FCC RF Test Report

APPLICANT	: BandRich Inc.
EQUIPMENT	: LTE/EVDO Rev. A module
BRAND NAME	: BandLuxe
MODEL NAME	: M535U
FCC ID	: UZI-35M168
STANDARD	: 47 CFR Part 2, 22(H), 24(E), 27
CLASSIFICATION	: PCS Licensed Transmitter (PCB)

The product was received on Feb. 11, 2014 and testing was completed on Feb. 17, 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

Testing Laboratory 1190

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

TABLE OF CONTENTS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG421186B	Rev. 01	Initial issue of report	Feb. 26, 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-132 (5.4) RSS-133 (6.4) RSS-139 (6.4)	Conducted Output Power	Reporting Only	PASS	-
3.2	§24.232(d) 27.50(d)(5)	RSS-130(4.4) RSS-132 (5.4) RSS-133 (6.4) RSS-139 (6.4)	Peak-to-Average Ratio	<13 dB	PASS	-
3.3	§2.1049 §22.917(a) §24.238(a) §27.53(g)(3)	RSS-GEN(4.6.1) RSS-132 (3.1) RSS-133 (3.1) RSS-139 (3.1)	Occupied Bandwidth	Reporting Only	PASS	-
3.4	§2.1051 §22.917(a) §24.238(a) §27.53(f) §27.53(g)	RSS-GEN(4.9) RSS-132 (5.5) RSS-133 (6.5.1) RSS-130(4.6) RSS-139 (6.5)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5) (Band 12)	< 43+10log10(P[Watts])	PASS	-
3.5	§2.1051 §22.917(a) §24.238(a) §27.53 (f) §27.53(g)	RSS-GEN(4.9) RSS-132 (5.5) RSS-133 (6.5.1) RSS-130(4.6) RSS-139 (6.5)	Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12)	< $43+10\log_{10}$(P[Watts])	PASS	-

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.6	§2.1053 §22.917(a) §24.238(a) §27.53 (f) §27.53(g)	RSS-GEN(4.9) RSS-132 (5.5) RSS-133 (6.5.1) RSS-130(4.6) RSS-139 (6.5)	Radiated Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12)	< $43+10\log_{10}(P[Watts])$	PASS	Under limit 8.62 dB at 15591.000 MHz
3.7	§2.1055 §22.355 §24.235 §27.54	RSS-GEN(4.7) RSS-132(5.3) RSS-133(6.3) RSS-130(4.3) RSS-139 (6.3)	Frequency Stability Temperature & Voltage	< 2.5 ppm	PASS	-

1 General Description

1.1 Applicant

BandRich Inc.
6F., No. 71, Zhouzi St., Neihu Dist., Taipei City 11493, Taiwan (R.O.C.)

1.2 Manufacturer

FAIR GOAL ELECTRONIC CO.
1F., No. 97-1, Haihu, Luzhu Township, Taoyuan County 338, Taiwan (R.O.C.)

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	LTE/EVDO Rev. A module
Brand Name	BandLuxe
Model Name	M535U
FCC ID	UZI-35M168
EUT supports Radios application	CDMA/EV-DO/LTE
HW Version	V1614E01
SW Version	QC_2_00016739_3_001_0001
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 12 : 699.7 MHz ~ 715.3 MHz LTE Band 5 : 824.7 MHz ~ 848.3 MHz LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz
Rx Frequency	LTE Band 12 : 729.7 MHz ~ 745.3 MHz LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz
Bandwidth	1.4MHz / 3MHz / 5MHz / 10MHz (Band 12) 1.4MHz / 3MHz / 5MHz / 10MHz (Band 5) 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz (Band 2) 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz (Band 4)
Maximum Output Power to Antenna	LTE Band 12 : 22.22 dBm / 0.17 W LTE Band 5 : 22.26 dBm / 0.17 W LTE Band 2 : 22.10 dBm / 0.16 W LTE Band 4 : 22.49 dBm / 0.18 W
Antenna Type	Fixed External 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	Frequency Tolerance (ppm)
Part 22	LTE Band 5	QPSK	1.4 MHz	1M10G7D	-
Part 22	LTE Band 5	16QAM	1.4 MHz	1M10D7W	-
Part 22	LTE Band 5	QPSK	3 MHz	2M73G7D	-
Part 22	LTE Band 5	16QAM	3 MHz	2M72D7W	-
Part 22	LTE Band 5	QPSK	5 MHz	4M50G7D	-
Part 22	LTE Band 5	16QAM	5 MHz	4M49D7W	-
Part 22	LTE Band 5	QPSK	10 MHz	9M08G7D	0.0044 ppm
Part 22	LTE Band 5	16QAM	10 MHz	9M04D7W	-
Part 24	LTE Band 2	QPSK	1.4 MHz	1M10G7D	-
Part 24	LTE Band 2	16QAM	1.4 MHz	1M11D7W	-
Part 24	LTE Band 2	QPSK	3 MHz	2M73G7D	-
Part 24	LTE Band 2	16QAM	3 MHz	2M74D7W	-
Part 24	LTE Band 2	QPSK	5 MHz	4M50G7D	-
Part 24	LTE Band 2	16QAM	5 MHz	4M50D7W	-
Part 24	LTE Band 2	QPSK	10 MHz	9M06G7D	0.0047 ppm
Part 24	LTE Band 2	16QAM	10 MHz	9M04D7W	-
Part 24	LTE Band 2	QPSK	15 MHz	13M5G7D	-
Part 24	LTE Band 2	16QAM	15 MHz	13M5D7W	-
Part 24	LTE Band 2	QPSK	20 MHz	18M4G7D	-
Part 24	LTE Band 2	16QAM	20 MHz	18M4D7W	-

FCC Rule	System	Type of Modulation	BW	Emission Designator	Frequency Tolerance (ppm)
Part 27	LTE Band 4	QPSK	1.4 MHz	1M10G7D	-
Part 27	LTE Band 4	16QAM	1.4 MHz	1M10D7W	-
Part 27	LTE Band 4	QPSK	3 MHz	2M72G7D	-
Part 27	LTE Band 4	16QAM	3 MHz	2M73D7W	-
Part 27	LTE Band 4	QPSK	5MHz	4M51G7D	-
Part 27	LTE Band 4	16QAM	5MHz	4M51D7W	-
Part 27	LTE Band 4	QPSK	10MHz	9M06G7D	0.0213 ppm
Part 27	LTE Band 4	16QAM	10MHz	9M04D7W	-
Part 27	LTE Band 4	QPSK	15MHz	13M5G7D	-
Part 27	LTE Band 4	16QAM	15MHz	13M5D7W	-
Part 27	LTE Band 4	QPSK	20MHz	18M4G7D	-
Part 27	LTE Band 4	16QAM	20MHz	18M5D7W	-
Part 27	LTE Band 12	QPSK	1.4 MHz	1M10G7D	-
Part 27	LTE Band 12	16QAM	1.4 MHz	1M10D7W	-
Part 27	LTE Band 12	QPSK	3 MHz	2M73G7D	-
Part 27	LTE Band 12	16QAM	3 MHz	2M74D7W	-
Part 27	LTE Band 12	QPSK	5MHz	4M50G7D	-
Part 27	LTE Band 12	16QAM	5MHz	4M50D7W	-
Part 27	LTE Band 12	QPSK	10MHz	9M10G7D	0.0066 ppm
Part 27	LTE Band 12	16QAM	10MHz	9M06D7W	-

1.7 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	TH02-HY	03CH07-HY	722060/4086B-1

1.8 Applied Standards

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

- 47 CFR Part 2, 22(H), 24(E), 27
- ANSI / TIA / EIA-603-C-2004
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r01

Remark:

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

2 Test Configuration of Equipment Under Test

2.1 Test Mode

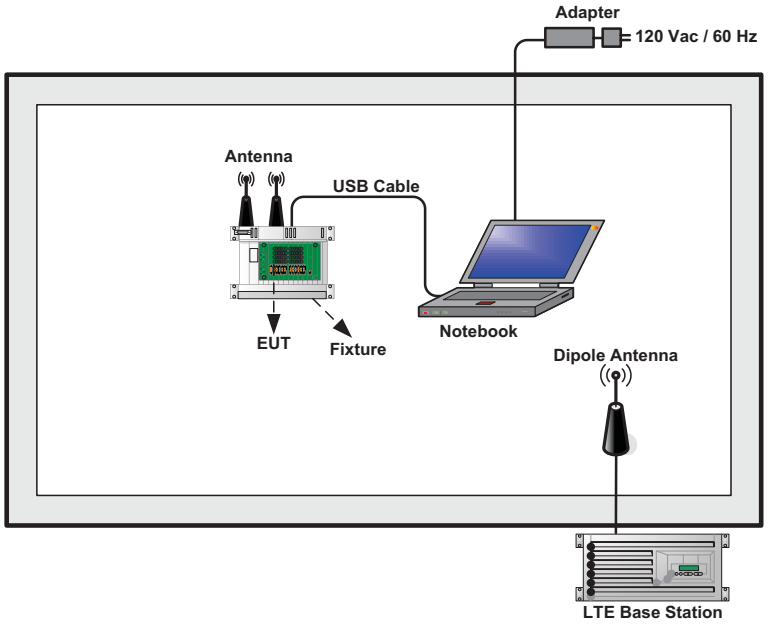
During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range.

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

Test Modes			
Band		Radiated TCs	Conducted TCs
LTE Band 5	BW 1.4MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 3) Link ■ LTE (RB Size 6) Link
	BW 3MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 8) Link ■ LTE (RB Size 15) Link
	BW 5MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 12) Link ■ LTE (RB Size 25) Link
	BW 10MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 25) Link ■ LTE (RB Size 50) Link
LTE Band 2	BW 1.4MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 3) Link ■ LTE (RB Size 6) Link
	BW 3MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 8) Link ■ LTE (RB Size 15) Link
	BW 5MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 12) Link ■ LTE (RB Size 25) Link
	BW 10MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 25) Link ■ LTE (RB Size 50) Link
	BW 15MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 36) Link ■ LTE (RB Size 75) Link
	BW 20MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 50) Link ■ LTE (RB Size 100) Link

Test Modes			
Band		Radiated TCs	Conducted TCs
LTE Band 4	BW 1.4MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 3) Link ■ LTE (RB Size 6) Link
	BW 3MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 8) Link ■ LTE (RB Size 15) Link
	BW 5MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 12) Link ■ LTE (RB Size 25) Link
	BW 10MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 25) Link ■ LTE (RB Size 50) Link
	BW 15MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 36) Link ■ LTE (RB Size 75) Link
	BW 20MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 50) Link ■ LTE (RB Size 100) Link
LTE Band 12	BW 1.4MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 3) Link ■ LTE (RB Size 6) Link
	BW 3MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 8) Link ■ LTE (RB Size 15) Link
	BW 5MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 12) Link ■ LTE (RB Size 25) Link
	BW 10MHz	■ LTE (RB Size 1) Link	■ LTE (RB Size 1) Link ■ LTE (RB Size 25) Link ■ LTE (RB Size 50) Link

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	Notebook	DELL	P20G	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	Fixture	NA	NA	NA	NA	NA
4.	Antenna	NA	NA	NA	NA	NA

2.4 Measurement Results Explanation Example

For all conducted test items:

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

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.
Offset = RF cable loss + attenuator factor.
Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Example :
Offset(dB) = RF cable loss(dB) + attenuator factor(dB).
= 4.2 + 10 = 14.2 (dB)

3 Test Result

3.1 Conducted Output Power Measurement

3.1.1 Description of the Conducted Output Power Measurement

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

3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup

3.1.5 Test Result of Conducted Output Power

<LTE Band 5 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				20450	20525	20600
Frequency (MHz)				829	836.5	844
10	QPSK	1	0	22.16	22.10	22.06
10	QPSK	1	24	22.03	22.09	22.05
10	QPSK	1	49	22.00	22.04	21.98
10	QPSK	25	0	21.08	21.64	21.61
10	QPSK	25	12	21.04	21.54	21.57
10	QPSK	25	24	20.98	21.46	21.55
10	QPSK	50	0	20.95	20.85	20.86
10	16QAM	1	0	20.96	20.81	20.85
10	16QAM	1	24	20.89	20.85	20.87
10	16QAM	1	49	20.74	20.83	20.82
10	16QAM	25	0	20.10	20.56	20.47
10	16QAM	25	12	20.00	20.48	20.44
10	16QAM	25	24	19.95	20.44	20.42
10	16QAM	50	0	19.95	19.73	19.87
Channel				20425	20525	20625
Frequency (MHz)				826.5	836.5	846.5
5	QPSK	1	0	22.08	22.05	22.04
5	QPSK	1	12	22.07	22.03	22.03
5	QPSK	1	24	22.09	21.98	21.94
5	QPSK	12	0	21.17	21.53	21.65
5	QPSK	12	6	21.20	21.44	21.60
5	QPSK	12	11	21.20	21.40	21.54
5	QPSK	25	0	21.10	20.94	20.97
5	16QAM	1	0	21.03	21.27	21.27
5	16QAM	1	12	20.99	21.37	21.33
5	16QAM	1	24	21.33	21.35	21.25
5	16QAM	12	0	20.22	20.52	20.69
5	16QAM	12	6	20.25	20.42	20.59
5	16QAM	12	11	20.26	20.38	20.53
5	16QAM	25	0	20.15	19.97	20.01

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				20415	20525	20635
Frequency (MHz)				825.5	836.5	847.5
3	QPSK	1	0	22.22	22.12	22.04
3	QPSK	1	7	22.16	22.11	21.99
3	QPSK	1	14	22.14	22.03	21.95
3	QPSK	8	0	21.23	21.67	21.66
3	QPSK	8	4	21.10	21.57	21.46
3	QPSK	8	7	21.21	21.55	21.36
3	QPSK	15	0	21.12	20.98	21.06
3	16QAM	1	0	21.48	21.29	21.36
3	16QAM	1	7	21.40	21.39	20.99
3	16QAM	1	14	21.38	21.29	21.19
3	16QAM	8	0	20.08	20.54	20.55
3	16QAM	8	4	20.03	20.52	20.46
3	16QAM	8	7	20.07	20.43	20.35
3	16QAM	15	0	20.11	19.97	20.00
Channel				20407	20525	20643
Frequency (MHz)				824.7	836.5	848.3
1.4	QPSK	1	0	22.10	22.12	22.09
1.4	QPSK	1	2	22.15	22.07	21.96
1.4	QPSK	1	5	22.14	22.05	21.93
1.4	QPSK	3	0	22.26	22.11	22.08
1.4	QPSK	3	1	22.17	22.03	22.05
1.4	QPSK	3	2	22.15	21.99	21.99
1.4	QPSK	6	0	21.17	21.02	21.04
1.4	16QAM	1	0	21.13	21.16	21.06
1.4	16QAM	1	2	21.13	21.11	20.97
1.4	16QAM	1	5	21.11	21.06	21.15
1.4	16QAM	3	0	21.25	21.23	21.11
1.4	16QAM	3	1	21.27	21.24	21.10
1.4	16QAM	3	2	21.27	21.22	21.12
1.4	16QAM	6	0	20.33	20.19	20.10

<LTE Band 2 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				18700	18900	19100
Frequency (MHz)				1860	1880	1900
20	QPSK	1	0	22.10	22.03	22.07
20	QPSK	1	49	22.00	22.02	21.86
20	QPSK	1	99	21.99	22.00	21.59
20	QPSK	50	0	20.97	20.85	20.89
20	QPSK	50	24	20.94	20.91	20.81
20	QPSK	50	49	20.82	20.99	20.77
20	QPSK	100	0	20.93	20.92	20.86
20	16QAM	1	0	21.12	20.82	21.00
20	16QAM	1	49	21.05	21.05	20.83
20	16QAM	1	99	21.04	20.97	20.59
20	16QAM	50	0	19.90	19.79	19.80
20	16QAM	50	24	19.89	19.86	19.77
20	16QAM	50	49	19.76	19.88	19.75
20	16QAM	100	0	19.81	19.86	19.81
Channel				18675	18900	19125
Frequency (MHz)				1857.5	1880	1902.5
15	QPSK	1	0	22.09	22.07	22.02
15	QPSK	1	37	22.09	22.06	21.83
15	QPSK	1	74	21.85	22.05	21.54
15	QPSK	36	0	21.08	20.96	20.87
15	QPSK	36	18	20.95	20.94	20.77
15	QPSK	36	37	20.84	20.90	20.73
15	QPSK	75	0	20.96	20.87	20.74
15	16QAM	1	0	21.07	20.94	20.98
15	16QAM	1	37	21.06	20.99	20.82
15	16QAM	1	74	20.87	20.98	20.53
15	16QAM	36	0	19.97	19.93	19.84
15	16QAM	36	18	19.94	19.93	19.76
15	16QAM	36	37	19.81	19.89	19.75
15	16QAM	75	0	19.86	19.82	19.73

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				18650	18900	19150
Frequency (MHz)				1855	1880	1905
10	QPSK	1	0	22.05	22.01	22.04
10	QPSK	1	24	21.99	21.91	21.94
10	QPSK	1	49	21.96	21.96	21.83
10	QPSK	25	0	21.07	20.96	20.94
10	QPSK	25	12	21.09	21.09	21.00
10	QPSK	25	24	21.00	21.10	20.87
10	QPSK	50	0	20.83	20.94	20.79
10	16QAM	1	0	20.87	20.98	20.76
10	16QAM	1	24	20.95	21.03	20.94
10	16QAM	1	49	20.85	21.01	20.51
10	16QAM	25	0	20.03	20.00	19.87
10	16QAM	25	12	20.03	19.99	19.93
10	16QAM	25	24	20.00	20.00	19.81
10	16QAM	50	0	19.86	19.89	19.75
Channel				18625	18900	19175
Frequency (MHz)				1852.5	1880	1907.5
5	QPSK	1	0	22.05	22.09	22.04
5	QPSK	1	12	22.04	22.00	21.84
5	QPSK	1	24	21.88	22.08	21.37
5	QPSK	12	0	21.02	21.09	20.92
5	QPSK	12	6	21.09	21.04	20.80
5	QPSK	12	11	21.03	21.03	20.69
5	QPSK	25	0	21.01	21.00	20.76
5	16QAM	1	0	21.10	21.20	21.11
5	16QAM	1	12	21.21	21.19	20.98
5	16QAM	1	24	21.13	21.21	20.69
5	16QAM	12	0	20.00	20.10	19.81
5	16QAM	12	6	19.99	20.01	19.95
5	16QAM	12	11	19.99	20.05	19.71
5	16QAM	25	0	19.88	19.94	19.72

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				18615	18900	19185
Frequency (MHz)				1851.5	1880	1908.5
3	QPSK	1	0	22.06	22.04	22.02
3	QPSK	1	7	21.99	21.95	21.66
3	QPSK	1	14	22.05	22.03	21.44
3	QPSK	8	0	21.09	21.05	20.77
3	QPSK	8	4	21.06	21.02	20.64
3	QPSK	8	7	21.07	21.06	20.53
3	QPSK	15	0	21.08	21.06	20.70
3	16QAM	1	0	20.97	21.01	20.83
3	16QAM	1	7	20.98	20.93	20.63
3	16QAM	1	14	20.97	21.00	20.44
3	16QAM	8	0	19.96	19.91	19.70
3	16QAM	8	4	19.94	19.93	19.57
3	16QAM	8	7	19.96	19.92	19.51
3	16QAM	15	0	20.01	19.97	19.64
Channel				18607	18900	19193
Frequency (MHz)				1850.7	1880	1909.3
1.4	QPSK	1	0	22.07	22.05	22.04
1.4	QPSK	1	2	22.01	21.98	21.54
1.4	QPSK	1	5	22.04	22.02	21.52
1.4	QPSK	3	0	22.01	21.99	21.62
1.4	QPSK	3	1	22.05	22.03	21.56
1.4	QPSK	3	2	22.06	22.04	21.55
1.4	QPSK	6	0	21.04	21.12	20.56
1.4	16QAM	1	0	21.11	21.23	20.76
1.4	16QAM	1	2	21.16	21.27	20.77
1.4	16QAM	1	5	21.28	21.26	20.71
1.4	16QAM	3	0	21.03	21.08	20.51
1.4	16QAM	3	1	21.06	21.12	20.49
1.4	16QAM	3	2	21.06	21.12	20.63
1.4	16QAM	6	0	20.15	20.23	19.52

<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	22.33	22.27	22.22
20	QPSK	1	49	22.29	22.22	22.00
20	QPSK	1	99	22.32	22.10	22.06
20	QPSK	50	0	21.14	21.31	21.13
20	QPSK	50	24	21.19	21.20	21.00
20	QPSK	50	49	21.32	21.03	21.07
20	QPSK	100	0	21.21	21.25	21.06
20	16QAM	1	0	21.30	21.50	21.27
20	16QAM	1	49	21.50	21.36	21.17
20	16QAM	1	99	21.45	21.31	21.60
20	16QAM	50	0	20.26	20.25	20.02
20	16QAM	50	24	20.19	20.21	20.01
20	16QAM	50	49	20.30	20.16	20.10
20	16QAM	100	0	20.29	20.23	20.19
Channel				20025	20175	20325
Frequency (MHz)				1717.5	1732.5	1747.5
15	QPSK	1	0	22.36	22.40	22.27
15	QPSK	1	37	22.34	22.31	22.27
15	QPSK	1	74	22.35	22.11	22.16
15	QPSK	36	0	21.19	21.23	21.06
15	QPSK	36	18	21.06	21.14	20.98
15	QPSK	36	37	21.17	21.07	21.22
15	QPSK	75	0	21.11	21.08	21.05
15	16QAM	1	0	21.40	21.43	21.38
15	16QAM	1	37	21.56	21.46	21.43
15	16QAM	1	74	21.58	21.25	21.51
15	16QAM	36	0	20.19	20.24	20.05
15	16QAM	36	18	20.17	20.12	20.09
15	16QAM	36	37	20.28	20.07	20.24
15	16QAM	75	0	20.09	20.04	20.04

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	22.34	22.45	22.26
10	QPSK	1	24	22.25	22.23	22.25
10	QPSK	1	49	22.33	22.15	22.18
10	QPSK	25	0	21.18	21.22	21.19
10	QPSK	25	12	21.13	21.24	21.26
10	QPSK	25	24	21.12	21.22	21.29
10	QPSK	50	0	21.05	21.10	21.10
10	16QAM	1	0	21.03	21.17	21.07
10	16QAM	1	24	21.23	21.27	21.16
10	16QAM	1	49	21.25	21.15	21.18
10	16QAM	25	0	20.23	20.29	20.25
10	16QAM	25	12	20.19	20.32	20.33
10	16QAM	25	24	20.28	20.30	20.37
10	16QAM	50	0	20.01	20.23	20.13
Channel				19975	20175	20375
Frequency (MHz)				1712.5	1732.5	1752.5
5	QPSK	1	0	22.36	22.22	22.48
5	QPSK	1	12	22.35	22.17	22.47
5	QPSK	1	24	22.18	22.21	22.33
5	QPSK	12	0	21.28	21.33	21.41
5	QPSK	12	6	21.25	21.22	21.57
5	QPSK	12	11	21.28	21.27	21.38
5	QPSK	25	0	21.11	21.20	21.32
5	16QAM	1	0	21.05	21.13	21.15
5	16QAM	1	12	21.11	21.04	21.32
5	16QAM	1	24	20.91	21.03	21.06
5	16QAM	12	0	20.35	20.34	20.40
5	16QAM	12	6	20.44	20.35	20.48
5	16QAM	12	11	20.39	20.39	20.48
5	16QAM	25	0	20.12	20.30	20.43

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	22.30	22.26	22.49
3	QPSK	1	7	22.21	22.25	22.45
3	QPSK	1	14	22.21	22.19	22.32
3	QPSK	8	0	21.35	21.28	21.49
3	QPSK	8	4	21.47	21.34	21.54
3	QPSK	8	7	21.33	21.29	21.46
3	QPSK	15	0	21.37	21.28	21.41
3	16QAM	1	0	21.23	21.11	21.77
3	16QAM	1	7	21.10	21.13	21.76
3	16QAM	1	14	21.01	21.40	21.57
3	16QAM	8	0	20.19	20.25	20.47
3	16QAM	8	4	20.31	20.29	20.43
3	16QAM	8	7	20.18	20.30	20.45
3	16QAM	15	0	20.35	20.44	20.56
Channel				19957	20175	20393
Frequency (MHz)				1710.7	1732.5	1754.3
1.4	QPSK	1	0	22.46	22.29	22.48
1.4	QPSK	1	2	22.41	22.28	22.33
1.4	QPSK	1	5	22.29	22.27	22.28
1.4	QPSK	3	0	22.32	22.28	22.41
1.4	QPSK	3	1	22.25	22.19	22.30
1.4	QPSK	3	2	22.29	22.20	22.29
1.4	QPSK	6	0	21.30	21.27	21.25
1.4	16QAM	1	0	21.57	21.71	21.74
1.4	16QAM	1	2	21.50	21.67	21.59
1.4	16QAM	1	5	21.62	21.47	21.35
1.4	16QAM	3	0	21.31	21.21	21.54
1.4	16QAM	3	1	21.22	21.19	21.48
1.4	16QAM	3	2	21.25	21.29	21.47
1.4	16QAM	6	0	20.27	20.43	20.46

<LTE Band 12 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				23060	23095	23130
Frequency (MHz)				704	707.5	711
10	QPSK	1	0	22.12	22.22	22.06
10	QPSK	1	24	22.07	22.21	21.88
10	QPSK	1	49	21.93	21.84	21.91
10	QPSK	25	0	20.79	21.82	21.74
10	QPSK	25	12	20.77	21.77	21.76
10	QPSK	25	24	20.82	21.78	21.72
10	QPSK	50	0	20.58	20.63	20.61
10	16QAM	1	0	20.87	21.02	20.88
10	16QAM	1	24	21.32	20.79	20.79
10	16QAM	1	49	20.90	21.14	20.77
10	16QAM	25	0	19.80	20.83	20.80
10	16QAM	25	12	19.79	20.76	20.71
10	16QAM	25	24	19.85	20.76	20.80
10	16QAM	50	0	19.61	19.60	19.57
Channel				23035	23095	23155
Frequency (MHz)				701.5	707.5	713.5
5	QPSK	1	0	22.03	22.05	22.05
5	QPSK	1	12	21.94	21.47	21.70
5	QPSK	1	24	21.90	21.71	21.75
5	QPSK	12	0	20.92	21.58	21.56
5	QPSK	12	6	21.05	21.52	21.41
5	QPSK	12	11	20.95	21.46	21.36
5	QPSK	25	0	20.85	20.75	20.70
5	16QAM	1	0	21.07	20.84	20.76
5	16QAM	1	12	20.92	20.91	20.89
5	16QAM	1	24	21.00	20.86	20.76
5	16QAM	12	0	19.76	20.82	20.72
5	16QAM	12	6	19.95	20.80	20.66
5	16QAM	12	11	19.83	20.72	20.72
5	16QAM	25	0	19.77	19.78	19.60

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				23025	23095	23165
Frequency (MHz)				700.5	707.5	714.5
3	QPSK	1	0	22.21	22.01	22.01
3	QPSK	1	7	22.03	21.59	21.88
3	QPSK	1	14	22.05	21.99	21.83
3	QPSK	8	0	20.89	21.52	21.87
3	QPSK	8	4	20.93	21.46	21.78
3	QPSK	8	7	21.03	21.43	21.72
3	QPSK	15	0	20.89	20.86	20.71
3	16QAM	1	0	21.23	21.11	20.64
3	16QAM	1	7	21.08	21.16	20.73
3	16QAM	1	14	21.14	21.13	20.60
3	16QAM	8	0	19.87	20.96	20.82
3	16QAM	8	4	19.84	20.87	20.87
3	16QAM	8	7	19.94	20.77	20.81
3	16QAM	15	0	19.83	19.93	19.91
Channel				23017	23095	23173
Frequency (MHz)				699.7	707.5	715.3
1.4	QPSK	1	0	22.04	22.03	22.01
1.4	QPSK	1	2	21.94	21.50	21.85
1.4	QPSK	1	5	21.92	21.96	21.75
1.4	QPSK	3	0	21.94	21.85	21.74
1.4	QPSK	3	1	21.89	21.87	21.85
1.4	QPSK	3	2	21.85	21.49	21.72
1.4	QPSK	6	0	20.97	20.95	21.08
1.4	16QAM	1	0	20.64	20.56	20.43
1.4	16QAM	1	2	20.81	20.49	20.39
1.4	16QAM	1	5	20.34	20.49	20.36
1.4	16QAM	3	0	20.98	20.80	20.92
1.4	16QAM	3	1	21.07	20.76	20.91
1.4	16QAM	3	2	21.02	20.70	20.90
1.4	16QAM	6	0	19.73	19.86	19.58

Note: maximum average power for LTE.

3.2 Peak-to-Average Ratio

3.2.1 Description of the PAR Measurement

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

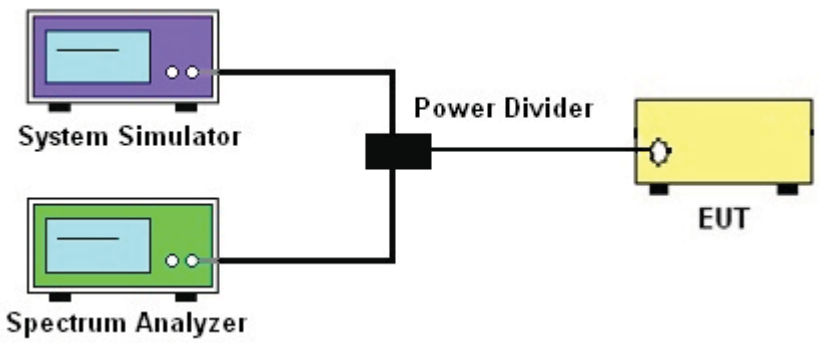
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

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

3.2.4 Test Setup



3.2.5 Test Result of Peak-to-Average Ratio

LTE Band 5						
BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				20450	20525	20600
Frequency (MHz)				829	836.5	844
10	16QAM	1	0	6.92	7.12	7.24
10	16QAM	50	0	6.70	6.63	6.60

LTE Band 2						
BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				18700	18900	19100
Frequency (MHz)				1860	1880	1900
20	16QAM	1	0	6.79	6.86	6.83
20	16QAM	100	0	6.47	6.60	6.60

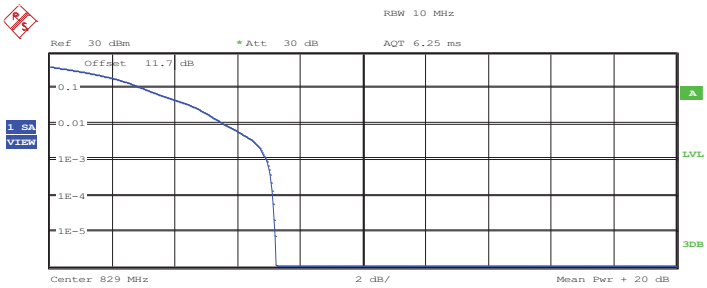
LTE Band 4						
BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				20050	20175	20300
Frequency (MHz)				1720	1732.5	1745
20	16QAM	1	0	6.12	6.96	6.70
20	16QAM	100	0	6.47	6.51	6.60

LTE Band 12						
BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				23060	23095	23130
Frequency (MHz)				704	707.5	711
10	16QAM	1	0	6.70	6.92	6.96
10	16QAM	50	0	6.60	6.70	6.73

3.2.6 Peak to Average Power Ratio

Peak-to-Average Ratio on LTE Band 5

10MHz / 16QAM in Ch. 20450 (1RB Size)



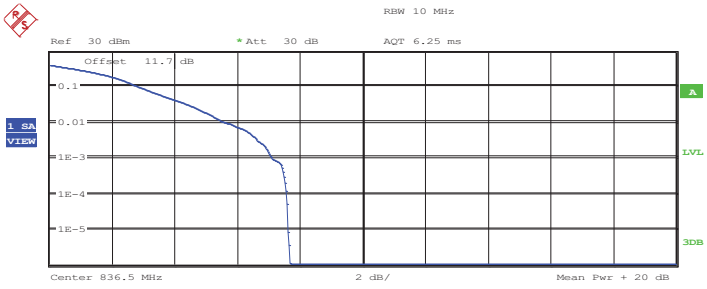
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	21.47 dBm
Peak	28.68 dBm
Crest	7.22 dB
10 %	3.01 dB
1 %	5.58 dB
.1 %	6.92 dB
.01 %	7.12 dB

Date: 14.FEB.2014 13:56:58

Peak-to-Average Ratio on LTE Band 5

10MHz / 16QAM in Ch. 20525 (1RB Size)



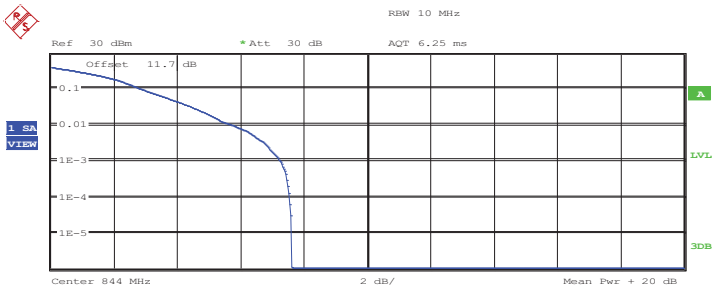
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	21.65 dBm
Peak	29.32 dBm
Crest	7.67 dB
10 %	2.85 dB
1 %	5.61 dB
.1 %	7.12 dB
.01 %	7.56 dB

Date: 14.FEB.2014 13:57:52

Peak-to-Average Ratio on LTE Band 5

10MHz / 16QAM in Ch. 20600 (1RB Size)



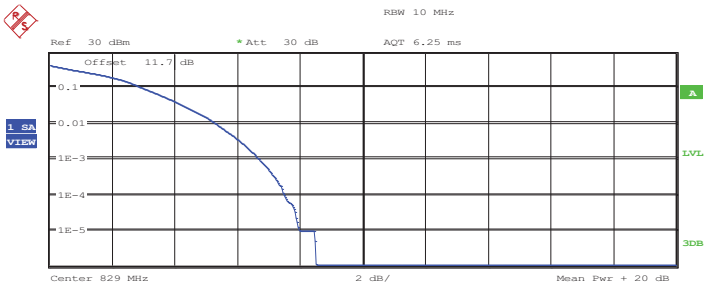
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	21.57 dBm
Peak	29.19 dBm
Crest	7.61 dB
10 %	2.88 dB
1 %	5.74 dB
.1 %	7.24 dB
.01 %	7.53 dB

Date: 14.FEB.2014 13:58:30

Peak-to-Average Ratio on LTE Band 5

10MHz / 16QAM in Ch. 20450 (50RB Size)



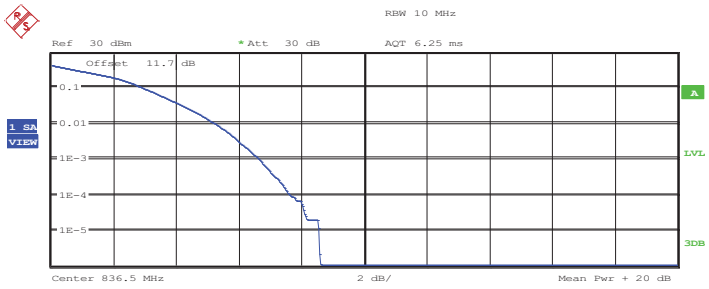
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	20.66 dBm
Peak	29.18 dBm
Crest	8.51 dB
10 %	2.98 dB
1 %	5.29 dB
.1 %	6.70 dB
.01 %	7.50 dB

Date: 14.FEB.2014 13:57:26

Peak-to-Average Ratio on LTE Band 5

10MHz / 16QAM in Ch. 20525 (50RB Size)



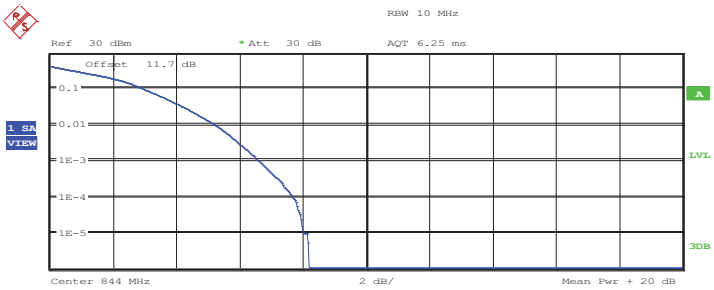
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	20.67 dBm
Peak	29.25 dBm
Crest	8.58 dB
10 %	2.95 dB
1 %	5.22 dB
.1 %	6.63 dB
.01 %	7.63 dB

Date: 14.FEB.2014 13:58:10

Peak-to-Average Ratio on LTE Band 5

10MHz / 16QAM in Ch. 20600 (50RB Size)



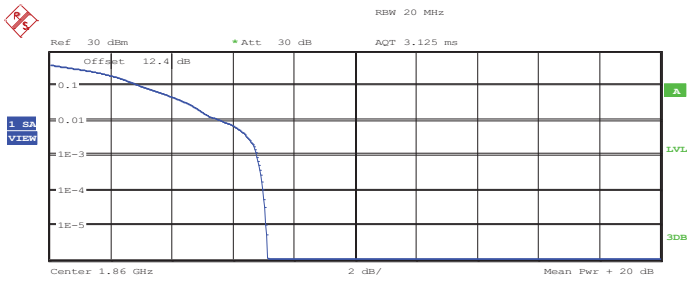
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	20.57 dBm
Peak	28.76 dBm
Crest	8.20 dB
10 %	2.98 dB
1 %	5.22 dB
.1 %	6.60 dB
.01 %	7.66 dB

Date: 14.FEB.2014 13:58:51

Peak-to-Average Ratio on LTE Band 2

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



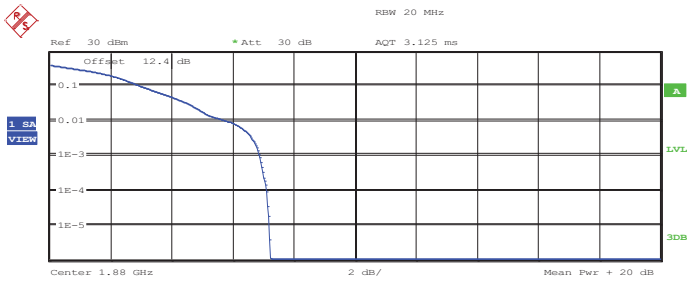
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	21.02 dBm
Peak	28.16 dBm
Crest	7.14 dB
10 %	2.98 dB
1 %	5.64 dB
.1 %	6.79 dB
.01 %	6.99 dB

Date: 14.FEB.2014 10:09:56

Peak-to-Average Ratio on LTE Band 2

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



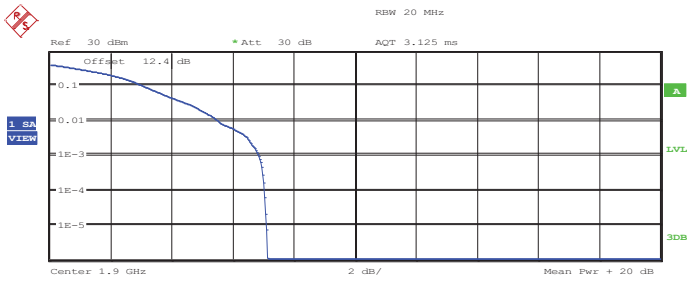
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	20.96 dBm
Peak	28.17 dBm
Crest	7.21 dB
10 %	2.98 dB
1 %	5.80 dB
.1 %	6.86 dB
.01 %	7.12 dB

Date: 14.FEB.2014 10:10:37

Peak-to-Average Ratio on LTE Band 2

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



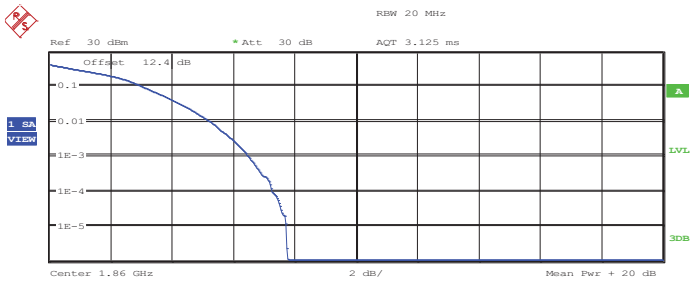
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	20.94 dBm
Peak	28.06 dBm
Crest	7.12 dB
10 %	3.08 dB
1 %	5.48 dB
.1 %	6.83 dB
.01 %	7.05 dB

Date: 14.FEB.2014 10:11:04

Peak-to-Average Ratio on LTE Band 2

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



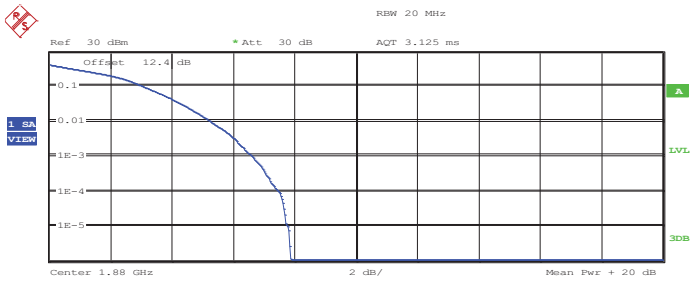
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	20.13 dBm
Peak	27.88 dBm
Crest	7.75 dB
10 %	3.04 dB
1 %	5.22 dB
.1 %	6.47 dB
.01 %	7.28 dB

Date: 14.FEB.2014 10:12:11

Peak-to-Average Ratio on LTE Band 2

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



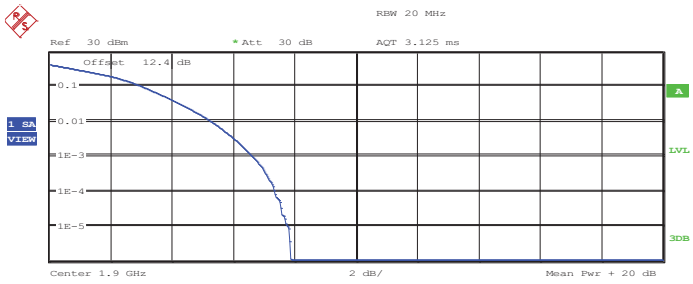
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	20.17 dBm
Peak	28.03 dBm
Crest	7.86 dB
10 %	3.08 dB
1 %	5.22 dB
.1 %	6.60 dB
.01 %	7.47 dB

Date: 14.FEB.2014 10:11:46

Peak-to-Average Ratio on LTE Band 2

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



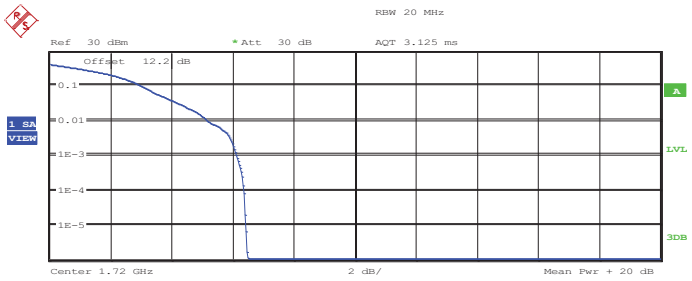
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	20.27 dBm
Peak	28.13 dBm
Crest	7.86 dB
10 %	3.04 dB
1 %	5.26 dB
.1 %	6.60 dB
.01 %	7.34 dB

Date: 14.FEB.2014 10:11:27

Peak-to-Average Ratio on LTE Band 4

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



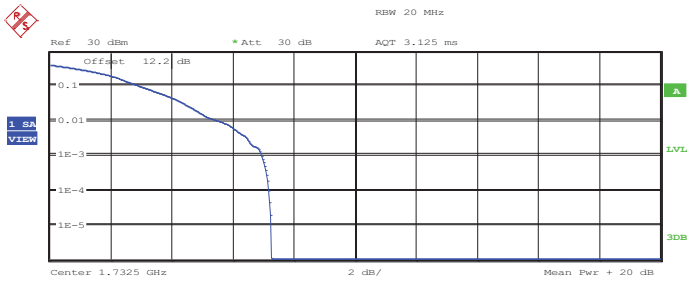
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	21.01 dBm
Peak	27.48 dBm
Crest	6.48 dB
10 %	3.01 dB
1 %	5.16 dB
.1 %	6.12 dB
.01 %	6.38 dB

Date: 14.FEB.2014 12:51:14

Peak-to-Average Ratio on LTE Band 4

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



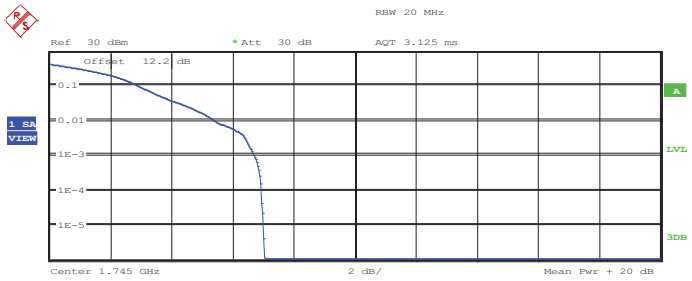
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	21.63 dBm
Peak	28.89 dBm
Crest	7.25 dB
10 %	2.95 dB
1 %	5.51 dB
.1 %	6.96 dB
.01 %	7.18 dB

Date: 14.FEB.2014 12:50:24

Peak-to-Average Ratio on LTE Band 4

20MHz / 16QAM in Ch. 20300 (1RB Size)



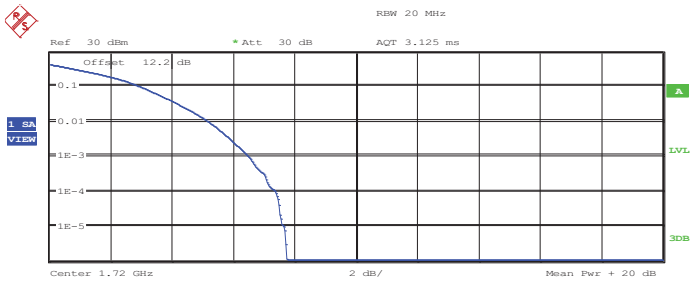
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	21.02 dBm
Peak	28.03 dBm
Crest	7.02 dB
10 %	2.92 dB
1 %	5.38 dB
.1 %	6.70 dB
.01 %	6.92 dB

Date: 14.FEB.2014 12:49:20

Peak-to-Average Ratio on LTE Band 4

20MHz / 16QAM in Ch. 20500 (100RB Size)



