FCC TEST REPORT

For

Wearable Data Terminal

Model Number: WD100

FCC ID: HLEWD100BTNL

Report Number : WT188005266

Test Laboratory	:	Shenzhen Academy of Metrology and Quality Inspection
Site Location	:	NETC Building, No.4 Tongfa Rd., Xili, Nanshan, Shenzhen, China
Tel	:	0086-755-86928965
Fax	:	0086-755-86009898-31396
Web	:	www.smq.com.cn
E-mail	:	emcrf@smq.com.cn

Test report declaration

Applicant	:	unitech Electronics Co., LTD.
Address	:	5F., No.136, Ln. 235, Baoqiao Rd., Xindian Dist., New Taipei City, Taiwan
Manufacturer	:	unitech Electronics Co., LTD.
Address	:	5F., No.136, Ln. 235, Baoqiao Rd., Xindian Dist., New Taipei City, Taiwan
EUT Description	:	Wearable Data Terminal
Model No	:	WD100
Trade mark	:	unitech
Serial Number	:	/
FCC ID	:	HLEWD100BTNL

Test Standards:

FCC PART 22H , 24E AND 27 (2017)

The EUT described above is tested by Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory to determine the maximum emissions from the EUT. Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory is assumed full responsibility for the accuracy of the test results. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.26 (2015) & KDB971168 and the energy emitted by the sample EUT tested as described in this report is in compliance with FCC Rules Part 22H , 24E AND 27.

The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

Project Engineer:	(Chen Silin 陈司林)	Date:	Nov.14, 2018
Checked by:	(Lin Yixiang 林奕翔)	Date:	Nov.14, 2018
Approved by:	(Lin Bin 林斌)	Date:	Nov.14, 2018

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1. TEST RESULTS SUMMARY

Table 1 Test Results Summary

FCC Measurement Specification	FCC Limits Part(s)	Description	Result
2.1046	22.913 24.232 27.50(d) 27.50(h)	Effective Radiated Power of Transmitter	PASS
2.1046	22.913 24.232 27.50(d) 27.50(h)	Conducted Power of Transmitter	PASS
2.1046	22.913 24.232 27.50(d) 27.50(h)	Peak to Average Radio	PASS
2.1049	22.917(b) 24.238(b) 27.53	Occupied Bandwidth	PASS
2.1051	22.917 24.238 27.53	Spurious Emission at Antenna Terminal	PASS
2.1053	22.917 24.238 27.53	Radiated Spurious Emissions	PASS
2.1055	22.355 24.235 27.54	Frequency Stability	PASS

CFR 47 (FCC) part 22 subpart H, part 24 subpart E and part 27 .

Remark: “N/A” means “Not applicable.”
The tests documented in this report were performed in accordance with ANSI C63.26 (2015) & KDB971168, FCC CFR 47 Part 2, Part 22 ,Part 24 and Part 27.

2. GENERAL INFORMATION

2.1. Report information

This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that SMQ approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that SMQ in any way guarantees the later performance of the product/equipment.

The samples mentioned in this report is/are supplied by Applicant, SMQ therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through SMQ, unless the applicant has authorized SMQ in writing to do so.

2.2. Laboratory Accreditation and Relationship to Customer

The testing report were performed by the Shenzhen Academy of Metrology and The testing report were performed by the Shenzhen Academy of Metrology and quality Inspection EMC Laboratory (Guangdong EMC compliance testing center), in their facilities located at NETC Building, No.4 Tongfa Rd., Xili, Nanshan, Shenzhen, China. At the time of testing, Laboratory is accredited by the following organizations:

China National Accreditation Service for Conformity Assessment (CNAS) accredits the Laboratory for conformance to FCC standards, EMC international standards and EN standards. The Registration Number is CNAS L0579.

The Laboratory is Accredited Testing Laboratory of FCC with Designation number CN1165 and Site registration number 582918.

The Laboratory is registered to perform emission tests with Industry Canada (IC), and the registration number is 11177A.

2.3. Measurement Uncertainty

For a 95% confidence level (k = 2), the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 as following:
Radiated Emission
30MHz~1000MHz 4.5dB
1GHz~26.5GHz 4.6dB

26dB & Occupied Bandwidth: ±0.39%

Frequency Stability: ±0.42%

Peak to Average Ratio:0.45 dB

Conducted power :0.3 dB

Temperature: ±0.698

Supply voltages:±0.15%

3. PRODUCT DESCRIPTION

3.1. EUT Description

Table 2 Specification of the Equipment under Test

Product Type:	Wearable Data Terminal		
Hardware Version:	V03		
Software Version :	SQ46W_P1_00AX_YBUTE_AU1616_404_R_0_181009_01		
FCC-ID:	HLEWD100BTNL		
Frequency Range	GSM850: TX 824MHz~849MHz RX 869MHz~894MHz PCS1900: TX 1850MHZ~1910MHz RX 1930MHz~1990MHz WCDMA 850: TX 824MHz~849MHz RX 869MHz~894MHz WCDMA 1700: TX: 1710MHz~1755MHz RX 2110MHz~2155MHz WCDMA 1900: TX 1850MHZ~1910MHz RX 1930MHz~1990MHz LTE Band 2: TX 1850MHZ~1910MHz RX 1930MHz~1990MHz LTE Band 4: TX: 1710MHz~1755MHz RX 2110MHz~2155MHz LTE Band 5: TX 824MHz~849MHz RX 869MHz~894MHz LTE Band 7: TX 2500MHz~2570MHz RX 2620MHz~2690MHz		
Type(s) of Modulation:	GSM850/PCS1900 :GMSK 8PSK WCDMA:QPSK LTE:QPSK, 16QAM		
LTE Supported Channel Bandwidth:	Band 2:	1.4 MHz	Supported
		3 MHz	Supported
		5 MHz	Supported
		10 MHz	Supported
		15 MHz	Supported
		20 MHz	Supported
	Band 4:	1.4 MHz	Supported
		3 MHz	Supported
		5 MHz	Supported
		10 MHz	Supported
		15 MHz	Supported
		20 MHz	Supported
	Band 5:	1.4 MHz	Supported
		3 MHz	Supported

		5 MHz	Supported
		10 MHz	Supported
	Band 7:	5 MHz	Supported
		10 MHz	Supported
		15 MHz	Supported
		20 MHz	Supported
Antenna Designation:	PIFA antenna		
Antenna Gain	824MHz~849MHz: -2dBi 1710MHz~1780MHz: -1 dBi 1850MHZ~1910MHz: -1 dBi 2500MHz~2570MHz: -1 dBi		
Operating voltage:	Internal battery, 120V AC Adapter; 3.5V (Low)/3.7V (Nominal)/ 4.35V (Max)		

Remark:---

Table 3 Identification of the Equipment Under Test (EUT)

EUT	Serial Number/IMEI	HW Version	SW Version	Notes
1	865330030028505	V03	SQ46W_P1_00AX_YB UTE_AU1616_404_R_ 0_181009_01	Conducted testing sample.
2	865330030028505	V03	SQ46W_P1_00AX_YB UTE_AU1616_404_R_ 0_181009_01	Radiated testing sample.

Table 4 Identification of Accessory equipment

Name	Model No	S/N	Manufacturer
Adaptor for EUT	ZAU-A050150A-02	--	ShenZhen Zhongling Electronics Technology CO.,Ltd
Battery for EUT	HBLU2	--	ICON ENERGY SYSTEM(SHEN ZHEN) CO.,LTD.

3.2. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: **HLEWD100BTNL** filing to comply with FCC PART 22H,24E AND 27.

3.3. Operating Condition of EUT

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, and EUT is rotated on three test planes to find out the worst emission (X plane).

TM1: GPRS Mode with GMSK Modulation
TM2: EDGE Mode with 8PSK Modulation
TM3: WCDMA Mode with QPSK Modulation

TM4: LTE Mode with QPSK Modulation
TM5: LTE Mode with 16QAM Modulation
The maximum power levels are GSM mode for GMSK link, Edge mode for 8PSK link, WCDMA mode for QPSK link, LTE Mode for QPSK link , LTE mode for 16QAM link.only these modes were used for all tests.
The conducted power tables are as follows:

Band: GSM850	Average Power [dBm]		
Channel	**128**	**190**	**251**
Frequency (MHz)	**824.2**	**836.6**	**848.8**
GSM (GMSK, 1 Tx slot)	**32.88**	**32.61**	**32.40**
GPRS (GMSK, 1 Tx slot)	32.85	32.59	32.38
GPRS (GMSK, 2 Tx slots)	30.91	30.66	30.52
GPRS (GMSK, 3 Tx slots)	29.20	28.82	28.63
GPRS (GMSK, 4 Tx slots)	28.05	27.83	27.37
EDGE (8PSK, 1 Tx slot)	**27.51**	**27.21**	**27.03**
EDGE (8PSK, 2 Tx slot)	25.35	25.02	24.82
EDGE (8PSK, 3 Tx slot)	23.27	22.99	22.82
EDGE (8PSK, 4 Tx slot)	22.42	22.06	21.80

Band: GSM1900	Average Power [dBm]		
Channel	**512**	**661**	**810**
Frequency (MHz)	**1850.2**	**1880**	**1909.8**
GSM (GMSK, 1 Tx slot)	29.45	29.30	29.86
GPRS (GMSK, 1 Tx slot)	**30.10**	**30.20**	**30.87**
GPRS (GMSK, 2 Tx slots)	28.28	28.01	28.51
GPRS (GMSK, 3 Tx slots)	26.53	26.27	26.65
GPRS (GMSK, 4 Tx slots)	25.43	25.06	25.54
EDGE (8PSK, 1 Tx slot)	**26.30**	**25.83**	**26.23**
EDGE (8PSK, 2 Tx slot)	23.56	23.03	23.36
EDGE (8PSK, 3 Tx slot)	22.03	21.60	21.99
EDGE (8PSK, 4 Tx slot)	20.70	20.44	20.77

Band: WCDMA Band II	Average Power [dBm]		
Channel	**9262**	**9400**	**9538**
Frequency (MHz)	**1852.4**	**1880.0**	**1907.6**
RMC 12.2K	**23.06**	**22.94**	**23.42**
HSDPA Subtest-1	21.90	22.02	22.51
HSDPA Subtest-2	21.57	21.58	22.01
HSDPA Subtest-3	21.29	21.31	21.78
HSDPA Subtest-4	21.36	21.32	21.80
HSUPA Subtest-1	21.89	22.18	22.45
HSUPA Subtest-2	20.63	21.00	21.24
HSUPA Subtest-3	20.34	20.63	21.43
HSUPA Subtest-4	21.11	21.26	21.69
HSUPA Subtest-5	21.80	21.42	22.28

Band: WCDMA Band IV	Average Power [dBm]		
Channel	**1312**	**1413**	**1513**
Frequency (MHz)	**1712.4**	**1732.6**	**1752.6**
RMC 12.2K	**23.23**	**22.98**	**22.74**
HSDPA Subtest-1	22.21	21.97	21.77
HSDPA Subtest-2	21.67	21.49	21.28
HSDPA Subtest-3	21.36	21.26	20.98
HSDPA Subtest-4	21.32	21.24	20.95
HSUPA Subtest-1	21.78	21.93	21.69
HSUPA Subtest-2	20.54	20.78	21.04
HSUPA Subtest-3	20.82	20.42	20.66
HSUPA Subtest-4	20.91	20.89	21.05
HSUPA Subtest-5	21.59	21.61	21.72

Band :WCDMA Band V	Average Power [dBm]		
Channel	**4,132**	**4,182**	**4,233**
Frequency (MHz)	**826.4**	**836.4**	**846.6**
RMC 12.2K	**23.11**	**23.17**	**22.90**
HSDPA Subtest-1	22.20	22.09	21.76
HSDPA Subtest-2	21.69	21.66	21.23
HSDPA Subtest-3	21.61	21.36	20.87
HSDPA Subtest-4	21.32	20.72	20.88
HSUPA Subtest-1	21.82	21.78	21.50
HSUPA Subtest-2	20.60	20.41	20.17
HSUPA Subtest-3	20.08	20.06	20.29
HSUPA Subtest-4	21.23	21.31	20.91
HSUPA Subtest-5	21.86	21.95	21.55

LTE Band 2(1.4MHz)

	Channel Bandwidth: 1.4 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	18607	1850.7	1	0	22.63
			1	3	22.87
			1	5	22.67
			3	0	22.88
			3	2	22.75
			3	3	22.55
			6	0	21.67
	18900	1880	1	0	22.77
			1	3	22.89
			1	5	22.74
			3	0	22.79
			3	2	22.71
			3	3	22.77
			6	0	21.98
	19193	1909.3	1	0	23.47
			1	3	**23.49**
			1	5	23.39
			3	0	23.38
			3	2	23.41
			3	3	23.42
			6	0	22.33
16QAM	18607	1850.7	1	0	22.40
			1	3	22.62
			1	5	22.16
			3	0	22.17
			3	2	21.83
			3	3	21.75
			6	0	20.85
	18900	1880	1	0	22.28
			1	3	22.35
			1	5	22.22
			3	0	21.91
			3	2	21.97
			3	3	21.98
			6	0	20.86
	19193	1909.3	1	0	22.80
			1	3	22.85
			1	5	**22.89**
			3	0	22.60
			3	2	22.54
			3	3	22.45
			6	0	21.55

LTE Band 2(3MHz)

	Channel Bandwidth: 3 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	18615	1851.5	1	0	22.70
			1	7	22.56
			1	14	22.67
			8	0	21.81
			8	4	21.72
			8	7	21.66
			15	0	21.68
	18900	1880	1	0	22.76
			1	7	22.81
			1	14	22.80
			8	0	21.74
			8	4	21.67
			8	7	21.80
			15	0	21.69
	19185	1908.5	1	0	23.29
			1	7	23.31
			1	14	**23.37**
			8	0	22.36
			8	4	22.30
			8	7	22.35
			15	0	22.38
16QAM	18615	1851.5	1	0	22.08
			1	7	22.10
			1	14	22.07
			8	0	20.93
			8	4	20.95
			8	7	20.87
			15	0	20.73
	18900	1880	1	0	22.32
			1	7	22.30
			1	14	22.22
			8	0	20.82
			8	4	20.74
			8	7	20.75
			15	0	20.83
	19185	1908.5	1	0	**22.83**
			1	7	22.76
			1	14	22.63
			8	0	21.36
			8	4	21.60
			8	7	21.61
			15	0	21.52

LTE Band 2 (5MHz)

	Channel Bandwidth: 5 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	18625	1852.5	1	0	22.83
			1	12	22.91
			1	24	22.81
			12	0	21.70
			12	6	21.70
			12	13	21.71
			25	0	21.75
	18900	1880	1	0	22.86
			1	12	22.98
			1	24	22.91
			12	0	21.75
			12	6	21.78
			12	13	21.88
			25	0	21.74
	19175	1907.5	1	0	23.30
			1	12	23.54
			1	24	**23.56**
			12	0	22.29
			12	6	22.33
			12	13	22.47
			25	0	22.40
16QAM	18625	1852.5	1	0	21.87
			1	12	21.90
			1	24	21.75
			12	0	20.85
			12	6	20.80
			12	13	20.83
			25	0	20.84
	18900	1880	1	0	22.37
			1	12	22.03
			1	24	22.24
			12	0	20.95
			12	6	20.95
			12	13	21.05
			25	0	20.94
	19175	1907.5	1	0	22.46
			1	12	**22.60**
			1	24	22.44
			12	0	21.39
			12	6	21.42
			12	13	21.62
			25	0	21.49

LTE Band 2 (10MHz)

	Channel Bandwidth: 10 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	18650	1855	1	0	22.66
			1	24	22.61
			1	49	22.62
			25	0	21.70
			25	12	21.67
			25	25	21.67
			50	0	21.64
	18900	1880	1	0	22.72
			1	24	22.82
			1	49	22.83
			25	0	21.79
			25	12	21.83
			25	25	21.95
			50	0	21.80
	19150	1905	1	0	23.33
			1	24	23.34
			1	49	**23.52**
			25	0	22.21
			25	12	22.30
			25	25	22.45
			50	0	22.27
16QAM	18650	1855	1	0	22.26
			1	24	21.79
			1	49	22.43
			25	0	20.73
			25	12	20.66
			25	25	20.76
			50	0	20.73
	18900	1880	1	0	22.28
			1	24	22.10
			1	49	22.35
			25	0	20.96
			25	12	20.95
			25	25	20.94
			50	0	20.88
	19150	1905	1	0	22.86
			1	24	**22.95**
			1	49	22.89
			25	0	21.36
			25	12	21.43
			25	25	21.36
			50	0	21.37

LTE Band 2 (15MHz)

	Channel Bandwidth: 15 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	18675	1857.5	1	0	22.51
			1	37	22.74
			1	74	22.79
			37	0	21.73
			37	18	21.69
			37	38	21.66
			75	0	21.74
	18900	1880	1	0	22.88
			1	37	22.75
			1	74	22.83
			37	0	21.82
			37	18	21.97
			37	38	21.94
			75	0	21.90
	19125	1902.5	1	0	23.33
			1	37	23.35
			1	74	**23.45**
			37	0	22.28
			37	18	22.32
			37	38	22.33
			75	0	22.24
16QAM	18675	1857.5	1	0	22.17
			1	37	22.40
			1	74	22.00
			37	0	20.73
			37	18	20.88
			37	38	20.85
			75	0	20.87
	18900	1880	1	0	22.70
			1	37	22.16
			1	74	22.49
			37	0	20.98
			37	18	20.95
			37	38	21.00
			75	0	21.02
	19125	1902.5	1	0	22.61
			1	37	22.65
			1	74	**22.83**
			37	0	21.42
			37	18	21.21
			37	38	21.32
			75	0	21.30

LTE Band 2 (20MHz)

	Channel Bandwidth: 20 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	18700	1860	1	0	22.65
			1	49	22.80
			1	99	22.61
			50	0	21.68
			50	25	21.65
			50	50	21.55
			100	0	21.63
	18900	1880	1	0	22.74
			1	49	22.80
			1	99	22.75
			50	0	21.67
			50	25	21.88
			50	50	21.89
			100	0	21.69
	19100	1900	1	0	23.25
			1	49	**23.41**
			1	99	23.32
			50	0	22.01
			50	25	22.05
			50	50	22.20
			100	0	22.07
16QAM	18700	1860	1	0	21.94
			1	49	21.44
			1	99	21.37
			50	0	20.78
			50	25	20.73
			50	50	20.58
			100	0	20.76
	18900	1880	1	0	22.04
			1	49	22.25
			1	99	22.14
			50	0	20.72
			50	25	20.97
			50	50	20.94
			100	0	20.68
	19100	1900	1	0	22.37
			1	49	22.08
			1	99	**22.67**
			50	0	21.06
			50	25	21.09
			50	50	21.17
			100	0	21.29

LTE Band 4(1.4MHz)

	Channel Bandwidth: 1.4 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	19957	1710.7	1	0	23.19
			1	3	23.20
			1	5	23.21
			3	0	23.21
			3	2	**23.24**
			3	3	23.19
			6	0	22.23
	20175	1732.5	1	0	22.95
			1	3	23.22
			1	5	23.17
			3	0	23.17
			3	2	23.01
			3	3	23.04
			6	0	21.98
	20393	1754.3	1	0	22.59
			1	3	22.61
			1	5	22.52
			3	0	22.69
			3	2	22.59
			3	3	22.53
			6	0	21.65
16QAM	19957	1710.7	1	0	22.32
			1	3	22.33
			1	5	22.44
			3	0	22.22
			3	2	22.24
			3	3	22.19
			6	0	21.47
	20175	1732.5	1	0	22.63
			1	3	**22.88**
			1	5	22.55
			3	0	22.18
			3	2	22.18
			3	3	22.06
			6	0	20.88
	20393	1754.3	1	0	21.97
			1	3	22.08
			1	5	21.97
			3	0	21.59
			3	2	21.61
			3	3	21.55
			6	0	20.74

LTE Band 4 (3MHz)

	Channel Bandwidth: 3 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	19965	1711.5	1	0	23.11
			1	7	**23.24**
			1	14	23.05
			8	0	22.24
			8	4	22.23
			8	7	22.07
			15	0	22.28
	20175	1732.5	1	0	23.07
			1	7	22.86
			1	14	23.07
			8	0	21.92
			8	4	21.98
			8	7	22.07
			15	0	21.95
	20385	1753.5	1	0	22.42
			1	7	22.37
			1	14	22.43
			8	0	21.59
			8	4	21.53
			8	7	21.52
			15	0	21.57
16QAM	19965	1711.5	1	0	22.54
			1	7	**22.91**
			1	14	22.79
			8	0	21.18
			8	4	21.20
			8	7	21.07
			15	0	21.30
	20175	1732.5	1	0	22.50
			1	7	22.48
			1	14	22.19
			8	0	20.94
			8	4	21.01
			8	7	21.01
			15	0	20.98
	20385	1753.5	1	0	21.67
			1	7	21.66
			1	14	21.88
			8	0	20.58
			8	4	20.54
			8	7	20.51
			15	0	20.69

LTE Band 4 (5MHz)

	Channel Bandwidth: 5 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	19975	1712.5	1	0	23.16
			1	12	**23.23**
			1	24	23.09
			12	0	22.08
			12	6	22.03
			12	13	22.14
			25	0	22.27
	20175	1732.5	1	0	23.12
			1	12	22.98
			1	24	23.06
			12	0	22.11
			12	6	21.91
			12	13	21.96
			25	0	21.97
	20375	1752.5	1	0	22.73
			1	12	22.67
			1	24	22.76
			12	0	21.48
			12	6	21.52
			12	13	21.59
			25	0	21.58
16QAM	19975	1712.5	1	0	22.33
			1	12	22.33
			1	24	**22.40**
			12	0	21.23
			12	6	21.35
			12	13	21.28
			25	0	21.31
	20175	1732.5	1	0	22.26
			1	12	22.03
			1	24	22.13
			12	0	21.08
			12	6	20.93
			12	13	20.90
			25	0	21.11
	20375	1752.5	1	0	21.76
			1	12	21.77
			1	24	21.60
			12	0	20.67
			12	6	20.68
			12	13	20.54
			25	0	20.62

LTE Band 4 (10MHz)

	Channel Bandwidth: 10 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	20000	1715	1	0	**23.30**
			1	24	23.24
			1	49	23.23
			25	0	22.38
			25	12	22.24
			25	25	22.21
			50	0	22.19
	20175	1732.5	1	0	23.26
			1	24	22.94
			1	49	22.89
			25	0	22.15
			25	12	21.97
			25	25	22.01
			50	0	22.07
	20350	1750	1	0	22.96
			1	24	22.68
			1	49	22.66
			25	0	21.74
			25	12	21.67
			25	25	21.62
			50	0	21.73
16QAM	20000	1715	1	0	**22.71**
			1	24	22.68
			1	49	22.70
			25	0	21.24
			25	12	21.22
			25	25	21.27
			50	0	21.26
	20175	1732.5	1	0	22.39
			1	24	22.31
			1	49	22.25
			25	0	21.14
			25	12	21.01
			25	25	21.13
			50	0	21.06
	20350	1750	1	0	21.99
			1	24	22.53
			1	49	21.98
			25	0	20.79
			25	12	20.69
			25	25	20.59
			50	0	20.66

LTE Band 4 (15MHz)

	Channel Bandwidth: 15 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	20025	1717.5	1	0	23.10
			1	37	23.20
			1	74	**23.32**
			37	0	22.25
			37	18	22.20
			37	38	22.23
			75	0	22.29
	20175	1732.5	1	0	23.31
			1	37	23.11
			1	74	22.95
			37	0	22.18
			37	18	22.07
			37	38	22.05
			75	0	22.07
	20325	1747.5	1	0	23.08
			1	37	22.92
			1	74	22.73
			37	0	21.80
			37	18	21.70
			37	38	21.70
			75	0	21.68
16QAM	20025	1717.5	1	0	22.78
			1	37	**22.97**
			1	74	22.38
			37	0	21.31
			37	18	21.25
			37	38	21.29
			75	0	21.33
	20175	1732.5	1	0	22.39
			1	37	22.28
			1	74	22.07
			37	0	21.20
			37	18	21.09
			37	38	21.09
			75	0	21.11
	20325	1747.5	1	0	22.40
			1	37	22.06
			1	74	21.98
			37	0	20.76
			37	18	20.63
			37	38	20.55
			75	0	20.75

LTE Band 4 (20MHz)

	Channel Bandwidth: 20 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	20050	1720	1	0	**23.34**
			1	49	23.29
			1	99	23.01
			50	0	22.32
			50	25	22.22
			50	50	22.19
			100	0	22.18
	20175	1732.5	1	0	23.06
			1	49	22.82
			1	99	22.63
			50	0	22.16
			50	25	21.98
			50	50	21.99
			100	0	21.92
	20300	1745	1	0	23.09
			1	49	23.06
			1	99	22.65
			50	0	21.98
			50	25	21.85
			50	50	21.69
			100	0	21.87
16QAM	20050	1720	1	0	22.35
			1	49	**22.60**
			1	99	22.50
			50	0	21.31
			50	25	21.30
			50	50	21.18
			100	0	21.22
	20175	1732.5	1	0	22.40
			1	49	22.25
			1	99	21.79
			50	0	21.19
			50	25	21.02
			50	50	20.90
			100	0	20.96
	20300	1745	1	0	21.87
			1	49	22.11
			1	99	21.49
			50	0	21.00
			50	25	20.78
			50	50	20.71
			100	0	20.92

LTE Band 5(1.4MHz)

	Channel Bandwidth: 1.4 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	20407	824.7	1	0	23.16
			1	3	23.45
			1	5	**23.50**
			3	0	23.42
			3	2	23.29
			3	3	23.41
			6	0	22.35
	20525	836.5	1	0	23.25
			1	3	23.36
			1	5	23.43
			3	0	23.35
			3	2	23.28
			3	3	23.36
			6	0	22.24
	20643	848.3	1	0	23.08
			1	3	23.09
			1	5	23.02
			3	0	23.10
			3	2	23.00
			3	3	22.93
			6	0	22.07
16QAM	20407	824.7	1	0	22.98
			1	3	**23.16**
			1	5	23.07
			3	0	22.39
			3	2	22.26
			3	3	22.36
			6	0	21.22
	20525	836.5	1	0	22.84
			1	3	23.05
			1	5	22.90
			3	0	22.23
			3	2	22.34
			3	3	22.47
			6	0	21.50
	20643	848.3	1	0	22.36
			1	3	22.80
			1	5	22.50
			3	0	22.28
			3	2	22.26
			3	3	22.25
			6	0	21.08

LTE Band 5(3MHz)

	Channel Bandwidth: 3 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	20415	825.5	1	0	23.32
			1	7	23.41
			1	14	**23.47**
			8	0	22.63
			8	4	22.51
			8	7	22.61
			15	0	22.55
	20525	836.5	1	0	23.30
			1	7	23.23
			1	14	23.33
			8	0	22.46
			8	4	22.36
			8	7	22.33
			15	0	22.31
	20635	847.5	1	0	23.01
			1	7	22.97
			1	14	22.96
			8	0	22.17
			8	4	22.10
			8	7	22.03
			15	0	22.08
16QAM	20415	825.5	1	0	22.90
			1	7	22.96
			1	14	**22.99**
			8	0	21.49
			8	4	21.51
			8	7	21.59
			15	0	21.68
	20525	836.5	1	0	22.67
			1	7	22.69
			1	14	22.69
			8	0	21.56
			8	4	21.34
			8	7	21.35
			15	0	21.24
	20635	847.5	1	0	22.49
			1	7	22.45
			1	14	22.43
			8	0	21.24
			8	4	21.22
			8	7	21.23
			15	0	21.08

LTE Band 5(5MHz)

	Channel Bandwidth: 5 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	20425	826.5	1	0	23.27
			1	12	**23.72**
			1	24	23.32
			12	0	22.53
			12	6	22.56
			12	13	22.56
			25	0	22.49
	20525	836.5	1	0	23.12
			1	12	23.47
			1	24	23.33
			12	0	22.26
			12	6	22.31
			12	13	22.29
			25	0	22.27
	20625	846.5	1	0	22.83
			1	12	23.04
			1	24	22.90
			12	0	22.03
			12	6	22.01
			12	13	22.04
			25	0	21.95
16QAM	20425	826.5	1	0	22.35
			1	12	**22.65**
			1	24	22.37
			12	0	21.43
			12	6	21.54
			12	13	21.54
			25	0	21.61
	20525	836.5	1	0	22.17
			1	12	22.45
			1	24	22.25
			12	0	21.26
			12	6	21.21
			12	13	21.18
			25	0	21.28
	20625	846.5	1	0	21.95
			1	12	22.19
			1	24	22.03
			12	0	20.97
			12	6	21.09
			12	13	21.02
			25	0	20.91

LTE Band 5 (10MHz)

	Channel Bandwidth: 10 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	20450	829	1	0	23.39
			1	24	23.47
			1	49	**23.50**
			25	0	22.64
			25	12	22.60
			25	25	22.49
			50	0	22.55
	20525	836.5	1	0	23.35
			1	24	23.39
			1	49	23.42
			25	0	22.41
			25	12	22.39
			25	25	22.39
			50	0	22.34
	20600	844	1	0	23.16
			1	24	22.98
			1	49	23.00
			25	0	22.16
			25	12	22.00
			25	25	22.01
			50	0	22.04
16QAM	20450	829	1	0	**23.01**
			1	24	22.74
			1	49	22.92
			25	0	21.67
			25	12	21.67
			25	25	21.56
			50	0	21.61
	20525	836.5	1	0	22.74
			1	24	23.03
			1	49	22.77
			25	0	21.36
			25	12	21.32
			25	25	21.37
			50	0	21.29
	20600	844	1	0	22.52
			1	24	22.61
			1	49	22.38
			25	0	21.06
			25	12	21.11
			25	25	21.05
			50	0	20.97

LTE Band 7 (5MHz)

	Channel Bandwidth: 5 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	20775	2502.5	1	0	23.79
			1	12	24.07
			1	24	23.86
			12	0	23.01
			12	6	23.03
			12	13	22.99
			25	0	23.02
	21100	2535	1	0	24.36
			1	12	**24.66**
			1	24	24.56
			12	0	23.65
			12	6	23.62
			12	13	23.56
			25	0	23.55
	21425	2567.5	1	0	23.65
			1	12	23.97
			1	24	24.06
			12	0	23.04
			12	6	22.99
			12	13	23.11
			25	0	22.99
16QAM	20775	2502.5	1	0	23.05
			1	12	22.96
			1	24	22.94
			12	0	21.93
			12	6	22.04
			12	13	22.02
			25	0	22.19
	21100	2535	1	0	23.77
			1	12	**23.96**
			1	24	23.84
			12	0	22.75
			12	6	22.76
			12	13	22.75
			25	0	22.77
	21425	2567.5	1	0	23.14
			1	12	23.14
			1	24	23.04
			12	0	22.10
			12	6	22.12
			12	13	22.07
			25	0	22.13

LTE Band 7 (10MHz)

	Channel Bandwidth: 10 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	20800	2505	1	0	23.87
			1	24	24.03
			1	49	24.04
			25	0	23.16
			25	12	23.08
			25	25	23.01
			50	0	23.01
	21100	2535	1	0	24.53
			1	24	**24.55**
			1	49	24.51
			25	0	23.63
			25	12	23.60
			25	25	23.65
			50	0	23.62
	21400	2565	1	0	24.27
			1	24	24.00
			1	49	24.10
			25	0	23.26
			25	12	23.21
			25	25	23.10
			50	0	23.16
16QAM	20800	2505	1	0	23.63
			1	24	23.85
			1	49	23.58
			25	0	22.11
			25	12	22.13
			25	25	22.04
			50	0	22.11
	21100	2535	1	0	**24.14**
			1	24	23.89
			1	49	24.00
			25	0	22.88
			25	12	22.85
			25	25	22.81
			50	0	22.75
	21400	2565	1	0	23.71
			1	24	23.25
			1	49	23.48
			25	0	22.25
			25	12	22.35
			25	25	22.15
			50	0	22.20

LTE Band 7 (15MHz)

	Channel Bandwidth: 15 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	20825	2507.5	1	0	23.79
			1	37	23.70
			1	74	23.92
			37	0	22.84
			37	18	22.79
			37	38	22.86
			75	0	22.85
	21100	2535	1	0	24.35
			1	37	24.40
			1	74	**24.44**
			37	0	23.57
			37	18	23.46
			37	38	23.48
			75	0	23.47
	21375	2562.5	1	0	24.24
			1	37	23.98
			1	74	24.03
			37	0	23.28
			37	18	23.02
			37	38	22.91
			75	0	23.08
16QAM	20825	2507.5	1	0	23.33
			1	37	23.11
			1	74	23.35
			37	0	21.91
			37	18	21.85
			37	38	21.86
			75	0	21.85
	21100	2535	1	0	**24.18**
			1	37	23.62
			1	74	24.30
			37	0	22.51
			37	18	22.63
			37	38	22.54
			75	0	22.56
	21375	2562.5	1	0	23.67
			1	37	23.50
			1	74	23.33
			37	0	22.38
			37	18	22.13
			37	38	21.93
			75	0	22.24

LTE Band 7 (20MHz)

	Channel Bandwidth: 20 MHz				
Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power [dBm]
			Size	Offset	
QPSK	20850	2510	1	0	24.27
			1	49	23.97
			1	99	24.11
			50	0	23.16
			50	25	23.11
			50	50	23.25
			100	0	23.14
	21100	2535	1	0	24.75
			1	49	24.54
			1	99	24.41
			50	0	23.80
			50	25	23.84
			50	50	23.75
			100	0	23.78
	21350	2560	1	0	**24.76**
			1	49	24.43
			1	99	24.21
			50	0	23.60
			50	25	23.49
			50	50	23.28
			100	0	23.43
16QAM	20850	2510	1	0	23.68
			1	49	23.47
			1	99	23.55
			50	0	22.22
			50	25	22.20
			50	50	22.28
			100	0	22.19
	21100	2535	1	0	**23.85**
			1	49	23.78
			1	99	23.72
			50	0	22.86
			50	25	22.94
			50	50	22.71
			100	0	22.78
	21350	2560	1	0	23.59
			1	49	23.35
			1	99	23.50
			50	0	22.68
			50	25	22.49
			50	50	22.30
			100	0	22.50

3.4. Support Equipment List

Table 5 Support Equipment List

Name	Model No	S/N	Manufacturer
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3.5. Test Conditions

Date of test：Sep.04, 2018 – Nov.04, 2018
Date of EUT Receive：Sep.04, 2018
Temperature: -10 ~ 50 ℃
Relative Humidity: 39-52 %

3.6. Special Accessories

Not available for this EUT intended for grant.

3.7. Equipment Modifications

Not available for this EUT intended for grant.

4. TEST EQUIPMENT USED

Table 6 Test Equipment

No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
SB8501/09	EMI Test Receiver	Rohde & Schwarz	ESU40	Mar.20 2018	1 Year
SB8501/04	Bilog Antenna	Schwarzbeck	VULB9163	Jun.12, 2018	1 Year
SB5472/02	Bilog Antenna	Schwarzbeck	VULB9163	Jun.12, 2018	1 Year
SB3435	Horn Antenna	Rohde & Schwarz	HF906	Jan.02, 2018	1 Year
SB3434	Horn Antenna	Rohde & Schwarz	HF906	Jan.02, 2018	1 Year
SB8501/11	Horn Antenna	Rohde & Schwarz	3160-09	Mar.21, 2017	3 Year
SB8501/14	Preamplifier	Rohde & Schwarz	SCU-03	Mar.08, 2018	1 Year
SB8501/17	Preamplifier	Rohde & Schwarz	SCU-18	Mar.05, 2018	1 Year
SB8501/16	Preamplifier	Rohde & Schwarz	SCU-26	Mar.05, 2018	1 Year
SB8501/02	Communication Test Unit	Rohde & Schwarz	CMU200	Dec.04, 2017	1 Year
SB9054/02	Wideband Radio communication Tester	Rohde & Schwarz	CMW500	Oct.25, 2018	1 Year
SB9721/07	DC Power Supply	Agilent	66319D	---	---
SB11818	Temperature&Humidity Test chamber	Espec	EH-010U	Mar.26, 2018	1 Year
SB7941/02	Signal Analyzer	Rohde & Schwarz	FSU26	Jun.06,2018	1 Year

5. TEST RESULTS

5.1. RF Power Output

5.1.1.Test Standard

FCC: CFR Part 2.1046, CFR Part 22.913, CFR Part 24.232 CFR Part 27

5.1.2.Test Limit

FCC 22.913 (a) Effective radiated power limits.
The effective radiated power (ERP) of mobile transmitters must not exceed 7 Watts.
FCC 24.232 (b)(c) Power limits.
(b) Mobile/portable stations are limited to 2 Watts effective isotropic radiated power (EIRP). (c) Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms equivalent voltage. The measurement results shall be properly adjusted for any limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, etc., so as to obtain a true peak measurement over the full bandwidth of the channel.
27.50 (d)(4) The following power and antenna height requirements apply to stations transmitting in the 1710–1755 MHz and 2110–2155 MHz bands: Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.
.27.50 (h) (2) Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to2.0 watts transmitter output power.

5.1.3.Test Procedure

ANSI C63.26:2015
KDB 971168 Section 5.6

ERP/EIRP = PMeas + GT − LC
where: ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);
PMeas = measured transmitter output power or PSD, in dBm or dBW;
GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);
LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.2
For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit antenna gain term to be used in the above equation.
EUT includes different power levels for head use configuration and body use configuration and the below tables contain the highest of all configurations average conducted and ERP/EIRP output powers as follows:

5.1.4.Test Data

Table 7 Maximum Output Power Results

Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	ERP		FCC Limit (dBm)	Verdict
				dBm	mW		
824- 849	GSM	32.88	-2	30.88	1224.6	38.5	PASS
	EGPRS	27.51	-2	25.51	563.6	38.5	PASS
	WCDMA	23.17	-2	21.17	130.9	38.5	PASS

Table 8 Maximum Output Power Results

Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	EIRP		FCC Limit (dBm)	Verdict
				dBm	mW		
1850-1910	GSM	30.87	-1	29.87	970.5	33	PASS
	EGPRS	26.30	-1	25.30	338.8	33	PASS
	WCDMA	23.42	-1	22.42	174.6	33	PASS

Table 9 Maximum Output Power Results

Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	EIRP		FCC Limit (dBm)	Verdict
				dBm	mW		
1710-1755	WCDMA	23.23	-1	22.23	167.1	30	PASS

Table 10 Maximum Output Power Results

Test Band	Chanel Bandwidth (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	EIRP		FCC Limit (dBm)	Verdict
					dBm	mW		
LTE Band 2	1.4	QPSK	23.49	-1	22.49	177.4	33	PASS
		16QAM	22.89	-1	21.89	154.5	33	PASS
	3	QPSK	23.37	-1	22.37	172.6	33	PASS
		16QAM	22.83	-1	21.83	152.4	33	PASS
	5	QPSK	23.56	-1	22.56	180.3	33	PASS
		16QAM	22.60	-1	21.60	144.5	33	PASS
	10	QPSK	23.52	-1	22.52	178.6	33	PASS
		16QAM	22.95	-1	21.95	156.8	33	PASS
	15	QPSK	23.45	-1	22.45	175.8	33	PASS
		16QAM	22.83	-1	21.83	152.4	33	PASS
	20	QPSK	23.41	-1	22.41	174.1	33	PASS
		16QAM	22.67	-1	21.67	146.9	33	PASS

Table 11 Maximum Output Power Results

Test Band	Chanel Bandwidth (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	EIRP		FCC Limit (dBm)	Verdict
					dBm	mW		
LTE Band 4	1.4	QPSK	23.24	-1	22.49	177.4	30	PASS
		16QAM	22.88	-1	21.89	154.5	30	PASS
	3	QPSK	23.24	-1	22.37	172.6	30	PASS
		16QAM	22.91	-1	21.83	152.4	30	PASS
	5	QPSK	23.23	-1	22.56	180.3	30	PASS
		16QAM	22.40	-1	21.60	144.5	30	PASS
	10	QPSK	23.30	-1	22.52	178.6	30	PASS
		16QAM	22.71	-1	21.95	156.8	30	PASS
	15	QPSK	23.32	-1	22.45	175.8	30	PASS
		16QAM	22.97	-1	21.83	152.4	30	PASS
	20	QPSK	23.34	-1	22.41	174.1	30	PASS
		16QAM	22.60	-1	21.67	146.9	30	PASS

Table 12 Maximum Output Power Results

Test Band	Chanel Bandwidth (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	ERP		FCC Limit (dBm)	Verdict
					dBm	mW		
LTE Band 5	1.4	QPSK	23.50	-2	21.50	141.3	38.5	PASS
		16QAM	23.16	-2	21.16	130.6	38.5	PASS
	3	QPSK	23.47	-2	21.47	140.3	38.5	PASS
		16QAM	22.99	-2	20.99	125.6	38.5	PASS
	5	QPSK	23.72	-2	21.72	148.6	38.5	PASS
		16QAM	22.65	-2	20.65	116.1	38.5	PASS
	10	QPSK	23.50	-2	21.50	141.2	38.5	PASS
		16QAM	23.01	-2	21.01	126.2	38.5	PASS

Table 13 Maximum Output Power Results

Test Band	Chanel Bandwidth (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	EIRP		FCC Limit (dBm)	Verdict
					dBm	mW		
LTE Band 7	5	QPSK	24.16	-1	23.16	207	33	PASS
		16QAM	23.96	-1	22.96	197.7	33	PASS
	10	QPSK	24.55	-1	23.55	226.5	33	PASS
		16QAM	24.14	-1	23.14	206.1	33	PASS
	15	QPSK	24.44	-1	23.44	220.8	33	PASS
		16QAM	24.18	-1	23.18	208	33	PASS
	20	QPSK	24.76	-1	23.76	237.7	33	PASS
		16QAM	23.85	-1	22.85	192.8	33	PASS

5.2. Peak to Average Ratio

5.2.1. Test Standard

CFR 47 (FCC) part 24 subpart E, part 27

5.2.2. Test Limit

The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

5.2.3. Test Procedure

A peak to average ratio measurement is performed at the conducted port of the EUT. For WCDMA signals, the spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level. For GSM signals, an average and a peak trace are used on a spectrum analyzer to determine the largest deviation between the average and the peak power of the EUT in a bandwidth greater than the emission bandwidth. The traces are generated with the spectrum analyzer set to zero span mode. For LTE operating mode: a. The EUT was connected to spectrum and system simulator via a power divider. b. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer. c. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1%. d. Record the deviation as Peak to Average Ratio.

