TEST REPORT

REPORT NUMBER: B19W50128-WWAN

ON

Type of Equipment:	LTE Wireless Module
Model Name:	BM816
Manufacturer:	Suzhou wutong intelligent electronics co. LTD

ACCORDING TO

FCC CFR Part 2, FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS;

PART 22, PUBLIC MOBILE SERVICES;

PART 24, PERSONAL COMMUNICATIONS SERVICES;

PART 27,MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES.

Chongqing Academy of Information and Communications Technology

Month date, year
May, 24, 2019

Signature

Zhang Yan
Director

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of Chongqing Academy of Information and Communications Technology.

Revision Version

Report Number	Revision	Date	Memo
B19W50128-WWAN	V0.0	2019-05-24	--

FCC ID:	2AON8-BM816
Report Date:	2019-05-24
Test Firm Name:	Chongqing Academy of Information and Communications Technology
FCC Registration Number:	CN1239

Statement

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported tests were carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Parts 2, 22, 24, 27，The sample tested was found to comply with the requirements defined in the applied rules.

CONTENTS

1 GENERAL INFORMATION 4

1.1 NOTES 4

1.2 TESTERS 5

1.3 TESTING LABORATORY INFORMATION 6

1.4 DETAILS OF APPLICANT OR MANUFACTURER 7

2 TEST ITEM 8

2.1 GENERAL INFORMATION 8

2.2 OUTLINE OF EQUIPMENT UNDER TEST 8

2.3 MODIFICATIONS INCORPORATED IN EUT 9

2.4 EQUIPMENT CONFIGURATION 9

2.5 OTHER INFORMATION 9

3 SUMMARY OF TEST RESULTS 10

4 TEST EQUIPMENTS AND ANCILLARIES USED FOR TESTS 11

5 TEST RESULTS 12

5.1 CONDUCTED RF POWER OUTPUT 12

5.2 OCCUPIED BANDWIDTH 43

5.3 CONDUCTED SPURIOUS EMISSION 116

5.4 RADIATED SPURIOUS EMISSION 171

5.5 BAND EDGE 229

5.6 FREQUENCY STABILITY OVER TEMPERATURE VARIATION 343

5.7 FREQUENCY STABILITY OVER VOLTAGE VARIATION 346

5.8 PEAK TO AVERAGE RATIO 349

5.9 ERP AND EIRP 365

ANNEX A EUT PHOTOS 367

ANNEX B DEVIATIONS FROM PRESCRIBED TEST METHODS 383

1 General Information

1.1 Notes

All reported tests were carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Parts 2, 22, 24, 27.

The test results of this test report relate exclusively to the item(s) tested as specified in section 2.

The following deviation from, additions to, or exclusions from the test specifications have been made. See Annex B.

Chongqing Academy of Information and Communications Technology authorizes the applicant or manufacturer (see section 1.4) to reproduce this report provided, and the test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of Chongqing Academy of Information and Communications Technology. Mr. Zhang Yan.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Chongqing Institute of Telecommunications accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

1.2 Testers

Name:	Li Xu
Position:	Engineer
Department:	Department of RF test
Date:	2019-03-30 to 2019-05-24
Signature:	

Editor of this test report:

Name:	Chen Wen
Position:	Engineer
Department:	Department of RF test
Date:	2019-05-24
Signature:	

Technical responsibility for area of testing:

Name:	Zhang Yan
Position:	Manager
Department:	Director of the laboratory
Date:	2019-05-24
Signature:	

1.3 Testing Laboratory information

1.3.1 Location

Name:	Chongqing Academy of Information and Communications Technology
Address:	Building B, Technology Innovation Center, No.8, Yuma Road, Chayuan New Area, Nan'an District, Chongqing, People's Republic of China, 401336
Tel:	+86-23-88069965
Fax:	+86-23-88608777
Email:	liqiao@caict.ac.cn

1.3.2 Test location, where different from section 1.3.1

Name:	------
Street:	------
City:	------
Country:	------
Telephone:	------
Fax:	------
Postcode:	------

1.4 Details of applicant or manufacturer

1.4.1 Applicant

Name:	Suzhou wutong intelligent electronics co. LTD
Address:	2596 Taidong Road, Caohu Street, Xiangcheng Economic Development Area,Suzhou, China
Country:	China
Telephone:	+86-15191864870
Fax:	--
Contact:	wuting
Telephone:	+86-15191864870
Email:	--

1.4.2 Manufacturer (if different from applicant in section 1.4.1)

Name:	------
Address:	------
Country:	------
Telephone:	------
Fax:	------
Contact:	------
Telephone:	------
Email:	------

2 Test Item

2.1 General Information

Manufacturer: Suzhou wutong intelligent electronics co. LTD

Type of Equipment: LTE Wireless Module

Model Name: BM816

Production Status: Product

Hardware Version: V2.0

Software Version: M1.0.1_E1.0.0.0_A1.0.1

Receipt date of test item: 2019-03-29

2.2 Outline of Equipment under Test

The BM816 referred to as "EUT" hereafter, is a multi-Band wireless module operating on the GSM/WCDMA/LTE networks. The table below shows the supported Bands for the EUT.

Technology	Band	UL Freq.(MHz)	DL Freq.(MHz)	Note
GSM	GSM850	824 – 849	869 – 894	--
	PCS1900	1850 – 1910	1930 – 1990	--
WCDMA	B2	1850 – 1910	1930 – 1990	--
	B4	1710-1755	2110-2155	
	B5	824 – 849	869 – 894	--
LTE	B2	1850 – 1910	1930 – 1990	--
	B4	1710 – 1755	2110 – 2155	--
	B5	824 – 849	869 – 894	--
	B12	699-716	729-746	--
	B13	746-756	777-787	--
	B17	704-716	734-746	--

2.3 Modifications Incorporated in EUT

The EUT has not been modified from what is described by the brand name and unique type identification stated above.

2.4 Equipment Configuration

Equipment configuration list:

Item	Generic Description	Manufacturer	Type	Serial No.	Remarks
A	Modules	Suzhou wutong intelligent electronics co. LTD	BM816	3175018113010045	None
C	Adaptor	None	None	--	None

2.5 Other Information

--

3 Summary of Test Results

A brief summary of the tests carried out is shown as following.

FCC Rules	Name of Test	Result
2.1046, 22.913(a) 24.232(c), 27.50	Conducted RF Power Output	Pass
2.1049, 22.917(b), 24.238(b)	Occupied Bandwidth	*Note 1
2.1051, 2.1053 22.917, 24.238 27.53	Conducted spurious emissions	Pass
2.1051, 2.1053 22.917, 24.238 27.53	Radiated Spurious Emission	Pass
2.1051, 2.1053 22.917, 24.238 27.53	Band Edge	Pass
2.1055, 22.355 24.235, 27.54	Frequency Stability over Temperature Variation	Pass
2.1055, 22.355 24.235, 27.54	Frequency Stability over Voltage Variation	Pass
24.232, 27.50	Peak to Average Ratio	Pass
22.913(a), 24.232(b)	ERP and EIRP	Pass
Note 1: No applicable performance criteria.		

4 Test Equipments and Ancillaries Used For Tests

The test equipments and ancillaries used are as follows.

No.	Equipment	Model	SN	Manufacture	Cal. Due Date
1	EMI Test Receiver	ESU26	100367	R&S	2020-03-01
2	Trilog super broadBand test antenna	VULB 9163	9163-544	R&S	2019-11-24
3	Double-Ridged Horn Antenna	HF907	100357	R&S	2019-6-22
4	Fully-Anechoic Chamber	11.8m×6.5 m×6.3m	--	ETS	2020-8-20
5	Universal Radio Communication Tester	CMW500	152395	R&S	2020-03-01
6	Signal Generator	SMU200A	104517	R&S	2020-03-01
7	spectrum analyzer	FSQ 26	201137/026	R&S	2020-03-01
8	spectrum analyzer	N9020A	MY50200376	Agilent	2020-03-01
9	Universal Radio Communication Tester	CMU200	112012	R&S	2020-03-01
10	Climate chamber	SH-241	92010759	ESPEC	2020-03-01
11	DC Power Supply	N6705B	MY50000919	Agilent	2019-12-05
12	Ultra Wideband Antenna	SWB-VU LB 9163	00995	R&S	2019-06-04

5 Test Results

5.1 Conducted RF Power Output

Specifications:	FCC Part 2.1046, 22.913(a), 24.232(c), 27.50
DUT Serial Number:	868020030062938
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

According to Part 22.913(a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

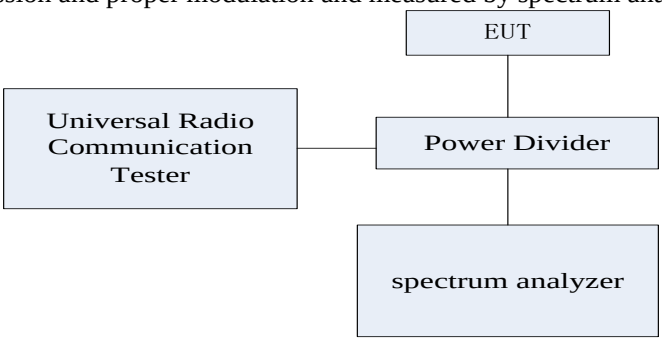
According to Part24.232(c), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to Part 27.50(c), portable stations (hand-held devices) in the 600 MHz uplink Band and the 698-746 MHz Band, and fixed and mobile stations in the 600 MHz uplink Band are limited to 3 watts ERP.

According to Part 27.50(d), fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz Band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz Bands are limited to 1 watt EIRP.

Test Setup:

During the test, the EUT was controlled via the Wireless Telecommunications Test Set to ensure max power transmission and proper modulation and measured by spectrum analyzer.



Test Method:

1) The EUT was coupled to the spectrum analyzer and the Wireless Telecommunications Test Set through a power divider. The loss of the RF cables of the test system is calibrated to correct the readings.

2) For RMS power test, the spectrum analyzer was set to RMS Detector function and Maximum hold mode.

3) For Peak power test, the spectrum analyzer was set to Maxpeak Detector function and

Maximum hold mode.

4) The resolution Bandwidth of the spectrum analyzer was comparable to the emission Bandwidth.

Note: --

5.1.1 GSM850 Conducted RF Power Output Results

GPRS GMSK Mode:

Channel No.	Maximum output power(pk) [dBm]			
	1TS	2TS	3TS	4TS
128 (824.2MHz)	33.74	31.76	30.38	29.39
190 (836.6MHz)	33.87	31.68	30.74	29.30
251 (848.8MHz)	33.80	31.65	30.53	29.59

EGPRS GMSK Mode

Channel No.	Maximum output power(pk) [dBm]			
	1TS	2TS	3TS	4TS
128 (824.2MHz)	33.67	31.73	30.66	29.55
190 (836.6MHz)	33.81	31.87	30.85	29.59
251 (848.8MHz)	33.72	32.02	30.77	29.60

EGPRS 8PSK Mode

Channel No.	Maximum output power(pk) [dBm]			
	1TS	2TS	3TS	4TS
128 (824.2MHz)	27.40	25.38	24.42	23.38
190 (836.6MHz)	27.57	25.43	24.45	23.45
251 (848.8MHz)	27.48	25.48	24.47	23.37

GPRS GMSK Mode:

Channel No.	Maximum output power(avg) [dBm]			
	1TS	2TS	3TS	4TS
128 (824.2MHz)	33.46	31.55	30.07	29.14
190 (836.6MHz)	33.55	31.40	30.58	29.35
251 (848.8MHz)	33.77	31.46	30.33	29.28

EGPRS GMSK Mode

Channel No.	Maximum output power(avg) [dBm]			
	1TS	2TS	3TS	4TS
128 (824.2MHz)	33.48	31.59	30.43	29.46
190 (836.6MHz)	33.52	31.63	30.68	29.28
251 (848.8MHz)	33.47	31.87	30.51	29.57

EGPRS 8PSK Mode

Channel No.	Maximum output power(avg) [dBm]			
	1TS	2TS	3TS	4TS
128 (824.2MHz)	27.27	25.55	24.27	23.17
190 (836.6MHz)	27.33	25.27	24.25	23.19
251 (848.8MHz)	27.29	25.35	24.23	23.07

5.1.2 PCS1900 Conducted RF Power Output Results

GPRS GMSK Mode

Channel No.	Maximum output power(pk) [dBm]			
	1TS	2TS	3TS	4TS
512 (1850.2MHz)	29.57	28.03	27.44	26.42
661 (1880.0MHz)	29.66	28.07	26.95	26.23
810 (1909.8MHz)	30.37	28.62	27.51	26.80

EGPRS GMSK Mode

Channel No.	Maximum output power(pk) [dBm]			
	1TS	2TS	3TS	4TS
512 (1850.2MHz)	29.56	28.19	27.13	26.54
661 (1880.0MHz)	29.72	28.12	27.14	26.47
810 (1909.8MHz)	30.33	28.63	27.54	26.80

EGPRS 8PSK Mode

Channel No.	Maximum output power(pk) [dBm]			
	1TS	2TS	3TS	4TS
512 (1850.2MHz)	24.67	23.26	22.22	21.13
661 (1880.0MHz)	24.49	23.07	22.25	20.95
810 (1909.8MHz)	24.83	23.45	22.34	21.24

GPRS GMSK Mode

Channel No.	Maximum output power(avg) [dBm]			
	1TS	2TS	3TS	4TS
512 (1850.2MHz)	29.36	27.89	26.78	26.22
661 (1880.0MHz)	29.35	27.87	26.81	26.09
810 (1909.8MHz)	30.07	28.52	27.37	26.57

EGPRS GMSK Mode

Channel No.	Maximum output power(avg) [dBm]			
	1TS	2TS	3TS	4TS
512 (1850.2MHz)	29.36	27.99	26.97	26.36
661 (1880.0MHz)	29.49	28.74	26.97	26.26
810 (1909.8MHz)	30.12	28.46	27.35	26.62

EGPRS 8PSK Mode

Channel No.	Maximum output power(avg) [dBm]			
	1TS	2TS	3TS	4TS
512 (1850.2MHz)	24.37	23.87	22.19	21.74
661 (1880.0MHz)	24.12	22.76	21.85	20.62
810 (1909.8MHz)	24.65	23.28	22.03	21.09

5.1.3 WCDMA Band2 Conducted RF Power Output Results

		Maximum output power(pk) [dBm]			Maximum output power(RMS) [dBm]		
Mode	3GPP Subtest	9262	9400	9538	9262	9400	9538
RMC	--	26.72	26.97	26.82	22.57	22.25	22.35
HSDPA	1	26.10	25.78	25.91	21.16	21.17	21.26
	2	25.77	25.65	25.87	20.93	21.16	21.19
	3	25.52	25.17	25.29	20.67	20.65	20.63
	4	25.82	25.61	26.55	20.56	20.77	20.77
HSUPA (QPSK)	1	25.76	25.29	25.31	21.15	21.17	21.24
	2	25.45	25.84	25.57	20.99	21.15	21.11
	3	25.90	25.74	26.63	20.67	20.76	20.68
	4	26.02	25.83	25.56	20.53	20.74	20.75
	5	25.92	25.87	25.69	20.57	20.62	20.62
HSUPA (16QAM)	1	25.30	25.19	25.44	21.11	21.21	21.16
	2	25.18	25.37	25.51	20.99	21.19	21.09
	3	25.22	25.09	25.32	20.52	20.77	20.67
	4	25.15	25.07	25.27	20.59	20.85	20.75
	5	25.33	25.26	25.18	20.66	20.74	20.68

5.1.3 WCDMA Band4 Conducted RF Power Output Results

		Maximum output power(pk) [dBm]			Maximum output power(RMS) [dBm]		
Mode	3GPP Subtest	1312	1412	1512	1312	1412	1512
RMC	--	26.49	26.88	26.73	22.57	22.65	22.69
HSDPA	1	25.53	25.49	26.70	21.45	21.43	21.55
	2	25.62	25.38	25.48	21.76	21.67	21.52
	3	25.57	25.66	25.74	21.24	21.14	21.17
	4	26.10	25.68	25.51	20.92	21.00	21.02
HSUPA (QPSK)	1	25.86	25.57	25.62	21.44	21.49	21.56
	2	25.36	25.44	25.69	21.78	21.67	21.58
	3	25.85	25.60	25.52	21.29	21.17	21.14
	4	25.37	25.66	25.74	20.92	21.04	21.07

	5	25.57	25.42	25.36	20.99	21.08	20.90
HSUPA (16QAM)	1	25.25	25.19	25.43	21.47	21.57	21.41
	2	25.53	25.28	25.17	21.65	21.69	21.55
	3	25.44	25.31	25.08	21.33	21.22	21.18
	4	25.37	25.42	25.15	21.04	21.07	21.78
	5	25.39	25.47	25.21	20.99	21.09	20.92

5.1.4 WCDMA Band5 Conducted RF Power Output Results

		Maximum output power(pk) [dBm]			Maximum output power(RMS) [dBm]		
Mode	3GPP Subtest	4132	4182	4233	4132	4182	4233
RMC	--	27.25	27.06	26.92	23.22	23.25	23.36
HSDPA	1	26.11	25.85	26.02	22.37	22.32	22.39
	2	25.77	25.89	25.65	22.34	22.26	22.23
	3	25.87	25.43	25.72	21.81	21.69	21.88
	4	25.69	25.74	26.55	21.79	21.67	21.72
HSUPA (QPSK)	1	25.43	25.62	25.84	22.36	22.36	22.35
	2	25.49	25.57	25.83	22.33	22.21	22.27
	3	25.75	25.90	26.52	21.82	21.69	21.86
	4	25.67	25.55	25.37	21.75	21.67	21.74
	5	25.71	25.64	25.78	21.79	21.65	21.60
HSUPA (16QAM)	1	25.33	25.28	25.40	22.27	22.21	22.27
	2	25.61	25.32	25.45	22.44	22.35	22.25
	3	25.56	25.25	25.28	21.86	21.79	21.88
	4	25.39	25.17	25.44	21.78	21.67	21.76
	5	25.42	25.24	25.19	21.79	21.84	21.74

5.1.5 LTE B2 Conducted RF Power Output Results

Test Data (1.4MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
18607	1850.7	1	0	QPSK	21.04	25.36	4.32
		1	2		21.16	25.19	4.03
		1	5		21.04	25.11	4.07
		6	0		19.80	25.20	5.40
		1	0	16QAM	19.98	25.26	5.28
		1	2		20.04	25.25	5.21
		1	5		19.99	25.14	5.15
		6	0		18.77	24.90	6.13
18900	1880	1	0	QPSK	20.60	24.58	3.98
		1	2		20.66	24.55	3.89
		1	5		21.83	25.99	4.16
		6	0		20.75	25.93	5.18
		1	0	16QAM	20.91	26.12	5.21
		1	2		20.96	26.07	5.11
		1	5		20.80	25.88	5.08
		6	0		19.87	26.05	6.18
19193	1909.3	1	0	QPSK	21.60	26.10	4.50
		1	2		21.54	25.99	4.45
		1	5		21.48	25.96	4.48
		6	0		20.62	26.01	5.39
		1	0	16QAM	21.02	26.04	5.02
		1	2		21.14	25.97	4.83
		1	5		20.98	25.95	4.97
		6	0		20.02	25.73	5.71

Test Data (3MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
18615	1851.5	1	0	QPSK	21.65	26.28	4.63
		1	8		21.50	25.93	4.43
		1	15		21.60	26.13	4.53
		15	0		20.70	26.64	5.94
		1	0	16QAM	20.60	25.99	5.39
		1	8		20.32	25.75	5.43
		1	15		20.34	25.84	5.50
		15	0		19.67	25.99	6.32
18900	1880	1	0	QPSK	21.74	26.20	4.46
		1	8		21.88	26.07	4.19
		1	15		21.84	25.99	4.15
		15	0		21.10	26.15	5.05
		1	0	16QAM	20.87	25.86	4.99
		1	8		20.97	25.79	4.82
		1	15		20.91	25.73	4.82
		15	0		20.21	25.98	5.77
19185	1908.5	1	0	QPSK	21.79	25.59	3.80
		1	8		21.92	26.30	4.38
		1	15		21.64	26.11	4.47
		15	0		20.89	25.94	5.05
		1	0	16QAM	21.48	26.54	5.06
		1	8		21.37	26.21	4.84
		1	15		21.38	26.27	4.89
		15	0		20.42	26.28	5.86

Test Data (5MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
18625	1852.5	1	0	QPSK	21.33	26.01	4.68
		1	13		21.48	26.03	4.55
		1	24		21.45	25.97	4.52
		25	0		20.74	26.27	5.53
		1	0	16QAM	20.20	25.72	5.52
		1	13		20.02	25.83	5.81
		1	24		20.03	25.73	5.70
		25	0		19.80	26.06	6.26
18900	1880	1	0	QPSK	21.55	26.05	4.50
		1	13		21.72	25.95	4.23
		1	24		21.65	25.82	4.17
		25	0		20.81	26.42	5.61
		1	0	16QAM	21.24	26.25	5.01
		1	13		21.20	26.12	4.92
		1	24		21.10	25.90	4.80
		25	0		19.79	26.30	6.51
19175	1907.5	1	0	QPSK	21.51	25.97	4.46
		1	13		21.50	25.60	4.10
		1	24		21.40	25.61	4.21
		25	0		20.68	26.20	5.52
		1	0	16QAM	21.00	26.15	5.15
		1	13		21.19	26.07	4.88
		1	24		21.05	25.90	4.85
		25	0		19.86	26.30	6.44

Test Data (10MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
18650	1855	1	0	QPSK	21.40	26.23	4.83
		1	25		21.66	26.19	4.53
		1	49		21.44	26.15	4.71
		50	0		20.85	25.99	5.14
		1	0	16QAM	20.88	25.99	5.11
		1	25		21.55	26.43	4.88
		1	49		20.43	25.79	5.36
		27	0		19.80	26.64	6.84
18900	1880	1	0	QPSK	21.45	26.08	4.63
		1	25		21.67	26.01	4.34
		1	49		21.61	25.71	4.10
		50	0		20.63	25.84	5.21
		1	0	16QAM	21.27	26.31	5.04
		1	25		21.19	25.98	4.79
		1	49		21.25	25.80	4.55
		27	0		20.00	25.91	5.91
19150	1905	1	0	QPSK	21.72	26.40	4.68
		1	25		21.89	26.51	4.62
		1	49		21.63	26.05	4.42
		50	0		20.73	25.83	5.10
		1	0	16QAM	20.24	25.92	5.68
		1	25		21.23	26.82	5.59
		1	49		20.77	26.17	5.40
		27	0		19.80	26.21	6.41

Test Data (15MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
18675	1857.5	1	0	QPSK	21.52	26.04	4.52
		1	38		21.45	26.11	4.66
		1	74		21.39	26.06	4.67
		75	0		20.65	26.28	5.63
		1	0	16QAM	20.78	25.83	5.05
		1	38		20.85	26.01	5.16
		1	74		20.72	26.03	5.31
		27	0		19.95	26.14	6.19
18900	1880	1	0	QPSK	21.55	26.28	4.73
		1	38		21.62	25.98	4.36
		1	74		21.41	25.62	4.21
		75	0		20.73	26.03	5.30
		1	0	16QAM	21.29	26.34	5.05
		1	38		21.62	26.12	4.50
		1	74		21.25	25.72	4.47
		27	0		20.01	25.92	5.91
19125	1902.5	1	0	QPSK	21.25	25.94	4.69
		1	38		21.46	26.14	4.68
		1	74		21.44	25.93	4.49
		75	0		20.78	26.46	5.68
		1	0	16QAM	20.07	25.49	5.42
		1	38		20.45	25.82	5.37
		1	74		20.72	25.90	5.18
		27	0		19.74	26.15	6.41

Test Data (20MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
18700	1860	1	0	QPSK	21.23	25.75	4.52
		1	50		21.37	26.05	4.68
		1	99		21.25	25.87	4.62
		100	0		20.55	26.57	6.02
		1	0	16QAM	21.22	26.35	5.13
		1	50		20.86	26.36	5.50
		1	99		21.09	26.46	5.37
		27	0		19.65	26.57	6.92
18900	1880	1	0	QPSK	21.65	26.34	4.69
		1	50		21.89	26.07	4.18
		1	99		21.65	25.76	4.11
		100	0		20.78	26.19	5.41
		1	0	16QAM	20.81	26.28	5.47
		1	50		20.93	25.95	5.02
		1	99		20.57	25.62	5.05
		27	0		19.79	26.14	6.35
19100	1900	1	0	QPSK	21.71	26.04	4.33
		1	50		22.20	26.88	4.68
		1	99		21.72	26.19	4.47
		100	0		20.88	26.85	5.97
		1	0	16QAM	21.34	26.03	4.69
		1	50		21.63	26.66	5.03
		1	99		22.01	26.79	4.78
		27	0		19.87	26.78	6.91

5.1.6 LTE B4 Conducted RF Power Output Results

Test Data (1.4MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
19957	1710.7	1	0	QPSK	22.33	27.09	4.76
		1	2		22.46	27.15	4.69
		1	5		22.29	27.05	4.76
		6	0		21.56	27.02	5.46
		1	0	16QAM	22.13	27.40	5.27
		1	2		22.12	27.23	5.11
		1	5		22.07	27.36	5.29
		6	0		20.45	27.01	6.56
20175	1732.5	1	0	QPSK	26.08	26.84	0.76
		1	2		21.27	26.98	5.71
		1	5		21.13	26.87	5.74
		6	0		20.46	26.81	6.35
		1	0	16QAM	21.04	26.82	5.78
		1	2		21.08	26.91	5.83
		1	5		21.09	26.83	5.74
		6	0		20.24	26.77	6.53
20393	1754.3	1	0	QPSK	22.56	27.40	4.84
		1	2		22.43	27.23	4.80
		1	5		22.64	27.47	4.83
		6	0		21.39	26.93	5.54
		1	0	16QAM	21.63	27.41	5.78
		1	2		21.65	27.40	5.75
		1	5		21.52	27.32	5.80
		6	0		20.41	26.97	6.56

Test Data (3MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
19965	1711.5	1	0	QPSK	22.41	27.17	4.76
		1	8		22.46	27.07	4.61
		1	15		22.30	27.06	4.76
		15	0		21.49	26.98	5.49
		1	0	16QAM	22.00	27.33	5.33
		1	8		22.17	27.27	5.10
		1	15		22.01	27.37	5.36
		15	0		20.57	26.97	6.40
20175	1732.5	1	0	QPSK	22.38	27.17	4.79
		1	8		22.49	27.12	4.63
		1	15		22.43	27.15	4.72
		15	0		21.46	27.12	5.66
		1	0	16QAM	20.85	26.61	5.76
		1	8		21.27	26.99	5.72
		1	15		21.13	26.86	5.73
		15	0		20.46	27.02	6.56
20385	1753.5	1	0	QPSK	22.43	27.38	4.95
		1	8		22.69	27.45	4.76
		1	15		22.32	27.30	4.98
		15	0		21.35	26.96	5.61
		1	0	16QAM	21.41	26.76	5.35
		1	8		21.44	26.78	5.34
		1	15		21.47	26.87	5.40
		15	0		20.48	27.39	6.91

Test Data (5MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
19975	1712.5	1	0	QPSK	22.31	27.16	4.85
		1	13		22.35	27.00	4.65
		1	24		22.36	27.17	4.81
		25	0		21.53	27.32	5.79
		1	0	16QAM	20.91	26.99	6.08
		1	13		20.63	26.54	5.91
		1	24		20.83	26.89	6.06
		25	0		20.57	27.29	6.72
20175	1732.5	1	0	QPSK	22.24	26.98	4.74
		1	13		22.23	26.88	4.65
		1	24		22.30	27.03	4.73
		25	0		21.41	27.19	5.78
		1	0	16QAM	21.57	26.98	5.41
		1	13		21.57	26.97	5.40
		1	24		21.54	27.04	5.50
		25	0		20.44	27.28	6.84
20375	1752.5	1	0	QPSK	22.28	27.08	4.80
		1	13		22.48	27.13	4.65
		1	24		22.47	27.36	4.89
		25	0		21.42	27.13	5.71
		1	0	16QAM	21.07	26.81	5.74
		1	13		21.05	26.83	5.78
		1	24		21.15	26.87	5.72
		25	0		20.35	27.25	6.90

Test Data (10MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
20000	1715	1	0	QPSK	22.45	27.36	4.91
		1	25		22.53	27.18	4.65
		1	49		22.47	27.25	4.78
		50	0		21.60	26.94	5.34
		1	0	16QAM	21.85	27.19	5.34
		1	25		22.03	27.14	5.11
		1	49		21.51	26.86	5.35
		27	0		20.56	27.74	7.18
20175	1732.5	1	0	QPSK	22.40	27.27	4.87
		1	25		22.49	27.22	4.73
		1	49		22.42	27.27	4.85
		50	0		21.44	27.36	5.92
		1	0	16QAM	21.97	27.39	5.42
		1	25		22.02	27.15	5.13
		1	49		21.96	27.32	5.36
		27	0		20.41	27.24	6.83
20350	1750	1	0	QPSK	22.42	27.26	4.84
		1	25		22.72	27.38	4.66
		1	49		22.53	27.37	4.84
		50	0		21.54	27.35	5.81
		1	0	16QAM	21.08	26.83	5.75
		1	25		21.08	27.00	5.92
		1	49		21.09	27.02	5.93
		27	0		20.51	27.34	6.83

Test Data (15MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
20025	1717.5	1	0	QPSK	22.33	27.16	4.83
		1	38		22.23	26.92	4.69
		1	74		22.22	27.06	4.84
		75	0		21.30	27.15	5.85
		1	0	16QAM	21.36	26.90	5.54
		1	38		21.36	26.75	5.39
		1	74		21.25	26.83	5.58
		27	0		20.40	27.12	6.72
20175	1732.5	1	0	QPSK	22.88	27.37	4.49
		1	38		22.86	27.15	4.29
		1	74		22.90	27.40	4.50
		75	0		22.01	27.63	5.62
		1	0	16QAM	21.83	27.14	5.31
		1	38		21.78	26.96	5.18
		1	74		21.78	27.12	5.34
		27	0		20.92	27.08	6.16
20325	1747.5	1	0	QPSK	22.98	27.74	4.76
		1	38		22.66	27.37	4.71
		1	74		22.74	27.51	4.77
		75	0		21.88	27.66	5.78
		1	0	16QAM	22.07	27.35	5.28
		1	38		21.90	27.11	5.21
		1	74		22.10	27.36	5.26
		27	0		20.98	27.21	6.23

Test Data (20MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
20050	1720	1	0	QPSK	22.98	27.57	4.59
		1	50		22.80	27.42	4.62
		1	99		22.81	27.42	4.61
		100	0		21.87	27.42	5.55
		1	0	16QAM	21.71	27.30	5.59
		1	50		21.64	27.21	5.57
		1	99		21.30	26.91	5.61
		27	0		20.95	27.03	6.08
20175	1732.5	1	0	QPSK	22.66	27.40	4.74
		1	50		22.56	27.34	4.78
		1	99		22.45	27.25	4.80
		100	0		21.84	27.59	5.75
		1	0	16QAM	22.63	27.68	5.05
		1	50		22.55	27.48	4.93
		1	99		22.39	27.56	5.17
		27	0		20.89	27.05	6.16
20300	1745	1	0	QPSK	22.76	27.48	4.72
		1	50		22.93	27.50	4.57
		1	99		22.56	27.34	4.78
		100	0		21.78	27.30	5.52
		1	0	16QAM	22.44	27.76	5.32
		1	50		22.46	27.69	5.23
		1	99		22.53	27.91	5.38
		27	0		20.87	27.08	6.21

5.1.7 LTE B5 Conducted RF Power Output Results

Test Data (1.4MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
20407	824.7	1	0	QPSK	23.28	27.51	4.23
		1	2		23.50	27.58	4.08
		1	5		23.25	27.53	4.28
		6	0		22.12	27.45	5.33
		1	0	16QAM	22.17	27.42	5.25
		1	2		22.49	27.56	5.07
		1	5		22.30	27.46	5.16
		6	0		21.11	27.43	6.32
20525	836.5	1	0	QPSK	23.23	27.21	3.98
		1	2		23.22	27.11	3.89
		1	5		23.12	27.05	3.93
		6	0		22.21	27.16	4.95
		1	0	16QAM	22.48	27.06	4.58
		1	2		22.64	27.07	4.43
		1	5		22.46	26.93	4.47
		6	0		21.35	27.18	5.83
20643	848.3	1	0	QPSK	23.19	27.29	4.10
		1	2		23.48	27.08	3.60
		1	5		22.96	26.70	3.74
		6	0		21.99	27.09	5.10
		1	0	16QAM	22.22	27.22	5.00
		1	2		21.98	26.81	4.83
		1	5		21.74	26.54	4.80
		6	0		20.85	26.84	5.99

Test Data (3MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
20415	825.5	1	0	QPSK	23.27	27.51	4.24
		1	8		23.08	27.26	4.18
		1	15		23.24	27.48	4.24
		15	0		22.27	27.57	5.30
		1	0	16QAM	22.56	27.38	4.82
		1	8		22.39	27.12	4.73
		1	15		22.16	27.13	4.97
		15	0		21.03	27.28	6.25
20525	836.5	1	0	QPSK	23.42	27.28	3.86
		1	8		23.12	27.00	3.88
		1	15		23.50	27.13	3.63
		15	0		22.14	27.19	5.05
		1	0	16QAM	23.05	27.40	4.35
		1	8		22.76	27.08	4.32
		1	15		22.69	26.98	4.29
		15	0		20.92	26.89	5.97
20635	847.5	1	0	QPSK	23.08	27.39	4.31
		1	8		23.02	27.12	4.10
		1	15		23.15	26.76	3.61
		15	0		22.01	27.30	5.29
		1	0	16QAM	23.00	27.79	4.79
		1	8		21.71	26.90	5.19
		1	15		22.25	26.78	4.53
		15	0		20.79	26.94	6.15

Test Data (5MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
20425	826.5	1	0	QPSK	23.22	27.51	4.29
		1	13		23.29	27.45	4.16
		1	24		23.37	27.58	4.21
		25	0		22.30	27.63	5.33
		1	0	16QAM	22.32	27.44	5.12
		1	13		21.74	26.95	5.21
		1	24		22.43	27.48	5.05
		25	0		21.13	27.36	6.23
20525	836.5	1	0	QPSK	23.35	27.33	3.98
		1	13		23.43	27.18	3.75
		1	24		23.45	27.11	3.66
		25	0		22.21	27.58	5.37
		1	0	16QAM	22.69	27.44	4.75
		1	13		22.44	27.04	4.60
		1	24		22.49	27.00	4.51
		25	0		21.25	27.32	6.07
20625	846.5	1	0	QPSK	23.04	27.41	4.37
		1	13		23.43	27.61	4.18
		1	24		23.53	27.09	3.56
		25	0		22.04	27.41	5.37
		1	0	16QAM	22.00	27.07	5.07
		1	13		21.67	27.05	5.38
		1	24		22.34	26.99	4.65
		25	0		21.05	27.33	6.28

Test Data (10MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
20450	829	1	0	QPSK	23.42	27.74	4.32
		1	25		23.51	27.71	4.20
		1	49		23.43	27.72	4.29
		50	0		22.72	27.74	5.02
		1	0	16QAM	23.26	27.89	4.63
		1	25		23.73	28.06	4.33
		1	49		23.20	27.81	4.61
		27	0		21.76	27.50	5.74
20525	836.5	1	0	QPSK	23.54	27.70	4.16
		1	25		23.98	27.63	3.65
		1	49		23.71	27.23	3.52
		50	0		22.67	27.48	4.81
		1	0	16QAM	22.50	27.63	5.13
		1	25		22.67	27.40	4.73
		1	49		21.96	26.84	4.88
		27	0		21.57	27.18	5.61
20600	844	1	0	QPSK	23.68	27.30	3.62
		1	25		23.85	27.43	3.58
		1	49		23.69	27.45	3.76
		50	0		22.46	27.37	4.91
		1	0	16QAM	22.79	27.10	4.31
		1	25		23.43	27.46	4.03
		1	49		23.32	27.51	4.19
		27	0		21.38	27.29	5.91

5.1.8 LTE B12 Conducted RF Power Output Results

Test Data (1.4MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
23017	699.7	1	0	QPSK	24.11	28.25	4.14
		1	2		24.29	28.39	4.10
		1	5		23.90	28.24	4.34
		6	0		22.84	28.10	5.26
		1	0	16QAM	23.17	28.23	5.06
		1	2		23.07	28.23	5.16
		1	5		22.93	28.22	5.29
		6	0		21.56	27.85	6.29
23095	707.5	1	0	QPSK	23.99	27.68	3.69
		1	2		23.95	27.55	3.60
		1	5		23.86	27.52	3.66
		6	0		22.76	27.67	4.91
		1	0	16QAM	23.08	27.46	4.38
		1	2		23.27	27.46	4.19
		1	5		23.34	27.47	4.13
		6	0		22.21	27.79	5.58
23173	715.3	1	0	QPSK	23.50	27.27	3.77
		1	2		23.98	27.09	3.11
		1	5		23.88	26.61	2.73
		6	0		22.49	27.28	4.79
		1	0	16QAM	22.15	27.02	4.87
		1	2		22.53	26.90	4.37
		1	5		22.20	26.45	4.25
		6	0		21.33	26.98	5.65

Test Data (3MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
23025	700.5	1	0	QPSK	24.00	28.24	4.24
		1	8		23.89	28.21	4.32
		1	15		23.58	28.00	4.42
		15	0		22.62	27.96	5.34
		1	0	16QAM	23.58	28.19	4.61
		1	8		23.47	28.13	4.66
		1	15		23.56	28.35	4.79
		15	0		21.80	28.08	6.28
23095	707.5	1	0	QPSK	23.72	27.61	3.89
		1	8		23.46	27.25	3.79
		1	15		23.91	27.52	3.61
		15	0		22.68	27.74	5.06
		1	0	16QAM	23.57	27.66	4.09
		1	8		23.22	27.36	4.14
		1	15		23.28	27.43	4.15
		15	0		21.88	27.86	5.98
23165	714.5	1	0	QPSK	23.52	27.72	4.20
		1	8		23.62	27.18	3.56
		1	15		23.67	26.25	2.58
		15	0		22.35	27.51	5.16
		1	0	16QAM	22.23	27.41	5.18
		1	8		22.53	27.14	4.61
		1	15		22.53	27.14	4.61
		15	0		21.42	27.31	5.89

Test Data (5MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
23035	701.5	1	0	QPSK	23.54	27.90	4.36
		1	13		23.51	27.80	4.29
		1	24		23.57	27.89	4.32
		25	0		22.57	28.07	5.50
		1	0	16QAM	22.36	27.72	5.36
		1	13		22.28	27.56	5.28
		1	24		22.41	27.73	5.32
		25	0		21.60	27.87	6.27
23095	707.5	1	0	QPSK	23.72	27.71	3.99
		1	13		23.65	27.35	3.70
		1	24		23.47	27.48	4.01
		25	0		22.57	27.62	5.05
		1	0	16QAM	22.66	27.55	4.89
		1	13		22.23	27.04	4.81
		1	24		21.88	27.01	5.13
		25	0		21.75	27.61	5.86
23155	713.5	1	0	QPSK	23.54	27.67	4.13
		1	13		23.67	27.63	3.96
		1	24		23.5	26.46	2.96
		25	0		22.43	27.68	5.25
		1	0	16QAM	22.69	27.59	4.90
		1	13		23.09	27.69	4.60
		1	24		22.81	26.56	3.75
		25	0		21.25	27.75	6.50

