

FCC REPORT

(LTE)

Applicant: FrontierGadget Inc.

Address of Applicant: 2nd Floor, Block 2 lot 14 Avanti Street, Sterling Industrial Park,
Barangay Iba, Meycauayan, Bulacan, Philippines

Equipment Under Test (EUT)

Product Name: Smartphone

Model No.: JL Ekonic

Trade mark: Ekonic

FCC ID: 2AMAE-JLEkonic

Applicable standards: FCC CFR Title 47 Part 2
FCC CFR Title 47 Part 22 Subpart H

Date of sample receipt: 02 May, 2017

Date of Test: 02 May, to 19 May, 2017

Date of report issued: 19 May, 2017

Test Result: PASS*

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

Authorized Signature:



Bruce Zhang
Laboratory Manager

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

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

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2. Version

Version No.	Date	Description
00	19 May, 2017	Original

Tested by:

Zora Lee

Date:

19 May, 2017

Test Engineer

Reviewed by:

Ryan Lee

Date:

19 May, 2017

Project Engineer

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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 22.913 (a)(2)	Pass
Peak-to-Average Ratio	Part 24.232 (d)	Pass
Modulation Characteristics	Part 2.1047	Pass
99% & -26 dB Occupied Bandwidth	Part 2.1049 Part 22.917(b)	Pass
Spurious Emissions at Antenna Terminal	Part 2.1051 Part 22.917(a)	Pass
Field Strength of Spurious Radiation	Part 2.1053 Part 22.917(a)	Pass
Out of band emission, Band Edge	Part 22.917(a)	Pass
Frequency stability vs. temperature	Part 2.1055(a)(1)(b)	Pass
Frequency stability vs. voltage	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:	FrontierGadget Inc.
Address of Applicant:	2nd Floor, Block 2 lot 14 Avanti Street, Sterling Industrial Park, Barangay Iba, Meycauayan, Bulacan, Philippines
Manufacturer:	Truvo Tech (HK) Co., Ltd
Address of Manufacturer:	Unit 2, 9/F., One Mong Kok Road Commercial Centre, 1 Mong Kok Road, Kowloon, Hong Kong

5.2 General Description of E.U.T.

Product Name:	Smartphone
Model No.:	JL Ekonic
Operation Frequency range:	LTE Band 5: TX: 824MHz-849MHz, RX: 869MHz-894MHz
Modulation type:	QPSK, 16QAM
Antenna type:	Internal Antenna
Antenna gain:	LTE Band 5: -2.9dBi
Power supply:	Rechargeable Li-ion Battery DC3.7V-2500mAh
AC adapter:	Model no: SWN006S05010OU1 Input: AC100-240V 50/60Hz 0.2A Output: DC 5.0V, 1A

Operation Frequency List:

LTE Band 5(1.4MHz)		LTE Band 5(3MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
20407	824.70	20415	825.50
20408	824.80	20416	825.60
....			
20524	836.40	20524	836.40
20525	836.50	20525	836.50
20525	836.60	20525	836.60
...	...	...	...
20642	848.20	20634	847.40
20643	848.30	20635	847.50
LTE Band 5(5MHz)		LTE Band 5(10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
20425	826.50	20450	829.00
20426	826.60	20451	829.10
....			
20524	836.40	20524	836.40
20525	836.50	20525	836.50
20525	836.60	20525	836.60
...	...	...	...
20624	846.40	20599	843.90
20625	846.50	20600	844.00

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 5(1.4MHz)			LTE Band 5(3MHz)		
Channel		Frequency (MHz)	Channel		Frequency (MHz)
Lowest channel	20407	824.70	Lowest channel	20415	825.50
Middle channel	20525	836.50	Middle channel	20525	836.50
Highest channel	20643	848.30	Highest channel	20635	847.50
LTE Band 5(5MHz)			LTE Band 5(10MHz)		
Channel		Frequency (MHz)	Channel		Frequency (MHz)
Lowest channel	20425	826.50	Lowest channel	20450	829.00
Middle channel	20525	836.50	Middle channel	20525	836.50
Highest channel	20625	846.50	Highest channel	20600	844.00

5.3 Test modes

Data mode (LTE band 5(QPSK))	Keep the EUT in data communicating mode on LTE band 5(QPSK). (LTE band5(1.4MHz), LTE band5(3MHz), LTE band5(5MHz), LTE band5(10MHz))
Data mode (LTE band 5(16QAM))	Keep the EUT in data communicating mode on LTE band 5(16QAM). (LTE band5(1.4MHz), LTE band5(3MHz), LTE band5(5MHz), LTE band5(10MHz))
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 22 Subpart H 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 47clause 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 ZhongjianNanfang 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 ZhongjianNanfang 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 ZhongjianNanfang 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 ZhongjianNanfang 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

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 MESS-ELEKTRONIK	VULB9163	CCIS0005	02-25-2017	02-24-2018
Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	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	FSP 30	CCIS0023	02-25-2017	02-24-2018
EMI Test Receiver	Rohde & Schwarz	ESPI	CCIS0022	02-25-2017	02-24-2018
EMI Test Receiver	Rohde & Schwarz	ESRP7	CCIS0167	02-25-2017	02-24-2018
Loop antenna	Laplace instrument	RF300	EMC0701	02-25-2017	02-24-2018
Universal radio communication tester	Rhode & Schwarz	CMU200	CCIS0069	02-25-2017	02-24-2018
Signal Analyzer	Rohde & Schwarz	FSIQ3	CCIS0088	02-25-2017	02-24-2018
DC Power Supply	Shenzhen XinNuoEr Technologies Co., Ltd.	WYK-10020K	CCIS0201	10-31-2016	10-30-2017
Temperature Humidity Chamber	Fo Shan HengPu Electronics Co., Ltd.	HPGDS-500	CCIS0240	11-18-2016	11-27-2017

