

FCC REPORT

(Base Stations)

Applicant: Baicells Technologies Co., Ltd.

Address of Applicant: 3F, Hui Yuan Development Building, No.1 Shangdi Information Industry Base, Haidian Dist., Beijing, China

Equipment Under Test (EUT)

Product Name: LTE Outdoor CPE

Model No.: EG7035L-M1

Trade mark: BaiCells

FCC ID: 2AG32EG7035LM1

Applicable standards: FCC CFR Title 47 Part 2
FCC CFR Title 47 Part 27 Subpart M

Date of sample receipt: 05 Jul., 2017

Date of Test: 05 Jul., 2017 to 11 Jul., 2017

Date of report issued: 11 Jul., 2017

Test Result: PASS*

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Bruce Zhang

Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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2. Version

Version No.	Date	Description
00	11 Jul., 2017	Original

Tested by:



Date:

11 Jul., 2017

Test Engineer

Reviewed by:



Date:

11 Jul., 2017

Project Engineer

3. Contents

	Page
1. COVER PAGE.....	1
2. VERSION.....	2
3. CONTENTS.....	3
4. TEST SUMMARY.....	4
5. GENERAL INFORMATION.....	5
5.1 CLIENT INFORMATION.....	5
5.2 GENERAL DESCRIPTION OF E.U.T.....	5
5.3 TEST MODES.....	6
5.4 DESCRIPTION OF SUPPORT UNITS.....	6
5.5 RELATED SUBMITTAL(S) / GRANT (S).....	6
5.6 TEST METHODOLOGY.....	6
5.7 LABORATORY FACILITY.....	6
5.8 LABORATORY LOCATION	6
5.9 TEST INSTRUMENTS LIST.....	7
6. SYSTEM TEST CONFIGURATION	8
6.1 EUT CONFIGURATION	8
6.2 EUT EXERCISE.....	8
6.3 CONFIGURATION OF TESTED SYSTEM	8
6.4 DESCRIPTION OF TEST MODES.....	8
6.5 TRANSMIT OUTPUT POWER	9
6.6 OCCUPY BANDWIDTH	12
6.7 OUT OF BAND EMISSION AT ANTENNA TERMINALS	23
6.8 ERP, EIRP MEASUREMENT	84
6.9 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT.....	89
6.10 FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT.....	95
6.11 FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT	100
7. TEST SETUP PHOTO.....	103
8. EUT CONSTRUCTIONAL DETAILS	104

4. Test Summary

Test Item	Section in CFR 47	Result
	FCC	
RF Output Power	Part 2.1046 Part 27.50 (h)(2)	Pass
Modulation Characteristics	Part 2.1047	Pass
99% & -26 dB Occupied Bandwidth	Part 2.1049 Part 27.53(m)	Pass
Spurious Emissions at Antenna Terminal	Part 2.1051 Part 27.53(m)	Pass
Field Strength of Spurious Radiation	Part 2.1053 Part 27.53(m)	Pass
Frequency stability vs. temperature	Part 2.1055(a)(1)(b) Part 27.54	Pass
Frequency stability vs. voltage	Part 2.1055(d)(1)(2) Part 27.54	Pass

Pass: The EUT complies with the essential requirements in the standard.

5. General Information

5.1 Client Information

Applicant:	Baicells Technologies Co., Ltd.
Address of Applicant:	3F, Hui Yuan Development Building, No.1 Shangdi Information Industry Base, Haidian Dist., Beijing, China
Manufacturer	Baicells Technologies Co., Ltd.
Address of Manufacturer:	3F, Hui Yuan Development Building, No.1 Shangdi Information Industry Base, Haidian Dist., Beijing, China

5.2 General Description of E.U.T.

Product Name:	LTE Outdoor CPE
Model No.:	EG7035L-M1
Operation Frequency range:	Band41: 2496MHz~2690MHz
Modulation type:	BPSK, QPSK, 16QAM
Antenna type:	Internal antenna ("N" type)
Antenna gain:	10 dBi
AC adapter:	Model: G0549A-240-050 Input: AC100-240V 50/60Hz 0.5 A Output: DC 24V, 500 mA
Power supply:	DC 24V

Test Channel:

Band41

5MHz		10MHz	
Channel:	Frequency (MHz)	Channel:	Frequency (MHz)
Lowest	2498.5	Lowest	2501.0
Middle	2593.0	Middle	2593.0
Highest	2687.5	Highest	2685.0
15MHz		20MHz	
Channel:	Frequency (MHz)	Channel:	Frequency (MHz)
Lowest	2503.5	Lowest	2506.0
Middle	2593.0	Middle	2593.0
Highest	2682.5	Highest	2680.0

5.3 Test modes

Data mode (QPSK)	Keep the EUT in data communicating mode (QPSK). (5MHz, 10MHz, 15MHz, 20MHz)
Data mode (16QAM)	Keep the EUT in data communicating mode (16QAM). (5MHz, 10MHz, 15MHz, 20MHz)

5.4 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
/	/	/	/	/

5.5 Related Submittal(s) / Grant (s)

FCC: This submittal(s) (test report) is filing to comply with Section Part 27 subpart M of the FCC CFR 47 Rules.

5.6 Test Methodology

FCC: Both conducted and radiated testing were performed according to the procedures document on TIA/EIA 603 and FCC CFR 47.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057

5.7 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC - Registration No.: 817957**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 817957, February 27, 2012.

- **IC - Registration No.: 10106A-1**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

5.8 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Address: No.B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,

Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755-23118282

Fax: +86-755-23116366

Email: info@ccis-cb.com

5.9 Test Instruments list

Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	08-23-2014	08-22-2017
BiConiLog Antenna	SCHWARZBECK	VULB9163	CCIS0005	02-25-2017	02-24-2018
Horn Antenna	SCHWARZBECK	BBHA9120D	CCIS0006	02-25-2017	02-24-2018
Pre-amplifier (10kHz-1.3GHz)	HP	8447D	CCIS0003	02-25-2017	02-24-2018
Pre-amplifier (1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	02-25-2017	02-24-2018
Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	02-25-2017	02-24-2018
Horn Antenna	ETS-LINDGREN	3160	GTS217	02-25-2017	02-24-2018
Spectrum analyzer 9k-30GHz	Rohde & Schwarz	FSP30	CCIS0023	02-25-2017	02-24-2018
Spectrum Analyzer 20Hz-26.5GHz	Agilent	N9020A	MY50510123	02-25-2017	02-24-2018
EMI Test Receiver	Rohde & Schwarz	ESRP7	CCIS0167	02-25-2017	02-24-2018
Loop antenna	Laplace instrument	RF300	EMC0701	02-25-2017	02-24-2018
Coaxial Cable	CCIS	N/A	CCIS0016	02-25-2017	02-24-2018
Coaxial Cable	CCIS	N/A	CCIS0017	02-25-2017	02-24-2018
Coaxial cable	CCIS	N/A	CCIS0018	02-25-2017	02-24-2018
Coaxial Cable	CCIS	N/A	CCIS0019	02-25-2017	02-24-2018
Coaxial Cable	CCIS	N/A	CCIS0087	02-25-2017	02-24-2018
Signal Generator	Rohde & Schwarz	SMR 20	CCIS0024	02-25-2017	02-24-2018
Signal Generator	Rohde & Schwarz	SMX	CCIS0064	02-25-2017	02-24-2018
Signal Analyzer	Rohde & Schwarz	FSIQ3	CCIS0088	02-25-2017	02-24-2018

6. System test configuration

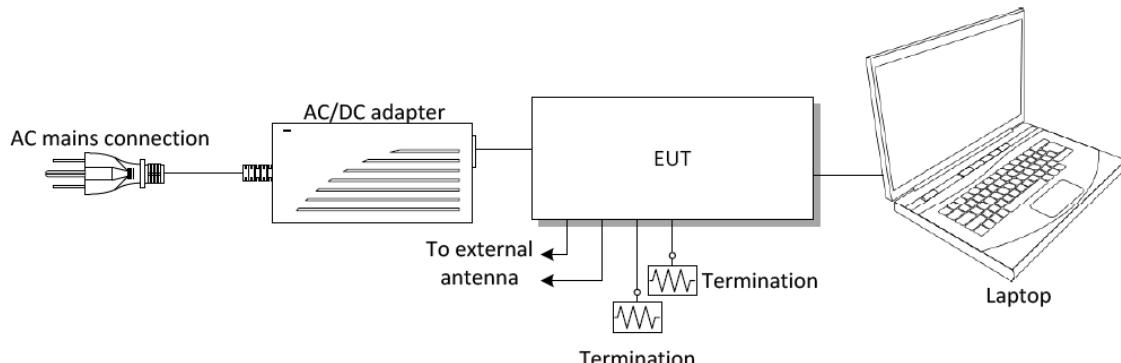
6.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

6.2 EUT Exercise

The EUT (Transmitter) was operated in the engineering mode to fix the Tx frequency which was for the purpose of the measurements.

6.3 Configuration of Tested System



6.4 Description of Test Modes

The EUT has been tested under operating condition.

EUT staying in continuous transmitting mode. Channel Low, Mid and High for each type band with rated data rate were chosen for full testing.

The field strength of spurious radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for three modes with power adaptor, earphone and Data cable. The worst-case H mode.

6.5 Transmit Output Power

Test Requirement:	Part 27.50 (h)(2)
Test Method:	FCC part2.1046
Limit:	(ii) If a main or booster station sectorizes or otherwise uses one or more transmitting antennas with a non-omnidirectional horizontal plane radiation pattern, the maximum EIRP in dBW in a given direction shall be determined by the following formula: EIRP = 33 dBW + 10 log(X/Y) dBW + 10 log(360/beamwidth) dBW, where X is the actual channel width in MHz, Y is either (i) 6 MHz if prior to transition or the station is in the MBS following transition or (ii) 5.5 MHz if the station is in the LBS and UBS following transition, and beamwidth is the total horizontal plane beamwidth of the individual transmitting antenna for the station or any sector measured at the half-power points.
Test Procedure:	RBW=1MHz, VBW=3MHz, Detector mode= RMS , Trace mode: Power averaging over 100 sweeps
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data

Band41 Power:

LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					39675	40620	41565
					2498.5MHz	2593.0MHz	2687.5MHz
41	5	QPSK	1	0	21.04	22.64	22.87
			1	12	21.36	22.89	23.18
			1	24	21.10	22.56	22.75
			12	0	21.21	22.75	22.92
			12	6	21.31	22.82	23.07
			12	11	21.20	22.71	22.89
			25	0	21.24	22.67	22.88
		16QAM	1	0	21.37	22.88	22.93
			1	12	21.72	23.12	23.18
			1	24	21.39	22.80	22.87
			12	0	21.25	22.85	22.97
			12	6	21.41	22.89	23.08
			12	11	21.25	22.75	23.01
			25	0	21.25	22.73	23.01
LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					39700	40620	41540
					2501.0MHz	2593.0MHz	2685.0MHz
41	10	QPSK	1	0	20.72	22.14	22.41
			1	24	21.49	23.00	23.03
			1	49	20.74	22.34	22.20
			25	0	21.01	22.53	22.70
			25	12	21.29	22.76	22.84
			25	24	21.13	22.61	22.60
			50	0	21.00	22.58	22.58
		16QAM	1	0	20.82	22.32	22.58
			1	24	21.66	23.10	23.20
			1	49	20.97	22.44	22.38
			25	0	21.07	22.61	22.78
			25	12	21.36	22.84	22.87
			25	24	21.13	22.68	22.68
			50	0	21.16	22.67	22.67

LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					39725	40620	41515
					2503.5MHz	2593.0MHz	2682.5MHz
41	15	QPSK	1	0	20.99	21.56	21.78
			1	37	21.39	22.90	22.92
			1	74	20.97	21.75	21.62
			36	0	20.80	22.24	22.42
			36	16	21.19	22.64	22.81
			36	35	20.87	22.32	22.37
			75	0	20.77	22.30	22.48
		16QAM	1	0	20.59	22.03	22.29
			1	37	21.81	23.26	23.38
			1	74	20.76	22.22	22.09
			36	0	20.80	22.25	22.50
			36	16	21.19	22.60	22.76
			36	35	20.95	22.41	22.37
			75	0	20.80	22.35	22.51
LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					39750	40620	41490
					2506.0MHz	2593.0MHz	2680.0MHz
41	20	QPSK	1	0	21.77	23.19	23.52
			1	49	21.45	22.92	23.04
			1	99	22.02	23.45	23.23
			50	0	21.51	22.86	23.14
			50	24	21.47	22.88	23.07
			50	49	21.62	23.07	23.01
			100	0	21.62	23.00	23.18
		16QAM	1	0	22.26	23.68	23.97
			1	49	21.93	23.35	23.50
			1	99	22.51	24.00	23.76
			50	0	21.49	22.98	23.23
			50	24	21.53	22.95	23.07
			50	49	21.69	23.14	23.14
			100	0	21.65	23.06	23.29

6.6 Occupy Bandwidth

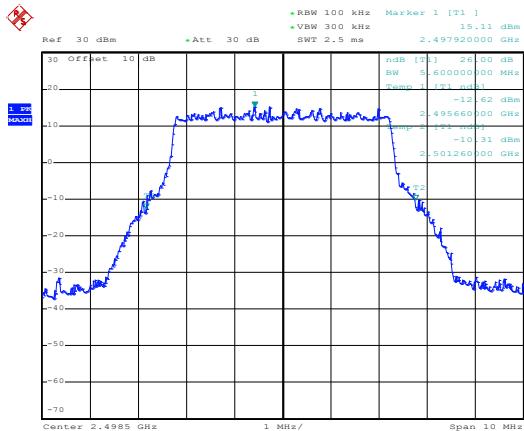
Test Requirement:	Part 27.53(m)
Test Method:	FCC part 2.1049
Test Procedure:	<ol style="list-style-type: none">1. The EUT's output RF connector was connected with a short cable to the spectrum analyzer2. The transmitter shall be operated at its maximum carrier power measured under normal test conditions.3. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.4. The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately 3x RBW.
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

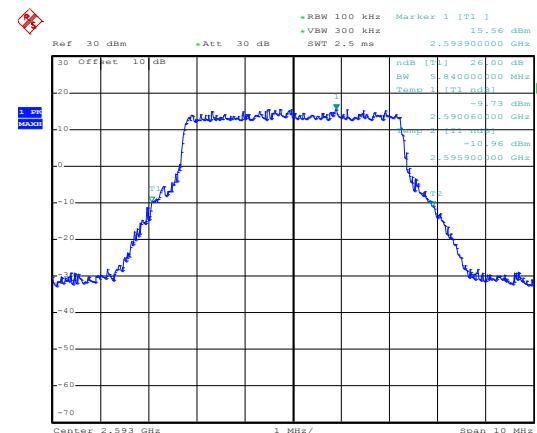
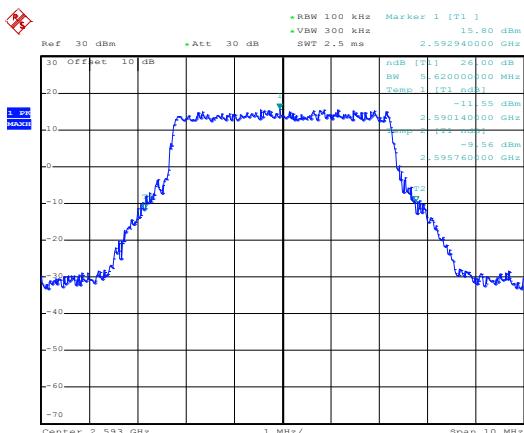
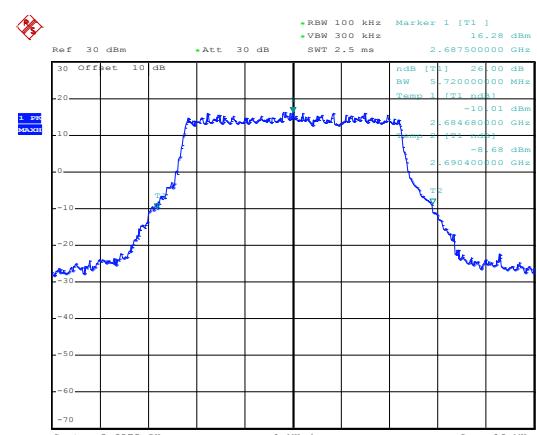
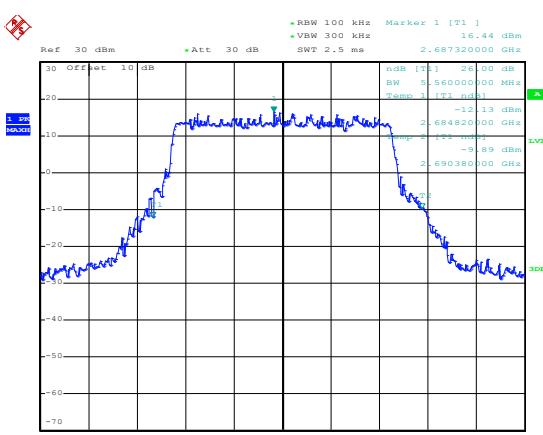
Measurement Data

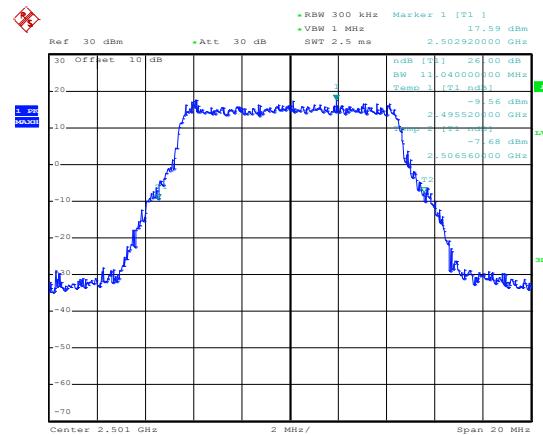
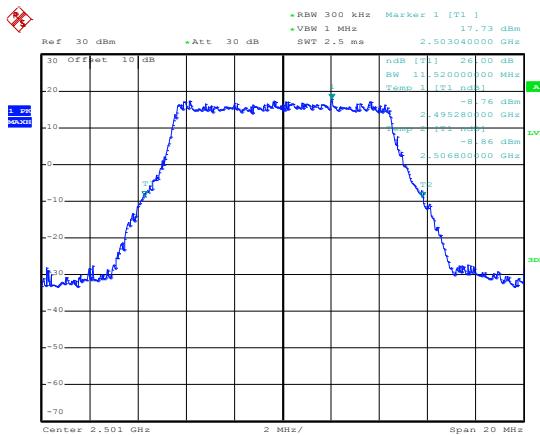
Bandwidth(MHz)	Modulation	Test Channel	26dB Occupy bandwidth (MHz)
5	QPSK	Lowest	5.60
		Middle	5.62
		Highest	5.56
	16QAM	Lowest	5.54
		Middle	5.84
		Highest	5.72
10	QPSK	Lowest	11.52
		Middle	11.68
		Highest	11.36
	16QAM	Lowest	11.04
		Middle	11.44
		Highest	11.36
15	QPSK	Lowest	15.90
		Middle	15.48
		Highest	16.44
	16QAM	Lowest	15.66
		Middle	15.66
		Highest	15.84
20	QPSK	Lowest	20.40
		Middle	20.32
		Highest	20.08
	16QAM	Lowest	19.68
		Middle	19.60
		Highest	19.92

Bandwidth(MHz)	Modulation	Test Channel	99% Occupy bandwidth (MHz)
5	QPSK	Lowest	4.58
		Middle	4.54
		Highest	4.52
	16QAM	Lowest	4.54
		Middle	4.54
		Highest	4.52
10	QPSK	Lowest	9.20
		Middle	9.36
		Highest	9.24
	16QAM	Lowest	9.20
		Middle	9.20
		Highest	9.24
15	QPSK	Lowest	13.56
		Middle	13.56
		Highest	13.56
	16QAM	Lowest	13.50
		Middle	13.56
		Highest	13.56
20	QPSK	Lowest	18.00
		Middle	18.00
		Highest	18.08
	16QAM	Lowest	18.00
		Middle	18.00
		Highest	17.92

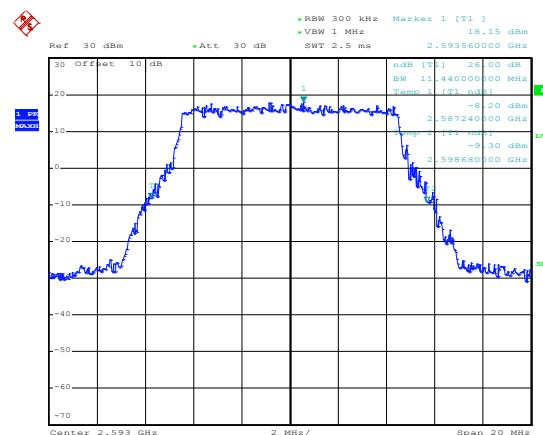
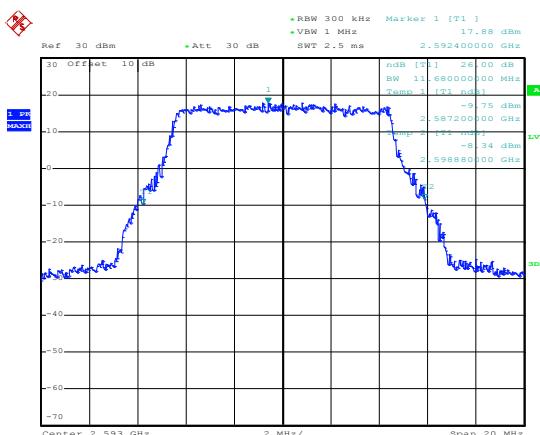
Test plot as follows:

**26dB OBW
5MHz**
QPSK

16QAM

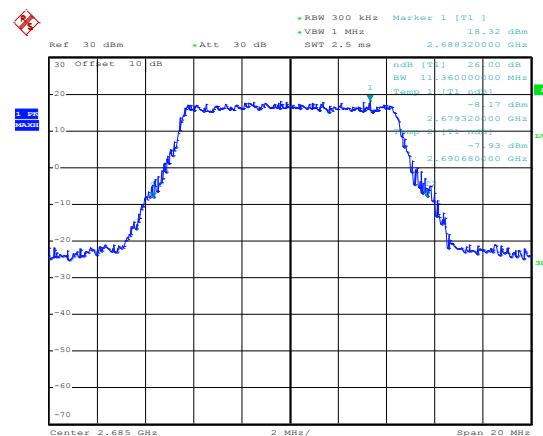
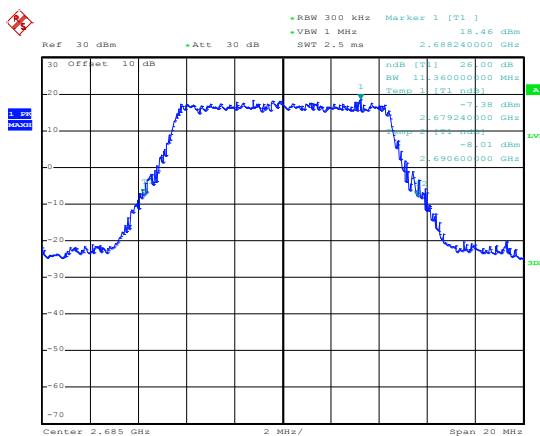
Lowest channel

Middle channel

Highest channel



Lowest channel



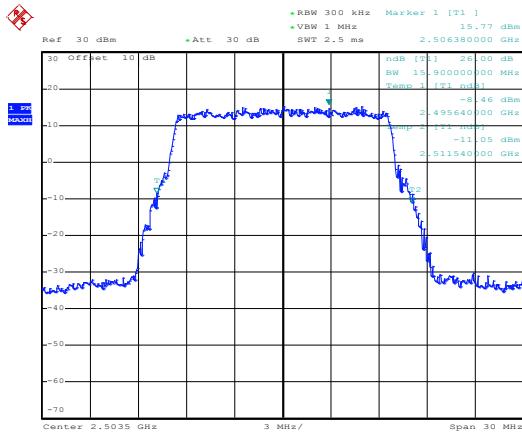
Middle channel



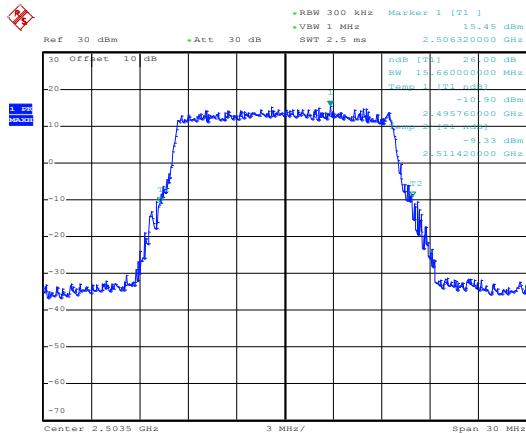
Highest channel

15MHz

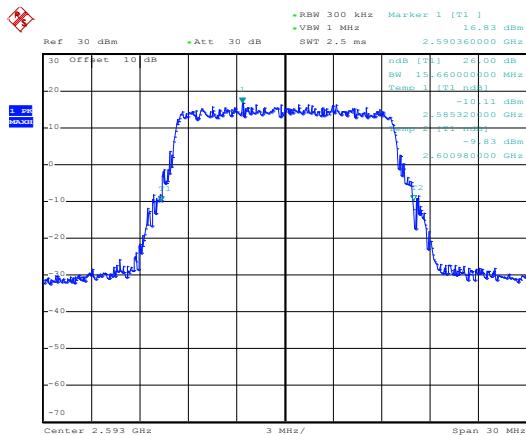
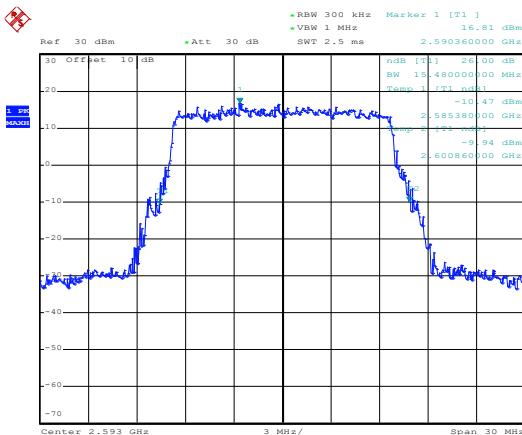
QPSK



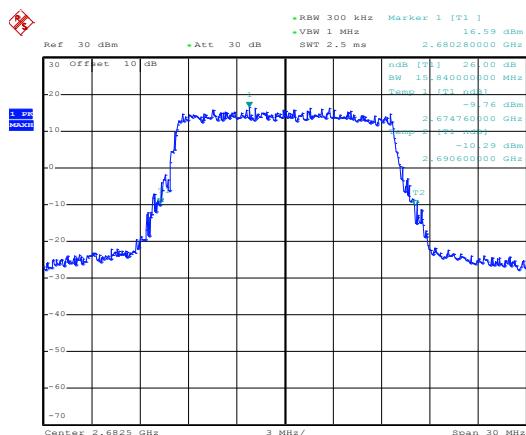
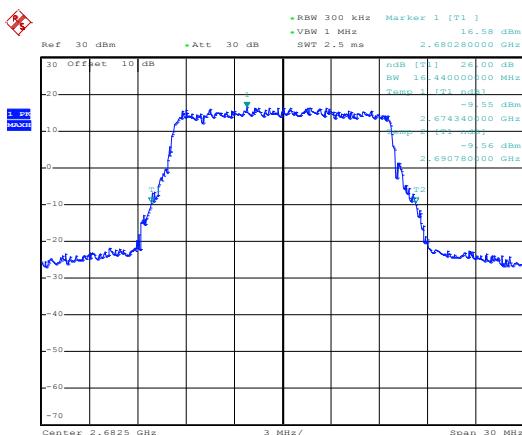
16QAM



Lowest channel



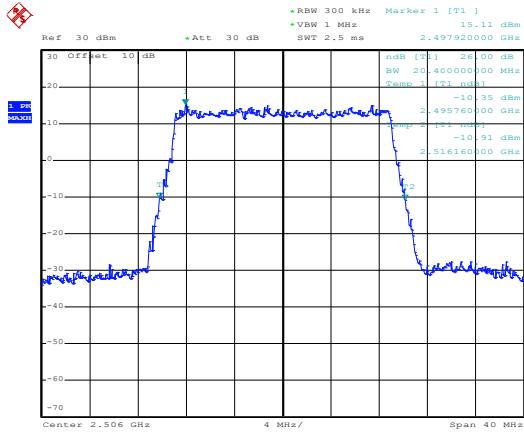
Middle channel



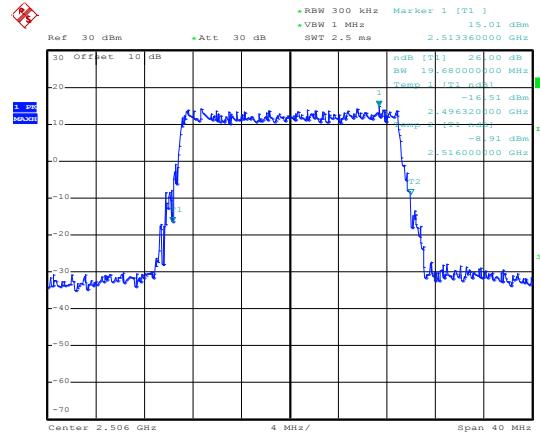
Highest channel

20MHz

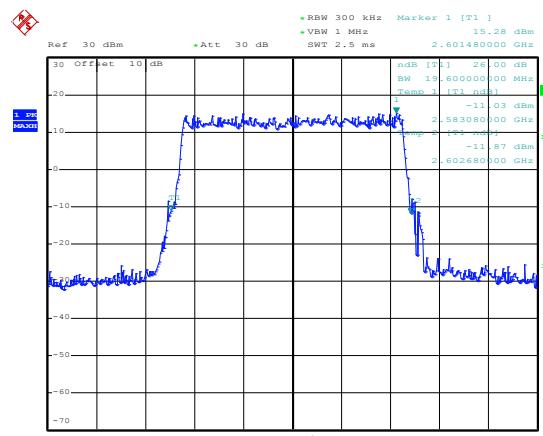
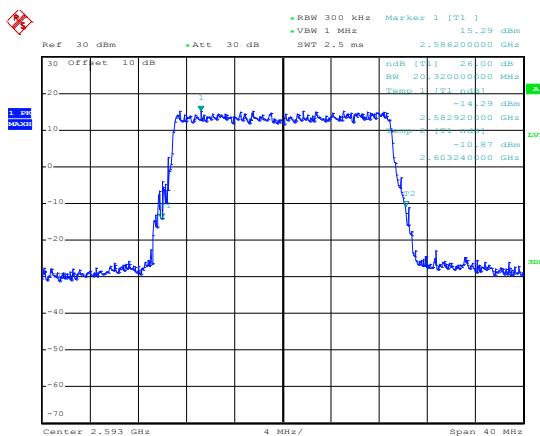
QPSK



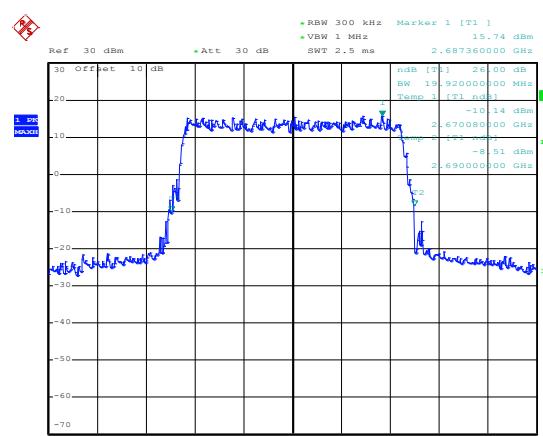
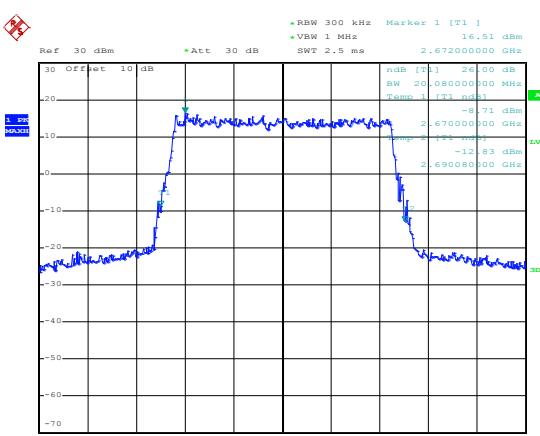
16QAM



Lowest channel



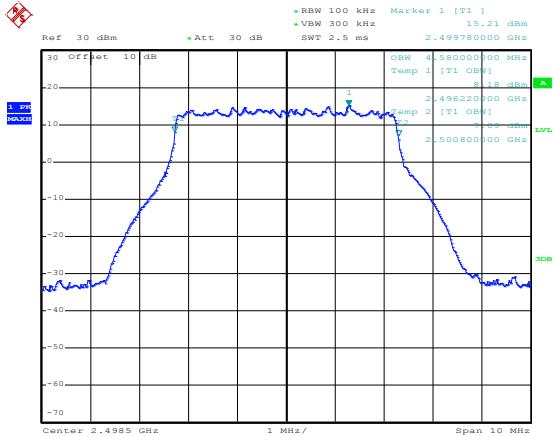
Middle channel



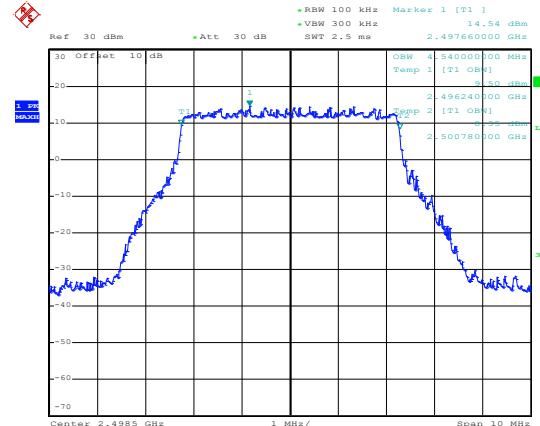
Highest channel

99% OBW
5MHz

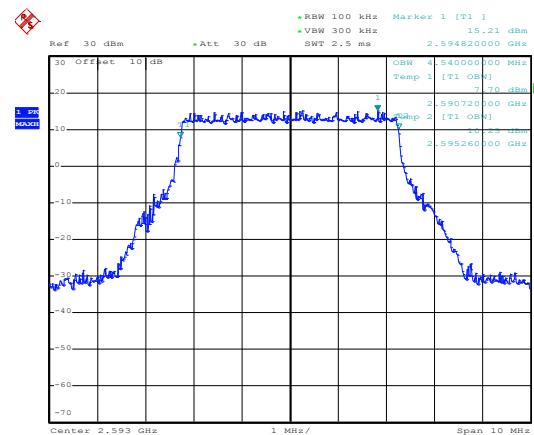
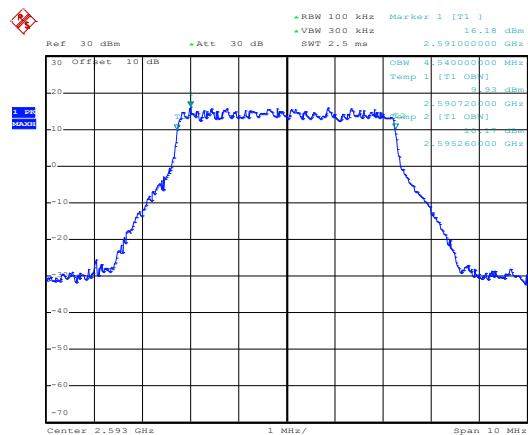
QPSK



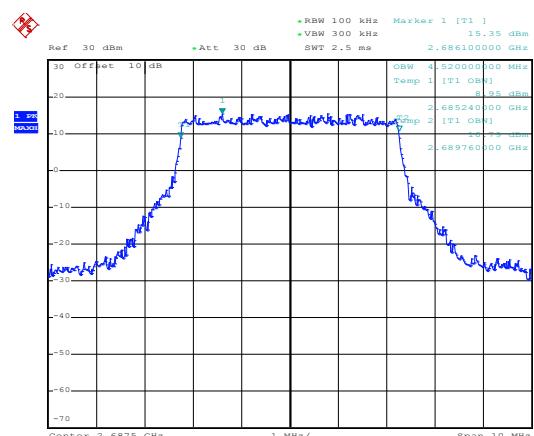
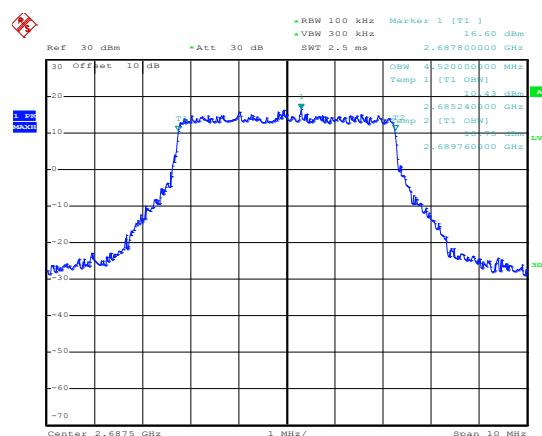
16QAM



Lowest channel



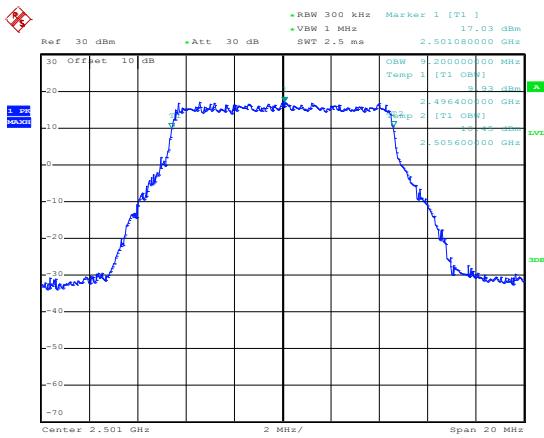
Middle channel



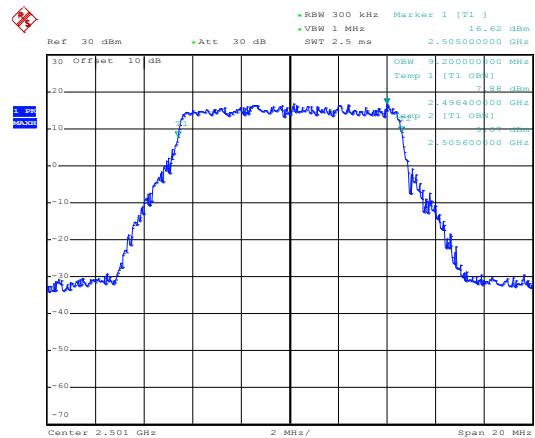
Highest channel

10MHz

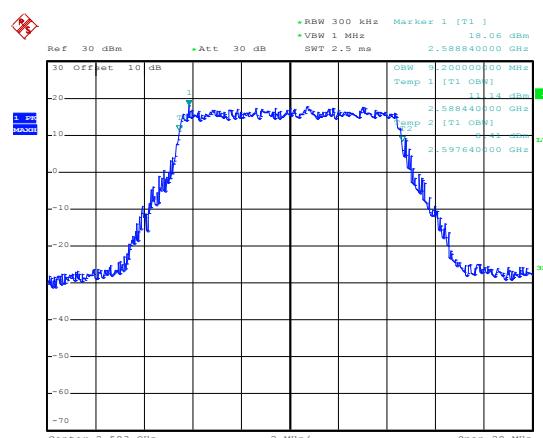
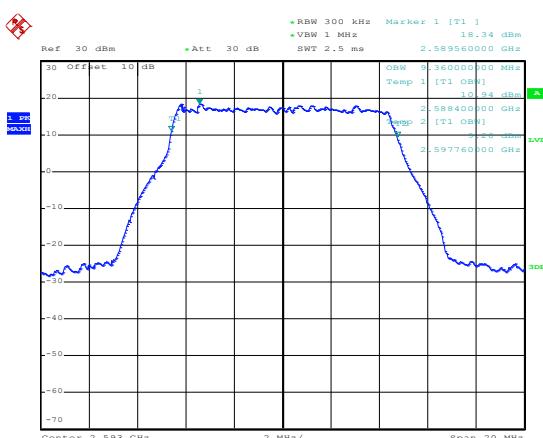
QPSK



