

FCC REPORT

(LTE)

Applicant: EMATIC LIMITED

Address of Applicant: Unit 17, 9/F Tower A, New Mandar 1n Plaza NO , 14 Science Museum Rd, TST, Hong Kong, China

Equipment Under Test (EUT)

Product Name: Rock X11

Model No.: Rock X11

Trade mark: EXTREM

FCC ID: 2AJ9Z-X11

FCC CFR Title 47 Part 2

Applicable standards: FCC CFR Title 47 Part 27 Subpart L

FCC CFR Title 47 Part 27 Subpart M

Date of sample receipt: 30 Jun., 2017

Date of Test: 30 Jun., to 05 Jul., 2017

Date of report issued: 05 Jul., 2017

Test Result: PASS*

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

Authorized Signature:



Bruce Zhang

Laboratory Manager

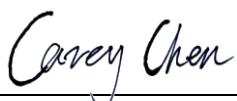
This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production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

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2. Version

Version No.	Date	Description
00	05 Jul., 2017	Original

Tested by:**Date:**

05 Jul., 2017

Test Engineer**Reviewed by:****Date:**

05 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.....	9
5.4 RELATED SUBMITTAL(S) / GRANT (S).....	9
5.5 TEST METHODOLOGY.....	9
5.6 LABORATORY FACILITY.....	9
5.7 LABORATORY LOCATION	9
5.8 TEST INSTRUMENTS LIST.....	10
6. SYSTEM TEST CONFIGURATION	11
6.1 EUT CONFIGURATION.....	11
6.2 EUT EXERCISE.....	11
6.3 CONFIGURATION OF TESTED SYSTEM.....	11
6.4 DESCRIPTION OF TEST MODES.....	11
6.5 CONDUCTED OUTPUT POWER	12
6.6 PEAK-TO-AVERAGE RATIO.....	17
6.7 OCCUPY BANDWIDTH	20
6.8 MODULATION CHARACTERISTIC	43
6.9 OUT OF BAND EMISSION AT ANTENNA TERMINALS	43
6.10 ERP, EIRP MEASUREMENT	184
6.11 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT.....	192
6.12 FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT.....	203
6.13 FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT	210
7. TEST SETUP PHOTO.....	215
8. EUT CONSTRUCTIONAL DETAILS	216

4. Test Summary

Test Item	Section in CFR 47	Result
RF Exposure (SAR)	Part 1.1307 Part 2.1093	Passed (Please refer to SAR Report)
RF Output Power	Part 2.1046 Part 27.50 (d)(4) Part 27.50 (h)(2)	Pass
Peak-to-Average Ratio	Part 27.50(d)(5)	Pass
Modulation Characteristics	Part 2.1047	Pass
99% & -26 dB Occupied Bandwidth	Part 2.1049 Part 27.53(h) Part 27.53(m)	Pass
Spurious Emissions at Antenna Terminal	Part 2.1051 Part 27.53 (h) Part 27.53(m)	Pass
Field Strength of Spurious Radiation	Part 2.1053 Part 27.53 (h) Part 27.53(m)	Pass
Out of band emission, Band Edge	Part 27.53 (h) Part 27.53(m)	Pass
Frequency stability vs. temperature	Part 27.54 Part 2.1055(a)(1)(b)	Pass
Frequency stability vs. voltage	Part 27.54 Part 2.1055(d)(2)	Pass

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

5. General Information

5.1 Client Information

Applicant:	EMATIC LIMITED
Address of Applicant:	Unit 17, 9/F Tower A, New Mandar 1n Plaza NO , 14 Science Museum Rd, TST, Hong Kong, China
Manufacturer:	EMATIC LIMITED
Address of Manufacturer:	Unit 17, 9/F Tower A, New Mandar 1n Plaza NO , 14 Science Museum Rd, TST, Hong Kong, China

5.2 General Description of E.U.T.

Product Name:	Rock X11
Model No.:	Rock X11
Operation Frequency range:	LTE Band 4:TX: 1710MHz-1755MHz, RX: 2110MHz-2155MHz LTE Band 7: TX: 2500MHz -2570MHz, RX: 2620MHz-2690MHz
Modulation type:	QPSK, 16QAM
Antenna type:	Internal Antenna
Antenna gain:	LTE Band 4: 1.92 dBi LTE Band 7: 1.92 dBi
AC adapter:	Model: A138A-12015U-US2 Input: AC100-240V 50/60Hz 0.5A Output: DC 5.0V, 1.5 A
Power supply:	Rechargeable Li-ion Battery DC3.8V-10000mAh

Operation Frequency List:

LTE Band 4(1.4MHz)		LTE Band 4(3MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
19957	1710.70	19965	1711.50
19958	1710.80	19966	1711.60
....
20174	1732.40	20174	1732.40
20175	1732.50	20175	1732.50
20176	1732.60	20176	1732.60
...
20392	1754.20	20384	1753.40
20393	1754.30	20385	1753.50
LTE Band 4(5MHz)		LTE Band 4(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
19975	1712.50	20000	1715.00
19976	1712.60	20001	1715.10
....
20174	1732.40	20174	1732.40
20175	1732.50	20175	1732.50
20176	1732.60	20176	1732.60
...
20374	1752.40	20349	1749.90
20375	1752.50	20350	1750.00
LTE Band 4(15MHz)		LTE Band 4(20MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
20025	1717.50	20050	1720.00
20026	1717.60	20051	1720.10
....
20174	1732.40	20174	1732.40
20175	1732.50	20175	1732.50
20176	1732.60	20176	1732.60
...
20324	1747.40	20299	1744.90
20325	1747.50	20300	1745.00

LTE Band 7(5MHz)		LTE Band 7(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
20775	2502.50	20800	2505.00
20776	2502.60	20801	2502.10
....
21099	2534.90	21099	2534.90
21100	2535.00	21100	2535.00
21101	2535.20	21101	2535.20
...
21424	2567.40	21399	2564.90
21425	2567.50	21400	2565.00
LTE Band 7(15MHz)		LTE Band 7(20MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
20825	2507.50	20850	2510.00
20826	2507.60	20851	2510.10
....
21099	2534.90	21099	2534.90
21100	2535.00	21100	2535.00
21101	2535.20	21101	2535.20
...
21374	2562.40	21349	2559.90
21375	2562.50	21350	2560.00

Regards to the operating frequency range, the lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channels as below:

LTE Band 4(1.4MHz)			LTE Band 4(3MHz)		
Channel:		Frequency (MHz)	Channel		Frequency (MHz)
Lowest channel	19957	1710.70	Lowest channel	19965	1711.50
Middle channel	20175	1732.50	Middle channel	20175	1732.50
Highest channel	20393	1754.30	Highest channel	20385	1753.50
LTE Band 4(5MHz)			LTE Band 4(10MHz)		
Channel		Frequency (MHz)	Channel		Frequency (MHz)
Lowest channel	19975	1712.50	Lowest channel	20000	1715.00
Middle channel	20175	1732.50	Middle channel	20175	1732.50
Highest channel	20375	1752.50	Highest channel	20350	1750.00
LTE Band 4(15MHz)			LTE Band 4(20MHz)		
Channel		Frequency (MHz)	Channel		Frequency (MHz)
Lowest channel	20025	1717.50	Lowest channel	20050	1720.00
Middle channel	20175	1732.50	Middle channel	20175	1732.50
Highest channel	20325	1747.50	Highest channel	20300	1745.00

LTE Band 7(5MHz)			LTE Band 7(10MHz)		
Channel		Frequency (MHz)	Channel		Frequency (MHz)
Lowest channel	20775	2502.50	Lowest channel	20800	2505.00
Middle channel	21100	2535.00	Middle channel	21100	2535.00
Highest channel	21425	2567.50	Highest channel	21400	2565.00
LTE Band 7(15MHz)			LTE Band 7(20MHz)		
Channel		Frequency (MHz)	Channel		Frequency (MHz)
Lowest channel	20825	2507.50	Lowest channel	20850	2510.00
Middle channel	21100	2535.00	Middle channel	21100	2535.00
Highest channel	21375	2562.50	Highest channel	21350	2560.00

5.3 Test modes

Data mode (LTE band 4(QPSK))	Keep the EUT in data communicating mode on LTE band 4(QPSK). (<i>LTE band 4(1.4MHz), LTE band 4(3MHz), LTE band 4(5MHz), LTE band 4(10MHz), LTE band 4(15MHz), LTE band 4(20MHz)</i>)
Data mode (LTE band 4(16QAM))	Keep the EUT in data communicating mode on LTE band 4(16QAM). (<i>LTE band 4(1.4MHz), LTE band 4(3MHz), LTE band 4(5MHz), LTE band 4(10MHz), LTE band 4(15MHz), LTE band 4(20MHz)</i>)
Data mode (LTE band 7(QPSK))	Keep the EUT in data communicating mode on LTE band 7(QPSK). (<i>LTE band7(5MHz), LTE band 7(10MHz), LTE band 7(15MHz), LTE band 7(20MHz)</i>)
Data mode (LTE band 7(16QAM))	Keep the EUT in data communicating mode on LTE band 7(16QAM). (<i>LTE band7(5MHz), LTE band7(10MHz), LTE band 7(15MHz), LTE band 7(20MHz)</i>)
Remark :	Just the worst case data were shown in the report.

5.4 Related Submittal(s) / Grant (s)

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

5.5 Test Methodology

Both conducted and radiated testing were performed according to the procedures document on TIA/EIA 603 and FCC CFR 47 clause 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057

5.6 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 out 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.

5.7 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, Website: <http://www.ccis-cb.com>

5.8 Test Instruments list

Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m Semi- Anechoic Chamber	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
EMI Test Software	AUDIX	E3	N/A	N/A	N/A
Amplifier (10kHz-1.3GHz)	HP	8447D	CCIS0003	02-25-2017	02-24-2018
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
Printer	HP	HP LaserJet P1007	N/A	N/A	N/A
Positioning Controller	UC	UC3000	CCIS0015	N/A	N/A
Spectrum analyzer 9k-30GHz	Rohde & Schwarz	FSP30	CCIS0023	02-25-2017	02-24-2018
EMI Test Receiver	Rohde & Schwarz	ESRP7	CCIS0167	02-25-2017	02-24-2018
Loop antenna	SCHWARZBECK	FMZB1519B	CCIS0188	02-25-2017	02-24-2018
Universal radio communication tester	Anritsu	MT8820C	CCIS0170	02-25-2017	02-24-2018
DC Power Supply	XinNuoEr	WYK-10020K	CCIS0201	10-31-2016	10-30-2017
Temperature Humidity Chamber	HengPu	HPGDS-500	CCIS0240	11-18-2016	11-27-2017

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 (LTE Band 4, LTE Band 7) with power adaptor, earphone and Data cable. The worst-case H mode for LTE Band 4, LTE Band 7.

6.5 Conducted Output Power

Test Requirement:	Part 27.50(d), Part 27.50 (h)	
Test Method:	FCC part 2.1046	
Limit:	LTE Band 4: 1W LTE Band 7: 2W	
Test setup:		
<p style="text-align: center;"><i>Note: Measurement setup for testing on Antenna connector</i></p>		
Test Procedure:	The transmitter output was connected to a calibrated attenuator, the other end of which was connected to the simulated station. Transmitter output power was read off in dBm.	
Test Instruments:	Refer to section 5.8 for details	
Test mode:	Refer to section 5.3 for details	
Test results:	Passed	

Measurement Data:**LTE Band 4 part**

LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					19957	20175	20393
					1710.7MHz	1732.5MHz	1754.3MHz
4	1.4	QPSK	1	0	22.49	22.24	22.75
			1	2	22.55	22.33	22.79
			1	5	22.50	22.22	22.67
			3	0	22.63	22.38	22.82
			3	1	22.55	22.35	22.80
			3	2	22.55	22.36	22.81
			6	0	21.63	21.29	21.89
		16QAM	1	0	21.69	21.43	21.84
			1	2	21.98	21.73	21.87
			1	5	21.40	21.36	21.65
			3	0	21.87	21.43	21.83
			3	1	21.64	21.36	21.81
			3	2	21.70	21.31	21.80
			6	0	20.61	20.31	20.90
LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					19965	20175	20385
					1711.5MHz	1732.5MHz	1753.5MHz
4	3	QPSK	1	0	22.55	22.27	22.75
			1	7	22.62	22.28	22.67
			1	14	22.45	22.19	22.70
			8	0	21.66	21.38	21.86
			8	4	21.67	21.36	21.85
			8	7	21.65	21.33	21.89
			15	0	21.74	21.42	21.91
		16QAM	1	0	21.68	21.44	21.56
			1	7	21.45	21.43	21.80
			1	14	21.64	21.18	21.75
			8	0	20.63	20.36	20.74
			8	4	20.85	20.36	20.76
			8	7	20.70	20.32	20.87
			15	0	20.62	20.48	20.80
LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					19975	20175	20375
					1712.5MHz	1732.5MHz	1752.5MHz
4	5	QPSK	1	0	22.61	22.30	22.70
			1	12	22.58	22.28	22.75
			1	24	22.47	22.21	22.73
			12	0	21.76	21.47	21.79
			12	6	21.71	21.44	21.84
			12	11	21.73	21.39	21.88
			25	0	21.71	21.39	21.86
		16QAM	1	0	22.13	21.32	21.64
			1	12	21.76	21.77	22.18
			1	24	21.66	21.41	22.17
			12	0	20.75	20.49	20.84
			12	6	20.66	20.43	20.81
			12	11	20.71	20.44	20.83
			25	0	20.71	20.45	20.78

LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					20000	20175	20350
					1715.0MHz	1732.5MHz	1750.0MHz
4	10	QPSK	1	0	22.65	22.52	22.64
			1	24	22.62	22.38	22.73
			1	49	22.49	22.30	22.86
			25	0	21.71	21.50	21.76
			25	12	21.65	21.41	21.79
			25	24	21.69	21.37	21.87
			50	0	21.66	21.51	21.90
		16QAM	1	0	21.76	21.58	21.82
			1	24	21.72	21.49	21.80
			1	49	21.63	21.27	21.64
			25	0	20.64	20.44	20.74
			25	12	20.60	20.48	20.72
			25	24	20.69	20.30	20.86
			50	0	20.73	20.43	20.83
LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					20025	20175	20325
					1717.5MHz	1732.5MHz	1747.5MHz
4	15	QPSK	1	0	22.73	22.54	22.50
			1	37	22.58	22.38	22.63
			1	74	22.50	22.38	22.75
			36	0	21.80	21.63	21.69
			36	16	21.77	21.43	21.71
			36	35	21.59	21.52	21.90
			75	0	21.67	21.48	21.76
		16QAM	1	0	21.65	22.13	22.21
			1	37	21.79	21.70	21.57
			1	74	21.73	21.72	21.49
			36	0	20.75	20.52	20.69
			36	16	20.64	20.51	20.75
			36	35	20.60	20.51	20.73
			75	0	20.65	20.50	20.68
LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					20050	20175	20300
					1720.0MHz	1732.5MHz	1745.0MHz
4	20	QPSK	1	0	22.75	22.69	22.52
			1	49	22.56	22.34	22.62
			1	99	22.41	22.41	22.82
			50	0	21.74	21.65	21.66
			50	24	21.61	21.45	21.70
			50	49	21.53	21.44	21.83
			100	0	21.58	21.47	21.68
		16QAM	1	0	21.53	21.49	21.66
			1	49	21.89	21.35	21.83
			1	99	21.13	22.10	21.93
			50	0	20.78	20.65	20.59
			50	24	20.71	20.50	20.64
			50	49	20.61	20.44	20.81
			100	0	20.58	20.50	20.70

LTE Band 7 part

LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					20775	21100	21425
					2502.5MHz	2535.0MHz	2567.5MHz
7	5	QPSK	1	0	21.87	21.79	21.71
			1	12	21.91	21.83	21.69
			1	24	21.80	21.73	21.63
			12	0	20.94	20.92	20.84
			12	6	20.93	20.88	20.84
			12	11	20.90	20.86	20.82
			25	0	20.91	20.81	20.79
		16QAM	1	0	20.94	20.68	21.09
			1	12	20.96	20.92	21.12
			1	24	20.68	20.90	20.79
			12	0	20.38	20.39	20.31
			12	6	20.36	20.34	20.36
			12	11	20.35	20.39	20.34
			25	0	20.32	23.38	20.32
LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					20800	21100	21400
					2505.0MHz	2535.0MHz	2565.0MHz
7	10	QPSK	1	0	21.90	21.78	21.73
			1	24	21.90	21.82	21.73
			1	49	21.89	21.81	21.77
			25	0	20.96	20.88	20.82
			25	12	20.93	20.86	20.85
			25	24	20.97	20.87	20.80
			50	0	20.93	20.86	20.76
		16QAM	1	0	21.31	20.68	20.61
			1	24	20.83	21.24	21.14
			1	49	20.73	20.77	21.18
			25	0	20.31	20.38	20.36
			25	12	20.39	20.36	20.33
			25	24	20.31	20.34	20.34
			50	0	20.36	20.36	20.32

LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					20825	21100	21375
					2507.5MHz	2535.0MHz	2562.5MHz
7	15	QPSK	1	0	21.95	21.79	21.90
			1	37	22.03	21.77	21.74
			1	74	21.91	21.88	21.83
			36	0	21.03	20.94	20.95
			36	16	21.05	20.93	20.97
			36	35	21.00	20.93	20.93
			75	0	21.01	20.91	20.93
		16QAM	1	0	21.11	21.12	21.01
			1	37	21.17	20.81	21.35
			1	74	20.86	20.68	20.76
			36	0	20.32	20.35	20.34
			36	16	20.37	20.33	20.39
			36	35	20.31	20.36	20.31
			75	0	20.37	20.39	20.37
LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					20850	21100	21350
					2510.0MHz	2535.0MHz	2560.0MHz
7	20	QPSK	1	0	22.04	21.85	21.89
			1	49	21.91	21.83	21.88
			1	99	21.93	21.89	21.83
			50	0	21.05	20.99	20.90
			50	24	21.02	20.94	20.93
			50	49	21.02	20.90	20.89
			100	0	21.05	20.88	20.92
		16QAM	1	0	21.01	21.42	21.47
			1	49	20.92	21.14	21.03
			1	99	21.08	20.88	20.63
			50	0	20.32	20.31	20.3
			50	24	20.33	20.32	20.38
			50	49	20.33	20.33	20.36
			100	0	20.34	20.39	20.39

6.6 Peak-to-Average Ratio

Test Requirement:	Part 27.50(d), Part 27.50 (h)
Limit:	The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.
Test setup:	<pre> graph LR EUT[EUT] --- Splitter[Splitter] Splitter --- CommTester[Communication Tester] Splitter --- ATT[ATT] ATT --- SPA[SPA] </pre>
<p><i>Note: Measurement setup for testing on Antenna connector</i></p>	
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 Set the CCDF option in spectrum analyzer, $RBW \geq OBW$, 3 Set the EUT working in highest power level, measured and recorded the 0.1% as PAPR level. 4 Repeat step 1~3 at other frequency and modulations.
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

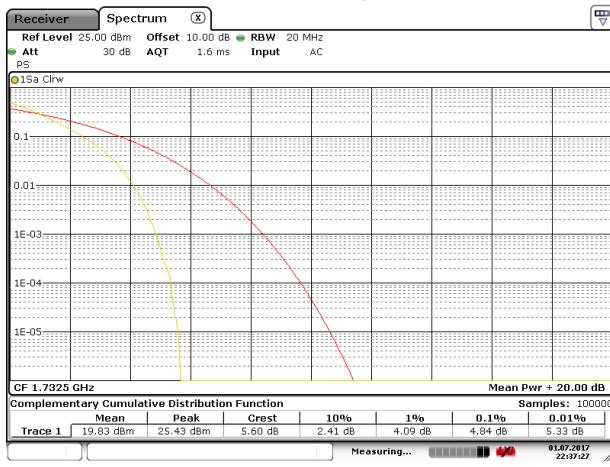
Measurement Data:

BW(MHz)	Modulation	RB Size	RB Offset	PAPR
LTE Band 4 (Middle Channel)				
20MHz	QPSK	100	0	4.09
	16QAM	100	0	4.81
LTE Band 7 (Middle Channel)				
20MHz	QPSK	100	0	4.29
	16QAM	100	0	4.90

Test plots as below:

LTE Band 4 Middle channel

Modulation: QPSK

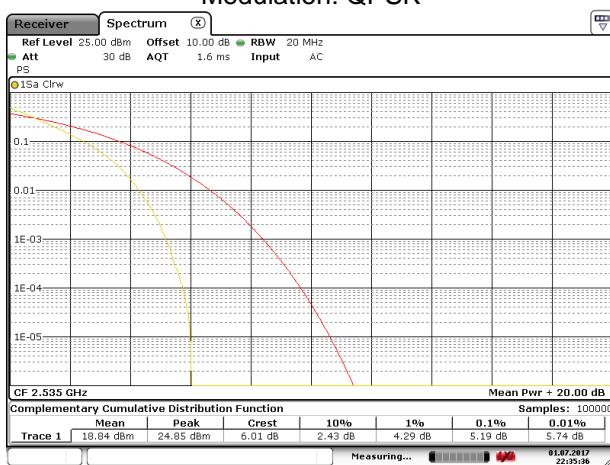


Modulation:16QAM

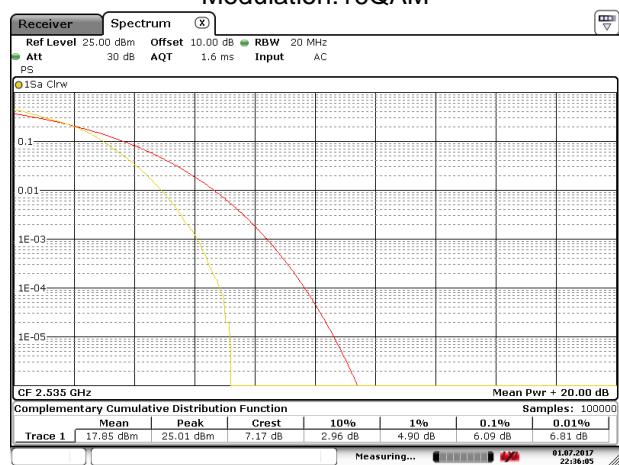


LTE Band 7 Middle channel

Modulation: QPSK



Modulation:16QAM



Date: 1.JUL.2017 22:35:36

Date: 1.JUL.2017 22:36:05

6.7 Occupy Bandwidth

Test Requirement:	part 27.53(h), Part 27.53(m)
Test Method:	FCC part 2.1049
Test setup:	<pre> graph LR EUT[EUT] --- Splitter[Splitter] Splitter --- SPA[SPA] Splitter --- CT[Communication Tester] </pre> <p><i>Note: Measurement setup for testing on Antenna connector</i></p>
Test Procedure:	
<ol style="list-style-type: none"> 1. The EUT's output RF connector was connected with a short cable to the spectrum analyzer 2. RBW was set to about 1% ~ 5% of emission BW, VBW= 3 times RBW. 3. -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace. 	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data:**LTE Band 4 part:**

EUT Mode	Channel	Frequency(MHz)	Modulation	99% OBW (kHz)	-26dBcEBW (kHz)
1.4MHz	19957	1710.7	16QAM	1098	1234
			QPSK	1098	1266
	20175	1732.5	16QAM	1098	1234
			QPSK	1098	1234
	20393	1754.3	16QAM	1098	1260
			QPSK	1104	1284
	19965	1711.5	16QAM	2724	2976
			QPSK	2736	3048
3MHz	20175	1732.5	16QAM	2724	2988
			QPSK	2736	3048
	20385	1750.5	16QAM	2724	2964
			QPSK	2736	3048
5MHz	19975	1712.5	16QAM	4500	4960
			QPSK	4520	4940
	20175	1732.5	16QAM	4520	4920
			QPSK	4540	5080
	20375	1752.5	16QAM	4520	4860
			QPSK	4540	5040
10MHz	20000	1715.0	16QAM	9120	1000
			QPSK	9080	1024
	20175	1732.5	16QAM	9080	1008
			QPSK	9080	1032
	20350	1750.0	16QAM	9080	1004
			QPSK	9080	1020
15MHz	20025	1717.5	16QAM	13560	14820
			QPSK	13500	14880
	20175	1732.5	16QAM	13560	14520
			QPSK	13560	14760
	20325	1747.5	16QAM	13560	14820
			QPSK	13560	14880
20MHz	20050	1720.0	16QAM	18000	19360
			QPSK	18000	19360
	20175	1732.5	16QAM	17920	19280
			QPSK	18080	19600
	20300	1745.0	16QAM	18000	19360
			QPSK	18000	19520

LTE Band 7 part:

EUT Mode	Channel	Frequency (MHz)	Modulation	99% OBW (kHz)	-26dB EBW (kHz)
5MHz	20775	2502.5	16QAM	4520	4900
			QPSK	4540	5040
	21100	2535.0	16QAM	4520	4920
			QPSK	4520	5000
	21425	2567.5	16QAM	4520	4940
			QPSK	4540	4960
	20800	2505.0	16QAM	9160	1000
			QPSK	9160	1008
10MHz	21100	2535.0	16QAM	9160	1008
			QPSK	9160	1008
	21400	2565.0	16QAM	9080	1000
			QPSK	9120	1004
15MHz	20825	2507.5	16QAM	13620	14520
			QPSK	13560	14540
	21100	2535.0	16QAM	13300	14580
			QPSK	13560	14640
20MHz	21375	2562.5	16QAM	13620	14580
			QPSK	13560	14700
	20850	2510.0	16QAM	18000	19120
			QPSK	18080	19200
	21100	2535.0	16QAM	18000	19120
			QPSK	18080	19200
	21350	2560.0	16QAM	18000	19120
			QPSK	18000	19120

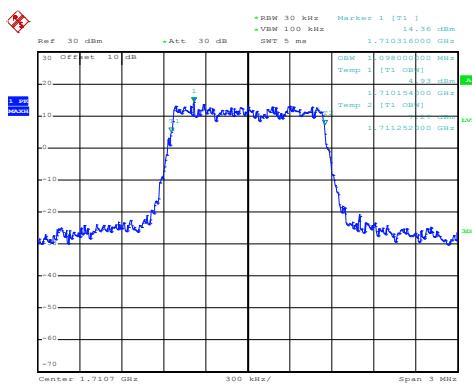
Test plot as follows:

