FCC RF Test Report

APPLICANT	:	**ZTE CORPORATION**
EQUIPMENT	:	**CDMA/LTE Multi-Mode Digital Mobile Phone**
BRAND NAME	:	**ZTE**
MODEL NAME	:	**N9518**
FCC ID	:	**SRQ-ZTEN9518**
STANDARD	:	**47 CFR Part 2, 22(H), 24(E), 27(M)**
CLASSIFICATION	:	**PCS Licensed Transmitter Held to Ear (PCE)**

The product was received on Mar. 30, 2015 and testing was completed on Apr. 22, 2015. We, SPORTON INTERNATIONAL (KUNSHAN) 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 (KUNSHAN) INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

Testing Laboratory
2627

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APPENDIX A. SETUP PHOTOGRAPHS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG533001B	Rev. 01	Initial issue of report	May 11, 2015

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	§2.1046	Conducted Output Power	Reporting Only	PASS	-
3.2	§24.232(d)	Peak-to-Average Ratio	<13 dB	PASS	-
3.3	§22.913(a)(2)	Effective Radiated Power (Band 26)	ERP < 7 Watt	PASS	-
	§24.232(c) §27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 25) (Band 41)	EIRP < 2Watt		
3.4	§2.1049 §22.917(b) §24.238(b) §27.53(m)(6)	Occupied Bandwidth	Reporting Only	PASS	-
3.5	§2.1051 §22.917(a) §24.238(a)	Conducted Band Edge Measurement (Band 25) (Band 26)	< 43+10log10(P[Watt])	PASS	-
	§2.1051 §27.53(m)(4)	Conducted Band Edge Measurement (Band 41)	< 5MHz: -10 dBm 5 MHz~6MHz or 26dB(BW): -13 dBm ≥6MHz or 26dB(BW): -25 dBm		

Report Section	FCC Rule	Description	Limit	Result	Remark
3.6	§2.1051 §22.917(a) §24.238(a)	Conducted Spurious Emission (Band 25) (Band 26)	< 43+10log10(P[Watts])	PASS	-
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 41)	< 55+10log$_{10}$(P[Watts])	PASS	-
3.7	§2.1053 §22.917(a) §24.238(a)	Radiated Spurious Emission (Band 25) (Band 26)	< 43+10log$_{10}$(P[Watts])	PASS	Under limit 15.27 dB at 7763.000 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 41)	< 55+10log$_{10}$(P[Watts])	PASS	
3.8	§2.1055 §22.355	Frequency Stability Temperature & Voltage	< 2.5 ppm	PASS	-
	§2.1055 §24.235 §27.54		within authorized band		

1 General Description

1.1 Applicant

ZTE CORPORATION
ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P. R. China

1.2 Manufacturer

ZTE CORPORATION
ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P. R. China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	CDMA/LTE Multi-Mode Digital Mobile Phone
Brand Name	ZTE
Model Name	N9518
FCC ID	SRQ-ZTEN9518
EUT supports Radios application	CDMA/EV-DO/LTE WLAN2.4GHz 802.11b/g/n HT20 Bluetooth v3.0+EDR/Bluetooth v4.0 LE
MEID Code	Conducted: 99000609680276 Radiation: 99000609680631
HW Version	cwxA
SW Version	N9518V1.0.0B01
EUT Stage	Identical Prototype

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

1.4 Product Specification subjective to this standard

Product Specification subjective to this standard	
Tx Frequency	LTE Band 25 : 1850.7MHz ~ 1914.3 MHz LTE Band 26 : 824.7 MHz ~ 848.3 MHz LTE Band 41 : 2498.5 MHz ~ 2687.5 MHz
Rx Frequency	LTE Band 25 : 1930.7MHz ~ 1994.3 MHz LTE Band 26: 869.7 MHz ~ 893.3 MHz LTE Band 41 : 2498.5 MHz ~ 2687.5 MHz
Bandwidth	LTE Band 25 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 26 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz LTE Band 41 : 5MHz / 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	LTE Band 25 : 23.43 dBm LTE Band 26 : 23.32 dBm LTE Band 41 : 23.60 dBm
Antenna Type	Fixed Internal Antenna
Type of Modulation	QPSK / 16QAM

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

LTE Band 25	QPSK			16QAM		
BW(MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
1.4	1M09G7D	-	0.4207	1M10W7D	-	0.3243
3	2M73G7D	-	0.3864	2M72W7D	-	0.3236
5	4M51G7D	-	0.4055	4M50W7D	-	0.3184
10	9M11G7D	0.0097	0.4295	9M03W7D	-	0.3281
15	13M5G7D	-	0.4169	13M5W7D	-	0.3304
20	18M4G7D	-	0.4178	18M3W7D	-	0.3516
LTE Band 26	QPSK			16QAM		
BW(MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)
1.4	1M10G7D	-	0.1393	1M10W7D	-	0.1064
3	2M73G7D	-	0.1361	2M73W7D	-	0.1069
5	4M49G7D	-	0.1306	4M50W7D	-	0.1033
10	9M07G7D	0.0165	0.1127	9M01W7D	-	0.0863
15	13M4G7D	-	0.1146	13M5W7D	-	0.1102
LTE Band 41	QPSK			16QAM		
BW(MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
5	4M53G7D	-	0.2495	4M50W7D	-	0.2296
10	9M07G7D	0.0066	0.3428	9M03W7D	-	0.2432
15	13M5G7D	-	0.2630	13M5W7D	-	0.2606
20	18M3G7D	-	0.2799	18M4W7D	-	0.2270

1.7 Testing Location

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.		
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958		
Test Site No.	**Sporton Site No.**		**FCC Registration No.**
	TH01-KS	03CH02-KS	418269

1.8 Applicable Standards

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

- 47 CFR Part 2, 22(H), 24(E), 27(M)
- ANSI / TIA / EIA-603-C-2004
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r02

Remark:

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

2 Test Configuration of Equipment Under Test

2.1 Test Mode

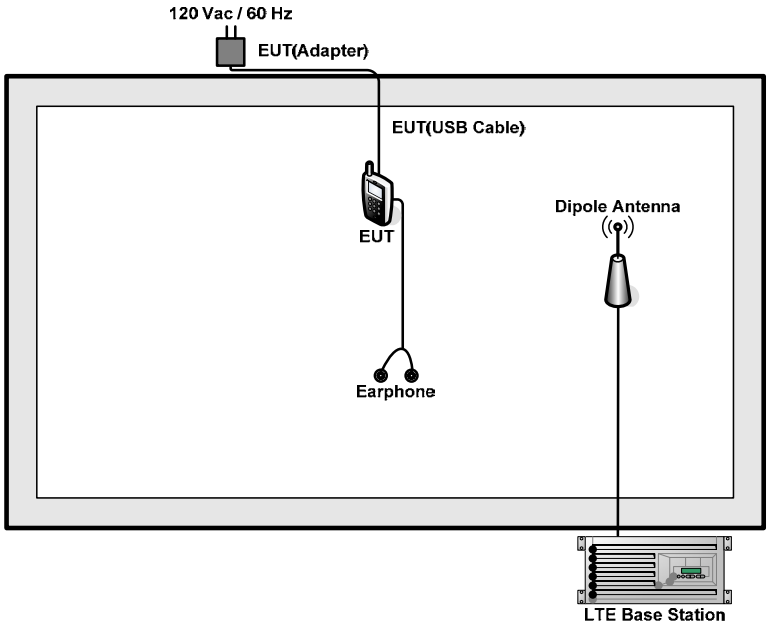
Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v02r02 with maximum output power.

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	25	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	26	v	v	v	v	v	-	v	v	v	v	v	v	v	v
	41	-	-	v	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	25						v	v	v	v		v	v	v	v
	41	-	-				v	v	v	v		v	v	v	v
26dB and 99% Bandwidth	25	v	v	v	v	v	v	v	v			v		v	
	26	v	v	v	v	v	-	v	v			v		v	
	41	-	-	v	v	v	v	v	v			v		v	
Conducted Band Edge	25	v	v	v	v	v	v	v	v	v		v	v		v
	26	v	v	v	v	v	-	v	v	v		v	v		v
	41	-	-	v	v	v	v	v	v	v		v	v		v

Test Items	Band	Bandwidth (MHz)						Modulation		RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
Conducted Spurious Emission	25	v	v	v	v	v	v	v	v	v			v	v	v
	26	v	v	v	v	v	-	v	v	v			v	v	v
	41	-	-	v	v	v	v	v	v	v			v	v	v
Frequency Stability	25				v			v				v		v	
	26				v		-	v				v		v	
	41	-	-		v			v				v		v	
E.R.P./ E.I.R.P.	25	v	v	v	v	v	v	v	v	v			v	v	v
	26	v	v	v	v	v	-	v	v	v			v	v	v
	41	-	-	v	v	v	v	v	v	v			v	v	v
Radiated Spurious Emission	25	v	v	v	v	v	v	v		v				v	
	26	v	v	v	v	v	-	v		v				v	
	41	-	-	v	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.	DC Power Supply	GW INSTEK	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
2.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
3.	Earphone	Lenovo	SH100	N/A	N/A	N/A

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 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.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 5.0 dB.

Example :

Offset(dB) = RF cable loss(dB).

= 5.0 (dB)

3 Test Result

3.1 Conducted Output Power Measurement

3.1.1 Description of the Conducted Output Power Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to force the EUT transmitting at maximum output power. 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 the system simulator.
2. Set EUT at maximum power through the system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.

3.1.4 Test Setup

3.1.5 Test Result of Conducted Output Power

<LTE Band 25 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				**26140**	**26340**	**26590**
Frequency (MHz)				**1860**	**1880**	**1905**
20	QPSK	1	0	23.38	23.43	23.34
20	QPSK	1	49	23.18	23.28	23.31
20	QPSK	1	99	23.09	23.34	23.22
20	QPSK	50	0	22.17	22.26	22.23
20	QPSK	50	24	22.10	22.04	22.16
20	QPSK	50	49	22.14	22.05	22.24
20	QPSK	100	0	22.11	22.14	22.23
20	16QAM	1	0	22.77	22.31	22.77
20	16QAM	1	49	22.18	21.99	22.40
20	16QAM	1	99	22.47	22.50	22.36
20	16QAM	50	0	21.12	21.18	21.32
20	16QAM	50	24	21.01	21.05	21.18
20	16QAM	50	49	21.08	21.02	21.26
20	16QAM	100	0	21.10	21.07	21.15
Channel				**26115**	**26340**	**26615**
Frequency (MHz)				**1857.5**	**1880**	**1907.5**
15	QPSK	1	0	23.37	23.24	23.27
15	QPSK	1	37	22.79	23.19	23.14
15	QPSK	1	74	22.98	22.90	23.20
15	QPSK	36	0	22.12	22.13	22.17
15	QPSK	36	18	22.05	22.05	22.24
15	QPSK	36	37	22.04	22.07	22.20
15	QPSK	75	0	22.03	22.03	22.27
15	16QAM	1	0	22.80	22.75	22.20
15	16QAM	1	37	22.34	21.91	22.38
15	16QAM	1	74	22.18	22.08	22.64
15	16QAM	36	0	20.98	21.12	21.21
15	16QAM	36	18	20.91	21.05	21.20
15	16QAM	36	37	21.01	21.12	21.14
15	16QAM	75	0	21.00	20.97	21.26

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				**26090**	**26340**	**26640**
Frequency (MHz)				**1855**	**1880**	**1910**
10	QPSK	1	0	23.31	23.07	23.40
10	QPSK	1	24	23.02	23.02	23.09
10	QPSK	1	49	23.06	22.97	23.27
10	QPSK	25	0	22.04	22.05	22.18
10	QPSK	25	12	22.07	21.99	22.19
10	QPSK	25	24	22.03	22.03	22.28
10	QPSK	50	0	22.04	22.01	22.18
10	16QAM	1	0	22.40	22.33	22.19
10	16QAM	1	24	22.50	22.14	22.32
10	16QAM	1	49	22.33	22.23	22.24
10	16QAM	25	0	20.90	21.12	21.15
10	16QAM	25	12	20.75	20.91	21.18
10	16QAM	25	24	21.01	20.98	21.25
10	16QAM	50	0	20.80	21.03	21.11
Channel				**26065**	**26340**	**26665**
Frequency (MHz)				**1852.5**	**1880**	**1912.5**
5	QPSK	1	0	23.20	22.90	23.17
5	QPSK	1	12	23.03	22.84	23.34
5	QPSK	1	24	22.89	22.89	22.87
5	QPSK	12	0	22.09	21.94	22.13
5	QPSK	12	6	22.05	21.93	22.22
5	QPSK	12	11	21.91	22.01	22.15
5	QPSK	25	0	22.10	22.00	22.23
5	16QAM	1	0	22.51	22.28	22.49
5	16QAM	1	12	21.94	22.51	22.26
5	16QAM	1	24	22.44	22.12	22.40
5	16QAM	12	0	20.99	20.82	21.19
5	16QAM	12	6	21.11	20.83	21.30
5	16QAM	12	11	20.81	21.07	21.43
5	16QAM	25	0	21.05	21.13	21.36

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				**26055**	**26340**	**26675**
Frequency (MHz)				**1851.5**	**1880**	**1913.5**
3	QPSK	1	0	23.23	22.89	23.26
3	QPSK	1	7	23.07	22.90	23.22
3	QPSK	1	14	23.04	22.88	23.09
3	QPSK	8	0	22.18	21.93	22.18
3	QPSK	8	4	22.11	22.08	22.12
3	QPSK	8	7	22.11	22.00	22.13
3	QPSK	15	0	22.13	21.99	22.11
3	16QAM	1	0	22.58	22.22	22.81
3	16QAM	1	7	22.50	22.49	22.34
3	16QAM	1	14	21.98	22.37	22.66
3	16QAM	8	0	21.23	20.82	21.37
3	16QAM	8	4	21.07	20.90	21.34
3	16QAM	8	7	21.28	20.87	21.25
3	16QAM	15	0	21.10	20.64	21.09
Channel				**26047**	**26340**	**26683**
Frequency (MHz)				**1850.7**	**1880**	**1914.3**
1.4	QPSK	1	0	23.07	22.91	22.97
1.4	QPSK	1	2	23.16	23.05	22.99
1.4	QPSK	1	5	22.99	22.82	22.90
1.4	QPSK	3	0	23.09	22.86	23.05
1.4	QPSK	3	1	23.18	22.87	23.02
1.4	QPSK	3	2	23.23	23.00	23.18
1.4	QPSK	6	0	22.15	21.88	22.14
1.4	16QAM	1	0	22.49	22.01	22.28
1.4	16QAM	1	2	22.23	22.49	22.59
1.4	16QAM	1	5	22.50	22.41	22.51
1.4	16QAM	3	0	22.04	22.13	22.23
1.4	16QAM	3	1	22.22	22.16	22.13
1.4	16QAM	3	2	22.20	22.15	22.27
1.4	16QAM	6	0	21.20	20.55	21.19

<LTE Band 26 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				**26865**	**26915**	**26965**
Frequency (MHz)				**831.5**	**836.5**	**841.5**
15	QPSK	1	0	23.07	22.80	23.17
15	QPSK	1	37	23.30	23.32	22.94
15	QPSK	1	74	23.04	22.76	22.88
15	QPSK	36	0	22.02	22.05	22.07
15	QPSK	36	18	22.13	22.02	21.91
15	QPSK	36	37	22.06	21.95	22.02
15	QPSK	75	0	22.06	22.03	22.02
15	16QAM	1	0	22.38	22.29	22.47
15	16QAM	1	37	22.36	22.33	22.24
15	16QAM	1	74	22.33	22.23	22.20
15	16QAM	36	0	20.99	21.11	21.02
15	16QAM	36	18	21.05	21.07	20.98
15	16QAM	36	37	21.05	21.00	20.81
15	16QAM	75	0	21.05	20.90	20.90
Channel				**26840**	**26915**	**26990**
Frequency (MHz)				**829**	**836.5**	**844**
10	QPSK	1	0	22.85	22.89	23.15
10	QPSK	1	24	23.29	23.06	22.99
10	QPSK	1	49	23.31	23.09	22.86
10	QPSK	25	0	21.93	22.12	22.07
10	QPSK	25	12	22.06	22.00	21.96
10	QPSK	25	24	22.12	22.01	22.01
10	QPSK	50	0	22.06	21.99	22.02
10	16QAM	1	0	22.38	22.42	22.45
10	16QAM	1	24	22.33	22.24	22.24
10	16QAM	1	49	22.49	22.35	22.23
10	16QAM	25	0	21.16	21.23	20.96
10	16QAM	25	12	21.05	20.98	20.95
10	16QAM	25	24	21.10	20.99	20.89
10	16QAM	50	0	20.96	20.89	20.83

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				26815	26915	27015
Frequency (MHz)				826.5	836.5	846.5
5	QPSK	1	0	23.10	23.12	23.04
5	QPSK	1	12	23.03	23.07	23.13
5	QPSK	1	24	22.91	22.69	22.71
5	QPSK	12	0	21.84	22.03	22.00
5	QPSK	12	6	21.90	22.03	21.98
5	QPSK	12	11	21.94	22.00	21.90
5	QPSK	25	0	21.99	21.93	22.07
5	16QAM	1	0	22.34	22.37	22.31
5	16QAM	1	12	22.15	22.33	22.26
5	16QAM	1	24	22.27	22.24	22.22
5	16QAM	12	0	20.93	20.93	21.01
5	16QAM	12	6	20.90	20.82	20.86
5	16QAM	12	11	20.81	20.89	20.90
5	16QAM	25	0	20.88	20.92	20.95
Channel				26805	26915	27025
Frequency (MHz)				825.5	836.5	847.5
3	QPSK	1	0	23.05	23.12	22.92
3	QPSK	1	7	23.10	23.08	23.10
3	QPSK	1	14	22.98	22.82	22.89
3	QPSK	8	0	22.02	22.02	22.07
3	QPSK	8	4	22.01	21.95	21.93
3	QPSK	8	7	22.03	22.02	22.00
3	QPSK	15	0	21.97	22.08	21.90
3	16QAM	1	0	22.36	22.44	22.32
3	16QAM	1	7	22.27	22.33	22.31
3	16QAM	1	14	22.28	22.33	22.23
3	16QAM	8	0	20.97	21.24	21.19
3	16QAM	8	4	20.89	20.87	20.97
3	16QAM	8	7	20.92	20.94	20.88
3	16QAM	15	0	21.09	20.88	21.03
Channel				26797	26915	27033
Frequency (MHz)				824.7	836.5	848.3
1.4	QPSK	1	0	23.02	23.08	22.81
1.4	QPSK	1	2	23.01	23.17	23.10
1.4	QPSK	1	5	22.99	23.01	22.99
1.4	QPSK	3	0	23.01	23.06	22.97
1.4	QPSK	3	1	22.98	23.08	23.00
1.4	QPSK	3	2	22.98	22.99	22.92
1.4	QPSK	6	0	21.98	21.98	22.05
1.4	16QAM	1	0	22.35	22.21	22.23
1.4	16QAM	1	2	22.33	22.23	22.35
1.4	16QAM	1	5	22.29	22.34	22.28
1.4	16QAM	3	0	22.23	22.15	22.05
1.4	16QAM	3	1	22.28	22.17	22.10
1.4	16QAM	3	2	22.27	22.16	22.09
1.4	16QAM	6	0	21.04	21.04	21.00

<LTE Band 41 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				**39750**	**40620**	**41490**
Frequency (MHz)				**2506**	**2593**	**2680**
20	QPSK	1	0	23.60	22.98	23.42
20	QPSK	1	49	23.45	22.80	23.40
20	QPSK	1	99	23.40	22.67	23.40
20	QPSK	50	0	22.63	22.12	22.59
20	QPSK	50	24	22.45	21.98	22.49
20	QPSK	50	49	22.35	21.98	22.46
20	QPSK	100	0	22.48	22.07	22.43
20	16QAM	1	0	22.74	22.31	22.85
20	16QAM	1	49	22.71	22.10	22.79
20	16QAM	1	99	22.54	22.00	22.46
20	16QAM	50	0	21.46	21.17	21.63
20	16QAM	50	24	21.50	21.05	21.62
20	16QAM	50	49	21.39	20.99	21.51
20	16QAM	100	0	21.43	21.07	21.67
Channel				**39725**	**40620**	**41515**
Frequency (MHz)				**2503.5**	**2593**	**2682.5**
15	QPSK	1	0	23.41	23.14	23.38
15	QPSK	1	37	23.32	22.91	23.36
15	QPSK	1	74	23.31	22.87	23.41
15	QPSK	36	0	22.57	22.01	22.52
15	QPSK	36	18	22.46	21.94	22.50
15	QPSK	36	37	22.42	21.97	22.47
15	QPSK	75	0	22.45	22.01	22.47
15	16QAM	1	0	22.77	22.38	22.61
15	16QAM	1	37	22.66	22.10	22.37
15	16QAM	1	74	22.89	22.01	22.60
15	16QAM	36	0	21.28	21.04	21.61
15	16QAM	36	18	21.47	20.92	21.59
15	16QAM	36	37	21.24	20.77	21.57
15	16QAM	75	0	21.42	21.03	21.41

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				**39700**	**40620**	**41540**
Frequency (MHz)				**2501**	**2593**	**2685**
10	QPSK	1	0	23.31	23.12	23.58
10	QPSK	1	24	23.46	22.69	23.48
10	QPSK	1	49	23.24	22.69	23.38
10	QPSK	25	0	22.51	22.06	22.51
10	QPSK	25	12	22.44	21.97	22.54
10	QPSK	25	24	22.40	21.92	22.41
10	QPSK	50	0	22.45	22.02	22.47
10	16QAM	1	0	22.76	22.42	22.57
10	16QAM	1	24	22.72	22.10	22.41
10	16QAM	1	49	22.73	22.03	22.37
10	16QAM	25	0	21.48	21.13	21.76
10	16QAM	25	12	21.41	21.07	21.89
10	16QAM	25	24	21.39	21.03	21.54
10	16QAM	50	0	21.35	21.04	21.61
Channel				**39675**	**40620**	**41565**
Frequency (MHz)				**2498.5**	**2593**	**2687.5**
5	QPSK	1	0	23.18	22.92	23.47
5	QPSK	1	12	23.48	23.09	23.55
5	QPSK	1	24	23.19	22.80	23.36
5	QPSK	12	0	22.36	21.98	22.60
5	QPSK	12	6	22.42	21.95	22.48
5	QPSK	12	11	22.40	22.02	22.45
5	QPSK	25	0	22.36	21.96	22.53
5	16QAM	1	0	22.45	22.21	22.61
5	16QAM	1	12	22.54	22.11	22.41
5	16QAM	1	24	22.33	22.07	22.38
5	16QAM	12	0	21.60	20.75	21.65
5	16QAM	12	6	21.60	20.93	21.62
5	16QAM	12	11	21.56	20.93	21.66
5	16QAM	25	0	21.67	20.99	21.76

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.

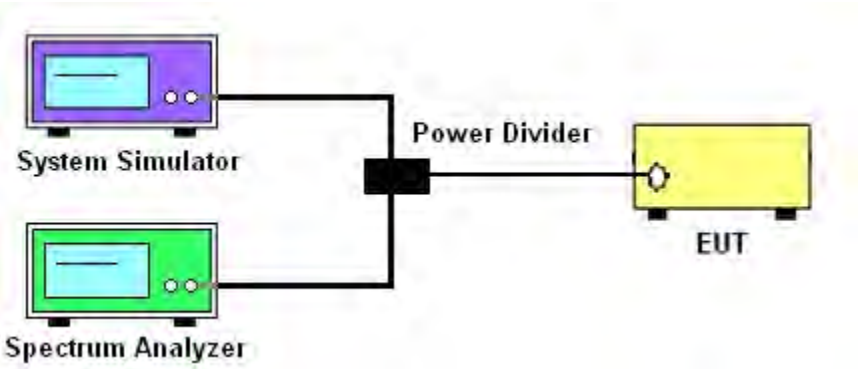
3.2.2 Measuring Instruments

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 and system simulator via a power divider.
2. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
3. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
4. Record the deviation as Peak to Average Ratio.

3.2.4 Test Setup



3.2.5 Test Result of Peak-to-Average Ratio

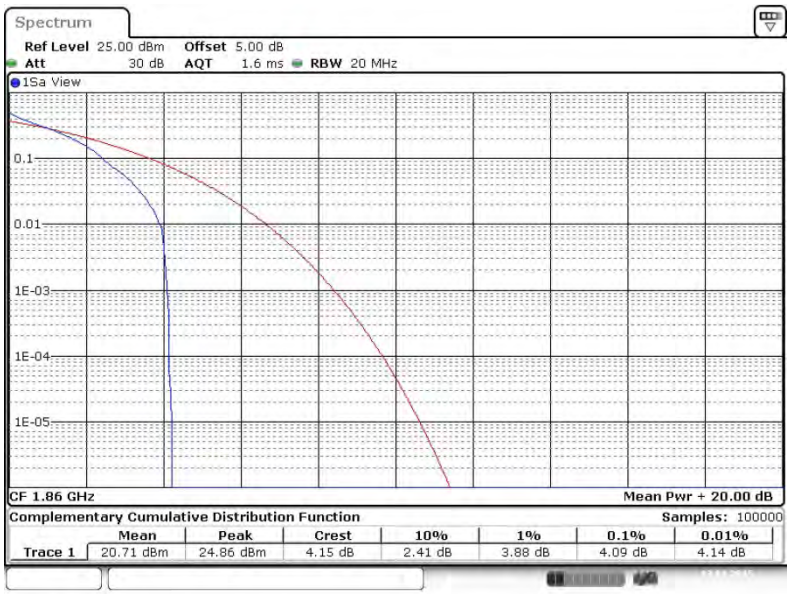
LTE Band 25						
BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				26140	26340	26590
Frequency (MHz)				1860	1880	1905
20	QPSK	1	0	4.09	4.29	4.26
20	QPSK	100	0	4.87	4.87	5.01
20	16QAM	1	0	5.01	5.10	4.93
20	16QAM	100	0	5.86	5.80	5.94

LTE Band 41						
BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				39750	40620	41490
Frequency (MHz)				2506	2593	2680
20	QPSK	1	0	4.26	4.09	5.30
20	QPSK	100	0	5.30	5.30	6.38
20	16QAM	1	0	4.78	5.25	4.64
20	16QAM	100	0	6.17	6.58	5.91

3.2.6 Peak to Average Power Ratio

Peak-to-Average Ratio on LTE Band 25

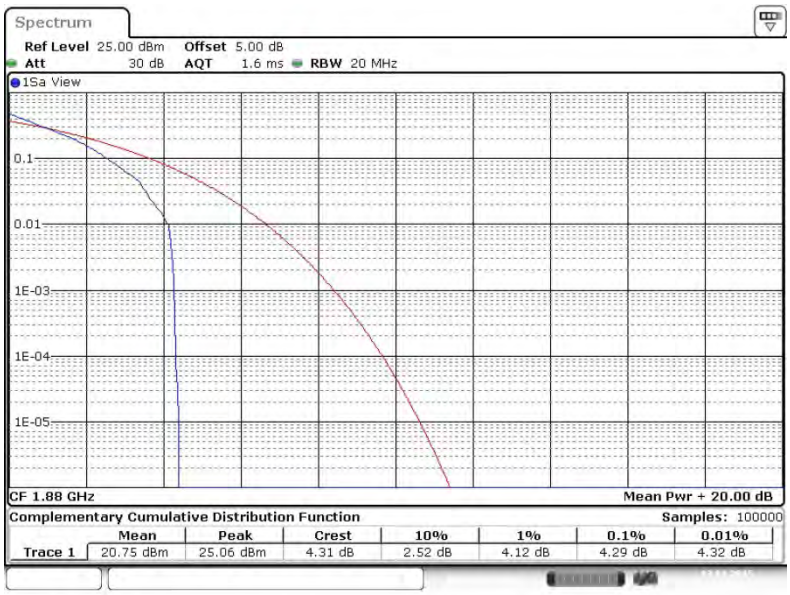
20MHz / QPSK in Ch. 26140 (1RB Size)



Date: 13.APR.2015 14:56:01

Peak-to-Average Ratio on LTE Band 25

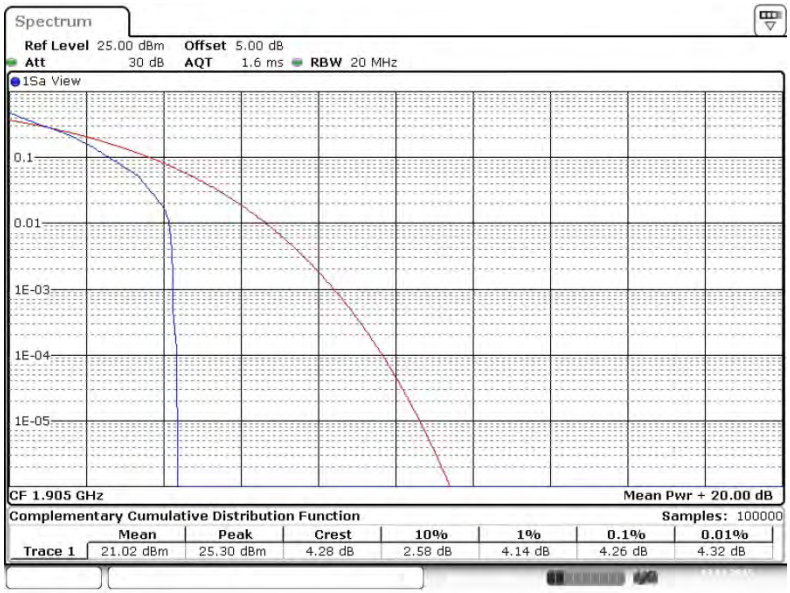
20MHz / QPSK in Ch. 26340 (1RB Size)



Date: 13.APR.2015 15:00:28

Peak-to-Average Ratio on LTE Band 25

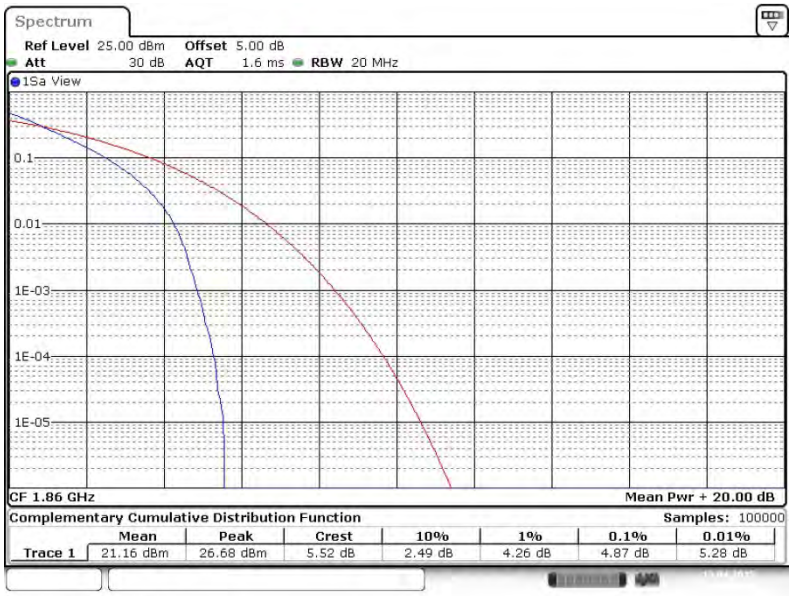
20MHz / QPSK in Ch. 26590 (1RB Size)



Date: 13.APR.2015 15:02:10

Peak-to-Average Ratio on LTE Band 25

20MHz / QPSK in Ch. 26140 (100RB Size)



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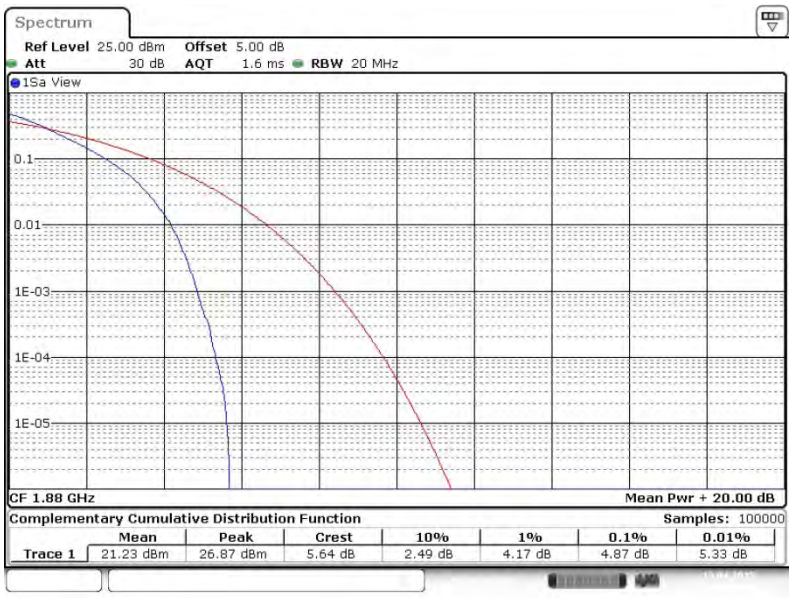
Peak-to-Average Ratio on LTE Band 25

20MHz / QPSK in Ch. 26340 (100RB Size)