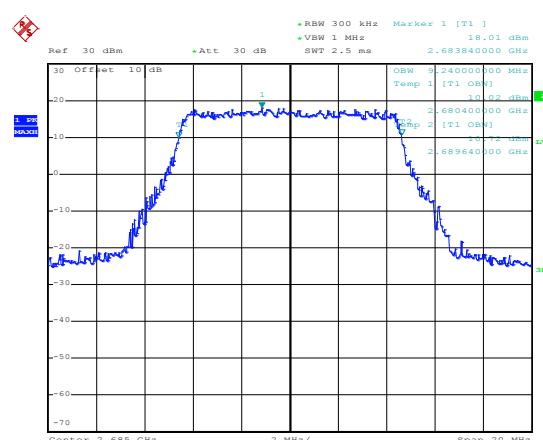
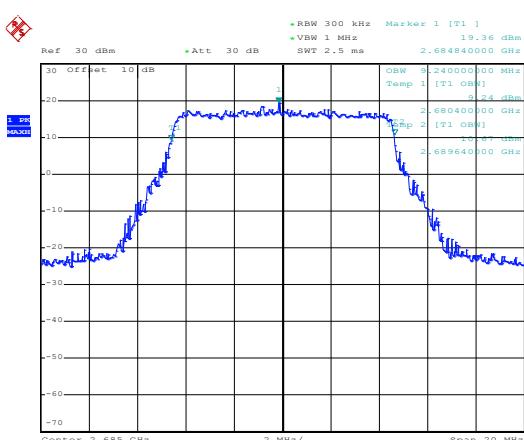
16QAM



Lowest channel



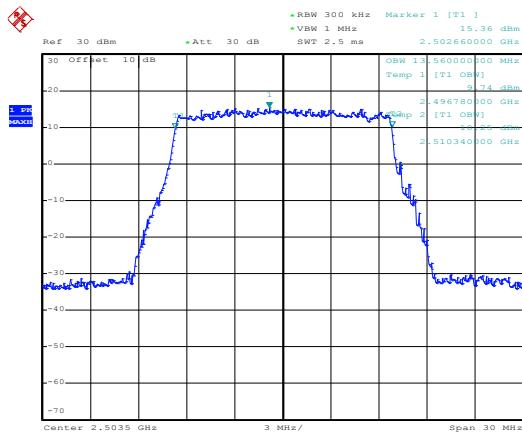
Middle channel



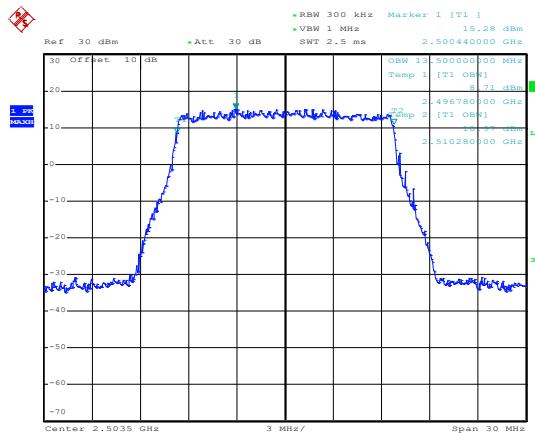
Highest channel



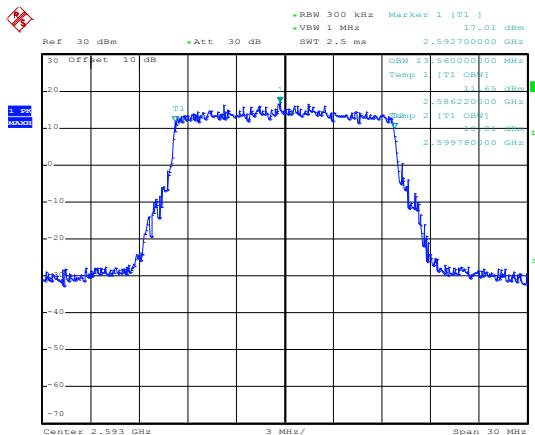
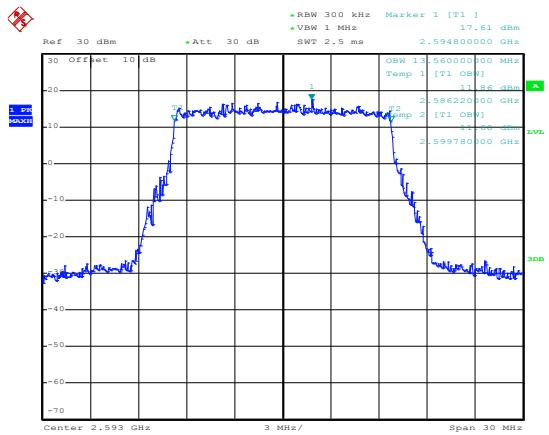
QPSK



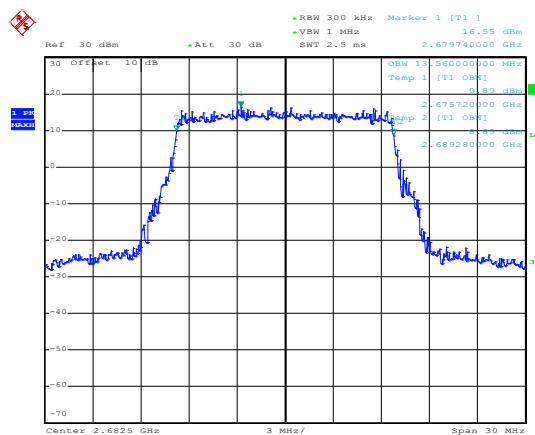
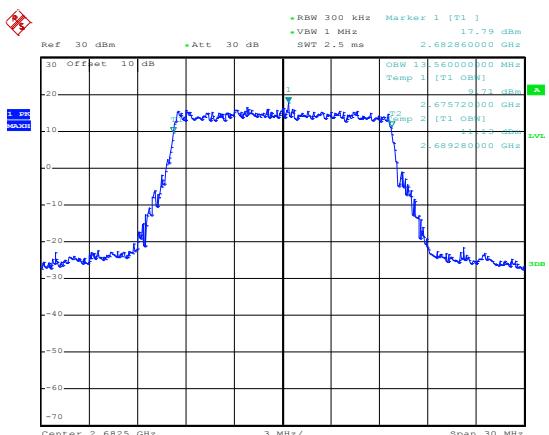
16QAM



Lowest channel



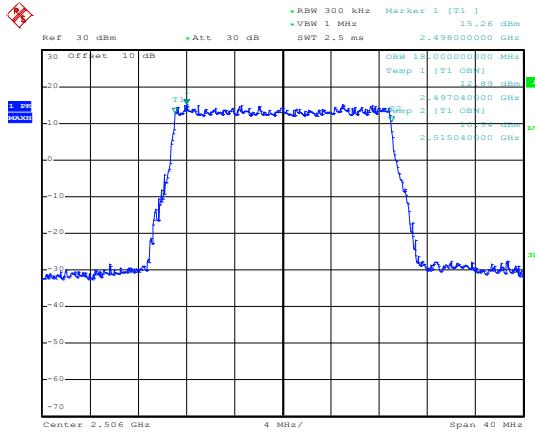
Middle channel



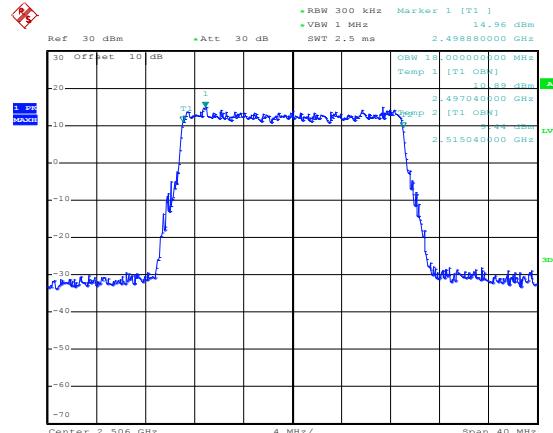
Highest channel

20MHz

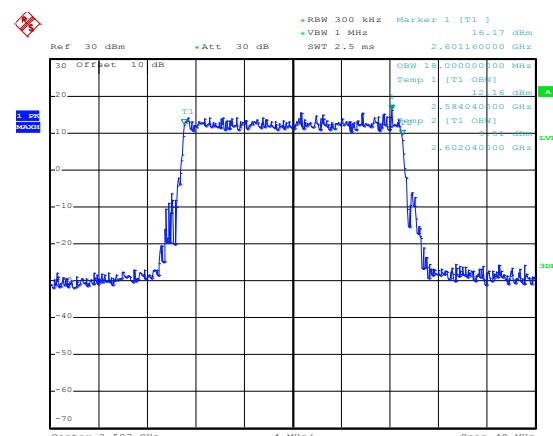
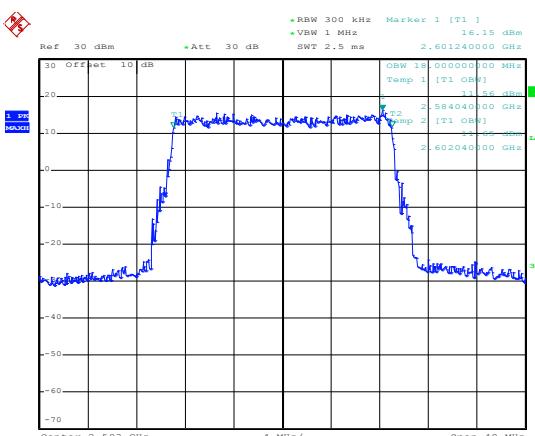
QPSK



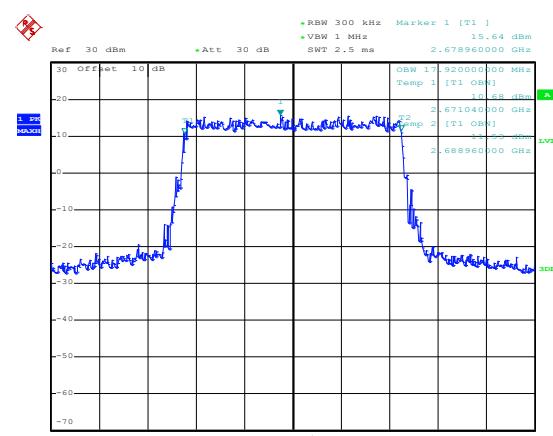
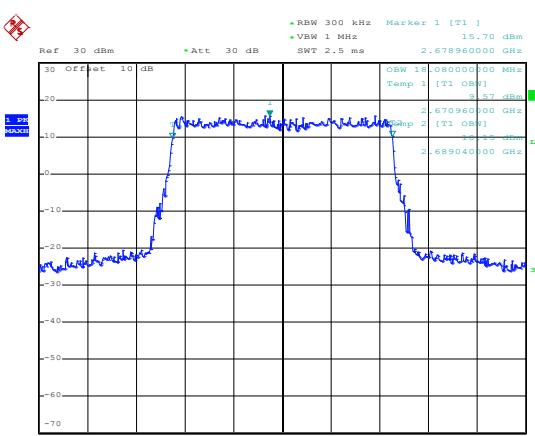
16QAM



Lowest channel



Middle channel



Highest channel

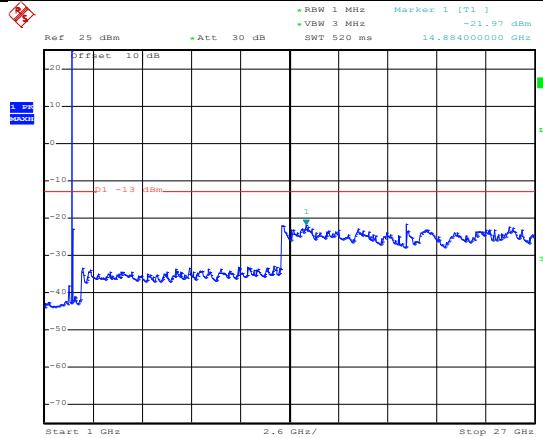
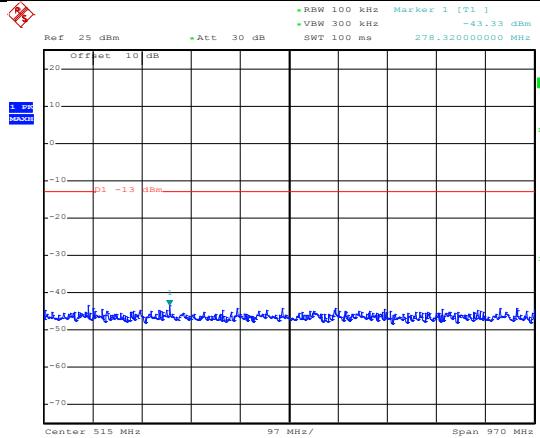
6.7 Out of band emission at antenna terminals

Test Requirement:	Part 27.53(m)
Test Method:	FCC part2.1051
Limit:	-13dBm
Test Procedure:	<ol style="list-style-type: none">1 The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.2 The resolution bandwidth of the spectrum analyzer was set at 100 kHz when below 1GHz, 1MHz when above 1 GHz; sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.3 For the out of band: Set the RBW=100 kHz, VBW=300 kHz when below 1 GHz, RBW =1 MHz, VBW=3 MHz when above 1 GHz, Start=30MHz, Stop= 10th harmonic.4 Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions.
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	During the test, pre-scan the QPSK, 16QAM modulation, and found the QPSK modulation (10MHz/20MHz middle channel) is the worst case.

Test plots as follows (worst case):

**Spurious emission
LTE band 41 Part: 5MHz**

Test Mode:	LTE band 41(5 MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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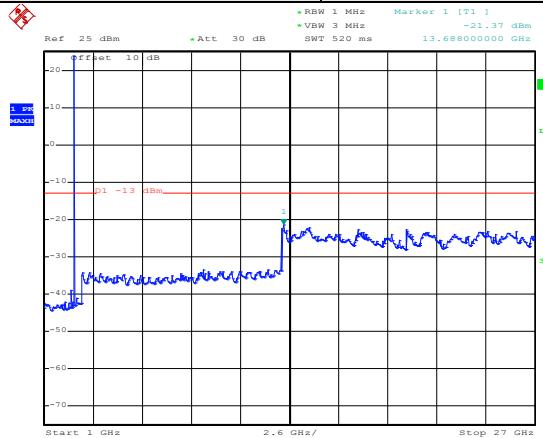
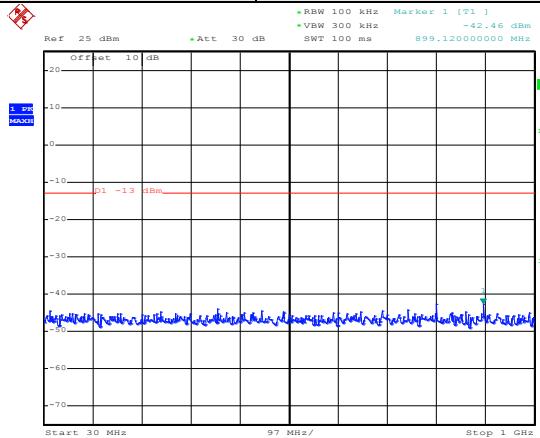
Date: 28.JUN.2017 22:45:24

Date: 28.JUN.2017 23:48:05

30MHz~1GHz

1GHz~27GHz

Test Mode:	LTE band 41(5 MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Middle channel
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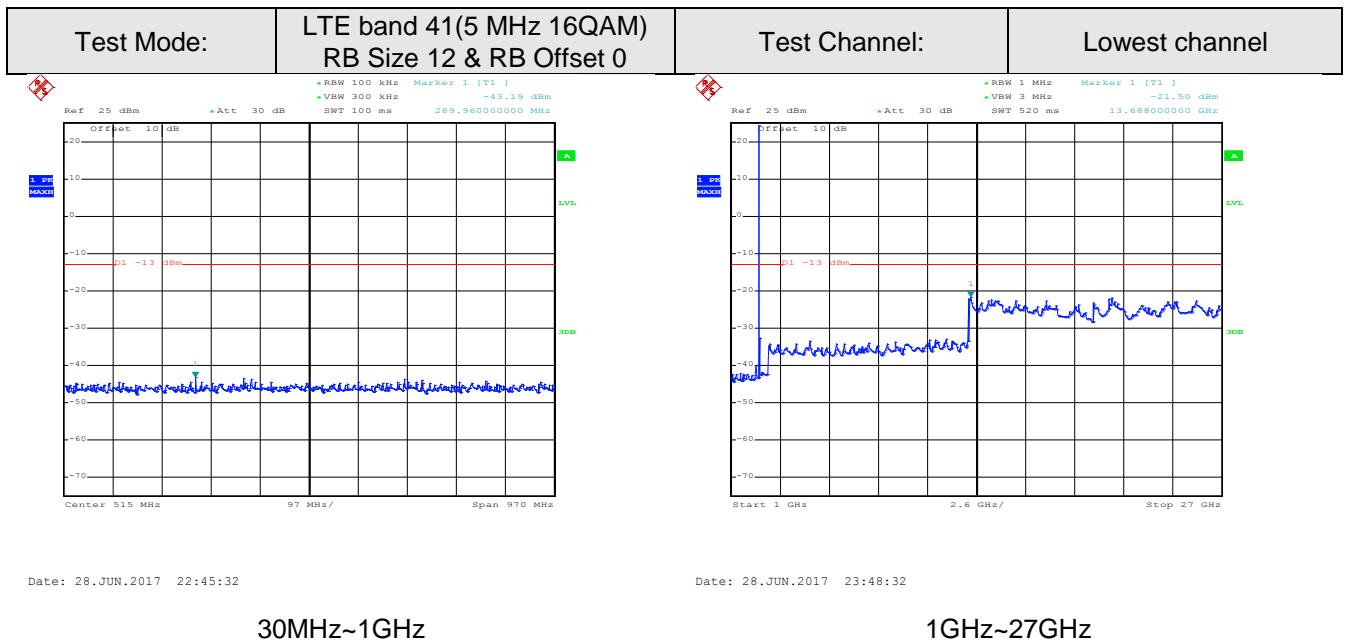
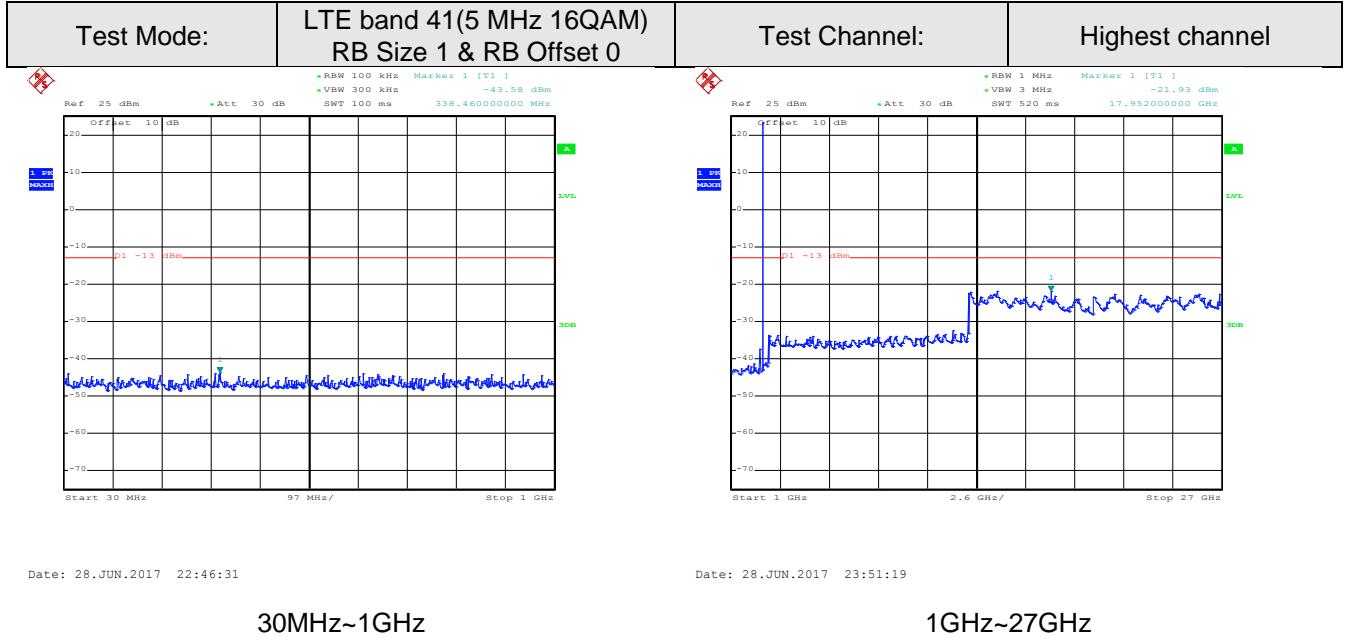


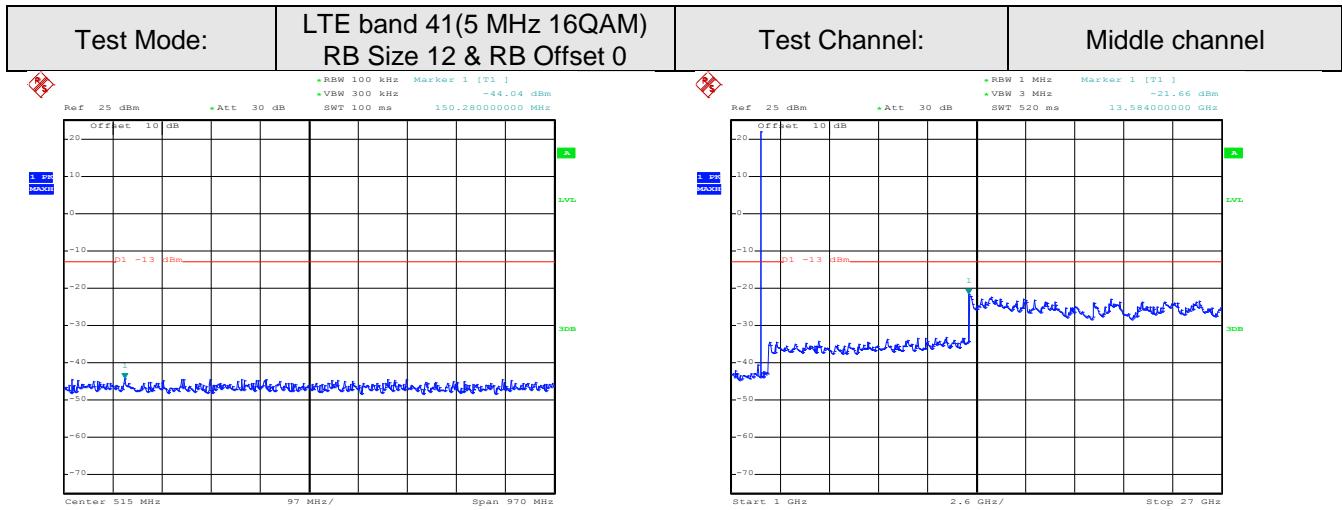
Date: 28.JUN.2017 22:46:17

Date: 28.JUN.2017 23:50:20

30MHz~1GHz

1GHz~27GHz



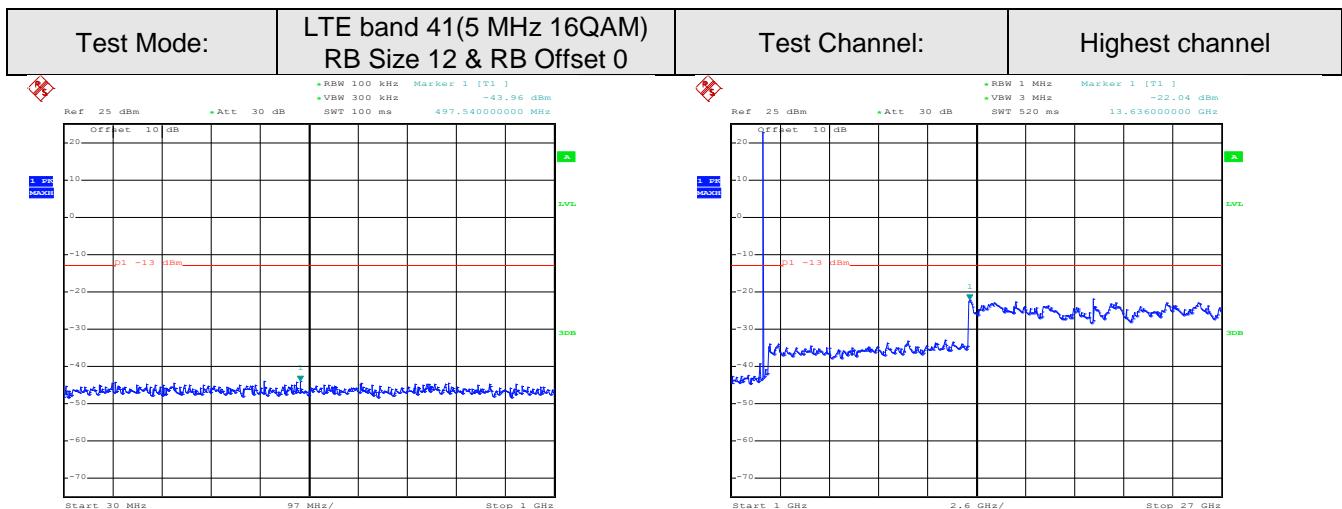


Date: 28.JUN.2017 22:46:08

30MHz~1GHz

Date: 28.JUN.2017 23:49:56

1GHz~27GHz

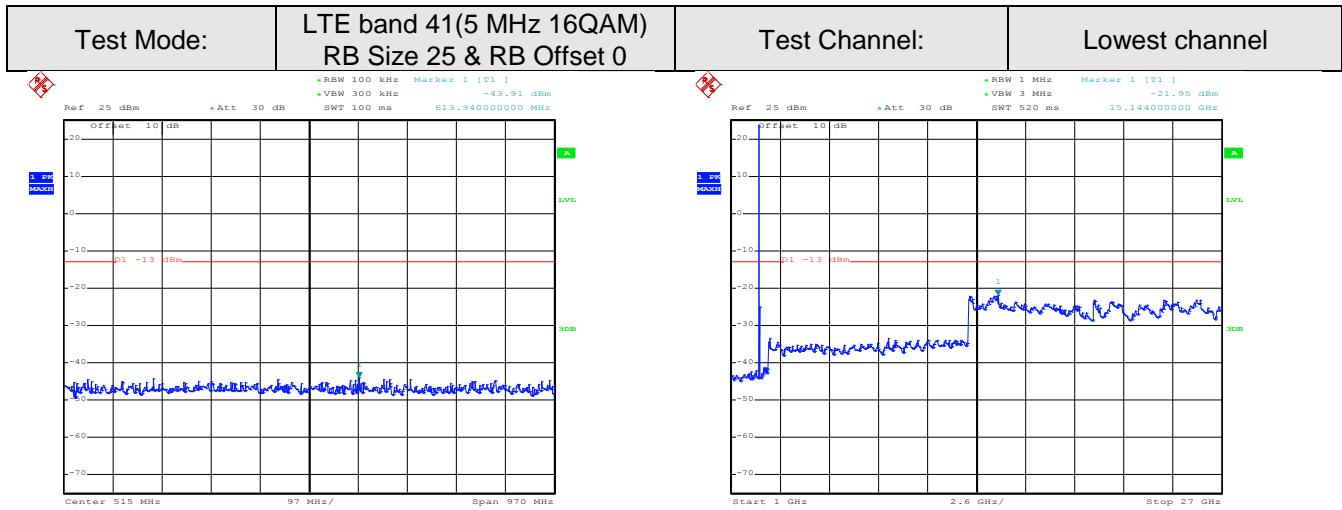


Date: 28.JUN.2017 22:46:41

30MHz~1GHz

Date: 28.JUN.2017 23:51:43

1GHz~27GHz

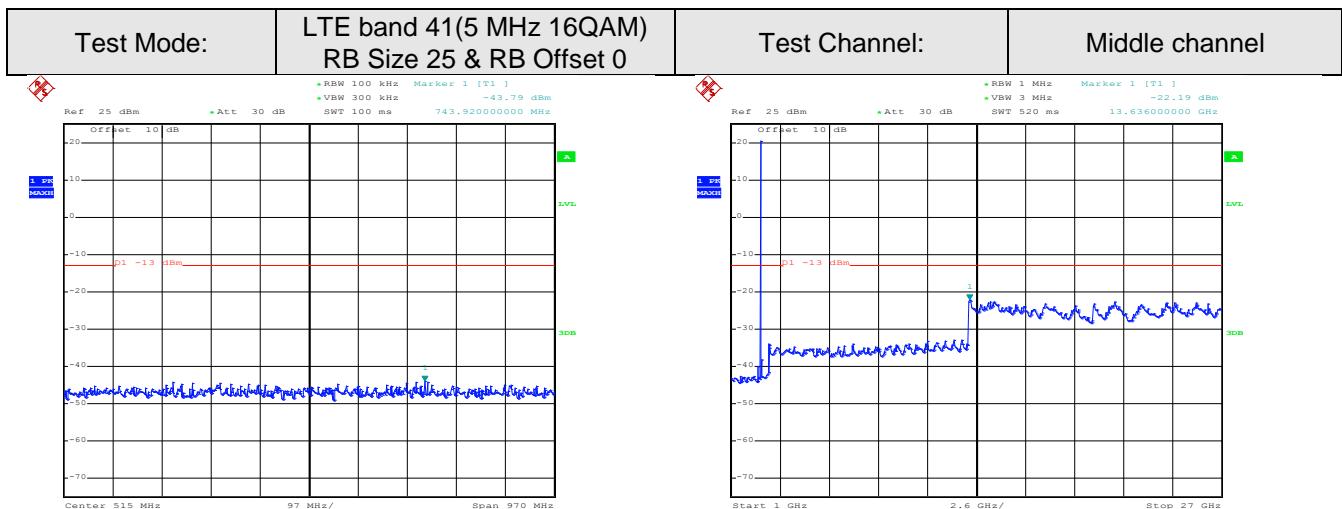


Date: 28.JUN.2017 22:45:47

30MHz~1GHz

Date: 28.JUN.2017 23:49:04

1GHz~27GHz

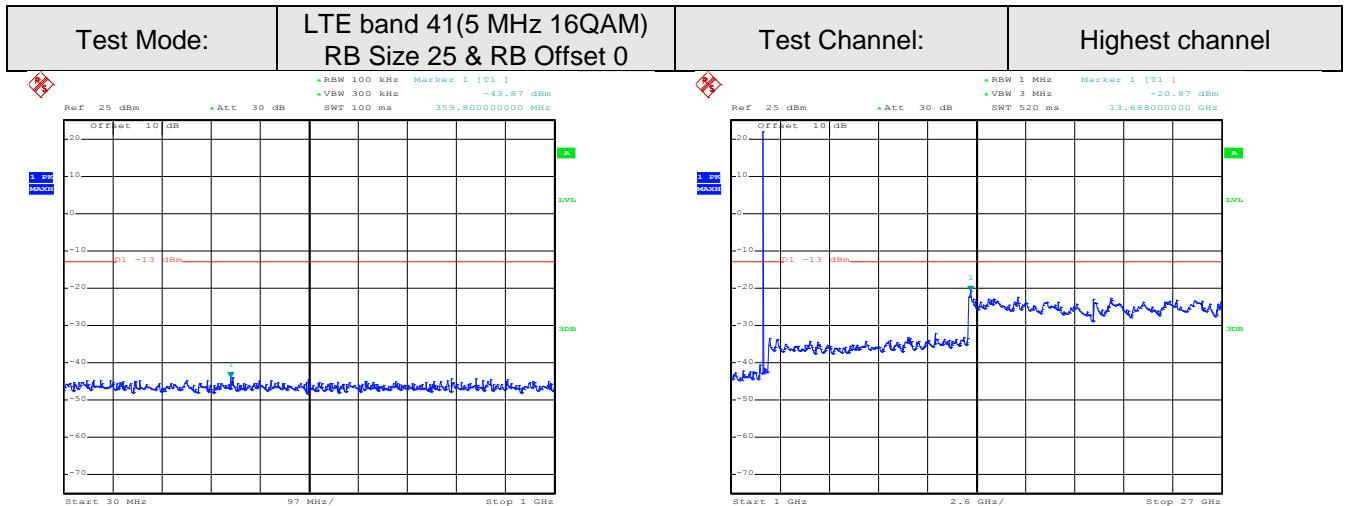


Date: 28.JUN.2017 22:45:58

30MHz~1GHz

Date: 28.JUN.2017 23:49:27

1GHz~27GHz

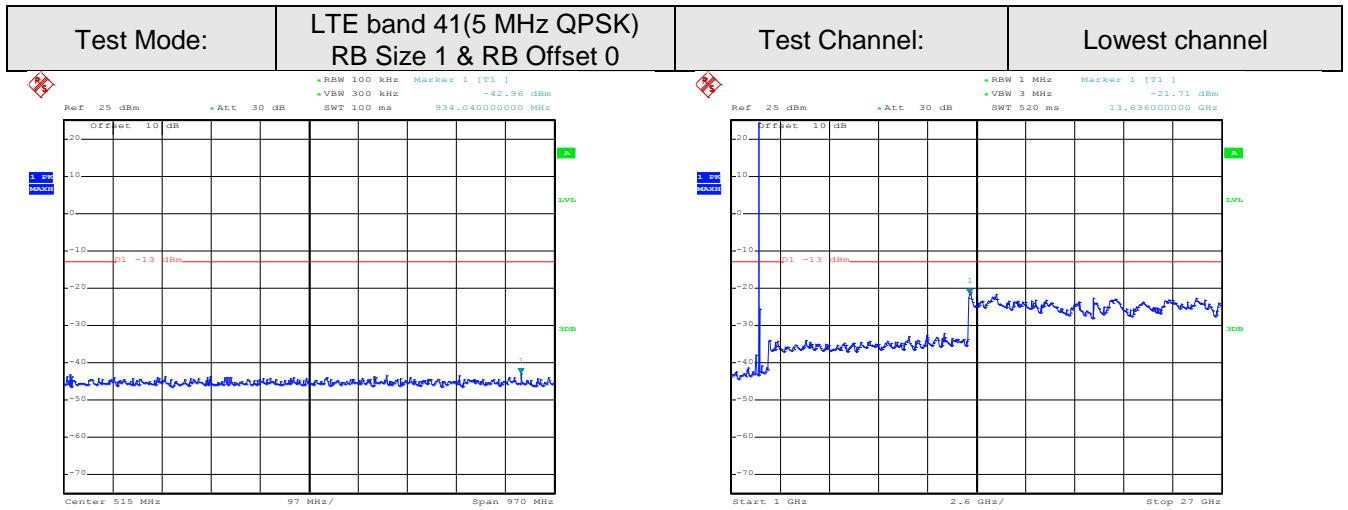


Date: 28.JUN.2017 22:46:53

30MHz~1GHz

Date: 28.JUN.2017 23:52:07

1GHz~27GHz

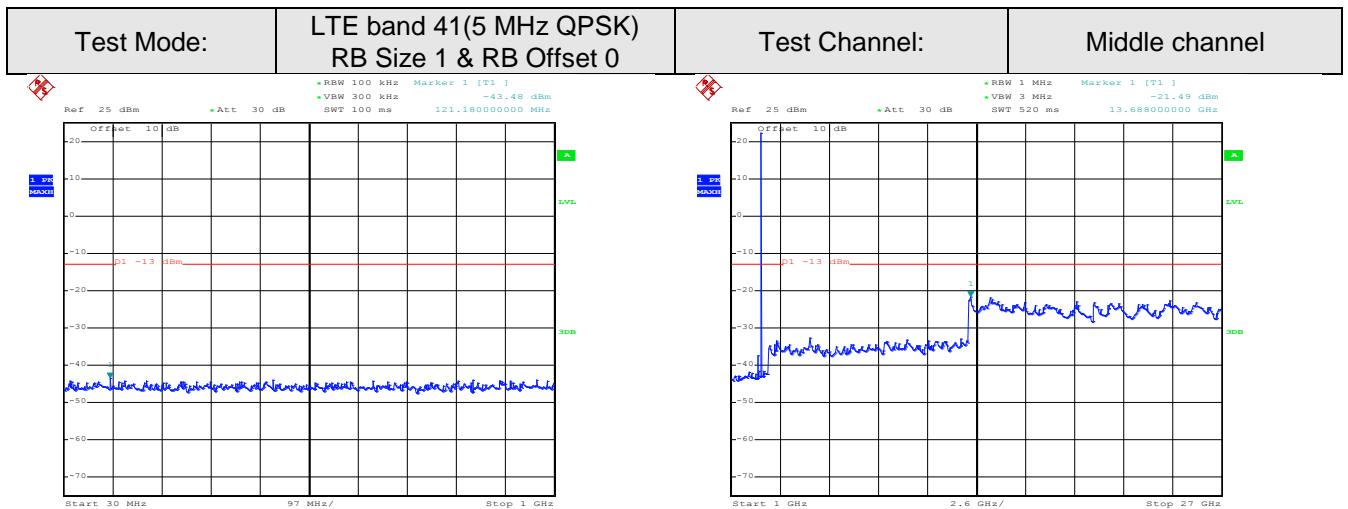


Date: 28.JUN.2017 22:45:20

30MHz~1GHz

Date: 28.JUN.2017 23:47:53

1GHz~27GHz

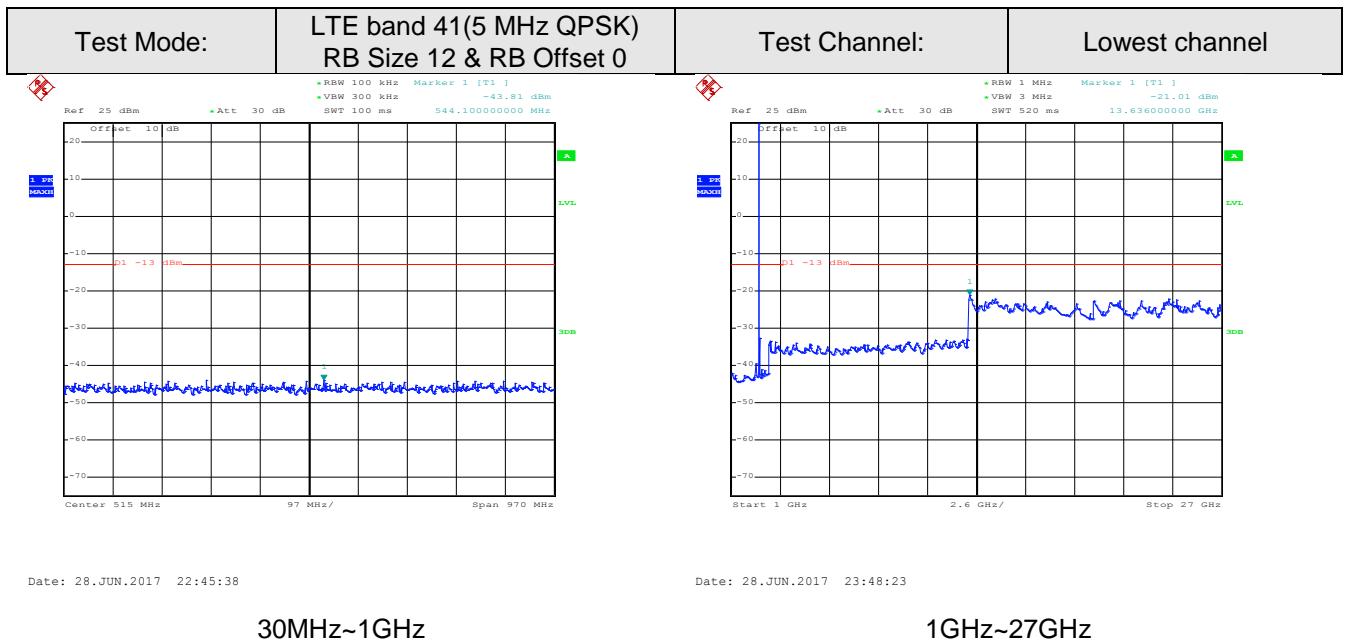
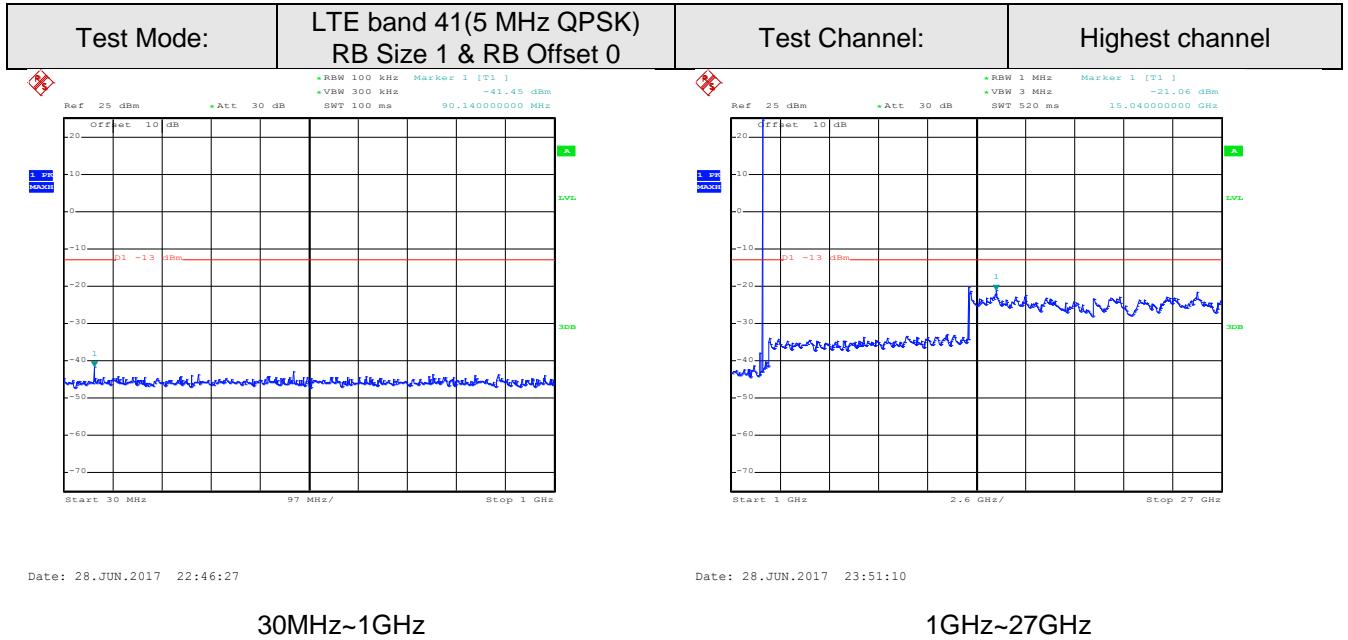


