

FCC RF Test Report

APPLICANT : HTC Corporation
EQUIPMENT : Smartphone
MODEL NAME : PL80120
FCC ID : NM8PL80120
STANDARD : 47 CFR Part 2, 24, 27
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Aug. 16, 2012 and completely tested on Sep. 26, 2012. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI / TIA / EIA-603-C-2004 and shown compliance with the applicable technical standards.

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

Reviewed by:



Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

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



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG281609B	Rev. 01	Initial issue of report	Oct. 31, 2012
FG281609B	Rev. 02	Update report by adding the followings, 1. Conducted Power 2. Description of RB and Offset 3. Peak to Average Ratio	Dec. 11, 2012

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	§2.1046	Conducted Output Power	NA	PASS	-
3.3	NA	Peak-to-Average Ratio	<13 dB	PASS	-
3.3	§27.50(c)(10)	Effective Radiated Power (Band 12)	ERP < 3 Watts	PASS	-
	§24.232(c)	Equivalent Isotropic Radiated Power (Band 2)	EIRP < 2Watt		
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4)	EIRP < 1Watt		
3.4	§2.1049 §22.917(a) §24.238(a) §27.53(g)(1)	Occupied Bandwidth	N/A	PASS	-
3.5	§2.1049 §27.53(h)	Conducted Band Edge Measurement	< 43+10log ₁₀ (P[Watts])	PASS	-
3.6	§2.1051 §27.53(h)	Conducted Spurious Emission	< 43+10log ₁₀ (P[Watts])	PASS	-
3.7	§2.1053 §24.238(a) §27.53(g) §27.53(h)	Radiated Spurious Emission	< 43+10log ₁₀ (P[Watts])	PASS	Under limit 4.05 dB at 1405.000 MHz
3.8	§2.1055 §24.235 §27.54	Frequency Stability Temperature & Voltage	< 2.5 ppm	PASS	-

1 General Description

1.1 Applicant

HTC Corporation

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

1.2 Manufacturer

HTC Corporation

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

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Smartphone
Model Name	PL80120
FCC ID	NM8PL80120
Sample 1	EUT with LCM 1 and Main Camera 1
Sample 2	EUT with LCM 2 and Main Camera 2
EUT supports Radios application	CDMA/EV-DO/LTE/ WLAN 11abgn / Bluetooth / NFC
EUT Stage	Production Unit

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

Product Specification subjective to this standard	
Tx Frequency	LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 12 : 699.7 MHz ~ 715.3 MHz
Rx Frequency	LTE Band 2 : 1805.7 MHz ~ 1879.3 MHz LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 12 : 729.7 MHz ~ 745.3 MHz
Bandwidth	1.4MHz/ 3MHz/ 5MHz/ 10MHz (Band 2) 1.4MHz/ 3MHz/ 5MHz/ 10MHz (Band 4) 1.4MHz/ 3MHz/ 5MHz/ 10MHz (Band 12)
Maximum Output Power to Antenna	LTE Band 2 : 23.40 dBm LTE Band 4 : 23.41 dBm LTE Band 12 : 23.60 dBm
Antenna Type	PIFA Antenna
Type of Modulation	QPSK / 16QAM

1.4 Emission Designator

FCC Rule	System	Type of Modulation	BW	Maximum ERP/EIRP (W)	Frequency Tolerance (% , Hz, ppm)	Emission Designator
Part 24	LTE Band 2	QPSK	1.4 MHz	0.0395	0.040 ppm	1M09G7D
Part 24	LTE Band 2	16QAM	1.4 MHz	0.0332	0.040 ppm	1M10D7W
Part 24	LTE Band 2	QPSK	3 MHz	0.0329	0.036 ppm	2M74G7D
Part 24	LTE Band 2	16QAM	3 MHz	0.0281	0.036 ppm	2M74D7W
Part 24	LTE Band 2	QPSK	5MHz	0.0350	0.039 ppm	4M52G7D
Part 24	LTE Band 2	16QAM	5MHz	0.0273	0.039 ppm	4M52D7W
Part 24	LTE Band 2	QPSK	10MHz	0.0343	0.036 ppm	9M16G7D
Part 24	LTE Band 2	16QAM	10MHz	0.0309	0.036 ppm	9M08D7W
Part 27	LTE Band 4	QPSK	1.4 MHz	0.0350	0.018 ppm	1M10G7D
Part 27	LTE Band 4	16QAM	1.4 MHz	0.0275	0.018 ppm	1M10D7W
Part 27	LTE Band 4	QPSK	3 MHz	0.0337	0.019 ppm	2M72G7D
Part 27	LTE Band 4	16QAM	3 MHz	0.0251	0.019 ppm	2M74D7W
Part 27	LTE Band 4	QPSK	5MHz	0.0340	0.021 ppm	4M50G7D
Part 27	LTE Band 4	16QAM	5MHz	0.0261	0.021 ppm	4M52D7W
Part 27	LTE Band 4	QPSK	10MHz	0.0347	0.019 ppm	9M12G7D
Part 27	LTE Band 4	16QAM	10MHz	0.0273	0.019 ppm	9M12D7W
Part 27	LTE Band 12	QPSK	1.4 MHz	0.0220	0.016 ppm	1M10G7D
Part 27	LTE Band 12	16QAM	1.4 MHz	0.0179	0.016 ppm	1M10D7W
Part 27	LTE Band 12	QPSK	3 MHz	0.0241	0.012 ppm	2M74G7D
Part 27	LTE Band 12	16QAM	3 MHz	0.0180	0.012 ppm	2M75D7W
Part 27	LTE Band 12	QPSK	5MHz	0.0181	0.010 ppm	4M50G7D
Part 27	LTE Band 12	16QAM	5MHz	0.0153	0.010 ppm	4M50 D7W
Part 27	LTE Band 12	QPSK	10MHz	0.0232	0.015 ppm	9M16G7D
Part 27	LTE Band 12	16QAM	10MHz	0.0174	0.015 ppm	9M08D7W

1.5 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	TH02-HY	03CH05-HY	TW1022/4086B-1

1.6 Applied Standards

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

- ♦ 47 CFR Part 2, 27
- ♦ ANSI / TIA / EIA-603-C-2004
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v01

Remark:

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

1.7 Ancillary Equipment List

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m

2 Test Configuration of Equipment Under Test

2.1 Test Mode

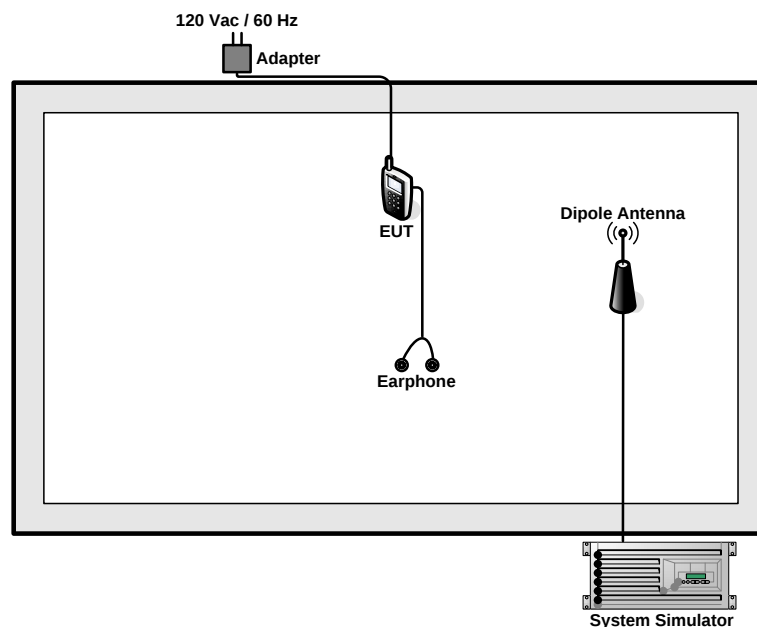
During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range.

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

Test Modes			
Band		Radiated TCs	Conducted TCs
LTE Band 2	BW 1.4MHz	■ LTE (RB Size 1, RB Offset 0) Link	■ LTE (RB Size 1, RB Offset 0) Link ■ LTE (RB Size 1, RB Offset 5) Link ■ LTE (RB Size 3, RB Offset 2) Link ■ LTE (RB Size 6, RB Offset 0) Link
	BW 3MHz	■ LTE (RB Size 1, RB Offset 0) Link	■ LTE (RB Size 1, RB Offset 0) Link ■ LTE (RB Size 1, RB Offset 14) Link ■ LTE (RB Size 8, RB Offset 4) Link ■ LTE (RB Size 15, RB Offset 0) Link
	BW 5MHz	■ LTE (RB Size 1, RB Offset 0) Link	■ LTE (RB Size 1, RB Offset 0) Link ■ LTE (RB Size 1, RB Offset 24) Link ■ LTE (RB Size 12, RB Offset 6) Link ■ LTE (RB Size 25, RB Offset 0) Link
	BW 10MHz	■ LTE (RB Size 1, RB Offset 0) Link	■ LTE (RB Size 1, RB Offset 0) Link ■ LTE (RB Size 1, RB Offset 49) Link ■ LTE (RB Size 25, RB Offset 13) Link ■ LTE (RB Size 50, RB Offset 0) Link
LTE Band 4	BW 1.4MHz	■ LTE (RB Size 1, RB Offset 0) Link	■ LTE (RB Size 1, RB Offset 0) Link ■ LTE (RB Size 1, RB Offset 5) Link ■ LTE (RB Size 3, RB Offset 2) Link ■ LTE (RB Size 6, RB Offset 0) Link
	BW 3MHz	■ LTE (RB Size 1, RB Offset 0) Link	■ LTE (RB Size 1, RB Offset 0) Link ■ LTE (RB Size 1, RB Offset 14) Link ■ LTE (RB Size 8, RB Offset 4) Link ■ LTE (RB Size 15, RB Offset 0) Link
	BW 5MHz	■ LTE (RB Size 1, RB Offset 0) Link	■ LTE (RB Size 1, RB Offset 0) Link ■ LTE (RB Size 1, RB Offset 24) Link ■ LTE (RB Size 12, RB Offset 6) Link ■ LTE (RB Size 25, RB Offset 0) Link
	BW 10MHz	■ LTE (RB Size 1, RB Offset 0) Link	■ LTE (RB Size 1, RB Offset 0) Link ■ LTE (RB Size 1, RB Offset 49) Link ■ LTE (RB Size 25, RB Offset 13) Link ■ LTE (RB Size 50, RB Offset 0) Link

Test Modes			
LTE Band 12	BW 1.4MHz	■ LTE (RB Size 1, RB Offset 0) Link	■ LTE (RB Size 1, RB Offset 0) Link ■ LTE (RB Size 1, RB Offset 5) Link ■ LTE (RB Size 3, RB Offset 2) Link ■ LTE (RB Size 6, RB Offset 0) Link
	BW 3MHz	■ LTE (RB Size 1, RB Offset 0) Link	■ LTE (RB Size 1, RB Offset 0) Link ■ LTE (RB Size 1, RB Offset 14) Link ■ LTE (RB Size 8, RB Offset 4) Link ■ LTE (RB Size 15, RB Offset 0) Link
	BW 5MHz	■ LTE (RB Size 1, RB Offset 0) Link	■ LTE (RB Size 1, RB Offset 0) Link ■ LTE (RB Size 1, RB Offset 24) Link ■ LTE (RB Size 12, RB Offset 6) Link ■ LTE (RB Size 25, RB Offset 0) Link
	BW 10MHz	■ LTE (RB Size 1, RB Offset 0) Link	■ LTE (RB Size 1, RB Offset 0) Link ■ LTE (RB Size 1, RB Offset 49) Link ■ LTE (RB Size 25, RB Offset 13) Link ■ LTE (RB Size 50, RB Offset 0) Link
Remark: All the tests were performed with Sample 1.			

2.2 Connection Diagram of Test System



3 Test Result

3.1 Conducted Output Power Measurement

3.1.1 Description of the Conducted Output Power Measurement

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

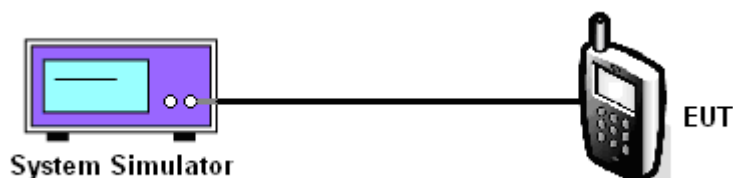
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

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

3.1.4 Test Setup



3.1.5 Test Result of Conducted Output Power

Operation Band	Band Width	Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watts)	PAPR (dB)	Mod / RB (Size – Offset)
LTE Band 2	1.4MHz	QPSK	18607	1850.7	23.04	0.20	4.49	QPSK 1-0
			18900	1880.0	23.08	0.20	4.49	QPSK 1-0
			19193	1909.3	23.04	0.20	4.49	QPSK 1-0
		16QAM	18607	1850.7	22.31	0.17	5.45	16QAM 1-0
			18900	1880.0	22.18	0.17	5.45	16QAM 1-0
			19193	1909.3	22.30	0.17	5.45	16QAM 3-2
	3MHz	QPSK	18615	1851.5	22.92	0.20	5.06	QPSK 1-14
			18900	1880.0	23.02	0.20	5.06	QPSK 1-0
			19185	1908.5	23.02	0.20	5.06	QPSK 1-0
		16QAM	18615	1851.5	22.05	0.16	5.90	16QAM 1-0
			18900	1880.0	22.02	0.16	5.90	16QAM 1-0
			19185	1908.5	22.19	0.17	5.90	16QAM 1-0
	5MHz	QPSK	18625	1852.5	22.61	0.18	4.71	QPSK 1-0
			18900	1880.0	23.00	0.20	4.71	QPSK 1-0
			19175	1907.5	23.00	0.20	4.71	QPSK 1-0
		16QAM	18625	1852.5	22.00	0.16	5.71	16QAM 1-0
			18900	1880.0	21.91	0.16	5.71	16QAM 1-0
			19175	1907.5	22.22	0.17	5.71	16QAM 1-0
	10MHz	QPSK	18650	1855.0	23.13	0.21	5.06	QPSK 1-49
			18900	1880.0	23.40	0.22	5.06	QPSK 1-0
			19150	1905.0	23.13	0.21	5.06	QPSK 1-49
		16QAM	18650	1855.0	22.15	0.16	6.19	16QAM 1-0
			18900	1880.0	22.44	0.18	6.19	16QAM 1-0
			19150	1905.0	22.23	0.17	6.19	16QAM 1-49



Operation Band	Band Width	Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watts)	PAPR (dB)	Mod / RB (Size – Offset)
LTE Band 4	1.4MHz	QPSK	19957	1710.7	23.38	0.22	4.07	QPSK 1-0
			20175	1732.5	23.38	0.22	4.07	QPSK 1-0
			20393	1754.3	23.32	0.21	4.07	QPSK 1-5
		16QAM	19957	1710.7	22.39	0.17	5.03	16QAM 1-5
			20175	1732.5	22.35	0.17	5.03	16QAM 1-0
			20393	1754.3	22.30	0.17	5.03	16QAM 1-0
	3MHz	QPSK	19965	1711.5	23.36	0.22	4.74	QPSK 1-14
			20175	1732.5	23.39	0.22	4.74	QPSK 1-14
			20385	1753.5	23.32	0.21	4.74	QPSK 1-14
		16QAM	19965	1711.5	22.39	0.17	5.54	16QAM 1-0
			20175	1732.5	22.37	0.17	5.54	16QAM 1-14
			20385	1753.5	22.01	0.16	5.54	16QAM 1-0
	5MHz	QPSK	19975	1712.5	23.28	0.21	4.26	QPSK 1-24
			20175	1732.5	23.38	0.22	4.26	QPSK 1-24
			20375	1752.5	23.35	0.22	4.26	QPSK 1-0
		16QAM	19975	1712.5	22.34	0.17	5.13	16QAM 1-0
			20175	1732.5	22.33	0.17	5.13	16QAM 1-0
			20375	1752.5	22.32	0.17	5.13	16QAM 1-24
	10MHz	QPSK	20000	1715.0	23.28	0.21	4.84	QPSK 1-0
			20175	1732.5	23.41	0.22	4.84	QPSK 1-0
			20350	1750.0	23.32	0.21	4.84	QPSK 1-0
		16QAM	20000	1715.0	22.30	0.17	5.61	16QAM 1-0
			20175	1732.5	22.40	0.17	5.61	16QAM 1-0
			20350	1750.0	22.34	0.17	5.61	16QAM 1-0



Operation Band	Band Width	Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watts)	PAPR (dB)	Mod / RB (Size – Offset)
LTE Band 12	1.4MHz	QPSK	23017	699.7	23.52	0.22	4.90	QPSK 1-0
			23095	707.5	23.54	0.23	4.90	QPSK 1-0
			23173	715.3	23.50	0.22	4.90	QPSK 1-0
		16QAM	23017	699.7	22.88	0.19	6.31	16QAM 1-0
			23095	707.5	22.84	0.19	6.31	16QAM 1-5
			23173	715.3	22.79	0.19	6.31	16QAM 1-5
	3MHz	QPSK	23025	700.5	23.50	0.22	5.58	QPSK 1-0
			23095	707.5	23.51	0.22	5.58	QPSK 1-0
			23165	714.5	23.44	0.22	5.58	QPSK 1-14
		16QAM	23025	700.5	22.74	0.19	6.54	16QAM 1-0
			23095	707.5	22.88	0.19	6.54	16QAM 1-14
			23165	714.5	22.78	0.19	6.54	16QAM 1-0
	5MHz	QPSK	23035	701.5	23.50	0.22	5.58	QPSK 1-24
			23095	707.5	23.53	0.23	5.58	QPSK 1-24
			23155	713.5	23.52	0.22	5.58	QPSK 1-0
		16QAM	23035	701.5	22.86	0.19	6.38	16QAM 1-0
			23095	707.5	22.84	0.19	6.38	16QAM 1-0
			23155	713.5	22.82	0.19	6.38	16QAM 1-24
	10MHz	QPSK	23060	704.0	23.42	0.22	5.58	QPSK 1-49
			23095	707.5	23.60	0.23	5.58	QPSK 1-0
			23130	711.0	23.39	0.22	5.58	QPSK 1-0
		16QAM	23060	704.0	22.84	0.19	6.51	16QAM 1-49
			23095	707.5	22.89	0.19	6.51	16QAM 1-0
			23130	711.0	22.72	0.19	6.51	16QAM 1-49

3.2 Peak-to-Average Ratio

3.2.1 Description of the PAR Measurement

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

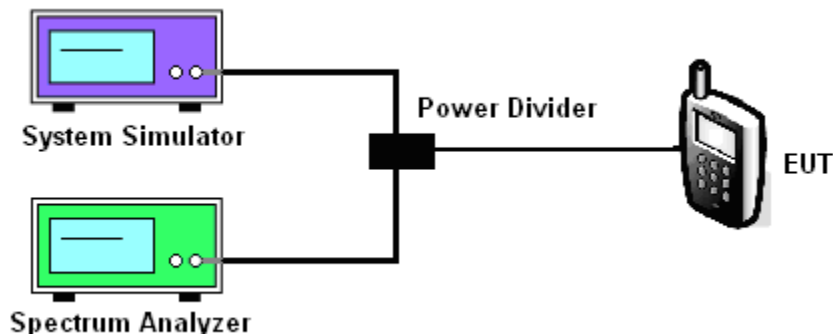
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. For GSM/EGPRS operating modes:
 - a. Set the RBW = 1MHz, VBW = 1MHz, Peak detector in spectrum analyzer.
 - b. Set EUT in maximum power output, and triggered the burst signal.
 - c. Measured respectively the Peak level and Mean level, and the deviation was recorded as Peak to Average Ratio.
3. For UMTS operating modes:
 - a. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
 - b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.

3.2.4 Test Setup



3.2.5 Test Result of Peak-to-Average Ratio

Modes	LTE Band 2			
BW / Mod.	1.4MHz / QPSK	1.4MHz / 16QAM	3MHz / QPSK	3MHz / 16QAM
Peak-to-Average Ratio (dB)	4.49	5.45	5.06	5.90
BW / Mod.	5MHz / QPSK	5MHz / 16QAM	10MHz / QPSK	10MHz / 16QAM
Peak-to-Average Ratio (dB)	4.71	5.71	5.06	6.19

Modes	LTE Band 4			
BW / Mod.	1.4MHz / QPSK	1.4MHz / 16QAM	3MHz / QPSK	3MHz / 16QAM
Peak-to-Average Ratio (dB)	4.07	5.03	4.74	5.54
BW / Mod.	5MHz / QPSK	5MHz / 16QAM	10MHz / QPSK	10MHz / 16QAM
Peak-to-Average Ratio (dB)	4.26	5.13	4.84	5.61

Modes	LTE Band 12			
BW / Mod.	1.4MHz / QPSK	1.4MHz / 16QAM	3MHz / QPSK	3MHz / 16QAM
Peak-to-Average Ratio (dB)	4.90	6.31	5.58	6.54
BW / Mod.	5MHz / QPSK	5MHz / 16QAM	10MHz / QPSK	10MHz / 16QAM
Peak-to-Average Ratio (dB)	5.58	6.38	5.58	6.51

Note:

The maximum RB configurations of the PAPR summary as below:

BW1.4M RB setting : RB Size 6, RB offset 0

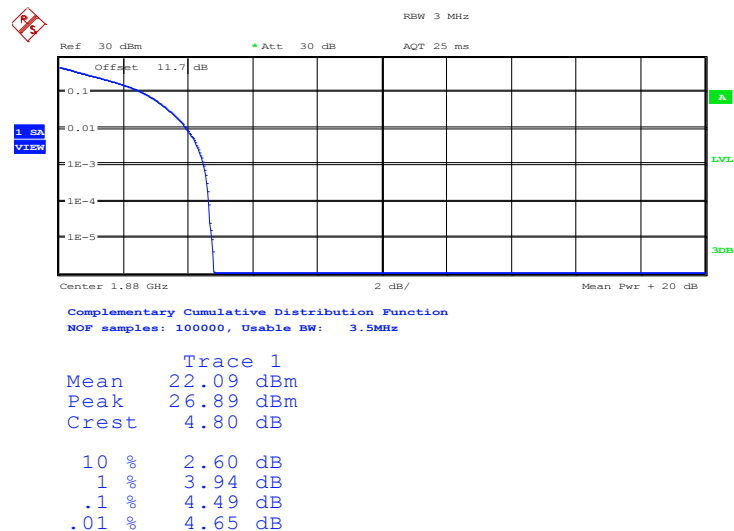
BW3.0M RB setting : RB Size 15, RB offset 0

BW5.0M RB setting : RB Size 25, RB offset 0

BW10M RB setting : RB Size 50, RB offset 0

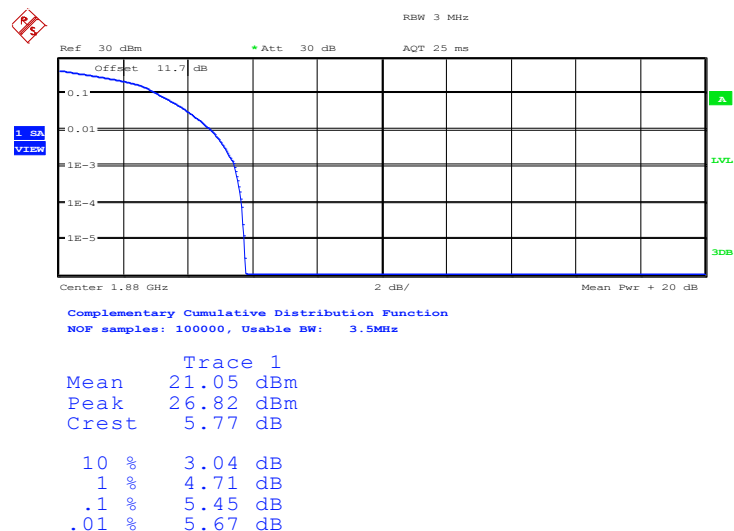
3.2.6 Peak to Average Power Ratio

Peak-to-Average Ratio on LTE Band 2 1.4MHz / QPSK



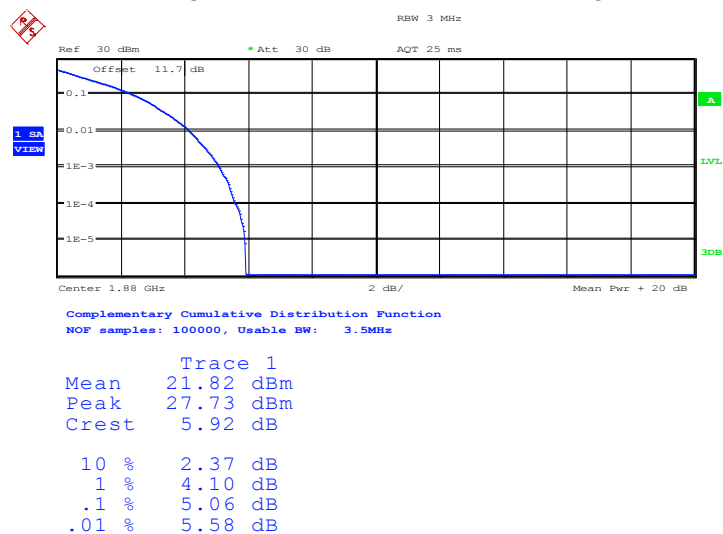
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Peak-to-Average Ratio on LTE Band 2 1.4MHz / 16QAM



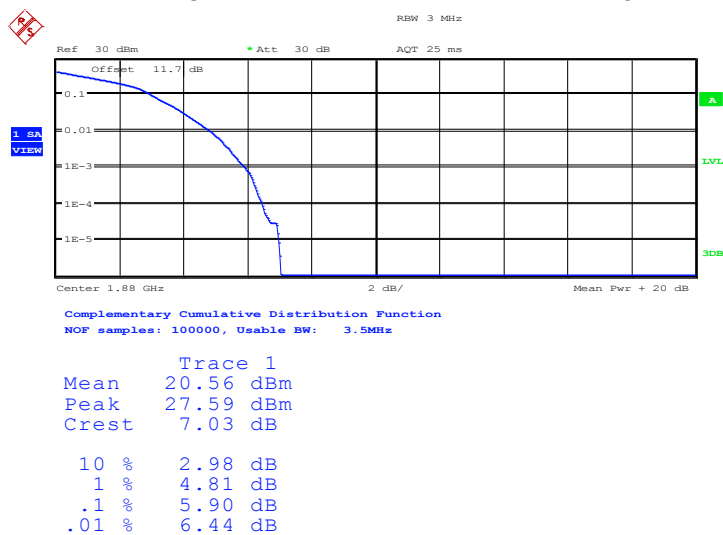
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Peak-to-Average Ratio on LTE Band 2 3MHz / QPSK



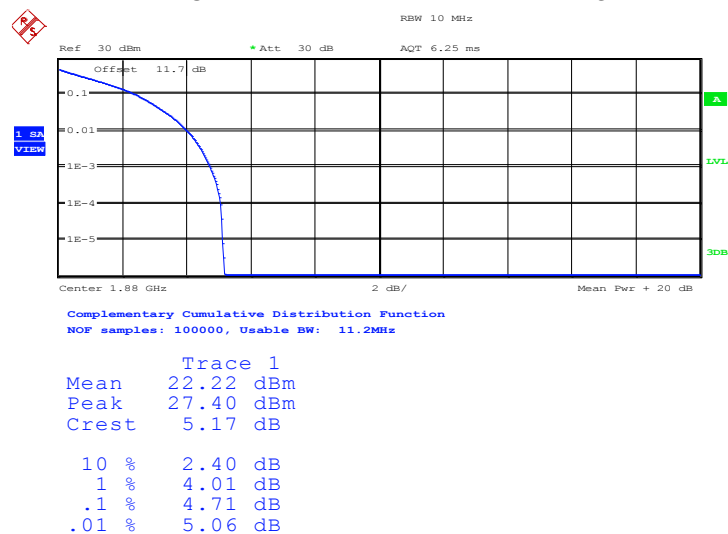
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Peak-to-Average Ratio on LTE Band 2 3MHz / 16QAM