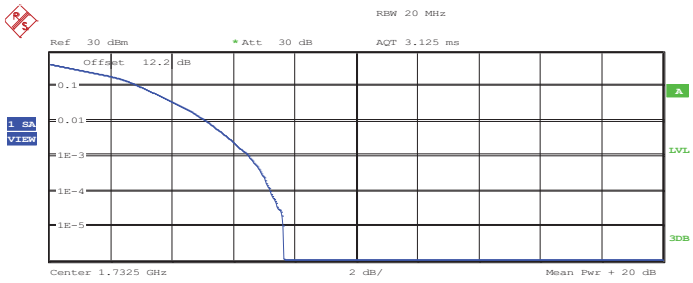
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	20.74 dBm
Peak	28.47 dBm
Crest	7.73 dB
10 %	2.98 dB
1 %	5.16 dB
.1 %	6.47 dB
.01 %	7.37 dB

Date: 14.FEB.2014 12:48:03

Peak-to-Average Ratio on LTE Band 4

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



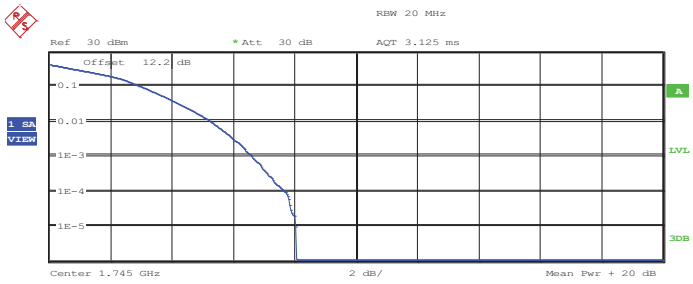
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	20.60 dBm
Peak	28.25 dBm
Crest	7.65 dB
10 %	2.95 dB
1 %	5.13 dB
.1 %	6.51 dB
.01 %	7.21 dB

Date: 14.FEB.2014 12:48:32

Peak-to-Average Ratio on LTE Band 4

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



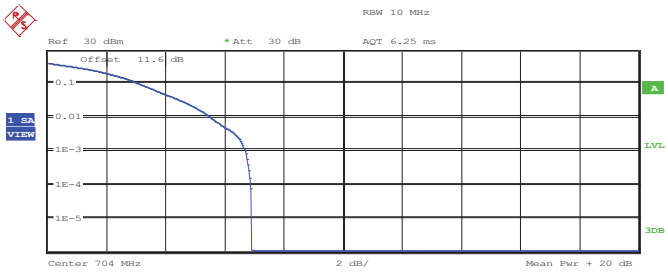
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 23.7MHz

	Trace 1
Mean	20.46 dBm
Peak	28.52 dBm
Crest	8.07 dB
10 %	3.01 dB
1 %	5.26 dB
.1 %	6.60 dB
.01 %	7.66 dB

Date: 14.FEB.2014 12:48:58

Peak-to-Average Ratio on LTE Band 12

10MHz / 16QAM in Ch. 23060 (1RB Size)



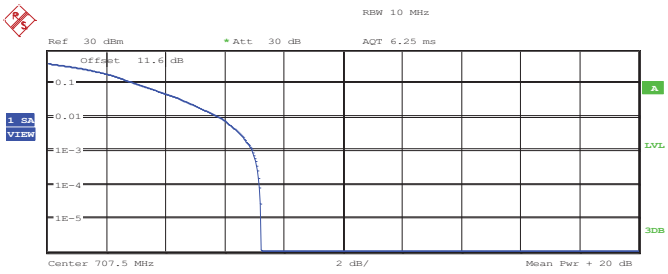
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	20.94 dBm
Peak	27.85 dBm
Crest	6.91 dB
10 %	3.11 dB
1 %	5.48 dB
.1 %	6.70 dB
.01 %	6.89 dB

Date: 14.FEB.2014 15:52:02

Peak-to-Average Ratio on LTE Band 12

10MHz / 16QAM in Ch. 23095 (1RB Size)



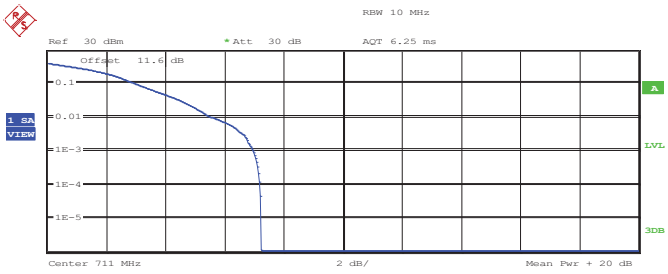
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	21.36 dBm
Peak	28.58 dBm
Crest	7.22 dB
10 %	3.01 dB
1 %	5.80 dB
.1 %	6.92 dB
.01 %	7.18 dB

Date: 14.FEB.2014 15:52:18

Peak-to-Average Ratio on LTE Band 12

10MHz / 16QAM in Ch. 23130 (1RB Size)



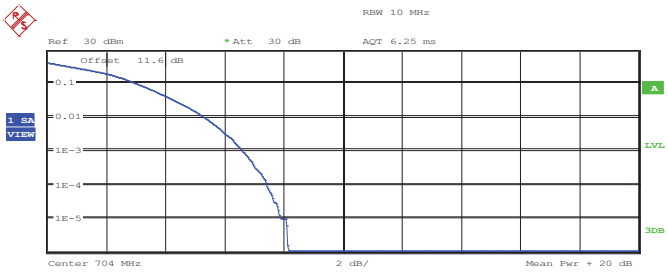
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	21.45 dBm
Peak	28.67 dBm
Crest	7.22 dB
10 %	2.98 dB
1 %	5.58 dB
.1 %	6.96 dB
.01 %	7.18 dB

Date: 14.FEB.2014 15:53:27

Peak-to-Average Ratio on LTE Band 12

10MHz / 16QAM in Ch. 23060 (50RB Size)



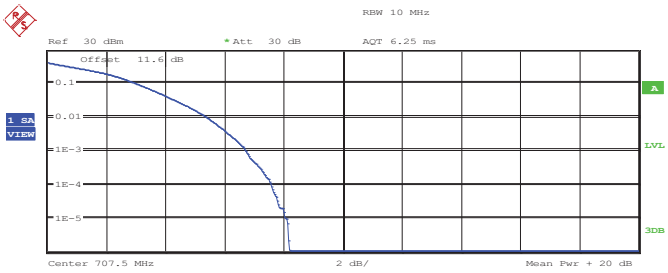
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	20.42 dBm
Peak	28.56 dBm
Crest	8.14 dB
10 %	3.04 dB
1 %	5.29 dB
.1 %	6.60 dB
.01 %	7.40 dB

Date: 14.FEB.2014 15:51:44

Peak-to-Average Ratio on LTE Band 12

10MHz / 16QAM in Ch. 23095 (50RB Size)



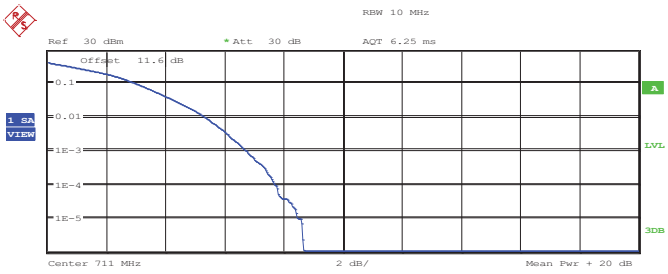
Complementary Cumulative Distribution Function
NOF samples: 100000, Usable BW: 11.2MHz

	Trace 1
Mean	20.40 dBm
Peak	28.58 dBm
Crest	8.17 dB
10 %	3.01 dB
1 %	5.38 dB
.1 %	6.70 dB
.01 %	7.56 dB

Date: 14.FEB.2014 15:52:37

Peak-to-Average Ratio on LTE Band 12

10MHz / 16QAM in Ch. 23130 (50RB Size)



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

	Trace 1
Mean	20.43 dBm
Peak	29.09 dBm
Crest	8.66 dB
10 %	3.01 dB
1 %	5.32 dB
.1 %	6.73 dB
.01 %	7.72 dB

Date: 14.FEB.2014 15:52:56

3.3 Occupied Bandwidth

3.3.1 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.

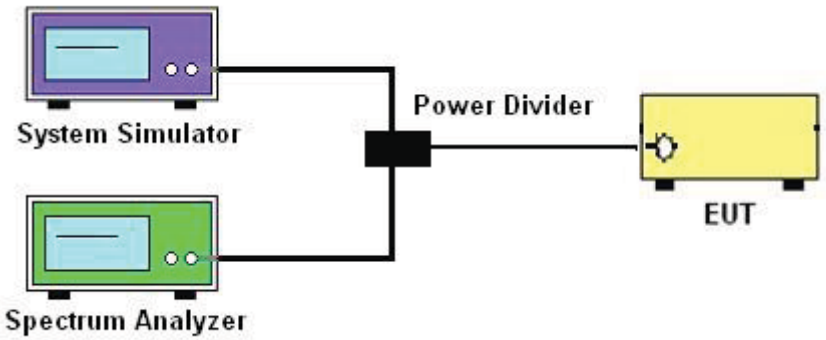
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

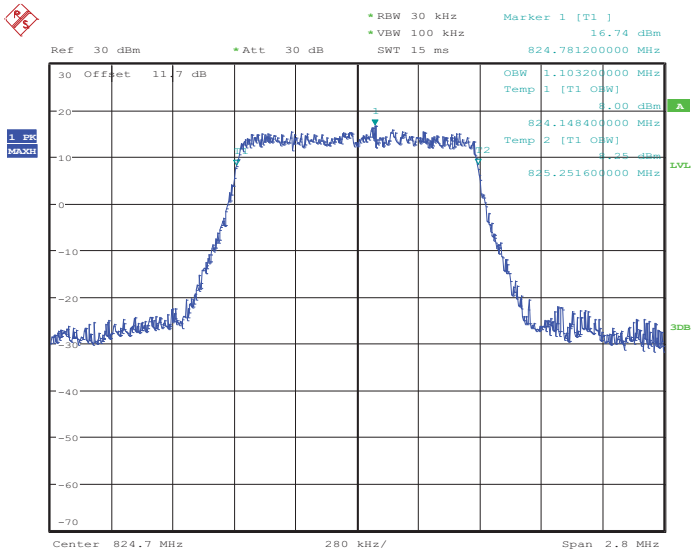
3.3.4 Test Setup



3.3.5 Test Result (Plots) of Occupied Bandwidth

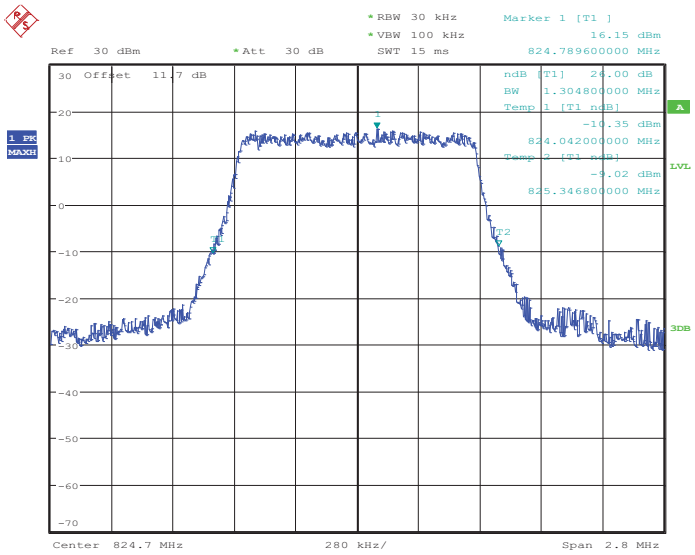
Band :	LTE Band 5	BW / Mod. :	1.4MHz / QPSK

99% Occupied Bandwidth Plot on Channel 20407



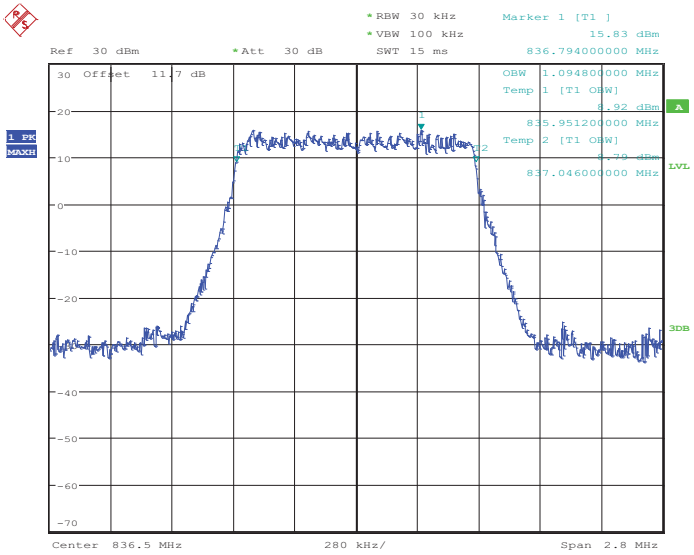
Date: 14.FEB.2014 12:55:56

26dB Bandwidth Plot on Channel 20407



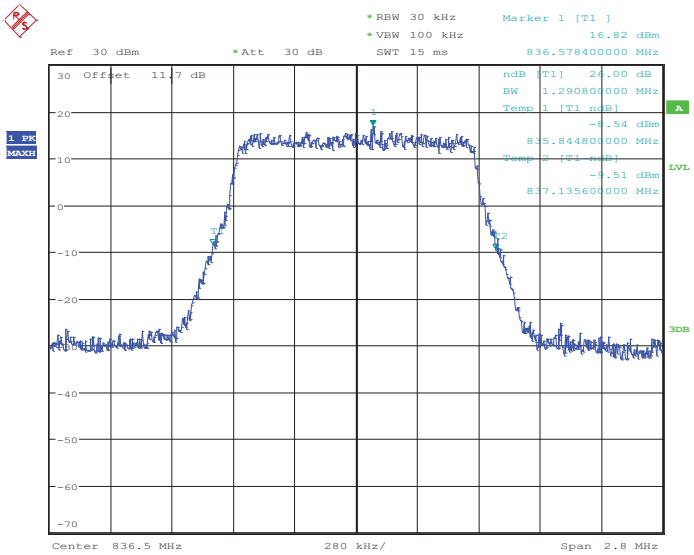
Date: 14.FEB.2014 12:56:35

99% Occupied Bandwidth Plot on Channel 20525



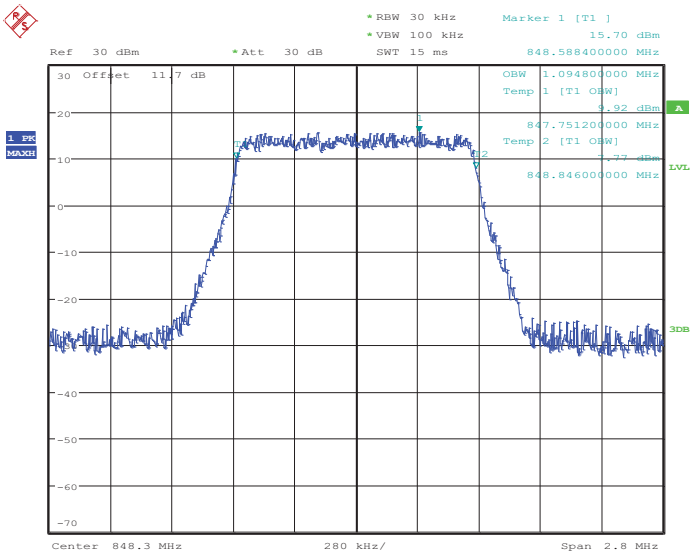
Date: 14.FEB.2014 13:01:31

26dB Bandwidth Plot on Channel 20525



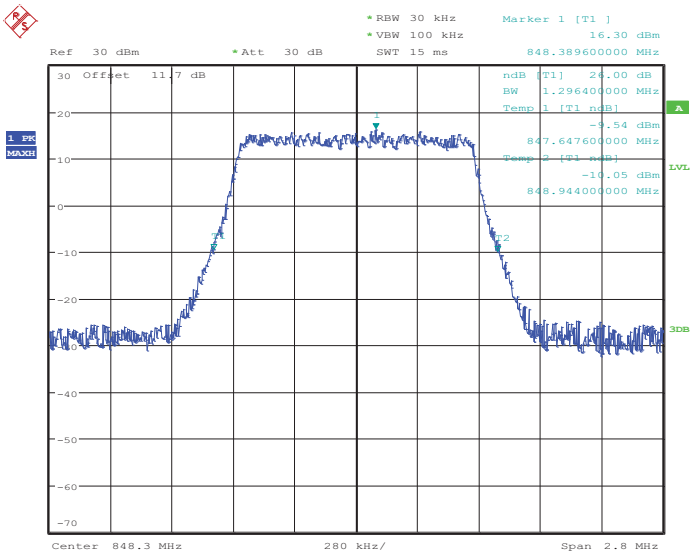
Date: 14.FEB.2014 13:01:56

99% Occupied Bandwidth Plot on Channel 20643



Date: 14.FEB.2014 13:04:13

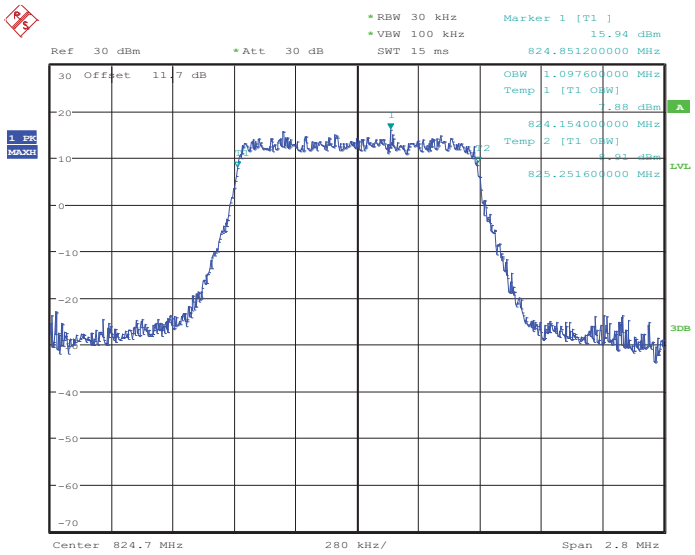
26dB Bandwidth Plot on Channel 20643



Date: 14.FEB.2014 13:04:38

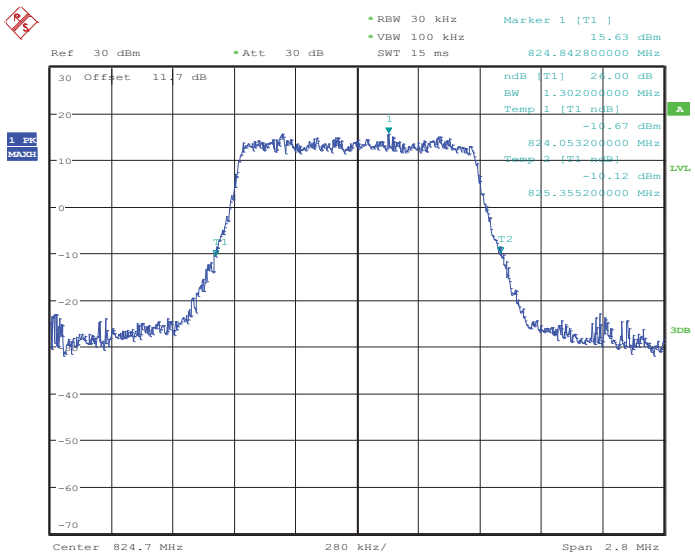
Band :	LTE Band 5	BW / Mod. :	1.4MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 20407



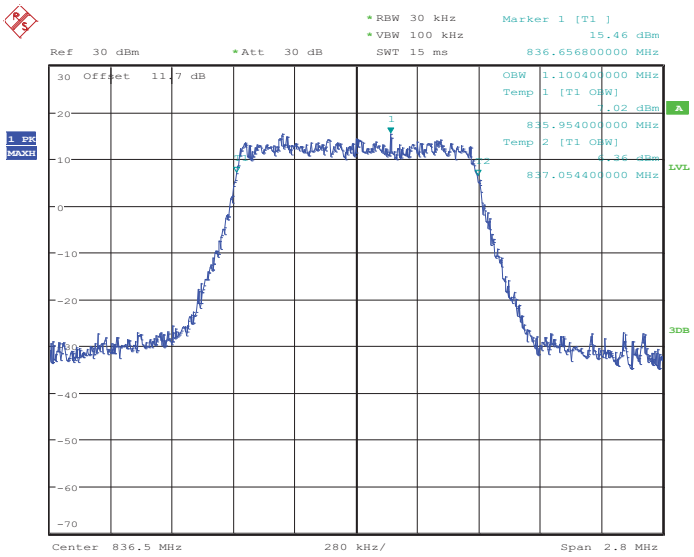
Date: 14.FEB.2014 12:56:08

26dB Bandwidth Plot on Channel 20407



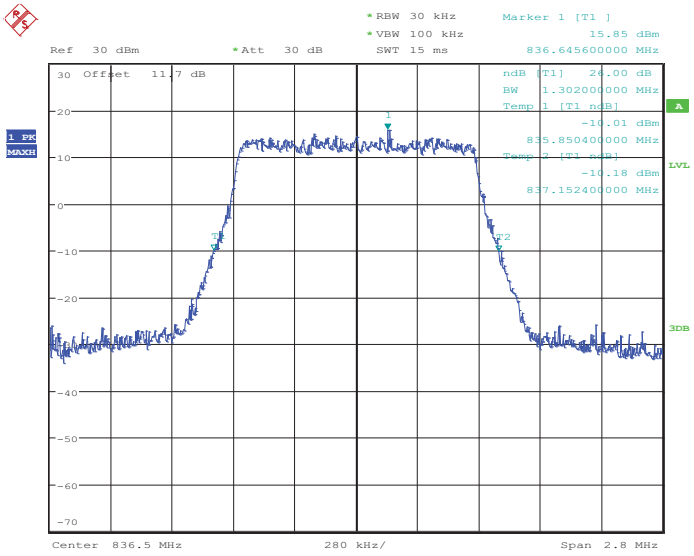
Date: 14.FEB.2014 12:56:22

99% Occupied Bandwidth Plot on Channel 20525



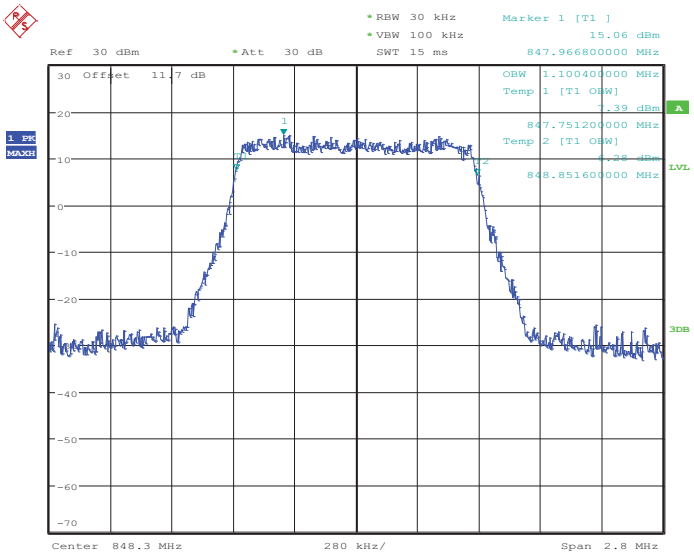
Date: 14.FEB.2014 13:01:42

26dB Bandwidth Plot on Channel 20525



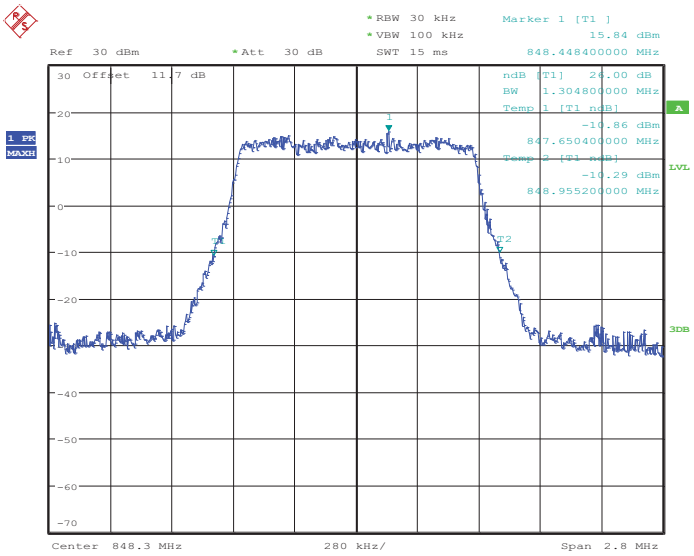
Date: 14.FEB.2014 13:02:09

99% Occupied Bandwidth Plot on Channel 20643



Date: 14.FEB.2014 13:04:25

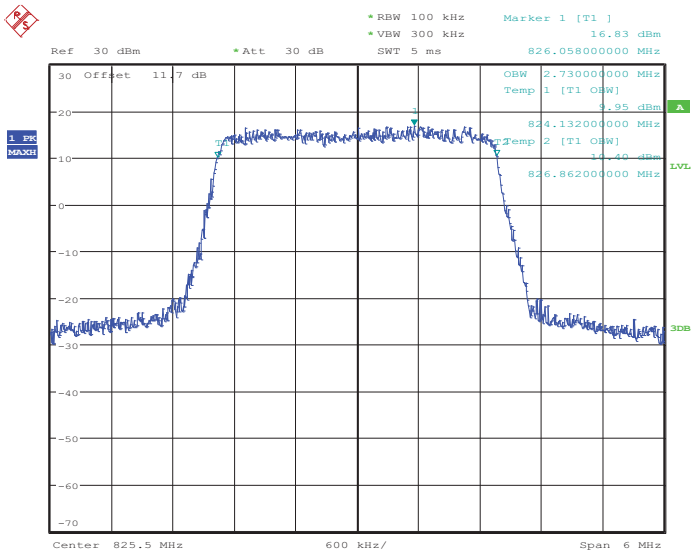
26dB Bandwidth Plot on Channel 20643



Date: 14.FEB.2014 13:04:52

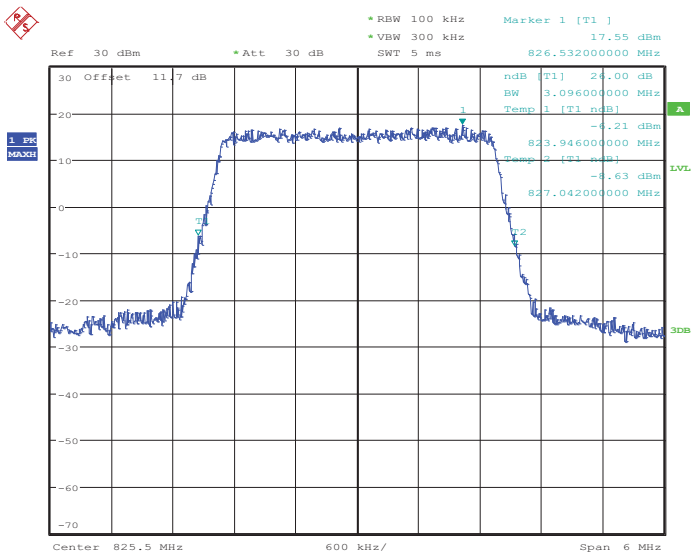
Band :	LTE Band 5	BW / Mod. :	3MHz / QPSK

99% Occupied Bandwidth Plot on Channel 20415



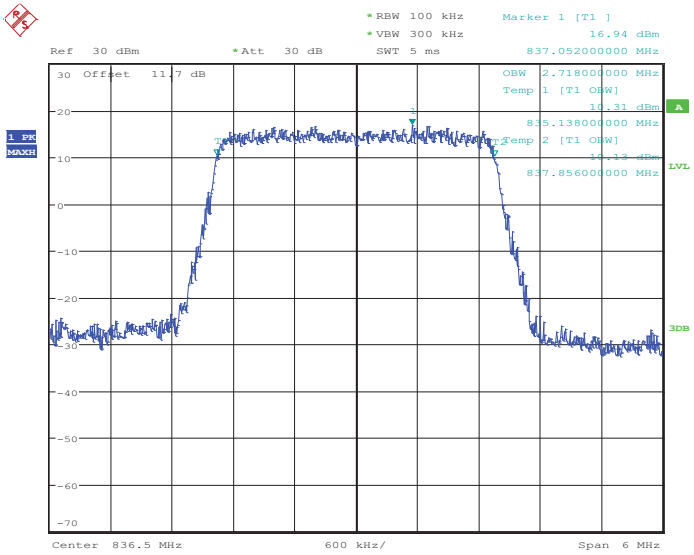
Date: 14.FEB.2014 13:09:51

26dB Bandwidth Plot on Channel 20415



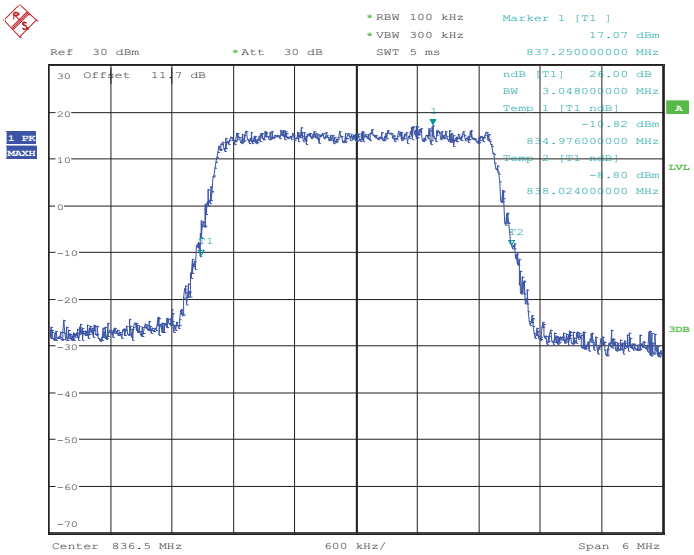
Date: 14.FEB.2014 13:10:16

99% Occupied Bandwidth Plot on Channel 20525



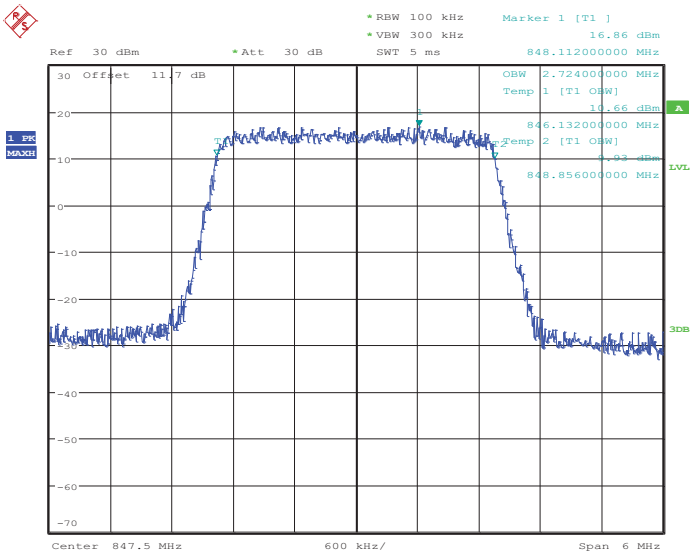
Date: 14.FEB.2014 13:15:25

26dB Bandwidth Plot on Channel 20525



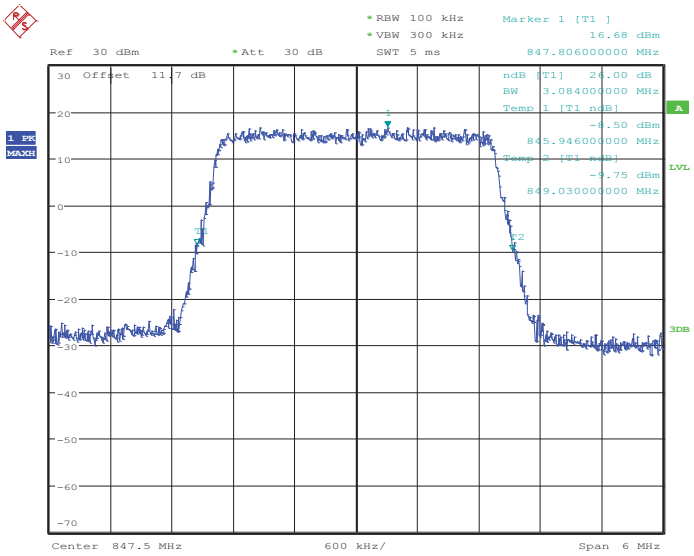
Date: 14.FEB.2014 13:15:50

99% Occupied Bandwidth Plot on Channel 20635



Date: 14.FEB.2014 13:18:08

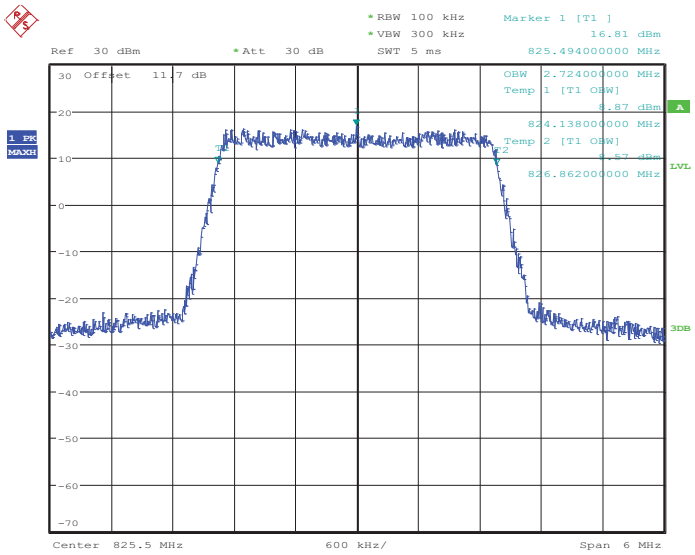
26dB Bandwidth Plot on Channel 20635



Date: 14.FEB.2014 13:18:33

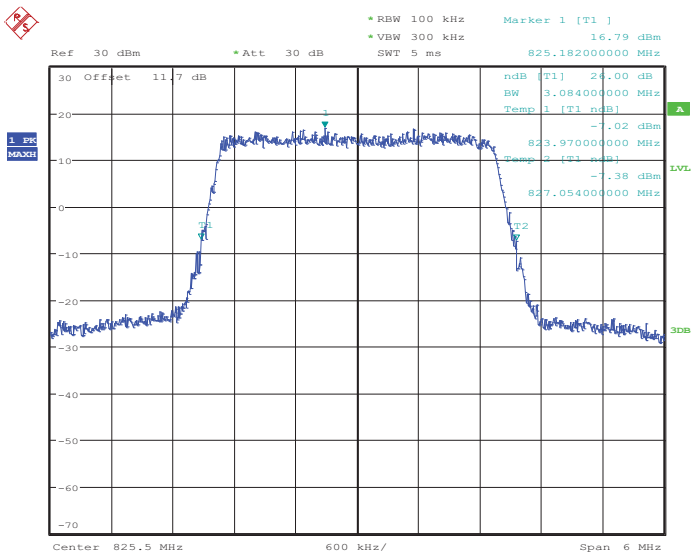
Band :	LTE Band 5	BW / Mod. :	3MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 20415



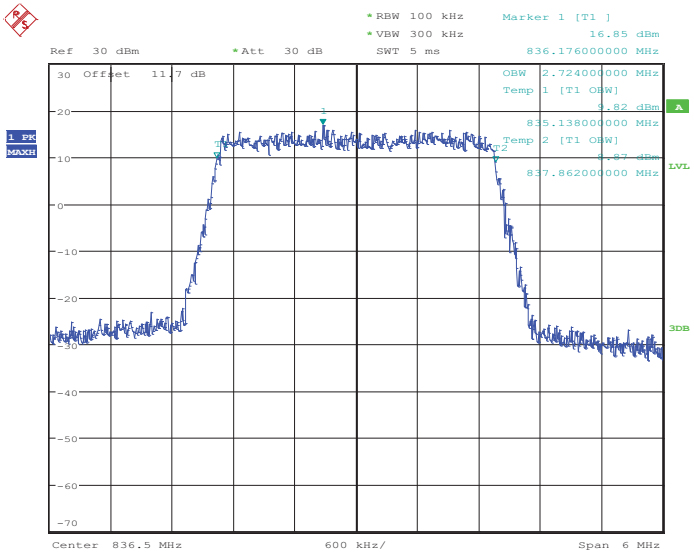
Date: 14.FEB.2014 13:10:03

26dB Bandwidth Plot on Channel 20415



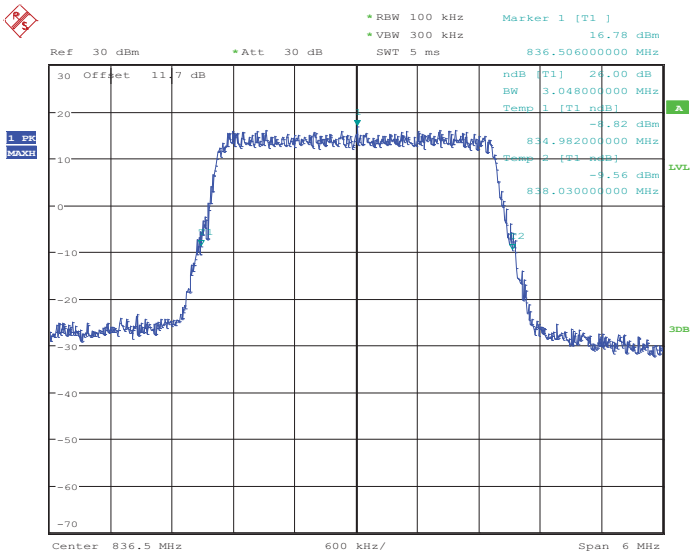
Date: 14.FEB.2014 13:10:30

99% Occupied Bandwidth Plot on Channel 20525



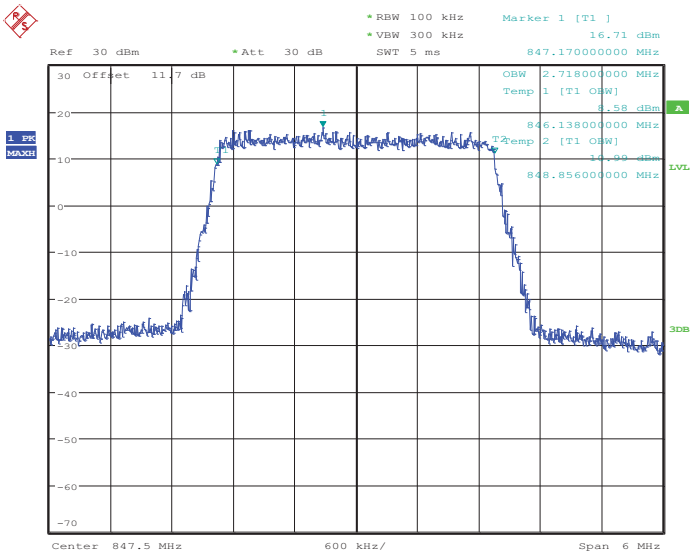
Date: 14.FEB.2014 13:15:37

26dB Bandwidth Plot on Channel 20525



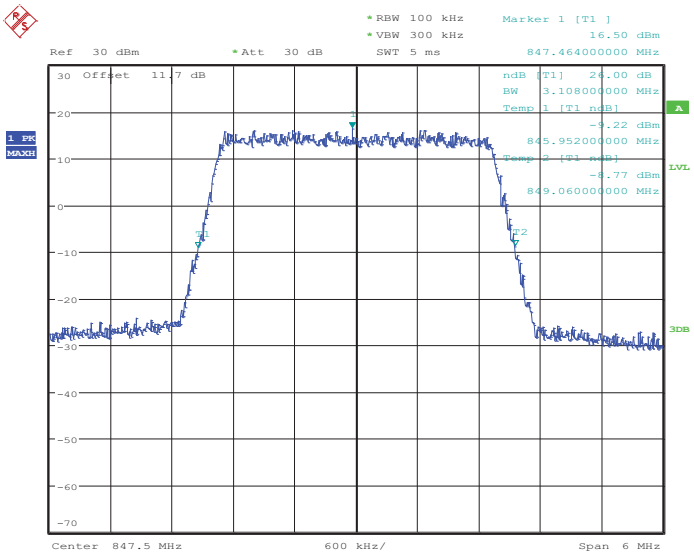
Date: 14.FEB.2014 13:16:04

99% Occupied Bandwidth Plot on Channel 20635



Date: 14.FEB.2014 13:18:19

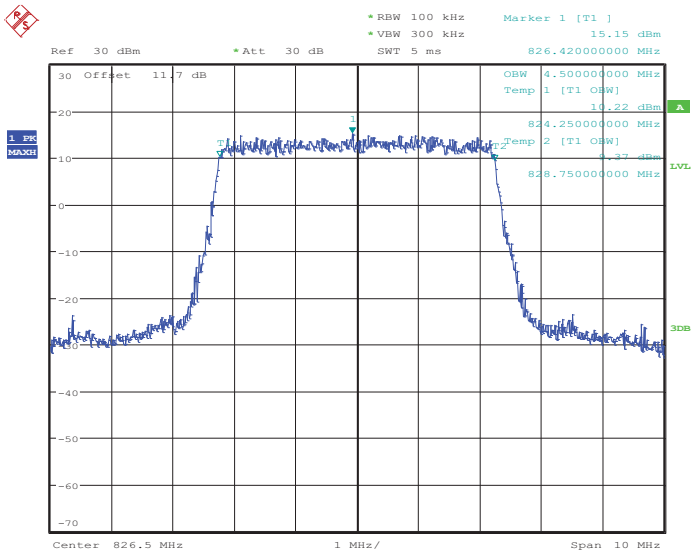
26dB Bandwidth Plot on Channel 20635



Date: 14.FEB.2014 13:18:46

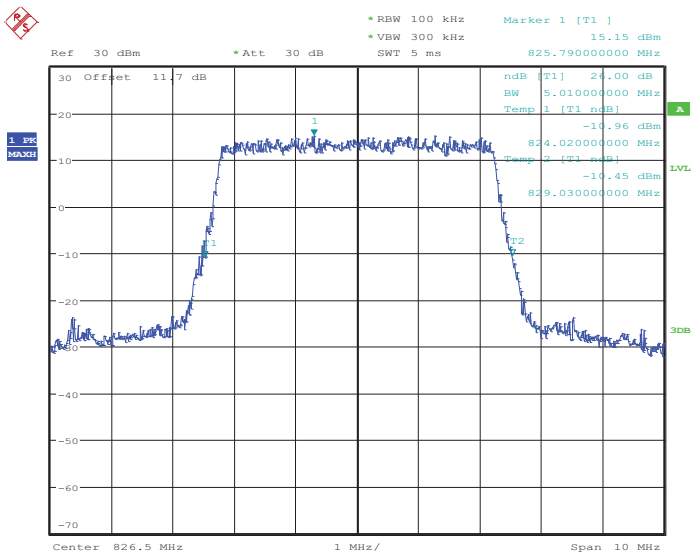
Band :	LTE Band 5	BW / Mod. :	5MHz / QPSK

