

FCC/IC RF Test Report

APPLICANT : Motorola Mobility, LLC
EQUIPMENT : Mobile Cellular Phone
BRAND NAME : Motorola Mobility, LLC
MODEL NAME : 4005
FCC ID : IHDT56PG3
IC : 109O-T56PG3
STANDARD : 47 CFR Part 2, 27
IC RSS-130 issue 1
IC RSS-139 issue 2
IC RSS-199 issue 1

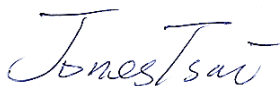
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Mar. 12, 2014 and testing was completed on Mar. 25, 2014. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI / TIA / EIA-603-C-2004 and shown compliance with the applicable technical standards.

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



Reviewed by: Joseph Lin / Supervisor



Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

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Page Number : 1 of 289

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG431235B	Rev. 01	Initial issue of report	Apr. 14, 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-139 (6.4) RSS-199 (4.4)	Conducted Output Power	Reporting Only	PASS	-
3.2	§27.50(d)(5)	RSS-130(4.4) RSS-139 (6.4)	Peak-to-Average Ratio	<13 dB	PASS	-
3.3	§27.50(c)(10)	N/A	Effective Radiated Power (Band 17)	ERP < 3 Watts	PASS	-
	N/A	RSS-130(4.4)	Equivalent Isotropic Radiated Power (Band 17)	EIRP < 5 Watts		
	§27.50(h)(2)	RSS-199 (4.4)	Equivalent Isotropic Radiated Power (Band 7)	EIRP < 2Watt		
	§27.50(d)(4)	RSS-139 (6.4) SRSP-513(5.1.2)	Equivalent Isotropic Radiated Power (Band 4)	EIRP < 1Watt		
3.4	§2.1049 §27.53(g)(3) §27.53(l)(6)	RSS-GEN(4.6.1) RSS-139 (3.1) RSS-199 (4.2)	Occupied Bandwidth	Reporting Only	PASS	-
3.5	§2.1051 §27.53(f) §27.53(g) §27.53(l)(4)	RSS-GEN(4.9) RSS-130(4.6) RSS-139 (6.5) RSS-199 (4.5)	Conducted Band Edge Measurement (Band 4) (Band 17) (Band 7)	< 43+10log10(P[Watts])	PASS	-



Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.6	§2.1051 §27.53(f) §27.53(g)	RSS-GEN(4.9) RSS-130(4.6) RSS-139 (6.5)	Conducted Spurious Emission (Band 4) (Band 17)	$< 43+10\log_{10}(P[\text{Watts}])$	PASS	-
	§2.1051 §27.53(l)(4)	RSS-GEN(4.9) RSS-199 (4.5)	Conducted Spurious Emission (Band 7)	$< 55+10\log_{10}(P[\text{Watts}])$	PASS	-
3.7	§2.1053 §27.53(f) §27.53(g)	RSS-GEN(4.9) RSS-130(4.6) RSS-139 (6.5)	Radiated Spurious Emission (Band 4) (Band 17)	$< 43+10\log_{10}(P[\text{Watts}])$	PASS	Under limit 14.21 dB at 5055.000 MHz
	§2.1053 §27.53(l)(4)	RSS-GEN(4.9) RSS-199 (4.5)	Radiated Spurious Emission (Band 7)	$< 55+10\log_{10}(P[\text{Watts}])$	PASS	
3.8	§2.1055 §27.54	RSS-GEN(4.7) RSS-130(4.3) RSS-139 (6.3) RSS-199 (4.3)	Frequency Stability Temperature & Voltage	$< 2.5 \text{ ppm}$	PASS	

1 General Description

1.1 Applicant

Motorola Mobility, LLC

222 W Merchandise Mart Plaza, Suite 1800, Chicago, IL 60654, United States

1.2 Manufacturer

Motorola Mobility, LLC

222 W Merchandise Mart Plaza, Suite 1800, Chicago, IL 60654, United States

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola Mobility, LLC
Model Name	4005
FCC ID	IHDT56PG3
IC	109O-T56PG3
IMEI Code	359291050000500
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE WLAN 11b/g/n (HT20) Bluetooth 3.0 + EDR Bluetooth 4.0 - LE
HW Version	P2D
SW Version	4.4.2 KXB20.82 66
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 of Equipment Under Test

Product Specification subjective to this standard	
Tx Frequency	LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 17 : 706.5 MHz ~ 713.5 MHz LTE Band 7 : 2506.5 MHz ~ 2534.5 MHz and 2556 MHz ~ 2567.5 MHz
Rx Frequency	LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 17 : 736.5 MHz ~ 743.5 MHz LTE Band 7 : 2626.5MHz ~ 2654.5 MHz and 2676 MHz ~ 2687.5 MHz
Bandwidth	1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz (Band 4) 5MHz/ 10MHz / 15MHz / 20MHz (Band 7) 5MHz / 10MHz (Band 17)
Maximum Output Power to Antenna	LTE Band 4 : 23.29 dBm / 0.2133 W LTE Band 17 : 22.78 dBm / 0.1897 W LTE Band 7 : 23.26 dBm / 0.2118 W
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 Emission Designator

FCC Rule	System	Type of Modulation	BW	Emission Designator	Maximum ERP/EIRP
Part 27	LTE Band 4	QPSK	1.4 MHz	1M10G7D	0.333 W
Part 27	LTE Band 4	16QAM	1.4 MHz	1M10D7W	0.204 W
Part 27	LTE Band 4	QPSK	3 MHz	2M72G7D	0.334 W
Part 27	LTE Band 4	16QAM	3 MHz	2M72D7W	0.213 W
Part 27	LTE Band 4	QPSK	5MHz	4M50G7D	0.354 W
Part 27	LTE Band 4	16QAM	5MHz	4M50D7W	0.228 W
Part 27	LTE Band 4	QPSK	10MHz	9M08G7D	0.278 W
Part 27	LTE Band 4	16QAM	10MHz	9M02D7W	0.215 W
Part 27	LTE Band 4	QPSK	15MHz	13M5G7D	0.273 W
Part 27	LTE Band 4	16QAM	15MHz	13M5D7W	0.218 W
Part 27	LTE Band 4	QPSK	20MHz	18M5G7D	0.307 W
Part 27	LTE Band 4	16QAM	20MHz	18M5D7W	0.213 W
Part 27	LTE Band 17	QPSK	5MHz	4M50G7D	0.048 W
Part 27	LTE Band 17	16QAM	5MHz	4M50D7W	0.028 W
Part 27	LTE Band 17	QPSK	10MHz	9M06G7D	0.047 W
Part 27	LTE Band 17	16QAM	10MHz	9M04D7W	0.027 W
Part 27	LTE Band 7	QPSK	5MHz	4M50G7D	0.372 W
Part 27	LTE Band 7	16QAM	5MHz	4M49D7W	0.322 W
Part 27	LTE Band 7	QPSK	10MHz	9M08G7D	0.393 W
Part 27	LTE Band 7	16QAM	10MHz	9M02D7W	0.347 W
Part 27	LTE Band 7	QPSK	15MHz	13M5G7D	0.320 W
Part 27	LTE Band 7	16QAM	15MHz	13M4D7W	0.302 W
Part 27	LTE Band 7	QPSK	20MHz	18M4G7D	0.291 W
Part 27	LTE Band 7	16QAM	20MHz	18M4D7W	0.302 W

1.7 Testing Location

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 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978		
Test Site No.	Sporton Site No.		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-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.
- ♦ 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

The test mode table below consisted of antenna port conducted and radiated test items was performed according to the KDB 971168 D01 and the ANSI / TIA / EIA-603-C. The radiated measurements were performed with rotating EUT in three orthogonal test planes to find the maximum emission and were carried out in a semi-anechoic chamber with 3-meter test range.

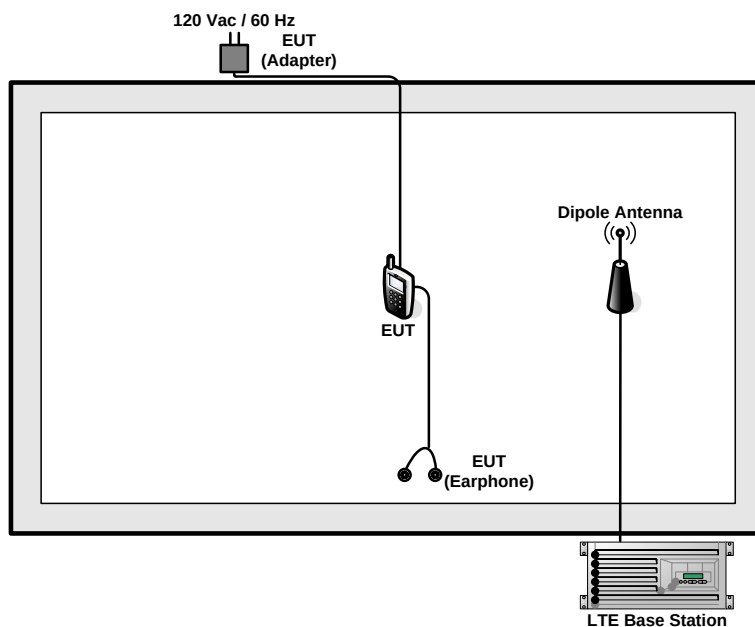
Test Items	Band	Bandwidth (MHz)						Modulation		RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
Max. Output Power	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	7	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	17	-	-	✓	✓	-	-	✓	✓	✓	✓	✓	✓	✓	✓
Peak-to-Average Ratio	4						✓		✓	✓		✓	✓	✓	✓
	7	-	-				✓		✓	✓		✓	✓	✓	✓
	17	-	-		✓	-	-		✓	✓		✓	✓	✓	✓
26dB and 99% Bandwidth	4	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
	7	-	-	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
	17	-	-	✓	✓	-	-	✓	✓			✓	✓	✓	✓
Conducted Band Edge	4	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
	7	-	-	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
	17	-	-	✓	✓	-	-	✓	✓	✓		✓	✓		✓

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	4	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
	7	-	-	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
	17	-	-	✓	✓	-	-	✓	✓	✓			✓	✓	✓
Frequency Stability	4				✓			✓				✓		✓	
	7	-	-		✓			✓				✓		✓	
	17	-	-		✓	-	-	✓				✓		✓	
E.R.P/ E.I.R.P	4	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
	7	-	-	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
	17	-	-	✓	✓	-	-	✓	✓	✓			✓	✓	✓
Radiated Spurious Emission	4	✓	✓	✓	✓	✓	✓	✓		✓			✓	✓	✓
	7	-	-	✓	✓	✓	✓	✓		✓			✓	✓	✓
	17	-	-	✓	✓	-	-	✓		✓			✓	✓	✓

Note:

1. The mark "✓" means that the configuration is chosen for testing ; the mark "-" means that the bandwidth is not supported.
2. For ERP/EIRP measurement, the highest power configurations are chosen for testing according to the measurement result listed in section 3.1.
3. The Radiated Spurious Emission is investigated from 30MHz to 10 times of fundamental signal and the configuration 1RB-QPSK is chosen for final radiated spurious emission measurement, since it is the highest RF power level among all RB configurations and there is no significant difference between QPSK and 16QAM modulation in conducted spurious emission test result.

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

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

2.4 Measurement Results Explanation Example

For all conducted test items:

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

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

Offset = RF cable loss + attenuator factor.

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

Example :

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 4.2 + 10 = 14.2 \text{ (dB)}\end{aligned}$$

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.

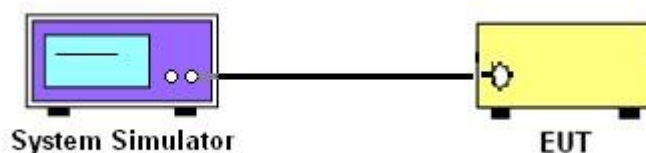
3.1.2 Measuring Instruments

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.
4. Measure and record the power level from the base station.

3.1.4 Test Setup



3.1.5 Test Result of Conducted Output Power

<LTE Band 4 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (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	22.73	23.01	23.18
20	QPSK	1	49	22.84	22.94	23.29
20	QPSK	1	99	22.78	23.10	23.19
20	QPSK	50	0	22.03	22.16	22.38
20	QPSK	50	24	21.93	22.08	22.43
20	QPSK	50	49	21.95	22.20	22.33
20	QPSK	100	0	22.03	22.13	22.27
20	16QAM	1	0	22.07	22.10	22.13
20	16QAM	1	49	21.95	22.07	21.95
20	16QAM	1	99	22.06	22.17	21.98
20	16QAM	50	0	21.00	21.12	21.44
20	16QAM	50	24	20.86	20.99	21.49
20	16QAM	50	49	20.92	21.09	21.41
20	16QAM	100	0	21.00	21.12	21.34
Channel				20025	20175	20325
Frequency (MHz)				1717.5	1732.5	1747.5
15	QPSK	1	0	22.89	22.88	23.11
15	QPSK	1	37	22.70	23.02	23.16
15	QPSK	1	74	22.69	23.00	23.07
15	QPSK	36	0	21.91	22.02	22.33
15	QPSK	36	18	21.87	22.01	22.23
15	QPSK	36	37	21.78	22.01	22.19
15	QPSK	75	0	21.85	22.06	22.24
15	16QAM	1	0	21.79	21.85	22.16
15	16QAM	1	37	21.65	21.96	22.24
15	16QAM	1	74	21.63	21.93	22.09
15	16QAM	36	0	20.86	20.96	21.34
15	16QAM	36	18	20.80	20.94	21.19
15	16QAM	36	37	20.70	20.92	21.19
15	16QAM	75	0	20.84	20.96	21.34



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	22.90	22.87	23.08
10	QPSK	1	24	22.71	22.89	23.15
10	QPSK	1	49	22.69	22.86	23.05
10	QPSK	25	0	21.81	22.01	22.26
10	QPSK	25	12	21.82	21.96	22.20
10	QPSK	25	24	21.85	22.06	22.15
10	QPSK	50	0	21.88	22.03	22.30
10	16QAM	1	0	21.82	21.85	22.25
10	16QAM	1	24	21.70	21.86	22.12
10	16QAM	1	49	21.68	21.85	22.11
10	16QAM	25	0	20.87	21.01	21.36
10	16QAM	25	12	20.83	20.94	21.30
10	16QAM	25	24	20.84	21.06	21.26
10	16QAM	50	0	20.83	20.95	21.34
Channel				19975	20175	20375
Frequency (MHz)				1712.5	1732.5	1752.5
5	QPSK	1	0	22.83	22.90	23.16
5	QPSK	1	12	22.74	22.97	23.11
5	QPSK	1	24	22.71	22.98	23.15
5	QPSK	12	0	21.91	21.94	22.24
5	QPSK	12	6	21.82	21.95	22.16
5	QPSK	12	11	21.86	22.04	22.16
5	QPSK	25	0	21.84	21.96	22.17
5	16QAM	1	0	21.81	21.90	22.20
5	16QAM	1	12	21.73	21.96	22.15
5	16QAM	1	24	21.66	21.92	22.08
5	16QAM	12	0	20.92	20.98	21.33
5	16QAM	12	6	20.83	20.98	21.29
5	16QAM	12	11	20.85	21.04	21.28
5	16QAM	25	0	20.85	20.96	21.29



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	22.85	22.90	23.16
3	QPSK	1	7	22.77	23.00	23.14
3	QPSK	1	14	22.78	23.02	23.14
3	QPSK	8	0	21.90	21.95	22.17
3	QPSK	8	4	21.83	21.94	22.14
3	QPSK	8	7	21.85	22.05	22.13
3	QPSK	15	0	21.79	22.01	22.22
3	16QAM	1	0	21.80	21.86	22.22
3	16QAM	1	7	21.72	22.00	22.10
3	16QAM	1	14	21.74	21.98	22.17
3	16QAM	8	0	20.92	20.98	21.31
3	16QAM	8	4	20.79	21.00	21.20
3	16QAM	8	7	20.80	21.10	21.28
3	16QAM	15	0	20.81	20.94	21.24
Channel				19957	20175	20393
Frequency (MHz)				1710.7	1732.5	1754.3
1.4	QPSK	1	0	22.89	22.98	23.18
1.4	QPSK	1	2	22.88	22.90	23.17
1.4	QPSK	1	5	22.91	23.07	23.14
1.4	QPSK	3	0	22.93	22.99	23.15
1.4	QPSK	3	1	22.91	22.93	23.12
1.4	QPSK	3	2	22.85	22.92	23.09
1.4	QPSK	6	0	21.89	21.99	22.25
1.4	16QAM	1	0	21.80	21.94	22.16
1.4	16QAM	1	2	21.82	21.93	22.12
1.4	16QAM	1	5	21.86	21.97	22.16
1.4	16QAM	3	0	21.85	21.94	22.17
1.4	16QAM	3	1	21.83	21.96	22.12
1.4	16QAM	3	2	21.83	21.93	22.14
1.4	16QAM	6	0	20.80	20.89	21.15

<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	22.78	22.66	22.59
10	QPSK	1	24	22.45	22.63	22.43
10	QPSK	1	49	22.64	22.56	22.48
10	QPSK	25	0	21.71	21.56	21.49
10	QPSK	25	12	21.63	21.45	21.40
10	QPSK	25	24	21.48	21.51	21.47
10	QPSK	50	0	21.70	21.62	21.55
10	16QAM	1	0	21.60	21.62	21.53
10	16QAM	1	24	21.31	21.48	21.37
10	16QAM	1	49	21.33	21.71	21.42
10	16QAM	25	0	20.67	20.54	20.52
10	16QAM	25	12	20.58	20.46	20.43
10	16QAM	25	24	20.51	20.52	20.51
10	16QAM	50	0	20.69	20.57	20.65
Channel				23755	23790	23825
Frequency (MHz)				706.5	710	713.5
5	QPSK	1	0	22.74	22.46	22.26
5	QPSK	1	12	22.60	22.39	22.54
5	QPSK	1	24	22.49	22.50	22.22
5	QPSK	12	0	21.67	21.42	21.42
5	QPSK	12	6	21.66	21.39	21.46
5	QPSK	12	11	21.66	21.39	21.47
5	QPSK	25	0	21.72	21.41	21.40
5	16QAM	1	0	21.74	21.41	21.24
5	16QAM	1	12	21.56	21.39	21.42
5	16QAM	1	24	21.51	21.45	21.18
5	16QAM	12	0	20.72	20.45	20.46
5	16QAM	12	6	20.67	20.44	20.51
5	16QAM	12	11	20.64	20.42	20.57
5	16QAM	25	0	20.66	20.39	20.41



<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	22.94	23.15	23.09
20	QPSK	1	49	22.63	23.07	22.79
20	QPSK	1	99	22.62	22.53	22.57
20	QPSK	50	0	21.82	22.31	22.09
20	QPSK	50	24	21.77	22.16	21.89
20	QPSK	50	49	21.60	21.81	21.86
20	QPSK	100	0	21.59	21.93	21.73
20	16QAM	1	0	21.83	22.05	21.99
20	16QAM	1	49	21.55	22.02	21.87
20	16QAM	1	99	21.54	21.48	21.55
20	16QAM	50	0	20.82	21.22	21.15
20	16QAM	50	24	20.60	21.15	20.63
20	16QAM	50	49	20.54	20.83	20.81
20	16QAM	100	0	20.50	21.06	20.57
Channel				20825	21100	21375
Frequency (MHz)				2507.5	2535	2562.5
15	QPSK	1	0	22.92	23.26	23.08
15	QPSK	1	37	22.44	23.01	22.77
15	QPSK	1	74	22.40	22.72	22.66
15	QPSK	36	0	21.63	22.24	21.61
15	QPSK	36	18	21.57	22.03	21.70
15	QPSK	36	37	21.50	21.83	21.79
15	QPSK	75	0	21.49	22.06	21.80
15	16QAM	1	0	21.83	22.16	22.01
15	16QAM	1	37	21.56	21.96	21.90
15	16QAM	1	74	21.40	21.78	21.74
15	16QAM	36	0	20.61	21.17	20.51
15	16QAM	36	18	20.39	20.99	20.74
15	16QAM	36	37	20.49	20.80	20.80
15	16QAM	75	0	20.48	21.00	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				20800	21100	21400
Frequency (MHz)				2505	2535	2565
10	QPSK	1	0	22.90	23.23	23.07
10	QPSK	1	24	22.59	23.00	22.91
10	QPSK	1	49	22.35	22.55	22.68
10	QPSK	25	0	21.67	22.24	21.80
10	QPSK	25	12	21.48	22.03	21.79
10	QPSK	25	24	21.59	21.86	21.85
10	QPSK	50	0	21.61	21.97	21.90
10	16QAM	1	0	21.81	22.10	22.09
10	16QAM	1	24	21.45	21.95	21.74
10	16QAM	1	49	21.30	21.56	21.55
10	16QAM	25	0	20.67	21.24	20.83
10	16QAM	25	12	20.61	21.02	20.88
10	16QAM	25	24	20.60	20.90	20.91
10	16QAM	50	0	20.62	20.94	20.95
Channel				20775	21100	21425
Frequency (MHz)				2502.5	2535	2567.5
5	QPSK	1	0	22.98	23.17	23.07
5	QPSK	1	12	22.74	22.94	23.02
5	QPSK	1	24	22.41	22.82	22.67
5	QPSK	12	0	21.84	22.15	21.86
5	QPSK	12	6	21.72	22.00	21.95
5	QPSK	12	11	21.63	21.97	21.96
5	QPSK	25	0	21.71	22.06	21.92
5	16QAM	1	0	21.88	22.09	21.81
5	16QAM	1	12	21.63	21.90	21.85
5	16QAM	1	24	21.61	21.78	21.95
5	16QAM	12	0	20.87	21.18	20.91
5	16QAM	12	6	20.78	21.03	20.98
5	16QAM	12	11	20.75	20.99	21.04
5	16QAM	25	0	20.81	21.03	20.99

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.

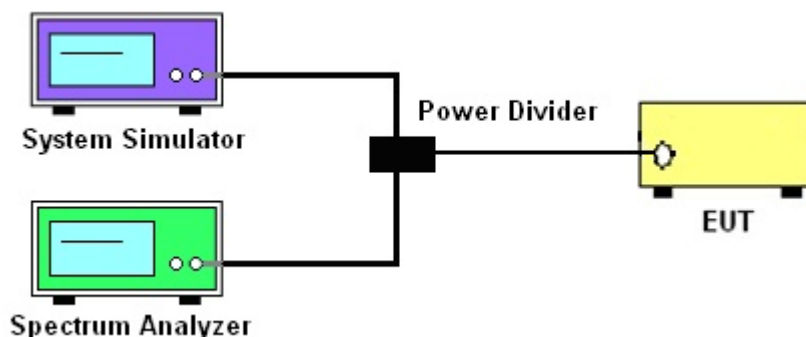
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

1. The EUT was connected to the spectrum and the System Simulator via the 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 4						
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	16QAM	1	0	6.67	5.80	6.47
20	16QAM	100	0	6.22	6.54	6.60

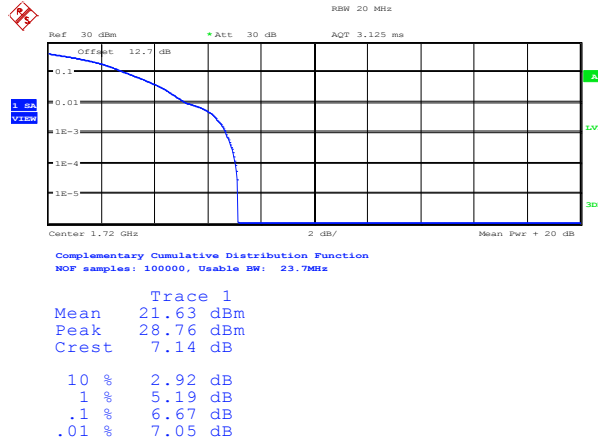
LTE Band 17						
BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				23780	23790	23800
Frequency (MHz)				709	710	711
10	16QAM	1	0	7.53	7.60	7.60
10	16QAM	50	0	6.60	6.76	6.70

LTE Band 7						
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	16QAM	1	0	6.57	7.12	6.76
20	16QAM	100	0	6.44	6.51	6.38

3.2.6 Peak to Average Power Ratio

Peak-to-Average Ratio on LTE Band 4

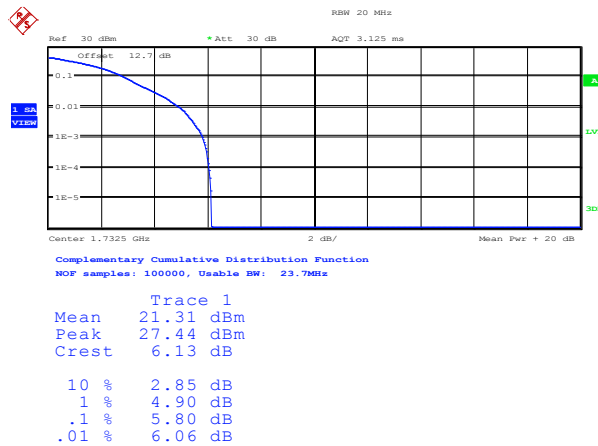
20MHz / 16QAM in Ch. 20050 (1RB Size)



Date: 25.MAR.2014 11:12:41

Peak-to-Average Ratio on LTE Band 4

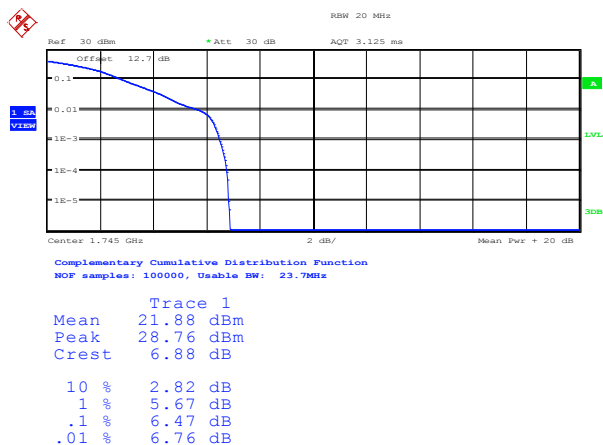
20MHz / 16QAM in Ch. 20175 (1RB Size)



Date: 25.MAR.2014 11:13:18

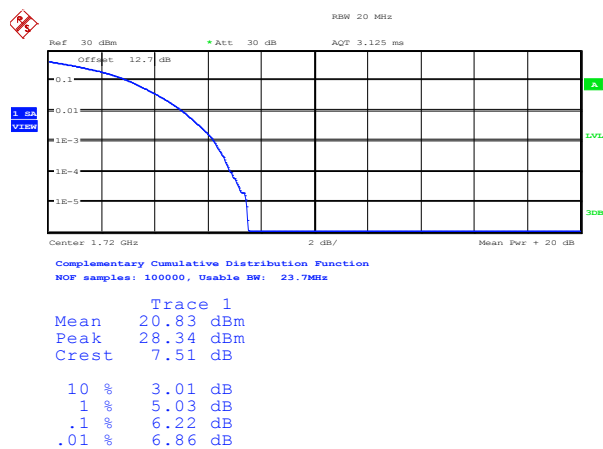


Peak-to-Average Ratio on LTE Band 4
20MHz / 16QAM in Ch. 20300 (1RB Size)



Date: 25.MAR.2014 11:13:46

Peak-to-Average Ratio on LTE Band 4
20MHz / 16QAM in Ch. 20050 (100RB Size)

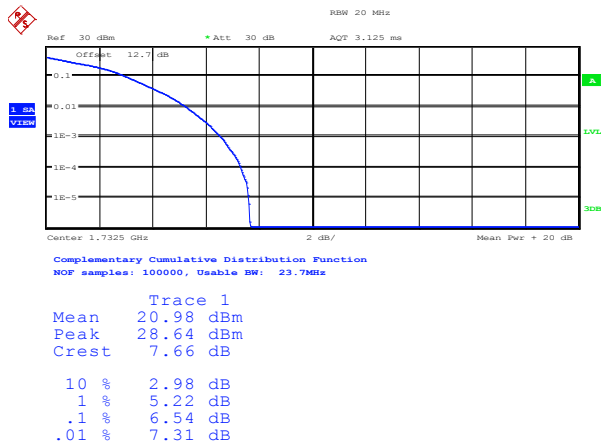


Date: 25.MAR.2014 11:13:02



Peak-to-Average Ratio on LTE Band 4

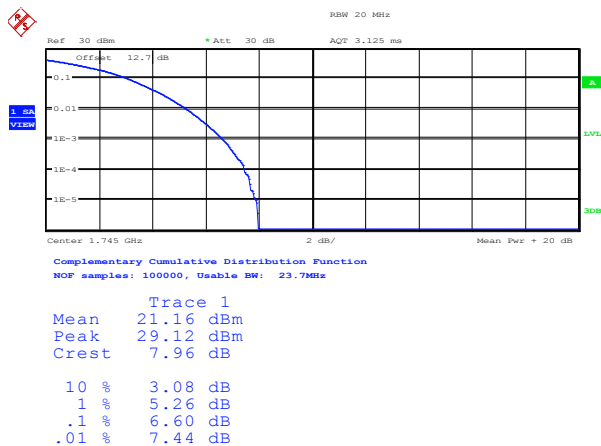
20MHz / 16QAM in Ch. 201750 (100RB Size)



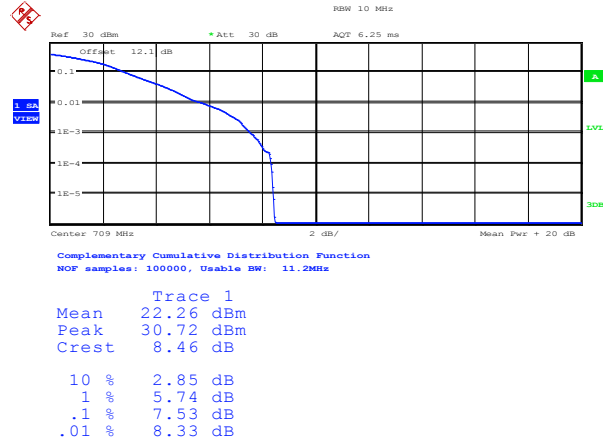
Date: 25.MAR.2014 11:13:32

Peak-to-Average Ratio on LTE Band 4

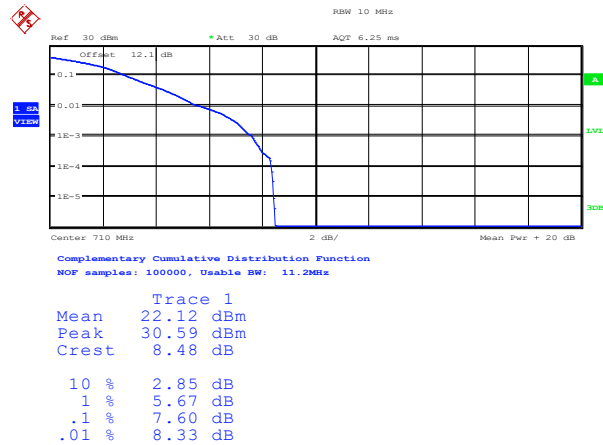
20MHz / 16QAM in Ch. 20300 (100RB Size)



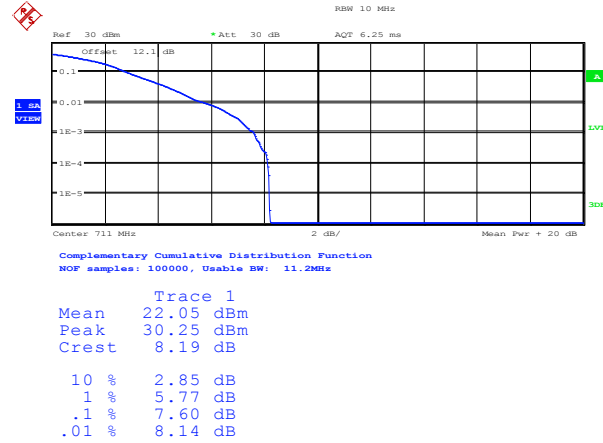
Date: 25.MAR.2014 11:14:02

Peak-to-Average Ratio on LTE Band 17
10MHz / 16QAM in Ch. 23780 (1RB Size)


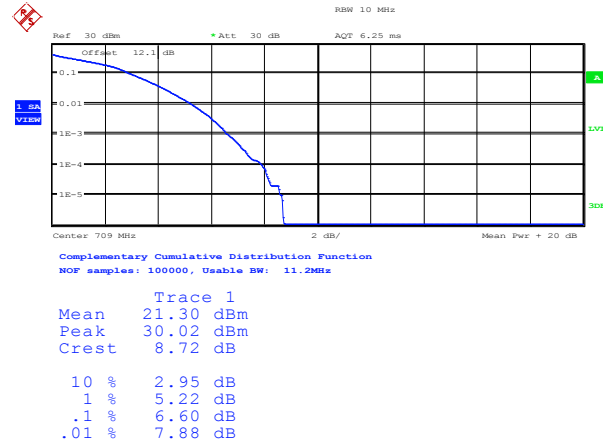
Date: 25.MAR.2014 13:21:06

Peak-to-Average Ratio on LTE Band 17
10MHz / 16QAM in Ch. 23790 (1RB Size)


Date: 25.MAR.2014 13:21:43

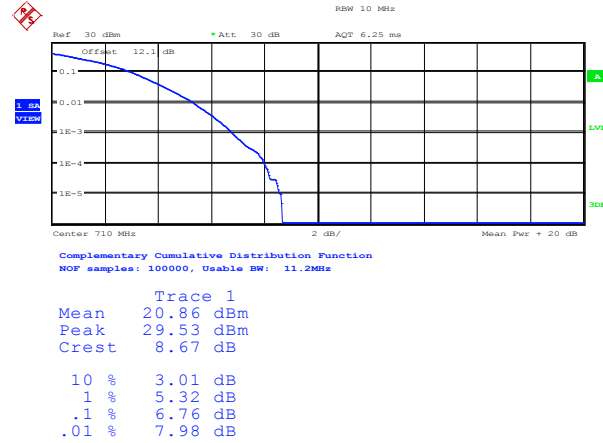
Peak-to-Average Ratio on LTE Band 17
10MHz / 16QAM in Ch. 23800 (1RB Size)


Date: 25.MAR.2014 13:22:32

Peak-to-Average Ratio on LTE Band 17
10MHz / 16QAM in Ch. 23780 (50RB Size)


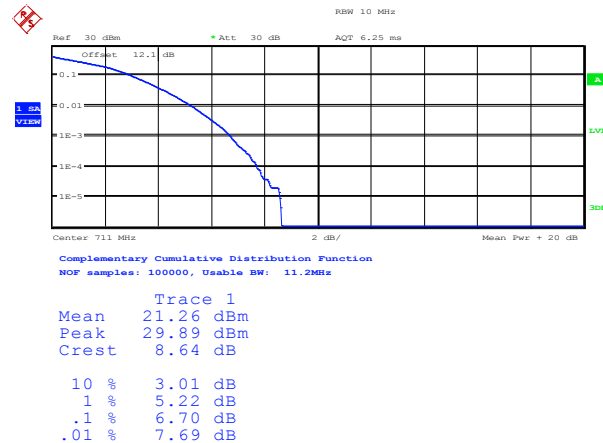
Date: 25.MAR.2014 13:21:27

Peak-to-Average Ratio on LTE Band 17
10MHz / 16QAM in Ch. 23790 (50RB Size)



