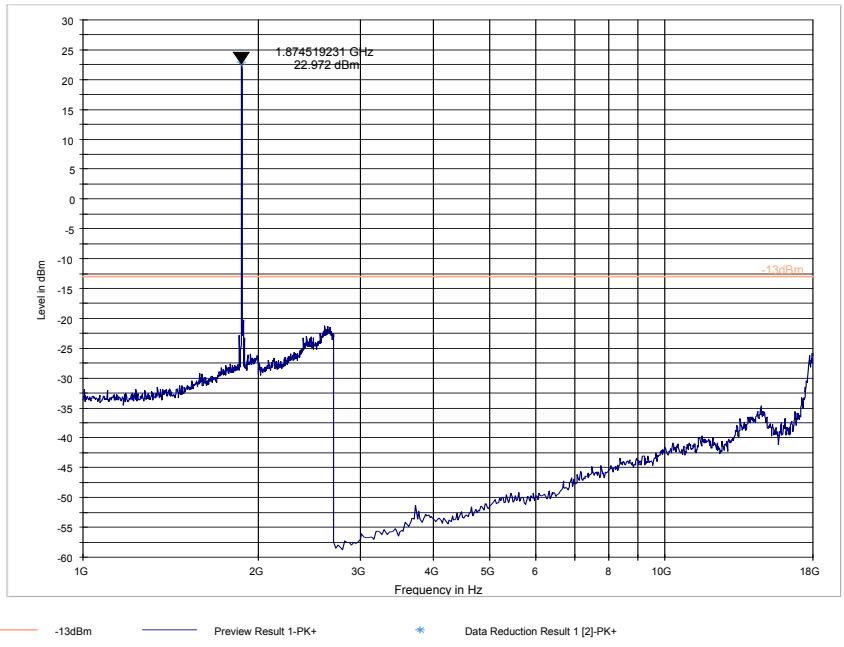
6.7.8.1.11 QPSK/ 10MHz/ Low Channel/ 1GHz to 18GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: QPSK		
Measurement results - 1 GHz – 18 GHz –Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



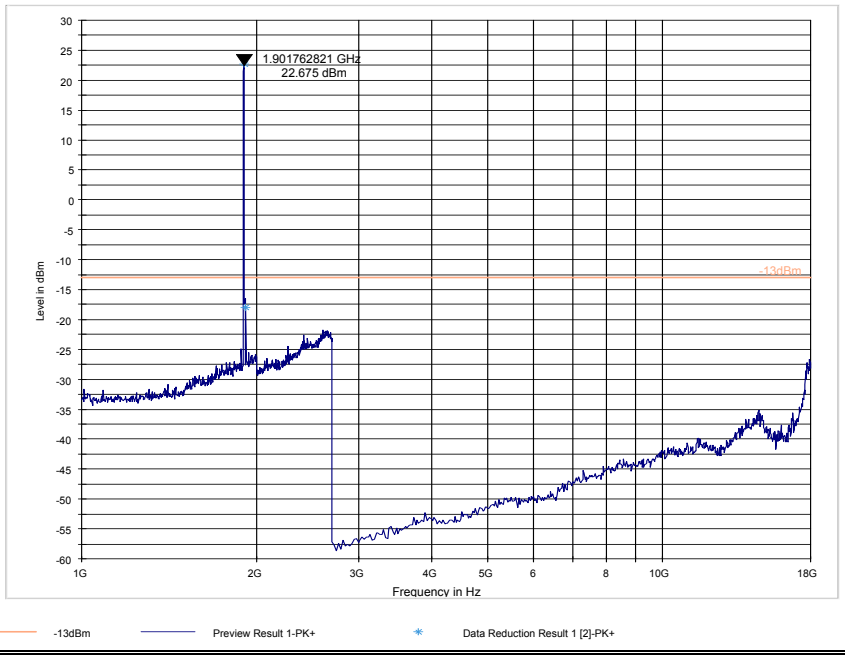
6.7.8.1.12 QPSK/ 10MHz/ Mid Channel/ 1GHz to 18GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: QPSK		
Measurement results - 1 GHz – 18 GHz –Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



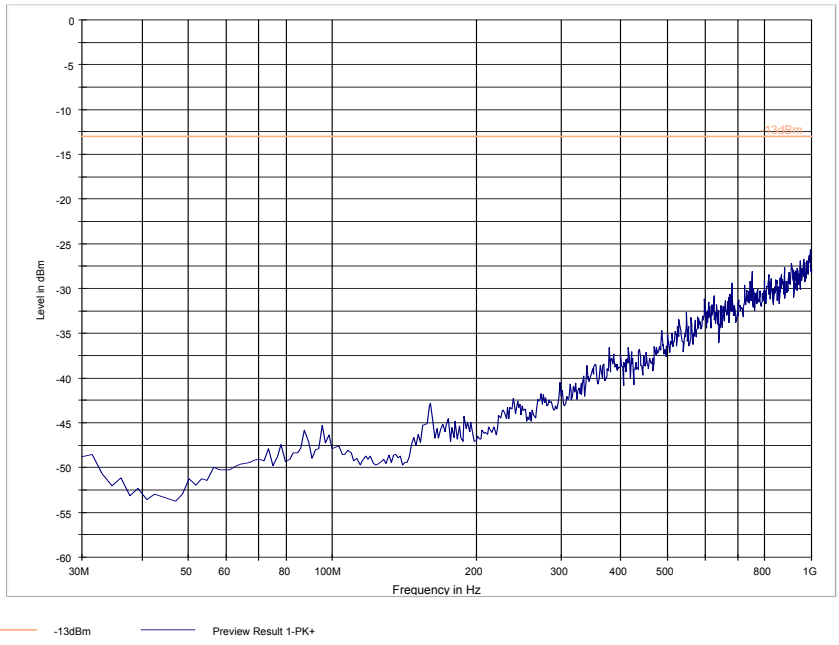
6.7.8.1.13 QPSK/ 10MHz/ High Channel/ 1GHz to 18GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: QPSK		
Measurement results - 1 GHz – 18 GHz –High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



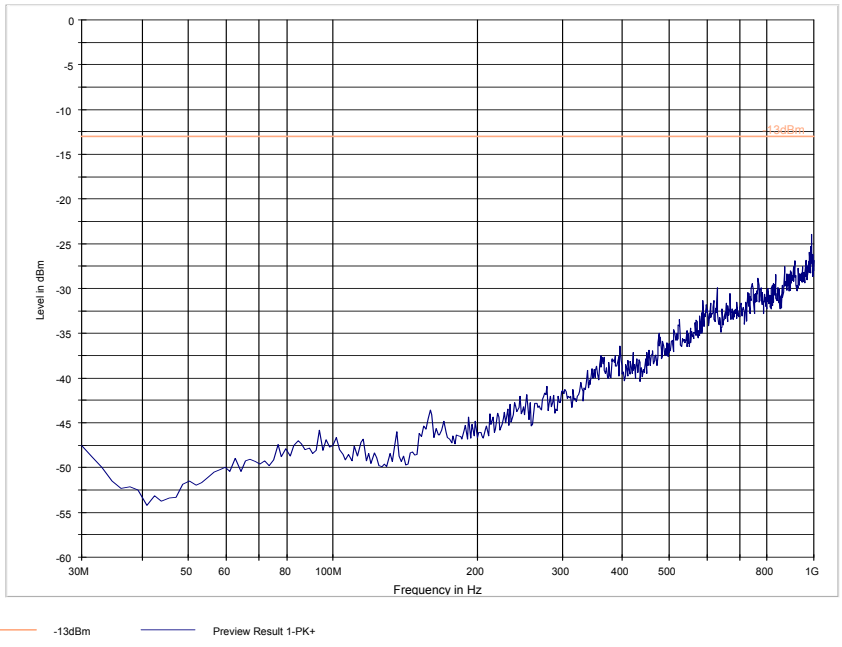
6.7.8.1.14 16 QAM/ 5MHz/ Low Channel/ 30MHz to 1GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: 16 QAM		
Measurement results - 30 MHz – 1 GHz –Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



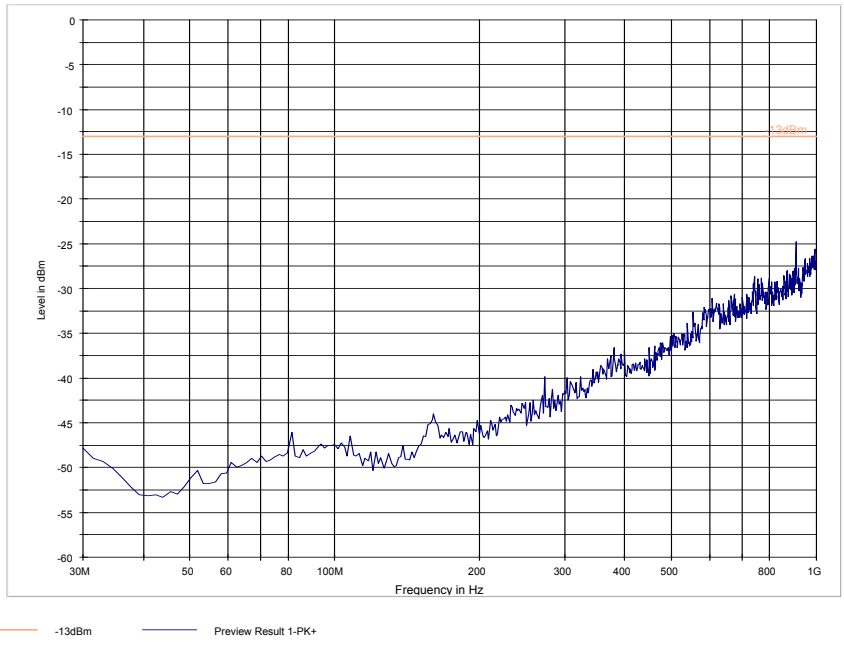
6.7.8.1.15 16 QAM/ 5MHz/ Mid Channel/ 30MHz to 1GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: 16 QAM		
Measurement results - 30 MHz – 1 GHz –Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



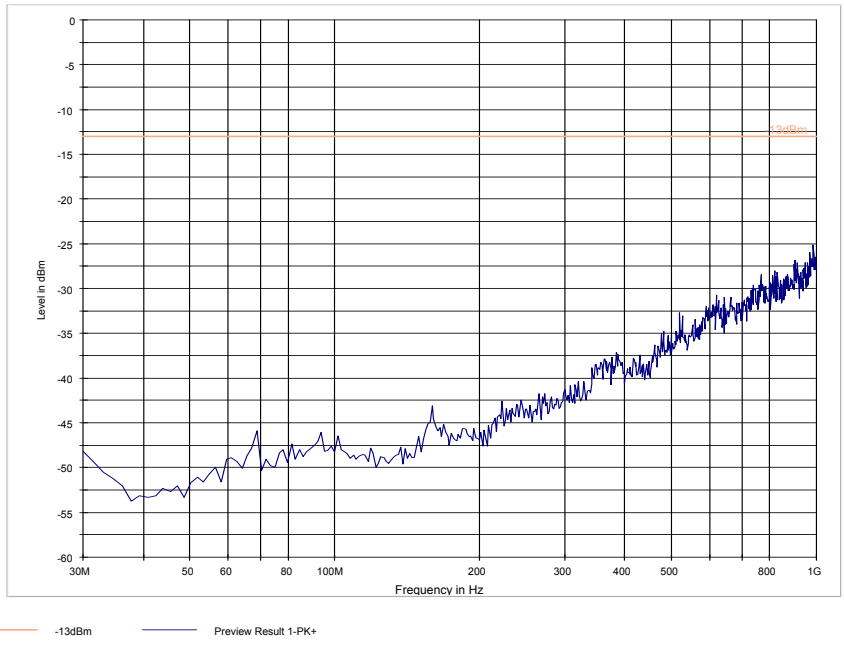
6.7.8.1.16 16 QAM/ 5MHz/ High Channel 30MHz to 1GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: 16 QAM		
Measurement results - 30 MHz – 1GHz -High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



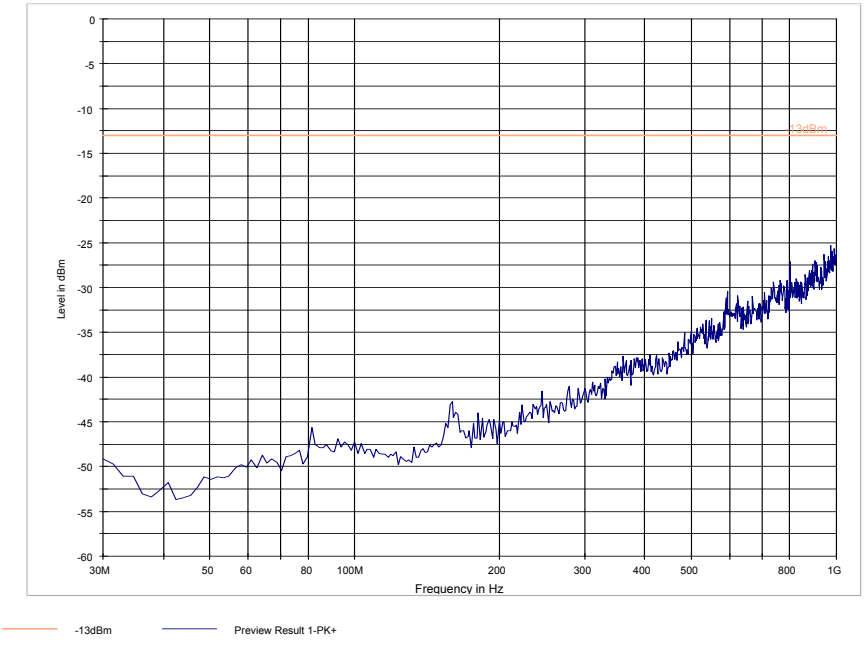
6.7.8.1.17 16 QAM/ 10MHz/ Low Channel/ 30MHz to 1GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: 16 QAM		
Measurement results - 30 MHz – 1GHz -Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



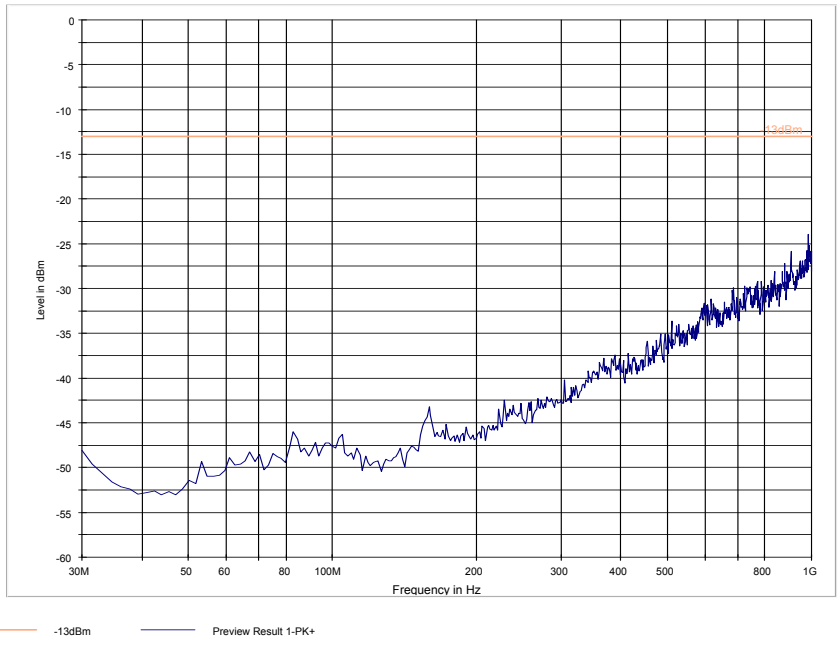
6.7.8.1.18 16 QAM/ 10MHz/ Mid Channel/ 30MHz to 1GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: 16 QAM		
Measurement results - 30 MHz – 1GHz -Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



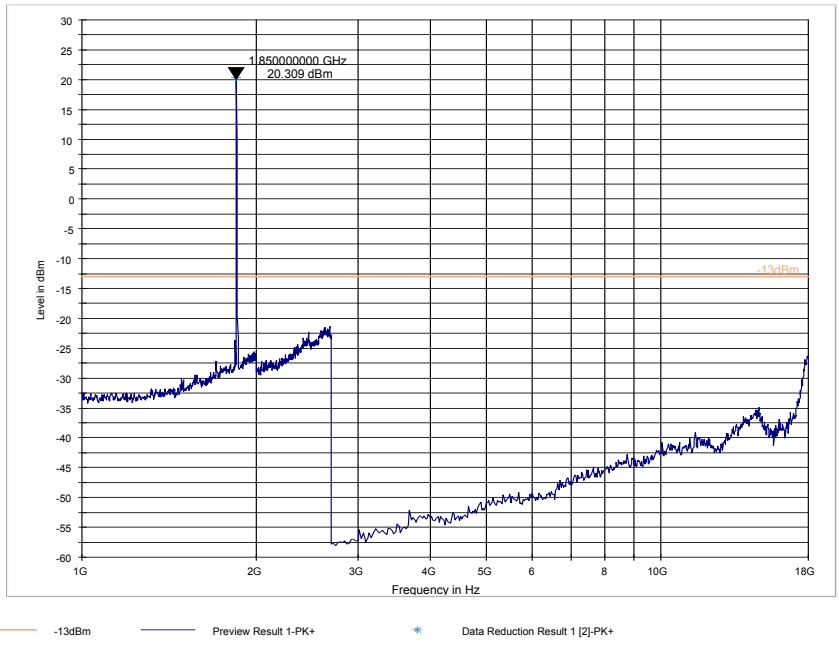
6.7.8.1.19 16 QAM/ 10MHz/ High Channel/ 30MHz to 1GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: 16 QAM		
Measurement results - 30 MHz – 1GHz -High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



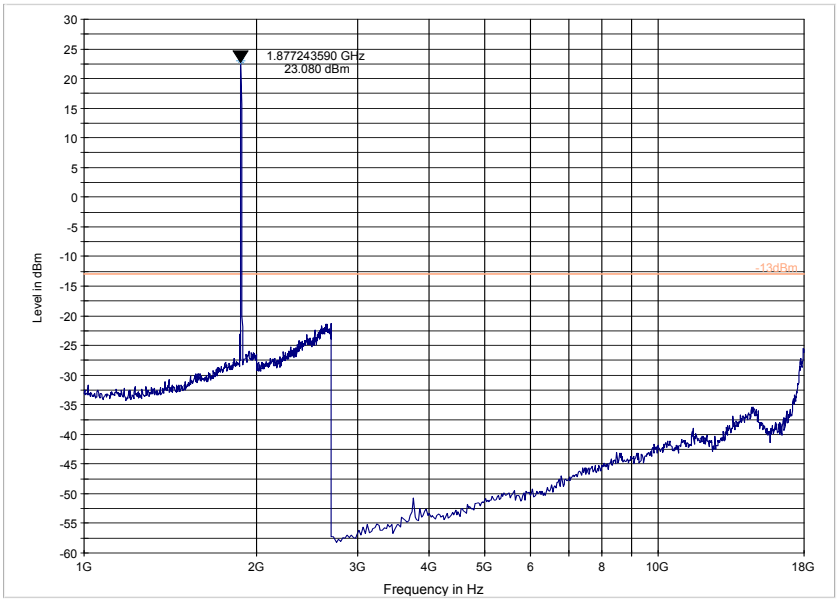
6.7.8.1.20 16 QAM/ 5MHz/ Low Channel/ 1GHz to 18GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: 16 QAM		
Measurement results - 1 GHz – 18 GHz -Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



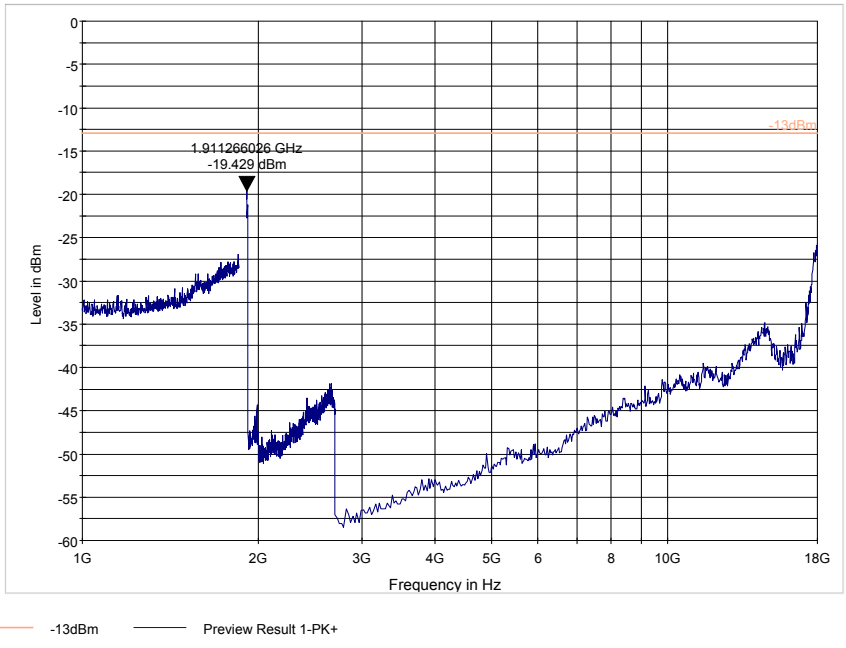
6.7.8.1.21 16 QAM/ 5MHz/ Mid Channel/ 1GHz to 18GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: 16 QAM		
Measurement results - 1 GHz – 18 GHz -Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



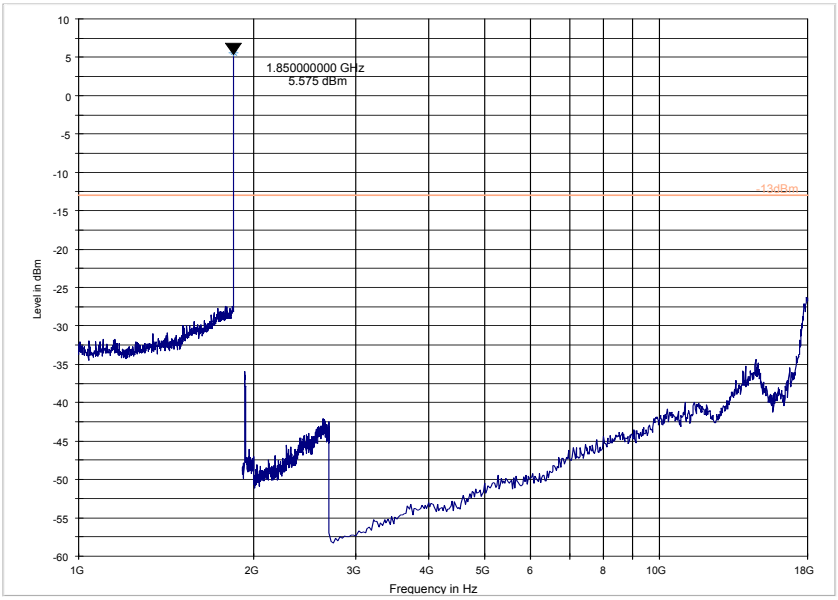
6.7.8.1.22 16 QAM/ 5MHz/ High Channel/ 1GHz to 18GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: 16 QAM		
Measurement results - 1 GHz – 18 GHz -High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



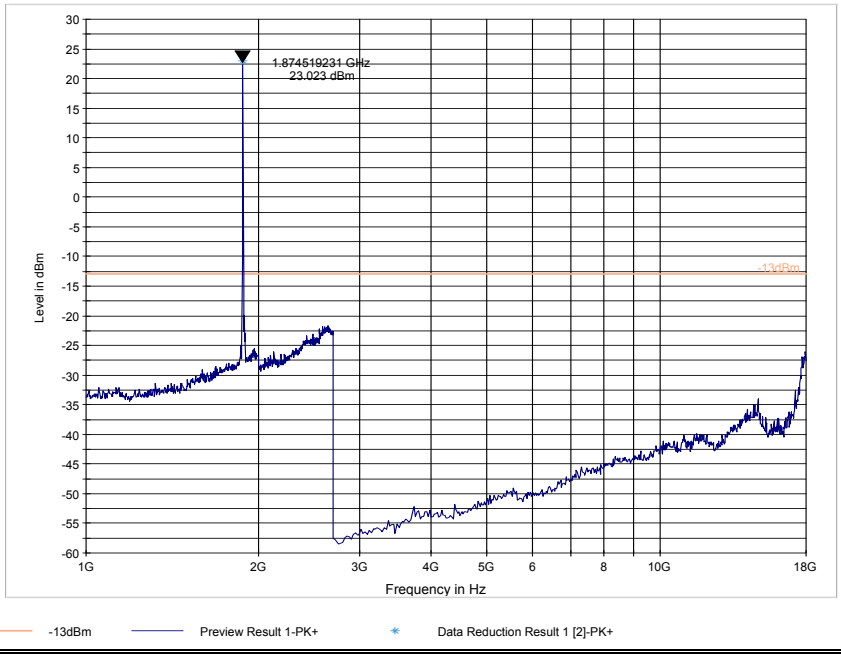
6.7.8.1.23 16 QAM/ 10MHz/ Low Channel/ 1GHz to 18GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: 16 QAM		
Measurement results - 1 GHz – 18 GHz -Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



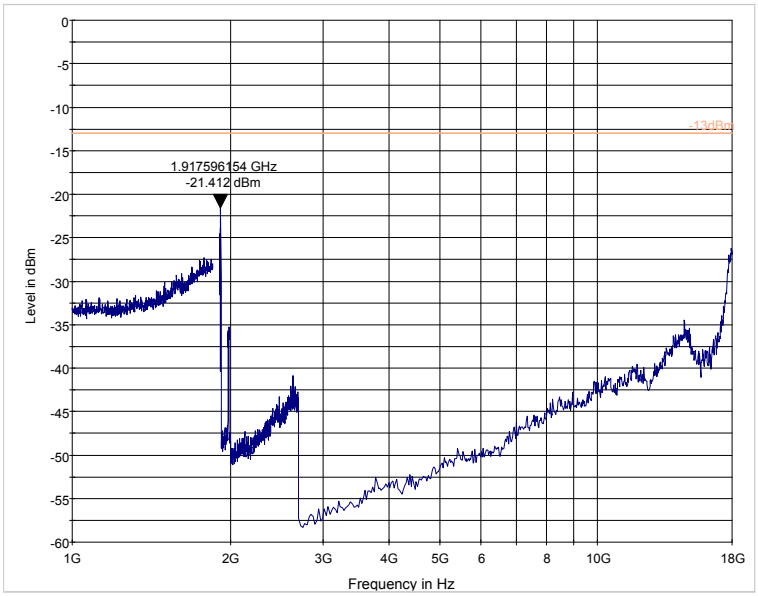
6.7.8.1.24 16 QAM/ 10MHz/ Mid Channel/ 1GHz to 18GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: 16 QAM		
Measurement results - 1 GHz – 18 GHz -Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



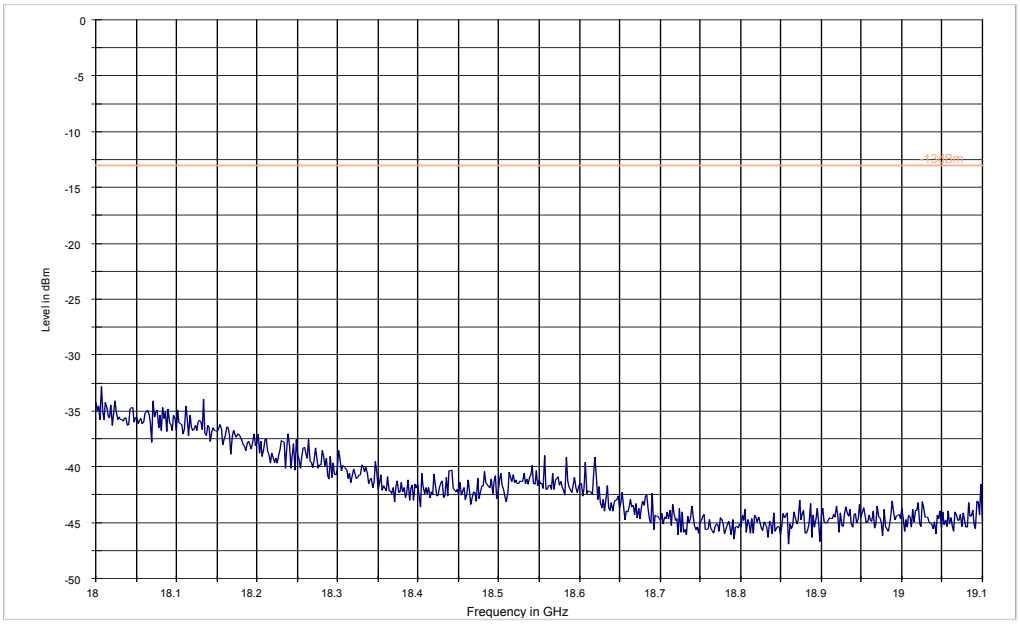
6.7.8.1.25 16 QAM/ 10MHz/ High Channel/ 1GHz to 18GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: 16 QAM		
Measurement results - 1 GHz – 18 GHz -High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



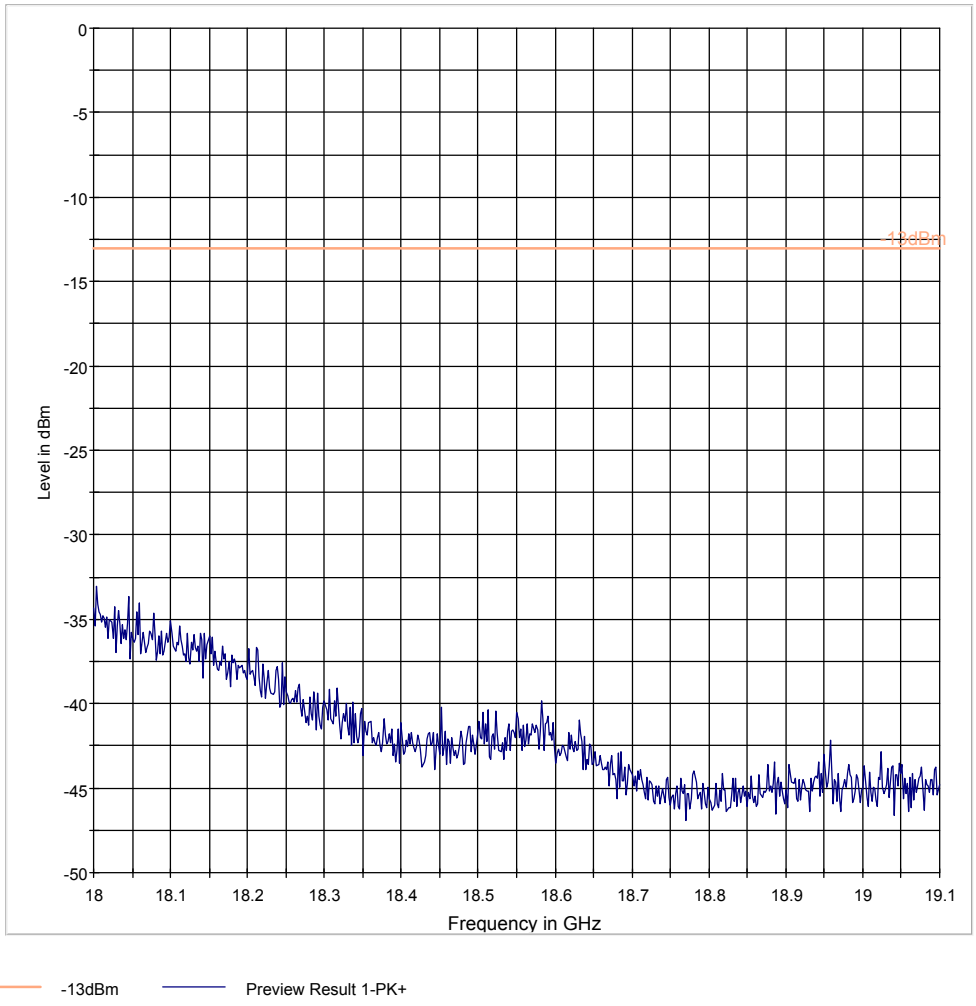
6.7.8.1.26 QPSK/ 1RB Mid/ Mid Channel/ 18GHz to 19.1GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: QPSK		
Measurement results - 18 GHz – 19.1 GHz –Mid Channel		
RB Size = 1	**RB Offset** = Mid	



6.7.8.1.27 16QAM/ 1RB Mid/ Mid Channel/ 18GHz to 19.1GHz:

LTE Band 2 (1850 MHz – 1910 MHz) -Modulation: 16QAM		
Measurement results - 18 GHz – 19.1 GHz –Mid Channel		
RB Size = 1	**RB Offset** = Mid	



6.7.8.2 Spurious Emission LTE FDD 4:

6.7.8.2.1 LTE FDD 4 Summary Tables

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: QPSK						
RB Size = 1			**RB Offset** = 0		**BW (MHz)** = 5	
Harmonic	**Tx ch-19975 Freq. (MHz)**	**Level (dBm)**	**Tx ch-20175 Freq. (MHz)**	**Level (dBm)**	**Tx ch-20375 Freq. (MHz)**	**Level (dBm)**
1	**1712.5**	22.333	**1732.5**	17.241	**1752.5**	23.873
2	**3425**	NF	**3465**	NF	**3505**	NF
3	**5137.5**	NF	**5197.5**	NF	**5257.5**	NF
4	**6850**	NF	**6930**	NF	**7010**	NF
5	**8562.5**	NF	**8662.5**	NF	**8762.5**	NF
6	**10275**	NF	**10395**	NF	**10515**	NF
7	**11987.5**	NF	**12127.5**	NF	**12267.5**	NF
8	**13700**	NF	**13860**	NF	**14020**	NF
9	**15412.5**	NF	**15592.5**	NF	**15772.5**	NF
10	**17125**	NF	**17325**	NF	**17525**	NF
NF= Noise Floor						