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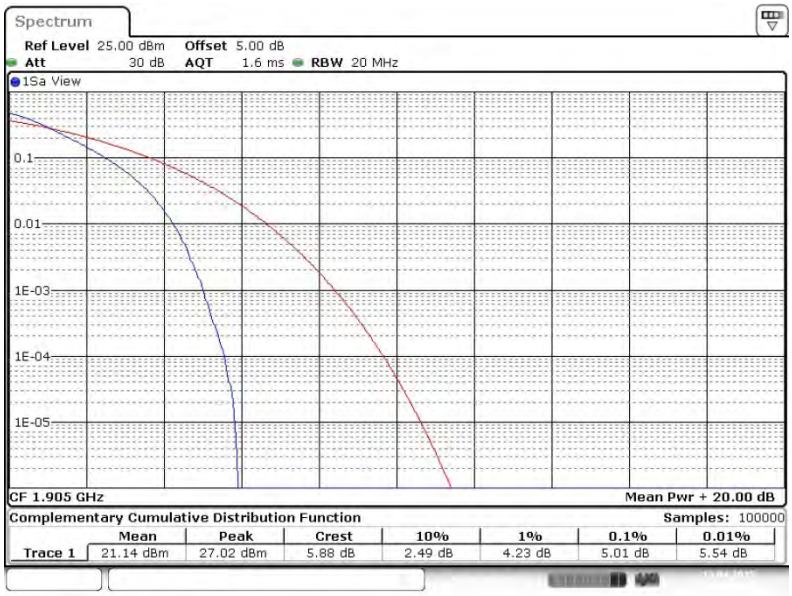
Peak-to-Average Ratio on LTE Band 26

20MHz / QPSK in Ch. 26590 (100RB Size)



Date: 13.APR.2015 15:02:55

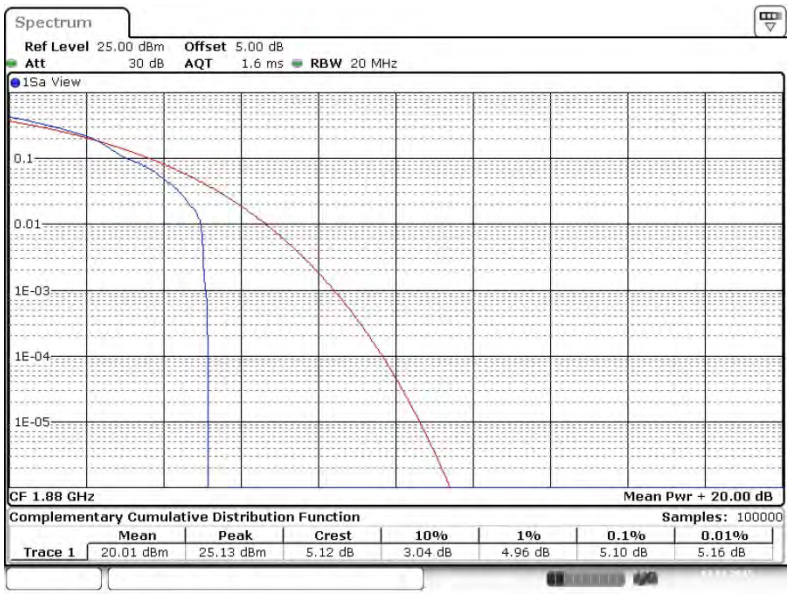
Peak-to-Average Ratio on LTE Band 25

20MHz / 16QAM in Ch. 26140 (1RB Size)

Date: 13.APR.2015 14:56:16

Peak-to-Average Ratio on LTE Band 25

20MHz / 16QAM in Ch. 26340 (1RB Size)



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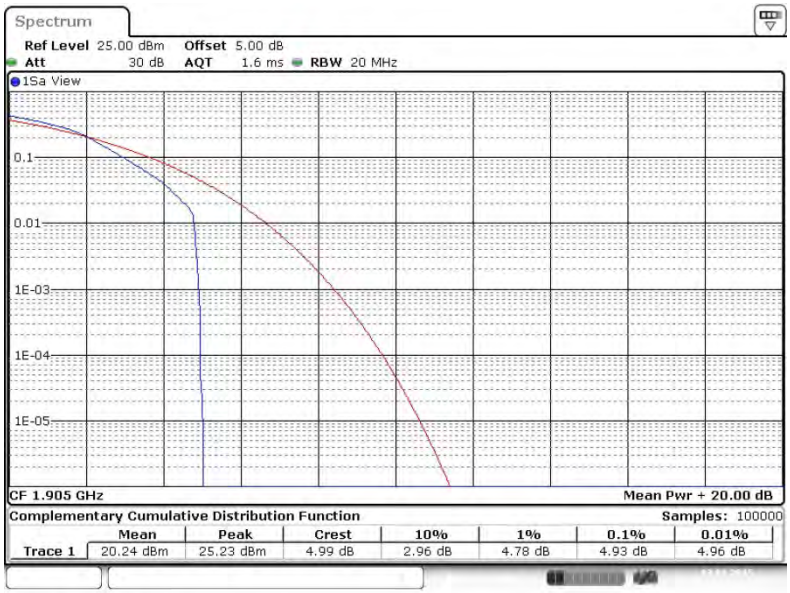
Peak-to-Average Ratio on LTE Band 25

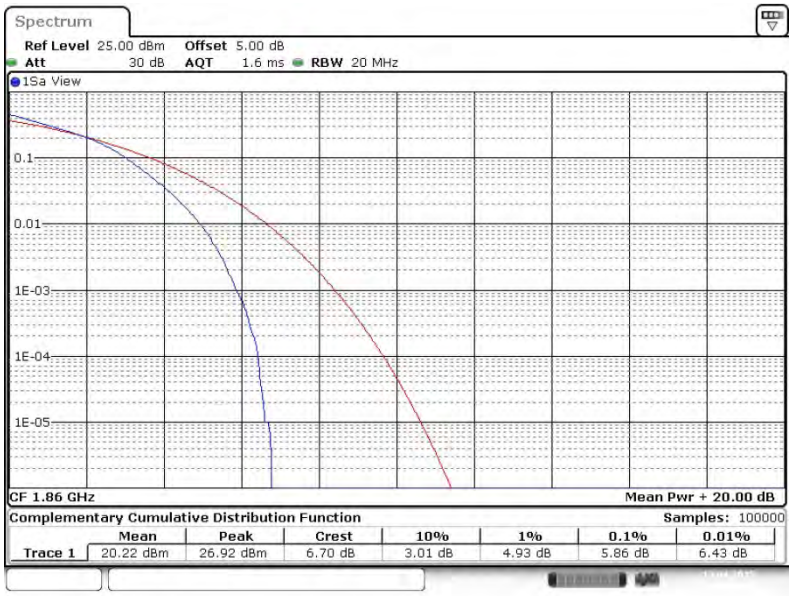
20MHz / 16QAM in Ch. 26590 (1RB Size)



Date: 13.APR.2015 15:02:25

Peak-to-Average Ratio on LTE Band 25

20MHz / 16QAM in Ch. 26140 (100RB Size)



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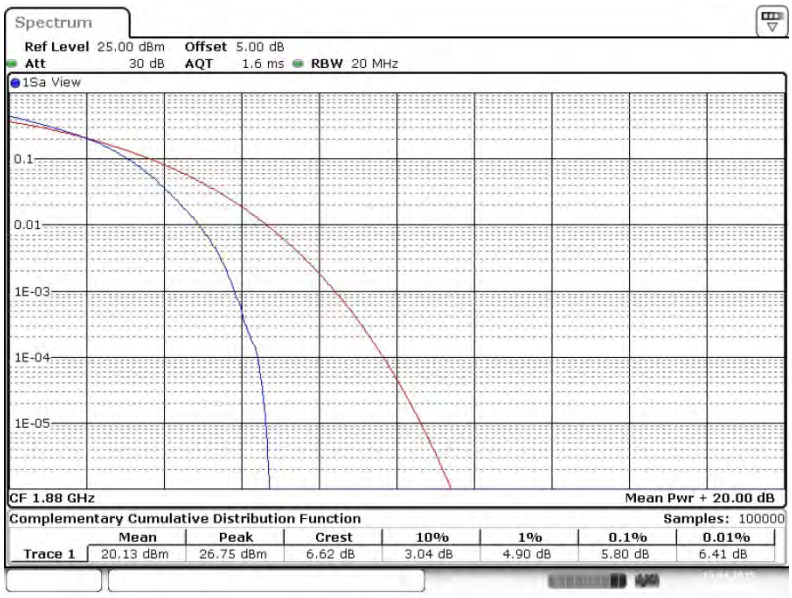
Peak-to-Average Ratio on LTE Band 25

20MHz / 16QAM in Ch. 26340 (100RB Size)



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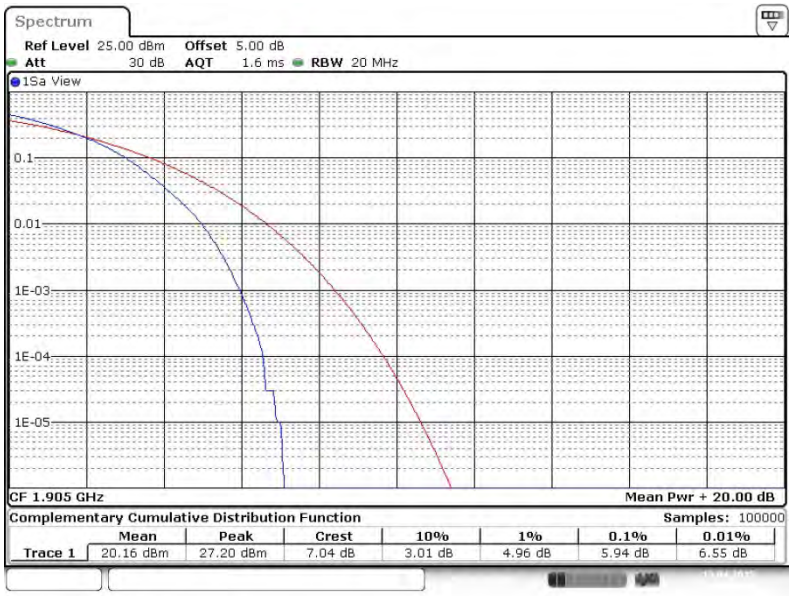
Peak-to-Average Ratio on LTE Band 25

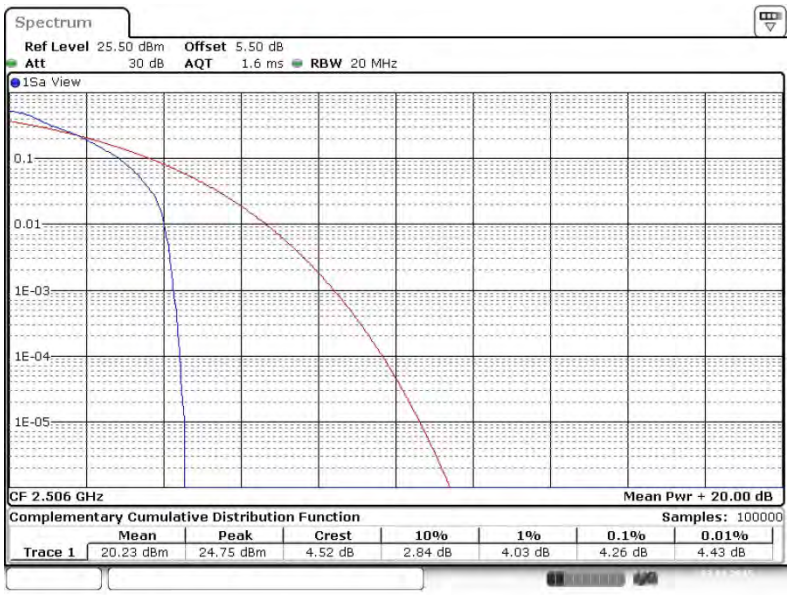
20MHz / 16QAM in Ch. 26590 (100RB Size)



Date: 13.APR.2015 15:02:39

Peak-to-Average Ratio on LTE Band 41

20MHz / QPSK in Ch. 39750 (1RB Size)



Date: 3.APR.2015 01:31:45

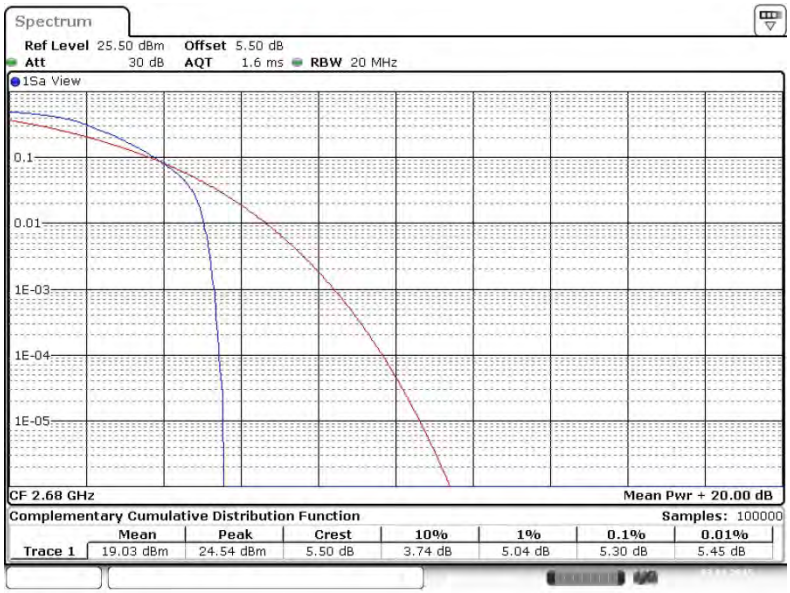
Peak-to-Average Ratio on LTE Band 41

20MHz / QPSK in Ch. 40620 (1RB Size)

Date: 3.APR.2015 01:37:38

Peak-to-Average Ratio on LTE Band 41

20MHz / QPSK in Ch. 41490 (1RB Size)



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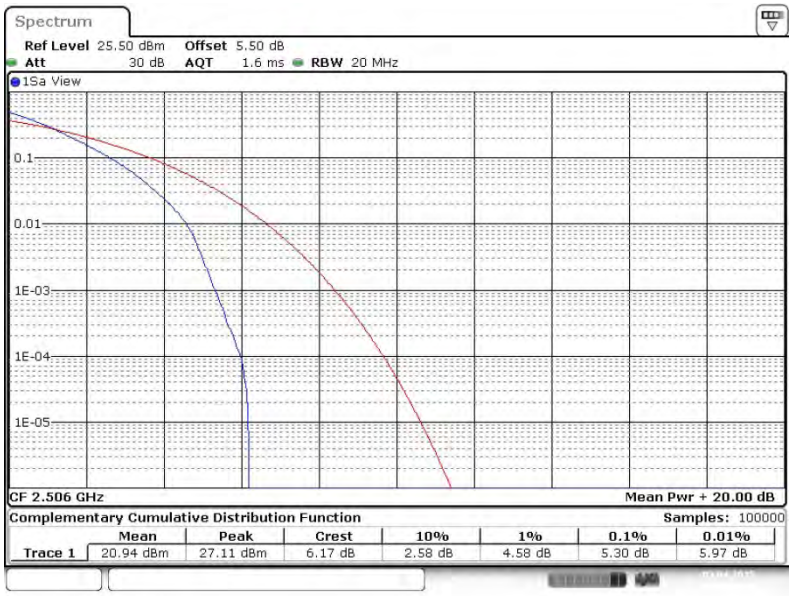
Peak-to-Average Ratio on LTE Band 41

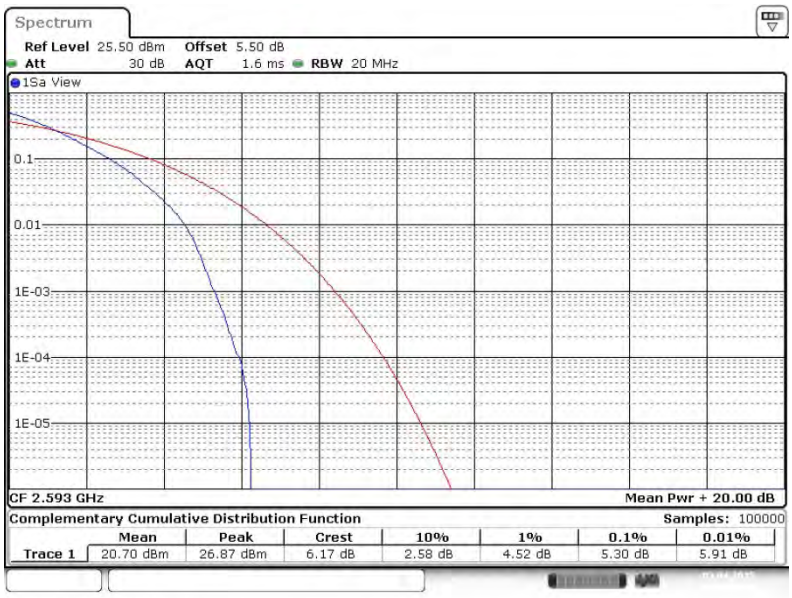
20MHz / QPSK in Ch. 39750 (100RB Size)



Date: 3.APR.2015 01:34:14

Peak-to-Average Ratio on LTE Band 41

20MHz / QPSK in Ch. 40620 (100RB Size)



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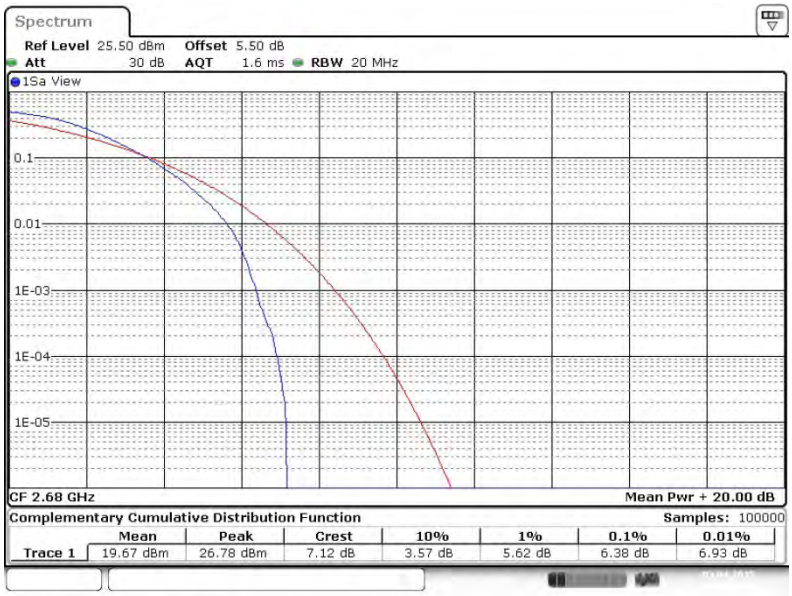
Peak-to-Average Ratio on LTE Band 41

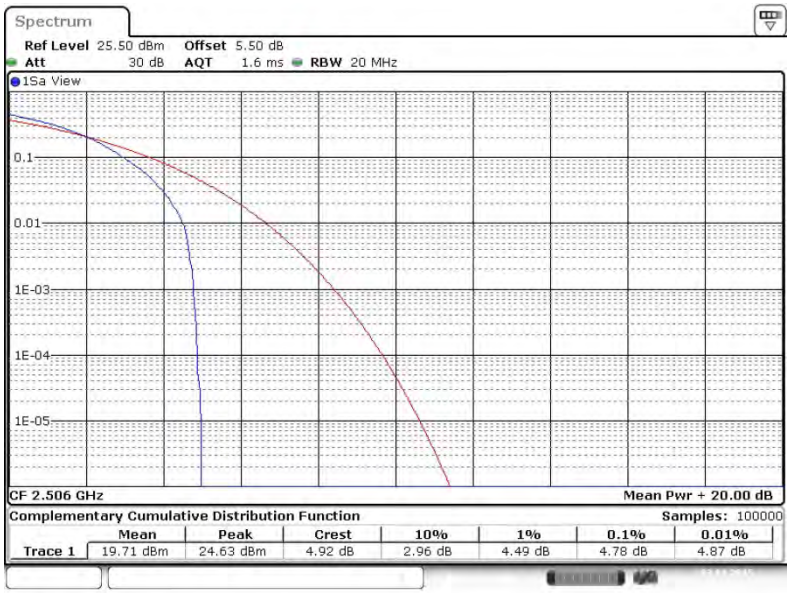
20MHz / QPSK in Ch. 41490 (100RB Size)



Date: 3.APR.2015 01:41:00

Peak-to-Average Ratio on LTE Band 41

20MHz / 16QAM in Ch. 39750 (1RB Size)



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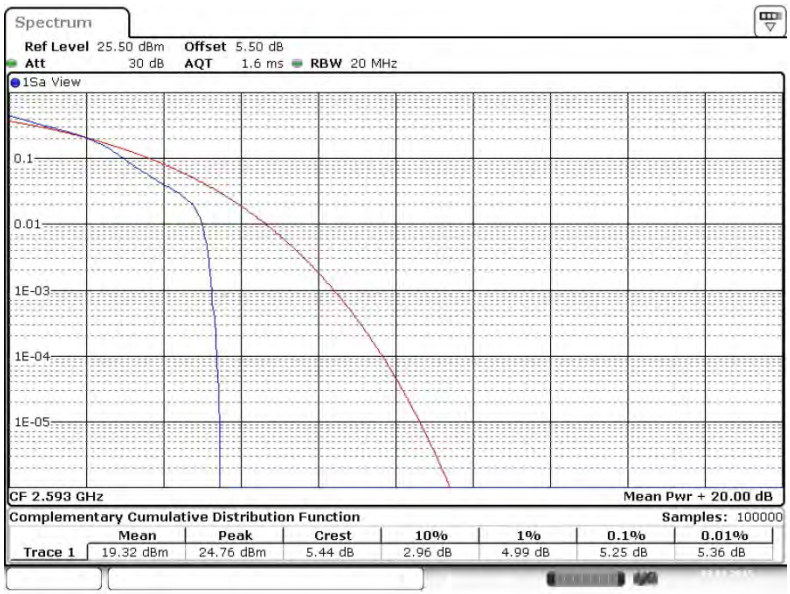
Peak-to-Average Ratio on LTE Band 41

20MHz / 16QAM in Ch. 40620 (1RB Size)



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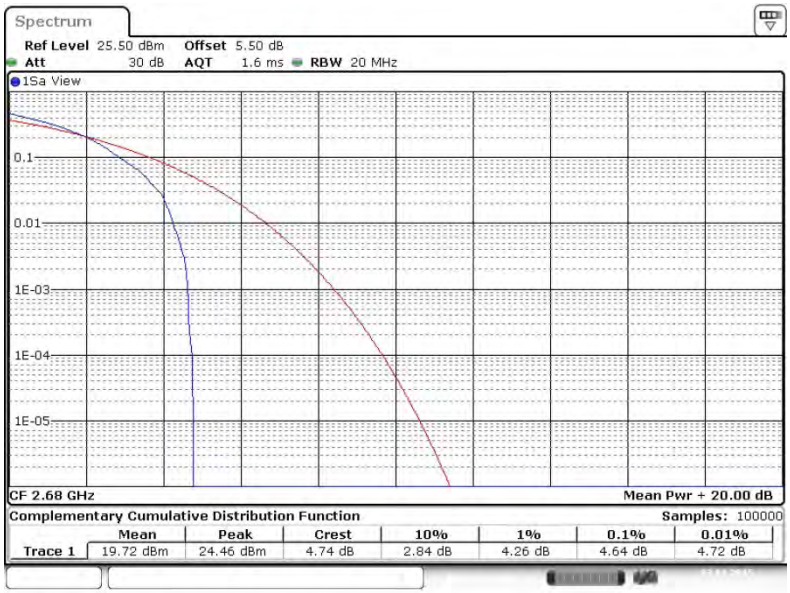
Peak-to-Average Ratio on LTE Band 41

20MHz / 16QAM in Ch. 41490 (1RB Size)



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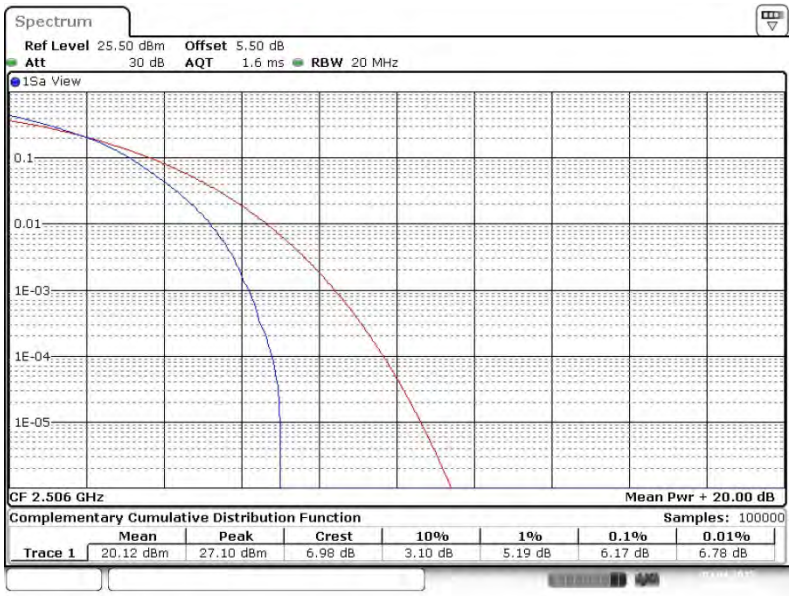
Peak-to-Average Ratio on LTE Band 41

20MHz / 16QAM in Ch. 39750 (100RB Size)



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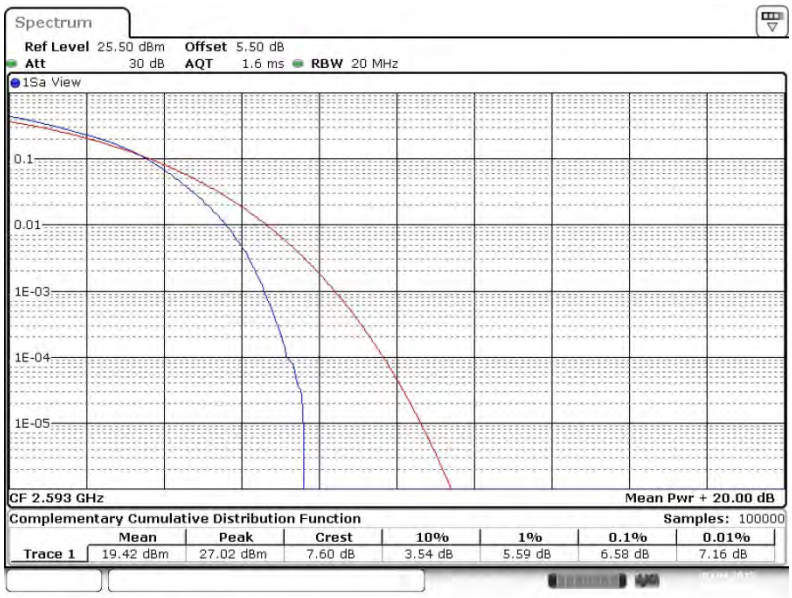
Peak-to-Average Ratio on LTE Band 41

20MHz / 16QAM in Ch. 40620 (100RB Size)



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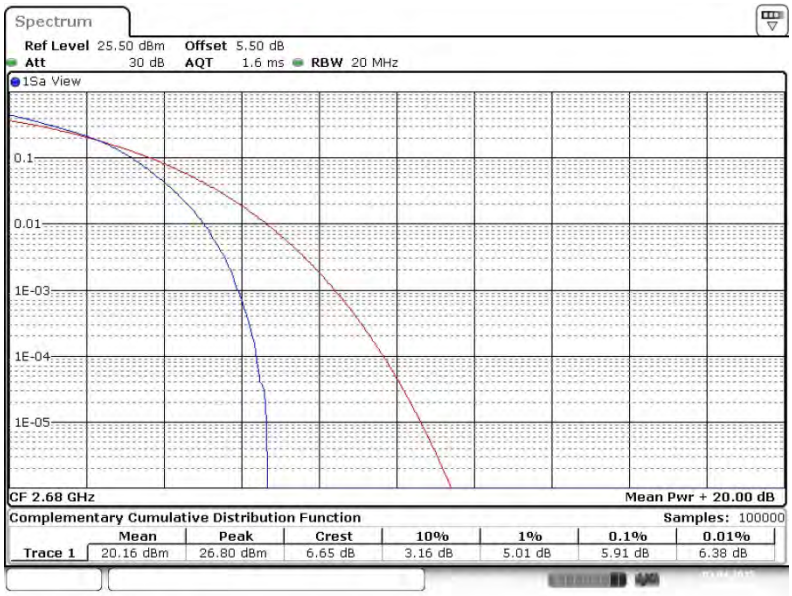
Peak-to-Average Ratio on LTE Band 41

20MHz / 16QAM in Ch. 41490 (100RB Size)



Date: 3.APR.2015 01:41:19

3.3 Effective Radiated Power and Equivalent Isotropic Radiated Power Measurement

3.3.1 Description of the ERP/EIRP Measurement

Effective radiated power output measurements by substitution method according to ANSI / TIA / EIA-603-C-2004, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v02r02. Mobile and portable (hand-held) stations operating are limited to average ERP of 7 watts with LTE band 26.

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 v02r02. Mobile and portable (hand-held) stations operating are limited to average EIRP of 2 watts with LTE band 25 / 41.

3.3.2 Measuring Instruments

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

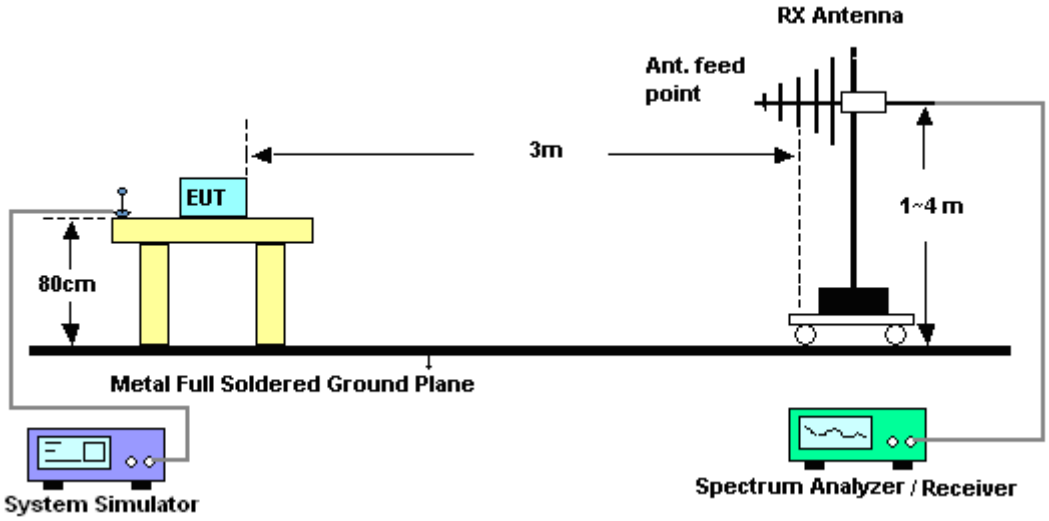
3.3.3 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 5.2.1. and ANSI / TIA-603-C-2004 Section 2.2.17.
2. The EUT was placed on a non-conductive rotating platform 0.8 meters high 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 with RMS detector per section 5. of KDB 971168 D01.
3. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power. The maximum 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.
4. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by the 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. Take the record of the output power at substitution antenna.