5.2.4. Test Data

Test Band	Test Mode	Test Channel(MHz)	Measured[dB]	Limit [dB]	Verdict
GSM1900	GPRS/TM1	1850.2	0.39	<13	PASS
		1880	0.41	<13	PASS
		1909.8	0.41	<13	PASS
GSM1900	EDGE/TM2	1850.2	3.30	<13	PASS
		1880	3.37	<13	PASS
		1909.8	3.65	<13	PASS

Test Band	Test Mode	Test Channel(MHz)	Measured[dB]	Limit [dB]	Verdict
WCDMA1700	UMTS/TM3	1712.4	3.43	<13	PASS
		1732.6	3.61	<13	PASS
		1752.6	3.62	<13	PASS
WCDMA1900	UMTS/TM3	1852.4	3.46	<13	PASS
		1880	3.57	<13	PASS
		1907.6	3.49	<13	PASS

LTE Band 2:

Channel Bandwidth: 1.4 MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	1850.7	1	0	3.62	<13	PASS
	1880	1	0	3.59	<13	PASS
	1909.3	1	0	3.43	<13	PASS
16QAM	1850.7	1	0	4.39	<13	PASS
	1880	1	0	4.42	<13	PASS
	1909.3	1	0	4.17	<13	PASS

Channel Bandwidth: 3MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	1851.5	1	0	3.72	<13	PASS
	1880	1	0	3.62	<13	PASS
	1908.5	1	0	3.46	<13	PASS
16QAM	1851.5	1	0	4.42	<13	PASS
	1880	1	0	4.46	<13	PASS
	1908.5	1	0	4.04	<13	PASS

Channel Bandwidth: 5MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	1852.5	1	0	3.56	<13	PASS
	1880	1	0	3.56	<13	PASS
	1907.5	1	0	3.40	<13	PASS
16QAM	1852.5	1	0	4.39	<13	PASS
	1880	1	0	4.33	<13	PASS
	1907.5	1	0	4.17	<13	PASS

Channel Bandwidth: 10MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	1855	1	0	3.59	<13	PASS
	1880	1	0	3.53	<13	PASS
	1905	1	0	3.33	<13	PASS
16QAM	1855	1	0	4.33	<13	PASS
	1880	1	0	4.39	<13	PASS
	1905	1	0	4.04	<13	PASS

Channel Bandwidth: 15MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	1857.5	1	0	5.80	<13	PASS
	1880	1	0	5.93	<13	PASS
	1902.5	1	0	6.06	<13	PASS
16QAM	1857.5	1	0	6.57	<13	PASS
	1880	1	0	6.86	<13	PASS
	1902.5	1	0	6.44	<13	PASS

Channel Bandwidth: 20MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	1860	1	0	6.44	<13	PASS
	1880	1	0	6.57	<13	PASS
	1900	1	0	6.51	<13	PASS
16QAM	1860	1	0	7.15	<13	PASS
	1880	1	0	6.76	<13	PASS
	1900	1	0	7.21	<13	PASS

LTE Band 4:

Channel Bandwidth: 1.4 MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	1710.7	1	0	3.30	<13	PASS
	1732.5	1	0	3.59	<13	PASS
	1754.3	1	0	3.56	<13	PASS
16QAM	1710.7	1	0	4.13	<13	PASS
	1732.5	1	0	4.46	<13	PASS
	1754.3	1	0	4.39	<13	PASS

Channel Bandwidth: 3MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	1711.5	1	0	3.30	<13	PASS
	1732.5	1	0	3.65	<13	PASS
	1753.5	1	0	3.59	<13	PASS
16QAM	1711.5	1	0	4.20	<13	PASS
	1732.5	1	0	4.46	<13	PASS
	1753.5	1	0	4.23	<13	PASS

Channel Bandwidth: 5MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	1712.5	1	0	3.30	<13	PASS
	1732.5	1	0	3.53	<13	PASS
	1752.5	1	0	3.46	<13	PASS
16QAM	1712.5	1	0	4.10	<13	PASS
	1732.5	1	0	4.33	<13	PASS
	1752.5	1	0	4.20	<13	PASS

Channel Bandwidth: 10MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	1715	1	0	3.27	<13	PASS
	1732.5	1	0	3.59	<13	PASS
	1750	1	0	3.43	<13	PASS
16QAM	1715	1	0	4.13	<13	PASS
	1732.5	1	0	4.42	<13	PASS
	1750	1	0	4.26	<13	PASS

Channel Bandwidth: 15MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	1717.5	1	0	5.83	<13	PASS
	1732.5	1	0	5.83	<13	PASS
	1747.5	1	0	5.83	<13	PASS
16QAM	1717.5	1	0	6.73	<13	PASS
	1732.5	1	0	6.79	<13	PASS
	1747.5	1	0	6.79	<13	PASS

Channel Bandwidth: 20MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	1720	1	0	6.51	<13	PASS
	1732.5	1	0	6.47	<13	PASS
	1745	1	0	6.41	<13	PASS
16QAM	1720	1	0	7.12	<13	PASS
	1732.5	1	0	7.21	<13	PASS
	1745	1	0	7.05	<13	PASS

LTE Band 5:

Channel Bandwidth: 1.4 MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	824.7	1	0	3.62	<13	PASS
	836.5	1	0	3.94	<13	PASS
	848.3	1	0	3.49	<13	PASS
16QAM	824.7	1	0	4.36	<13	PASS
	836.5	1	0	4.78	<13	PASS
	848.3	1	0	4.29	<13	PASS

Channel Bandwidth: 3MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	825.5	1	0	3.69	<13	PASS
	836.5	1	0	3.97	<13	PASS
	847.5	1	0	3.30	<13	PASS
16QAM	825.5	1	0	4.33	<13	PASS
	836.5	1	0	4.78	<13	PASS
	847.5	1	0	4.07	<13	PASS

Channel Bandwidth: 5MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	826.5	1	0	3.65	<13	PASS
	836.5	1	0	3.88	<13	PASS
	846.5	1	0	3.30	<13	PASS
16QAM	826.5	1	0	4.42	<13	PASS
	836.5	1	0	4.65	<13	PASS
	846.5	1	0	4.10	<13	PASS

Channel Bandwidth: 10MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	829	1	0	3.62	<13	PASS
	836.5	1	0	3.75	<13	PASS
	844	1	0	3.81	<13	PASS
16QAM	829	1	0	4.23	<13	PASS
	836.5	1	0	4.49	<13	PASS
	844	1	0	4.55	<13	PASS

LTE Band 7:

Channel Bandwidth: 5MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	2502.5	1	0	2.69	<13	PASS
	2535	1	0	2.72	<13	PASS
	2567.5	1	0	2.63	<13	PASS
16QAM	2502.5	1	0	3.37	<13	PASS
	2535	1	0	3.49	<13	PASS
	2567.5	1	0	3.30	<13	PASS

Channel Bandwidth: 10MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	2505	1	0	2.66	<13	PASS
	2535	1	0	2.60	<13	PASS
	2565	1	0	2.44	<13	PASS
16QAM	2505	1	0	3.24	<13	PASS
	2535	1	0	3.21	<13	PASS
	2565	1	0	3.17	<13	PASS

Channel Bandwidth: 15MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	2507.5	1	0	5.83	<13	PASS
	2535	1	0	5.93	<13	PASS
	2562.5	1	0	5.93	<13	PASS
16QAM	2507.5	1	0	6.70	<13	PASS
	2535	1	0	6.76	<13	PASS
	2562.5	1	0	6.76	<13	PASS

Channel Bandwidth: 20MHz						
Modulation	Test Channel(MHz)	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	2510	1	0	6.41	<13	PASS
	2535	1	0	6.57	<13	PASS
	2560	1	0	6.47	<13	PASS
16QAM	2510	1	0	7.15	<13	PASS
	2535	1	0	7.18	<13	PASS
	2560	1	0	7.08	<13	PASS

5.3. Occupied Bandwidth/Emission Bandwidth

5.3.1. Test Standard

FCC: CFR Part 2.1049, CFR Part 22.917, CFR Part 24.238, CRF Part 27

5.3.2. Test Limit

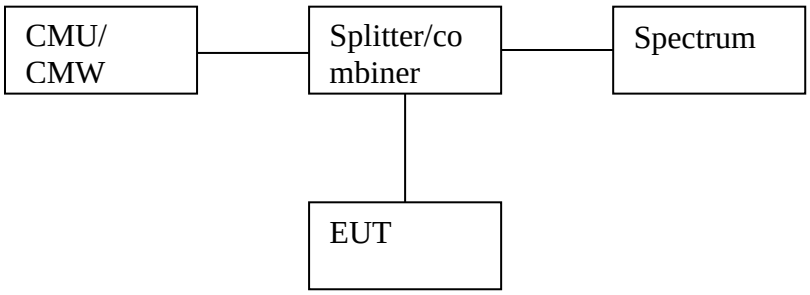
The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured under the following conditions as applicable.
(h) Transmitters employing digital modulation techniques-when modulated by an input signal such that its amplitude and symbol rate represent the maximum rated conditions under which the equipment will be operated.

5.3.3. Test Procedure

1. Connect the equipment as shown in the above diagram.
2. Adjust the settings of the Universal Radio Communication Tester (CMU) to set the EUT to its maximum power at the required channel.
3. Set the spectrum analyzer to measure the 99% occupied bandwidth. Record the value.
4. Set the spectrum analyzer to measure the -26 dB emission bandwidth. Record the value.
5. Measurements are to be performed with the EUT set to the low, middle and high channel of each frequency band.

Spectrum analyzer settings: Measurement bandwidth of at least 1% of the occupied bandwidth.

5.3.4. Test Setup



5.3.5.Test Data

Table 14 Occupied Bandwidth Test Data

Test Band	Test Mode	Test Channel	99% OBW (kHz)	26dBc BANDWIDTH (kHz)	Verdict
GSM850	GPRS/TM1	LCH	**246.79**	314.10	PASS
		MCH	246.79	310.90	PASS
		HCH	246.79	312.50	PASS
	EDGE/TM2	LCH	243.59	306.09	PASS
		MCH	**246.79**	310.90	PASS
		HCH	243.59	307.69	PASS
GSM1900	GPRS/TM1	LCH	245.19	301.28	PASS
		MCH	245.19	302.88	PASS
		HCH	**250.00**	315.71	PASS
	EDGE/TM2	LCH	241.99	304.49	PASS
		MCH	**246.79**	302.88	PASS
		HCH	241.99	296.47	PASS

Table 15 Occupied Bandwidth Test Data

Test Band	Test Mode	Test Channel	99% OBW (kHz)	26dBc BANDWIDTH (kHz)	Verdict
WCDMA850	UMTS/TM3	LCH	4166.7	4712	PASS
		MCH	**4182.7**	4712	PASS
		HCH	4166.7	4696	PASS
WCDMA1700	UMTS/TM3	LCH	**4198.7**	4728	PASS
		MCH	4182.7	4679	PASS
		HCH	4182.7	4728	PASS
WCDMA1900	UMTS/TM3	LCH	**4198.7**	4728	PASS
		MCH	4198.7	4712	PASS
		HCH	4198.7	4744	PASS

LTE Band 2:

Channel Bandwidth: 1.4 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	6	0	**1.11**	1.250	PASS
	MCH	6	0	1.105	1.235	PASS
	HCH	6	0	1.11	1.275	PASS
16QAM	LCH	6	0	**1.115**	1.255	PASS
	MCH	6	0	1.11	1.245	PASS
	HCH	6	0	1.115	1.240	PASS

Channel Bandwidth: 3 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	15	0	**2.7**	2.860	PASS
	MCH	15	0	2.7	2.880	PASS
	HCH	15	0	2.7	2.920	PASS
16QAM	LCH	15	0	2.7	2.880	PASS
	MCH	15	0	**2.71**	2.860	PASS
	HCH	15	0	2.7	2.890	PASS

Channel Bandwidth: 5 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	25	0	**4.48**	4.710	PASS
	MCH	25	0	4.47	4.730	PASS
	HCH	25	0	4.48	4.740	PASS
16QAM	LCH	25	0	4.48	4.730	PASS
	MCH	25	0	4.48	4.700	PASS
	HCH	25	0	**4.49**	4.760	PASS

Channel Bandwidth: 10 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	50	0	8.933	9.300	PASS
	MCH	50	0	**8.967**	9.300	PASS
	HCH	50	0	8.933	9.267	PASS
16QAM	LCH	50	0	8.933	9.267	PASS
	MCH	50	0	8.933	9.267	PASS
	HCH	50	0	**8.967**	9.267	PASS

Channel Bandwidth: 15 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	75	0	**13.4**	13.850	PASS
	MCH	75	0	13.4	13.850	PASS
	HCH	75	0	13.4	13.800	PASS
16QAM	LCH	75	0	**13.4**	13.800	PASS
	MCH	75	0	13.35	13.750	PASS
	HCH	75	0	13.4	13.800	PASS

Channel Bandwidth: 20 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	100	0	**17.867**	18.400	PASS
	MCH	100	0	17.8	18.267	PASS
	HCH	100	0	17.867	18.333	PASS
16QAM	LCH	100	0	**17.867**	18.333	PASS
	MCH	100	0	17.8	18.333	PASS
	HCH	100	0	17.867	18.333	PASS

LTE Band 4:

Channel Bandwidth: 1.4 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	6	0	**1.11**	1.245	PASS
	MCH	6	0	1.105	1.240	PASS
	HCH	6	0	1.105	1.240	PASS
16QAM	LCH	6	0	1.11	1.240	PASS
	MCH	6	0	**1.115**	1.245	PASS
	HCH	6	0	1.11	1.240	PASS

Channel Bandwidth: 3 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	15	0	**2.7**	2.900	PASS
	MCH	15	0	2.7	2.880	PASS
	HCH	15	0	2.7	2.860	PASS
16QAM	LCH	15	0	2.7	2.900	PASS
	MCH	15	0	**2.71**	2.880	PASS
	HCH	15	0	2.7	2.890	PASS

Channel Bandwidth: 5 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	25	0	**4.48**	4.760	PASS
	MCH	25	0	4.48	4.750	PASS
	HCH	25	0	4.48	4.750	PASS
16QAM	LCH	25	0	**4.49**	4.750	PASS
	MCH	25	0	4.48	4.700	PASS
	HCH	25	0	4.48	4.760	PASS

Channel Bandwidth: 10 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	50	0	**8.933**	9.300	PASS
	MCH	50	0	8.933	9.267	PASS
	HCH	50	0	8.933	9.267	PASS
16QAM	LCH	50	0	**8.933**	9.233	PASS
	MCH	50	0	8.933	9.267	PASS
	HCH	50	0	8.933	9.333	PASS

Channel Bandwidth: 15 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	75	0	**13.4**	13.850	PASS
	MCH	75	0	13.4	13.850	PASS
	HCH	75	0	13.4	13.800	PASS
16QAM	LCH	75	0	**13.4**	13.800	PASS
	MCH	75	0	13.4	13.800	PASS
	HCH	75	0	13.4	13.900	PASS

Channel Bandwidth: 20 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	100	0	**17.867**	18.400	PASS
	MCH	100	0	17.867	18.333	PASS
	HCH	100	0	17.867	18.267	PASS
16QAM	LCH	100	0	**17.867**	18.333	PASS
	MCH	100	0	17.867	18.333	PASS
	HCH	100	0	17.867	18.267	PASS

LTE Band 5:

Channel Bandwidth: 1.4 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	6	0	**1.11**	1.250	PASS
	MCH	6	0	1.105	1.225	PASS
	HCH	6	0	1.11	1.250	PASS
16QAM	LCH	6	0	**1.115**	1.240	PASS
	MCH	6	0	1.115	1.260	PASS
	HCH	6	0	1.11	1.245	PASS

Channel Bandwidth: 3 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	15	0	**2.7**	2.880	PASS
	MCH	15	0	2.7	2.890	PASS
	HCH	15	0	2.7	2.880	PASS
16QAM	LCH	15	0	**2.7**	2.870	PASS
	MCH	15	0	2.7	2.910	PASS
	HCH	15	0	2.7	2.890	PASS

Channel Bandwidth: 5 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	25	0	**4.49**	4.720	PASS
	MCH	25	0	4.48	4.740	PASS
	HCH	25	0	4.48	4.690	PASS
16QAM	LCH	25	0	**4.49**	4.720	PASS
	MCH	25	0	4.49	4.720	PASS
	HCH	25	0	4.48	4.710	PASS

Channel Bandwidth: 10 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	50	0	**8.933**	9.233	PASS
	MCH	50	0	8.933	9.267	PASS
	HCH	50	0	8.933	9.200	PASS
16QAM	LCH	50	0	**8.933**	9.267	PASS
	MCH	50	0	8.933	9.333	PASS
	HCH	50	0	8.933	9.267	PASS

LTE Band 7:

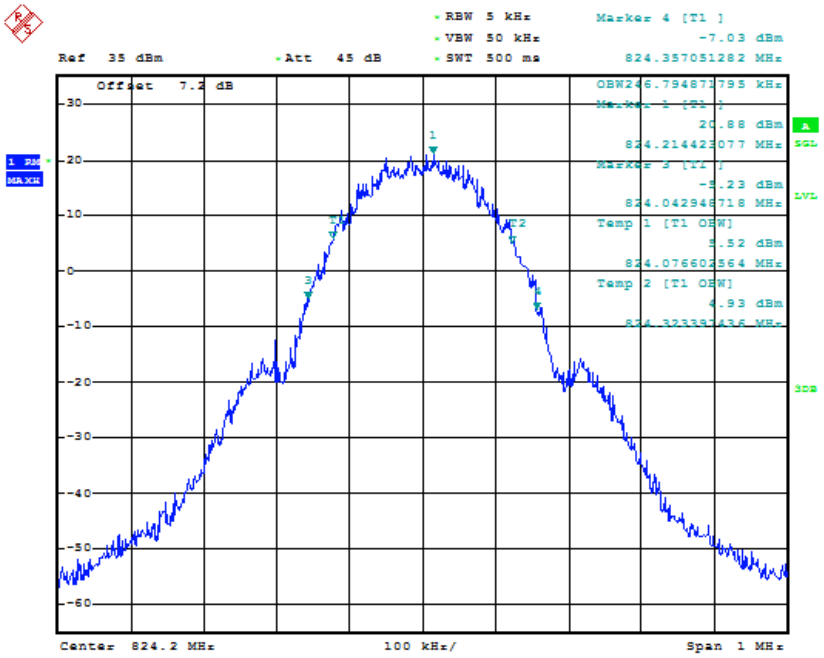
Channel Bandwidth: 5 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	25	0	**4.49**	4.900	PASS
	MCH	25	0	4.49	4.770	PASS
	HCH	25	0	4.48	4.780	PASS
16QAM	LCH	25	0	**4.49**	4.730	PASS
	MCH	25	0	4.49	4.730	PASS
	HCH	25	0	4.48	4.740	PASS

Channel Bandwidth: 10 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	50	0	**8.967**	9.367	PASS
	MCH	50	0	8.933	9.367	PASS
	HCH	50	0	8.933	9.567	PASS
16QAM	LCH	50	0	**8.933**	9.300	PASS
	MCH	50	0	8.933	9.267	PASS
	HCH	50	0	8.933	9.400	PASS

Channel Bandwidth: 15 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	75	0	13.4	13.900	PASS
	MCH	75	0	**13.45**	13.950	PASS
	HCH	75	0	13.4	14.000	PASS
16QAM	LCH	75	0	**13.4**	13.800	PASS
	MCH	75	0	13.4	13.900	PASS
	HCH	75	0	13.4	13.850	PASS

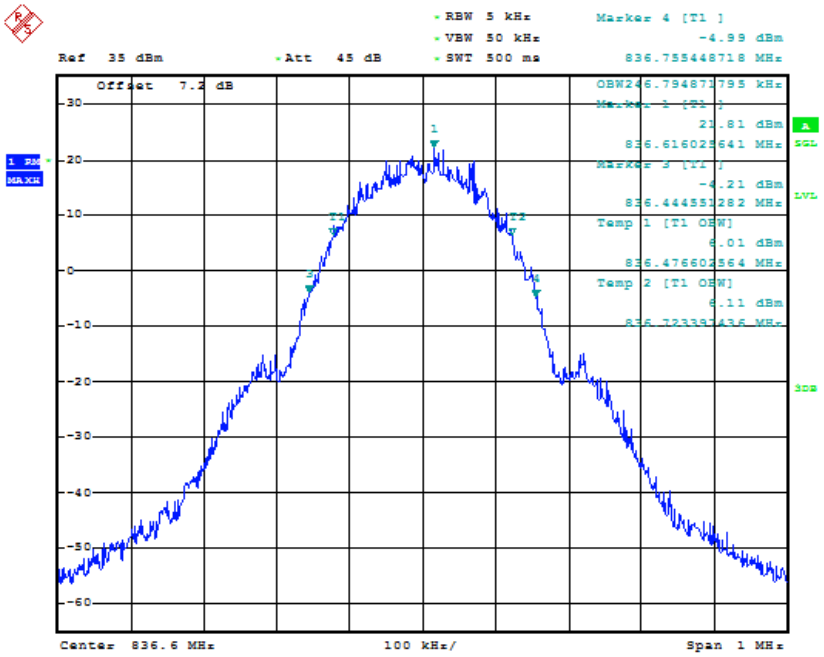
Channel Bandwidth: 20 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	100	0	**17.867**	18.400	PASS
	MCH	100	0	17.867	18.467	PASS
	HCH	100	0	17.867	18.667	PASS
16QAM	LCH	100	0	**17.867**	18.467	PASS
	MCH	100	0	17.867	18.333	PASS
	HCH	100	0	17.867	18.467	PASS

Test Band = GSM850
Test Mode = GSM/TM1
Test Channel = LCH



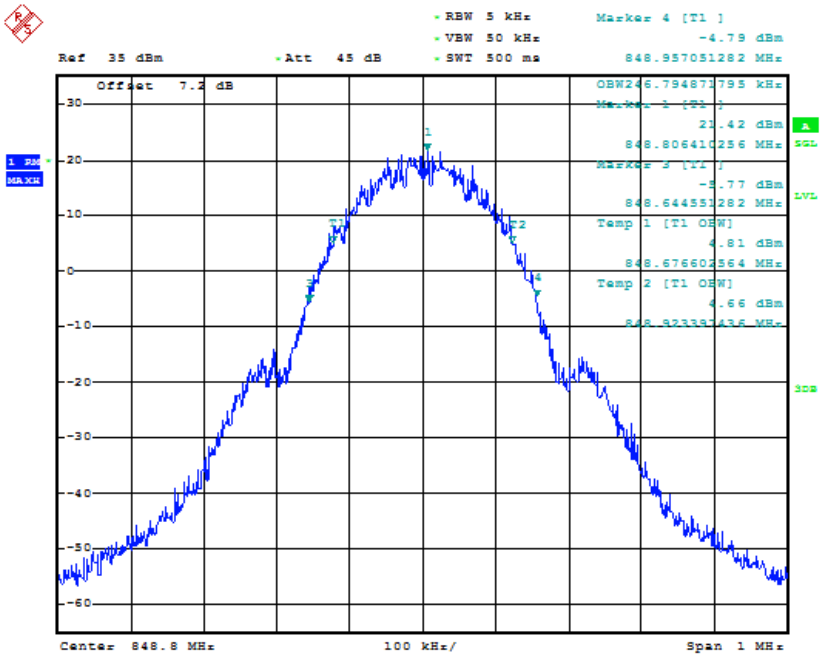
Date: 17.SEP.2018 17:19:56

Test Band = GSM850
Test Mode = GSM/TM1
Test Channel = MCH



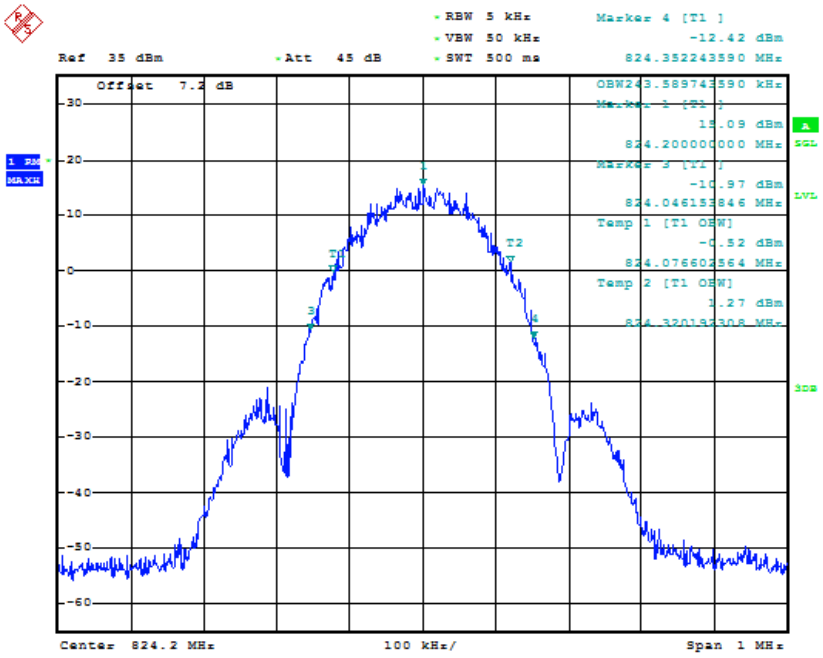
Date: 17.SEP.2018 17:20:41

Test Band = GSM850
GSM/TM1
Test Channel = HCH



Date: 17.SEP.2018 17:21:27

Test Band = GSM850
Test Mode = EDGE/TM2
Test Channel = LCH



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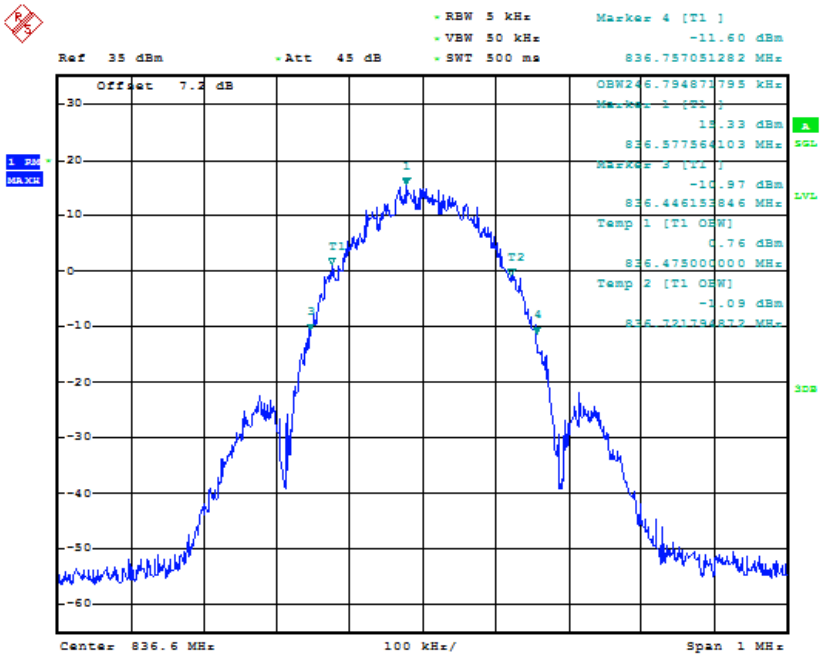
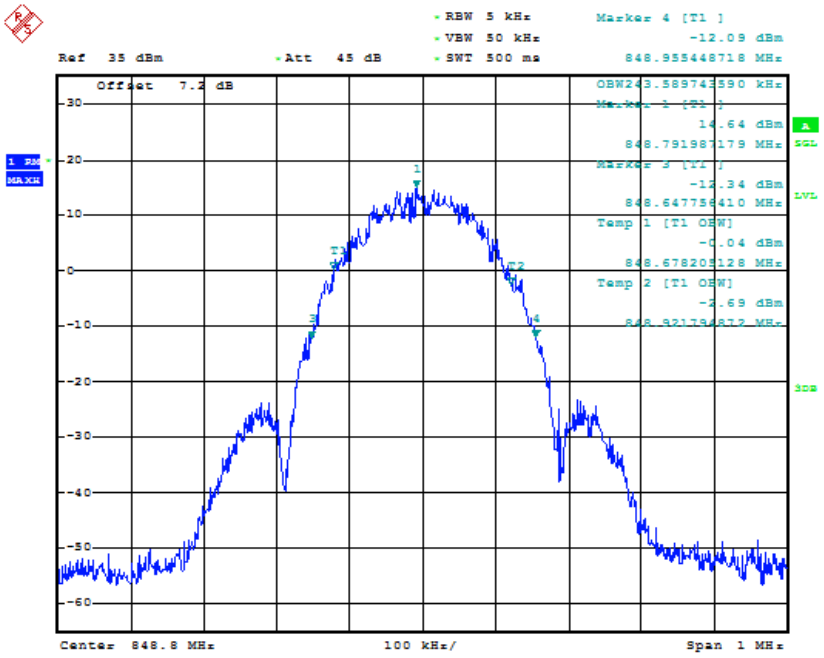
Test Band = GSM850
Test Mode = EDGE/TM2
Test Channel = MCH



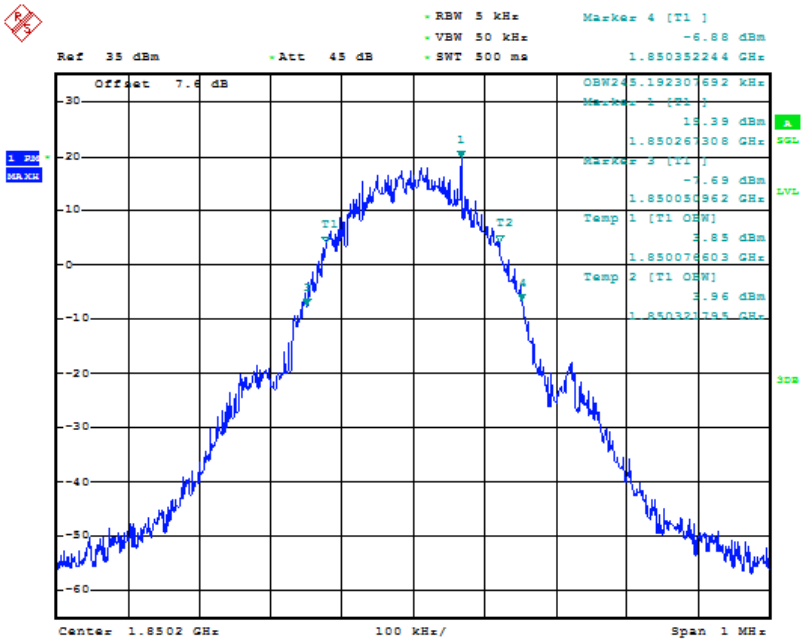
Date: 17.SEP.2018 17:50:05

Test Band = GSM850
Test Mode = EDGE/TM2
Test Channel = HCH



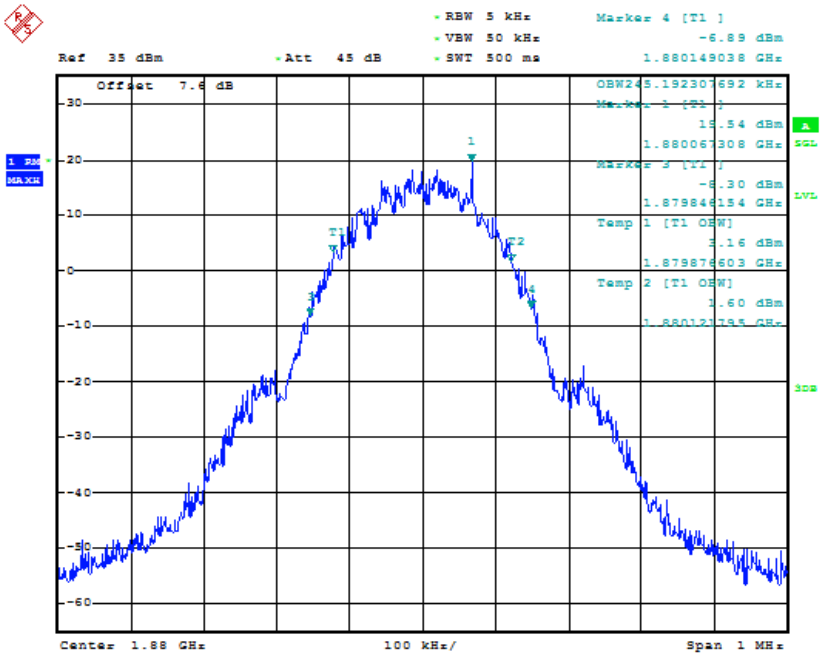
Date: 17.SEP.2018 17:50:55

Test Band = GSM1900
Test Mode = GPRS/TM1
Test Channel = LCH



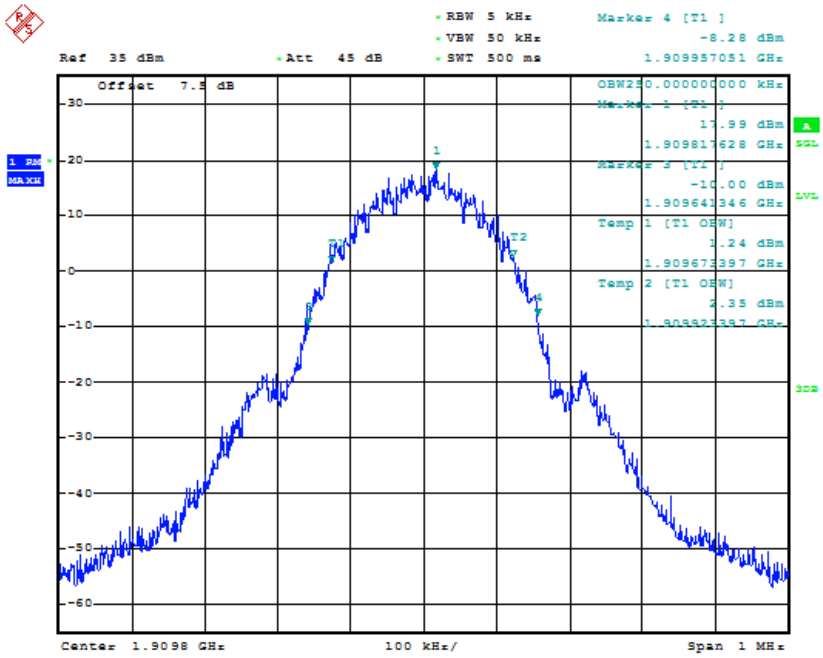
Date: 17.SEP.2018 17:58:10

Test Band = GSM1900
Test Mode = GPRS/TM1
Test Channel = MCH



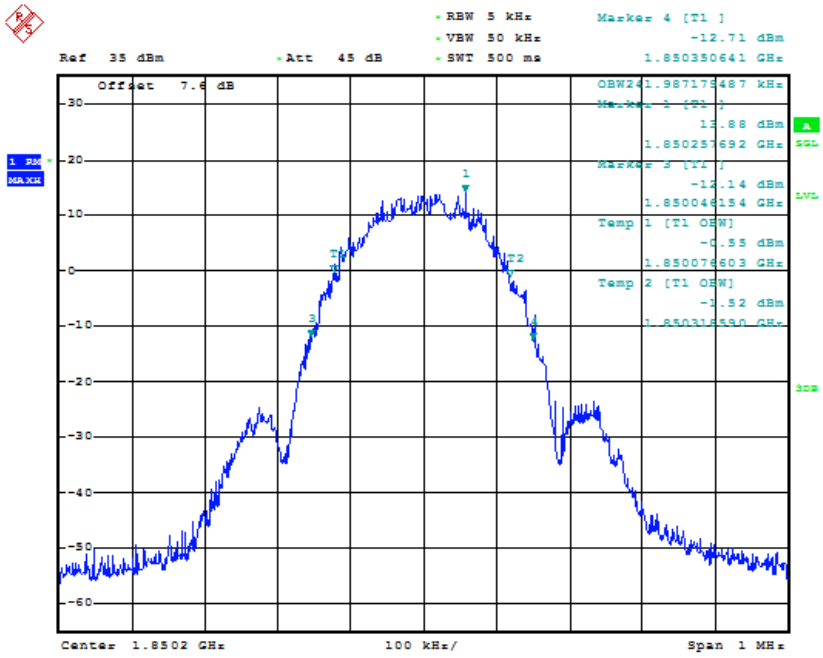
Date: 17.SEP.2018 17:58:35

Test Band = GSM1900
Test Mode = GPRS/TM1
Test Channel = HCH



Date: 17.SEP.2018 17:59:00

Test Band = GSM1900
Test Mode = EDGE /TM2
Test Channel = LCH



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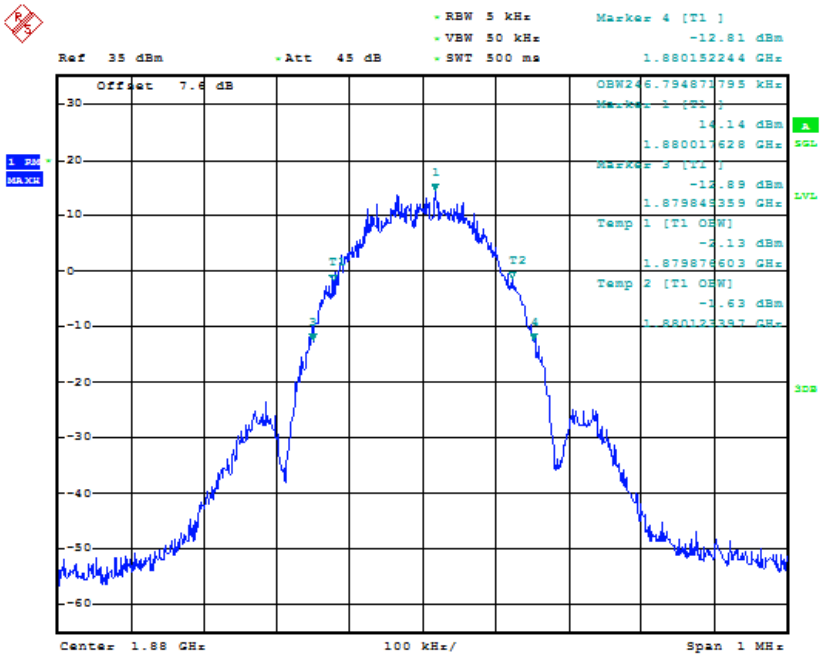
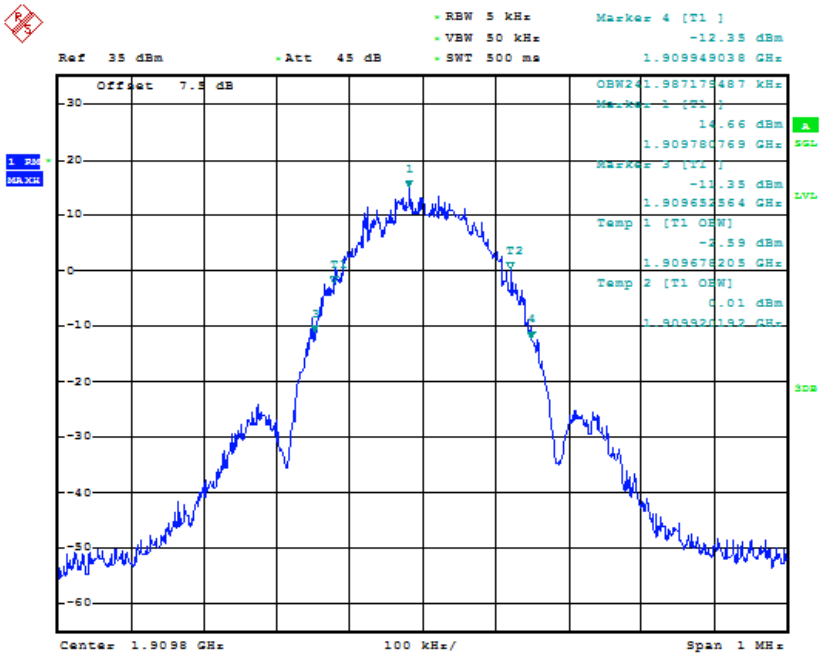
Test Band = GSM1900
Test Mode = EDGE /TM2
Test Channel = MCH



