FCC/IC RF Test Report

APPLICANT	:	Sony Mobile Communications Inc.
EQUIPMENT	:	Smart phone
BRAND NAME	:	SONY
TYPE NAME	:	PM-0383-BV
FCC ID	:	PY7PM-0383
IC	:	4170B-PM0383
STANDARD	:	47 CFR Part 2, 24(E), 27 IC RSS-130 issue 1 IC RSS-133 issue 6 IC RSS-139 issue 2 IC RSS-199 issue 1
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)

The product was received on May 02, 2014and testing was completed on Jun. 20, 2014. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA / EIA-603-C-2004 and the testing has shown the tested sample to be in 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.
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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG450254B	Rev. 01	Initial issue of report	Jul. 14, 2014
FG450254B	Rev. 02	Update EUT Information List for SW version change as 18.4.C.1.10	Aug. 01, 2014

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	§2.1046	RSS-Gen(4.8) RSS-130(4.4) RSS-133 (6.4) RSS-139 (6.4) RSS-199 (4.4)	Conducted Output Power	Reporting Only	PASS	-
3.2	§24.232(d)	RSS-133 (6.4)	Peak-to-Average Ratio	<13 dB	PASS	-
3.3	§24.232(c)	RSS-133 (6.4) SRSP-510(5.1.2)	Equivalent Isotropic Radiated Power (Band 2)	EIRP < 2Watt	PASS	-
3.4	§2.1049 §24.238(b)	RSS-GEN(4.6.1) RSS-133 (3.1)	Occupied Bandwidth	Reporting Only	PASS	-
3.5	§2.1051 §24.238(a)	RSS-GEN(4.9) RSS-133 (6.5.1)	Conducted Band Edge Measurement (Band 2)	< 43+10log10(P[Watt])	PASS	-
3.6	§2.1051 §24.238(a)	RSS-GEN(4.9) RSS-133 (6.5.1)	Conducted Spurious Emission (Band 2)	< $43+10\log_{10}$(P[Watts])	PASS	-
3.7	§2.1053 §24.238(a)	RSS-GEN(4.9) RSS-133 (6.5.1)	Radiated Spurious Emission (Band 2)	< $43+10\log_{10}$(P[Watts])	PASS	Under limit 14.63 dB at 7584.000 MHz
	§2.1053 §27.53(l)(4)	RSS-GEN(4.9) RSS-199 (4.5)	Radiated Spurious Emission (Band 7)	< $55+10\log_{10}$(P[Watts])	PASS	
3.8	§2.1055 §24.235	RSS-GEN(4.7) RSS-133(6.3)	Frequency Stability Temperature & Voltage	< 2.5 ppm	PASS	-

1 General Description

1.1 Applicant

Sony Mobile Communications Inc.
Nya Vattentornet, 22188 Lund, Sweden

1.2 Manufacturer

Arima Communication Corp.
6F, No. 866, Jhongjheng Rd., Jhonghe Dist., New Taipei City 23586, Taiwan

1.3 Feature of Equipment Under Test

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

Product Feature	
Equipment	Smart phone
Brand Name	SONY
Type Name	PM-0383-BV
FCC ID	PY7PM-0383
IC	4170B-PM0383
GSM Operating Band(s)	GSM 850/900/1800/1900MHz
GPRS / EGPRS Multi Slot Class	GPRS Class 33, EGPRS Class 33
WCDMA Operating Band(s)	FDD Band I / II / IV / V
WCDMA Rel. Version	Rel. 9
LTE Operating Band(s)	FDD Band II / IV / VII / XVII
LTE Rel. Version	Rel. 8
Wi-Fi Specification	802.11b/g/n (HT20)
Bluetooth Version	v3.0 + EDR / v4.0 - LE
NFC Specification	ISO14443A / ISO14443B / Felica / ISO15693
ANT+	ANT+
Power Supply	Battery / AC Adapter / Car Charger

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

1.4 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx Frequency	LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz LTE Band 17 : 706.5 MHz ~ 713.5 MHz
Rx Frequency	LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 7 : 2622.5MHz ~ 2687.5 MHz LTE Band 17 : 736.5 MHz ~ 743.5 MHz
Bandwidth	1.4MHz / 3MHz / 5MHz/ 10MHz / 15MHz / 20MHz (Band 2) 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz (Band4) 5MHz/ 10MHz / 15MHz / 20MHz (Band 7) 5MHz / 10MHz (Band17)
Maximum Output Power to Antenna	LTE Band 2 : 22.98 dBm LTE Band 4 : 22.83 dBm LTE Band 7 : 22.58 dBm LTE Band 17 : 23.28 dBm
Antenna Type / Gain	I-FA Antenna / 0.22 dBi
Type of Modulation	QPSK / 16QAM

EUT Information List				
IMEI	HW Version	SW Version	S/N	Performed Test Item
IMEI: 004402452625449	A	18.4.C.1.10	HL4421D19876	RF conducted measurement
IMEI: 004402452628385			HL4421D19404	Radiated Spurious Emission, EIRP test

Accessory List	
AC Adapter	Model No. : EP800
	Type No. : CAA-0002016-US B
	S/N : 3113W45408465
Battery	Model No. : LIS1551ERPC
Earphone	Model No. : MH410c
	Type No. : AG-1100
	S/N: 13511E5B0076390
USB Cable	Model No. : EC450
	Part No. : AI-0700
	S/N: 134912DC0004380

Note:

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

1.5 Modification of EUT

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

1.6 Maximum ERP/EIRP Power, Frequency Tolerance, and Emission Designator

FCC Rule	System	Type of Modulation	BW	Emission Designator	Frequency Tolerance (ppm)	Maximum ERP/EIRP
Part 24	LTE Band 2	QPSK	1.4 MHz	1M10G7D	-	0.22 W
Part 24	LTE Band 2	16QAM	1.4 MHz	1M10D7W	-	0.17 W
Part 24	LTE Band 2	QPSK	3 MHz	2M73G7D	-	0.22 W
Part 24	LTE Band 2	16QAM	3 MHz	2M73D7W	-	0.17 W
Part 24	LTE Band 2	QPSK	5 MHz	4M50G7D	-	0.21 W
Part 24	LTE Band 2	16QAM	5 MHz	4M50D7W	-	0.16 W
Part 24	LTE Band 2	QPSK	10 MHz	9M08G7D	0.0047 ppm	0.22 W
Part 24	LTE Band 2	16QAM	10 MHz	9M04D7W	-	0.16 W
Part 24	LTE Band 2	QPSK	15 MHz	13M4G7D	-	0.20 W
Part 24	LTE Band 2	16QAM	15 MHz	13M4D7W	-	0.15 W
Part 24	LTE Band 2	QPSK	20 MHz	18M4G7D	-	0.18 W
Part 24	LTE Band 2	16QAM	20 MHz	18M5D7W	-	0.14 W

1.7 Testing Site

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1022 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

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.**		**IC Registration No.**
	TH02-HY	03CH07-HY	4086B-1

1.8 Applied Standards

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

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

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.
3. Per the section 2.2.3 of Notice of 2012-DRS0126, " Receivers Excluded from Industry Canada Requirements", only radiocommunication receivers operating in stand-alone mode within the band 30-960 MHz and scanner receivers are subject to Industry Canada requirements.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

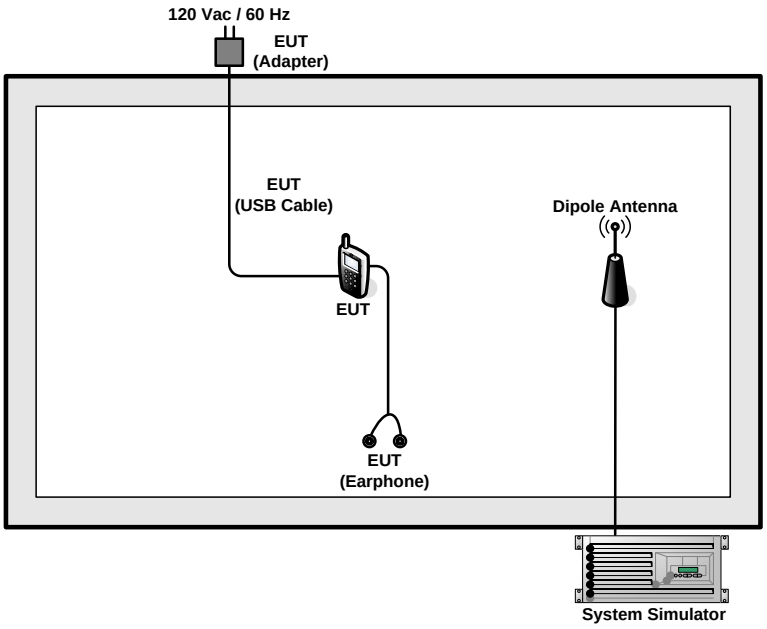
Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v02r01 with maximum output power.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

Test Items	Band	Bandwidth (MHz)						Modulation		RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
Max. Output Power	2	v	v	v	v	v	v	v	v			v	v	v	v
	4	v	v	v	v	v	v	v	v			v	v	v	v
	7	-	-	v	v	v	v	v	v	v	v			v	v
	17	-	-	v	v	-	-	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	2						v		v	v		v	v	v	v
26dB and 99% Bandwidth	2	v	v	v	v	v	v	v	v			v	v	v	v
Conducted Band Edge	2	v	v	v	v	v	v	v	v	v		v	v		v
Conducted Spurious Emission	2	v	v	v	v	v	v	v	v	v			v	v	v
Frequency Stability	2				v			v				v		v	
E.R.P./ E.I.R.P.	2		v	v	v	v	v	v	v	v			v	v	v
	2	v						v	v	v (16QAM)	v (QPSK)		v	v	v

Radiated Spurious Emission	**2**	**v**	**v**	**v**	**v**	**v**	**v**	**v**		**v**			**v**	**v**	**v**
	7	**-**	**-**			**v**		**v**		**v**			**v**	**v**	**v**
Note	1. The mark "v " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.														

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.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m

2.4 Measurement Results Explanation Example

For all conducted test items:

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

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

Offset = RF cable loss + attenuator factor.

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

Example :

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

= 4.2 + 10 = 14.2 (dB)

3 Test Result

3.1 Conducted Output Power Measurement

3.1.1 Description of the Conducted Output Power Measurement

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

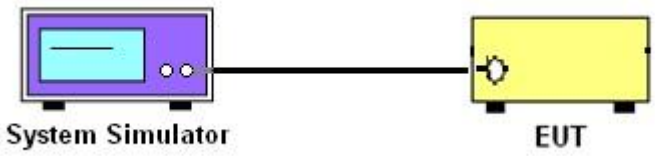
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup



3.1.5 Test Result of Conducted Output Power

<LTE Band 2 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				**18700**	**18900**	**19100**
Frequency (MHz)				**1860.0**	**1880.0**	**1900.0**
20	QPSK	1	0	22.86	**22.98**	22.63
20	QPSK	1	49	22.88	22.91	22.42
20	QPSK	1	99	22.74	22.76	22.24
20	QPSK	50	0	21.87	21.89	21.54
20	QPSK	50	24	21.85	21.79	21.41
20	QPSK	50	49	21.89	21.62	21.31
20	QPSK	100	0	21.84	21.82	21.43
20	16QAM	1	0	21.86	21.96	21.53
20	16QAM	1	49	21.87	21.88	21.35
20	16QAM	1	99	21.71	21.77	21.15
20	16QAM	50	0	20.87	20.87	20.53
20	16QAM	50	24	20.82	20.85	20.43
20	16QAM	50	49	20.84	20.69	20.28
20	16QAM	100	0	20.89	20.87	20.44
Channel				**18675**	**18900**	**19125**
Frequency (MHz)				**1857.5**	**1880**	**1902.5**
15	QPSK	1	0	22.87	22.88	22.60
15	QPSK	1	37	22.85	**22.89**	22.40
15	QPSK	1	74	22.88	22.82	22.20
15	QPSK	36	0	21.95	21.72	21.41
15	QPSK	36	18	21.88	21.81	21.42
15	QPSK	36	37	21.94	21.84	21.34
15	QPSK	75	0	21.93	21.91	21.38
15	16QAM	1	0	21.83	21.79	21.53
15	16QAM	1	37	21.79	21.74	21.36
15	16QAM	1	74	21.85	21.60	21.14
15	16QAM	36	0	20.87	20.76	20.52
15	16QAM	36	18	20.85	20.85	20.46
15	16QAM	36	37	20.99	20.90	20.37
15	16QAM	75	0	20.94	20.86	20.44

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				18650	18900	19150
Frequency (MHz)				1855	1880	1905
10	QPSK	1	0	22.83	22.90	22.52
10	QPSK	1	24	22.79	22.84	22.44
10	QPSK	1	49	22.94	22.75	22.29
10	QPSK	25	0	21.90	21.90	21.46
10	QPSK	25	12	21.93	21.88	21.36
10	QPSK	25	24	21.90	21.81	21.34
10	QPSK	50	0	21.90	21.94	21.40
10	16QAM	1	0	21.88	21.93	21.41
10	16QAM	1	24	21.80	21.81	21.40
10	16QAM	1	49	21.91	21.69	21.24
10	16QAM	25	0	20.92	20.95	20.58
10	16QAM	25	12	20.90	20.93	20.43
10	16QAM	25	24	20.89	20.93	20.37
10	16QAM	50	0	20.92	20.92	20.39
Channel				18625	18900	19175
Frequency (MHz)				1852.5	1880	1907.5
5	QPSK	1	0	22.83	22.88	22.44
5	QPSK	1	12	22.81	22.82	22.33
5	QPSK	1	24	22.82	22.82	22.29
5	QPSK	12	0	21.86	21.91	21.34
5	QPSK	12	6	21.90	21.90	21.34
5	QPSK	12	11	21.86	21.91	21.32
5	QPSK	25	0	21.88	21.88	21.33
5	16QAM	1	0	21.80	21.89	21.35
5	16QAM	1	12	21.78	21.80	21.26
5	16QAM	1	24	21.78	21.71	21.24
5	16QAM	12	0	20.92	20.93	20.42
5	16QAM	12	6	20.89	20.95	20.39
5	16QAM	12	11	20.89	20.96	20.39
5	16QAM	25	0	20.91	20.93	20.39

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				18615	18900	19185
Frequency (MHz)				1851.5	1880	1908.5
3	QPSK	1	0	22.82	22.86	22.34
3	QPSK	1	7	22.80	22.84	22.33
3	QPSK	1	14	22.81	22.81	22.30
3	QPSK	8	0	21.88	21.88	21.36
3	QPSK	8	4	21.85	21.86	21.34
3	QPSK	8	7	21.91	21.94	21.28
3	QPSK	15	0	21.86	21.90	21.31
3	16QAM	1	0	21.75	21.79	21.27
3	16QAM	1	7	21.79	21.79	21.22
3	16QAM	1	14	21.77	21.72	21.22
3	16QAM	8	0	20.95	20.94	20.39
3	16QAM	8	4	20.93	20.94	20.41
3	16QAM	8	7	20.92	20.95	20.35
3	16QAM	15	0	20.88	20.93	20.36
Channel				18607	18900	19193
Frequency (MHz)				1850.7	1880	1909.3
1.4	QPSK	1	0	22.87	22.89	22.41
1.4	QPSK	1	2	22.83	22.89	22.33
1.4	QPSK	1	5	22.87	22.93	22.36
1.4	QPSK	3	0	22.88	22.90	22.39
1.4	QPSK	3	1	22.84	22.89	22.35
1.4	QPSK	3	2	22.85	22.89	22.35
1.4	QPSK	6	0	21.90	21.93	21.36
1.4	16QAM	1	0	21.85	21.83	21.25
1.4	16QAM	1	2	21.81	21.80	21.29
1.4	16QAM	1	5	21.78	21.82	21.26
1.4	16QAM	3	0	21.88	21.84	21.25
1.4	16QAM	3	1	21.85	21.84	21.24
1.4	16QAM	3	2	21.85	21.85	21.27
1.4	16QAM	6	0	20.84	20.82	20.29

<LTE Band 4 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				20050	20175	20300
Frequency (MHz)				1720	1732.5	1745
20	QPSK	1	0	22.83	22.67	22.68
20	QPSK	1	49	22.72	22.60	22.63
20	QPSK	1	99	22.47	22.53	22.54
20	QPSK	50	0	21.83	21.71	21.71
20	QPSK	50	24	21.76	21.66	21.71
20	QPSK	50	49	21.66	21.58	21.57
20	QPSK	100	0	21.69	21.61	21.69
20	16QAM	1	0	21.77	21.62	21.63
20	16QAM	1	49	21.67	21.54	21.56
20	16QAM	1	99	21.43	21.49	21.46
20	16QAM	50	0	20.75	20.70	20.70
20	16QAM	50	24	20.75	20.65	20.69
20	16QAM	50	49	20.64	20.63	20.59
20	16QAM	100	0	20.68	20.65	20.69
Channel				20025	20175	20325
Frequency (MHz)				1717.5	1732.5	1747.5
15	QPSK	1	0	22.79	22.67	22.64
15	QPSK	1	37	22.70	22.59	22.52
15	QPSK	1	74	22.58	22.57	22.53
15	QPSK	36	0	21.75	21.65	21.66
15	QPSK	36	18	21.75	21.64	21.66
15	QPSK	36	37	21.75	21.64	21.55
15	QPSK	75	0	21.74	21.65	21.60
15	16QAM	1	0	21.74	21.60	21.61
15	16QAM	1	37	21.63	21.58	21.43
15	16QAM	1	74	21.53	21.51	21.44
15	16QAM	36	0	20.70	20.68	20.63
15	16QAM	36	18	20.72	20.59	20.64
15	16QAM	36	37	20.73	20.56	20.50
15	16QAM	75	0	20.77	20.64	20.57

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				20000	20175	20350
Frequency (MHz)				1715	1732.5	1750
10	QPSK	1	0	22.75	22.56	22.63
10	QPSK	1	24	22.70	22.58	22.53
10	QPSK	1	49	22.69	22.56	22.54
10	QPSK	25	0	21.74	21.65	21.69
10	QPSK	25	12	21.71	21.59	21.53
10	QPSK	25	24	21.70	21.57	21.43
10	QPSK	50	0	21.74	21.62	21.60
10	16QAM	1	0	21.74	21.49	21.59
10	16QAM	1	24	21.64	21.56	21.45
10	16QAM	1	49	21.64	21.53	21.46
10	16QAM	25	0	20.77	20.67	20.69
10	16QAM	25	12	20.75	20.68	20.58
10	16QAM	25	24	20.74	20.68	20.47
10	16QAM	50	0	20.74	20.65	20.57
Channel				19975	20175	20375
Frequency (MHz)				1712.5	1732.5	1752.5
5	QPSK	1	0	22.77	22.60	22.53
5	QPSK	1	12	22.61	22.61	22.41
5	QPSK	1	24	22.68	22.58	22.58
5	QPSK	12	0	21.78	21.62	21.44
5	QPSK	12	6	21.69	21.58	21.46
5	QPSK	12	11	21.68	21.63	21.45
5	QPSK	25	0	21.74	21.64	21.44
5	16QAM	1	0	21.71	21.57	21.45
5	16QAM	1	12	21.60	21.55	21.37
5	16QAM	1	24	21.63	21.51	21.45
5	16QAM	12	0	20.83	20.70	20.53
5	16QAM	12	6	20.74	20.68	20.49
5	16QAM	12	11	20.74	20.68	20.51
5	16QAM	25	0	20.74	20.67	20.48

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				19965	20175	20385
Frequency (MHz)				1711.5	1732.5	1753.5
3	QPSK	1	0	22.75	22.61	22.47
3	QPSK	1	7	22.61	22.61	22.50
3	QPSK	1	14	22.68	22.61	22.59
3	QPSK	8	0	21.80	21.61	21.44
3	QPSK	8	4	21.71	21.60	21.57
3	QPSK	8	7	21.71	21.65	21.58
3	QPSK	15	0	21.72	21.63	21.57
3	16QAM	1	0	21.71	21.57	21.38
3	16QAM	1	7	21.60	21.56	21.45
3	16QAM	1	14	21.63	21.58	21.49
3	16QAM	8	0	20.81	20.67	20.54
3	16QAM	8	4	20.76	20.67	20.61
3	16QAM	8	7	20.71	20.66	20.64
3	16QAM	15	0	20.70	20.65	20.60
Channel				19957	20175	20393
Frequency (MHz)				1710.7	1732.5	1754.3
1.4	QPSK	1	0	22.81	22.69	22.65
1.4	QPSK	1	2	22.81	22.67	22.65
1.4	QPSK	1	5	22.80	22.71	22.66
1.4	QPSK	3	0	22.82	22.70	22.71
1.4	QPSK	3	1	22.82	22.70	22.65
1.4	QPSK	3	2	22.81	22.70	22.64
1.4	QPSK	6	0	21.77	21.73	21.70
1.4	16QAM	1	0	21.79	21.64	21.60
1.4	16QAM	1	2	21.78	21.63	21.57
1.4	16QAM	1	5	21.76	21.60	21.58
1.4	16QAM	3	0	21.80	21.63	21.57
1.4	16QAM	3	1	21.79	21.62	21.58
1.4	16QAM	3	2	21.81	21.63	21.55
1.4	16QAM	6	0	20.72	20.59	20.56

<LTE Band 7 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				**20850**	**21100**	**21350**
Frequency (MHz)				**2510**	**2535**	**2560**
20	QPSK	1	0	**22.58**	22.42	22.37
20	QPSK	1	49	22.50	22.46	22.37
20	QPSK	1	99	22.46	22.40	22.41
20	QPSK	50	0	21.54	21.49	21.42
20	QPSK	50	24	21.50	21.46	21.35
20	QPSK	50	49	21.56	21.48	21.45
20	QPSK	100	0	21.54	21.48	21.45
20	16QAM	1	0	21.48	21.37	21.24
20	16QAM	1	49	21.45	21.35	21.38
20	16QAM	1	99	21.42	21.37	21.34
20	16QAM	50	0	20.45	20.60	20.45
20	16QAM	50	24	20.53	20.56	20.46
20	16QAM	50	49	20.55	20.60	20.49
20	16QAM	100	0	20.54	20.46	20.46
Channel				**20825**	**21100**	**21375**
Frequency (MHz)				**2507.5**	**2535**	**2562.5**
15	QPSK	1	0	**22.55**	22.47	22.35
15	QPSK	1	37	22.48	22.37	22.27
15	QPSK	1	74	22.47	22.39	22.39
15	QPSK	36	0	21.57	21.46	21.47
15	QPSK	36	18	21.56	21.45	21.37
15	QPSK	36	37	21.49	21.48	21.52
15	QPSK	75	0	21.50	21.49	21.39
15	16QAM	1	0	21.55	21.36	21.26
15	16QAM	1	37	21.42	21.36	21.28
15	16QAM	1	74	21.44	21.37	21.33
15	16QAM	36	0	20.58	20.52	20.43
15	16QAM	36	18	20.54	20.49	20.37
15	16QAM	36	37	20.55	20.51	20.43
15	16QAM	75	0	20.57	20.53	20.36

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				20800	21100	21400
Frequency (MHz)				2505	2535	2565
10	QPSK	1	0	22.52	22.49	22.41
10	QPSK	1	24	22.40	22.44	22.45
10	QPSK	1	49	22.50	22.41	22.46
10	QPSK	25	0	21.44	21.47	21.37
10	QPSK	25	12	21.39	21.40	21.48
10	QPSK	25	24	21.46	21.49	21.43
10	QPSK	50	0	21.51	21.41	21.37
10	16QAM	1	0	21.49	21.42	21.29
10	16QAM	1	24	21.43	21.38	21.44
10	16QAM	1	49	21.40	21.44	21.39
10	16QAM	25	0	20.50	20.55	20.45
10	16QAM	25	12	20.56	20.55	20.52
10	16QAM	25	24	20.46	20.53	20.49
10	16QAM	50	0	20.56	20.48	20.44
Channel				20775	21100	21425
Frequency (MHz)				2502.5	2535	2567.5
5	QPSK	1	0	22.50	22.41	22.45
5	QPSK	1	12	22.34	22.43	22.34
5	QPSK	1	24	22.40	22.36	22.40
5	QPSK	12	0	21.50	21.40	21.40
5	QPSK	12	6	21.52	21.47	21.35
5	QPSK	12	11	21.48	21.45	21.46
5	QPSK	25	0	21.46	21.48	21.49
5	16QAM	1	0	21.48	21.51	21.44
5	16QAM	1	12	21.24	21.35	21.28
5	16QAM	1	24	21.31	21.29	21.27
5	16QAM	12	0	20.55	20.55	20.46
5	16QAM	12	6	20.54	20.56	20.44
5	16QAM	12	11	20.56	20.56	20.40
5	16QAM	25	0	20.52	20.51	20.46

<LTE Band 17 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				**23780**	**23790**	**23800**
Frequency (MHz)				**709**	**710**	**711**
10	QPSK	1	0	**23.28**	23.12	23.17
10	QPSK	1	24	23.23	23.13	23.20
10	QPSK	1	49	23.22	23.25	23.26
10	QPSK	25	0	22.27	22.25	22.25
10	QPSK	25	12	22.29	22.21	22.22
10	QPSK	25	24	22.21	22.22	22.24
10	QPSK	50	0	22.21	22.16	22.20
10	16QAM	1	0	22.24	22.09	22.13
10	16QAM	1	24	22.18	22.11	22.15
10	16QAM	1	49	22.17	22.19	22.20
10	16QAM	25	0	21.26	21.21	21.22
10	16QAM	25	12	21.22	21.23	21.20
10	16QAM	25	24	21.21	21.19	21.27
10	16QAM	50	0	21.22	21.22	21.22
Channel				**23755**	**23790**	**23825**
Frequency (MHz)				**706.5**	**710**	**713.5**
5	QPSK	1	0	**23.25**	23.23	23.18
5	QPSK	1	12	23.23	23.08	23.13
5	QPSK	1	24	23.19	23.23	23.23
5	QPSK	12	0	22.27	22.27	22.24
5	QPSK	12	6	22.17	22.23	22.18
5	QPSK	12	11	22.29	22.21	22.29
5	QPSK	25	0	22.12	22.18	22.20
5	16QAM	1	0	22.22	22.12	22.11
5	16QAM	1	12	22.20	22.09	22.09
5	16QAM	1	24	22.20	22.15	22.14
5	16QAM	12	0	21.27	21.23	21.22
5	16QAM	12	6	21.28	21.26	21.18
5	16QAM	12	11	21.26	21.21	21.28
5	16QAM	25	0	21.26	21.28	21.26

Note: maximum average power for LTE.

3.2 Peak-to-Average Ratio

3.2.1 Description of the PAR Measurement

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

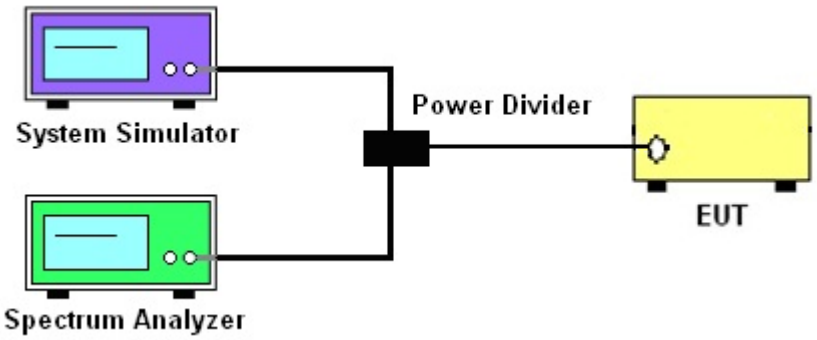
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

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

3.2.4 Test Setup



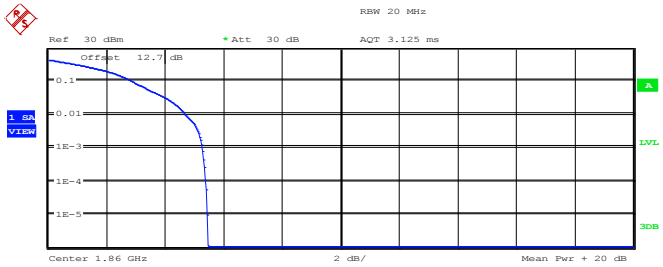
3.2.5 Test Result of Peak-to-Average Ratio

LTE Band 2						
BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				18700	18900	19100
Frequency (MHz)				1860	1880	1900
20	16QAM	1	0	5.26	5.58	6.12
20	16QAM	100	0	5.87	6.09	6.09

3.2.6 Peak to Average Power Ratio

Peak-to-Average Ratio on LTE Band 2

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



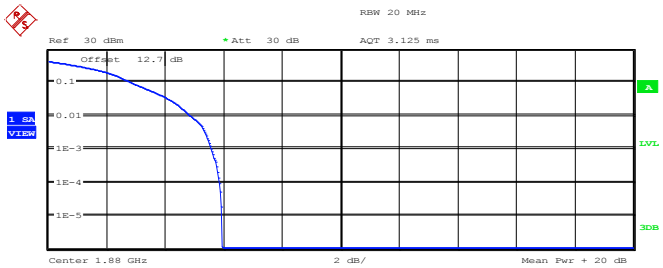
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	22.89 dBm
Peak	28.34 dBm
Crest	5.45 dB
10 %	2.85 dB
1 %	4.68 dB
.1 %	5.26 dB
.01 %	5.38 dB

Date: 18.MAY.2014 10:14:34

Peak-to-Average Ratio on LTE Band 2

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



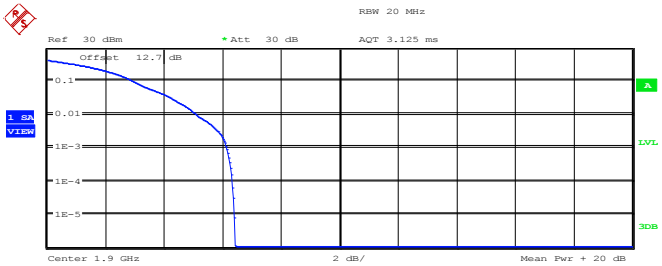
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	22.85 dBm
Peak	28.78 dBm
Crest	5.94 dB
10 %	2.85 dB
1 %	4.84 dB
.1 %	5.58 dB
.01 %	5.87 dB

Date: 18.MAY.2014 10:15:02

Peak-to-Average Ratio on LTE Band 2

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



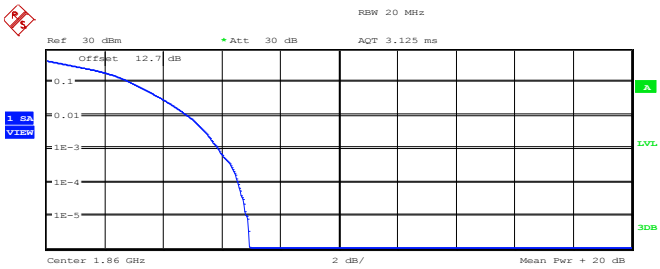
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	22.21 dBm
Peak	28.62 dBm
Crest	6.41 dB
10 %	2.95 dB
1 %	5.10 dB
.1 %	6.12 dB
.01 %	6.35 dB

Date: 18.MAY.2014 10:15:34

Peak-to-Average Ratio on LTE Band 2

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



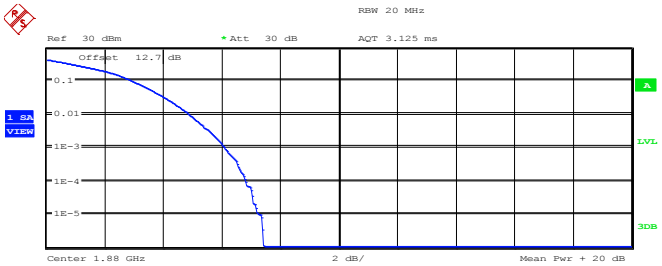
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	22.18 dBm
Peak	29.11 dBm
Crest	6.94 dB
10 %	2.88 dB
1 %	4.81 dB
.1 %	5.87 dB
.01 %	6.54 dB

Date: 18.MAY.2014 10:14:47

Peak-to-Average Ratio on LTE Band 2

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



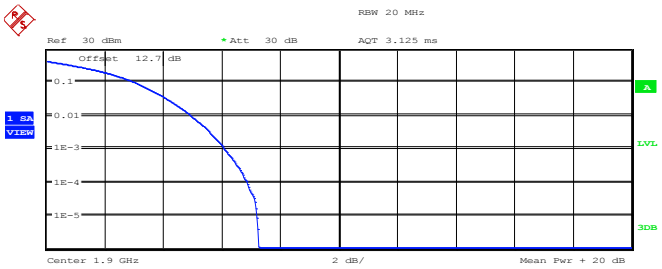
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	22.14 dBm
Peak	29.56 dBm
Crest	7.42 dB
10 %	2.95 dB
1 %	4.87 dB
.1 %	6.09 dB
.01 %	6.79 dB

Date: 18.MAY.2014 10:15:17

Peak-to-Average Ratio on LTE Band 2

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



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

	Trace 1
Mean	21.86 dBm
Peak	29.12 dBm
Crest	7.26 dB
10 %	3.01 dB
1 %	4.94 dB
.1 %	6.09 dB
.01 %	6.86 dB

Date: 18.MAY.2014 10:15:48

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

3.3 Effective Radiated Power and Equivalent Isotropic Radiated Power Measurement

3.3.1 Description of the ERP/EIRP Measurement

Equivalent isotropic radiated power output measurements by substitution method according to ANSI / TIA / EIA-603-C-2004, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v02r01. Mobile and portable (hand-held) stations operating are limited to average EIRP of 2 watts with LTE band 2.