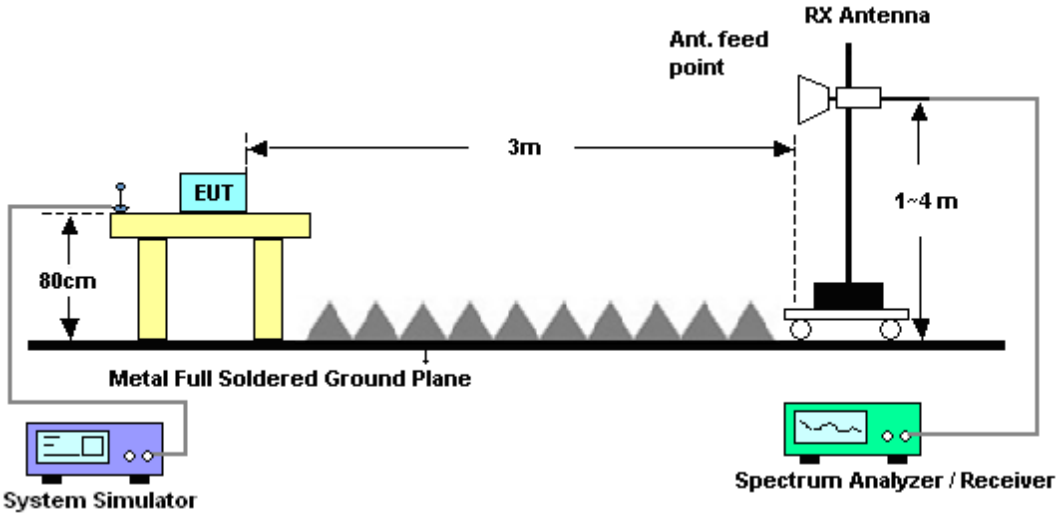
	LTE					
LTE BW	1.4M	3M	5M	10M	15M	20M
Span	3MHz	6MHz	10MHz	20MHz	30MHz	40MHz
RBW	30kHz	100kHz	100kHz	300kHz	300kHz	300kHz
VBW	100kHz	300kHz	300kHz	1MHz	1MHz	1MHz
Detector	RMS	RMS	RMS	RMS	RMS	RMS
Trace	Average	Average	Average	Average	Average	Average
Average Type	Power	Power	Power	Power	Power	Power
Sweep Count	100	100	100	100	100	100

3.3.4 Test Setup

For Effective Radiated Power



For Equivalent Isotropic Radiated Power



3.3.5 Test Result of ERP/EIRP

LTE Band 25 / 1.4MHz							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	3	2	25.11	0.3243	25.56	0.3597
Middle		1	2	25.48	0.3532	26.24	0.4207
Highest		3	2	24.66	0.2924	25.47	0.3524
Lowest	16QAM	1	5	24.45	0.2786	24.96	0.3133
Middle		1	2	24.24	0.2655	25.11	0.3243
Highest		1	2	24.00	0.2512	24.82	0.3034
Limit	EIRP < 2W			Result		PASS	

LTE Band 25 / 3MHz							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	25.15	0.3273	25.72	0.3733
Middle		1	7	25.12	0.3251	25.87	0.3864
Highest		1	0	25.05	0.3199	25.81	0.3811
Lowest	16QAM	1	0	24.44	0.2780	25.01	0.3170
Middle		1	7	24.24	0.2655	25.10	0.3236
Highest		1	0	24.30	0.2692	25.05	0.3199
Limit	EIRP < 2W			Result		PASS	

LTE Band 25 / 5MHz							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	25.36	0.3436	25.86	0.3855
Middle		1	0	25.06	0.3206	25.77	0.3776
Highest		1	12	25.10	0.3236	26.08	0.4055
Lowest	16QAM	1	0	24.32	0.2704	24.87	0.3069
Middle		1	12	24.15	0.2600	25.03	0.3184
Highest		1	0	24.19	0.2624	24.92	0.3105
Limit	EIRP < 2W			Result		PASS	

LTE Band 25 / 10MHz							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	25.22	0.3327	25.69	0.3707
Middle		1	0	25.46	0.3516	26.33	0.4295
Highest		1	0	25.44	0.3499	26.06	0.4036
Lowest	16QAM	1	24	24.44	0.2780	25.06	0.3206
Middle		1	0	24.48	0.2805	25.16	0.3281
Highest		1	24	24.30	0.2692	25.01	0.3170
Limit	EIRP < 2W			Result		PASS	

LTE Band 25 / 15MHz							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	25.30	0.3388	25.96	0.3945
Middle		1	0	25.41	0.3475	26.20	0.4169
Highest		1	0	25.54	0.3581	25.92	0.3908
Lowest	16QAM	1	0	24.44	0.2780	25.18	0.3296
Middle		1	0	24.69	0.2944	25.19	0.3304
Highest		1	74	24.05	0.2541	24.85	0.3055
Limit	EIRP < 2W			Result		PASS	

LTE Band 25 / 20MHz							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	25.51	0.3556	26.21	0.4178
Middle		1	0	25.28	0.3373	25.90	0.3890
Highest		1	0	25.43	0.3491	26.14	0.4111
Lowest	16QAM	1	0	24.73	0.2972	25.46	0.3516
Middle		1	99	24.22	0.2642	25.18	0.3296
Highest		1	0	24.56	0.2858	25.28	0.3373
Limit	EIRP < 2W			Result		PASS	

LTE Band 26 / 1.4MHz							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	21.44	0.1393	13.42	0.0220
Middle		1	2	20.21	0.1050	13.27	0.0212
Highest		1	2	19.82	0.0959	14.48	0.0281
Lowest	16QAM	1	0	20.27	0.1064	12.36	0.0172
Middle		1	5	19.49	0.0889	12.57	0.0181
Highest		1	2	18.64	0.0731	13.31	0.0214
Limit	EIRP < 7W			Result		PASS	

LTE Band 26 / 3MHz							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	7	21.34	0.1361	13.56	0.0227
Middle		1	0	20.14	0.1033	13.22	0.0210
Highest		1	7	19.65	0.0923	14.09	0.0256
Lowest	16QAM	1	0	20.29	0.1069	12.40	0.0174
Middle		1	0	19.15	0.0822	12.33	0.0171
Highest		1	0	19.03	0.0800	13.22	0.0210
Limit	EIRP < 7W			Result		PASS	

LTE Band 26 / 5MHz							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	21.16	0.1306	13.13	0.0206
Middle		1	0	20.02	0.1005	13.10	0.0204
Highest		1	12	19.93	0.0984	14.27	0.0267
Lowest	16QAM	1	0	20.14	0.1033	12.24	0.0167
Middle		1	0	19.13	0.0818	12.19	0.0166
Highest		1	0	18.85	0.0767	12.90	0.0195
Limit	EIRP < 7W			Result		PASS	

LTE Band 26/ 10MHz							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	49	20.18	0.1042	12.99	0.0199
Middle		1	49	20.02	0.1005	13.82	0.0241
Highest		1	0	20.52	0.1127	13.90	0.0245
Lowest	16QAM	1	49	19.21	0.0834	12.21	0.0166
Middle		1	0	19.29	0.0849	12.01	0.0159
Highest		1	0	19.36	0.0863	12.76	0.0189
Limit	EIRP < 7W			Result		PASS	

LTE Band 26 / 15MHz							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	37	20.59	0.1146	13.18	0.0208
Middle		1	37	20.38	0.1091	13.48	0.0223
Highest		1	0	20.01	0.1002	13.12	0.0205
Lowest	16QAM	1	0	20.42	0.1102	12.61	0.0182
Middle		1	37	19.37	0.0865	12.41	0.0174
Highest		1	0	19.32	0.0855	12.43	0.0175
Limit	EIRP < 7W			Result		PASS	

LTE Band 41 / 5MHz							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	12	22.98	0.1986	20.73	0.1183
Middle		1	12	23.82	0.2410	22.92	0.1959
Highest		1	12	23.97	0.2495	22.40	0.1738
Lowest	16QAM	1	12	23.33	0.2153	20.99	0.1256
Middle		1	0	22.42	0.1746	21.18	0.1312
Highest		1	0	23.61	0.2296	21.92	0.1556
Limit	EIRP < 2W			Result		PASS	

LTE Band 41 / 10MHz							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	24	23.22	0.2099	21.38	0.1374
Middle		1	0	23.49	0.2234	22.33	0.1710
Highest		1	0	25.35	0.3428	23.44	0.2208
Lowest	16QAM	1	0	22.19	0.1656	20.12	0.1028
Middle		1	0	22.25	0.1679	21.15	0.1303
Highest		1	0	23.86	0.2432	21.91	0.1552
Limit	EIRP < 2W			Result		PASS	

LTE Band 41 / 15MHz							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	23.51	0.2244	21.05	0.1274
Middle		1	0	23.43	0.2203	21.90	0.1549
Highest		1	74	24.20	0.2630	22.34	0.1714
Lowest	16QAM	1	74	23.54	0.2259	20.93	0.1239
Middle		1	0	22.64	0.1837	21.11	0.1291
Highest		1	0	24.16	0.2606	21.96	0.1570
Limit	EIRP < 2W			Result		PASS	

LTE Band 41 / 20MHz							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	19.24	0.0839	16.84	0.0483
Middle		1	0	23.53	0.2254	21.92	0.1556
Highest		1	0	24.47	0.2799	22.96	0.1977
Lowest	16QAM	1	0	22.59	0.1816	20.17	0.1040
Middle		1	0	22.25	0.1679	20.62	0.1153
Highest		1	0	23.56	0.2270	21.82	0.1521
Limit	EIRP < 2W			Result		PASS	

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.

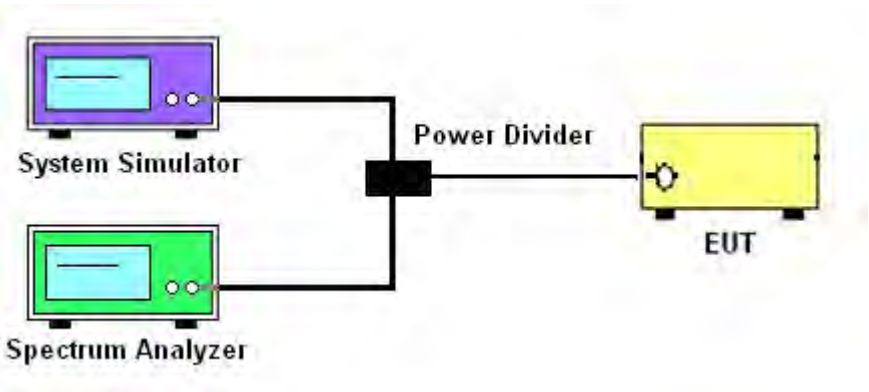
3.4.2 Measuring Instruments

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 system simulator via a power divider.
2. The 26dB and 99% occupied bandwidth (BW) of the middle channel for the highest RF power with full RB sizes were measured.

3.4.4 Test Setup



3.4.5 Test Result of 99% Occupied Bandwidth and 26dB Bandwidth

Modes	LTE Band 25			
BW / Mod.	1.4MHz / QPSK	1.4MHz / 16QAM	3MHz / QPSK	3MHz / 16QAM
99% OBW (MHz)	1.094	1.097	2.727	2.721
26dB BW (MHz)	1.290	1.287	3.045	3.045
BW / Mod.	5MHz / QPSK	5MHz / 16QAM	10MHz / QPSK	10MHz / 16QAM
99% OBW (MHz)	4.505	4.496	9.111	9.031
26dB BW (MHz)	5.045	5.045	10.110	9.990
BW / Mod.	15MHz / QPSK	15MHz / 16QAM	20MHz / QPSK	20MHz / 16QAM
99% OBW (MHz)	13.487	13.457	18.422	18.342
26dB BW (MHz)	14.805	14.835	20.420	20.420

Modes	LTE Band 26			
BW / Mod.	1.4MHz / QPSK	1.4MHz / 16QAM	3MHz / QPSK	3MHz / 16QAM
99% OBW (MHz)	1.097	1.097	2.727	2.727
26dB BW (MHz)	1.290	1.292	3.045	3.051
BW / Mod.	5MHz / QPSK	5MHz / 16QAM	10MHz / QPSK	10MHz / 16QAM
99% OBW (MHz)	4.486	4.496	9.071	9.011
26dB BW (MHz)	5.045	5.045	10.110	10.010
BW / Mod.	15MHz / QPSK	15MHz / 16QAM		
99% OBW (MHz)	13.427	13.546		
26dB BW (MHz)	14.416	14.655		

Modes	LTE Band 41			
BW / Mod.	**5MHz / QPSK**	**5MHz / 16QAM**	**10MHz / QPSK**	**10MHz / 16QAM**
99% OBW (MHz)	4.525	4.496	9.071	9.031
26dB BW (MHz)	4.995	4.995	9.910	10.250
BW / Mod.	**15MHz / QPSK**	**15MHz / 16QAM**	**20MHz / QPSK**	**20MHz / 16QAM**
99% OBW (MHz)	13.546	13.457	18.302	18.422
26dB BW (MHz)	14.595	14.565	20.100	20.460

Note:

The maximum RB configurations of the 99% Occupied Bandwidth and 26dB Bandwidth summary as below:

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

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

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

BW10MHz RB setting：RB Size 50, RB offset 0

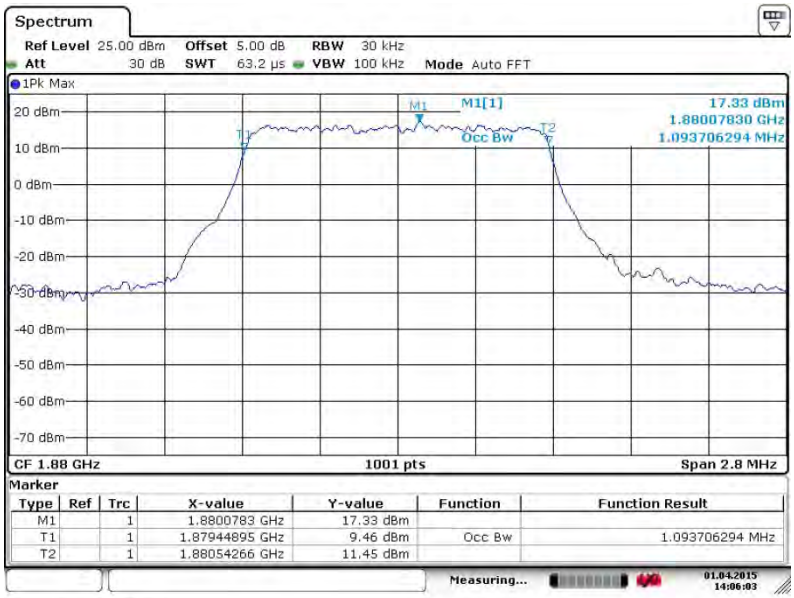
BW15MHz RB setting：RB Size 75, RB offset 0

BW20MHz RB setting：RB Size 100, RB offset 0

3.4.6 Test Result (Plots) of Occupied Bandwidth

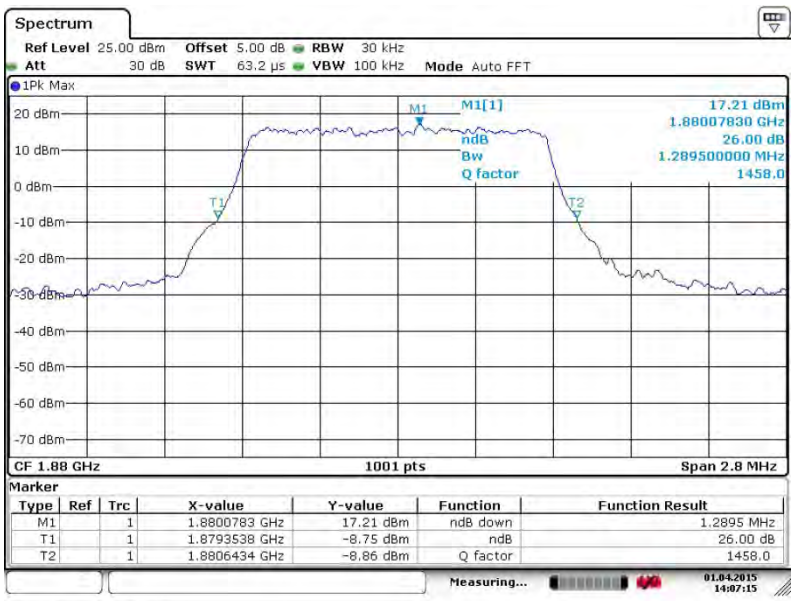
Band :	LTE Band 25	BW / Mod. :	1.4MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26340



Date: 1.APR.2015 14:06:03

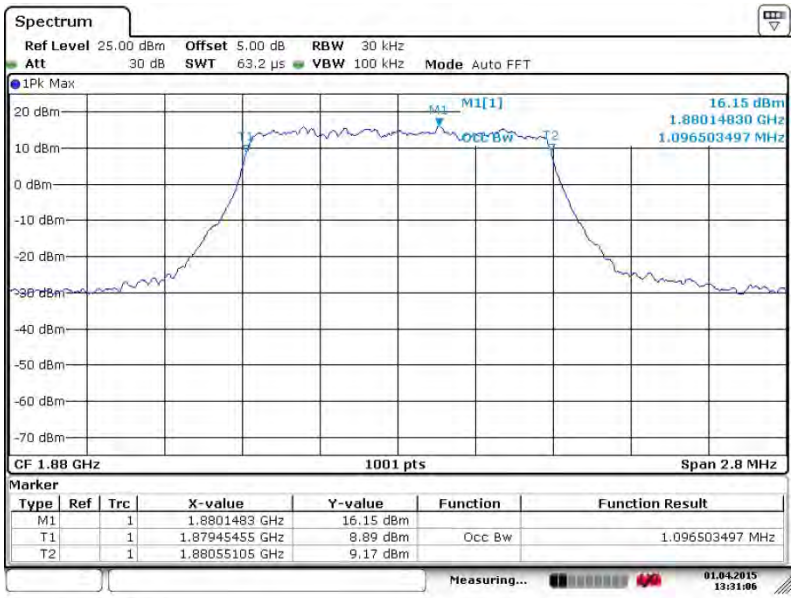
26dB Bandwidth Plot on Channel 26340



Date: 1.APR.2015 14:07:15

Band :	LTE Band 25	BW / Mod. :	1.4MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26340



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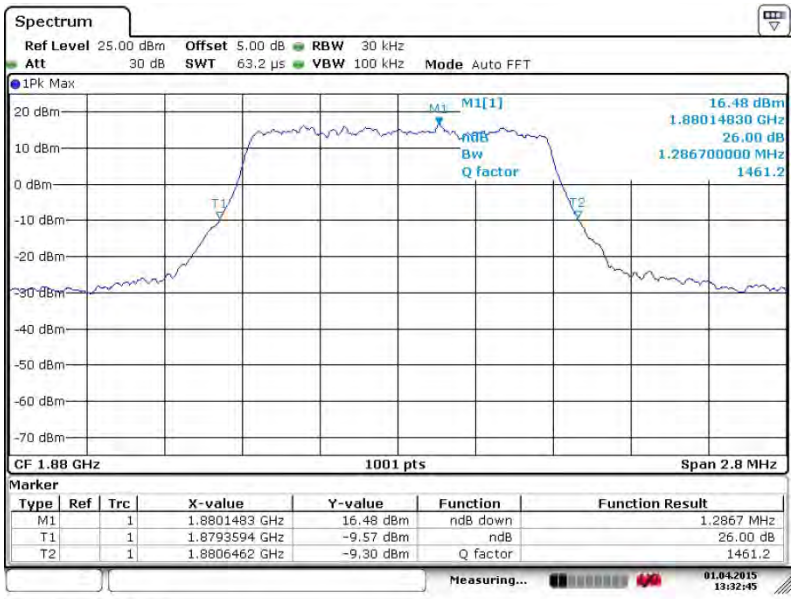
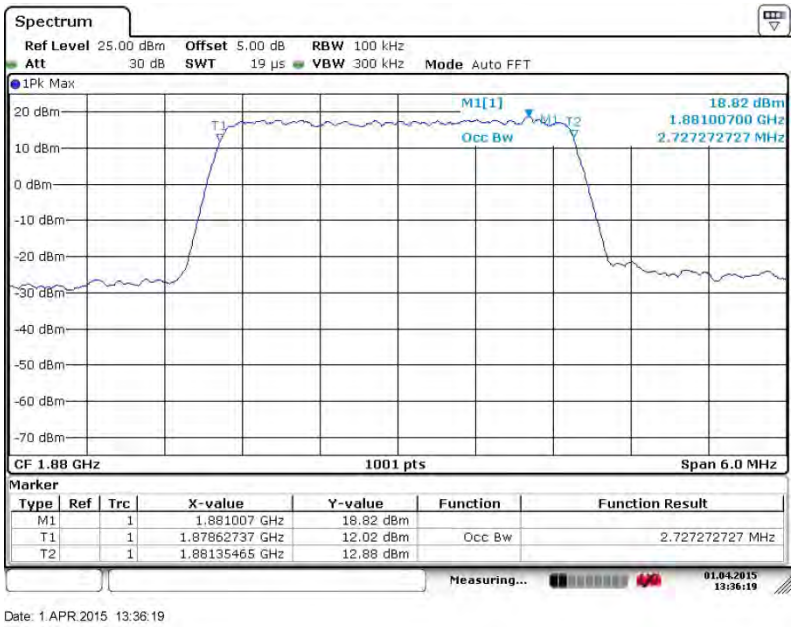
26dB Bandwidth Plot on Channel 26340



Date: 1.APR.2015 13:32:45

Band :	LTE Band 25	BW / Mod. :	3MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26340



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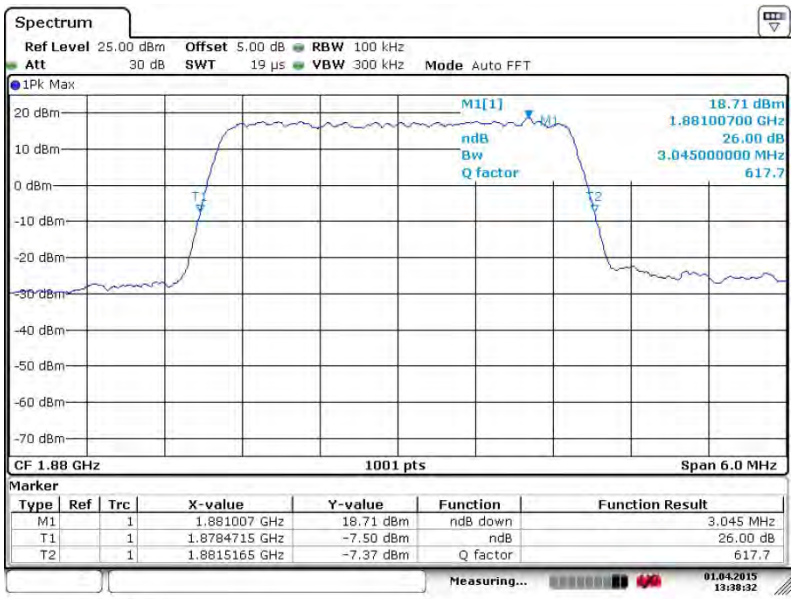
26dB Bandwidth Plot on Channel 26340



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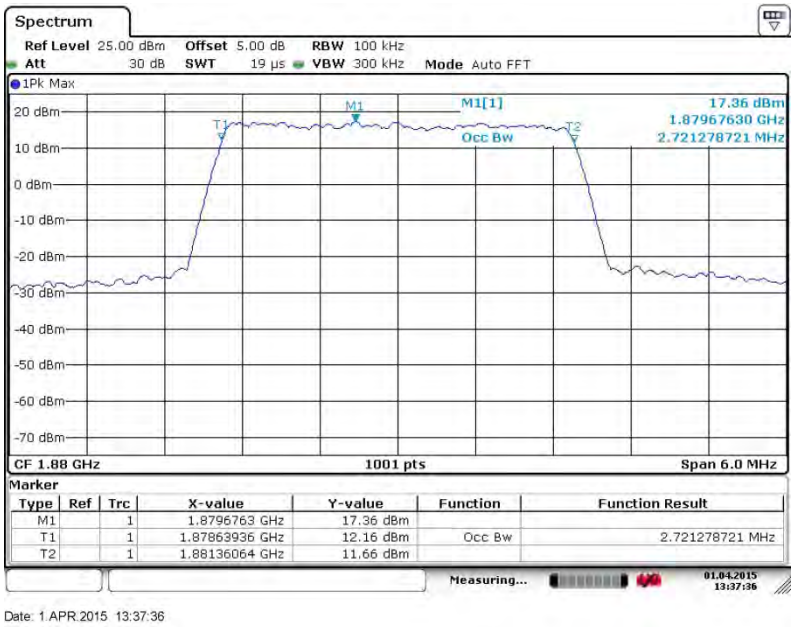
Band :	LTE Band 25	BW / Mod. :	3MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26340



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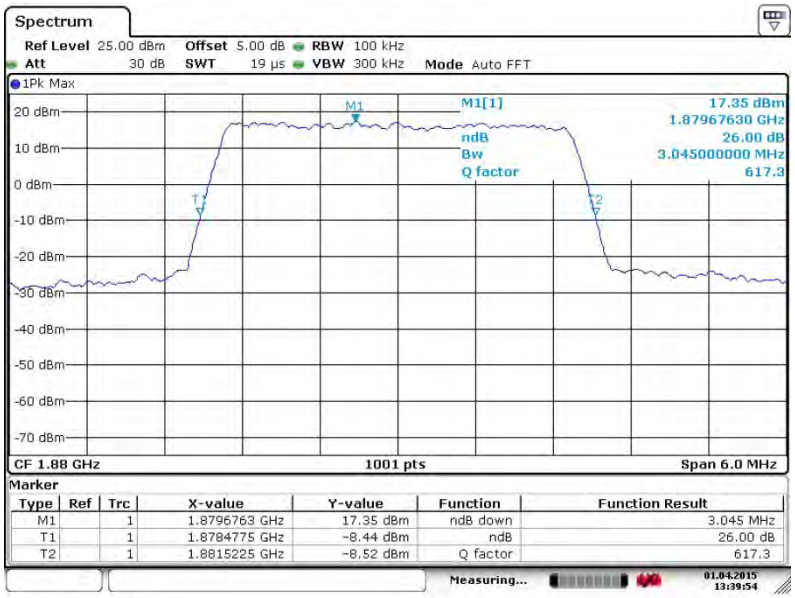
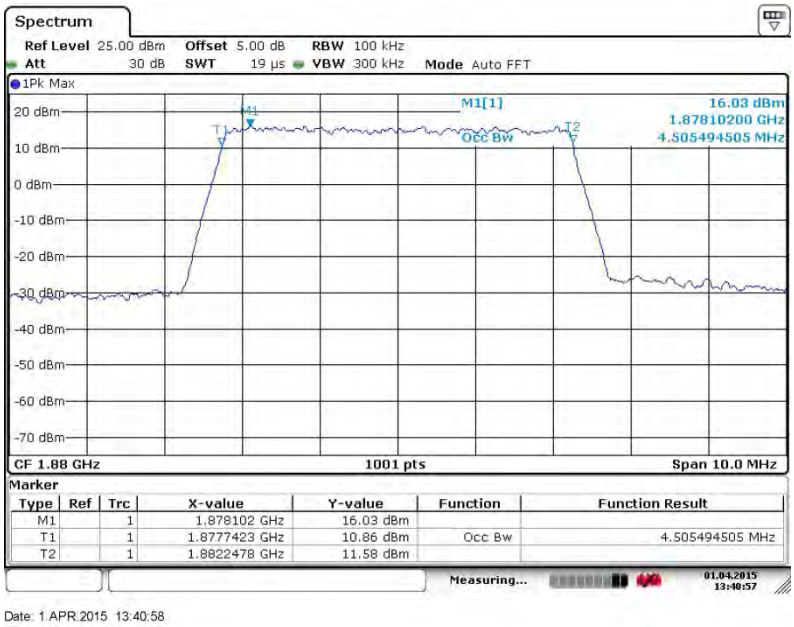
26dB Bandwidth Plot on Channel 26340



Date: 1.APR.2015 13:39:54

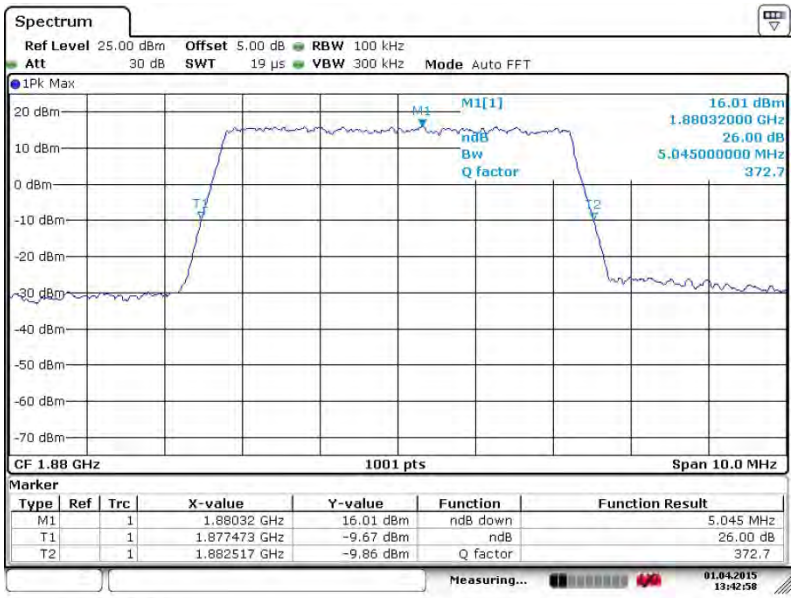
Band :	LTE Band 25	BW / Mod. :	5MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26340



Date: 1.APR.2015 13:40:58

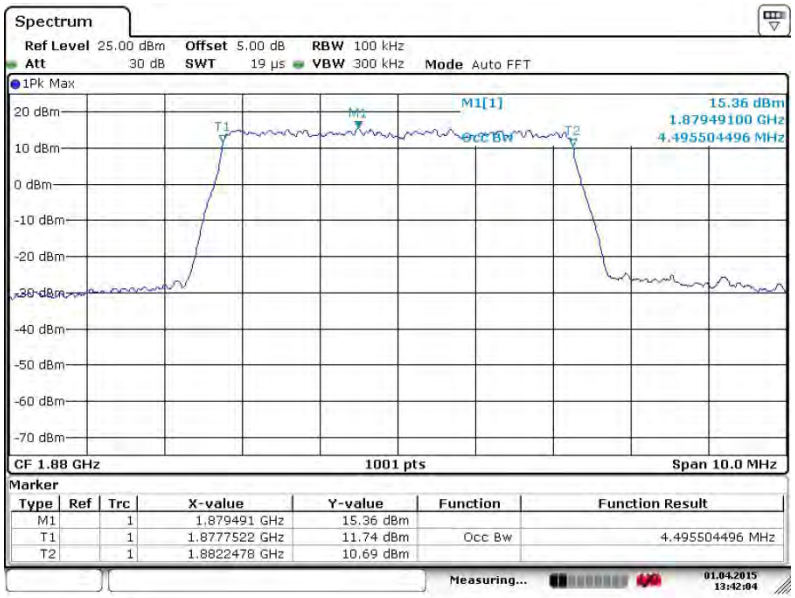
26dB Bandwidth Plot on Channel 26340



Date: 1.APR.2015 13:42:58

Band :	LTE Band 25	BW / Mod. :	5MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26340



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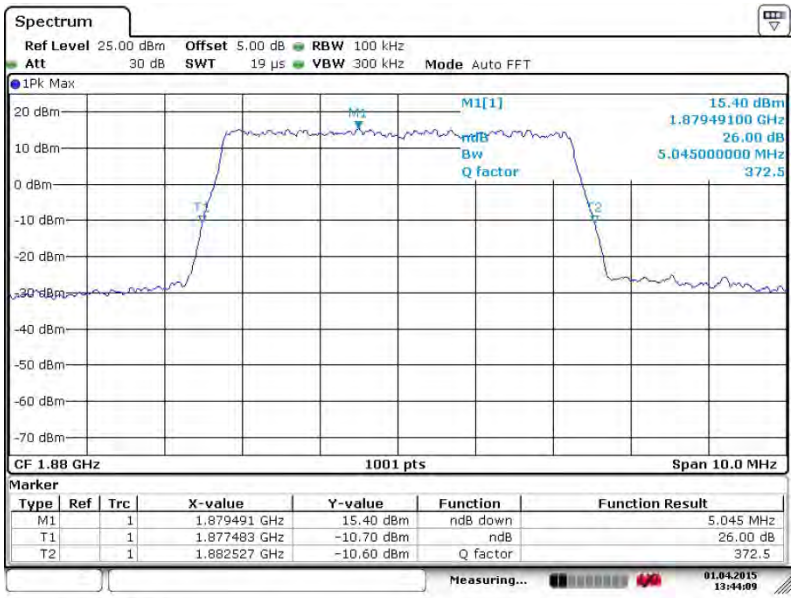
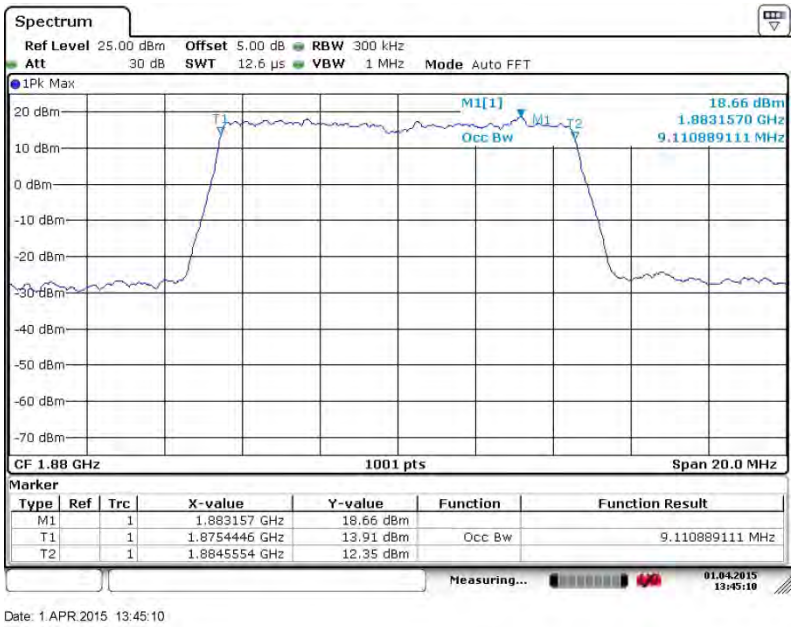
26dB Bandwidth Plot on Channel 26340