6. System test configuration

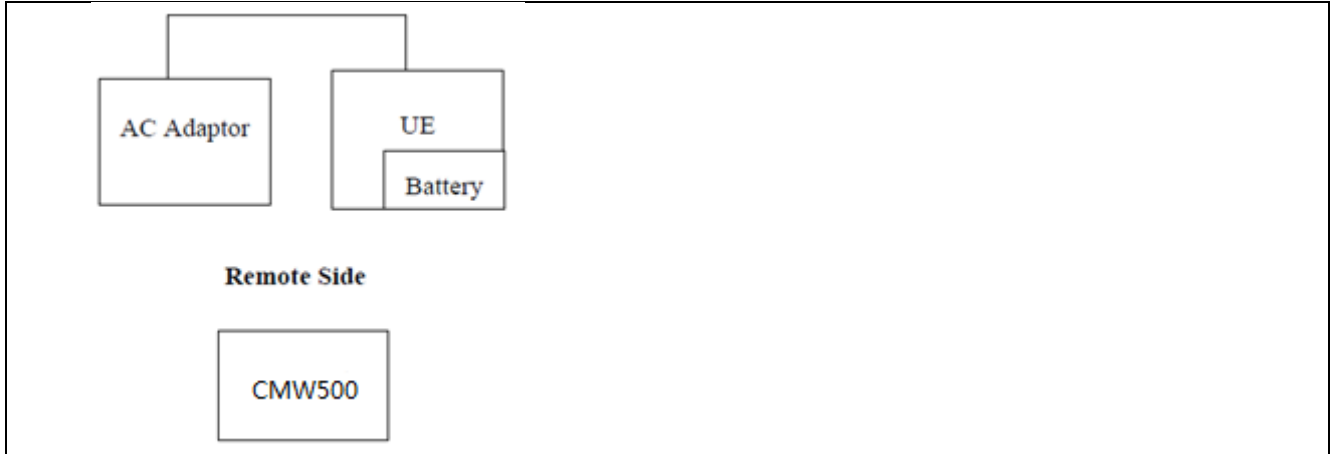
6.1 EUT Configuration

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



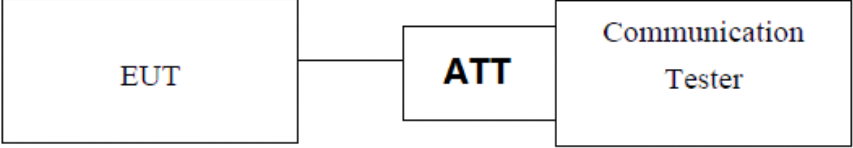
6.4 Description of Test Modes

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 5) with power adaptor, earphone and Data cable. The worst-case H mode for LTE Band 5.

6.5 Conducted Output Power

Test Requirement:	FCC Part 22.913 (a)
Test Method:	FCC part2.1046
Limit:	LTE Band 5: 7W
Test setup:	 <i>Note: Measurement setup for testing on Antenna connector</i>
Test Procedure:	The transmitter output was connected to a calibrated attenuator, the other end of which was connected to the CMW500. 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

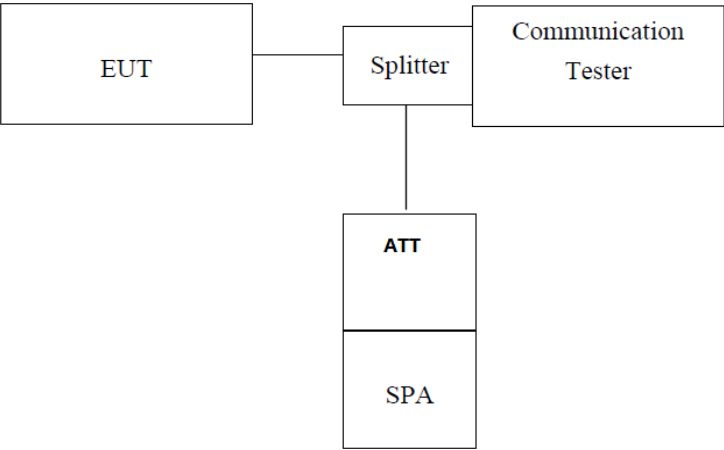
Measurement Data:

LTE Band 5 part

LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					20407	20525	20643
					824.7MHz	836.5MHz	848.3MHz
5	1.4	QPSK	1	0	22.69	22.62	22.66
			1	2	22.67	22.63	22.60
			1	5	22.66	22.63	22.64
			3	0	22.77	22.69	22.79
			3	1	22.75	22.68	22.73
			3	2	22.76	22.73	22.73
			6	0	21.71	21.82	21.81
		16QAM	1	0	21.89	21.92	21.75
			1	2	21.90	21.88	21.67
			1	5	21.85	21.83	21.71
			3	0	21.87	21.74	21.69
			3	1	21.80	21.86	21.81
			3	2	21.76	21.83	21.80
			6	0	20.73	20.76	20.82
LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					20415	20525	20635
					825.5MHz	836.5MHz	847.5MHz
5	3	QPSK	1	0	22.61	22.63	22.67
			1	7	22.65	22.68	22.71
			1	14	22.57	22.64	22.64
			8	0	21.76	21.78	21.83
			8	4	21.73	21.75	21.82
			8	7	21.69	21.76	21.83
			15	0	21.74	21.77	21.84
		16QAM	1	0	21.89	21.81	21.89
			1	7	21.86	21.80	21.95
			1	14	21.76	21.74	21.82
			8	0	20.70	20.77	20.90
			8	4	20.69	20.79	20.86
			8	7	20.65	20.75	20.82
			15	0	20.63	20.68	20.84
LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					20425	20525	20625
					826.5MHz	836.5MHz	846.5MHz
5	5	QPSK	1	0	22.83	22.78	22.74
			1	12	22.73	22.74	22.74
			1	24	22.71	22.64	22.68
			12	0	21.84	21.89	21.85
			12	6	21.77	21.90	21.85
			12	11	21.80	21.89	21.81
			25	0	21.76	21.80	21.80
		16QAM	1	0	21.89	21.93	21.85
			1	12	21.91	21.94	21.85
			1	24	21.77	21.69	21.82
			12	0	20.83	20.79	20.83
			12	6	20.78	20.87	20.86
			12	11	20.78	20.80	20.82
			25	0	20.75	20.79	20.74

LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					20450	20525	20600
					829MHz	836.5MHz	844MHz
5	10	QPSK	1	0	22.74	22.80	22.78
			1	24	22.67	22.72	22.73
			1	49	22.71	22.73	22.76
			25	0	21.73	21.81	21.85
			25	12	21.75	21.82	21.83
			25	24	21.79	21.81	21.81
			50	0	21.81	21.85	21.82
		16QAM	1	0	21.90	21.90	21.91
			1	24	21.81	21.64	21.82
			1	49	21.83	21.71	21.99
			25	0	20.77	20.87	20.84
			25	12	20.80	20.81	20.87
			25	24	20.77	20.83	20.79
			50	0	20.75	20.82	20.80

6.6 Peak-to-Average Ratio

Test Requirement:	Part 24.232 (d)
Limit:	The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.
Test setup:	 <i>Note: Measurement setup for testing on Antenna connector</i>
Test Procedure:	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:

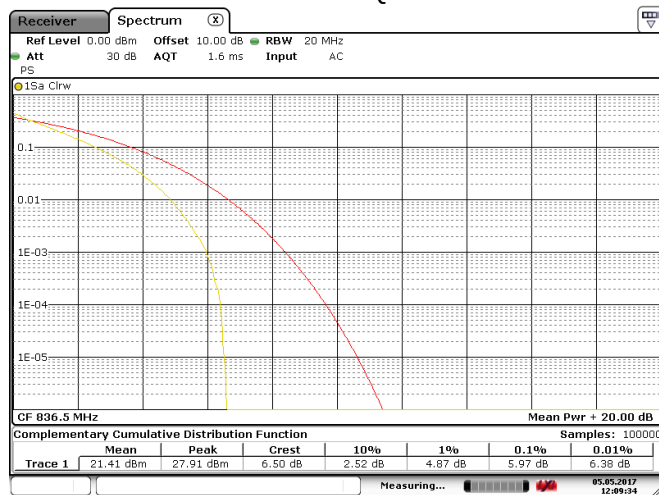
BW(MHz)	Modulation	RB Size	RB Offset	PAPR
LTE Band 5 (Middle Channel)				
10MHz	QPSK	100	0	5.97
	16QAM	100	0	6.70

Test plots as below:

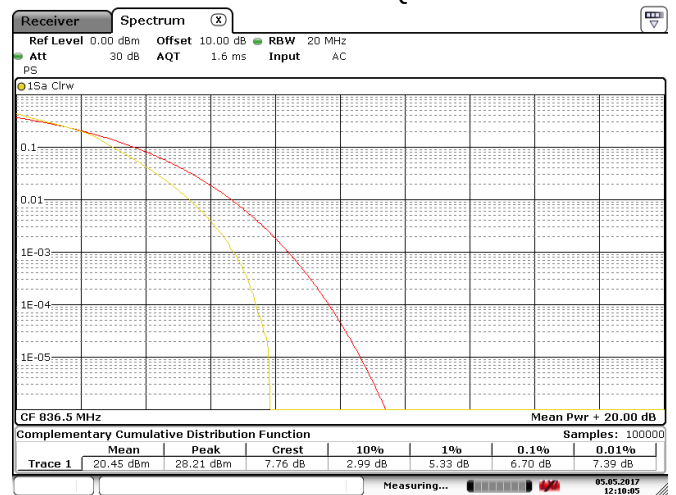
LTE Band 5 Middle channel

Modulation: QPSK

Modulation:16QAM

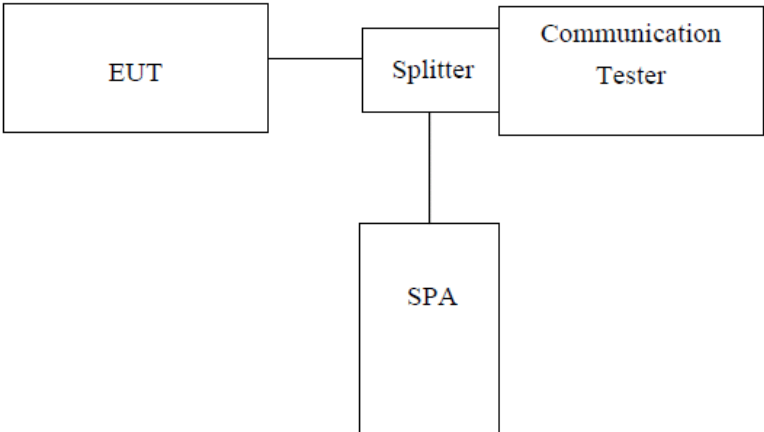


Date: 5.MAY.2017 12:09:34



Date: 5.MAY.2017 12:10:05

6.7 Occupy Bandwidth

Test Requirement:	FCC Part 22.917(b)
Test Method:	FCC part2.1049
Test setup:	 <i>Note: Measurement setup for testing on Antenna connector</i>
Test Procedure:	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:

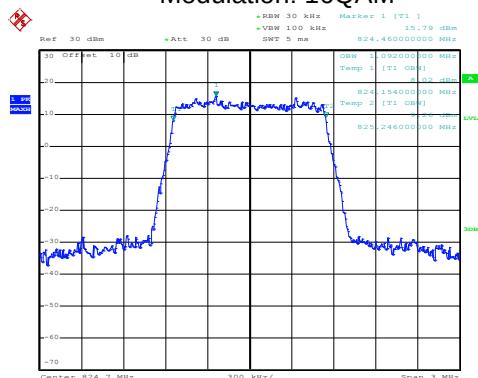
LTE Band 5 part:

EUT Mode	Channel	Frequency (MHz)	Modulation	99% OBW (kHz)	-26dB EBW (kHz)
1.4MHz	20407	824.70	16QAM	1092	1260
			QPSK	1104	1278
	20525	836.50	16QAM	1092	1260
			QPSK	1098	1278
	20643	848.30	16QAM	1098	1272
			QPSK	1104	1284
3MHz	20415	825.50	16QAM	2724	3000
			QPSK	2736	3048
	20525	836.50	16QAM	2712	3000
			QPSK	2736	3036
	20635	847.50	16QAM	2700	2988
			QPSK	2748	3036
5MHz	20425	826.50	16QAM	4500	4940
			QPSK	4520	4980
	20525	836.50	16QAM	4520	4940
			QPSK	4540	5020
	20625	846.50	16QAM	4500	4980
			QPSK	4520	4980
10MHz	20450	829.00	16QAM	9120	10120
			QPSK	9120	10240
	20525	836.50	16QAM	9120	9960
			QPSK	9120	10320
	20600	844.00	16QAM	9080	10120
			QPSK	9080	10120

Test plot as follows:
LTE Band 5 part

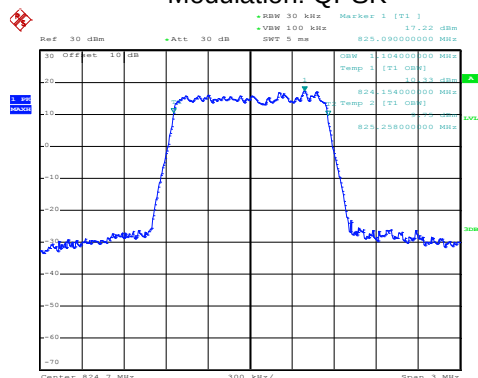
Test Item:99% Occupy bandwidth
BW: 1.4MHz

