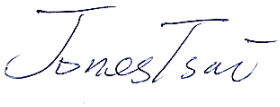
FCC RF Test Report

APPLICANT	:	LG Electronics Inc.
EQUIPMENT	:	Mobile Phone
BRAND NAME	:	LG
MODEL NAME	:	LG-D805, LG-D806
FCC ID	:	ZNFD805
STANDARD	:	47 CFR Part 2, 27
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Jun. 28, 2013 and completely tested on Jul. 11, 2013. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI / TIA / EIA-603-C-2004 and shown compliance with the applicable technical standards.

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

Reviewed by: Joseph Lin / Supervisor



Approved by: Jones Tsai / Manager

Testing Laboratory
1190

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

TABLE OF CONTENTS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG362801B	Rev. 01	Initial issue of report	Aug. 09, 2013

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	§2.1046	RSS-139(6.4)	Conducted Output Power	Reporting Only	PASS	-
3.2	27.53(d)(5)	RSS-139(6.4)	Peak-to-Average Ratio	<13 dB	PASS	-
3.3	§27.50(c)(10)	N/A	Effective Radiated Power (Band 17)	ERP < 3 Watts	PASS	-
	§27.50(d)(4)	RSS-139 (6.4) SRSP-513(5.1.2)	Equivalent Isotropic Radiated Power (Band 4)	EIRP < 1Watt		
	§2.1051 §27.53(m)	N/A	Equivalent Isotropic Radiated Power (Band 7)	EIRP < 2Watt		
3.4	§2.1049 §27.53(h)(3)	RSS-GEN(4.6.1) RSS-139 (3.1)	Occupied Bandwidth	Reporting Only	PASS	-
3.5	§2.1049 §27.53(c) (g) (h) (m)	RSS-139 (6.5)	Conducted Band Edge Measurement (Band 4) (Band 7)(Band 17)	< 43+10log10(P[Watts])	PASS	-
3.6	§2.1051 §27.53(g) (h)	RSS-139 (6.5)	Conducted Spurious Emission (Band 4) (Band 17)	< $43+10\log_{10}$(P[Watts])	PASS	-
	§2.1051 §27.53(m)	N/A	Conducted Spurious Emission (Band 7)	< $55+10\log_{10}$(P[Watts])		

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.7	§2.1053 §27.53(g)(h)	RSS-139 (6.5)	Radiated Spurious Emission (Band 4) (Band 17)	< 43+10log$_{10}$(P[Watts])	PASS	Under limit 10.21 dB at 7520.000 MHz
3.7	§2.1053 §27.53(m)	N/A	Radiated Spurious Emission (Band 7)	< 55+10log$_{10}$(P[Watts])		
3.8	§2.1055 §27.54	RSS-139 (6.3)	Frequency Stability Temperature & Voltage	< 2.5 ppm	PASS	-

1 General Description

1.1 Applicant

LG Electronics Inc.
60-39, Kasan-dong, Kumchon-gu, Seoul 135-801, Korea

1.2 Manufacturer

LG Electronics Inc.
60-39, Kasan-dong, Kumchon-gu, Seoul 135-801, Korea

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	LG
Model Name	LG-D805, LG-D806
FCC ID	ZNFD805
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE/ WLAN 2.4GHz 802.11b/g/n/ac, WLAN 5GHz 802.11a/n/ac/ Bluetooth 3.0/4.0+LE/ NFC
HW Version	Rev.d
SW Version	D80508a
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.

1.4 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx Frequency	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz LTE Band 4 : 1712.5 MHz ~ 1752.5 MHz LTE Band 7 : 2506.5 MHz ~2534.5MHz and 2556MHz~2567.5 MHz LTE Band 17 : 706.5 MHz ~ 713.5 MHz 802.11b/g/n/ac: 2412 MHz ~ 2462 MHz 802.11a/n: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5580 MHz and 5660 MHz ~ 5720 MHz; 5745 MHz ~ 5825 MHz 802.11ac: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5580 MHz and 5660 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
Rx Frequency	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz LTE Band 4 : 2112.5 MHz ~ 2152.5 MHz LTE Band 7 : 2626.5MHz ~2654.5MHz and 2676MHz~2687.5 MHz LTE Band 17 : 736.5 MHz ~ 743.5 MHz 802.11b/g/n/ac: 2412 MHz ~ 2462 MHz 802.11a/n: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5580 MHz and 5660 MHz ~ 5720 MHz; 5745 MHz ~ 5825 MHz 802.11ac: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5580 MHz and 5660 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz GPS : 1.57542 GHz NFC : 13.56 MHz
Bandwidth	LTE Band 4 : 5MHz/ 10MHz / 15MHz / 20MHz LTE Band 7 : 5MHz/ 10MHz / 15MHz / 20MHz LTE Band 17 : 5MHz / 10MHz
Maximum Output Power to Antenna	LTE Band 4 : 23.32 dBm / 0.2148 W LTE Band 7 : 23.23 dBm / 0.2104 W LTE Band 17 : 23.48 dBm / 0.2228 W
Antenna Type	WWAN : PIFA Antenna LTE : PIFA Antenna WLAN : PIFA Antenna Bluetooth : PIFA Antenna GPS : PIFA Antenna NFC : Loop Antenna

Product Specification subjective to this standard	
Type of Modulation	GSM / GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) LTE : QPSK / 16QAM 802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) Bluetooth 4.0 - LE : GFSK Bluetooth 3.0 BR (1Mbps) : GFSK Bluetooth 3.0 EDR (2Mbps) : π /4-DQPSK Bluetooth 3.0 EDR (3Mbps) : 8-DPSK GPS : BPSK NFC: ASK

1.5 Modification of EUT

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

1.6 Emission Designator

FCC Rule	System	Type of Modulation	BW	Emission Designator	Frequency Tolerance (%, Hz, ppm)	Maximum ERP/EIRP
Part 27	LTE Band 4	QPSK	5MHz	4M54G7D	0.010 ppm	0.5007 W
Part 27	LTE Band 4	16QAM	5MHz	4M54D7W	0.010 ppm	0.3685 W
Part 27	LTE Band 4	QPSK	10MHz	9M08G7D	0.010 ppm	0.3548 W
Part 27	LTE Band 4	16QAM	10MHz	9M08D7W	0.010 ppm	0.2917 W
Part 27	LTE Band 4	QPSK	15MHz	13M5G7D	0.010 ppm	0.3579 W
Part 27	LTE Band 4	16QAM	15MHz	13M5D7W	0.010 ppm	0.2732 W
Part 27	LTE Band 4	QPSK	20MHz	18M6G7D	0.010 ppm	0.3308 W
Part 27	LTE Band 4	16QAM	20MHz	18M6D7W	0.010 ppm	0.2510 W
Part 27	LTE Band 7	QPSK	5MHz	4M52G7D	0.007 ppm	0.1209 W
Part 27	LTE Band 7	16QAM	5MHz	4M52D7W	0.007 ppm	0.0954 W
Part 27	LTE Band 7	QPSK	10MHz	9M08G7D	0.007 ppm	0.1209 W
Part 27	LTE Band 7	16QAM	10MHz	9M08D7W	0.007 ppm	0.0947 W
Part 27	LTE Band 7	QPSK	15MHz	13M5G7D	0.007 ppm	0.1233 W
Part 27	LTE Band 7	16QAM	15MHz	13M5D7W	0.008 ppm	0.0939 W
Part 27	LTE Band 7	QPSK	20MHz	18M6G7D	0.007 ppm	0.1153 W
Part 27	LTE Band 7	16QAM	20MHz	18M5D7W	0.007 ppm	0.1008 W
Part 27	LTE Band 17	QPSK	5MHz	4M52G7D	0.024 ppm	0.0567 W
Part 27	LTE Band 17	16QAM	5MHz	4M52D7W	0.024 ppm	0.0457 W
Part 27	LTE Band 17	QPSK	10MHz	9M04G7D	0.023 ppm	0.0331 W
Part 27	LTE Band 17	16QAM	10MHz	9M04D7W	0.025 ppm	0.0272 W

1.7 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	TH02-HY	03CH06-HY	722060/4086B-1

1.8 Applied Standards

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

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

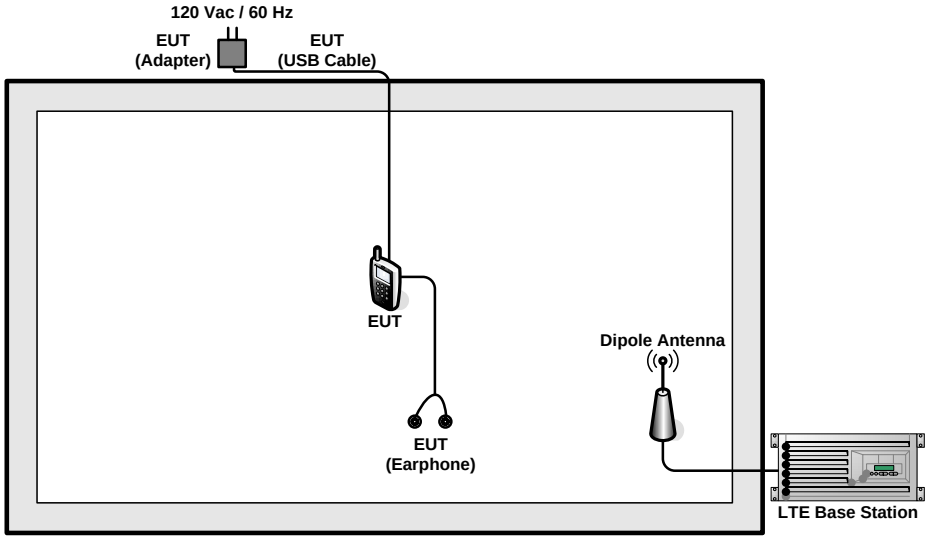
2 Test Configuration of Equipment Under Test

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 4	**BW 5MHz**	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 12) Link ■ LTE (RB Size 25) Link
	BW 10MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 25) Link ■ LTE (RB Size 50) Link
	BW 15MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 36) Link ■ LTE (RB Size 75) Link
	BW 20MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 50) Link ■ LTE (RB Size 100) Link
LTE Band 7	**BW 5MHz**	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 12) Link ■ LTE (RB Size 25) Link
	BW 10MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 25) Link ■ LTE (RB Size 50) Link
	BW 15MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 36) Link ■ LTE (RB Size 75) Link
	BW 20MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 50) Link ■ LTE (RB Size 100) Link
LTE Band 17	**BW 5MHz**	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 12) Link ■ LTE (RB Size 25) Link
	BW 10MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 25) Link ■ LTE (RB Size 50) Link

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

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

2.4 Measurement Results Explanation Example

For all conducted test items:

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

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

Offset = RF cable loss + attenuator factor.

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

Example :

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

= 4.2 + 10 = 14.2 (dB)

3 Test Result

3.1 Conducted Output Power Measurement

3.1.1 Description of the Conducted Output Power Measurement

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

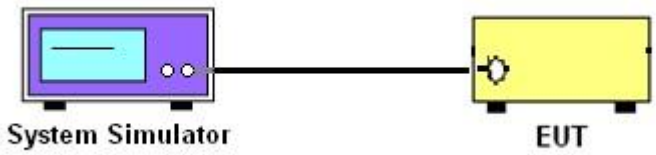
3.1.2 Measuring Instruments

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

<LTE Band 4 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				20050	20175	20300
Frequency (MHz)				1720	1732.5	1745
20	QPSK	1	0	23.23	23.32	23.26
20	QPSK	1	49	23.03	23.11	23.21
20	QPSK	1	99	23.04	23.27	23.22
20	QPSK	50	0	22.02	22.02	22.04
20	QPSK	50	24	21.92	22.01	21.98
20	QPSK	50	49	21.97	21.96	21.99
20	QPSK	100	0	21.94	22.01	21.97
20	16QAM	1	0	22.61	22.43	22.61
20	16QAM	1	49	22.39	22.04	22.26
20	16QAM	1	99	21.98	22.12	22.38
20	16QAM	50	0	20.98	21.07	21.10
20	16QAM	50	24	21.01	20.91	20.92
20	16QAM	50	49	20.94	21.03	20.98
20	16QAM	100	0	21.19	21.05	21.00
Channel				20025	20175	20325
Frequency (MHz)				1717.5	1732.5	1747.5
15	QPSK	1	0	23.17	23.28	23.16
15	QPSK	1	37	23.00	23.15	23.16
15	QPSK	1	74	23.18	23.02	23.16
15	QPSK	36	0	21.99	22.08	22.09
15	QPSK	36	18	22.02	22.07	22.11
15	QPSK	36	37	22.01	22.05	22.05
15	QPSK	75	0	21.92	22.07	22.01
15	16QAM	1	0	21.80	22.29	21.96
15	16QAM	1	37	21.99	22.14	21.72
15	16QAM	1	74	22.23	22.05	21.93
15	16QAM	36	0	21.01	20.98	21.15
15	16QAM	36	18	21.02	21.09	20.98
15	16QAM	36	37	21.07	21.08	20.97
15	16QAM	75	0	20.92	21.02	21.06

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				20000	20175	20350
Frequency (MHz)				1715	1732.5	1750
10	QPSK	1	0	23.03	22.99	23.19
10	QPSK	1	24	22.85	23.13	23.19
10	QPSK	1	49	23.15	23.03	23.21
10	QPSK	25	0	22.08	22.16	22.21
10	QPSK	25	12	21.89	22.17	22.14
10	QPSK	25	24	22.13	22.11	22.18
10	QPSK	50	0	22.02	22.02	21.96
10	16QAM	1	0	22.16	22.39	22.28
10	16QAM	1	24	21.86	22.28	22.16
10	16QAM	1	49	22.02	22.07	22.00
10	16QAM	25	0	21.03	21.08	21.30
10	16QAM	25	12	20.83	21.14	21.03
10	16QAM	25	24	21.13	21.11	21.09
10	16QAM	50	0	20.80	21.05	20.97
Channel				19975	20175	20375
Frequency (MHz)				1712.5	1732.5	1752.5
5	QPSK	1	0	23.19	23.18	23.11
5	QPSK	1	12	22.73	23.09	23.19
5	QPSK	1	24	23.04	23.26	23.16
5	QPSK	12	0	22.16	22.19	22.25
5	QPSK	12	6	22.17	22.15	22.31
5	QPSK	12	11	22.10	22.17	22.22
5	QPSK	25	0	22.06	22.06	22.21
5	16QAM	1	0	22.39	22.14	22.19
5	16QAM	1	12	22.03	22.26	22.36
5	16QAM	1	24	22.20	22.06	22.42
5	16QAM	12	0	21.17	21.21	21.22
5	16QAM	12	6	21.15	21.25	21.13
5	16QAM	12	11	21.16	21.15	21.32
5	16QAM	25	0	21.15	21.10	21.11

<LTE Band 7 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				**20890**	**21020**	**-**
Frequency (MHz)				**2514**	**2527**	**-**
20	QPSK	1	0	23.07	23.15	-
20	QPSK	1	49	22.96	23.15	-
20	QPSK	1	99	23.11	**23.23**	-
20	QPSK	50	0	21.65	21.72	-
20	QPSK	50	24	21.70	21.78	-
20	QPSK	50	49	21.74	21.77	-
20	QPSK	100	0	21.80	21.82	-
20	16QAM	1	0	22.01	22.34	-
20	16QAM	1	49	22.28	21.93	-
20	16QAM	1	99	22.06	22.34	-
20	16QAM	50	0	20.63	20.78	-
20	16QAM	50	24	20.74	20.77	-
20	16QAM	50	49	20.75	20.78	-
20	16QAM	100	0	20.81	20.86	-
Channel				**20865**	**21045**	**21375**
Frequency (MHz)				**2511.5**	**2529.5**	**2562.5**
15	QPSK	1	0	23.10	23.14	23.05
15	QPSK	1	37	23.09	22.96	22.95
15	QPSK	1	74	23.18	23.16	22.90
15	QPSK	36	0	21.69	21.81	21.69
15	QPSK	36	18	21.77	21.80	21.72
15	QPSK	36	37	21.82	21.85	21.61
15	QPSK	75	0	21.74	21.84	21.63
15	16QAM	1	0	22.03	22.01	21.96
15	16QAM	1	37	22.31	21.96	21.84
15	16QAM	1	74	22.12	21.83	21.91
15	16QAM	36	0	20.79	20.93	20.76
15	16QAM	36	18	20.81	20.83	20.74
15	16QAM	36	37	20.85	20.93	20.71
15	16QAM	75	0	20.60	20.81	20.66

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				20840	21070	21400
Frequency (MHz)				2509	2532	2565
10	QPSK	1	0	23.00	23.08	22.88
10	QPSK	1	24	23.01	22.98	22.83
10	QPSK	1	49	22.96	23.06	22.76
10	QPSK	25	0	21.96	21.88	21.80
10	QPSK	25	12	21.86	21.87	21.71
10	QPSK	25	24	21.79	21.85	21.68
10	QPSK	50	0	21.77	21.75	21.64
10	16QAM	1	0	22.00	22.00	22.22
10	16QAM	1	24	22.30	22.25	22.16
10	16QAM	1	49	22.27	22.27	21.85
10	16QAM	25	0	20.94	21.06	20.85
10	16QAM	25	12	20.95	20.99	20.88
10	16QAM	25	24	20.86	20.91	20.67
10	16QAM	50	0	20.72	20.79	20.65
Channel				20815	21095	21425
Frequency (MHz)				2506.5	2534.5	2567.5
5	QPSK	1	0	23.07	23.05	22.93
5	QPSK	1	12	23.14	22.93	22.78
5	QPSK	1	24	23.07	22.98	22.78
5	QPSK	12	0	22.10	22.01	21.82
5	QPSK	12	6	22.02	21.97	21.79
5	QPSK	12	11	22.05	22.01	21.76
5	QPSK	25	0	21.90	21.85	21.57
5	16QAM	1	0	22.03	22.23	22.09
5	16QAM	1	12	21.87	21.62	21.84
5	16QAM	1	24	22.36	22.20	21.87
5	16QAM	12	0	21.09	21.04	20.98
5	16QAM	12	6	20.99	21.08	20.90
5	16QAM	12	11	21.10	21.11	20.86
5	16QAM	25	0	20.96	20.96	20.68

<LTE Band 17 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				**23780**	**23790**	**23800**
Frequency (MHz)				**709**	**710**	**711**
10	QPSK	1	0	23.22	23.26	23.14
10	QPSK	1	24	23.14	23.18	23.35
10	QPSK	1	49	**23.48**	23.25	23.26
10	QPSK	25	0	22.11	22.08	22.12
10	QPSK	25	12	22.21	22.29	22.27
10	QPSK	25	24	22.28	22.33	22.40
10	QPSK	50	0	21.93	22.02	21.98
10	16QAM	1	0	22.74	22.60	22.63
10	16QAM	1	24	22.63	22.68	22.78
10	16QAM	1	49	22.73	22.73	22.58
10	16QAM	25	0	21.23	21.22	21.26
10	16QAM	25	12	21.23	21.31	21.27
10	16QAM	25	24	21.28	21.31	21.37
10	16QAM	50	0	20.90	20.99	21.04
Channel				**23755**	**23790**	**23825**
Frequency (MHz)				**706.5**	**710**	**713.5**
5	QPSK	1	0	23.33	23.29	23.36
5	QPSK	1	12	23.18	23.24	23.42
5	QPSK	1	24	23.27	23.38	23.01
5	QPSK	12	0	22.38	22.32	22.34
5	QPSK	12	6	22.25	22.40	22.41
5	QPSK	12	11	22.36	22.47	22.43
5	QPSK	25	0	22.10	22.23	22.27
5	16QAM	1	0	22.43	22.25	22.38
5	16QAM	1	12	22.27	22.28	22.56
5	16QAM	1	24	22.23	22.49	22.06
5	16QAM	12	0	21.43	21.47	21.37
5	16QAM	12	6	21.08	21.55	21.55
5	16QAM	12	11	21.41	21.50	21.36
5	16QAM	25	0	21.25	21.27	21.24

Note: maximum average power for LTE.

3.2 Peak-to-Average Ratio

3.2.1 Description of the PAR Measurement

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

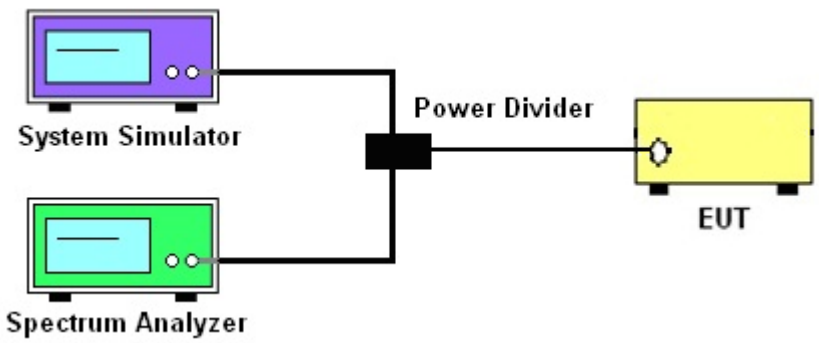
3.2.2 Measuring Instruments

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 LTE operating modes:
   a. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
   b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
3. Record the deviation as Peak to Average Ratio.

3.2.4 Test Setup



3.2.5 Test Result of Peak-to-Average Ratio

Modes	LTE Band 4			
BW / Mod.	5MHz / QPSK	5MHz / 16QAM	10MHz / QPSK	10MHz / 16QAM
Peak-to-Average Ratio (dB)	5.29	6.09	5.26	6.15
BW / Mod.	15MHz / QPSK	15MHz / 16QAM	20MHz / QPSK	20MHz / 16QAM
Peak-to-Average Ratio (dB)	5.45	6.12	5.22	6.12

Modes	LTE Band 7			
BW / Mod.	5MHz / QPSK	5MHz / 16QAM	10MHz / QPSK	10MHz / 16QAM
Peak-to-Average Ratio (dB)	5.83	6.67	5.67	6.60
BW / Mod.	15MHz / QPSK	15MHz / 16QAM	20MHz / QPSK	20MHz / 16QAM
Peak-to-Average Ratio (dB)	6.09	6.67	5.67	6.51

Modes	LTE Band 17			
BW / Mod.	5MHz / QPSK	5MHz / 16QAM	10MHz / QPSK	10MHz / 16QAM
Peak-to-Average Ratio (dB)	5.76	6.68	5.52	6.52

Note:

The maximum RB configurations of the PAPR summary as below:

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

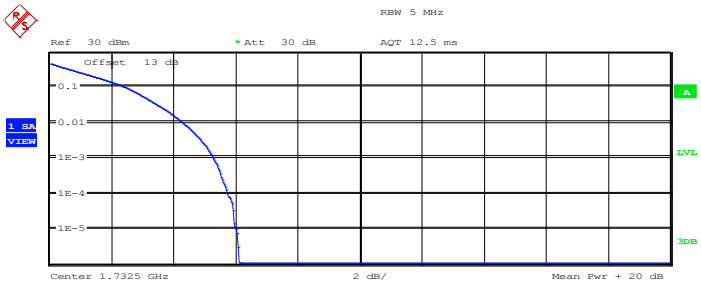
BW10MHz RB setting：RB Size 50, RB offset 0

BW15MHz RB setting：RB Size 75, RB offset 0

BW20MHz RB setting：RB Size 100, RB offset 0

3.2.6 Peak to Average Power Ratio

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

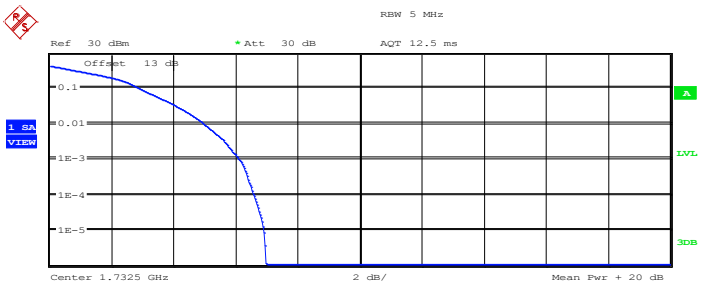


Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 7.1MHz

	Trace 1
Mean	22.13 dBm
Peak	28.23 dBm
Crest	6.10 dB
10 %	2.44 dB
1 %	4.29 dB
.1 %	5.29 dB
.01 %	5.74 dB

Date: 11.JUL.2013 15:07:17

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

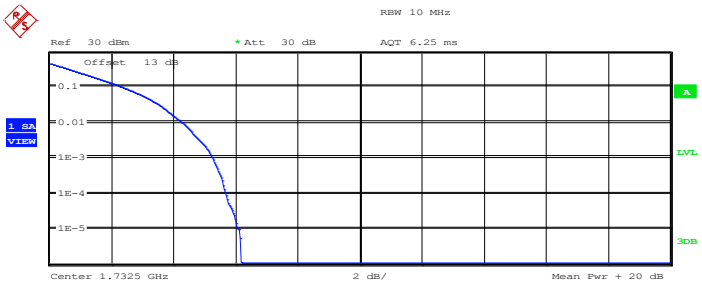


Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 7.1MHz

	Trace 1
Mean	21.05 dBm
Peak	28.02 dBm
Crest	6.97 dB
10 %	2.92 dB
1 %	4.97 dB
.1 %	6.09 dB
.01 %	6.57 dB

Date: 11.JUL.2013 15:07:36

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

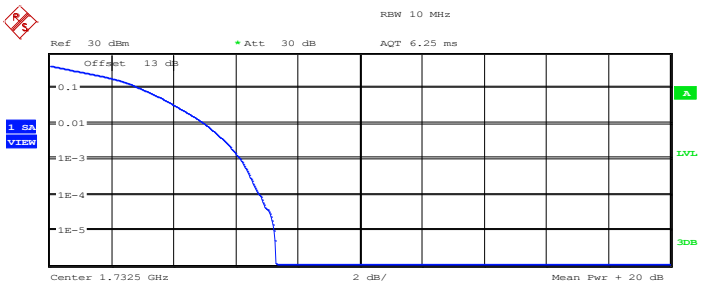


Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	22.27 dBm
Peak	28.45 dBm
Crest	6.18 dB
10 %	2.37 dB
1 %	4.26 dB
.1 %	5.26 dB
.01 %	5.67 dB

Date: 11.JUL.2013 15:08:10

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

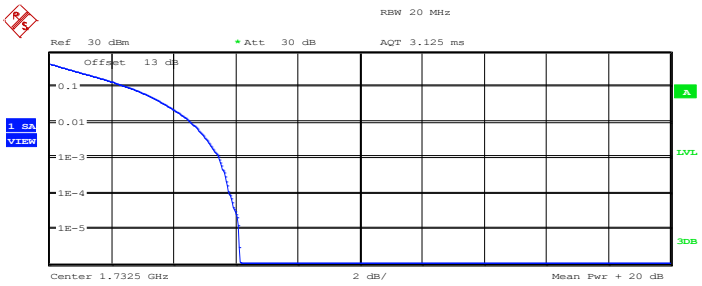


Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	21.15 dBm
Peak	28.45 dBm
Crest	7.30 dB
10 %	2.92 dB
1 %	4.97 dB
.1 %	6.15 dB
.01 %	6.76 dB

Date: 11.JUL.2013 15:08:29

Peak-to-Average Ratio on LTE Band 4 15MHz / QPSK

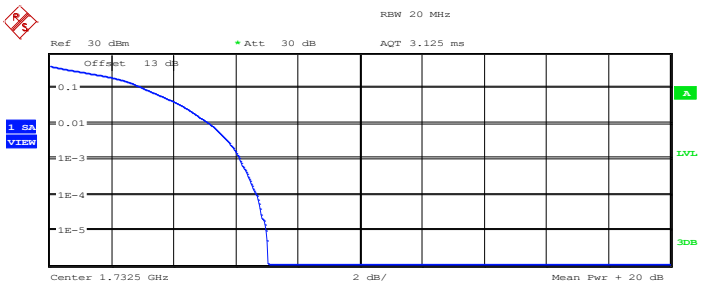


Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	22.02 dBm
Peak	28.14 dBm
Crest	6.12 dB
10 %	2.53 dB
1 %	4.55 dB
.1 %	5.45 dB
.01 %	5.80 dB

Date: 11.JUL.2013 15:09:00

Peak-to-Average Ratio on LTE Band 4 15MHz / 16QAM

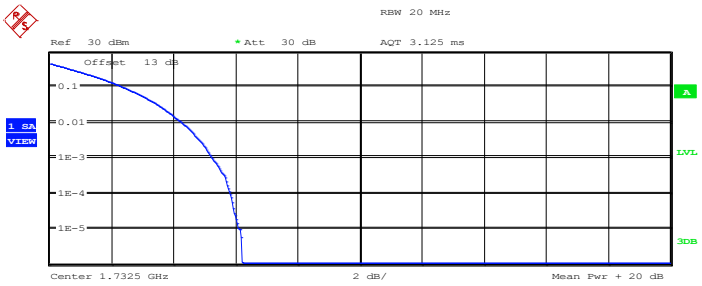


Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	20.96 dBm
Peak	28.00 dBm
Crest	7.04 dB
10 %	3.04 dB
1 %	5.13 dB
.1 %	6.12 dB
.01 %	6.67 dB

Date: 11.JUL.2013 15:09:20

Peak-to-Average Ratio on LTE Band 4 20MHz / QPSK

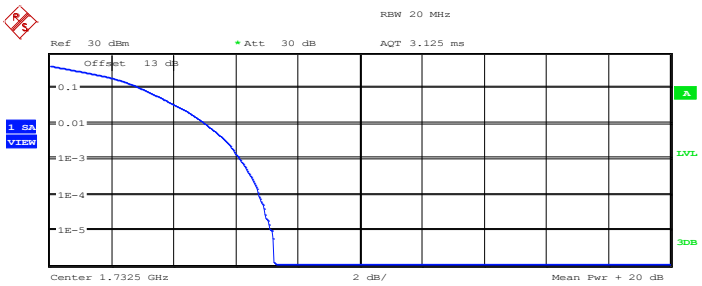


Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	22.13 dBm
Peak	28.35 dBm
Crest	6.21 dB
10 %	2.37 dB
1 %	4.23 dB
.1 %	5.22 dB
.01 %	5.83 dB

Date: 11.JUL.2013 15:09:48

Peak-to-Average Ratio on LTE Band 4 20MHz / 16QAM

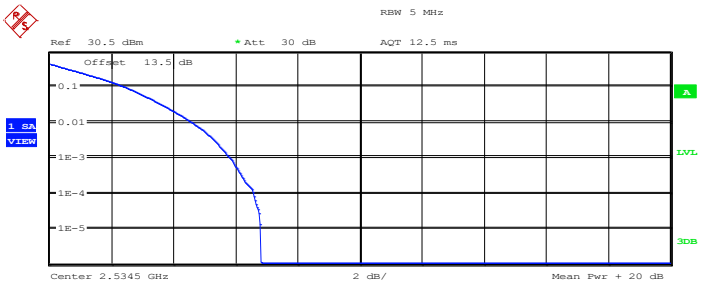


Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	20.97 dBm
Peak	28.21 dBm
Crest	7.24 dB
10 %	2.95 dB
1 %	5.00 dB
.1 %	6.12 dB
.01 %	6.73 dB

Date: 11.JUL.2013 15:10:17

Peak-to-Average Ratio on LTE Band 7 5MHz / QPSK

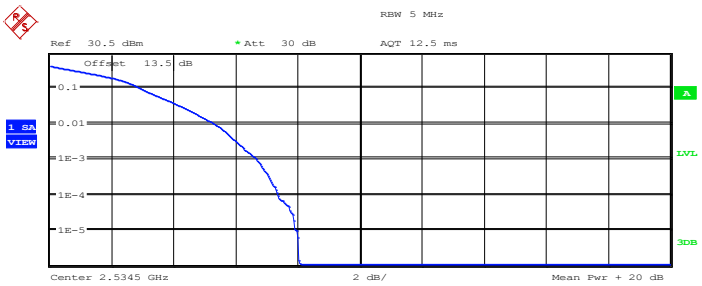


Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 7.1MHz

	Trace 1
Mean	22.19 dBm
Peak	29.01 dBm
Crest	6.81 dB
10 %	2.44 dB
1 %	4.58 dB
.1 %	5.83 dB
.01 %	6.57 dB

Date: 11.JUL.2013 15:19:13

Peak-to-Average Ratio on LTE Band 7 5MHz / 16QAM

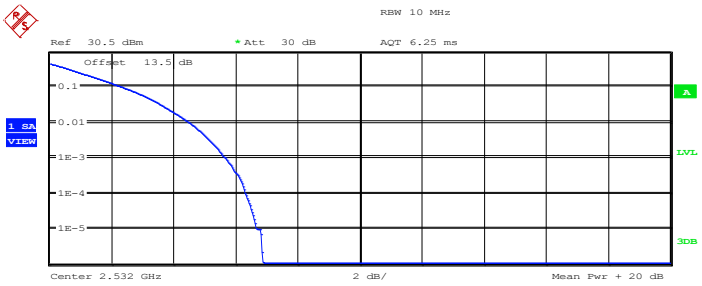


Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 7.1MHz

	Trace 1
Mean	21.25 dBm
Peak	29.29 dBm
Crest	8.04 dB
10 %	2.92 dB
1 %	5.29 dB
.1 %	6.67 dB
.01 %	7.34 dB

Date: 11.JUL.2013 15:18:48

Peak-to-Average Ratio on LTE Band 7 10MHz / QPSK

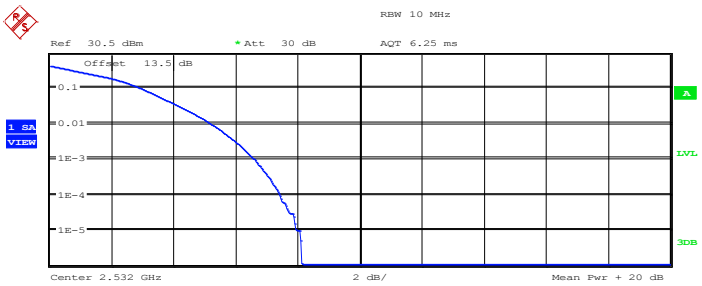


Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	22.23 dBm
Peak	29.09 dBm
Crest	6.86 dB
10 %	2.37 dB
1 %	4.49 dB
.1 %	5.67 dB
.01 %	6.31 dB

Date: 11.JUL.2013 15:18:03

Peak-to-Average Ratio on LTE Band 7 10MHz / 16QAM

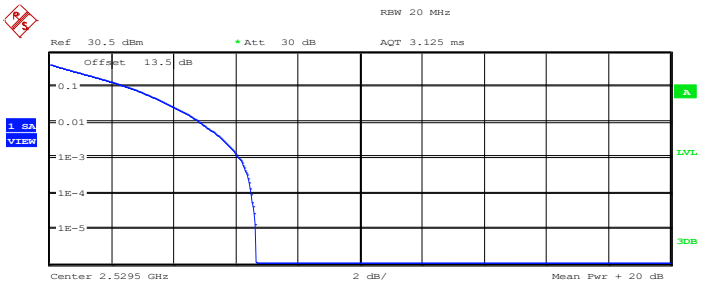


Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	21.31 dBm
Peak	29.44 dBm
Crest	8.13 dB
10 %	2.95 dB
1 %	5.19 dB
.1 %	6.60 dB
.01 %	7.40 dB

Date: 11.JUL.2013 15:17:40

Peak-to-Average Ratio on LTE Band 7 15MHz / QPSK

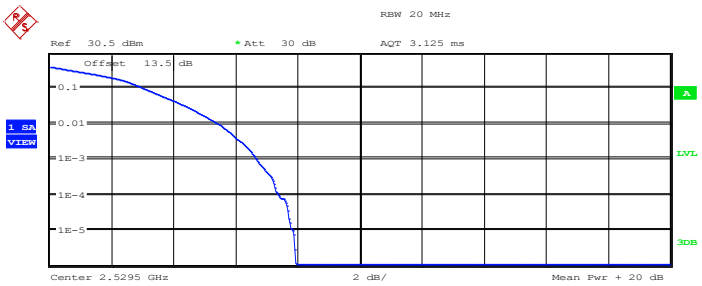


Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	22.18 dBm
Peak	28.83 dBm
Crest	6.66 dB
10 %	2.53 dB
1 %	4.84 dB
.1 %	6.09 dB
.01 %	6.51 dB

Date: 11.JUL.2013 15:14:59

Peak-to-Average Ratio on LTE Band 7 15MHz / 16QAM

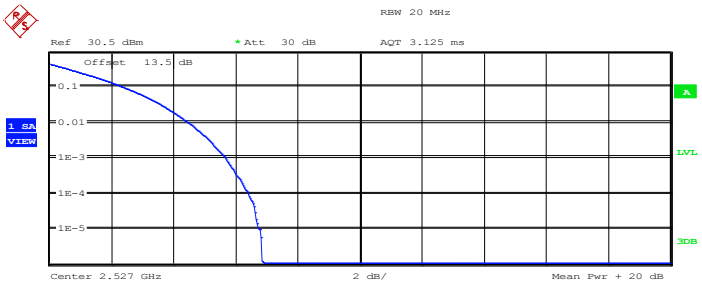


Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	21.19 dBm
Peak	29.11 dBm
Crest	7.92 dB
10 %	3.04 dB
1 %	5.42 dB
.1 %	6.67 dB
.01 %	7.37 dB

Date: 11.JUL.2013 15:15:14

Peak-to-Average Ratio on LTE Band 7 20MHz / QPSK

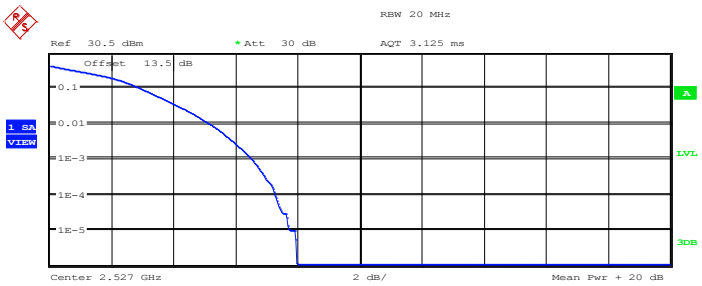


Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	22.38 dBm
Peak	29.24 dBm
Crest	6.86 dB
10 %	2.37 dB
1 %	4.49 dB
.1 %	5.67 dB
.01 %	6.41 dB

Date: 11.JUL.2013 15:16:19

Peak-to-Average Ratio on LTE Band 7 20MHz / 16QAM

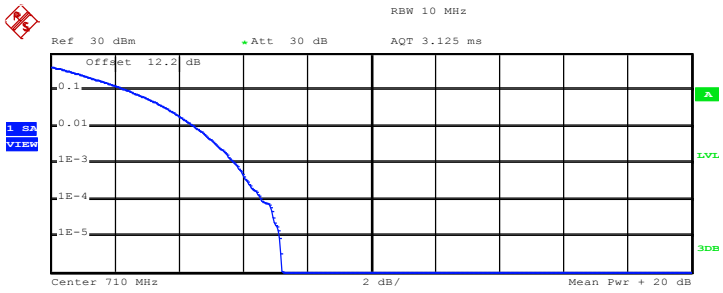


Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	21.33 dBm
Peak	29.31 dBm
Crest	7.97 dB
10 %	2.95 dB
1 %	5.16 dB
.1 %	6.51 dB
.01 %	7.28 dB

Date: 11.JUL.2013 15:16:33

Peak-to-Average Ratio on LTE Band 17 5MHz / QPSK

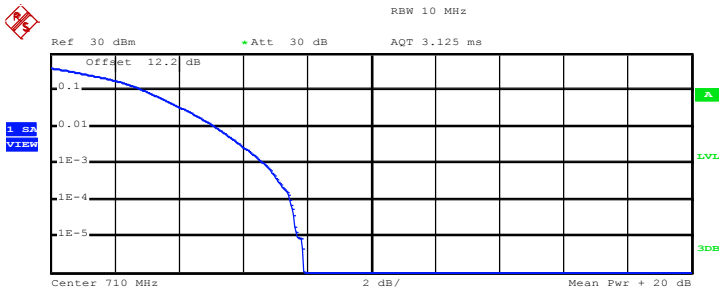


Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	22.97 dBm
Peak	30.18 dBm
Crest	7.21 dB
10 %	2.44 dB
1 %	4.52 dB
.1 %	5.76 dB
.01 %	6.60 dB

Date: 10.JUL.2013 11:24:03

Peak-to-Average Ratio on LTE Band 17 5MHz / 16QAM

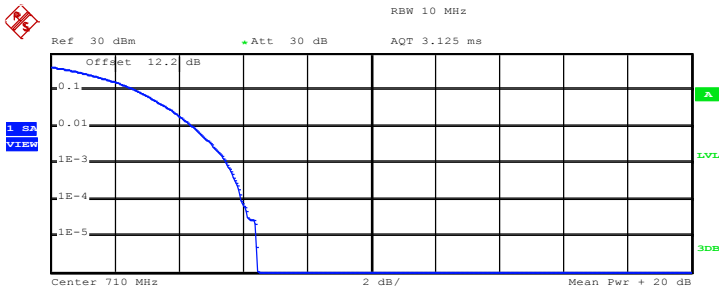


Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	22.00 dBm
Peak	29.90 dBm
Crest	7.90 dB
10 %	2.96 dB
1 %	5.16 dB
.1 %	6.68 dB
.01 %	7.48 dB

Date: 10.JUL.2013 11:24:28

Peak-to-Average Ratio on LTE Band 17 10MHz / QPSK

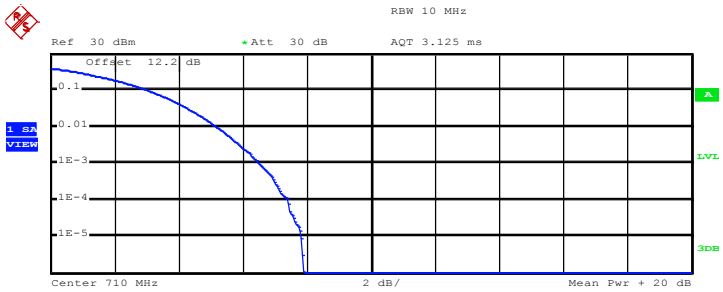


Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	22.55 dBm
Peak	28.98 dBm
Crest	6.44 dB
10 %	2.68 dB
1 %	4.44 dB
.1 %	5.52 dB
.01 %	5.96 dB

Date: 10.JUL.2013 11:22:59

Peak-to-Average Ratio on LTE Band 17 10MHz / 16QAM



Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	21.45 dBm
Peak	29.34 dBm
Crest	7.89 dB
10 %	3.12 dB
1 %	5.20 dB
.1 %	6.52 dB
.01 %	7.40 dB

Date: 10.JUL.2013 11:23:20

3.3 Effective Radiated Power and Equivalent Isotropic Radiated Power Measurement

3.3.1 Description of the ERP/EIRP Measurement

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

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

3.3.2 Measuring Instruments

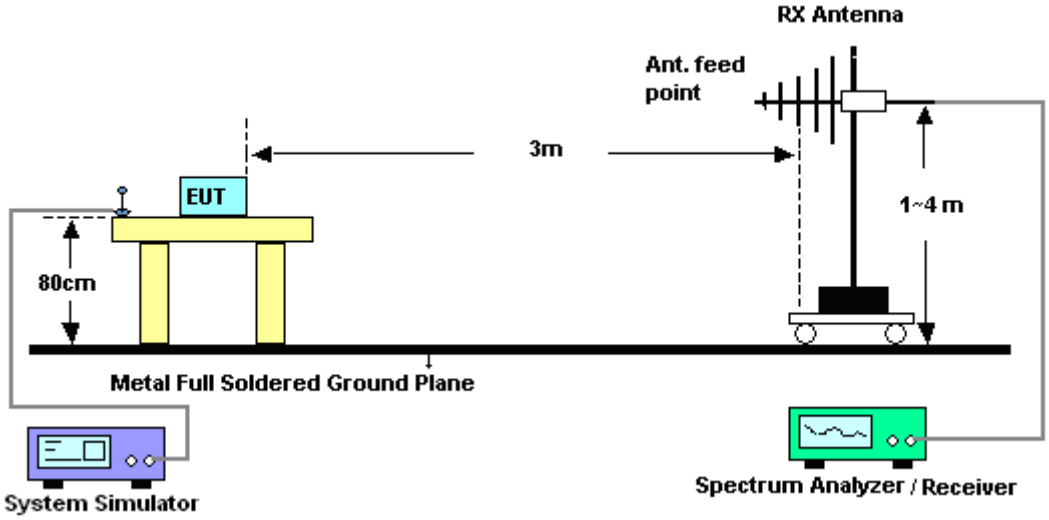
See list of measuring instruments of this test report.

3.3.3 Test Procedures

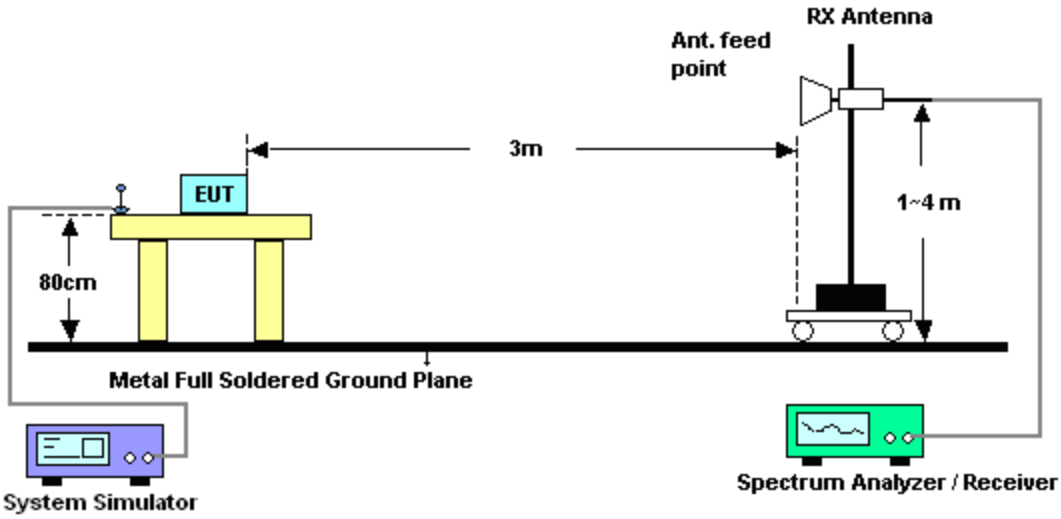
1. The EUT was placed on a non-conductive rotating platform with 0.8 meter height in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer which used a channel power option across EUT's signal bandwidth per section 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 + Correction factor and ERP = EIRP – 2.15.