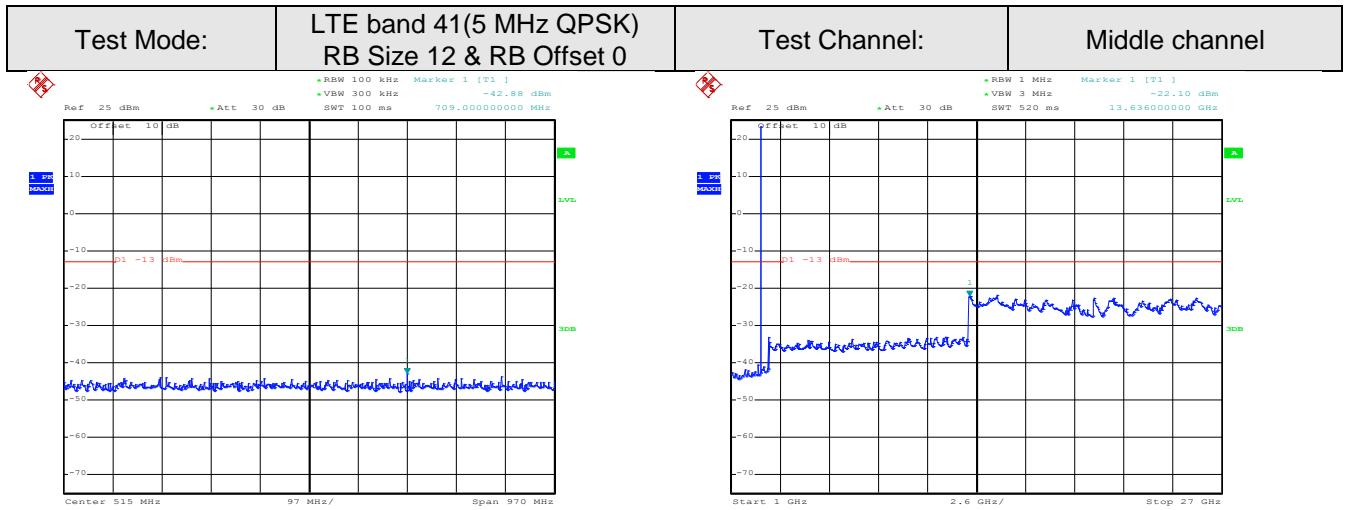
Date: 28.JUN.2017 22:46:14

30MHz~1GHz

Date: 28.JUN.2017 23:50:12

1GHz~27GHz



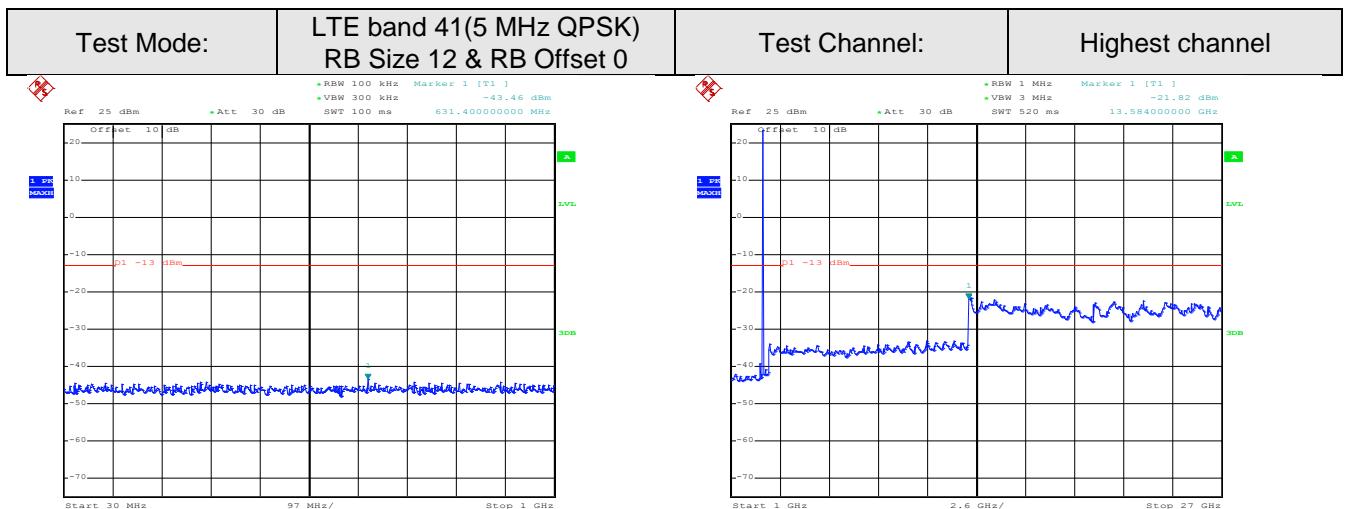


Date: 28.JUN.2017 22:46:04

30MHz~1GHz

Date: 28.JUN.2017 23:49:50

1GHz~27GHz

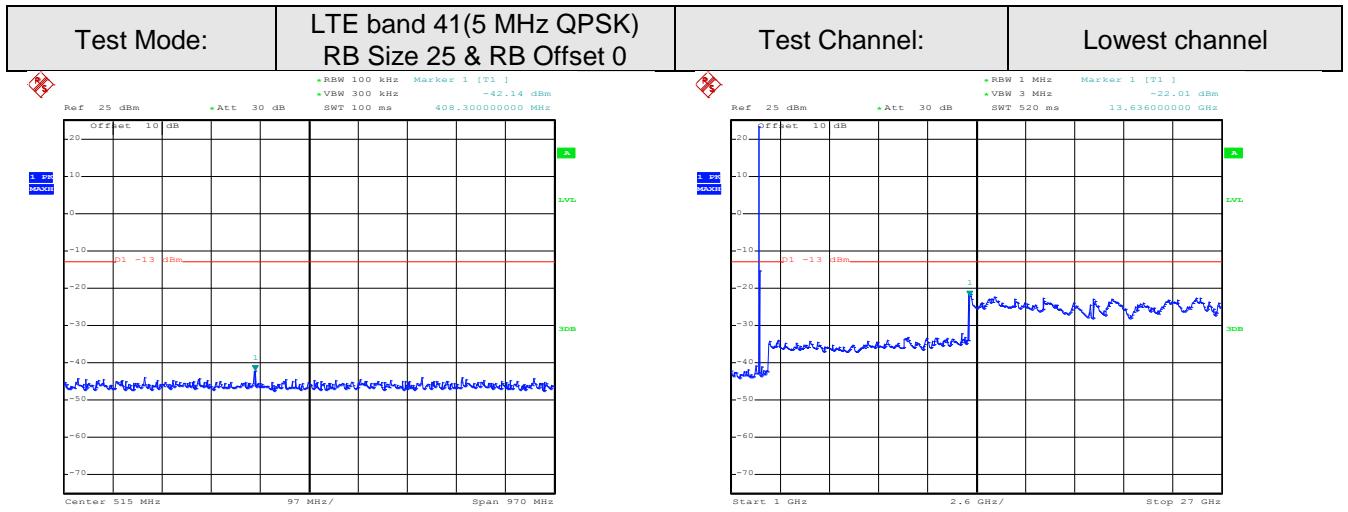


Date: 28.JUN.2017 22:46:36

30MHz~1GHz

Date: 28.JUN.2017 23:51:35

1GHz~27GHz

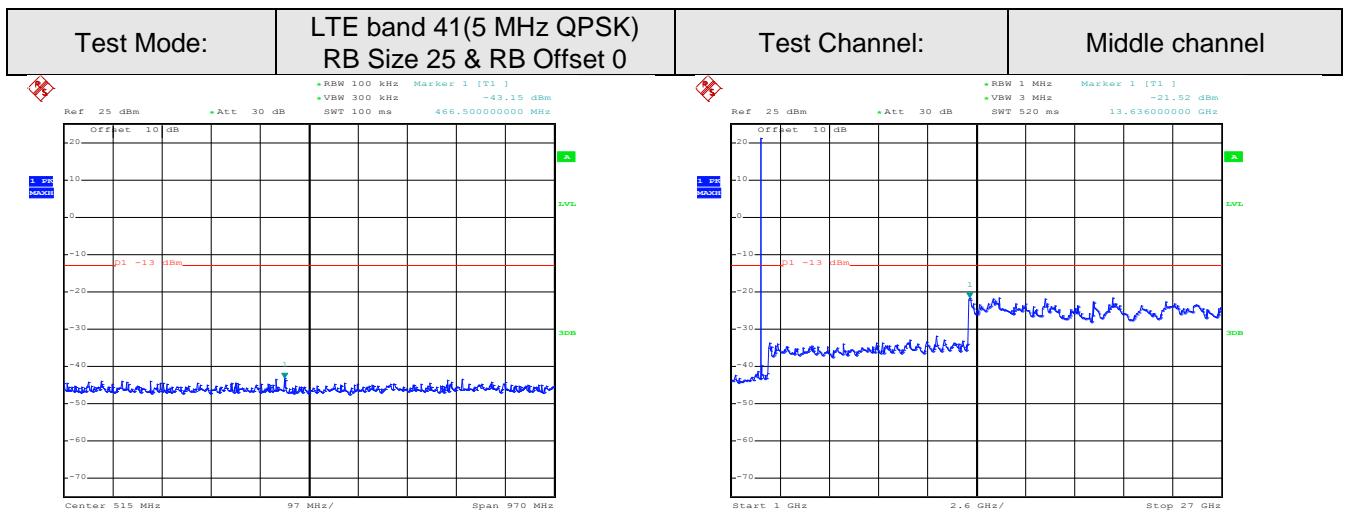


Date: 28.JUN.2017 22:45:44

30MHz~1GHz

Date: 28.JUN.2017 23:48:49

1GHz~27GHz



Date: 28.JUN.2017 22:45:55

30MHz~1GHz

Date: 28.JUN.2017 23:49:19

1GHz~27GHz

Test Mode: LTE band 41(5 MHz QPSK)
RB Size 25 & RB Offset 0

Test Channel:

Highest channel

Legend: Ref 25 dBm, Att 30 dB, SWT 100 ms, SWT 520 ms.

Marker 1 [T1]:

Parameter	Value
RWB	100 kHz
VBW	300 kHz
Offset	1.0 dB
SWT	100 ms
Marker 1	-42.33 dBm
Marker 2	474.260000000 MHz

Marker 1 [T1]:

Parameter	Value
RWB	1 MHz
VBW	3 MHz
Offset	1.0 dB
SWT	520 ms
Marker 1	-19.98 dBm
Marker 2	13.740000000 GHz

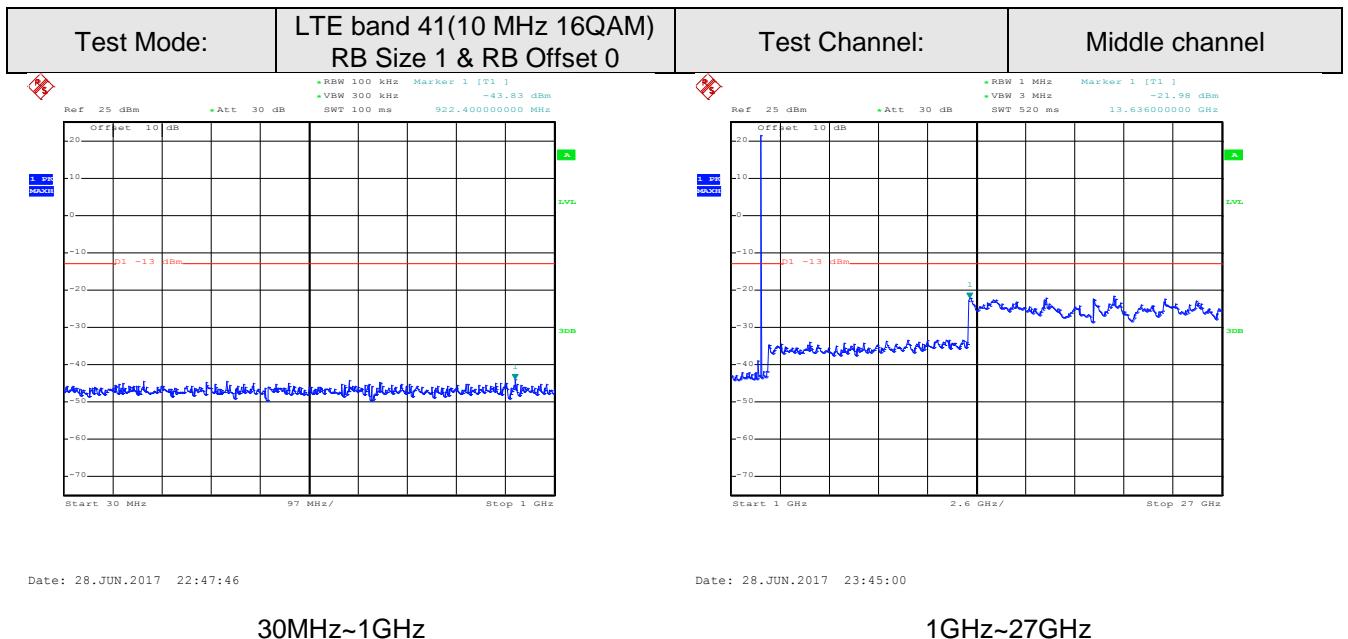
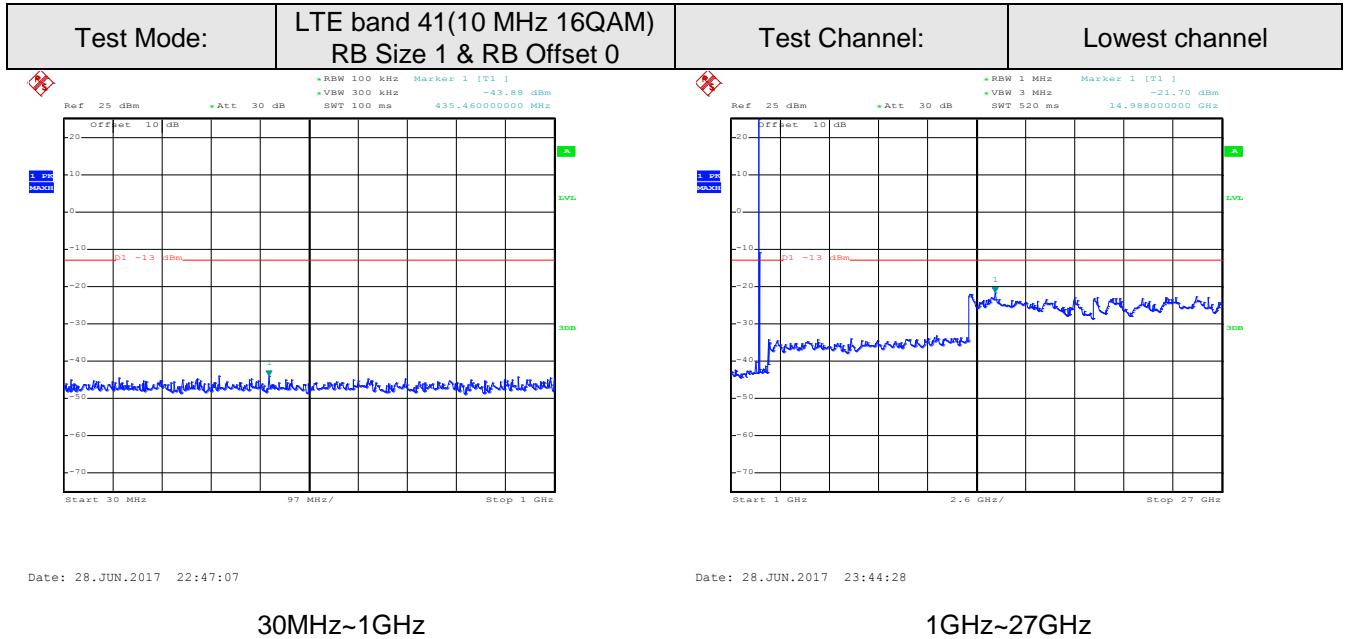
Date: 28.JUN.2017 22:46:47

Date: 28.JUN.2017 23:51:58

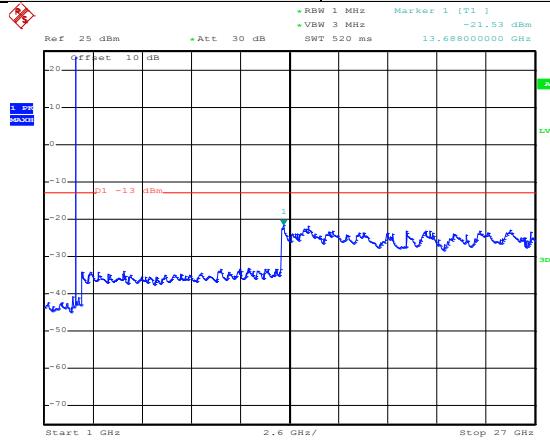
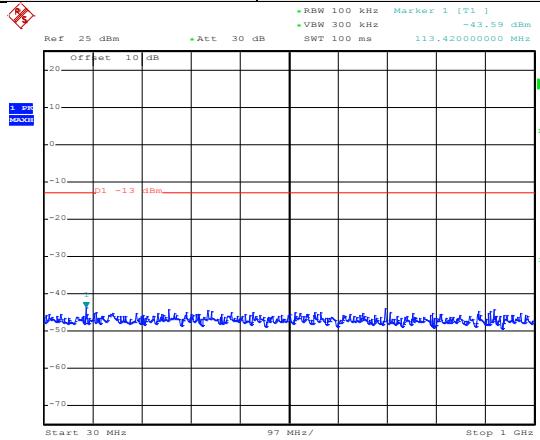
30MHz~1GHz

1GHz~27GHz

LTE band 41 Part: 10MHz



Test Mode:	LTE band 41(10 MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Highest channel
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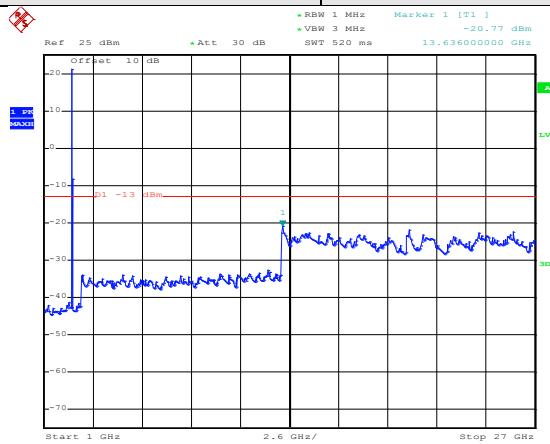
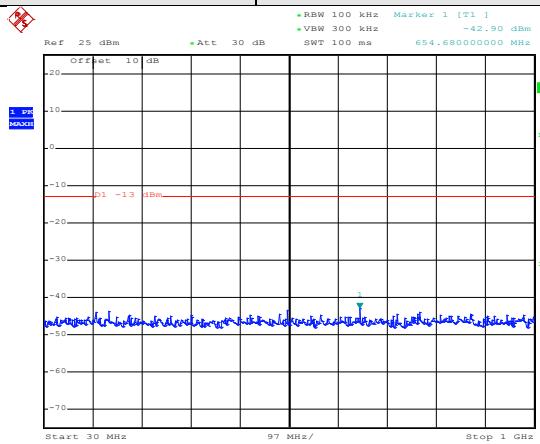
Date: 28.JUN.2017 22:48:17

30MHz~1GHz

Date: 28.JUN.2017 23:47:08

1GHz~27GHz

Test Mode:	LTE band 41(10 MHz 16QAM) RB Size 25 & RB Offset 0	Test Channel:	Lowest channel
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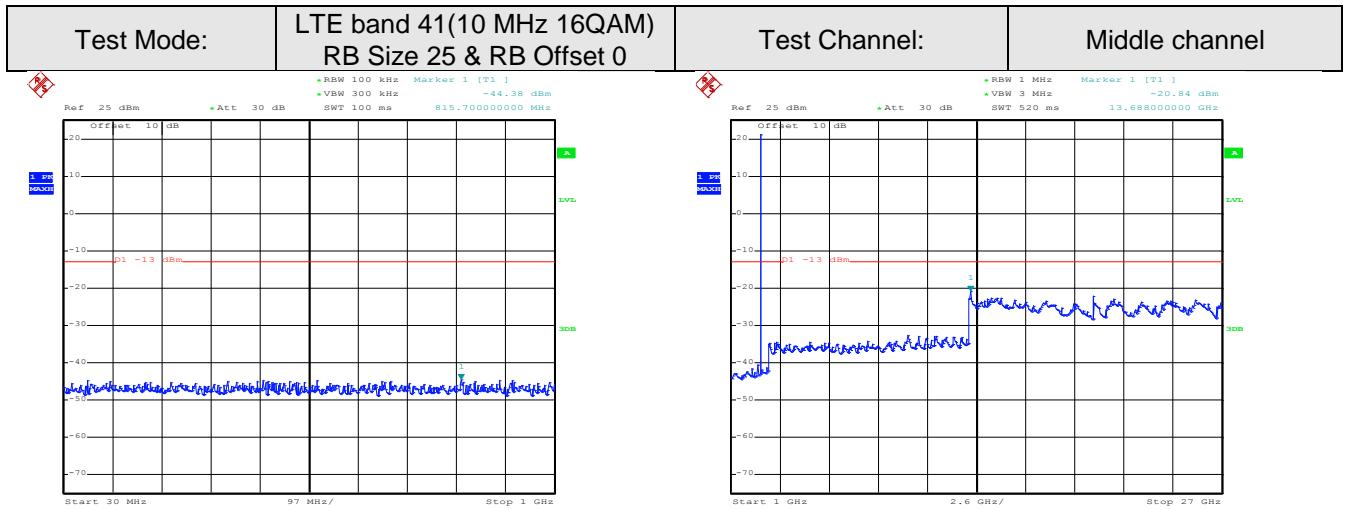


Date: 28.JUN.2017 22:47:25

30MHz~1GHz

Date: 28.JUN.2017 23:44:06

1GHz~27GHz

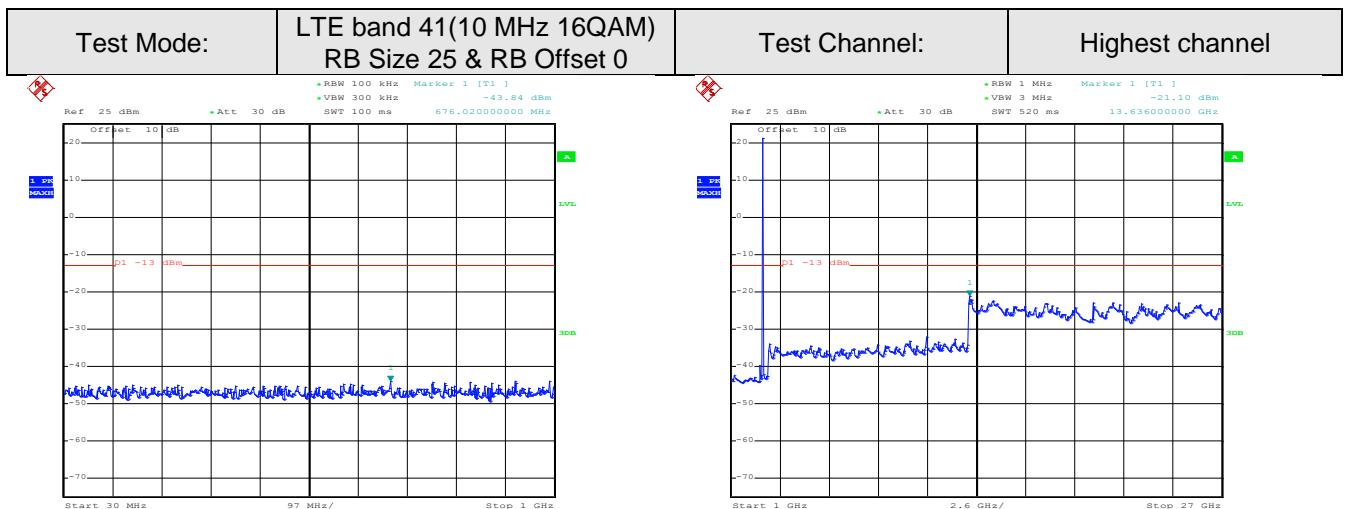


Date: 28.JUN.2017 22:47:56

30MHz~1GHz

Date: 28.JUN.2017 23:45:28

1GHz~27GHz

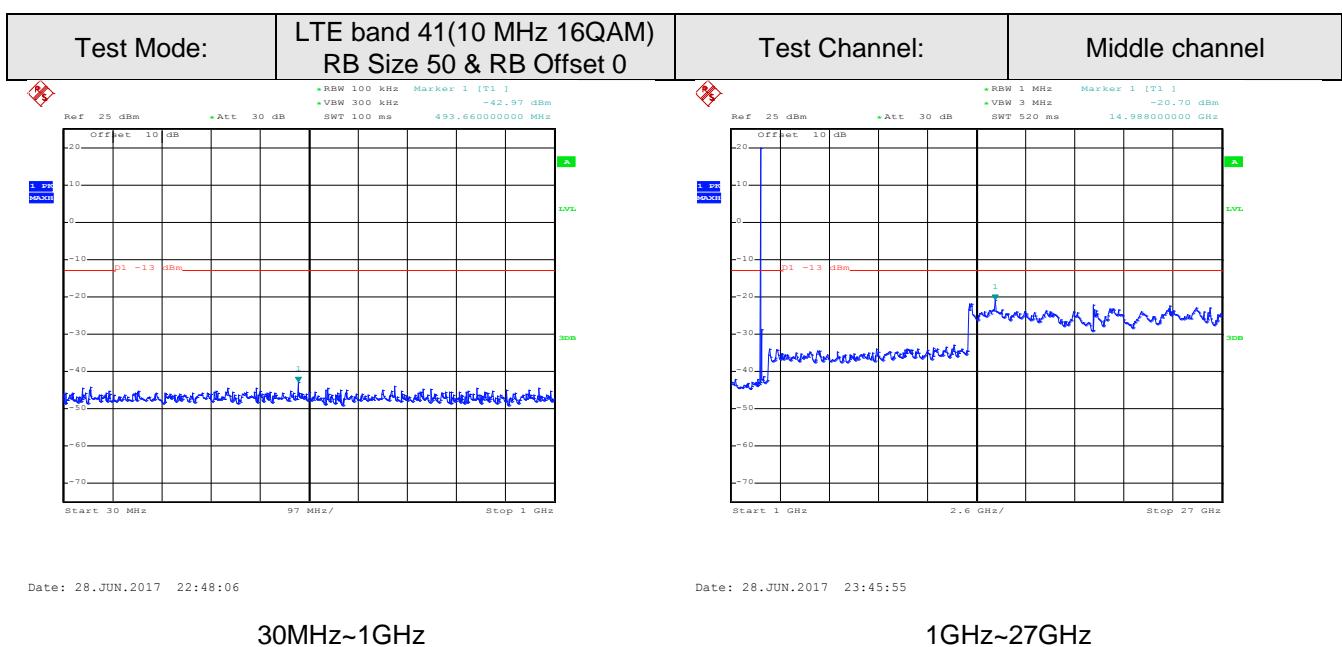
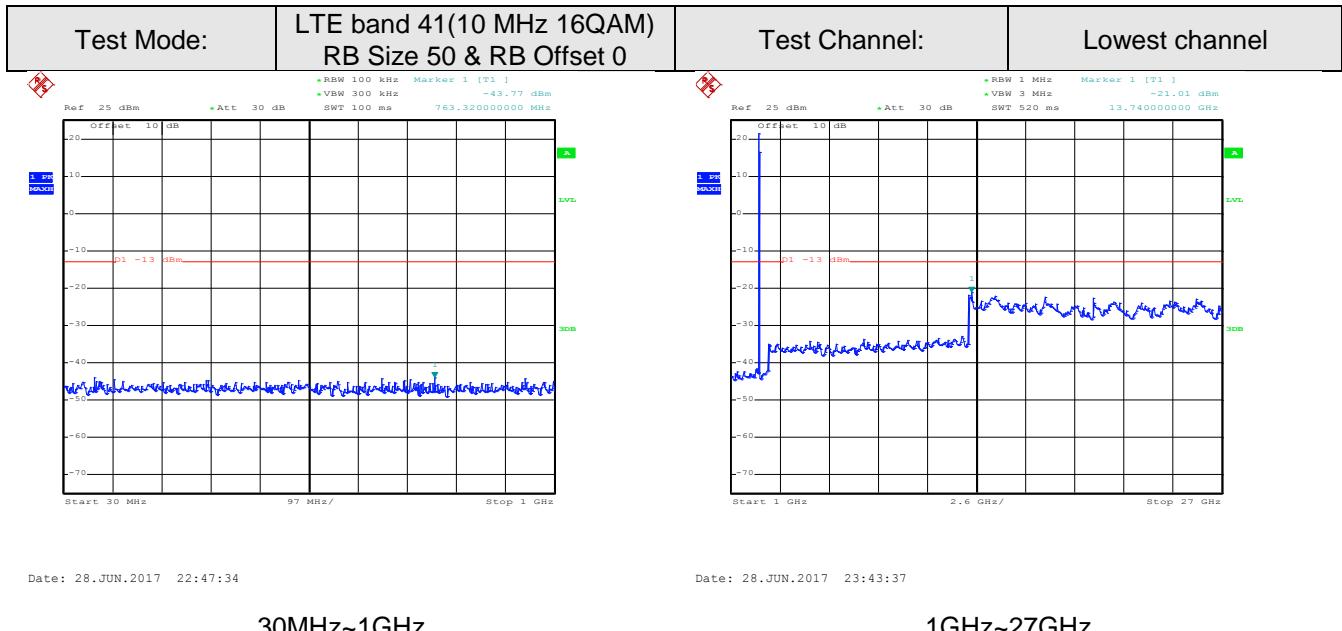