Test Data (10MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
23060	704	1	0	QPSK	22.56	26.97	4.41
		1	25		22.87	26.95	4.08
		1	49		22.77	26.55	3.78
		50	0		21.97	26.88	4.91
		1	0	16QAM	21.85	26.82	4.97
		1	25		22.27	26.92	4.65
		1	49		22.08	26.46	4.38
		27	0		21.01	27.34	6.33
23095	707.5	1	0	QPSK	22.70	27.00	4.30
		1	25		23.21	26.67	3.46
		1	49		22.55	26.83	4.28
		50	0		21.74	26.53	4.79
		1	0	16QAM	21.75	26.97	5.22
		1	25		21.55	26.37	4.82
		1	49		21.22	26.55	5.33
		27	0		20.84	27.11	6.27
23130	711	1	0	QPSK	22.71	26.66	3.95
		1	25		22.94	26.92	3.98
		1	49		22.64	26.23	3.59
		50	0		21.88	26.67	4.79
		1	0	16QAM	22.10	26.59	4.49
		1	25		22.46	26.91	4.45
		1	49		22.05	26.24	4.19
		27	0		20.83	27.19	6.36

5.1.9 LTE B13 Conducted RF Power Output Results

Test Data (5MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
23205	779.5	1	0	QPSK	23.66	27.71	4.05
		1	13		23.82	27.88	4.06
		1	24		23.54	27.89	4.35
		25	0		22.77	28.05	5.28
		1	0	16QAM	22.23	27.24	5.01
		1	13		22.16	27.24	5.08
		1	24		22.19	27.28	5.09
		25	0		21.91	27.88	5.97
23230	782.0	1	0	QPSK	23.55	27.73	4.18
		1	13		23.58	27.46	3.88
		1	24		23.41	27.24	3.83
		25	0		22.51	27.97	5.46
		1	0	16QAM	22.95	27.79	4.84
		1	13		22.85	27.41	4.56
		1	24		23.01	27.39	4.38
		25	0		21.65	27.96	6.31
23255	784.5	1	0	QPSK	23.32	27.48	4.16
		1	13		23.52	26.93	3.41
		1	24		23.46	26.90	3.44
		25	0		22.51	27.60	5.09
		1	0	16QAM	22.32	27.30	4.98
		1	13		22.30	26.88	4.58
		1	24		22.26	26.84	4.58
		25	0		21.46	27.42	5.96

Test Data (10MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
23230	782.0	1	0	QPSK	23.32	27.59	4.27
		1	25		23.62	27.45	3.83
		1	49		23.69	27.08	3.39
		50	0		22.54	27.50	4.96
		1	0	16QAM	22.60	27.30	4.70
		1	25		23.39	27.61	4.22
		1	49		22.70	26.87	4.17
		27	0		21.54	27.79	6.25

5.1.10 LTE B17 Conducted RF Power Output Results

Test Data (5MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
23755	706.5	1	0	QPSK	23.55	27.71	4.16
		1	13		23.54	27.33	3.79
		1	24		23.38	27.21	3.83
		25	0		22.51	27.88	5.37
		1	0	16QAM	22.78	27.67	4.89
		1	13		22.92	27.33	4.41
		1	24		23.03	27.34	4.31
		25	0		21.51	27.76	6.25
23790	710.0	1	0	QPSK	23.72	27.46	3.74
		1	13		23.62	27.42	3.80
		1	24		23.42	27.66	4.24
		25	0		22.39	27.58	5.19

		1	0	16QAM	22.08	26.98	4.90
		1	13		21.73	26.79	5.06
		1	24		21.99	27.12	5.13
		25	0		21.54	27.59	6.05
23825	713.5	1	0	QPSK	23.67	27.55	3.88
		1	13		23.65	27.47	3.82
		1	24		23.57	26.41	2.84
		25	0		22.57	27.83	5.26
		1	0	16QAM	22.01	27.13	5.12
		1	13		22.06	27.12	5.06
		1	24		22.48	26.44	3.96
		25	0		21.53	27.80	6.27

Test Data (10MHz bandwidth Mode)

Channel	Frequency (MHz)	No.RB	RB START	Modulation	Max Power(RMS)	Max Power (PK)	PAR
23780	709.0	1	0	QPSK	22.99	26.99	4.00
		1	25		22.83	26.47	3.64
		1	49		22.79	26.79	4.00
		50	0		21.76	27.01	5.25
		1	0	16QAM	22.20	26.85	4.65
		1	25		22.79	26.60	3.81
		1	49		22.29	26.81	4.52
		27	0		20.90	26.63	5.73
23790	710.0	1	0	QPSK	23.05	26.79	3.74
		1	25		22.71	26.55	3.84
		1	49		22.83	26.45	3.62
		50	0		21.73	26.51	4.78
		1	0	16QAM	22.08	26.64	4.56

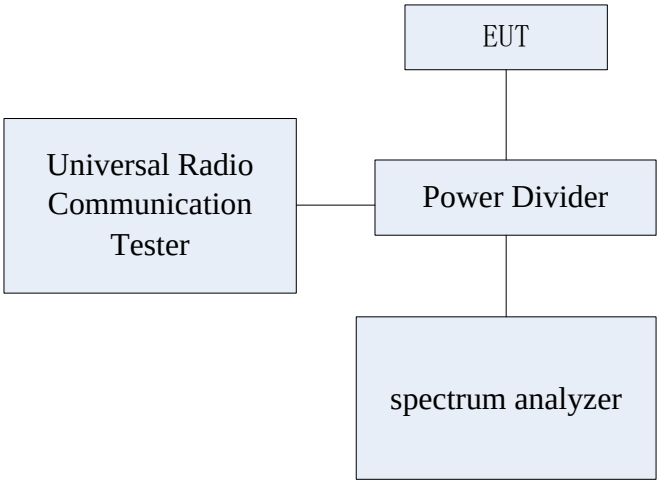
		1	25		22.09	26.50	4.41
		1	49		22.53	26.60	4.07
		27	0		20.63	27.06	6.43
23800	711.0	1	0	QPSK	22.53	26.53	4.00
		1	25		23.04	26.76	3.72
		1	49		22.67	25.81	3.14
		50	0		21.60	26.51	4.91
		1	0	16QAM	21.41	26.35	4.94
		1	25		21.36	26.39	5.03
		1	49		21.49	25.86	4.37
		27	0		20.76	26.71	5.95

5.2 Occupied Bandwidth

Specifications:	FCC Part 2.1049, 22.917(b), 24.238(b)
DUT Serial Number:	868020030062938
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	--

Test Setup

During the test, the EUT was controlled via the Wireless Communications Test Set to ensure max power transmission and proper modulation and measured by spectrum analyzer.



Test Method

The 99% occupied Bandwidth was calculated from the spectrum analyzer. Markers in the spectrum analyzer were then placed between the calculated frequencies to show the calculated 99% power Band. The 26dB Bandwidth was also measured and recorded.

Note: --

5.2.1 GSM Mode Occupied Bandwidth Results

Band	EUT channel No.	Mode	99% OBW (MHz)	-26dBc OBW (MHz)
GSM850	128	GMSK	0.25	0.32
		8PSK	0.24	0.31
	190	GMSK	0.24	0.31
		8PSK	0.24	0.30
	251	GMSK	0.24	0.30
		8PSK	0.24	0.30
PCS1900	512	GMSK	0.24	0.31
		8PSK	0.25	0.31
	661	GMSK	0.24	0.32
		8PSK	0.25	0.31
	810	GMSK	0.24	0.31
		8PSK	0.25	0.31

5.2.2 WCDMA Band mode occupied bandwidth Results

Band	EUT channel No.	Mode	99% OBW (MHz)	-26dBc OBW (MHz)
B2	9400 (1880.0 MHz)	QPSK	4.16	4.72
B4	1412 (1732.4MHz)	QPSK	4.16	4.74
B5	4182 (836.4MHz)	QPSK	4.16	4.71
B2	9400 (1880.0 MHz)	16QAM	4.13	4.74
B4	1412 (1732.4MHz)	16QAM	4.12	4.74
B5	4182 (836.4MHz)	16QAM	4.15	4.73

5.2.3 LTE B2 occupied bandwidth Results

Mode	EUT channel No.	bandwidth	No. RB	RB offset	99% occupied bandwidth [MHz]	-26dBc occupied bandwidth [MHz]
QPSK	18900 (1880MHz)	1.4MHz	6	0	1.08	1.24
		3MHz	15		2.68	2.89
		5MHz	25		4.45	4.88
		10MHz	50		8.91	9.45
		15MHz	75		13.46	14.42
		20MHz	100		17.88	18.65
16QAM		1.4MHz	6		1.08	1.23
		3MHz	15		2.68	2.88
		5MHz	25		4.45	4.83
		10MHz	50		8.91	9.42
		15MHz	75		13.41	14.37
		20MHz	100		17.88	18.94

5.2.4 LTE B4 occupied bandwidth Results

Mode	EUT channel No.	bandwidth	No. RB	RB offset	99% occupied bandwidth [MHz]	-26dBc occupied bandwidth [MHz]
QPSK	20175 (1732.5MHz)	1.4MHz	6	0	1.08	1.22
		3MHz	15		2.68	2.87
		5MHz	25		4.48	4.88
		10MHz	50		8.97	9.48
		15MHz	75		13.41	14.27
		20MHz	100		17.88	18.89
16QAM		1.4MHz	6		1.08	1.24
		3MHz	15		2.68	2.87
		5MHz	25		4.47	4.79
		10MHz	50		8.91	9.45
		15MHz	75		13.46	14.27
		20MHz	100		17.88	18.89

5.2.5 LTE B5 occupied bandwidth Results

Mode	EUT channel No.	bandwidth	No. RB	RB offset	99% occupied bandwidth [MHz]	-26dBc occupied bandwidth [MHz]
QPSK	20525 (836.5MHz)	1.4MHz	6	0	1.08	1.21
		3MHz	15		2.68	2.86
		5MHz	25		4.45	4.77
		10MHz	50		8.94	9.39
16QAM		1.4MHz	6		1.08	1.21
		3MHz	15		2.68	2.82
		5MHz	25		4.47	4.83
		10MHz	50		8.91	9.29

5.2.6 LTE B12 occupied bandwidth Results

Mode	EUT channel No.	bandwidth	No. RB	RB offset	99% occupied bandwidth [MHz]	-26dBc occupied bandwidth [MHz]
QPSK	20095 (707.5MHz)	1.4MHz	6	0	1.08	1.22
		3MHz	15		2.68	2.89
		5MHz	25		4.45	4.83
		10MHz	50		8.91	9.42
16QAM		1.4MHz	6		1.08	1.20
		3MHz	15		2.68	2.83
		5MHz	25		4.47	4.87
		10MHz	50		8.91	9.35

5.2.7 LTE B13 occupied bandwidth Results

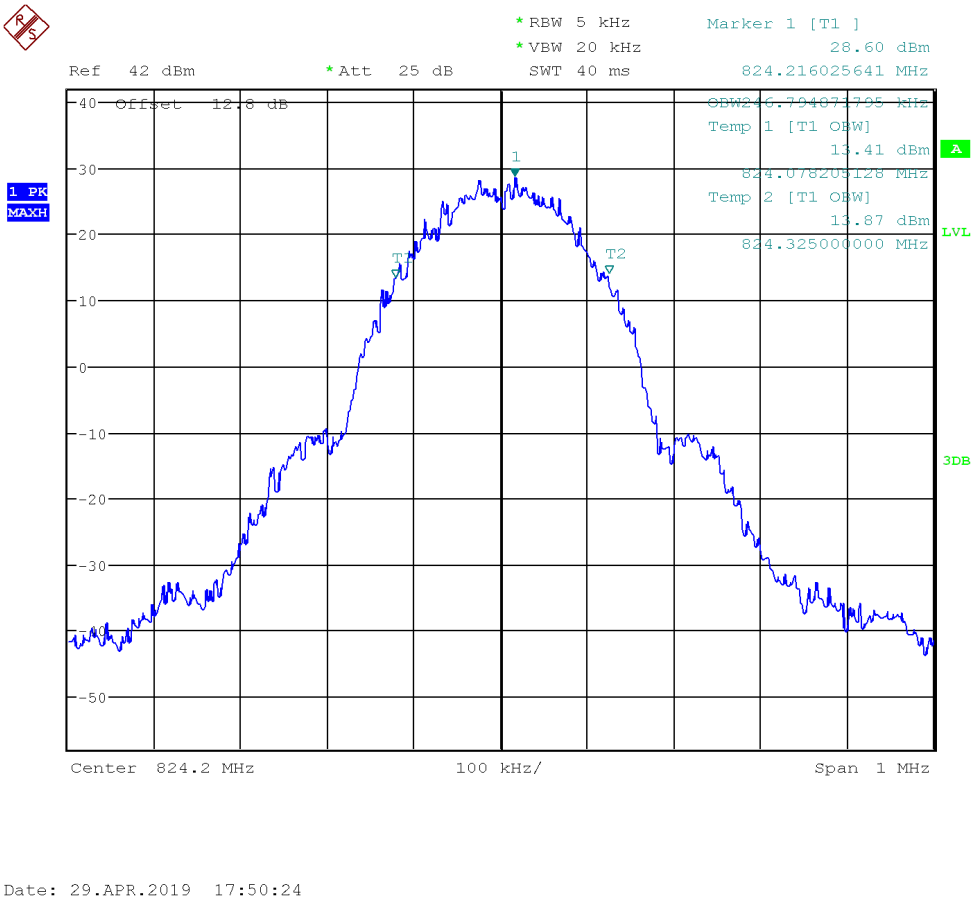
Mode	EUT channel No.	bandwidth	No. RB	RB offset	99% occupied bandwidth [MHz]	-26dBc occupied bandwidth [MHz]
QPSK	20230 (782MHz)	5MHz	25	0	4.47	4.83
		10MHz	50		8.97	9.45
16QAM		5MHz	25		4.47	4.84
		10MHz	50		8.97	9.36

5.2.8 LTE B17 occupied bandwidth Results

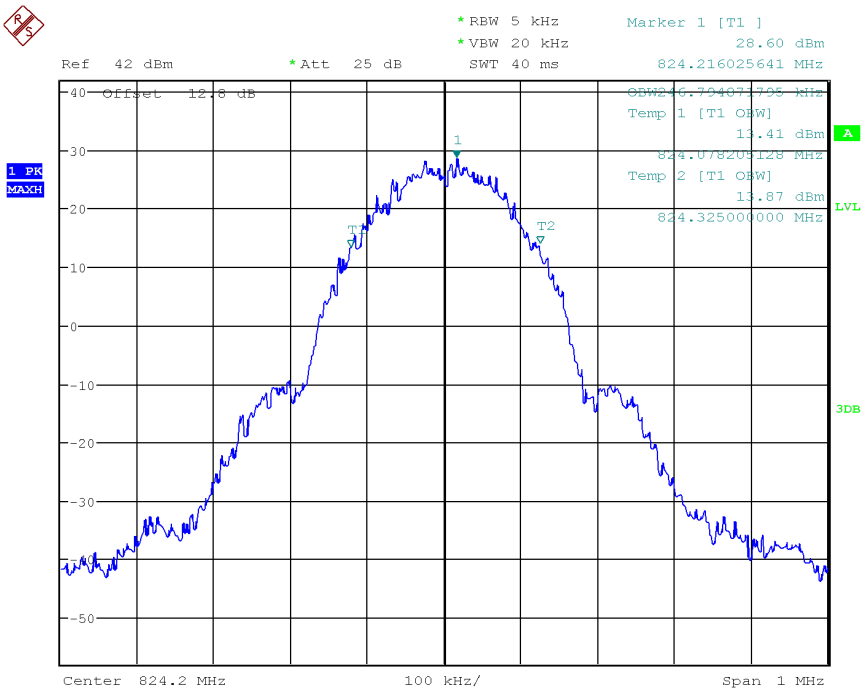
Mode	EUT channel No.	bandwidth	No. RB	RB offset	99% occupied bandwidth [MHz]	-26dBc occupied bandwidth [MHz]
QPSK	20790 (710MHz)	5MHz	25	0	4.47	4.83
		10MHz	50		8.97	9.45
16QAM		5MHz	25		4.47	4.84

		10MHz	50		8.97	9.36

Graphical results for GSM850:

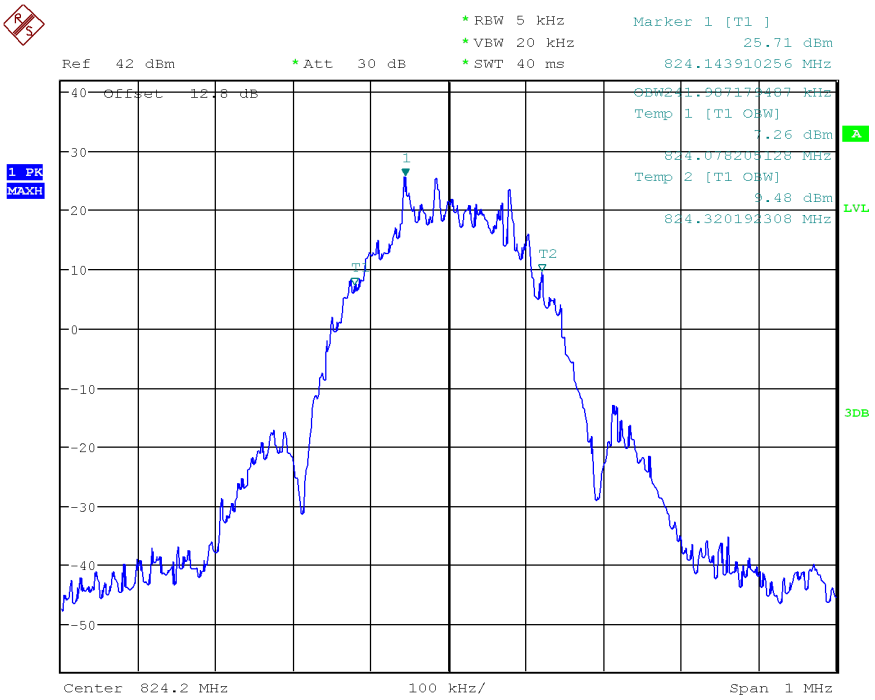


GMSK 99% Channel 128



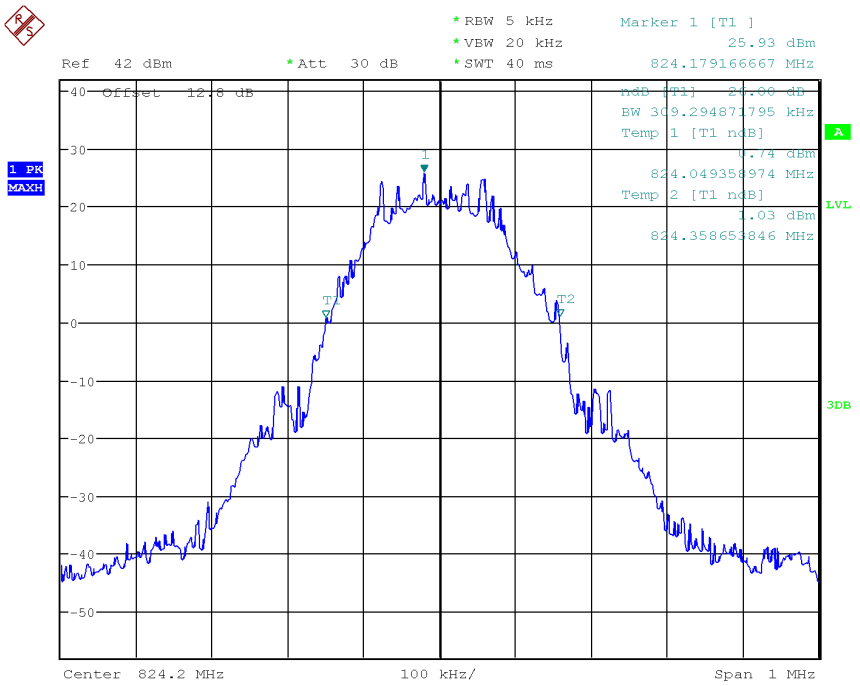
Date: 29.APR.2019 17:50:24

GMSK -26dBc Channel 128



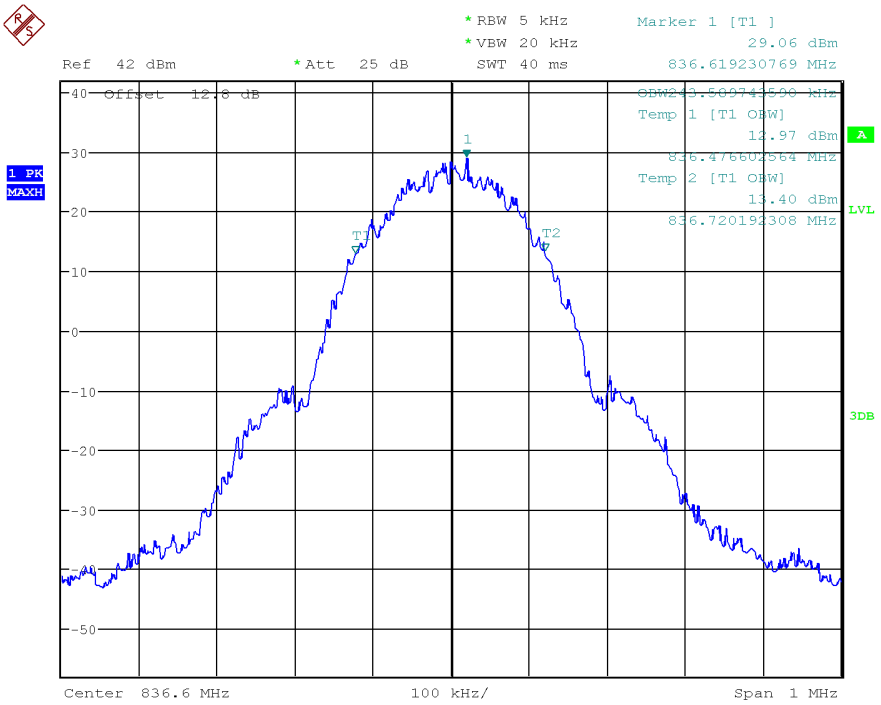
Date: 29.APR.2019 19:02:48

8PSK 99% Channel 128



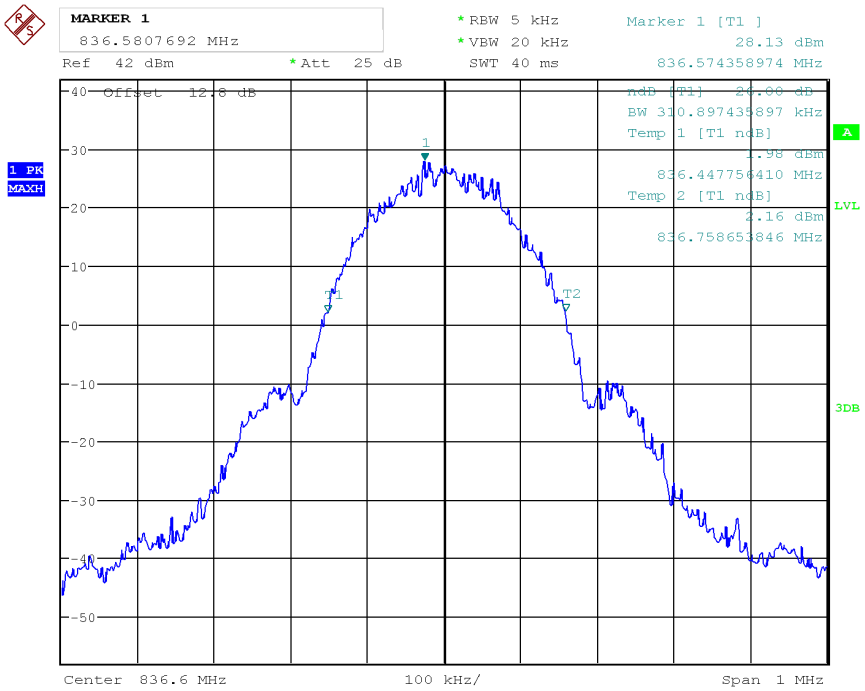
Date: 29.APR.2019 19:02:31

8PSK -26dBc Channel 128



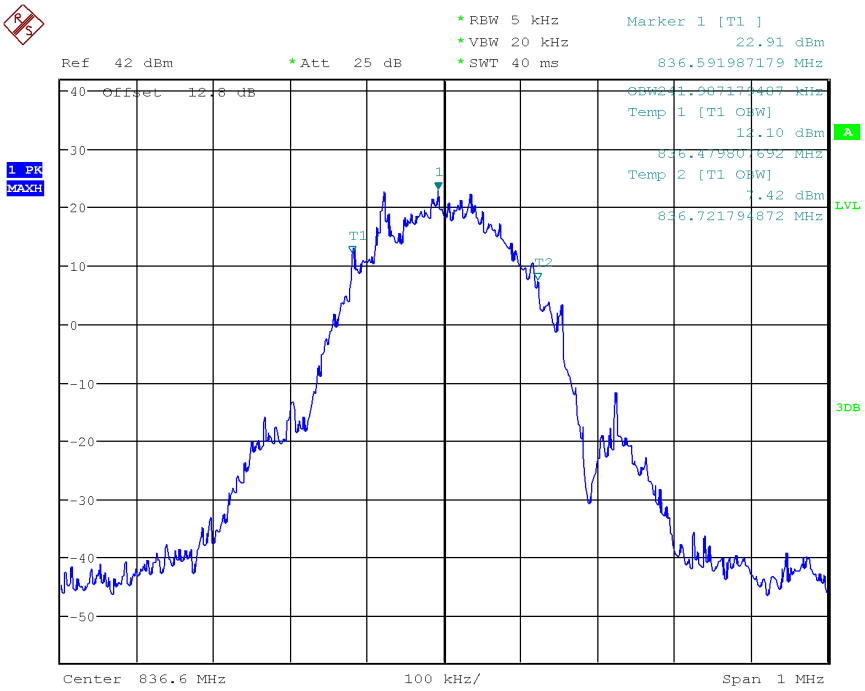
Date: 29.APR.2019 17:51:10

GMSK 99% Channel 190



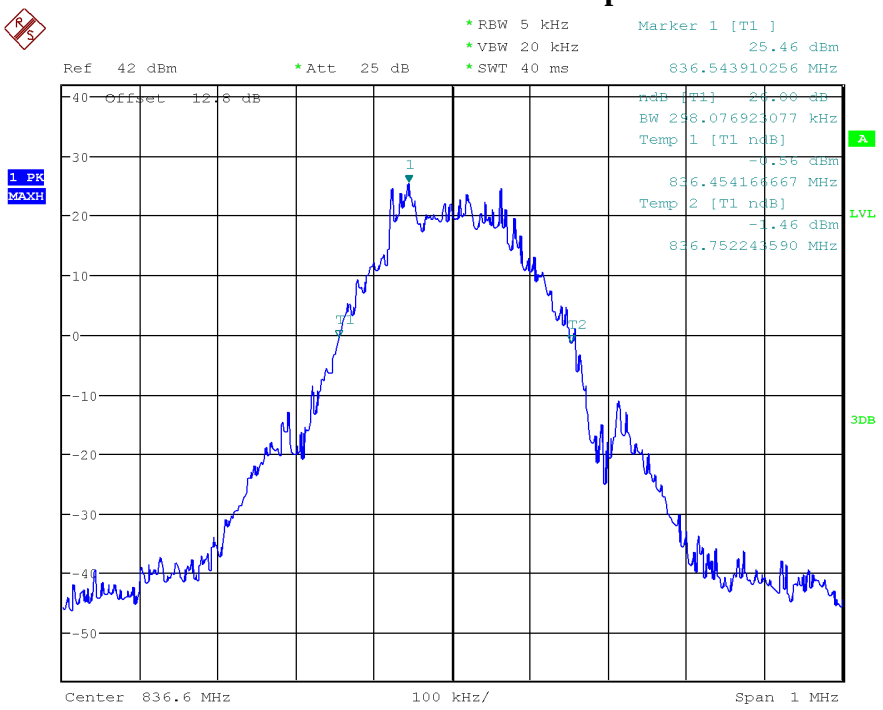
Date: 29.APR.2019 17:51:28

GMSK -26dBc Channel 190



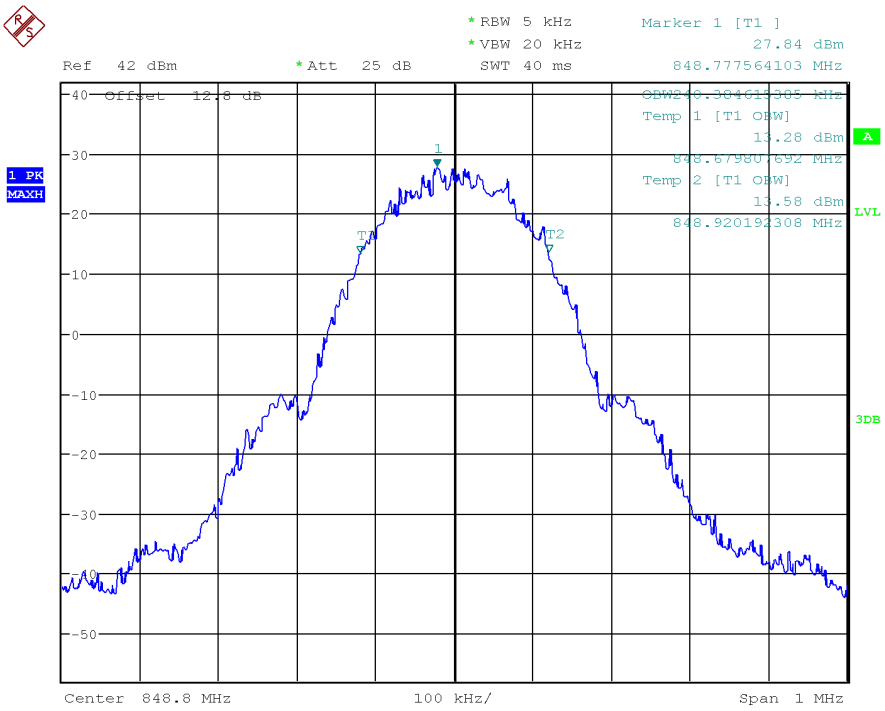
Date: 29.APR.2019 19:00:53

8PSK 99% Channel 190



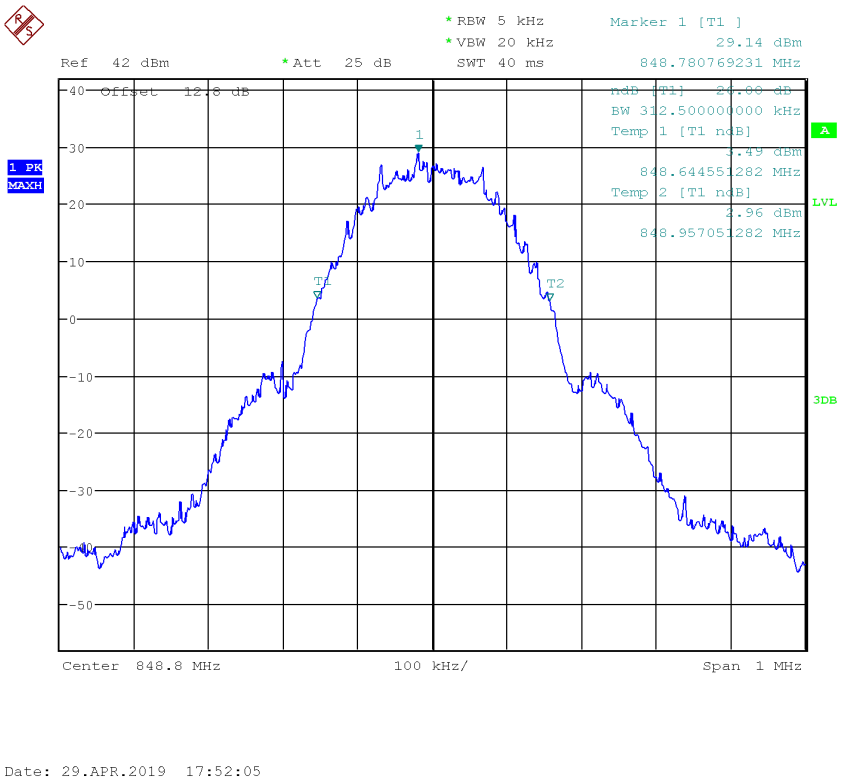
Date: 29.APR.2019 19:00:33

8PSK -26dBc Channel 190



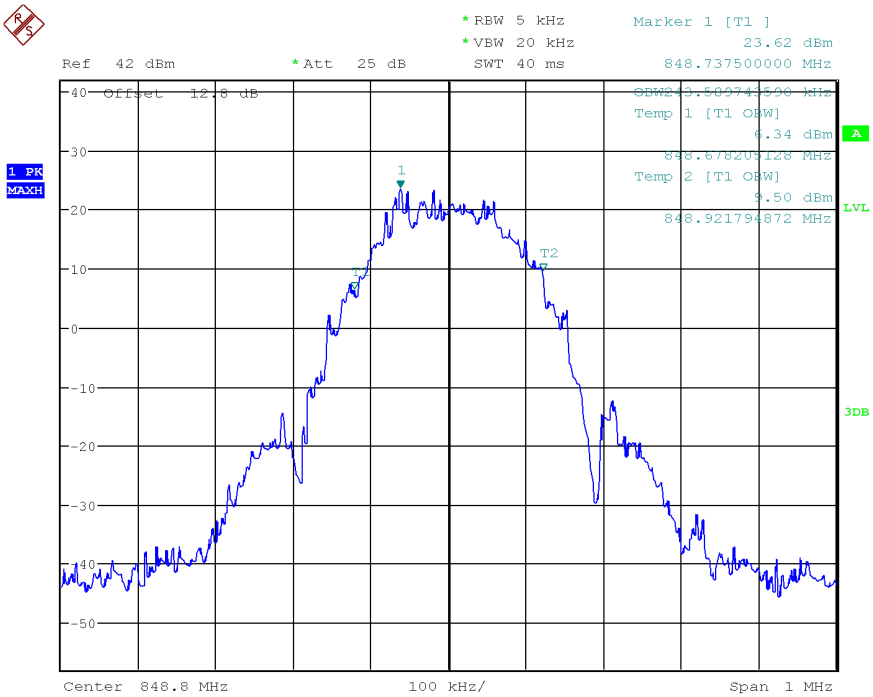
Date: 29.APR.2019 17:52:26

GMSK 99% Channel 251



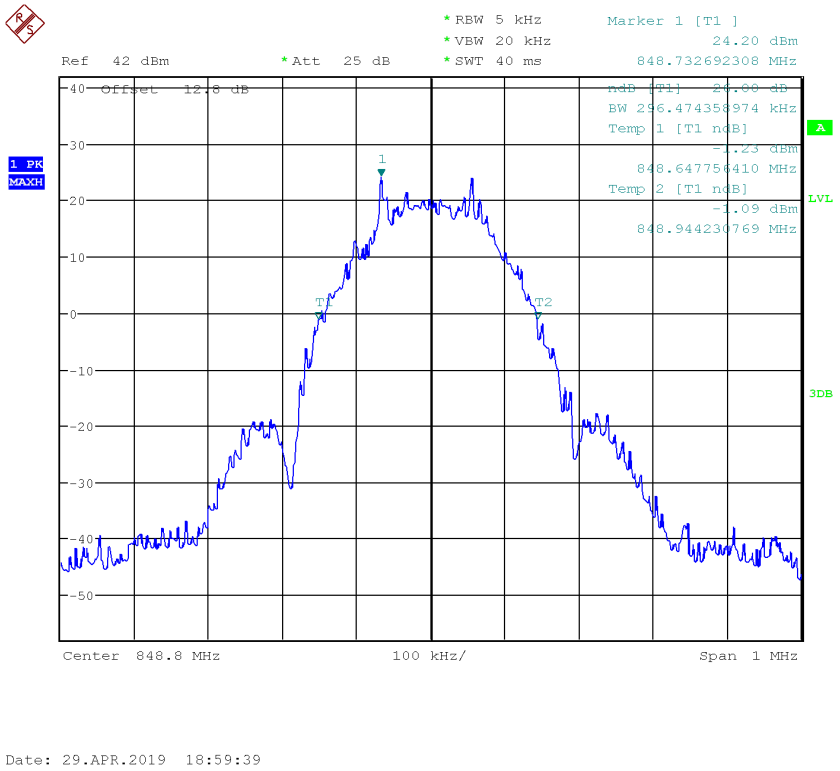
Date: 29.APR.2019 17:52:05

GMSK -26dBc Channel 251



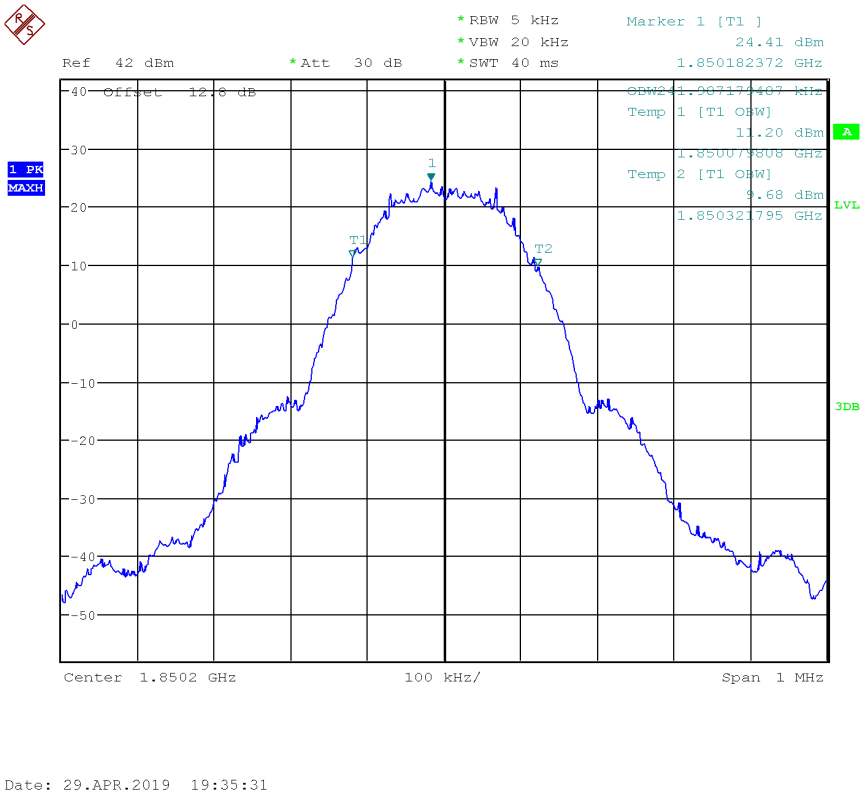
Date: 29.APR.2019 18:59:01

8PSK 99% Channel 251

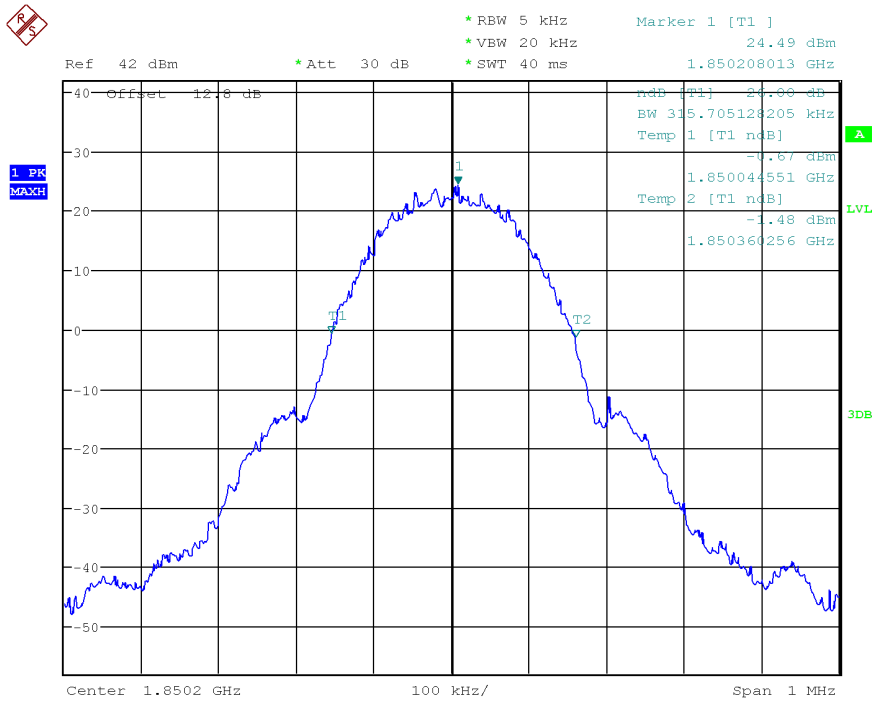


8PSK -26dBc Channel 251

Graphical results for GSM1900:

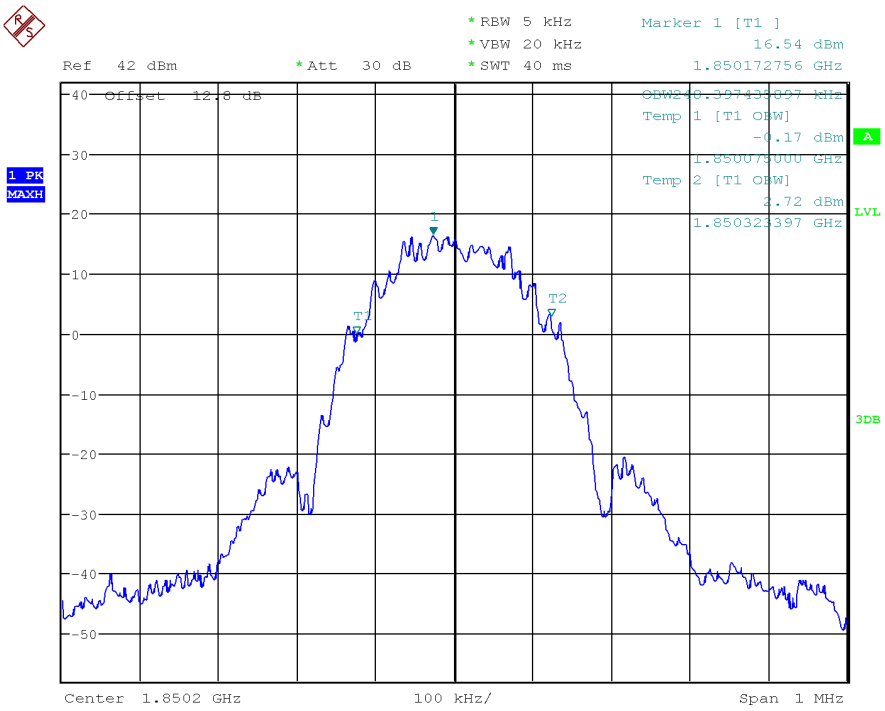


GMSK 99% Channel 512



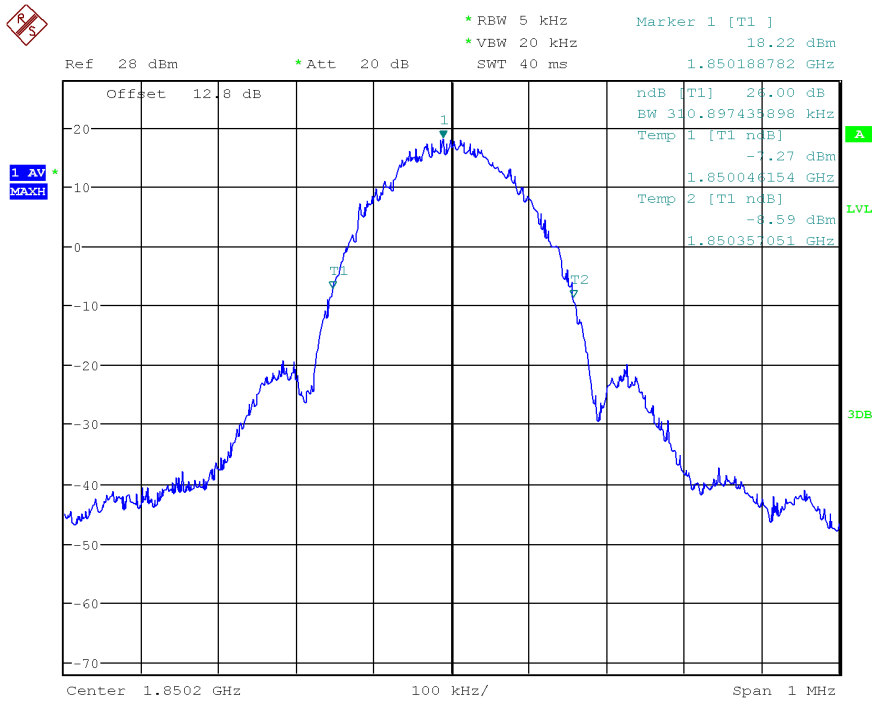
Date: 29.APR.2019 19:37:05

GMSK -26dBc Channel 512



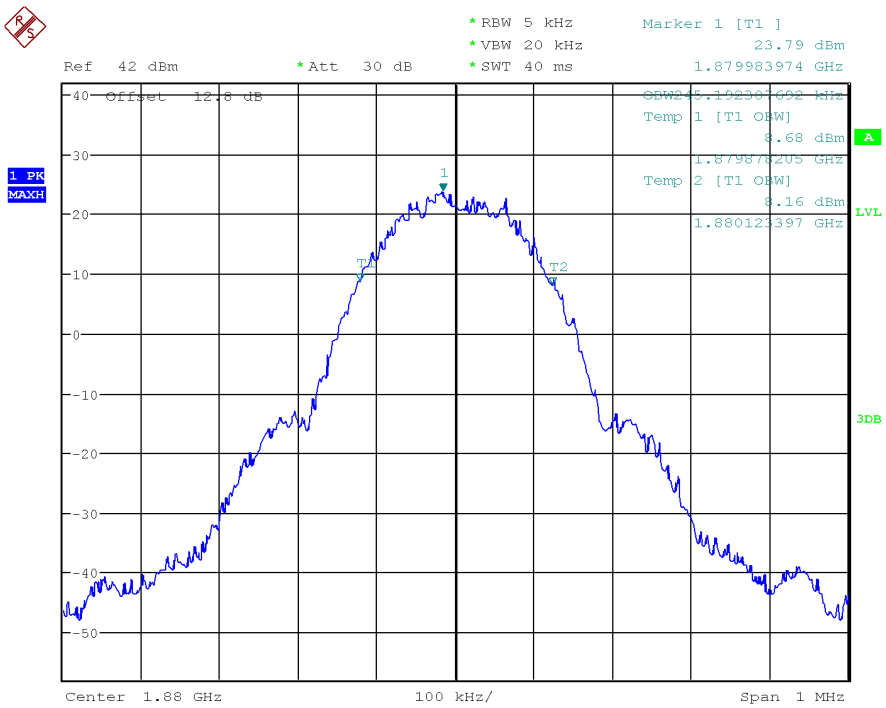
Date: 29.APR.2019 19:51:38

8PSK 99% Channel 512



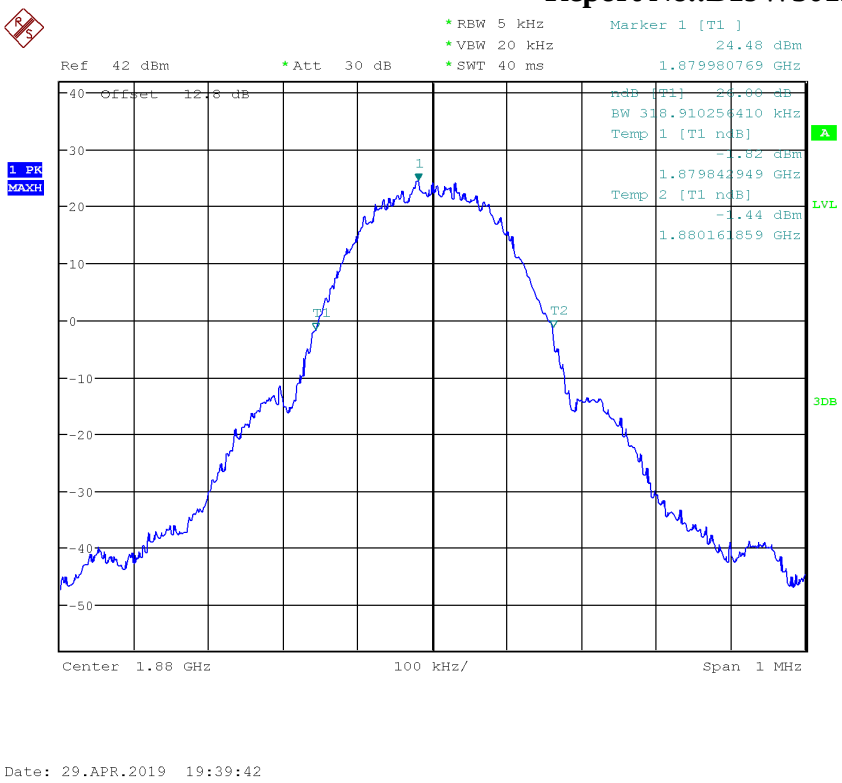
Date: 29.APR.2019 20:13:11

8PSK -26dBc Channel 512

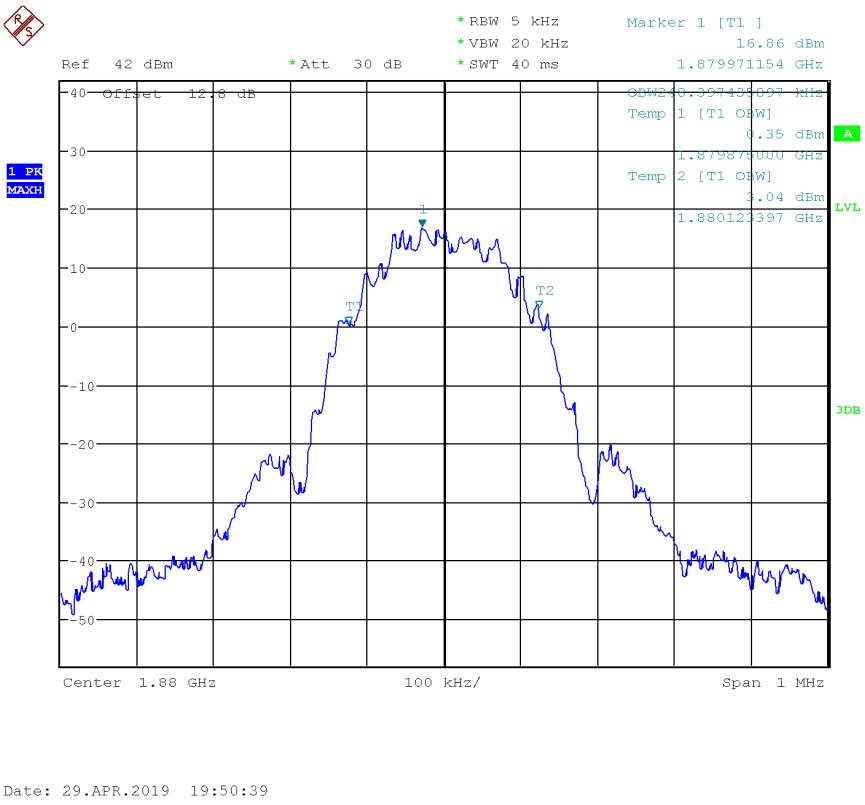


Date: 29.APR.2019 19:40:33

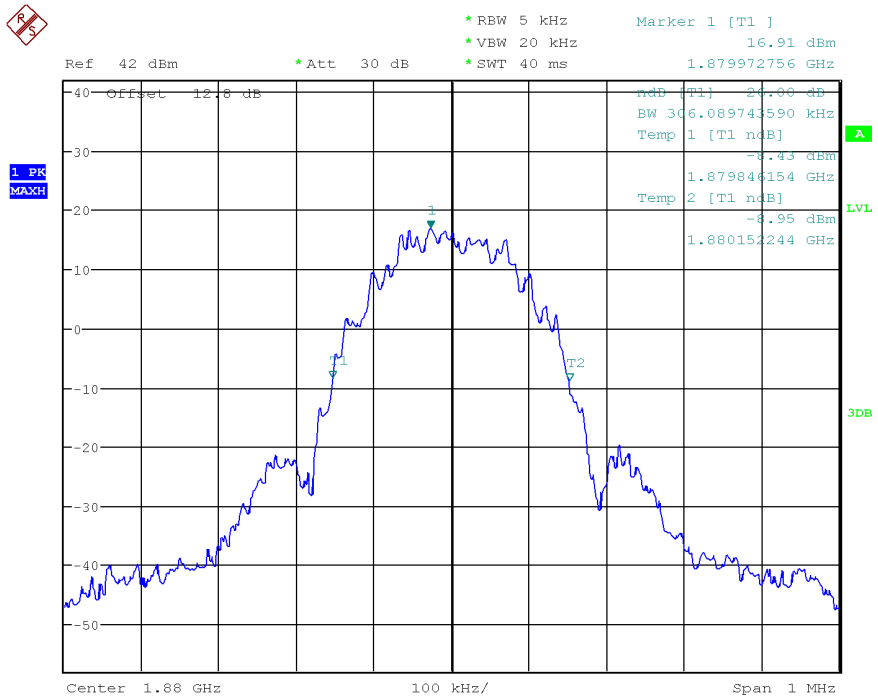
GMSK 99% Channel 661



GMSK -26dBc Channel 661

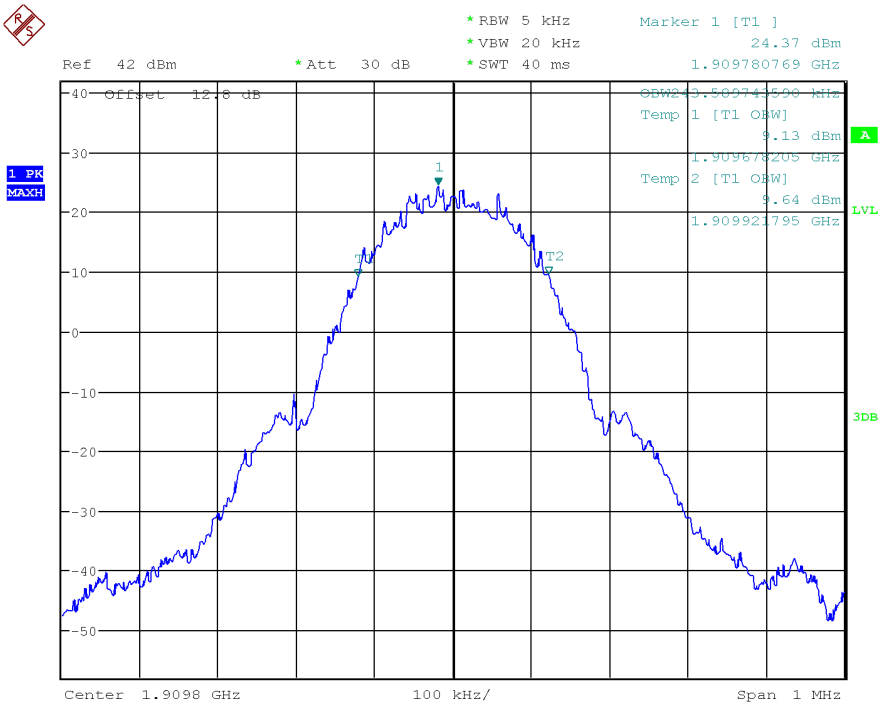


8PSK 99% Channel 661



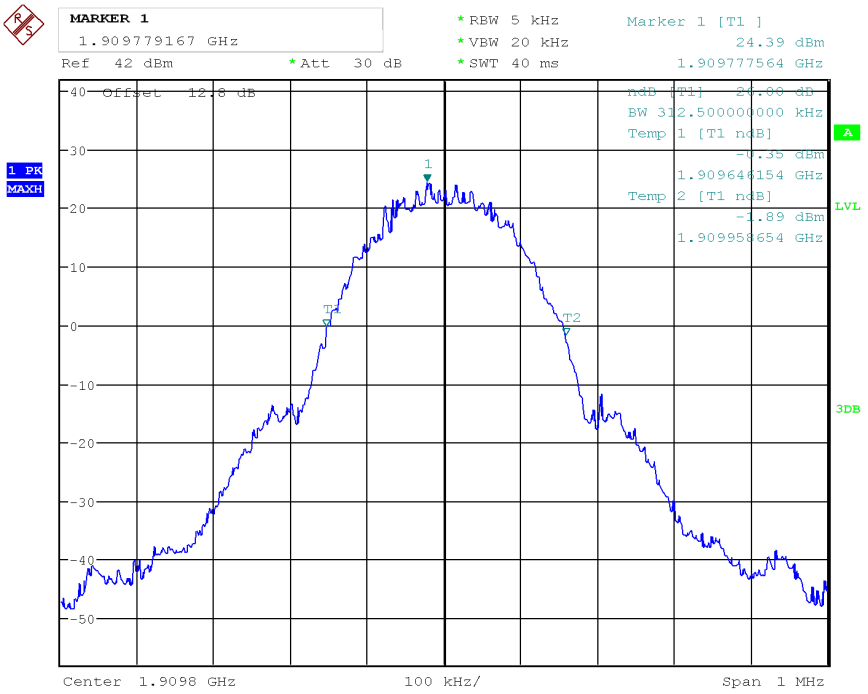
Date: 29.APR.2019 19:50:14

8PSK -26dBc Channel 661



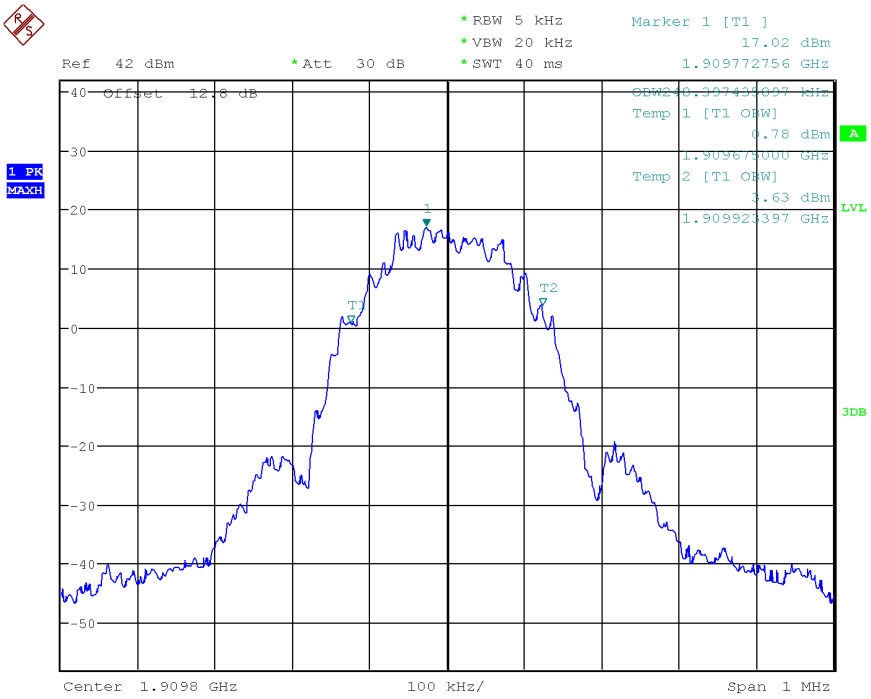
Date: 29.APR.2019 19:41:23

GMSK 99% Channel 810



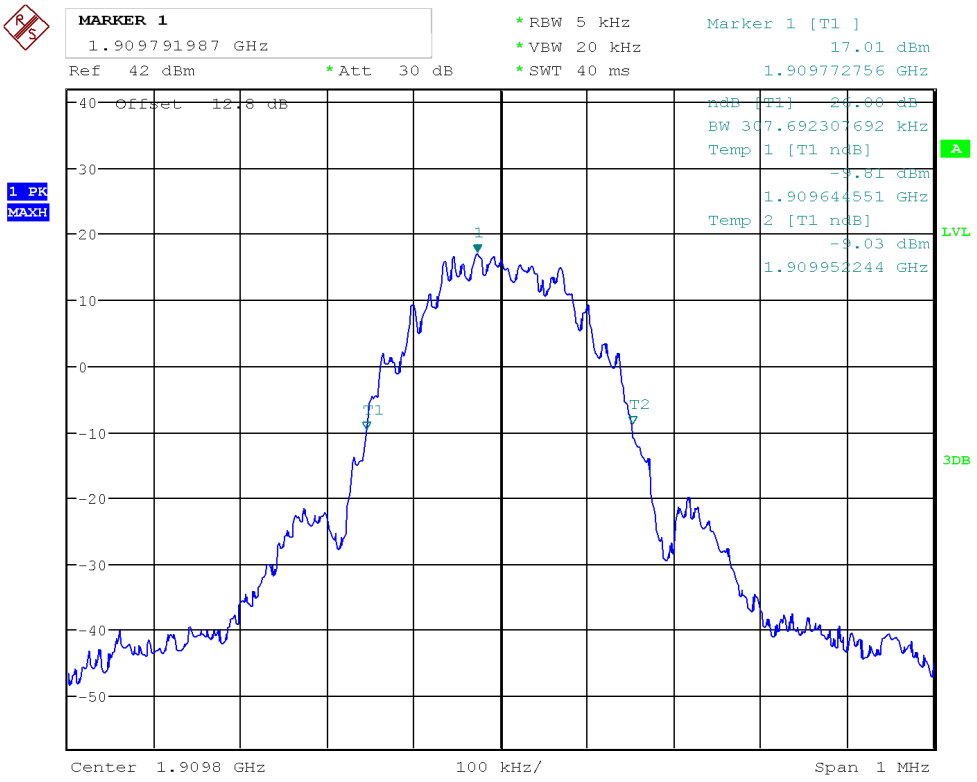
Date: 29.APR.2019 19:43:29

GMSK -26dBc Channel 810



Date: 29.APR.2019 19:48:51

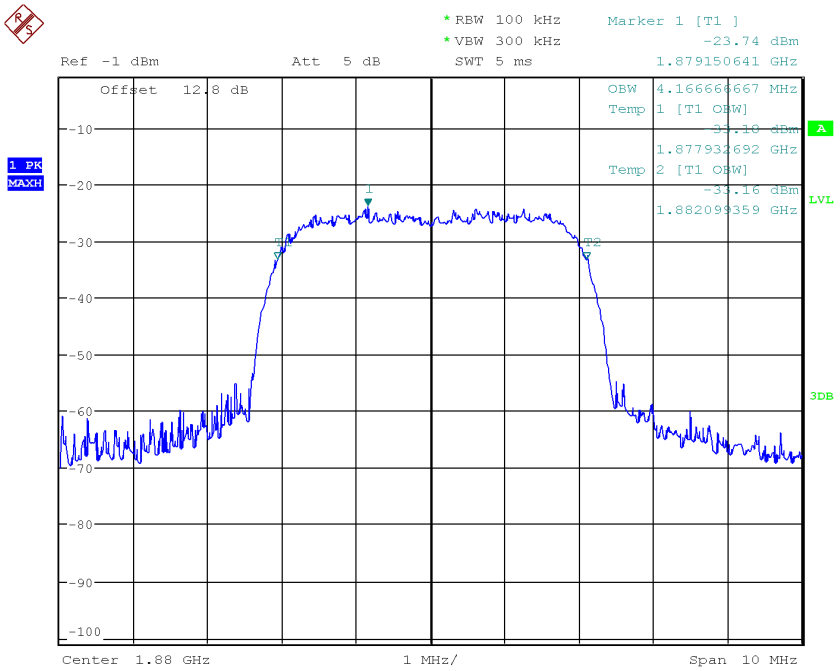
8PSK 99% Channel 810



Date: 29.APR.2019 19:49:19

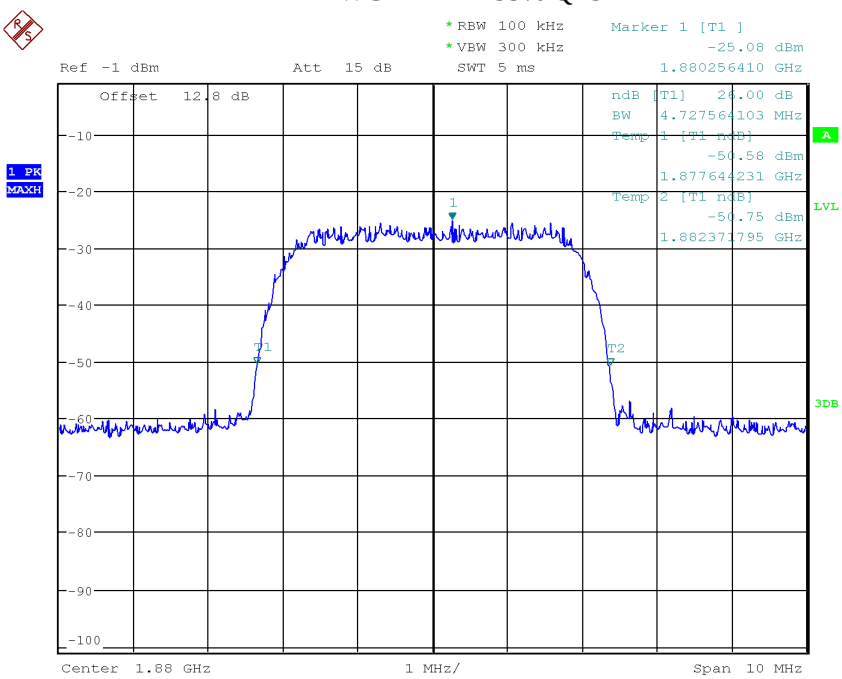
8PSK -26dBc Channel 810

Graphical results for WCDMA Band2:



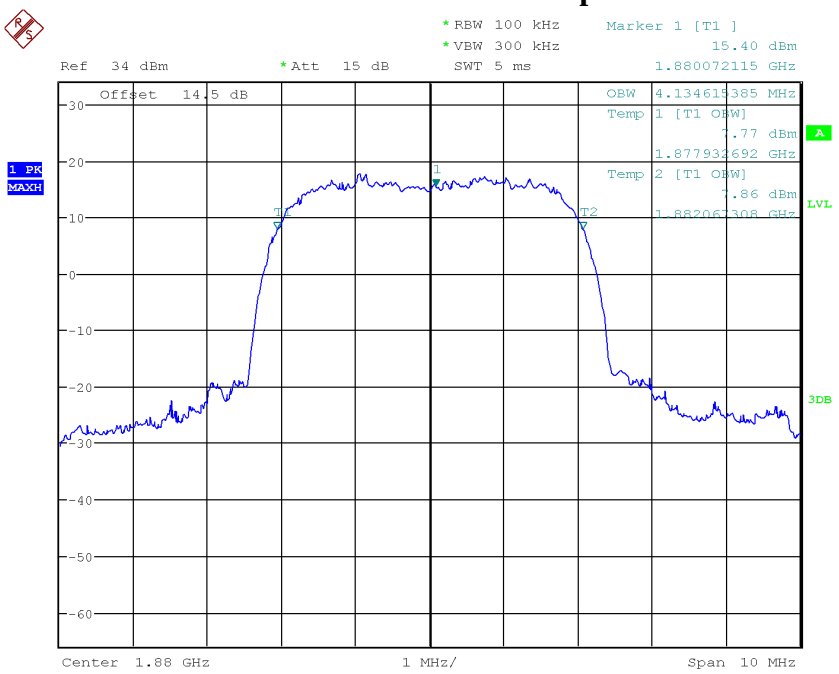
Date: 30.APR.2019 09:59:55

WCDMA B2 99% QPSK



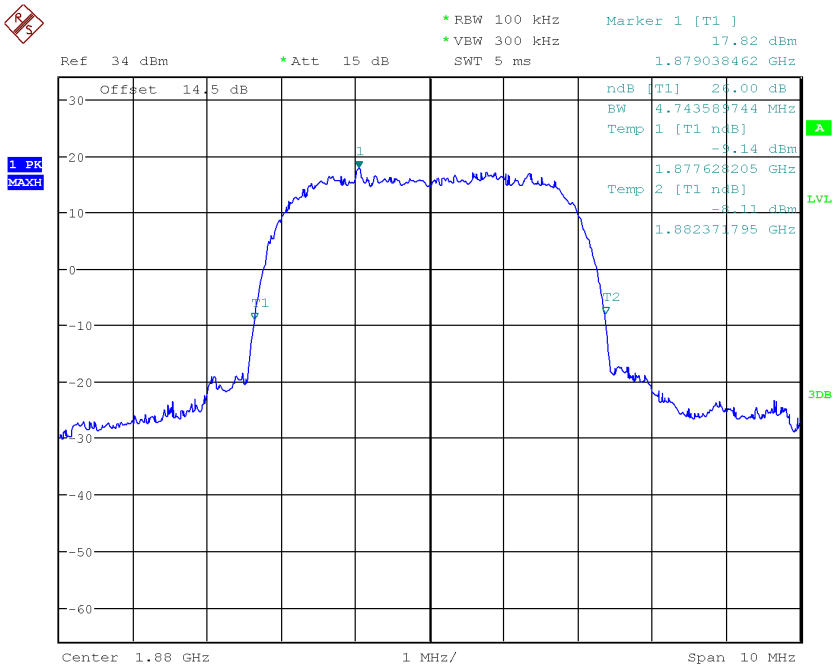
Date: 30.APR.2019 10:00:11

WCDMA B2 -26dBc QPSK



Date: 7.MAY.2019 14:03:37

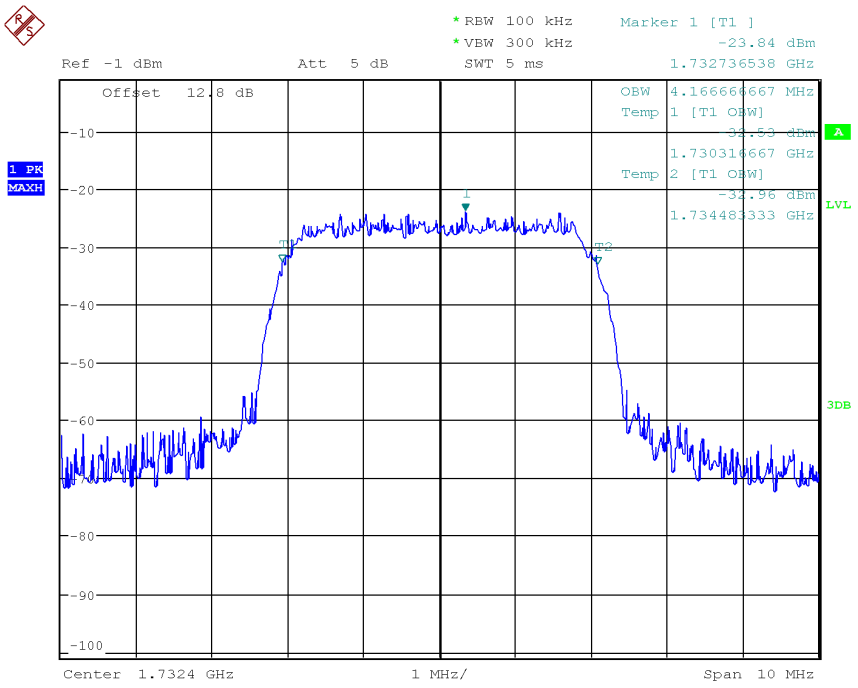
WCDMA B2 99% 16QAM



Date: 7.MAY.2019 14:13:17

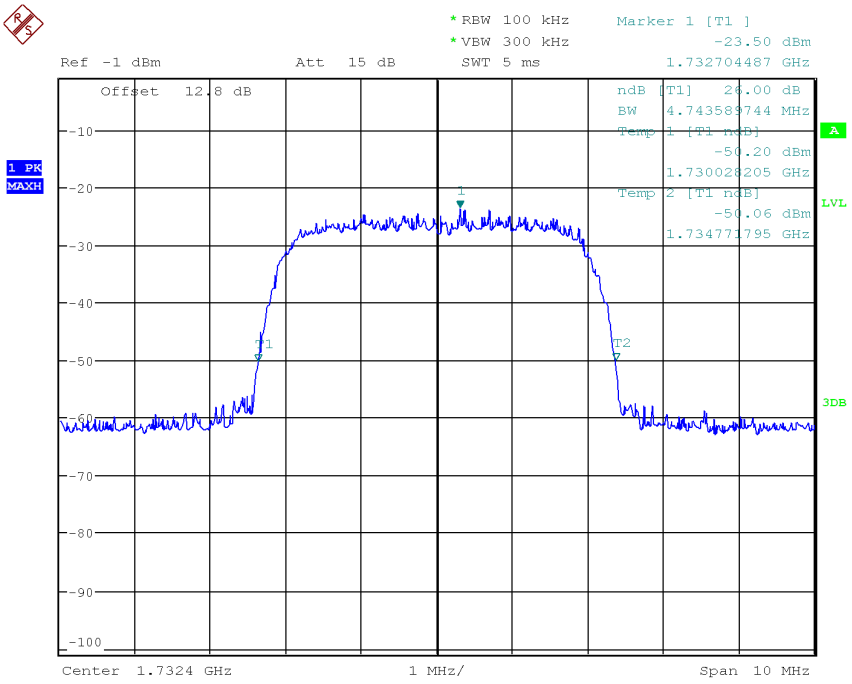
WCDMA B2 -26dBc 16QAM

Graphical results for WCDMA Band4:



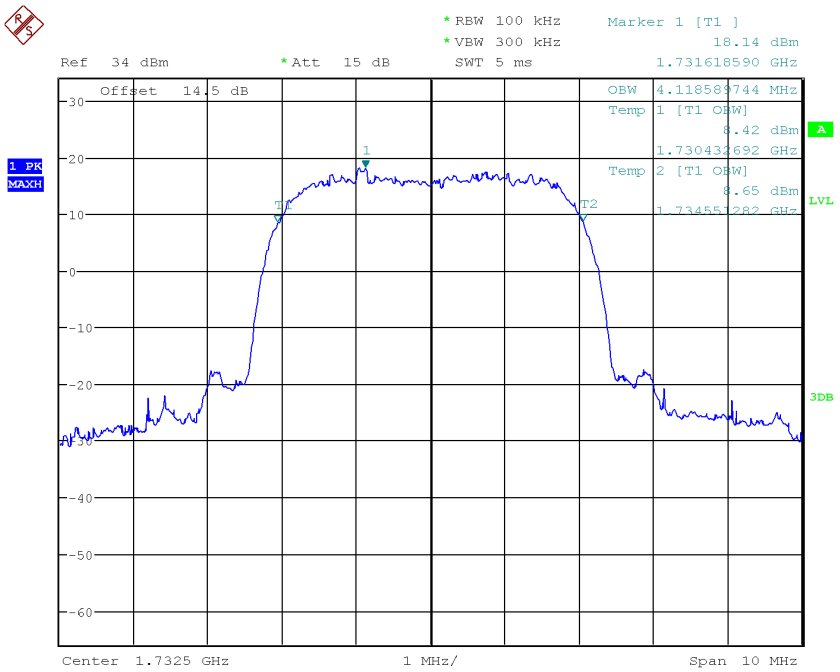
Date: 30.APR.2019 10:01:51

WCDMA B4 99% QPSK



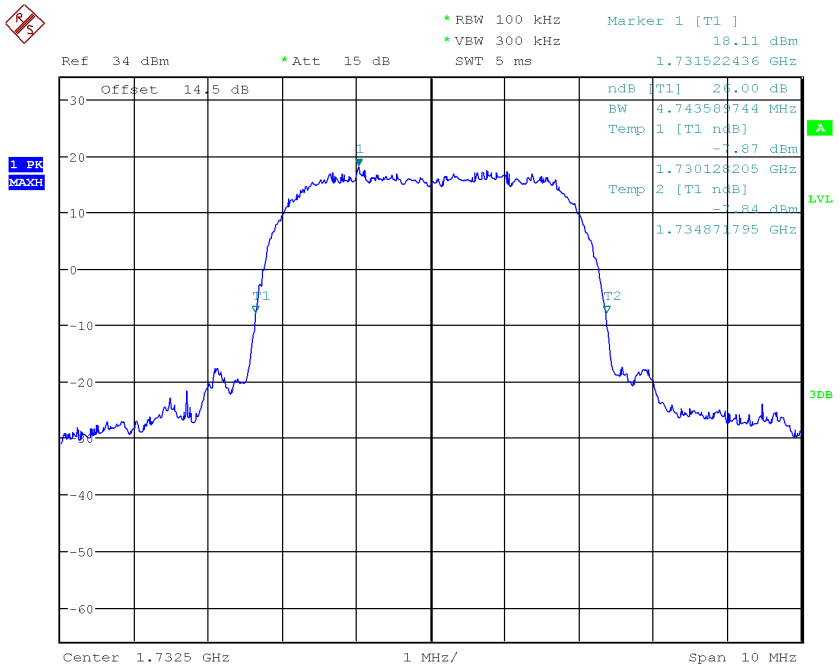
Date: 30.APR.2019 10:01:16

WCDMA B4 -26dBc QPSK



Date: 7.MAY.2019 14:11:30

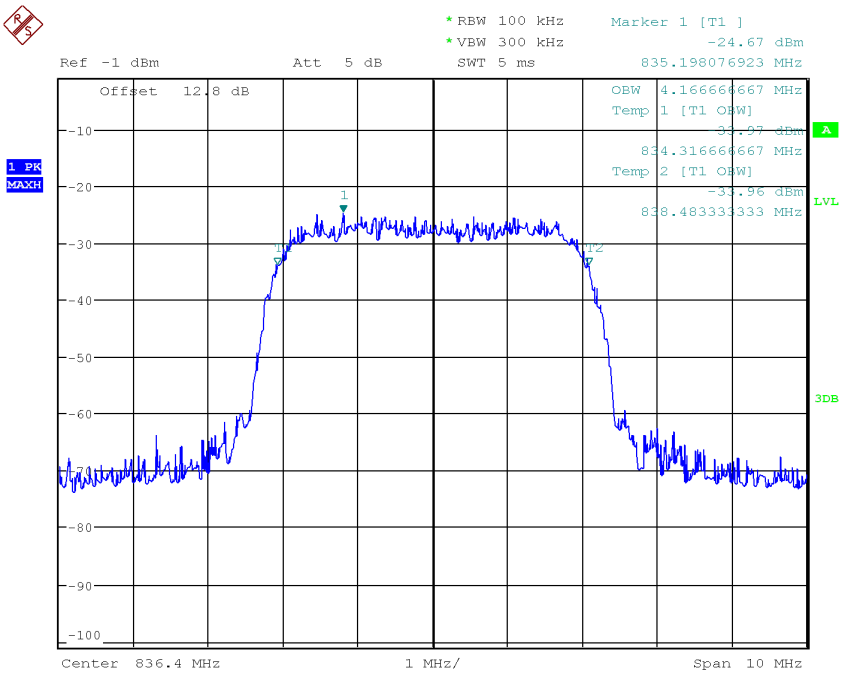
WCDMA B4 99% 16QAM



Date: 7.MAY.2019 14:12:18

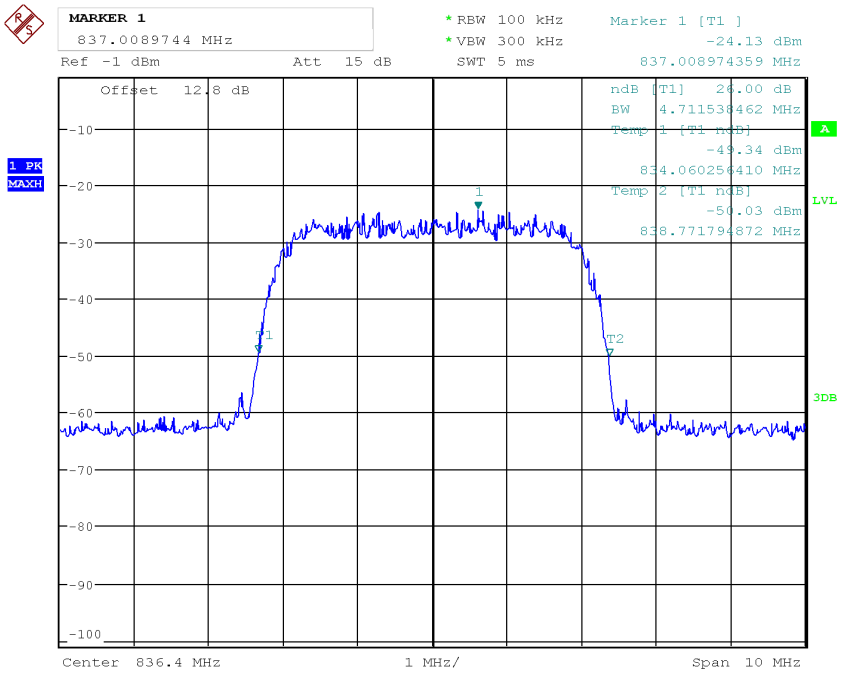
WCDMA B4 -26dBc 16QAM

Graphical results for WCDMA Band5:



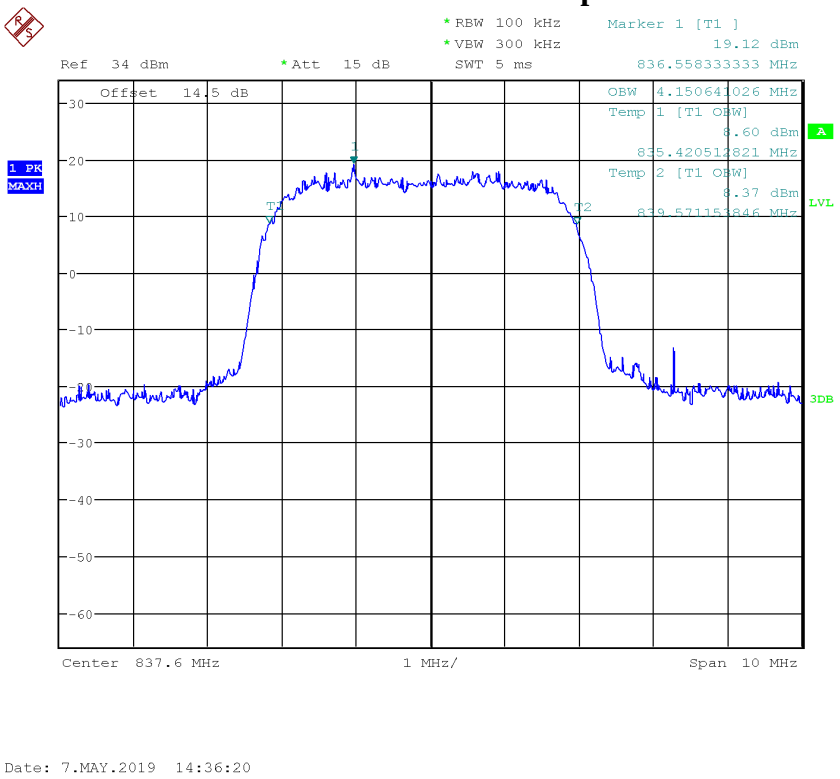
Date: 30.APR.2019 10:02:42

WCDMA B5 99% QPSK

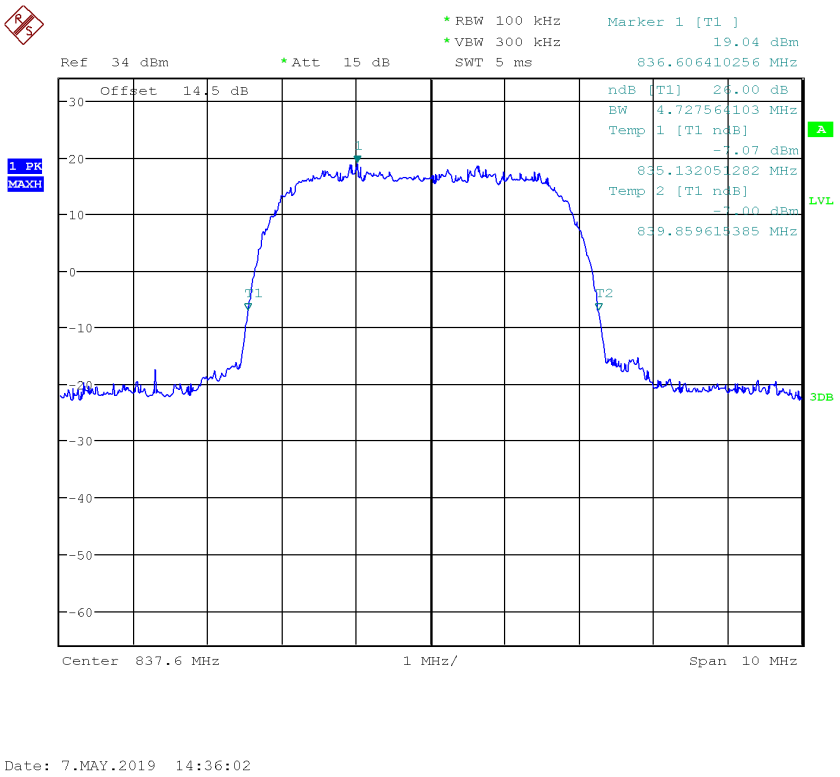


Date: 30.APR.2019 10:03:02

WCDMA B5 -26dBc QPSK

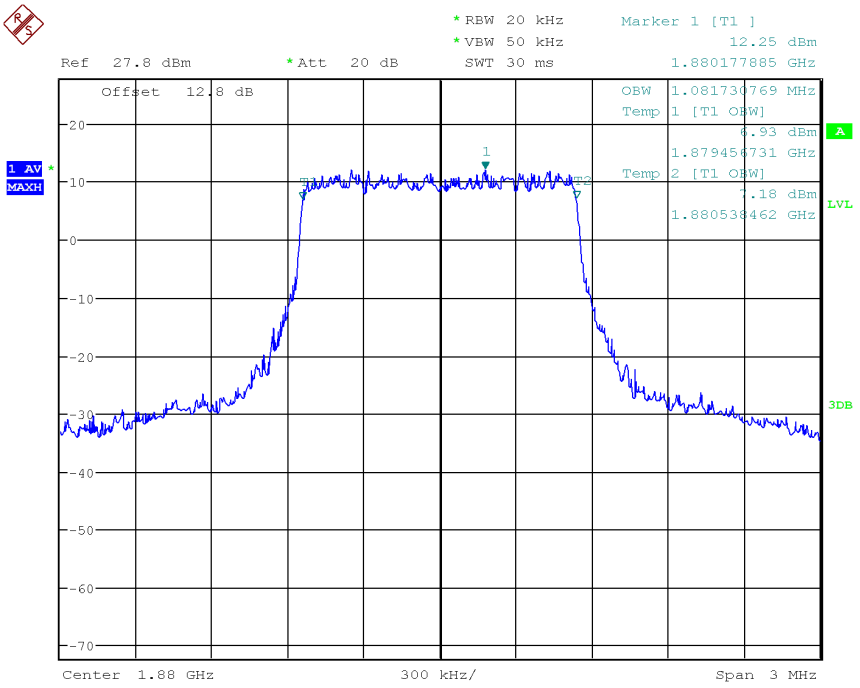


WCDMA B5 99% 16QAM



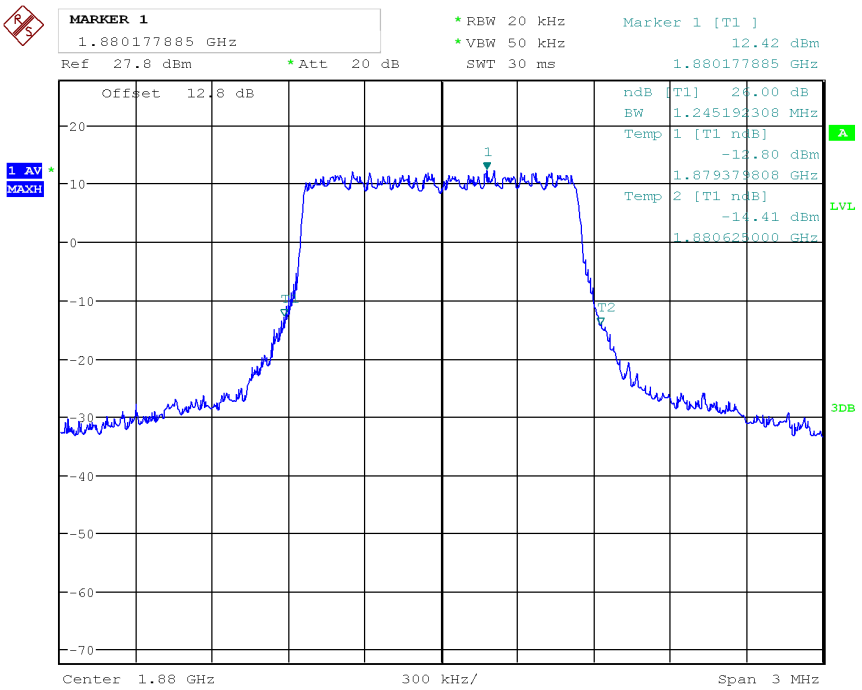
WCDMA B5 -26dBc 16QAM

Graphical results for LTE B2:



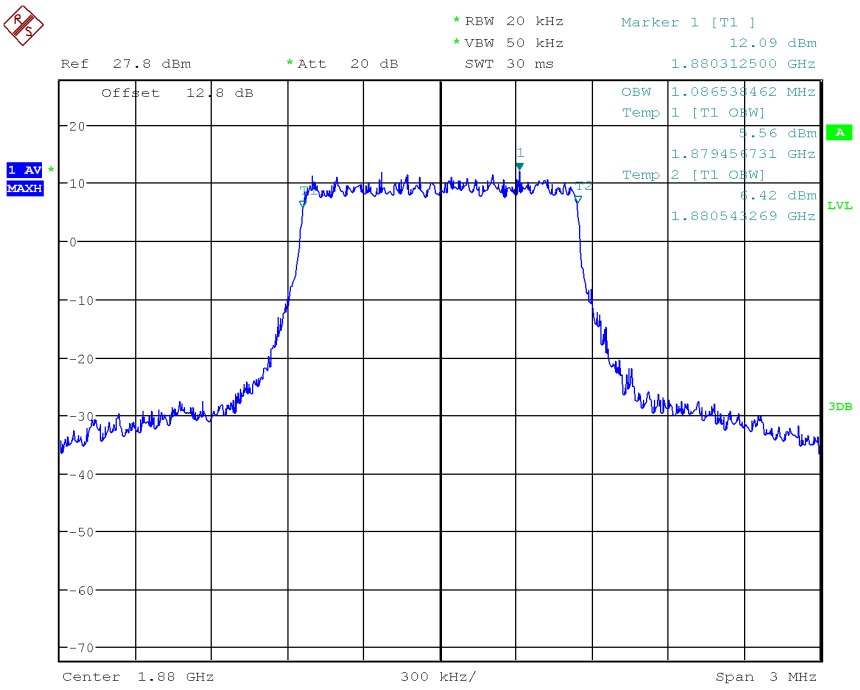
Date: 28.APR.2019 19:31:52

LTE Band2 QPSK 99% Channel 18900 BW=1.4MHz RB=6 RB Offset=0



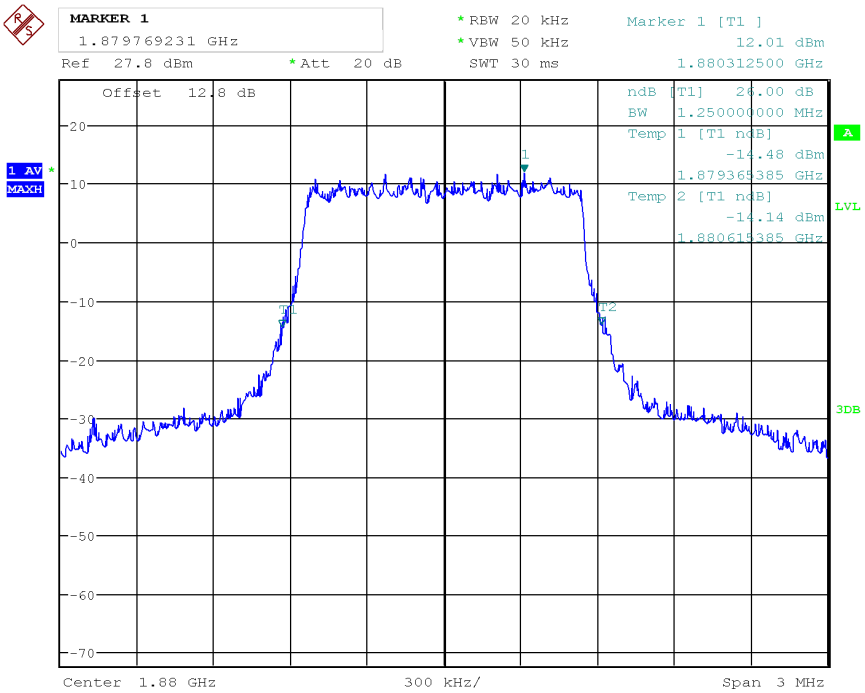
Date: 28.APR.2019 19:31:34

LTE Band2 QPSK -26dBc Channel 18900 BW=1.4MHz RB=6 RB Offset=0



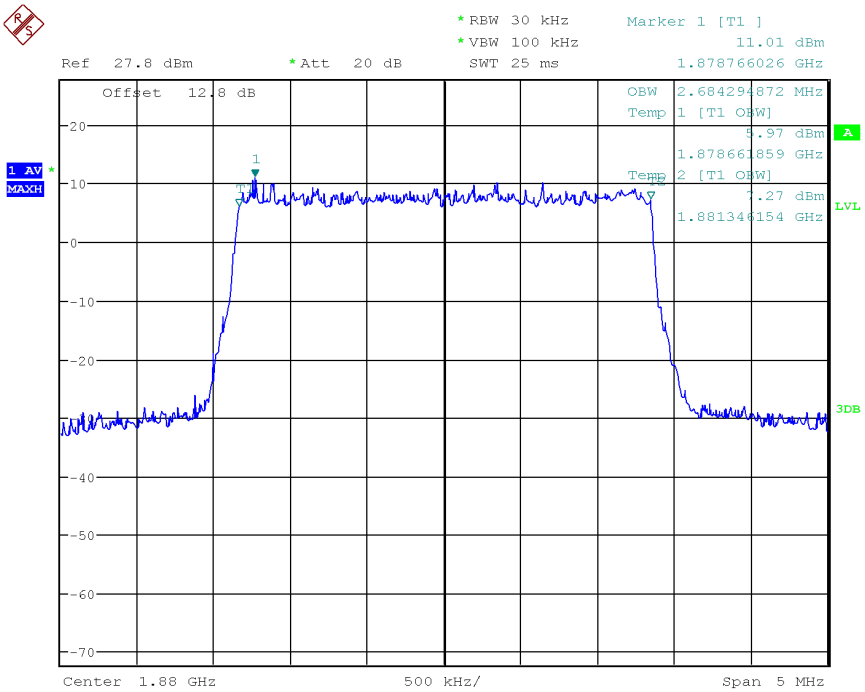
Date: 28.APR.2019 19:32:16

LTE Band2 16QAM 99% Channel 18900 BW=1.4MHz RB=6 RB Offset=0



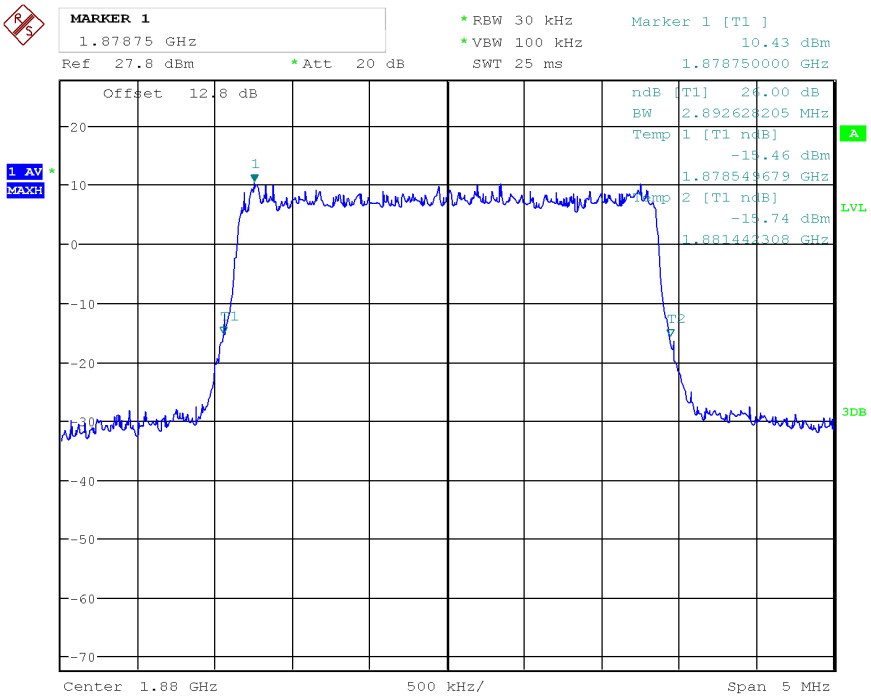
Date: 28.APR.2019 19:32:34

LTE Band2 16QAM -26dBc Channel 18900 BW=1.4MHz RB=6 RB Offset=0



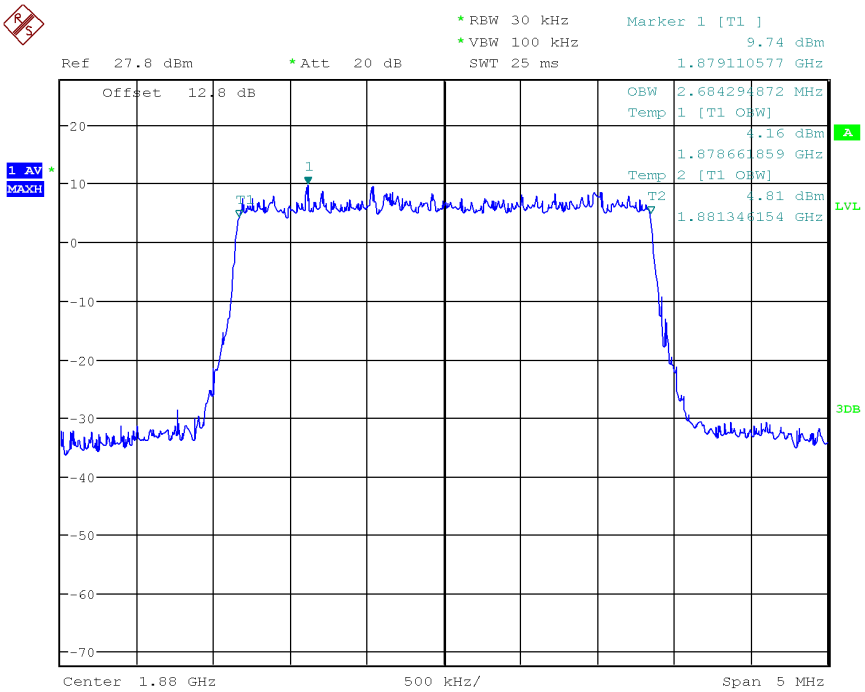
Date: 28.APR.2019 19:33:49

LTE Band2 QPSK 99% Channel 18900 BW=3MHz RB=15 RB Offset=0



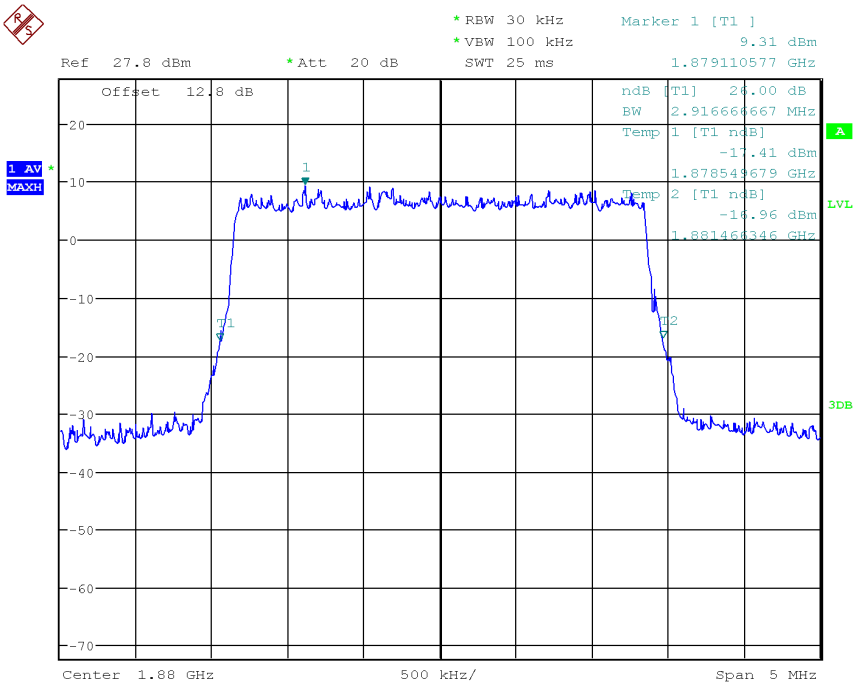
Date: 28.APR.2019 19:34:04

LTE Band2 QPSK -26dBc Channel 18900 BW=3MHz RB=15 RB Offset=0



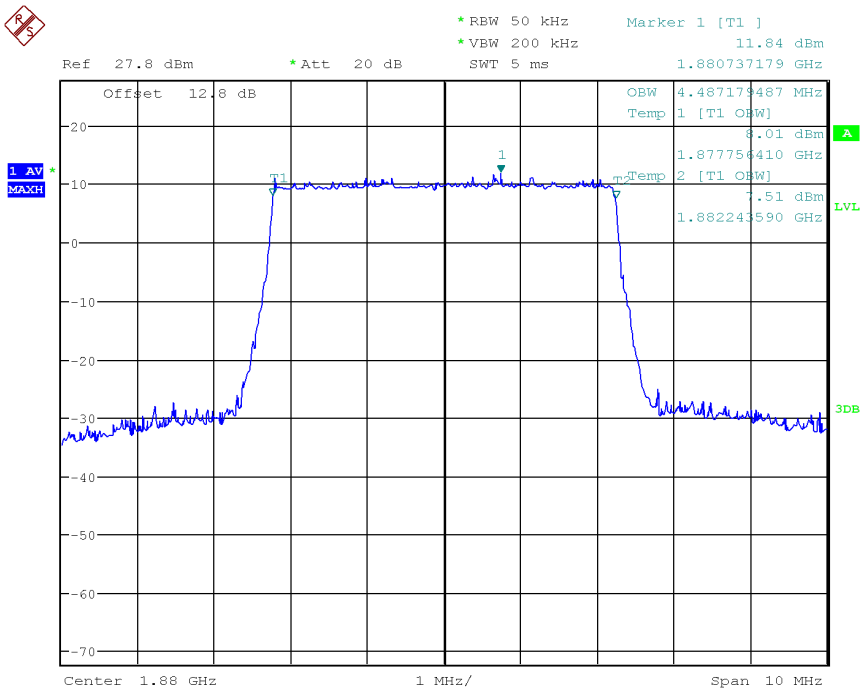
Date: 28.APR.2019 19:33:25

LTE Band2 16QAM 99% Channel 18900 BW=3MHz RB=15 RB Offset=0



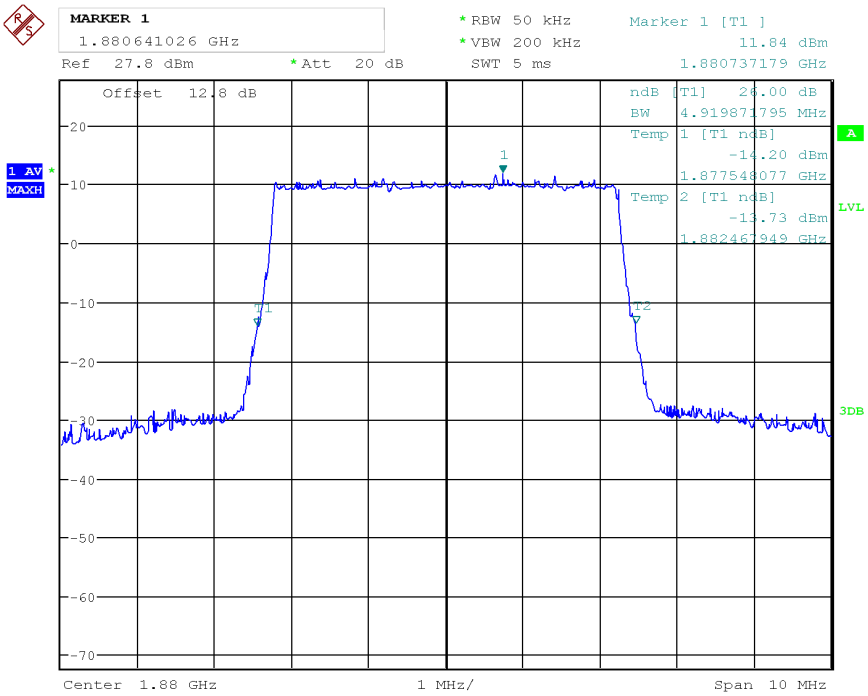
Date: 28.APR.2019 19:33:10

LTE Band2 16QAM -26dBc Channel 18900 BW=3MHz RB=15 RB Offset=0



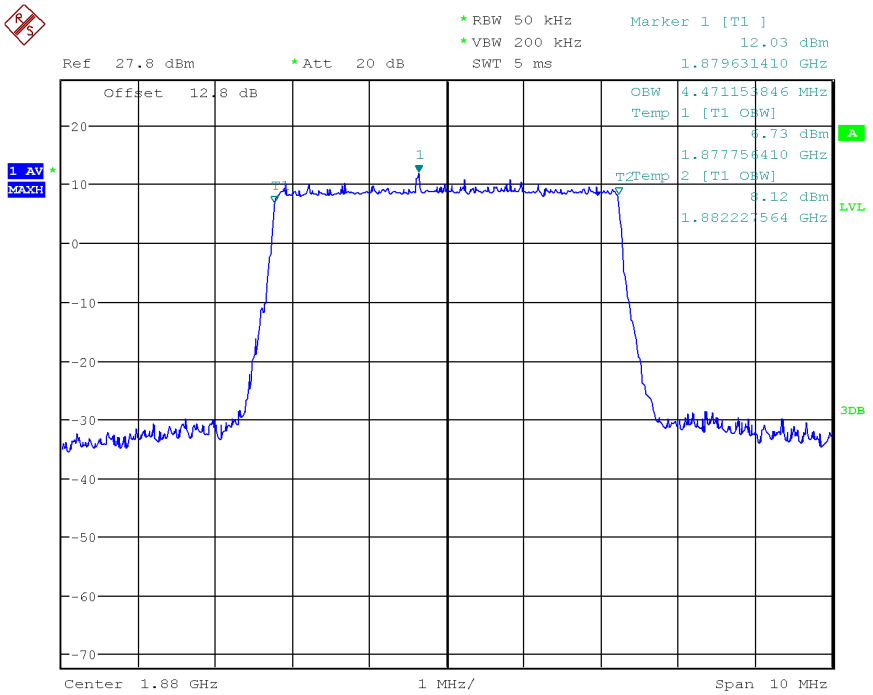
Date: 28.APR.2019 19:35:39

LTE Band2 QPSK 99% Channel 18900 BW=5MHz RB=25 RB Offset=0



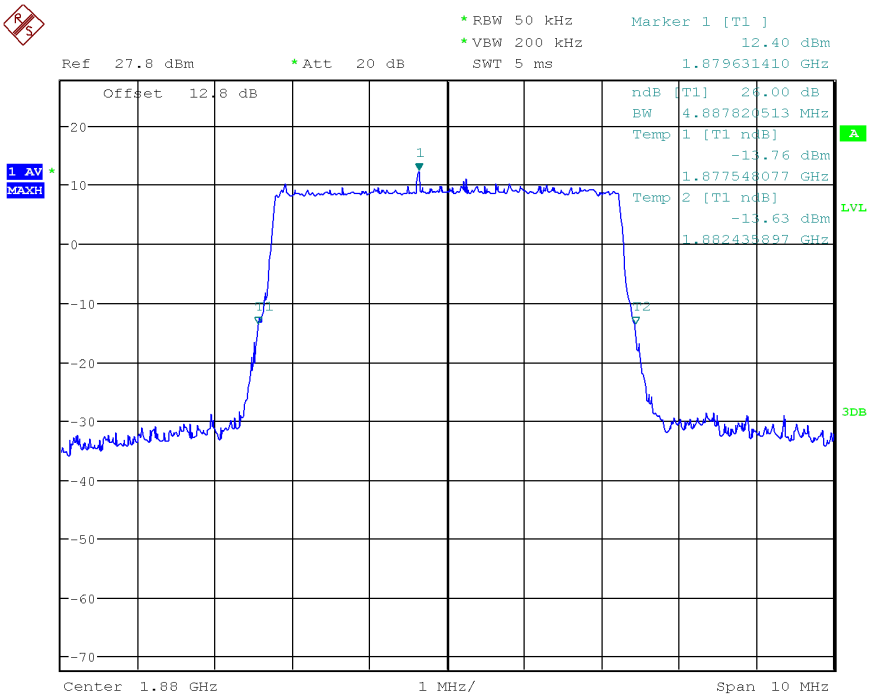
Date: 28.APR.2019 19:35:56

LTE Band2 QPSK -26dBc Channel 18900 BW=5MHz RB=25 RB Offset=0



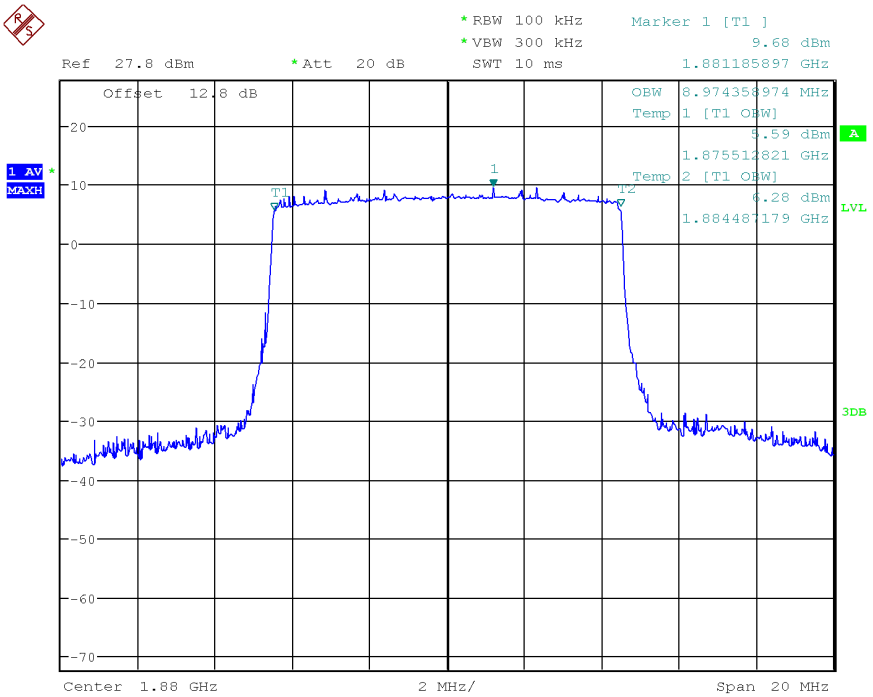
Date: 28.APR.2019 19:35:18

LTE Band2 16QAM 99% Channel 18900 BW=5MHz RB=25 RB Offset=0



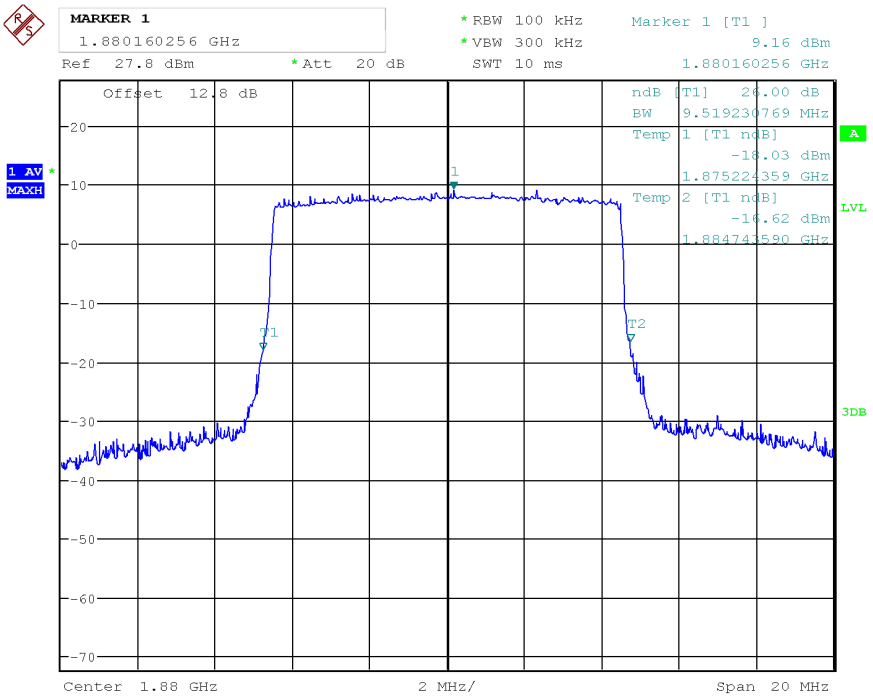
Date: 28.APR.2019 19:34:55

LTE Band2 16QAM -26dBc Channel 18900 BW=5MHz RB=25 RB Offset=0



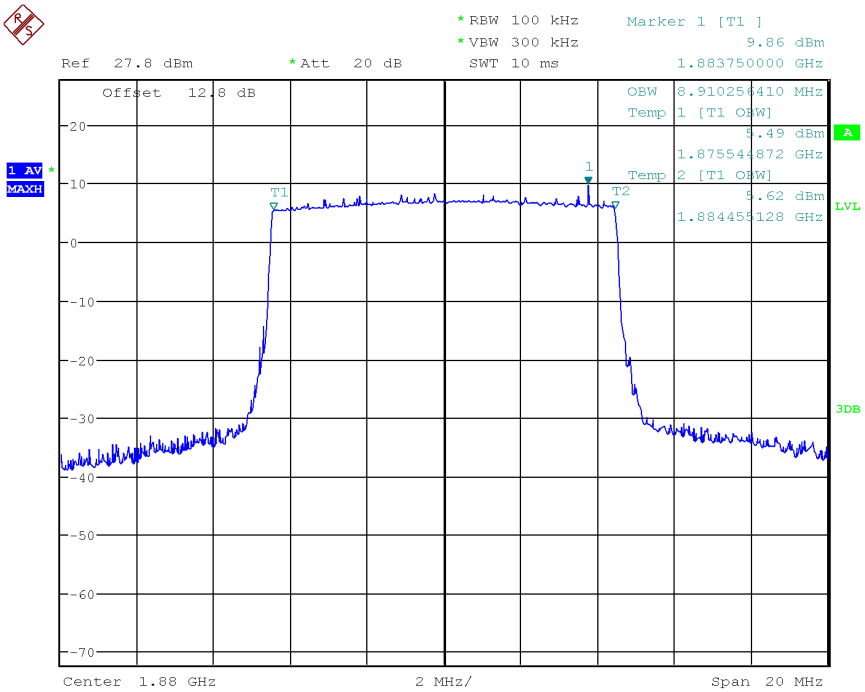
Date: 28.APR.2019 19:37:22

LTE Band2 QPSK 99% Channel 18900 BW=10MHz RB=50 RB Offset=0

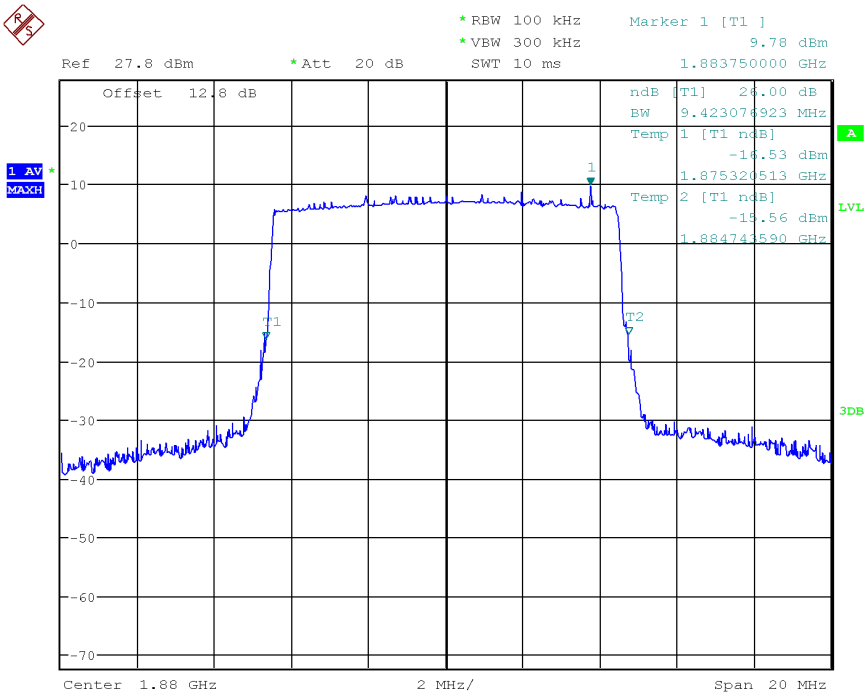


Date: 28.APR.2019 19:37:36

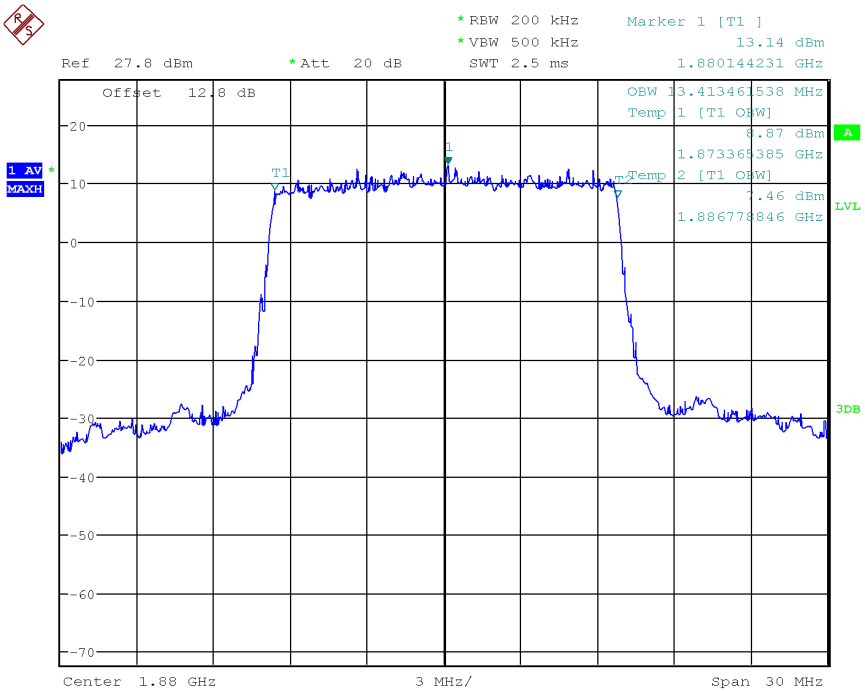
LTE Band2 QPSK -26dBc Channel 18900 BW=10MHz RB=50 RB Offset=0