LTE Band 4 part

Test Item:99% Occupy bandwidth

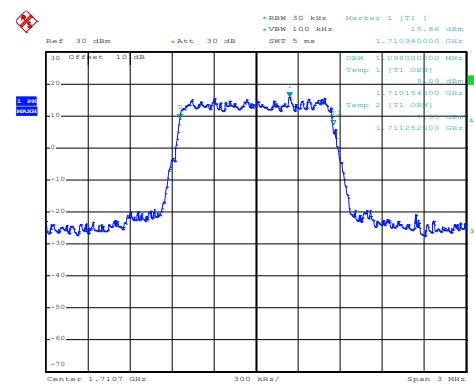
BW: 1.4MHz

Modulation:16QAM



Date: 1.JUL.2017 17:32:29

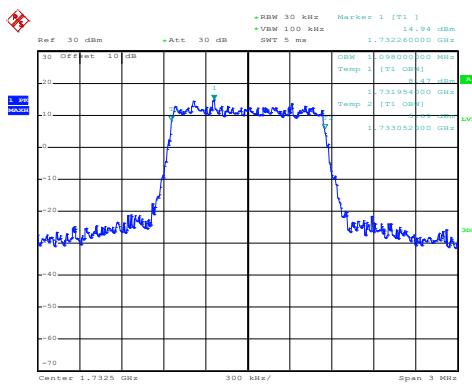
Modulation: QPSK



Date: 1.JUL.2017 17:32:24

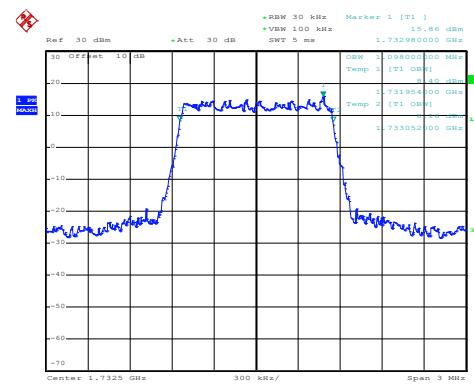
Lowest channel

Modulation:16QAM



Date: 1.JUL.2017 17:31:12

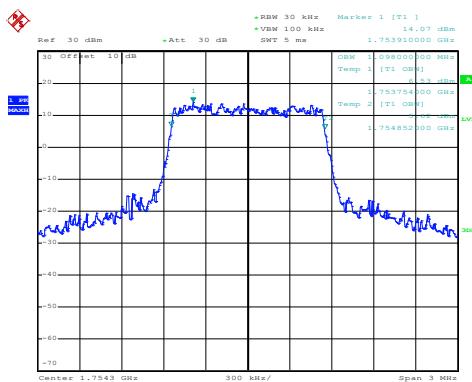
Modulation: QPSK



Date: 1.JUL.2017 17:31:05

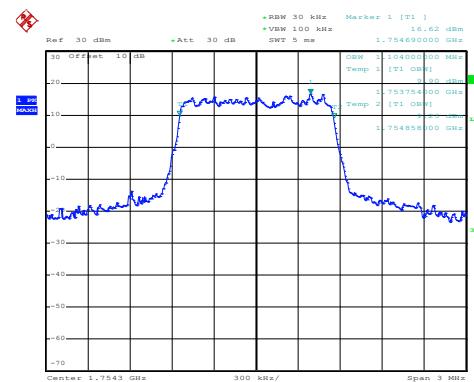
Middle channel

Modulation:16QAM



Date: 1.JUL.2017 17:30:25

Modulation: QPSK



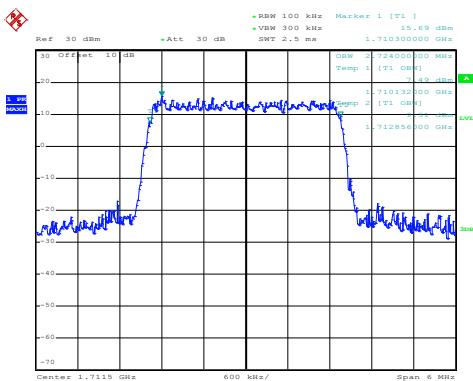
Date: 1.JUL.2017 17:30:19

Highest channel

Test Item:99% Occupy bandwidth

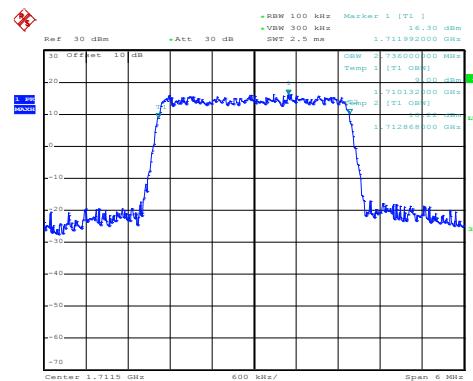
BW: 3MHz

Modulation:16QAM



Date: 1.JUL.2017 16:05:48

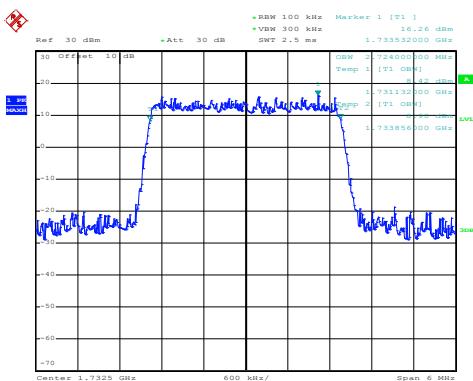
Modulation: QPSK



Date: 1.JUL.2017 16:05:44

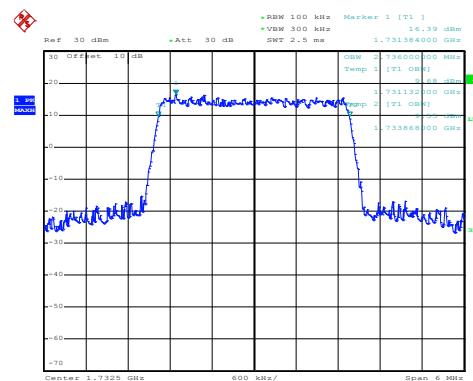
Lowest channel

Modulation:16QAM



Date: 1.JUL.2017 16:06:05

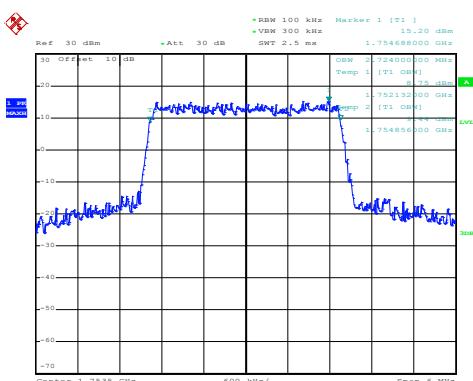
Modulation: QPSK



Date: 1.JUL.2017 16:06:01

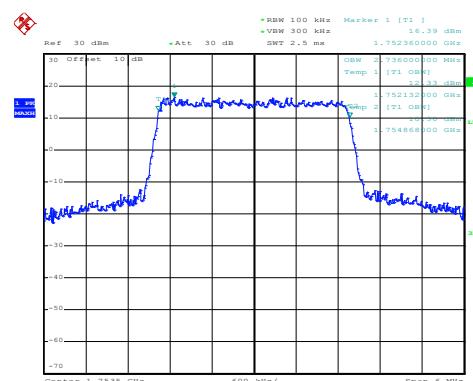
Middle channel

Modulation:16QAM



Date: 1.JUL.2017 16:06:48

Modulation: QPSK



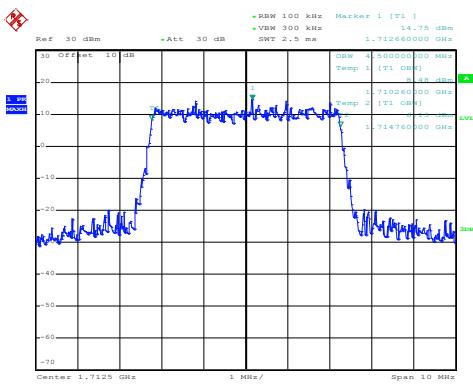
Date: 1.JUL.2017 16:06:44

Highest channel

Test Item:99% Occupy bandwidth

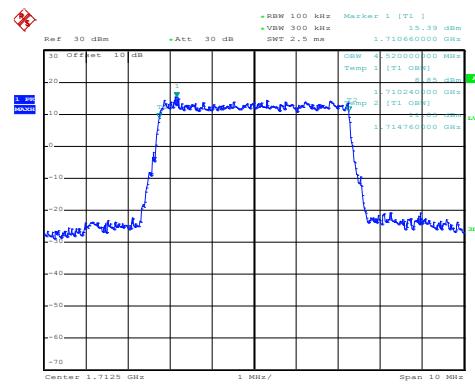
BW: 5MHz

Modulation:16QAM



Date: 1.JUL.2017 16:07:33

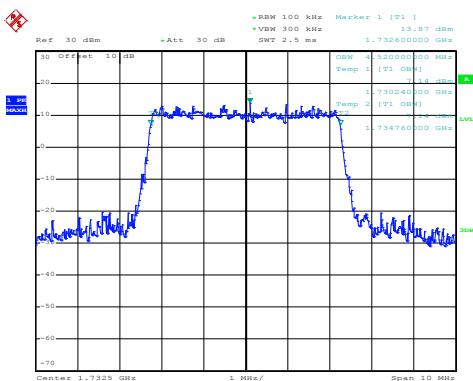
Modulation: QPSK



Date: 1.JUL.2017 16:07:28

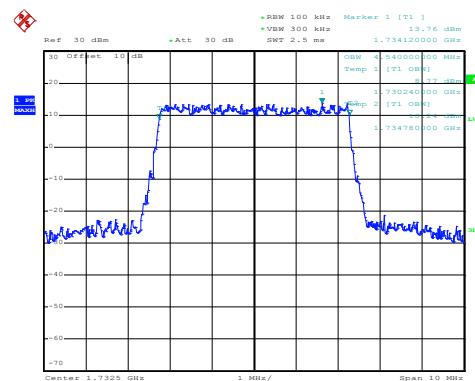
Lowest channel

Modulation:16QAM



Date: 1.JUL.2017 16:08:23

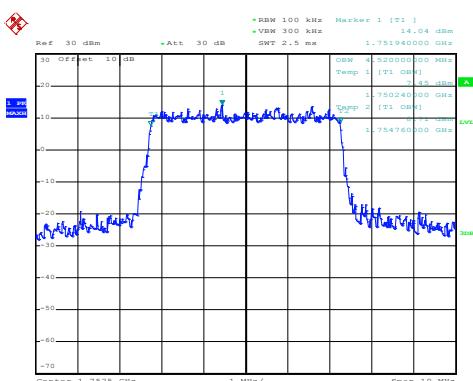
Modulation: QPSK



Date: 1.JUL.2017 16:08:18

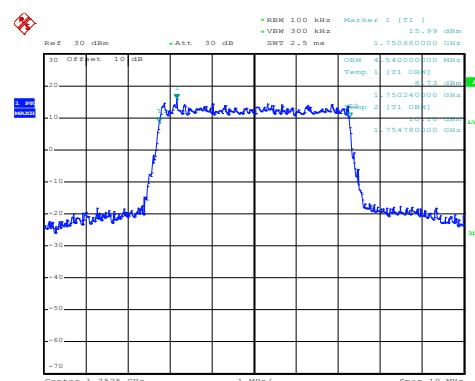
Middle channel

Modulation:16QAM



Date: 1.JUL.2017 16:08:42

Modulation: QPSK



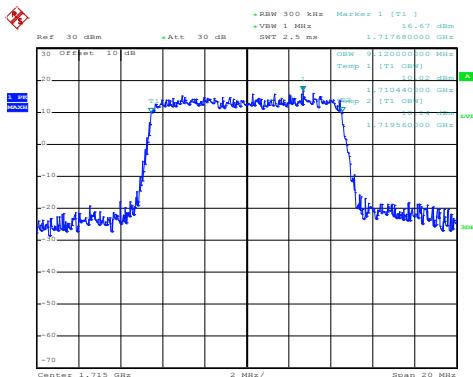
Date: 1.JUL.2017 16:08:38

Highest channel

Test Item:99% Occupy bandwidth

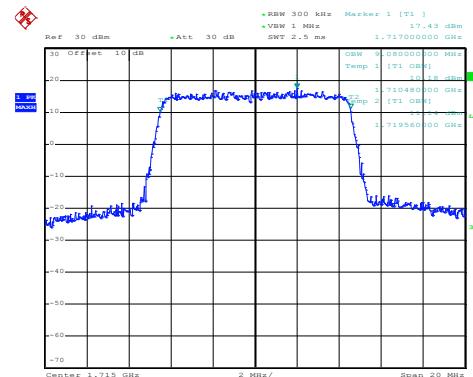
BW: 10MHz

Modulation:16QAM



Date: 1.JUL.2017 16:09:38

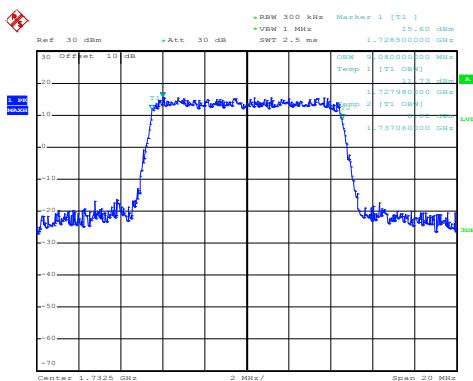
Modulation: QPSK



Date: 1.JUL.2017 16:09:35

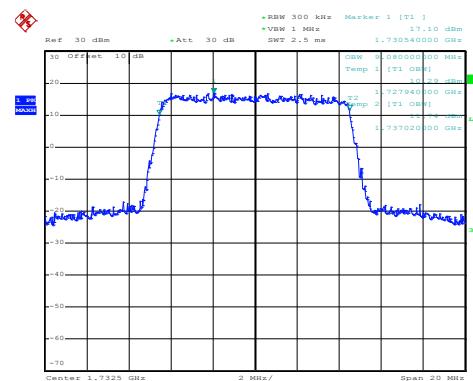
Lowest channel

Modulation:16QAM



Date: 1.JUL.2017 16:09:57

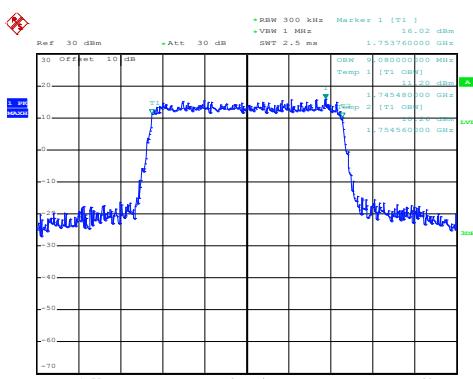
Modulation: QPSK



Date: 1.JUL.2017 16:09:51

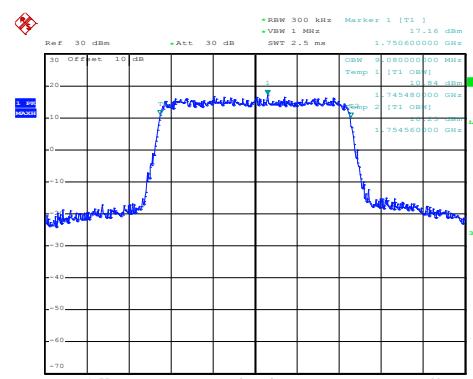
Middle channel

Modulation:16QAM



Date: 1.JUL.2017 16:10:44

Modulation: QPSK



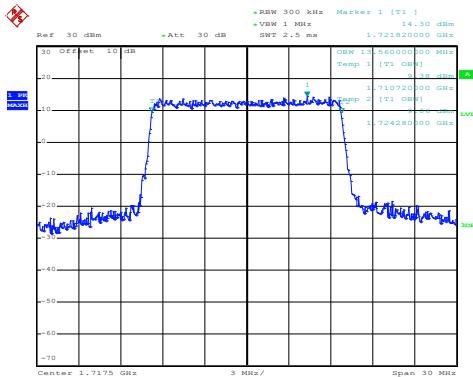
Date: 1.JUL.2017 16:10:40

Highest channel

Test Item:99% Occupy bandwidth

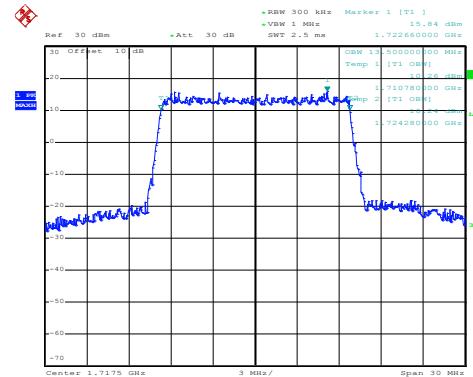
BW: 15MHz

Modulation:16QAM



Date: 1.JUL.2017 16:11:54

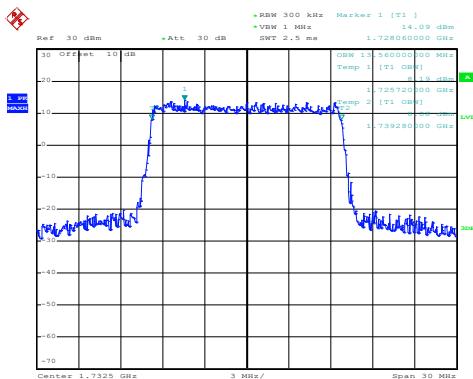
Modulation: QPSK



Date: 1.JUL.2017 16:11:48

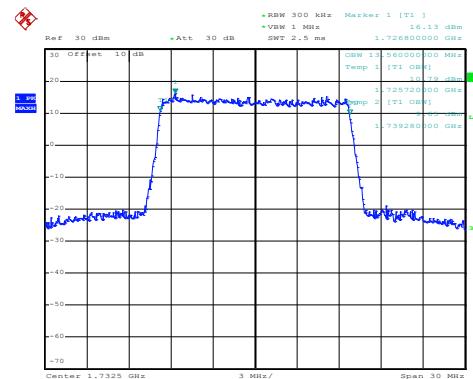
Lowest channel

Modulation:16QAM



Date: 1.JUL.2017 16:12:20

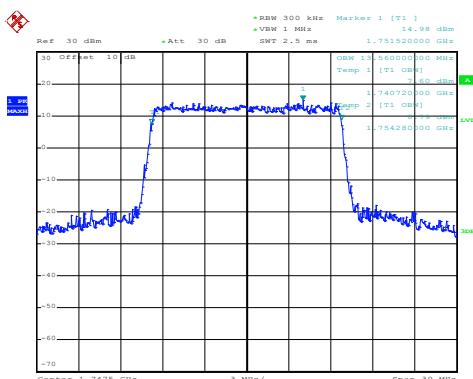
Modulation: QPSK



Date: 1.JUL.2017 16:12:14

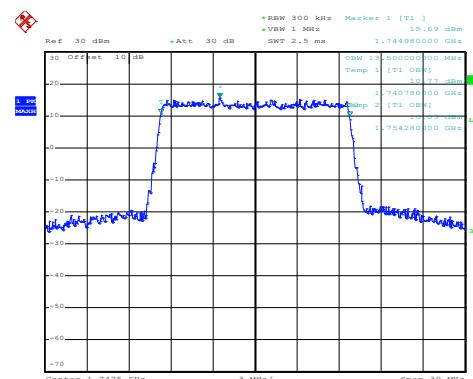
Middle channel

Modulation:16QAM



Date: 1.JUL.2017 16:25:49

Modulation: QPSK

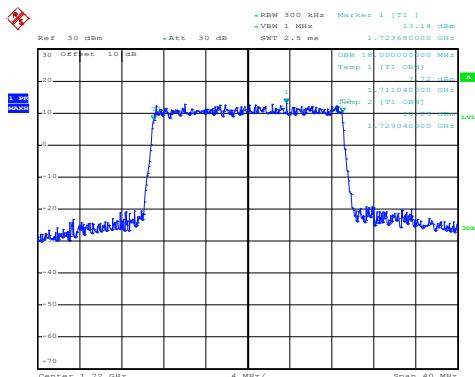


Date: 1.JUL.2017 16:25:42

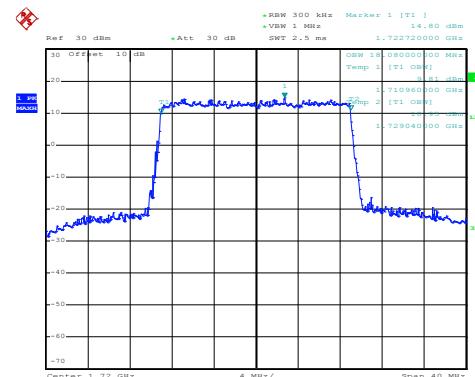
Highest channel

Test Item:99% Occupy bandwidth
BW: 20MHz

Modulation:16QAM



Modulation: QPSK

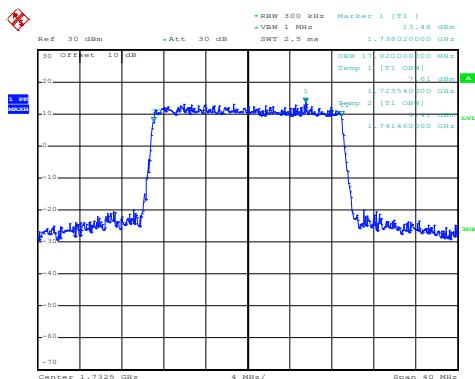


Date: 1.JUL.2017 16:19:39

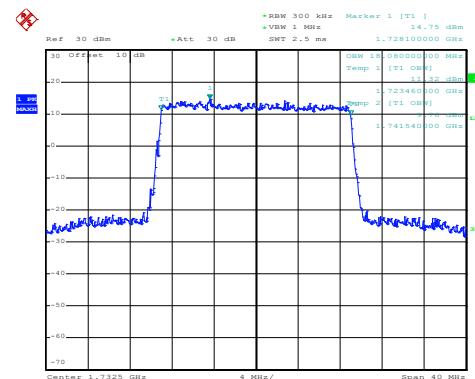
Date: 1.JUL.2017 16:19:34

Lowest channel

Modulation:16QAM



Modulation: QPSK

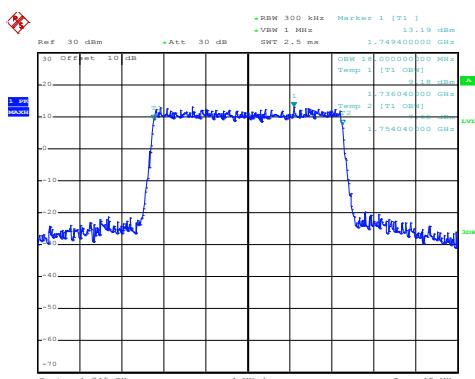


Date: 1.JUL.2017 16:17:21

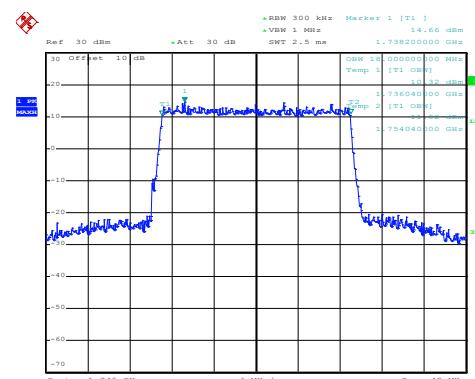
Date: 1.JUL.2017 16:17:15

Middle channel

Modulation:16QAM



Modulation: QPSK



Date: 1.JUL.2017 16:21:11

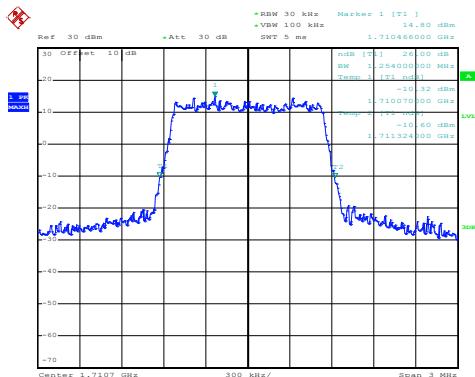
Date: 1.JUL.2017 16:21:06

Highest channel

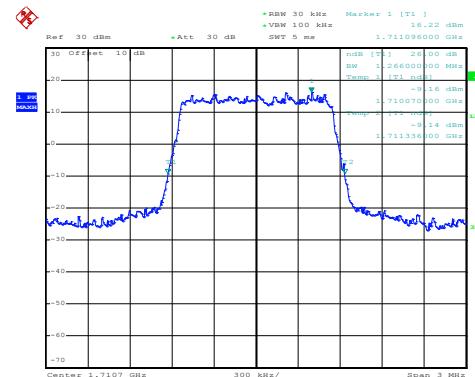
Test Item:-26dBc bandwidth

BW: 1.4MHz

Modulation:16QAM



Modulation: QPSK

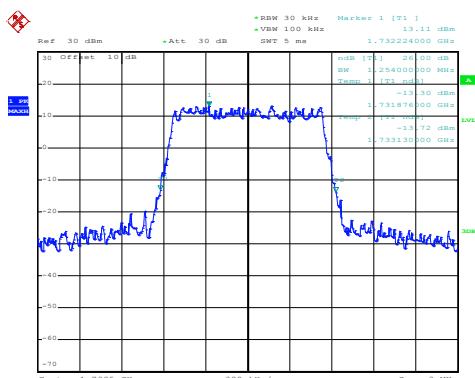


Date: 1.JUL.2017 17:32:10

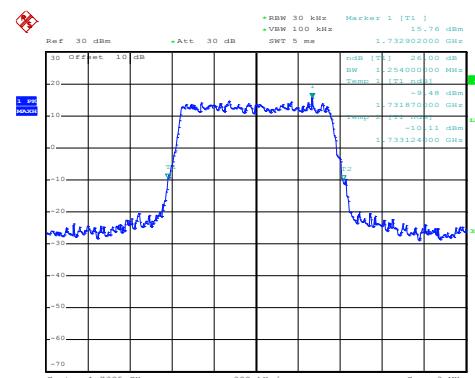
Date: 1.JUL.2017 17:31:54

Lowest channel

Modulation:16QAM



Modulation: QPSK

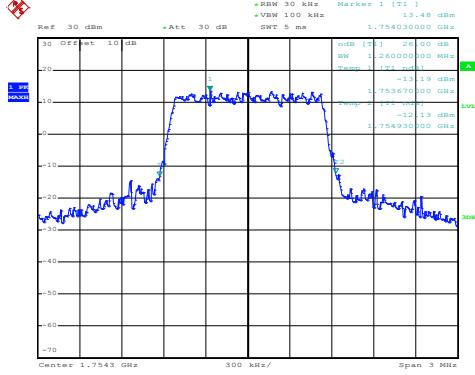


Date: 1.JUL.2017 17:30:57

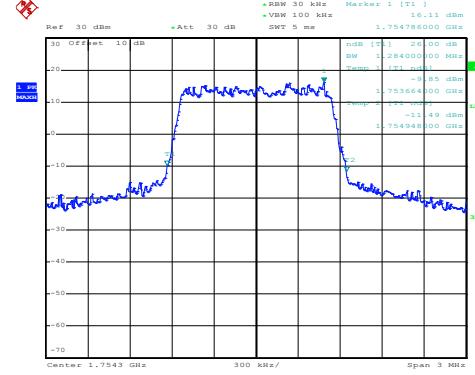
Date: 1.JUL.2017 17:31:21

Middle channel

Modulation:16QAM



Modulation: QPSK



Date: 1.JUL.2017 17:30:40

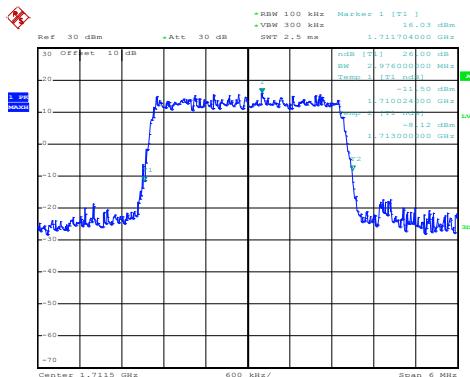
Date: 1.JUL.2017 17:30:35

Highest channel

Test Item:-26dBc bandwidth

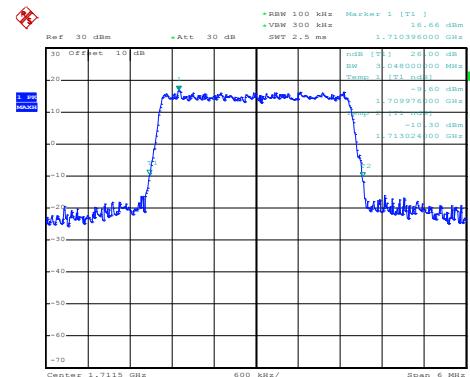
BW: 3MHz

Modulation:16QAM



Date: 1.JUL.2017 16:05:38

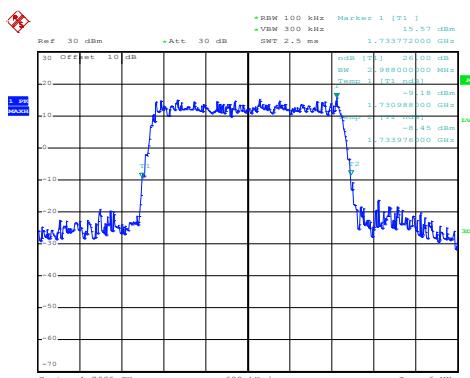
Modulation: QPSK



Date: 1.JUL.2017 16:05:33

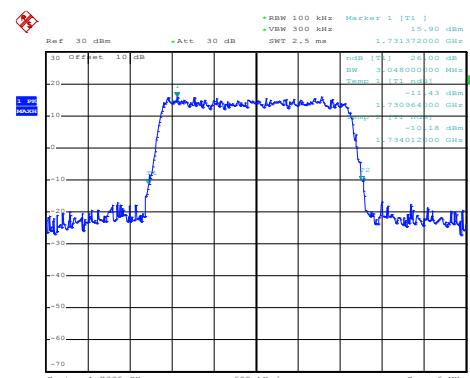
Lowest channel

Modulation:16QAM



Date: 1.JUL.2017 16:06:16

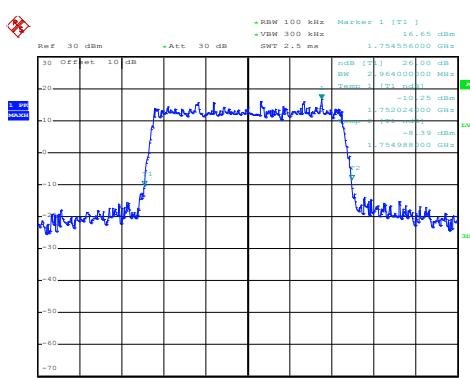
Modulation: QPSK



Date: 1.JUL.2017 16:06:12

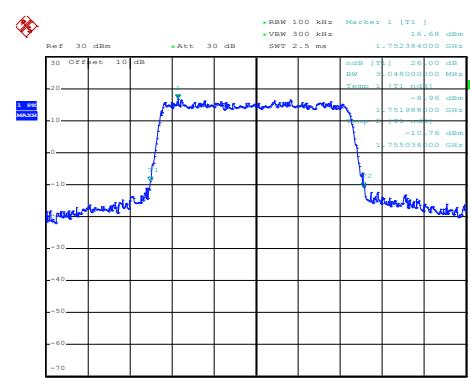
Middle channel

Modulation:16QAM



Date: 1.JUL.2017 16:06:36

Modulation: QPSK



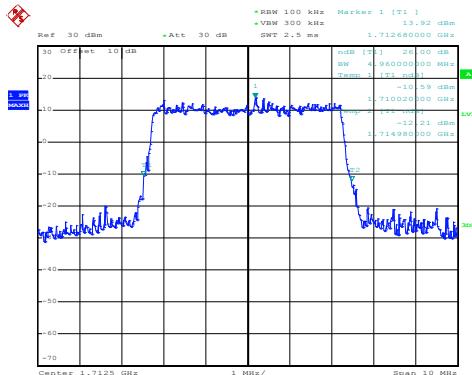
Date: 1.JUL.2017 16:06:31

Highest channel

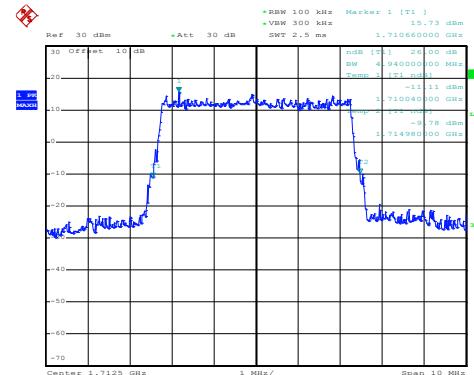
Test Item:-26dBc bandwidth

BW: 5MHz

Modulation:16QAM



Modulation: QPSK

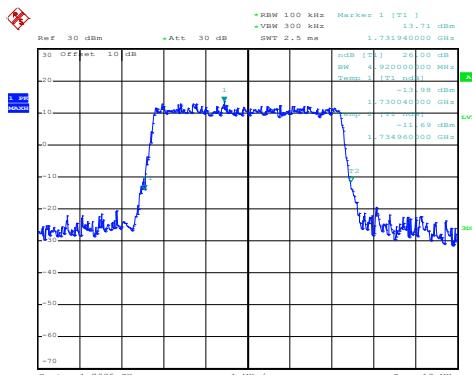


Date: 1.JUL.2017 16:07:44

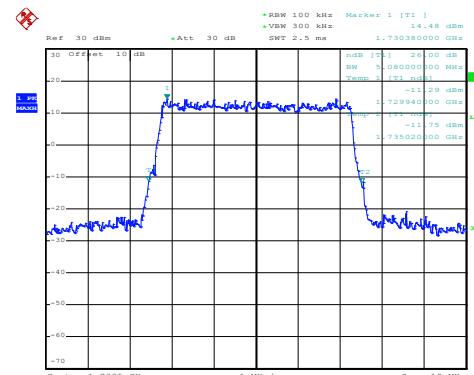
Date: 1.JUL.2017 16:07:40

Lowest channel

Modulation:16QAM



Modulation: QPSK

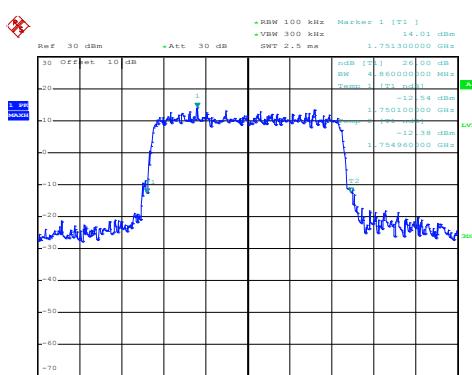


Date: 1.JUL.2017 16:08:07

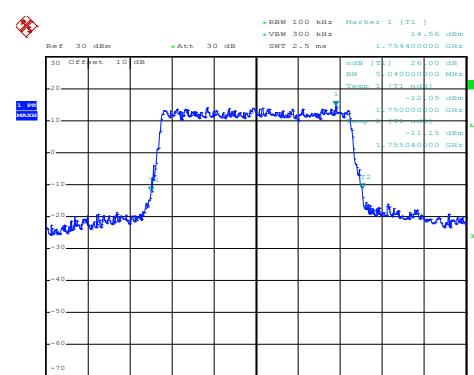
Date: 1.JUL.2017 16:08:02

Middle channel

Modulation:16QAM



Modulation: QPSK



Date: 1.JUL.2017 16:08:55

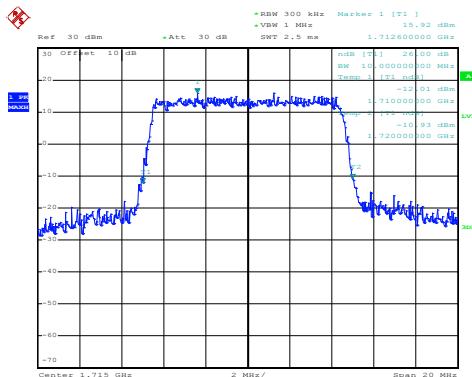
Date: 1.JUL.2017 16:08:51

Highest channel

Test Item:-26dBc bandwidth

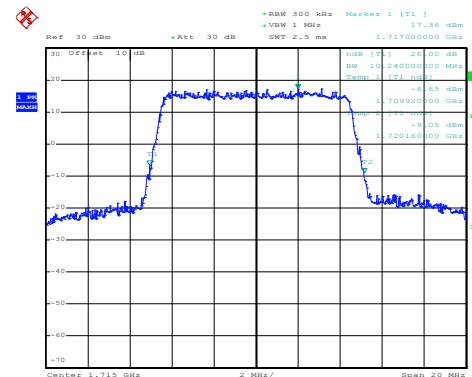
BW: 10MHz

Modulation:16QAM



Date: 1.JUL.2017 16:09:28

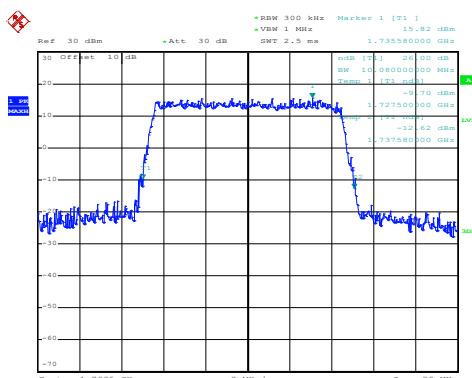
Modulation: QPSK



Date: 1.JUL.2017 16:09:24

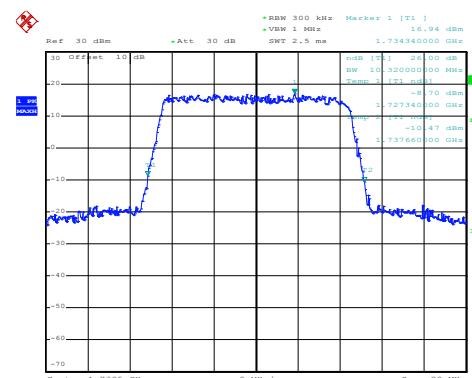
Lowest channel

Modulation:16QAM



Date: 1.JUL.2017 16:10:14

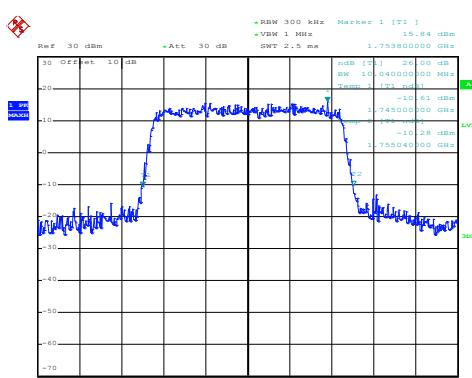
Modulation: QPSK



Date: 1.JUL.2017 16:10:07

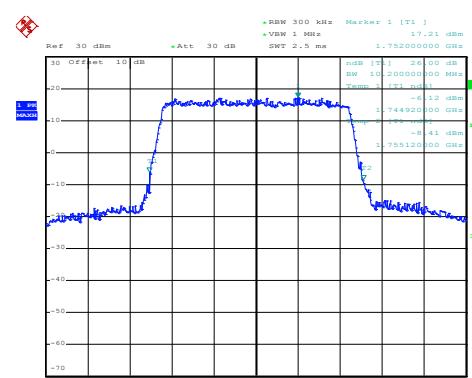
Middle channel

Modulation:16QAM



Date: 1.JUL.2017 16:10:34

Modulation: QPSK



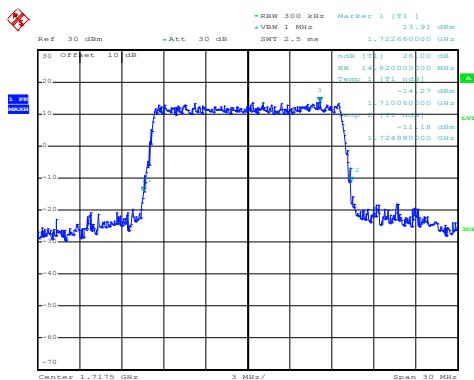
Date: 1.JUL.2017 16:10:30

Highest channel

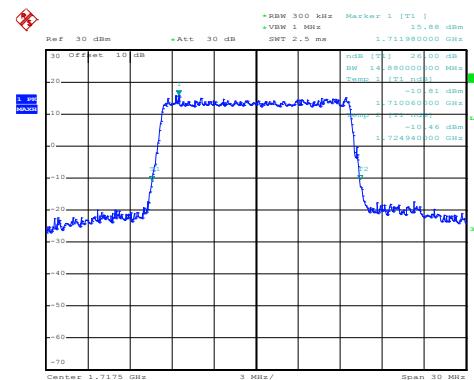
Test Item:-26dBc bandwidth

BW: 15MHz

Modulation:16QAM



Modulation: QPSK

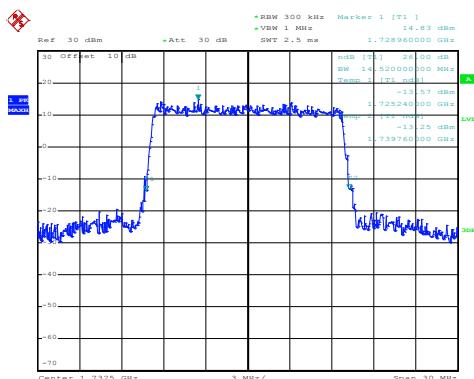


Date: 1.JUL.2017 16:11:40

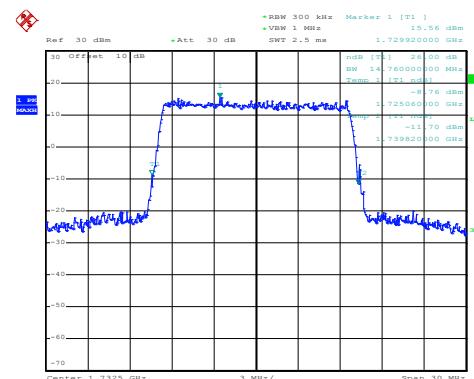
Date: 1.JUL.2017 16:11:36

Lowest channel

Modulation:16QAM



Modulation: QPSK

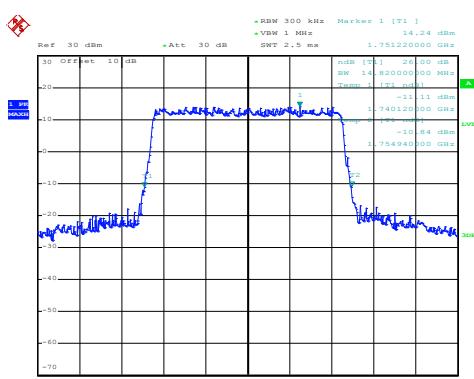


Date: 1.JUL.2017 16:12:32

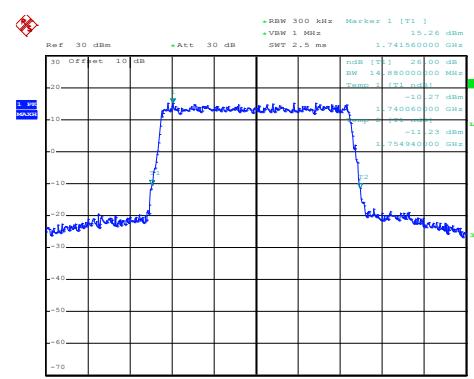
Date: 1.JUL.2017 16:12:28

Middle channel

Modulation:16QAM



Modulation: QPSK



Date: 1.JUL.2017 16:12:54

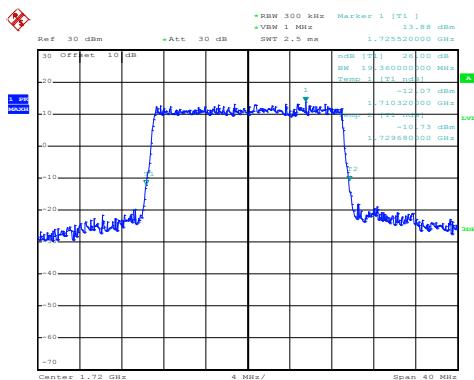
Date: 1.JUL.2017 16:12:46

Highest channel

Test Item:-26dBc bandwidth

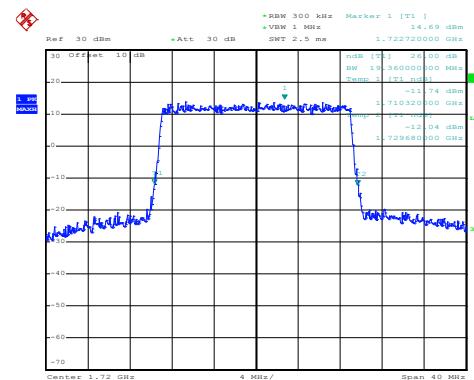
BW: 20MHz

Modulation:16QAM



Date: 1.JUL.2017 16:19:52

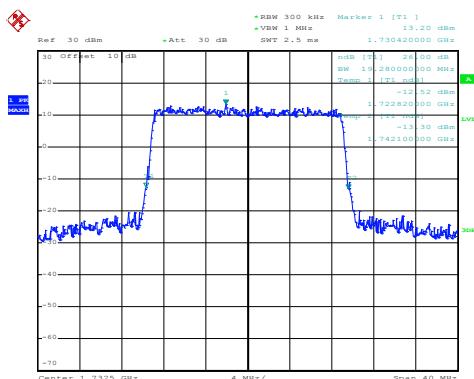
Modulation: QPSK



Date: 1.JUL.2017 16:19:45

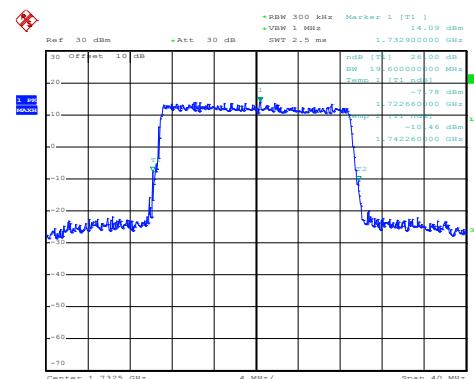
Lowest channel

Modulation:16QAM



Date: 1.JUL.2017 16:17:05

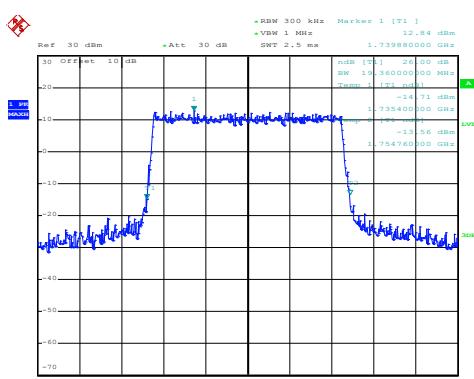
Modulation: QPSK



Date: 1.JUL.2017 16:20:43

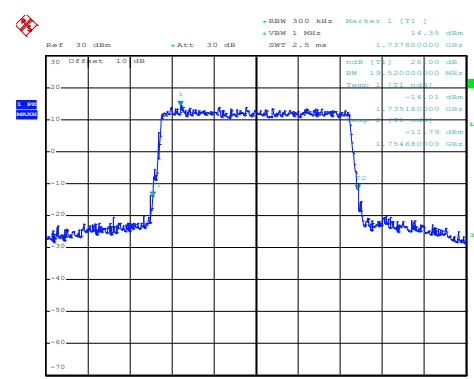
Middle channel

Modulation:16QAM



Date: 1.JUL.2017 16:20:59

Modulation: QPSK



Date: 1.JUL.2017 16:20:55