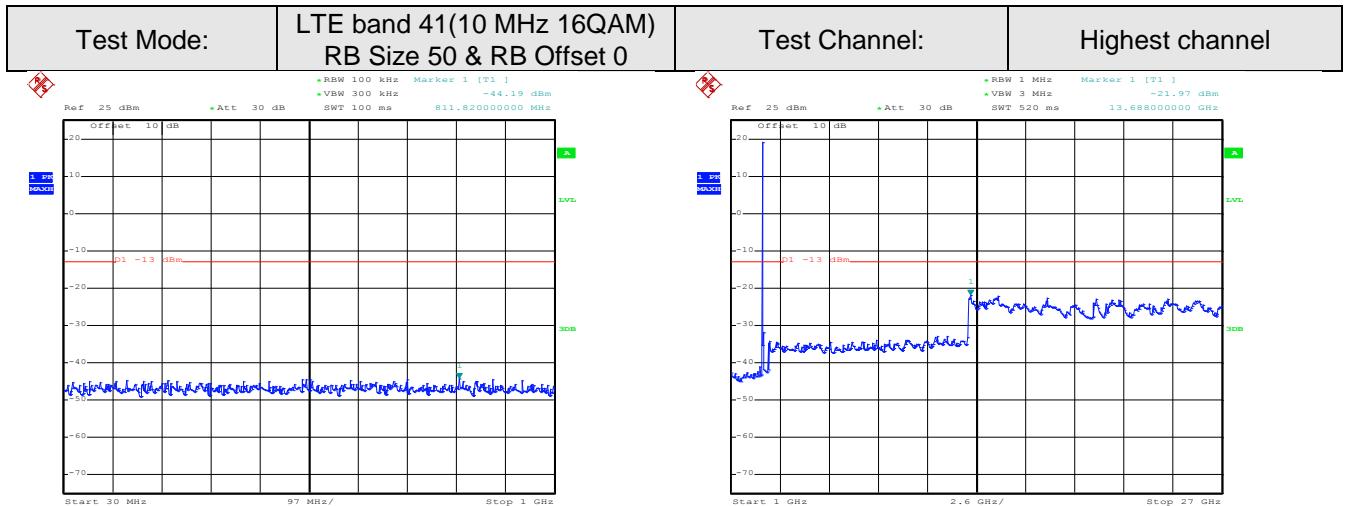
Date: 28.JUN.2017 22:48:26

30MHz~1GHz

Date: 28.JUN.2017 23:46:48

1GHz~27GHz



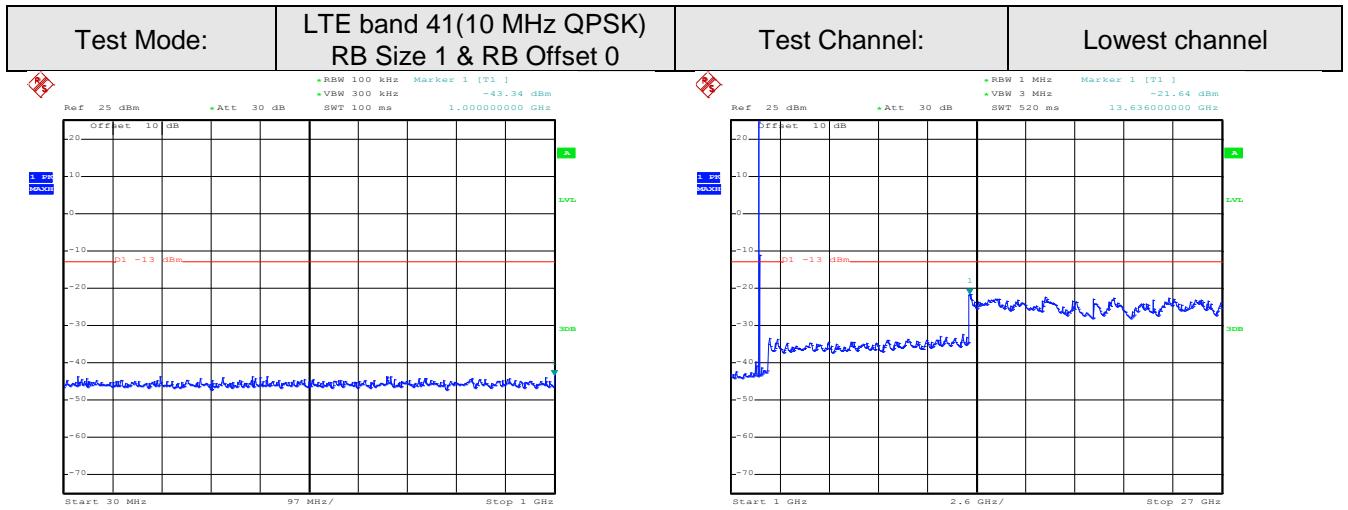


Date: 28.JUN.2017 22:48:34

30MHz~1GHz

Date: 28.JUN.2017 23:46:20

1GHz~27GHz

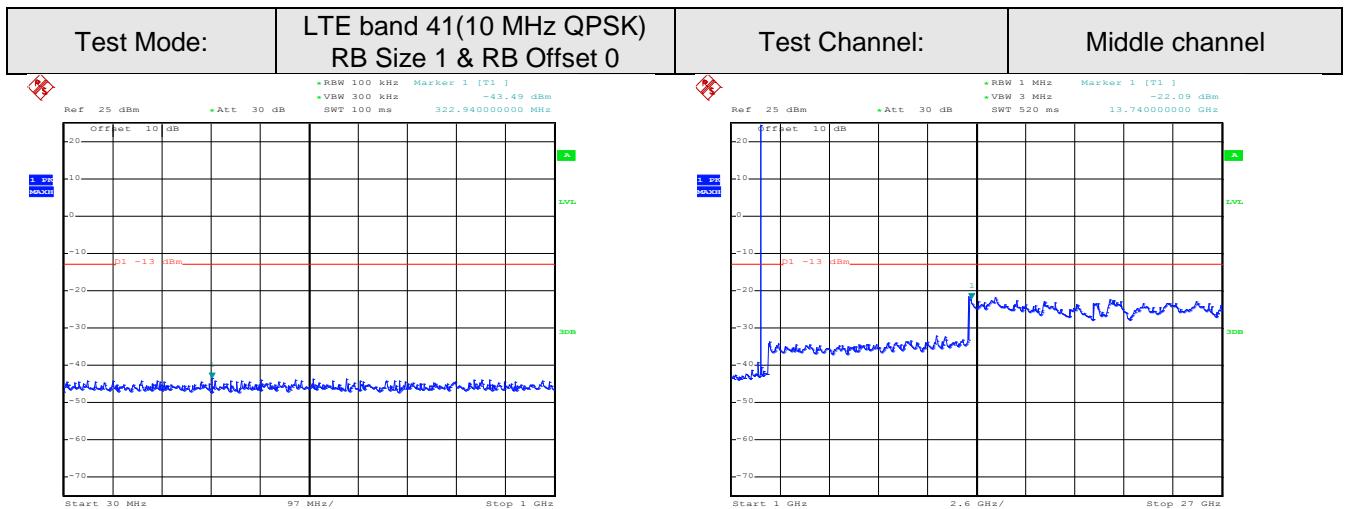


Date: 28.JUN.2017 22:47:03

30MHz~1GHz

Date: 28.JUN.2017 23:44:20

1GHz~27GHz



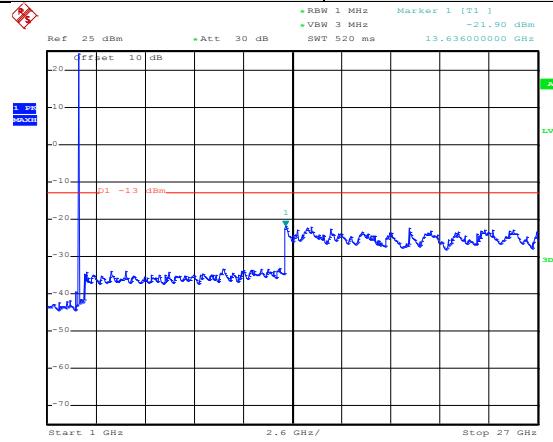
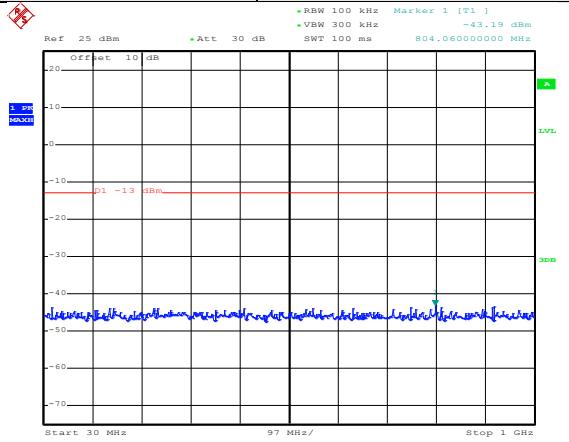
Date: 28.JUN.2017 22:47:43

30MHz~1GHz

Date: 28.JUN.2017 23:44:50

1GHz~27GHz

Test Mode:	LTE band 41(10 MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Highest channel
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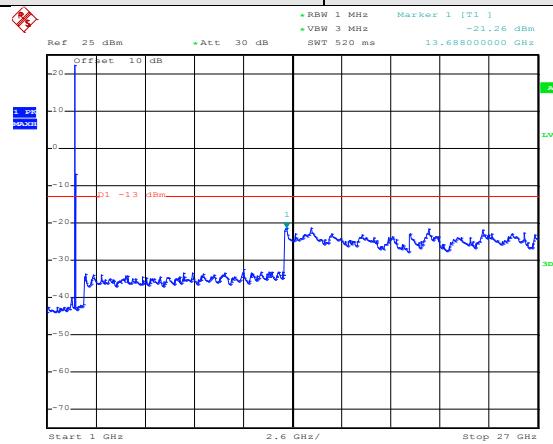
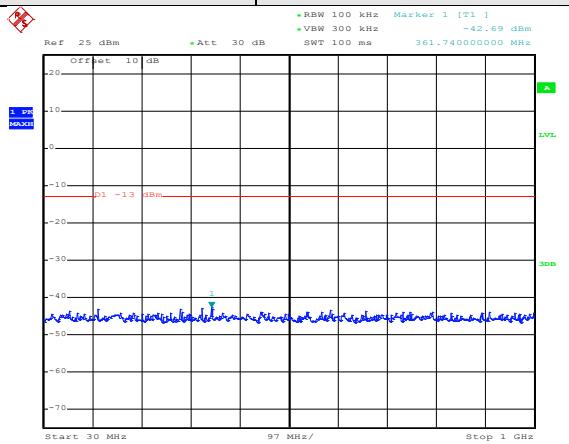
Date: 28.JUN.2017 22:48:14

30MHz~1GHz

Date: 28.JUN.2017 23:47:00

1GHz~27GHz

Test Mode:	LTE band 41(10 MHz QPSK) RB Size 25 & RB Offset 0	Test Channel:	Lowest channel
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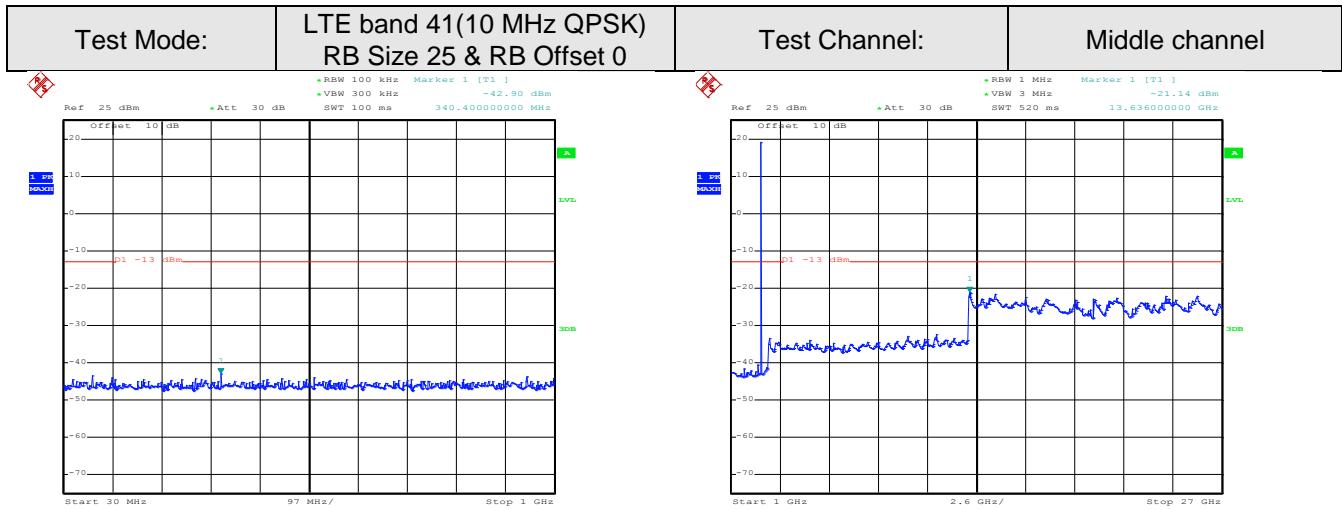


Date: 28.JUN.2017 22:47:20

30MHz~1GHz

Date: 28.JUN.2017 23:43:59

1GHz~27GHz

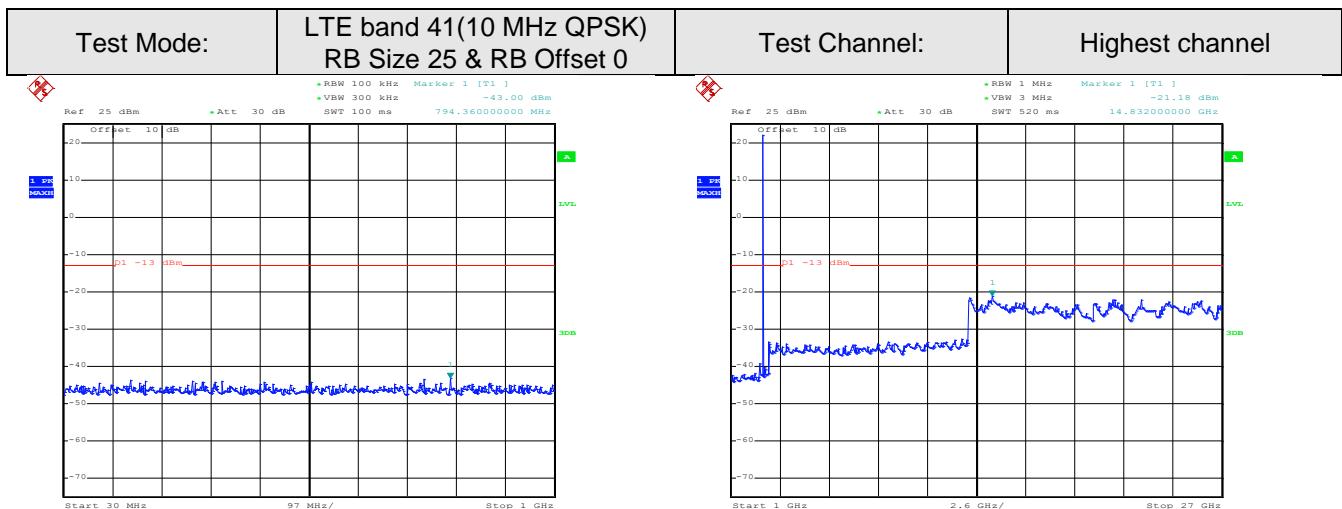


Date: 28.JUN.2017 22:47:52

30MHz~1GHz

Date: 28.JUN.2017 23:45:21

1GHz~27GHz

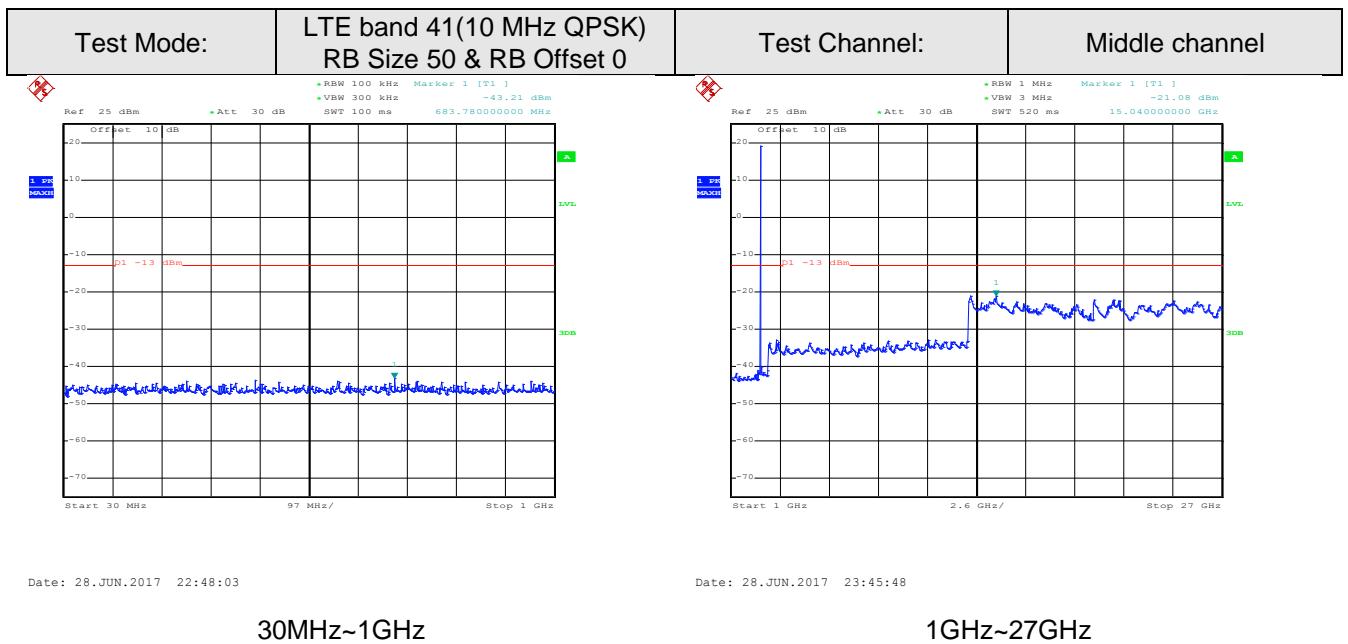
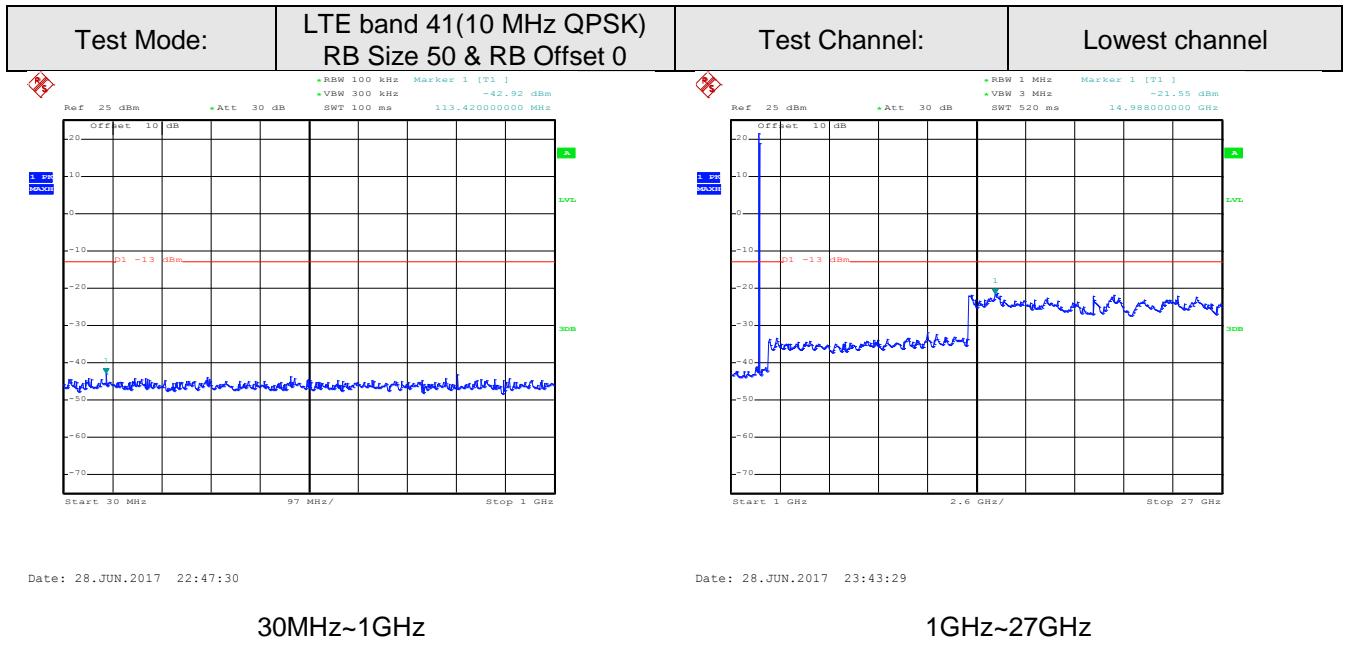


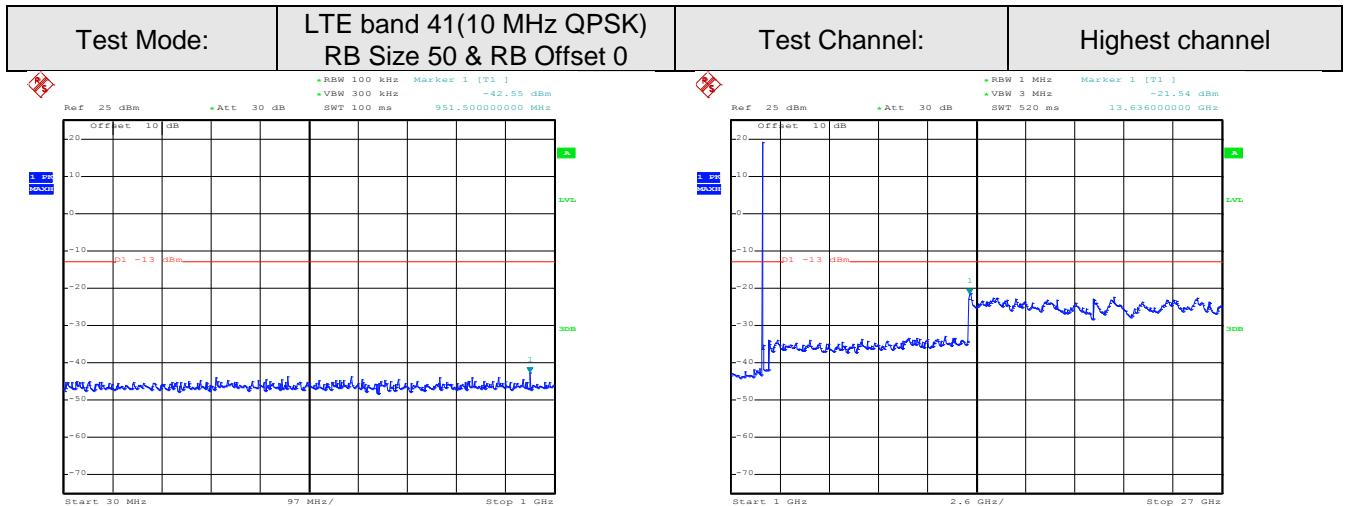
Date: 28.JUN.2017 22:48:22

30MHz~1GHz

Date: 28.JUN.2017 23:46:42

1GHz~27GHz

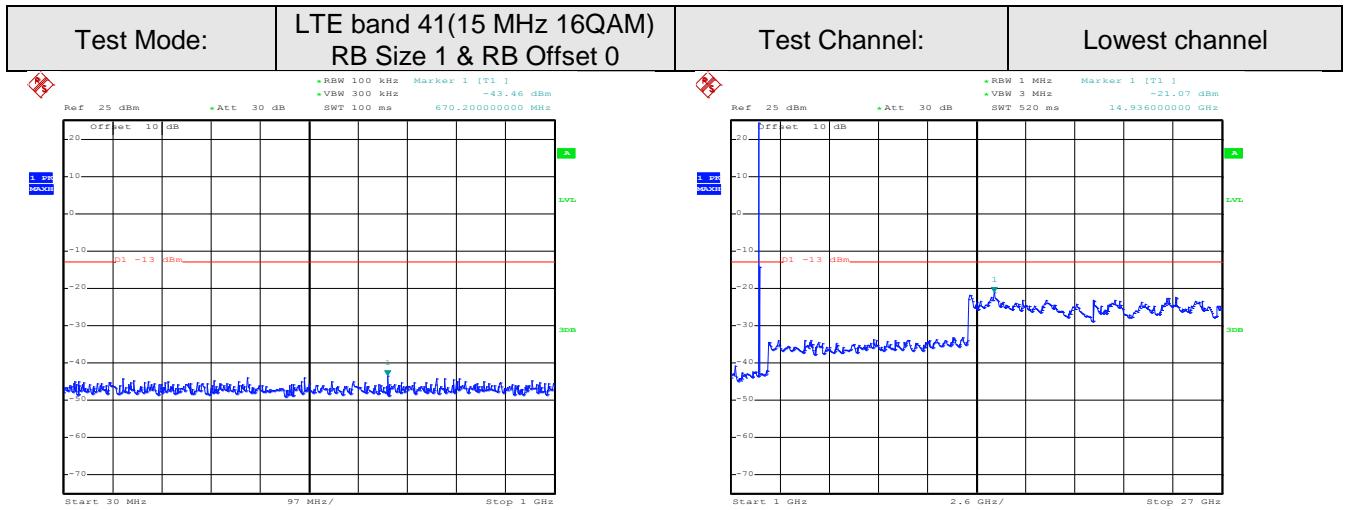




30MHz~1GHz

1GHz~27GHz

LTE band 41 Part: 15MHz

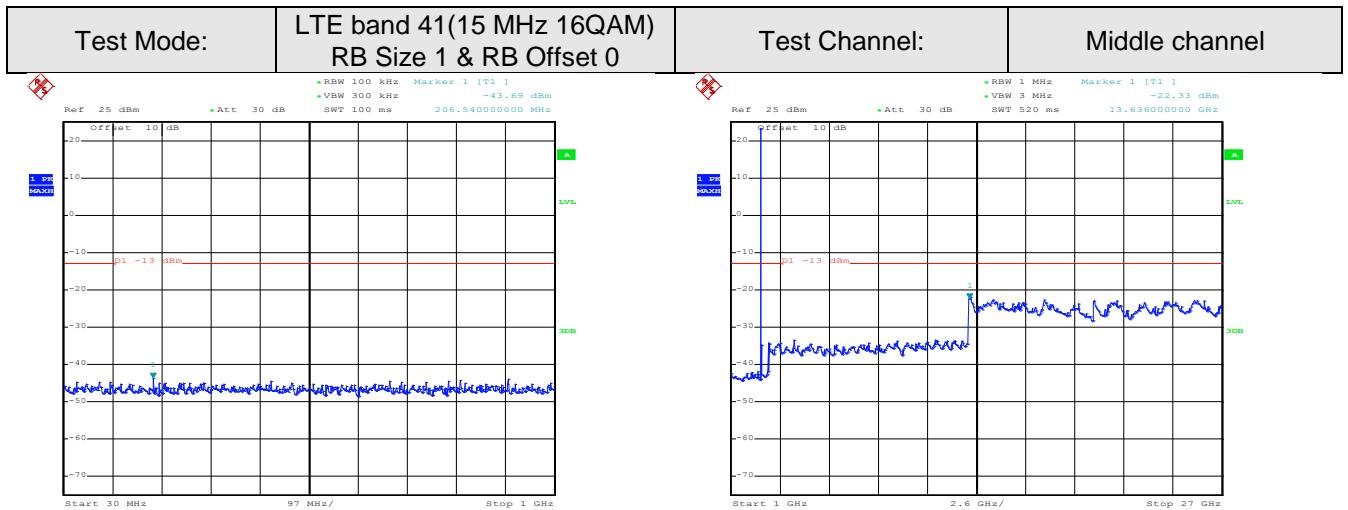


Date: 28.JUN.2017 22:48:47

Date: 28.JUN.2017 23:42:56

30MHz~1GHz

1GHz~27GHz

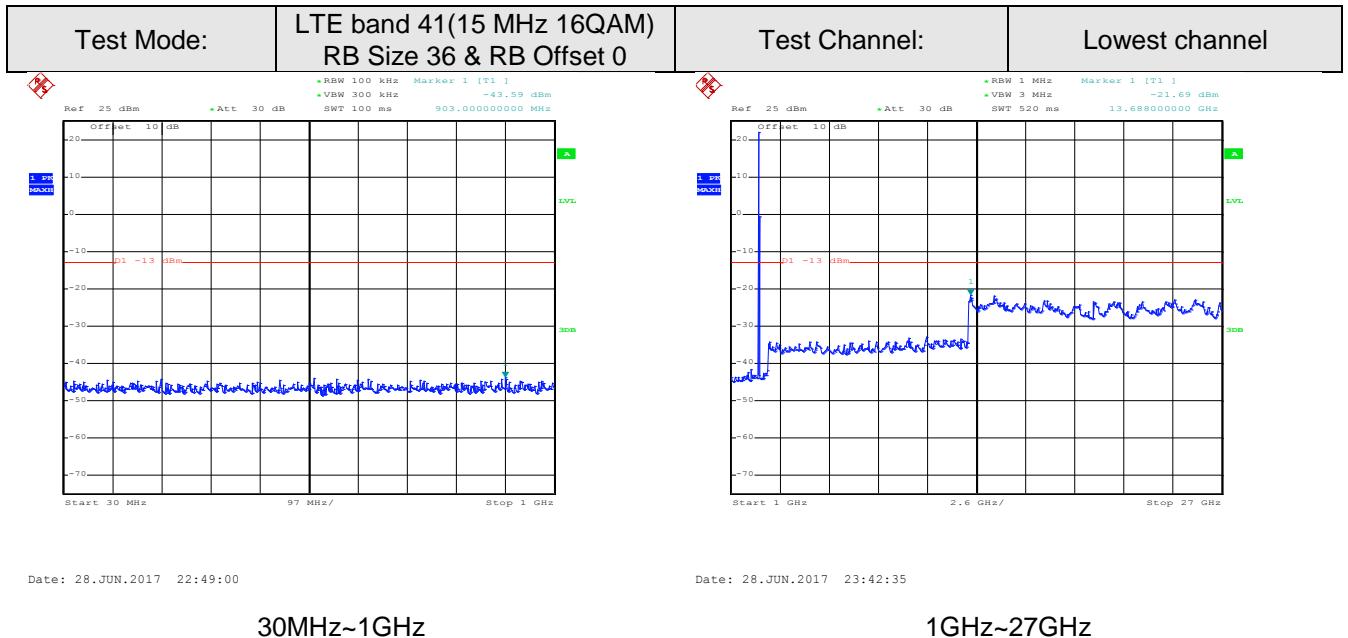
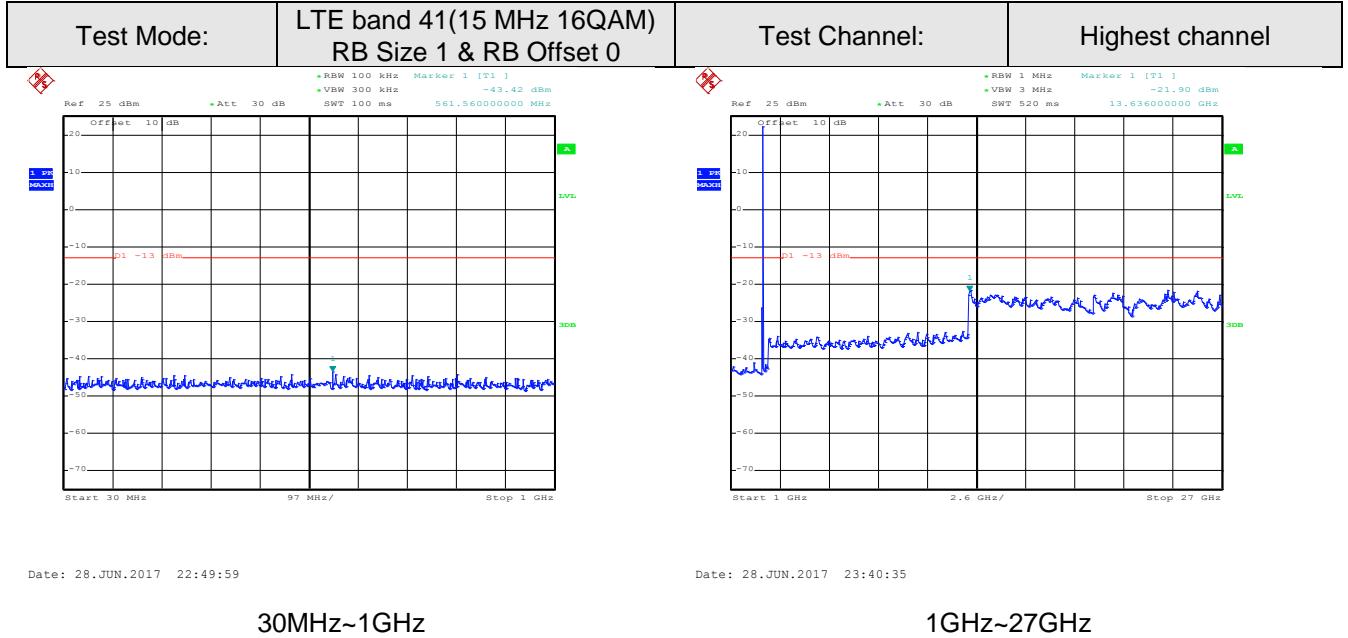