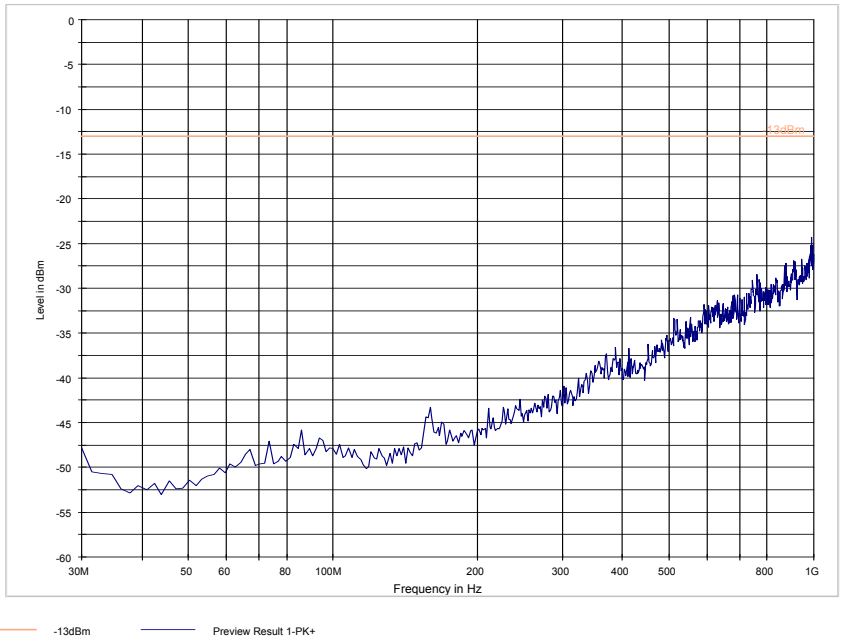
LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: QPSK						
RB Size = 1			**RB Offset** = 0		**BW (MHz)** = 10	
Harmonic	**Tx ch-20000 Freq. (MHz)**	**Level (dBm)**	**Tx ch-20175 Freq. (MHz)**	**Level (dBm)**	**Tx ch-20350 Freq. (MHz)**	**Level (dBm)**
1	**1715**	22.790	**1732.5**	17.451	**1750**	22.078
2	**3430**	NF	**3465**	NF	**3500**	NF
3	**5145**	NF	**5197.5**	NF	**5250**	NF
4	**6860**	NF	**6930**	NF	**7000**	NF
5	**8575**	NF	**8662.5**	NF	**8750**	NF
6	**10290**	NF	**10395**	NF	**10500**	NF
7	**12005**	NF	**12127.5**	NF	**12250**	NF
8	**13720**	NF	**13860**	NF	**14000**	NF
9	**15435**	NF	**15592.5**	NF	**15750**	NF
10	**17150**	NF	**17325**	NF	**17500**	NF
NF= Noise Floor						

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: 16 QAM						
RB Size = 1			**RB Offset** = 0		**BW (MHz)** = 5	
Harmonic	**Tx ch-19975 Freq. (MHz)**	**Level (dBm)**	**Tx ch-20175 Freq. (MHz)**	**Level (dBm)**	**Tx ch-20375 Freq. (MHz)**	**Level (dBm)**
1	**1712.5**	22.732	**1732.5**	17.393	**1752.5**	22.304
2	**3425**	NF	**3465**	NF	**3505**	NF
3	**5137.5**	NF	**5197.5**	NF	**5257.5**	NF
4	**6850**	NF	**6930**	NF	**7010**	NF
5	**8562.5**	NF	**8662.5**	NF	**8762.5**	NF
6	**10275**	NF	**10395**	NF	**10515**	NF
7	**11987.5**	NF	**12127.5**	NF	**12267.5**	NF
8	**13700**	NF	**13860**	NF	**14020**	NF
9	**15412.5**	NF	**15592.5**	NF	**15772.5**	NF
10	**17125**	NF	**17325**	NF	**17525**	NF
NF= Noise Floor						

LTE Band 4 (824 MHz – 849 MHz) -Modulation: 16 QAM						
RB Size = 1			**RB Offset** = 0		**BW (MHz)** = 10	
Harmonic	**Tx ch-20000 Freq. (MHz)**	**Level (dBm)**	**Tx ch-20175 Freq. (MHz)**	**Level (dBm)**	**Tx ch-20350 Freq. (MHz)**	**Level (dBm)**
1	**1715**	22.640	**1732.5**	17.713	**1750**	22.175
2	**3430**	NF	**3465**	NF	**3500**	NF
3	**5145**	NF	**5197.5**	NF	**5250**	NF
4	**6860**	NF	**6930**	NF	**7000**	NF
5	**8575**	NF	**8662.5**	NF	**8750**	NF
6	**10290**	NF	**10395**	NF	**10500**	NF
7	**12005**	NF	**12127.5**	NF	**12250**	NF
8	**13720**	NF	**13860**	NF	**14000**	NF
9	**15435**	NF	**15592.5**	NF	**15750**	NF
10	**17150**	NF	**17325**	NF	**17500**	NF
NF= Noise Floor						

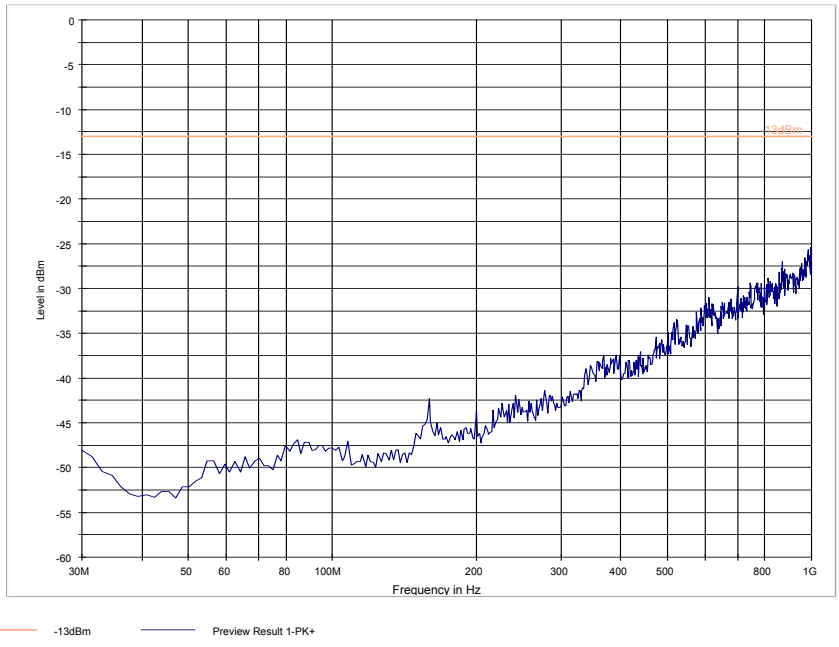
6.7.8.2.2 QPSK/ 5MHz/ Low Channel/ 30MHz to 1GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1GHz -Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



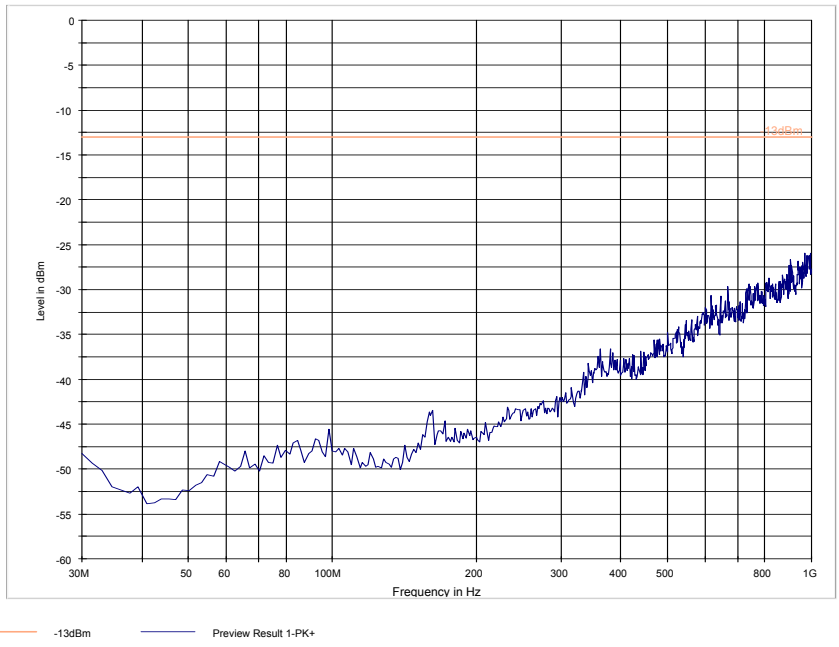
6.7.8.2.3 QPSK/ 5MHz/ Mid Channel/ 30MHz to 1GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1GHz -Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



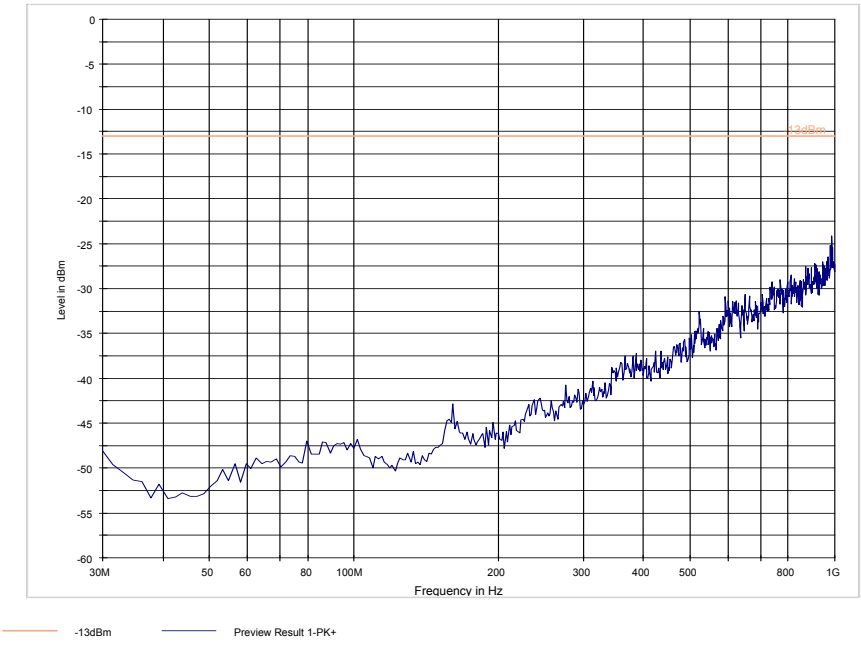
6.7.8.2.4 QPSK/ 5MHz/ High Channel/ 30MHz to 1GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1GHz -High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



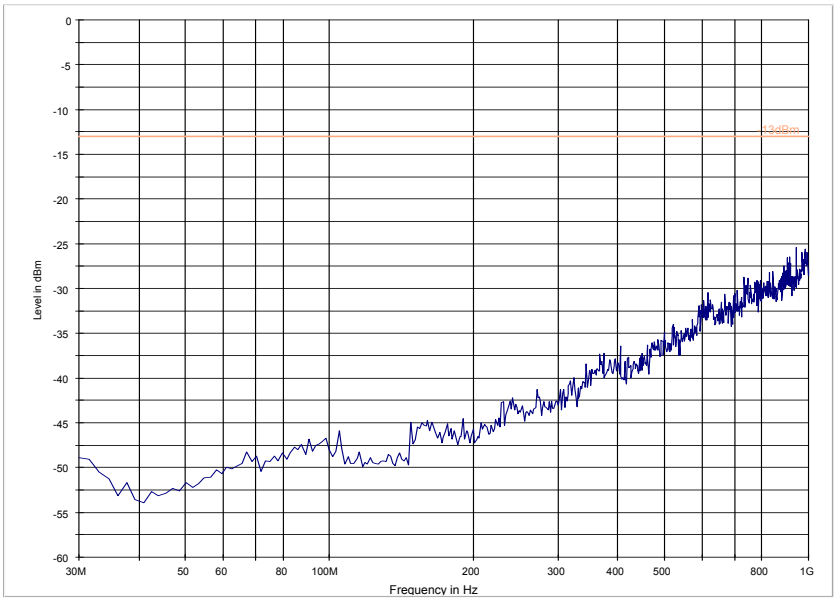
6.7.8.2.5 QPSK/ 10MHz/ Low Channel/ 30MHz to 1GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1GHz -Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



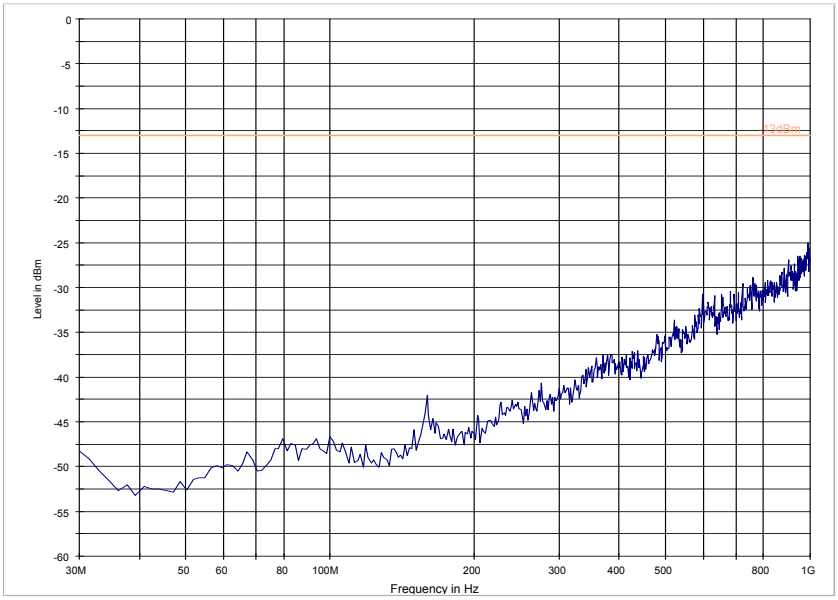
6.7.8.2.6 QPSK/ 10MHz/ Mid Channel/ 30MHz to 1GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1GHz –Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



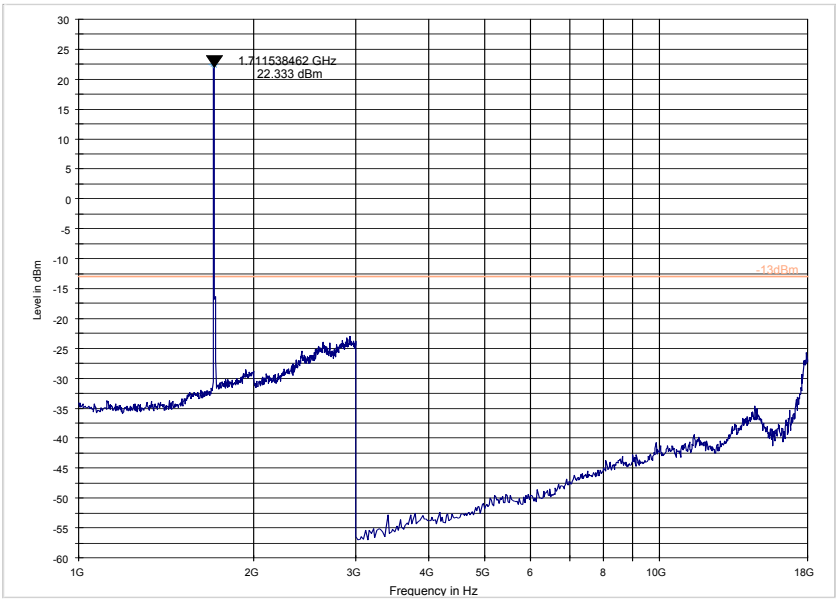
6.7.8.2.7 QPSK/ 10MHz/ High Channel/ 30MHz to 1GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1GHz -High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



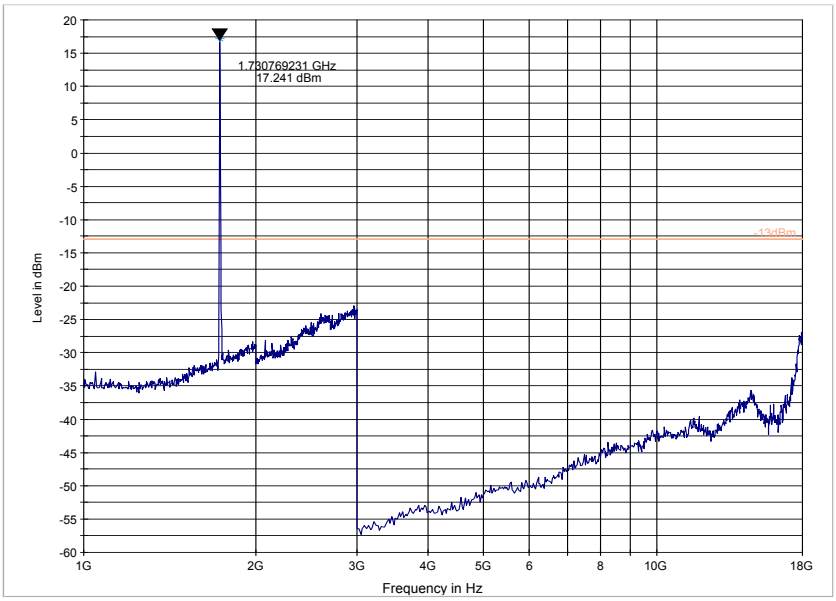
6.7.8.2.8 QPSK/ 5MHz/ Low Channel/ 1GHz to 18GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: QPSK		
Measurement results - 1 GHz – 18 GHz -Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



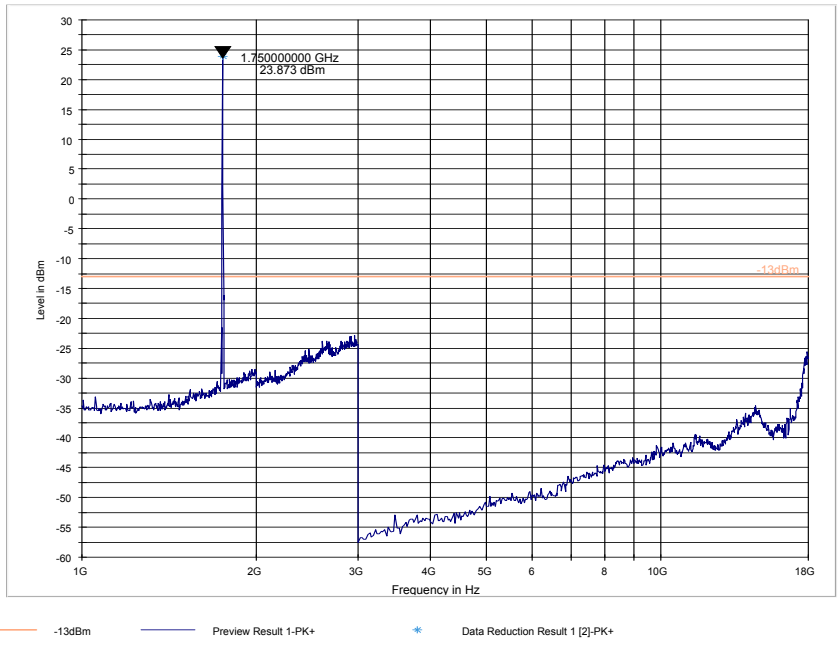
6.7.8.2.9 QPSK/ 5MHz/ Mid Channel/ 1GHz to 18GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: QPSK		
Measurement results - 1 GHz – 18 GHz -Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



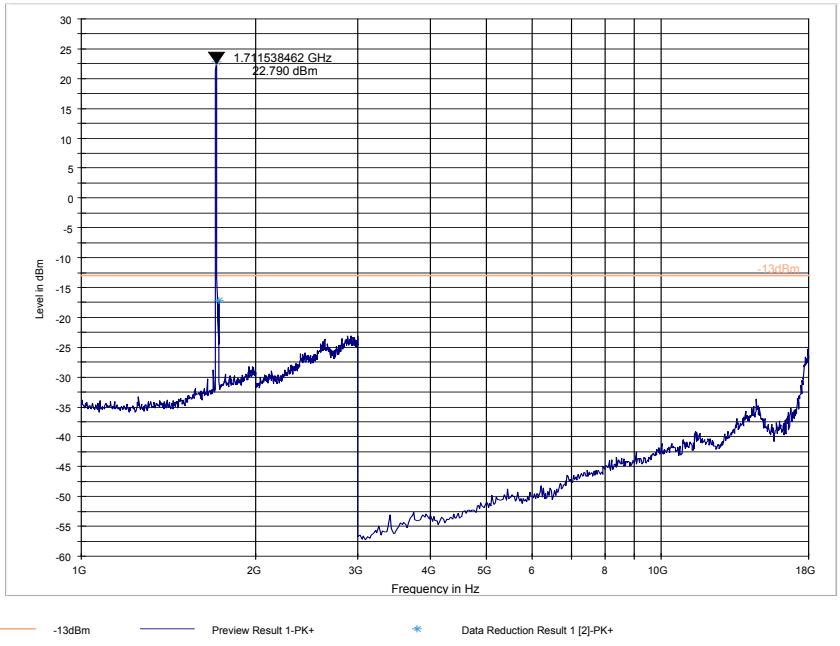
6.7.8.2.10 QPSK/ 5MHz/ High Channel/ 1GHz to 18GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: QPSK		
Measurement results - 1 GHz – 18 GHz -High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



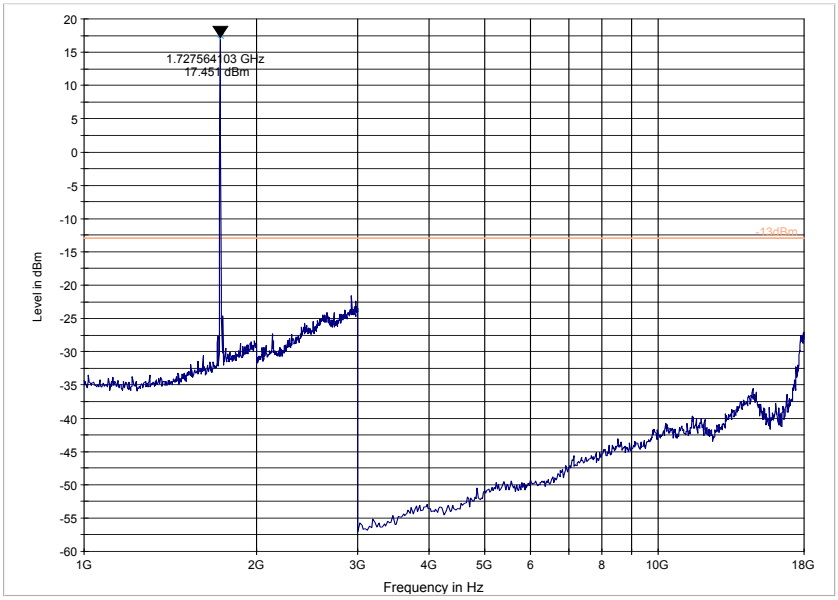
6.7.8.2.11 QPSK/ 10MHz/ Low Channel/ 1GHz to 18GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: QPSK		
Measurement results - 1 GHz – 18 GHz -Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



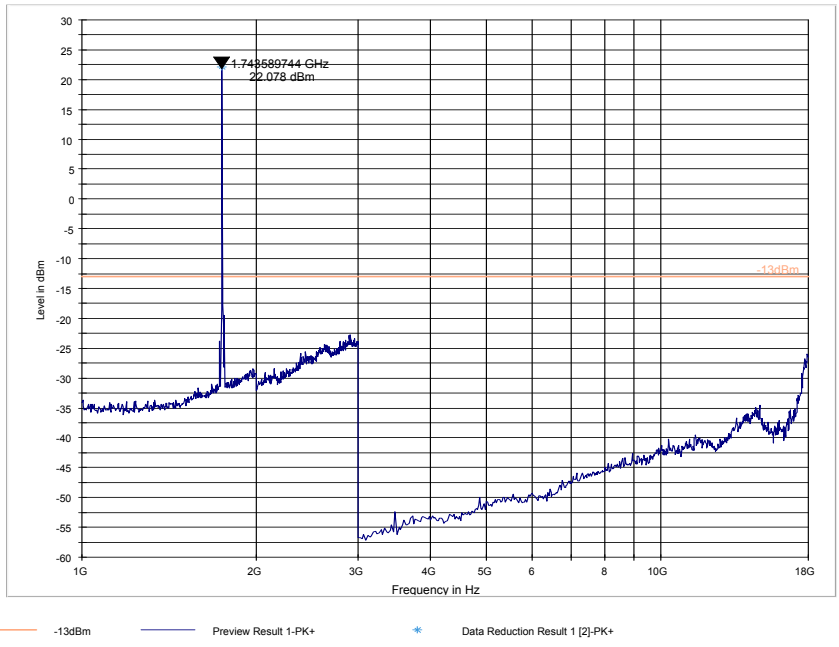
6.7.8.2.12 QPSK/ 10MHz/ Mid Channel/ 1GHz to 18GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: QPSK		
Measurement results - 1 GHz – 18 GHz -Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



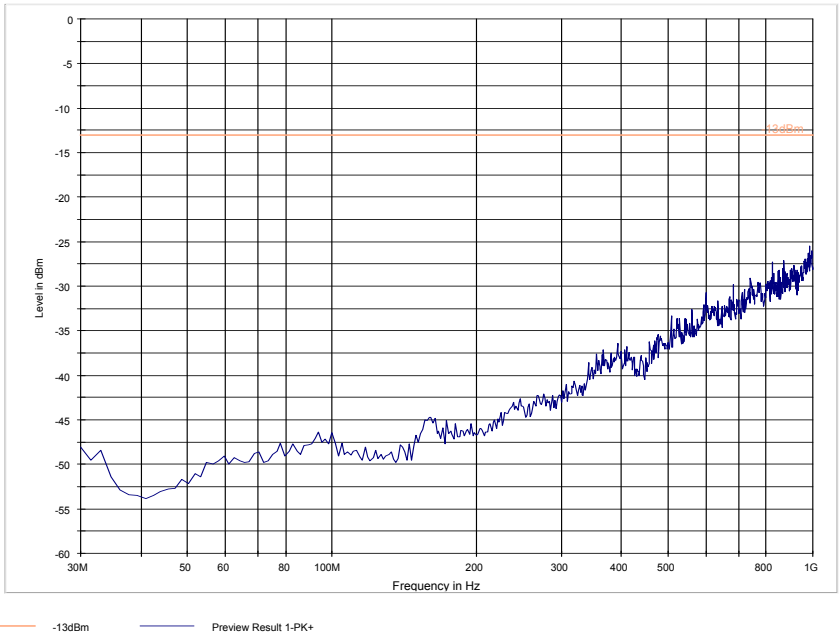
6.7.8.2.13 QPSK/ 10MHz/ High Channel/ 1GHz to 18GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: QPSK		
Measurement results - 1 GHz – 18 GHz -High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



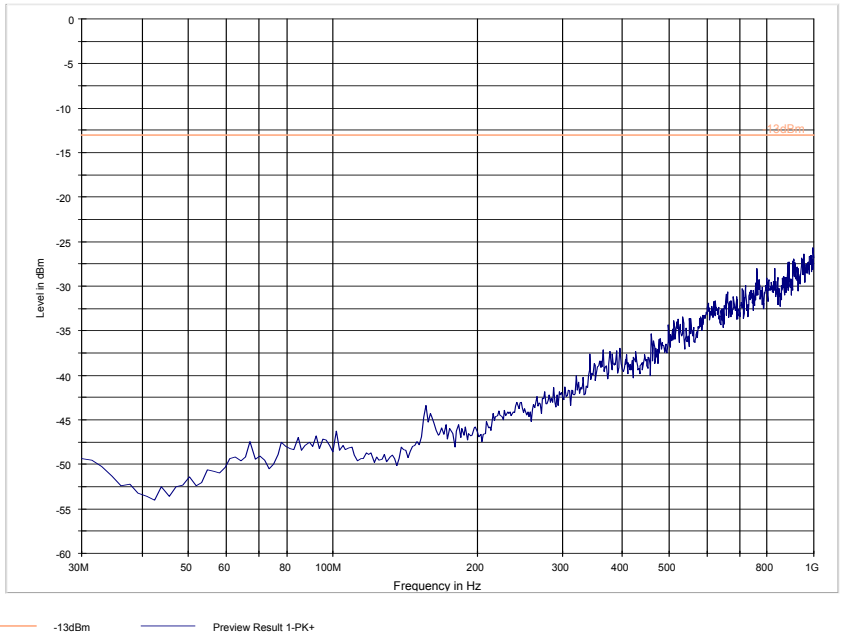
6.7.8.2.14 16 QAM/ 5MHz/ Low Channel/ 30MHz to 1GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: 16 QAM		
Measurement results - 30 MHz – 1GHz -Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



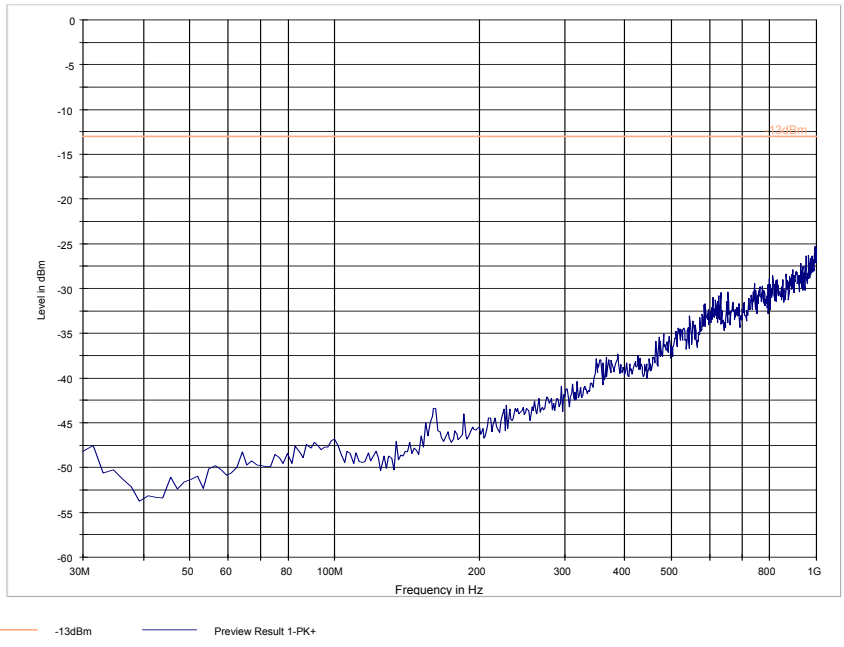
6.7.8.2.15 16 QAM/ 5MHz/ Mid Channel/ 30MHz to 1GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: 16 QAM		
Measurement results - 30 MHz – 1GHz -Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



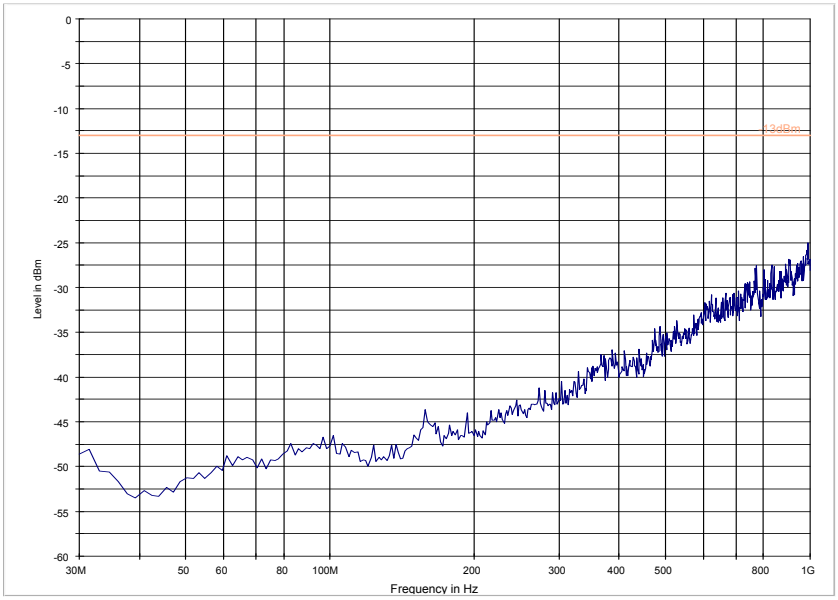
6.7.8.2.16 16 QAM/ 5MHz/ High Channe/ 30MHz to 1GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: 16 QAM		
Measurement results - 30 MHz – 1GHz -High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