3.3.2 Measuring Instruments

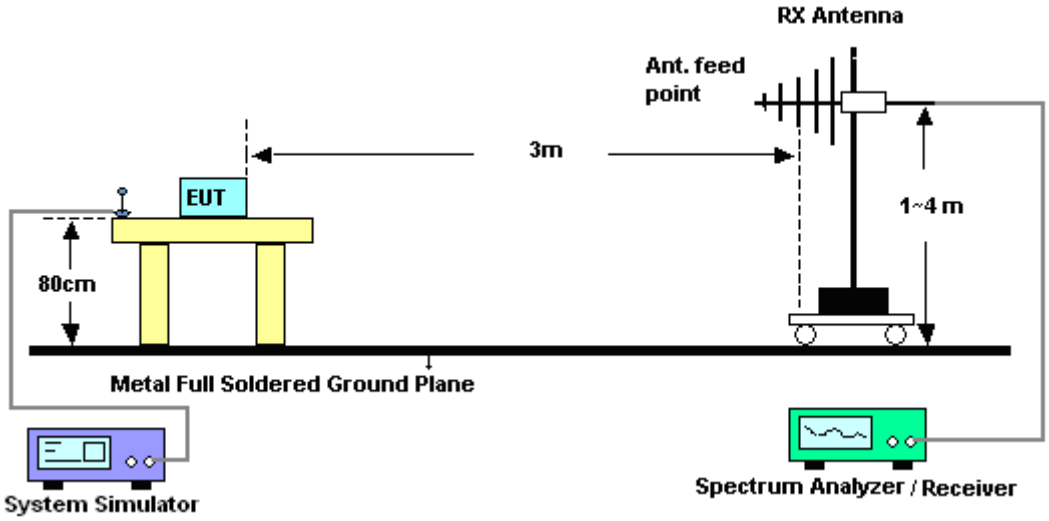
The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

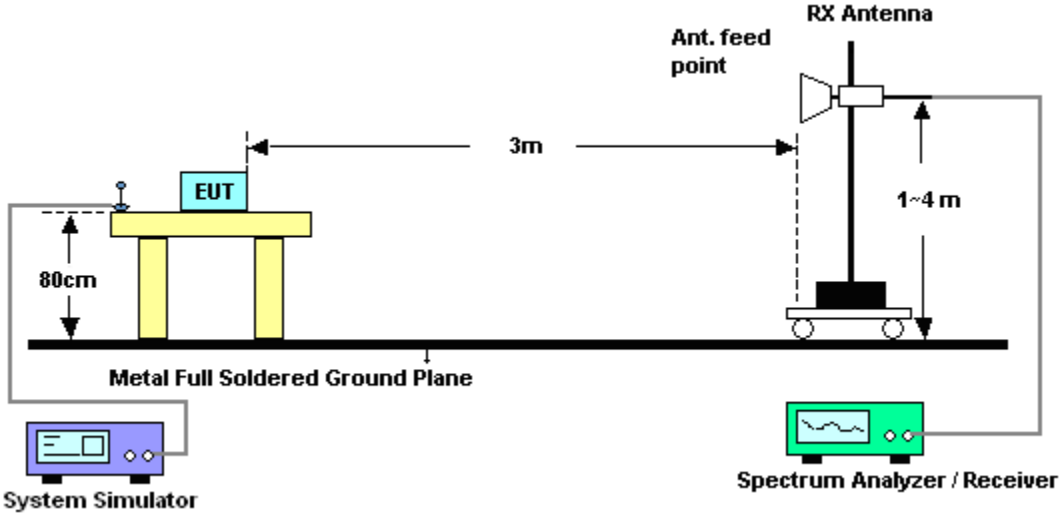
1. The EUT was placed on a non-conductive rotating platform with 0.8 meter height in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer which used a channel power option across EUT's signal bandwidth per section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

3.3.4 Test Setup

For Effective Radiated Power



For Equivalent Isotropic Radiated Power



3.3.5 Test Result of ERP/EIRP

LTE Band 2 Radiated Power EIRP for BW 1.4MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.7	-23.15	45.68	22.53	0.18
1880.0	-23.34	46.01	22.67	0.18
1909.3	-22.40	45.76	23.36	0.22
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.7	-28.26	49.18	20.92	0.12
1880.0	-29.40	50.42	21.02	0.13
1909.3	-27.44	48.94	21.50	0.14

LTE Band 2 Radiated Power EIRP for BW 1.4MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.7	-24.22	45.68	21.46	0.14
1880.0	-24.48	46.01	21.53	0.14
1909.3	-23.35	45.76	22.41	0.17
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.7	-29.47	49.18	19.71	0.09
1880.0	-30.59	50.42	19.83	0.10
1909.3	-28.41	48.94	20.53	0.11

LTE Band 2 Radiated Power EIRP for BW 3MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1851.5	-23.39	45.76	22.37	0.17
1880.0	-23.47	46.01	22.54	0.18
1908.5	-22.55	45.95	23.40	0.22
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1851.5	-28.37	49.03	20.66	0.12
1880.0	-29.64	50.42	20.78	0.12
1908.5	-27.34	48.86	21.52	0.14

LTE Band 2 Radiated Power EIRP for BW 3MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1851.5	-23.39	45.76	22.37	0.17
1880.0	-24.33	46.01	21.68	0.15
1908.5	-23.64	45.95	22.31	0.17
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1851.5	-28.32	49.03	20.71	0.12
1880.0	-30.61	50.42	19.81	0.10
1908.5	-28.38	48.86	20.48	0.11

LTE Band 2 Radiated Power EIRP for BW 5MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1852.5	-23.76	46.11	22.35	0.17
1880.0	-23.50	46.04	22.54	0.18
1907.5	-22.98	46.14	23.16	0.21
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1852.5	-28.55	49.17	20.62	0.12
1880.0	-29.67	50.42	20.75	0.12
1907.5	-27.42	48.78	21.36	0.14

LTE Band 2 Radiated Power EIRP for BW 5MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1852.5	-24.74	46.11	21.37	0.14
1880.0	-24.55	46.04	21.49	0.14
1907.5	-24.09	46.14	22.05	0.16
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1852.5	-29.66	49.17	19.51	0.09
1880.0	-30.74	50.42	19.68	0.09
1907.5	-28.60	48.78	20.18	0.10

LTE Band 2 Radiated Power EIRP for BW 10MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1855.0	-23.59	46.10	22.51	0.18
1880.0	-23.31	46.01	22.70	0.19
1905.0	-22.93	46.39	23.46	0.22
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1855.0	-28.87	49.73	20.86	0.12
1880.0	-29.36	50.42	21.06	0.13
1905.0	-26.55	48.30	21.75	0.15

LTE Band 2 Radiated Power EIRP for BW 10MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1855.0	-24.61	46.10	21.49	0.14
1880.0	-24.49	46.01	21.52	0.14
1905.0	-24.41	46.39	21.98	0.16
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1855.0	-29.98	49.73	19.75	0.09
1880.0	-30.53	50.42	19.89	0.10
1905.0	-27.99	48.30	20.31	0.11

LTE Band 2 Radiated Power EIRP for BW 15MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1857.5	-23.61	46.24	22.63	0.18
1880.0	-23.29	46.01	22.72	0.19
1902.5	-23.24	46.18	22.94	0.20
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1857.5	-28.82	49.68	20.86	0.12
1880.0	-29.51	50.42	20.91	0.12
1902.5	-26.97	48.20	21.23	0.13

LTE Band 2 Radiated Power EIRP for BW 15MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1857.5	-25.00	46.24	21.24	0.13
1880.0	-24.56	46.01	21.45	0.14
1902.5	-24.45	46.18	21.73	0.15
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1857.5	-30.24	49.68	19.44	0.09
1880.0	-30.62	50.42	19.80	0.10
1902.5	-28.33	48.20	19.87	0.10

LTE Band 2 Radiated Power EIRP for BW 20MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1860.0	-24.47	46.88	22.41	0.17
1880.0	-23.51	46.01	22.50	0.18
1900.0	-23.92	46.57	22.65	0.18
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1860.0	-28.92	49.69	20.77	0.12
1880.0	-29.70	50.42	20.72	0.12
1900.0	-27.87	48.87	21.00	0.13

LTE Band 2 Radiated Power EIRP for BW 20MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1860.0	-25.53	46.88	21.35	0.14
1880.0	-24.55	46.01	21.46	0.14
1900.0	-24.99	46.57	21.58	0.14
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1860.0	-30.05	49.69	19.64	0.09
1880.0	-30.72	50.42	19.70	0.09
1900.0	-28.89	48.87	19.98	0.10

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 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

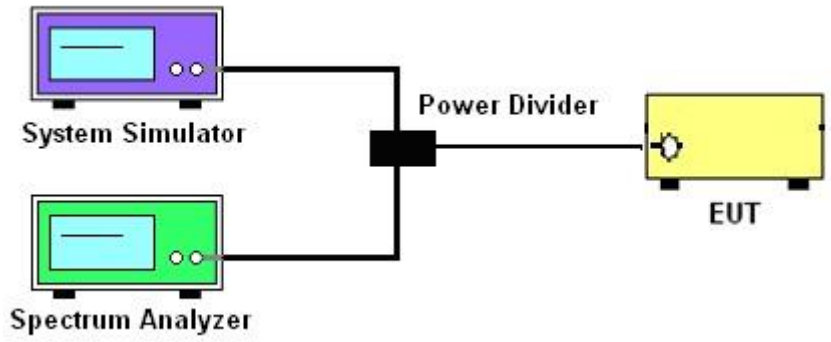
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

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

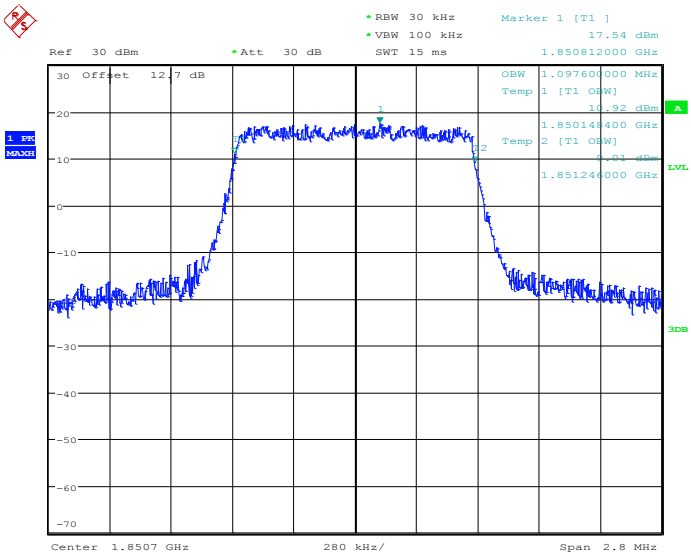
3.4.4 Test Setup



3.4.5 Test Result (Plots) of Occupied Bandwidth

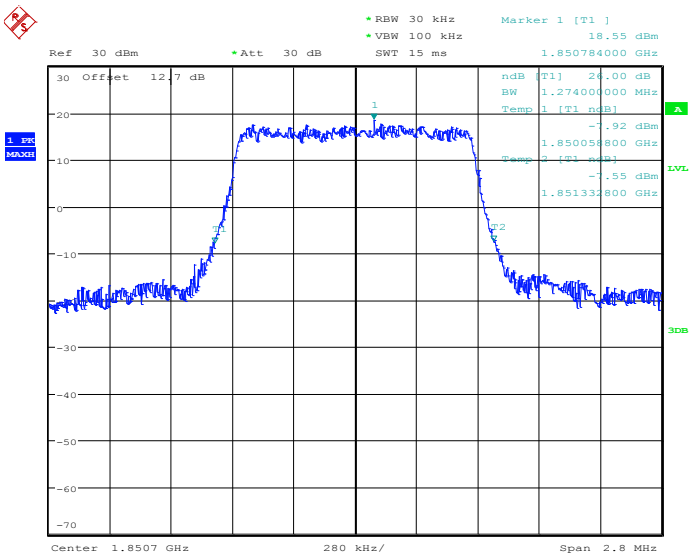
Band :	LTE Band 2	BW / Mod. :	1.4MHz / QPSK

99% Occupied Bandwidth Plot on Channel 18607



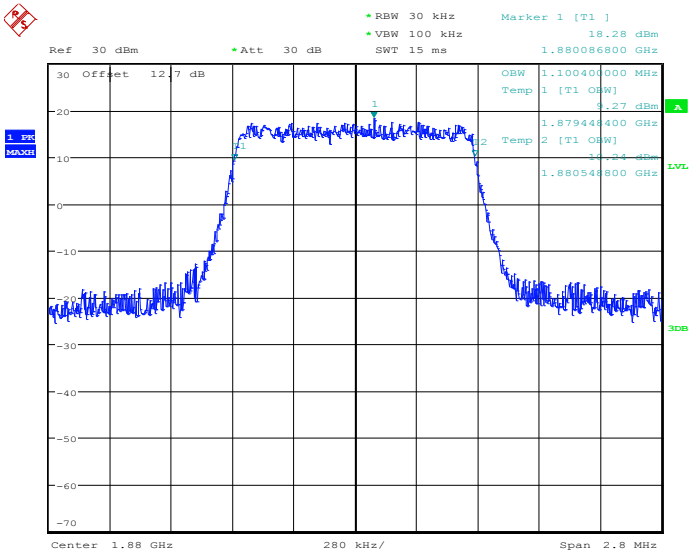
Date: 18.MAY.2014 10:17:03

26dB Bandwidth Plot on Channel 18607



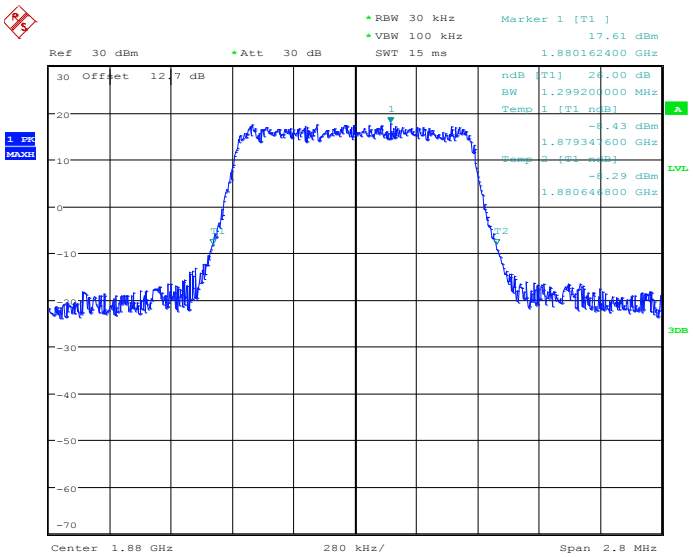
Date: 18.MAY.2014 08:40:24

99% Occupied Bandwidth Plot on Channel 18900



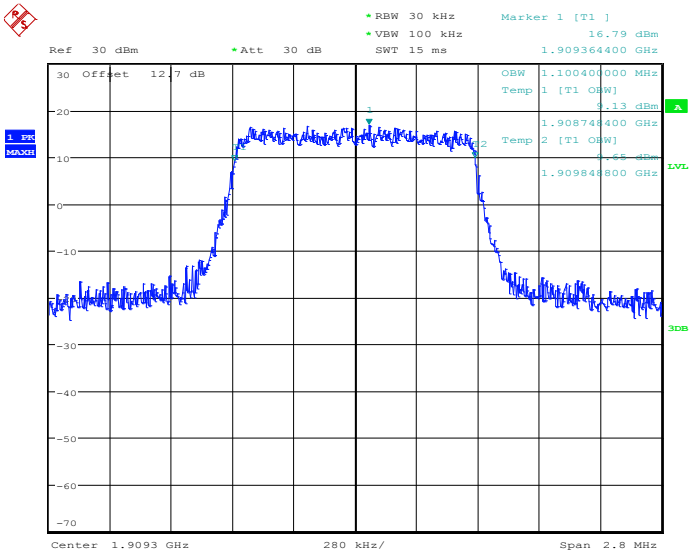
Date: 18.MAY.2014 08:46:03

26dB Bandwidth Plot on Channel 18900



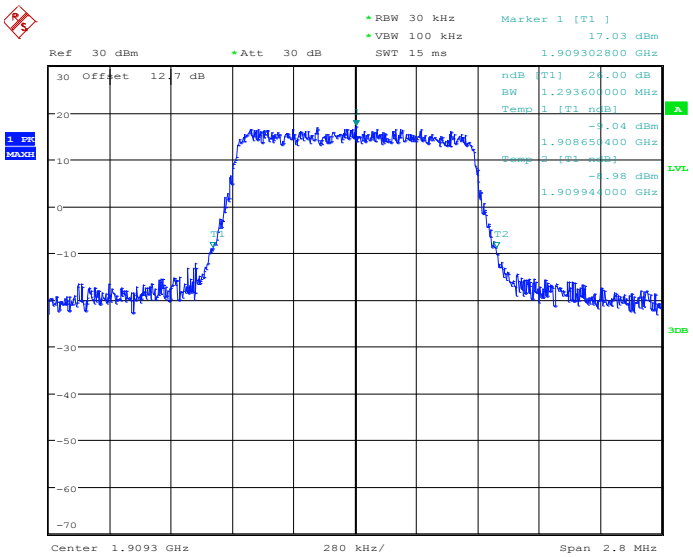
Date: 18.MAY.2014 08:46:35

99% Occupied Bandwidth Plot on Channel 19193



Date: 18.MAY.2014 08:49:07

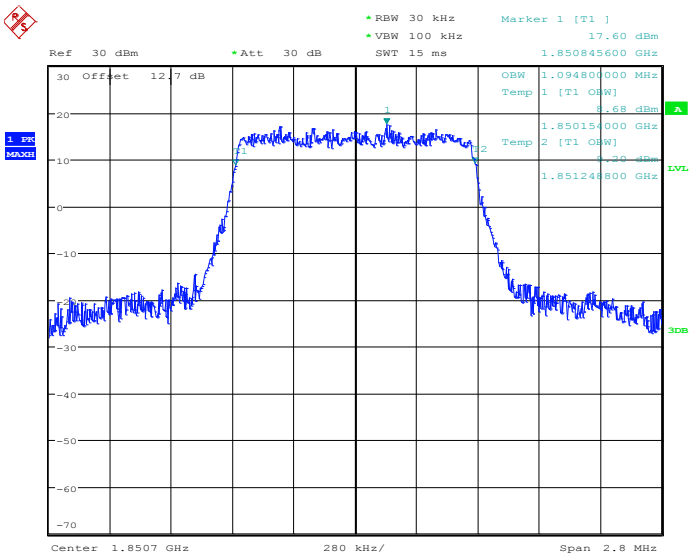
26dB Bandwidth Plot on Channel 19193



Date: 18.MAY.2014 08:49:40

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

99% Occupied Bandwidth Plot on Channel 18607



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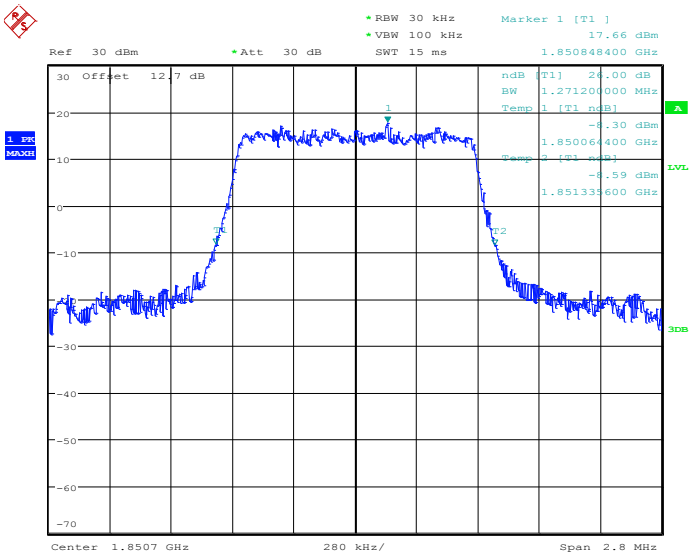
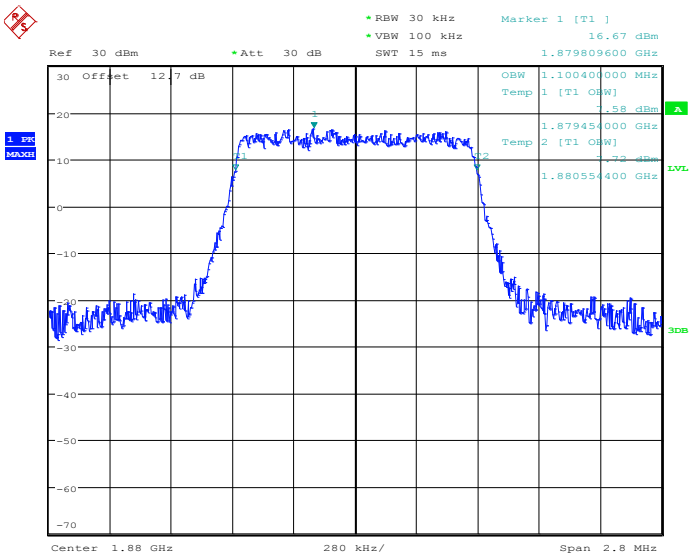
26dB Bandwidth Plot on Channel 18607



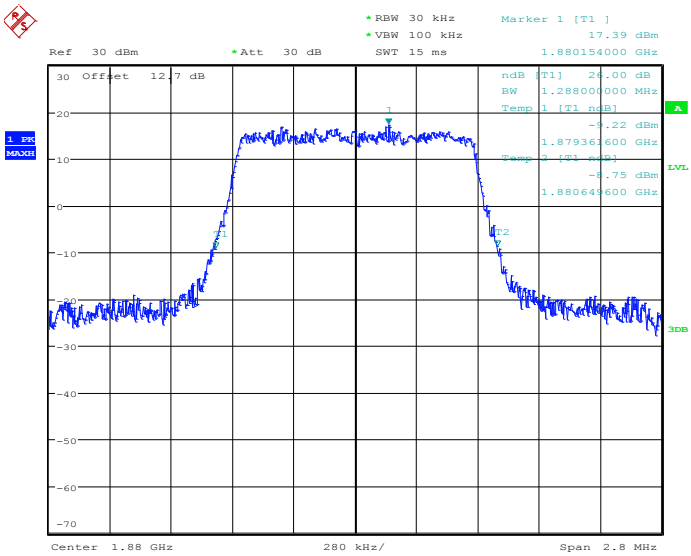
Date: 18.MAY.2014 08:40:42

99% Occupied Bandwidth Plot on Channel 18900



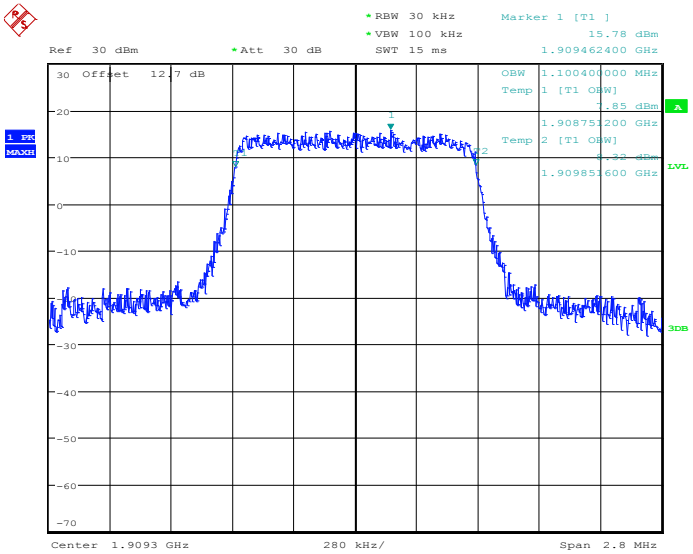
Date: 18.MAY.2014 08:46:18

26dB Bandwidth Plot on Channel 18900



Date: 18.MAY.2014 08:46:52

99% Occupied Bandwidth Plot on Channel 19193



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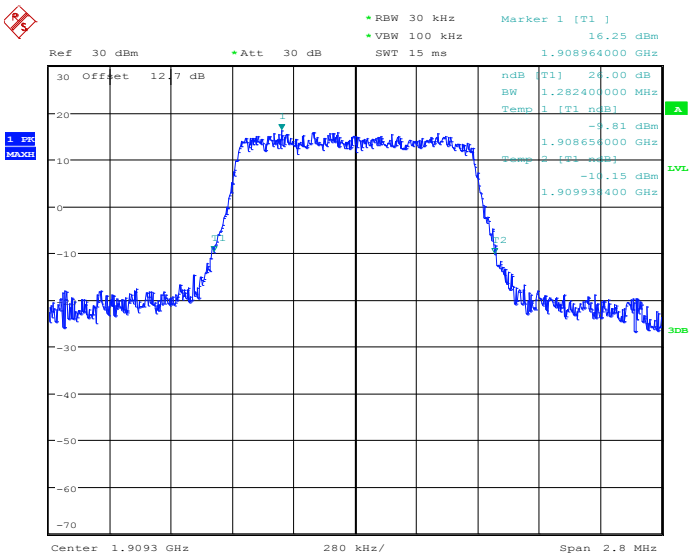
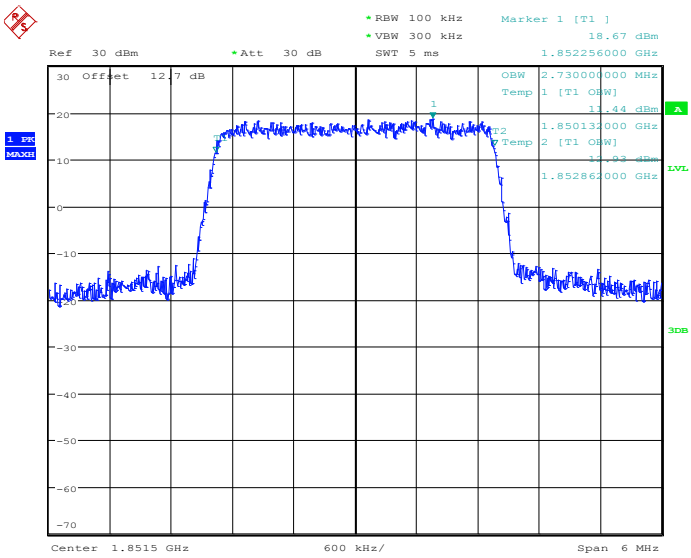
26dB Bandwidth Plot on Channel 19193



Date: 18.MAY.2014 08:49:57

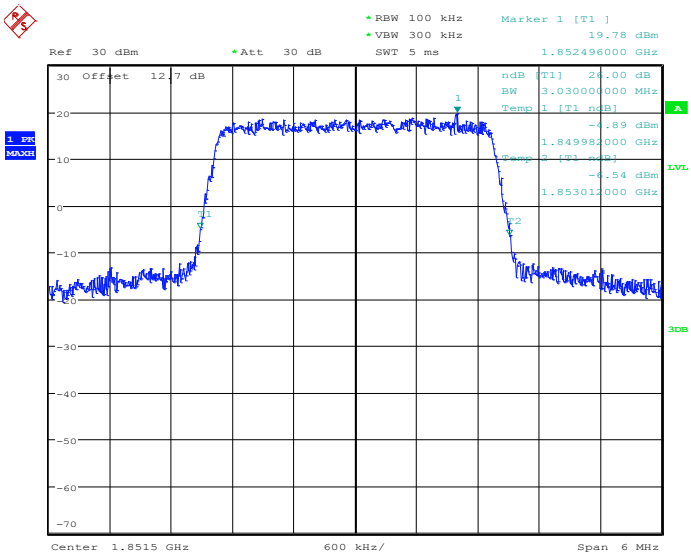
Band :	LTE Band 2	BW / Mod. :	3MHz / QPSK