99% Occupied Bandwidth Plot on Channel 20425



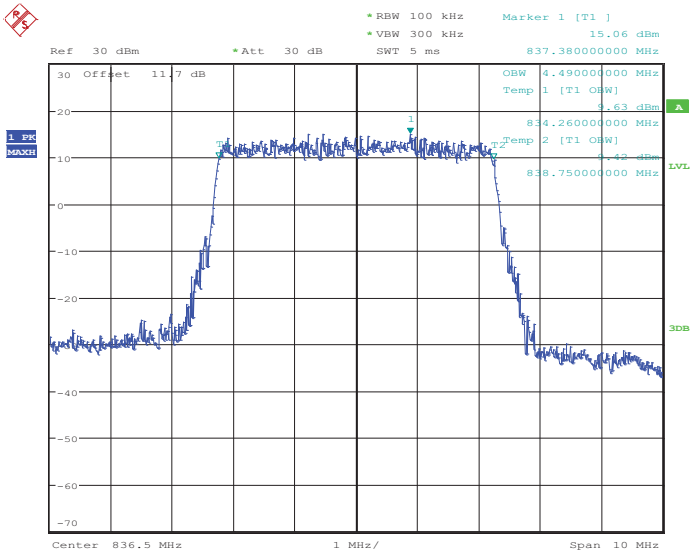
Date: 14.FEB.2014 13:23:46

26dB Bandwidth Plot on Channel 20425



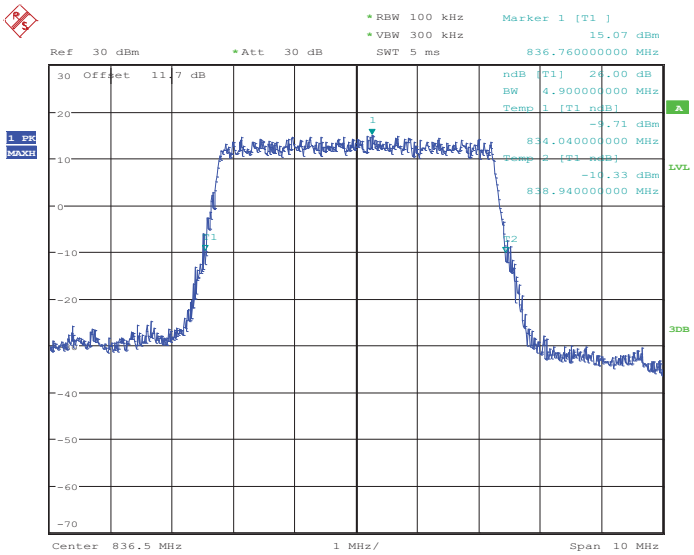
Date: 14.FEB.2014 13:24:11

99% Occupied Bandwidth Plot on Channel 20525



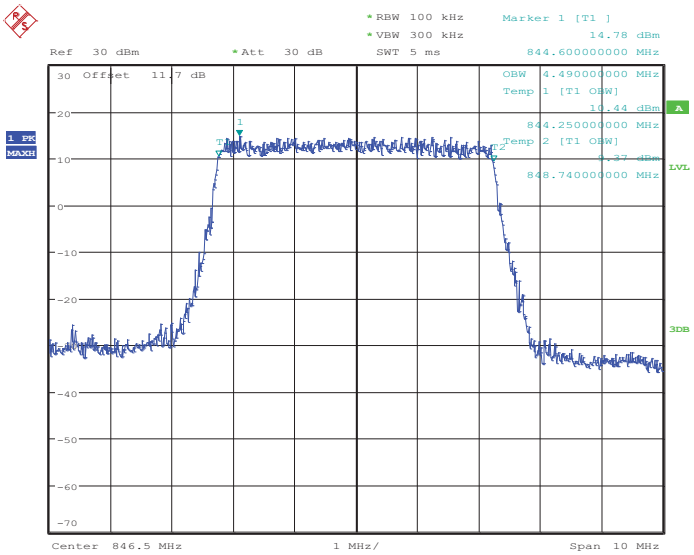
Date: 14.FEB.2014 13:29:20

26dB Bandwidth Plot on Channel 20525



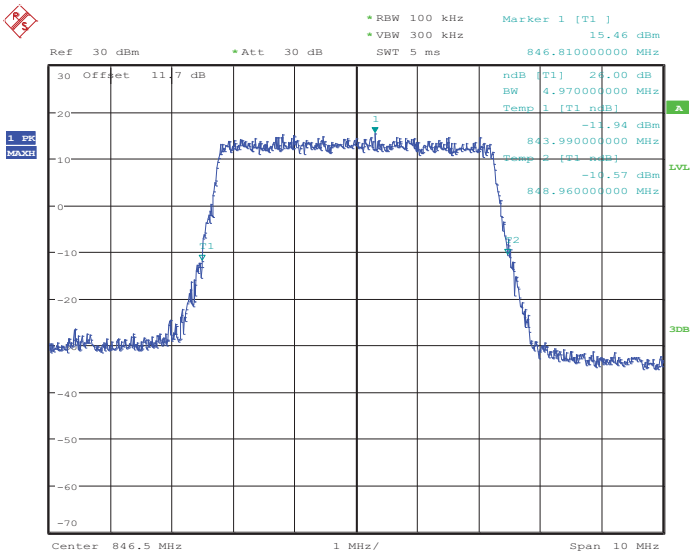
Date: 14.FEB.2014 13:29:45

99% Occupied Bandwidth Plot on Channel 20625



Date: 14.FEB.2014 13:32:02

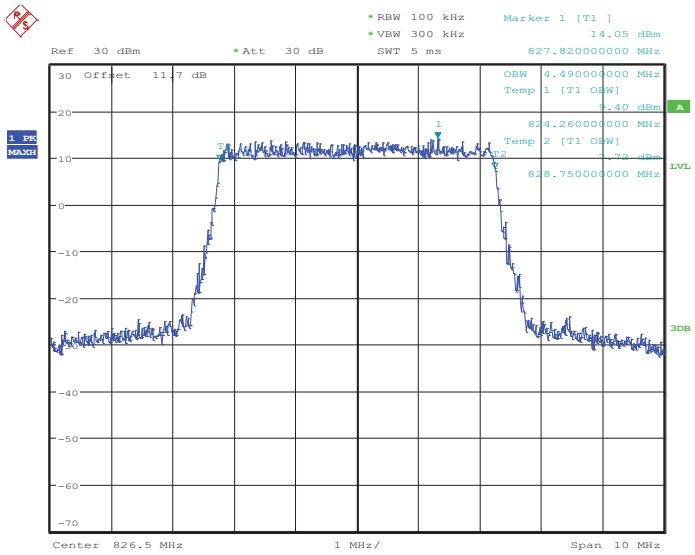
26dB Bandwidth Plot on Channel 20625



Date: 14.FEB.2014 13:32:28

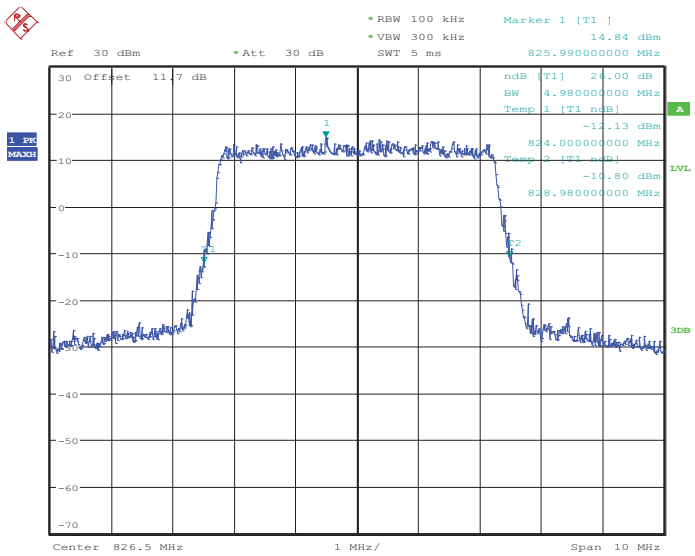
Band :	LTE Band 5	BW / Mod. :	5MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 20425



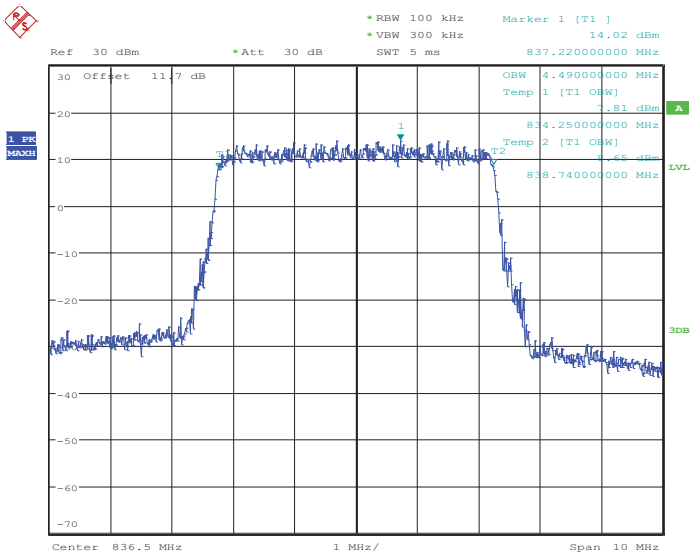
Date: 14.FEB.2014 13:23:57

26dB Bandwidth Plot on Channel 20425



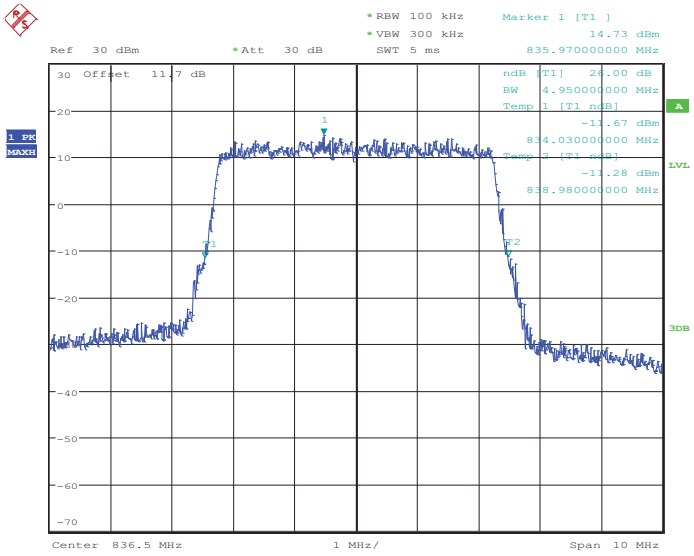
Date: 14.FEB.2014 13:24:24

99% Occupied Bandwidth Plot on Channel 20525



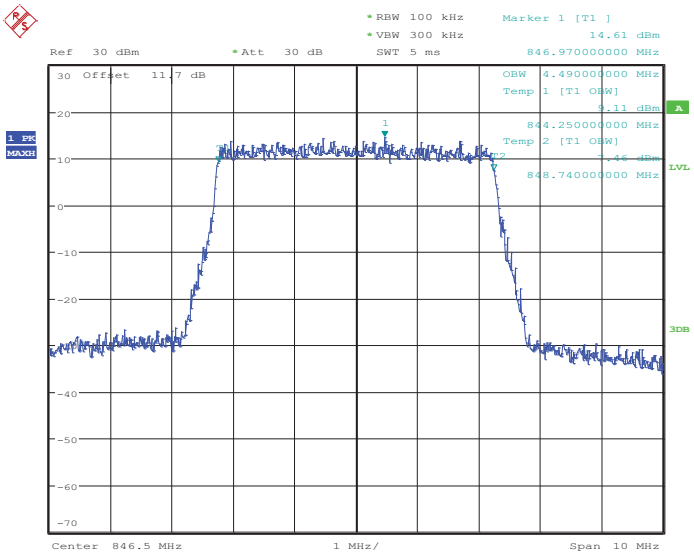
Date: 14.FEB.2014 13:29:32

26dB Bandwidth Plot on Channel 20525



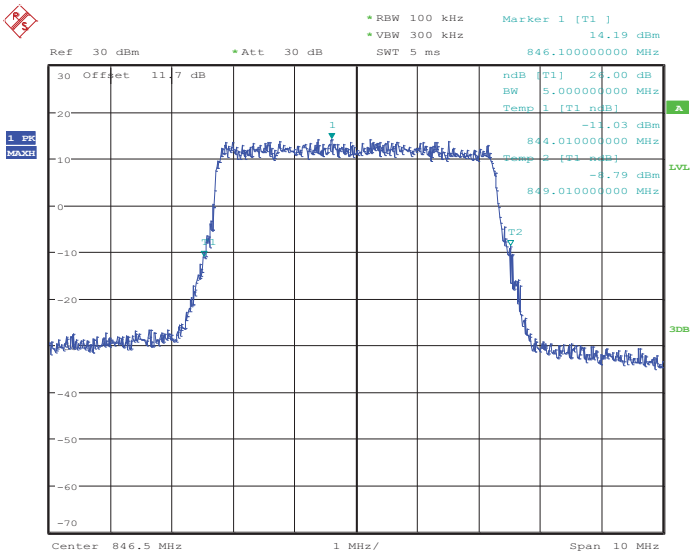
Date: 14.FEB.2014 13:29:59

99% Occupied Bandwidth Plot on Channel 20625



Date: 14.FEB.2014 13:32:14

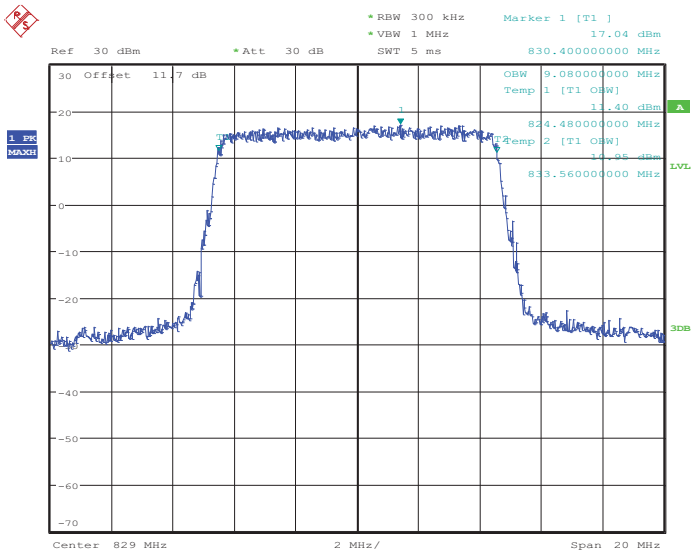
26dB Bandwidth Plot on Channel 20625



Date: 14.FEB.2014 13:32:41

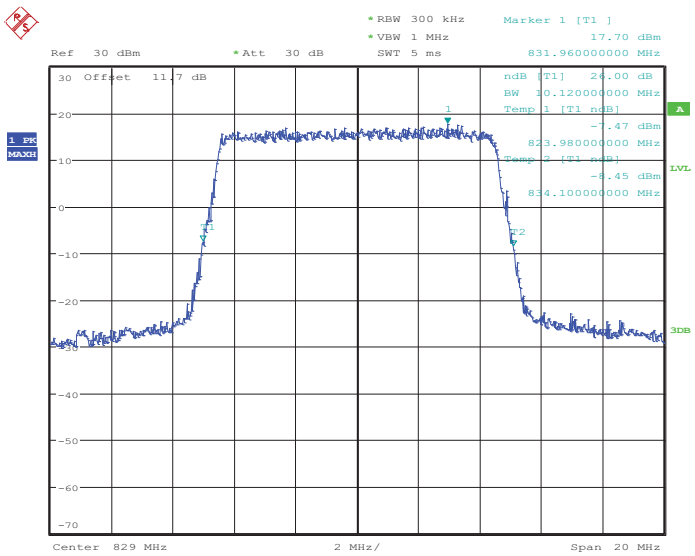
Band :	LTE Band 5	BW / Mod. :	10MHz / QPSK

99% Occupied Bandwidth Plot on Channel 20450



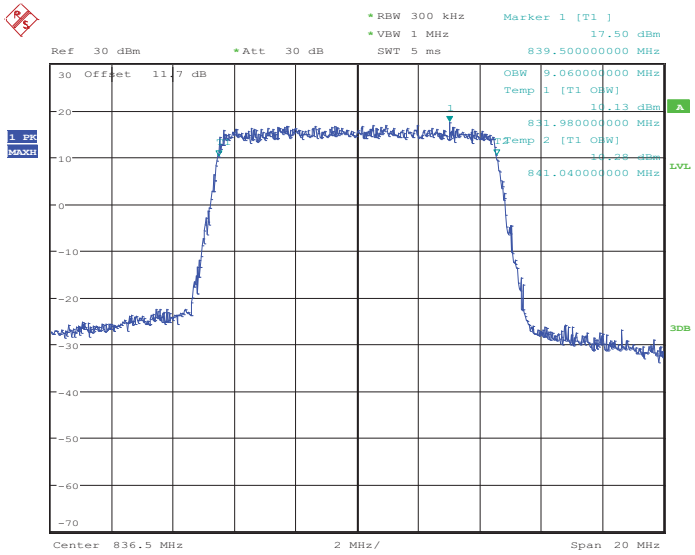
Date: 14.FEB.2014 13:37:41

26dB Bandwidth Plot on Channel 20450



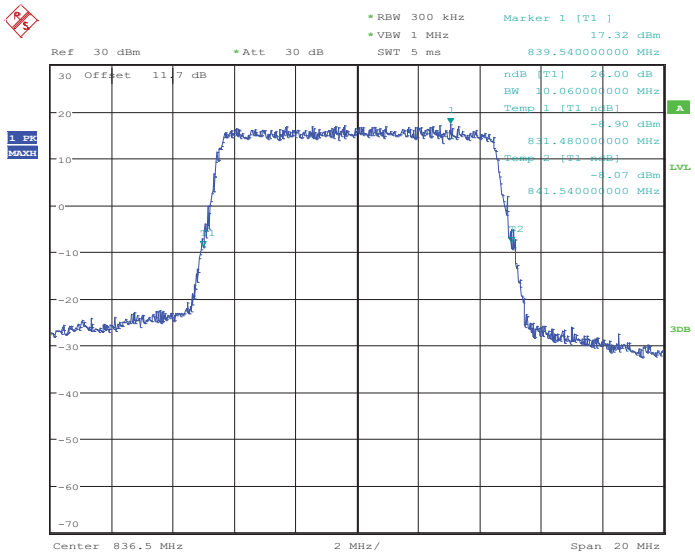
Date: 14.FEB.2014 13:38:06

99% Occupied Bandwidth Plot on Channel 20525



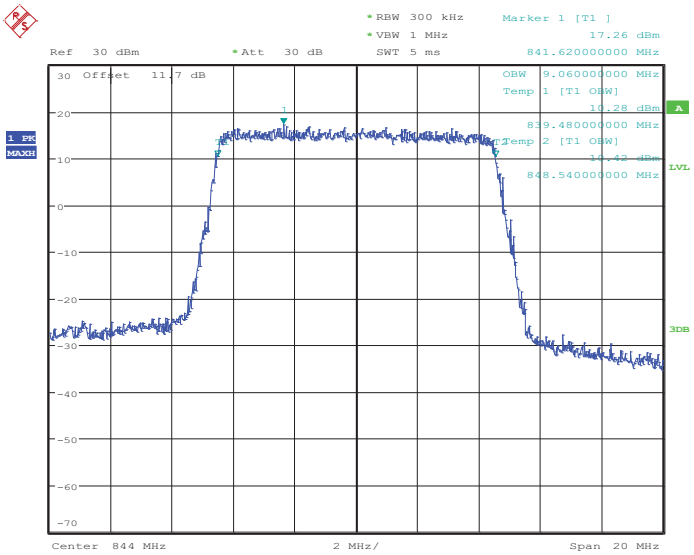
Date: 14.FEB.2014 13:43:16

26dB Bandwidth Plot on Channel 20525



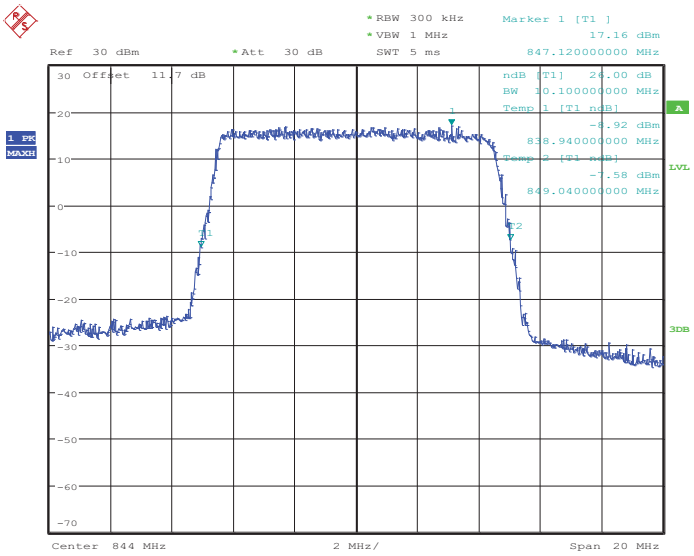
Date: 14.FEB.2014 13:43:41

99% Occupied Bandwidth Plot on Channel 20600



Date: 14.FEB.2014 13:45:59

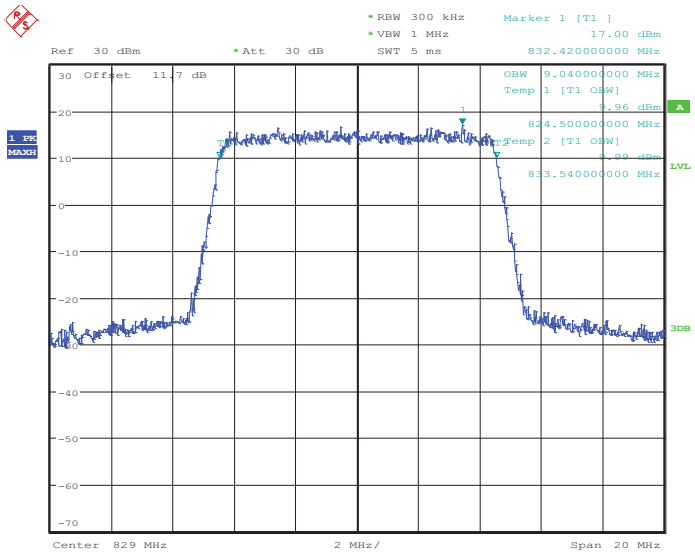
26dB Bandwidth Plot on Channel 20600



Date: 14.FEB.2014 13:46:24

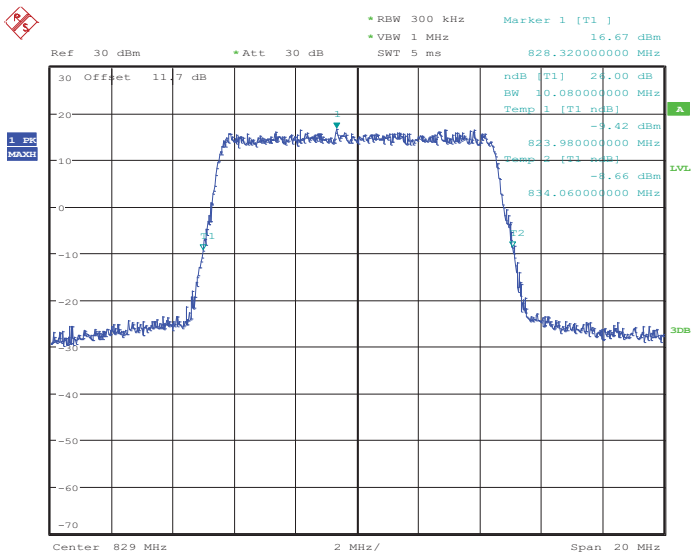
Band :	LTE Band 5	BW / Mod. :	10MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 20450



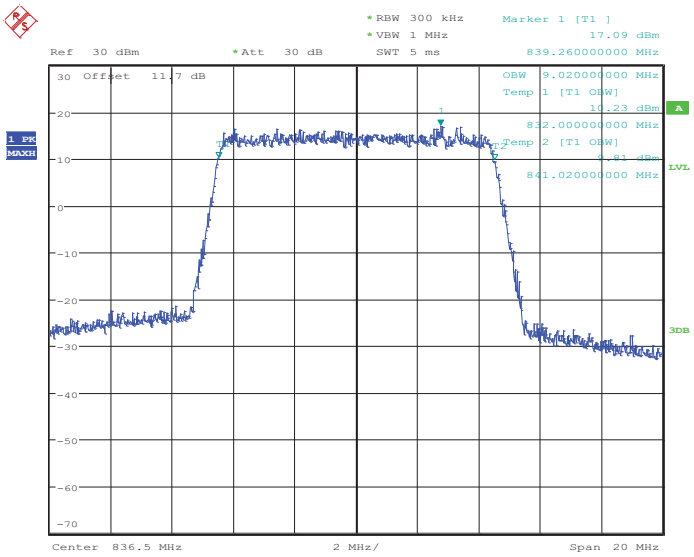
Date: 14.FEB.2014 13:37:53

26dB Bandwidth Plot on Channel 20450



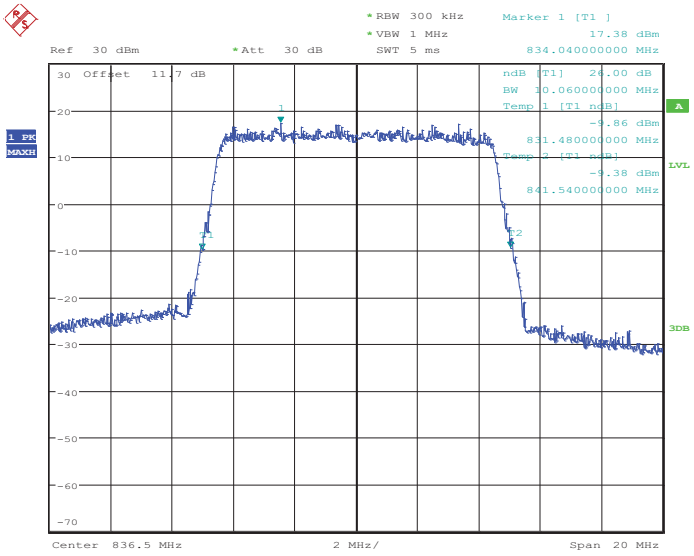
Date: 14.FEB.2014 13:38:20

99% Occupied Bandwidth Plot on Channel 20525



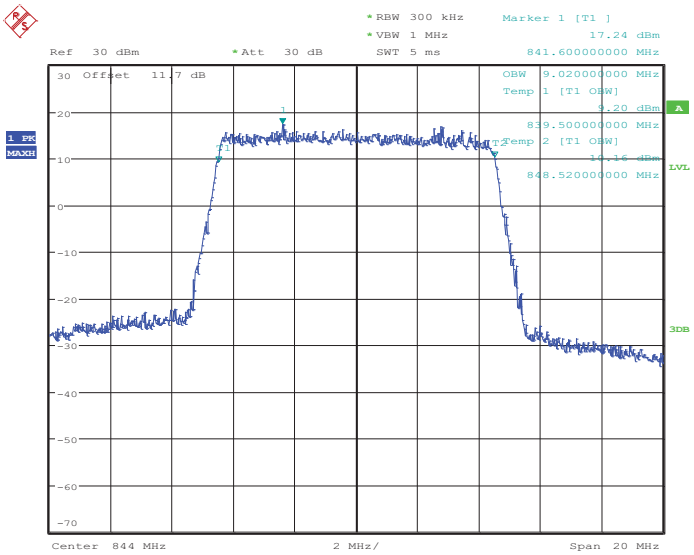
Date: 14.FEB.2014 13:43:28

26dB Bandwidth Plot on Channel 20525



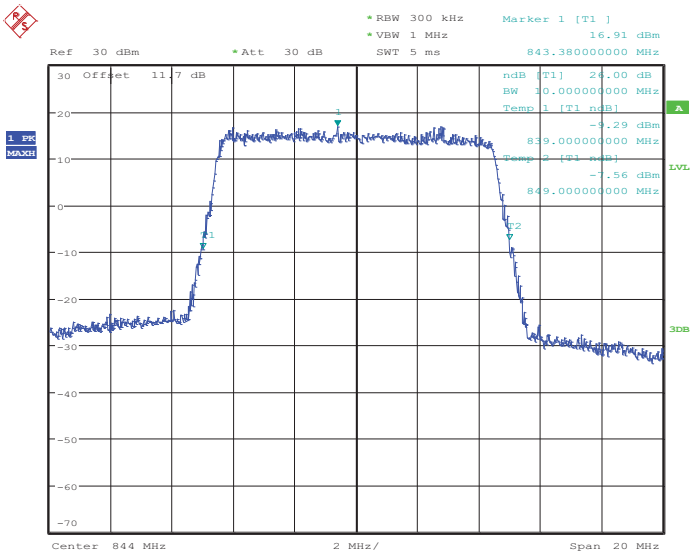
Date: 14.FEB.2014 13:43:55

99% Occupied Bandwidth Plot on Channel 20600



Date: 14.FEB.2014 13:46:10

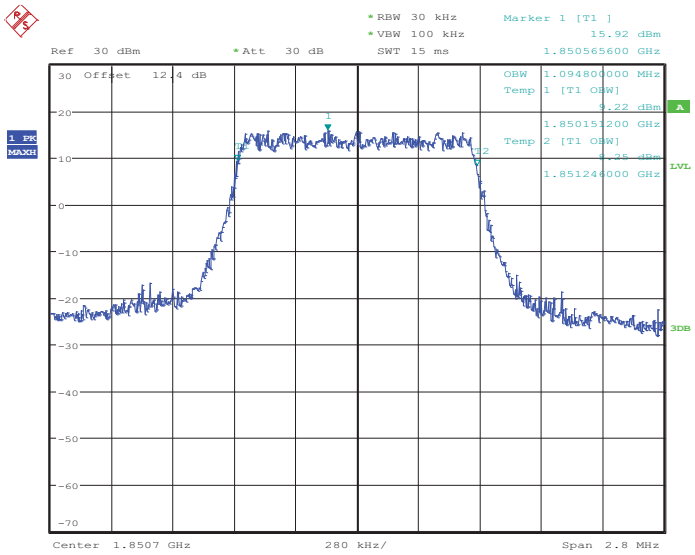
26dB Bandwidth Plot on Channel 20600



Date: 14.FEB.2014 13:46:37

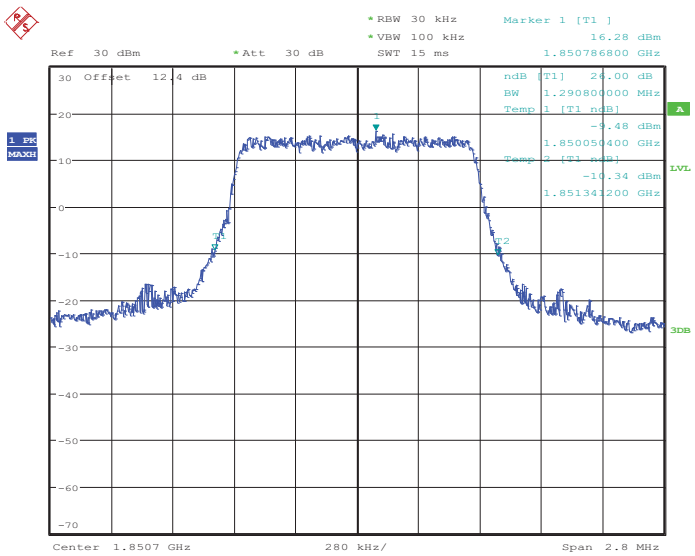
Band :	LTE Band 2	BW / Mod. :	1.4MHz / QPSK

99% Occupied Bandwidth Plot on Channel 18607



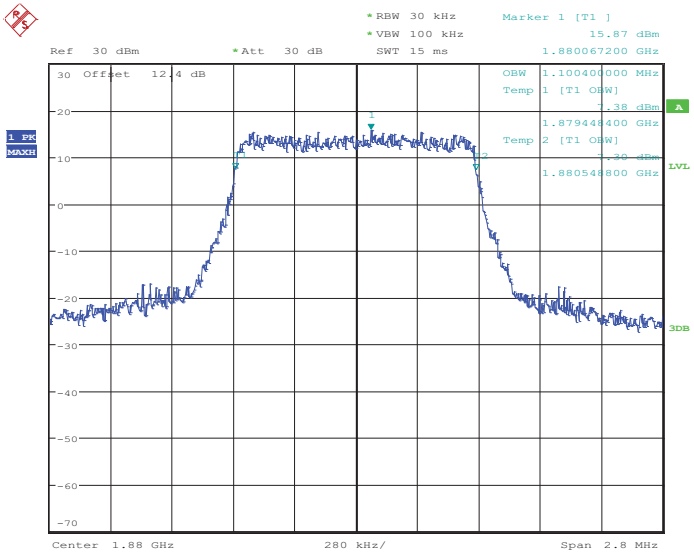
Date: 14.FEB.2014 08:33:17

26dB Bandwidth Plot on Channel 18607



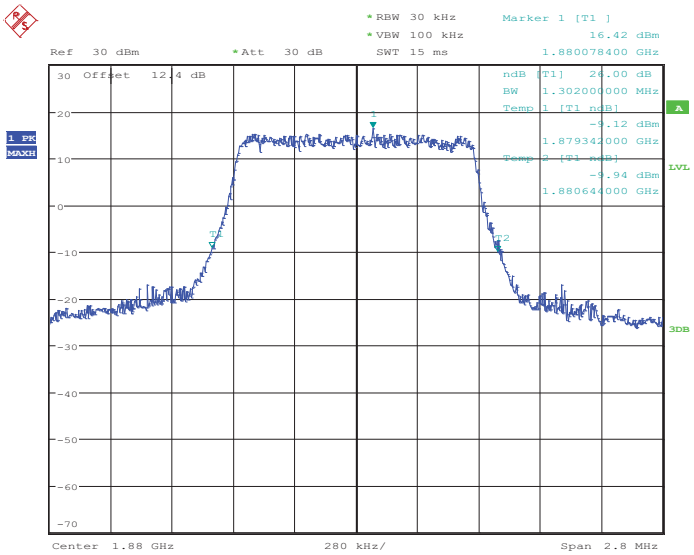
Date: 14.FEB.2014 08:33:42

99% Occupied Bandwidth Plot on Channel 18900



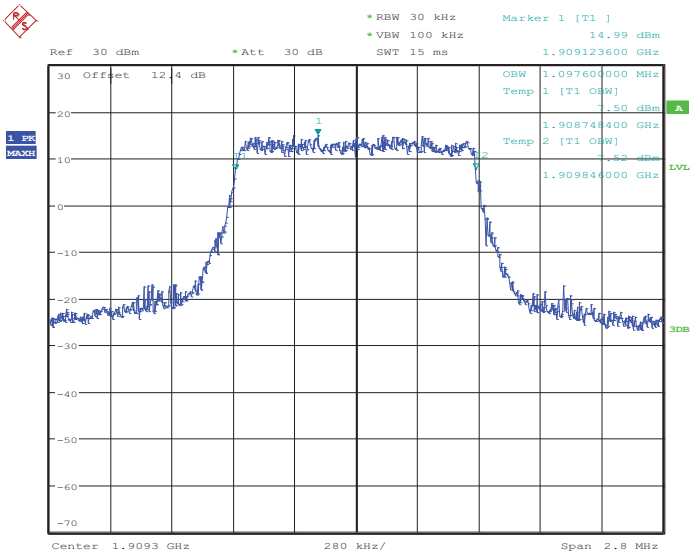
Date: 14.FEB.2014 08:38:51

26dB Bandwidth Plot on Channel 18900



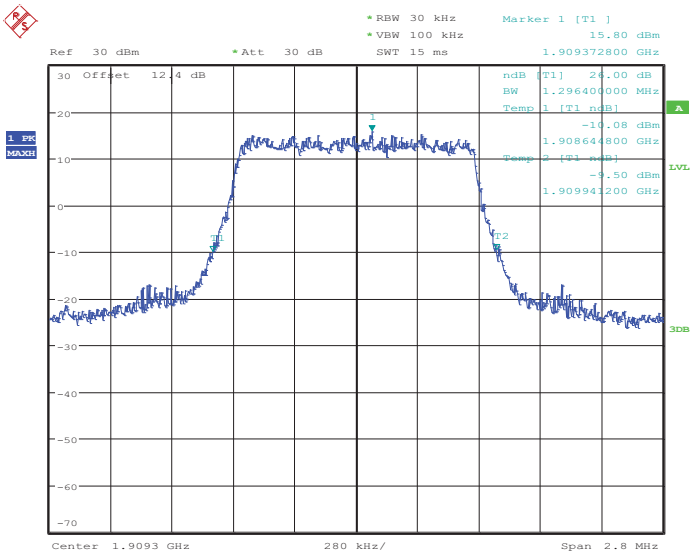
Date: 14.FEB.2014 08:39:16

99% Occupied Bandwidth Plot on Channel 19193



Date: 14.FEB.2014 08:41:33

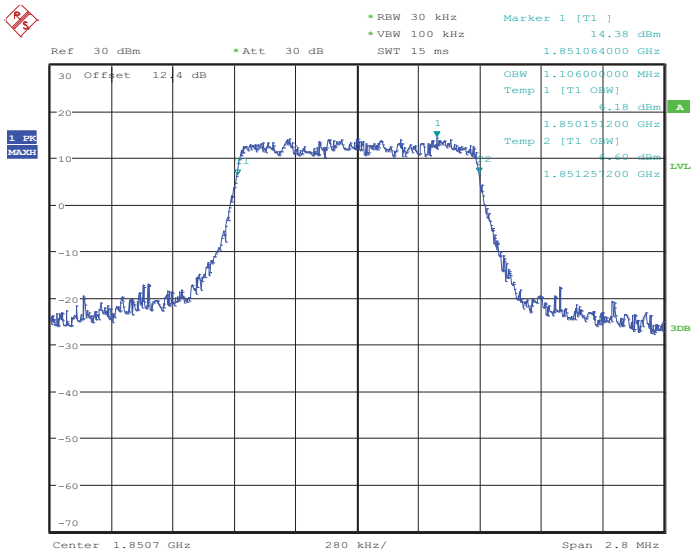
26dB Bandwidth Plot on Channel 19193



Date: 14.FEB.2014 08:41:59

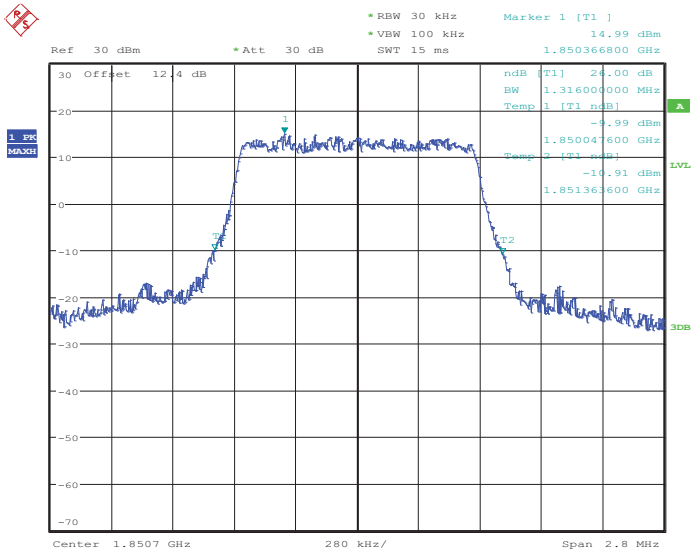
Band :	LTE Band 2	BW / Mod. :	1.4MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 18607



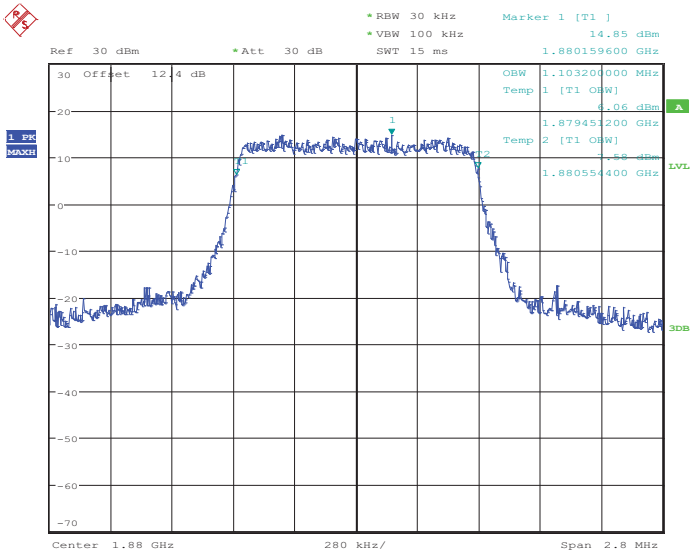
Date: 14.FEB.2014 08:33:28

26dB Bandwidth Plot on Channel 18607



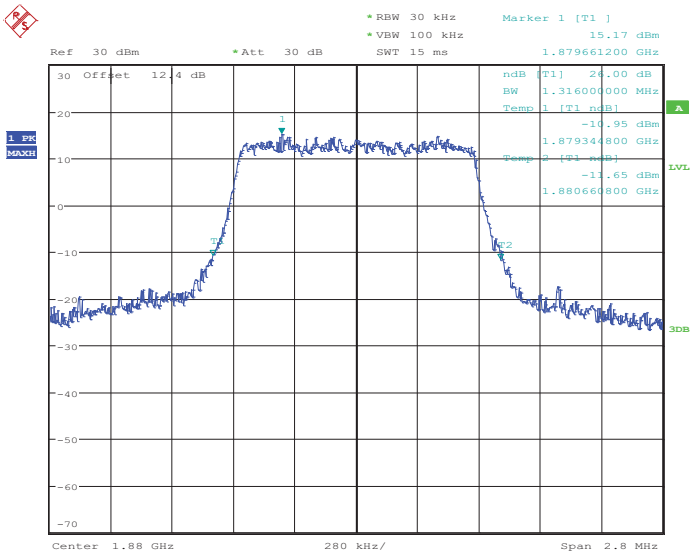
Date: 14.FEB.2014 08:33:55

99% Occupied Bandwidth Plot on Channel 18900



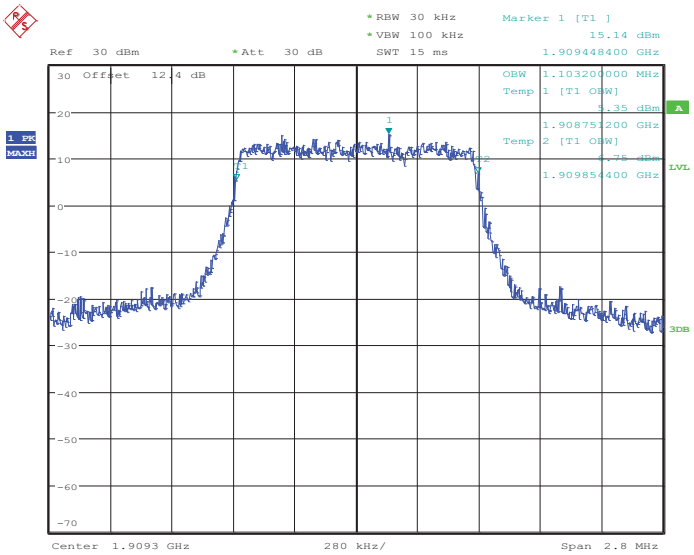
Date: 14.FEB.2014 08:39:03

26dB Bandwidth Plot on Channel 18900



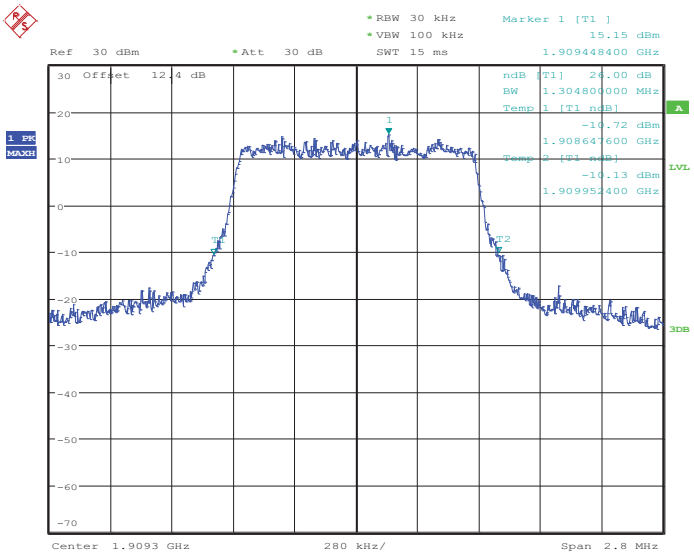
Date: 14.FEB.2014 08:39:30

99% Occupied Bandwidth Plot on Channel 19193



Date: 14.FEB.2014 08:41:45

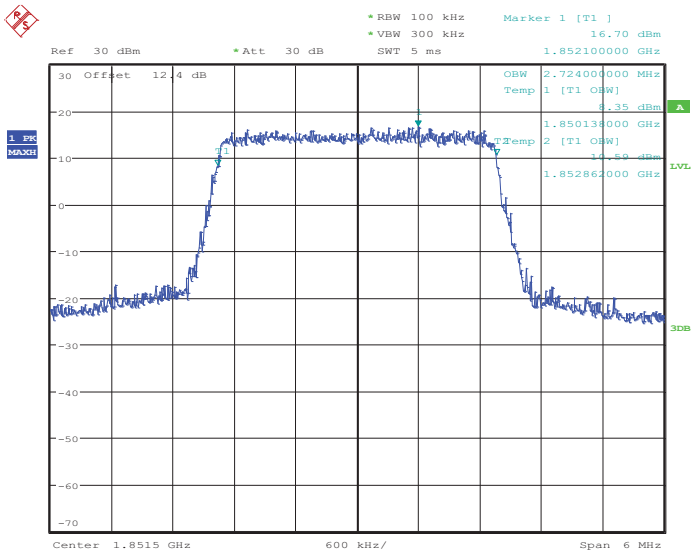
26dB Bandwidth Plot on Channel 19193



Date: 14.FEB.2014 08:42:12

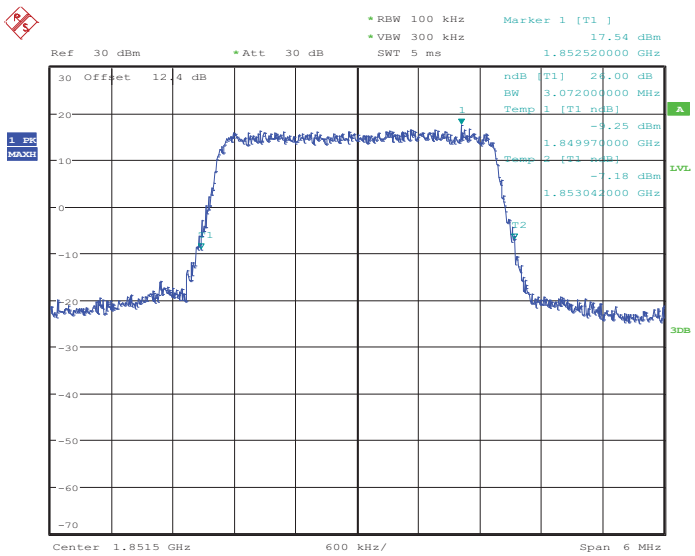
Band :	LTE Band 2	BW / Mod. :	3MHz / QPSK