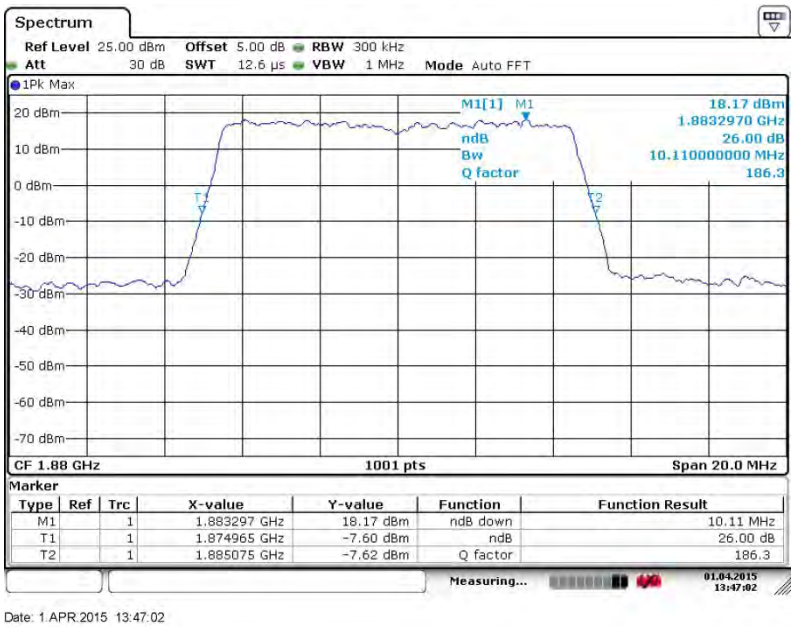
Date: 1.APR.2015 13:44:09

Band :	LTE Band 25	BW / Mod. :	10MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26340

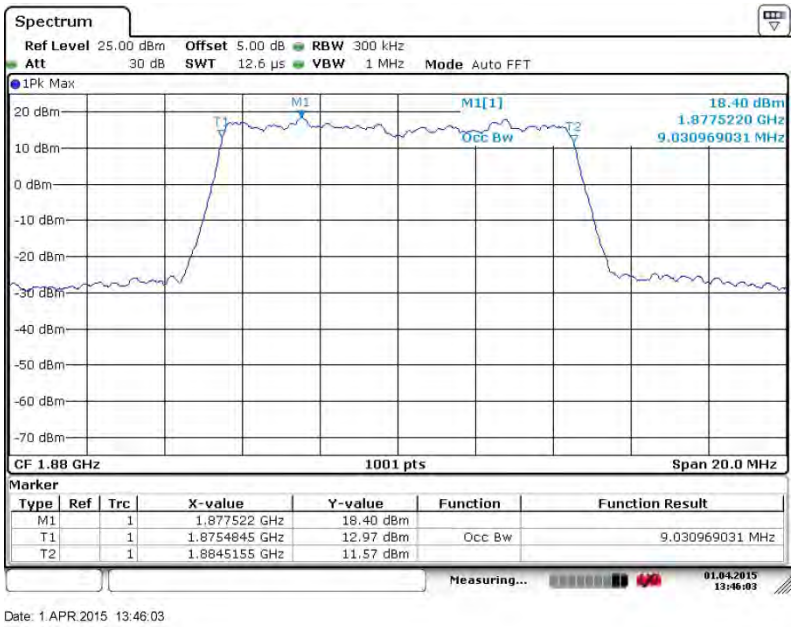


26dB Bandwidth Plot on Channel 26340

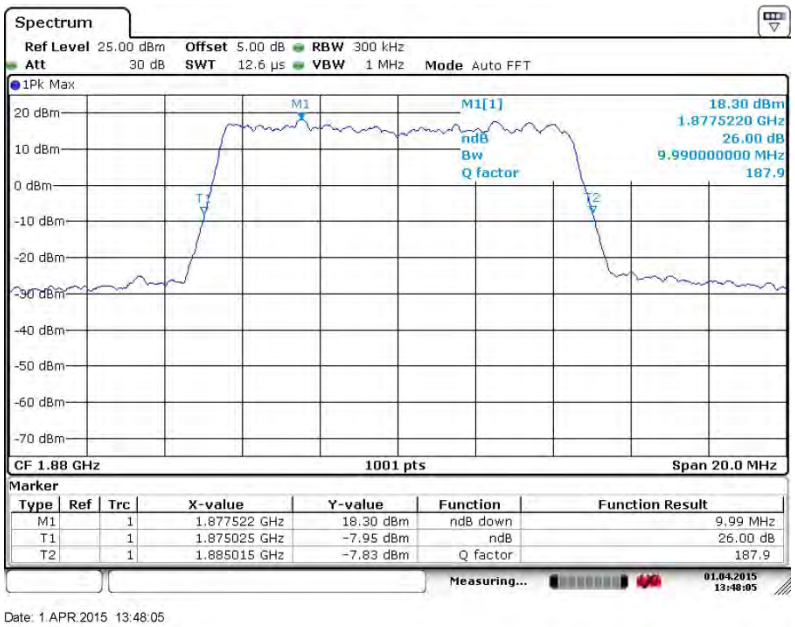


Band :	LTE Band 25	BW / Mod. :	10MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26340

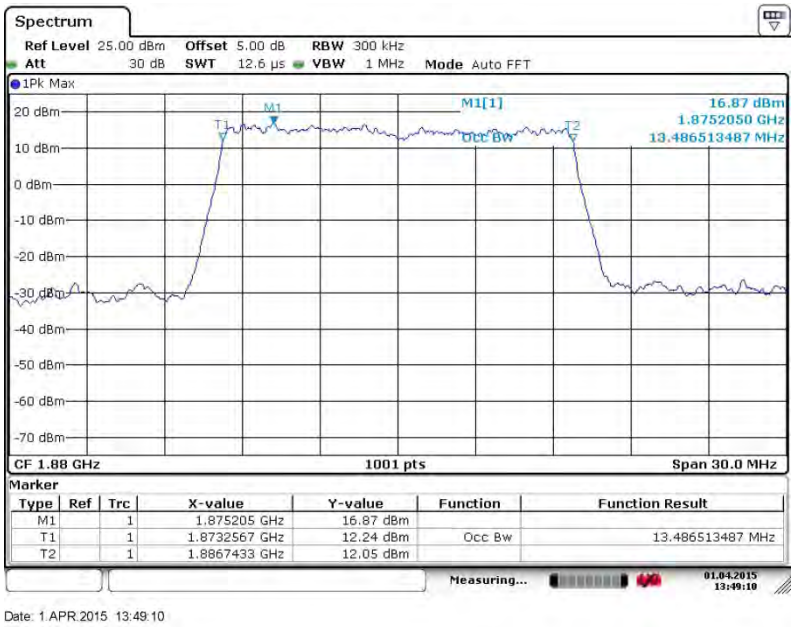


26dB Bandwidth Plot on Channel 26340



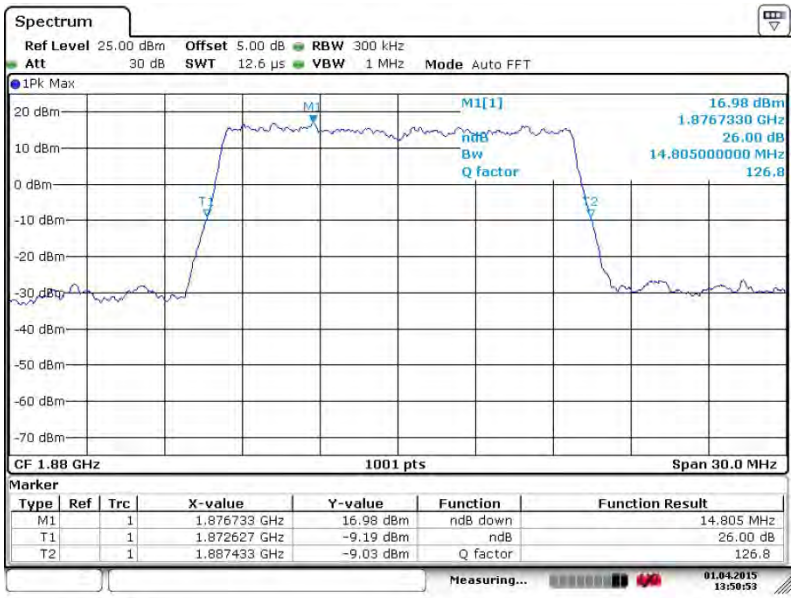
Band :	LTE Band 25	BW / Mod. :	15MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26340



Date: 1.APR.2015 13:49:10

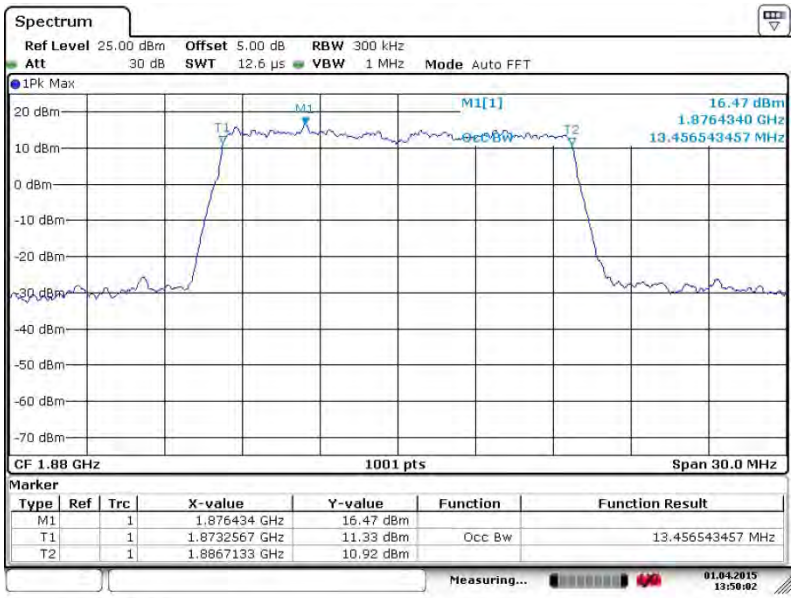
26dB Bandwidth Plot on Channel 26340



Date: 1.APR.2015 13:50:54

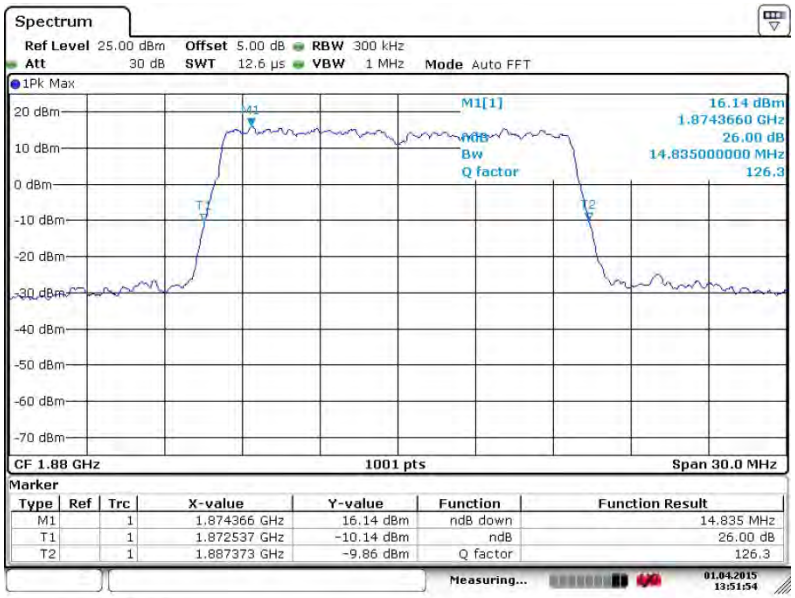
Band :	LTE Band 25	BW / Mod. :	15MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26340



Date: 1.APR.2015 13:50:01

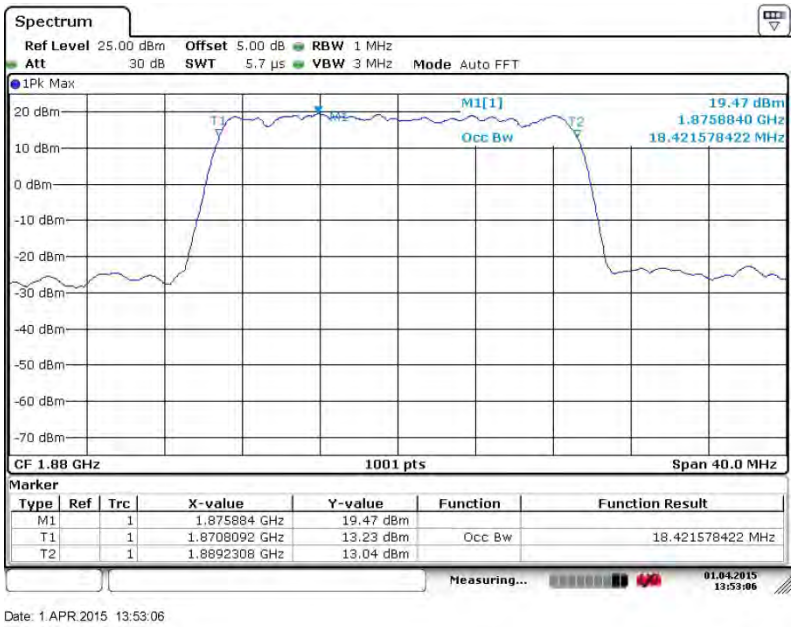
26dB Bandwidth Plot on Channel 26340



Date: 1.APR.2015 13:51:55

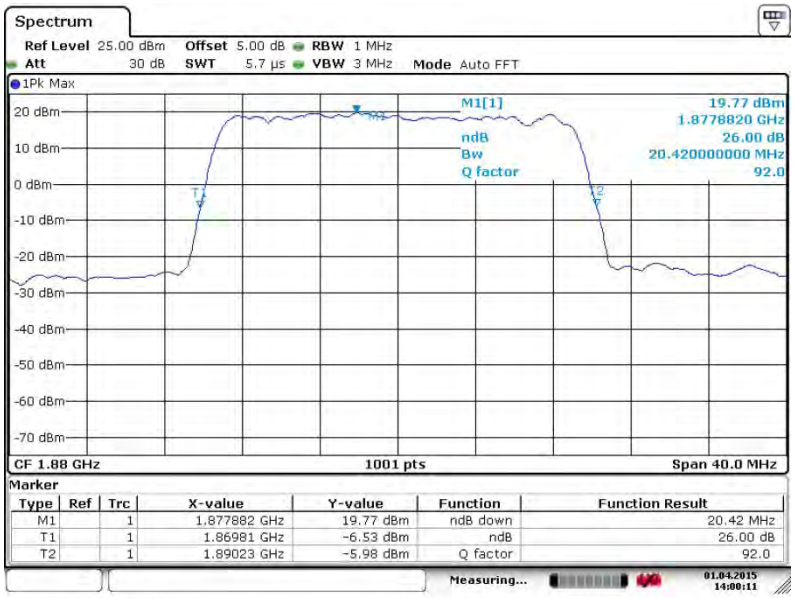
Band :	LTE Band 25	BW / Mod. :	20MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26340



Date: 1.APR.2015 13:53:06

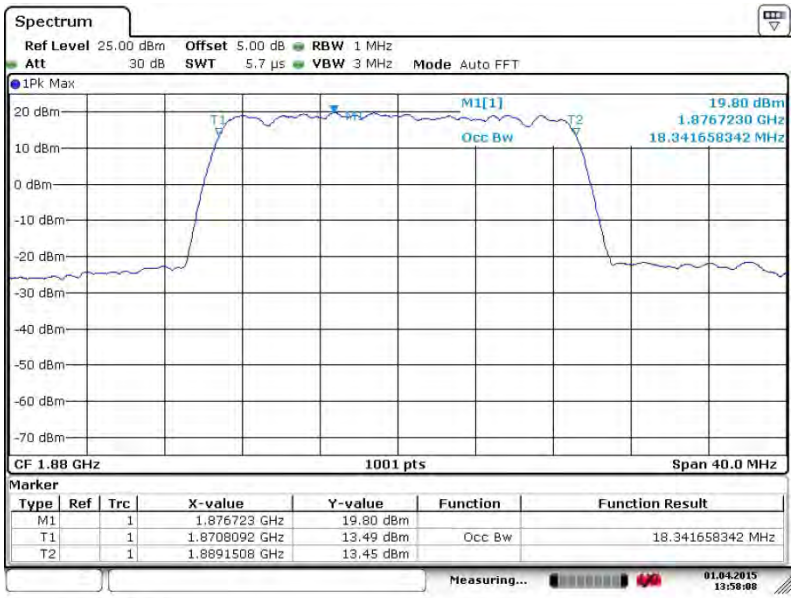
26dB Bandwidth Plot on Channel 26340



Date: 1.APR.2015 14:00:12

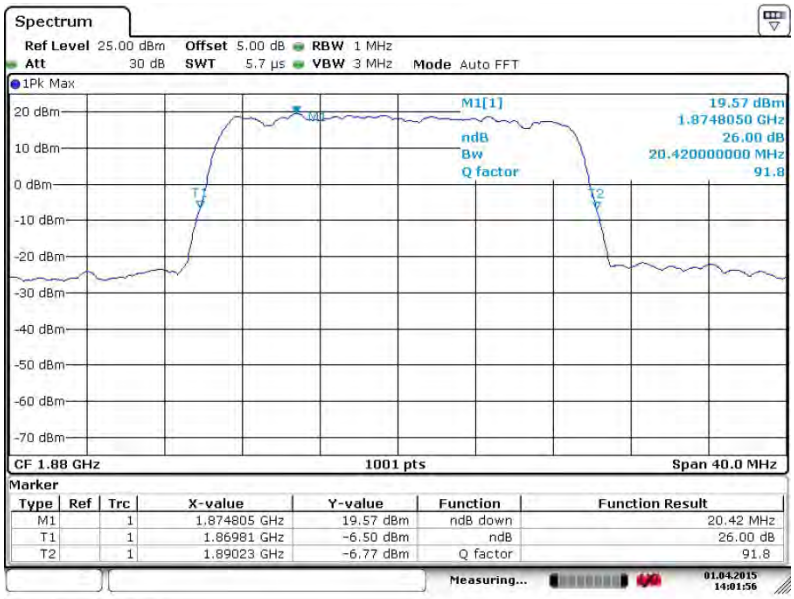
Band :	LTE Band 25	BW / Mod. :	20MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26340



Date: 1.APR.2015 13:58:08

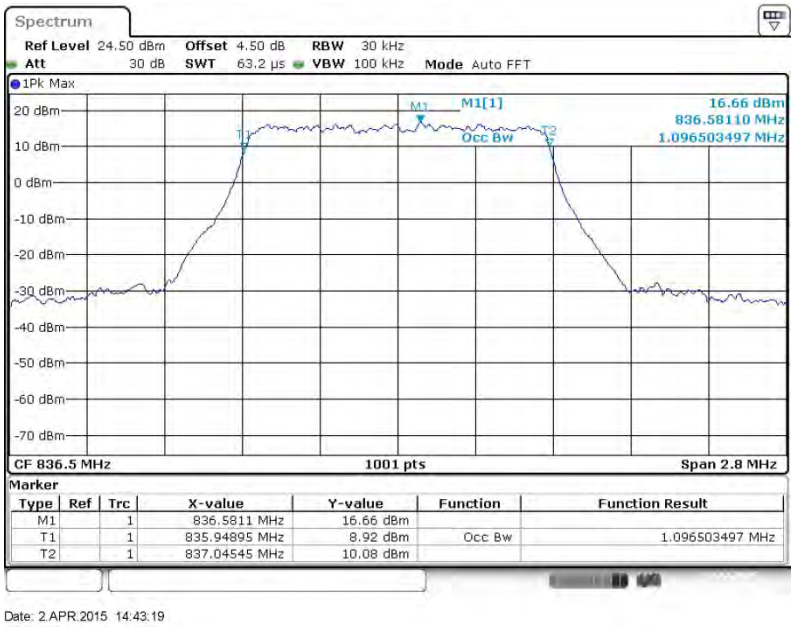
26dB Bandwidth Plot on Channel 26340



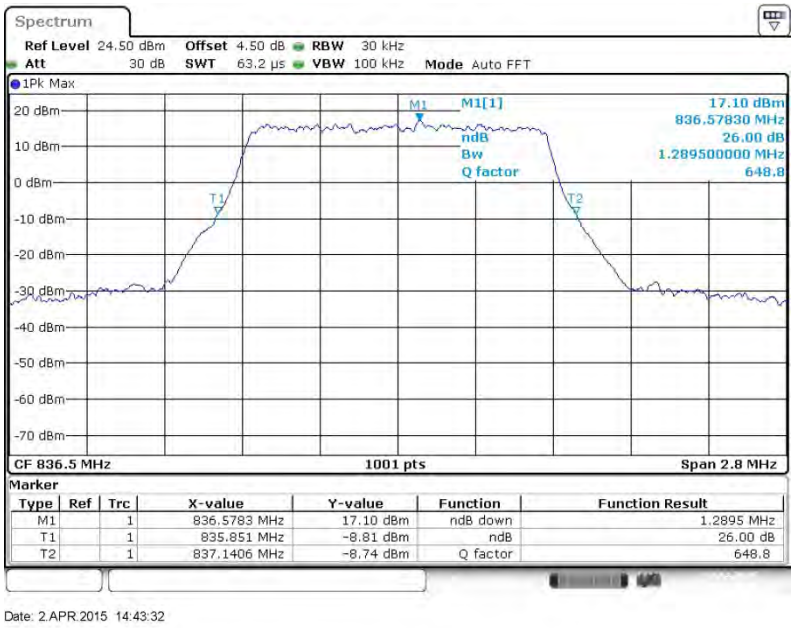
Date: 1.APR.2015 14:01:56

Band :	LTE Band 26	BW / Mod. :	1.4MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26915

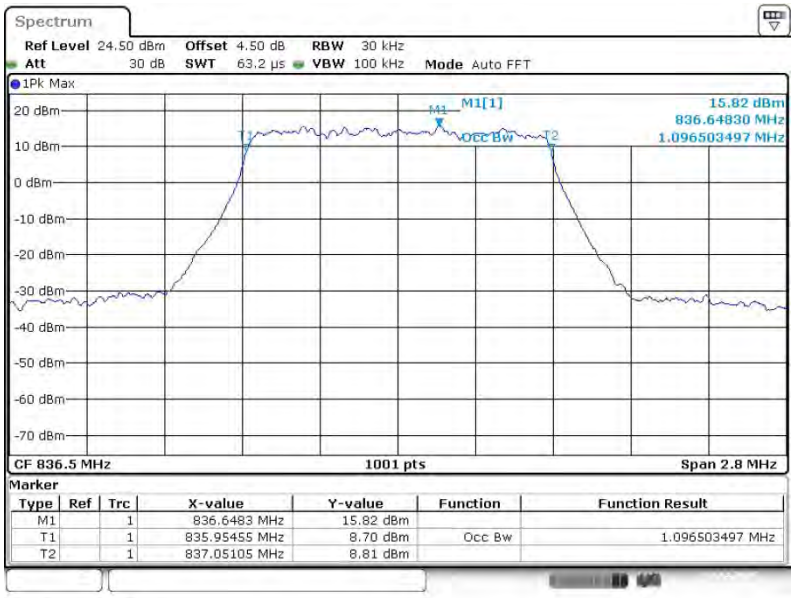


26dB Bandwidth Plot on Channel 26915



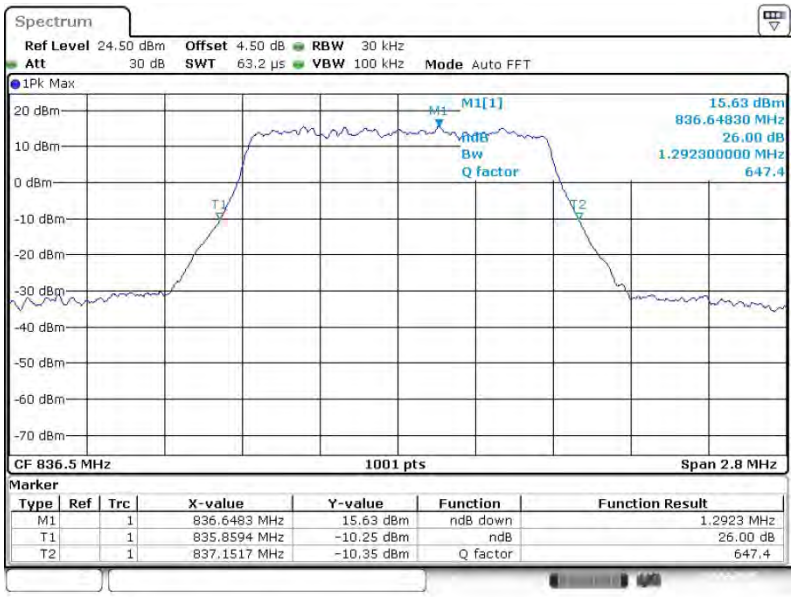
Band :	LTE Band 26	BW / Mod. :	1.4MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26915



Date: 2.APR.2015 14:42:54

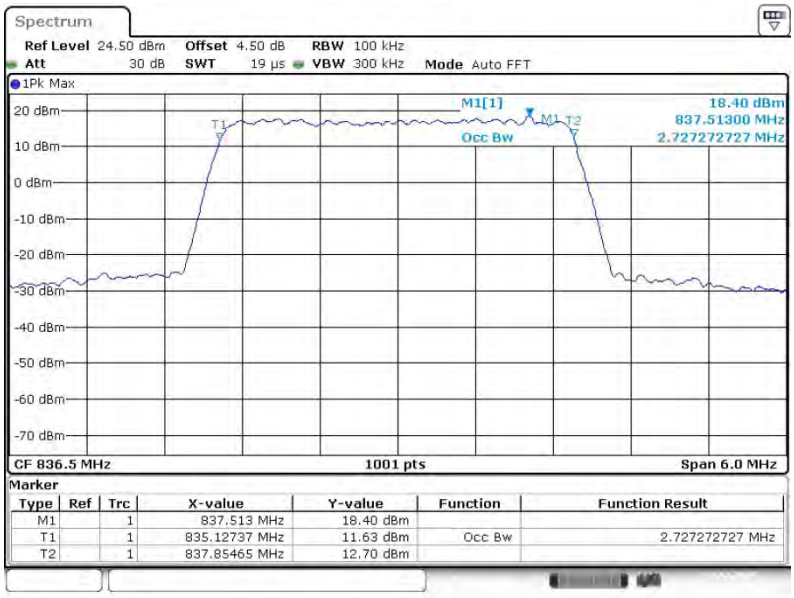
26dB Bandwidth Plot on Channel 26915



Date: 2.APR.2015 14:43:04

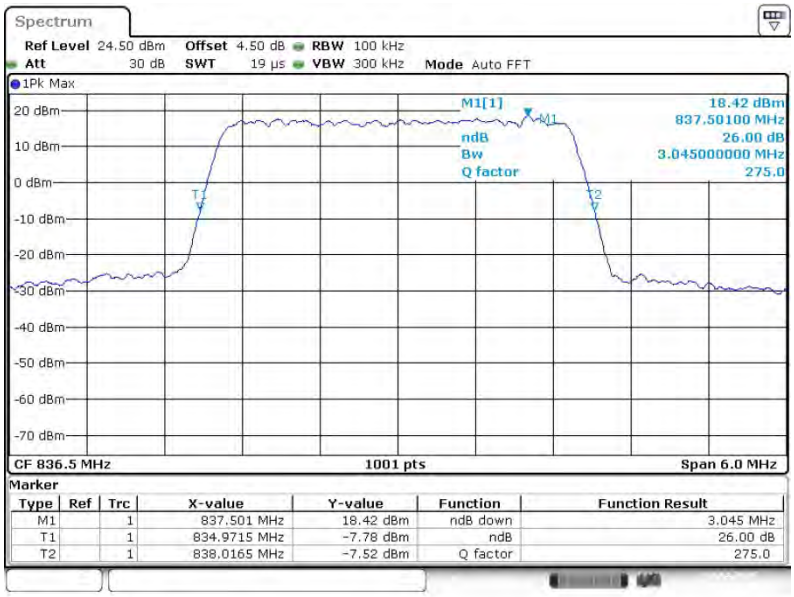
Band :	LTE Band 26	BW / Mod. :	3MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26915



Date: 2.APR.2015 14:51:51

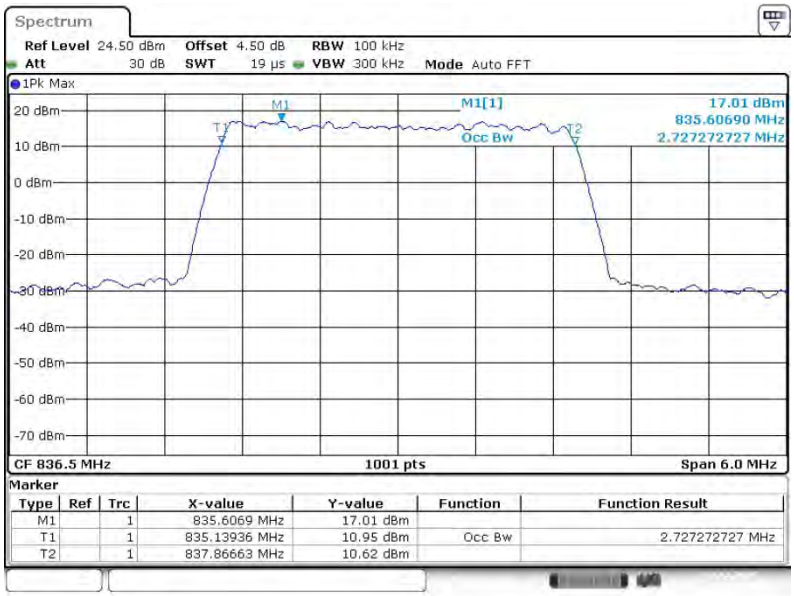
26dB Bandwidth Plot on Channel 26915



Date: 2.APR.2015 14:52:10

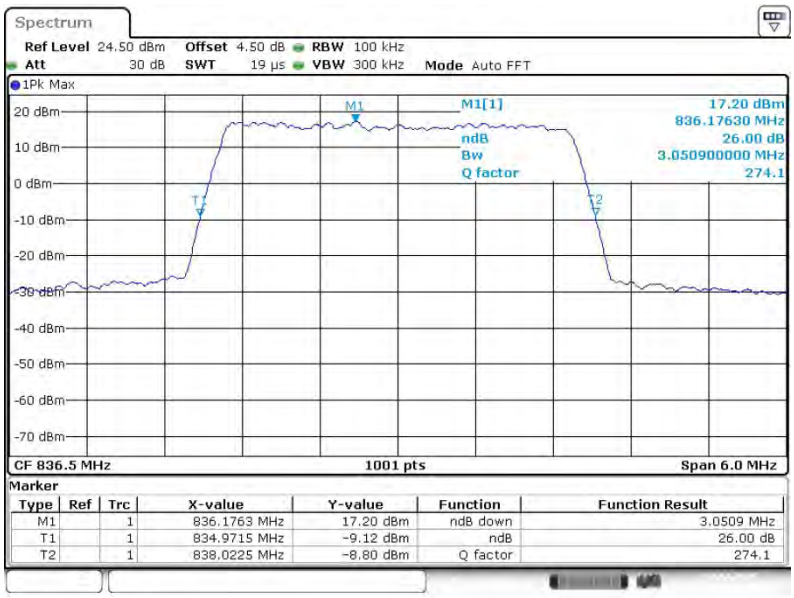
Band :	LTE Band 26	BW / Mod. :	3MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26915



Date: 2.APR.2015 14:52:35

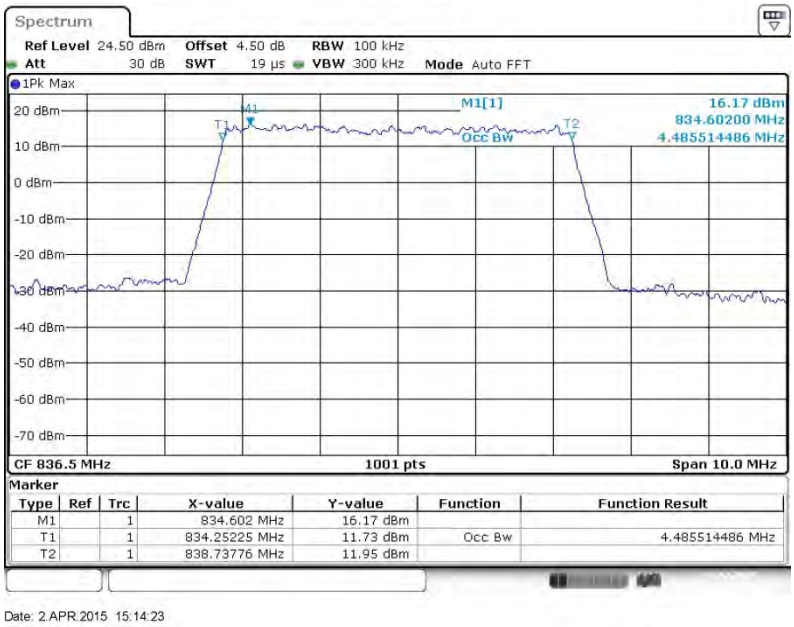
26dB Bandwidth Plot on Channel 26915



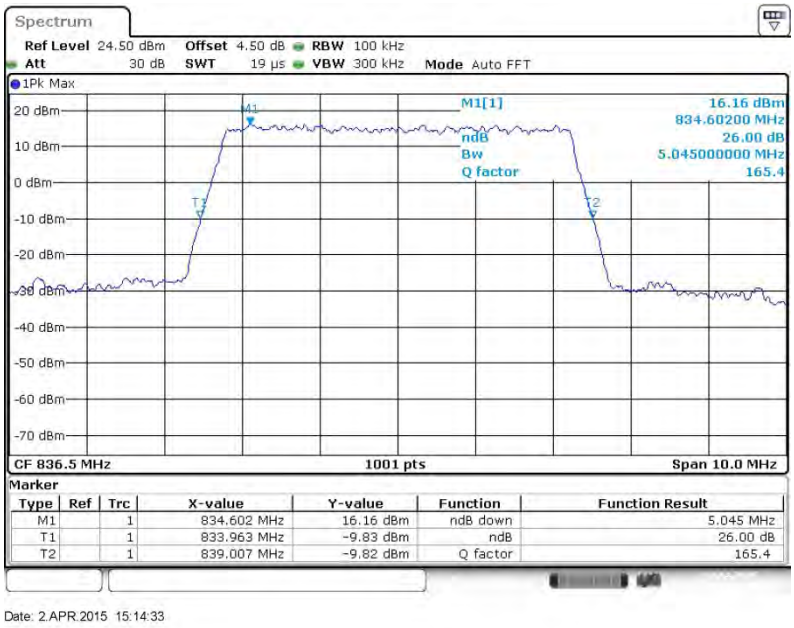
Date: 2.APR.2015 14:52:48

Band :	LTE Band 26	BW / Mod. :	5MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26915