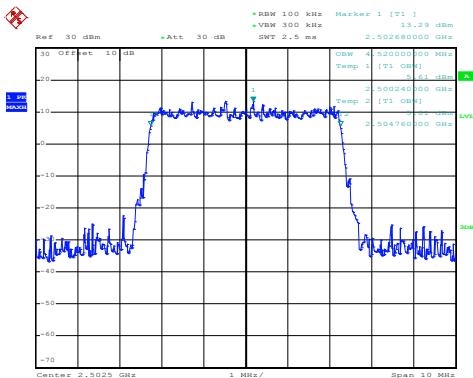
Highest channel

LTE-Band 7 part

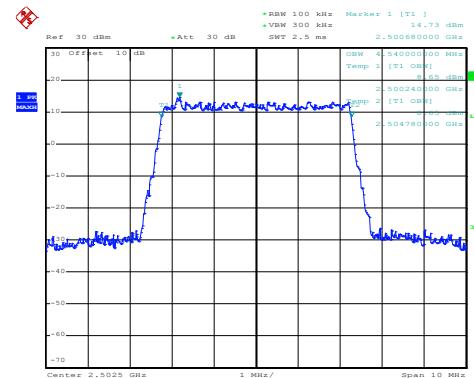
Test Item:99% Occupy bandwidth

BW: 5MHz

Modulation:16QAM



Modulation: QPSK

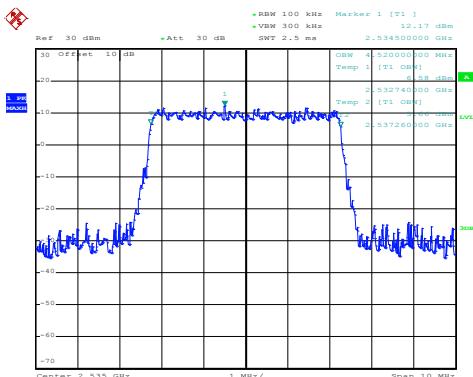


Date: 1.JUL.2017 17:47:48

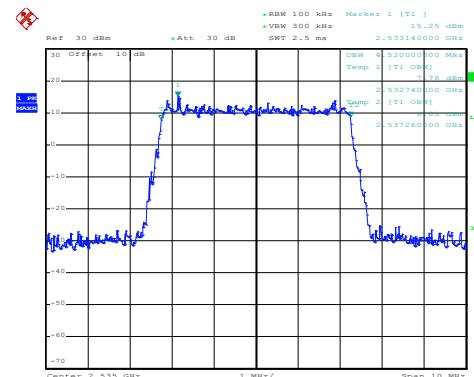
Date: 1.JUL.2017 17:47:41

Lowest channel

Modulation:16QAM



Modulation: QPSK

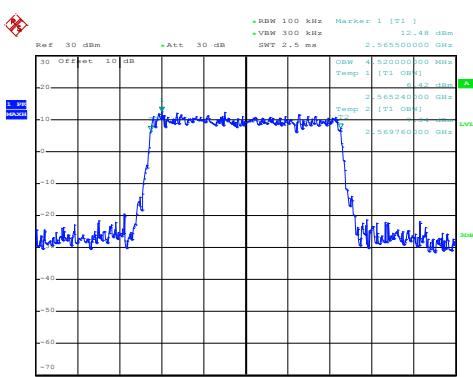


Date: 1.JUL.2017 17:48:36

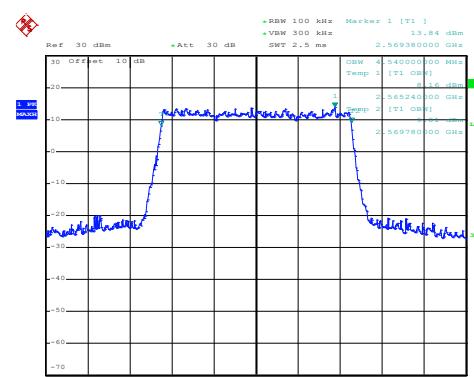
Date: 1.JUL.2017 17:48:30

Middle channel

Modulation:16QAM



Modulation: QPSK



Date: 1.JUL.2017 17:49:00

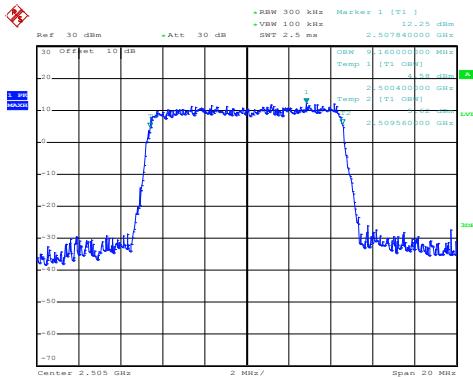
Date: 1.JUL.2017 17:48:55

Highest channel

Test Item:99% Occupy bandwidth

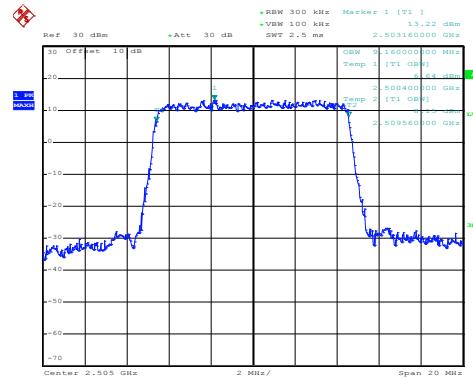
BW: 10MHz

Modulation:16QAM



Date: 1.JUL.2017 17:49:58

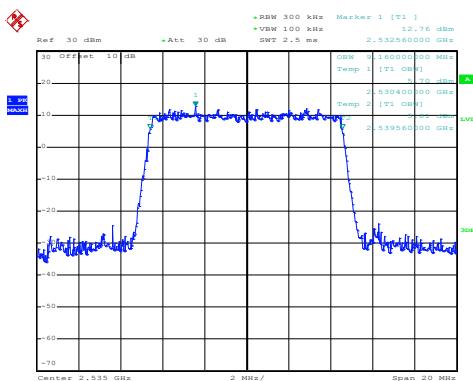
Modulation: QPSK



Date: 1.JUL.2017 17:49:54

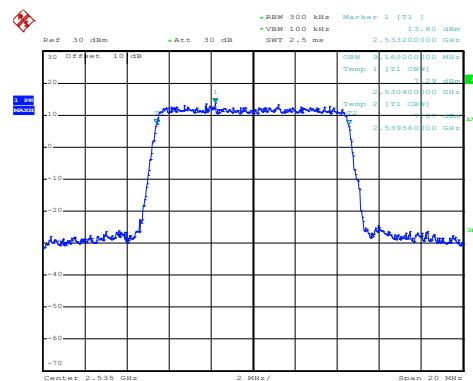
Lowest channel

Modulation:16QAM



Date: 1.JUL.2017 17:50:16

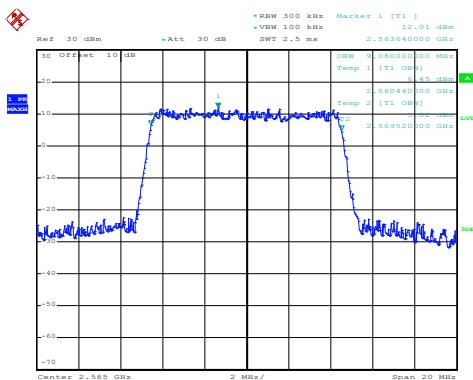
Modulation: QPSK



Date: 1.JUL.2017 17:50:12

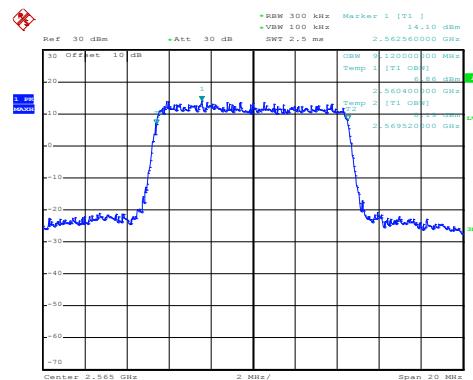
Middle channel

Modulation:16QAM



Date: 1.JUL.2017 17:50:59

Modulation: QPSK



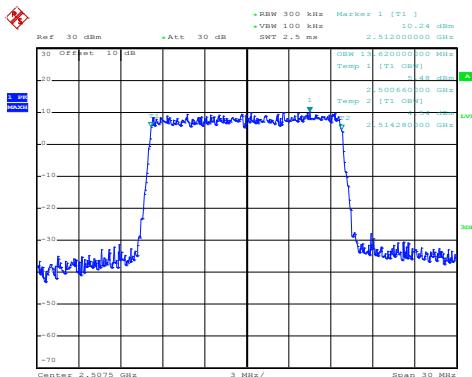
Date: 1.JUL.2017 17:50:55

Highest channel

Test Item:99% Occupy bandwidth

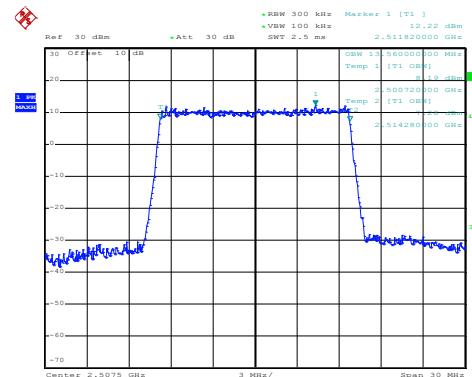
BW: 15MHz

Modulation:16QAM



Date: 1.JUL.2017 17:51:25

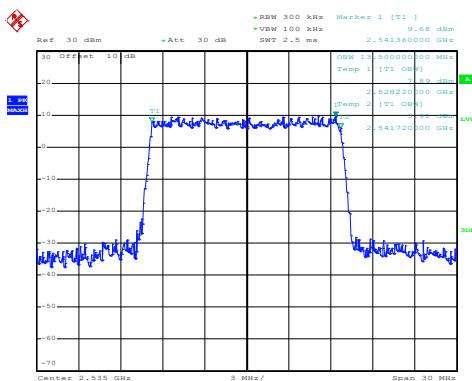
Modulation: QPSK



Date: 1.JUL.2017 17:51:21

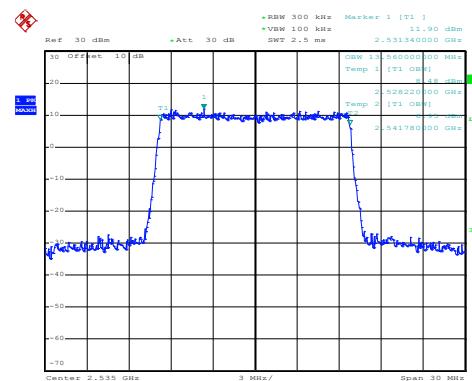
Lowest channel

Modulation:16QAM



Date: 1.JUL.2017 17:52:00

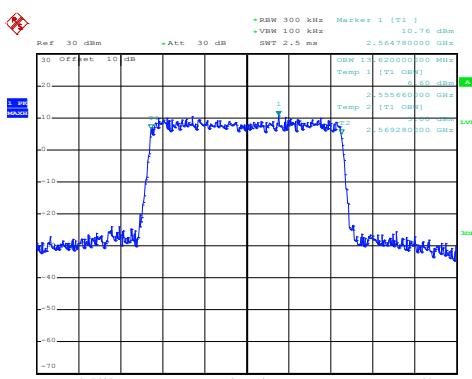
Modulation: QPSK



Date: 1.JUL.2017 17:51:57

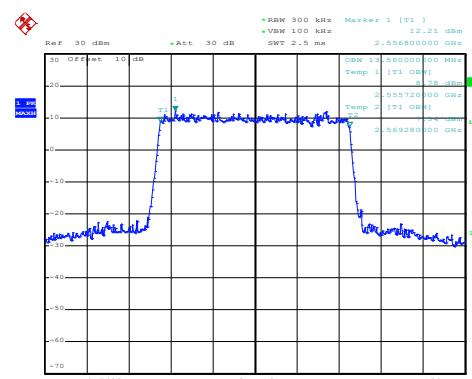
Middle channel

Modulation:16QAM



Date: 1.JUL.2017 17:52:41

Modulation: QPSK



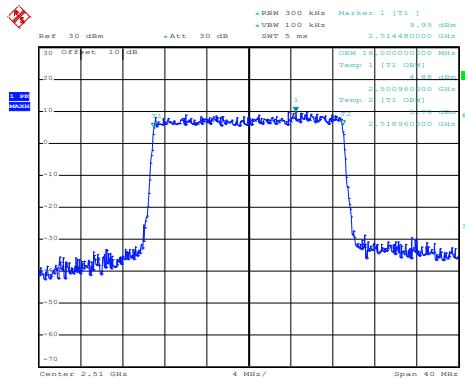
Date: 1.JUL.2017 17:52:38

Highest channel

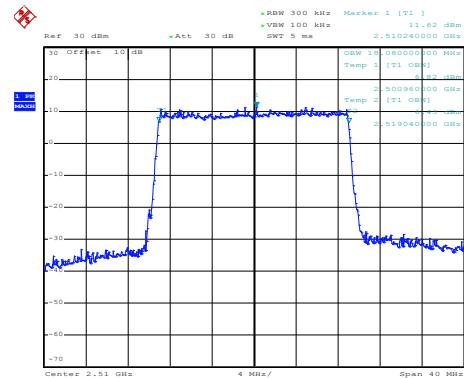
Test Item:99% Occupy bandwidth

BW: 20MHz

Modulation:16QAM



Modulation: QPSK

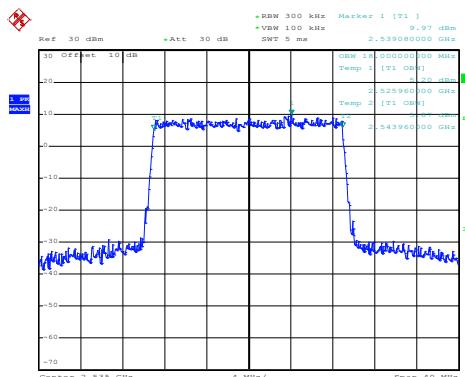


Date: 1.JUL.2017 17:53:14

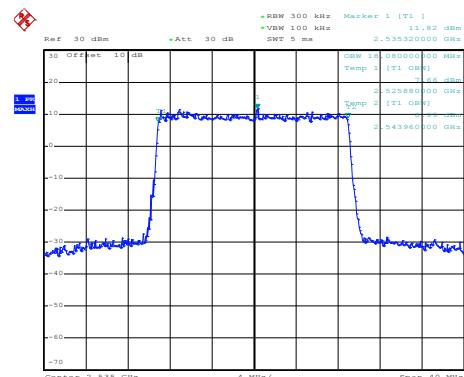
Date: 1.JUL.2017 17:53:10

Lowest channel

Modulation:16QAM



Modulation: QPSK

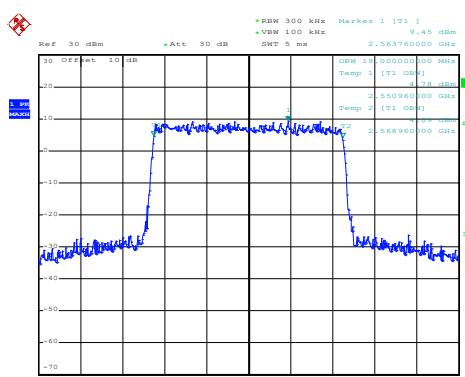


Date: 1.JUL.2017 17:54:03

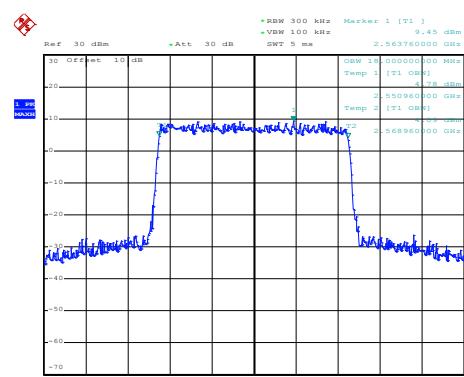
Date: 1.JUL.2017 17:53:59

Middle channel

Modulation:16QAM



Modulation: QPSK



Date: 1.JUL.2017 17:54:33

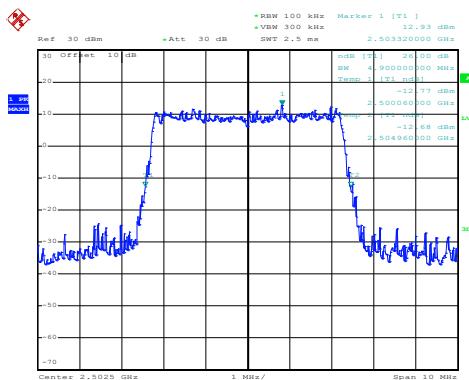
Date: 1.JUL.2017 17:54:33

Highest channel

Test Item:-26dBc bandwidth

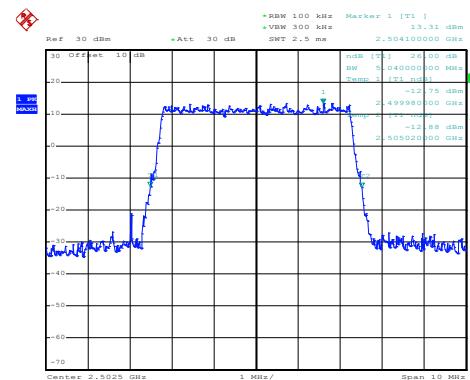
BW: 5MHz

Modulation:16QAM



Date: 1.JUL.2017 17:48:00

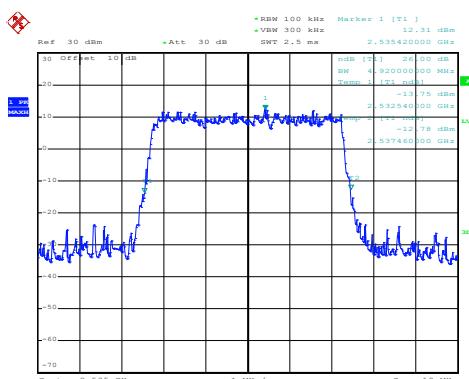
Modulation: QPSK



Date: 1.JUL.2017 17:47:56

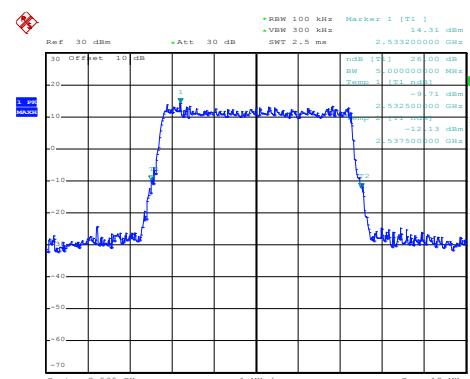
Lowest channel

Modulation:16QAM



Date: 1.JUL.2017 17:48:25

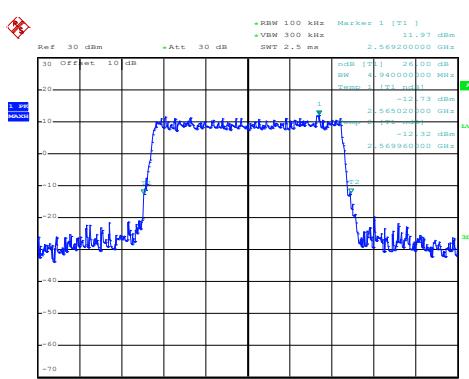
Modulation: QPSK



Date: 1.JUL.2017 17:48:21

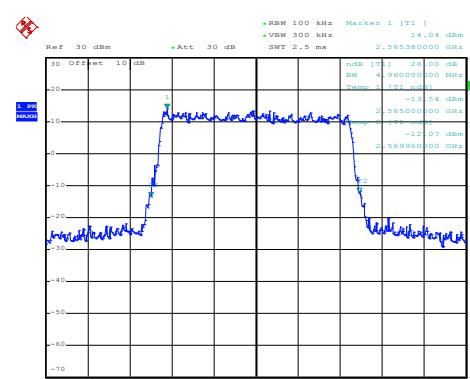
Middle channel

Modulation:16QAM



Date: 1.JUL.2017 17:49:13

Modulation: QPSK



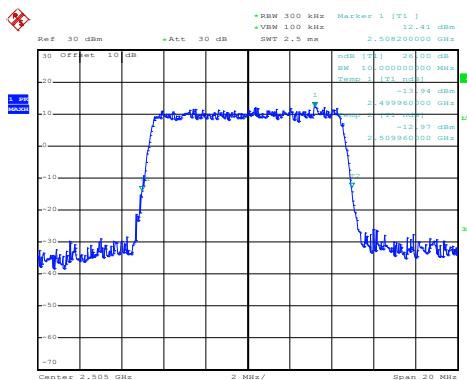
Date: 1.JUL.2017 17:49:07

Highest channel

Test Item:-26dBc bandwidth

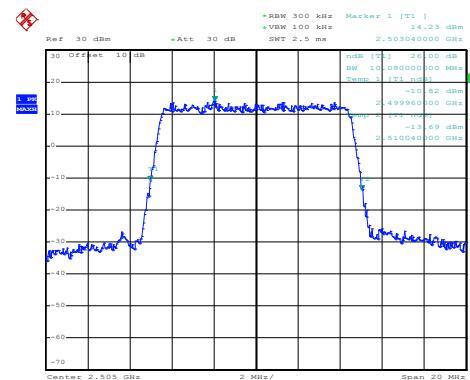
BW: 10MHz

Modulation:16QAM



Date: 1.JUL.2017 17:49:48

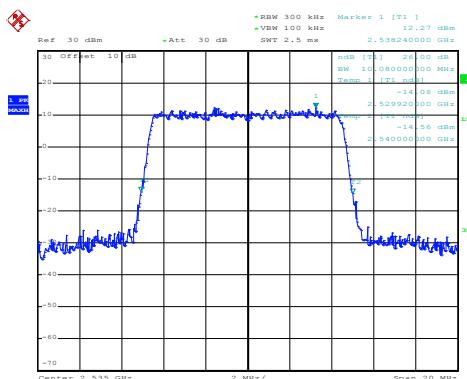
Modulation: QPSK



Date: 1.JUL.2017 17:49:44

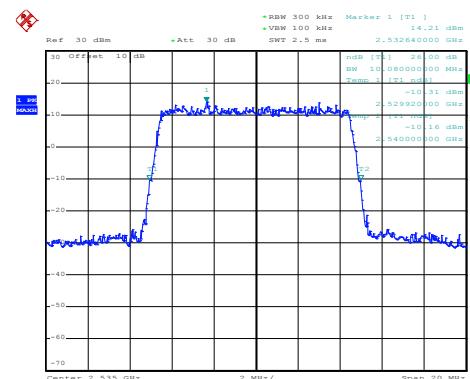
Lowest channel

Modulation:16QAM



Date: 1.JUL.2017 17:50:33

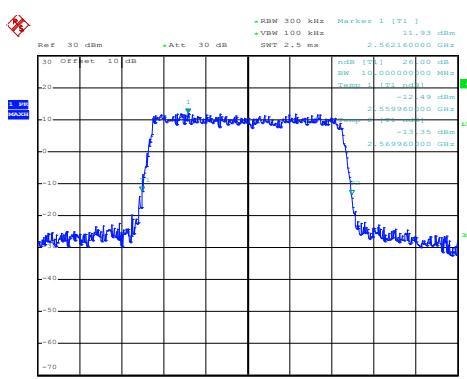
Modulation: QPSK



Date: 1.JUL.2017 17:50:28

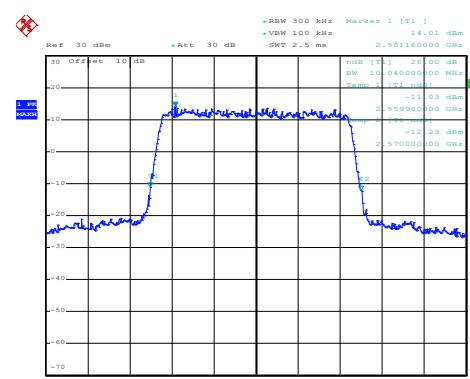
Middle channel

Modulation:16QAM



Date: 1.JUL.2017 17:50:49

Modulation: QPSK



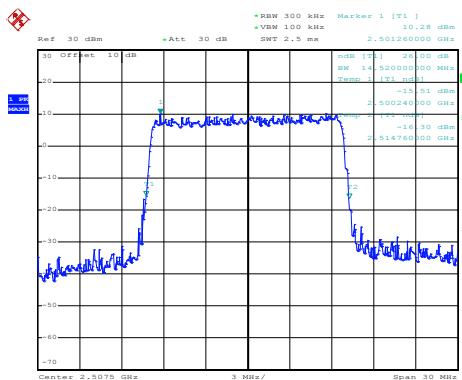
Date: 1.JUL.2017 17:50:45

Highest channel

Test Item:-26dBc bandwidth

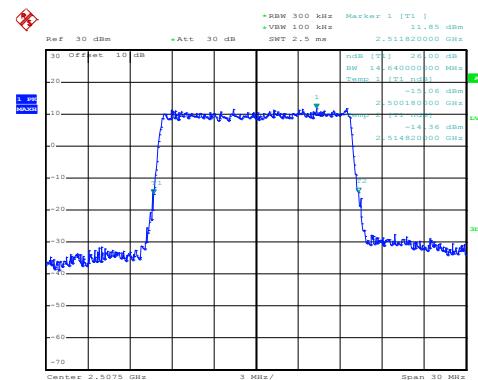
BW: 15MHz

Modulation:16QAM



Date: 1.JUL.2017 17:51:34

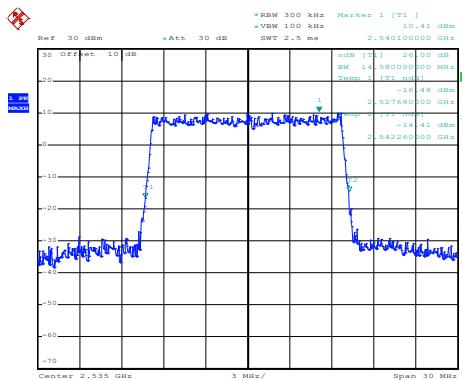
Modulation: QPSK



Date: 1.JUL.2017 17:51:30

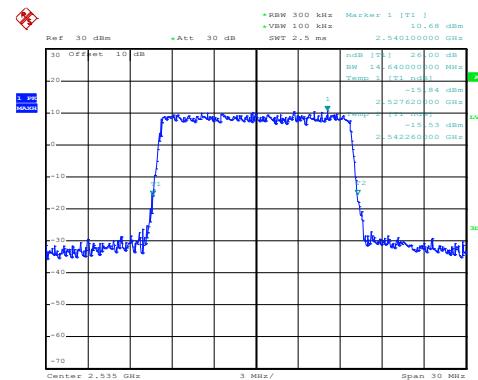
Lowest channel

Modulation:16QAM



Date: 1.JUL.2017 17:51:51

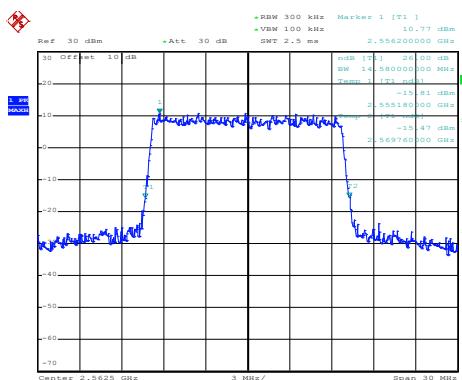
Modulation: QPSK



Date: 1.JUL.2017 17:52:08

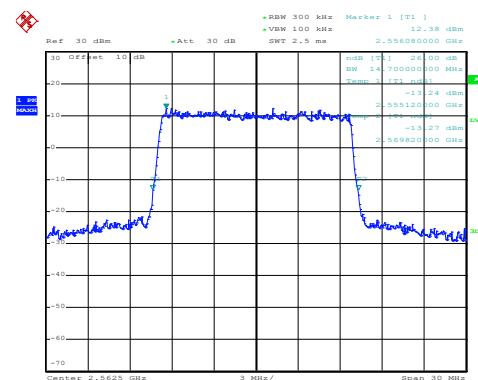
Middle channel

Modulation:16QAM



Date: 1.JUL.2017 17:52:30

Modulation: QPSK



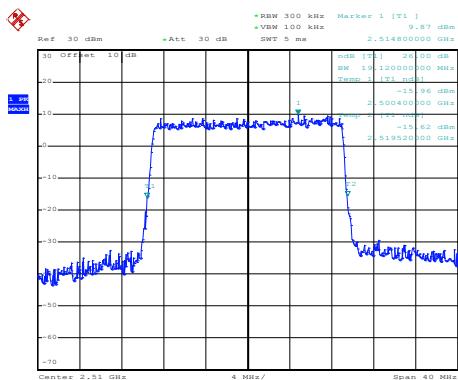
Date: 1.JUL.2017 17:52:25

Highest channel

Test Item:-26dBc bandwidth

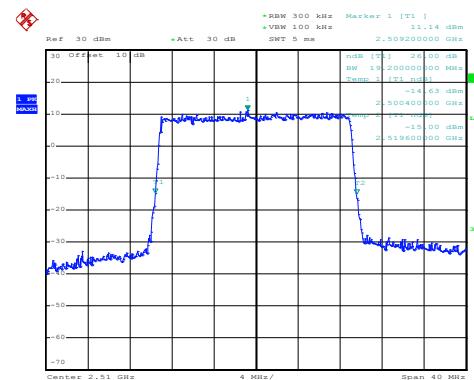
BW: 20MHz

Modulation:16QAM



Date: 1.JUL.2017 17:53:31

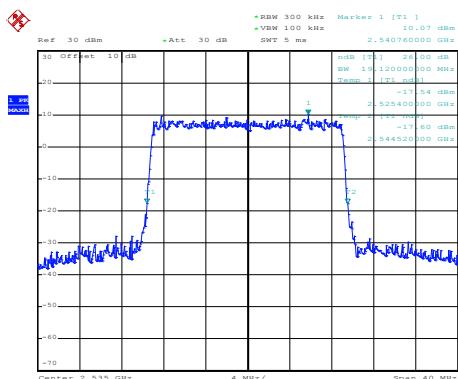
Modulation: QPSK



Date: 1.JUL.2017 17:53:26

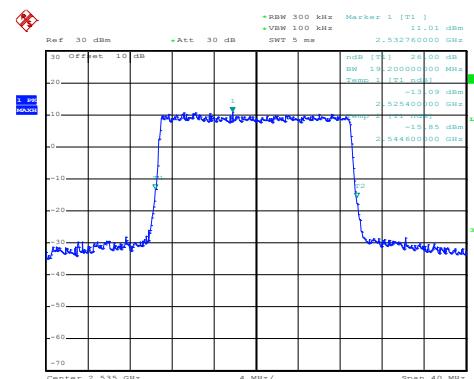
Lowest channel

Modulation:16QAM



Date: 1.JUL.2017 17:53:49

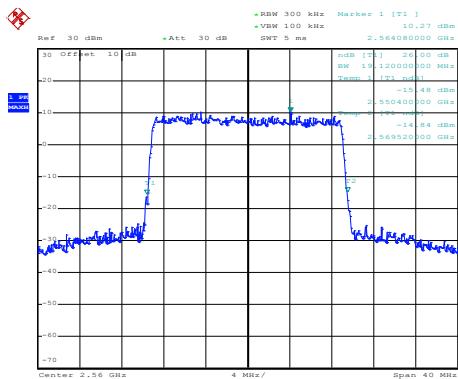
Modulation: QPSK



Date: 1.JUL.2017 17:53:45

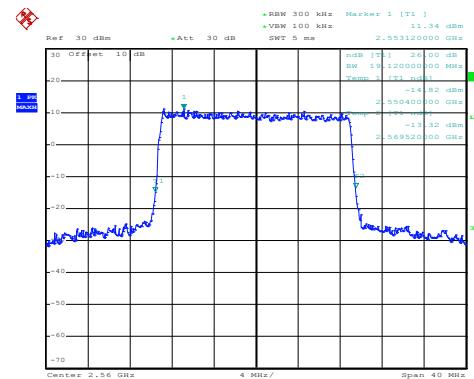
Middle channel

Modulation:16QAM



Date: 1.JUL.2017 17:54:45

Modulation: QPSK



Date: 1.JUL.2017 17:54:40

Highest channel

6.8 Modulation Characteristic

According to FCC § 2.1047(d), Part 24E & 27H & 27L & 27M there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

6.9 Out of band emission at antenna terminals

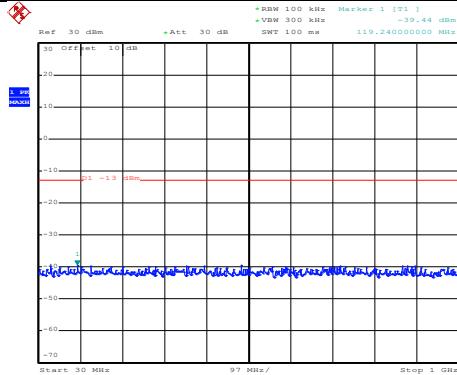
Test Requirement:	Part 27.53 (h),Part 27.53(m)
Test Method:	FCC part 2.1051
Limit:	<p>Band 4: The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB (-13 dBm).</p> <p>Band 7: For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log(P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log(P)$ dB at or below 2490.5 MHz.</p>
Test setup:	<pre> graph LR EUT[EUT] --- Splitter[Splitter] Splitter --- CommTester[Communication Tester] Splitter --- ATT[ATT] ATT --- SPA[SPA] </pre> <p><i>Note: Measurement setup for testing on Antenna connector</i></p>
Test Procedure:	<ol style="list-style-type: none"> The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. 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. 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. 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

Test plots as follows:

Spurious emission

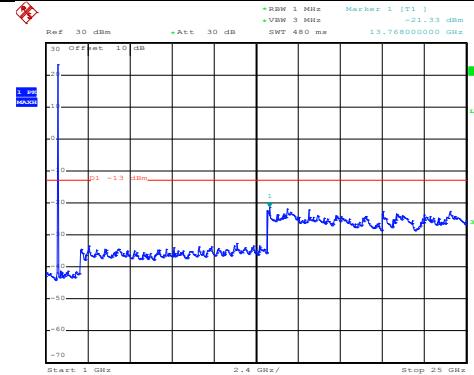
LTE band 4 Part: 1.4MHz

Test Mode:	LTE band 4(1.4 MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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Date: 1.JUL.2017 21:35:16

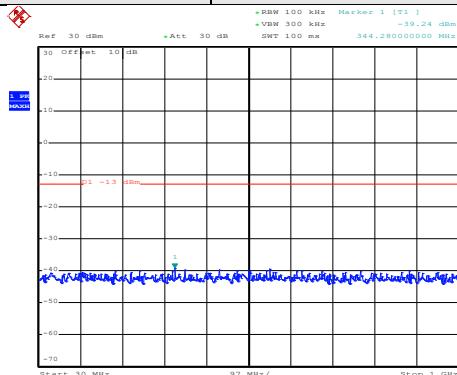
30MHz~1GHz



Date: 1.JUL.2017 18:24:07

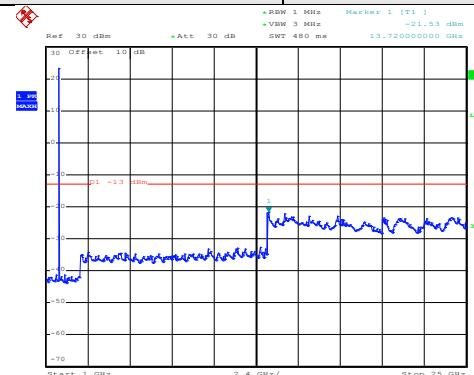
1GHz~25GHz

Test Mode:	LTE band 4(1.4 MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Middle channel
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Date: 1.JUL.2017 21:35:50

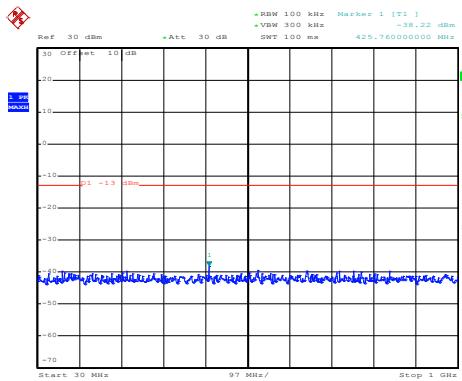
30MHz~1GHz



Date: 1.JUL.2017 18:25:11

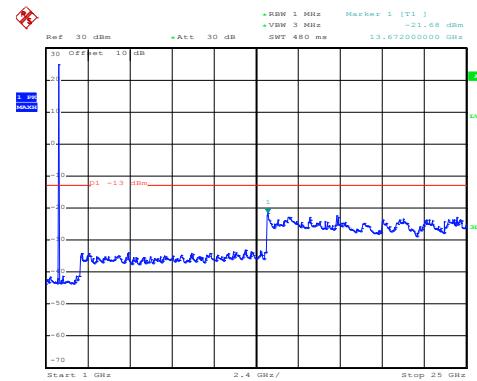
1GHz~25GHz

Test Mode:	LTE band 4(1.4 MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Highest channel
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Date: 1.JUL.2017 21:36:27

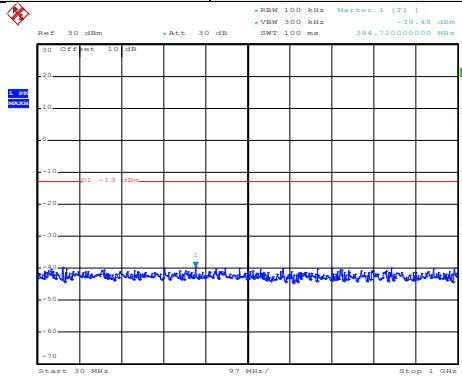
0MHz~1GHz



Date: 1.JUL.2017 18:26:09

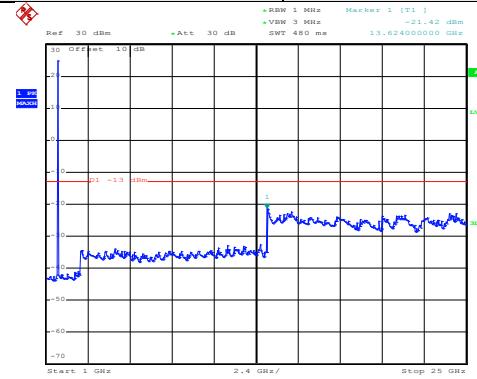
1GHz~25GHz

Test Mode:	LTE band 4(1.4 MHz 16QAM) RB Size 3 & RB Offset 0	Test Channel:	Lowest channel
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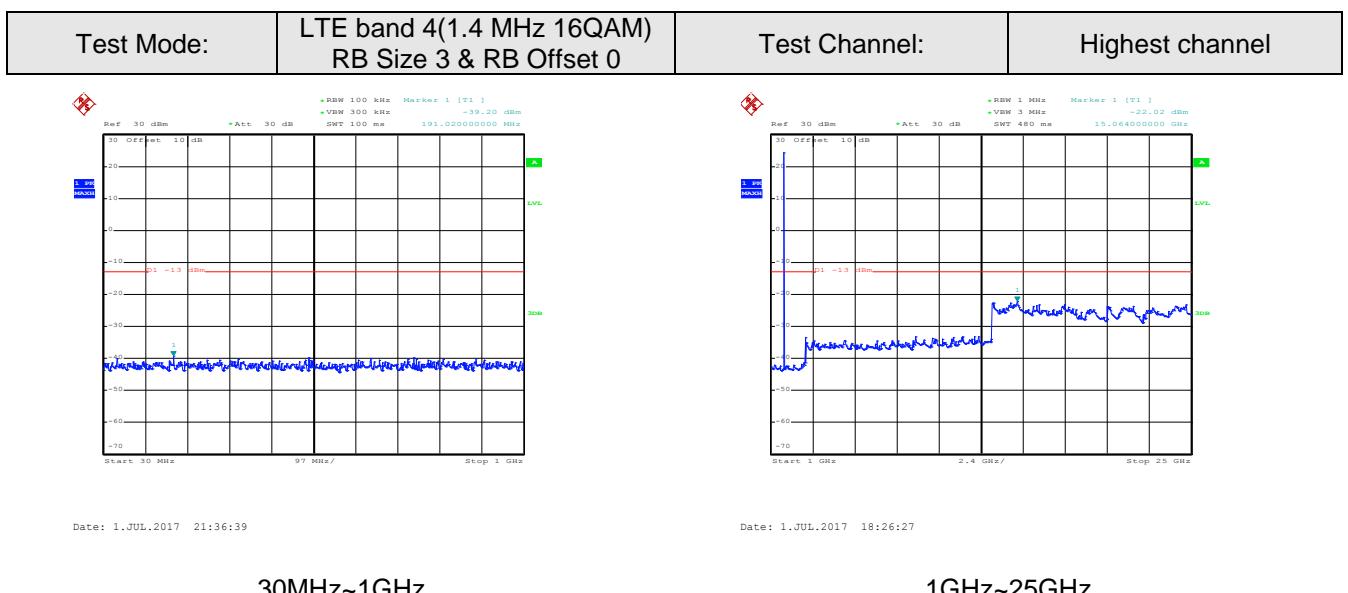
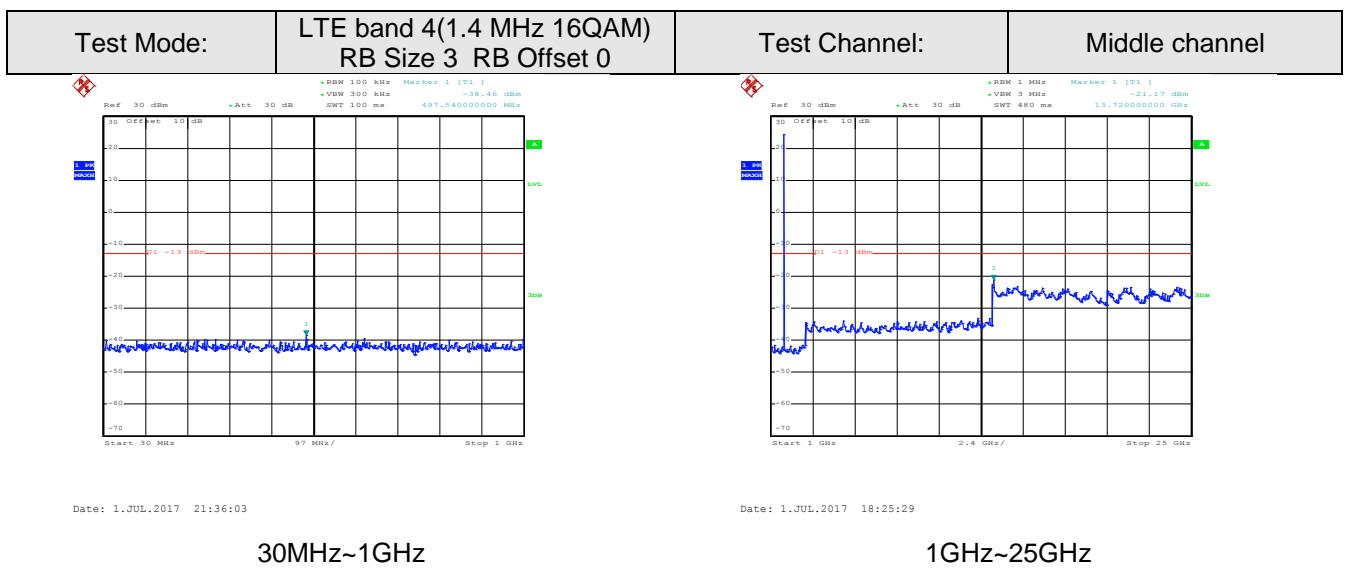
Date: 1.JUL.2017 21:35:26

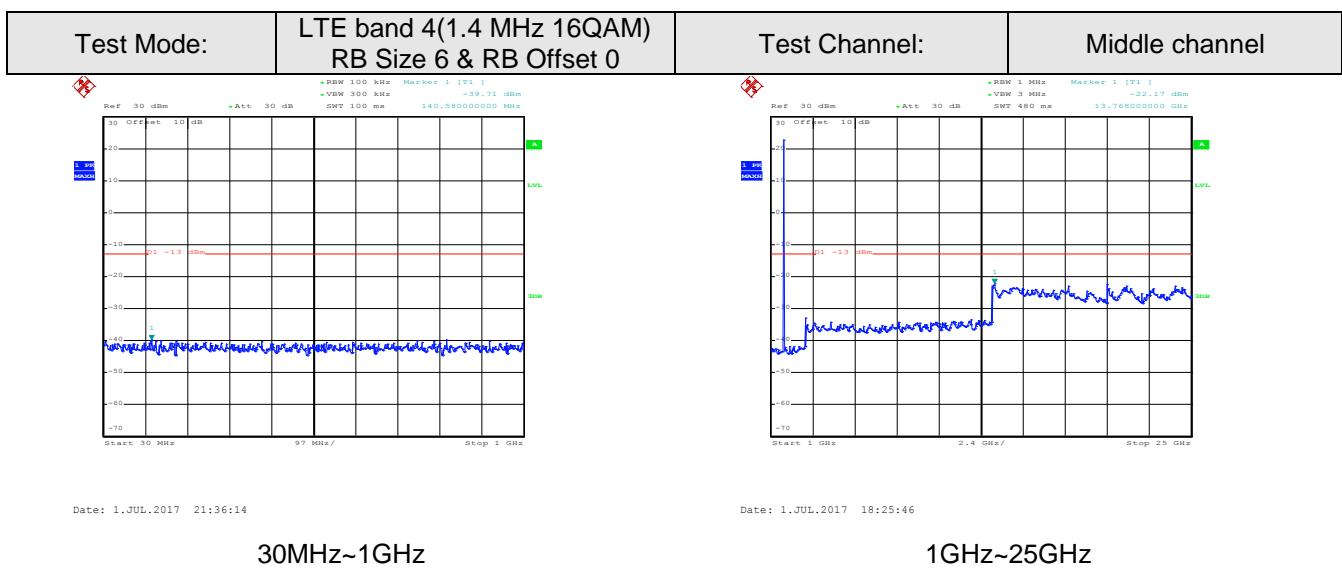
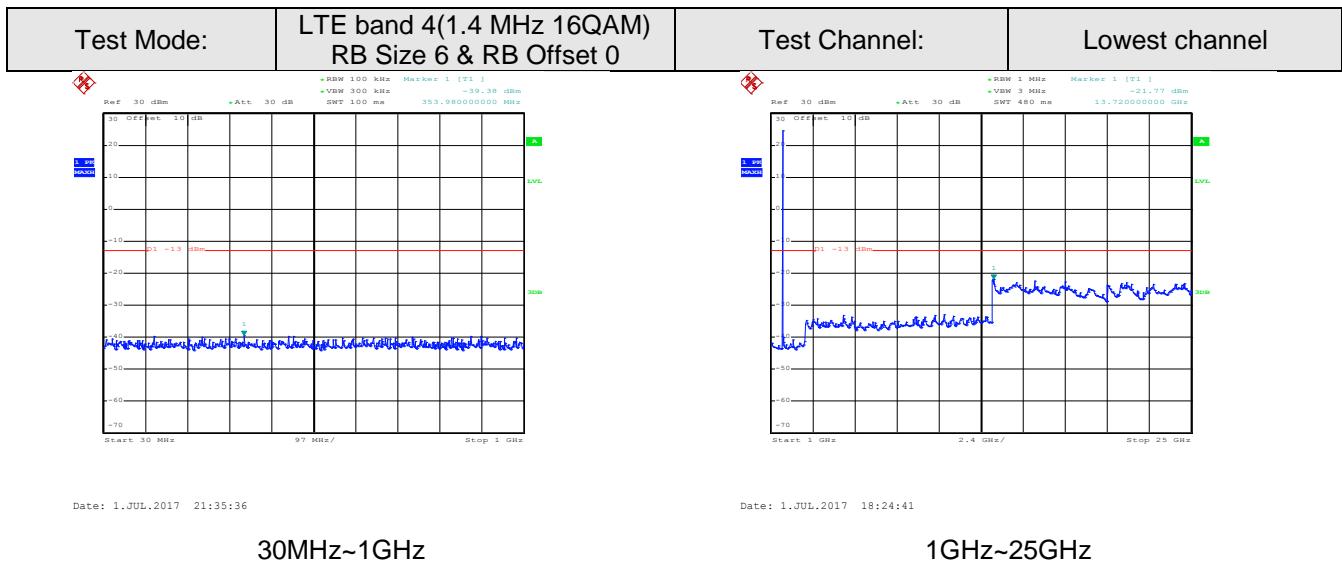
30MHz~1GHz