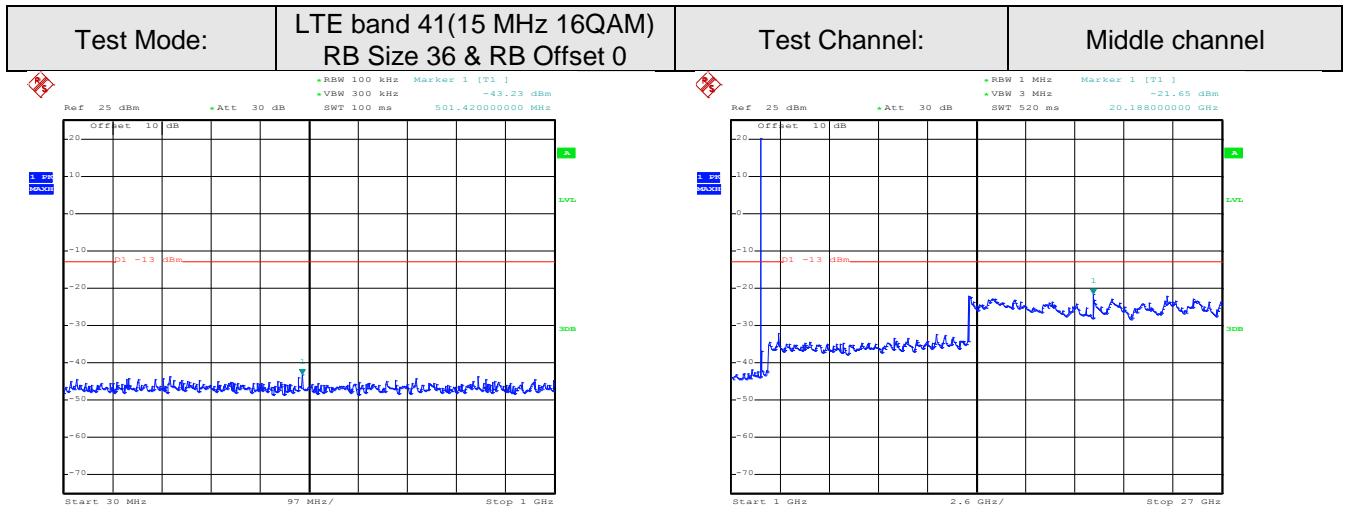
Date: 28.JUN.2017 22:49:25

Date: 28.JUN.2017 23:41:03

30MHz~1GHz

1GHz~27GHz



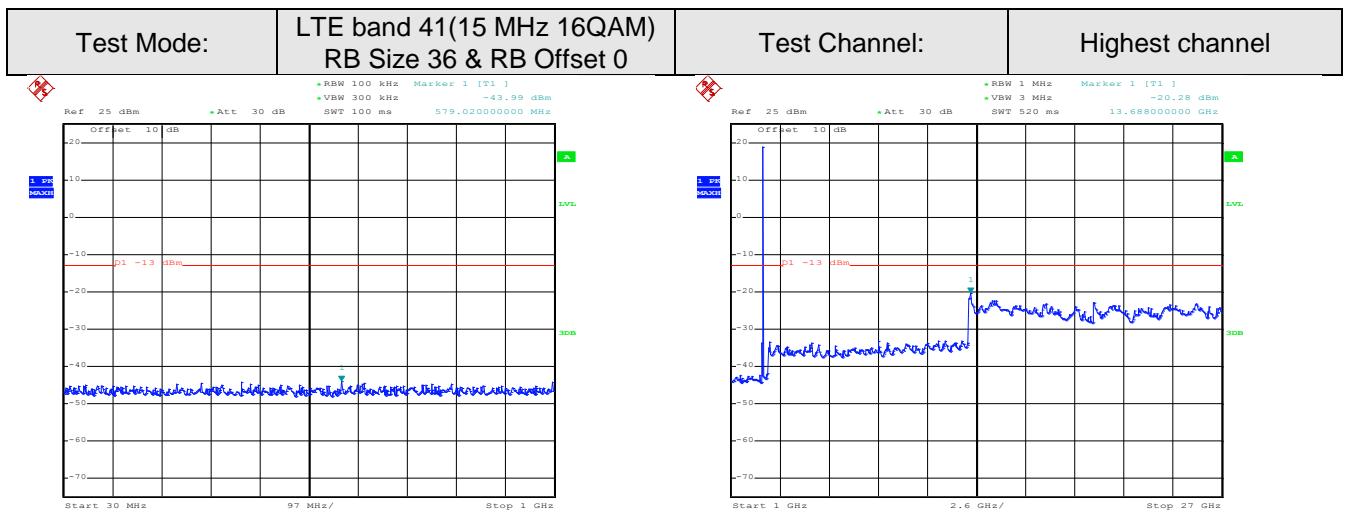


Date: 28.JUN.2017 22:49:35

30MHz~1GHz

Date: 28.JUN.2017 23:41:26

1GHz~27GHz

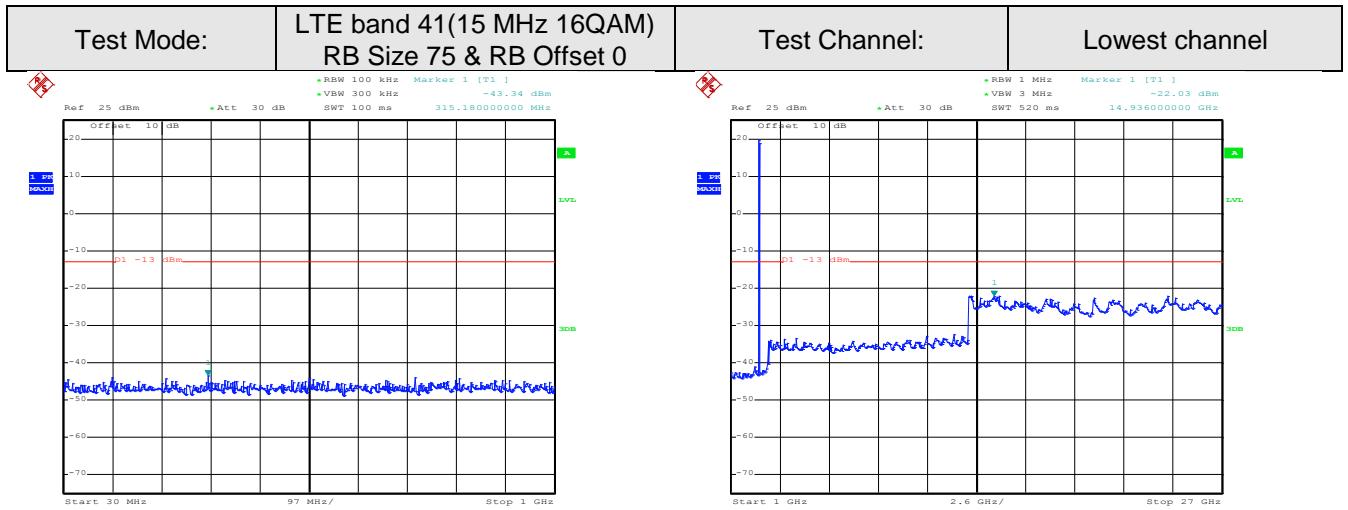


Date: 28.JUN.2017 22:50:09

30MHz~1GHz

Date: 28.JUN.2017 23:40:13

1GHz~27GHz

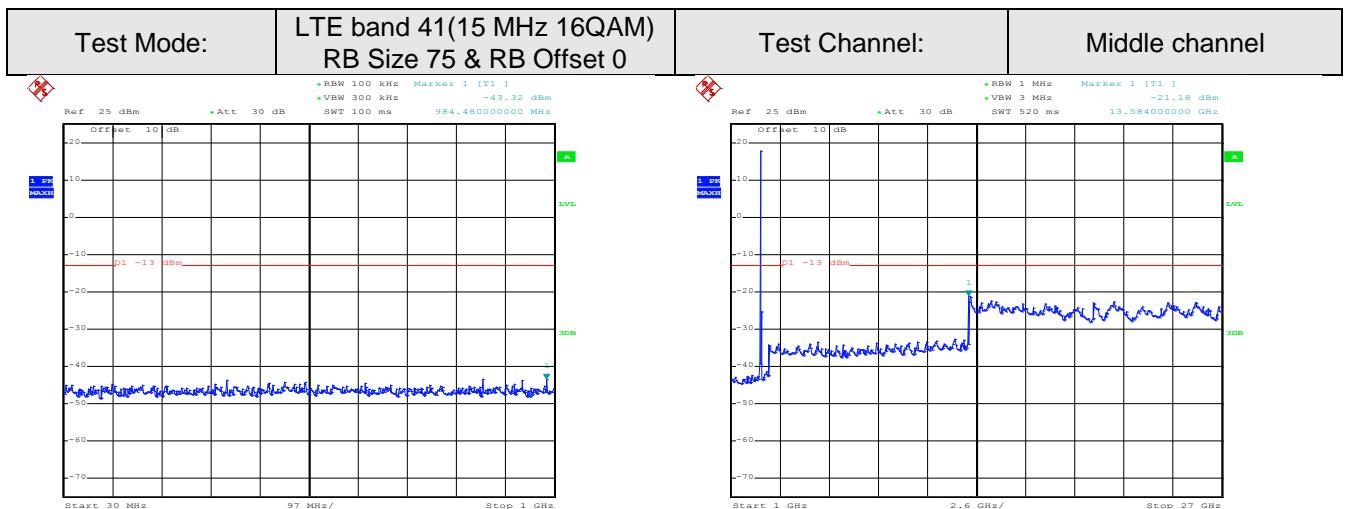


Date: 28.JUN.2017 22:49:12

30MHz~1GHz

Date: 28.JUN.2017 23:42:14

1GHz~27GHz

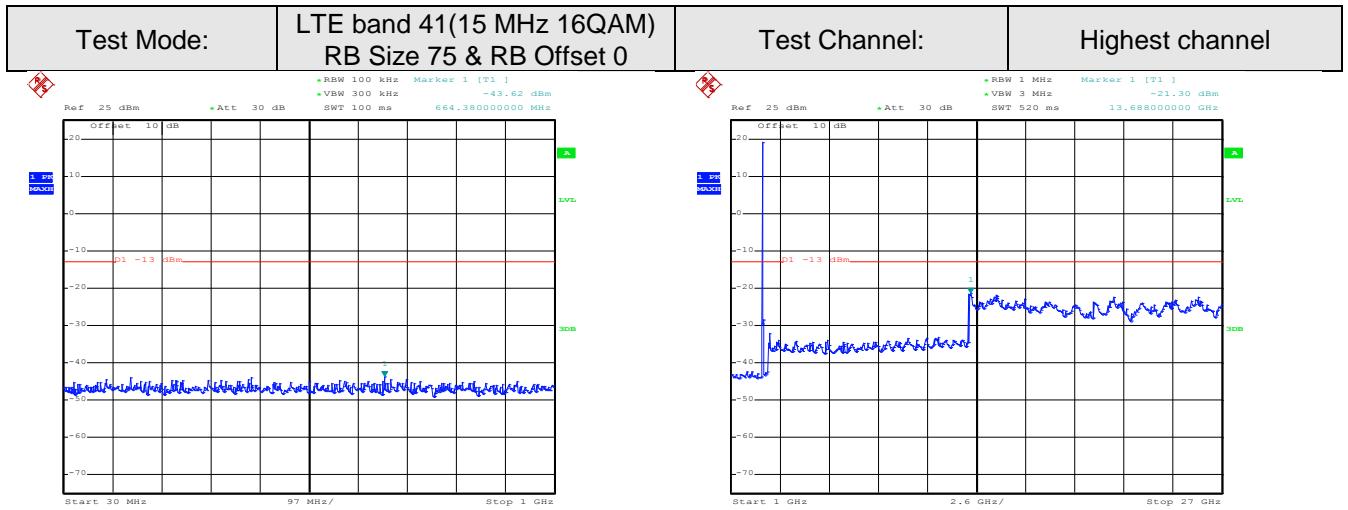


Date: 28.JUN.2017 22:49:47

30MHz~1GHz

Date: 28.JUN.2017 23:41:45

1GHz~27GHz

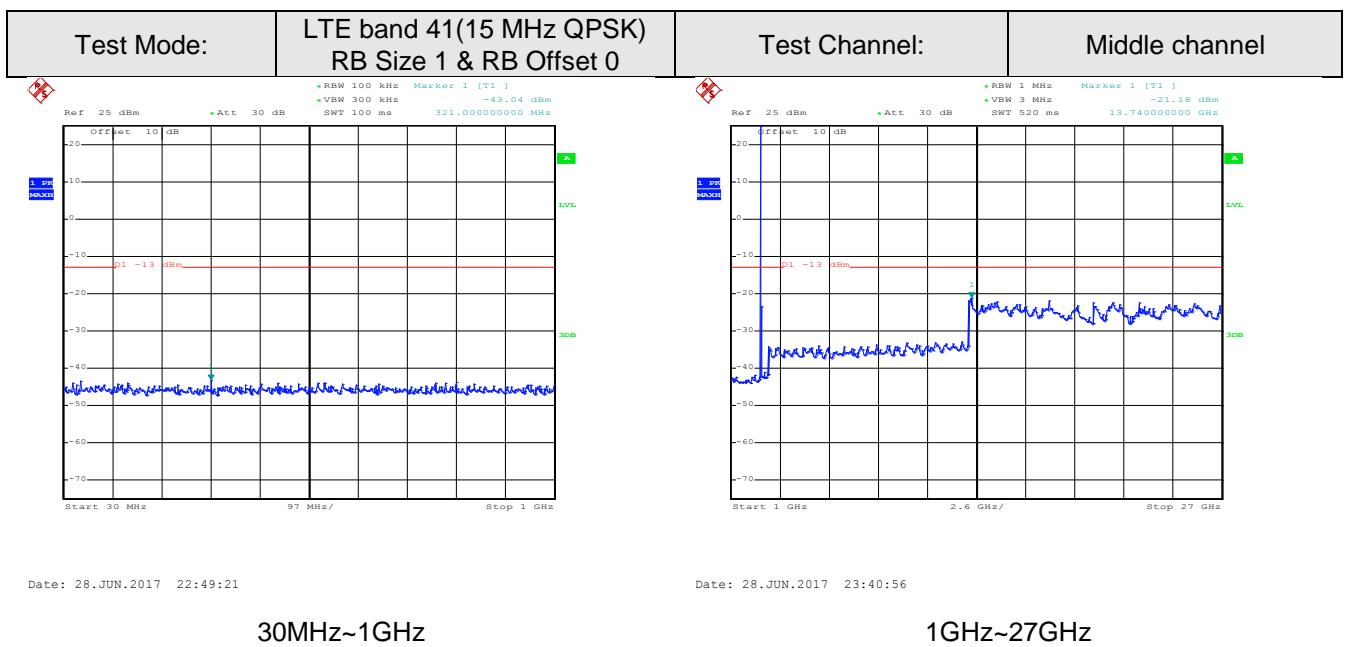
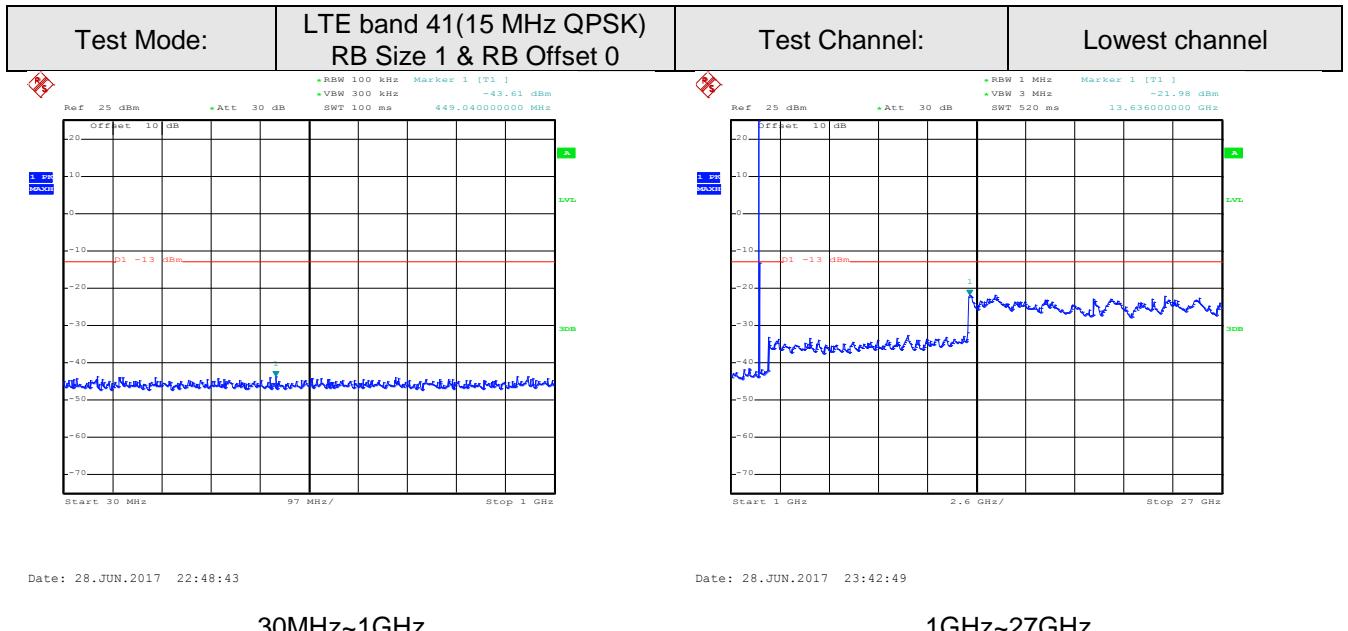


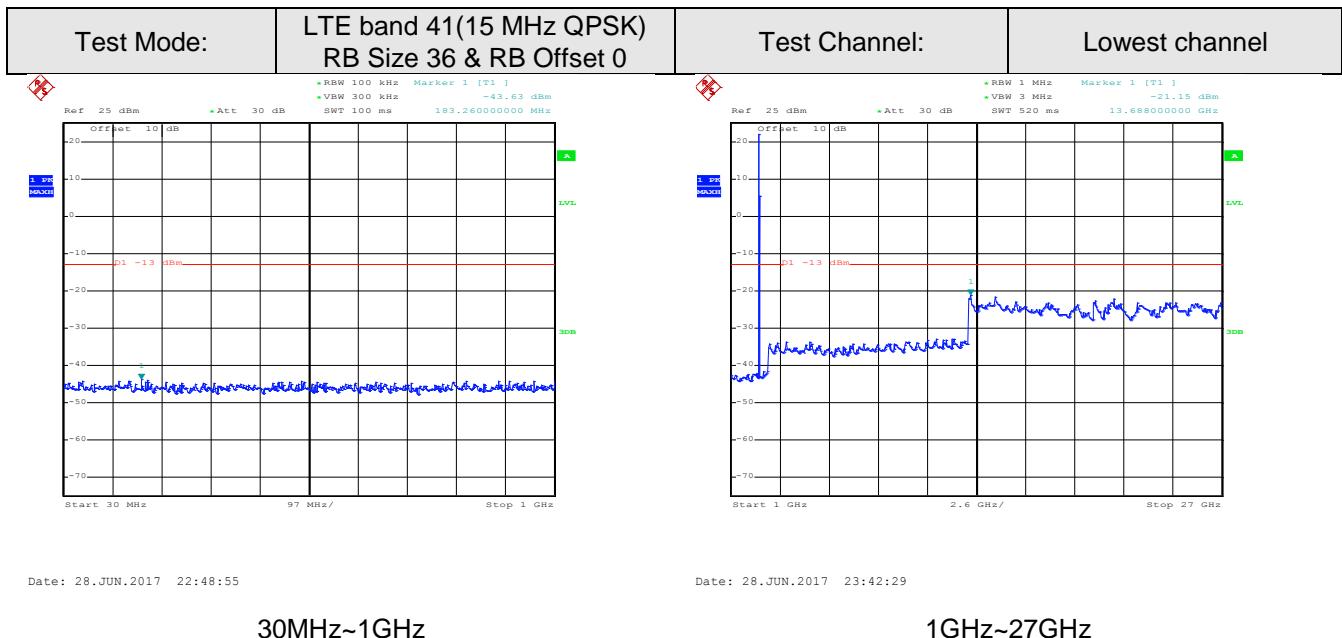
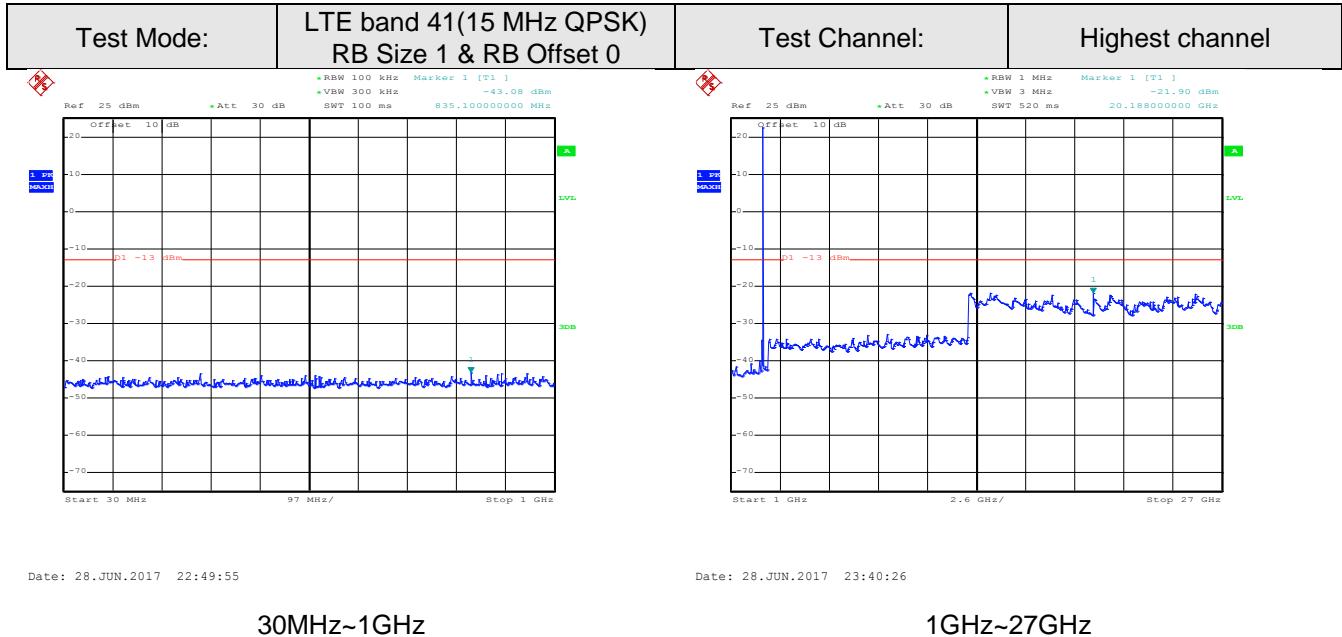
Date: 28.JUN.2017 22:50:19

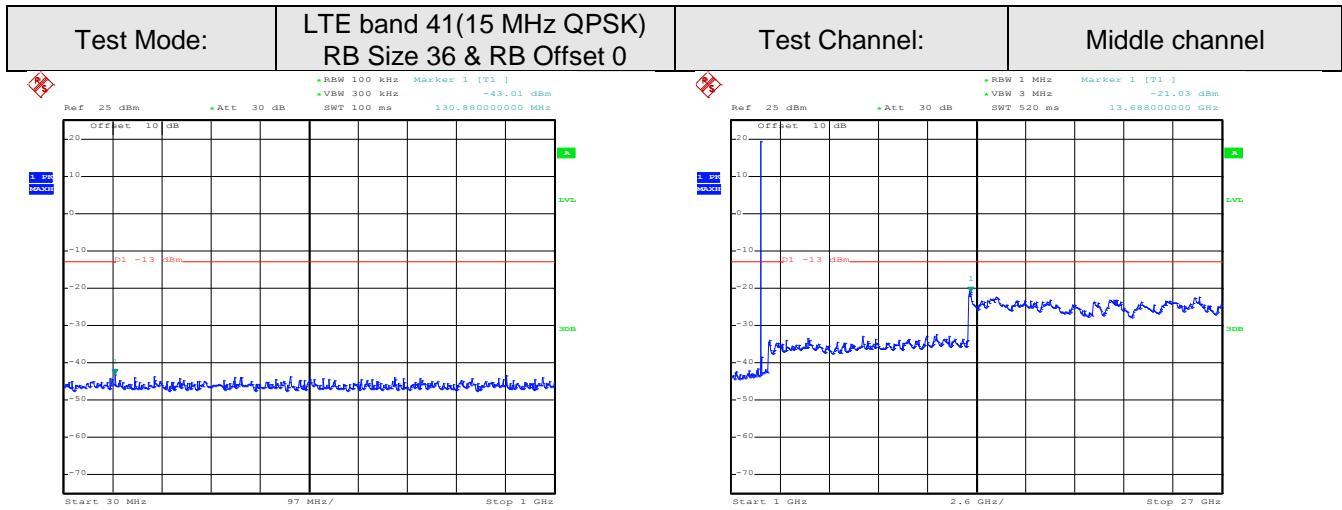
30MHz~1GHz

Date: 28.JUN.2017 23:39:51

1GHz~27GHz





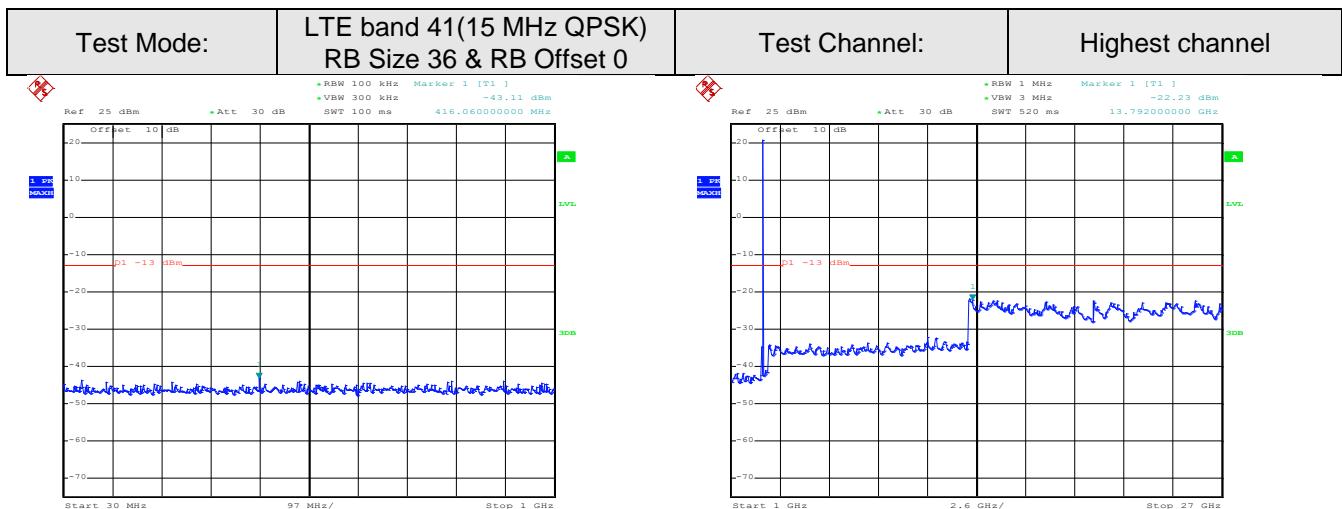


Date: 28.JUN.2017 22:49:31

30MHz~1GHz

Date: 28.JUN.2017 23:41:19

1GHz~27GHz

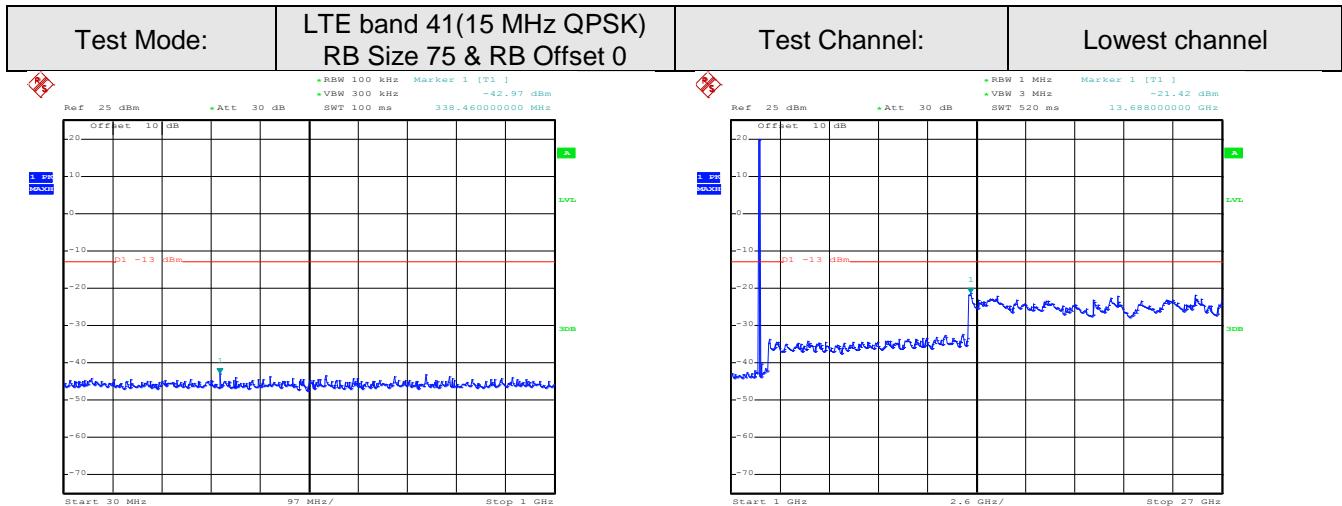


Date: 28.JUN.2017 22:50:05

30MHz~1GHz

Date: 28.JUN.2017 23:40:05

1GHz~27GHz

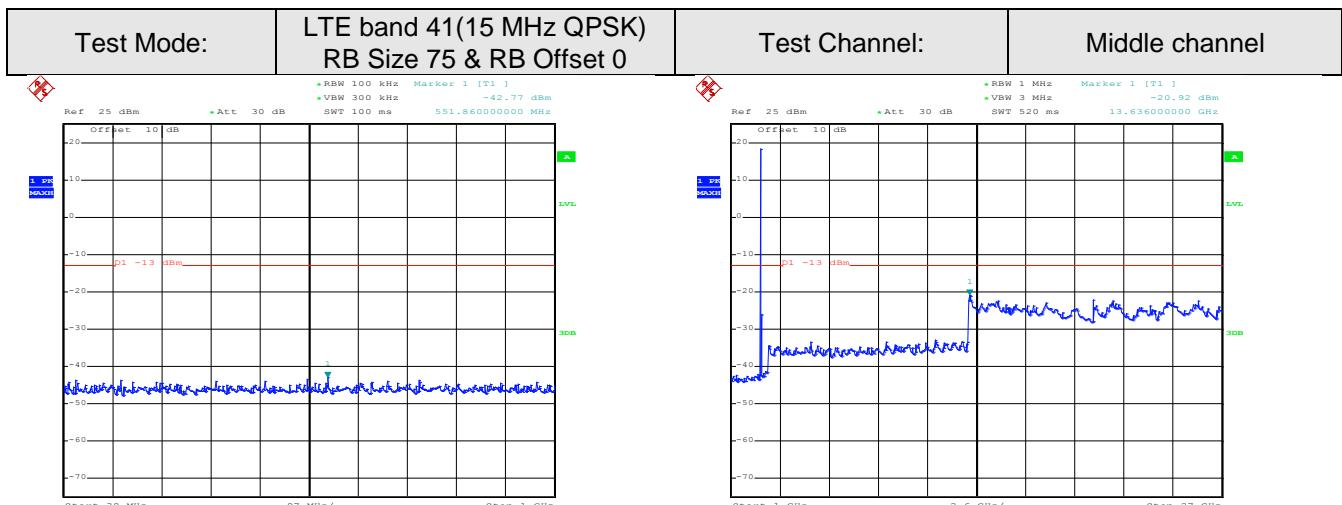


Date: 28.JUN.2017 22:49:08

30MHz~1GHz

Date: 28.JUN.2017 23:42:04

1GHz~27GHz

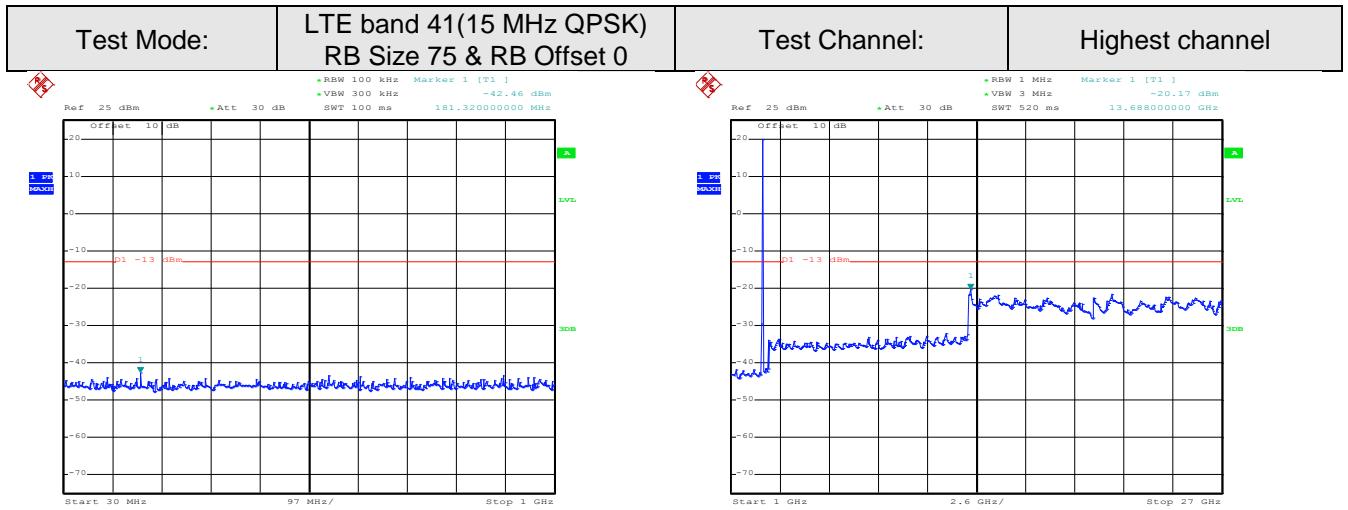


Date: 28.JUN.2017 22:49:42

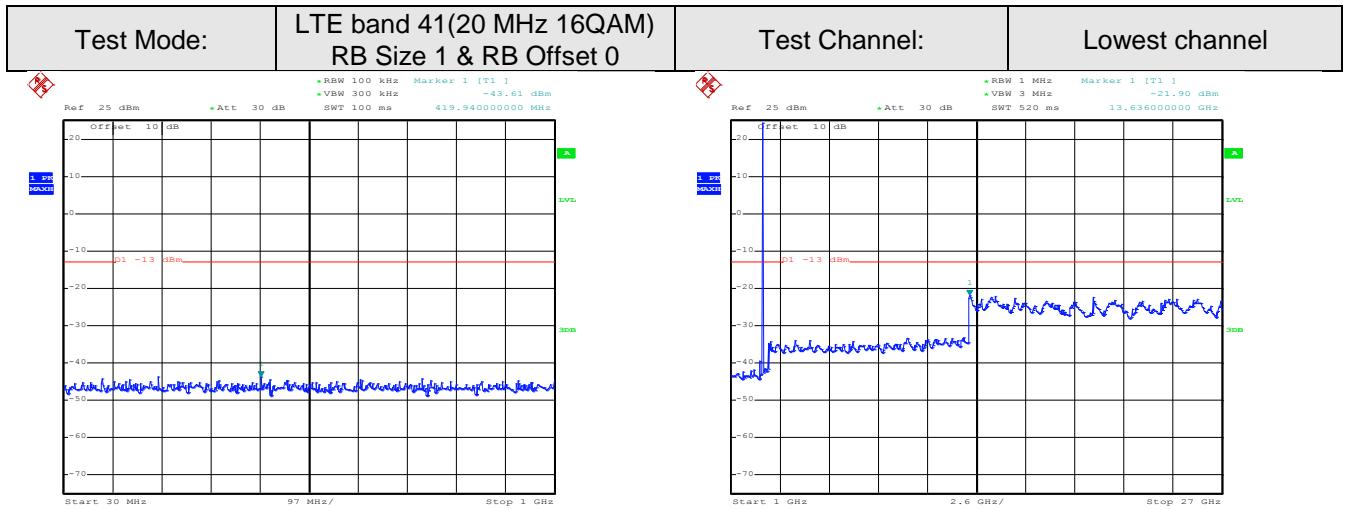
30MHz~1GHz

Date: 28.JUN.2017 23:41:37

1GHz~27GHz



LTE band 41 Part: 20MHz

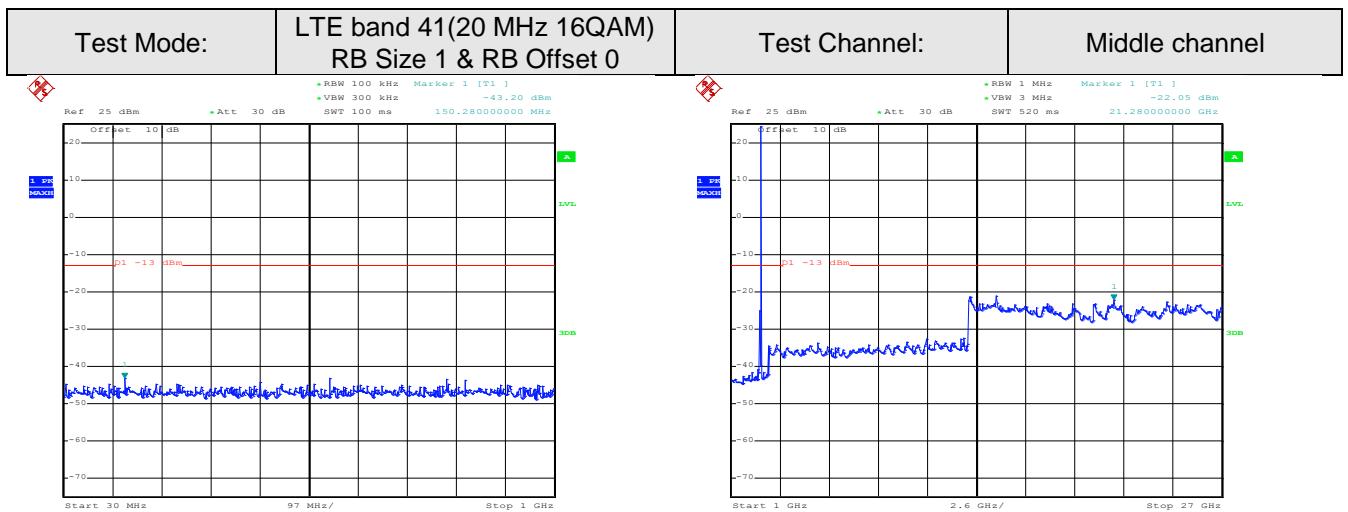


Date: 28.JUN.2017 22:50:37

Date: 28.JUN.2017 23:47:00

30MHz~1GHz

1GHz~27GHz

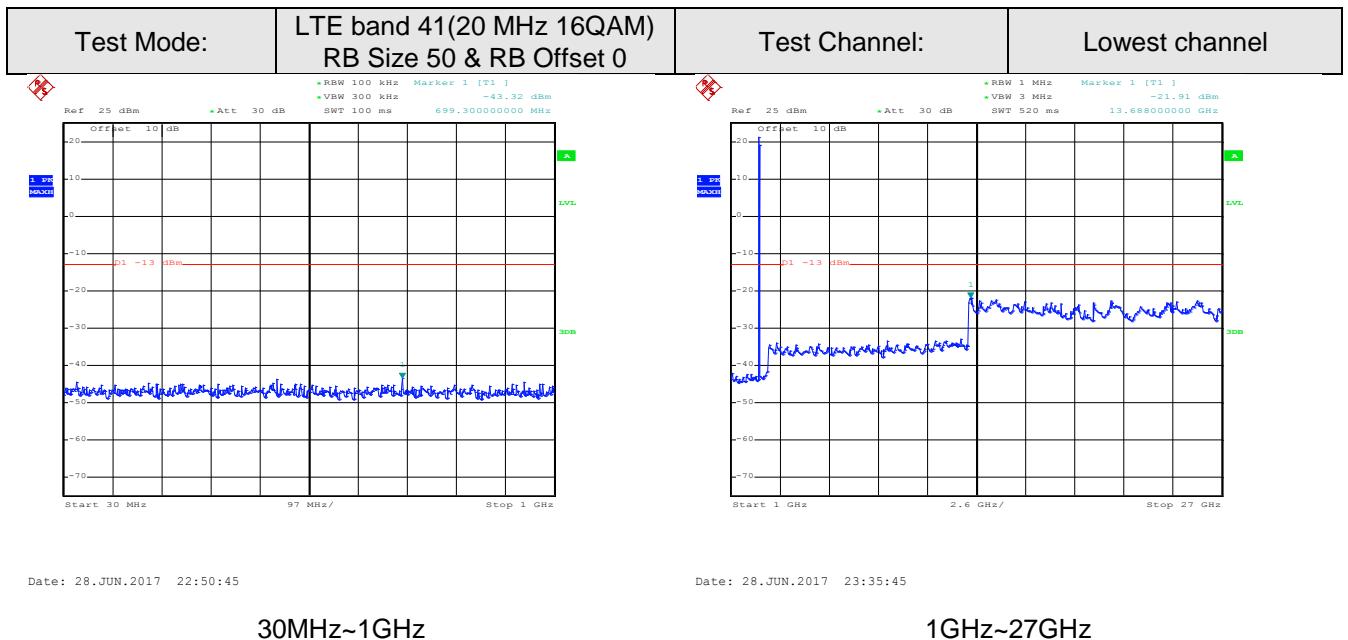
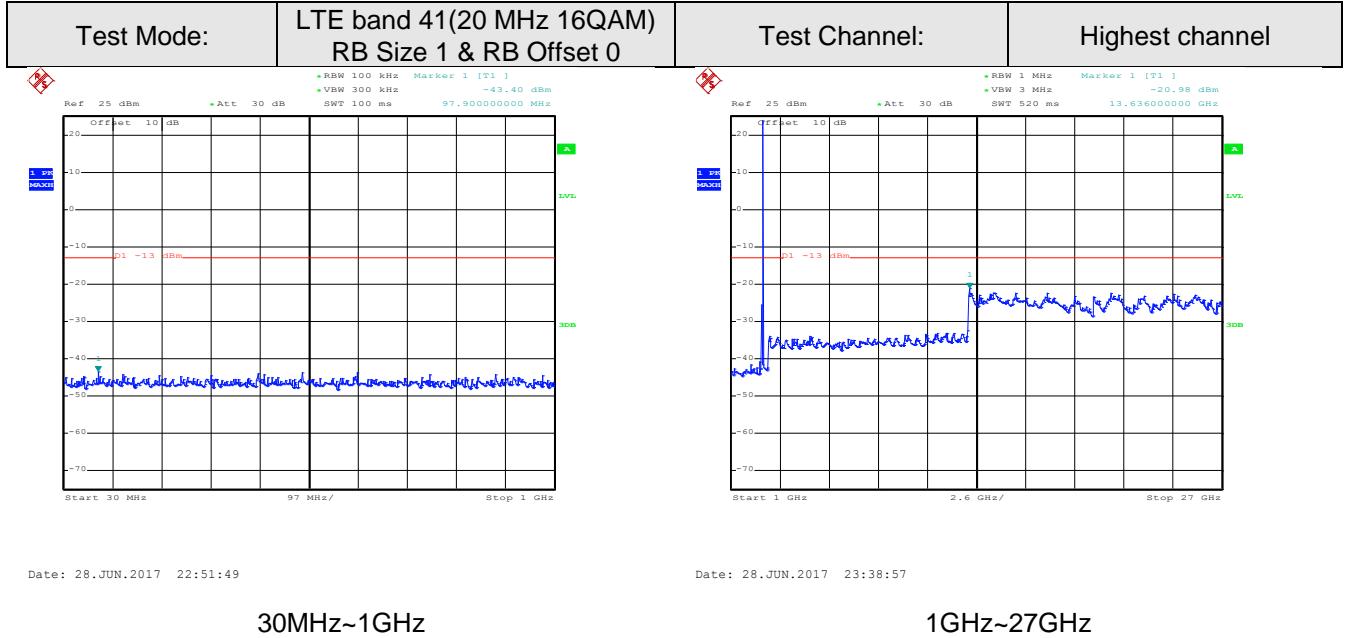