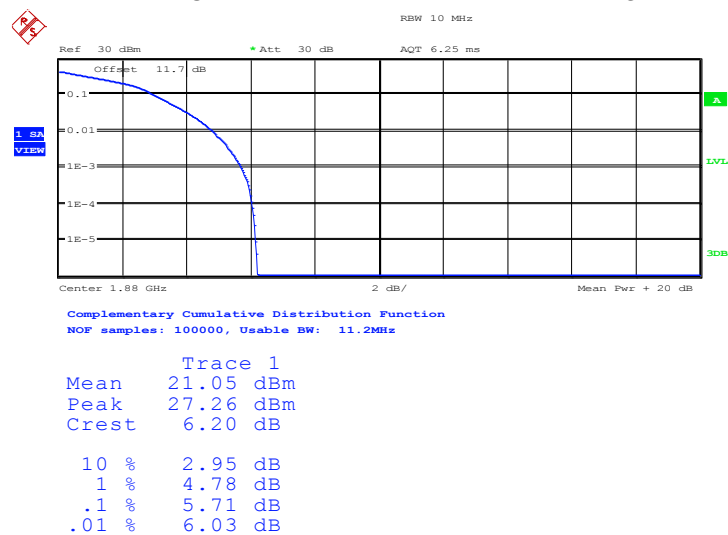
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Peak-to-Average Ratio on LTE Band 2 5MHz / QPSK



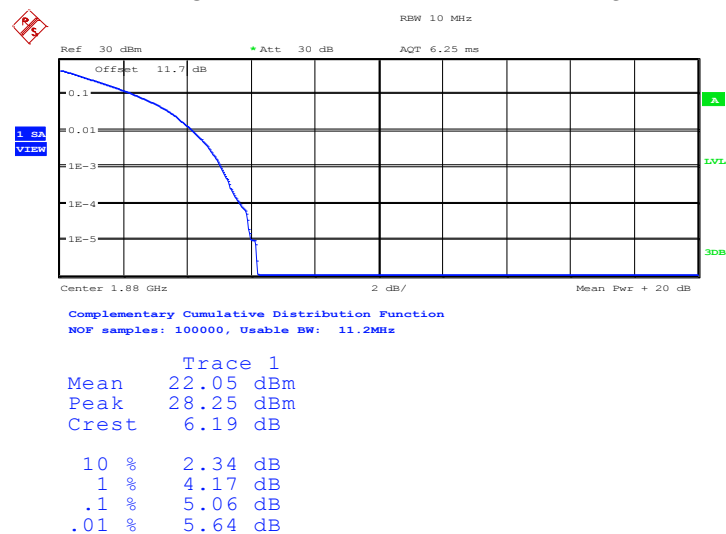
Date: 17.OCT.2012 23:29:20

Peak-to-Average Ratio on LTE Band 2 5MHz / 16QAM



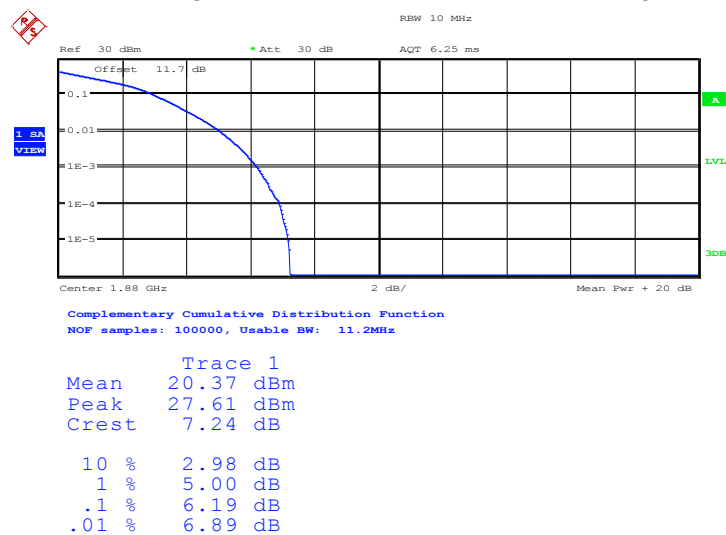
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Peak-to-Average Ratio on LTE Band 2 10MHz / QPSK



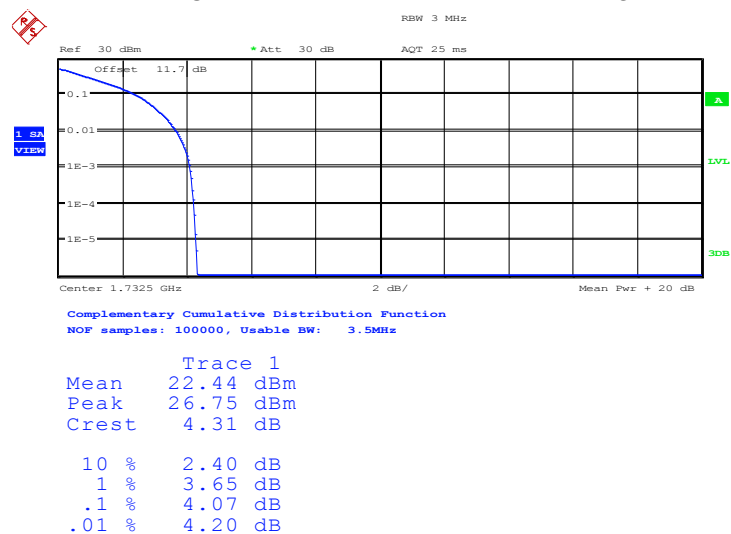
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Peak-to-Average Ratio on LTE Band 2 10MHz / 16QAM



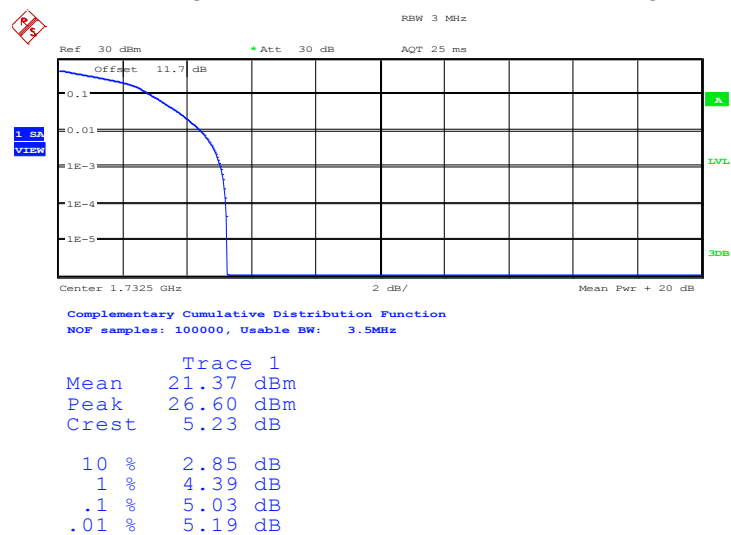
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Peak-to-Average Ratio on LTE Band 4 1.4MHz / QPSK



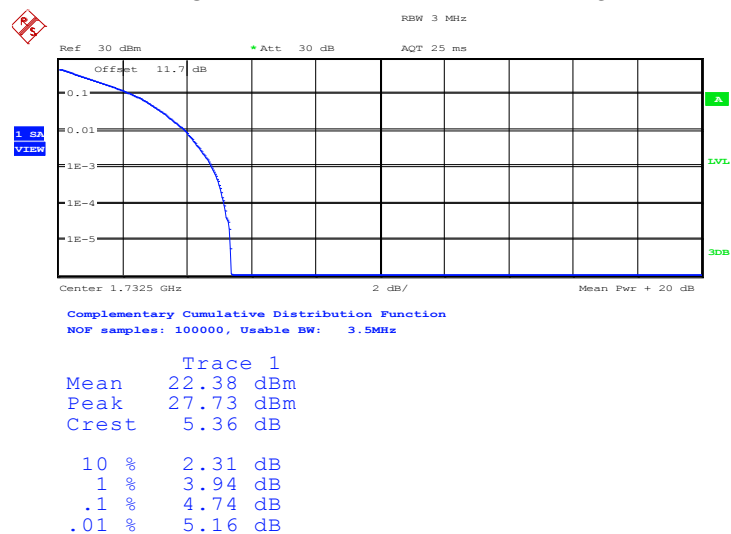
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Peak-to-Average Ratio on LTE Band 4 1.4MHz / 16QAM



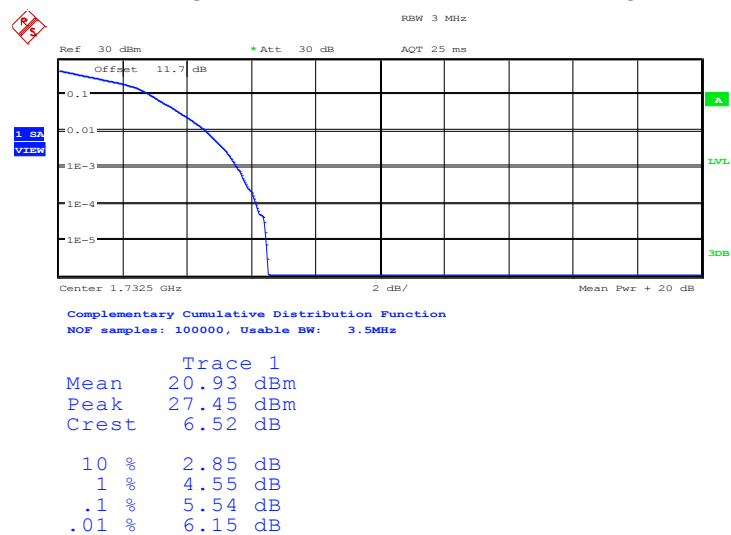
Date: 17.OCT.2012 23:09:19

Peak-to-Average Ratio on LTE Band 4 3MHz / QPSK



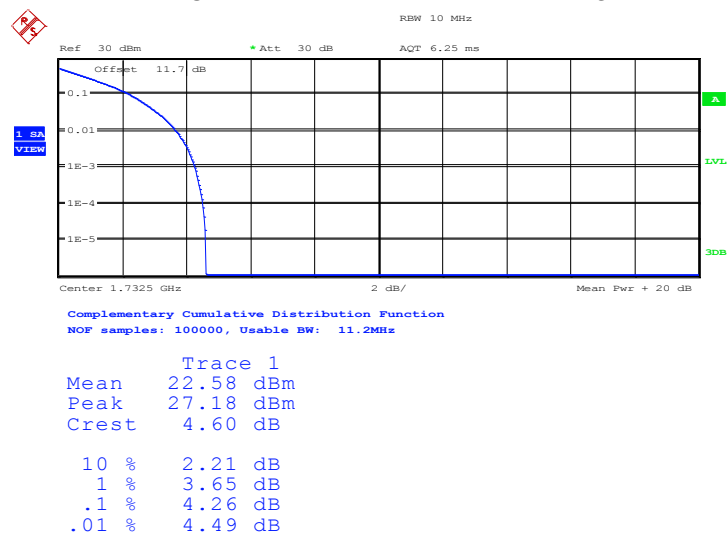
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Peak-to-Average Ratio on LTE Band 4 3MHz / 16QAM



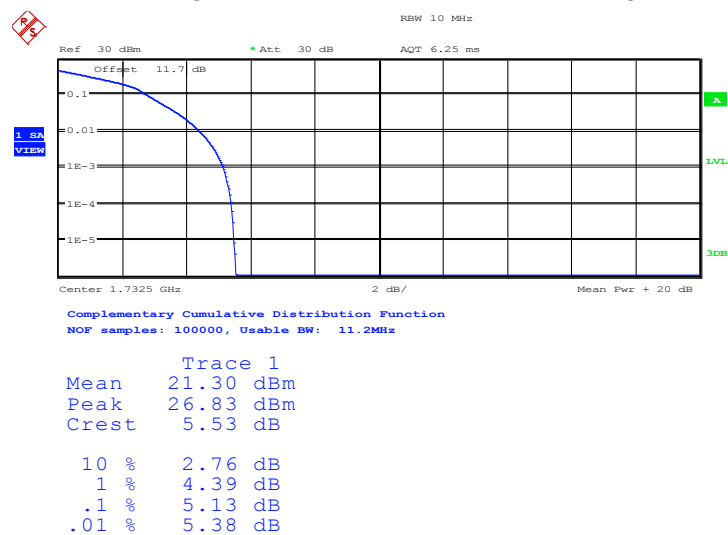
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Peak-to-Average Ratio on LTE Band 4 5MHz / QPSK



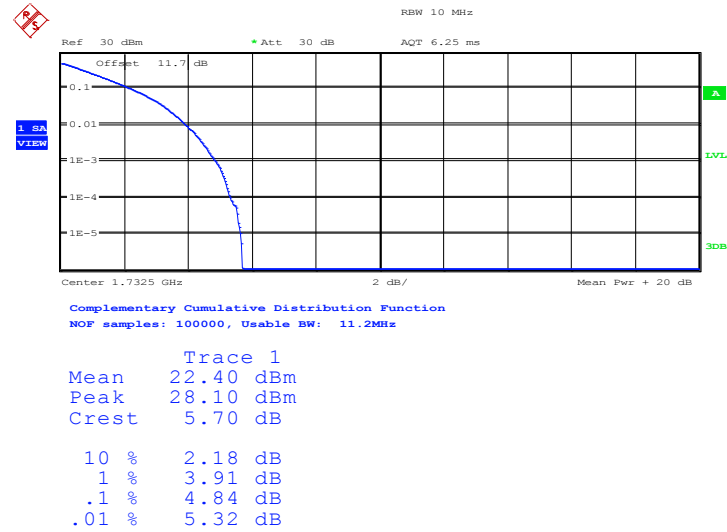
Date: 17.OCT.2012 23:18:59

Peak-to-Average Ratio on LTE Band 4 5MHz / 16QAM



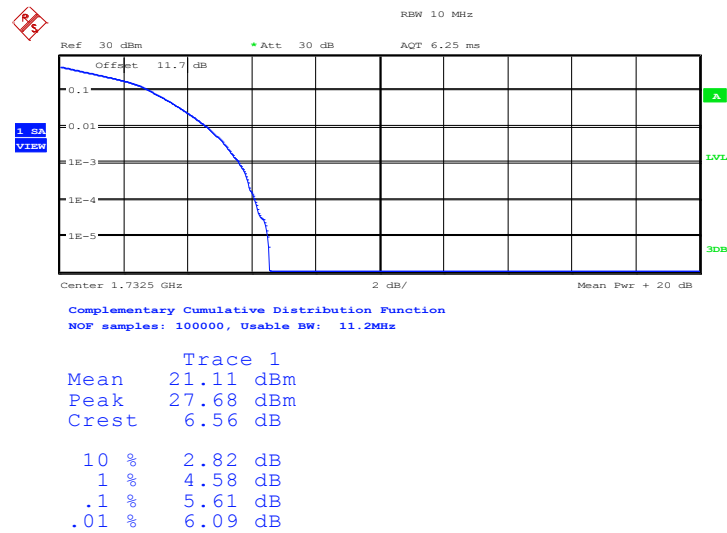
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Peak-to-Average Ratio on LTE Band 4 10MHz / QPSK



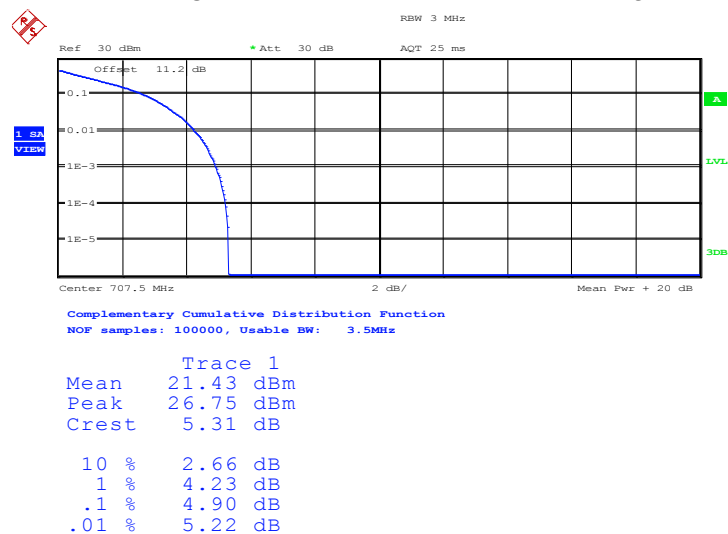
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Peak-to-Average Ratio on LTE Band 4 10MHz / 16QAM



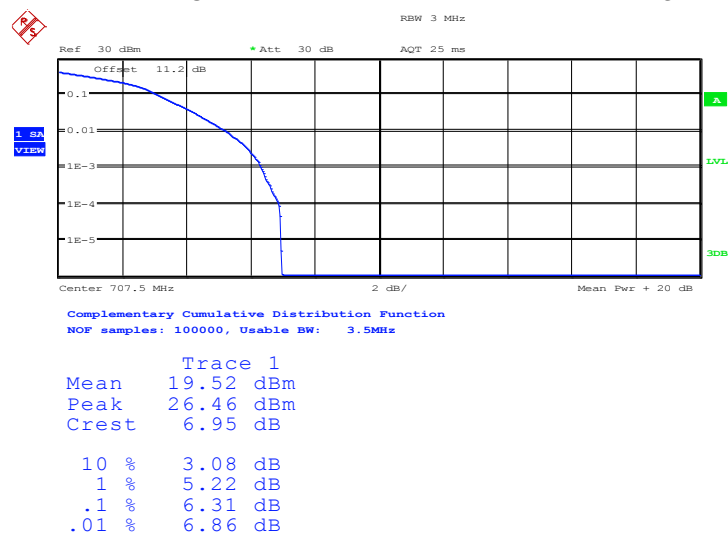
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Peak-to-Average Ratio on LTE Band 12 1.4MHz / QPSK



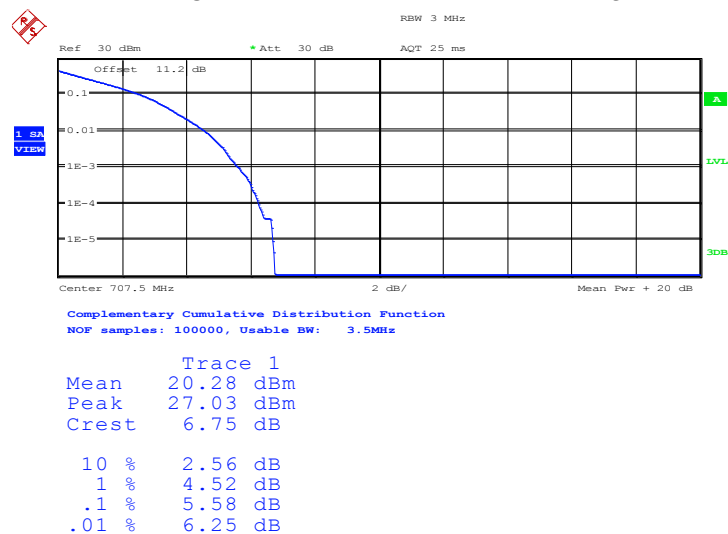
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Peak-to-Average Ratio on LTE Band 12 1.4MHz / 16QAM



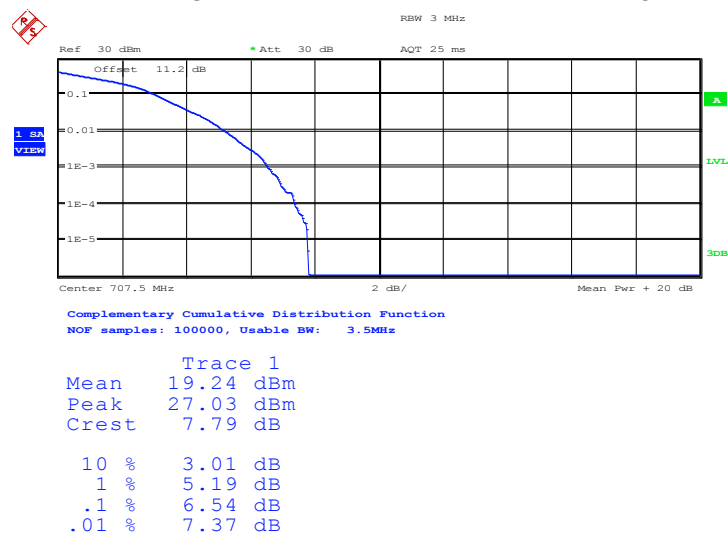
Date: 17.OCT.2012 23:00:10

Peak-to-Average Ratio on LTE Band 12 3MHz / QPSK



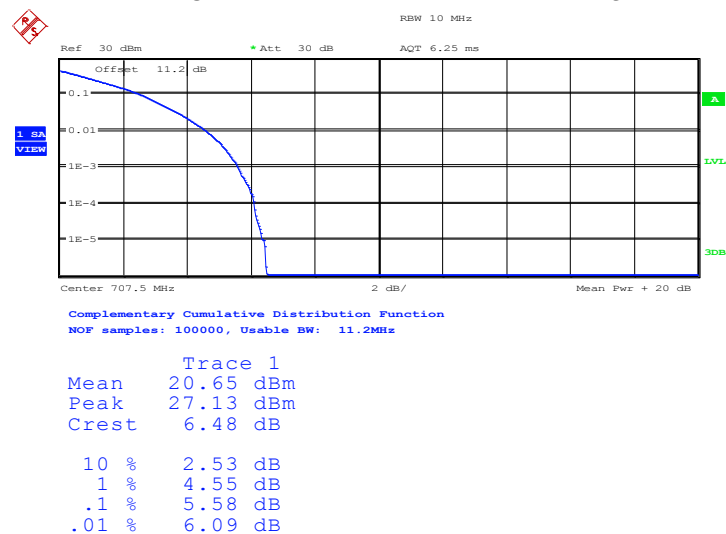
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Peak-to-Average Ratio on LTE Band 12 3MHz / 16QAM



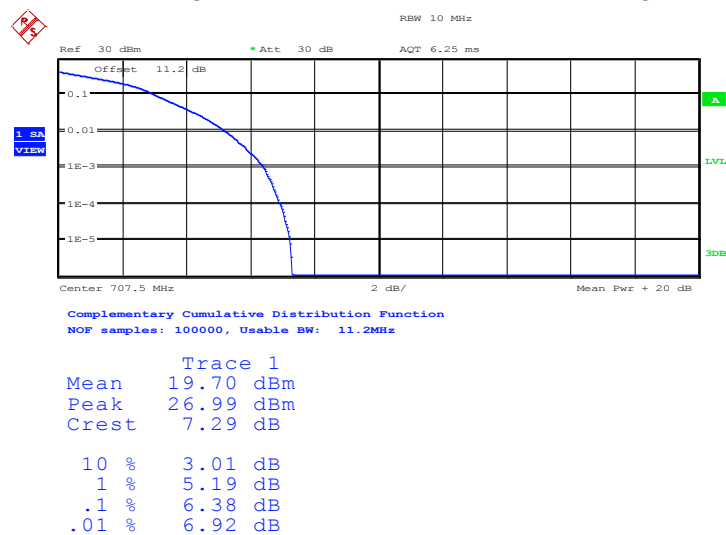
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Peak-to-Average Ratio on LTE Band 12 5MHz / QPSK



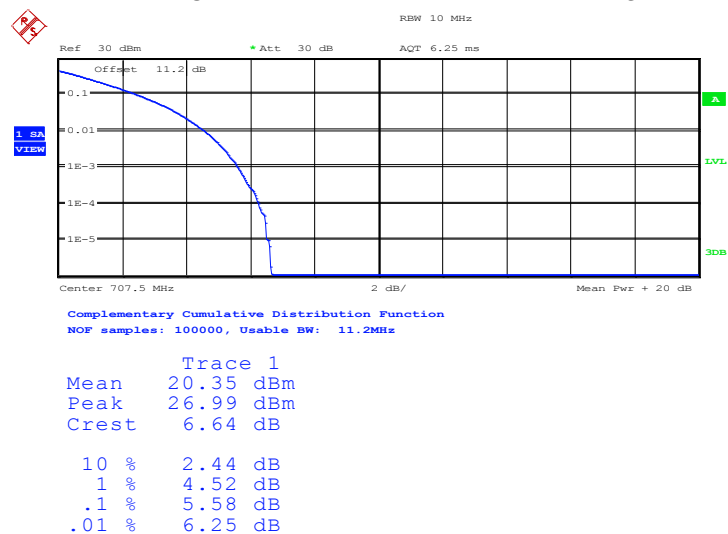
Date: 17.OCT.2012 22:47:06

Peak-to-Average Ratio on LTE Band 12 5MHz / 16QAM



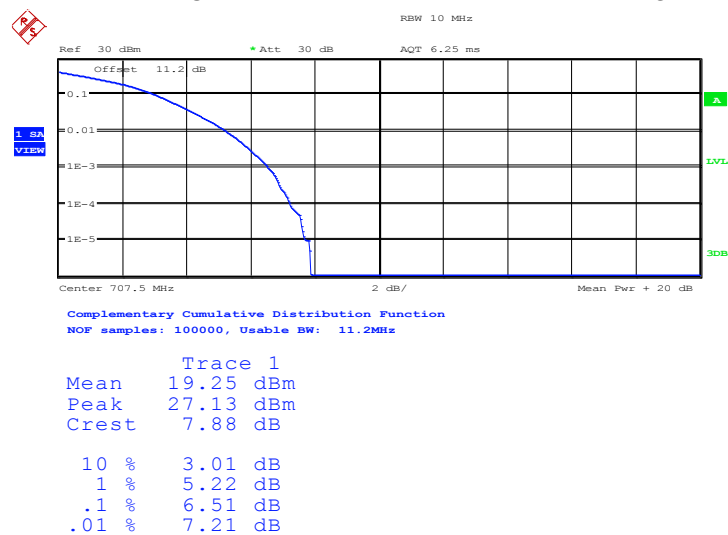
Date: 17.OCT.2012 22:48:19

Peak-to-Average Ratio on LTE Band 12 10MHz / QPSK



Date: 17.OCT.2012 22:41:46

Peak-to-Average Ratio on LTE Band 12 10MHz / 16QAM



Date: 17.OCT.2012 22:44:10

3.3 Effective Radiated Power and Equivalent Isotropic Radiated Power Measurement

3.3.1 Description of the ERP/EIRP Measurement

Effective radiated power output measurements by substitution method according to ANSI / TIA / EIA-603-C-2004, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v01. Mobile and portable (hand-held) stations operating are limited to average ERP of 3 watts with LTE band 12.