Date: 25.MAR.2014 13:22:10

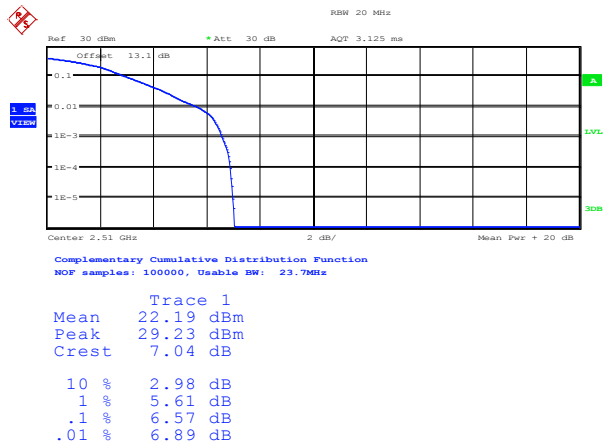
Peak-to-Average Ratio on LTE Band 17
10MHz / 16QAM in Ch. 23800 (50RB Size)



Date: 25.MAR.2014 13:22:49

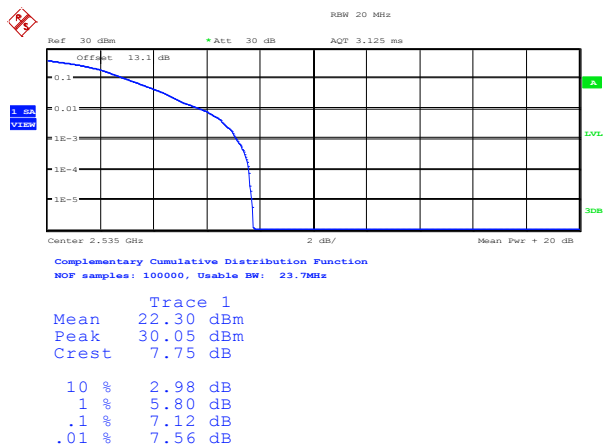


Peak-to-Average Ratio on LTE Band 7
20MHz / 16QAM in Ch. 20850 (1RB Size)



Date: 25.MAR.2014 14:41:31

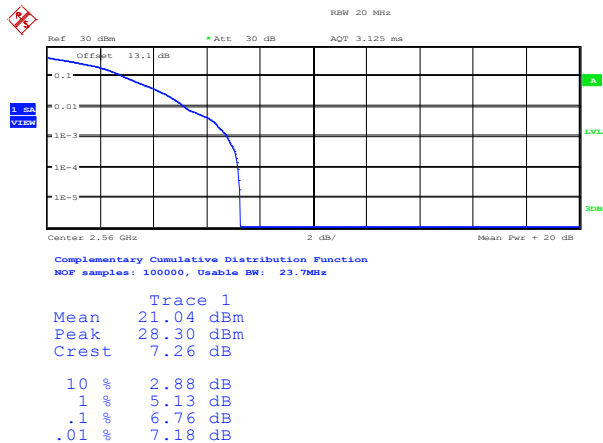
Peak-to-Average Ratio on LTE Band 7
20MHz / 16QAM in Ch. 21100 (1RB Size)



Date: 25.MAR.2014 14:41:59

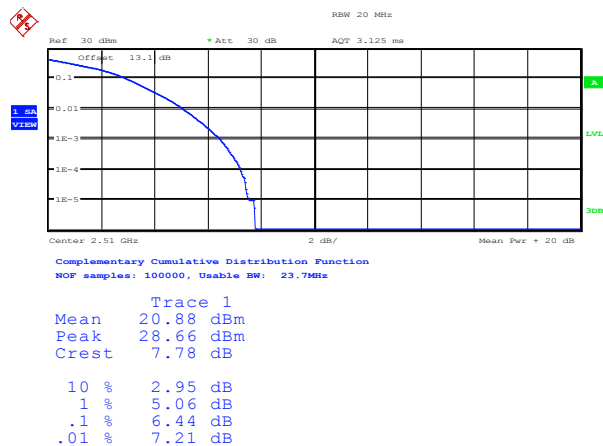


Peak-to-Average Ratio on LTE Band 7
20MHz / 16QAM in Ch. 21350 (1RB Size)



Date: 25.MAR.2014 14:42:40

Peak-to-Average Ratio on LTE Band 7
20MHz / 16QAM in Ch. 20850 (100RB Size)

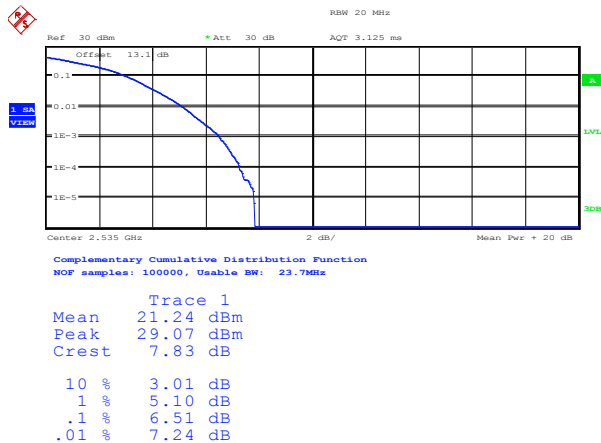


Date: 25.MAR.2014 14:41:45



Peak-to-Average Ratio on LTE Band 7

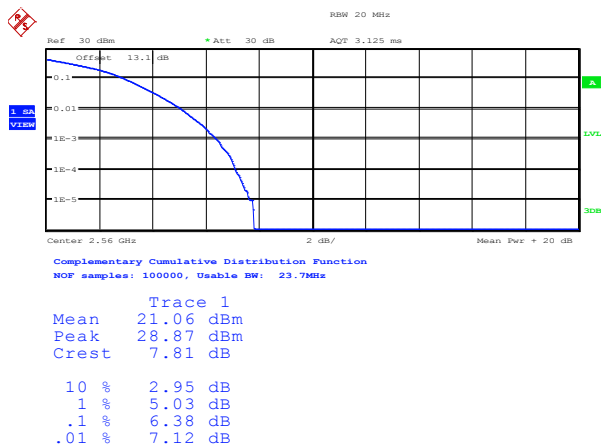
20MHz / 16QAM in Ch. 21100 (100RB Size)



Date: 25.MAR.2014 14:42:19

Peak-to-Average Ratio on LTE Band 7

20MHz / 16QAM in Ch. 21350 (100RB Size)



Date: 25.MAR.2014 14:43:07

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 v02r01. Mobile and portable (hand-held) stations operating are limited to average ERP of 3 watt with LTE band 17.

Equivalent isotropic radiated power output measurements by substitution method according to ANSI / TIA / EIA-603-C-2004, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v02r01. Mobile and portable (hand-held) stations operating are limited to average EIRP of 2 watts with LTE band 7 and 1 watt with LTE band 4.

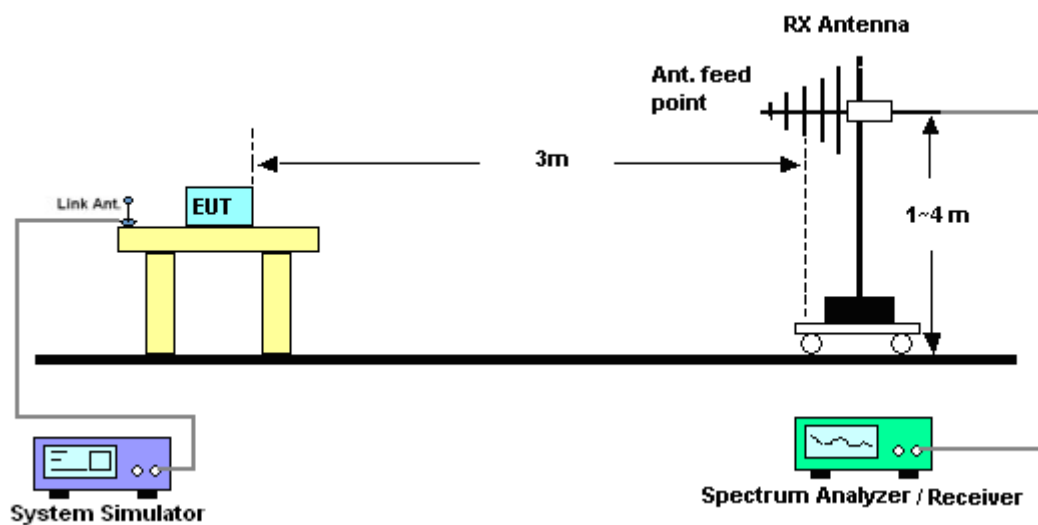
3.3.2 Measuring Instruments

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 per section 5. of KDB 971168 D01.
2. During the measurement, the EUT was enforced in maximum power and linked with a base station. The highest emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
3. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by dipole antenna (substitution antenna) at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP was calculated with the correction factor, $EIRP = LVL + \text{Correction factor}$ and $ERP = EIRP - 2.15$.

3.3.4 Test Setup



3.3.5 Test Result of ERP/EIRP

LTE Band 4 Radiated Power EIRP for BW 1.4MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1710.70	-20.97	43.43	22.46	0.1762
1732.50	-19.83	43.34	23.51	0.2244
1754.30	-20.07	43.65	23.58	0.2280
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1710.70	-22.41	46.93	24.52	0.2831
1732.50	-21.75	46.19	24.44	0.2780
1754.30	-22.07	47.30	25.23	0.3334

LTE Band 4 Radiated Power EIRP for BW 1.4MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1710.70	-22.98	43.43	20.45	0.1109
1732.50	-21.90	43.34	21.44	0.1393
1754.30	-22.10	43.65	21.55	0.1429
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1710.70	-24.47	46.93	22.46	0.1762
1732.50	-23.80	46.19	22.39	0.1734
1754.30	-24.20	47.30	23.10	0.2042

LTE Band 4 Radiated Power EIRP for BW 3MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1711.50	-20.69	43.38	22.69	0.1858
1732.50	-19.94	43.34	23.40	0.2188
1753.50	-19.57	43.51	23.94	0.2477
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1711.50	-22.42	46.65	24.23	0.2649
1732.50	-21.86	46.19	24.33	0.2710
1753.50	-22.41	47.65	25.24	0.3342

LTE Band 4 Radiated Power EIRP for BW 3MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1711.50	-22.78	43.38	20.60	0.1148
1732.50	-21.92	43.34	21.42	0.1387
1753.50	-21.56	43.51	21.95	0.1567
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1711.50	-24.31	46.65	22.34	0.1714
1732.50	-23.87	46.19	22.32	0.1706
1753.50	-24.36	47.65	23.29	0.2133

LTE Band 4 Radiated Power EIRP for BW 5MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1712.50	-20.47	42.75	22.28	0.1690
1732.50	-19.83	43.34	23.51	0.2244
1752.50	-19.22	43.28	24.06	0.2547
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1712.50	-22.49	46.26	23.77	0.2382
1732.50	-22.34	46.19	23.85	0.2427
1752.50	-22.23	47.72	25.49	0.3540

LTE Band 4 Radiated Power EIRP for BW 5MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1712.50	-22.42	42.75	20.33	0.1079
1732.50	-21.76	43.34	21.58	0.1439
1752.50	-21.00	43.28	22.28	0.1690
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1712.50	-24.40	46.26	21.86	0.1535
1732.50	-24.29	46.19	21.90	0.1549
1752.50	-24.14	47.72	23.58	0.2280

LTE Band 4 Radiated Power EIRP for BW 10MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1715.00	-20.53	42.22	21.69	0.1476
1732.50	-20.27	43.34	23.07	0.2028
1750.00	-20.73	44.37	23.64	0.2312
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1715.00	-21.82	45.79	23.97	0.2495
1732.50	-22.24	46.19	23.95	0.2483
1750.00	-22.77	47.21	24.44	0.2780

LTE Band 4 Radiated Power EIRP for BW 10MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1715.00	-22.43	42.22	19.79	0.0953
1732.50	-22.11	43.34	21.23	0.1327
1750.00	-22.89	44.37	21.48	0.1406
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1715.00	-23.77	45.79	22.02	0.1592
1732.50	-24.21	46.19	21.98	0.1578
1750.00	-23.89	47.21	23.32	0.2148

LTE Band 4 Radiated Power EIRP for BW 15MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1717.50	-20.89	42.93	22.04	0.1600
1732.50	-20.25	43.34	23.09	0.2037
1747.50	-21.52	43.58	22.06	0.1607
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1717.50	-22.16	46.52	24.36	0.2729
1732.50	-22.31	46.19	23.88	0.2443
1747.50	-23.14	47.08	23.94	0.2477

LTE Band 4 Radiated Power EIRP for BW 15MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1717.50	-21.87	42.93	21.06	0.1276
1732.50	-21.29	43.34	22.05	0.1603
1747.50	-20.99	43.58	22.59	0.1816
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1717.50	-24.29	46.52	22.23	0.1671
1732.50	-23.71	46.19	22.48	0.1770
1747.50	-23.70	47.08	23.38	0.2178

LTE Band 4 Radiated Power EIRP for BW 20MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1720.00	-20.84	43.42	22.58	0.1811
1732.50	-19.55	43.34	23.79	0.2393
1745.00	-20.80	43.62	22.82	0.1914
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1720.00	-22.53	46.18	23.65	0.2317
1732.50	-21.35	46.19	24.84	0.3048
1745.00	-21.67	46.54	24.87	0.3069

LTE Band 4 Radiated Power EIRP for BW 20MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1720.00	-23.01	43.42	20.41	0.1099
1732.50	-21.61	43.34	21.73	0.1489
1745.00	-21.64	43.62	21.98	0.1578
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1720.00	-24.45	46.18	21.73	0.1489
1732.50	-23.98	46.19	22.21	0.1663
1745.00	-23.26	46.54	23.28	0.2128

LTE Band 17 Radiated Power ERP for BW 5MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
706.50	-11.97	30.84	16.72	0.0470
710.00	-11.87	30.86	16.84	0.0483
713.50	-12.18	30.81	16.48	0.0445
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
706.50	-23.39	34.59	9.05	0.0080
710.00	-22.95	34.03	8.93	0.0078
713.50	-23.19	33.68	8.34	0.0068

LTE Band 17 Radiated Power ERP for BW 5MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
706.50	-14.50	30.84	14.19	0.0262
710.00	-14.25	30.86	14.46	0.0279
713.50	-14.57	30.81	14.09	0.0256
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
706.50	-25.86	34.59	6.58	0.0045
710.00	-25.31	34.03	6.57	0.0045
713.50	-25.57	33.68	5.96	0.0039

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

LTE Band 17 Radiated Power ERP for BW 10MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
709.00	-12.14	30.77	16.48	0.0445
710.00	-11.97	30.86	16.74	0.0472
711.00	-11.91	30.82	16.76	0.0474
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
709.00	-23.32	34.16	8.69	0.0074
710.00	-23.05	34.03	8.83	0.0076
711.00	-23.06	33.94	8.73	0.0075

LTE Band 17 Radiated Power ERP for BW 10MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
709.00	-14.53	30.77	14.09	0.0256
710.00	-14.33	30.86	14.38	0.0274
711.00	-14.29	30.82	14.38	0.0274
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
709.00	-25.80	34.16	6.21	0.0042
710.00	-25.48	34.03	6.40	0.0044
711.00	-25.40	33.94	6.39	0.0044

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

LTE Band 7 Radiated Power EIRP for BW 5MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2502.50	-22.83	46.44	23.61	0.2296
2535.00	-21.14	46.85	25.71	0.3724
2567.50	-22.48	46.93	24.45	0.2786
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2502.50	-28.81	48.49	19.68	0.0929
2535.00	-28.21	47.50	19.29	0.0849
2567.50	-27.29	48.26	20.97	0.1250

LTE Band 7 Radiated Power EIRP for BW 5MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2502.50	-23.10	46.44	23.34	0.2158
2535.00	-21.77	46.85	25.08	0.3221
2567.50	-22.96	46.93	23.97	0.2495
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2502.50	-29.37	48.49	19.12	0.0817
2535.00	-28.78	47.50	18.72	0.0745
2567.50	-27.69	48.26	20.57	0.1140

LTE Band 7 Radiated Power EIRP for BW 10MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2505.00	-22.83	46.38	23.55	0.2265
2535.00	-23.14	46.85	23.71	0.2350
2565.00	-20.95	46.89	25.94	0.3926
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2505.00	-29.39	48.26	18.87	0.0771
2535.00	-27.75	47.50	19.75	0.0944
2565.00	-27.67	48.10	20.43	0.1104

LTE Band 7 Radiated Power EIRP for BW 10MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2505.00	-23.43	46.38	22.95	0.1972
2535.00	-23.50	46.85	23.35	0.2163
2565.00	-21.49	46.89	25.40	0.3467
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2505.00	-29.96	48.26	18.30	0.0676
2535.00	-27.99	47.50	19.51	0.0893
2565.00	-28.09	48.10	20.01	0.1002

LTE Band 7 Radiated Power EIRP for BW 15MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2507.50	-24.14	46.51	22.37	0.1726
2535.00	-22.74	46.85	24.11	0.2576
2562.50	-21.39	46.44	25.05	0.3199
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2507.50	-29.80	47.86	18.06	0.0640
2535.00	-27.40	47.50	20.10	0.1023
2562.50	-26.84	48.09	21.25	0.1334

LTE Band 7 Radiated Power EIRP for BW 15MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2507.50	-24.25	46.51	22.26	0.1683
2535.00	-23.17	46.85	23.68	0.2333
2562.50	-21.64	46.44	24.80	0.3020
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2507.50	-30.37	47.86	17.49	0.0561
2535.00	-27.71	47.50	19.79	0.0953
2562.50	-27.23	48.09	20.86	0.1219

LTE Band 7 Radiated Power EIRP for BW 20MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2510.00	-24.11	46.54	22.43	0.1750
2535.00	-22.21	46.85	24.64	0.2911
2560.00	-23.24	46.49	23.25	0.2113
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2510.00	-30.36	47.75	17.39	0.0548
2535.00	-26.88	47.50	20.62	0.1153
2560.00	-26.94	48.43	21.49	0.1409

LTE Band 7 Radiated Power EIRP for BW 20MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2510.00	-21.74	46.54	24.80	0.3020
2535.00	-22.59	46.85	24.26	0.2667
2560.00	-21.82	46.49	24.67	0.2931
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2510.00	-28.11	47.75	19.64	0.0920
2535.00	-29.35	47.50	18.15	0.0653
2560.00	-28.13	48.43	20.30	0.1072

3.4 Occupied Bandwidth

3.4.1 Description of Occupied Bandwidth Measurement

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

The 26dB occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal 26 dB.

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

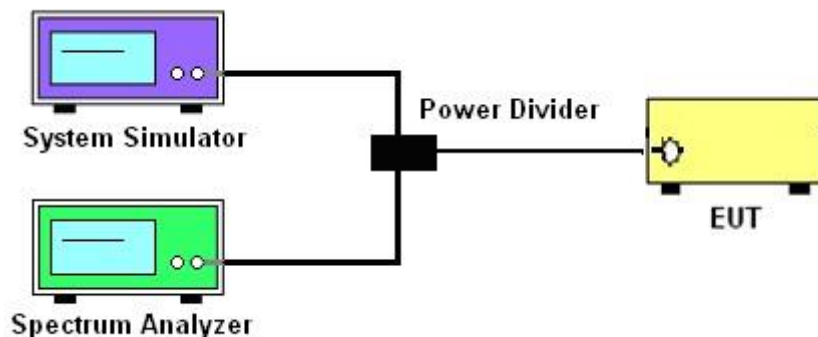
3.4.2 Measuring Instruments

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

3.4.4 Test Setup

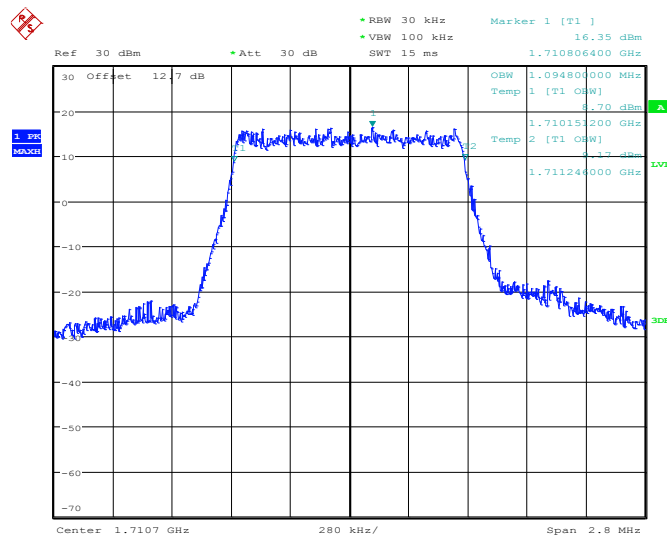




3.4.5 Test Result (Plots) of Occupied Bandwidth

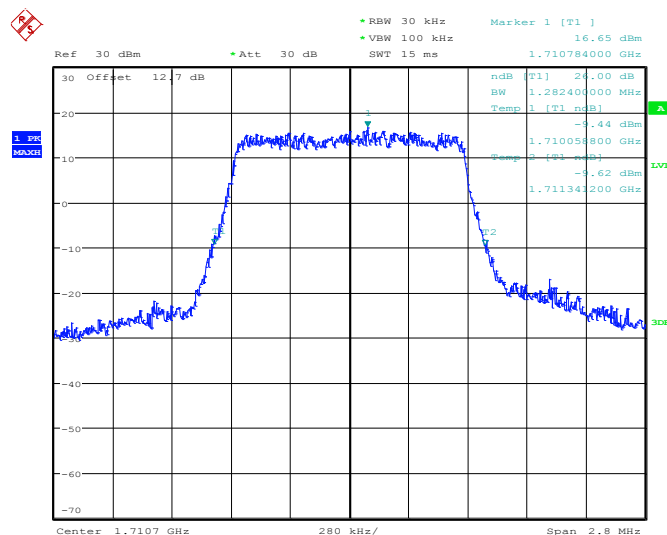
Band :	LTE Band 4	BW / Mod. :	1.4MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 19957



Date: 25.MAR.2014 09:38:39

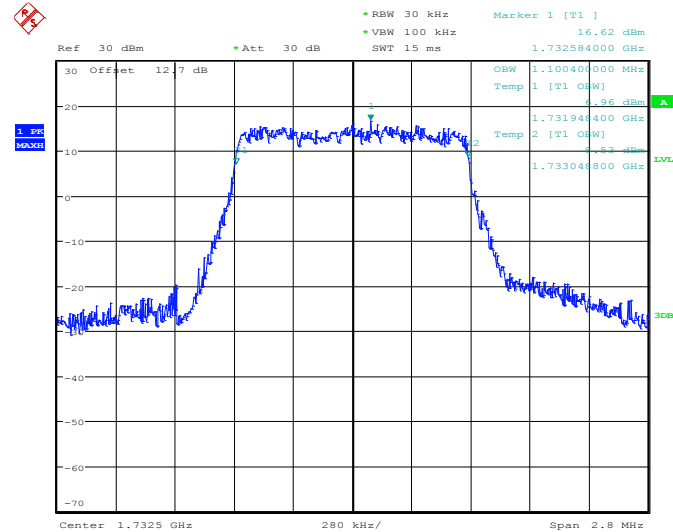
26dB Bandwidth Plot on Channel 19957



Date: 25.MAR.2014 09:39:11

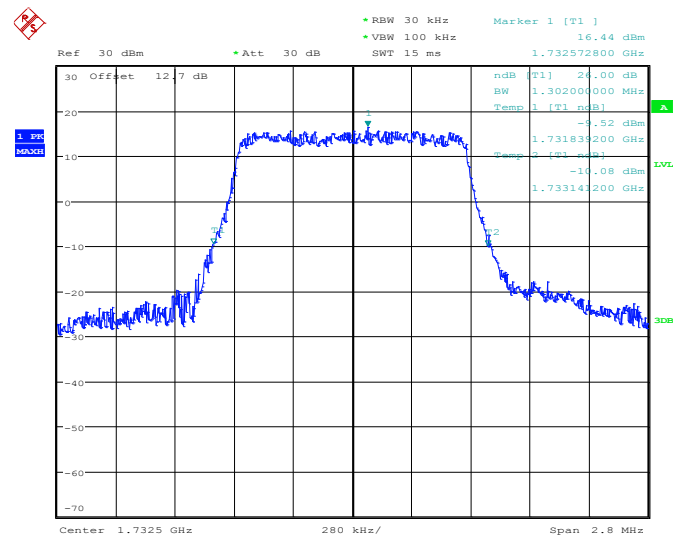


99% Occupied Bandwidth Plot on Channel 20175



Date: 25.MAR.2014 09:44:48

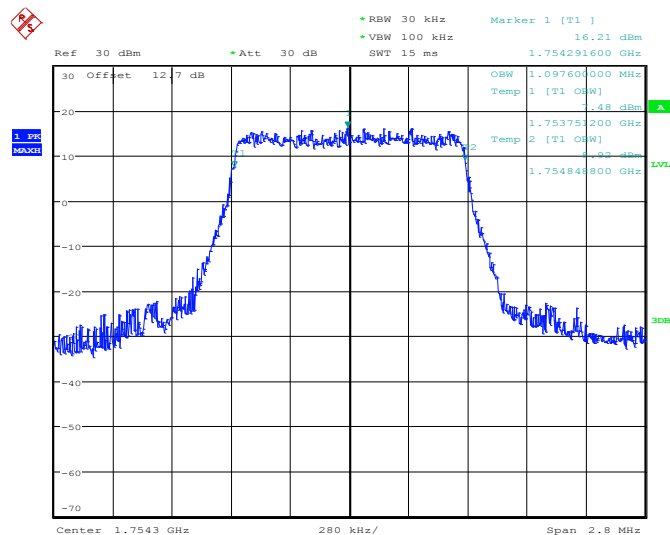
26dB Bandwidth Plot on Channel 20175



Date: 25.MAR.2014 09:45:20

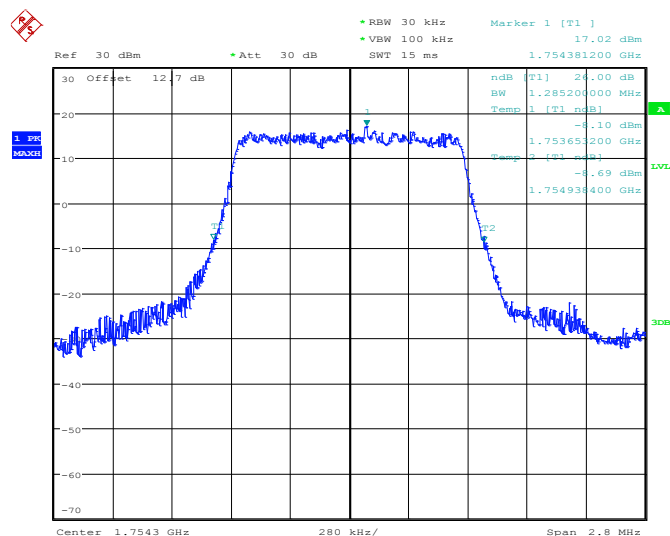


99% Occupied Bandwidth Plot on Channel 20393



Date: 25.MAR.2014 09:47:51

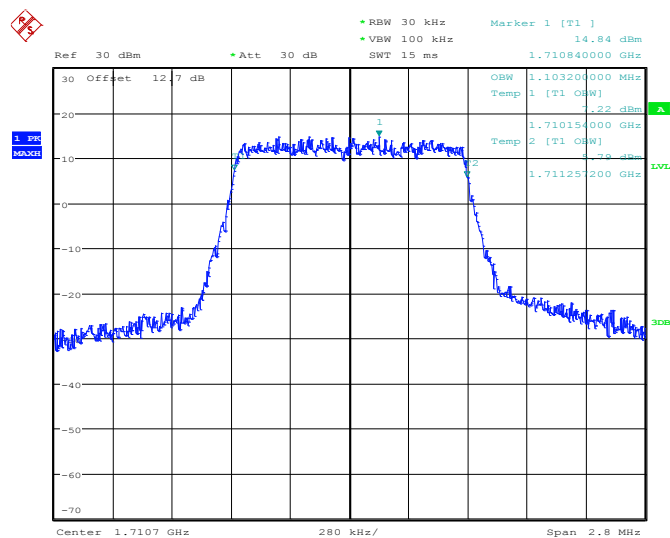
26dB Bandwidth Plot on Channel 20393



Date: 25.MAR.2014 09:48:24

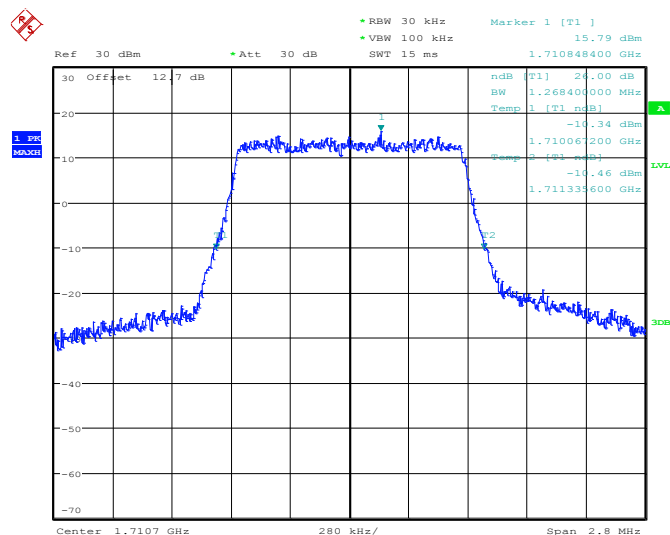
Band :	LTE Band 4	BW / Mod. :	1.4MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 19957



Date: 25.MAR.2014 09:38:54

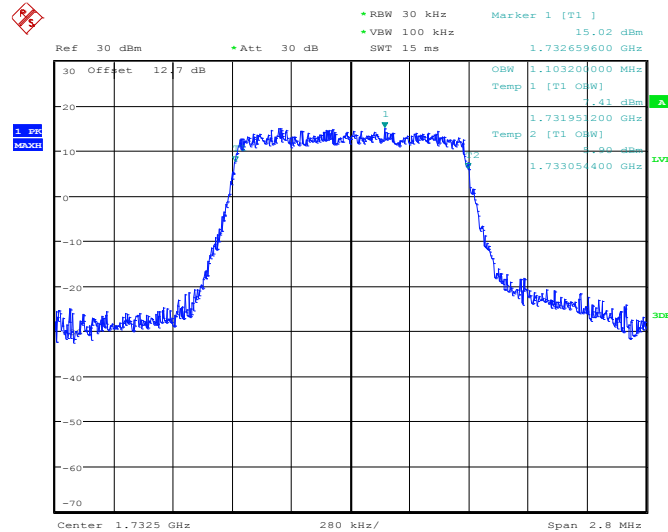
26dB Bandwidth Plot on Channel 19957



Date: 25.MAR.2014 09:39:28

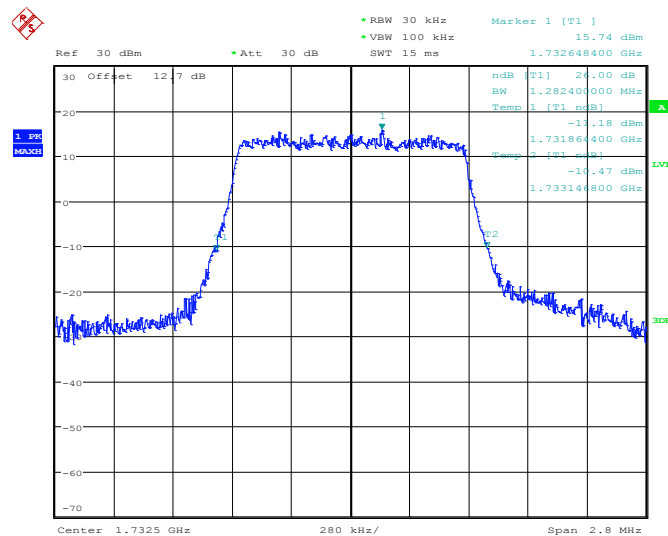


99% Occupied Bandwidth Plot on Channel 20175



Date: 25.MAR.2014 09:45:03

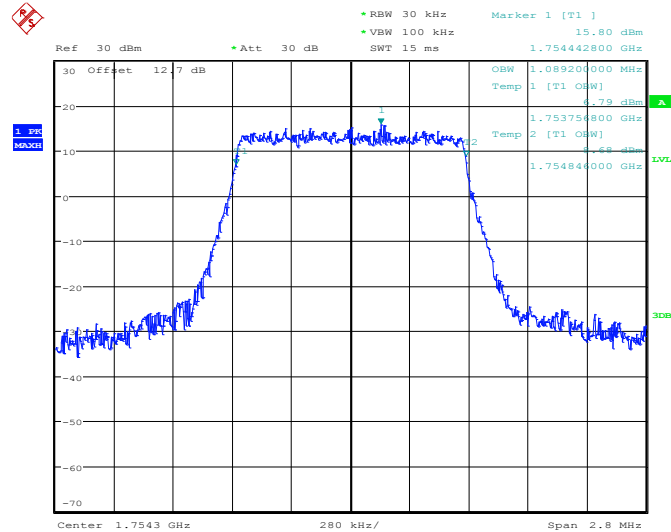
26dB Bandwidth Plot on Channel 20175



Date: 25.MAR.2014 09:45:37

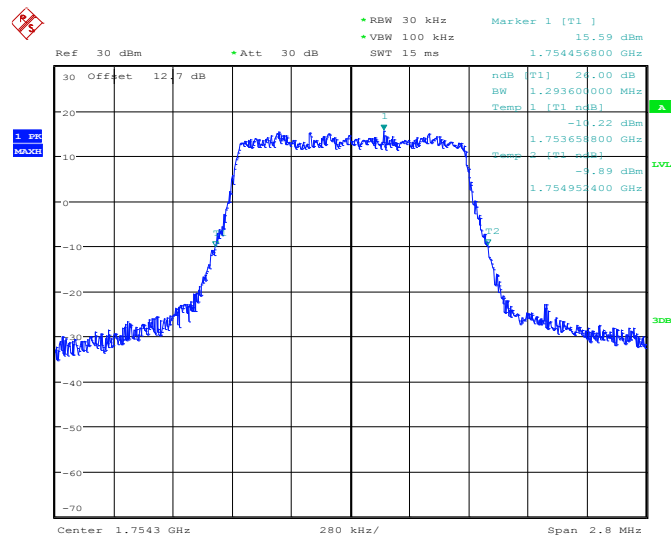


99% Occupied Bandwidth Plot on Channel 20393



Date: 25.MAR.2014 09:48:06

26dB Bandwidth Plot on Channel 20393

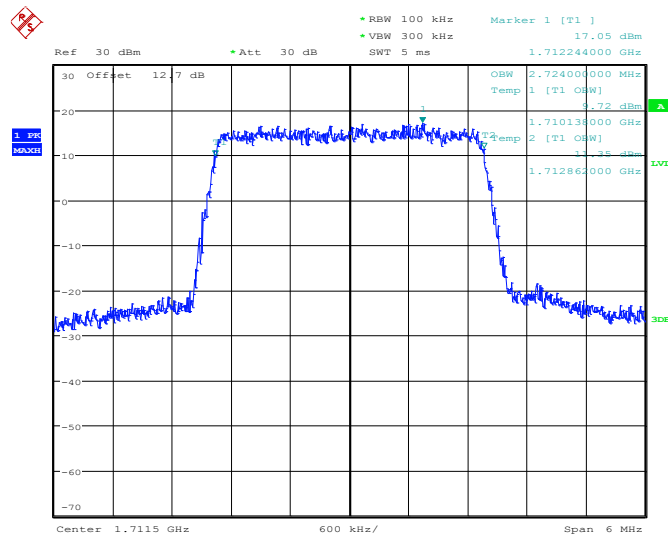


Date: 25.MAR.2014 09:48:41



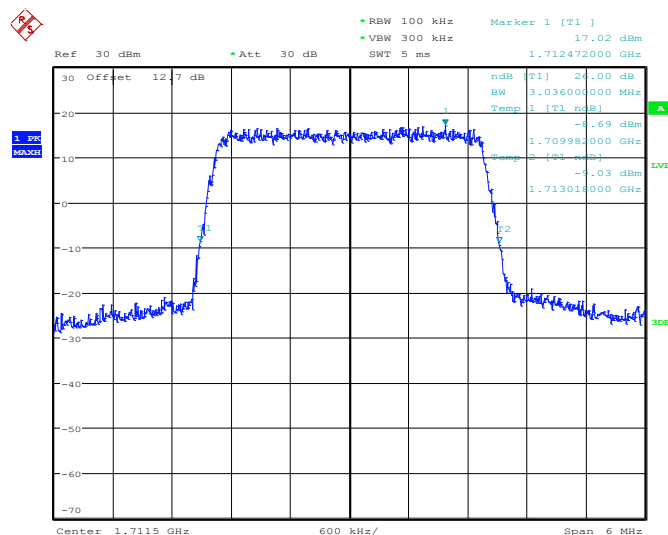
Band :	LTE Band 4	BW / Mod. :	3MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 19965