99% Occupied Bandwidth Plot on Channel 18615



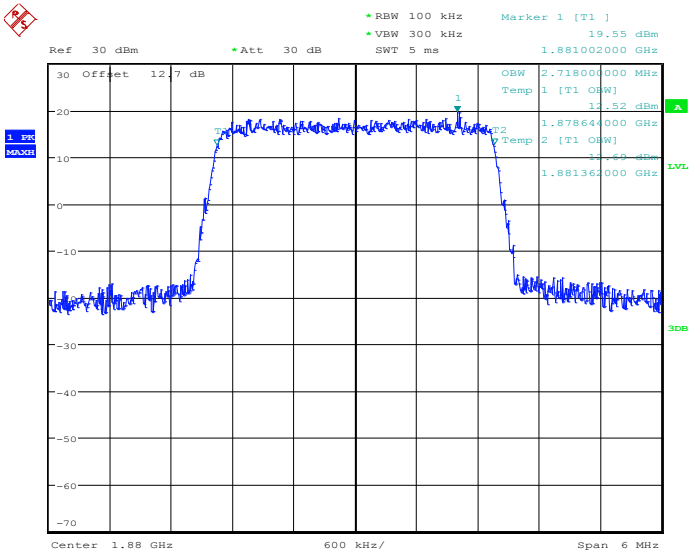
Date: 18.MAY.2014 10:18:27

26dB Bandwidth Plot on Channel 18615



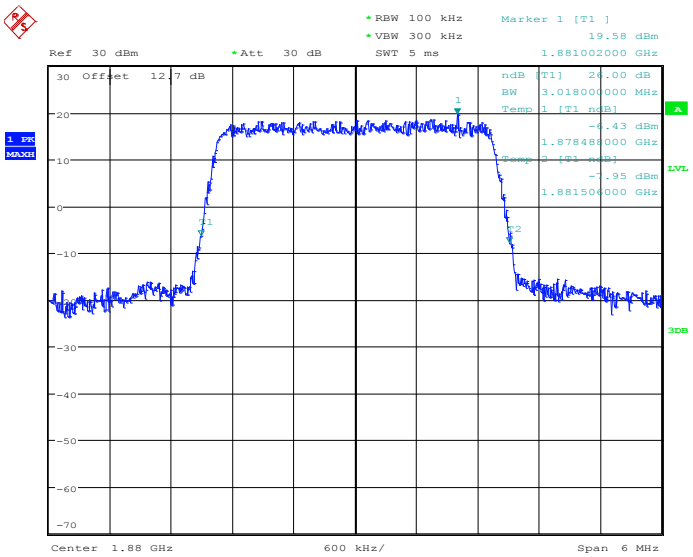
Date: 18.MAY.2014 08:57:03

99% Occupied Bandwidth Plot on Channel 18900



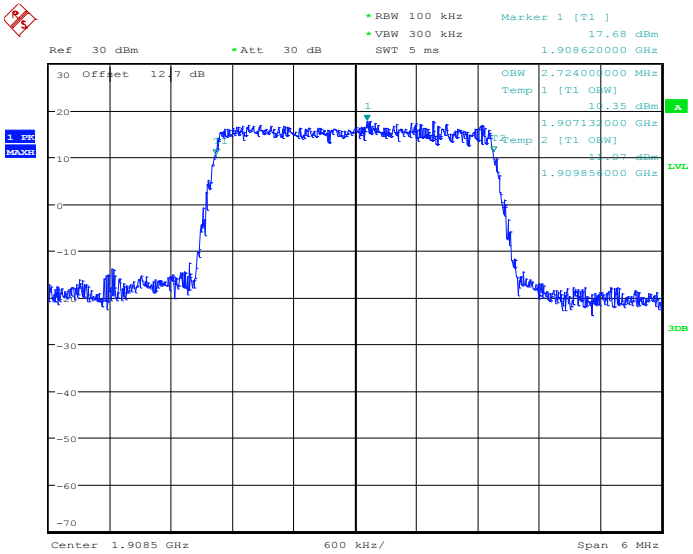
Date: 18.MAY.2014 09:02:41

26dB Bandwidth Plot on Channel 18900



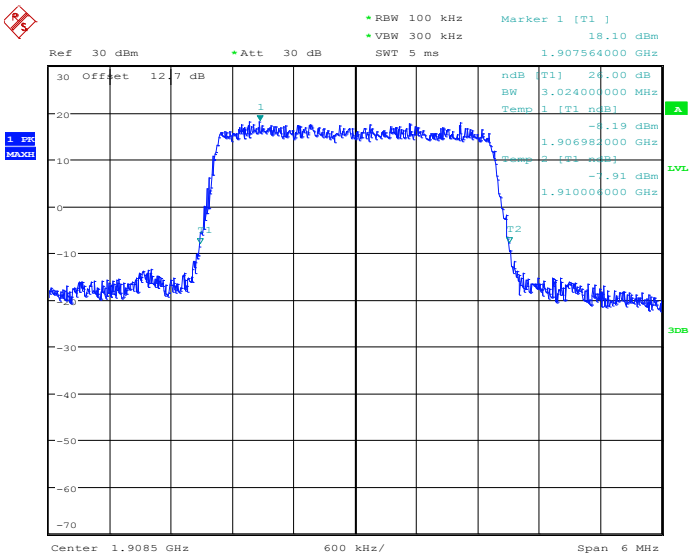
Date: 18.MAY.2014 09:03:13

99% Occupied Bandwidth Plot on Channel 19185



Date: 18.MAY.2014 09:05:46

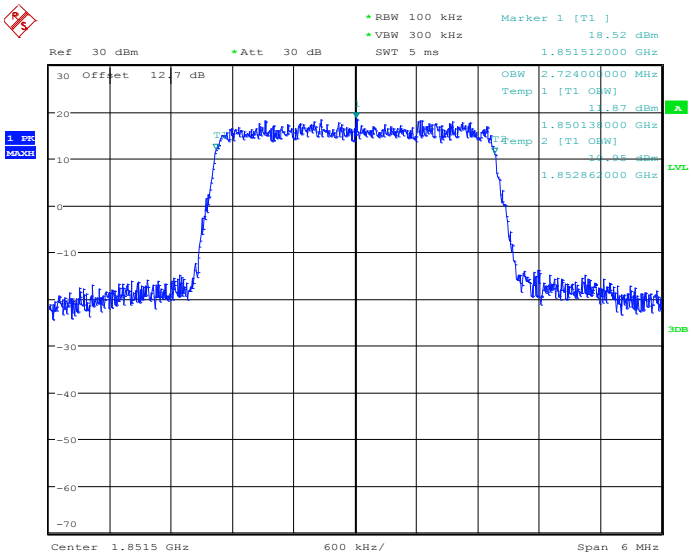
26dB Bandwidth Plot on Channel 19185



Date: 18.MAY.2014 09:06:18

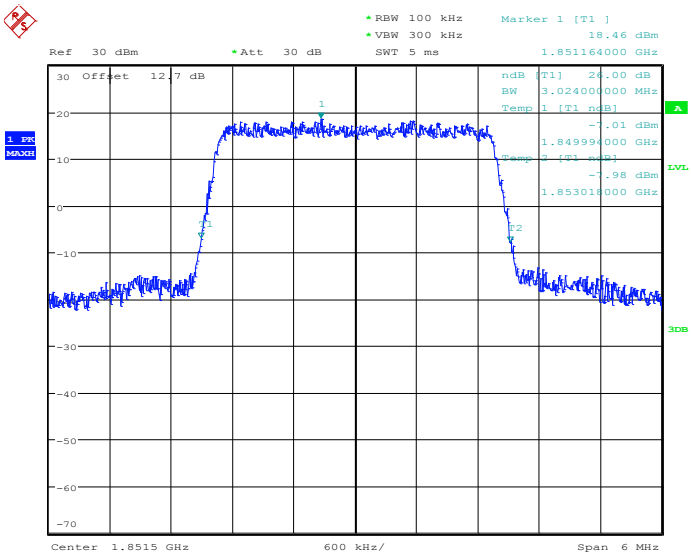
Band :	LTE Band 2	BW / Mod. :	3MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 18615



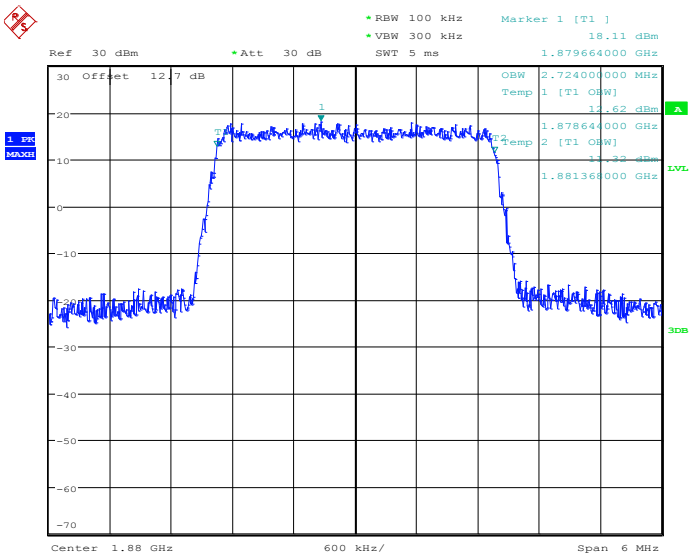
Date: 18.MAY.2014 08:56:45

26dB Bandwidth Plot on Channel 18615



Date: 18.MAY.2014 08:57:20

99% Occupied Bandwidth Plot on Channel 18900



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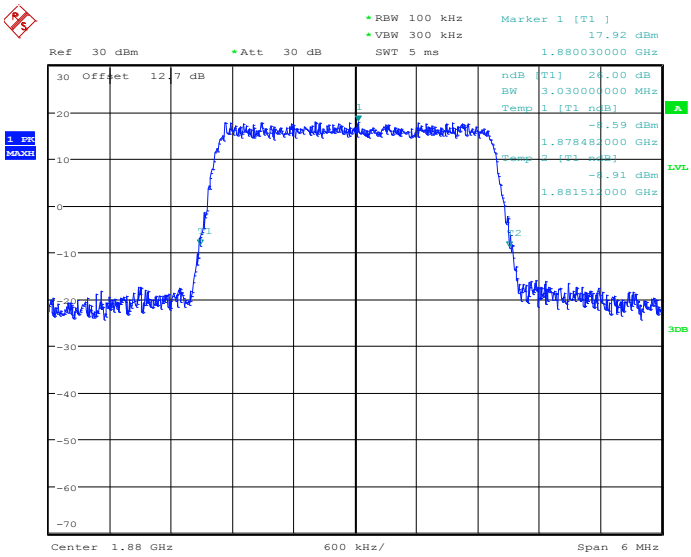
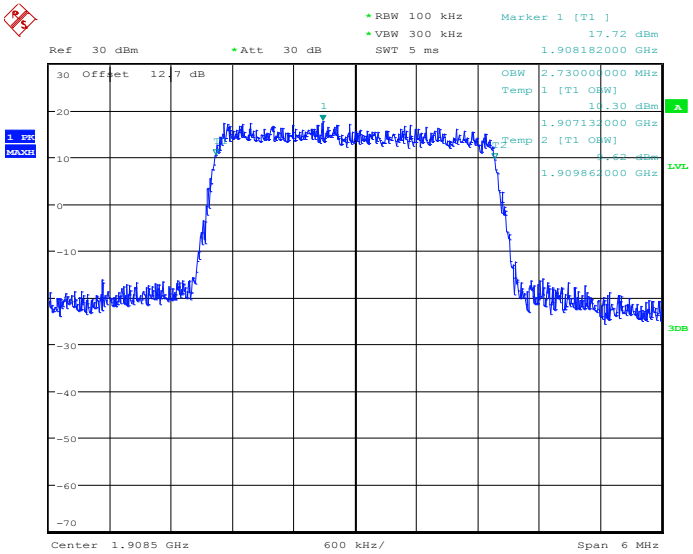
26dB Bandwidth Plot on Channel 18900



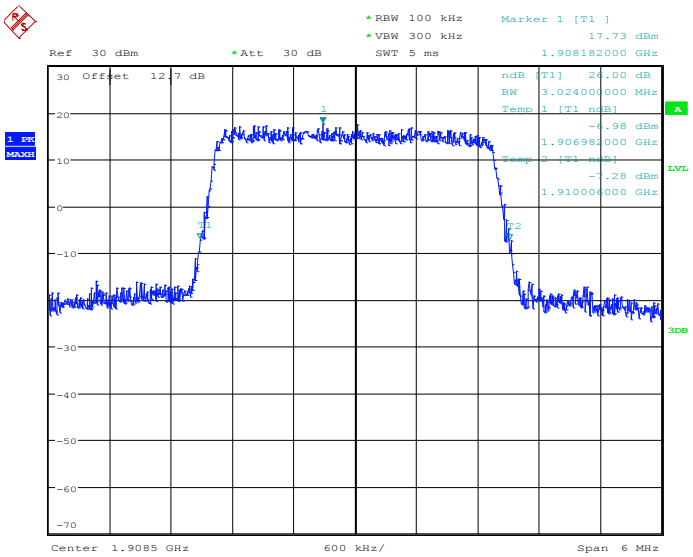
Date: 18.MAY.2014 09:03:30

99% Occupied Bandwidth Plot on Channel 19185



Date: 18.MAY.2014 09:06:01

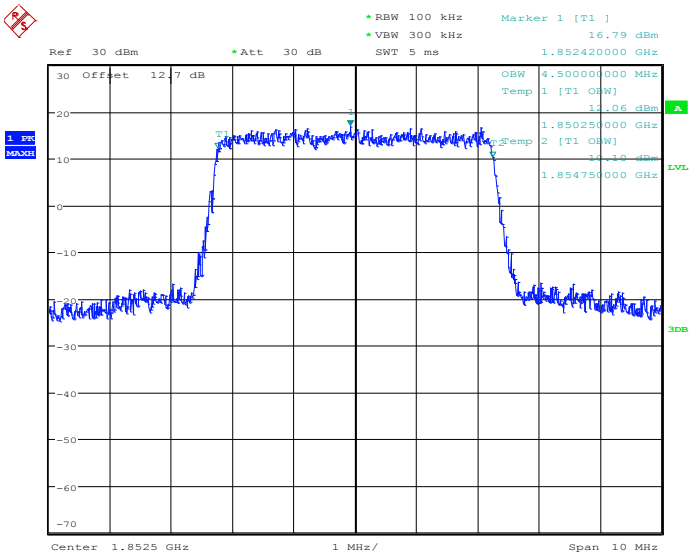
26dB Bandwidth Plot on Channel 19185



Date: 18.MAY.2014 09:06:35

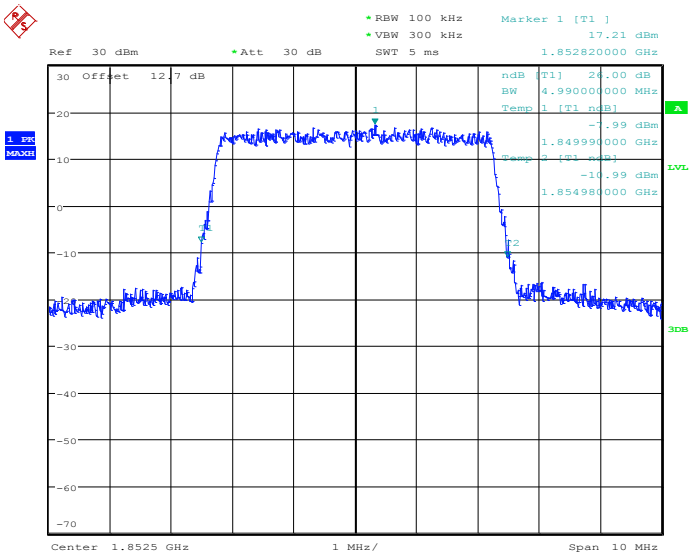
Band :	LTE Band 2	BW / Mod. :	5MHz / QPSK

99% Occupied Bandwidth Plot on Channel 18625



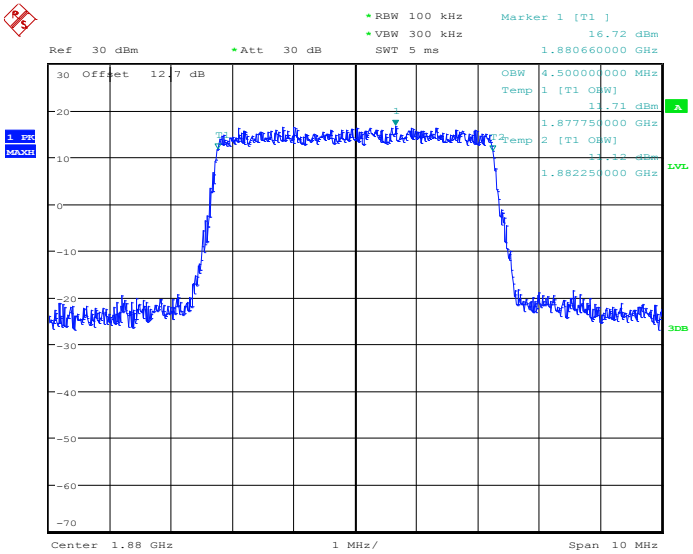
Date: 18.MAY.2014 09:12:01

26dB Bandwidth Plot on Channel 18625



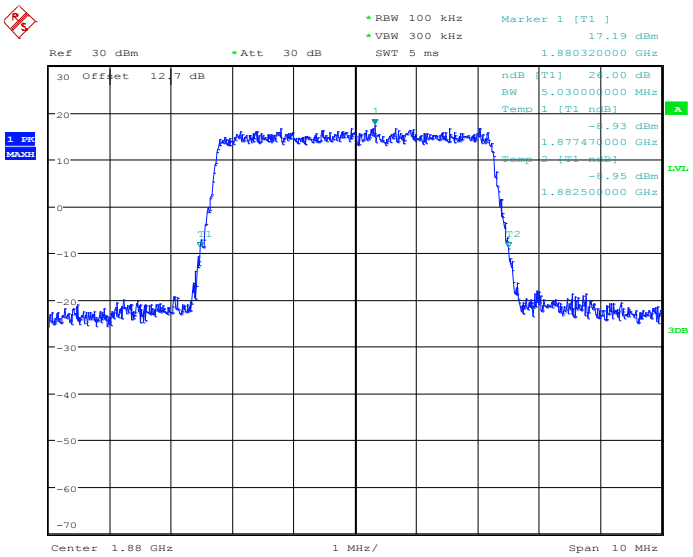
Date: 18.MAY.2014 09:12:33

99% Occupied Bandwidth Plot on Channel 18900



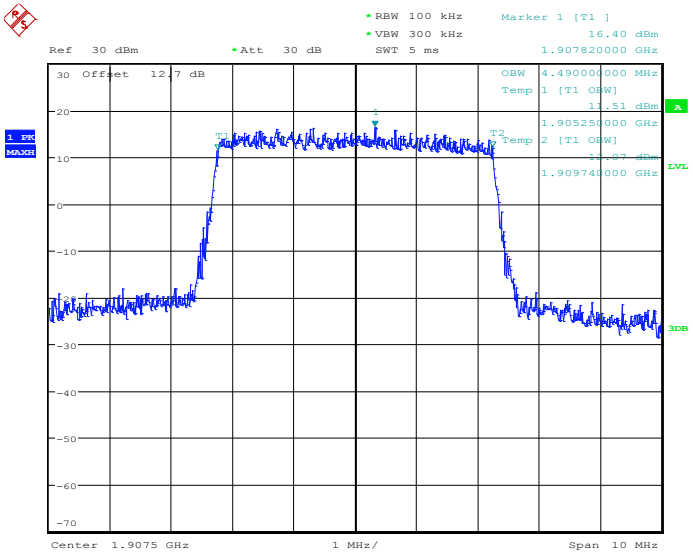
Date: 18.MAY.2014 09:18:11

26dB Bandwidth Plot on Channel 18900



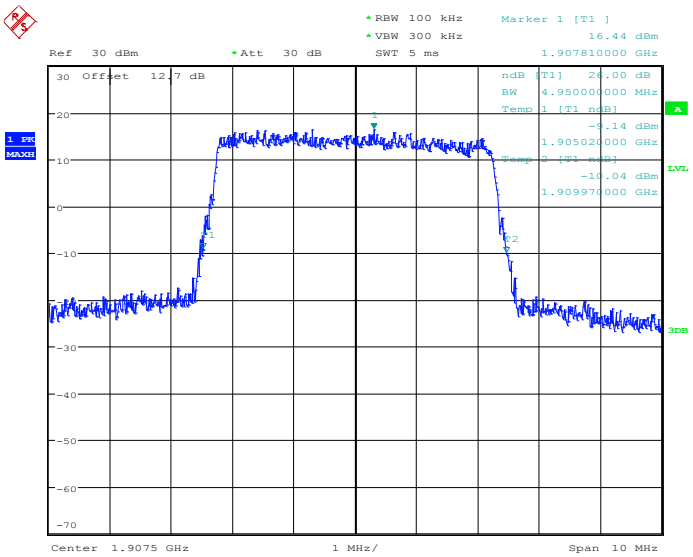
Date: 18.MAY.2014 09:18:44

99% Occupied Bandwidth Plot on Channel 19175



Date: 18.MAY.2014 09:21:19

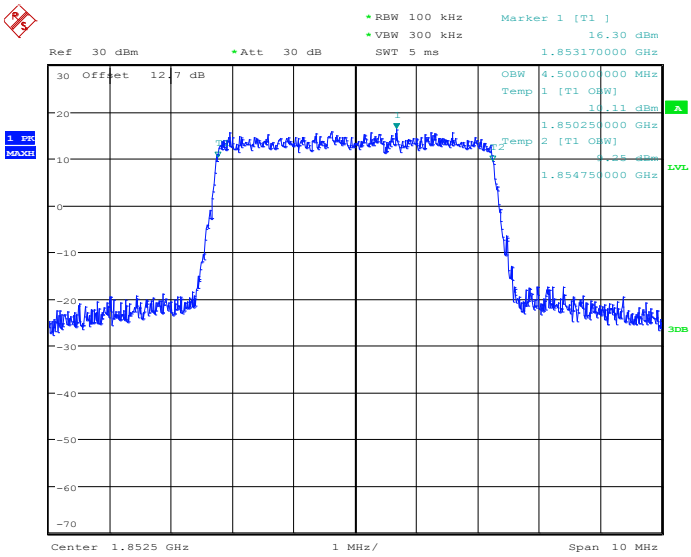
26dB Bandwidth Plot on Channel 19175



Date: 18.MAY.2014 09:21:51

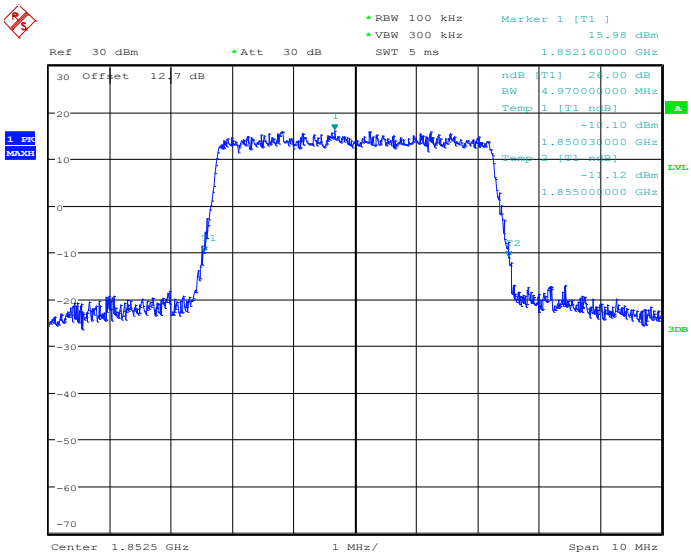
Band :	LTE Band 2	BW / Mod. :	5MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 18625



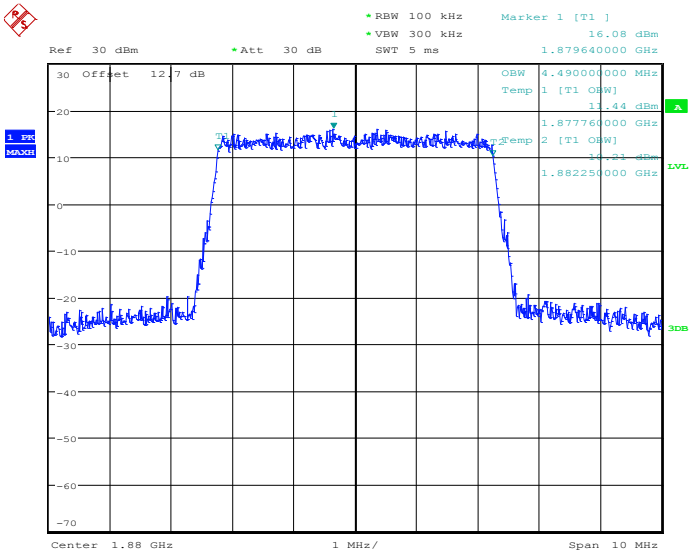
Date: 18.MAY.2014 09:12:16

26dB Bandwidth Plot on Channel 18625



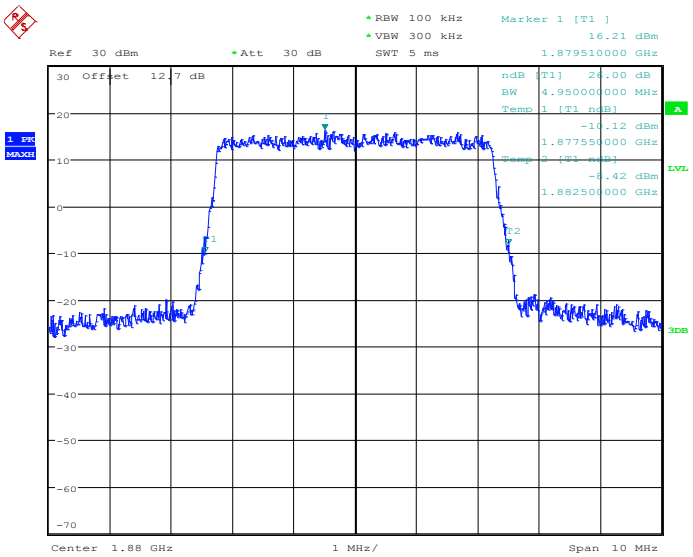
Date: 18.MAY.2014 09:12:51

99% Occupied Bandwidth Plot on Channel 18900



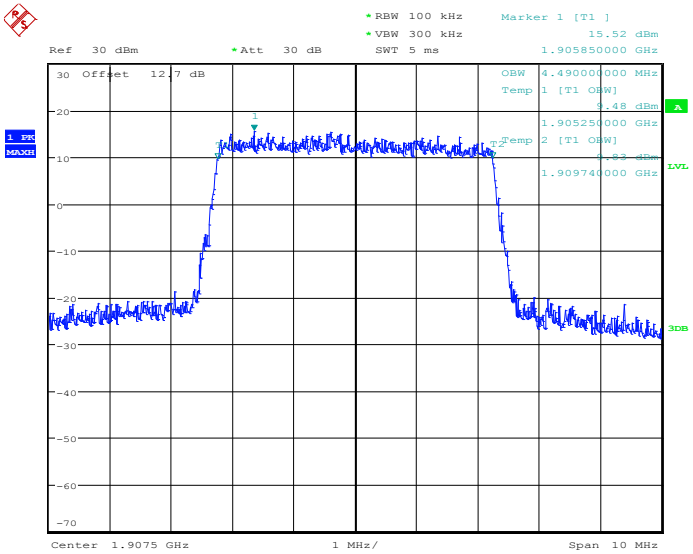
Date: 18.MAY.2014 09:18:27

26dB Bandwidth Plot on Channel 18900



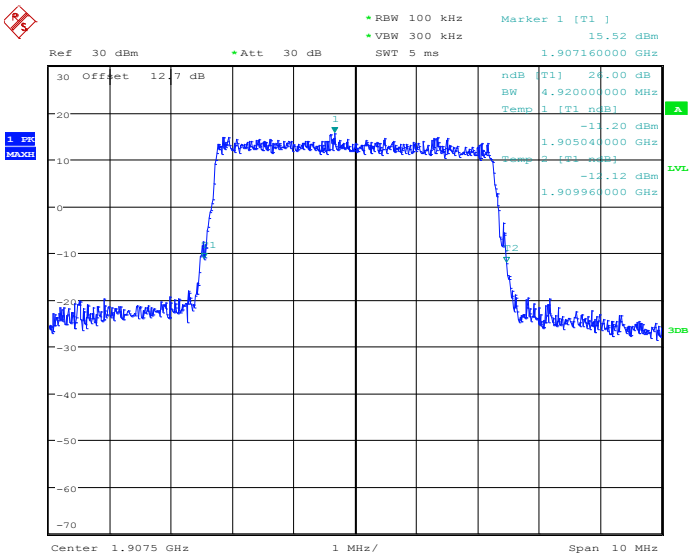
Date: 18.MAY.2014 09:19:01

99% Occupied Bandwidth Plot on Channel 19175



Date: 18.MAY.2014 09:21:34

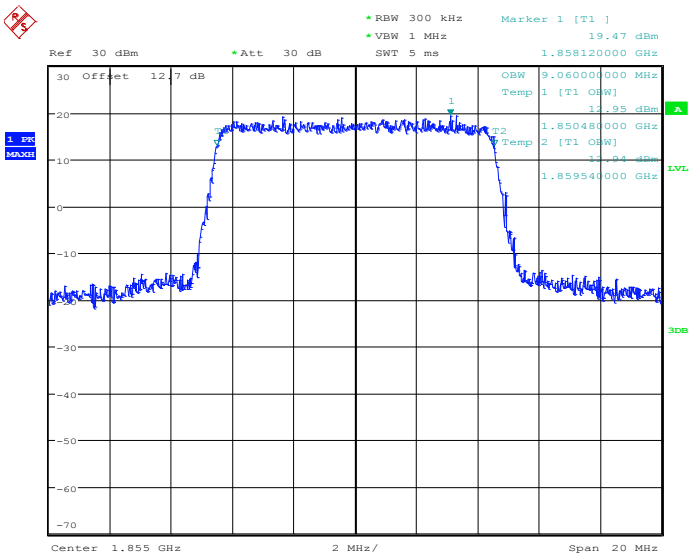
26dB Bandwidth Plot on Channel 19175



Date: 18.MAY.2014 09:22:09

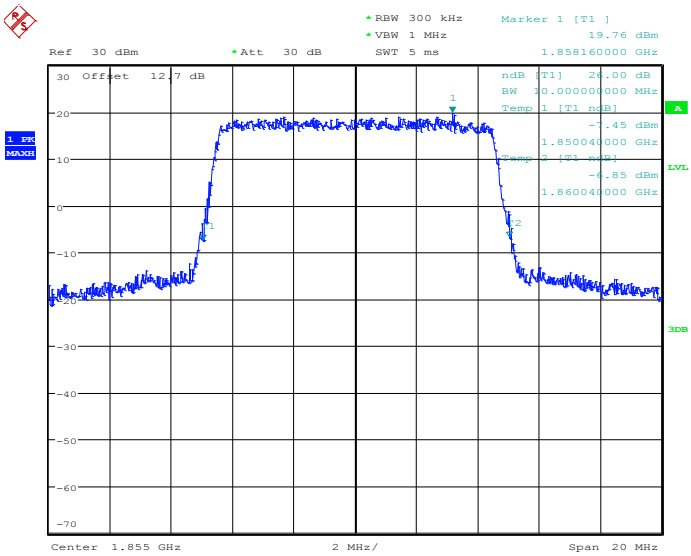
Band :	LTE Band 2	BW / Mod. :	10MHz / QPSK