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

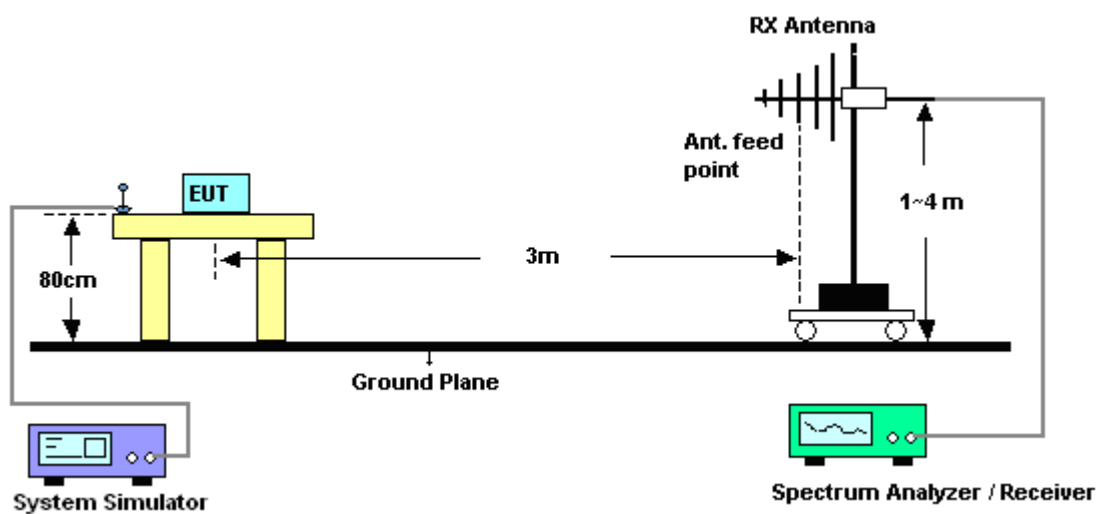
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

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

3.3.4 Test Setup



3.3.5 Test Result of ERP/EIRP

LTE Band 2 Radiated Power EIRP for BW 1.4MHz (QPSK, 1RB Size, RB Offset 0)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.70	-26.55	40.7	14.15	0.0260
1880.00	-25.94	41.91	15.97	0.0395
1909.30	-27.34	41.73	14.39	0.0275
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.70	-32.57	42.78	10.21	0.0105
1880.00	-32.36	43.75	11.39	0.0138
1909.30	-32.54	43.06	10.52	0.0113

LTE Band 2 Radiated Power EIRP for BW 1.4MHz (16QAM, 1RB Size, RB Offset 0)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.70	-27.70	40.7	13.00	0.0200
1880.00	-26.70	41.91	15.21	0.0332
1909.30	-28.43	41.73	13.30	0.0214
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.70	-33.32	42.78	9.46	0.0088
1880.00	-33.04	43.75	10.71	0.0118
1909.30	-33.36	43.06	9.70	0.0093

LTE Band 2 Radiated Power EIRP for BW 3MHz (QPSK, 1RB Size, RB Offset 0)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1851.50	-26.64	40.4	13.76	0.0238
1880.00	-26.74	41.91	15.17	0.0329
1908.50	-26.63	41.59	14.96	0.0313
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1851.50	-31.77	42.69	10.92	0.0124
1880.00	-31.66	43.75	12.09	0.0162
1908.50	-31.07	43.02	11.95	0.0157

LTE Band 2 Radiated Power EIRP for BW 3MHz (16QAM, 1RB Size, RB Offset 0)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1851.50	-27.45	40.4	12.95	0.0197
1880.00	-27.42	41.91	14.49	0.0281
1908.50	-27.59	41.59	14.00	0.0251
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1851.50	-32.68	42.69	10.01	0.0100
1880.00	-32.57	43.75	11.18	0.0131
1908.50	-32.43	43.02	10.59	0.0115

LTE Band 2 Radiated Power EIRP for BW 5MHz (QPSK, 1RB Size, RB Offset 0)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1852.50	-27.27	40.40	13.13	0.0206
1880.00	-26.47	41.91	15.44	0.0350
1907.50	-27.35	41.59	14.24	0.0265
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1852.50	-32.23	42.69	10.46	0.0111
1880.00	-31.77	43.75	11.98	0.0158
1907.50	-31.76	43.02	11.26	0.0134

LTE Band 2 Radiated Power EIRP for BW 5MHz (16QAM, 1RB Size, RB Offset 24)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1852.50	-28.13	40.40	12.27	0.0169
1880.00	-27.55	41.91	14.36	0.0273
1907.50	-28.00	41.59	13.59	0.0229
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1852.50	-32.70	42.69	9.99	0.0100
1880.00	-32.03	43.75	11.72	0.0149
1907.50	-32.16	43.02	10.86	0.0122

LTE Band 2 Radiated Power EIRP for BW 10MHz (QPSK, 1RB Size, RB Offset 0)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1855.00	-26.88	40.70	13.82	0.0241
1880.00	-26.56	41.91	15.35	0.0343
1905.00	-27.54	41.73	14.19	0.0262
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1855.00	-31.74	42.78	11.04	0.0127
1880.00	-31.46	43.75	12.29	0.0169
1905.00	-31.88	43.06	11.18	0.0131

LTE Band 2 Radiated Power EIRP for BW 10MHz (16QAM, 1RB Size, RB Offset 49)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1855.00	-27.43	40.70	13.27	0.0212
1880.00	-27.01	41.91	14.90	0.0309
1905.00	-27.83	41.73	13.90	0.0245
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1855.00	-32.46	42.78	10.32	0.0108
1880.00	-32.37	43.75	11.38	0.0137
1905.00	-32.30	43.06	10.76	0.0119

LTE Band 4 Radiated Power EIRP for BW 1.4MHz (QPSK, 1RB Size, RB Offset 0)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1710.70	-24.23	39.33	15.10	0.0324
1732.50	-24.48	39.86	15.38	0.0345
1754.30	-24.47	39.91	15.44	0.0350
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1710.70	-32.64	42.9	10.26	0.0106
1732.50	-32.04	42.23	10.19	0.0104
1754.30	-31.33	41.7	10.37	0.0109

LTE Band 4 Radiated Power EIRP for BW 1.4MHz (16QAM, 1RB Size, RB Offset 5)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1710.70	-25.44	39.33	13.89	0.0245
1732.50	-25.61	39.86	14.25	0.0266
1754.30	-25.52	39.91	14.39	0.0275
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1710.70	-33.94	42.90	8.96	0.0079
1732.50	-33.09	42.23	9.14	0.0082
1754.30	-32.44	41.70	9.26	0.0084

LTE Band 4 Radiated Power EIRP for BW 3MHz (QPSK, 1RB Size, RB Offset 0)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1711.50	-24.75	39.36	14.61	0.0289
1732.50	-24.78	39.86	15.08	0.0322
1753.50	-24.61	39.88	15.27	0.0337
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1711.50	-33.00	42.85	9.85	0.0097
1732.50	-32.11	42.23	10.12	0.0103
1753.50	-31.53	41.66	10.13	0.0103

LTE Band 4 Radiated Power EIRP for BW 3MHz (16QAM, 1RB Size, RB Offset 0)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1711.50	-25.69	39.36	13.67	0.0233
1732.50	-25.92	39.86	13.94	0.0248
1753.50	-25.89	39.88	13.99	0.0251
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1711.50	-33.98	42.85	8.87	0.0077
1732.50	-33.30	42.23	8.93	0.0078
1753.50	-32.64	41.66	9.02	0.0080

LTE Band 4 Radiated Power EIRP for BW 5MHz (QPSK, 1RB Size, RB Offset 0)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1712.50	-24.73	39.39	14.66	0.0292
1732.50	-24.67	39.86	15.19	0.0330
1752.50	-24.52	39.84	15.32	0.0340
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1712.50	-33.32	42.83	9.51	0.0089
1732.50	-31.97	42.23	10.26	0.0106
1752.50	-31.01	41.64	10.63	0.0116

LTE Band 4 Radiated Power EIRP for BW 5MHz (16QAM, 1RB Size, RB Offset 24)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1712.50	-25.98	39.39	13.41	0.0219
1732.50	-25.82	39.86	14.04	0.0254
1752.50	-25.67	39.84	14.17	0.0261
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1712.50	-34.55	42.83	8.28	0.0067
1732.50	-33.18	42.23	9.05	0.0080
1752.50	-32.43	41.64	9.21	0.0083

LTE Band 4 Radiated Power EIRP for BW 10MHz (QPSK, 1RB Size, RB Offset 0)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1715.00	-25.21	39.43	14.22	0.0264
1732.50	-24.90	39.86	14.96	0.0313
1750.00	-24.37	39.77	15.40	0.0347
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1715.00	-33.07	42.36	9.29	0.0085
1732.50	-32.43	42.23	9.80	0.0095
1750.00	-31.67	41.69	10.02	0.0100

LTE Band 4 Radiated Power EIRP for BW 10MHz (16QAM, 1RB Size, RB Offset 0)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1715.00	-26.21	39.43	13.22	0.0210
1732.50	-25.93	39.86	13.93	0.0247
1750.00	-25.41	39.77	14.36	0.0273
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1715.00	-33.94	42.36	8.42	0.0070
1732.50	-33.46	42.23	8.77	0.0075
1750.00	-32.39	41.69	9.30	0.0085

LTE Band 12 Radiated Power ERP for BW 1.4MHz (QPSK, 1RB Size, RB Offset 0)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
699.70	-15.41	30.76	13.20	0.0209
707.50	-15.49	31.07	13.43	0.0220
715.30	-15.59	31.09	13.35	0.0216
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
699.70	-23.22	34.86	9.49	0.0089
707.50	-22.51	34.63	9.97	0.0099
715.30	-22.44	34.39	9.80	0.0095

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

LTE Band 12 Radiated Power ERP for BW 1.4MHz (16QAM, 1RB Size, RB Offset 0)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
699.70	-16.48	30.76	12.13	0.0163
707.50	-16.85	31.07	12.07	0.0161
715.30	-16.42	31.09	12.52	0.0179
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
699.70	-24.20	34.86	8.51	0.0071
707.50	-24.41	34.63	8.07	0.0064
715.30	-23.19	34.39	9.05	0.0080

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

LTE Band 12 Radiated Power ERP for BW 3MHz (QPSK, 1RB Size, RB Offset 0)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
700.50	-15.58	30.97	13.24	0.0211
707.50	-15.10	31.07	13.82	0.0241
714.50	-15.85	30.88	12.88	0.0194
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
700.50	-23.05	34.69	9.49	0.0089
707.50	-22.64	34.63	9.84	0.0096
714.50	-22.97	34.5	9.38	0.0087

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

LTE Band 12 Radiated Power ERP for BW 3MHz (16QAM, 1RB Size, RB Offset 0)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
700.50	-16.62	30.97	12.20	0.0166
707.50	-17.16	31.07	11.76	0.0150
714.50	-16.17	30.88	12.56	0.0180
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
700.50	-23.80	34.69	8.74	0.0075
707.50	-23.61	34.63	8.87	0.0077
714.50	-23.63	34.5	8.72	0.0074

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

LTE Band 12 Radiated Power ERP for BW 5MHz (QPSK, 1RB Size, RB Offset 0)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
701.50	-16.44	30.97	12.38	0.0173
707.50	-16.73	31.07	12.19	0.0166
713.50	-16.15	30.88	12.58	0.0181
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
701.50	-23.42	34.69	9.12	0.0082
707.50	-22.97	34.63	9.51	0.0089
713.50	-22.78	34.5	9.57	0.0091

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

LTE Band 12 Radiated Power ERP for BW 5MHz (16QAM, 1RB Size, RB Offset 24)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
701.50	-16.97	30.97	11.85	0.0153
707.50	-17.23	31.07	11.69	0.0148
713.50	-16.88	30.88	11.85	0.0153
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
701.50	-24.15	34.69	8.39	0.0069
707.50	-23.66	34.63	8.82	0.0076
713.50	-23.71	34.5	8.64	0.0073

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

LTE Band 12 Radiated Power ERP for BW 10MHz (QPSK, 1RB Size, RB Offset 0)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
704.00	-16.63	30.97	12.19	0.0166
707.50	-15.26	31.07	13.66	0.0232
711.00	-15.67	30.88	13.06	0.0202
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
704.00	-23.24	34.69	9.30	0.0085
707.50	-22.33	34.63	10.15	0.0104
711.00	-22.57	34.5	9.78	0.0095

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

LTE Band 12 Radiated Power ERP for BW 10MHz (16QAM, 1RB Size, RB Offset 0)				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
704.00	-17.29	30.97	11.53	0.0142
707.50	-16.51	31.07	12.41	0.0174
711.00	-17.01	30.88	11.72	0.0149
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
704.00	-23.84	34.69	8.70	0.0074
707.50	-22.96	34.63	9.52	0.0090
711.00	-23.12	34.5	9.23	0.0084

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

3.4 Occupied Bandwidth

3.4.1 Description of Occupied Bandwidth Measurement

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

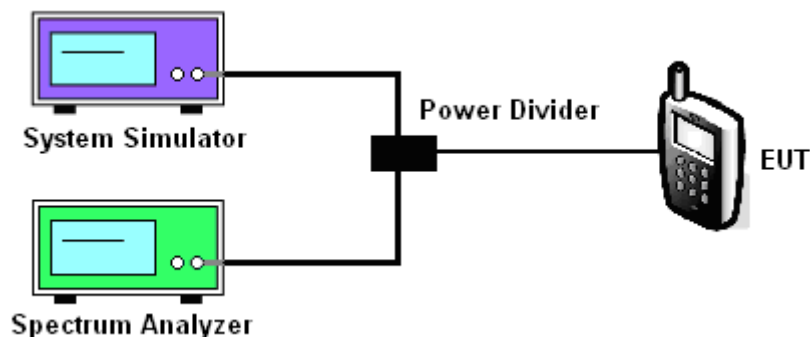
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

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

3.4.4 Test Setup



3.4.5 Test Result of Occupied Bandwidth

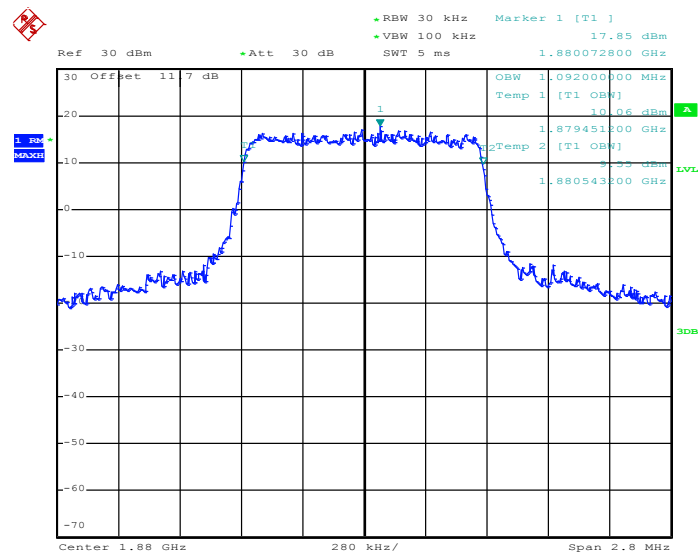
Modes	LTE Band 2			
BW / Modulation	1.4MHz / QPSK	1.4MHz / 16QAM	3MHz / QPSK	3MHz / 16QAM
99% OBW (MHz)	1.09	1.10	2.74	2.74
26dB BW (MHz)	1.30	1.28	3.06	3.12
BW / Modulation	5MHz / QPSK	5MHz / 16QAM	10MHz / QPSK	10MHz / 16QAM
99% OBW (MHz)	4.52	4.52	9.16	9.08
26dB BW (MHz)	5.00	4.92	10.04	10.00

Modes	LTE Band 4			
BW / Modulation	1.4MHz / QPSK	1.4MHz / 16QAM	3MHz / QPSK	3MHz / 16QAM
99% OBW (MHz)	1.10	1.10	2.72	2.74
26dB BW (MHz)	1.29	1.30	3.11	3.11
BW / Modulation	5MHz / QPSK	5MHz / 16QAM	10MHz / QPSK	10MHz / 16QAM
99% OBW (MHz)	4.50	4.52	9.12	9.12
26dB BW (MHz)	5.08	5.00	10.16	10.08

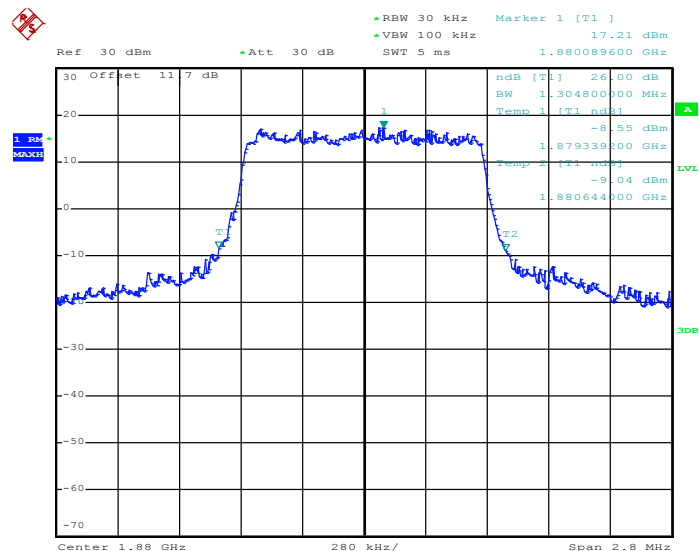
Modes	LTE Band 12			
BW / Modulation	1.4MHz / QPSK	1.4MHz / 16QAM	3MHz / QPSK	3MHz / 16QAM
99% OBW (MHz)	1.10	1.10	2.74	2.75
26dB BW (MHz)	1.30	1.30	3.11	3.08
BW / Modulation	5MHz / QPSK	5MHz / 16QAM	10MHz / QPSK	10MHz / 16QAM
99% OBW (MHz)	4.50	4.50	9.16	9.08
26dB BW (MHz)	4.98	4.94	10.12	9.92

3.4.6 Test Result (Plots) of Occupied Bandwidth

Band :	LTE Band 2	BW / Mod. :	1.4MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 18900


Date: 19.SEP.2012 21:45:57

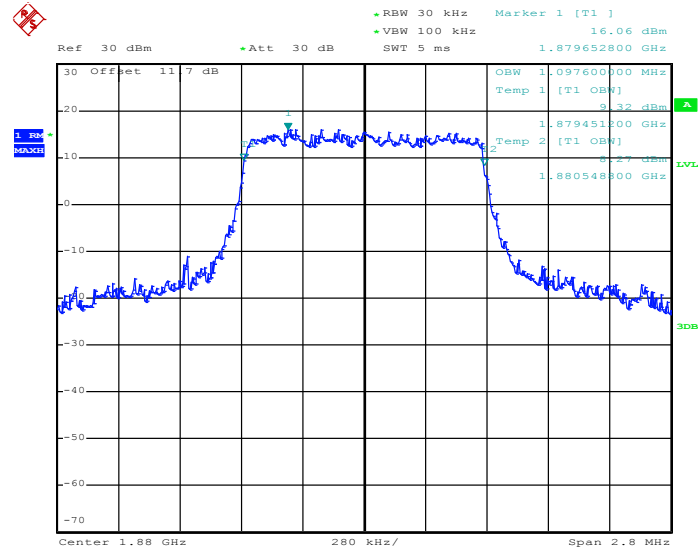
26dB Bandwidth Plot on Channel 18900


Date: 19.SEP.2012 21:01:18



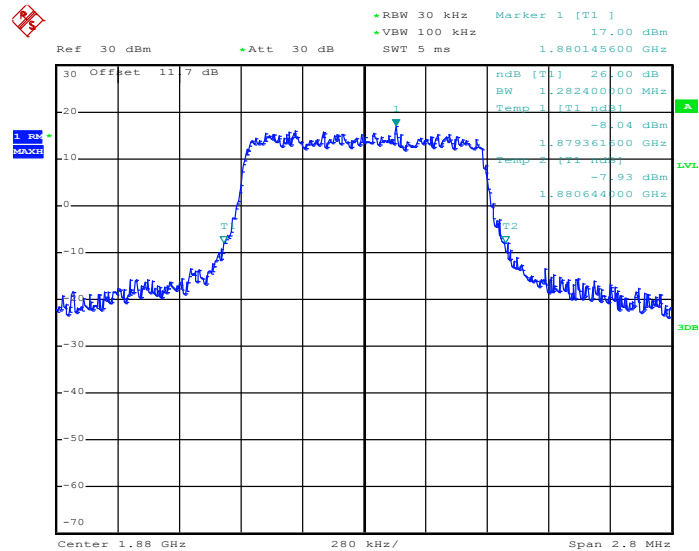
Band :	LTE Band 2	BW / Mod. :	1.4MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 18900



Date: 19.SEP.2012 21:46:18

26dB Bandwidth Plot on Channel 18900

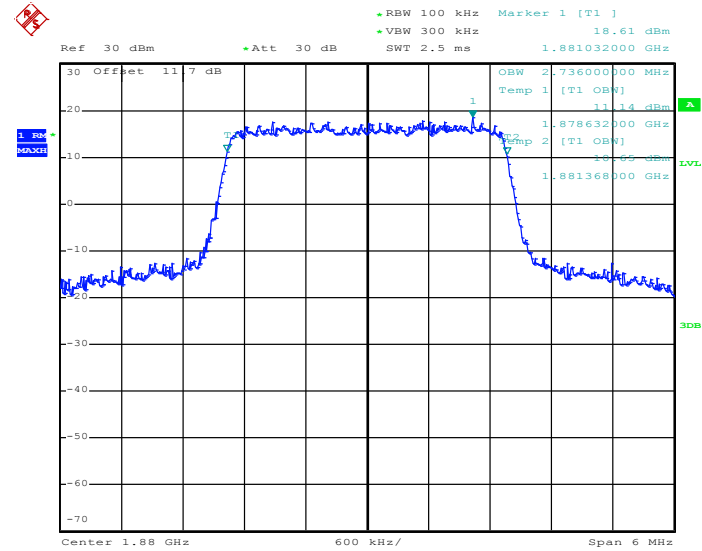


Date: 19.SEP.2012 21:01:30



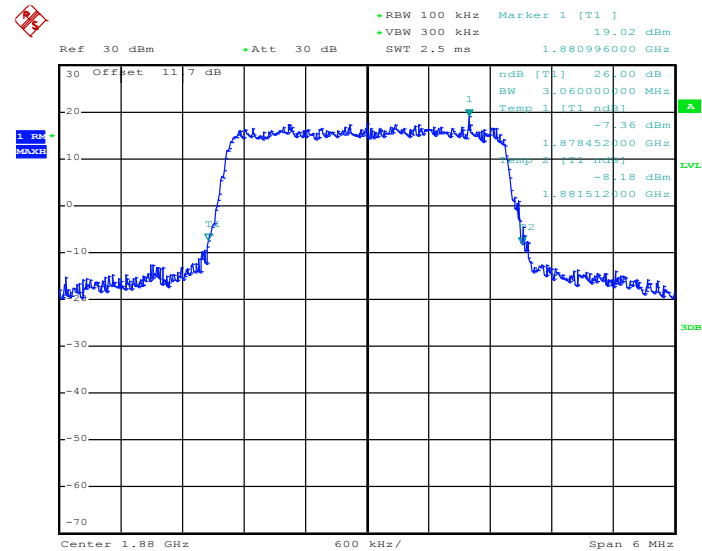
Band :	LTE Band 2	BW / Mod. :	3MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 18900



Date: 19.SEP.2012 21:41:42

26dB Bandwidth Plot on Channel 18900

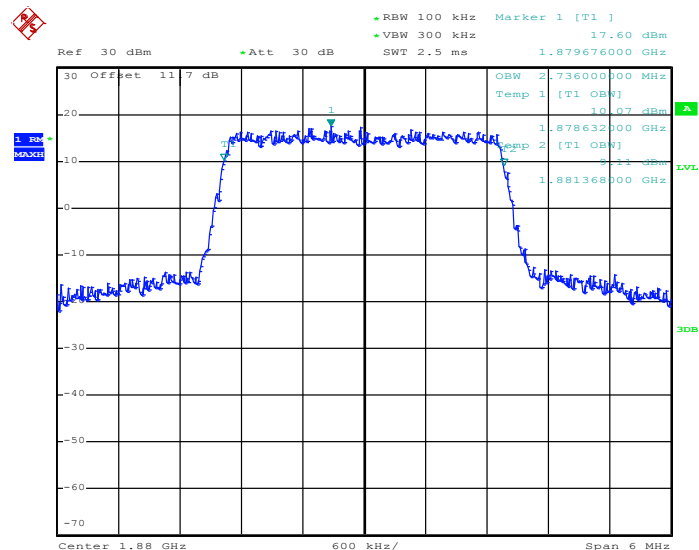


Date: 19.SEP.2012 21:02:56



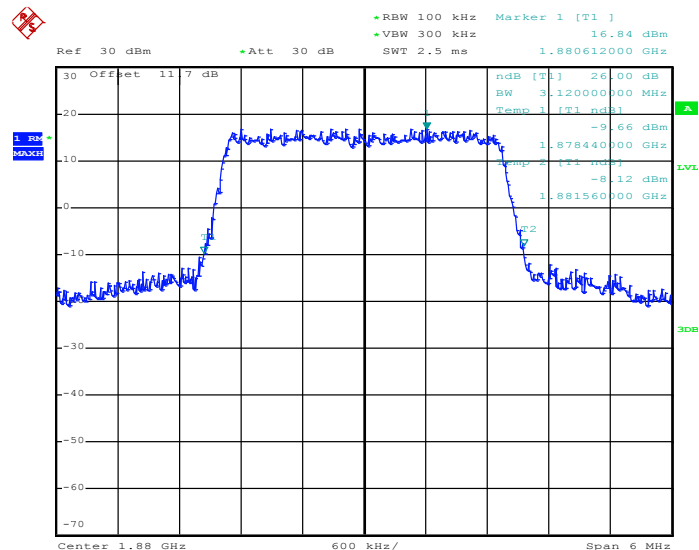
Band :	LTE Band 2	BW / Mod. :	3MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 18900



Date: 19.SEP.2012 21:41:57

26dB Bandwidth Plot on Channel 18900

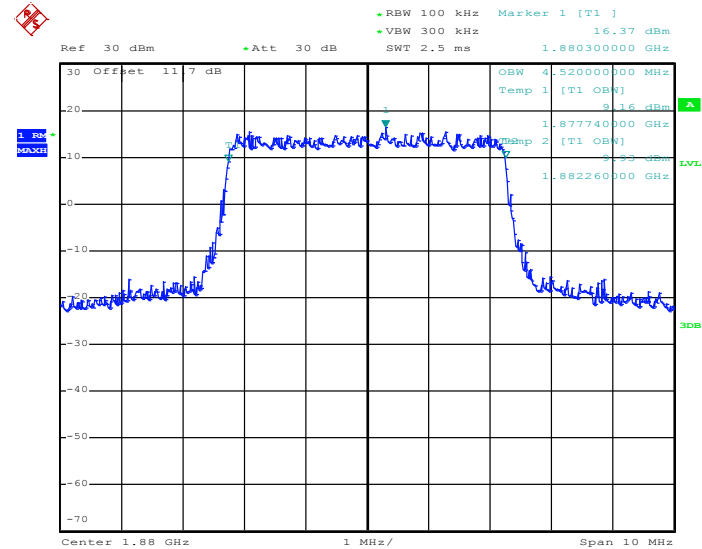


Date: 19.SEP.2012 21:03:13



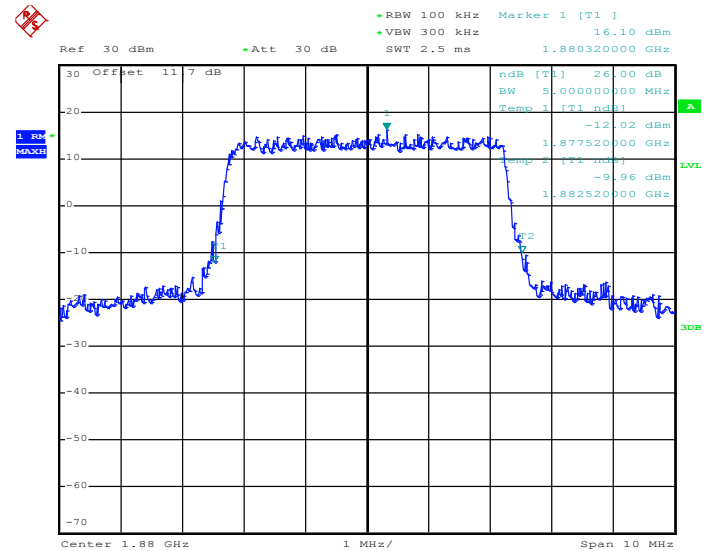
Band :	LTE Band 2	BW / Mod. :	5MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 18900



Date: 19.SEP.2012 21:34:13

26dB Bandwidth Plot on Channel 18900

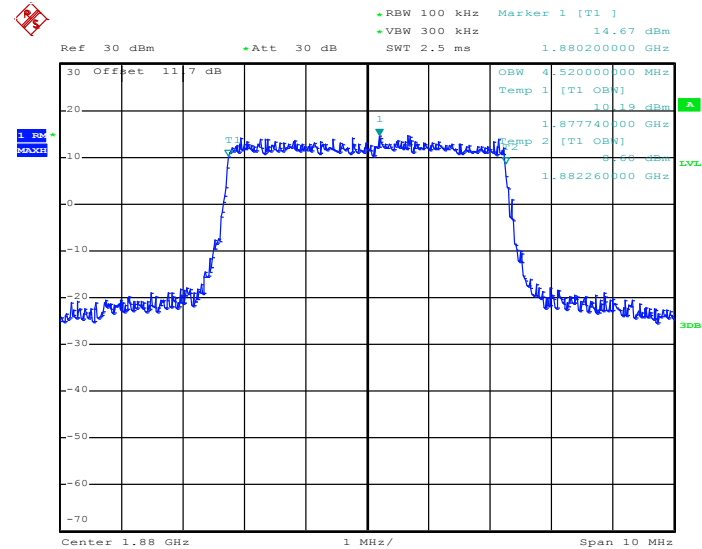


Date: 19.SEP.2012 20:46:51



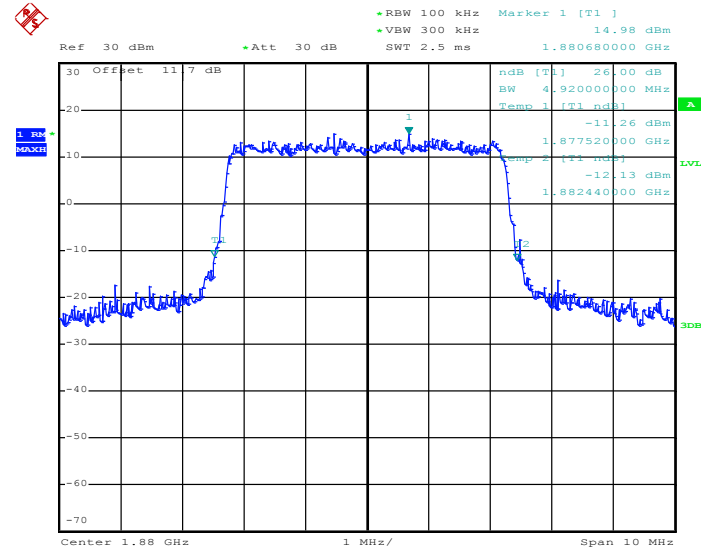
Band :	LTE Band 2	BW / Mod. :	5MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 18900