3.3.4 Test Setup

For Effective Radiated Power



For Equivalent Isotropic Radiated Power



3.3.5 Test Result of ERP/EIRP

LTE Band 4 Radiated Power EIRP for BW 5MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1712.5	-17.39	41.62	24.23	0.2649
1732.5	-16.96	42.95	25.99	0.3973
1752.5	-15.63	41.73	26.10	0.4071
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1712.5	-18.73	43.45	24.72	0.2965
1732.5	-19.40	45.94	26.54	0.4507
1752.5	-17.88	44.88	27.00	0.5007

LTE Band 4 Radiated Power EIRP for BW 5MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1712.5	-18.39	41.62	23.23	0.2105
1732.5	-18.38	42.95	24.57	0.2866
1752.5	-16.81	41.73	24.92	0.3103
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1712.5	-19.78	43.45	23.67	0.2328
1732.5	-20.88	45.94	25.06	0.3203
1752.5	-19.22	44.88	25.66	0.3685

LTE Band 4 Radiated Power EIRP for BW 10MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1715.0	-17.66	42.12	24.46	0.2792
1732.5	-18.71	42.95	24.24	0.2655
1750.0	-16.89	41.57	24.68	0.2941
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1715.0	-19.84	44.81	24.97	0.3144
1732.5	-21.32	45.94	24.62	0.2894
1750.0	-19.24	44.74	25.50	0.3548

LTE Band 4 Radiated Power EIRP for BW 10MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1715.0	-19.80	42.12	22.32	0.1705
1732.5	-20.32	42.95	22.63	0.1832
1750.0	-17.91	41.57	23.66	0.2323
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1715.0	-21.95	44.81	22.86	0.1933
1732.5	-22.74	45.94	23.20	0.2091
1750.0	-20.09	44.74	24.65	0.2917

LTE Band 4 Radiated Power EIRP for BW 15MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1717.5	-18.15	41.79	23.64	0.2314
1732.5	-19.14	42.95	23.81	0.2407
1747.5	-16.51	41.31	24.80	0.3019
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1717.5	-20.86	44.99	24.13	0.2586
1732.5	-21.60	45.94	24.34	0.2715
1747.5	-19.41	44.95	25.54	0.3579

LTE Band 4 Radiated Power EIRP for BW 15MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1717.5	-19.23	41.79	22.56	0.1805
1732.5	-20.31	42.95	22.64	0.1838
1747.5	-17.66	41.31	23.65	0.2317
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1717.5	-21.82	44.99	23.17	0.2073
1732.5	-22.78	45.94	23.16	0.2068
1747.5	-20.59	44.95	24.36	0.2732

LTE Band 4 Radiated Power EIRP for BW 20MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1720.0	-18.10	41.43	23.33	0.2154
1732.5	-19.32	42.95	23.63	0.2305
1745.0	-16.52	41.15	24.64	0.2907
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1720.0	-20.00	43.87	23.87	0.2436
1732.5	-21.82	45.94	24.12	0.2582
1745.0	-19.19	44.39	25.20	0.3308

LTE Band 4 Radiated Power EIRP for BW 20MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1720.0	-19.24	41.43	22.19	0.1656
1732.5	-20.48	42.95	22.47	0.1766
1745.0	-17.61	41.15	23.54	0.2260
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1720.0	-21.14	43.87	22.73	0.1877
1732.5	-22.92	45.94	23.02	0.2003
1745.0	-20.39	44.39	24.00	0.2510

LTE Band 7 Radiated Power EIRP for BW 5MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2506.5	-24.02	44.76	20.74	0.1187
2534.5	-24.55	45.37	20.82	0.1209
2567.5	-25.20	45.12	19.92	0.0981
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2506.5	-27.18	45.76	18.58	0.0721
2534.5	-28.38	47.04	18.66	0.0734
2567.5	-29.23	46.31	17.08	0.0510

LTE Band 7 Radiated Power EIRP for BW 5MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2506.5	-24.98	44.76	19.78	0.0951
2534.5	-25.58	45.37	19.79	0.0954
2567.5	-26.15	45.12	18.97	0.0789
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2506.5	-28.10	45.76	17.66	0.0584
2534.5	-29.37	47.04	17.67	0.0585
2567.5	-30.26	46.31	16.05	0.0403

LTE Band 7 Radiated Power EIRP for BW 10MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2509	-23.92	44.74	20.82	0.1209
2532	-24.95	45.37	20.42	0.1101
2565	-25.03	45.12	20.09	0.1021
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2509	-26.81	45.74	18.93	0.0782
2532	-28.39	47.04	18.65	0.0733
2565	-28.29	46.31	18.02	0.0634

LTE Band 7 Radiated Power EIRP for BW 10MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2509	-25.01	44.74	19.73	0.0941
2532	-25.61	45.37	19.76	0.0947
2565	-25.99	45.12	19.13	0.0819
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2509	-27.94	45.74	17.80	0.0603
2532	-28.99	47.04	18.05	0.0638
2565	-29.30	46.31	17.01	0.0502

LTE Band 7 Radiated Power EIRP for BW 15MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2511.5	-24.53	44.74	20.21	0.1050
2529.5	-24.78	45.37	20.59	0.1146
2562.5	-24.21	45.12	20.91	0.1233
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2511.5	-27.32	45.74	18.43	0.0696
2529.5	-28.15	47.04	18.89	0.0774
2562.5	-27.58	46.31	18.73	0.0746

LTE Band 7 Radiated Power EIRP for BW 15MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2511.5	-25.22	44.74	19.52	0.0896
2529.5	-26.24	45.37	19.13	0.0818
2562.5	-25.39	45.12	19.73	0.0939
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2511.5	-28.03	45.74	17.71	0.0590
2529.5	-29.85	47.04	17.19	0.0524
2562.5	-28.70	46.31	17.61	0.0577

LTE Band 7 Radiated Power EIRP for BW 20MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2514	-24.11	44.73	20.62	0.1153
2527	-25.21	45.37	20.16	0.1037
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2514	-26.76	45.73	18.97	0.0789
2527	-28.90	47.04	18.14	0.0652

LTE Band 7 Radiated Power EIRP for BW 20MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2514	-24.69	44.73	20.04	0.1008
2527	-25.64	45.37	19.73	0.0941
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2514	-26.89	45.73	18.84	0.0765
2527	-28.68	47.04	18.36	0.0686

LTE Band 17 Radiated Power ERP for BW 5MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
706.5	-12.99	32.68	17.54	0.0567
710.0	-15.43	32.39	14.81	0.0303
713.5	-14.96	32.07	14.96	0.0314
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
706.5	-25.30	35.93	8.48	0.0070
710.0	-29.58	35.55	3.82	0.0024
713.5	-29.19	35.15	3.81	0.0024

LTE Band 17 Radiated Power ERP for BW 5MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
706.5	-13.93	32.68	16.60	0.0457
710.0	-16.38	32.39	13.86	0.0243
713.5	-15.93	32.07	13.99	0.0251
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
706.5	-26.19	35.93	7.59	0.0057
710.0	-30.53	35.55	2.87	0.0019
713.5	-30.15	35.15	2.85	0.0019

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

LTE Band 17 Radiated Power ERP for BW 10MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
709	-15.39	32.41	14.87	0.0307
710	-15.04	32.39	15.20	0.0331
711	-15.42	32.37	14.80	0.0302
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
709	-29.61	35.76	4.00	0.0025
710	-29.02	35.55	4.38	0.0027
711	-29.30	35.39	3.94	0.0025

LTE Band 17 Radiated Power ERP for BW 10MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
709	-15.92	32.41	14.35	0.0272
710	-16.15	32.39	14.09	0.0256
711	-16.35	32.37	13.87	0.0244
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
709	-29.98	35.76	3.63	0.0023
710	-30.15	35.55	3.25	0.0021
711	-30.23	35.39	3.01	0.0020

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

3.4 Occupied Bandwidth

3.4.1 Description of Occupied Bandwidth Measurement

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

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

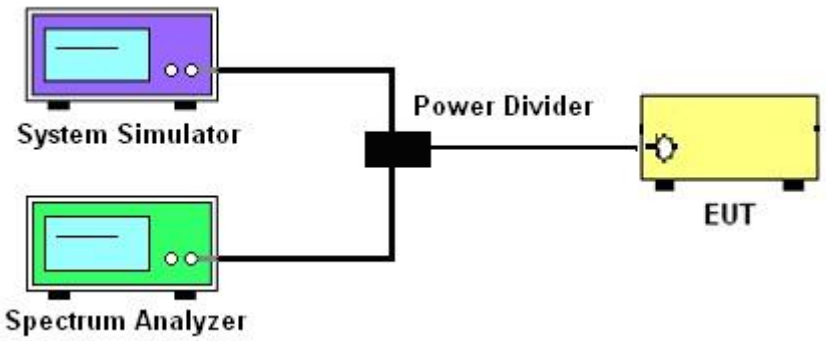
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

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

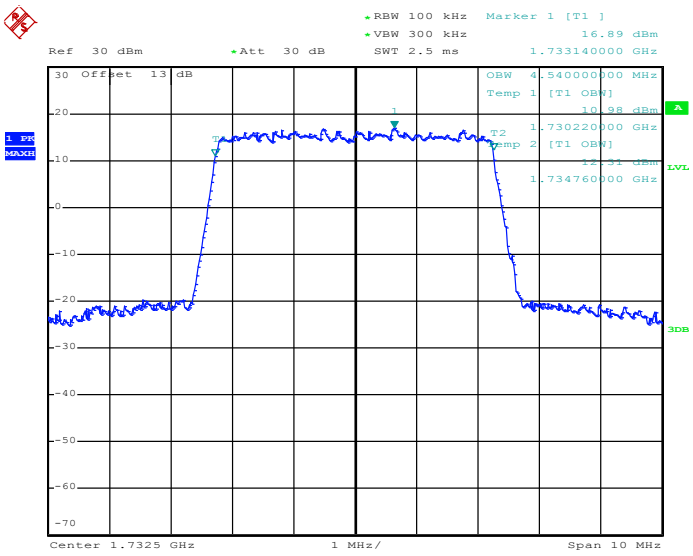
3.4.4 Test Setup



3.4.5 Test Result (Plots) of Occupied Bandwidth

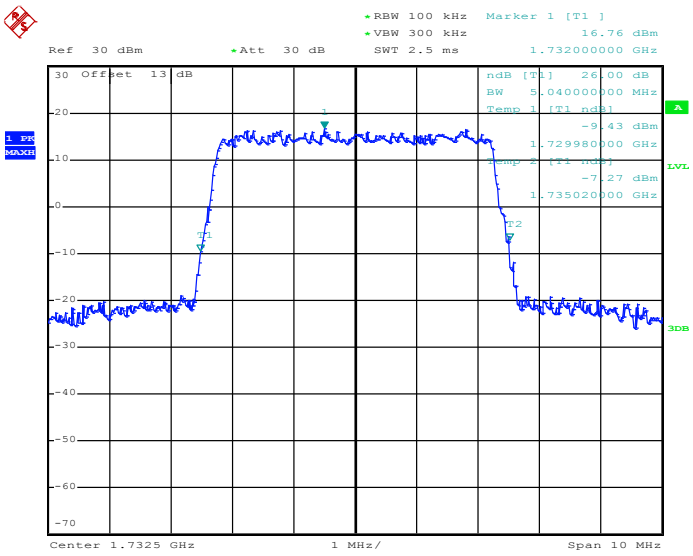
Band :	LTE Band 4	BW / Mod. :	5MHz / QPSK

99% Occupied Bandwidth Plot on Channel 20175



Date: 11.JUL.2013 09:10:12

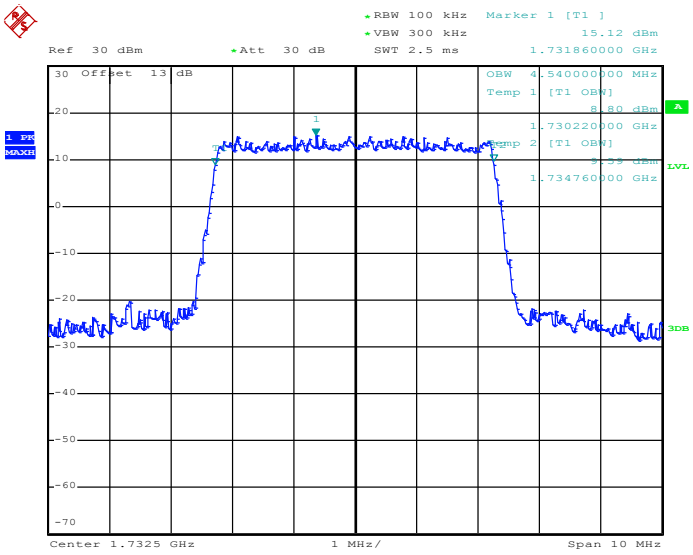
26dB Bandwidth Plot on Channel 20175



Date: 11.JUL.2013 09:26:53

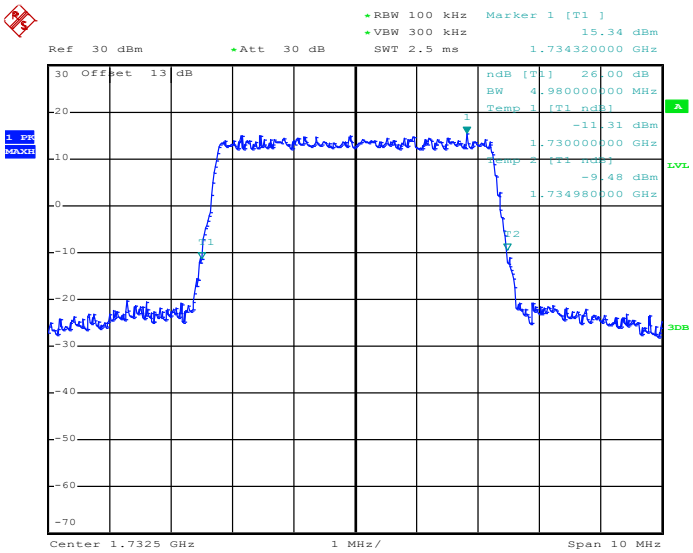
Band :	LTE Band 4	BW / Mod. :	5MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 20175



Date: 11.JUL.2013 09:10:29

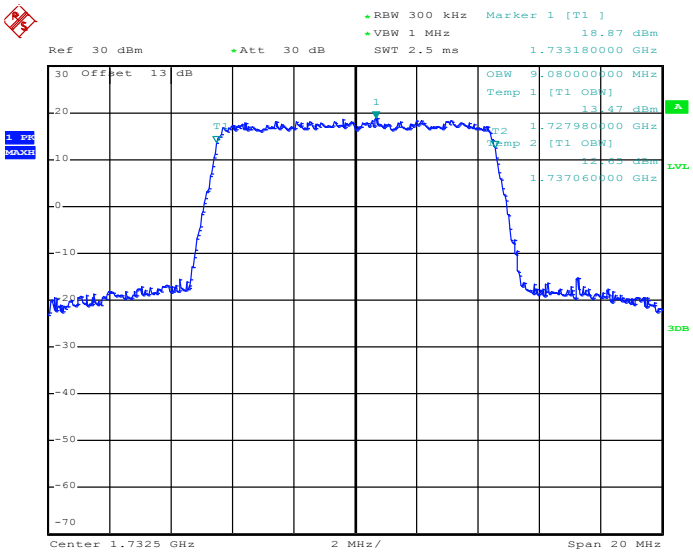
26dB Bandwidth Plot on Channel 20175



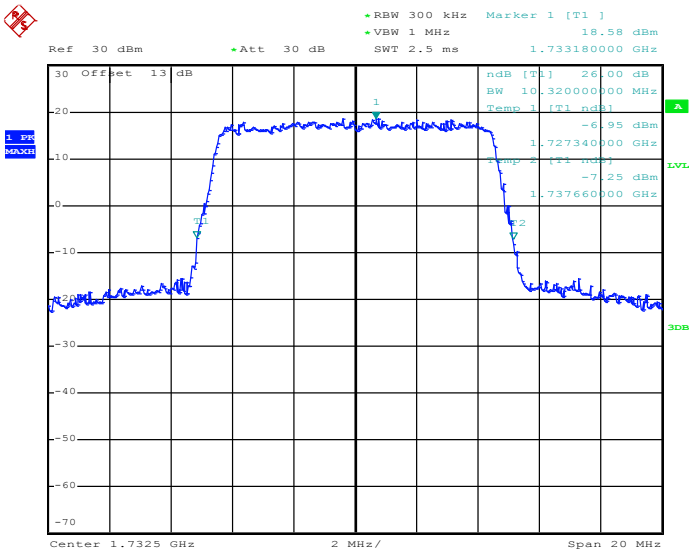
Date: 11.JUL.2013 09:27:13

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

99% Occupied Bandwidth Plot on Channel 20175

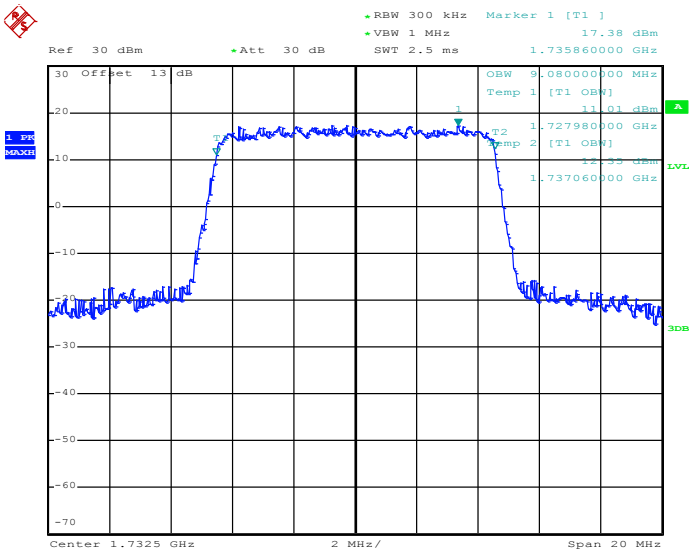


26dB Bandwidth Plot on Channel 20175



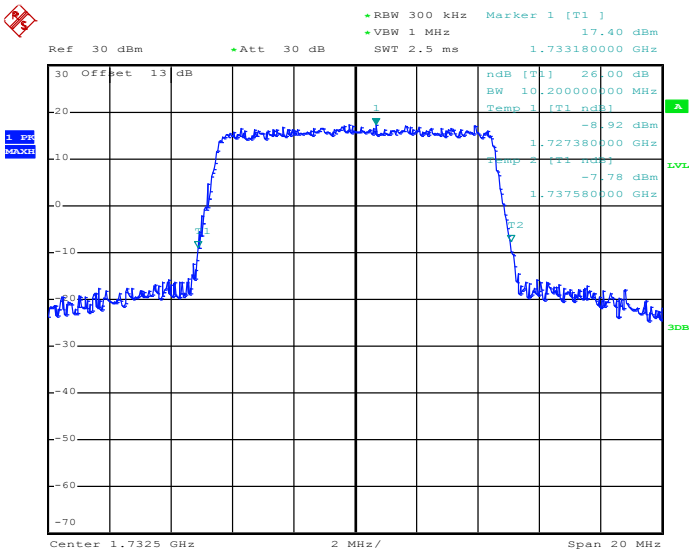
Band :	LTE Band 4	BW / Mod. :	10MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 20175



Date: 11.JUL.2013 09:13:58

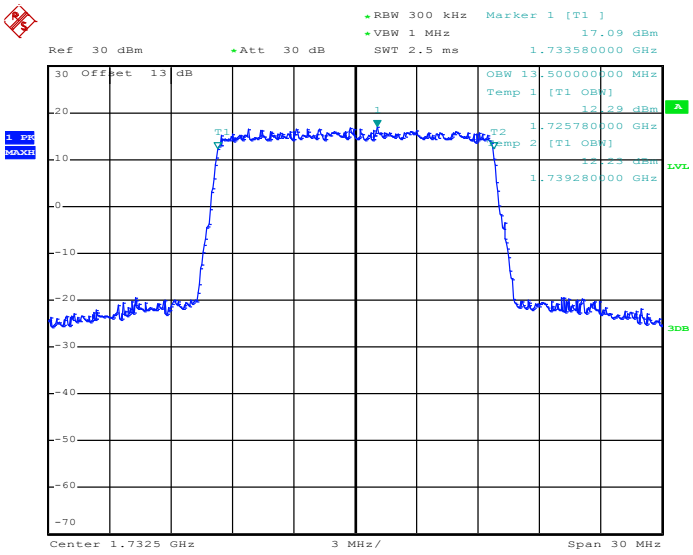
26dB Bandwidth Plot on Channel 20175



Date: 11.JUL.2013 09:26:14

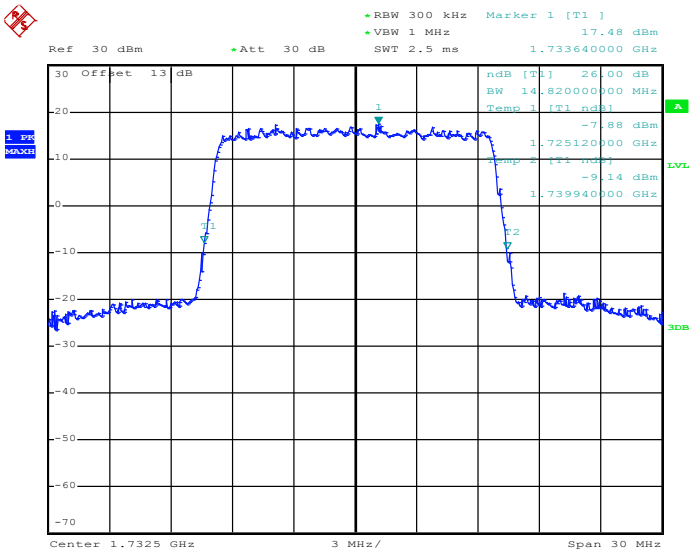
Band :	LTE Band 4	BW / Mod. :	15MHz / QPSK

99% Occupied Bandwidth Plot on Channel 20175



Date: 11.JUL.2013 09:17:44

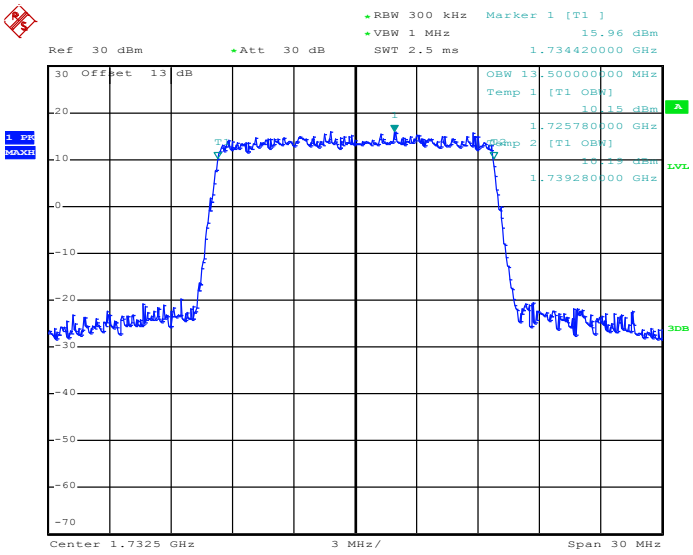
26dB Bandwidth Plot on Channel 20175



Date: 11.JUL.2013 09:25:03

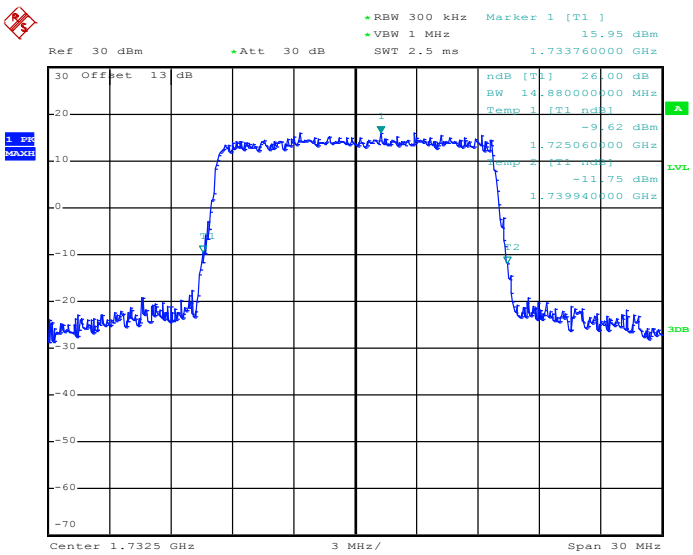
Band :	LTE Band 4	BW / Mod. :	15MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 20175



Date: 11.JUL.2013 09:18:02

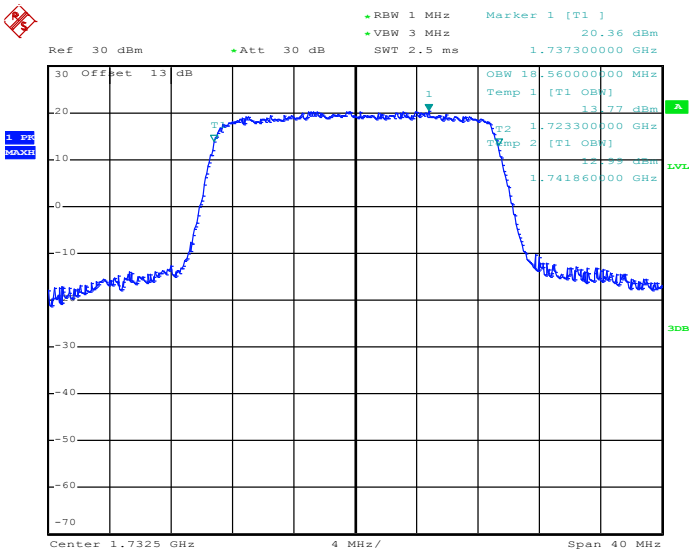
26dB Bandwidth Plot on Channel 20175



Date: 11.JUL.2013 09:25:21

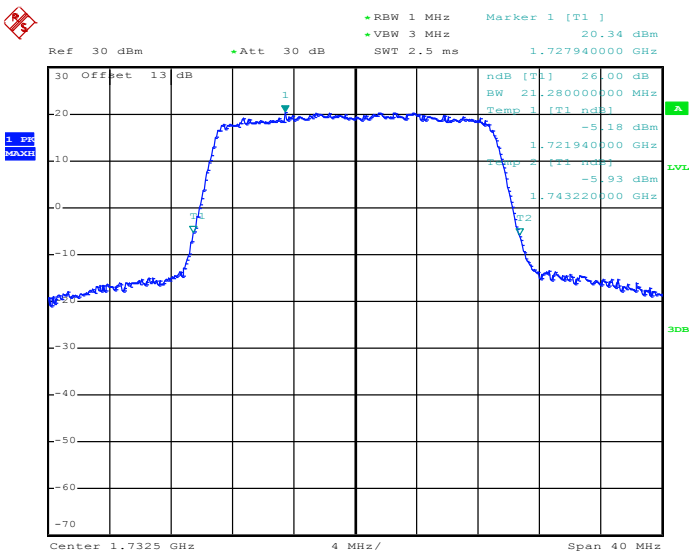
Band :	LTE Band 4	BW / Mod. :	20MHz / QPSK

99% Occupied Bandwidth Plot on Channel 20175



Date: 11.JUL.2013 09:20:53

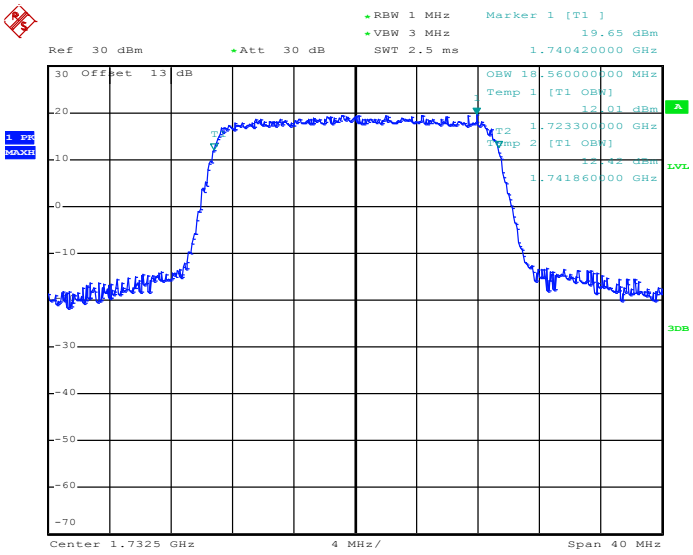
26dB Bandwidth Plot on Channel 20175



Date: 11.JUL.2013 09:23:51

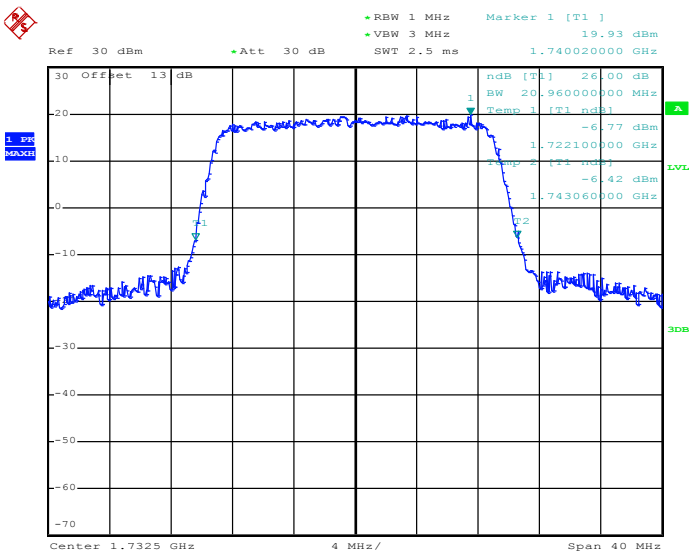
Band :	LTE Band 4	BW / Mod. :	20MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 20175



Date: 11.JUL.2013 09:21:11

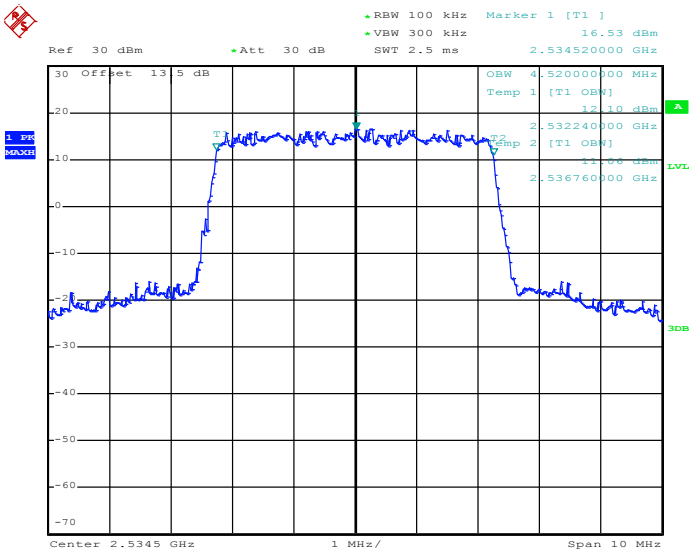
26dB Bandwidth Plot on Channel 20175



Date: 11.JUL.2013 09:24:18

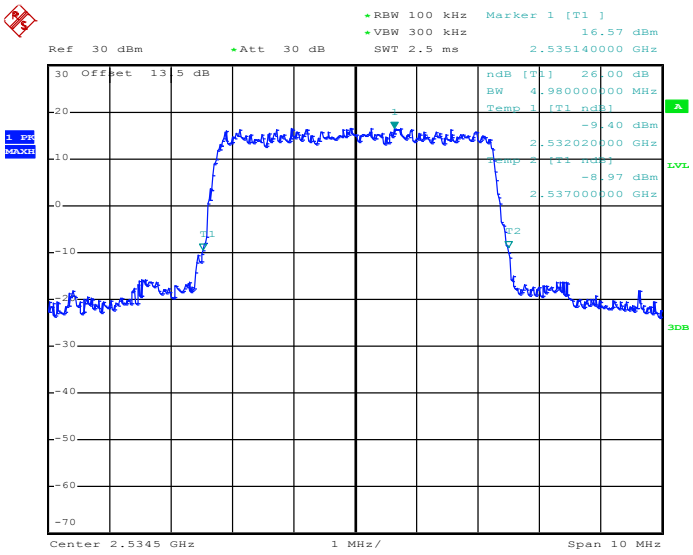
Band :	LTE Band 7	BW / Mod. :	5MHz / QPSK

99% Occupied Bandwidth Plot on Channel 21095



Date: 10.JUL.2013 16:12:50

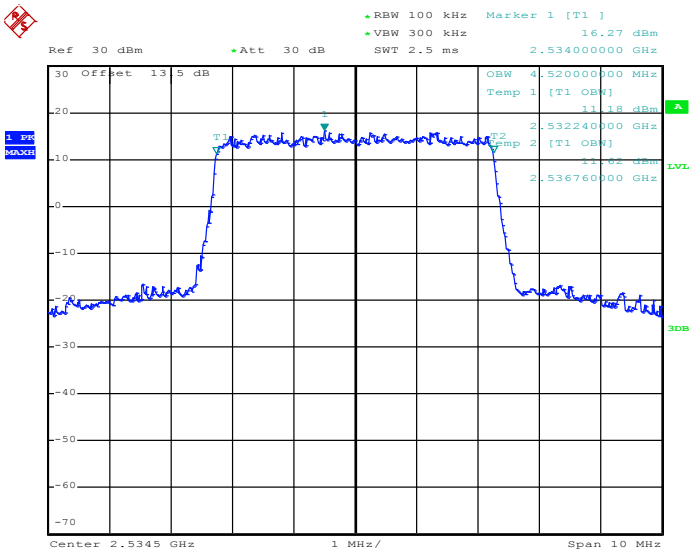
26dB Bandwidth Plot on Channel 21095



Date: 10.JUL.2013 16:26:12

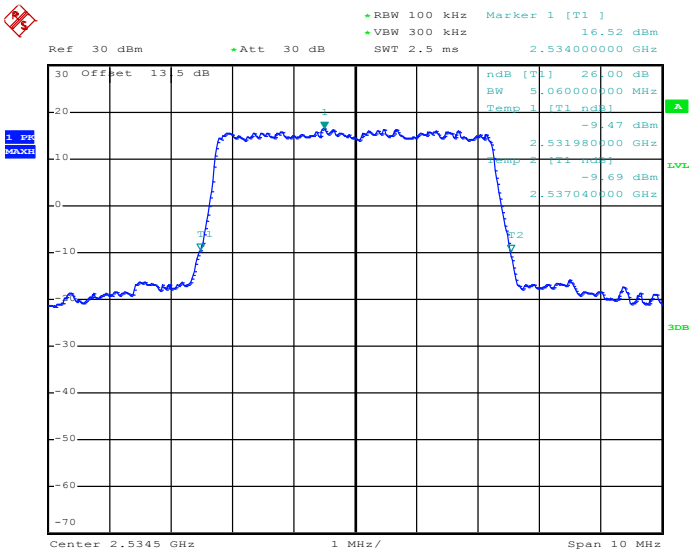
Band :	LTE Band 7	BW / Mod. :	5MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 21095



Date: 10.JUL.2013 16:12:35

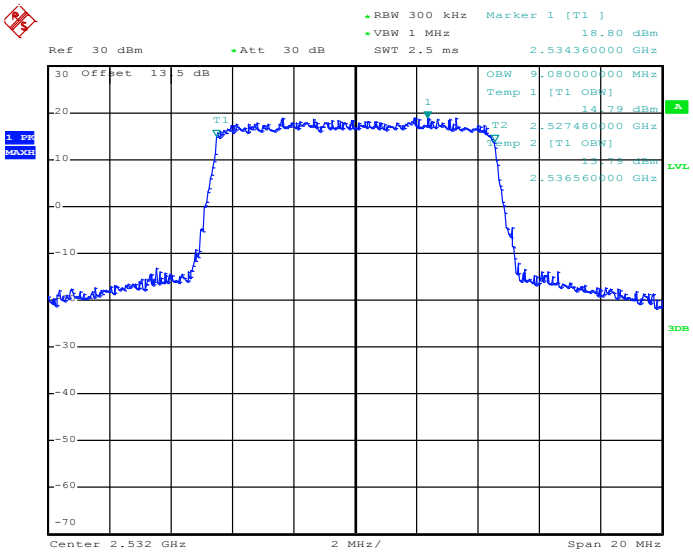
26dB Bandwidth Plot on Channel 21095



Date: 10.JUL.2013 16:25:58

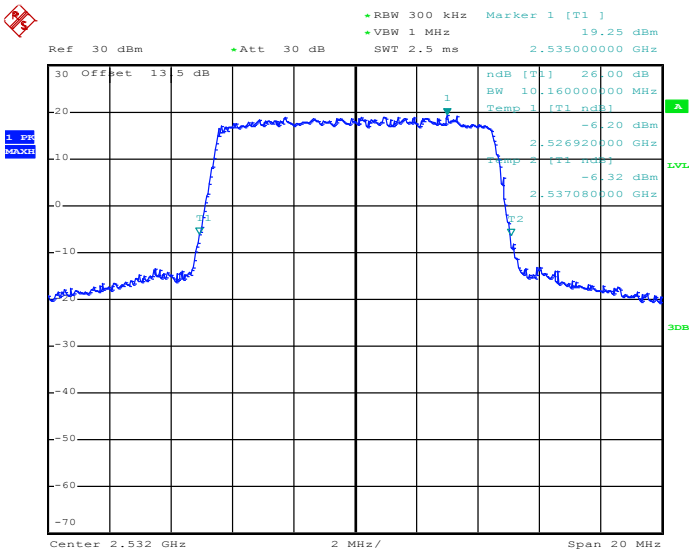
Band :	LTE Band 7	BW / Mod. :	10MHz / QPSK

99% Occupied Bandwidth Plot on Channel 21070



Date: 10.JUL.2013 16:03:35

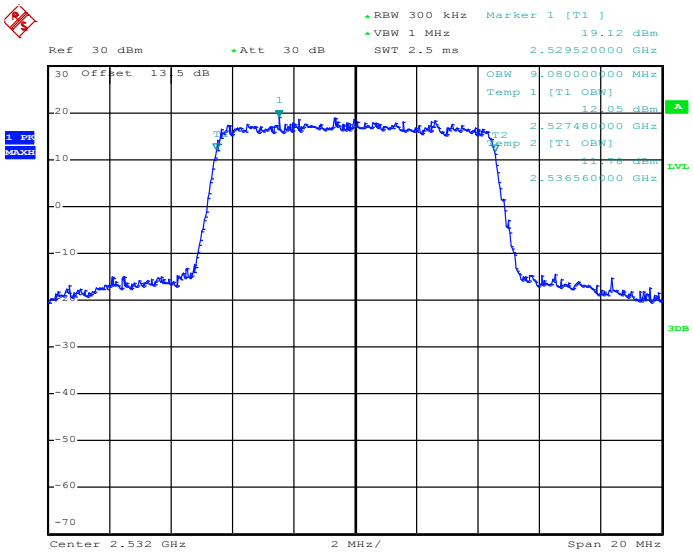
26dB Bandwidth Plot on Channel 21070



Date: 10.JUL.2013 15:50:35

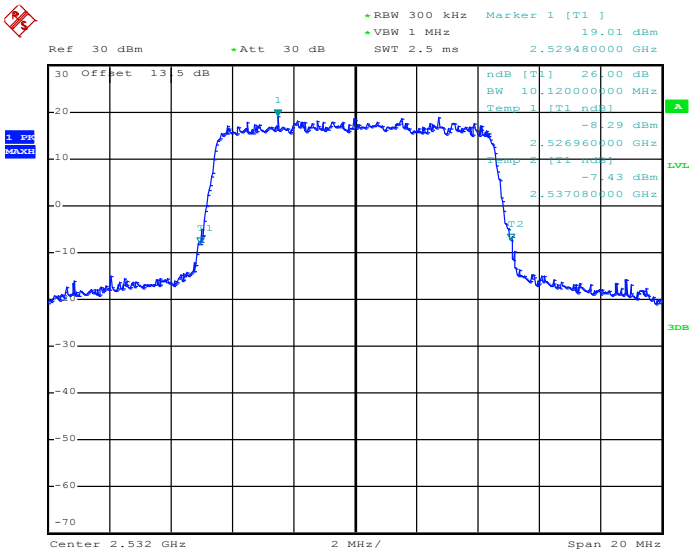
Band :	LTE Band 7	BW / Mod. :	10MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 21070



Date: 10.JUL.2013 16:03:22

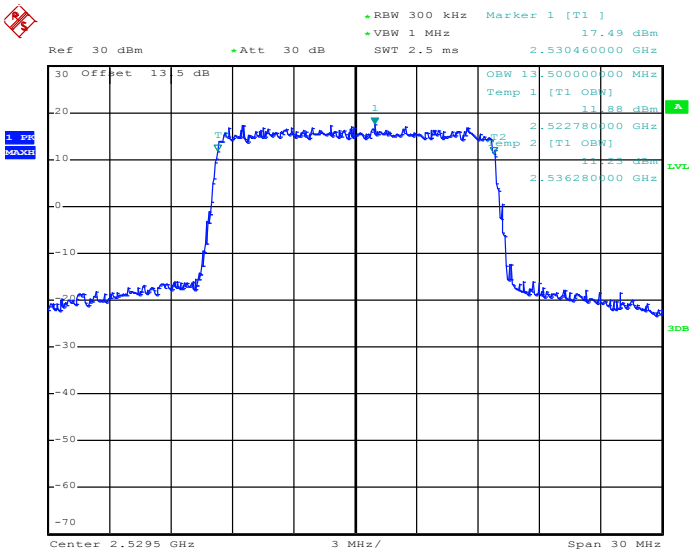
26dB Bandwidth Plot on Channel 21070



Date: 10.JUL.2013 16:03:02

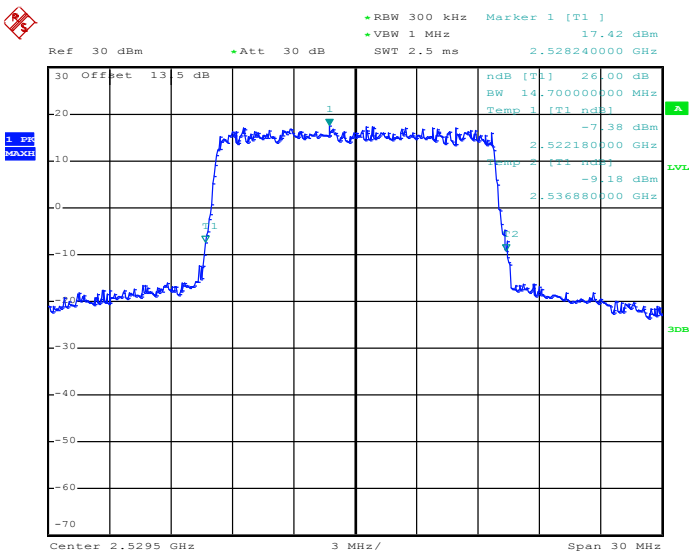
Band :	LTE Band 7	BW / Mod. :	15MHz / QPSK

99% Occupied Bandwidth Plot on Channel 21045



Date: 10.JUL.2013 15:36:32

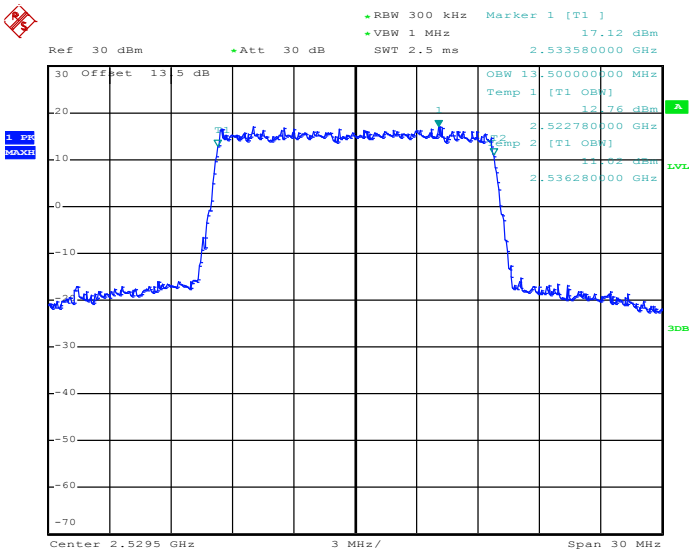
26dB Bandwidth Plot on Channel 21045



Date: 10.JUL.2013 15:45:14

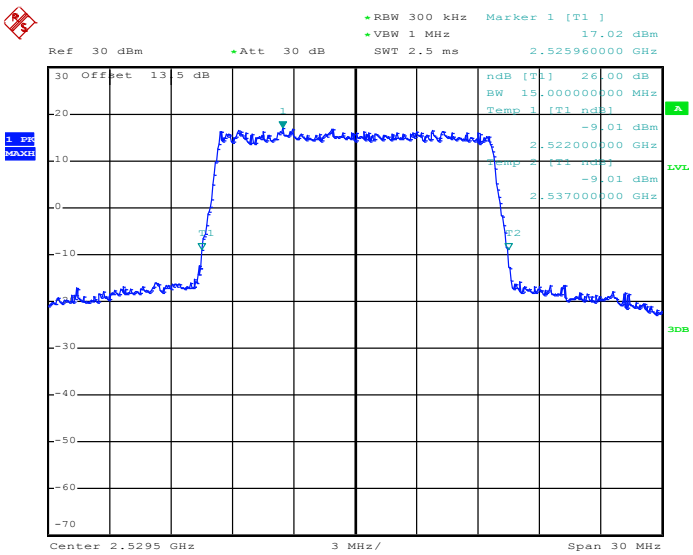
Band :	LTE Band 7	BW / Mod. :	15MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 21045



Date: 10.JUL.2013 15:36:17

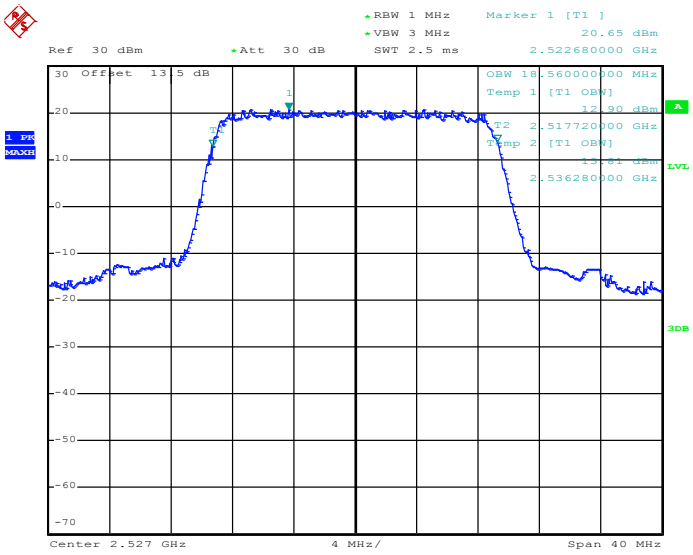
26dB Bandwidth Plot on Channel 21045



Date: 10.JUL.2013 15:45:01

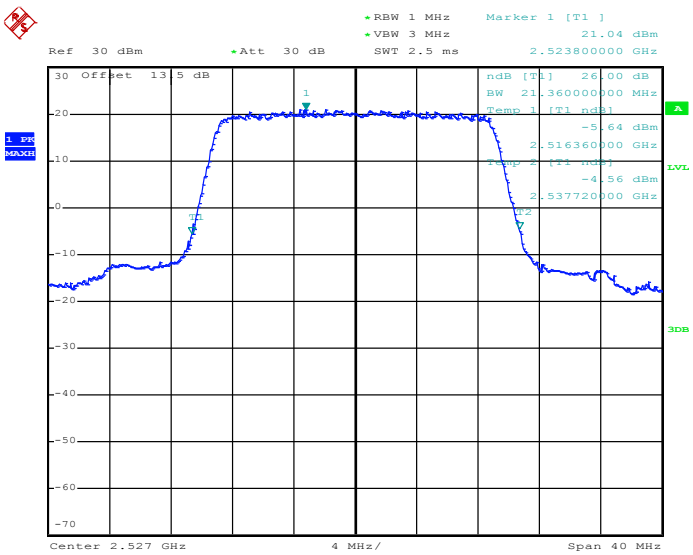
Band :	LTE Band 7	BW / Mod. :	20MHz / QPSK

99% Occupied Bandwidth Plot on Channel 21020



Date: 10.JUL.2013 15:33:05

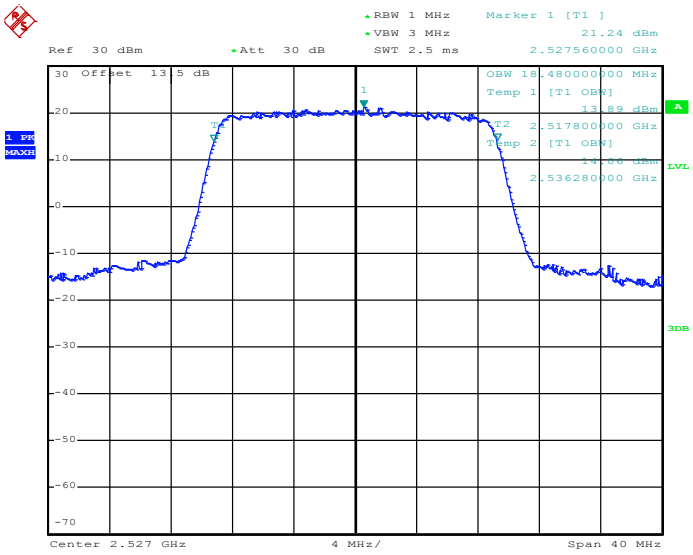
26dB Bandwidth Plot on Channel 21020



Date: 10.JUL.2013 15:31:46

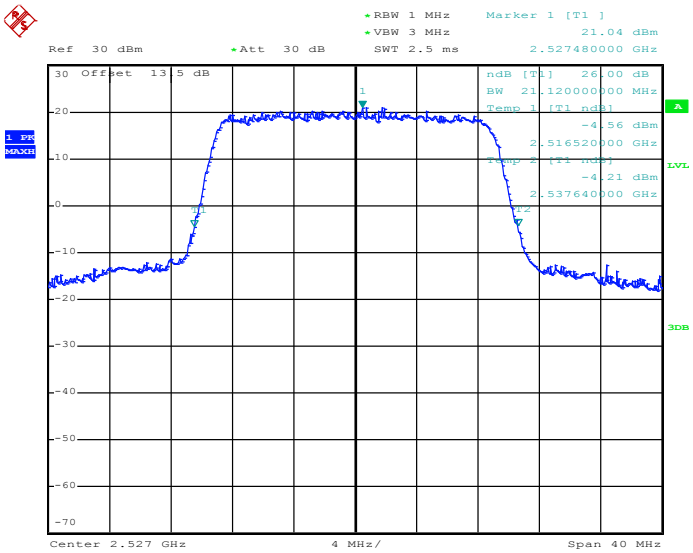
Band :	LTE Band 7	BW / Mod. :	20MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 21020