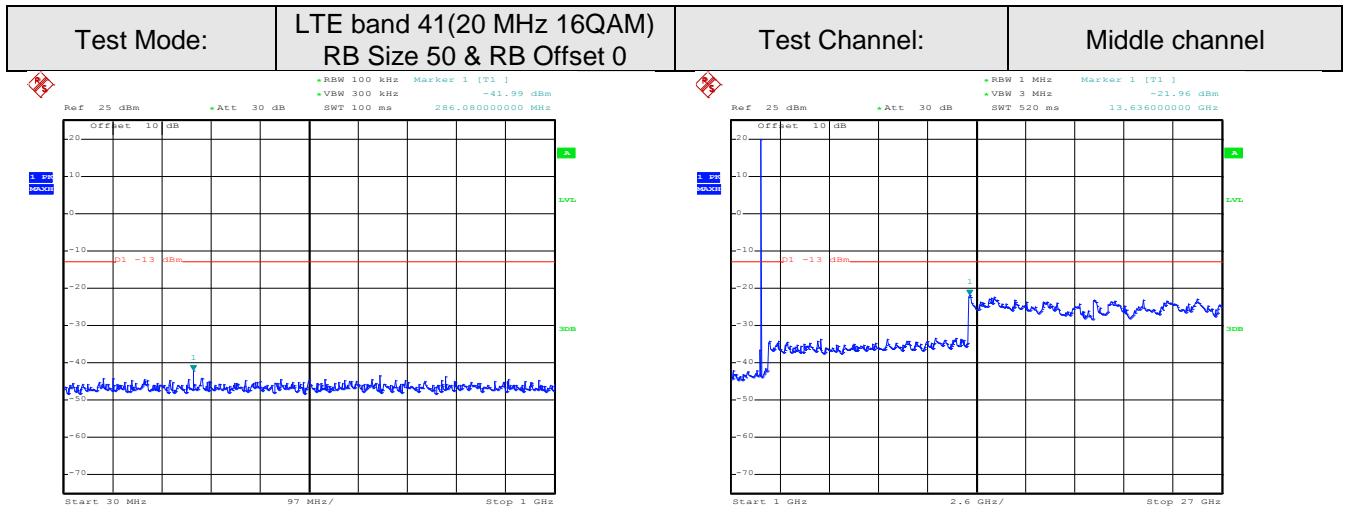
Date: 28.JUN.2017 22:51:11

Date: 28.JUN.2017 23:36:56

30MHz~1GHz

1GHz~27GHz



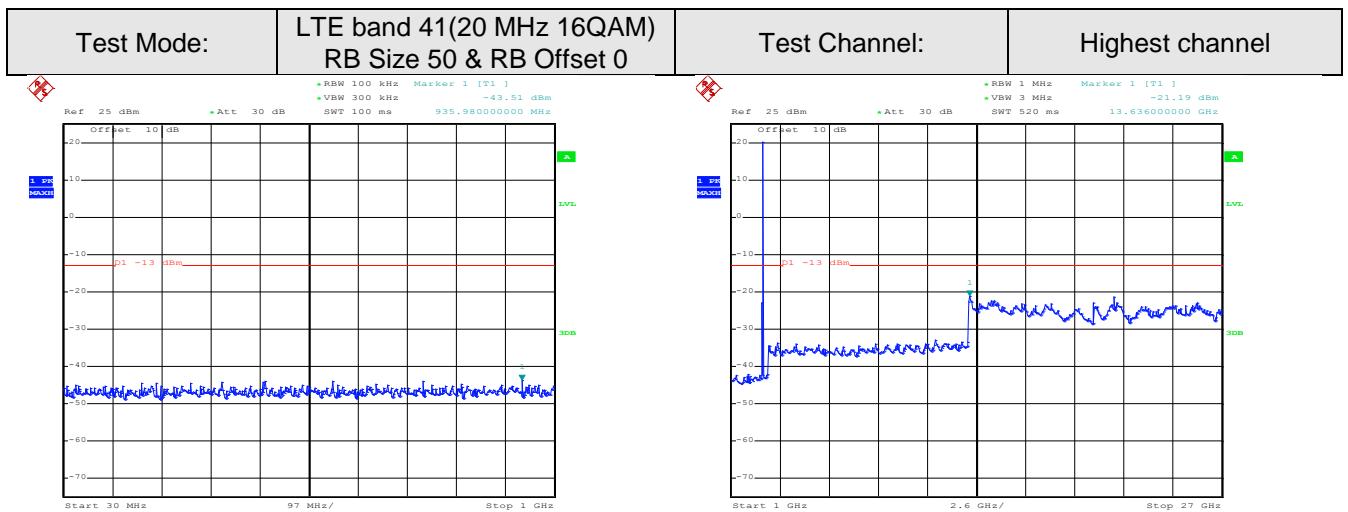


Date: 28.JUN.2017 22:51:24

30MHz~1GHz

Date: 28.JUN.2017 23:37:21

1GHz~27GHz

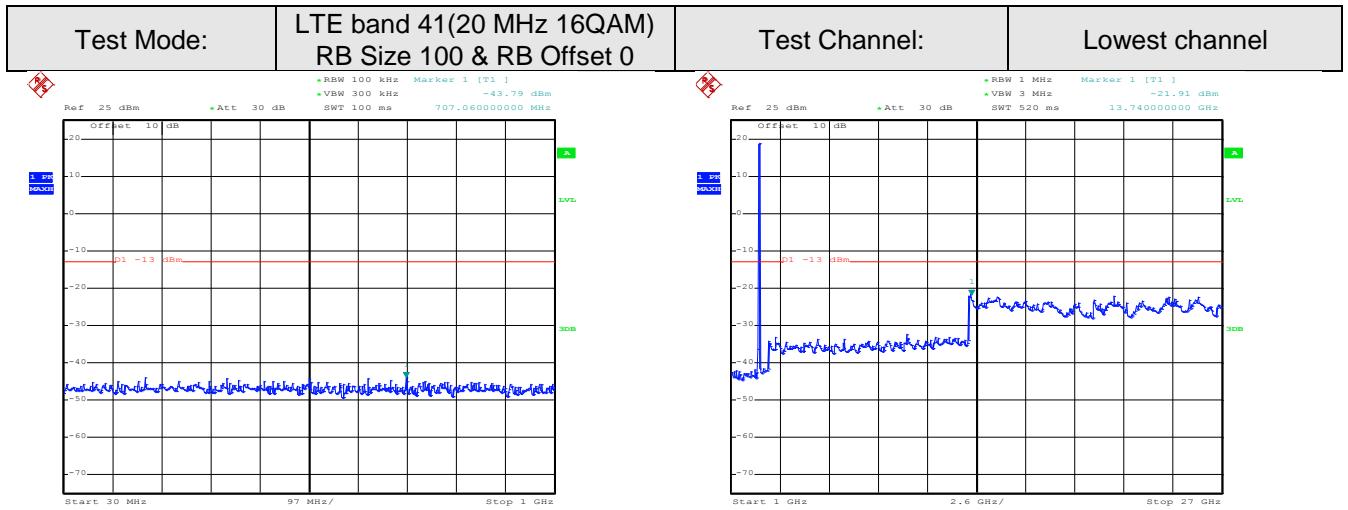


Date: 28.JUN.2017 22:52:01

30MHz~1GHz

Date: 28.JUN.2017 23:38:35

1GHz~27GHz

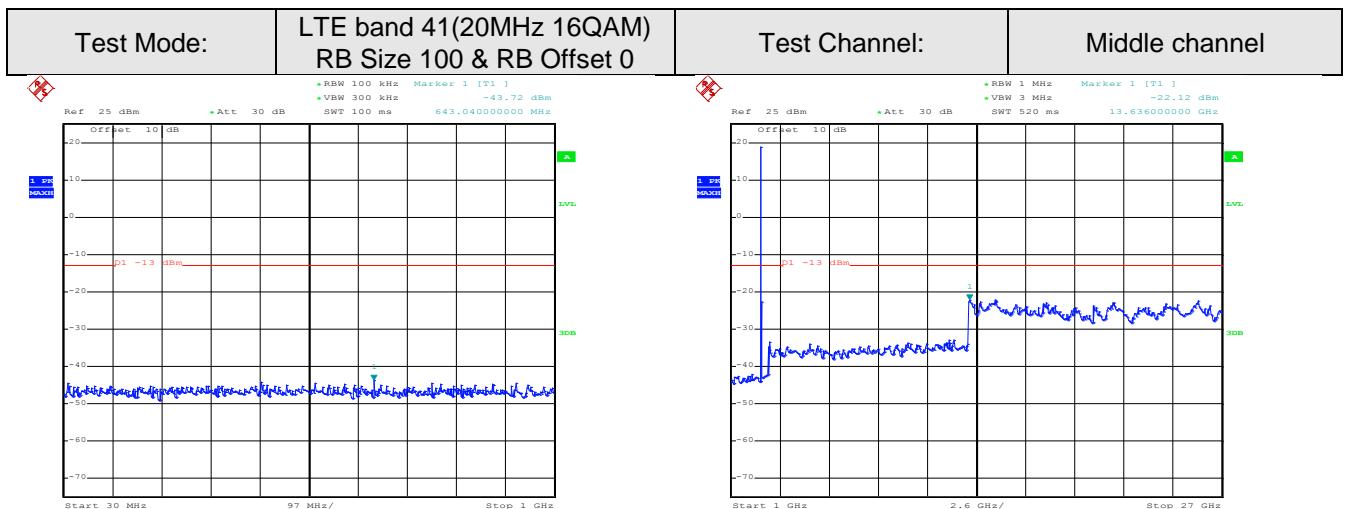


Date: 28.JUN.2017 22:50:57

30MHz~1GHz

Date: 28.JUN.2017 23:35:02

1GHz~27GHz

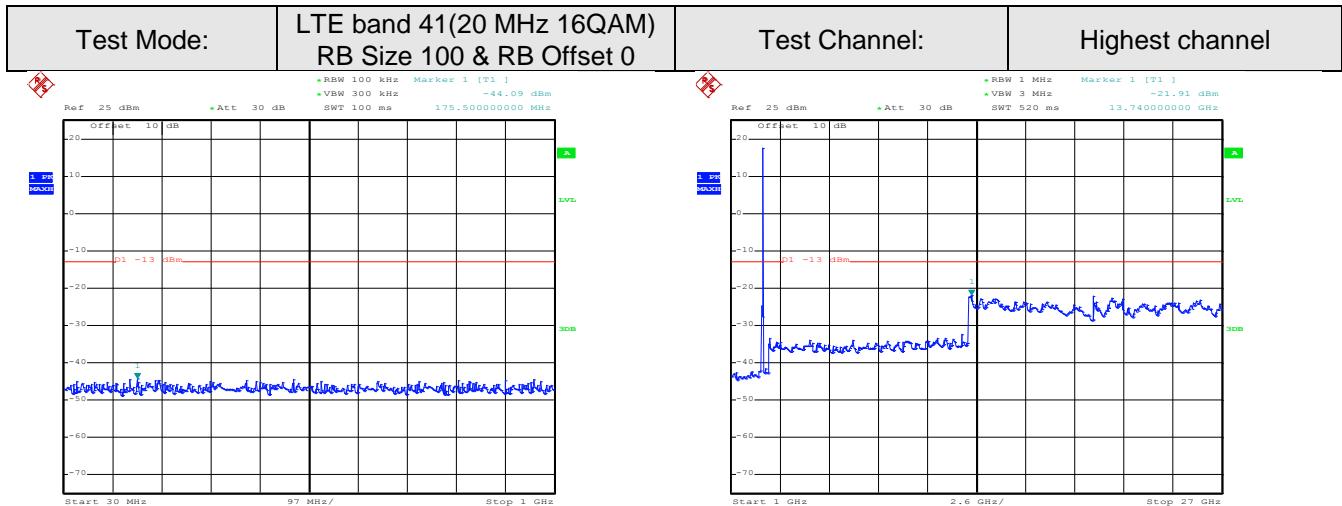


Date: 28.JUN.2017 22:51:35

30MHz~1GHz

Date: 28.JUN.2017 23:37:42

1GHz~27GHz

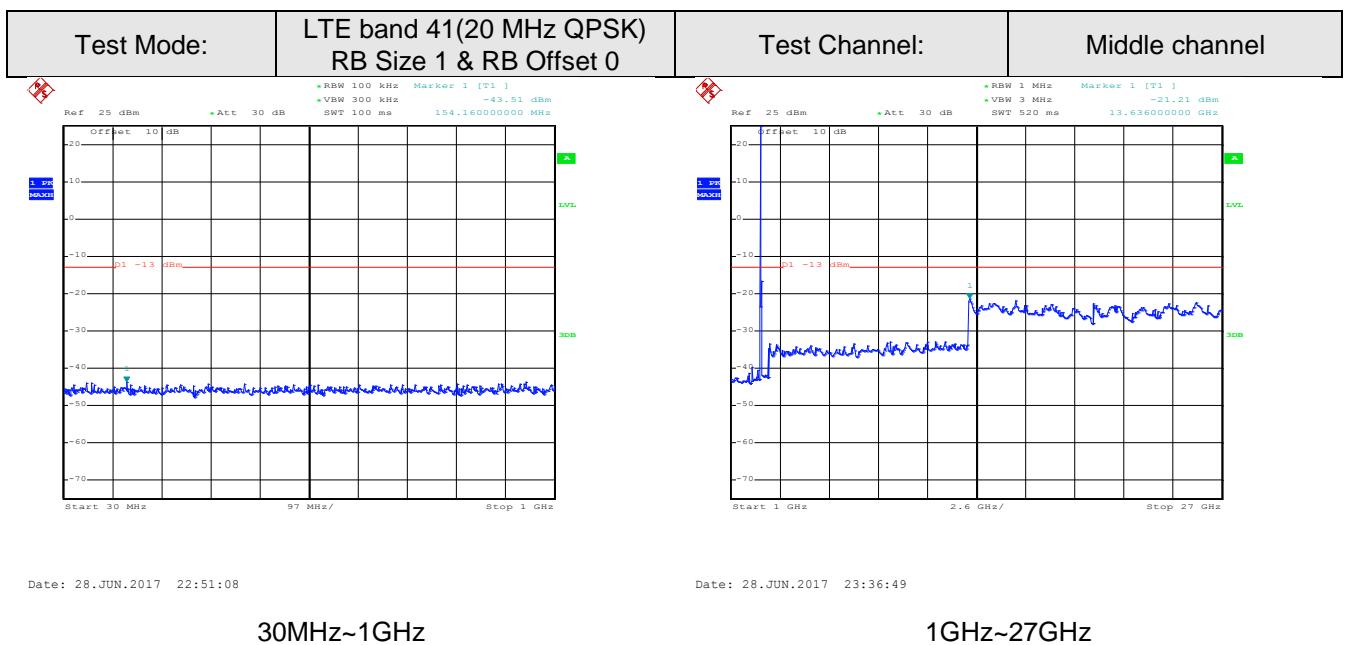
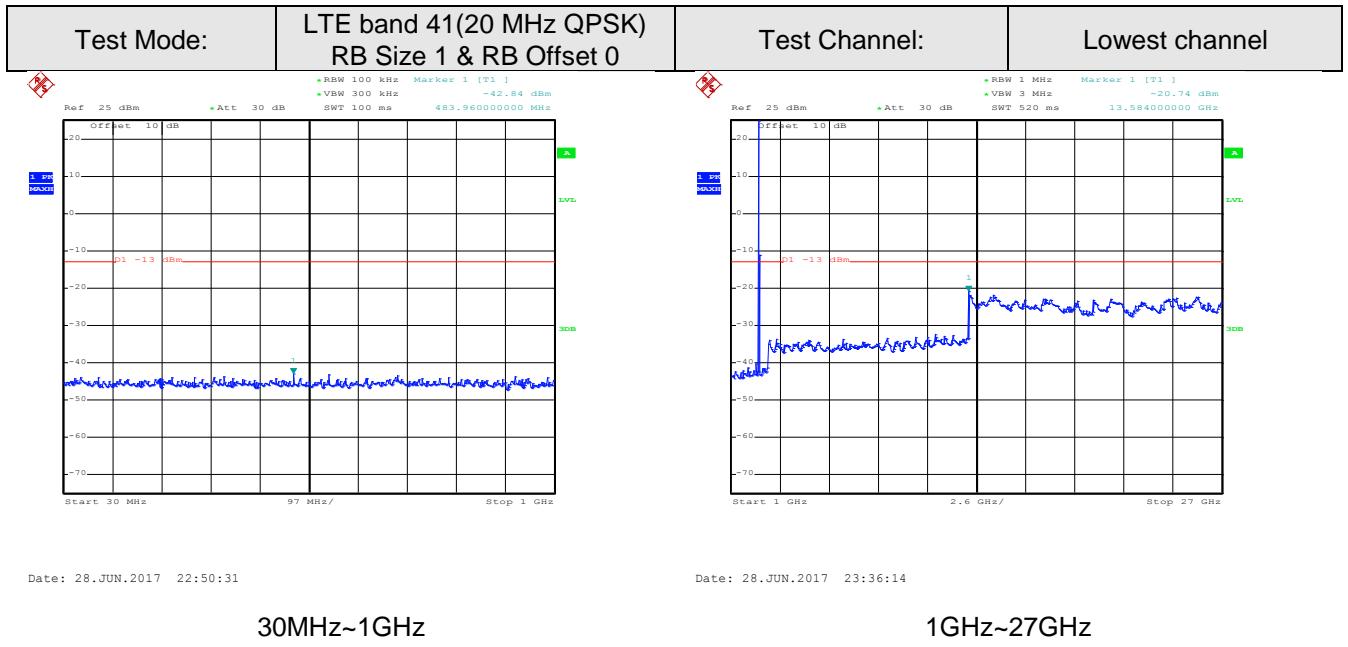


Date: 28.JUN.2017 22:52:11

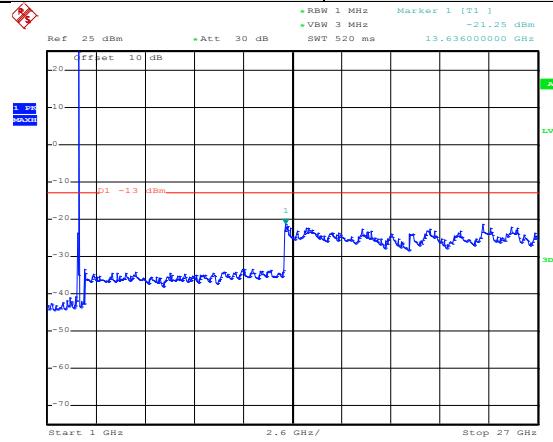
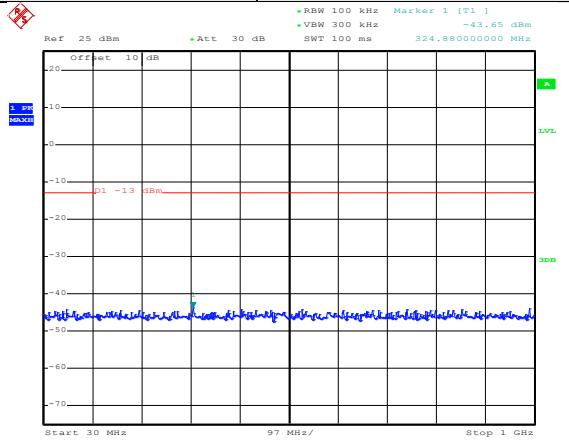
30MHz~1GHz

Date: 28.JUN.2017 23:38:08

1GHz~27GHz



Test Mode:	LTE band 41(20 MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Highest channel
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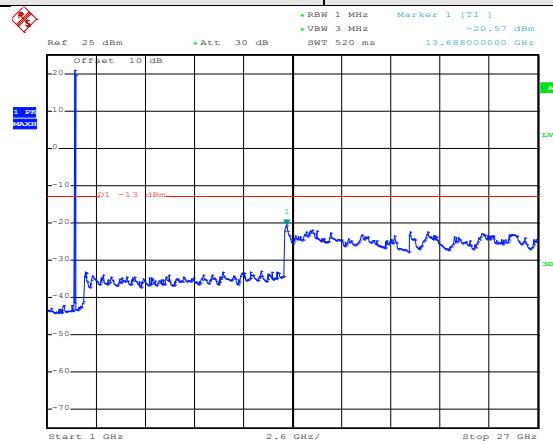
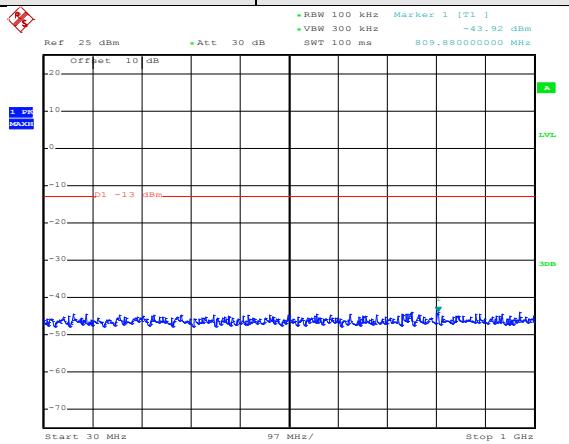
Date: 28.JUN.2017 22:51:43

30MHz~1GHz

Date: 28.JUN.2017 23:38:49

1GHz~27GHz

Test Mode:	LTE band 41(20 MHz QPSK) RB Size 50 & RB Offset 0	Test Channel:	Lowest channel
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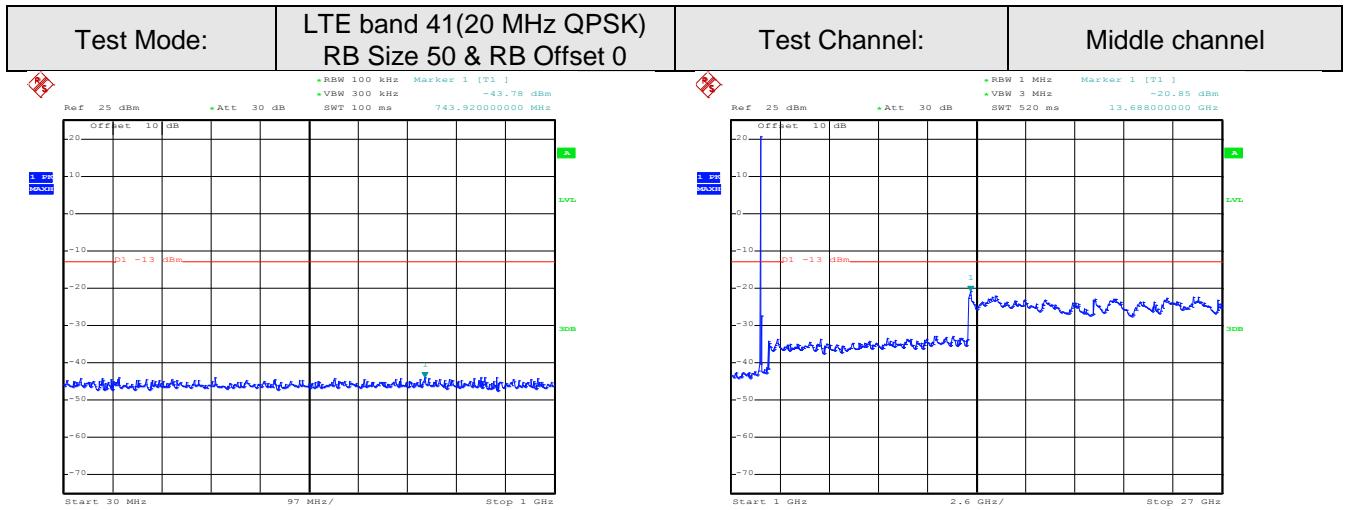


Date: 28.JUN.2017 22:50:42

30MHz~1GHz

Date: 28.JUN.2017 23:35:57

1GHz~27GHz

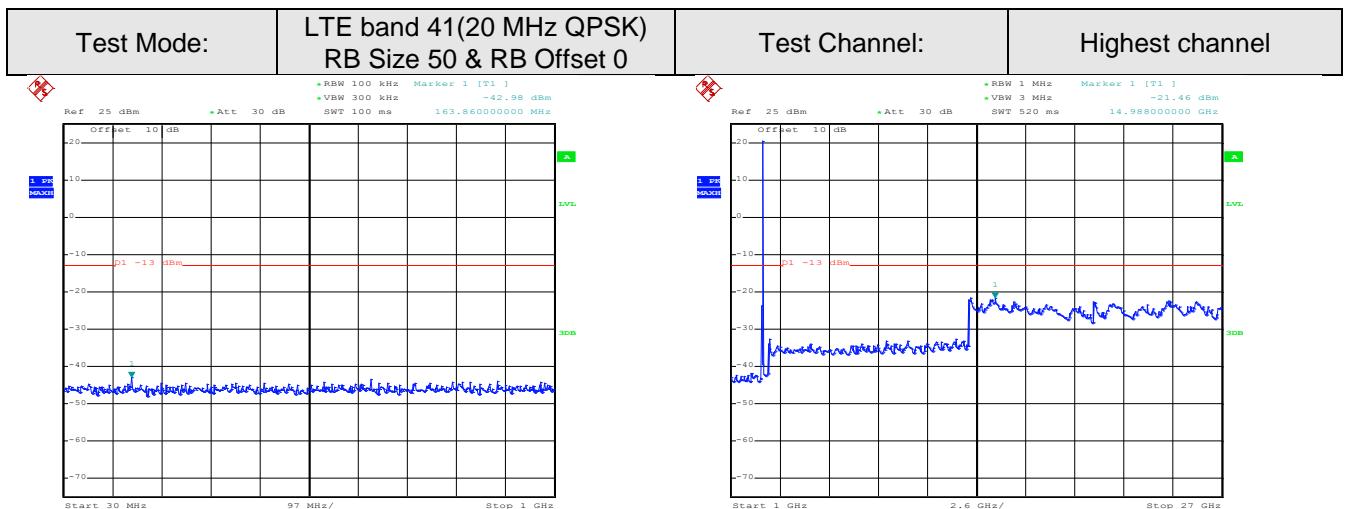


Date: 28.JUN.2017 22:51:19

30MHz~1GHz

Date: 28.JUN.2017 23:37:15

1GHz~27GHz

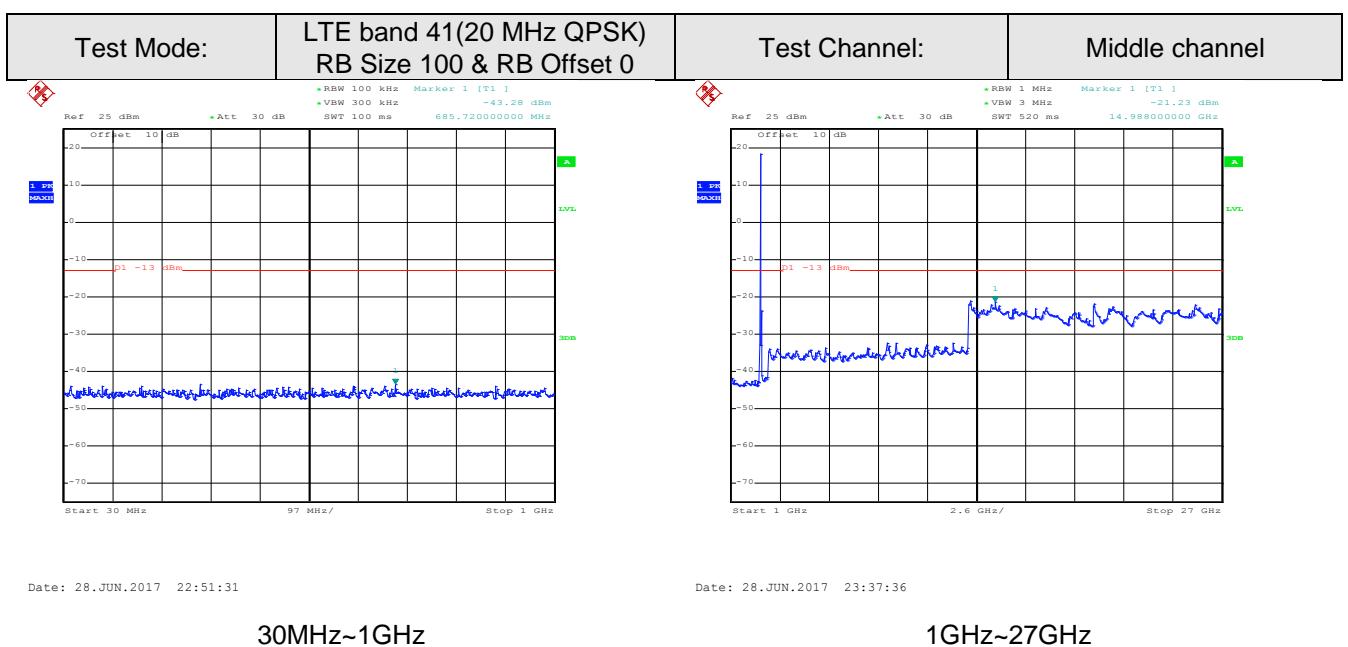
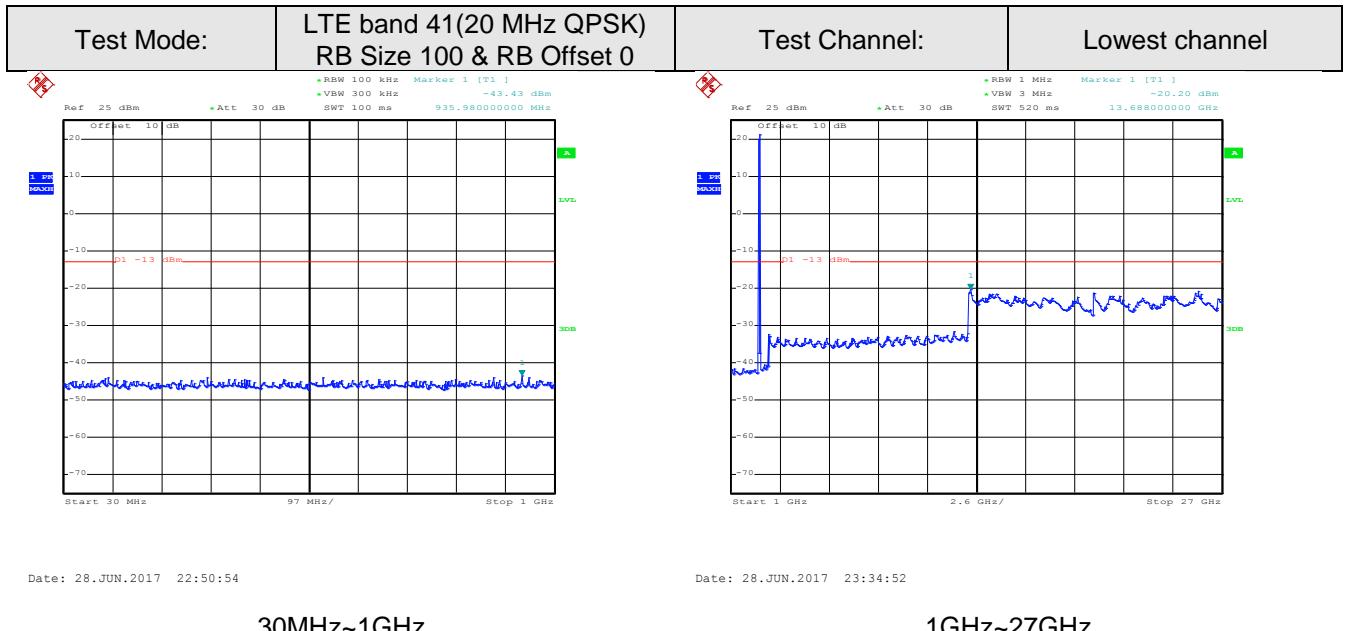


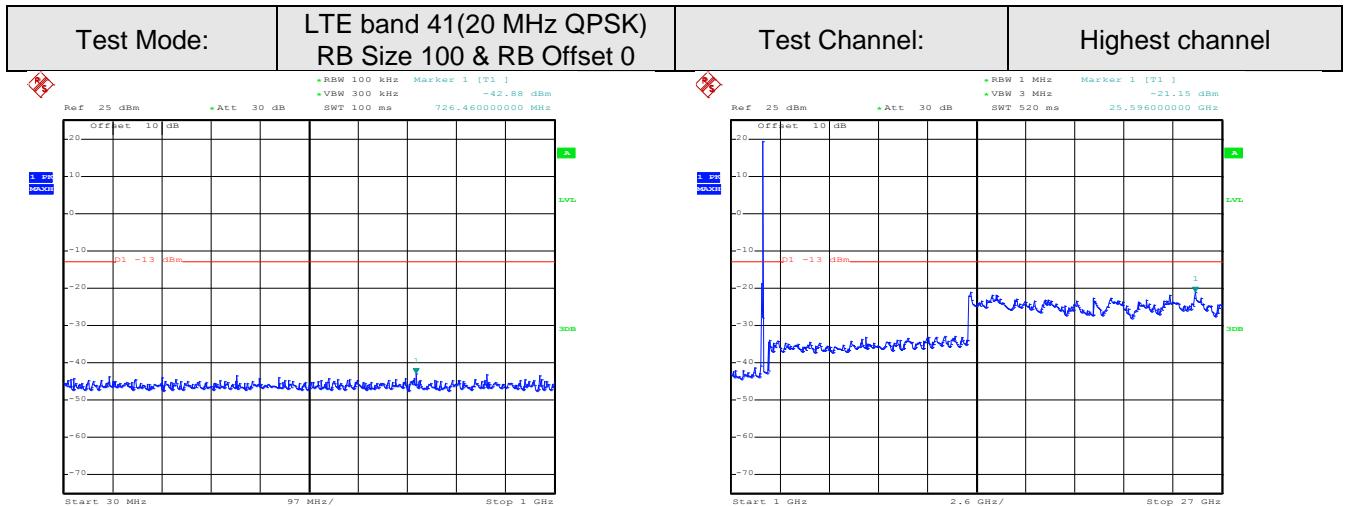
Date: 28.JUN.2017 22:51:56

30MHz~1GHz

Date: 28.JUN.2017 23:38:28

1GHz~27GHz





Date: 28.JUN.2017 22:52:07

30MHz~1GHz

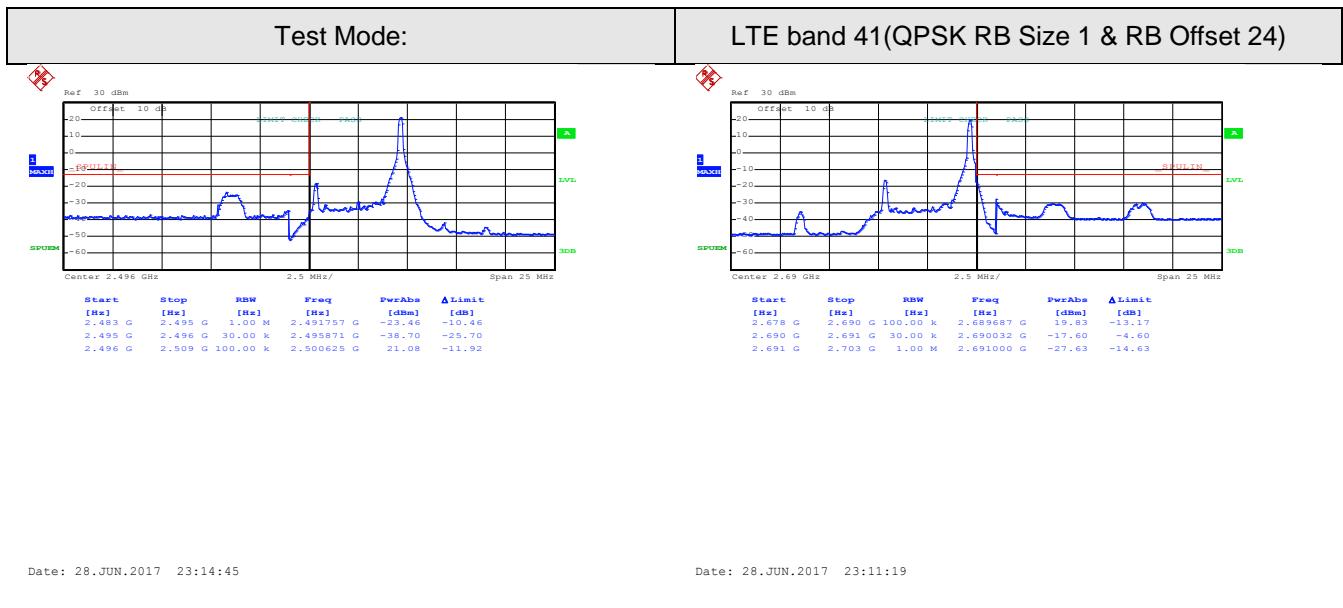
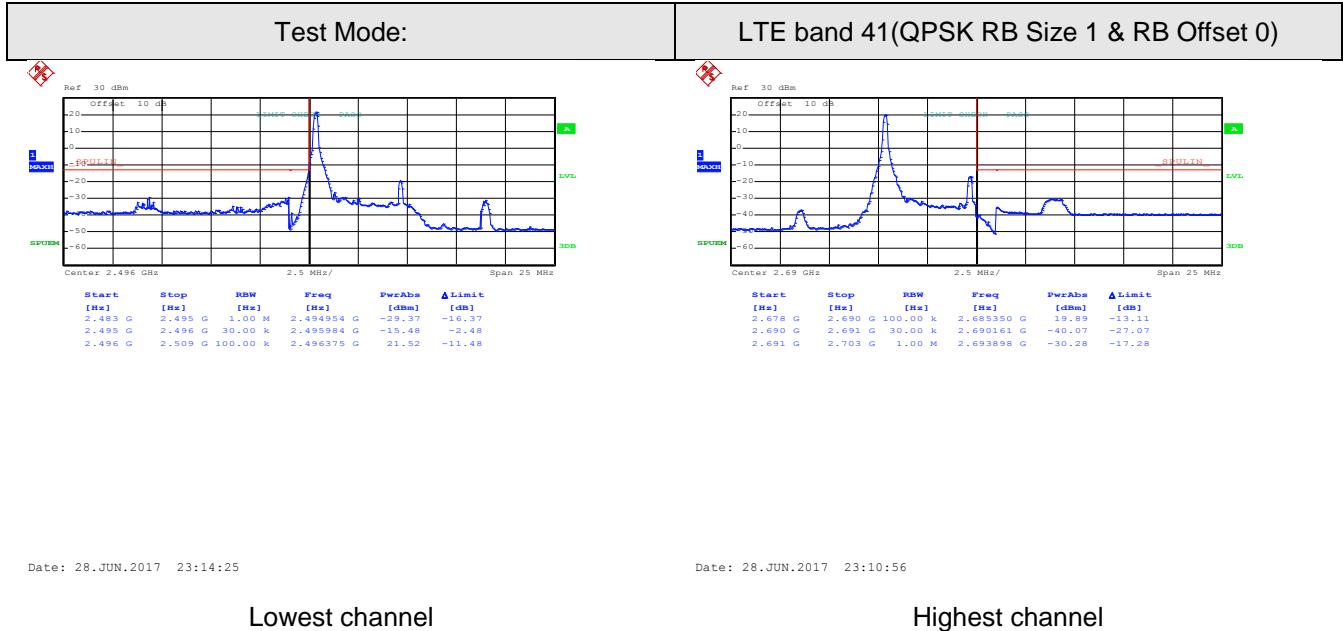
Date: 28.JUN.2017 23:38:02

1GHz~27GHz

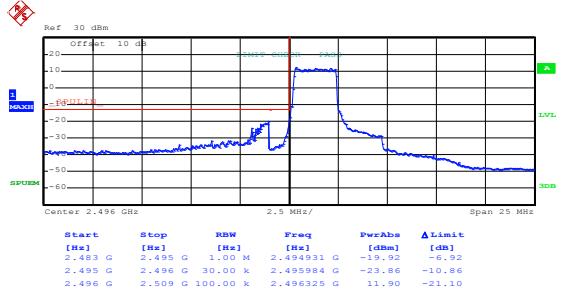
Band edge emission:

LTE band 41 part:

5MHz:

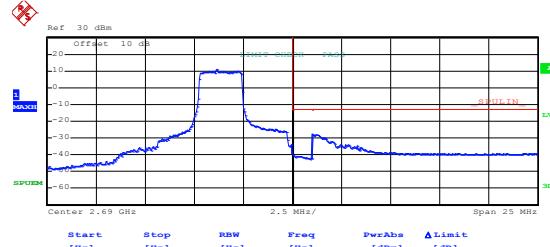


Test Mode:	LTE band 41(QPSK RB Size 12 & RB Offset 0)
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Date: 28.JUN.2017 23:15:07

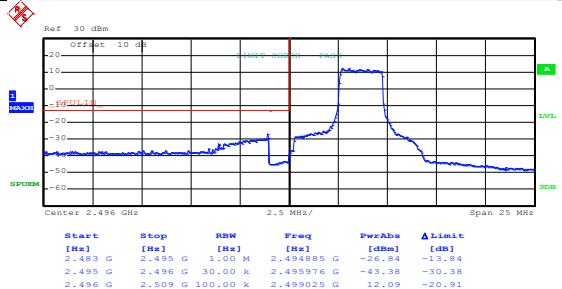
Lowest channel



Date: 28.JUN.2017 23:11:43

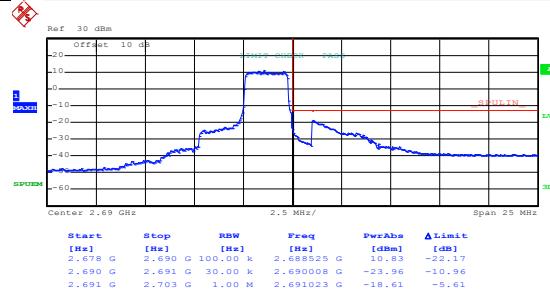
Highest channel

Test Mode:	LTE band 41(QPSK RB Size 12 & RB Offset 11)
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Date: 28.JUN.2017 23:15:25