99% Occupied Bandwidth Plot on Channel 18615



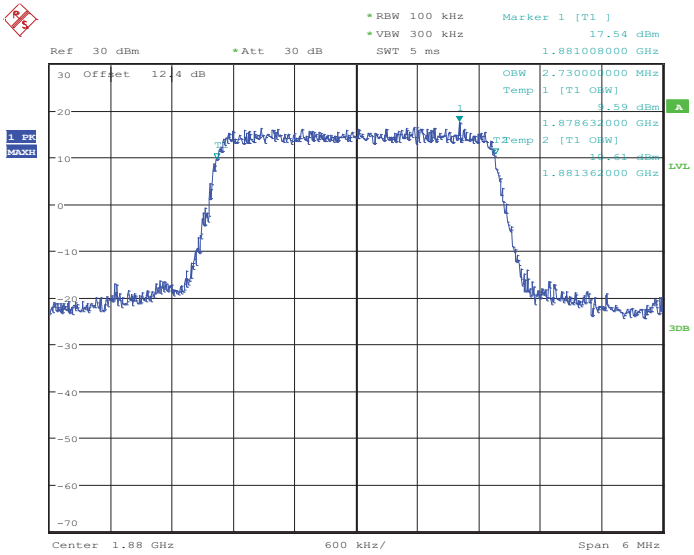
Date: 14.FEB.2014 08:47:12

26dB Bandwidth Plot on Channel 18615



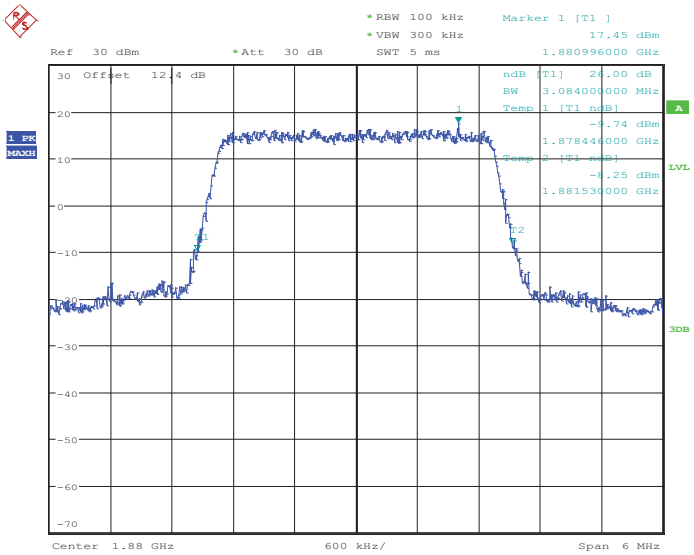
Date: 14.FEB.2014 08:47:37

99% Occupied Bandwidth Plot on Channel 18900



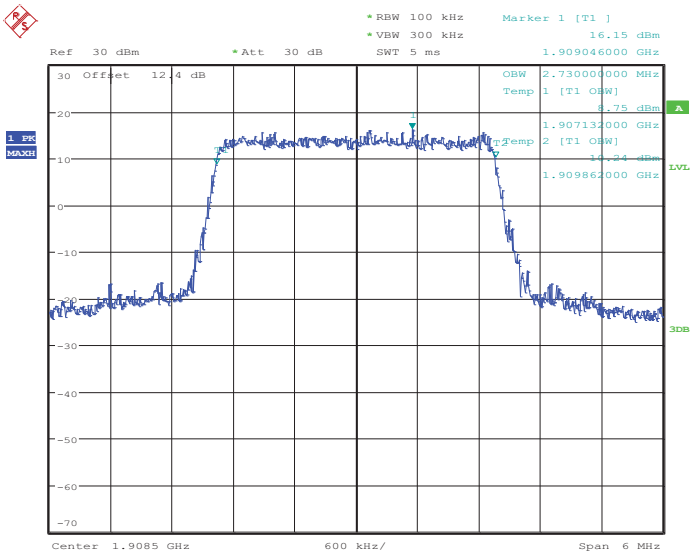
Date: 14.FEB.2014 08:52:46

26dB Bandwidth Plot on Channel 18900



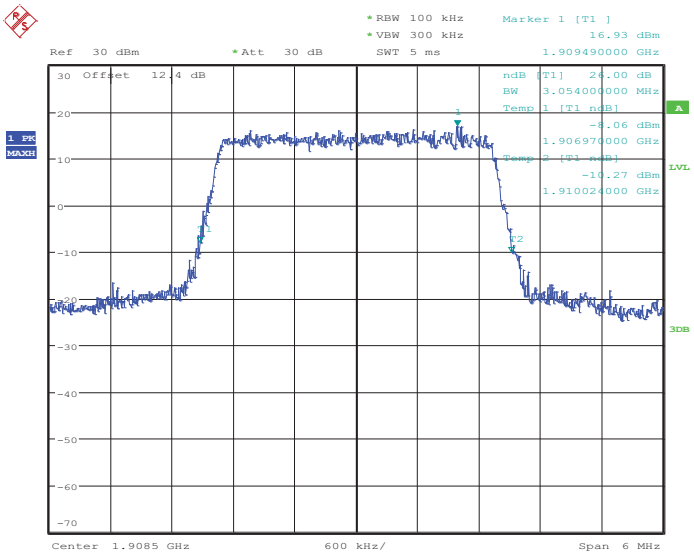
Date: 14.FEB.2014 08:53:11

99% Occupied Bandwidth Plot on Channel 19185



Date: 14.FEB.2014 08:55:29

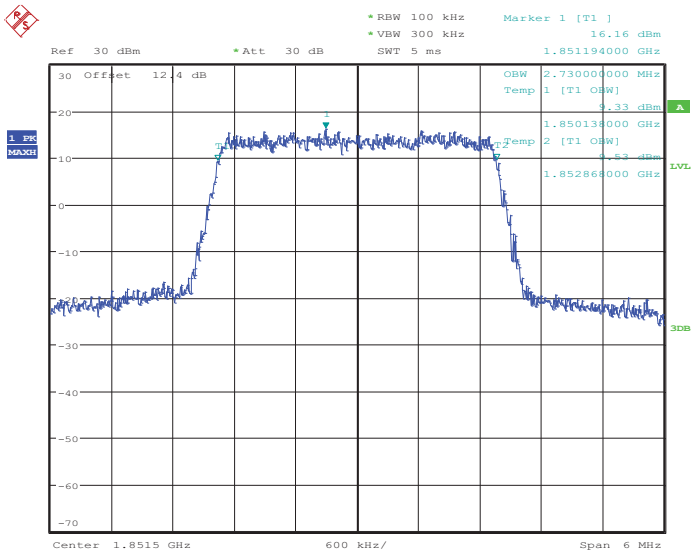
26dB Bandwidth Plot on Channel 19185



Date: 14.FEB.2014 08:55:54

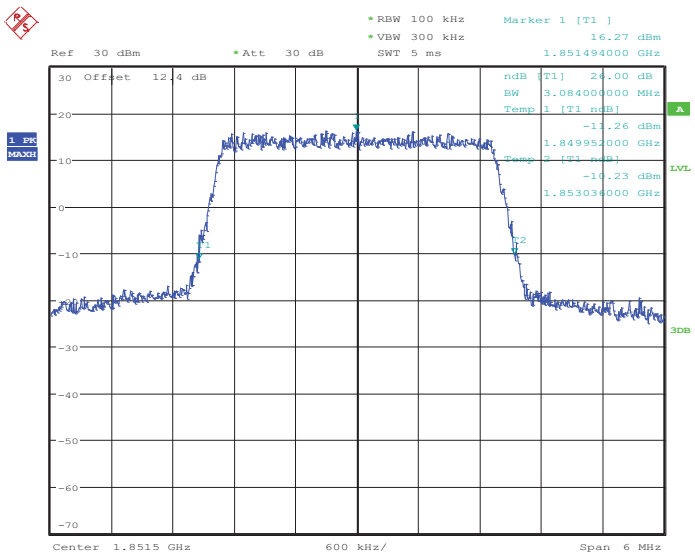
Band :	LTE Band 2	BW / Mod. :	3MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 18615



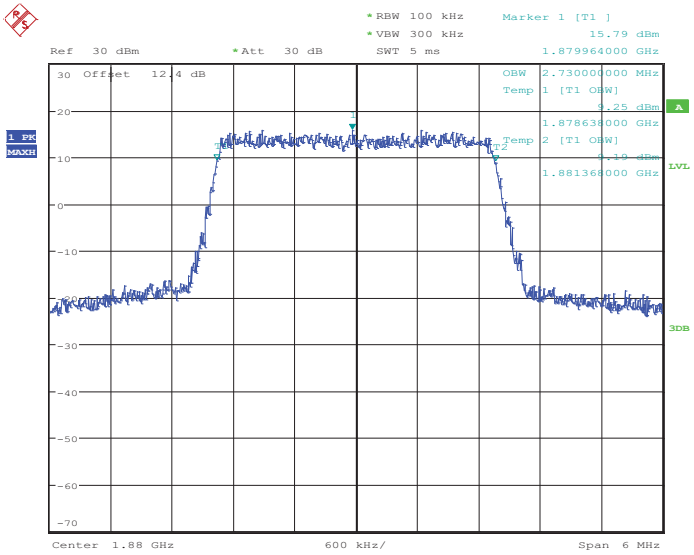
Date: 14.FEB.2014 08:47:23

26dB Bandwidth Plot on Channel 18615



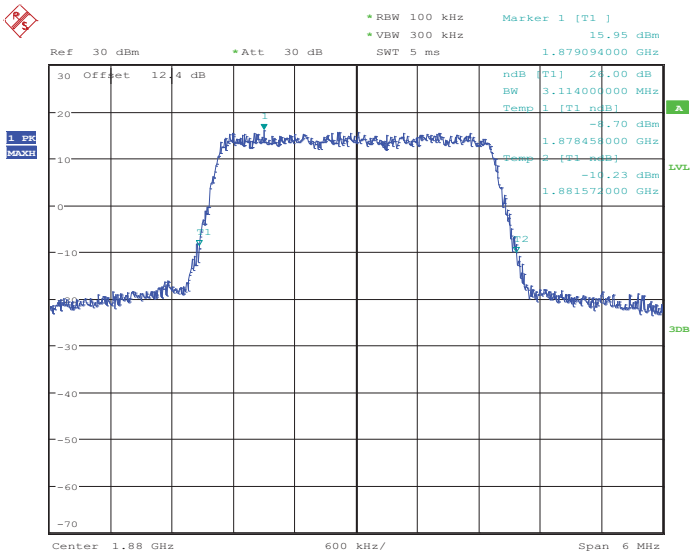
Date: 14.FEB.2014 08:47:50

99% Occupied Bandwidth Plot on Channel 18900



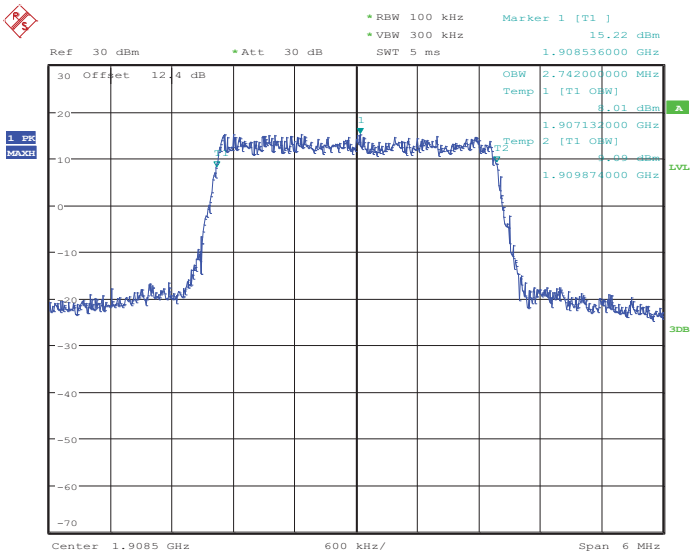
Date: 14.FEB.2014 08:52:58

26dB Bandwidth Plot on Channel 18900



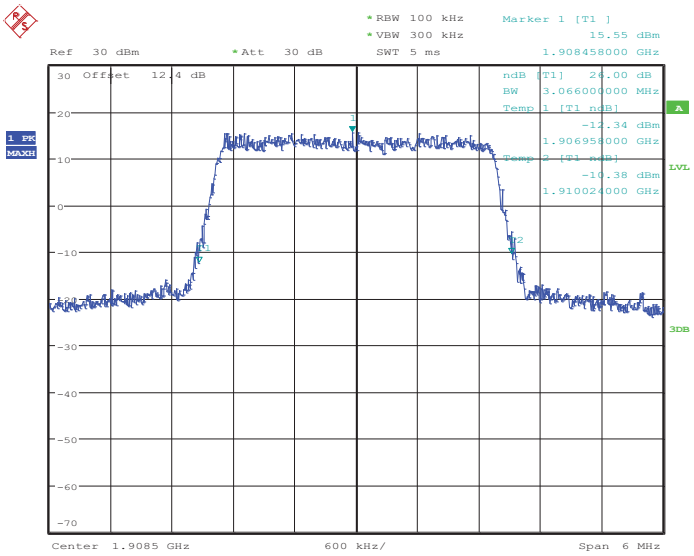
Date: 14.FEB.2014 08:53:25

99% Occupied Bandwidth Plot on Channel 19185



Date: 14.FEB.2014 08:55:41

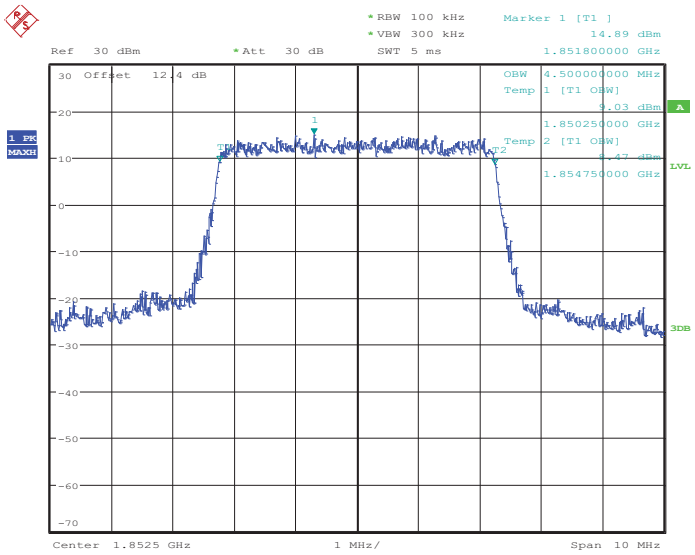
26dB Bandwidth Plot on Channel 19185



Date: 14.FEB.2014 08:56:08

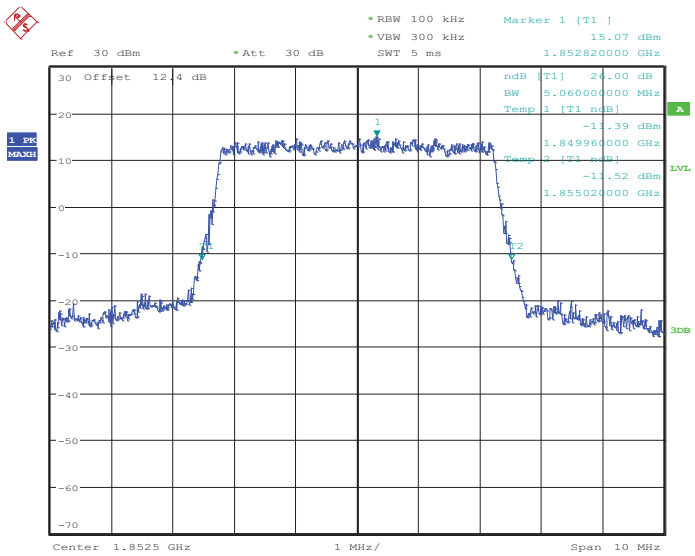
Band :	LTE Band 2	BW / Mod. :	5MHz / QPSK

99% Occupied Bandwidth Plot on Channel 18625



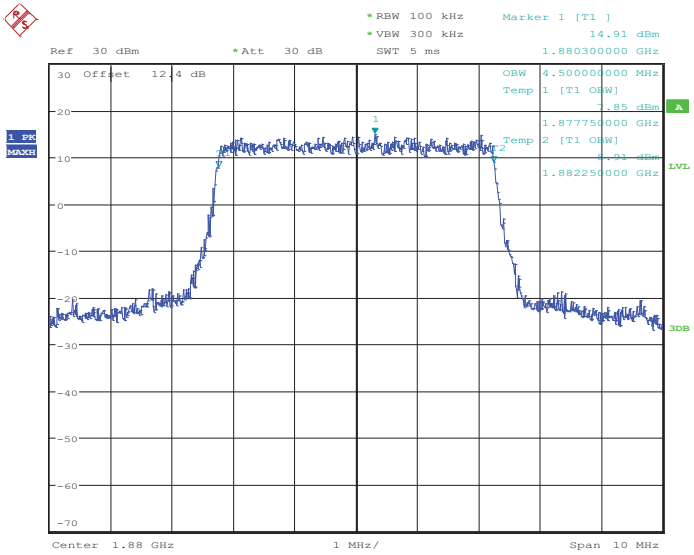
Date: 14.FEB.2014 09:01:07

26dB Bandwidth Plot on Channel 18625



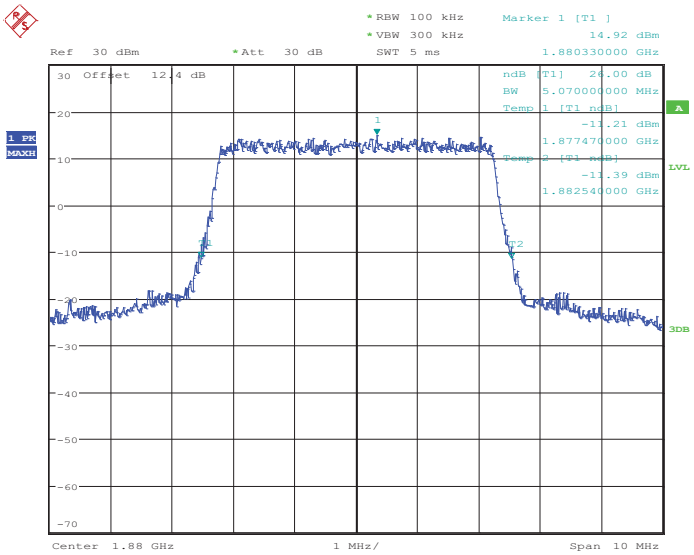
Date: 14.FEB.2014 09:01:32

99% Occupied Bandwidth Plot on Channel 18900



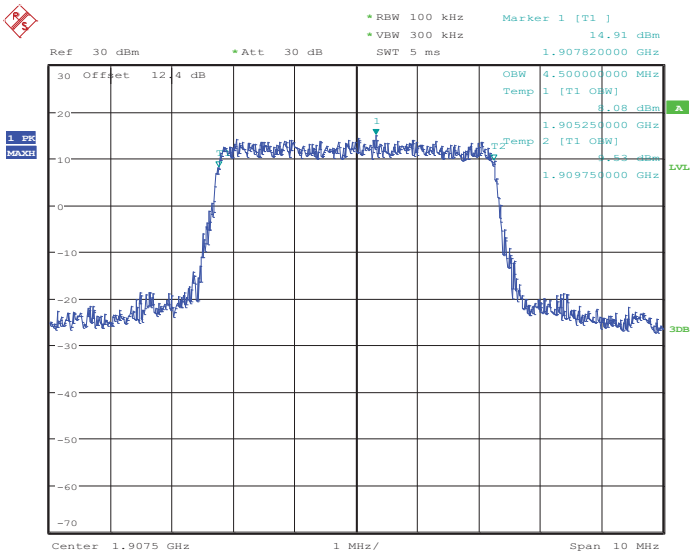
Date: 14.FEB.2014 09:06:41

26dB Bandwidth Plot on Channel 18900



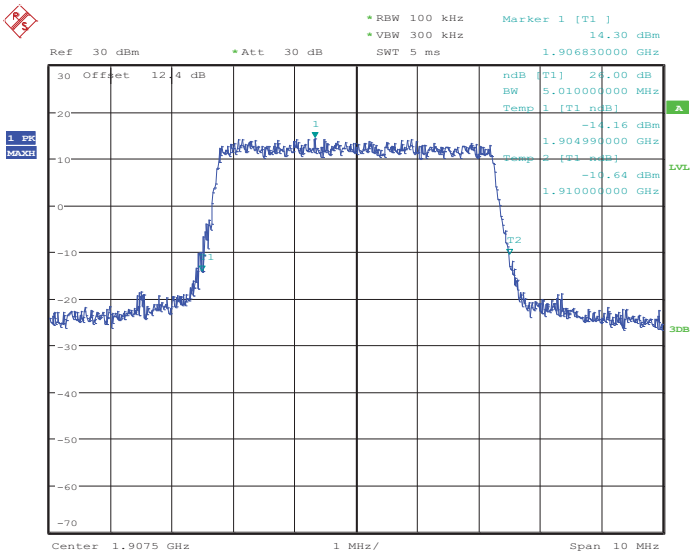
Date: 14.FEB.2014 09:07:07

99% Occupied Bandwidth Plot on Channel 19175



Date: 14.FEB.2014 09:09:24

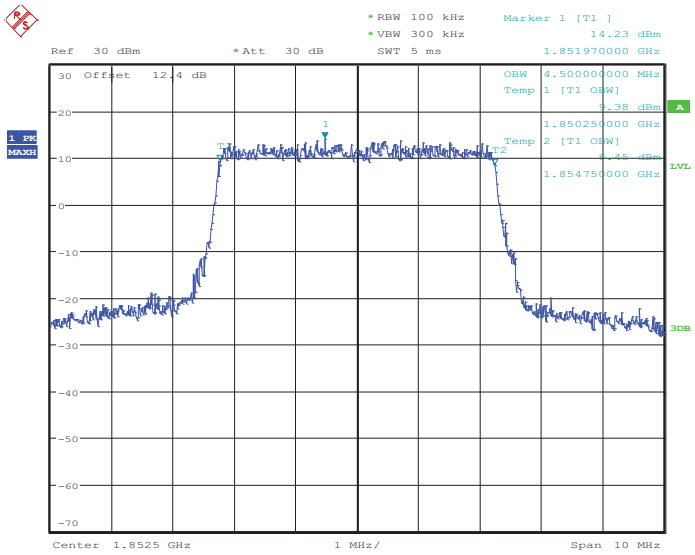
26dB Bandwidth Plot on Channel 19175



Date: 14.FEB.2014 09:09:49

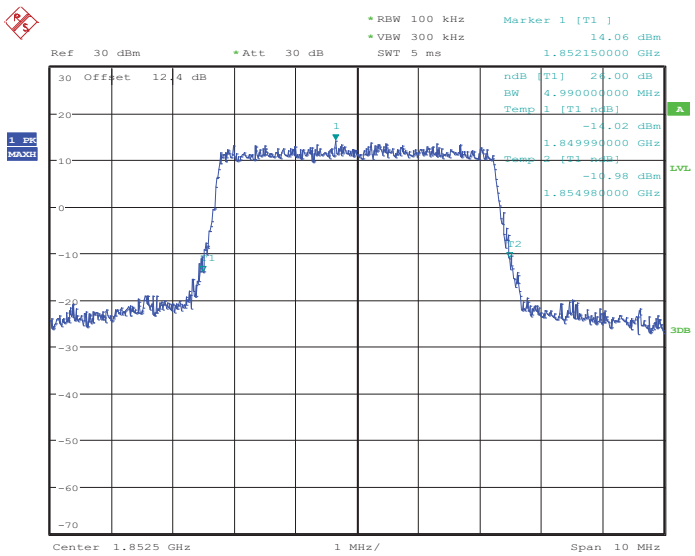
Band :	LTE Band 2	BW / Mod. :	5MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 18625



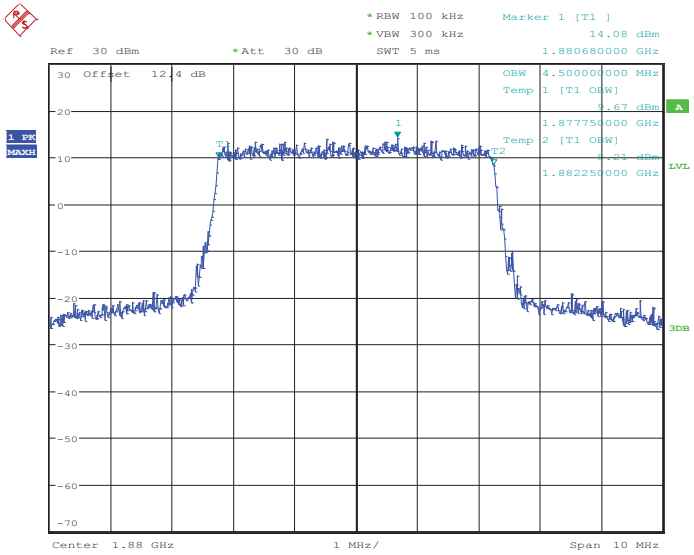
Date: 14.FEB.2014 09:01:19

26dB Bandwidth Plot on Channel 18625



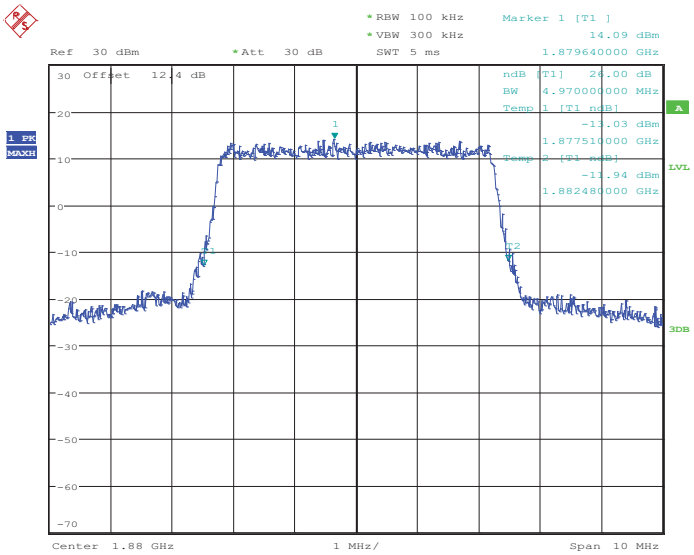
Date: 14.FEB.2014 09:01:46

99% Occupied Bandwidth Plot on Channel 18900



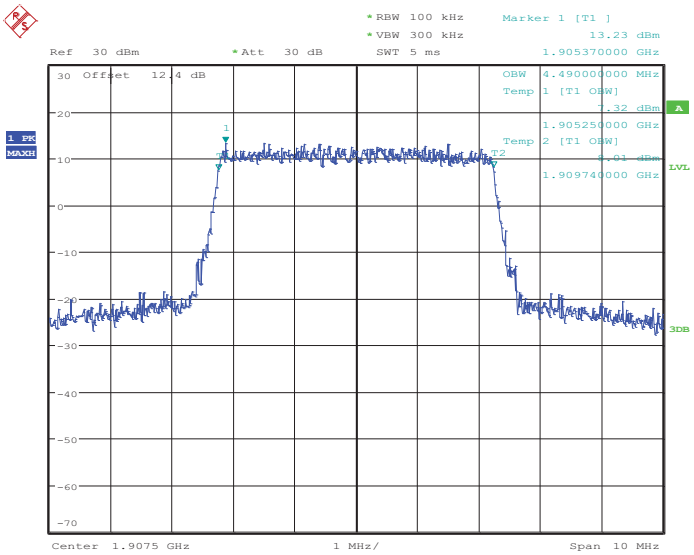
Date: 14.FEB.2014 09:06:53

26dB Bandwidth Plot on Channel 18900



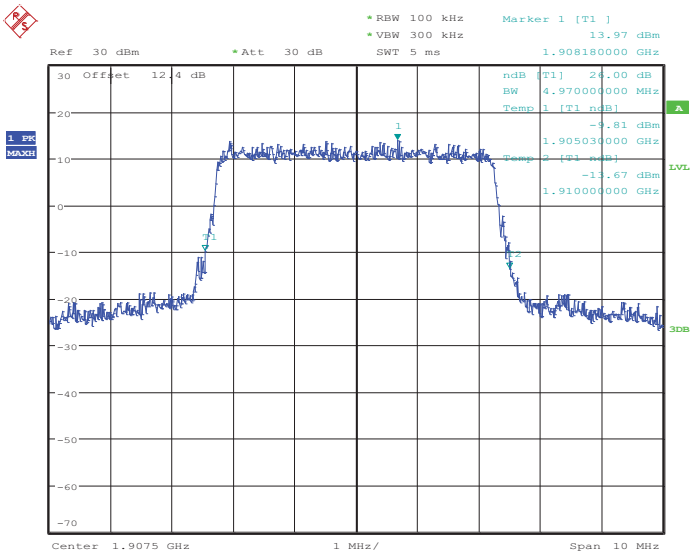
Date: 14.FEB.2014 09:07:20

99% Occupied Bandwidth Plot on Channel 19175



Date: 14.FEB.2014 09:09:36

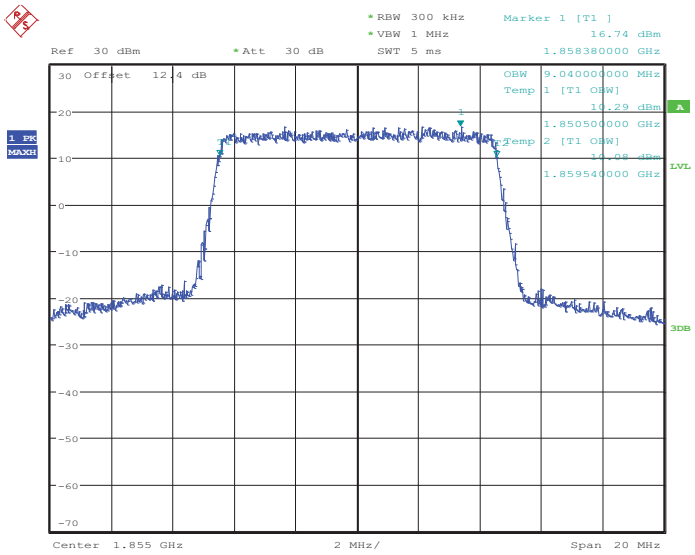
26dB Bandwidth Plot on Channel 19175



Date: 14.FEB.2014 09:10:03

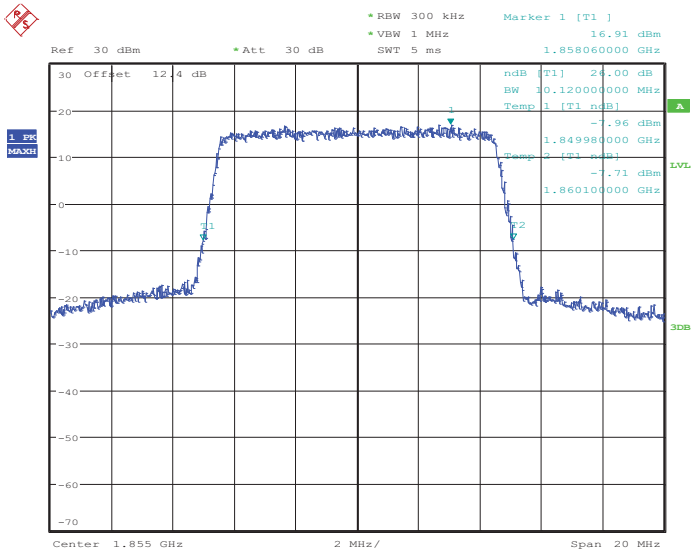
Band :	LTE Band 2	BW / Mod. :	10MHz / QPSK

99% Occupied Bandwidth Plot on Channel 18650



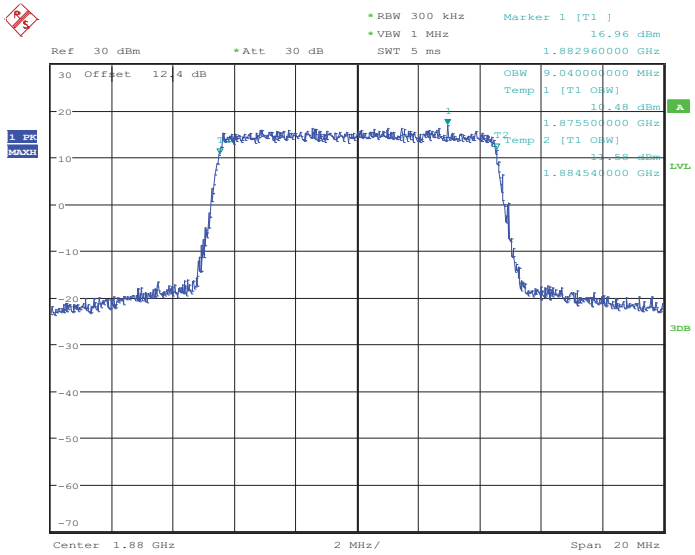
Date: 14.FEB.2014 09:14:59

26dB Bandwidth Plot on Channel 18650



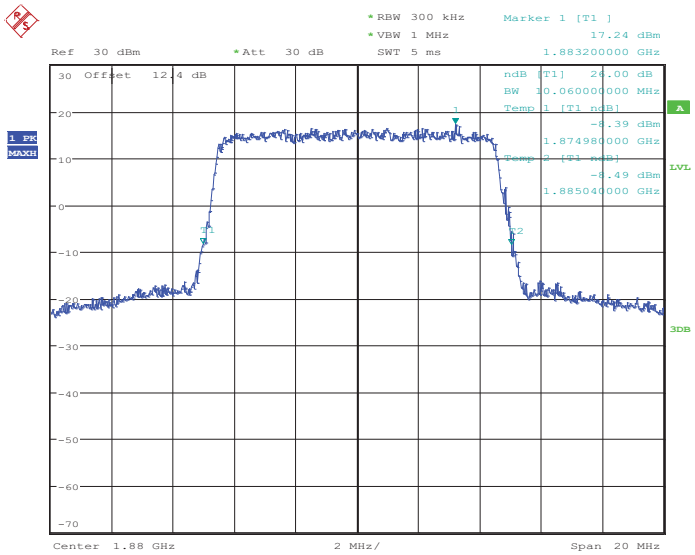
Date: 14.FEB.2014 09:15:23

99% Occupied Bandwidth Plot on Channel 18900



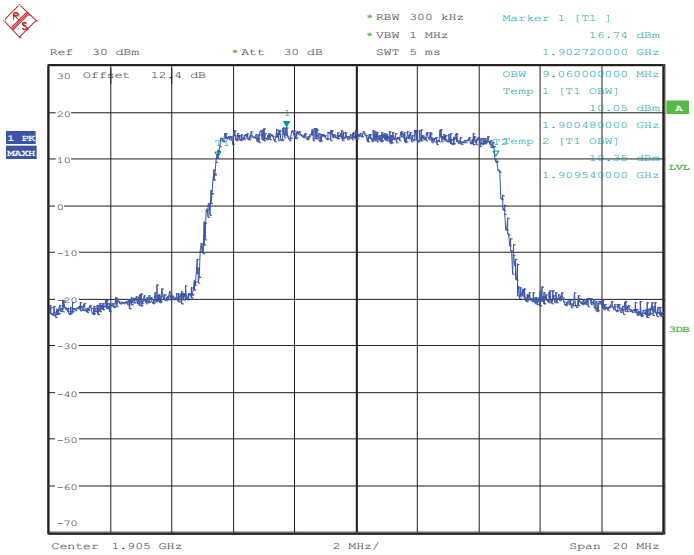
Date: 14.FEB.2014 09:20:27

26dB Bandwidth Plot on Channel 18900



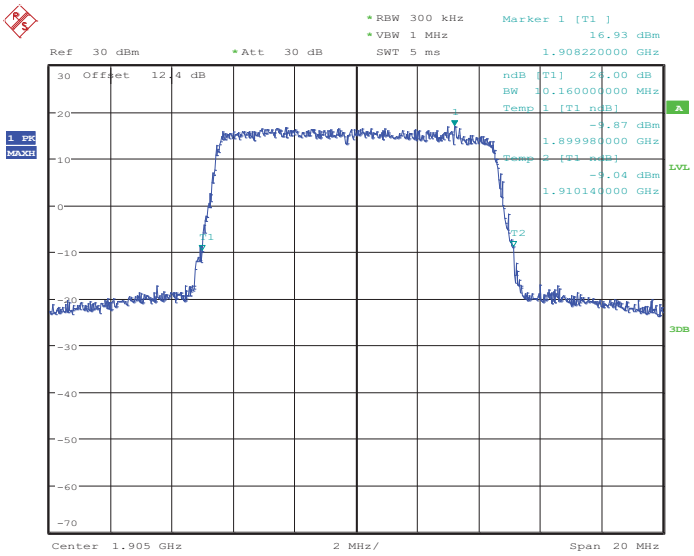
Date: 14.FEB.2014 09:20:51

99% Occupied Bandwidth Plot on Channel 19150



Date: 14.FEB.2014 09:33:26

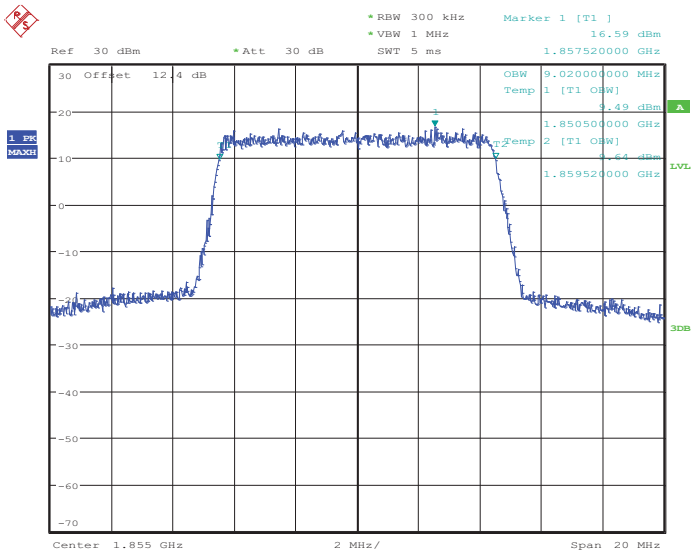
26dB Bandwidth Plot on Channel 19150



Date: 14.FEB.2014 09:33:52

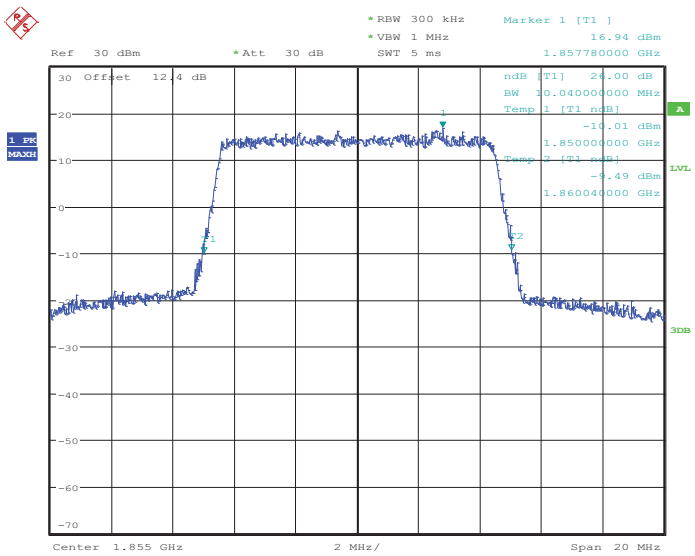
Band :	LTE Band 2	BW / Mod. :	10MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 18650



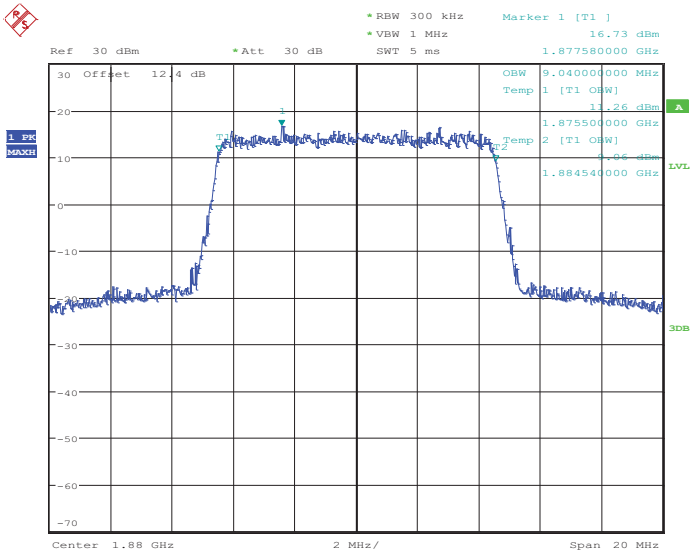
Date: 14.FEB.2014 09:15:10

26dB Bandwidth Plot on Channel 18650



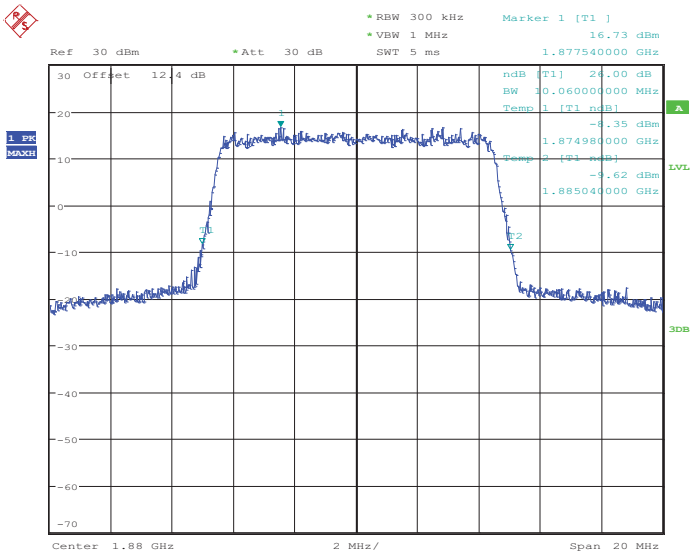
Date: 14.FEB.2014 09:15:36

99% Occupied Bandwidth Plot on Channel 18900



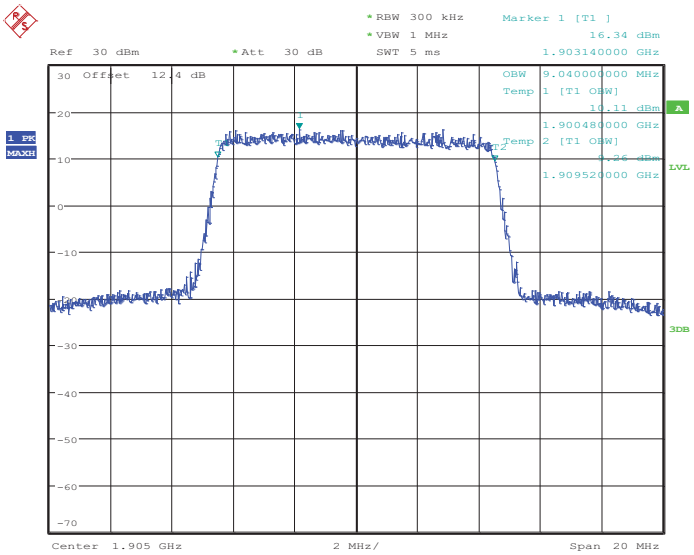
Date: 14.FEB.2014 09:20:38

26dB Bandwidth Plot on Channel 18900



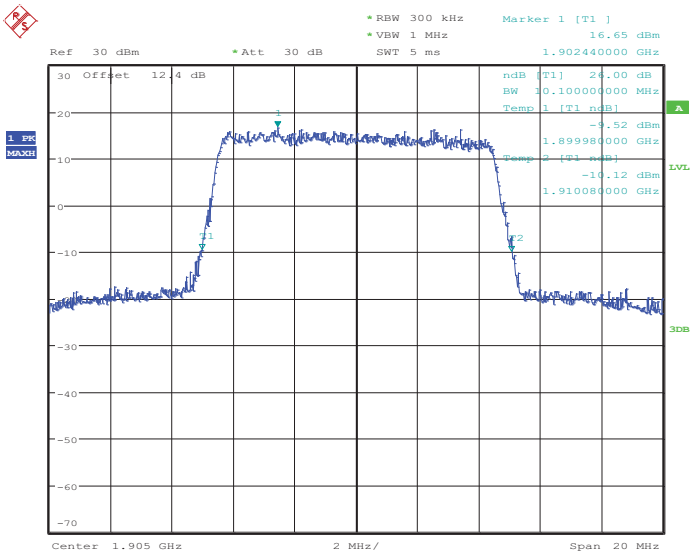
Date: 14.FEB.2014 09:21:04

99% Occupied Bandwidth Plot on Channel 19150



Date: 14.FEB.2014 09:33:38

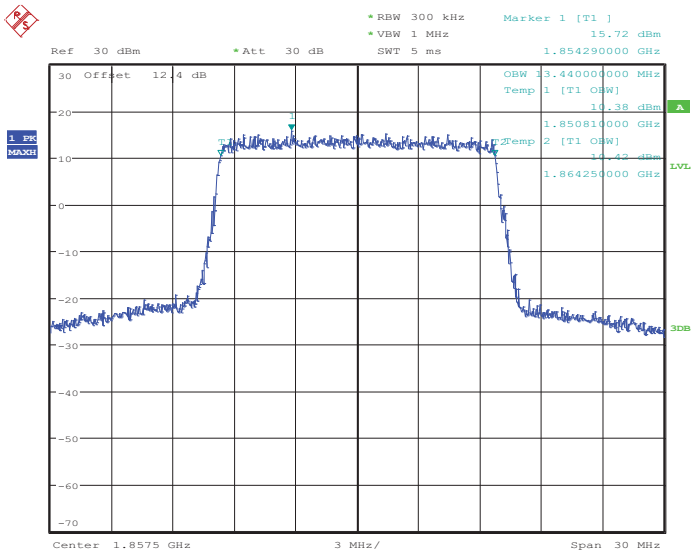
26dB Bandwidth Plot on Channel 19150



Date: 14.FEB.2014 09:34:05

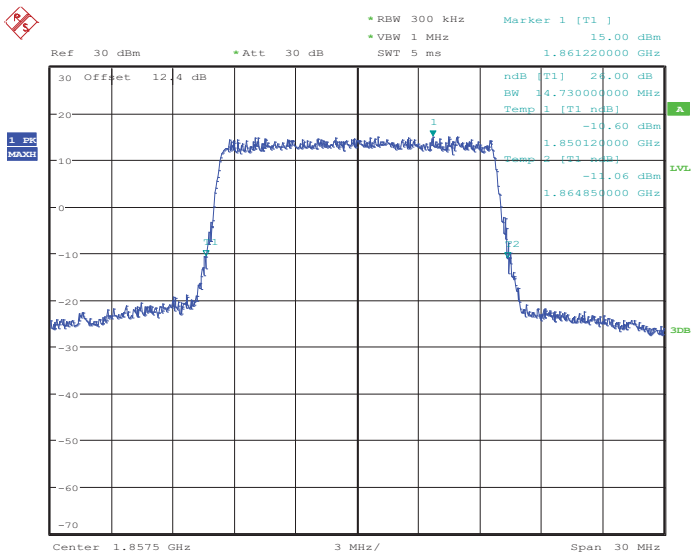
Band :	LTE Band 2	BW / Mod. :	15MHz / QPSK