Date: 10.JUL.2013 15:32:50

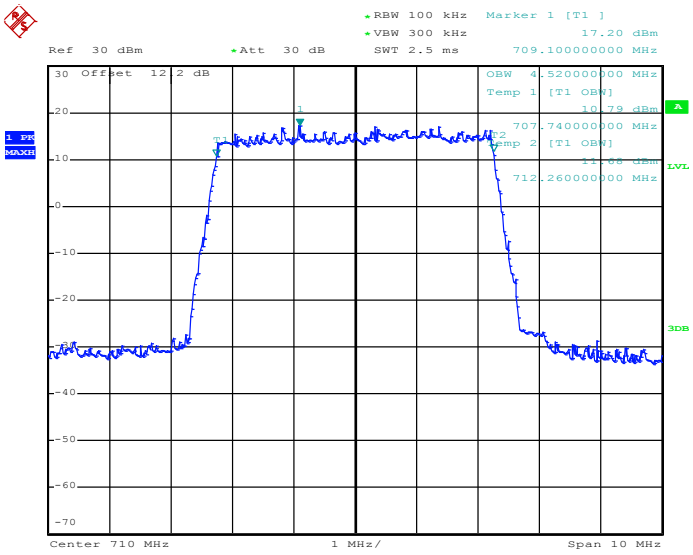
26dB Bandwidth Plot on Channel 21020



Date: 10.JUL.2013 15:32:00

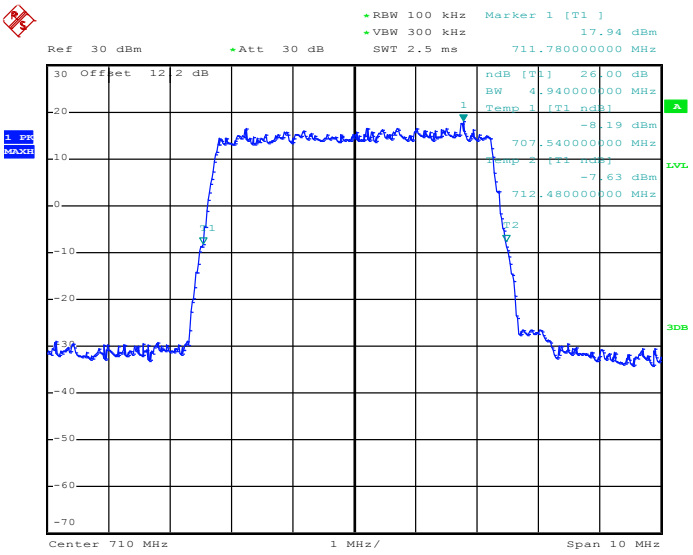
Band :	LTE Band 17	BW / Mod. :	5MHz / QPSK

99% Occupied Bandwidth Plot on Channel 23790



Date: 10.JUL.2013 11:18:32

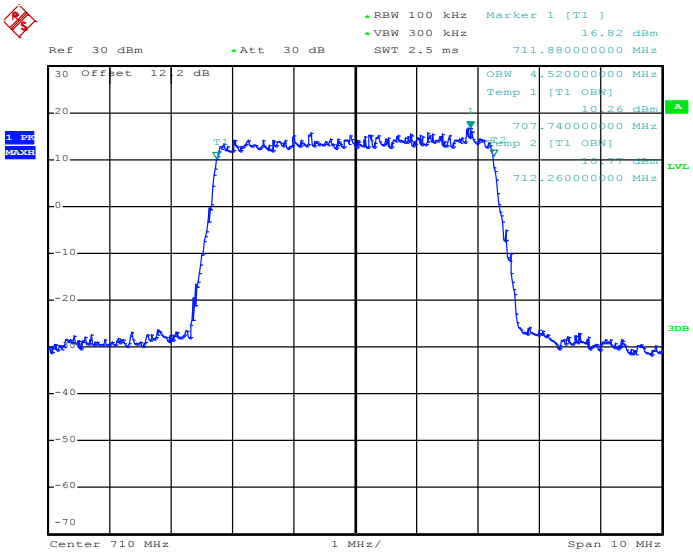
26dB Bandwidth Plot on Channel 23790



Date: 10.JUL.2013 11:19:49

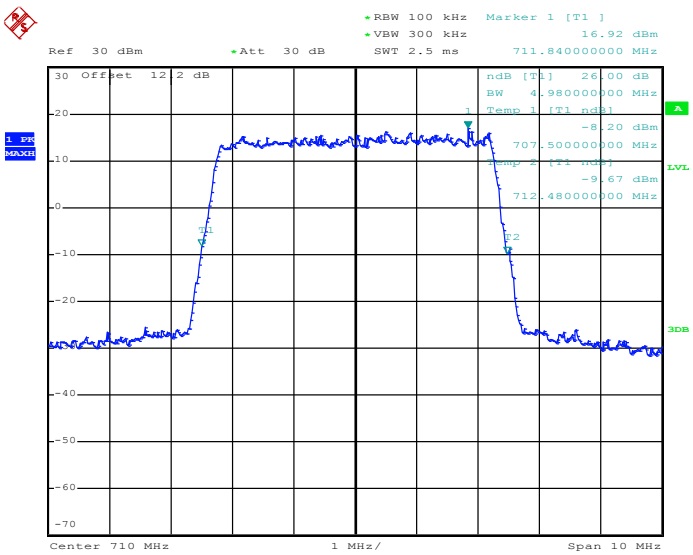
Band :	LTE Band 17	BW / Mod. :	5MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 23790



Date: 10.JUL.2013 11:18:47

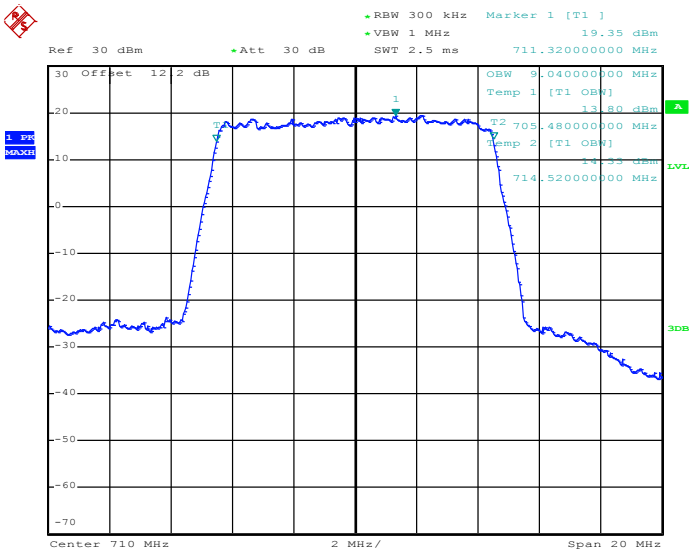
26dB Bandwidth Plot on Channel 23790



Date: 10.JUL.2013 11:19:31

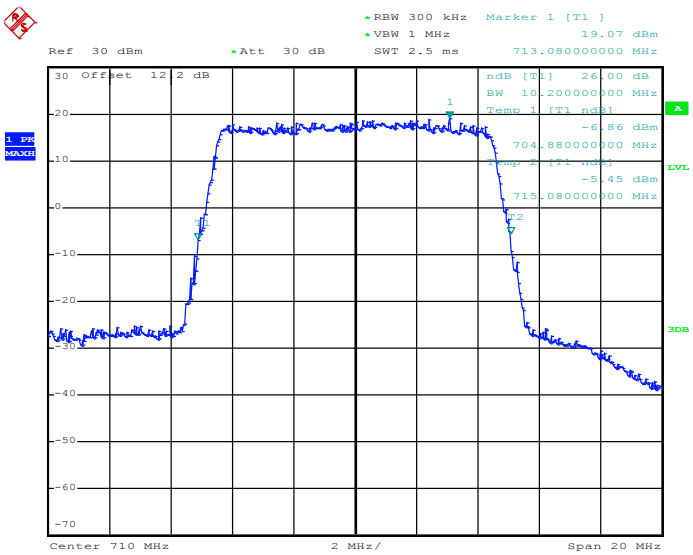
Band :	LTE Band 17	BW / Mod. :	10MHz / QPSK

99% Occupied Bandwidth Plot on Channel 23790



Date: 10.JUL.2013 11:17:13

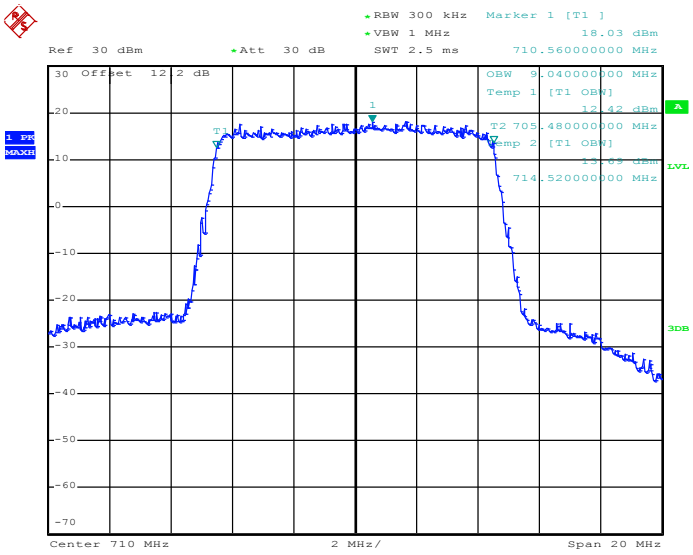
26dB Bandwidth Plot on Channel 23790



Date: 10.JUL.2013 11:20:33

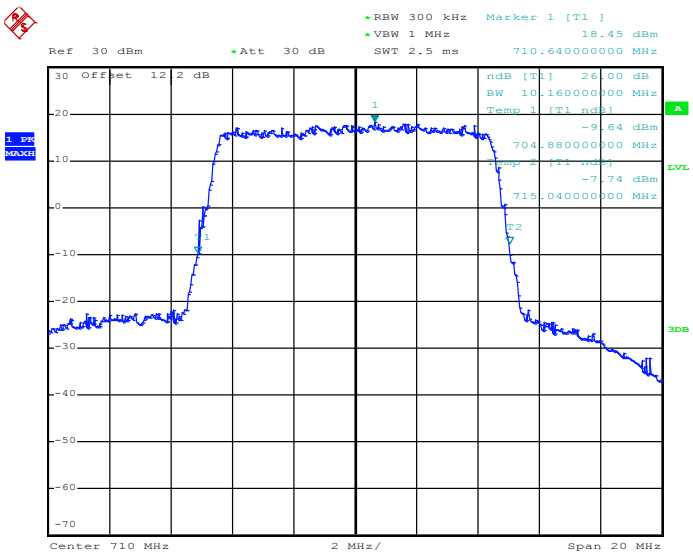
Band :	LTE Band 17	BW / Mod. :	10MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 23790



Date: 10.JUL.2013 11:17:28

26dB Bandwidth Plot on Channel 23790



Date: 10.JUL.2013 11:20:52

3.5 Conducted Band Edge Measurement

3.5.1 Description of Conducted Band Edge Measurement

27.53 (g) For Band 17

For operations in the 698 -746 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 100 kHz bandwidth. 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.

27.53 (h) For Band 4

For operations in the 1710 – 1755 MHz band, the FCC limit is 43 + $10\log_{10}$(P[Watts]) dB below the transmitter power P(Watts) in a 1 MHz bandwidth. However, in the 1MHz 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.

27.53 (m) For Band 7

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

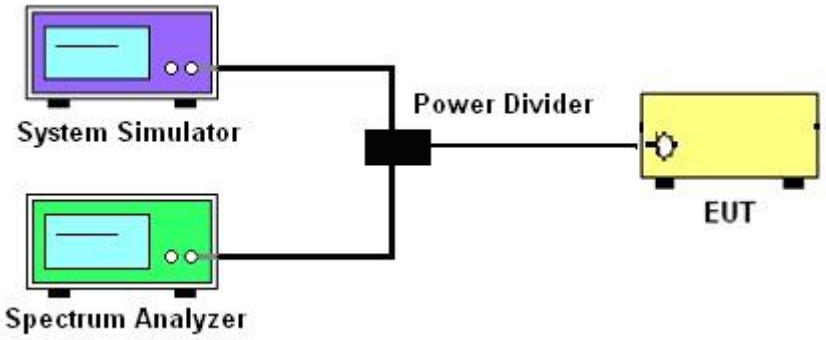
3.5.2 Measuring Instruments

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 ≥ 1% EBW, and measuring bandwidth = 1MHz.
3. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
4. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
   = P(W)- [43 + 10log(P)] (dB)
   = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
   = -13dBm.

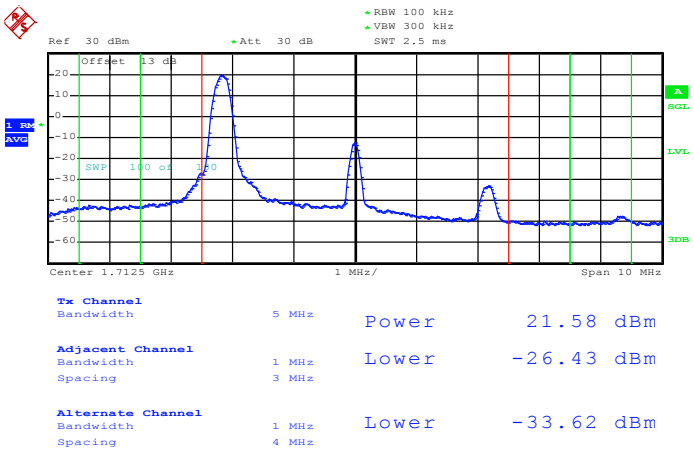
3.5.4 Test Setup



3.5.5 Test Result (Plots) of Conducted Band Edge

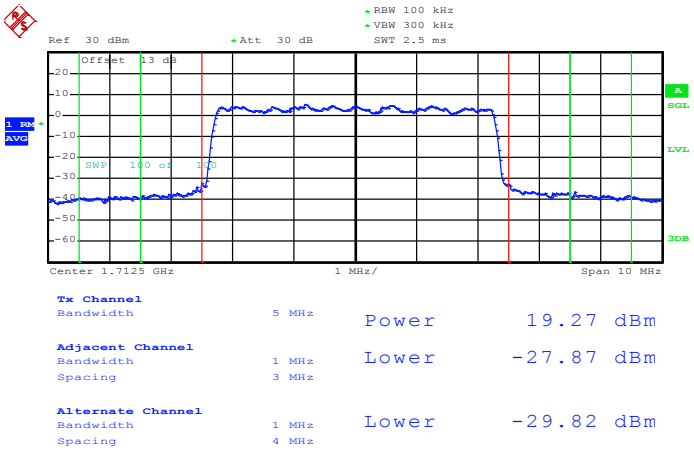
Band :	LTE Band 4	Band Width :	5MHz / QPSK

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



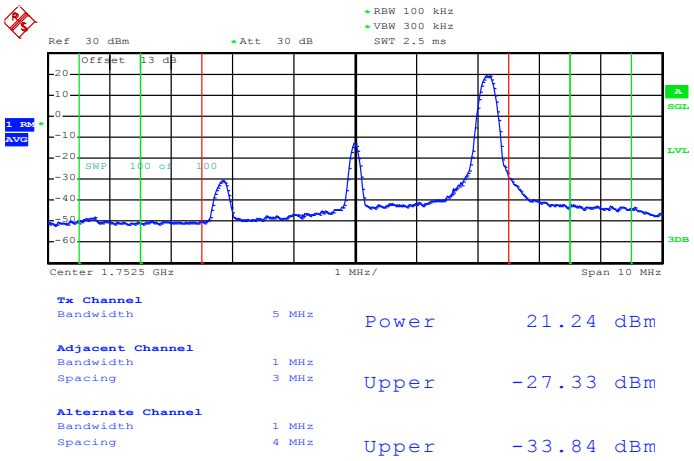
Date: 11.JUL.2013 09:34:08

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



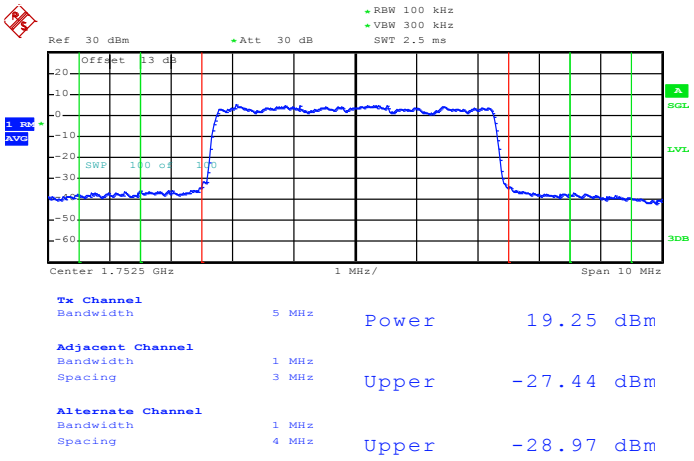
Date: 11.JUL.2013 09:31:10

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



Date: 11.JUL.2013 09:34:51

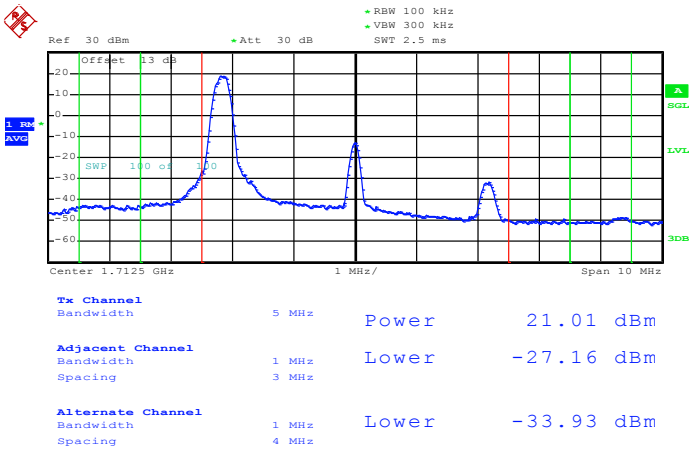
Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0



Date: 11.JUL.2013 09:36:33

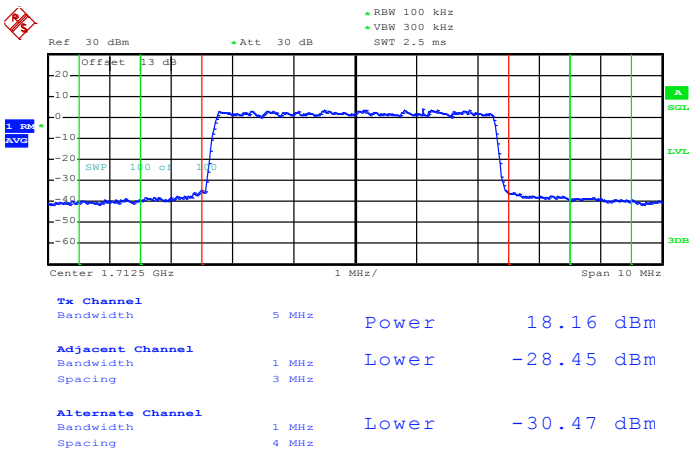
Band :	LTE Band 4	Band Width :	5MHz / 16QAM

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



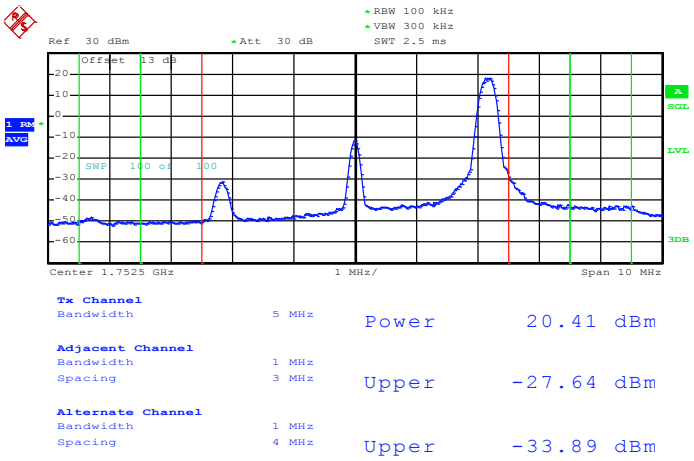
Date: 11.JUL.2013 09:31:51

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



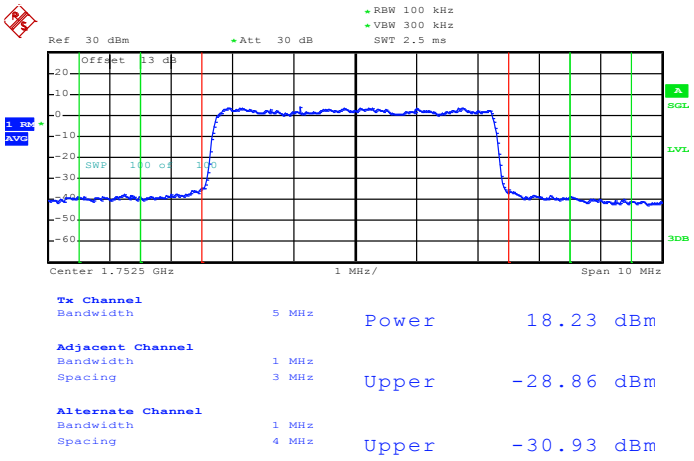
Date: 11.JUL.2013 09:31:27

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



Date: 11.JUL.2013 09:35:31

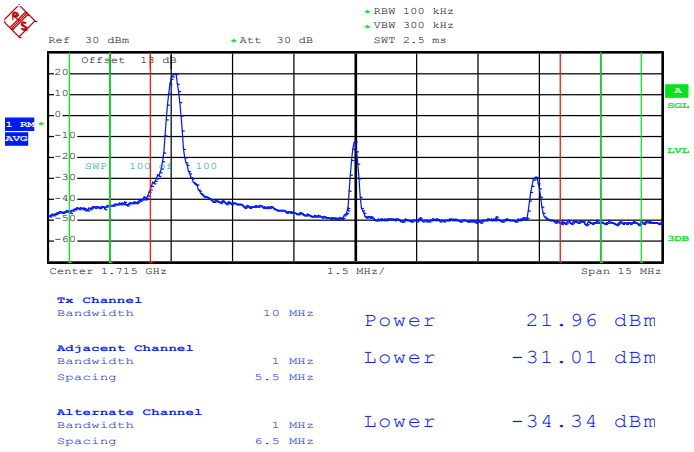
Higher Band Edge Plot for 16QAM-RB Size 25, RB Offset 0



Date: 11.JUL.2013 09:36:16

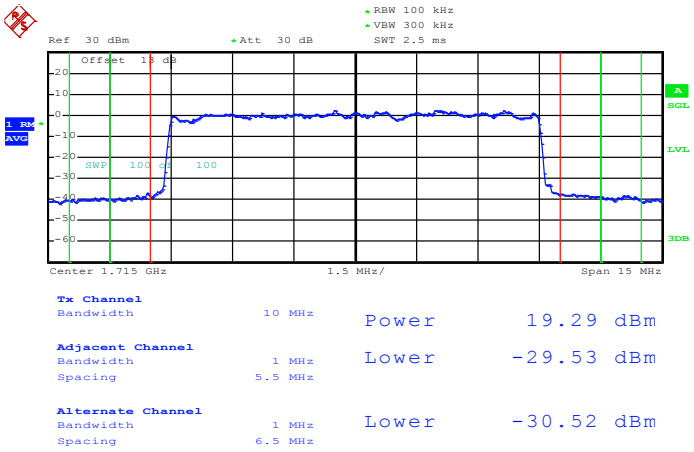
Band :	LTE Band 4	Band Width :	10MHz / QPSK

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



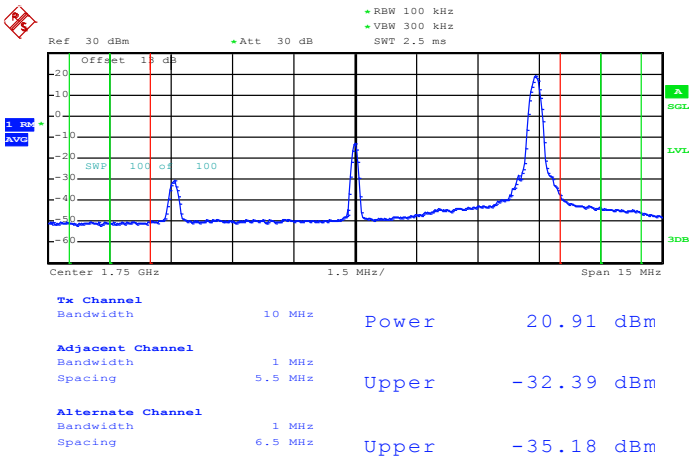
Date: 11.JUL.2013 09:45:14

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



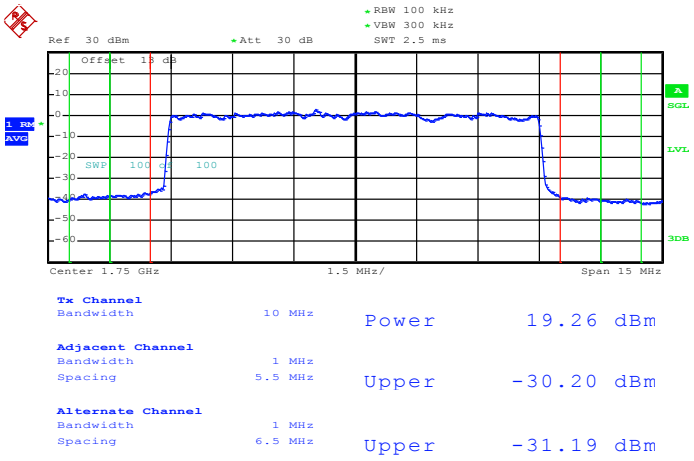
Date: 11.JUL.2013 09:46:05

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



Date: 11.JUL.2013 09:44:16

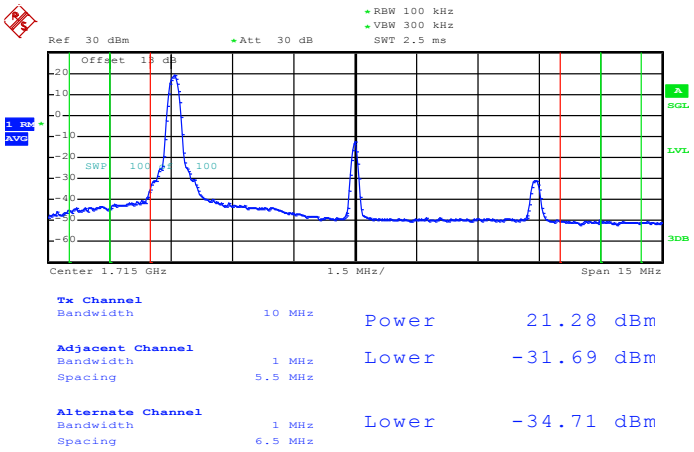
Higher Band Edge Plot for QPSK-RB Size 50, RB Offset 0



Date: 11.JUL.2013 09:42:56

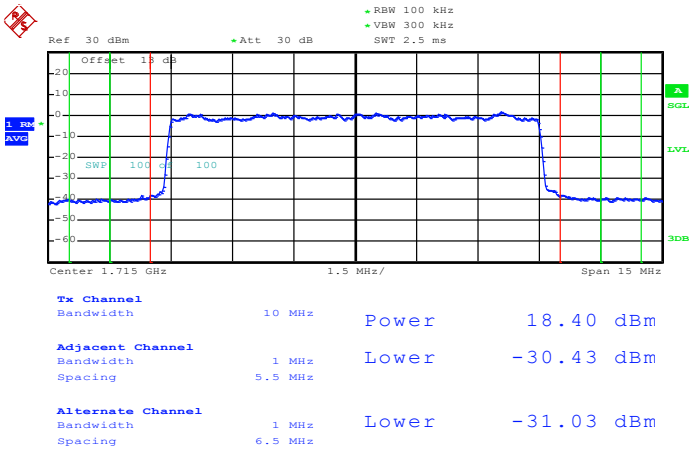
Band :	LTE Band 4	Band Width :	10MHz / 16QAM

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



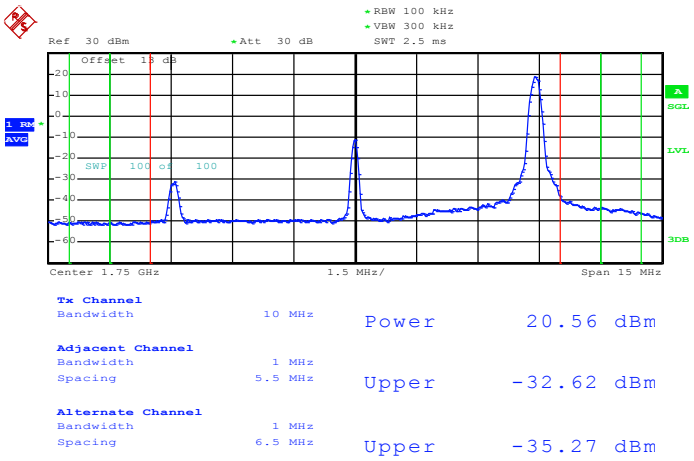
Date: 11.JUL.2013 09:45:33

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



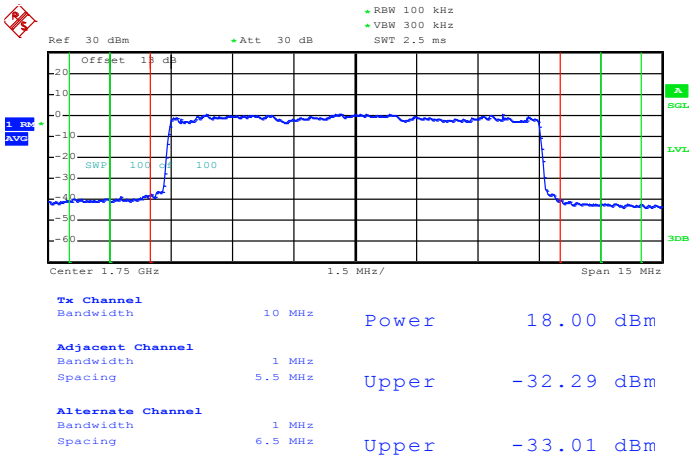
Date: 11.JUL.2013 09:45:48

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



Date: 11.JUL.2013 09:43:47

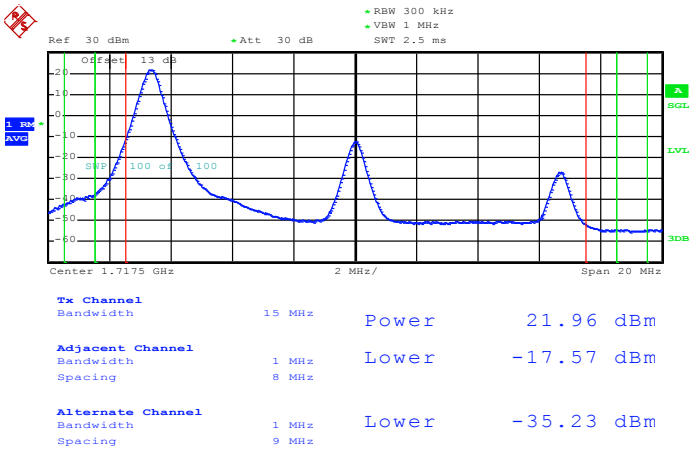
Higher Band Edge Plot for 16QAM-RB Size 50, RB Offset 0



Date: 11.JUL.2013 09:43:24

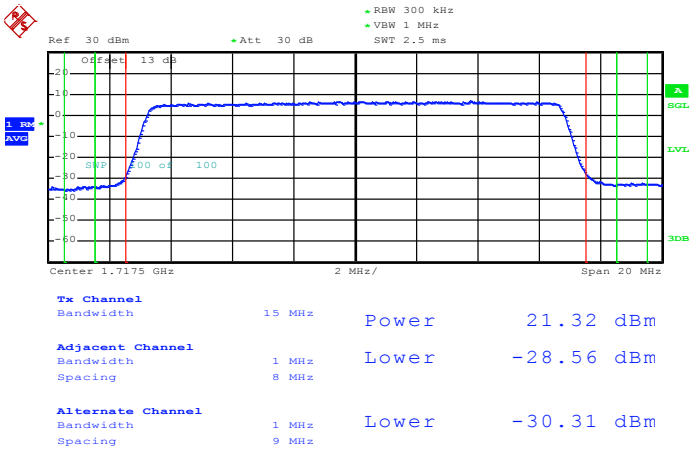
Band :	LTE Band 4	Band Width :	15MHz / QPSK

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



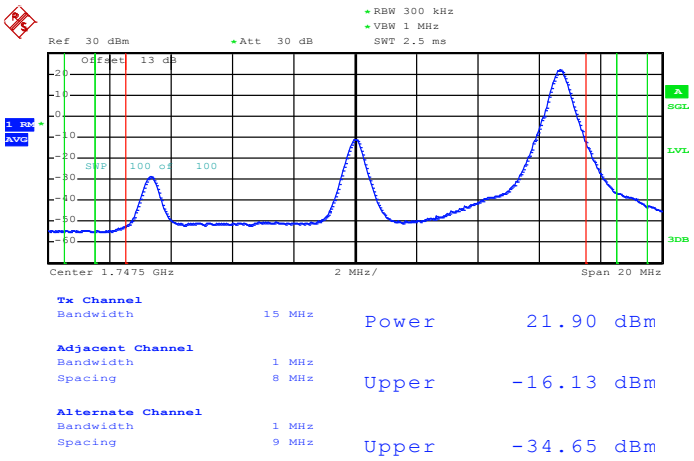
Date: 11.JUL.2013 09:48:24

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



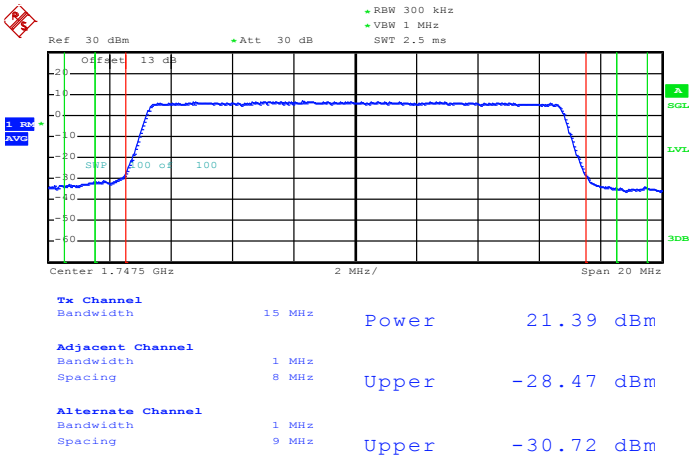
Date: 11.JUL.2013 09:47:33

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



Date: 11.JUL.2013 09:49:21

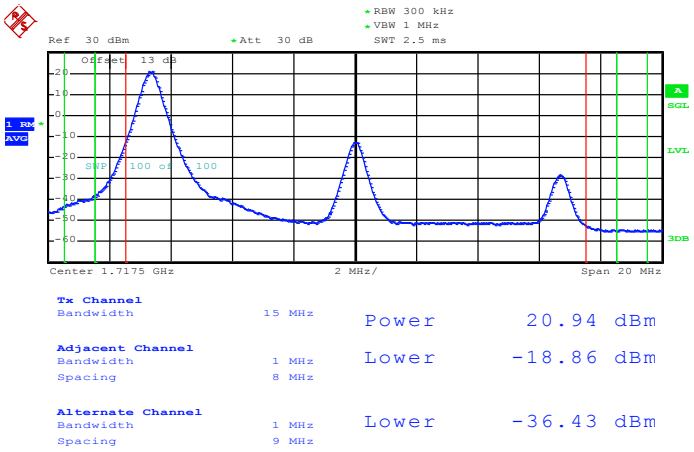
Higher Band Edge Plot for QPSK-RB Size 75, RB Offset 0



Date: 11.JUL.2013 09:50:13

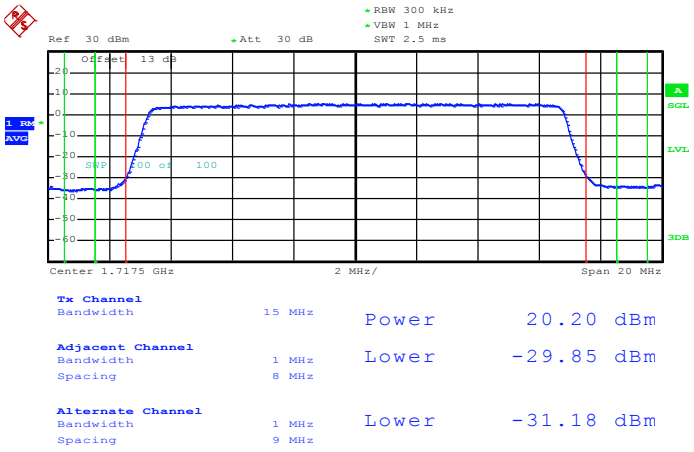
Band :	LTE Band 4	Band Width :	15MHz / 16QAM

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



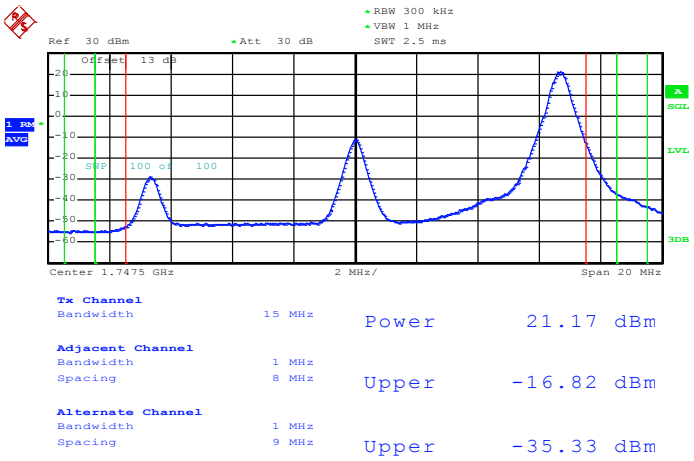
Date: 11.JUL.2013 09:48:03

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



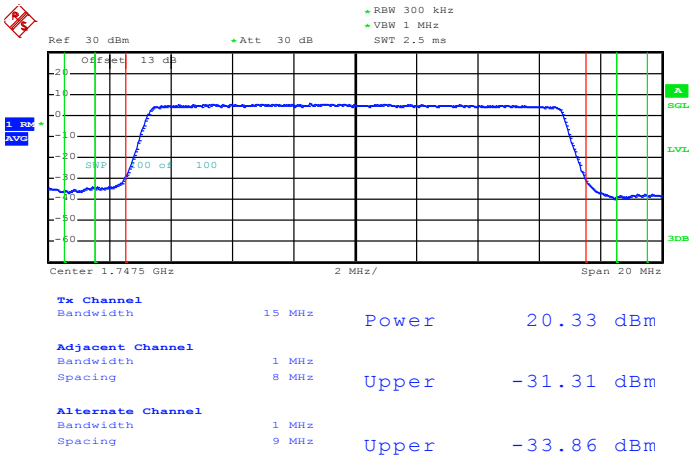
Date: 11.JUL.2013 09:47:47

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



Date: 11.JUL.2013 09:49:36

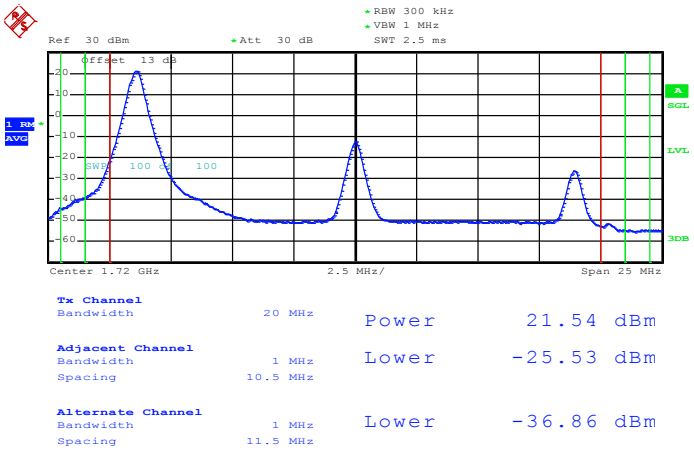
Higher Band Edge Plot for 16QAM-RB Size 75, RB Offset 0



Date: 11.JUL.2013 09:49:55

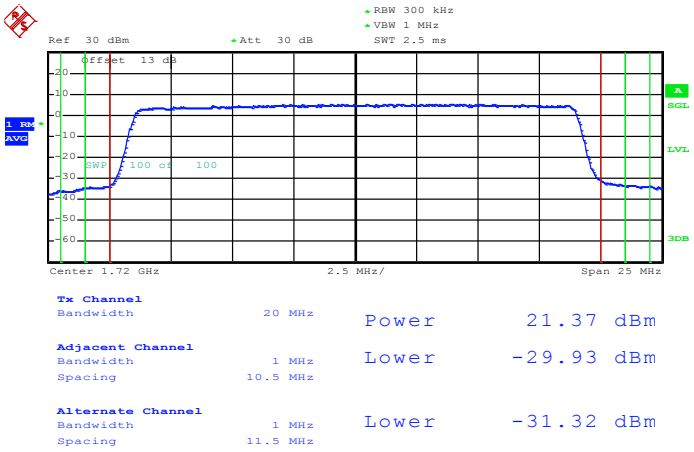
Band :	LTE Band 4	Band Width :	20MHz / QPSK

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



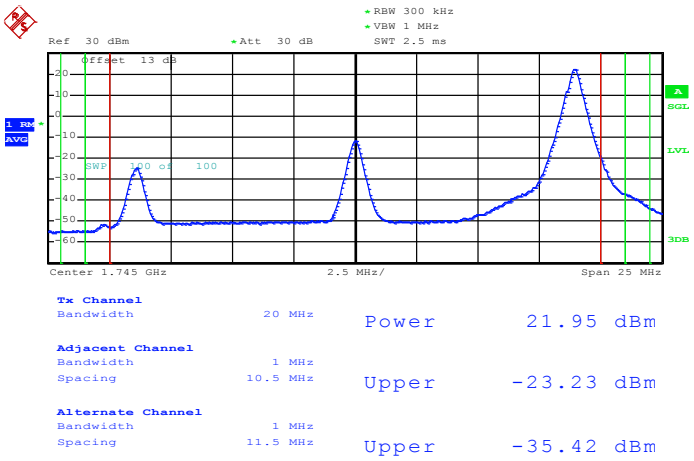
Date: 11.JUL.2013 10:06:49

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



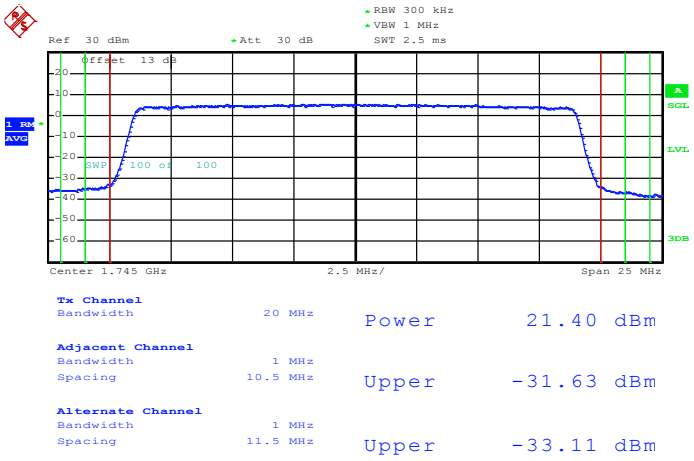
Date: 11.JUL.2013 10:07:52

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



Date: 11.JUL.2013 10:06:11

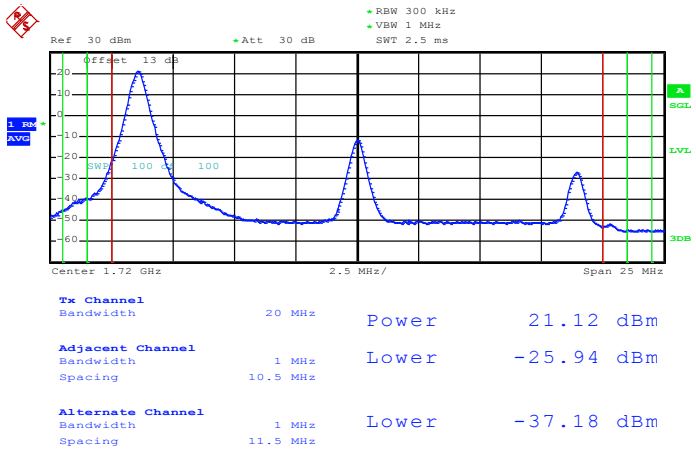
Higher Band Edge Plot for QPSK-RB Size 100, RB Offset 0



Date: 11.JUL.2013 10:03:33

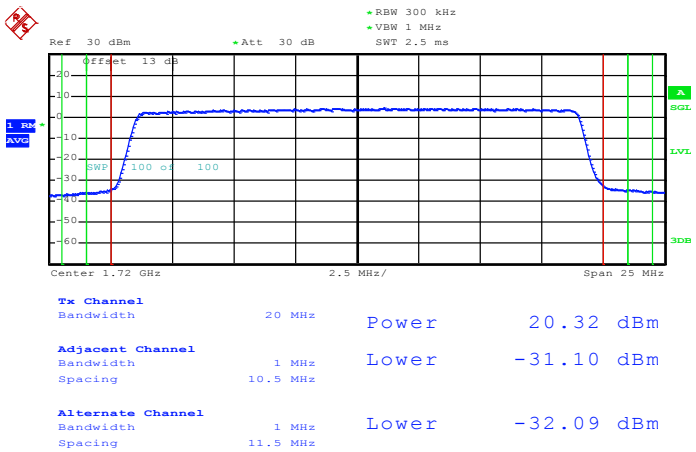
Band :	LTE Band 4	Band Width :	20MHz / 16QAM

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



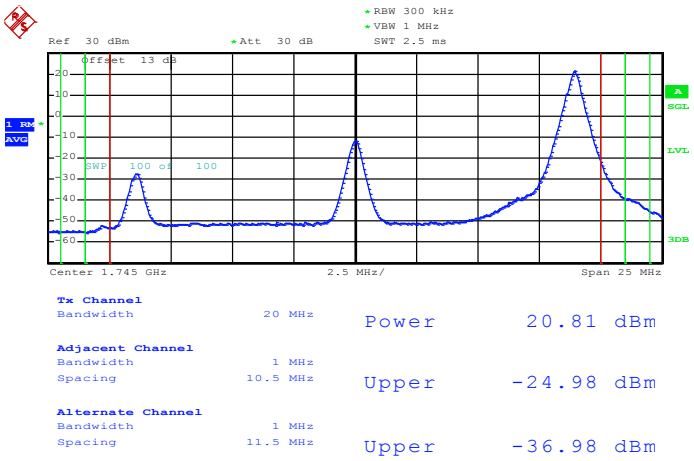
Date: 11.JUL.2013 10:07:05

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



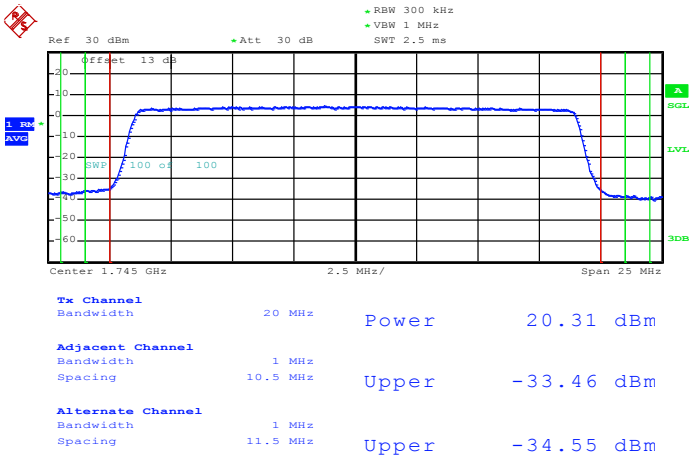
Date: 11.JUL.2013 10:07:37

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



Date: 11.JUL.2013 10:05:56

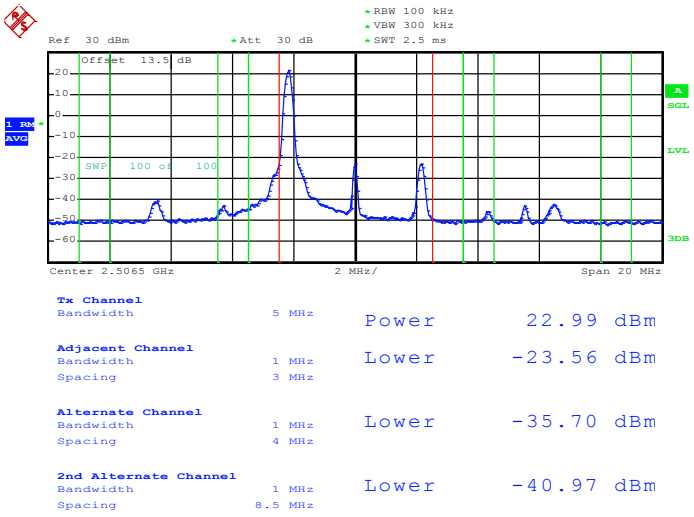
Higher Band Edge Plot for 16QAM-RB Size 100, RB Offset 0