Date: 19.SEP.2012 21:34:29

26dB Bandwidth Plot on Channel 18900

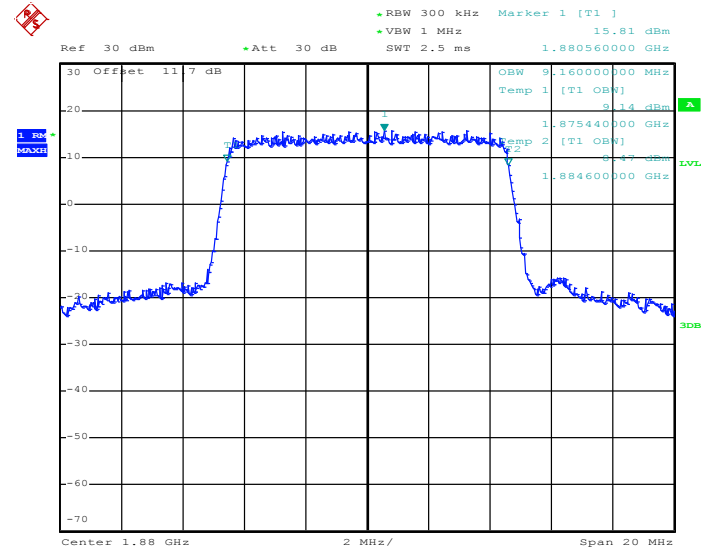


Date: 19.SEP.2012 20:47:43



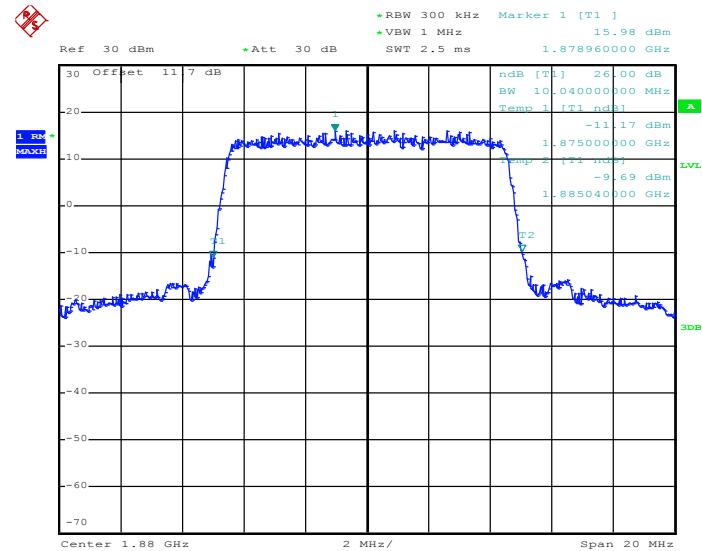
Band :	LTE Band 2	BW / Mod. :	10MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 18900



Date: 19.SEP.2012 21:20:12

26dB Bandwidth Plot on Channel 18900

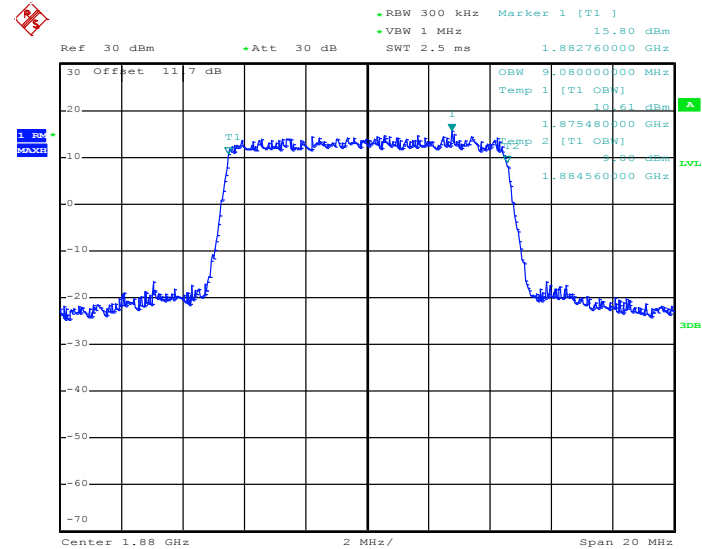


Date: 19.SEP.2012 20:49:37



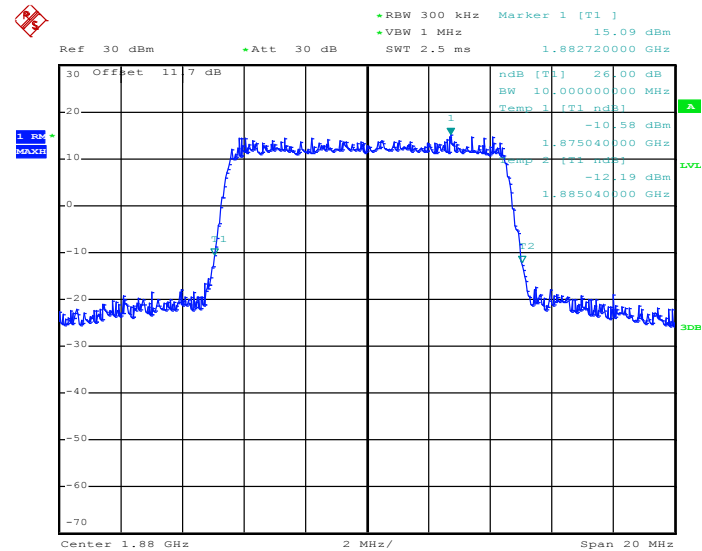
Band :	LTE Band 2	BW / Mod. :	10MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 18900



Date: 19.SEP.2012 21:20:36

26dB Bandwidth Plot on Channel 18900

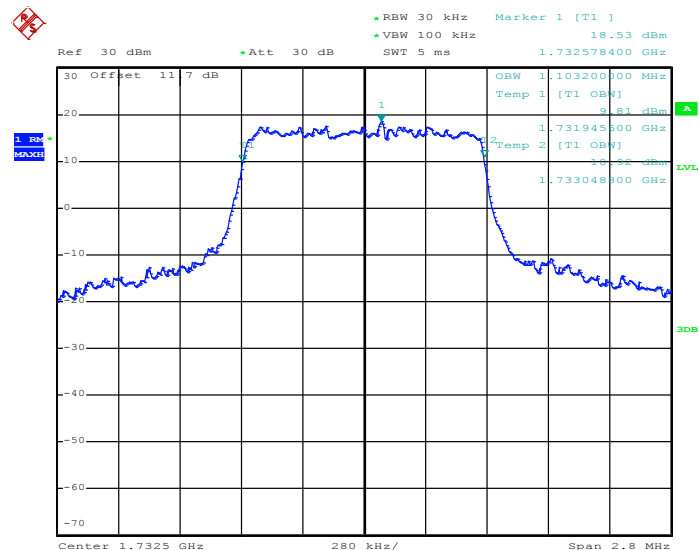


Date: 19.SEP.2012 20:50:03



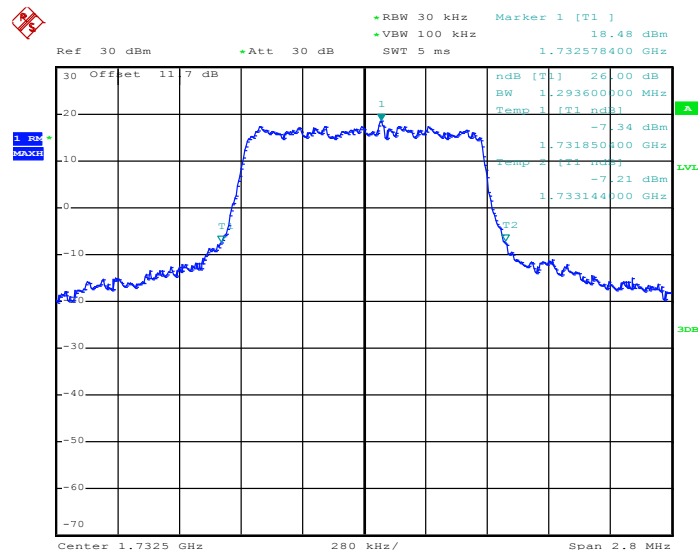
Band :	LTE Band 4	BW / Mod. :	1.4MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 20175



Date: 8.SEP.2012 21:43:02

26dB Bandwidth Plot on Channel 20175

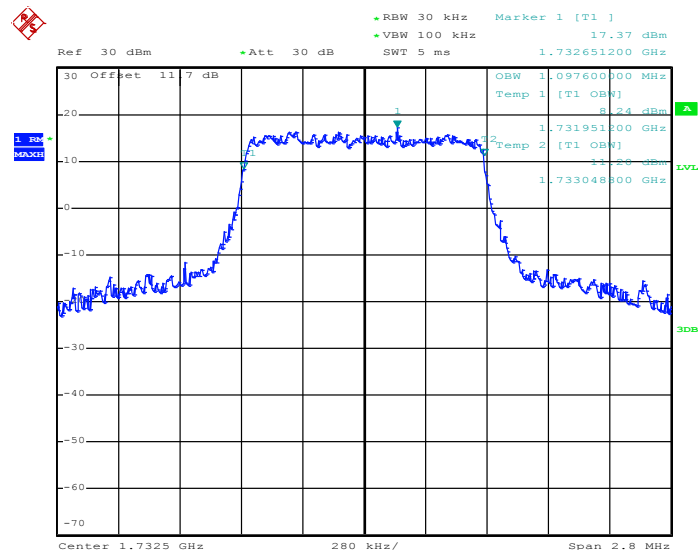


Date: 8.SEP.2012 21:53:37



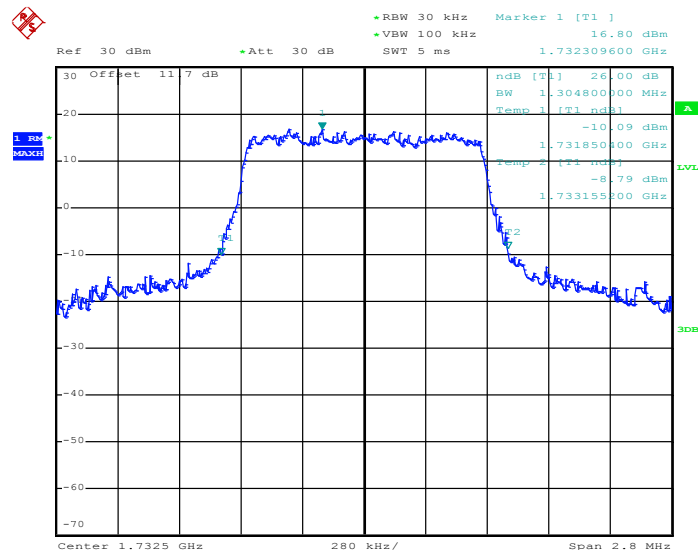
Band :	LTE Band 4	BW / Mod. :	1.4MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 20175



Date: 8.SEP.2012 21:43:21

26dB Bandwidth Plot on Channel 20175

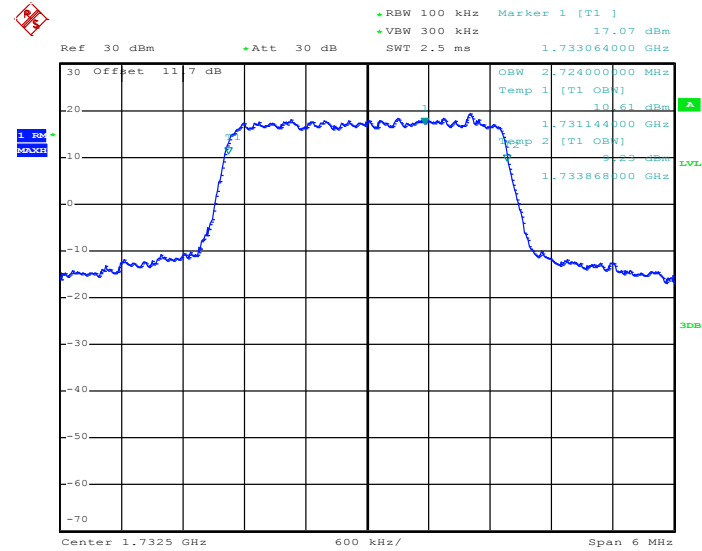


Date: 8.SEP.2012 21:53:56



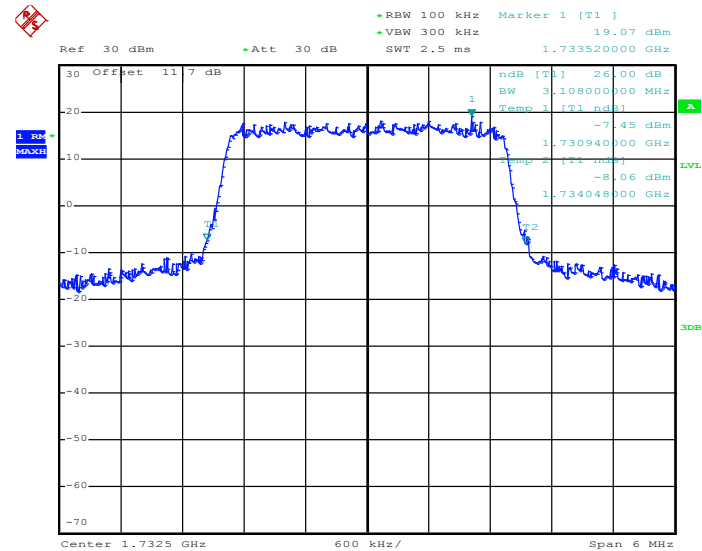
Band :	LTE Band 4	BW / Mod. :	3MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 20175



Date: 8.SEP.2012 21:31:26

26dB Bandwidth Plot on Channel 20175

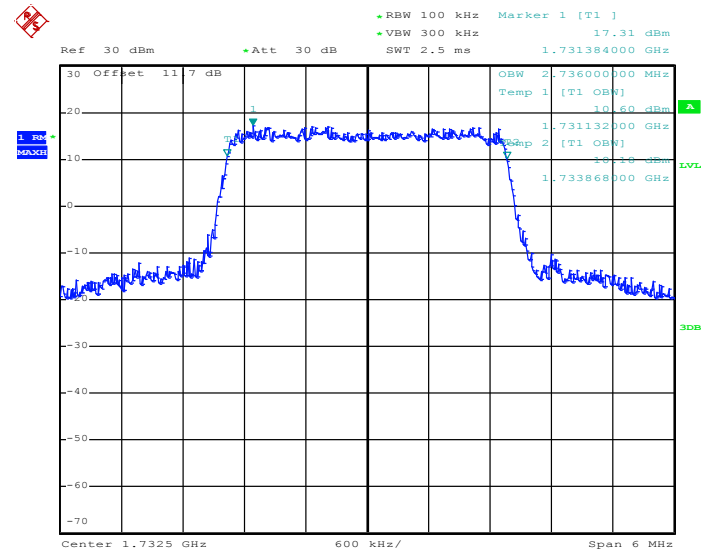


Date: 8.SEP.2012 21:56:19



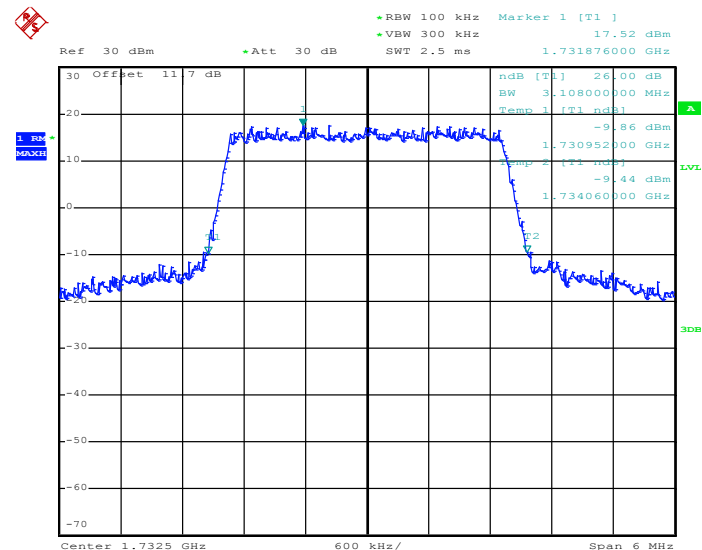
Band :	LTE Band 4	BW / Mod. :	3MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 20175



Date: 8.SEP.2012 21:31:38

26dB Bandwidth Plot on Channel 20175



Date: 8.SEP.2012 21:55:48



99% Occupied Bandwidth Plot on Channel 20175





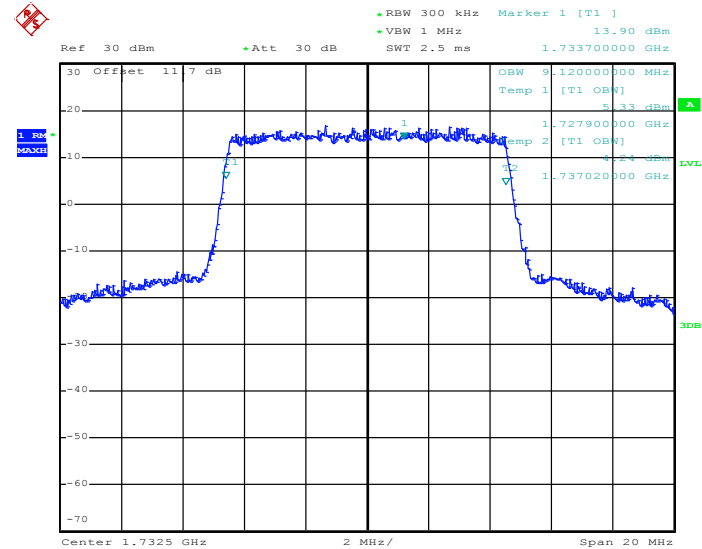
99% Occupied Bandwidth Plot on Channel 20175





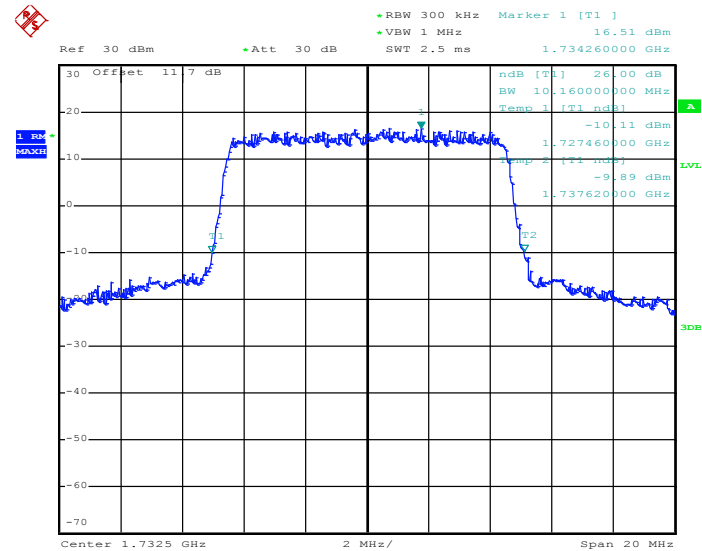
Band :	LTE Band 4	BW / Mod. :	10MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 20175



Date: 8.SEP.2012 20:41:13

26dB Bandwidth Plot on Channel 20175

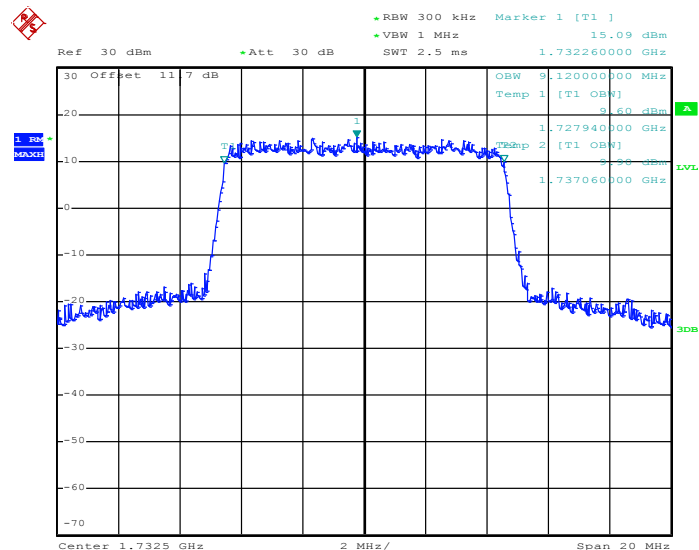


Date: 8.SEP.2012 22:01:07



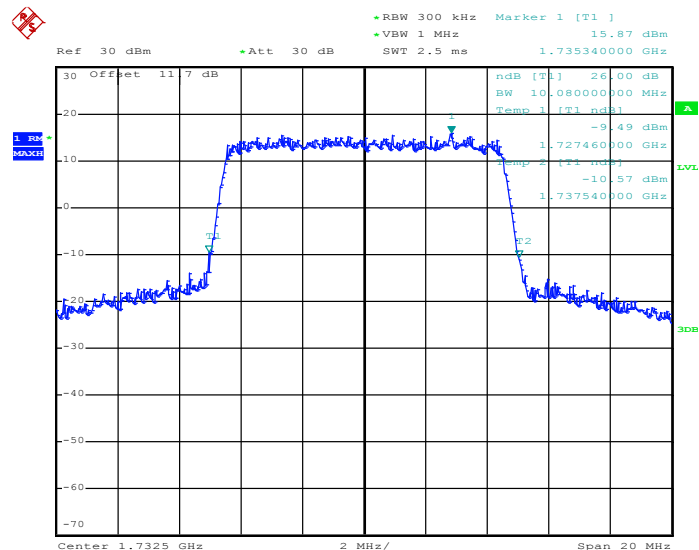
Band :	LTE Band 4	BW / Mod. :	10MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 20175



Date: 8.SEP.2012 21:19:17

26dB Bandwidth Plot on Channel 20175

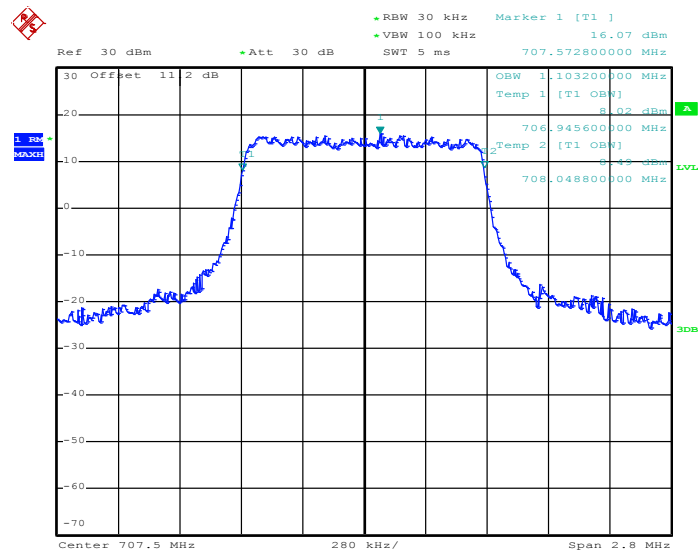


Date: 8.SEP.2012 22:01:20



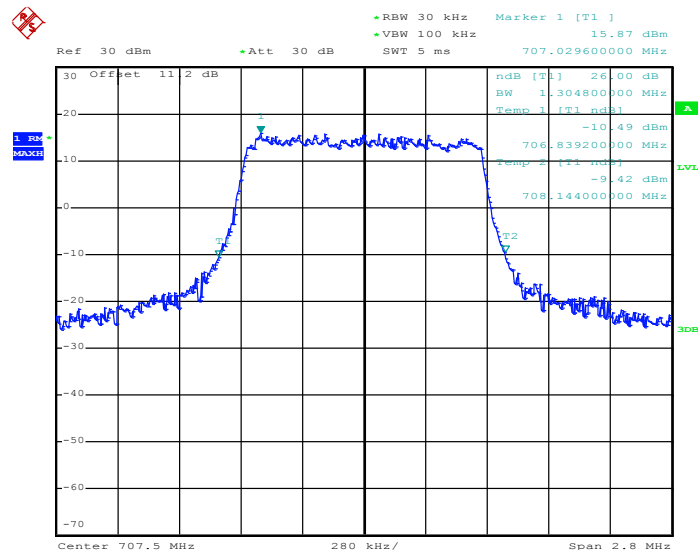
Band :	LTE Band 12	BW / Mod. :	1.4MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 23095



Date: 10.SEP.2012 13:44:37

26dB Bandwidth Plot on Channel 23095

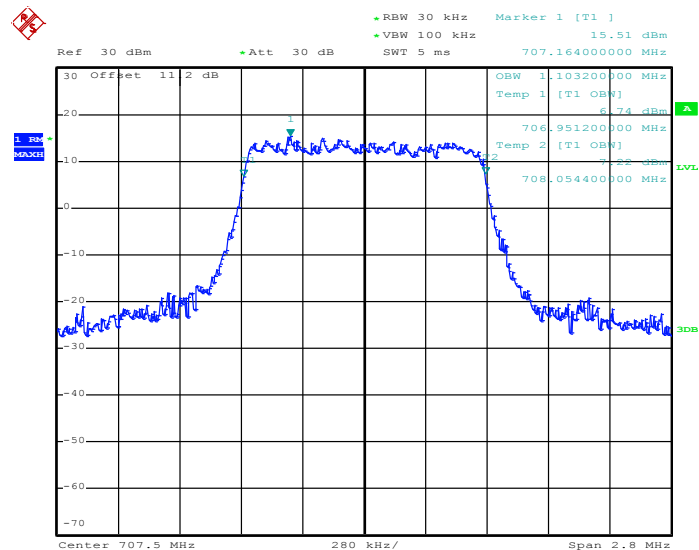


Date: 10.SEP.2012 14:46:47



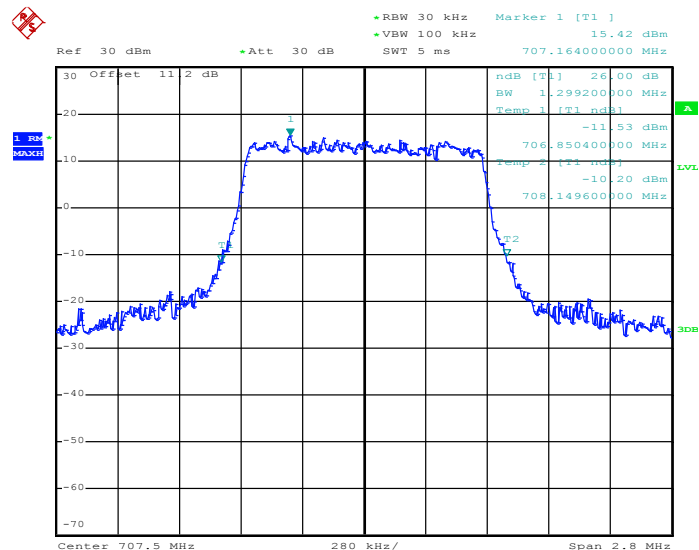
Band :	LTE Band 12	BW / Mod. :	1.4MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 23095



Date: 10.SEP.2012 13:44:57

26dB Bandwidth Plot on Channel 23095

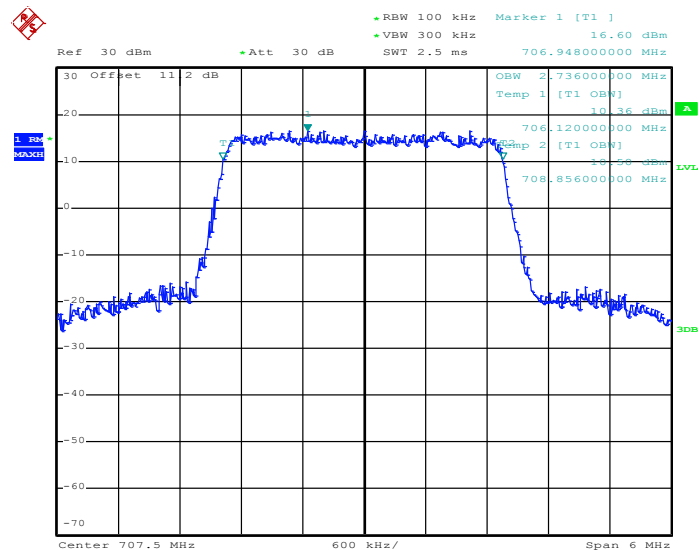


Date: 10.SEP.2012 14:45:59



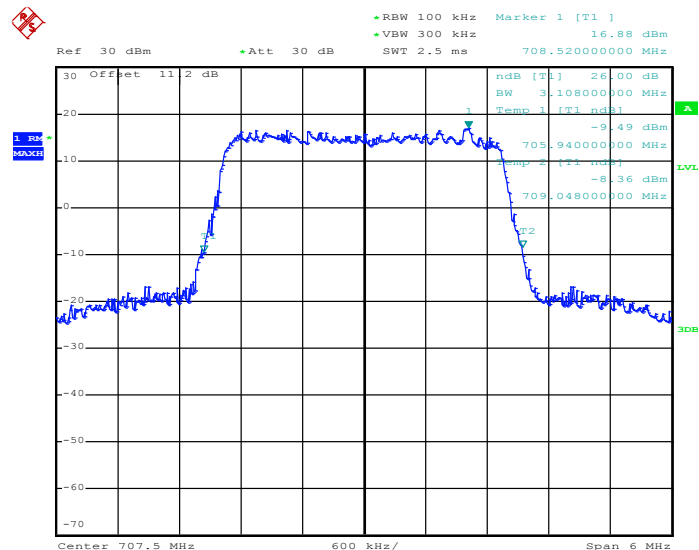
Band :	LTE Band 12	BW / Mod. :	3MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 23095