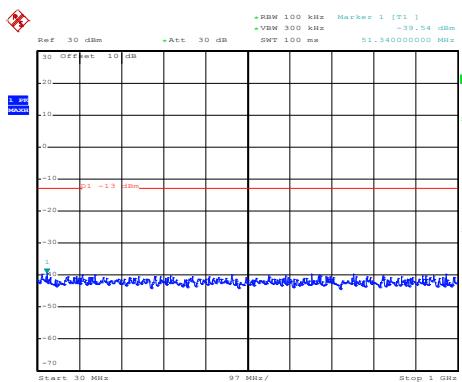
Date: 1.JUL.2017 18:24:24

1GHz~25GHz



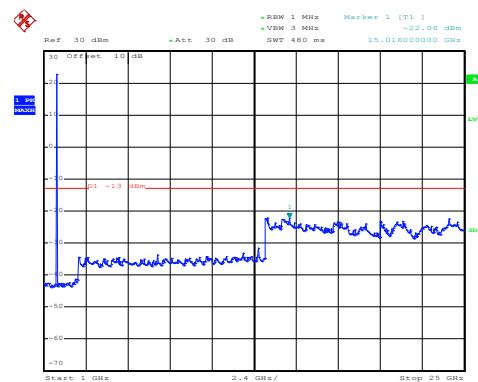


Test Mode:	LTE band 4(1.4 MHz 16QAM) RB Size 6 & RB Offset 0	Test Channel:	Highest channel
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Date: 1.JUL.2017 21:36:58

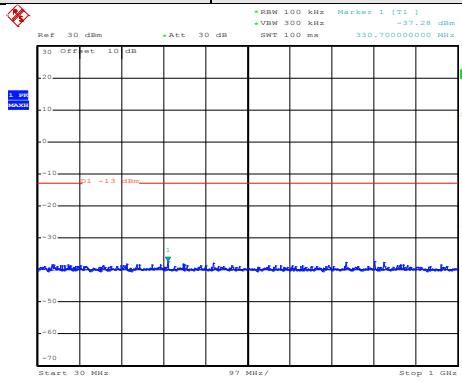
30MHz~1GHz



Date: 1.JUL.2017 18:26:45

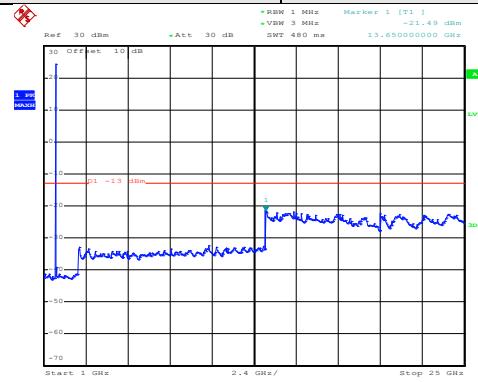
1GHz~25GHz

Test Mode:	LTE band 4(1.4 MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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Date: 1.JUL.2017 21:35:10

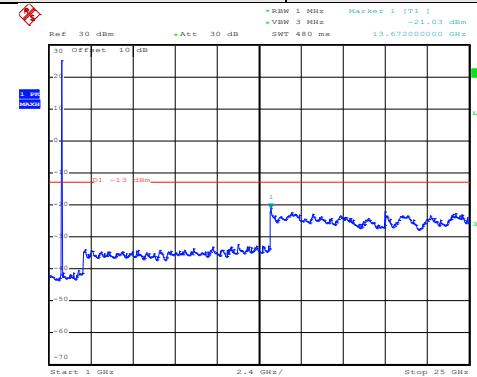
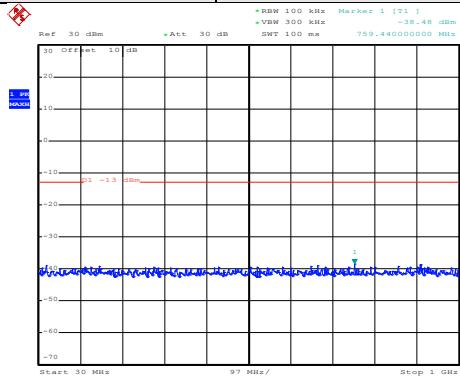
30MHz~1GHz



Date: 1.JUL.2017 18:23:55

1GHz~25GHz

Test Mode:	LTE band 4(1.4 MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Middle channel
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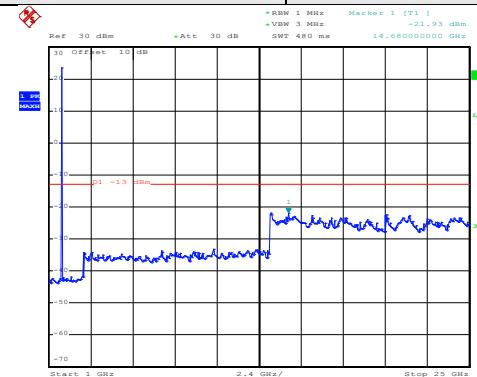
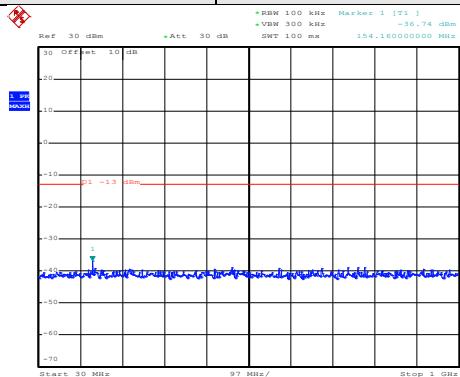
Date: 1.JUL.2017 21:35:46

30MHz~1GHz

Date: 1.JUL.2017 18:25:04

1GHz~25GHz

Test Mode:	LTE band 4(1.4 MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Highest channel
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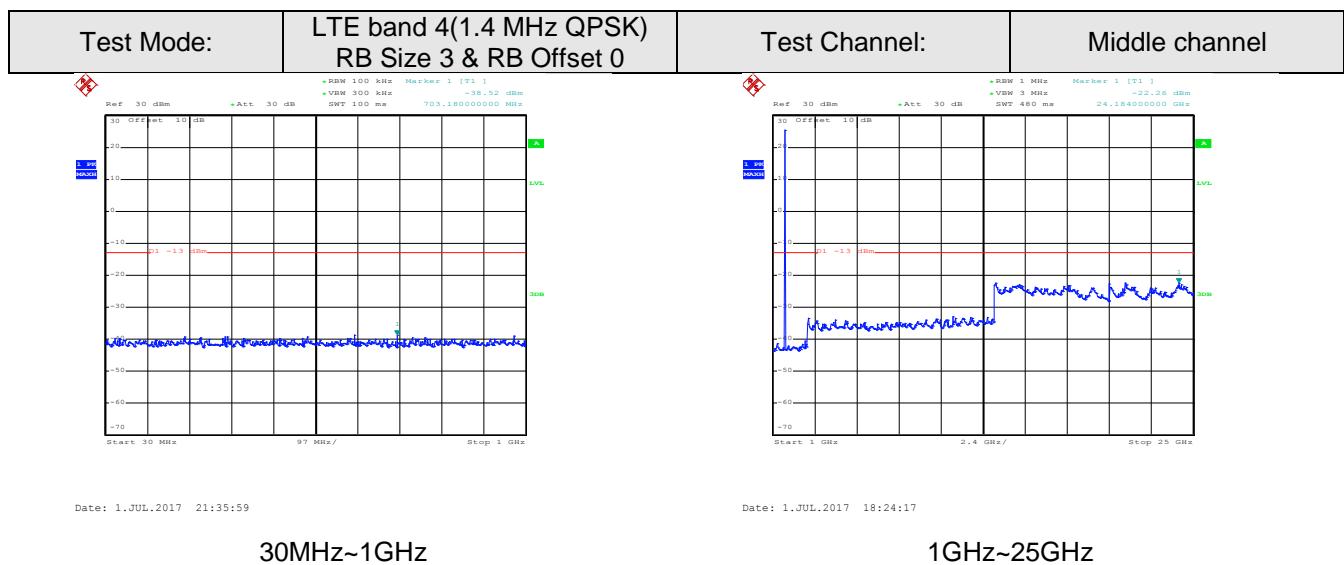
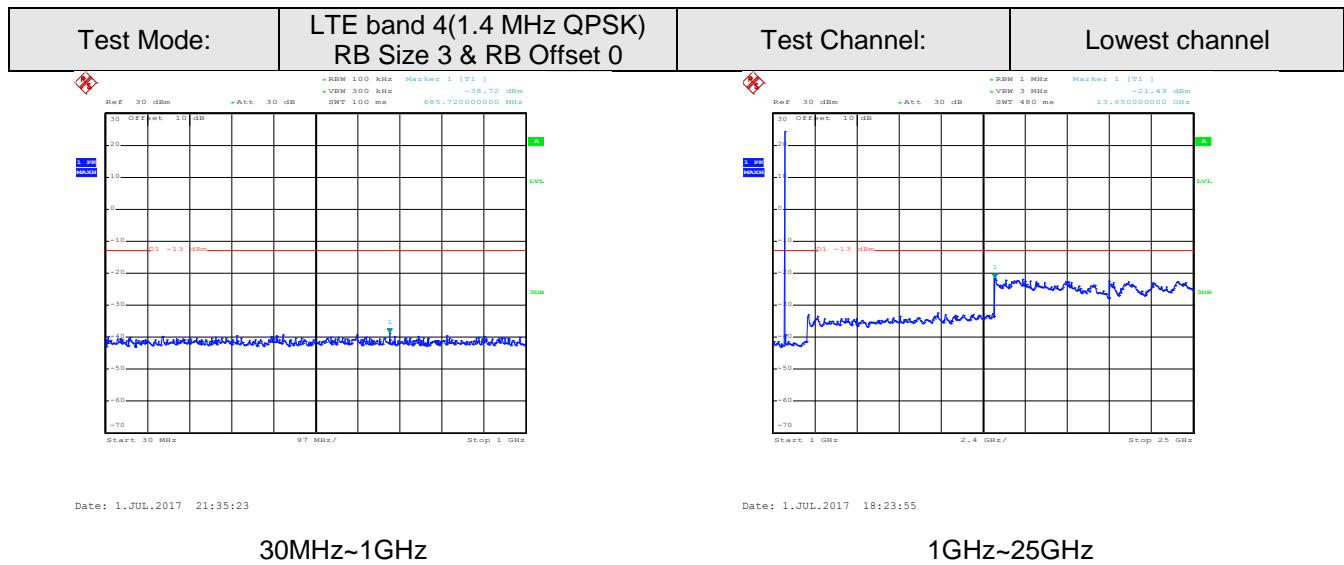


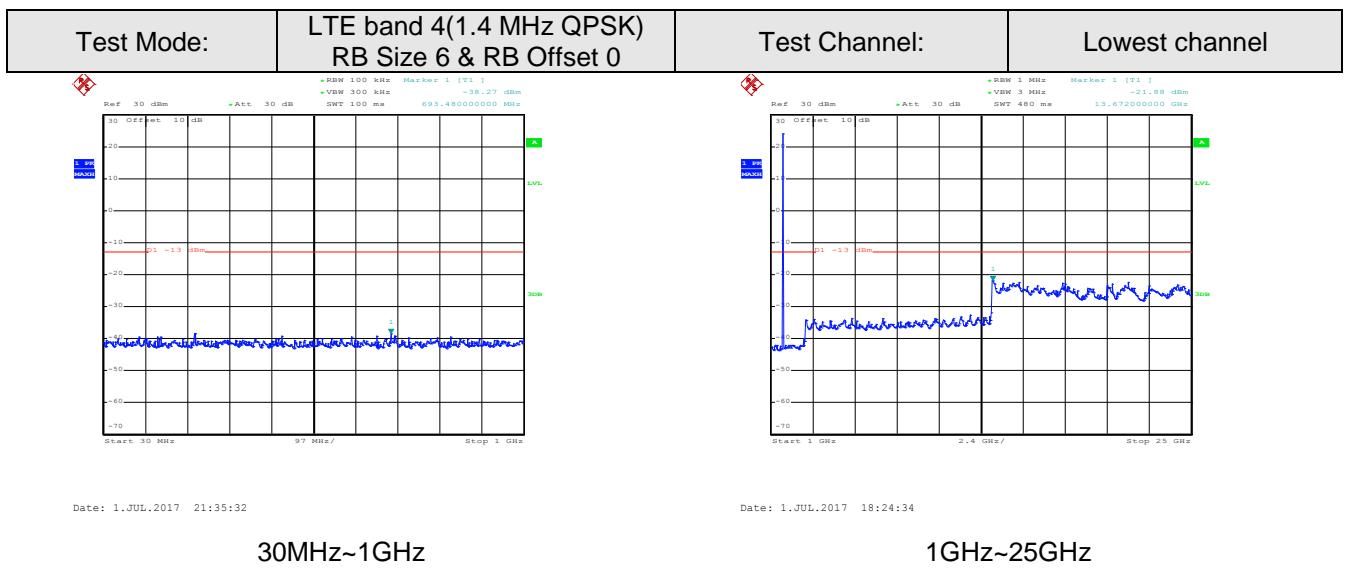
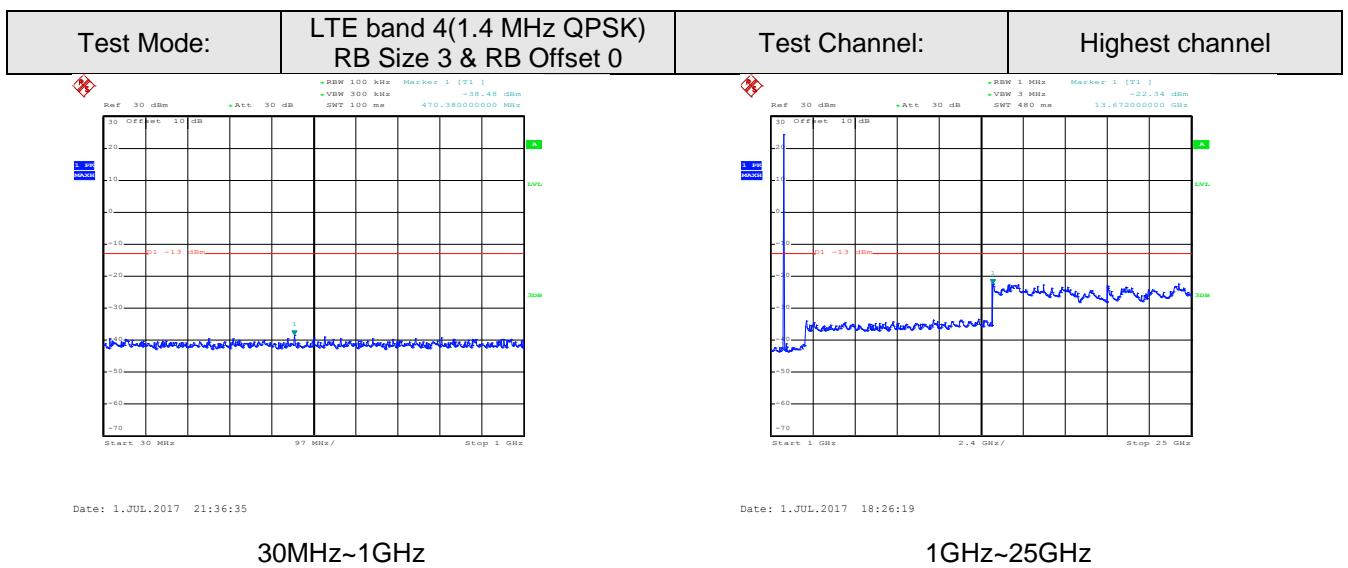
Date: 1.JUL.2017 21:36:23

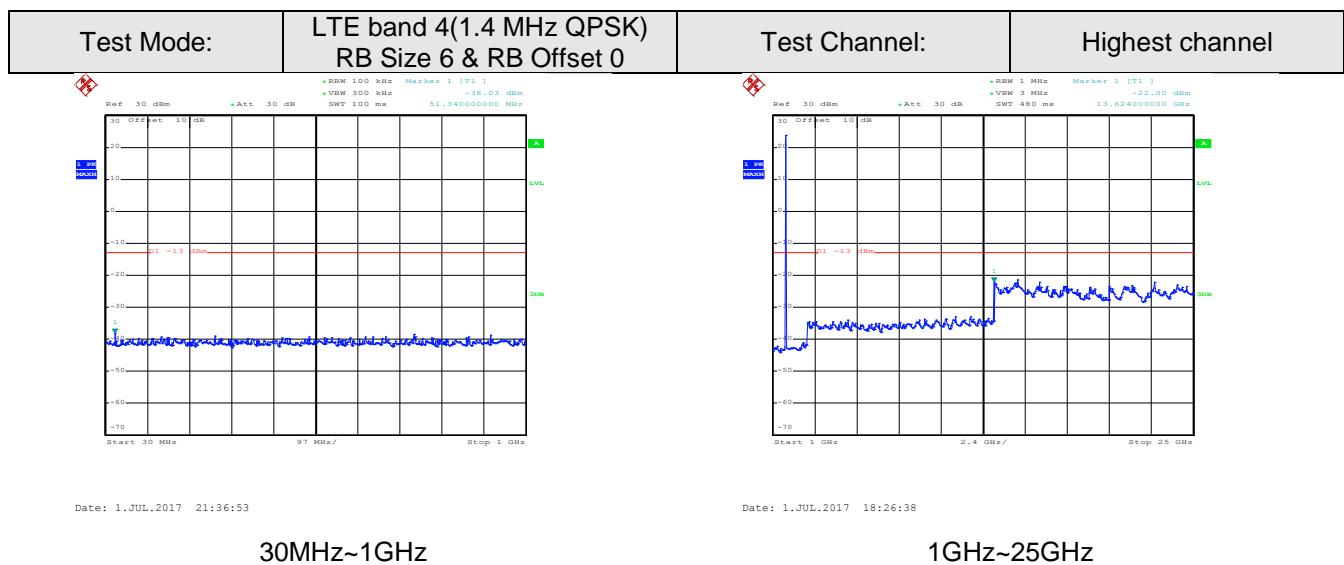
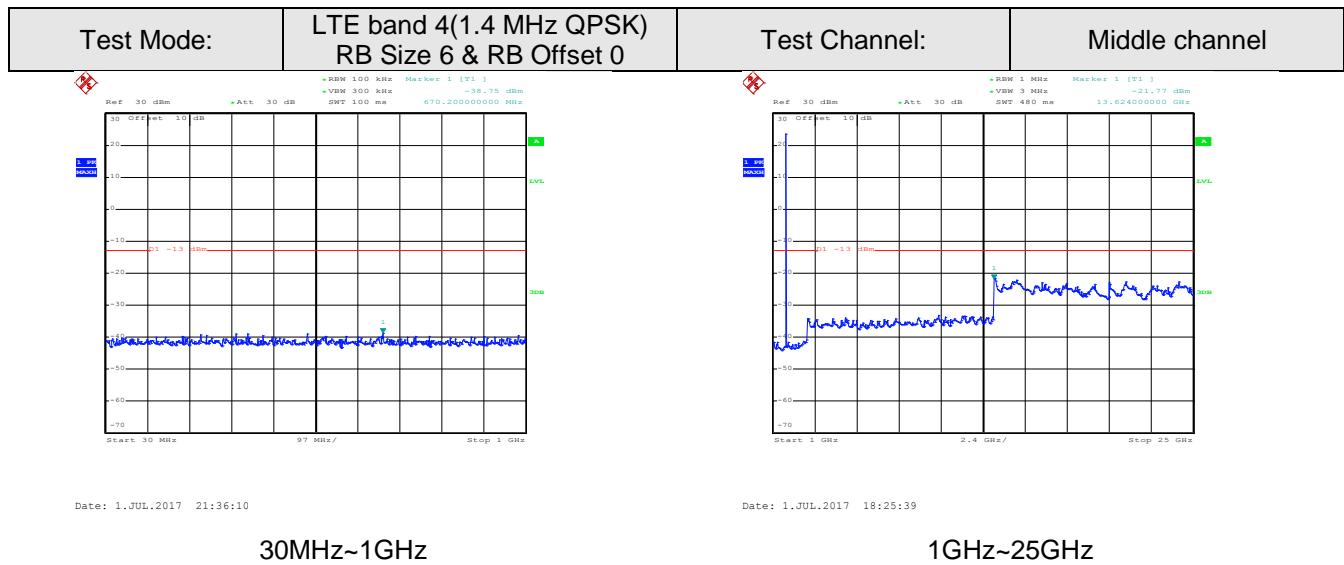
30MHz~1GHz

Date: 1.JUL.2017 18:26:01

1GHz~25GHz

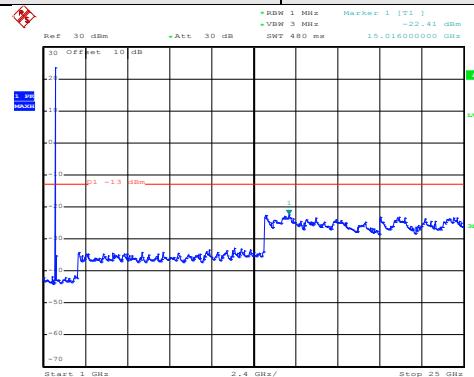
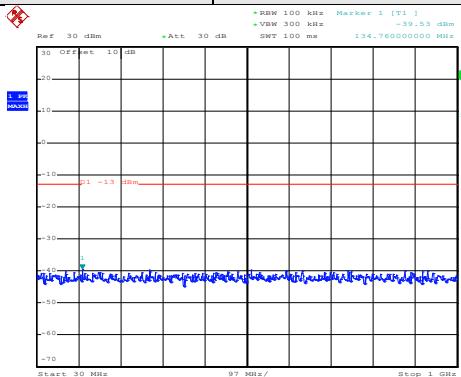






3MHz

Test Mode:	LTE band 4(3MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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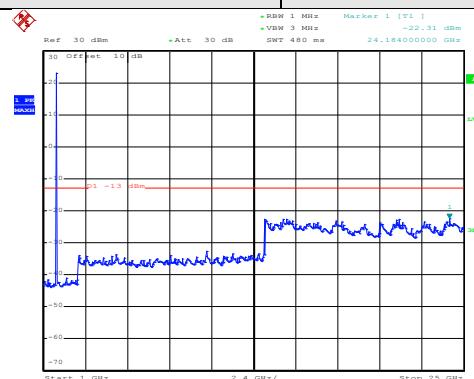
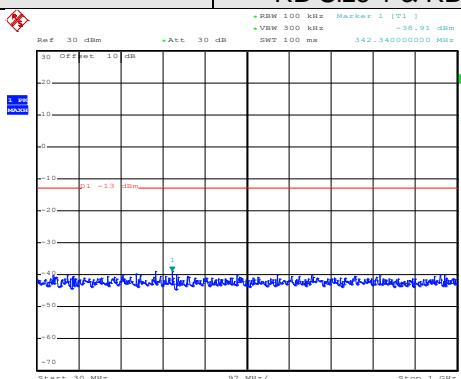
Date: 1.JUL.2017 21:37:12

Date: 1.JUL.2017 18:28:28

30MHz~1GHz

1GHz~25GHz

Test Mode:	LTE band 4(3MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Middle channel
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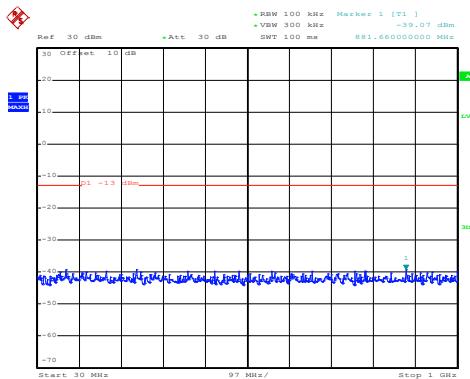
Date: 1.JUL.2017 21:37:55

Date: 1.JUL.2017 18:29:41

30MHz~1GHz

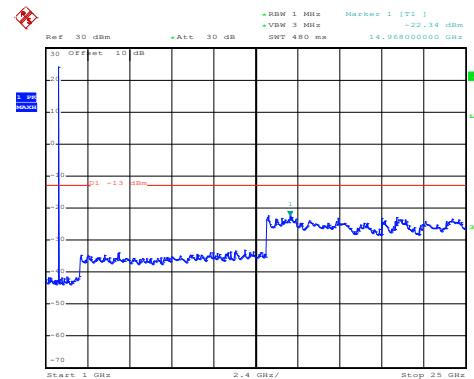
1GHz~25GHz

Test Mode:	LTE band 4(3MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Highest channel
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Date: 1.JUL.2017 21:38:30

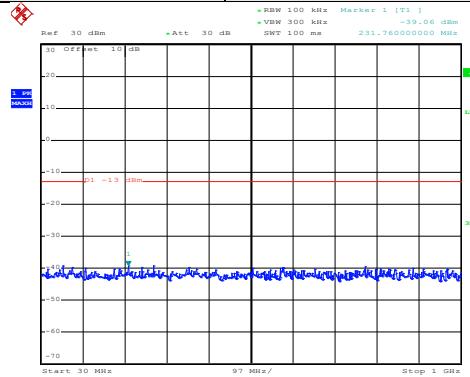
30MHz~1GHz



Date: 1.JUL.2017 18:30:55

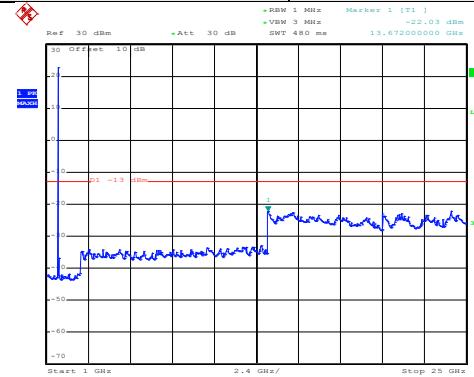
1GHz~25GHz

Test Mode:	LTE band 4(3MHz 16QAM) RB Size 8 & RB Offset 0	Test Channel:	Lowest channel
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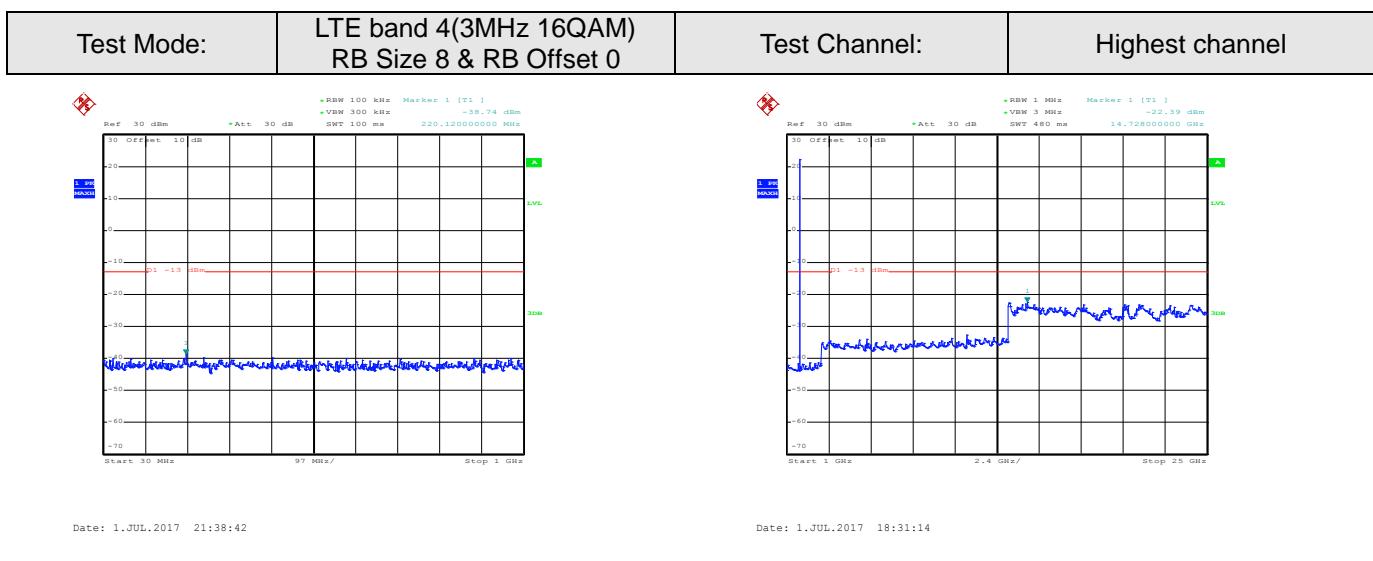
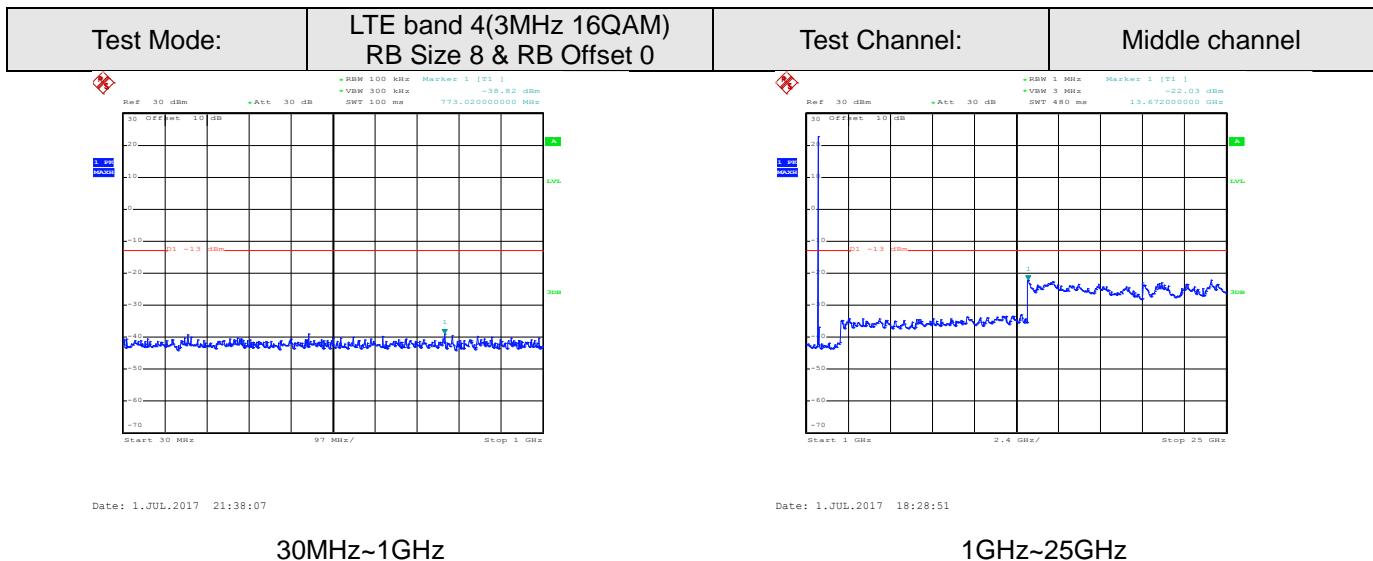
Date: 1.JUL.2017 21:37:27

30MHz~1GHz

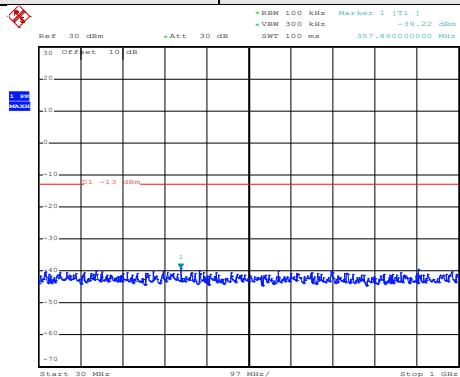


Date: 1.JUL.2017 18:28:51

1GHz~25GHz

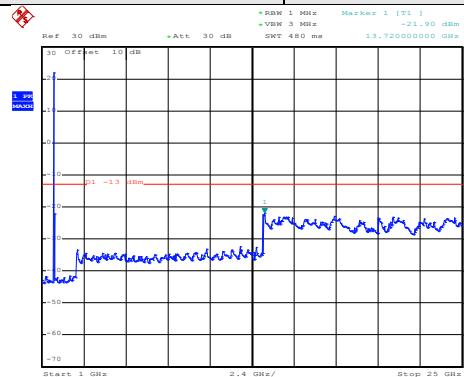


Test Mode:	LTE band 4(3MHz 16QAM) RB Size 15 & RB Offset 0	Test Channel:	Lowest channel
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Date: 1.JUL.2017 21:37:39

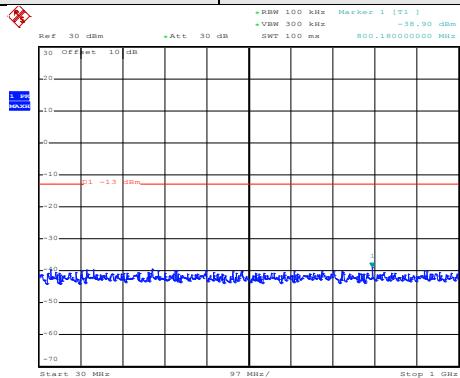
30MHz~1GHz



Date: 1.JUL.2017 18:29:10

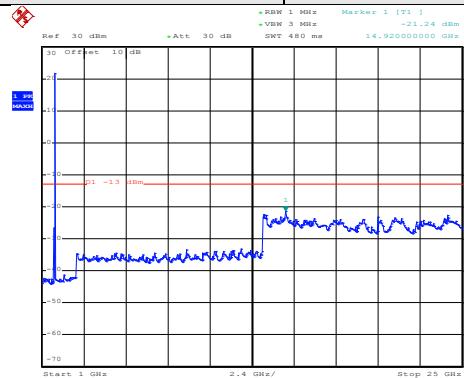
1GHz~25GHz

Test Mode:	LTE band 4(3MHz 16QAM) RB Size 15 & RB Offset 0	Test Channel:	Middle channel
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Date: 1.JUL.2017 21:38:18

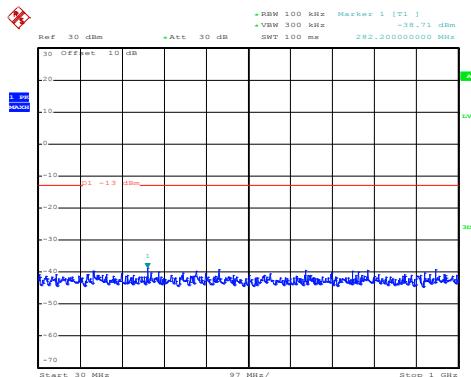
30MHz~1GHz



Date: 1.JUL.2017 18:30:31

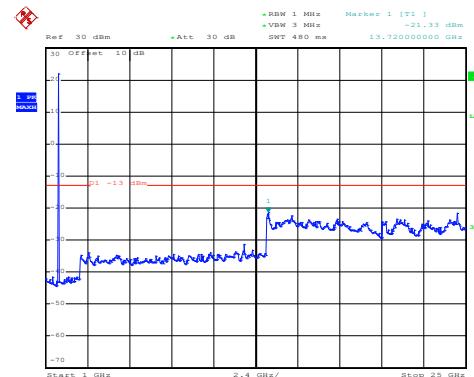
1GHz~25GHz

Test Mode:	LTE band 4(3MHz 16QAM) RB Size 15 & RB Offset 0	Test Channel:	Highest channel
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Date: 1.JUL.2017 21:52:51

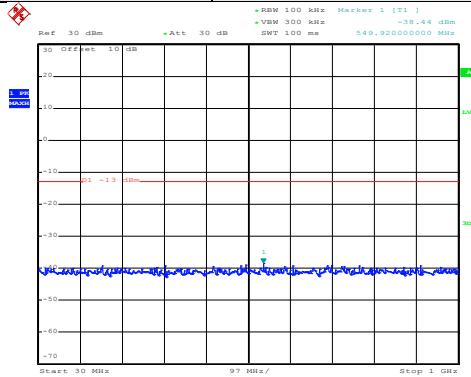
30MHz~1GHz



Date: 1.JUL.2017 18:31:30

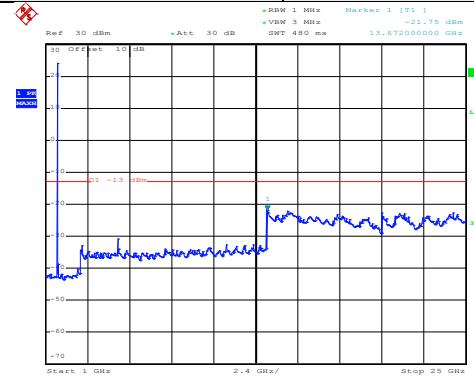
1GHz~25GHz

Test Mode:	LTE band 4(3MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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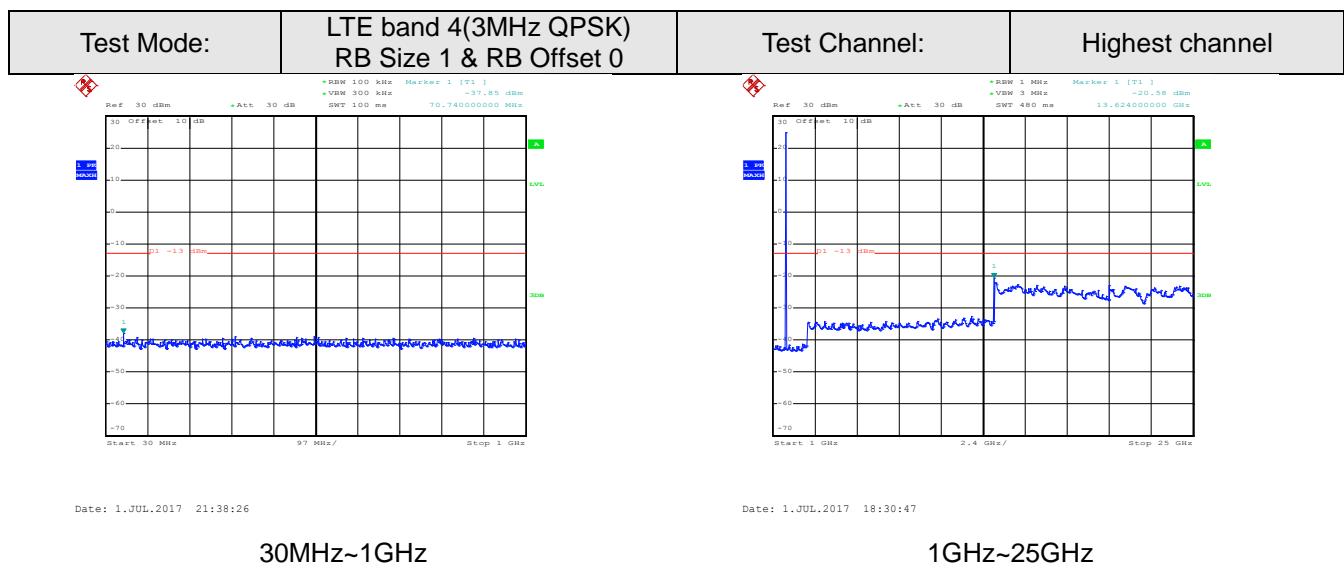
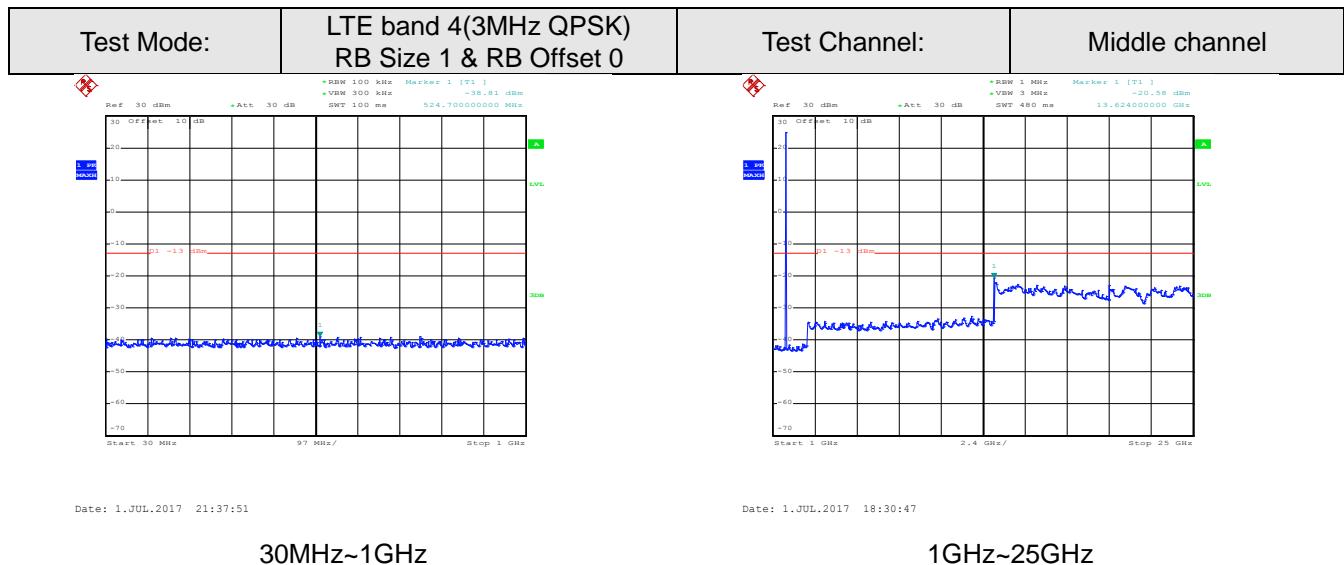
Date: 1.JUL.2017 21:37:08