99% Occupied Bandwidth Plot on Channel 18675



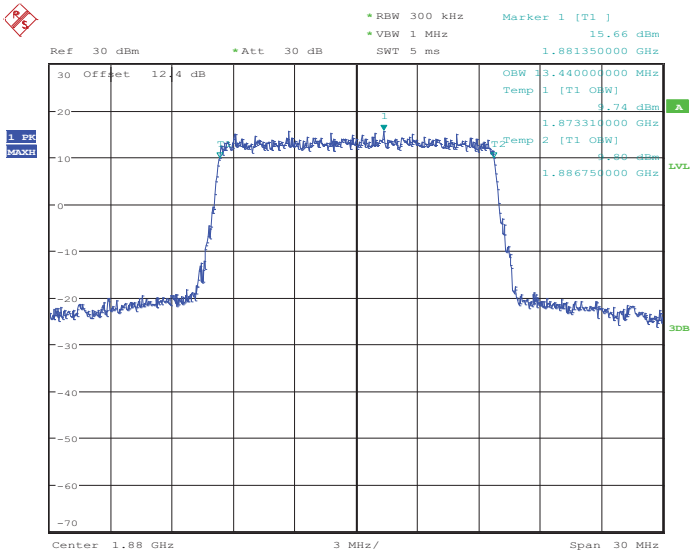
Date: 14.FEB.2014 09:39:05

26dB Bandwidth Plot on Channel 18675



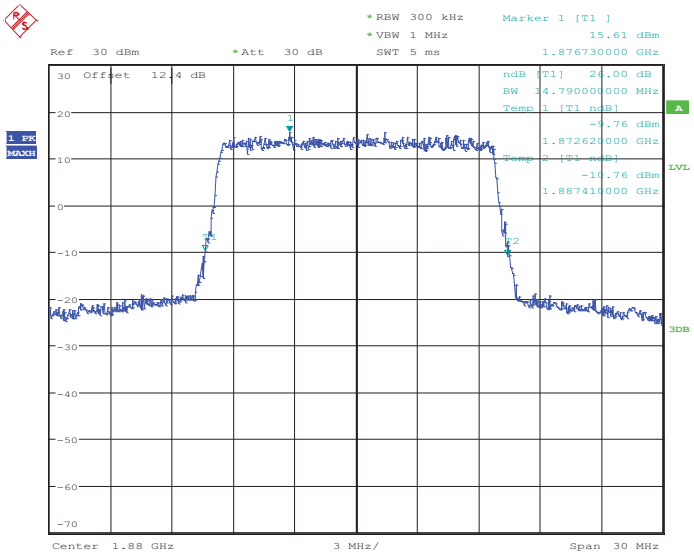
Date: 14.FEB.2014 09:39:30

99% Occupied Bandwidth Plot on Channel 18900



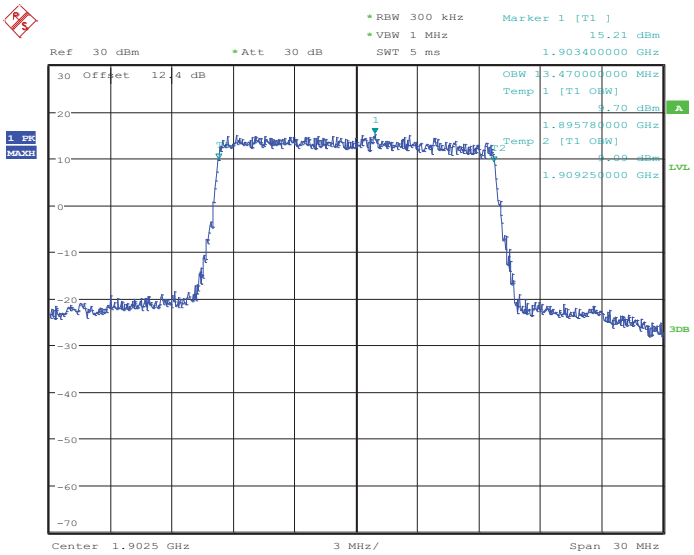
Date: 14.FEB.2014 09:44:39

26dB Bandwidth Plot on Channel 18900



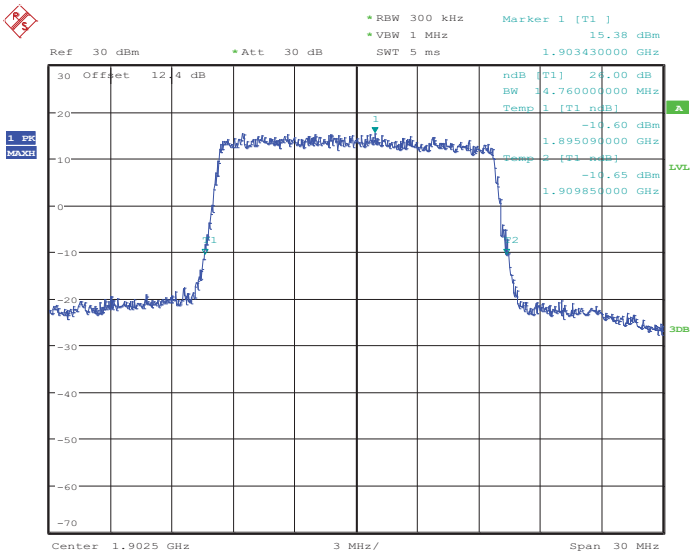
Date: 14.FEB.2014 09:45:04

99% Occupied Bandwidth Plot on Channel 19125



Date: 14.FEB.2014 09:47:22

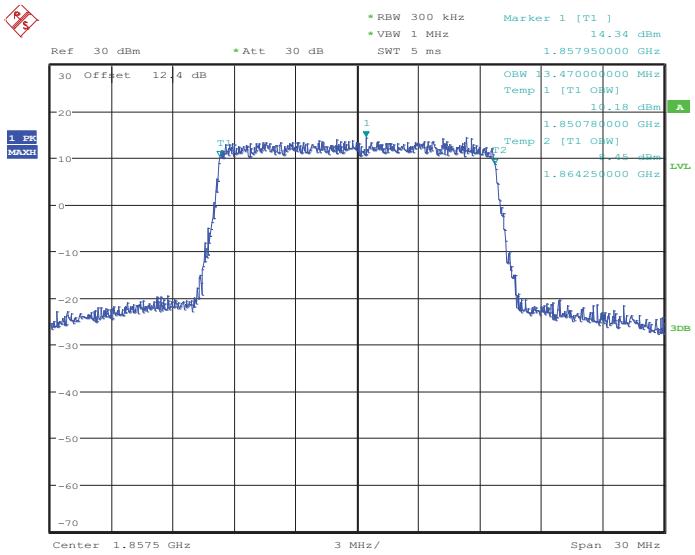
26dB Bandwidth Plot on Channel 19125



Date: 14.FEB.2014 09:47:47

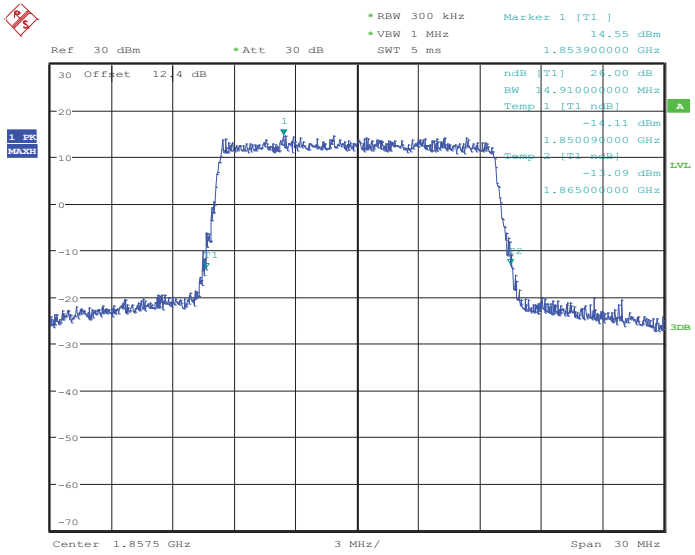
Band :	LTE Band 2	BW / Mod. :	15MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 18675



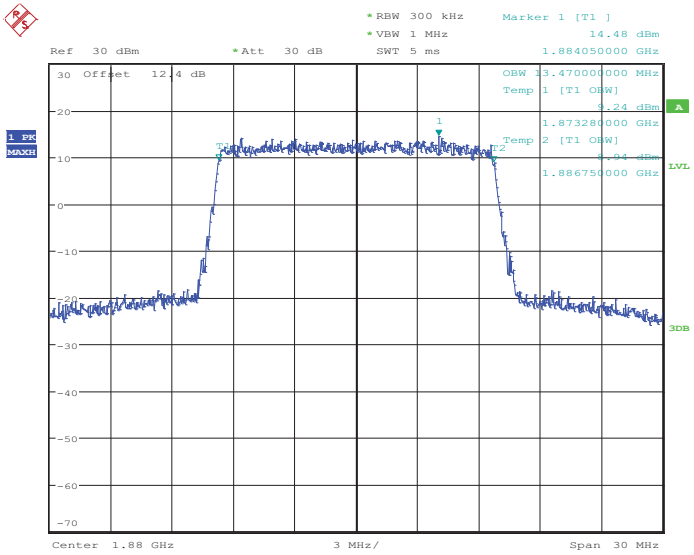
Date: 14.FEB.2014 09:39:16

26dB Bandwidth Plot on Channel 18675



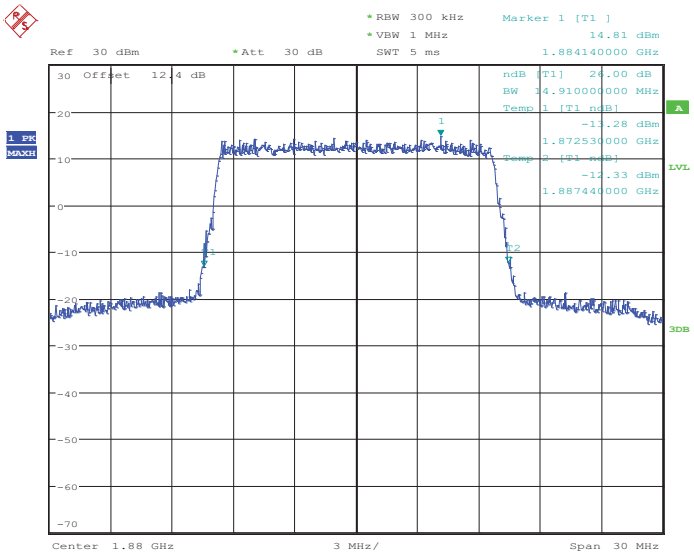
Date: 14.FEB.2014 09:39:43

99% Occupied Bandwidth Plot on Channel 18900



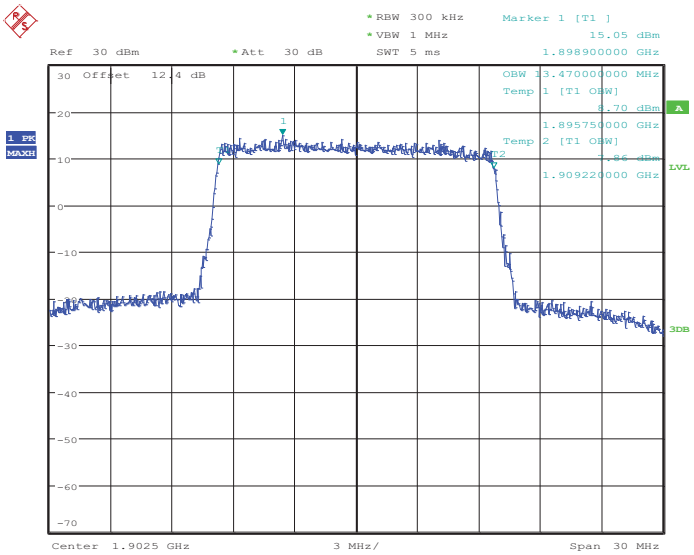
Date: 14.FEB.2014 09:44:51

26dB Bandwidth Plot on Channel 18900



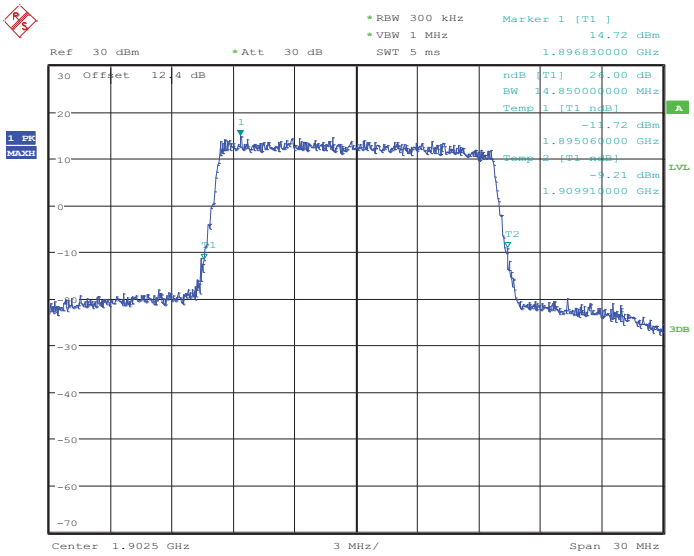
Date: 14.FEB.2014 09:45:18

99% Occupied Bandwidth Plot on Channel 19125



Date: 14.FEB.2014 09:47:34

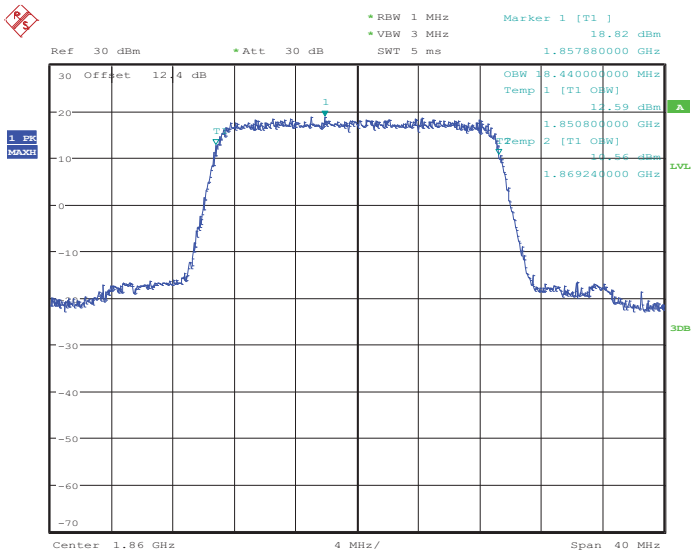
26dB Bandwidth Plot on Channel 19125



Date: 14.FEB.2014 09:48:01

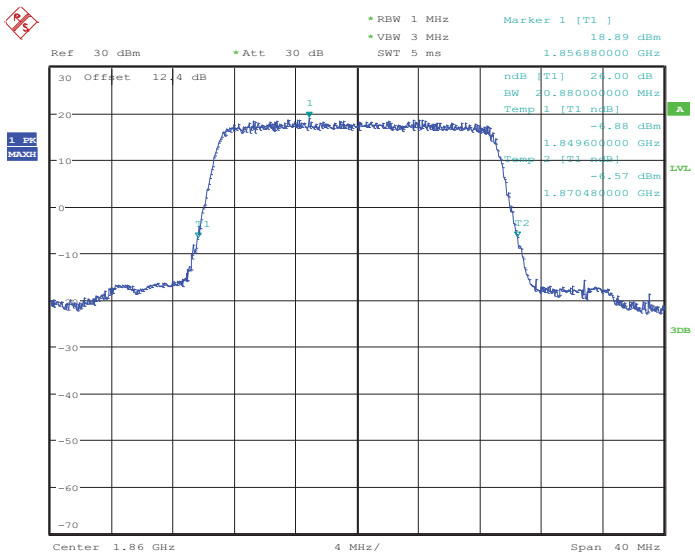
Band :	LTE Band 2	BW / Mod. :	20MHz / QPSK

99% Occupied Bandwidth Plot on Channel 18700



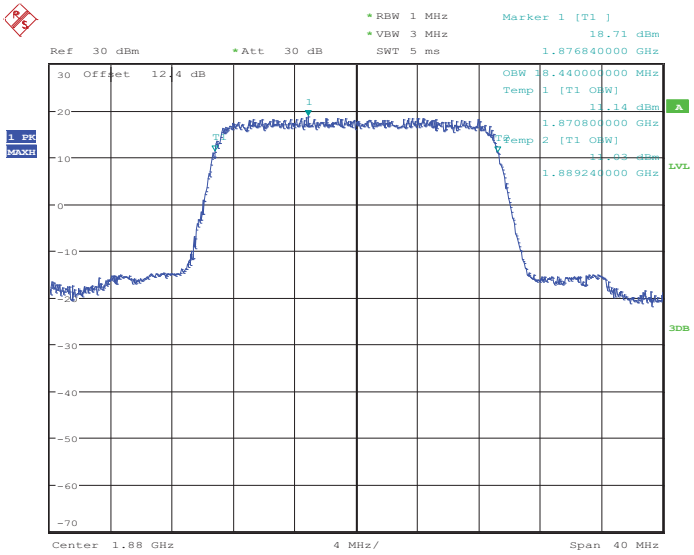
Date: 14.FEB.2014 09:54:46

26dB Bandwidth Plot on Channel 18700



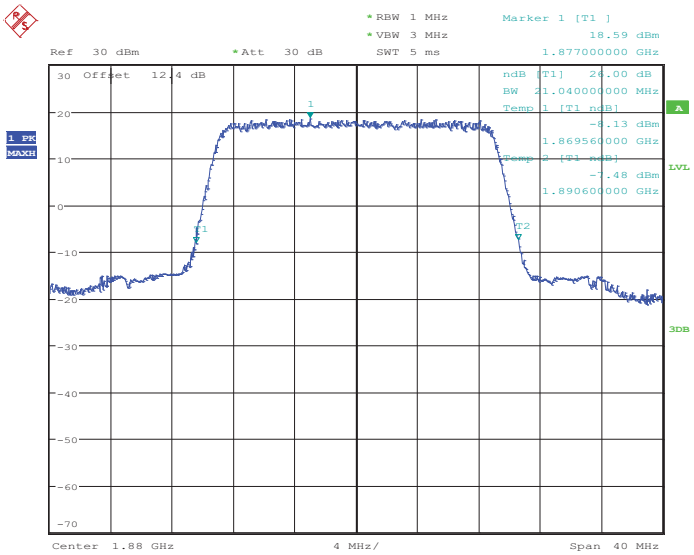
Date: 14.FEB.2014 09:55:11

99% Occupied Bandwidth Plot on Channel 18900



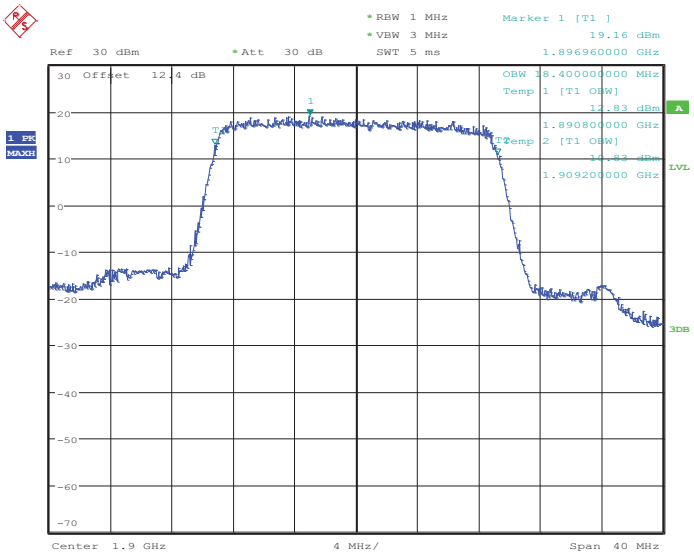
Date: 14.FEB.2014 10:00:21

26dB Bandwidth Plot on Channel 18900



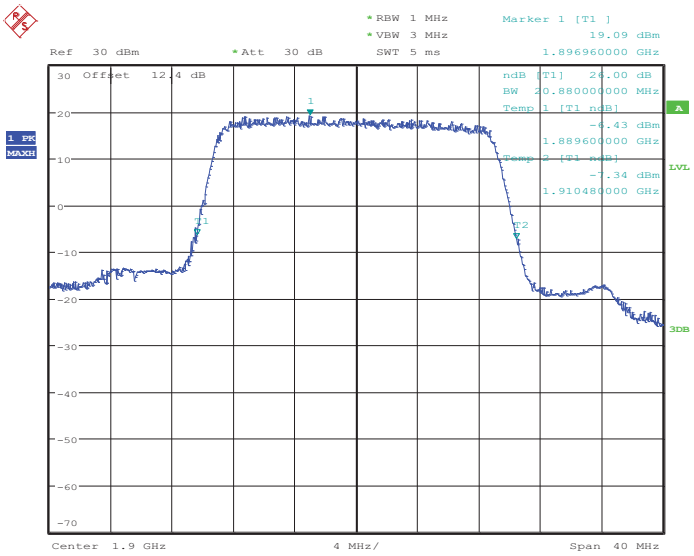
Date: 14.FEB.2014 10:00:46

99% Occupied Bandwidth Plot on Channel 19100



Date: 14.FEB.2014 10:03:04

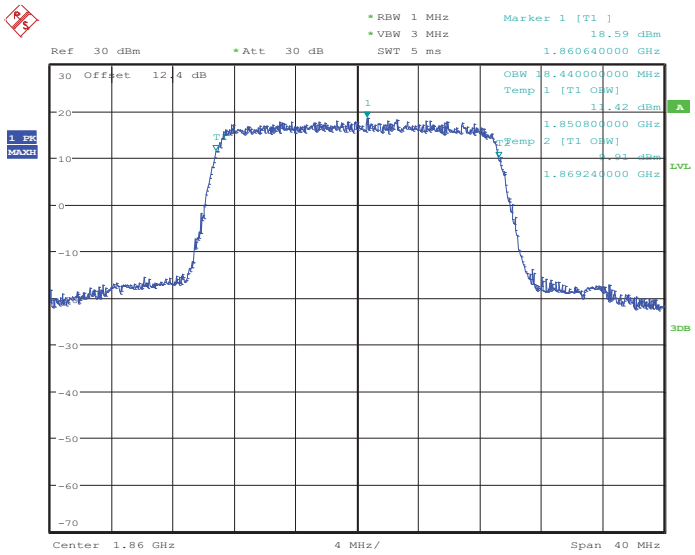
26dB Bandwidth Plot on Channel 19100



Date: 14.FEB.2014 10:03:29

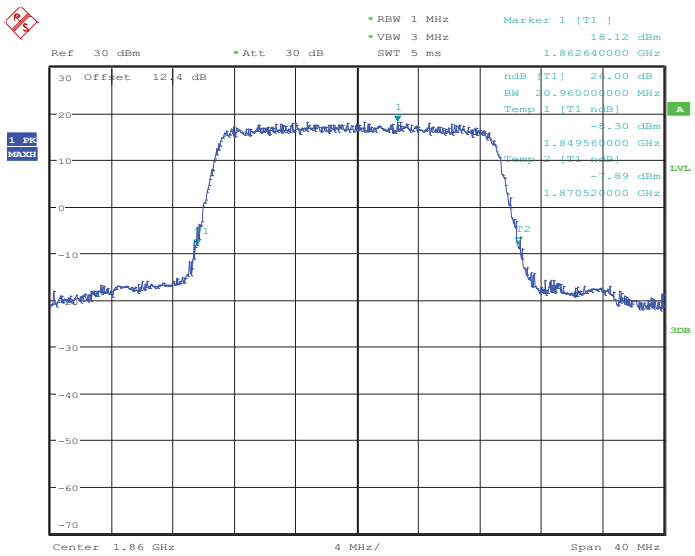
Band :	LTE Band 2	BW / Mod. :	20MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 18700



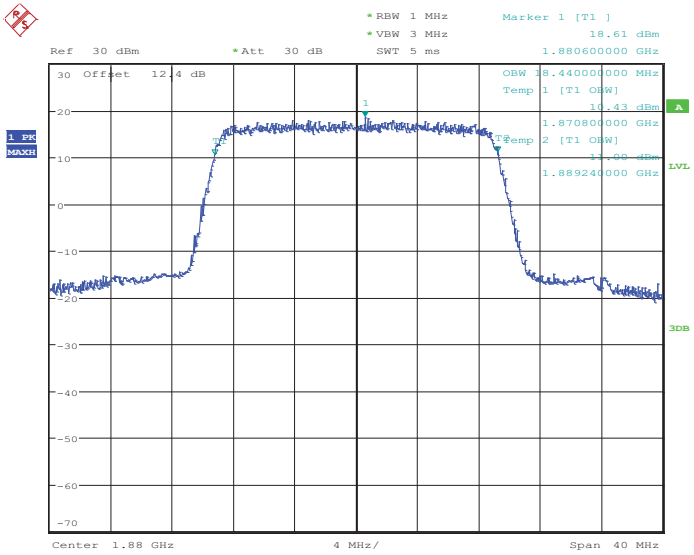
Date: 14.FEB.2014 09:54:58

26dB Bandwidth Plot on Channel 18700



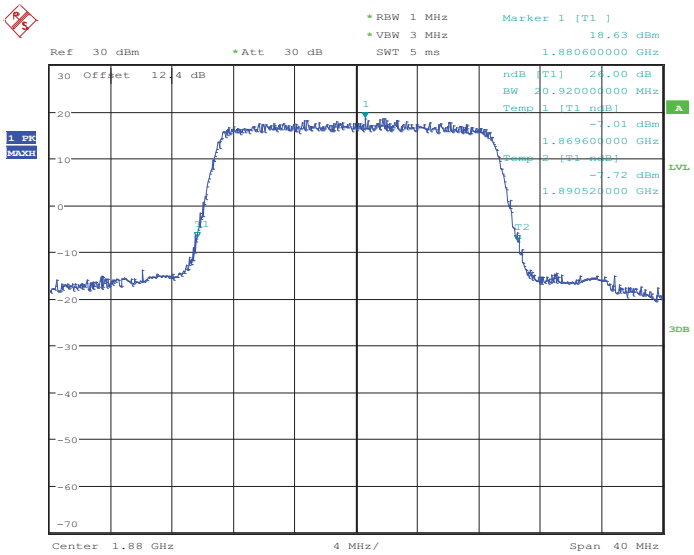
Date: 14.FEB.2014 09:55:25

99% Occupied Bandwidth Plot on Channel 18900



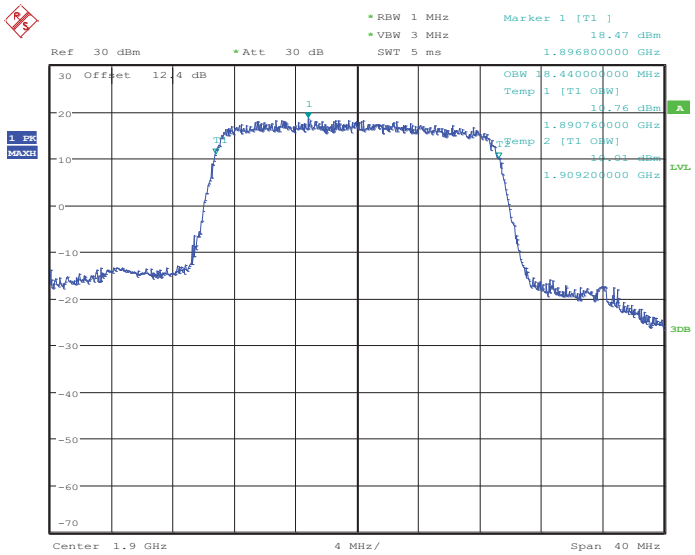
Date: 14.FEB.2014 10:00:33

26dB Bandwidth Plot on Channel 18900



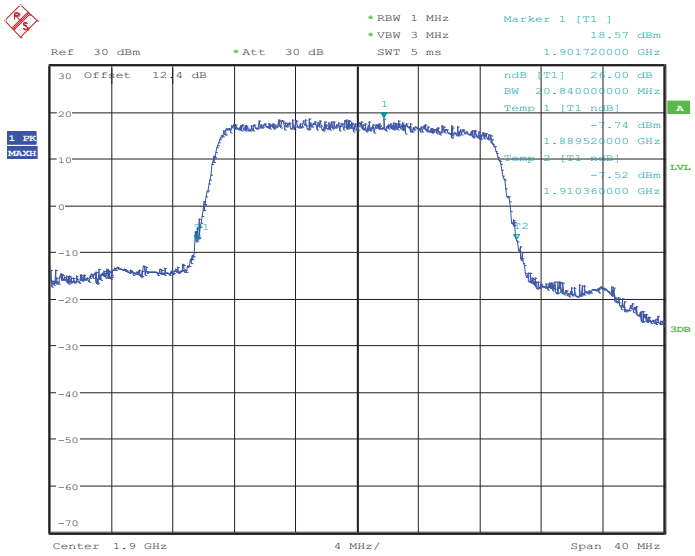
Date: 14.FEB.2014 10:01:00

99% Occupied Bandwidth Plot on Channel 19100



Date: 14.FEB.2014 10:03:16

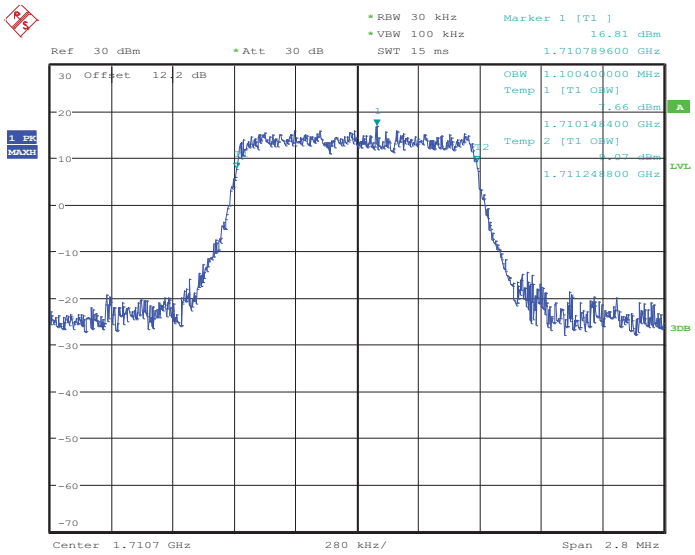
26dB Bandwidth Plot on Channel 19100



Date: 14.FEB.2014 10:03:43

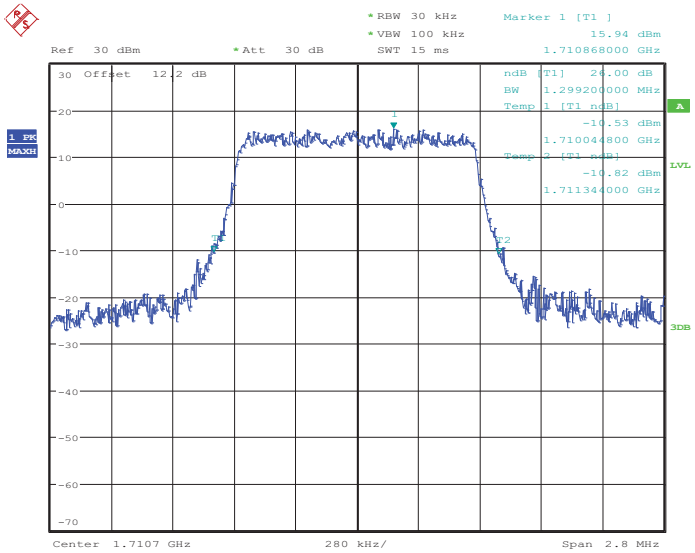
Band :	LTE Band 4	BW / Mod. :	1.4MHz / QPSK

99% Occupied Bandwidth Plot on Channel 19957



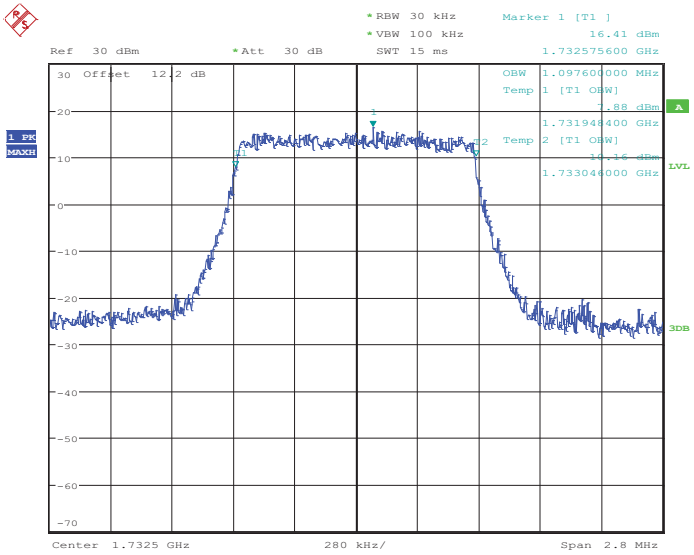
Date: 14.FEB.2014 10:15:33

26dB Bandwidth Plot on Channel 19957



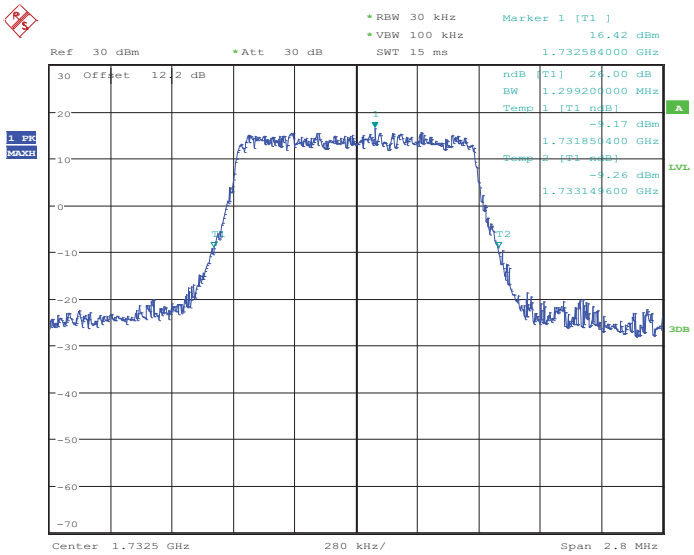
Date: 14.FEB.2014 10:15:58

99% Occupied Bandwidth Plot on Channel 20175



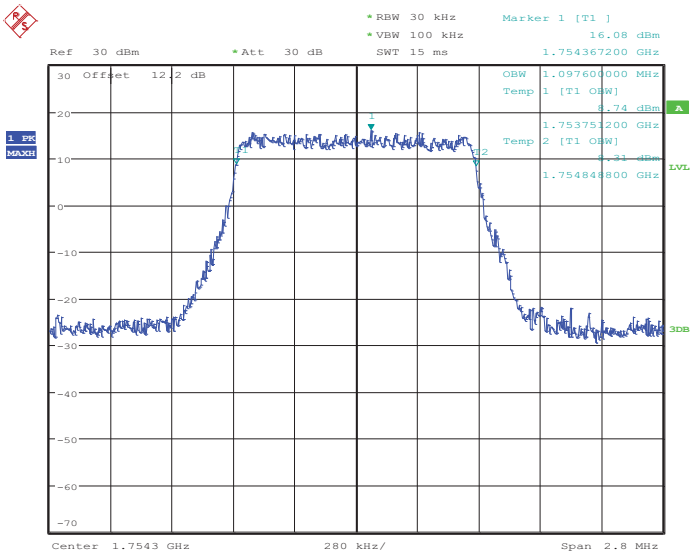
Date: 14.FEB.2014 10:21:08

26dB Bandwidth Plot on Channel 20175



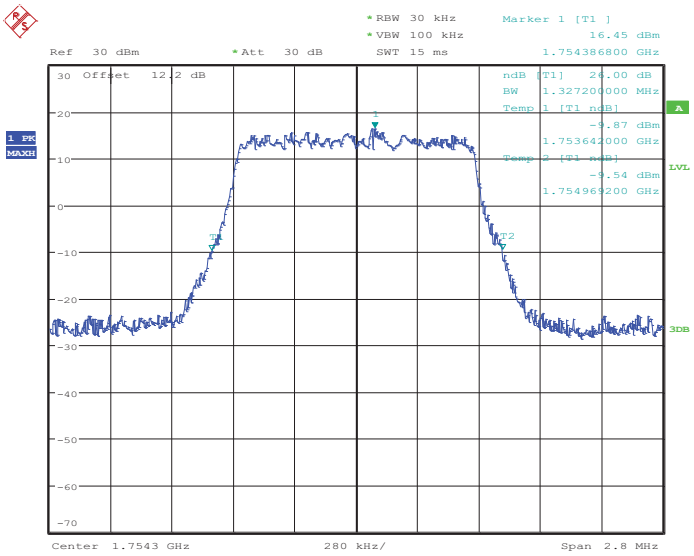
Date: 14.FEB.2014 10:21:34

99% Occupied Bandwidth Plot on Channel 20393



Date: 14.FEB.2014 10:23:51

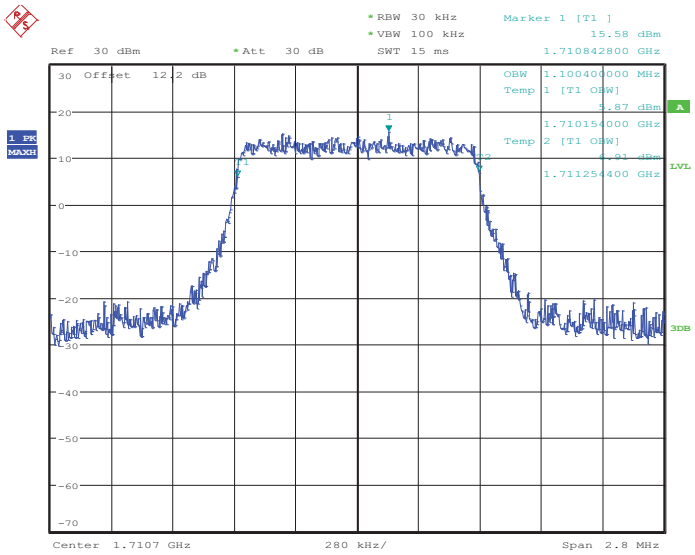
26dB Bandwidth Plot on Channel 20393



Date: 14.FEB.2014 10:24:16

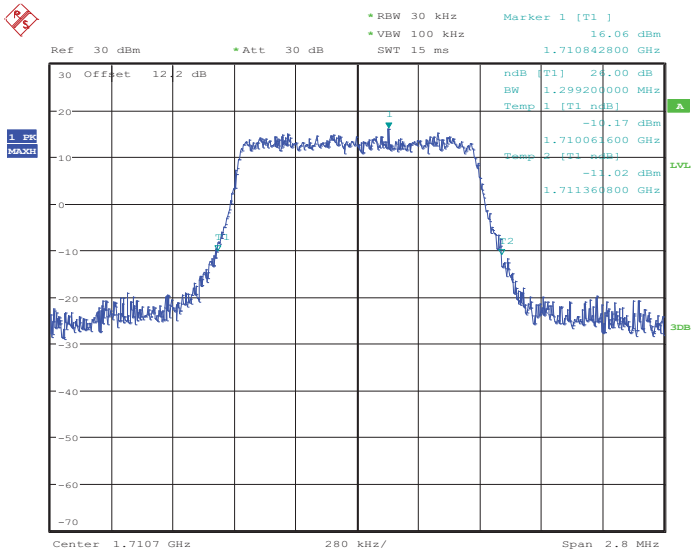
Band :	LTE Band 4	BW / Mod. :	1.4MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 19957



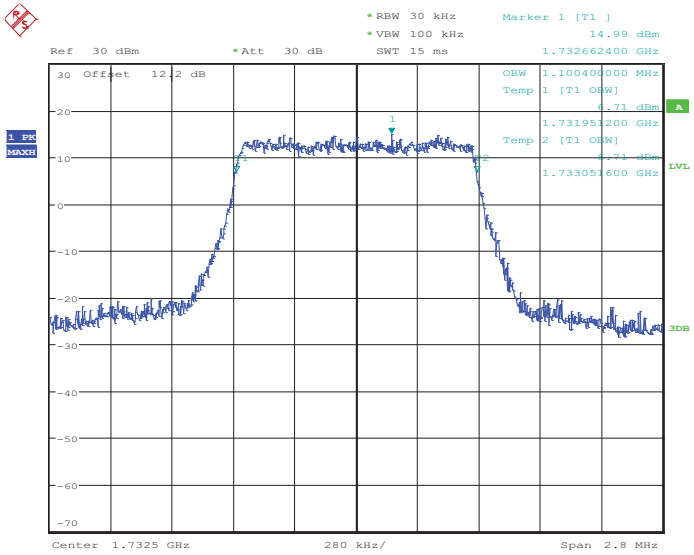
Date: 14.FEB.2014 10:15:45

26dB Bandwidth Plot on Channel 19957



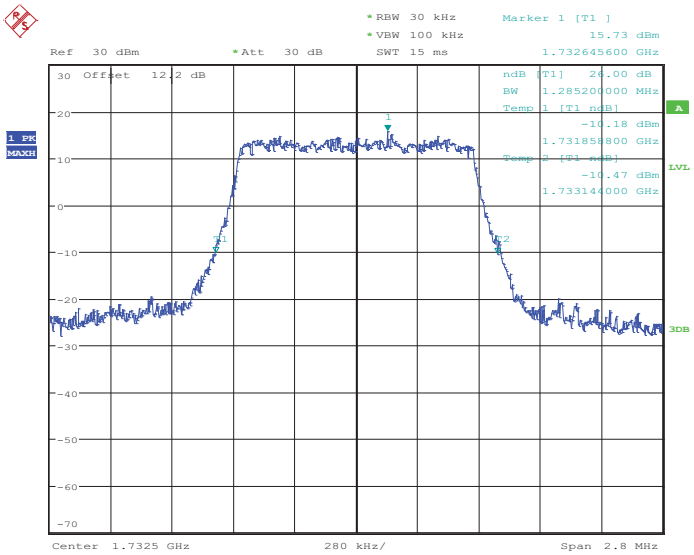
Date: 14.FEB.2014 10:16:12

99% Occupied Bandwidth Plot on Channel 20175



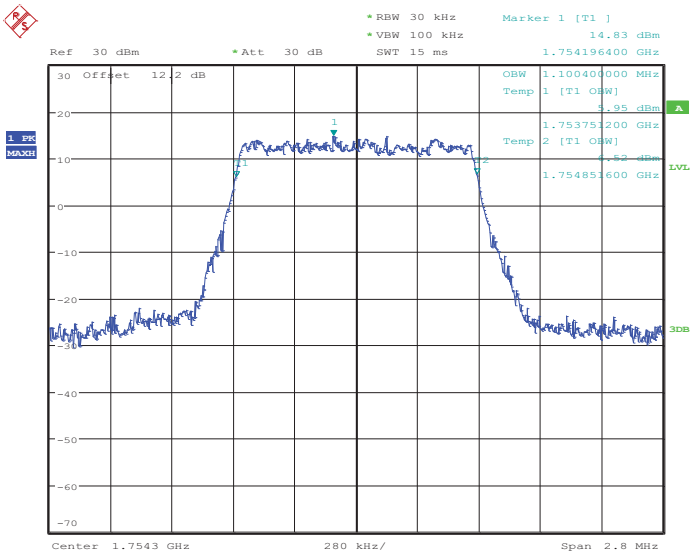
Date: 14.FEB.2014 10:21:20

26dB Bandwidth Plot on Channel 20175



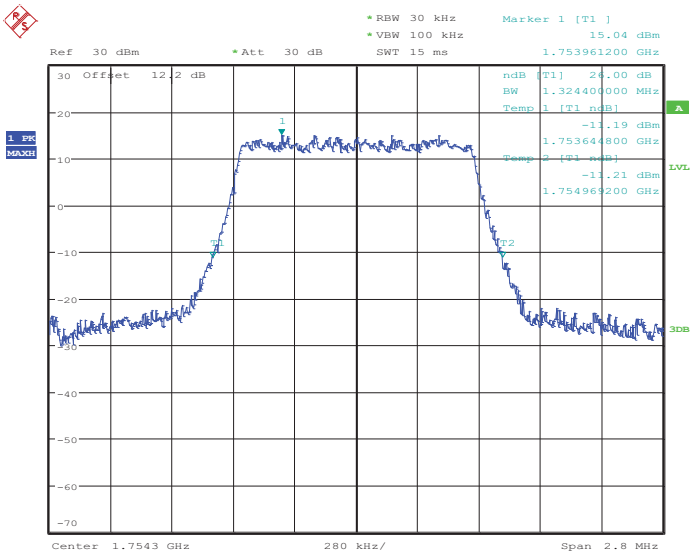
Date: 14.FEB.2014 10:21:47

99% Occupied Bandwidth Plot on Channel 20393



Date: 14.FEB.2014 10:24:03

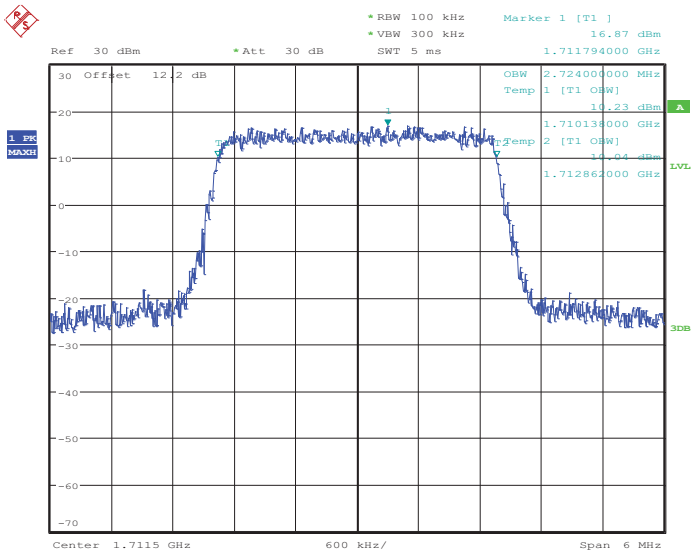
26dB Bandwidth Plot on Channel 20393



Date: 14.FEB.2014 10:24:30

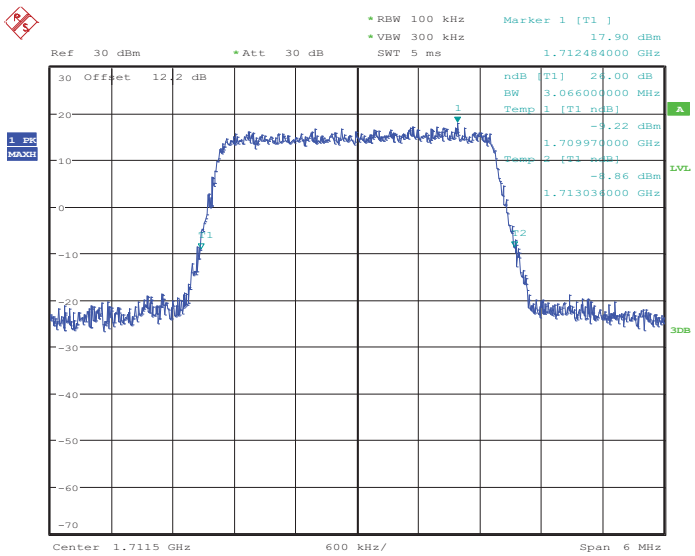
Band :	LTE Band 4	BW / Mod. :	3MHz / QPSK