Date: 10.SEP.2012 14:20:56

26dB Bandwidth Plot on Channel 23095

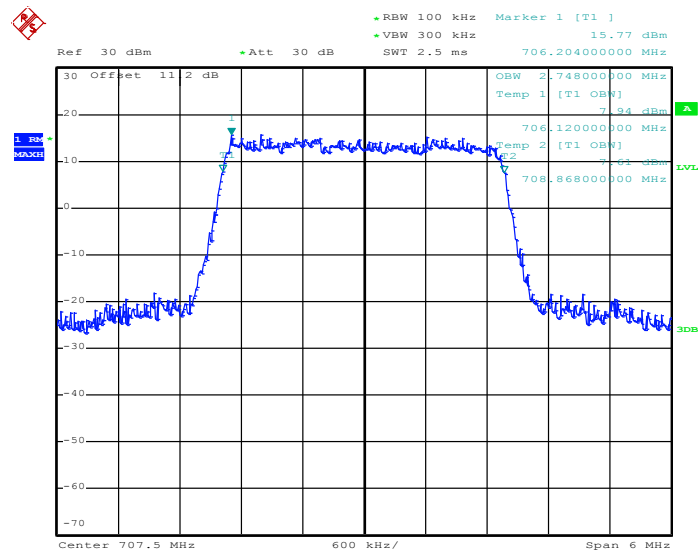


Date: 10.SEP.2012 14:37:13



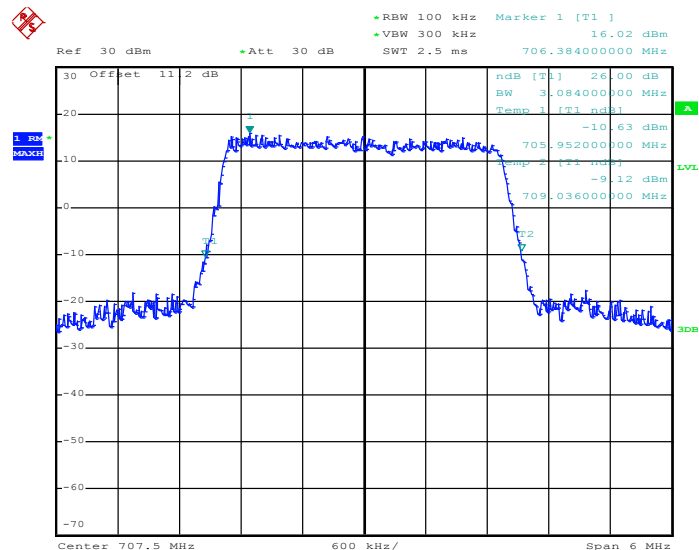
Band :	LTE Band 12	BW / Mod. :	3MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 23095



Date: 10.SEP.2012 14:21:09

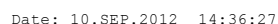
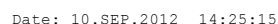
26dB Bandwidth Plot on Channel 23095



Date: 10.SEP.2012 14:37:26



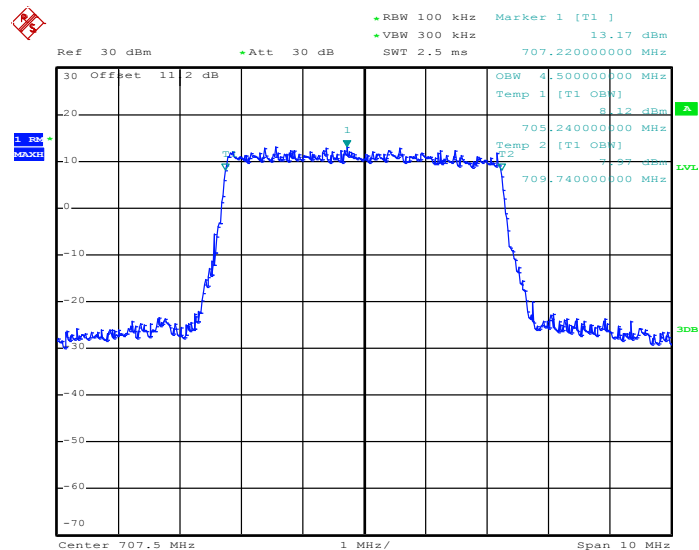
99% Occupied Bandwidth Plot on Channel 23095





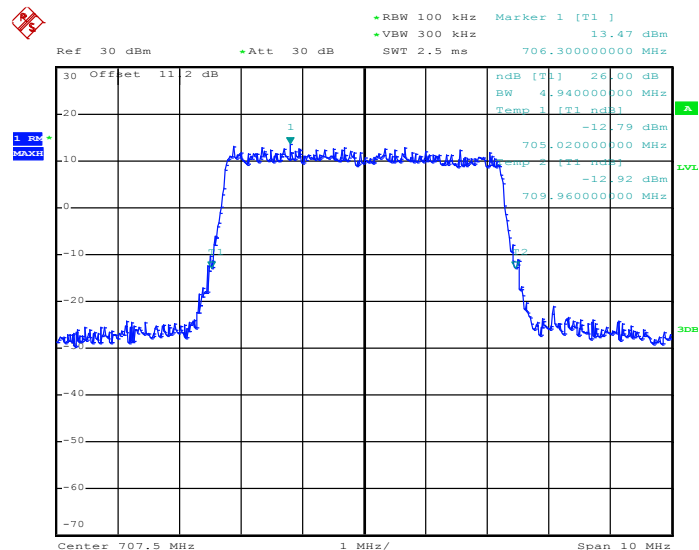
Band :	LTE Band 12	BW / Mod. :	5MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 23095



Date: 10.SEP.2012 14:25:35

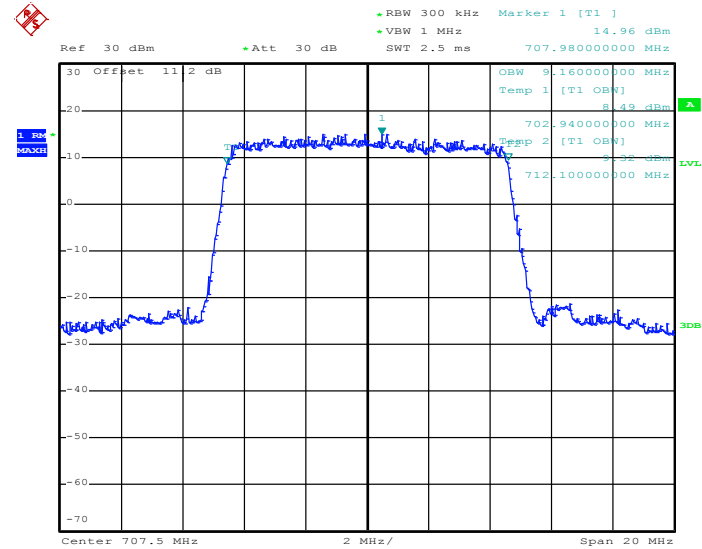
26dB Bandwidth Plot on Channel 23095



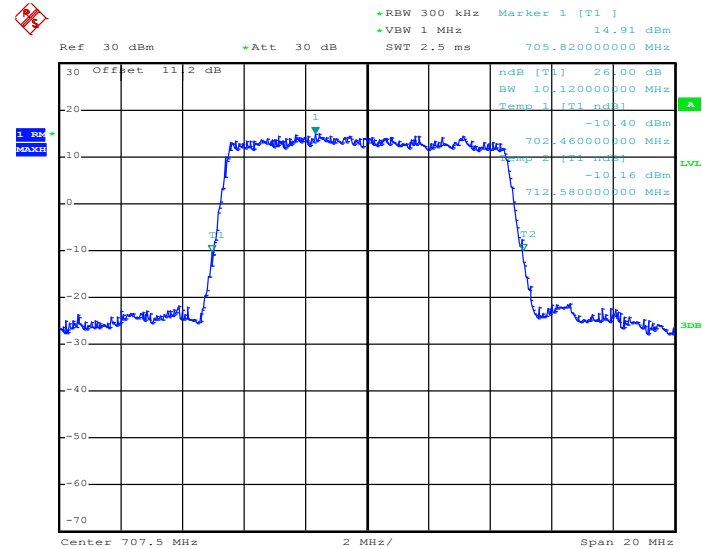
Date: 10.SEP.2012 14:36:43



Band :	LTE Band 12	BW / Mod. :	10MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 23095

Date: 10.SEP.2012 14:29:30

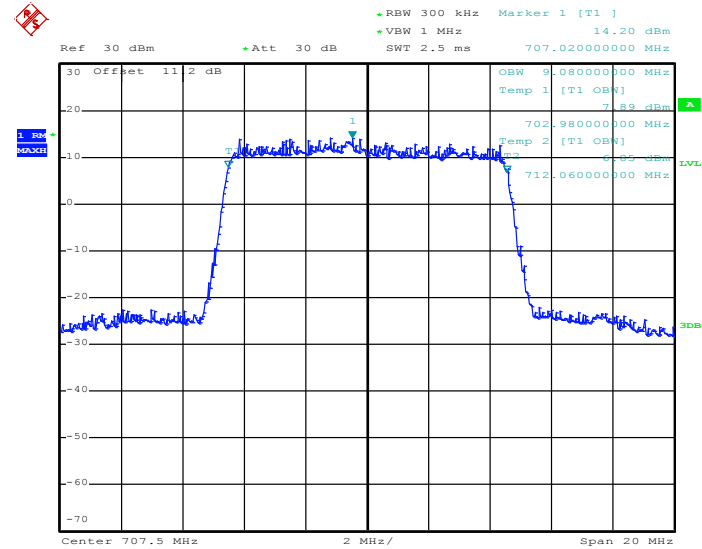
26dB Bandwidth Plot on Channel 23095

Date: 10.SEP.2012 14:35:24



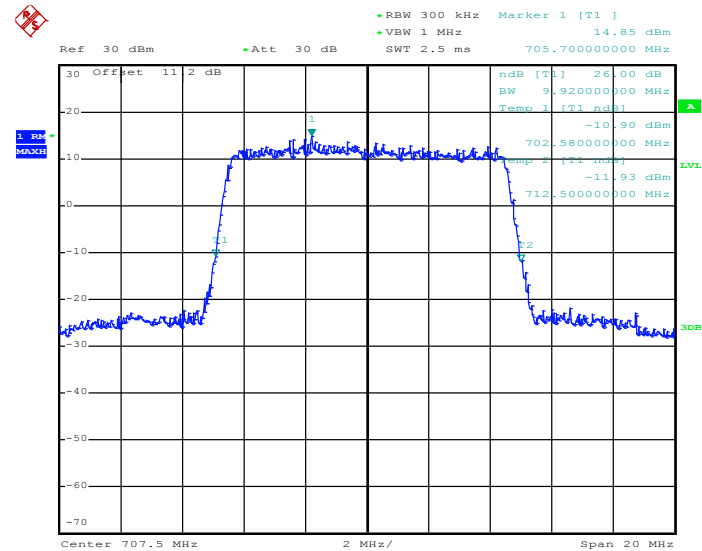
Band :	LTE Band 12	BW / Mod. :	10MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 23095



Date: 10.SEP.2012 14:29:49

26dB Bandwidth Plot on Channel 23095



Date: 10.SEP.2012 14:35:38

3.5 Conducted Band Edge Measurement

3.5.1 Description of Conducted Band Edge Measurement

The emissions be operated in the 698 -746 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB = -13 dBm in a 100 KHz bandwidth.

For operations in the 1710 – 1755 MHz bands , the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB = -13 dBm in a 1 MHz bandwidth.

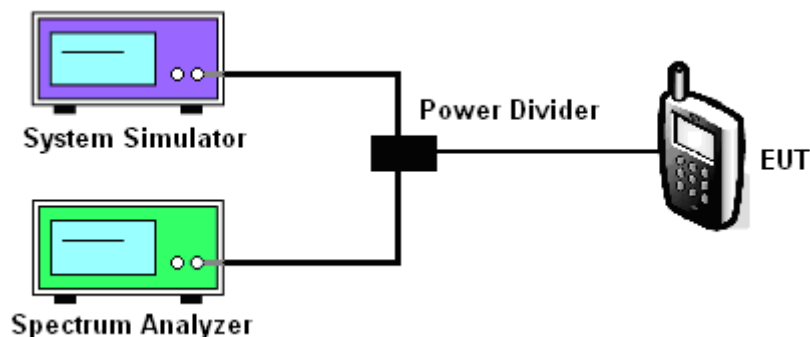
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The band edges of low and high channels for the highest RF powers were measured. Setting RBW = 100KHz(Band 17) / 1MHz(Band 4).

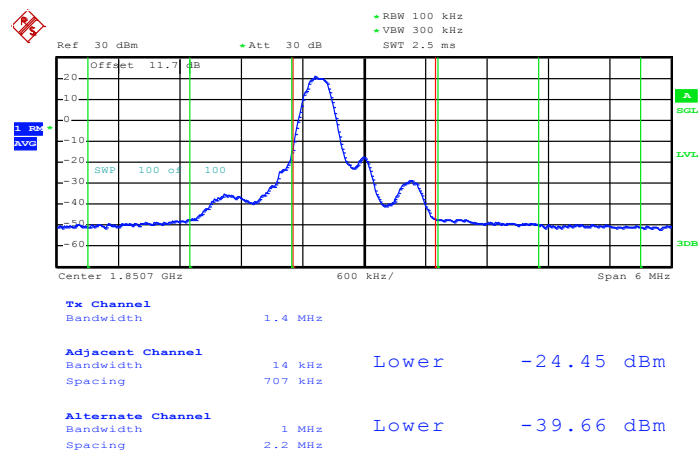
3.5.4 Test Setup



3.5.5 Test Result (Plots) of Conducted Band Edge

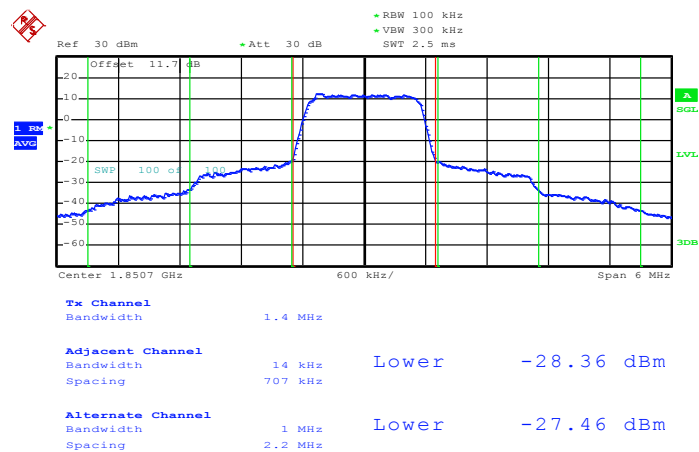
Band :	LTE Band 2	Band Width :	1.4MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 10.SEP.2012 15:11:25

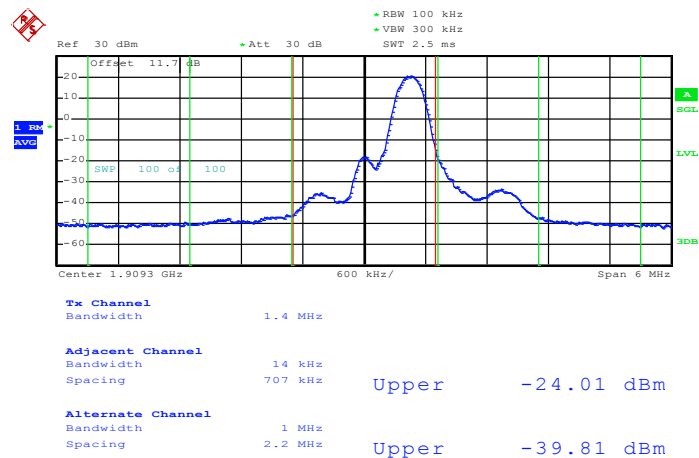
Lower Band Edge Plot for QPSK-RB Size 6, RB Offset 0



Date: 10.SEP.2012 15:10:32

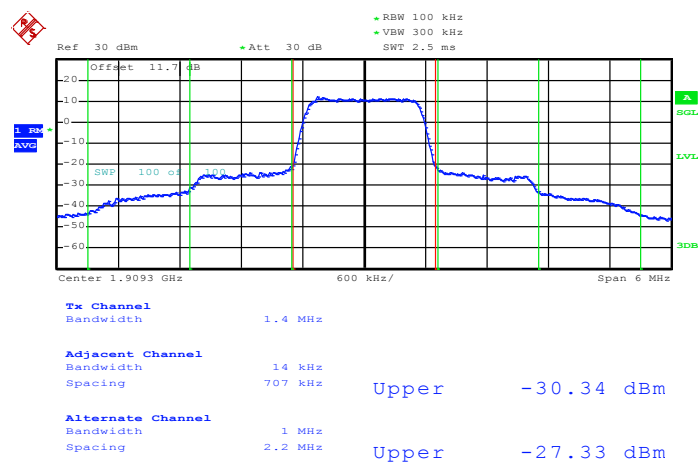


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 5



Date: 10.SEP.2012 15:14:54

Higher Band Edge Plot for QPSK-RB Size 6, RB Offset 0

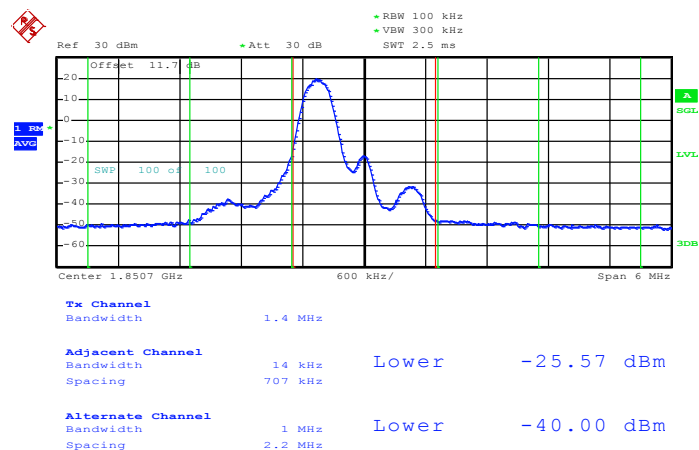


Date: 10.SEP.2012 15:14:03



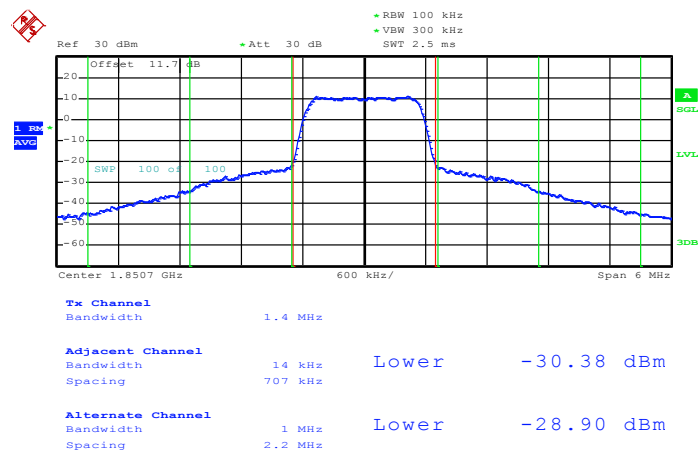
Band :	LTE Band 2	Band Width :	1.4MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



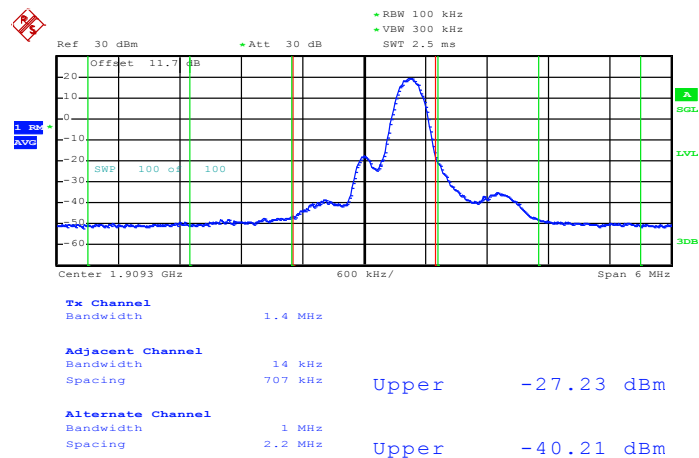
Date: 10.SEP.2012 15:11:40

Lower Band Edge Plot for 16QAM-RB Size 6, RB Offset 0



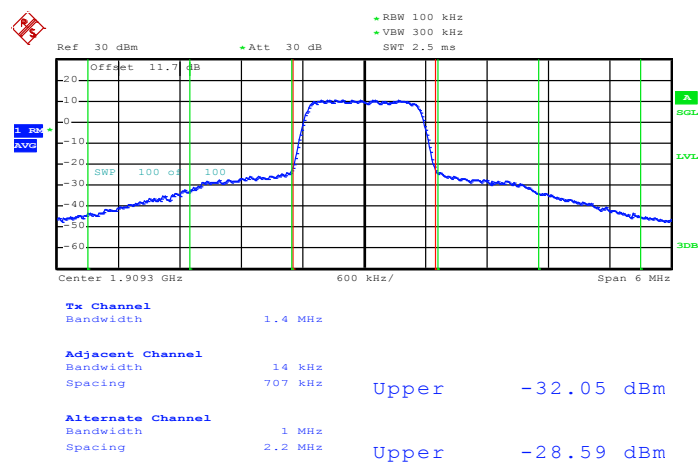
Date: 10.SEP.2012 15:10:01

Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 5



Date: 10.SEP.2012 15:15:28

Higher Band Edge Plot for 16QAM-RB Size 6, RB Offset 0

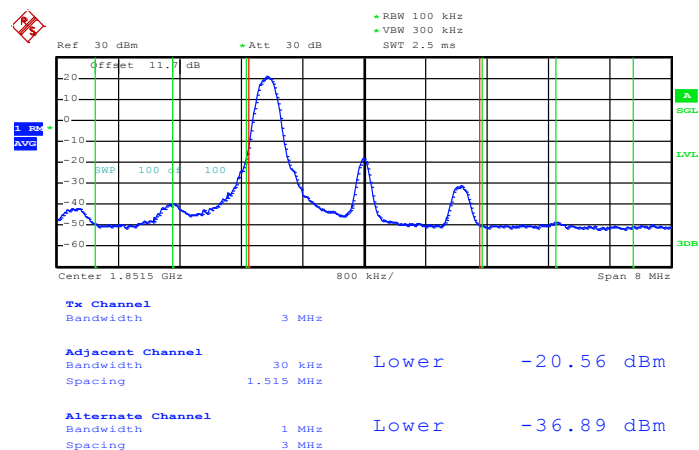


Date: 10.SEP.2012 15:14:21



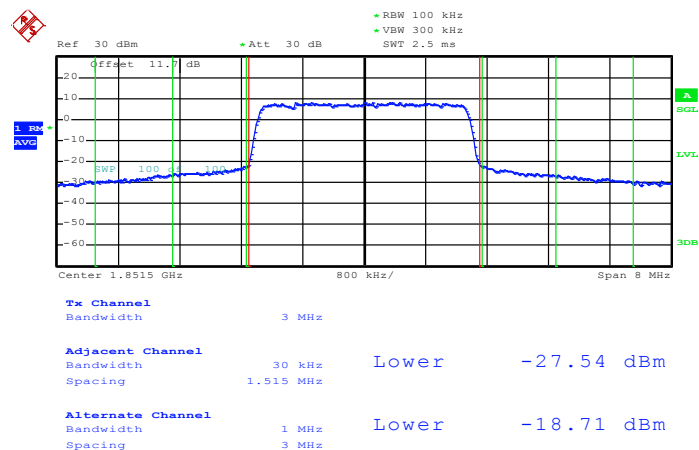
Band :	LTE Band 2	Band Width :	3MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



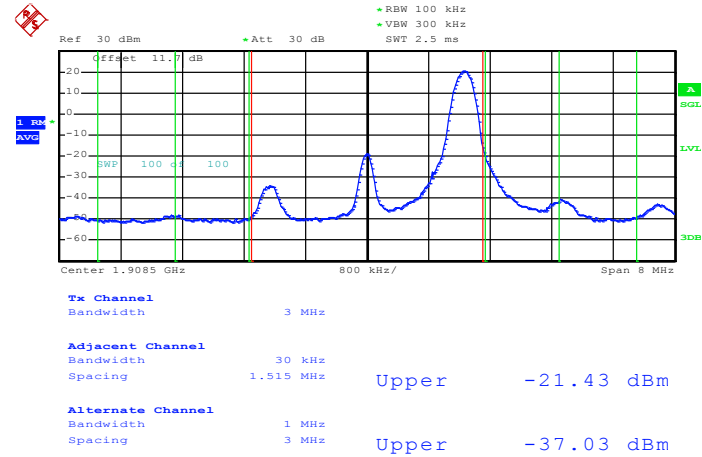
Date: 10.SEP.2012 15:19:47

Lower Band Edge Plot for QPSK-RB Size 15, RB Offset 0



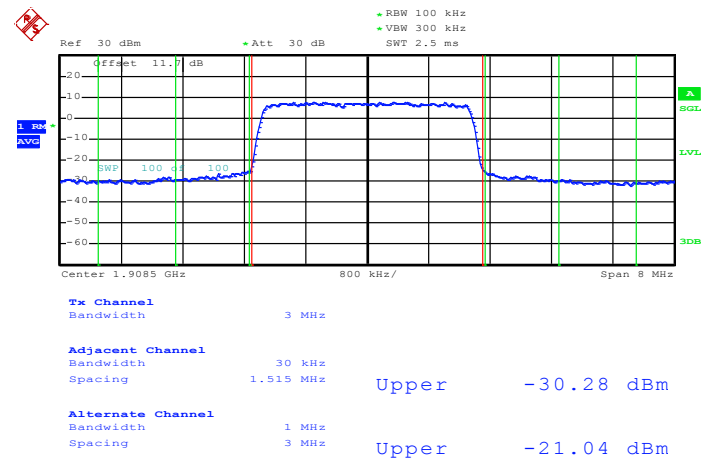
Date: 10.SEP.2012 15:19:10

Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 14



Date: 10.SEP.2012 15:22:00

Higher Band Edge Plot for QPSK-RB Size 15, RB Offset 0

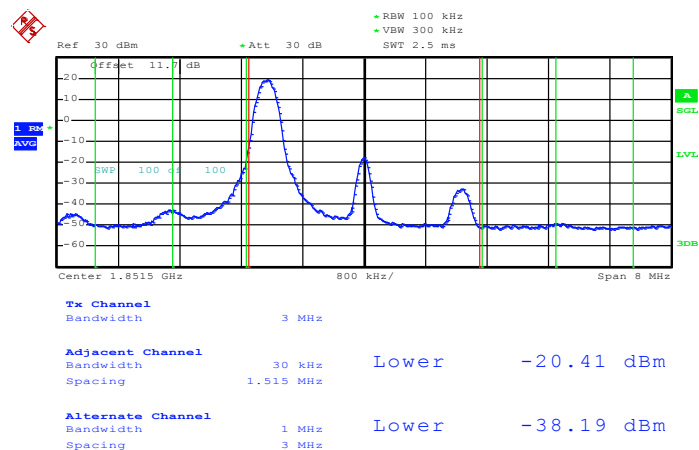


Date: 10.SEP.2012 15:21:08



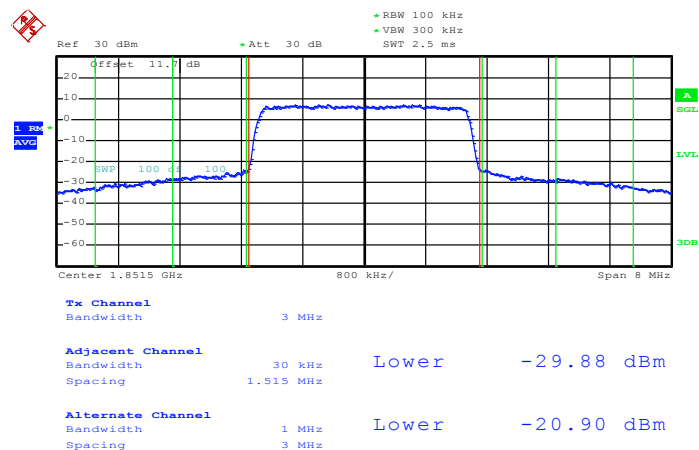
Band :	LTE Band 2	Band Width :	3MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