99% Occupied Bandwidth Plot on Channel 18650



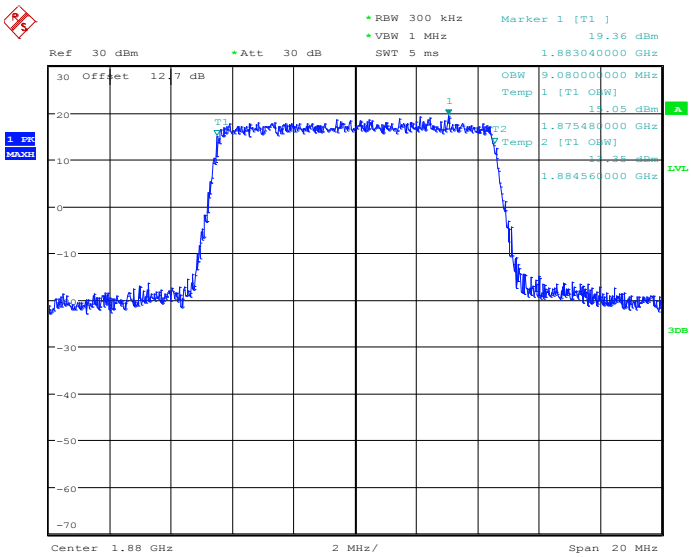
Date: 18.MAY.2014 09:27:35

26dB Bandwidth Plot on Channel 18650



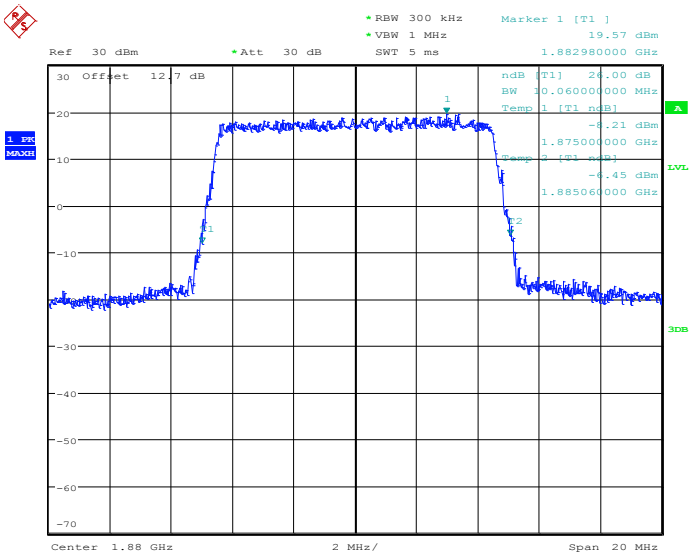
Date: 18.MAY.2014 09:28:08

99% Occupied Bandwidth Plot on Channel 18900



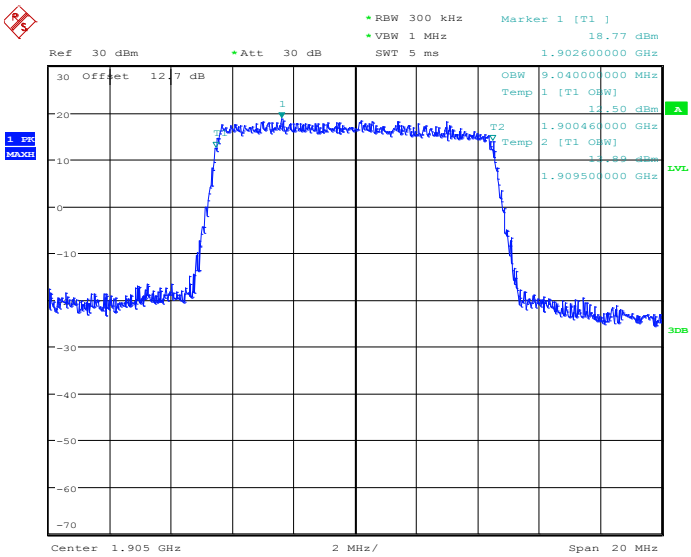
Date: 18.MAY.2014 09:33:46

26dB Bandwidth Plot on Channel 18900



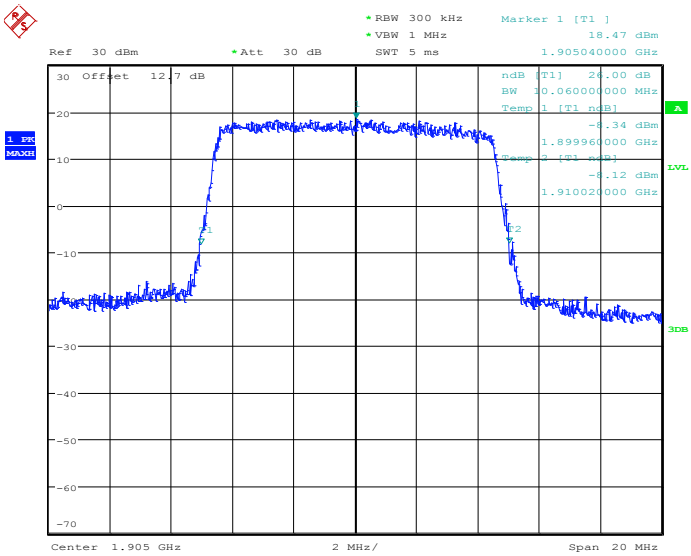
Date: 18.MAY.2014 09:34:18

99% Occupied Bandwidth Plot on Channel 19150



Date: 18.MAY.2014 09:36:51

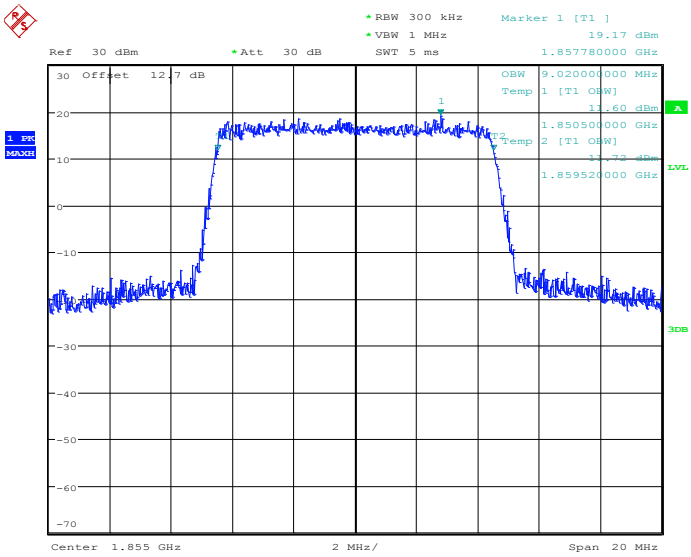
26dB Bandwidth Plot on Channel 19150



Date: 18.MAY.2014 09:37:23

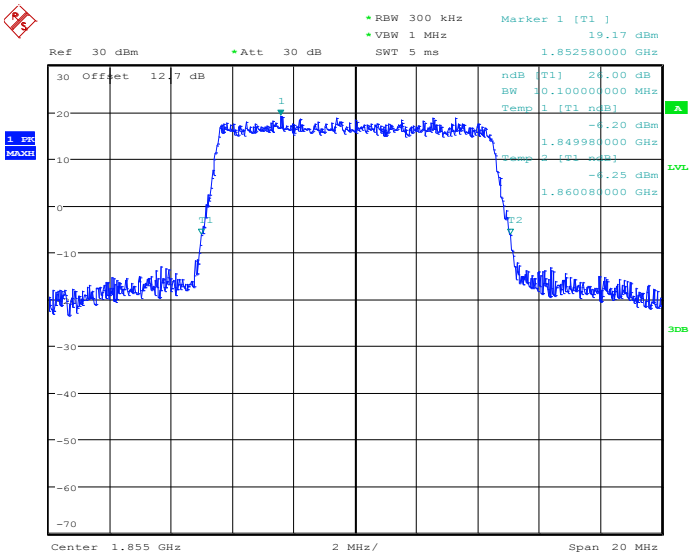
Band :	LTE Band 2	BW / Mod. :	10MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 18650



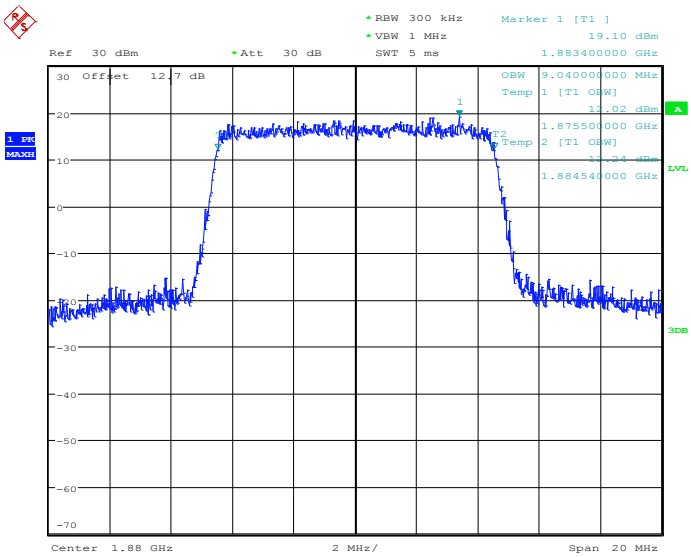
Date: 18.MAY.2014 09:27:50

26dB Bandwidth Plot on Channel 18650



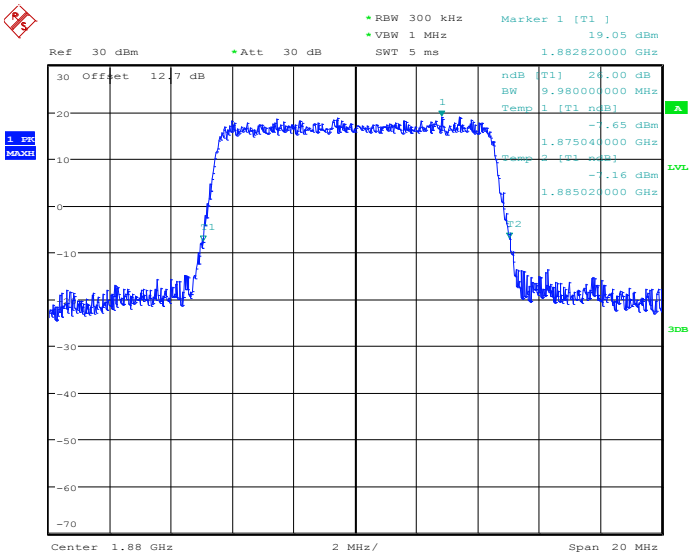
Date: 18.MAY.2014 09:28:25

99% Occupied Bandwidth Plot on Channel 18900



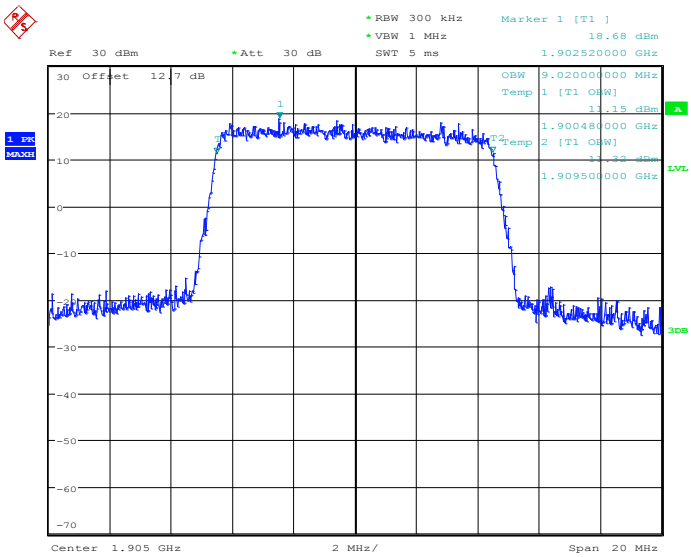
Date: 18.MAY.2014 09:34:01

26dB Bandwidth Plot on Channel 18900



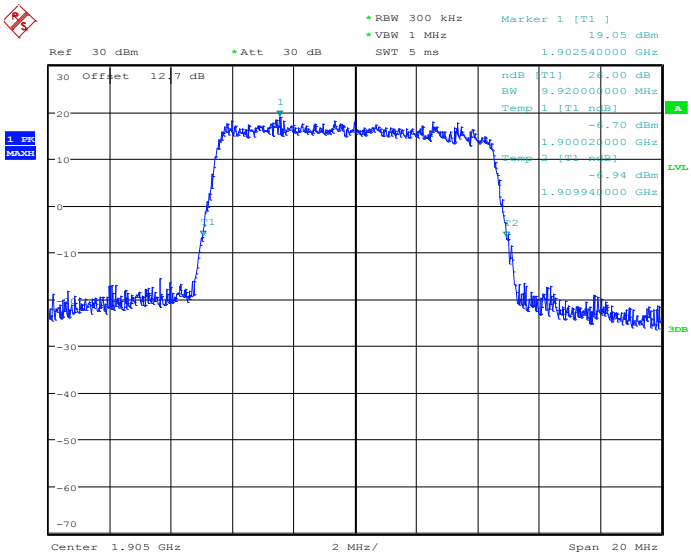
Date: 18.MAY.2014 09:34:35

99% Occupied Bandwidth Plot on Channel 19150



Date: 18.MAY.2014 09:37:06

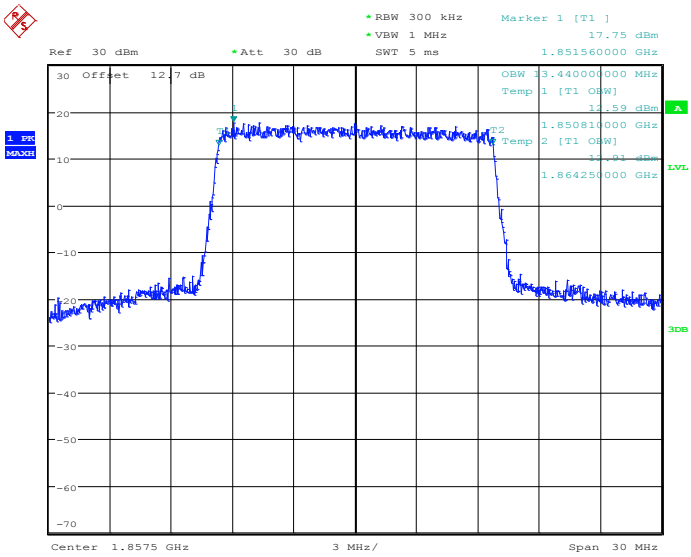
26dB Bandwidth Plot on Channel 19150



Date: 18.MAY.2014 09:37:41

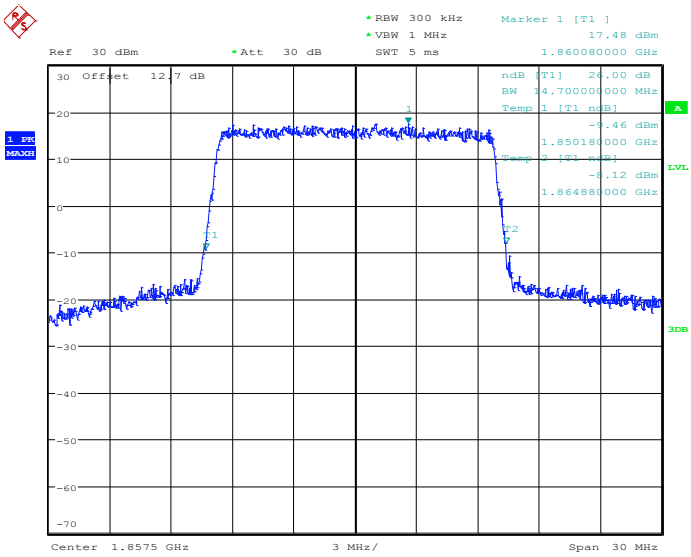
Band :	LTE Band 2	BW / Mod. :	15MHz / QPSK

99% Occupied Bandwidth Plot on Channel 18675



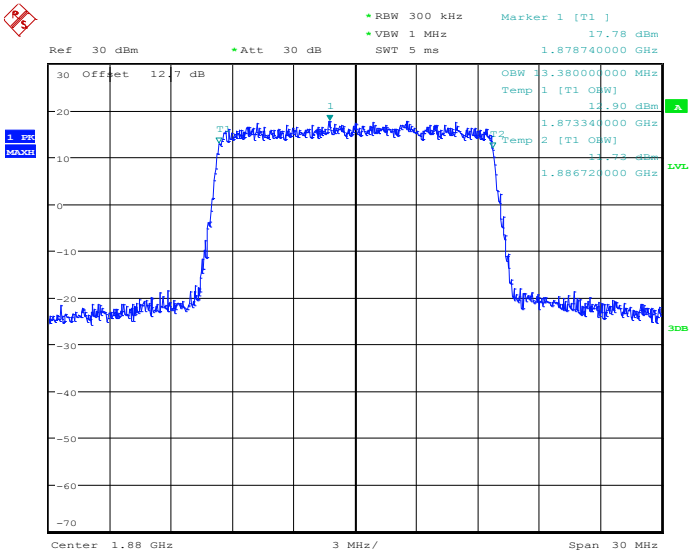
Date: 18.MAY.2014 09:43:06

26dB Bandwidth Plot on Channel 18675



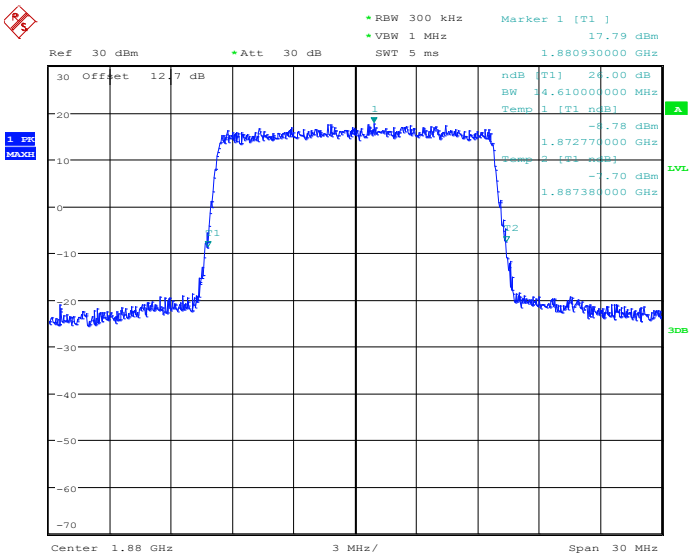
Date: 18.MAY.2014 09:43:38

99% Occupied Bandwidth Plot on Channel 18900



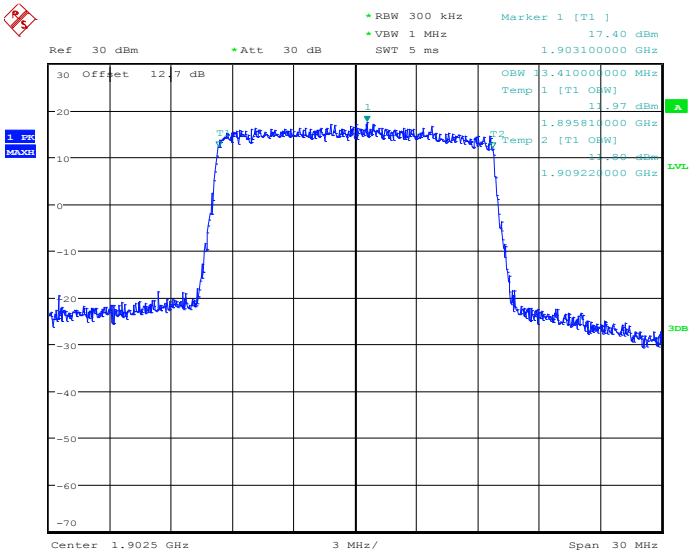
Date: 18.MAY.2014 09:49:17

26dB Bandwidth Plot on Channel 18900



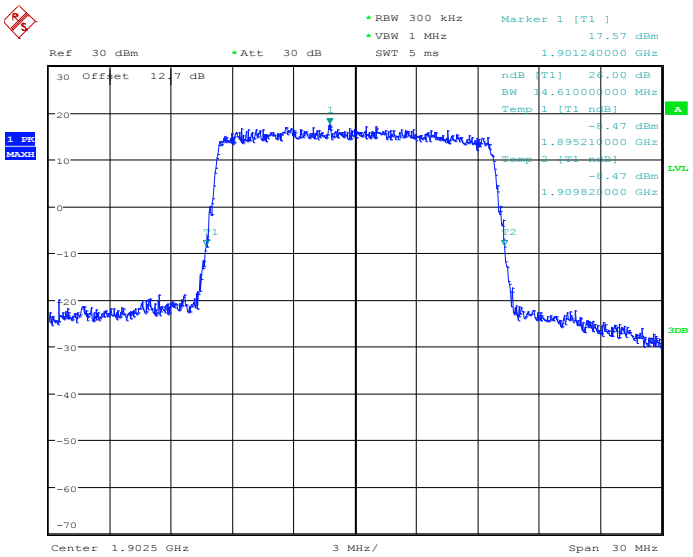
Date: 18.MAY.2014 09:49:49

99% Occupied Bandwidth Plot on Channel 19125



Date: 18.MAY.2014 09:52:22

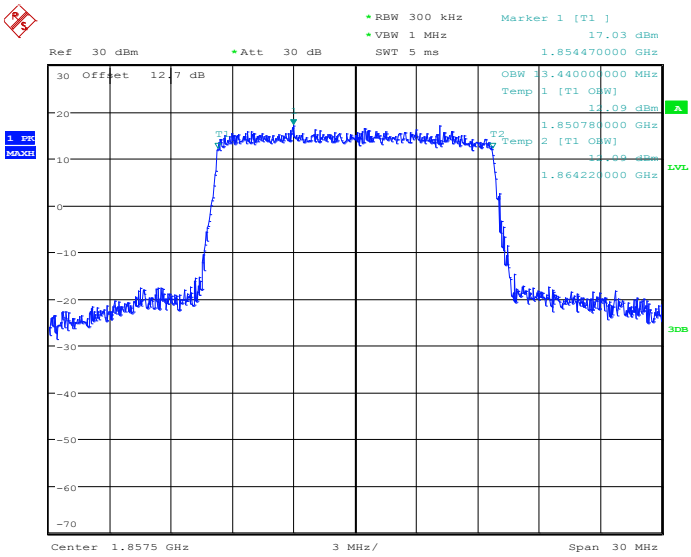
26dB Bandwidth Plot on Channel 19125



Date: 18.MAY.2014 09:52:54

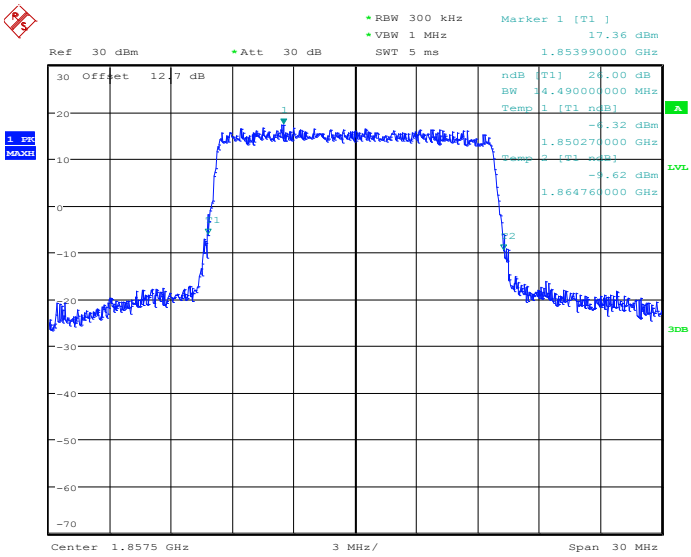
Band :	LTE Band 2	BW / Mod. :	15MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 18675



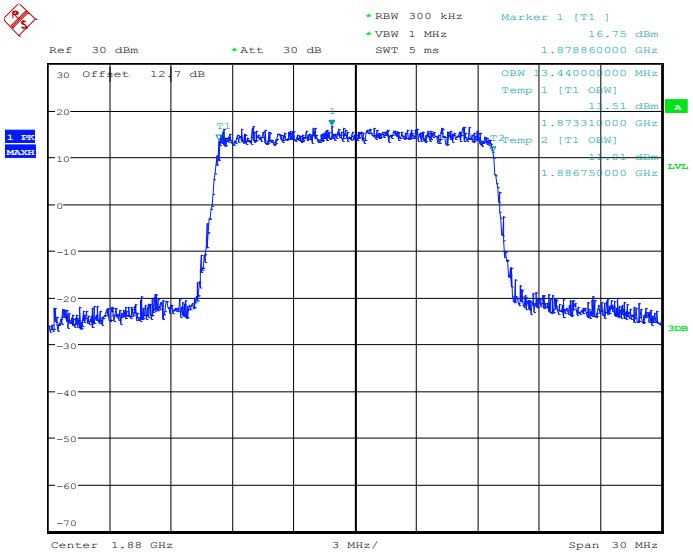
Date: 18.MAY.2014 09:43:21

26dB Bandwidth Plot on Channel 18675



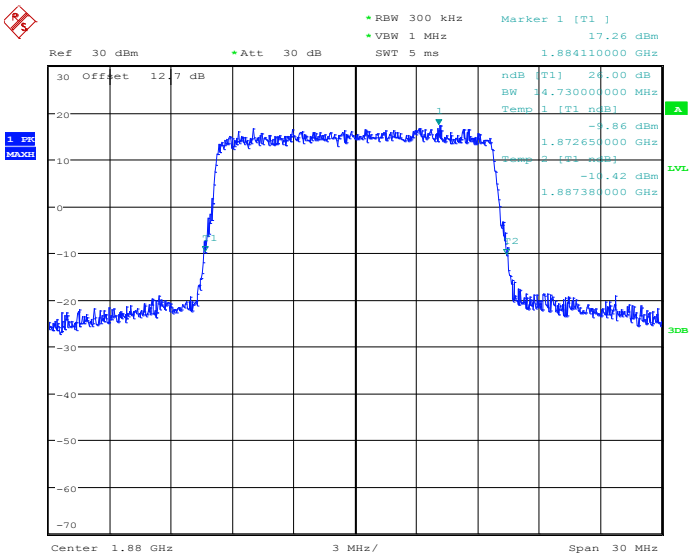
Date: 18.MAY.2014 09:43:56

99% Occupied Bandwidth Plot on Channel 18900



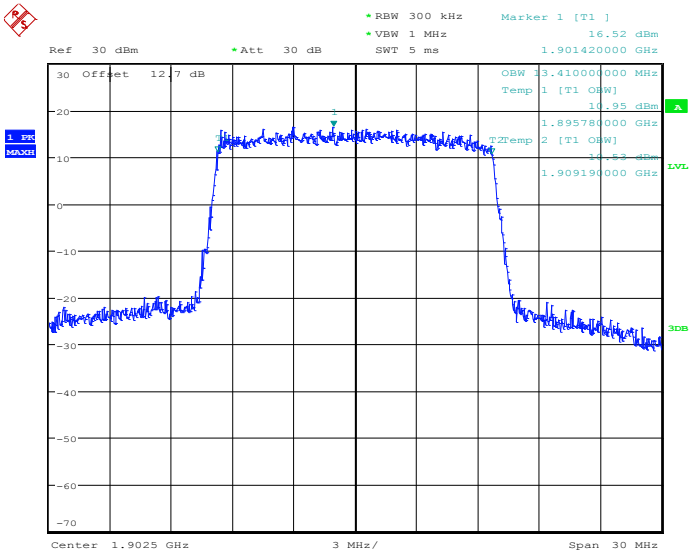
Date: 18.MAY.2014 09:49:32

26dB Bandwidth Plot on Channel 18900



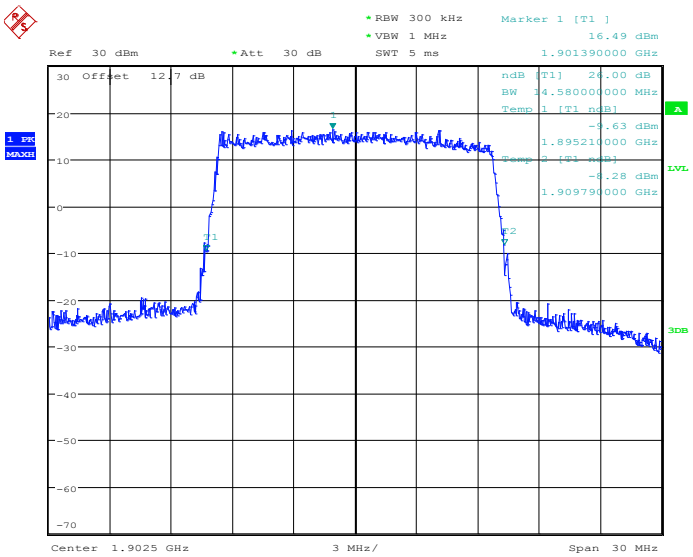
Date: 18.MAY.2014 09:50:06

99% Occupied Bandwidth Plot on Channel 19125



Date: 18.MAY.2014 09:52:37

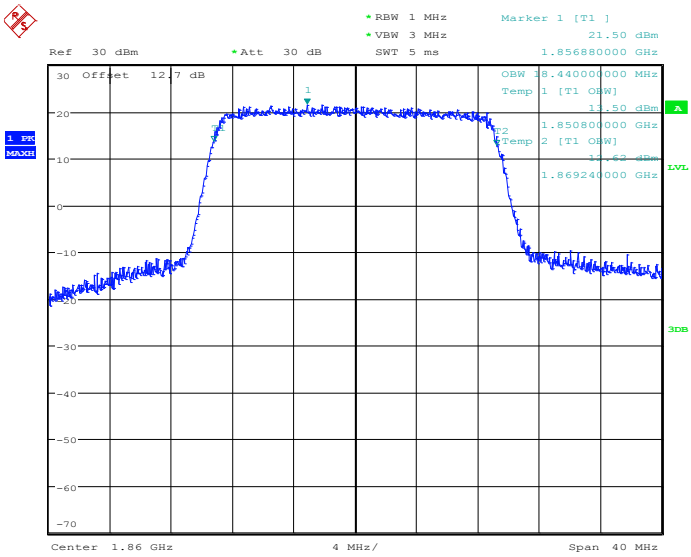
26dB Bandwidth Plot on Channel 19125



Date: 18.MAY.2014 09:53:11

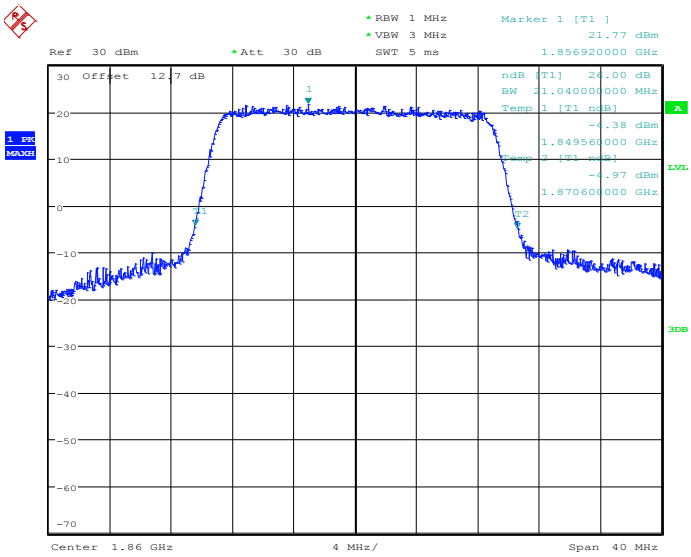
Band :	LTE Band 2	BW / Mod. :	20MHz / QPSK