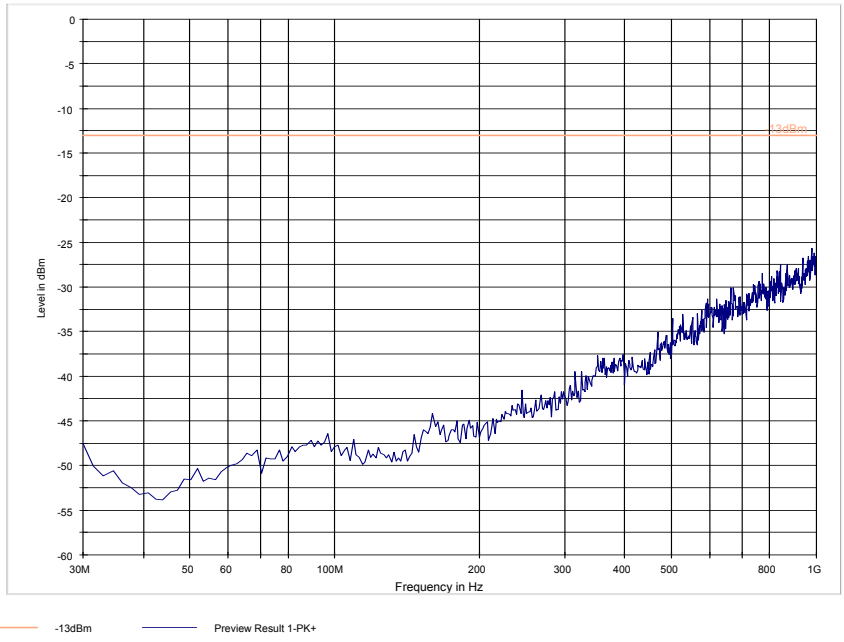
6.7.8.2.17 16 QAM/ 10MHz/ Low Channel/ 30MHz to 1GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: 16 QAM		
Measurement results - 30 MHz – 1GHz -Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



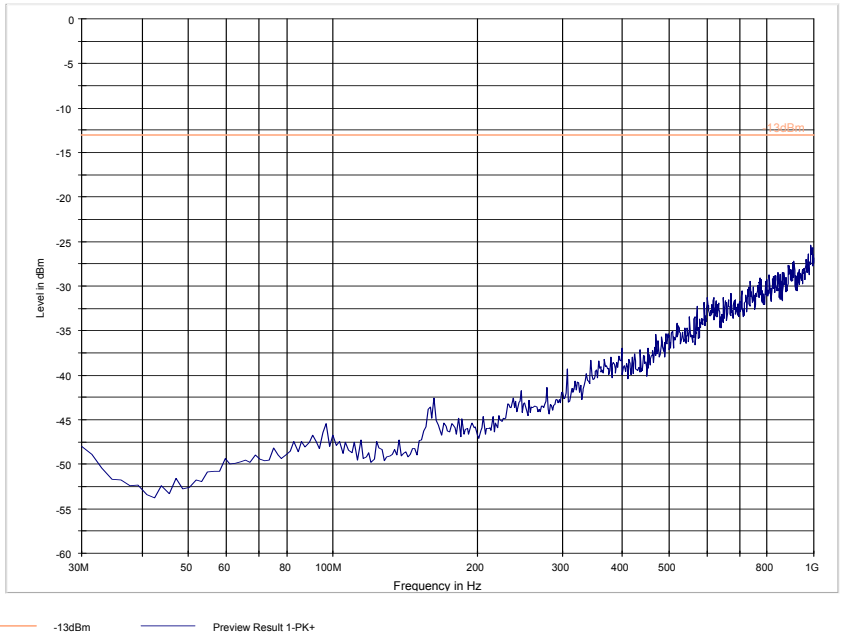
6.7.8.2.18 16 QAM/ 10MHz/ Mid Channel/ 30MHz to 1GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: 16 QAM		
Measurement results - 30 MHz – 1GHz -Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



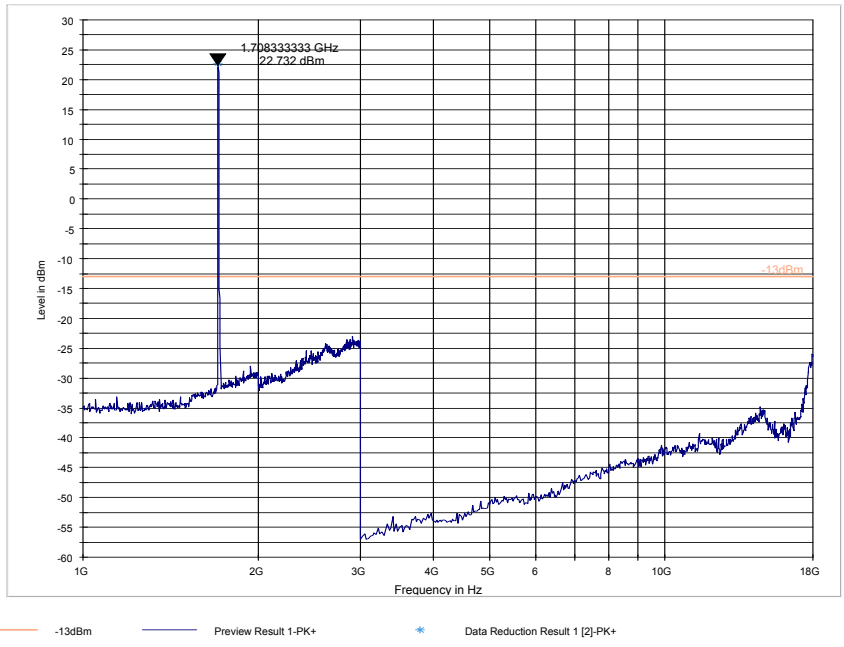
6.7.8.2.19 16 QAM/ 10MHz/ High Channel/ 30MHz to 1GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: 16 QAM		
Measurement results - 30 MHz – 1GHz –High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



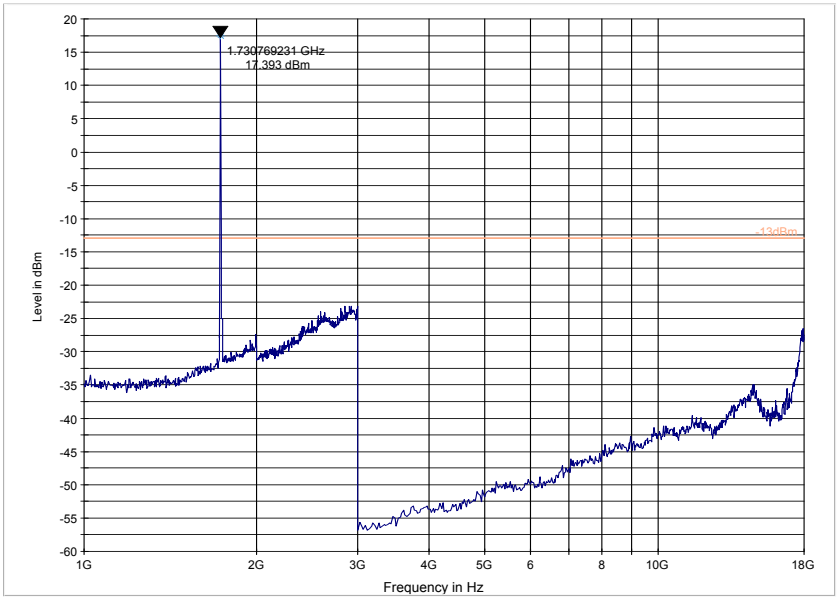
6.7.8.2.20 16 QAM/ 5MHz/ Low Channel/ 1GHz to 18GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: 16 QAM		
Measurement results – 1 GHz – 18 GHz –Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



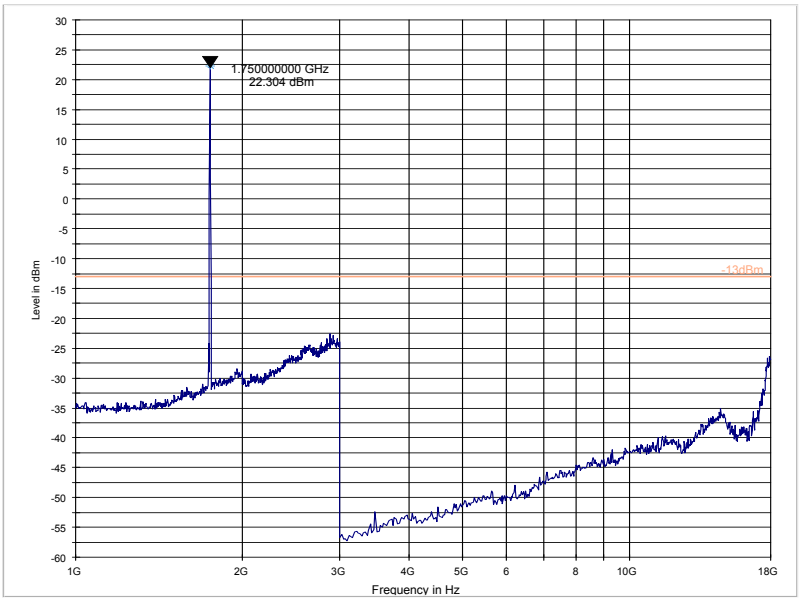
6.7.8.2.21 16 QAM/ 5MHz/ Mid Channel/ 1GHz to 18GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: 16 QAM		
Measurement results – 1 GHz – 18 GHz –Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



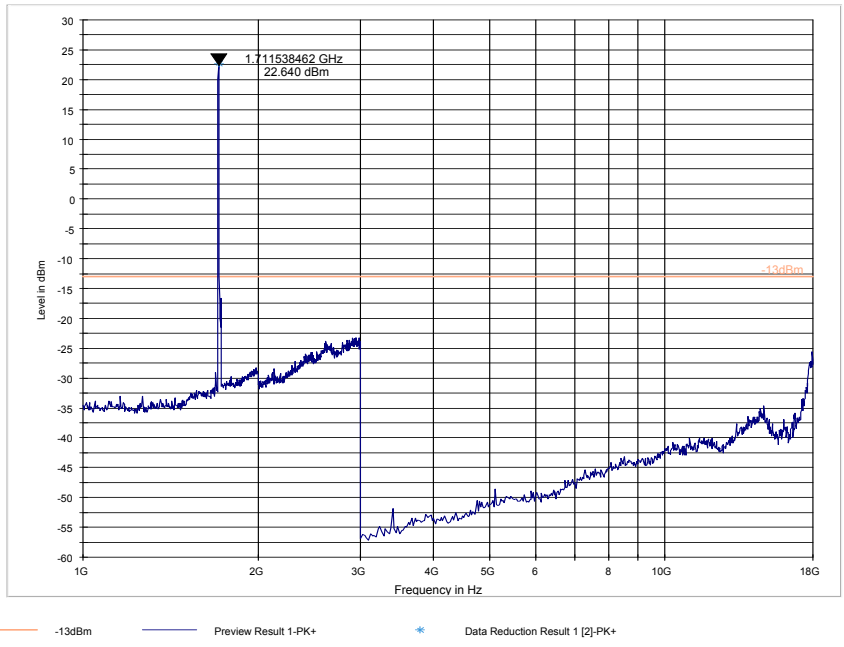
6.7.8.2.22 16 QAM/ 5MHz/ High Channel/ 1GHz to 18GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: 16 QAM		
Measurement results – 1 GHz – 18 GHz –High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



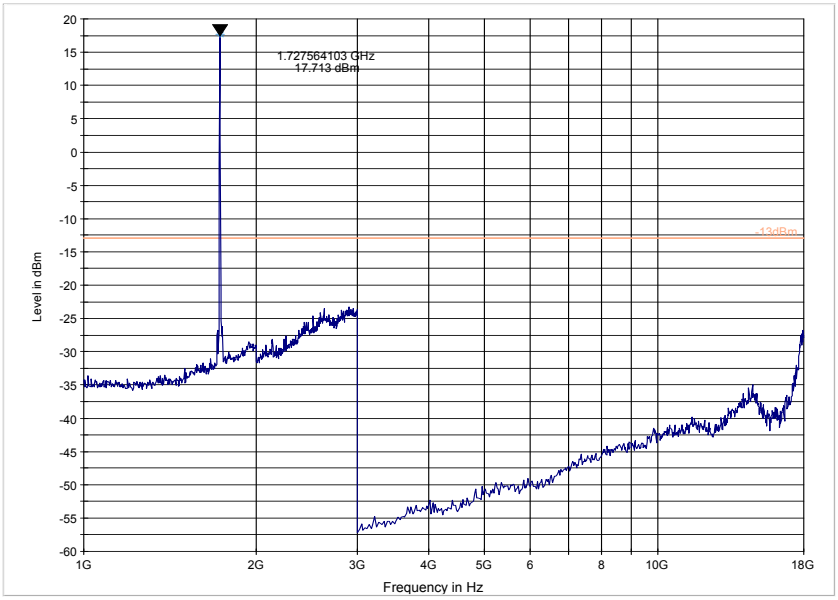
6.7.8.2.23 16 QAM/ 10MHz/ Low Channel/ 1GHz to 18GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: 16 QAM		
Measurement results – 1 GHz – 18 GHz –Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



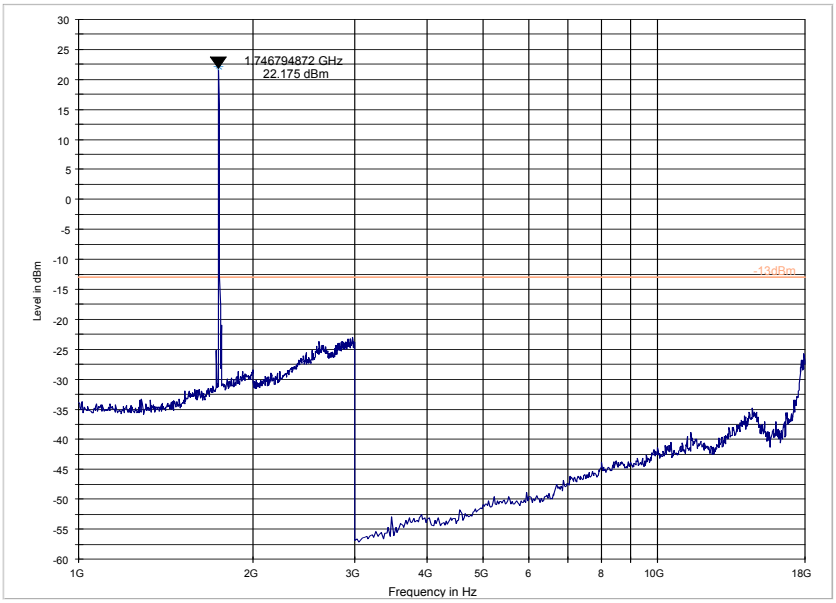
6.7.8.2.24 16 QAM/ 10MHz/ Mid Channel/ 1GHz to 18GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: 16 QAM		
Measurement results – 1 GHz – 18 GHz –Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



6.7.8.2.25 16 QAM/ 10MHz/ High Channel/ 1GHz to 18GHz

LTE Band 4 (1710 MHz – 1755 MHz) -Modulation: 16 QAM		
Measurement results – 1 GHz – 18 GHz –High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



6.7.8.3 Spurious Emission LTE FDD 5:

6.7.8.3.1 LTE FDD 5 Summary Tables

LTE Band 5 (824 MHz – 849 MHz) -Modulation: QPSK						
RB Size = 1			**RB Offset** = 0		**BW (MHz)** = 5	
Harmonic	**Tx ch-20425 Freq. (MHz)**	**Level (dBm)**	**Tx ch-20525 Freq. (MHz)**	**Level (dBm)**	**Tx ch-20625 Freq. (MHz)**	**Level (dBm)**
1	**826.5**	11.600	**836.5**	14.499	**846.5**	15.457
2	**1653**	NF	**1673**	NF	**1693**	NF
3	**2479.5**	NF	**2509.5**	-53.516	**2539.5**	-54.803
4	**3306**	-32.068	**3346**	-34.260	**3386**	-33.489
5	**4132.5**	-43.699	**4182.5**	-47.578	**4232.5**	NF
6	**4959**	NF	**5019**	NF	**5079**	NF
7	**5785.5**	NF	**5855.5**	NF	**5925.5**	NF
8	**6612**	NF	**6692**	NF	**6772**	NF
9	**7438.5**	NF	**7528.5**	NF	**7618.5**	NF
10	**8265**	NF	**8365**	NF	**8465**	NF
NF= Noise Floor						

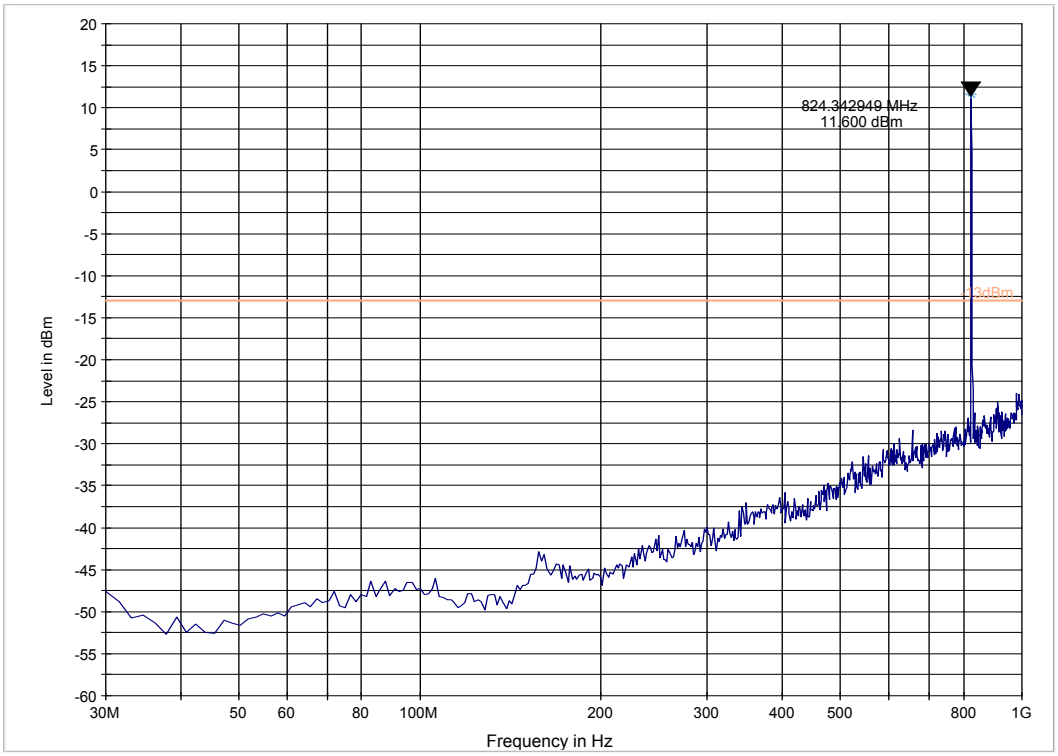
LTE Band 5 (824 MHz – 849 MHz) -Modulation: QPSK						
RB Size = 1			**RB Offset** = 0		**BW (MHz)** = 10	
Harmonic	**Tx ch-20450 Freq. (MHz)**	**Level (dBm)**	**Tx ch-20525 Freq. (MHz)**	**Level (dBm)**	**Tx ch-20600 Freq. (MHz)**	**Level (dBm)**
1	**829**	12.733	**836.5**	15.730	**844**	13.096
2	**1658**	NF	**1673**	NF	**1688**	NF
3	**2487**	NF	**2509.5**	-48.876	**2532**	-53.728
4	**3316**	-34.410	**3346**	-36.452	**3376**	-31.237
5	**4145**	-42.554	**4182.5**	-48.948	**4220**	-47.588
6	**4974**	NF	**5019**	NF	**5064**	NF
7	**5803**	NF	**5855.5**	NF	**5908**	NF
8	**6632**	NF	**6692**	NF	**6752**	NF
9	**7461**	NF	**7528.5**	NF	**7596**	NF
10	**8290**	NF	**8365**	NF	**8440**	NF
NF= Noise Floor						

LTE Band 5 (824 MHz – 849 MHz) -Modulation: 16 QAM						
RB Size = 1			**RB Offset** = 0		**BW (MHz)** = 5	
Harmonic	**Tx ch-20425 Freq. (MHz)**	**Level (dBm)**	**Tx ch-20525 Freq. (MHz)**	**Level (dBm)**	**Tx ch-20625 Freq. (MHz)**	**Level (dBm)**
1	**826.5**	11.038	**836.5**	12.353	**846.5**	14.039
2	**1658**	NF	**1673**	NF	**1688**	NF
3	**2487**	NF	**2509.5**	-52.205	**2532**	-50.358
4	**3316**	-31.443	**3346**	-34.748	**3376**	-33.138
5	**4145**	-42.702	**4182.5**	-46.715	**4220**	NF
6	**4974**	NF	**5019**	NF	**5064**	NF
7	**5803**	NF	**5855.5**	NF	**5908**	NF
8	**6632**	NF	**6692**	NF	**6752**	NF
9	**7461**	NF	**7528.5**	NF	**7596**	NF
10	**8290**	NF	**8365**	NF	**8440**	NF
NF= Noise Floor						

LTE Band 5 (824 MHz – 849 MHz) -Modulation: 16 QAM						
RB Size = 1			**RB Offset** = 0		**BW (MHz)** = 10	
Harmonic	**Tx ch-20450 Freq. (MHz)**	**Level (dBm)**	**Tx ch-20525 Freq. (MHz)**	**Level (dBm)**	**Tx ch-20600 Freq. (MHz)**	**Level (dBm)**
1	**829**	13.154	**836.5**	16.419	**844**	13.193
2	**1658**	NF	**1673**	NF	**1688**	NF
3	**2487**	NF	**2509.5**	-51.093	**2532**	-54.192
4	**3316**	-32.931	**3346**	-34.540	**3376**	-31.145
5	**4145**	-42.733	**4182.5**	-48.652	**4220**	-47.167
6	**4974**	NF	**5019**	NF	**5064**	NF
7	**5803**	NF	**5855.5**	NF	**5908**	NF
8	**6632**	NF	**6692**	NF	**6752**	NF
9	**7461**	NF	**7528.5**	NF	**7596**	NF
10	**8290**	NF	**8365**	NF	**8440**	NF
NF= Noise Floor						

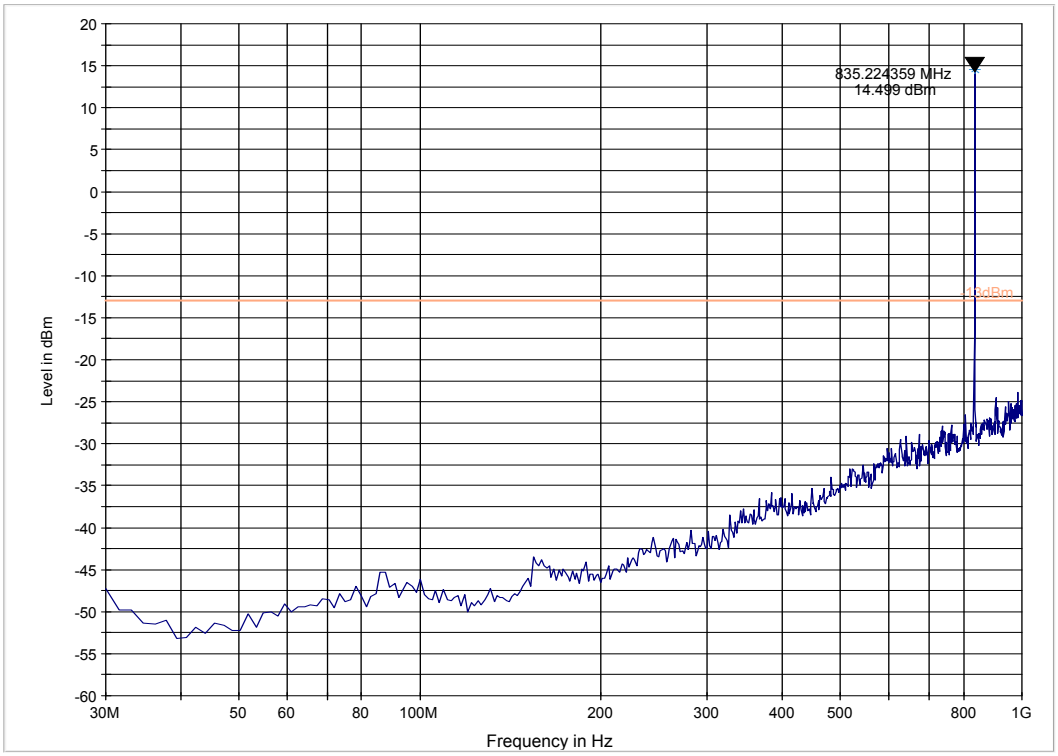
6.7.8.3.2 QPSK/ 5MHz/ Low Channel/ 30MHz to 1GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1GHz -Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



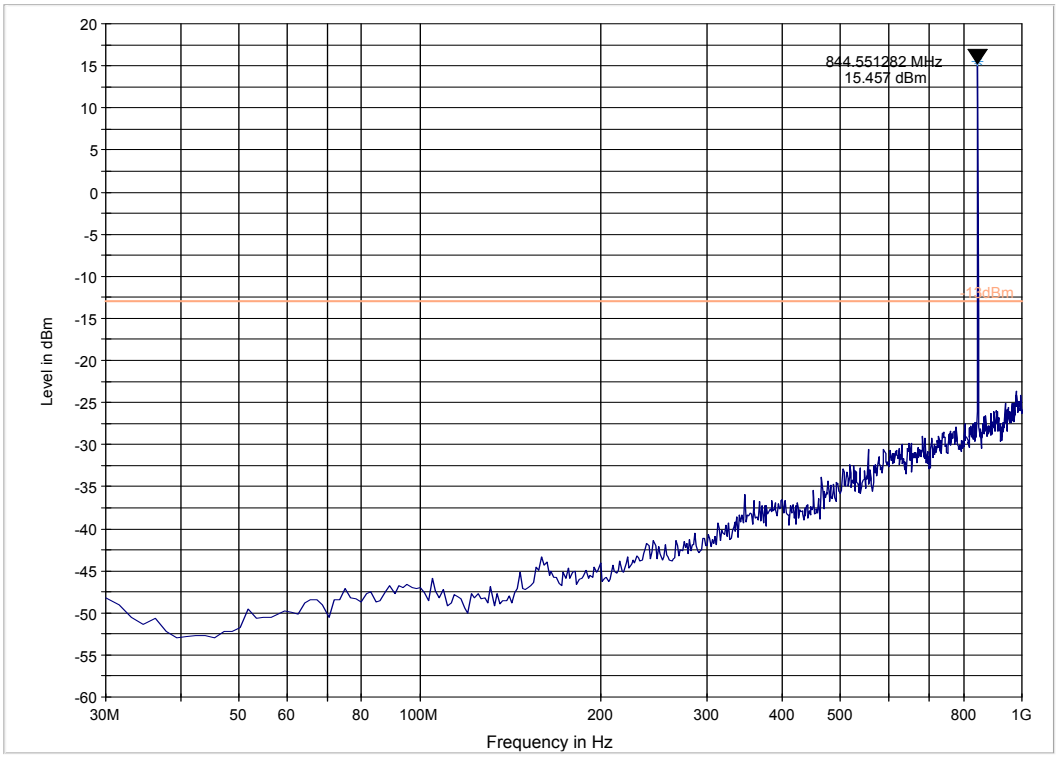
6.7.8.3.3 QPSK/ 5MHz/ Mid Channel/ 30MHz to 1GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1GHz -Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



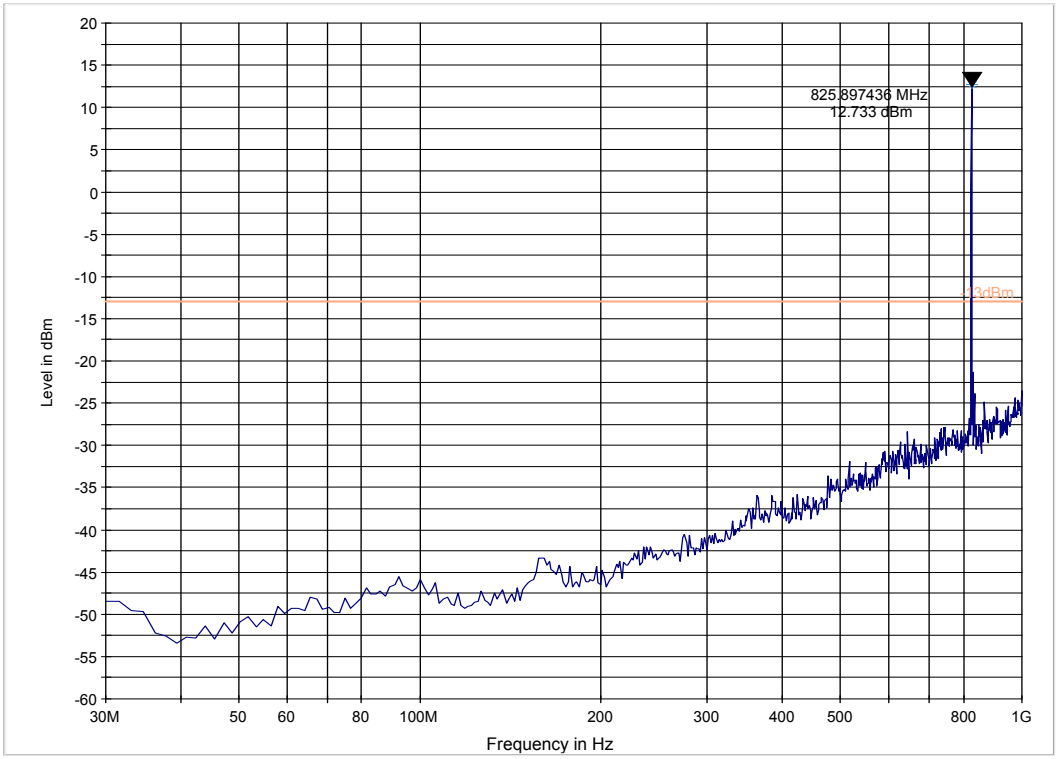
6.7.8.3.4 QPSK/ 5MHz/ High Channel/ 30MHz to 1GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1GHz -High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



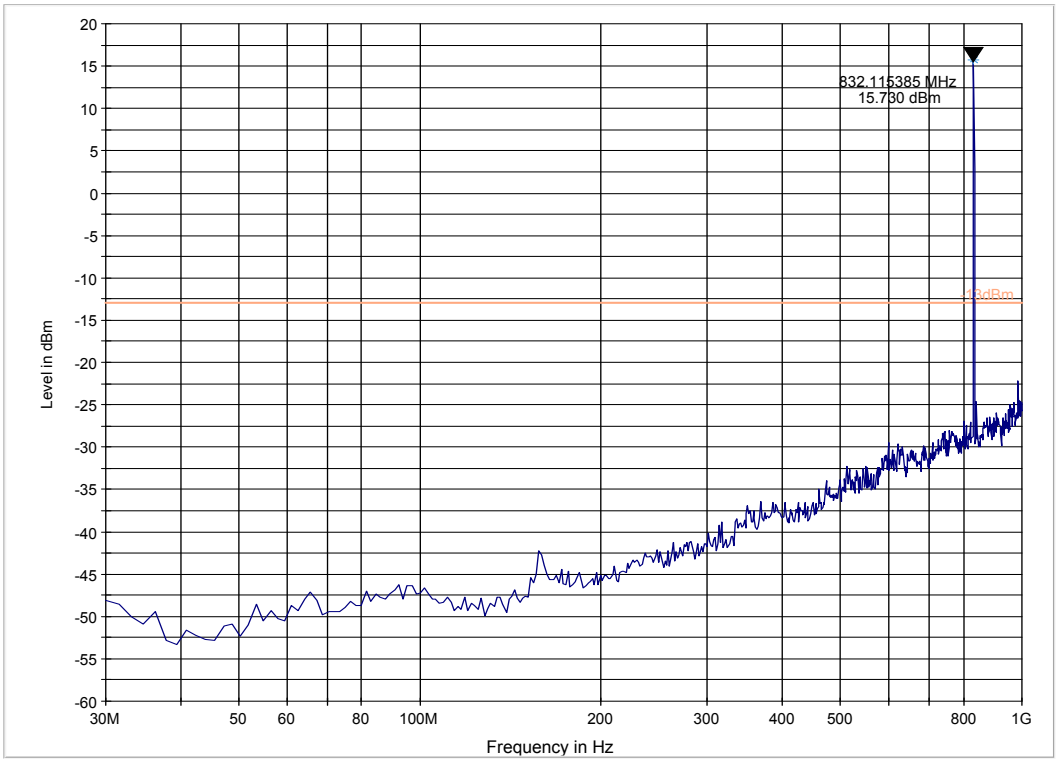
6.7.8.3.5 QPSK/ 10MHz/ Low Channel/ 30MHz to 1GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1GHz -Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