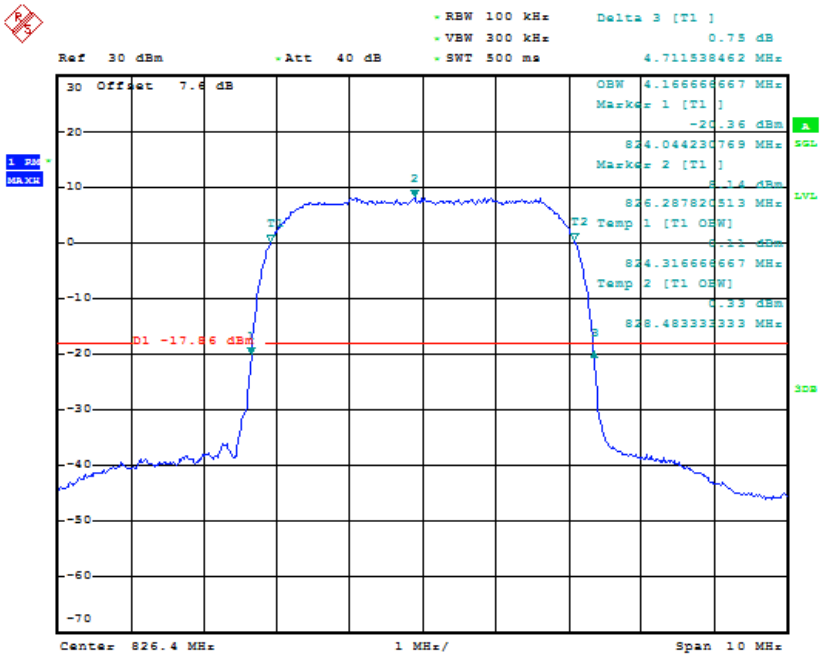
Date: 17.SEP.2018 18:12:26

Test Band = GSM1900
Test Mode = EDGE /TM2
Test Channel = HCH



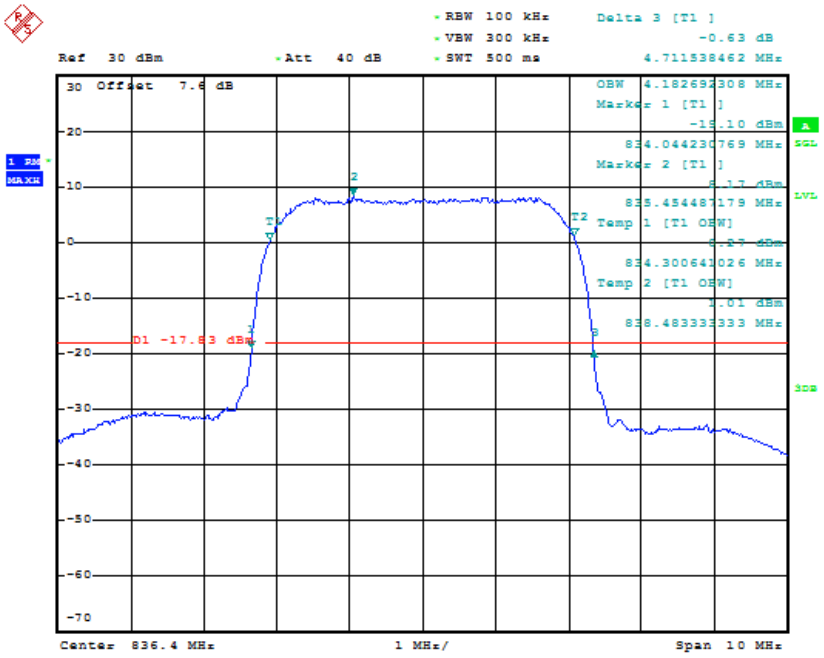
Date: 17.SEP.2018 18:13:21

Test Band=WCDMA850
Test Mode=UMTS/TM3
Test Channel=LCH



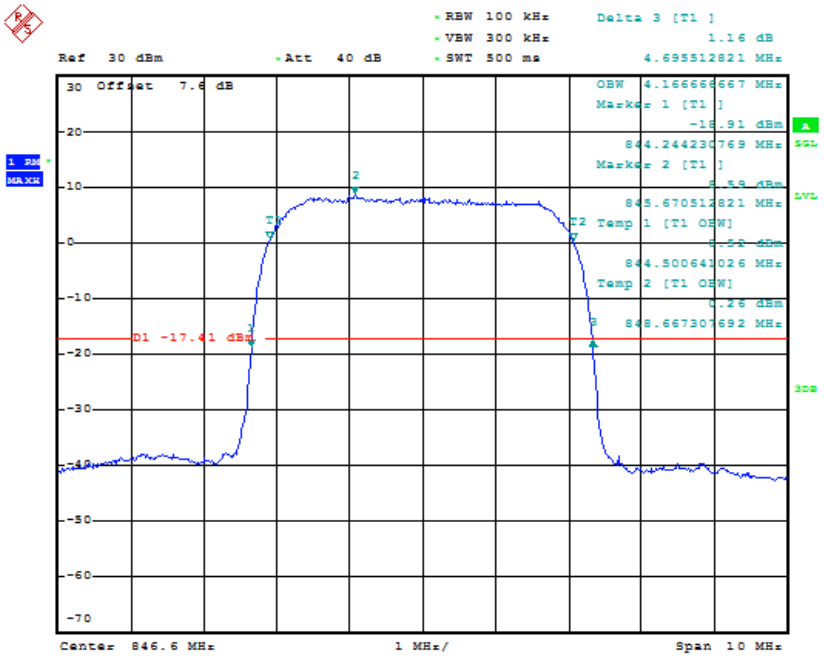
Date: 17.SEP.2018 16:50:57

Test Band=WCDMA850
Test Mode=UMTS/TM3
Test Channel=MCH



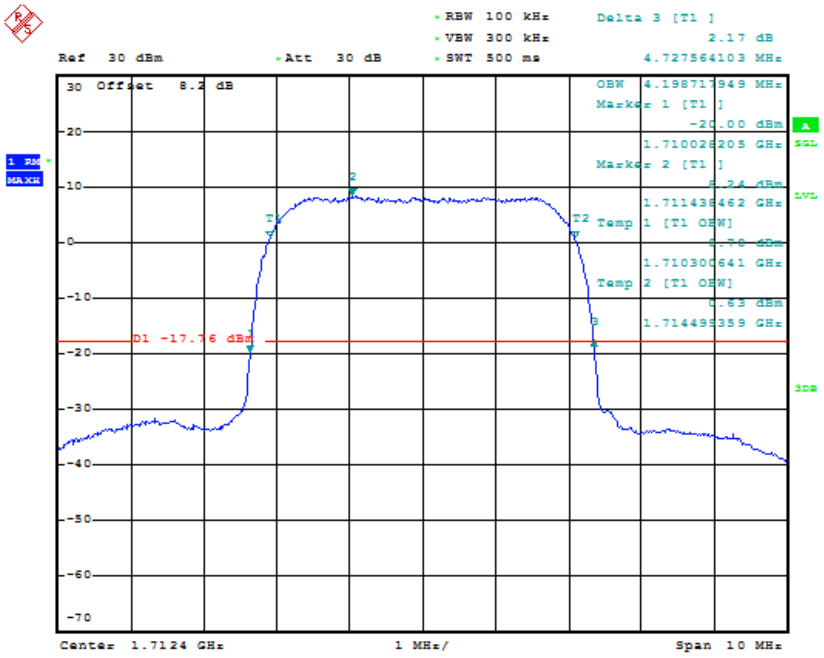
Date: 17.SEP.2018 16:51:21

Test Band=WCDMA850
Test Mode=UMTS/TM3
Test Channel=HCH



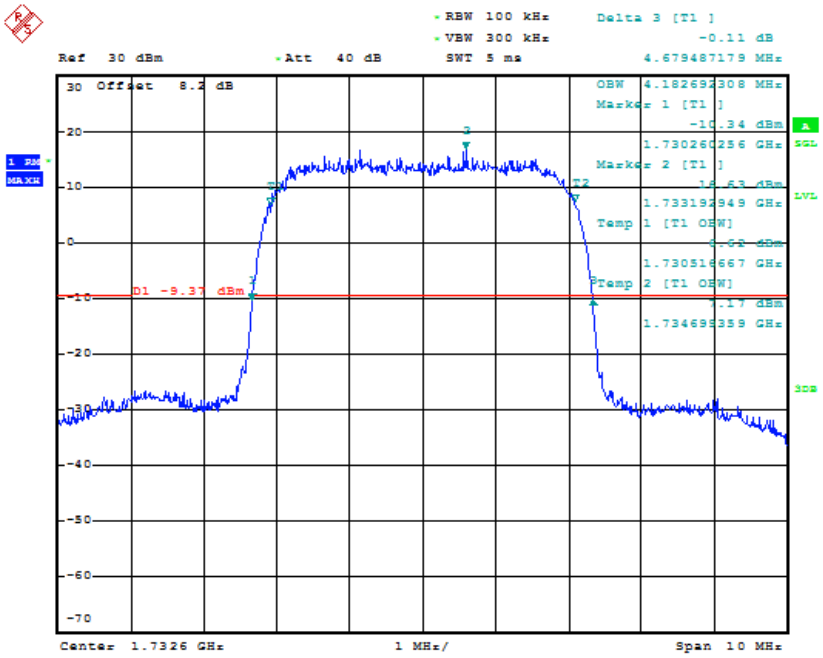
Date: 17.SEP.2018 16:51:45

Test Band=WCDMA1700
Test Mode=UMTS/TM3
Test Channel=LCH



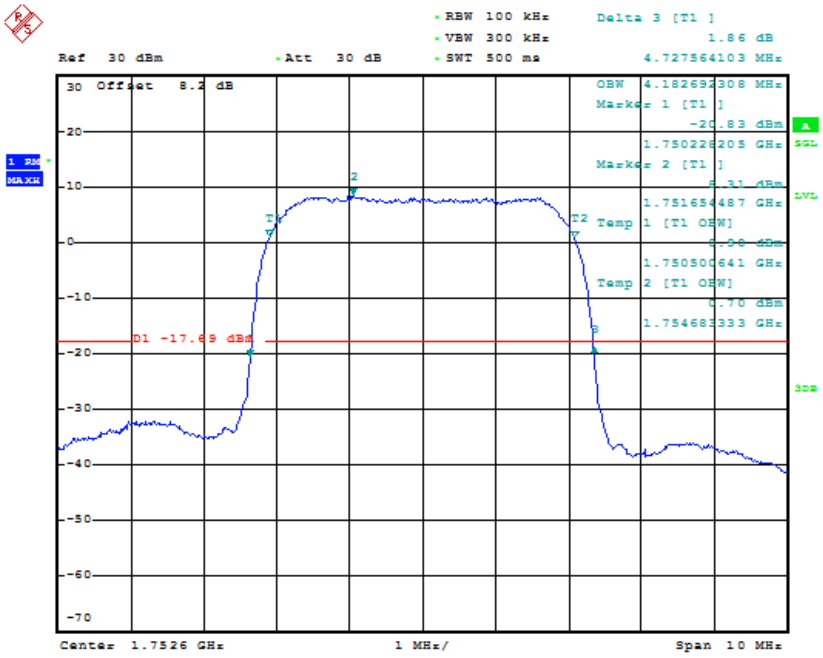
Date: 17.SEP.2018 16:17:51

Test Band=WCDMA1700
Test Mode=UMTS/TM3
Test Channel=MCH



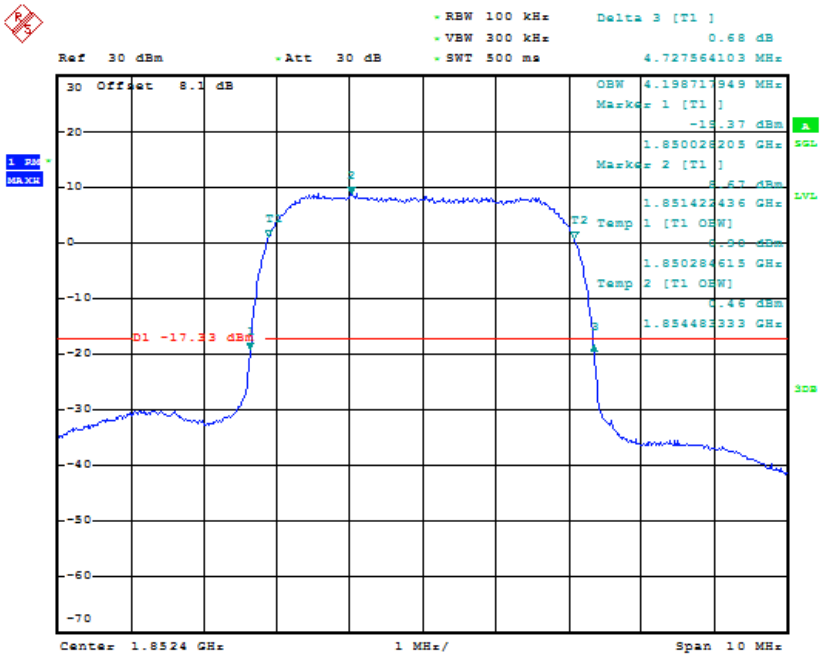
Date: 10.SEP.2018 15:29:37

Test Band=WCDMA1700
Test Mode=UMTS/TM3
Test Channel=HCH



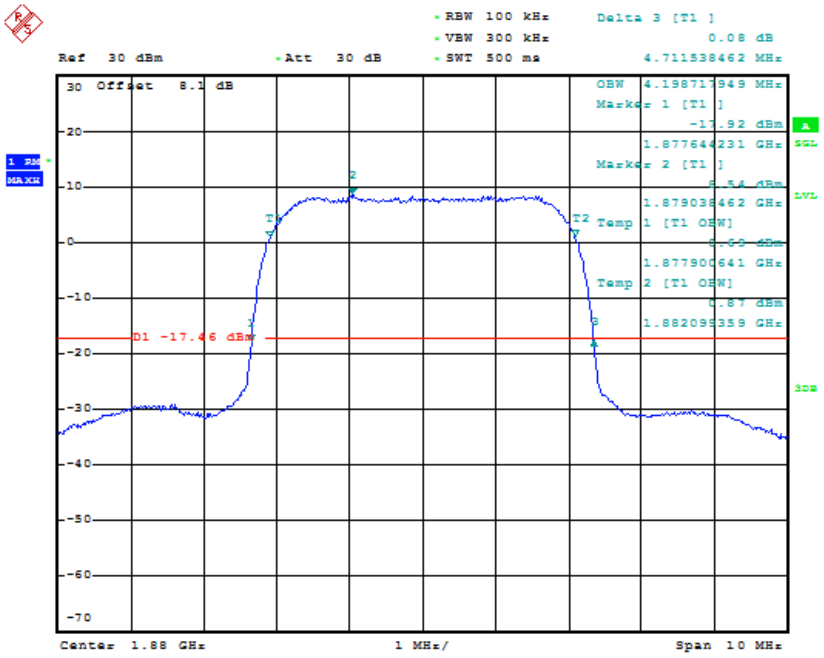
Date: 17.SEP.2018 16:18:24

Test Band=WCDMA1900
Test Mode=UMTS/TM3
Test Channel=LCH



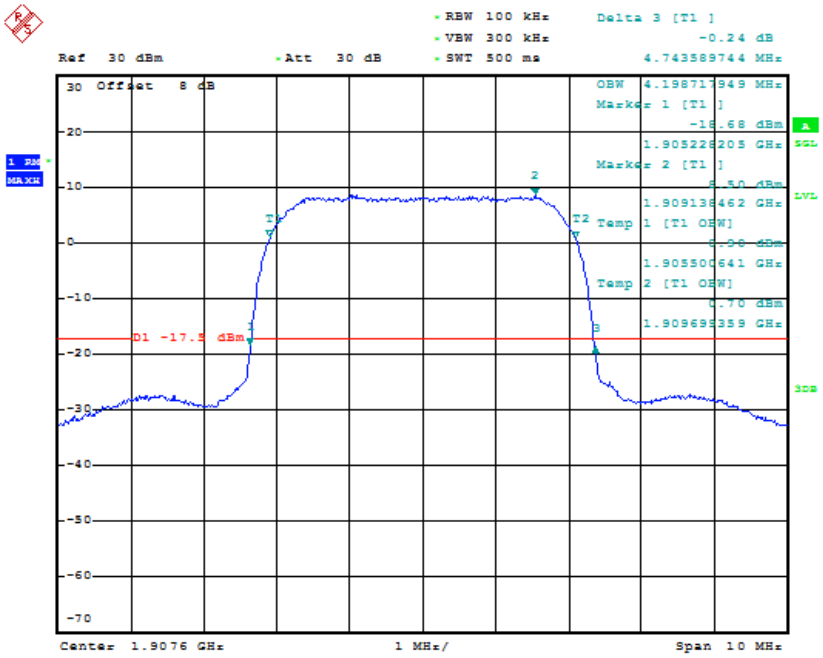
Date: 17.SEP.2018 15:13:31

Test Band=WCDMA1900
Test Mode=UMTS/TM3
Test Channel=MCH



Date: 17.SEP.2018 15:14:01

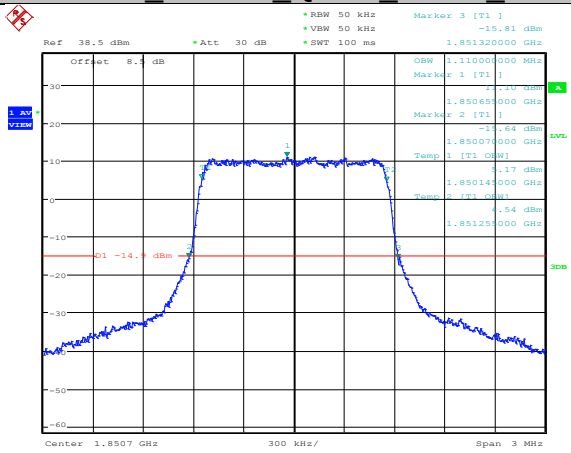
Test Band=WCDMA1900
Test Mode=UMTS/TM3
Test Channel=HCH



Date: 17.SEP.2018 15:14:29

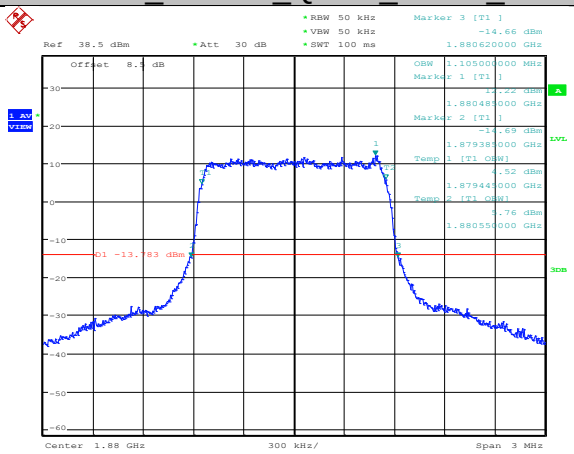
LTE Band 2
Channel Bandwidth: 1.4 MHz
Test Mode=QPSK/TM4

Band2_1.4MHz_QPSK_18607_6RB#0



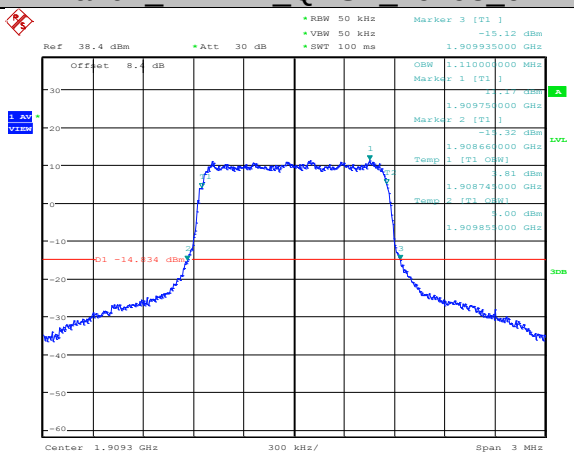
Date: 5.SEP.2018 17:40:39

Band2_1.4MHz_QPSK_18900_6RB#0



Date: 5.SEP.2018 17:41:01

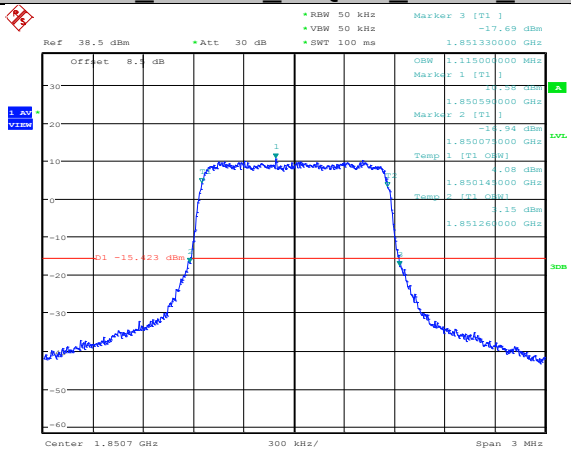
Band2_1.4MHz_QPSK_19193_6RB#0



Date: 5.SEP.2018 17:41:29

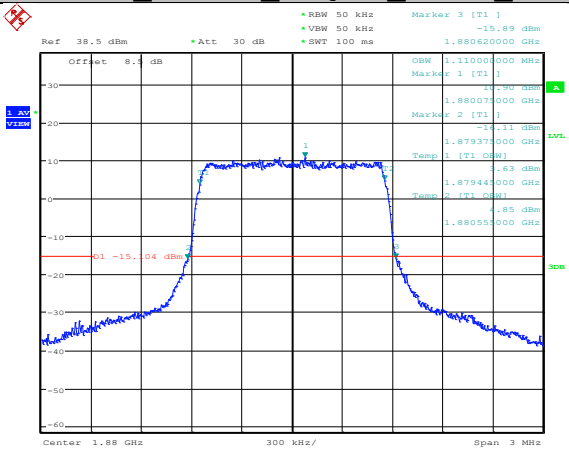
LTE Band 2
Channel Bandwidth: 1.4 MHz
Test Mode=16QAM/TM5

Band2_1.4MHz_16QAM_18607_6RB#0



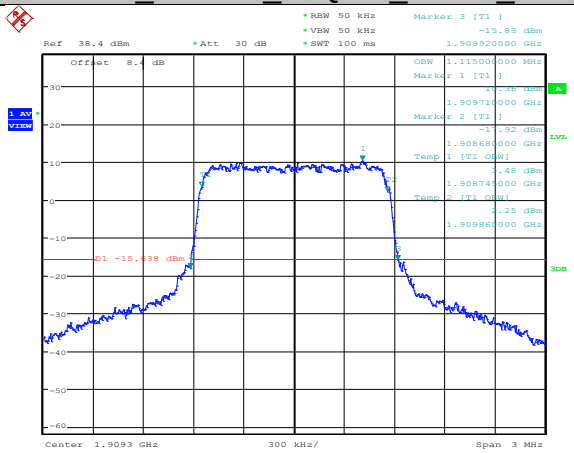
Date: 5.SEP.2018 17:40:49

Band2_1.4MHz_16QAM_18900_6RB#0



Date: 5.SEP.2018 17:41:11

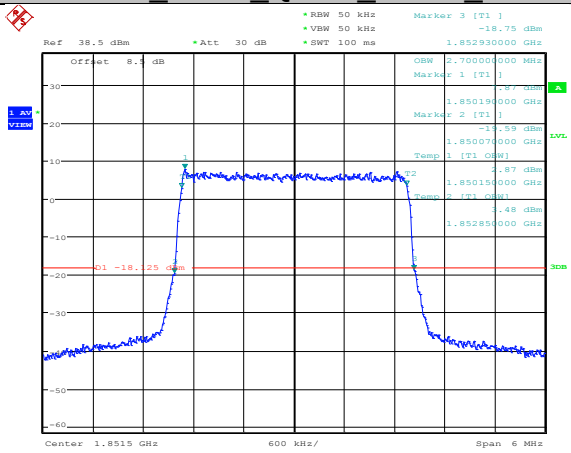
Band2_1.4MHz_16QAM_19193_6RB#0



Date: 5.SEP.2018 17:41:39

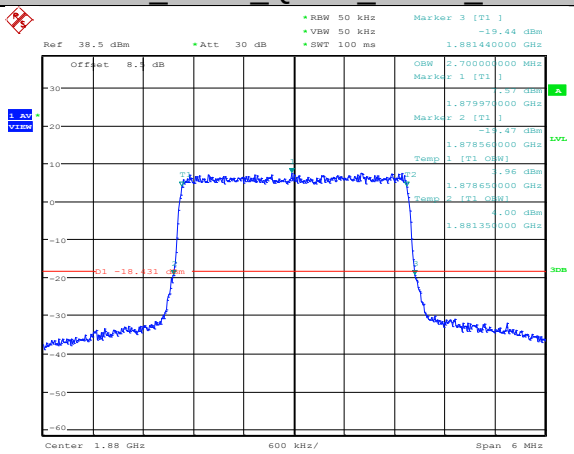
LTE Band 2
Channel Bandwidth: 3 MHz
Test Mode=QPSK/TM4

Band2_3MHz_QPSK_18615_15RB#0



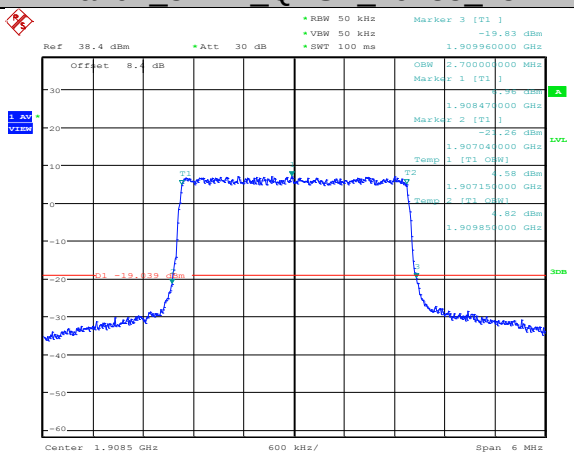
Date: 5.SEP.2018 17:42:46

Band2_3MHz_QPSK_18900_15RB#0



Date: 5.SEP.2018 17:43:08

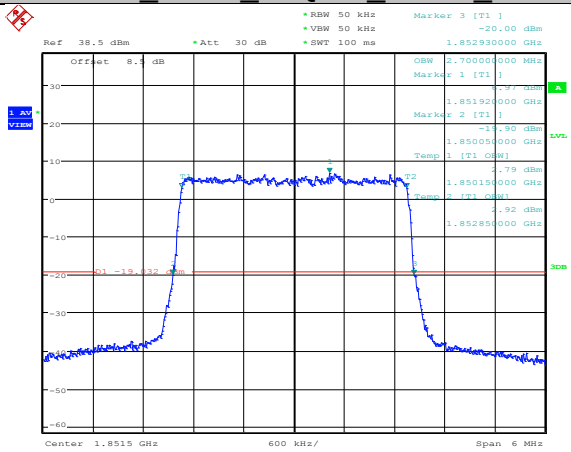
Band2_3MHz_QPSK_19185_15RB#0



Date: 5.SEP.2018 17:43:35

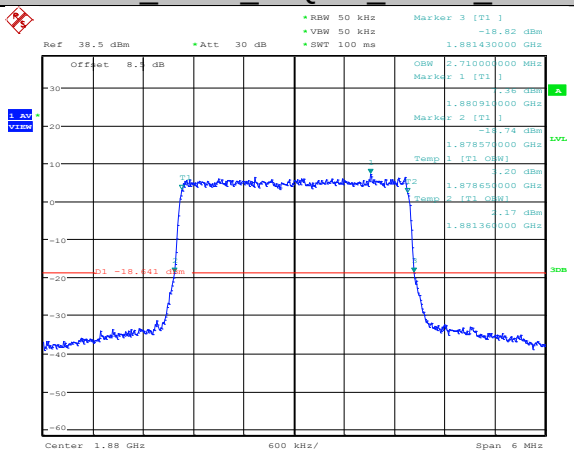
LTE Band 2
Channel Bandwidth: 3 MHz
Test Mode=16QAM/TM5

Band2_3MHz_16QAM_18615_15RB#0



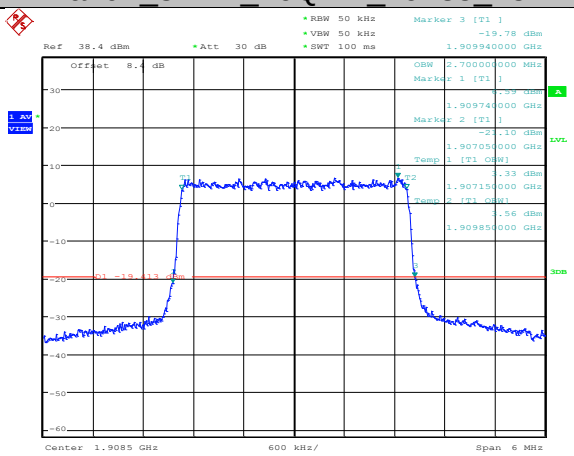
Date: 5.SEP.2018 17:42:56

Band2_3MHz_16QAM_18900_15RB#0



Date: 5.SEP.2018 17:43:18

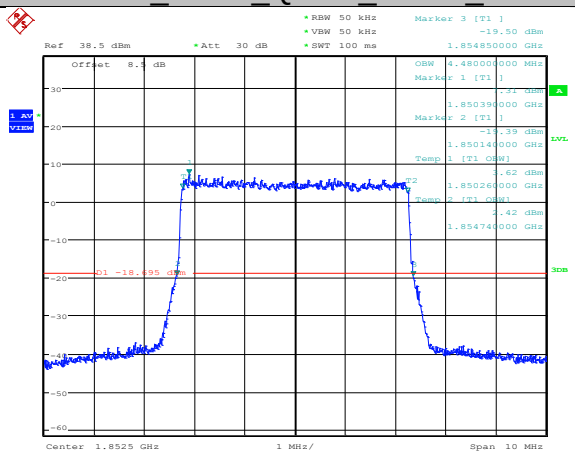
Band2_3MHz_16QAM_19185_15RB#0



Date: 5.SEP.2018 17:43:45

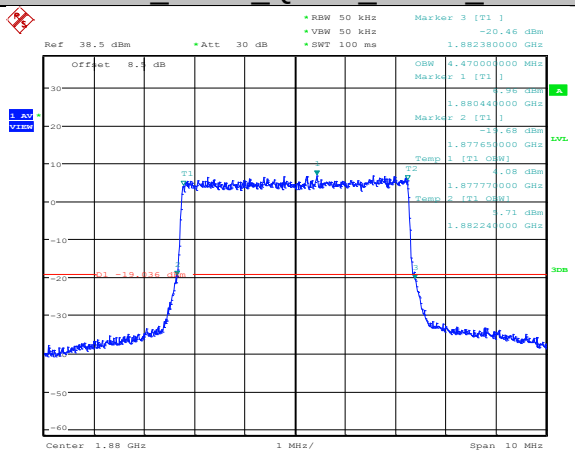
LTE Band 2
Channel Bandwidth: 5 MHz
Test Mode=QPSK/TM4

Band2_5MHz_QPSK_18625_25RB#0



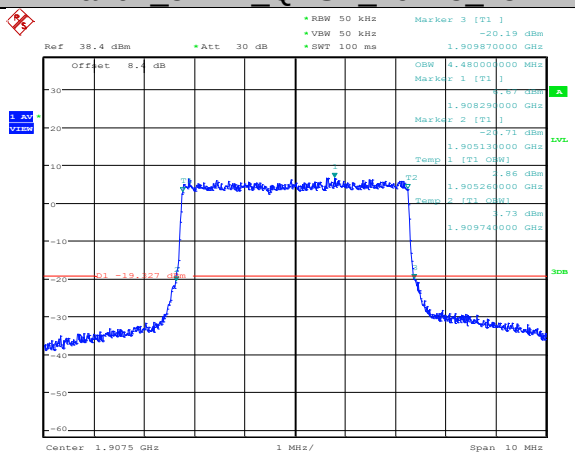
Date: 5.SEP.2018 17:44:57

Band2_5MHz_QPSK_18900_25RB#0



Date: 5.SEP.2018 17:45:34

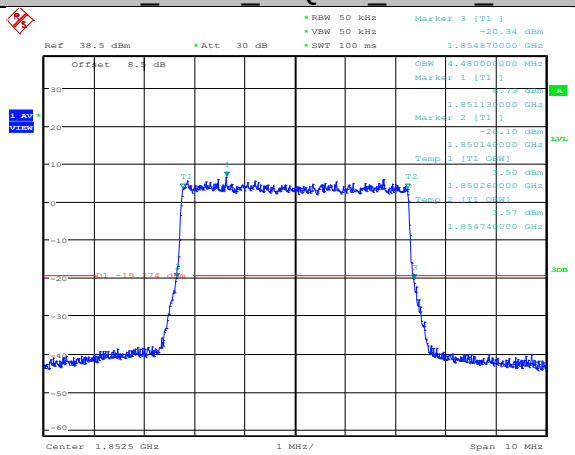
Band2_5MHz_QPSK_19175_25RB#0



Date: 5.SEP.2018 17:46:15

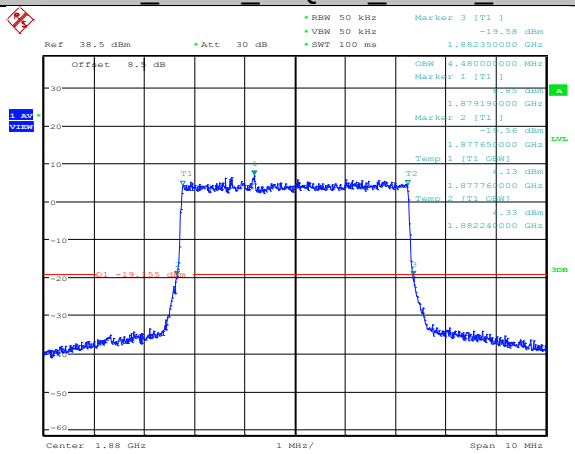
LTE Band 2
Channel Bandwidth: 5 MHz
Test Mode=16QAM/TM5

Band2_5MHz_16QAM_18625_25RB#0



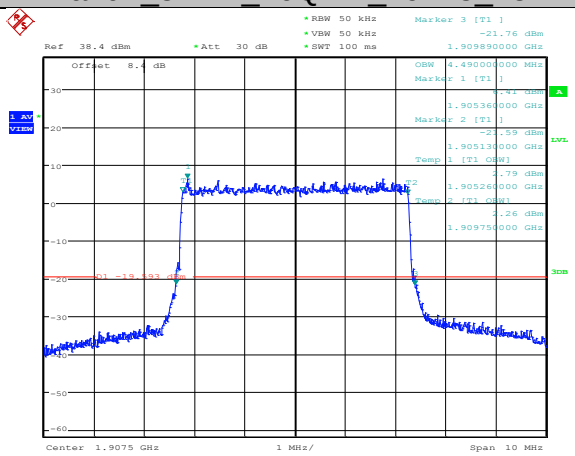
Date: 5.SEP.2018 17:45:15

Band2_5MHz_16QAM_18900_25RB#0



Date: 5.SEP.2018 17:45:50

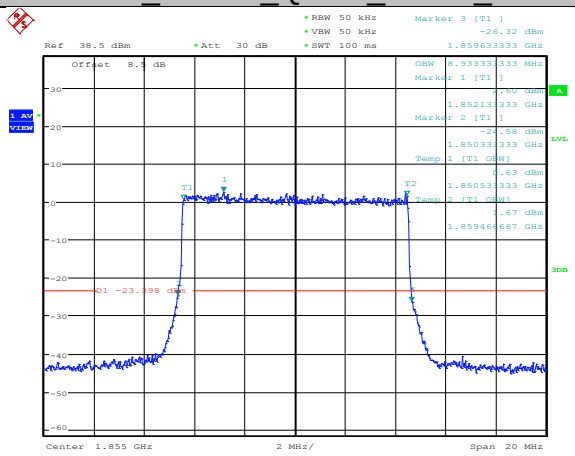
Band2_5MHz_16QAM_19175_25RB#0



Date: 5.SEP.2018 17:46:32

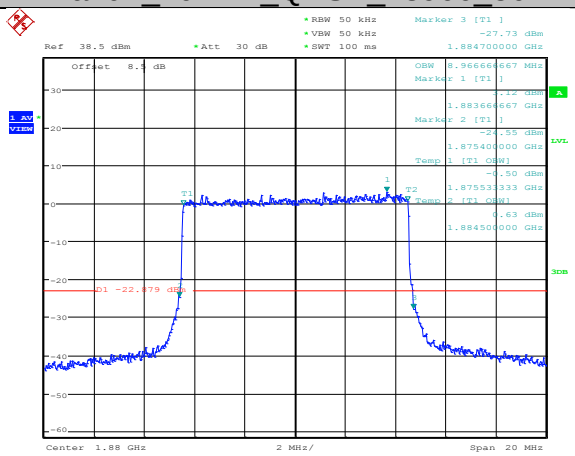
LTE Band 2
Channel Bandwidth: 10 MHz
Test Mode=QPSK/TM4

Band2_10MHz_QPSK_18650_50RB#0



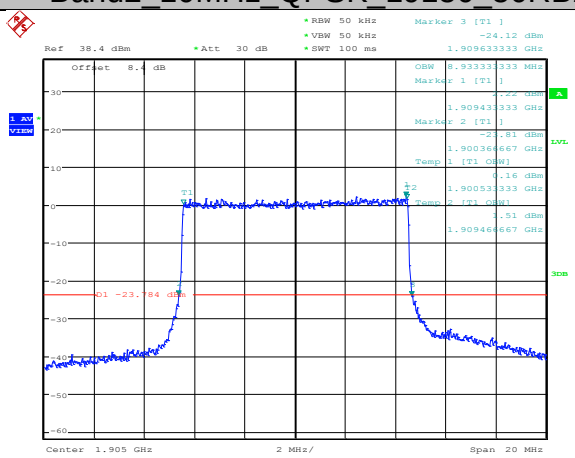
Date: 5.SEP.2018 17:47:36

Band2_10MHz_QPSK_18900_50RB#0



Date: 5.SEP.2018 17:47:58

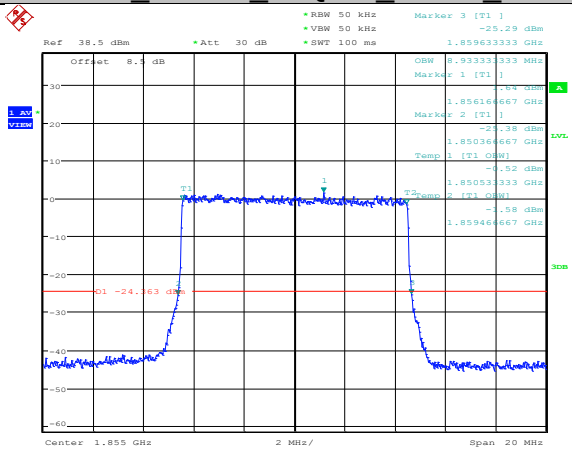
Band2_10MHz_QPSK_19150_50RB#0



Date: 5.SEP.2018 17:48:26

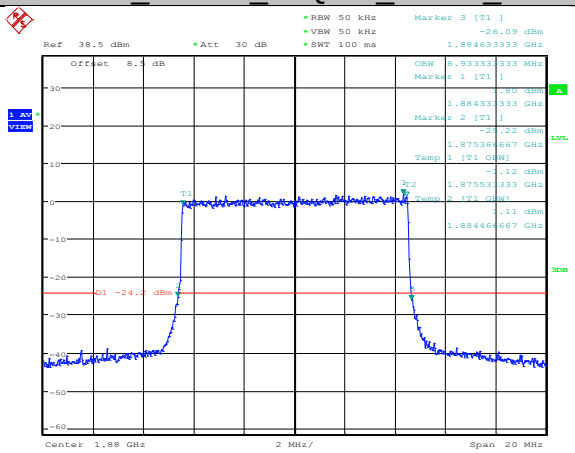
LTE Band 2
Channel Bandwidth: 10MHz
Test Mode=16QAM/TM5

Band2_10MHz_16QAM_18650_50RB#0



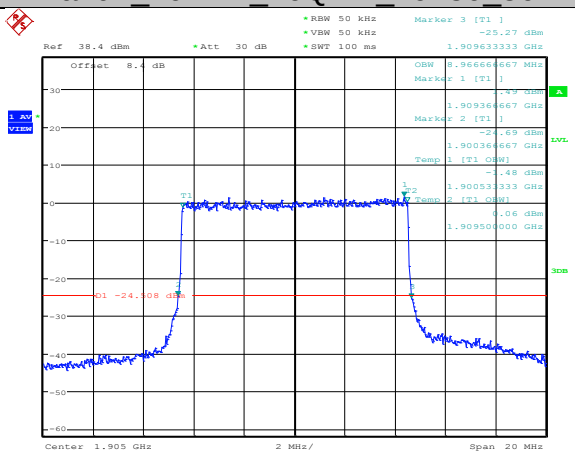
Date: 5.SEP.2018 17:47:46

Band2_10MHz_16QAM_18900_50RB#0



Date: 5.SEP.2018 17:48:08

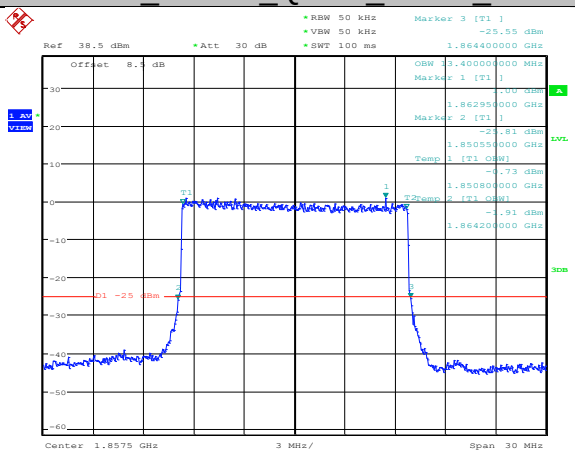
Band2_10MHz_16QAM_19150_50RB#0



Date: 5.SEP.2018 17:48:36

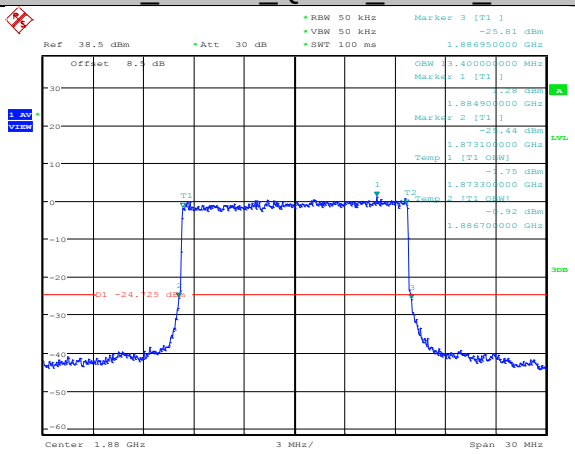
LTE Band 2
Channel Bandwidth: 15 MHz
Test Mode=QPSK/TM4

Band2_15MHz_QPSK_18675_75RB#0



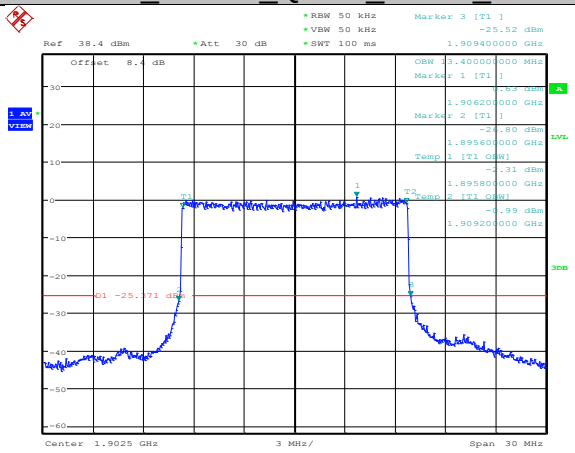
Date: 5.SEP.2018 17:49:36

Band2_15MHz_QPSK_18900_75RB#0



Date: 5.SEP.2018 17:49:58

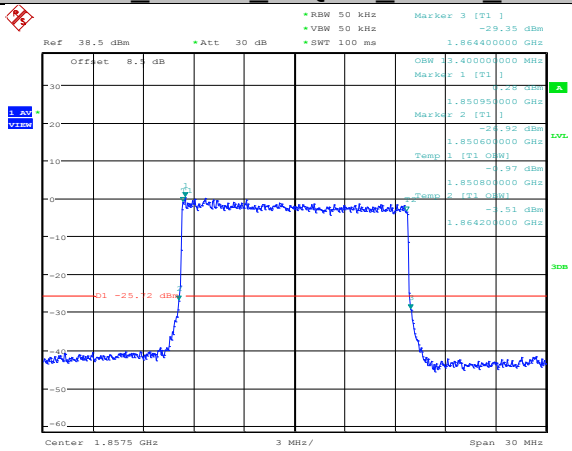
Band2_15MHz_QPSK_19125_75RB#0



Date: 5.SEP.2018 17:50:25

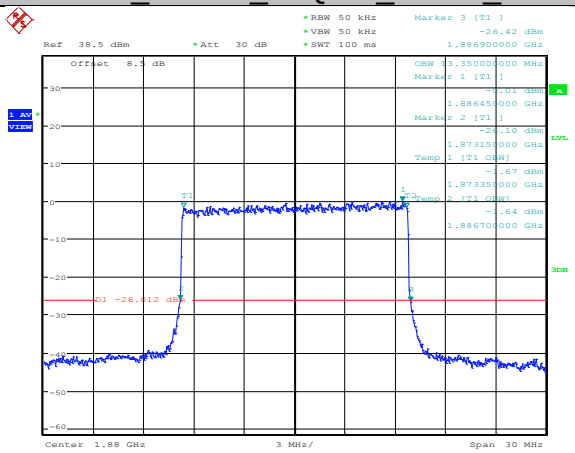
LTE Band 2
Channel Bandwidth: 15 MHz
Test Mode=16QAM/TM5

Band2_15MHz_16QAM_18675_75RB#0



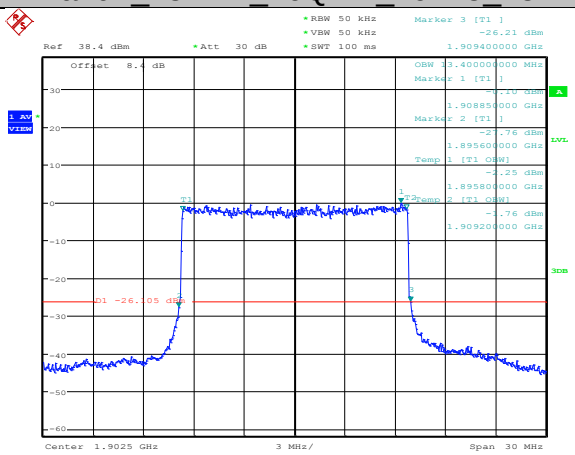
Date: 5.SEP.2018 17:49:46

Band2_15MHz_16QAM_18900_75RB#0



Date: 5.SEP.2018 17:50:08

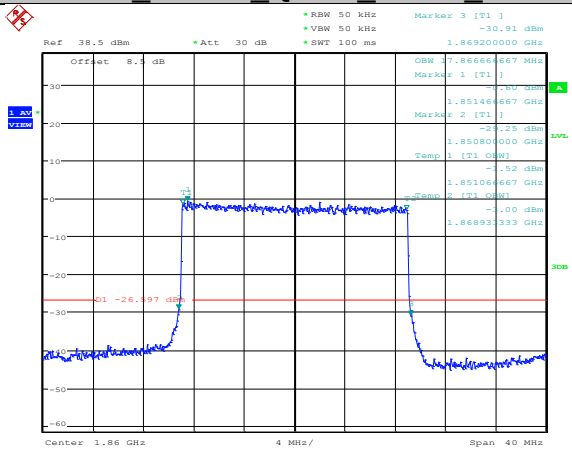
Band2_15MHz_16QAM_19125_75RB#0



Date: 5.SEP.2018 17:50:35

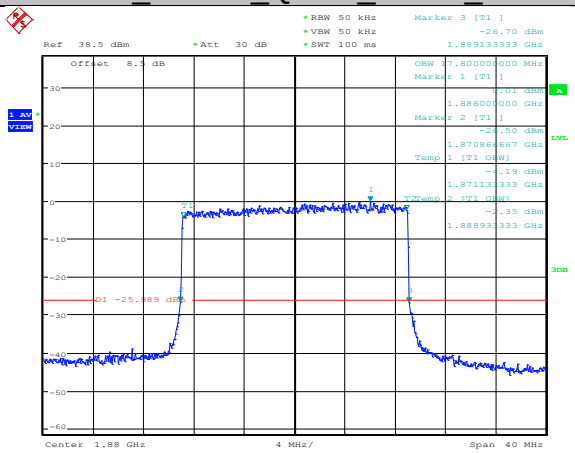
LTE Band 2
Channel Bandwidth: 20 MHz
Test Mode=QPSK/TM4

Band2_20MHz_QPSK_18700_100RB#0



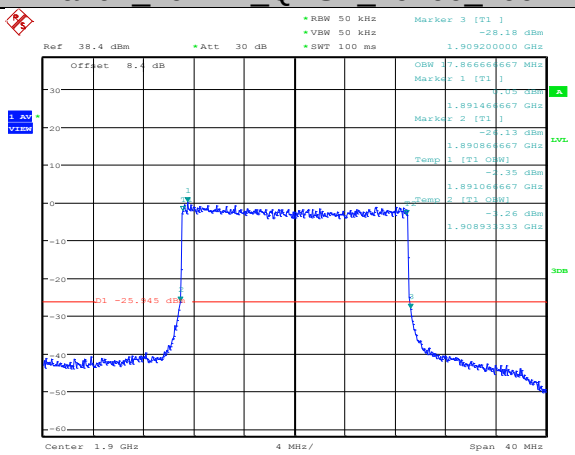
Date: 5.SEP.2018 17:53:34

Band2_20MHz_QPSK_18900_100RB#0



Date: 5.SEP.2018 17:53:56

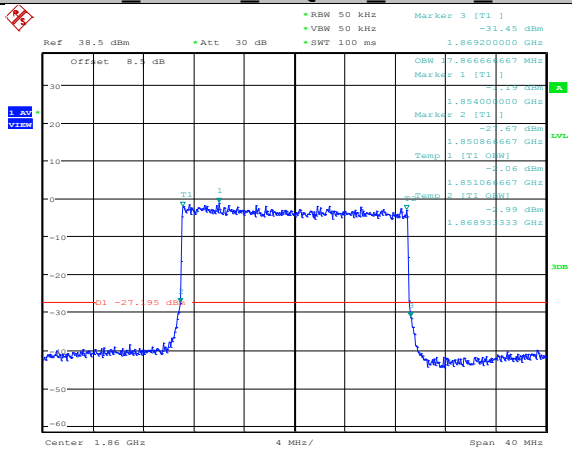
Band2_20MHz_QPSK_19100_100RB#0



Date: 5.SEP.2018 17:54:24

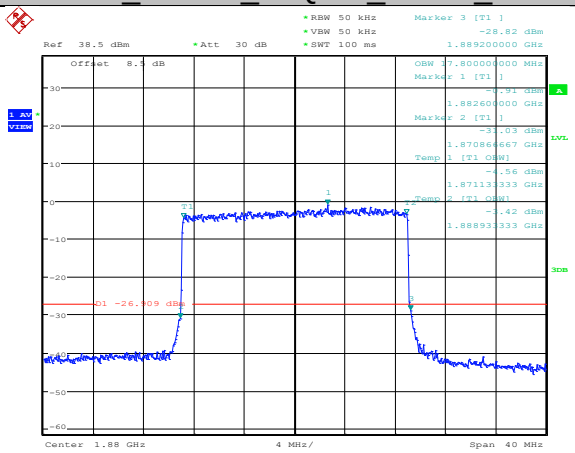
LTE Band 2
Channel Bandwidth: 20 MHz
Test Mode=16QAM/TM5