Date: 25.MAR.2014 09:55:00

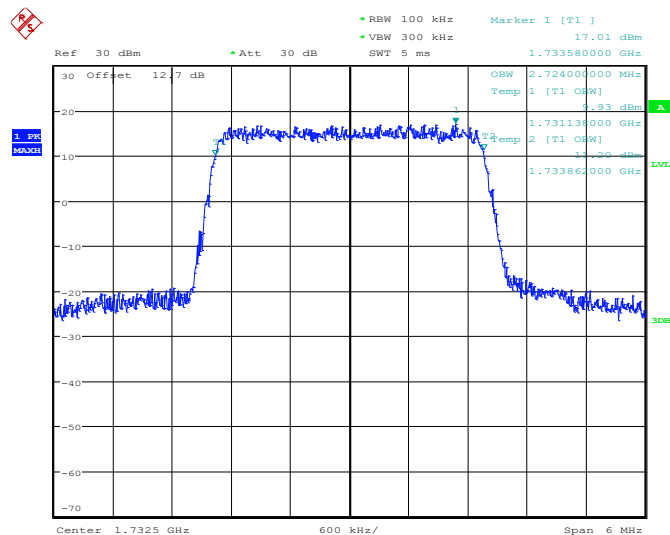
26dB Bandwidth Plot on Channel 19965



Date: 25.MAR.2014 09:55:32

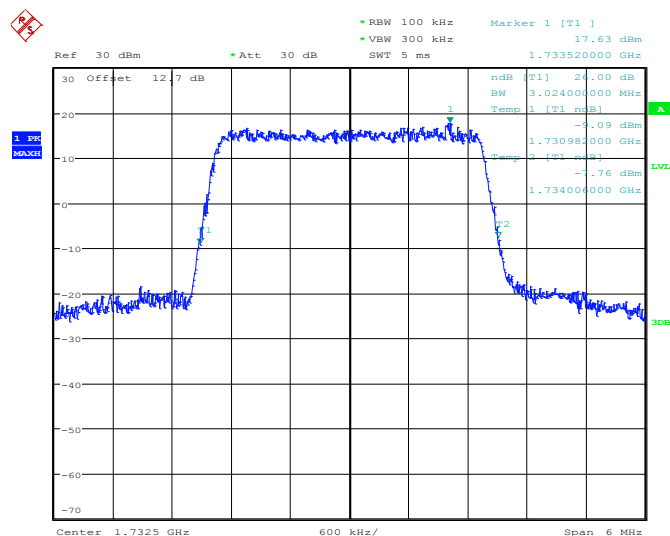


99% Occupied Bandwidth Plot on Channel 20175



Date: 25.MAR.2014 10:01:09

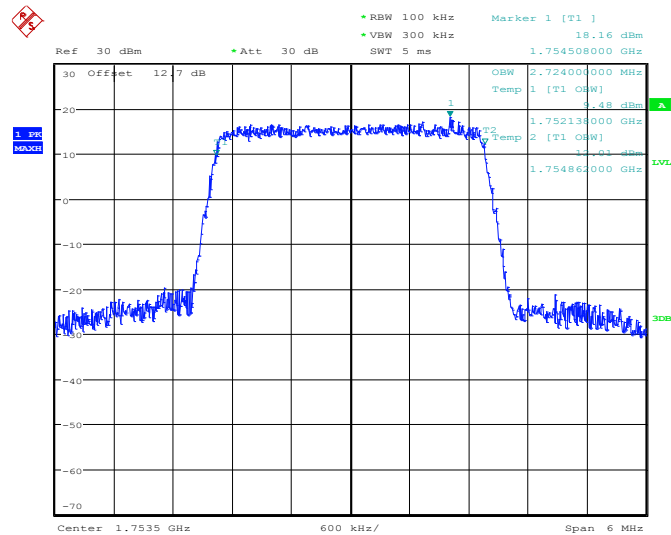
26dB Bandwidth Plot on Channel 20175



Date: 25.MAR.2014 10:01:42

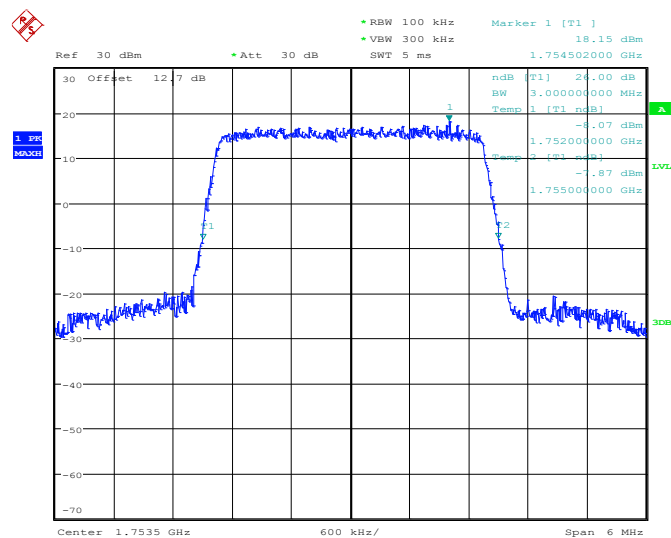


99% Occupied Bandwidth Plot on Channel 20385



Date: 25.MAR.2014 10:04:13

26dB Bandwidth Plot on Channel 20385

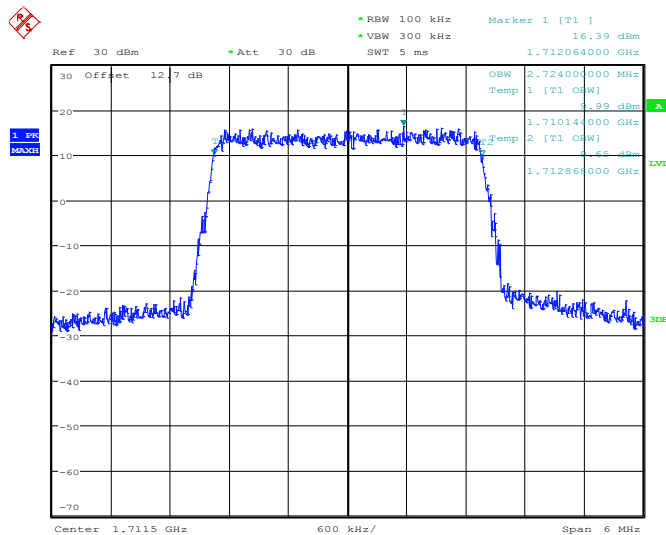


Date: 25.MAR.2014 10:04:46



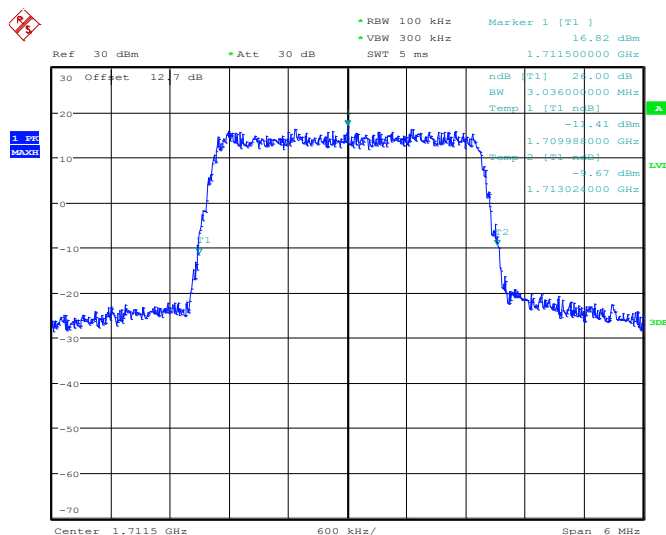
Band :	LTE Band 4	BW / Mod. :	3MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 19965

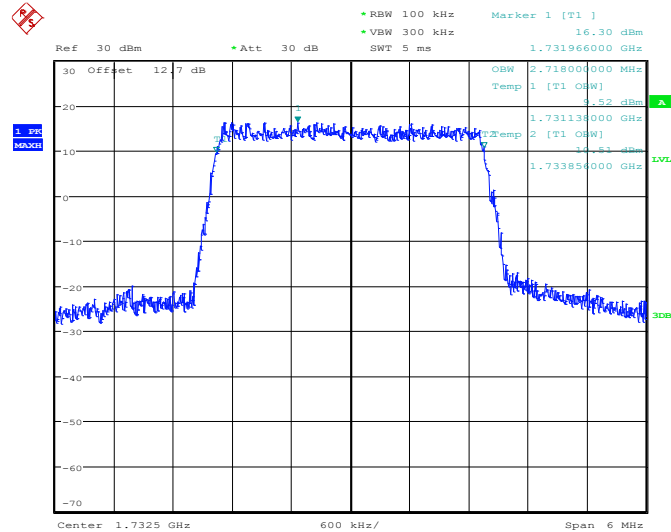


Date: 25.MAR.2014 09:55:15

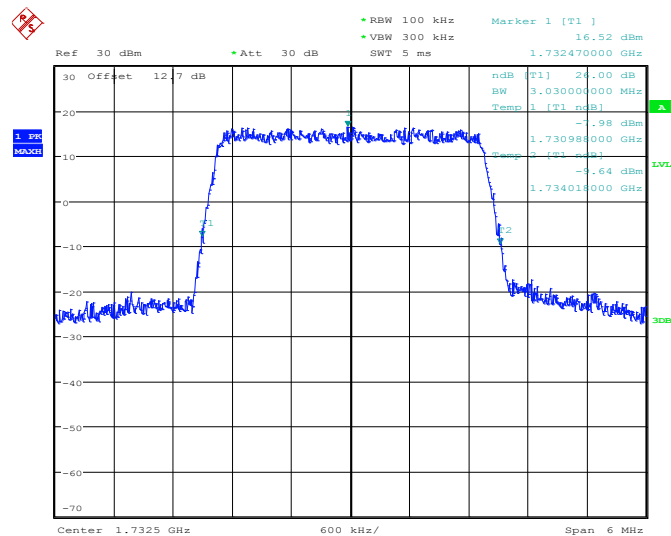
26dB Bandwidth Plot on Channel 19965



Date: 25.MAR.2014 09:55:49

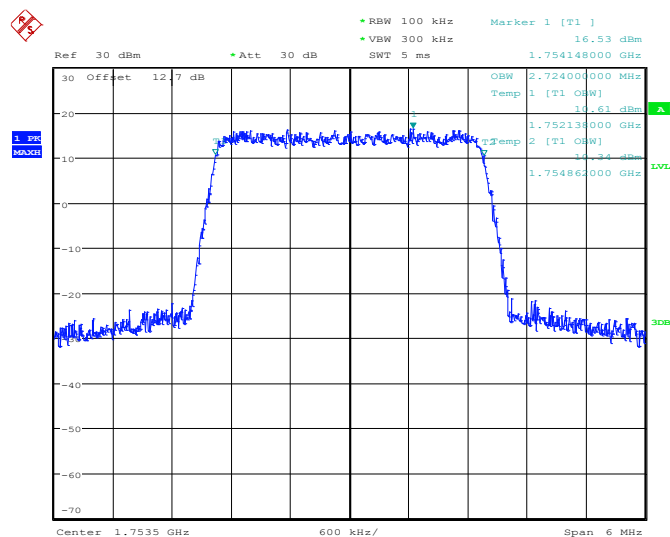
99% Occupied Bandwidth Plot on Channel 20175


Date: 25.MAR.2014 10:01:25

26dB Bandwidth Plot on Channel 20175


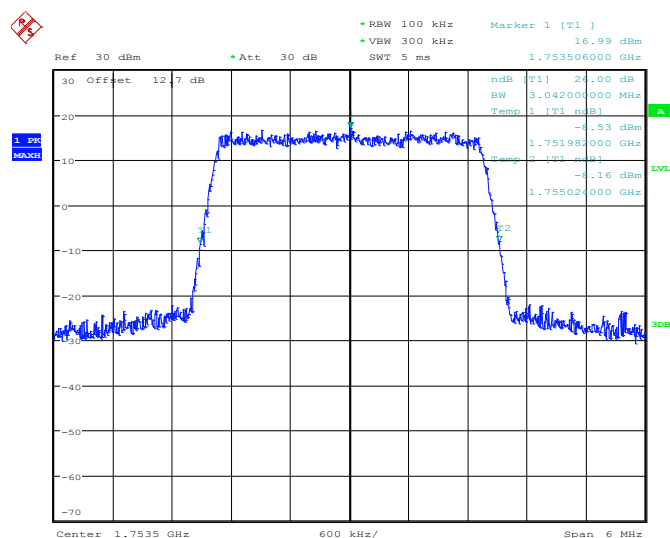
Date: 25.MAR.2014 10:01:59

99% Occupied Bandwidth Plot on Channel 20385



Date: 25.MAR.2014 10:04:29

26dB Bandwidth Plot on Channel 20385

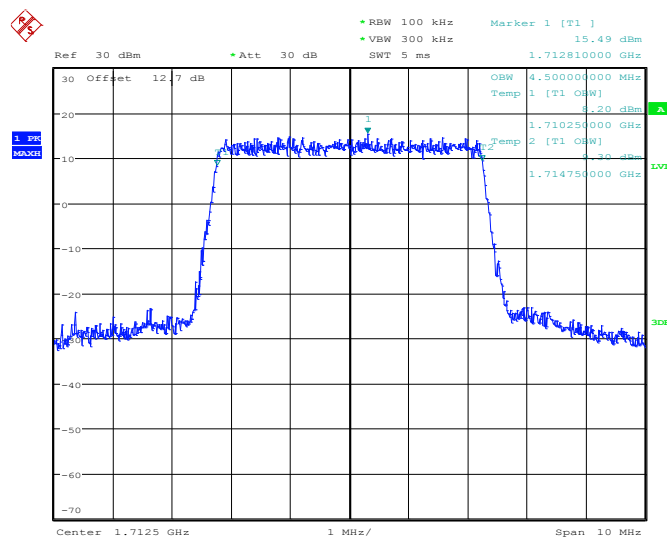


Date: 25.MAR.2014 10:05:03



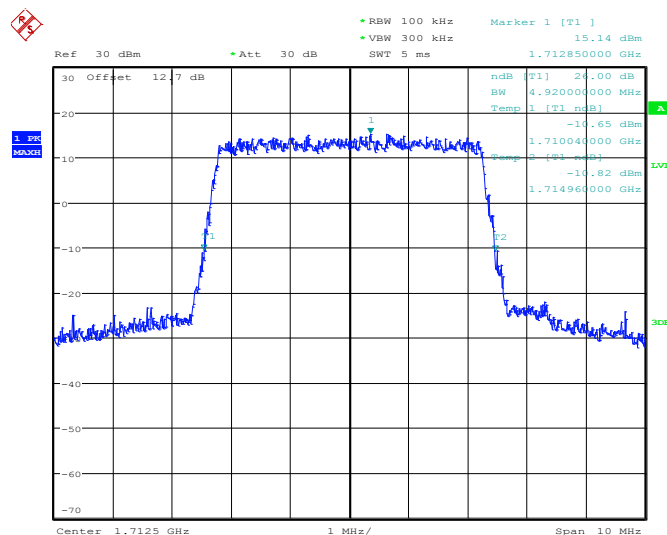
Band :	LTE Band 4	BW / Mod. :	5MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 19975

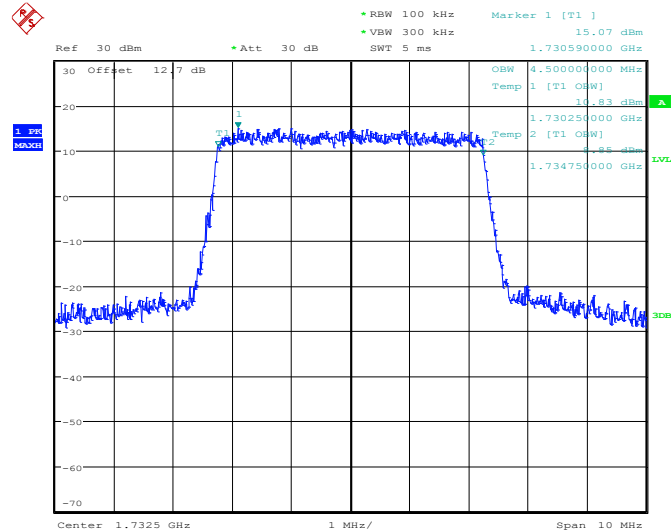


Date: 25.MAR.2014 10:10:24

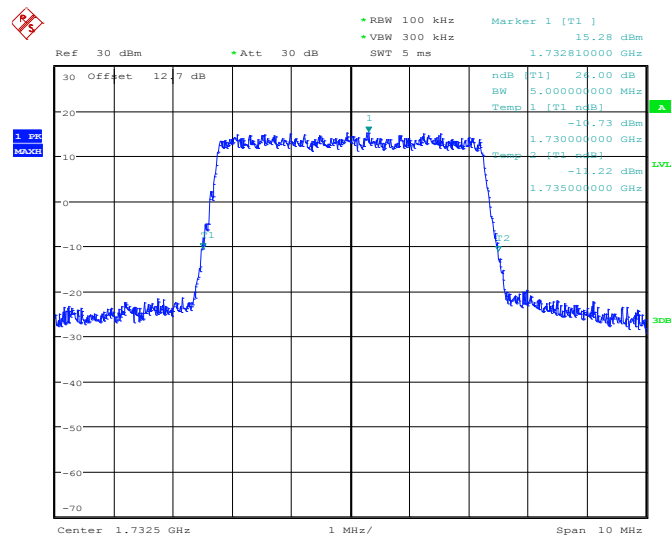
26dB Bandwidth Plot on Channel 19975



Date: 25.MAR.2014 10:10:57

99% Occupied Bandwidth Plot on Channel 20175


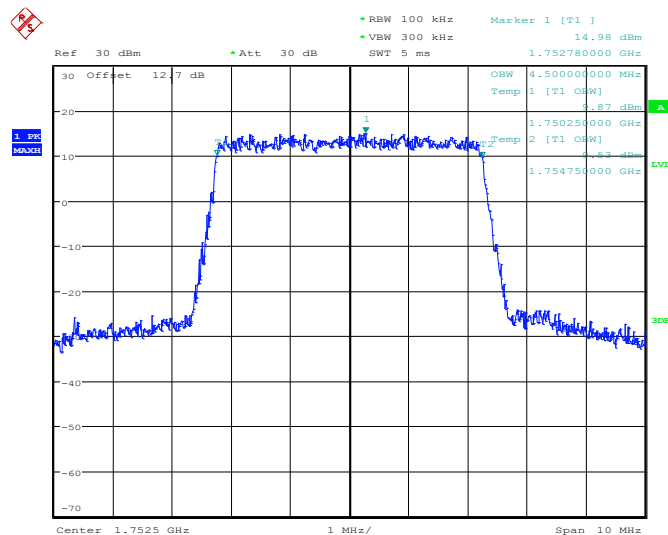
Date: 25.MAR.2014 10:16:34

26dB Bandwidth Plot on Channel 20175


Date: 25.MAR.2014 10:17:07

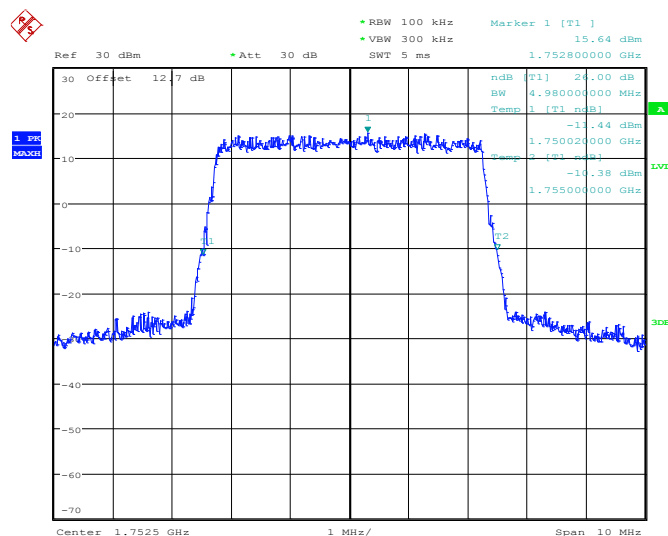


99% Occupied Bandwidth Plot on Channel 20375



Date: 25.MAR.2014 10:19:38

26dB Bandwidth Plot on Channel 20375

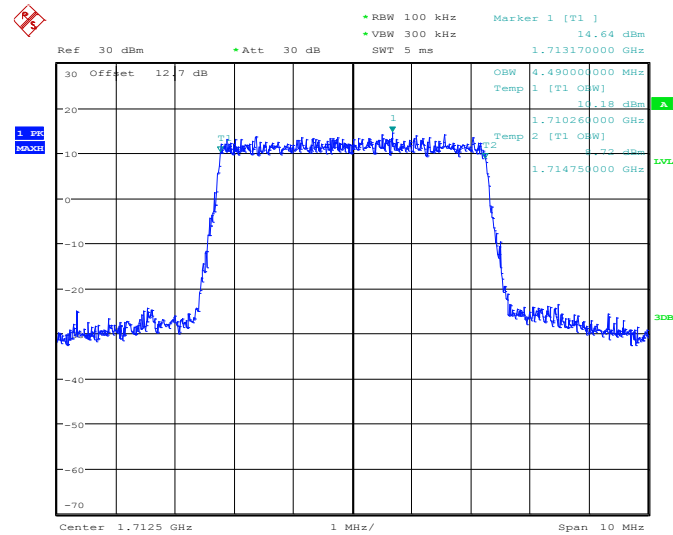


Date: 25.MAR.2014 10:20:11



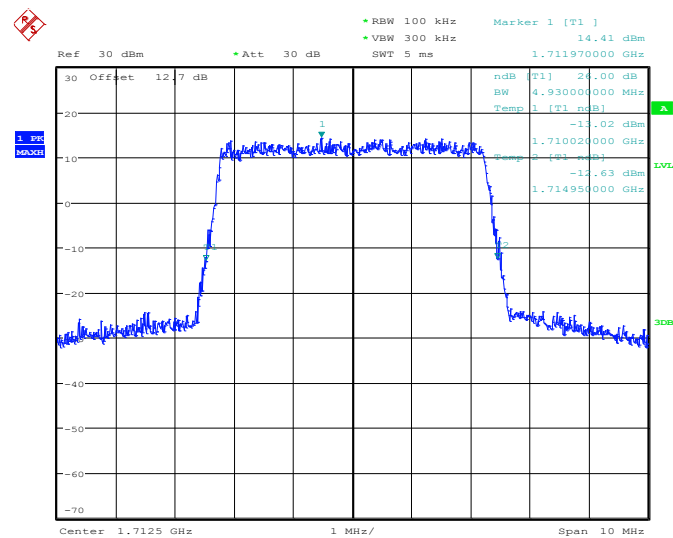
Band :	LTE Band 4	BW / Mod. :	5MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 19975



Date: 25.MAR.2014 10:10:40

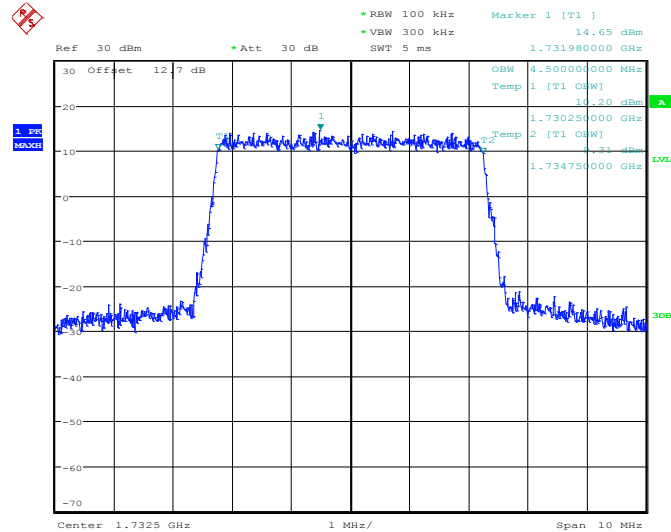
26dB Bandwidth Plot on Channel 19975



Date: 25.MAR.2014 10:11:14

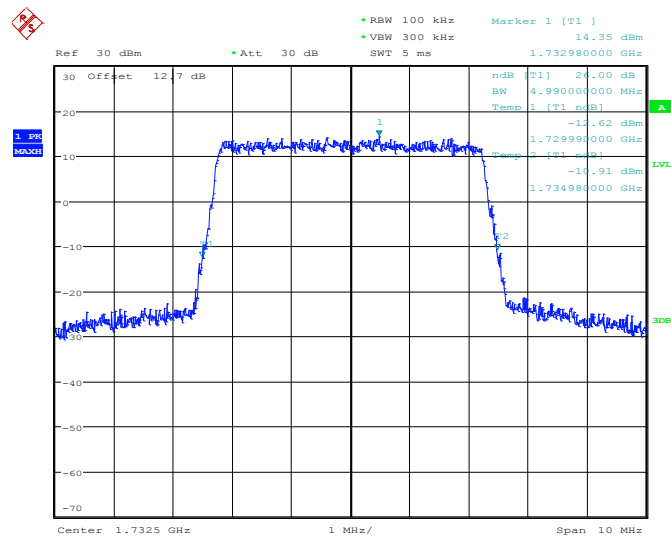


99% Occupied Bandwidth Plot on Channel 20175



Date: 25.MAR.2014 10:16:49

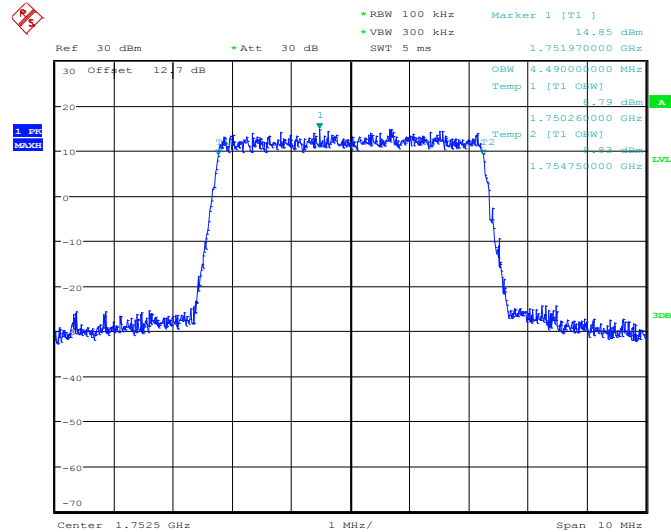
26dB Bandwidth Plot on Channel 20175



Date: 25.MAR.2014 10:17:24

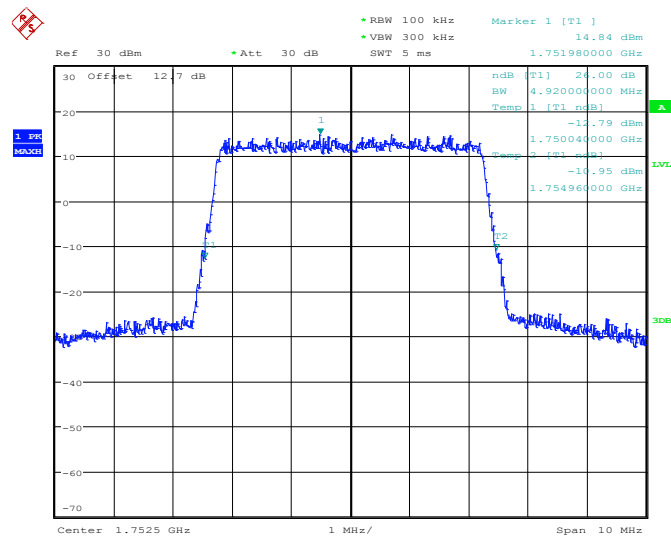


99% Occupied Bandwidth Plot on Channel 20375



Date: 25.MAR.2014 10:19:54

26dB Bandwidth Plot on Channel 20375

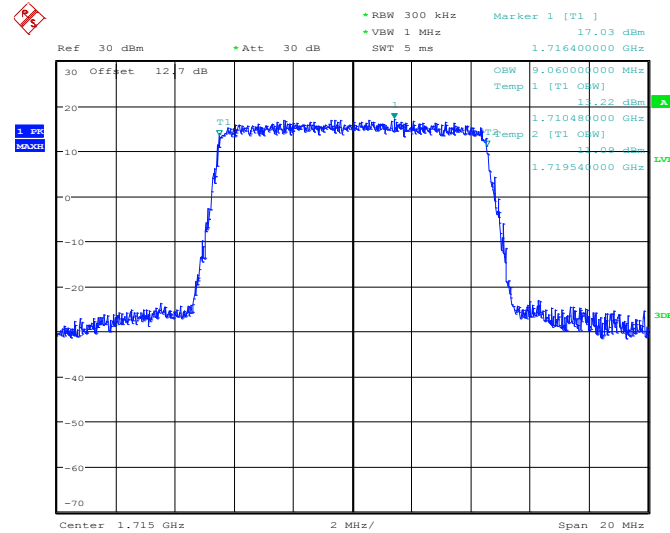


Date: 25.MAR.2014 10:20:28



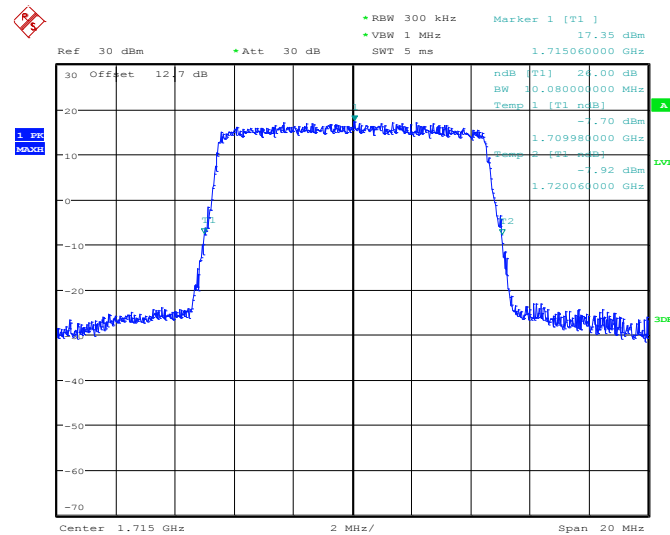
Band :	LTE Band 4	BW / Mod. :	10MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 20000