99% Occupied Bandwidth Plot on Channel 19965



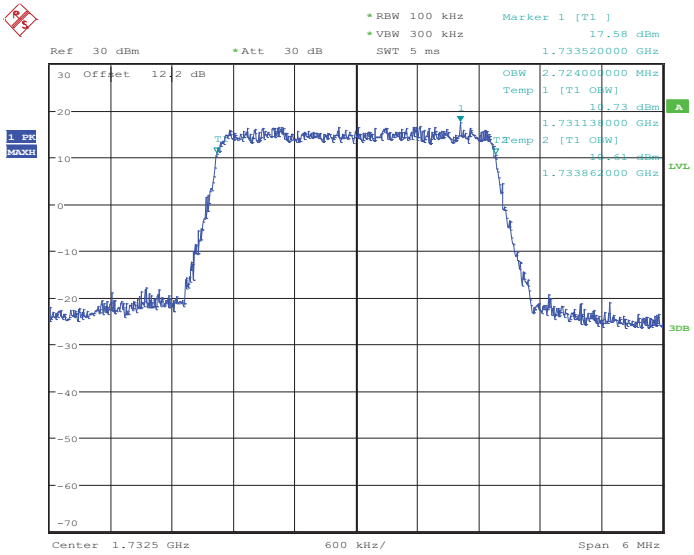
Date: 14.FEB.2014 10:29:31

26dB Bandwidth Plot on Channel 19965



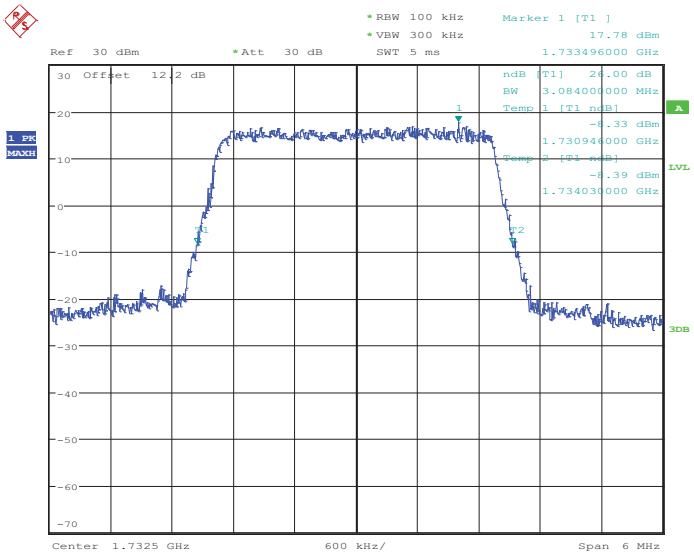
Date: 14.FEB.2014 10:29:56

99% Occupied Bandwidth Plot on Channel 20175



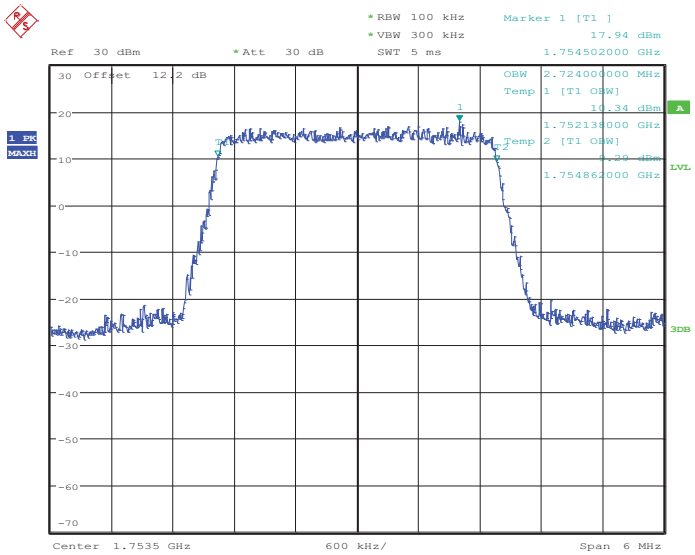
Date: 14.FEB.2014 10:35:05

26dB Bandwidth Plot on Channel 20175



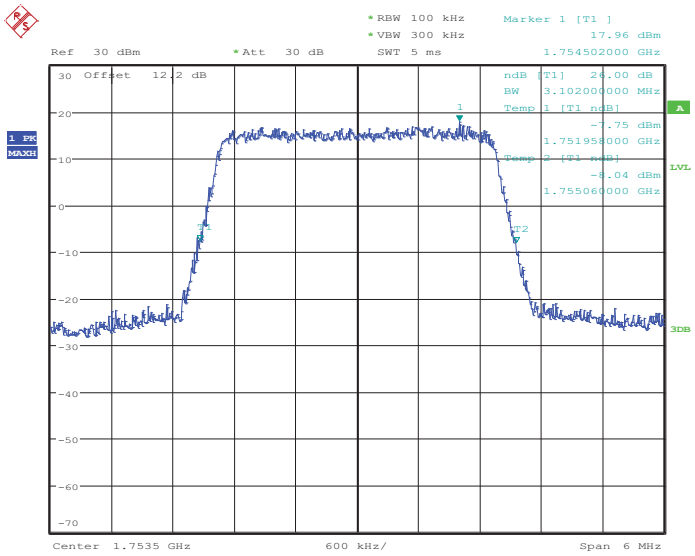
Date: 14.FEB.2014 10:35:30

99% Occupied Bandwidth Plot on Channel 20385



Date: 14.FEB.2014 10:37:48

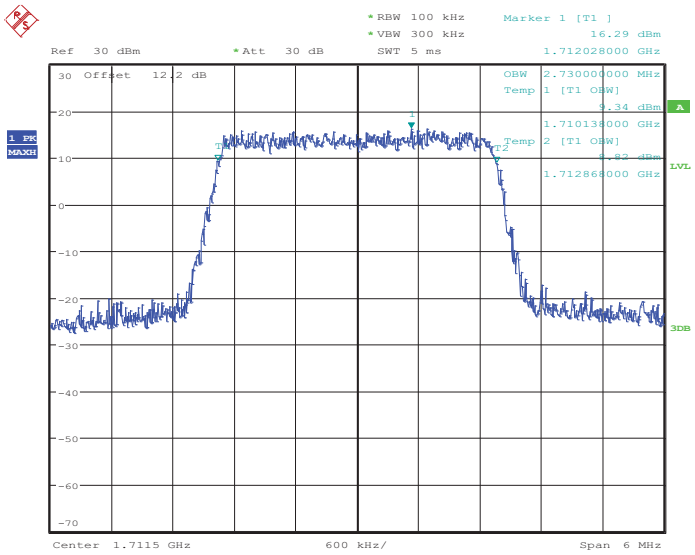
26dB Bandwidth Plot on Channel 20385



Date: 14.FEB.2014 10:38:14

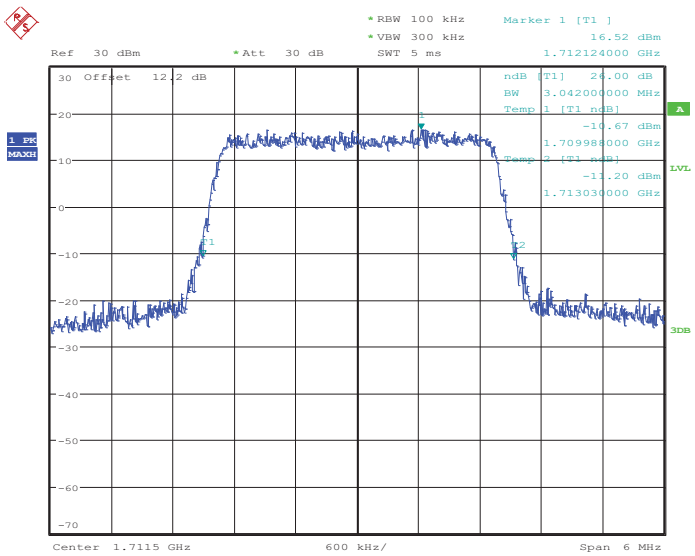
Band :	LTE Band 4	BW / Mod. :	3MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 19965



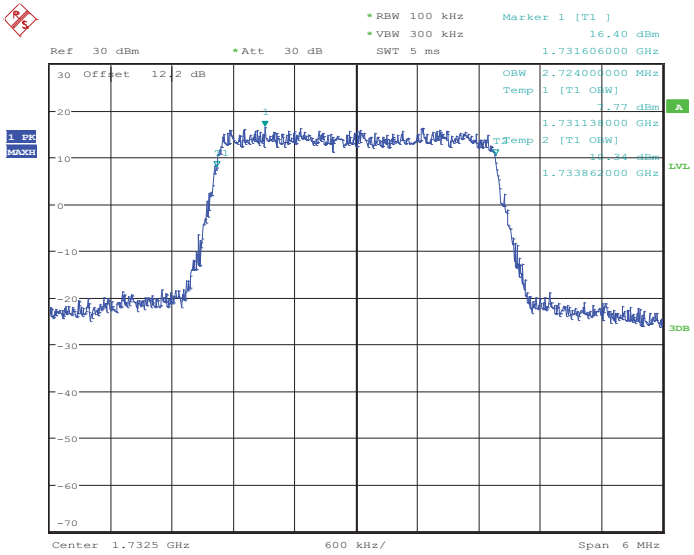
Date: 14.FEB.2014 10:29:42

26dB Bandwidth Plot on Channel 19965



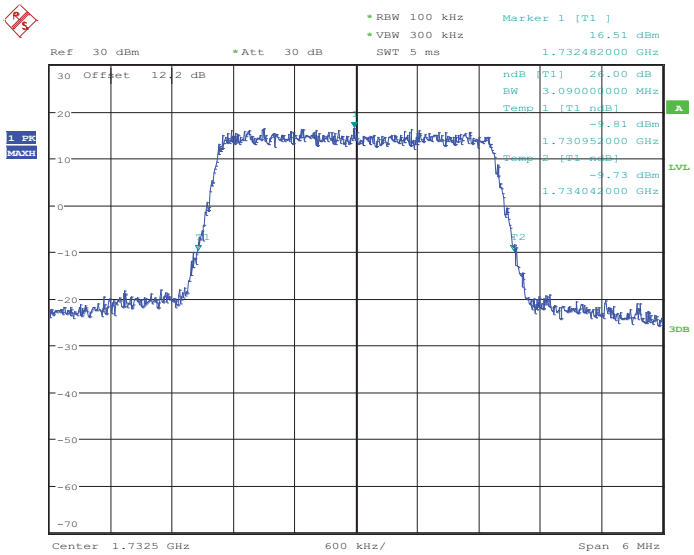
Date: 14.FEB.2014 10:30:09

99% Occupied Bandwidth Plot on Channel 20175



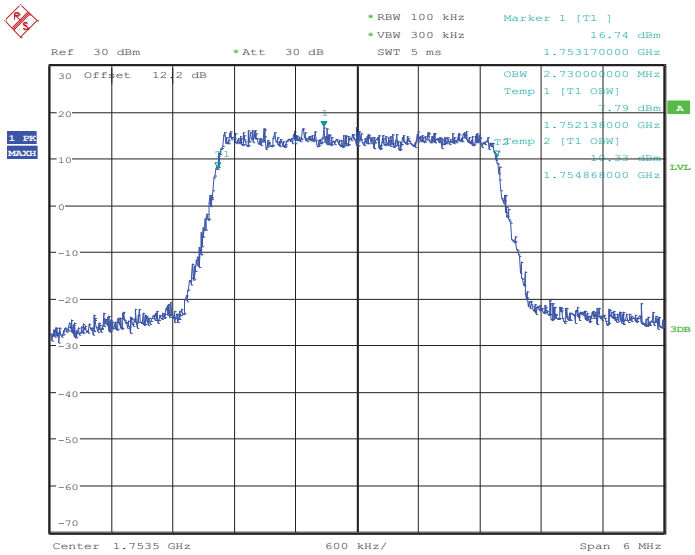
Date: 14.FEB.2014 10:35:17

26dB Bandwidth Plot on Channel 20175



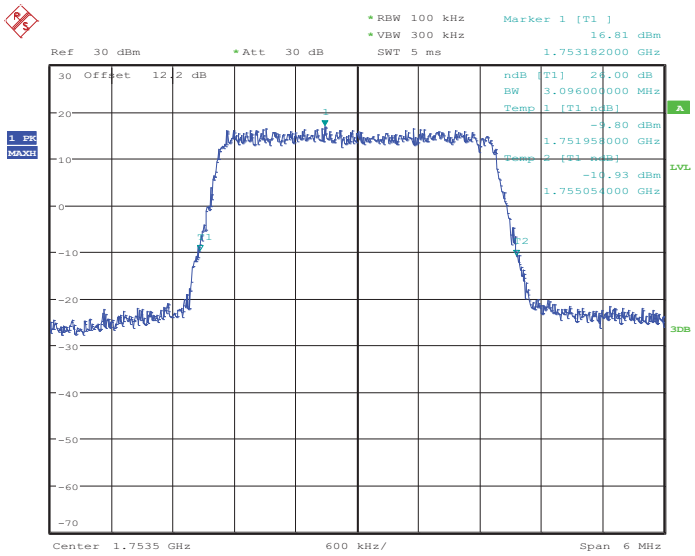
Date: 14.FEB.2014 10:35:44

99% Occupied Bandwidth Plot on Channel 20385



Date: 14.FEB.2014 10:38:00

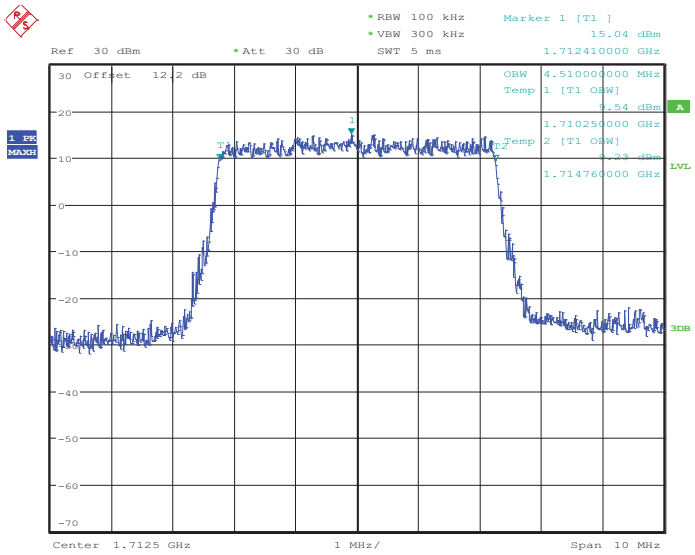
26dB Bandwidth Plot on Channel 20385



Date: 14.FEB.2014 10:38:27

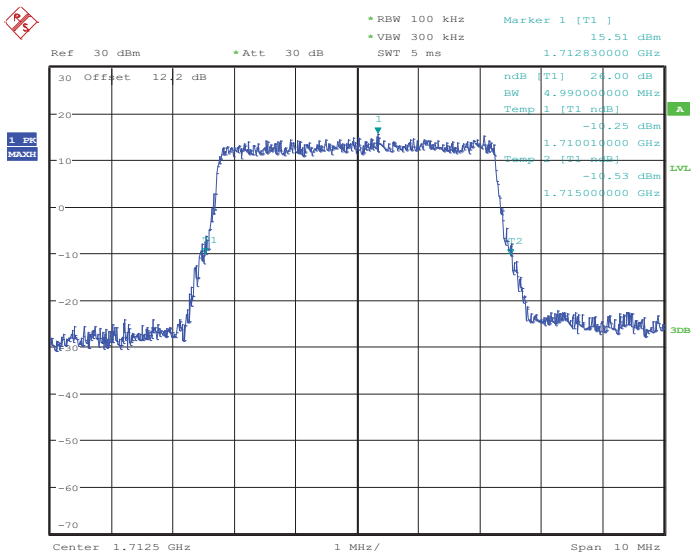
Band :	LTE Band 4	BW / Mod. :	5MHz / QPSK

99% Occupied Bandwidth Plot on Channel 19975



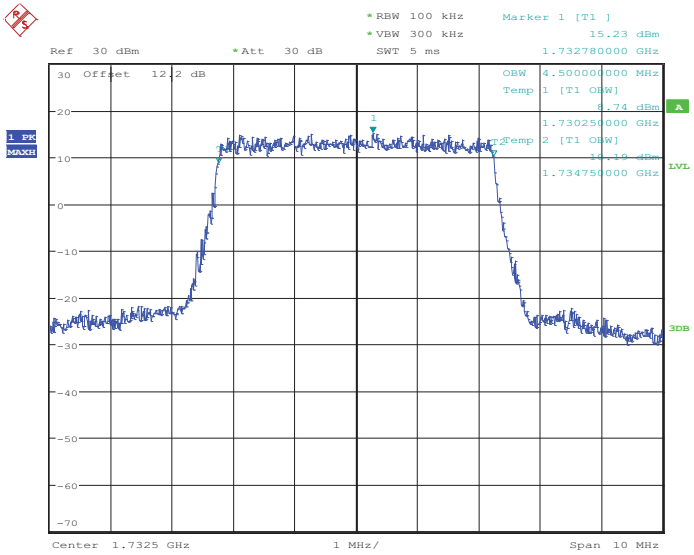
Date: 14.FEB.2014 10:43:27

26dB Bandwidth Plot on Channel 19975

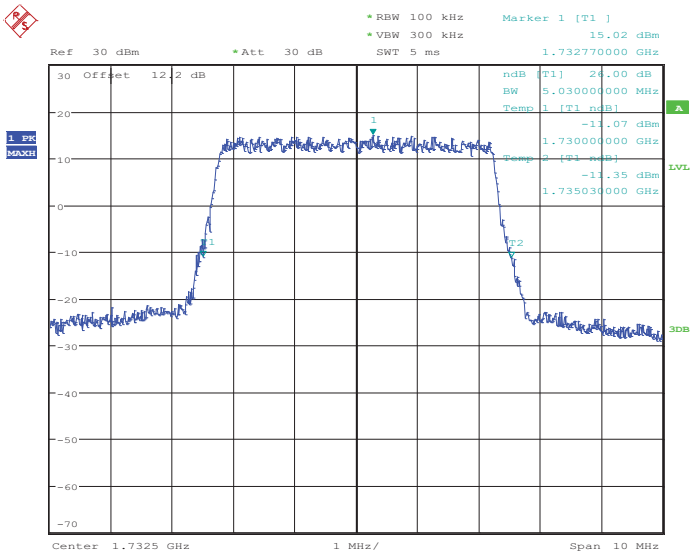


Date: 14.FEB.2014 10:43:53

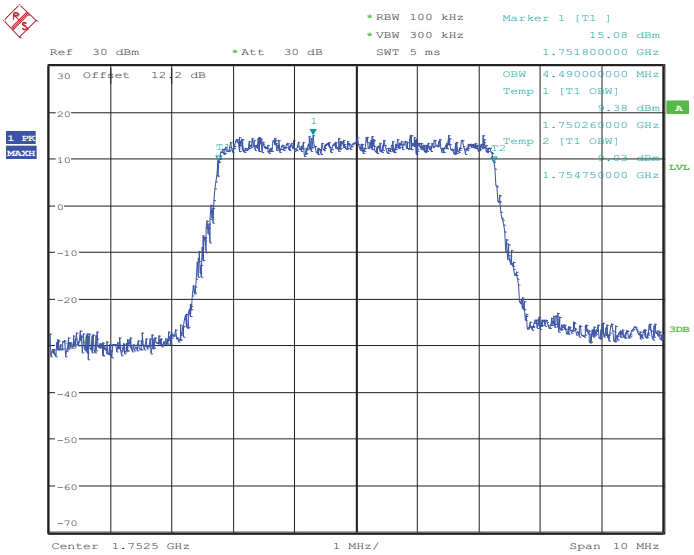
99% Occupied Bandwidth Plot on Channel 20175



26dB Bandwidth Plot on Channel 20175

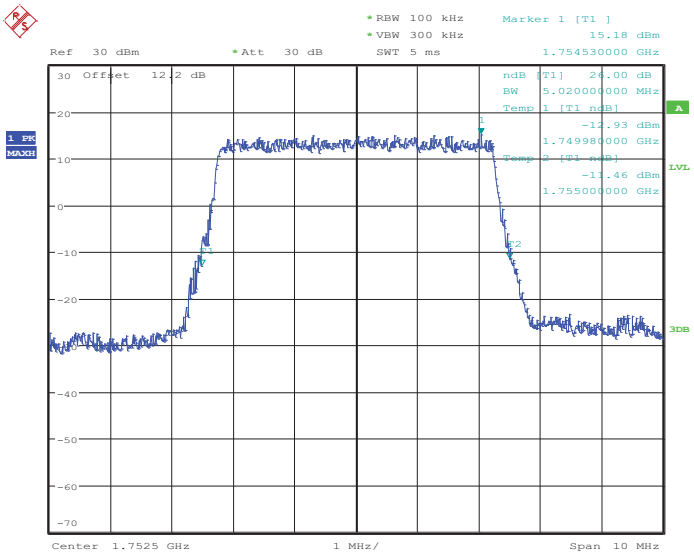


99% Occupied Bandwidth Plot on Channel 20375



Date: 14.FEB.2014 10:51:45

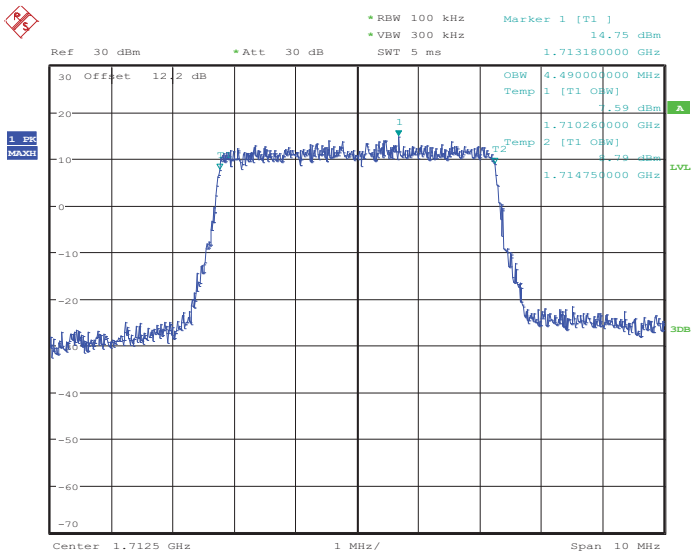
26dB Bandwidth Plot on Channel 20375



Date: 14.FEB.2014 10:52:11

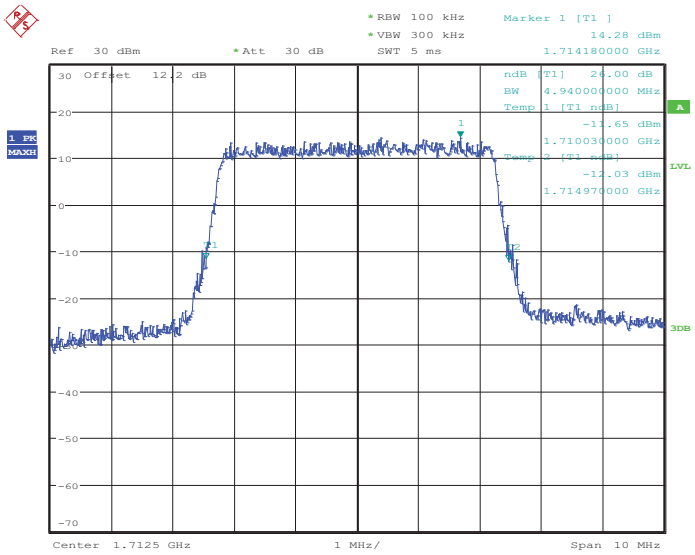
Band :	LTE Band 4	BW / Mod. :	5MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 19975



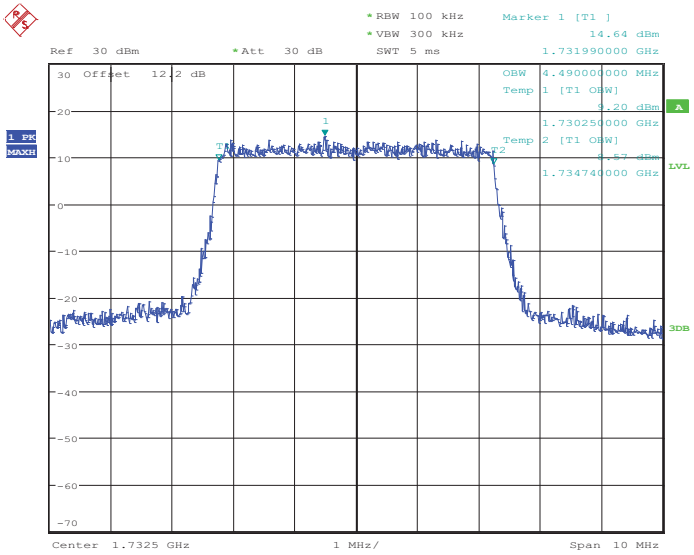
Date: 14.FEB.2014 10:43:39

26dB Bandwidth Plot on Channel 19975



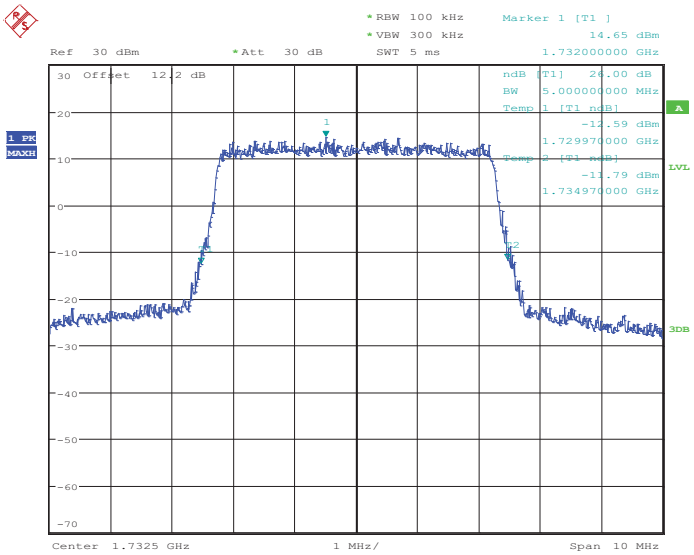
Date: 14.FEB.2014 10:44:06

99% Occupied Bandwidth Plot on Channel 20175



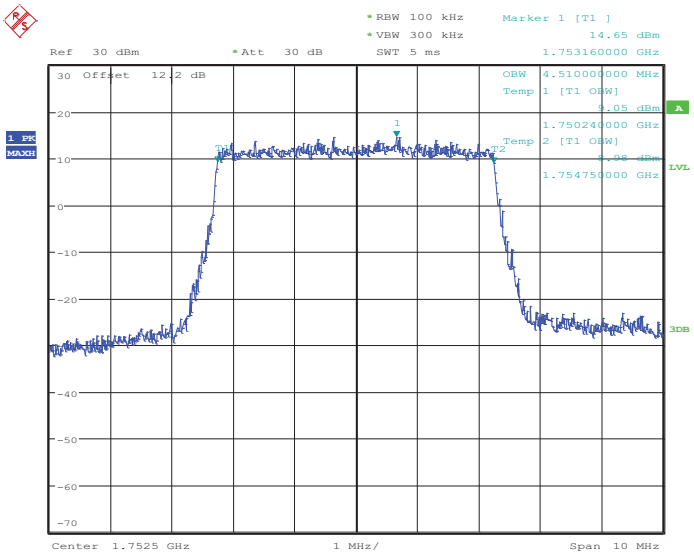
Date: 14.FEB.2014 10:49:14

26dB Bandwidth Plot on Channel 20175



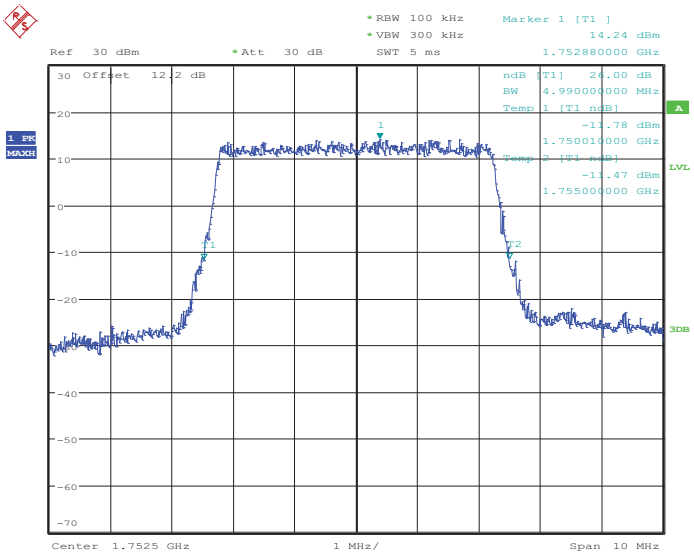
Date: 14.FEB.2014 10:49:41

99% Occupied Bandwidth Plot on Channel 20375



Date: 14.FEB.2014 10:51:57

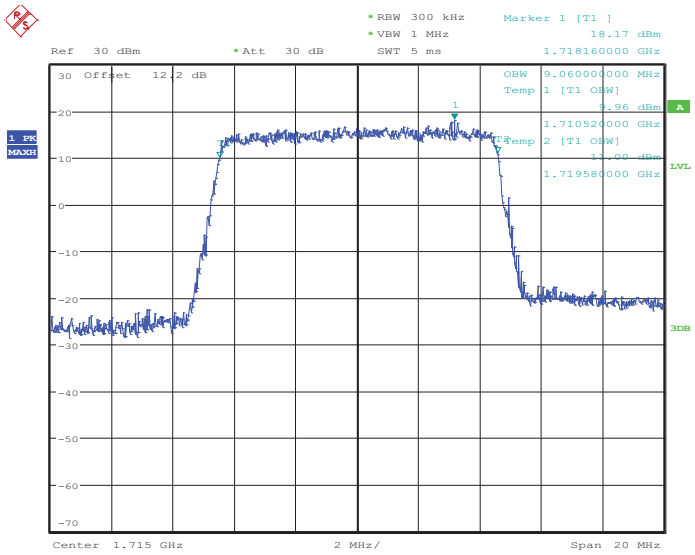
26dB Bandwidth Plot on Channel 20375



Date: 14.FEB.2014 10:52:24

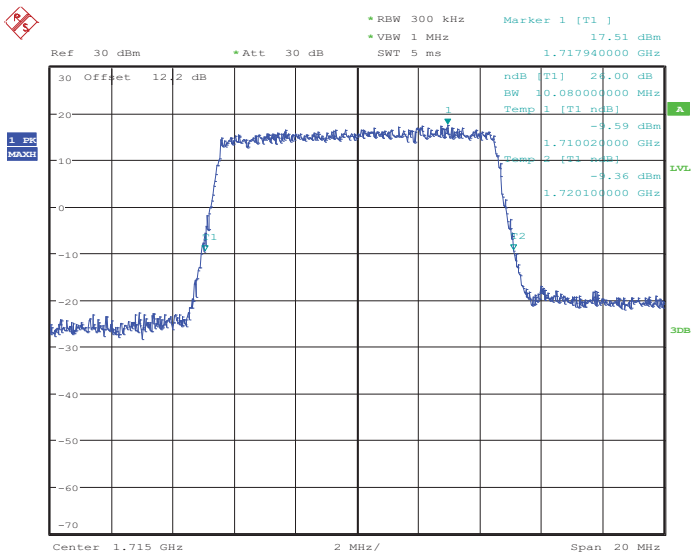
Band :	LTE Band 4	BW / Mod. :	10MHz / QPSK

99% Occupied Bandwidth Plot on Channel 20000



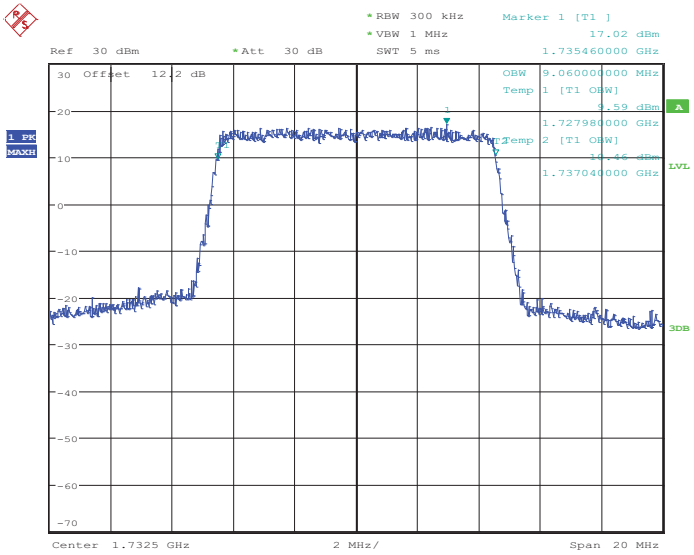
Date: 14.FEB.2014 10:57:25

26dB Bandwidth Plot on Channel 20000



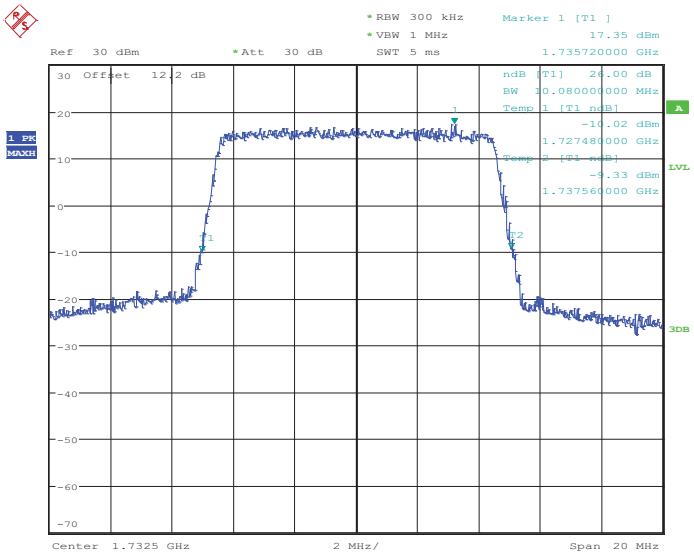
Date: 14.FEB.2014 10:57:50

99% Occupied Bandwidth Plot on Channel 20175



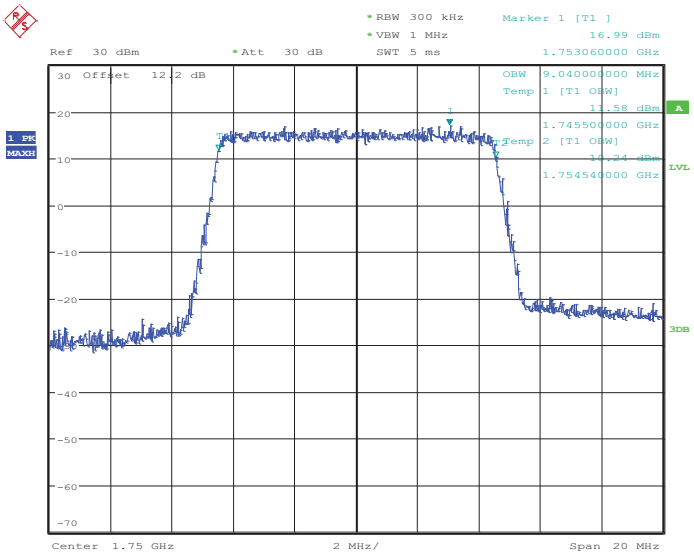
Date: 14.FEB.2014 11:02:59

26dB Bandwidth Plot on Channel 20175



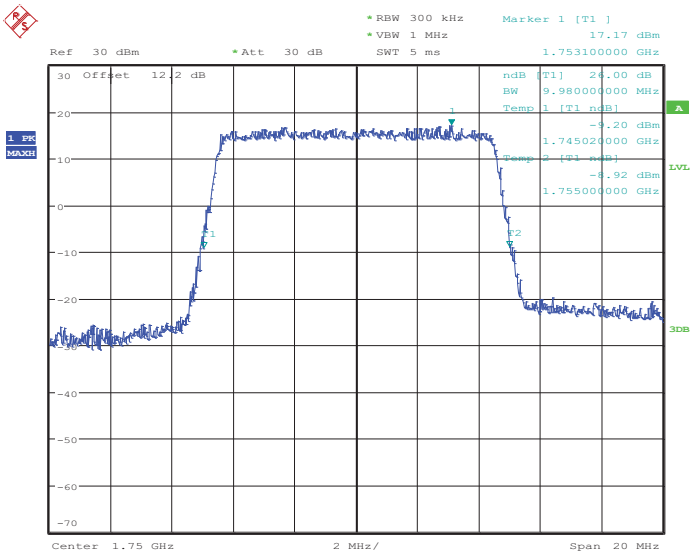
Date: 14.FEB.2014 11:03:25

99% Occupied Bandwidth Plot on Channel 20350



Date: 14.FEB.2014 11:05:42

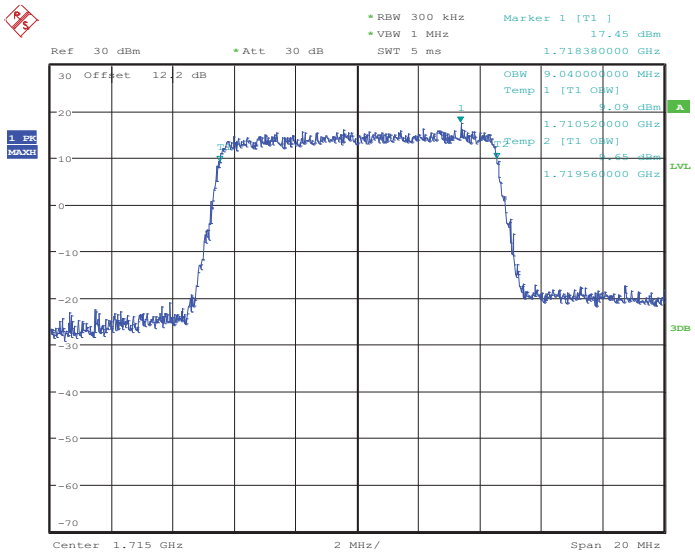
26dB Bandwidth Plot on Channel 20350



Date: 14.FEB.2014 11:06:07

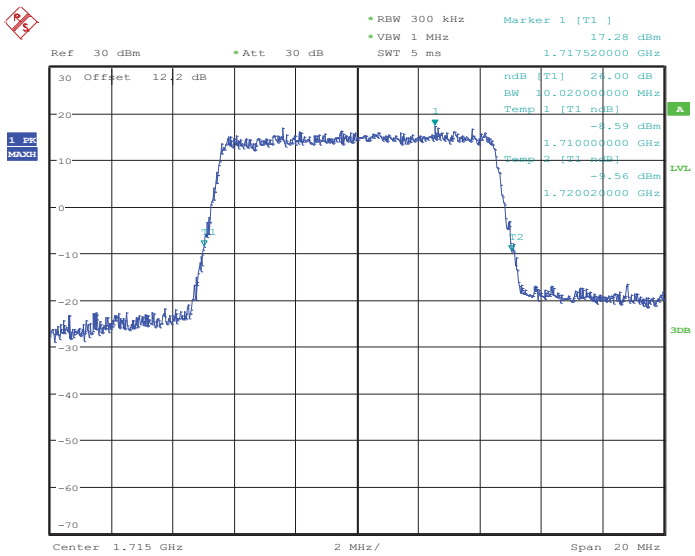
Band :	LTE Band 4	BW / Mod. :	10MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 20000



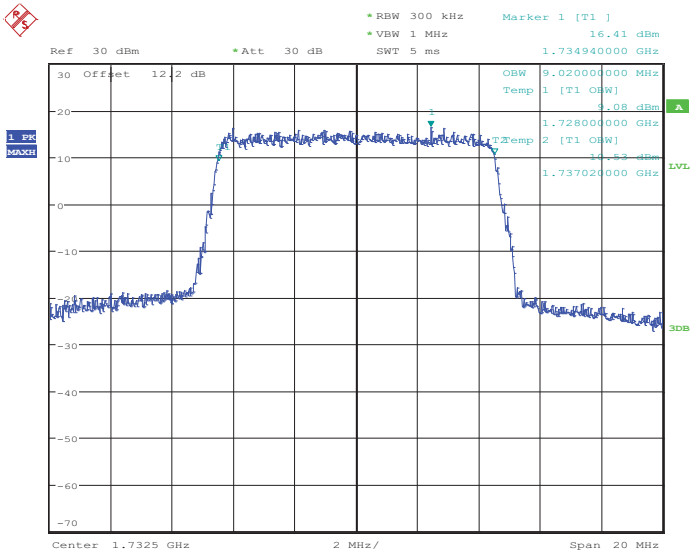
Date: 14.FEB.2014 10:57:36

26dB Bandwidth Plot on Channel 20000



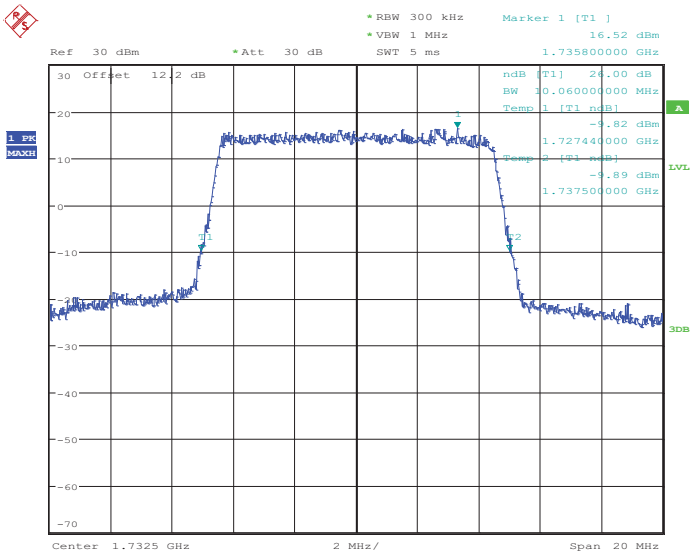
Date: 14.FEB.2014 10:58:03

99% Occupied Bandwidth Plot on Channel 20175



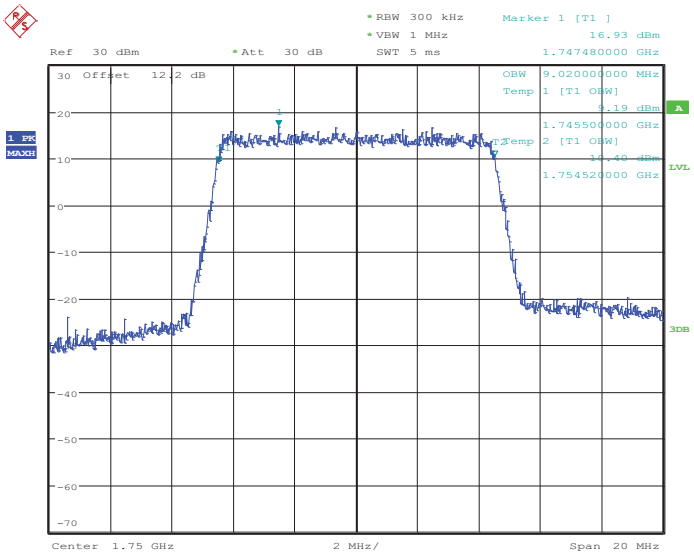
Date: 14.FEB.2014 11:03:11

26dB Bandwidth Plot on Channel 20175



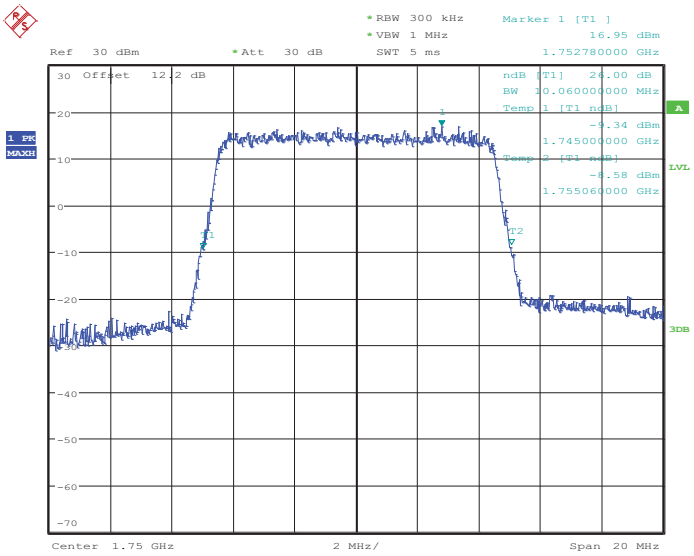
Date: 14.FEB.2014 11:03:38

99% Occupied Bandwidth Plot on Channel 20350



Date: 14.FEB.2014 11:05:54

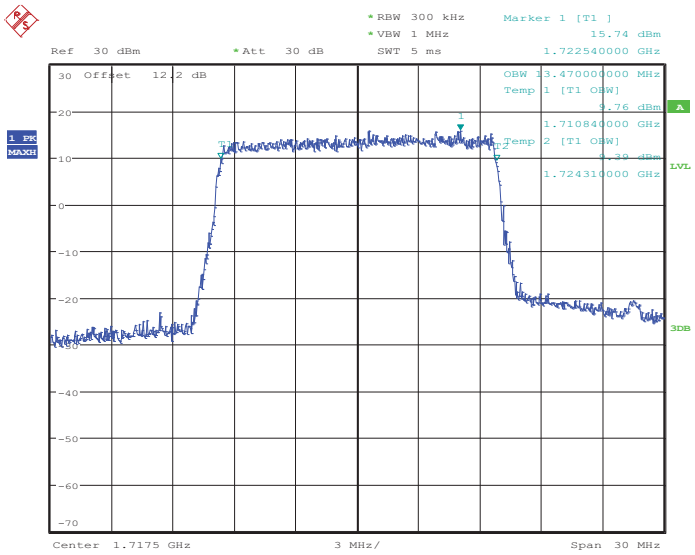
26dB Bandwidth Plot on Channel 20350



Date: 14.FEB.2014 11:06:21

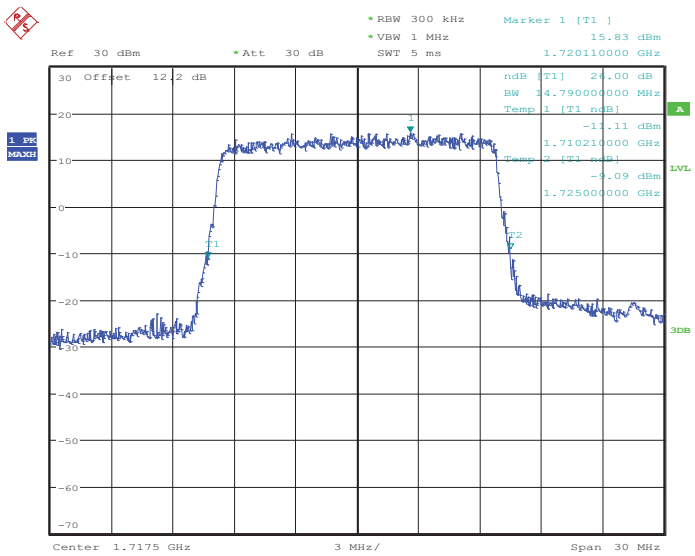
Band :	LTE Band 4	BW / Mod. :	15MHz / QPSK