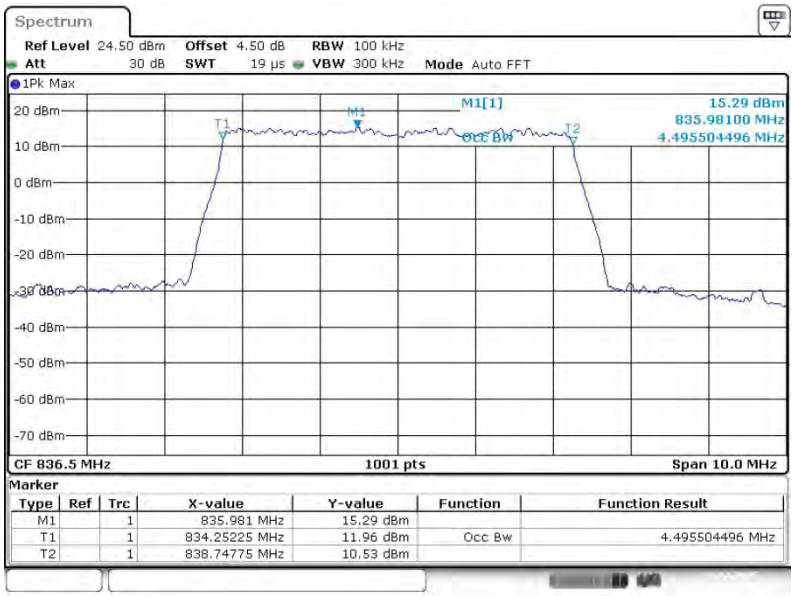


26dB Bandwidth Plot on Channel 26915



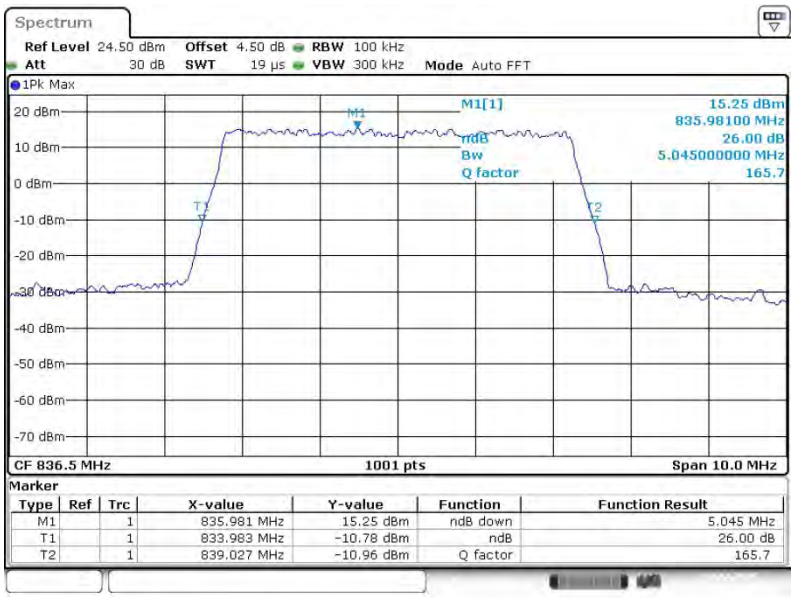
Band :	LTE Band 26	BW / Mod. :	5MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26915



Date: 2.APR.2015 15:14:50

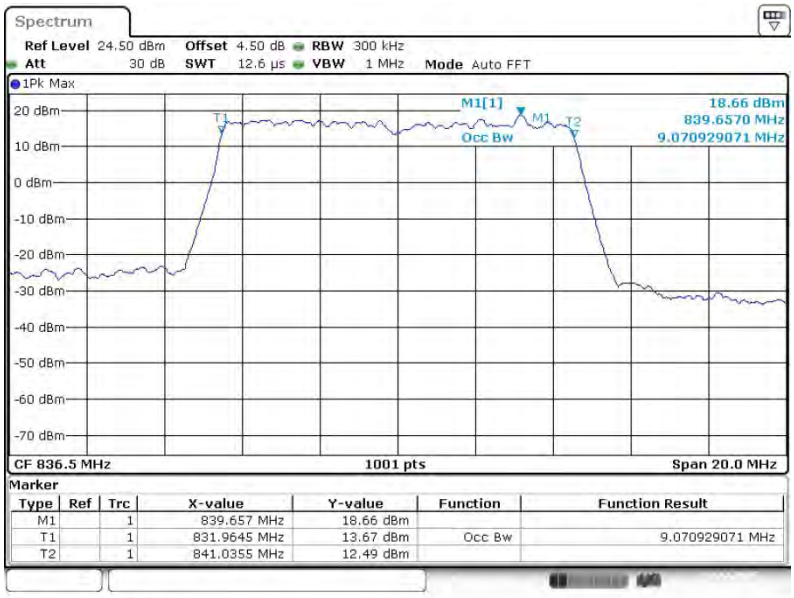
26dB Bandwidth Plot on Channel 26915



Date: 2.APR.2015 15:15:07

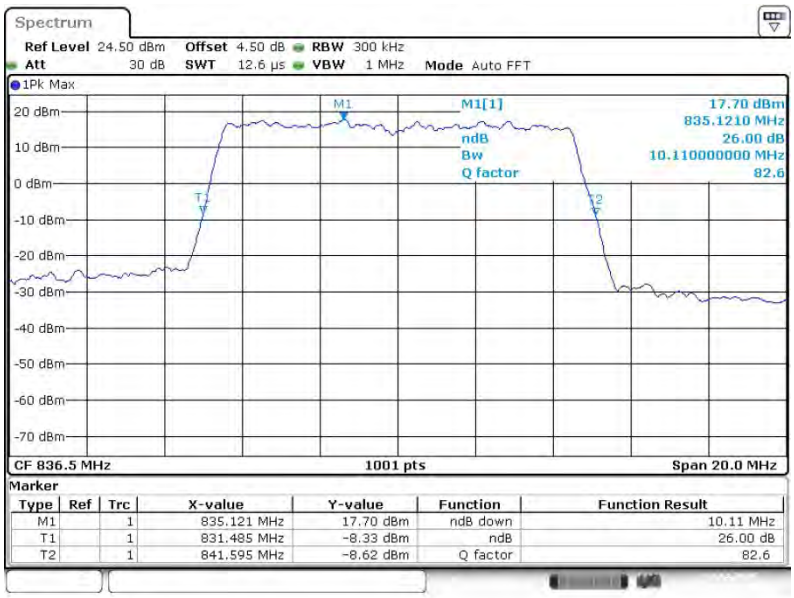
Band :	LTE Band 26	BW / Mod. :	10MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26915



Date: 2.APR.2015 15:25:16

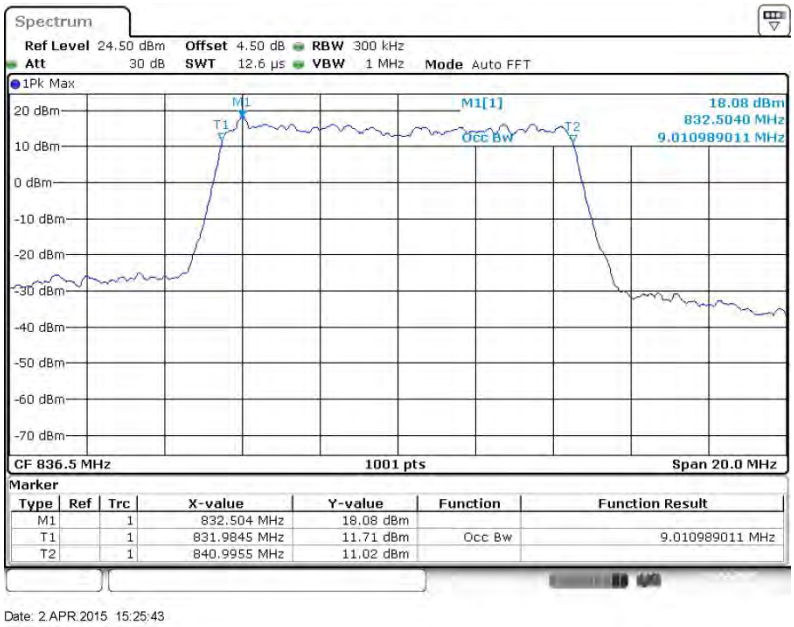
26dB Bandwidth Plot on Channel 26915



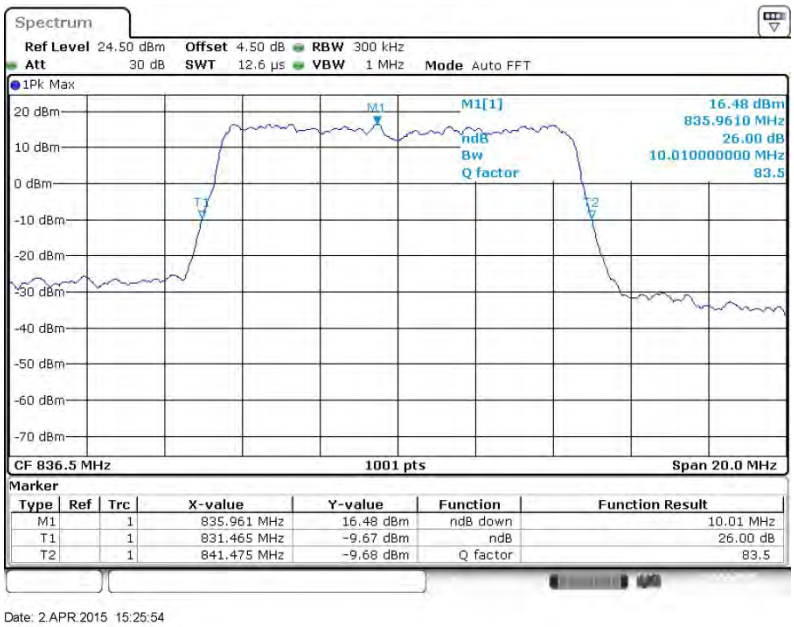
Date: 2.APR.2015 15:25:30

Band :	LTE Band 26	BW / Mod. :	10MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26915

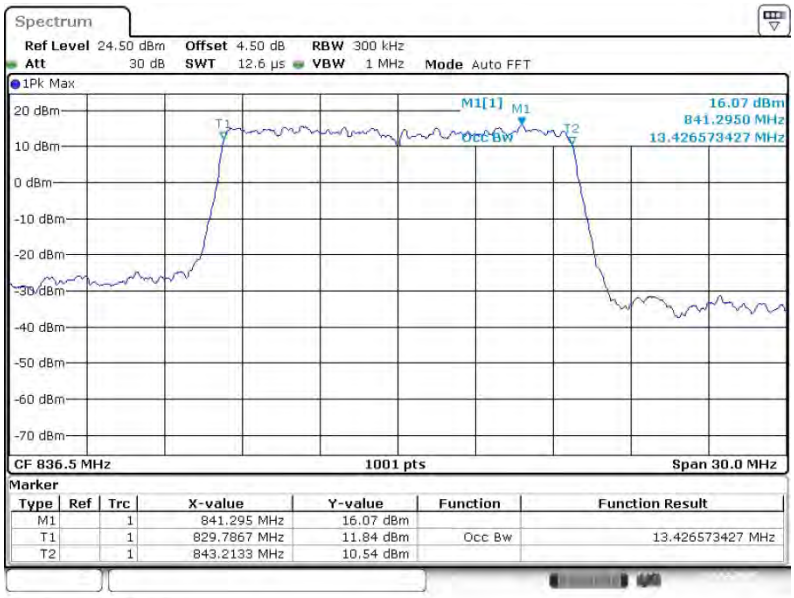


26dB Bandwidth Plot on Channel 26915



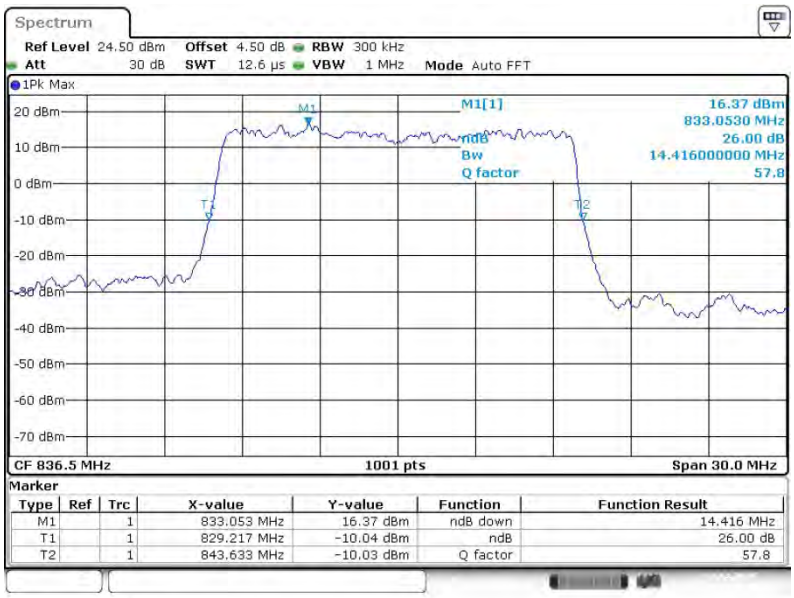
Band :	LTE Band 26	BW / Mod. :	15MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26915



Date: 2.APR.2015 15:37:33

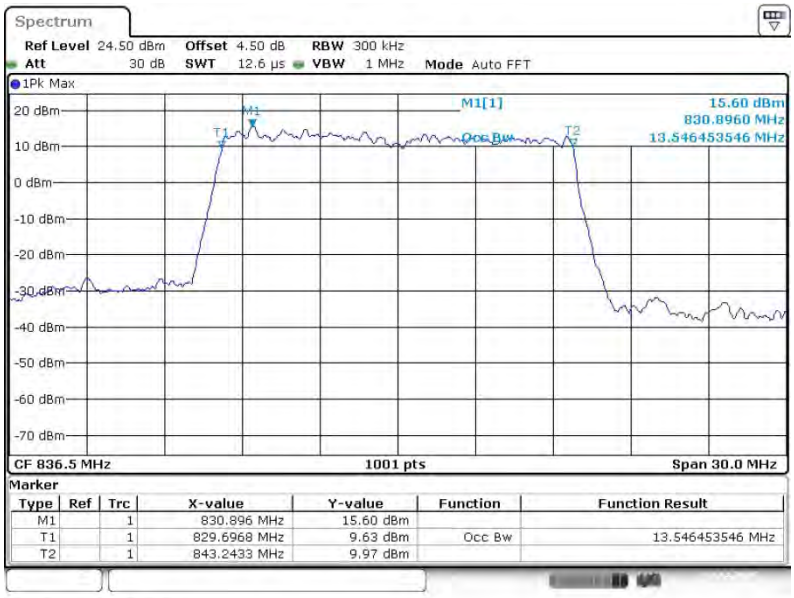
26dB Bandwidth Plot on Channel 26915



Date: 2.APR.2015 15:37:44

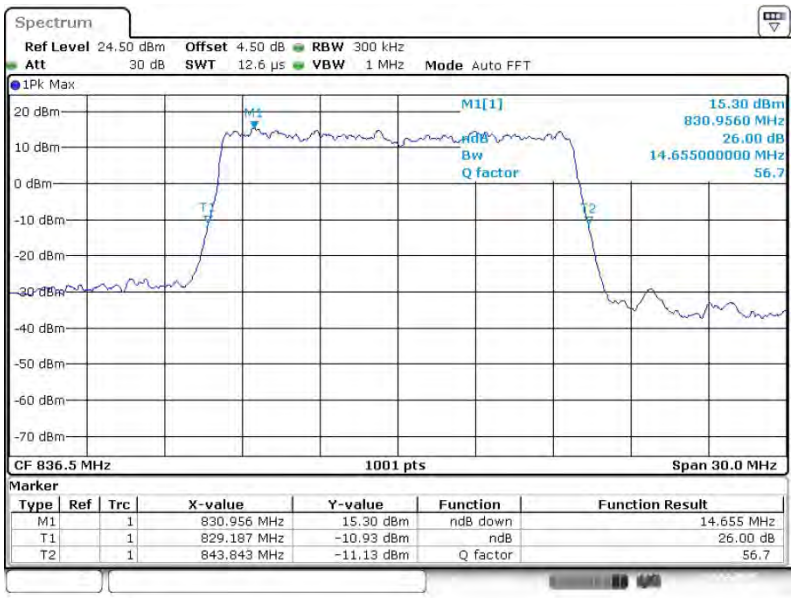
Band :	LTE Band 26	BW / Mod. :	15MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26915



Date: 2.APR.2015 15:36:59

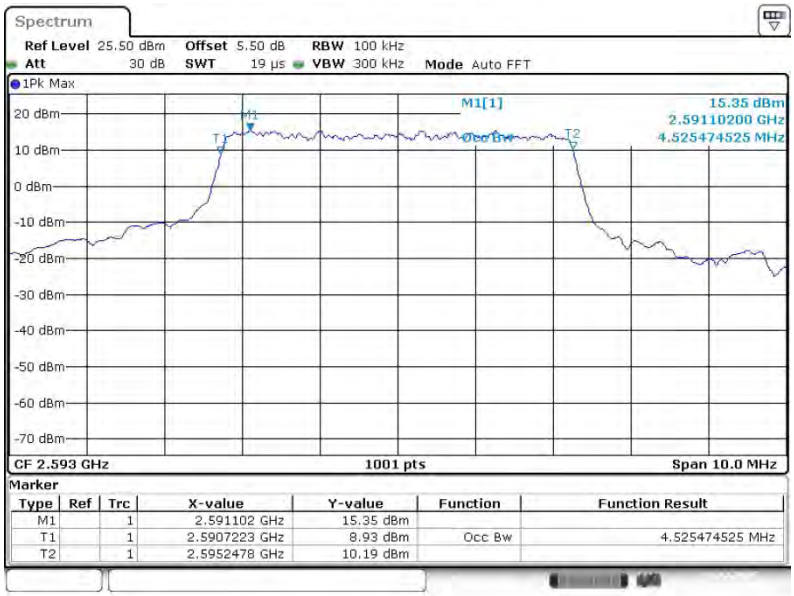
26dB Bandwidth Plot on Channel 26915



Date: 2.APR.2015 15:37:21

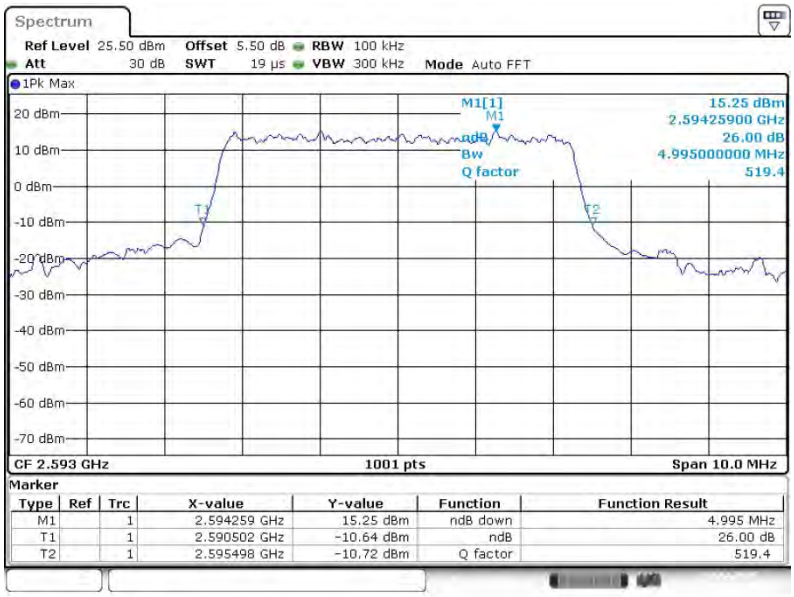
Band :	LTE Band 41	BW / Mod. :	5MHz / QPSK

99% Occupied Bandwidth Plot on Channel 40620



Date: 2.APR.2015 22:04:14

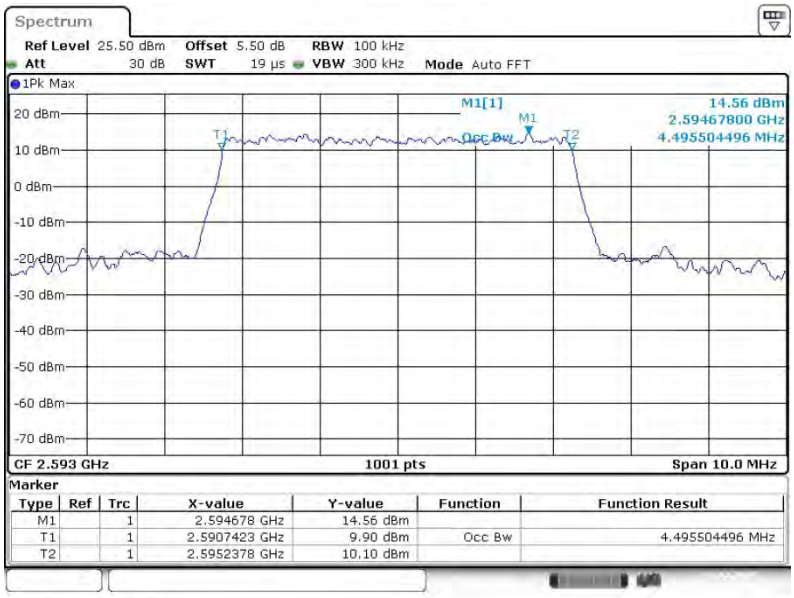
26dB Bandwidth Plot on Channel 40620



Date: 2.APR.2015 22:06:23

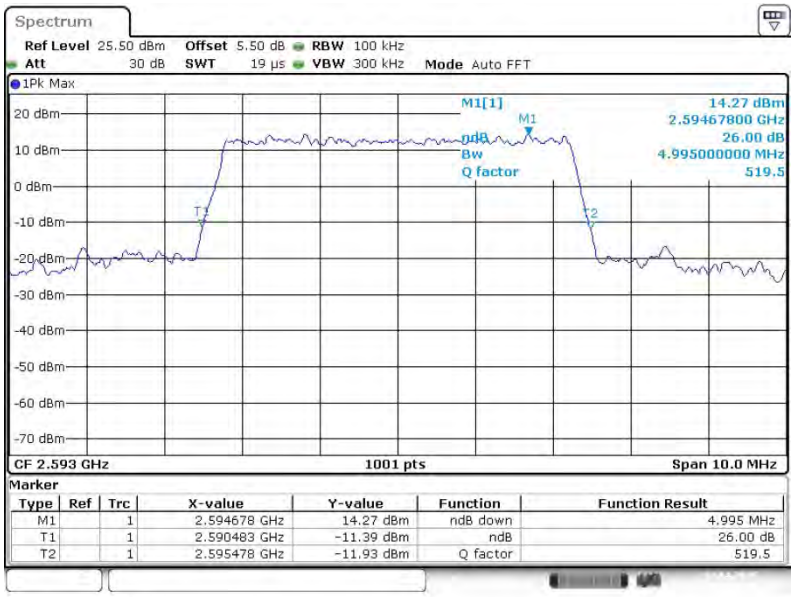
Band :	LTE Band 41	BW / Mod. :	5MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 40620



Date: 2.APR.2015 22:04:32

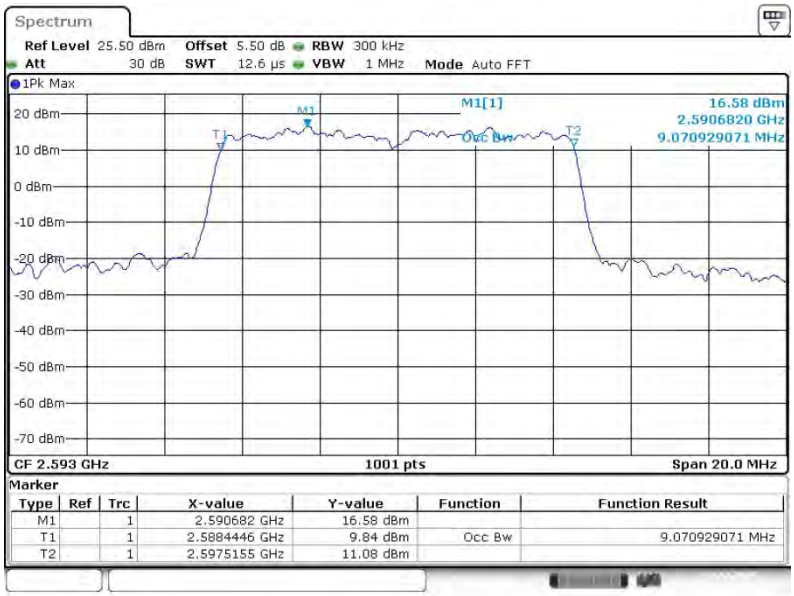
26dB Bandwidth Plot on Channel 40620



Date: 2.APR.2015 22:04:42

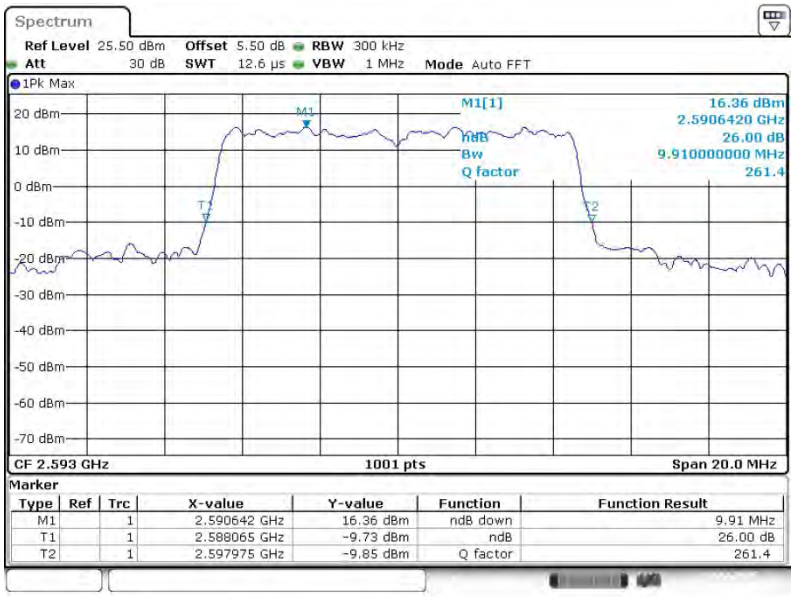
Band :	LTE Band 41	BW / Mod. :	10MHz / QPSK

99% Occupied Bandwidth Plot on Channel 40620



Date: 2.APR.2015 23:45:34

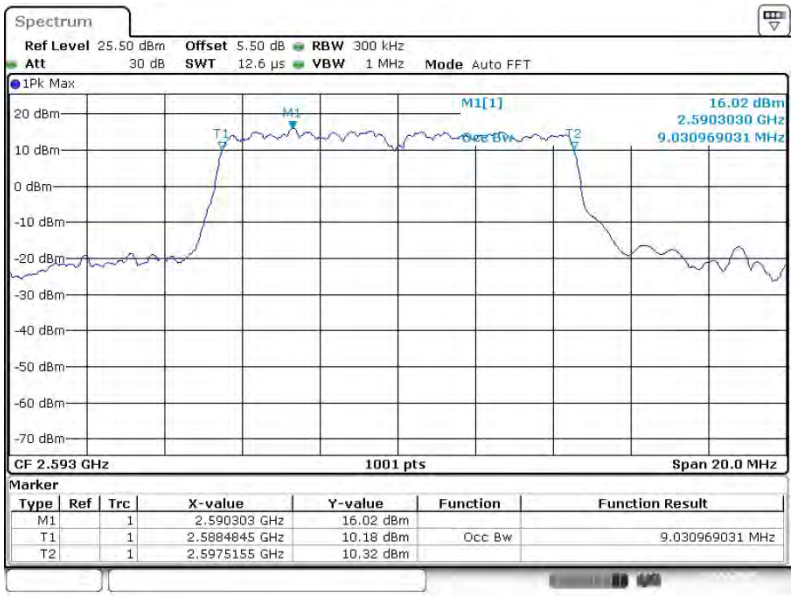
26dB Bandwidth Plot on Channel 40620



Date: 2.APR.2015 23:45:45

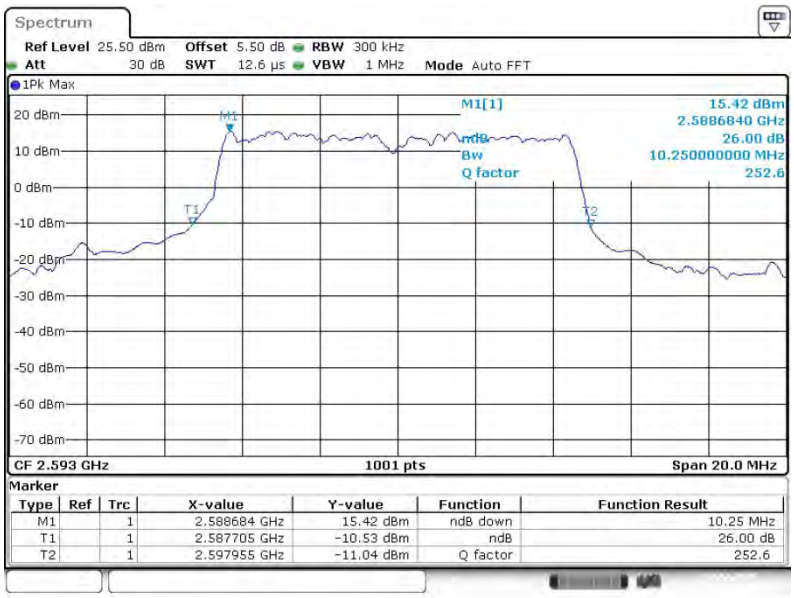
Band :	LTE Band 41	BW / Mod. :	10MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 40620