Date: 11.JUL.2013 10:03:53

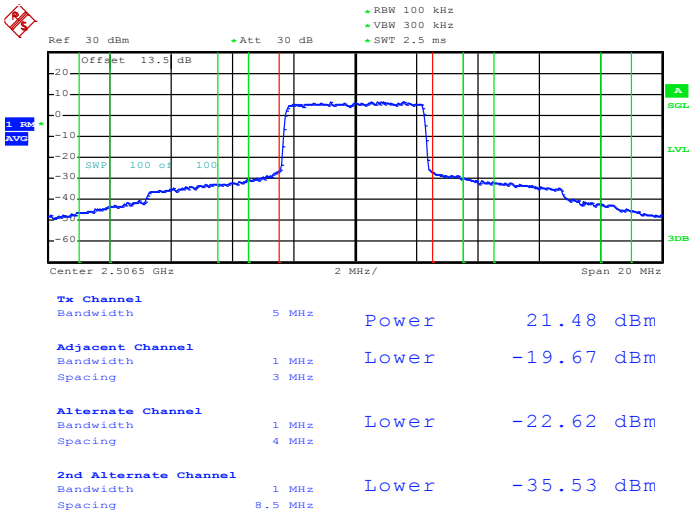
Band :	LTE Band 7	Band Width :	5MHz / QPSK

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



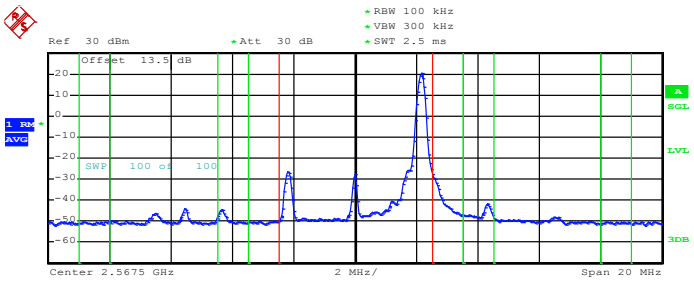
Date: 10.JUL.2013 16:32:57

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



Date: 10.JUL.2013 16:32:07

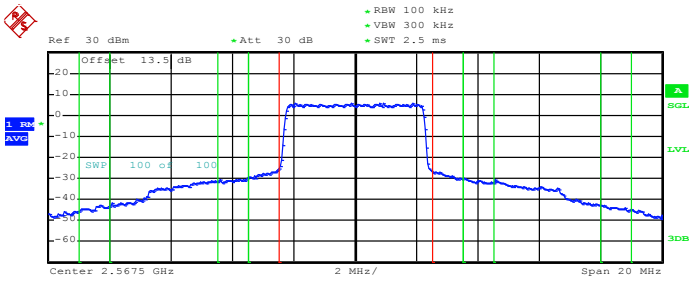
Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 24



Tx Channel			
Bandwidth	5 MHz	Power	22.27 dBm
Adjacent Channel			
Bandwidth	1 MHz		
Spacing	3 MHz	Upper	-25.07 dBm
Alternate Channel			
Bandwidth	1 MHz		
Spacing	4 MHz	Upper	-36.12 dBm
2nd Alternate Channel			
Bandwidth	1 MHz		
Spacing	8.5 MHz	Upper	-41.11 dBm

Date: 10.JUL.2013 16:34:05

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

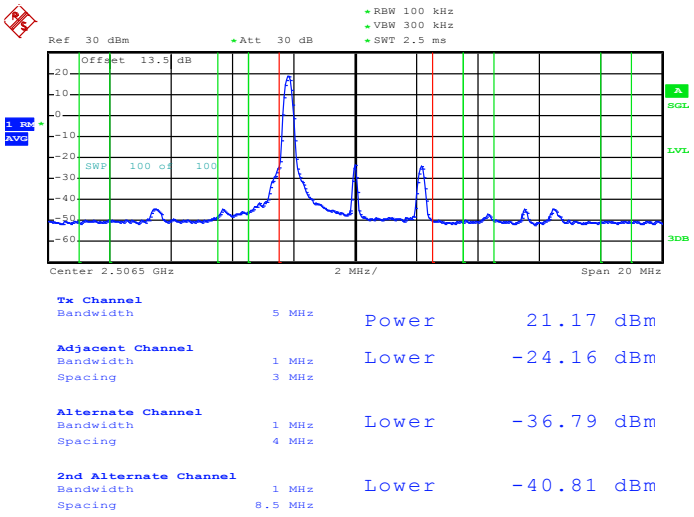


Tx Channel			
Bandwidth	5 MHz	Power	21.07 dBm
Adjacent Channel			
Bandwidth	1 MHz		
Spacing	3 MHz	Upper	-18.80 dBm
Alternate Channel			
Bandwidth	1 MHz		
Spacing	4 MHz	Upper	-21.74 dBm
2nd Alternate Channel			
Bandwidth	1 MHz		
Spacing	8.5 MHz	Upper	-34.32 dBm

Date: 10.JUL.2013 16:35:35

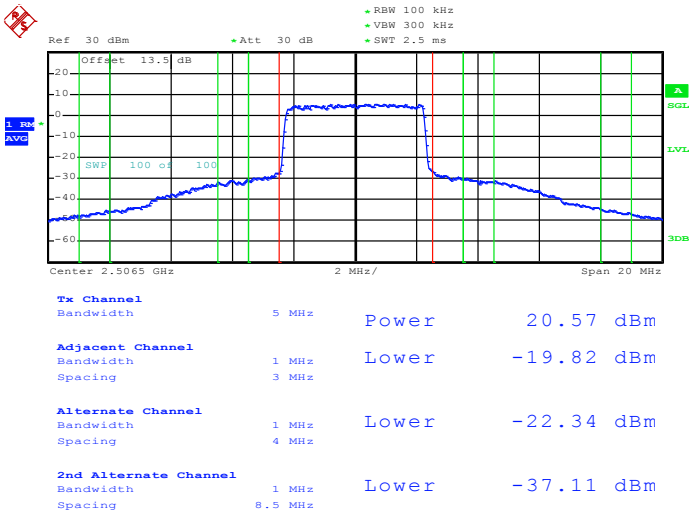
Band :	LTE Band 7	Band Width :	5MHz / 16QAM

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



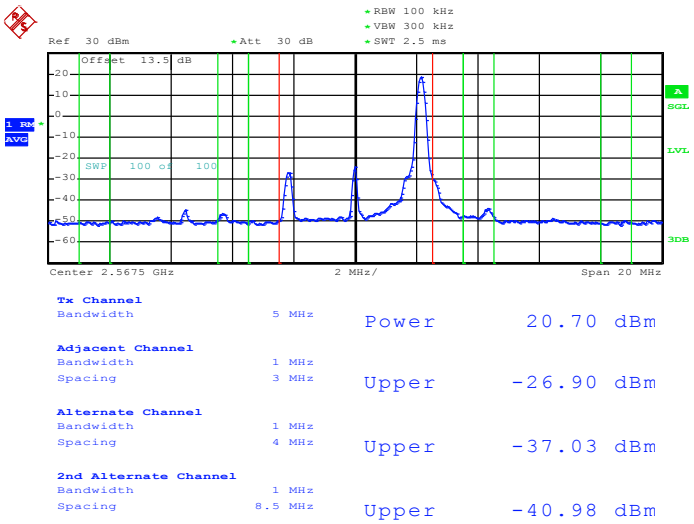
Date: 10.JUL.2013 16:32:41

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



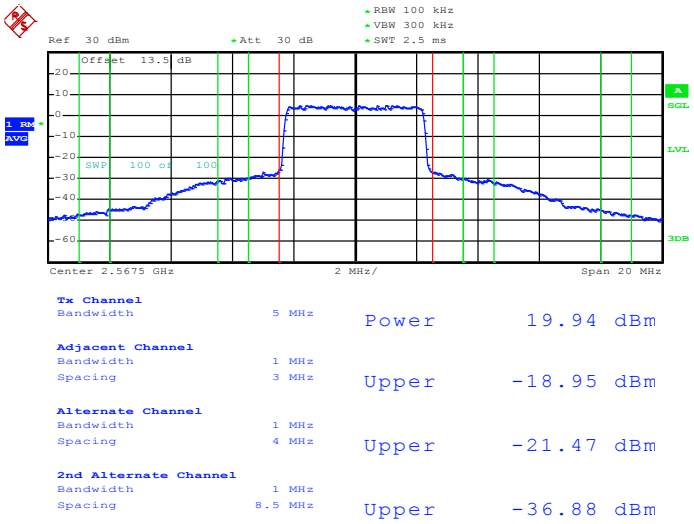
Date: 10.JUL.2013 16:32:22

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



Date: 10.JUL.2013 16:35:02

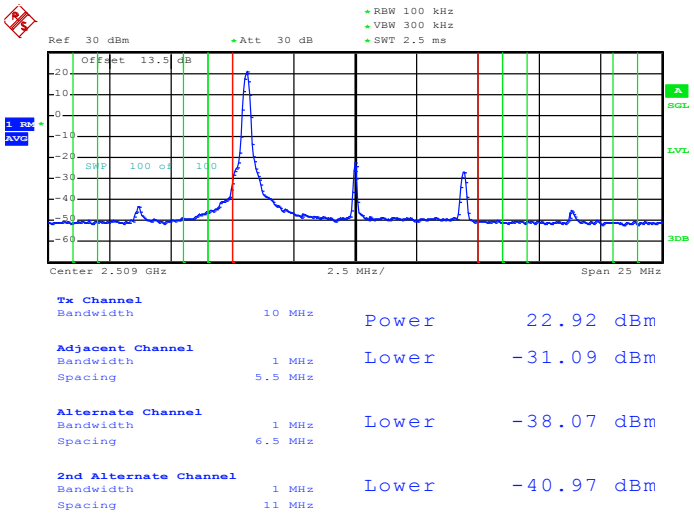
Higher Band Edge Plot for 16QAM-RB Size 25, RB Offset 0



Date: 10.JUL.2013 16:35:20

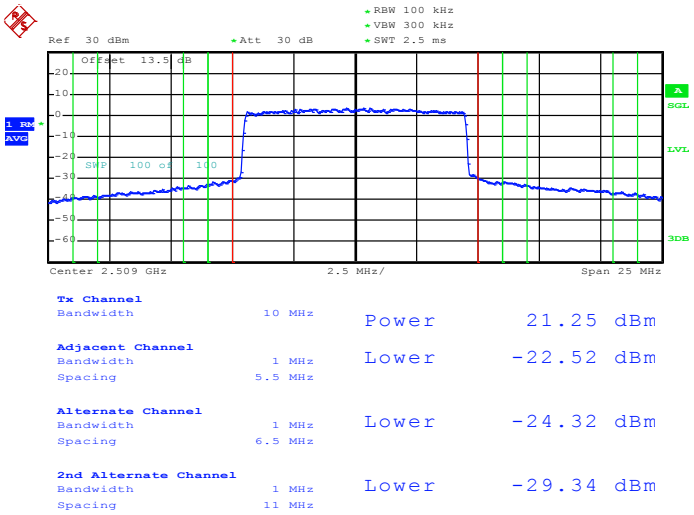
Band :	LTE Band 7	Band Width :	10MHz / QPSK

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



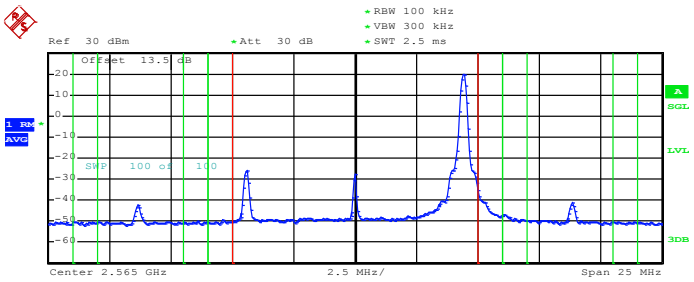
Date: 10.JUL.2013 16:39:32

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



Date: 10.JUL.2013 16:40:24

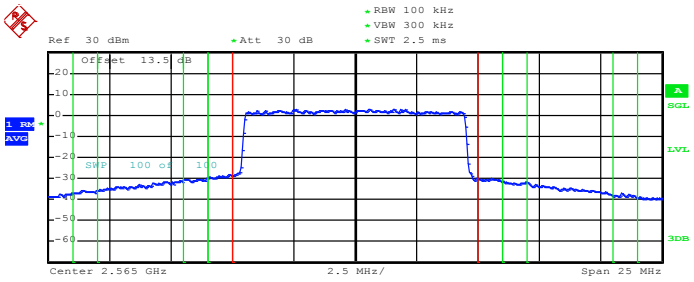
Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 49



Tx Channel			
Bandwidth	10 MHz	Power	22.24 dBm
Adjacent Channel			
Bandwidth	1 MHz		
Spacing	5.5 MHz	Upper	-32.22 dBm
Alternate Channel			
Bandwidth	1 MHz		
Spacing	6.5 MHz	Upper	-39.00 dBm
2nd Alternate Channel			
Bandwidth	1 MHz		
Spacing	11 MHz	Upper	-41.07 dBm

Date: 10.JUL.2013 16:38:23

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

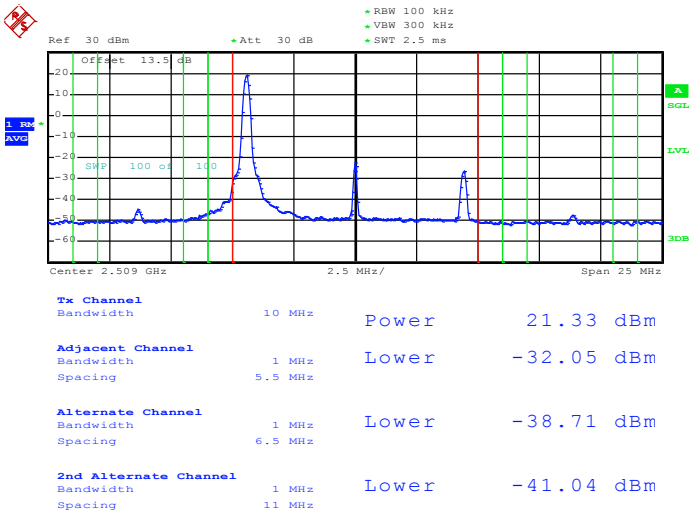


Tx Channel			
Bandwidth	10 MHz	Power	20.92 dBm
Adjacent Channel			
Bandwidth	1 MHz		
Spacing	5.5 MHz	Upper	-20.96 dBm
Alternate Channel			
Bandwidth	1 MHz		
Spacing	6.5 MHz	Upper	-22.48 dBm
2nd Alternate Channel			
Bandwidth	1 MHz		
Spacing	11 MHz	Upper	-28.46 dBm

Date: 10.JUL.2013 16:37:29

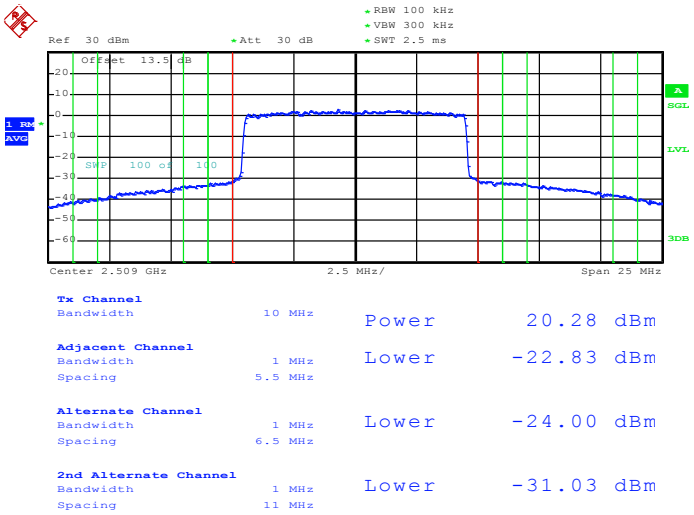
Band :	LTE Band 7	Band Width :	10MHz / 16QAM

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



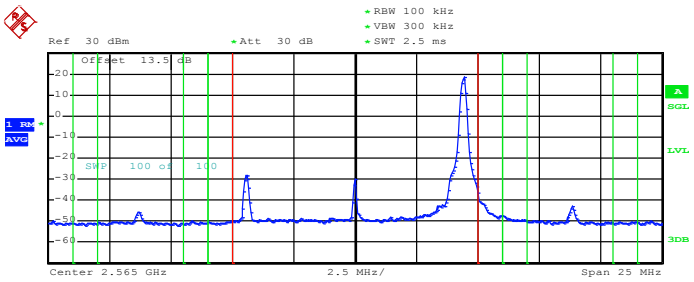
Date: 10.JUL.2013 16:39:47

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



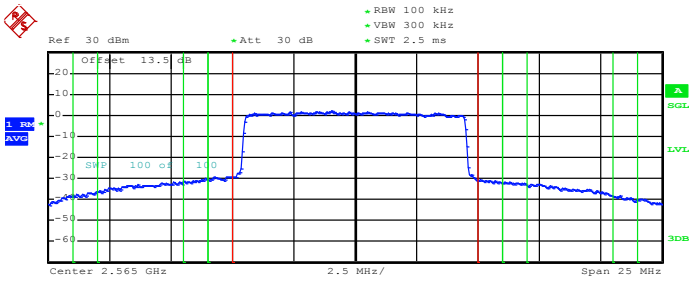
Date: 10.JUL.2013 16:40:08

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



Date: 10.JUL.2013 16:38:07

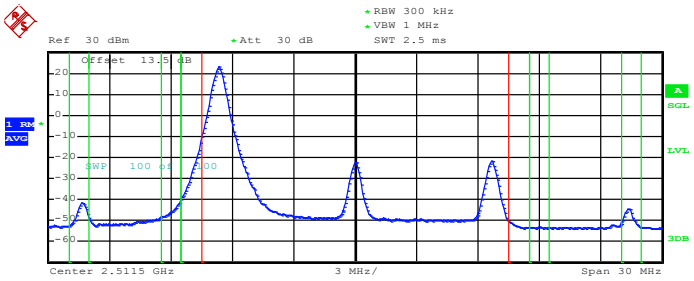
Higher Band Edge Plot for 16QAM-RB Size 50, RB Offset 0



Date: 10.JUL.2013 16:37:45

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

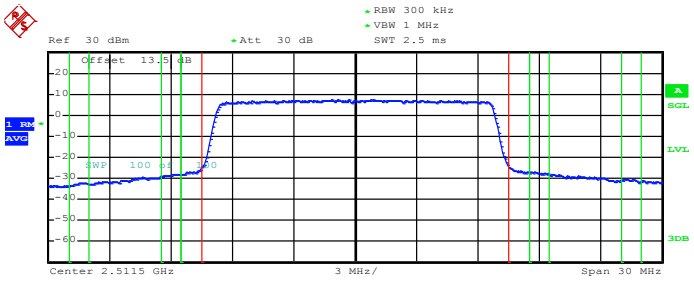
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Tx Channel			
Bandwidth	15 MHz	Power	23.24 dBm
Adjacent Channel			
Bandwidth	1 MHz	Lower	-16.27 dBm
Spacing	8 MHz		
Alternate Channel			
Bandwidth	1 MHz	Lower	-40.26 dBm
Spacing	9 MHz		
2nd Alternate Channel			
Bandwidth	1 MHz	Lower	-40.64 dBm
Spacing	13.5 MHz		

Date: 10.JUL.2013 16:44:04

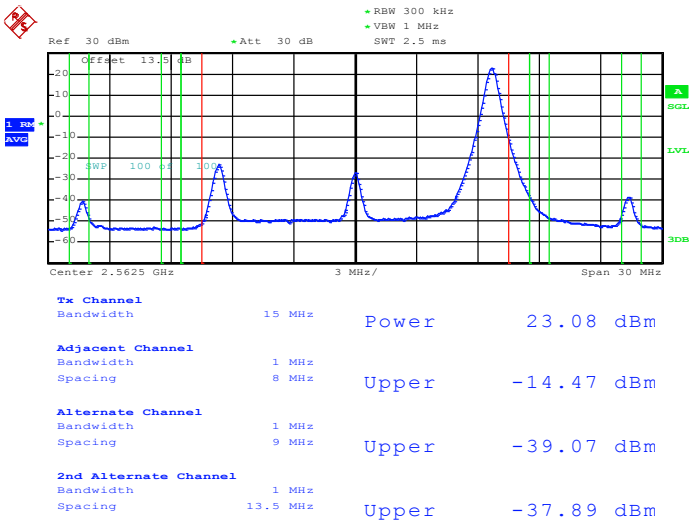
Lower Band Edge Plot for QPSK-RB Size 75, RB Offset 0



Tx Channel			
Bandwidth	15 MHz	Power	22.33 dBm
Adjacent Channel			
Bandwidth	1 MHz	Lower	-22.61 dBm
Spacing	8 MHz		
Alternate Channel			
Bandwidth	1 MHz	Lower	-23.92 dBm
Spacing	9 MHz		
2nd Alternate Channel			
Bandwidth	1 MHz	Lower	-28.25 dBm
Spacing	13.5 MHz		

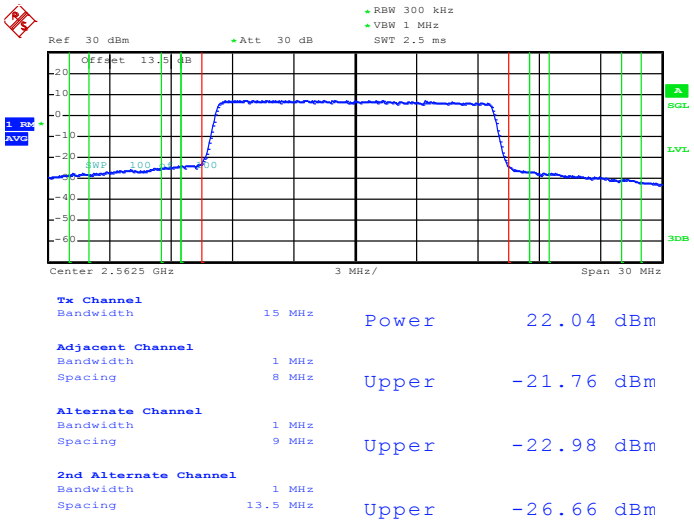
Date: 10.JUL.2013 16:43:18

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



Date: 10.JUL.2013 16:44:49

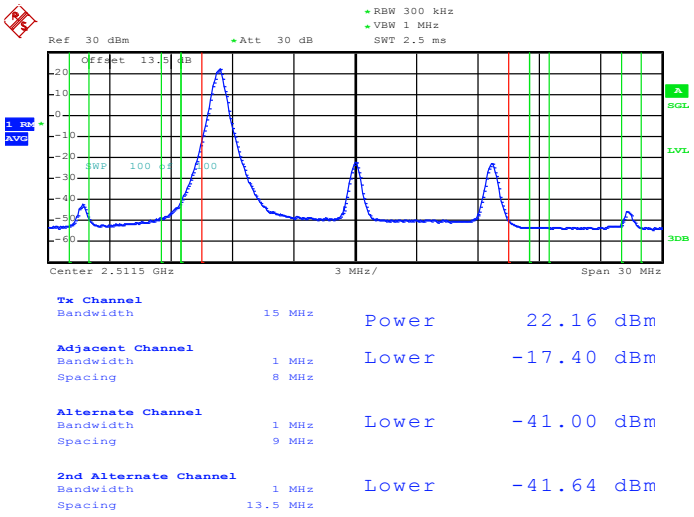
Higher Band Edge Plot for QPSK-RB Size 75, RB Offset 0



Date: 10.JUL.2013 16:45:40

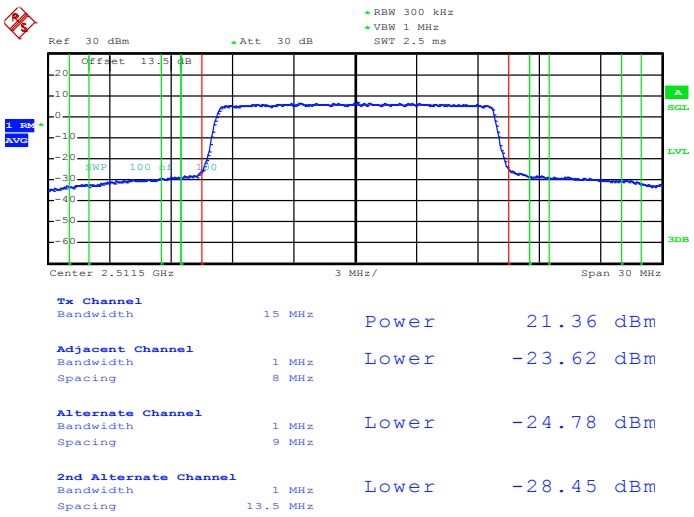
Band :	LTE Band 7	Band Width :	15MHz / 16QAM

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



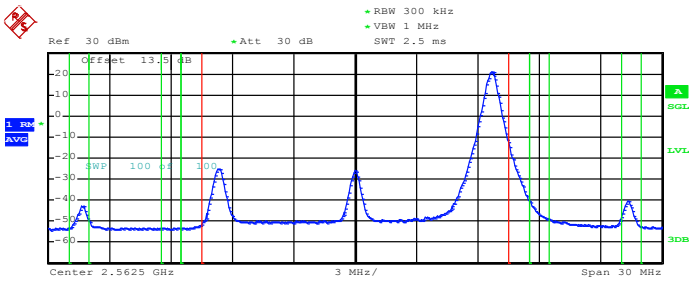
Date: 10.JUL.2013 16:43:49

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



Date: 10.JUL.2013 16:43:32

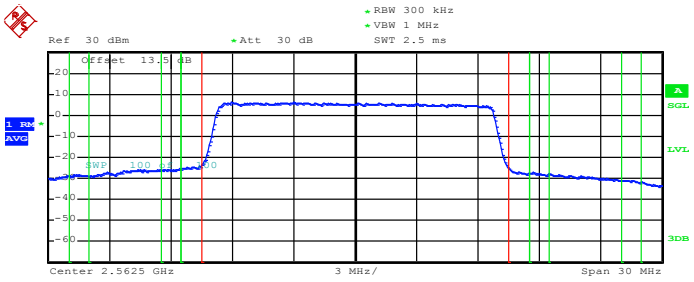
Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 74



Tx Channel			
Bandwidth	15 MHz	Power	21.55 dBm
Adjacent Channel			
Bandwidth	1 MHz		
Spacing	8 MHz	Upper	-16.02 dBm
Alternate Channel			
Bandwidth	1 MHz		
Spacing	9 MHz	Upper	-40.62 dBm
2nd Alternate Channel			
Bandwidth	1 MHz		
Spacing	13.5 MHz	Upper	-39.86 dBm

Date: 10.JUL.2013 16:45:04

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

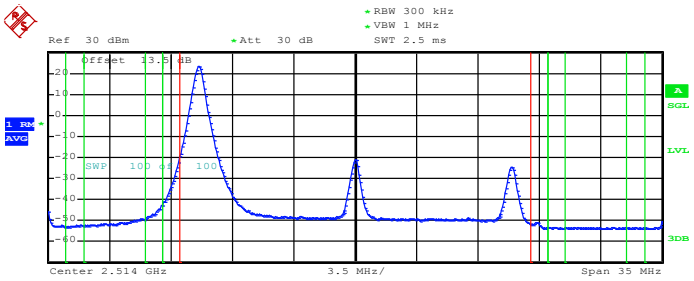


Tx Channel			
Bandwidth	15 MHz	Power	20.98 dBm
Adjacent Channel			
Bandwidth	1 MHz		
Spacing	8 MHz	Upper	-22.65 dBm
Alternate Channel			
Bandwidth	1 MHz		
Spacing	9 MHz	Upper	-23.40 dBm
2nd Alternate Channel			
Bandwidth	1 MHz		
Spacing	13.5 MHz	Upper	-26.87 dBm

Date: 10.JUL.2013 16:45:24

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

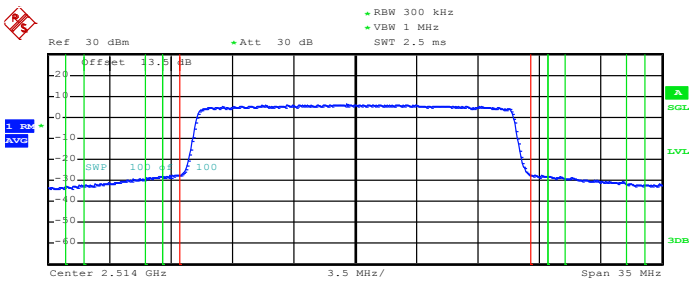
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Tx Channel Bandwidth	20 MHz	Power	23.79 dBm
Adjacent Channel Bandwidth	1 MHz	Lower	-24.10 dBm
Spacing	10.5 MHz		
Alternate Channel Bandwidth	1 MHz	Lower	-41.85 dBm
Spacing	11.5 MHz		
2nd Alternate Channel Bandwidth	1 MHz	Lower	-48.14 dBm
Spacing	16 MHz		

Date: 10.JUL.2013 16:59:51

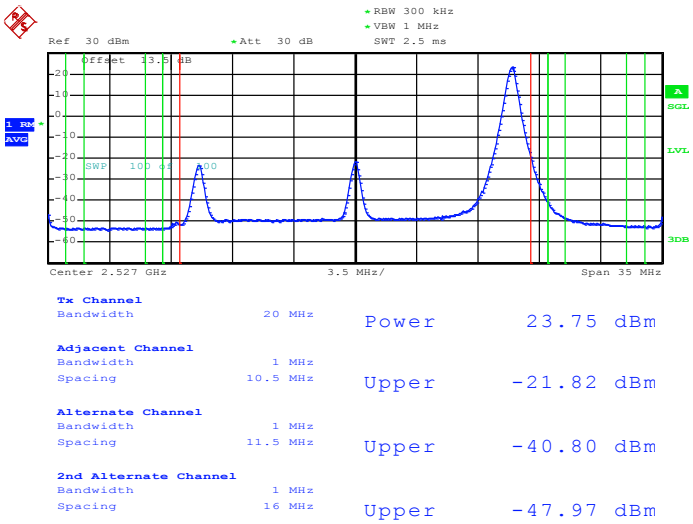
Lower Band Edge Plot for QPSK-RB Size 100, RB Offset 0



Tx Channel Bandwidth	20 MHz	Power	22.18 dBm
Adjacent Channel Bandwidth	1 MHz	Lower	-23.56 dBm
Spacing	10.5 MHz		
Alternate Channel Bandwidth	1 MHz	Lower	-24.22 dBm
Spacing	11.5 MHz		
2nd Alternate Channel Bandwidth	1 MHz	Lower	-28.54 dBm
Spacing	16 MHz		

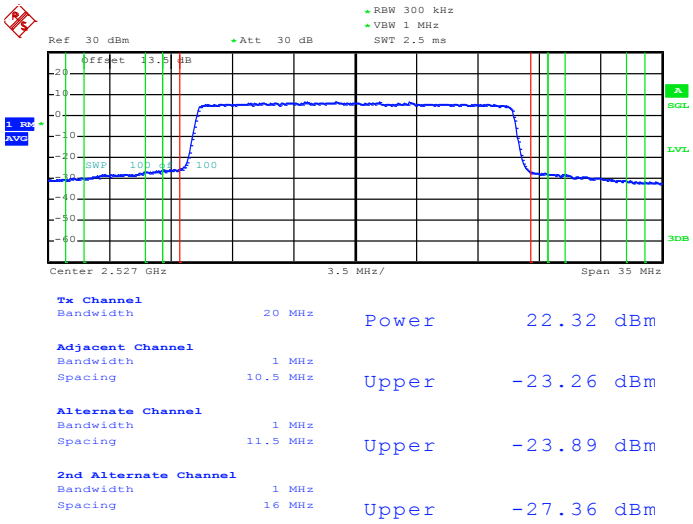
Date: 10.JUL.2013 17:00:50

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



Date: 10.JUL.2013 16:52:37

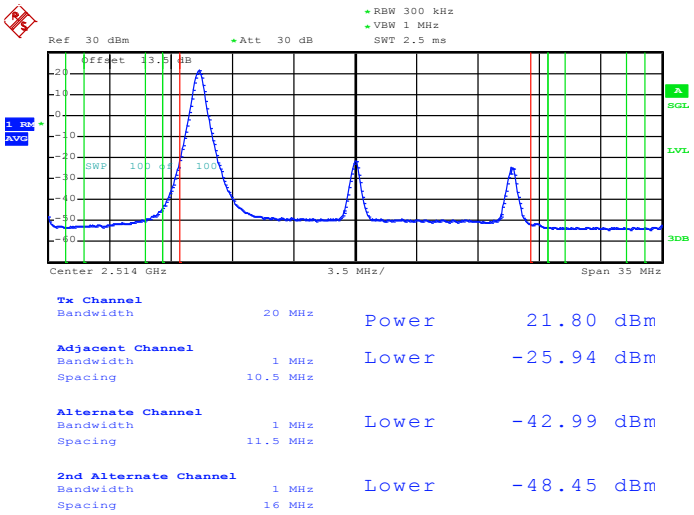
Higher Band Edge Plot for QPSK-RB Size 100, RB Offset 0



Date: 10.JUL.2013 16:50:25

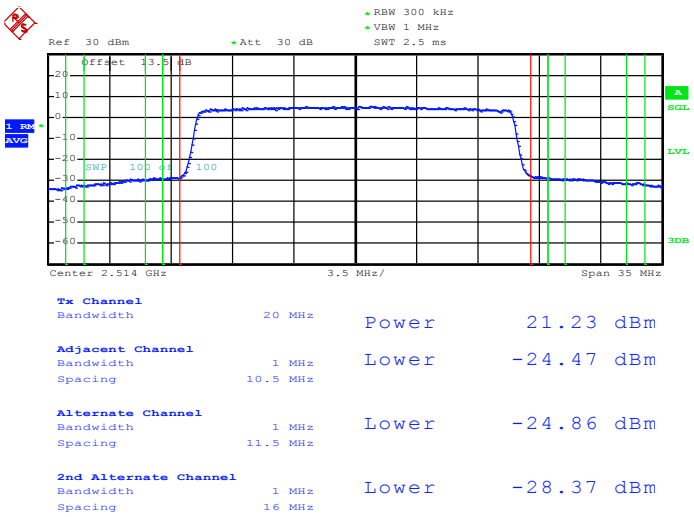
Band :	LTE Band 7	Band Width :	20MHz / 16QAM

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



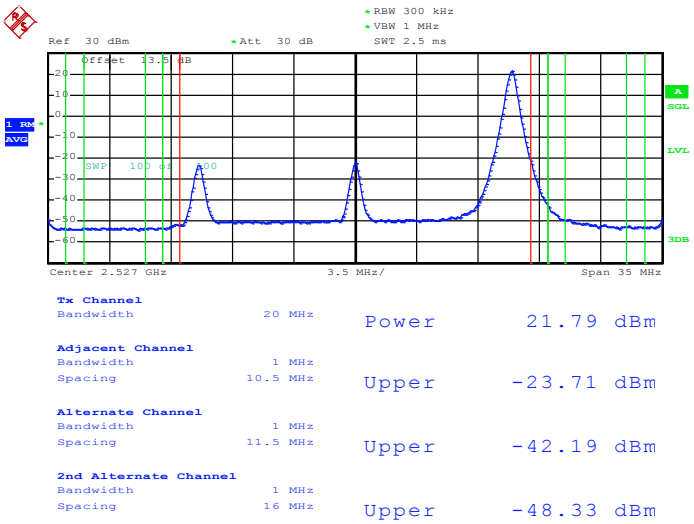
Date: 10.JUL.2013 17:00:10

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



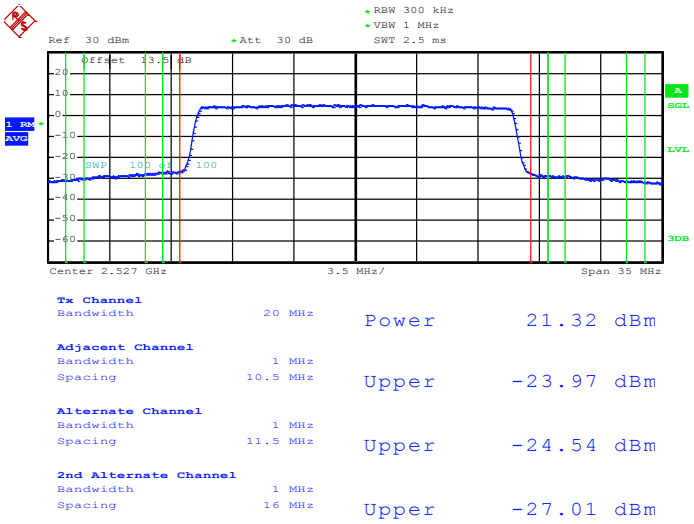
Date: 10.JUL.2013 17:00:31

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



Date: 10.JUL.2013 16:52:19

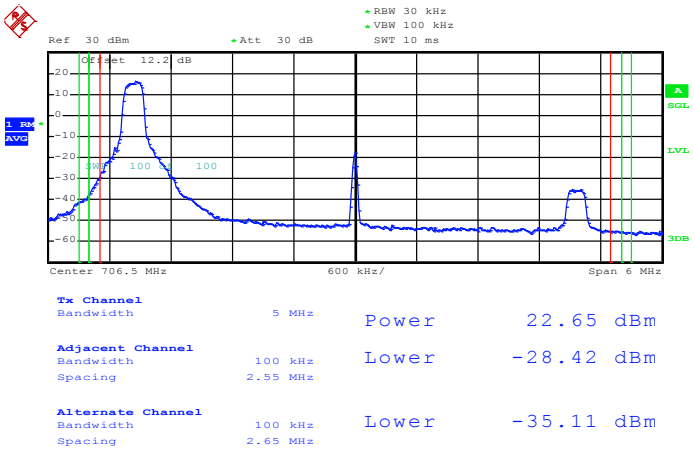
Higher Band Edge Plot for 16QAM-RB Size 100, RB Offset 0



Date: 10.JUL.2013 16:50:41

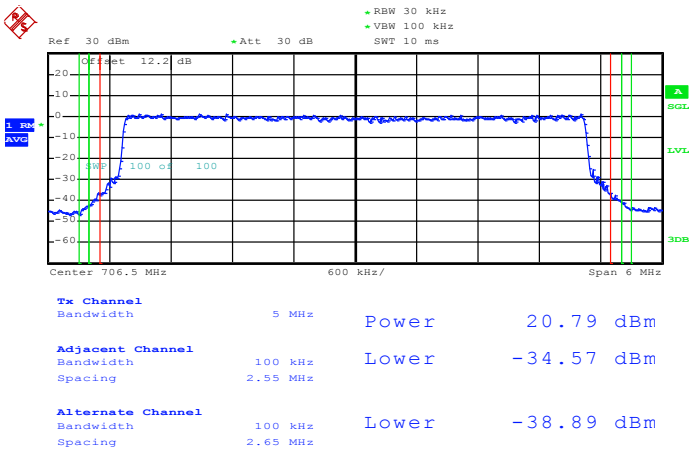
Band :	LTE Band 17	Band Width :	5MHz / QPSK

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



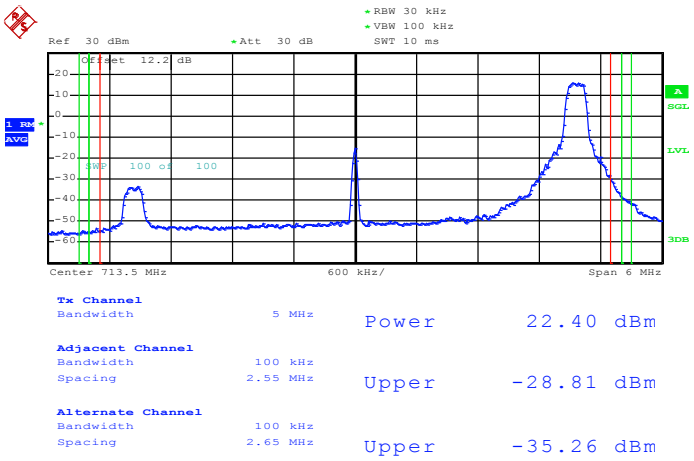
Date: 10.JUL.2013 11:28:24

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



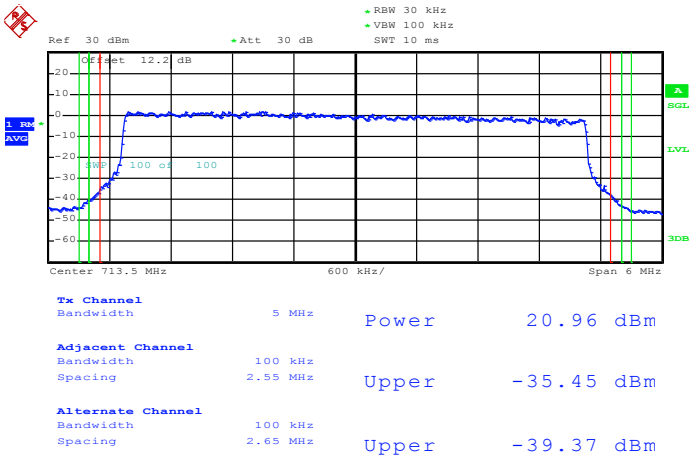
Date: 10.JUL.2013 11:27:20

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



Date: 10.JUL.2013 11:29:21

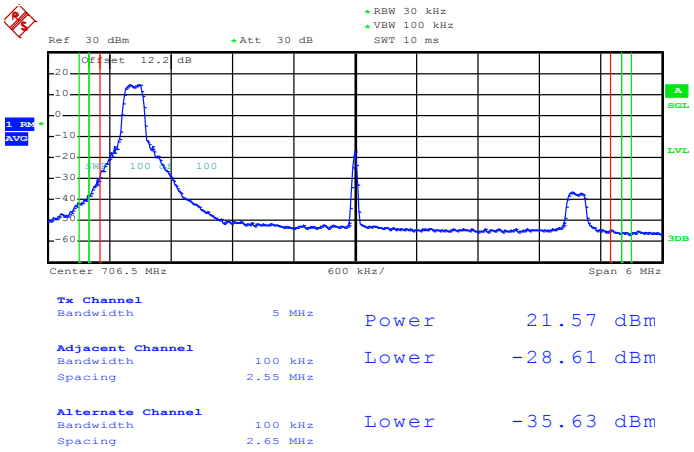
Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0



Date: 10.JUL.2013 11:30:28

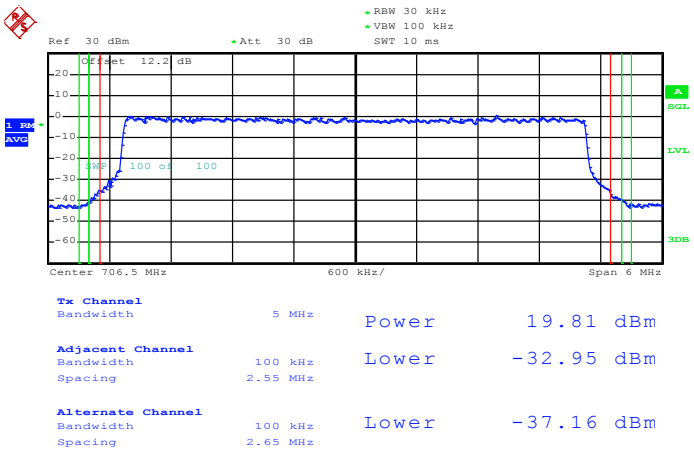
Band :	LTE Band 17	Band Width :	5MHz / 16QAM

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



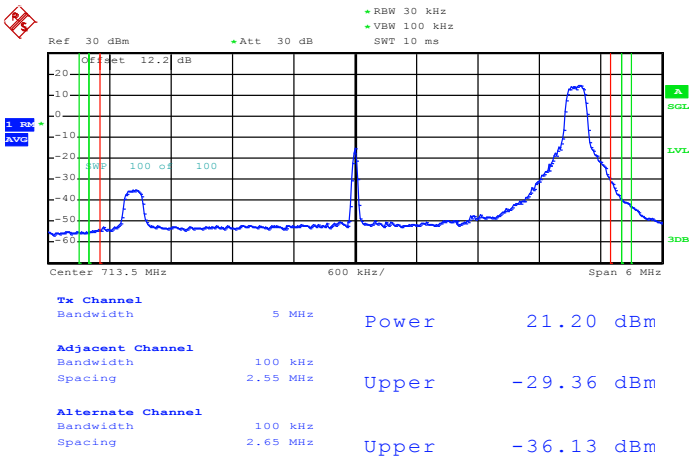
Date: 10.JUL.2013 11:28:04

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



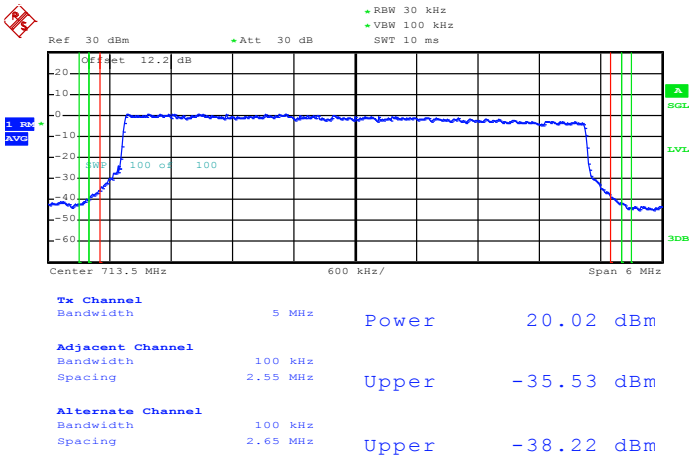
Date: 10.JUL.2013 11:27:41

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



Date: 10.JUL.2013 11:29:43

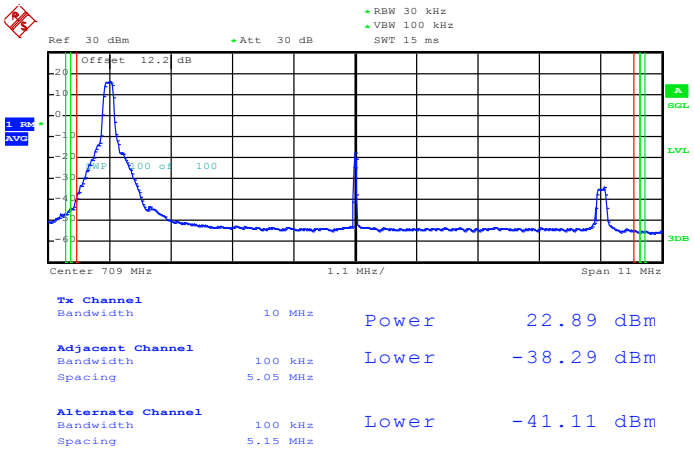
Higher Band Edge Plot for 16QAM-RB Size 25, RB Offset 0



Date: 10.JUL.2013 11:30:09

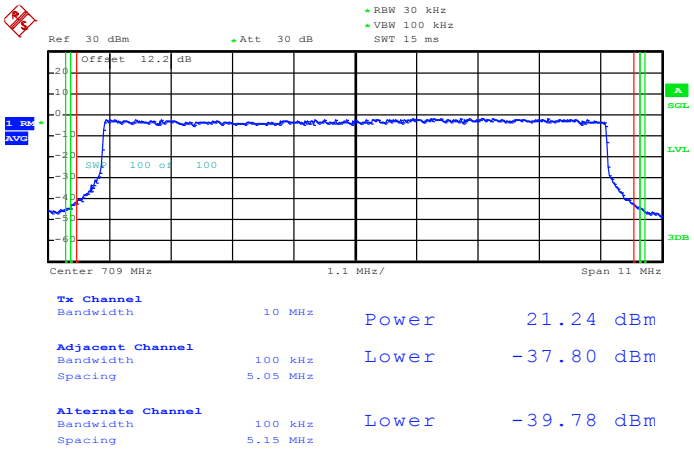
Band :	LTE Band 17	Band Width :	10MHz / QPSK