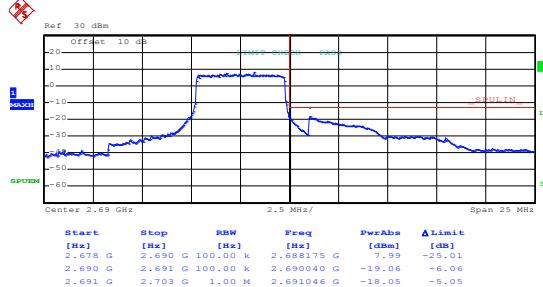
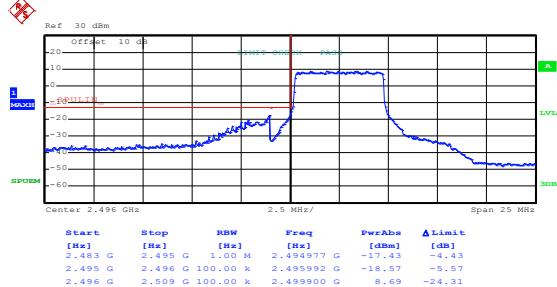
Lowest channel



Date: 28.JUN.2017 23:12:01

Highest channel

Test Mode:	LTE band 41(QPSK RB Size 25 & RB Offset 0)
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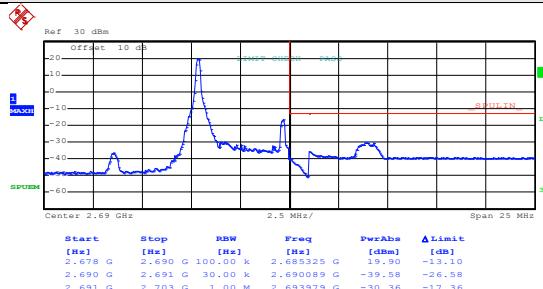
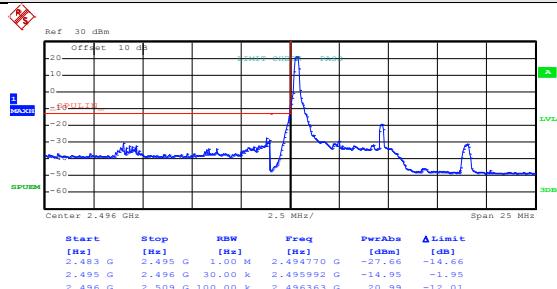
Date: 28.JUN.2017 23:13:56

Lowest channel

Date: 28.JUN.2017 23:13:11

Highest channel

Test Mode:	LTE band 41(16QAM RB Size 1 & RB Offset 0)
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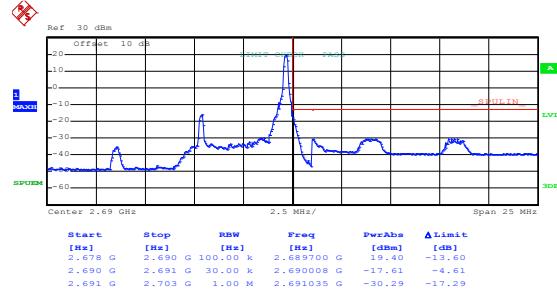
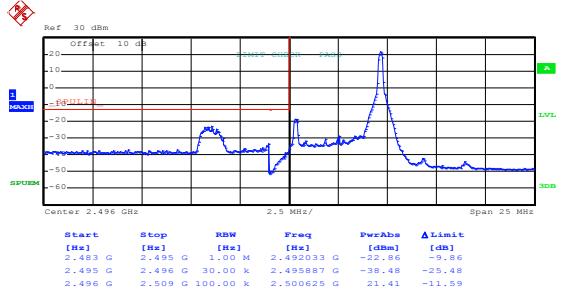
Date: 28.JUN.2017 23:14:35

Lowest channel

Date: 28.JUN.2017 23:11:05

Highest channel

Test Mode:	LTE band 41(16QAM RB Size 1 & RB Offset 24)
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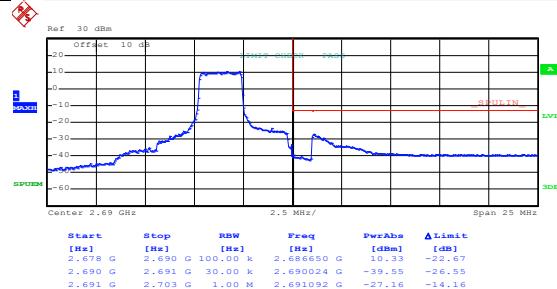
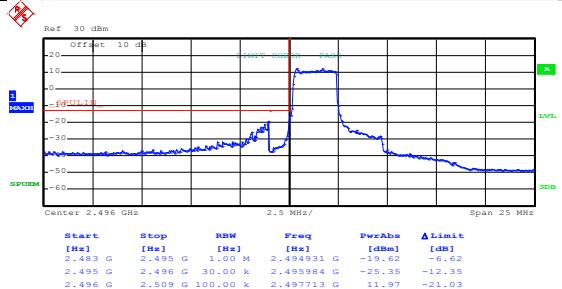
Date: 28.JUN.2017 23:14:53

Lowest channel

Date: 28.JUN.2017 23:11:30

Highest channel

Test Mode:	LTE band 41(16QAM RB Size 12 & RB Offset 0)
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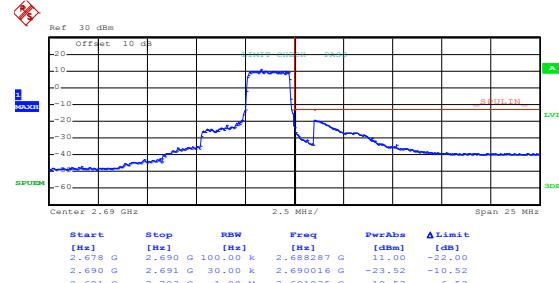
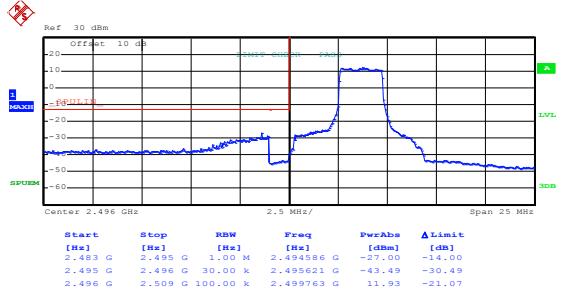
Date: 28.JUN.2017 23:15:13

Lowest channel

Date: 28.JUN.2017 23:11:51

Highest channel

Test Mode:	LTE band 41(16QAM RB Size 12 & RB Offset 11)
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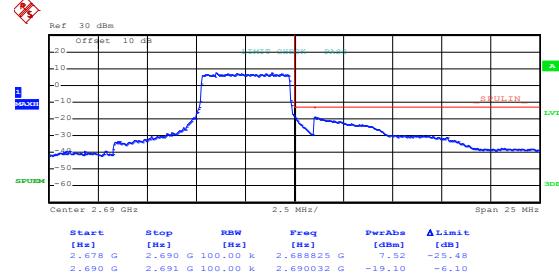
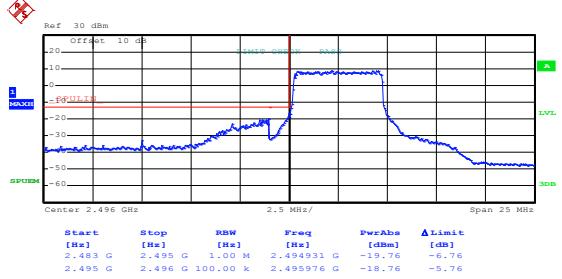
Date: 28.JUN.2017 23:15:36

Lowest channel

Date: 28.JUN.2017 23:12:08

Highest channel

Test Mode:	LTE band 41(16QAM RB Size 25 & RB Offset 0)
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Date: 28.JUN.2017 23:14:02

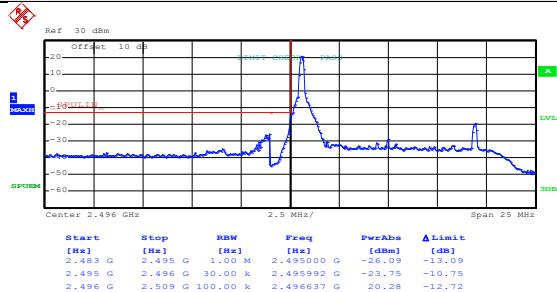
Lowest channel

Date: 28.JUN.2017 23:13:20

Highest channel

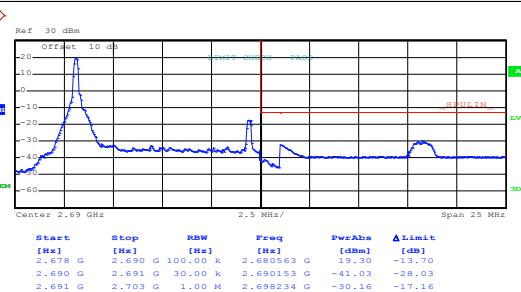
10MHz:

Test Mode:	LTE band 41(QPSK RB Size 1 & RB Offset 0)
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Date: 28.JUN.2017 23:06:14

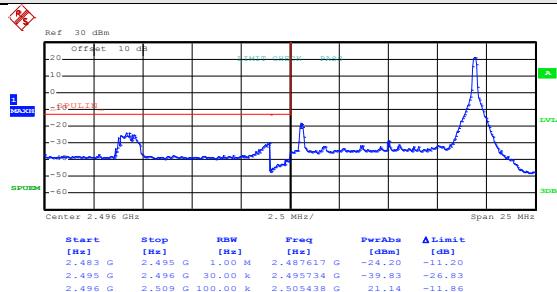
Lowest channel



Date: 28.JUN.2017 23:08:37

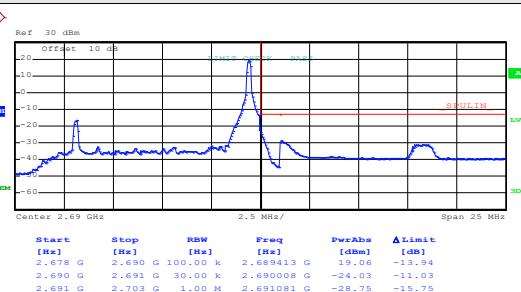
Highest channel

Test Mode:	LTE band 41(QPSK RB Size 1 & RB Offset 49)
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Date: 28.JUN.2017 23:06:02

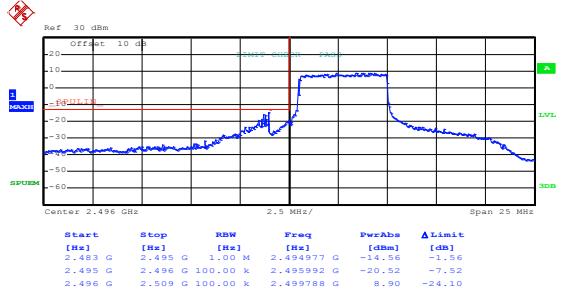
Lowest channel



Date: 28.JUN.2017 23:09:00

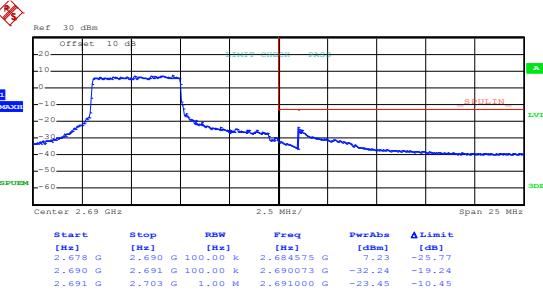
Highest channel

Test Mode:	LTE band 41(QPSK RB Size 25 & RB Offset 0)
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Date: 28.JUN.2017 23:06:51

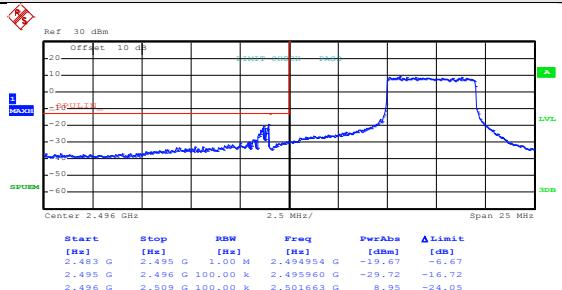
Lowest channel



Date: 28.JUN.2017 23:09:27

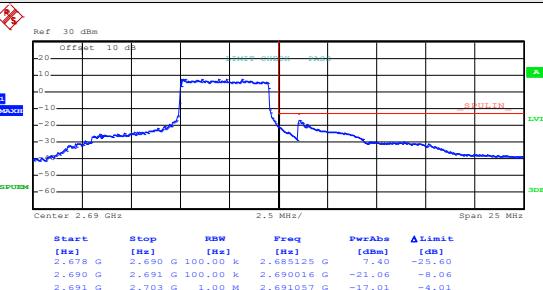
Highest channel

Test Mode:	LTE band 41(QPSK RB Size 25 & RB Offset 24)
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Date: 28.JUN.2017 23:07:08

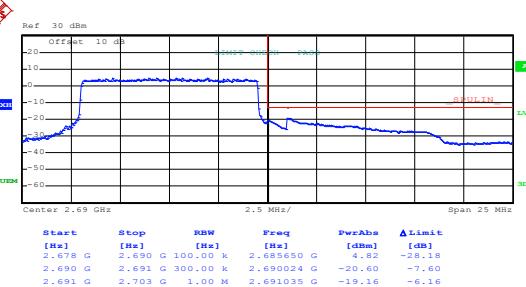
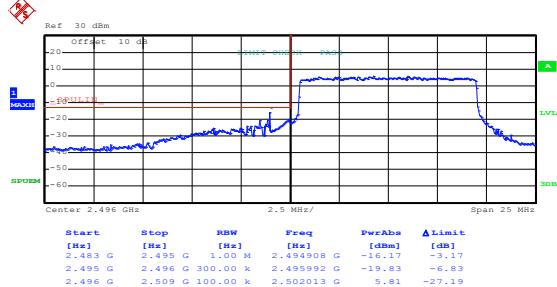
Lowest channel



Date: 28.JUN.2017 23:09:42

Highest channel

Test Mode:	LTE band 41(QPSK RB Size 50 & RB Offset 0)
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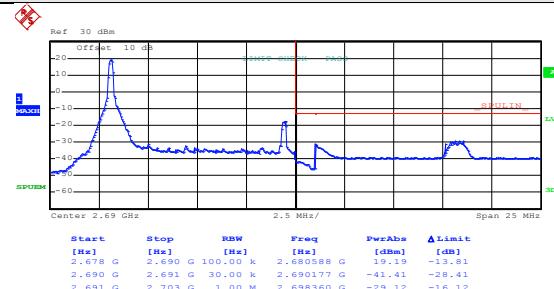
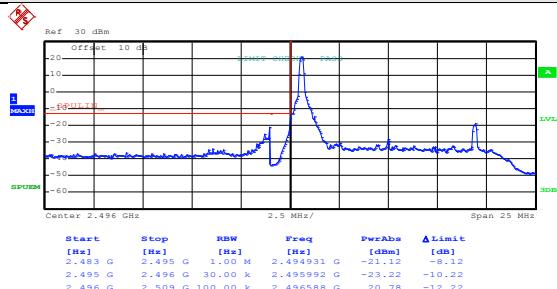
Date: 28.JUN.2017 23:07:54

Lowest channel

Date: 28.JUN.2017 23:10:13

Highest channel

Test Mode:	LTE band 41(16QAM RB Size 1 & RB Offset 0)
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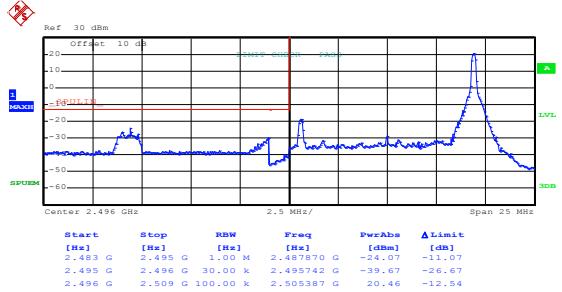
Date: 28.JUN.2017 23:06:26

Lowest channel

Date: 28.JUN.2017 23:08:46

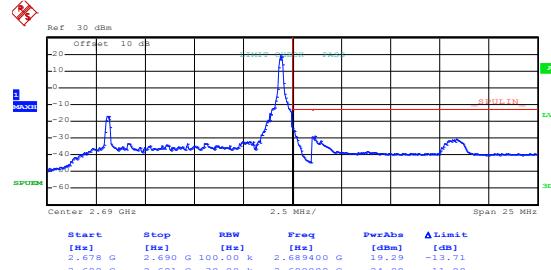
Highest channel

Test Mode:	LTE band 41(16QAM RB Size 1 & RB Offset 49)
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Date: 28.JUN.2017 23:05:54

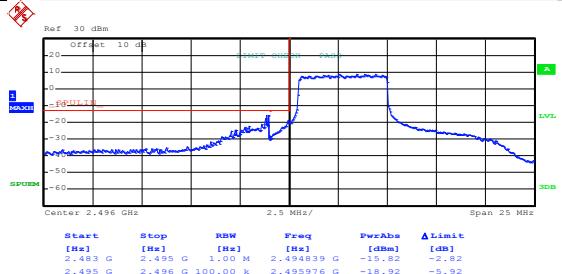
Lowest channel



Date: 28.JUN.2017 23:09:05

Highest channel

Test Mode:	LTE band 41(16QAM RB Size 25 & RB Offset 0)
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Date: 28.JUN.2017 23:06:57

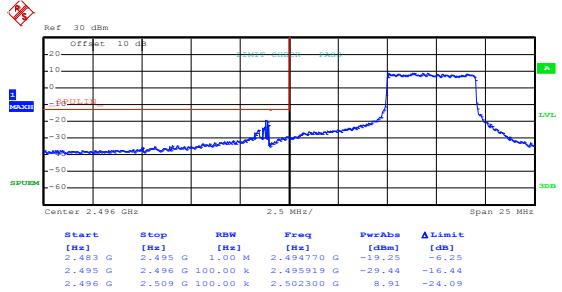
Lowest channel



Date: 28.JUN.2017 23:09:32

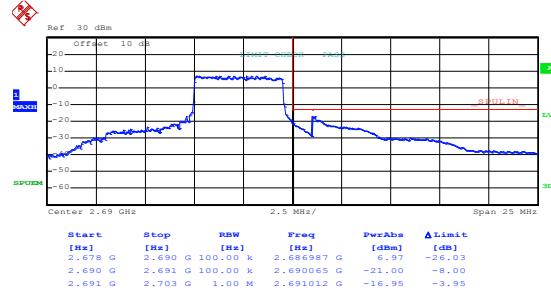
Highest channel

Test Mode:	LTE band 41(16QAM RB Size 25 & RB Offset 24)
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Date: 28.JUN.2017 23:07:16

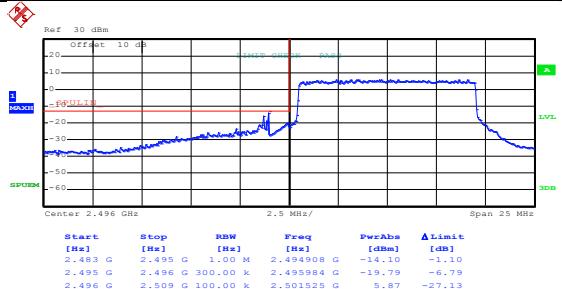
Lowest channel



Date: 28.JUN.2017 23:09:48

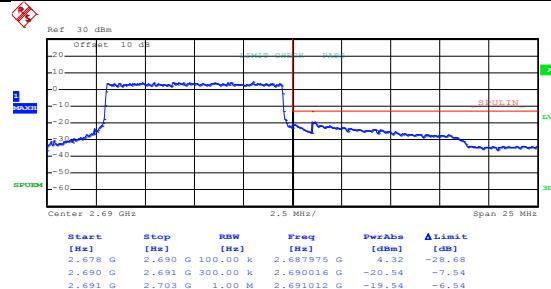
Highest channel

Test Mode:	LTE band 41(16QAM RB Size 50 & RB Offset 0)
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Date: 28.JUN.2017 23:08:03

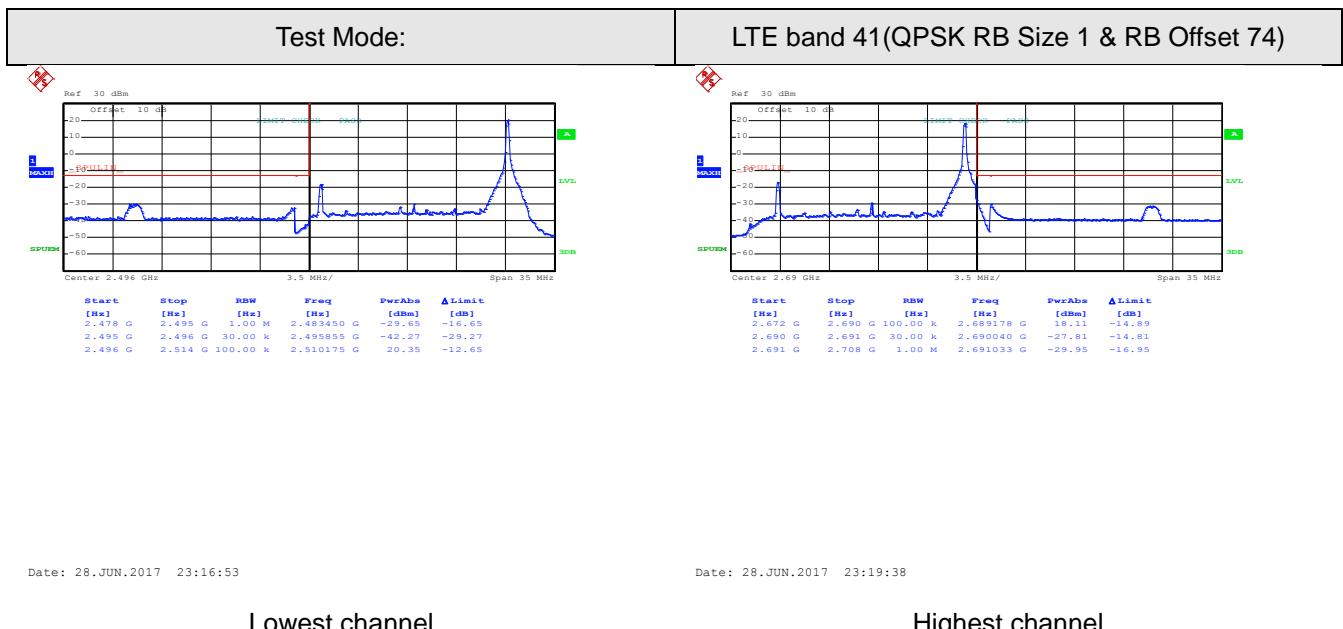
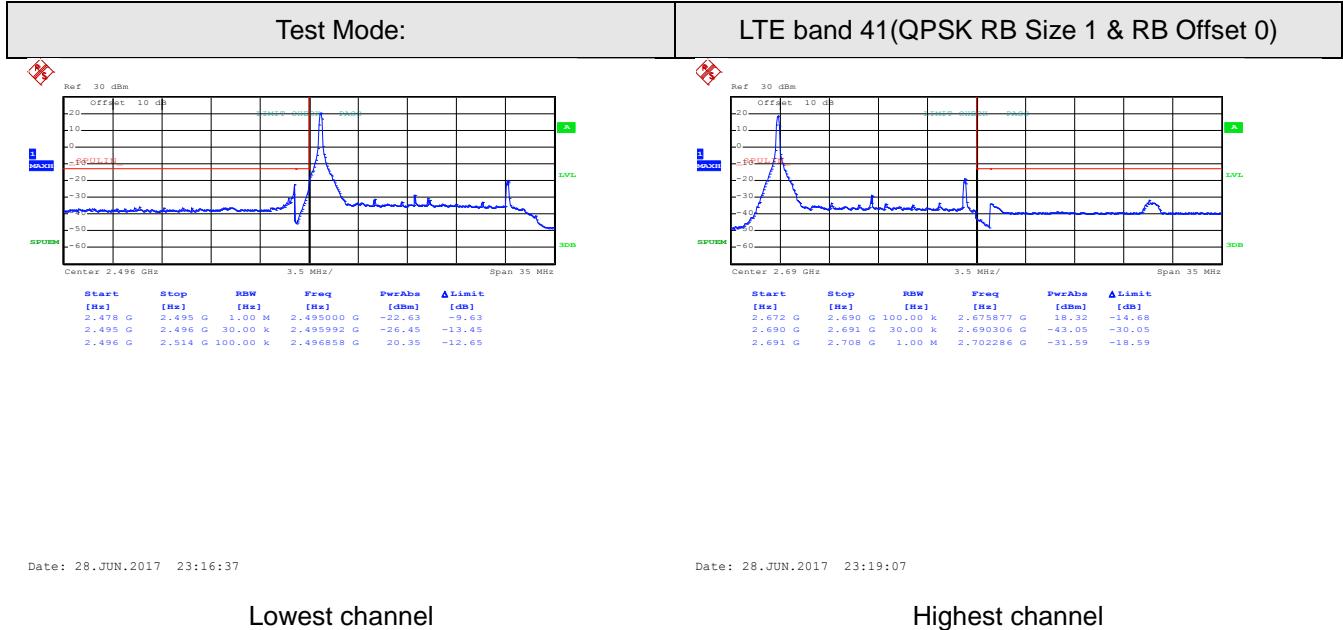
Lowest channel

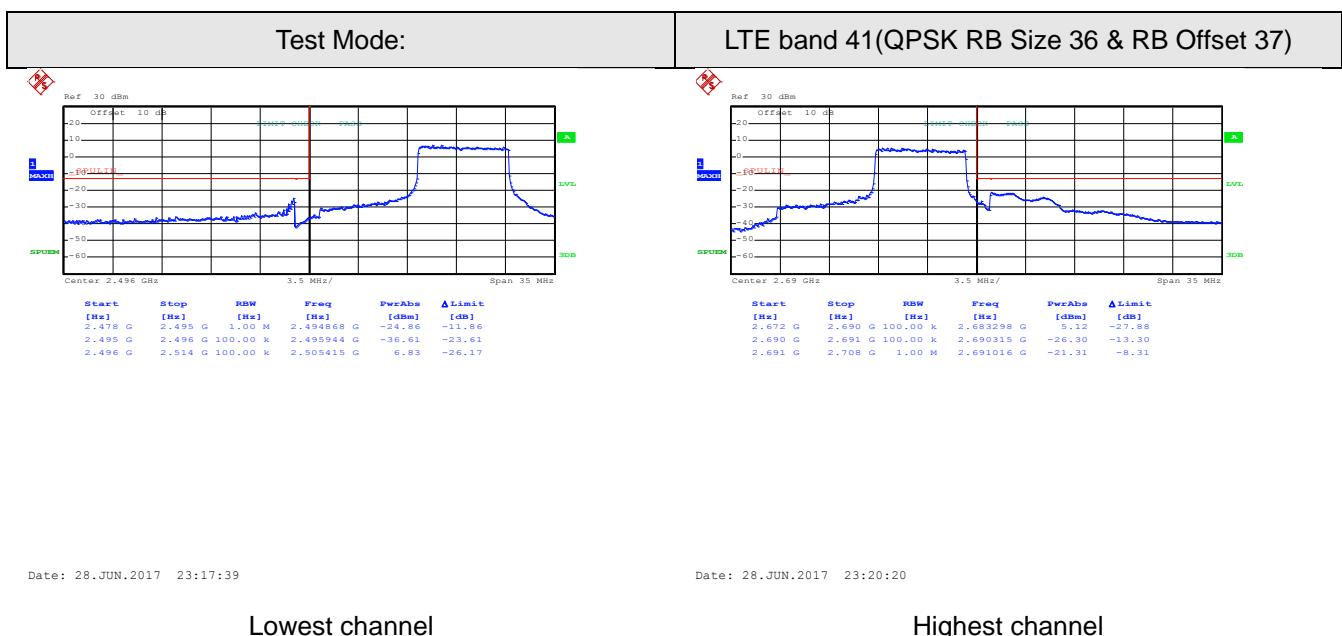
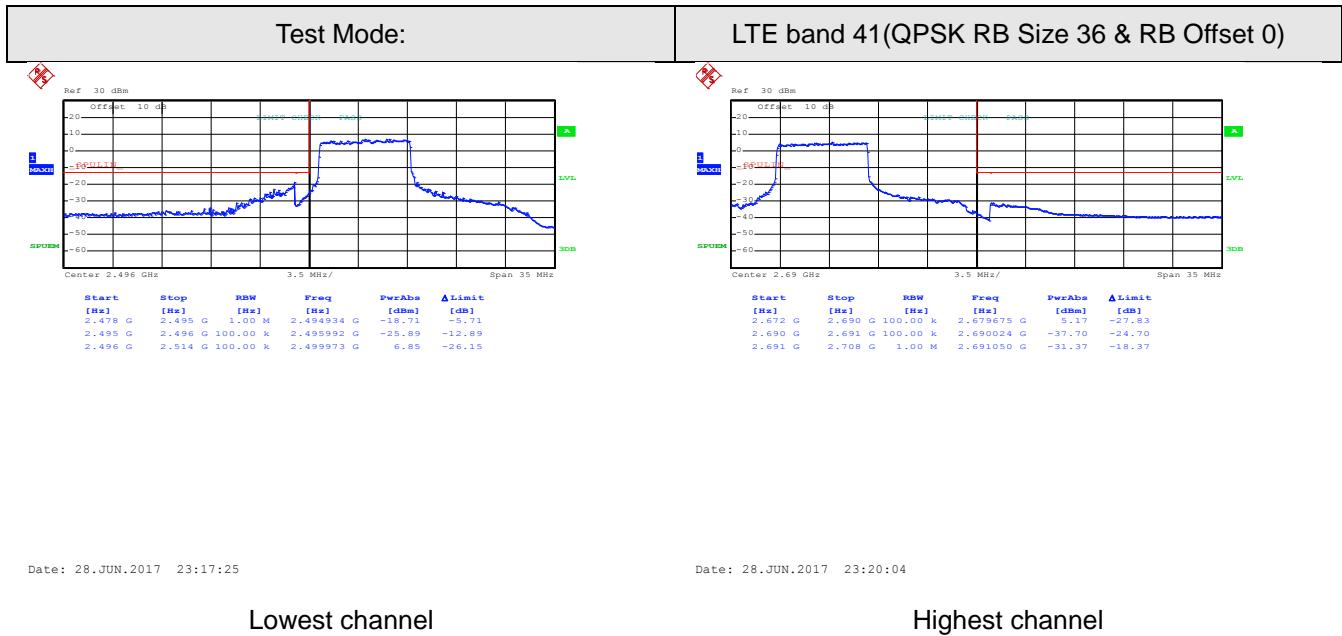


Date: 28.JUN.2017 23:10:27

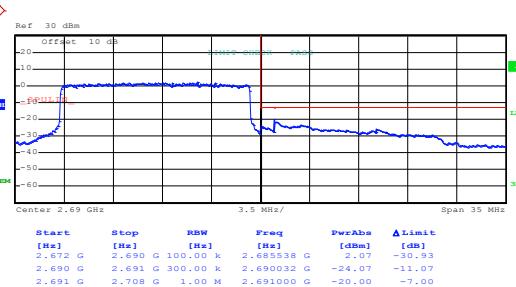
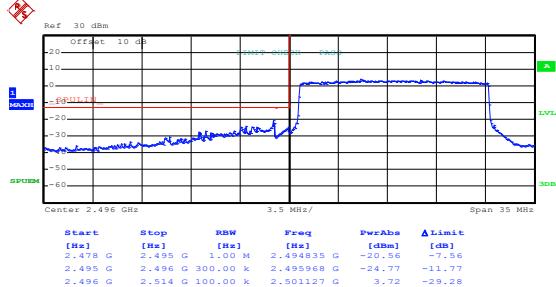
Highest channel

15MHz:





Test Mode:	LTE band 41(QPSK RB Size 75 & RB Offset 0)
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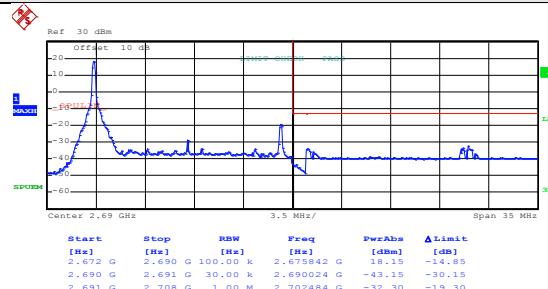
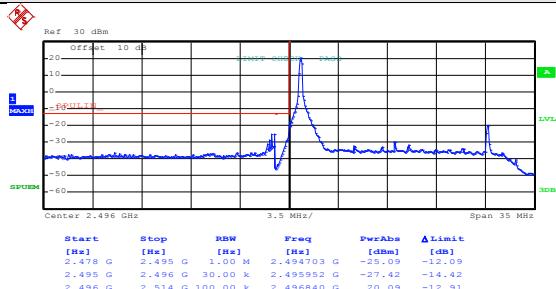
Date: 28.JUN.2017 23:18:09

Lowest channel

Date: 28.JUN.2017 23:20:43

Highest channel

Test Mode:	LTE band 41(16QAM RB Size 1 & RB Offset 0)
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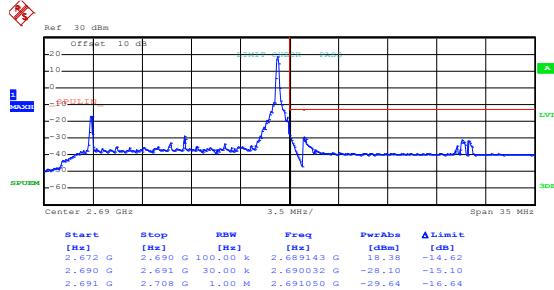
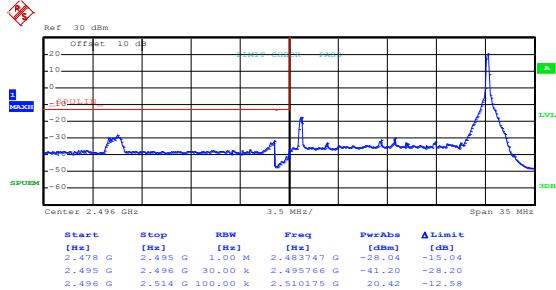
Date: 28.JUN.2017 23:16:44

Lowest channel

Date: 28.JUN.2017 23:19:13

Highest channel

Test Mode:	LTE band 41(16QAM RB Size 1 & RB Offset 74)
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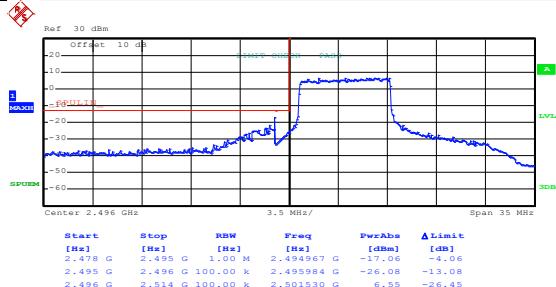
Date: 28.JUN.2017 23:17:03

Lowest channel

Date: 28.JUN.2017 23:19:44

Highest channel

Test Mode:	LTE band 41(16QAM RB Size 36 & RB Offset 0)
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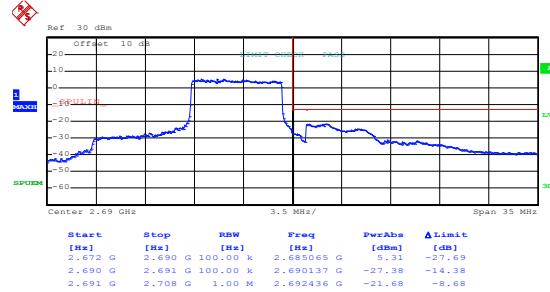
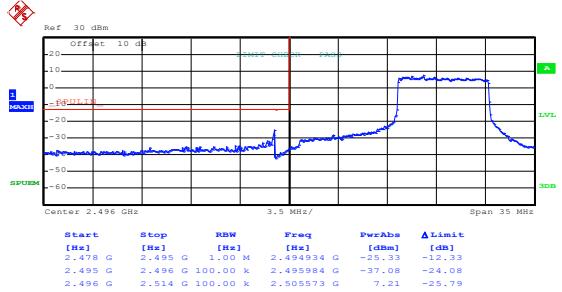
Date: 28.JUN.2017 23:17:30

Lowest channel

Date: 28.JUN.2017 23:20:11

Highest channel

Test Mode:	LTE band 41(16QAM RB Size 36 & RB Offset 37)
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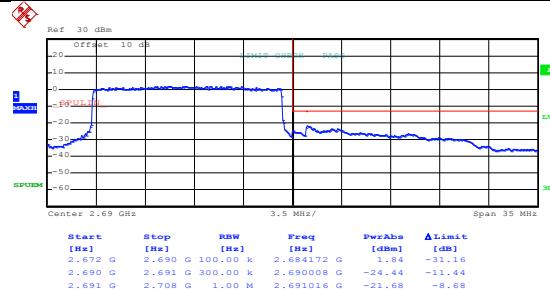
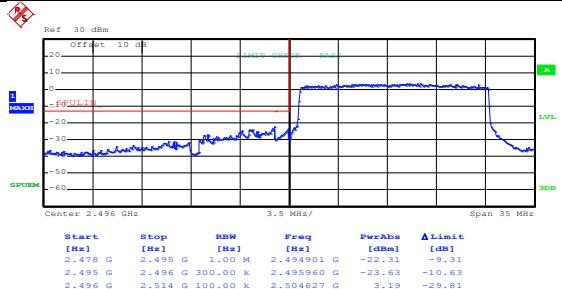
Date: 28.JUN.2017 23:17:44