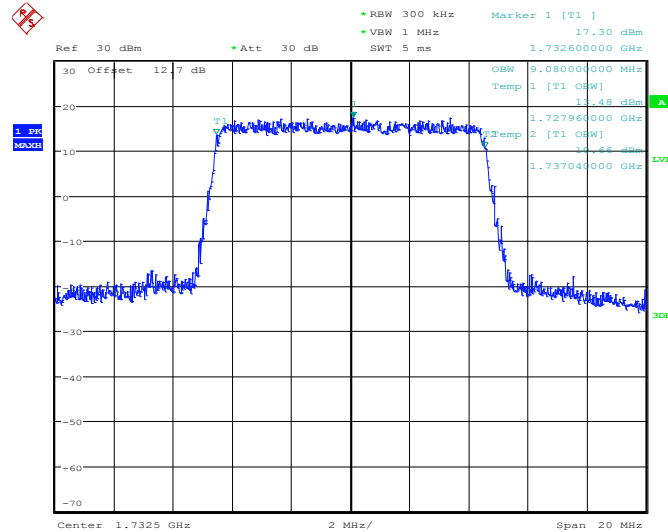


Date: 25.MAR.2014 10:25:49

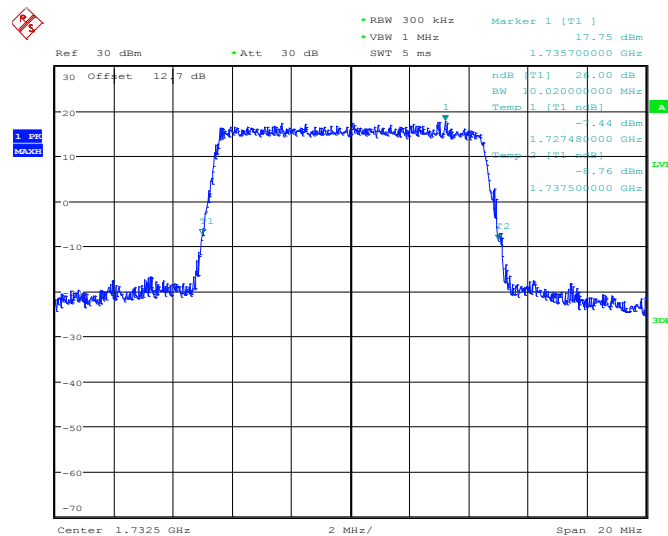
26dB Bandwidth Plot on Channel 20000



Date: 25.MAR.2014 10:26:21

99% Occupied Bandwidth Plot on Channel 20175


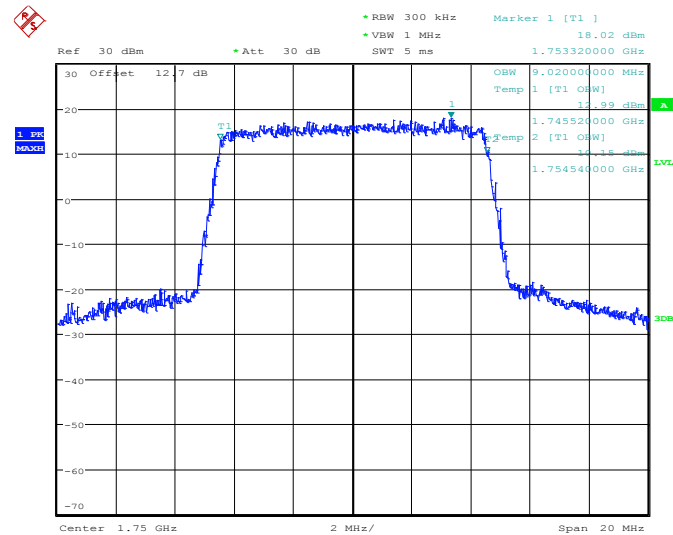
Date: 25.MAR.2014 10:31:59

26dB Bandwidth Plot on Channel 20175


Date: 25.MAR.2014 10:32:32

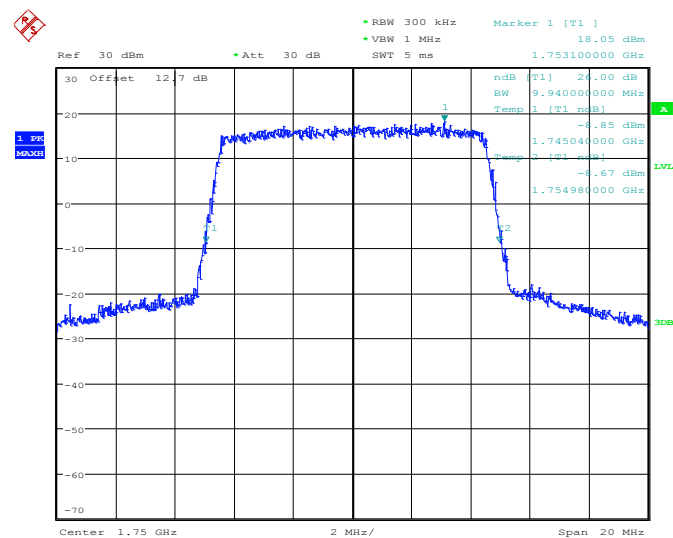


99% Occupied Bandwidth Plot on Channel 20350



Date: 25.MAR.2014 10:35:03

26dB Bandwidth Plot on Channel 20350

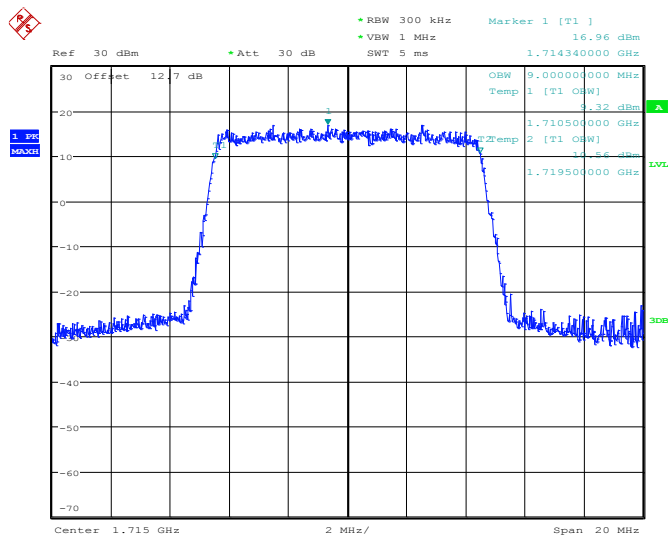


Date: 25.MAR.2014 10:35:36



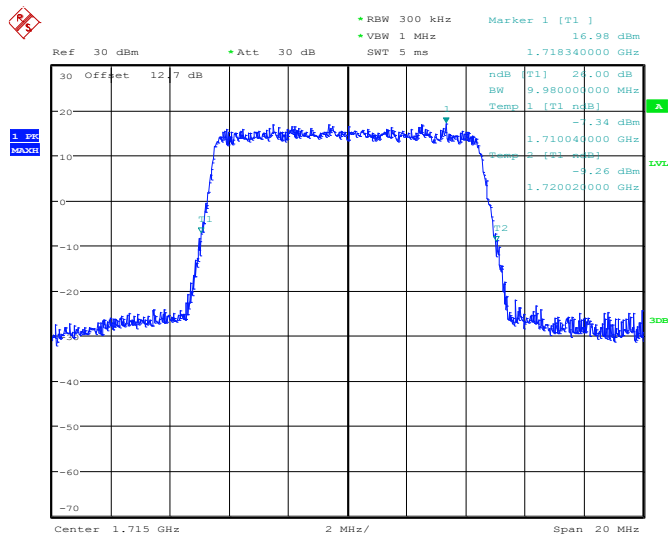
Band :	LTE Band 4	BW / Mod. :	10MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 20000



Date: 25.MAR.2014 10:26:04

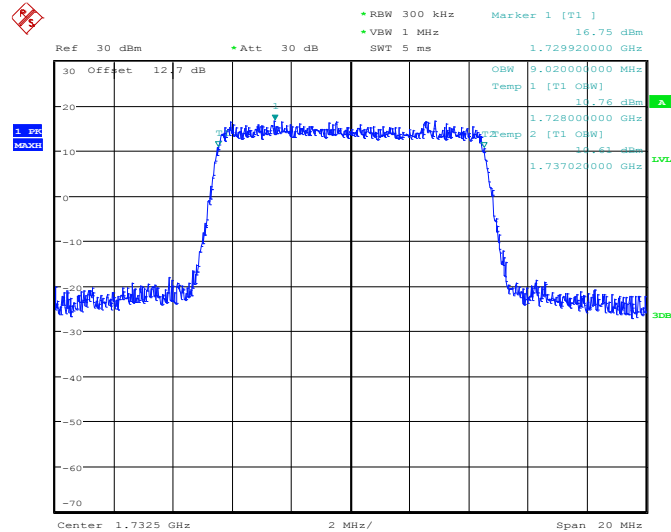
26dB Bandwidth Plot on Channel 20000



Date: 25.MAR.2014 10:26:38

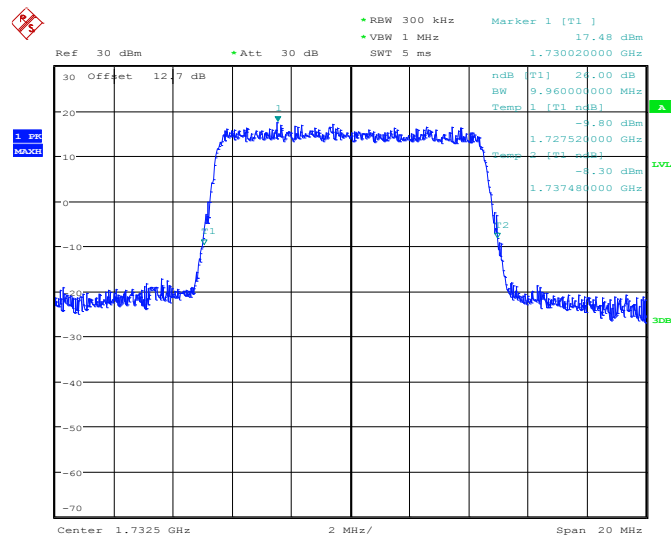


99% Occupied Bandwidth Plot on Channel 20175



Date: 25.MAR.2014 10:32:14

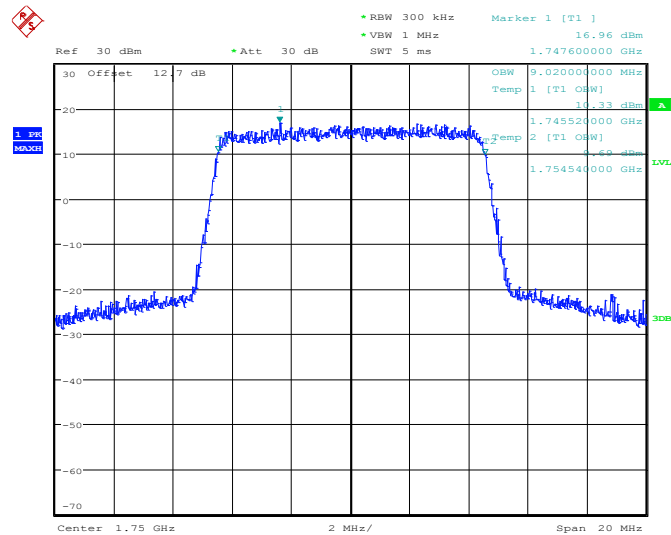
26dB Bandwidth Plot on Channel 20175



Date: 25.MAR.2014 10:32:49

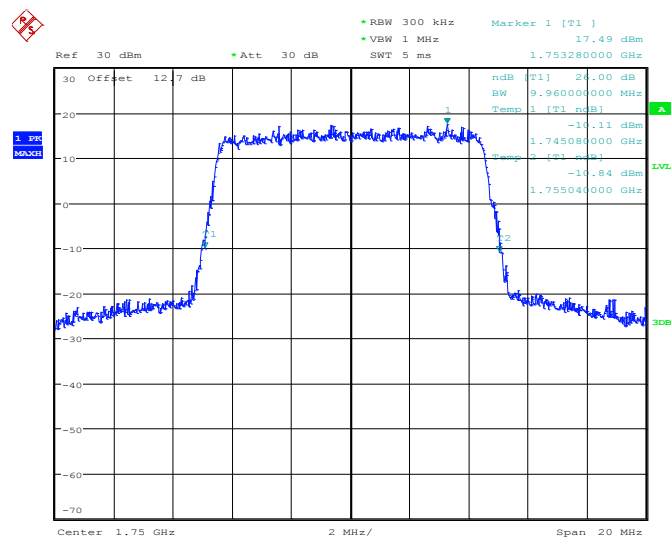


99% Occupied Bandwidth Plot on Channel 20350



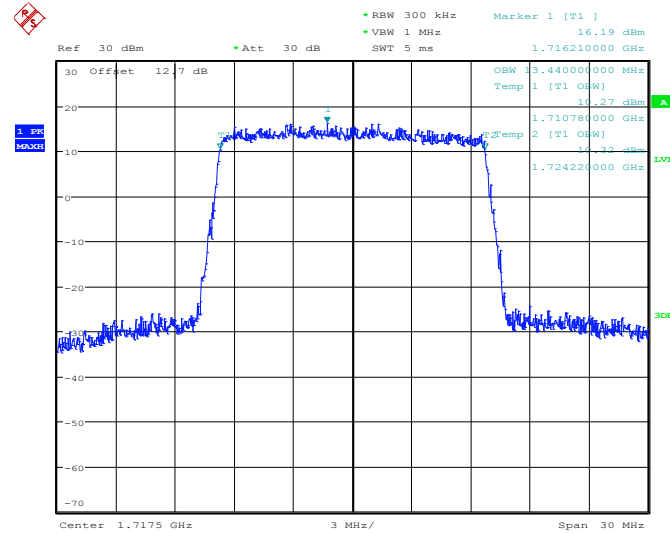
Date: 25.MAR.2014 10:35:19

26dB Bandwidth Plot on Channel 20350

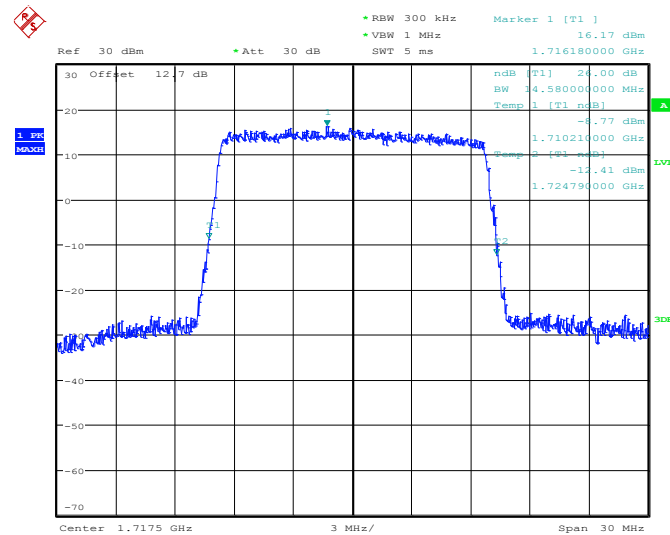


Date: 25.MAR.2014 10:35:53

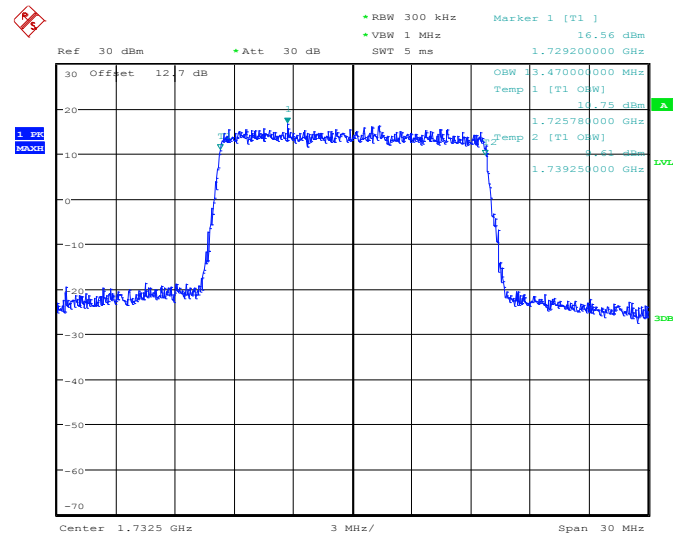
Band :	LTE Band 4	BW / Mod. :	15MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 20025


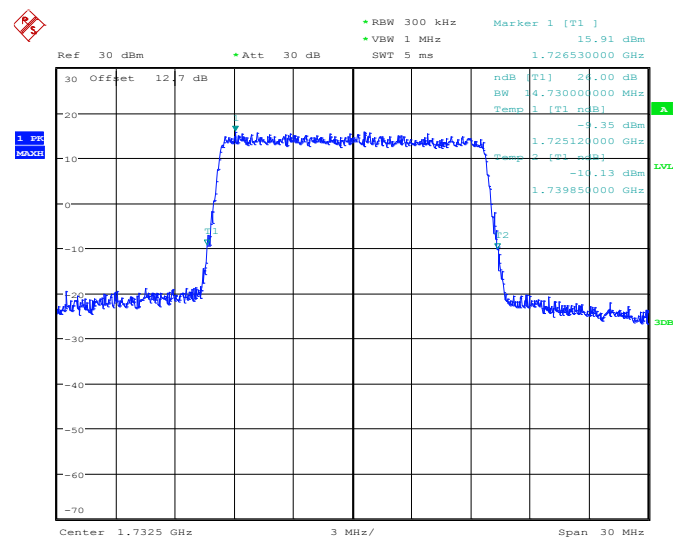
Date: 25.MAR.2014 10:41:13

26dB Bandwidth Plot on Channel 20025


Date: 25.MAR.2014 10:41:45

99% Occupied Bandwidth Plot on Channel 20175


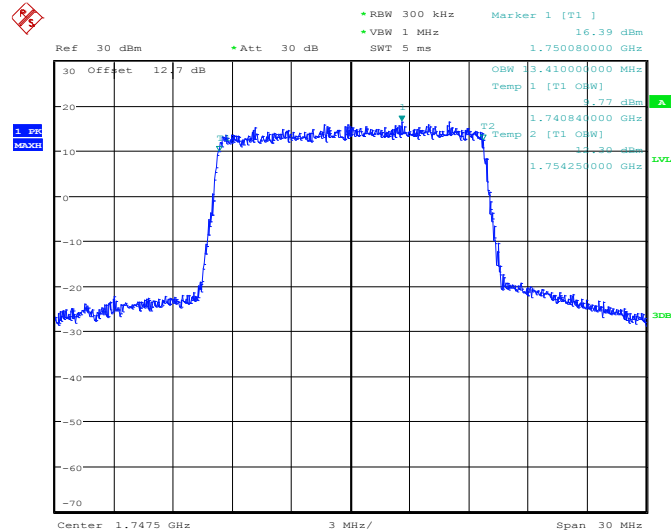
Date: 25.MAR.2014 10:48:00

26dB Bandwidth Plot on Channel 20175


Date: 25.MAR.2014 10:48:33

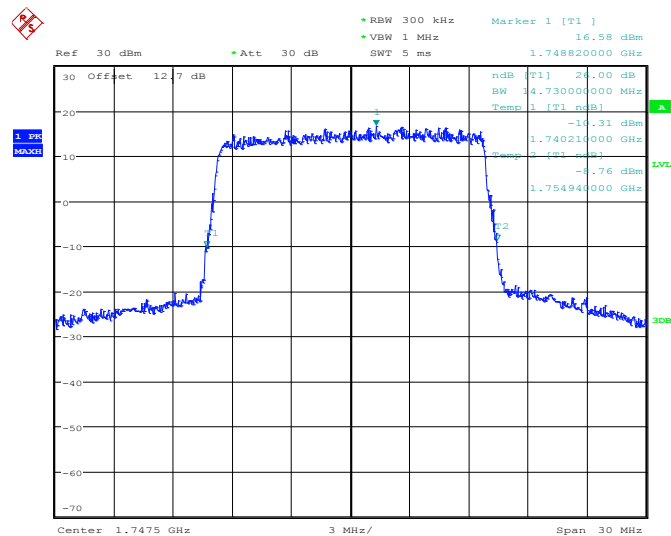


99% Occupied Bandwidth Plot on Channel 20325



Date: 25.MAR.2014 10:51:04

26dB Bandwidth Plot on Channel 20325

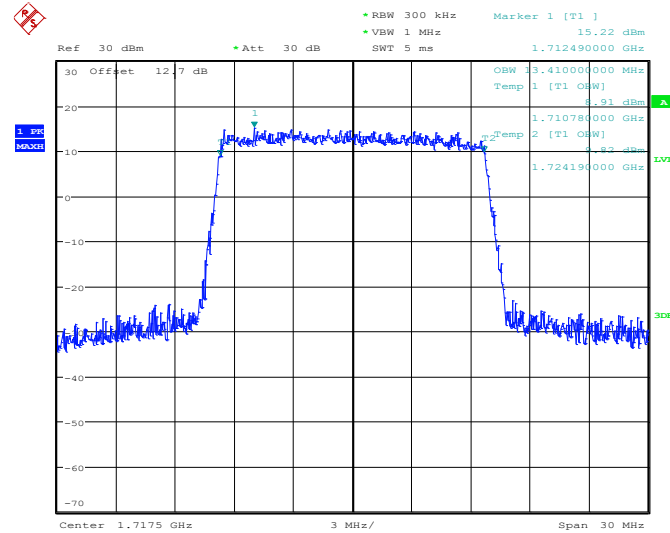


Date: 25.MAR.2014 10:51:37



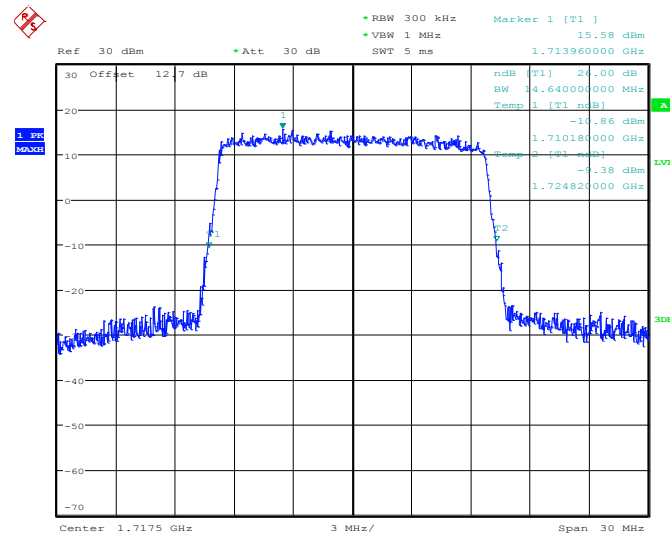
Band :	LTE Band 4	BW / Mod. :	15MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 20025



Date: 25.MAR.2014 10:41:28

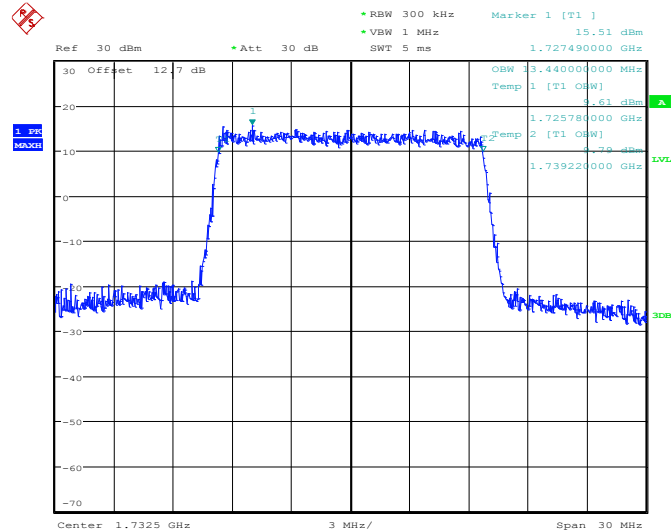
26dB Bandwidth Plot on Channel 20025



Date: 25.MAR.2014 10:42:02

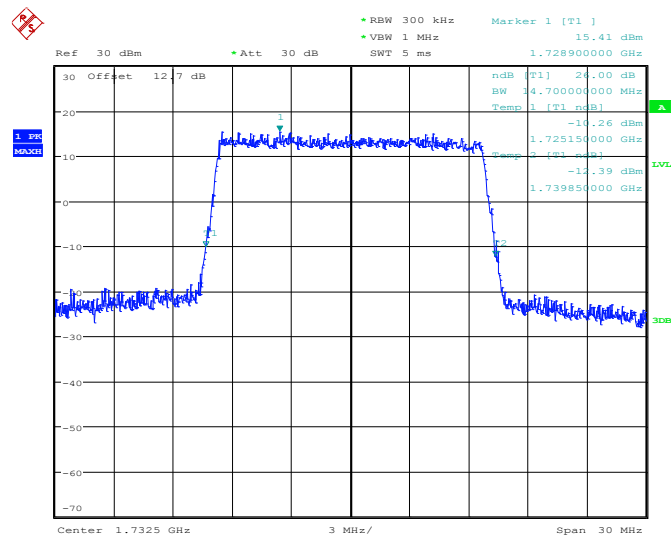


99% Occupied Bandwidth Plot on Channel 20175



Date: 25.MAR.2014 10:48:16

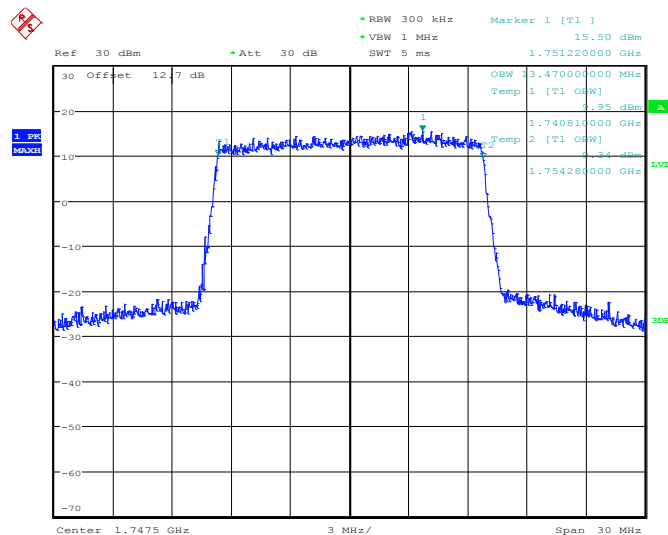
26dB Bandwidth Plot on Channel 20175



Date: 25.MAR.2014 10:48:50

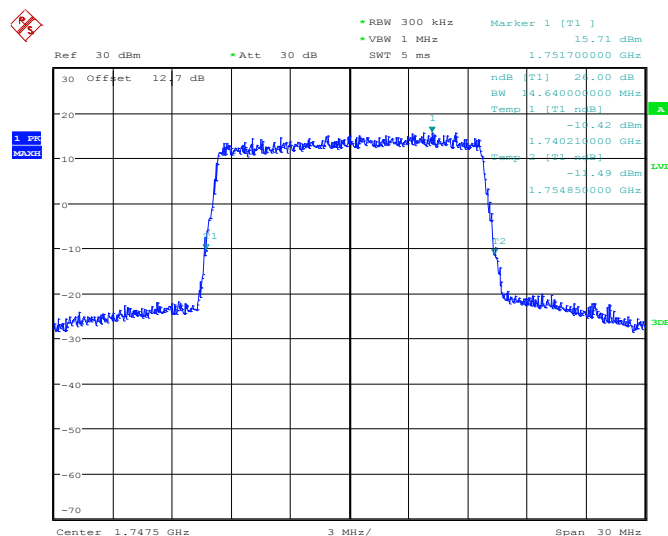


99% Occupied Bandwidth Plot on Channel 20325



Date: 25.MAR.2014 10:51:19

26dB Bandwidth Plot on Channel 20325

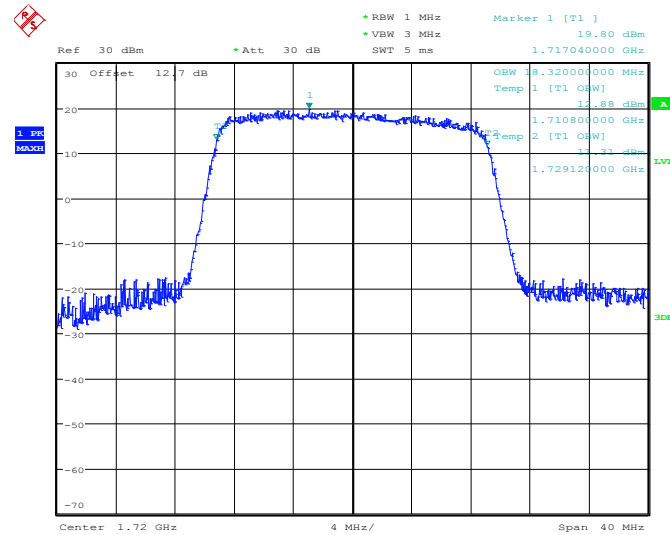


Date: 25.MAR.2014 10:51:54



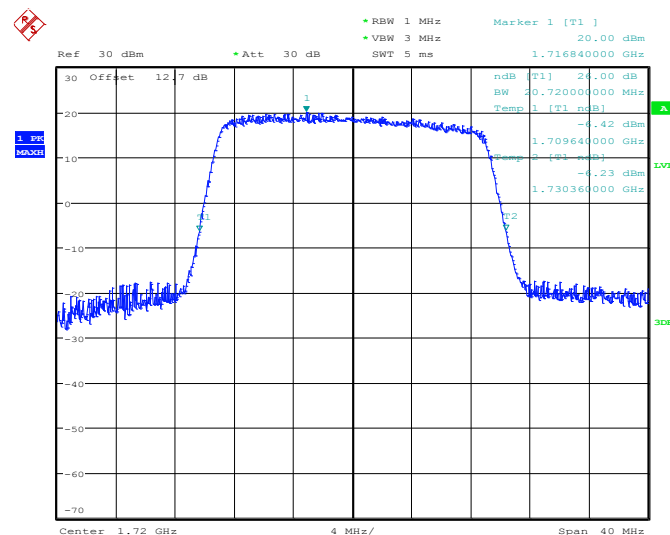
Band :	LTE Band 4	BW / Mod. :	20MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 20050



Date: 25.MAR.2014 10:57:14

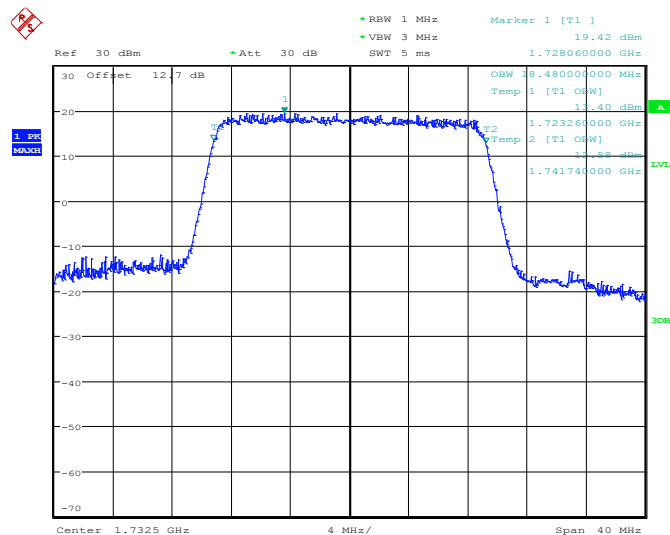
26dB Bandwidth Plot on Channel 20050



Date: 25.MAR.2014 10:57:47

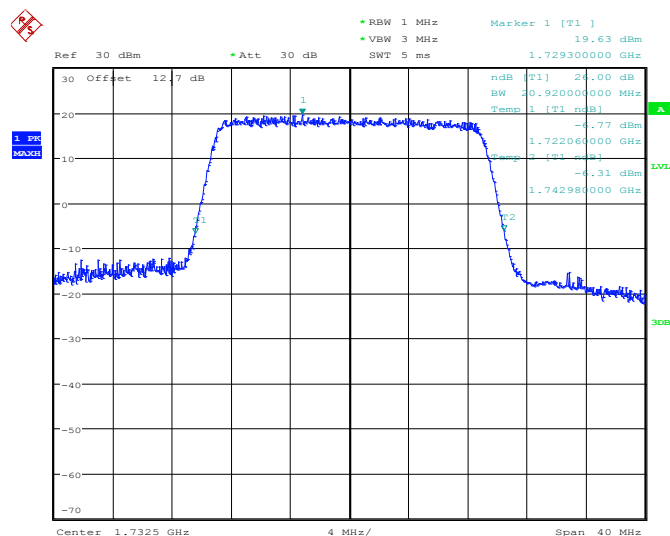


99% Occupied Bandwidth Plot on Channel 20175



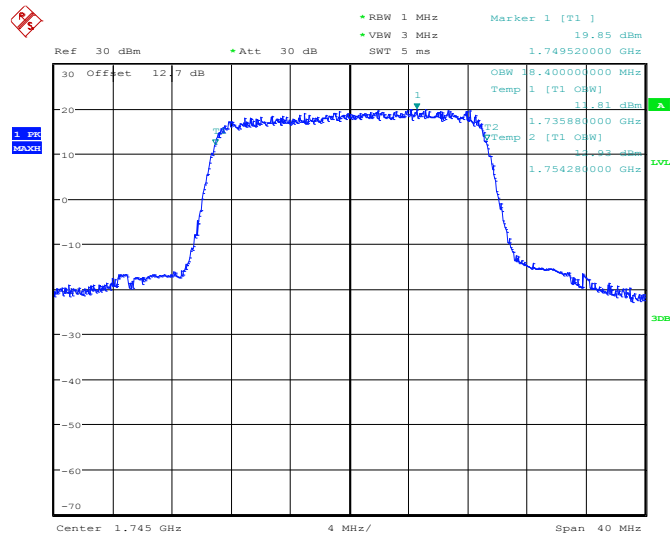
Date: 25.MAR.2014 11:03:24

26dB Bandwidth Plot on Channel 20175



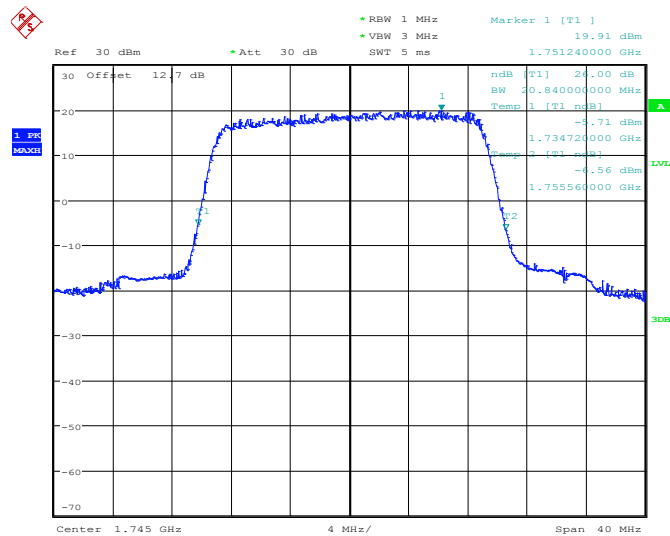
Date: 25.MAR.2014 11:03:57

99% Occupied Bandwidth Plot on Channel 20300



Date: 25.MAR.2014 11:06:28

26dB Bandwidth Plot on Channel 20300

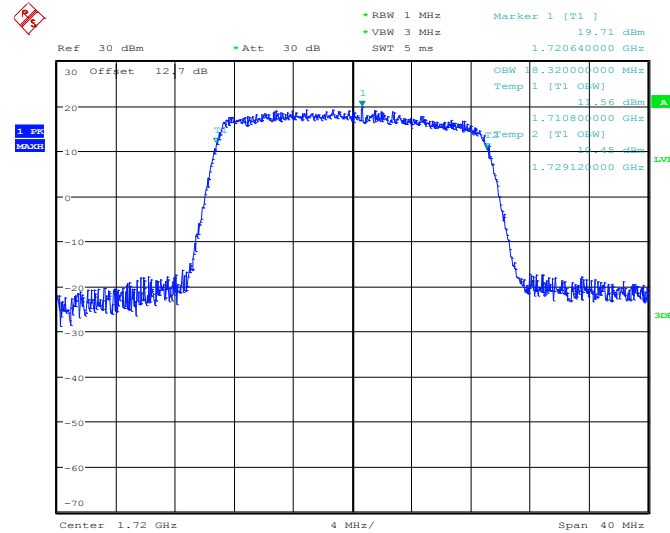


Date: 25.MAR.2014 11:07:00



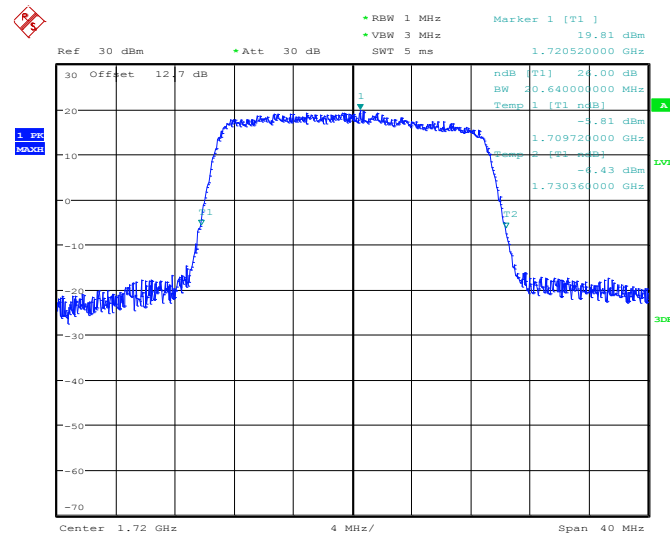
Band :	LTE Band 4	BW / Mod. :	20MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 20050