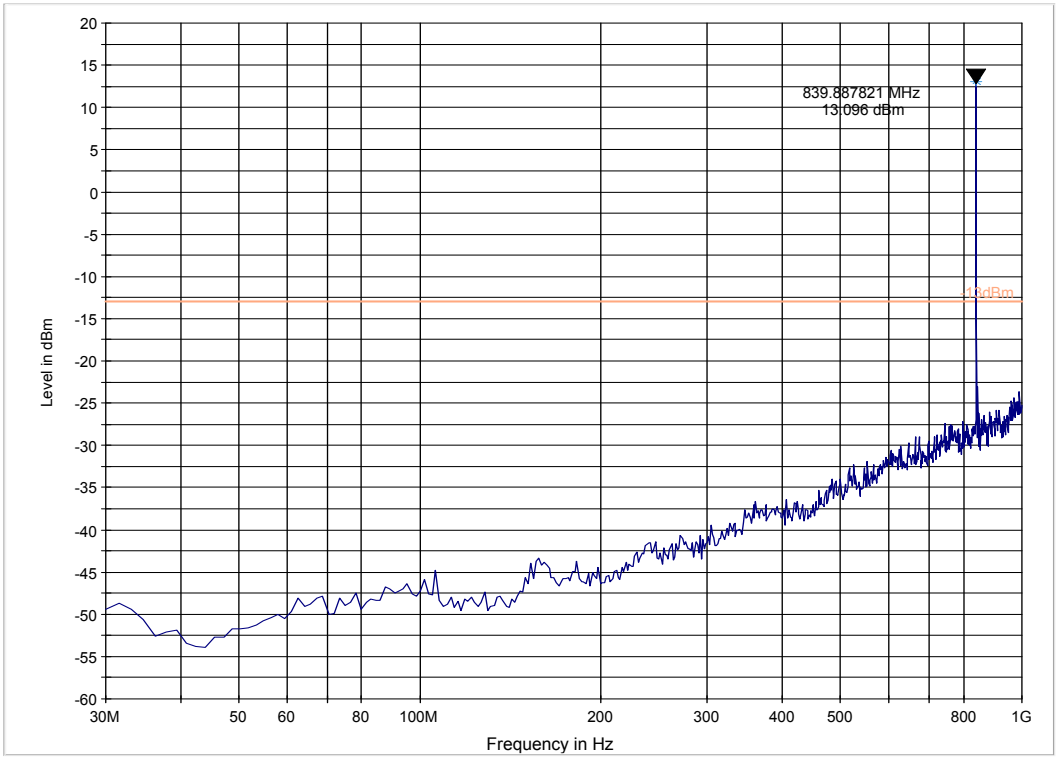
6.7.8.3.6 QPSK/ 10MHz/ Mid Channel/ 30MHz to 1GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1GHz -Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



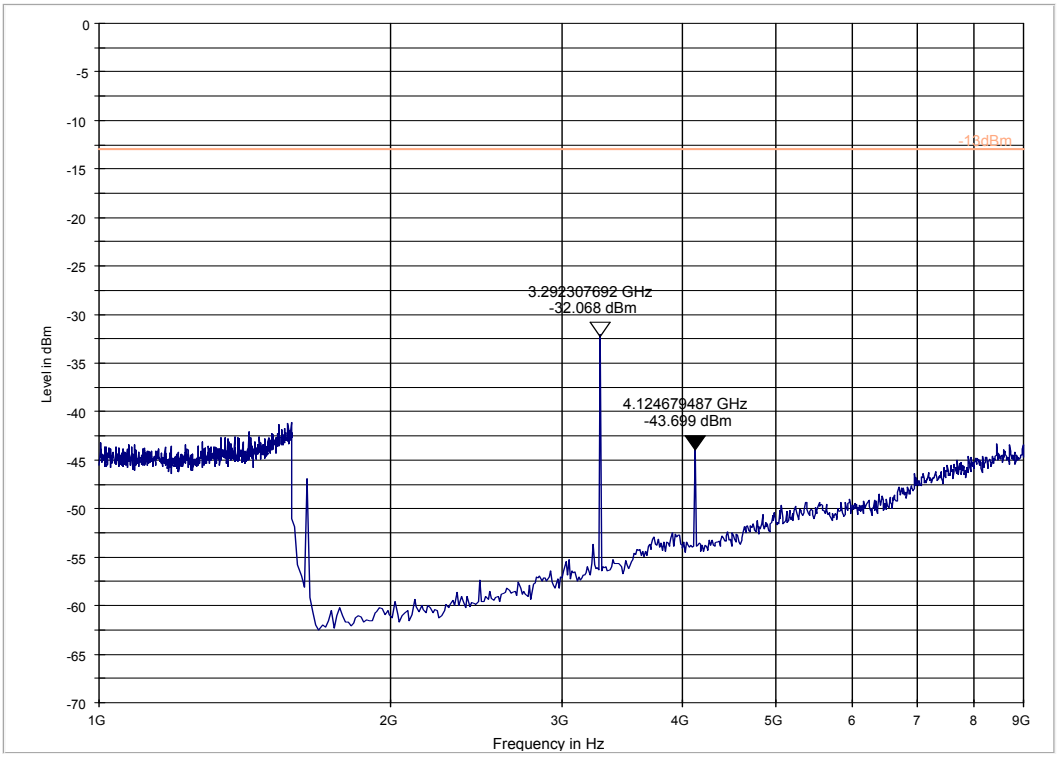
6.7.8.3.7 QPSK/ 10MHz/ High Channel/ 30MHz to 1GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1GHz -High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



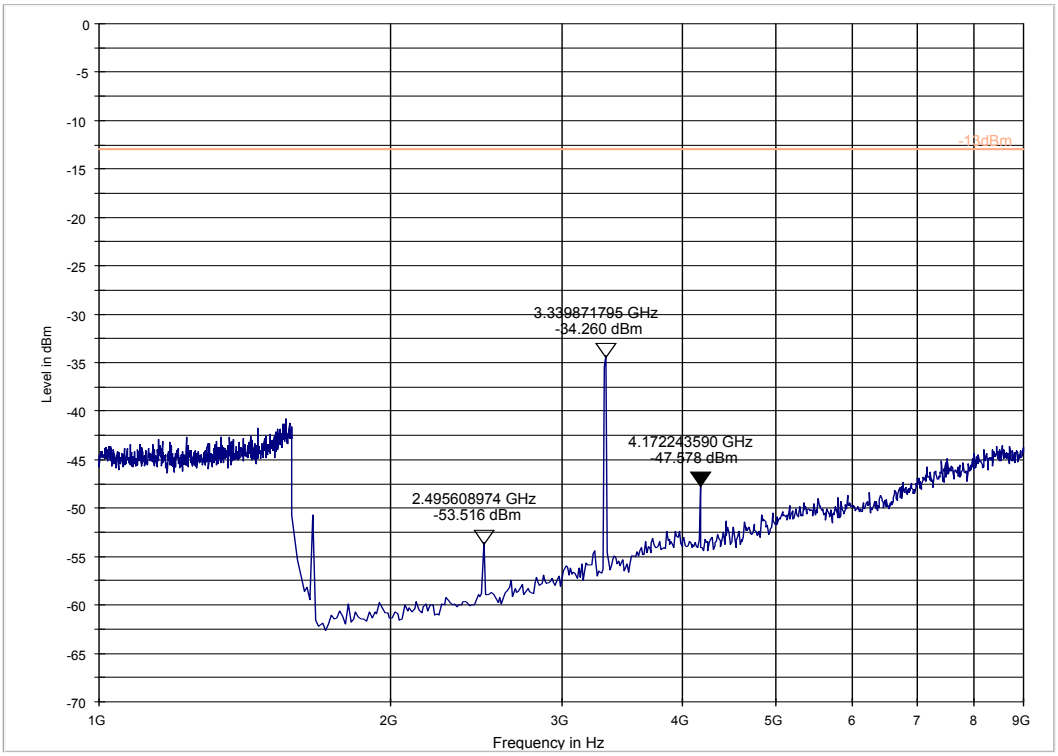
6.7.8.3.8 QPSK/ 5MHz/ Low Channel/ 1GHz to 9GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: QPSK		
Measurement results - 1 GHz – 9 GHz -Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



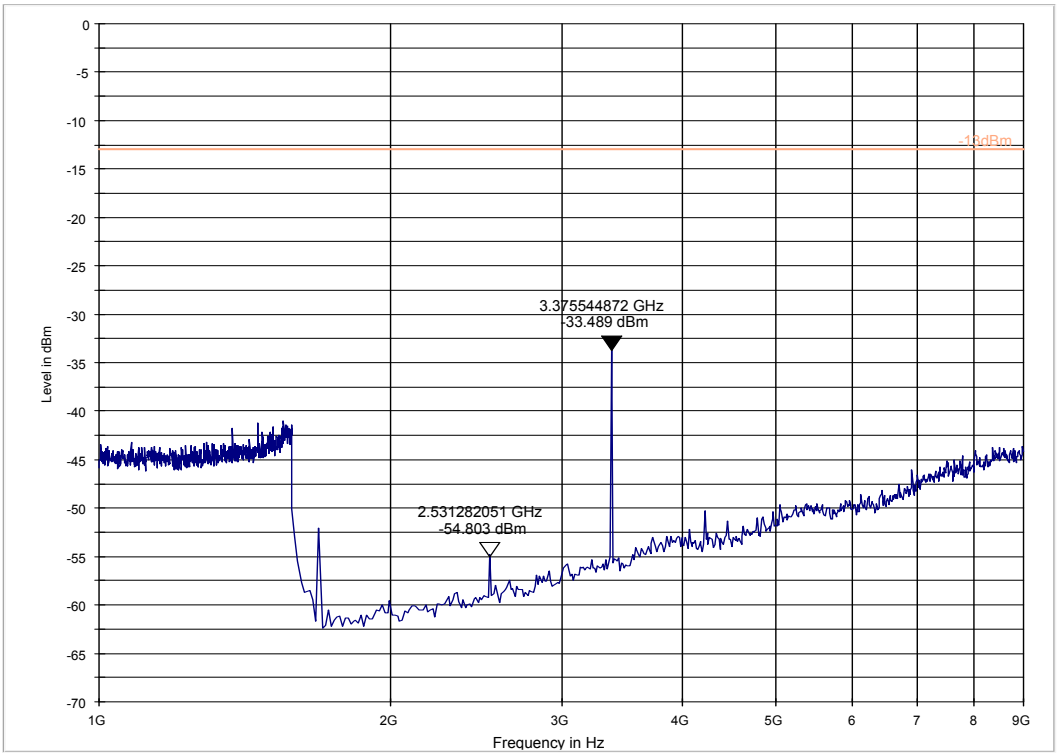
6.7.8.3.9 QPSK/ 5MHz/ Mid Channel/ 1GHz to 9GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: QPSK		
Measurement results - 1 GHz – 9 GHz -Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



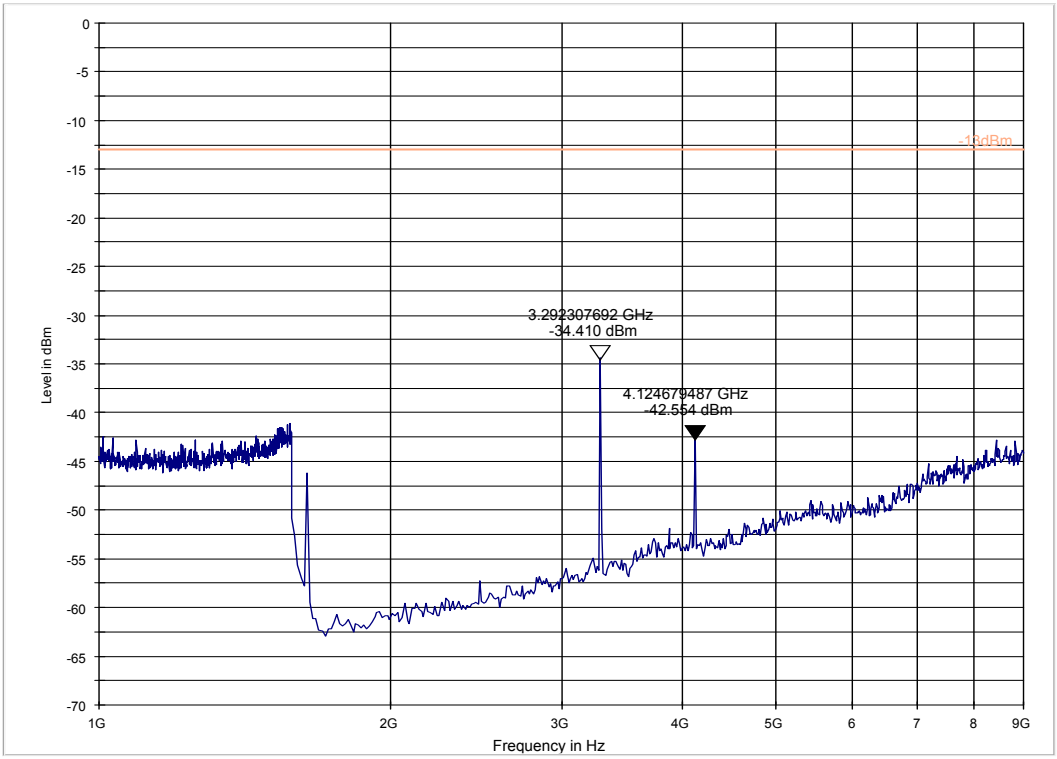
6.7.8.3.10 QPSK/ 5MHz/ High Channel/ 1GHz to 9GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: QPSK		
Measurement results – 1 GHz – 9 GHz -High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



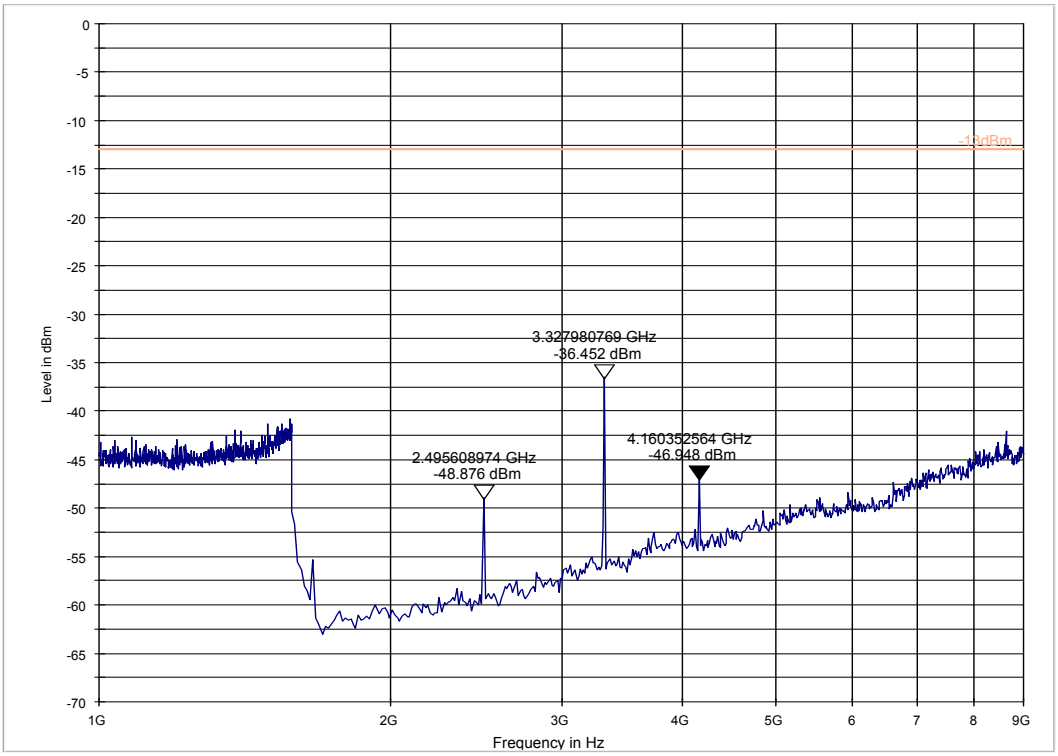
6.7.8.3.11 QPSK/ 10MHz/ Low Channel/ 1GHz to 9GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: QPSK		
Measurement results – 1 GHz – 9 GHz -Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



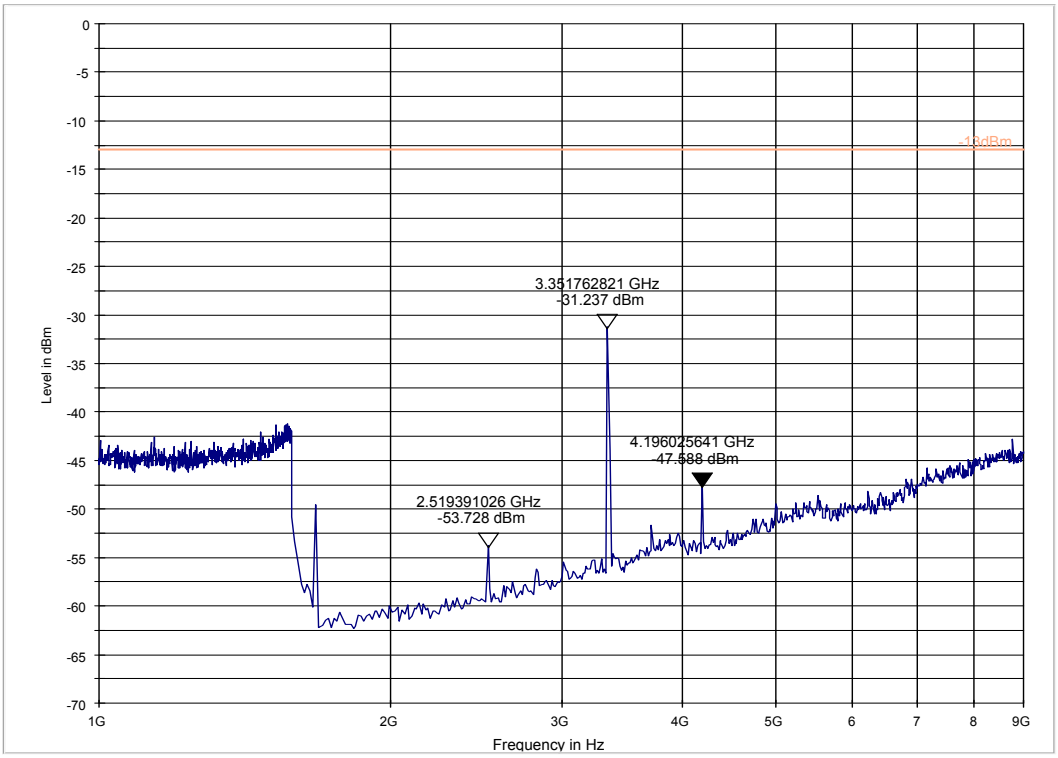
6.7.8.3.12 QPSK/ 10MHz/ Mid Channel/ 1GHz to 9GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: QPSK		
Measurement results – 1 GHz – 9 GHz -Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



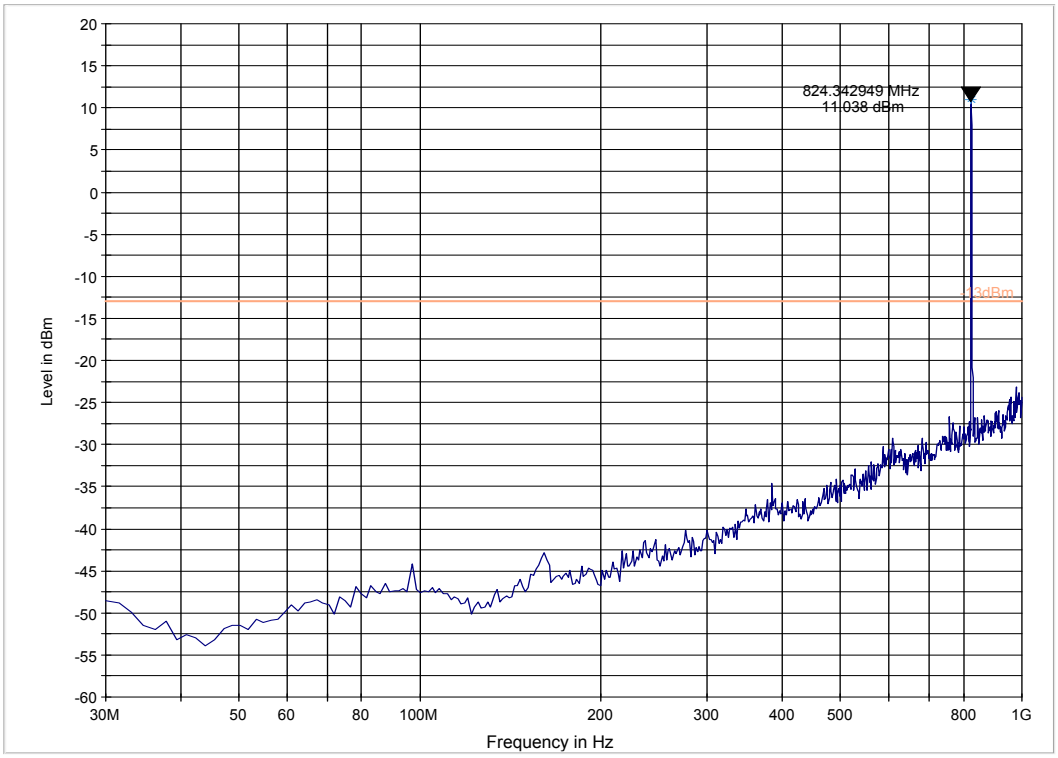
6.7.8.3.13 QPSK/ 10MHz/ High Channel/ 1GHz to 9GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: QPSK		
Measurement results – 1 GHz – 9 GHz -High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



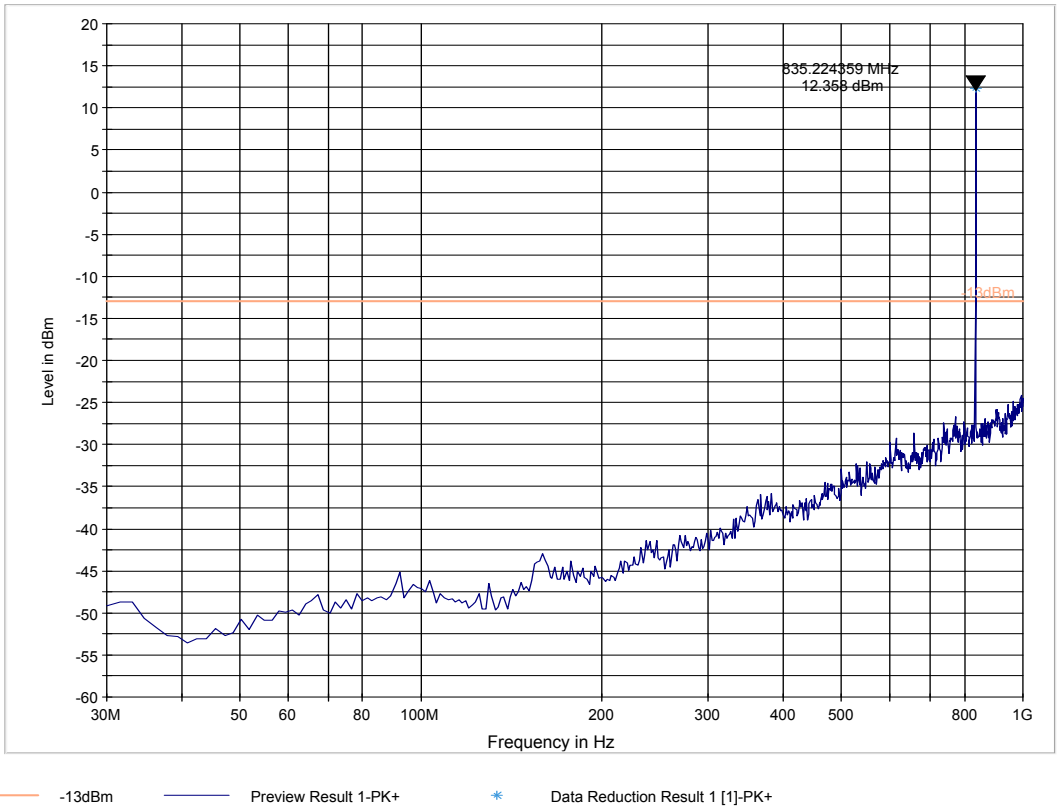
6.7.8.3.14 16 QAM/ 5MHz/ Low Channel/ 30MHz to 1GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: 16 QAM		
Measurement results – 30 MHz – 1 GHz -Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



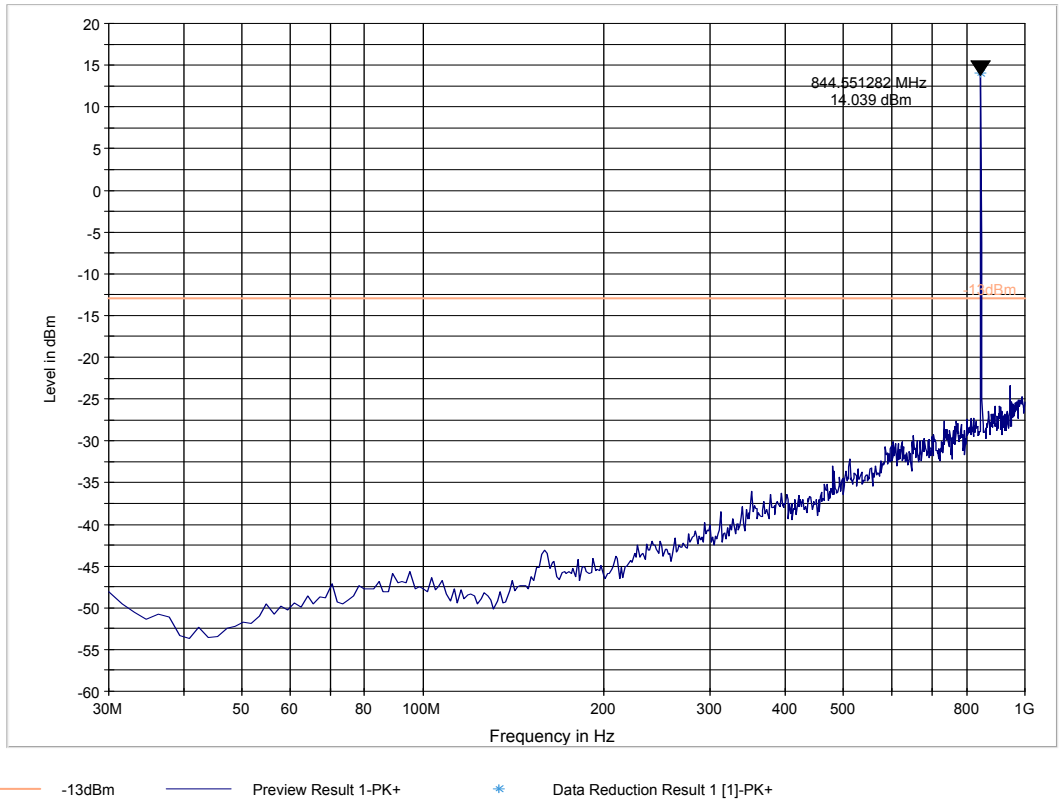
6.7.8.3.15 16 QAM/ 5MHz/ Mid Channel/ 30MHz to 1GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: 16 QAM		
Measurement results – 30 MHz – 1GHz -Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



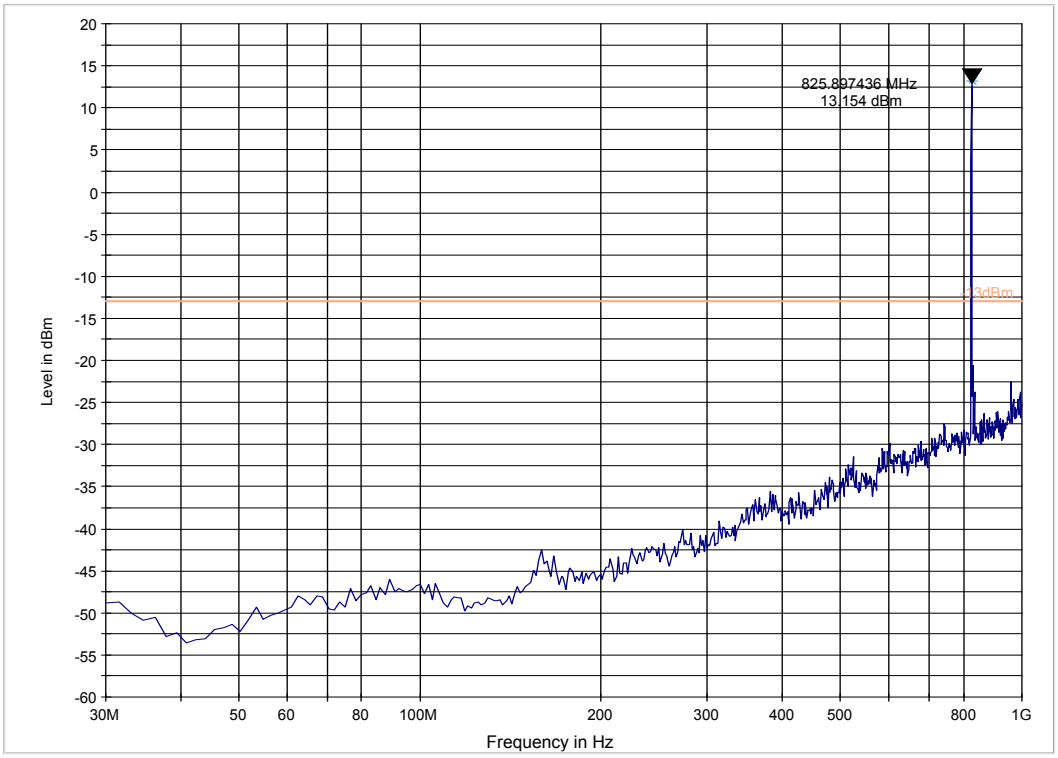
6.7.8.3.16 16 QAM/ 5MHz/ High Channel/ 30MHz to 1GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: 16 QAM		
Measurement results – 30 MHz – 1 GHz -High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



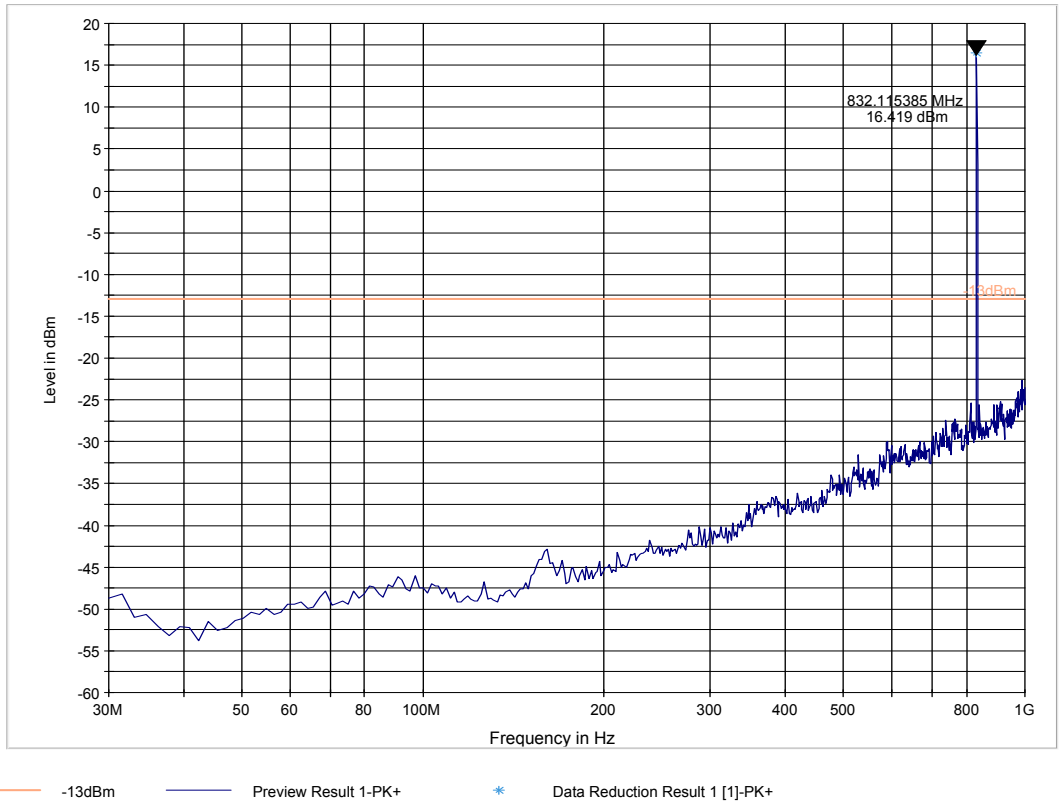
6.7.8.3.17 16 QAM/ 10MHz/ Low Channel/ 30MHz to 1GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: 16 QAM		
Measurement results – 30 MHz – 1 GHz -Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



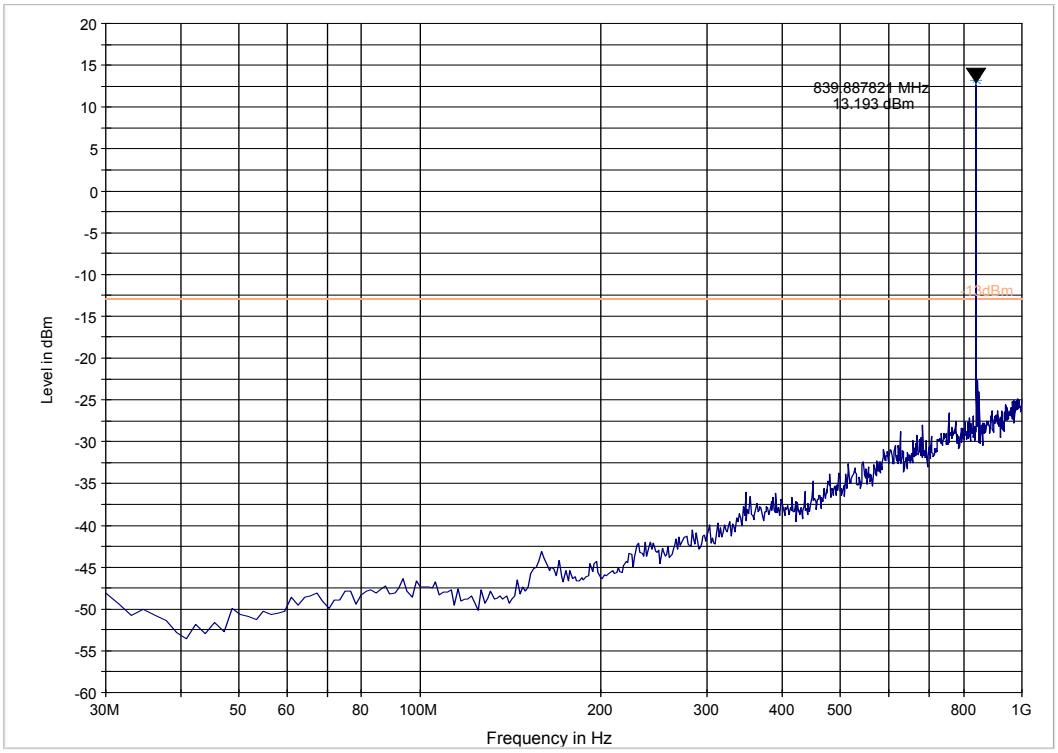
6.7.8.3.18 16 QAM/ 10MHz/ Mid Channel/ 30MHz to 1GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: 16 QAM		
Measurement results – 30 MHz – 1 GHz -Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