Band2_20MHz_16QAM_18700_100RB#0



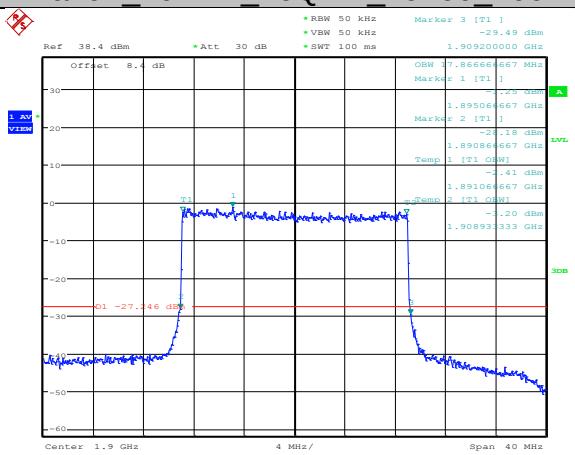
Date: 5.SEP.2018 17:53:44

Band2_20MHz_16QAM_18900_100RB#0



Date: 5.SEP.2018 17:54:06

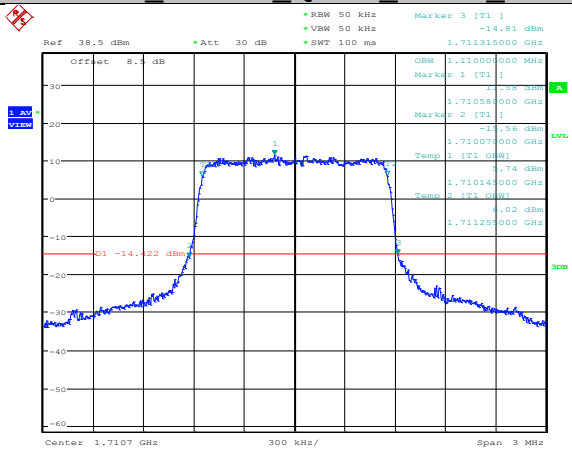
Band2_20MHz_16QAM_19100_100RB#0



Date: 5.SEP.2018 17:54:35

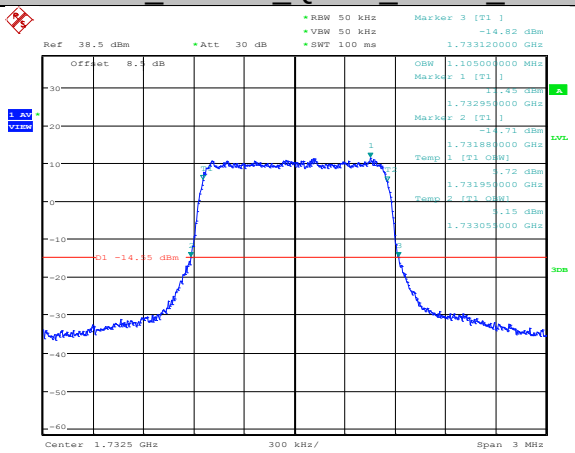
LTE Band 4
Channel Bandwidth: 1.4 MHz
Test Mode=QPSK/TM4

Band4_1.4MHz_QPSK_19957_6RB#0



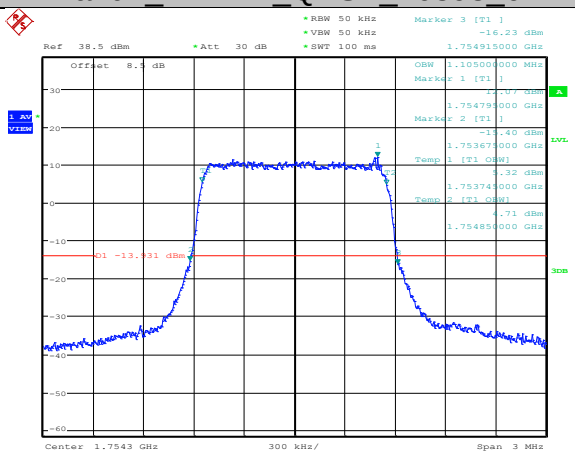
Date: 6.SEP.2018 10:54:52

Band4_1.4MHz_QPSK_20175_6RB#0



Date: 6.SEP.2018 10:55:14

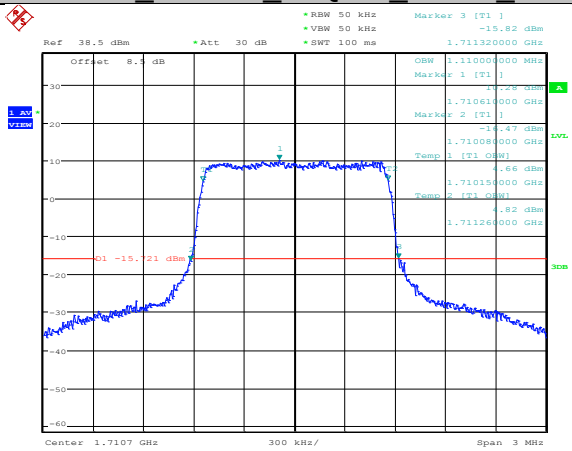
Band4_1.4MHz_QPSK_20393_6RB#0



Date: 6.SEP.2018 10:55:36

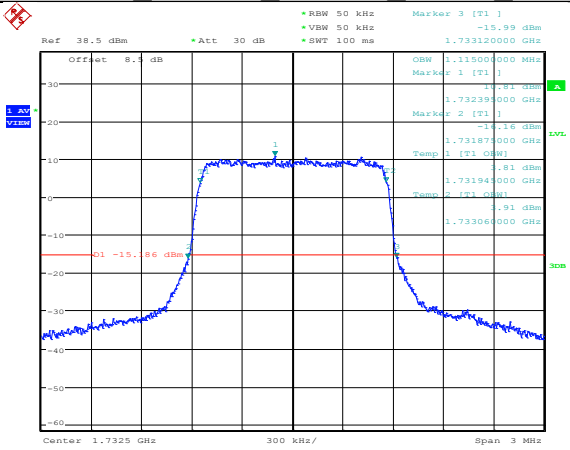
LTE Band 4
Channel Bandwidth: 1.4 MHz
Test Mode=16QAM/TM5

Band4_1.4MHz_16QAM_19957_6RB#0



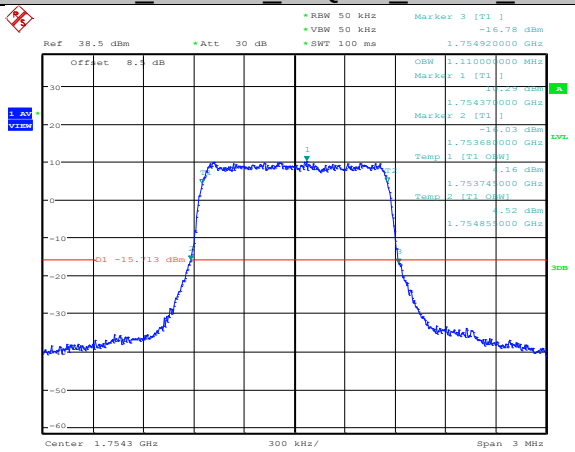
Date: 6.SEP.2018 10:55:02

Band4_1.4MHz_16QAM_20175_6RB#0



Date: 6.SEP.2018 10:55:24

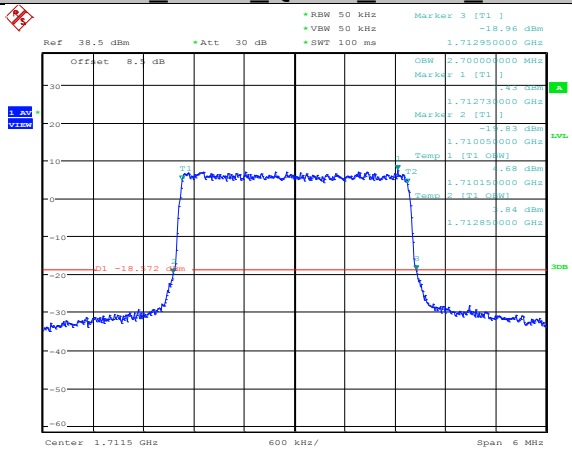
Band4_1.4MHz_16QAM_20393_6RB#0



Date: 6.SEP.2018 10:55:46

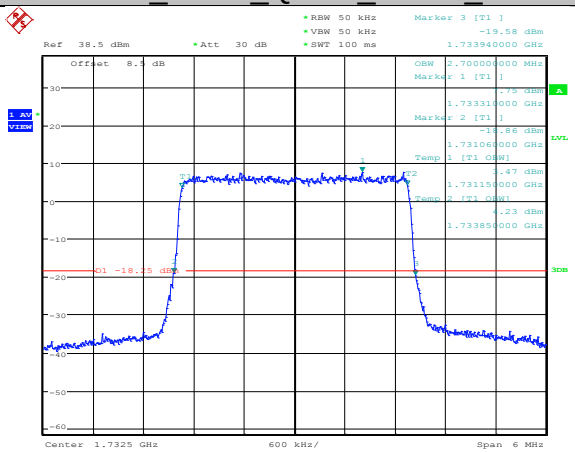
LTE Band 4
Channel Bandwidth: 3 MHz
Test Mode=QPSK/TM4

Band4_3MHz_QPSK_19965_15RB#0



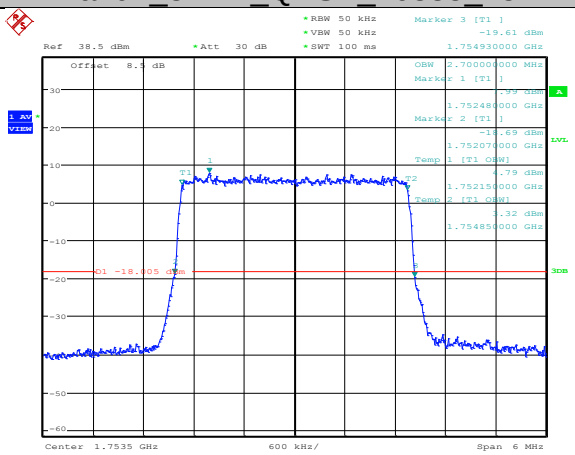
Date: 6.SEP.2018 11:22:51

Band4_3MHz_QPSK_20175_15RB#0



Date: 6.SEP.2018 11:23:37

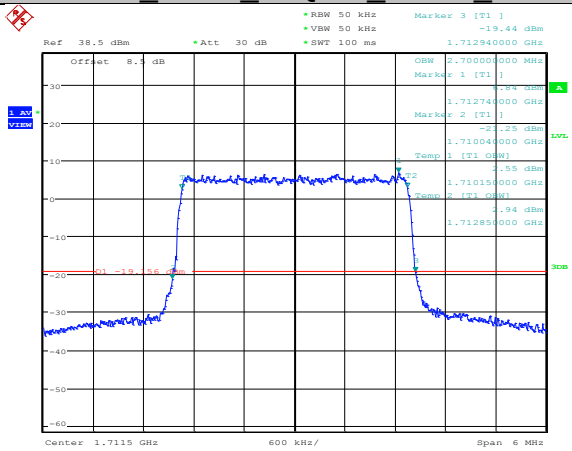
Band4_3MHz_QPSK_20385_15RB#0



Date: 6.SEP.2018 11:24:01

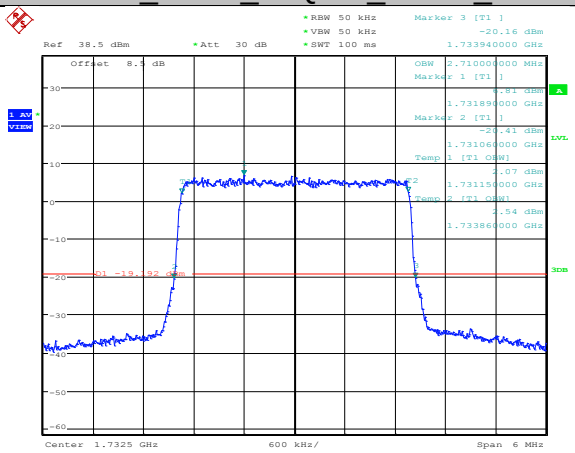
LTE Band 4
Channel Bandwidth: 3 MHz
Test Mode=16QAM/TM5

Band4_3MHz_16QAM_19965_15RB#0



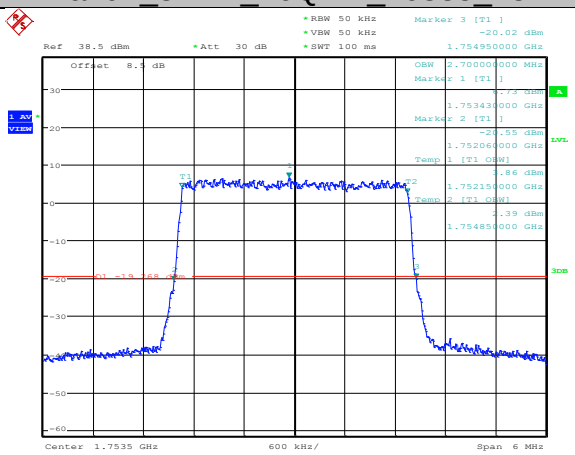
Date: 6.SEP.2018 11:23:14

Band4_3MHz_16QAM_20175_15RB#0



Date: 6.SEP.2018 11:23:47

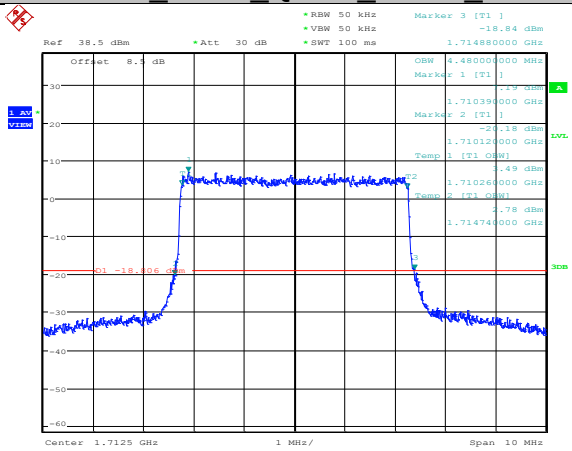
Band4_3MHz_16QAM_20385_15RB#0



Date: 6.SEP.2018 11:24:33

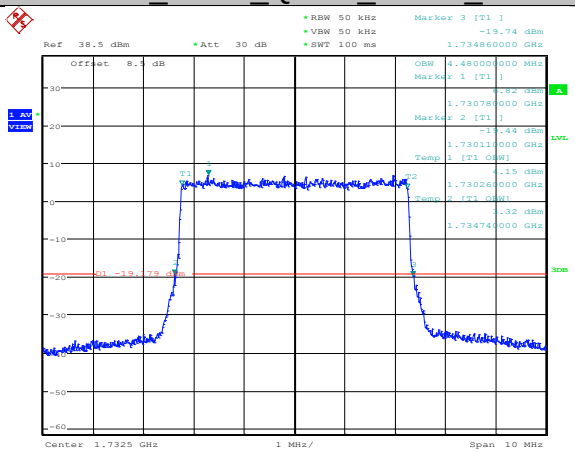
LTE Band 4
Channel Bandwidth: 5 MHz
Test Mode=QPSK/TM4

Band4_5MHz_QPSK_19975_25RB#0



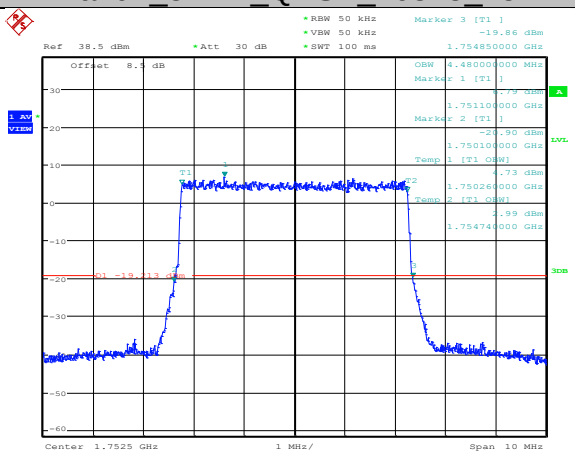
Date: 6.SEP.2018 11:41:27

Band4_5MHz_QPSK_20175_25RB#0



Date: 6.SEP.2018 11:42:23

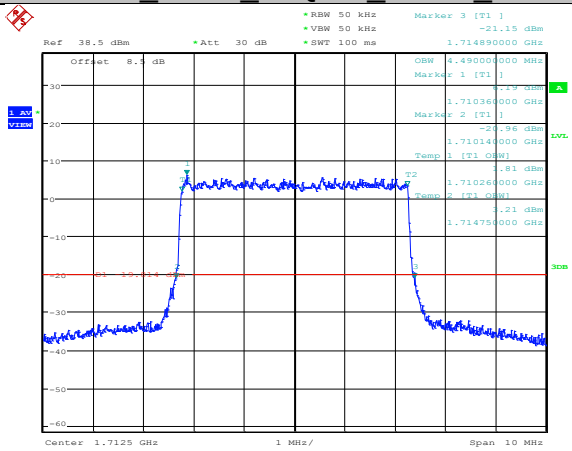
Band4_5MHz_QPSK_20375_25RB#0



Date: 6.SEP.2018 11:43:37

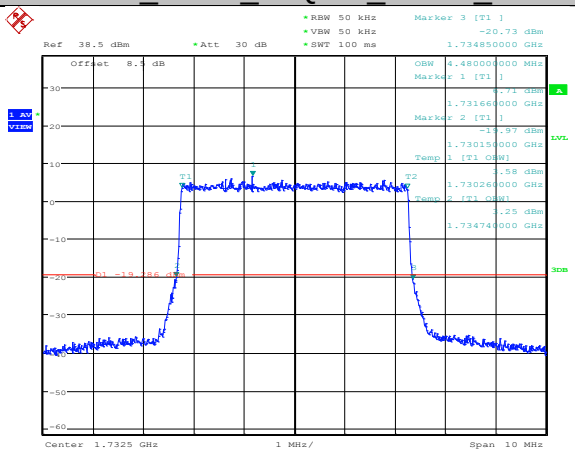
LTE Band 4
Channel Bandwidth: 5 MHz
Test Mode=16QAM/TM5

Band4_5MHz_16QAM_19975_25RB#0



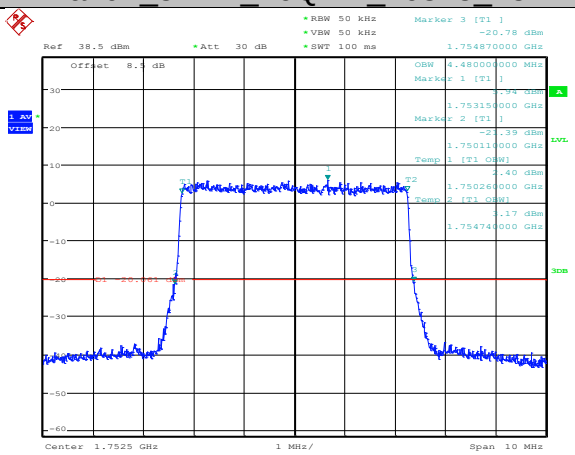
Date: 6.SEP.2018 11:41:45

Band4_5MHz_16QAM_20175_25RB#0



Date: 6.SEP.2018 11:42:58

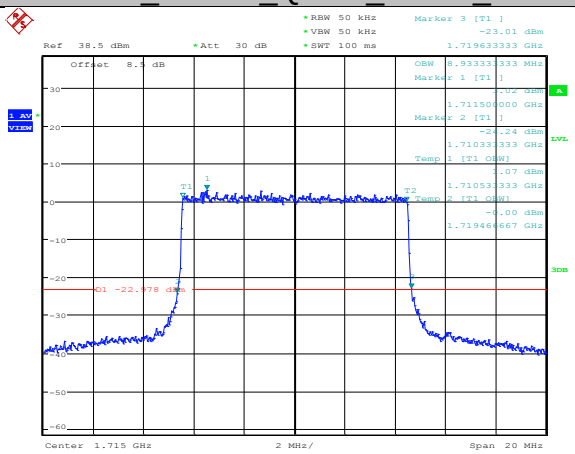
Band4_5MHz_16QAM_20375_25RB#0



Date: 6.SEP.2018 11:44:14

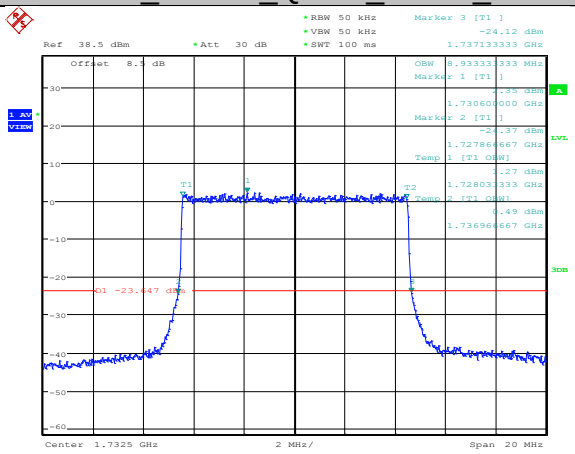
LTE Band 4
Channel Bandwidth: 10 MHz
Test Mode=QPSK/TM4

Band4_10MHz_QPSK_20000_50RB#0



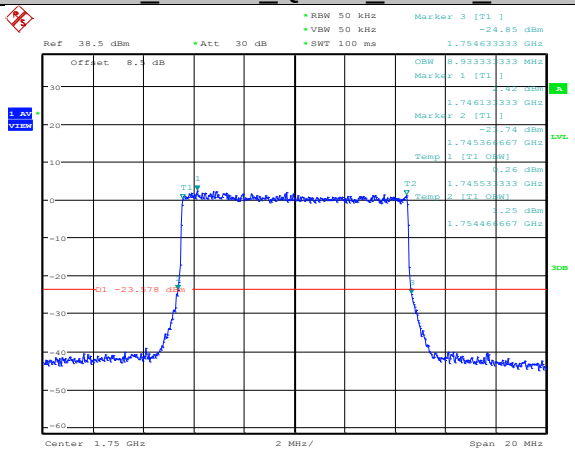
Date: 6.SEP.2018 12:02:34

Band4_10MHz_QPSK_20175_50RB#0



Date: 6.SEP.2018 12:02:56

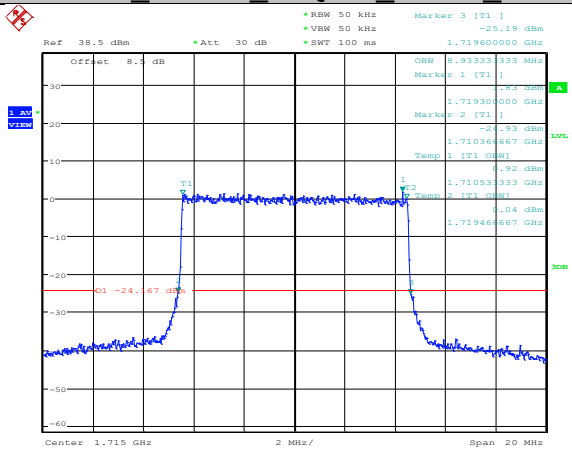
Band4_10MHz_QPSK_20350_50RB#0



Date: 6.SEP.2018 12:03:18

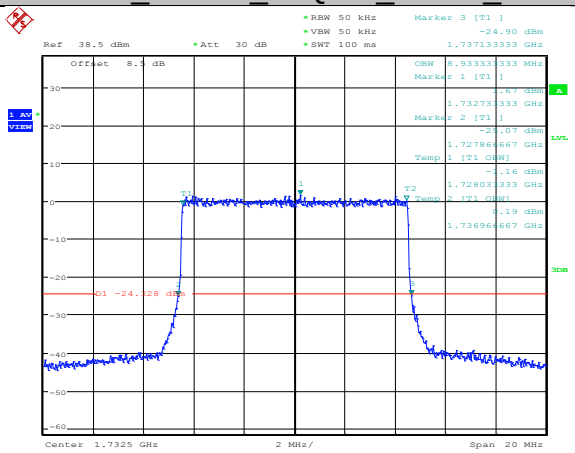
LTE Band 4
Channel Bandwidth: 10MHz
Test Mode=16QAM/TM5

Band4_10MHz_16QAM_20000_50RB#0



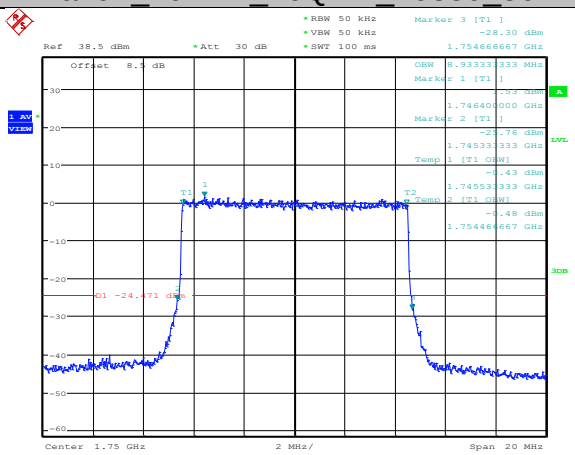
Date: 6.SEP.2018 12:02:44

Band4_10MHz_16QAM_20175_50RB#0



Date: 6.SEP.2018 12:03:06

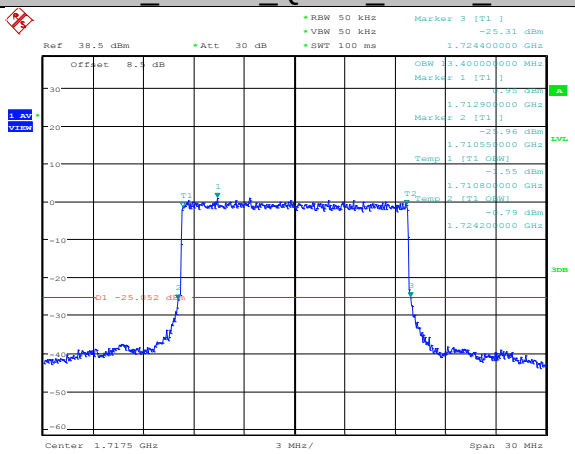
Band4_10MHz_16QAM_20350_50RB#0



Date: 6.SEP.2018 12:03:27

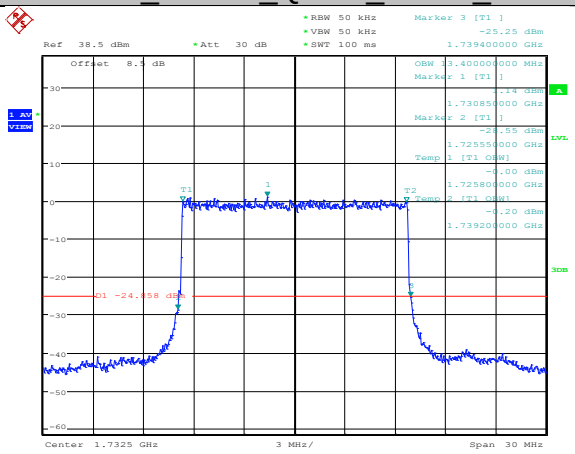
LTE Band 4
Channel Bandwidth: 15 MHz
Test Mode=QPSK/TM4

Band4_15MHz_QPSK_20025_75RB#0



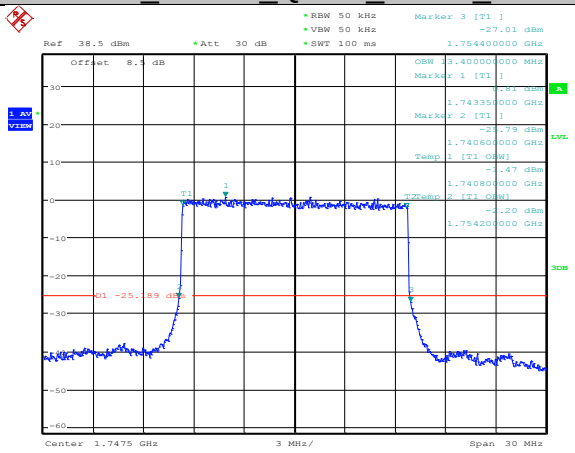
Date: 6.SEP.2018 12:30:54

Band4_15MHz_QPSK_20175_75RB#0



Date: 6.SEP.2018 12:31:16

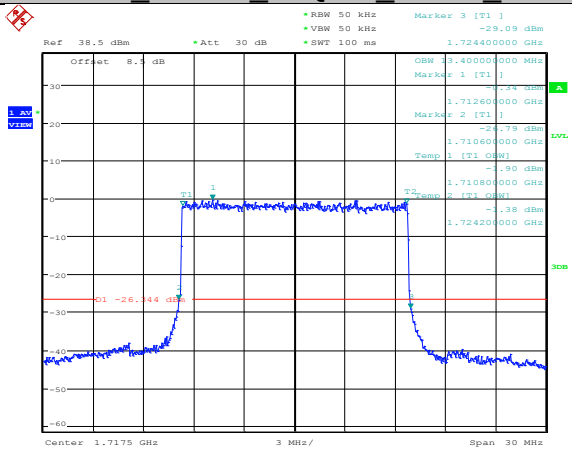
Band4_15MHz_QPSK_20325_75RB#0



Date: 6.SEP.2018 12:31:37

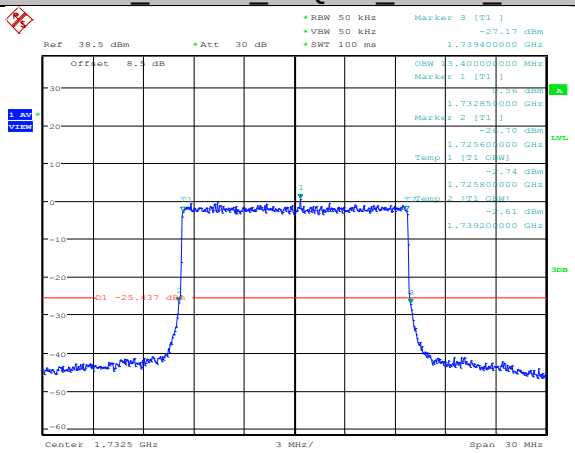
LTE Band 4
Channel Bandwidth: 15 MHz
Test Mode=16QAM/TM5

Band4_15MHz_16QAM_20025_75RB#0



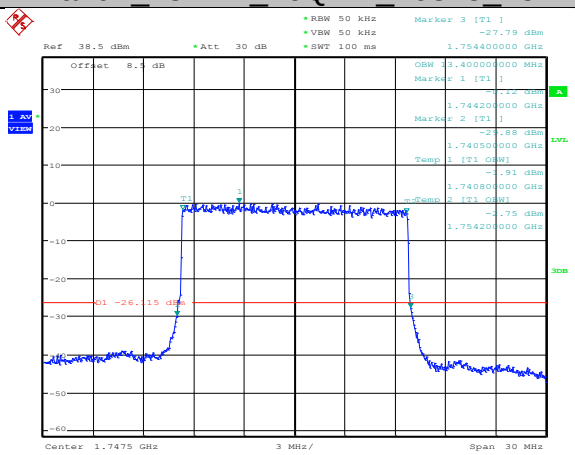
Date: 6.SEP.2018 12:31:04

Band4_15MHz_16QAM_20175_75RB#0



Date: 6.SEP.2018 12:31:26

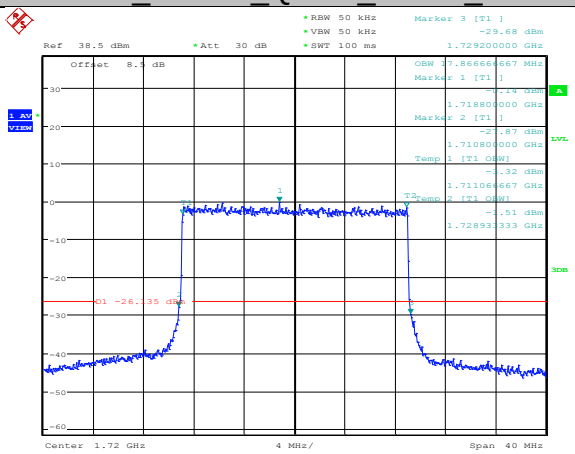
Band4_15MHz_16QAM_20325_75RB#0



Date: 6.SEP.2018 12:31:47

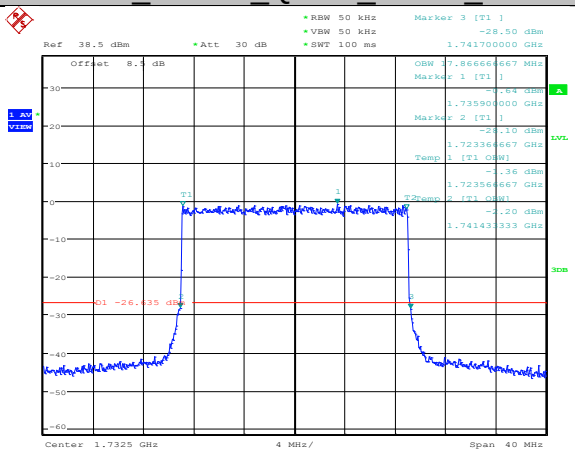
LTE Band 4
Channel Bandwidth: 20 MHz
Test Mode=QPSK/TM4

Band4_20MHz_QPSK_20050_100RB#0



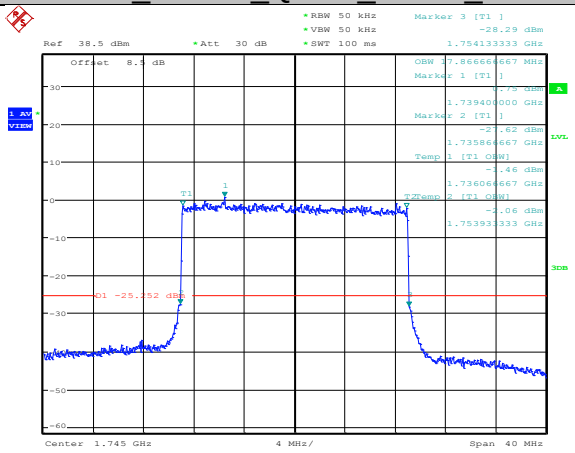
Date: 6.SEP.2018 12:59:04

Band4_20MHz_QPSK_20175_100RB#0



Date: 6.SEP.2018 12:59:26

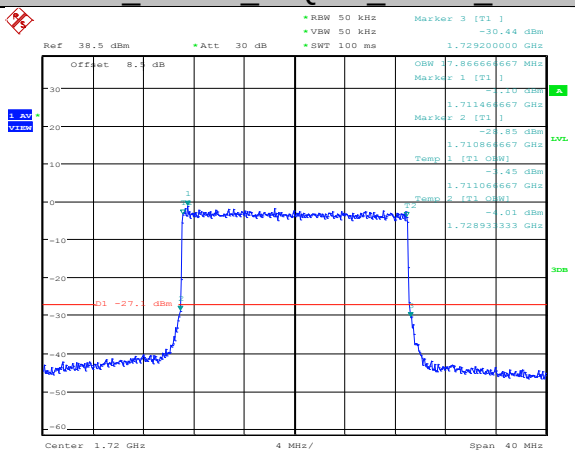
Band4_20MHz_QPSK_20300_100RB#0



Date: 6.SEP.2018 12:59:49

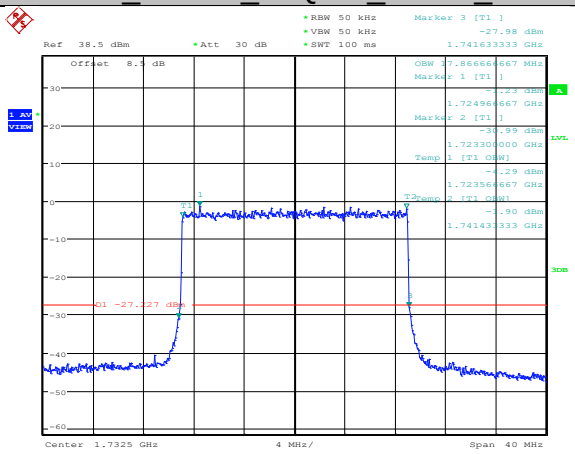
LTE Band 4
Channel Bandwidth: 20 MHz
Test Mode=16QAM/TM5

Band4_20MHz_16QAM_20050_100RB#0



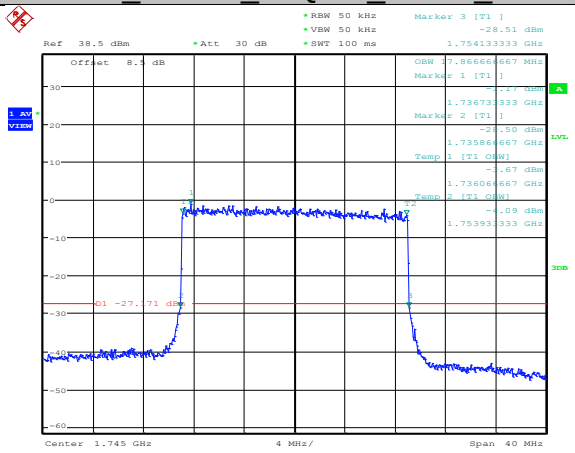
Date: 6.SEP.2018 12:59:14

Band4_20MHz_16QAM_20175_100RB#0



Date: 6.SEP.2018 12:59:36

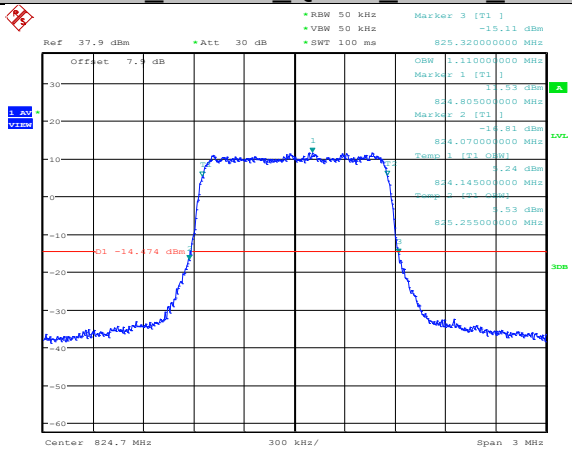
Band4_20MHz_16QAM_20300_100RB#0



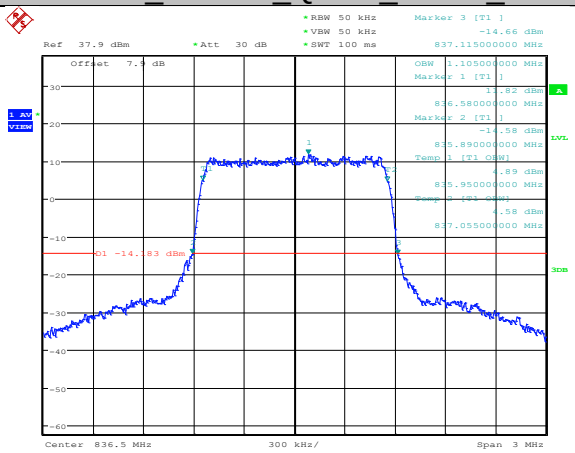
Date: 6.SEP.2018 12:59:59

LTE Band 5
Channel Bandwidth: 1.4 MHz
Test Mode=QPSK/TM4

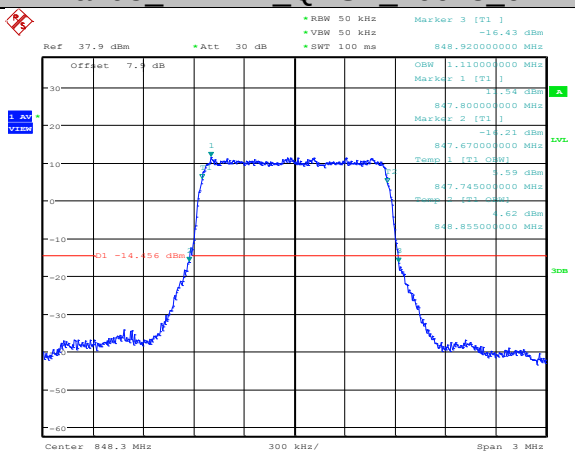
Band5_1.4MHz_QPSK_20407_6RB#0



Band5_1.4MHz_QPSK_20525_6RB#0

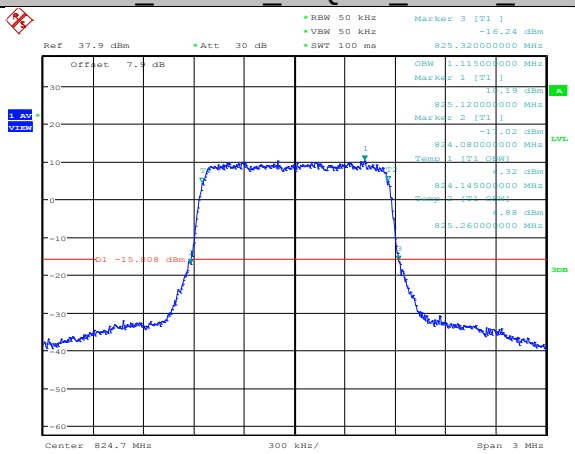


Band5_1.4MHz_QPSK_20643_6RB#0

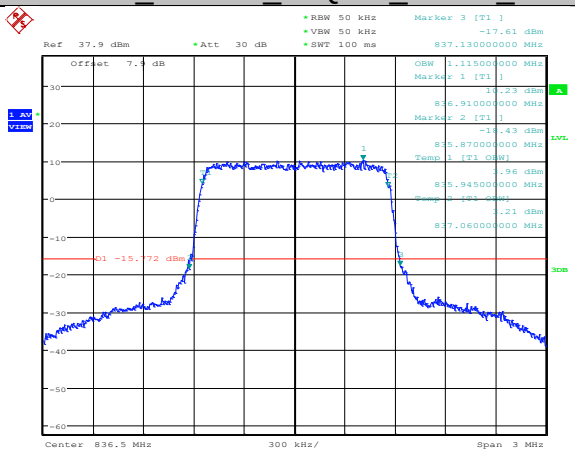


LTE Band 5
Channel Bandwidth: 1.4 MHz
Test Mode=16QAM/TM5

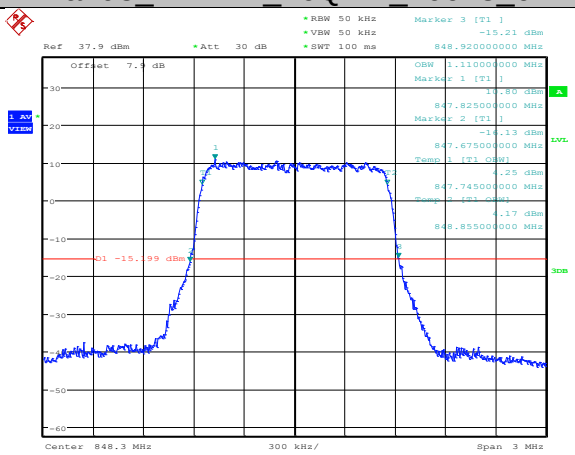
Band5_1.4MHz_16QAM_20407_6RB#0



Band5_1.4MHz_16QAM_20525_6RB#0

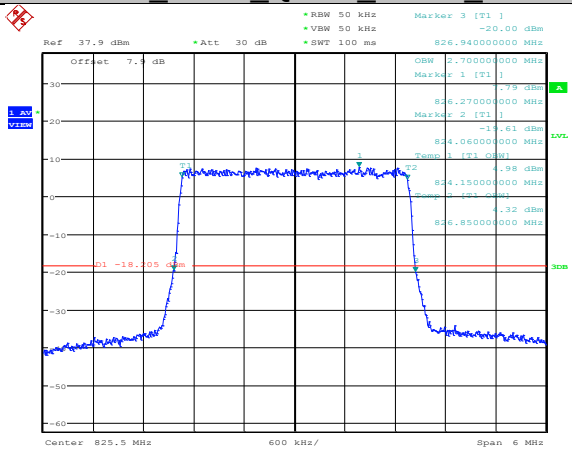


Band5_1.4MHz_16QAM_20643_6RB#0



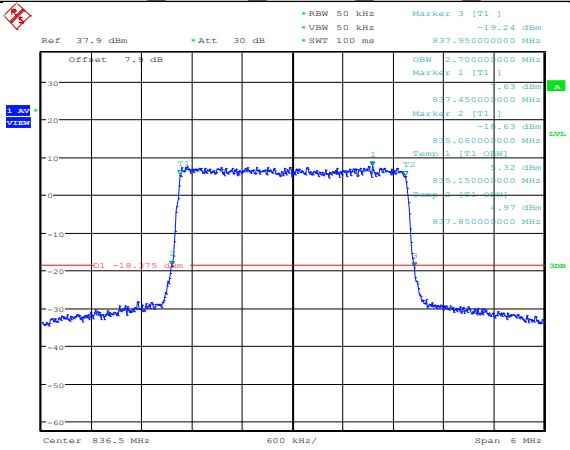
LTE Band 5
Channel Bandwidth: 3 MHz
Test Mode=QPSK/TM4