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



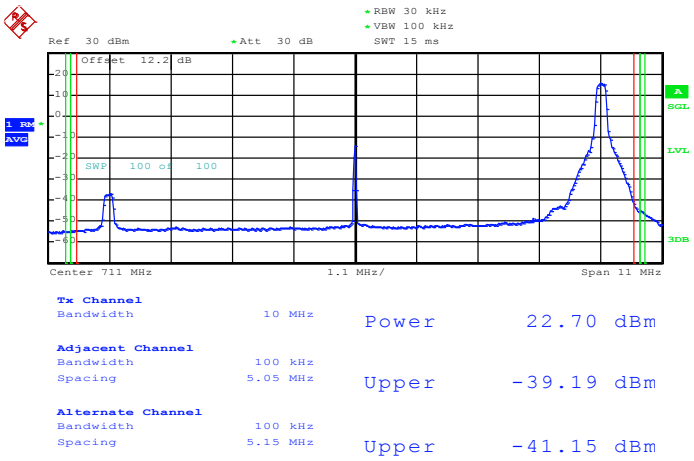
Date: 10.JUL.2013 11:36:39

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



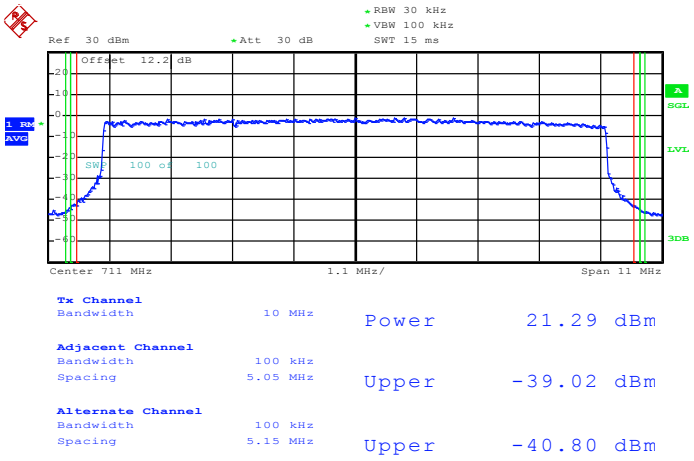
Date: 10.JUL.2013 11:37:43

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



Date: 10.JUL.2013 11:36:02

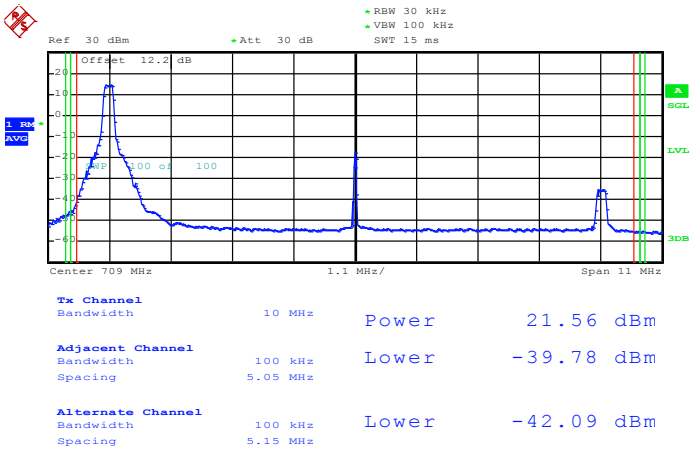
Higher Band Edge Plot for QPSK-RB Size 50, RB Offset 0



Date: 10.JUL.2013 11:33:43

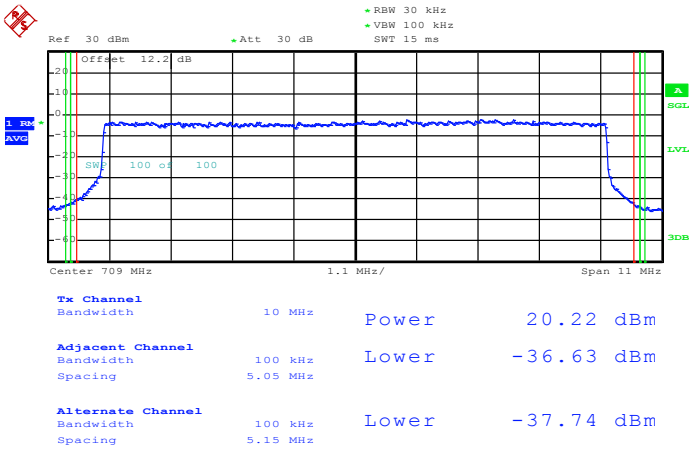
Band :	LTE Band 17	Band Width :	10MHz / 16QAM

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



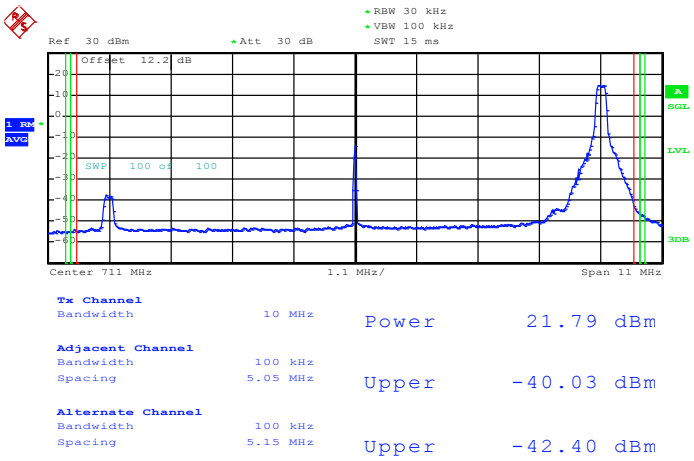
Date: 10.JUL.2013 11:37:01

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



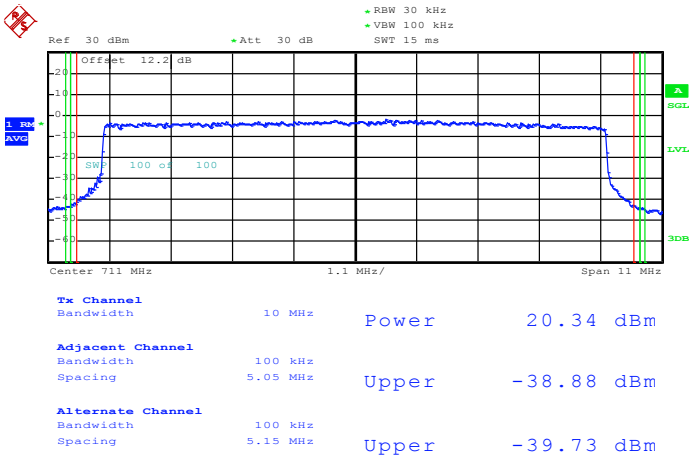
Date: 10.JUL.2013 11:37:22

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



Date: 10.JUL.2013 11:35:45

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



Date: 10.JUL.2013 11:35:14

3.6 Conducted Spurious Emission Measurement

3.6.1 Description of Conducted Spurious Emission Measurement

For Band 4, 17

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

For Band 7

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

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

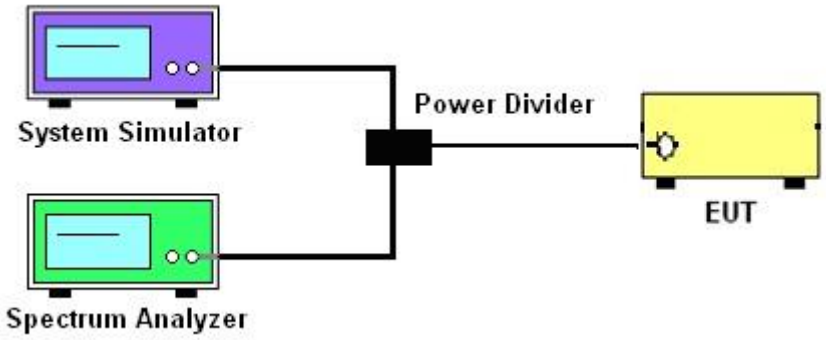
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

1. The EUT was connected to spectrum analyzer and base station via power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. The middle channel for the highest RF power within the transmitting frequency was measured.
4. The conducted spurious emission for the whole frequency range was taken.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. For Band 4, 17
   The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
   = P(W)- [43 + 10log(P)] (dB)
   = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
   = -13dBm.
8. For Band 7
   The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)

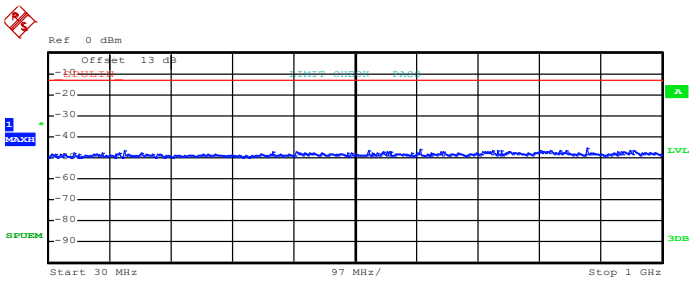
3.6.4 Test Setup



3.6.5 Test Result (Plots) of Conducted Spurious Emission

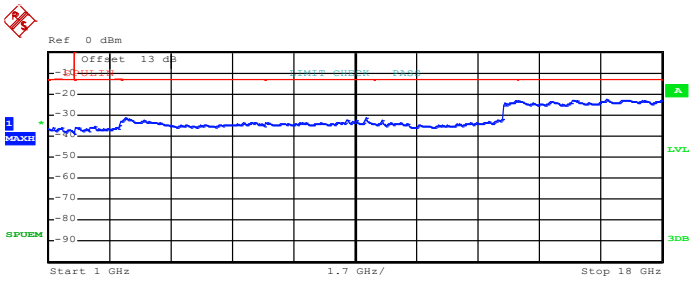
Band :	LTE Band 4	Channel :	CH19975 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	882.145000 M	-45.13	-32.13

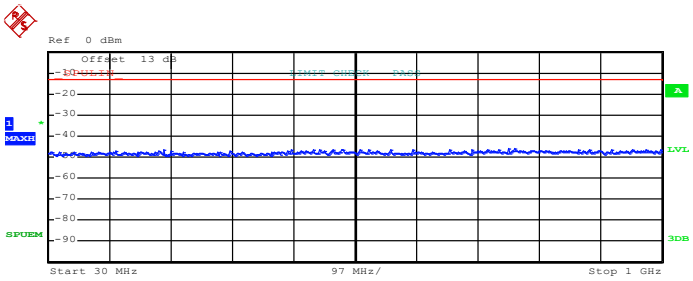
Date: 11.JUL.2013 10:58:34



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.700 G	1.00 M	1.130900 G	-35.78	-22.78
1.725 G	3.000 G	1.00 M	2.984700 G	-34.56	-21.56
3.000 G	7.000 G	1.00 M	3.142000 G	-31.18	-18.18
7.000 G	10.000 G	1.00 M	9.820000 G	-31.43	-18.43
10.000 G	14.000 G	1.00 M	13.980000 G	-23.35	-10.35
14.000 G	18.000 G	1.00 M	16.456000 G	-22.75	-9.75

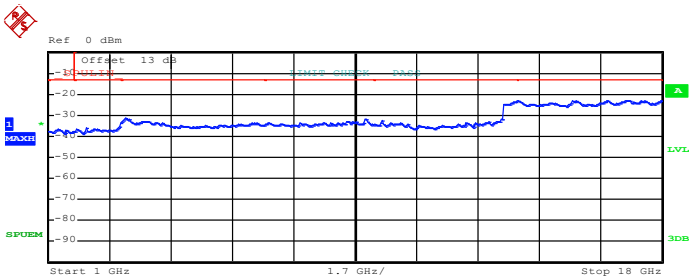
Date: 11.JUL.2013 10:57:35

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	757.015000 M	-45.87	-32.87

Date: 11.JUL.2013 10:58:19

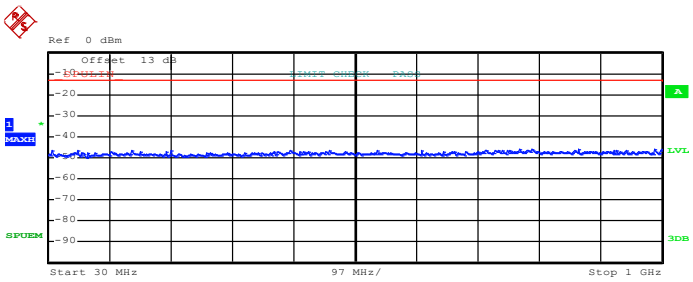


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.700 G	1.00 M	1.260750 G	-36.40	-23.40
1.725 G	3.000 G	1.00 M	2.972587 G	-35.41	-22.41
3.000 G	7.000 G	1.00 M	3.138000 G	-31.33	-18.33
7.000 G	10.000 G	1.00 M	9.781000 G	-31.99	-18.99
10.000 G	14.000 G	1.00 M	13.944000 G	-23.54	-10.54
14.000 G	18.000 G	1.00 M	17.512000 G	-23.01	-10.01

Date: 11.JUL.2013 10:57:52

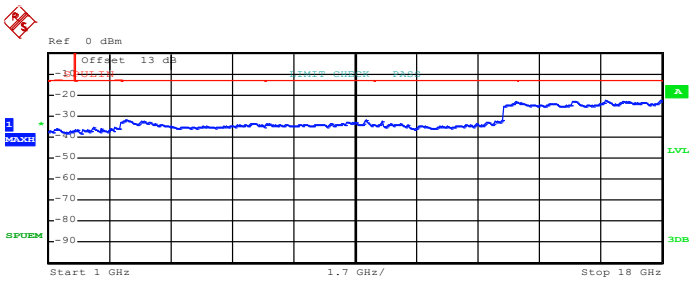
Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 24)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	793.390000 M	-45.75	-32.75

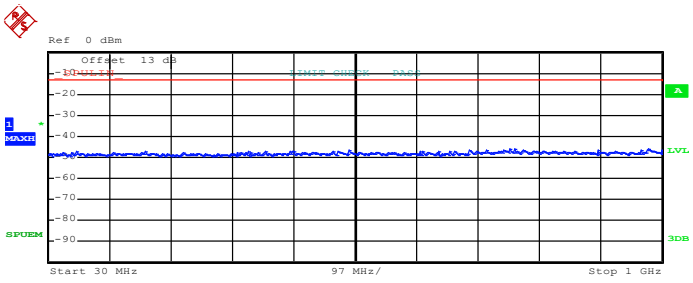
Date: 11.JUL.2013 10:55:22



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.720 G	1.00 M	1.241560 G	-36.03	-23.03
1.745 G	3.000 G	1.00 M	2.273982 G	-35.37	-22.37
3.000 G	7.000 G	1.00 M	3.166000 G	-31.76	-18.76
7.000 G	10.000 G	1.00 M	9.794500 G	-31.73	-18.73
10.000 G	14.000 G	1.00 M	13.970000 G	-23.23	-10.23
14.000 G	18.000 G	1.00 M	17.950000 G	-22.47	-9.47

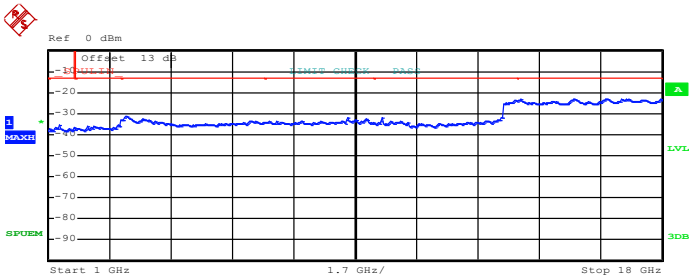
Date: 11.JUL.2013 10:56:30

16QAM (RB Size 1, RB Offset 12)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	759.440000 M	-45.73	-32.73

Date: 11.JUL.2013 10:55:47

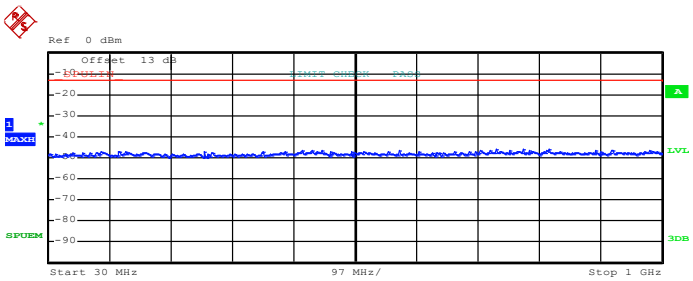


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.720 G	1.00 M	1.290880 G	-35.62	-22.62
1.745 G	3.000 G	1.00 M	2.934740 G	-35.41	-22.41
3.000 G	7.000 G	1.00 M	3.168000 G	-31.29	-18.29
7.000 G	10.000 G	1.00 M	9.307000 G	-31.87	-18.87
10.000 G	14.000 G	1.00 M	13.982000 G	-23.41	-10.41
14.000 G	18.000 G	1.00 M	16.432000 G	-23.00	-10.00

Date: 11.JUL.2013 10:56:05

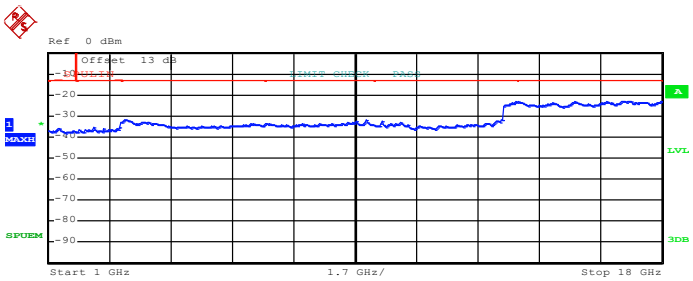
Band :	LTE Band 4	Channel :	CH20375 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 12)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	822.005000 M	-45.92	-32.92

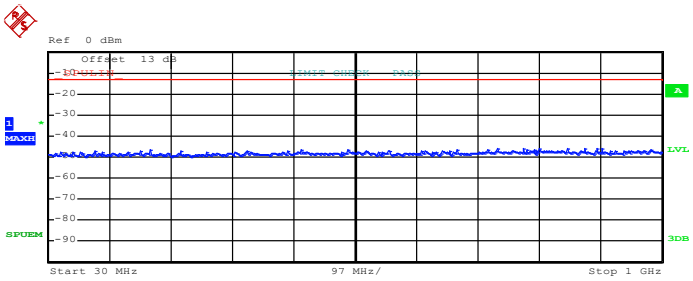
Date: 11.JUL.2013 10:53:43



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.740 G	1.00 M	1.273060 G	-35.74	-22.74
1.765 G	3.000 G	1.00 M	2.998765 G	-35.23	-22.23
3.000 G	7.000 G	1.00 M	3.132000 G	-31.71	-18.71
7.000 G	10.000 G	1.00 M	9.805000 G	-31.84	-18.84
10.000 G	14.000 G	1.00 M	13.974000 G	-23.36	-10.36
14.000 G	18.000 G	1.00 M	17.082000 G	-22.82	-9.82

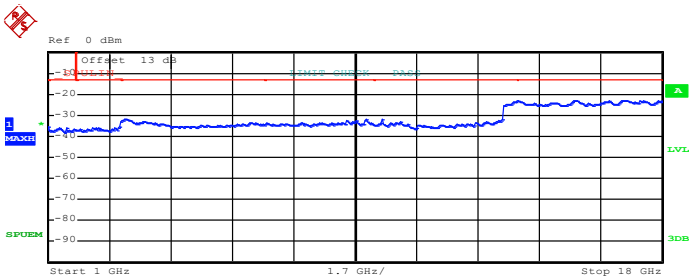
Date: 11.JUL.2013 10:52:34

16QAM (RB Size 1, RB Offset 24)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	896.210000 M	-45.72	-32.72

Date: 11.JUL.2013 10:53:22

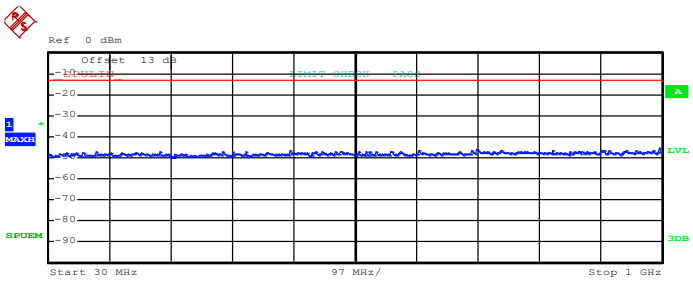


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.740 G	1.00 M	1.010360 G	-35.50	-22.50
1.765 G	3.000 G	1.00 M	2.975918 G	-35.25	-22.25
3.000 G	7.000 G	1.00 M	3.156000 G	-31.93	-18.93
7.000 G	10.000 G	1.00 M	9.796000 G	-32.11	-19.11
10.000 G	14.000 G	1.00 M	13.970000 G	-23.53	-10.53
14.000 G	18.000 G	1.00 M	15.562000 G	-22.82	-9.82

Date: 11.JUL.2013 10:53:00

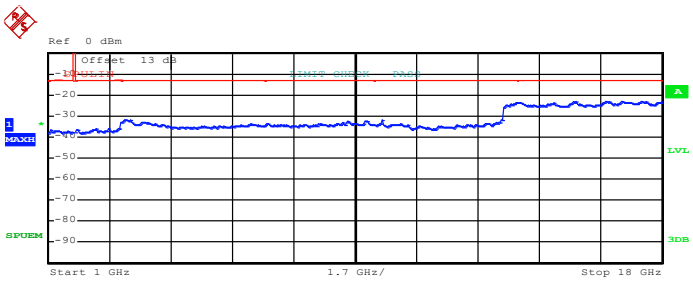
Band :	LTE Band 4	Channel :	CH20000 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 49)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	100.00 k	996.120000 M	-45.49	-32.49

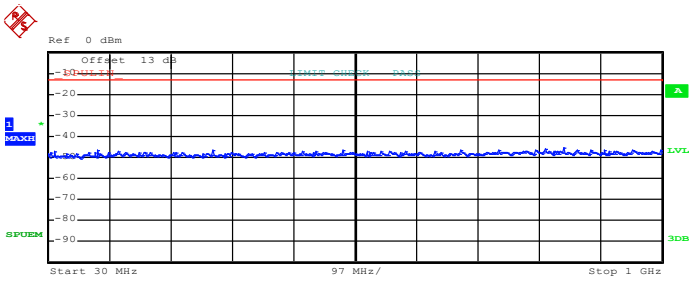
Date: 11.JUL.2013 10:45:19



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.000 G	1.695 G	1.00 M	1.059075 G	-36.68	-23.68
1.735 G	3.000 G	1.00 M	2.998735 G	-35.68	-22.68
3.000 G	7.000 G	1.00 M	3.146000 G	-31.88	-18.88
7.000 G	10.000 G	1.00 M	9.812500 G	-32.31	-19.31
10.000 G	14.000 G	1.00 M	13.938000 G	-23.63	-10.63
14.000 G	18.000 G	1.00 M	16.448000 G	-22.99	-9.99

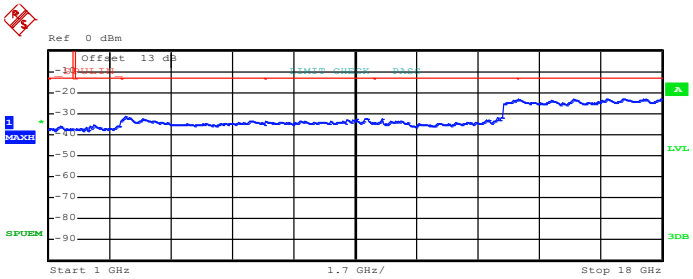
Date: 11.JUL.2013 10:46:28

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	843.830000 M	-45.61	-32.61

Date: 11.JUL.2013 10:45:49

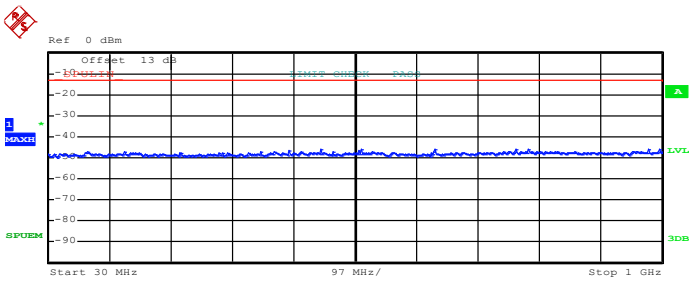


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.695 G	1.00 M	1.333948 G	-36.01	-23.01
1.735 G	3.000 G	1.00 M	2.258078 G	-35.22	-22.22
3.000 G	7.000 G	1.00 M	3.146000 G	-31.52	-18.52
7.000 G	10.000 G	1.00 M	9.785500 G	-32.22	-19.22
10.000 G	14.000 G	1.00 M	13.940000 G	-23.46	-10.46
14.000 G	18.000 G	1.00 M	17.952000 G	-23.05	-10.05

Date: 11.JUL.2013 10:46:08

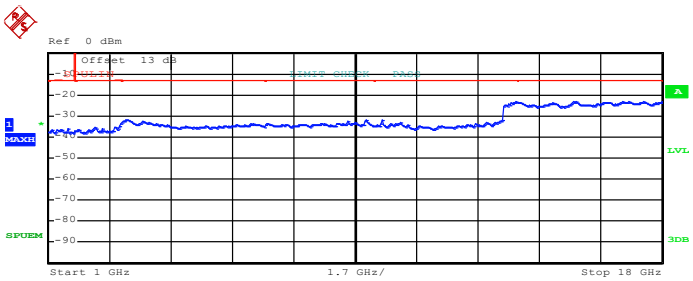
Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 24)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	995.150000 M	-45.72	-32.72

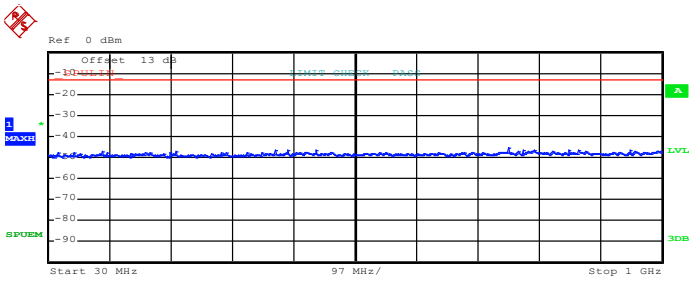
Date: 11.JUL.2013 10:49:13



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.712 G	1.00 M	1.528319 G	-35.80	-22.80
1.752 G	3.000 G	1.00 M	2.986901 G	-34.96	-21.96
3.000 G	7.000 G	1.00 M	3.130000 G	-31.68	-18.68
7.000 G	10.000 G	1.00 M	9.815500 G	-31.86	-18.86
10.000 G	14.000 G	1.00 M	13.966000 G	-23.36	-10.36
14.000 G	18.000 G	1.00 M	17.996000 G	-22.82	-9.82

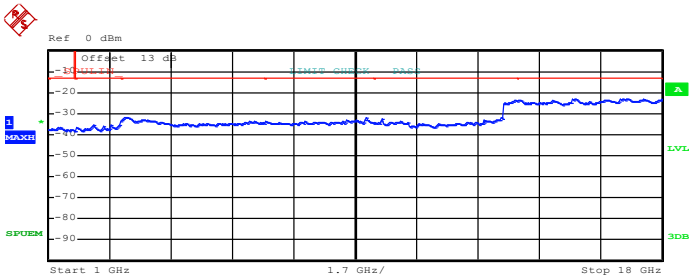
Date: 11.JUL.2013 10:48:10

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	757.985000 M	-45.61	-32.61

Date: 11.JUL.2013 10:48:50

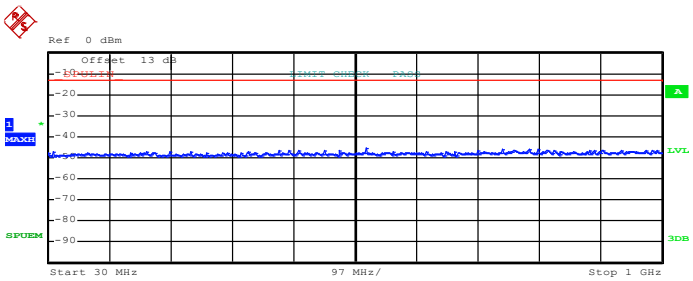


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.712 G	1.00 M	1.275381 G	-36.66	-23.66
1.752 G	3.000 G	1.00 M	2.964446 G	-35.21	-22.21
3.000 G	7.000 G	1.00 M	3.110000 G	-31.76	-18.76
7.000 G	10.000 G	1.00 M	9.794500 G	-31.78	-18.78
10.000 G	14.000 G	1.00 M	13.990000 G	-23.55	-10.55
14.000 G	18.000 G	1.00 M	17.982000 G	-22.85	-9.85

Date: 11.JUL.2013 10:48:32

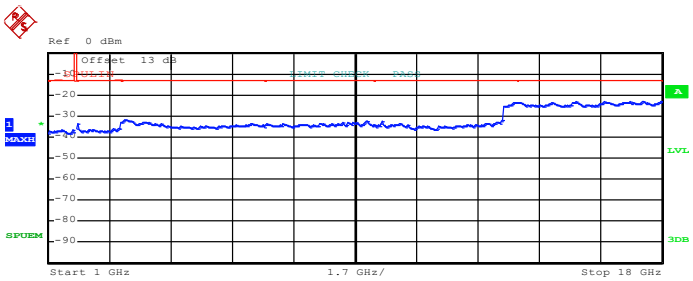
Band :	LTE Band 4	Channel :	CH20350 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 49)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	532.945000 M	-45.52	-32.52

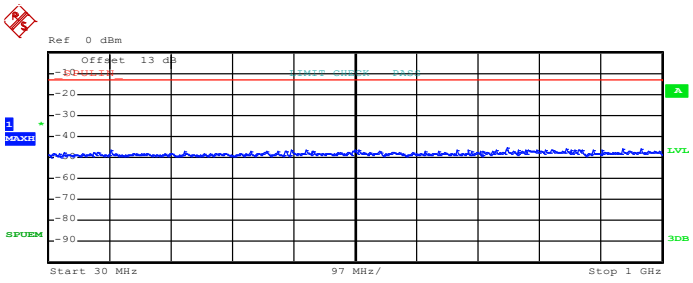
Date: 11.JUL.2013 10:50:24



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.730 G	1.00 M	1.690215 G	-36.50	-23.50
1.770 G	3.000 G	1.00 M	1.817355 G	-33.84	-20.84
3.000 G	7.000 G	1.00 M	3.182000 G	-31.65	-18.65
7.000 G	10.000 G	1.00 M	9.832000 G	-32.44	-19.44
10.000 G	14.000 G	1.00 M	13.984000 G	-23.69	-10.69
14.000 G	18.000 G	1.00 M	17.978000 G	-23.01	-10.01

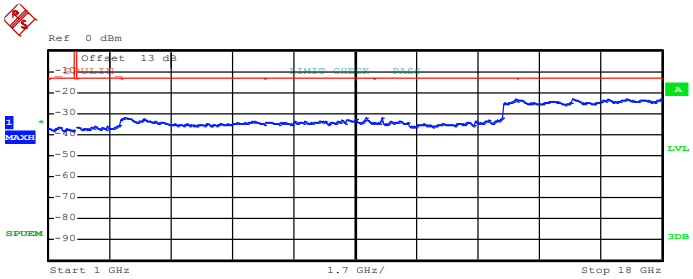
Date: 11.JUL.2013 10:51:30

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	755.560000 M	-45.54	-32.54

Date: 11.JUL.2013 10:50:42

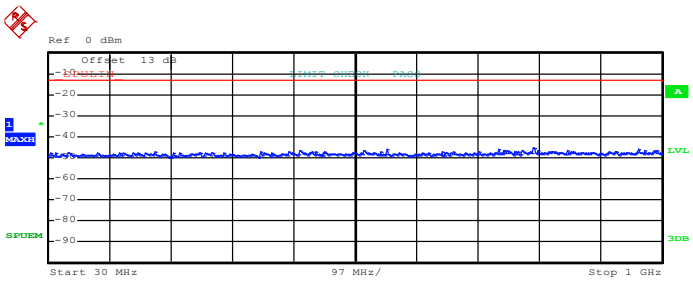


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.730 G	1.00 M	1.267910 G	-36.51	-23.51
1.770 G	3.000 G	1.00 M	2.959410 G	-35.29	-22.29
3.000 G	7.000 G	1.00 M	3.106000 G	-32.03	-19.03
7.000 G	10.000 G	1.00 M	9.811000 G	-32.09	-19.09
10.000 G	14.000 G	1.00 M	13.978000 G	-23.38	-10.38
14.000 G	18.000 G	1.00 M	17.044000 G	-22.84	-9.84

Date: 11.JUL.2013 10:51:08

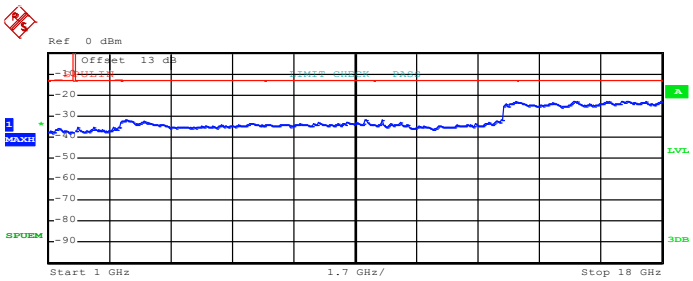
Band :	LTE Band 4	Channel :	CH20025 (Low)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 74)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	798.725000 M	-45.26	-32.26

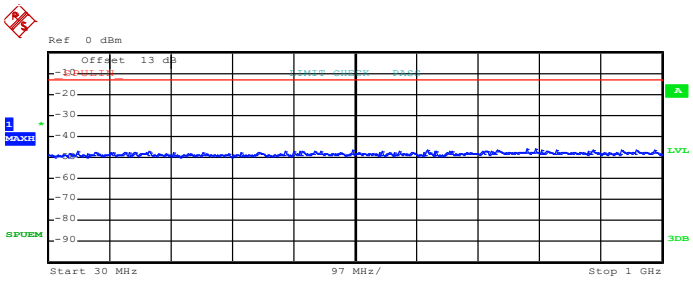
Date: 11.JUL.2013 10:44:14



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.690 G	1.00 M	1.260475 G	-35.99	-22.99
1.745 G	3.000 G	1.00 M	2.242608 G	-35.22	-22.22
3.000 G	7.000 G	1.00 M	3.138000 G	-31.96	-18.96
7.000 G	10.000 G	1.00 M	9.784000 G	-31.92	-18.92
10.000 G	14.000 G	1.00 M	13.974000 G	-22.98	-9.98
14.000 G	18.000 G	1.00 M	17.988000 G	-22.85	-9.85

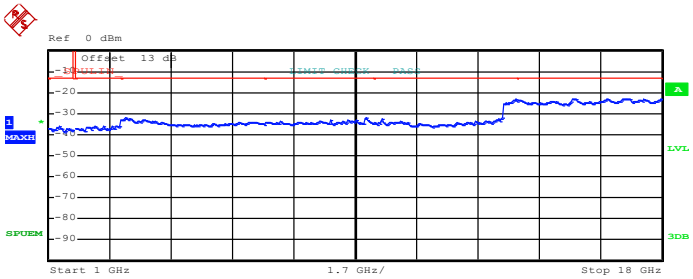
Date: 11.JUL.2013 10:43:21

16QAM (RB Size 1, RB Offset 74)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	799.695000 M	-45.75	-32.75

Date: 11.JUL.2013 10:43:57

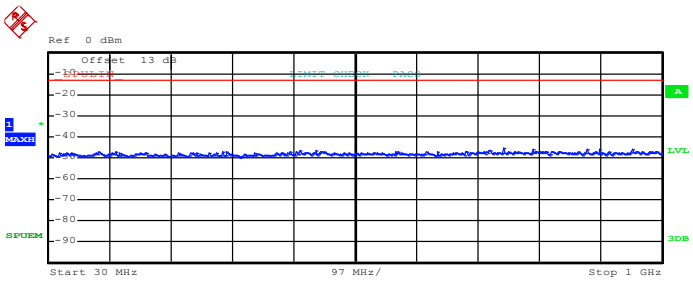


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.690 G	1.00 M	1.311190 G	-35.81	-22.81
1.745 G	3.000 G	1.00 M	2.911522 G	-35.83	-22.83
3.000 G	7.000 G	1.00 M	3.144000 G	-32.15	-19.15
7.000 G	10.000 G	1.00 M	9.803500 G	-31.90	-18.90
10.000 G	14.000 G	1.00 M	13.982000 G	-23.38	-10.38
14.000 G	18.000 G	1.00 M	17.974000 G	-22.81	-9.81

Date: 11.JUL.2013 10:43:40

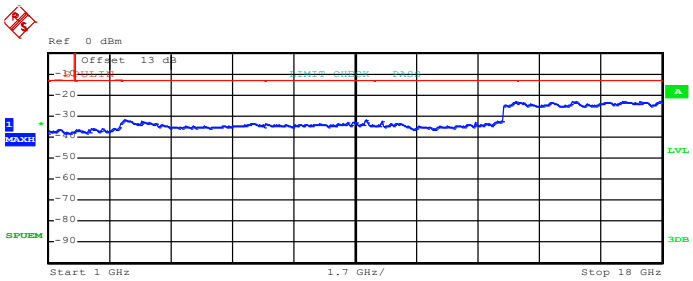
Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	750.225000 M	-45.50	-32.50

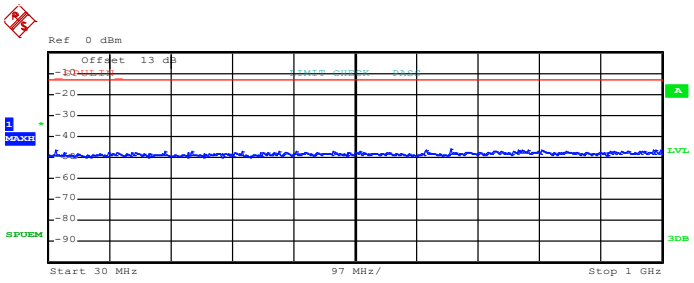
Date: 11.JUL.2013 10:41:05



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.705 G	1.00 M	1.255562 G	-36.47	-23.47
1.760 G	3.000 G	1.00 M	2.980160 G	-35.35	-22.35
3.000 G	7.000 G	1.00 M	3.102000 G	-31.65	-18.65
7.000 G	10.000 G	1.00 M	9.797500 G	-31.69	-18.69
10.000 G	14.000 G	1.00 M	13.982000 G	-23.36	-10.36
14.000 G	18.000 G	1.00 M	17.978000 G	-22.92	-9.92

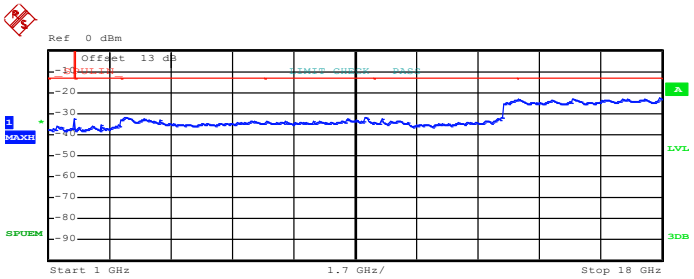
Date: 11.JUL.2013 10:42:13

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	666.320000 M	-45.87	-32.87

Date: 11.JUL.2013 10:41:25

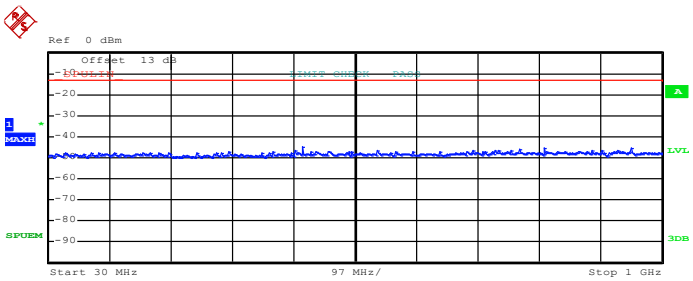


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.705 G	1.00 M	1.698655 G	-32.44	-19.44
1.760 G	3.000 G	1.00 M	2.933660 G	-35.47	-22.47
3.000 G	7.000 G	1.00 M	3.132000 G	-31.95	-18.95
7.000 G	10.000 G	1.00 M	9.806500 G	-32.11	-19.11
10.000 G	14.000 G	1.00 M	13.954000 G	-23.44	-10.44
14.000 G	18.000 G	1.00 M	17.942000 G	-22.72	-9.72

Date: 11.JUL.2013 10:41:51

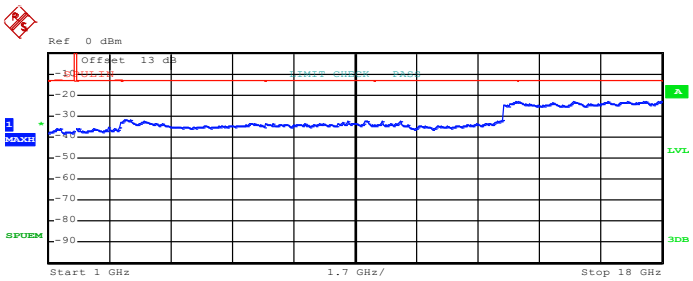
Band :	LTE Band 4	Channel :	CH20325 (High)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	431.580000 M	-44.97	-31.97

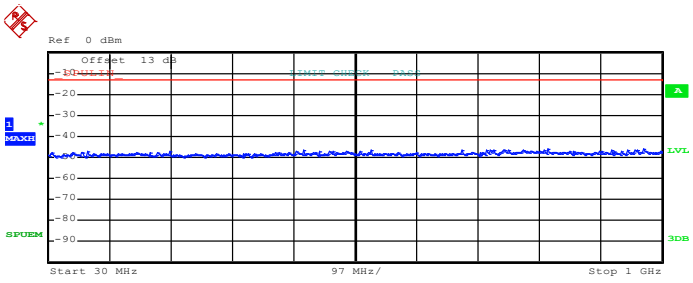
Date: 11.JUL.2013 10:40:11



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.720 G	1.00 M	1.226440 G	-35.86	-22.86
1.775 G	3.000 G	1.00 M	2.989587 G	-35.16	-22.16
3.000 G	7.000 G	1.00 M	3.168000 G	-31.73	-18.73
7.000 G	10.000 G	1.00 M	9.805000 G	-32.18	-19.18
10.000 G	14.000 G	1.00 M	13.972000 G	-23.19	-10.19
14.000 G	18.000 G	1.00 M	17.480000 G	-22.94	-9.94

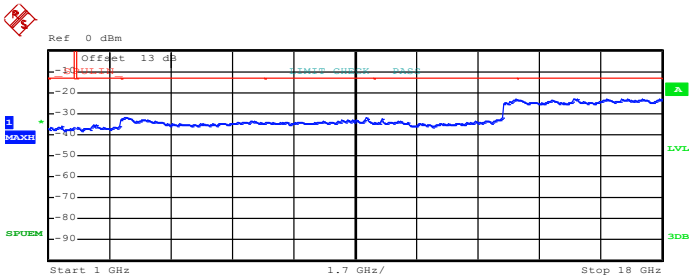
Date: 11.JUL.2013 10:39:09

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	818.610000 M	-45.78	-32.78

Date: 11.JUL.2013 10:39:55

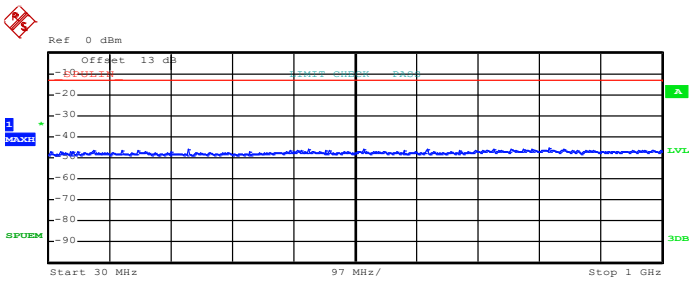


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.720 G	1.00 M	1.356760 G	-36.23	-23.23
1.775 G	3.000 G	1.00 M	2.247850 G	-35.19	-22.19
3.000 G	7.000 G	1.00 M	3.190000 G	-31.80	-18.80
7.000 G	10.000 G	1.00 M	9.814000 G	-31.92	-18.92
10.000 G	14.000 G	1.00 M	13.974000 G	-23.24	-10.24
14.000 G	18.000 G	1.00 M	15.560000 G	-22.81	-9.81

Date: 11.JUL.2013 10:39:33

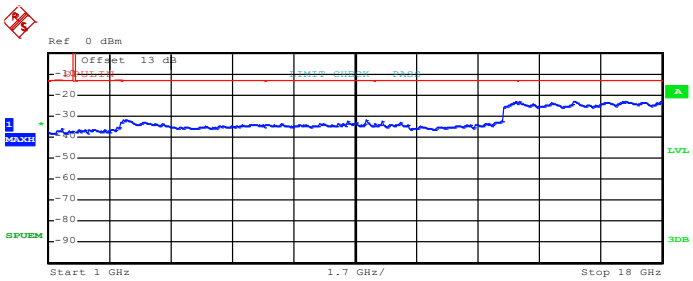
Band :	LTE Band 4	Channel :	CH20050 (Low)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	822.005000 M	-45.23	-32.23

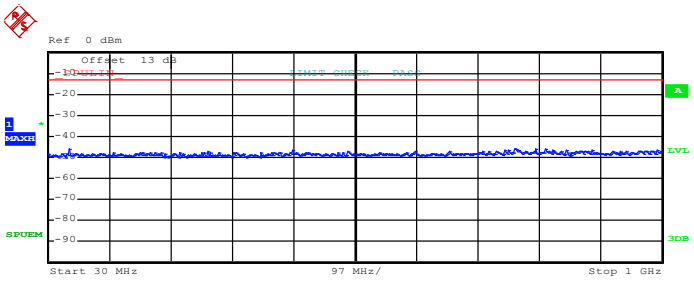
Date: 11.JUL.2013 10:32:33



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.685 G	1.00 M	1.360310 G	-35.83	-22.83
1.755 G	3.000 G	1.00 M	2.983815 G	-35.29	-22.29
3.000 G	7.000 G	1.00 M	3.148000 G	-31.60	-18.60
7.000 G	10.000 G	1.00 M	9.805000 G	-32.04	-19.04
10.000 G	14.000 G	1.00 M	13.982000 G	-23.31	-10.31
14.000 G	18.000 G	1.00 M	16.926000 G	-23.11	-10.11

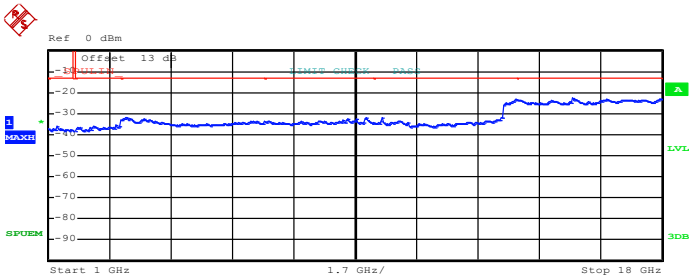
Date: 11.JUL.2013 10:33:26

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	62.495000 M	-45.83	-32.83

Date: 11.JUL.2013 10:32:50

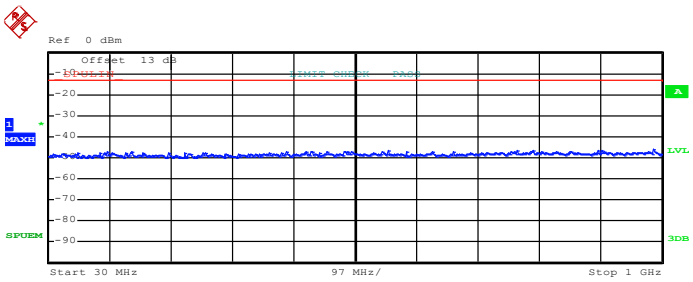


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.685 G	1.00 M	1.252765 G	-35.98	-22.98
1.755 G	3.000 G	1.00 M	2.861183 G	-35.65	-22.65
3.000 G	7.000 G	1.00 M	3.152000 G	-31.66	-18.66
7.000 G	10.000 G	1.00 M	9.811000 G	-32.15	-19.15
10.000 G	14.000 G	1.00 M	13.986000 G	-23.36	-10.36
14.000 G	18.000 G	1.00 M	15.514000 G	-22.48	-9.48

Date: 11.JUL.2013 10:33:10

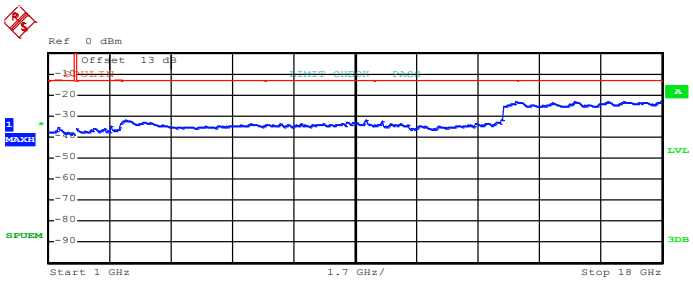
Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	986.420000 M	-45.99	-32.99

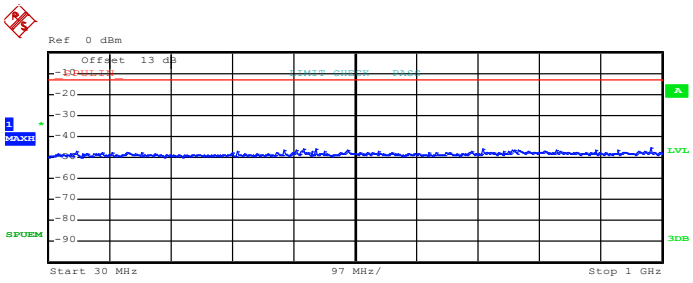
Date: 11.JUL.2013 10:35:12



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.698 G	1.00 M	1.285278 G	-35.61	-22.61
1.768 G	3.000 G	1.00 M	2.732547 G	-35.08	-22.08
3.000 G	7.000 G	1.00 M	3.140000 G	-31.87	-18.87
7.000 G	10.000 G	1.00 M	9.803500 G	-31.93	-18.93
10.000 G	14.000 G	1.00 M	13.966000 G	-23.26	-10.26
14.000 G	18.000 G	1.00 M	15.574000 G	-22.86	-9.86