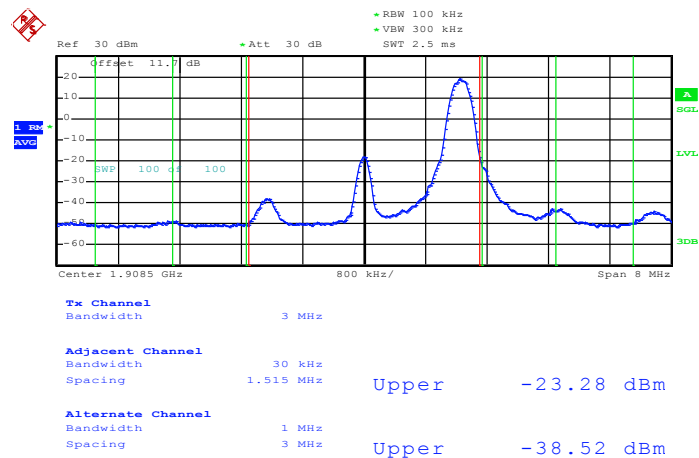
Date: 10.SEP.2012 15:20:03

Lower Band Edge Plot for 16QAM-RB Size 15, RB Offset 0



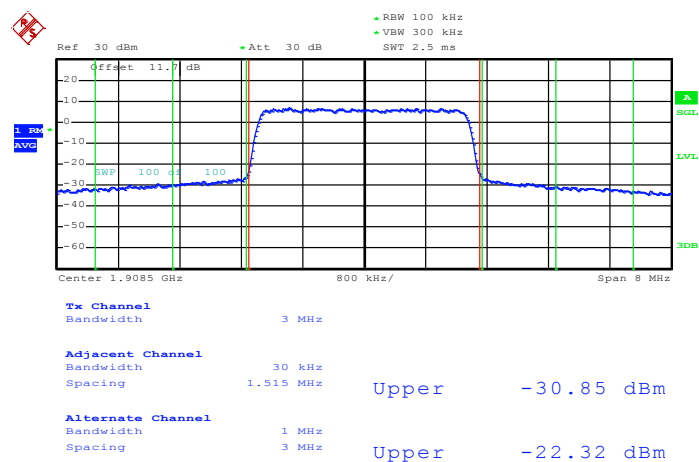
Date: 10.SEP.2012 15:19:22

Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 14



Date: 10.SEP.2012 15:22:45

Higher Band Edge Plot for 16QAM-RB Size 15, RB Offset 0

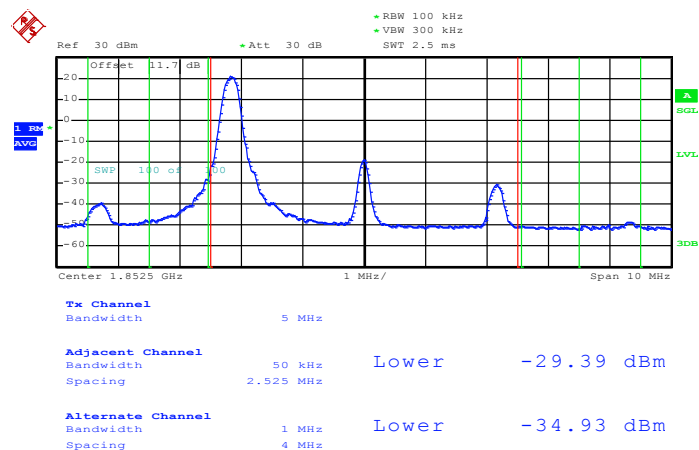


Date: 10.SEP.2012 15:21:30



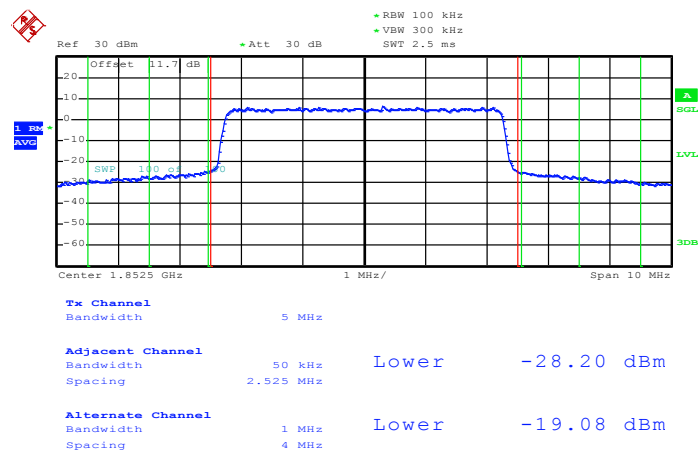
Band :	LTE Band 2	Band Width :	5MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 10.SEP.2012 15:27:24

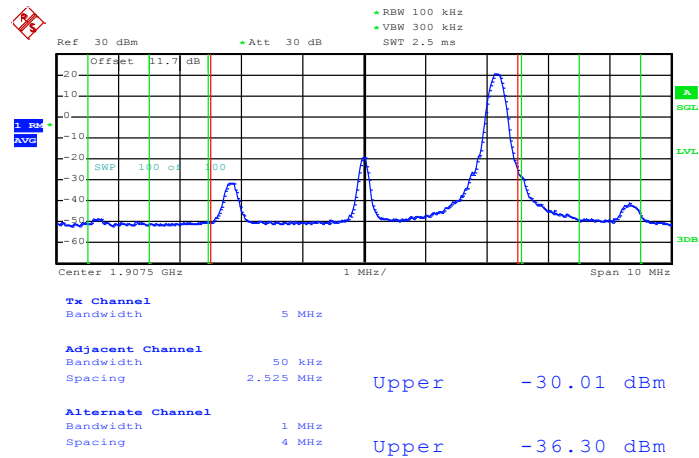
Lower Band Edge Plot for QPSK-RB Size 25, RB Offset 0



Date: 10.SEP.2012 15:26:49

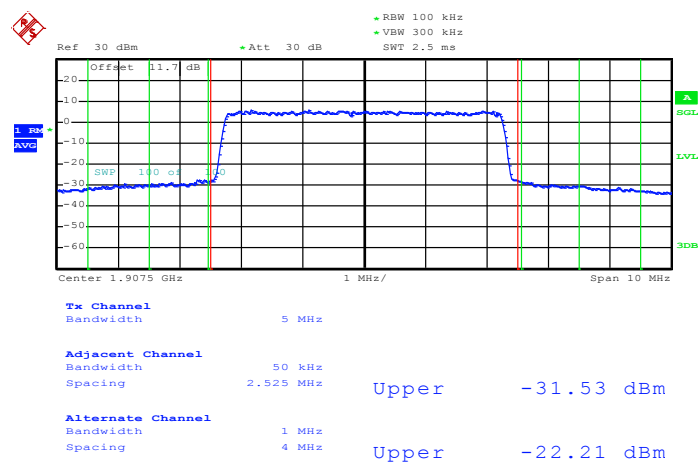


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 24



Date: 10.SEP.2012 15:30:02

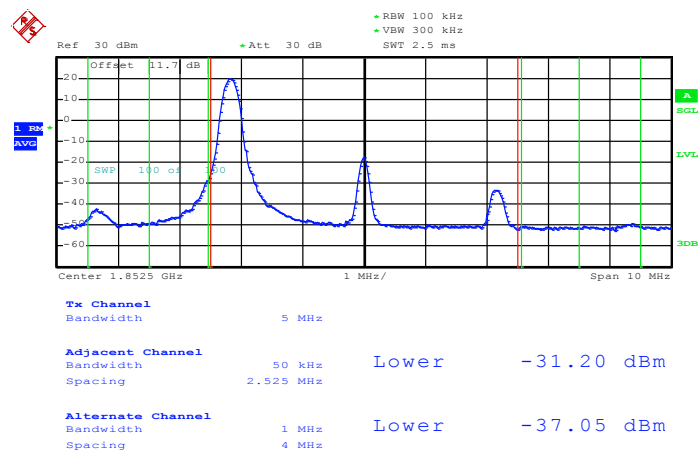
Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0



Date: 10.SEP.2012 15:29:24

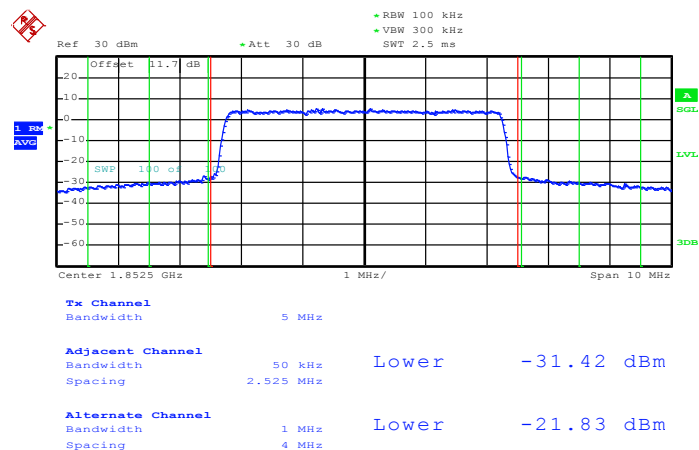
Band :	LTE Band 2	Band Width :	5MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



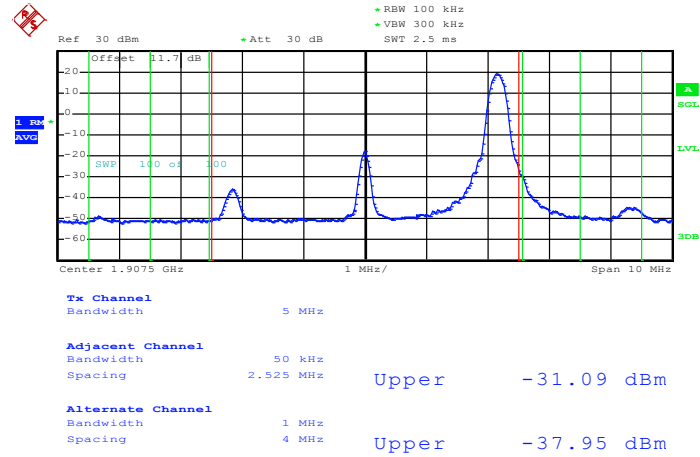
Date: 10.SEP.2012 15:28:02

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



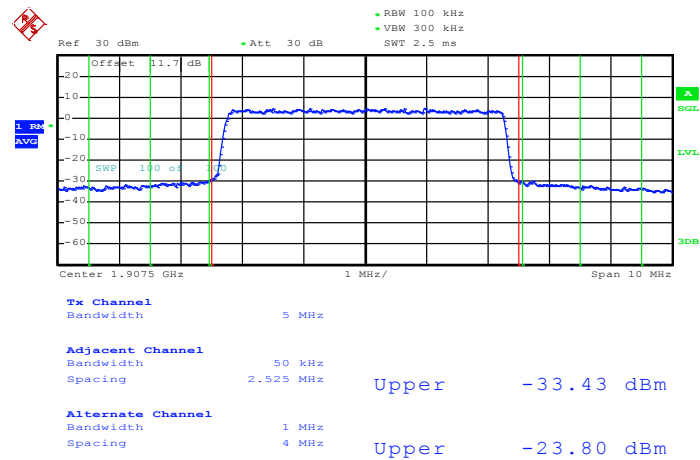
Date: 10.SEP.2012 15:27:08

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



Date: 10.SEP.2012 15:30:14

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

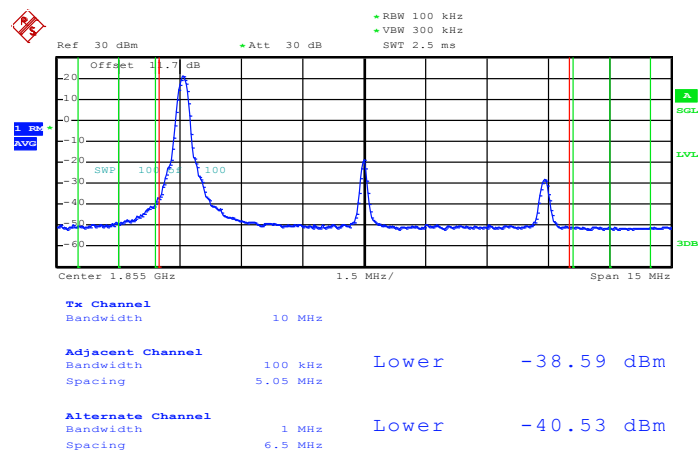


Date: 10.SEP.2012 15:29:39



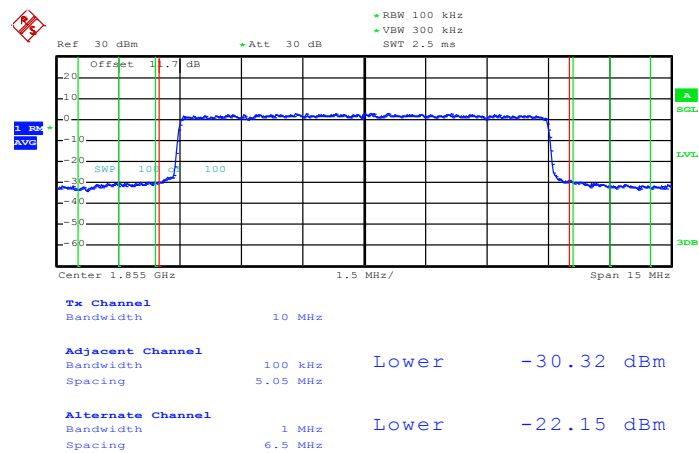
Band :	LTE Band 2	Band Width :	10MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



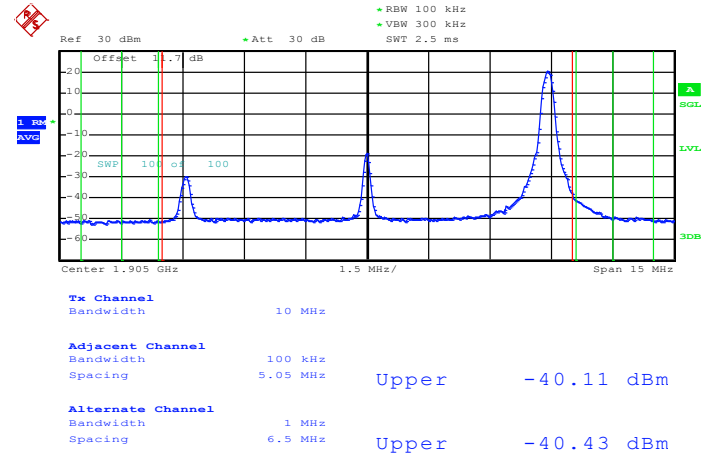
Date: 10.SEP.2012 15:32:40

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



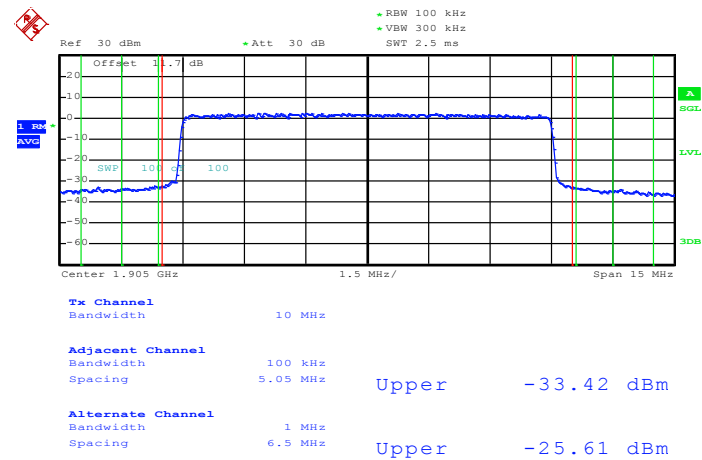
Date: 10.SEP.2012 15:32:09

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



Date: 10.SEP.2012 15:37:10

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

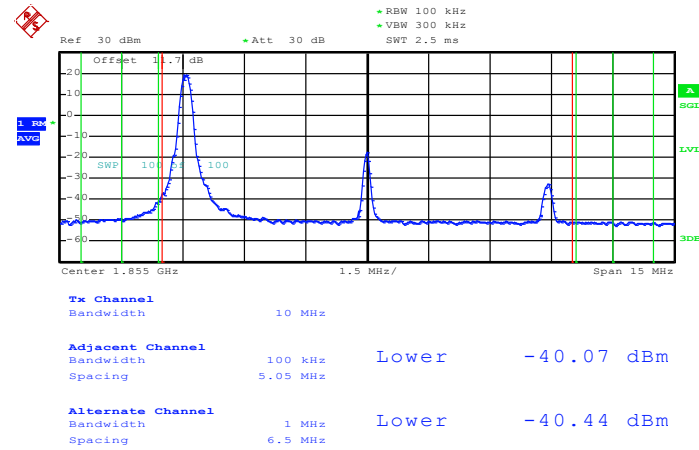


Date: 10.SEP.2012 15:36:27



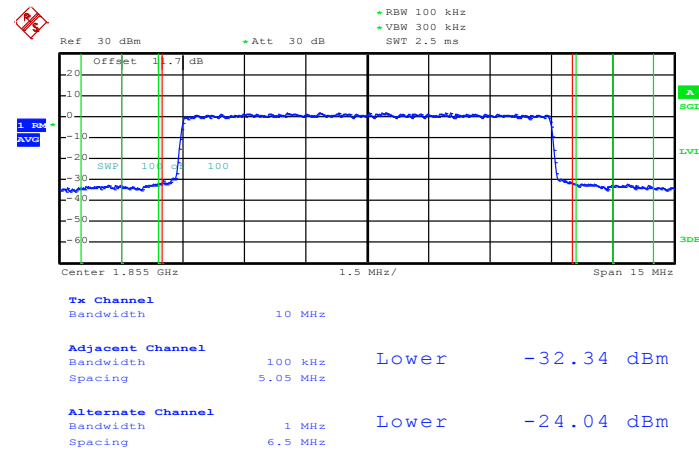
Band :	LTE Band 2	Band Width :	10MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



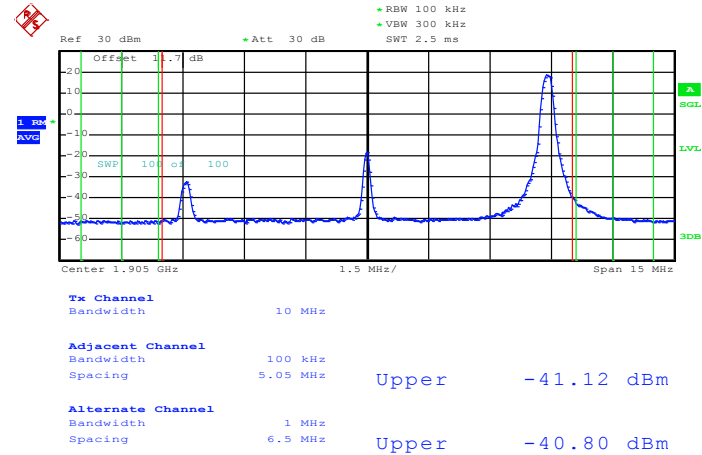
Date: 10.SEP.2012 15:33:48

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



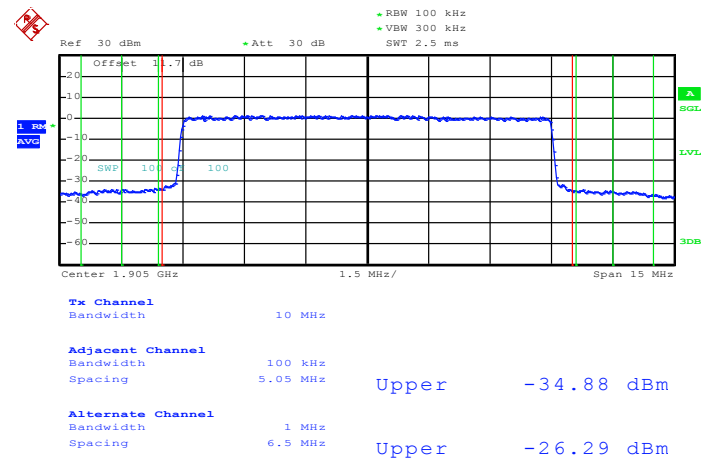
Date: 10.SEP.2012 15:32:23

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



Date: 10.SEP.2012 15:37:25

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

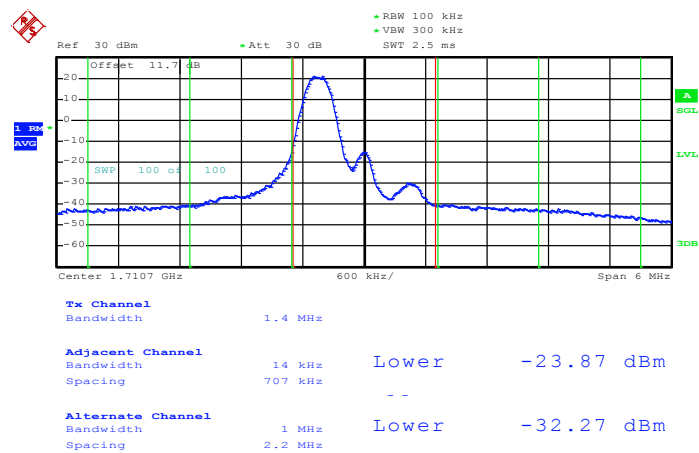


Date: 10.SEP.2012 15:36:44



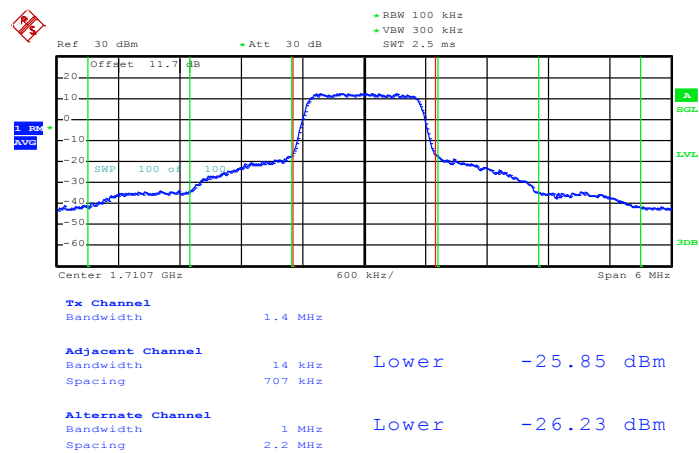
Band :	LTE Band 4	Band Width :	1.4MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



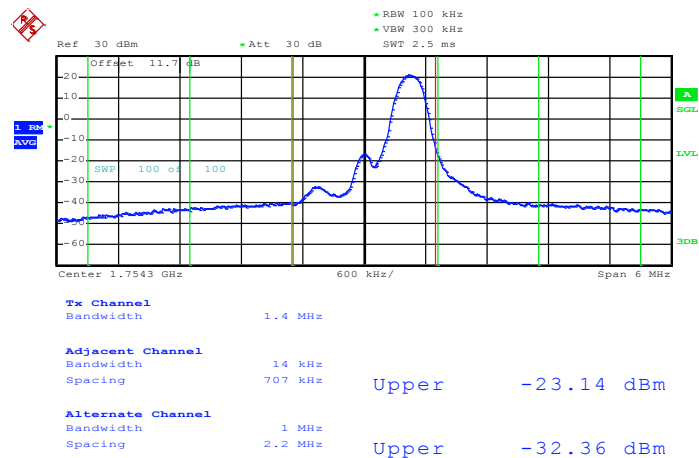
Date: 8.SEP.2012 23:50:02

Lower Band Edge Plot for QPSK-RB Size 6, RB Offset 0



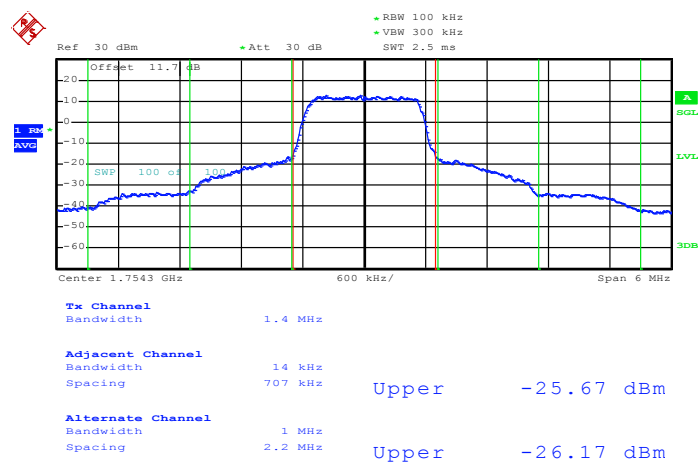
Date: 8.SEP.2012 23:47:34

Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 5



Date: 8.SEP.2012 23:53:57

Higher Band Edge Plot for QPSK-RB Size 6, RB Offset 0

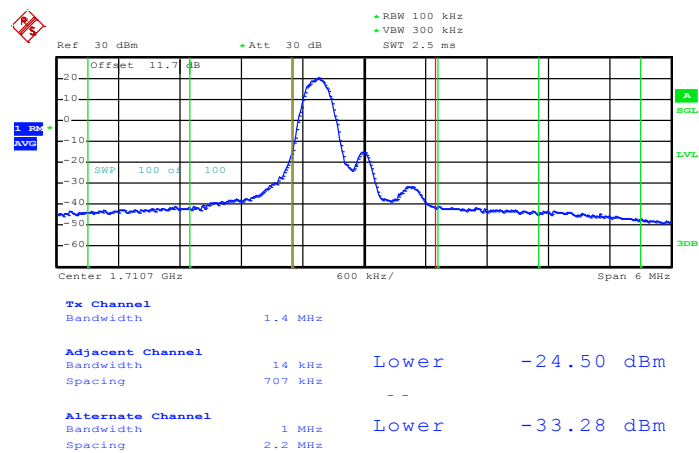


Date: 8.SEP.2012 23:52:54



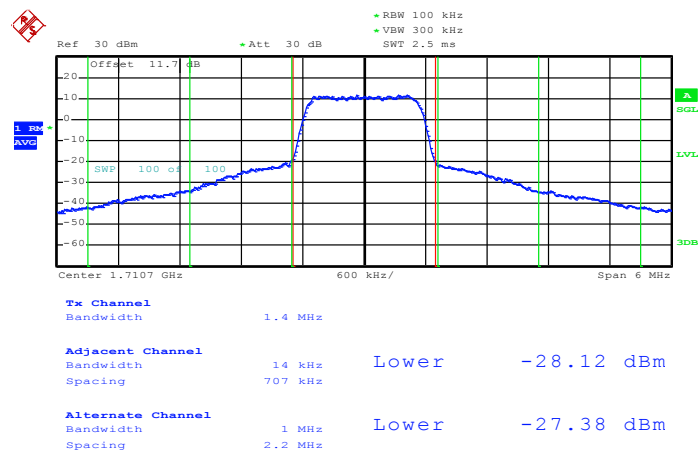
Band :	LTE Band 4	Band Width :	1.4MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