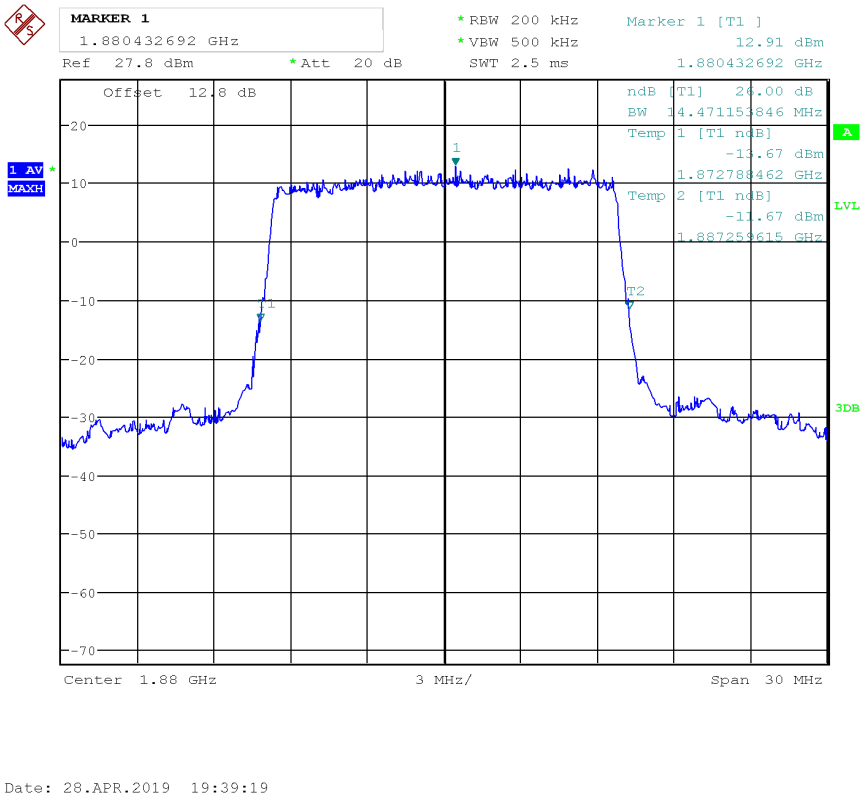
LTE Band2 16QAM 99% Channel 18900 BW=10MHz RB=27 RB Offset=0



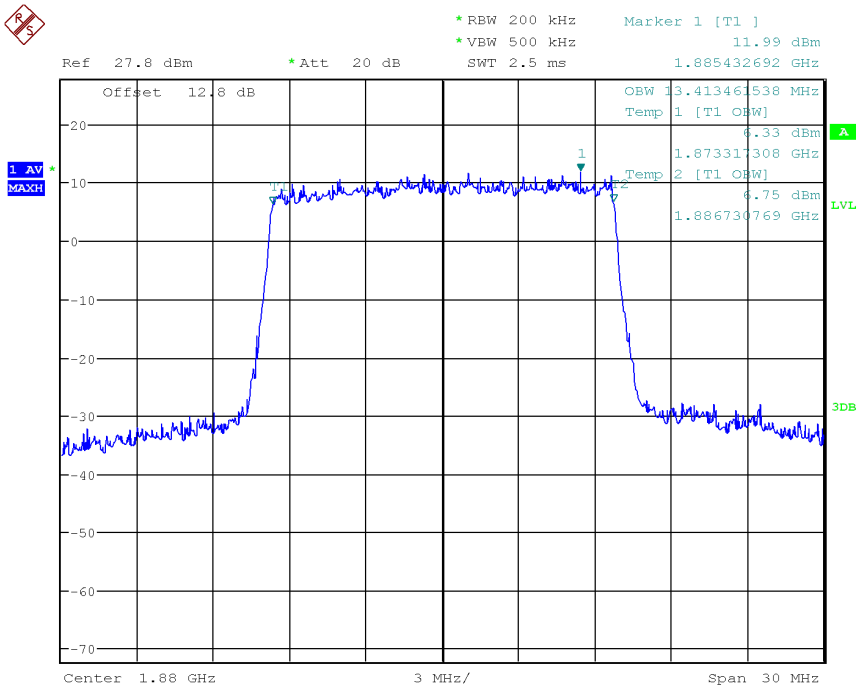
LTE Band2 16QAM -26dBc Channel 18900 BW=10MHz RB=27 RB Offset=0



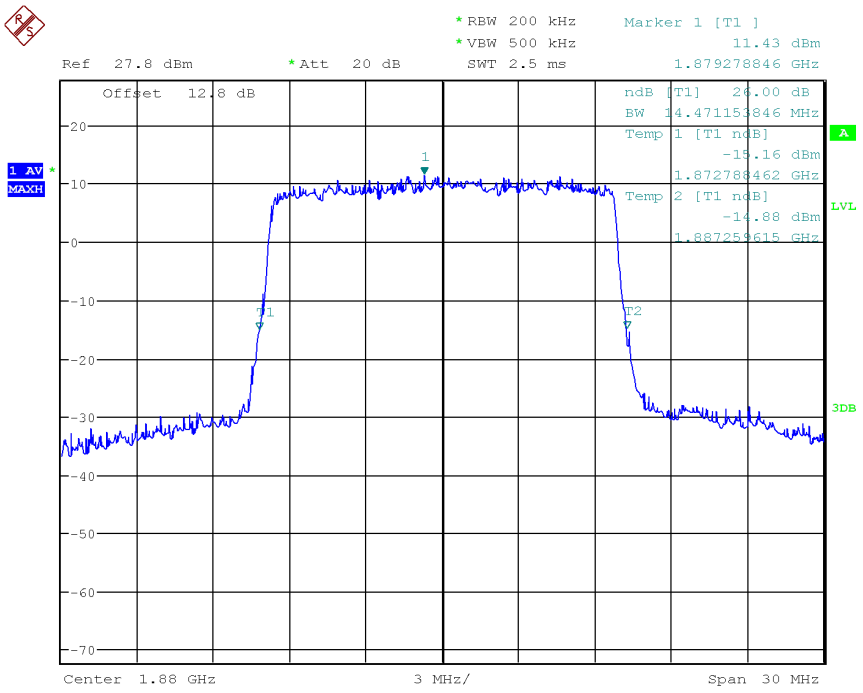
LTE Band2 QPSK 99% Channel 18900 BW=15MHz RB=75 RB Offset=0



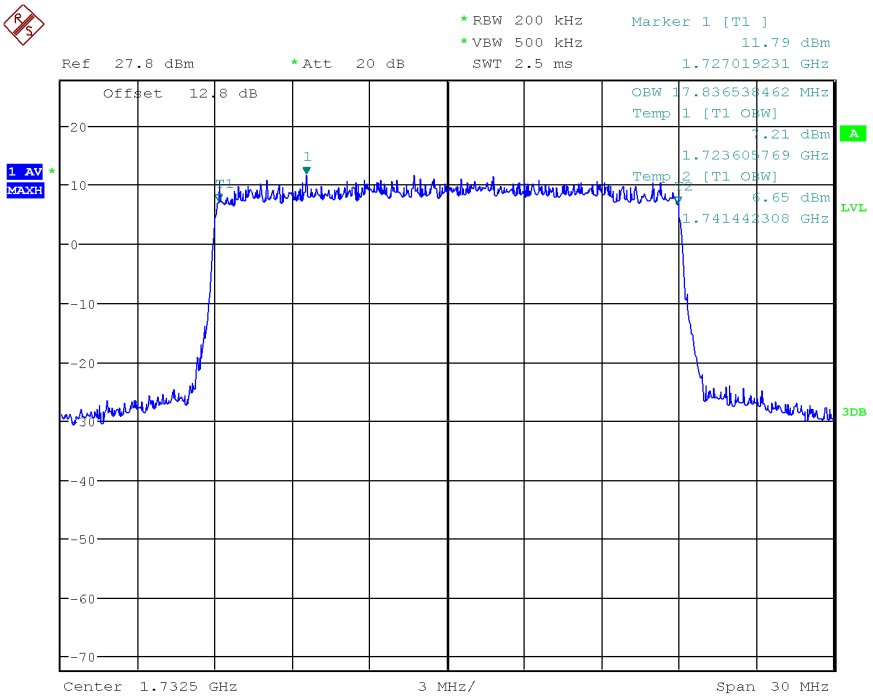
LTE Band2 QPSK -26dBc Channel 18900 BW=15MHz RB=75 RB Offset=0



LTE Band2 16QAM 99% Channel 18900 BW=15MHz RB=27 RB Offset=0

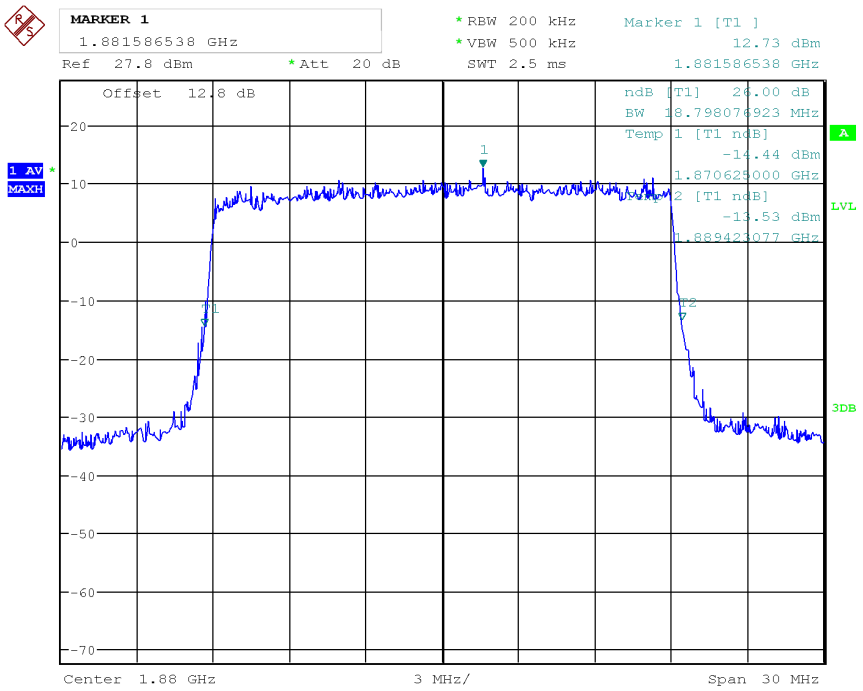


LTE Band2 16QAM -26dBc Channel 18900 BW=15MHz RB=27 RB Offset=0



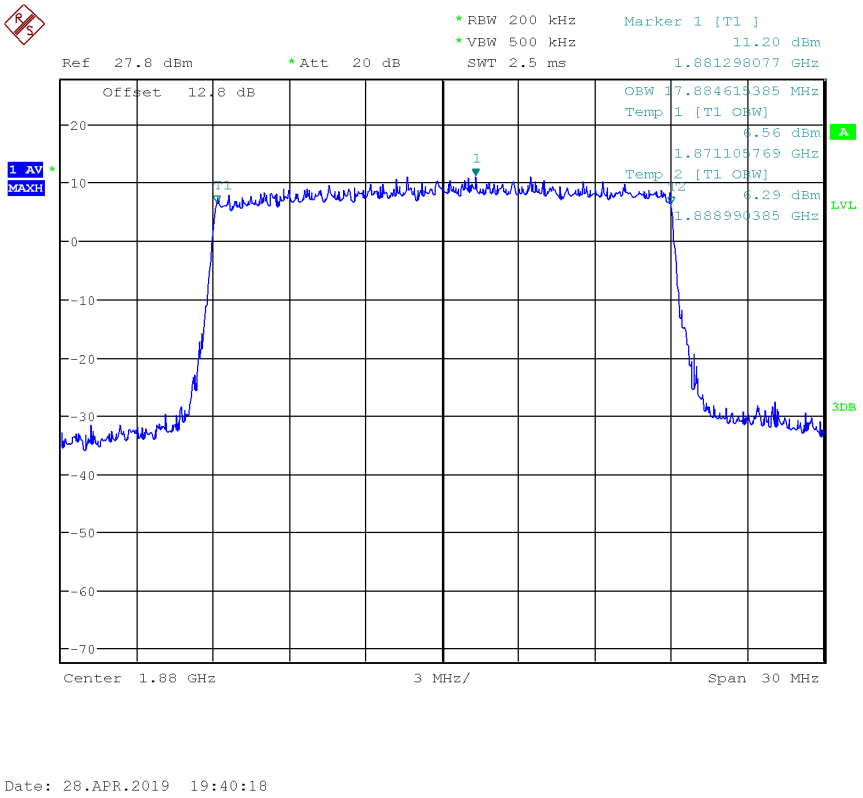
Date: 28.APR.2019 19:50:11

LTE Band2 QPSK 99% Channel 18900 BW=20MHz RB=100 RB Offset=0

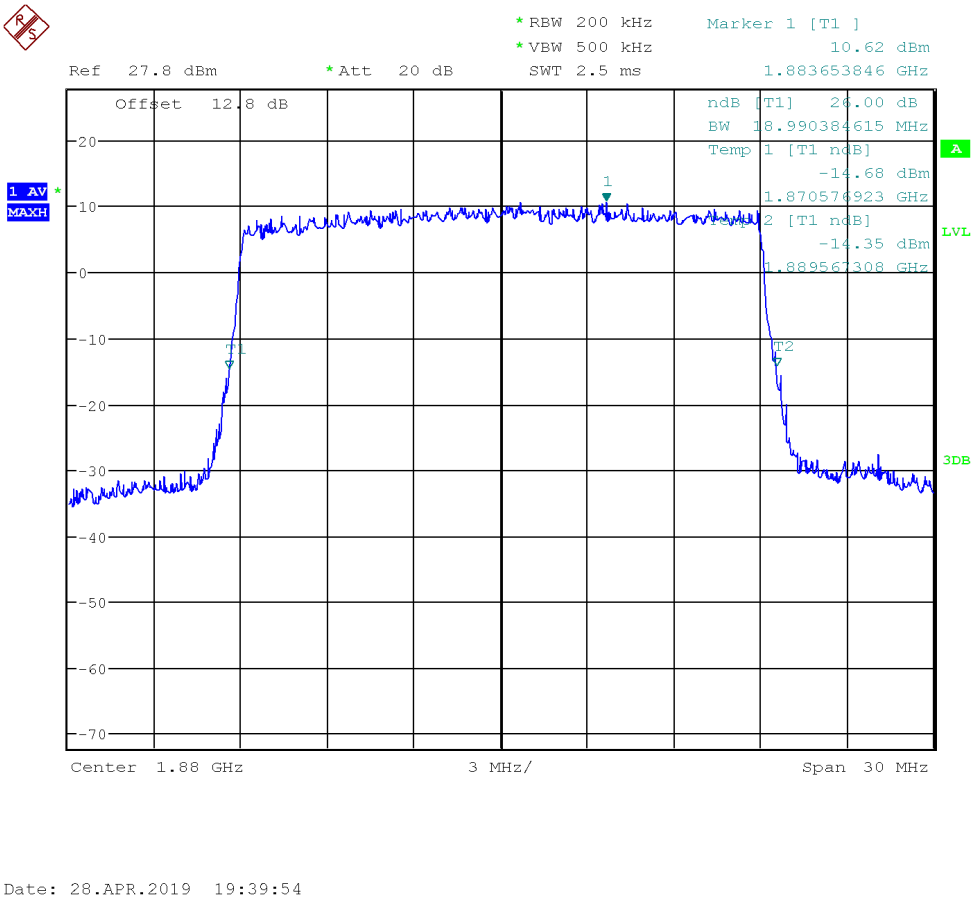


Date: 28.APR.2019 19:41:01

LTE Band2 QPSK -26dBc Channel 18900 BW=20MHz RB=100 RB Offset=0

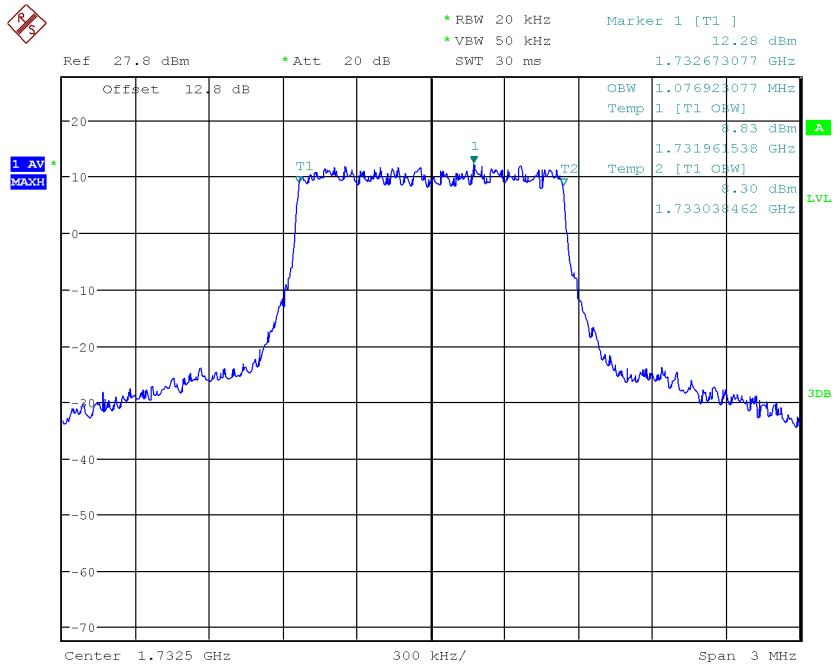


LTE Band2 16QAM 99% Channel 18900 BW=20MHz RB=27 RB Offset=0



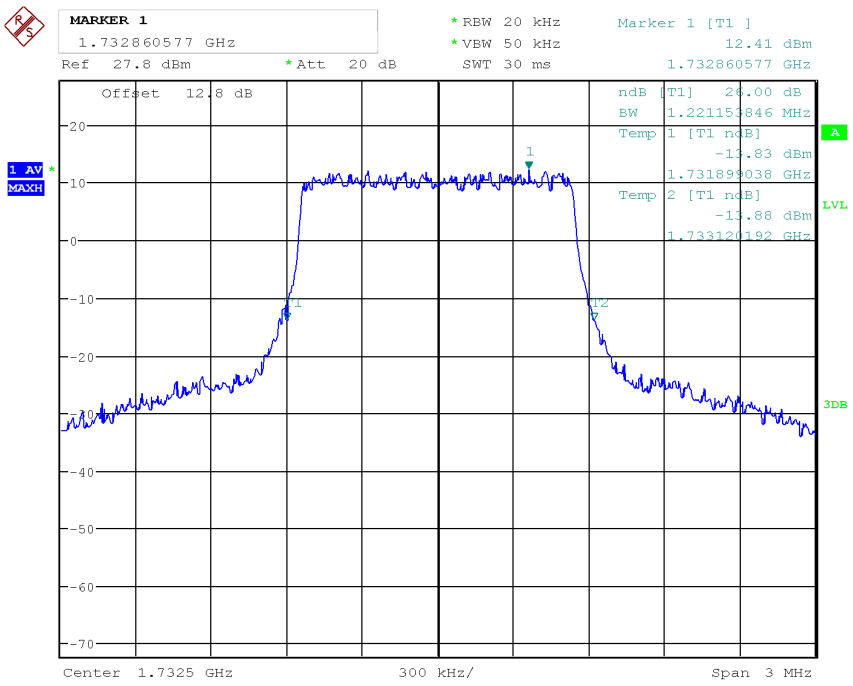
LTE Band2 16QAM -26dBc Channel 18900 BW=20MHz RB=27 RB Offset=0

Graphical results for LTE B4:



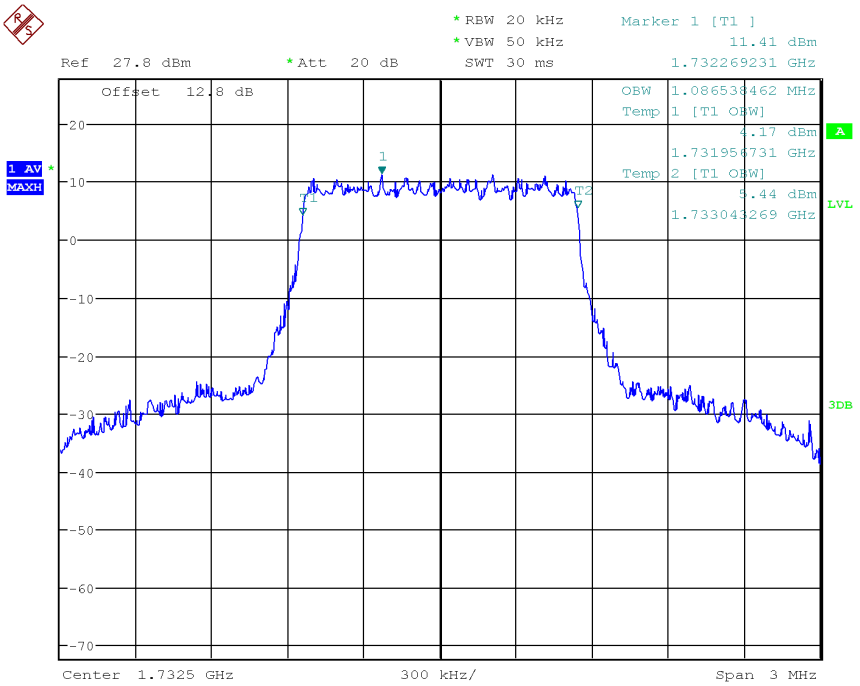
Date: 28.APR.2019 19:42:32

LTE Band4 QPSK 99% Channel 20175 BW=1.4MHz RB=6 RB Offset=0

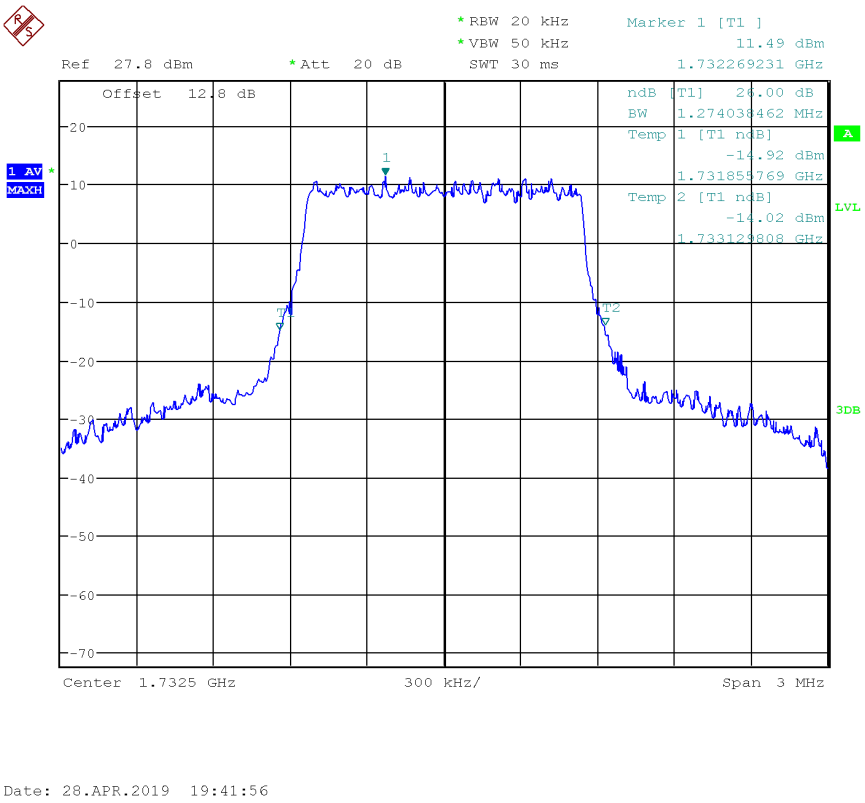


Date: 28.APR.2019 19:42:49

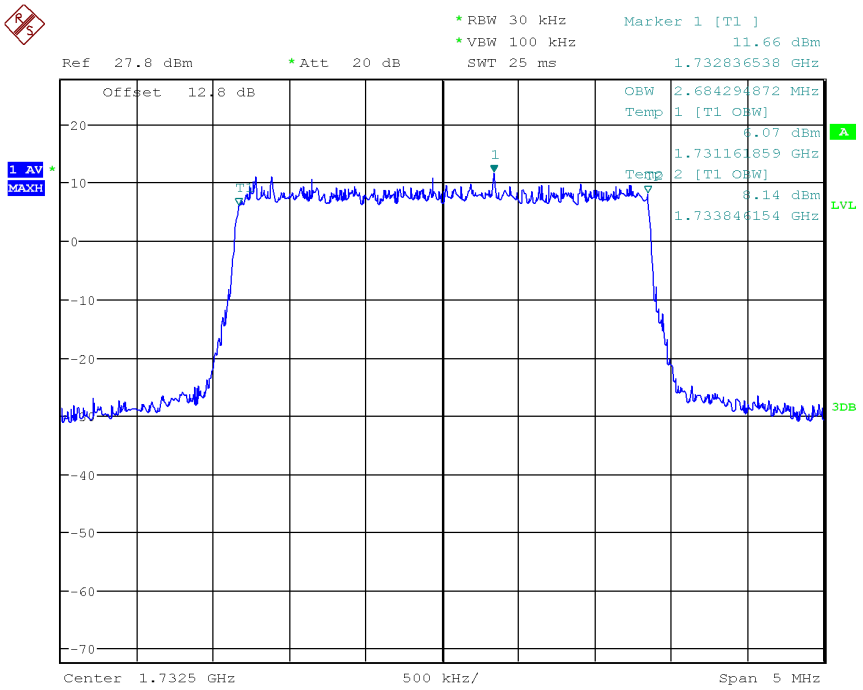
LTE Band4 QPSK -26dBc Channel 20175 BW=1.4MHz RB=6 RB Offset=0