Band5_3MHz_QPSK_20415_15RB#0



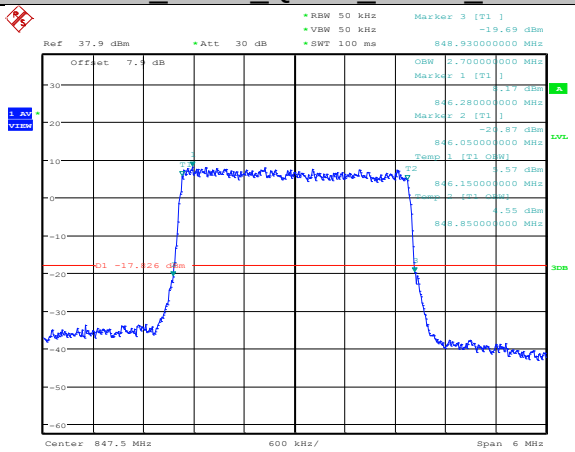
Date: 6.SEP.2018 15:48:46

Band5_3MHz_QPSK_20525_15RB#0



Date: 6.SEP.2018 15:49:08

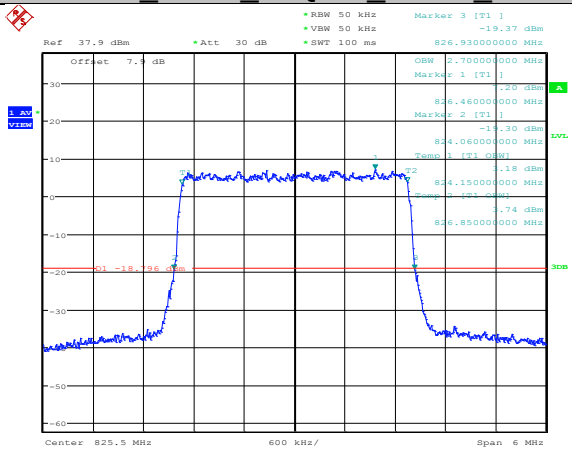
Band5_3MHz_QPSK_20635_15RB#0



Date: 6.SEP.2018 15:49:30

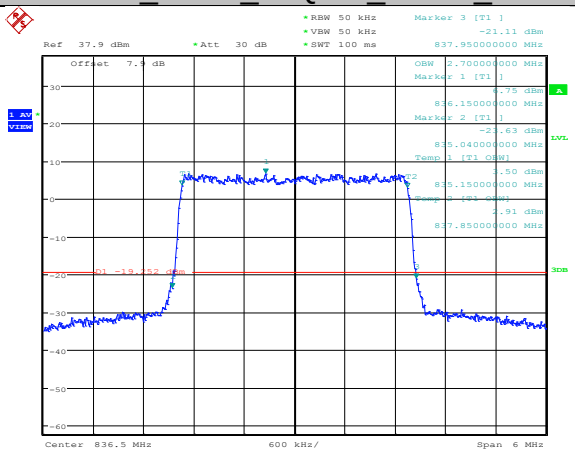
LTE Band 5
Channel Bandwidth: 3 MHz
Test Mode=16QAM/TM5

Band5_3MHz_16QAM_20415_15RB#0



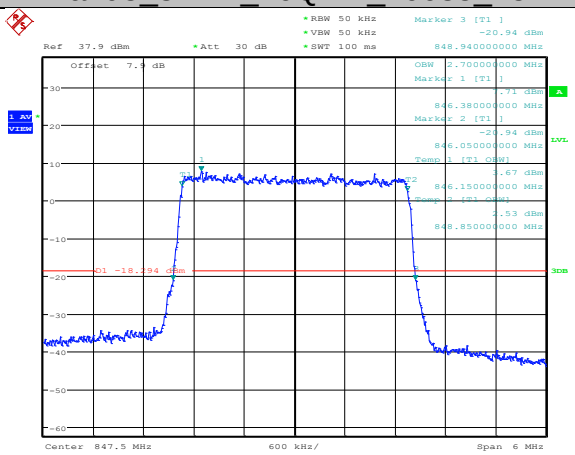
Date: 6.SEP.2018 15:48:56

Band5_3MHz_16QAM_20525_15RB#0



Date: 6.SEP.2018 15:49:18

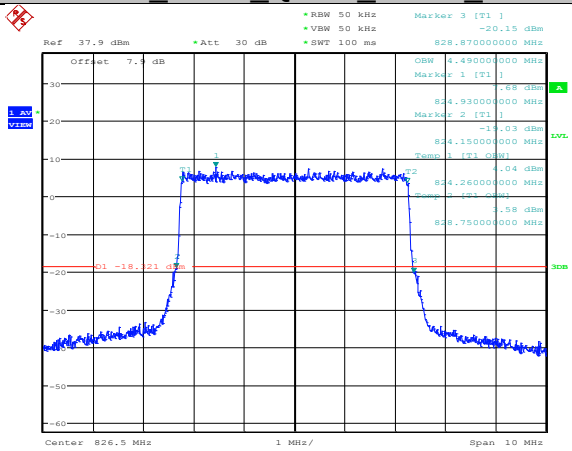
Band5_3MHz_16QAM_20635_15RB#0



Date: 6.SEP.2018 15:49:40

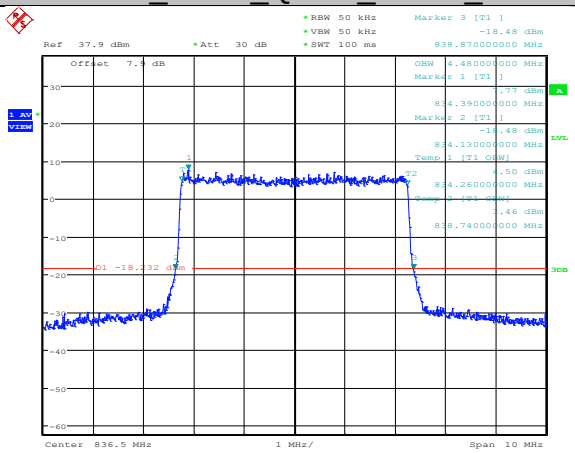
LTE Band 5
Channel Bandwidth: 5 MHz
Test Mode=QPSK/TM4

Band5_5MHz_QPSK_20425_25RB#0



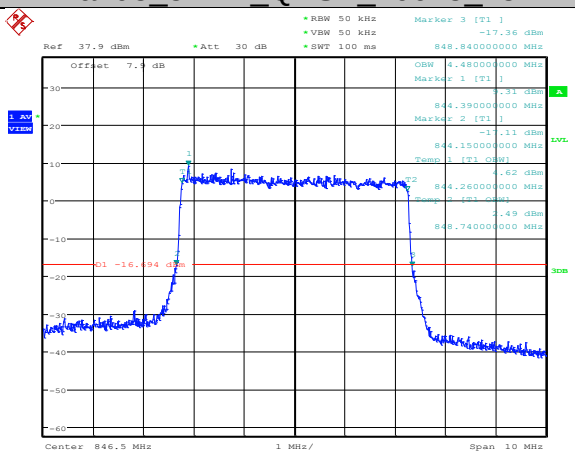
Date: 6.SEP.2018 16:13:00

Band5_5MHz_QPSK_20525_25RB#0



Date: 6.SEP.2018 16:13:36

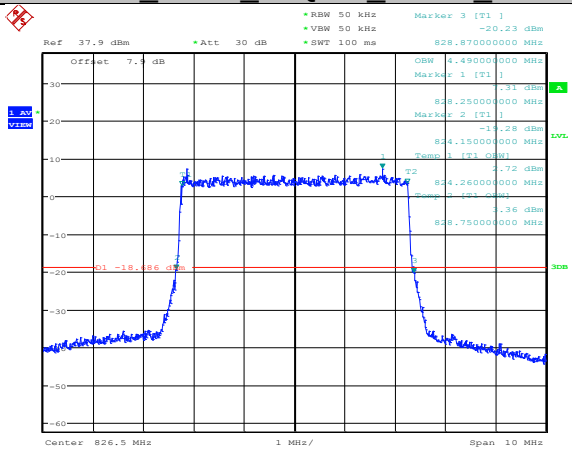
Band5_5MHz_QPSK_20625_25RB#0



Date: 6.SEP.2018 16:14:12

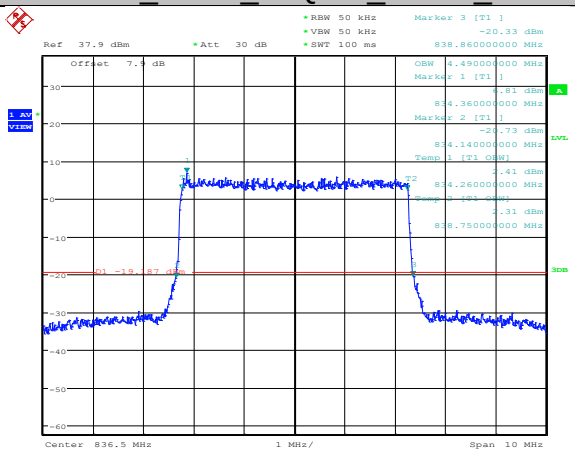
LTE Band 5
Channel Bandwidth: 5 MHz
Test Mode=16QAM/TM5

Band5_5MHz_16QAM_20425_25RB#0



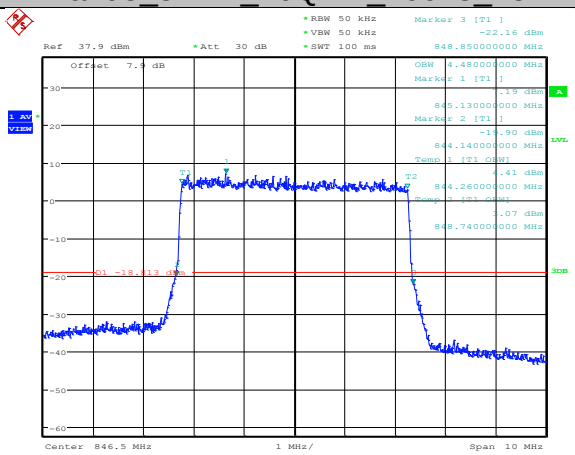
Date: 6.SEP.2018 16:13:17

Band5_5MHz_16QAM_20525_25RB#0



Date: 6.SEP.2018 16:13:53

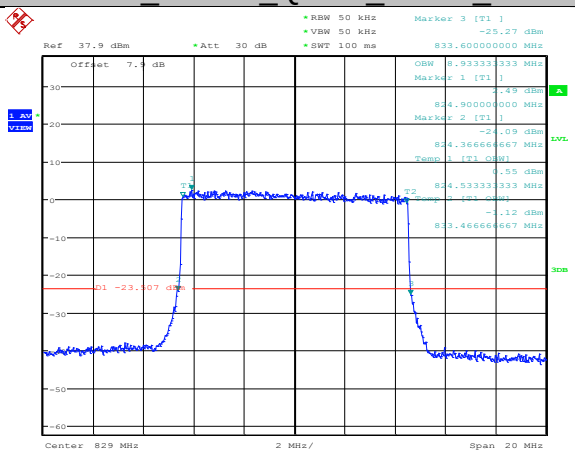
Band5_5MHz_16QAM_20625_25RB#0



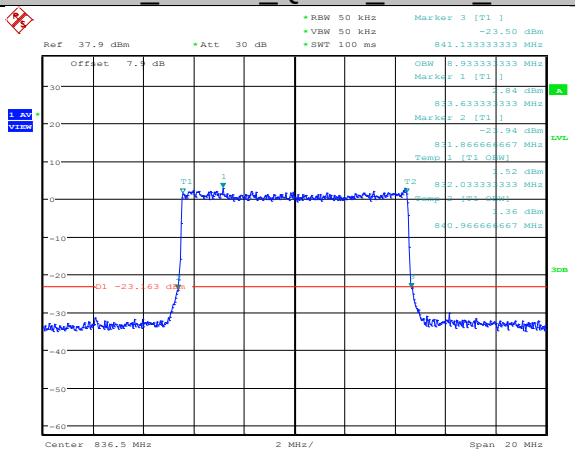
Date: 6.SEP.2018 16:14:29

LTE Band 5
Channel Bandwidth: 10 MHz
Test Mode=QPSK/TM4

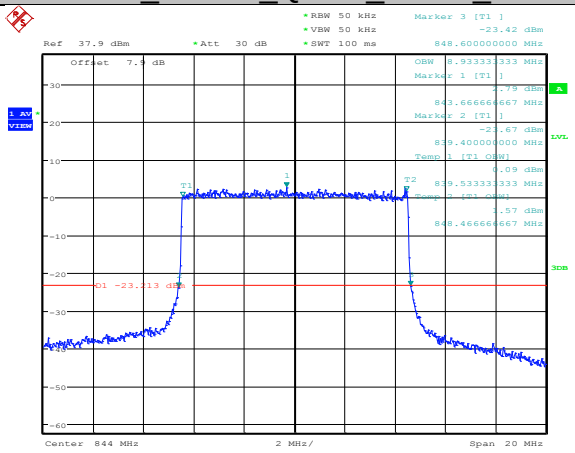
Band5_10MHz_QPSK_20450_50RB#0



Band5_10MHz_QPSK_20525_50RB#0

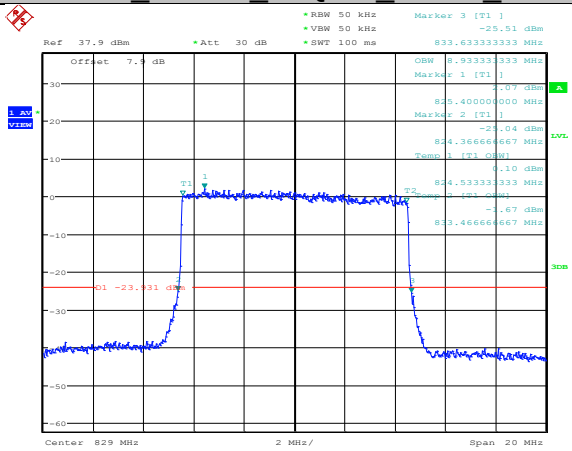


Band5_10MHz_QPSK_20600_50RB#0



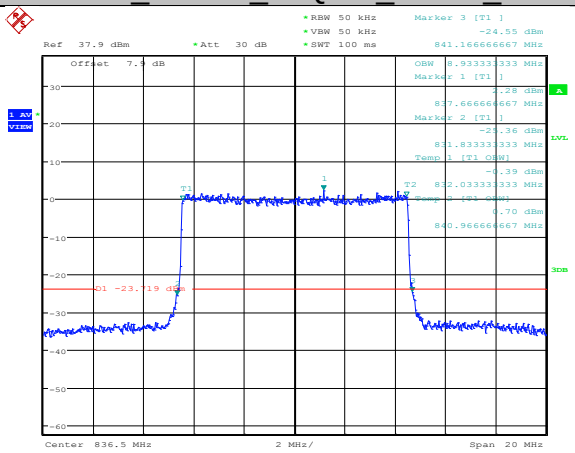
LTE Band 5
Channel Bandwidth: 10MHz
Test Mode=16QAM/TM5

Band5_10MHz_16QAM_20450_50RB#0



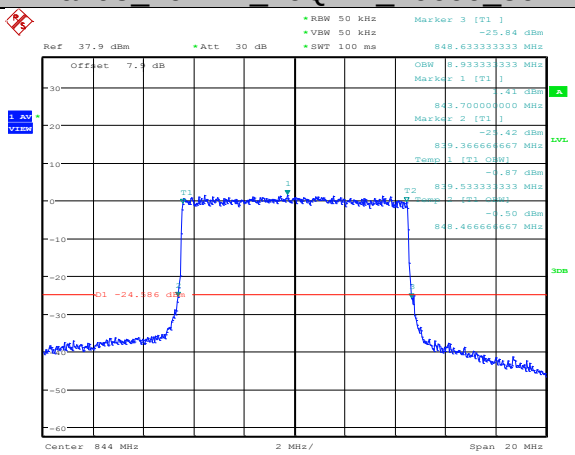
Date: 6.SEP.2018 16:36:00

Band5_10MHz_16QAM_20525_50RB#0



Date: 6.SEP.2018 16:36:22

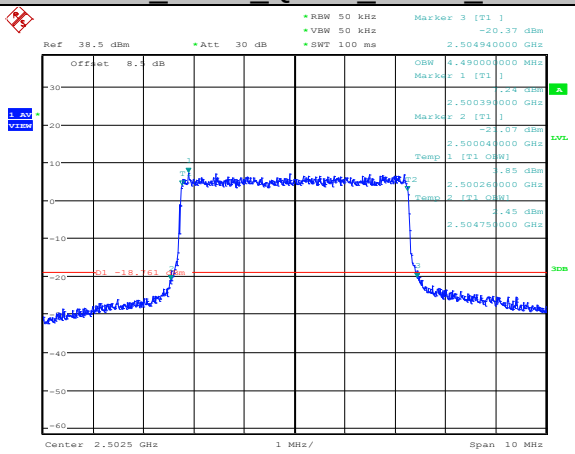
Band5_10MHz_16QAM_20600_50RB#0



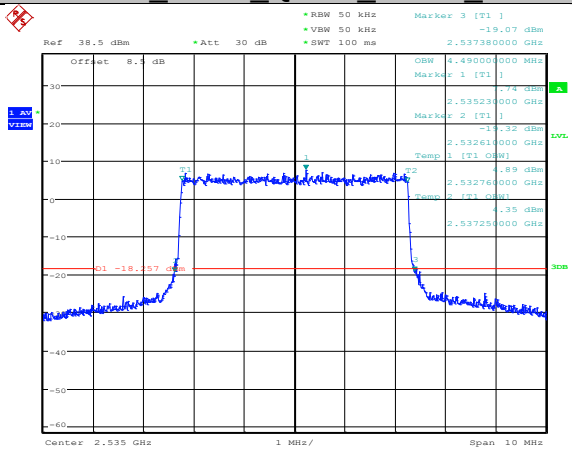
Date: 6.SEP.2018 16:36:44

LTE Band 7
Channel Bandwidth: 5 MHz
Test Mode=QPSK/TM4

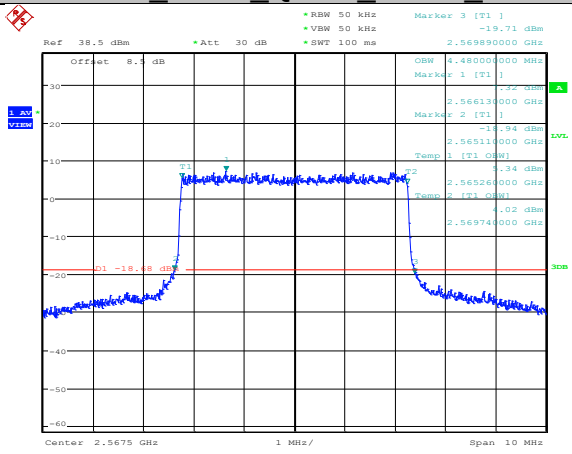
Band7_5MHz_QPSK_20775_25RB#0



Band7_5MHz_QPSK_21100_25RB#0

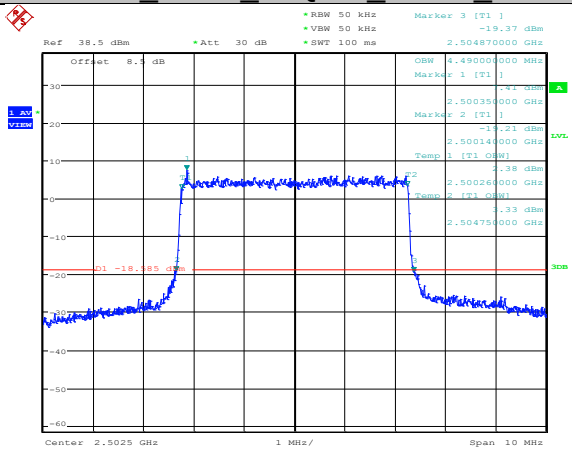


Band7_5MHz_QPSK_21425_25RB#0



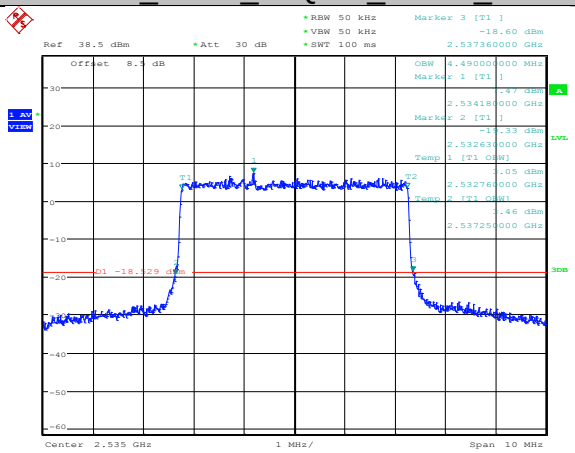
LTE Band 7
Channel Bandwidth: 5 MHz
Test Mode=16QAM/TM5

Band7_5MHz_16QAM_20775_25RB#0



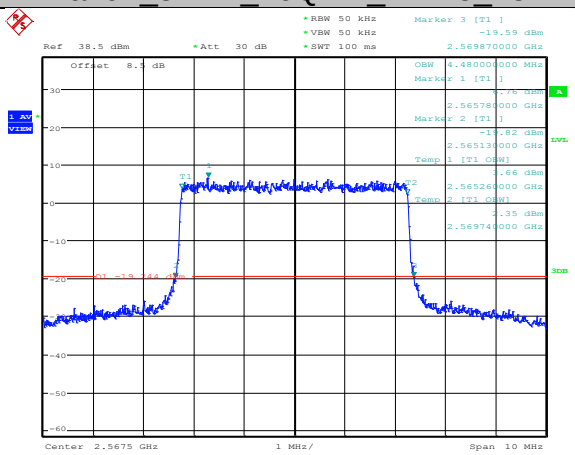
Date: 6.SEP.2018 17:32:45

Band7_5MHz_16QAM_21100_25RB#0



Date: 6.SEP.2018 17:33:21

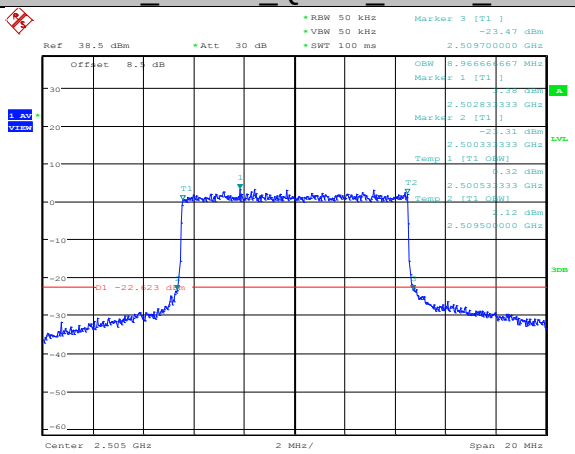
Band7_5MHz_16QAM_21425_25RB#0



Date: 6.SEP.2018 17:33:56

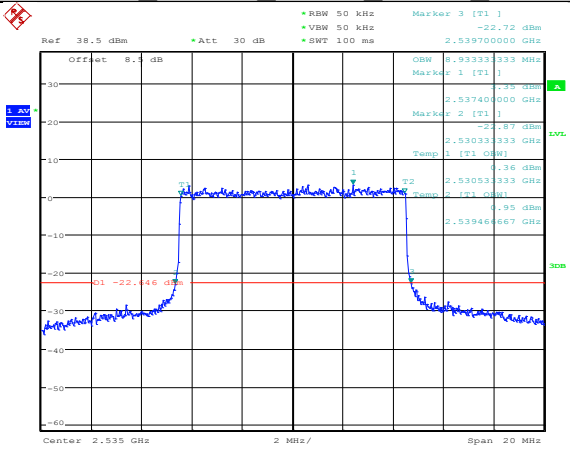
LTE Band 7
Channel Bandwidth: 10 MHz
Test Mode=QPSK/TM4

Band7_10MHz_QPSK_20800_50RB#0



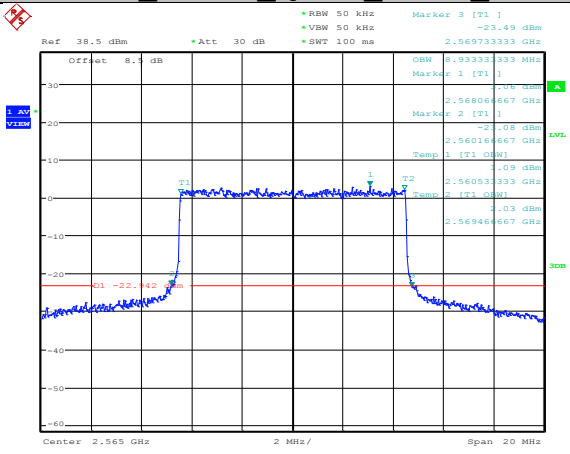
Date: 6.SEP.2018 17:55:52

Band7_10MHz_QPSK_21100_50RB#0



Date: 6.SEP.2018 17:56:14

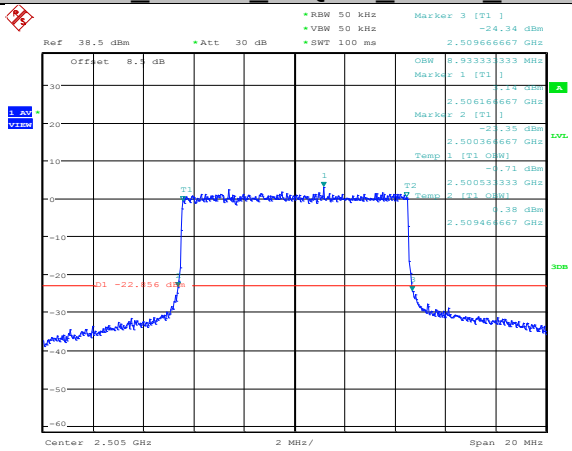
Band7_10MHz_QPSK_21400_50RB#0



Date: 6.SEP.2018 17:56:36

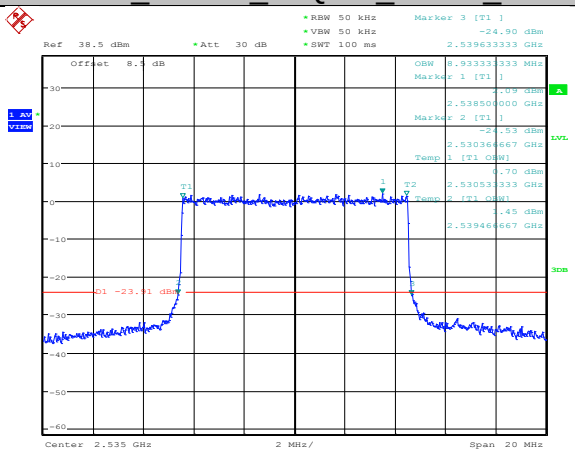
LTE Band 7
Channel Bandwidth: 10MHz
Test Mode=16QAM/TM5

Band7_10MHz_16QAM_20800_50RB#0



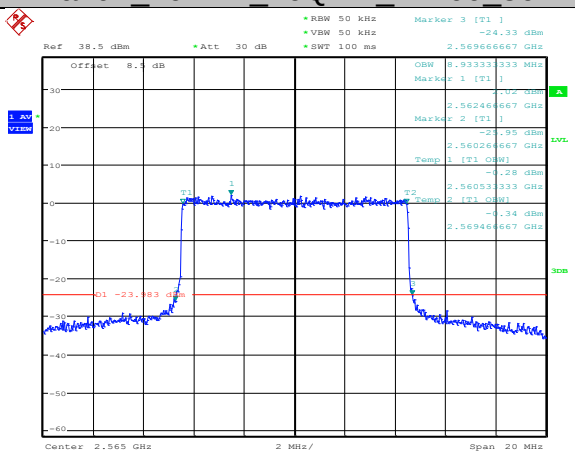
Date: 6.SEP.2018 17:56:02

Band7_10MHz_16QAM_21100_50RB#0



Date: 6.SEP.2018 17:56:24

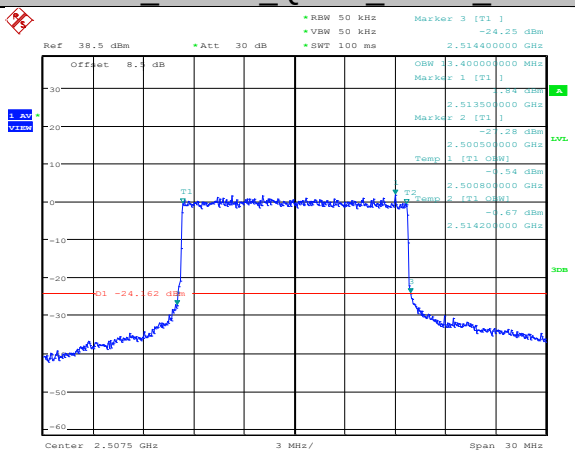
Band7_10MHz_16QAM_21400_50RB#0



Date: 6.SEP.2018 17:56:46

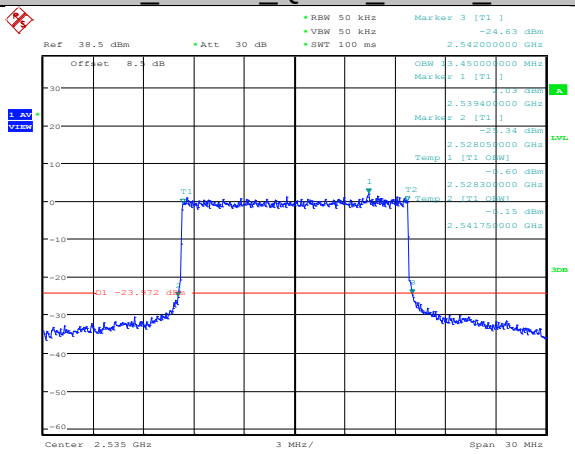
LTE Band 7
Channel Bandwidth: 15 MHz
Test Mode=QPSK/TM4

Band7_15MHz_QPSK_20825_75RB#0



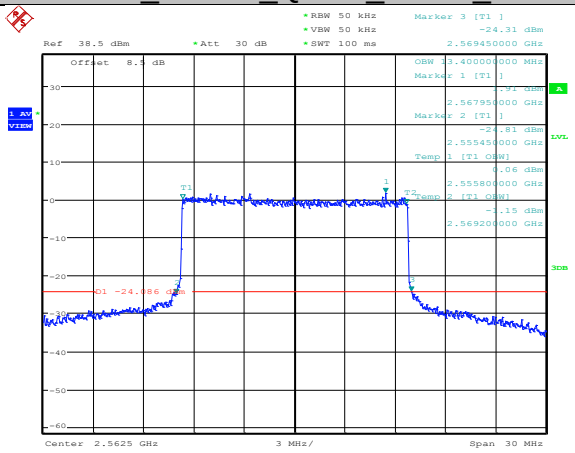
Date: 7.SEP.2018 15:06:09

Band7_15MHz_QPSK_21100_75RB#0



Date: 7.SEP.2018 15:06:30

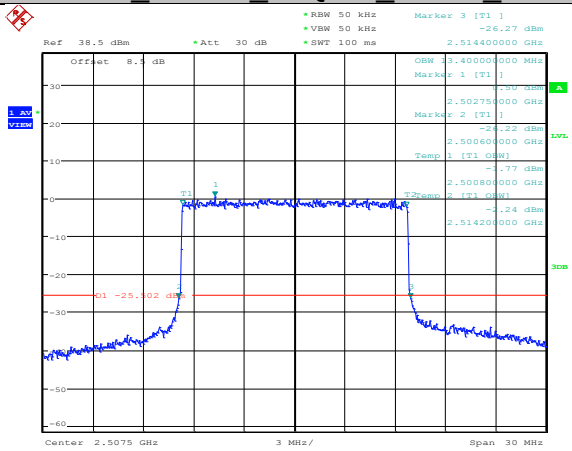
Band7_15MHz_QPSK_21375_75RB#0



Date: 7.SEP.2018 15:06:52

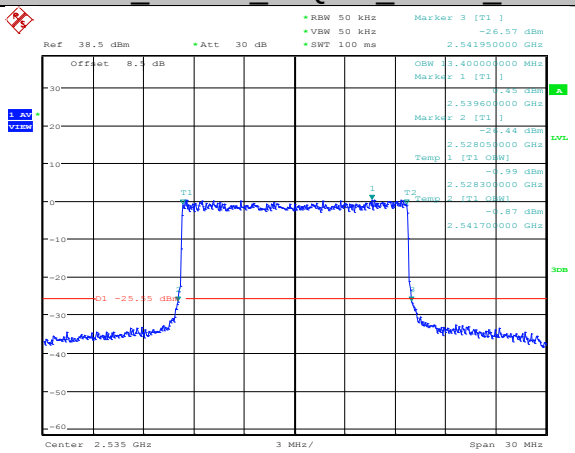
LTE Band 7
Channel Bandwidth: 15 MHz
Test Mode=16QAM/TM5

Band7_15MHz_16QAM_20825_75RB#0



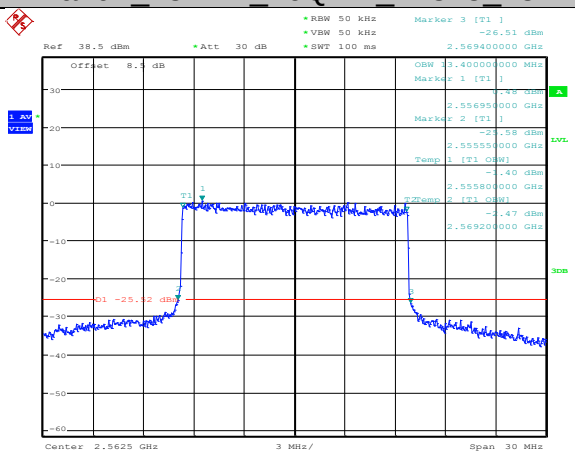
Date: 7.SEP.2018 15:06:19

Band7_15MHz_16QAM_21100_75RB#0



Date: 7.SEP.2018 15:06:40

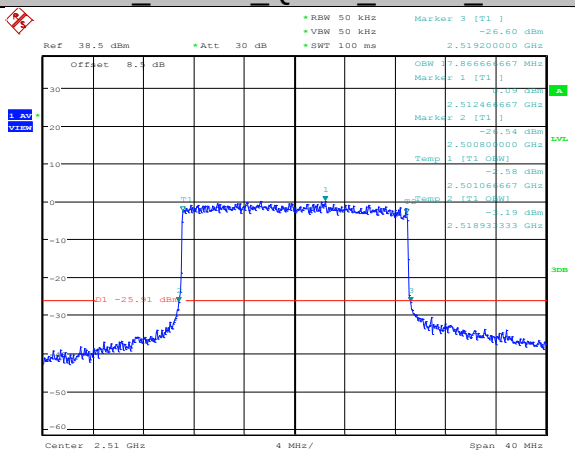
Band7_15MHz_16QAM_21375_75RB#0



Date: 7.SEP.2018 15:07:02

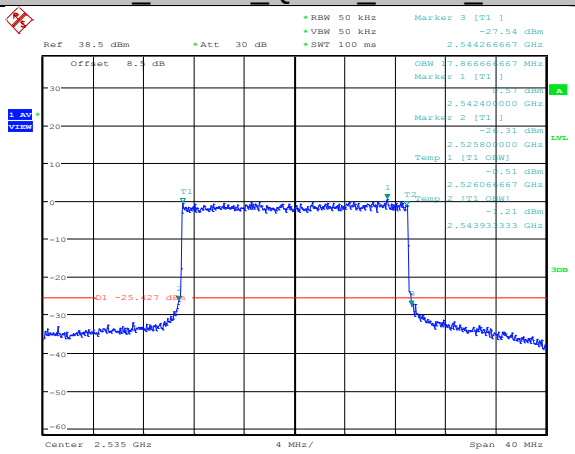
LTE Band 7
Channel Bandwidth: 20 MHz
Test Mode=QPSK/TM4

Band7_20MHz_QPSK_20850_100RB#0



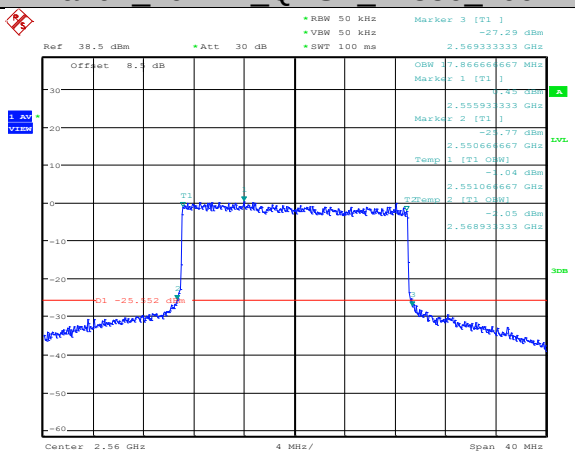
Date: 7.SEP.2018 15:22:28

Band7_20MHz_QPSK_21100_100RB#0



Date: 7.SEP.2018 15:22:51

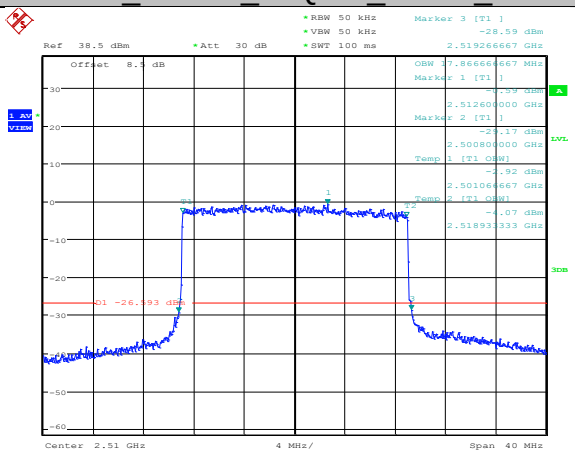
Band7_20MHz_QPSK_21350_100RB#0



Date: 7.SEP.2018 15:23:14

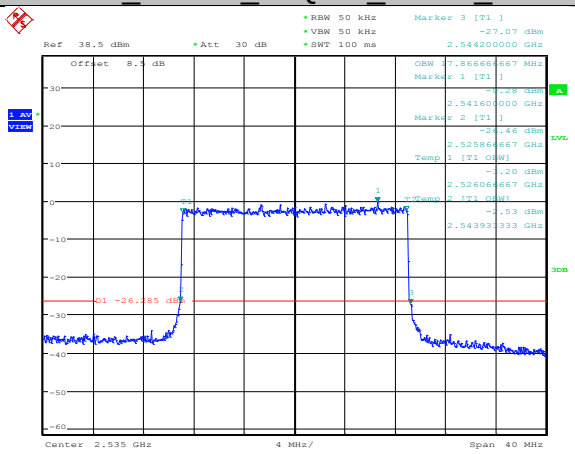
LTE Band 7
Channel Bandwidth: 20 MHz
Test Mode=16QAM/TM5

Band7_20MHz_16QAM_20850_100RB#0



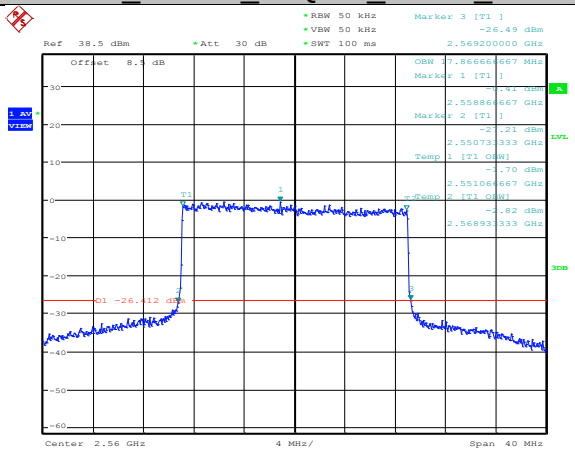
Date: 7.SEP.2018 15:22:39

Band7_20MHz_16QAM_21100_100RB#0



Date: 7.SEP.2018 15:23:01

Band7_20MHz_16QAM_21350_100RB#0



Date: 7.SEP.2018 15:23:24

5.4. Spurious Emission at Antenna Terminal

FCC: CFR Part 2.1051, CFR Part 22.917, CFR Part 24.238, CFR Part 27.53

5.4.1. Test Limit

The radio frequency voltage or power generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna. Curves or equivalent data shall show the magnitude of each harmonic and other spurious emission that can be detected when the equipment is operated under the conditions specified in FCC 2.1049 as appropriate. The magnitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be specified.
(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. For all power levels +30dBm to 0dBm, this becomes a constant specification of -13dBm.

FCC 22.917 Emission limitations for cellular equipment.
The rules in this section govern the spectral characteristics of emissions in the Cellular Radiotelephone Service.
(b) Measurement procedure. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz of 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

FCC 24.238 Emission limitations for Broadband PCS equipment.
The rules in this section govern the spectral characteristics of emissions in the Broadband Personal Communications Service.
(b) Measurement procedure. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz of 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

FCC: §27.53
(m)(4) For mobile digital stations, the attenuation factor shall be not less than 43 + 10 log (P) dB at the channel edge and 55 + 10 log (P) dB at 5.5 megahertz from the channel edges.(Channel edges are defined under §27.5 (i) Frequency assignment for

the BRS/EBS band)

(m)(6) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However,in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz of 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

5.4.2.Test Procedure

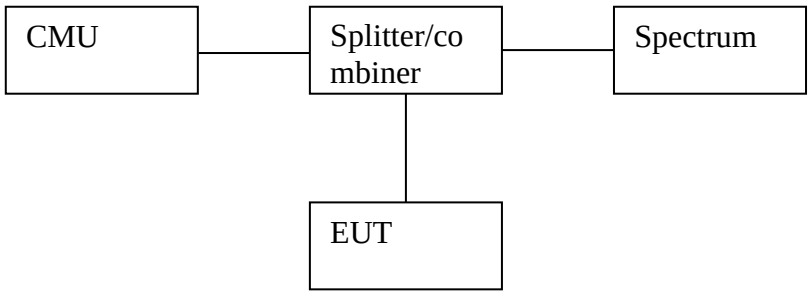
1. Connect the equipment as shown in the above diagram.
2. Set the spectrum analyzer to measure peak hold with the required settings.
3. Set the signal generator to a known output power and record the path loss in dB (LOSS) for frequencies up to the tenth harmonic of the EUT's carrier frequency.

LOSS = Generator Output Power (dBm) – Analyzer reading (dBm).

4. Replace the signal generator with the EUT.
5. Adjust the settings of the Universal Radio Communication Tester (CMU) to set the EUT to its maximum power at the required channel.
6. Set the spectrum analyzer to measure peak hold with the required settings. Offset the spectrum analyzer reference level by the path loss measured above.
7. Measure and record all spurious emissions up to the tenth harmonic of the carrier frequency.
8. Measurements are to be performed with the EUT set to the low, middle and high channel of each frequency band.
9. If necessary steps 6 and 7 may be performed with the spectrum analyzer set to average detector.