Date: 2.APR.2015 23:45:58

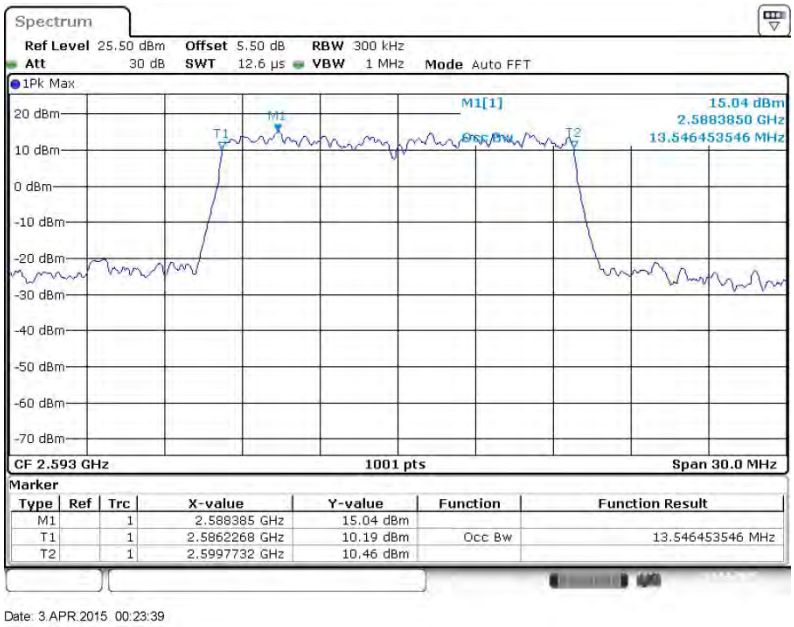
26dB Bandwidth Plot on Channel 40620



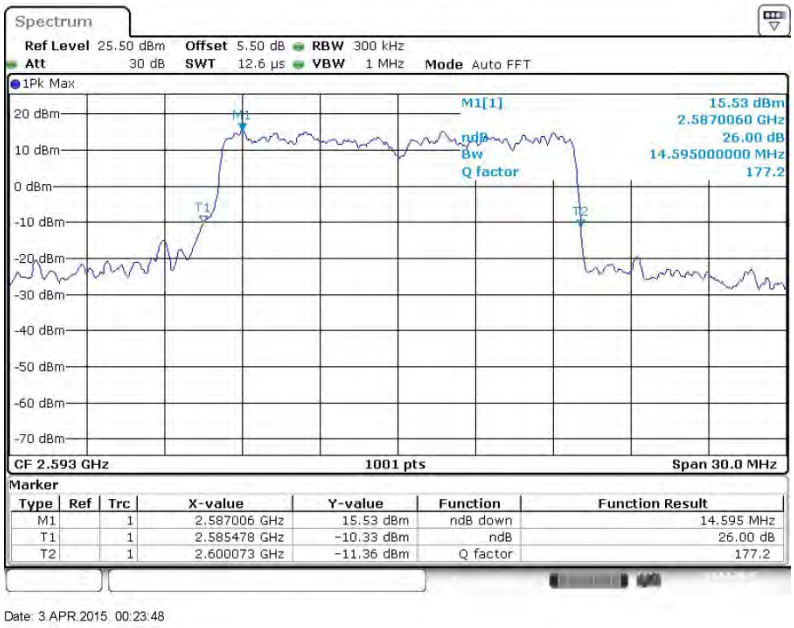
Date: 2.APR.2015 23:46:08

Band :	LTE Band 41	BW / Mod. :	15MHz / QPSK

99% Occupied Bandwidth Plot on Channel 40620

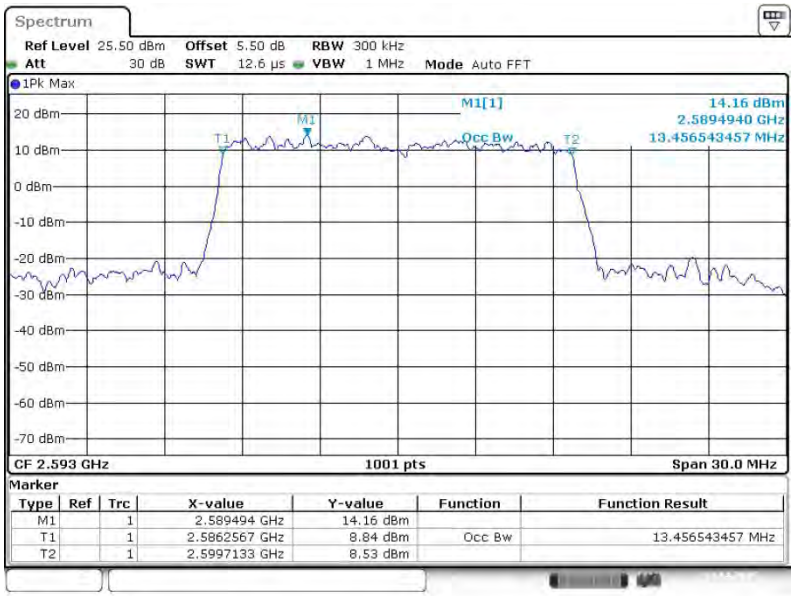


26dB Bandwidth Plot on Channel 40620



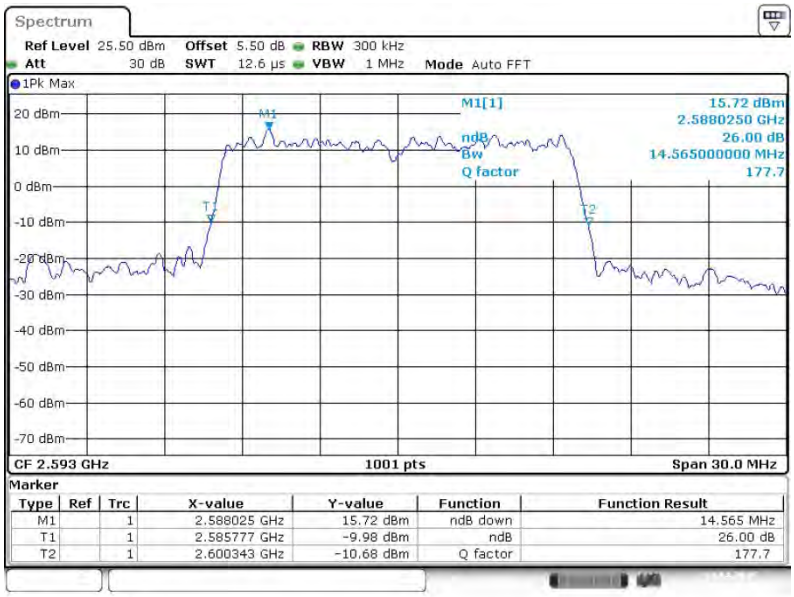
Band :	LTE Band 41	BW / Mod. :	15MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 40620



Date: 3.APR.2015 00:23:59

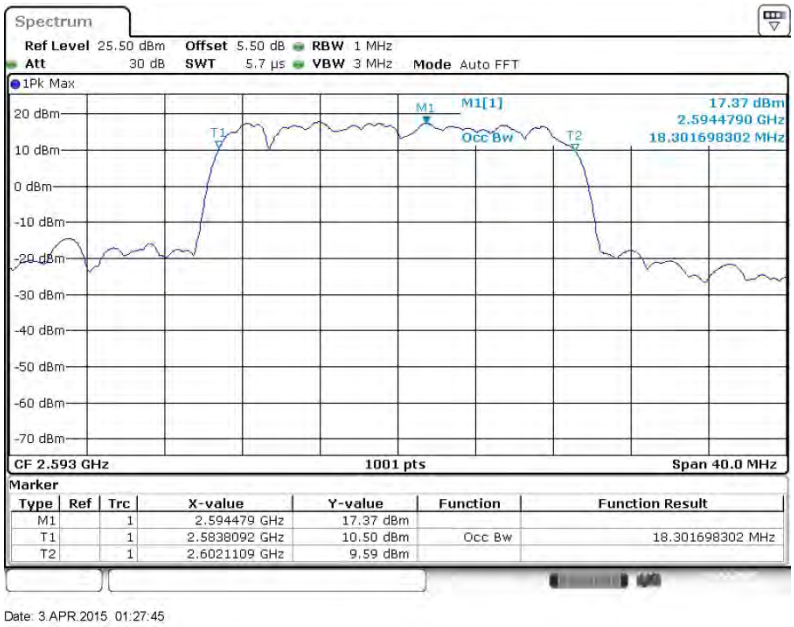
26dB Bandwidth Plot on Channel 40620



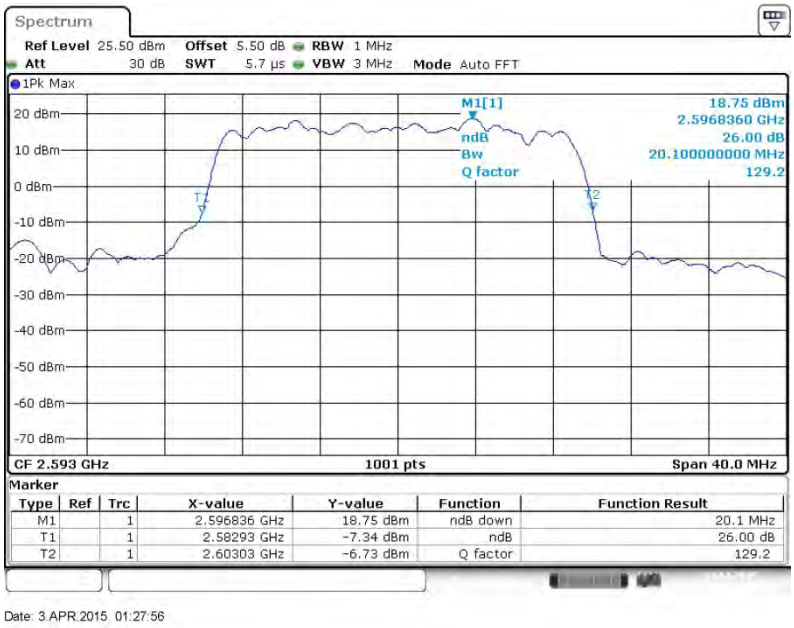
Date: 3.APR.2015 00:24:08

Band :	LTE Band 41	BW / Mod. :	20MHz / QPSK

99% Occupied Bandwidth Plot on Channel 40620

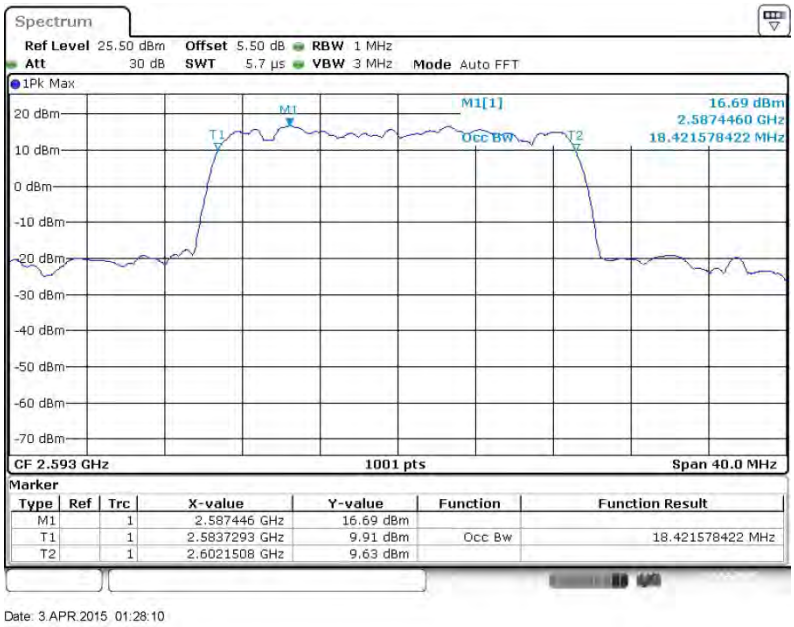


26dB Bandwidth Plot on Channel 40620

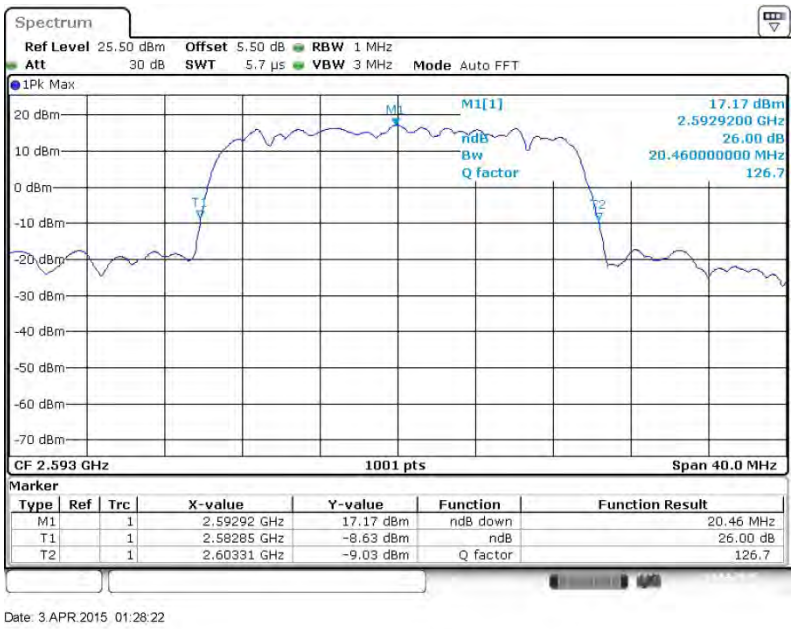


Band :	LTE Band 41	BW / Mod. :	20MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 40620



26dB Bandwidth Plot on Channel 40620



3.5 Conducted Band Edge Measurement

3.5.1 Description of Conducted Band Edge Measurement

22.917(a) for Band 26

For operations in the 824 – 849 MHz band, the FCC limit is 43 + 10log$_{10}$(P[Watts]) dB below the transmitter power P(Watts) in a 100kHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

24.238 (a) for Band 25

For operations in the 1850-1910 and 1930-1990 MHz band, the FCC limit is 43 + 10log$_{10}$(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.

27.53 (m)(4) for Band 41

For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

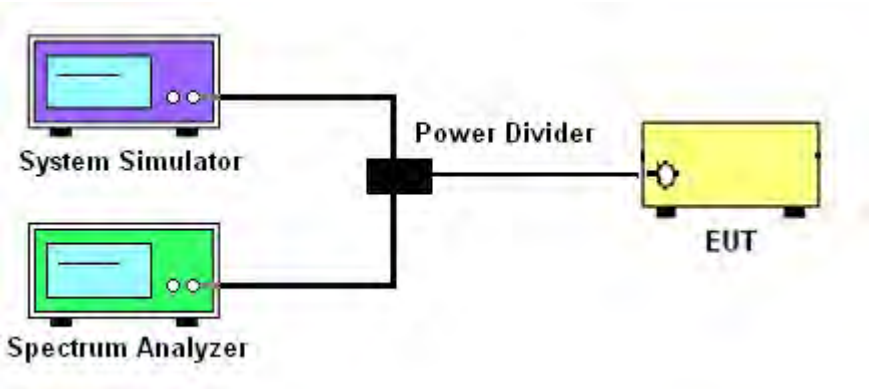
3.5.2 Measuring Instruments

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 system simulator via a power divider.
2. The band edges of low and high channels for the highest RF powers were measured. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
3. Set spectrum analyzer with RMS detector.
4. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
5. 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.
6. The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)
   = P(W)- [55 + 10log(P)] (dB)
   = [30 + 10log(P)] (dBm) - [55 + 10log(P)] (dB)
   = -25dBm.

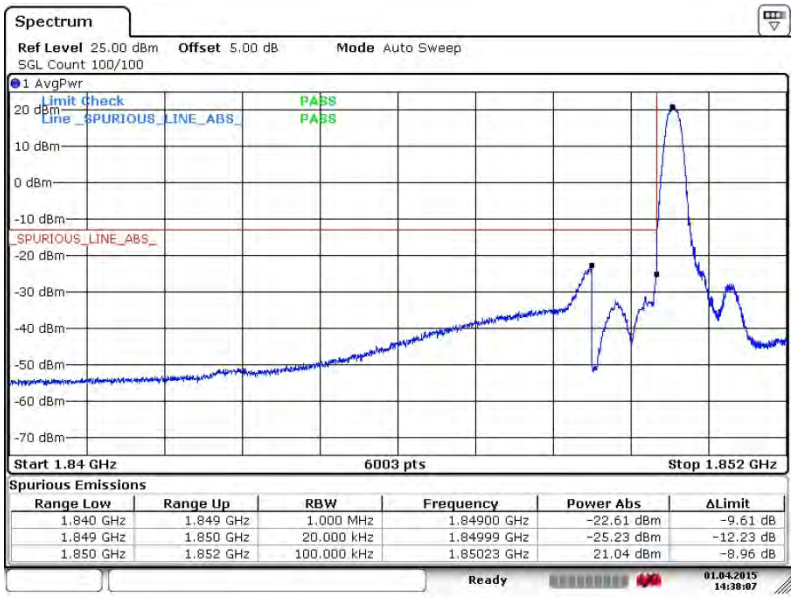
3.5.4 Test Setup



3.5.5 Test Result (Plots) of Conducted Band Edge

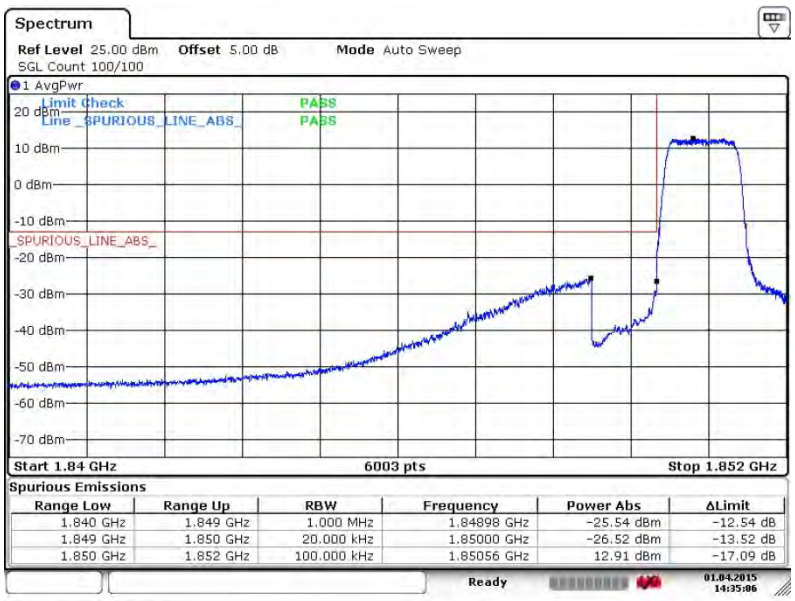
Band :	LTE Band 25	Band Width :	1.4MHz / QPSK

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



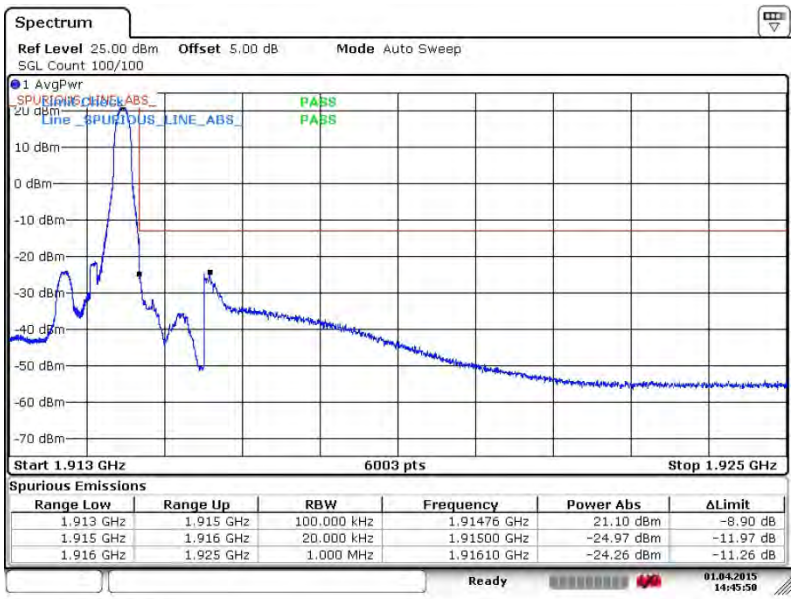
Date: 1.APR.2015 14:38:07

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



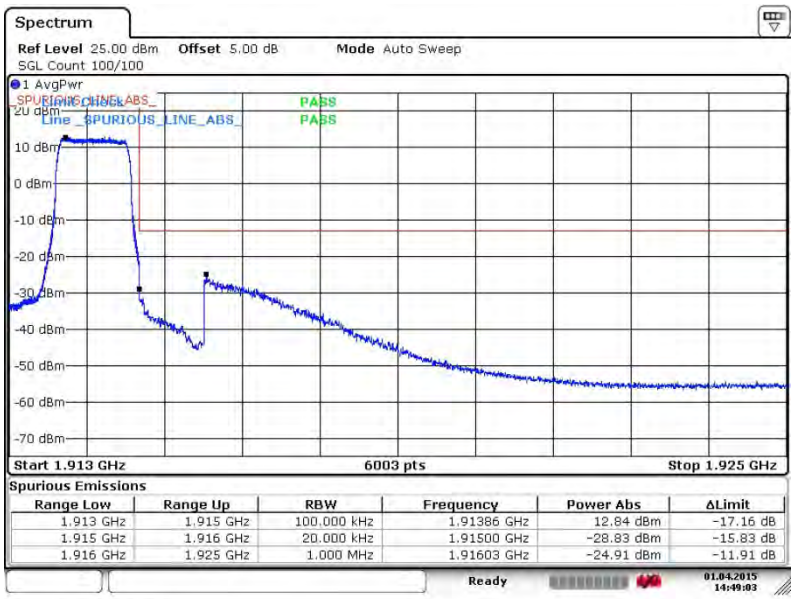
Date: 1.APR.2015 14:35:06

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



Date: 1.APR.2015 14:45:50

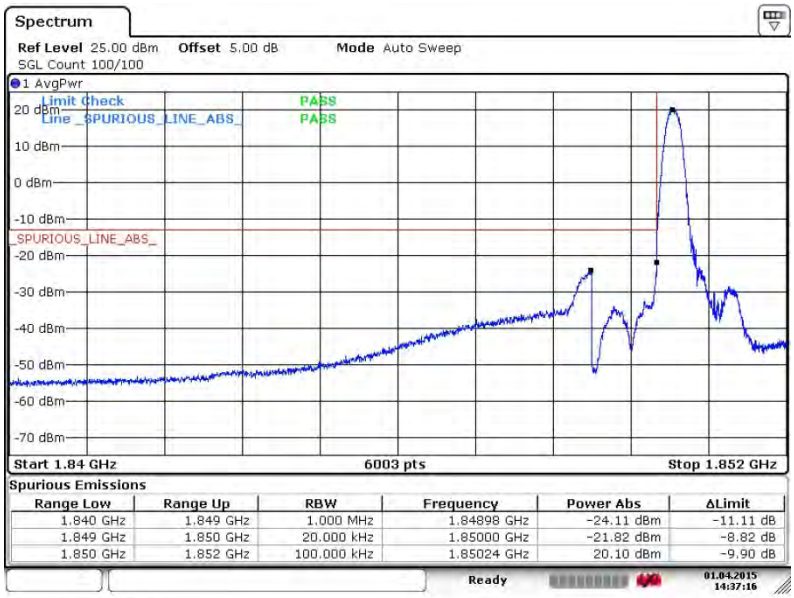
Higher Band Edge Plot for QPSK-RB Size 6, RB Offset 0



Date: 1.APR.2015 14:49:02

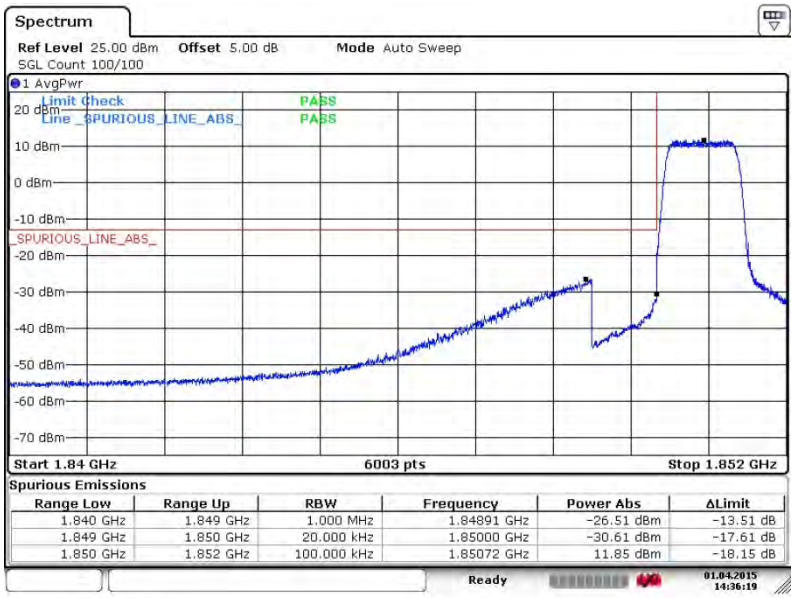
Band :	LTE Band 25	Band Width :	1.4MHz / 16QAM

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



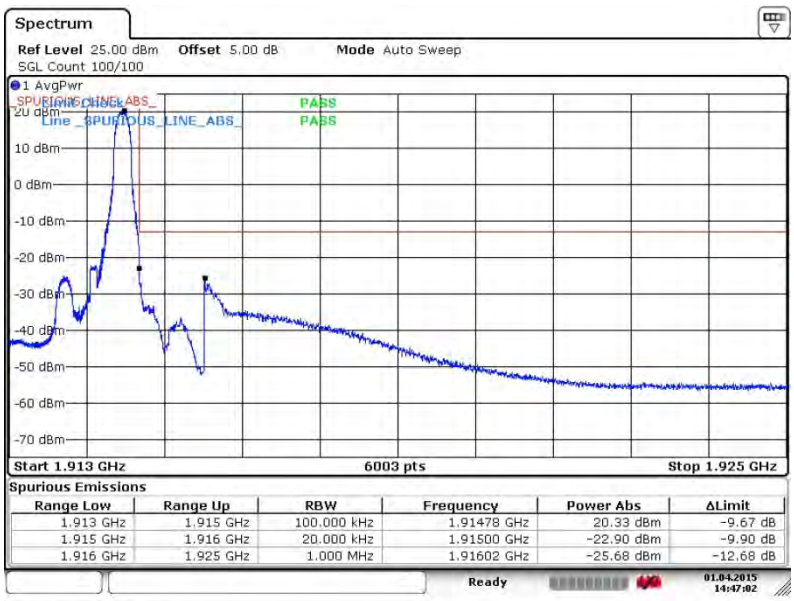
Date: 1.APR.2015 14:37:16

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



Date: 1.APR.2015 14:36:20

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

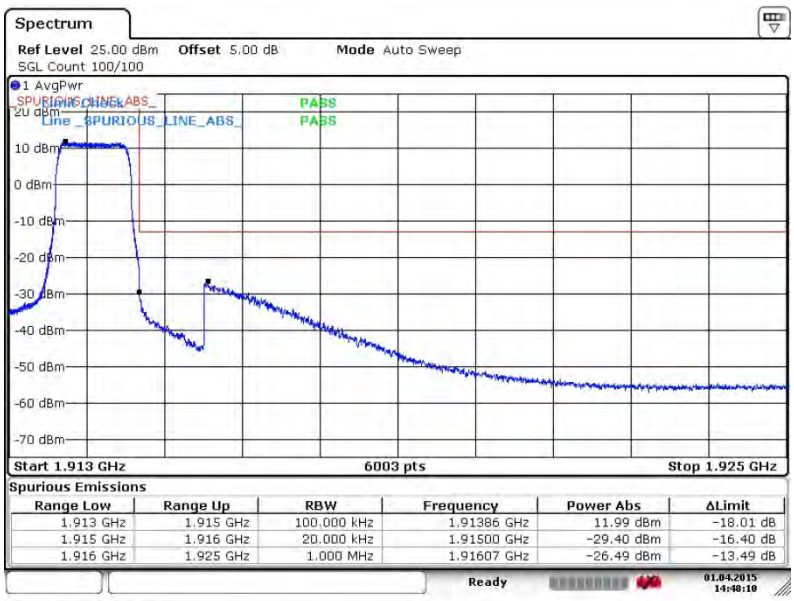


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.913 GHz	1.915 GHz	100.000 kHz	1.91478 GHz	20.33 dBm	-9.67 dB
1.915 GHz	1.916 GHz	20.000 kHz	1.91500 GHz	-22.90 dBm	-9.90 dB
1.916 GHz	1.925 GHz	1.000 MHz	1.91602 GHz	-25.68 dBm	-12.68 dB

Date: 1.APR.2015 14:47:02

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



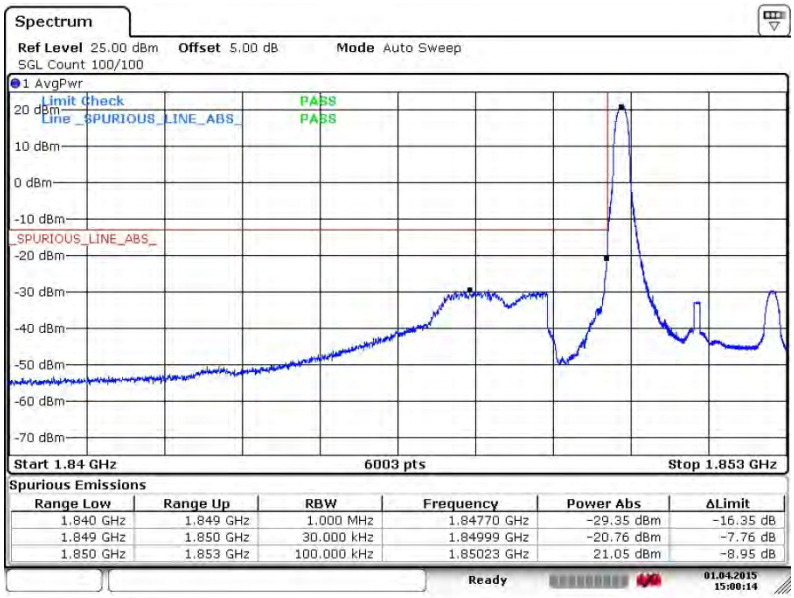
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.913 GHz	1.915 GHz	100.000 kHz	1.91386 GHz	11.99 dBm	-18.01 dB
1.915 GHz	1.916 GHz	20.000 kHz	1.91500 GHz	-29.40 dBm	-16.40 dB
1.916 GHz	1.925 GHz	1.000 MHz	1.91607 GHz	-26.49 dBm	-13.49 dB

Date: 1.APR.2015 14:48:10

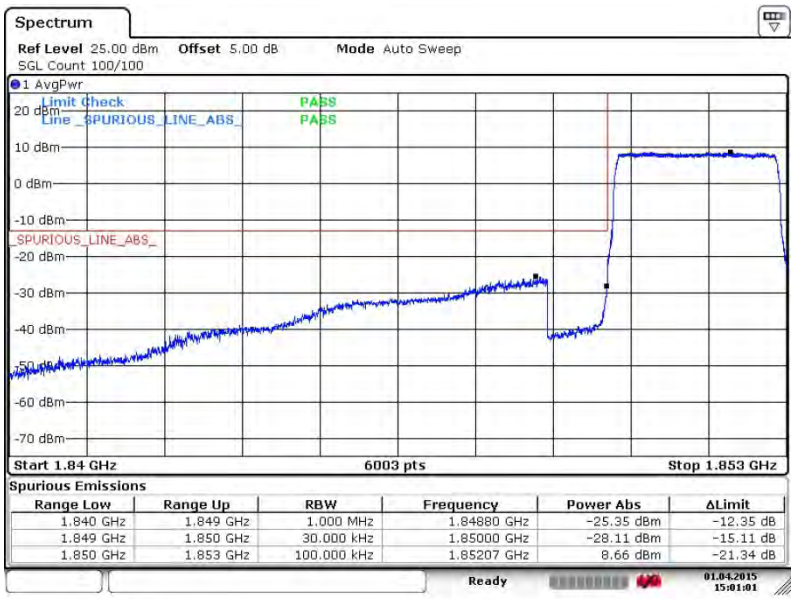
Band :	LTE Band 25	Band Width :	3MHz / QPSK

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



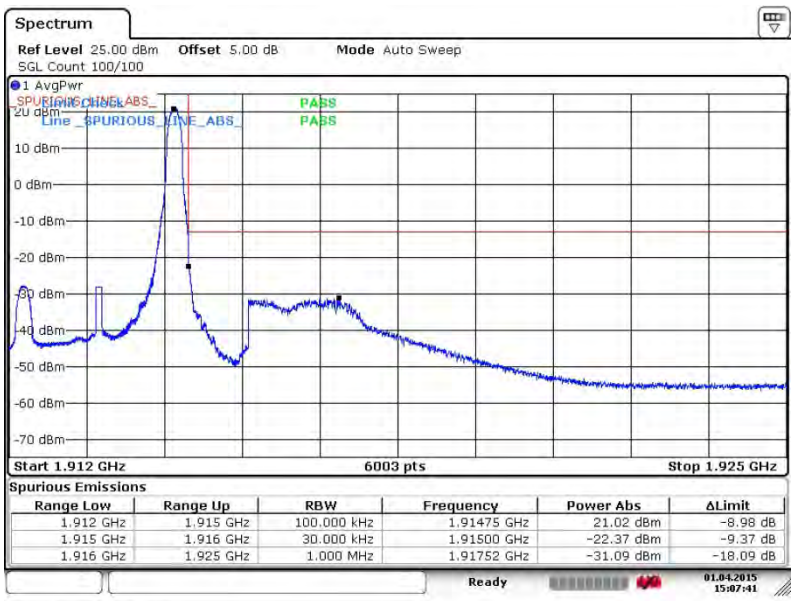
Date: 1.APR.2015 15:00:14

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



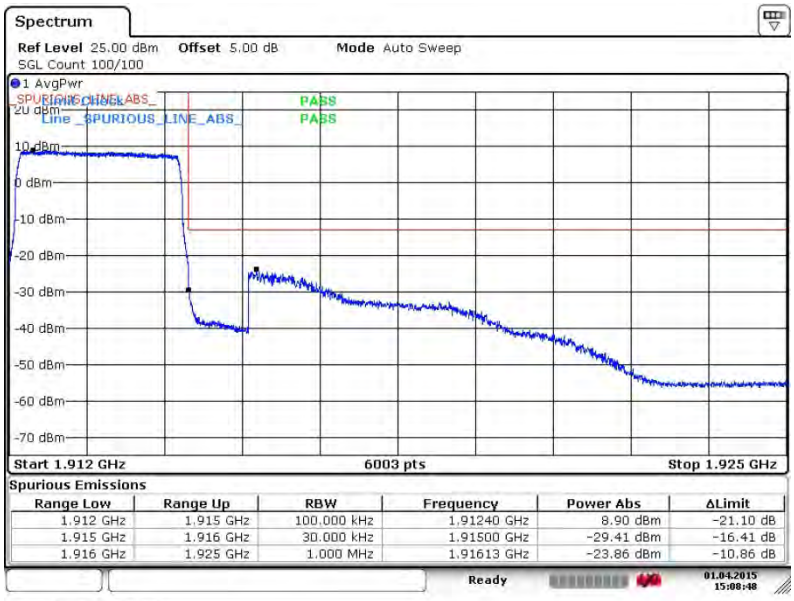
Date: 1.APR.2015 15:01:01

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



Date: 1.APR.2015 15:07:42

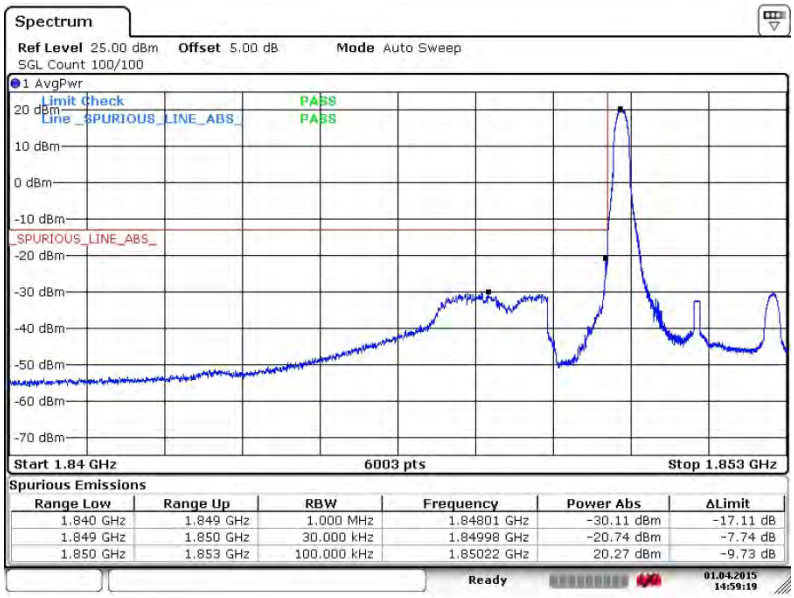
Higher Band Edge Plot for QPSK-RB Size 15, RB Offset 0