Modulation: 16QAM



Date: 4.MAY.2017 10:54:16

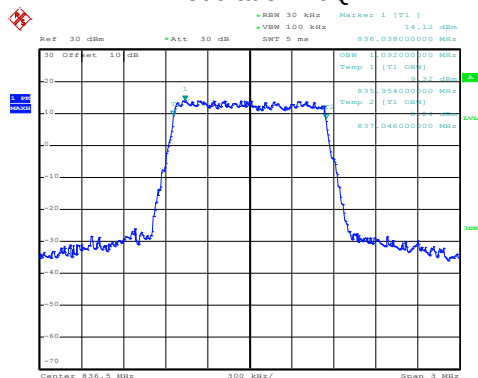
Modulation: QPSK



Date: 4.MAY.2017 10:53:58

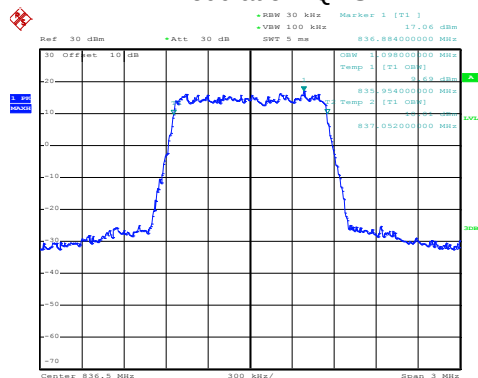
Lowest channel

Modulation:16QAM



Date: 4.MAY.2017 10:56:03

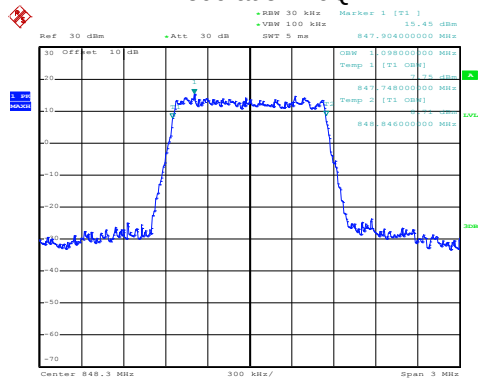
Modulation: QPSK



Date: 4.MAY.2017 10:55:54

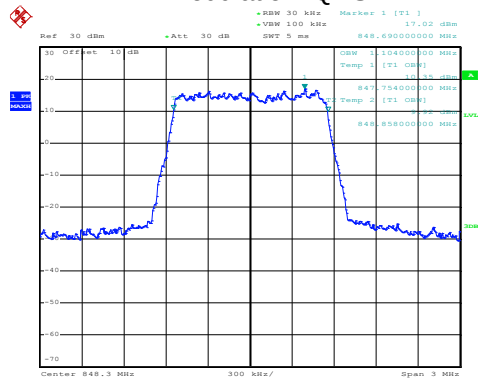
Middle channel

Modulation:16QAM



Date: 4.MAY.2017 10:57:26

Modulation: QPSK

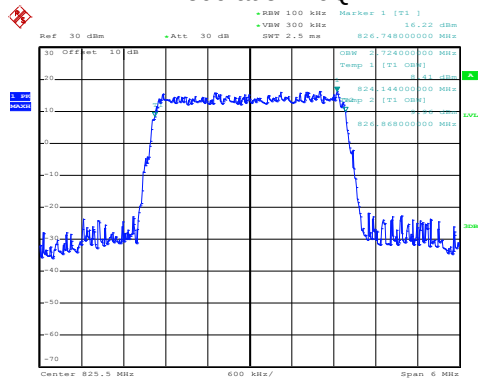


Date: 4.MAY.2017 10:57:18

Highest channel

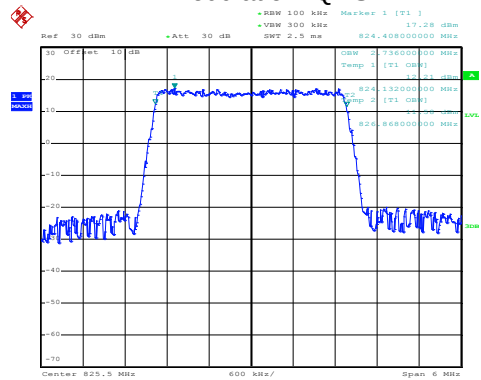
Test Item: 99% Occupancy bandwidth
BW: 3MHz

Modulation: 16QAM



Date: 4.MAY.2017 11:01:41

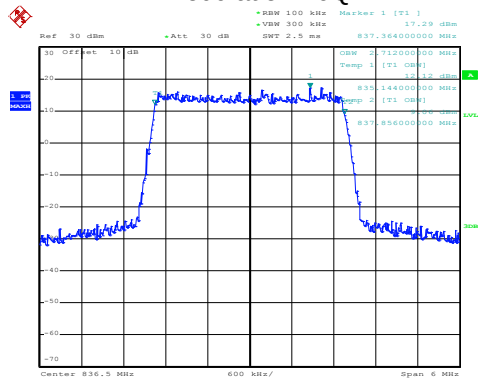
Modulation: QPSK



Date: 4.MAY.2017 11:01:32

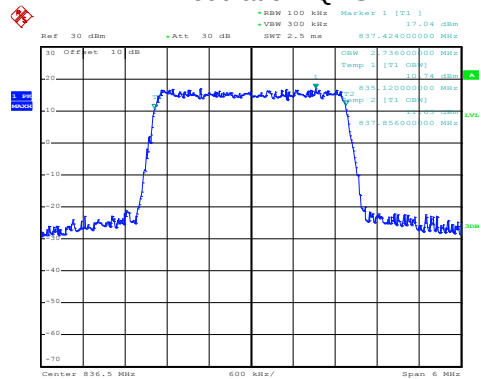
Lowest channel

Modulation: 16QAM



Date: 4.MAY.2017 11:02:47

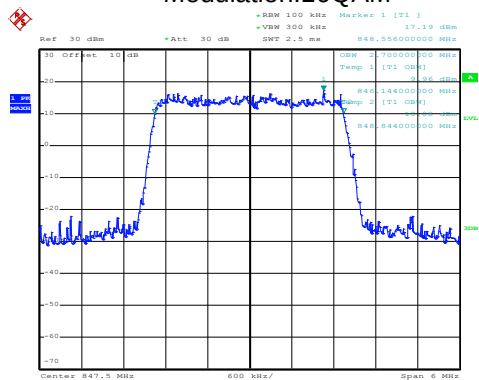
Modulation: QPSK



Date: 4.MAY.2017 11:02:40

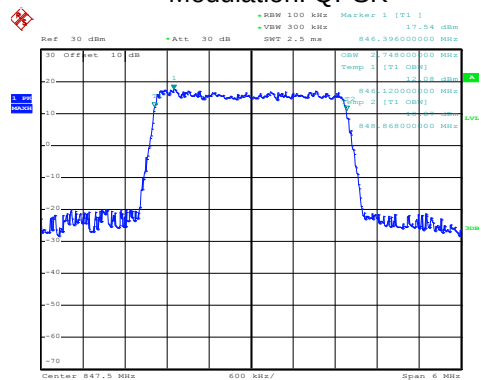
Middle channel

Modulation: 16QAM



Date: 4.MAY.2017 11:03:38

Modulation: QPSK

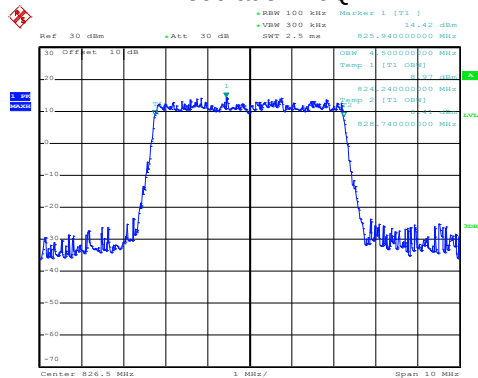


Date: 4.MAY.2017 11:03:32

Highest channel

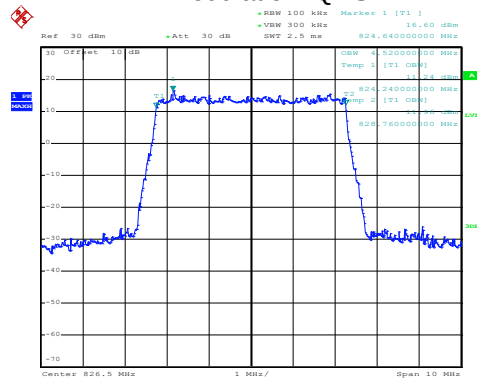
Test Item: 99% Occupancy bandwidth
BW: 5MHz