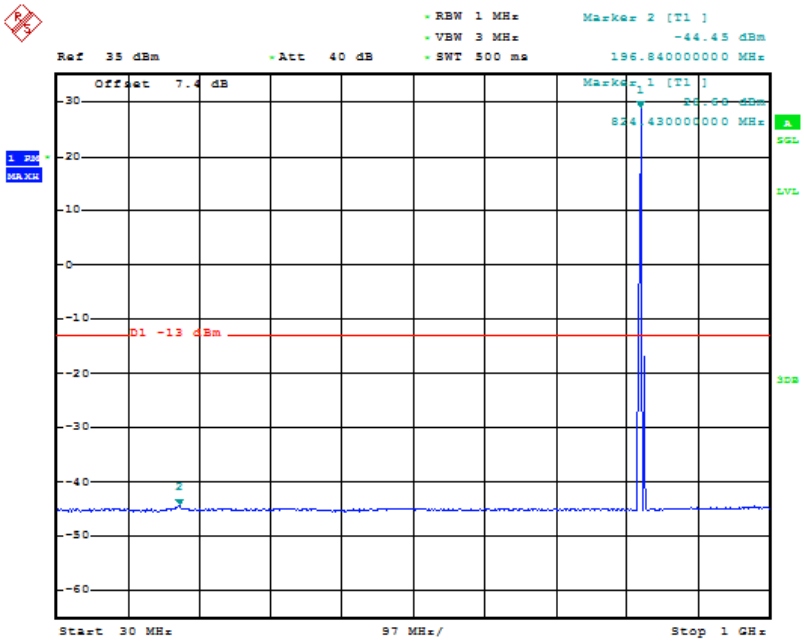
(Note: Step 3 above is performed prior to testing and LOSS is recorded by test software. Steps 2, 6, and 7 above are performed with test software.)

5.4.3.Test Setup

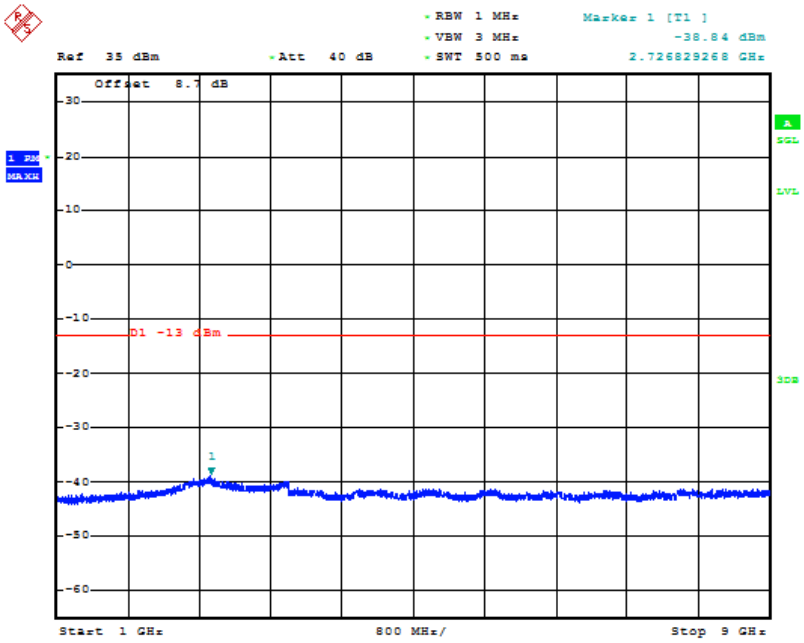


5.4.4.Test Data

Out of band measurement
Test Band = GSM850
Test Mode = GSM/TM1
Test Channel = LCH

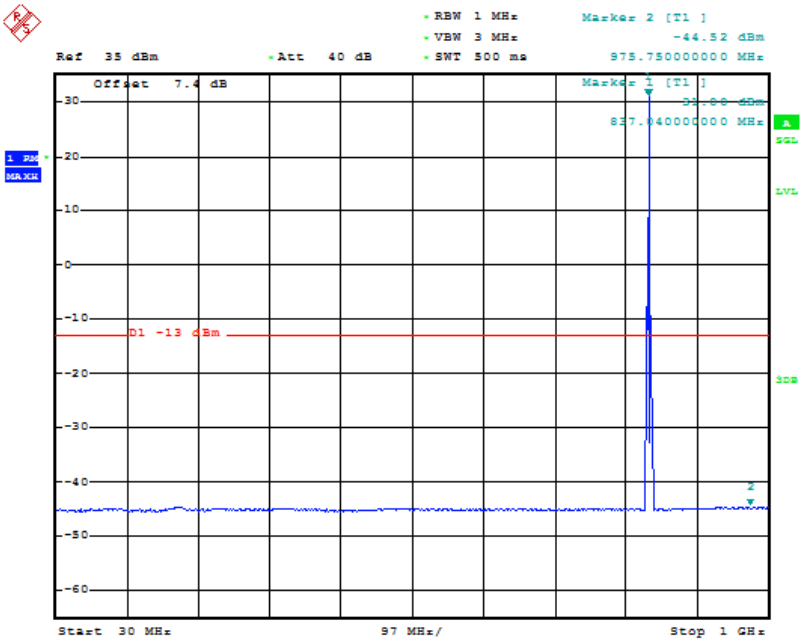


Date: 17.SEP.2018 17:36:47



Date: 17.SEP.2018 17:36:57

Out of band measurement
Test Band = GSM850
Test Mode = GSM/TM1
Test Channel = MCH



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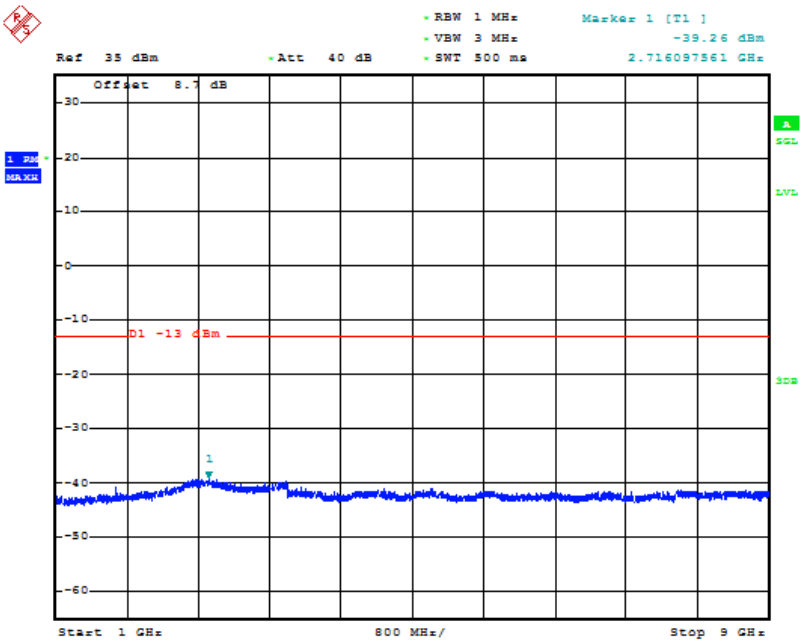

Date: 17.SEP.2018 17:37:44

Out of band measurement
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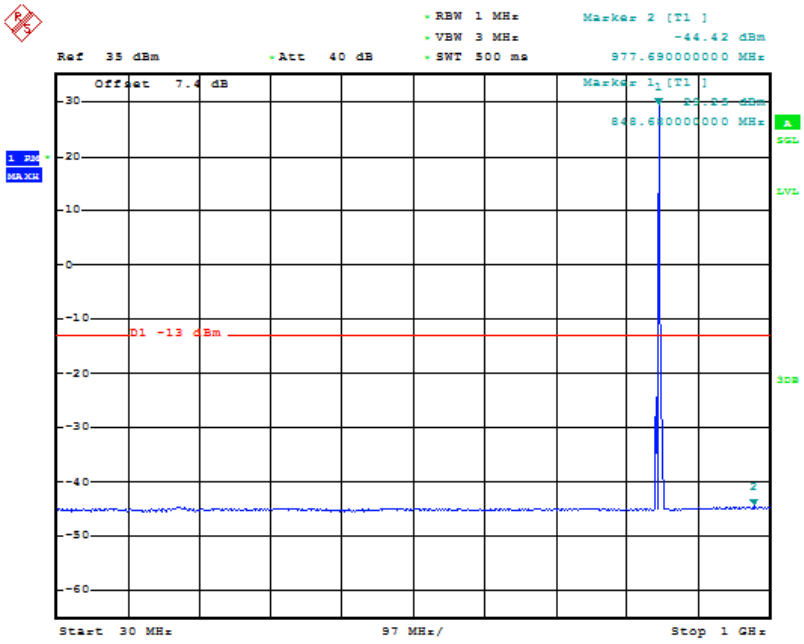
Test Mode = GSM/TM1
Test Channel = HCH



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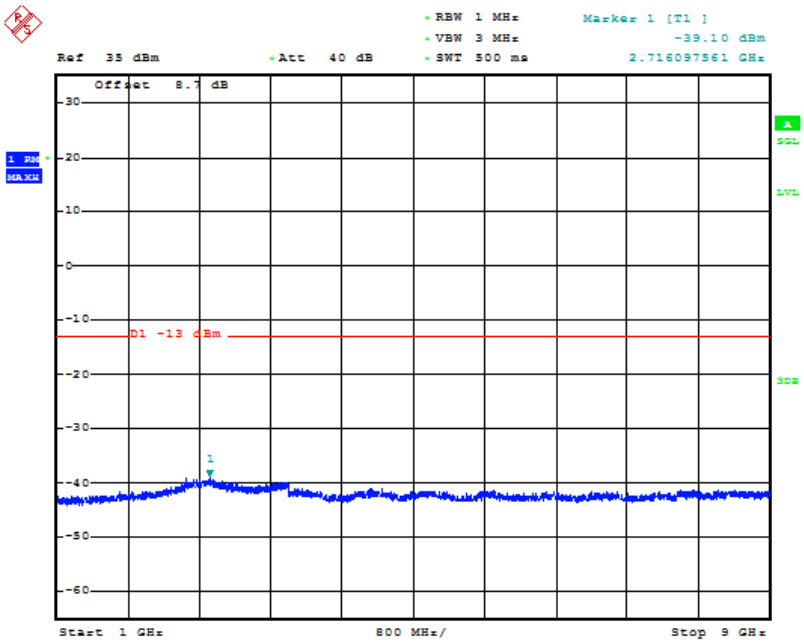
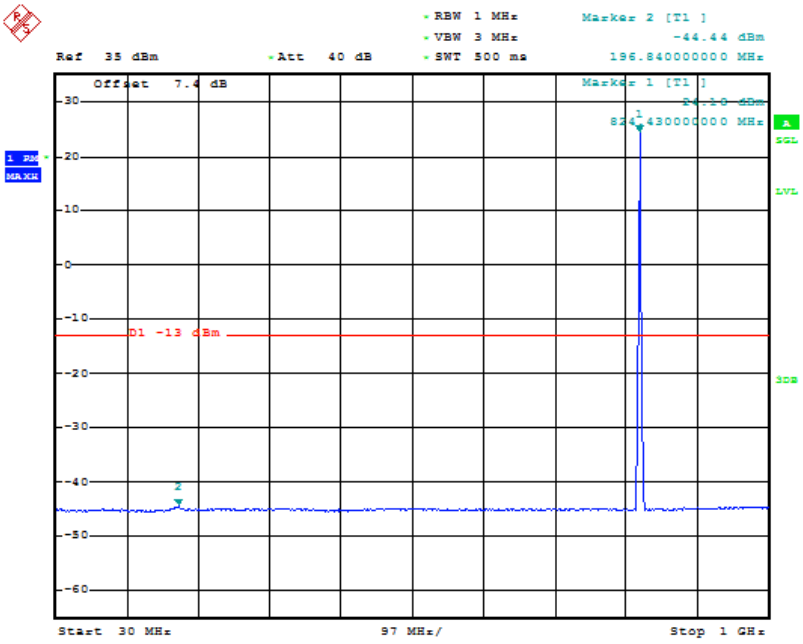


Date: 17.SEP.2018 17:38:32

Out of band measurement
Test Band = GSM850
Test Mode = EDGE /TM2
Test Channel = LCH



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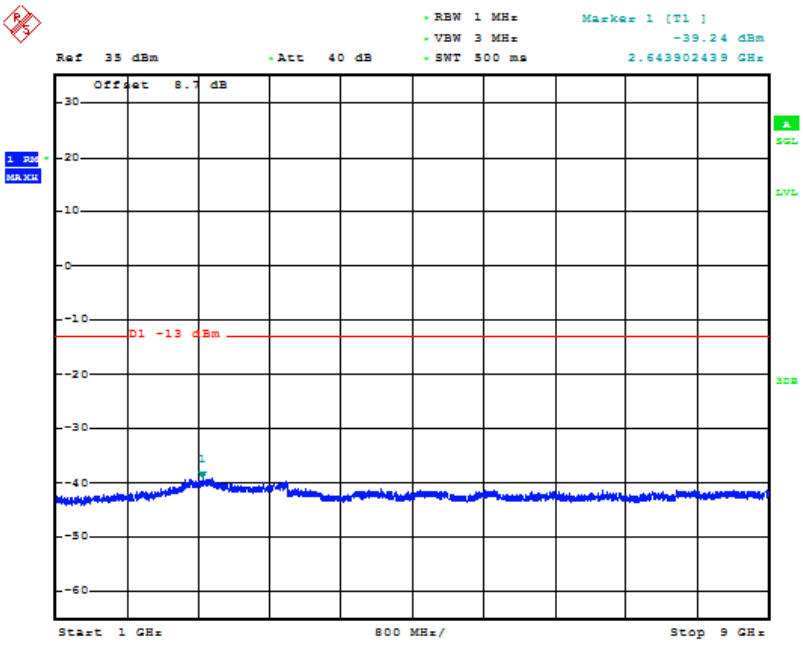

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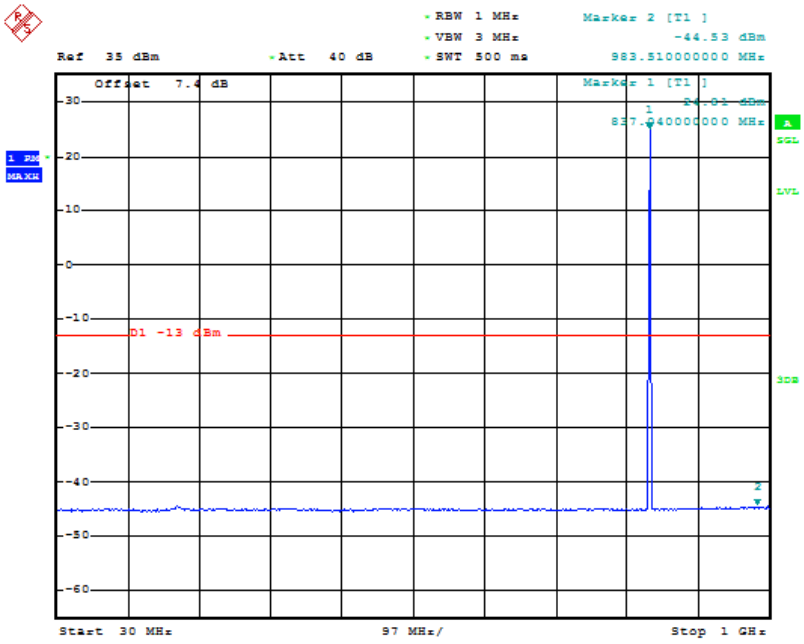
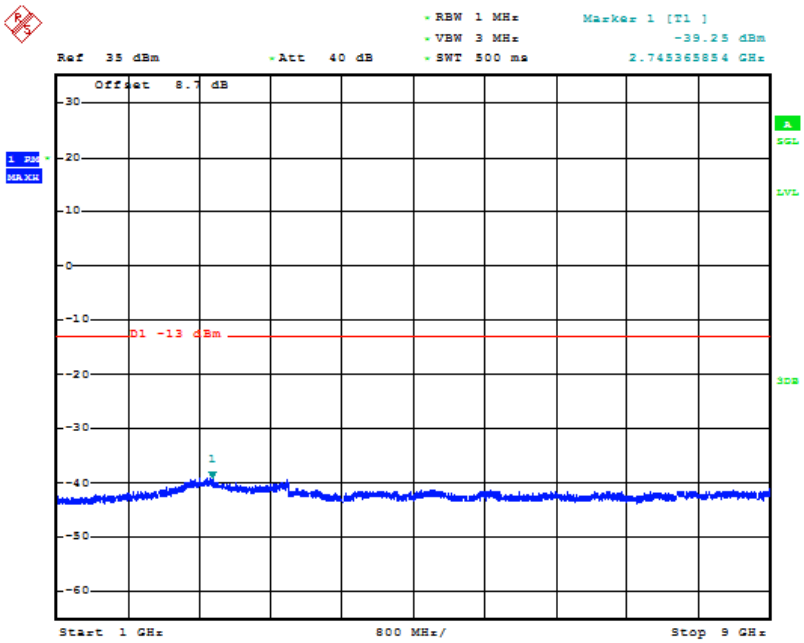
Out of band measurement
Test Band = GSM850
Test Mode = EDGE /TM2
Test Channel = MCH



Date: 17.SEP.2018 17:54:24



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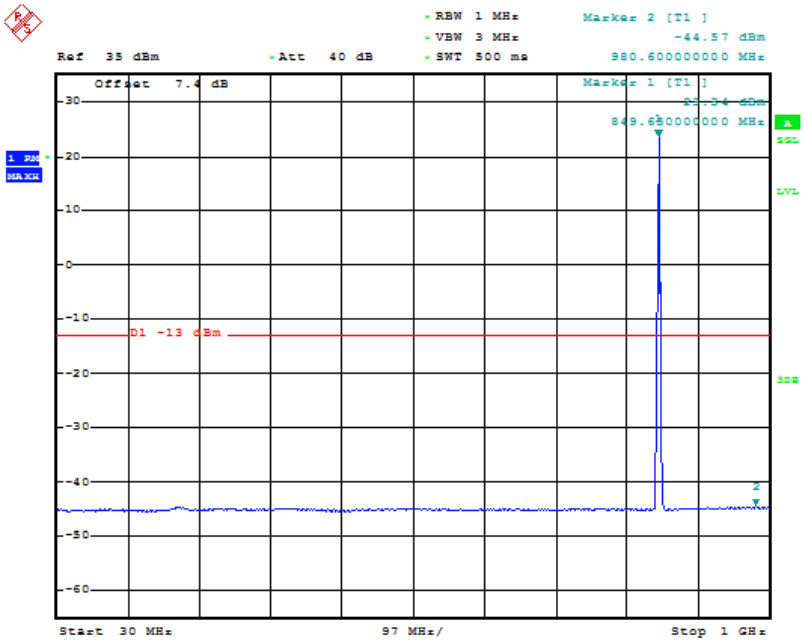
Out of band measurement
Test Band = GSM850
Test Mode = EDGE /TM2
Test Channel = HCH



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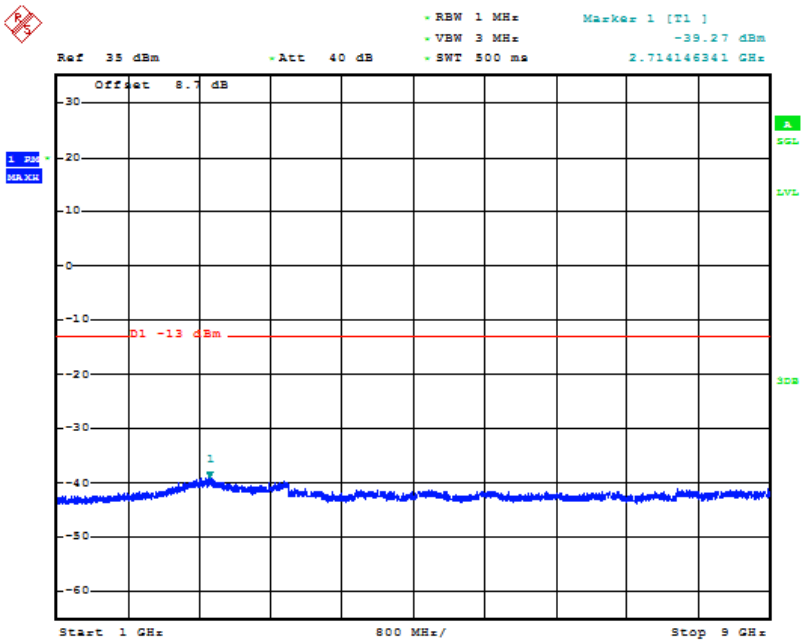
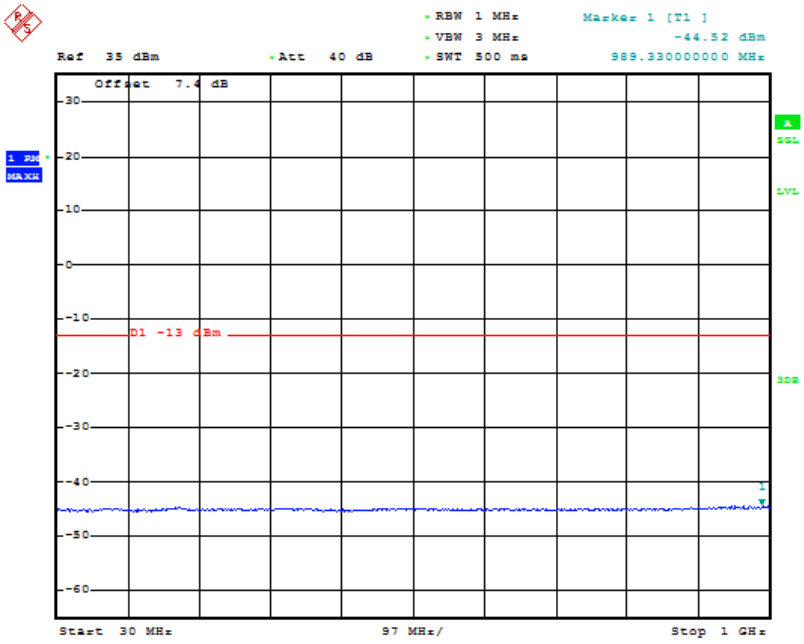


Date: 17.SEP.2018 17:55:18

Out of band measurement
Test Band = GSM1900
Test Mode = GPRS/TM1
Test Channel = LCH



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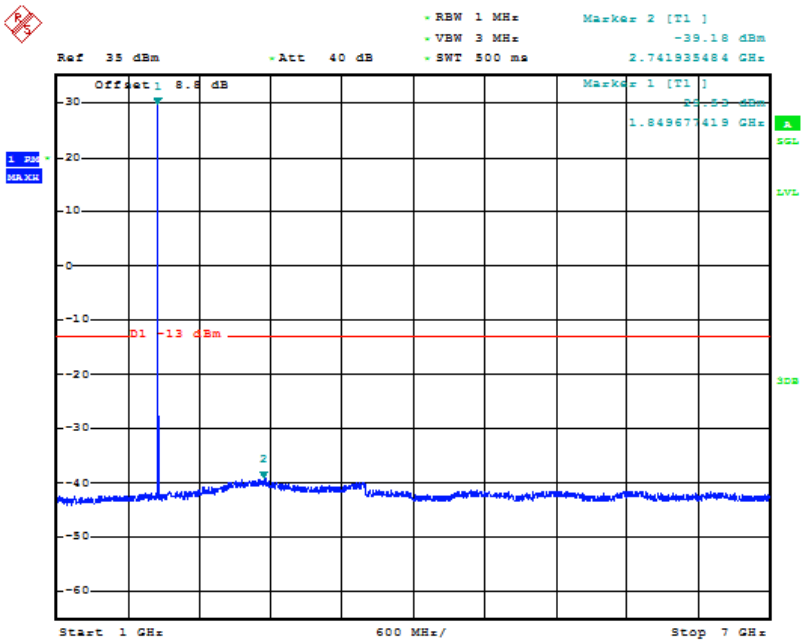

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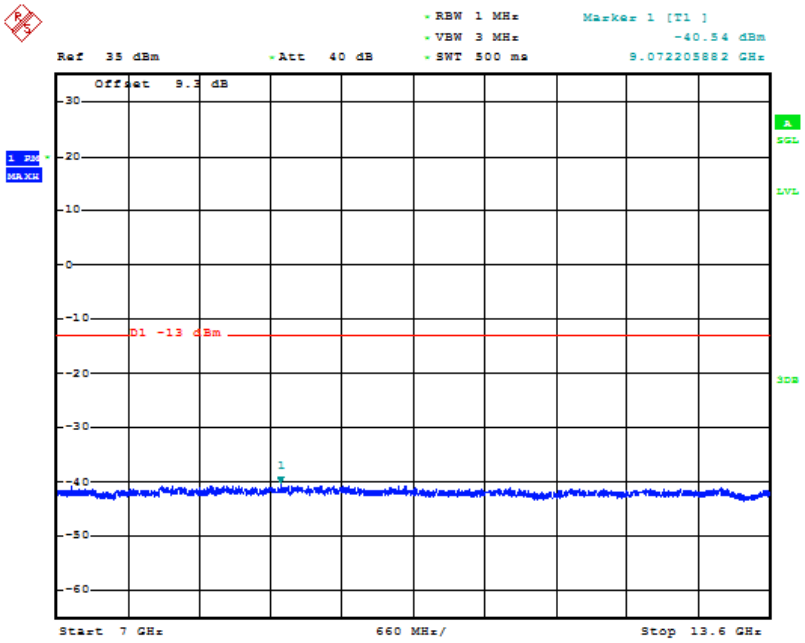

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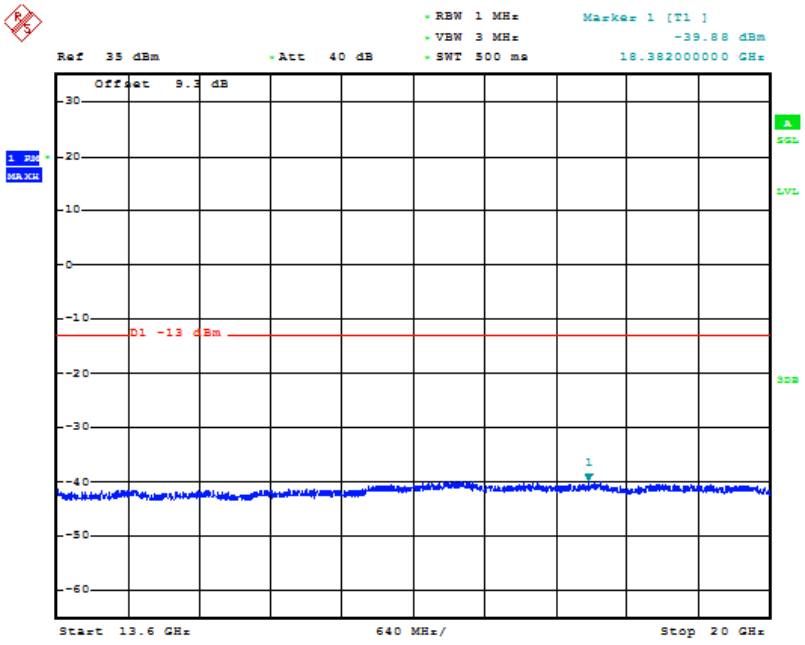

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Out of band measurement
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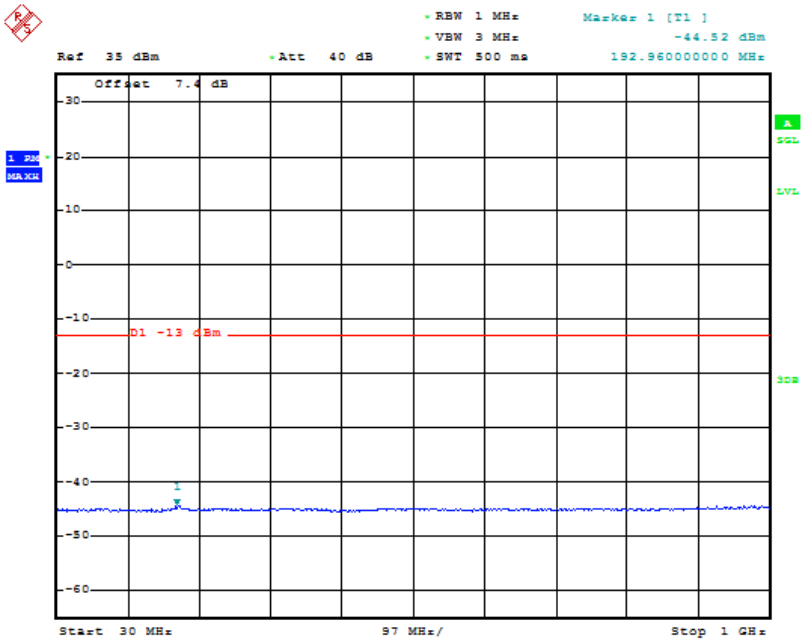
Test Mode = GPRS/TM1
Test Channel = MCH



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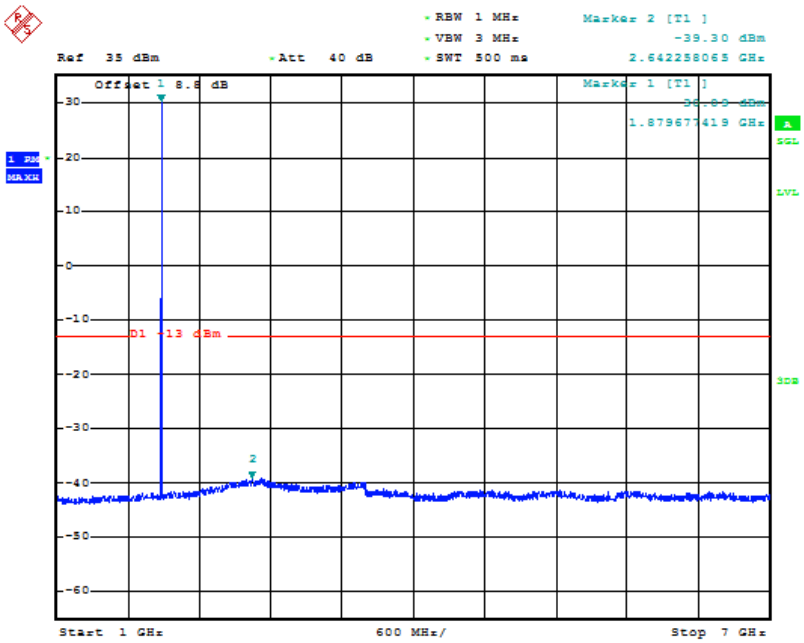

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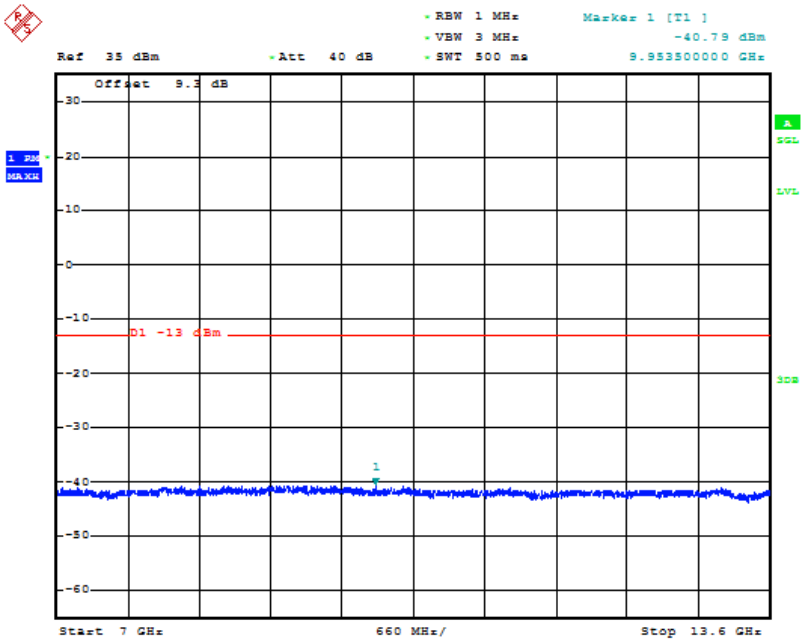

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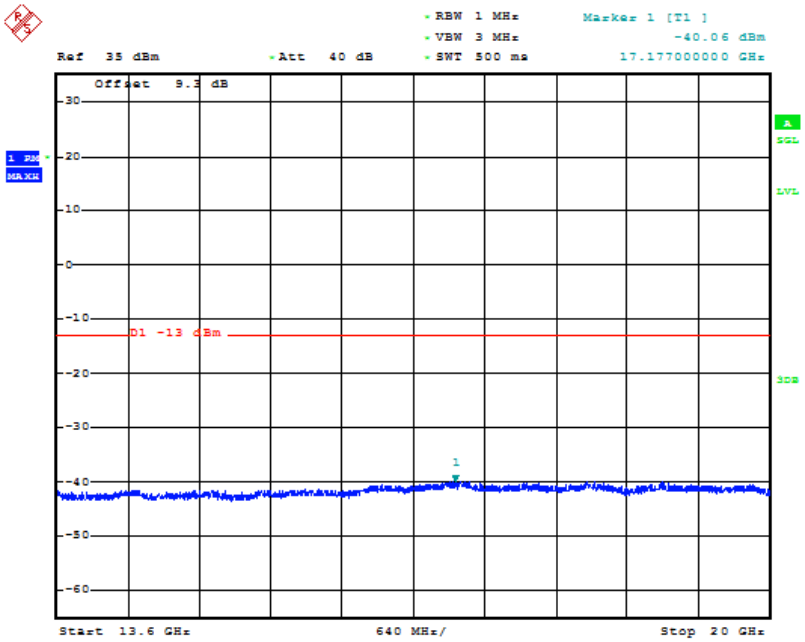

Date: 17.SEP.2018 18:08:34

Out of band measurement
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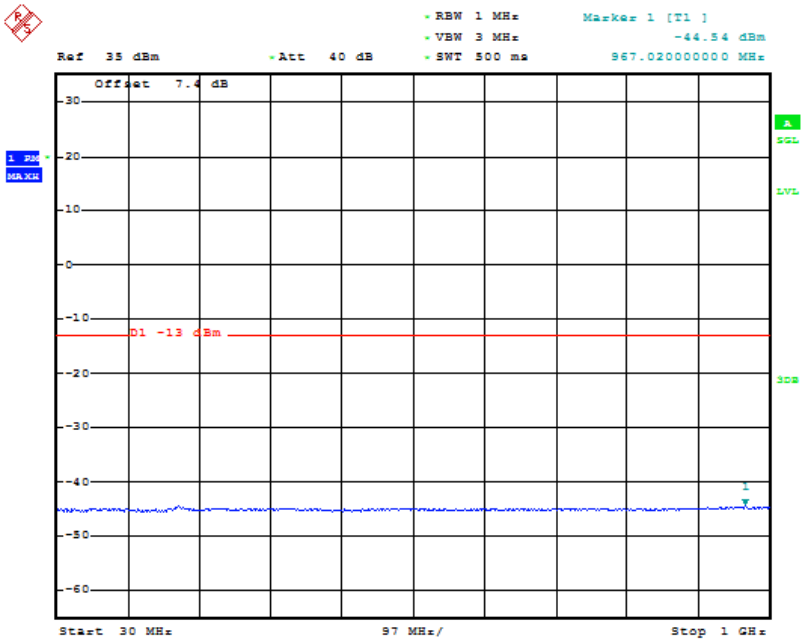
Test Mode = GPRS/TM1
Test Channel = HCH



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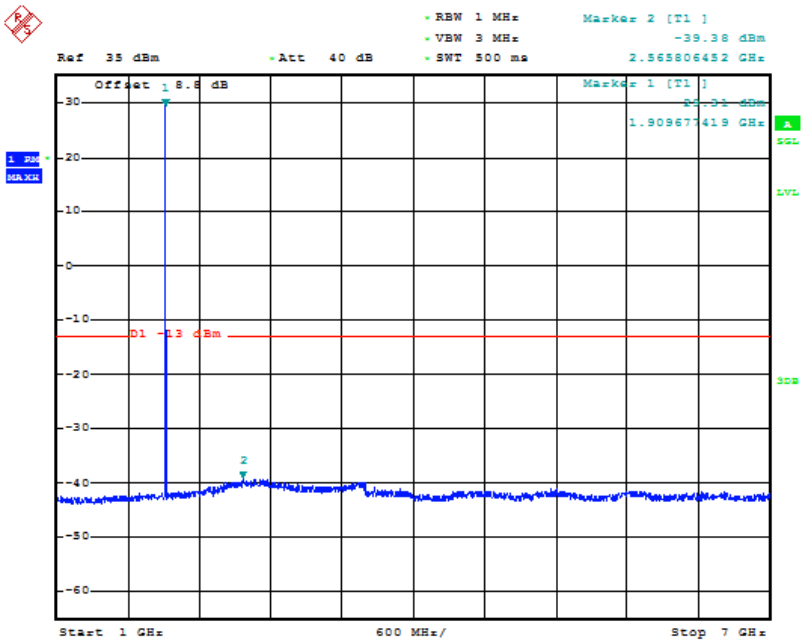

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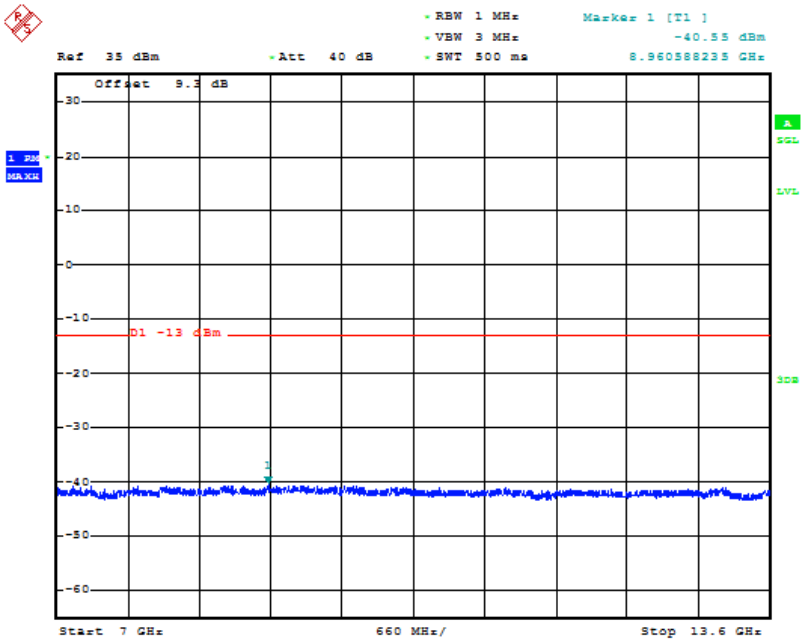

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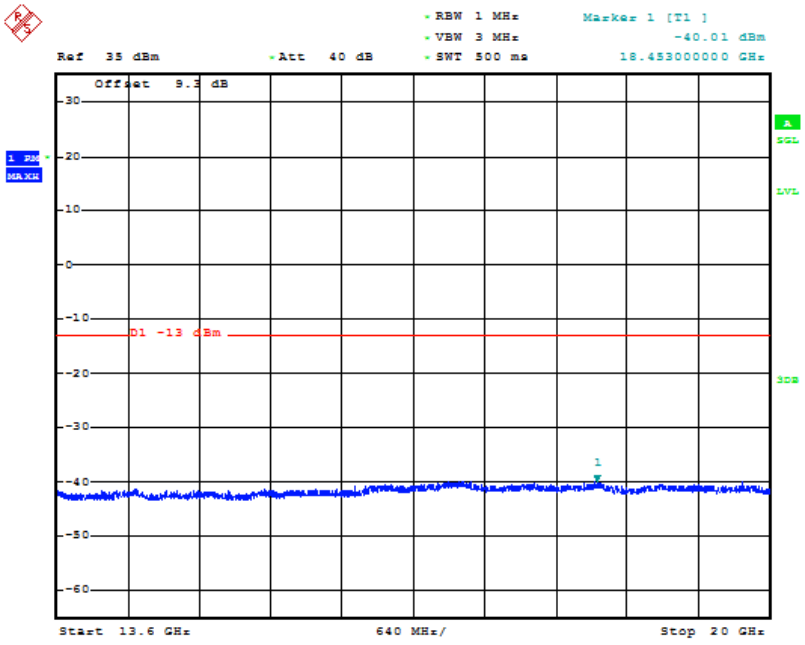

Date: 17.SEP.2018 18:09:35

Out of band measurement
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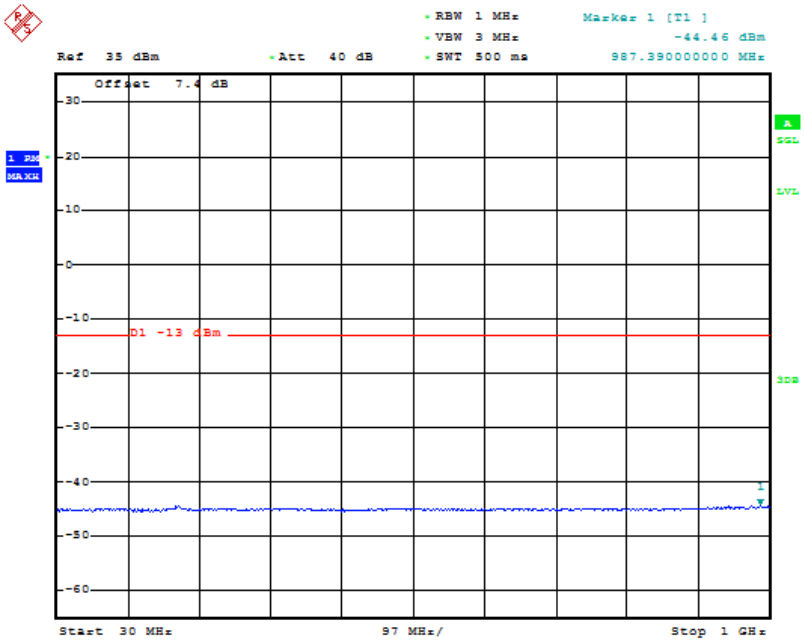
Test Mode = EDGE /TM2
Test Channel = LCH



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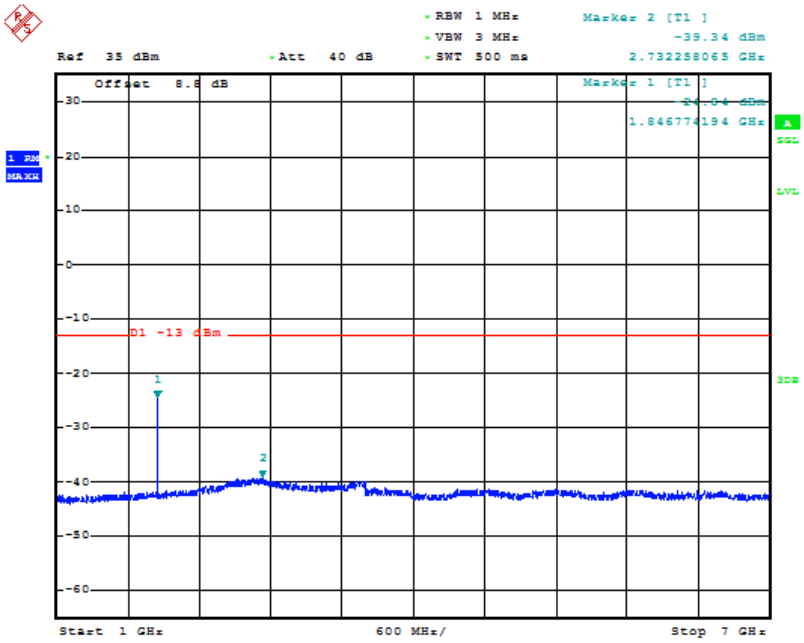

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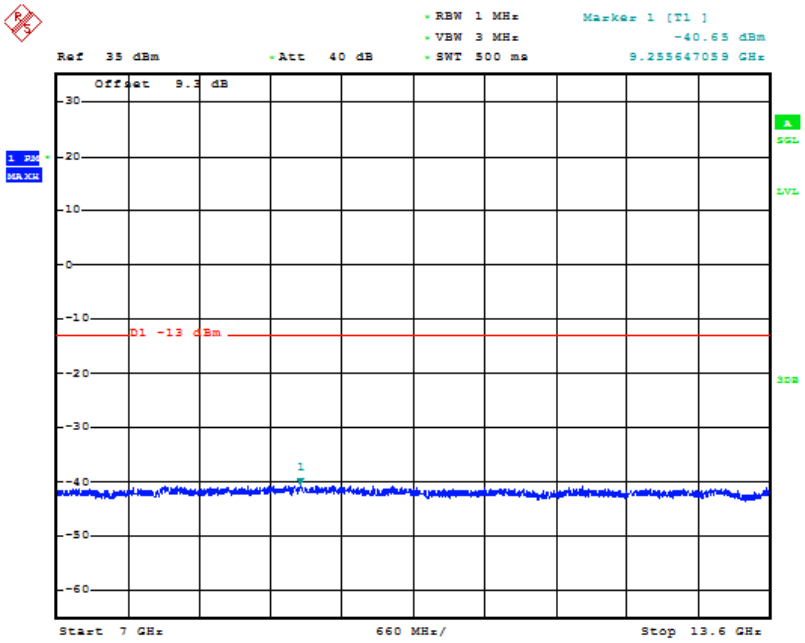