Date: 1.APR.2015 15:08:48

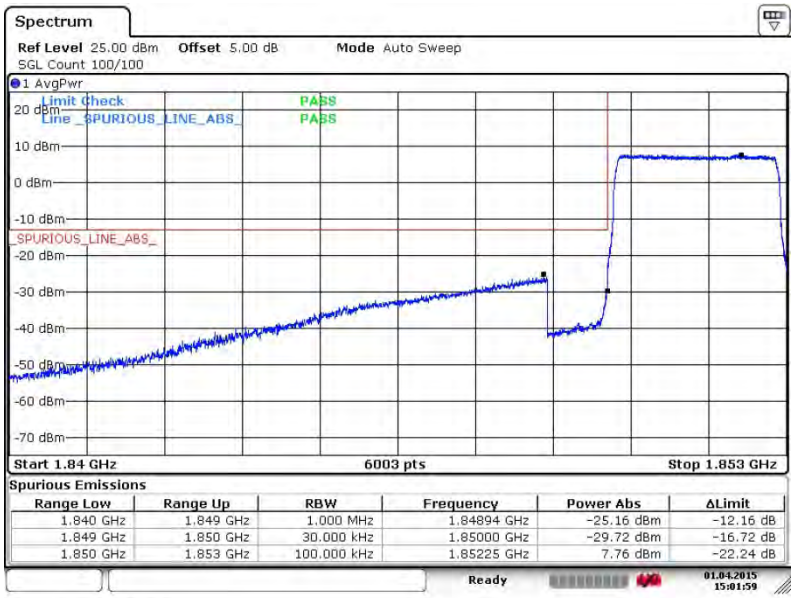
Band :	LTE Band 25	Band Width :	3MHz / 16QAM

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



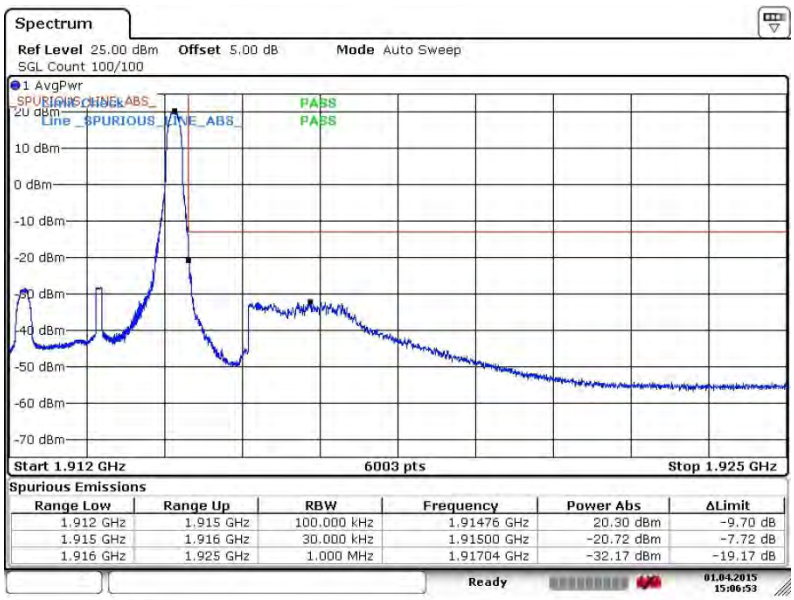
Date: 1.APR.2015 14:59:20

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



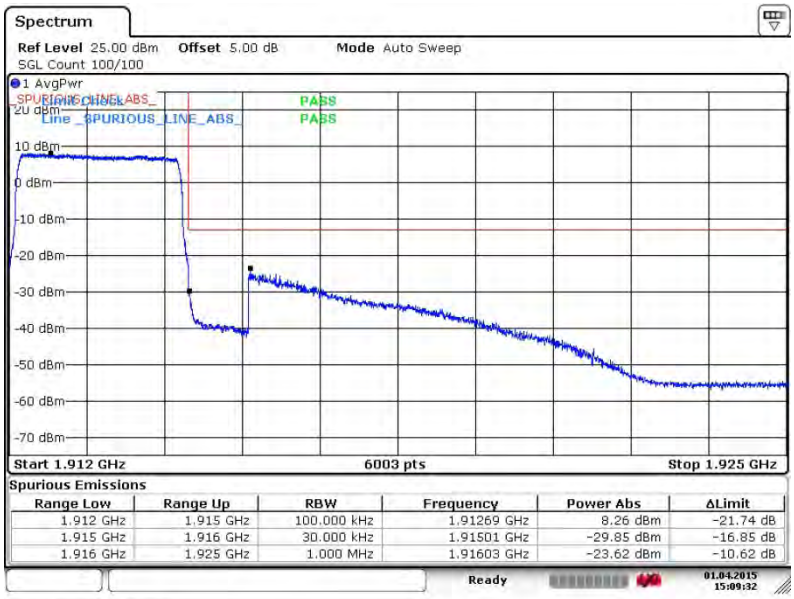
Date: 1.APR.2015 15:02:00

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



Date: 1.APR.2015 15:06:53

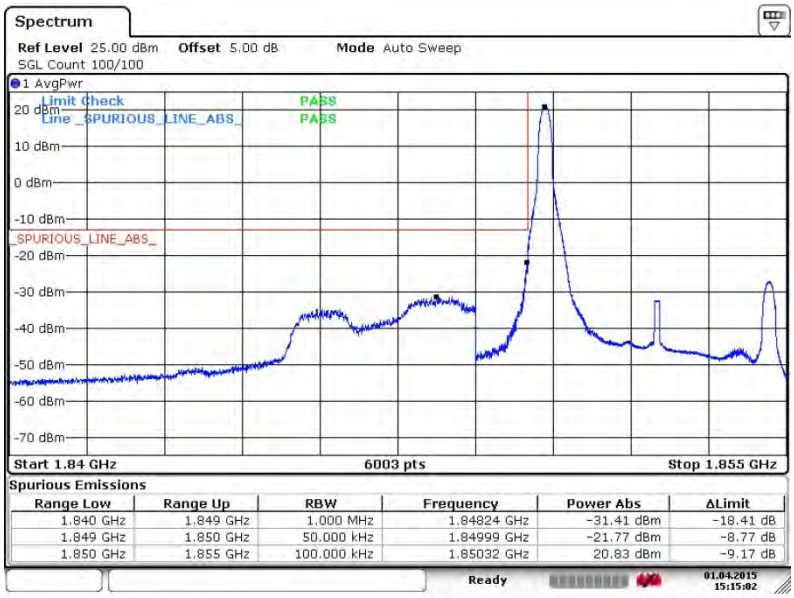
Higher Band Edge Plot for 16QAM -RB Size 15, RB Offset 0



Date: 1.APR.2015 15:09:32

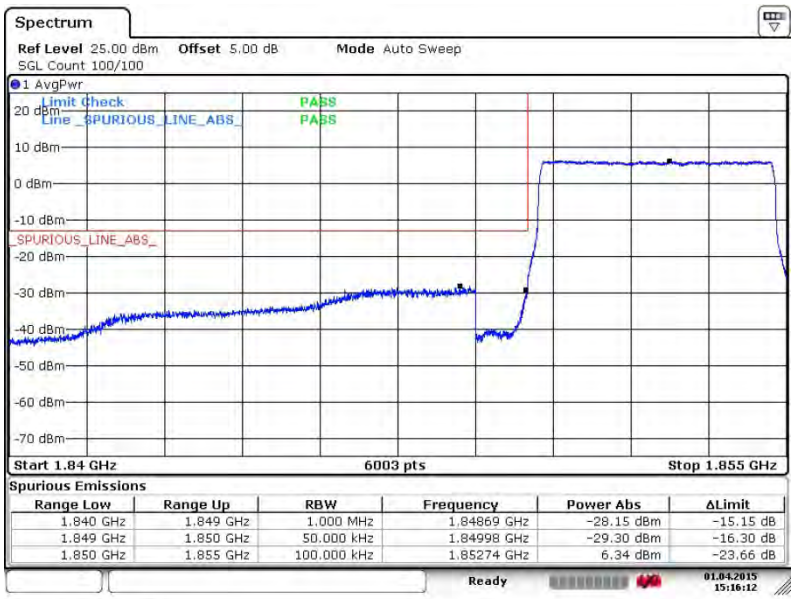
Band :	LTE Band 25	Band Width :	5MHz / QPSK

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



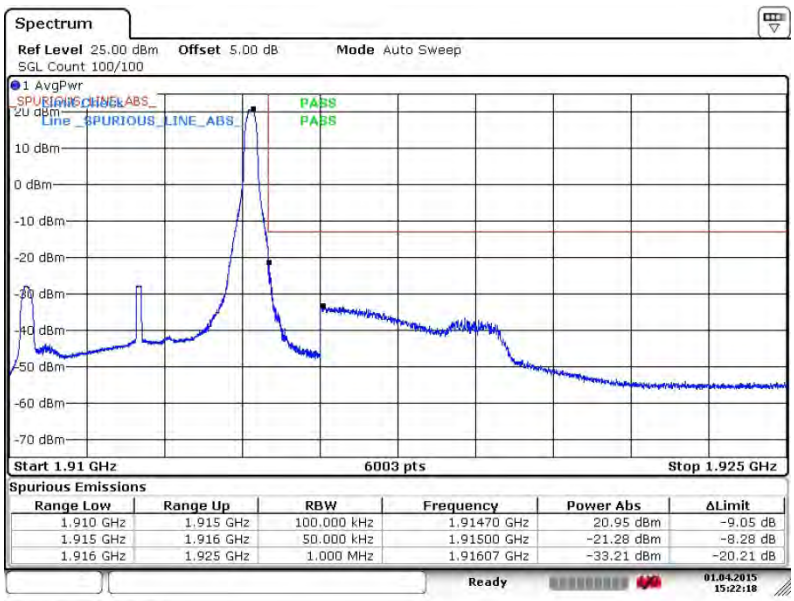
Date: 1.APR.2015 15:15:03

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



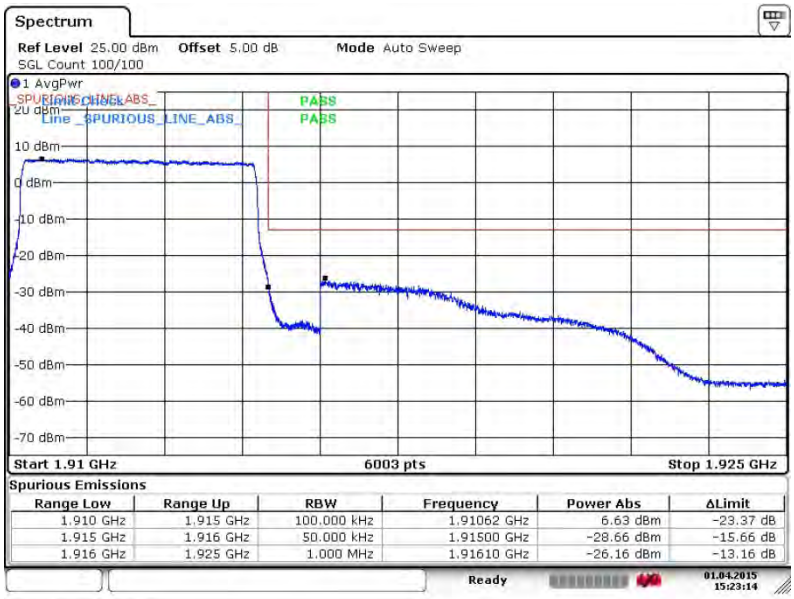
Date: 1.APR.2015 15:16:12

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



Date: 1.APR.2015 15:22:19

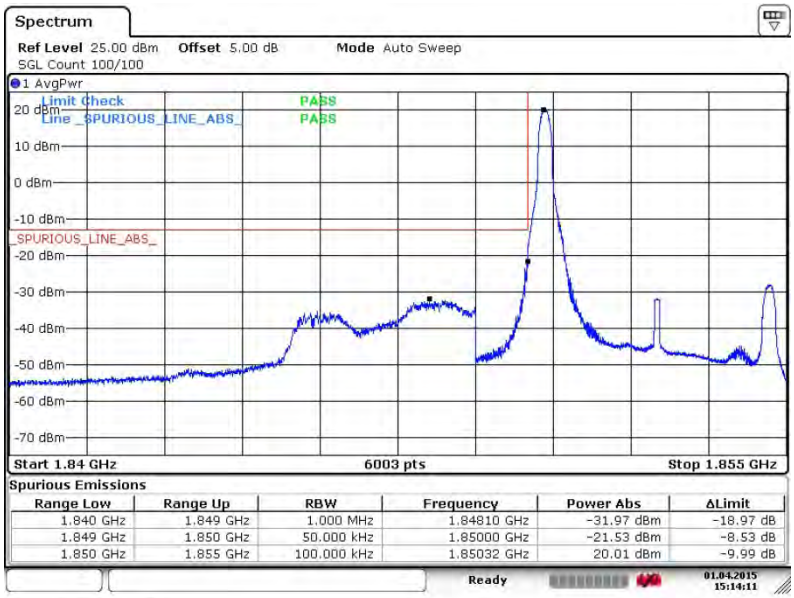
Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0



Date: 1.APR.2015 15:23:14

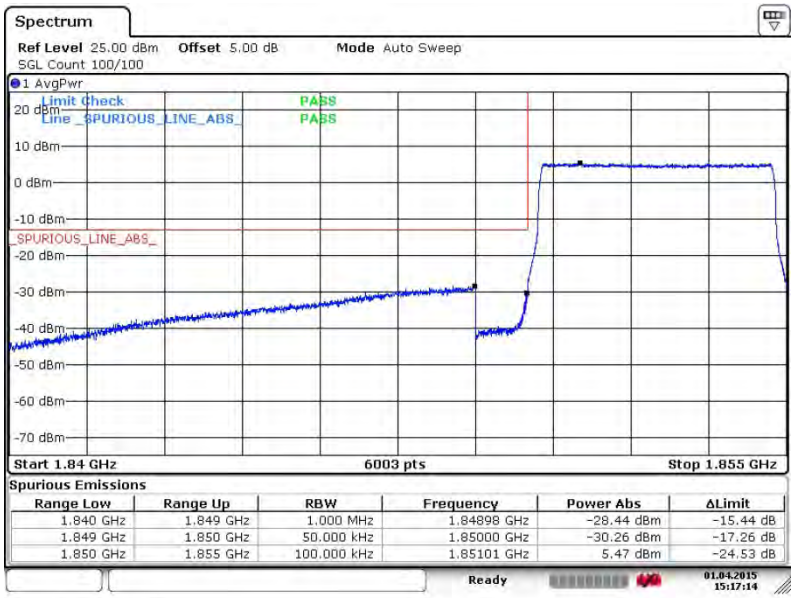
Band :	LTE Band 25	Band Width :	5MHz / 16QAM

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



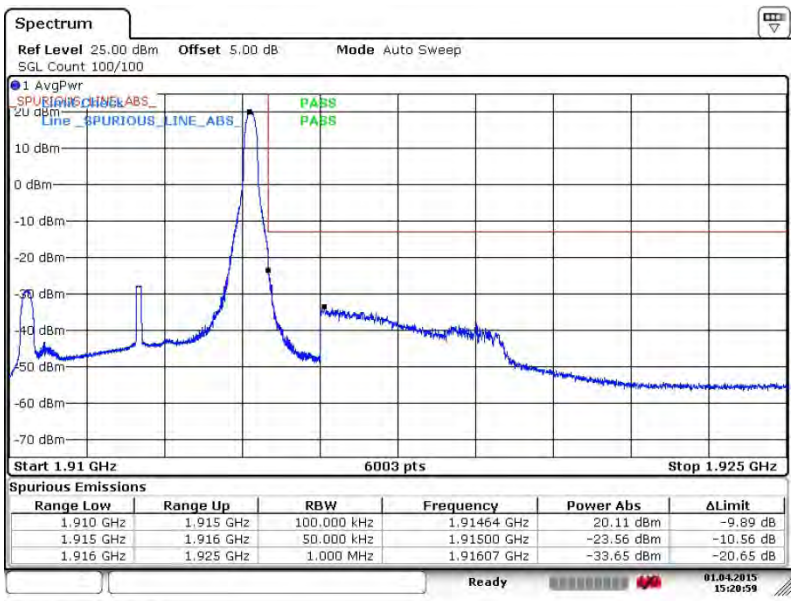
Date: 1.APR.2015 15:14:12

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



Date: 1.APR.2015 15:17:14

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

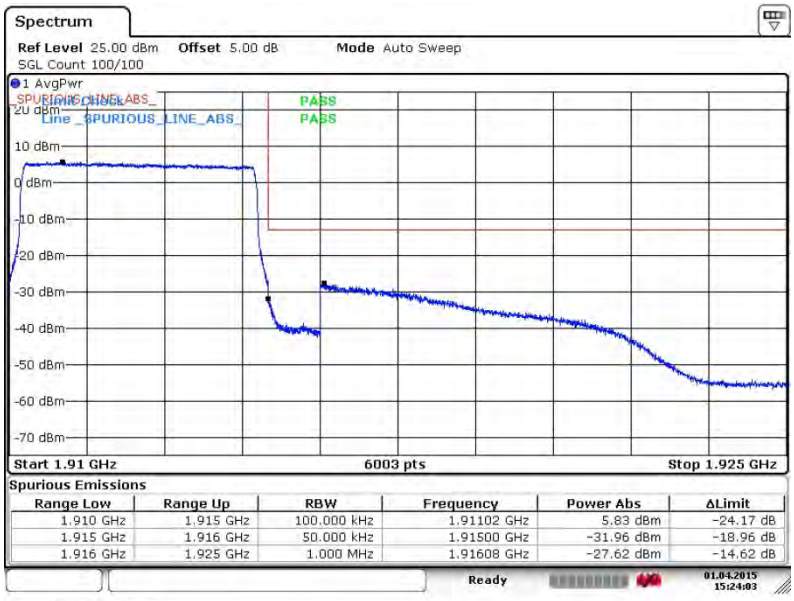


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.910 GHz	1.915 GHz	100.000 kHz	1.91464 GHz	20.11 dBm	-9.89 dB
1.915 GHz	1.916 GHz	50.000 kHz	1.91500 GHz	-23.56 dBm	-10.56 dB
1.916 GHz	1.925 GHz	1.000 MHz	1.91607 GHz	-33.65 dBm	-20.65 dB

Date: 1.APR.2015 15:20:59

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



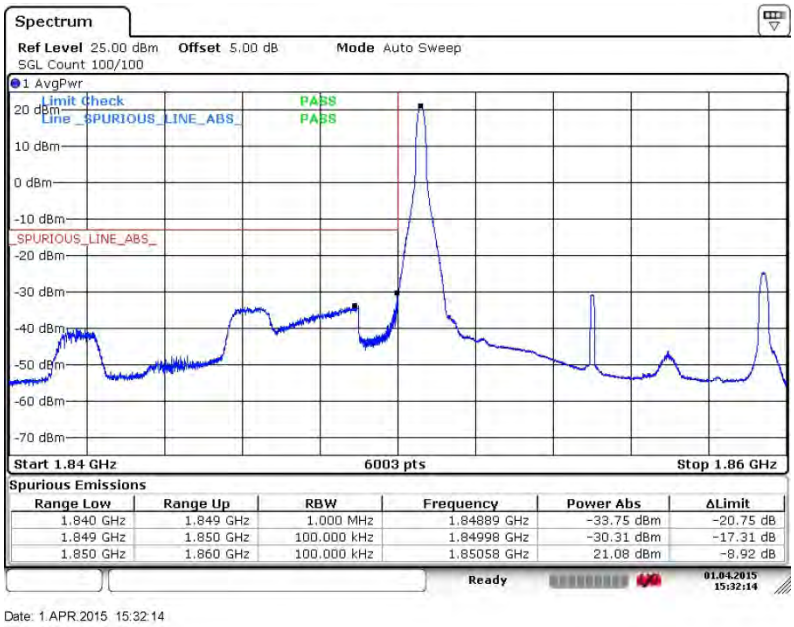
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.910 GHz	1.915 GHz	100.000 kHz	1.91102 GHz	5.83 dBm	-24.17 dB
1.915 GHz	1.916 GHz	50.000 kHz	1.91500 GHz	-31.96 dBm	-18.96 dB
1.916 GHz	1.925 GHz	1.000 MHz	1.91608 GHz	-27.62 dBm	-14.62 dB

Date: 1.APR.2015 15:24:03

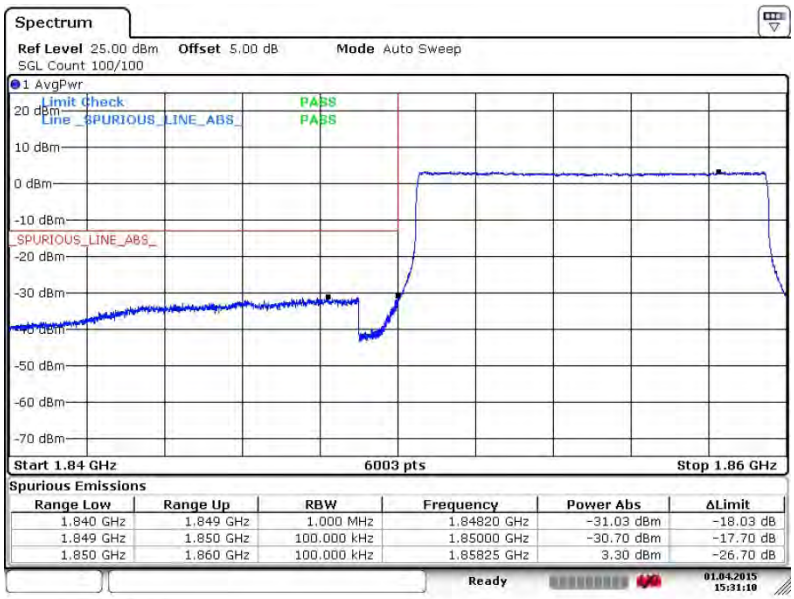
Band :	LTE Band 25	Band Width :	10MHz / QPSK

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



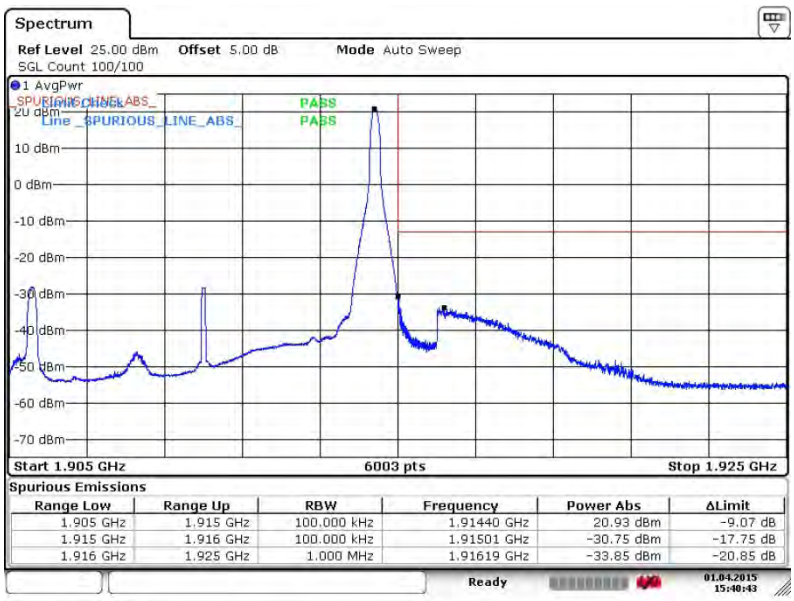
Date: 1.APR.2015 15:32:14

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



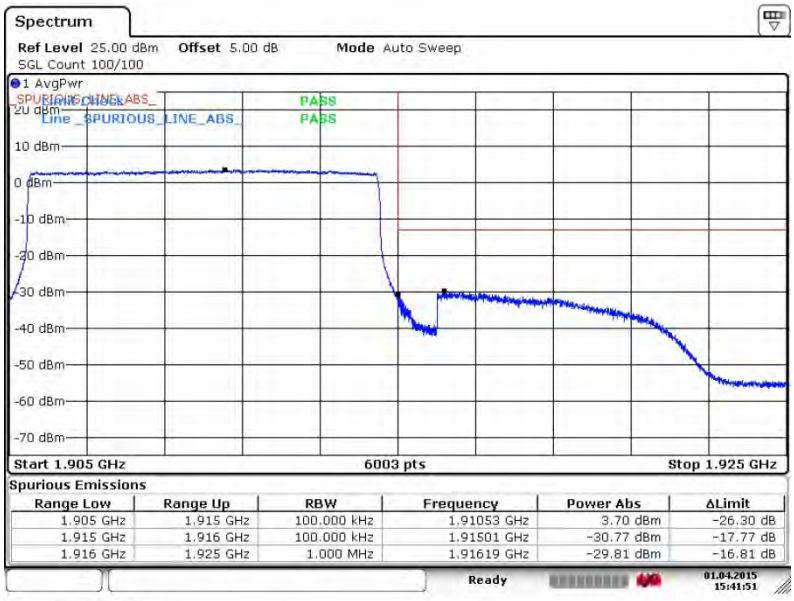
Date: 1.APR.2015 15:31:10

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



Date: 1.APR.2015 15:40:44

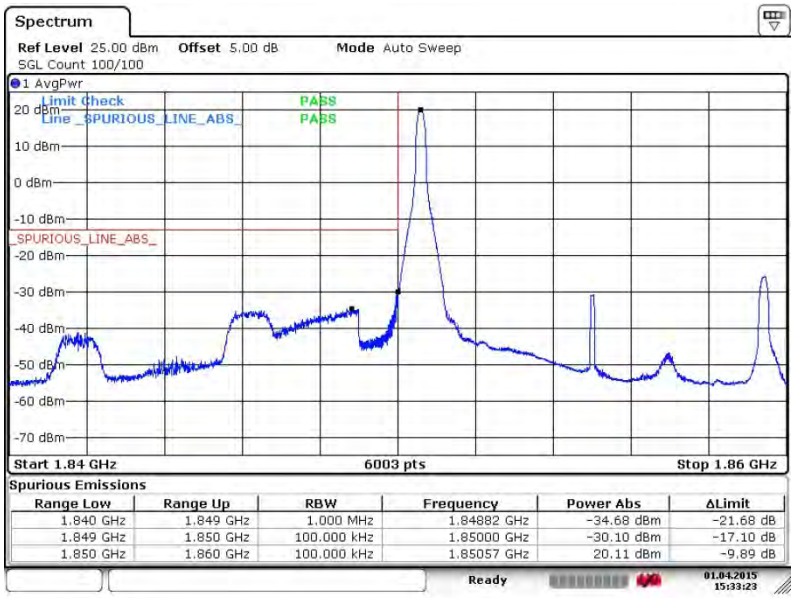
Higher Band Edge Plot for QPSK-RB Size 50, RB Offset 0



Date: 1.APR.2015 15:41:51

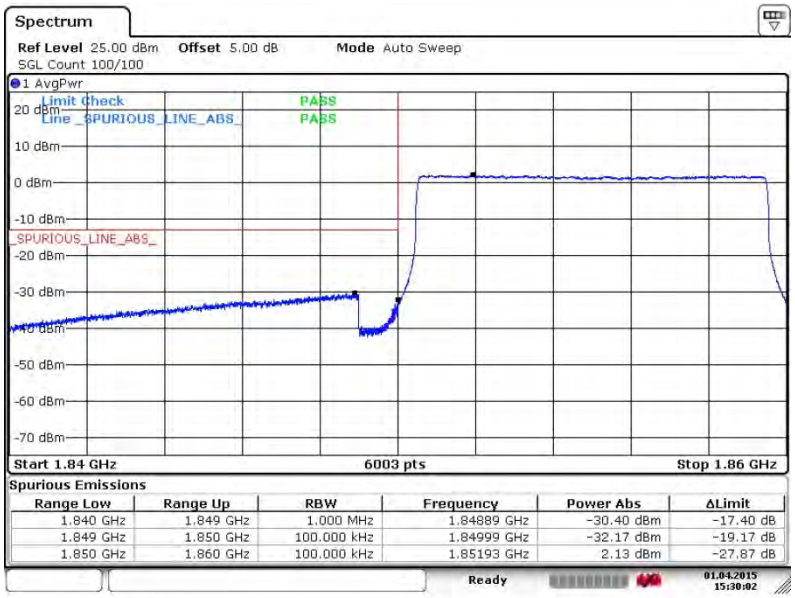
Band :	LTE Band 25	Band Width :	10MHz / 16QAM

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



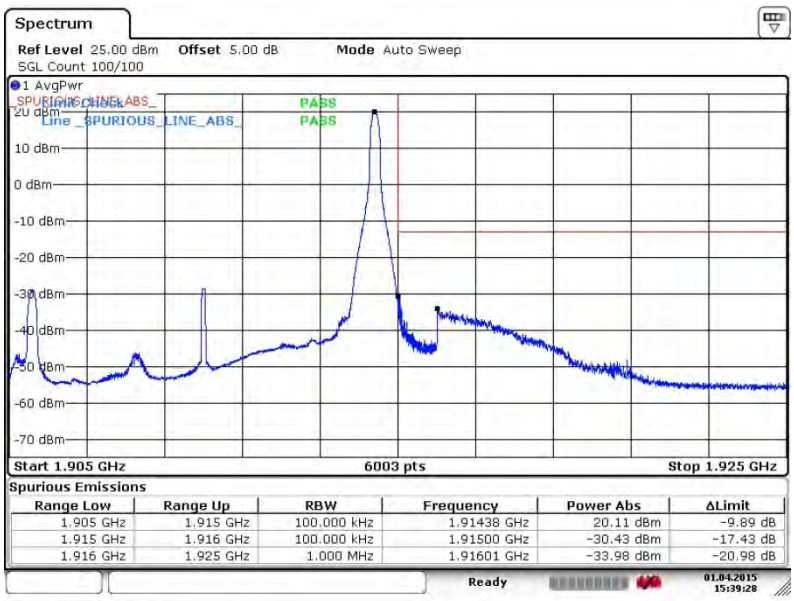
Date: 1.APR.2015 15:33:24

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



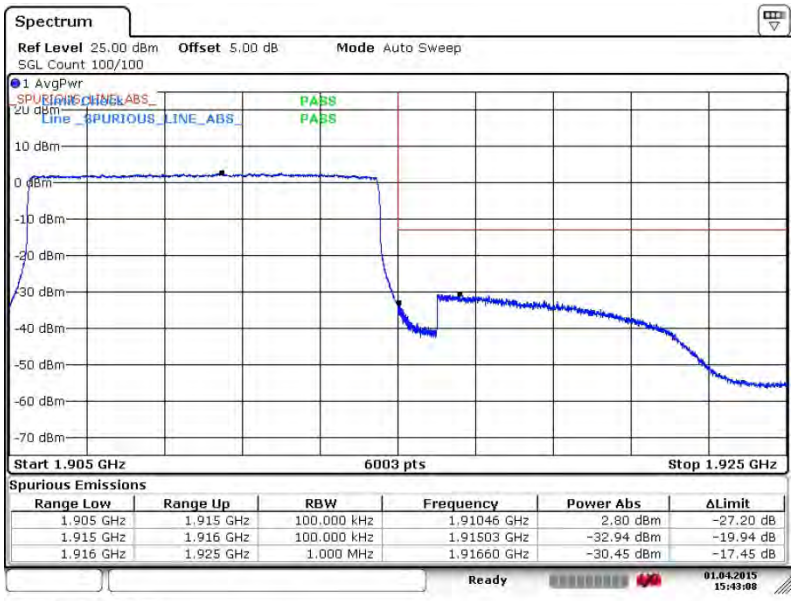
Date: 1.APR.2015 15:30:02

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



Date: 1.APR.2015 15:39:28

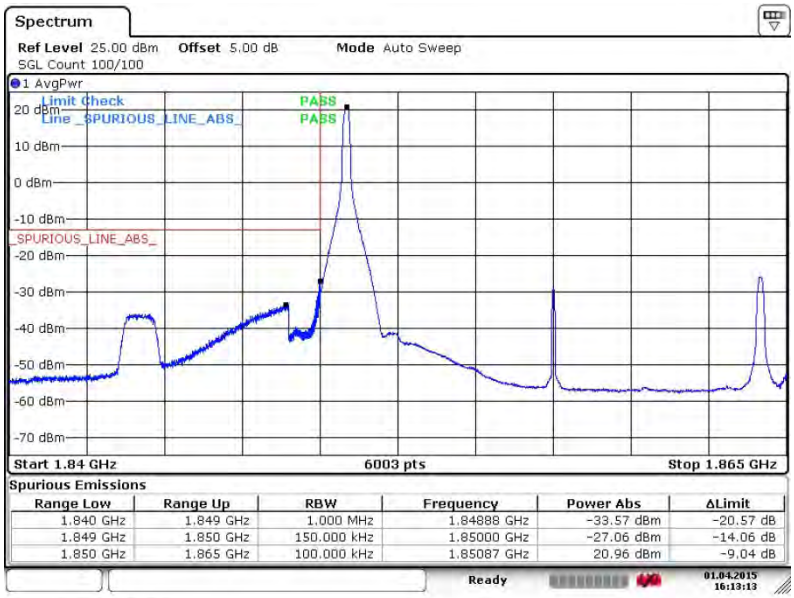
Higher Band Edge Plot for 16QAM -RB Size 50, RB Offset 0