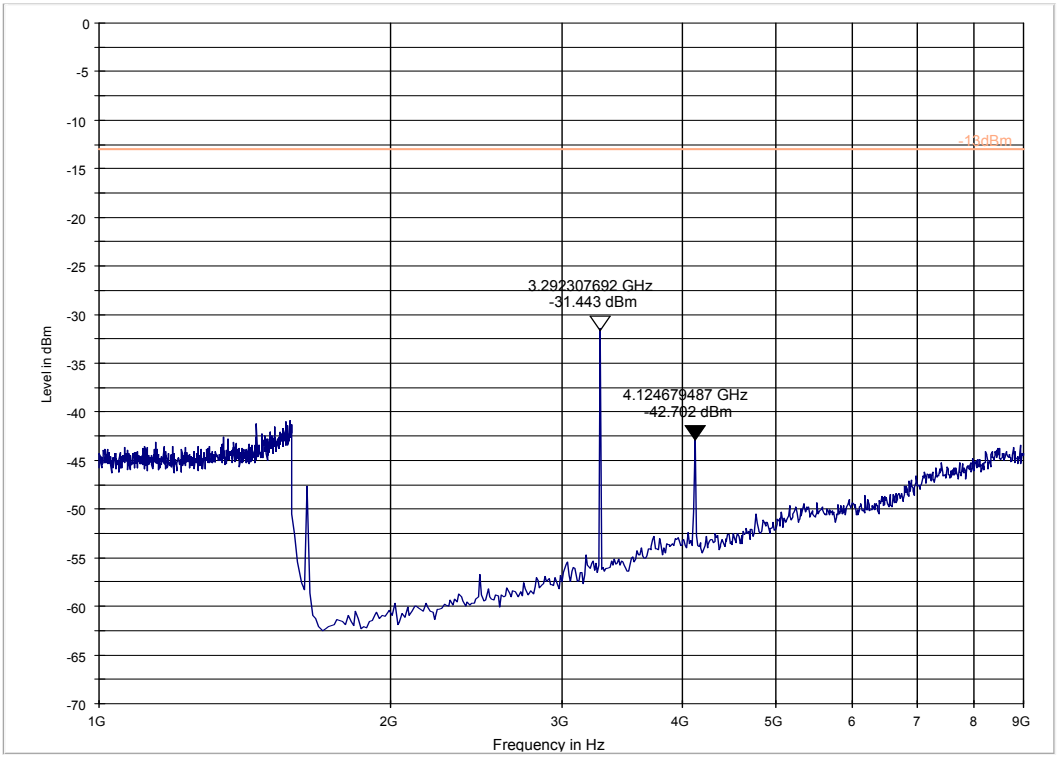
6.7.8.3.19 16 QAM/ 10MHz/ High Channel/ 30MHz to 1GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: 16 QAM		
Measurement results – 30 MHz – 1 GHz -High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



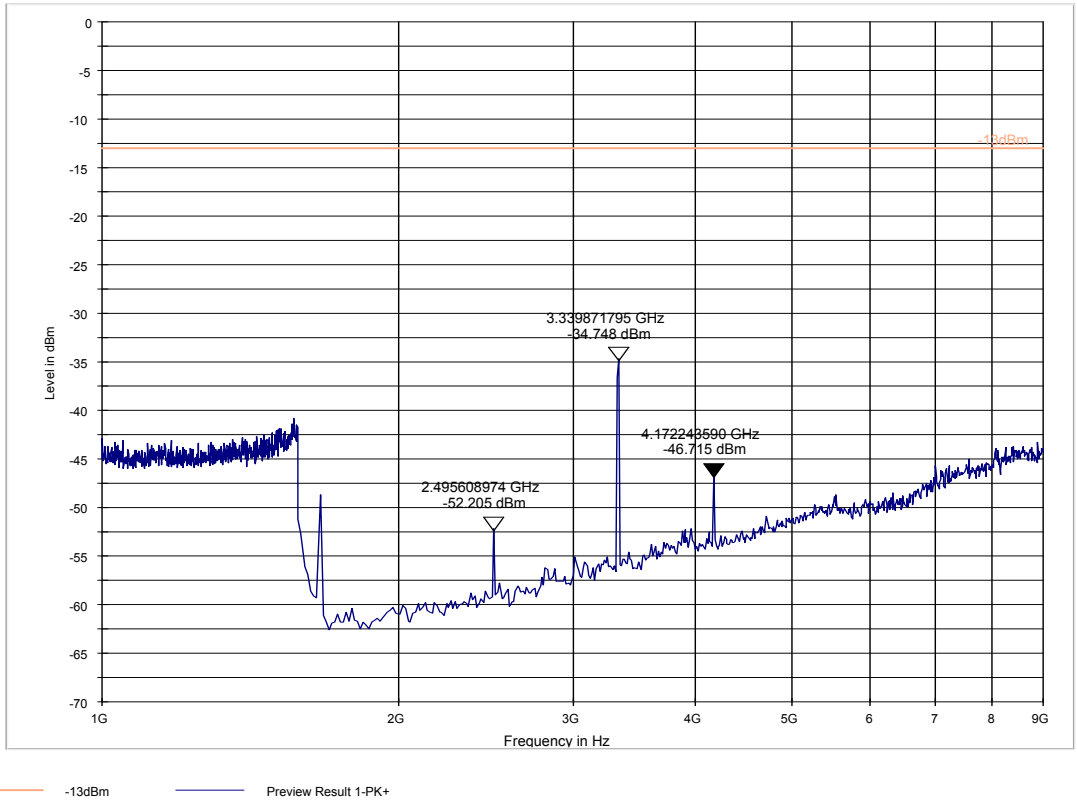
6.7.8.3.20 16 QAM/ 5MHz/ Low Channel/ 1GHz to 9GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: 16 QAM		
Measurement results – 1 GHz – 9 GHz -Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



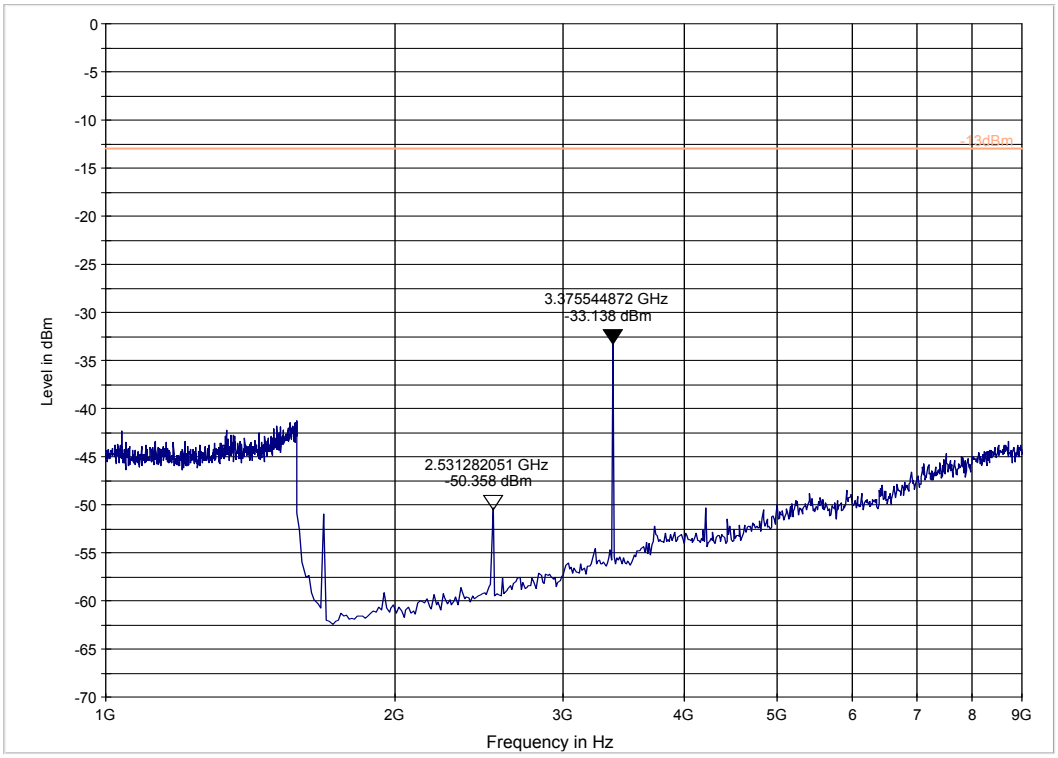
6.7.8.3.21 16 QAM/ 5MHz/ Mid Channel/ 1GHz to 9GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: 16 QAM		
Measurement results – 1 GHz – 9 GHz -Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



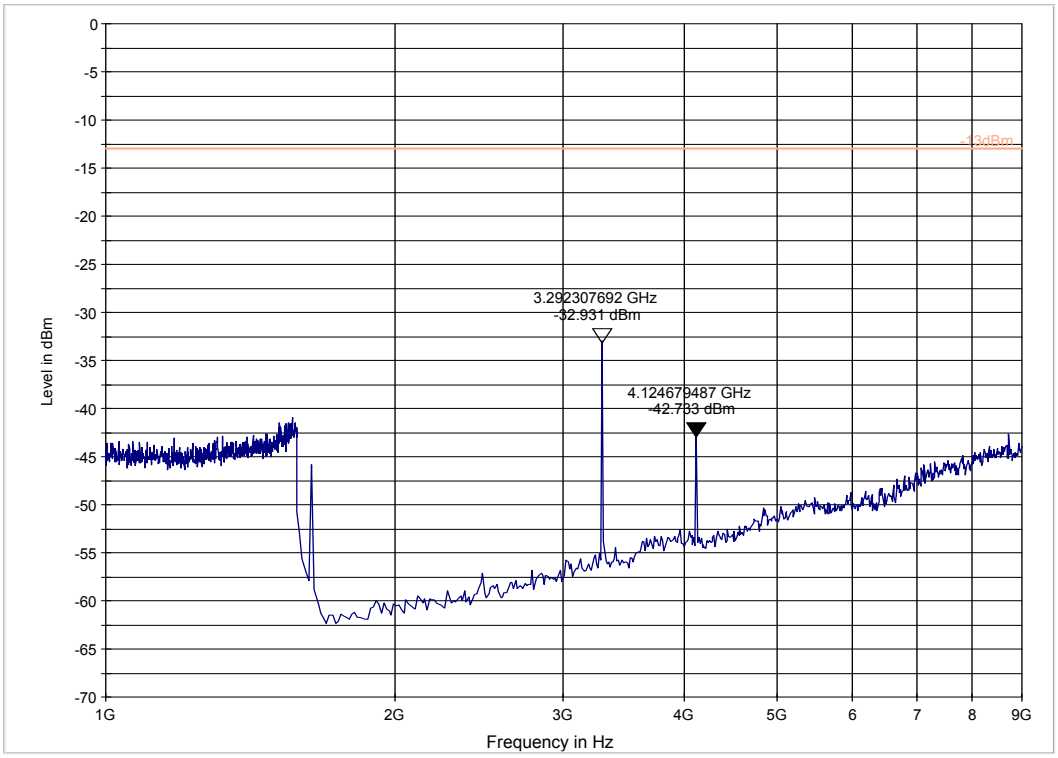
6.7.8.3.22 16 QAM/ 5MHz/ High Channel/ 1GHz to 9GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: 16 QAM		
Measurement results – 1 GHz – 9 GHz -High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



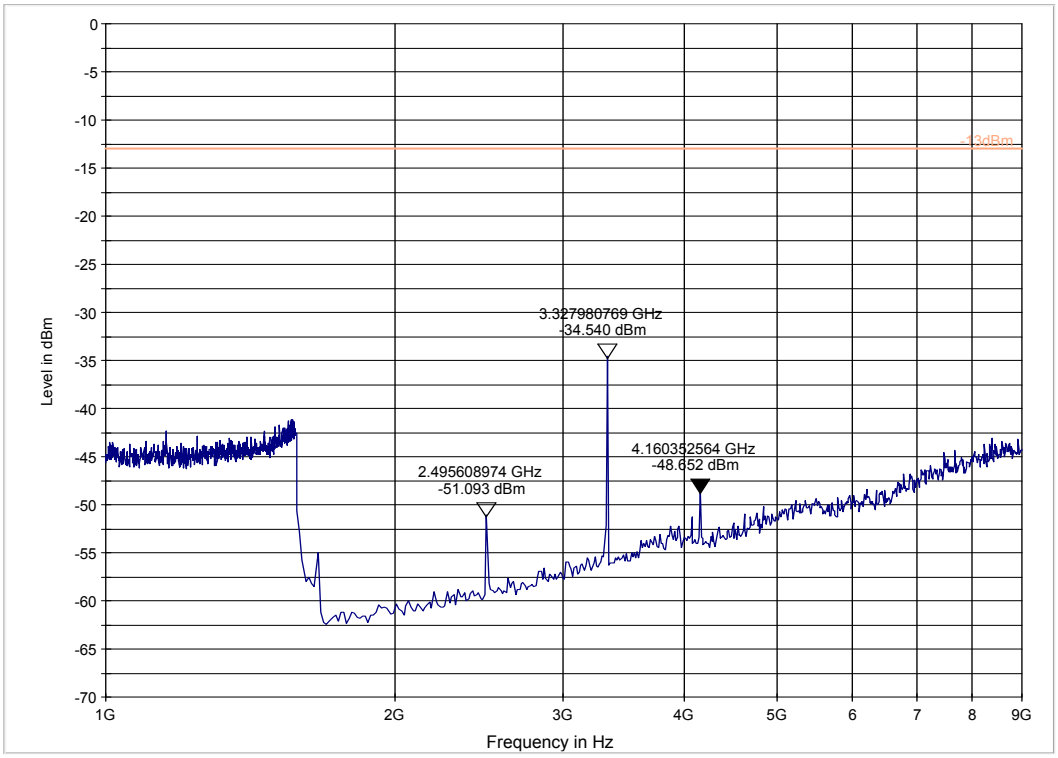
6.7.8.3.23 16 QAM/ 10MHz/ Low Channel/ 1GHz to 9GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: 16 QAM		
Measurement results – 1 GHz – 9 GHz -Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



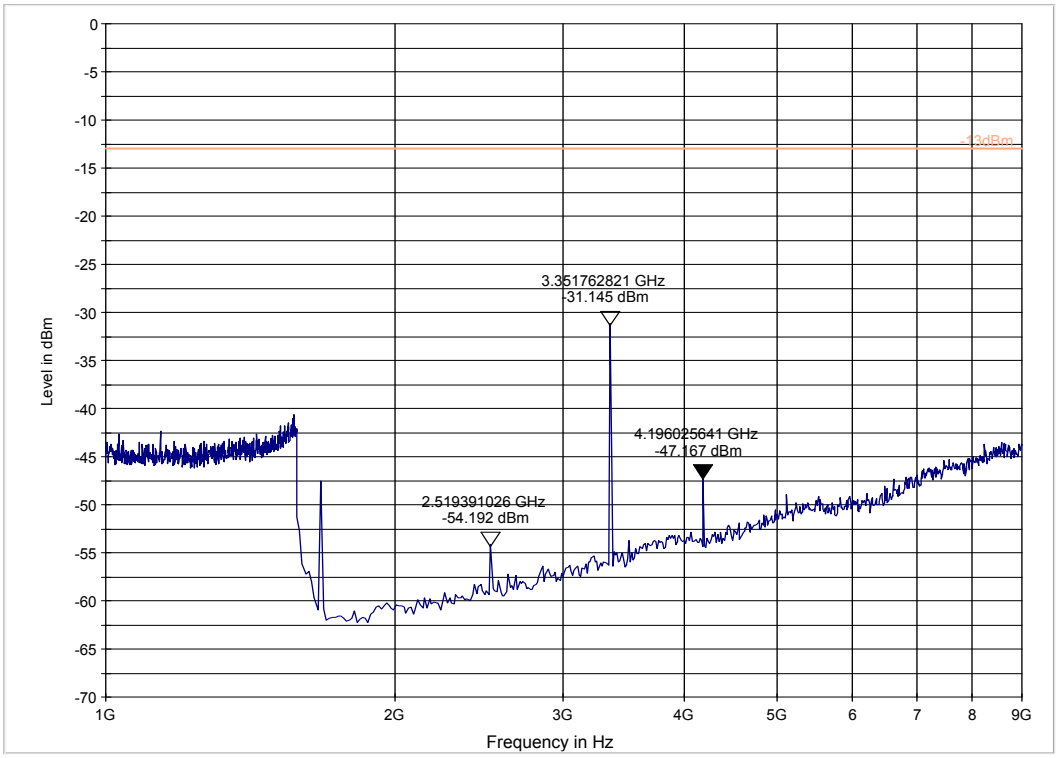
6.7.8.3.24 16 QAM/ 10MHz/ Mid Channel/ 1GHz to 9GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: 16 QAM		
Measurement results – 1 GHz – 9 GHz -Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



6.7.8.3.25 16 QAM/ 10MHz/ High Channel/ 1GHz to 9GHz

LTE Band 5 (824 MHz – 849 MHz) -Modulation: 16 QAM		
Measurement results – 1 GHz – 9 GHz -High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



6.7.8.4 Spurious Emissions LTE FDD 17:

6.7.8.4.1 LTE FDD 17 Summary Tables

LTE Band 17 (704 MHz – 716 MHz) -Modulation: QPSK						
RB Size = 1			**RB Offset** = 0		**BW (MHz)** = 5	
Harmonic	**Tx ch-23755 Freq. (MHz)**	**Level (dBm)**	**Tx ch-23790 Freq. (MHz)**	**Level (dBm)**	**Tx ch-23825 Freq. (MHz)**	**Level (dBm)**
1	**706.5**	5.423	**710**	5.593	**713.5**	6.981
2	**1413**	NF	**1420**	NF	**1427**	NF
3	**2119.5**	NF	**2130**	NF	**2140**	NF
4	**2826**	NF	**2840**	NF	**2854**	NF
5	**3532.5**	NF	**3550**	NF	**3567.5**	NF
6	**4239**	NF	**4260**	NF	**4281**	NF
7	**4945.5**	NF	**4970**	NF	**4994.5**	NF
8	**5652**	NF	**5680**	NF	**5708**	NF
9	**6358.5**	NF	**6390**	NF	**6421.5**	NF
10	**7065**	NF	**7100**	NF	**7135**	NF
NF= Noise Floor						

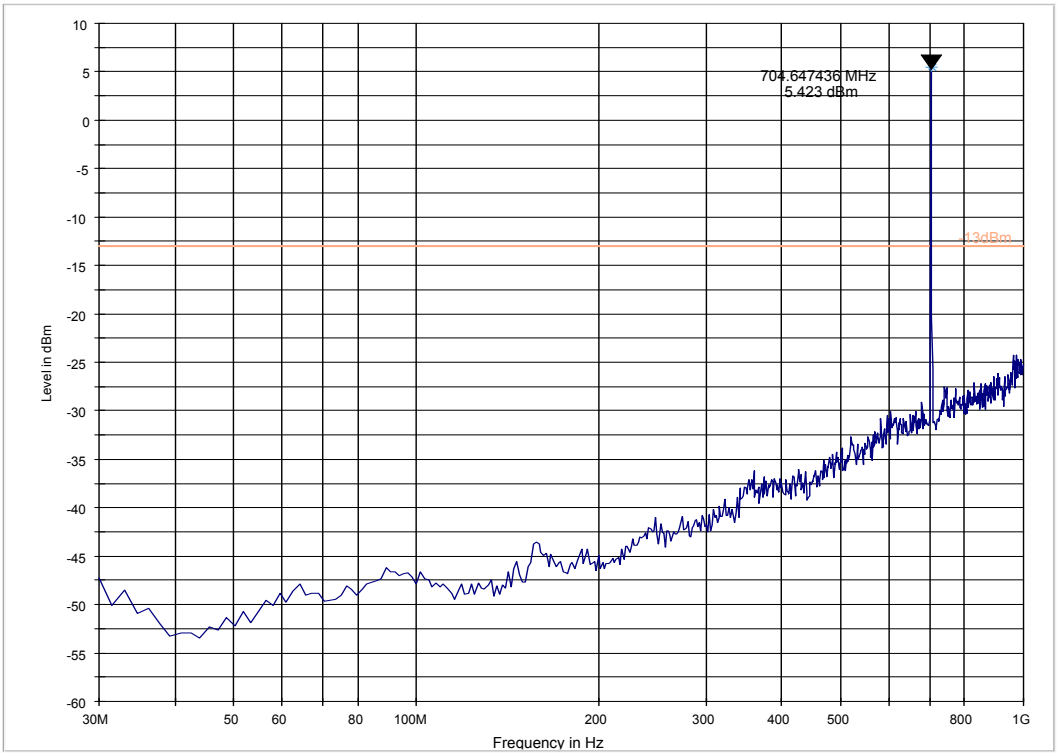
LTE Band 17 (704 MHz – 716 MHz) -Modulation: QPSK						
RB Size = 1			**RB Offset** = 0		**BW (MHz)** = 10	
Harmonic	**Tx ch-23780 Freq. (MHz)**	**Level (dBm)**	**Tx ch-23790 Freq. (MHz)**	**Level (dBm)**	**Tx ch-23800 Freq. (MHz)**	**Level (dBm)**
1	**709**	9.529	**710**	5.772	**711**	8.071
2	**3710**	NF	**1420**	NF	**1422**	NF
3	**5565**	NF	**2130**	NF	**2133**	NF
4	**7420**	NF	**2840**	NF	**2844**	NF
5	**9275**	NF	**3550**	NF	**3555**	NF
6	**11130**	NF	**4260**	NF	**4266**	NF
7	**130550**	NF	**4970**	NF	**4977**	NF
8	**14840**	NF	**5680**	NF	**5688**	NF
9	**16695**	NF	**6390**	NF	**6399**	NF
10	**18550**	NF	**7100**	NF	**7110**	NF
NF= Noise Floor						

LTE Band 17 (704 MHz – 716 MHz) -Modulation: 16 QAM						
RB Size = 1			**RB Offset** = 0		**BW (MHz)** = 5	
Harmonic	**Tx ch-23755 Freq. (MHz)**	**Level (dBm)**	**Tx ch-23790 Freq. (MHz)**	**Level (dBm)**	**Tx ch-23825 Freq. (MHz)**	**Level (dBm)**
1	**706.5**	10.795	**710**	5.687	**713.5**	9.072
2	**1413**	NF	**1420**	NF	**1427**	NF
3	**2119.5**	NF	**2130**	NF	**2140**	NF
4	**2826**	NF	**2840**	NF	**2854**	NF
5	**3532.5**	NF	**3550**	NF	**3567.5**	NF
6	**4239**	NF	**4260**	NF	**4281**	NF
7	**4945.5**	NF	**4970**	NF	**4994.5**	NF
8	**5652**	NF	**5680**	NF	**5708**	NF
9	**6358.5**	NF	**6390**	NF	**6421.5**	NF
10	**7065**	NF	**7100**	NF	**7135**	NF
NF= Noise Floor						

LTE Band 17 (704 MHz – 716 MHz) -Modulation: 16 QAM						
RB Size = 1			**RB Offset** = 0		**BW (MHz)** = 10	
Harmonic	**Tx ch-23780 Freq. (MHz)**	**Level (dBm)**	**Tx ch-23790 Freq. (MHz)**	**Level (dBm)**	**Tx ch-23800 Freq. (MHz)**	**Level (dBm)**
1	**709**	9.667	**710**	8.271	**711**	5.226
2	**3710**	NF	**1420**	NF	**1422**	NF
3	**5565**	NF	**2130**	NF	**2133**	NF
4	**7420**	NF	**2840**	NF	**2844**	NF
5	**9275**	NF	**3550**	NF	**3555**	NF
6	**11130**	NF	**4260**	NF	**4266**	NF
7	**130550**	NF	**4970**	NF	**4977**	NF
8	**14840**	NF	**5680**	NF	**5688**	NF
9	**16695**	NF	**6390**	NF	**6399**	NF
10	**18550**	NF	**7100**	NF	**7110**	NF
NF= Noise Floor						

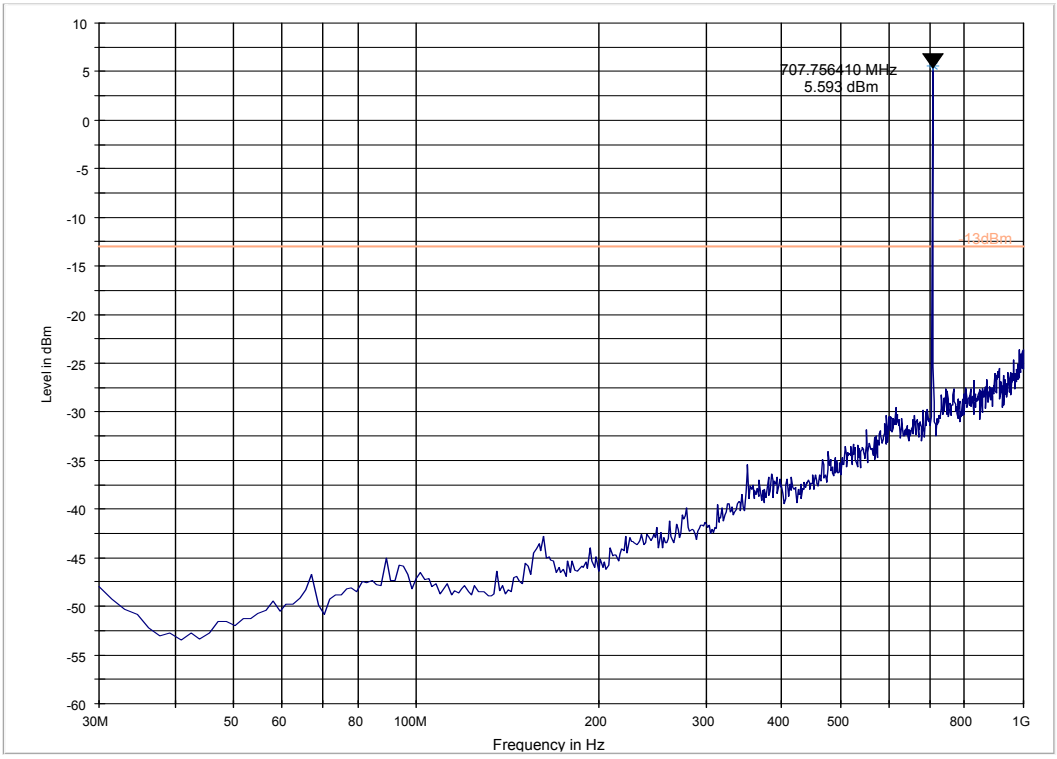
6.7.8.4.2 QPSK/ 5 MHz/ Low Channel/ 30MHz to 1GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1 GHz – Low Channel 23755		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



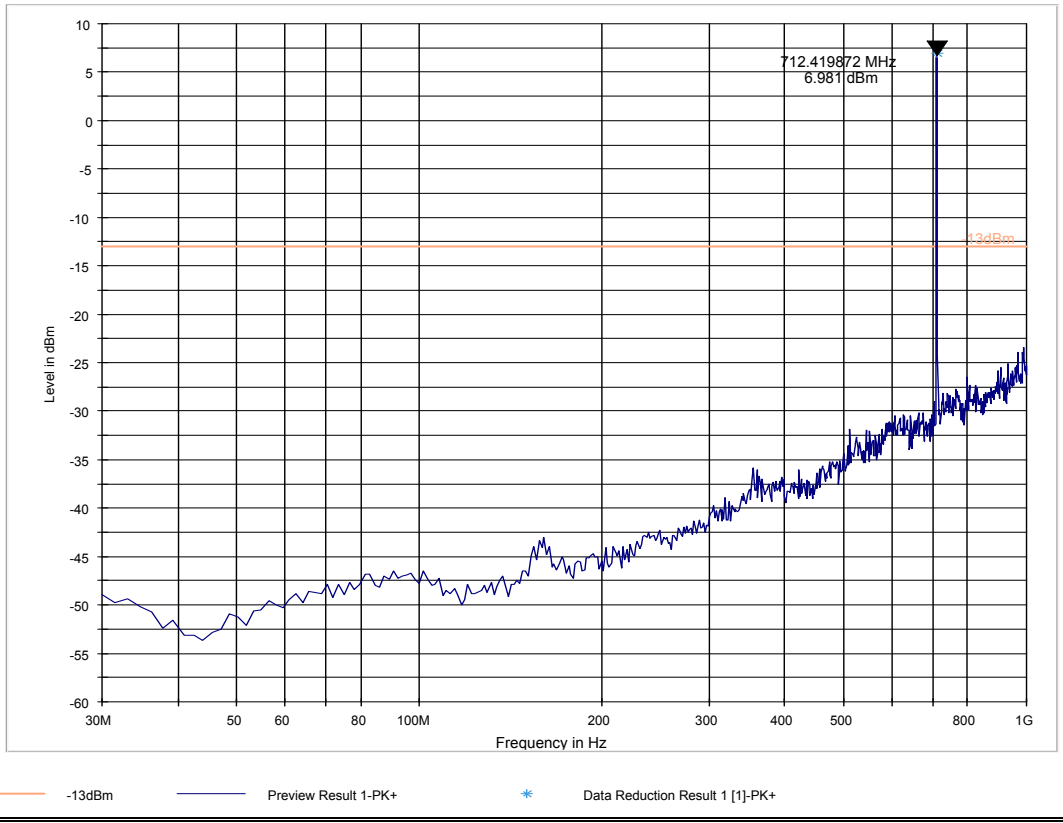
6.7.8.4.3 QPSK/ 5 MHz/ Mid Channel/ 30MHz to 1GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1 GHz – Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



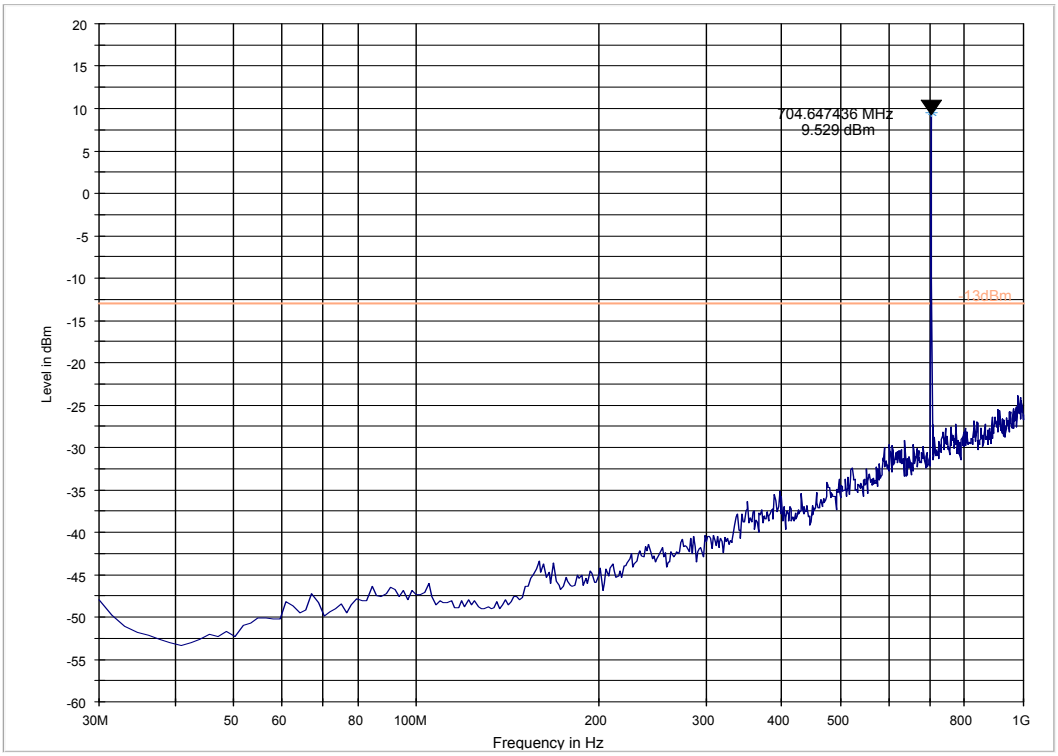
6.7.8.4.4 QPSK/ 5MHz/ High Channel/ 30MHz to 1GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1 GHz – High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