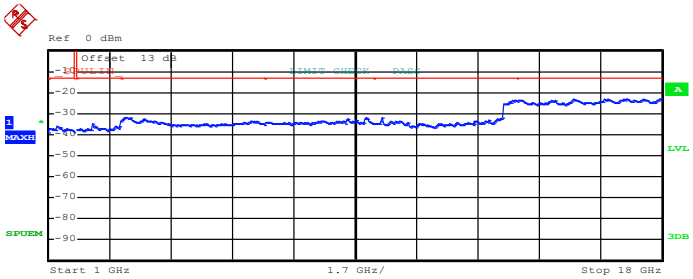
Date: 11.JUL.2013 10:34:21

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	982.540000 M	-45.41	-32.41

Date: 11.JUL.2013 10:34:57

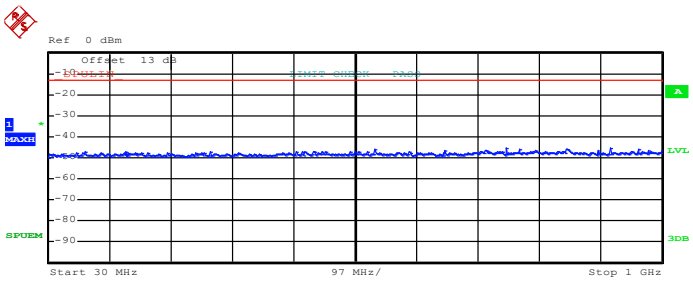


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.698 G	1.00 M	1.251100 G	-35.95	-22.95
1.768 G	3.000 G	1.00 M	2.214898 G	-35.05	-22.05
3.000 G	7.000 G	1.00 M	3.134000 G	-31.67	-18.67
7.000 G	10.000 G	1.00 M	9.811000 G	-32.06	-19.06
10.000 G	14.000 G	1.00 M	13.950000 G	-23.43	-10.43
14.000 G	18.000 G	1.00 M	17.048000 G	-22.93	-9.93

Date: 11.JUL.2013 10:34:41

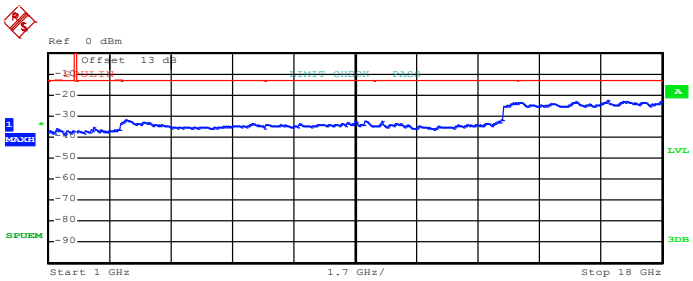
Band :	LTE Band 4	Channel :	CH20300 (High)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	918.520000 M	-45.56	-32.56

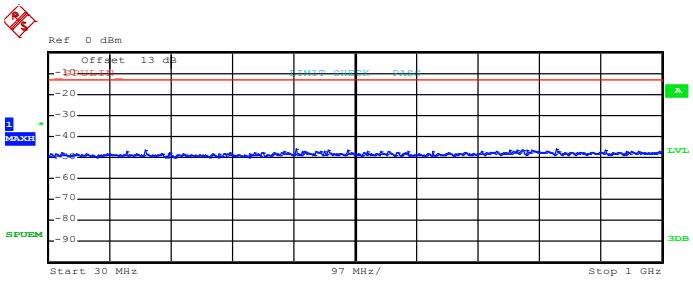
Date: 11.JUL.2013 10:36:36



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.710 G	1.00 M	1.222585 G	-36.13	-23.13
1.780 G	3.000 G	1.00 M	2.240550 G	-35.58	-22.58
3.000 G	7.000 G	1.00 M	3.154000 G	-31.82	-18.82
7.000 G	10.000 G	1.00 M	9.794500 G	-32.25	-19.25
10.000 G	14.000 G	1.00 M	14.000000 G	-23.62	-10.62
14.000 G	18.000 G	1.00 M	16.494000 G	-22.72	-9.72

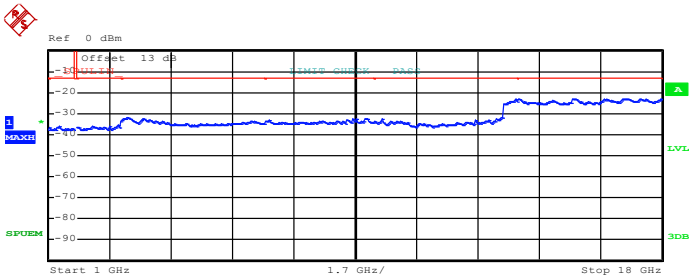
Date: 11.JUL.2013 10:37:34

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	832.675000 M	-45.77	-32.77

Date: 11.JUL.2013 10:36:53

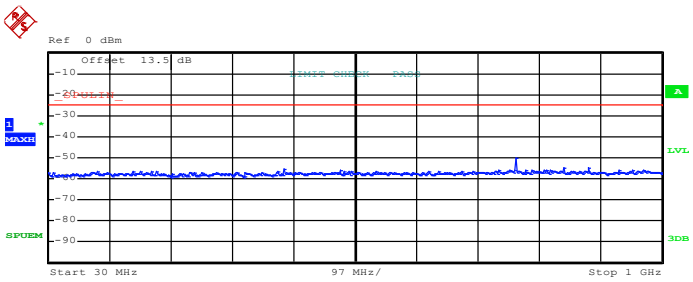


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.710 G	1.00 M	1.308850 G	-35.95	-22.95
1.780 G	3.000 G	1.00 M	2.938390 G	-35.54	-22.54
3.000 G	7.000 G	1.00 M	3.174000 G	-32.06	-19.06
7.000 G	10.000 G	1.00 M	9.802000 G	-32.25	-19.25
10.000 G	14.000 G	1.00 M	13.992000 G	-23.25	-10.25
14.000 G	18.000 G	1.00 M	17.054000 G	-22.85	-9.85

Date: 11.JUL.2013 10:37:18

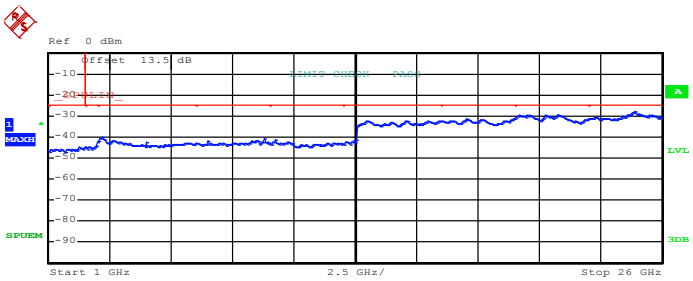
Band :	LTE Band 7	Channel :	CH20815 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 12)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	768.655000 M	-49.83	-24.83

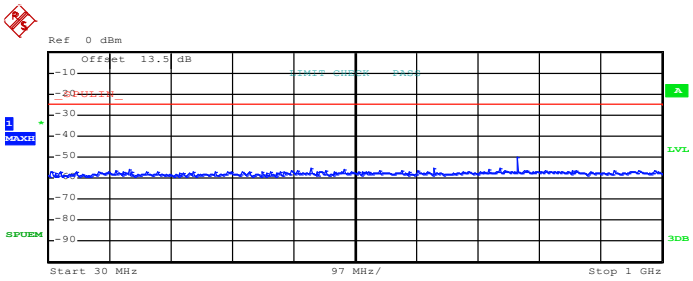
Date: 10.JUL.2013 17:51:06



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.494 G	1.00 M	2.267659 G	-44.65	-19.65
2.519 G	3.000 G	1.00 M	2.957912 G	-43.94	-18.94
3.000 G	7.000 G	1.00 M	3.178000 G	-40.29	-15.29
7.000 G	10.000 G	1.00 M	9.794500 G	-40.51	-15.51
10.000 G	13.000 G	1.00 M	10.252000 G	-41.00	-16.00
13.000 G	17.000 G	1.00 M	15.562000 G	-32.23	-7.23
17.000 G	20.000 G	1.00 M	19.971500 G	-31.42	-6.42
20.000 G	23.000 G	1.00 M	21.761000 G	-29.26	-4.26
23.000 G	26.000 G	1.00 M	24.897500 G	-28.07	-3.07

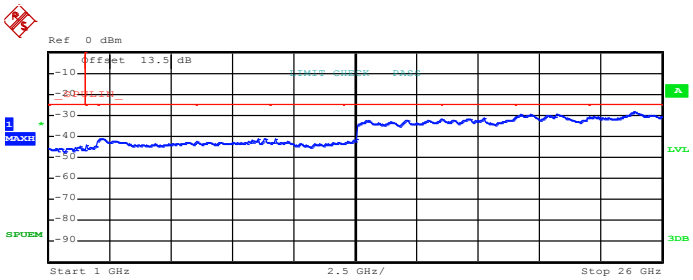
Date: 10.JUL.2013 17:49:47

16QAM (RB Size 1, RB Offset 24)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	770.595000 M	-49.87	-24.87

Date: 10.JUL.2013 17:50:33

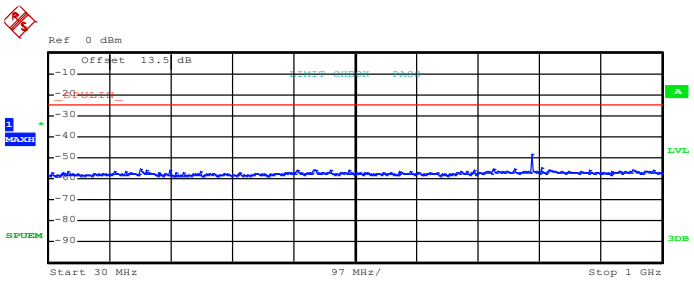


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.494 G	1.00 M	2.293804 G	-44.67	-19.67
2.519 G	3.000 G	1.00 M	2.544252 G	-44.16	-19.16
3.000 G	7.000 G	1.00 M	3.136000 G	-40.96	-15.96
7.000 G	10.000 G	1.00 M	9.830500 G	-40.97	-15.97
10.000 G	13.000 G	1.00 M	10.246000 G	-41.04	-16.04
13.000 G	17.000 G	1.00 M	15.524000 G	-32.28	-7.28
17.000 G	20.000 G	1.00 M	18.743000 G	-31.52	-6.52
20.000 G	23.000 G	1.00 M	21.714500 G	-29.71	-4.71
23.000 G	26.000 G	1.00 M	24.896000 G	-28.59	-3.59

Date: 10.JUL.2013 17:50:08

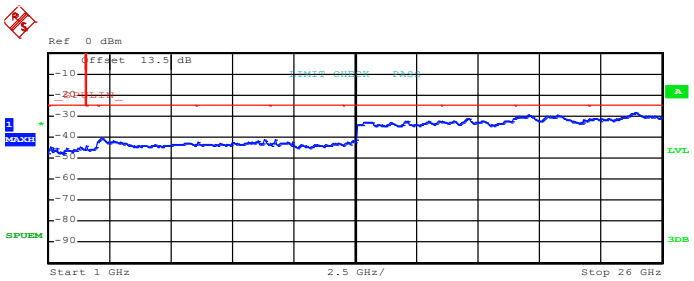
Band :	LTE Band 7	Channel :	CH21095 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	794.360000 M	-48.05	-23.05

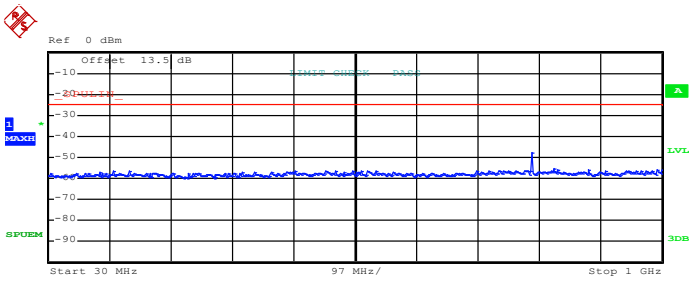
Date: 10.JUL.2013 17:46:51



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.522 G	1.00 M	2.277719 G	-44.89	-19.89
2.547 G	3.000 G	1.00 M	2.548586 G	-44.04	-19.04
3.000 G	7.000 G	1.00 M	3.186000 G	-40.51	-15.51
7.000 G	10.000 G	1.00 M	9.797500 G	-41.27	-16.27
10.000 G	13.000 G	1.00 M	10.261000 G	-41.36	-16.36
13.000 G	17.000 G	1.00 M	15.542000 G	-32.55	-7.55
17.000 G	20.000 G	1.00 M	19.971500 G	-31.01	-6.01
20.000 G	23.000 G	1.00 M	21.747500 G	-29.65	-4.65
23.000 G	26.000 G	1.00 M	24.906500 G	-28.31	-3.31

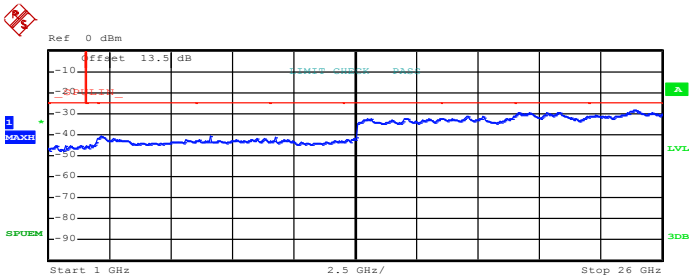
Date: 10.JUL.2013 17:48:46

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	794.360000 M	-47.58	-22.58

Date: 10.JUL.2013 17:48:07

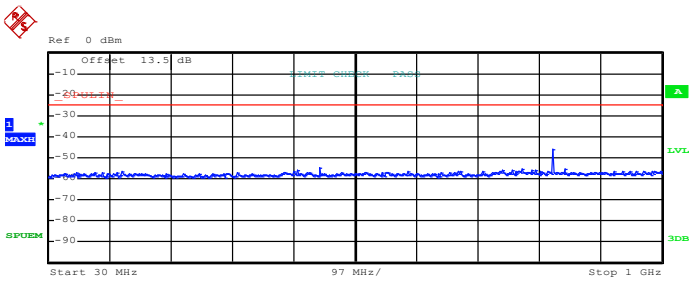


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.522 G	1.00 M	1.362997 G	-45.05	-20.05
2.547 G	3.000 G	1.00 M	2.982107 G	-43.67	-18.67
3.000 G	7.000 G	1.00 M	3.156000 G	-40.75	-15.75
7.000 G	10.000 G	1.00 M	7.597000 G	-40.62	-15.62
10.000 G	13.000 G	1.00 M	10.249000 G	-41.37	-16.37
13.000 G	17.000 G	1.00 M	15.630000 G	-32.34	-7.34
17.000 G	20.000 G	1.00 M	18.684500 G	-31.27	-6.27
20.000 G	23.000 G	1.00 M	21.773000 G	-29.39	-4.39
23.000 G	26.000 G	1.00 M	24.830000 G	-28.56	-3.56

Date: 10.JUL.2013 17:48:28

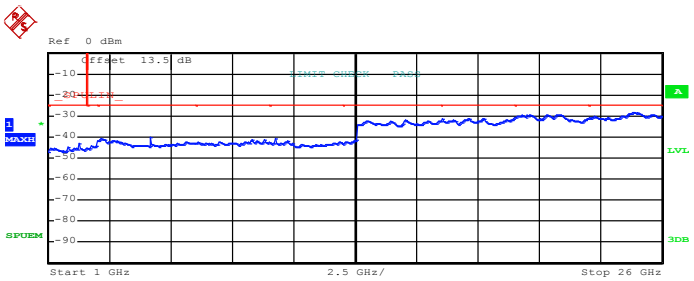
Band :	LTE Band 7	Channel :	CH21425 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	827.340000 M	-45.80	-20.80

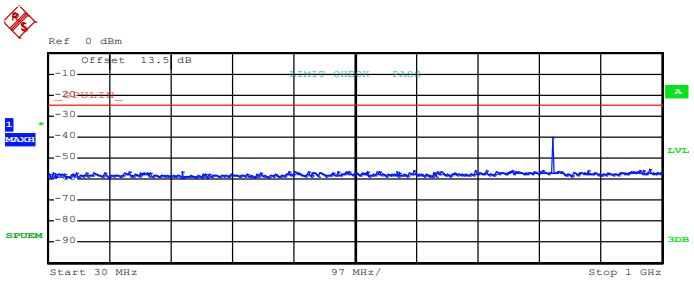
Date: 10.JUL.2013 17:45:54



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.555 G	1.00 M	2.271212 G	-43.01	-18.01
2.580 G	3.000 G	1.00 M	2.742120 G	-44.22	-19.22
3.000 G	7.000 G	1.00 M	5.130000 G	-40.13	-15.13
7.000 G	10.000 G	1.00 M	9.791500 G	-40.97	-15.97
10.000 G	13.000 G	1.00 M	10.249000 G	-40.72	-15.72
13.000 G	17.000 G	1.00 M	15.556000 G	-32.02	-7.02
17.000 G	20.000 G	1.00 M	18.759500 G	-31.09	-6.09
20.000 G	23.000 G	1.00 M	21.770000 G	-29.45	-4.45
23.000 G	26.000 G	1.00 M	24.995000 G	-28.39	-3.39

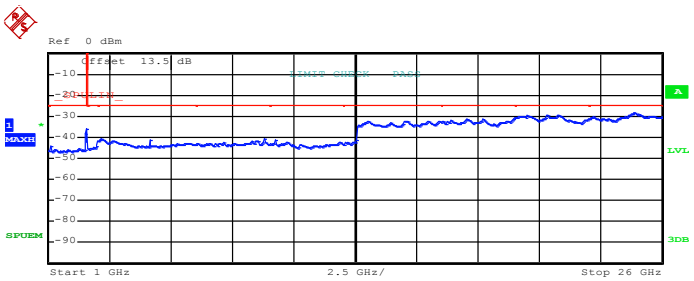
Date: 10.JUL.2013 17:44:46

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	827.340000 M	-39.92	-14.92

Date: 10.JUL.2013 17:45:38

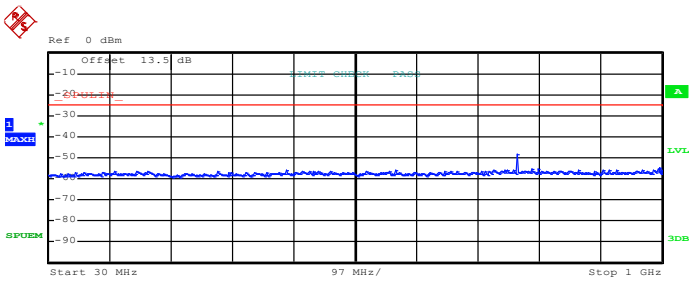


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.555 G	1.00 M	2.538673 G	-36.11	-11.11
2.580 G	3.000 G	1.00 M	2.580210 G	-42.69	-17.69
3.000 G	7.000 G	1.00 M	3.148000 G	-40.87	-15.87
7.000 G	10.000 G	1.00 M	9.818500 G	-40.75	-15.75
10.000 G	13.000 G	1.00 M	10.247500 G	-41.30	-16.30
13.000 G	17.000 G	1.00 M	16.950000 G	-32.25	-7.25
17.000 G	20.000 G	1.00 M	18.065000 G	-31.38	-6.38
20.000 G	23.000 G	1.00 M	21.317000 G	-29.51	-4.51
23.000 G	26.000 G	1.00 M	24.843500 G	-28.31	-3.31

Date: 10.JUL.2013 17:45:04

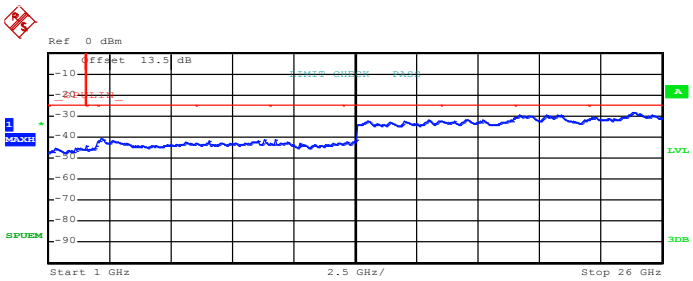
Band :	LTE Band 7	Channel :	CH20840 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 24)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	771.080000 M	-48.12	-23.12

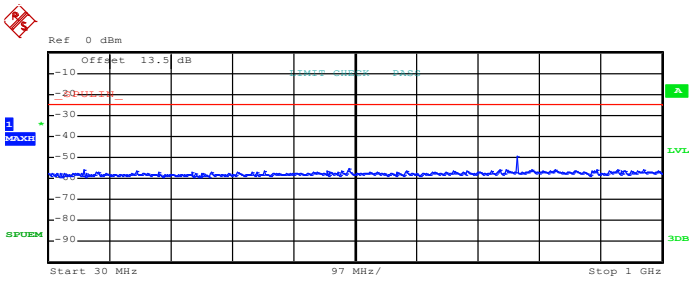
Date: 10.JUL.2013 17:38:49



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.489 G	1.00 M	1.297800 G	-45.36	-20.36
2.529 G	3.000 G	1.00 M	2.997880 G	-43.97	-18.97
3.000 G	7.000 G	1.00 M	3.154000 G	-40.85	-15.85
7.000 G	10.000 G	1.00 M	9.812500 G	-41.39	-16.39
10.000 G	13.000 G	1.00 M	10.261000 G	-41.07	-16.07
13.000 G	17.000 G	1.00 M	16.496000 G	-32.12	-7.12
17.000 G	20.000 G	1.00 M	19.947500 G	-31.26	-6.26
20.000 G	23.000 G	1.00 M	20.217500 G	-29.62	-4.62
23.000 G	26.000 G	1.00 M	24.879500 G	-28.45	-3.45

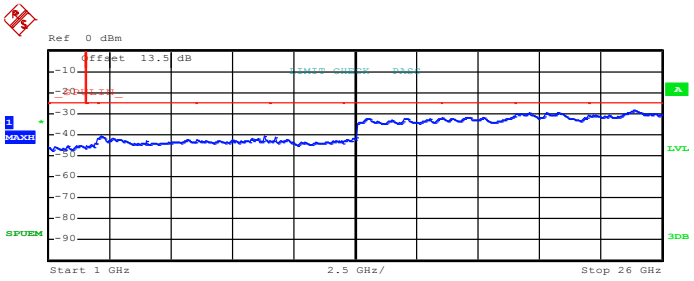
Date: 10.JUL.2013 17:39:44

16QAM (RB Size 1, RB Offset 24)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	771.080000 M	-49.49	-24.49

Date: 10.JUL.2013 17:39:08

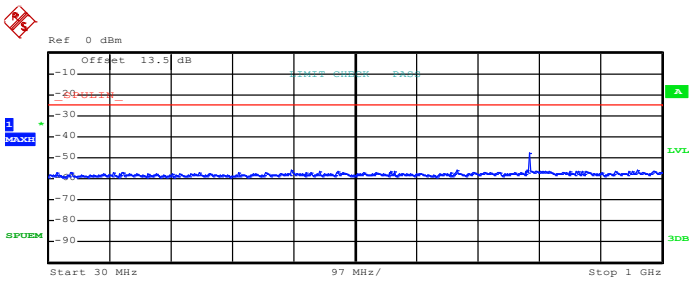


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.489 G	1.00 M	2.229914 G	-45.20	-20.20
2.529 G	3.000 G	1.00 M	2.879659 G	-44.13	-19.13
3.000 G	7.000 G	1.00 M	3.146000 G	-40.52	-15.52
7.000 G	10.000 G	1.00 M	9.811000 G	-40.77	-15.77
10.000 G	13.000 G	1.00 M	10.246000 G	-41.27	-16.27
13.000 G	17.000 G	1.00 M	15.616000 G	-32.28	-7.28
17.000 G	20.000 G	1.00 M	19.947500 G	-31.57	-6.57
20.000 G	23.000 G	1.00 M	21.744500 G	-29.36	-4.36
23.000 G	26.000 G	1.00 M	24.876500 G	-28.10	-3.10

Date: 10.JUL.2013 17:39:29

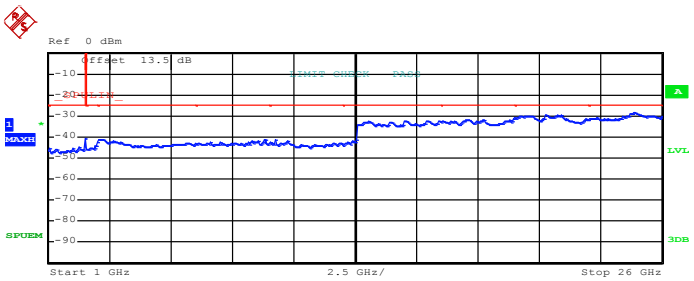
Band :	LTE Band 7	Channel :	CH21070 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	100.00 k	789.510000 M	-47.94	-22.94

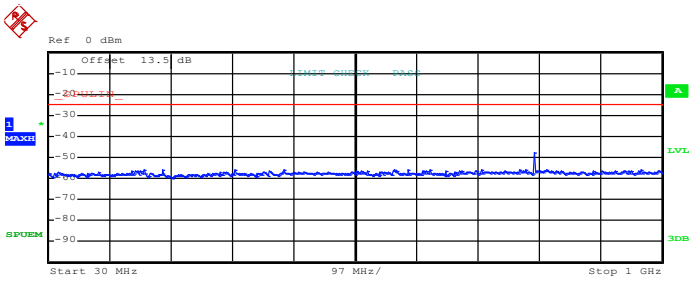
Date: 10.JUL.2013 17:37:55



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.000 G	2.512 G	1.00 M	2.510488 G	-40.81	-15.81
2.552 G	3.000 G	1.00 M	2.908384 G	-44.23	-19.23
3.000 G	7.000 G	1.00 M	3.144000 G	-41.02	-16.02
7.000 G	10.000 G	1.00 M	9.794500 G	-41.02	-16.02
10.000 G	13.000 G	1.00 M	10.253500 G	-41.38	-16.38
13.000 G	17.000 G	1.00 M	16.904000 G	-32.31	-7.31
17.000 G	20.000 G	1.00 M	19.956500 G	-31.23	-6.23
20.000 G	23.000 G	1.00 M	21.906500 G	-29.60	-4.60
23.000 G	26.000 G	1.00 M	24.867500 G	-28.30	-3.30

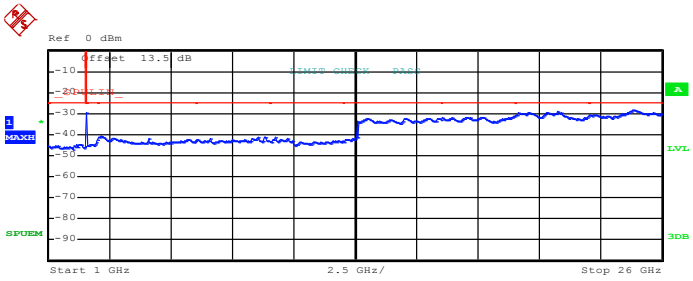
Date: 10.JUL.2013 17:36:35

16QAM (RB Size 1, RB Offset 49)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	798.240000 M	-47.55	-22.55

Date: 10.JUL.2013 17:37:36

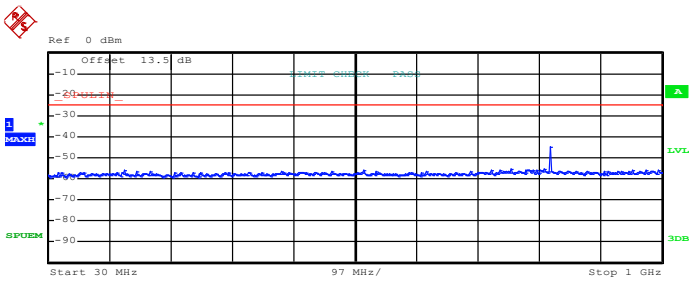


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.512 G	1.00 M	2.267056 G	-44.71	-19.71
2.552 G	3.000 G	1.00 M	2.553792 G	-29.41	-4.41
3.000 G	7.000 G	1.00 M	3.152000 G	-40.41	-15.41
7.000 G	10.000 G	1.00 M	9.787000 G	-40.94	-15.94
10.000 G	13.000 G	1.00 M	10.244500 G	-41.02	-16.02
13.000 G	17.000 G	1.00 M	14.018000 G	-32.26	-7.26
17.000 G	20.000 G	1.00 M	19.938500 G	-31.32	-6.32
20.000 G	23.000 G	1.00 M	21.725000 G	-29.03	-4.03
23.000 G	26.000 G	1.00 M	24.833000 G	-28.42	-3.42

Date: 10.JUL.2013 17:37:16

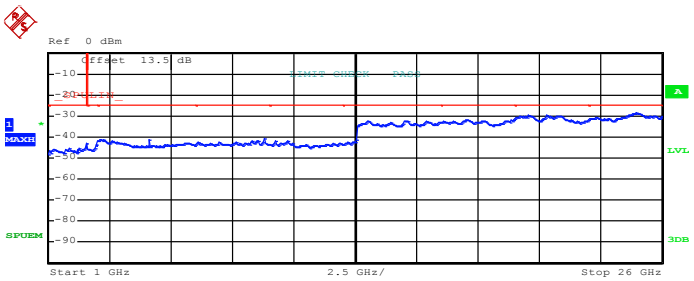
Band :	LTE Band 7	Channel :	CH21400 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	822.490000 M	-44.95	-19.95

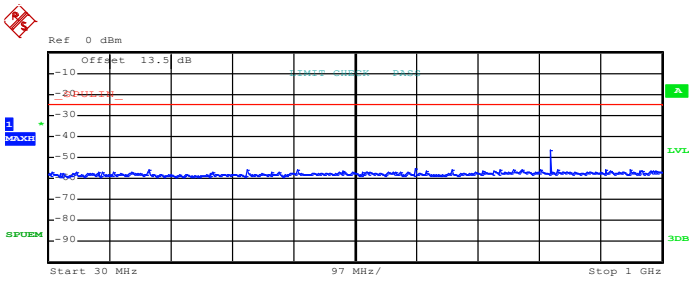
Date: 10.JUL.2013 17:34:44



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.545 G	1.00 M	2.543455 G	-42.98	-17.98
2.585 G	3.000 G	1.00 M	2.997717 G	-43.75	-18.75
3.000 G	7.000 G	1.00 M	3.152000 G	-41.15	-16.15
7.000 G	10.000 G	1.00 M	9.799000 G	-40.92	-15.92
10.000 G	13.000 G	1.00 M	10.243000 G	-41.52	-16.52
13.000 G	17.000 G	1.00 M	15.644000 G	-32.42	-7.42
17.000 G	20.000 G	1.00 M	19.856000 G	-31.75	-6.75
20.000 G	23.000 G	1.00 M	21.321500 G	-29.31	-4.31
23.000 G	26.000 G	1.00 M	24.924500 G	-28.30	-3.30

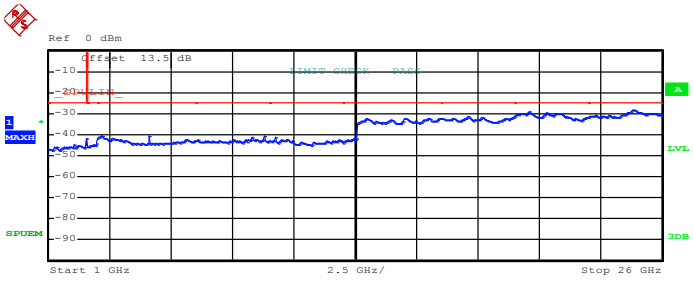
Date: 10.JUL.2013 17:35:42

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	822.490000 M	-46.64	-21.64

Date: 10.JUL.2013 17:35:02

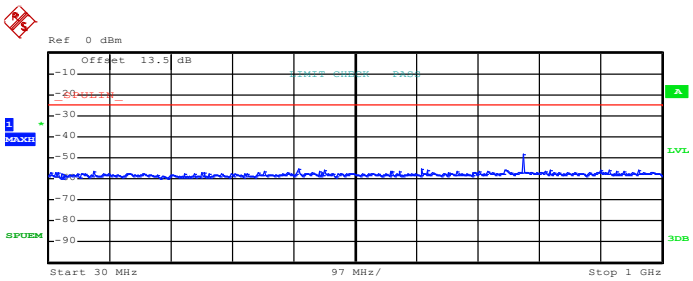


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.545 G	1.00 M	2.543455 G	-41.84	-16.84
2.585 G	3.000 G	1.00 M	2.979250 G	-44.09	-19.09
3.000 G	7.000 G	1.00 M	3.156000 G	-40.56	-15.56
7.000 G	10.000 G	1.00 M	9.805000 G	-40.82	-15.82
10.000 G	13.000 G	1.00 M	10.253500 G	-41.28	-16.28
13.000 G	17.000 G	1.00 M	16.444000 G	-32.29	-7.29
17.000 G	20.000 G	1.00 M	18.105500 G	-31.38	-6.38
20.000 G	23.000 G	1.00 M	20.589500 G	-29.10	-4.10
23.000 G	26.000 G	1.00 M	24.798500 G	-28.39	-3.39

Date: 10.JUL.2013 17:35:27

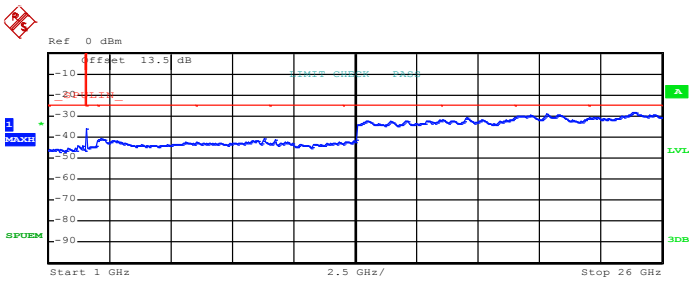
Band :	LTE Band 7	Channel :	CH20865 (Low)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 74)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	780.295000 M	-48.39	-23.39

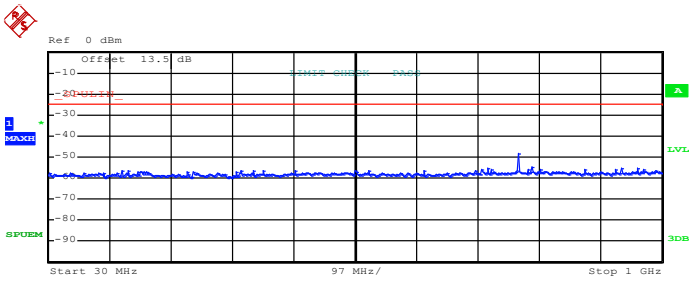
Date: 10.JUL.2013 17:29:14



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.484 G	1.00 M	2.222816 G	-44.31	-19.31
2.539 G	3.000 G	1.00 M	2.544763 G	-35.99	-10.99
3.000 G	7.000 G	1.00 M	3.138000 G	-40.57	-15.57
7.000 G	10.000 G	1.00 M	9.800500 G	-40.59	-15.59
10.000 G	13.000 G	1.00 M	10.259500 G	-41.36	-16.36
13.000 G	17.000 G	1.00 M	16.930000 G	-32.01	-7.01
17.000 G	20.000 G	1.00 M	18.050000 G	-30.76	-5.76
20.000 G	23.000 G	1.00 M	21.309500 G	-29.17	-4.17
23.000 G	26.000 G	1.00 M	24.906500 G	-28.21	-3.21

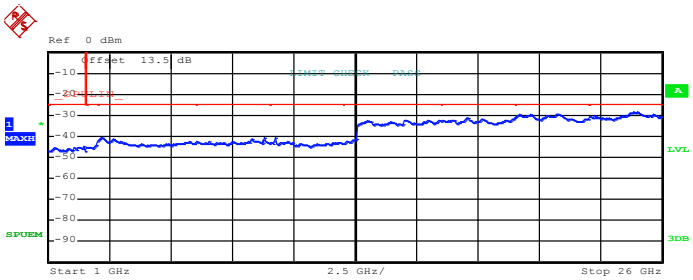
Date: 10.JUL.2013 17:28:13

16QAM (RB Size 1, RB Offset 37)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	773.505000 M	-48.27	-23.27

Date: 10.JUL.2013 17:28:57

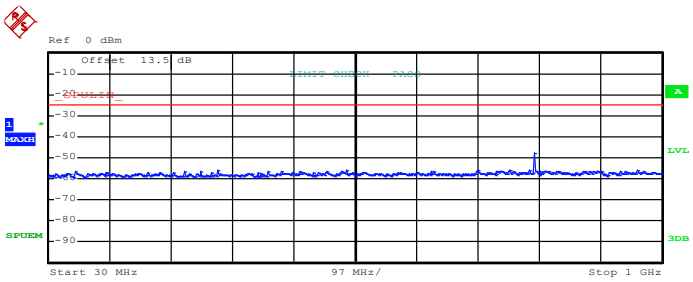


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.484 G	1.00 M	2.450610 G	-44.51	-19.51
2.539 G	3.000 G	1.00 M	2.979025 G	-44.24	-19.24
3.000 G	7.000 G	1.00 M	3.182000 G	-40.78	-15.78
7.000 G	10.000 G	1.00 M	9.805000 G	-40.74	-15.74
10.000 G	13.000 G	1.00 M	10.252000 G	-40.82	-15.82
13.000 G	17.000 G	1.00 M	15.572000 G	-32.29	-7.29
17.000 G	20.000 G	1.00 M	18.081500 G	-31.37	-6.37
20.000 G	23.000 G	1.00 M	21.812000 G	-29.48	-4.48
23.000 G	26.000 G	1.00 M	24.858500 G	-28.38	-3.38

Date: 10.JUL.2013 17:28:40

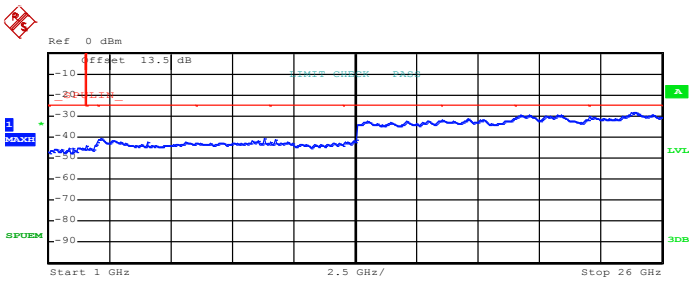
Band :	LTE Band 7	Channel :	CH21045 (Middle)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 74)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	798.240000 M	-47.50	-22.50

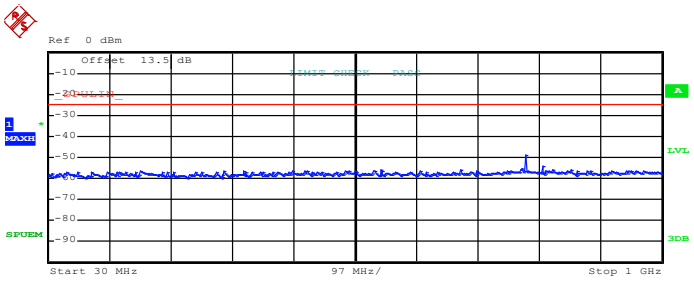
Date: 10.JUL.2013 17:30:04



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.502 G	1.00 M	1.858393 G	-45.19	-20.19
2.557 G	3.000 G	1.00 M	2.982058 G	-43.78	-18.78
3.000 G	7.000 G	1.00 M	3.126000 G	-40.93	-15.93
7.000 G	10.000 G	1.00 M	9.794500 G	-40.74	-15.74
10.000 G	13.000 G	1.00 M	10.255000 G	-41.01	-16.01
13.000 G	17.000 G	1.00 M	16.986000 G	-32.26	-7.26
17.000 G	20.000 G	1.00 M	19.961000 G	-31.41	-6.41
20.000 G	23.000 G	1.00 M	20.601500 G	-29.25	-4.25
23.000 G	26.000 G	1.00 M	24.932000 G	-28.35	-3.35

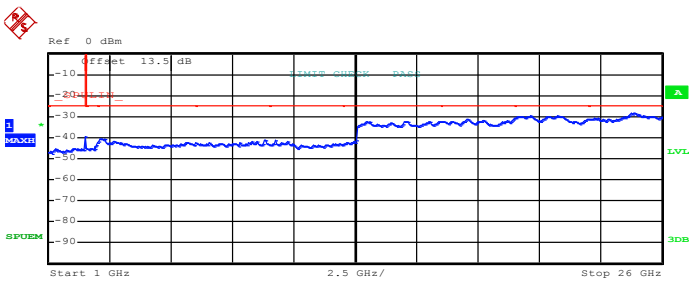
Date: 10.JUL.2013 17:31:09

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	784.660000 M	-48.82	-23.82

Date: 10.JUL.2013 17:30:24

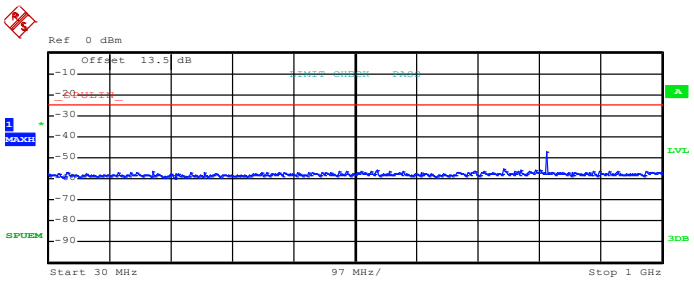


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.502 G	1.00 M	2.496743 G	-39.31	-14.31
2.557 G	3.000 G	1.00 M	2.998893 G	-43.58	-18.58
3.000 G	7.000 G	1.00 M	3.174000 G	-40.75	-15.75
7.000 G	10.000 G	1.00 M	9.805000 G	-41.07	-16.07
10.000 G	13.000 G	1.00 M	10.246000 G	-41.13	-16.13
13.000 G	17.000 G	1.00 M	16.502000 G	-32.21	-7.21
17.000 G	20.000 G	1.00 M	18.051500 G	-31.25	-6.25
20.000 G	23.000 G	1.00 M	21.737000 G	-29.56	-4.56
23.000 G	26.000 G	1.00 M	24.827000 G	-28.20	-3.20

Date: 10.JUL.2013 17:30:47

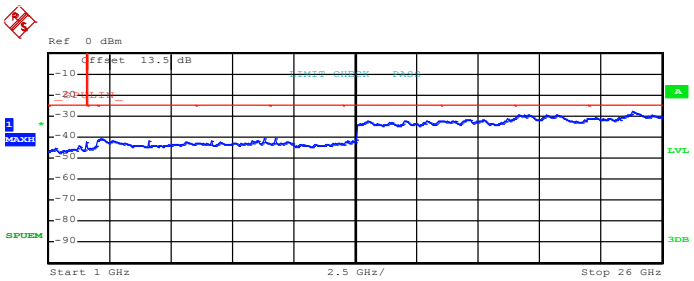
Band :	LTE Band 7	Channel :	CH21375 (High)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	817.640000 M	-47.31	-22.31

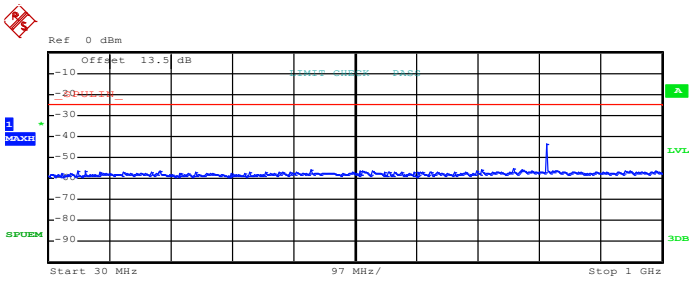
Date: 10.JUL.2013 17:33:22



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.535 G	1.00 M	2.530395 G	-42.32	-17.32
2.590 G	3.000 G	1.00 M	2.992005 G	-44.02	-19.02
3.000 G	7.000 G	1.00 M	3.130000 G	-40.51	-15.51
7.000 G	10.000 G	1.00 M	9.809500 G	-40.91	-15.91
10.000 G	13.000 G	1.00 M	10.243000 G	-40.70	-15.70
13.000 G	17.000 G	1.00 M	16.908000 G	-32.44	-7.44
17.000 G	20.000 G	1.00 M	19.950500 G	-31.09	-6.09
20.000 G	23.000 G	1.00 M	20.573000 G	-29.45	-4.45
23.000 G	26.000 G	1.00 M	24.821000 G	-28.00	-3.00

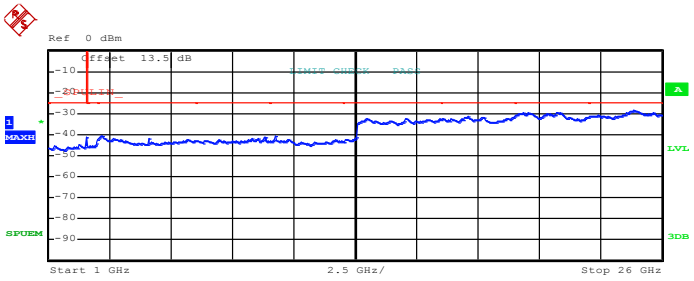
Date: 10.JUL.2013 17:32:30

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	817.640000 M	-43.66	-18.66

Date: 10.JUL.2013 17:33:05

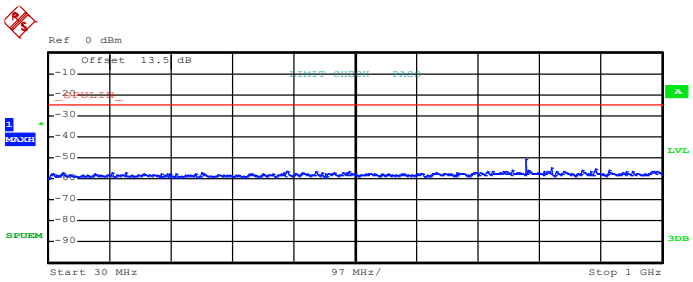


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.535 G	1.00 M	2.530395 G	-41.36	-16.36
2.590 G	3.000 G	1.00 M	2.998565 G	-44.43	-19.43
3.000 G	7.000 G	1.00 M	3.174000 G	-40.76	-15.76
7.000 G	10.000 G	1.00 M	9.829000 G	-41.30	-16.30
10.000 G	13.000 G	1.00 M	10.243000 G	-40.83	-15.83
13.000 G	17.000 G	1.00 M	16.996000 G	-32.17	-7.17
17.000 G	20.000 G	1.00 M	18.087500 G	-31.58	-6.58
20.000 G	23.000 G	1.00 M	20.570000 G	-29.64	-4.64
23.000 G	26.000 G	1.00 M	24.837500 G	-28.09	-3.09

Date: 10.JUL.2013 17:32:48

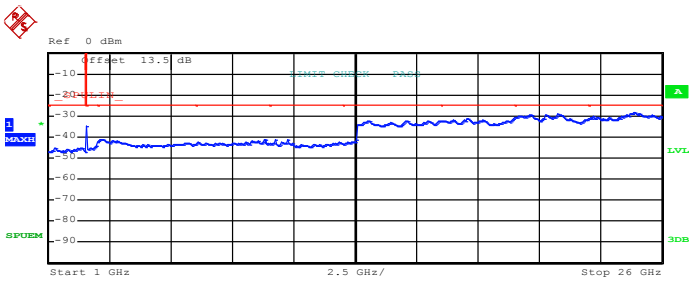
Band :	LTE Band 7	Channel :	CH20890 (Low)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 99)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	785.145000 M	-50.31	-25.31

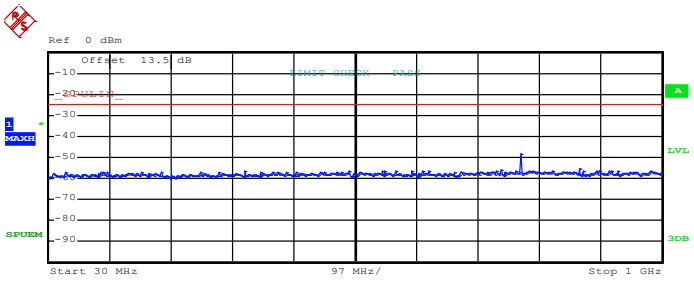
Date: 10.JUL.2013 17:19:51



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.479 G	1.00 M	1.296540 G	-45.08	-20.08
2.549 G	3.000 G	1.00 M	2.558696 G	-34.70	-9.70
3.000 G	7.000 G	1.00 M	3.132000 G	-40.97	-15.97
7.000 G	10.000 G	1.00 M	9.800500 G	-41.19	-16.19
10.000 G	13.000 G	1.00 M	10.261000 G	-40.94	-15.94
13.000 G	17.000 G	1.00 M	14.026000 G	-32.19	-7.19
17.000 G	20.000 G	1.00 M	18.096500 G	-31.16	-6.16
20.000 G	23.000 G	1.00 M	21.741500 G	-29.07	-4.07
23.000 G	26.000 G	1.00 M	24.881000 G	-28.28	-3.28

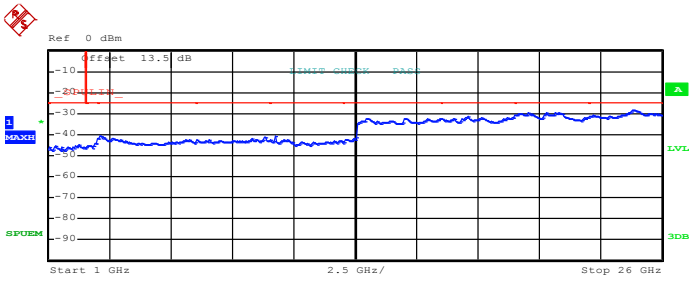
Date: 10.JUL.2013 17:20:12

16QAM (RB Size 1, RB Offset 49)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	775.930000 M	-47.97	-22.97