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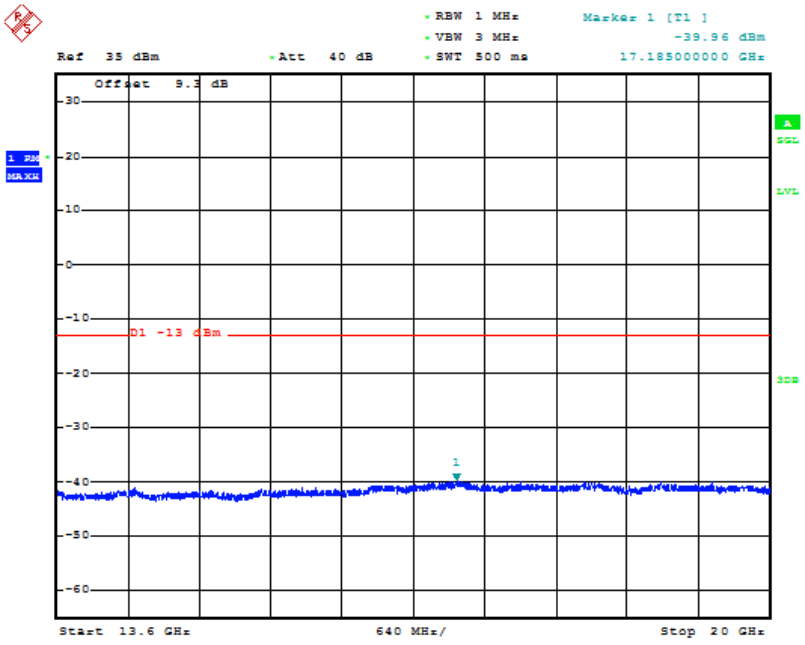
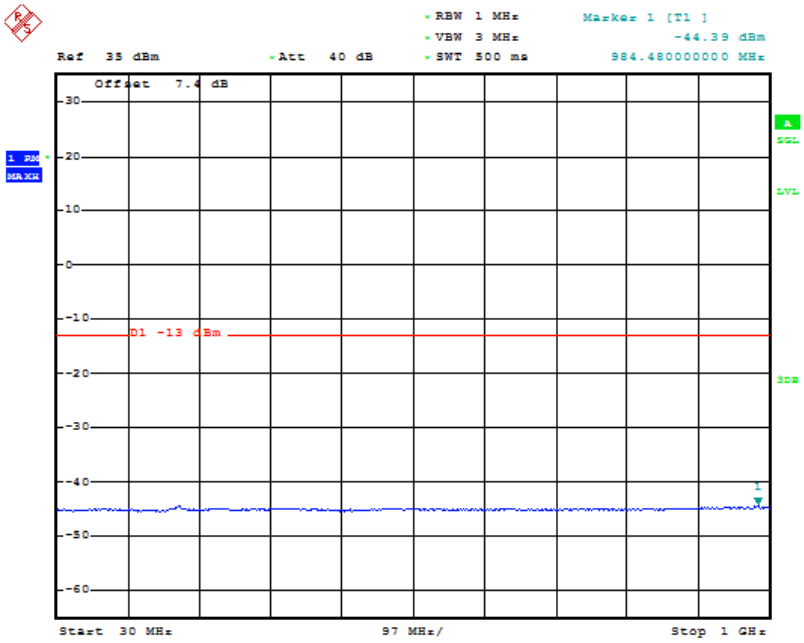


Date: 17.SEP.2018 18:14:33

Out of band measurement
Test Band = GSM1900
Test Mode = EDGE /TM2
Test Channel = MCH



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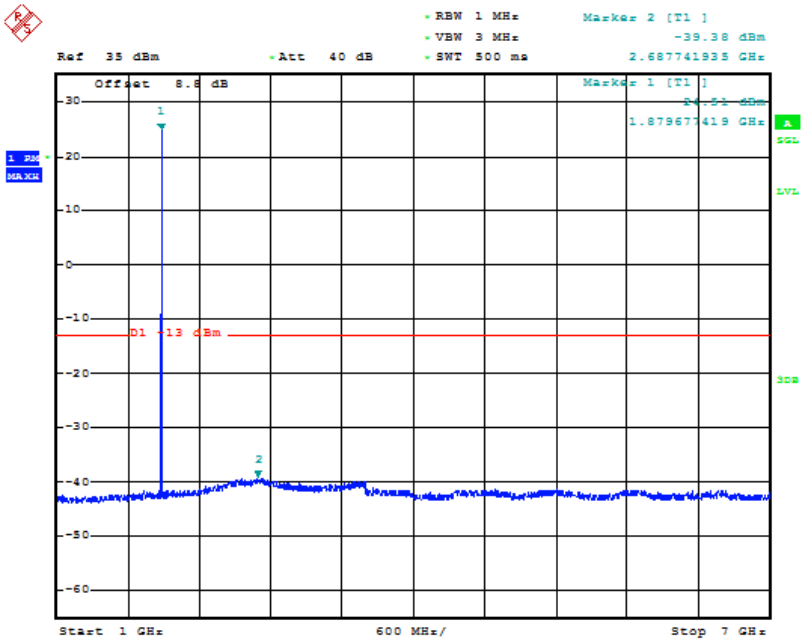
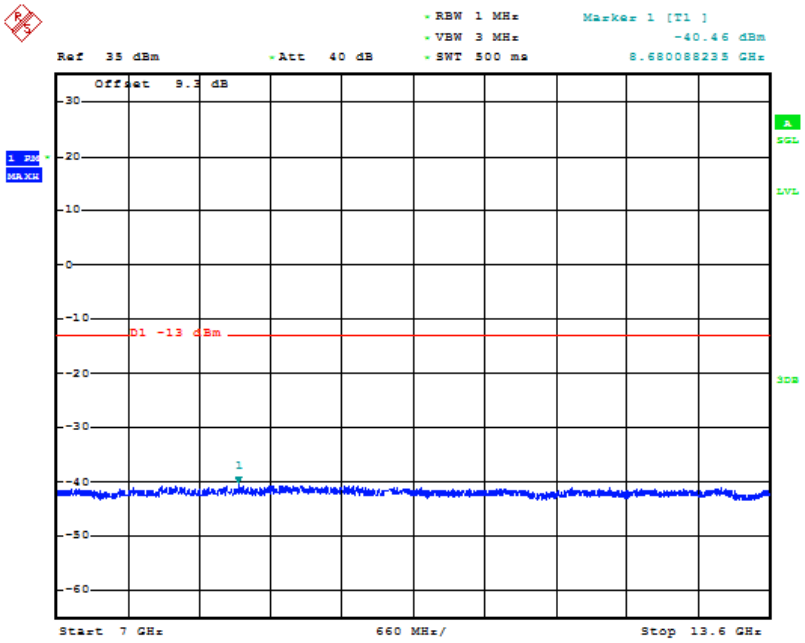
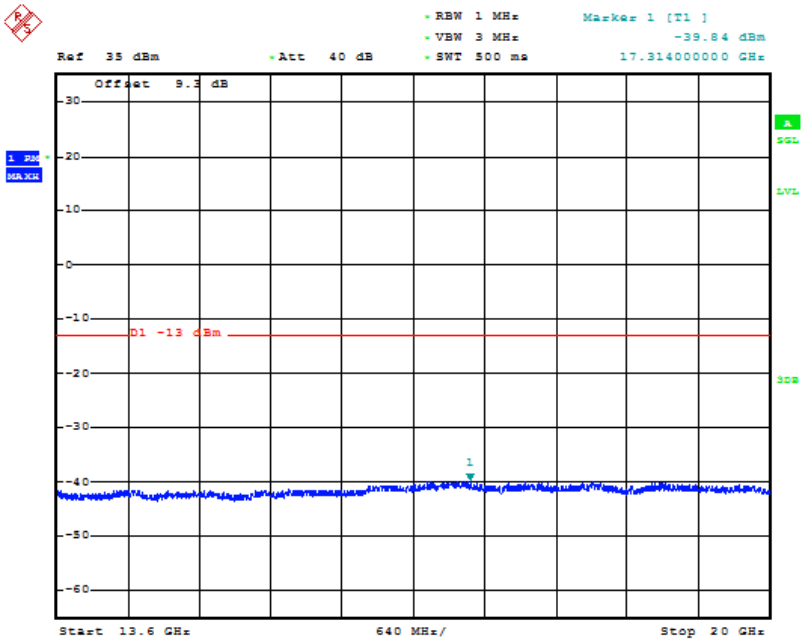


Date: 17.SEP.2018 18:15:19

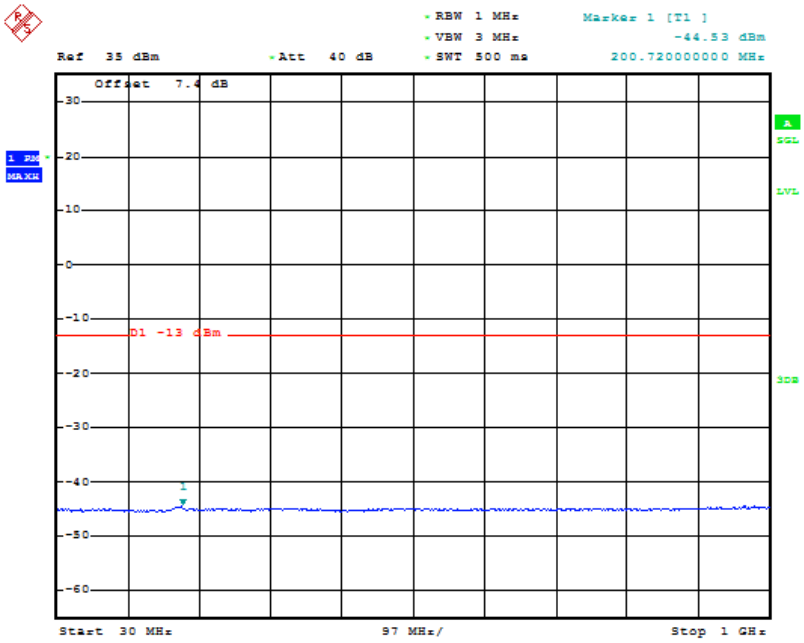


Date: 17.SEP.2018 18:15:28

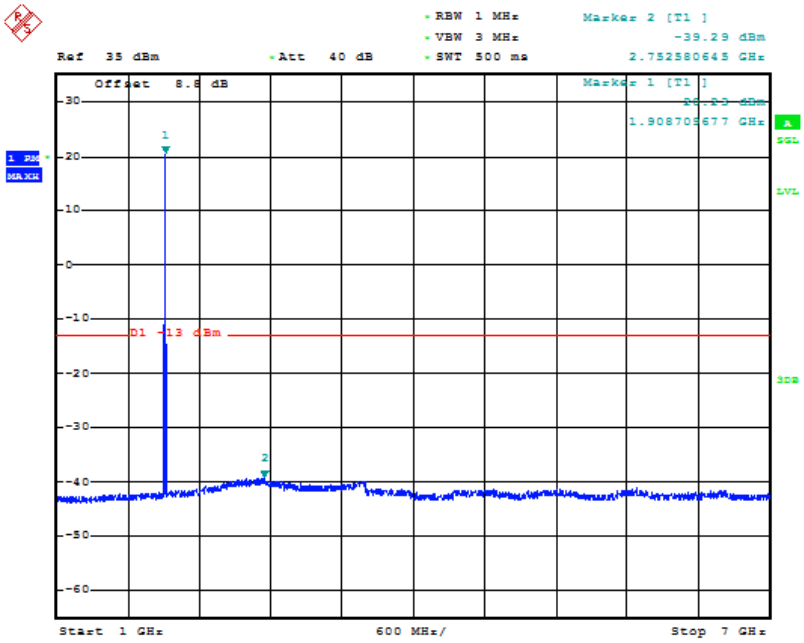


Date: 17.SEP.2018 18:15:38

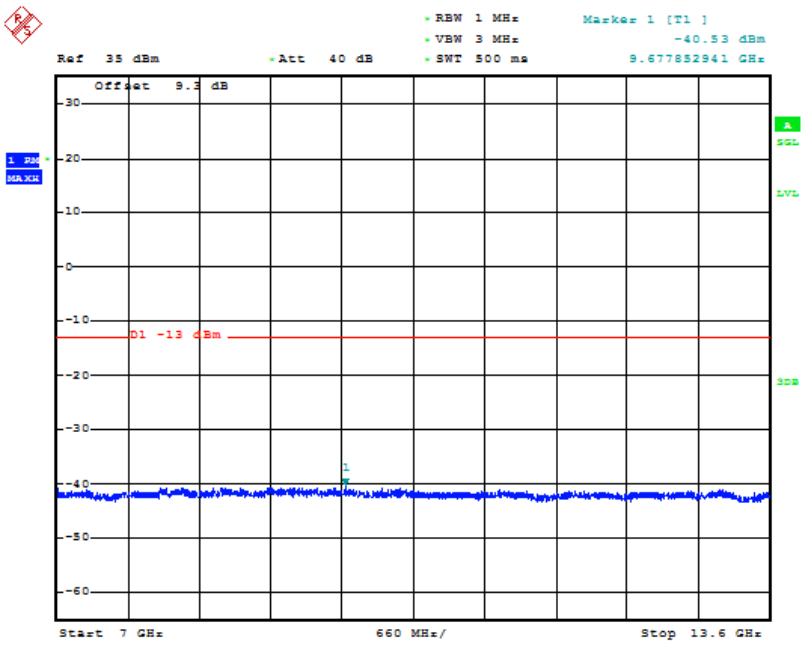
Out of band measurement
Test Band = GSM1900
Test Mode = EDGE /TM2
Test Channel = HCH



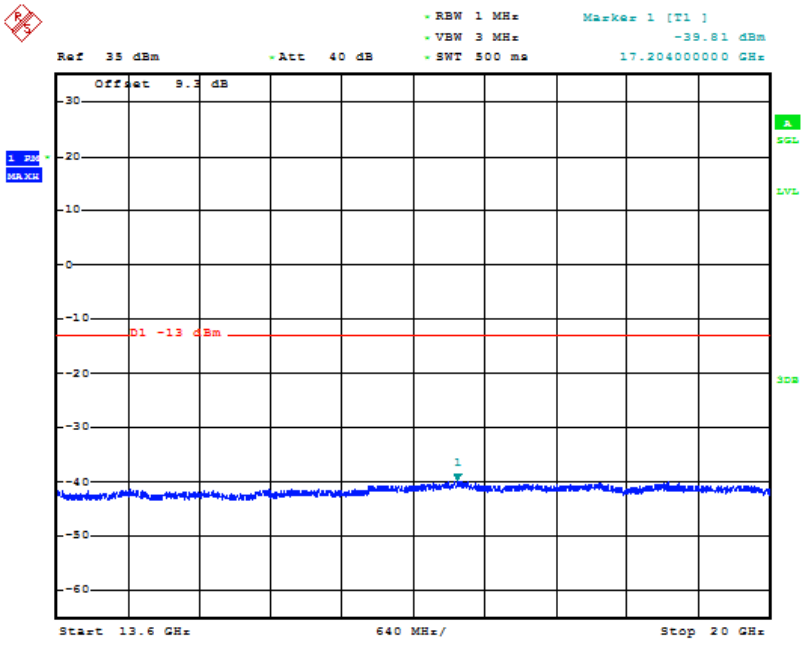
Date: 17.SEP.2018 18:16:13



Date: 17.SEP.2018 18:16:23

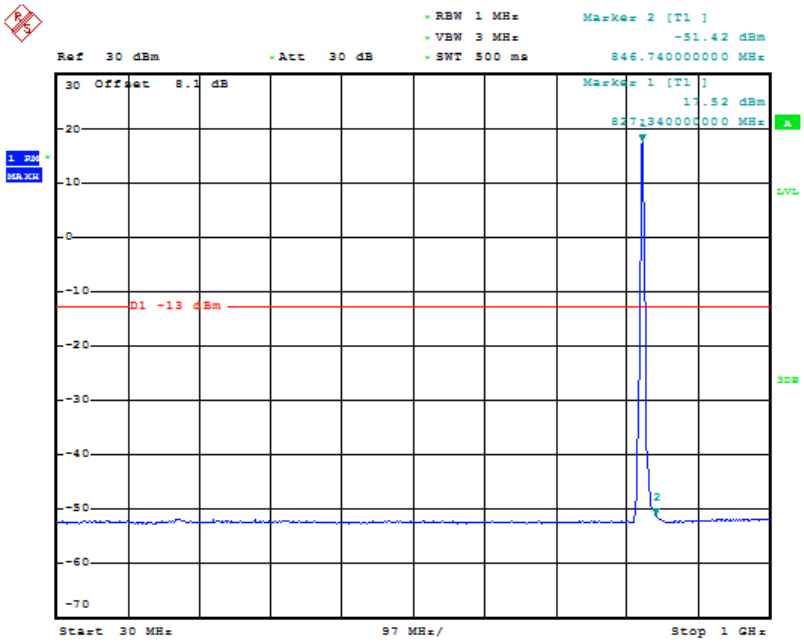


Date: 17.SEP.2018 18:16:33

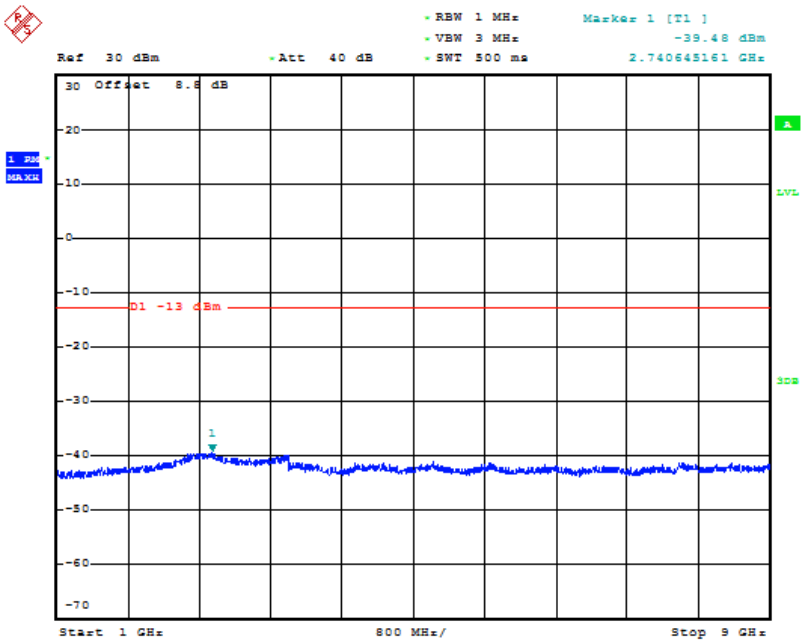


Date: 17.SEP.2018 18:16:42

Out of band measurement
Test Band = WCDMA850
Test Mode = UMTS/TM3
Test Channel = LCH

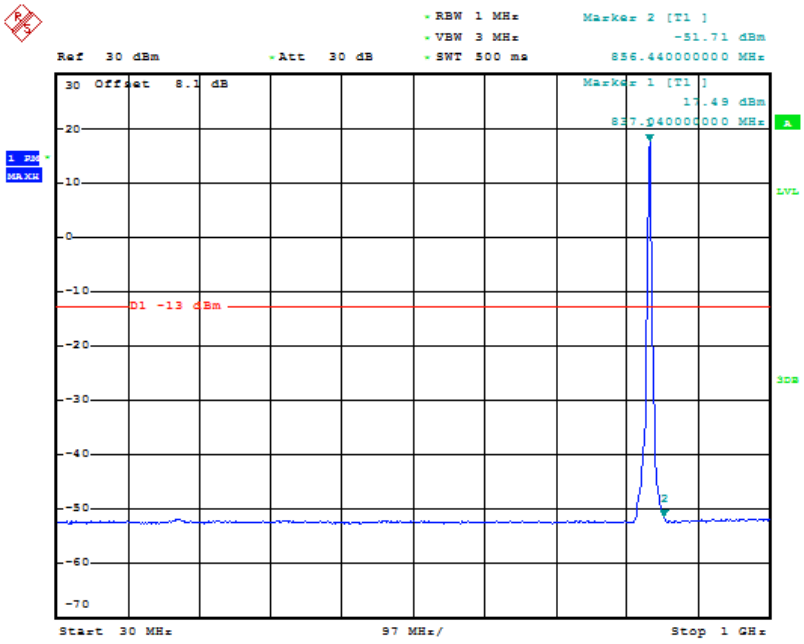


Date: 17.SEP.2018 16:53:41

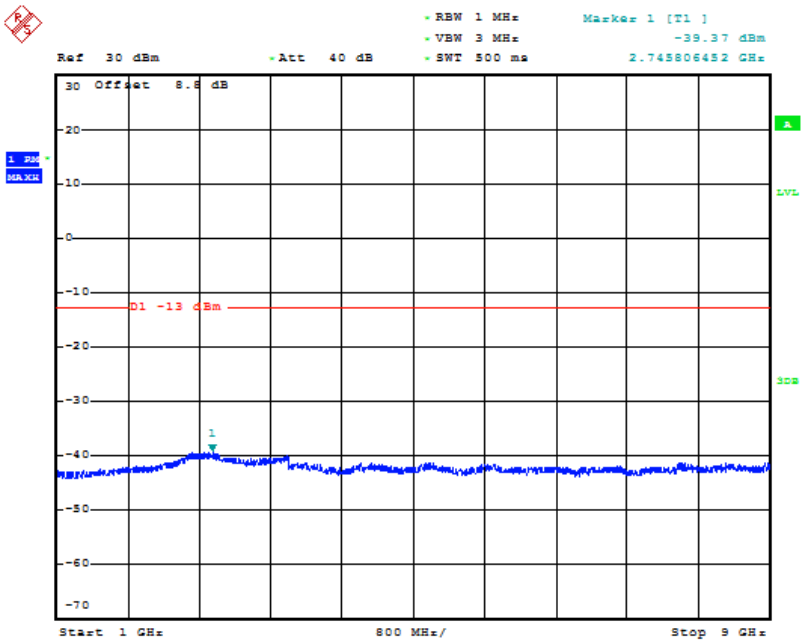


Date: 17.SEP.2018 16:53:50

Out of band measurement
Test Band = WCDMA850
Test Mode = UMTS/TM3
Test Channel = MCH

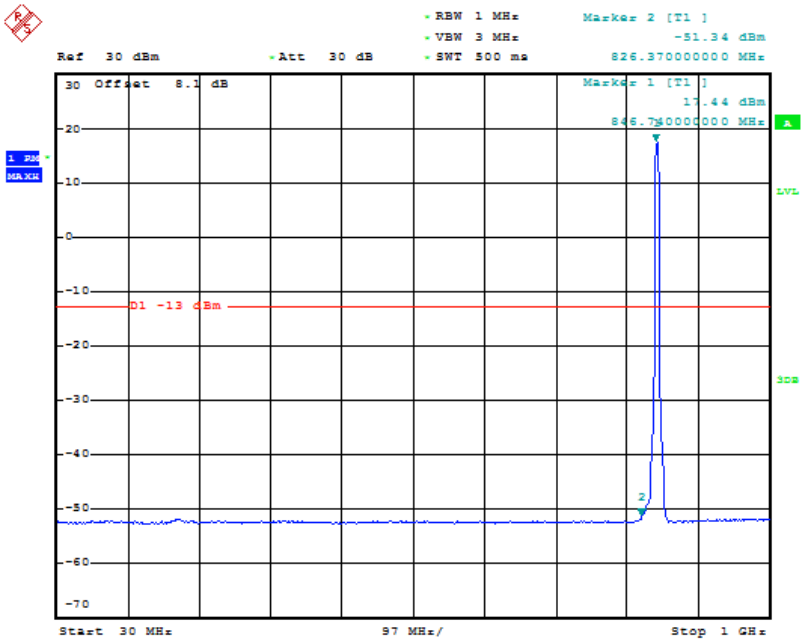


Date: 17.SEP.2018 16:54:19

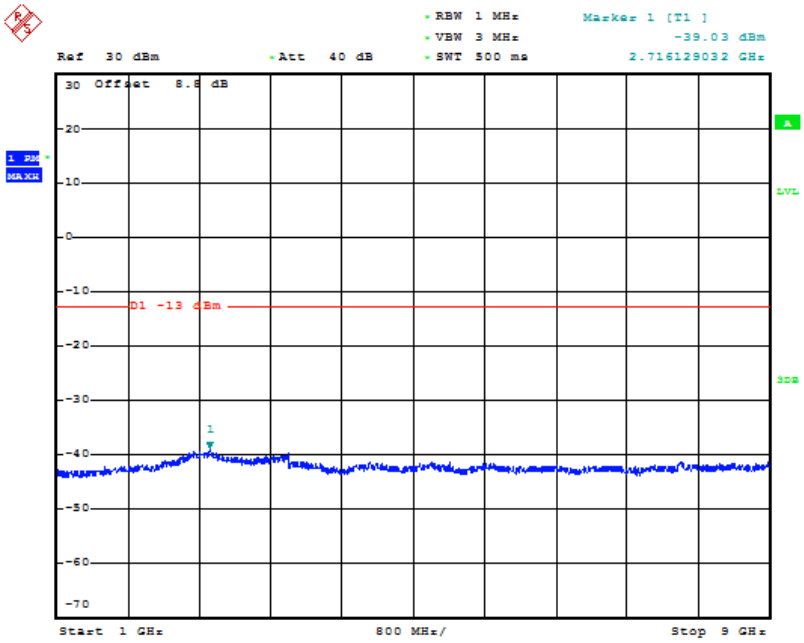


Date: 17.SEP.2018 16:54:27

Out of band measurement
Test Band = WCDMA850
Test Mode = UMTS/TM3
Test Channel = HCH

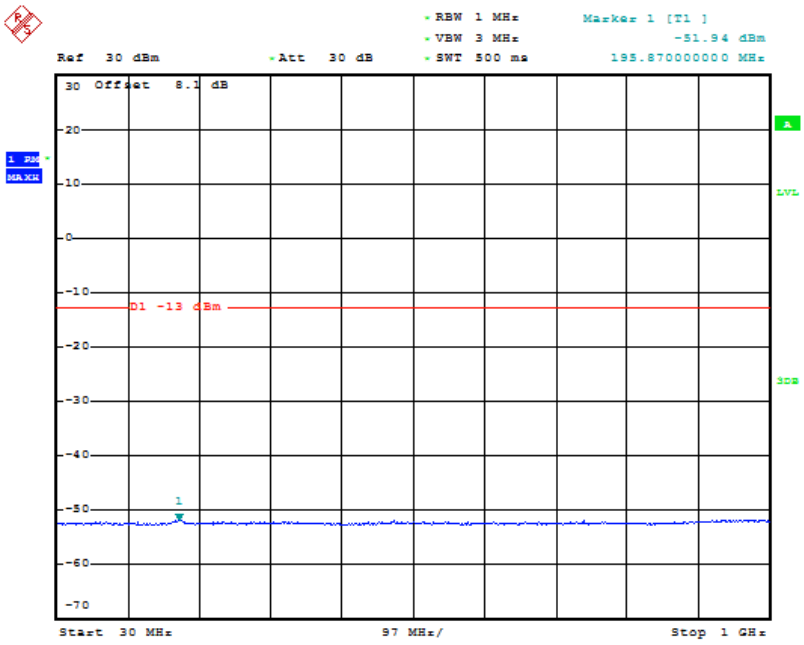


Date: 17.SEP.2018 16:54:56

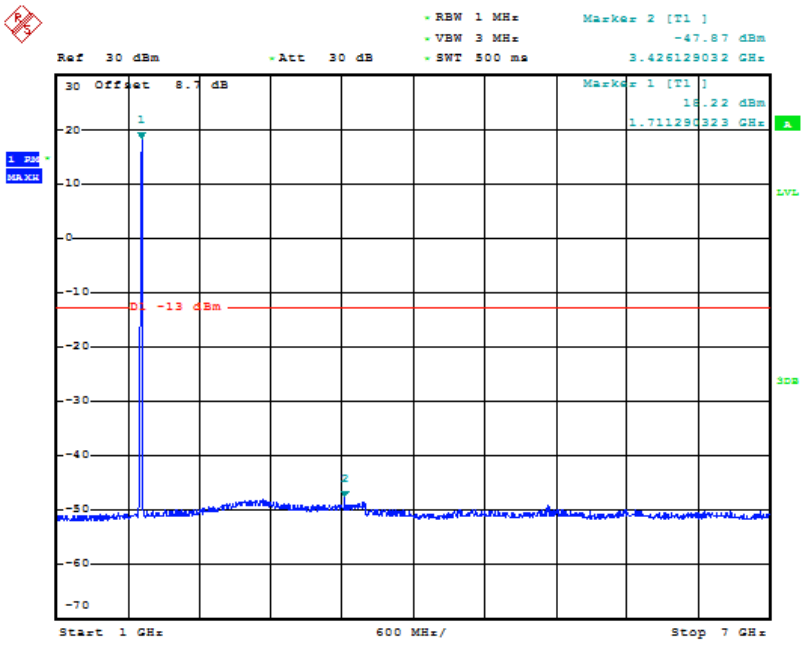


Date: 17.SEP.2018 16:55:05

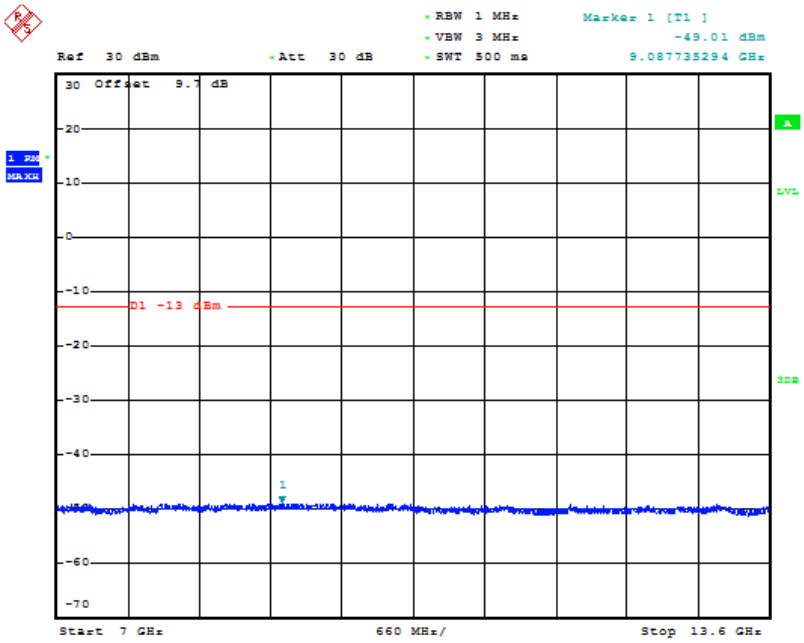
Test Band=WCDMA1700
Test Mode=UMTS/TM3
Test Channel=LCH



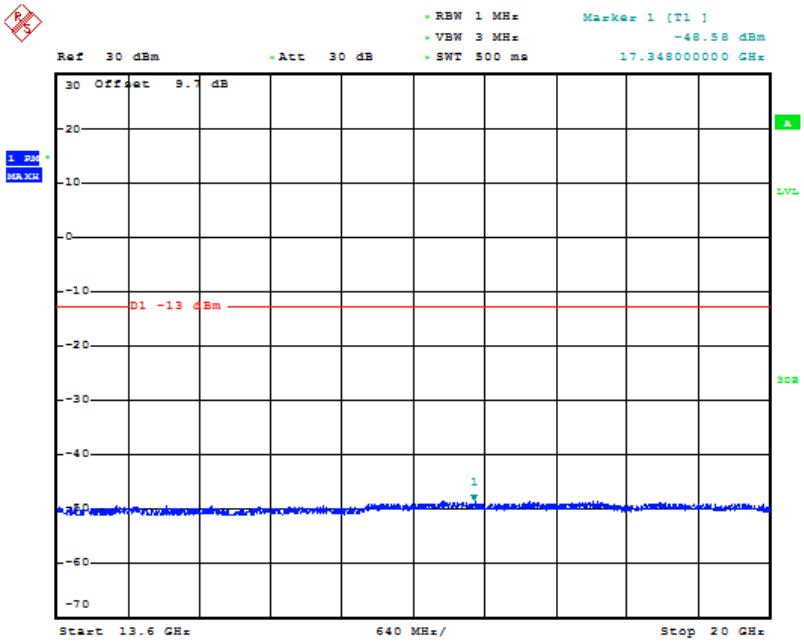
Date: 17.SEP.2018 16:20:46



Date: 17.SEP.2018 16:20:55

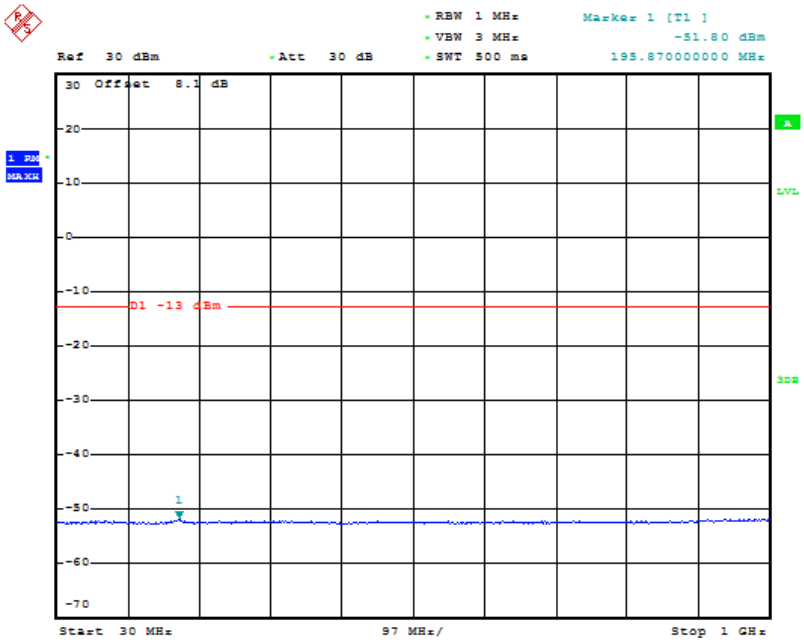


Date: 17.SEP.2018 16:21:04

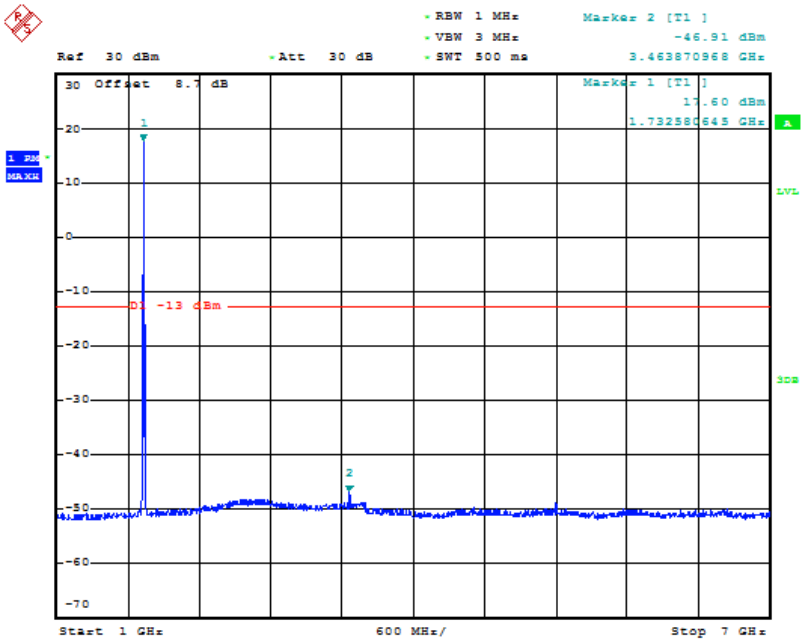


Date: 17.SEP.2018 16:21:12

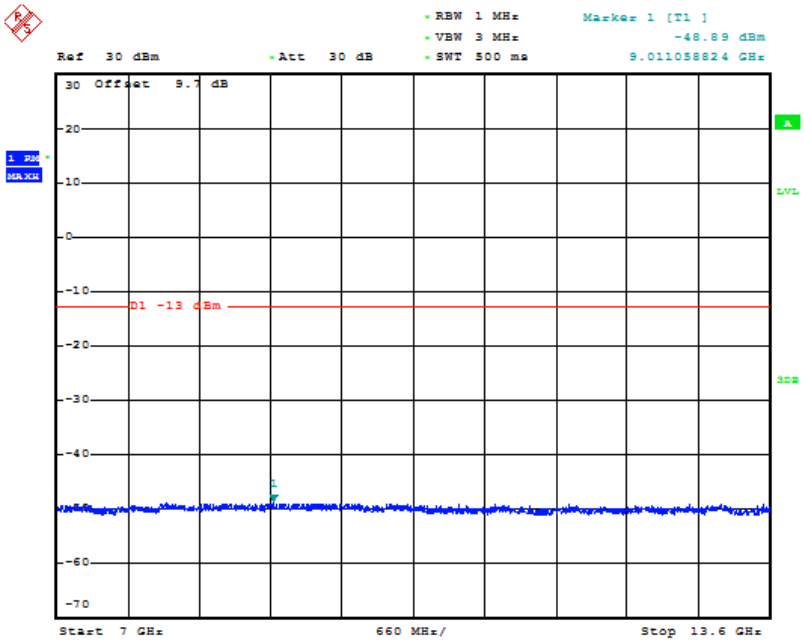
Test Band= WCDMA1700
Test Mode=UMTS/TM3
Test Channel=MCH



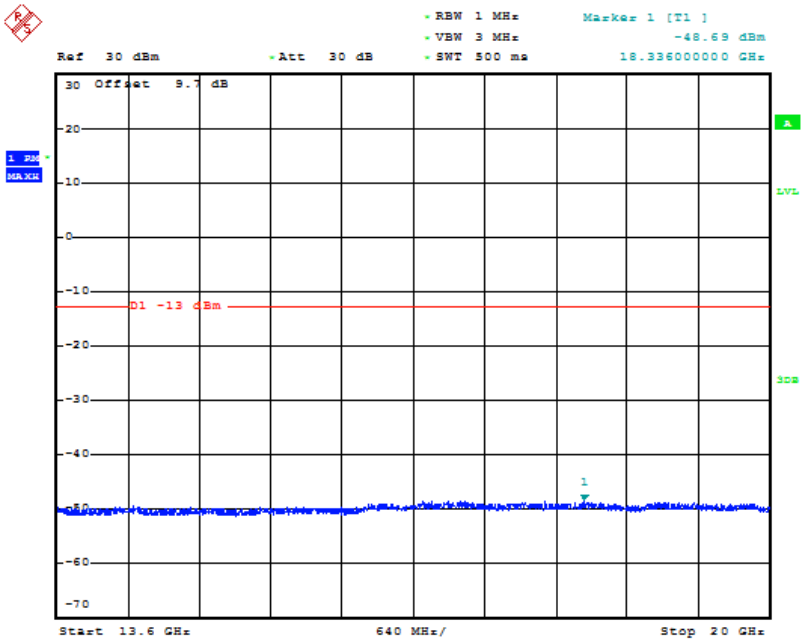
Date: 17.SEP.2018 16:21:40



Date: 17.SEP.2018 16:21:50

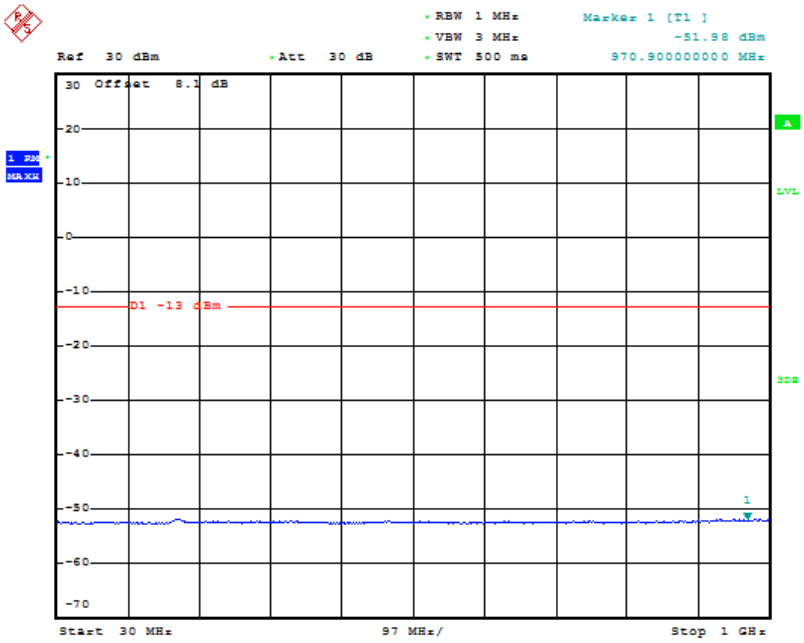


Date: 17.SEP.2018 16:21:58

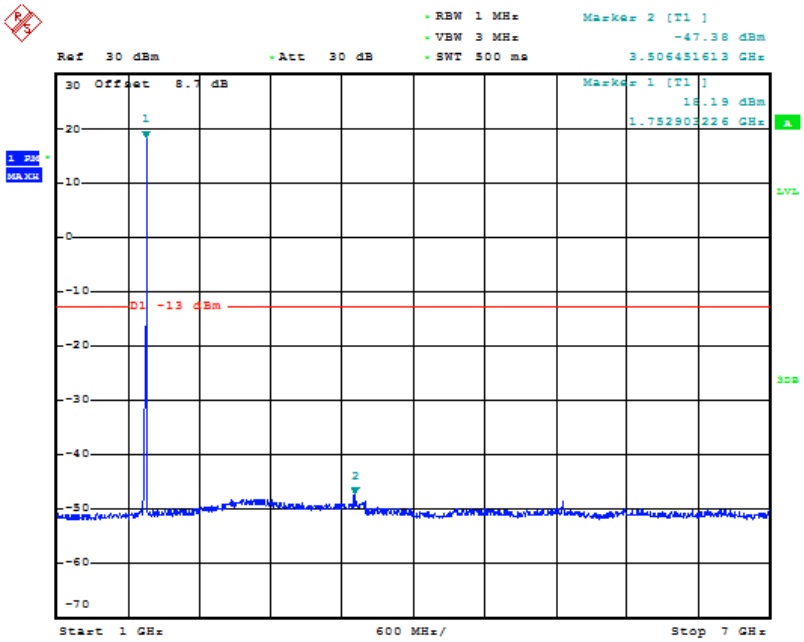


Date: 17.SEP.2018 16:22:06

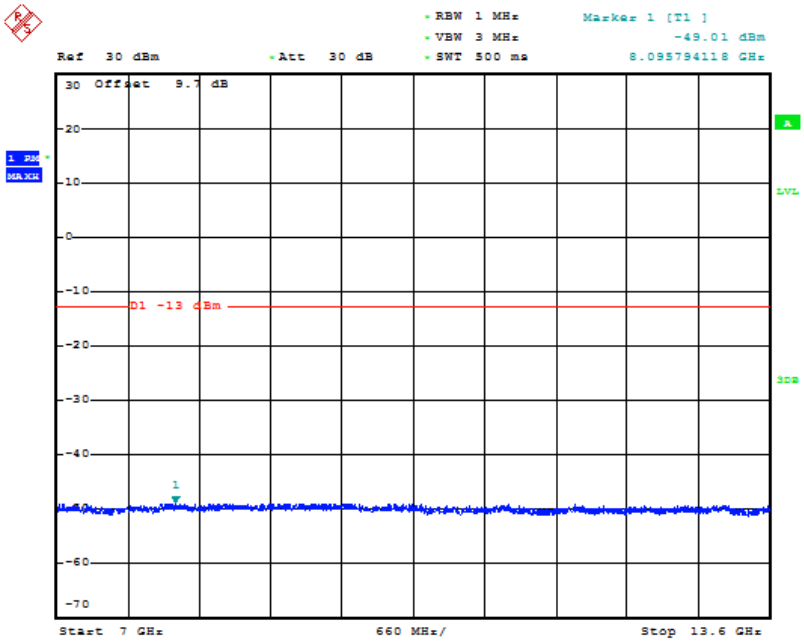
Test Band= WCDMA1700
Test Mode=UMTS/TM3
Test Channel=HCH