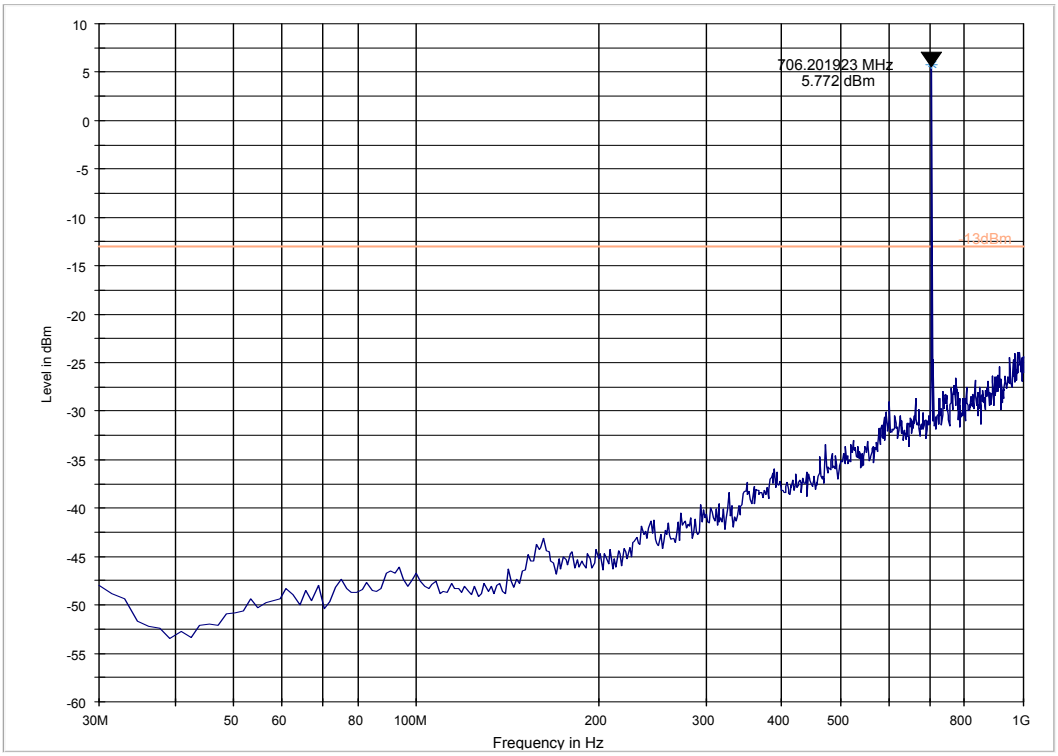
6.7.8.4.5 QPSK/ 5MHz/ Low Channel/ 30MHz to 1GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1 GHz – Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



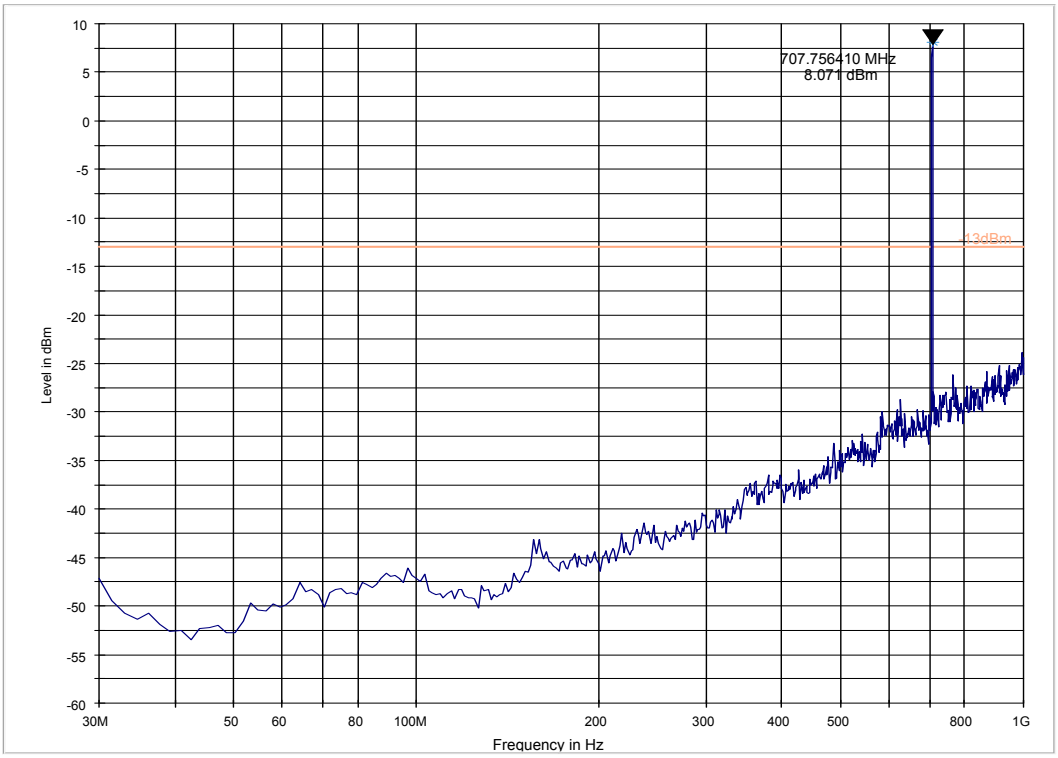
6.7.8.4.6 QPSK/10 MHz/ Mid Channel/ 30MHz to 1GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1 GHz – Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



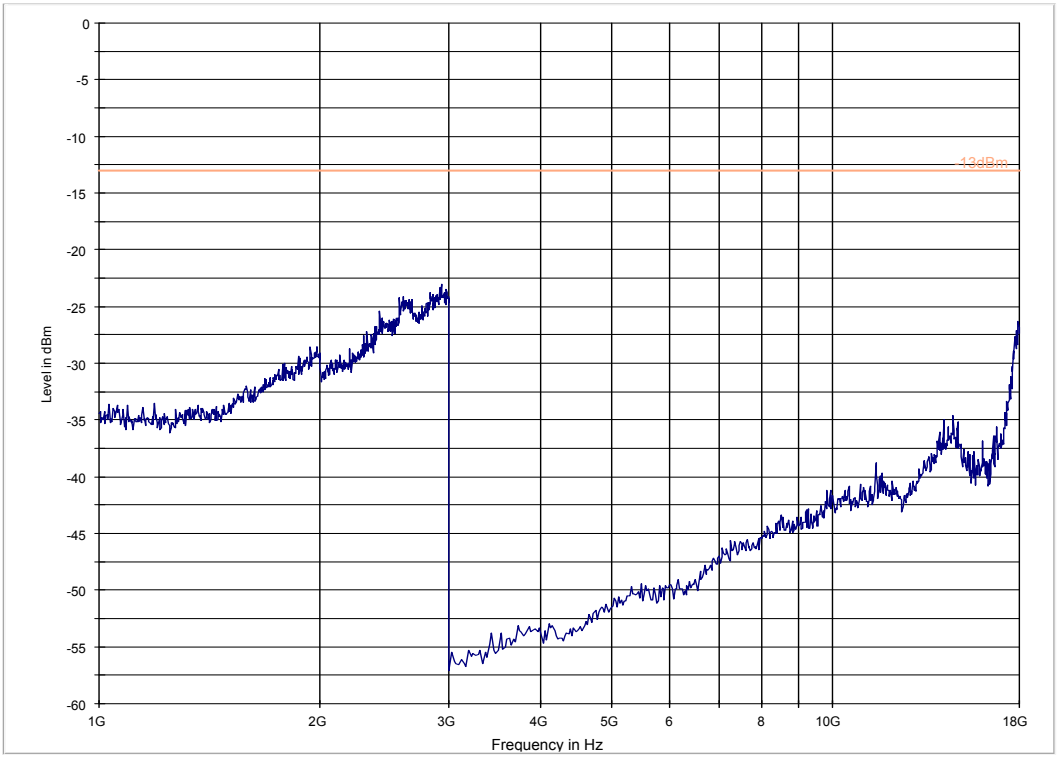
6.7.8.4.7 QPSK/ 10 MHz/ High Channel/ 30MHz to 1GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: QPSK		
Measurement results - 30 MHz – 1 GHz – High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



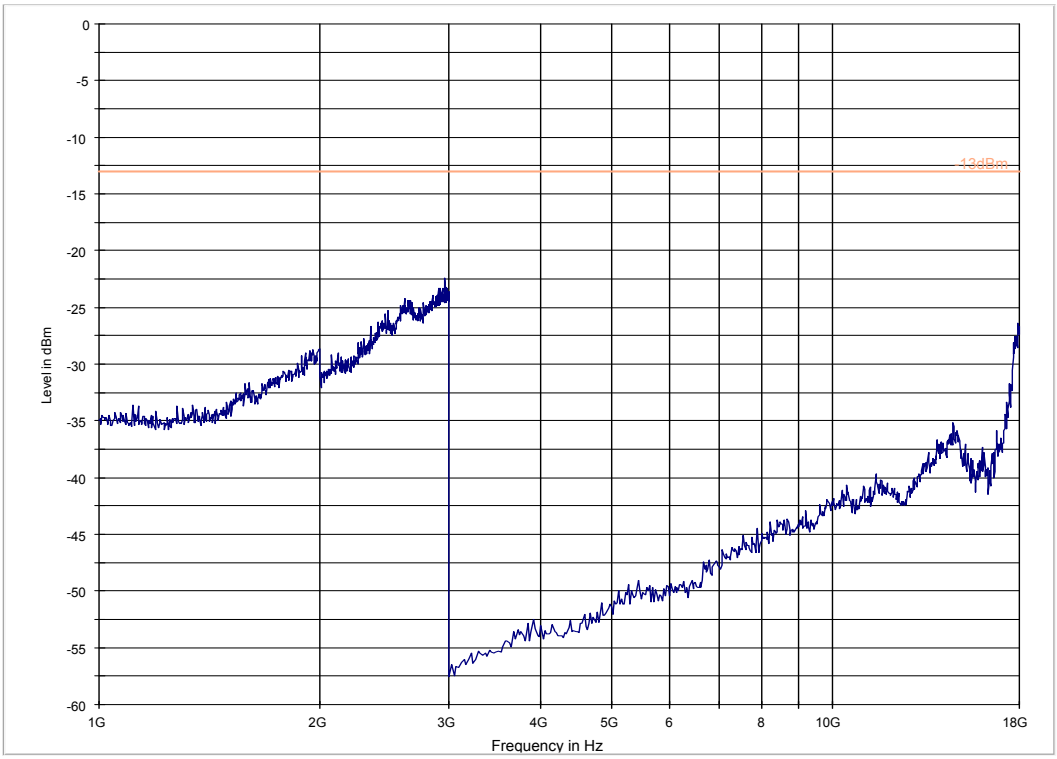
6.7.8.4.8 QPSK/ 5MHz/ Low Channel/ 1GHz to 18GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: QPSK		
Measurement results - 1 GHz – 18 GHz – Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



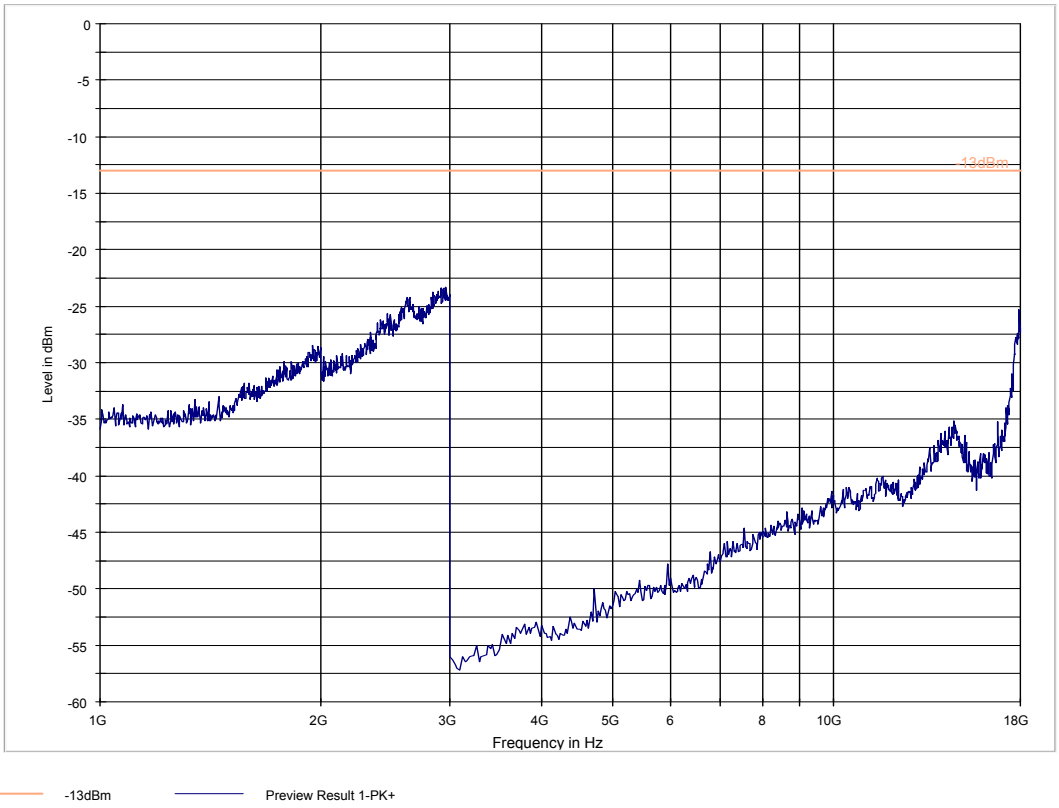
6.7.8.4.9 QPSK/ 5 MHz/ Mid Channel/ 1GHz to 18GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: QPSK		
Measurement results - 1 GHz – 18 GHz – Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



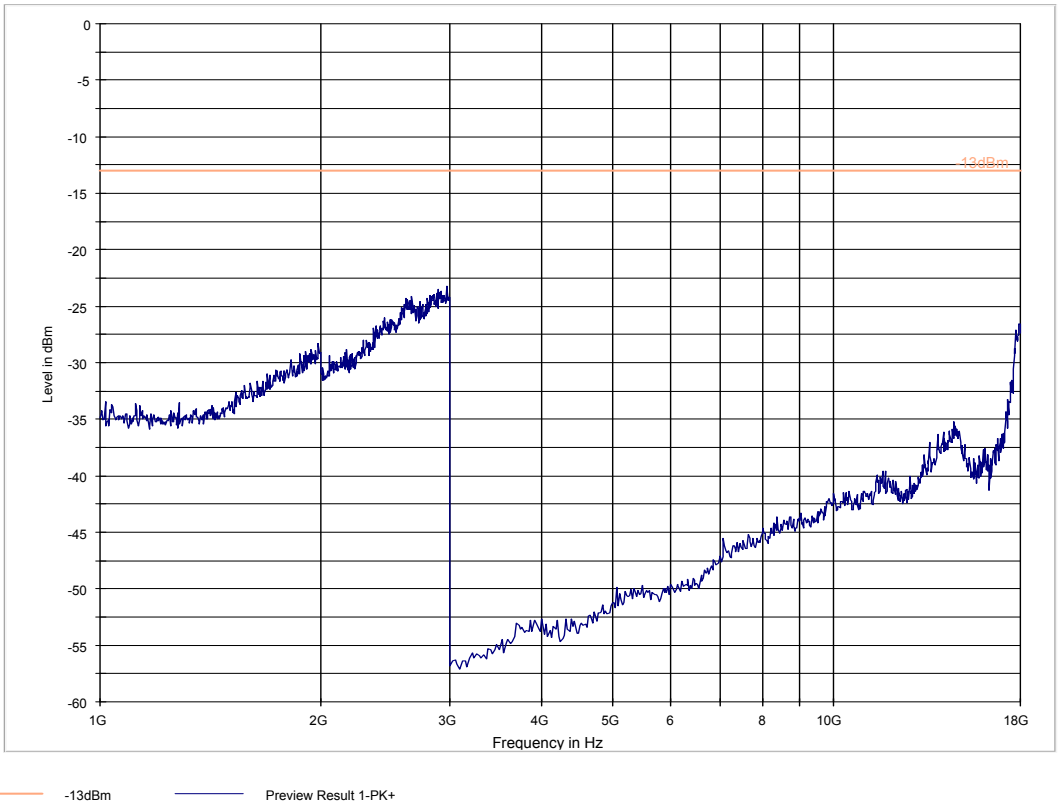
6.7.8.4.10 QPSK/ 5MHz/ High Channel/ 1GHz to 18GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: QPSK		
Measurement results - 1 GHz – 18 GHz – High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



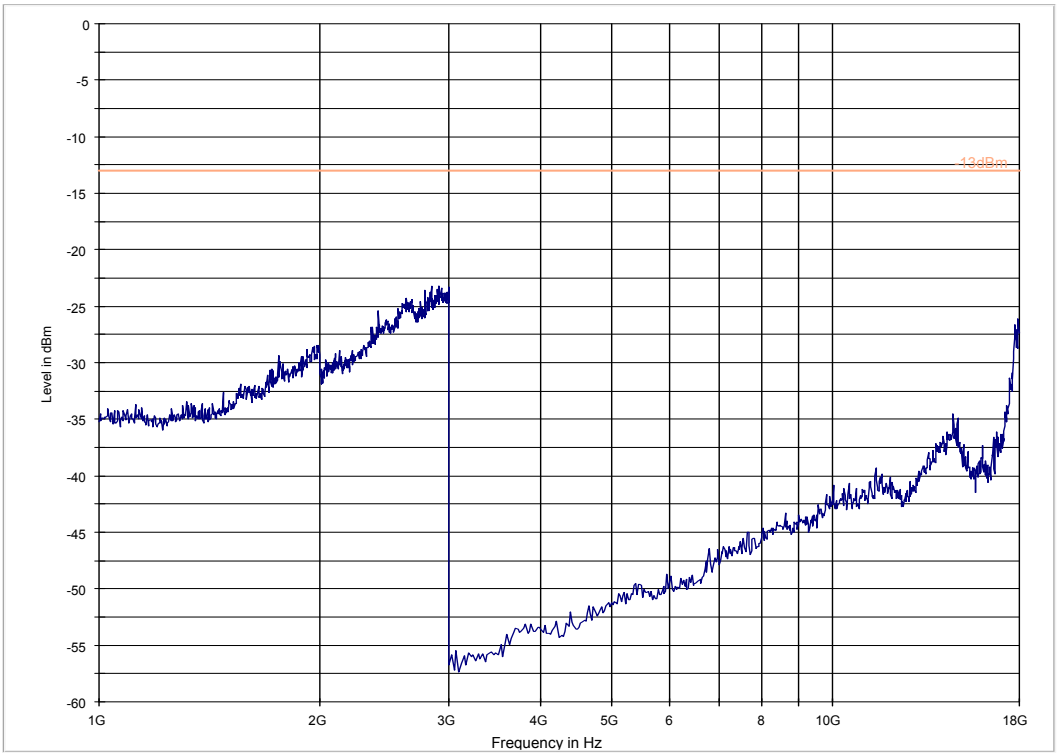
6.7.8.4.11 QPSK/10 MHz/ Low Channel/ 1GHz to 18GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: QPSK		
Measurement results – 1 GHz – 18 GHz – Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



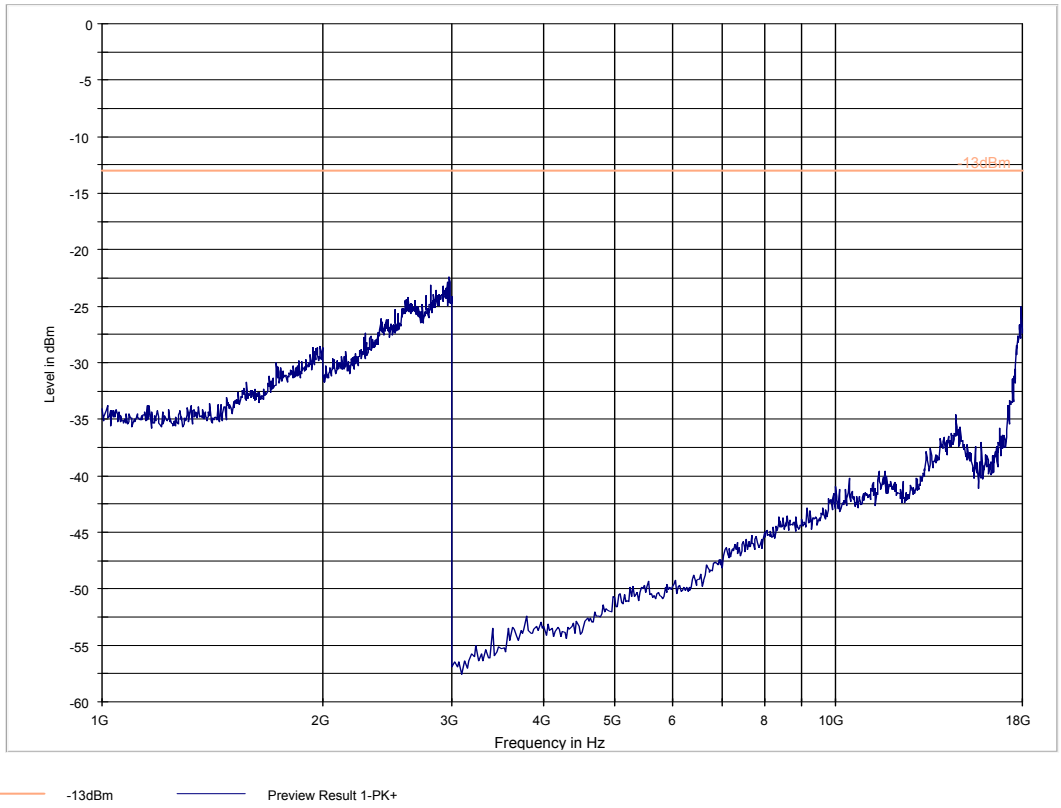
6.7.8.4.12 QPSK/ 10MHz/ Mid Channel/ 1GHz to 18GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: QPSK		
Measurement results - 1 GHz – 18 GHz – Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



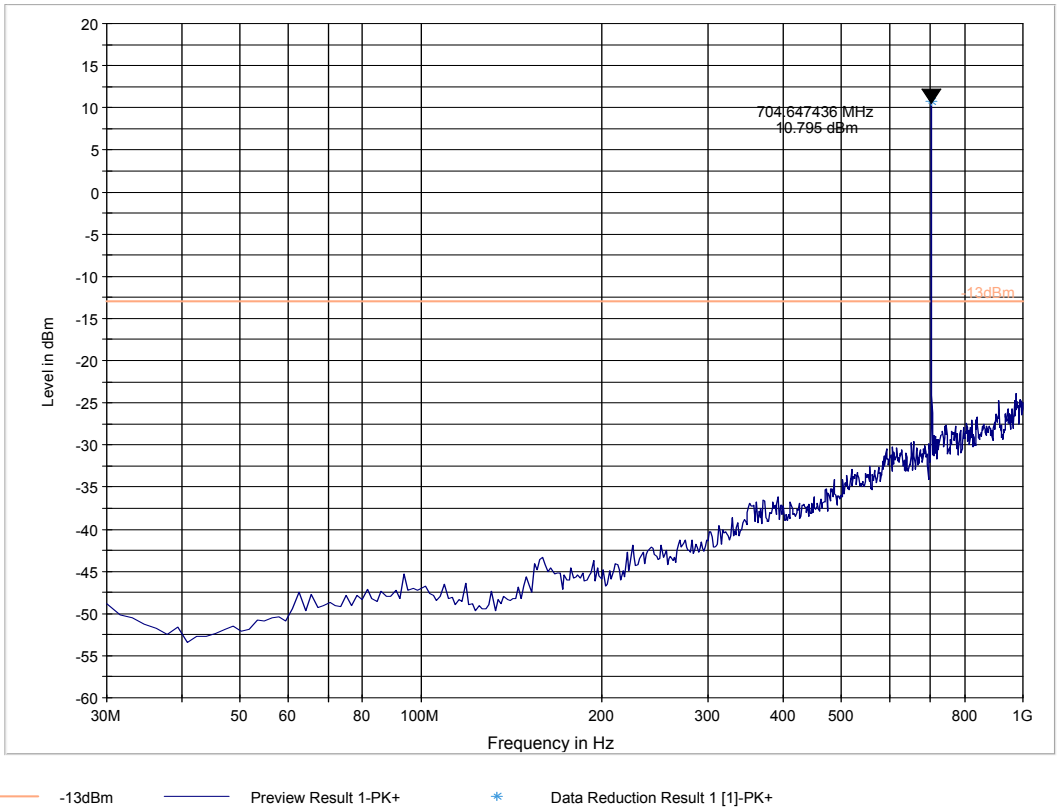
6.7.8.4.13 QPSK/ 10MHz/ High Channel/ 1GHz to 18GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: QPSK		
Measurement results - 1 GHz – 18 GHz – High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



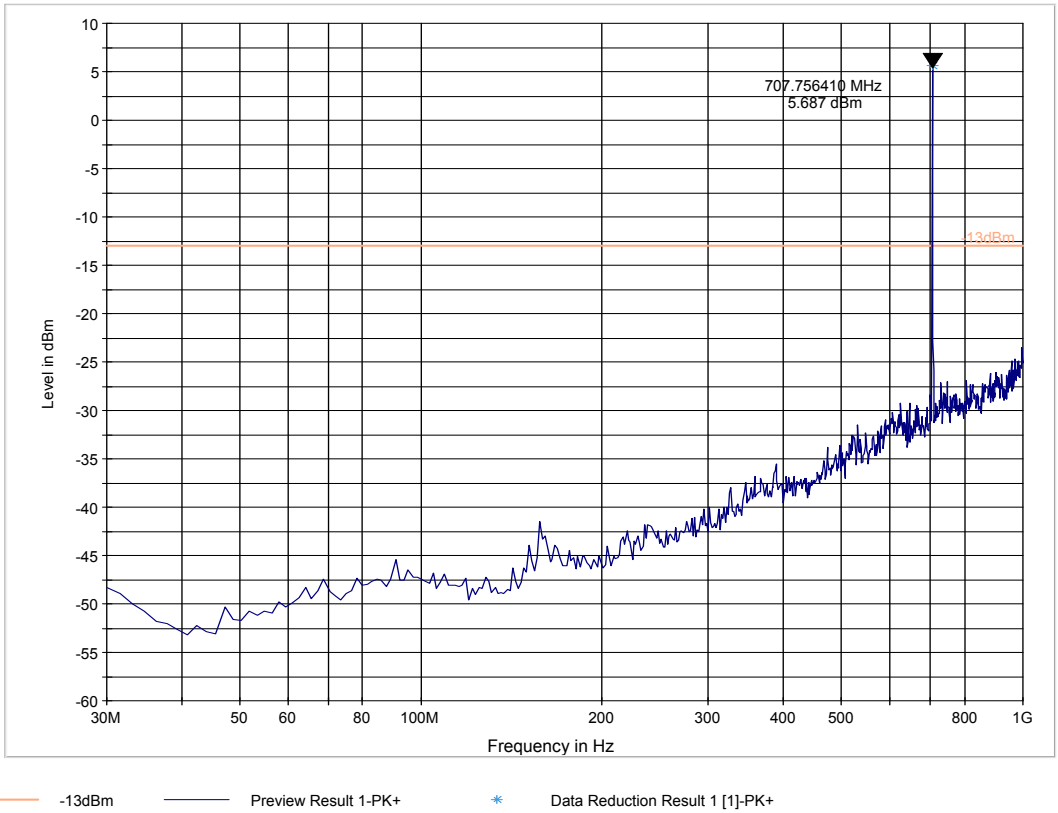
6.7.8.4.14 16 QAM/ 5MHz/ Low Channel/ 30MHz to 1GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: 16 QAM		
Measurement results - 30 MHz – 1 GHz – Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



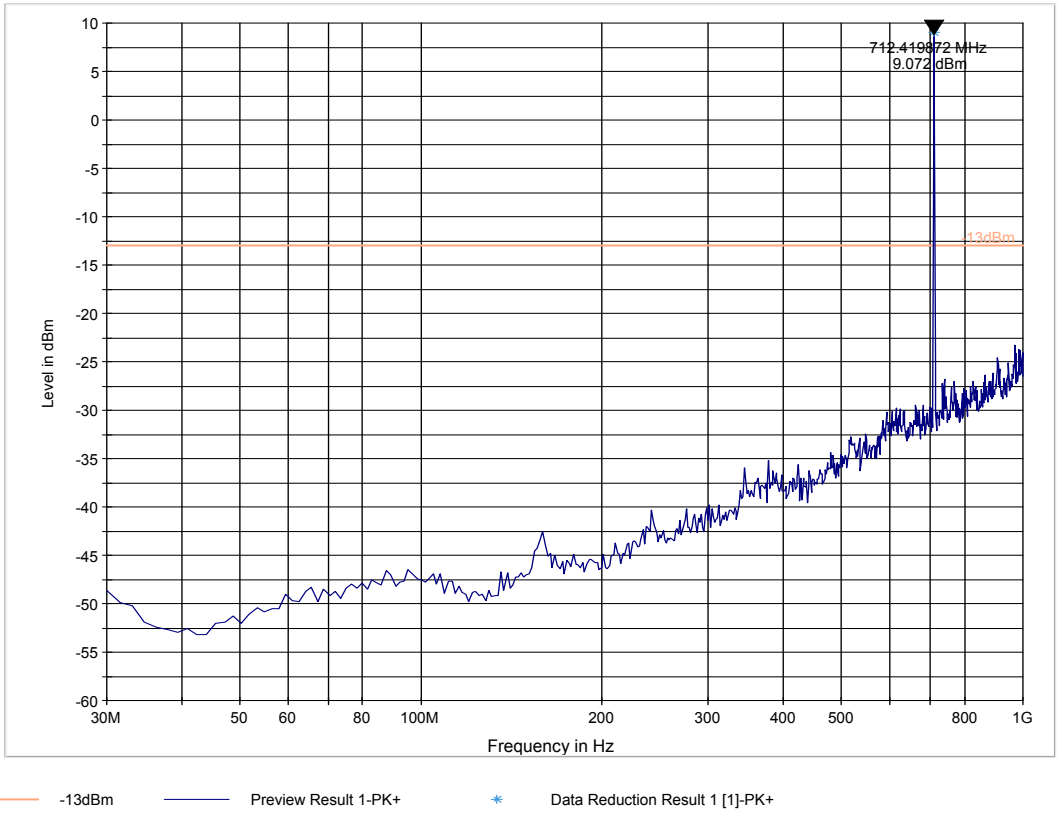
6.7.8.4.15 16 QAM/ 5MHz/ Mid Channel/ 30MHz to 1GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: 16 QAM		
Measurement results - 30 MHz – 1 GHz – Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



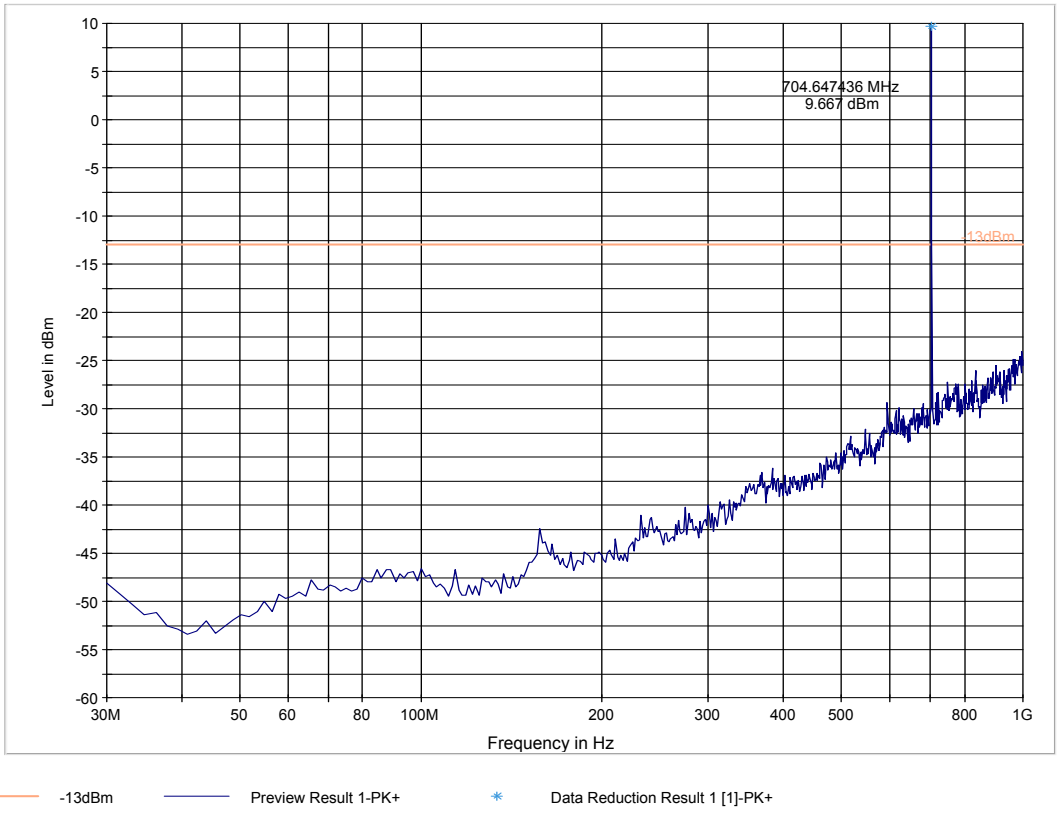
6.7.8.4.16 16 QAM/ 5MHz/ High Channel/ 30MHz to 1GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: 16 QAM		
Measurement results - 30 MHz – 1 GHz – High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