Date: 10.JUL.2013 17:21:52

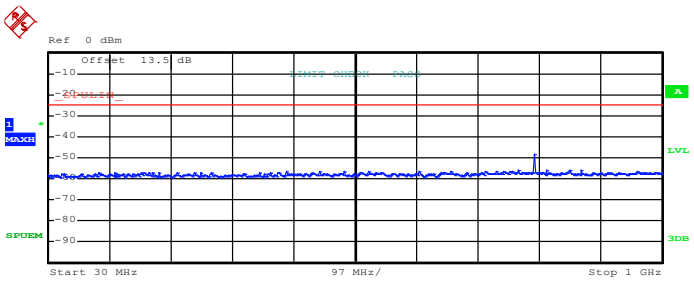


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.479 G	1.00 M	2.254932 G	-44.64	-19.64
2.549 G	3.000 G	1.00 M	2.932801 G	-43.87	-18.87
3.000 G	7.000 G	1.00 M	3.116000 G	-40.88	-15.88
7.000 G	10.000 G	1.00 M	9.791500 G	-41.28	-16.28
10.000 G	13.000 G	1.00 M	10.261000 G	-40.76	-15.76
13.000 G	17.000 G	1.00 M	15.610000 G	-32.24	-7.24
17.000 G	20.000 G	1.00 M	18.075500 G	-31.16	-6.16
20.000 G	23.000 G	1.00 M	20.525000 G	-29.67	-4.67
23.000 G	26.000 G	1.00 M	24.816500 G	-28.36	-3.36

Date: 10.JUL.2013 17:21:36

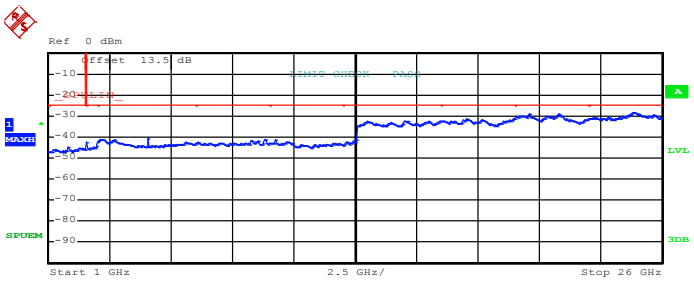
Band :	LTE Band 7	Channel :	CH21020 (Middle)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 99)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	797.755000 M	-48.42	-23.42

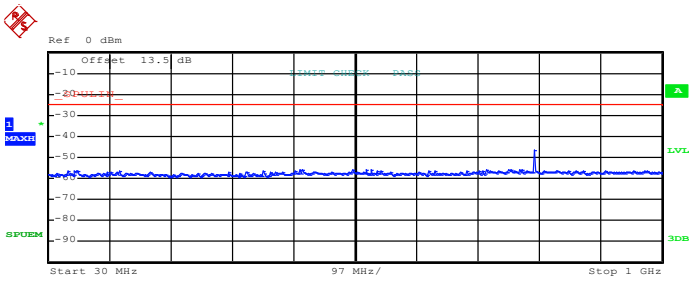
Date: 10.JUL.2013 17:25:57



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.492 G	1.00 M	1.800458 G	-44.56	-19.56
2.562 G	3.000 G	1.00 M	2.571855 G	-42.25	-17.25
3.000 G	7.000 G	1.00 M	5.072000 G	-40.79	-15.79
7.000 G	10.000 G	1.00 M	9.803500 G	-41.09	-16.09
10.000 G	13.000 G	1.00 M	10.240000 G	-41.27	-16.27
13.000 G	17.000 G	1.00 M	15.512000 G	-32.37	-7.37
17.000 G	20.000 G	1.00 M	18.029000 G	-31.29	-6.29
20.000 G	23.000 G	1.00 M	20.601500 G	-29.09	-4.09
23.000 G	26.000 G	1.00 M	24.786500 G	-28.37	-3.37

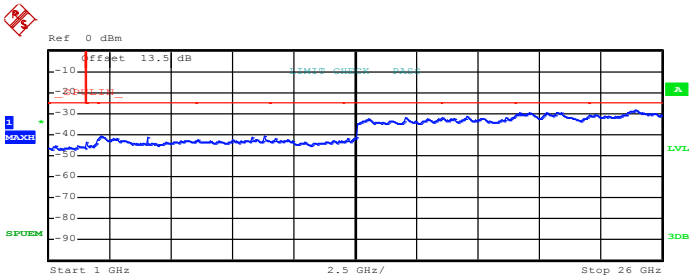
Date: 10.JUL.2013 17:26:26

16QAM (RB Size 1, RB Offset 99)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	797.755000 M	-46.73	-21.73

Date: 10.JUL.2013 17:25:41

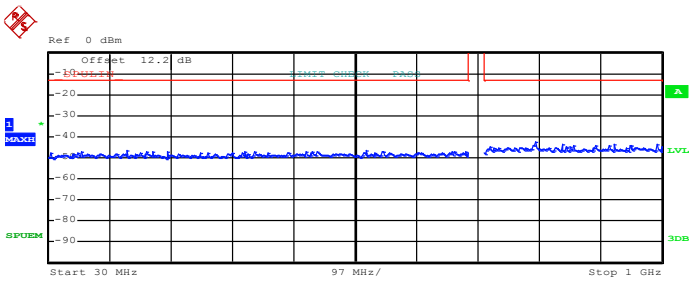


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	2.492 G	1.00 M	1.284226 G	-45.13	-20.13
2.562 G	3.000 G	1.00 M	2.562657 G	-43.47	-18.47
3.000 G	7.000 G	1.00 M	3.148000 G	-40.60	-15.60
7.000 G	10.000 G	1.00 M	9.823000 G	-40.87	-15.87
10.000 G	13.000 G	1.00 M	10.252000 G	-41.54	-16.54
13.000 G	17.000 G	1.00 M	15.568000 G	-32.10	-7.10
17.000 G	20.000 G	1.00 M	18.066500 G	-31.49	-6.49
20.000 G	23.000 G	1.00 M	21.879500 G	-29.47	-4.47
23.000 G	26.000 G	1.00 M	24.933500 G	-28.62	-3.62

Date: 10.JUL.2013 17:26:40

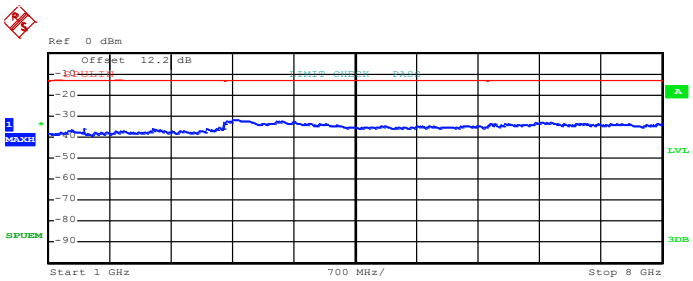
Band :	LTE Band 17	Channel :	CH23755 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	694.000 M	100.00 k	153.504000 M	-46.53	-33.53
719.000 M	1.000 G	100.00 k	800.911500 M	-42.62	-29.62

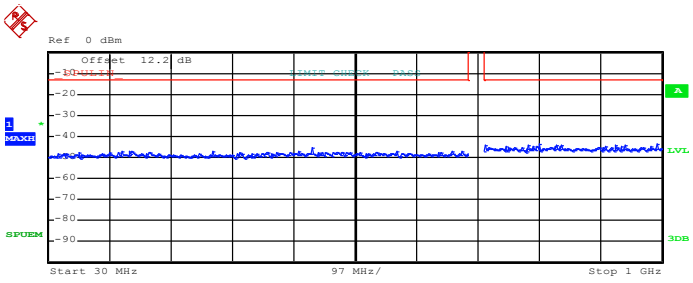
Date: 10.JUL.2013 14:21:38



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	3.000 G	1.00 M	2.950000 G	-35.23	-22.23
3.000 G	6.000 G	1.00 M	3.154500 G	-31.69	-18.69
6.000 G	8.000 G	1.00 M	6.729000 G	-32.89	-19.89

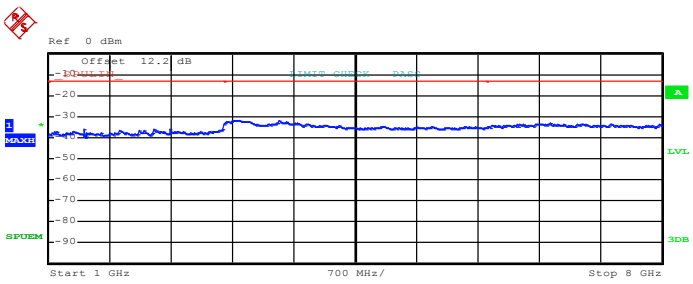
Date: 10.JUL.2013 14:21:58

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	694.000 M	100.00 k	446.992000 M	-45.54	-32.54
719.000 M	1.000 G	100.00 k	992.975000 M	-43.71	-30.71

Date: 10.JUL.2013 14:22:36

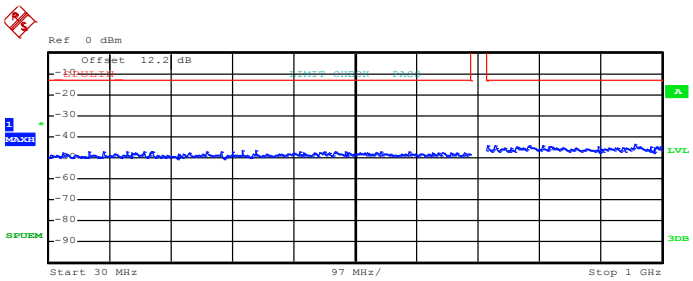


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	3.000 G	1.00 M	1.408000 G	-35.74	-22.74
3.000 G	6.000 G	1.00 M	3.168000 G	-31.61	-18.61
6.000 G	8.000 G	1.00 M	6.719000 G	-33.03	-20.03

Date: 10.JUL.2013 14:22:19

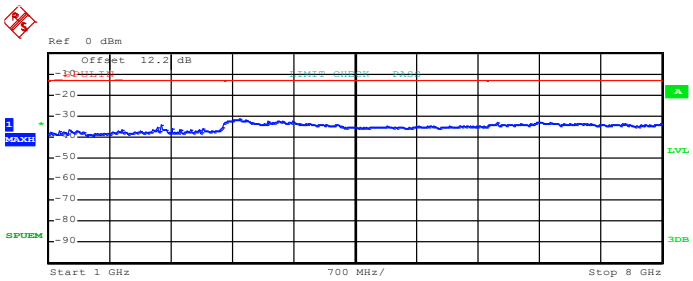
Band :	LTE Band 17	Channel :	CH23790 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 24)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	697.500 M	100.00 k	335.381250 M	-46.57	-33.57
722.500 M	1.000 G	100.00 k	957.958750 M	-43.39	-30.39

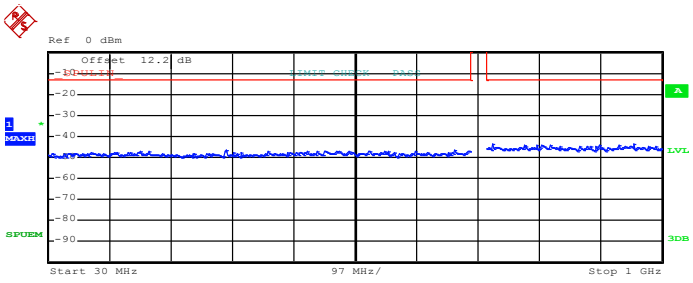
Date: 10.JUL.2013 14:23:57



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	3.000 G	1.00 M	2.288000 G	-34.00	-21.00
3.000 G	6.000 G	1.00 M	3.178500 G	-31.53	-18.53
6.000 G	8.000 G	1.00 M	6.586000 G	-32.85	-19.85

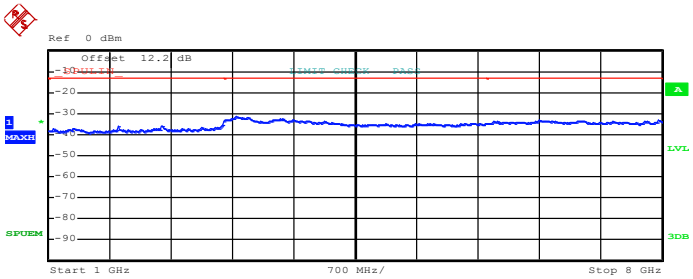
Date: 10.JUL.2013 14:24:23

16QAM (RB Size 1, RB Offset 24)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	697.500 M	100.00 k	672.468750 M	-46.67	-33.67
722.500 M	1.000 G	100.00 k	954.767500 M	-43.48	-30.48

Date: 10.JUL.2013 14:23:37

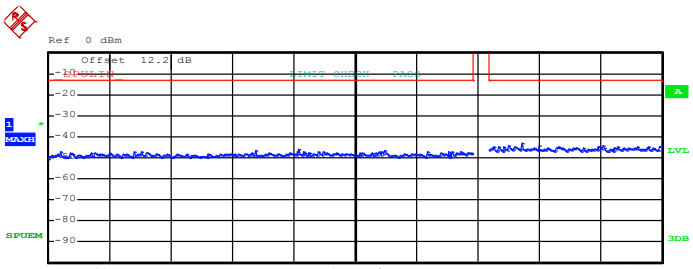


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	3.000 G	1.00 M	2.982000 G	-35.45	-22.45
3.000 G	6.000 G	1.00 M	3.138000 G	-31.34	-18.34
6.000 G	8.000 G	1.00 M	6.604000 G	-32.79	-19.79

Date: 10.JUL.2013 14:24:41

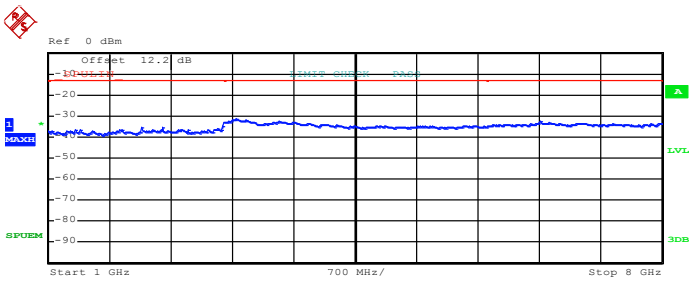
Band :	LTE Band 17	Channel :	CH23825 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 12)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	701.000 M	100.00 k	424.548000 M	-46.14	-33.14
726.000 M	1.000 G	100.00 k	779.293000 M	-42.98	-29.98

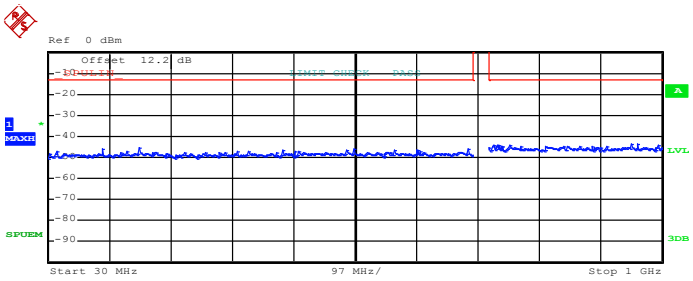
Date: 10.JUL.2013 14:28:01



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.000 G	3.000 G	1.00 M	2.998000 G	-34.55	-21.55
3.000 G	6.000 G	1.00 M	3.138000 G	-31.58	-18.58
6.000 G	8.000 G	1.00 M	6.608000 G	-32.66	-19.66

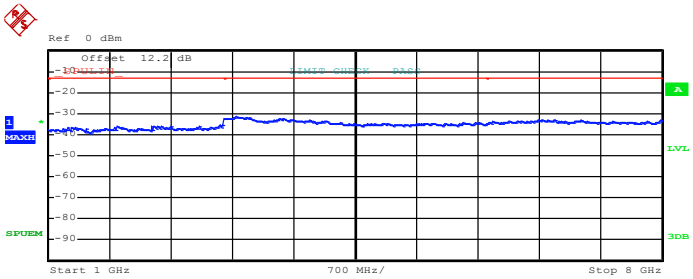
Date: 10.JUL.2013 14:27:40

16QAM (RB Size 1, RB Offset 12)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	701.000 M	100.00 k	172.923000 M	-45.42	-32.42
726.000 M	1.000 G	100.00 k	951.365000 M	-43.65	-30.65

Date: 10.JUL.2013 14:28:20

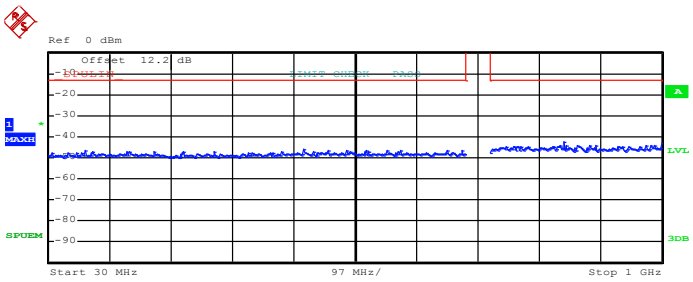


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	3.000 G	1.00 M	2.966000 G	-35.46	-22.46
3.000 G	6.000 G	1.00 M	3.142500 G	-31.39	-18.39
6.000 G	8.000 G	1.00 M	6.775000 G	-32.84	-19.84

Date: 10.JUL.2013 14:25:49

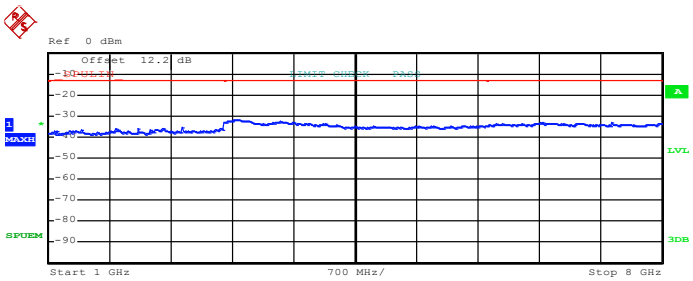
Band :	LTE Band 17	Channel :	CH23780 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 49)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	689.000 M	100.00 k	432.319500 M	-46.15	-33.15
729.000 M	1.000 G	100.00 k	844.039500 M	-42.38	-29.38

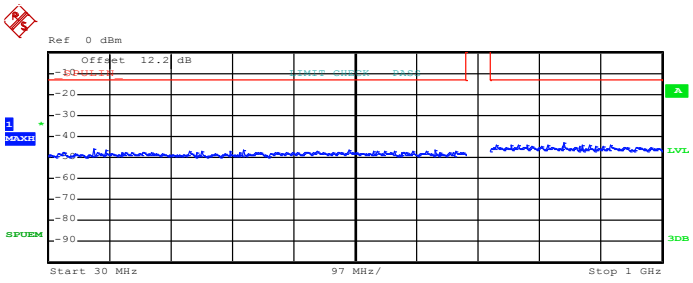
Date: 10.JUL.2013 14:37:30



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	3.000 G	1.00 M	2.526000 G	-35.60	-22.60
3.000 G	6.000 G	1.00 M	3.136500 G	-31.58	-18.58
6.000 G	8.000 G	1.00 M	6.607000 G	-33.22	-20.22

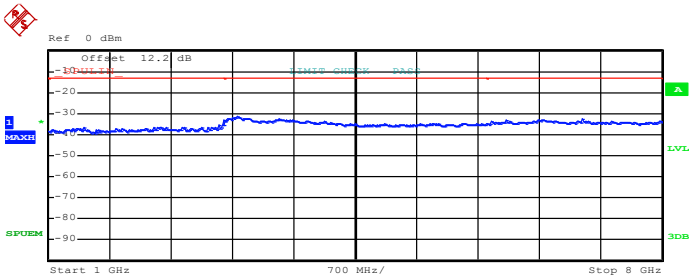
Date: 10.JUL.2013 14:37:57

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	689.000 M	100.00 k	102.160500 M	-45.75	-32.75
729.000 M	1.000 G	100.00 k	844.310500 M	-43.23	-30.23

Date: 10.JUL.2013 14:37:03

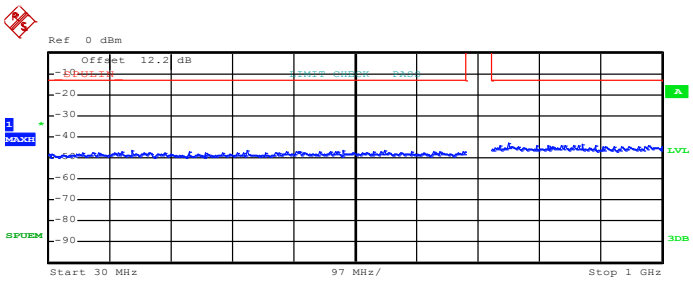


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	3.000 G	1.00 M	2.992000 G	-35.31	-22.31
3.000 G	6.000 G	1.00 M	3.156000 G	-31.42	-18.42
6.000 G	8.000 G	1.00 M	7.095000 G	-32.52	-19.52

Date: 10.JUL.2013 14:38:19

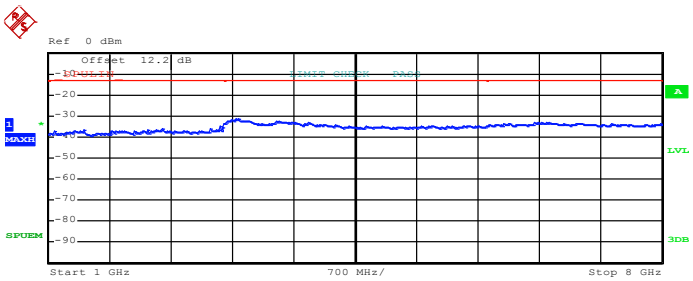
Band :	LTE Band 17	Channel :	CH23790 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	690.000 M	100.00 k	560.640000 M	-46.25	-33.25
730.000 M	1.000 G	100.00 k	756.460000 M	-42.86	-29.86

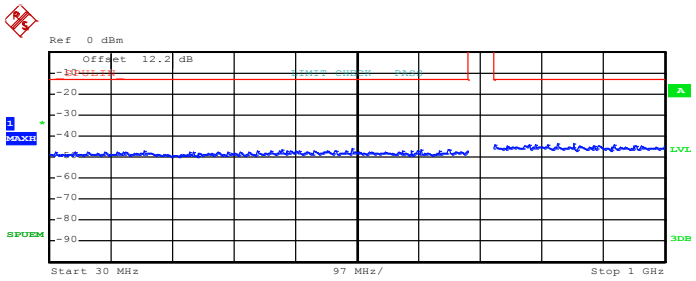
Date: 10.JUL.2013 14:35:50



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	3.000 G	1.00 M	2.964000 G	-34.58	-21.58
3.000 G	6.000 G	1.00 M	3.135000 G	-31.37	-18.37
6.000 G	8.000 G	1.00 M	6.621000 G	-32.76	-19.76

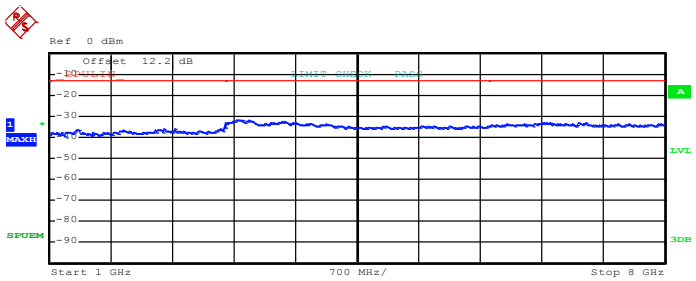
Date: 10.JUL.2013 14:34:39

16QAM (RB Size 1, RB Offset 24)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	690.000 M	100.00 k	507.840000 M	-46.04	-33.04
730.000 M	1.000 G	100.00 k	830.440000 M	-43.61	-30.61

Date: 10.JUL.2013 14:35:27

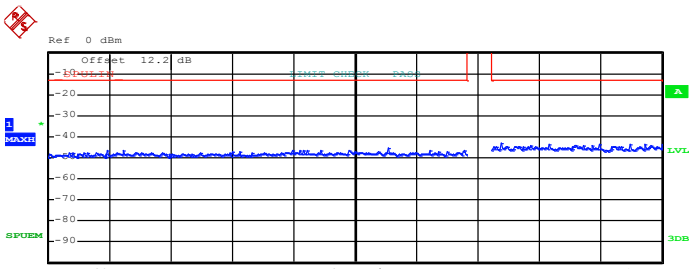


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	3.000 G	1.00 M	2.995000 G	-35.43	-22.43
3.000 G	6.000 G	1.00 M	3.160500 G	-31.79	-18.79
6.000 G	8.000 G	1.00 M	6.655000 G	-32.99	-19.99

Date: 10.JUL.2013 14:35:02

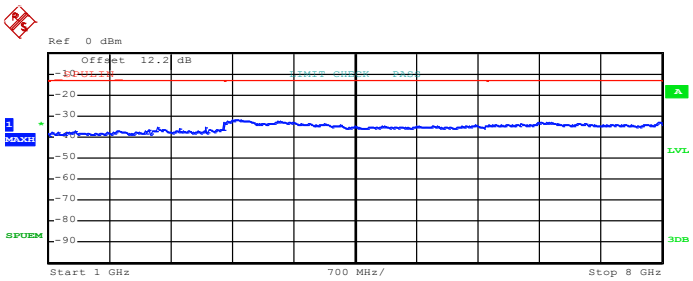
Band :	LTE Band 17	Channel :	CH23800 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 24)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	691.000 M	100.00 k	567.062500 M	-45.29	-32.29
731.000 M	1.000 G	100.00 k	744.853500 M	-43.08	-30.08

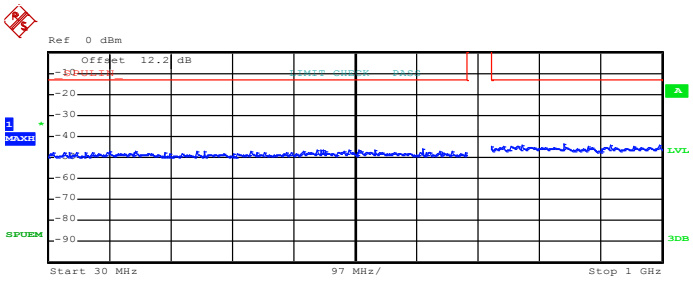
Date: 10.JUL.2013 14:31:44



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	3.000 G	1.00 M	2.246000 G	-35.50	-22.50
3.000 G	6.000 G	1.00 M	3.142500 G	-31.66	-18.66
6.000 G	8.000 G	1.00 M	7.951000 G	-32.79	-19.79

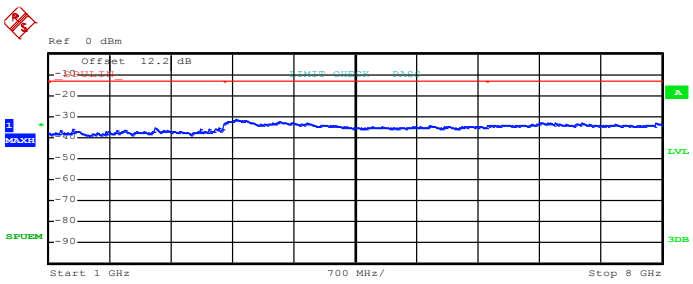
Date: 10.JUL.2013 14:32:58

16QAM (RB Size 1, RB Offset 24)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	691.000 M	100.00 k	621.264500 M	-46.05	-33.05
731.000 M	1.000 G	100.00 k	844.383500 M	-43.53	-30.53

Date: 10.JUL.2013 14:32:03



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	3.000 G	1.00 M	2.943000 G	-35.29	-22.29
3.000 G	6.000 G	1.00 M	3.135000 G	-31.40	-18.40
6.000 G	8.000 G	1.00 M	7.089000 G	-32.80	-19.80

Date: 10.JUL.2013 14:32:34

3.7 Radiated Spurious Emission Measurement

3.7.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI / TIA / EIA-603-C-2004.

For Band 4, 17

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

For Band 7

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

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

3.7.2 Measuring Instruments

See list of measuring instruments of this test report.

3.7.3 Test Procedures

1. The EUT was placed on a rotatable wooden table with 0.8 meter about ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

    For Band 4, 17

    The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.

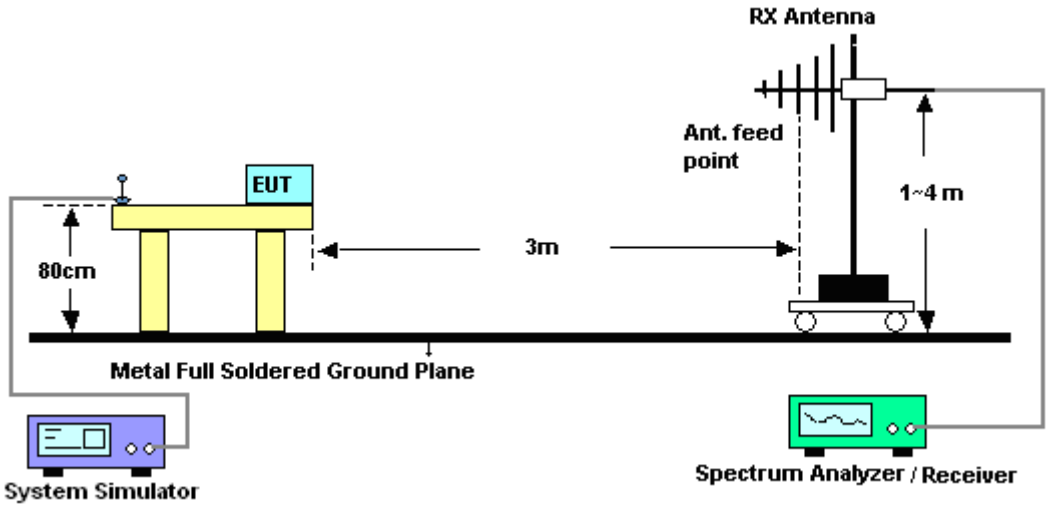
    For Band 7

    The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)

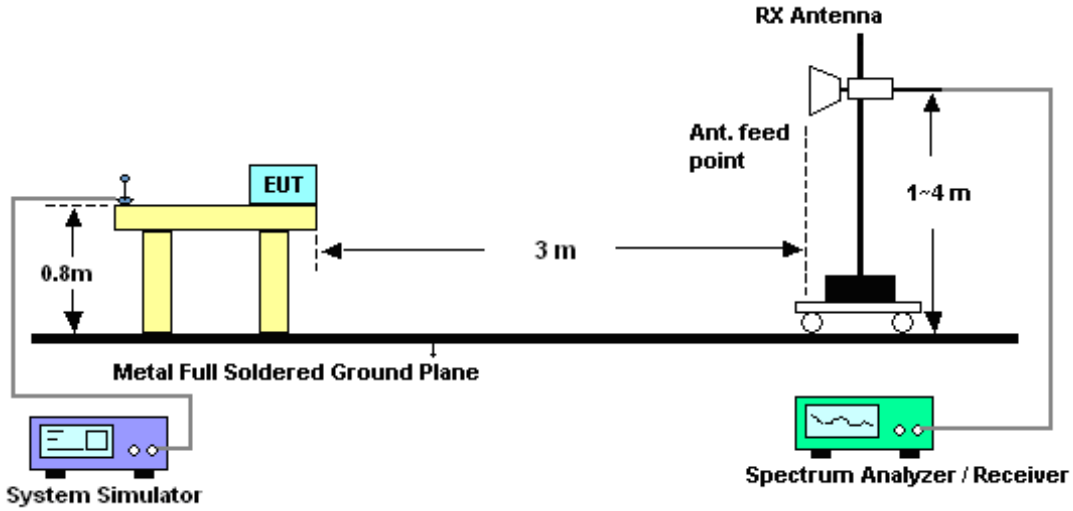
11. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
12. ERP (dBm) = EIRP - 2.15

3.7.4 Test Setup

For radiated emissions from 30MHz to 1GHz

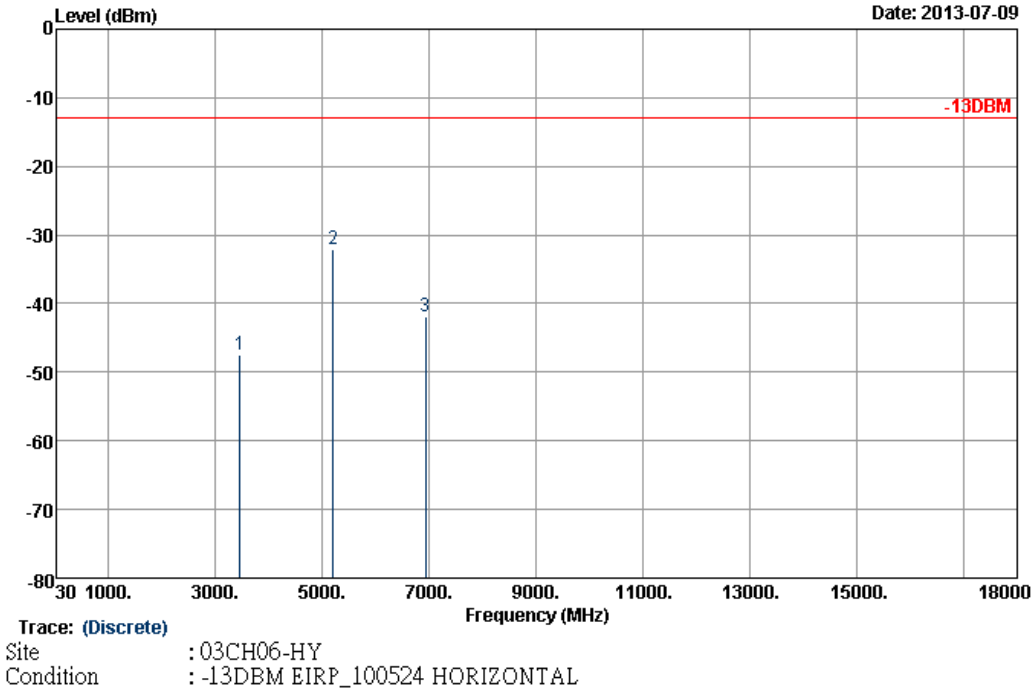


For radiated emissions above 1GHz



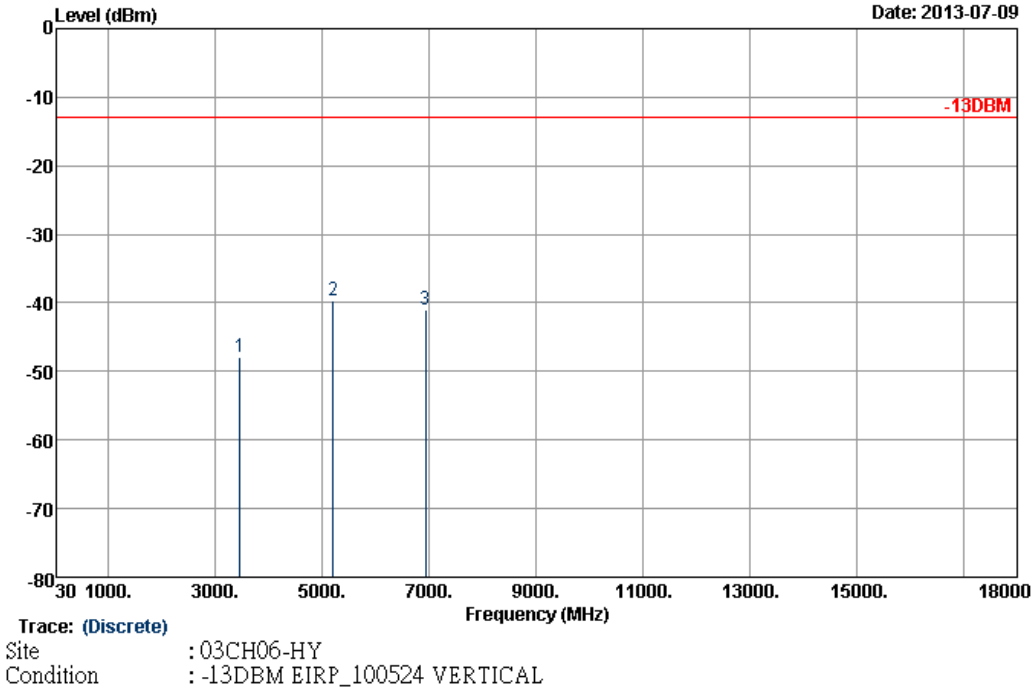
3.7.5 Test Result of Field Strength of Spurious Radiated

Band :	LTE Band 4	**Temperature :**	23~24°C
Test Mode :	5MHZ QPSK RB Size 1 Offset 24	**Relative Humidity :**	52~54%
Test Engineer :	David Yang	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



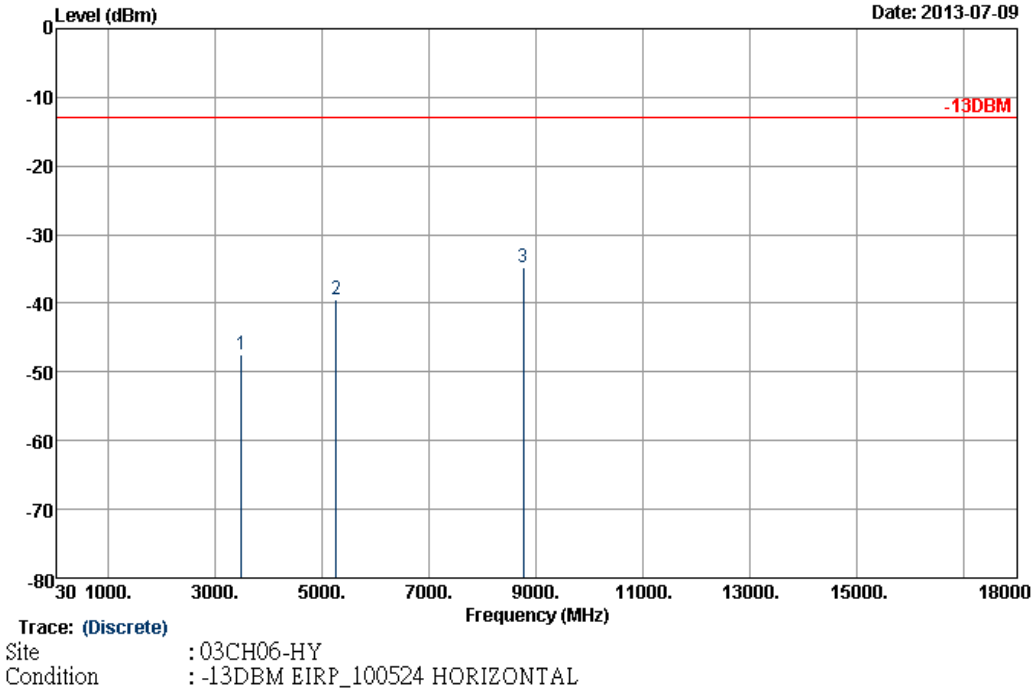
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3464	-47.57	-13	-34.57	-65.29	-53.36	2.50	8.30	H	Pass
5204	-32.05	-13	-19.05	-55.66	-39.75	2.74	10.44	H	Pass
6930	-41.90	-13	-28.90	-67.62	-50.24	3.13	11.47	H	Pass

Band :	LTE Band 4	Temperature :	23~24°C
Test Mode :	5MHZ QPSK RB Size 1 Offset 24	Relative Humidity :	52~54%
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



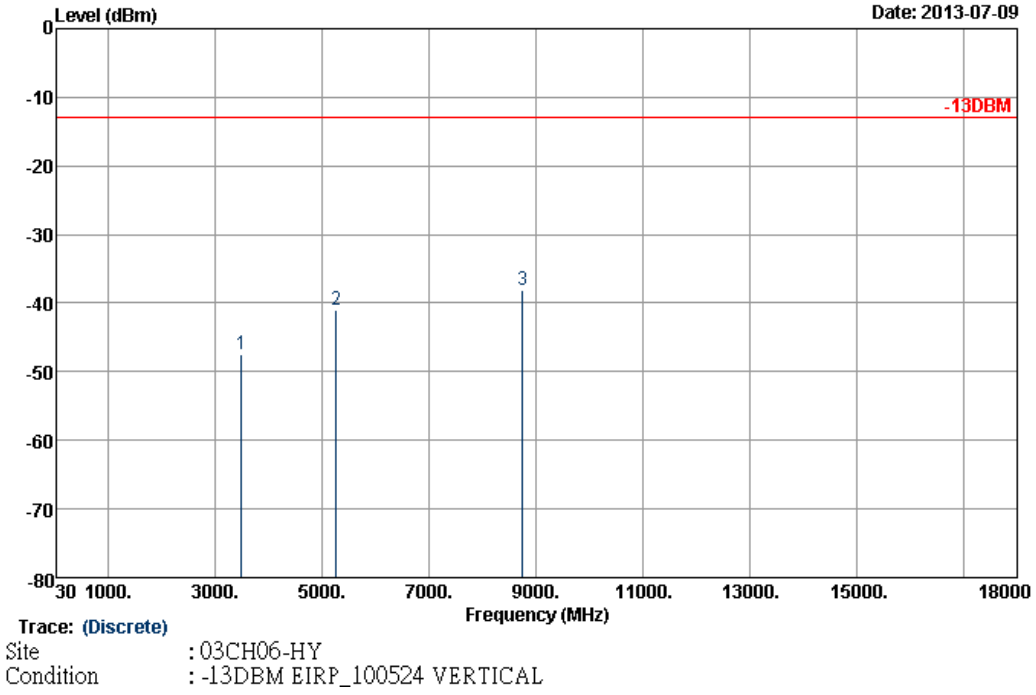
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3464	-47.85	-13	-34.85	-65.37	-53.64	2.50	8.30	V	Pass
5208	-39.72	-13	-26.72	-62.31	-47.42	2.74	10.44	V	Pass
6930	-41.03	-13	-28.03	-68.33	-49.37	3.13	11.47	V	Pass

Band :	LTE Band 4	Temperature :	23~24°C
Test Mode :	10MHZ QPSK RB Size 1 Offset 49	Relative Humidity :	52~54%
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



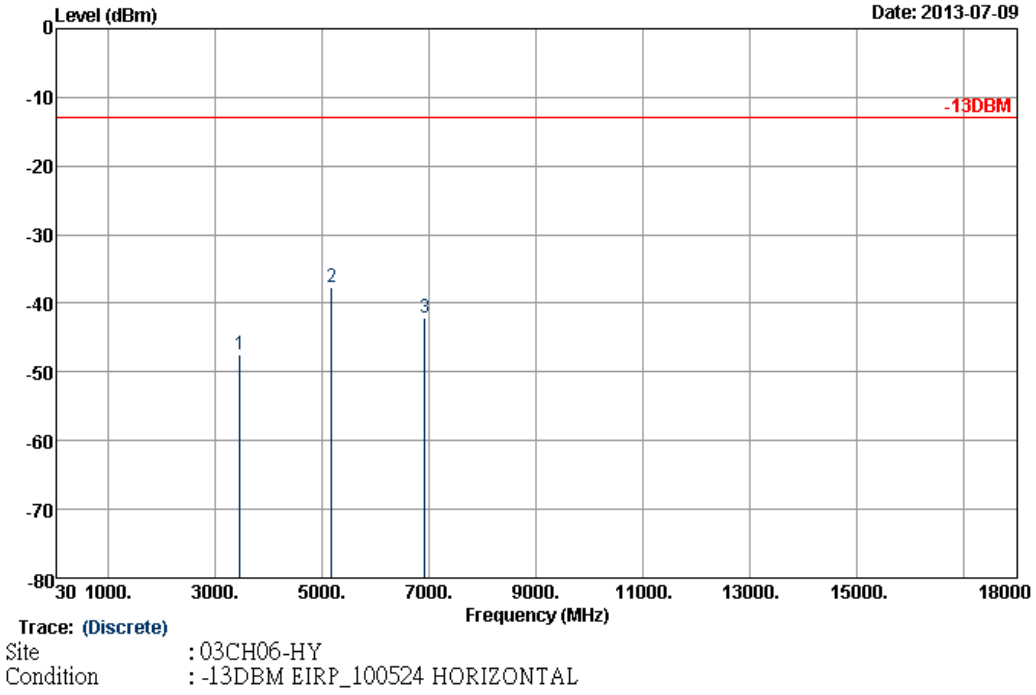
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3500	-47.38	-13	-34.38	-65.2	-53.24	2.52	8.38	H	Pass
5264	-39.43	-13	-26.43	-62.04	-47.16	2.74	10.48	H	Pass
8772	-34.70	-13	-21.70	-62.4	-44.12	3.73	13.15	H	Pass

Band :	LTE Band 4	Temperature :	23~24°C
Test Mode :	10MHZ QPSK RB Size 1 Offset 49	Relative Humidity :	52~54%
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



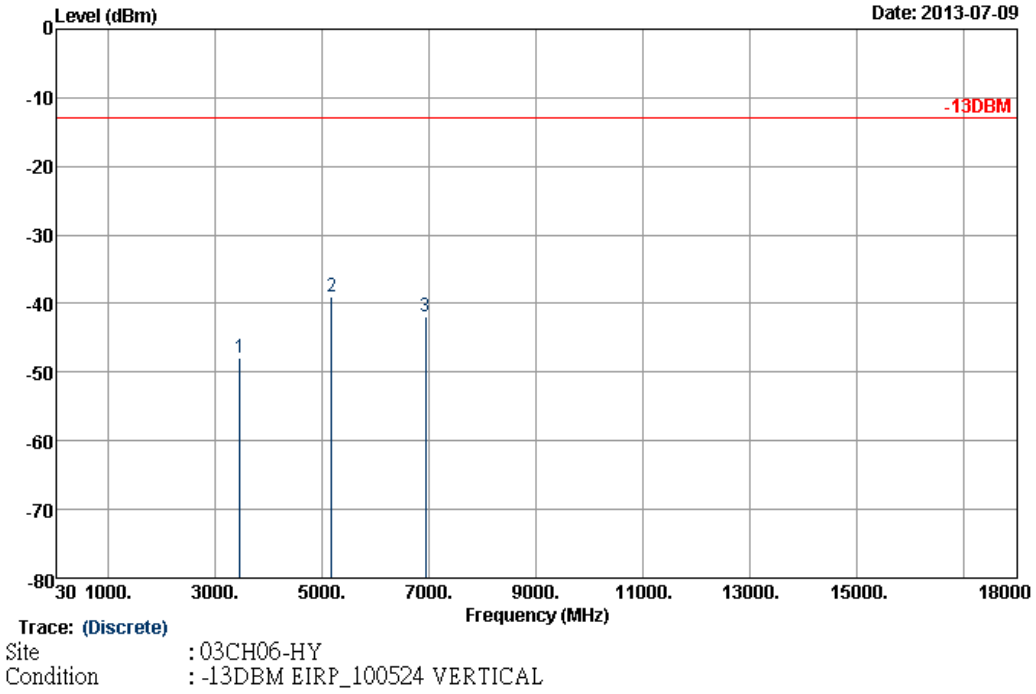
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3500	-47.55	-13	-34.55	-65	-53.41	2.52	8.38	V	Pass
5264	-41.02	-13	-28.02	-64.87	-48.75	2.74	10.48	V	Pass
8756	-38.11	-13	-25.11	-66.08	-47.53	3.73	13.15	V	Pass

Band :	LTE Band 4	Temperature :	23~24°C
Test Mode :	15MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	52~54%
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



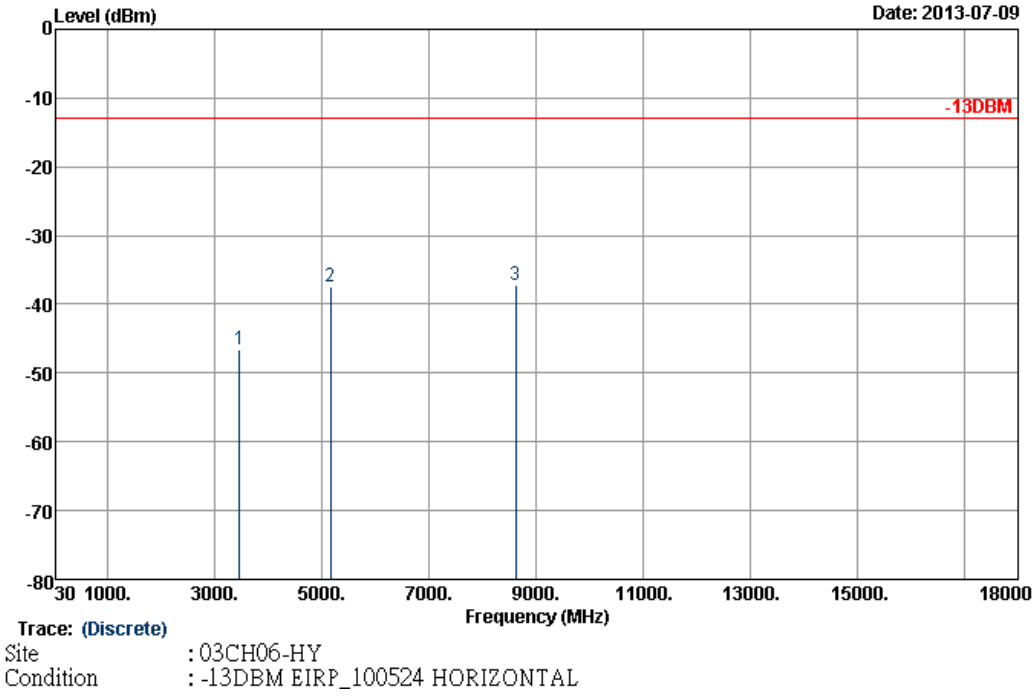
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3464	-47.37	-13	-34.37	-65.74	-53.16	2.50	8.30	H	Pass
5180	-37.58	-13	-24.58	-60.44	-45.28	2.74	10.44	H	Pass
6928	-42.12	-13	-29.12	-68.68	-50.46	3.13	11.47	H	Pass