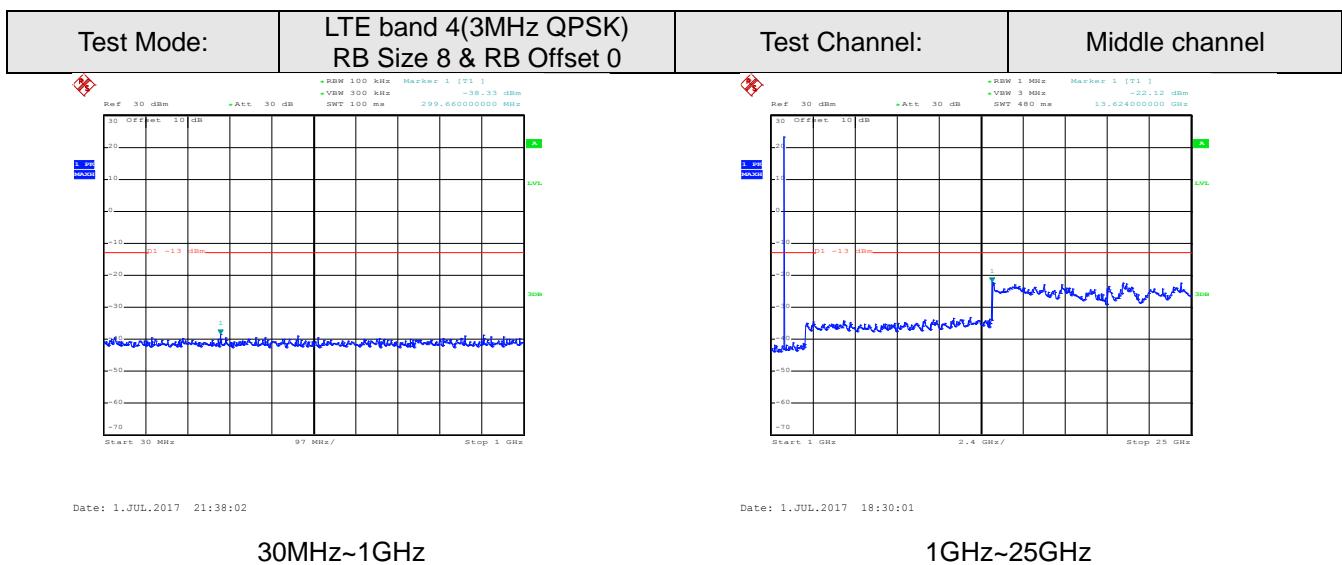
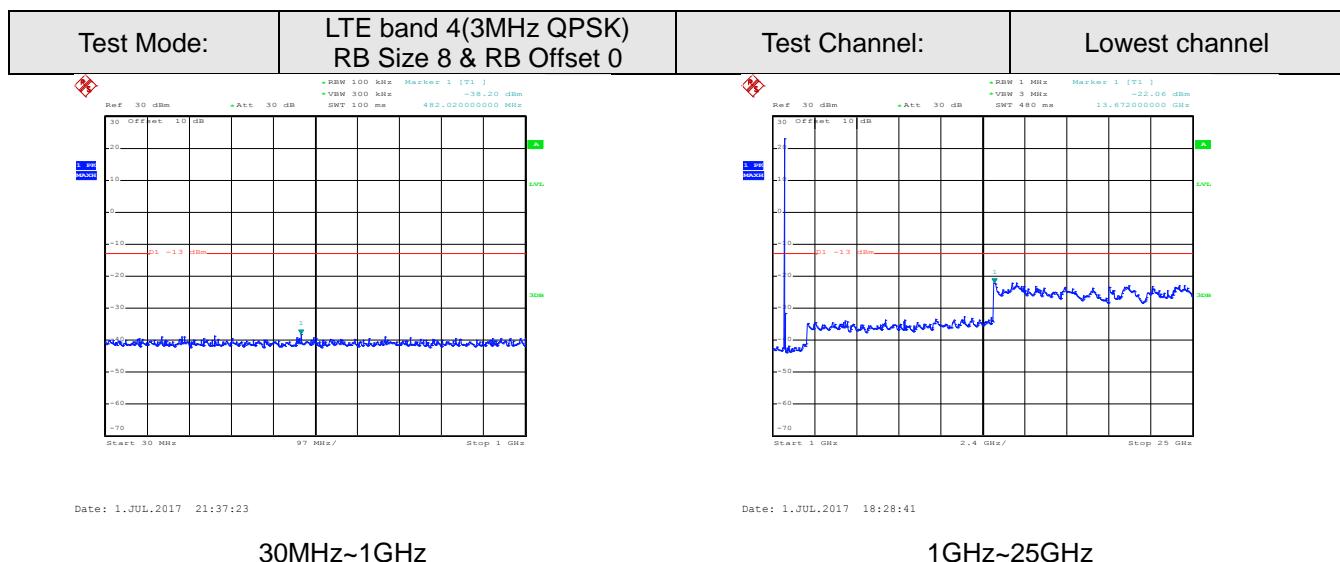
30MHz~1GHz



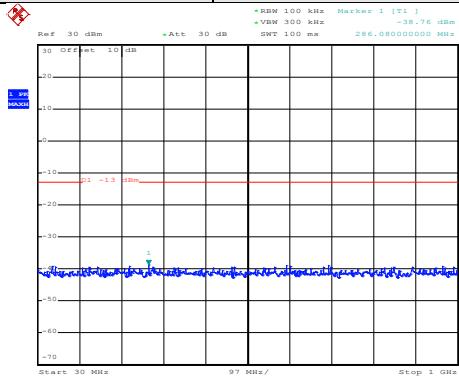
Date: 1.JUL.2017 18:28:20

1GHz~25GHz



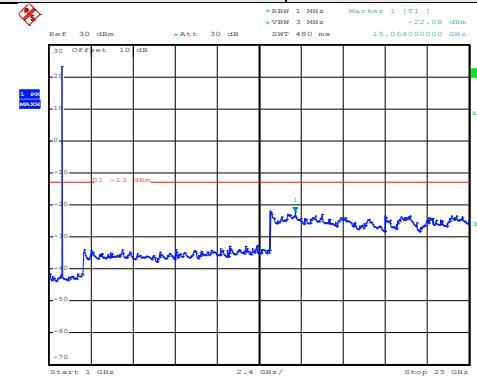


Test Mode:	LTE band 4(3MHz QPSK) RB Size 8 & RB Offset 0	Test Channel:	Highest channel
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Date: 1.JUL.2017 21:38:38

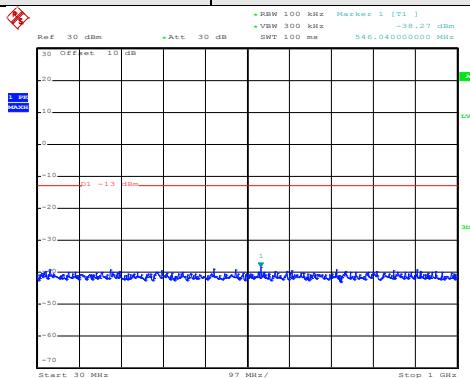
30MHz~1GHz



Date: 1.JUL.2017 18:31:07

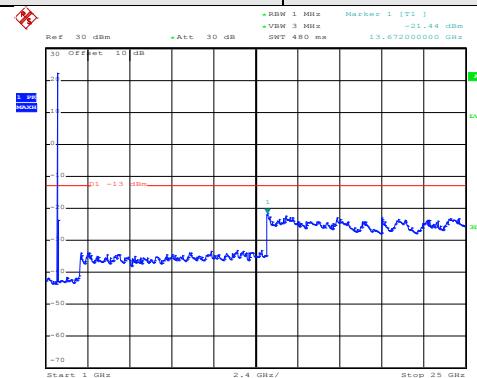
1GHz~25GHz

Test Mode:	LTE band 4(3MHz QPSK) RB Size 15 & RB Offset 0	Test Channel:	Lowest channel
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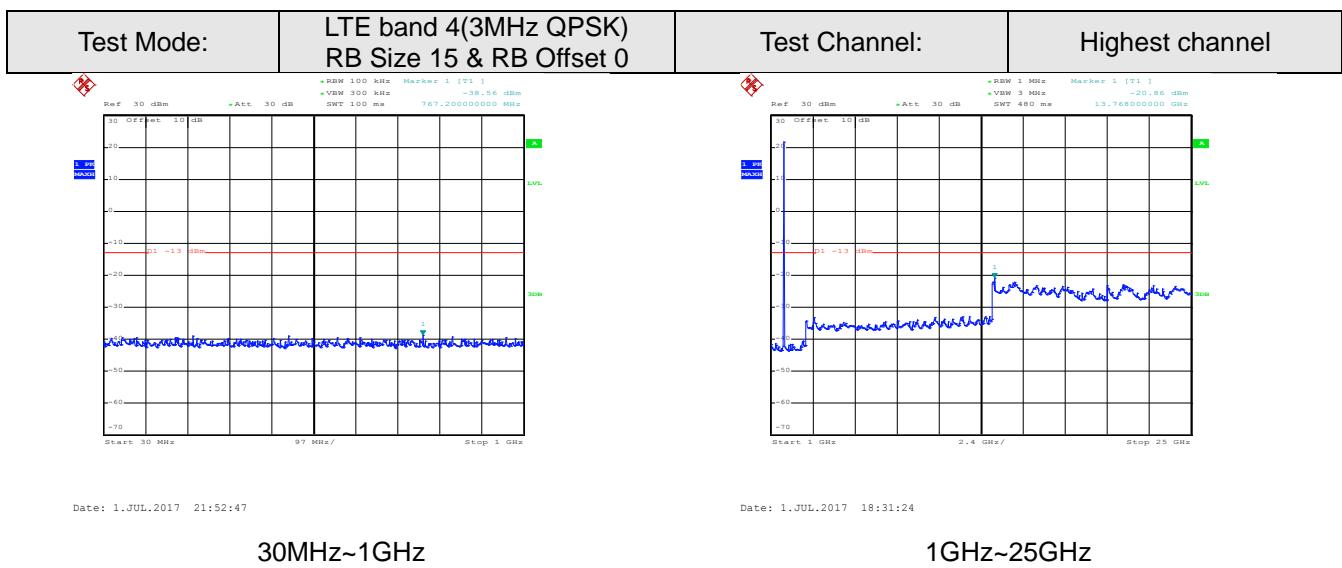
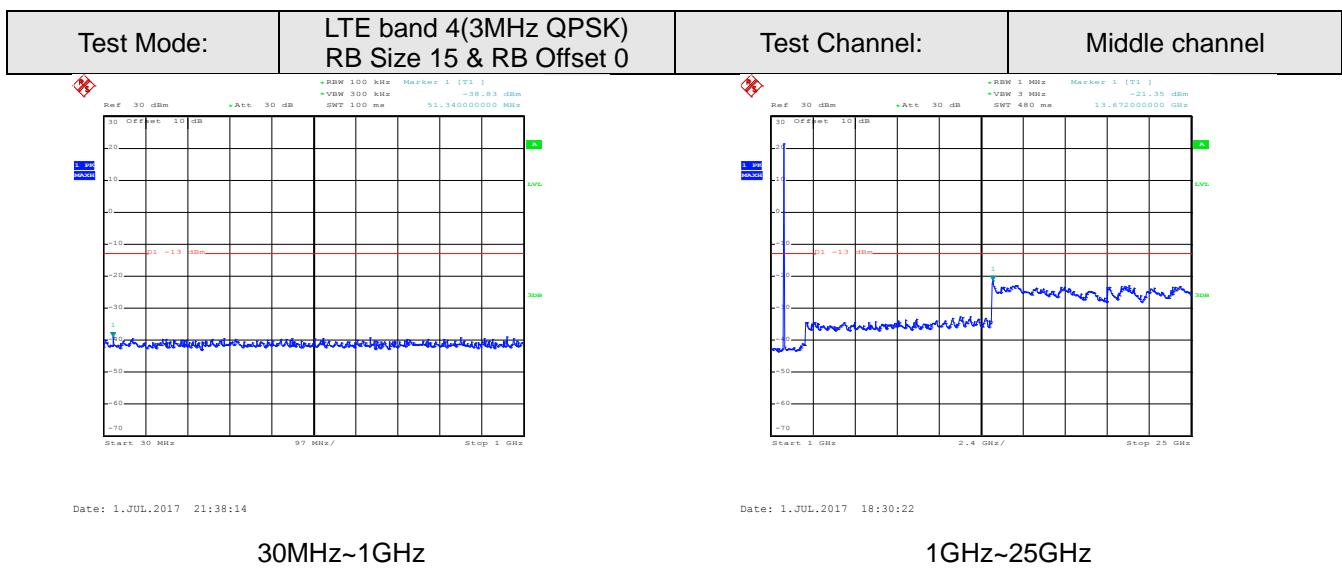
Date: 1.JUL.2017 21:37:35

30MHz~1GHz



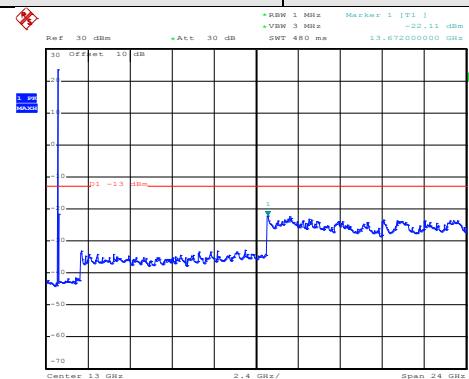
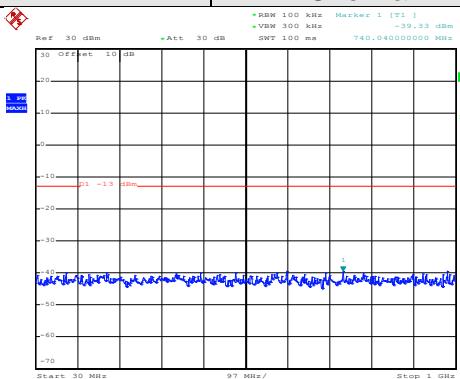
Date: 1.JUL.2017 18:29:01

1GHz~25GHz



5MHz

Test Mode:	LTE band 4(5MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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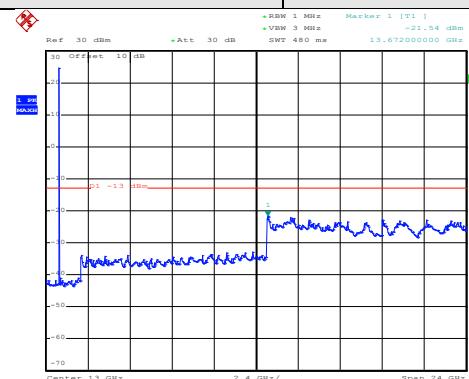
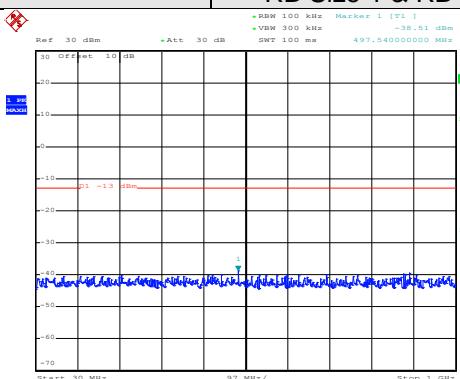
Date: 1.JUL.2017 21:53:05

30MHz~1GHz

Date: 1.JUL.2017 18:34:21

1GHz~25GHz

Test Mode:	LTE band 4(5MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Middle channel
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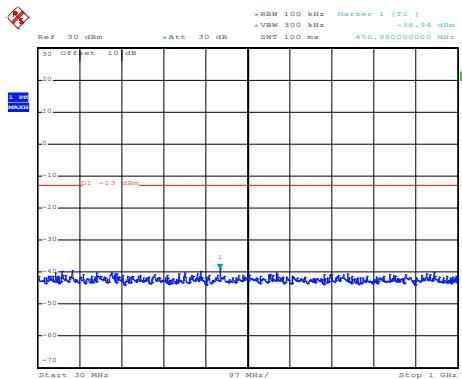
Date: 1.JUL.2017 21:53:40

30MHz~1GHz

Date: 1.JUL.2017 18:35:25

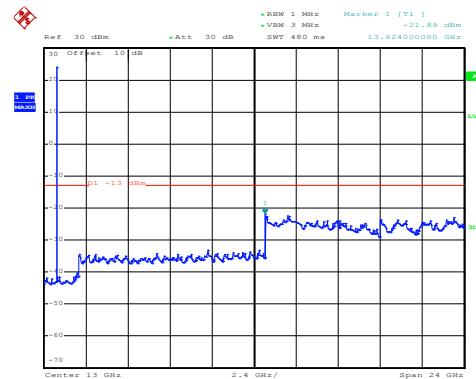
1GHz~25GHz

Test Mode:	LTE band 4(5MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Highest channel
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Date: 1.JUL.2017 21:58:15

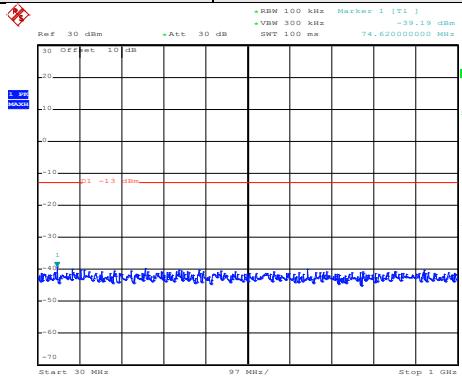
30MHz~1GHz



Date: 1.JUL.2017 18:36:23

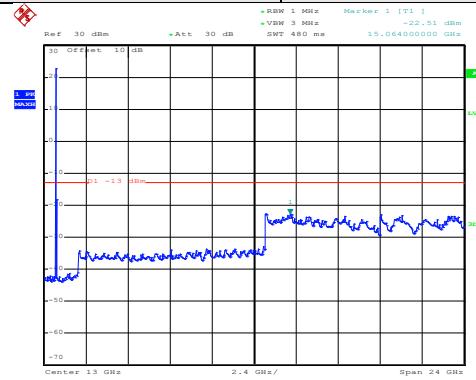
1GHz~25GHz

Test Mode:	LTE band 4(5MHz 16QAM) RB Size 12 & RB Offset 0	Test Channel:	Lowest channel
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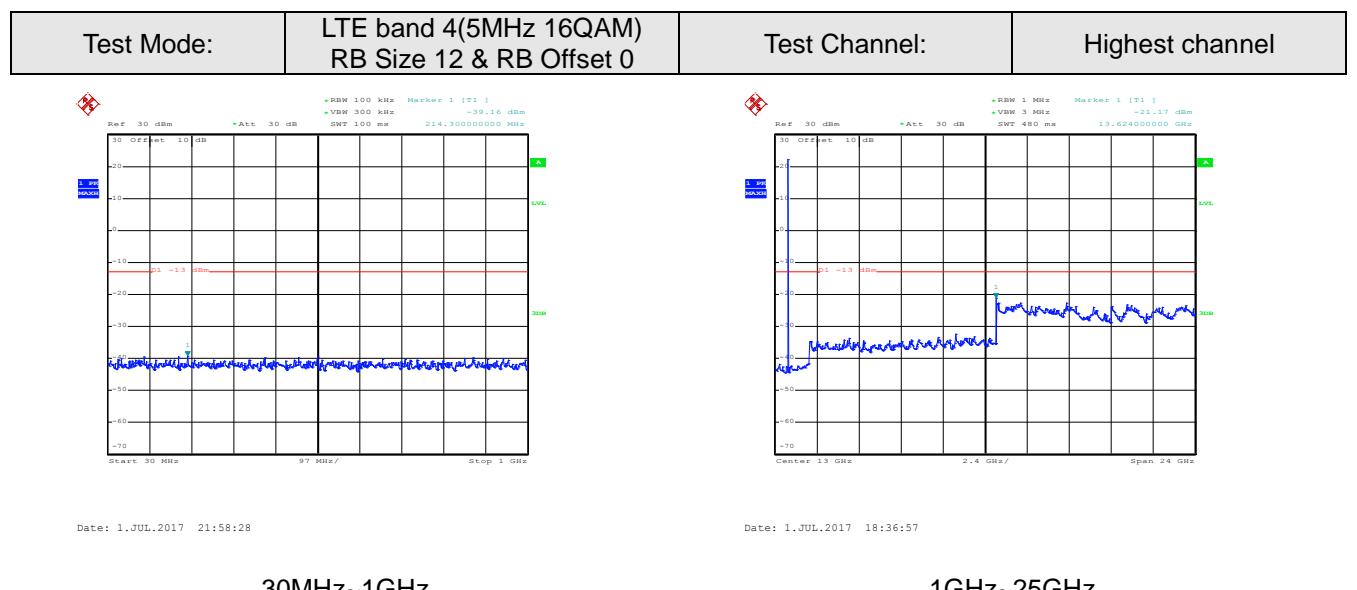
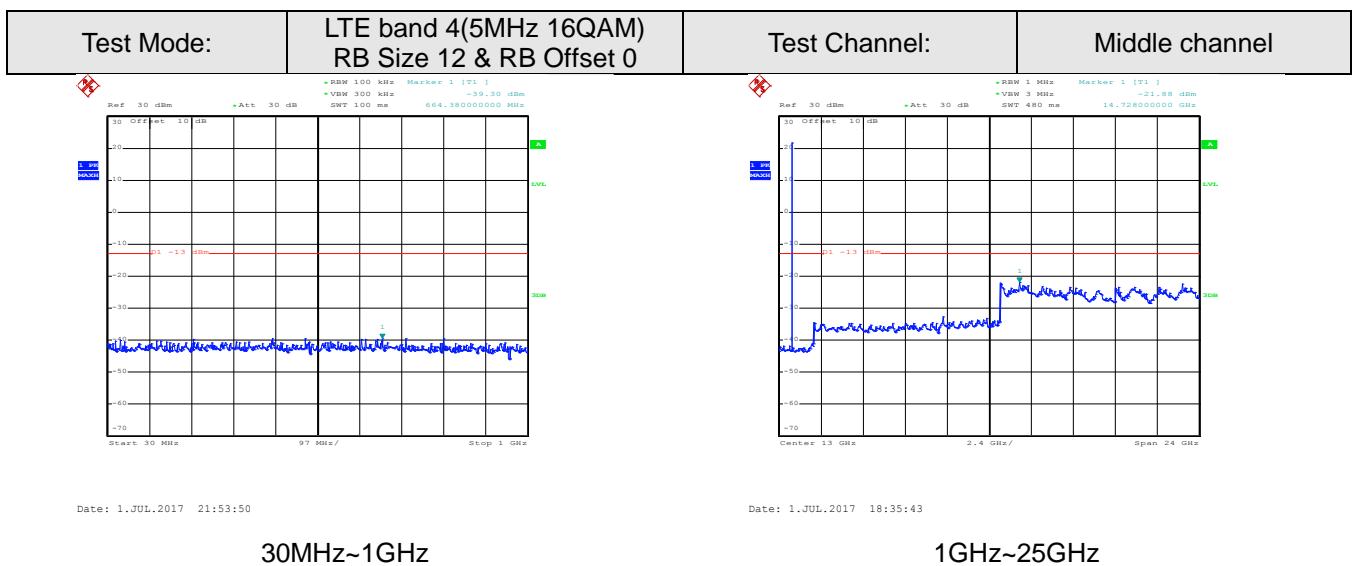
Date: 1.JUL.2017 21:53:15

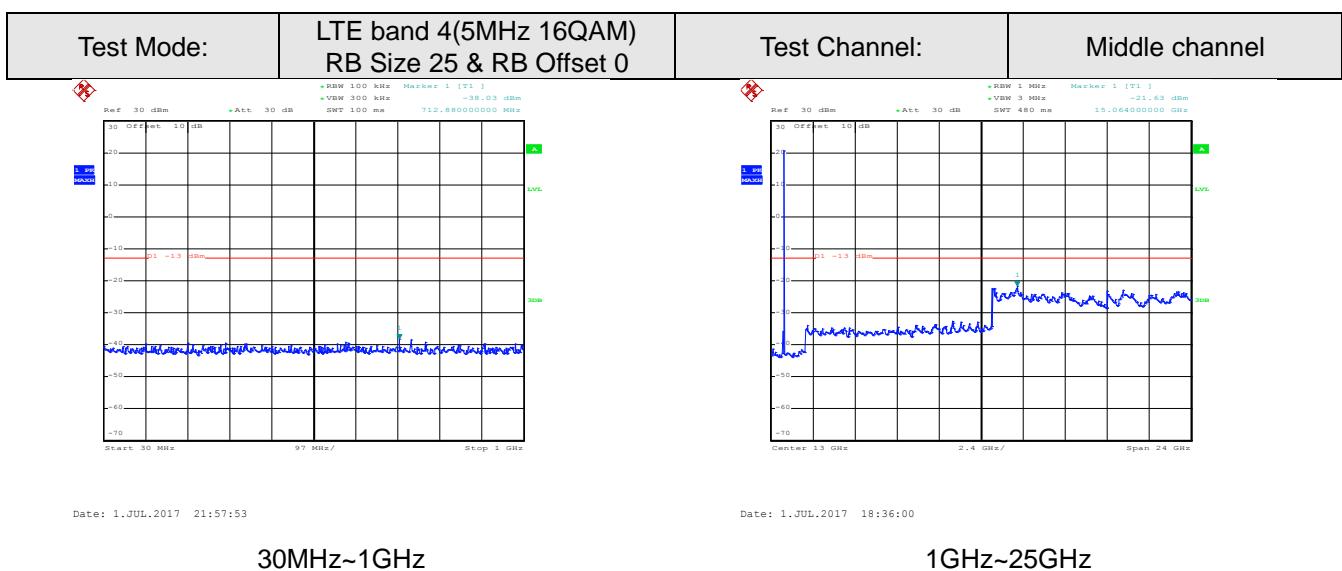
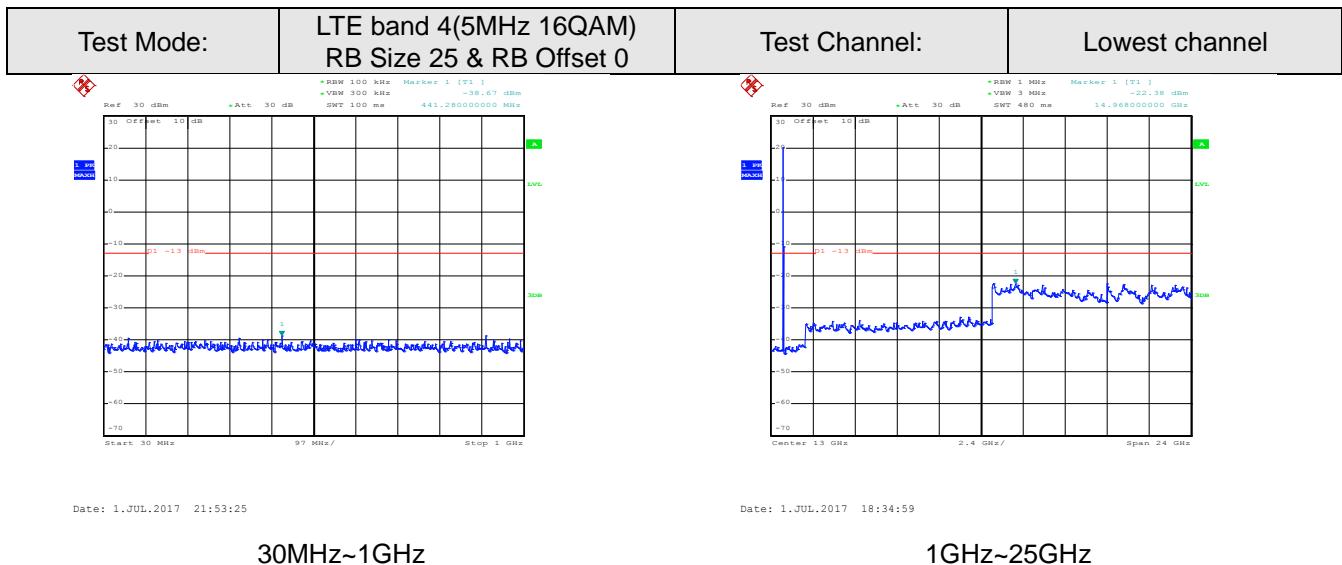
30MHz~1GHz



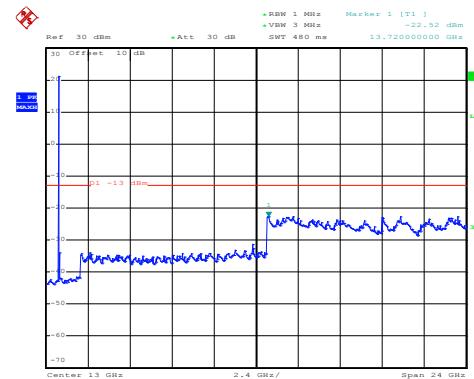
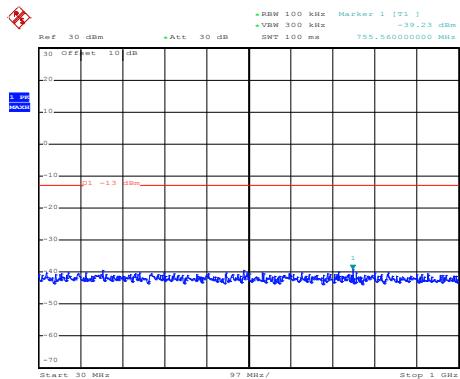
Date: 1.JUL.2017 18:34:43

1GHz~25GHz





Test Mode:	LTE band 4(5MHz 16QAM) RB Size 25 & RB Offset 0	Test Channel:	Highest channel
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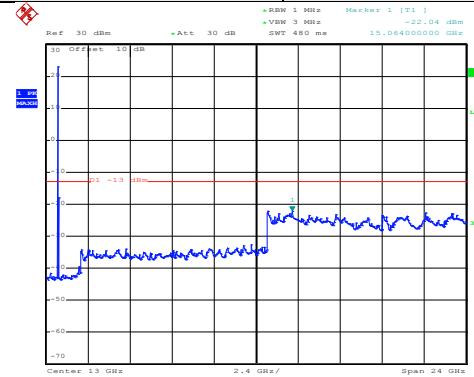
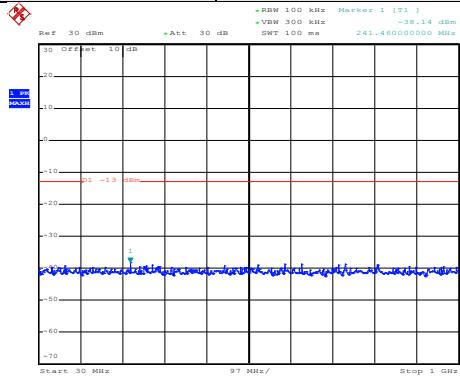
Date: 1.JUL.2017 21:58:42

30MHz~1GHz

Date: 1.JUL.2017 18:37:16

1GHz~25GHz

Test Mode:	LTE band 4(5MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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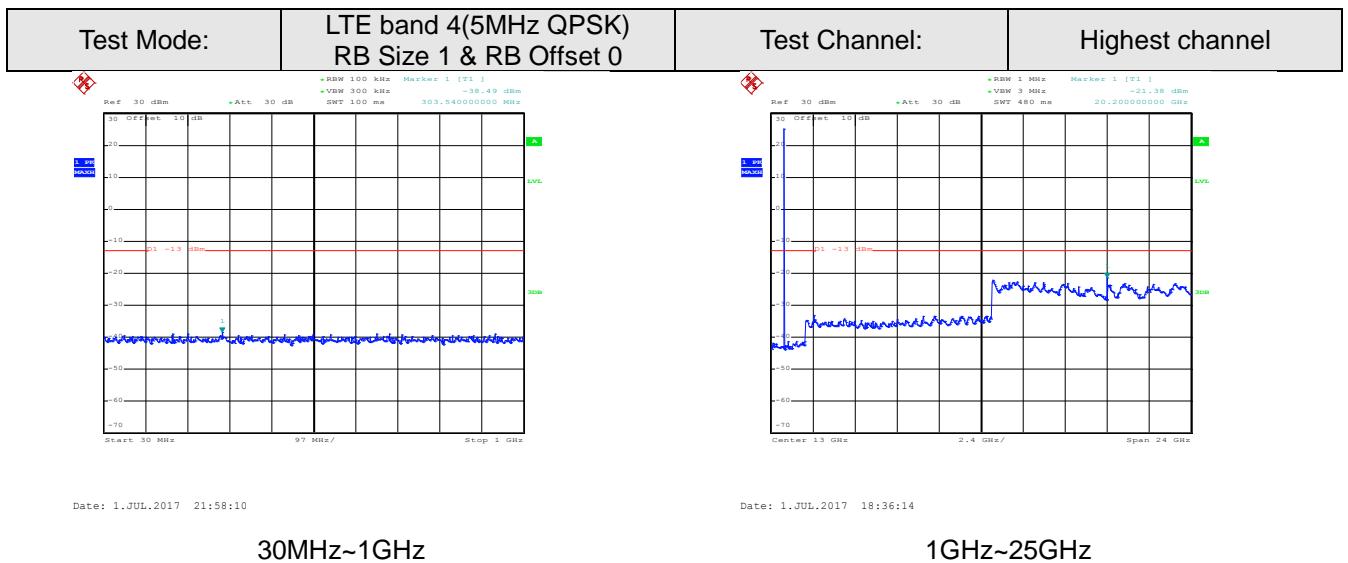
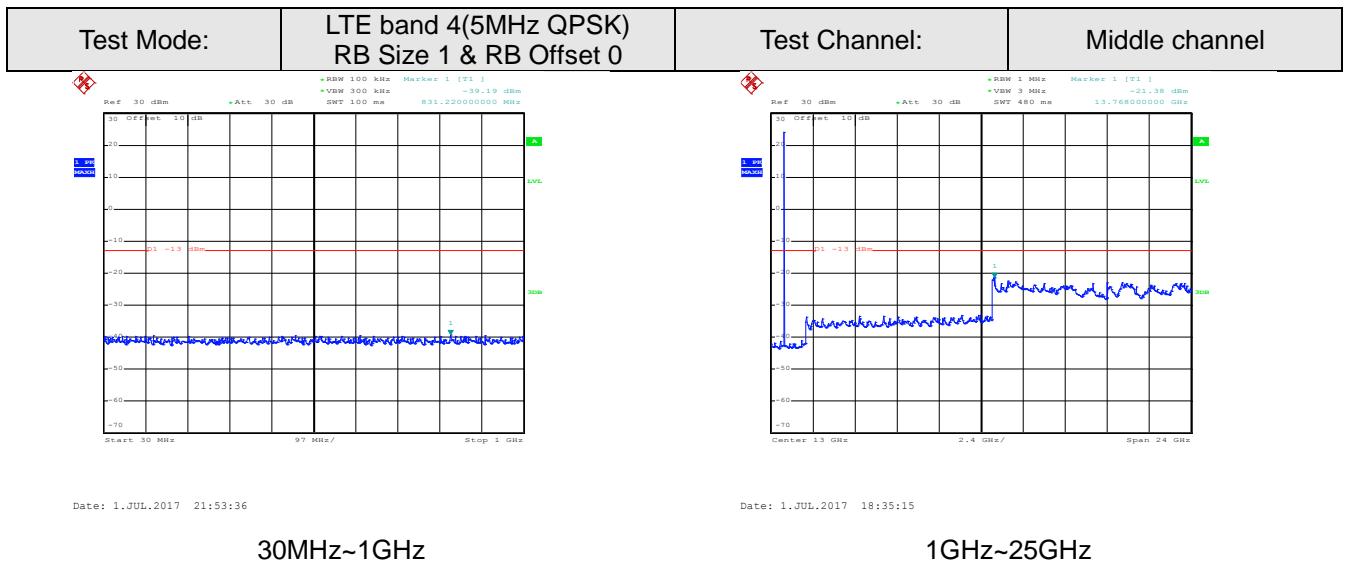


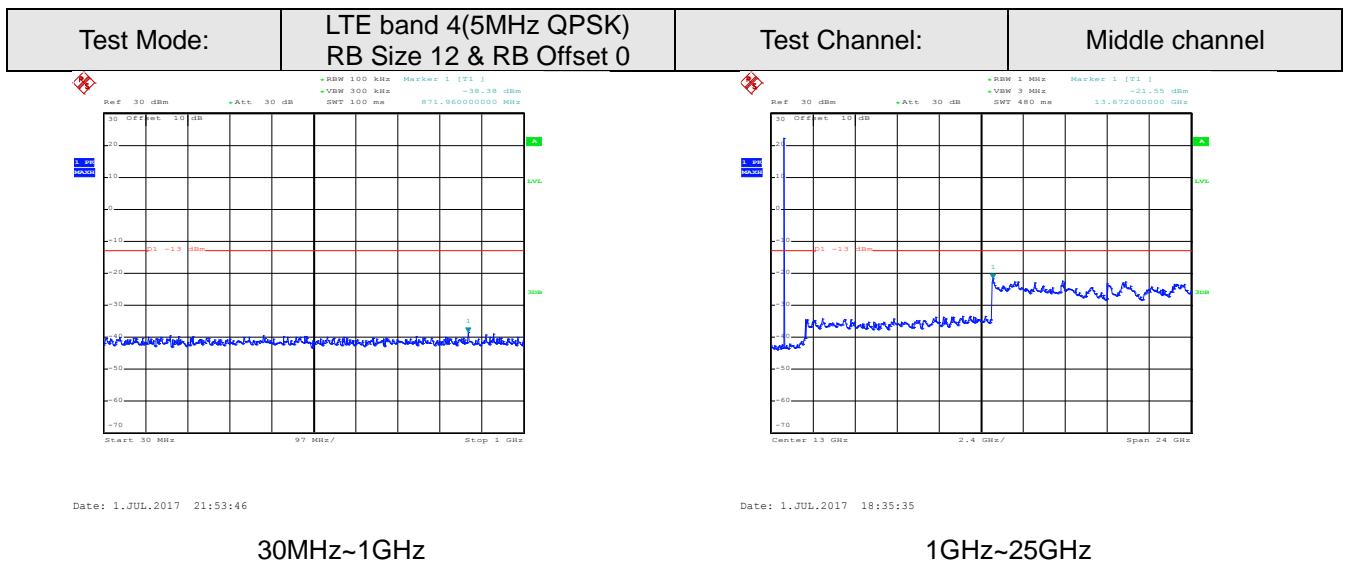
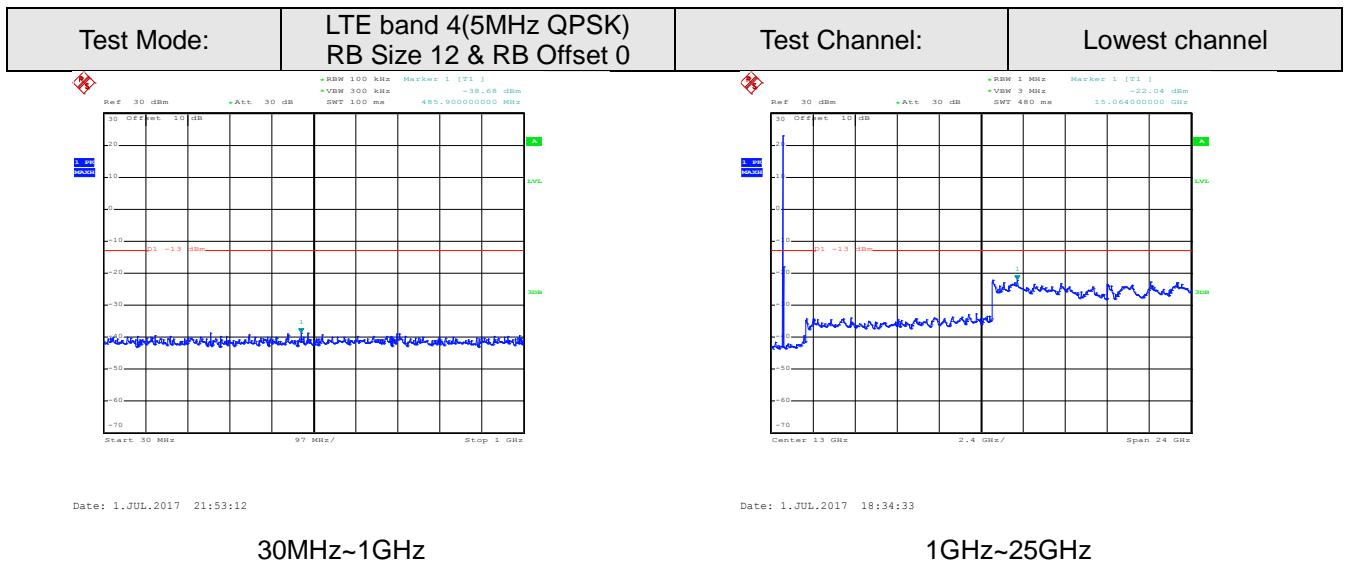
Date: 1.JUL.2017 21:53:01