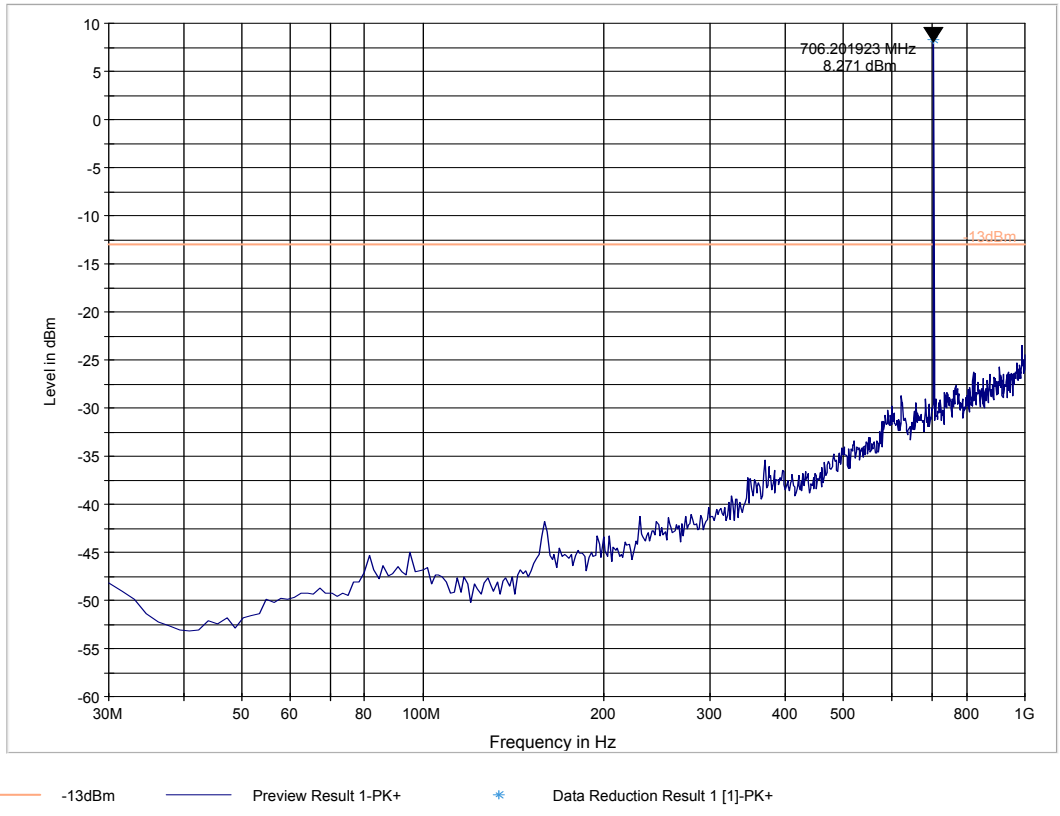
6.7.8.4.17 16 QAM/ 10MHz/ Low Channel/ 30MHz to 1GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: 16 QAM		
Test results - 30 MHz – 1GHz -Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



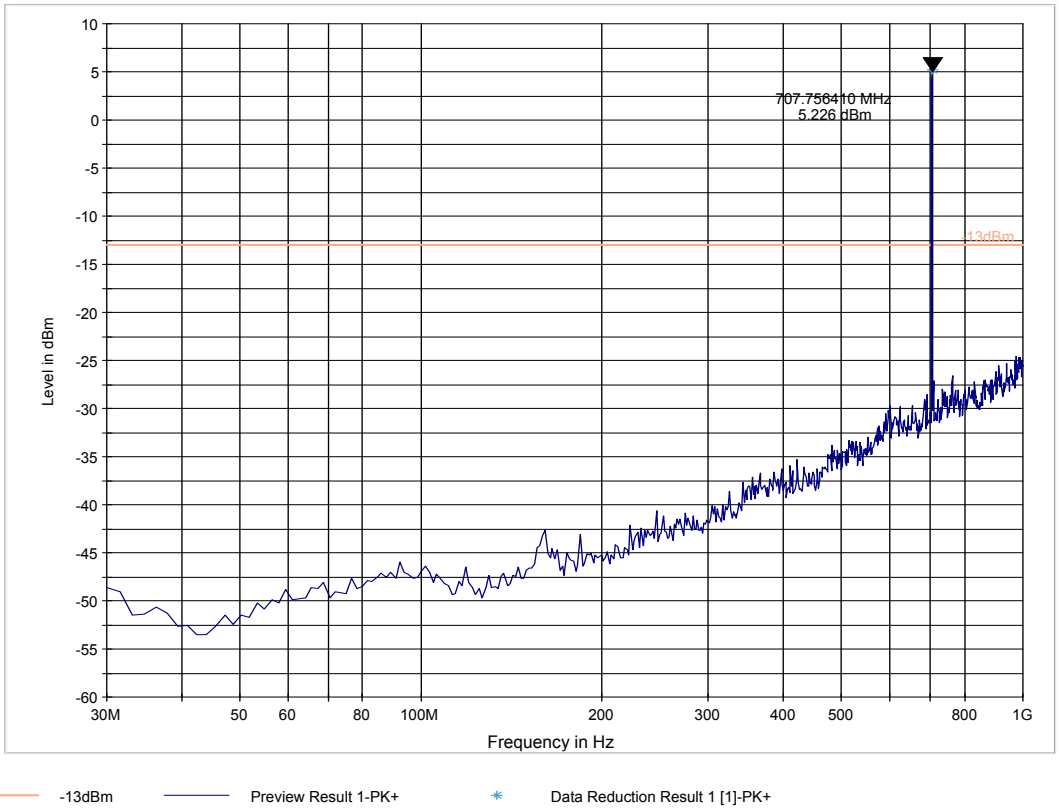
6.7.8.4.18 16 QAM/ 10MHz/ Mid Channel/ 30MHz to 1GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: 16 QAM		
Test results - 30 MHz – 1GHz -Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



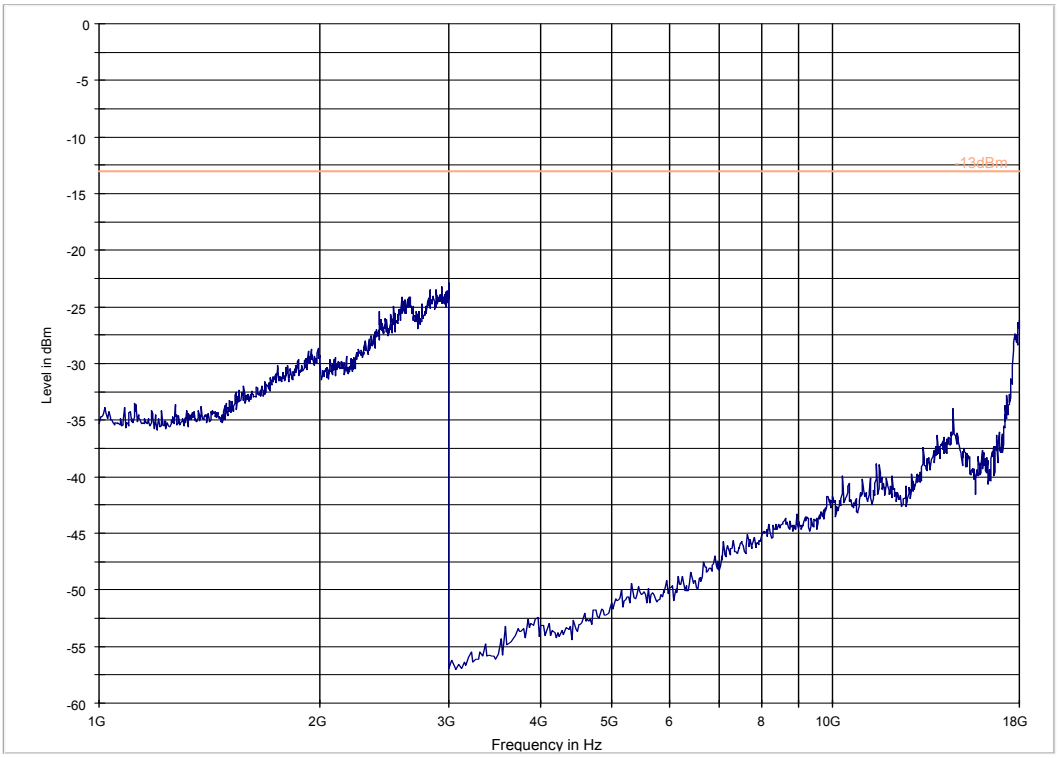
6.7.8.4.19 16 QAM/ 10MHz/ High Channel/ 30MHz to 1GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: 16 QAM		
Test results - 30 MHz – 1GHz -High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



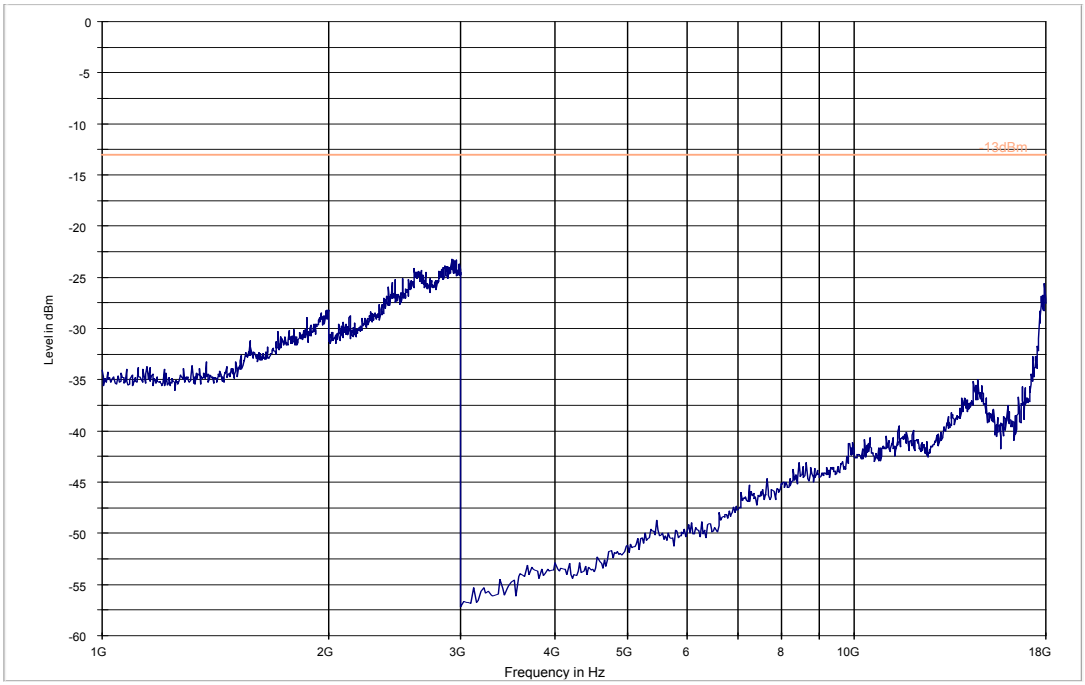
6.7.8.4.20 16 QAM/ 5MHz/ Low Channel/ 1GHz to 18GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: 16 QAM		
Measurement results - 1 GHz – 18 GHz – Low Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



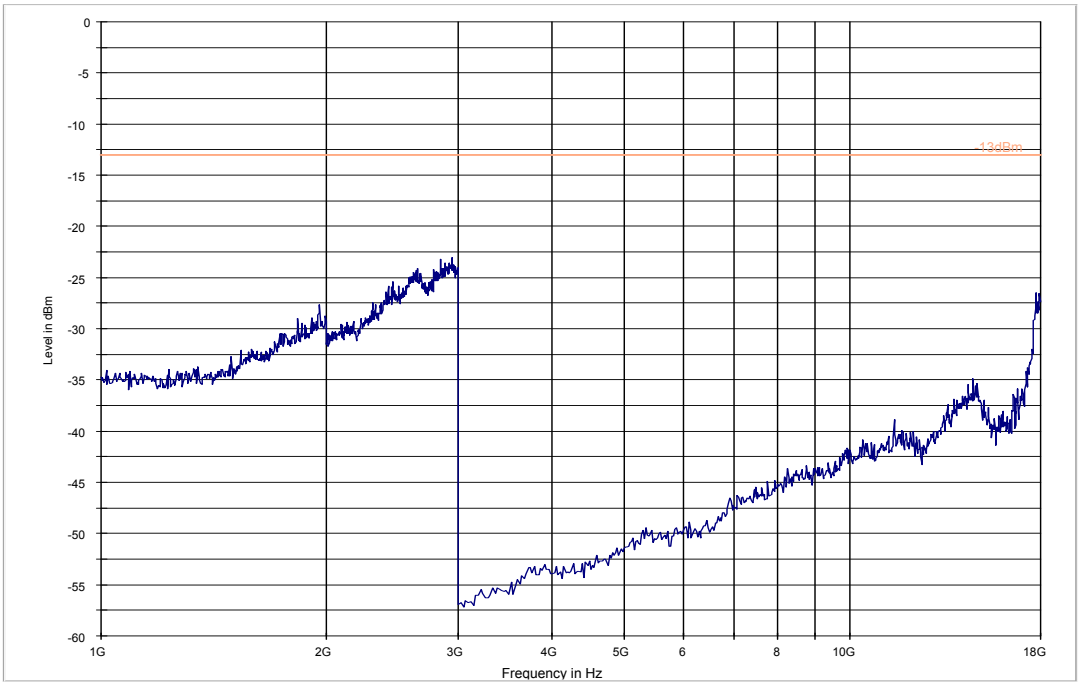
6.7.8.4.21 16 QAM/ 5MHz/ Mid Channel/ 1GHz to 18GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: 16 QAM		
Measurement results - 1 GHz – 18 GHz – Mid Channel		
RB Size = 25	**RB Offset** = 0	**BW (MHz)** = 5



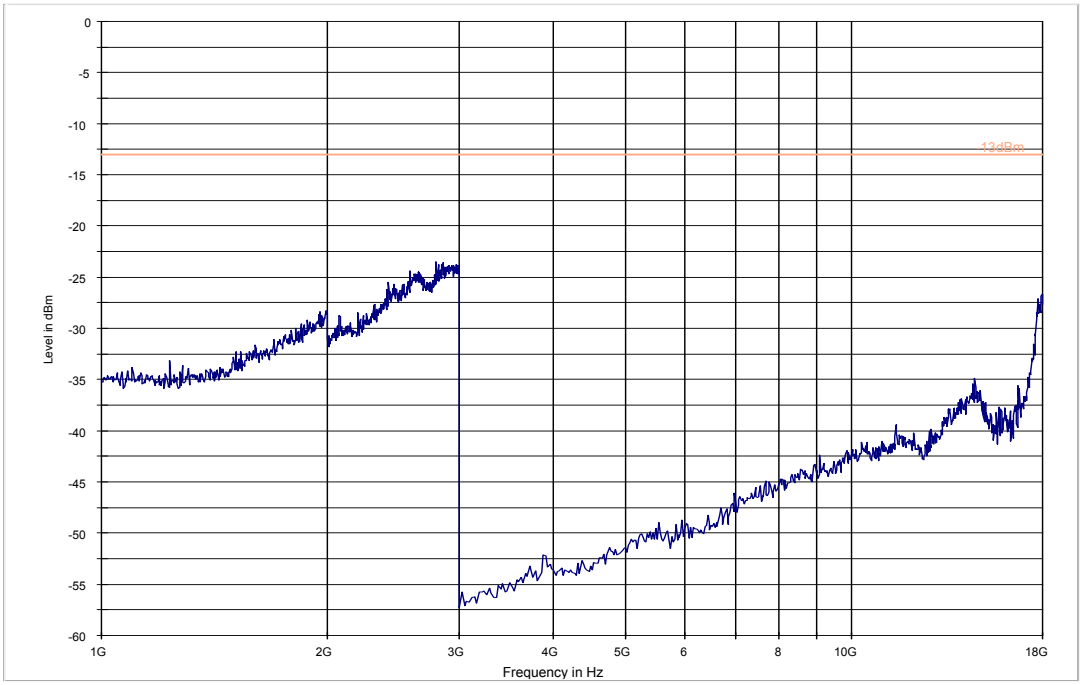
6.7.8.4.22 16 QAM/ 5MHz/ High Channel/ 1GHz to 18GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: 16 QAM		
Measurement results - 1 GHz – 18 GHz – High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 5



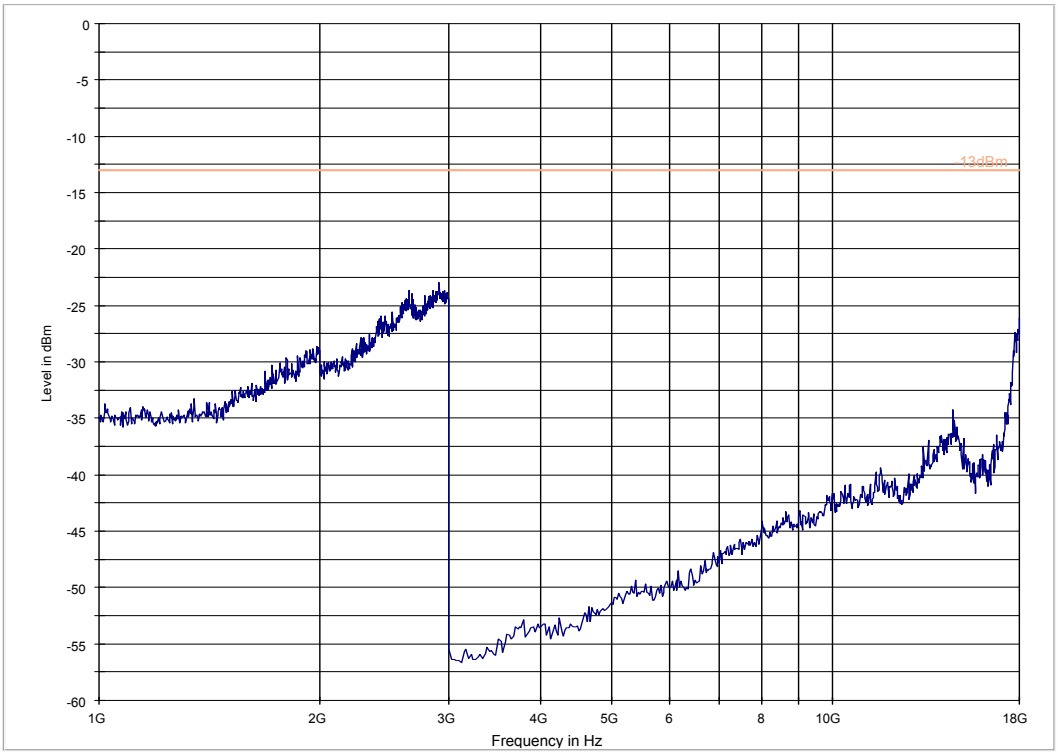
6.7.8.4.23 16 QAM/ 10MHz/ Low Channel/ 1GHz to 18GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: 16 QAM		
Measurement results - 1 GHz – 18 GHz – Low Channel		
RB Size = 50	**RB Offset** = 0	**BW (MHz)** = 10



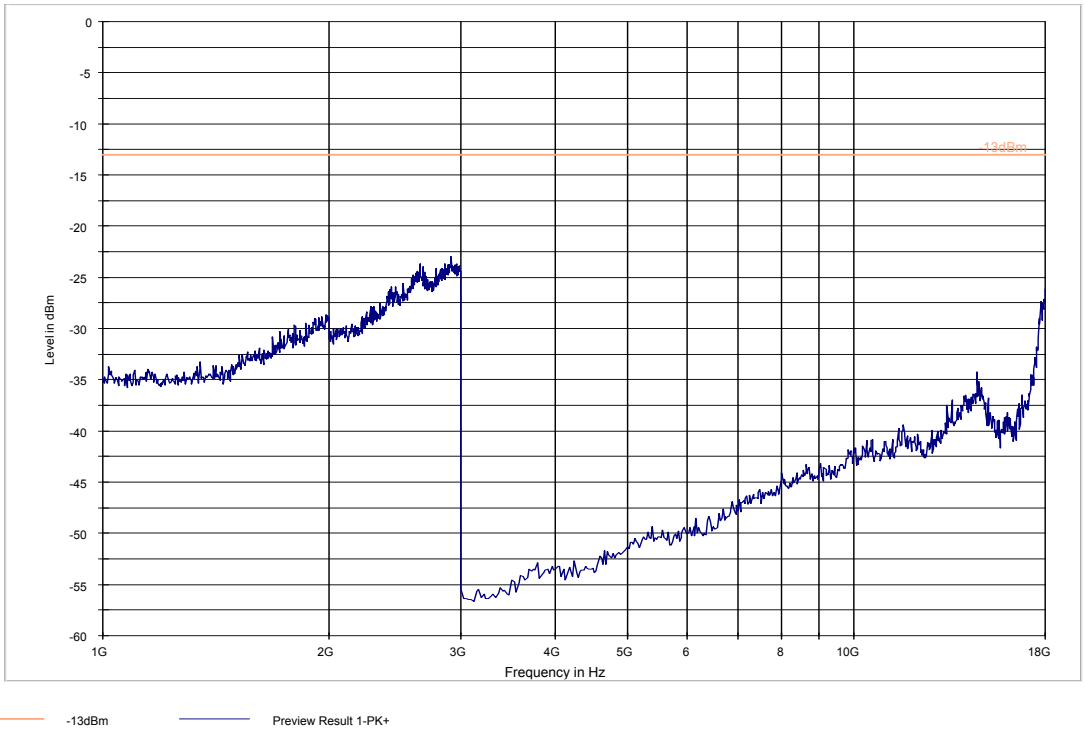
6.7.8.4.24 16 QAM/ 10MHz/ Mid Channel/ 1GHz to 18GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: 16 QAM		
Measurement results - 1 GHz – 18 GHz – Mid Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



6.7.8.4.25 16 QAM/ 10MHz/ High Channel/ 1GHz to 18GHz:

LTE Band 17 (704 MHz – 716 MHz) -Modulation: 16 QAM		
Measurement results - 1 GHz – 18 GHz – High Channel		
RB Size = 1	**RB Offset** = 0	**BW (MHz)** = 10



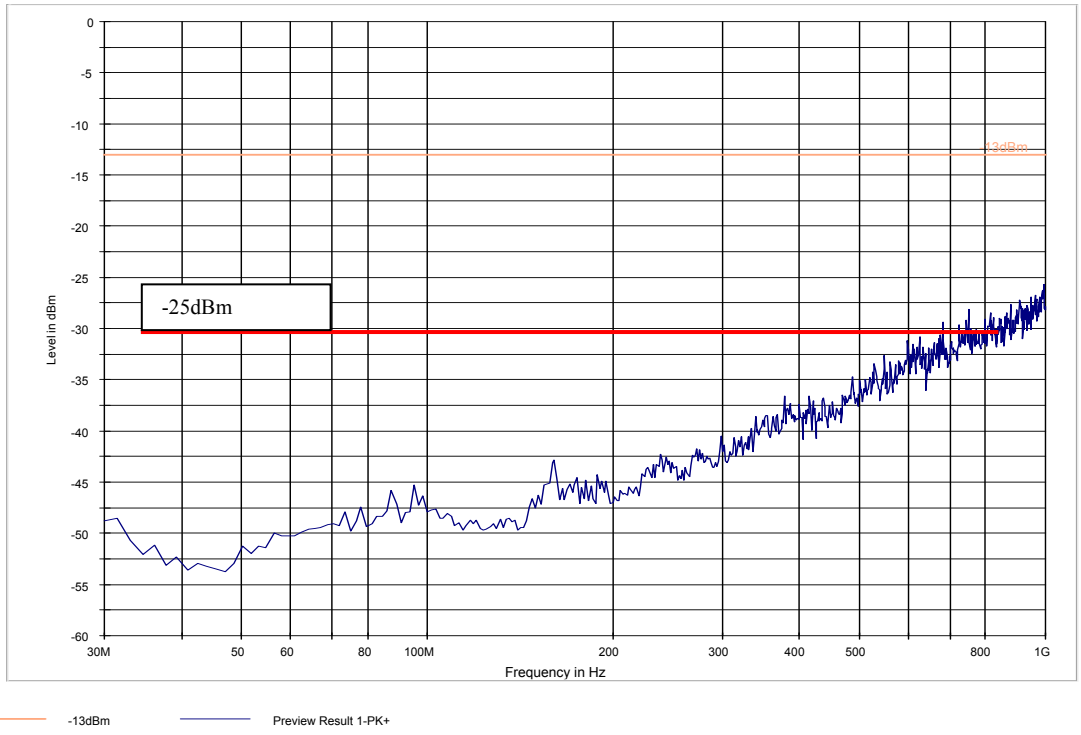
6.7.8.5 Spurious Emissions LTE FDD 7:

6.7.8.5.1 LTE FDD 7 Summary Tables

LTE Band 7 (2500 MHz – 2570 MHz) -Modulation: QPSK						
RB Size = 1/ **RB Offset** = 0/ **BW (MHz)** = 20			**RB Size** = 1/ **RB Offset** = 50/ **BW (MHz)** = 20		**RB Size** = 1/ **RB Offset** = 99/ **BW (MHz)** = 20	
Harmonic	**Tx ch-20850 Freq. (MHz)**	**Level (dBm)**	**Tx ch-21100 Freq. (MHz)**	**Level (dBm)**	**Tx ch-21350 Freq. (MHz)**	**Level (dBm)**
1	**2510**	14.40	**2535**	16.57	**2560**	17.47
2	**5020**	-43.11	**5070**	-38.52	**5120**	-30.67
3	**7530**	NF	**7605**	-40.82	**7680**	-28.04
4	**10040**	NF	**10140**	NF	**10240**	NF
5	**12550**	NF	**12675**	NF	**12800**	NF
6	**15060**	NF	**15210**	NF	**15360**	NF
7	**17570**	NF	**17745**	NF	**17920**	NF
8	**20080**	NF	**20280**	NF	**20480**	NF
9	**22590**	NF	**22815**	NF	**23040**	NF
10	**25100**	NF	**25350**	NF	**25600**	NF
NF= Noise Floor						

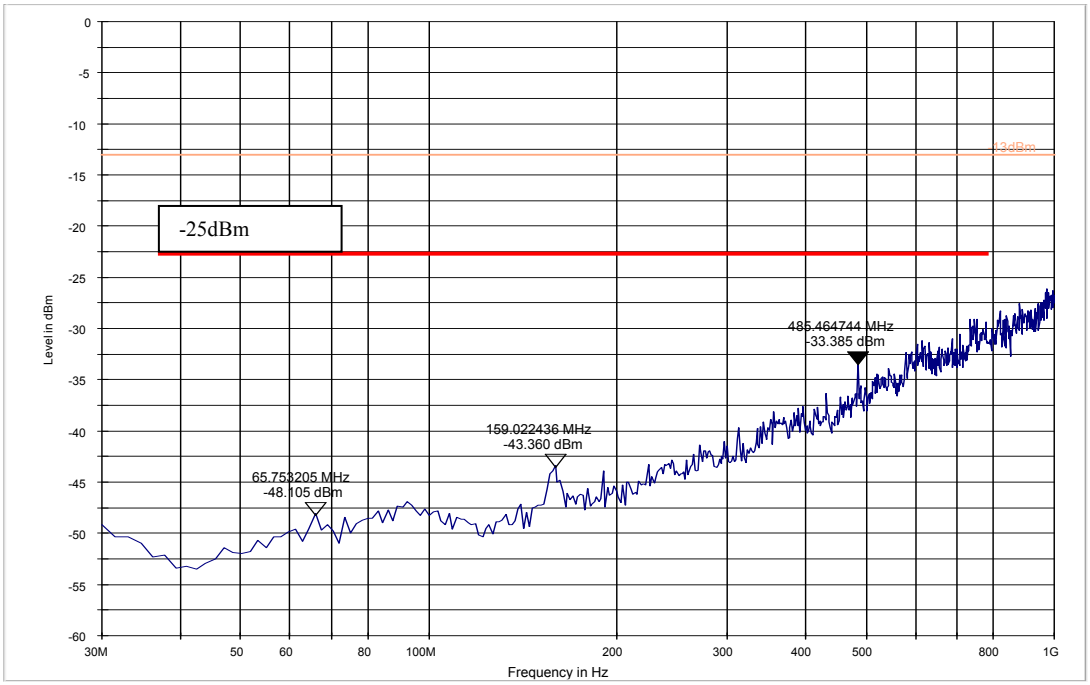
6.7.8.5.2 QPSK/ 1 RB Low/ Low Channel/ 30MHz to 1GHz

LTE Band 7 (2500 MHz – 2570 MHz) -Modulation: QPSK		
Measurement results – 30MHz – 1GHz – Low Channel		
RB Size = 1	**RB Offset** = 0	



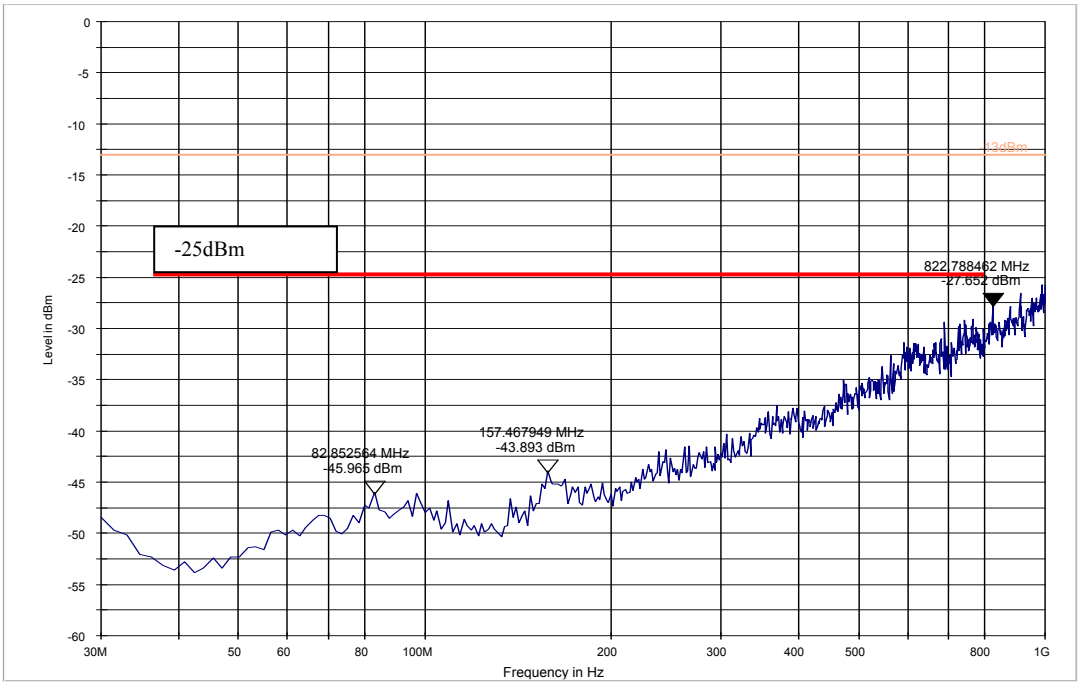
6.7.8.5.3 QPSK/ 1 RB Mid/ Mid Channel/ 30MHz to 1GHz

LTE Band 7 (2500 MHz – 2570 MHz) -Modulation: QPSK		
Measurement results – 30MHz – 1GHz – Mid Channel		
RB Size = 1	**RB Offset** = 50	



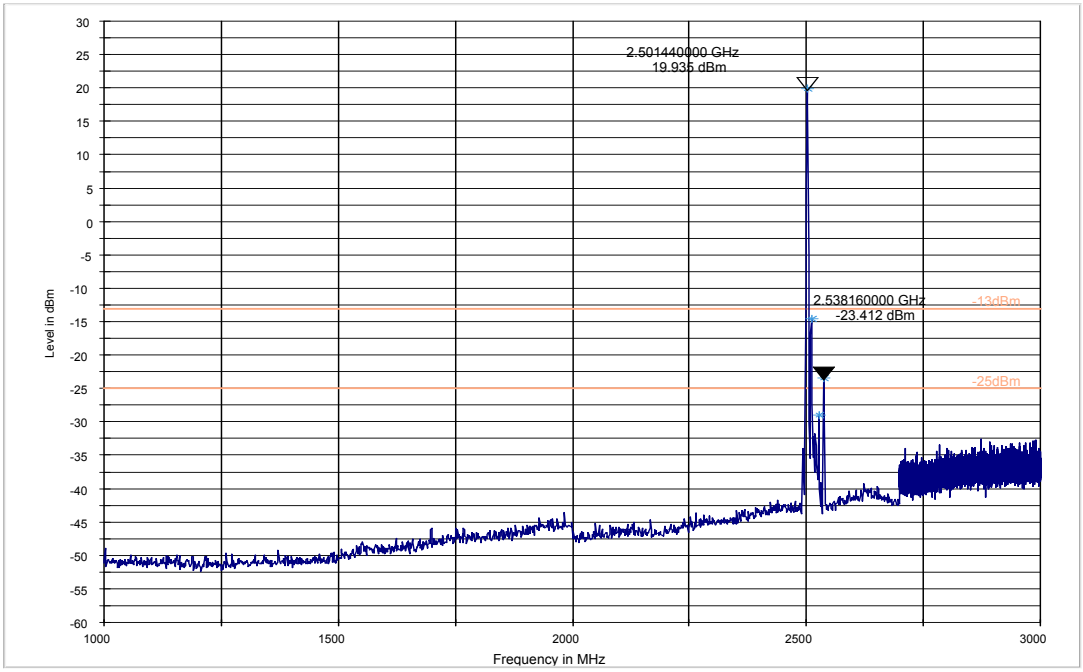
6.7.8.5.4 QPSK/ 1 RB High/ High Channel/ 30MHz to 1GHz