99% Occupied Bandwidth Plot on Channel 18700



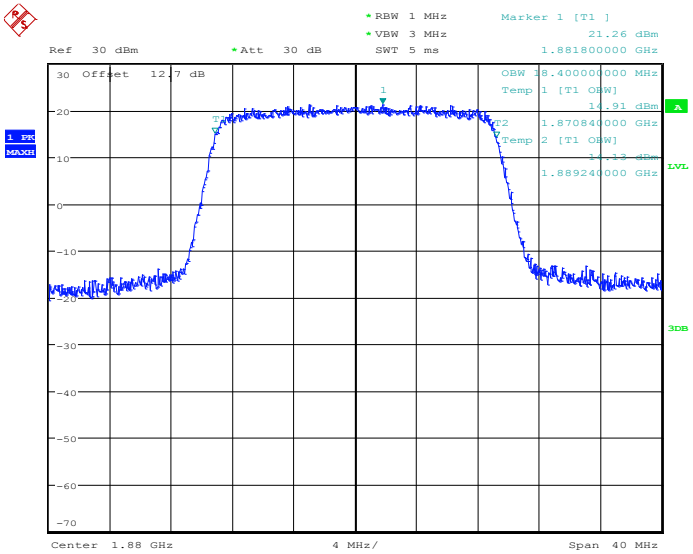
Date: 18.MAY.2014 09:58:37

26dB Bandwidth Plot on Channel 18700



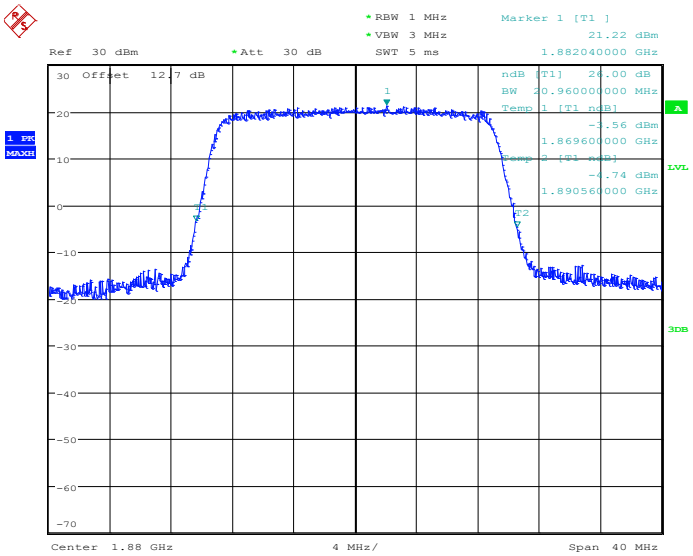
Date: 18.MAY.2014 09:59:09

99% Occupied Bandwidth Plot on Channel 18900



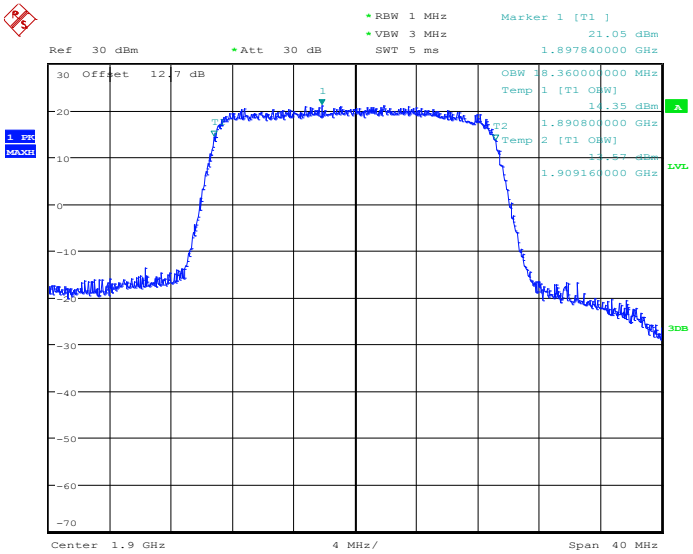
Date: 18.MAY.2014 10:04:48

26dB Bandwidth Plot on Channel 18900



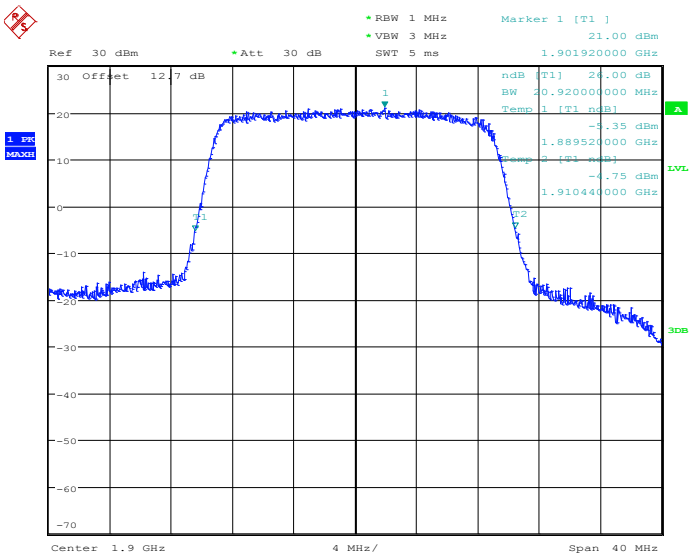
Date: 18.MAY.2014 10:05:20

99% Occupied Bandwidth Plot on Channel 19100



Date: 18.MAY.2014 10:07:53

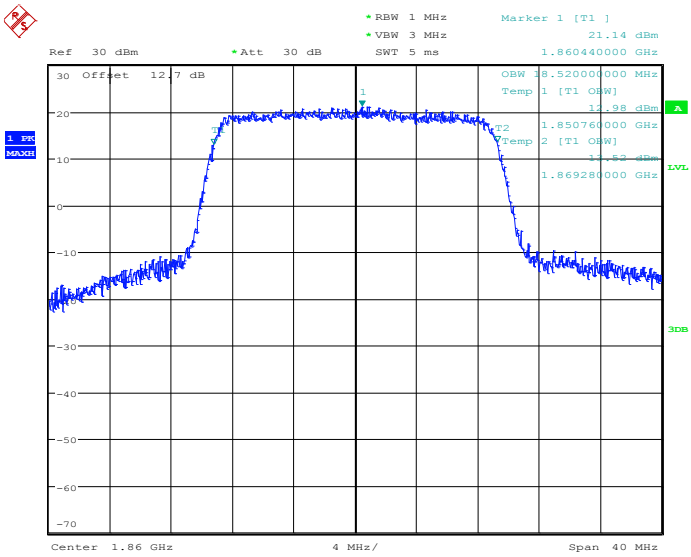
26dB Bandwidth Plot on Channel 19100



Date: 18.MAY.2014 10:08:25

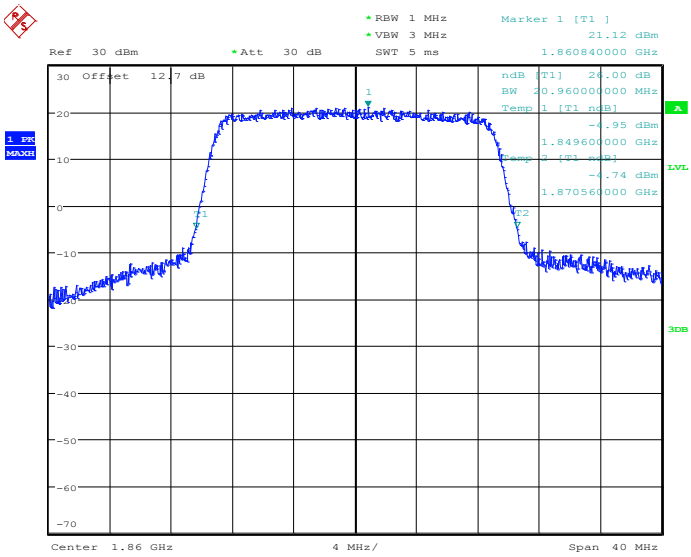
Band :	LTE Band 2	BW / Mod. :	20MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 18700



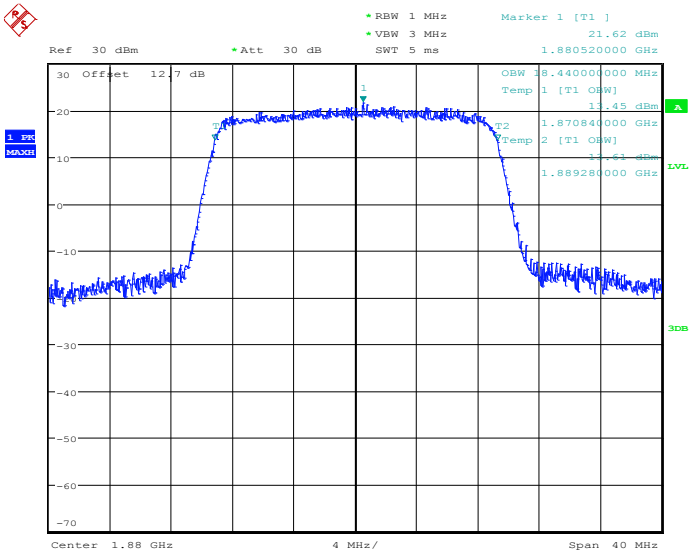
Date: 18.MAY.2014 09:58:52

26dB Bandwidth Plot on Channel 18700



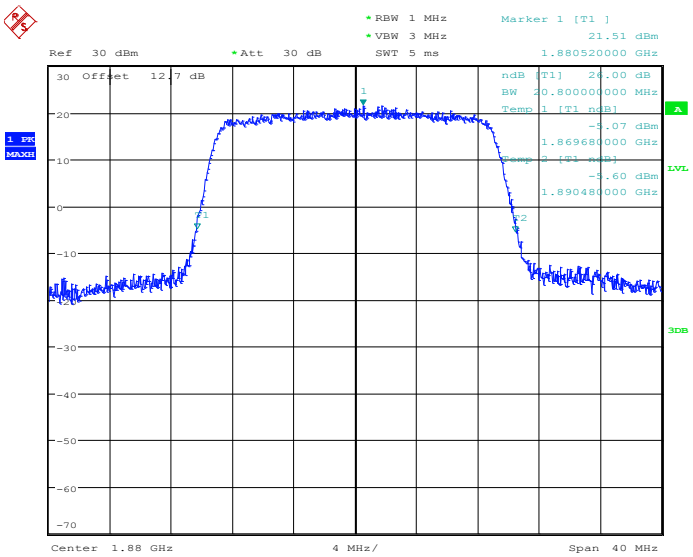
Date: 18.MAY.2014 09:59:27

99% Occupied Bandwidth Plot on Channel 18900



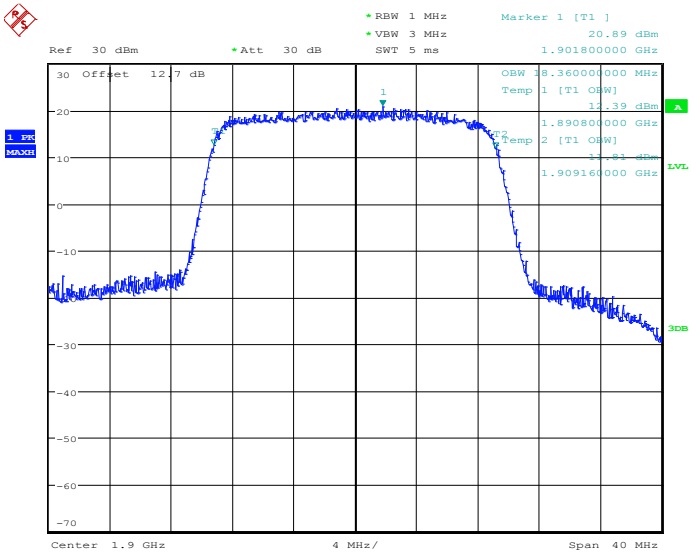
Date: 18.MAY.2014 10:05:03

26dB Bandwidth Plot on Channel 18900



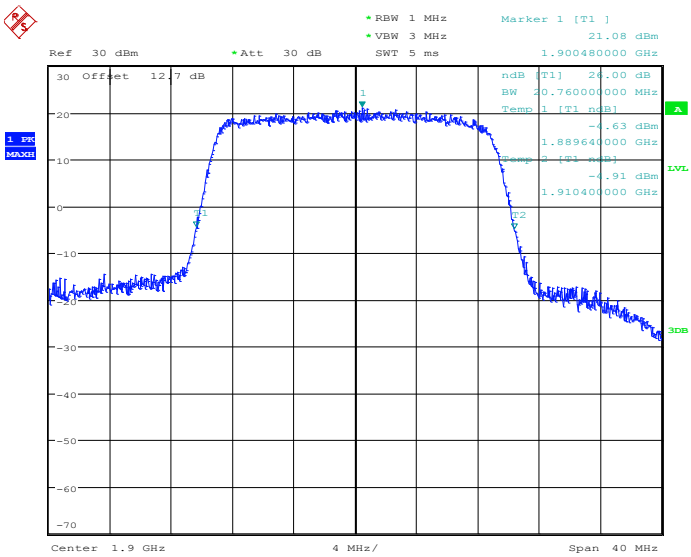
Date: 18.MAY.2014 10:05:37

99% Occupied Bandwidth Plot on Channel 19100



Date: 18.MAY.2014 10:08:08

26dB Bandwidth Plot on Channel 19100



Date: 18.MAY.2014 10:08:42

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

3.5 Conducted Band Edge Measurement

3.5.1 Description of Conducted Band Edge Measurement

24.238 (a) and RSS – 133 for Band 2

For operations in the 1850-1910 and 1930-1990 MHz band, the FCC limit is 43 + $10\log_{10}$(P[Watts]) dB below the transmitter power P(Watts) in a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

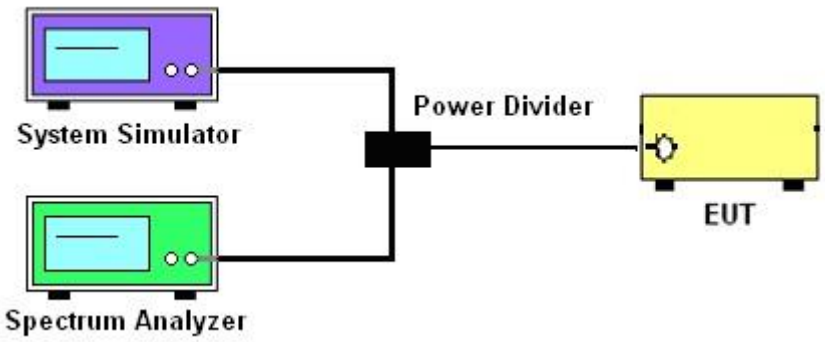
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

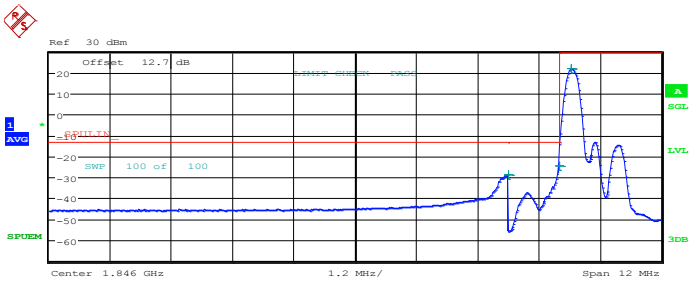
3.5.4 Test Setup



3.5.5 Test Result (Plots) of Conducted Band Edge

Band :	LTE Band 2	Band Width :	1.4MHz / QPSK

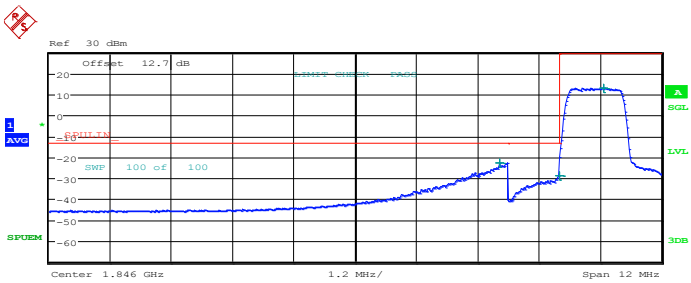
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.848991 G	-28.69	-15.69
1.849 G	1.850 G	20.00 k	1.849997 G	-24.47	-11.47
1.850 G	1.852 G	100.00 k	1.850238 G	21.56	-8.44

Date: 18.MAY.2014 08:41:28

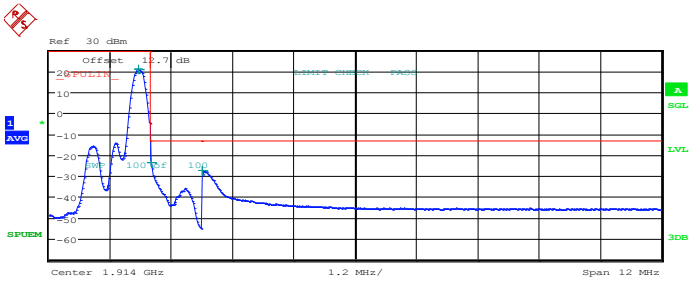
Lower Band Edge Plot for QPSK-RB Size 6, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.848820 G	-22.99	-9.99
1.849 G	1.850 G	20.00 k	1.849999 G	-29.09	-16.09
1.850 G	1.852 G	100.00 k	1.850874 G	13.01	-16.99

Date: 18.MAY.2014 08:43:01

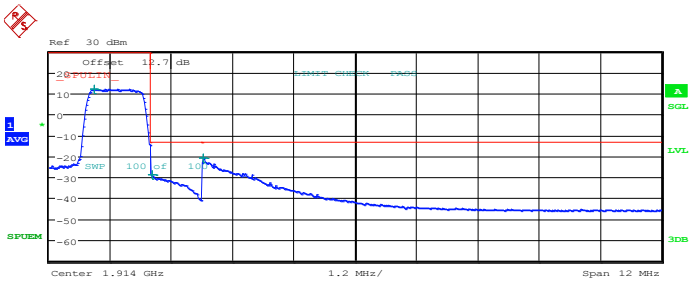
Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 5



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.908 G	1.910 G	100.00 k	1.909756 G	20.70	-9.30
1.910 G	1.911 G	20.00 k	1.910001 G	-23.94	-10.94
1.911 G	1.920 G	1.00 M	1.911009 G	-27.48	-14.48

Date: 18.MAY.2014 08:50:43

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

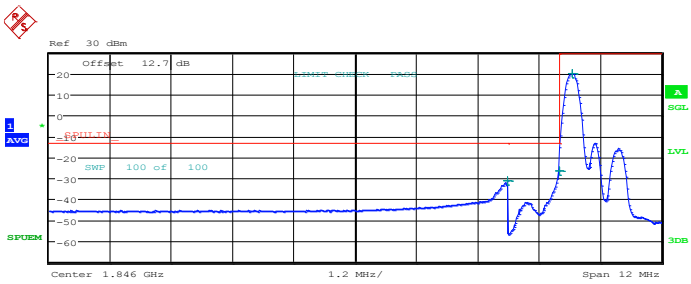


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.908 G	1.910 G	100.00 k	1.908882 G	12.16	-17.84
1.910 G	1.911 G	20.00 k	1.910010 G	-29.14	-16.14
1.911 G	1.920 G	1.00 M	1.911027 G	-21.08	-8.08

Date: 18.MAY.2014 08:52:17

Band :	LTE Band 2	Band Width :	1.4MHz / 16QAM

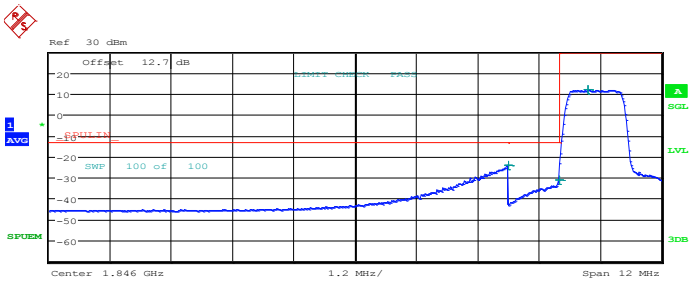
Lower Band Edge Plot for 16QAM -RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.848982 G	-31.47	-18.47
1.849 G	1.850 G	20.00 k	1.849997 G	-26.70	-13.70
1.850 G	1.852 G	100.00 k	1.850256 G	19.98	-10.02

Date: 18.MAY.2014 08:42:15

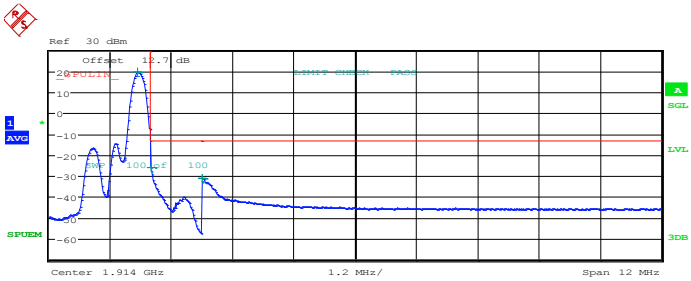
Lower Band Edge Plot for 16QAM -RB Size 6, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.849000 G	-24.07	-11.07
1.849 G	1.850 G	20.00 k	1.849999 G	-31.17	-18.17
1.850 G	1.852 G	100.00 k	1.850550 G	11.69	-18.31

Date: 18.MAY.2014 08:43:48

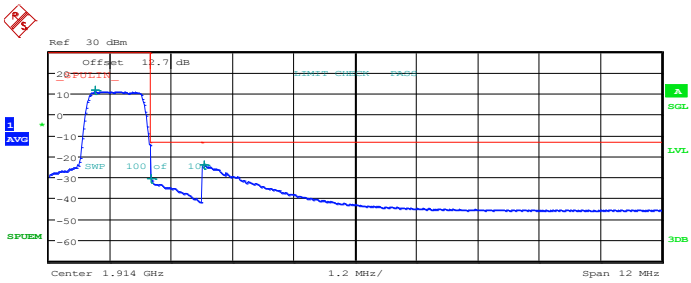
Higher Band Edge Plot for 16QAM -RB Size 1, RB Offset 5



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.908 G	1.910 G	100.00 k	1.909730 G	19.52	-10.48
1.910 G	1.911 G	20.00 k	1.910008 G	-25.99	-12.99
1.911 G	1.920 G	1.00 M	1.911009 G	-31.11	-18.11

Date: 18.MAY.2014 08:51:30

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

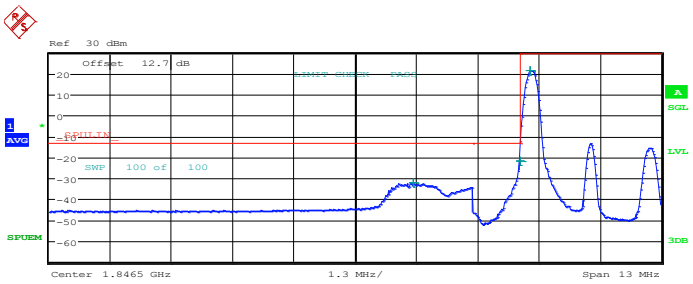


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.908 G	1.910 G	100.00 k	1.908908 G	11.30	-18.70
1.910 G	1.911 G	20.00 k	1.910001 G	-30.82	-17.82
1.911 G	1.920 G	1.00 M	1.911036 G	-24.08	-11.08

Date: 18.MAY.2014 08:53:03

Band :	LTE Band 2	Band Width :	3MHz / QPSK

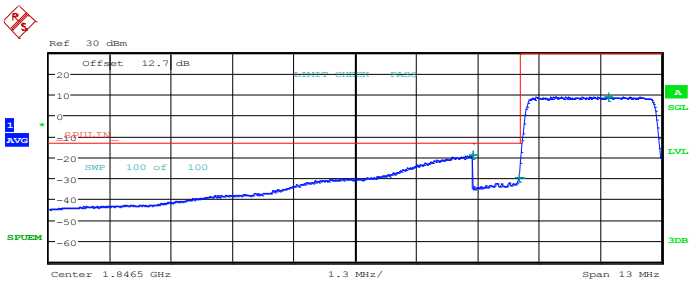
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.847722 G	-32.38	-19.38
1.849 G	1.850 G	30.00 k	1.849999 G	-21.80	-8.80
1.850 G	1.853 G	100.00 k	1.850210 G	21.30	-8.70

Date: 18.MAY.2014 08:58:06

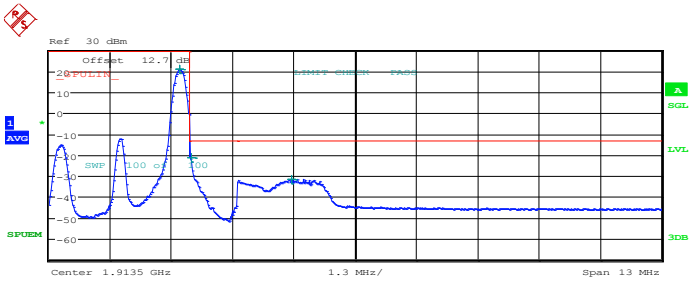
Lower Band Edge Plot for QPSK-RB Size 15, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.849000 G	-19.16	-6.16
1.849 G	1.850 G	30.00 k	1.849989 G	-29.83	-16.83
1.850 G	1.853 G	100.00 k	1.851869 G	8.68	-21.32

Date: 18.MAY.2014 08:59:39

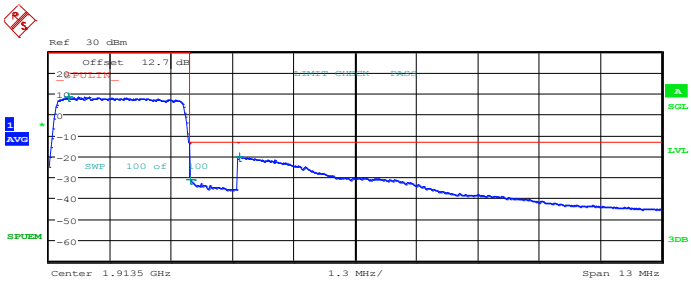
Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 14



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.907 G	1.910 G	100.00 k	1.909781 G	20.66	-9.34
1.910 G	1.911 G	30.00 k	1.910011 G	-21.38	-8.38
1.911 G	1.920 G	1.00 M	1.912152 G	-31.56	-18.56

Date: 18.MAY.2014 09:07:22

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

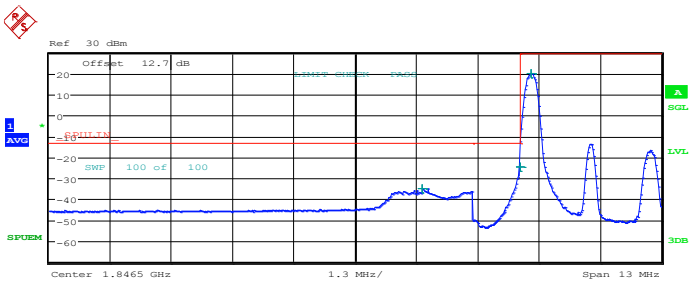


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.907 G	1.910 G	100.00 k	1.907420 G	8.34	-21.66
1.910 G	1.911 G	30.00 k	1.910006 G	-31.18	-18.18
1.911 G	1.920 G	1.00 M	1.911036 G	-20.37	-7.37

Date: 18.MAY.2014 09:08:55

Band :	LTE Band 2	Band Width :	3MHz / 16QAM

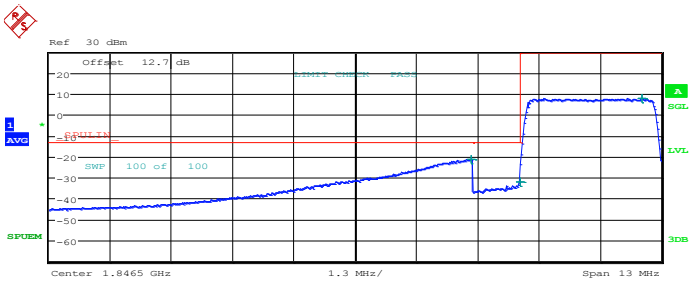
Lower Band Edge Plot for 16QAM -RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.847920 G	-34.98	-21.98
1.849 G	1.850 G	30.00 k	1.849996 G	-24.55	-11.55
1.850 G	1.853 G	100.00 k	1.850225 G	19.94	-10.06

Date: 18.MAY.2014 08:58:53

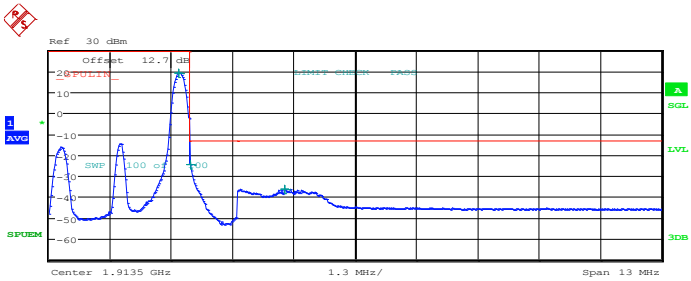
Lower Band Edge Plot for 16QAM -RB Size 15, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.848955 G	-21.44	-8.44
1.849 G	1.850 G	30.00 k	1.849997 G	-32.39	-19.39
1.850 G	1.853 G	100.00 k	1.852574 G	7.67	-22.33

Date: 18.MAY.2014 09:00:26

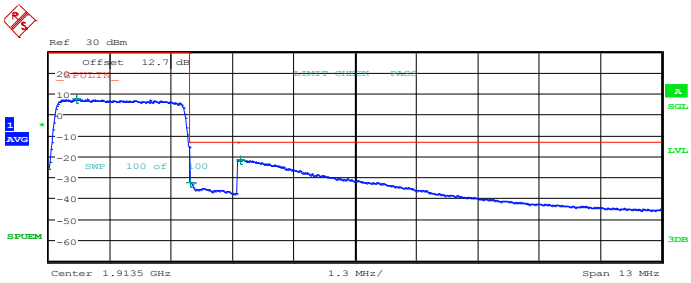
Higher Band Edge Plot for 16QAM -RB Size 1, RB Offset 14



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.907 G	1.910 G	100.00 k	1.909748 G	19.07	-10.93
1.910 G	1.911 G	30.00 k	1.910010 G	-24.71	-11.71
1.911 G	1.920 G	1.00 M	1.912008 G	-36.46	-23.46

Date: 18.MAY.2014 09:08:08

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

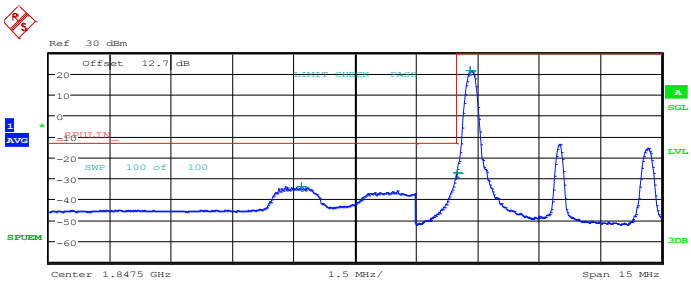


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.907 G	1.910 G	100.00 k	1.907582 G	7.05	-22.95
1.910 G	1.911 G	30.00 k	1.910008 G	-32.46	-19.46
1.911 G	1.920 G	1.00 M	1.911072 G	-21.64	-8.64

Date: 18.MAY.2014 09:09:41

Band :	LTE Band 2	Band Width :	5MHz / QPSK

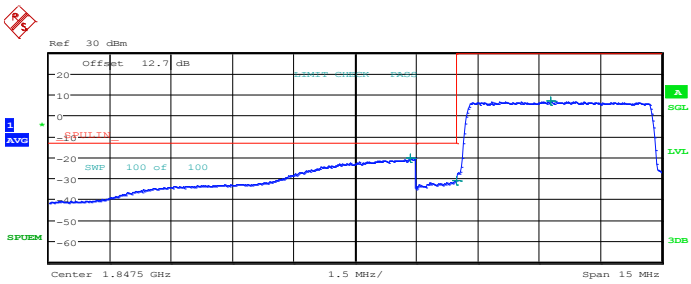
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.846174 G	-33.94	-20.94
1.849 G	1.850 G	50.00 k	1.849995 G	-27.73	-14.73
1.850 G	1.855 G	100.00 k	1.850320 G	21.24	-8.76

Date: 18.MAY.2014 09:13:37

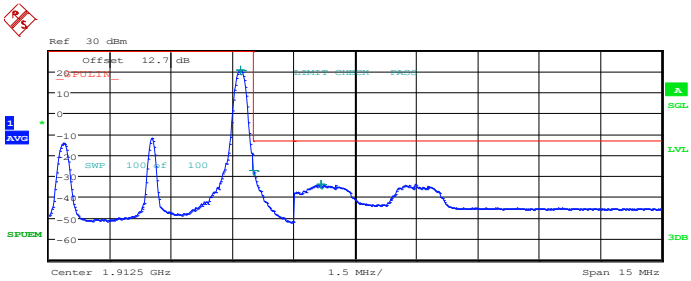
Lower Band Edge Plot for QPSK-RB Size 25, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.848856 G	-20.61	-7.61
1.849 G	1.850 G	50.00 k	1.849964 G	-31.06	-18.06
1.850 G	1.855 G	100.00 k	1.852295 G	6.68	-23.32

Date: 18.MAY.2014 09:15:10

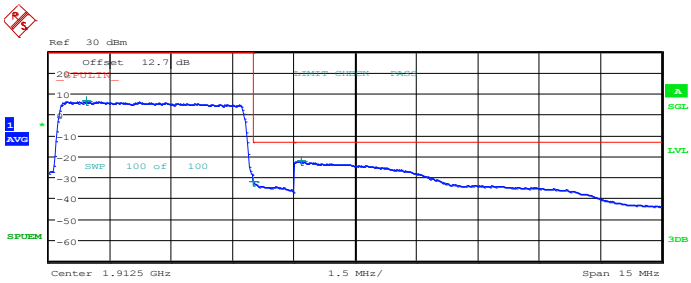
Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 24



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.905 G	1.910 G	100.00 k	1.909680 G	20.49	-9.51
1.910 G	1.911 G	50.00 k	1.910011 G	-27.47	-14.47
1.911 G	1.920 G	1.00 M	1.911648 G	-34.02	-21.02

Date: 18.MAY.2014 09:22:55

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

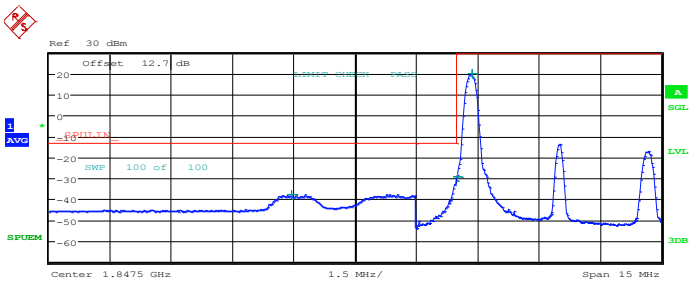


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.905 G	1.910 G	100.00 k	1.905905 G	6.27	-23.73
1.910 G	1.911 G	50.00 k	1.910006 G	-32.04	-19.04
1.911 G	1.920 G	1.00 M	1.911171 G	-22.37	-9.37

Date: 18.MAY.2014 09:24:29

Band :	LTE Band 2	Band Width :	5MHz / 16QAM

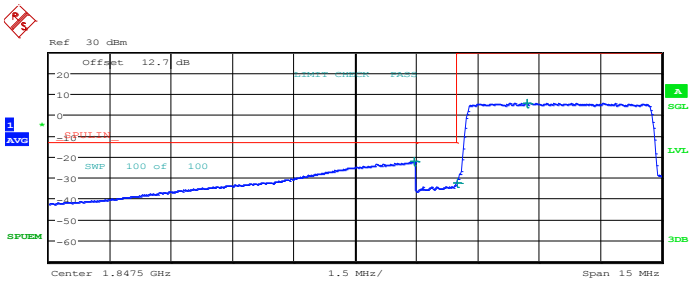
Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.845940 G	-37.69	-24.69
1.849 G	1.850 G	50.00 k	1.849998 G	-29.42	-16.42
1.850 G	1.855 G	100.00 k	1.850350 G	19.76	-10.24