Modulation: 16QAM



Date: 4.MAY.2017 11:05:06

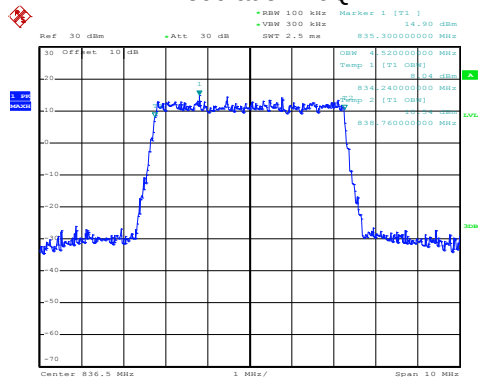
Modulation: QPSK



Date: 4.MAY.2017 11:04:57

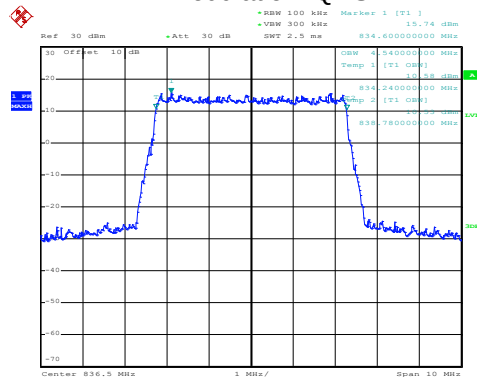
Lowest channel

Modulation: 16QAM



Date: 4.MAY.2017 11:05:58

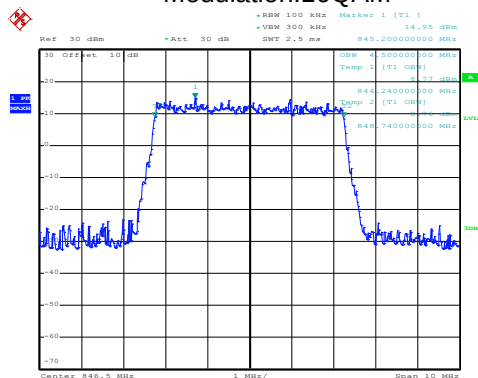
Modulation: QPSK



Date: 4.MAY.2017 11:05:52

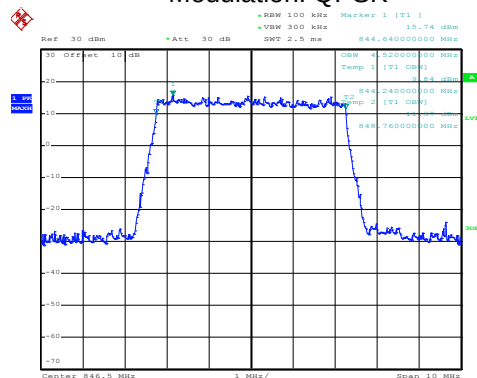
Middle channel

Modulation: 16QAM



Date: 4.MAY.2017 11:07:03

Modulation: QPSK

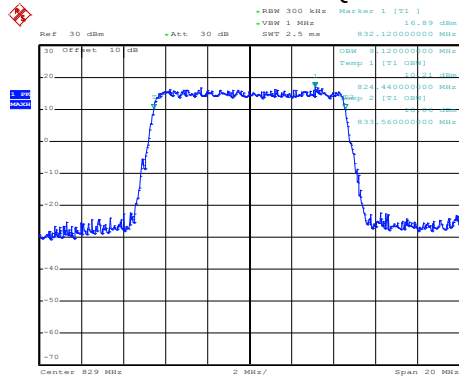


Date: 4.MAY.2017 11:06:55

Highest channel

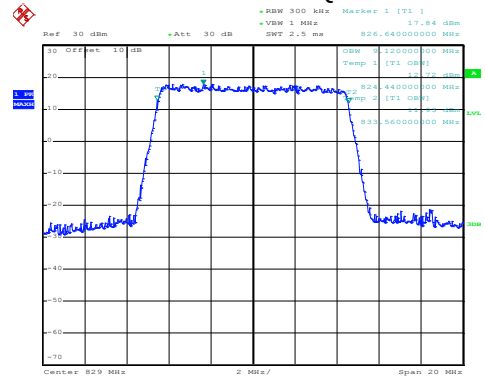
Test Item: 99% Occupancy bandwidth
BW: 10MHz