Lowest channel

Date: 28.JUN.2017 23:20:27

Highest channel

Test Mode:	LTE band 41(16QAM RB Size 75 & RB Offset 0)
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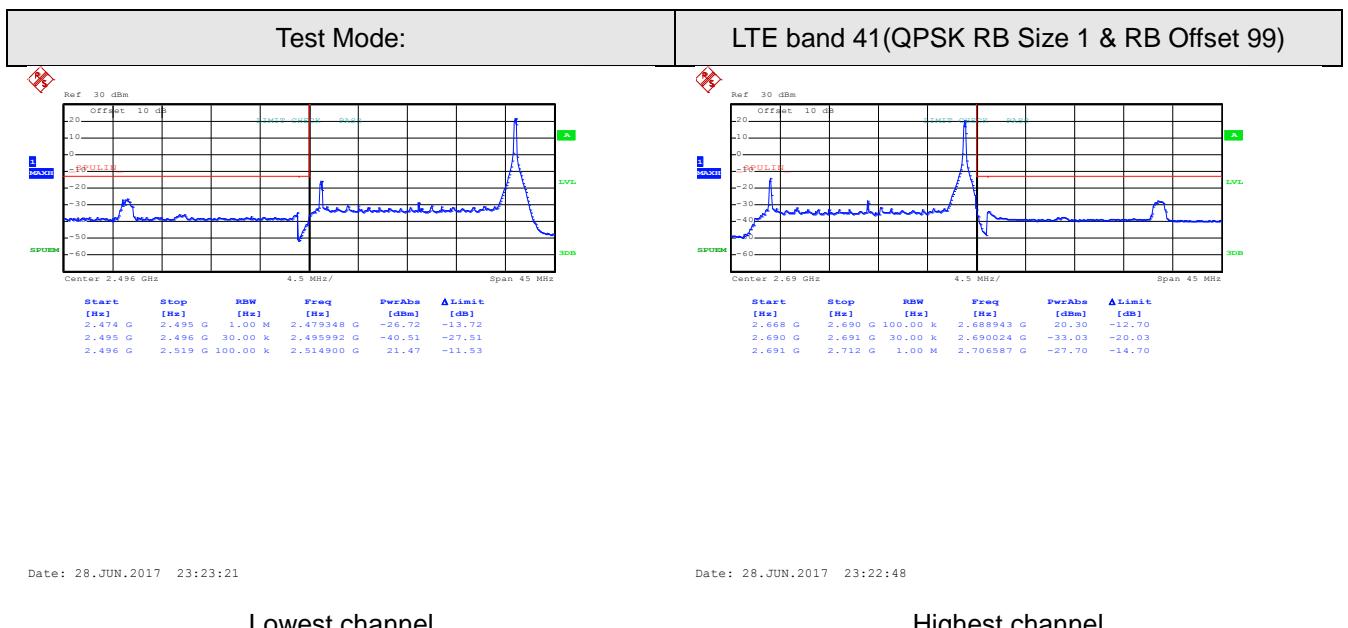
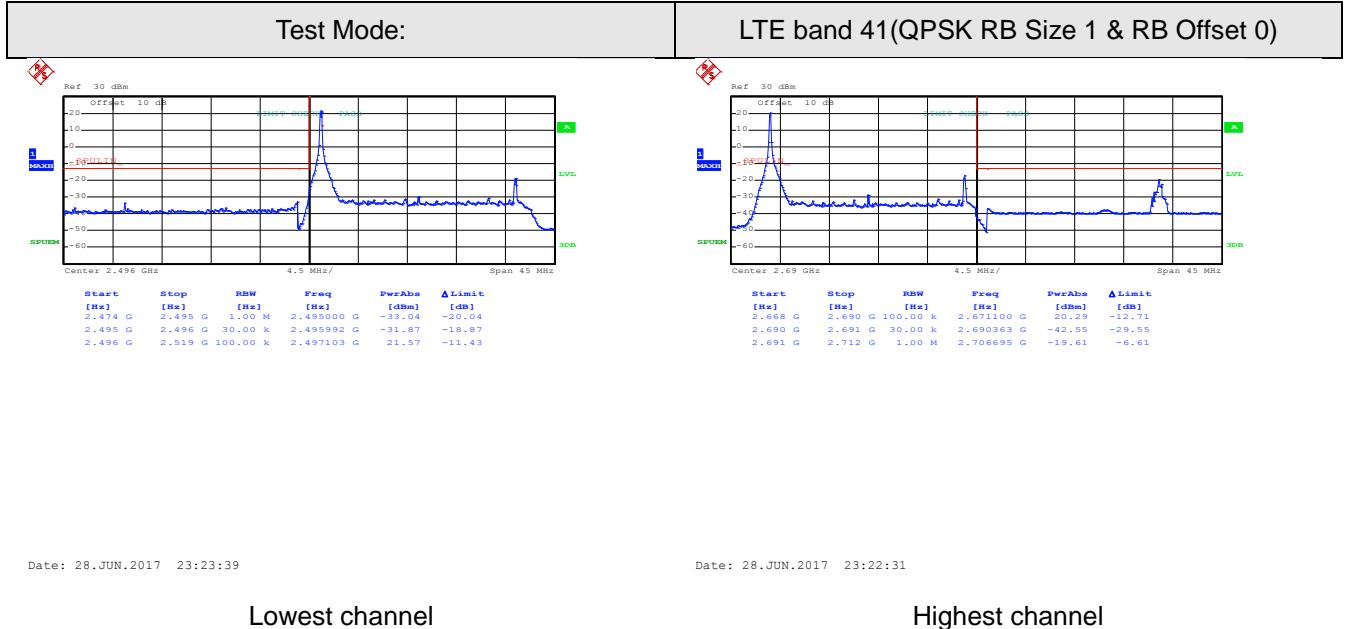
Date: 28.JUN.2017 23:18:15

Lowest channel

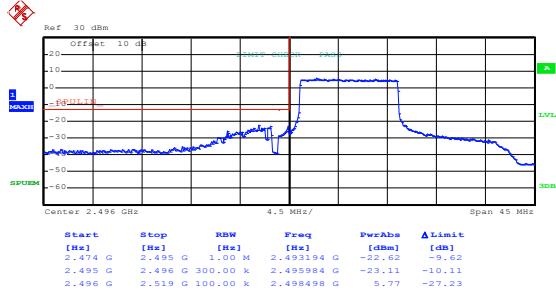
Date: 28.JUN.2017 23:20:48

Highest channel

20MHz:

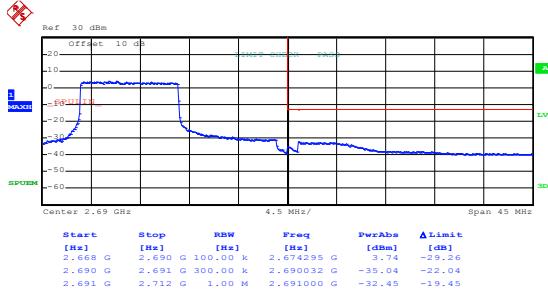


Test Mode:	LTE band 41(QPSK RB Size 50 & RB Offset 0)
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Date: 28.JUN.2017 23:24:04

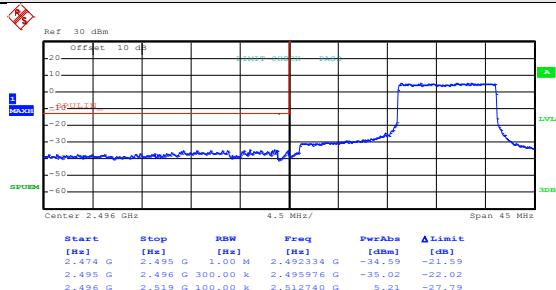
Lowest channel



Date: 28.JUN.2017 23:21:47

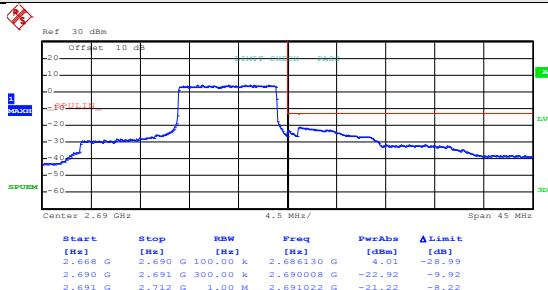
Highest channel

Test Mode:	LTE band 41(QPSK RB Size 50 & RB Offset 49)
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Date: 28.JUN.2017 23:24:20

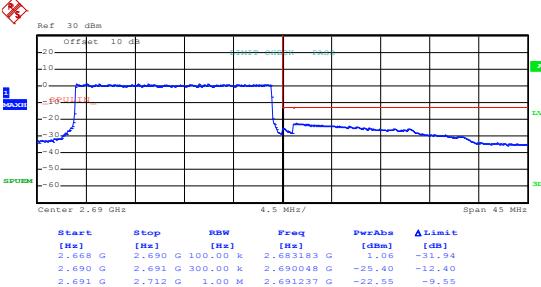
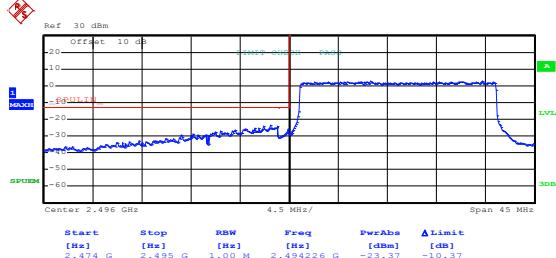
Lowest channel



Date: 28.JUN.2017 23:22:04

Highest channel

Test Mode:	LTE band 41(QPSK RB Size 100 & RB Offset 0)
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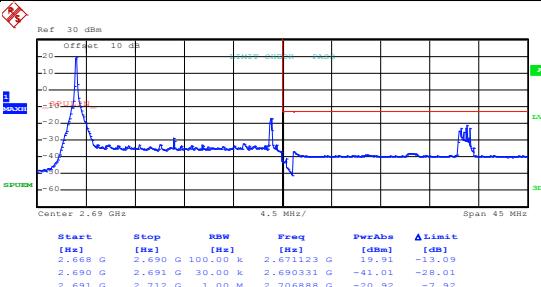
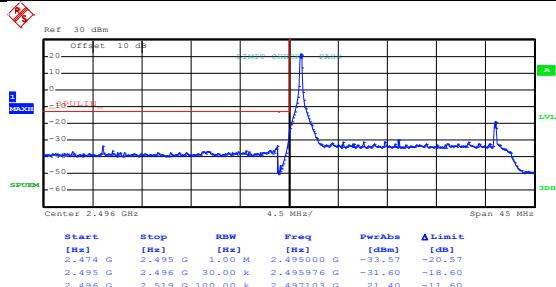
Date: 28.JUN.2017 23:24:38

Date: 28.JUN.2017 23:21:28

Lowest channel

Highest channel

Test Mode:	LTE band 41(16QAM RB Size 1 & RB Offset 0)
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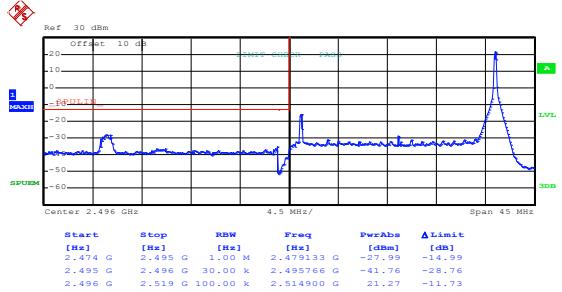
Date: 28.JUN.2017 23:23:44

Date: 28.JUN.2017 23:22:37

Lowest channel

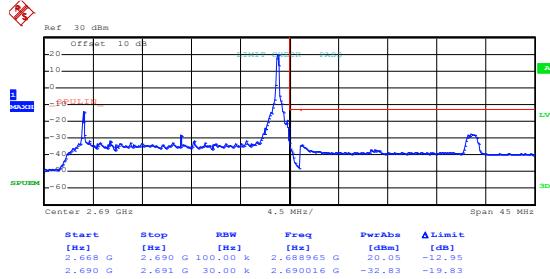
Highest channel

Test Mode:	LTE band 41(16QAM RB Size 1 & RB Offset 99)
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Date: 28.JUN.2017 23:23:28

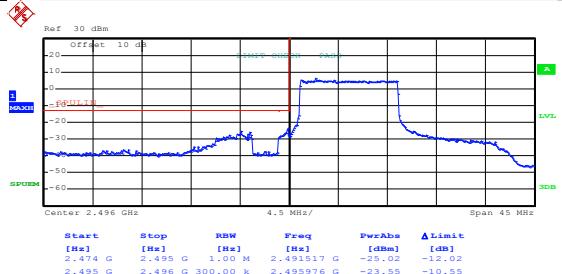
Lowest channel



Date: 28.JUN.2017 23:22:54

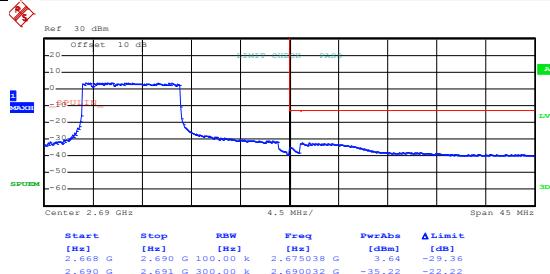
Highest channel

Test Mode:	LTE band 41(16QAM RB Size 50 & RB Offset 0)
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Date: 28.JUN.2017 23:24:09

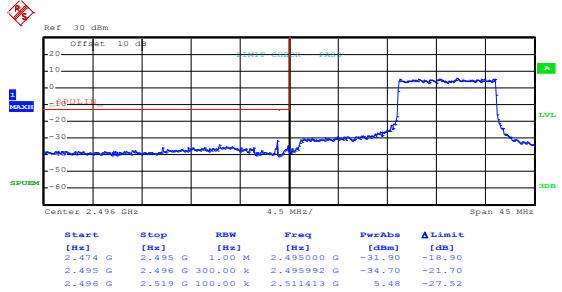
Lowest channel



Date: 28.JUN.2017 23:21:52

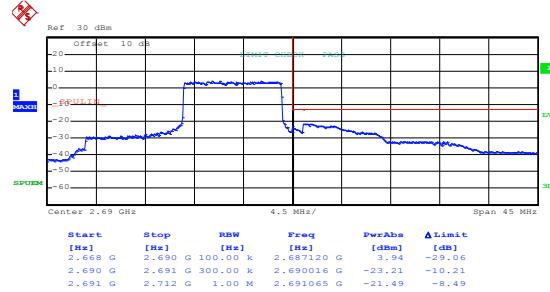
Highest channel

Test Mode:	LTE band 41(16QAM RB Size 50 & RB Offset 49)
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Date: 28.JUN.2017 23:24:26

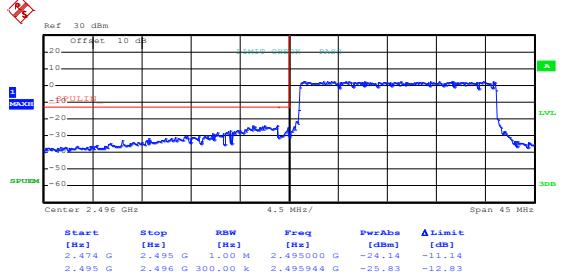
Lowest channel



Date: 28.JUN.2017 23:22:10

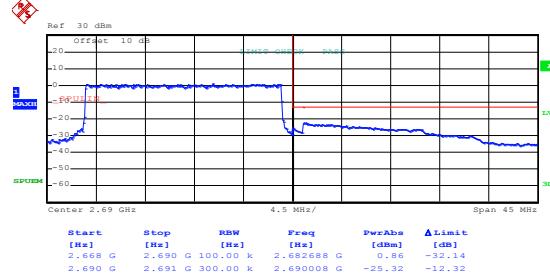
Highest channel

Test Mode:	LTE band 41(16QAM RB Size 100 & RB Offset 0)
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Date: 28.JUN.2017 23:24:45

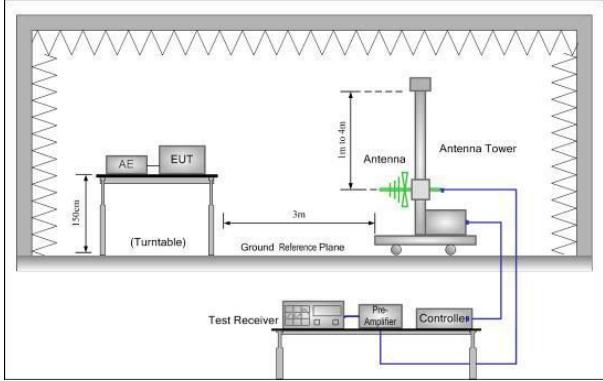
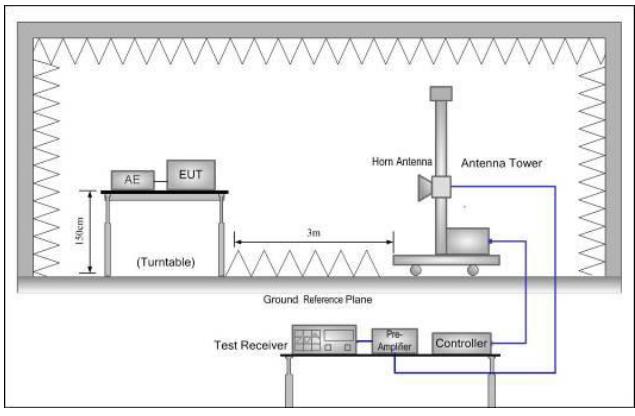
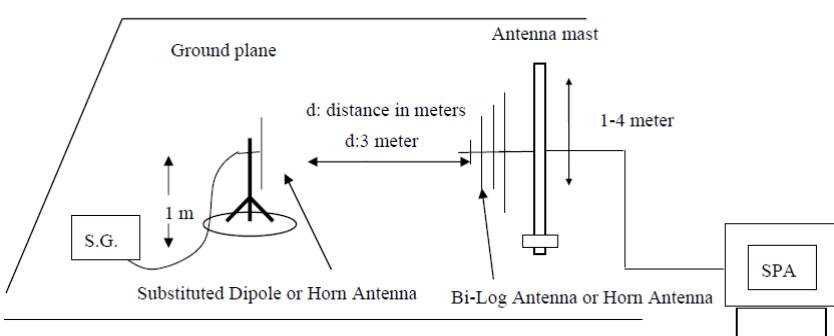
Lowest channel



Date: 28.JUN.2017 23:21:34

Highest channel

6.8 ERP, EIRP Measurement

Test Requirement:	Part 27.50 (h)(1)
Test Method:	FCC part2.1046
Limit:	<p>(ii) If a main or booster station sectorizes or otherwise uses one or more transmitting antennas with a non-omnidirectional horizontal plane radiation pattern, the maximum EIRP in dBW in a given direction shall be determined by the following formula: $EIRP = 33 \text{ dBW} + 10 \log(X/Y) \text{ dBW} + 10 \log(360/\text{beamwidth}) \text{ dBW}$, where X is the actual channel width in MHz, Y is either (i) 6 MHz if prior to transition or the station is in the MBS following transition or (ii) 5.5 MHz if the station is in the LBS and UBS following transition, and beamwidth is the total horizontal plane beamwidth of the individual transmitting antenna for the station or any sector measured at the half-power points.</p>
Test setup:	<p>Below 1GHz</p>  <p>Above 1GHz</p>  <p>Substituted method:</p> 

Test Procedure:	<ol style="list-style-type: none">1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.3. ERP in frequency band below 1GHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows: $\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable Loss (dB)}$4. EIRP in frequency band above 1GHz were measured using a substitution method. The EUT was replaced by or horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows: $\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable Loss (dB)}$5. The worse case was relating to the conducted output power.
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data (worst case):

LTE band 41 part

Lowest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
5MHz(RB size 1 & RB offset 0)								
2498.50	39675	QPSK	5	H	V	17.56	33.00	Pass
					H	19.31		
2498.50	39675	16QAM	5	H	V	18.05	33.00	Pass
					H	19.55		
5MHz(RB size 12 & RB offset 0)								
2498.50	39675	QPSK	5	H	V	14.45	33.00	Pass
					H	16.45		
2498.50	39675	16QAM	5	H	V	14.22	33.00	Pass
					H	16.63		
5MHz(RB size 25 & RB offset 0)								
2498.50	39675	QPSK	5	H	V	15.56	33.00	Pass
					H	17.36		
2498.50	39675	16QAM	5	H	V	15.53	33.00	Pass
					H	17.49		

Middle channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
5MHz(RB size 1 & RB offset 0)								
2593.00	40620	QPSK	5	H	V	17.24	33.00	Pass
					H	19.98		
2593.00	40620	16QAM	5	H	V	18.44	33.00	Pass
					H	19.42		
5MHz(RB size 12 & RB offset 0)								
2593.00	40620	QPSK	5	H	V	14.17	33.00	Pass
					H	16.49		
2593.00	40620	16QAM	5	H	V	14.01	33.00	Pass
					H	16.37		
5MHz(RB size 25 & RB offset 0)								
2593.00	40620	QPSK	5	H	V	15.48	33.00	Pass
					H	17.83		
2593.00	40620	16QAM	5	H	V	15.16	33.00	Pass
					H	17.44		

Highest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
5MHz(RB size 1 & RB offset 0)								
2687.50	41565	QPSK	5	H	V	17.02	33.00	Pass
					H	19.71		
2687.50	41565	16QAM	5	H	V	18.94	33.00	Pass
					H	19.39		
5MHz(RB size 12 & RB offset 0)								
2687.50	41565	QPSK	5	H	V	14.93	33.00	Pass
					H	16.25		
2687.50	41565	16QAM	5	H	V	14.73	33.00	Pass
					H	16.01		
5MHz(RB size 25 & RB offset 0)								
2687.50	41565	QPSK	5	H	V	15.94	33.00	Pass
					H	17.61		
2687.50	41565	16QAM	5	H	V	15.48	33.00	Pass
					H	17.42		

Lowest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
20MHz(RB size 1 & RB offset 0)								
2506.00	39750	QPSK	20	H	V	17.61	33.00	Pass
					H	19.35		
2506.00	39750	16QAM	20	H	V	18.27	33.00	Pass
					H	19.36		
20MHz(RB size 50 & RB offset 0)								
2506.00	39750	QPSK	20	H	V	14.39	33.00	Pass
					H	16.61		
2506.00	39750	16QAM	20	H	V	14.44	33.00	Pass
					H	16.43		
20MHz(RB size 100 & RB offset 0)								
2506.00	39750	QPSK	20	H	V	15.93	33.00	Pass
					H	17.38		
2506.00	39750	16QAM	20	H	V	15.78	33.00	Pass
					H	17.62		

Middle channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
20MHz(RB size 1 & RB offset 0)								
2593.00	40620	QPSK	20	H	V	17.24	33.00	Pass
					H	19.96		
2593.00	40620	16QAM	20	H	V	18.25	33.00	Pass
					H	19.83		
20MHz(RB size 50 & RB offset 0)								
2593.00	40620	QPSK	20	H	V	14.39	33.00	Pass
					H	16.82		
2593.00	40620	16QAM	20	H	V	14.83	33.00	Pass
					H	16.61		
20MHz(RB size 100 & RB offset 0)								
2593.00	40620	QPSK	20	H	V	15.96	33.00	Pass
					H	17.65		
2593.00	40620	16QAM	20	H	V	15.56	33.00	Pass
					H	17.39		

Highest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
20MHz(RB size 1 & RB offset 0)								
2680.00	41490	QPSK	20	H	V	17.67	33.00	Pass
					H	19.38		
2680.00	41490	16QAM	20	H	V	18.83	33.00	Pass
					H	19.31		
20MHz(RB size 50 & RB offset 0)								
2680.00	41490	QPSK	20	H	V	14.16	33.00	Pass
					H	16.39		
2680.00	41490	16QAM	20	H	V	14.33	33.00	Pass
					H	16.61		
20MHz(RB size 100 & RB offset 0)								
2680.00	41490	QPSK	20	H	V	15.28	33.00	Pass
					H	17.48		
2680.00	41490	16QAM	20	H	V	15.61	33.00	Pass
					H	17.32		

6.9 Field strength of spurious radiation measurement

Test Requirement:	Part 27.53(m)
Test Method:	FCC part2.1053
Limit:	-13dBm
Test setup:	<p>Below 1GHz</p> <p>Above 1GHz</p> <p>Substituted method:</p>
Test Procedure:	<ol style="list-style-type: none"> The EUT was placed on a non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. The frequency range up to tenth harmonic was investigated for each

	<p>of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.</p> <p>4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.</p> $\text{ERP / EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain(dB/dBi)} - \text{Cable Loss (dB)}$
Test Uncertainty:	± 4.88 dB
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details.
Test results:	Passed
Remark:	During the test, pre-scan the QPSK, 16QAM modulation, and found the QPSK modulation is the worst case.

Measurement Data (worst case):

Band41

5MHz for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
4997.00	Vertical	-24.54	-13	Pass
7495.50	V	-29.79		
9994.00	V	-28.33		
4997.00	Horizontal	-24.81		
7495.50	H	-28.71		
9994.00	H	-28.24		
Middle				
5186.00	Vertical	-33.22	-13	Pass
7779.00	V	-34.41		
10372.00	V	-17.68		
5186.00	Horizontal	-33.30		
7779.00	H	-34.09		
10372.00	H	-17.36		
Highest				
5375.00	Vertical	-29.47	-13	Pass
8062.50	V	-32.87		
10750.00	V	-23.68		
5375.00	Horizontal	-34.86		
8062.50	H	-34.98		
10750.00	H	-25.27		

Remark:

1. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

10MHz for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
5002.00	Vertical	-24.47	-13	Pass
7503.00	V	-29.51		
10004.00	V	-28.44		
5002.00	Horizontal	-24.45		
7503.00	H	-28.42		
10004.00	H	-28.51		
Middle				
5186.00	Vertical	-33.81	-13	Pass
7779.00	V	-34.12		
10372.00	V	-19.27		
5186.00	Horizontal	-33.12		
7779.00	H	-34.42		
10372.00	H	-18.12		
Highest				
5370.00	Vertical	-29.27	-13	Pass
8055.00	V	-32.25		
10740.00	V	-23.99		
5370.00	Horizontal	-34.85		
8055.00	H	-34.86		
10740.00	H	-25.28		

Remark:

1. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

15MHz for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
5007.00	Vertical	-24.53	-13	Pass
7510.50	V	-29.80		
10014.00	V	-28.10		
5007.00	Horizontal	-24.37		
7510.50	H	-28.06		
10014.00	H	-28.07		
Middle				
5186.00	Vertical	-33.79	-13	Pass
7779.00	V	-34.63		
10372.00	V	-17.75		
5186.00	Horizontal	-33.95		
7779.00	H	-34.34		
10372.00	H	-17.50		
Highest				
5365.00	Vertical	-29.50	-13	Pass
8047.50	V	-32.40		
10730.00	V	-23.08		
5365.00	Horizontal	-34.04		
8047.50	H	-34.03		
10730.00	H	-25.81		

Remark:

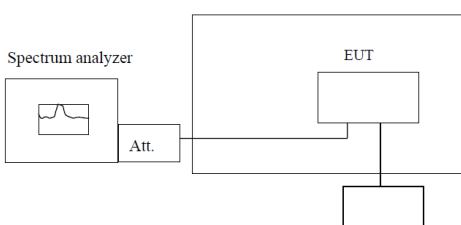
1. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

20MHz for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
5012.00	Vertical	-24.36	-13	Pass
7518.00	V	-29.54		
10024.00	V	-28.40		
5012.00	Horizontal	-24.46		
7518.00	H	-28.54		
10024.00	H	-28.24		
Middle				
5186.00	Vertical	-33.35	-13	Pass
7779.00	V	-34.26		
10372.00	V	-19.50		
5186.00	Horizontal	-33.54		
7779.00	H	-34.14		
10372.00	H	-18.16		
Highest				
5360.00	Vertical	-29.22	-13	Pass
8040.00	V	-32.29		
10720.00	V	-23.59		
5360.00	Horizontal	-34.48		
8040.00	H	-34.26		
10720.00	H	-25.93		

Remark:

1. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

6.10 Frequency stability V.S. Temperature measurement

Test Requirement:	Part 27.54																																																																														
Test Method:	FCC Part2.1055(a)(1)(b)																																																																														
Limit:	<p>FCC:</p> <table border="1"> <thead> <tr> <th rowspan="2">Frequency range (MHz)</th> <th rowspan="2">Fixed and base stations (\pmppm)</th> <th colspan="2">Mobile stations (\pmppm)</th> </tr> <tr> <th>Over 2 watts output power</th> <th>2 watts or less output power</th> </tr> </thead> <tbody> <tr><td>Below 25</td><td>100</td><td>100</td><td>200</td></tr> <tr><td>25-50</td><td>20</td><td>20</td><td>50</td></tr> <tr><td>72-76</td><td>5</td><td></td><td>50</td></tr> <tr><td>150-174</td><td>5</td><td>5</td><td>50</td></tr> <tr><td>216-220</td><td>1.0</td><td></td><td>1.0</td></tr> <tr><td>220-222</td><td>0.1</td><td>1.5</td><td>1.5</td></tr> <tr><td>421-512</td><td>2.5</td><td>5</td><td>5</td></tr> <tr><td>806-809</td><td>1.0</td><td>1.5</td><td>1.5</td></tr> <tr><td>809-824</td><td>1.5</td><td>2.5</td><td>2.5</td></tr> <tr><td>851-854</td><td>1.0</td><td>1.5</td><td>1.5</td></tr> <tr><td>854-869</td><td>1.5</td><td>2.5</td><td>2.5</td></tr> <tr><td>896-901</td><td>0.1</td><td>1.5</td><td>1.5</td></tr> <tr><td>902-928</td><td>2.5</td><td>2.5</td><td>2.5</td></tr> <tr><td>928-928</td><td>2.5</td><td>2.5</td><td>2.5</td></tr> <tr><td>929-930</td><td>1.5</td><td></td><td></td></tr> <tr><td>935-940</td><td>0.1</td><td>1.5</td><td>1.5</td></tr> <tr><td>1427-1435</td><td>300</td><td>300</td><td>300</td></tr> <tr><td>Above 2450</td><td></td><td></td><td></td></tr> </tbody> </table>	Frequency range (MHz)	Fixed and base stations (\pm ppm)	Mobile stations (\pm ppm)		Over 2 watts output power	2 watts or less output power	Below 25	100	100	200	25-50	20	20	50	72-76	5		50	150-174	5	5	50	216-220	1.0		1.0	220-222	0.1	1.5	1.5	421-512	2.5	5	5	806-809	1.0	1.5	1.5	809-824	1.5	2.5	2.5	851-854	1.0	1.5	1.5	854-869	1.5	2.5	2.5	896-901	0.1	1.5	1.5	902-928	2.5	2.5	2.5	928-928	2.5	2.5	2.5	929-930	1.5			935-940	0.1	1.5	1.5	1427-1435	300	300	300	Above 2450			
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Test setup:	 <p>Note : Measurement setup for testing on Antenna connector</p>																																																																														
Test procedure:	<ol style="list-style-type: none"> The equipment under test was connected to an external DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached 																																																																														
Test Instruments:	Refer to section 5.8 for details																																																																														
Test mode:	Refer to section 5.3 for details																																																																														
Test results:	Passed																																																																														
Remark:	All three channels of all modulations have been tested, but only the worst channel and the worst modulation show in this test item.																																																																														

Measurement Data (the worst channel):

Band41

Reference Frequency: Lowest channel=2498.5MHz(5MHz for QPSK)			
Power supplied (Vdc)	Temperature (°C)	Frequency error	
		Hz	ppm
24.00	-40	196	0.078447
	-25	188	0.075245
	-10	174	0.069642
	0	182	0.072844
	10	193	0.077246
	20	165	0.066040
	30	144	0.057635
	40	102	0.040824
	55	138	0.055233
Reference Frequency: Lowest channel=2501.0MHz(10MHz for QPSK)			
Power supplied (Vdc)	Temperature (°C)	Frequency error	
		Hz	ppm
24.00	-40	199	0.079568
	-20	152	0.060776
	-10	165	0.065974
	0	133	0.053179
	10	105	0.041983
	20	144	0.057577
	30	128	0.051180
	40	170	0.067973
	55	181	0.072371

Reference Frequency: Lowest channel=2503.5MHz(15MHz for QPSK)			
Power supplied (Vdc)	Temperature (°C)	Frequency error	
		Hz	ppm
24.00	-40	199	0.079489
	-25	186	0.074296
	-10	173	0.069103
	0	136	0.054324
	10	158	0.063112
	20	148	0.059117
	30	101	0.040344
	40	126	0.050330
	55	118	0.047134
Reference Frequency: Lowest channel=2506.0MHz(20MHz for QPSK)			
Power supplied (Vdc)	Temperature (°C)	Frequency error	
		Hz	ppm
24.00	-40	194	0.077414
	-20	181	0.072227
	-10	155	0.061852
	0	160	0.063847
	10	171	0.068236
	20	111	0.044294
	30	126	0.050279
	40	138	0.055068
	55	104	0.041500

Reference Frequency: Lowest channel=2498.5MHz(5MHz for QPSK)			
Power supplied (Vdc)	Temperature (°C)	Frequency error	
		Hz	ppm
24.00	-40	180	0.072043
	-25	166	0.066440
	-10	133	0.053232
	0	136	0.054433
	10	161	0.064439
	20	144	0.057635
	30	145	0.058035
	40	171	0.068441
	55	105	0.042025
Reference Frequency: Lowest channel=2501.0MHz(10MHz for QPSK)			
Power supplied (Vdc)	Temperature (°C)	Frequency error	
		Hz	ppm
24.00	-40	196	0.078369
	-20	133	0.053179
	-10	136	0.054378
	0	165	0.065974
	10	144	0.057577
	20	171	0.068373
	30	105	0.041983
	40	115	0.045982
	55	180	0.071971

Reference Frequency: Lowest channel=2503.5MHz(15MHz for QPSK)			
Power supplied (Vdc)	Temperature (°C)	Frequency error	
		Hz	ppm
24.00	-40	198	0.079089
	-25	165	0.065908
	-10	132	0.052726
	0	166	0.066307
	10	144	0.057519
	20	171	0.068304
	30	102	0.040743
	40	148	0.059117
	55	156	0.062313
Reference Frequency: Lowest channel=2506.0MHz(20MHz for QPSK)			
Power supplied (Vdc)	Temperature (°C)	Frequency error	
		Hz	ppm
24.00	-40	181	0.072227
	-20	165	0.065842
	-10	132	0.052674
	0	130	0.051875
	10	141	0.056265
	20	171	0.068236
	30	108	0.043097
	40	160	0.063847
	55	180	0.071828

6.11 Frequency stability V.S. Voltage measurement

Test Requirement:	Part 27.54																																																												
Test Method:	FCC Part 2.1055(a)(1)(b)																																																												
Limit:	<p>FCC:</p> <table border="1"> <thead> <tr> <th>Frequency range (MHz)</th> <th>Fixed and base stations (\pmppm)</th> <th>Mobile stations (\pmppm)</th> </tr> <tr> <th></th> <th>Over 2 watts output power</th> <th>2 watts or less output power</th> </tr> </thead> <tbody> <tr><td>Below 25</td><td>100</td><td>100</td></tr> <tr><td>25-50</td><td>20</td><td>20</td></tr> <tr><td>72-76</td><td>5</td><td>5</td></tr> <tr><td>150-174</td><td>5</td><td>5</td></tr> <tr><td>216-220</td><td>1.0</td><td>1.0</td></tr> <tr><td>220-222</td><td>0.1</td><td>1.5</td></tr> <tr><td>421-512</td><td>2.5</td><td>5</td></tr> <tr><td>806-809</td><td>1.0</td><td>1.5</td></tr> <tr><td>809-824</td><td>1.5</td><td>2.5</td></tr> <tr><td>851-854</td><td>1.0</td><td>1.5</td></tr> <tr><td>854-869</td><td>1.5</td><td>2.5</td></tr> <tr><td>896-901</td><td>0.1</td><td>1.5</td></tr> <tr><td>902-928</td><td>2.5</td><td>2.5</td></tr> <tr><td>902-928</td><td>2.5</td><td>2.5</td></tr> <tr><td>929-930</td><td>1.5</td><td></td></tr> <tr><td>935-940</td><td>0.1</td><td>1.5</td></tr> <tr><td>1427-1435</td><td>300</td><td>300</td></tr> <tr><td>Above 2450</td><td></td><td></td></tr> </tbody> </table>	Frequency range (MHz)	Fixed and base stations (\pm ppm)	Mobile stations (\pm ppm)		Over 2 watts output power	2 watts or less output power	Below 25	100	100	25-50	20	20	72-76	5	5	150-174	5	5	216-220	1.0	1.0	220-222	0.1	1.5	421-512	2.5	5	806-809	1.0	1.5	809-824	1.5	2.5	851-854	1.0	1.5	854-869	1.5	2.5	896-901	0.1	1.5	902-928	2.5	2.5	902-928	2.5	2.5	929-930	1.5		935-940	0.1	1.5	1427-1435	300	300	Above 2450		
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Test setup:	<p>Temperature Chamber</p> <p>Spectrum analyzer</p> <p>EUT</p> <p>Att.</p> <p>Variable Power Supply</p>																																																												
Note :	Measurement setup for testing on Antenna connector																																																												
Test procedure:	<ol style="list-style-type: none"> Set chamber temperature to 25°C. Use a variable DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency. Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change. 																																																												
Test Instruments:	Refer to section 5.8 for details																																																												
Test mode:	Refer to section 5.3 for details, and all channels have been tested, only shows the worst channel data in this report.																																																												
Test results:	Passed																																																												
Remark:	All three channels of all modulations have been tested, but only the worst channel and the worst modulation show in this test item.																																																												

Measurement Data (the worst channel):

Band41

Reference Frequency: Lowest channel=2498.5MHz(5MHz for QPSK)			
Temperature (°C)	Power supplied (Vdc)	Frequency error	
		Hz	ppm
25	20	99	0.039624
	24	65	0.026016
	28	80	0.032019
Reference Frequency: Lowest channel=2501.0MHz(10MHz for QPSK)			
Temperature (°C)	Power supplied (Vdc)	Frequency error	
		Hz	ppm
25	20	74	0.029588
	24	90	0.035986
	28	82	0.032787
Reference Frequency: Lowest channel=2503.5MHz(15MHz for QPSK)			
Temperature (°C)	Power supplied (Vdc)	Frequency error	
		Hz	ppm
25	20	87	0.034751
	24	90	0.035950
	28	81	0.032355
Reference Frequency: Lowest channel=2506.0MHz(20MHz for QPSK)			
Temperature (°C)	Power supplied (Vdc)	Frequency error	
		Hz	ppm
25	20	89	0.035515
	24	67	0.026736
	28	96	0.038308

Reference Frequency: Lowest channel=2498.5MHz(5MHz for QPSK)			
Temperature (°C)	Power supplied (Vdc)	Frequency error	
		Hz	ppm
25	20	77	0.030818
	24	80	0.032019
	28	88	0.035221

Reference Frequency: Lowest channel=2501.0MHz(10MHz for QPSK)			
Temperature (°C)	Power supplied (Vdc)	Frequency error	
		Hz	ppm
25	20	95	0.037985
	24	86	0.034386
	28	90	0.035986

Reference Frequency: Lowest channel=2503.5MHz(15MHz for QPSK)			
Temperature (°C)	Power supplied (Vdc)	Frequency error	
		Hz	ppm
25	20	84	0.033553
	24	96	0.038346
	28	59	0.023567

Reference Frequency: Lowest channel=2506.0MHz(20MHz for QPSK)			
Temperature (°C)	Power supplied (Vdc)	Frequency error	
		Hz	ppm
25	20	95	0.037909
	24	86	0.034318
	28	74	0.029529