Date: 18.MAY.2014 09:14:23

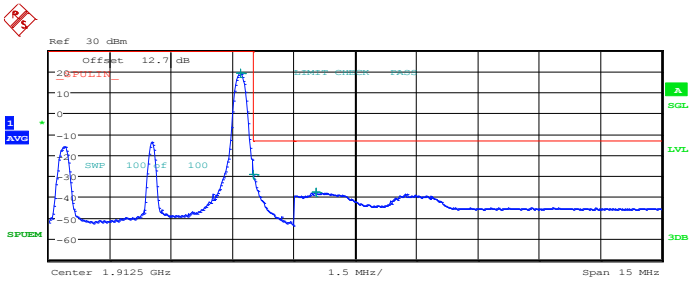
Lower Band Edge Plot for 16QAM-RB Size 25, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.848937 G	-22.50	-9.50
1.849 G	1.850 G	50.00 k	1.849996 G	-32.70	-19.70
1.850 G	1.855 G	100.00 k	1.851695 G	5.46	-24.54

Date: 18.MAY.2014 09:15:57

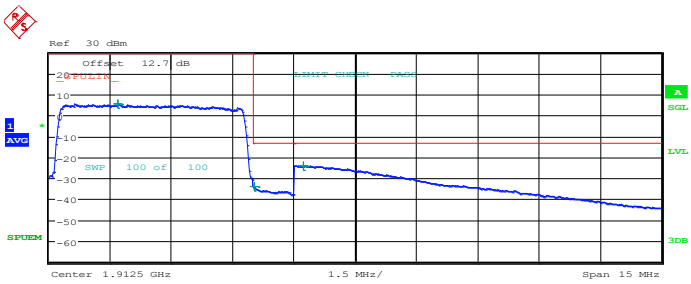
Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 24



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.905 G	1.910 G	100.00 k	1.909685 G	19.12	-10.88
1.910 G	1.911 G	50.00 k	1.910004 G	-29.39	-16.39
1.911 G	1.920 G	1.00 M	1.911531 G	-37.92	-24.92

Date: 18.MAY.2014 09:23:42

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

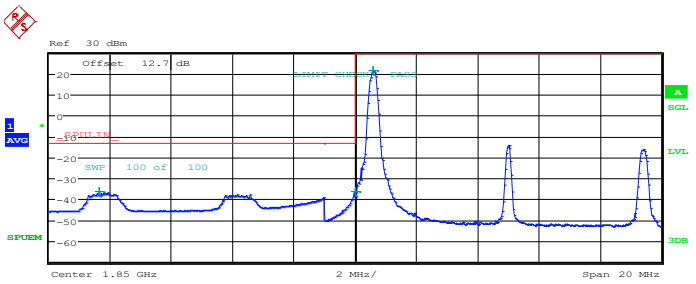


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.905 G	1.910 G	100.00 k	1.906675 G	5.40	-24.60
1.910 G	1.911 G	50.00 k	1.910019 G	-34.28	-21.28
1.911 G	1.920 G	1.00 M	1.911234 G	-24.22	-11.22

Date: 18.MAY.2014 09:25:15

Band :	LTE Band 2	Band Width :	10MHz / QPSK

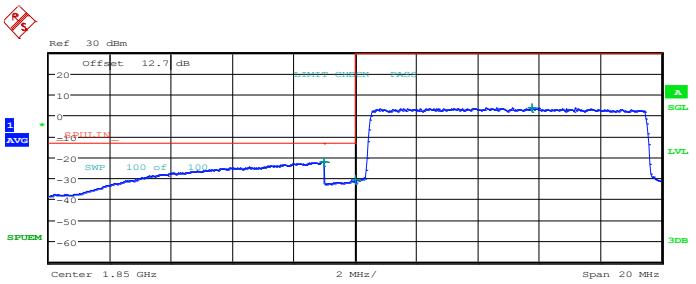
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.841620 G	-36.57	-23.57
1.849 G	1.850 G	100.00 k	1.849999 G	-36.53	-23.53
1.850 G	1.860 G	100.00 k	1.850590 G	21.37	-8.63

Date: 18.MAY.2014 09:29:11

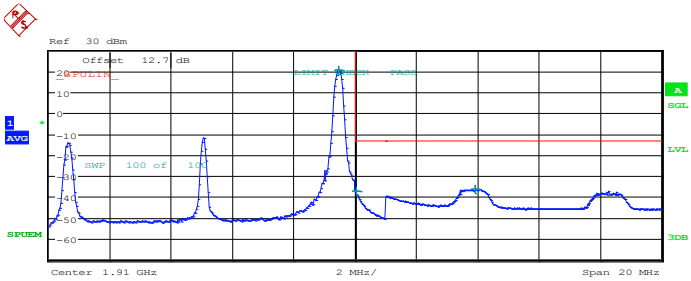
Lower Band Edge Plot for QPSK-RB Size 50, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.848982 G	-22.14	-9.14
1.849 G	1.850 G	100.00 k	1.849999 G	-30.93	-17.93
1.850 G	1.860 G	100.00 k	1.855760 G	3.41	-26.59

Date: 18.MAY.2014 09:30:44

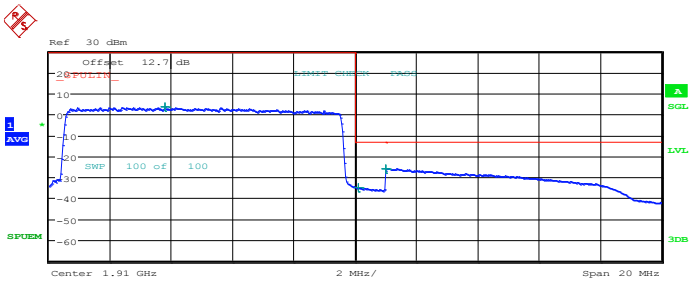
Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 49



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.900 G	1.910 G	100.00 k	1.909450 G	20.49	-9.51
1.910 G	1.911 G	100.00 k	1.910027 G	-37.50	-24.50
1.911 G	1.920 G	1.00 M	1.913925 G	-36.21	-23.21

Date: 18.MAY.2014 09:38:27

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

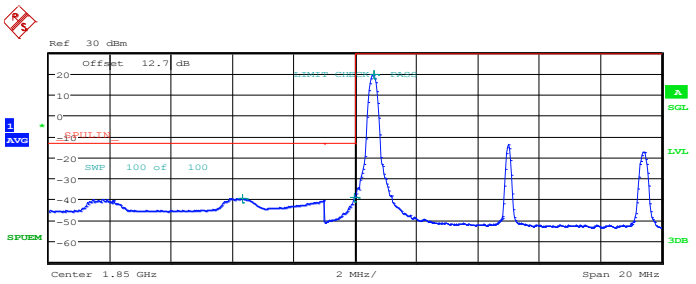


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.900 G	1.910 G	100.00 k	1.903780 G	3.26	-26.74
1.910 G	1.911 G	100.00 k	1.910095 G	-34.83	-21.83
1.911 G	1.920 G	1.00 M	1.911009 G	-25.87	-12.87

Date: 18.MAY.2014 09:40:00

Band :	LTE Band 2	Band Width :	10MHz / 16QAM

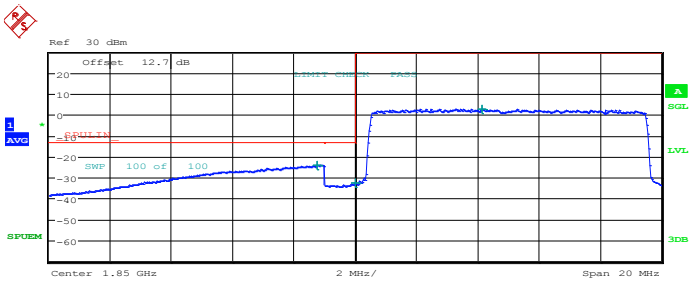
Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.846300 G	-39.50	-26.50
1.849 G	1.850 G	100.00 k	1.849962 G	-39.04	-26.04
1.850 G	1.860 G	100.00 k	1.850600 G	19.64	-10.36

Date: 18.MAY.2014 09:29:58

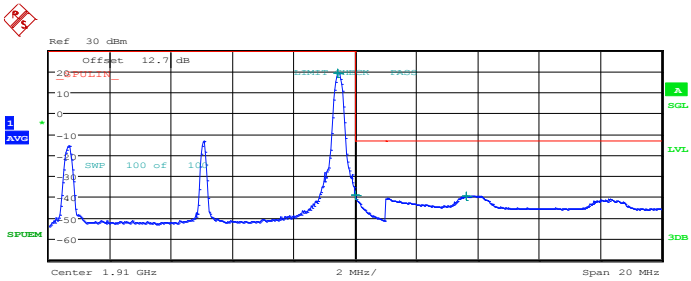
Lower Band Edge Plot for 16QAM-RB Size 50, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.848757 G	-24.09	-11.09
1.849 G	1.850 G	100.00 k	1.849993 G	-32.76	-19.76
1.850 G	1.860 G	100.00 k	1.854140 G	2.72	-27.28

Date: 18.MAY.2014 09:31:31

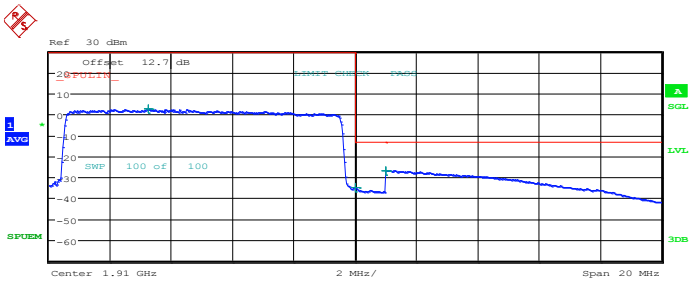
Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 49



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.900 G	1.910 G	100.00 k	1.909420 G	18.88	-11.12
1.910 G	1.911 G	100.00 k	1.910008 G	-39.19	-26.19
1.911 G	1.920 G	1.00 M	1.913610 G	-39.56	-26.56

Date: 18.MAY.2014 09:39:14

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

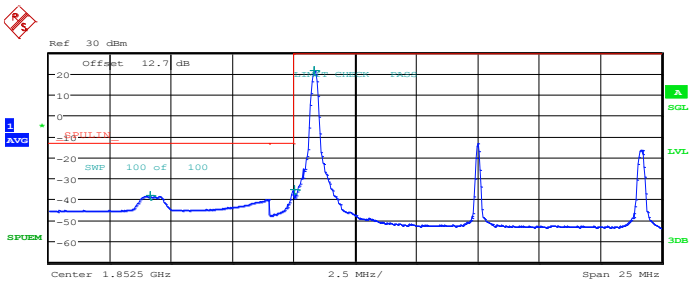


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.900 G	1.910 G	100.00 k	1.903250 G	2.50	-27.50
1.910 G	1.911 G	100.00 k	1.910003 G	-35.22	-22.22
1.911 G	1.920 G	1.00 M	1.911000 G	-26.94	-13.94

Date: 18.MAY.2014 09:40:47

Band :	LTE Band 2	Band Width :	15MHz / QPSK

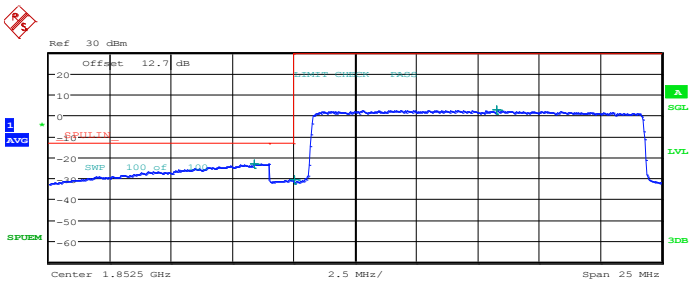
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.844113 G	-38.41	-25.41
1.849 G	1.850 G	150.00 k	1.849996 G	-35.27	-22.27
1.850 G	1.865 G	100.00 k	1.850825 G	21.38	-8.62

Date: 18.MAY.2014 09:44:42

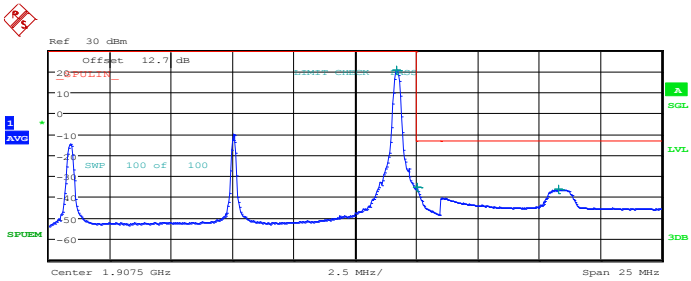
Lower Band Edge Plot for QPSK-RB Size 75, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.848361 G	-23.43	-10.43
1.849 G	1.850 G	150.00 k	1.849996 G	-30.82	-17.82
1.850 G	1.865 G	100.00 k	1.858280 G	2.39	-27.61

Date: 18.MAY.2014 09:46:15

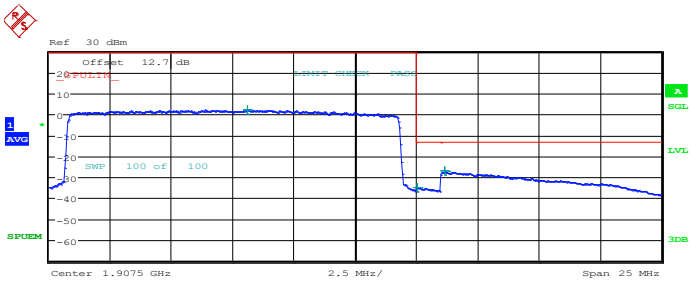
Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 74



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.895 G	1.910 G	100.00 k	1.909190 G	20.53	-9.47
1.910 G	1.911 G	150.00 k	1.910005 G	-35.61	-22.61
1.911 G	1.920 G	1.00 M	1.915788 G	-36.57	-23.57

Date: 18.MAY.2014 09:53:58

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

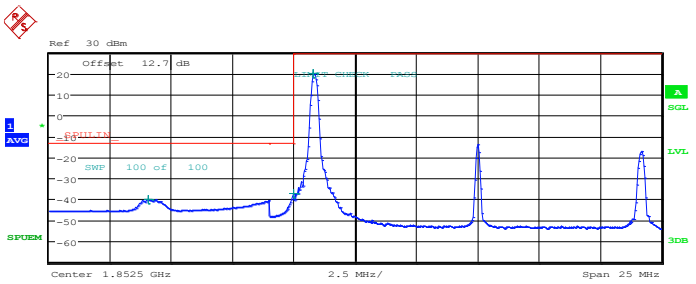


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.895 G	1.910 G	100.00 k	1.903085 G	2.08	-27.92
1.910 G	1.911 G	150.00 k	1.910005 G	-34.88	-21.88
1.911 G	1.920 G	1.00 M	1.911126 G	-27.28	-14.28

Date: 18.MAY.2014 09:55:31

Band :	LTE Band 2	Band Width :	15MHz / 16QAM

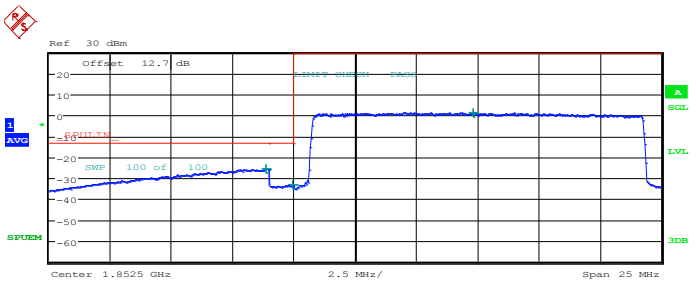
Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.844032 G	-40.00	-27.00
1.849 G	1.850 G	150.00 k	1.849994 G	-37.19	-24.19
1.850 G	1.865 G	100.00 k	1.850795 G	19.82	-10.18

Date: 18.MAY.2014 09:45:29

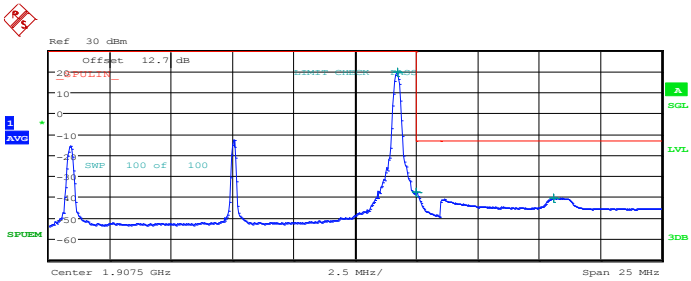
Lower Band Edge Plot for 16QAM-RB Size 75, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.848856 G	-25.40	-12.40
1.849 G	1.850 G	150.00 k	1.849929 G	-33.35	-20.35
1.850 G	1.865 G	100.00 k	1.857320 G	1.18	-28.82

Date: 18.MAY.2014 09:47:02

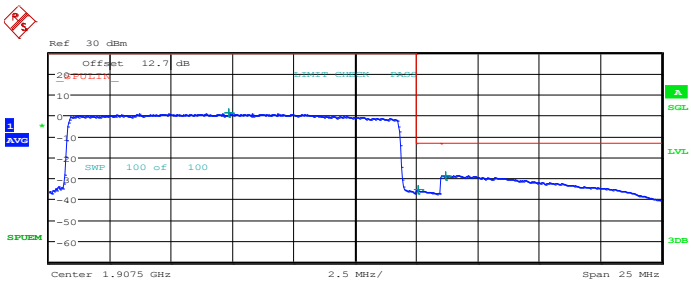
Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 74



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.895 G	1.910 G	100.00 k	1.909205 G	19.25	-10.75
1.910 G	1.911 G	150.00 k	1.910001 G	-37.76	-24.76
1.911 G	1.920 G	1.00 M	1.915608 G	-40.61	-27.61

Date: 18.MAY.2014 09:54:44

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

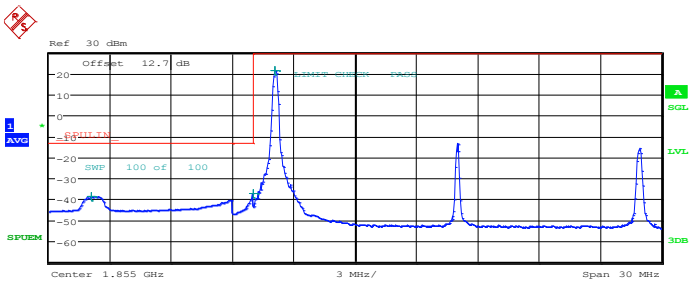


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.895 G	1.910 G	100.00 k	1.902350 G	0.90	-29.10
1.910 G	1.911 G	150.00 k	1.910045 G	-35.69	-22.69
1.911 G	1.920 G	1.00 M	1.911189 G	-28.80	-15.80

Date: 18.MAY.2014 09:56:18

Band :	LTE Band 2	Band Width :	20MHz / QPSK

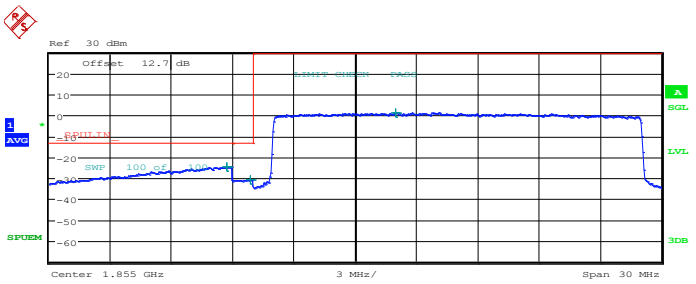
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.842079 G	-38.72	-25.72
1.849 G	1.850 G	200.00 k	1.849994 G	-37.44	-24.44
1.850 G	1.870 G	100.00 k	1.851080 G	21.36	-8.64

Date: 18.MAY.2014 10:00:13

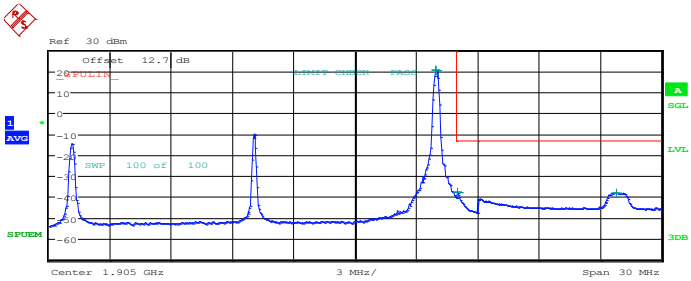
Lower Band Edge Plot for QPSK-RB Size 100, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.848685 G	-24.59	-11.59
1.849 G	1.850 G	200.00 k	1.849847 G	-30.88	-17.88
1.850 G	1.870 G	100.00 k	1.856980 G	1.06	-28.94

Date: 18.MAY.2014 10:01:46

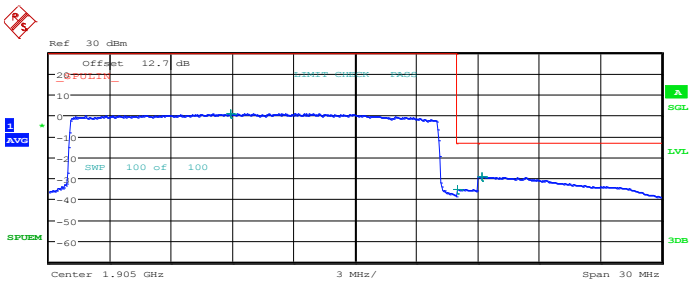
Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 99



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.890 G	1.910 G	100.00 k	1.908960 G	20.47	-9.53
1.910 G	1.911 G	200.00 k	1.910010 G	-37.95	-24.95
1.911 G	1.920 G	1.00 M	1.917786 G	-38.22	-25.22

Date: 18.MAY.2014 10:09:29

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

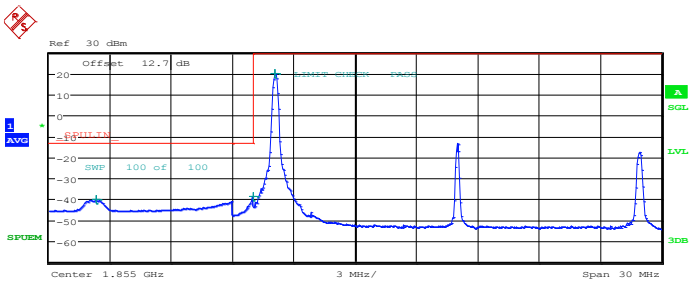


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.890 G	1.910 G	100.00 k	1.898880 G	0.63	-29.37
1.910 G	1.911 G	200.00 k	1.910014 G	-35.31	-22.31
1.911 G	1.920 G	1.00 M	1.911216 G	-29.28	-16.28

Date: 18.MAY.2014 10:11:02

Band :	LTE Band 2	Band Width :	20MHz / 16QAM

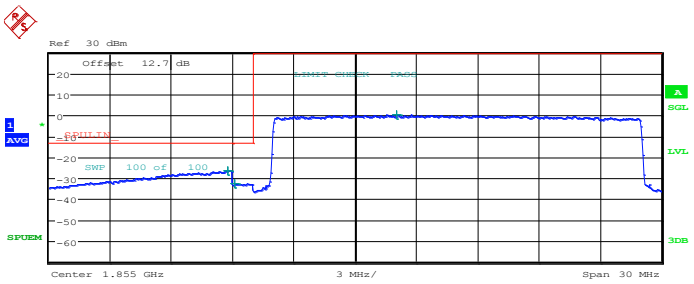
Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.842295 G	-40.37	-27.37
1.849 G	1.850 G	200.00 k	1.849986 G	-38.57	-25.57
1.850 G	1.870 G	100.00 k	1.851080 G	19.80	-10.20

Date: 18.MAY.2014 10:01:00

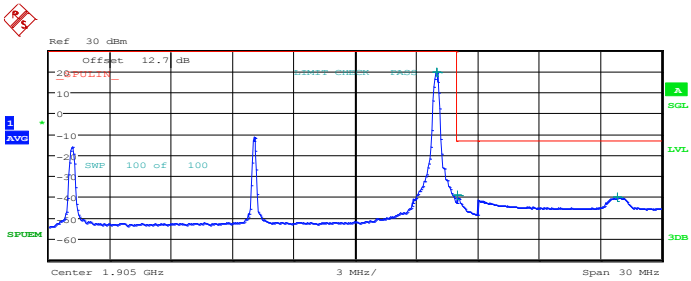
Lower Band Edge Plot for 16QAM-RB Size 100, RB Offset 0



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.840 G	1.849 G	1.00 M	1.848766 G	-26.58	-13.58
1.849 G	1.850 G	200.00 k	1.849089 G	-32.88	-19.88
1.850 G	1.870 G	100.00 k	1.857040 G	0.15	-29.85

Date: 18.MAY.2014 10:02:33

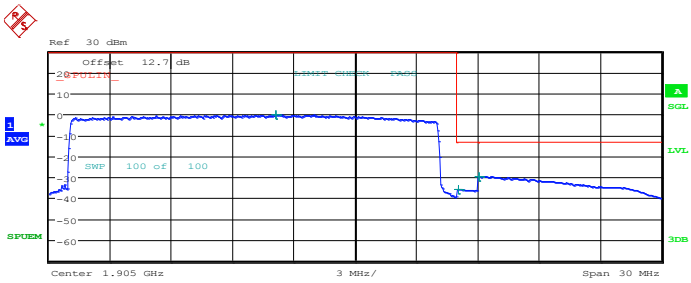
Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 99



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.890 G	1.910 G	100.00 k	1.909000 G	19.21	-10.79
1.910 G	1.911 G	200.00 k	1.910003 G	-39.02	-26.02
1.911 G	1.920 G	1.00 M	1.917822 G	-40.20	-27.20

Date: 18.MAY.2014 10:10:16

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



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
1.890 G	1.910 G	100.00 k	1.901120 G	-0.30	-30.30
1.910 G	1.911 G	200.00 k	1.910059 G	-35.76	-22.76
1.911 G	1.920 G	1.00 M	1.911072 G	-29.74	-16.74

Date: 18.MAY.2014 10:11:49

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

3.6 Conducted Spurious Emission Measurement

3.6.1 Description of Conducted Spurious Emission Measurement

For Band 2

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.

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

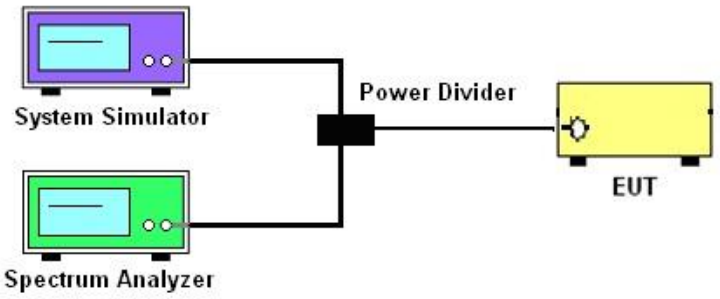
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

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

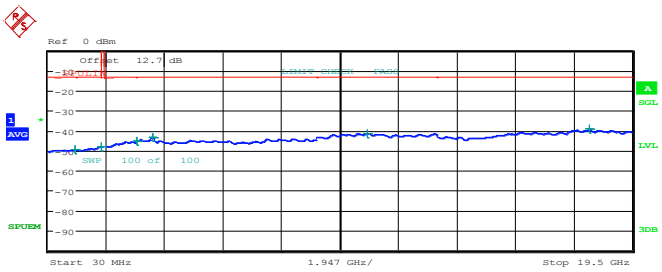
3.6.4 Test Setup



3.6.5 Test Result (Plots) of Conducted Spurious Emission

Band :	LTE Band 2	Channel :	CH18607 (Low)
Bandwidth :	1.4MHz		

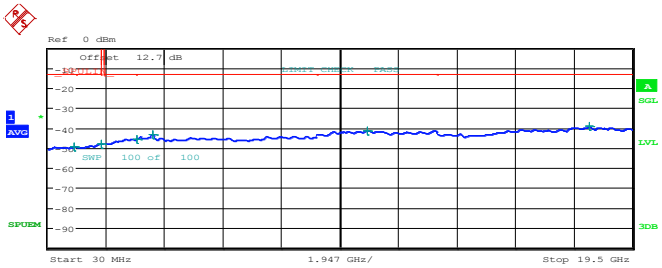
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	937.920000 M	-49.50	-36.50
1.000 G	1.840 G	1.00 M	1.804720 G	-47.99	-34.99
1.920 G	3.000 G	1.00 M	2.995680 G	-45.46	-32.46
3.000 G	9.000 G	1.00 M	3.516000 G	-43.33	-30.33
9.000 G	13.000 G	1.00 M	10.676000 G	-41.45	-28.45
13.000 G	19.500 G	1.00 M	18.050500 G	-39.35	-26.35

Date: 18.MAY.2014 08:44:47

16QAM (RB Size 1, RB Offset 0)

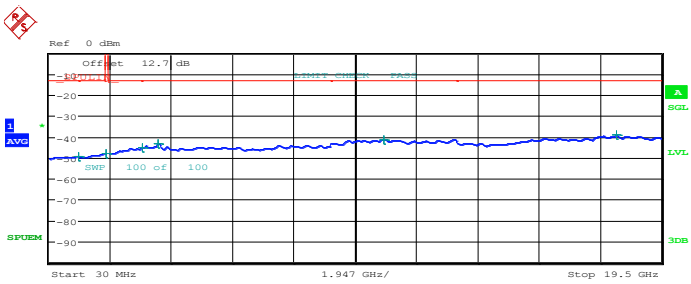


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	915.610000 M	-49.54	-36.54
1.000 G	1.840 G	1.00 M	1.802200 G	-48.09	-35.09
1.920 G	3.000 G	1.00 M	2.989200 G	-45.61	-32.61
3.000 G	9.000 G	1.00 M	3.510000 G	-43.33	-30.33
9.000 G	13.000 G	1.00 M	10.676000 G	-41.35	-28.35
13.000 G	19.500 G	1.00 M	18.050500 G	-39.37	-26.37

Date: 18.MAY.2014 08:45:47

Band :	LTE Band 2	Channel :	CH18900 (Middle)
Bandwidth :	1.4MHz		

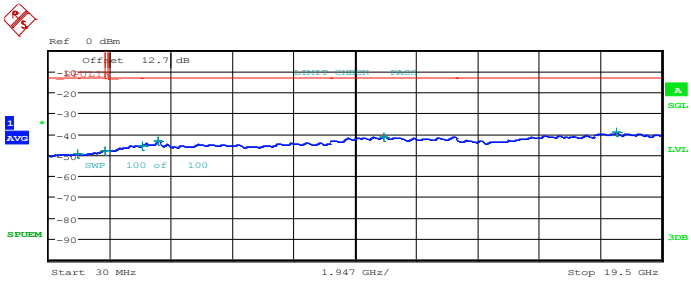
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	973.810000 M	-49.58	-36.58
1.000 G	1.840 G	1.00 M	1.833280 G	-48.01	-35.01
1.920 G	3.000 G	1.00 M	2.996760 G	-45.47	-32.47
3.000 G	9.000 G	1.00 M	3.498000 G	-43.37	-30.37
9.000 G	13.000 G	1.00 M	10.668000 G	-41.37	-28.37
13.000 G	19.500 G	1.00 M	18.050500 G	-39.35	-26.35

Date: 18.MAY.2014 08:47:52

16QAM (RB Size 1, RB Offset 0)