99% Occupied Bandwidth Plot on Channel 20025



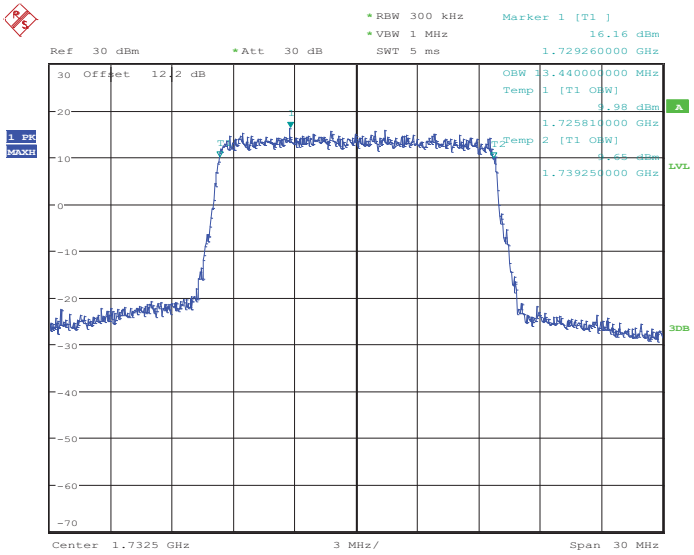
Date: 14.FEB.2014 11:11:22

26dB Bandwidth Plot on Channel 20025



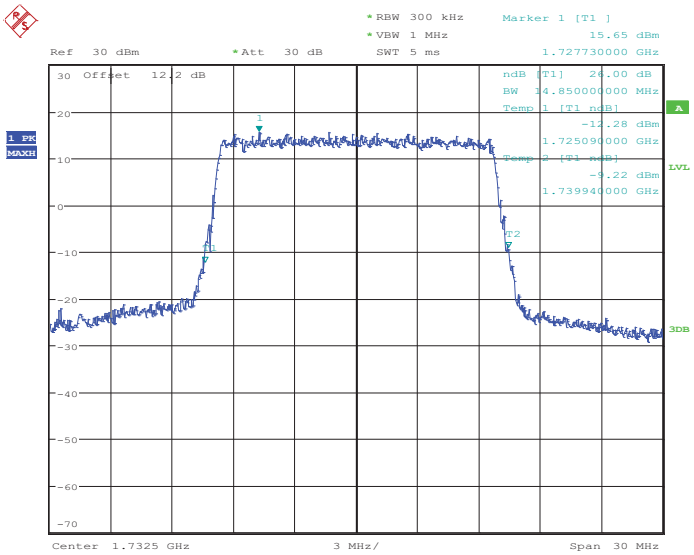
Date: 14.FEB.2014 11:11:47

99% Occupied Bandwidth Plot on Channel 20175



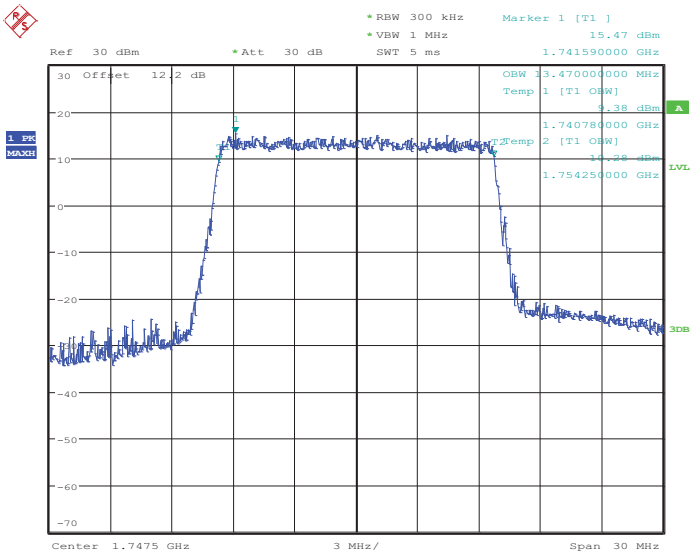
Date: 14.FEB.2014 11:16:56

26dB Bandwidth Plot on Channel 20175



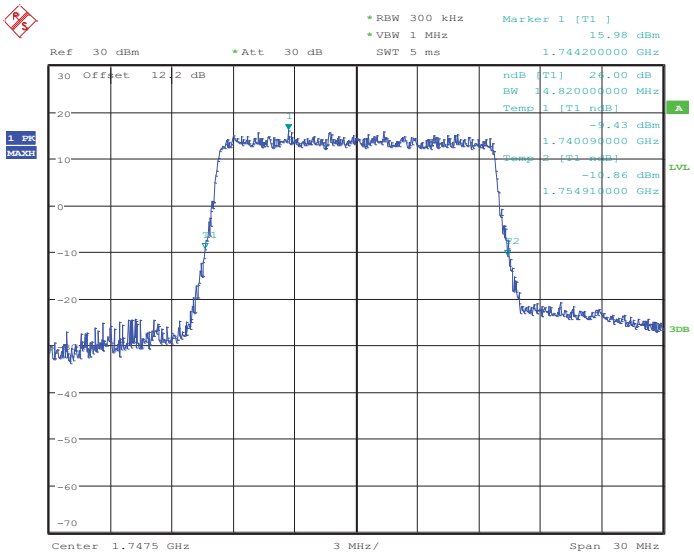
Date: 14.FEB.2014 11:17:21

99% Occupied Bandwidth Plot on Channel 20325



Date: 14.FEB.2014 11:19:39

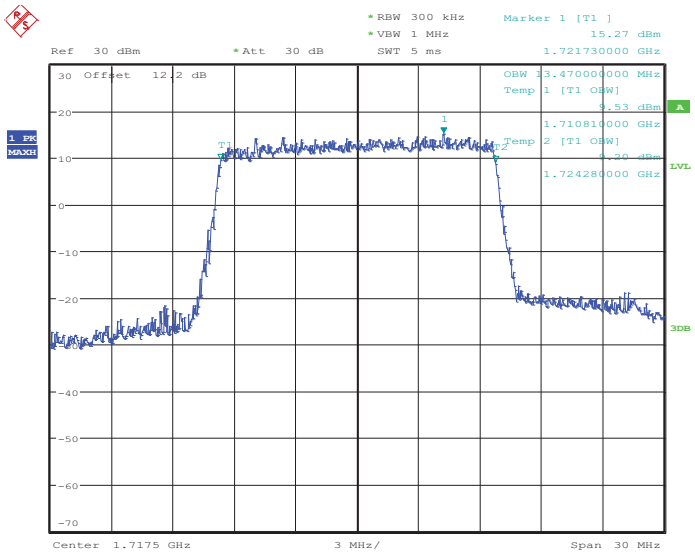
26dB Bandwidth Plot on Channel 20325



Date: 14.FEB.2014 11:20:04

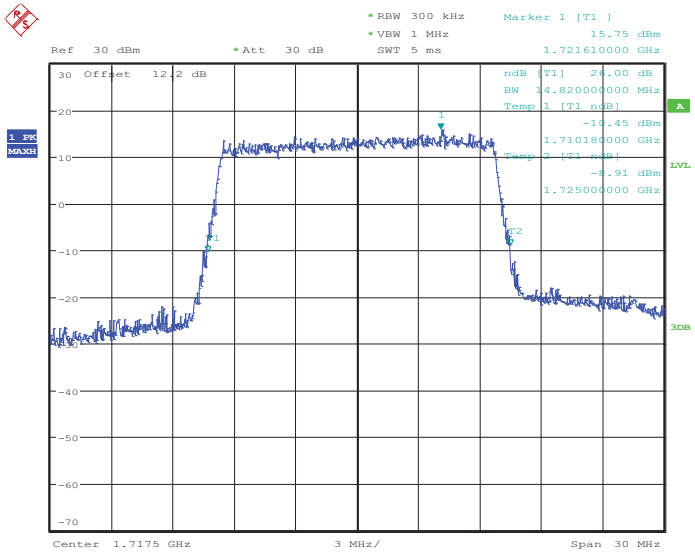
Band :	LTE Band 4	BW / Mod. :	15MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 20025



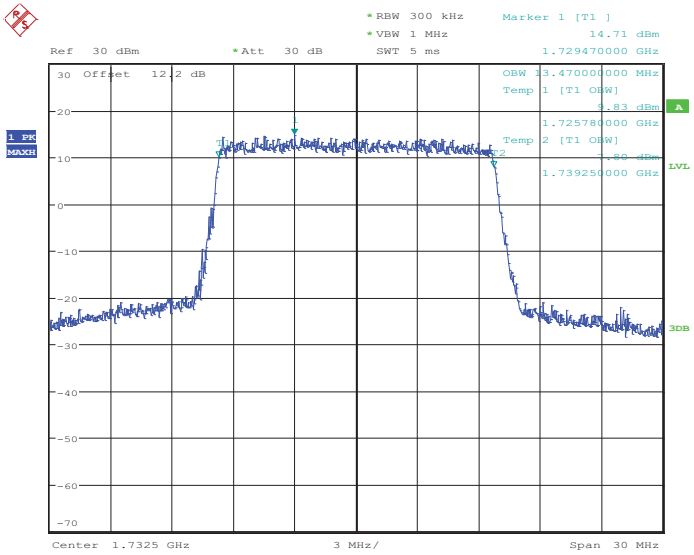
Date: 14.FEB.2014 11:11:33

26dB Bandwidth Plot on Channel 20025



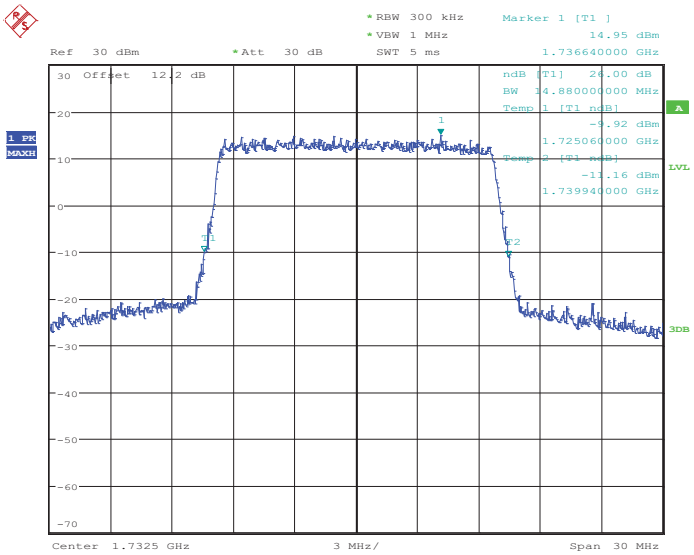
Date: 14.FEB.2014 11:12:00

99% Occupied Bandwidth Plot on Channel 20175



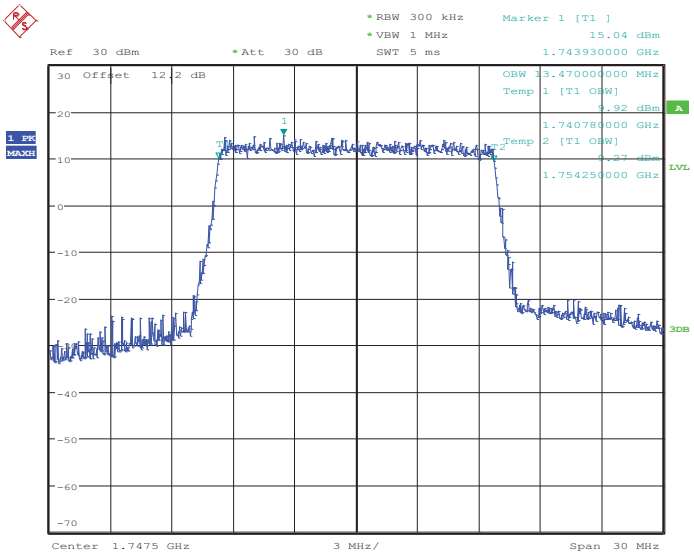
Date: 14.FEB.2014 11:17:08

26dB Bandwidth Plot on Channel 20175



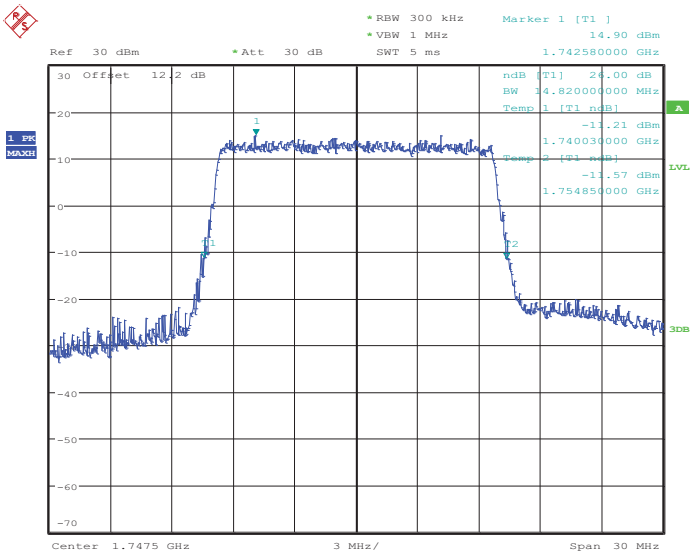
Date: 14.FEB.2014 11:17:35

99% Occupied Bandwidth Plot on Channel 20325



Date: 14.FEB.2014 11:19:51

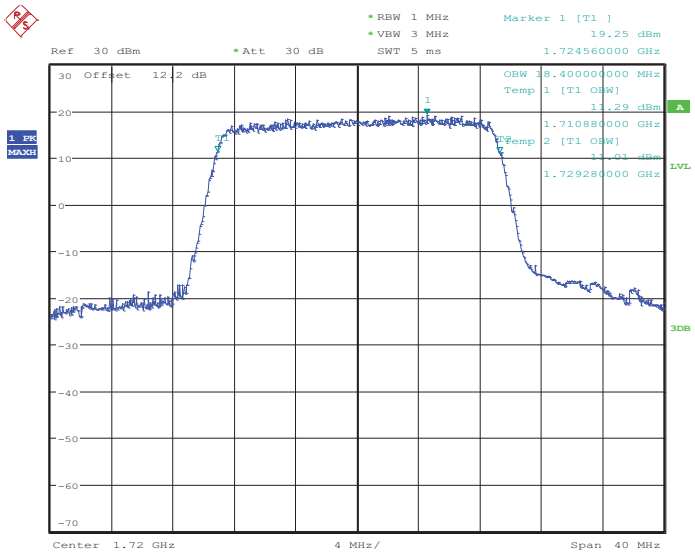
26dB Bandwidth Plot on Channel 20325



Date: 14.FEB.2014 11:20:19

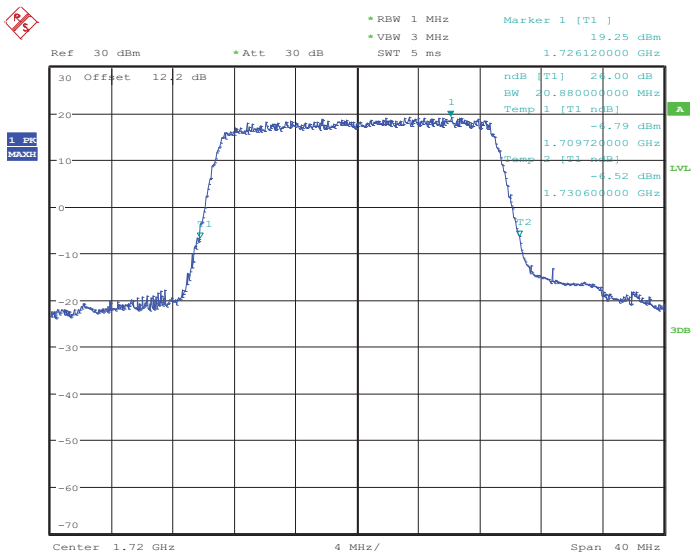
Band :	LTE Band 4	BW / Mod. :	20MHz / QPSK

99% Occupied Bandwidth Plot on Channel 20050



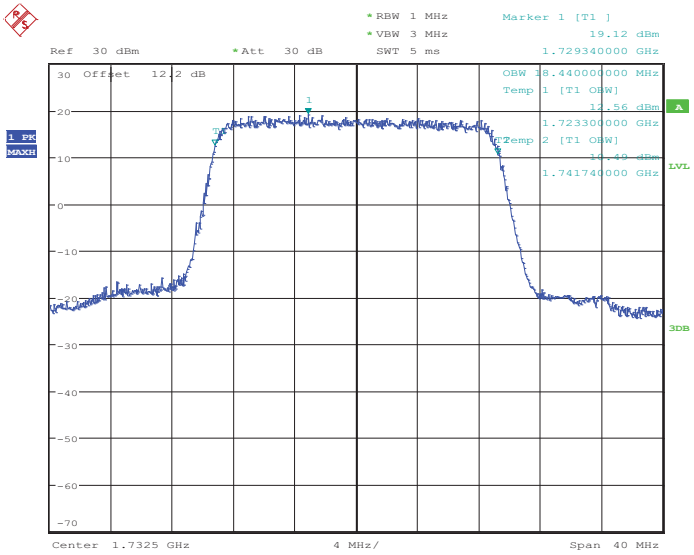
Date: 14.FEB.2014 11:25:20

26dB Bandwidth Plot on Channel 20050



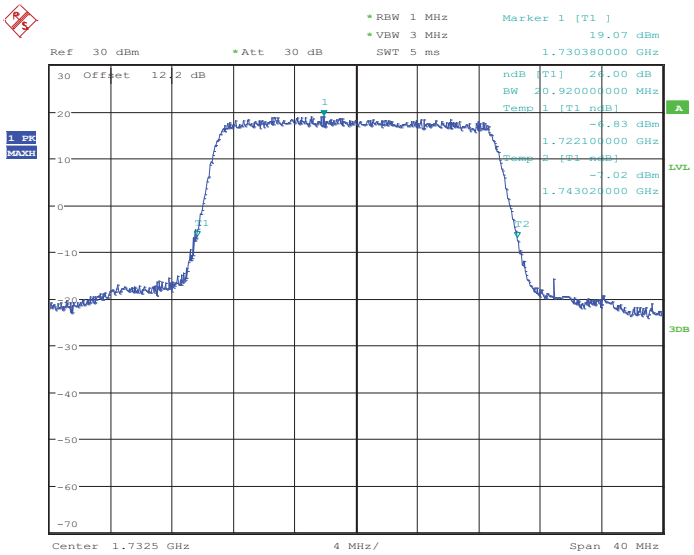
Date: 14.FEB.2014 11:25:45

99% Occupied Bandwidth Plot on Channel 20175



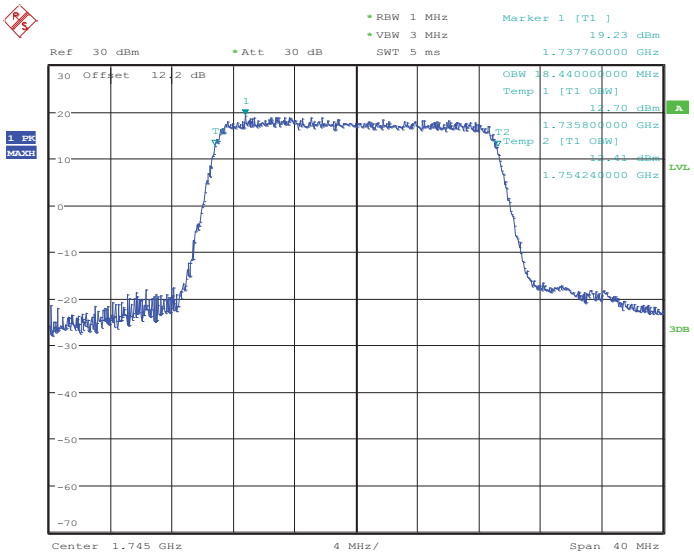
Date: 14.FEB.2014 11:30:54

26dB Bandwidth Plot on Channel 20175



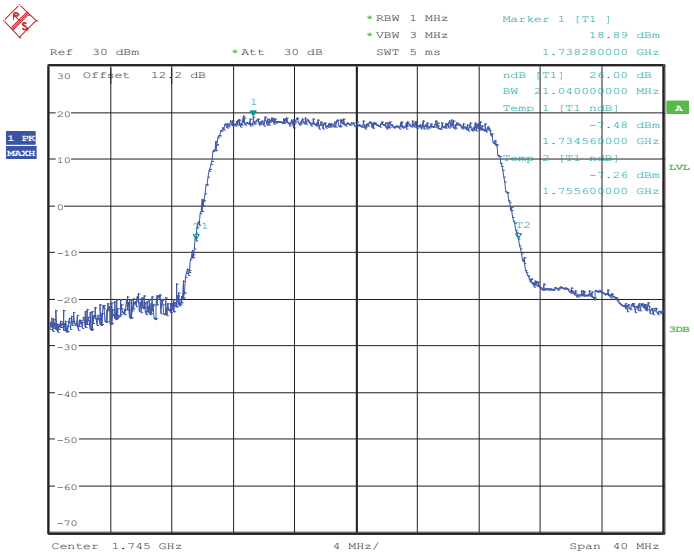
Date: 14.FEB.2014 11:31:19

99% Occupied Bandwidth Plot on Channel 20300



Date: 14.FEB.2014 11:33:37

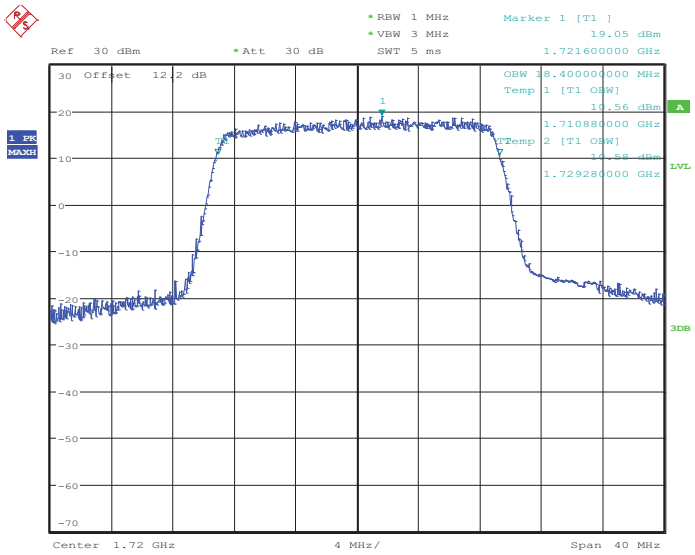
26dB Bandwidth Plot on Channel 20300



Date: 14.FEB.2014 11:34:02

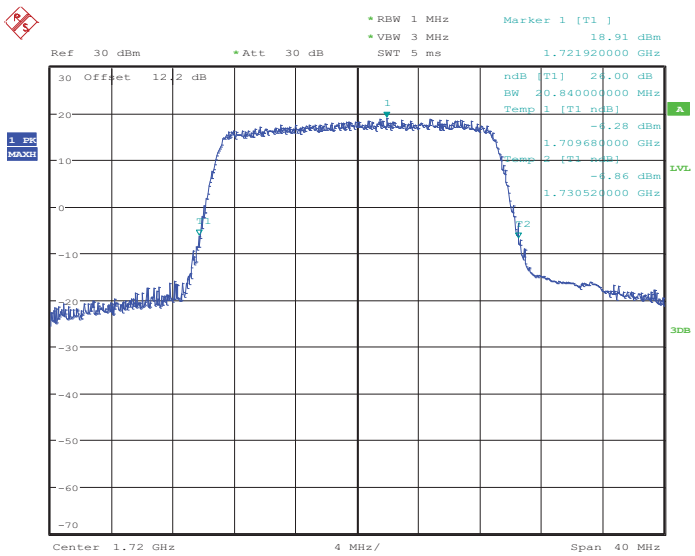
Band :	LTE Band 4	BW / Mod. :	20MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 20050



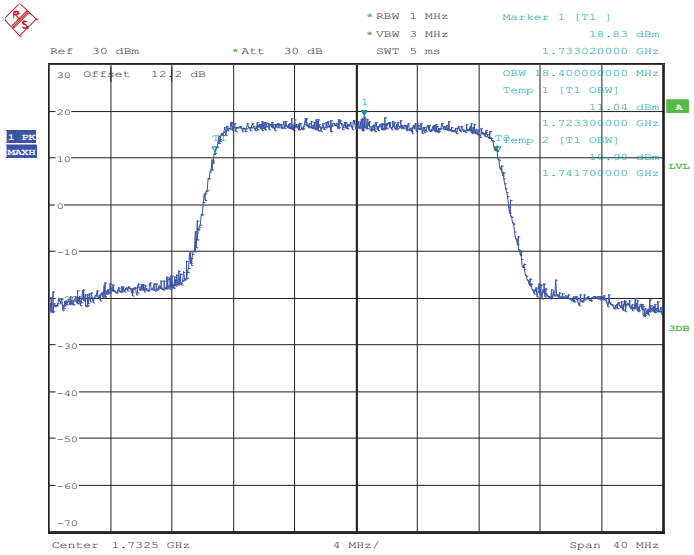
Date: 14.FEB.2014 11:25:31

26dB Bandwidth Plot on Channel 20050



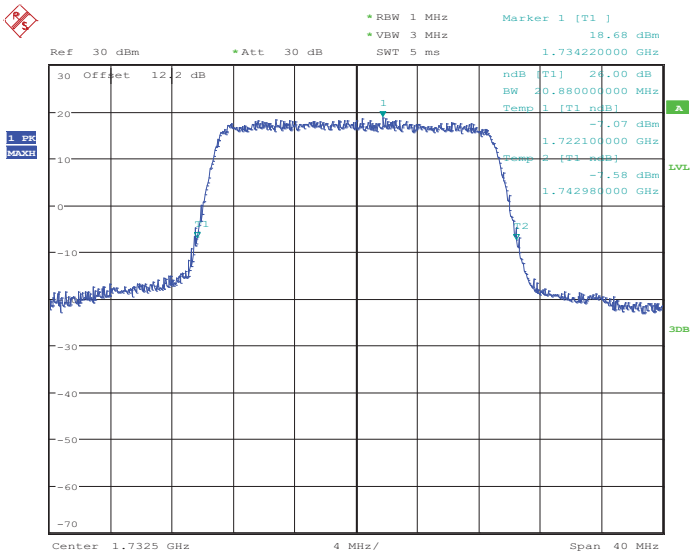
Date: 14.FEB.2014 11:25:58

99% Occupied Bandwidth Plot on Channel 20175



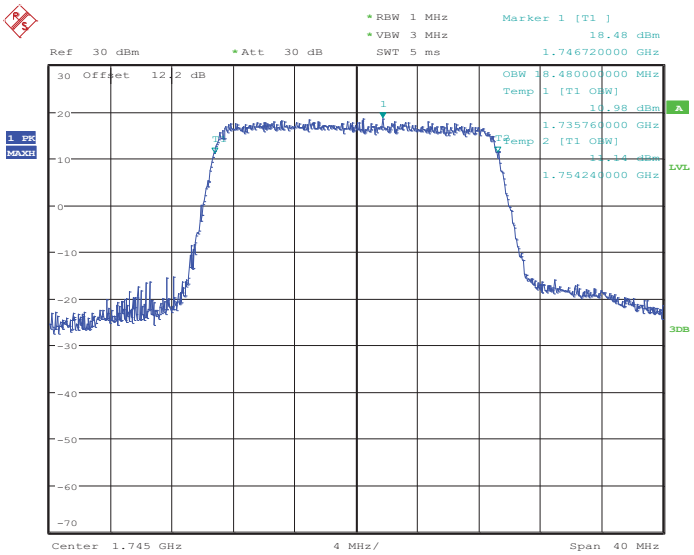
Date: 14.FEB.2014 11:31:06

26dB Bandwidth Plot on Channel 20175



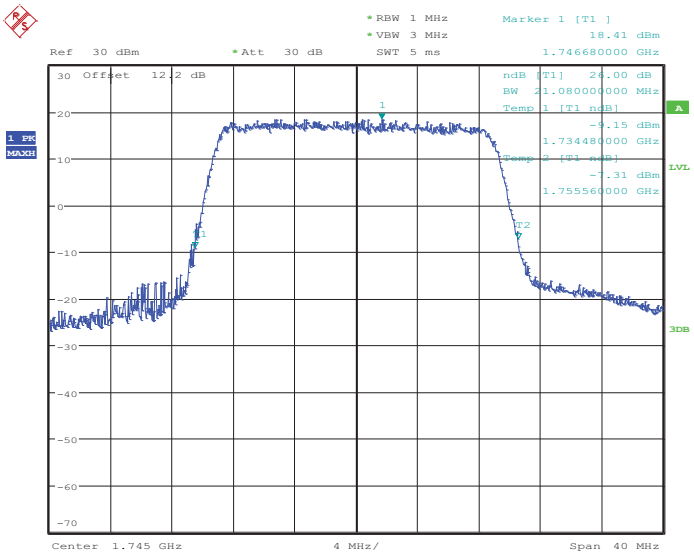
Date: 14.FEB.2014 11:31:33

99% Occupied Bandwidth Plot on Channel 20300



Date: 14.FEB.2014 11:33:49

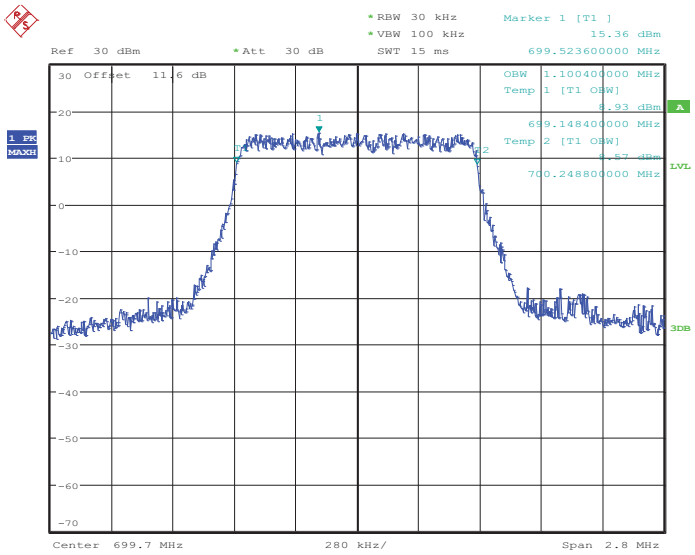
26dB Bandwidth Plot on Channel 20300



Date: 14.FEB.2014 11:34:16

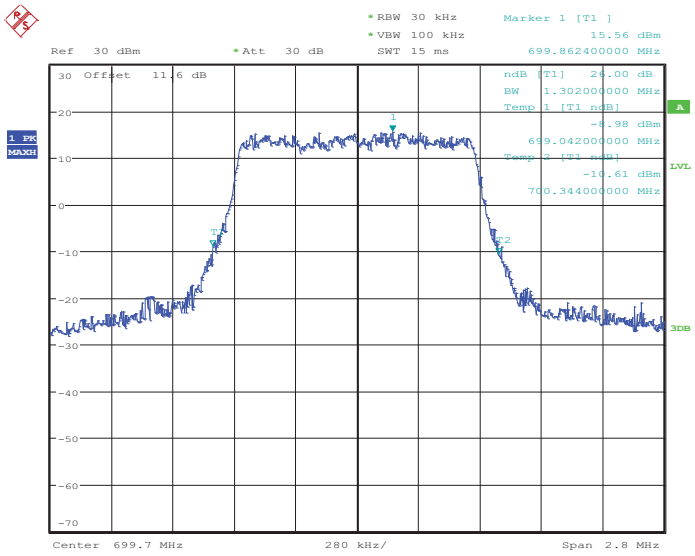
Band :	LTE Band 12	BW / Mod. :	1.4MHz / QPSK

99% Occupied Bandwidth Plot on Channel 23017



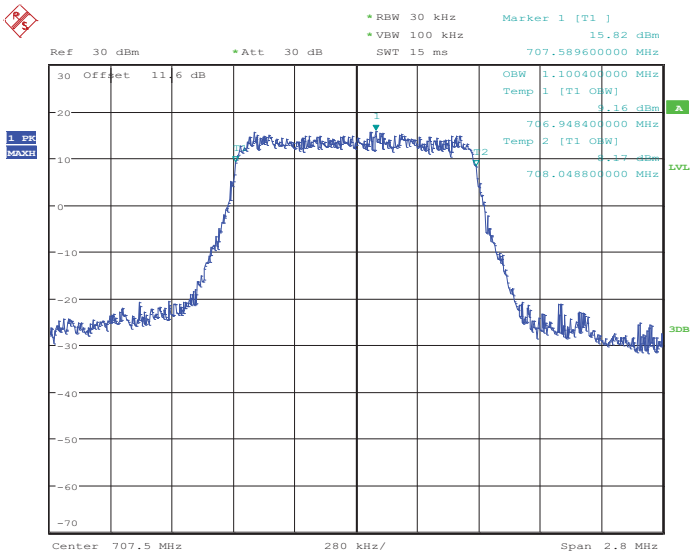
Date: 14.FEB.2014 14:32:18

26dB Bandwidth Plot on Channel 23017



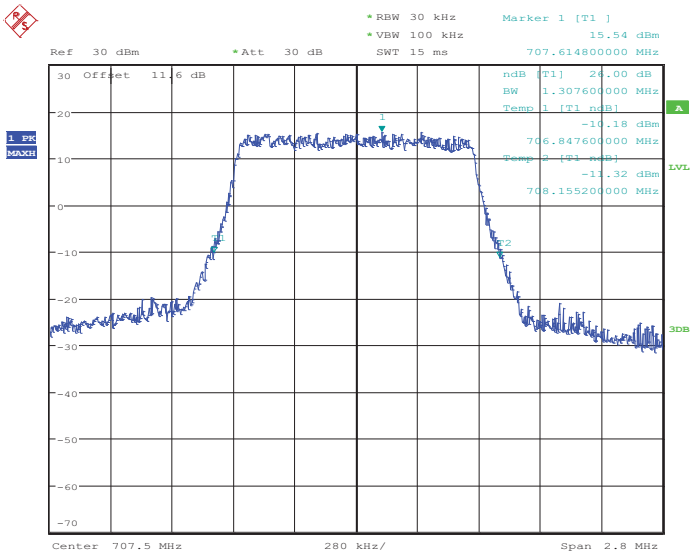
Date: 14.FEB.2014 14:32:56

99% Occupied Bandwidth Plot on Channel 23095



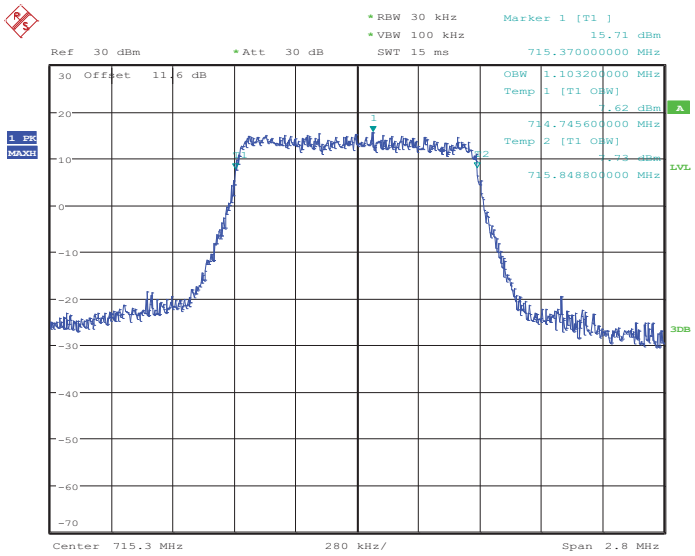
Date: 14.FEB.2014 14:38:04

26dB Bandwidth Plot on Channel 23095



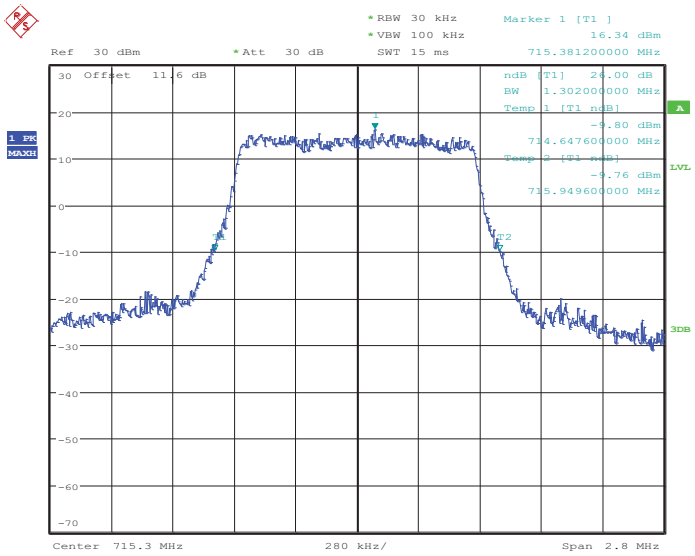
Date: 14.FEB.2014 14:38:17

99% Occupied Bandwidth Plot on Channel 23173



Date: 14.FEB.2014 14:40:34

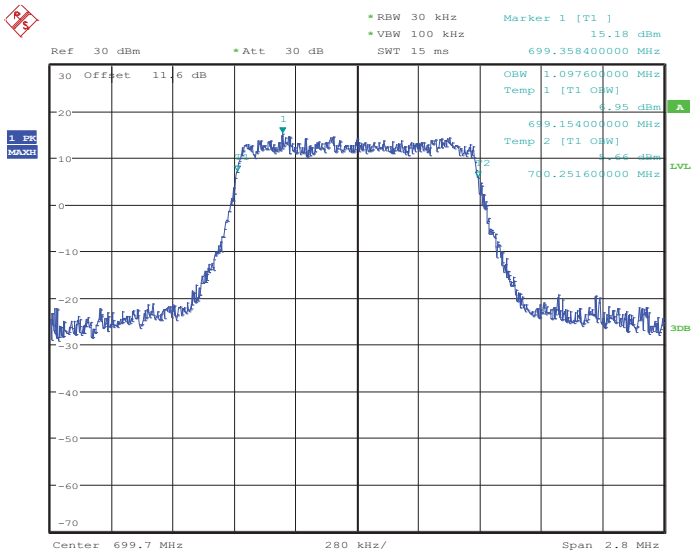
26dB Bandwidth Plot on Channel 23173



Date: 14.FEB.2014 14:41:13

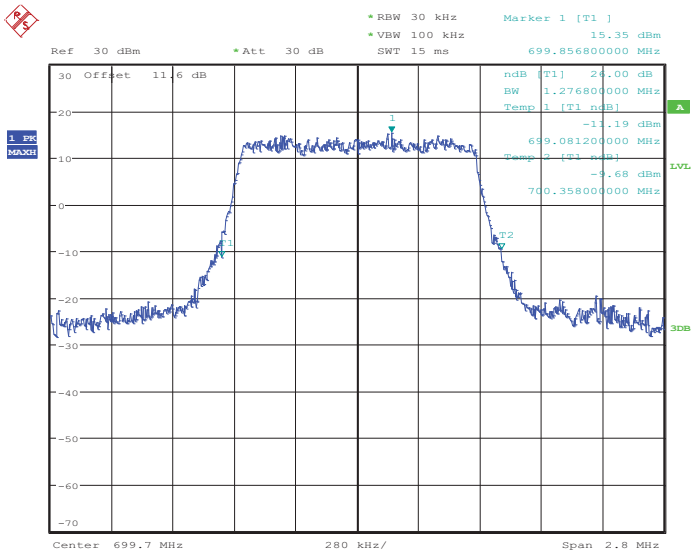
Band :	LTE Band 12	BW / Mod. :	1.4MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 23017



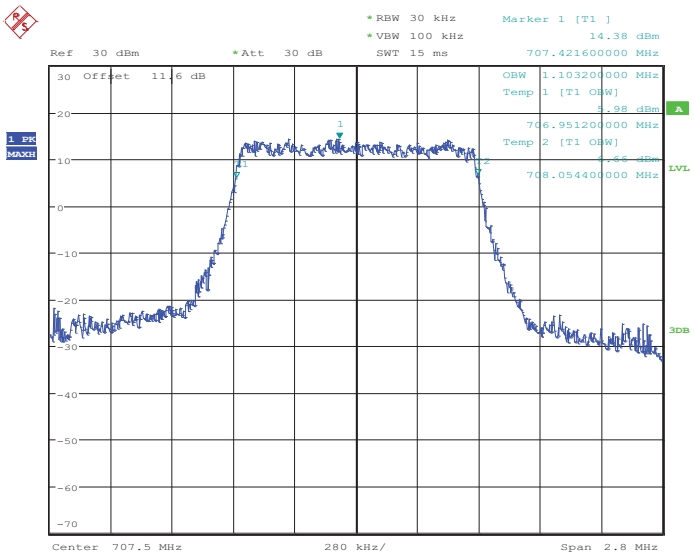
Date: 14.FEB.2014 14:32:29

26dB Bandwidth Plot on Channel 23017



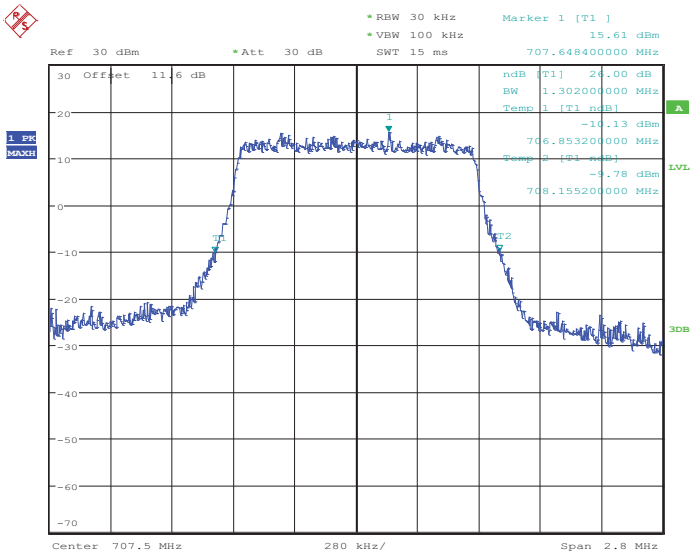
Date: 14.FEB.2014 14:32:43

99% Occupied Bandwidth Plot on Channel 23095



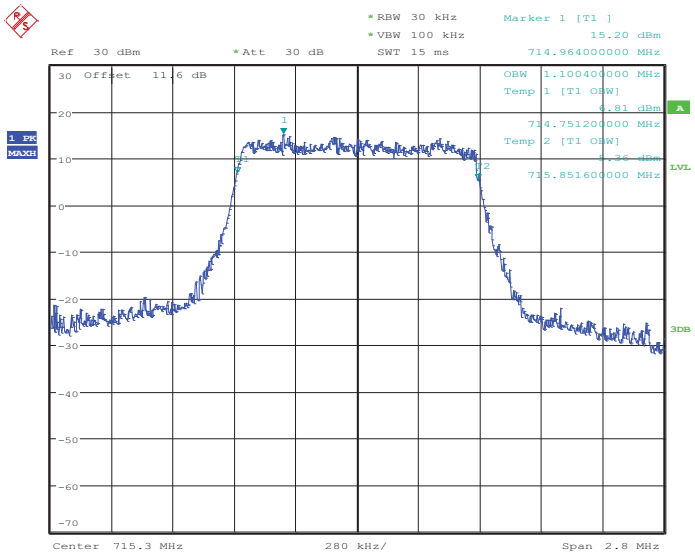
Date: 14.FEB.2014 14:37:52

26dB Bandwidth Plot on Channel 23095



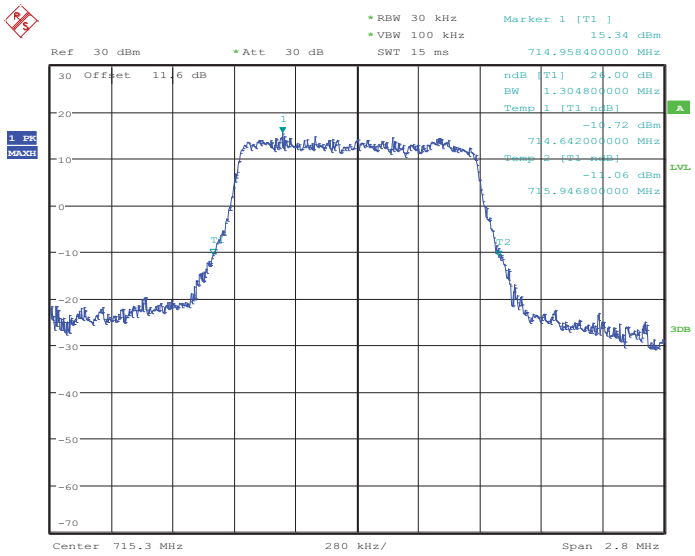
Date: 14.FEB.2014 14:38:31

99% Occupied Bandwidth Plot on Channel 23173



Date: 14.FEB.2014 14:40:46

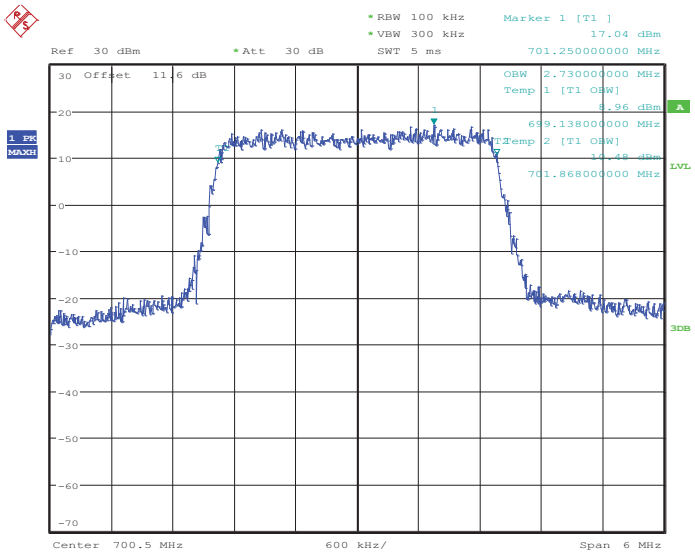
26dB Bandwidth Plot on Channel 23173



Date: 14.FEB.2014 14:40:59

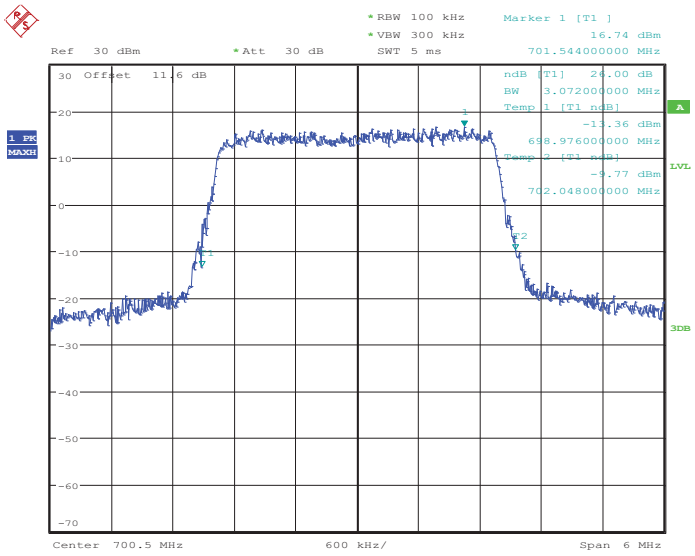
Band :	LTE Band 12	BW / Mod. :	3MHz / QPSK