Modulation: 16QAM



Date: 4.MAY.2017 11:09:50

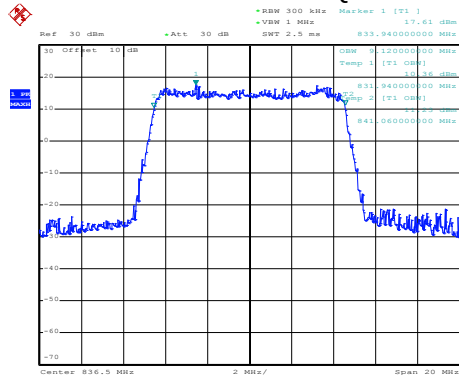
Modulation: QPSK



Date: 4.MAY.2017 11:09:39

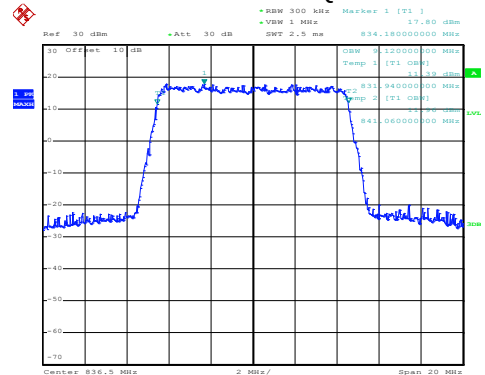
Lowest channel

Modulation: 16QAM



Date: 4.MAY.2017 11:10:53

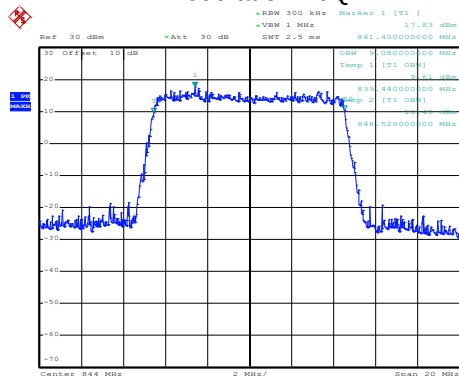
Modulation: QPSK



Date: 4.MAY.2017 11:10:43

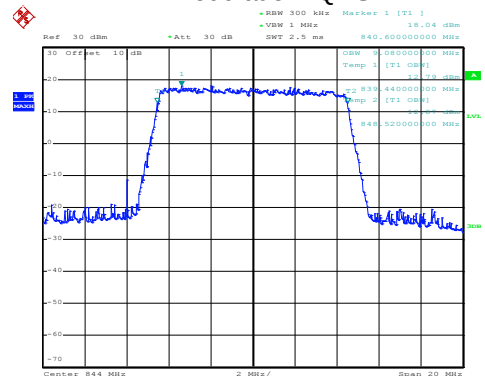
Middle channel

Modulation: 16QAM



Date: 4.MAY.2017 11:12:05

Modulation: QPSK

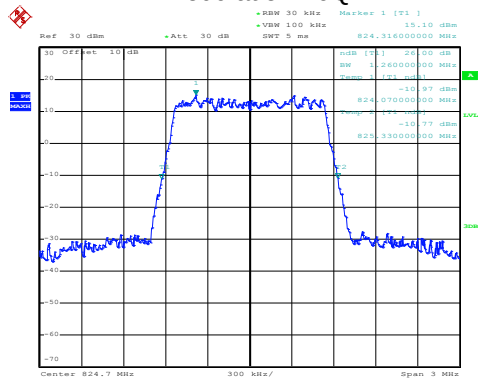


Date: 4.MAY.2017 11:11:56

Highest channel

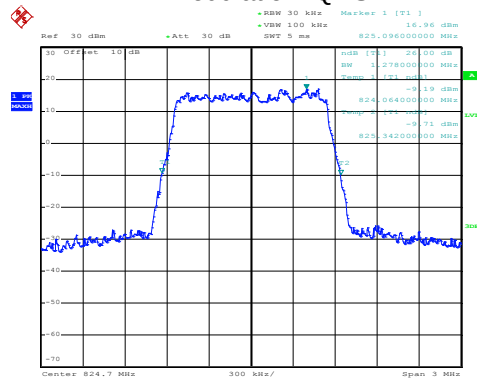
Test Item:-26dBc bandwidth
BW: 1.4MHz

Modulation:16QAM



Date: 4.MAY.2017 10:54:55

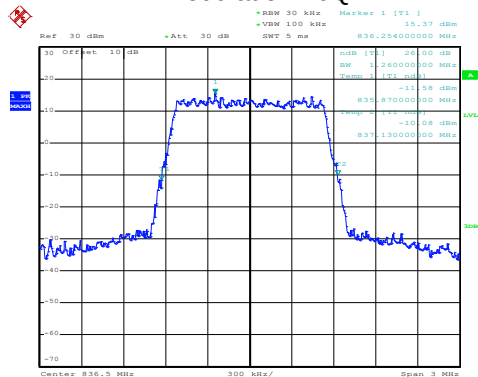
Modulation: QPSK



Date: 4.MAY.2017 10:54:46

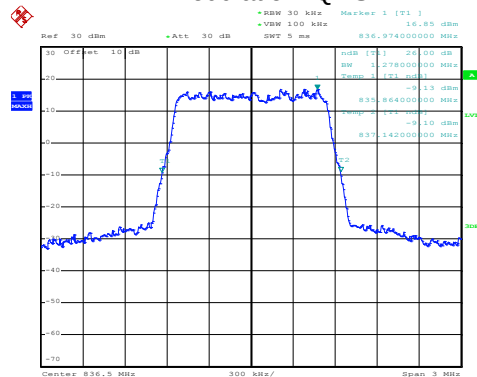
Lowest channel

Modulation:16QAM