LTE Band 7 (2500 MHz – 2570 MHz) -Modulation: QPSK		
Measurement results – 30MHz – 1GHz – High Channel		
RB Size = 1	**RB Offset** = 99	



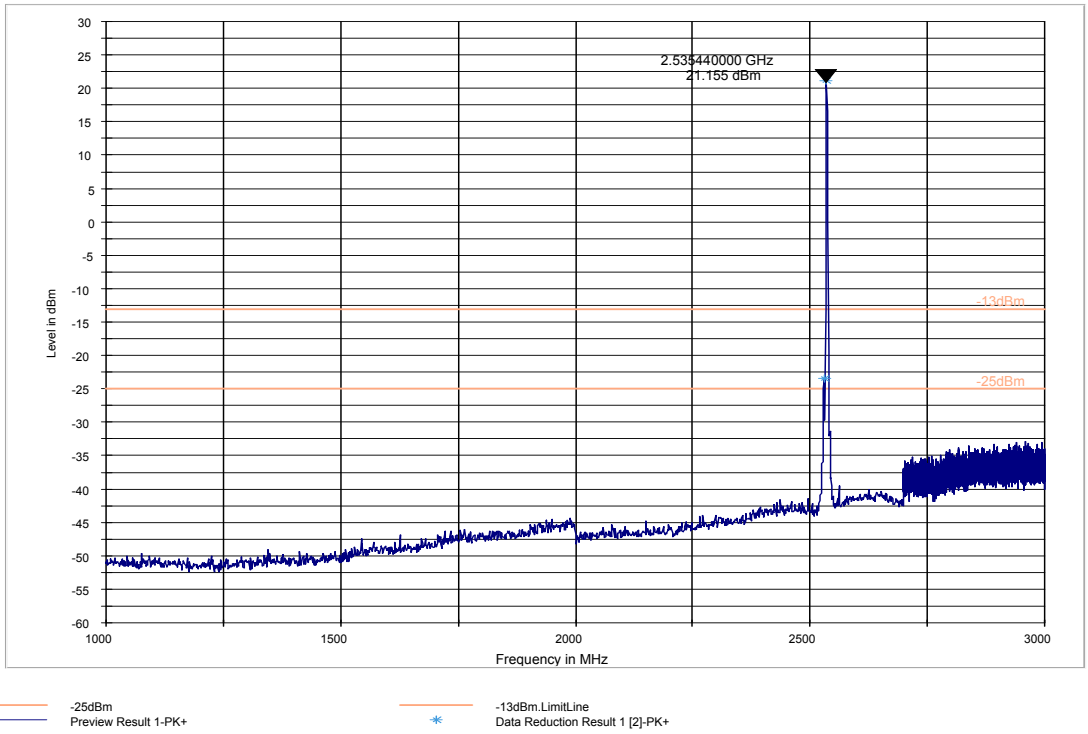
6.7.8.5.5 QPSK/ 1 RB Low/ Low Channel/ 1GHz to 3GHz

LTE Band 7 (2500 MHz – 2570 MHz) -Modulation: QPSK		
Measurement results 1GHz – 3GHz – Low Channel		
RB Size = 1	**RB Offset** = 0	



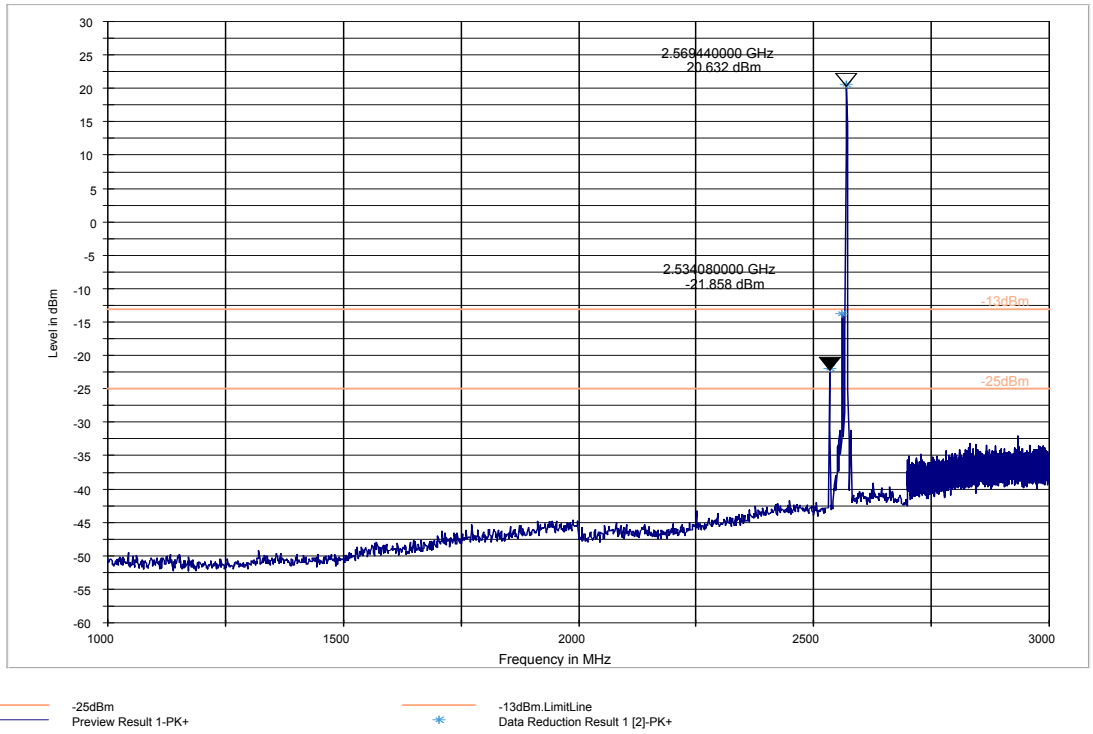
6.7.8.5.6 QPSK/ 1 RB Mid/ Mid Channel/ 1GHz to 3GHz

LTE Band 7 (2500 MHz – 2570 MHz) -Modulation: QPSK		
Measurement results 1GHz – 3GHz – Mid Channel		
RB Size = 1	**RB Offset** = Mid	



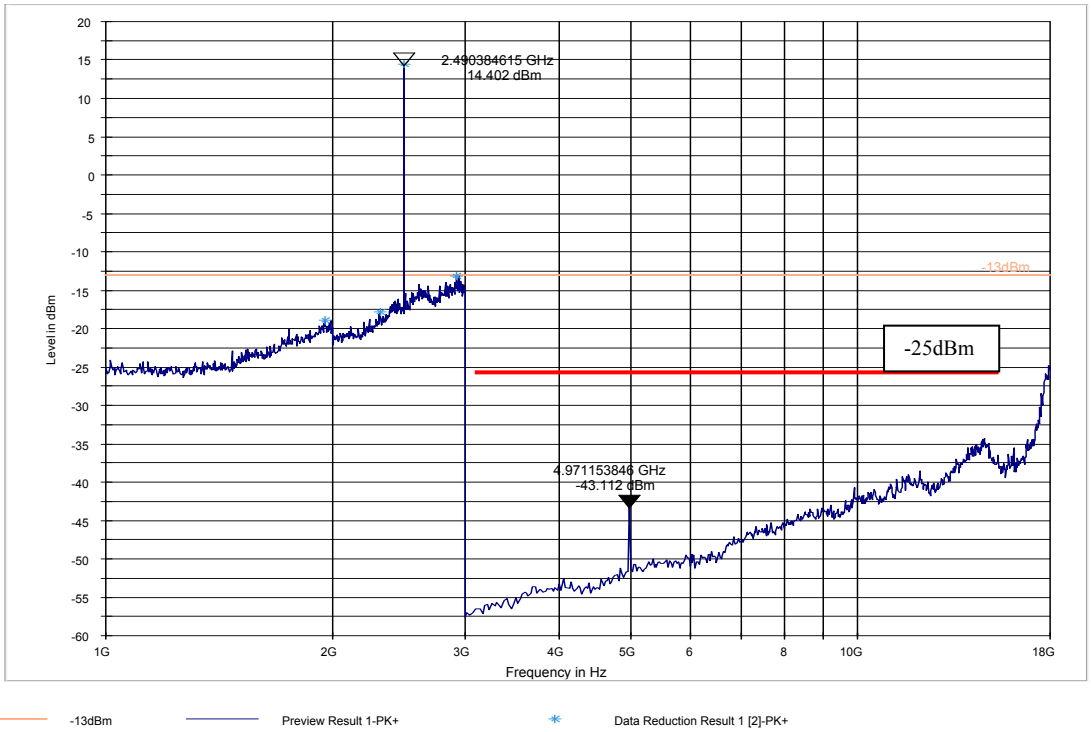
6.7.8.5.7 QPSK/ 1 RB High/ High Channel/ 1GHz to 3GHz

LTE Band 7 (2500 MHz – 2570 MHz) -Modulation: QPSK		
Measurement results 1GHz – 3GHz – High Channel		
RB Size = 1	**RB Offset** = High	



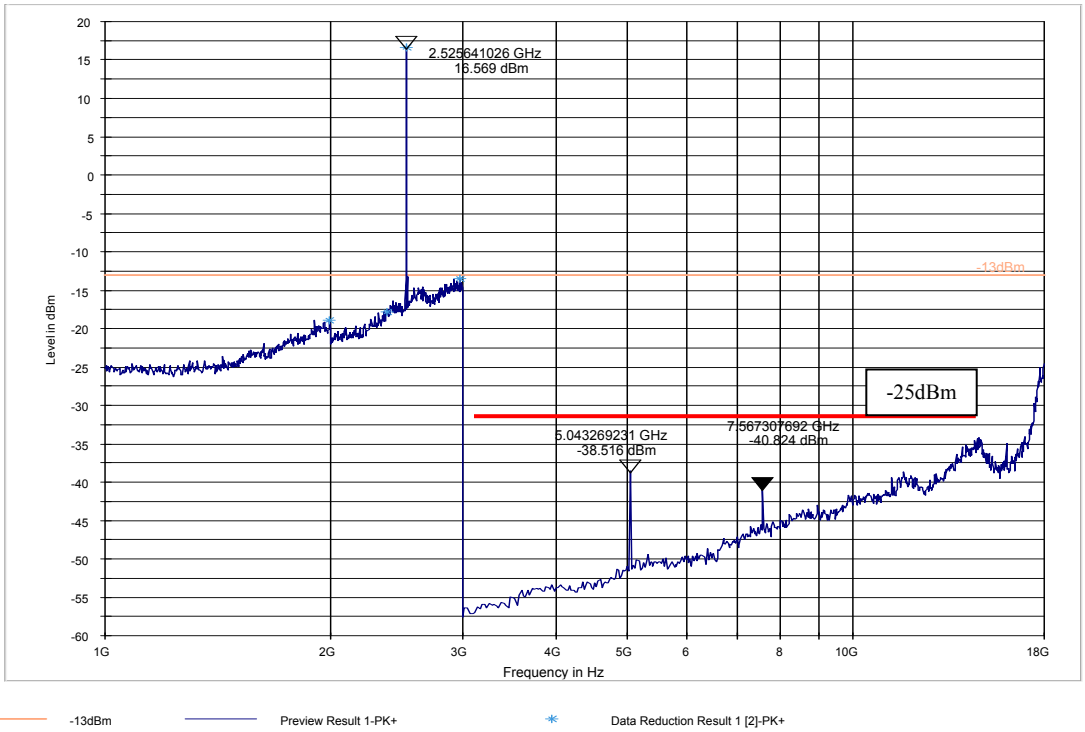
6.7.8.5.8 QPSK/ 1 RB Low/ Low Channel/ 3GHz to 18GHz

LTE Band 7 (2500 MHz – 2570 MHz) -Modulation: QPSK		
Measurement results 3GHz – 18GHz – Low Channel		
RB Size = 1	**RB Offset** = 0	



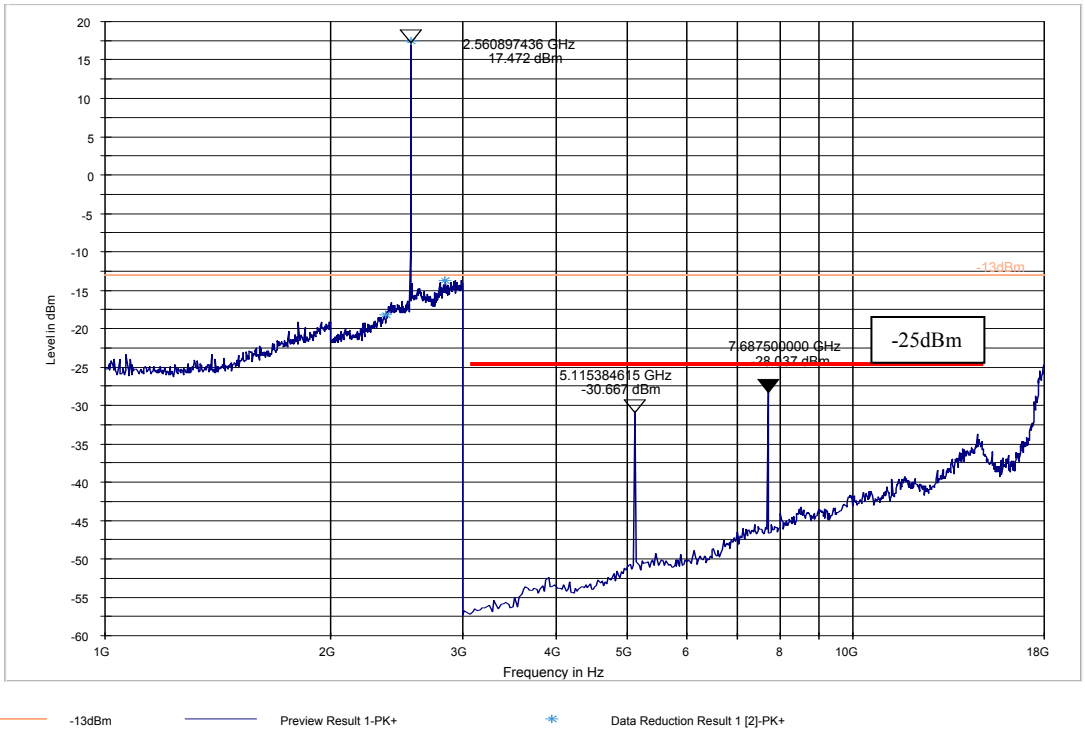
6.7.8.5.9 QPSK/ 1 RB Mid/ Mid Channel/ 3GHz to 18GHz

LTE Band 7 (2500 MHz – 2570 MHz) -Modulation: QPSK		
Measurement results 3GHz – 18GHz – Mid Channel		
RB Size = 1	**RB Offset** = 50	



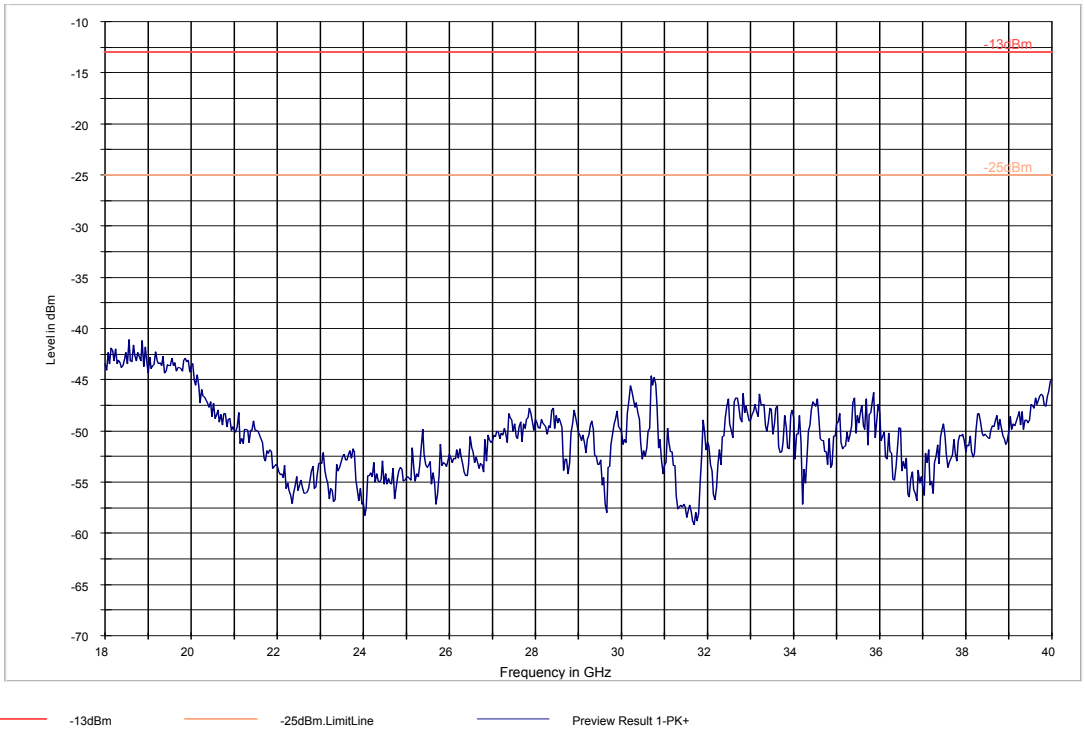
6.7.8.5.10 QPSK/ 1 RB High/ High Channel/ 3GHz to 18GHz

LTE Band 7 (2500 MHz – 2570 MHz) -Modulation: QPSK		
Measurement results 3GHz – 18GHz – High Channel		
RB Size = 1	**RB Offset** = 99	



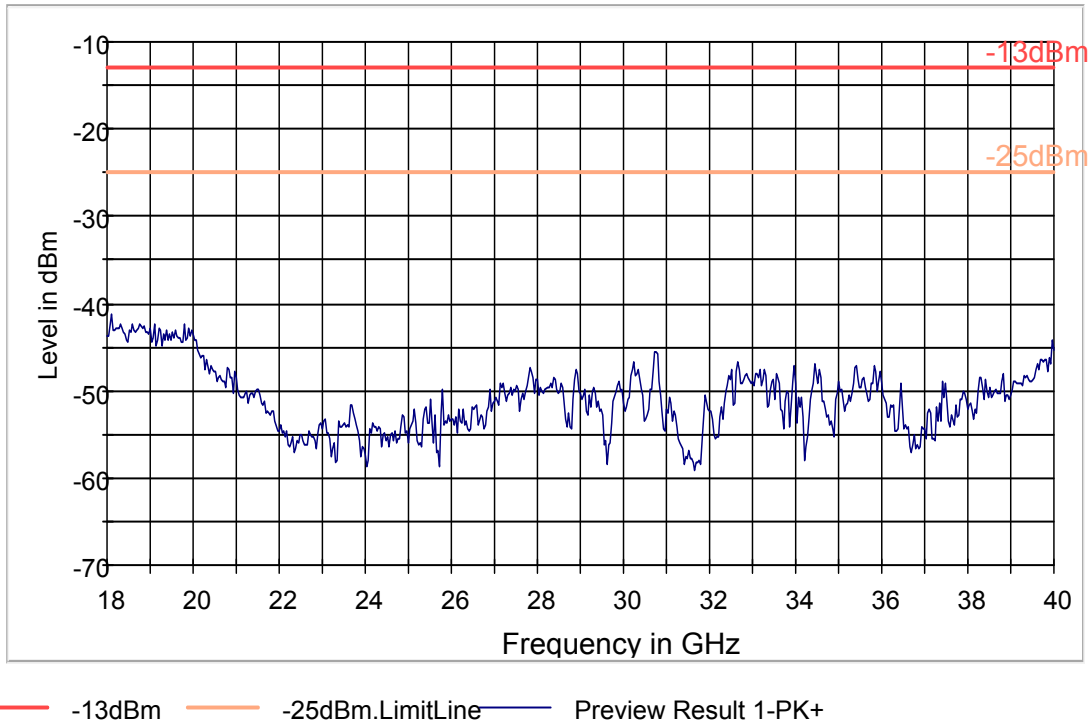
6.7.8.5.11 QPSK/ 1 RB Low/ Low Channel/ 18GHz to 40GHz

LTE Band 7 (2500 MHz – 2570 MHz) -Modulation: QPSK		
Measurement results 18GHz – 40GHz – Low Channel		
RB Size = 1	**RB Offset** = Low	



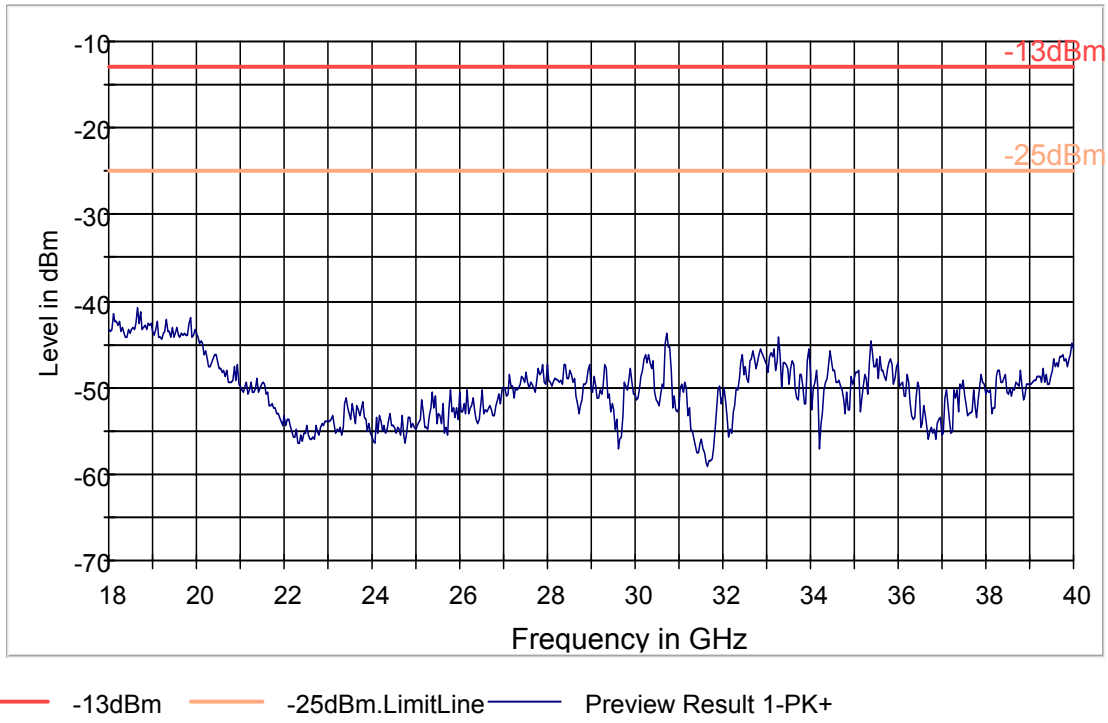
6.7.8.5.12 QPSK/ 1 RB Mid/ Mid Channel/ 18GHz to 40GHz

LTE Band 7 (2500 MHz – 2570 MHz) -Modulation: QPSK		
Measurement results 18GHz – 40GHz – Mid Channel		
RB Size = 1	**RB Offset** = Mid	



6.7.8.5.13 QPSK/ 1 RB High/ High Channel/ 18GHz to 40GHz

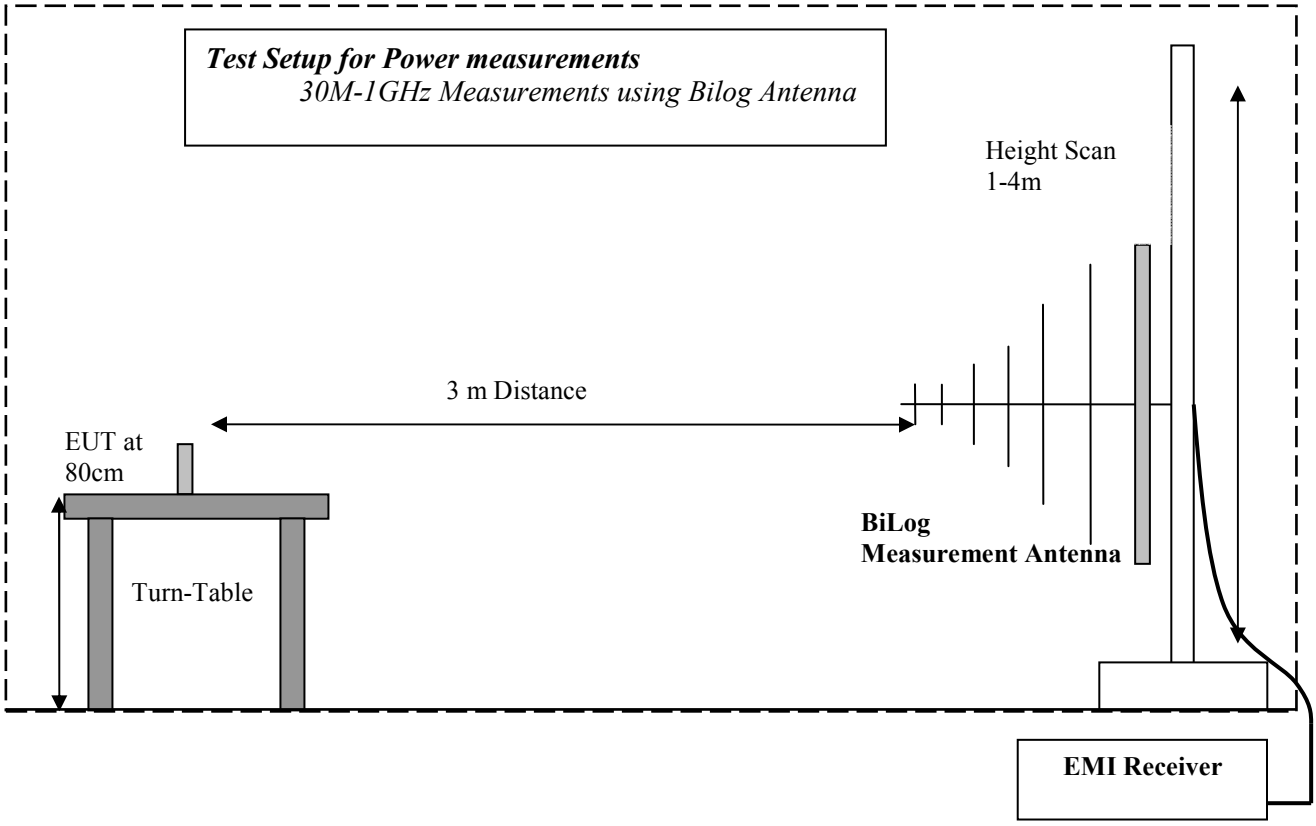
LTE Band 7 (2500 MHz – 2570 MHz) -Modulation: QPSK		
Measurement results 18GHz – 40GHz – High Channel		
RB Size = 1	**RB Offset** = High	

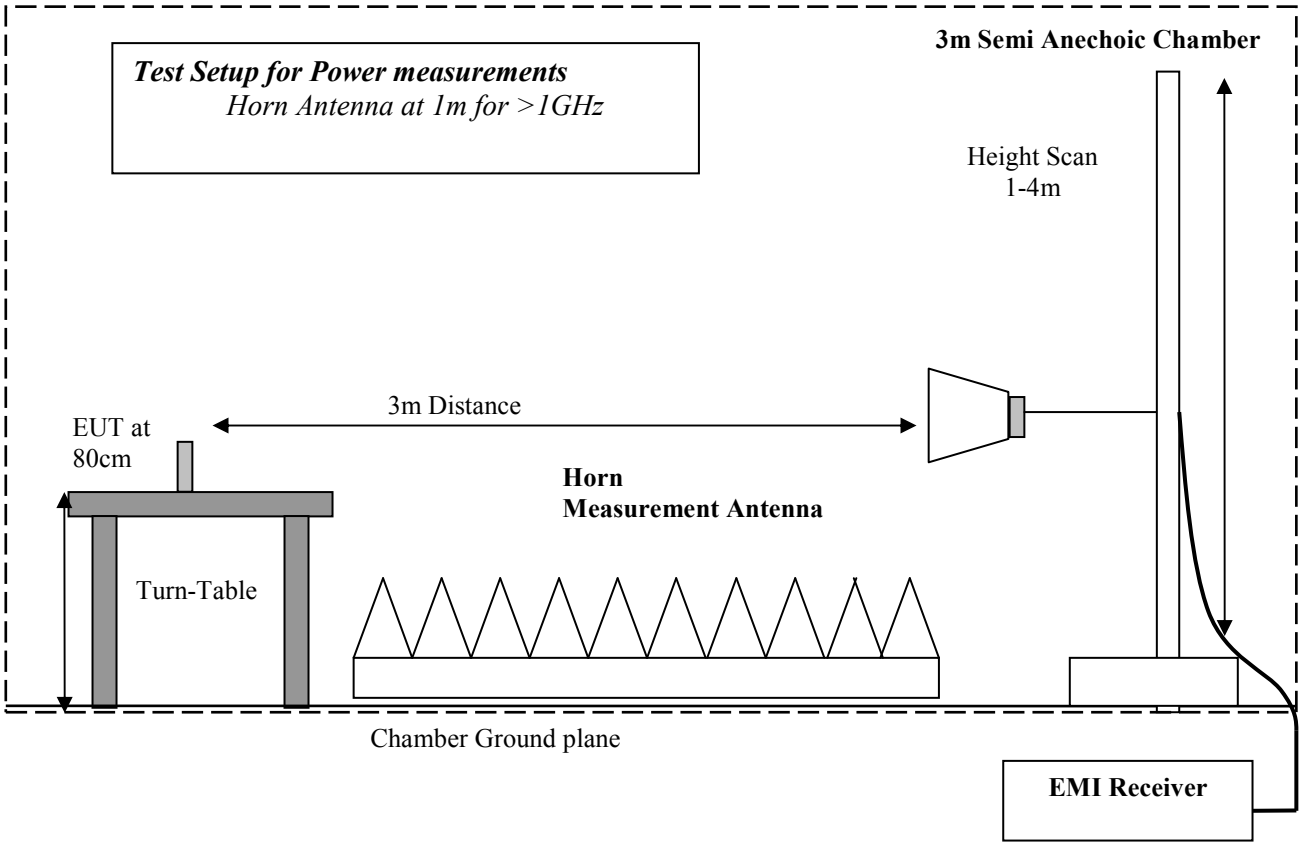


7 Test Equipment and Ancillaries used for tests

Equipment Name	Manufacturer	Type/Model	Serial No.	Cal Date	Cal Interval	Next cal date
3m Semi- Anechoic Chamber:						
Spectrum Analyzer	Rohde und Schwarz	FSU 26	200302	06/2013	2 years	06/2015
Receiver	Rohde und Schwarz	ESR3	101663	02/2013	2 years	02/2015
LISN	Rohde und Schwarz	ESV 216	101129	01/2013	2 years	01/2015
Radiocommunication Tester	Rohde and Schwarz	CMW 500	1201.0002K50	05/2013	2 years	05/2015
Horn Antenna	ETS Lindgren	3115	35111	04/2012	3 year	04/2015
Log Periodic Antenna	Rohde and Schwarz	HL 050	100515	04/2013	3 year	04/2015
Ultralog Antenna	Rohde and Schwarz	HL 562	100495	02/2012	3 year	02/2015
Open Switch Control Unit	Rohde and Schwarz	OPS 130	10085	n/a		
Extention Unit Open Switch Control Unit	Rohde and Schwarz	OSP 150	10086	n/a		
Signal Generator	Rohde and Schwarz	SMF 100A	101833	02/2012	2 years	02/2015
Turn Table TT	Maturo	1.5 SI	TT 1.5SI/204/6070910	n/a		
Compact antenna Mast	Maturo	CAM 4.0-P	CAM4.0-P/067/6000910	n/a		
Multiple Control Unit	Maturo	MCU	2140910	n/a		
Pre-Amplifier	Rohde and Schwarz	TS-PR 18	100072	Part of the system calibration		
High Pass Filter	Mini-Circuits	SHP-1200+	RUU11201224	Part of the system calibration		
High Pass Filter	Wainwright Instr.	WHKX 3.0/18	109	Part of the system calibration		
Ancillary equipment:						
Multimeter	Fluke	115 True RMS	21752138	3/2013	2 years	3/2015
DC Power Supply	GW Instek	GPS-1850D	EM845907	n/a		
Temperature Chamber	Test Equity	107	0700533	n/a		
Temperatuer Chamber	Test Equity	115	150300	n/a		
Thermometer	Fluke	5411B	17560031	12/2012	2 years	12/2014
Antenna	TECT Electronics	FPA3-0.8-6.0R/1329	408213-0001	n/a		

8 Test Setup Diagrams





9 Revision History

Date	Report Name	Changes to report	Report prepared by
2014-06-30	EMC_INTEL_INTEL_039_14001_FCC22_24_27_LTE_WWAN_Rev1	Corrections on calculation of frequency accuracy. Updating the ERP/EIRP table. Adding details on LTE FDD Band 7. Optimized formatting of spurious emissions results.	Franz Engert