30MHz~1GHz

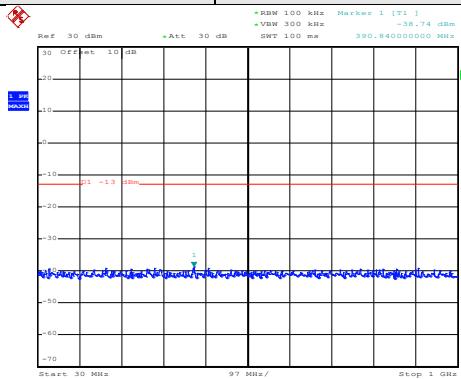
Date: 1.JUL.2017 18:34:33

1GHz~25GHz



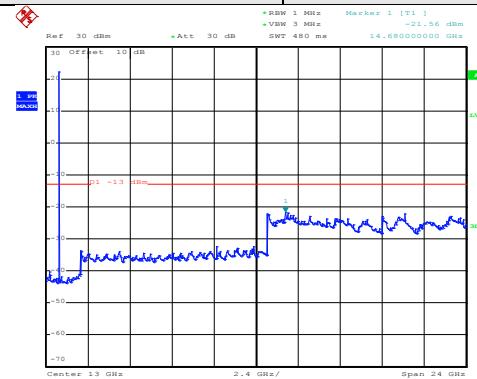


Test Mode:	LTE band 4(5MHz QPSK) RB Size 12 & RB Offset 0	Test Channel:	Highest channel
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Date: 1.JUL.2017 21:58:23

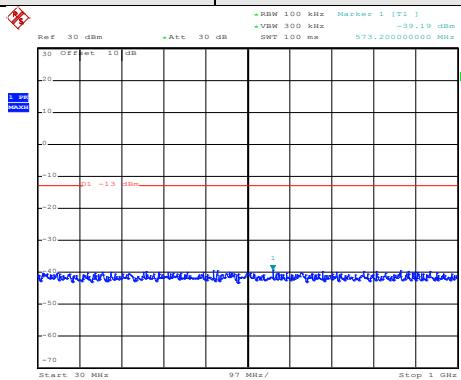
30MHz~1GHz



Date: 1.JUL.2017 18:36:49

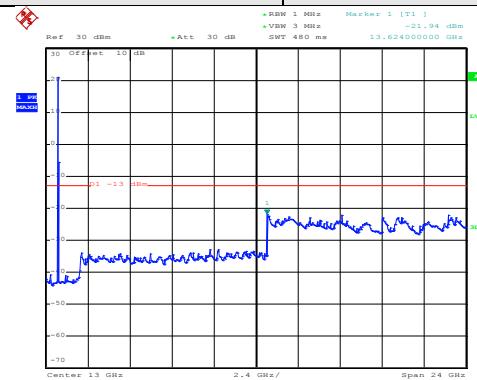
1GHz~25GHz

Test Mode:	LTE band 4(5MHz QPSK) RB Size 25 & RB Offset 0	Test Channel:	Lowest channel
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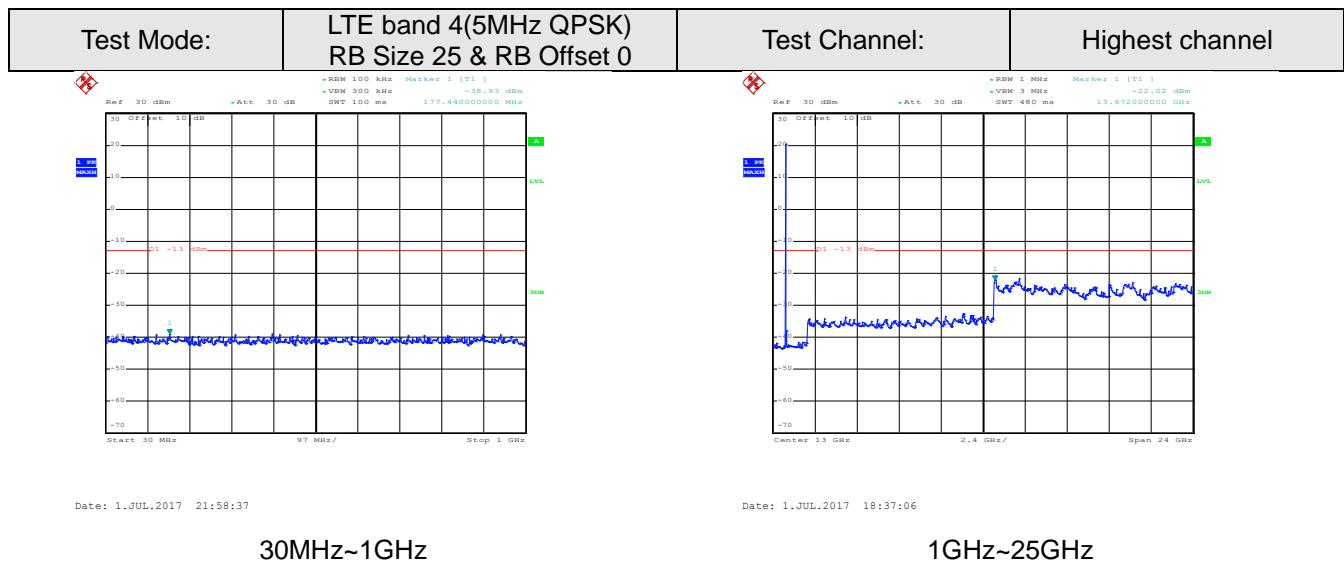
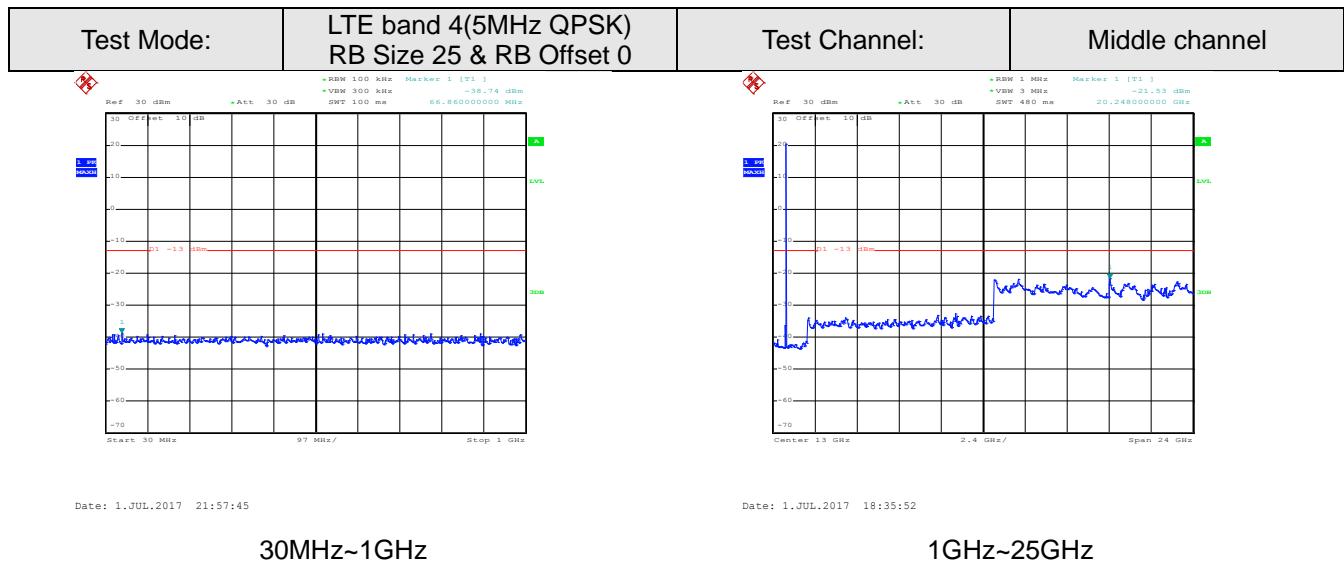
Date: 1.JUL.2017 21:53:22

30MHz~1GHz



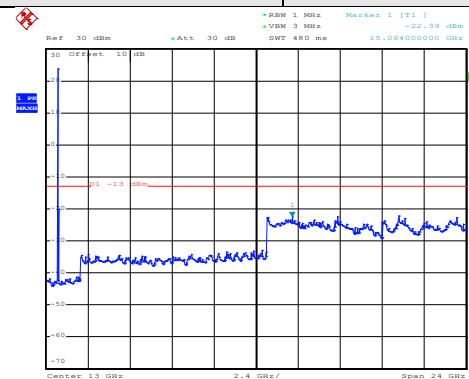
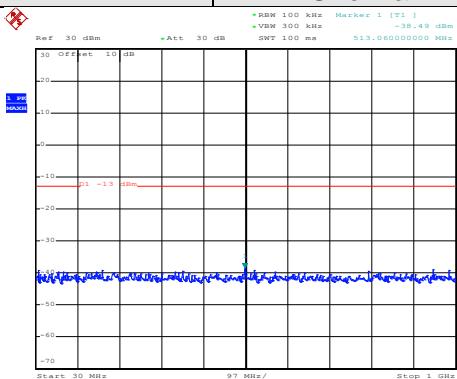
Date: 1.JUL.2017 18:34:52

1GHz~25GHz



10MHz

Test Mode:	LTE band 4(10MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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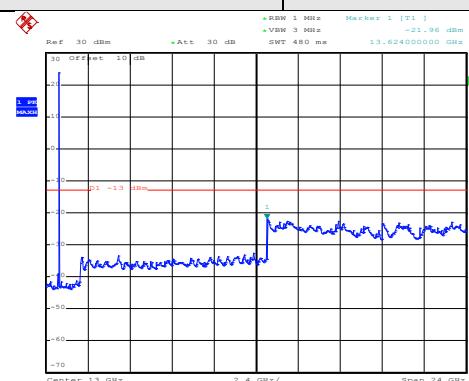
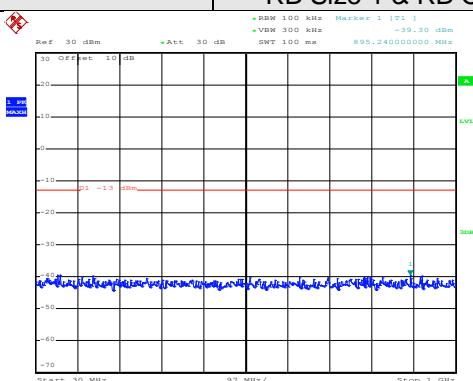
Date: 1.JUL.2017 21:59:23

Date: 1.JUL.2017 18:37:52

30MHz~1GHz

1GHz~25GHz

Test Mode:	LTE band 4(10MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Middle channel
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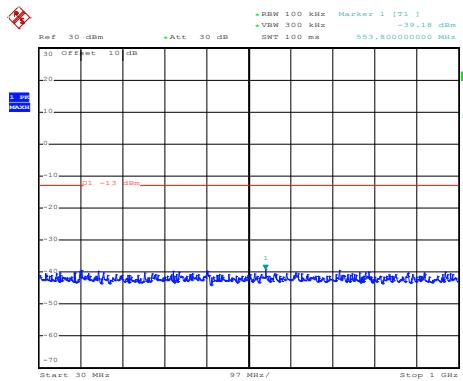
Date: 1.JUL.2017 22:00:11

Date: 1.JUL.2017 18:39:01

30MHz~1GHz

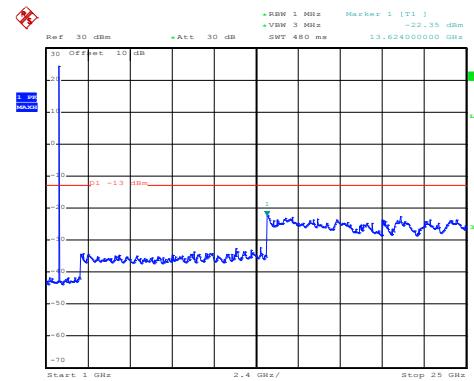
1GHz~25GHz

Test Mode:	LTE band 4(10MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Highest channel
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Date: 1.JUL.2017 22:00:37

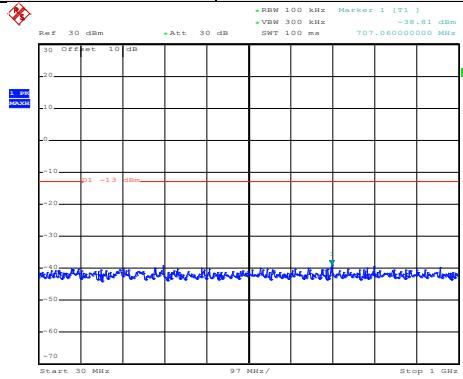
30MHz~1GHz



Date: 1.JUL.2017 18:40:03

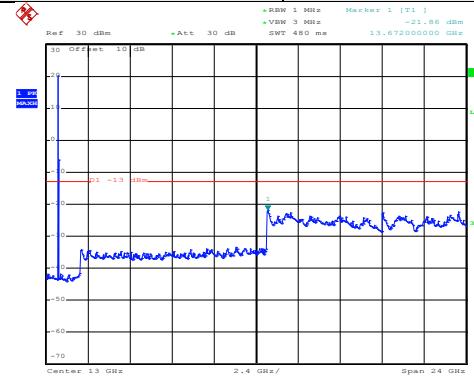
1GHz~25GHz

Test Mode:	LTE band 4(10MHz 16QAM) RB Size 25 & RB Offset 0	Test Channel:	Lowest channel
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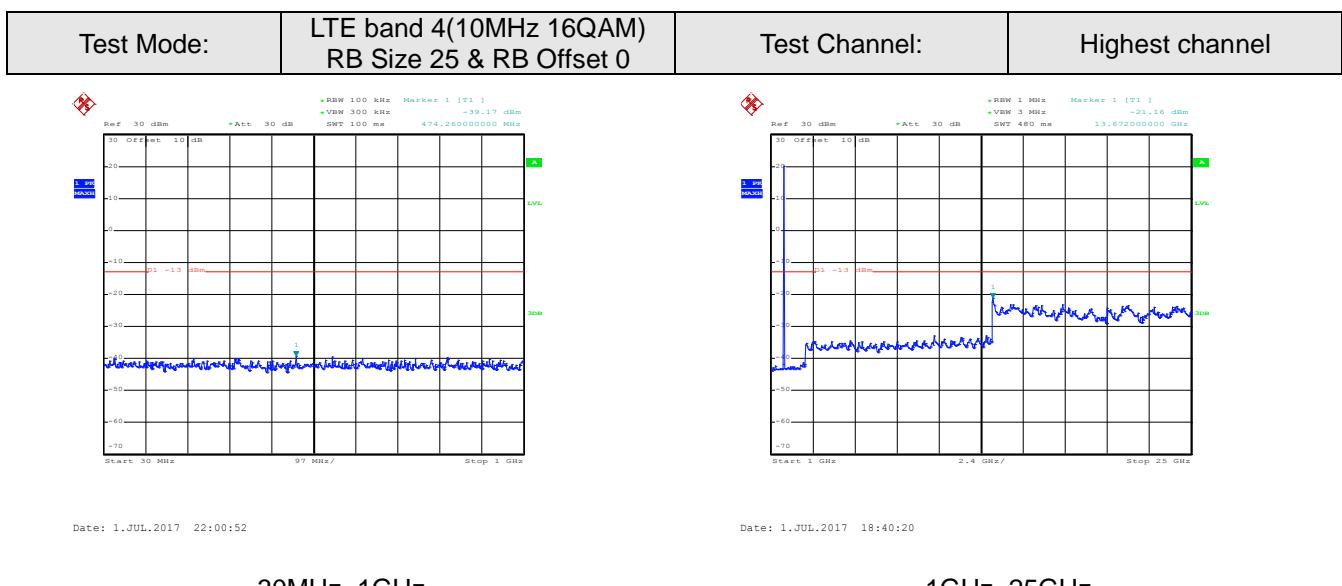
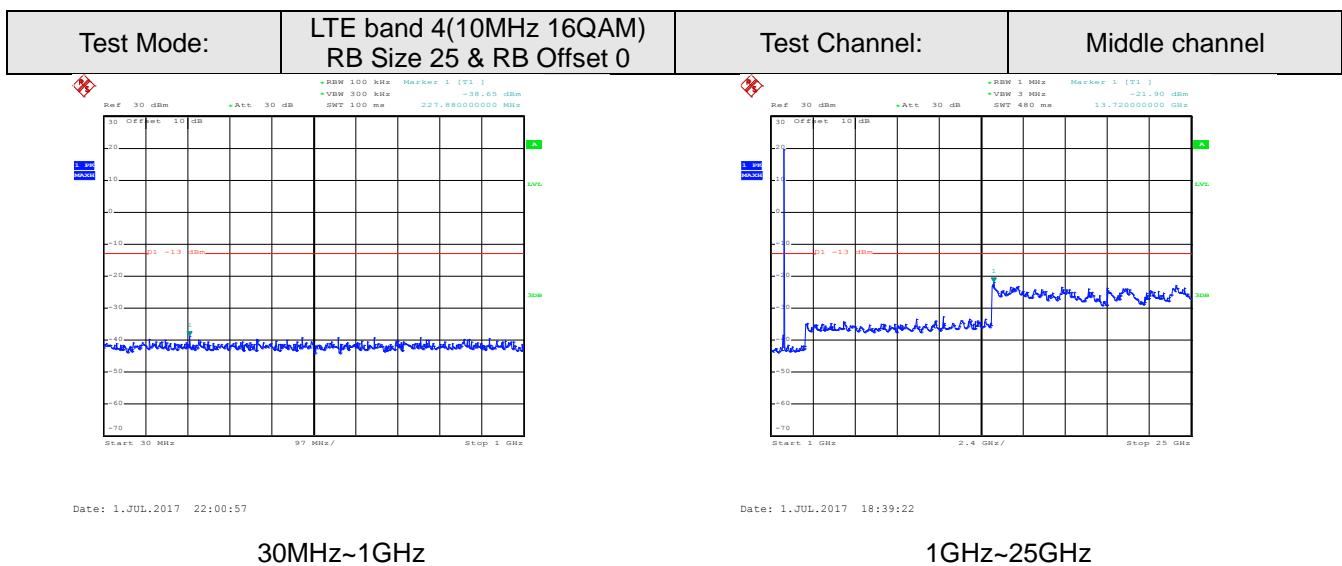
Date: 1.JUL.2017 21:59:39

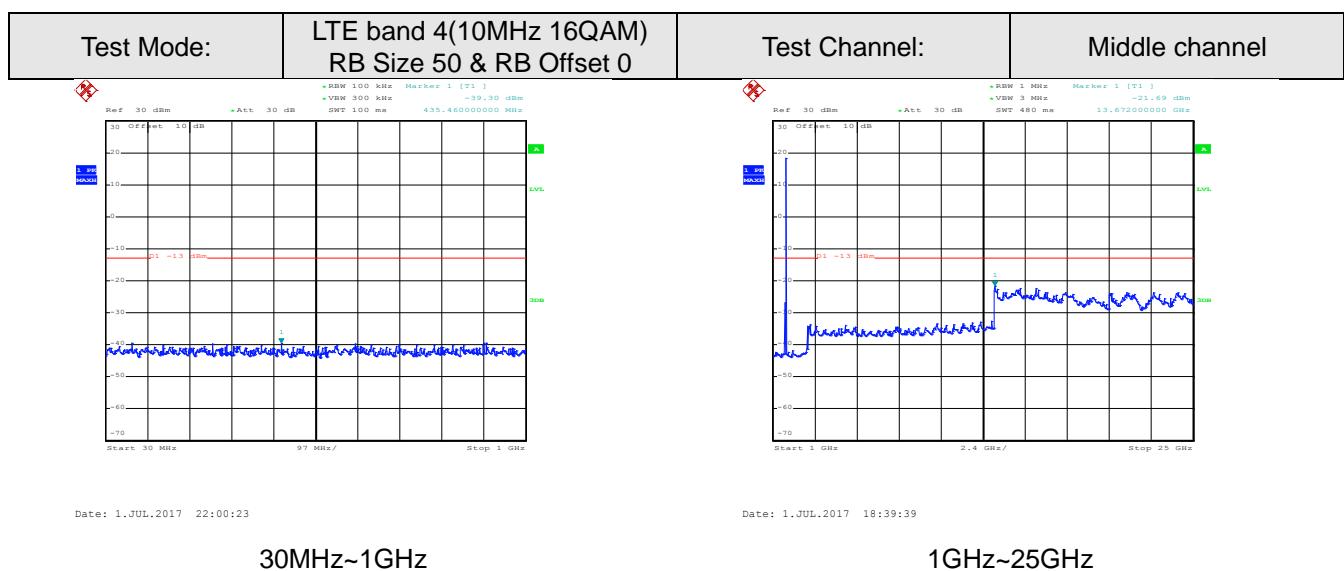
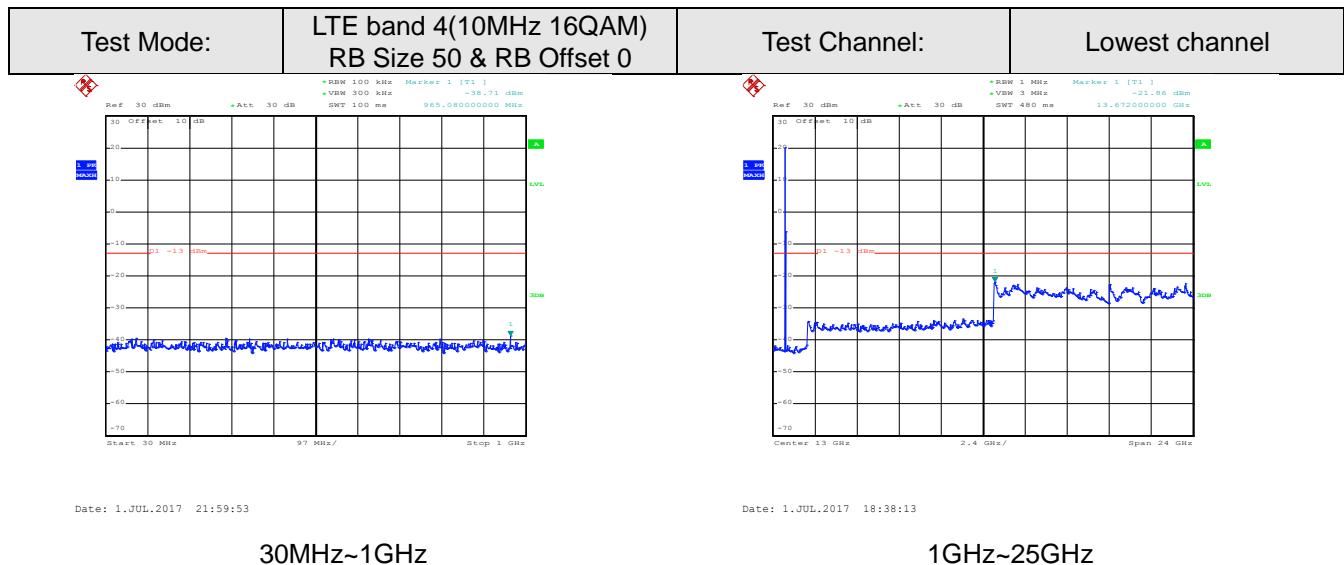
30MHz~1GHz



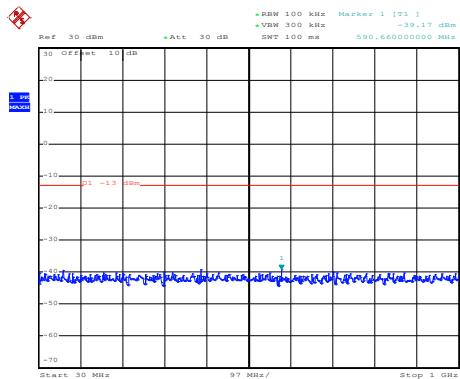
Date: 1.JUL.2017 18:38:13

1GHz~25GHz



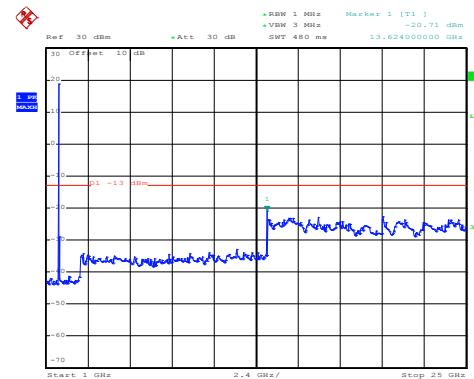


Test Mode:	LTE band 4(10MHz 16QAM) RB Size 50 & RB Offset 0	Test Channel:	Highest channel
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Date: 1.JUL.2017 22:01:10

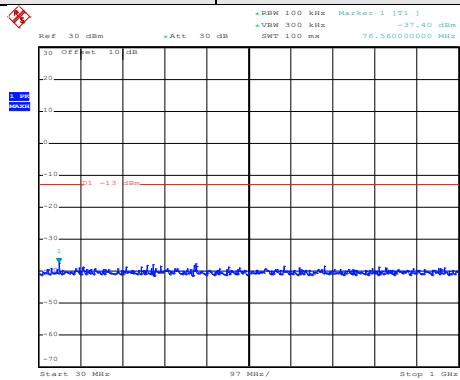
30MHz~1GHz



Date: 1.JUL.2017 18:40:34

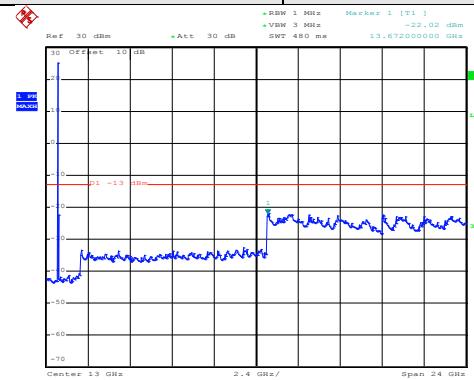
1GHz~25GHz

Test Mode:	LTE band 4(10MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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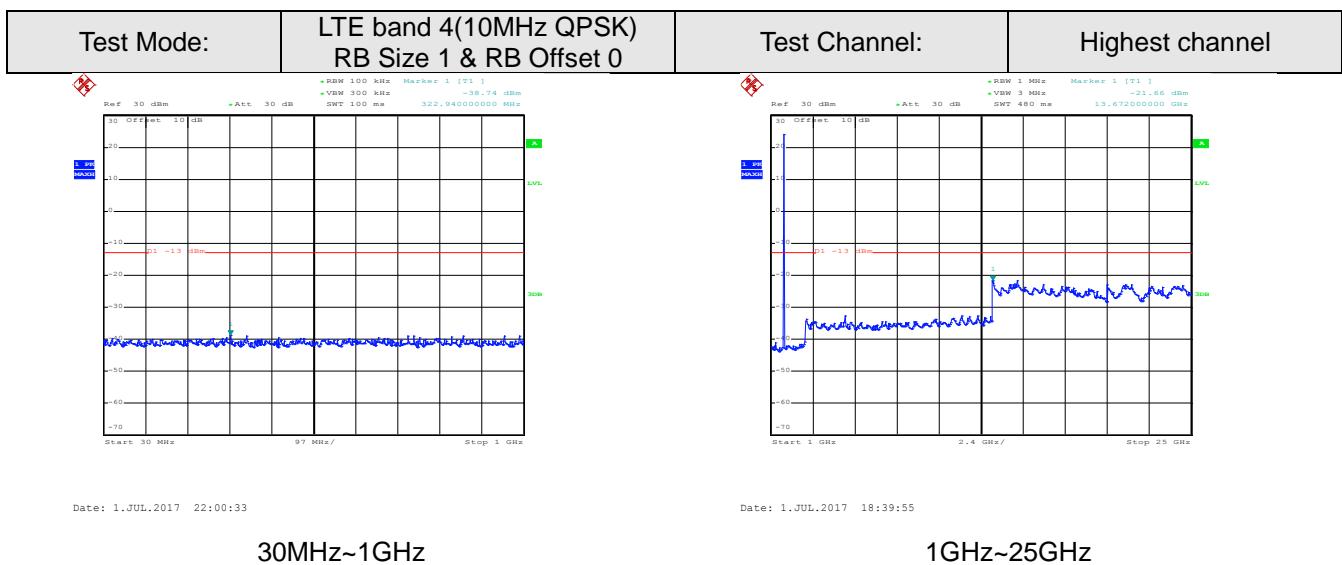
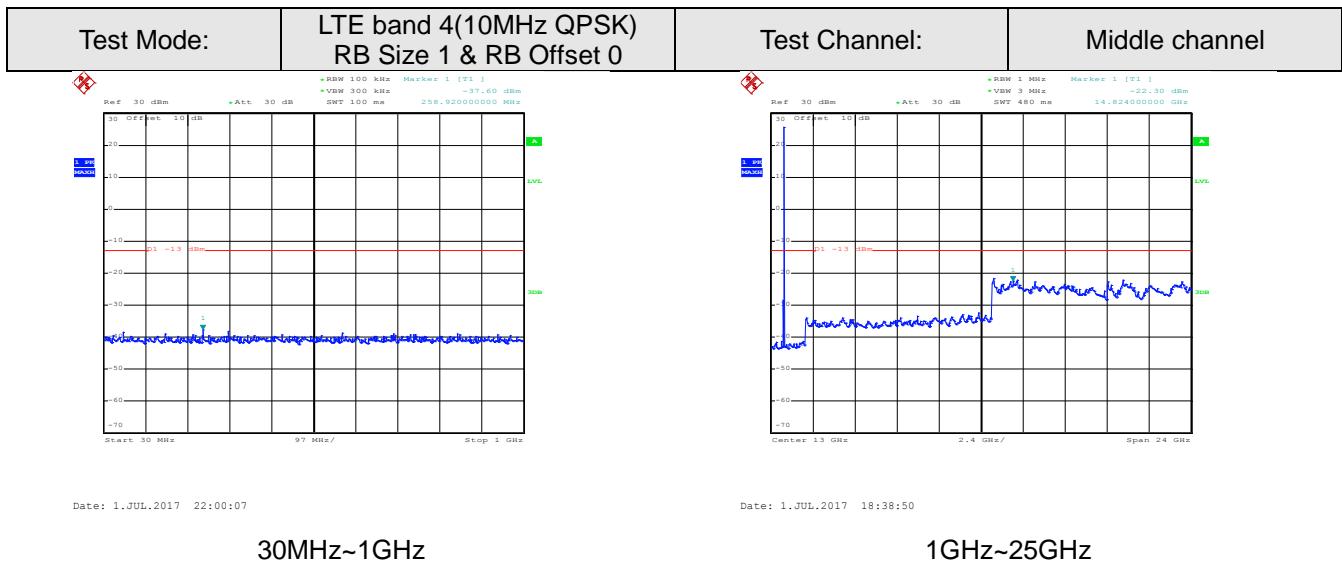
Date: 1.JUL.2017 21:59:17

30MHz~1GHz

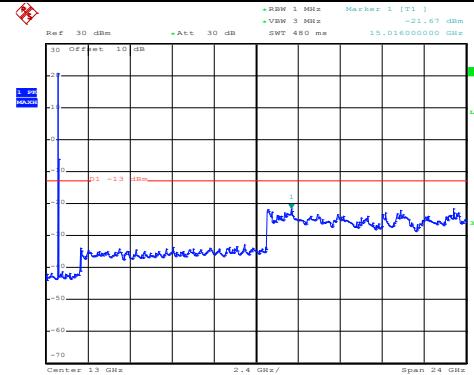
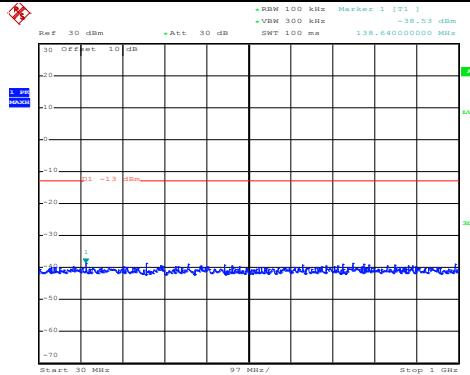


Date: 1.JUL.2017 18:37:44

1GHz~25GHz



Test Mode:	LTE band 4(10MHz QPSK) RB Size 25 & RB Offset 0	Test Channel:	Lowest channel
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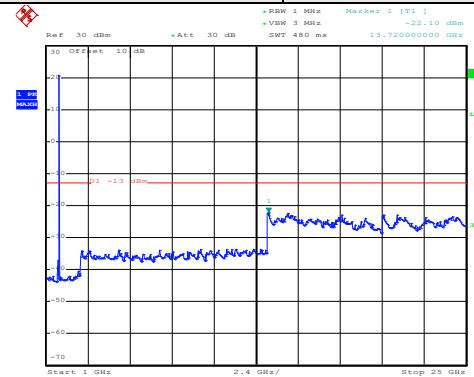
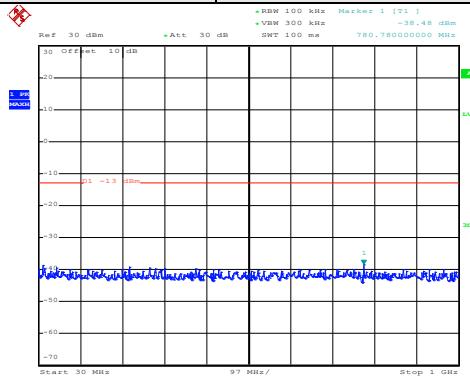
Date: 1.JUL.2017 21:59:34

30MHz~1GHz

Date: 1.JUL.2017 18:38:03

1GHz~25GHz

Test Mode:	LTE band 4(10MHz QPSK) RB Size 25 & RB Offset 0	Test Channel:	Middle channel
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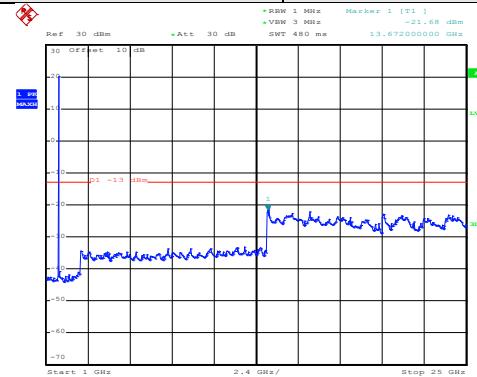
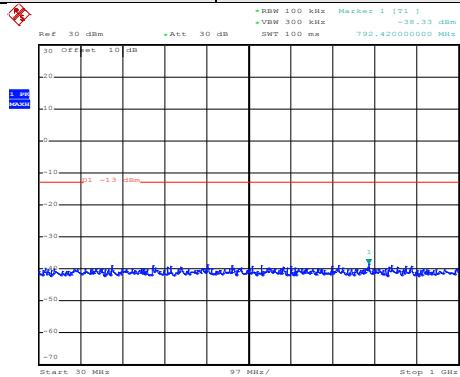
Date: 1.JUL.2017 22:01:26

30MHz~1GHz

Date: 1.JUL.2017 18:39:15

1GHz~25GHz

Test Mode:	LTE band 4(10MHz QPSK) RB Size 25 & RB Offset 0	Test Channel:	Highest channel
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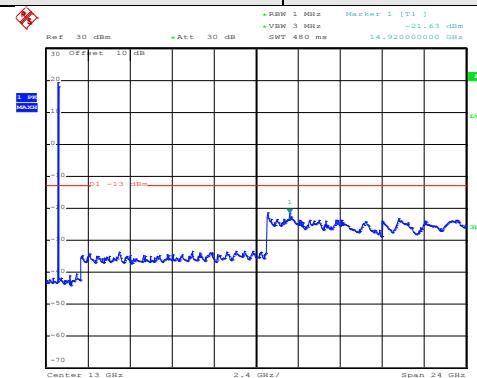
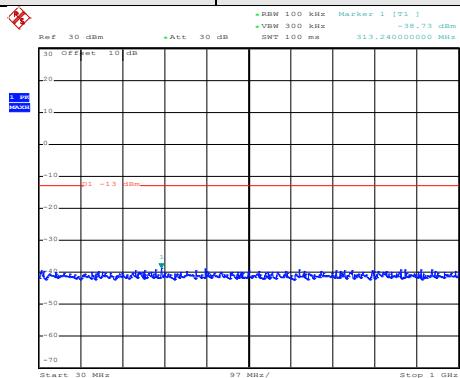
Date: 1.JUL.2017 22:00:48