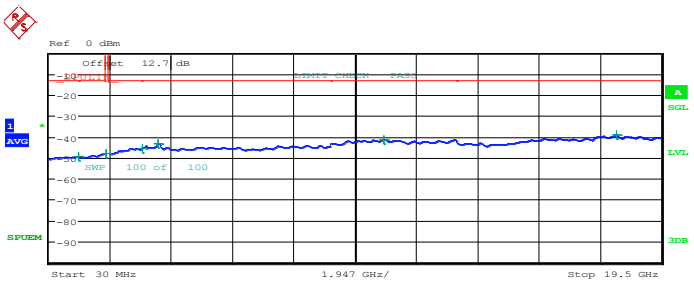


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	947.620000 M	-49.61	-36.61
1.000 G	1.840 G	1.00 M	1.804720 G	-47.91	-34.91
1.920 G	3.000 G	1.00 M	2.998920 G	-45.54	-32.54
3.000 G	9.000 G	1.00 M	3.504000 G	-43.36	-30.36
9.000 G	13.000 G	1.00 M	10.668000 G	-41.46	-28.46
13.000 G	19.500 G	1.00 M	18.057000 G	-39.35	-26.35

Date: 18.MAY.2014 08:48:52

Band :	LTE Band 2	Channel :	CH19193 (High)
Bandwidth :	1.4MHz		

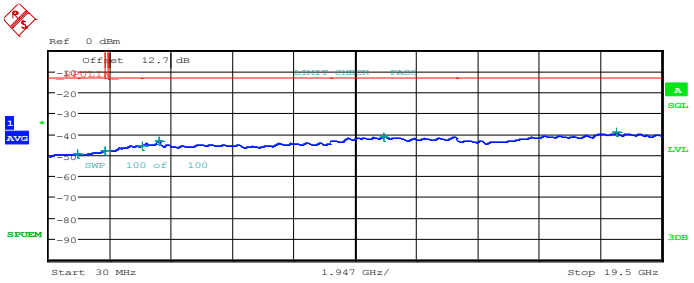
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	960.230000 M	-49.54	-36.54
1.000 G	1.840 G	1.00 M	1.832440 G	-47.96	-34.96
1.920 G	3.000 G	1.00 M	2.990280 G	-45.63	-32.63
3.000 G	9.000 G	1.00 M	3.504000 G	-43.31	-30.31
9.000 G	13.000 G	1.00 M	10.656000 G	-41.43	-28.43
13.000 G	19.500 G	1.00 M	18.057000 G	-39.32	-26.32

Date: 18.MAY.2014 08:54:03

16QAM (RB Size 1, RB Offset 0)

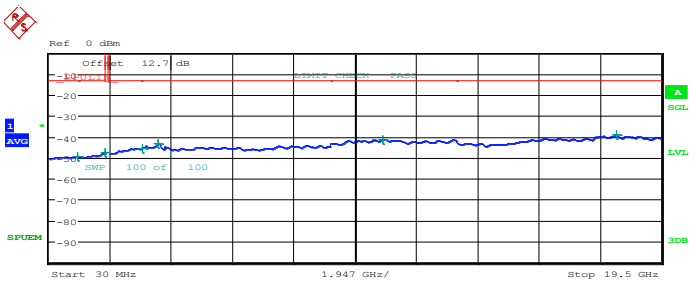


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	939.860000 M	-49.58	-36.58
1.000 G	1.840 G	1.00 M	1.808920 G	-48.02	-35.02
1.920 G	3.000 G	1.00 M	2.998920 G	-45.58	-32.58
3.000 G	9.000 G	1.00 M	3.510000 G	-43.31	-30.31
9.000 G	13.000 G	1.00 M	10.668000 G	-41.45	-28.45
13.000 G	19.500 G	1.00 M	18.063500 G	-39.30	-26.30

Date: 18.MAY.2014 08:55:02

Band :	LTE Band 2	Channel :	CH18615 (Low)
Bandwidth :	3MHz		

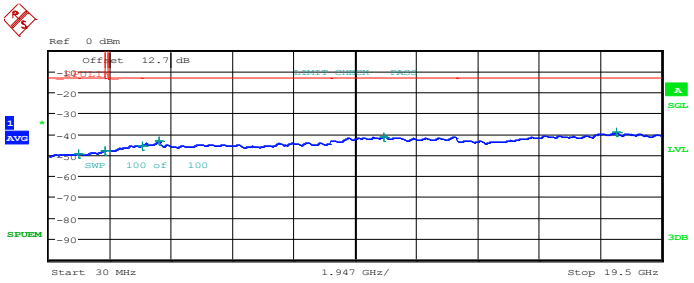
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	945.680000 M	-49.51	-36.51
1.000 G	1.840 G	1.00 M	1.812280 G	-47.73	-34.73
1.920 G	3.000 G	1.00 M	2.997840 G	-45.62	-32.62
3.000 G	9.000 G	1.00 M	3.504000 G	-43.36	-30.36
9.000 G	13.000 G	1.00 M	10.636000 G	-41.45	-28.45
13.000 G	19.500 G	1.00 M	18.057000 G	-39.39	-26.39

Date: 18.MAY.2014 09:01:25

16QAM (RB Size 1, RB Offset 0)

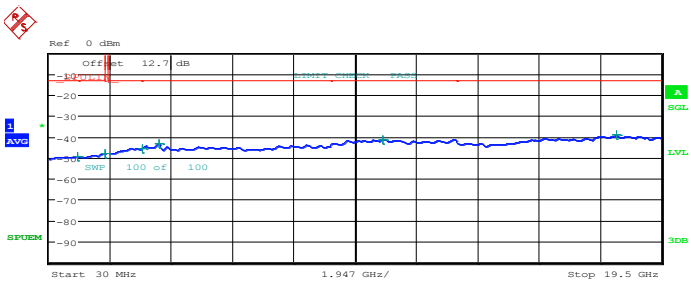


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	971.870000 M	-49.57	-36.57
1.000 G	1.840 G	1.00 M	1.813120 G	-47.93	-34.93
1.920 G	3.000 G	1.00 M	2.988120 G	-45.56	-32.56
3.000 G	9.000 G	1.00 M	3.510000 G	-43.36	-30.36
9.000 G	13.000 G	1.00 M	10.672000 G	-41.47	-28.47
13.000 G	19.500 G	1.00 M	18.050500 G	-39.38	-26.38

Date: 18.MAY.2014 09:02:25

Band :	LTE Band 2	Channel :	CH18900 (Middle)
Bandwidth :	3MHz		

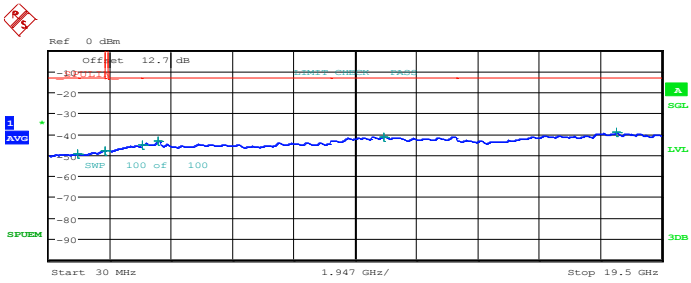
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	930.160000 M	-49.58	-36.58
1.000 G	1.840 G	1.00 M	1.819840 G	-48.04	-35.04
1.920 G	3.000 G	1.00 M	2.992440 G	-45.64	-32.64
3.000 G	9.000 G	1.00 M	3.510000 G	-43.26	-30.26
9.000 G	13.000 G	1.00 M	10.652000 G	-41.44	-28.44
13.000 G	19.500 G	1.00 M	18.050500 G	-39.35	-26.35

Date: 18.MAY.2014 09:04:30

16QAM (RB Size 1, RB Offset 0)

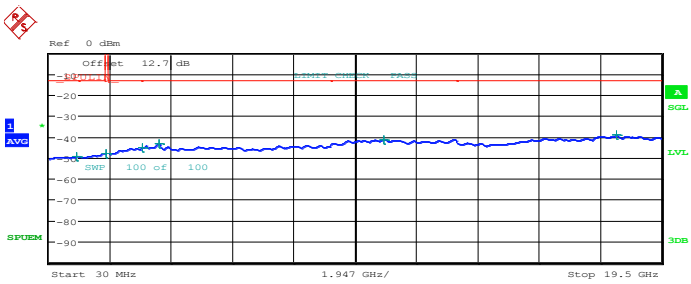


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	946.650000 M	-49.59	-36.59
1.000 G	1.840 G	1.00 M	1.823200 G	-47.97	-34.97
1.920 G	3.000 G	1.00 M	2.990280 G	-45.42	-32.42
3.000 G	9.000 G	1.00 M	3.504000 G	-43.33	-30.33
9.000 G	13.000 G	1.00 M	10.664000 G	-41.38	-28.38
13.000 G	19.500 G	1.00 M	18.057000 G	-39.38	-26.38

Date: 18.MAY.2014 09:05:30

Band :	LTE Band 2	Channel :	CH19185 (High)
Bandwidth :	3MHz		

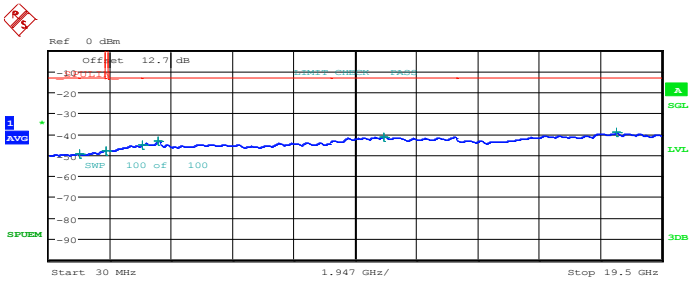
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	911.730000 M	-49.64	-36.64
1.000 G	1.840 G	1.00 M	1.828240 G	-48.03	-35.03
1.920 G	3.000 G	1.00 M	2.998920 G	-45.51	-32.51
3.000 G	9.000 G	1.00 M	3.510000 G	-43.35	-30.35
9.000 G	13.000 G	1.00 M	10.660000 G	-41.43	-28.43
13.000 G	19.500 G	1.00 M	18.057000 G	-39.38	-26.38

Date: 18.MAY.2014 09:10:41

16QAM (RB Size 1, RB Offset 0)

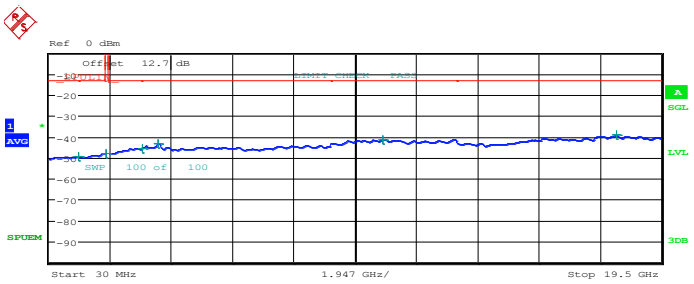


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	982.540000 M	-49.63	-36.63
1.000 G	1.840 G	1.00 M	1.833280 G	-47.99	-34.99
1.920 G	3.000 G	1.00 M	2.983800 G	-45.49	-32.49
3.000 G	9.000 G	1.00 M	3.504000 G	-43.37	-30.37
9.000 G	13.000 G	1.00 M	10.680000 G	-41.47	-28.47
13.000 G	19.500 G	1.00 M	18.063500 G	-39.39	-26.39

Date: 18.MAY.2014 09:11:41

Band :	LTE Band 2	Channel :	CH18625 (Low)
Bandwidth :	5MHz		

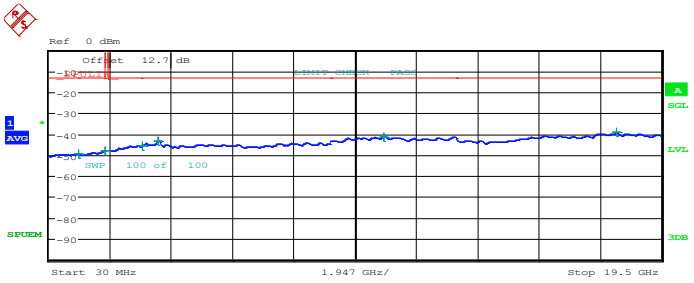
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	954.410000 M	-49.50	-36.50
1.000 G	1.840 G	1.00 M	1.830760 G	-48.07	-35.07
1.920 G	3.000 G	1.00 M	2.981640 G	-45.71	-32.71
3.000 G	9.000 G	1.00 M	3.504000 G	-43.37	-30.37
9.000 G	13.000 G	1.00 M	10.636000 G	-41.43	-28.43
13.000 G	19.500 G	1.00 M	18.057000 G	-39.34	-26.34

Date: 18.MAY.2014 09:16:56

16QAM (RB Size 1, RB Offset 0)

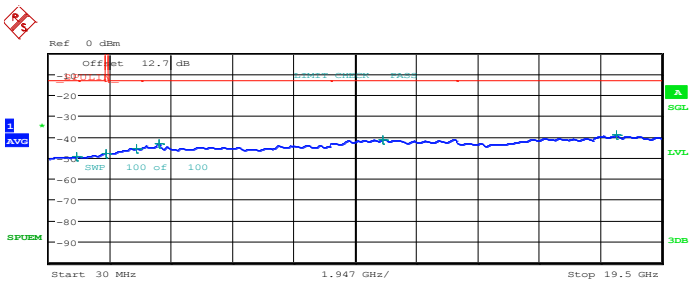


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	955.380000 M	-49.54	-36.54
1.000 G	1.840 G	1.00 M	1.812280 G	-47.91	-34.91
1.920 G	3.000 G	1.00 M	2.982720 G	-45.64	-32.64
3.000 G	9.000 G	1.00 M	3.504000 G	-43.37	-30.37
9.000 G	13.000 G	1.00 M	10.684000 G	-41.42	-28.42
13.000 G	19.500 G	1.00 M	18.050500 G	-39.39	-26.39

Date: 18.MAY.2014 09:17:56

Band :	LTE Band 2	Channel :	CH18900 (Middle)
Bandwidth :	5MHz		

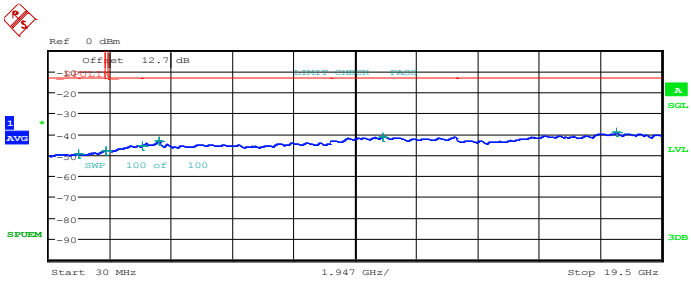
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	902.030000 M	-49.49	-36.49
1.000 G	1.840 G	1.00 M	1.839160 G	-48.00	-35.00
1.920 G	3.000 G	1.00 M	2.809920 G	-45.63	-32.63
3.000 G	9.000 G	1.00 M	3.510000 G	-43.33	-30.33
9.000 G	13.000 G	1.00 M	10.624000 G	-41.44	-28.44
13.000 G	19.500 G	1.00 M	18.057000 G	-39.36	-26.36

Date: 18.MAY.2014 09:20:01

16QAM (RB Size 1, RB Offset 0)

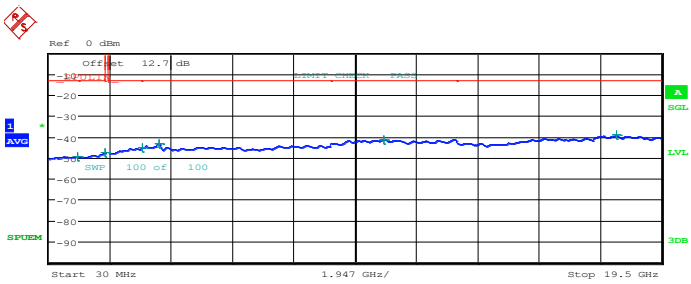


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	967.990000 M	-49.55	-36.55
1.000 G	1.840 G	1.00 M	1.836640 G	-48.01	-35.01
1.920 G	3.000 G	1.00 M	2.992440 G	-45.68	-32.68
3.000 G	9.000 G	1.00 M	3.510000 G	-43.35	-30.35
9.000 G	13.000 G	1.00 M	10.632000 G	-41.48	-28.48
13.000 G	19.500 G	1.00 M	18.057000 G	-39.38	-26.38

Date: 18.MAY.2014 09:21:03

Band :	LTE Band 2	Channel :	CH19175 (High)
Bandwidth :	5MHz		

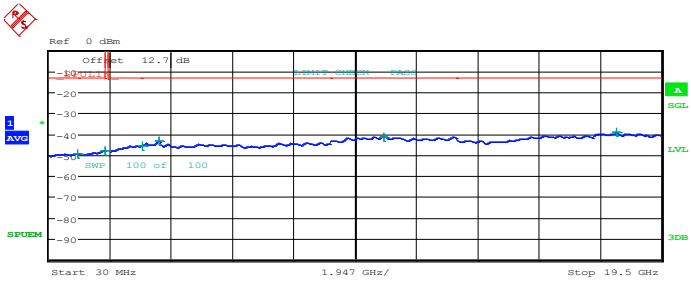
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	948.590000 M	-49.48	-36.48
1.000 G	1.840 G	1.00 M	1.822360 G	-47.83	-34.83
1.920 G	3.000 G	1.00 M	2.992440 G	-45.53	-32.53
3.000 G	9.000 G	1.00 M	3.510000 G	-43.35	-30.35
9.000 G	13.000 G	1.00 M	10.676000 G	-41.46	-28.46
13.000 G	19.500 G	1.00 M	18.050500 G	-39.34	-26.34

Date: 18.MAY.2014 09:26:15

16QAM (RB Size 1, RB Offset 0)

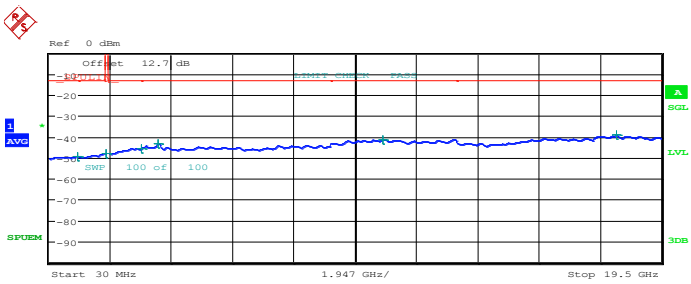


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	924.340000 M	-49.54	-36.54
1.000 G	1.840 G	1.00 M	1.803040 G	-48.06	-35.06
1.920 G	3.000 G	1.00 M	2.994600 G	-45.65	-32.65
3.000 G	9.000 G	1.00 M	3.510000 G	-43.31	-30.31
9.000 G	13.000 G	1.00 M	10.680000 G	-41.49	-28.49
13.000 G	19.500 G	1.00 M	18.063500 G	-39.32	-26.32

Date: 18.MAY.2014 09:27:15

Band :	LTE Band 2	Channel :	CH18650 (Low)
Bandwidth :	10MHz		

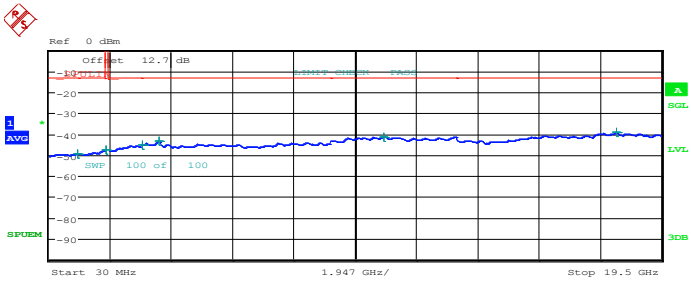
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	924.340000 M	-49.55	-36.55
1.000 G	1.840 G	1.00 M	1.833280 G	-48.00	-35.00
1.920 G	3.000 G	1.00 M	2.974080 G	-45.57	-32.57
3.000 G	9.000 G	1.00 M	3.498000 G	-43.32	-30.32
9.000 G	13.000 G	1.00 M	10.644000 G	-41.41	-28.41
13.000 G	19.500 G	1.00 M	18.057000 G	-39.40	-26.40

Date: 18.MAY.2014 09:32:30

16QAM (RB Size 1, RB Offset 0)

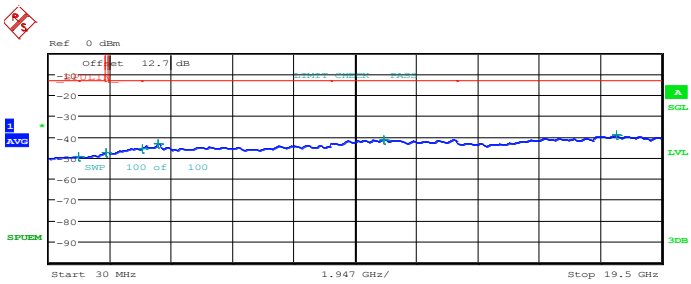


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	931.130000 M	-49.52	-36.52
1.000 G	1.840 G	1.00 M	1.836640 G	-47.88	-34.88
1.920 G	3.000 G	1.00 M	2.994600 G	-45.52	-32.52
3.000 G	9.000 G	1.00 M	3.510000 G	-43.37	-30.37
9.000 G	13.000 G	1.00 M	10.676000 G	-41.44	-28.44
13.000 G	19.500 G	1.00 M	18.050500 G	-39.27	-26.27

Date: 18.MAY.2014 09:33:30

Band :	LTE Band 2	Channel :	CH18900 (Middle)
Bandwidth :	10MHz		

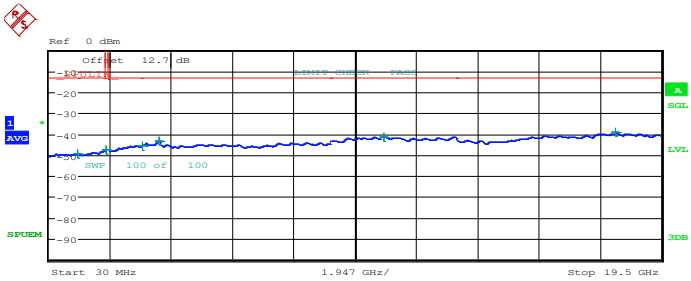
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	953.440000 M	-49.55	-36.55
1.000 G	1.840 G	1.00 M	1.838320 G	-47.64	-34.64
1.920 G	3.000 G	1.00 M	2.997840 G	-45.66	-32.66
3.000 G	9.000 G	1.00 M	3.504000 G	-43.36	-30.36
9.000 G	13.000 G	1.00 M	10.668000 G	-41.45	-28.45
13.000 G	19.500 G	1.00 M	18.050500 G	-39.38	-26.38

Date: 18.MAY.2014 09:35:35

16QAM (RB Size 1, RB Offset 0)

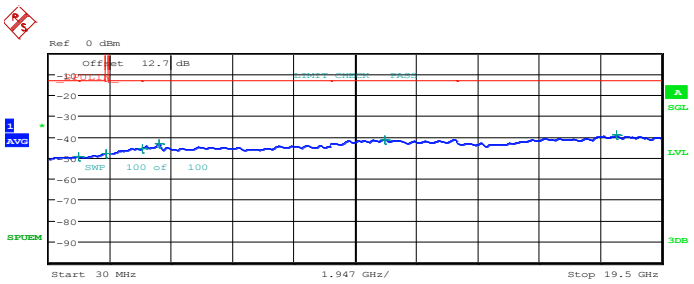


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	932.100000 M	-49.48	-36.48
1.000 G	1.840 G	1.00 M	1.838320 G	-47.73	-34.73
1.920 G	3.000 G	1.00 M	2.996760 G	-45.67	-32.67
3.000 G	9.000 G	1.00 M	3.522000 G	-43.37	-30.37
9.000 G	13.000 G	1.00 M	10.672000 G	-41.44	-28.44
13.000 G	19.500 G	1.00 M	18.044000 G	-39.37	-26.37

Date: 18.MAY.2014 09:36:35

Band :	LTE Band 2	Channel :	CH19150 (High)
Bandwidth :	10MHz		

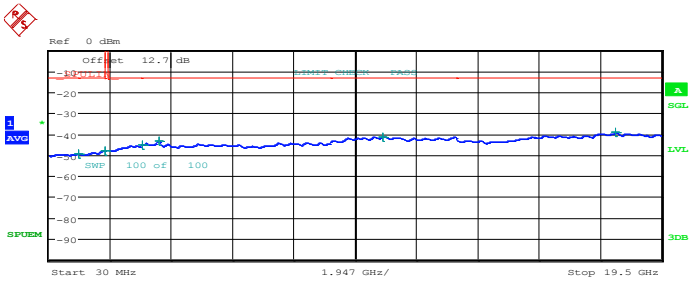
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	964.110000 M	-49.56	-36.56
1.000 G	1.840 G	1.00 M	1.824880 G	-47.93	-34.93
1.920 G	3.000 G	1.00 M	3.000000 G	-45.68	-32.68
3.000 G	9.000 G	1.00 M	3.510000 G	-43.30	-30.30
9.000 G	13.000 G	1.00 M	10.688000 G	-41.45	-28.45
13.000 G	19.500 G	1.00 M	18.050500 G	-39.37	-26.37

Date: 18.MAY.2014 09:41:46

16QAM (RB Size 1, RB Offset 0)

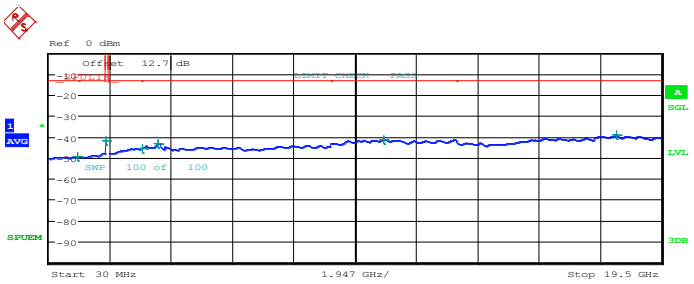


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	952.470000 M	-49.49	-36.49
1.000 G	1.840 G	1.00 M	1.824040 G	-47.93	-34.93
1.920 G	3.000 G	1.00 M	2.997840 G	-45.49	-32.49
3.000 G	9.000 G	1.00 M	3.510000 G	-43.31	-30.31
9.000 G	13.000 G	1.00 M	10.628000 G	-41.39	-28.39
13.000 G	19.500 G	1.00 M	18.037500 G	-39.43	-26.43

Date: 18.MAY.2014 09:42:46

Band :	LTE Band 2	Channel :	CH18675 (Low)
Bandwidth :	15MHz		

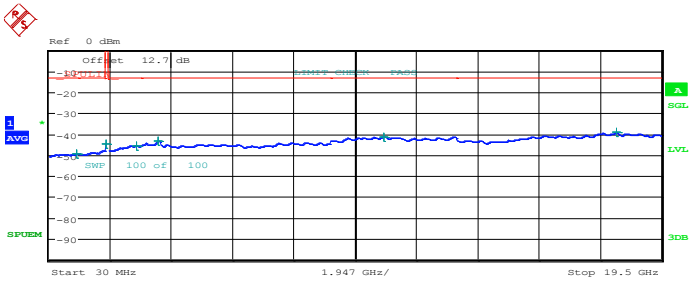
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	935.010000 M	-49.48	-36.48
1.000 G	1.840 G	1.00 M	1.838320 G	-41.95	-28.95
1.920 G	3.000 G	1.00 M	2.998920 G	-45.67	-32.67
3.000 G	9.000 G	1.00 M	3.504000 G	-43.32	-30.32
9.000 G	13.000 G	1.00 M	10.684000 G	-41.43	-28.43
13.000 G	19.500 G	1.00 M	18.050500 G	-39.36	-26.36

Date: 18.MAY.2014 09:48:01

16QAM (RB Size 1, RB Offset 0)

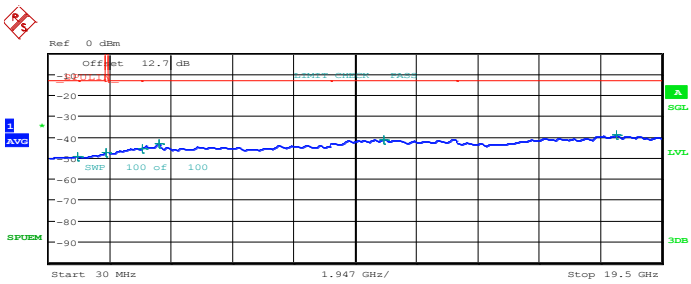


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	907.850000 M	-49.58	-36.58
1.000 G	1.840 G	1.00 M	1.838320 G	-44.81	-31.81
1.920 G	3.000 G	1.00 M	2.806680 G	-45.64	-32.64
3.000 G	9.000 G	1.00 M	3.504000 G	-43.36	-30.36
9.000 G	13.000 G	1.00 M	10.680000 G	-41.41	-28.41
13.000 G	19.500 G	1.00 M	18.063500 G	-39.35	-26.35

Date: 18.MAY.2014 09:49:01

Band :	LTE Band 2	Channel :	CH18900 (Middle)
Bandwidth :	15MHz		

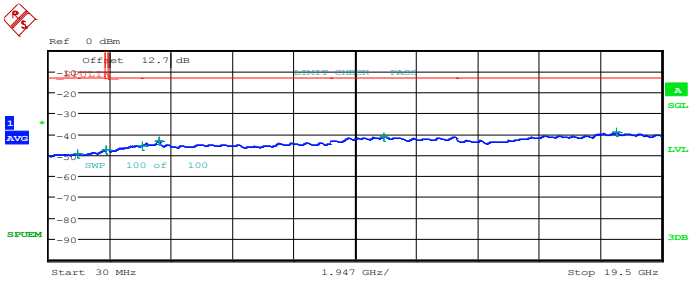
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	948.590000 M	-49.59	-36.59
1.000 G	1.840 G	1.00 M	1.835800 G	-47.47	-34.47
1.920 G	3.000 G	1.00 M	2.990280 G	-45.65	-32.65
3.000 G	9.000 G	1.00 M	3.510000 G	-43.35	-30.35
9.000 G	13.000 G	1.00 M	10.660000 G	-41.43	-28.43
13.000 G	19.500 G	1.00 M	18.050500 G	-39.38	-26.38

Date: 18.MAY.2014 09:51:06

16QAM (RB Size 1, RB Offset 0)

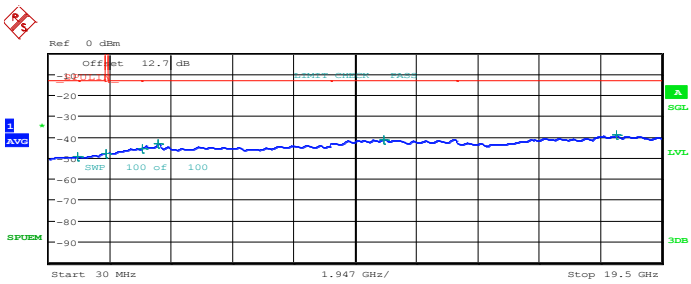


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	919.490000 M	-49.52	-36.52
1.000 G	1.840 G	1.00 M	1.835800 G	-47.61	-34.61
1.920 G	3.000 G	1.00 M	2.992440 G	-45.59	-32.59
3.000 G	9.000 G	1.00 M	3.516000 G	-43.33	-30.33
9.000 G	13.000 G	1.00 M	10.680000 G	-41.35	-28.35
13.000 G	19.500 G	1.00 M	18.057000 G	-39.39	-26.39

Date: 18.MAY.2014 09:52:06

Band :	LTE Band 2	Channel :	CH19125 (High)
Bandwidth :	15MHz		

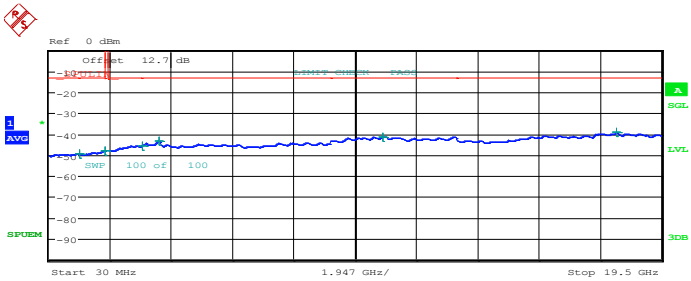
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	934.040000 M	-49.46	-36.46
1.000 G	1.840 G	1.00 M	1.832440 G	-47.93	-34.93
1.920 G	3.000 G	1.00 M	2.984880 G	-45.73	-32.73
3.000 G	9.000 G	1.00 M	3.492000 G	-43.36	-30.36
9.000 G	13.000 G	1.00 M	10.660000 G	-41.43	-28.43
13.000 G	19.500 G	1.00 M	18.057000 G	-39.31	-26.31