LTE Band4 16QAM 99% Channel 20175 BW=1.4MHz RB=6 RB Offset=0

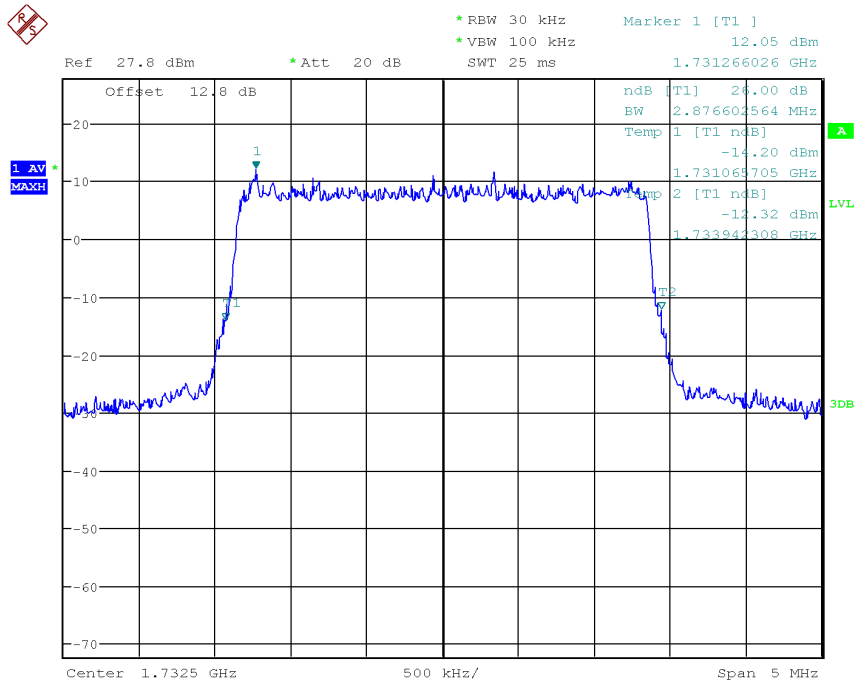


LTE Band4 16QAM -26dBc Channel 20175 BW=1.4MHz RB=6 RB Offset=0



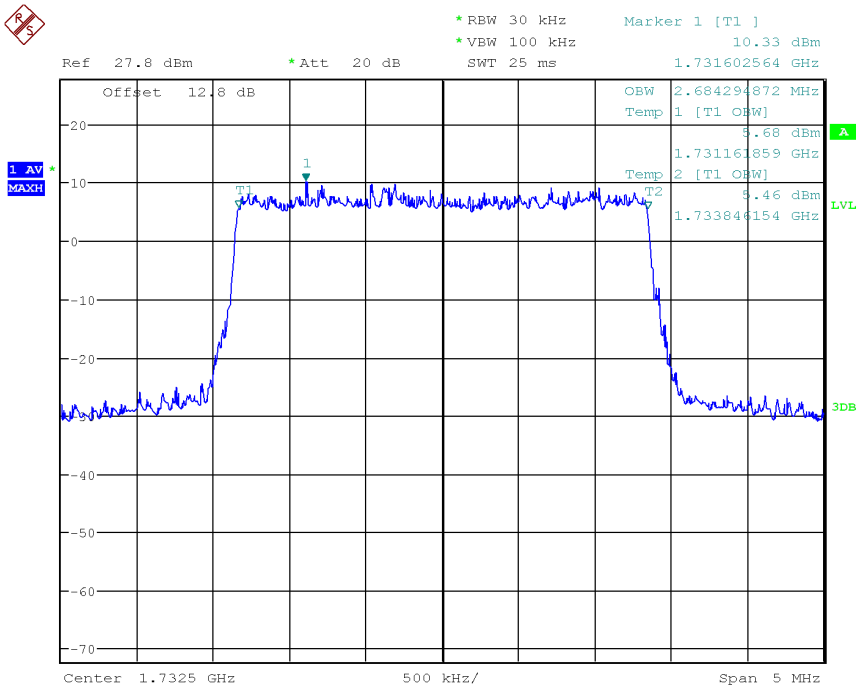
Date: 28.APR.2019 19:43:44

LTE Band4 QPSK 99% Channel 20175 BW=3MHz RB=15 RB Offset=0



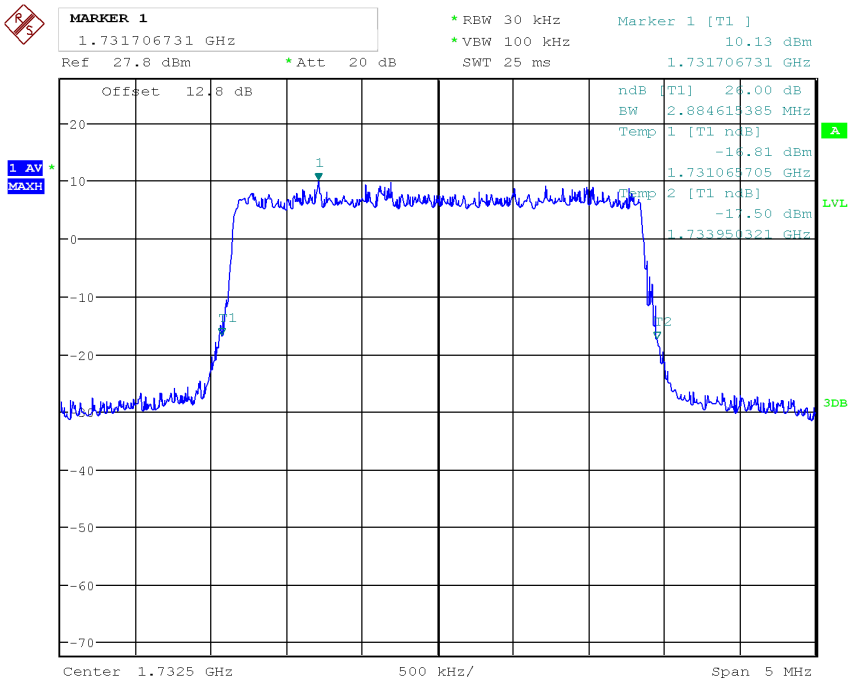
Date: 28.APR.2019 19:43:27

LTE Band4 QPSK -26dBc Channel 20175 BW=3MHz RB=15 RB Offset=0



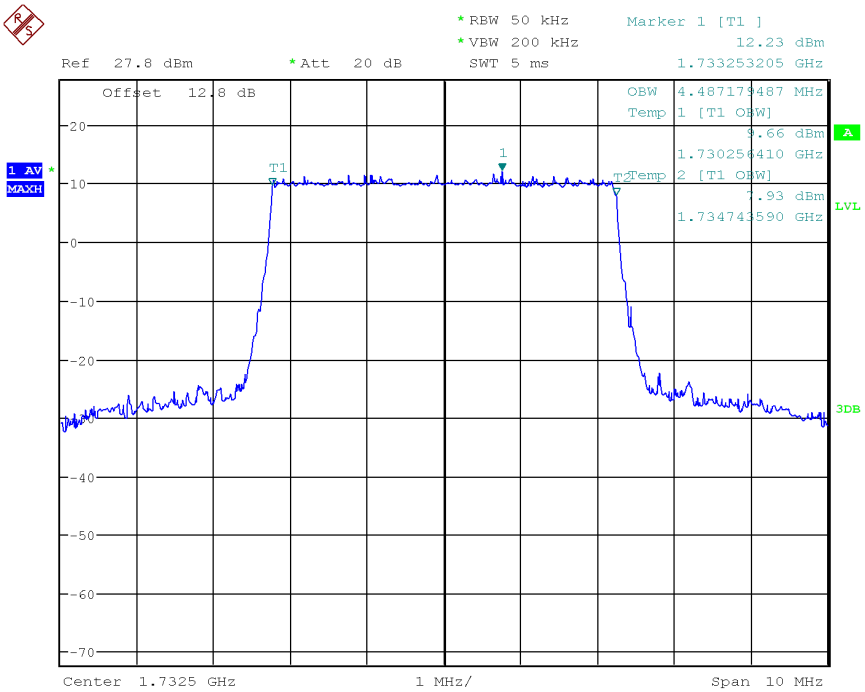
Date: 28.APR.2019 19:44:13

LTE Band4 16QAM 99% Channel 20175 BW=3MHz RB=15 RB Offset=0



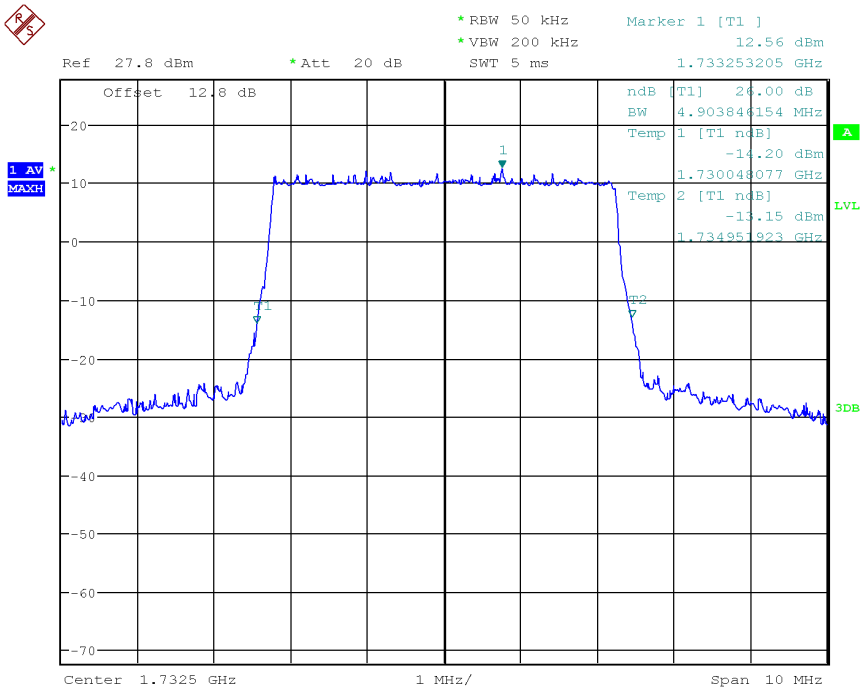
Date: 28.APR.2019 19:44:27

LTE Band4 16QAM -26dBc Channel 20175 BW=3MHz RB=15 RB Offset=0



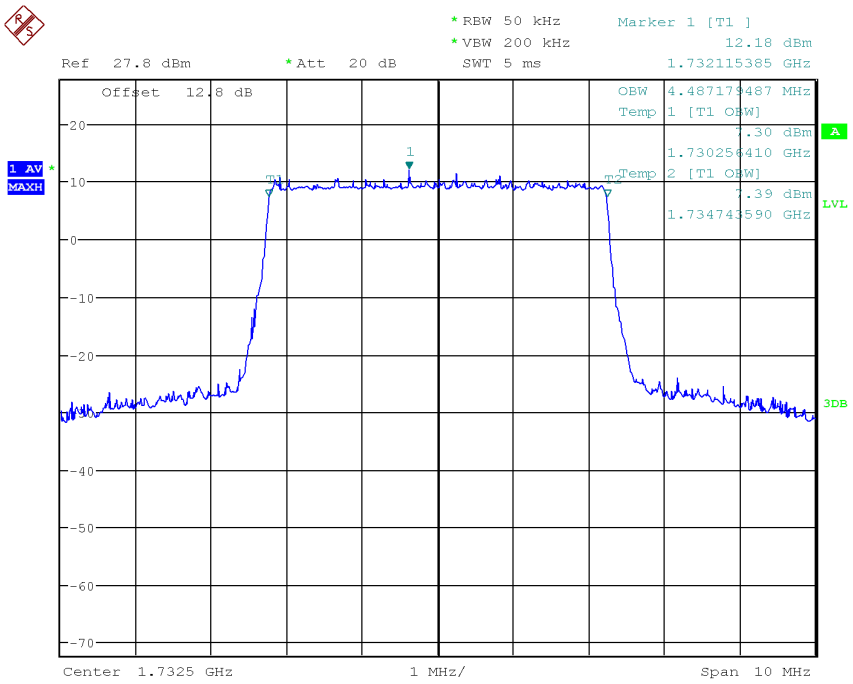
Date: 28.APR.2019 19:45:20

LTE Band4 QPSK 99% Channel 20175 BW=5MHz RB=25 RB Offset=0



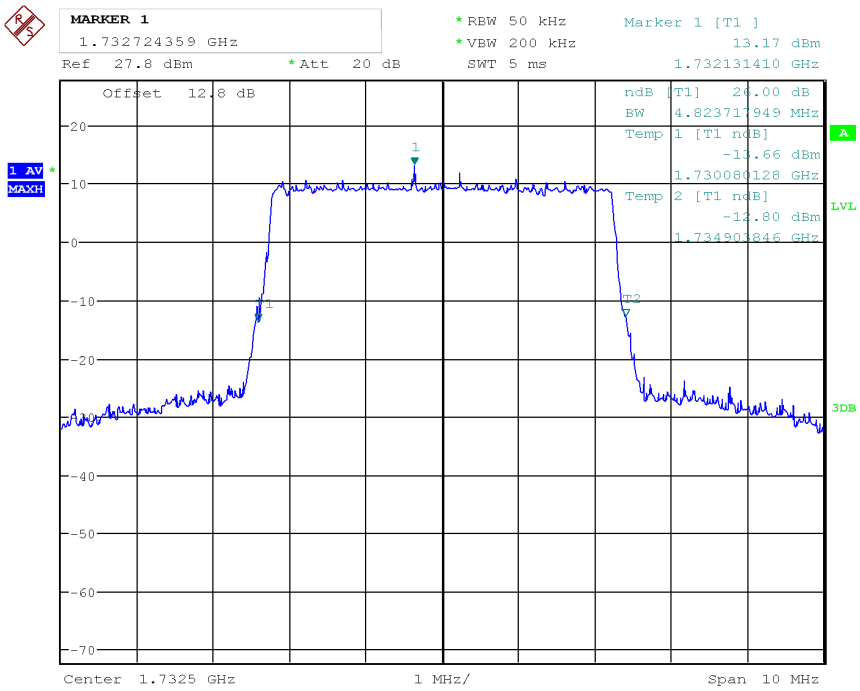
Date: 28.APR.2019 19:45:03

LTE Band4 QPSK -26dBc Channel 20175 BW=5MHz RB=25 RB Offset=0



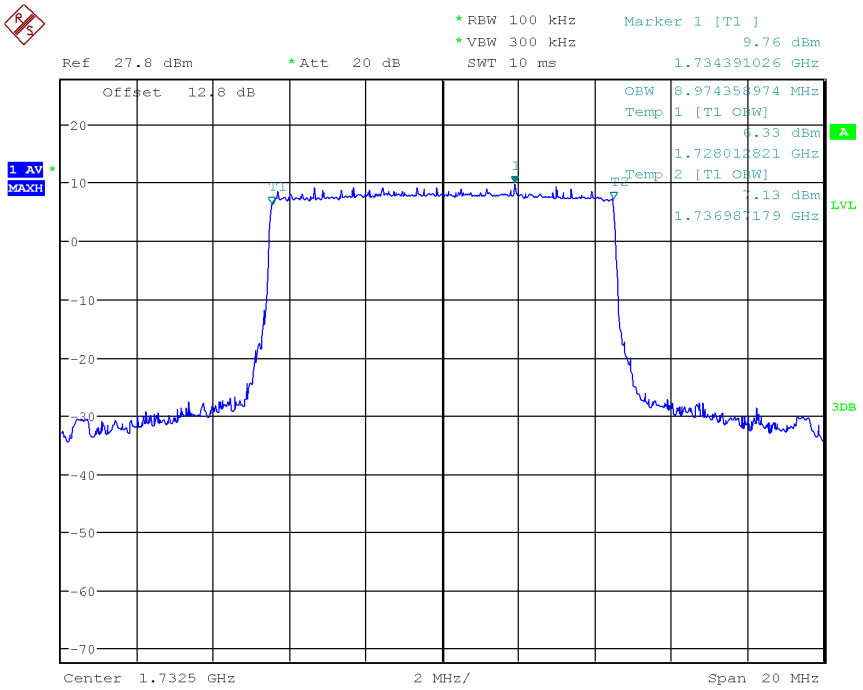
Date: 28.APR.2019 19:45:54

LTE Band4 16QAM 99% Channel 20175 BW=5MHz RB=25 RB Offset=0



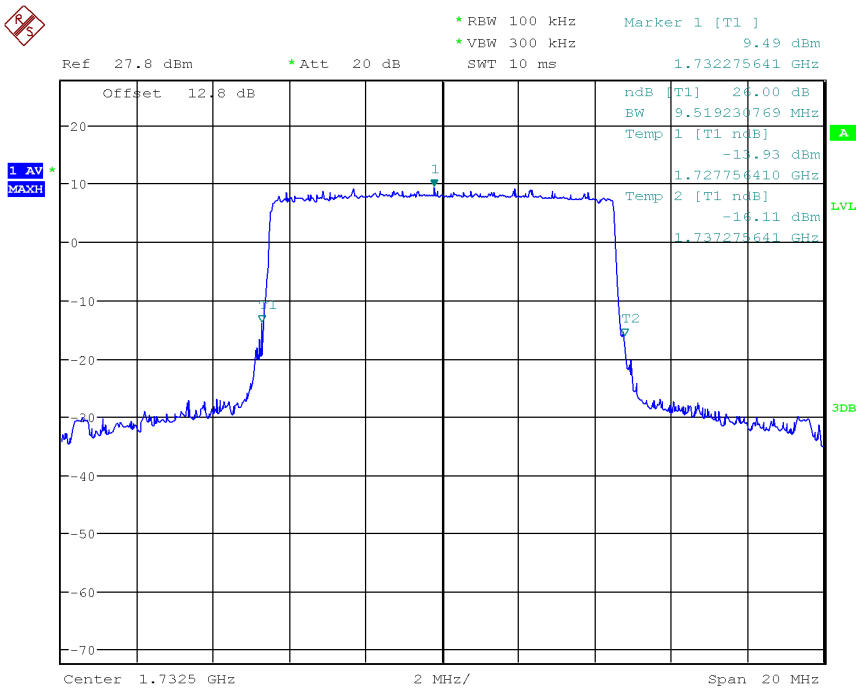
Date: 28.APR.2019 19:46:07

LTE Band4 16QAM -26dBc Channel 20175 BW=5MHz RB=25 RB Offset=0



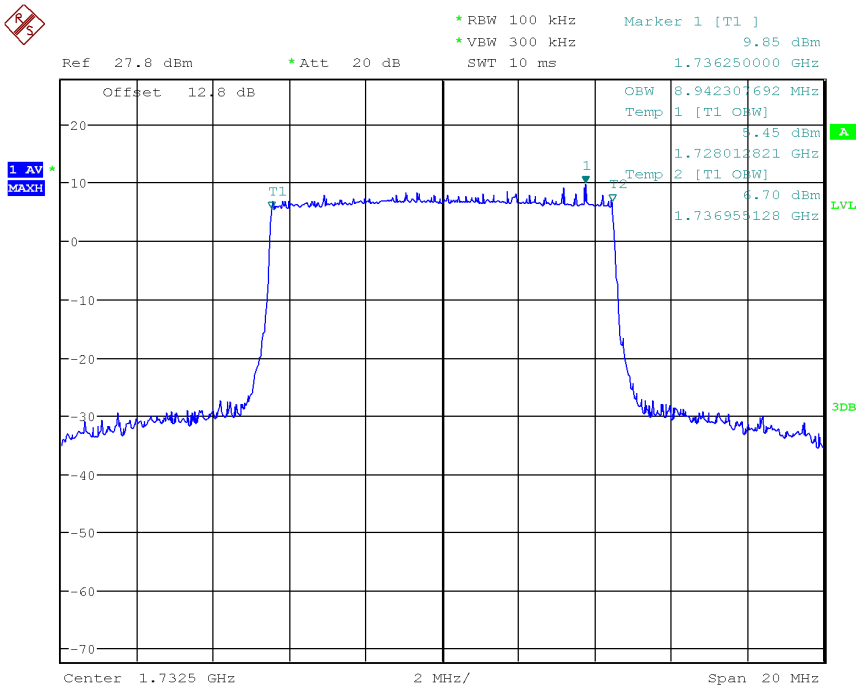
Date: 28.APR.2019 19:47:09

LTE Band4 QPSK 99% Channel 20175 BW=10MHz RB=50 RB Offset=0



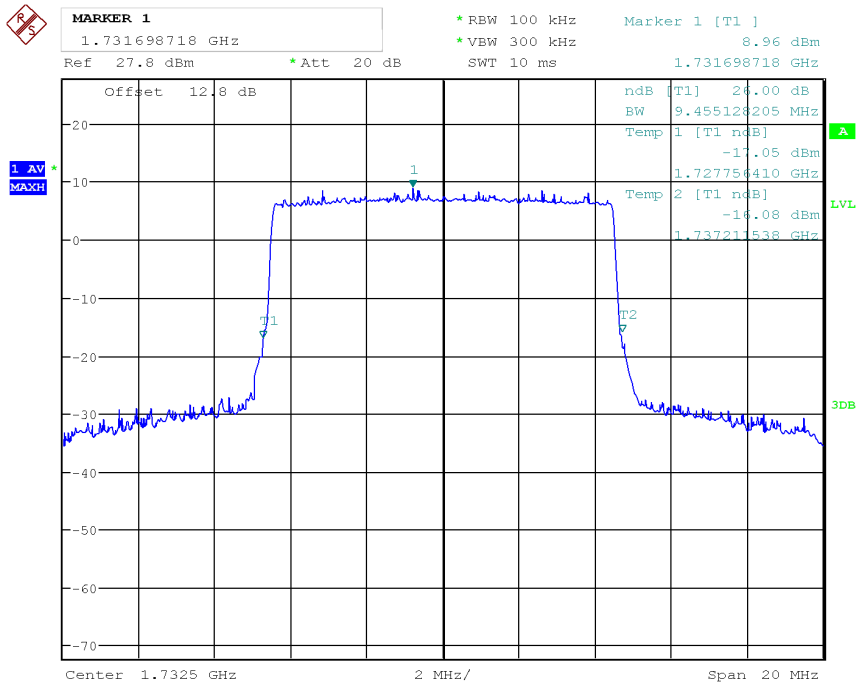
Date: 28.APR.2019 19:46:52

LTE Band4 QPSK -26dBc Channel 20175 BW=10MHz RB=50 RB Offset=0



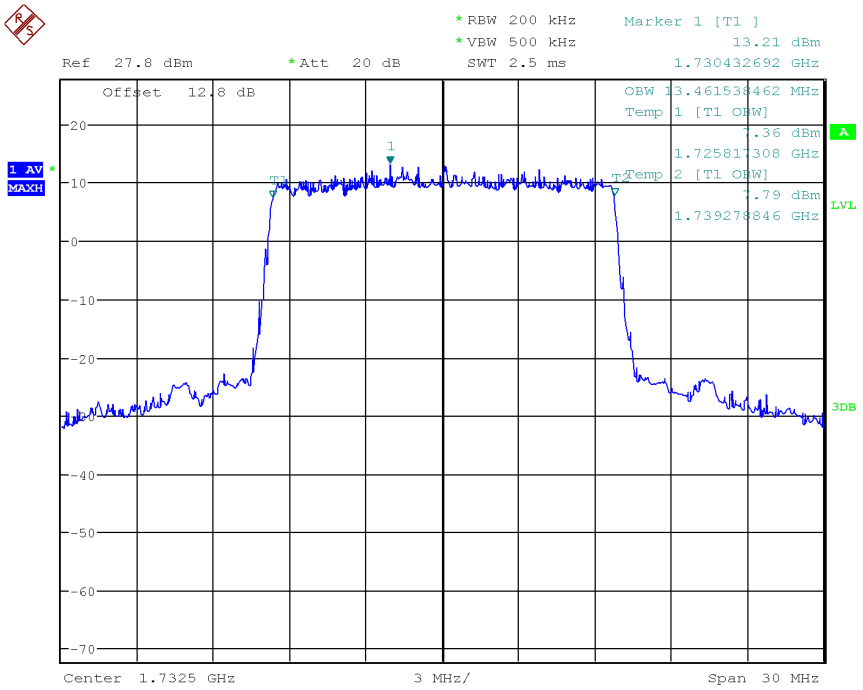
Date: 28.APR.2019 19:47:35

LTE Band4 16QAM 99% Channel 20175 BW=10MHz RB=27 RB Offset=0

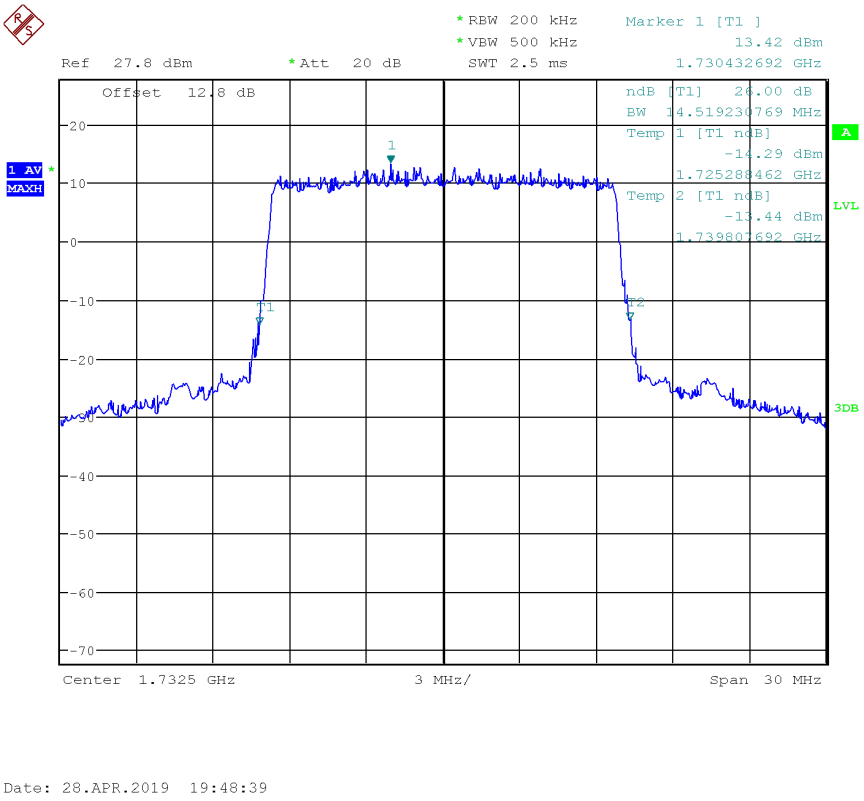


Date: 28.APR.2019 19:47:53

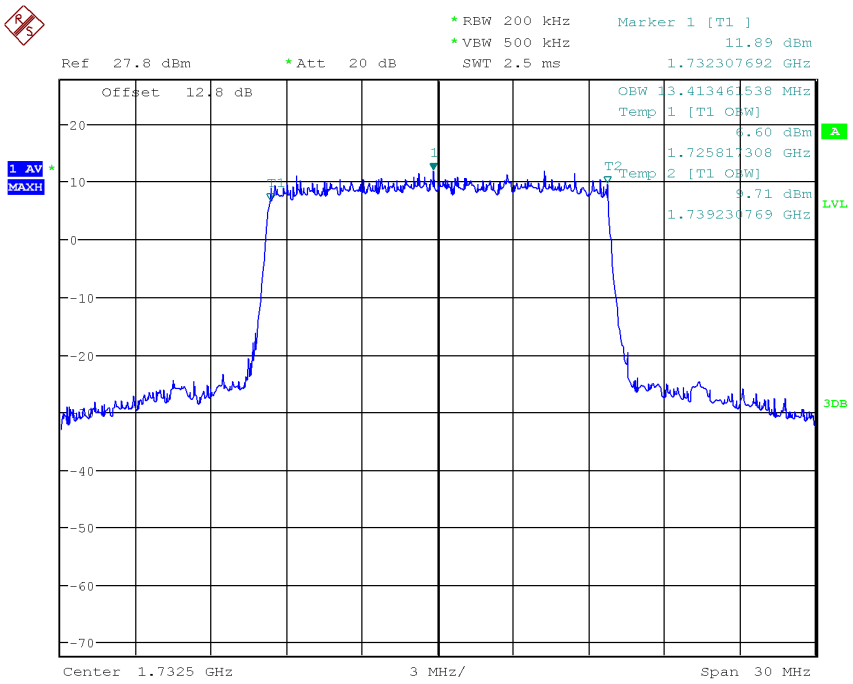
LTE Band4 16QAM -26dBc Channel 20175 BW=10MHz RB=27 RB Offset=0



LTE Band4 QPSK 99% Channel 20175 BW=15MHz RB=75 RB Offset=0

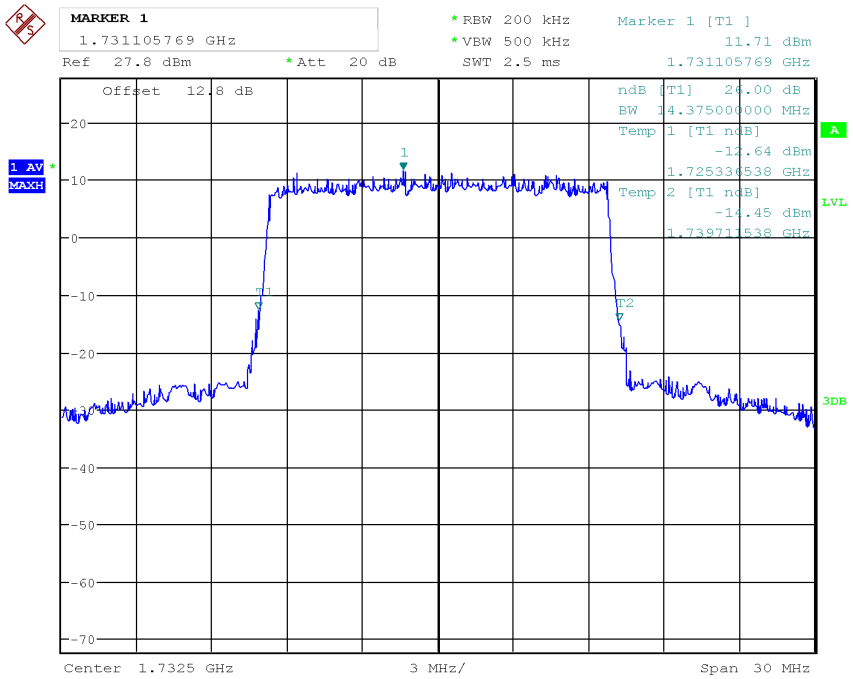


LTE Band4 QPSK -26dBc Channel 20175 BW=15MHz RB=75 RB Offset=0



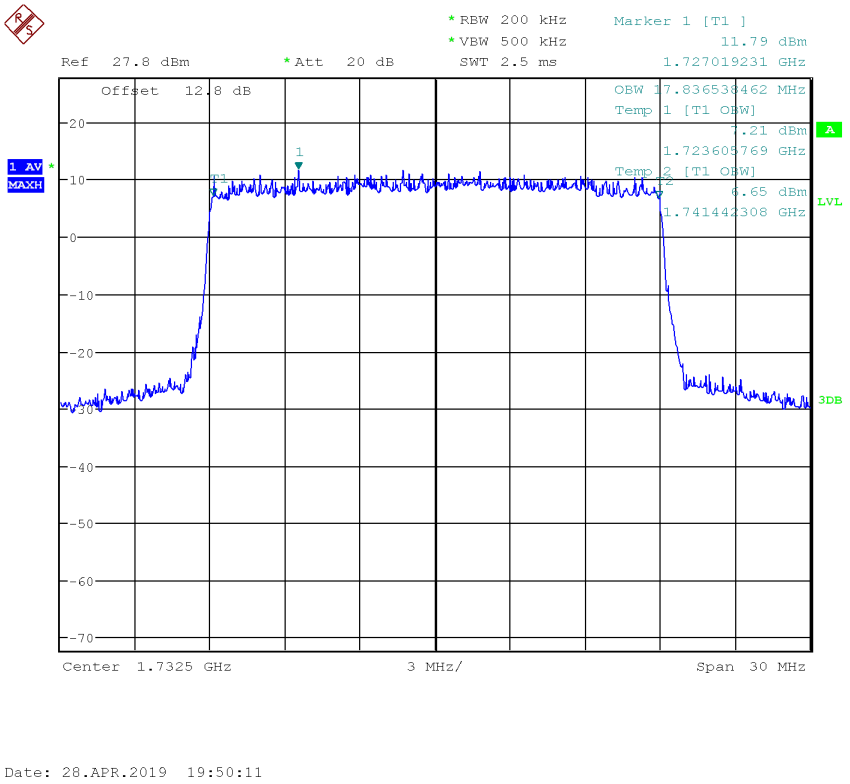
Date: 28.APR.2019 19:49:16

LTE Band4 16QAM 99% Channel 20175 BW=15MHz RB=27 RB Offset=0

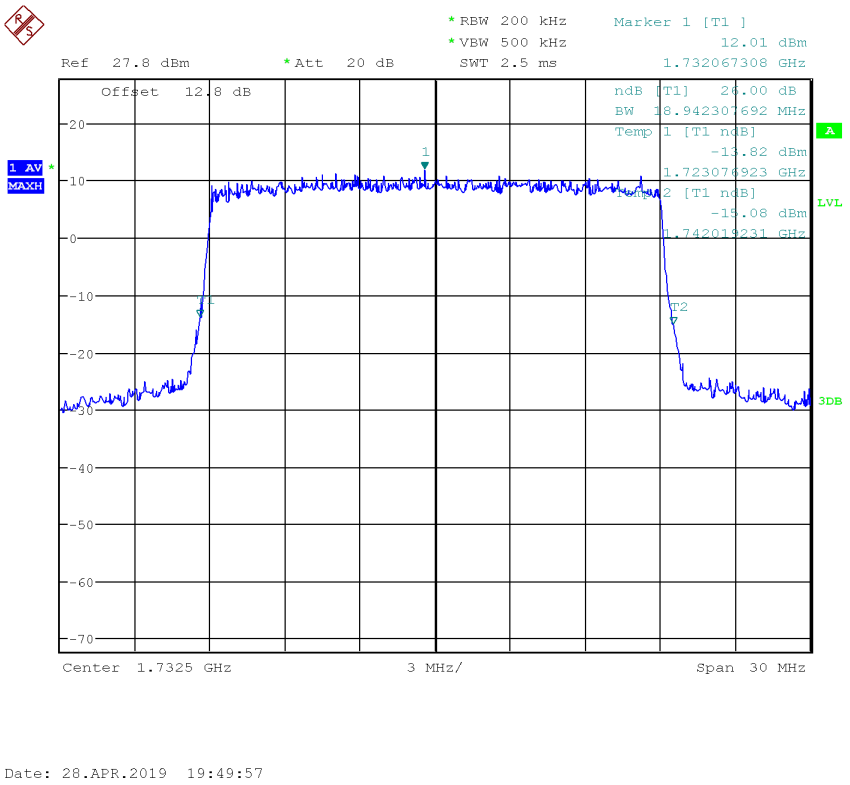


Date: 28.APR.2019 19:49:31

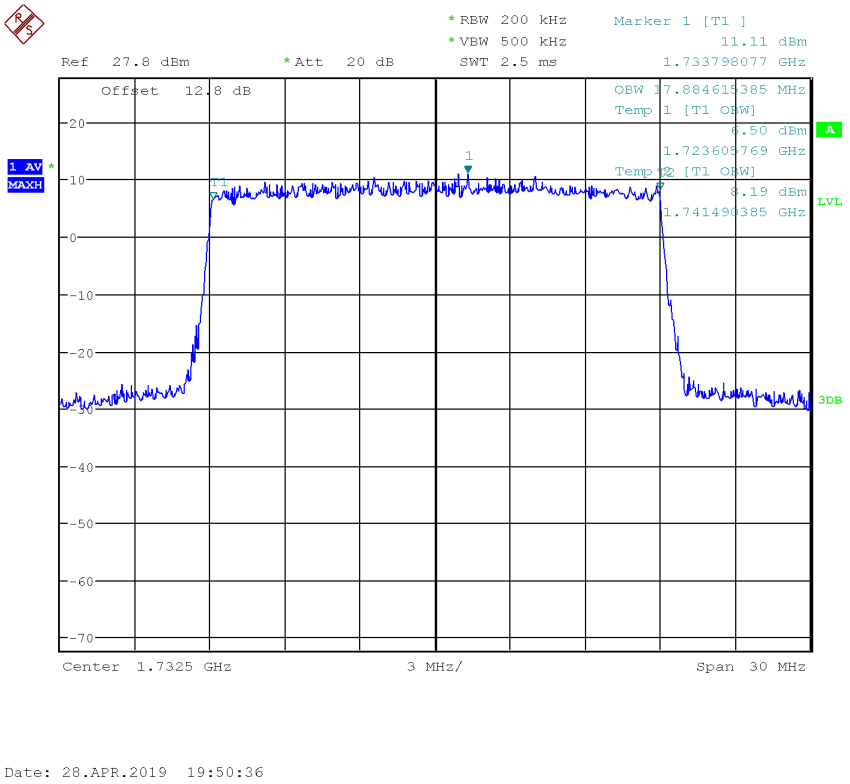
LTE Band4 16QAM -26dBc Channel 20175 BW=15MHz RB=27 RB Offset=0



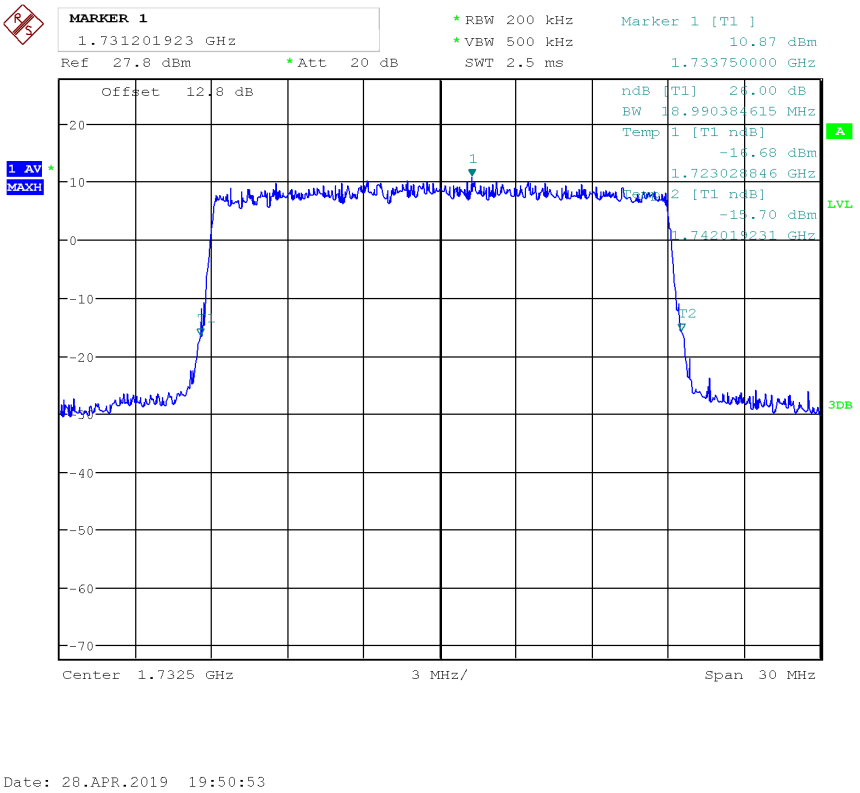
LTE Band4 QPSK 99% Channel 20175 BW=20MHz RB=100 RB Offset=0



LTE Band4 QPSK -26dBc Channel 20175 BW=20MHz RB=100 RB Offset=0

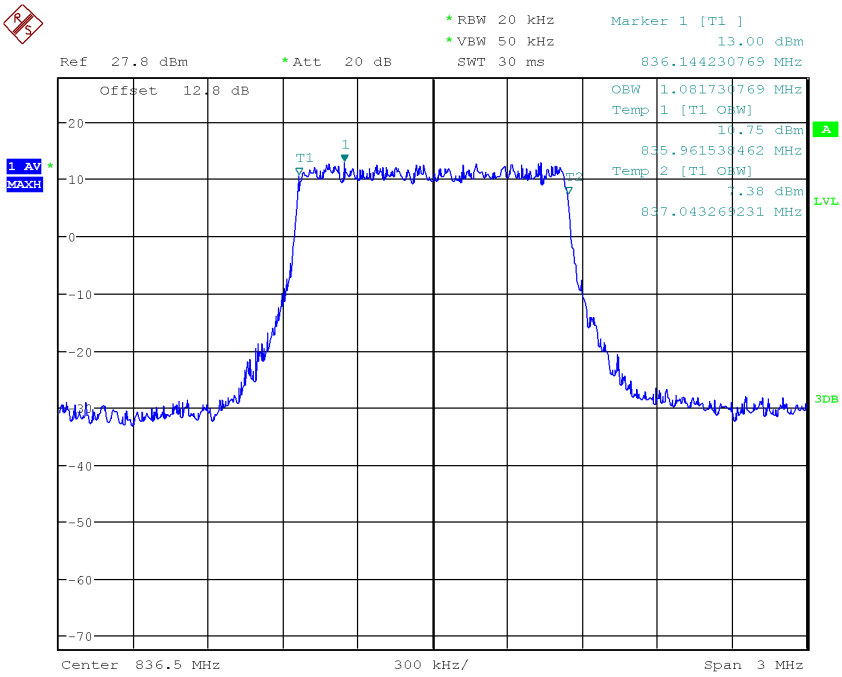


LTE Band4 16QAM 99% Channel 20175 BW=20MHz RB=27 RB Offset=0



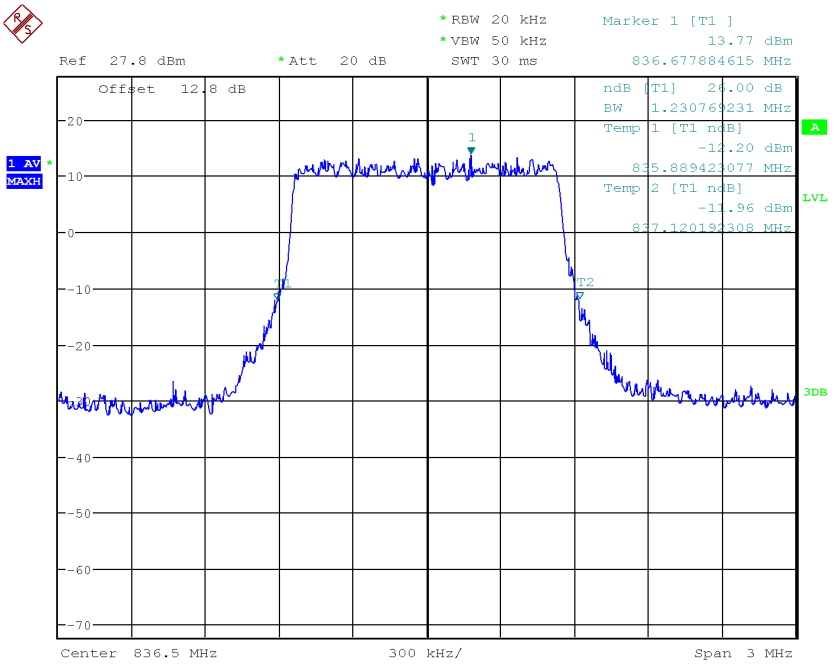
LTE Band4 16QAM -26dBc Channel 20175 BW=20MHz RB=27 RB Offset=0

Graphical results for LTE B5:



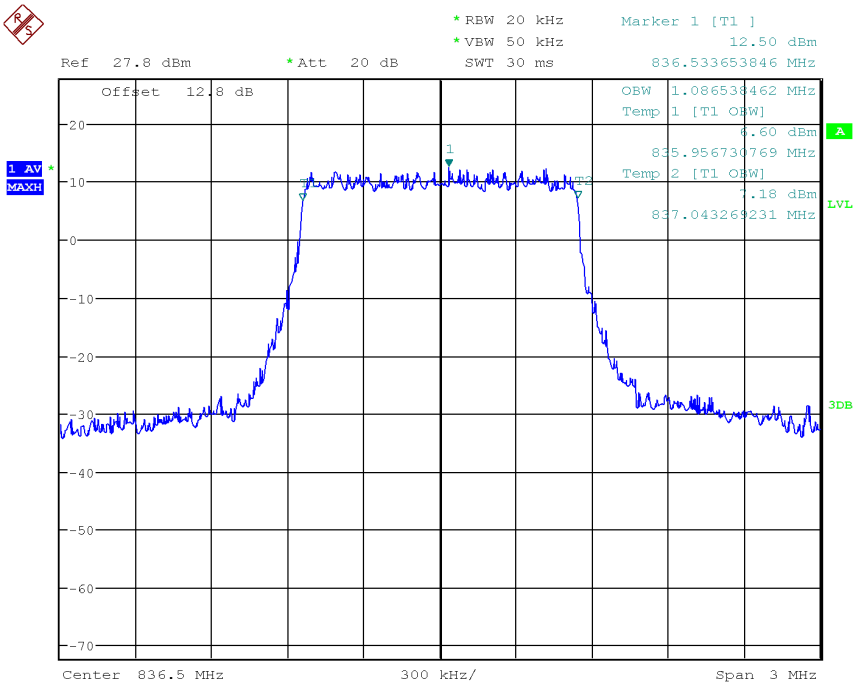
Date: 28.APR.2019 19:53:03

LTE Band5 QPSK 99% Channel 20525 BW=1.4MHz RB=6 RB Offset=0



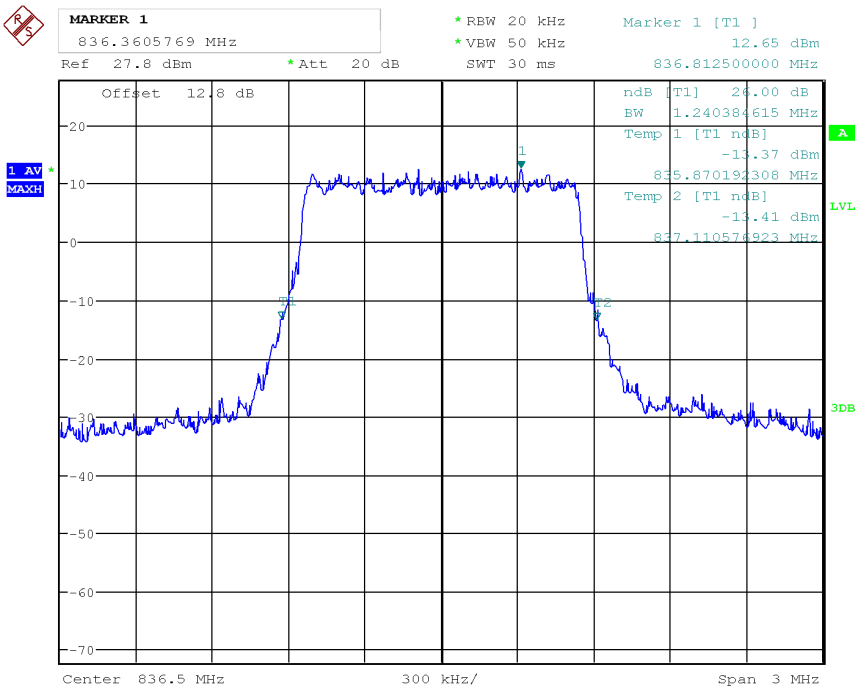
Date: 28.APR.2019 19:52:37

LTE Band5 QPSK -26dBc Channel 20525 BW=1.4MHz RB=6 RB Offset=0



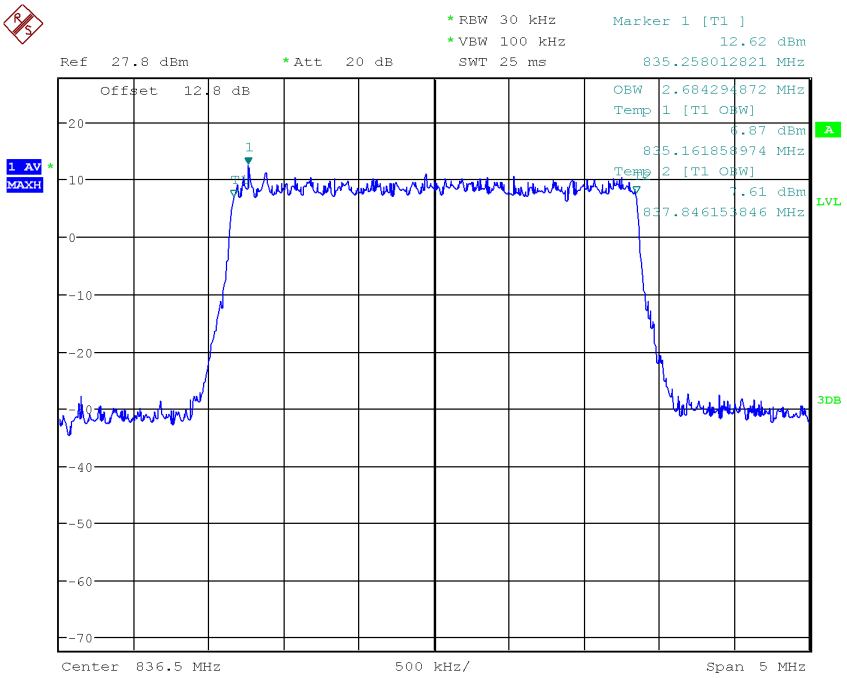
Date: 28.APR.2019 19:53:26

LTE Band5 16QAM 99% Channel 20525 BW=1.4MHz RB=6 RB Offset=0

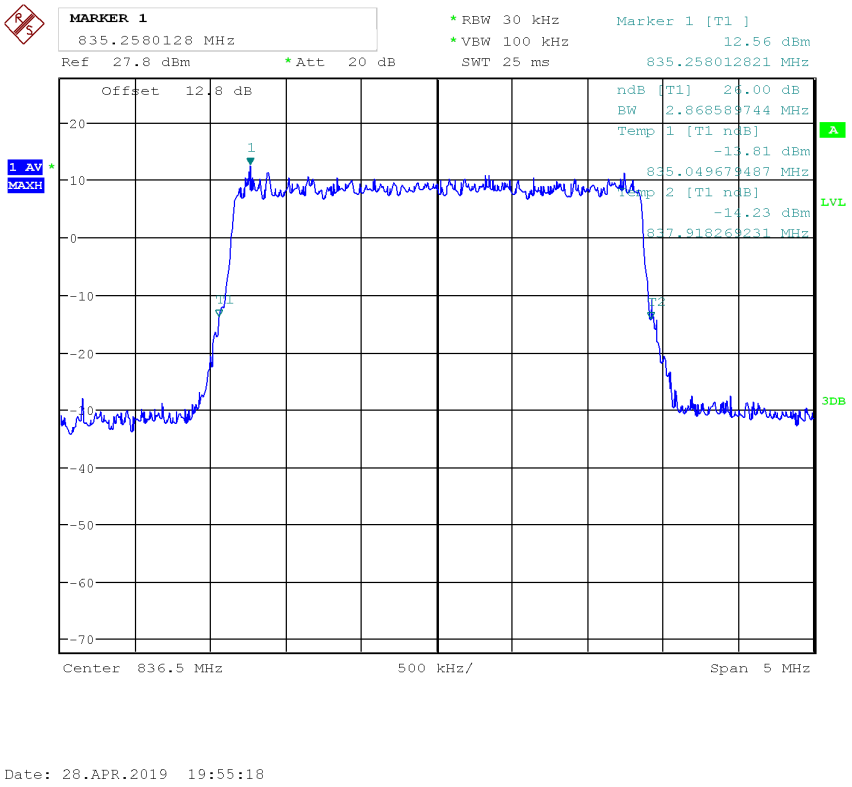


Date: 28.APR.2019 19:53:41

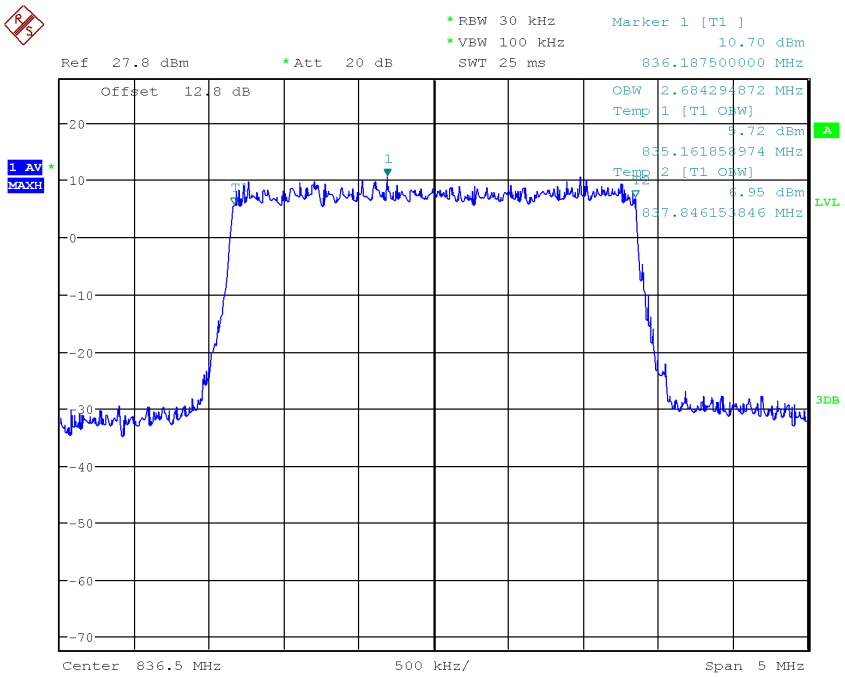
LTE Band5 16QAM -26dBc Channel 20525 BW=1.4MHz RB=6 RB Offset=0