Band :	LTE Band 4	Temperature :	23~24°C
Test Mode :	15MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	52~54%
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



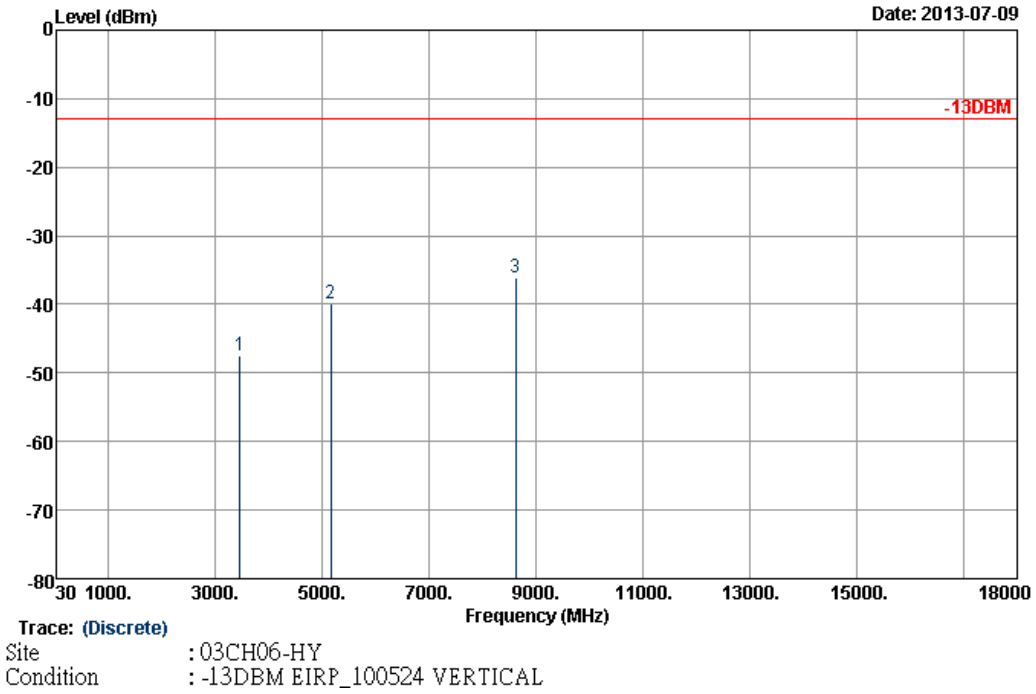
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3464	-47.92	-13	-34.92	-65.4	-53.71	2.50	8.30	V	Pass
5180	-38.92	-13	-25.92	-61.51	-46.62	2.74	10.44	V	Pass
6930	-41.88	-13	-28.88	-68.3	-50.22	3.13	11.47	V	Pass

Band :	LTE Band 4	Temperature :	23~24°C
Test Mode :	20MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	52~54%
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



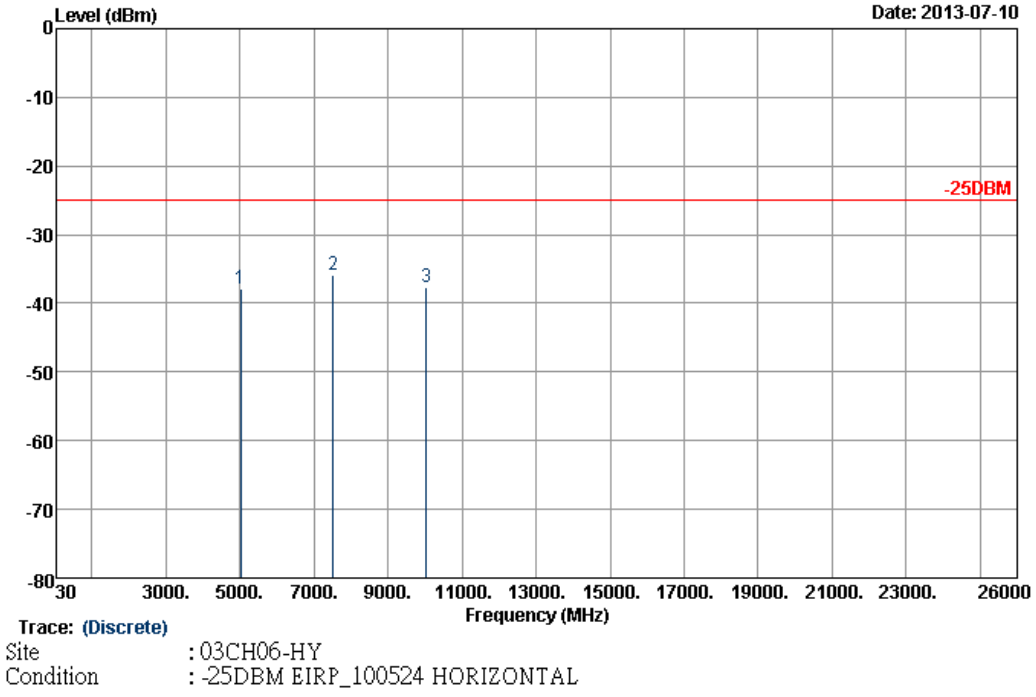
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3464	-46.67	-13	-33.67	-64.72	-52.46	2.50	8.30	H	Pass
5172	-37.48	-13	-24.48	-59.86	-45.18	2.74	10.44	H	Pass
8620	-37.32	-13	-24.32	-65.92	-46.68	3.75	13.11	H	Pass

Band :	LTE Band 4	Temperature :	23~24°C
Test Mode :	20MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	52~54%
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



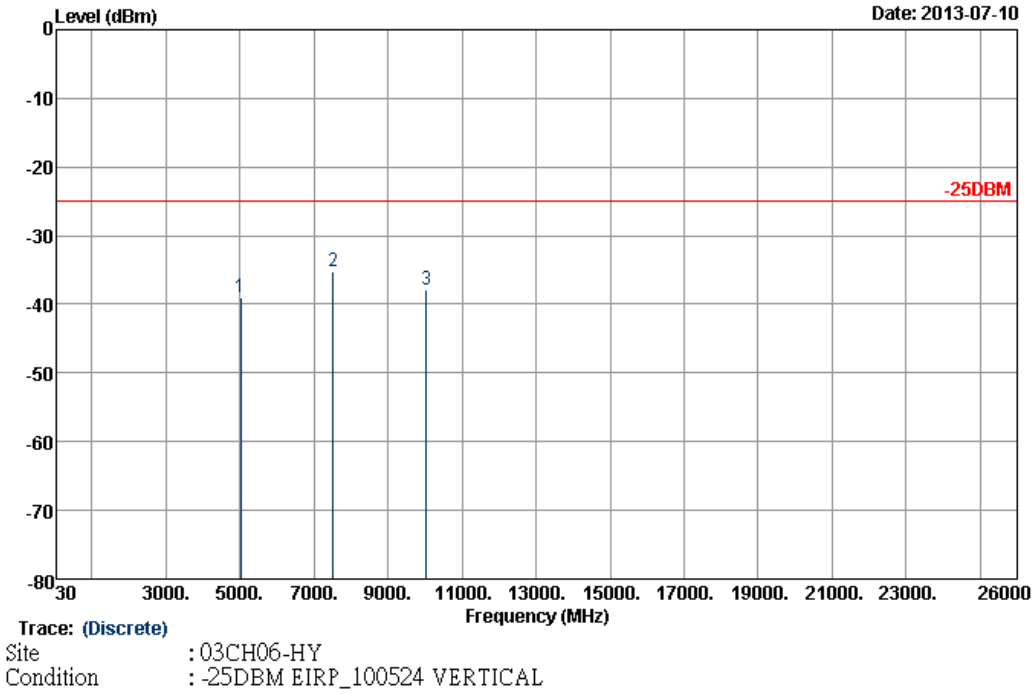
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3464	-47.48	-13	-34.48	-65.07	-53.27	2.50	8.30	V	Pass
5172	-39.82	-13	-26.82	-62.7	-47.52	2.74	10.44	V	Pass
8616	-36.03	-13	-23.03	-64.92	-45.39	3.75	13.11	V	Pass

Band :	LTE Band 7	Temperature :	23~24°C
Test Mode :	5MHZ QPSK RB Size 1 Offset 12	Relative Humidity :	52~54%
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



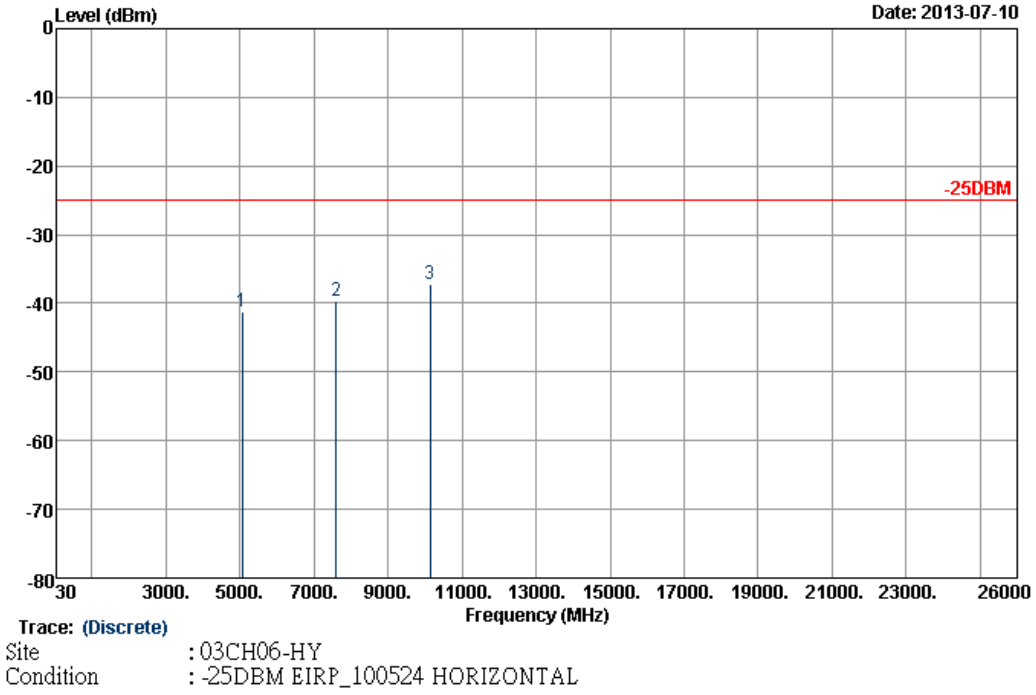
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5016	-37.99	-25	-12.99	-60.17	-46.31	2.08	10.40	H	Pass
7520	-35.94	-25	-10.94	-64.31	-45.47	2.68	12.21	H	Pass
10024	-37.57	-25	-12.57	-67.12	-48.12	2.56	13.10	H	Pass

Band :	LTE Band 7	Temperature :	23~24°C
Test Mode :	5MHZ QPSK RB Size 1 Offset 12	Relative Humidity :	52~54%
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



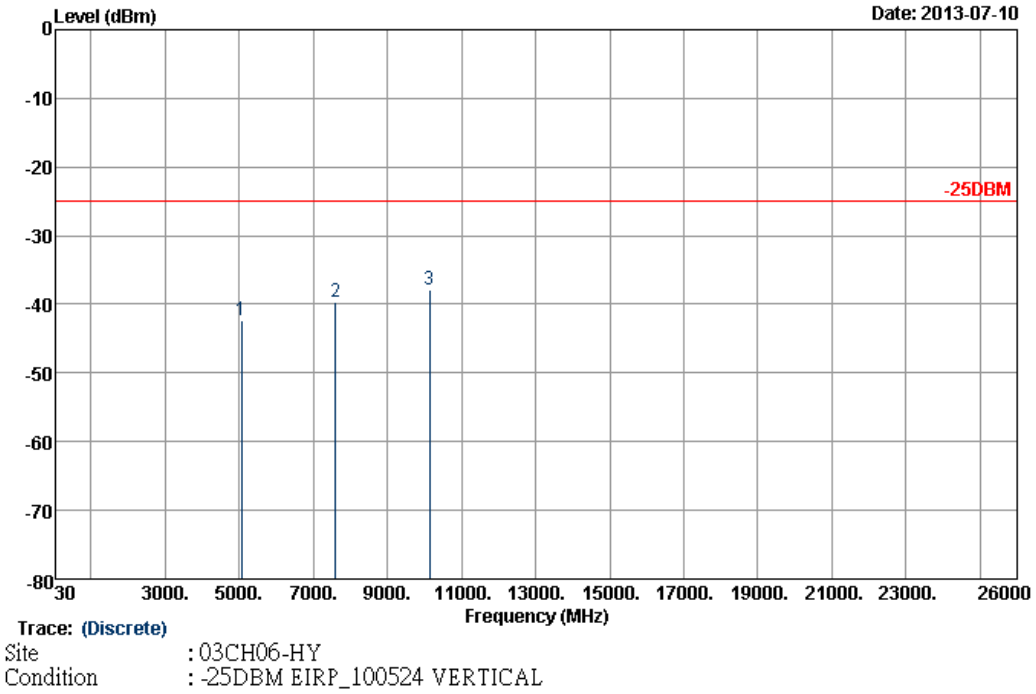
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5012	-39.04	-25	-14.04	-62.38	-47.36	2.08	10.40	V	Pass
7520	-35.21	-25	-10.21	-63.96	-44.74	2.68	12.21	V	Pass
10024	-37.92	-25	-12.92	-67.18	-48.47	2.56	13.10	V	Pass

Band :	LTE Band 7	Temperature :	23~24°C
Test Mode :	10MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	52~54%
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



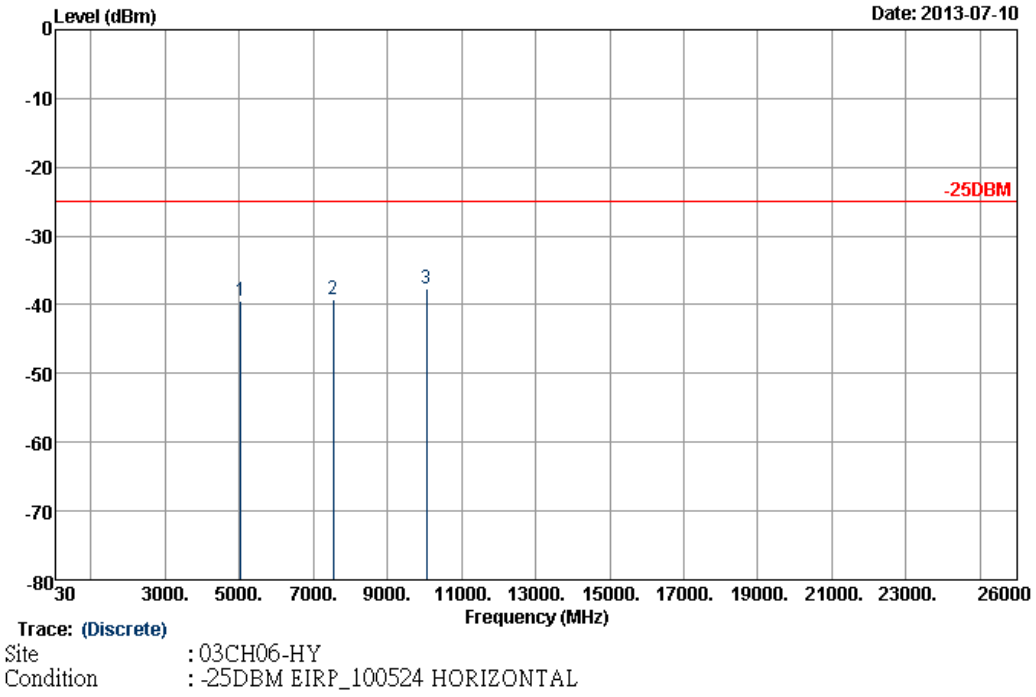
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5056	-41.12	-25	-16.12	-63.76	-49.47	2.07	10.43	H	Pass
7596	-39.72	-25	-14.72	-67.66	-49.32	2.67	12.27	H	Pass
10128	-37.26	-25	-12.26	-67.9	-47.75	2.66	13.16	H	Pass

Band :	LTE Band 7	Temperature :	23~24°C
Test Mode :	10MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	52~54%
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



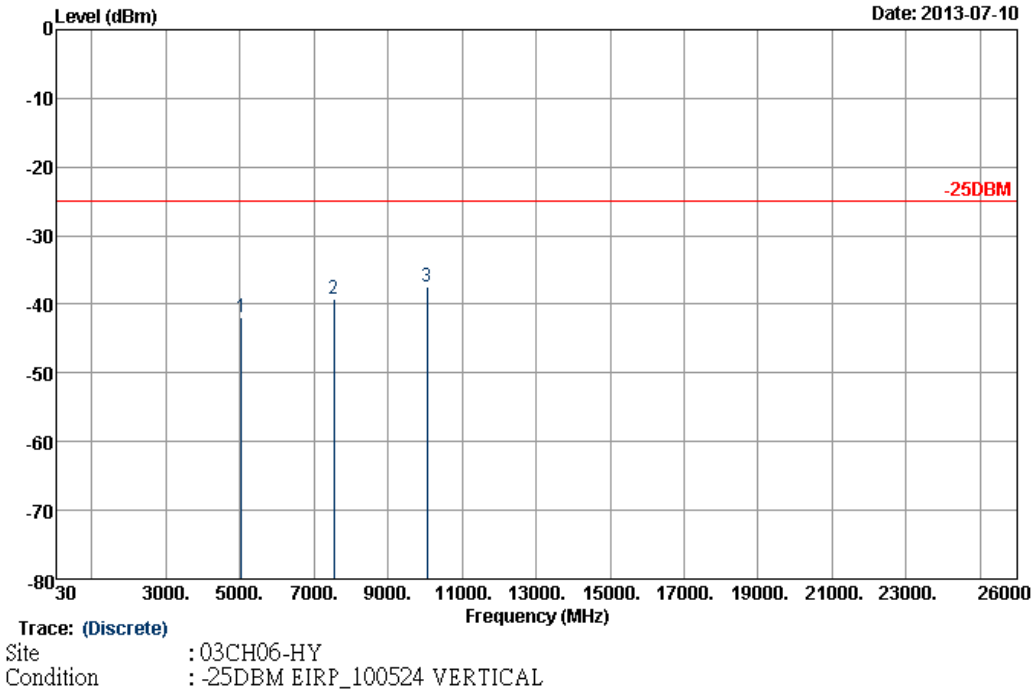
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5056	-42.41	-25	-17.41	-64.51	-50.76	2.07	10.43	V	Pass
7596	-39.72	-25	-14.72	-68.06	-49.32	2.67	12.27	V	Pass
10128	-37.99	-25	-12.99	-67.64	-48.48	2.66	13.16	V	Pass

Band :	LTE Band 7	Temperature :	23~24°C
Test Mode :	15MHZ QPSK RB Size 1 Offset 74	Relative Humidity :	52~54%
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



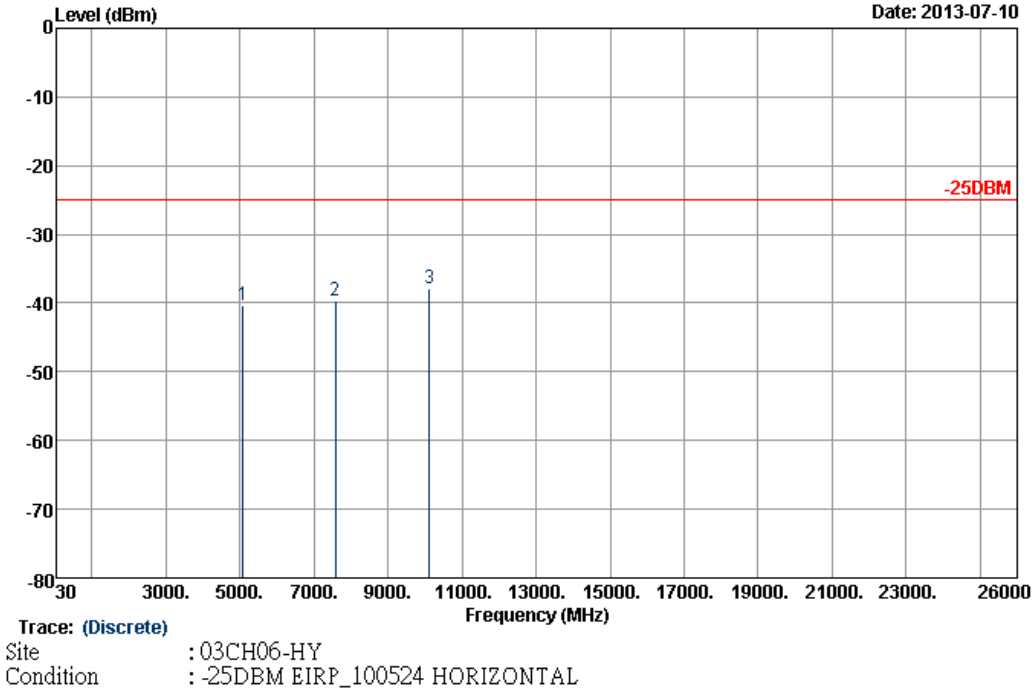
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5036	-39.50	-25	-14.50	-61.59	-47.82	2.07	10.39	H	Pass
7536	-39.20	-25	-14.20	-67.56	-48.72	2.67	12.19	H	Pass
10046	-37.61	-25	-12.61	-67.66	-48.13	2.57	13.09	H	Pass

Band :	LTE Band 7	Temperature :	23~24°C
Test Mode :	15MHZ QPSK RB Size 1 Offset 74	Relative Humidity :	52~54%
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



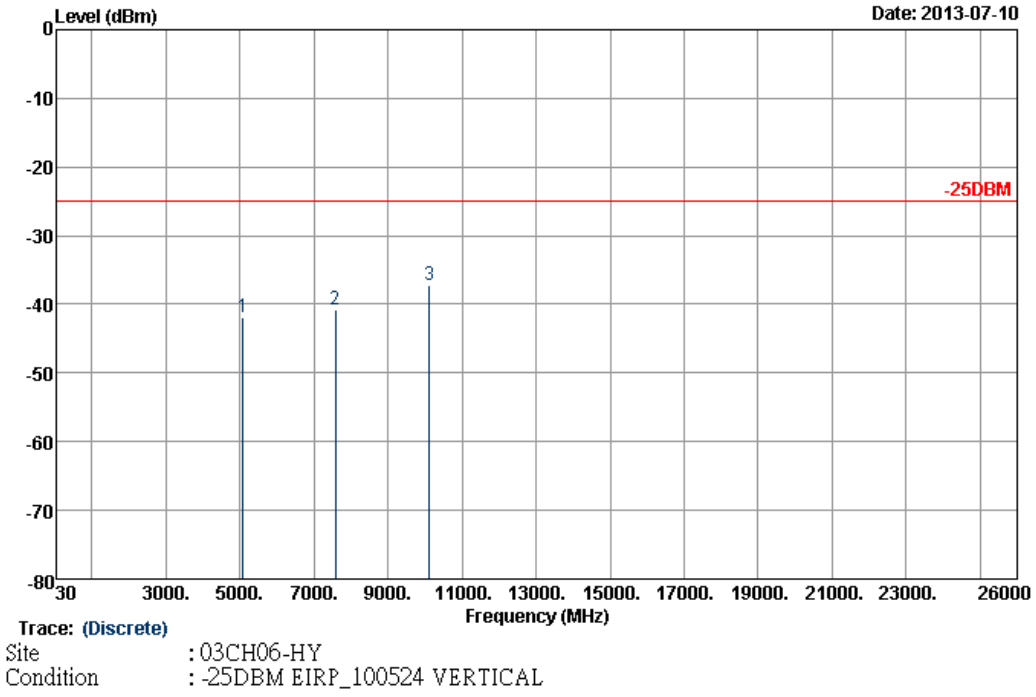
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5036	-41.93	-25	-16.93	-63.78	-50.25	2.07	10.39	V	Pass
7536	-39.11	-25	-14.11	-68.19	-48.63	2.67	12.19	V	Pass
10046	-37.39	-25	-12.39	-66.67	-47.91	2.57	13.09	V	Pass

Band :	LTE Band 7	Temperature :	23~24°C
Test Mode :	20MHZ QPSK RB Size 1 Offset 99	Relative Humidity :	52~54%
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



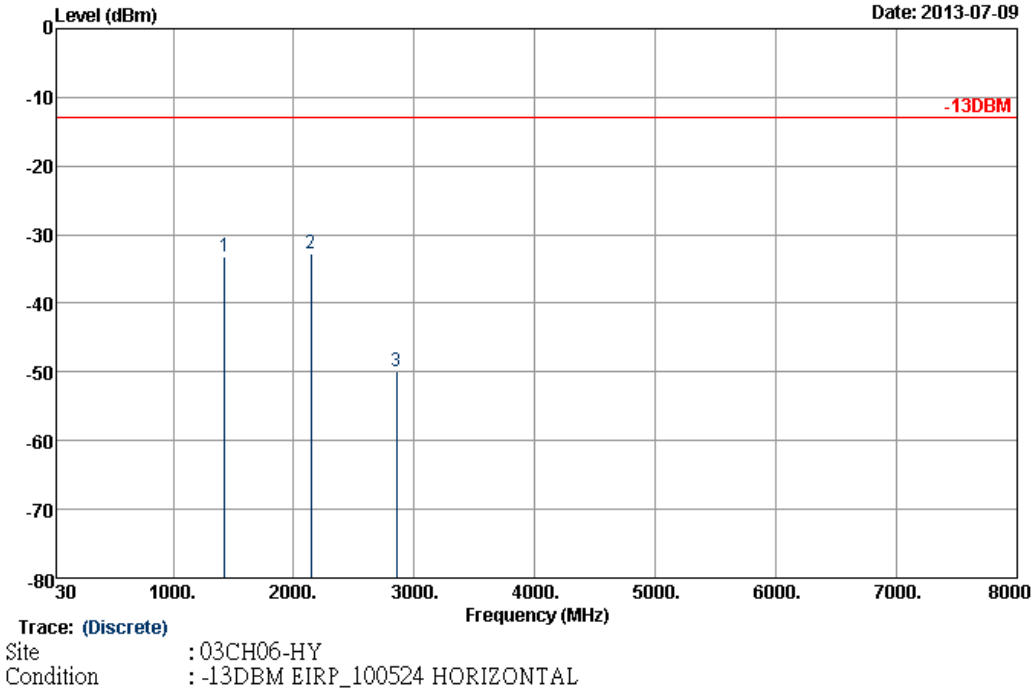
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5072	-40.40	-25	-15.40	-63.42	-48.75	2.02	10.38	H	Pass
7580	-39.67	-25	-14.67	-67.98	-49.31	2.57	12.21	H	Pass
10108	-37.93	-25	-12.93	-67.72	-48.46	2.60	13.14	H	Pass

Band :	LTE Band 7	Temperature :	23~24°C
Test Mode :	20MHZ QPSK RB Size 1 Offset 99	Relative Humidity :	52~54%
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



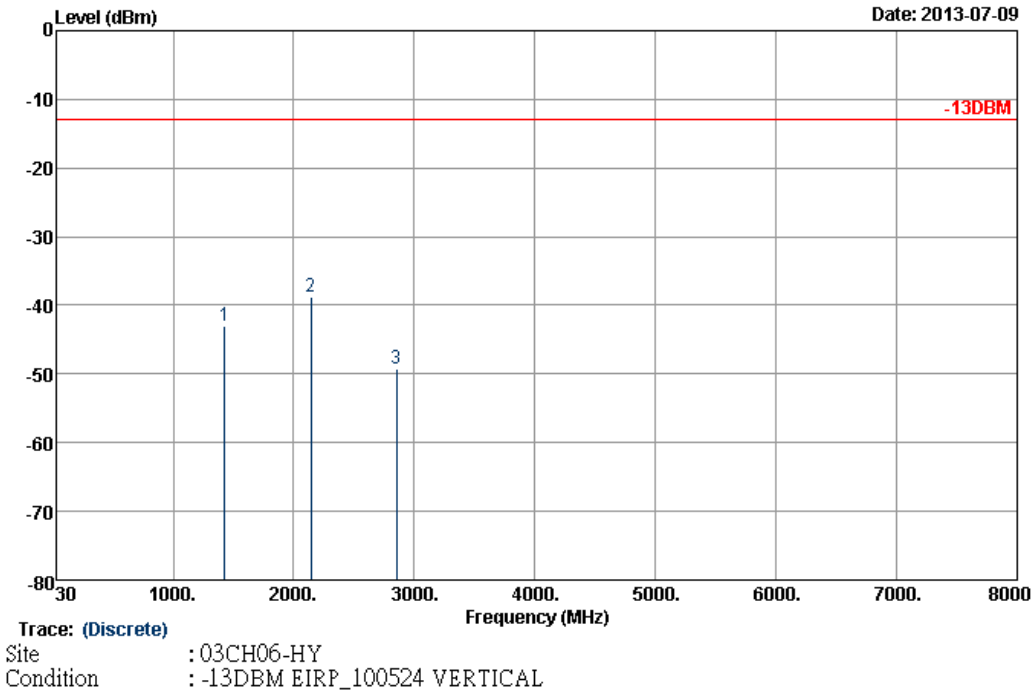
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5072	-41.93	-25	-16.93	-64.2	-50.28	2.02	10.38	V	Pass
7580	-40.87	-25	-15.87	-68.57	-50.51	2.57	12.21	V	Pass
10108	-37.16	-25	-12.16	-67.32	-47.69	2.60	13.14	V	Pass

Band :	LTE Band 17	Temperature :	23~24°C
Test Mode :	5MHZ QPSK RB Size 1 Offset 12	Relative Humidity :	52~54%
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



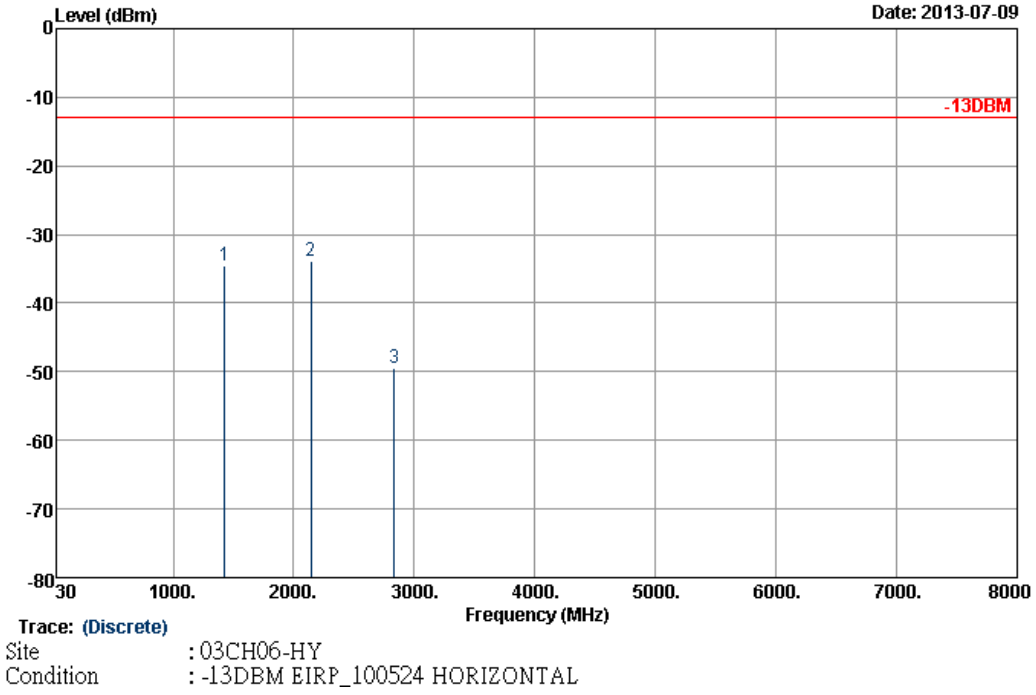
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1426	-33.18	-13	-20.18	-43.77	-34.74	1.67	5.38	H	Pass
2140	-32.71	-13	-19.71	-46.15	-34.26	2.12	5.82	H	Pass
2854	-49.91	-13	-36.91	-64.4	-53.15	2.21	7.60	H	Pass

Band :	LTE Band 17	Temperature :	23~24°C
Test Mode :	5MHZ QPSK RB Size 1 Offset 12	Relative Humidity :	52~54%
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



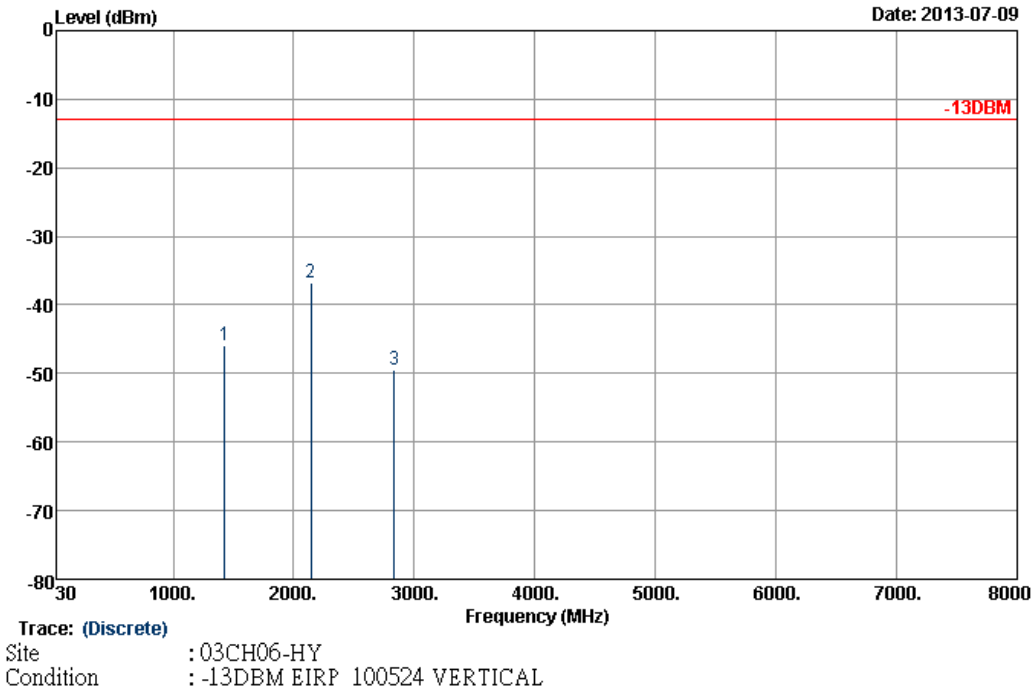
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1426	-43.09	-13	-30.09	-53.33	-44.65	1.67	5.38	V	Pass
2140	-38.82	-13	-25.82	-52.75	-40.37	2.12	5.82	V	Pass
2854	-49.34	-13	-36.34	-64.47	-52.58	2.21	7.60	V	Pass

Band :	LTE Band 17	Temperature :	23~24°C
Test Mode :	10MHZ QPSK RB Size 1 Offset 49	Relative Humidity :	52~54%
Test Engineer :	David Yang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1426	-34.62	-13	-21.62	-44.05	-36.16	1.67	5.36	H	Pass
2140	-33.88	-13	-20.88	-47.59	-35.42	2.12	5.81	H	Pass
2836	-49.50	-13	-36.50	-64.92	-52.74	2.21	7.59	H	Pass

Band :	LTE Band 17	Temperature :	23~24°C
Test Mode :	10MHZ QPSK RB Size 1 Offset 49	Relative Humidity :	52~54%
Test Engineer :	David Yang	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1426	-45.84	-13	-32.84	-55.81	-47.38	1.67	5.36	V	Pass
2140	-36.74	-13	-23.74	-50.35	-38.28	2.12	5.81	V	Pass
2836	-49.52	-13	-36.52	-65	-52.76	2.21	7.59	V	Pass

3.8 Frequency Stability Measurement

3.8.1 Description of Frequency Stability Measurement

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

3.8.2 Measuring Instruments

See list of measuring instruments of this test report.

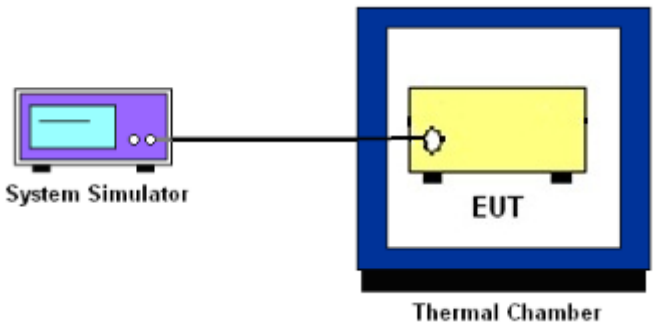
3.8.3 Test Procedures for Temperature Variation

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

3.8.4 Test Procedures for Voltage Variation

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

3.8.5 Test Setup



3.8.6 Test Result of Temperature Variation

Band :	LTE Band 4 (QPSK)	Limit (ppm) :	2.5

Temperature (°C)	BW 5MHz		BW 10MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	-16.5	-0.010	16.2	0.009	PASS
-20	14.9	0.009	-15.1	-0.009	
-10	14.3	0.008	12.1	0.007	
0	-12.8	-0.007	-13.7	-0.008	
10	17.6	0.010	16.6	0.010	
20	15.3	0.009	18.1	0.010	
30	-16.8	-0.010	-14.3	-0.008	
40	13.3	0.008	14.9	0.009	
50	15.4	0.009	-15.3	-0.009	

Band :	LTE Band 4 (QPSK)	Limit (ppm) :	2.5

Temperature (°C)	BW 15MHz		BW 20MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	-15.1	-0.009	15.3	0.009	PASS
-20	-15.5	-0.009	17.6	0.010	
-10	17.1	0.010	-14.8	-0.009	
0	-12.5	-0.007	13.7	0.008	
10	16.4	0.009	13.8	0.008	
20	13.7	0.008	12.1	0.007	
30	12.3	0.007	-15.6	-0.009	
40	14.7	0.008	12.4	0.007	
50	-16.4	-0.009	-13.7	-0.008	

Band :	LTE Band 4 (16QAM)	Limit (ppm) :	2.5

Temperature (°C)	BW 5MHz		BW 10MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	15.3	0.009	13.7	0.008	PASS
-20	-14.1	-0.008	14.8	0.009	
-10	16.8	0.010	14.2	0.008	
0	-12.7	-0.007	-13.9	-0.008	
10	-17.3	-0.010	14.5	0.008	
20	16.2	0.009	16.9	0.010	
30	15.6	0.009	-15.3	-0.009	
40	-12.2	-0.007	-17.1	-0.010	
50	13.6	0.008	-16.5	-0.010	

Band :	LTE Band 4 (16QAM)	Limit (ppm) :	2.5

Temperature (°C)	BW 15MHz		BW 20MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	17.3	0.010	16.5	0.010	PASS
-20	-16.8	-0.010	-14.2	-0.008	
-10	15.1	0.009	-13.7	-0.008	
0	14.3	0.008	-12.9	-0.007	
10	-12.4	-0.007	14.5	0.008	
20	-13.6	-0.008	16.7	0.010	
30	14.8	0.009	-13.3	-0.008	
40	-15.9	-0.009	-14.2	-0.008	
50	14.0	0.008	15.4	0.009	

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

Temperature (°C)	BW 5MHz		BW 10MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	-17.2	-0.007	15.3	0.006	PASS
-20	-16.5	-0.007	17.6	0.007	
-10	14.8	0.006	-13.8	-0.005	
0	16.1	0.006	16.2	0.006	
10	-18.3	-0.007	-14.7	-0.006	
20	-14.4	-0.006	-18.1	-0.007	
30	18.0	0.007	16.4	0.006	
40	-16.9	-0.007	-14.3	-0.006	
50	15.6	0.006	15.2	0.006	

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

Temperature (°C)	BW 15MHz		BW 20MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	16.7	0.007	17.7	0.007	PASS
-20	-17.8	-0.007	-14.0	-0.006	
-10	15.3	0.006	16.3	0.006	
0	-14.1	-0.006	17.2	0.007	
10	-17.4	-0.007	-14.4	-0.006	
20	16.3	0.006	15.8	0.006	
30	-12.9	-0.005	14.9	0.006	
40	18.8	0.007	16.1	0.006	
50	-16.5	-0.007	-18.6	-0.007	

Band :	LTE Band 7 (16QAM)	Limit (ppm) :	2.5

Temperature (°C)	BW 5MHz		BW 10MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	15.8	0.006	16.7	0.007	PASS
-20	-13.9	-0.005	-15.3	-0.006	
-10	-14.7	-0.006	15.4	0.006	
0	-16.2	-0.006	14.9	0.006	
10	18.4	0.007	-13.8	-0.005	
20	15.6	0.006	-12.9	-0.005	
30	16.7	0.007	18.6	0.007	
40	-15.8	-0.006	-15.5	-0.006	
50	17.6	0.007	-16.7	-0.007	

Band :	LTE Band 7 (16QAM)	Limit (ppm) :	2.5

Temperature (°C)	BW 15MHz		BW 20MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	18.4	0.007	-17.5	-0.007	PASS
-20	-13.5	-0.005	14.6	0.006	
-10	-14.2	-0.006	18.3	0.007	
0	16.8	0.007	-13.5	-0.005	
10	19.1	0.008	-16.7	-0.007	
20	-16.3	-0.006	17.2	0.007	
30	14.8	0.006	-15.6	-0.006	
40	-15.6	-0.006	-18.1	-0.007	
50	-14.8	-0.006	15.3	0.006	

Band :	LTE Band 17 (QPSK)	Limit (ppm) :	2.5

Temperature (°C)	BW 5MHz		BW 10MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	-14.3	-0.020	15.1	0.021	PASS
-20	12.5	0.018	-14.7	-0.021	
-10	-16.7	-0.024	15.6	0.022	
0	14.9	0.021	12.8	0.018	
10	15.2	0.021	-13.4	-0.019	
20	-12.4	-0.017	-14.9	-0.021	
30	16.8	0.024	15.0	0.021	
35	13.6	0.019	-14.7	-0.021	
40	-14.4	-0.020	-16.3	-0.023	
50	-15.6	-0.022	14.8	0.021	

Band :	LTE Band 17 (16QAM)	Limit (ppm) :	2.5

Temperature (°C)	BW 5MHz		BW 10MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	15.4	0.022	-12.8	-0.018	PASS
-20	-13.7	-0.019	13.9	0.020	
-10	16.6	0.023	-11.5	-0.016	
0	17.2	0.024	16.3	0.023	
10	-10.9	-0.015	16.7	0.024	
20	-13.8	-0.019	-12.5	-0.018	
30	14.2	0.020	17.4	0.025	
35	-15.7	-0.022	-16.6	-0.023	
40	16.1	0.023	-15.4	-0.022	
50	12.5	0.018	-14.8	-0.021	

3.8.7 Test Result of Voltage Variation

Band	Bandwidth	Voltage (Volt)	Freq. Dev. (Hz)	Deviation (ppm)	Limit (ppm)	Result
LTE Band 4 (QPSK)	5M	4.3	14.2	0.008	2.5	PASS
		Normal	-12.6	-0.007		
		3.7	-14.7	-0.008		
	10M	4.3	13.5	0.008		
		Normal	-17.2	-0.010		
		3.7	14.1	0.008		
	15M	4.3	-16.3	-0.009		
		Normal	12.4	0.007		
		3.7	13.7	0.008		
	20M	4.3	-12.5	-0.007		
		Normal	14.0	0.008		
		3.7	16.8	0.010		
LTE Band 7 (QPSK)	5M	4.3	17.7	0.007	2.5	PASS
		Normal	-16.3	-0.006		
		3.7	-15.2	-0.006		
	10M	4.3	14.3	0.006		
		Normal	-15.9	-0.006		
		3.7	16.8	0.007		
	15M	4.3	-12.7	-0.005		
		Normal	-17.9	-0.007		
		3.7	16.2	0.006		
	20M	4.3	14.2	0.006		
		Normal	-15.7	-0.006		
		3.7	16.8	0.007		
LTE Band 17 (QPSK)	5M	4.3	-14.7	-0.021	2.5	PASS
		Normal	15.5	0.022		
		3.7	16.1	0.023		
	10M	4.3	-12.6	-0.018		
		Normal	15.8	0.022		
		3.7	-13.4	-0.019		

Band	Bandwidth	Voltage (Volt)	Freq. Dev. (Hz)	Deviation (ppm)	Limit (ppm)	Result
LTE Band 4 (16QAM)	5M	4.3	-13.4	-0.008	2.5	PASS
		Normal	15.2	0.009		
		3.7	13.7	0.008		
	10M	4.3	-14.2	-0.008		
		Normal	-16.2	-0.009		
		3.7	14.7	0.008		
	15M	4.3	-12.5	-0.007		
		Normal	-14.9	-0.009		
		3.7	-13.4	-0.008		
	20M	4.3	16.2	0.009		
		Normal	14.7	0.008		
		3.7	-13.6	-0.008		
LTE Band 7 (16QAM)	5M	4.3	-15.6	-0.006	2.5	PASS
		Normal	17.3	0.007		
		3.7	-14.4	-0.006		
	10M	4.3	15.3	0.006		
		Normal	-16.2	-0.006		
		3.7	18.9	0.007		
	15M	4.3	14.7	0.006		
		Normal	-15.3	-0.006		
		3.7	16.5	0.007		
	20M	4.3	-15.1	-0.006		
		Normal	17.2	0.007		
		3.7	18.1	0.007		
LTE Band 17 (16QAM)	5M	4.3	12.4	0.017	2.5	PASS
		Normal	-15.3	-0.022		
		3.7	-14.7	-0.021		
	10M	4.3	16.2	0.023		
		Normal	-12.9	-0.018		
		3.7	13.6	0.019		

Remark:

1. Normal Voltage = 3.8V.
2. The manufacturer declared that the EUT could work properly between voltage 3.7V ~ 4.3V.

4 List of Measuring Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 07, 2013	Jul. 10, 2013 ~ Jul. 11, 2013	Jun. 06, 2014	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D3SP	TBN-930701	N/A	Jul. 23, 2012	Jul. 10, 2013 ~ Jul. 11, 2013	Jul. 22, 2013	Conducted (TH02-HY)
LTE Base Station	Anritsu	MT8820C	6201026480	30MHz~2.7GHz (FDD Band 1~26)	Jan, 04, 2013	Jul. 10, 2013 ~ Jul. 11, 2013	Jan, 03, 2014	Conducted (TH02-HY)
Spectrum Analyzer	R&S	FSP30	101352	9kHz~30GHz	Nov. 07, 2012	Jul. 09, 2013 ~ Jul. 10, 2013	Nov. 06, 2013	Radiation (03CH06-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211030	9kHz ~ 26.5GHz	Nov. 26, 2012	Jul. 09, 2013 ~ Jul. 10, 2013	Nov. 25, 2013	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/0003	20MHz ~ 1000MHz	May 06, 2013	Jul. 09, 2013 ~ Jul. 10, 2013	May 05, 2014	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz ~ 2GHz	Oct. 06, 2012	Jul. 09, 2013 ~ Jul. 10, 2013	Oct. 05, 2013	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Aug. 01, 2012	Jul. 09, 2013 ~ Jul. 10, 2013	Jul. 31, 2013	Radiation (03CH06-HY)
Amplifier	Agilent	310N	186713	9kHz ~ 1GHz	Apr. 12, 2013	Jul. 09, 2013 ~ Jul. 10, 2013	Apr. 11, 2014	Radiation (03CH06-HY)
Pre Amplifier	EMCI	EMC051845	SN980048	1GHz ~ 18GHz	Jul. 21, 2012	Jul. 09, 2013 ~ Jul. 10, 2013	Jul. 20, 2013	Radiation (03CH06-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Sep. 28, 2012	Jul. 09, 2013 ~ Jul. 10, 2013	Sep. 27, 2013	Radiation (03CH06-HY)
Preamplifier	Agilent	8449B	3008A01917	1GHz ~ 26.5GHz	Apr. 12, 2013	Jul. 09, 2013 ~ Jul. 10, 2013	Apr. 11, 2014	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0 - 360 degree	N/A	Jul. 09, 2013 ~ Jul. 10, 2013	N/A	Radiation (03CH06-HY)
Antenna Mast	MF	MF-7802	MF780208212	1 m ~ 4 m	N/A	Jul. 09, 2013 ~ Jul. 10, 2013	N/A	Radiation (03CH06-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.54**

Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.72**