Date: 25.MAR.2014 10:57:30

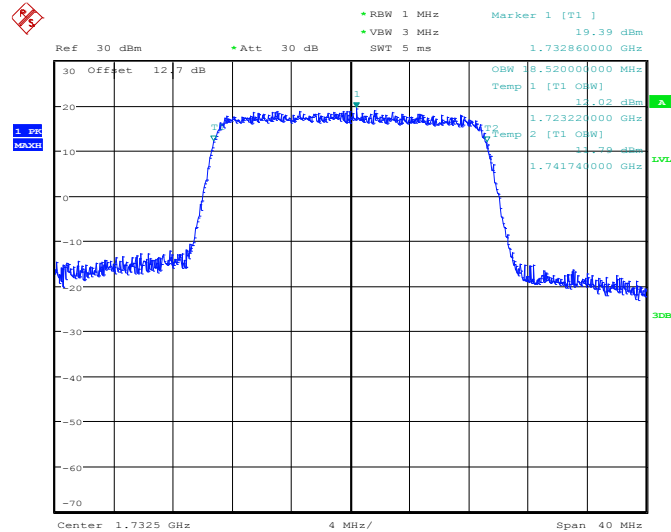
26dB Bandwidth Plot on Channel 20050



Date: 25.MAR.2014 10:58:04

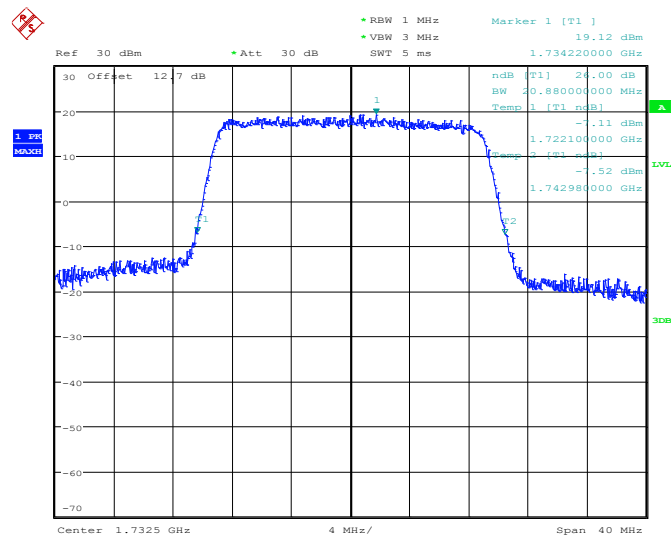


99% Occupied Bandwidth Plot on Channel 20175



Date: 25.MAR.2014 11:03:40

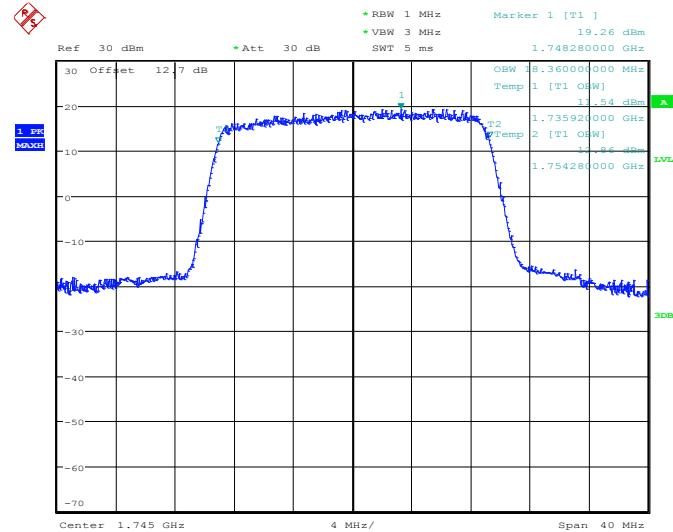
26dB Bandwidth Plot on Channel 20175



Date: 25.MAR.2014 11:04:14

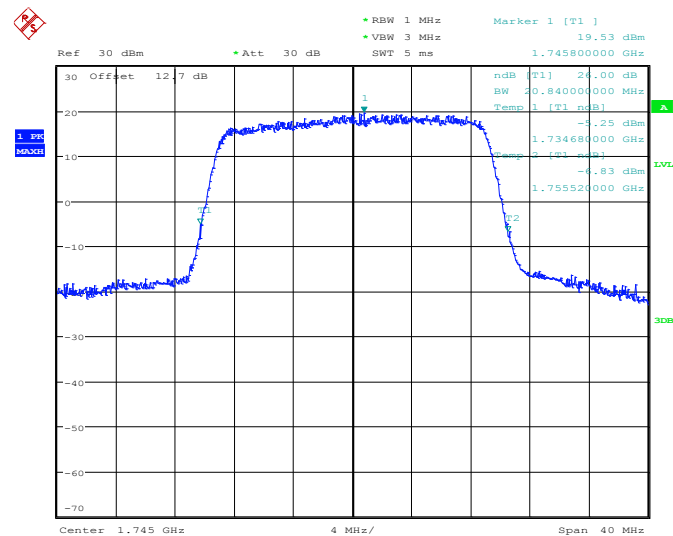


99% Occupied Bandwidth Plot on Channel 20300



Date: 25.MAR.2014 11:06:43

26dB Bandwidth Plot on Channel 20300

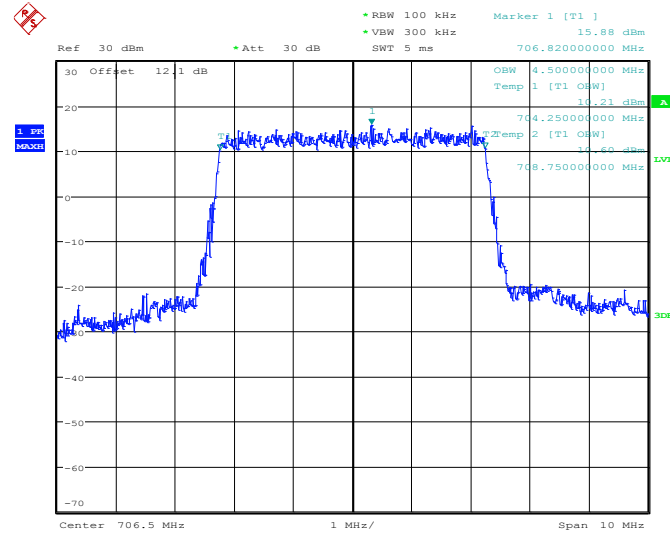


Date: 25.MAR.2014 11:07:17



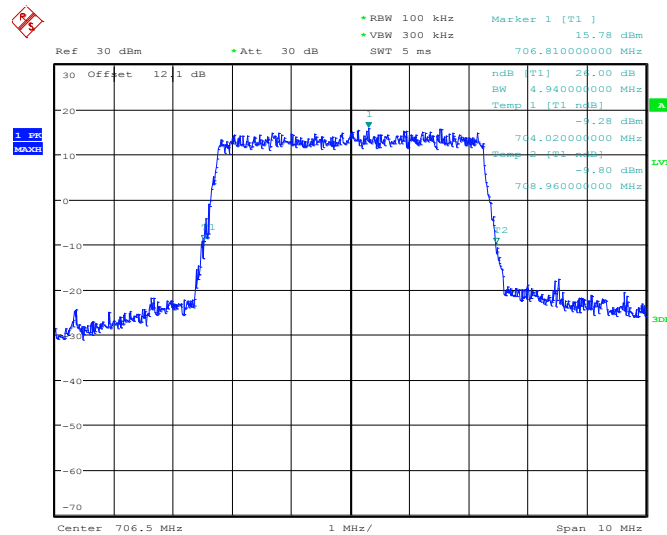
Band :	LTE Band 17	BW / Mod. :	5MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 23755



Date: 25.MAR.2014 12:49:59

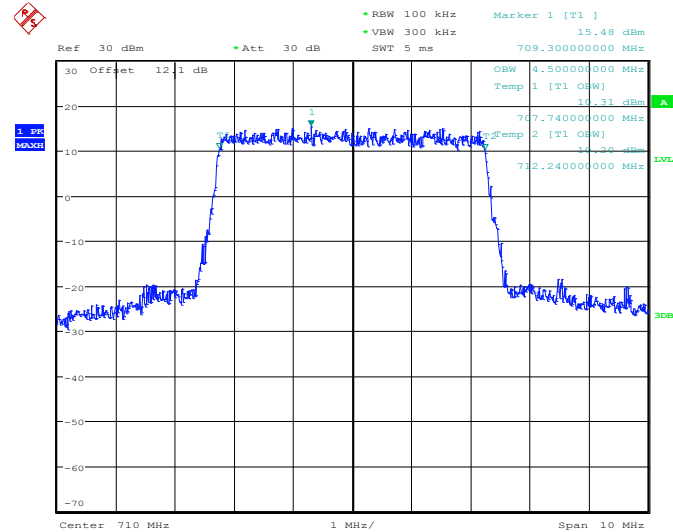
26dB Bandwidth Plot on Channel 23755



Date: 25.MAR.2014 12:50:32

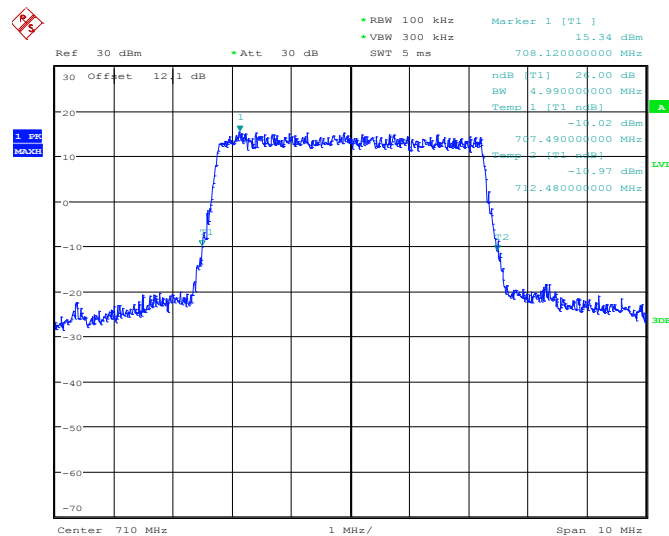


99% Occupied Bandwidth Plot on Channel 23790



Date: 25.MAR.2014 12:56:08

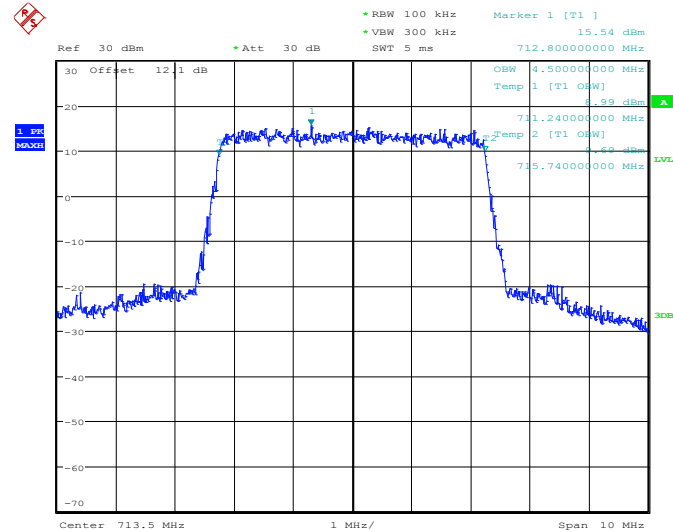
26dB Bandwidth Plot on Channel 23790



Date: 25.MAR.2014 12:56:40

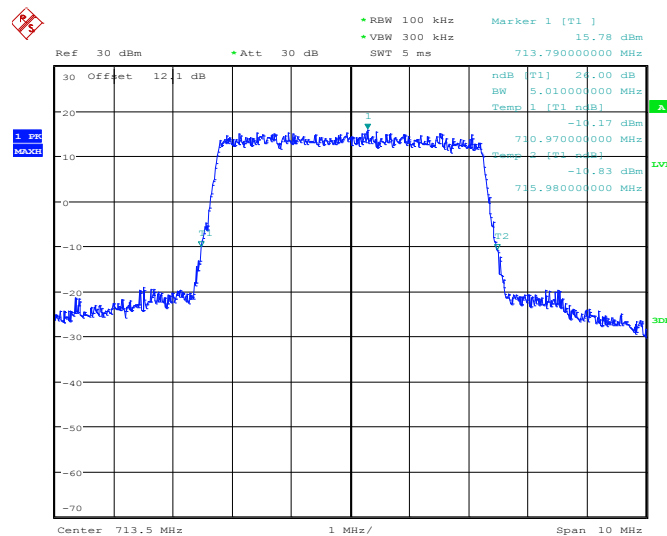


99% Occupied Bandwidth Plot on Channel 23825



Date: 25.MAR.2014 12:59:11

26dB Bandwidth Plot on Channel 23825

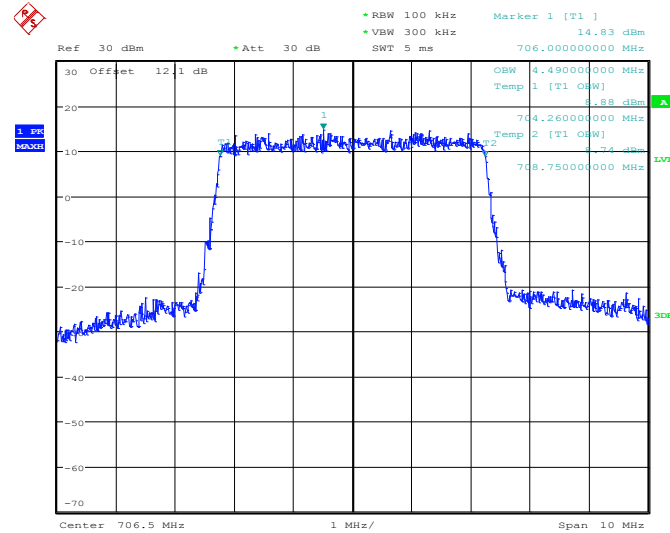


Date: 25.MAR.2014 12:59:43



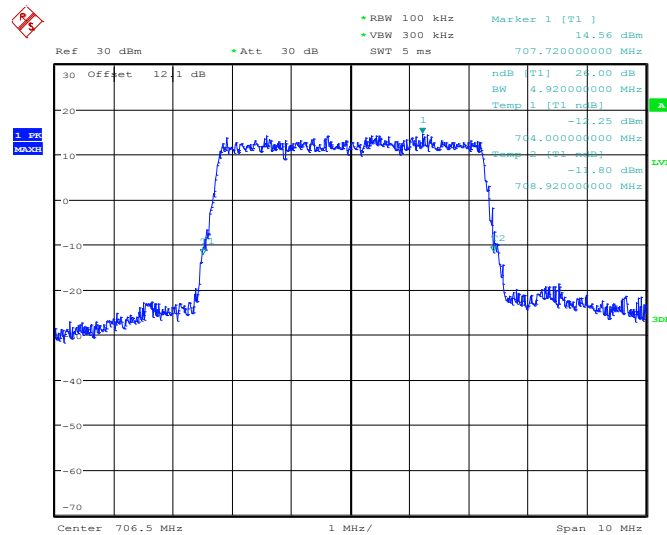
Band :	LTE Band 17	BW / Mod. :	5MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 23755



Date: 25.MAR.2014 12:50:15

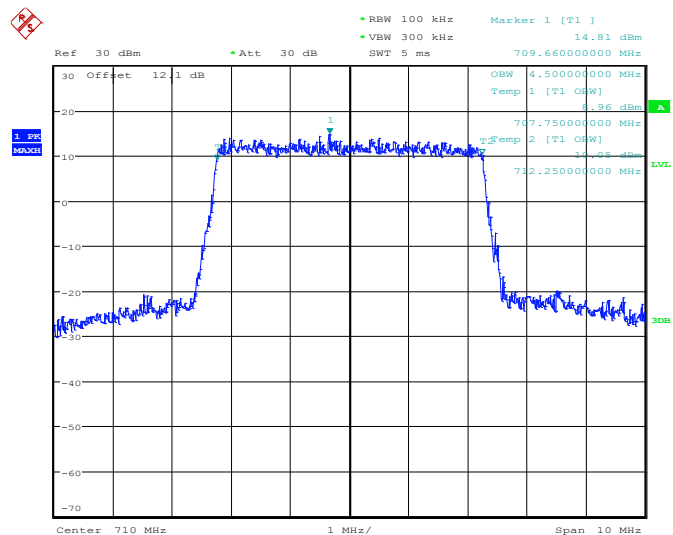
26dB Bandwidth Plot on Channel 23755



Date: 25.MAR.2014 12:50:49

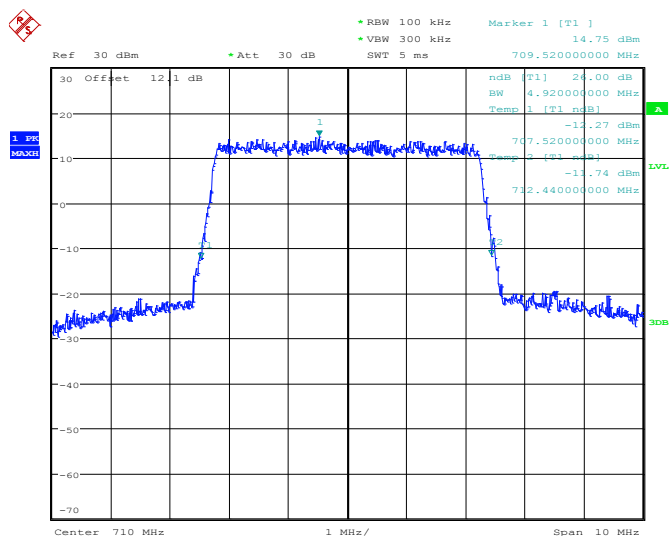


99% Occupied Bandwidth Plot on Channel 23790



Date: 25.MAR.2014 12:56:23

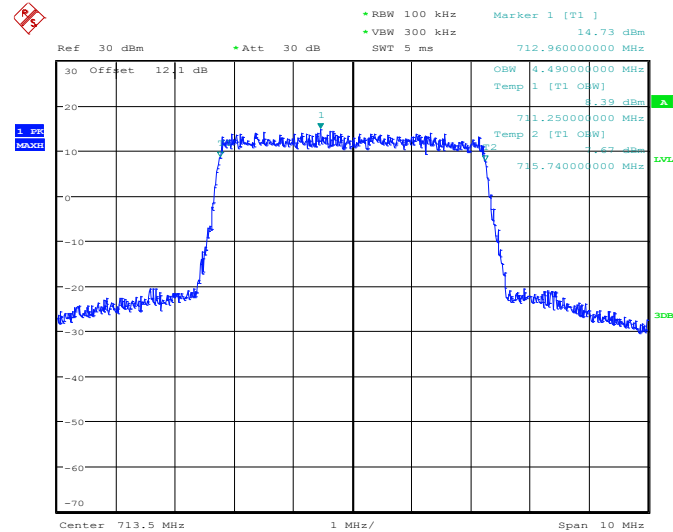
26dB Bandwidth Plot on Channel 23790



Date: 25.MAR.2014 12:56:57

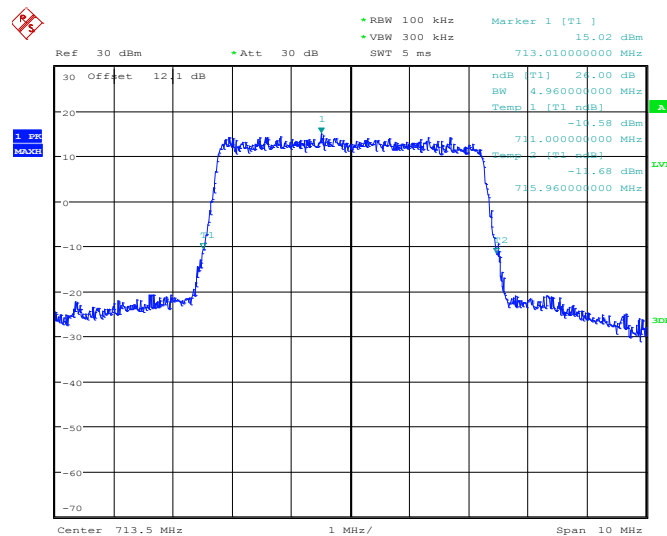


99% Occupied Bandwidth Plot on Channel 23825



Date: 25.MAR.2014 12:59:26

26dB Bandwidth Plot on Channel 23825



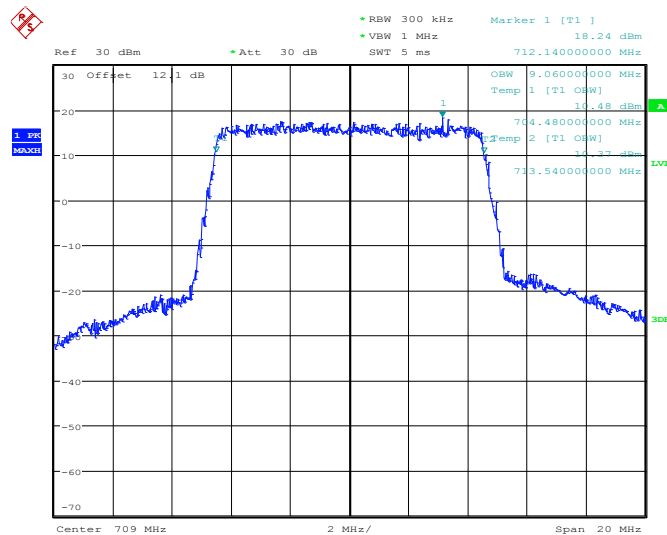
Date: 25.MAR.2014 13:00:00



Band : LTE Band 17

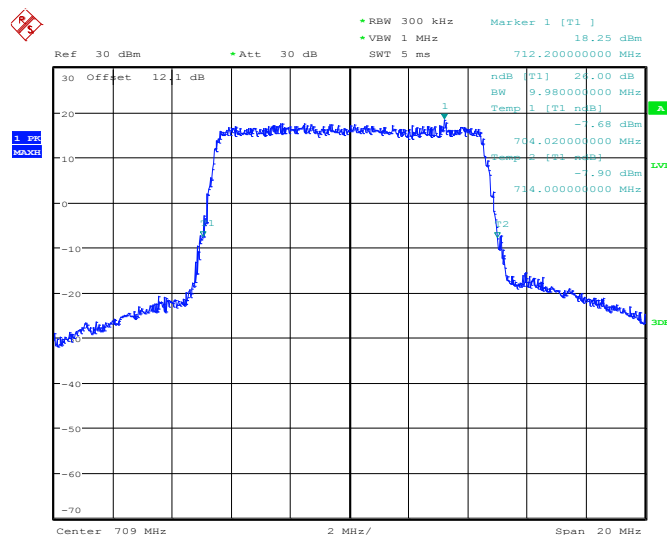
BW / Mod. : 10MHz / QPSK

99% Occupied Bandwidth Plot on Channel 23780



Date: 25.MAR.2014 13:05:19

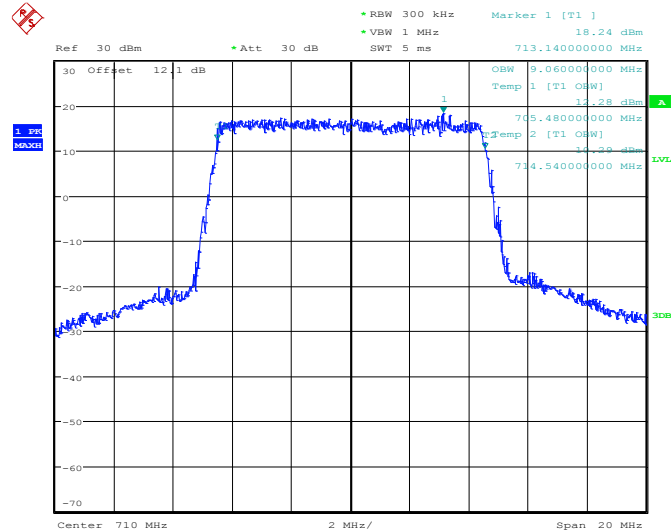
26dB Bandwidth Plot on Channel 23780



Date: 25.MAR.2014 13:05:51

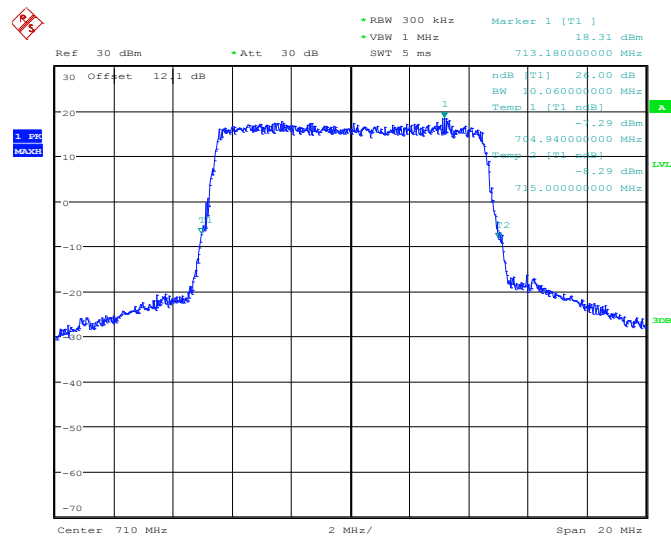


99% Occupied Bandwidth Plot on Channel 23790



Date: 25.MAR.2014 13:11:27

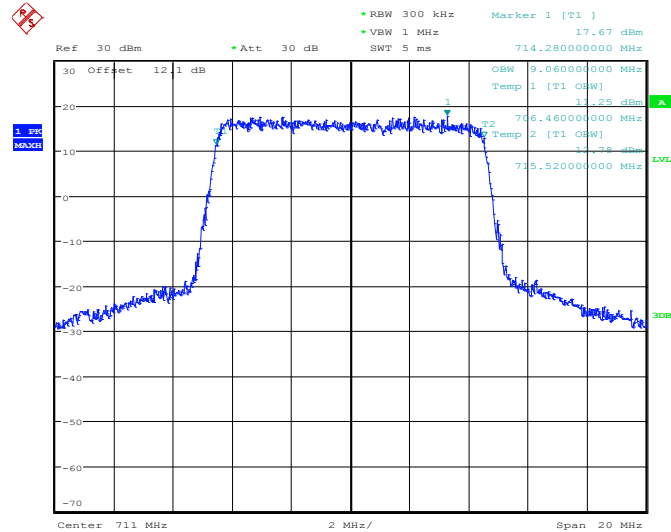
26dB Bandwidth Plot on Channel 23790



Date: 25.MAR.2014 13:11:59

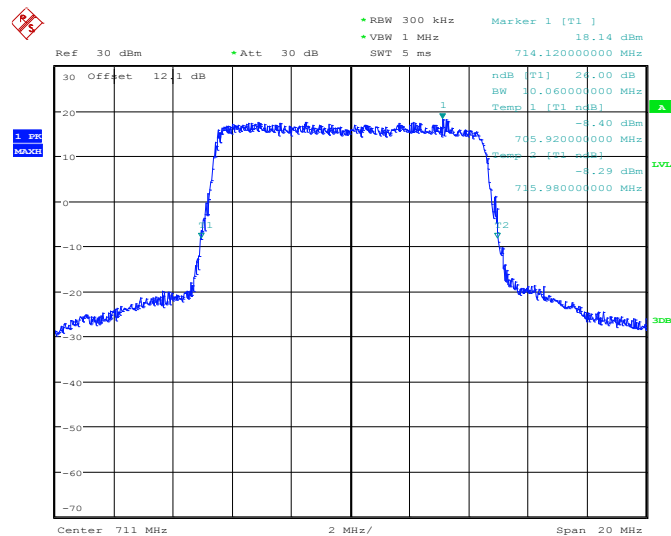


99% Occupied Bandwidth Plot on Channel 23800



Date: 25.MAR.2014 13:14:30

26dB Bandwidth Plot on Channel 23800



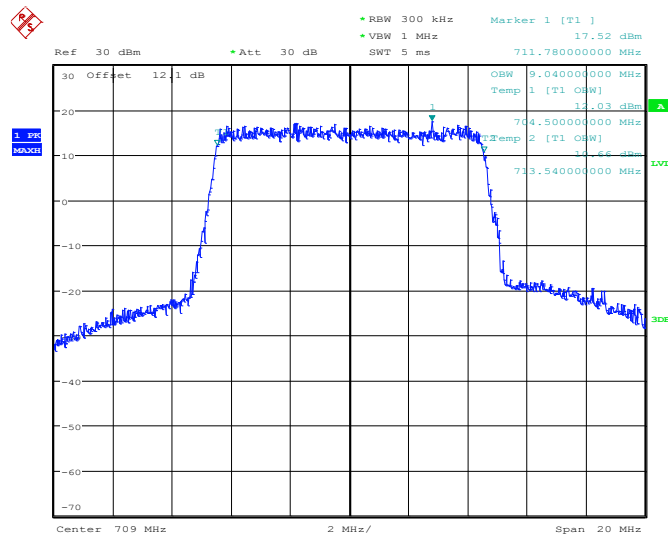
Date: 25.MAR.2014 13:15:02



Band : LTE Band 17

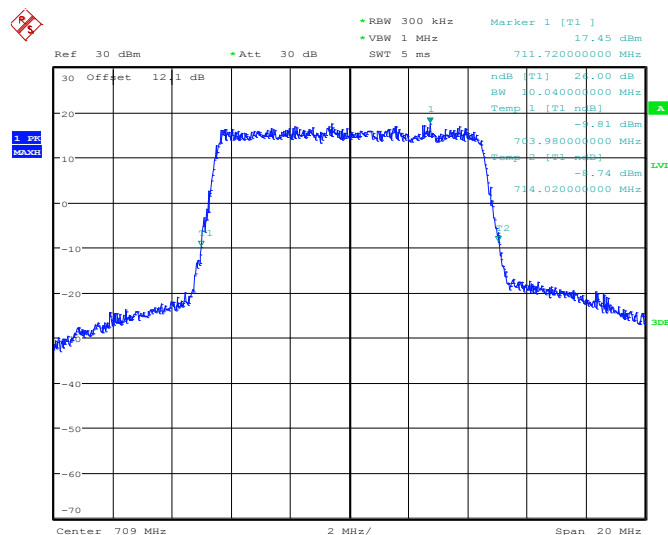
BW / Mod. : 10MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 23780



Date: 25.MAR.2014 13:05:34

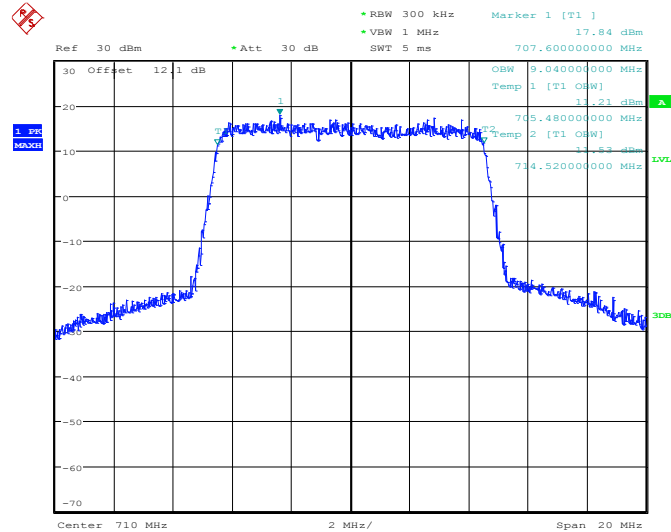
26dB Bandwidth Plot on Channel 23780



Date: 25.MAR.2014 13:06:08

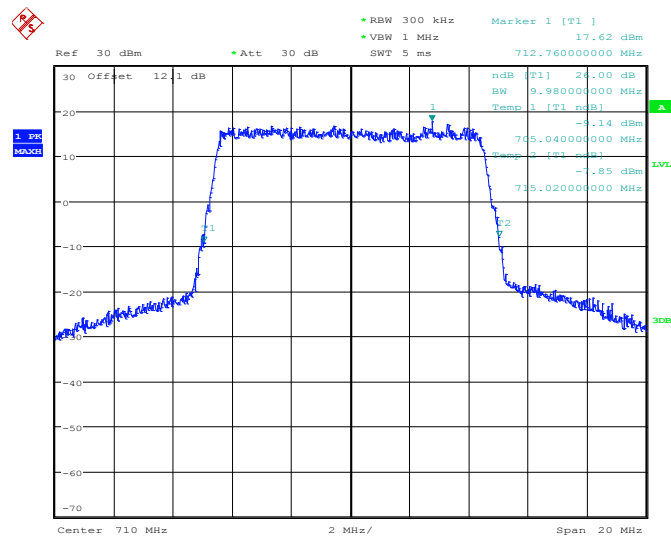


99% Occupied Bandwidth Plot on Channel 23790

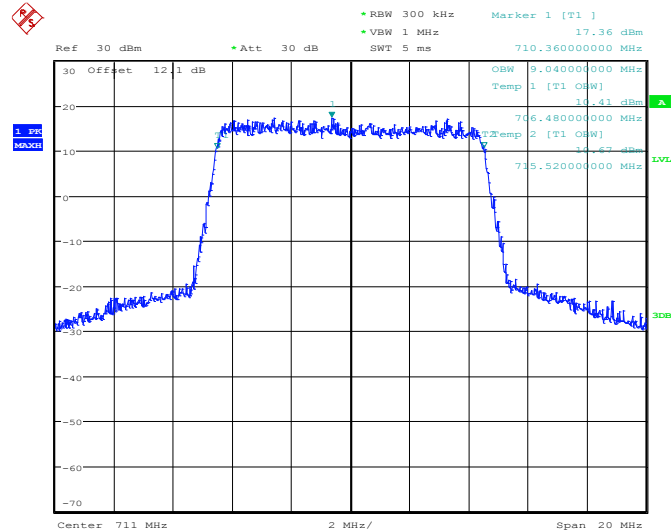


Date: 25.MAR.2014 13:11:42

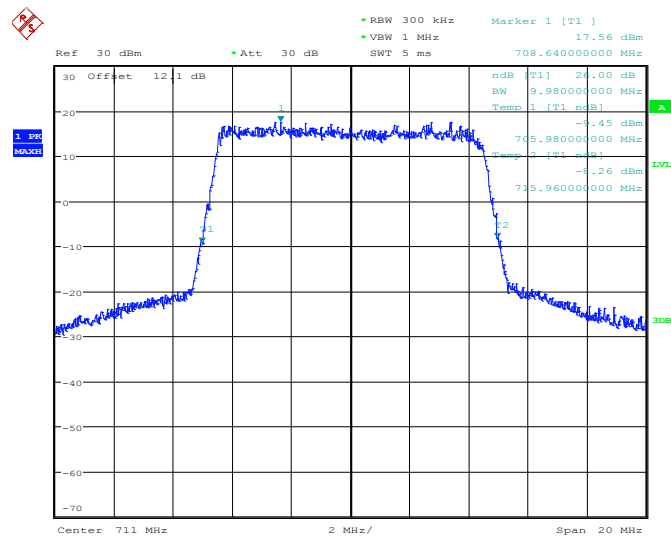
26dB Bandwidth Plot on Channel 23790



Date: 25.MAR.2014 13:12:16

99% Occupied Bandwidth Plot on Channel 23800


Date: 25.MAR.2014 13:14:45

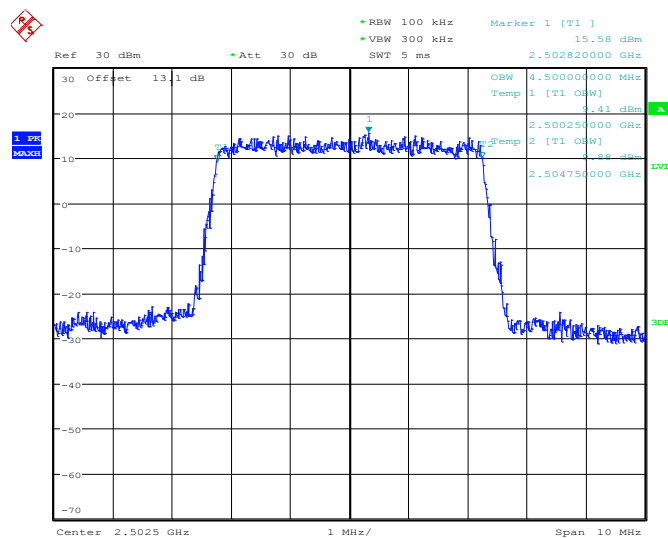
26dB Bandwidth Plot on Channel 23800


Date: 25.MAR.2014 13:15:19



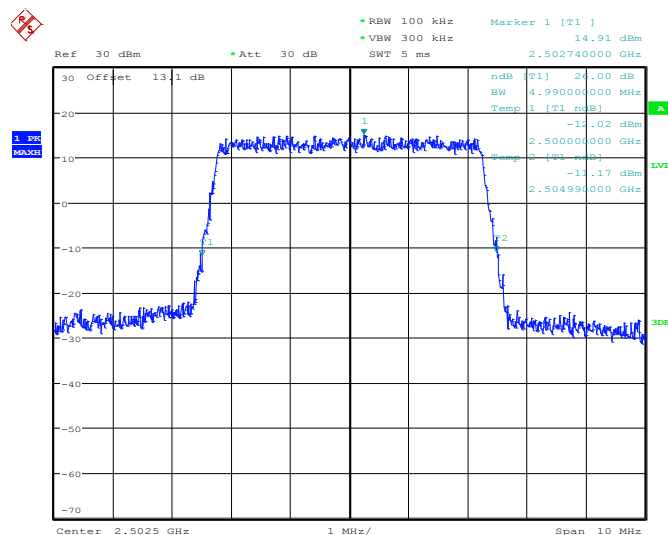
Band :	LTE Band 7	BW / Mod. :	5MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 20775