30MHz~1GHz

Date: 1.JUL.2017 18:40:13

1GHz~25GHz

Test Mode:	LTE band 4(10MHz QPSK) RB Size 50 & RB Offset 0	Test Channel:	Lowest channel
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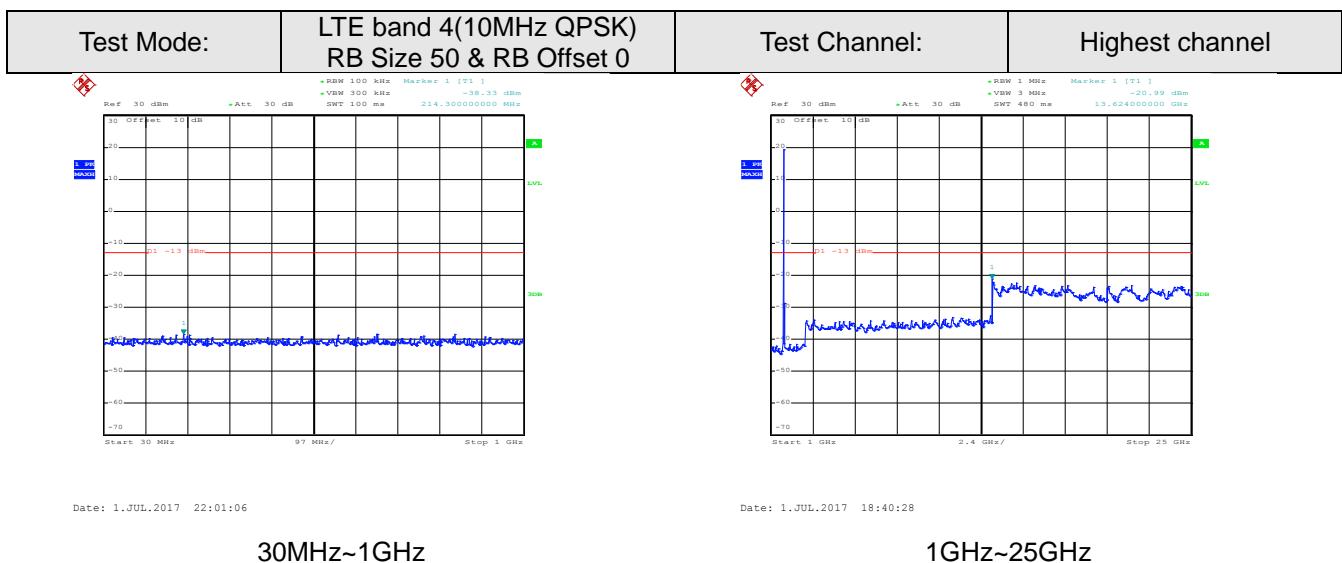
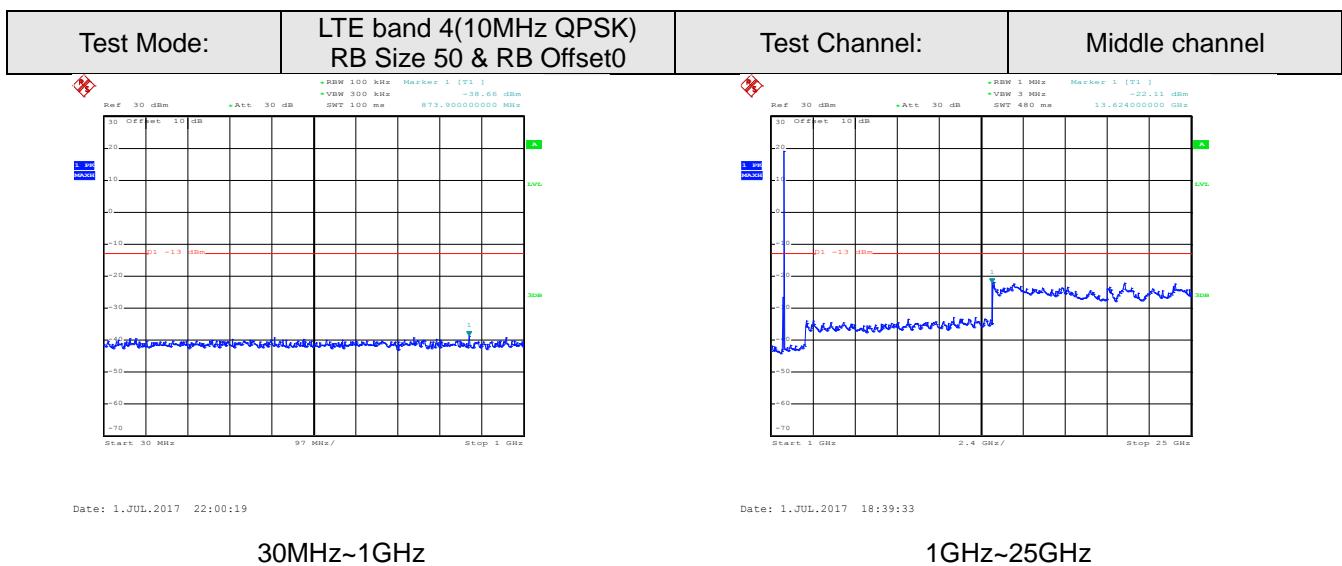


Date: 1.JUL.2017 21:59:48

30MHz~1GHz

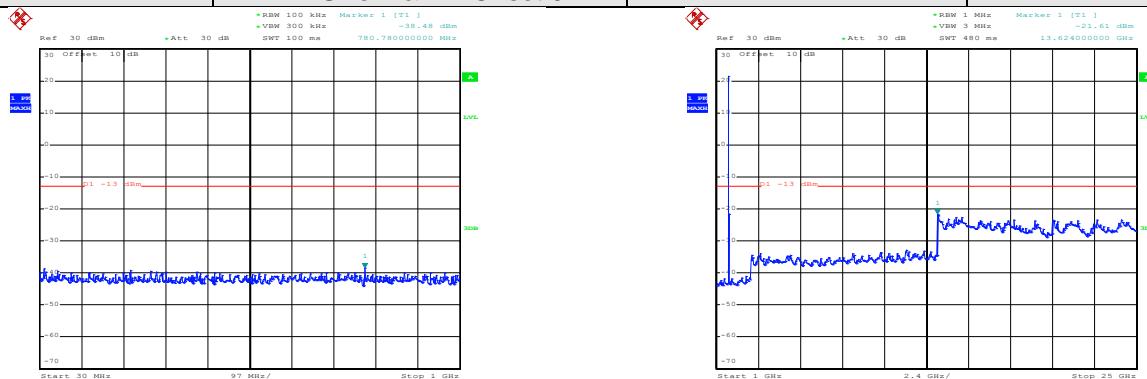
Date: 1.JUL.2017 18:38:22

1GHz~25GHz



15MHz

Test Mode:	LTE band 4(15MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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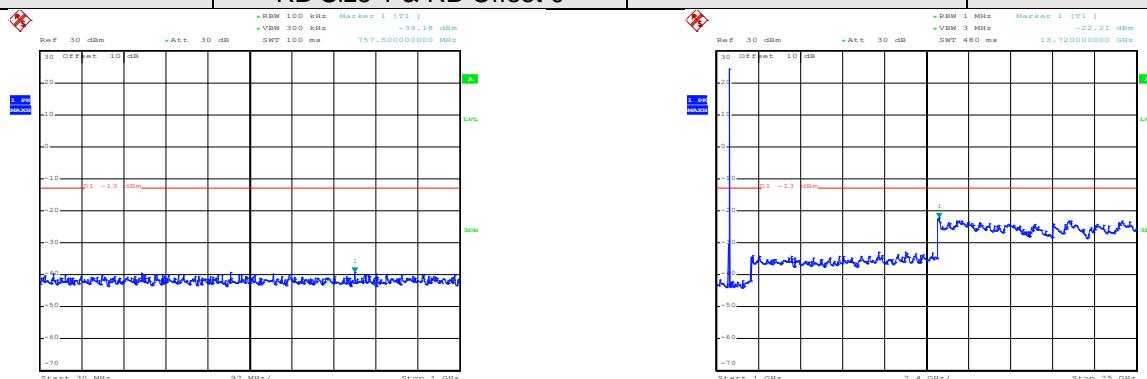
Date: 1.JUL.2017 22:01:26

Date: 1.JUL.2017 18:41:09

30MHz~1GHz

1GHz~25GHz

Test Mode:	LTE band 4(15MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Middle channel
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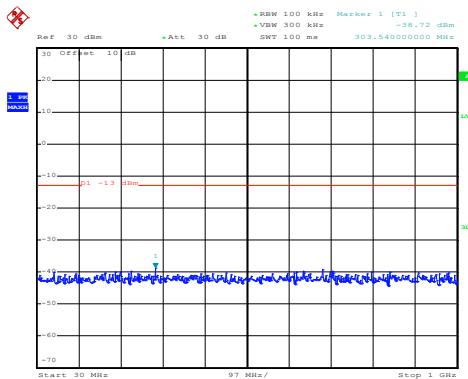
Date: 1.JUL.2017 22:02:13

Date: 1.JUL.2017 18:42:13

30MHz~1GHz

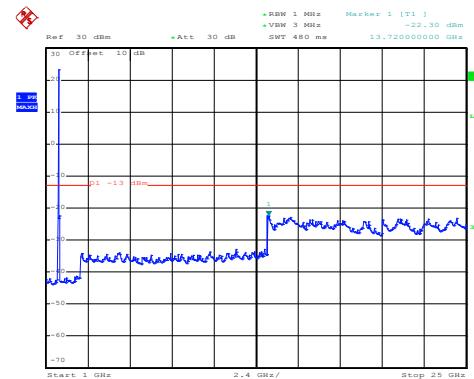
1GHz~25GHz

Test Mode:	LTE band 4(15MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Highest channel
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Date: 1.JUL.2017 22:02:52

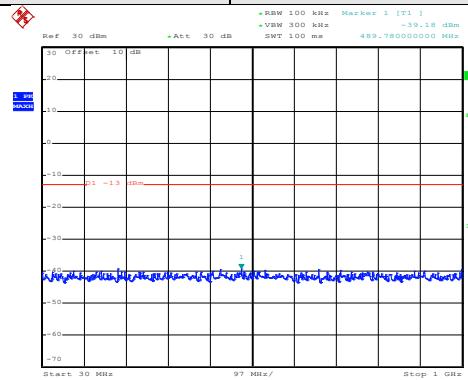
30MHz~1GHz



Date: 1.JUL.2017 18:43:43

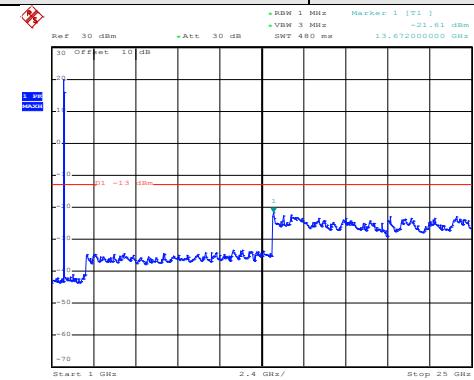
1GHz~25GHz

Test Mode:	LTE band 4(15MHz 16QAM) RB Size 36 & RB Offset 0	Test Channel:	Lowest channel
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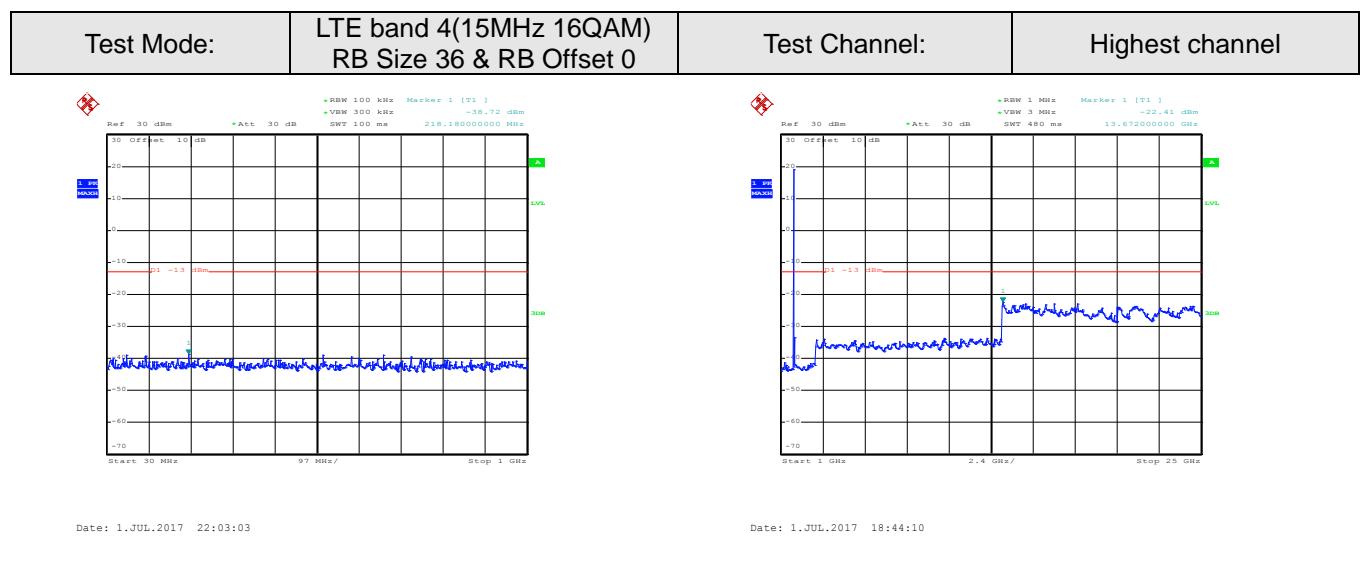
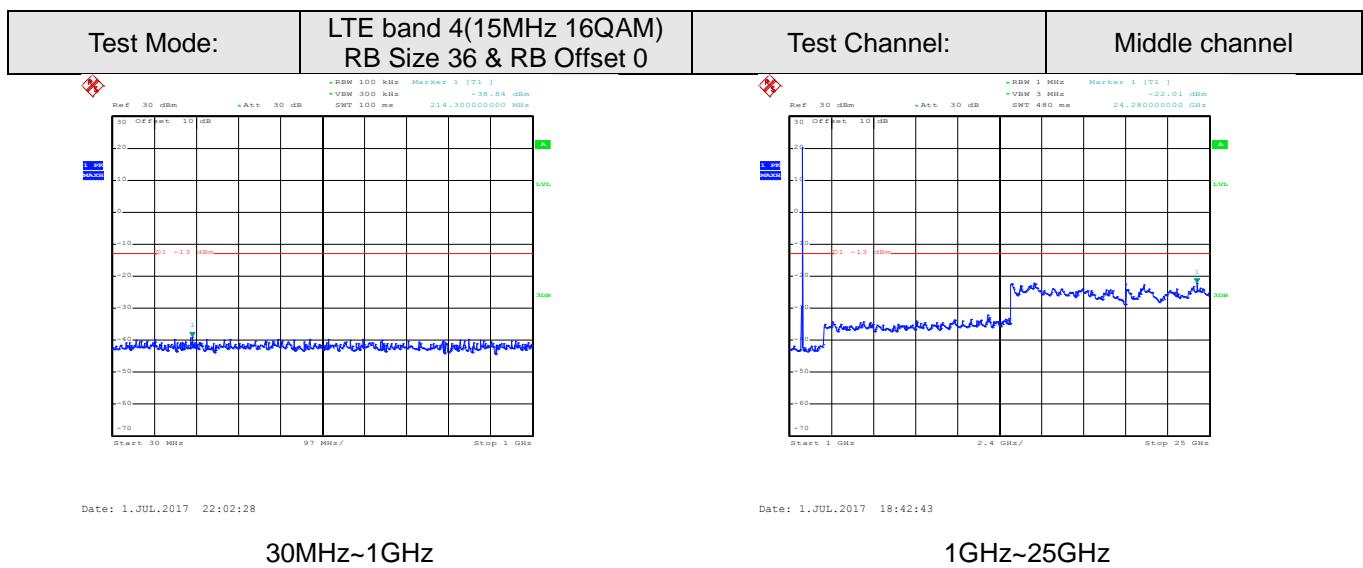
Date: 1.JUL.2017 22:01:40

30MHz~1GHz

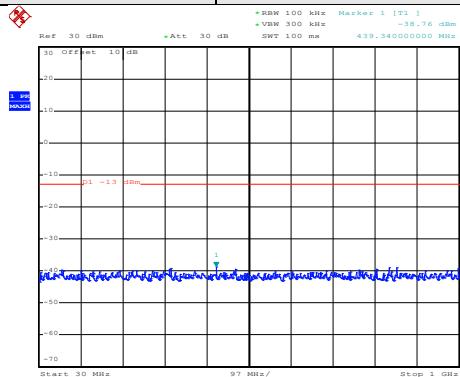


Date: 1.JUL.2017 18:41:28

1GHz~25GHz

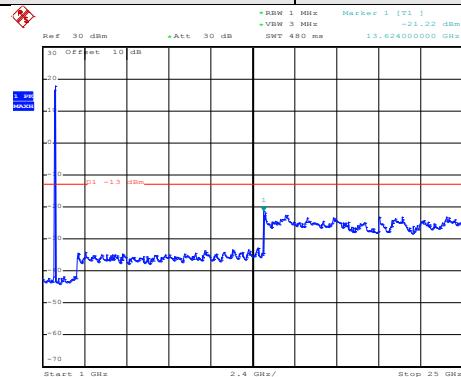


Test Mode:	LTE band 4(15MHz 16QAM) RB Size 75 & RB Offset 0	Test Channel:	Lowest channel
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Date: 1.JUL.2017 22:01:57

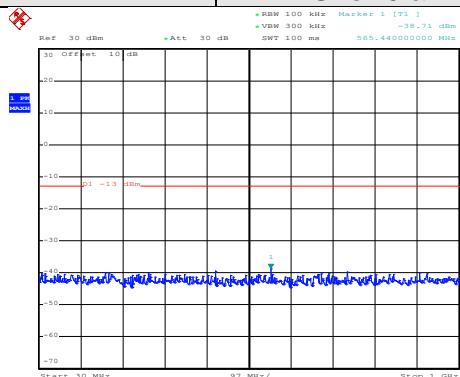
30MHz~1GHz



Date: 1.JUL.2017 18:41:49

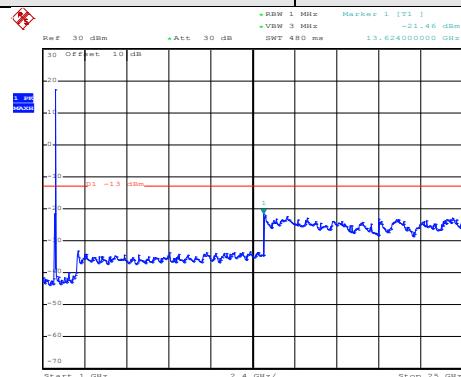
1GHz~25GHz

Test Mode:	LTE band 4(15MHz 16QAM) RB Size 75 & RB Offset 0	Test Channel:	Middle channel
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Date: 1.JUL.2017 22:02:39

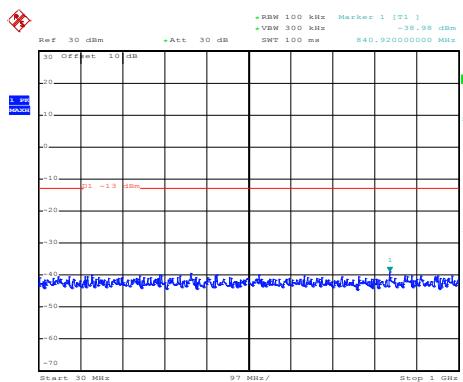
30MHz~1GHz



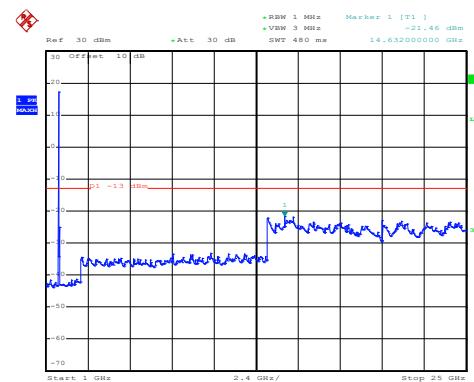
Date: 1.JUL.2017 18:43:18

1GHz~25GHz

Test Mode:	LTE band 4(15MHz 16QAM) RB Size 75 & RB Offset 0	Test Channel:	Highest channel
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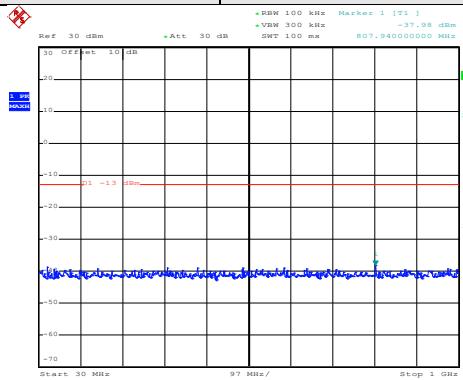
30MHz~1GHz



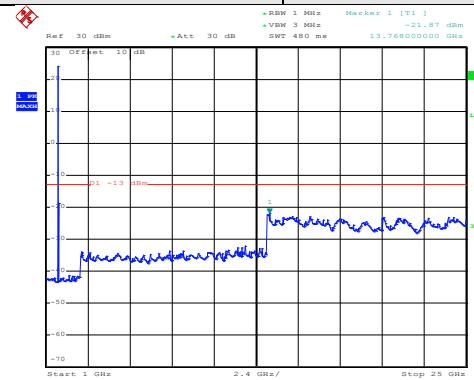
Date: 1.JUL.2017 18:44:27

1GHz~25GHz

Test Mode:	LTE band 4(15MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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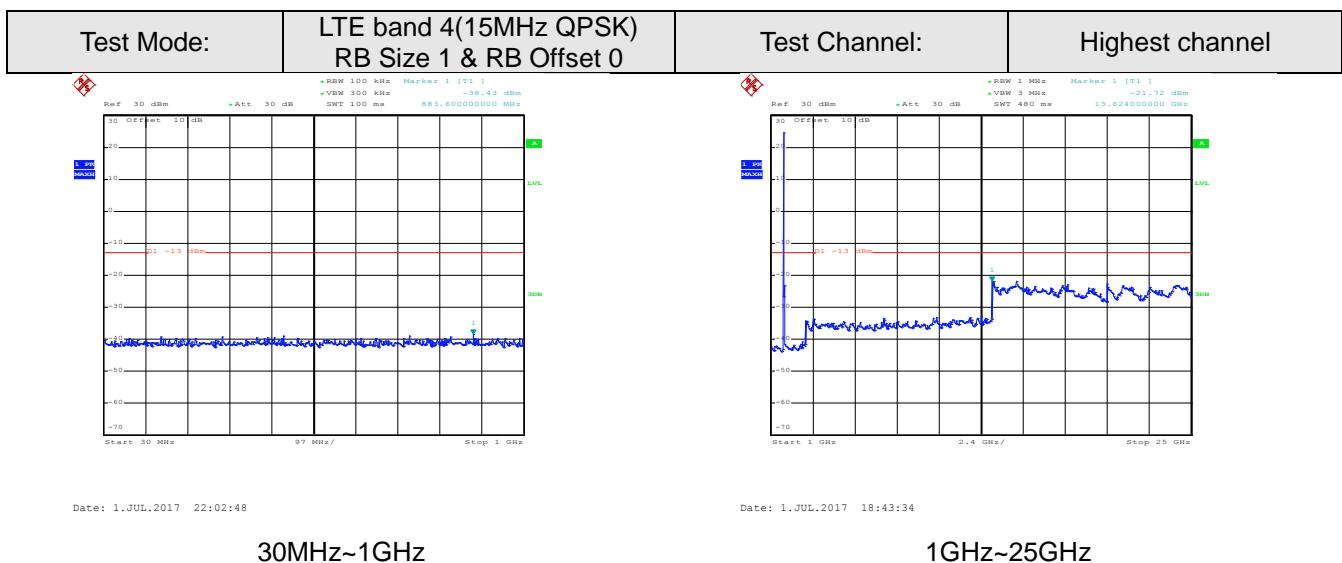
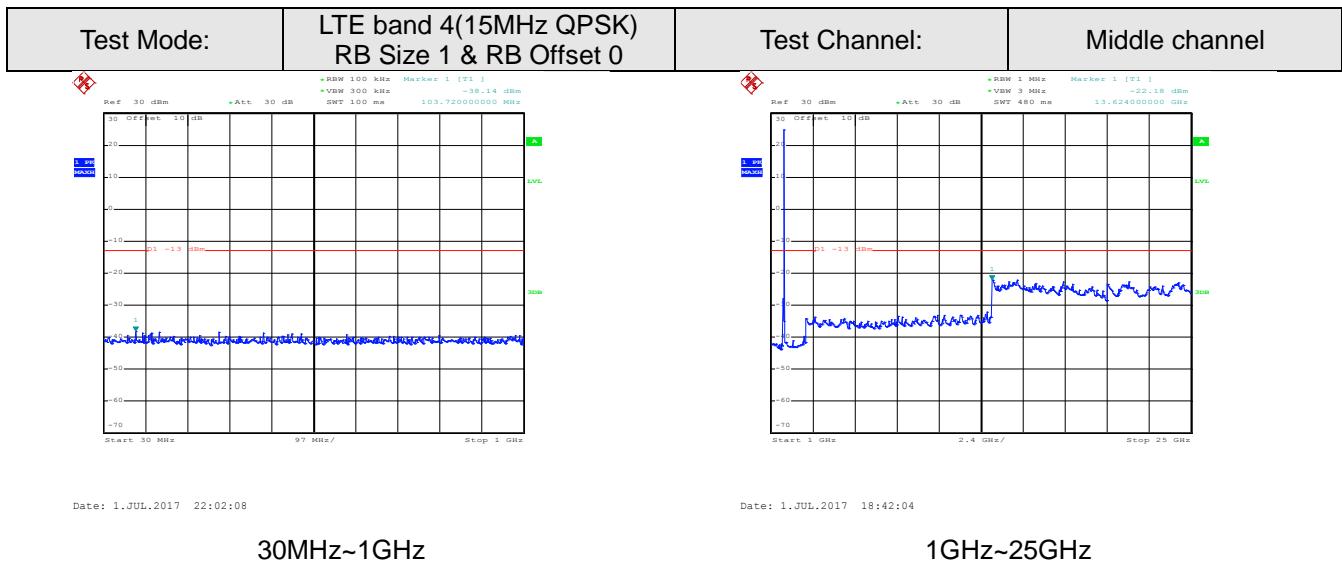


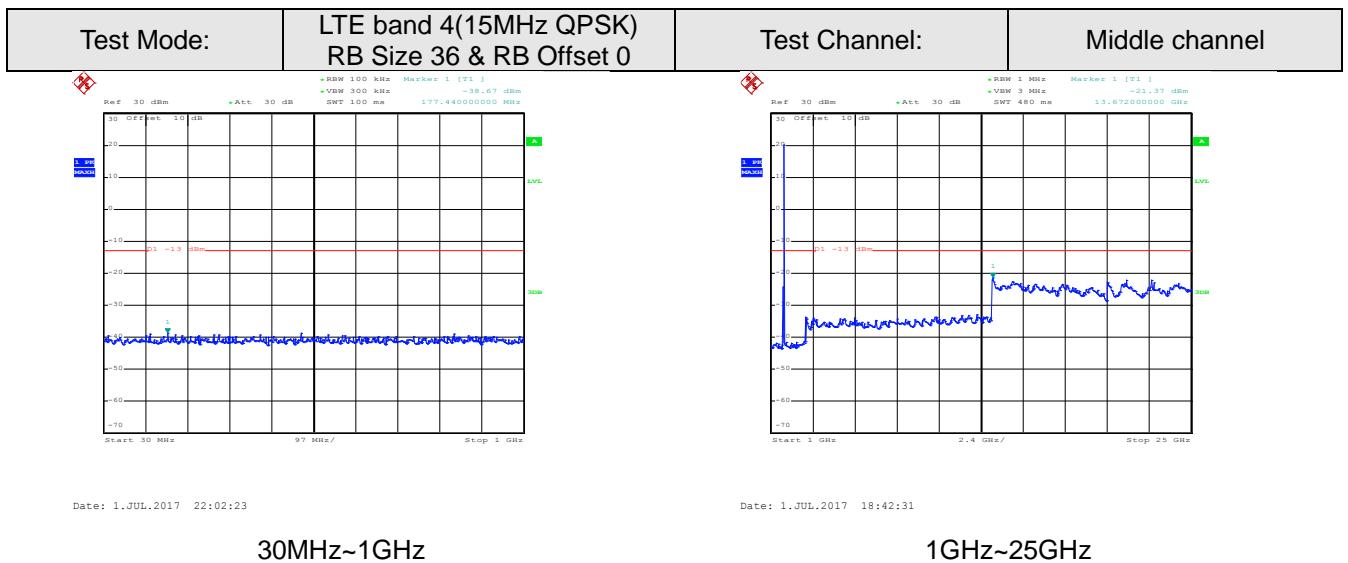
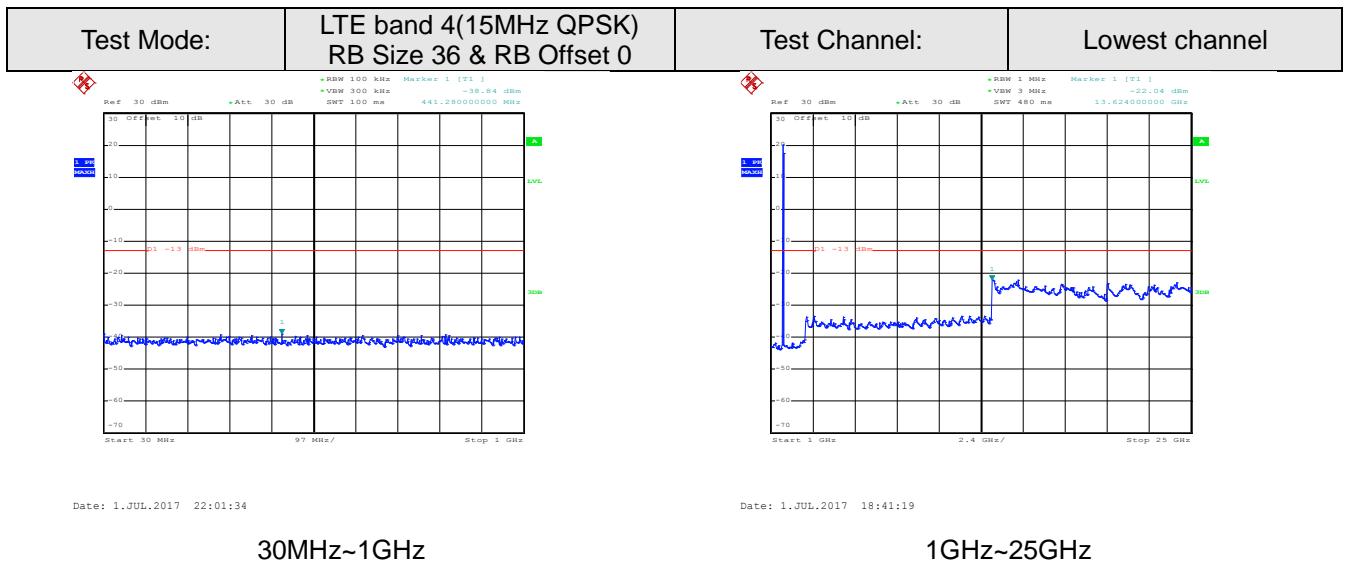
30MHz~1GHz



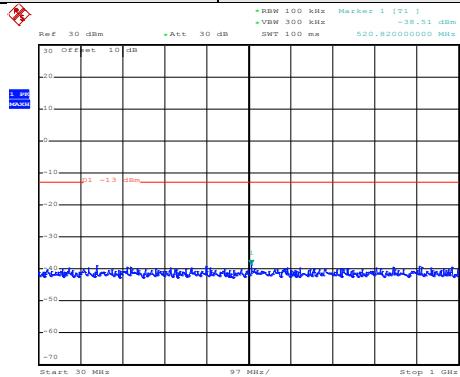
Date: 1.JUL.2017 18:41:00

1GHz~25GHz



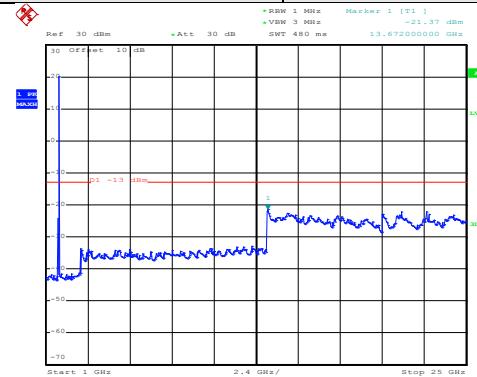


Test Mode:	LTE band 4(15MHz QPSK) RB Size 36 & RB Offset 0	Test Channel:	Highest channel
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Date: 1.JUL.2017 22:02:59

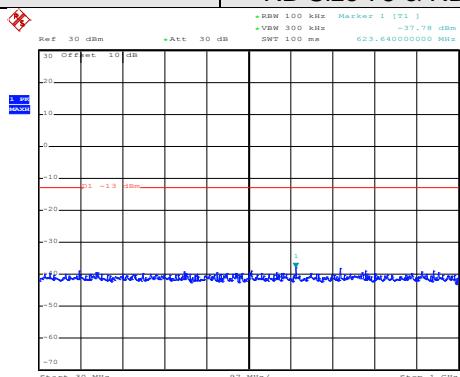
30MHz~1GHz



Date: 1.JUL.2017 18:42:31

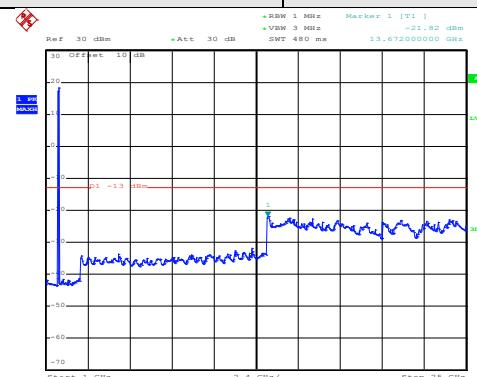
1GHz~25GHz

Test Mode:	LTE band 4(15MHz QPSK) RB Size 75 & RB Offset 0	Test Channel:	Lowest channel
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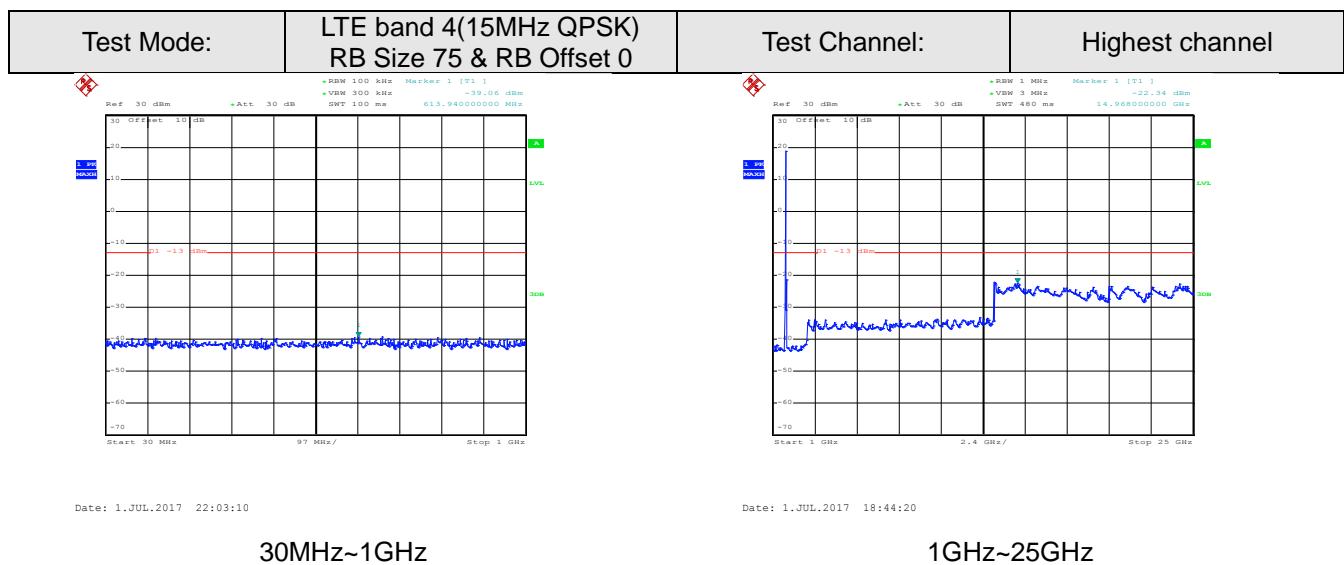
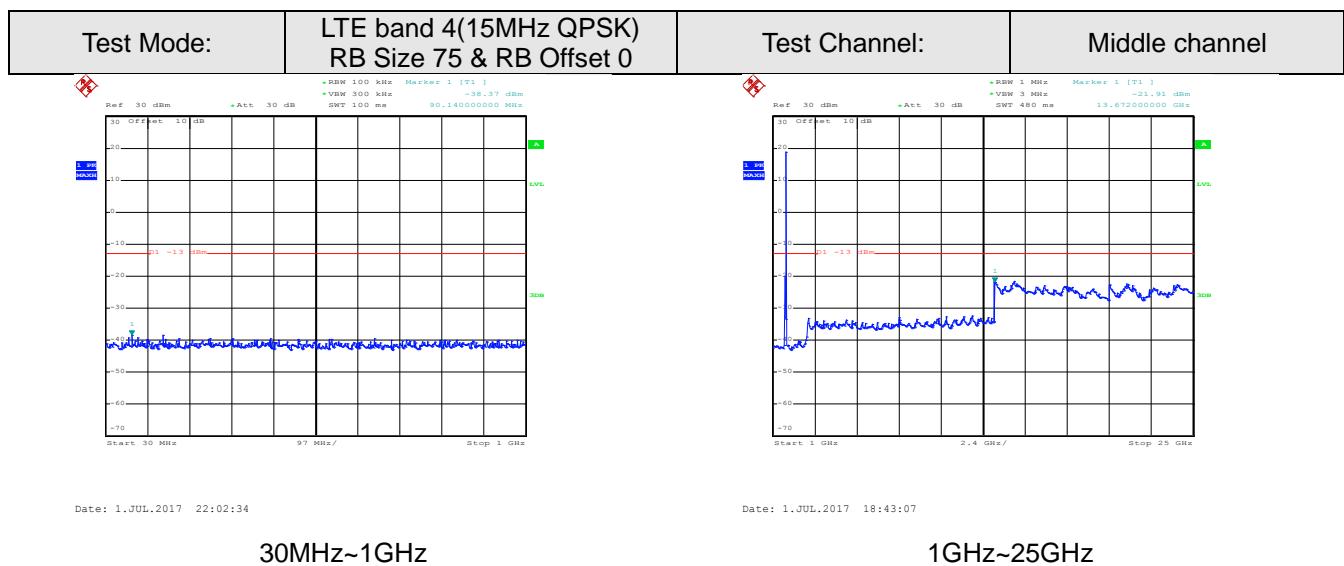
Date: 1.JUL.2017 22:01:51

30MHz~1GHz

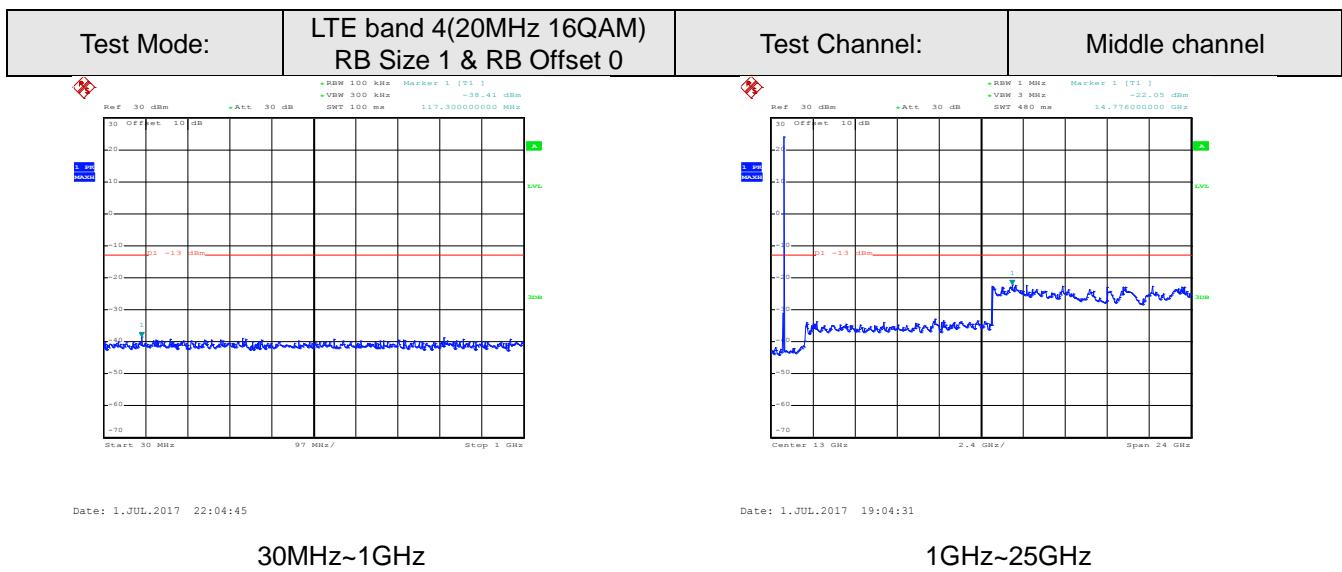
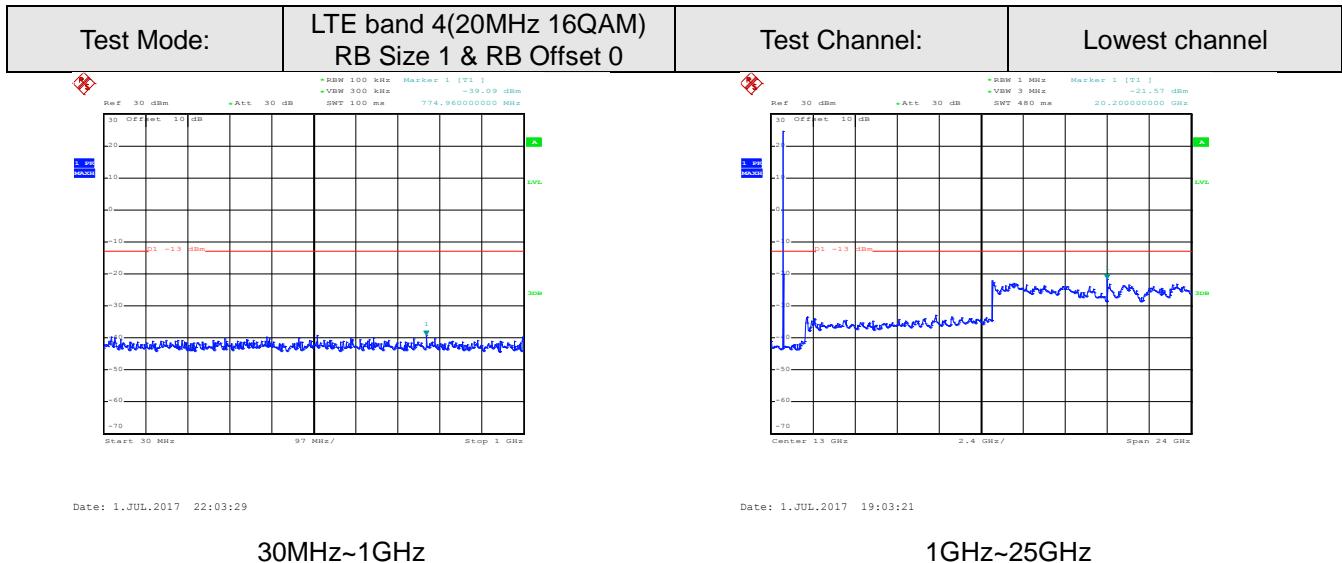