Date: 1.APR.2015 15:43:09

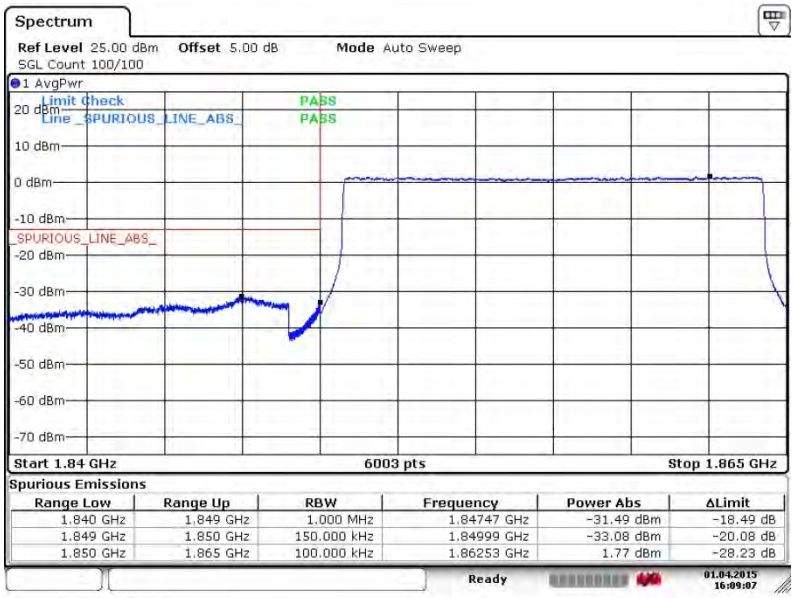
Band :	LTE Band 25	Band Width :	15MHz / QPSK

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



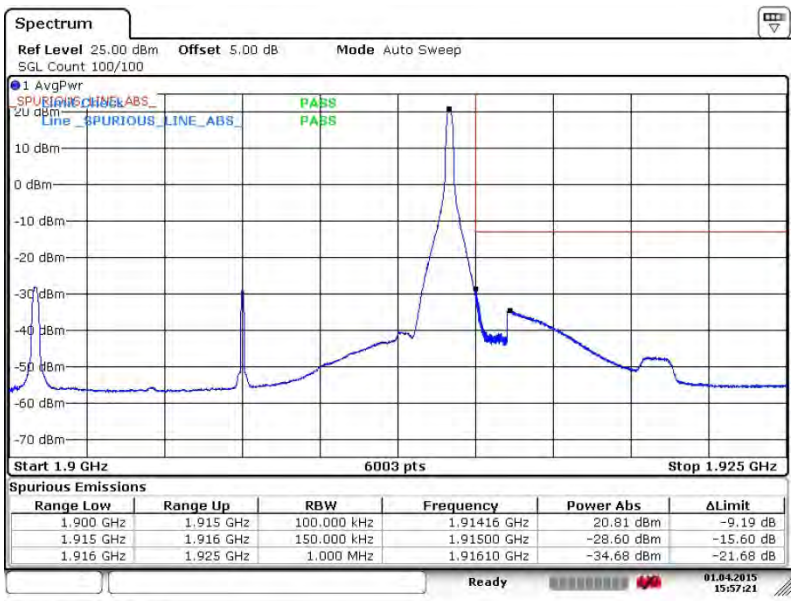
Date: 1.APR.2015 16:13:13

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



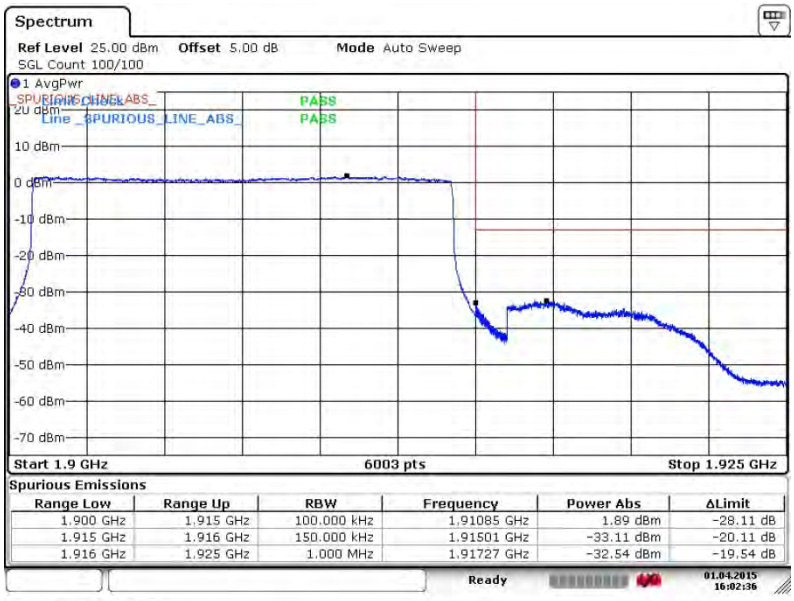
Date: 1.APR.2015 16:09:07

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



Date: 1.APR.2015 15:57:21

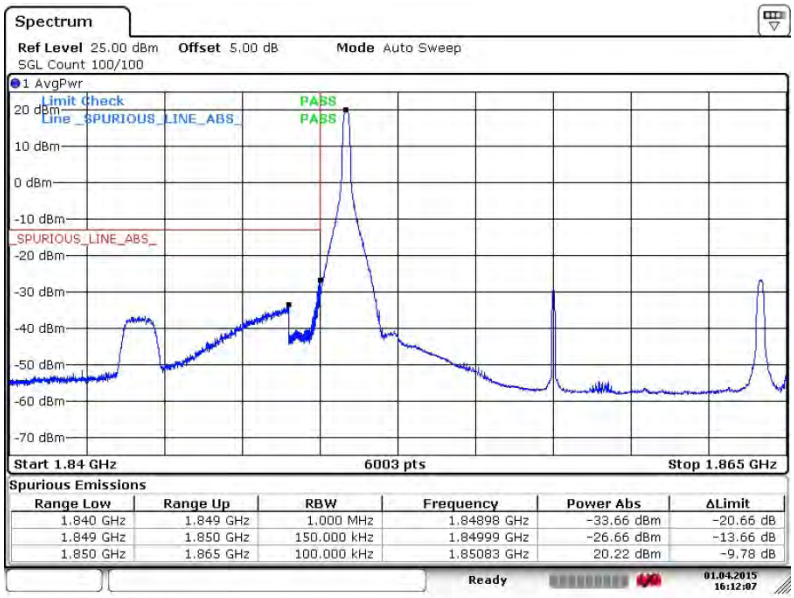
Higher Band Edge Plot for QPSK-RB Size 75, RB Offset 0



Date: 1.APR.2015 16:02:36

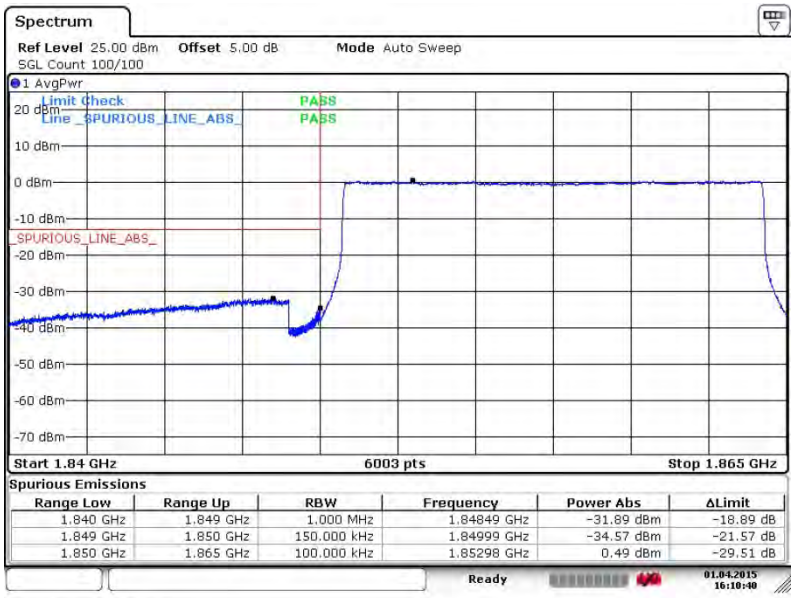
Band :	LTE Band 25	Band Width :	15MHz / 16QAM

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



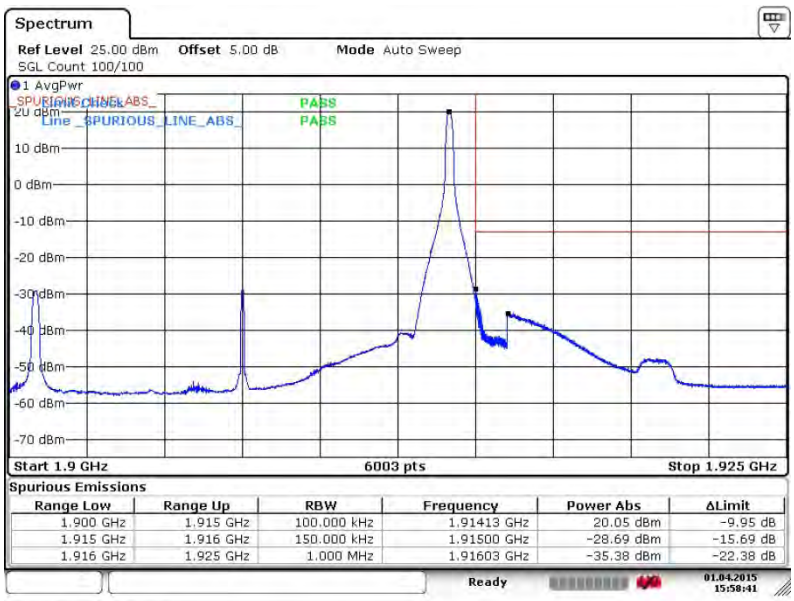
Date: 1.APR.2015 16:12:08

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



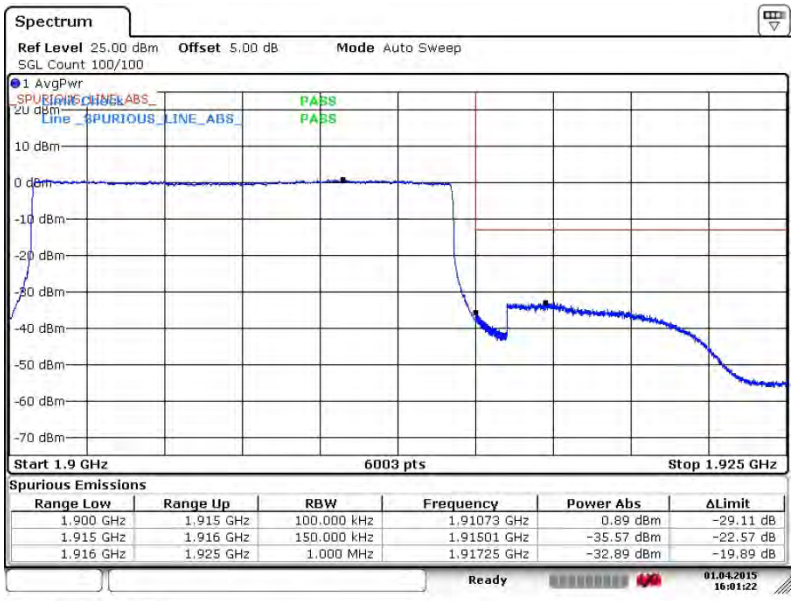
Date: 1.APR.2015 16:10:40

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



Date: 1.APR.2015 15:58:41

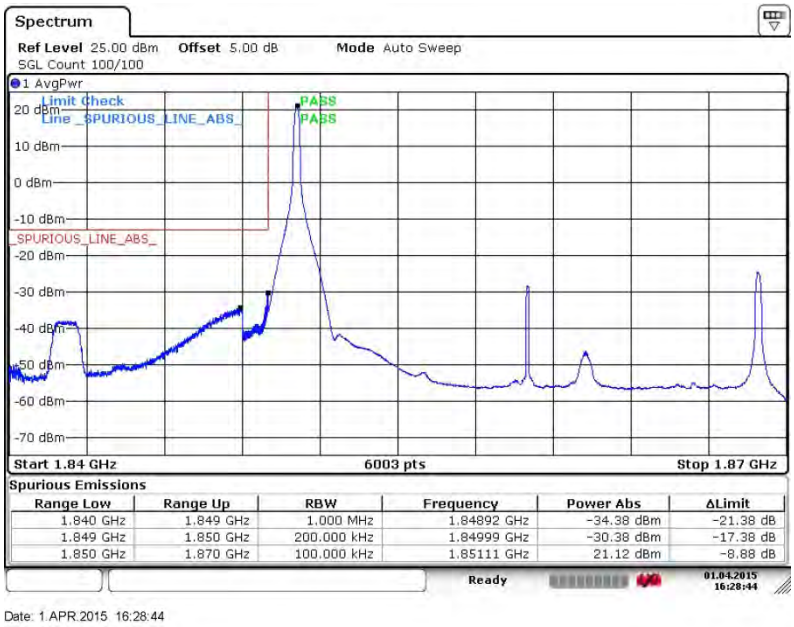
Higher Band Edge Plot for 16QAM-RB Size 75, RB Offset 0



Date: 1.APR.2015 16:01:21

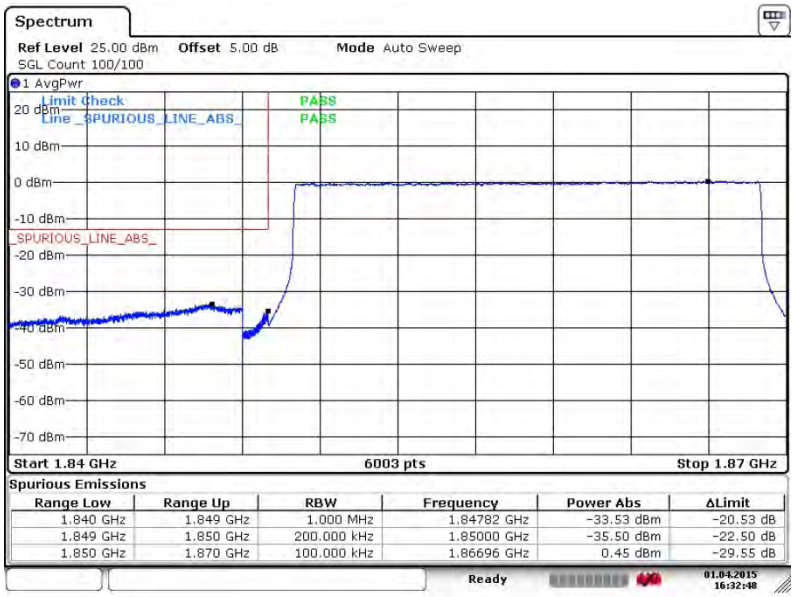
Band :	LTE Band 25	Band Width :	20MHz / QPSK

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



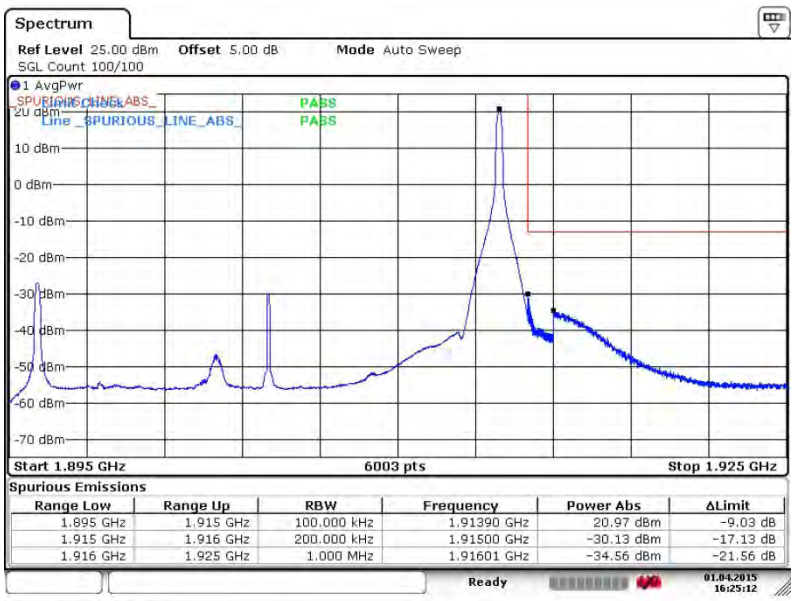
Date: 1.APR.2015 16:28:44

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



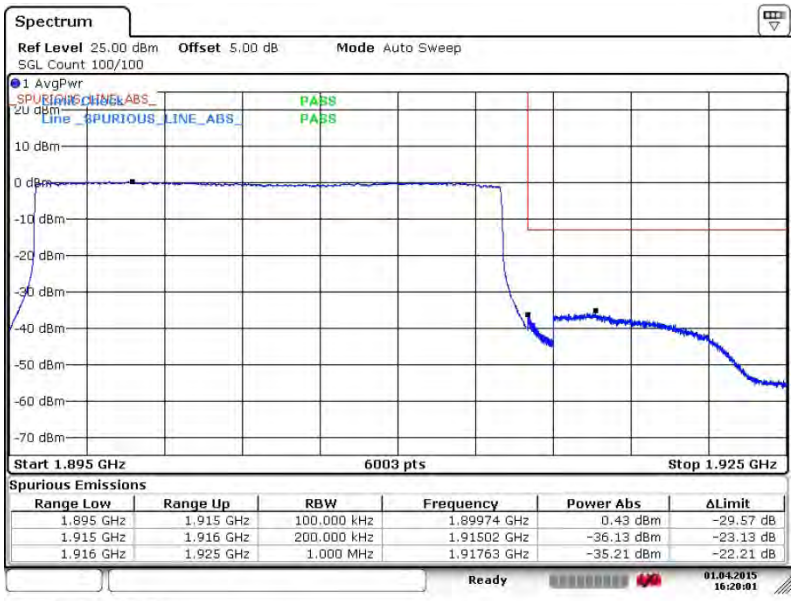
Date: 1.APR.2015 16:32:48

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



Date: 1.APR.2015 16:25:13

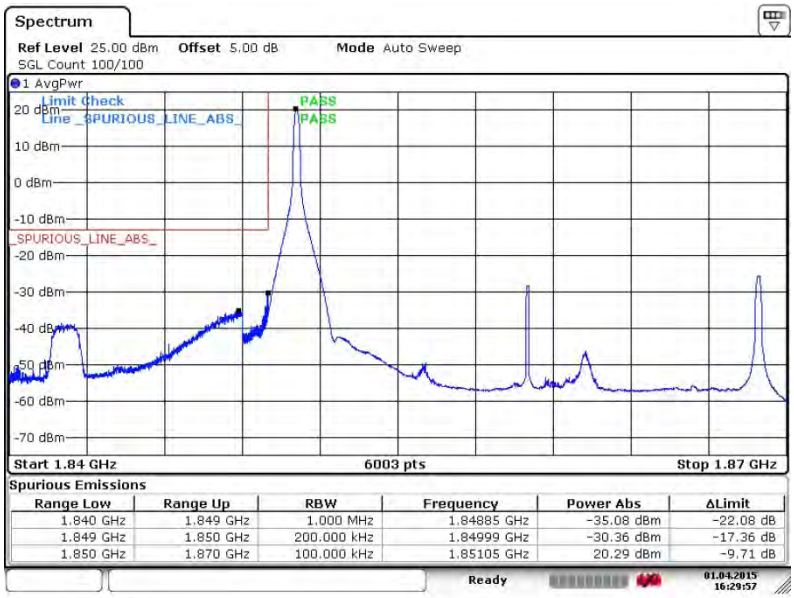
Higher Band Edge Plot for QPSK-RB Size 100, RB Offset 0



Date: 1.APR.2015 16:20:01

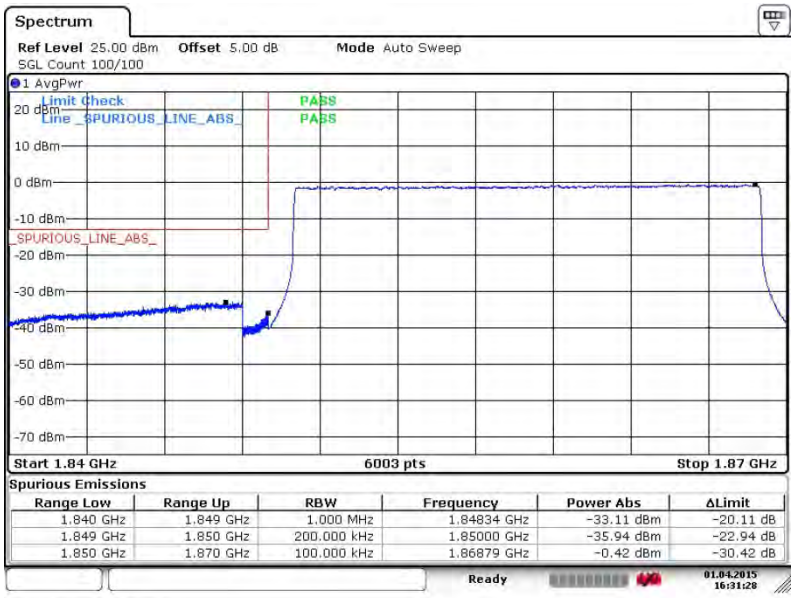
Band :	LTE Band 25	Band Width :	20MHz / 16QAM

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



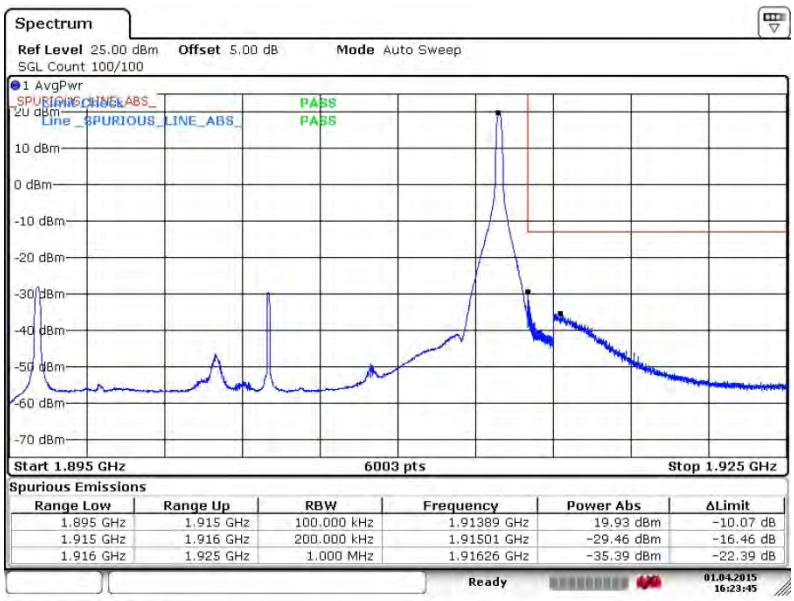
Date: 1.APR.2015 16:29:57

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



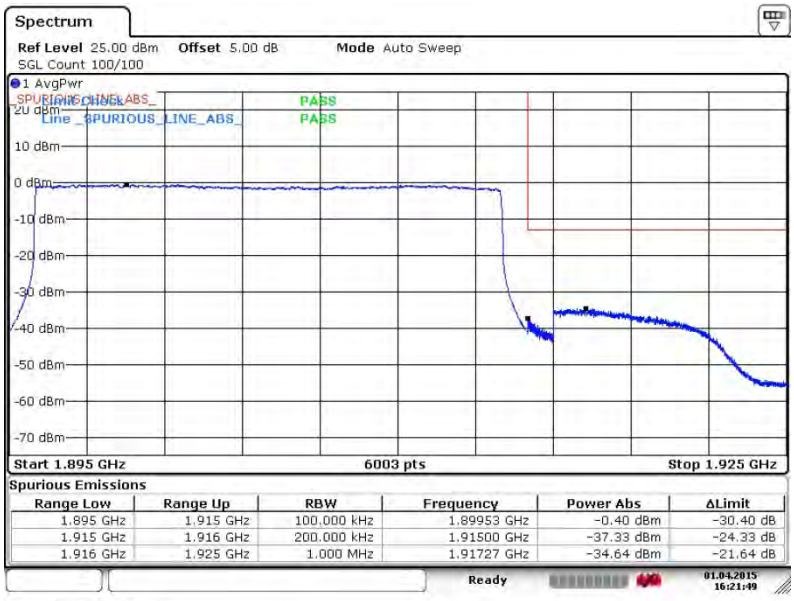
Date: 1.APR.2015 16:31:28

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



Date: 1.APR.2015 16:23:45

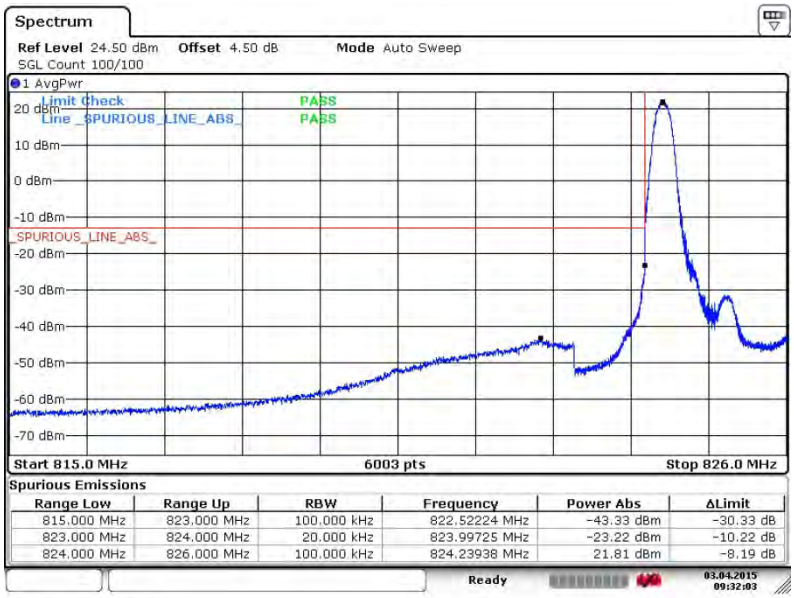
Higher Band Edge Plot for 16QAM-RB Size 100, RB Offset 0



Date: 1.APR.2015 16:21:49

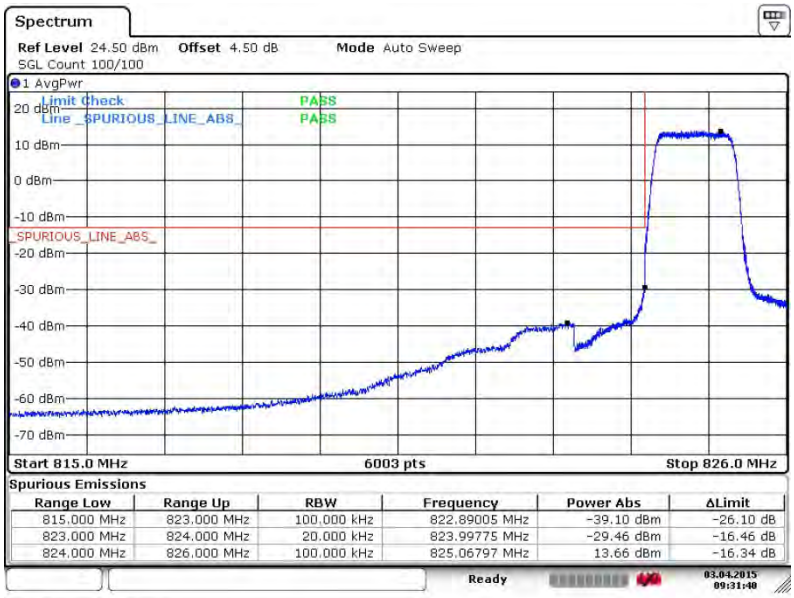
Band :	LTE Band 26	Band Width :	1.4MHz / QPSK

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



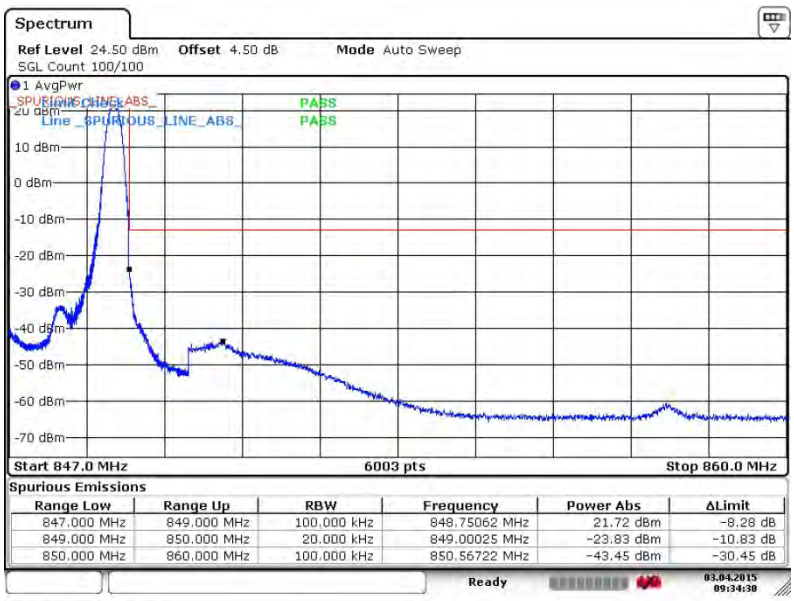
Date: 3.APR.2015 09:32:03

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



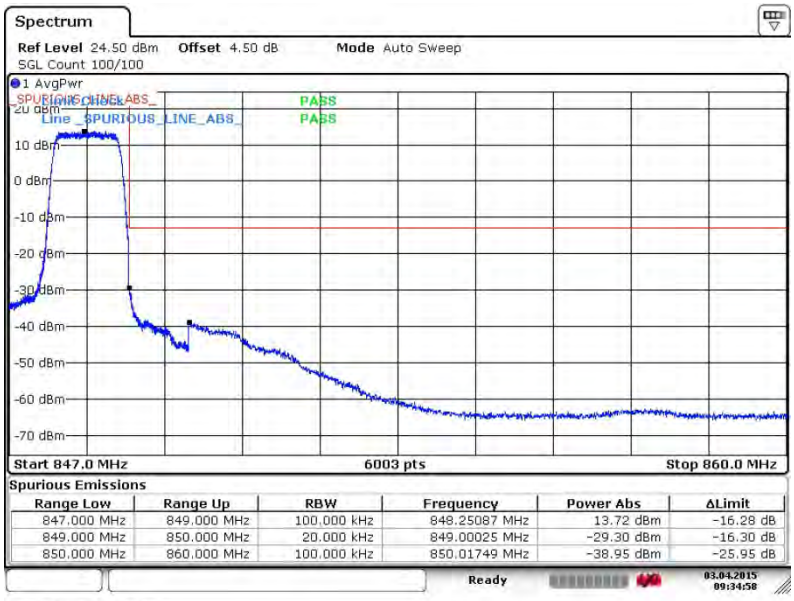
Date: 3.APR.2015 09:31:41

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



Date: 3.APR.2015 09:34:31

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



Date: 3.APR.2015 09:34:58