LTE Band5 QPSK 99% Channel 20525 BW=3MHz RB=15 RB Offset=0

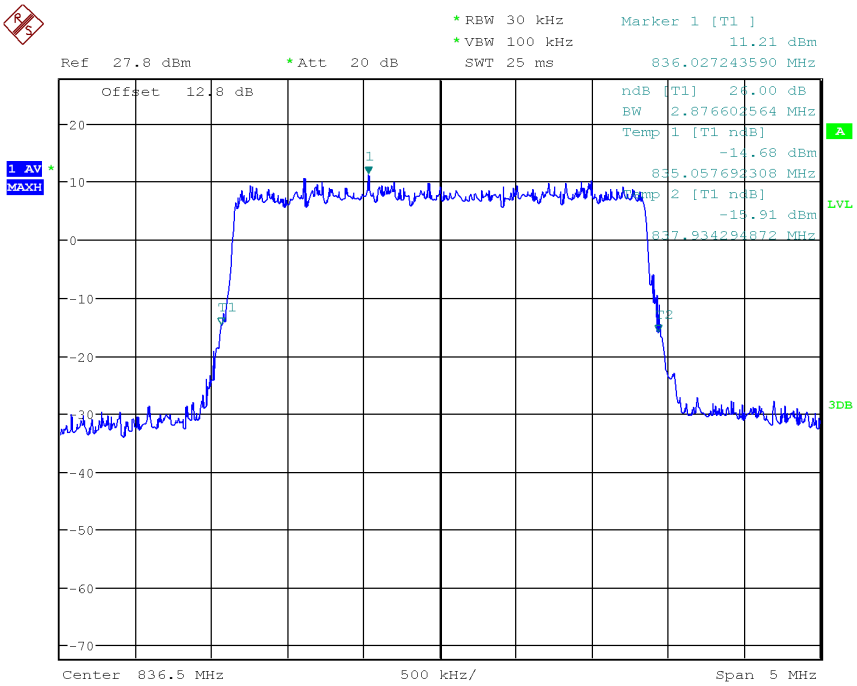


LTE Band5 QPSK -26dBc Channel 20525 BW=3MHz RB=15 RB Offset=0



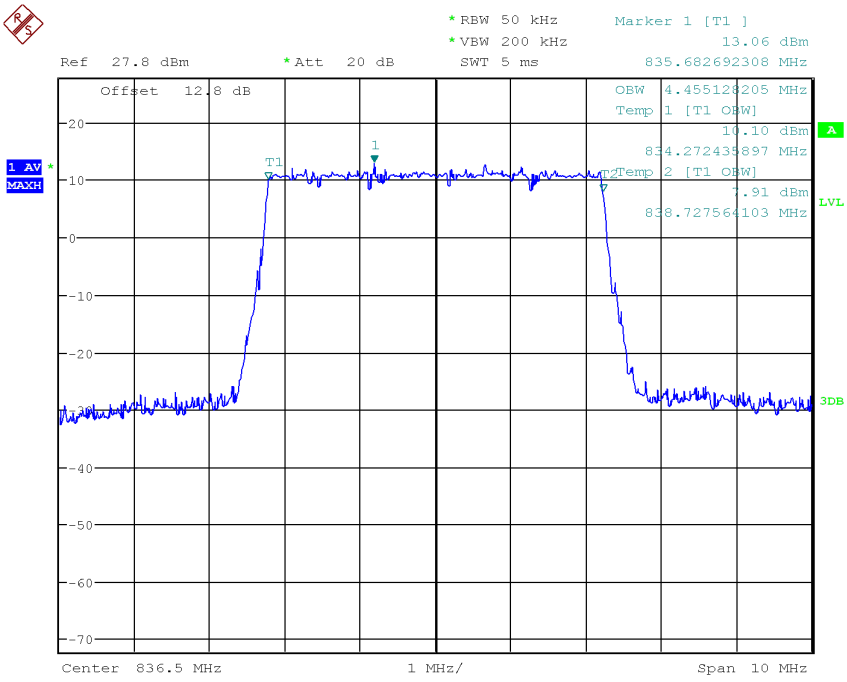
Date: 28.APR.2019 19:54:34

LTE Band5 16QAM 99% Channel 20525 BW=3MHz RB=15 RB Offset=0

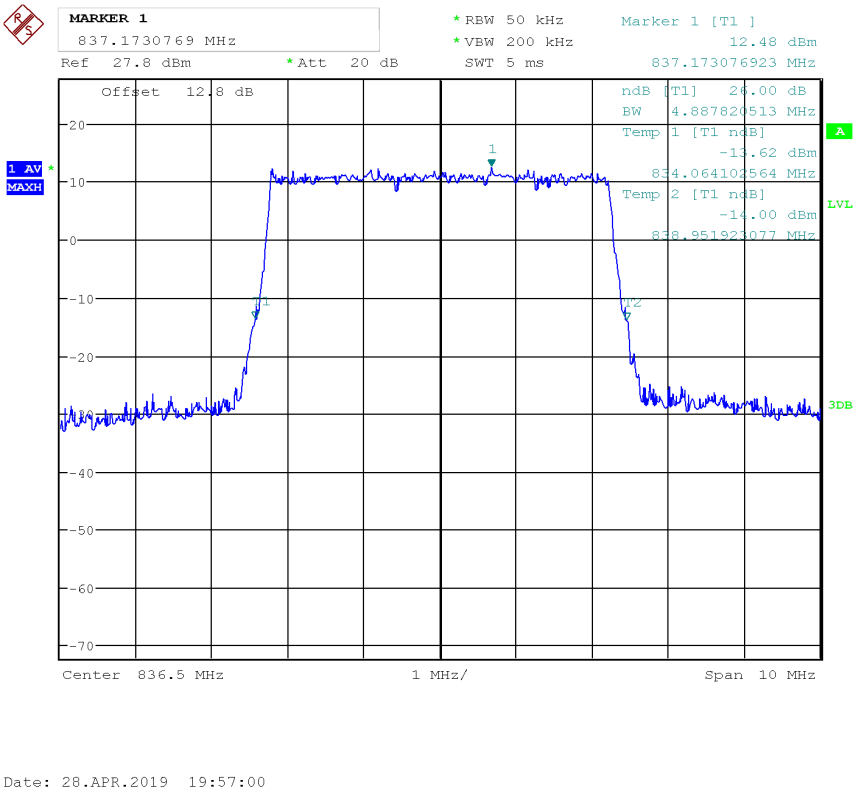


Date: 28.APR.2019 19:54:15

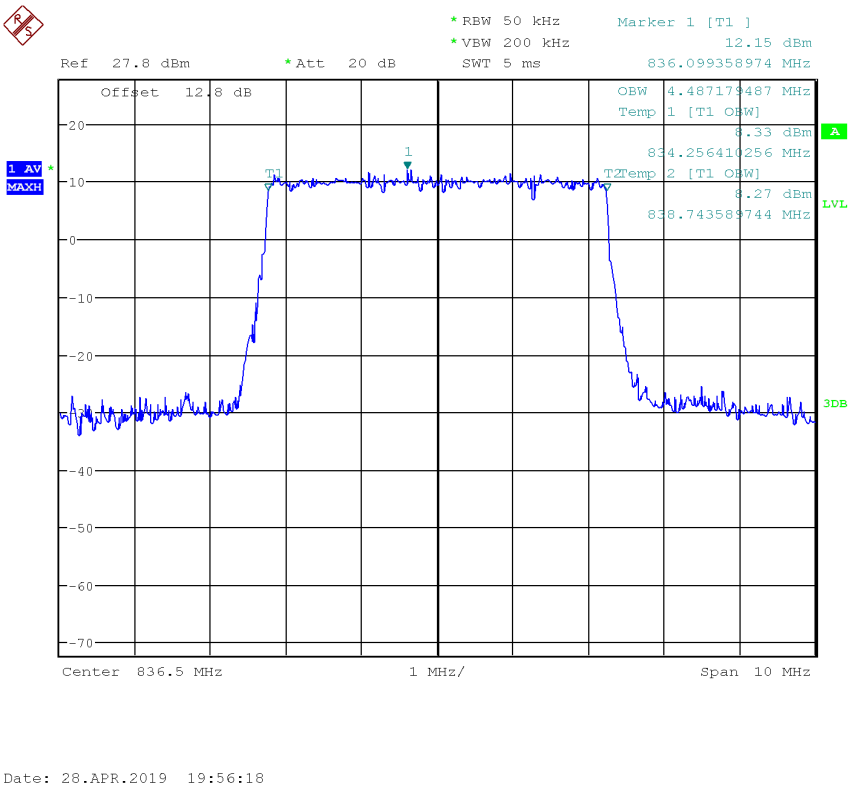
LTE Band5 16QAM -26dBc Channel 20525 BW=3MHz RB=15 RB Offset=0



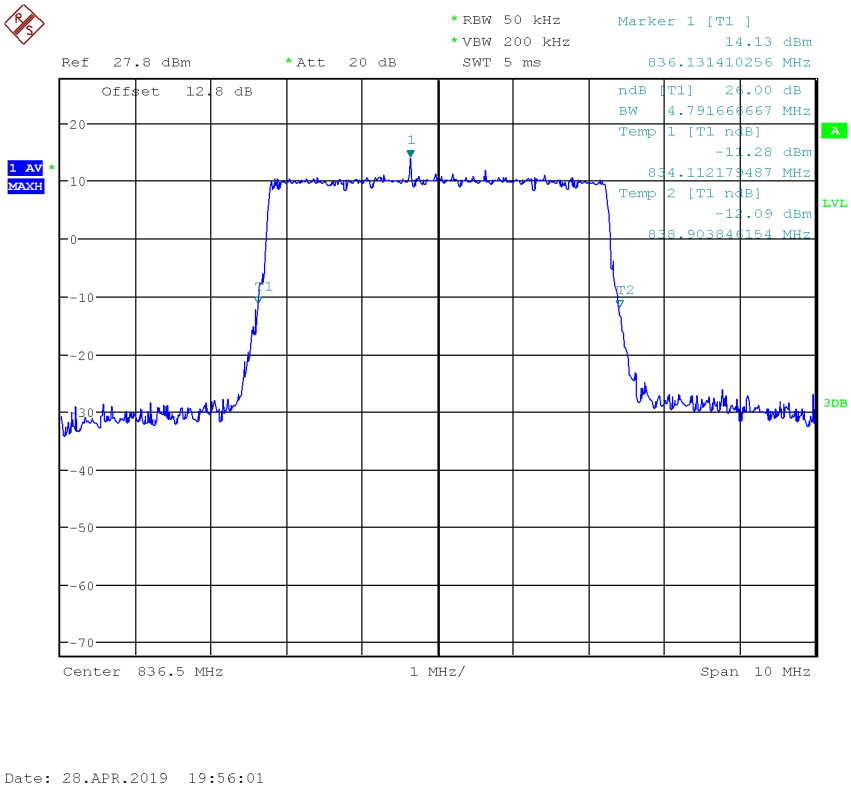
LTE Band5 QPSK 99% Channel 20525 BW=5MHz RB=25 RB Offset=0



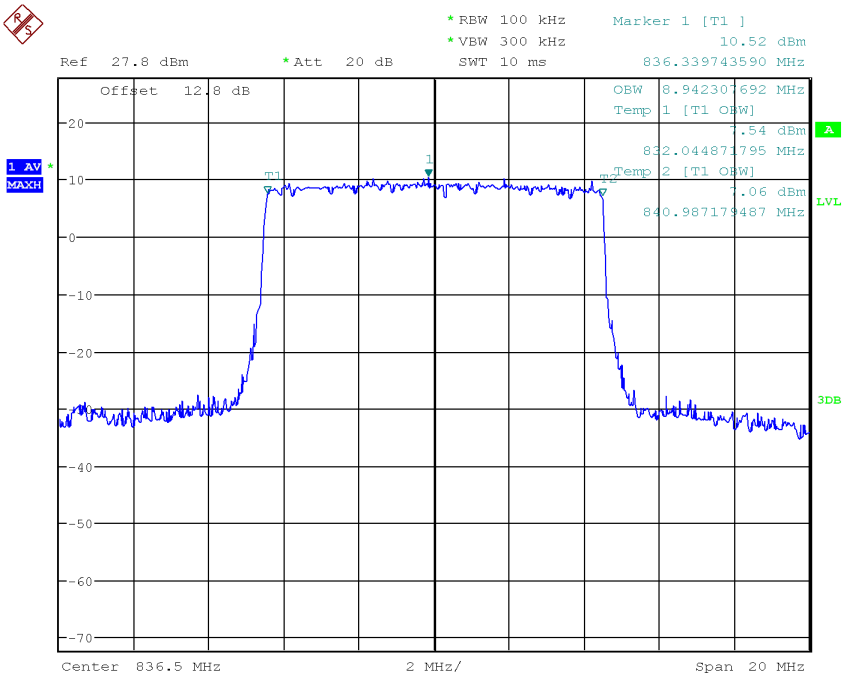
LTE Band5 QPSK -26dBc Channel 20525 BW=5MHz RB=25 RB Offset=0



LTE Band5 16QAM 99% Channel 20525 BW=5MHz RB=25 RB Offset=0

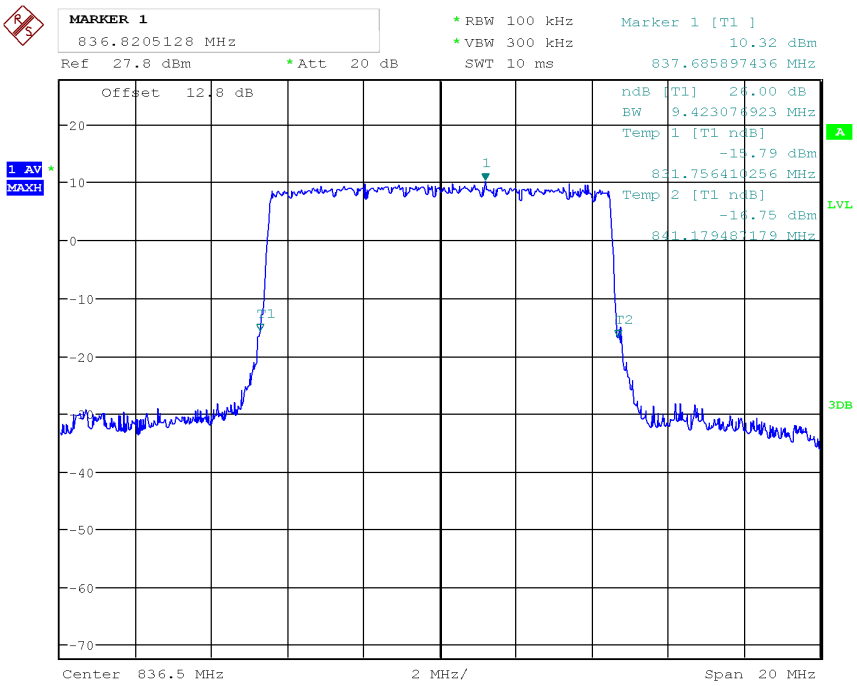


LTE Band5 16QAM -26dBc Channel 20525 BW=5MHz RB=25 RB Offset=0



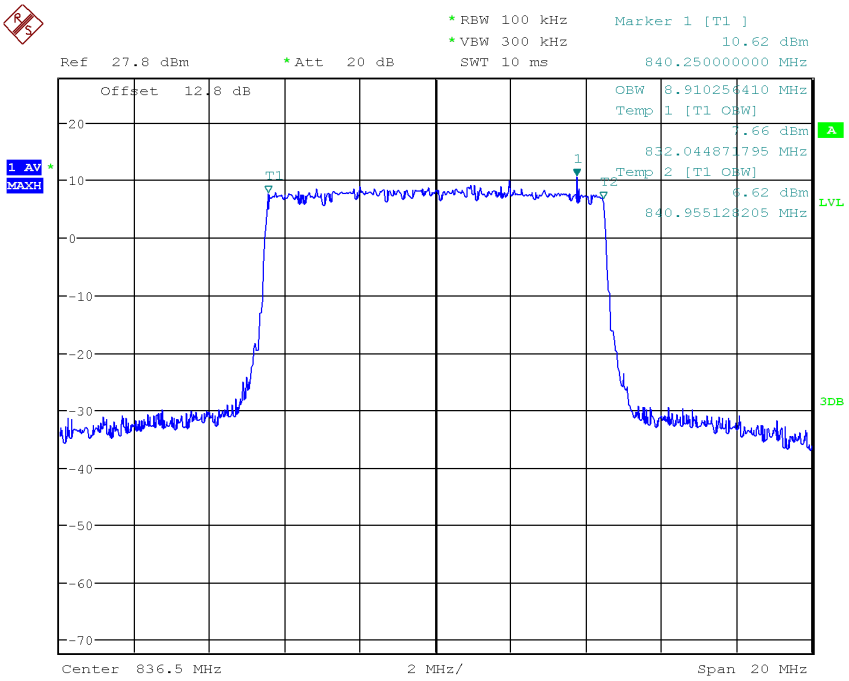
Date: 28.APR.2019 19:58:28

LTE Band5 QPSK 99% Channel 20525 BW=10MHz RB=50 RB Offset=0

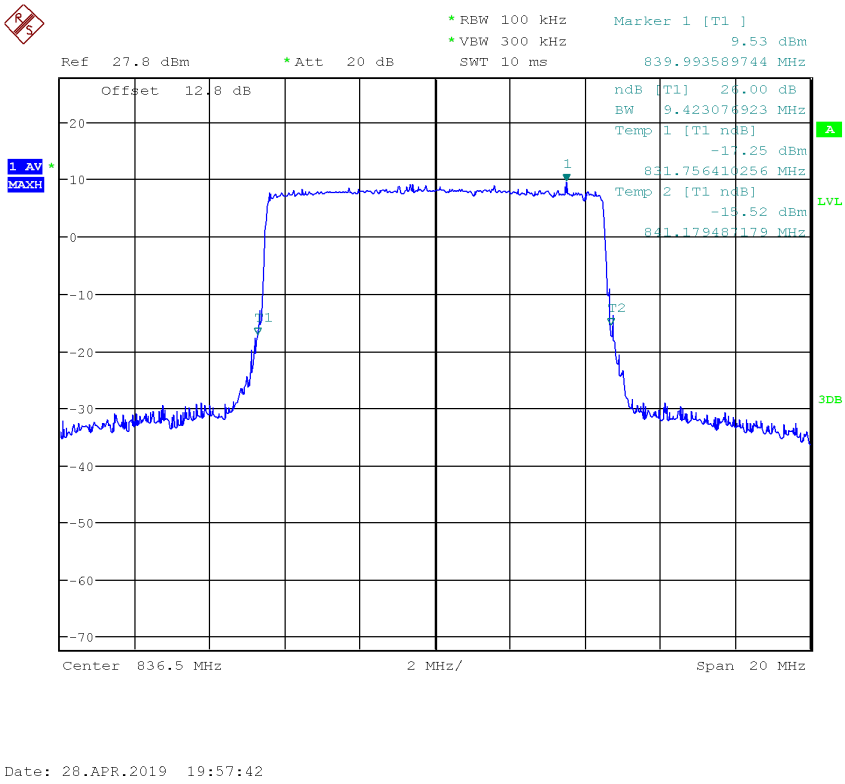


Date: 28.APR.2019 19:58:43

LTE Band5 QPSK -26dBc Channel 20525 BW=10MHz RB=50 RB Offset=0

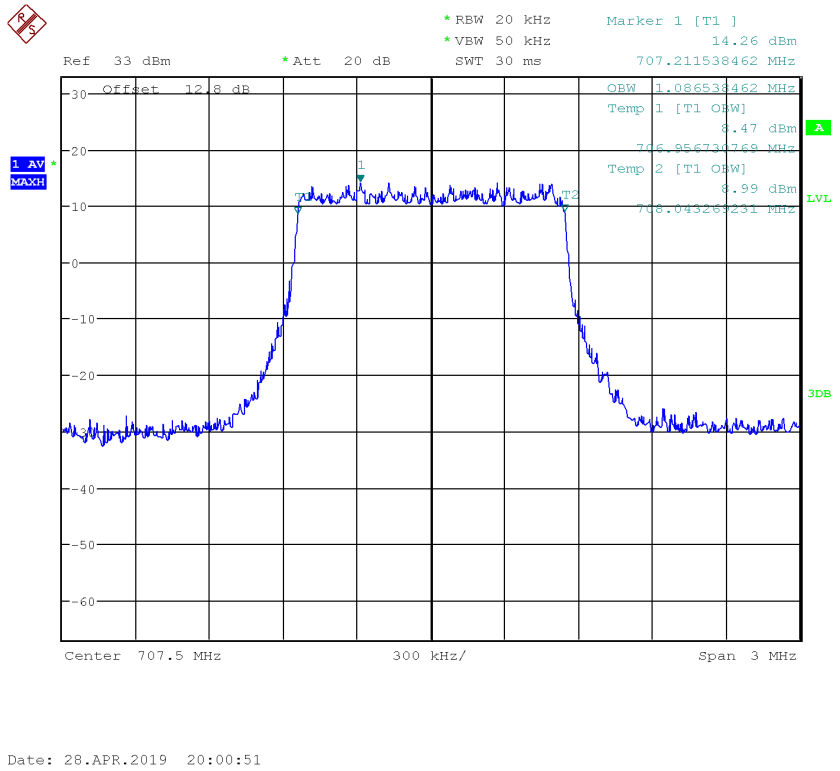


LTE Band5 16QAM 99% Channel 20525 BW=10MHz RB=27 RB Offset=0

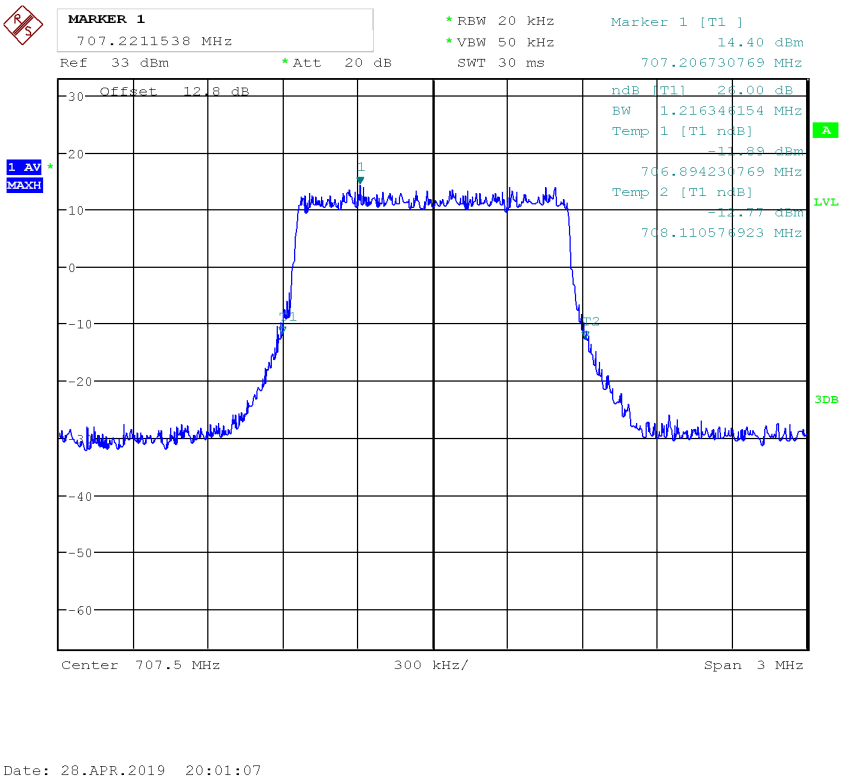


LTE Band5 16QAM -26dBc Channel 20525 BW=10MHz RB=27 RB Offset=0

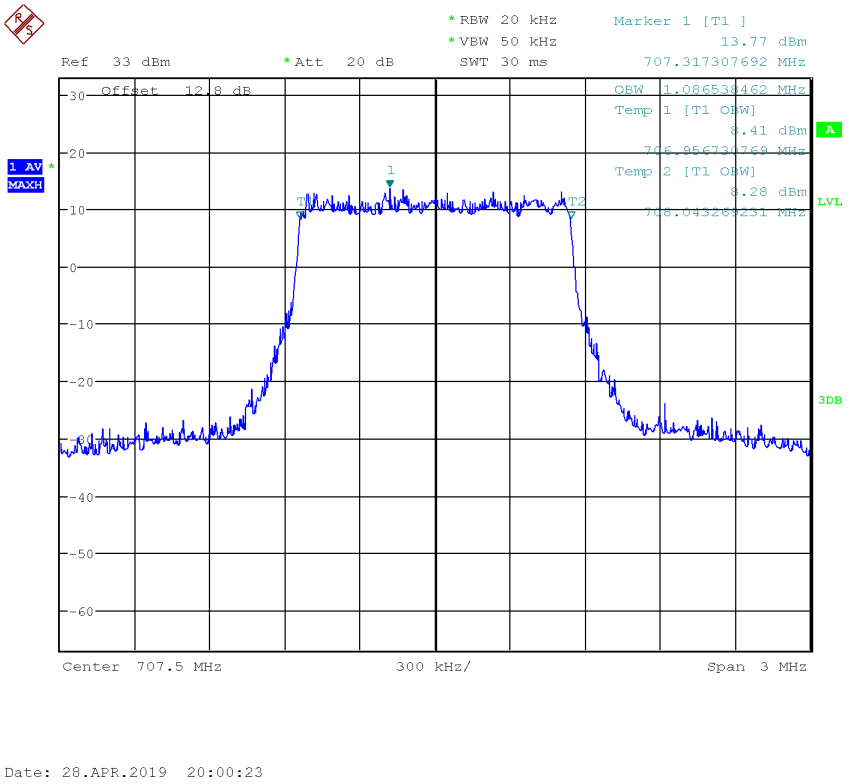
Graphical results for LTE B12:



LTE Band12 QPSK 99% Channel 20095 BW=1.4MHz RB=6RB Offset=0

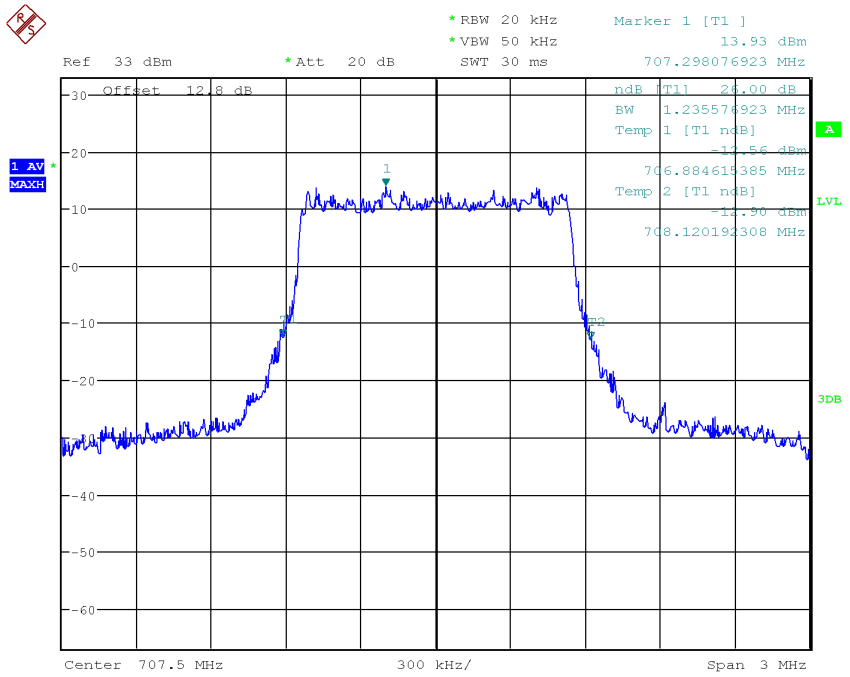


LTE Band12 QPSK -26dBc Channel 20095 BW=1.4MHz RB=6 RB Offset=0



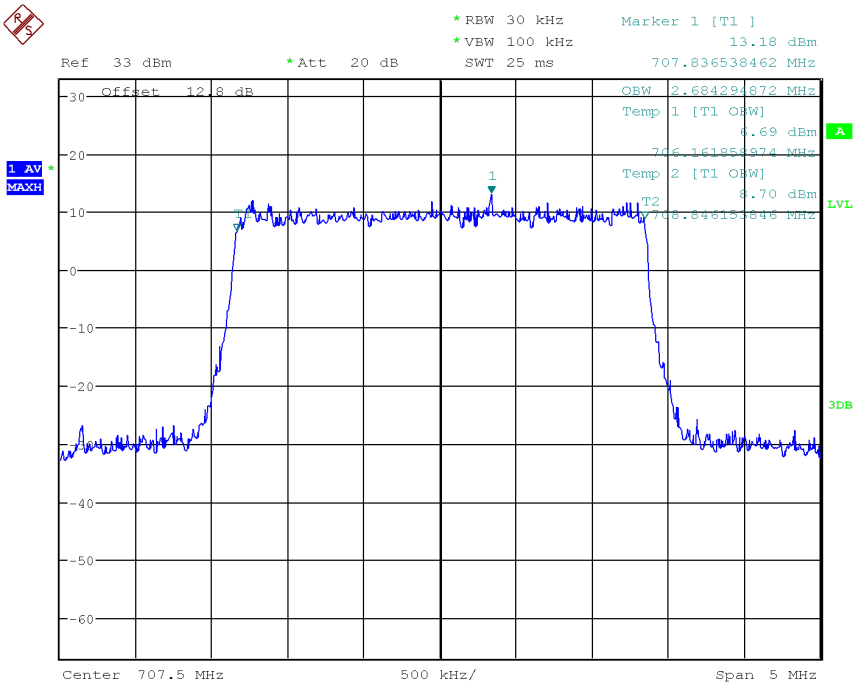
Date: 28.APR.2019 20:00:23

LTE Band12 16QAM 99% Channel 20095 BW=1.4MHz RB=6 RB Offset=0



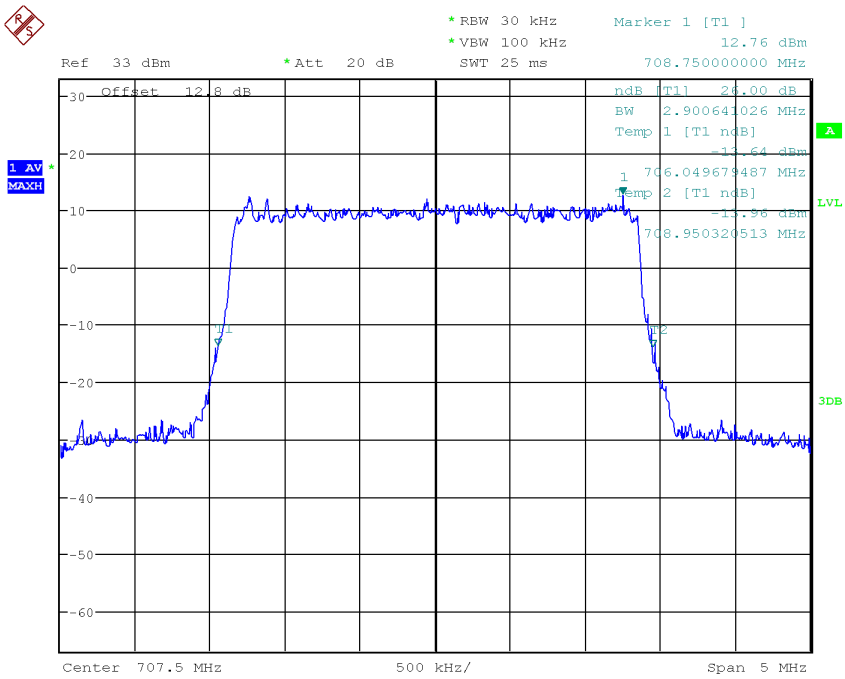
Date: 28.APR.2019 20:00:09

LTE Band12 16QAM -26dBc Channel 20095 BW=1.4MHz RB=6 RB Offset=0



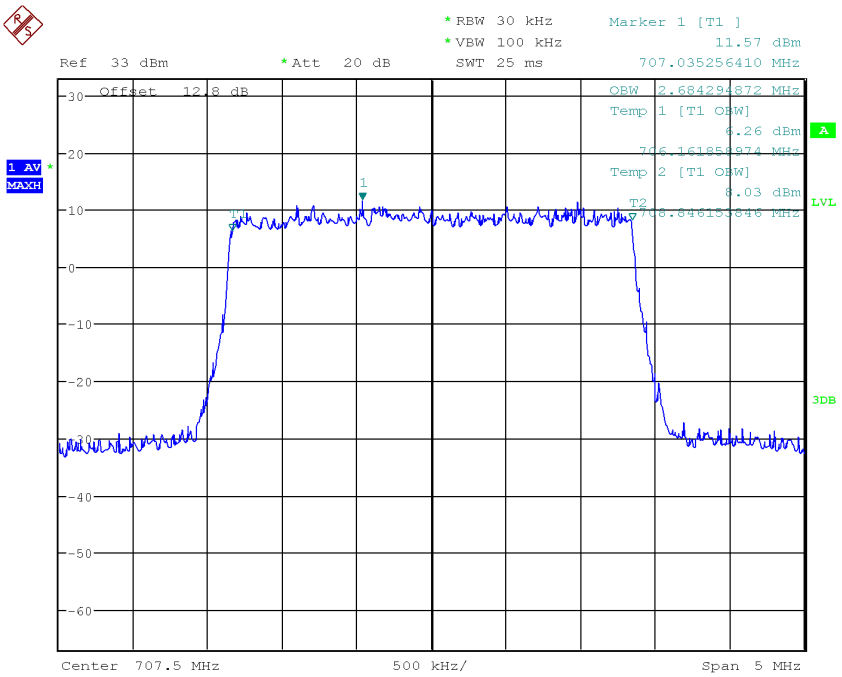
Date: 28.APR.2019 20:02:02

LTE Band12 QPSK 99% Channel 20095 BW=3MHz RB=15 RB Offset=0



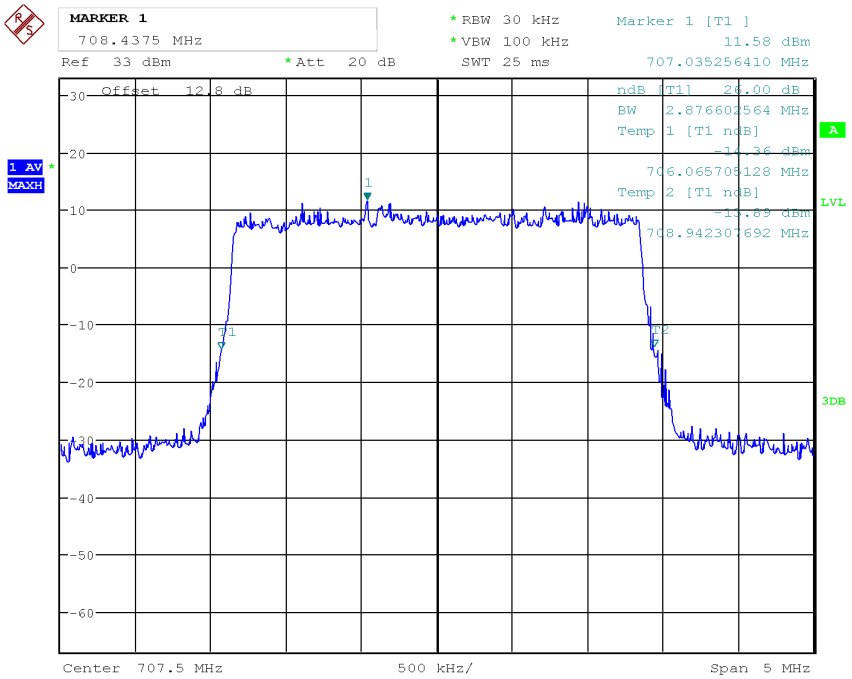
Date: 28.APR.2019 20:01:47

LTE Band12 QPSK -26dBc Channel 20095 BW=3MHz RB=15 RB Offset=0



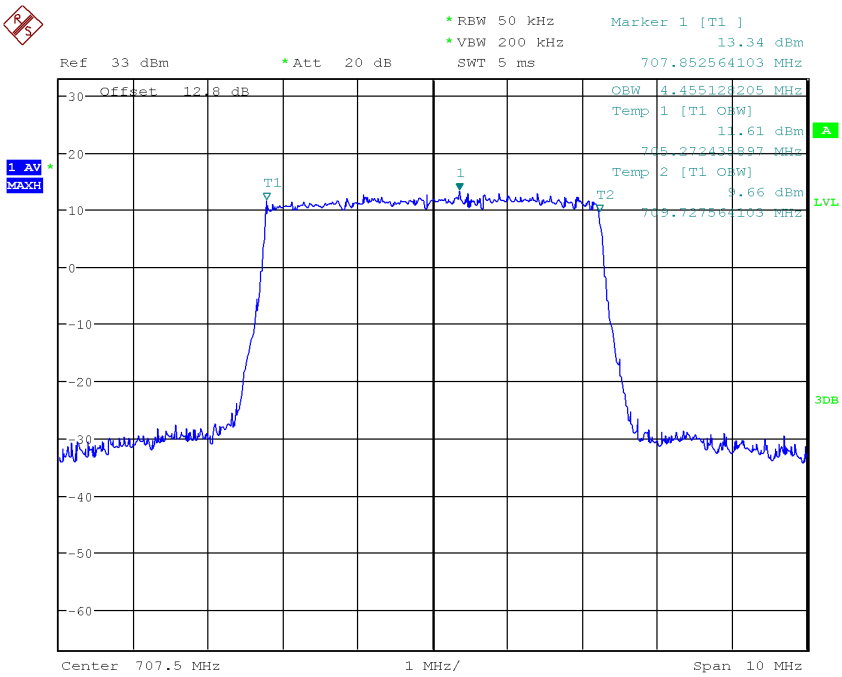
Date: 28.APR.2019 20:02:36

LTE Band12 16QAM 99% Channel 20095 BW=3MHz RB=15 RB Offset=0



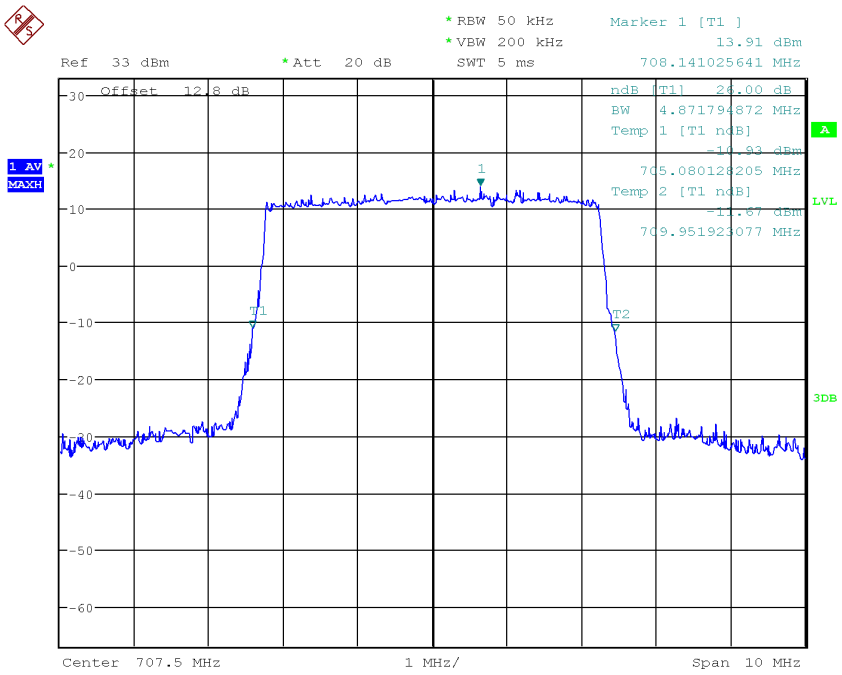
Date: 28.APR.2019 20:02:53

LTE Band12 16QAM -26dBc Channel 20095 BW=3MHz RB=15 RB Offset=0



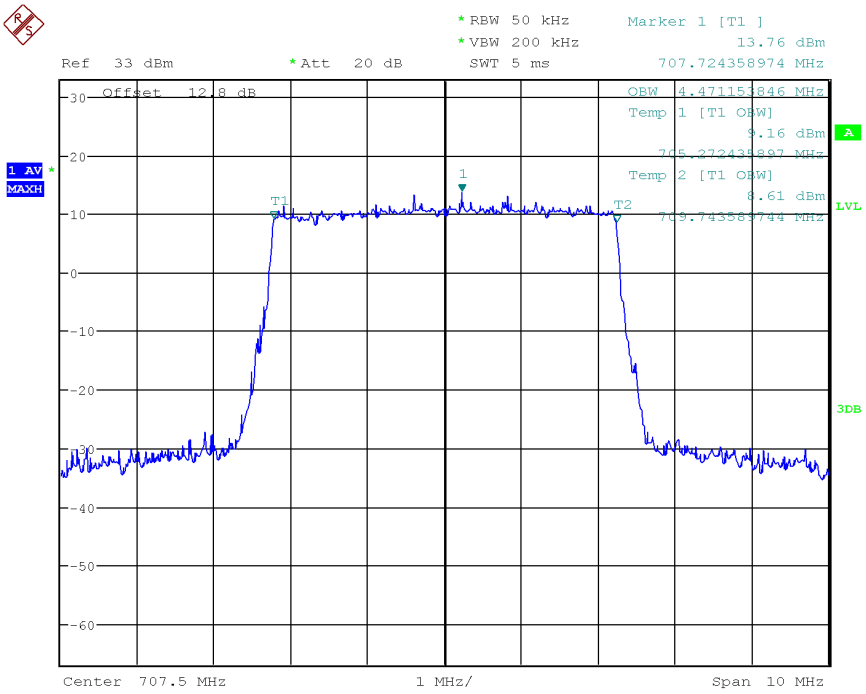
Date: 28.APR.2019 20:03:49

LTE Band12 QPSK 99% Channel 20095 BW=5MHz RB=25 RB Offset=0



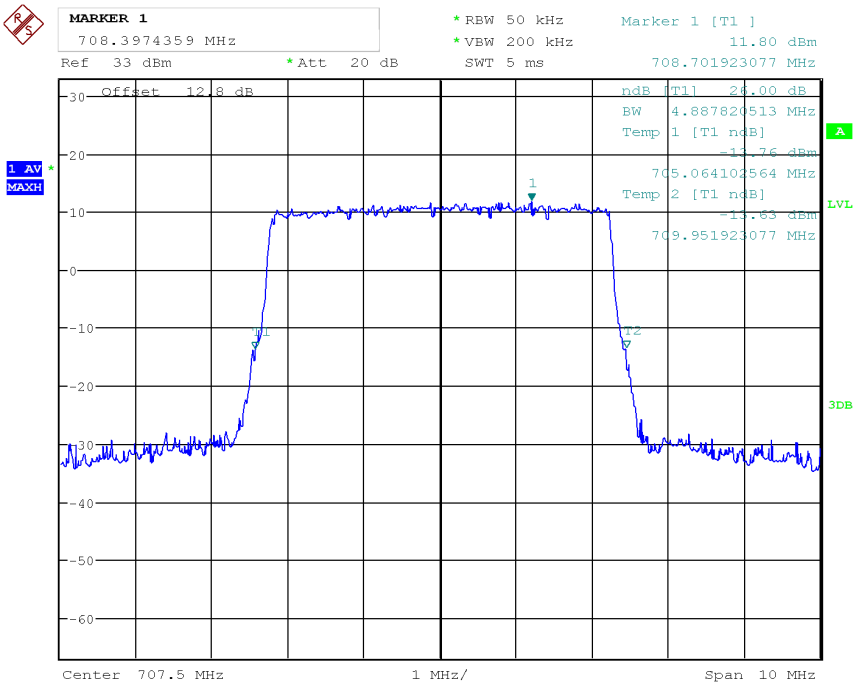
Date: 28.APR.2019 20:03:33

LTE Band12 QPSK -26dBc Channel 20095 BW=5MHz RB=25 RB Offset=0



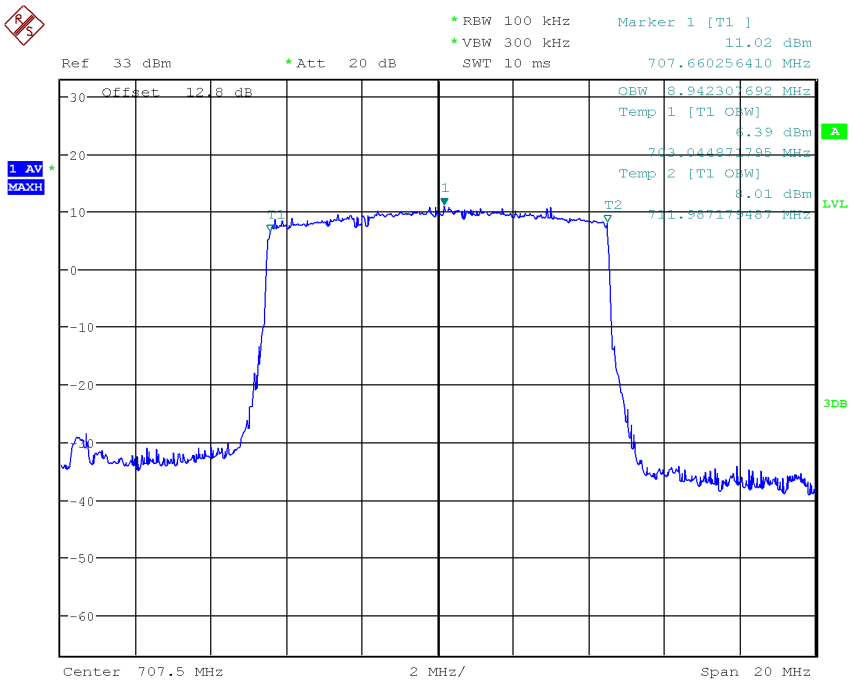
Date: 28.APR.2019 20:04:11

LTE Band12 16QAM 99% Channel 20095 BW=5MHz RB=25 RB Offset=0



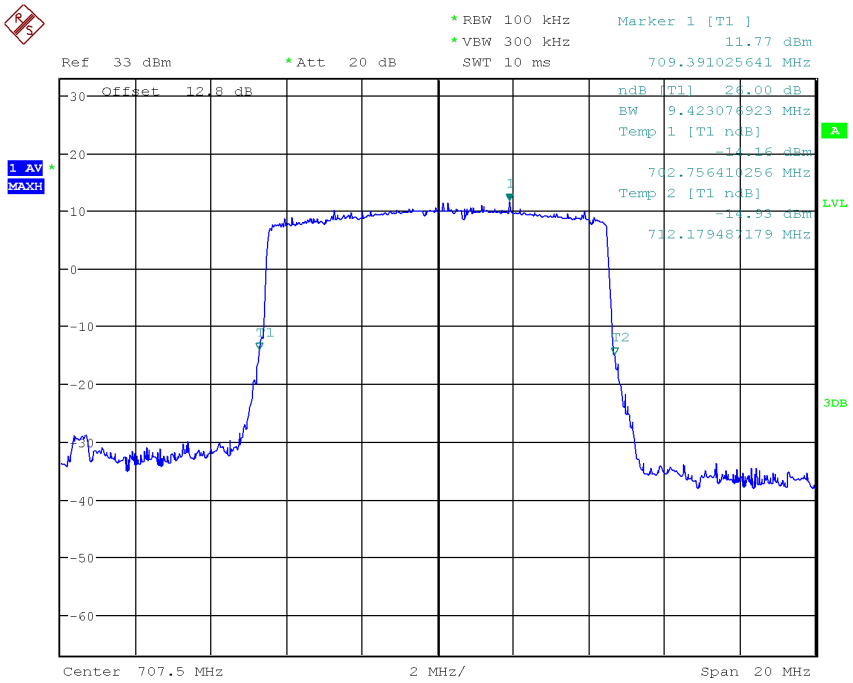
Date: 28.APR.2019 20:04:26

LTE Band12 16QAM -26dBc Channel 20095 BW=5MHz RB=25RB Offset=0



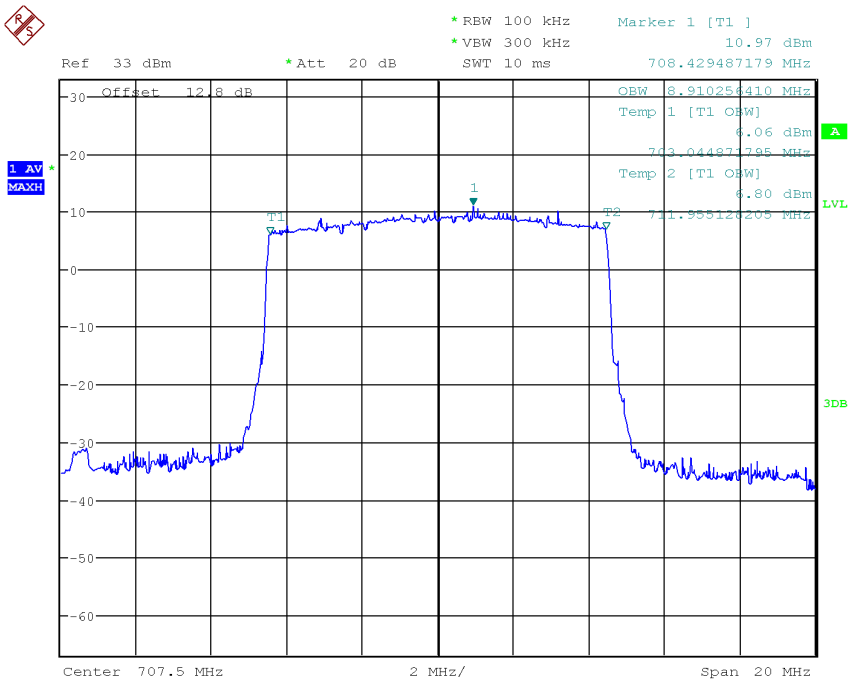
Date: 28.APR.2019 20:05:21

LTE Band12 QPSK 99% Channel 20095 BW=10MHz RB=50RB Offset=0



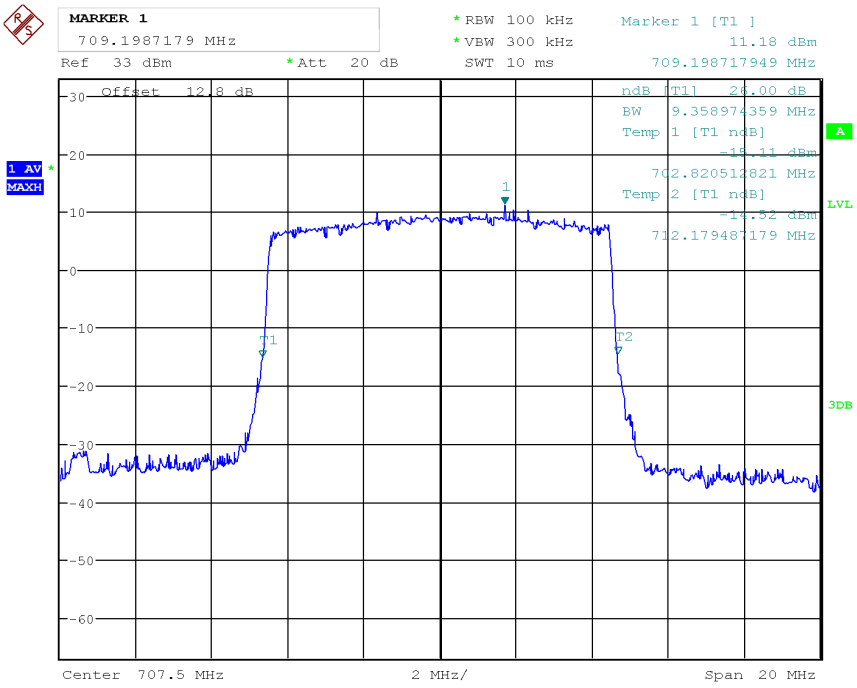
Date: 28.APR.2019 20:05:06

LTE Band12QPSK -26dBc Channel 20095 BW=10MHz RB=50RB Offset=0



Date: 28.APR.2019 20:05:47

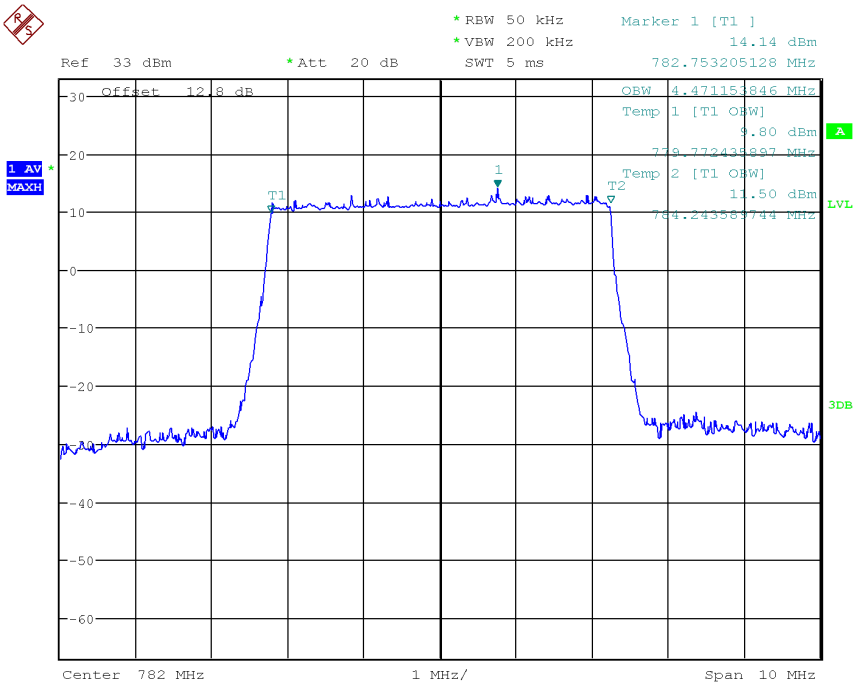
LTE Band12 16QAM 99% Channel 20095 BW=10MHz RB=50RB Offset=0



Date: 28.APR.2019 20:06:03

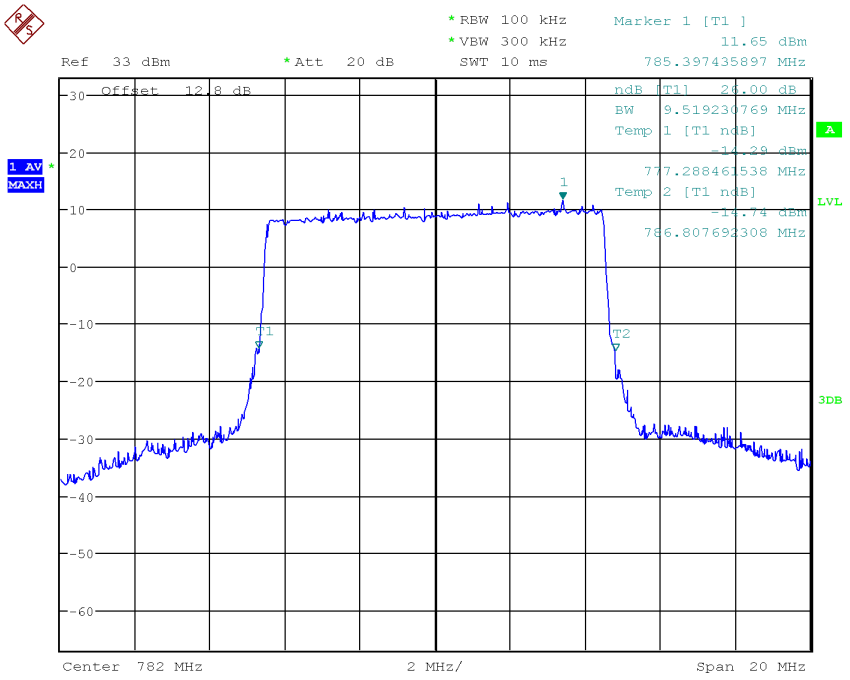
LTE Band12 16QAM -26dBc Channel 20095 BW=10MHz RB=50RB Offset=0

Graphical results for LTE B13:



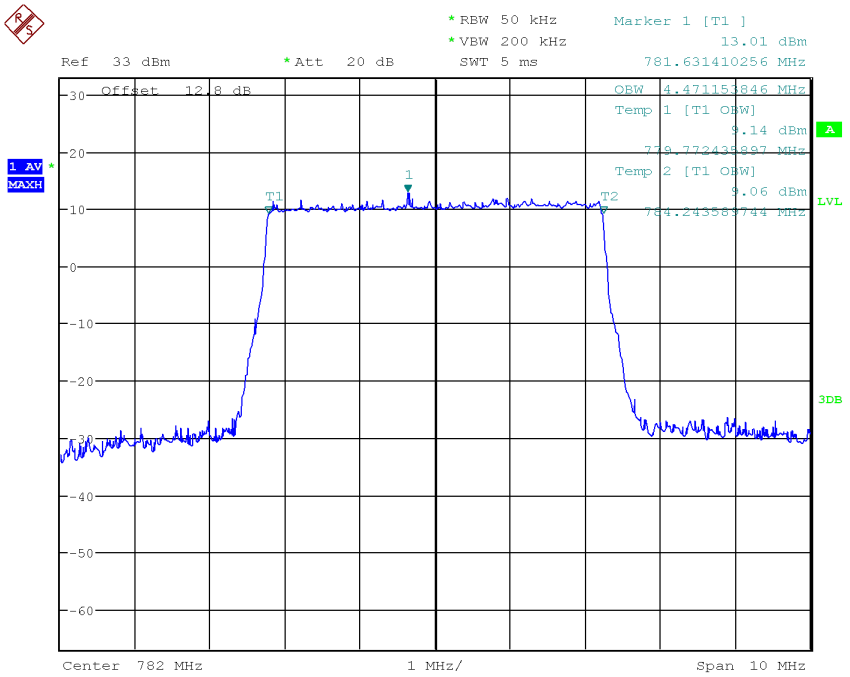
Date: 28.APR.2019 20:14:33

LTE Band13QPSK 99% Channel 20230 BW=5MHz RB=25 RB Offset=0



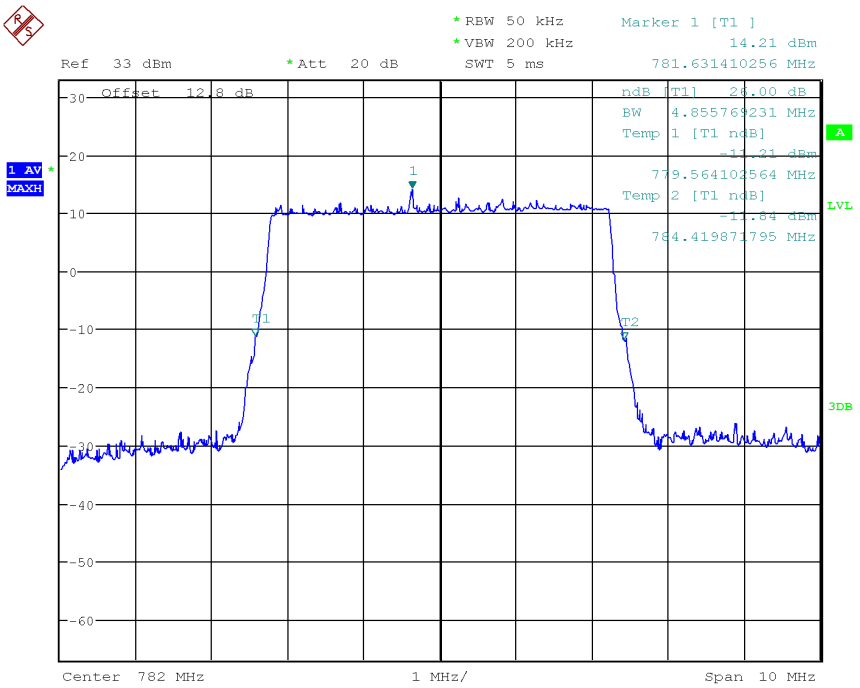
Date: 28.APR.2019 20:11:03

LTE Band13 QPSK -26dBc Channel 20230 BW=5MHz RB=25 RB Offset=0



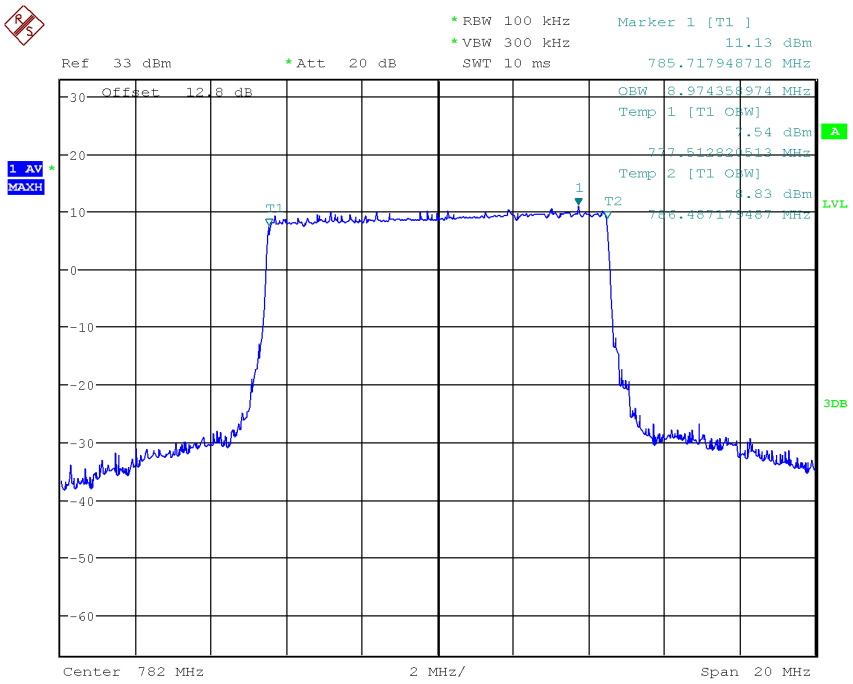
Date: 28.APR.2019 20:09:14

LTE Band13 16QAM 99% Channel 20230 BW=5MHz RB=25 RB Offset=0



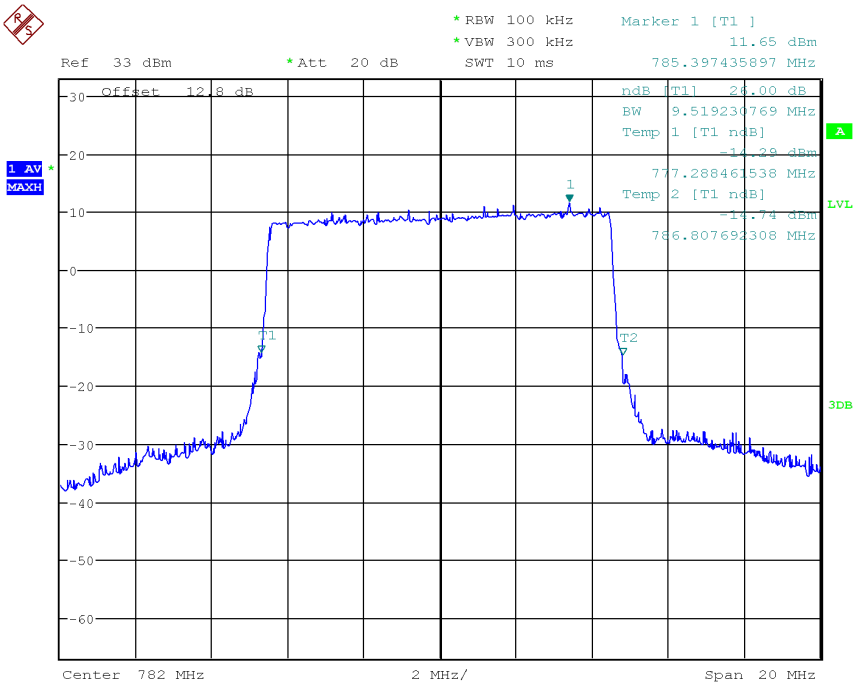
Date: 28.APR.2019 20:08:46

LTE Band13 16QAM -26dBc Channel 20230 BW=5MHz RB=25 RB Offset=0



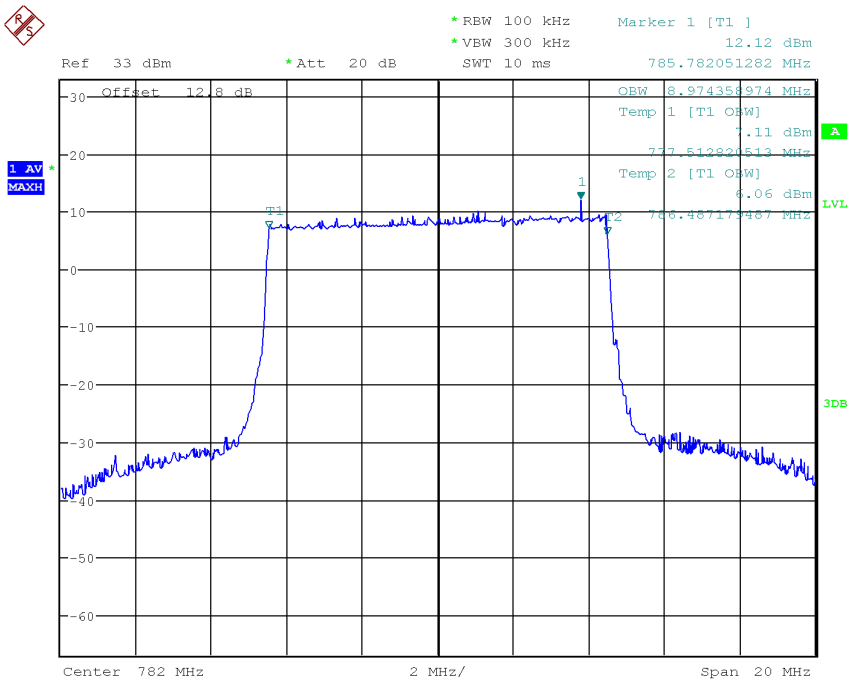
Date: 28.APR.2019 20:11:29

LTE Band13 QPSK 99% Channel 20230 BW=10MHz RB=50 RB Offset=0



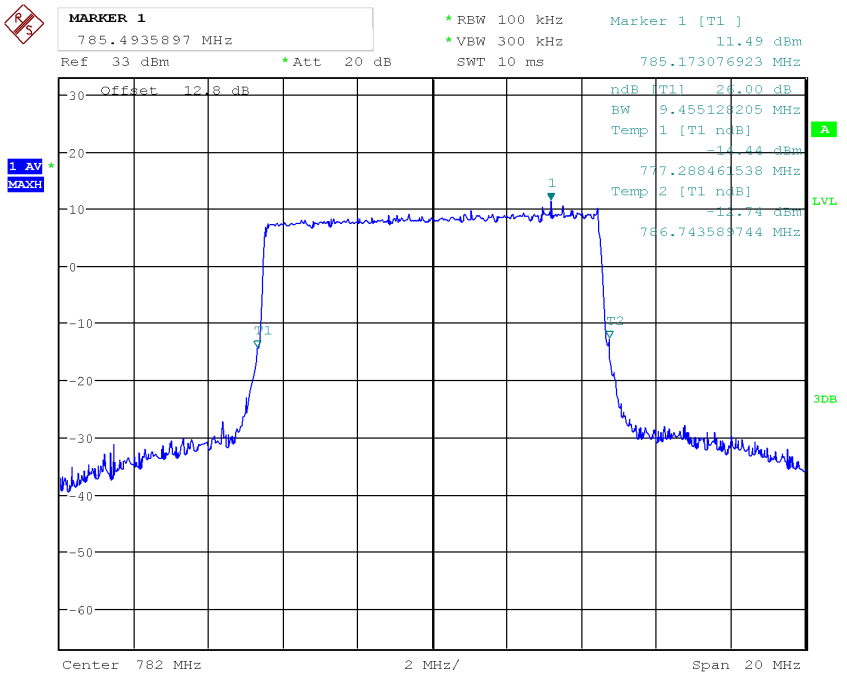
Date: 28.APR.2019 20:11:03

LTE Band13QPSK -26dBc Channel 20230 BW=10MHz RB=50 RB Offset=0



Date: 28.APR.2019 20:10:06

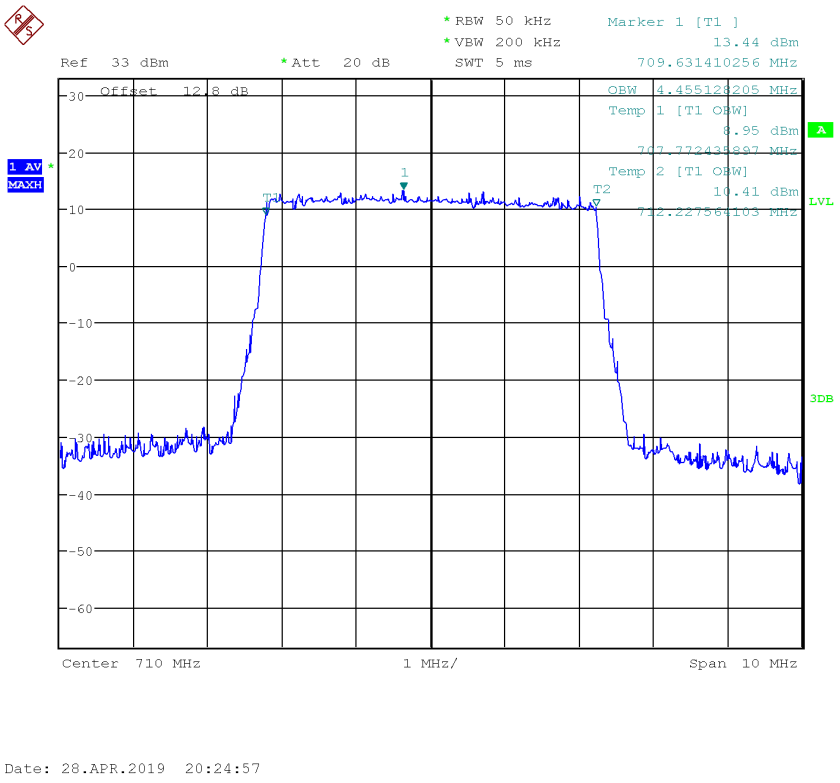
LTE Band13 16QAM 99% Channel 20230 BW=10MHz RB=50 RB Offset=0



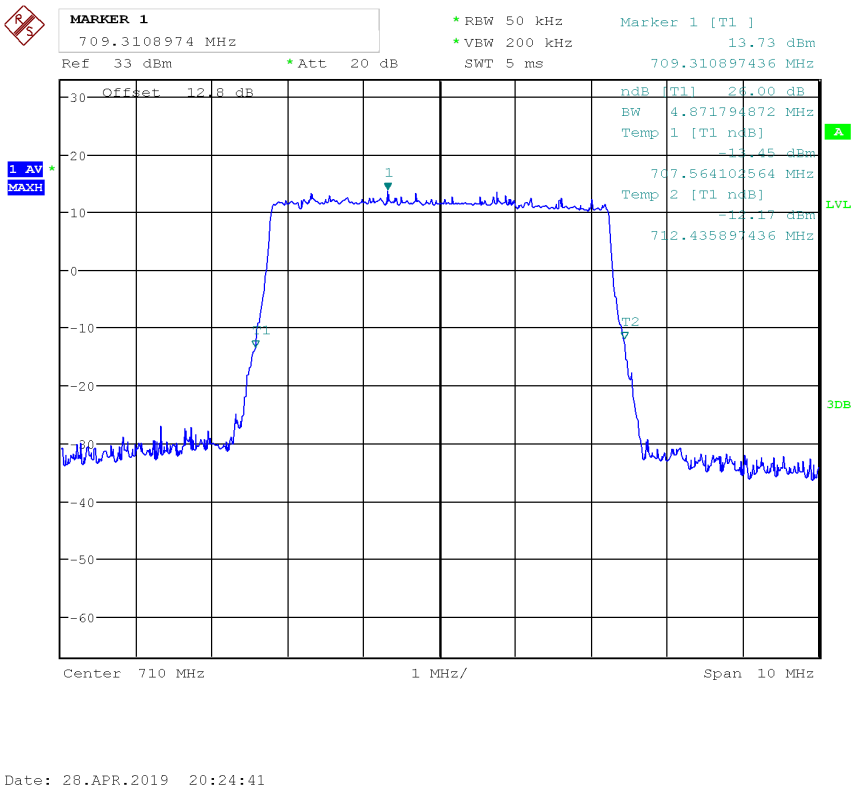
Date: 28.APR.2019 20:10:26

LTE Band13 16QAM -26dBc Channel 20230 BW=10MHz RB=50 RB Offset=0

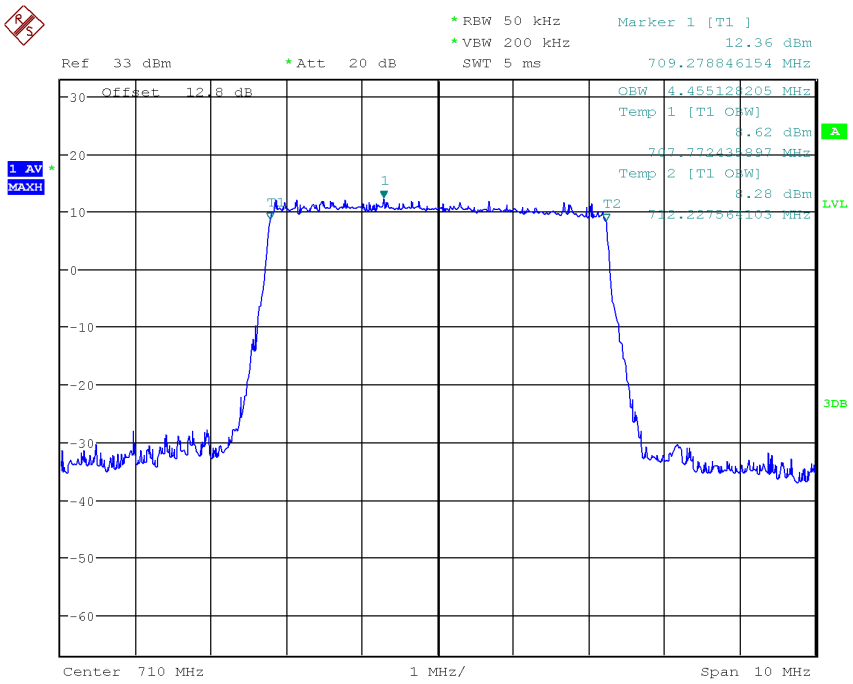
Graphical results for LTE B17:



LTE Band17 QPSK 99% Channel 20790 BW=5MHz RB=25 RB Offset=0

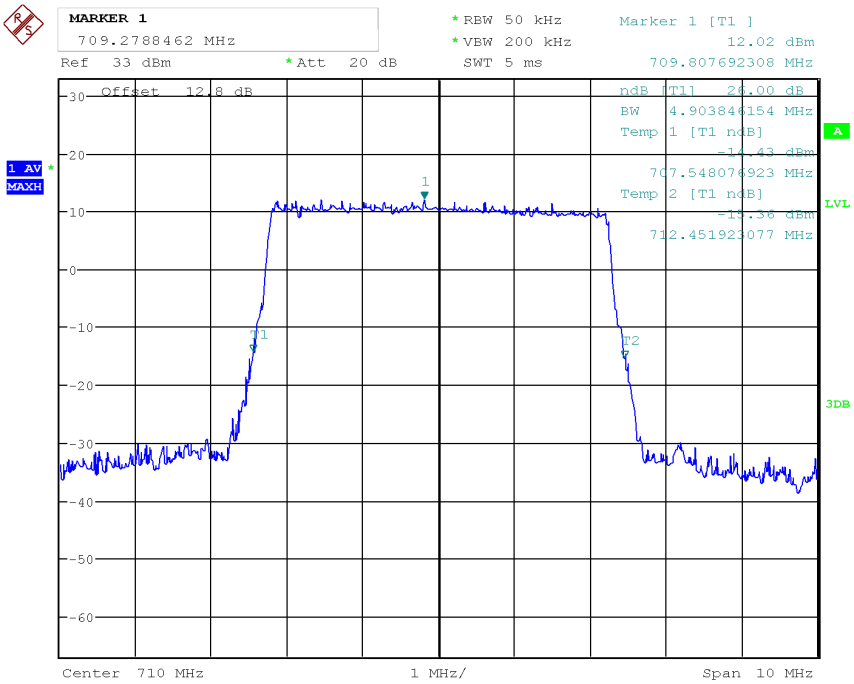


LTE Band17 QPSK -26dBc Channel 20790 BW=5MHz RB=25 RB Offset=0



Date: 28.APR.2019 20:25:29

LTE Band17 16QAM 99% Channel 20790 BW=5MHz RB=25 RB Offset=0



Date: 28.APR.2019 20:25:45

LTE Band17 16QAM -26dBc Channel 20790 BW=5MHz RB=25 RB Offset=0