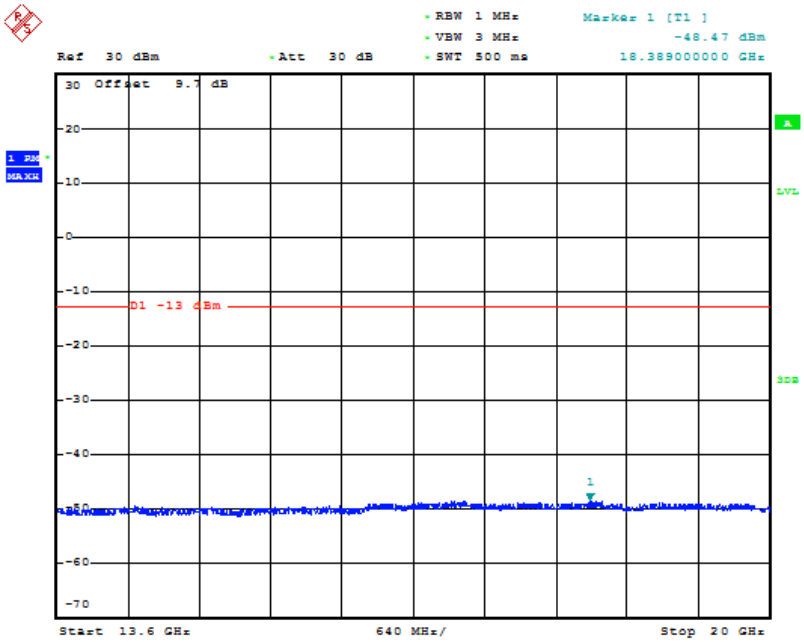
Date: 17.SEP.2018 16:22:34



Date: 17.SEP.2018 16:22:44

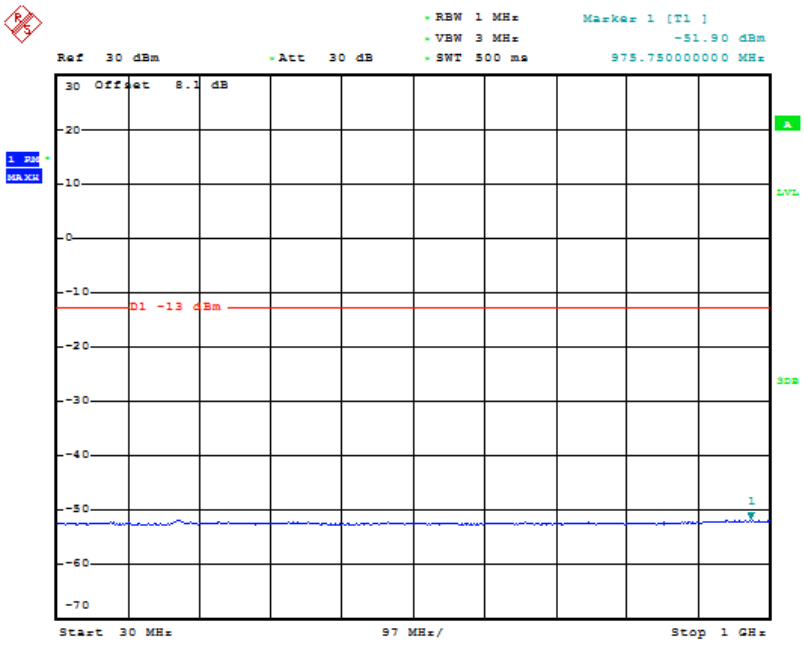


Date: 17.SEP.2018 16:22:52

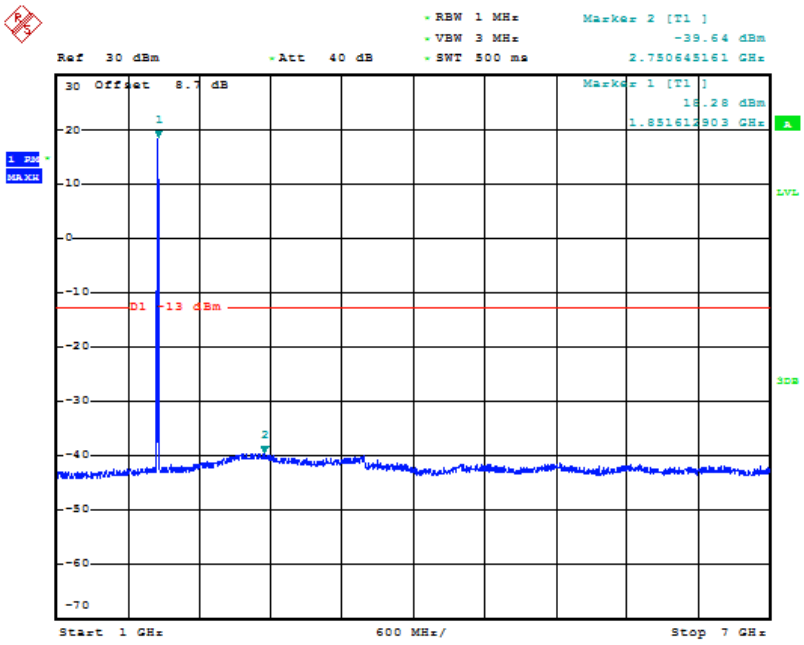


Date: 17.SEP.2018 16:23:01

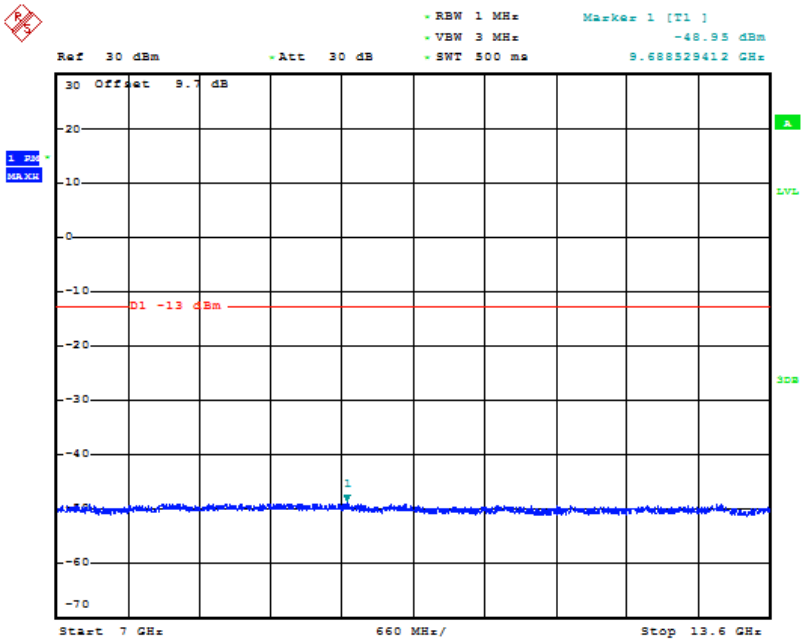
Test Band=WCDMA1900
Test Mode=UMTS/TM3
Test Channel=LCH



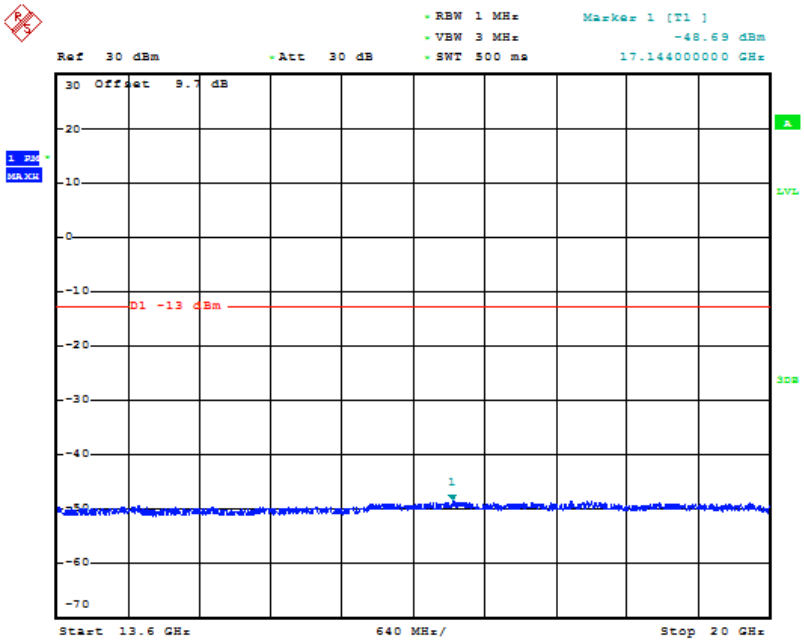
Date: 17.SEP.2018 15:16:55



Date: 17.SEP.2018 15:17:04

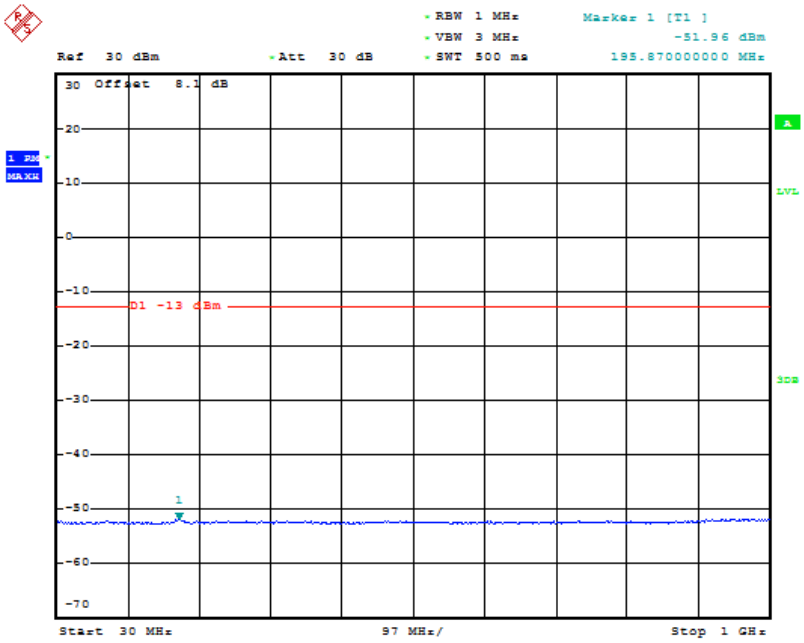


Date: 17.SEP.2018 15:17:13

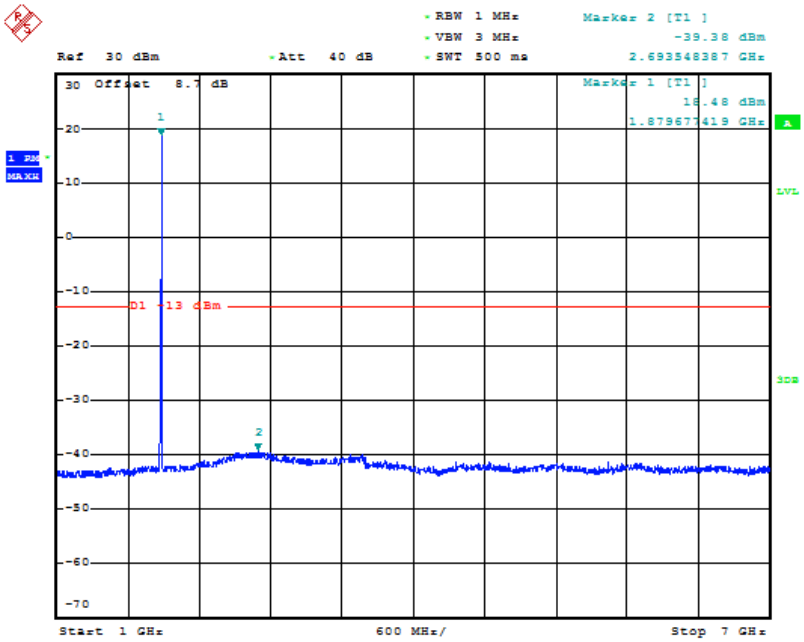


Date: 17.SEP.2018 15:17:21

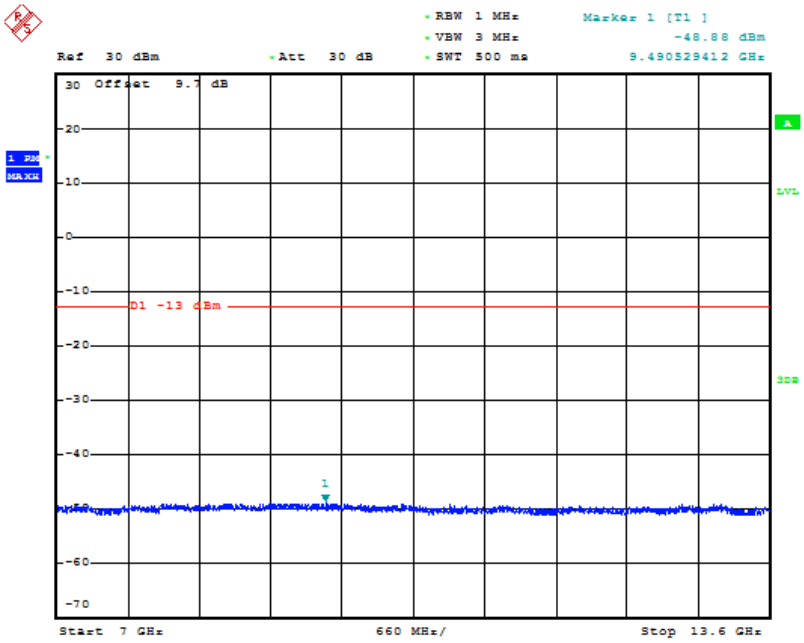
Test Band=WCDMA1900
Test Mode=UMTS/TM3
Test Channel=MCH



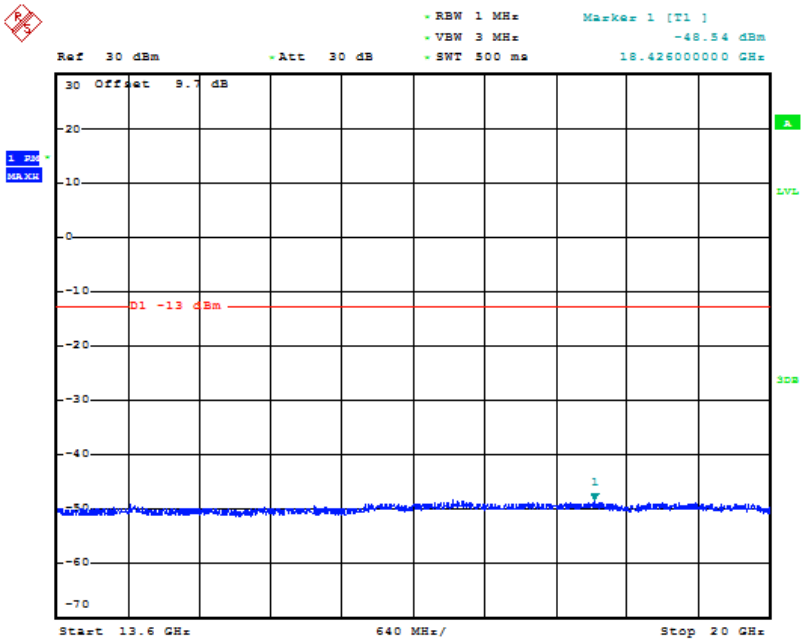
Date: 17.SEP.2018 15:17:49



Date: 17.SEP.2018 15:17:58

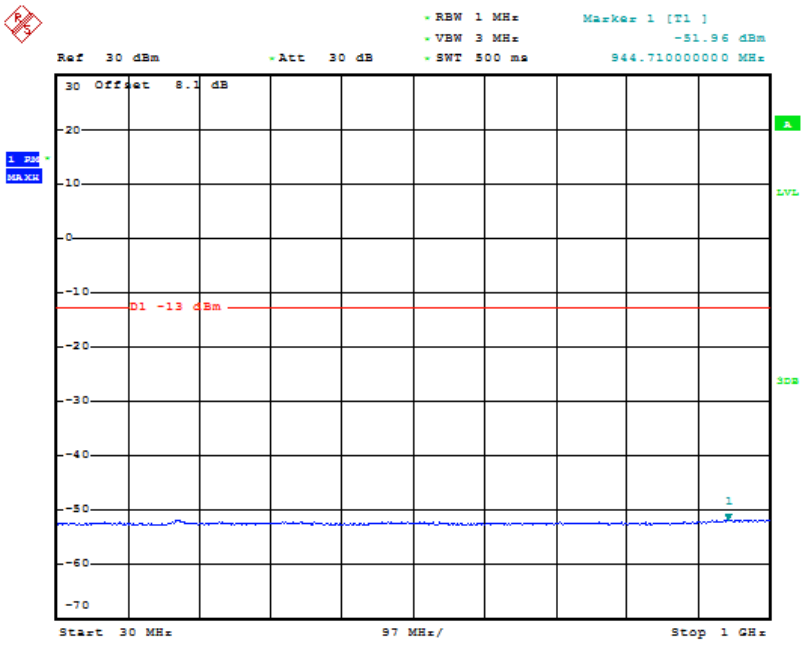


Date: 17.SEP.2018 15:18:07

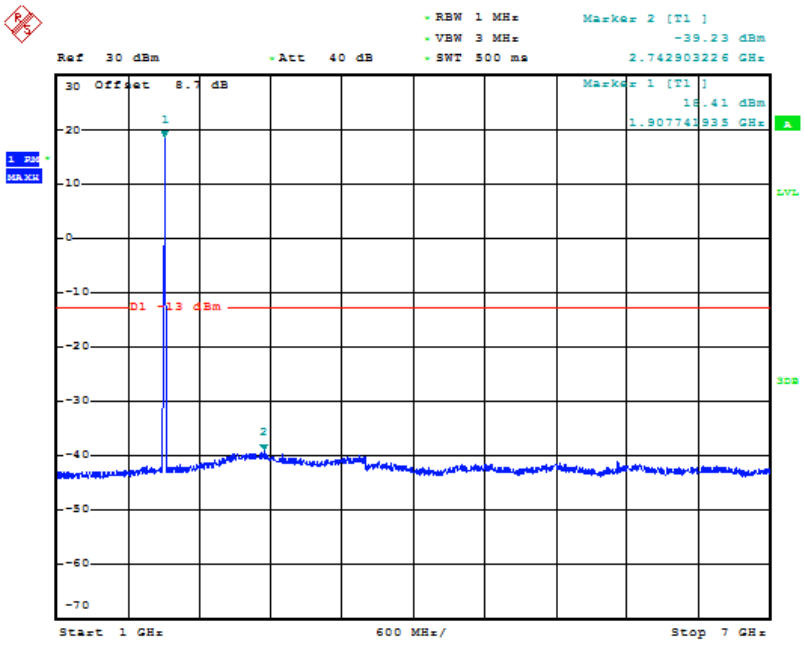


Date: 17.SEP.2018 15:18:15

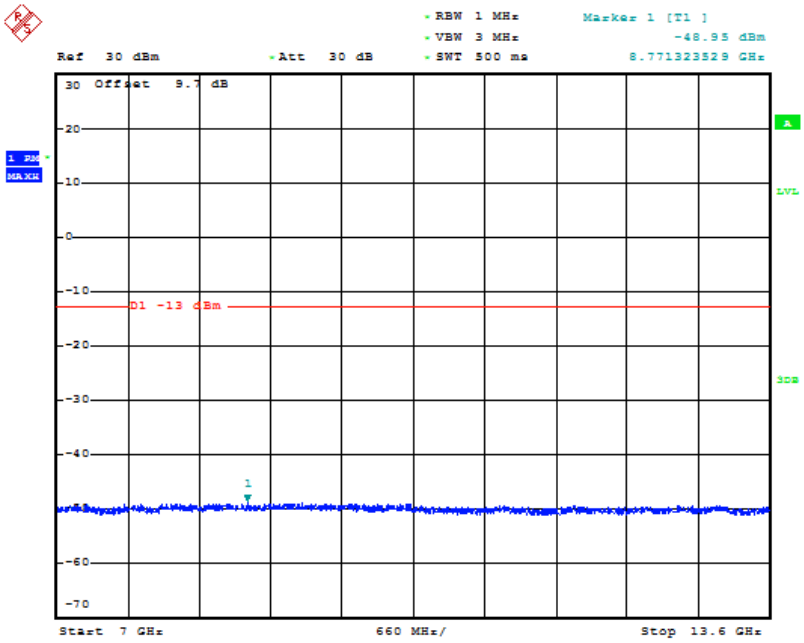
Test Band=WCDMA1900
Test Mode=UMTS/TM3
Test Channel=HCH



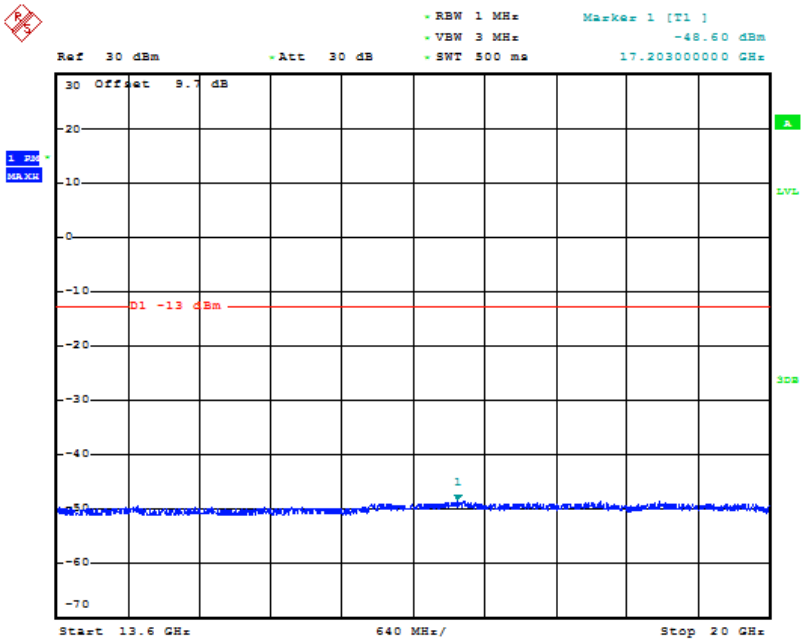
Date: 17.SEP.2018 15:18:43



Date: 17.SEP.2018 15:18:53



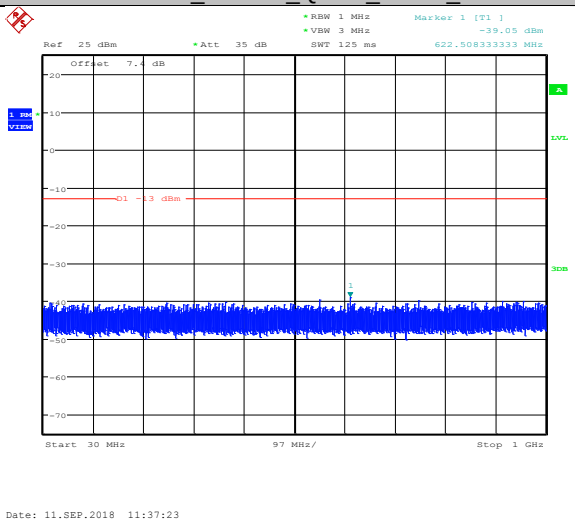
Date: 17.SEP.2018 15:19:01



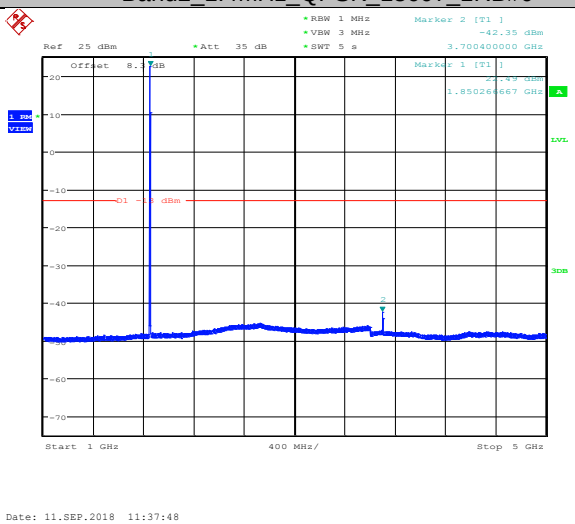
Date: 17.SEP.2018 15:19:09

Test Band=LTE Band 2
Test Mode=QPSK/TM4
Chanel Bandwidth=1.4MHz
Test Channel=LCH

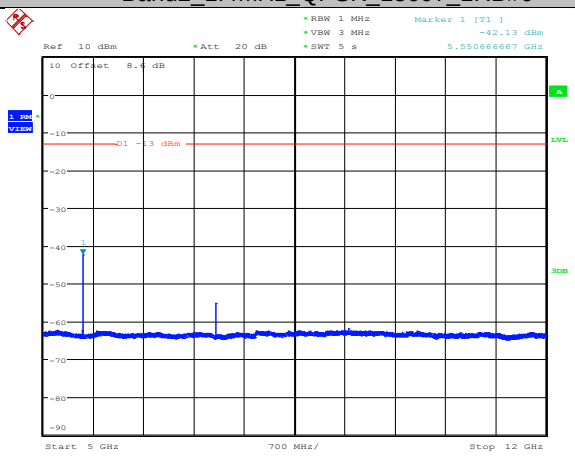
Band2_1.4MHz_QPSK_18607_1RB#0



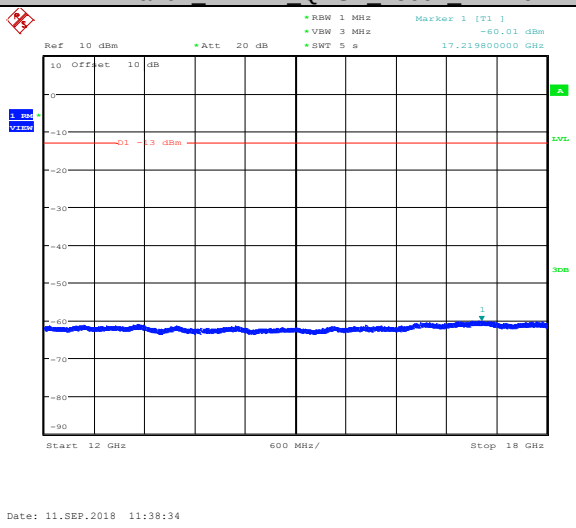
Band2_1.4MHz_QPSK_18607_1RB#0



Band2_1.4MHz_QPSK_18607_1RB#0

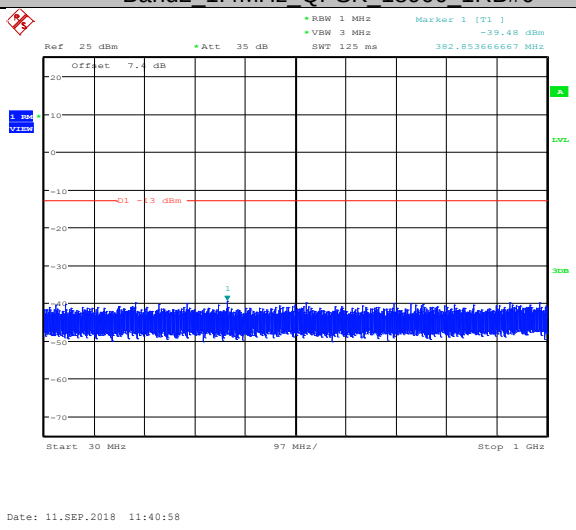


Band2_1.4MHz_QPSK_18607_1RB#0

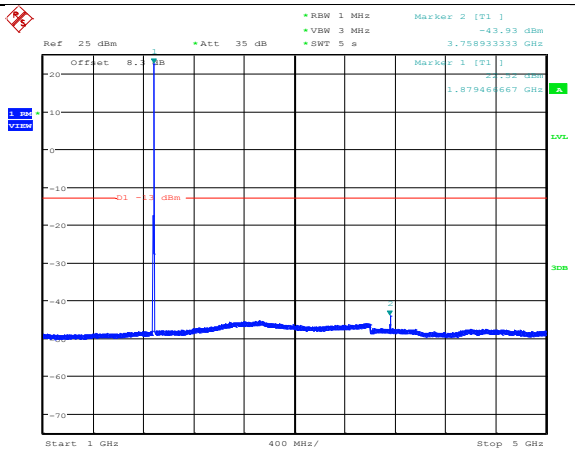


Test Band=LTE Band 2
Test Mode=QPSK/TM4
Chanel Bandwidth=1.4MHz
Test Channel=MCH

Band2_1.4MHz_QPSK_18900_1RB#0

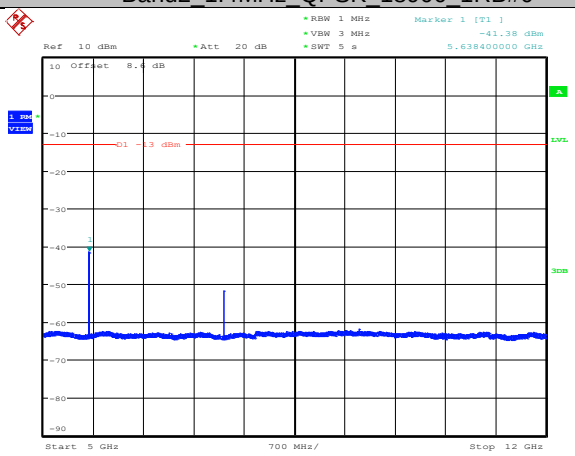


Band2_1.4MHz_QPSK_18900_1RB#0



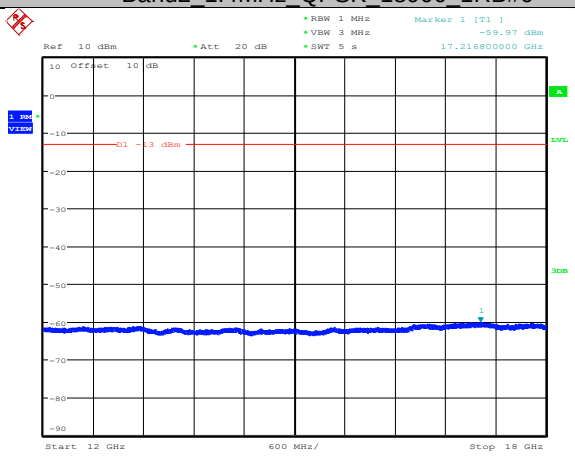
Date: 11.SEP.2018 11:41:22

Band2_1.4MHz_QPSK_18900_1RB#0



Date: 11.SEP.2018 11:41:45

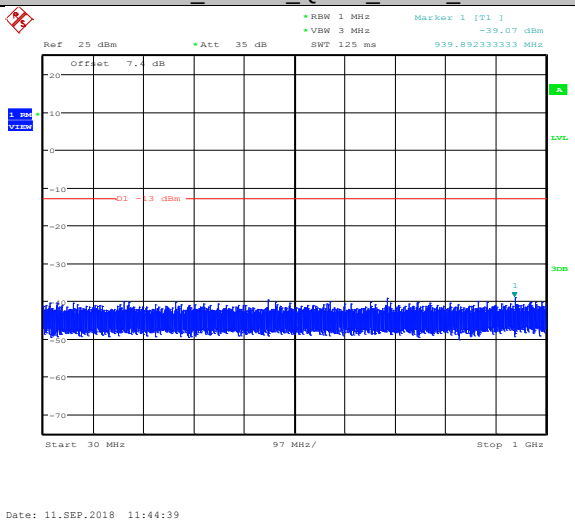
Band2_1.4MHz_QPSK_18900_1RB#0



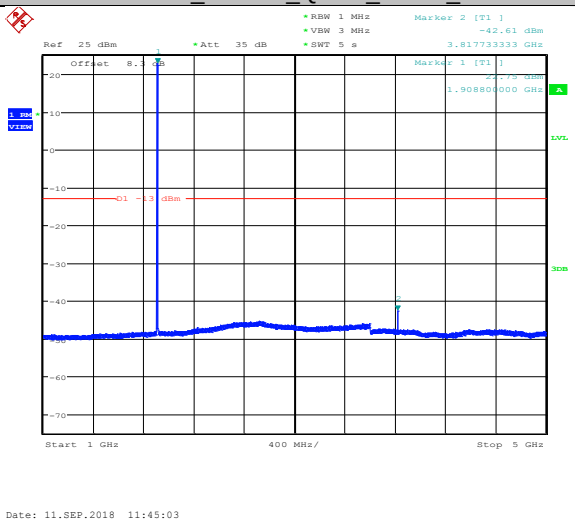
Date: 11.SEP.2018 11:42:08

Test Band=LTE Band 2
Test Mode=QPSK/TM4
Chanel Bandwidth=1.4MHz
Test Channel=HCH

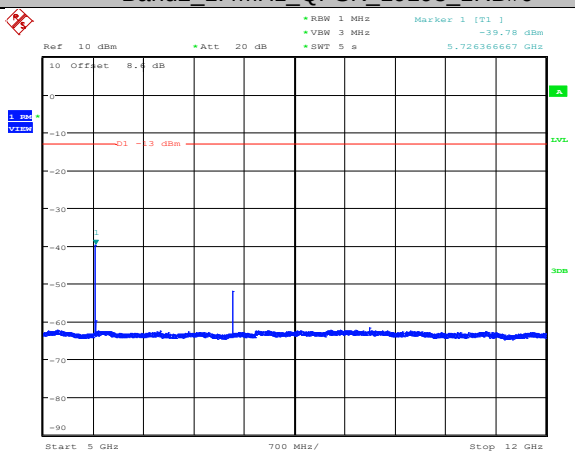
Band2_1.4MHz_QPSK_19193_1RB#0



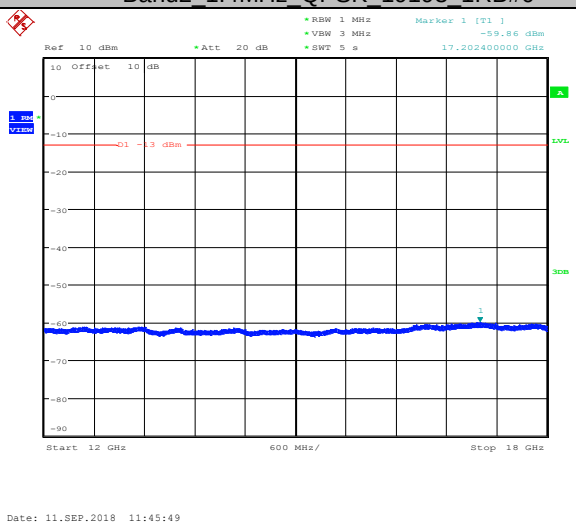
Band2_1.4MHz_QPSK_19193_1RB#0



Band2_1.4MHz_QPSK_19193_1RB#0

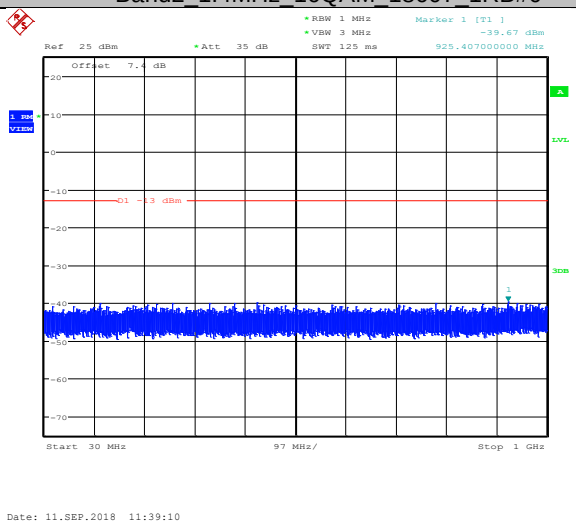


Band2_1.4MHz_QPSK_19193_1RB#0

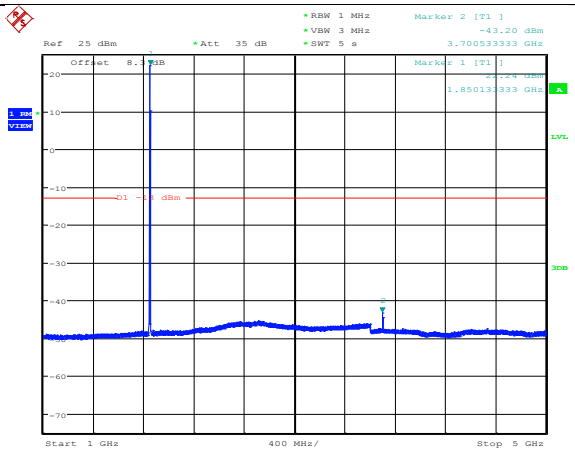


Test Band=LTE Band 2
Test Mode=16QAM/TM5
Chanel Bandwidth=1.4MHz
Test Channel=LCH

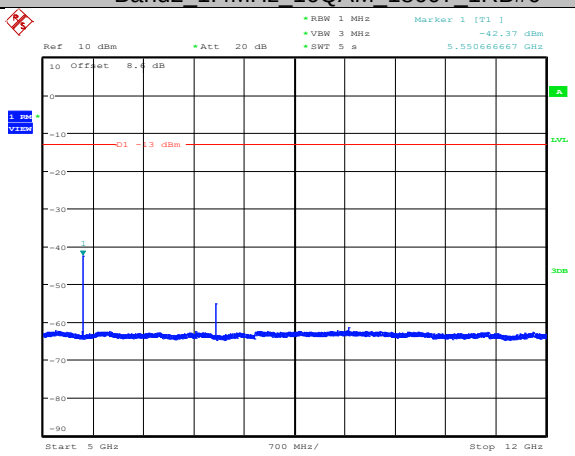
Band2_1.4MHz_16QAM_18607_1RB#0



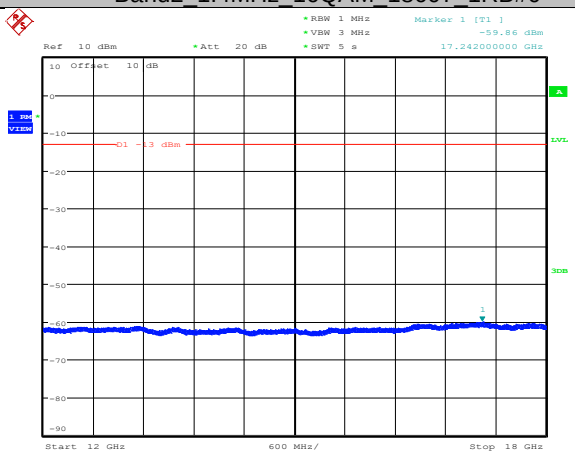
Band2_1.4MHz_16QAM_18607_1RB#0



Band2_1.4MHz_16QAM_18607_1RB#0

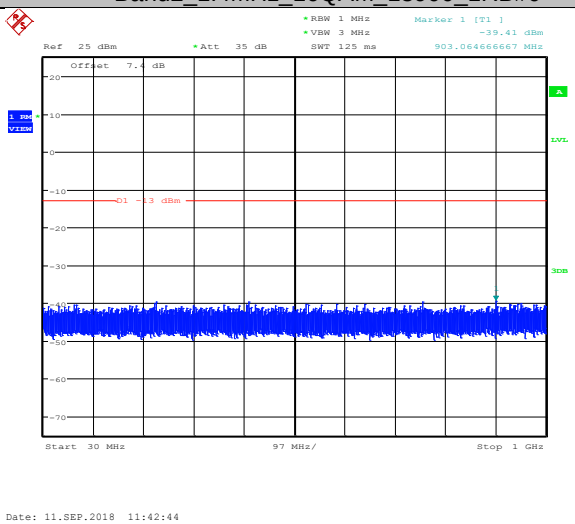


Band2_1.4MHz_16QAM_18607_1RB#0

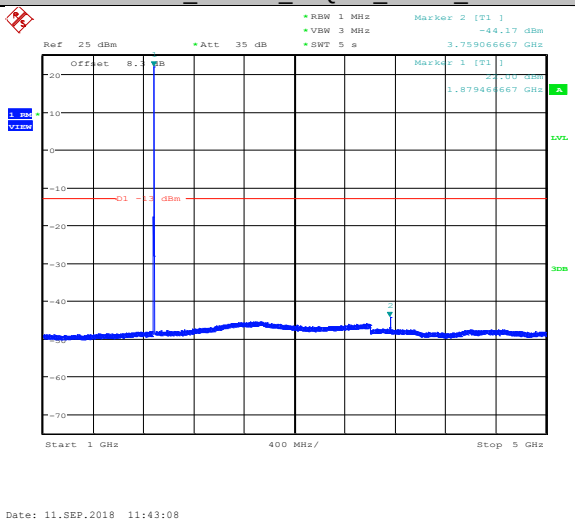


Test Band=LTE Band 2
Test Mode=16QAM/TM5
Chanel Bandwidth=1.4MHz
Test Channel=MCH

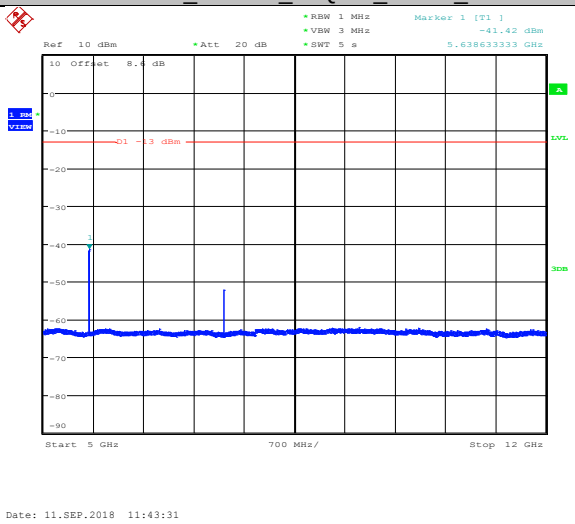
Band2_1.4MHz_16QAM_18900_1RB#0



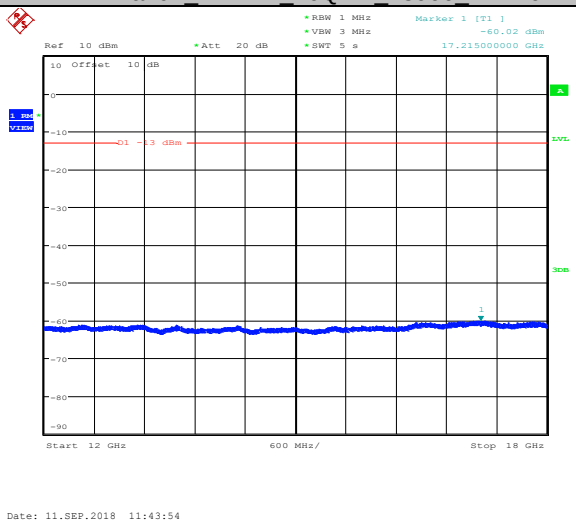
Band2_1.4MHz_16QAM_18900_1RB#0



Band2_1.4MHz_16QAM_18900_1RB#0

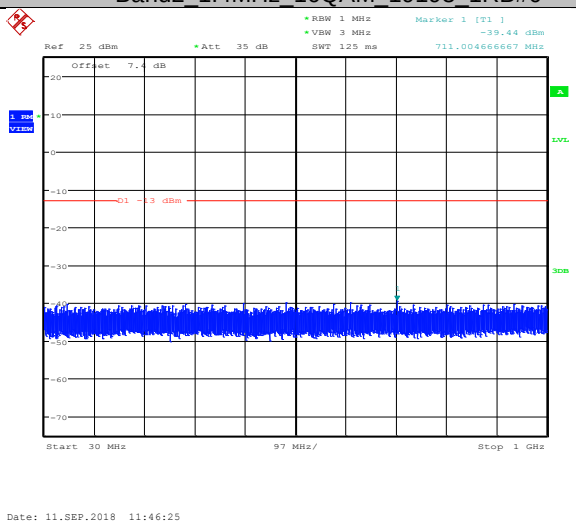


Band2_1.4MHz_16QAM_18900_1RB#0



Test Band=LTE Band 2
Test Mode=16QAM/TM5
Chanel Bandwidth=1.4MHz
Test Channel=HCH

Band2_1.4MHz_16QAM_19193_1RB#0



Band2_1.4MHz_16QAM_19193_1RB#0