Date: 1.JUL.2017 18:41:41

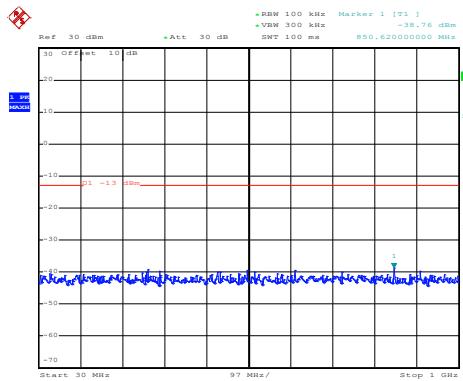
1GHz~25GHz



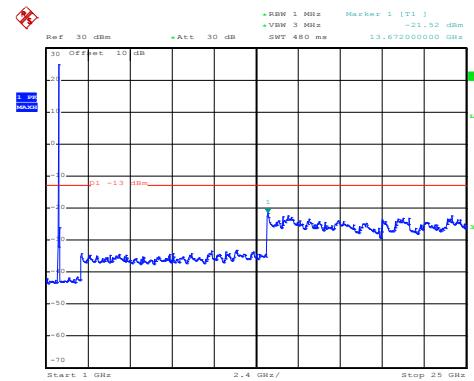
20MHz



Test Mode:	LTE band 4(20MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Highest channel
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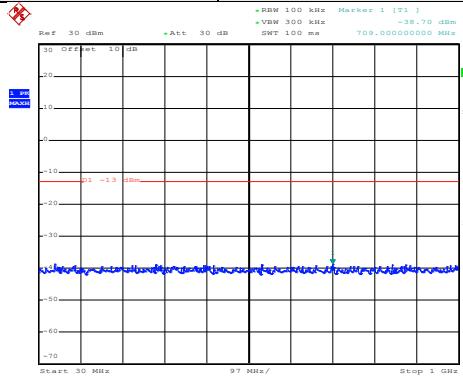
30MHz~1GHz



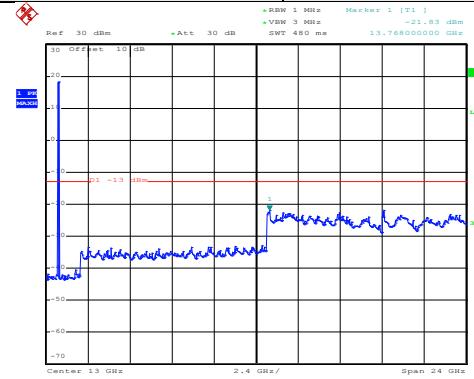
Date: 1.JUL.2017 19:05:38

1GHz~25GHz

Test Mode:	LTE band 4(20MHz 16QAM) RB Size 50 & RB Offset 0	Test Channel:	Lowest channel
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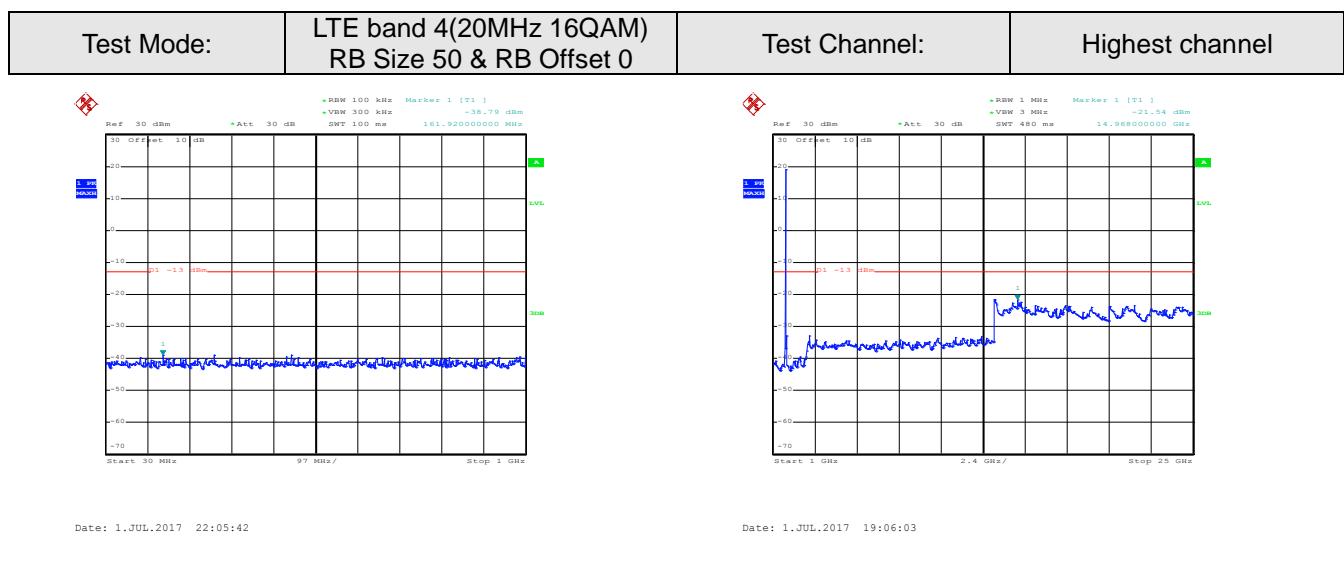
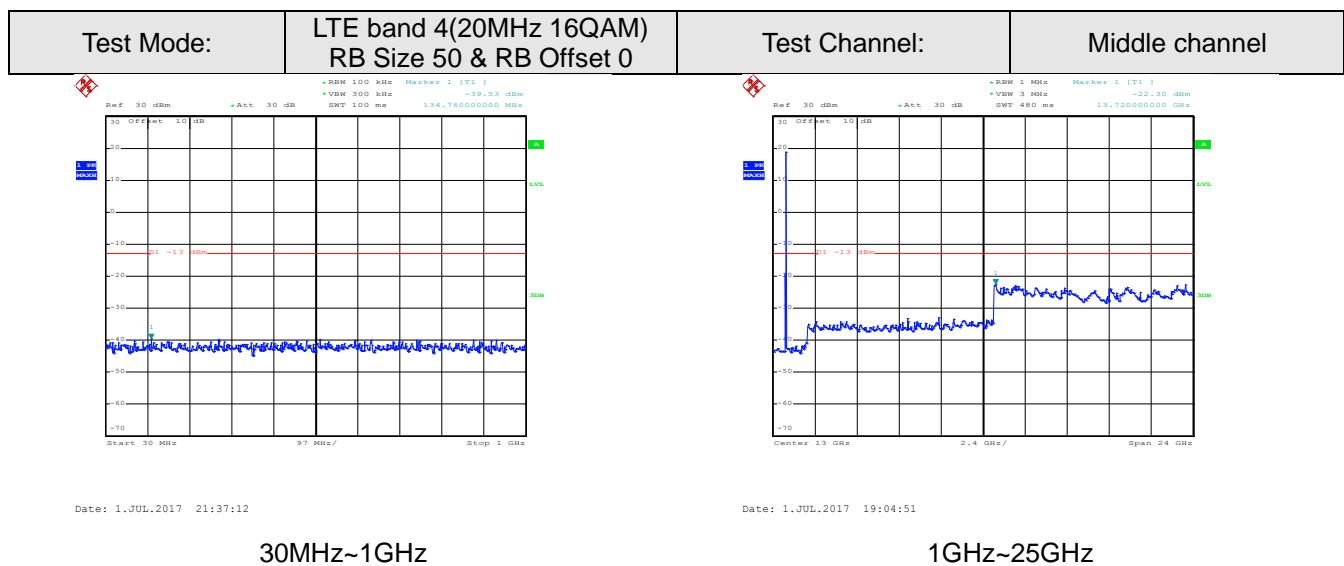


30MHz~1GHz

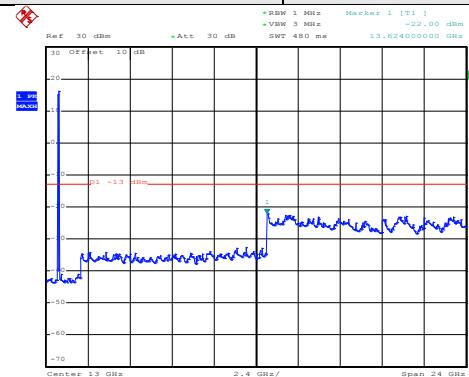
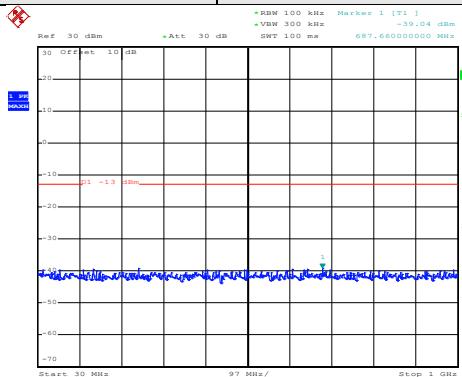


Date: 1.JUL.2017 22:04:09

1GHz~25GHz



Test Mode:	LTE band 4(20MHz 16QAM) RB Size 100 & RB Offset 0	Test Channel:	Lowest channel
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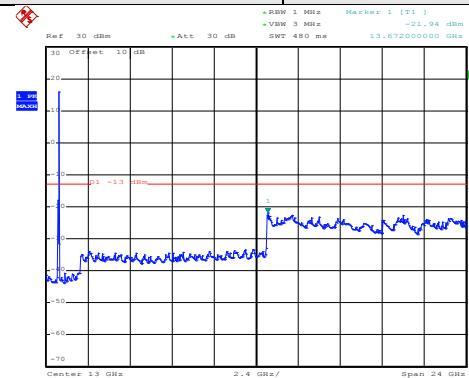
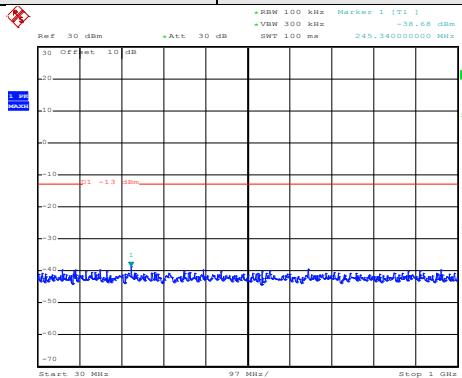
Date: 1.JUL.2017 22:04:24

30MHz~1GHz

Date: 1.JUL.2017 19:04:03

1GHz~25GHz

Test Mode:	LTE band 4(20MHz 16QAM) RB Size 100 & RB Offset 0	Test Channel:	Middle channel
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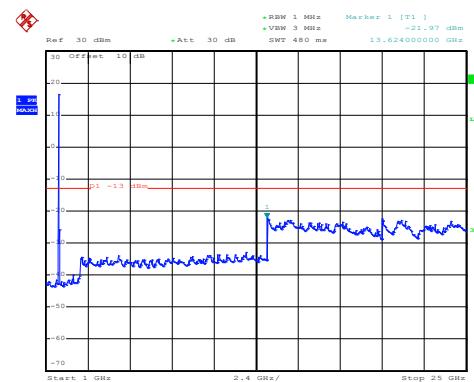
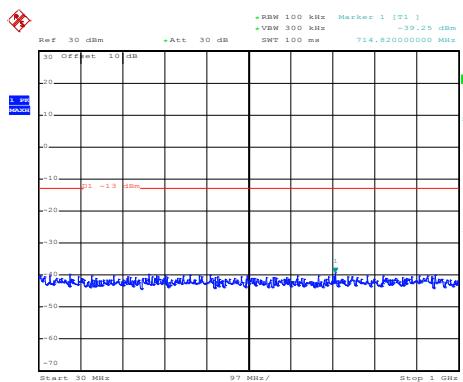
Date: 1.JUL.2017 22:05:15

30MHz~1GHz

Date: 1.JUL.2017 19:05:08

1GHz~25GHz

Test Mode:	LTE band 4(20MHz 16QAM) RB Size 100 & RB Offset 0	Test Channel:	Highest channel
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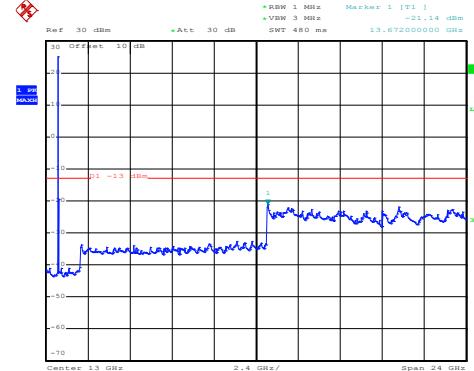
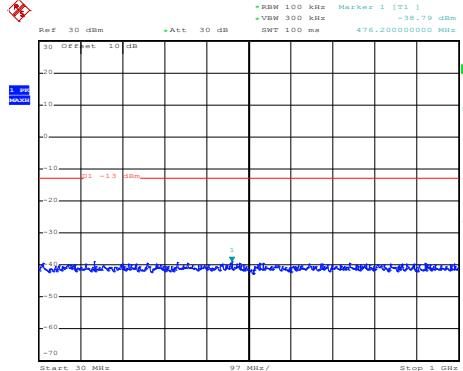
Date: 1.JUL.2017 22:05:59

30MHz~1GHz

Date: 1.JUL.2017 19:06:27

1GHz~25GHz

Test Mode:	LTE band 4(20MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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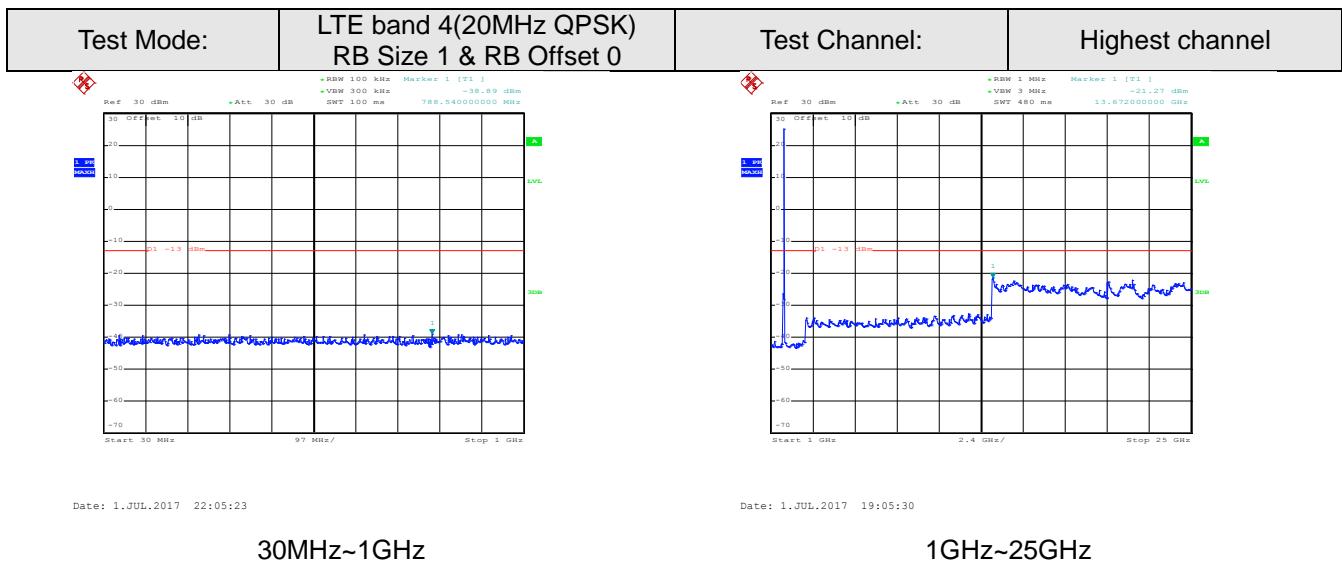
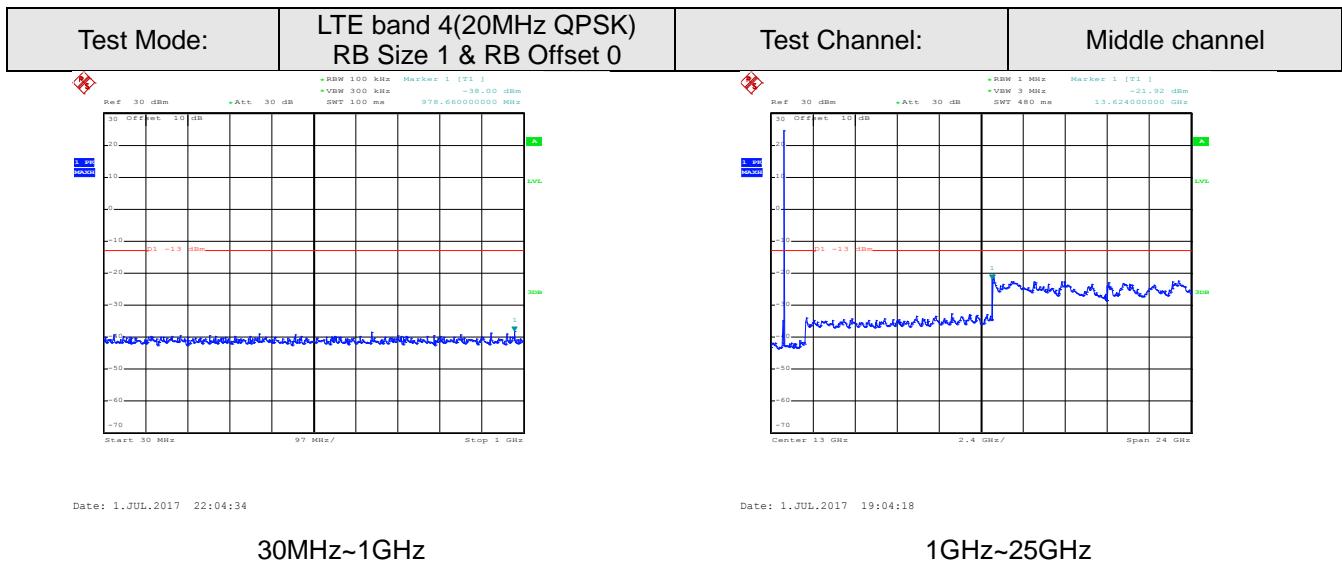


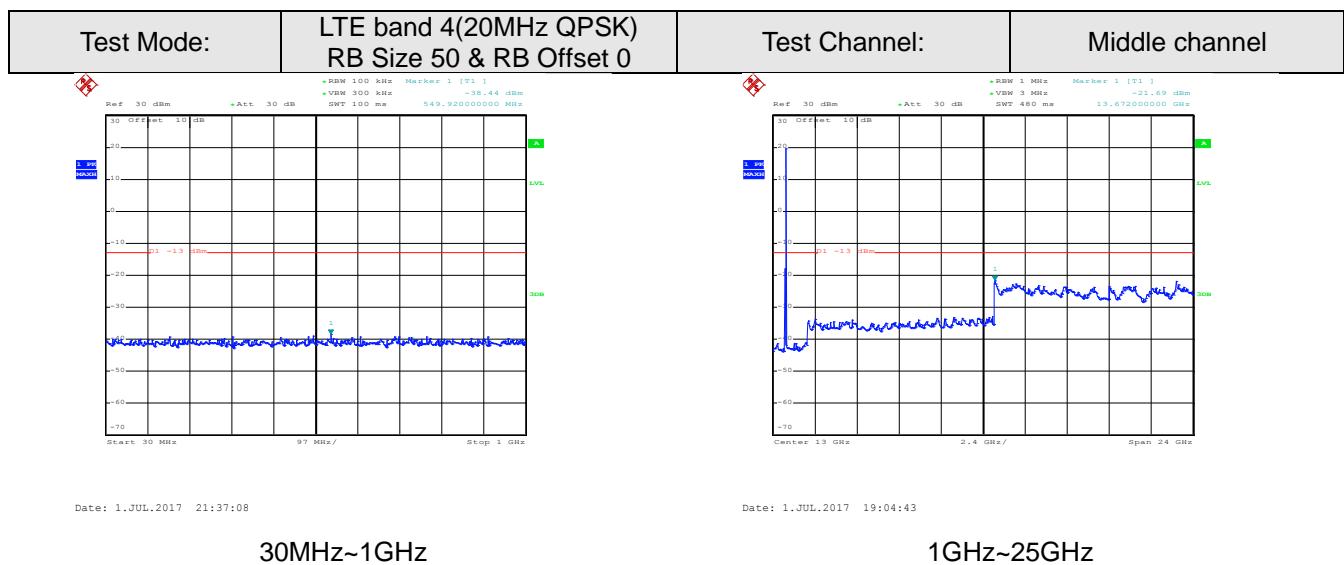
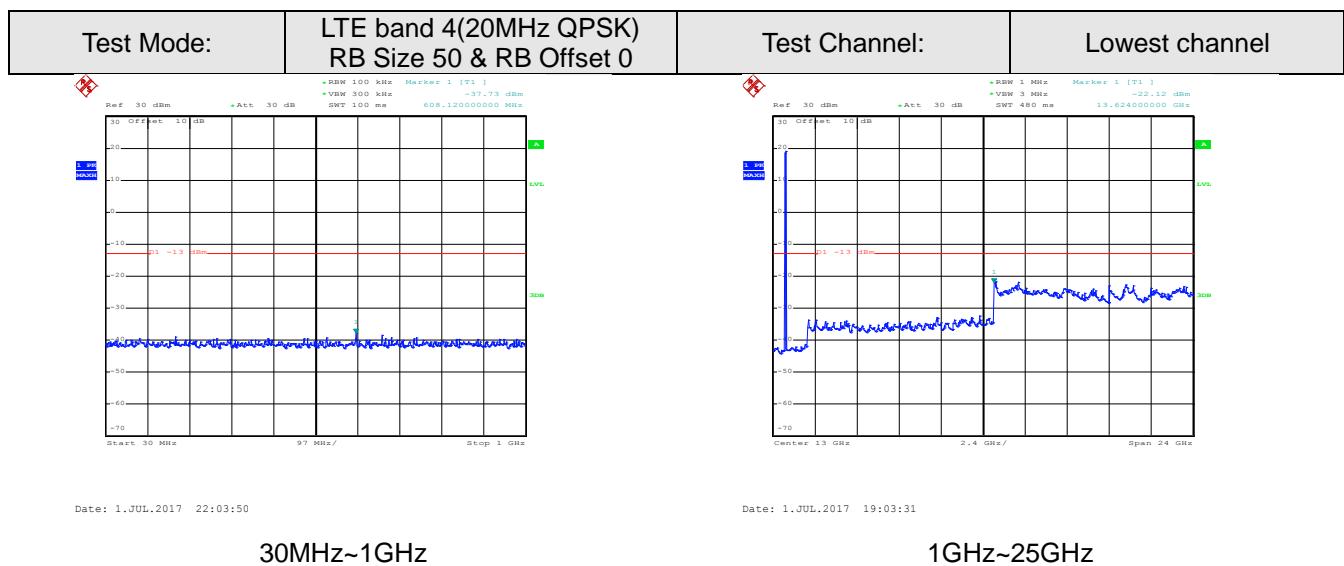
Date: 1.JUL.2017 22:03:25

30MHz~1GHz

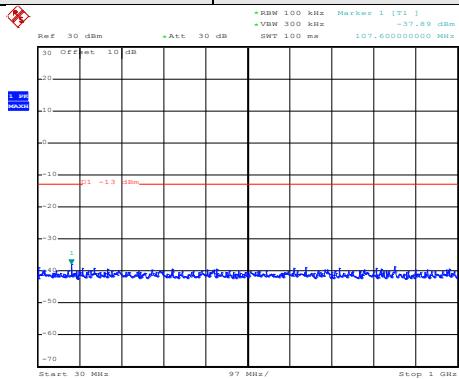
Date: 1.JUL.2017 19:03:11

1GHz~25GHz



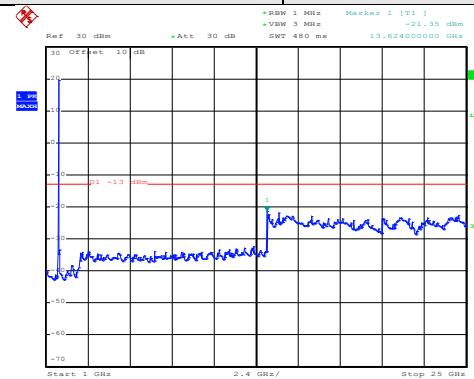


Test Mode:	LTE band 4(20MHz QPSK) RB Size 50 & RB Offset 0	Test Channel:	Highest channel
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Date: 1.JUL.2017 22:05:35

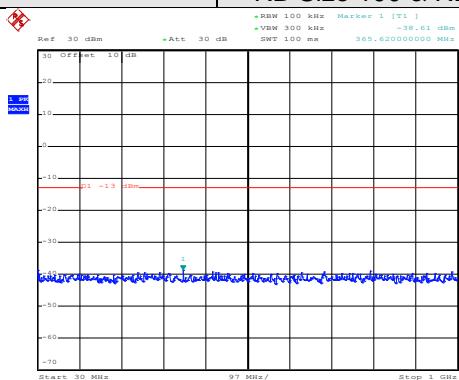
30MHz~1GHz



Date: 1.JUL.2017 19:05:54

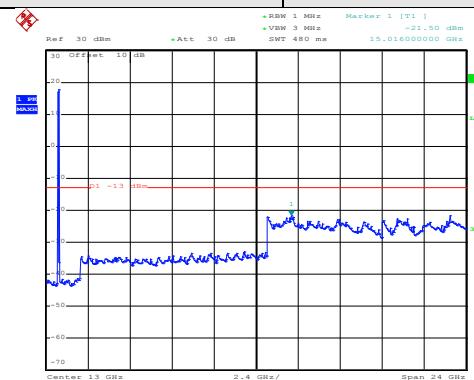
1GHz~25GHz

Test Mode:	LTE band 4(20MHz QPSK) RB Size 100 & RB Offset 0	Test Channel:	Lowest channel
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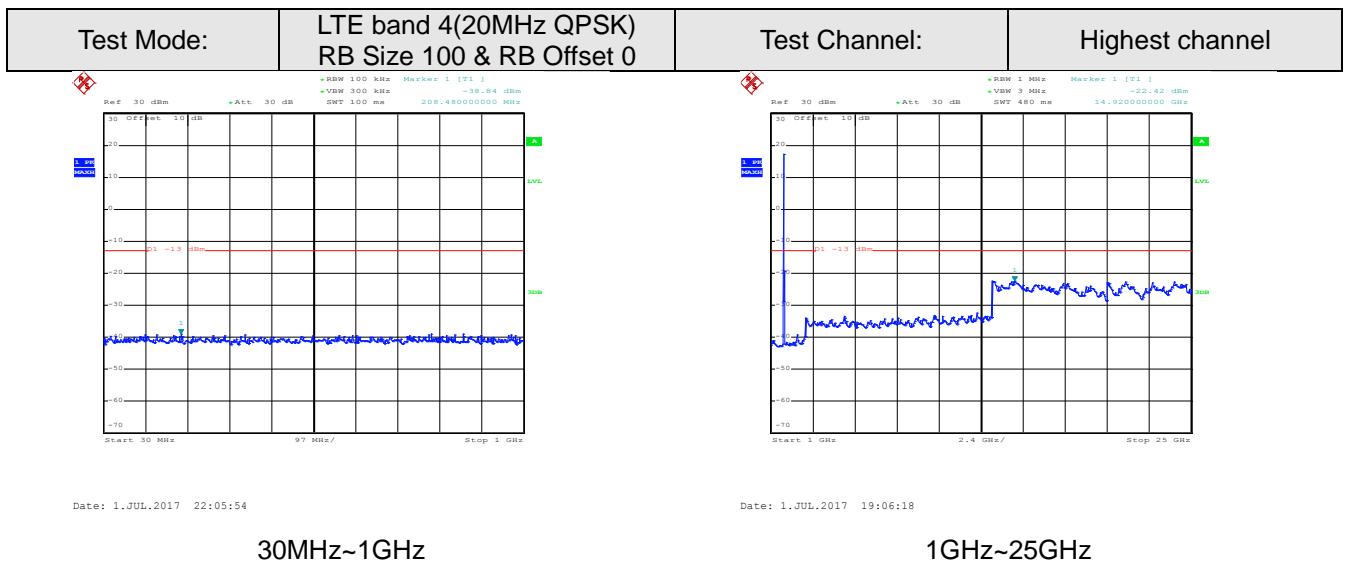
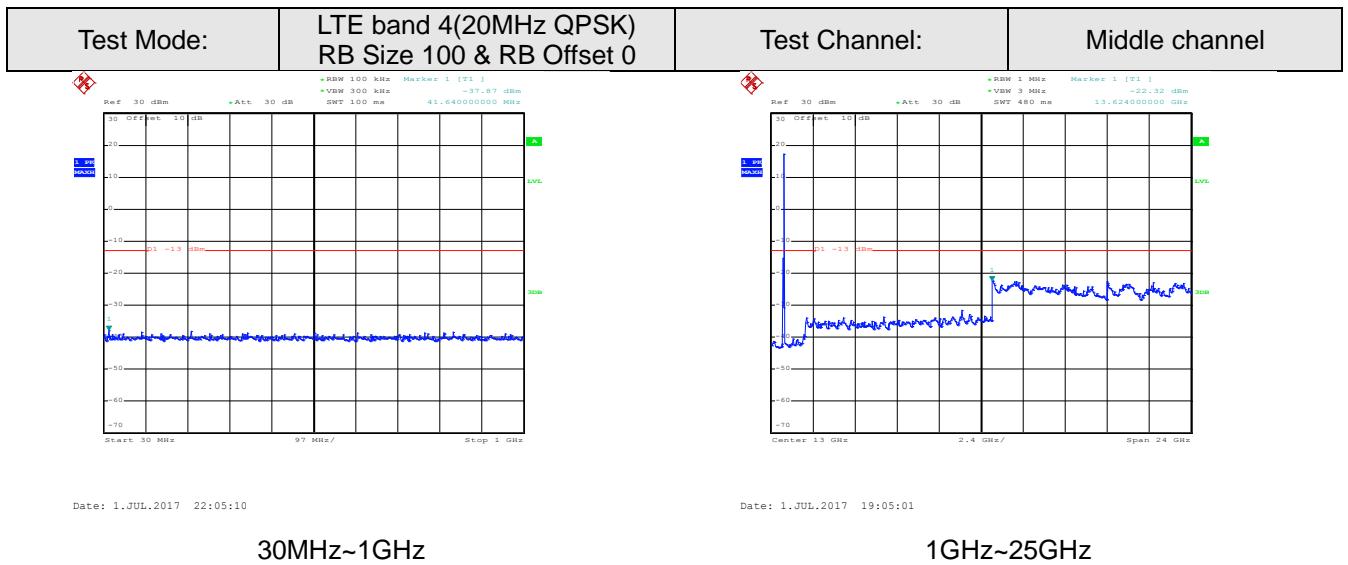
Date: 1.JUL.2017 22:04:17

30MHz~1GHz



Date: 1.JUL.2017 19:03:55

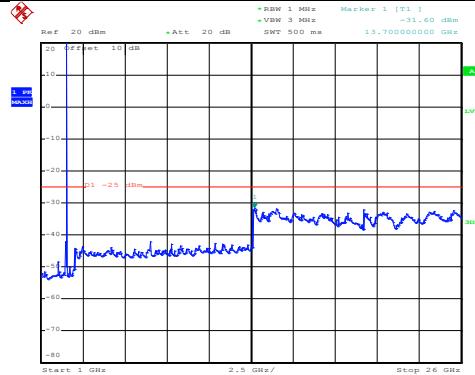
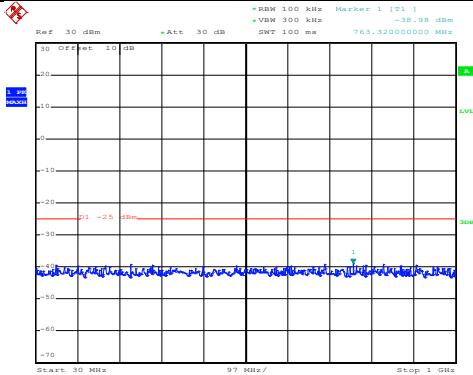
1GHz~25GHz



LTE band 7 part:

5MHz

Test Mode:	LTE band 7(5MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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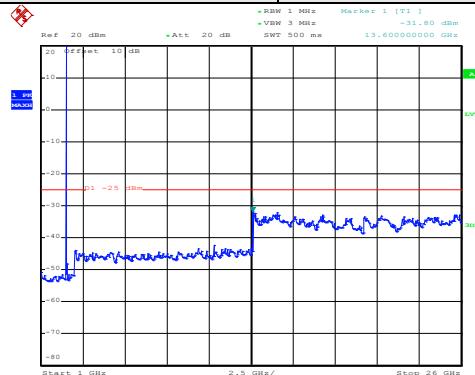
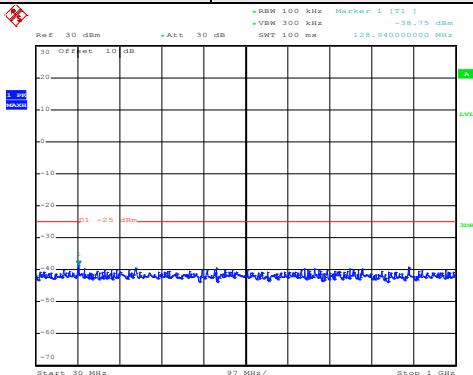
Date: 1.JUL.2017 21:25:02

Date: 1.JUL.2017 17:58:39

30MHz~1GHz

1GHz~26GHz

Test Mode:	LTE band 7(5MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Middle channel
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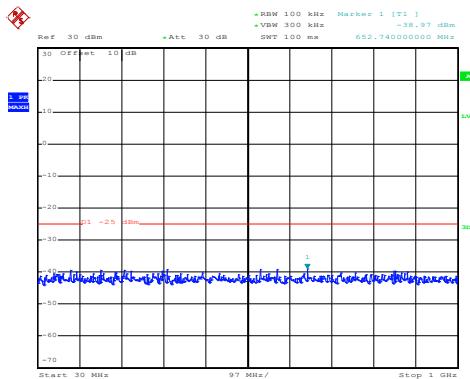
Date: 1.JUL.2017 21:25:51

Date: 1.JUL.2017 17:59:47

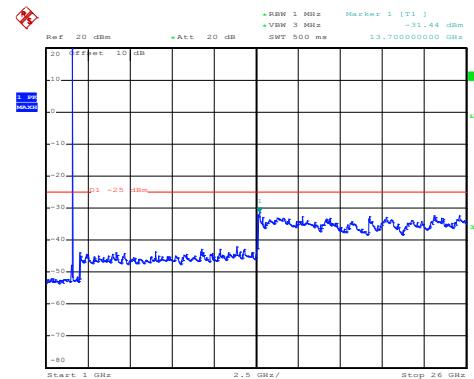
30MHz~1GHz

1GHz~26GHz

Test Mode:	LTE band 7(5MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Highest channel
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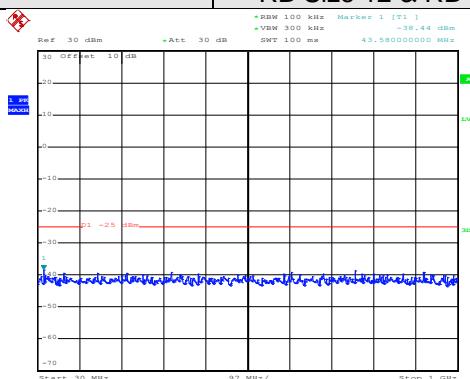


30MHz~1GHz



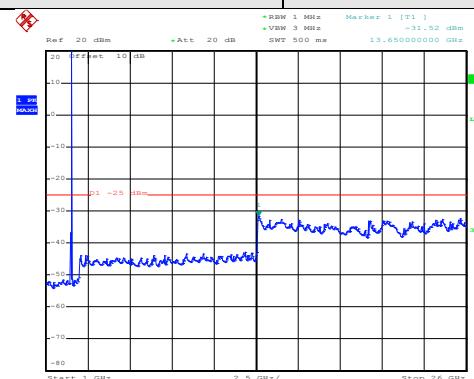
1GHz~26GHz

Test Mode:	LTE band 7(5MHz 16QAM) RB Size 12 & RB Offset 0
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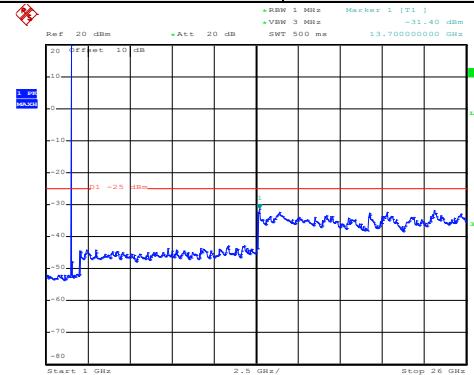
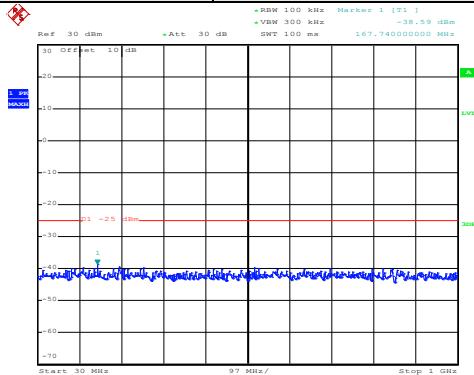
30MHz~1GHz

Test Channel:	Lowest channel
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1GHz~26GHz

Test Mode:	LTE band 7(5MHz 16QAM) RB Size 12 & RB Offset 0	Test Channel:	Middle channel
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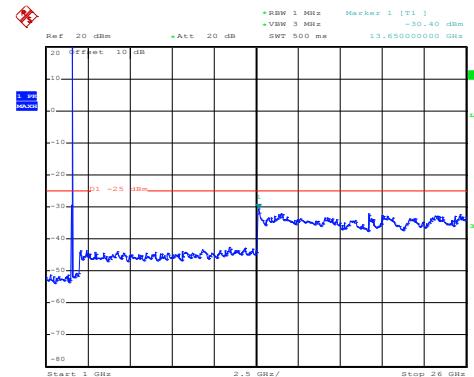
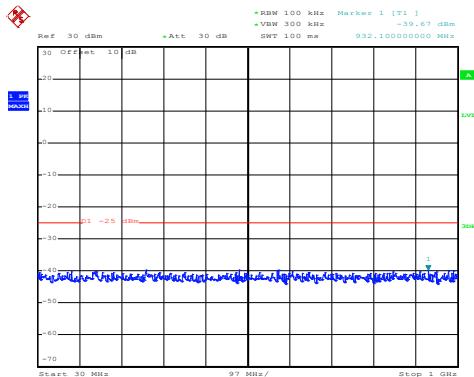
Date: 1.JUL.2017 21:26:02

30MHz~1GHz

Date: 1.JUL.2017 18:00:07

1GHz~26GHz

Test Mode:	LTE band 7(5MHz 16QAM) RB Size 12 & RB Offset 0	Test Channel:	Highest channel
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Date: 1.JUL.2017 21:26:38

30MHz~1GHz

Date: 1.JUL.2017 18:01:17

1GHz~26GHz