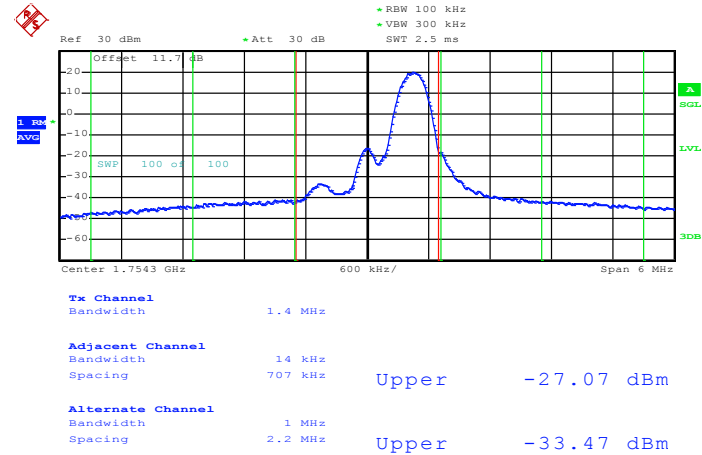
Date: 8.SEP.2012 23:50:35

Lower Band Edge Plot for 16QAM-RB Size 6, RB Offset 0



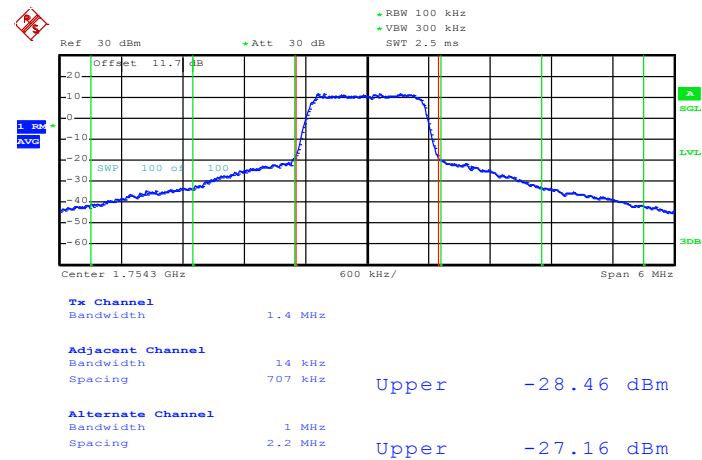
Date: 8.SEP.2012 23:48:00

Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 5



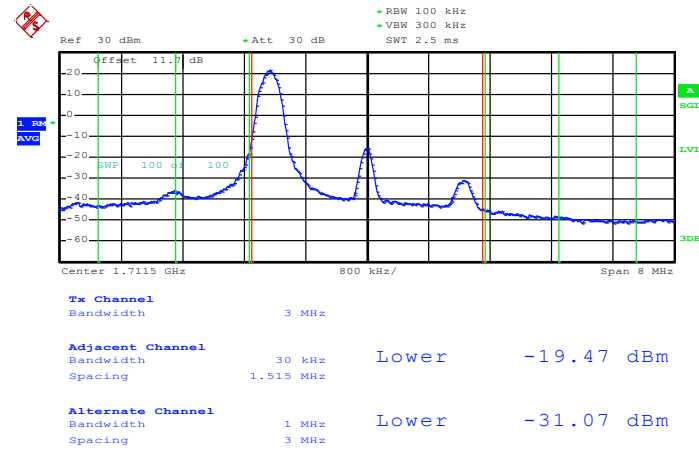
Date: 8.SEP.2012 23:54:20

Higher Band Edge Plot for 16QAM-RB Size 6, RB Offset 0

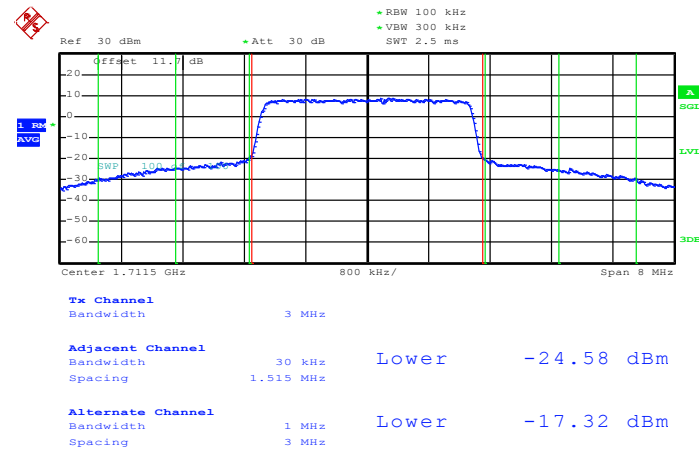


Date: 8.SEP.2012 23:53:08

Band :	LTE Band 4	Band Width :	3MHz / QPSK
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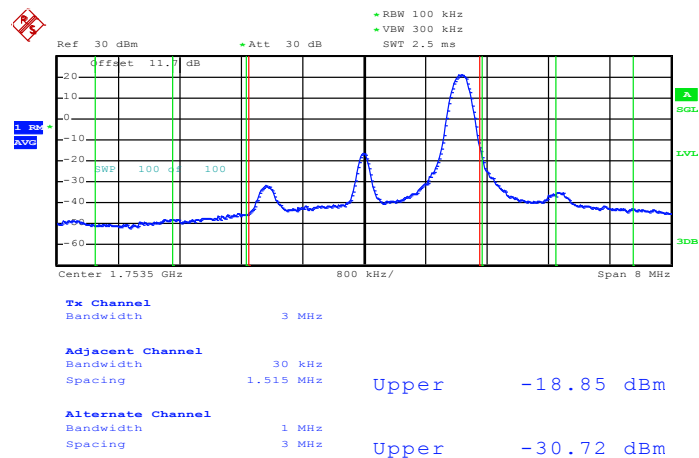
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0


Date: 8.SEP.2012 23:35:46

Lower Band Edge Plot for QPSK-RB Size 15, RB Offset 0


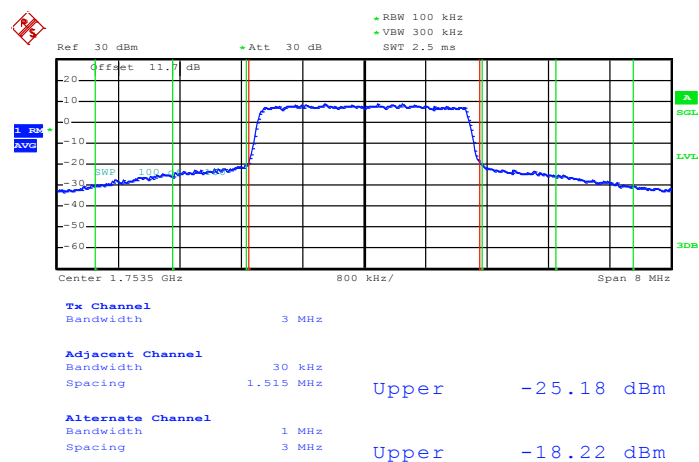
Date: 8.SEP.2012 23:33:54

Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 14



Date: 8.SEP.2012 23:39:50

Higher Band Edge Plot for QPSK-RB Size 15, RB Offset 0

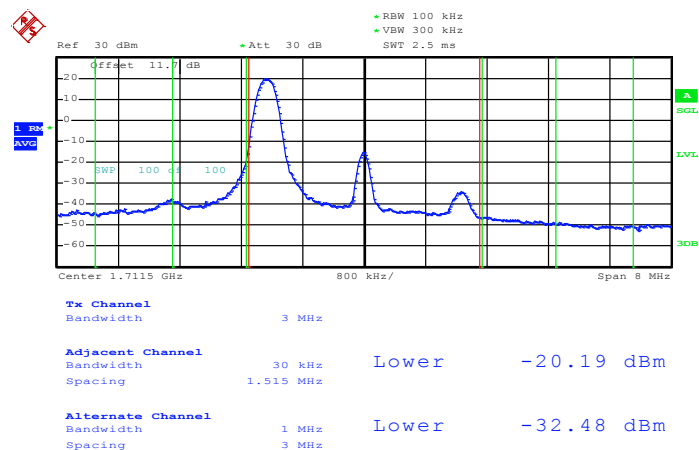


Date: 8.SEP.2012 23:38:08



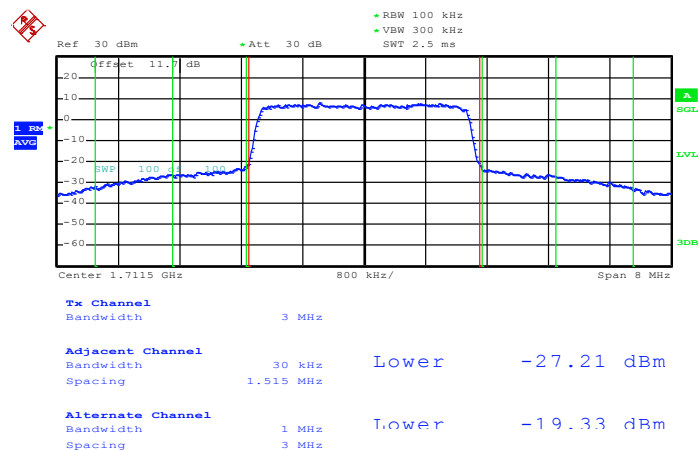
Band :	LTE Band 4	Band Width :	3MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



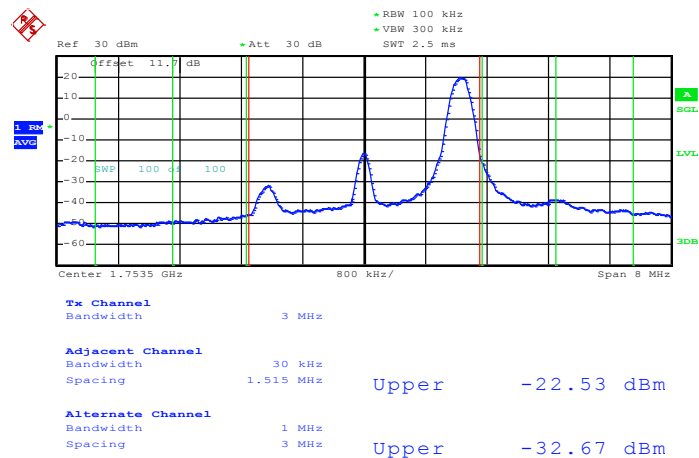
Date: 8.SEP.2012 23:36:20

Lower Band Edge Plot for 16QAM-RB Size 15, RB Offset 0



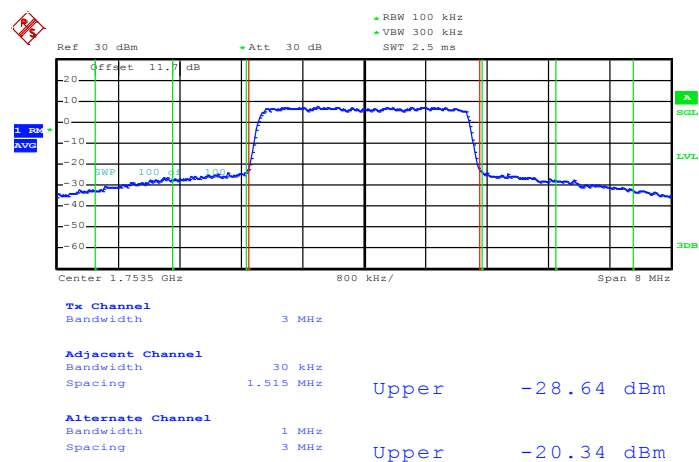
Date: 8.SEP.2012 23:35:08

Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 14



Date: 8.SEP.2012 23:40:07

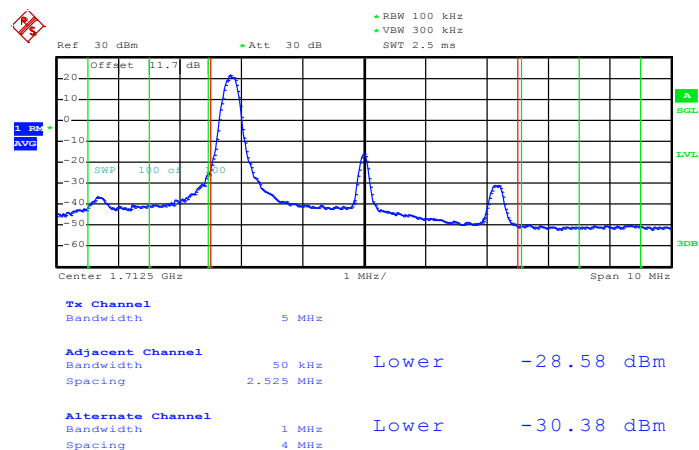
Higher Band Edge Plot for 16QAM-RB Size 15, RB Offset 0



Date: 8.SEP.2012 23:38:25

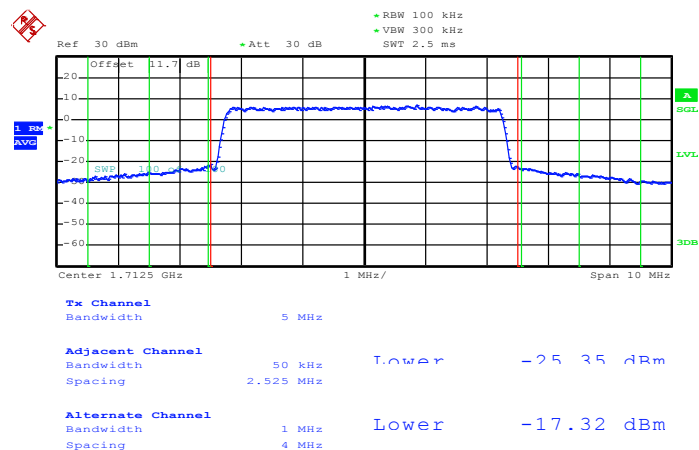
Band :	LTE Band 4	Band Width :	5MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



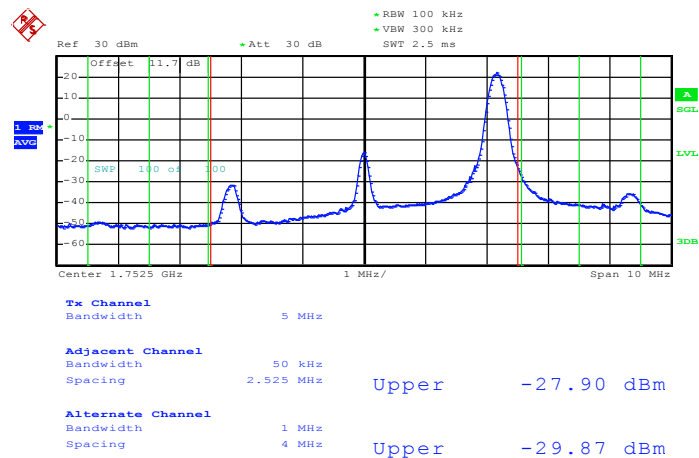
Date: 8.SEP.2012 23:10:03

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



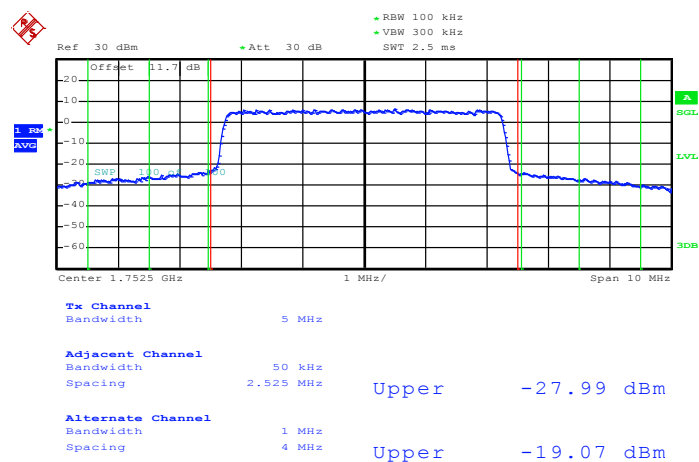
Date: 8.SEP.2012 23:09:31

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



Date: 8.SEP.2012 23:22:58

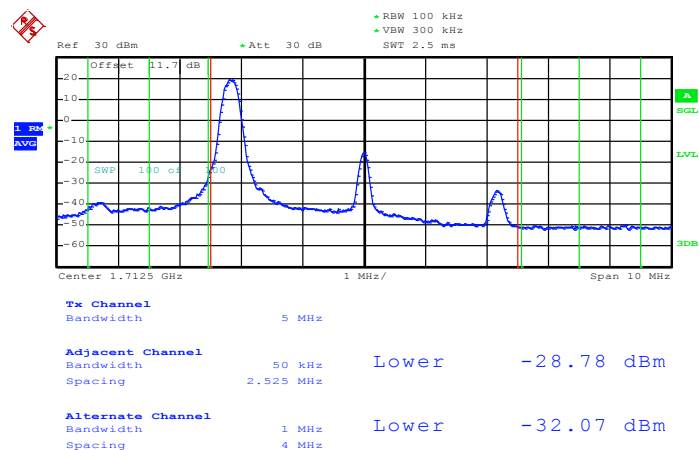
Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0



Date: 8.SEP.2012 23:21:19

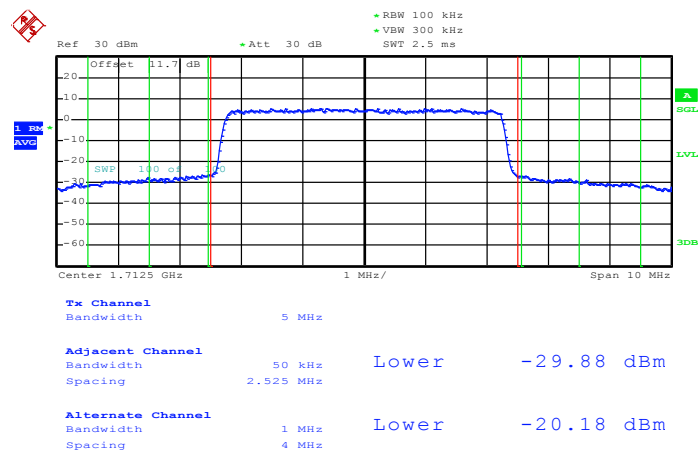
Band :	LTE Band 4	Band Width :	5MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



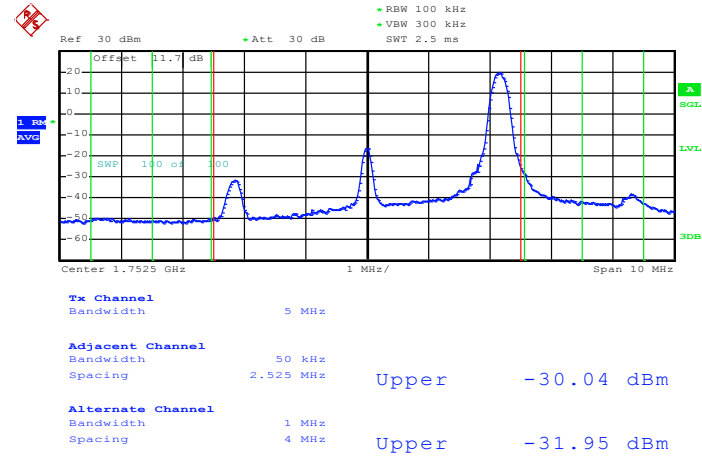
Date: 8.SEP.2012 23:10:19

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



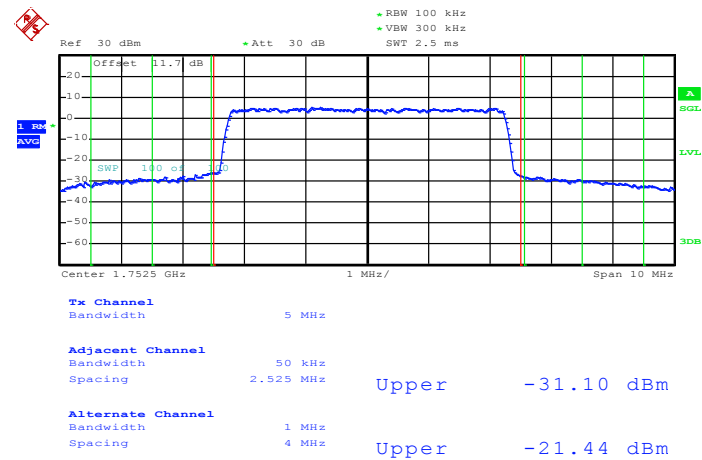
Date: 8.SEP.2012 23:09:47

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



Date: 8.SEP.2012 23:23:26

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

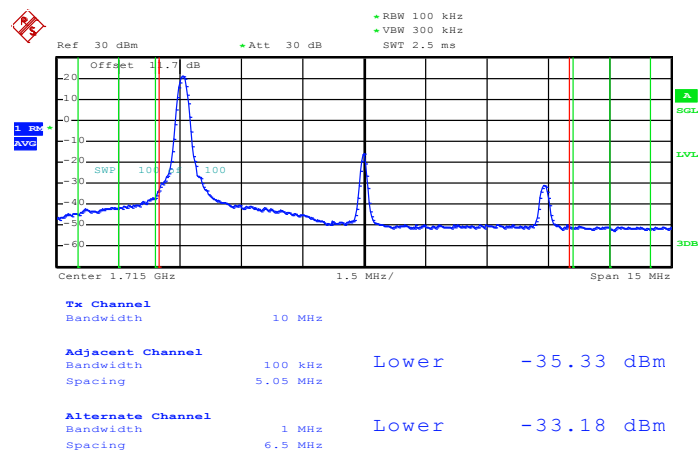


Date: 8.SEP.2012 23:21:39



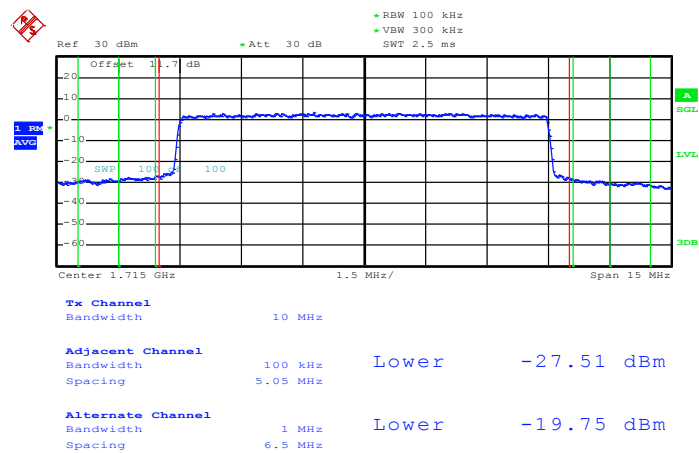
Band :	LTE Band 4	Band Width :	10MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



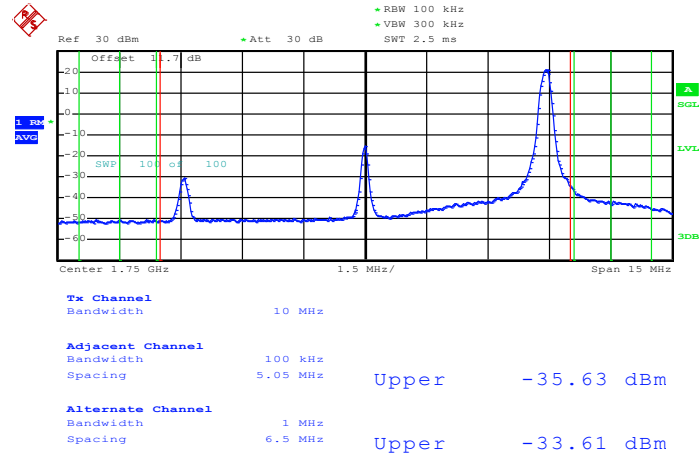
Date: 8.SEP.2012 22:42:17

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



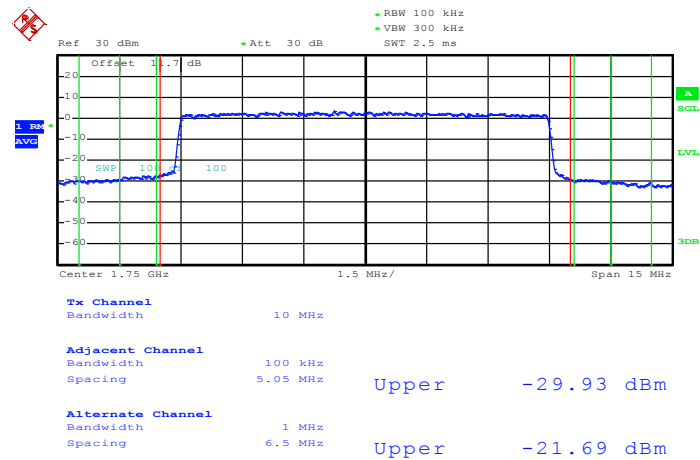
Date: 8.SEP.2012 22:41:06

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



Date: 8.SEP.2012 22:47:37

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

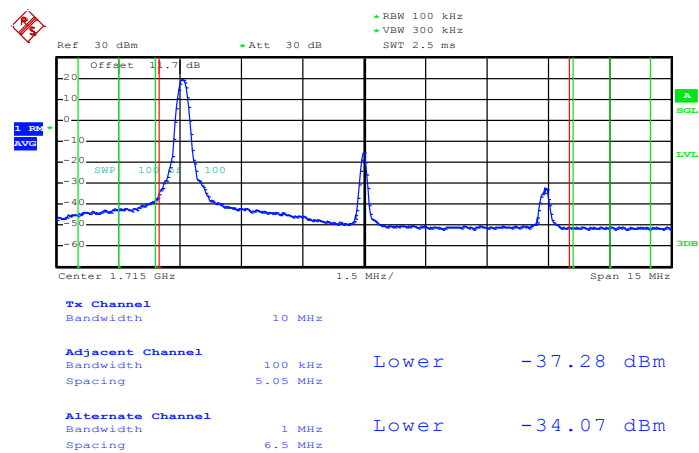


Date: 8.SEP.2012 22:45:30



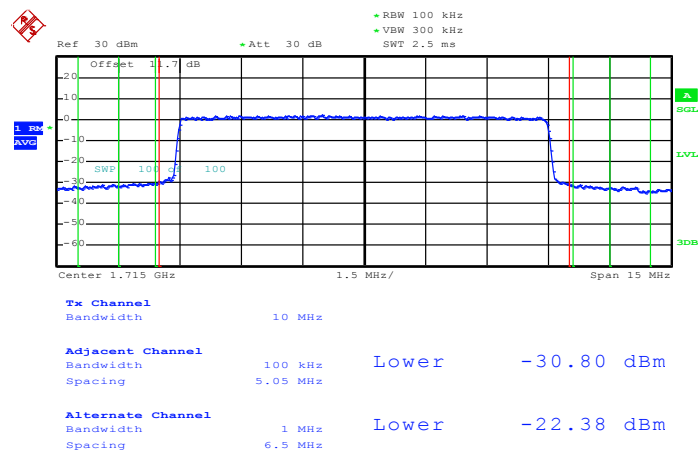
Band :	LTE Band 4	Band Width :	10MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



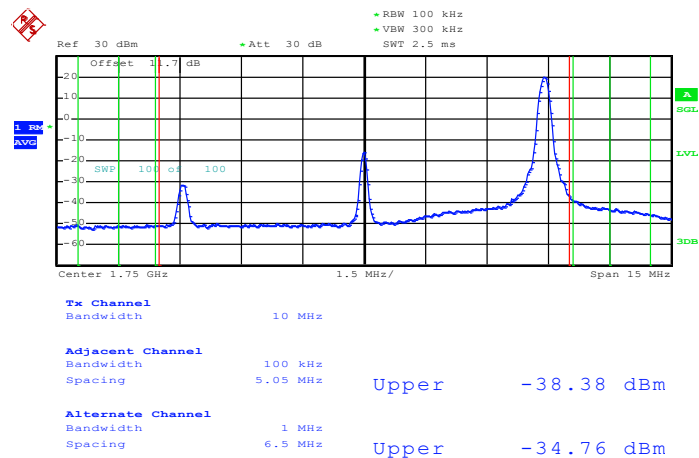
Date: 8.SEP.2012 22:42:34

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



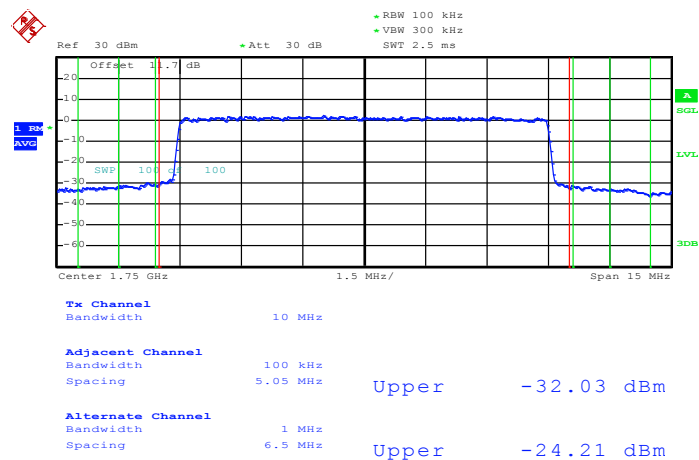
Date: 8.SEP.2012 22:41:31

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



Date: 8.SEP.2012 22:49:03

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

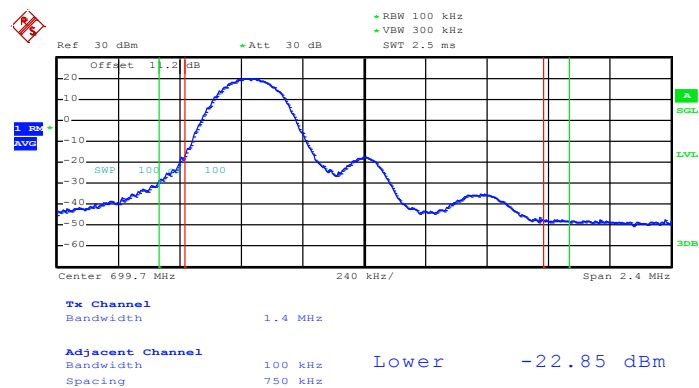


Date: 8.SEP.2012 22:45:51



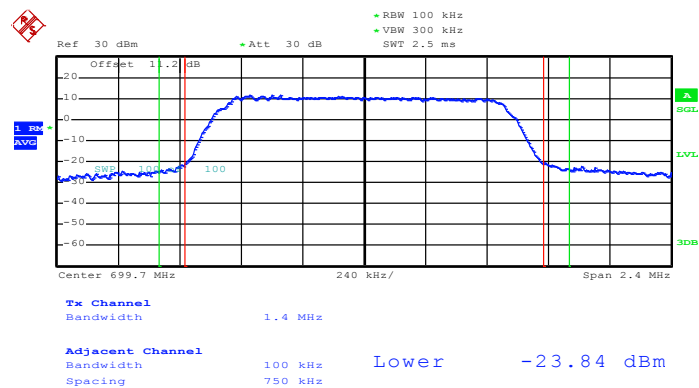
Band :	LTE Band 12	Band Width :	1.4MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0