Date: 25.MAR.2014 13:23:38

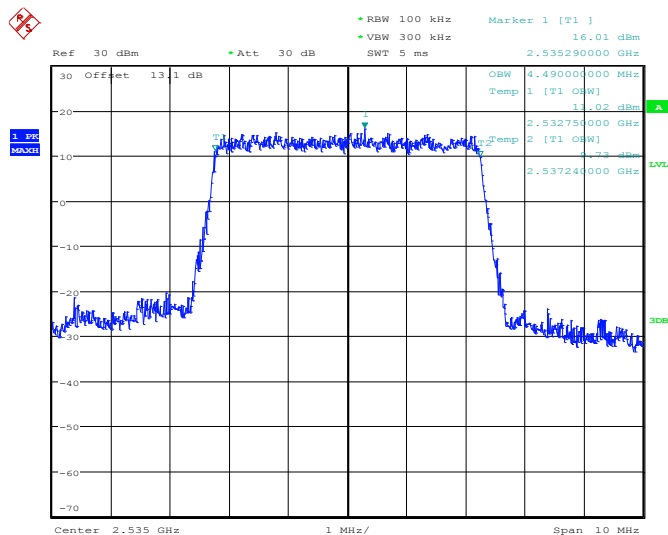
26dB Bandwidth Plot on Channel 20775



Date: 25.MAR.2014 13:24:10

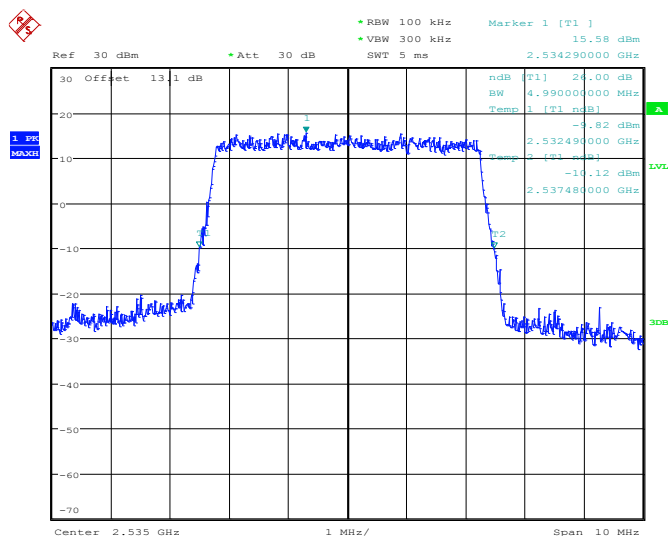


99% Occupied Bandwidth Plot on Channel 21100

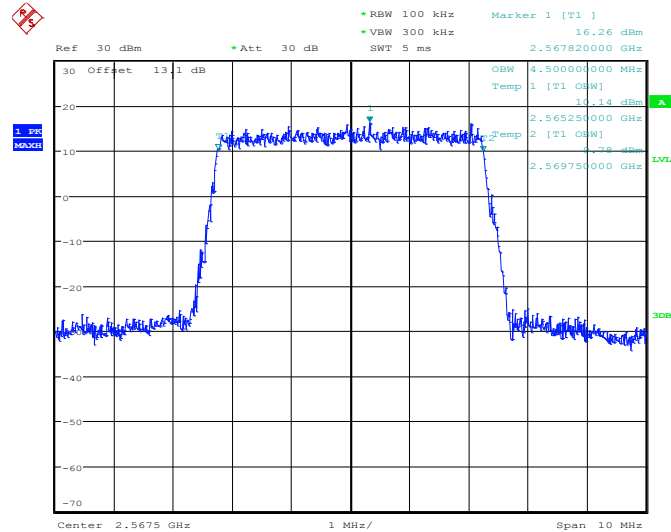


Date: 25.MAR.2014 13:29:42

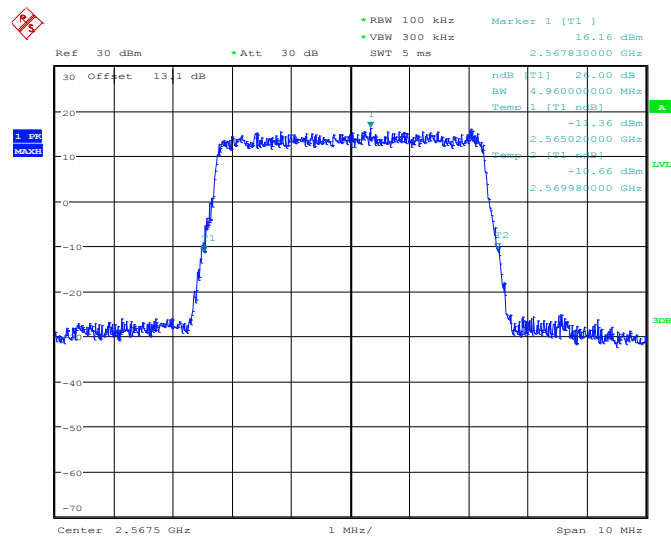
26dB Bandwidth Plot on Channel 21100



Date: 25.MAR.2014 13:30:13

99% Occupied Bandwidth Plot on Channel 21425


Date: 25.MAR.2014 13:32:39

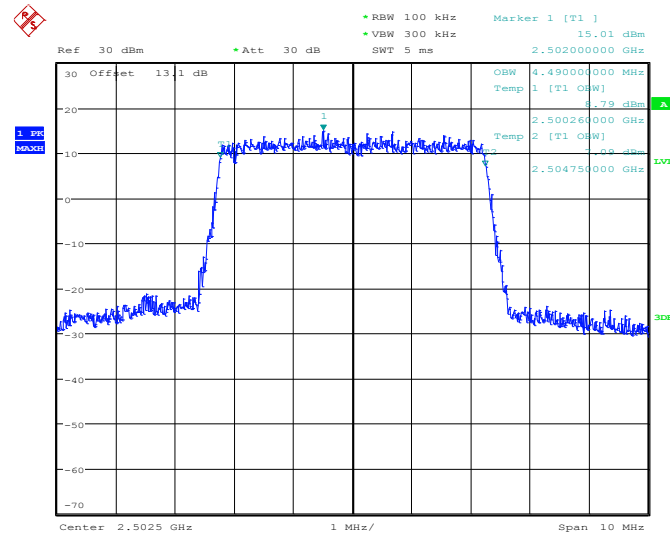
26dB Bandwidth Plot on Channel 21425


Date: 25.MAR.2014 13:33:10



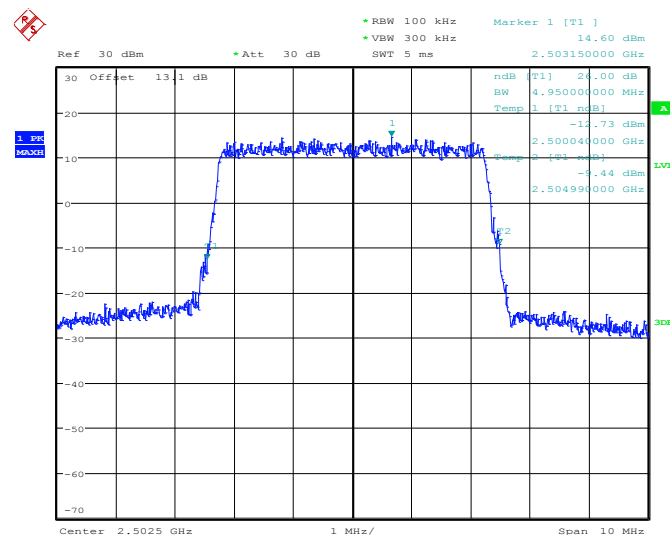
Band :	LTE Band 7	BW / Mod. :	5MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 20775



Date: 25.MAR.2014 13:23:53

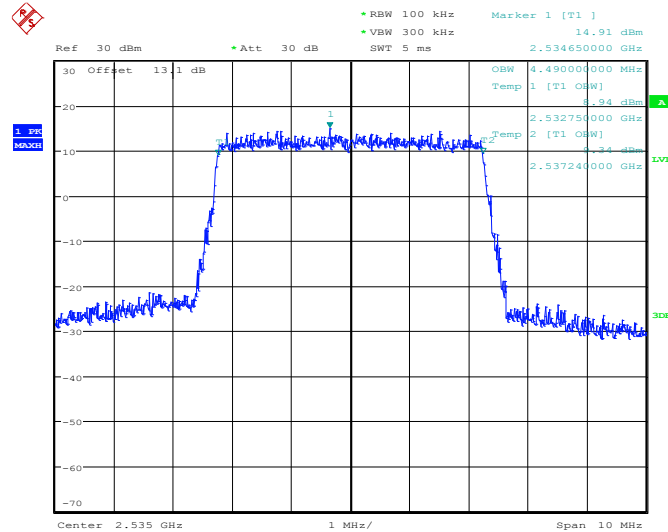
26dB Bandwidth Plot on Channel 20775



Date: 25.MAR.2014 13:24:27

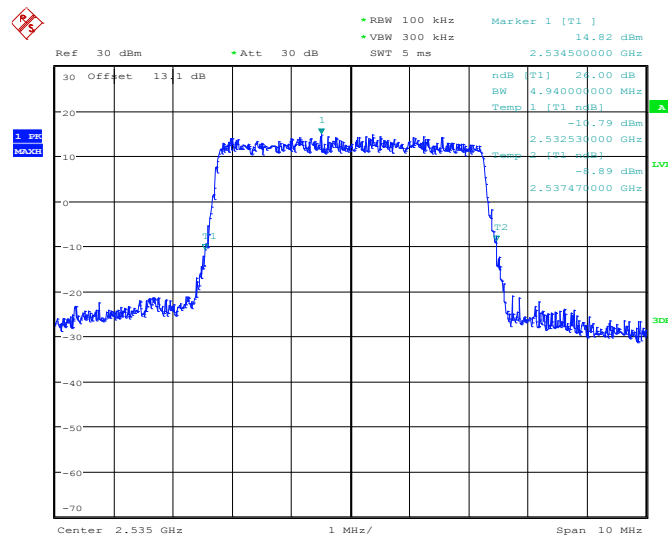


99% Occupied Bandwidth Plot on Channel 21100



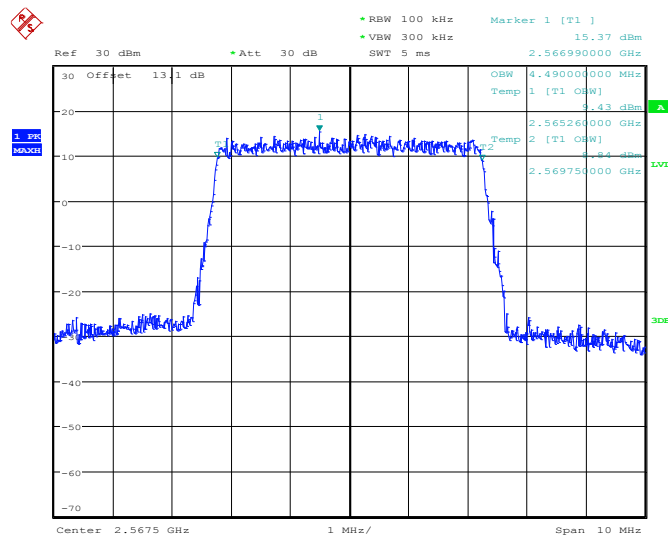
Date: 25.MAR.2014 13:29:57

26dB Bandwidth Plot on Channel 21100



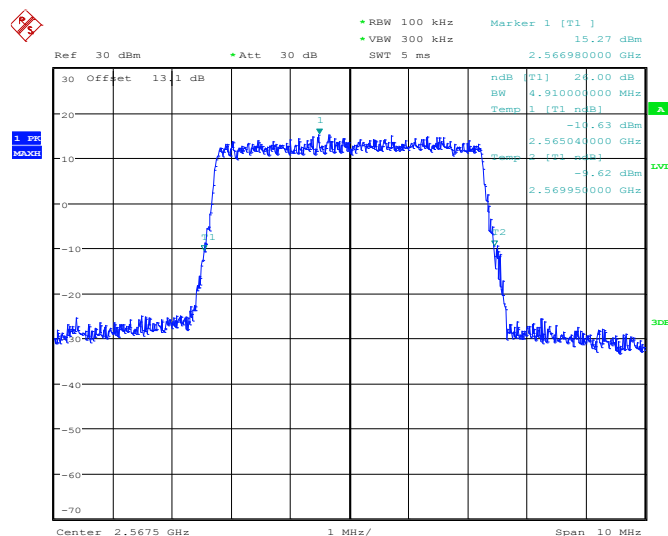
Date: 25.MAR.2014 13:30:29

99% Occupied Bandwidth Plot on Channel 21425



Date: 25.MAR.2014 13:32:54

26dB Bandwidth Plot on Channel 21425

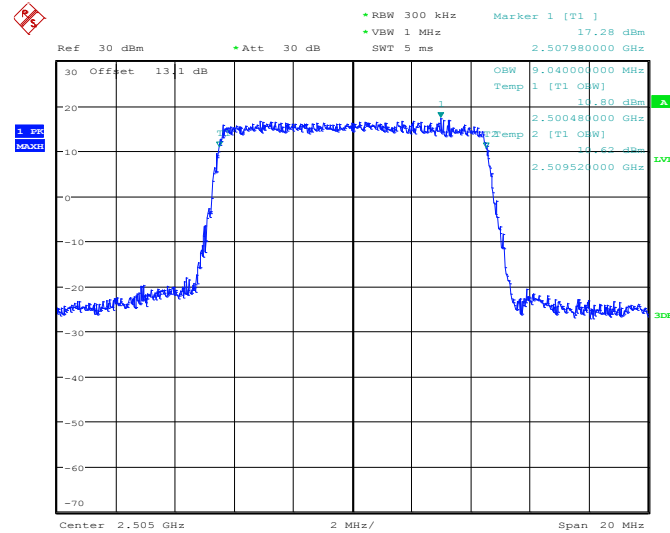


Date: 25.MAR.2014 13:33:26



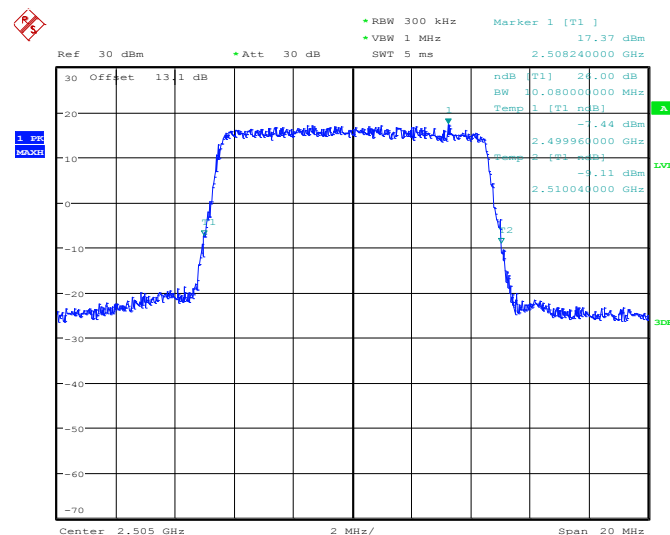
Band :	LTE Band 7	BW / Mod. :	10MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 20800

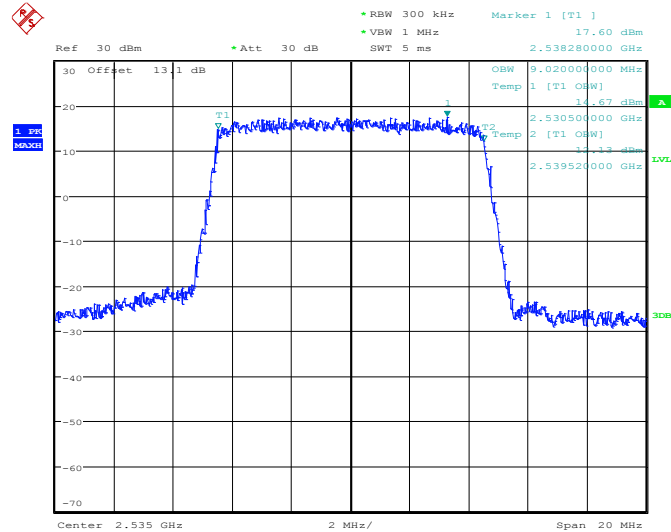


Date: 25.MAR.2014 13:46:44

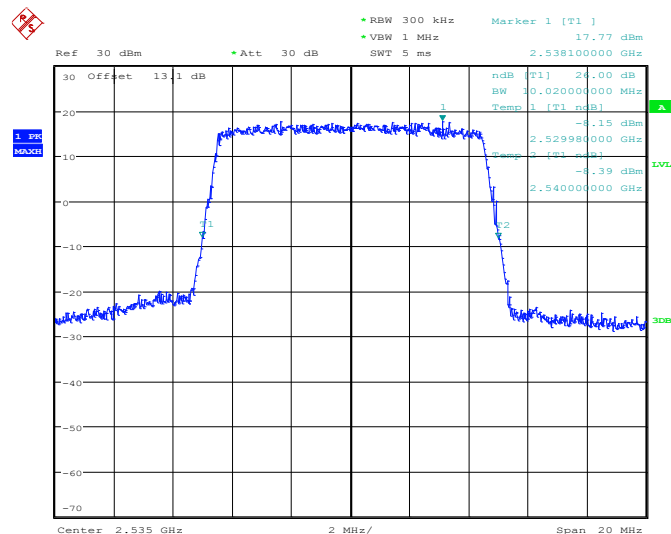
26dB Bandwidth Plot on Channel 20800



Date: 25.MAR.2014 13:47:16

99% Occupied Bandwidth Plot on Channel 21100


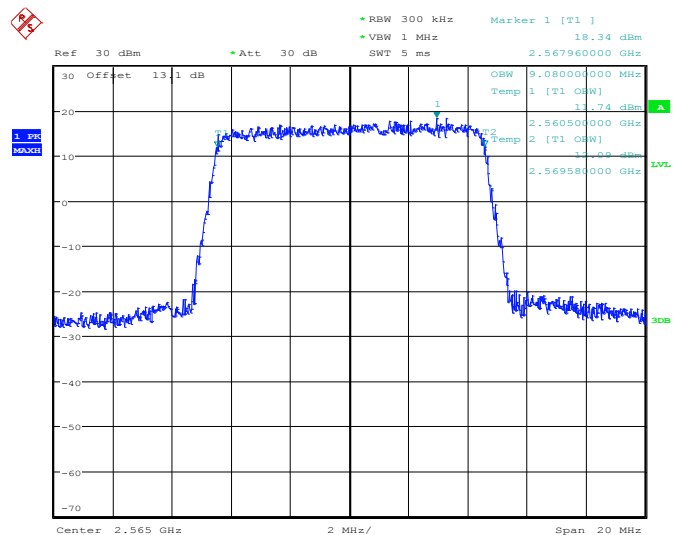
Date: 25.MAR.2014 13:52:56

26dB Bandwidth Plot on Channel 21100


Date: 25.MAR.2014 13:53:28

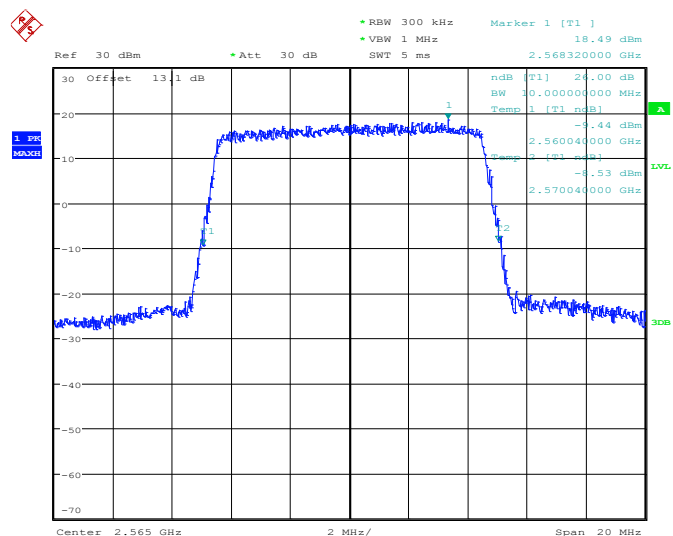


99% Occupied Bandwidth Plot on Channel 21400



Date: 25.MAR.2014 13:56:04

26dB Bandwidth Plot on Channel 21400

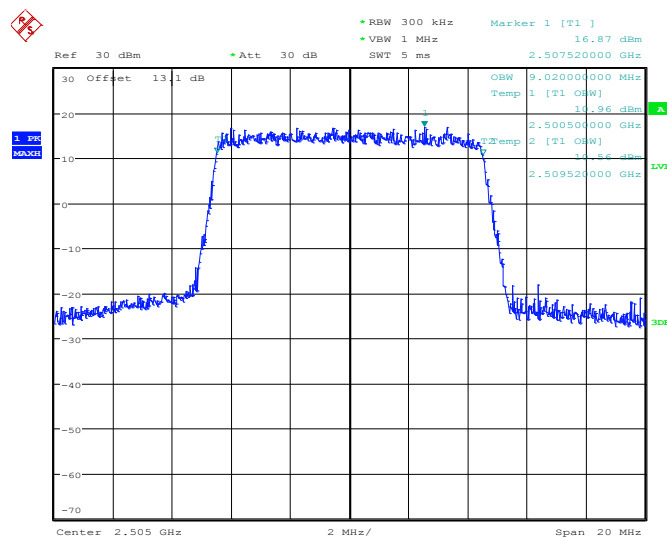


Date: 25.MAR.2014 13:56:36



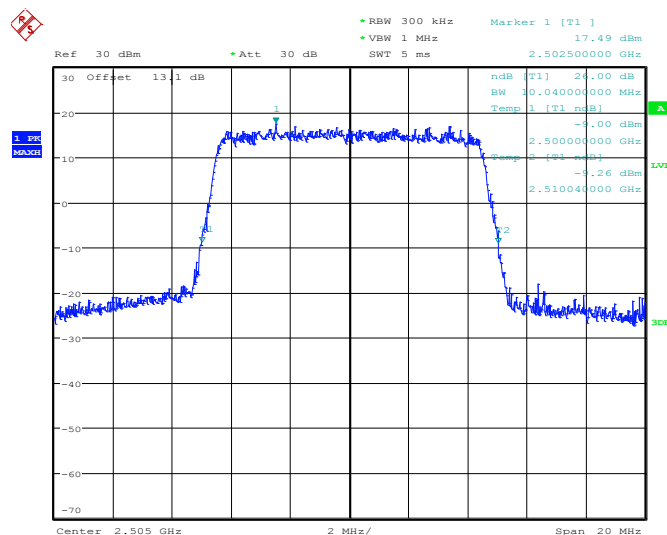
Band :	LTE Band 7	BW / Mod. :	10MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 20800

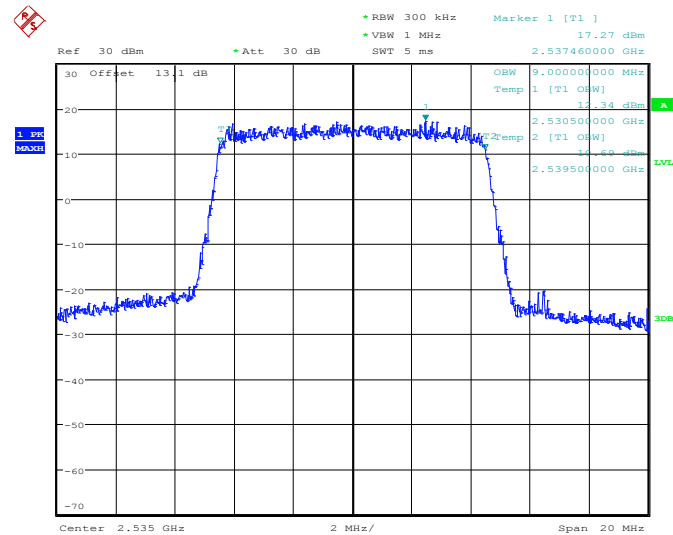


Date: 25.MAR.2014 13:46:59

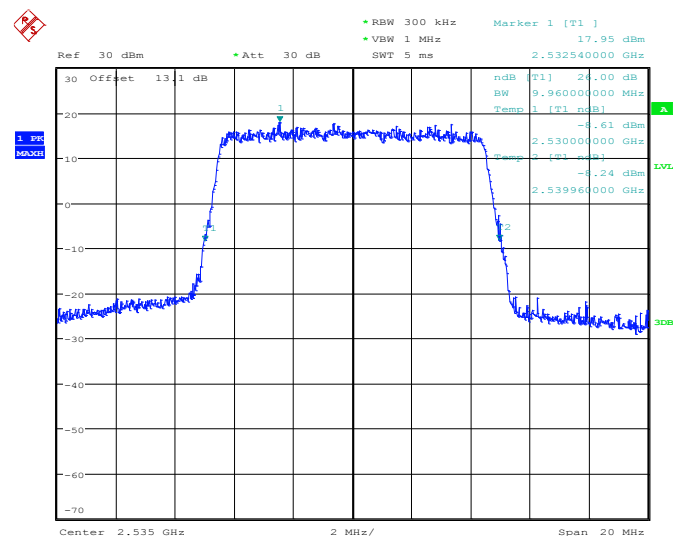
26dB Bandwidth Plot on Channel 20800



Date: 25.MAR.2014 13:47:33

99% Occupied Bandwidth Plot on Channel 21100


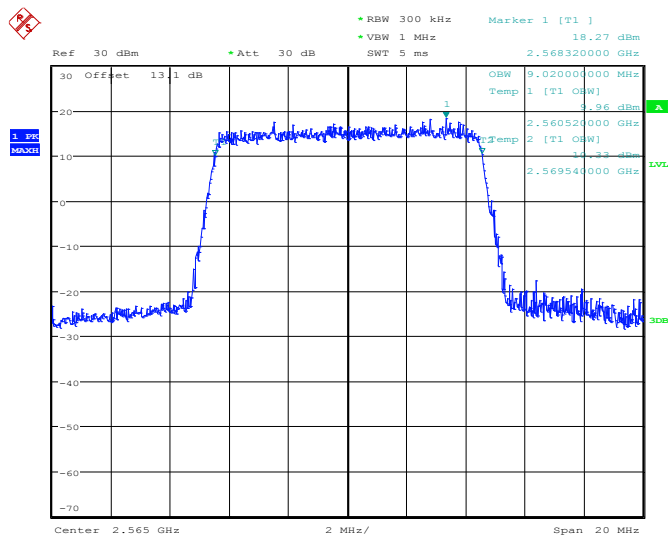
Date: 25.MAR.2014 13:53:11

26dB Bandwidth Plot on Channel 21100


Date: 25.MAR.2014 13:53:45

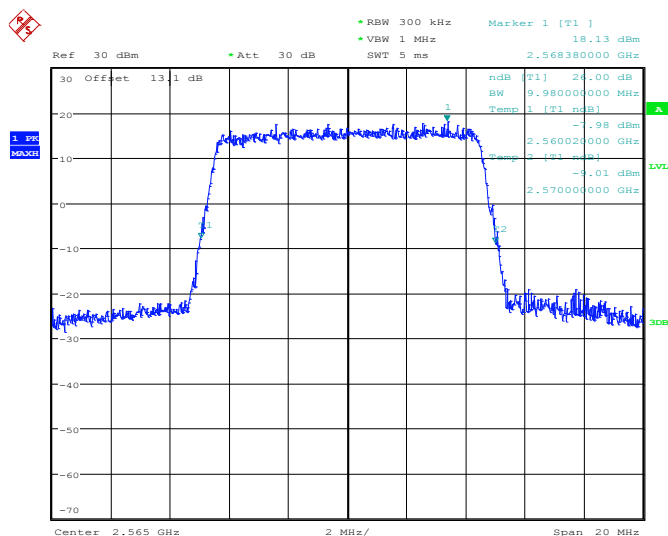


99% Occupied Bandwidth Plot on Channel 21400



Date: 25.MAR.2014 13:56:19

26dB Bandwidth Plot on Channel 21400

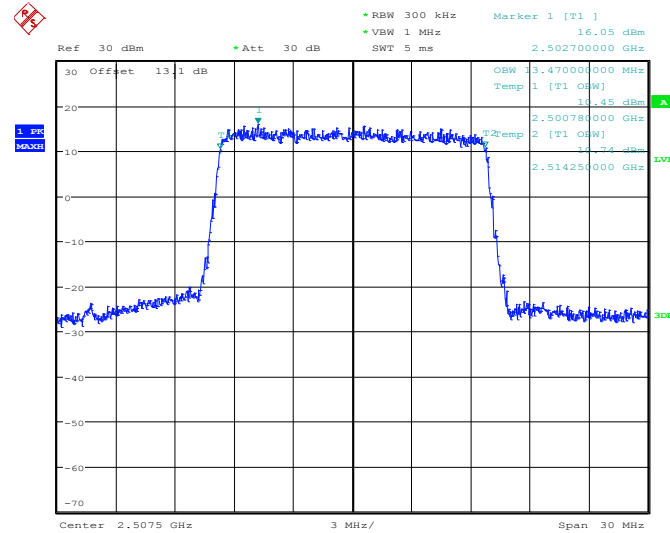


Date: 25.MAR.2014 13:56:53



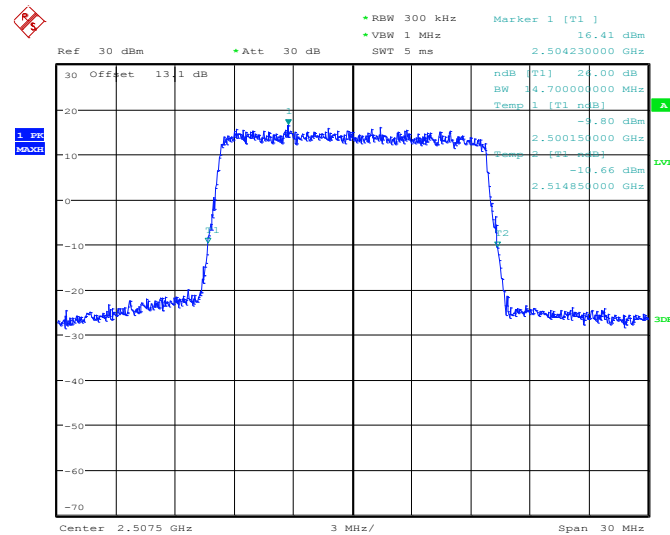
Band :	LTE Band 7	BW / Mod. :	15MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 20825