Date: 18.MAY.2014 09:57:17

16QAM (RB Size 1, RB Offset 0)

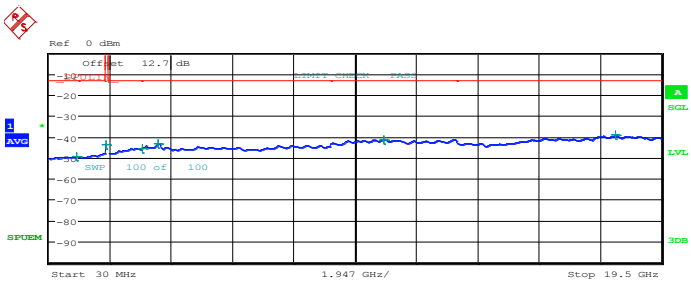


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	990.300000 M	-49.58	-36.58
1.000 G	1.840 G	1.00 M	1.822360 G	-47.94	-34.94
1.920 G	3.000 G	1.00 M	2.992440 G	-45.58	-32.58
3.000 G	9.000 G	1.00 M	3.516000 G	-43.32	-30.32
9.000 G	13.000 G	1.00 M	10.632000 G	-41.49	-28.49
13.000 G	19.500 G	1.00 M	18.050500 G	-39.35	-26.35

Date: 18.MAY.2014 09:58:17

Band :	LTE Band 2	Channel :	CH18700 (Low)
Bandwidth :	20MHz		

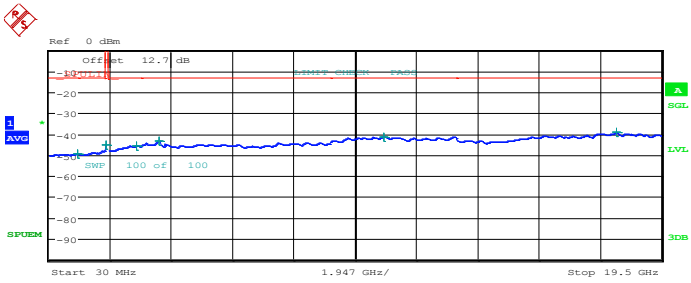
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	908.820000 M	-49.51	-36.51
1.000 G	1.840 G	1.00 M	1.834120 G	-43.72	-30.72
1.920 G	3.000 G	1.00 M	2.980560 G	-45.67	-32.67
3.000 G	9.000 G	1.00 M	3.504000 G	-43.34	-30.34
9.000 G	13.000 G	1.00 M	10.668000 G	-41.37	-28.37
13.000 G	19.500 G	1.00 M	18.044000 G	-39.37	-26.37

Date: 18.MAY.2014 10:03:32

16QAM (RB Size 1, RB Offset 0)

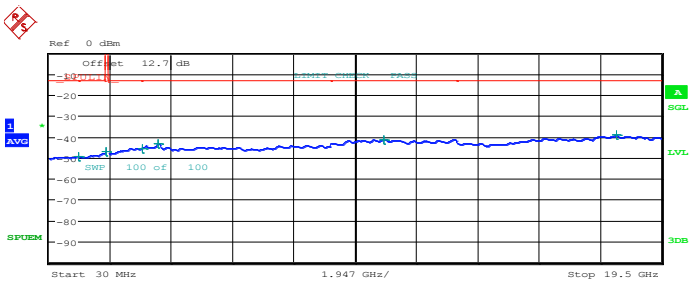


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	938.890000 M	-49.52	-36.52
1.000 G	1.840 G	1.00 M	1.834120 G	-45.43	-32.43
1.920 G	3.000 G	1.00 M	2.795880 G	-45.72	-32.72
3.000 G	9.000 G	1.00 M	3.510000 G	-43.36	-30.36
9.000 G	13.000 G	1.00 M	10.680000 G	-41.43	-28.43
13.000 G	19.500 G	1.00 M	18.063500 G	-39.40	-26.40

Date: 18.MAY.2014 10:04:32

Band :	LTE Band 2	Channel :	CH18900 (Middle)
Bandwidth :	20MHz		

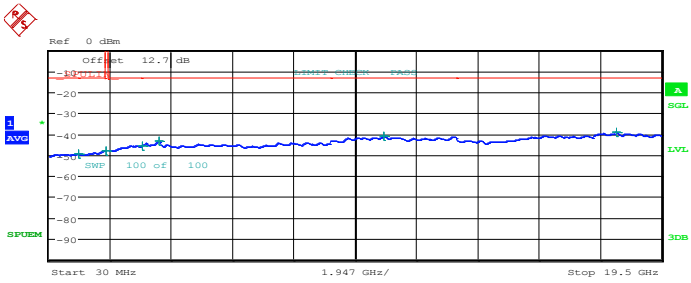
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	956.350000 M	-49.62	-36.62
1.000 G	1.840 G	1.00 M	1.836640 G	-47.01	-34.01
1.920 G	3.000 G	1.00 M	2.996760 G	-45.55	-32.55
3.000 G	9.000 G	1.00 M	3.504000 G	-43.41	-30.41
9.000 G	13.000 G	1.00 M	10.664000 G	-41.49	-28.49
13.000 G	19.500 G	1.00 M	18.050500 G	-39.37	-26.37

Date: 18.MAY.2014 10:06:37

16QAM (RB Size 1, RB Offset 0)

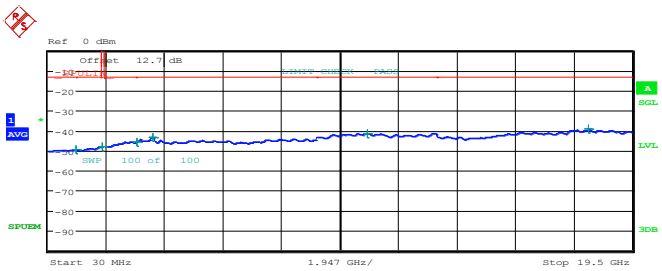


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	951.500000 M	-49.67	-36.67
1.000 G	1.840 G	1.00 M	1.836640 G	-47.94	-34.94
1.920 G	3.000 G	1.00 M	2.997840 G	-45.66	-32.66
3.000 G	9.000 G	1.00 M	3.510000 G	-43.35	-30.35
9.000 G	13.000 G	1.00 M	10.672000 G	-41.29	-28.29
13.000 G	19.500 G	1.00 M	18.050500 G	-39.39	-26.39

Date: 18.MAY.2014 10:07:37

Band :	LTE Band 2	Channel :	CH19100 (High)
Bandwidth :	20MHz		

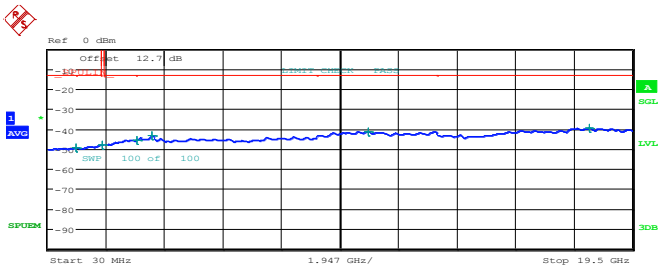
QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	955.380000 M	-49.47	-36.47
1.000 G	1.840 G	1.00 M	1.830760 G	-47.95	-34.95
1.920 G	3.000 G	1.00 M	2.996760 G	-45.60	-32.60
3.000 G	9.000 G	1.00 M	3.510000 G	-43.35	-30.35
9.000 G	13.000 G	1.00 M	10.668000 G	-41.40	-28.40
13.000 G	19.500 G	1.00 M	18.044000 G	-39.35	-26.35

Date: 18.MAY.2014 10:12:49

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	1.00 M	957.320000 M	-49.59	-36.59
1.000 G	1.840 G	1.00 M	1.829920 G	-47.94	-34.94
1.920 G	3.000 G	1.00 M	2.992440 G	-45.68	-32.68
3.000 G	9.000 G	1.00 M	3.498000 G	-43.40	-30.40
9.000 G	13.000 G	1.00 M	10.688000 G	-41.47	-28.47
13.000 G	19.500 G	1.00 M	18.057000 G	-39.45	-26.45

Date: 18.MAY.2014 10:13:48

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

3.7 Radiated Spurious Emission Measurement

3.7.1 Description of Radiated Spurious Emission

For Band 2

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

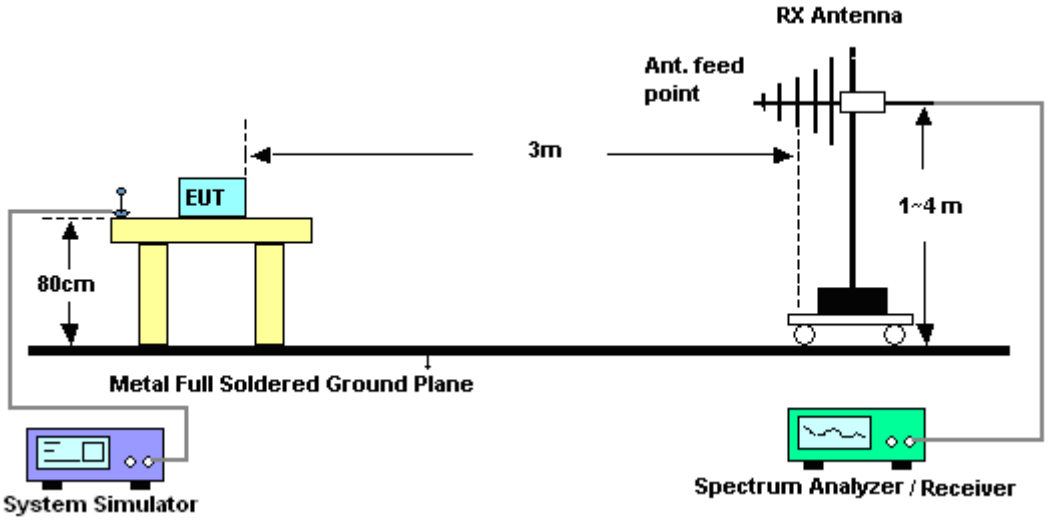
The measuring equipment is listed in the section 4 of this test report.

3.7.3 Test Procedures

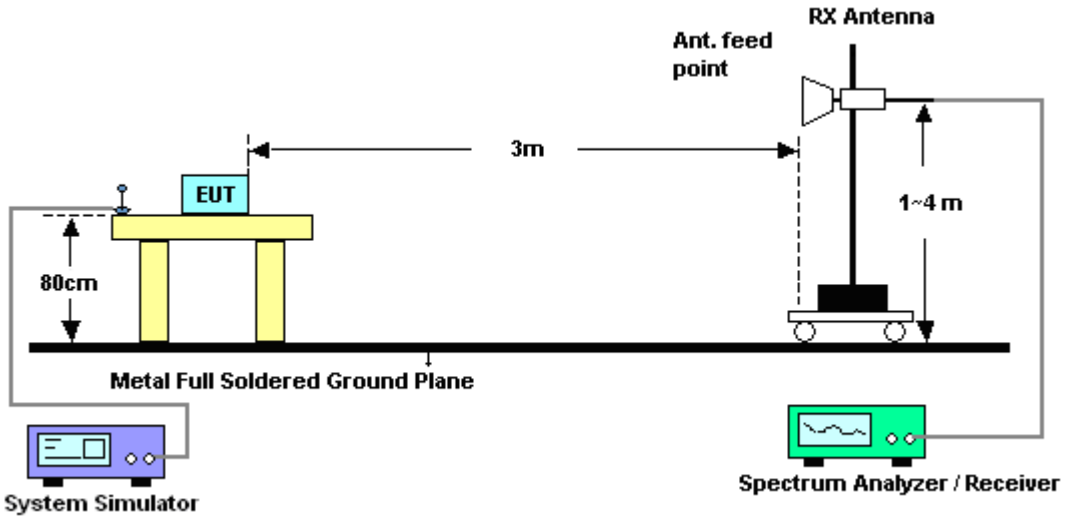
1. The EUT was placed on a rotatable wooden table with 0.8 meter above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving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

<Low Channel>

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 5	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
3700	-50.27	-13	-37.27	-65.34	-56.53	2.48	8.74	H	Pass
5548	-41.39	-13	-28.39	-61.67	-49.08	2.96	10.65	H	Pass
7403	-40.03	-13	-27.03	-67.2	-48.66	3.48	12.11	H	Pass

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 5	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
3700	-48.64	-13	-35.64	-64.63	-54.9	2.48	8.74	V	Pass
5548	-44.42	-13	-31.42	-64.48	-52.11	2.96	10.65	V	Pass
7403	-41.38	-13	-28.38	-68.35	-50.01	3.48	12.11	V	Pass

<Middle Channel>

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 5	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
3756	-50.43	-13	-37.43	-65.7	-56.73	2.51	8.81	H	Pass
5639	-42.09	-13	-29.09	-62.75	-49.8	2.99	10.70	H	Pass
7520	-41.01	-13	-28.01	-68.25	-49.54	3.59	12.12	H	Pass

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 5	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
3756	-47.05	-13	-34.05	-63.28	-53.35	2.51	8.81	V	Pass
5639	-41.83	-13	-28.83	-62.23	-49.54	2.99	10.70	V	Pass
7520	-41.15	-13	-28.15	-68.08	-49.68	3.59	12.12	V	Pass

<High Channel>

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 5	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
3819	-49.30	-13	-36.30	-64.82	-55.56	2.61	8.87	H	Pass
5723	-41.69	-13	-28.69	-62.67	-49.49	3.09	10.89	H	Pass
7634	-41.84	-13	-28.84	-68.03	-50.34	3.68	12.18	H	Pass

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 5	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
3819	-46.02	-13	-33.02	-62.43	-52.28	2.61	8.87	V	Pass
5723	-43.17	-13	-30.17	-63.95	-50.97	3.09	10.89	V	Pass
7634	-41.96	-13	-28.96	-68.02	-50.46	3.68	12.18	V	Pass

<Low Channel>

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	3MHz QPSK RB Size 1 Offset 14	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
3700	-50.13	-13	-37.13	-65.23	-56.39	2.47	8.73	H	Pass
5548	-41.23	-13	-28.23	-61.58	-48.98	2.93	10.68	H	Pass
7403	-40.93	-13	-27.93	-68.25	-49.65	3.42	12.14	H	Pass

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	3MHz QPSK RB Size 1 Offset 14	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
3700	-49.01	-13	-36.01	-65.11	-55.27	2.47	8.73	V	Pass
5548	-43.51	-13	-30.51	-63.66	-51.26	2.93	10.68	V	Pass
7403	-41.13	-13	-28.13	-68.1	-49.85	3.42	12.14	V	Pass

<Middle Channel>

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	3MHz QPSK RB Size 1 Offset 14	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
3756	-48.86	-13	-35.86	-64.09	-55.16	2.51	8.81	H	Pass
5639	-41.34	-13	-28.34	-61.89	-49.05	2.99	10.70	H	Pass
7520	-41.11	-13	-28.11	-68.29	-49.64	3.59	12.12	H	Pass

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	3MHz QPSK RB Size 1 Offset 14	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
3756	-47.03	-13	-34.03	-63.27	-53.33	2.51	8.81	V	Pass
5639	-41.96	-13	-28.96	-62.39	-49.67	2.99	10.70	V	Pass
7520	-41.38	-13	-28.38	-68.3	-49.91	3.59	12.12	V	Pass

<High Channel>

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	3MHz QPSK RB Size 1 Offset 14	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
3819	-48.79	-13	-35.79	-64.26	-55.02	2.64	8.87	H	Pass
5723	-42.95	-13	-29.95	-63.89	-50.69	3.08	10.82	H	Pass
7634	-41.61	-13	-28.61	-67.84	-50.1	3.64	12.13	H	Pass

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	3MHz QPSK RB Size 1 Offset 14	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
3819	-46.75	-13	-33.75	-63.33	-52.98	2.64	8.87	V	Pass
5723	-41.16	-13	-28.16	-61.92	-48.9	3.08	10.82	V	Pass
7634	-41.72	-13	-28.72	-67.81	-50.21	3.64	12.13	V	Pass

<Low Channel>

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	5MHz QPSK RB Size 1 Offset 24	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
3700	-50.90	-13	-37.90	-65.91	-57.23	2.46	8.79	H	Pass
5548	-42.43	-13	-29.43	-62.54	-50.3	2.9	10.77	H	Pass
7403	-40.14	-13	-27.14	-67.38	-48.96	3.42	12.24	H	Pass

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	5MHz QPSK RB Size 1 Offset 24	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
3700	-50.78	-13	-37.78	-65.78	-57.11	2.46	8.79	V	Pass
5548	-43.95	-13	-30.95	-64.05	-51.82	2.9	10.77	V	Pass
7403	-40.39	-13	-27.39	-67.28	-49.21	3.42	12.24	V	Pass

<Middle Channel>

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	5MHz QPSK RB Size 1 Offset 24	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
3756	-48.32	-13	-35.32	-63.48	-54.62	2.51	8.81	H	Pass
5632	-42.51	-13	-29.51	-63.02	-50.22	2.99	10.70	H	Pass
7515	-40.62	-13	-27.62	-67.83	-49.15	3.59	12.12	H	Pass

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	5MHz QPSK RB Size 1 Offset 24	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
3756	-46.14	-13	-33.14	-62.3	-52.44	2.51	8.81	V	Pass
5632	-42.22	-13	-29.22	-62.57	-49.93	2.99	10.70	V	Pass
7515	-40.83	-13	-27.83	-67.73	-49.36	3.59	12.12	V	Pass

<High Channel>

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	5MHz QPSK RB Size 1 Offset 24	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
3812	-48.28	-13	-35.28	-63.6	-54.62	2.59	8.93	H	Pass
5716	-42.64	-13	-29.64	-63.46	-50.54	3.08	10.98	H	Pass
7627	-42.78	-13	-29.78	-69.07	-51.31	3.64	12.17	H	Pass

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	5MHz QPSK RB Size 1 Offset 24	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
3812	-46.98	-13	-33.98	-63.21	-53.32	2.59	8.93	V	Pass
5716	-43.55	-13	-30.55	-64.08	-51.45	3.08	10.98	V	Pass
7627	-42.06	-13	-29.06	-64.04	-50.59	3.64	12.17	V	Pass

<Low Channel>

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
3700	-49.80	-13	-36.80	-64.67	-56.22	2.47	8.89	H	Pass
5548	-41.00	-13	-28.00	-61.23	-48.86	2.93	10.79	H	Pass
7403	-40.90	-13	-27.90	-68.06	-49.71	3.45	12.26	H	Pass

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
3700	-49.21	-13	-36.21	-65.15	-55.63	2.47	8.89	V	Pass
5548	-43.01	-13	-30.01	-63.13	-50.87	2.93	10.79	V	Pass
7403	-40.83	-13	-27.83	-67.58	-49.64	3.45	12.26	V	Pass

<Middle Channel>

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
3749	-50.15	-13	-37.15	-65.41	-56.45	2.51	8.81	H	Pass
5625	-41.34	-13	-28.34	-61.89	-49.05	2.99	10.70	H	Pass
7501	-40.98	-13	-27.98	-68.24	-49.51	3.59	12.12	H	Pass

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
3749	-47.10	-13	-34.10	-63.3	-53.4	2.51	8.81	V	Pass
5625	-41.88	-13	-28.88	-62.13	-49.59	2.99	10.70	V	Pass
7501	-41.48	-13	-28.48	-68.49	-50.01	3.59	12.12	V	Pass

<High Channel>

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
3798	-46.88	-13	-33.88	-62.24	-53.24	2.52	8.88	H	Pass
5702	-42.72	-13	-29.72	-63.57	-50.38	3.09	10.75	H	Pass
7606	-41.31	-13	-28.31	-67.64	-49.95	3.65	12.29	H	Pass

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
3798	-45.34	-13	-32.34	-61.6	-51.7	2.52	8.88	V	Pass
5702	-42.40	-13	-29.40	-63.08	-50.06	3.09	10.75	V	Pass
7606	-41.05	-13	-28.05	-67.38	-49.69	3.65	12.29	V	Pass

<Low Channel>

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	15MHz QPSK RB Size 1 Offset 74	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
3700	-51.16	-13	-38.16	-66.14	-57.51	2.49	8.84	H	Pass
5555	-41.05	-13	-28.05	-61.31	-48.9	3.01	10.86	H	Pass
7403	-40.75	-13	-27.75	-68.04	-49.72	3.38	12.35	H	Pass

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	15MHz QPSK RB Size 1 Offset 74	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
3700	-49.11	-13	-36.11	-65	-55.46	2.49	8.84	V	Pass
5555	-42.71	-13	-29.71	-62.79	-50.56	3.01	10.86	V	Pass
7403	-40.53	-13	-27.53	-67.36	-49.5	3.38	12.35	V	Pass

<Middle Channel>

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	15MHz QPSK RB Size 1 Offset 74	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
3749	-50.04	-13	-37.04	-65.27	-56.34	2.51	8.81	H	Pass
5618	-41.91	-13	-28.91	-62.38	-49.62	2.99	10.70	H	Pass
7496	-40.62	-13	-27.62	-67.97	-49.15	3.59	12.12	H	Pass

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	15MHz QPSK RB Size 1 Offset 74	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
3749	-46.81	-13	-33.81	-62.99	-53.11	2.51	8.81	V	Pass
5618	-42.78	-13	-29.78	-63.19	-50.49	2.99	10.70	V	Pass
7496	-41.37	-13	-28.37	-68.49	-49.9	3.59	12.12	V	Pass

<High Channel>

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	15MHz QPSK RB Size 1 Offset 74	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
3791	-48.51	-13	-35.51	-63.75	-54.82	2.52	8.83	H	Pass
5688	-42.63	-13	-29.63	-63.41	-50.36	3.03	10.76	H	Pass
7585	-41.35	-13	-28.35	-67.93	-49.9	3.61	12.16	H	Pass

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	15MHz QPSK RB Size 1 Offset 74	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
3791	-45.41	-13	-32.41	-61.61	-51.72	2.52	8.83	V	Pass
5688	-42.22	-13	-29.22	-62.89	-49.95	3.03	10.76	V	Pass
7585	-42.05	-13	-29.05	-68.44	-50.6	3.61	12.16	V	Pass

<Low Channel>

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
3700	-53.50	-13	-40.50	-68.71	-59.88	2.51	8.89	H	Pass
5555	-42.69	-13	-29.69	-63.21	-50.55	3.03	10.89	H	Pass
7403	-41.48	-13	-28.48	-68.75	-50.62	3.24	12.38	H	Pass

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
3700	-50.38	-13	-37.38	-66.59	-56.76	2.51	8.89	V	Pass
5555	-43.24	-13	-30.24	-63.5	-51.1	3.03	10.89	V	Pass
7403	-42.29	-13	-29.29	-69.12	-51.43	3.24	12.38	V	Pass

<Middle Channel>

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
3742	-51.74	-13	-38.74	-67.03	-58.04	2.51	8.81	H	Pass
5611	-41.92	-13	-28.92	-62.45	-49.63	2.99	10.70	H	Pass
7480	-40.61	-13	-27.61	-68.19	-49.14	3.59	12.12	H	Pass

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
3742	-48.47	-13	-35.47	-64.77	-54.77	2.51	8.81	V	Pass
5611	-43.50	-13	-30.50	-64.01	-51.21	2.99	10.70	V	Pass
7480	-41.94	-13	-28.94	-69.08	-50.47	3.59	12.12	V	Pass

<High Channel>

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
3784	-51.28	-13	-38.28	-66.85	-57.66	2.52	8.90	H	Pass
5674	-43.04	-13	-30.04	-63.92	-50.79	3.01	10.76	H	Pass
7564	-42.47	-13	-29.47	-69.49	-51	3.62	12.15	H	Pass

Band :	LTE Band 2	**Temperature :**	21~24°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
3784	-47.36	-13	-34.36	-63.86	-53.74	2.52	8.90	V	Pass
5674	-43.50	-13	-30.50	-64.21	-51.25	3.01	10.76	V	Pass
7564	-42.76	-13	-29.76	-69.58	-51.29	3.62	12.15	V	Pass

<Low Channel>

Band :	LTE Band 7	**Temperature :**	21~24°C
Test Mode :	15MHz QPSK RB Size 1 Offset 74	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
4998	-50.90	-25	-25.90	-68.65	-54.45	6.82	10.37	H	Pass
7500	-42.52	-25	-17.52	-70.14	-45.51	9.27	12.26	H	Pass
10002	-40.06	-25	-15.06	-68.72	-44.39	8.55	12.88	H	Pass

Band :	LTE Band 7	**Temperature :**	21~24°C
Test Mode :	15MHz QPSK RB Size 1 Offset 74	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
4998	-51.03	-25	-26.03	-68.99	-54.58	6.82	10.37	V	Pass
7500	-41.62	-25	-16.62	-68.99	-44.61	9.27	12.26	V	Pass
10002	-40.86	-25	-15.86	-68.59	-45.19	8.55	12.88	V	Pass

<Middle Channel>

Band :	LTE Band 7	**Temperature :**	21~24°C
Test Mode :	15MHz QPSK RB Size 1 Offset 74	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
5058	-51.37	-25	-26.37	-69.53	-54.86	6.86	10.35	H	Pass
7584	-39.63	-25	-14.63	-66.51	-42.52	9.34	12.23	H	Pass
10110	-40.03	-25	-15.03	-68.88	-44.13	8.64	12.74	H	Pass

Band :	LTE Band 7	**Temperature :**	21~24°C
Test Mode :	15MHz QPSK RB Size 1 Offset 74	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
5058	-51.51	-25	-26.51	-69.71	-55	6.86	10.35	V	Pass
7584	-42.52	-25	-17.52	-69.2	-45.41	9.34	12.23	V	Pass
10110	-41.29	-25	-16.29	-69.16	-45.39	8.64	12.74	V	Pass

<High Channel>

Band :	LTE Band 7	**Temperature :**	21~24°C
Test Mode :	15MHz QPSK RB Size 1 Offset 74	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
5112	-50.05	-25	-25.05	-68.44	-53.59	6.87	10.41	H	Pass
7668	-41.69	-25	-16.69	-67.91	-44.64	9.35	12.30	H	Pass
10224	-40.60	-25	-15.60	-69.52	-44.79	8.63	12.82	H	Pass

Band :	LTE Band 7	**Temperature :**	21~24°C
Test Mode :	15MHz QPSK RB Size 1 Offset 74	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
5112	-50.08	-25	-25.08	-68.6	-53.62	6.87	10.41	V	Pass
7668	-42.30	-25	-17.30	-68.42	-45.25	9.35	12.30	V	Pass
10224	-41.58	-25	-16.58	-69.66	-45.77	8.63	12.82	V	Pass

3.8 Frequency Stability Measurement

3.8.1 Description of Frequency Stability Measurement

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

3.8.2 Measuring Instruments

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

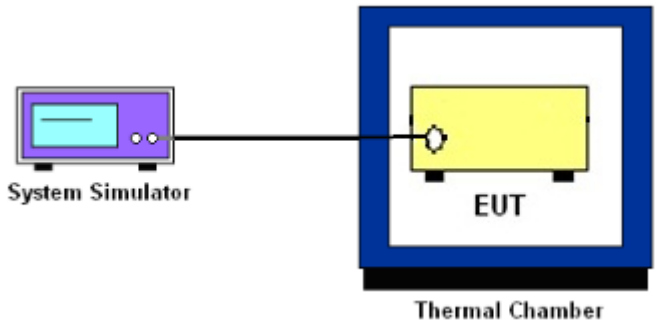
3.8.3 Test Procedures for Temperature Variation

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

3.8.4 Test Procedures for Voltage Variation

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

3.8.5 Test Setup



3.8.6 Test Result of Temperature Variation (FCC)

Band :	LTE Band 2 (QPSK)	Limit (ppm) :	2.5

Temperature (°C)	BW 10MHz	Result
	Deviation (ppm)	
50	0.0013	PASS
40	0.0017	
30	0.0011	
20 (Ref.)	0.0000	
10	0.0034	
0	0.0007	
-10	0.0006	
-20	0.0002	
-30	0.0047	

3.8.7 Test Result of Voltage Variation (FCC)

Band	Bandwidth	Voltage (Volt)	Deviation (ppm)	Limit (ppm)	Result
LTE Band 2	10M	3.50	0.0032	2.5	PASS
		Normal	0.0013		
		4.10	0.0035		

Remark:

1. Normal Voltage = 3.70V.
2. The manufacturer declared that the EUT could work properly between voltage 3.50V ~ 4.10V.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
LTE Base Station	Anritsu	MT8820C	6201026480	MIMO FDD	Jan. 07, 2014	May 18, 2014	Jan. 06, 2015	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 07, 2013	May 18, 2014	Jun. 06, 2014	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D3SP	TBN-930701	N/A	Jul. 19, 2013	May 18, 2014	Jul. 18, 2014	Conducted (TH02-HY)
RF cable	WOKEN	SMA(M)-SMA (M) for SS405 Cable Assembly	S05-130703-32	N/A	Jul. 09, 2013	May 18, 2014	Jul. 08, 2014	Conducted (TH02-HY)
Hygrometer	Testo	608-H1	34897199	N/A	May 06, 2014	May 18, 2014	May 04, 2015	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9KHz ~ 30GHz	Nov. 20, 2013	Jun. 20, 2014	Nov. 19, 2014	Radiation (03CH07-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Oct. 10, 2013	Jun. 20, 2014	Oct. 09, 2014	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	75962	1GHz~18GHz	Aug. 22, 2013	Jun. 20, 2014	Aug. 21, 2014	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10 MHz ~ 1000MHz	Mar. 17, 2014	Jun. 20, 2014	Mar. 16, 2015	Radiation (03CH07-HY)
Preamplifier	SONOMA	310N	187231	9kHz~1GHz	May 12, 2014	Jun. 20, 2014	May 11, 2015	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A01917	1GHz~26.5GHz	Aug. 12, 2013	Jun. 20, 2014	Aug. 11, 2014	Radiation (03CH07-HY)
Turn Table	ChainTek	ChainTek 3000	N/A	0 ~ 360 degree	N/A	Jun. 20, 2014	N/A	Radiation (03CH07-HY)
Antenna Mast	ChainTek	ChainTek 3000	N/A	N/A	N/A	Jun. 20, 2014	N/A	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 03, 2013	Jun. 20, 2014	Oct. 02, 2014	Radiation (03CH07-HY)
High Pass Filter	Microwave Circuits	H1G013G1	SN477215	1GHz HPF	Nov. 28, 2013	Jun. 20, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
High Pass Filter	Microwave Circuits	H3G018G1	SN477220	3GHz HPF	Nov. 28, 2013	Jun. 20, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
Notch Filter	Wainwright	WRCT 698/798-10/40 8ssk	SN1	LTE Band 12,13,14,17	Nov. 28, 2013	Jun. 20, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
Notch Filter	Wainwright	WRCT 1800/2000-20 /40-10ssk	SN1	LTE Band 2,25,33,35,36,37	Nov. 28, 2013	Jun. 20, 2014	Nov. 27, 2014	Radiation (03CH07-HY)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Notch Filter	Wainwright	WRCG 1710/1755-1	SN2	LTE Band 4	Nov. 28, 2013	Jun. 20, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
Notch Filter	Wainwright	WRCT 2500/2700-1	SN3	LTE Band 7,38,41	Nov. 28, 2013	Jun. 20, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
HF RF Cable	HUBER SUHNER	SUCOFLEX 104	38411/6	1GHz ~ 18GHz	Nov. 28, 2013	Jun. 20, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
LF RF Cable	Warison+HUBER SUHNER	WCBA-WC04NM.NM2	N/A	30MHz ~ 1GHz	Nov. 28, 2013	Jun. 20, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
Test Software	Audix	E3	Version 6.2009-08-2	N/A	N/A	Jun. 20, 2014	N/A	Radiation (03CH07-HY)
Hygrometer	Testo	608-H1	34897197	N/A	May 06, 2014	Jun. 20, 2014	May 05, 2015	Radiation (03CH07-HY)

Note: Test equipment calibration is traceable to the procedure of ISO17025.

5 Uncertainty of Evaluation

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

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