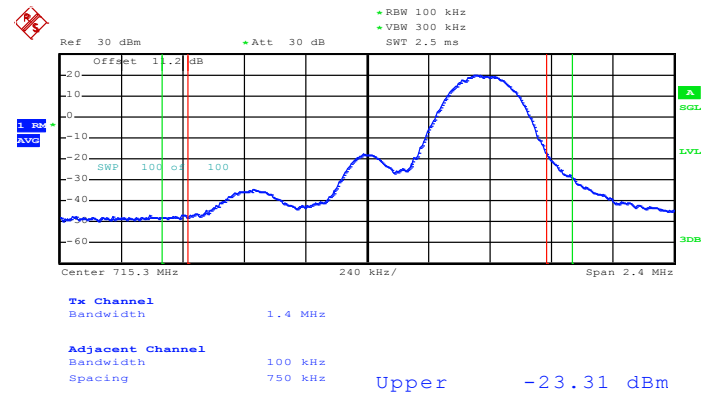


Date: 9.SEP.2012 00:34:26

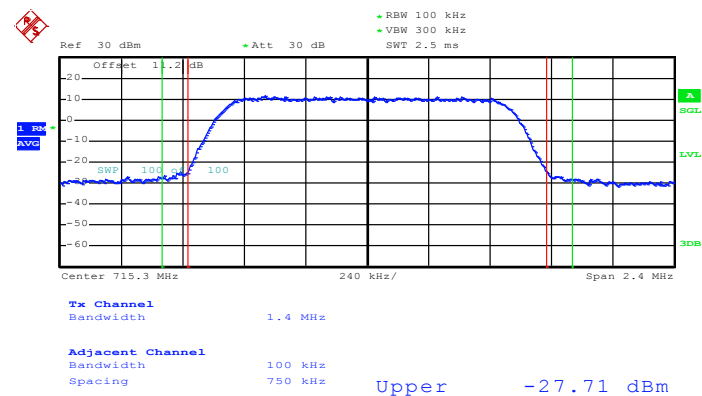
Lower Band Edge Plot for QPSK-RB Size 6, RB Offset 0



Date: 9.SEP.2012 00:31:19

Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 5


Date: 9.SEP.2012 00:44:01

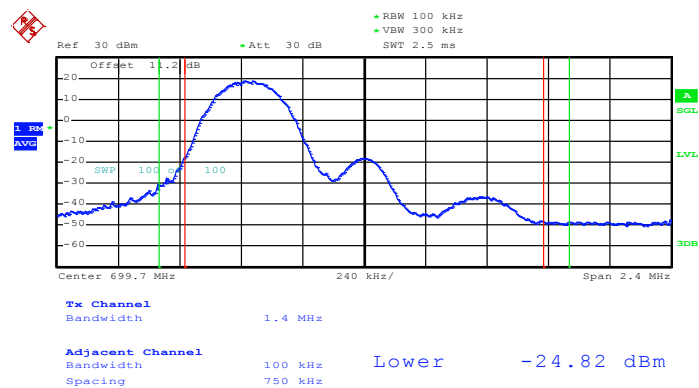
Higher Band Edge Plot for QPSK-RB Size 6, RB Offset 0


Date: 9.SEP.2012 00:43:20



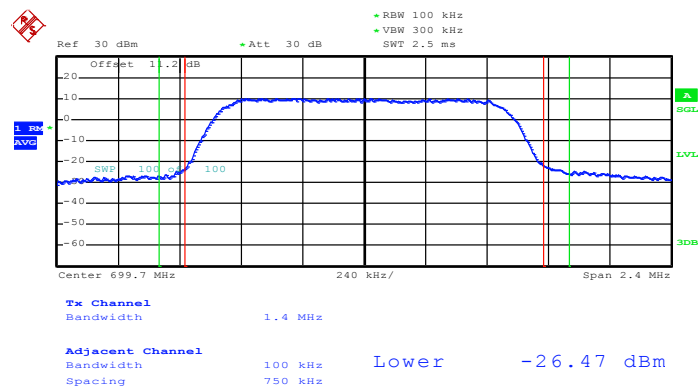
Band :	LTE Band 12	Band Width :	1.4MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



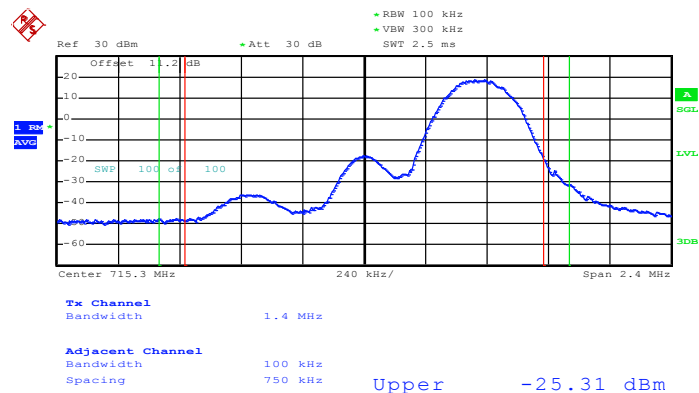
Date: 9.SEP.2012 00:34:43

Lower Band Edge Plot for 16QAM-RB Size 6, RB Offset 0



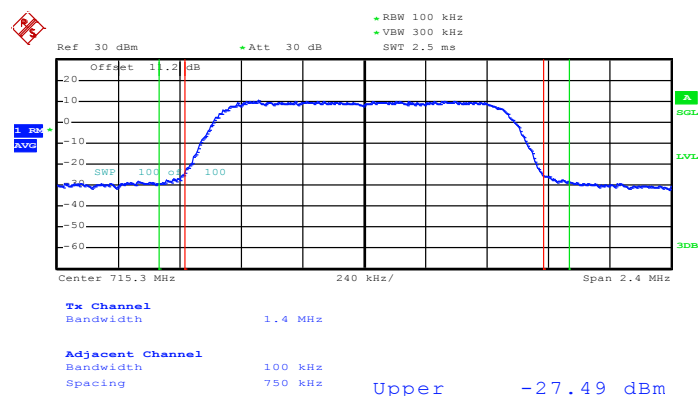
Date: 9.SEP.2012 00:32:07

Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 5



Date: 9.SEP.2012 00:44:16

Higher Band Edge Plot for 16QAM-RB Size 6, RB Offset 0

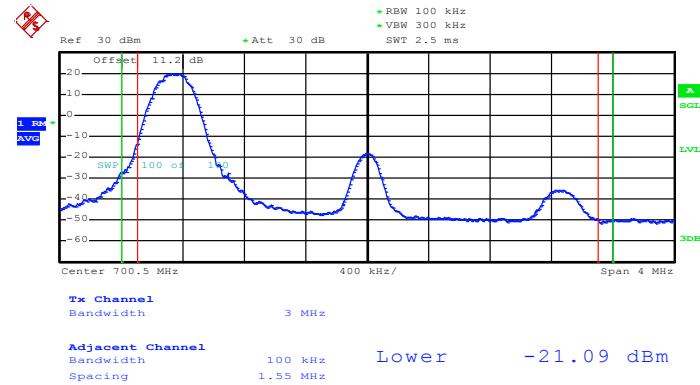


Date: 9.SEP.2012 00:43:33



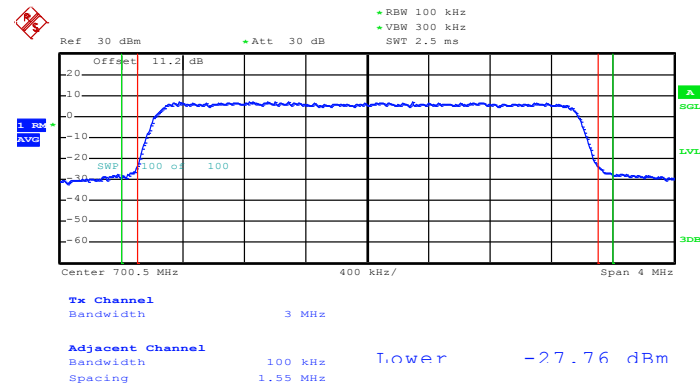
Band :	LTE Band 12	Band Width :	3MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 9.SEP.2012 00:49:20

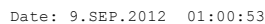
Lower Band Edge Plot for QPSK-RB Size 15, RB Offset 0



Date: 9.SEP.2012 00:47:25



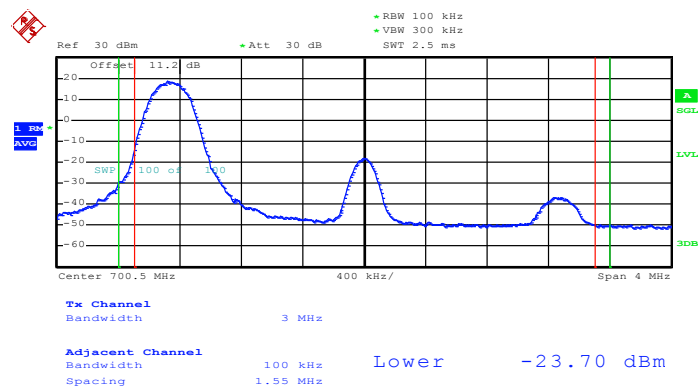
Higher Band Edge Plot for QPSK-RB Size 6, RB Offset 0





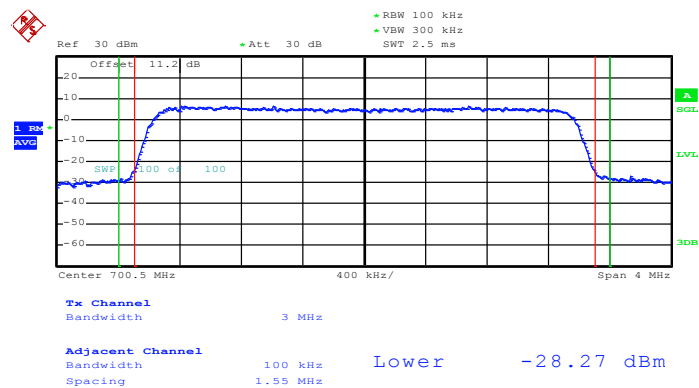
Band :	LTE Band 12	Band Width :	3MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



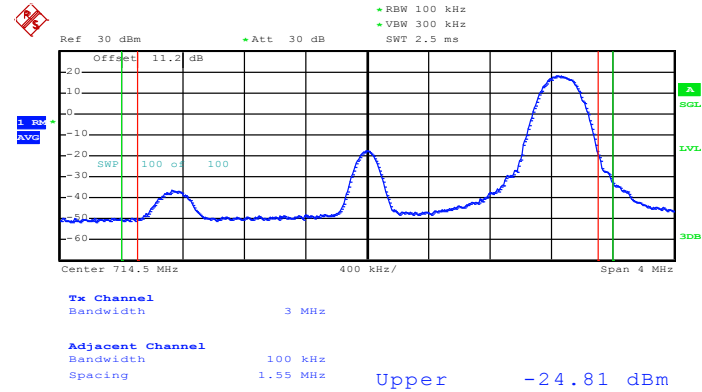
Date: 9.SEP.2012 00:49:36

Lower Band Edge Plot for 16QAM-RB Size 15, RB Offset 0



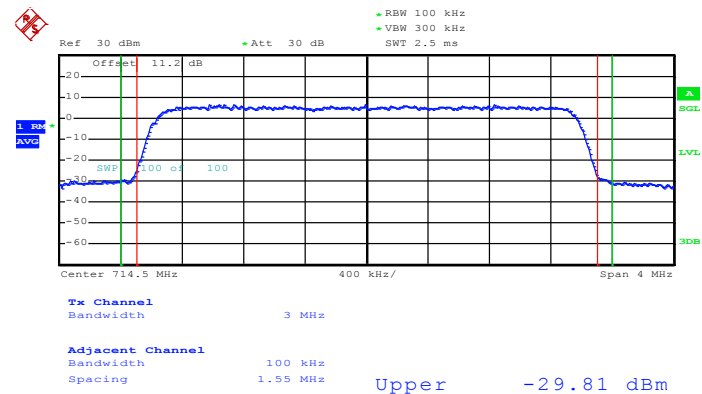
Date: 9.SEP.2012 00:48:27

Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 14



Date: 9.SEP.2012 01:02:23

Higher Band Edge Plot for 16QAM-RB Size 6, RB Offset 0

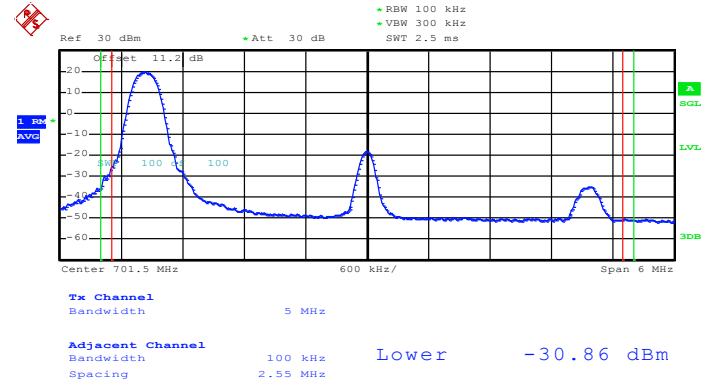


Date: 9.SEP.2012 01:01:28



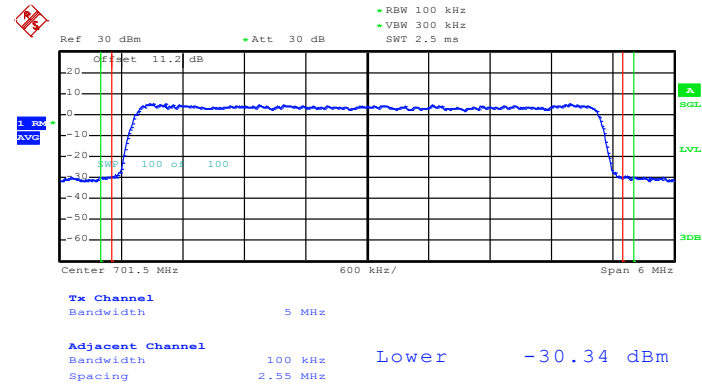
Band :	LTE Band 12	Band Width :	5MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



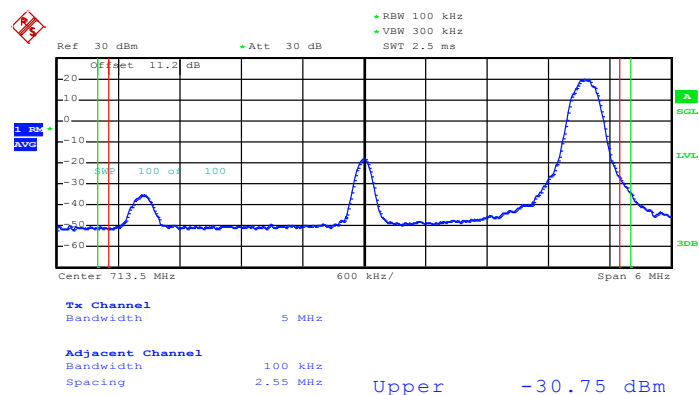
Date: 9.SEP.2012 01:06:47

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



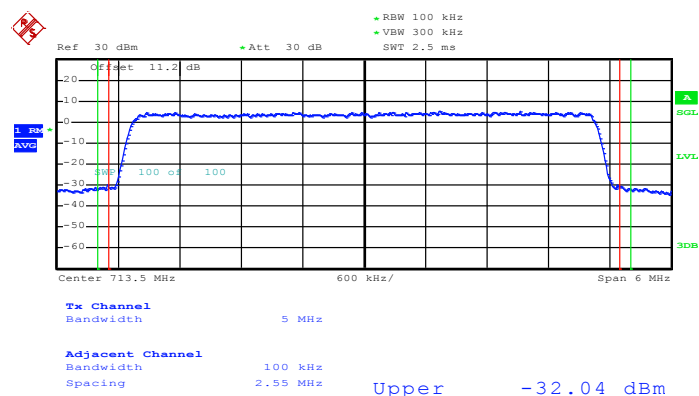
Date: 9.SEP.2012 01:06:04

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



Date: 9.SEP.2012 01:09:11

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

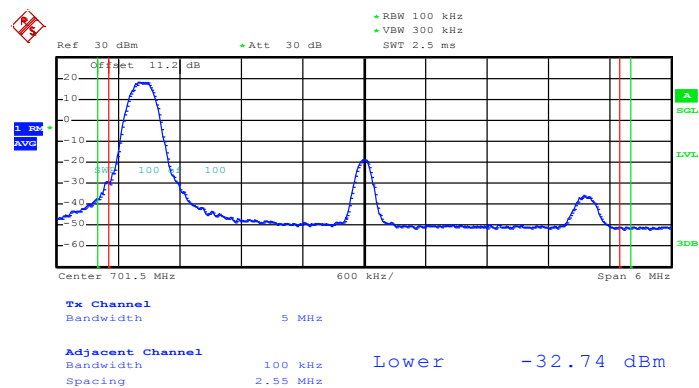


Date: 9.SEP.2012 01:08:22



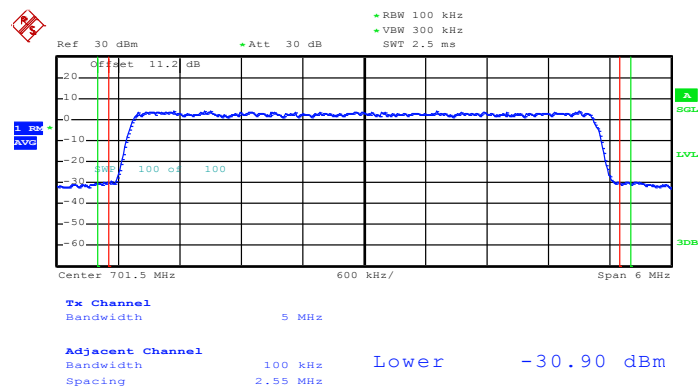
Band :	LTE Band 12	Band Width :	5MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



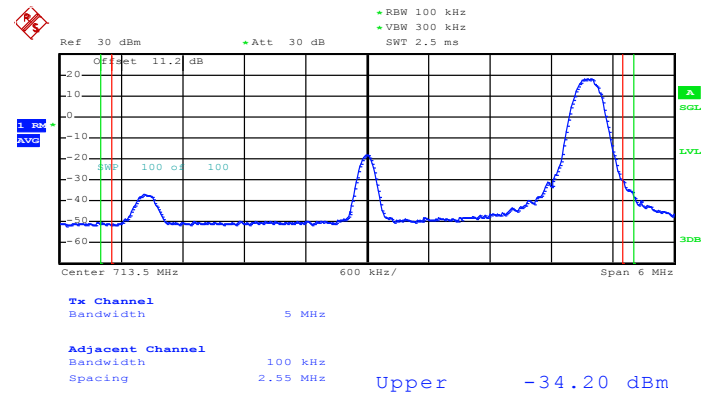
Date: 9.SEP.2012 01:07:03

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



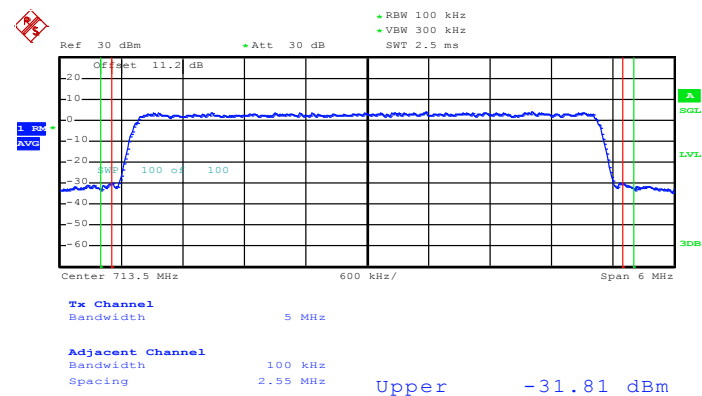
Date: 9.SEP.2012 01:06:21

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



Date: 9.SEP.2012 01:09:35

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

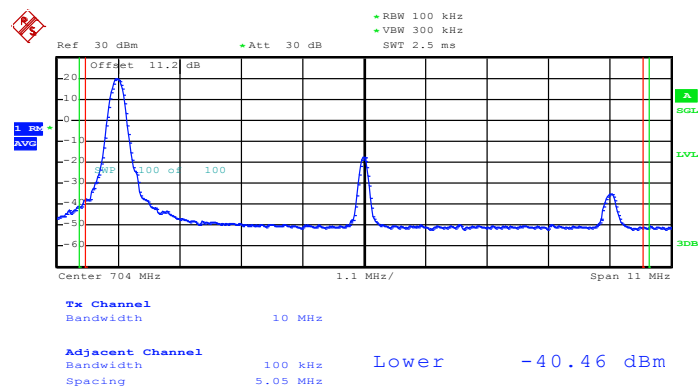


Date: 9.SEP.2012 01:08:41



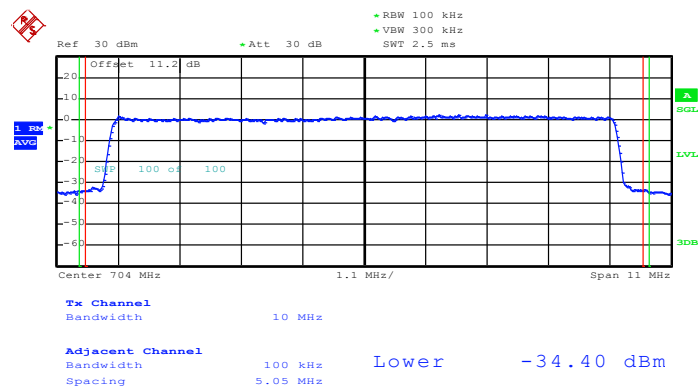
Band :	LTE Band 12	Band Width :	10MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



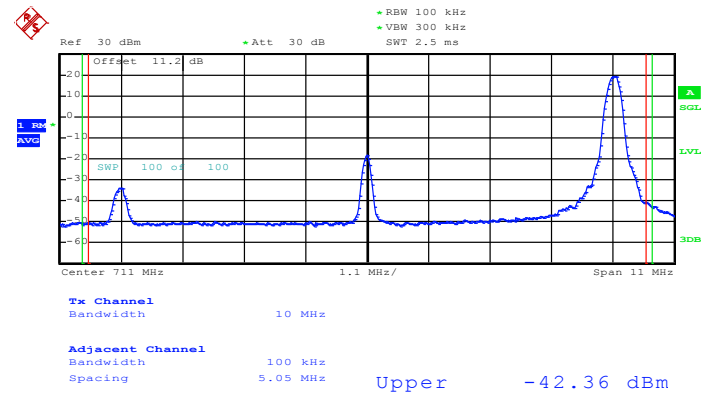
Date: 9.SEP.2012 01:14:45

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



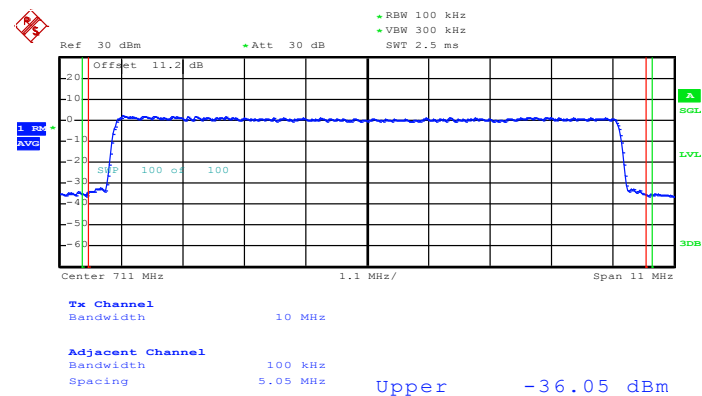
Date: 9.SEP.2012 01:14:00

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



Date: 9.SEP.2012 01:18:52

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

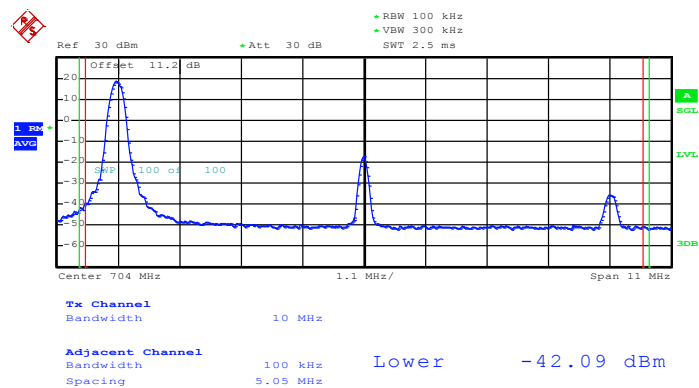


Date: 9.SEP.2012 01:18:16



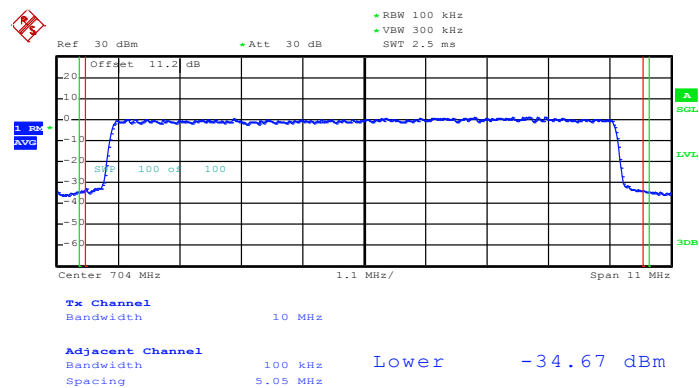
Band :	LTE Band 12	Band Width :	10MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0

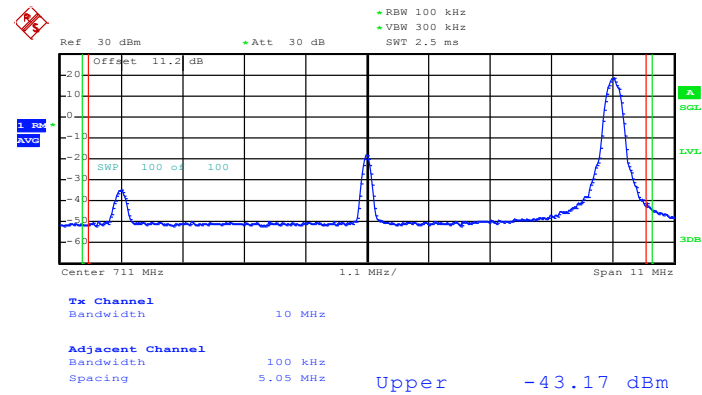


Date: 9.SEP.2012 01:14:58

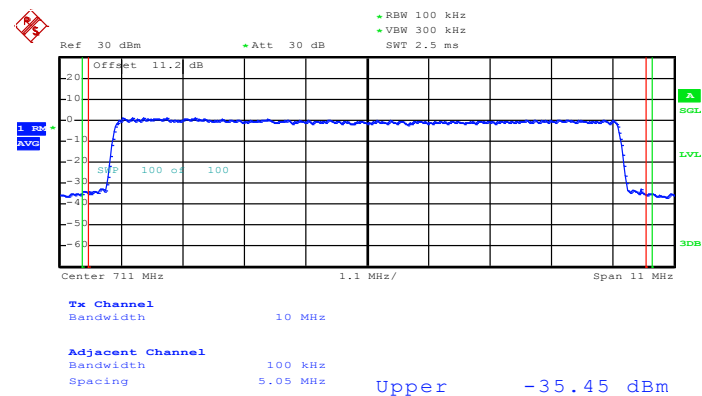
Lower Band Edge Plot for 16QAM-RB Size 50, RB Offset 0



Date: 9.SEP.2012 01:14:22

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


Date: 9.SEP.2012 01:19:09

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


Date: 9.SEP.2012 01:18:29