Date: 25.MAR.2014 14:02:36

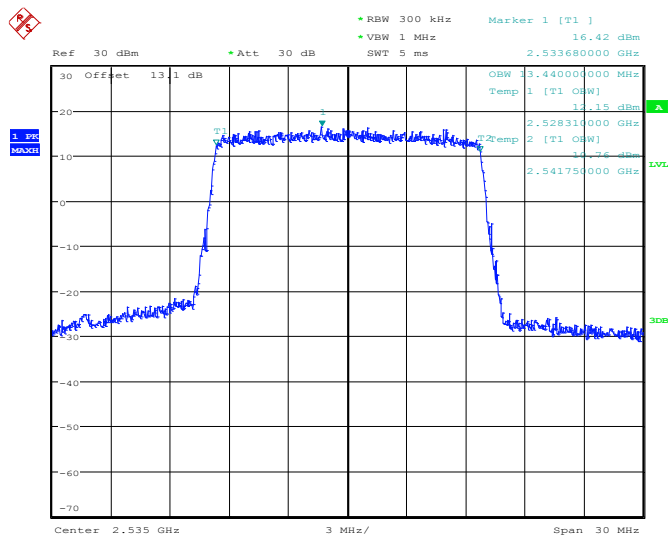
26dB Bandwidth Plot on Channel 20825



Date: 25.MAR.2014 14:03:08

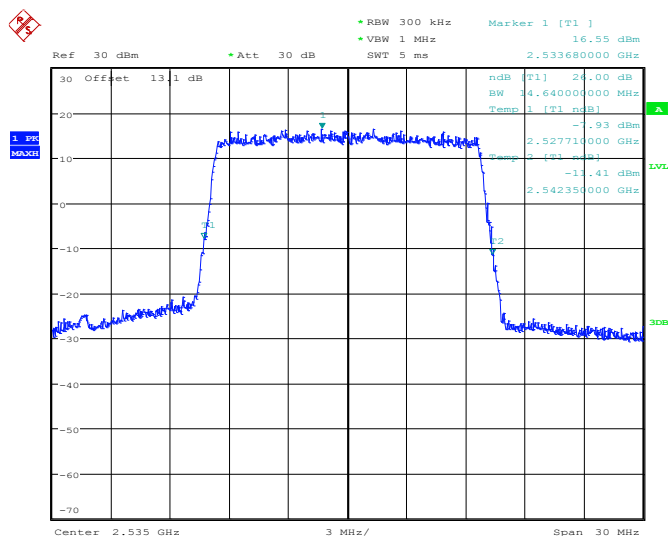


99% Occupied Bandwidth Plot on Channel 21100



Date: 25.MAR.2014 14:08:47

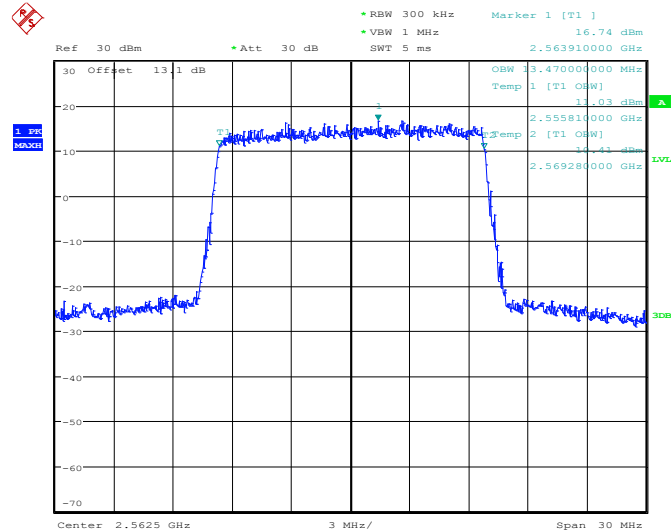
26dB Bandwidth Plot on Channel 21100



Date: 25.MAR.2014 14:09:19

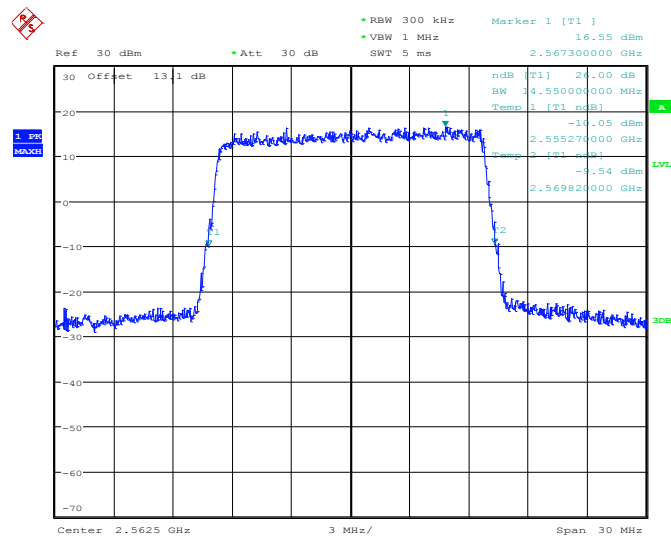


99% Occupied Bandwidth Plot on Channel 21375



Date: 25.MAR.2014 14:11:55

26dB Bandwidth Plot on Channel 21375

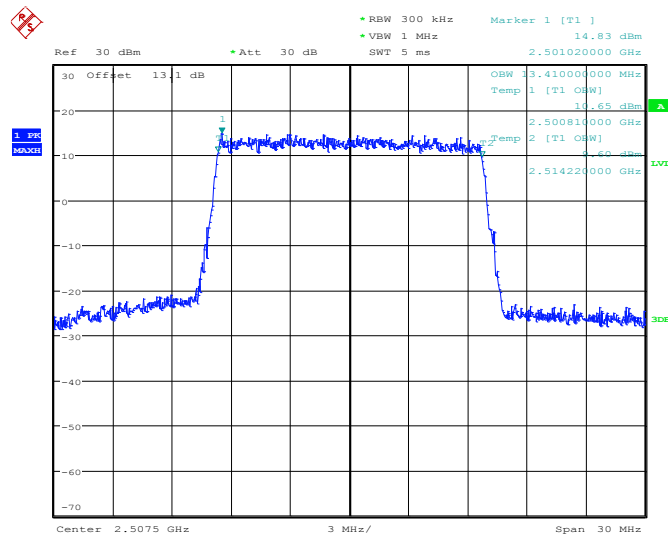


Date: 25.MAR.2014 14:12:27



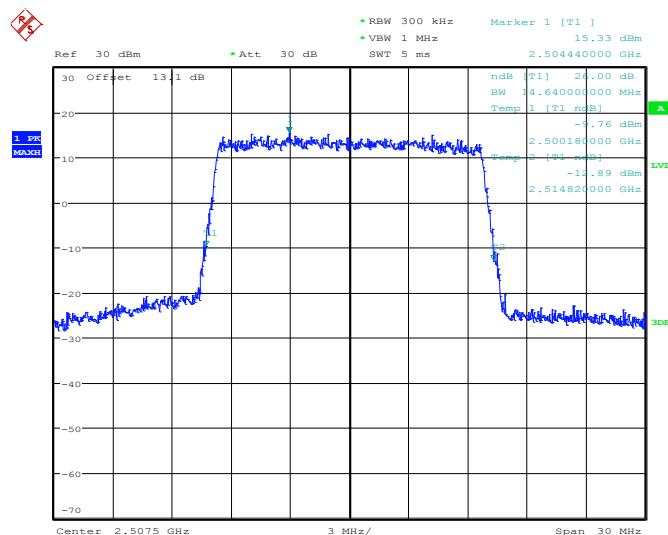
Band :	LTE Band 7	BW / Mod. :	15MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 20825



Date: 25.MAR.2014 14:02:51

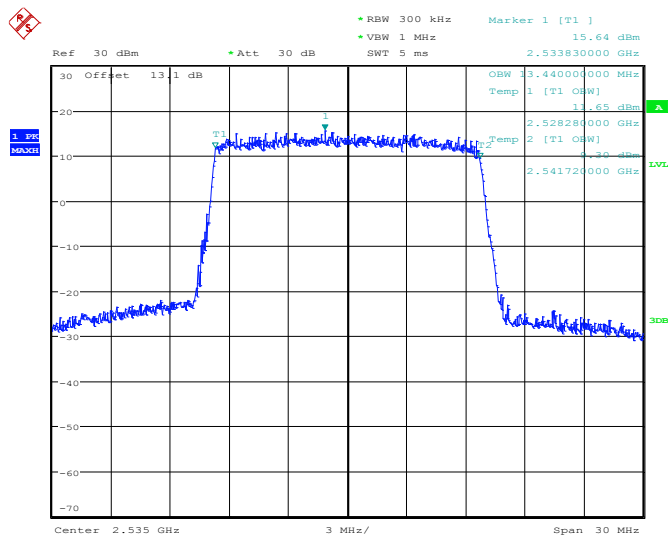
26dB Bandwidth Plot on Channel 20825



Date: 25.MAR.2014 14:03:25

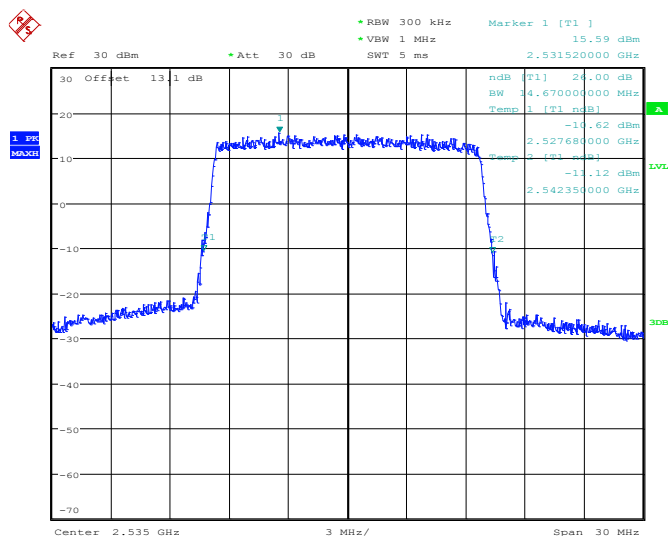


99% Occupied Bandwidth Plot on Channel 21100



Date: 25.MAR.2014 14:09:02

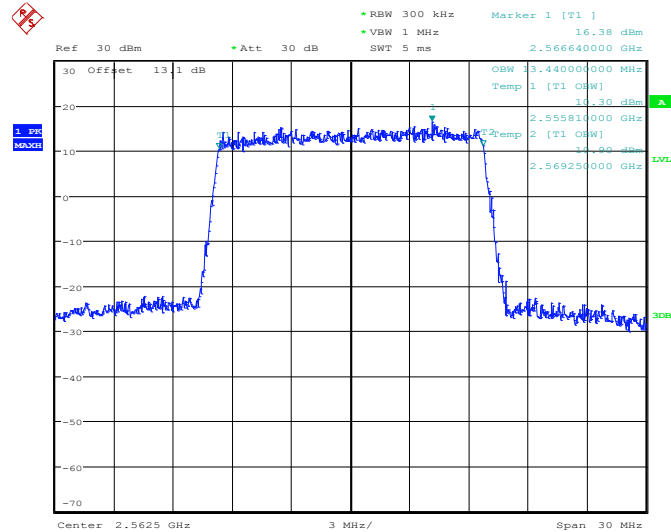
26dB Bandwidth Plot on Channel 21100



Date: 25.MAR.2014 14:09:36

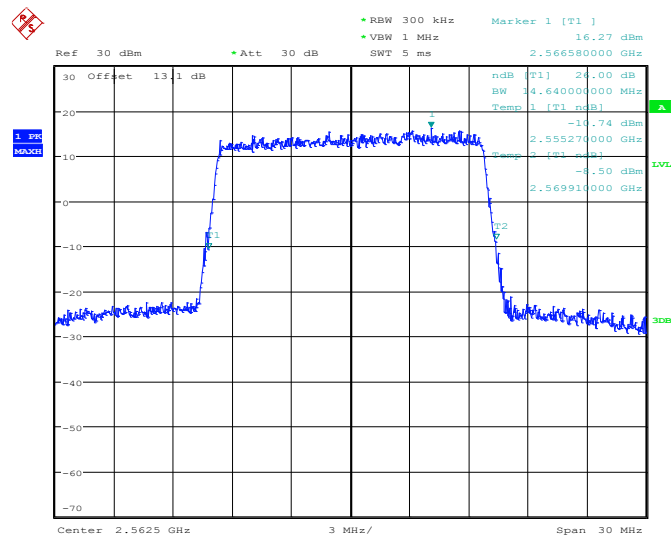


99% Occupied Bandwidth Plot on Channel 21375



Date: 25.MAR.2014 14:12:10

26dB Bandwidth Plot on Channel 21375

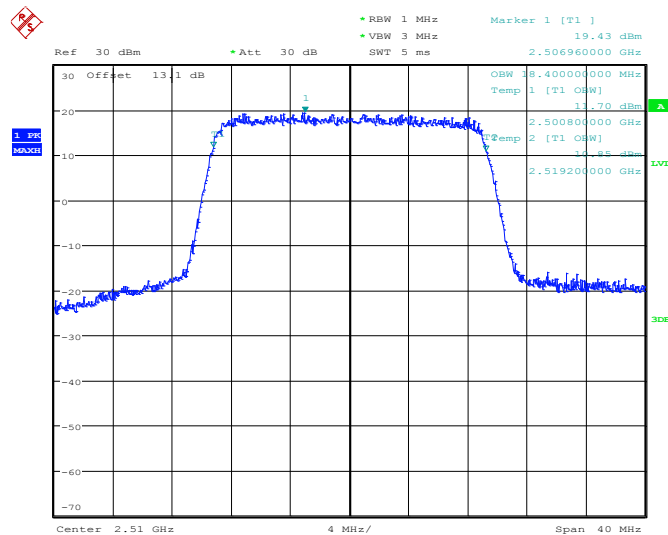


Date: 25.MAR.2014 14:12:44



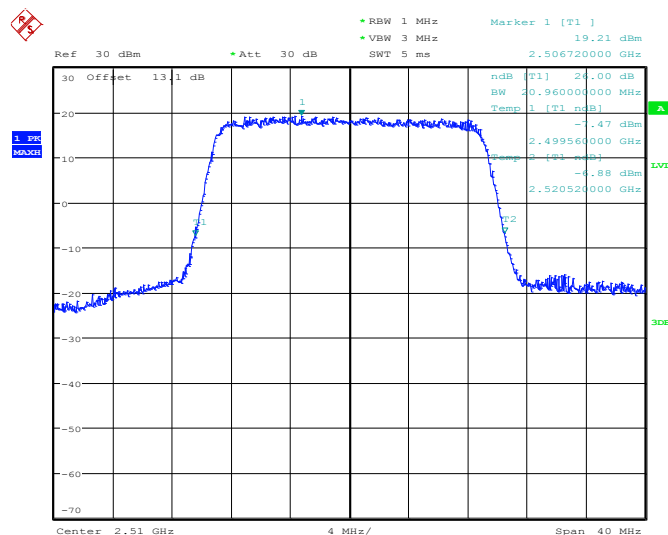
Band :	LTE Band 7	BW / Mod. :	20MHz / QPSK
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99% Occupied Bandwidth Plot on Channel 20850

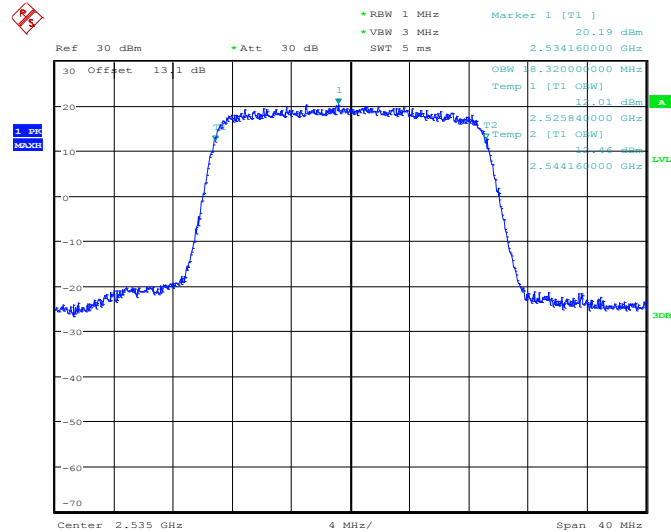


Date: 25.MAR.2014 14:18:59

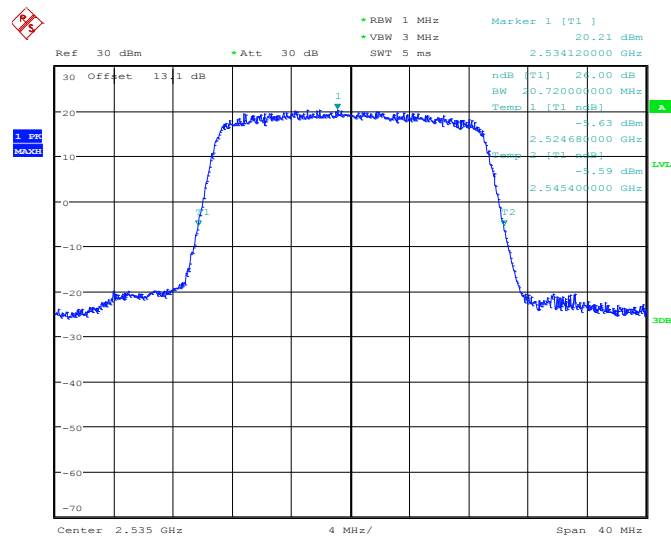
26dB Bandwidth Plot on Channel 20850



Date: 25.MAR.2014 14:19:31

99% Occupied Bandwidth Plot on Channel 21100


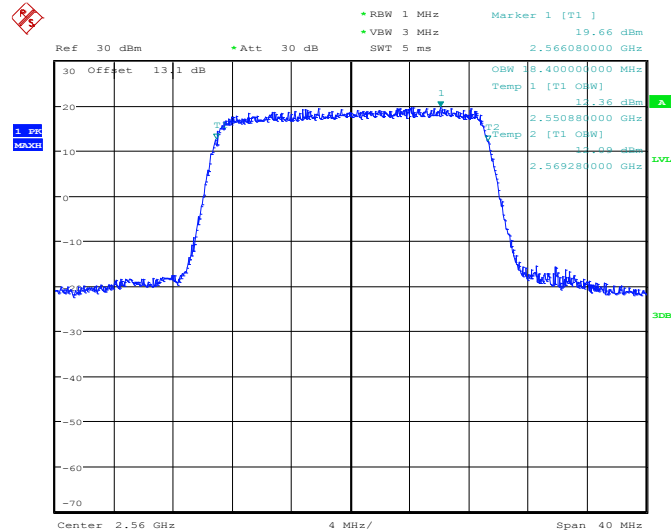
Date: 25.MAR.2014 14:25:11

26dB Bandwidth Plot on Channel 21100


Date: 25.MAR.2014 14:25:43

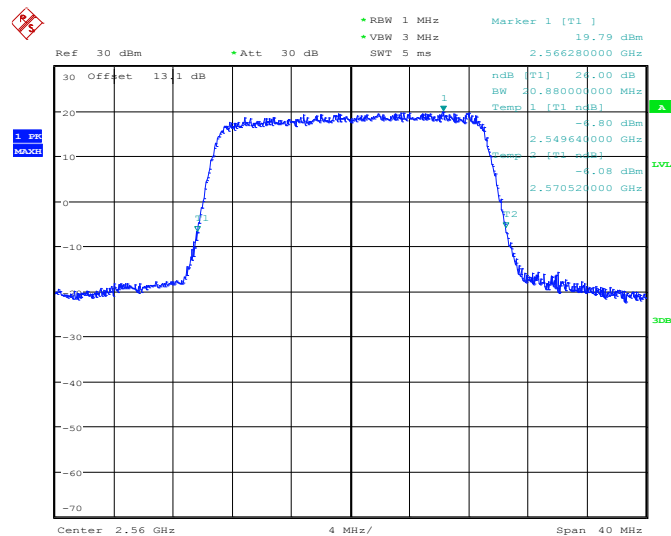


99% Occupied Bandwidth Plot on Channel 21350



Date: 25.MAR.2014 14:28:19

26dB Bandwidth Plot on Channel 21350

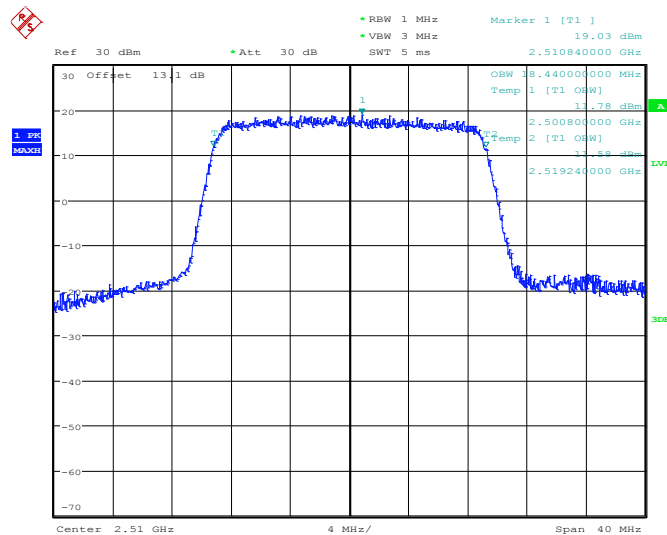


Date: 25.MAR.2014 14:28:51



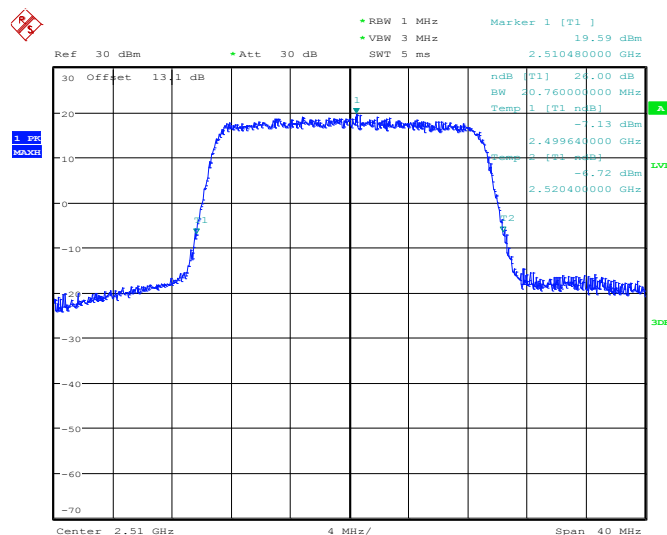
Band :	LTE Band 7	BW / Mod. :	20MHz / 16QAM
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99% Occupied Bandwidth Plot on Channel 20850



Date: 25.MAR.2014 14:19:14

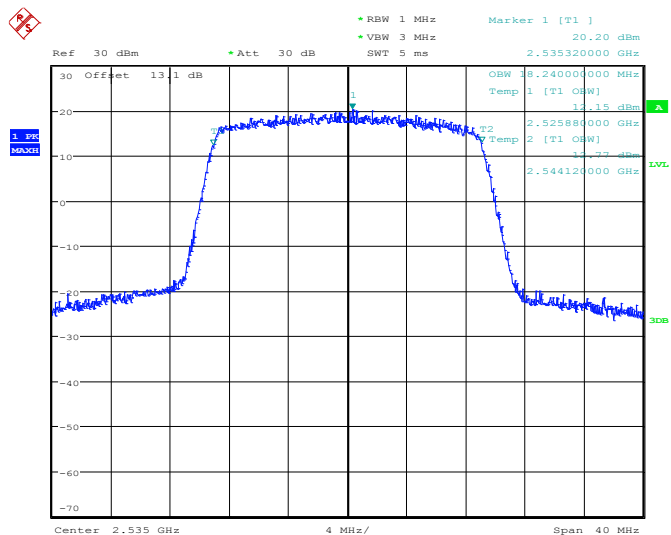
26dB Bandwidth Plot on Channel 20850



Date: 25.MAR.2014 14:19:48

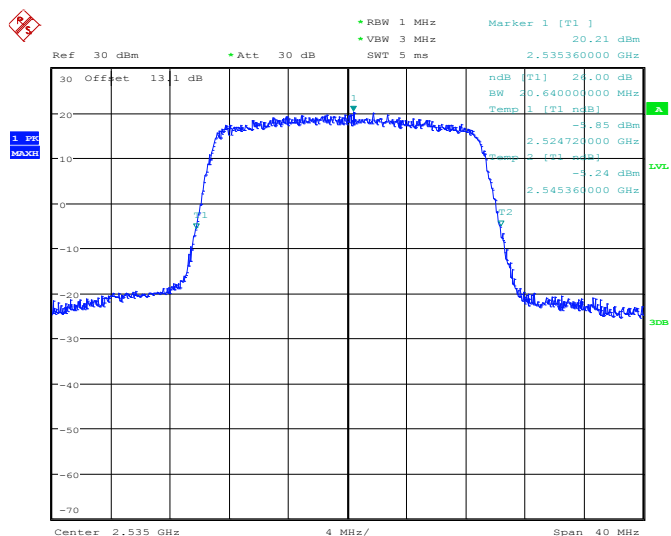


99% Occupied Bandwidth Plot on Channel 21100



Date: 25.MAR.2014 14:25:26

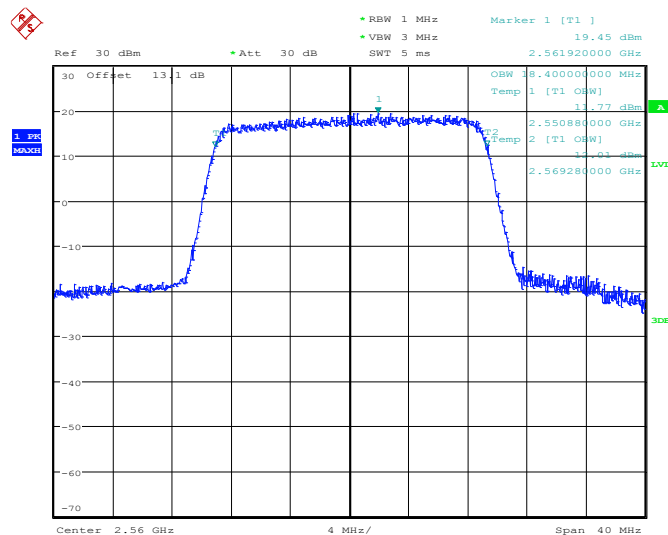
26dB Bandwidth Plot on Channel 21100



Date: 25.MAR.2014 14:26:00

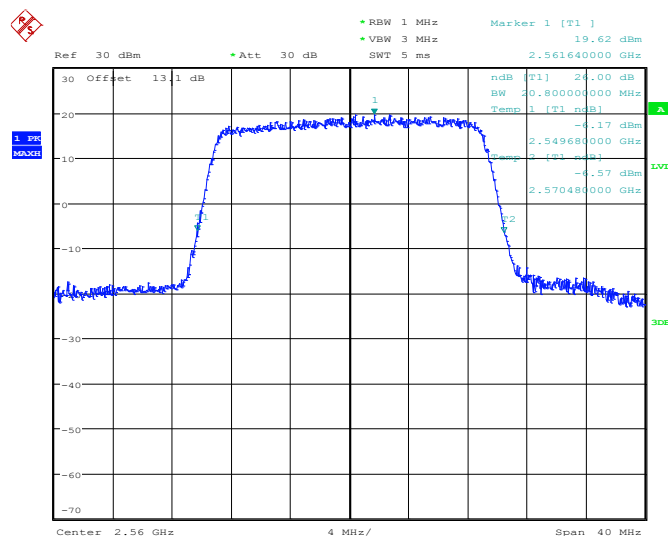


99% Occupied Bandwidth Plot on Channel 21350



Date: 25.MAR.2014 14:28:34

26dB Bandwidth Plot on Channel 21350



Date: 25.MAR.2014 14:29:08

3.5 Conducted Band Edge Measurement

3.5.1 Description of Conducted Band Edge Measurement

27.53 (f) For Band 17

For operations in the 698 -746 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 100 kHz bandwidth. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

27.53 (g) For Band 4

For operations in the 1710 – 1755 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 1 MHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

27.53(l) (4) For Band 7

The emissions be operated in the 2496-2690 MHz band, the attenuation factor of transmitter Power (P) shall be not less than $43 + 10 \log (P)$ dB at the channel edge and $55 + 10 \log (P)$ dB at 5.5 MHz from the channel edges.

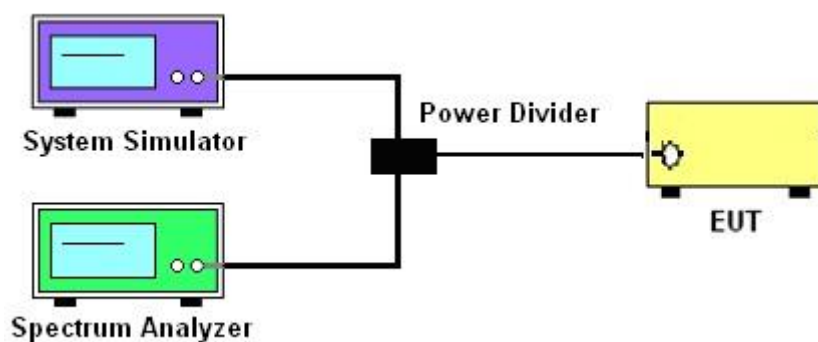
3.5.2 Measuring Instruments

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 power divider.
2. The band edges of low and high channels for the highest RF powers were measured. Setting $RBW \geq 1\%$ 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 $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)]$ (dB)
 $= [30 + 10\log(P)]$ (dBm) - $[43 + 10\log(P)]$ (dB)
 $= -13$ dBm.

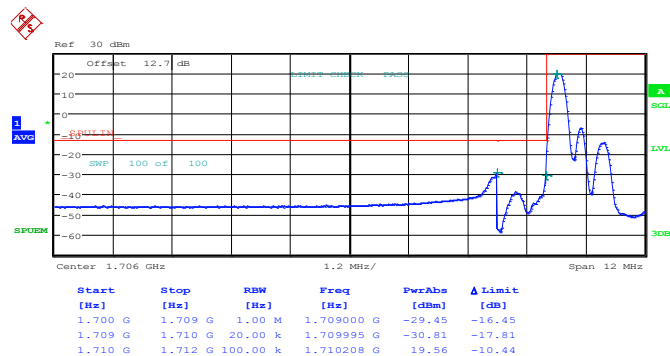
3.5.4 Test Setup



3.5.5 Test Result (Plots) of Conducted Band Edge

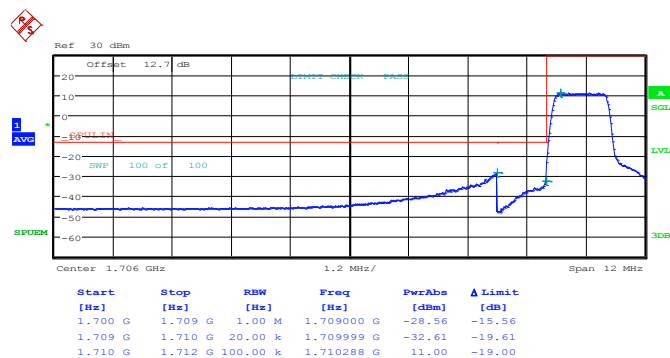
Band :	LTE Band 4	Band Width :	1.4MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



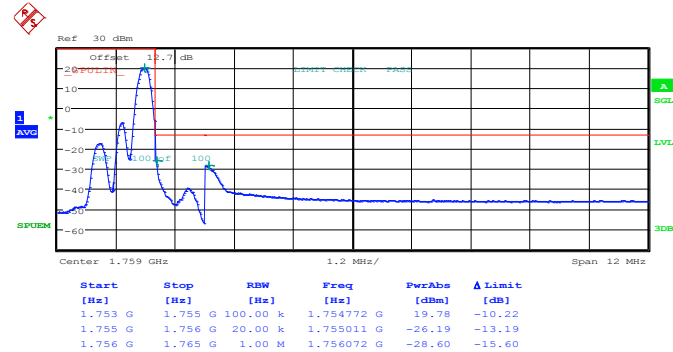
Date: 25.MAR.2014 09:40:14

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



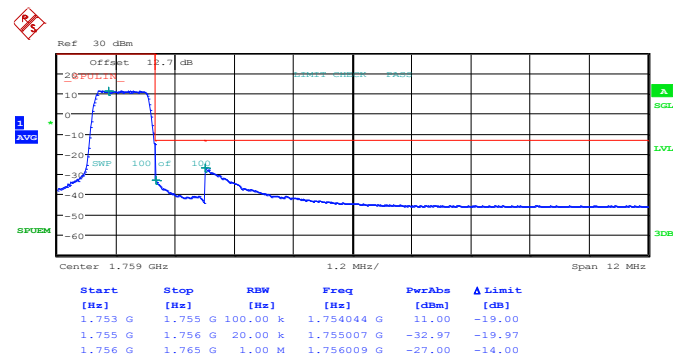
Date: 25.MAR.2014 09:41:47

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



Date: 25.MAR.2014 09:49:27

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

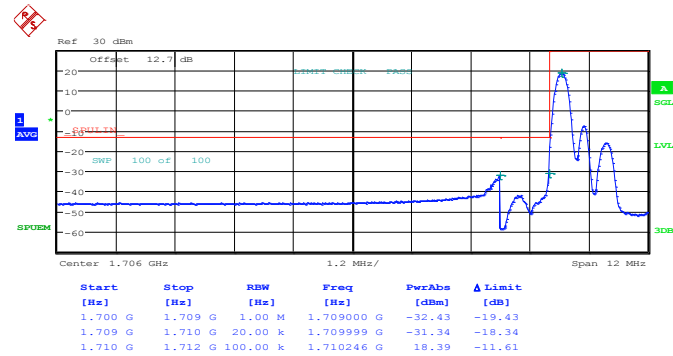


Date: 25.MAR.2014 09:51:00



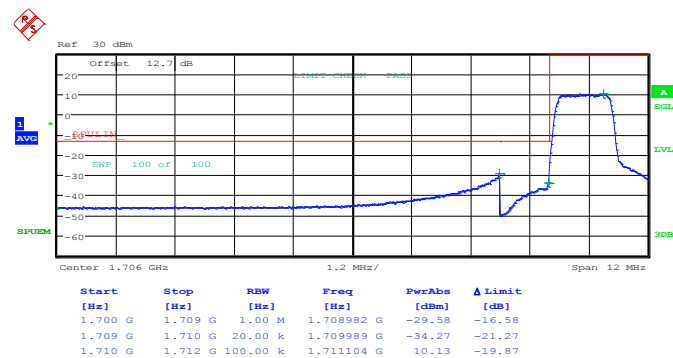
Band :	LTE Band 4	Band Width :	1.4MHz / 16QAM
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Lower Band Edge Plot for 16QAM -RB Size 1, RB Offset 0



Date: 25.MAR.2014 09:41:00

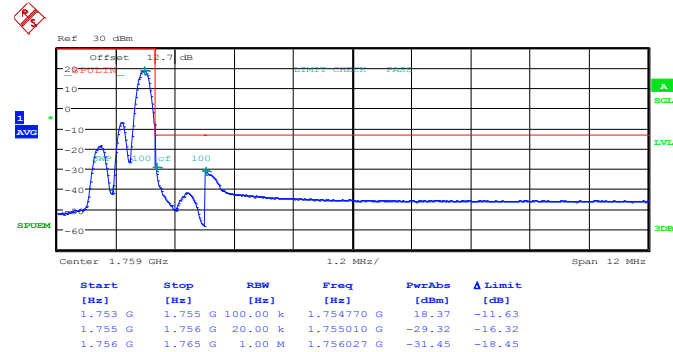
Lower Band Edge Plot for 16QAM-RB Size 6, RB Offset 0



Date: 25.MAR.2014 09:42:33

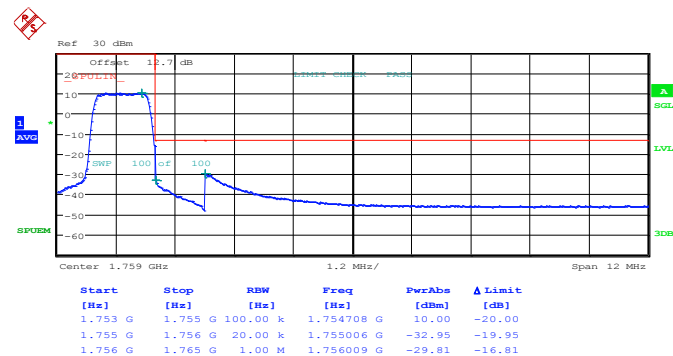


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 5



Date: 25.MAR.2014 09:50:14

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

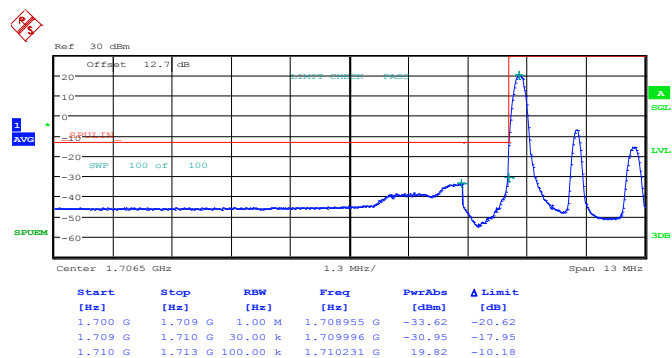


Date: 25.MAR.2014 09:51:46



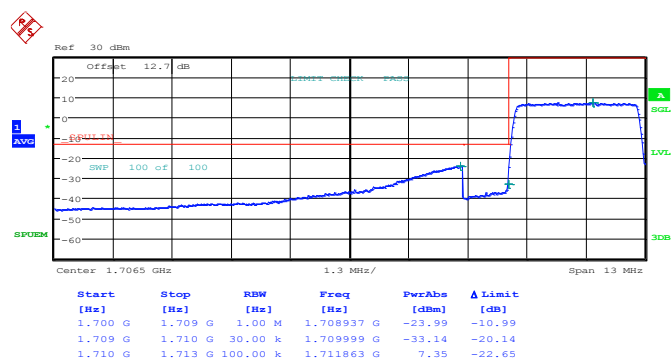
Band :	LTE Band 4	Band Width :	3MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