99% Occupied Bandwidth Plot on Channel 23025



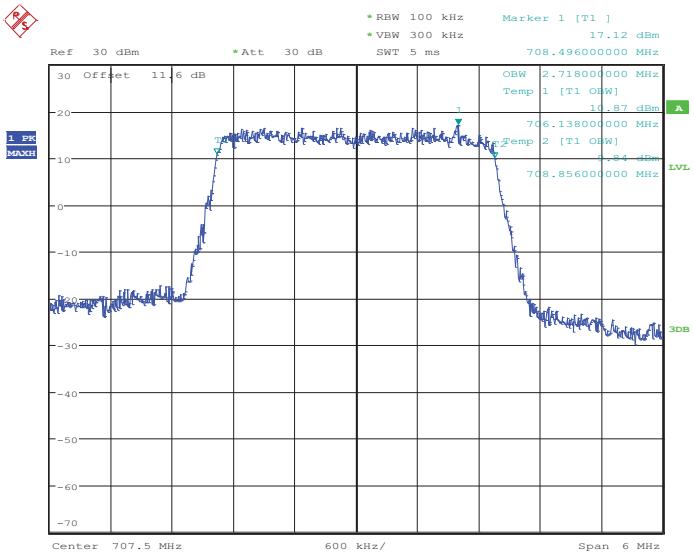
Date: 14.FEB.2014 14:46:12

26dB Bandwidth Plot on Channel 23025



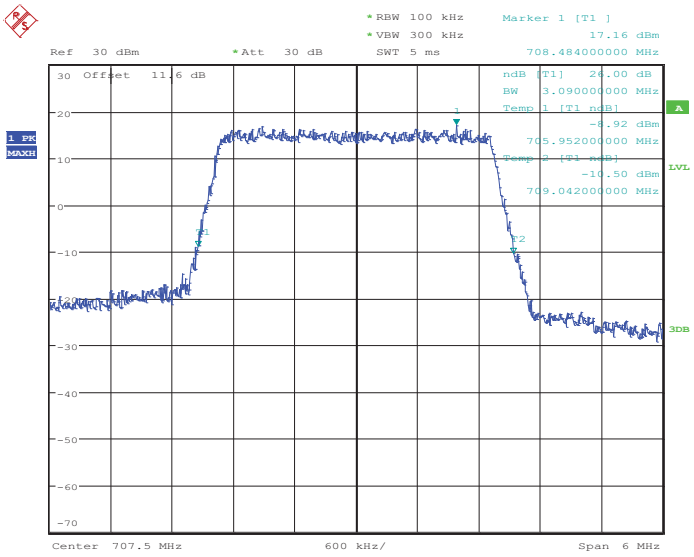
Date: 14.FEB.2014 14:46:51

99% Occupied Bandwidth Plot on Channel 23095



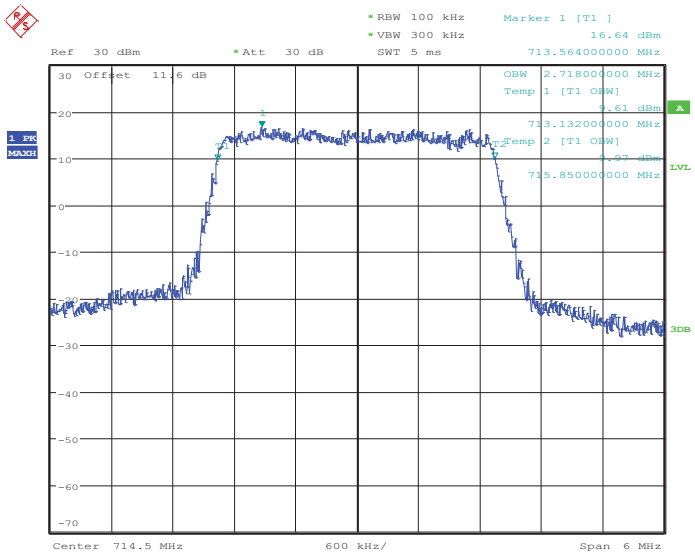
Date: 14.FEB.2014 14:52:11

26dB Bandwidth Plot on Channel 23095



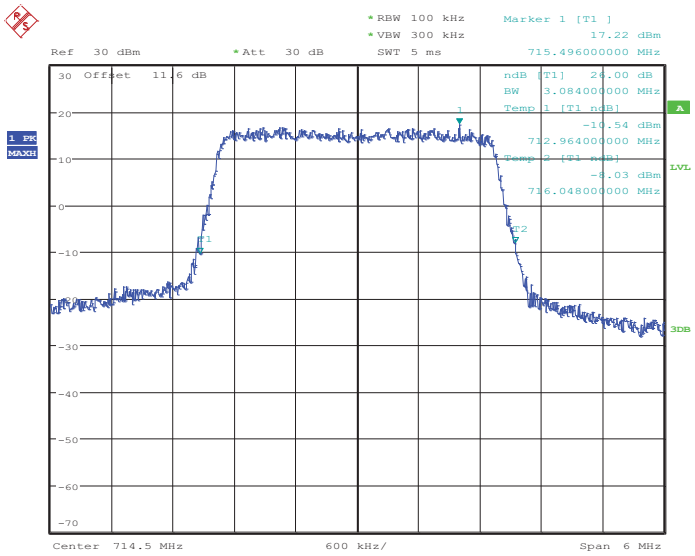
Date: 14.FEB.2014 14:52:24

99% Occupied Bandwidth Plot on Channel 23165



Date: 14.FEB.2014 14:54:42

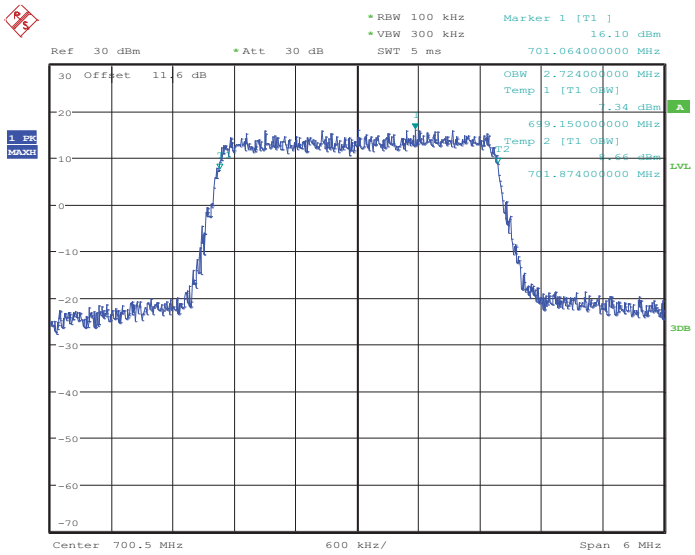
26dB Bandwidth Plot on Channel 23165



Date: 14.FEB.2014 14:55:21

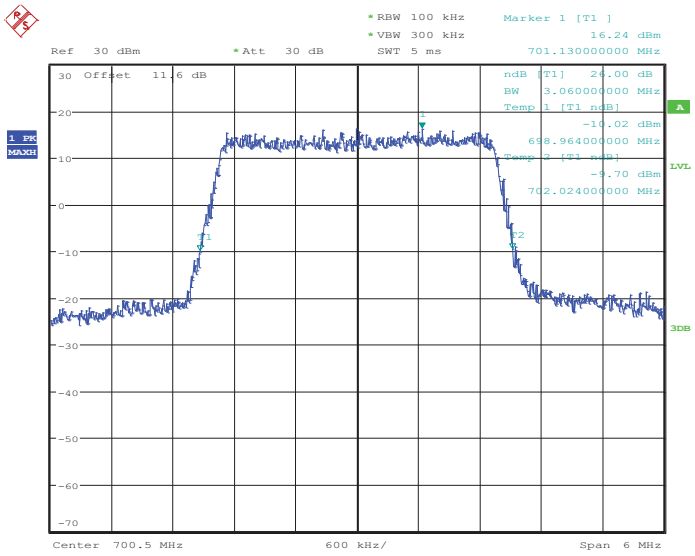
Band :	LTE Band 12	BW / Mod. :	3MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 23025



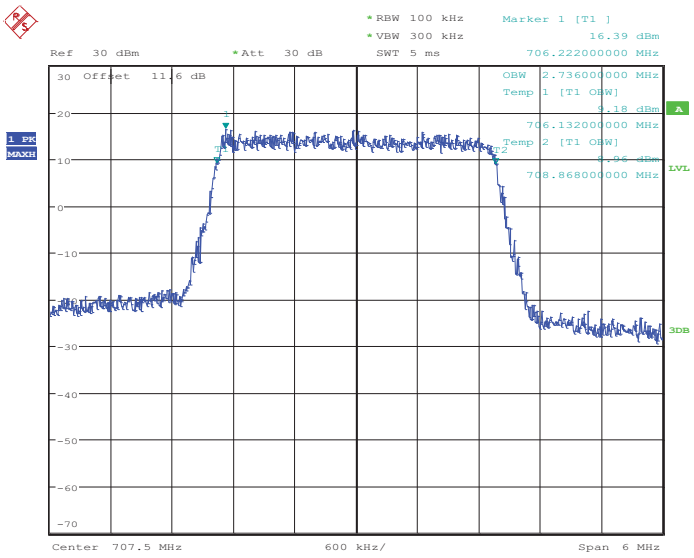
Date: 14.FEB.2014 14:46:24

26dB Bandwidth Plot on Channel 23025



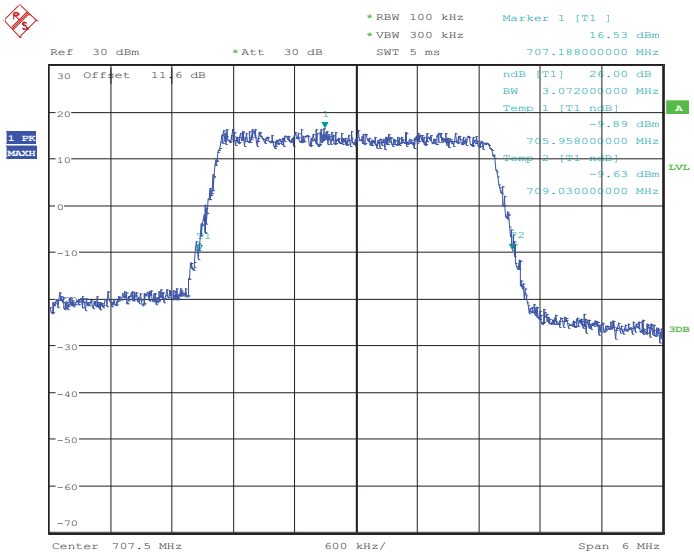
Date: 14.FEB.2014 14:46:38

99% Occupied Bandwidth Plot on Channel 23095



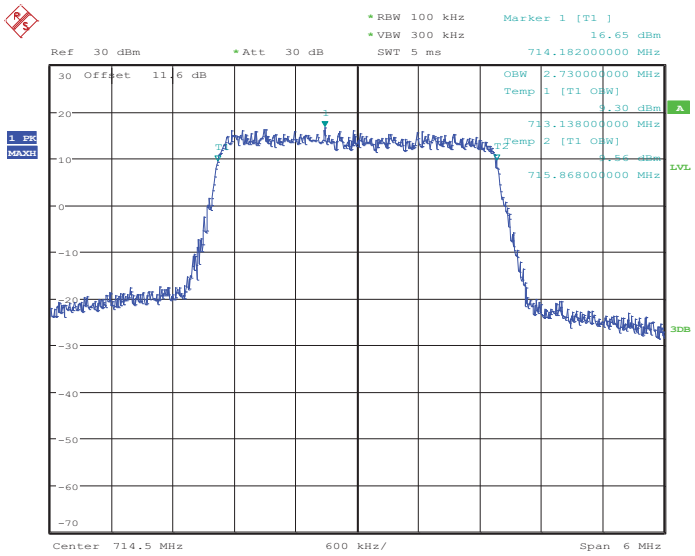
Date: 14.FEB.2014 14:51:59

26dB Bandwidth Plot on Channel 23095



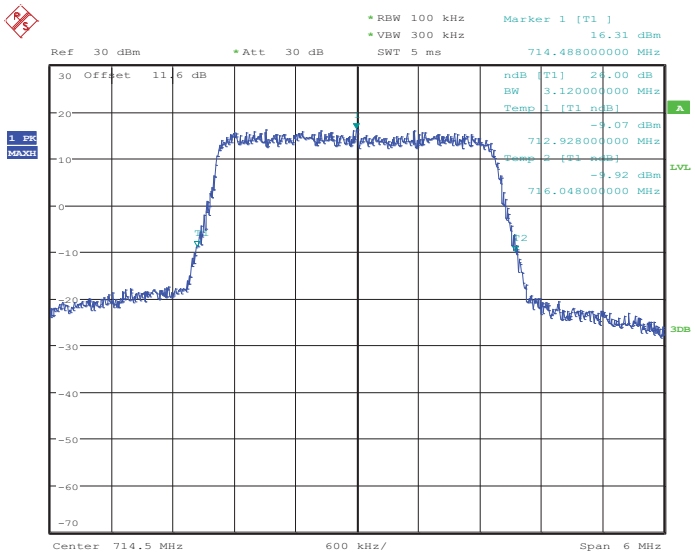
Date: 14.FEB.2014 14:52:38

99% Occupied Bandwidth Plot on Channel 23165



Date: 14.FEB.2014 14:54:54

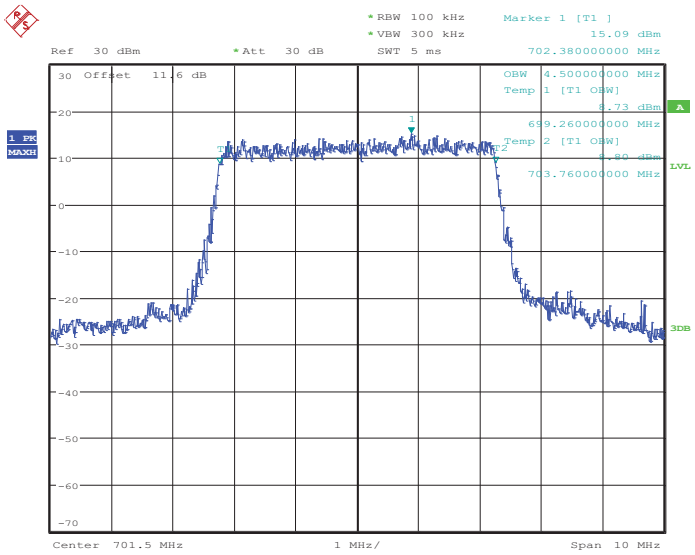
26dB Bandwidth Plot on Channel 23165



Date: 14.FEB.2014 14:55:07

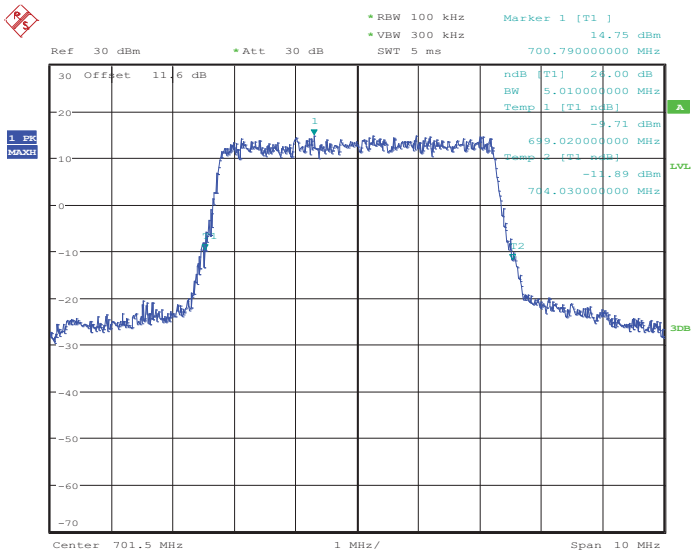
Band :	LTE Band 12	BW / Mod. :	5MHz / QPSK

99% Occupied Bandwidth Plot on Channel 23035



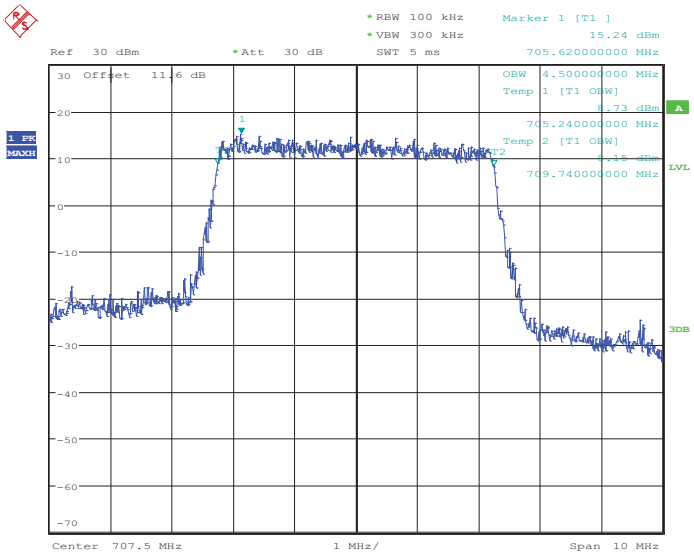
Date: 14.FEB.2014 15:00:24

26dB Bandwidth Plot on Channel 23035



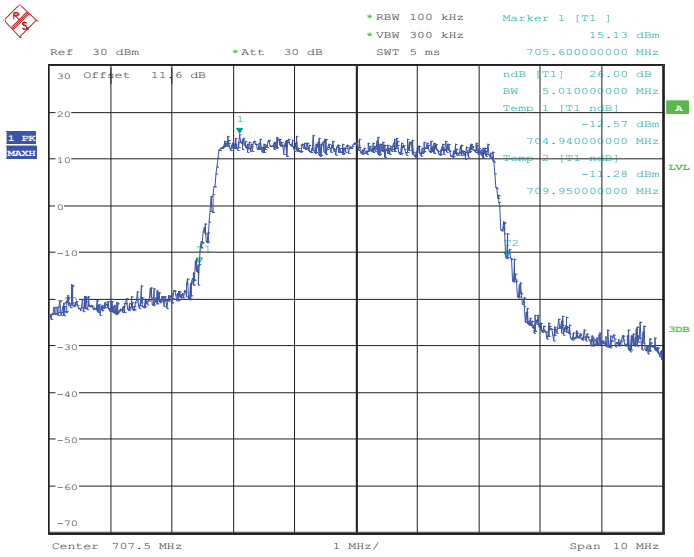
Date: 14.FEB.2014 15:01:03

99% Occupied Bandwidth Plot on Channel 23095



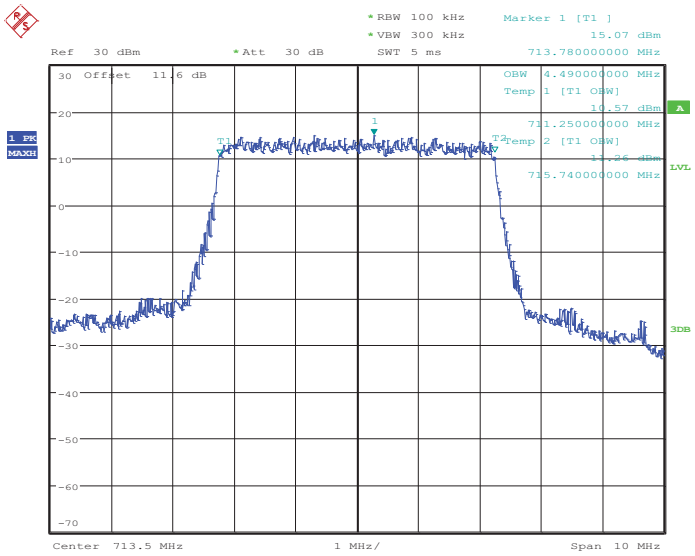
Date: 14.FEB.2014 15:06:40

26dB Bandwidth Plot on Channel 23095



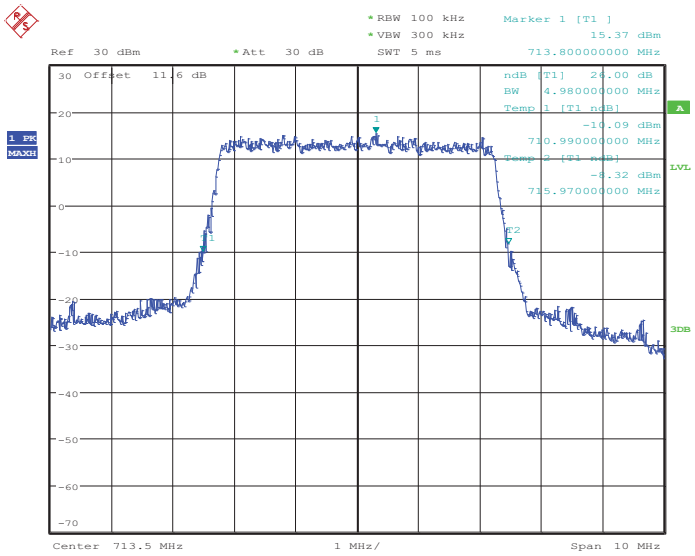
Date: 14.FEB.2014 15:06:53

99% Occupied Bandwidth Plot on Channel 23155



Date: 14.FEB.2014 15:09:11

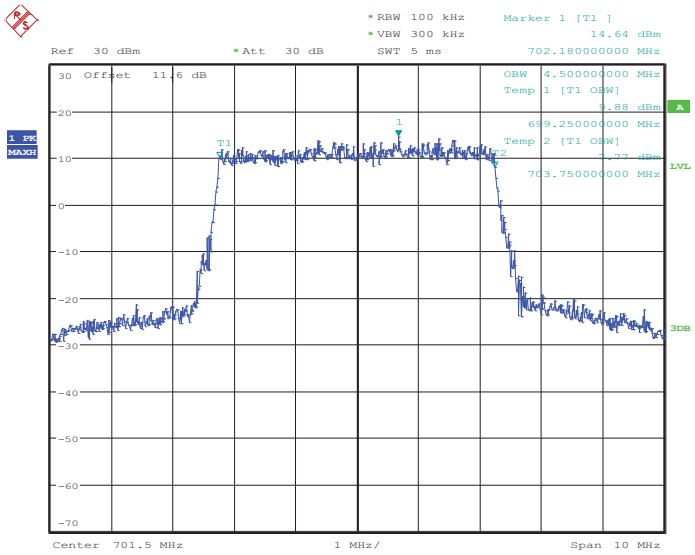
26dB Bandwidth Plot on Channel 23155



Date: 14.FEB.2014 15:09:50

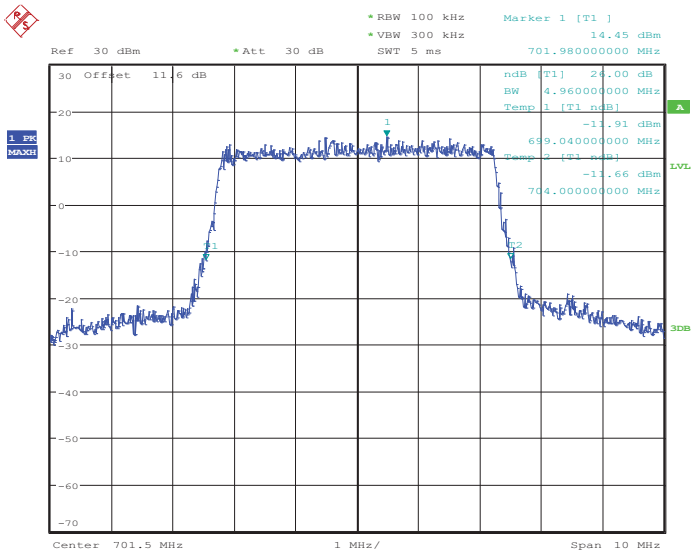
Band :	LTE Band 12	BW / Mod. :	5MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 23035



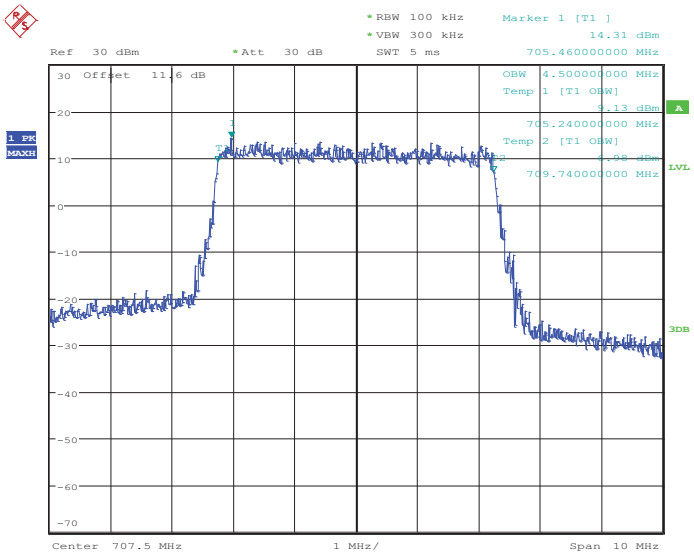
Date: 14.FEB.2014 15:00:36

26dB Bandwidth Plot on Channel 23035



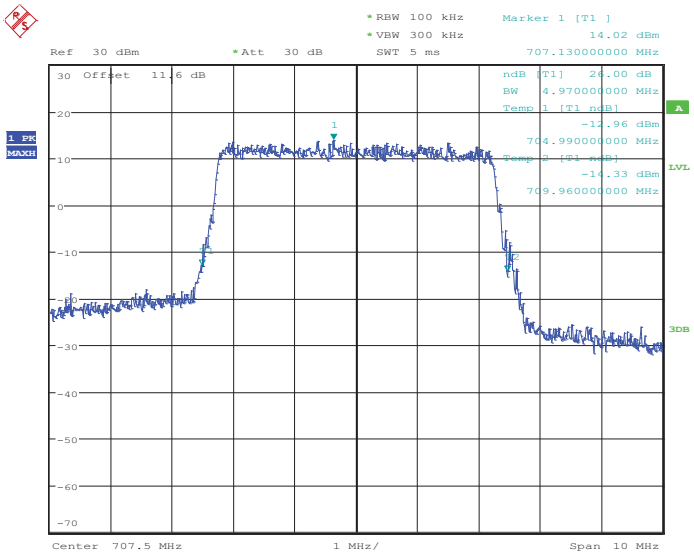
Date: 14.FEB.2014 15:00:49

99% Occupied Bandwidth Plot on Channel 23095



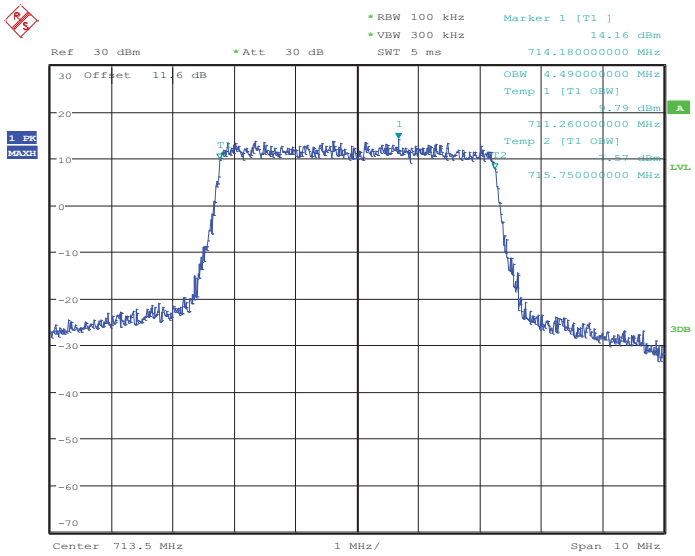
Date: 14.FEB.2014 15:06:28

26dB Bandwidth Plot on Channel 23095



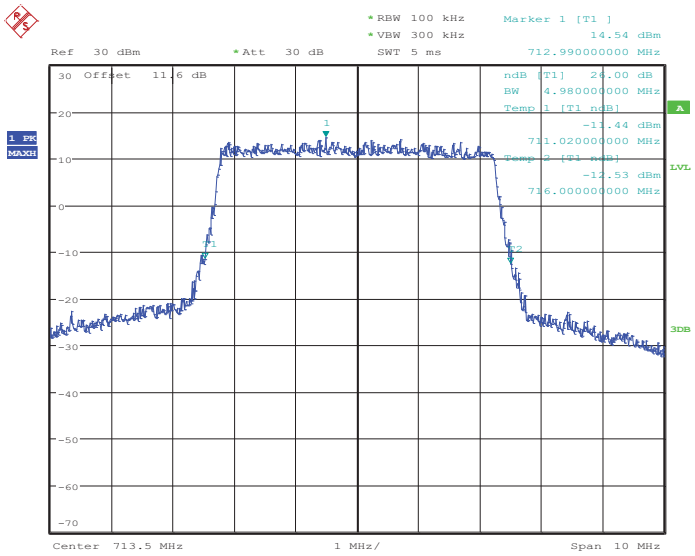
Date: 14.FEB.2014 15:07:07

99% Occupied Bandwidth Plot on Channel 23155



Date: 14.FEB.2014 15:09:23

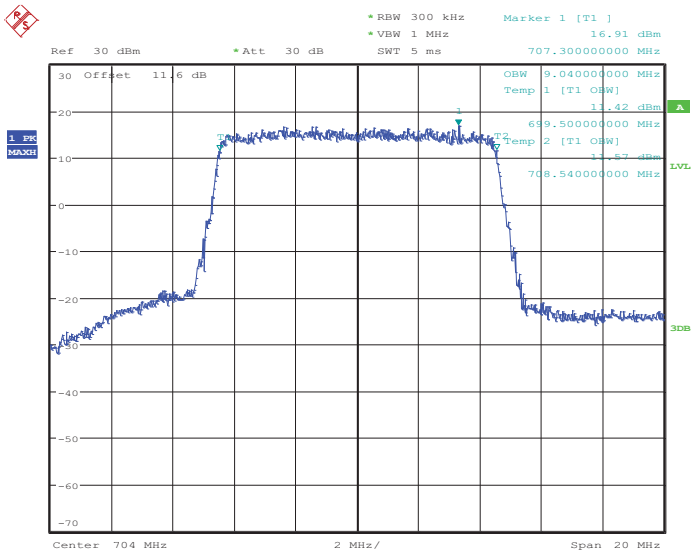
26dB Bandwidth Plot on Channel 23155



Date: 14.FEB.2014 15:09:36

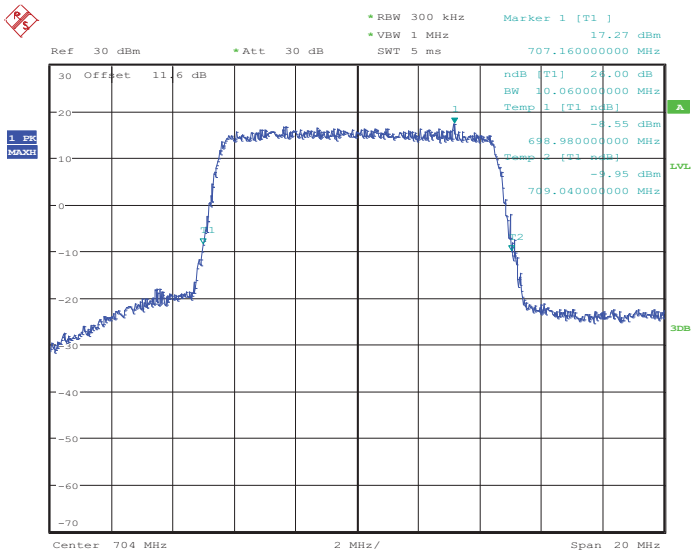
Band :	LTE Band 12	BW / Mod. :	10MHz / QPSK

99% Occupied Bandwidth Plot on Channel 23060



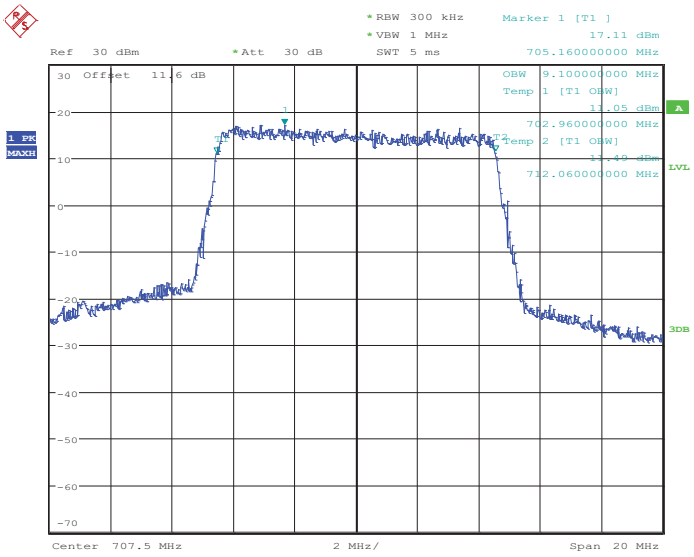
Date: 14.FEB.2014 15:37:24

26dB Bandwidth Plot on Channel 23060



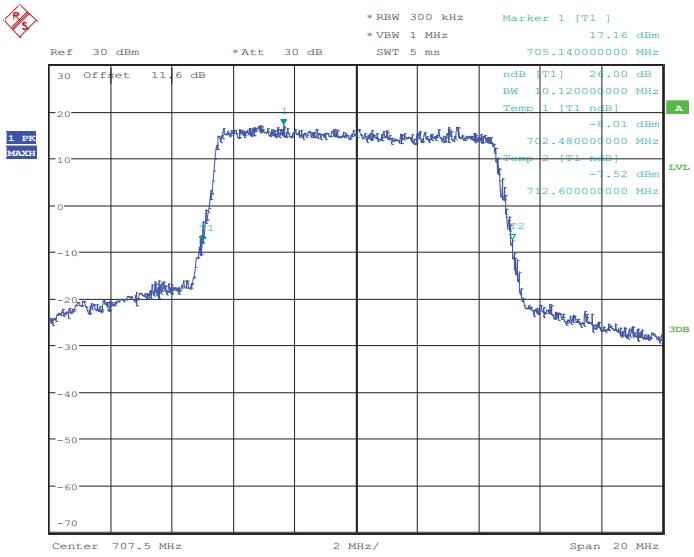
Date: 14.FEB.2014 15:38:03

99% Occupied Bandwidth Plot on Channel 23095



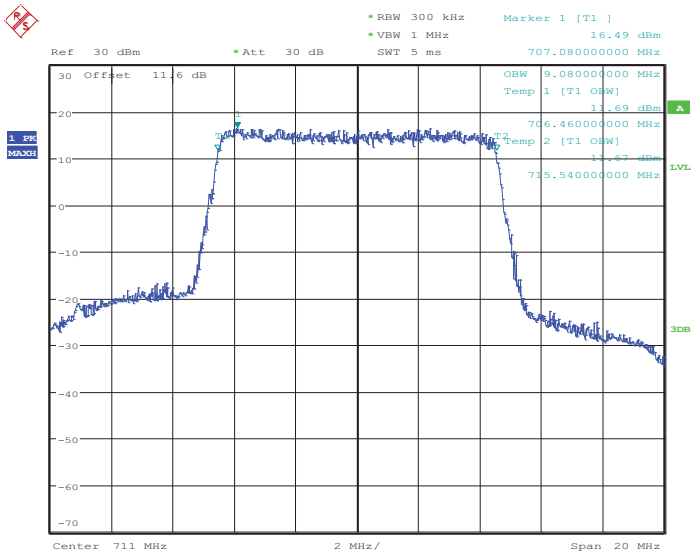
Date: 14.FEB.2014 15:43:12

26dB Bandwidth Plot on Channel 23095



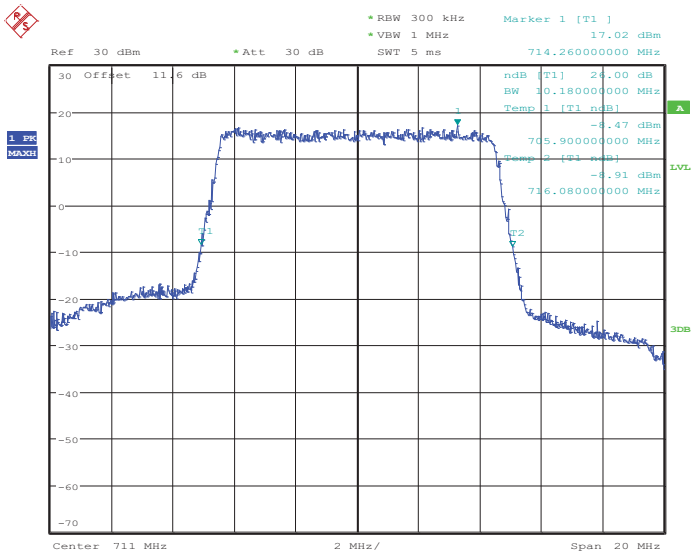
Date: 14.FEB.2014 15:43:26

99% Occupied Bandwidth Plot on Channel 23130



Date: 14.FEB.2014 15:45:43

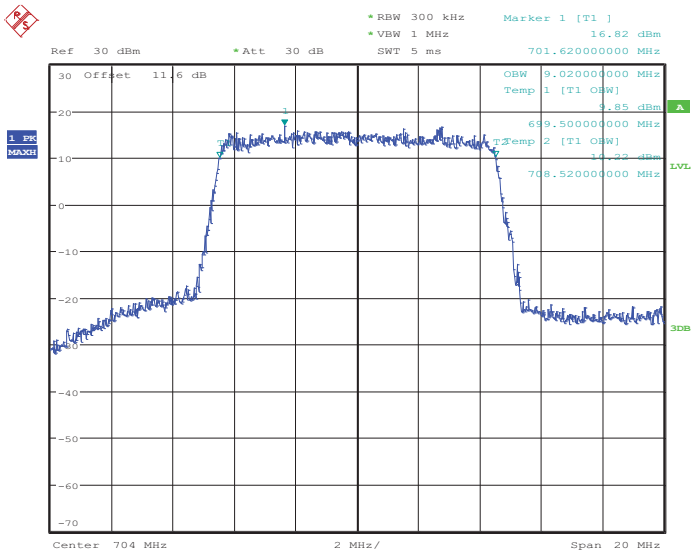
26dB Bandwidth Plot on Channel 23130



Date: 14.FEB.2014 15:46:22

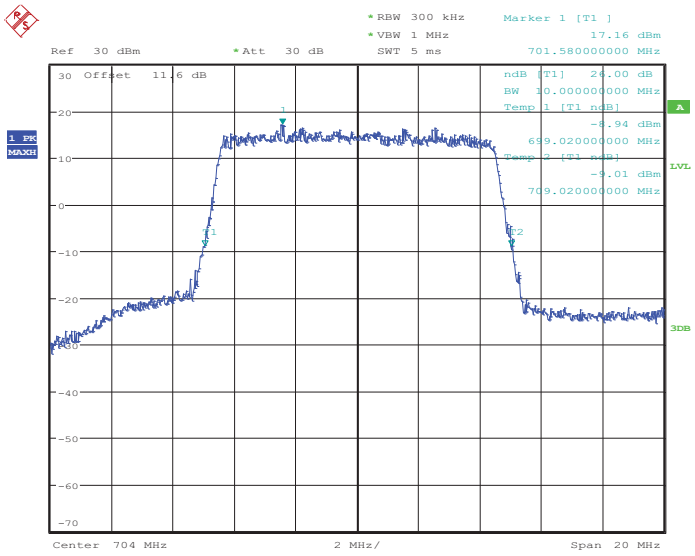
Band :	LTE Band 12	BW / Mod. :	10MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 23060



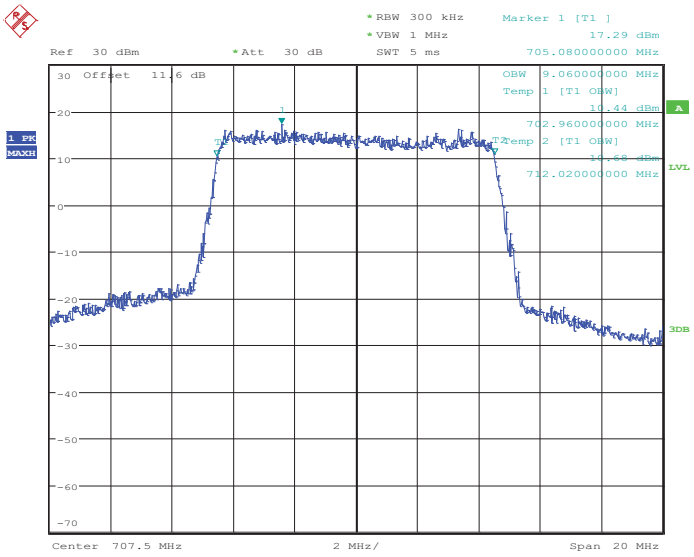
Date: 14.FEB.2014 15:37:36

26dB Bandwidth Plot on Channel 23060



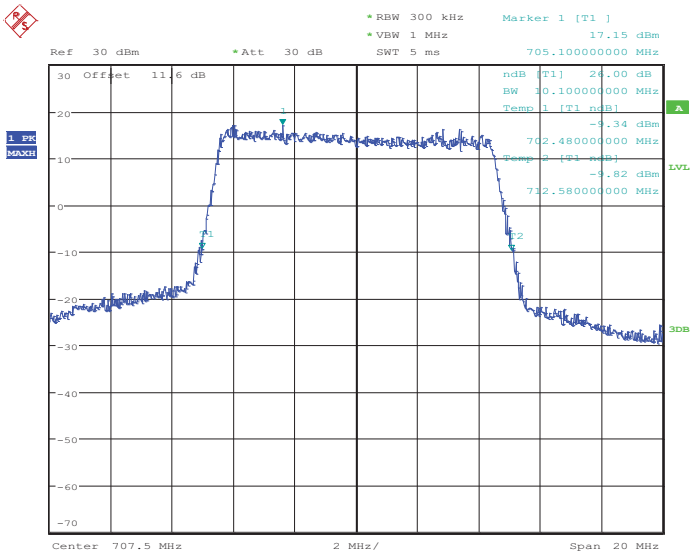
Date: 14.FEB.2014 15:37:49

99% Occupied Bandwidth Plot on Channel 23095



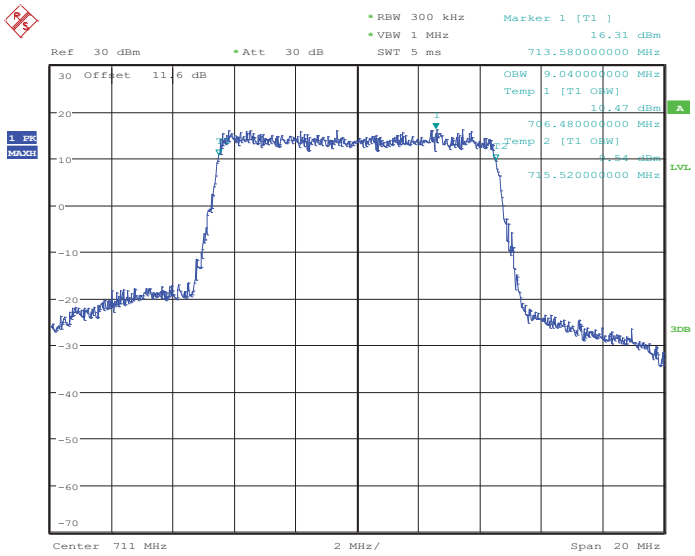
Date: 14.FEB.2014 15:43:00

26dB Bandwidth Plot on Channel 23095



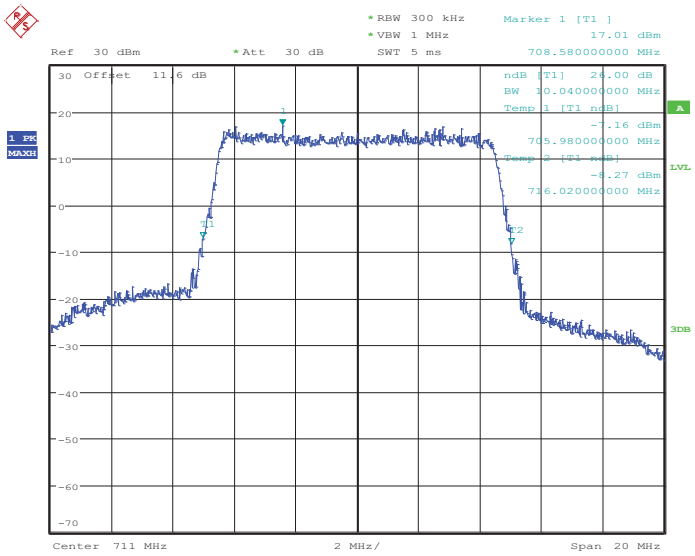
Date: 14.FEB.2014 15:43:39

99% Occupied Bandwidth Plot on Channel 23130



Date: 14.FEB.2014 15:45:55

26dB Bandwidth Plot on Channel 23130



Date: 14.FEB.2014 15:46:08