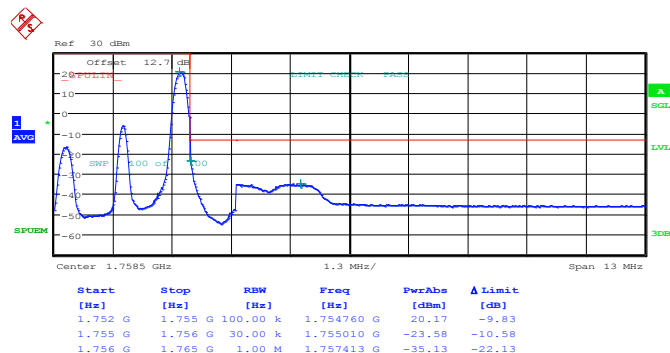
Date: 25.MAR.2014 09:56:35

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



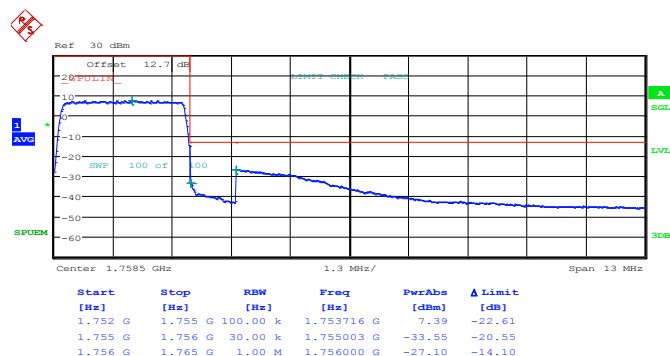
Date: 25.MAR.2014 09:58:08

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



Date: 25.MAR.2014 10:05:49

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

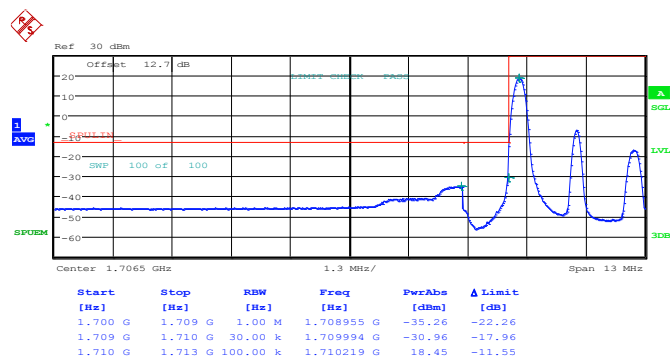


Date: 25.MAR.2014 10:07:23



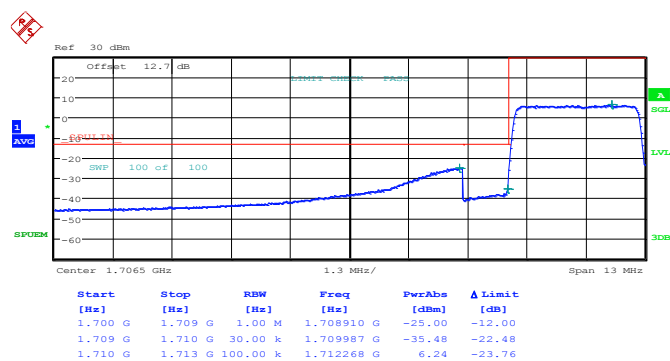
Band :	LTE Band 4	Band Width :	3MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 25.MAR.2014 09:57:22

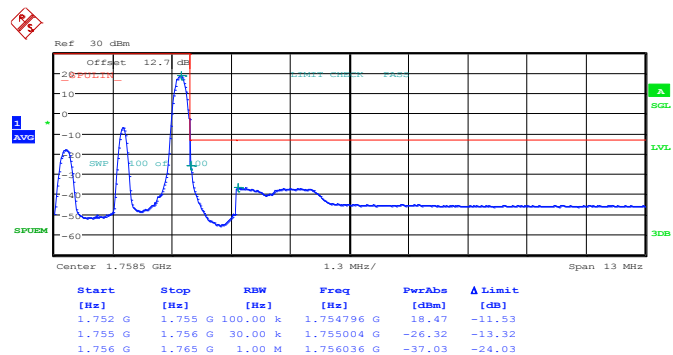
Lower Band Edge Plot for 16QAM-RB Size 15, RB Offset 0



Date: 25.MAR.2014 09:58:55

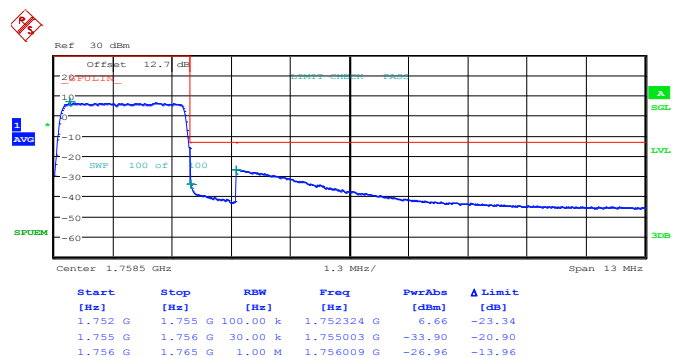


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 14



Date: 25.MAR.2014 10:06:36

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

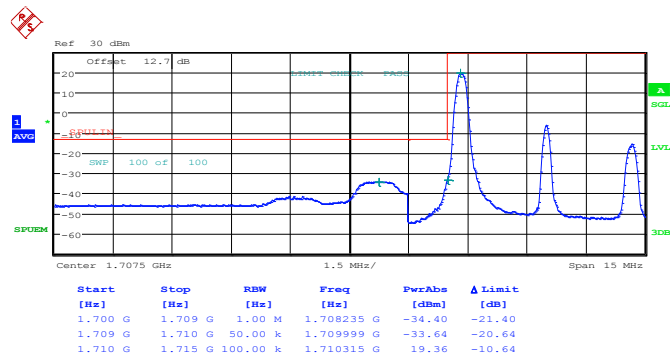


Date: 25.MAR.2014 10:08:09



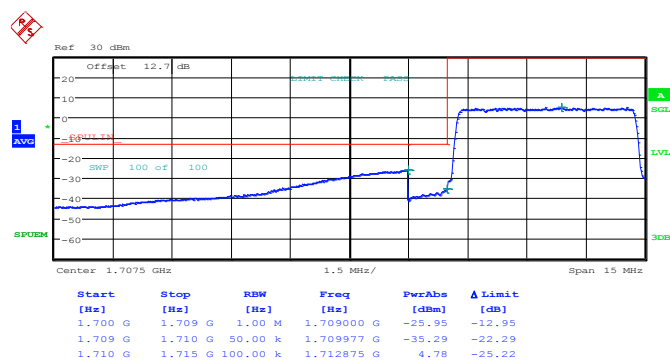
Band :	LTE Band 4	Band Width :	5MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 25.MAR.2014 10:12:00

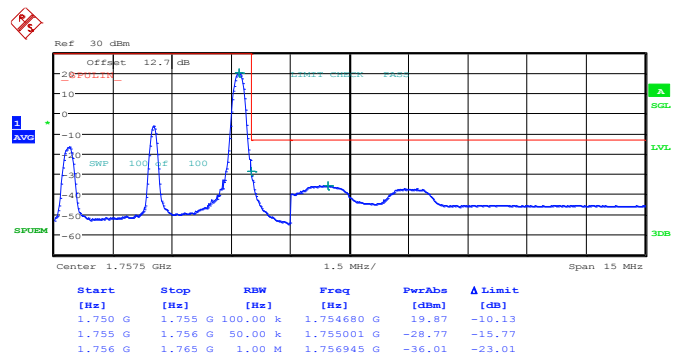
Lower Band Edge Plot for QPSK-RB Size 25, RB Offset 0



Date: 25.MAR.2014 10:13:33

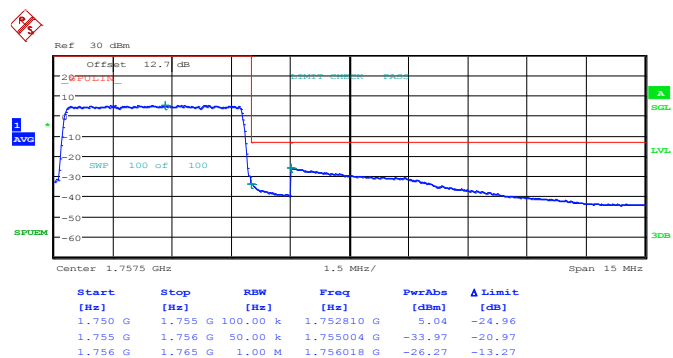


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 24



Date: 25.MAR.2014 10:21:14

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

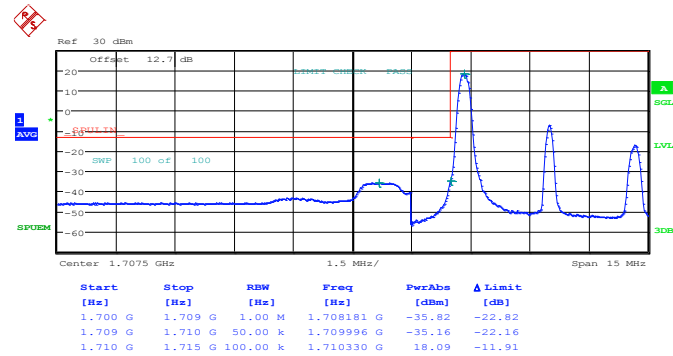


Date: 25.MAR.2014 10:22:47



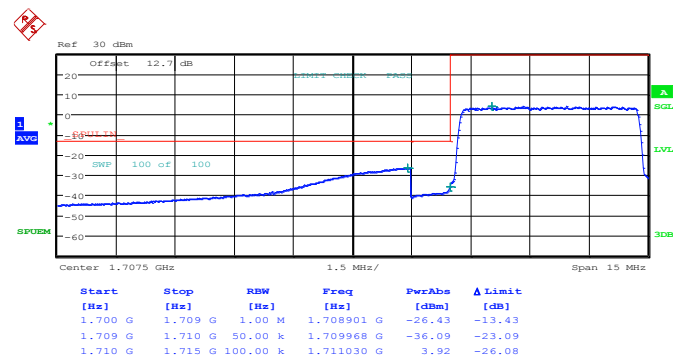
Band :	LTE Band 4	Band Width :	5MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 25.MAR.2014 10:12:47

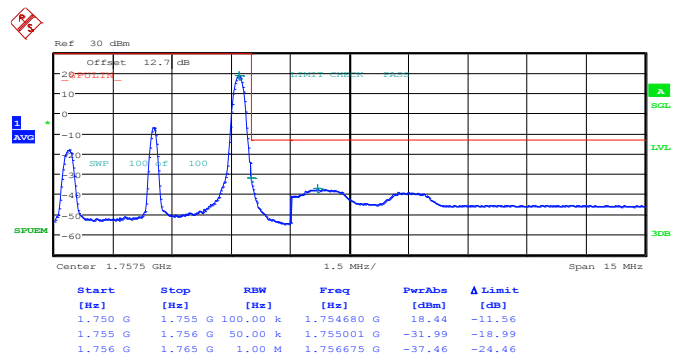
Lower Band Edge Plot for 16QAM-RB Size 25, RB Offset 0



Date: 25.MAR.2014 10:14:20

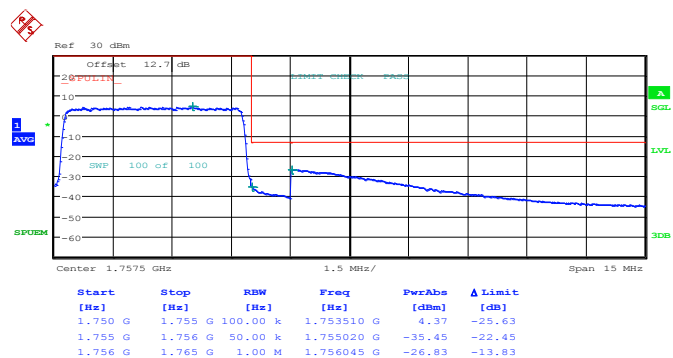


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 24



Date: 25.MAR.2014 10:22:01

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

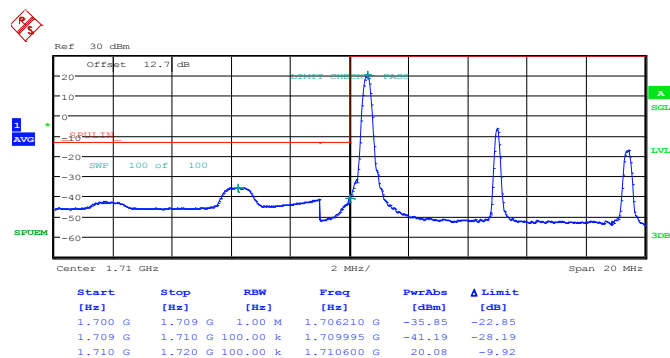


Date: 25.MAR.2014 10:23:34



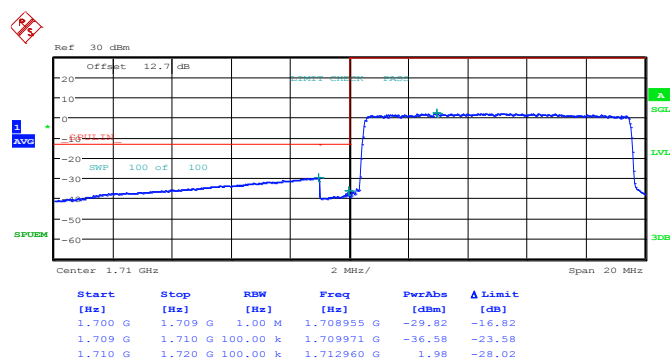
Band :	LTE Band 4	Band Width :	10MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



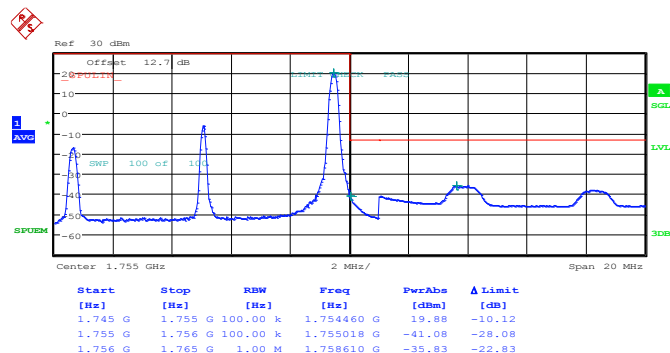
Date: 25.MAR.2014 10:27:25

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



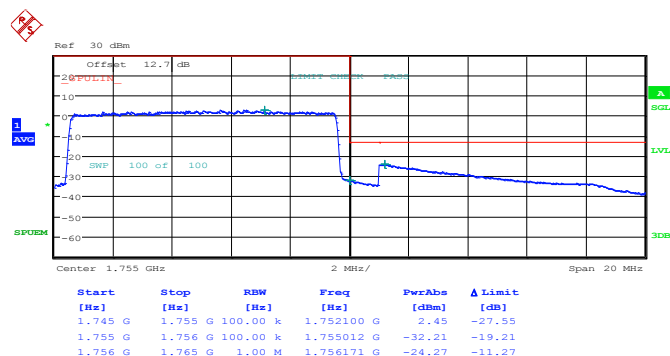
Date: 25.MAR.2014 10:28:58

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



Date: 25.MAR.2014 10:36:39

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

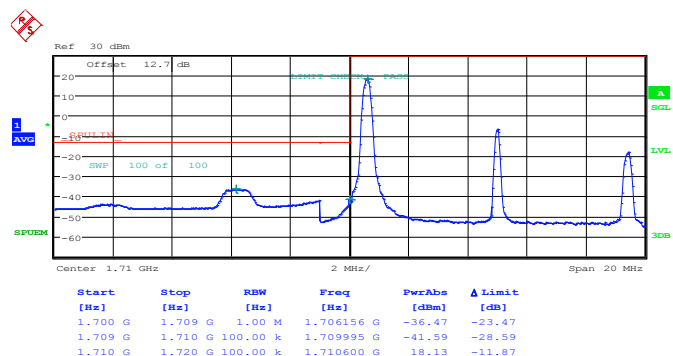


Date: 25.MAR.2014 10:38:12



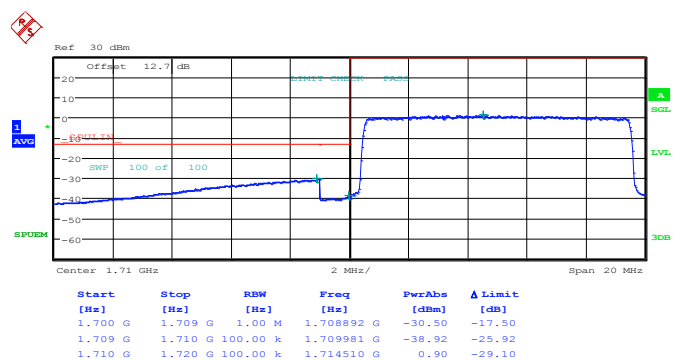
Band :	LTE Band 4	Band Width :	10MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 25.MAR.2014 10:28:11

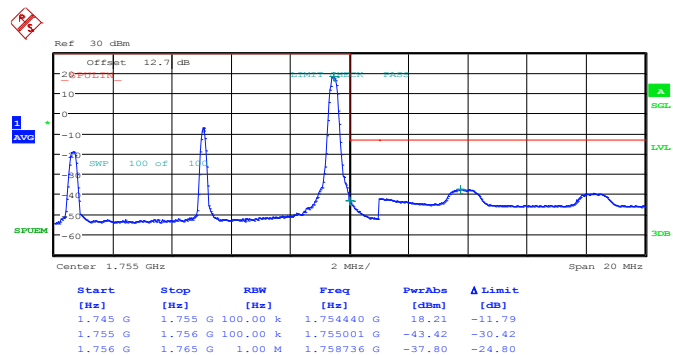
Lower Band Edge Plot for 16QAM-RB Size 50, RB Offset 0



Date: 25.MAR.2014 10:29:44

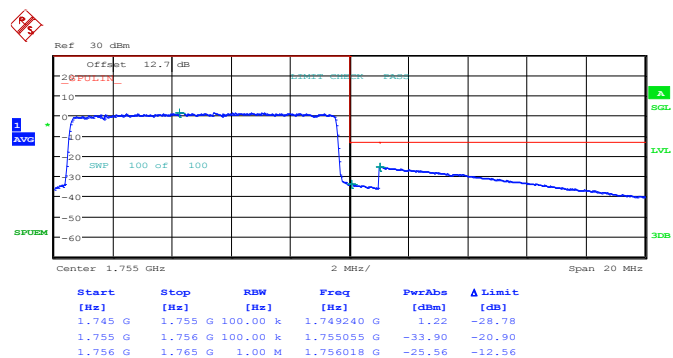


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 49



Date: 25.MAR.2014 10:37:26

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

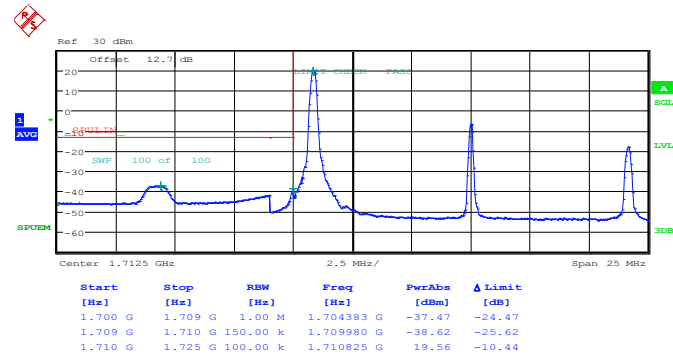


Date: 25.MAR.2014 10:38:59



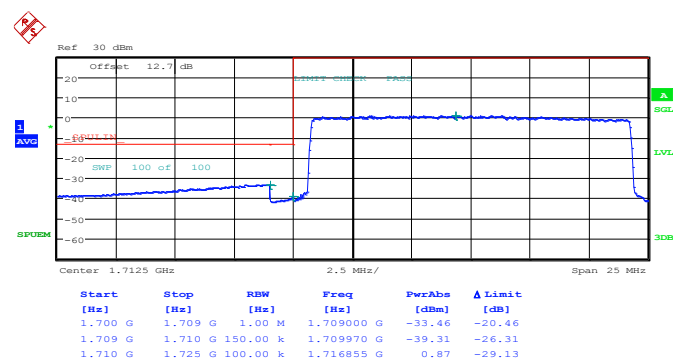
Band :	LTE Band 4	Band Width :	15MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 25.MAR.2014 10:42:49

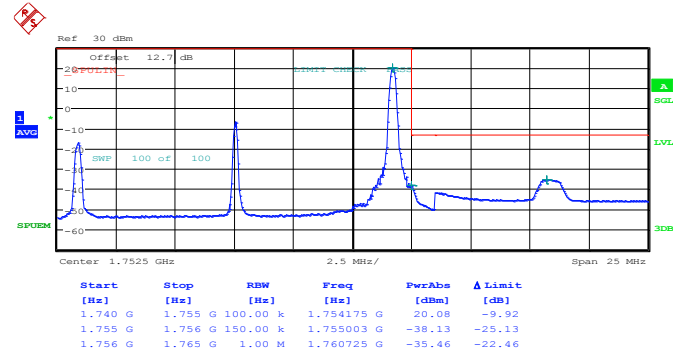
Lower Band Edge Plot for QPSK-RB Size 75, RB Offset 0



Date: 25.MAR.2014 10:44:22

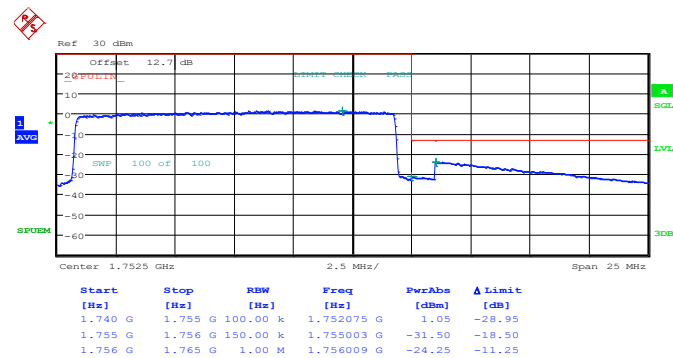


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 74



Date: 25.MAR.2014 10:52:40

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

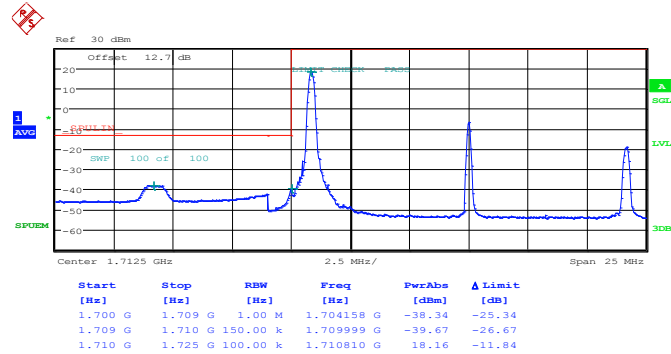


Date: 25.MAR.2014 10:54:13



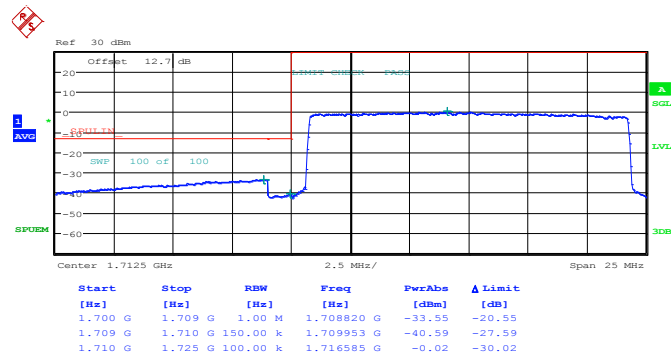
Band :	LTE Band 4	Band Width :	15MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 25.MAR.2014 10:43:36

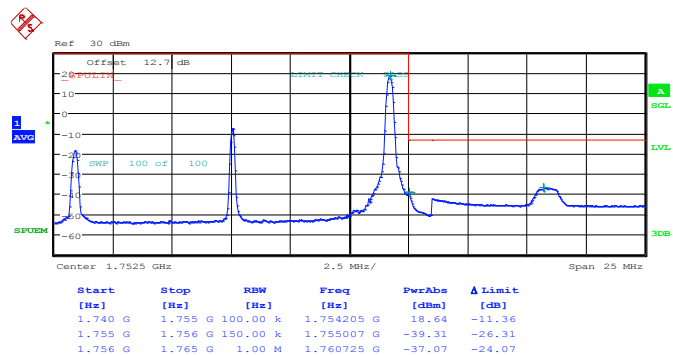
Lower Band Edge Plot for 16QAM-RB Size 75, RB Offset 0



Date: 25.MAR.2014 10:45:46

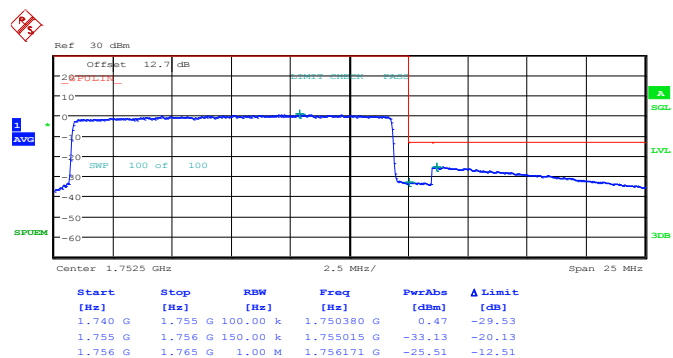


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 74



Date: 25.MAR.2014 10:53:27

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

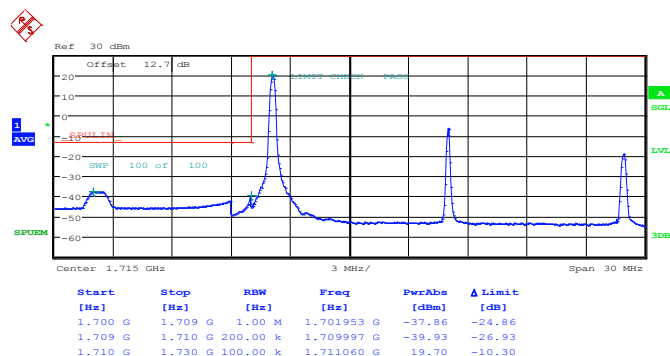


Date: 25.MAR.2014 10:55:00



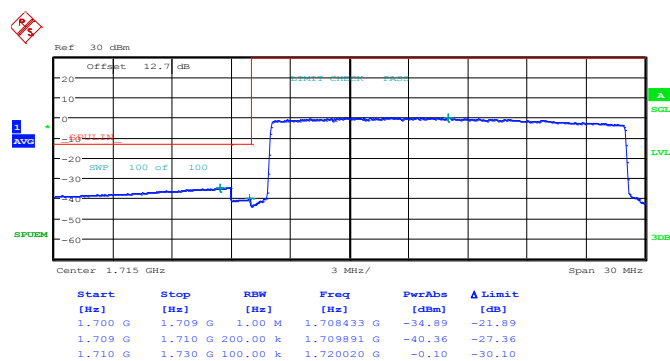
Band :	LTE Band 4	Band Width :	20MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 25.MAR.2014 10:58:50

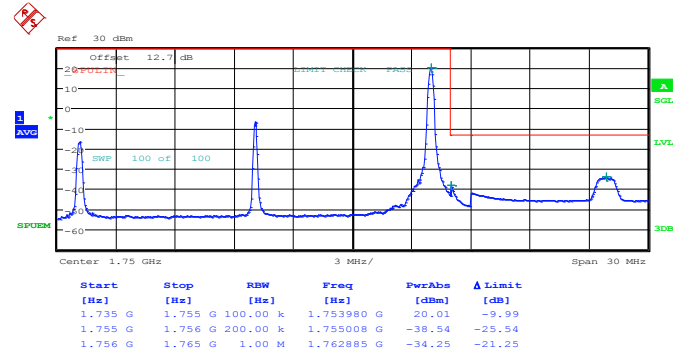
Lower Band Edge Plot for QPSK-RB Size 100, RB Offset 0



Date: 25.MAR.2014 11:00:23

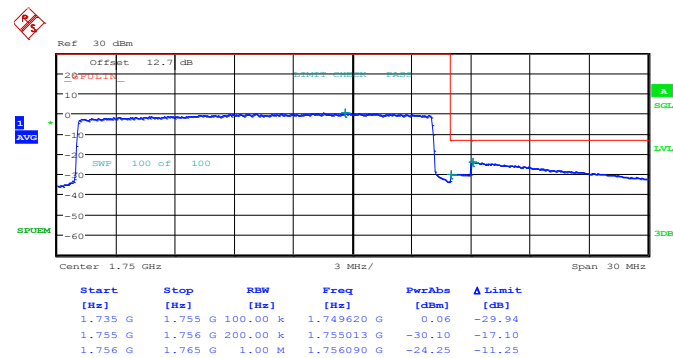


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 99



Date: 25.MAR.2014 11:08:04

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

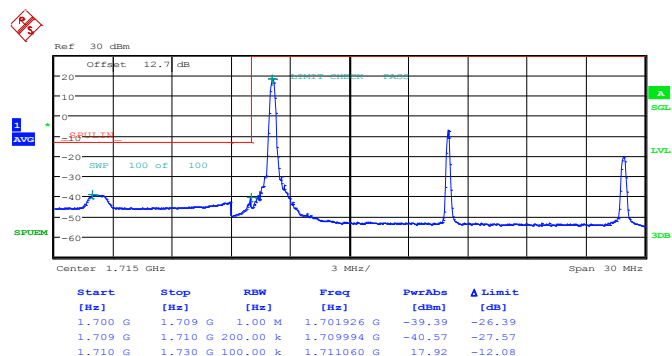


Date: 25.MAR.2014 11:09:37



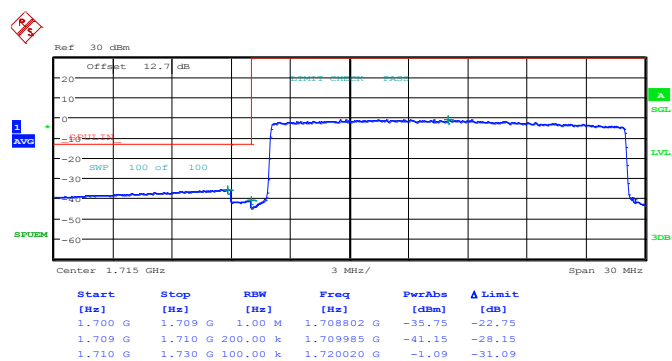
Band :	LTE Band 4	Band Width :	20MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 25.MAR.2014 10:59:37

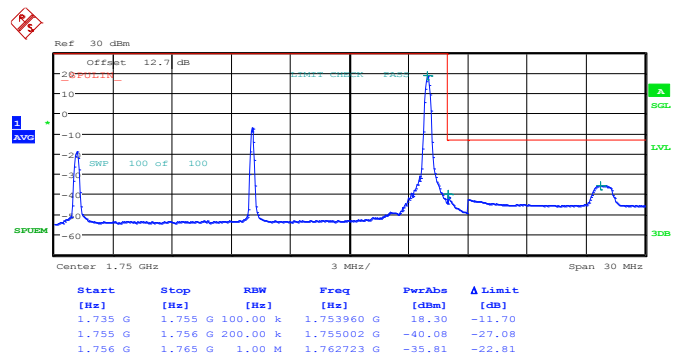
Lower Band Edge Plot for 16QAM-RB Size 100, RB Offset 0



Date: 25.MAR.2014 11:01:10

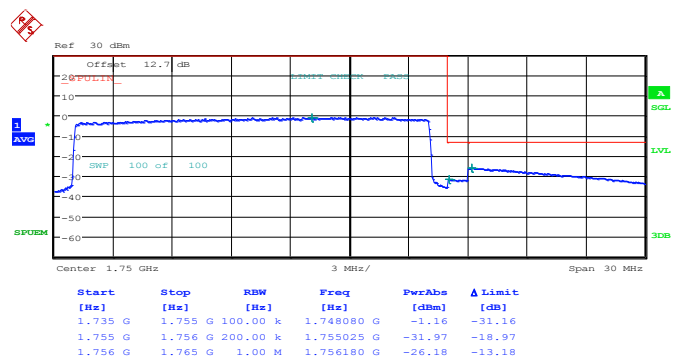


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 99



Date: 25.MAR.2014 11:08:50

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

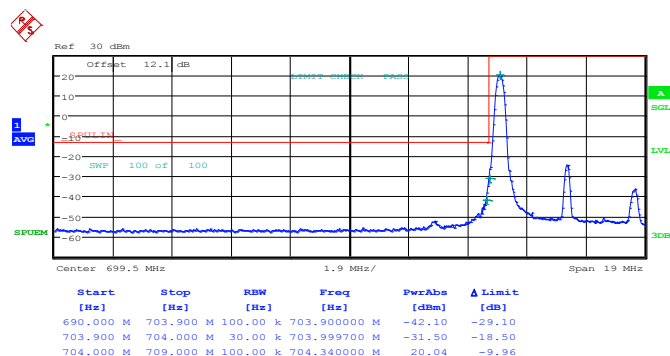


Date: 25.MAR.2014 11:10:23



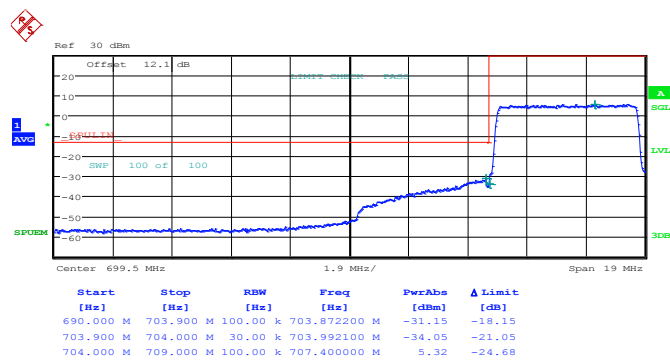
Band :	LTE Band 17	Band Width :	5MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 25.MAR.2014 12:51:35

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



Date: 25.MAR.2014 12:53:08