Date: 4.MAY.2017 10:56:30

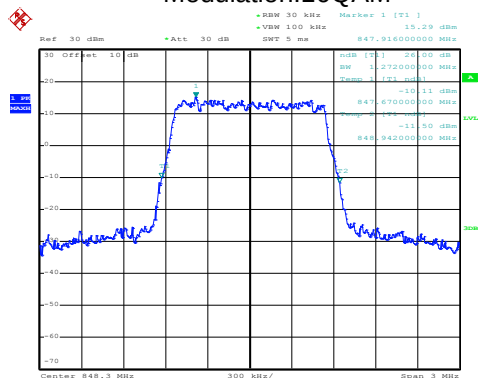
Modulation: QPSK



Date: 4.MAY.2017 10:56:20

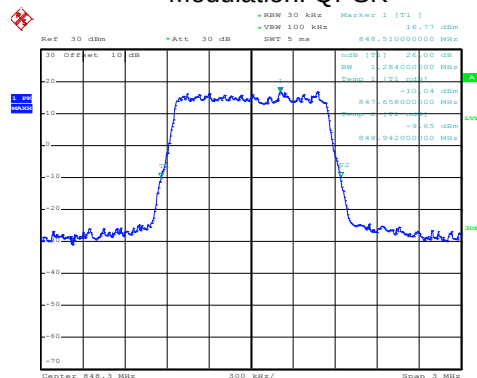
Middle channel

Modulation:16QAM



Date: 4.MAY.2017 10:57:52

Modulation: QPSK

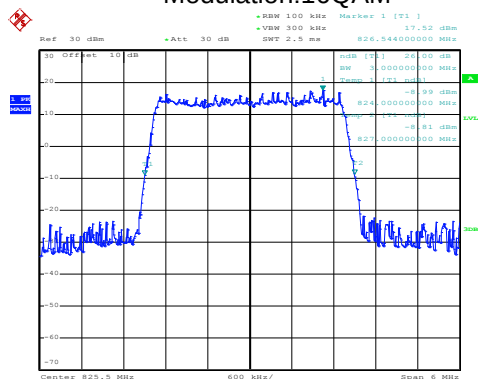


Date: 4.MAY.2017 10:57:44

Highest channel

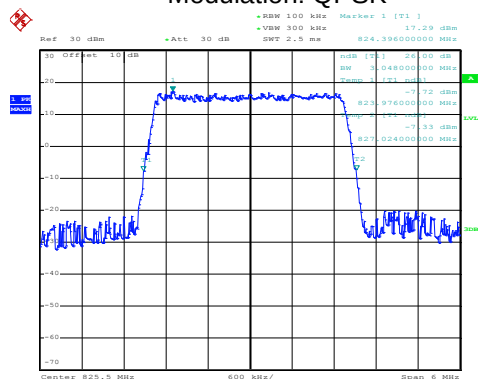
Test Item:-26dBc bandwidth
BW: 3MHz

Modulation:16QAM



Date: 4.MAY.2017 11:02:00

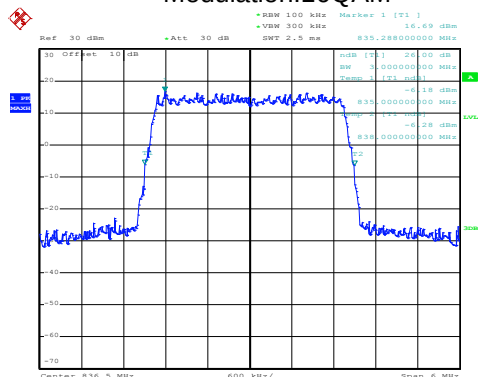
Modulation: QPSK



Date: 4.MAY.2017 11:01:53

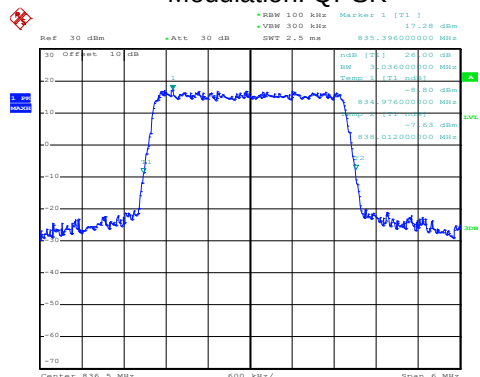
Lowest channel

Modulation:16QAM



Date: 4.MAY.2017 11:03:04

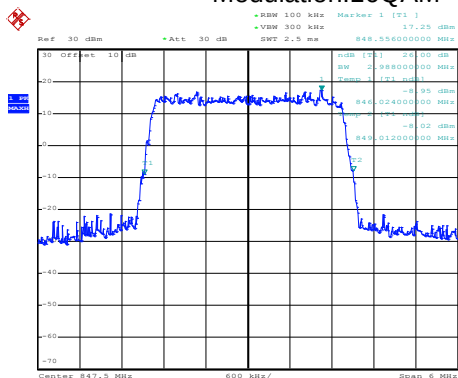
Modulation: QPSK



Date: 4.MAY.2017 11:02:58

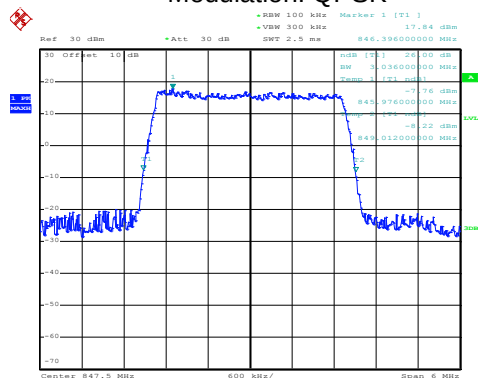
Middle channel

Modulation:16QAM



Date: 4.MAY.2017 11:03:55

Modulation: QPSK

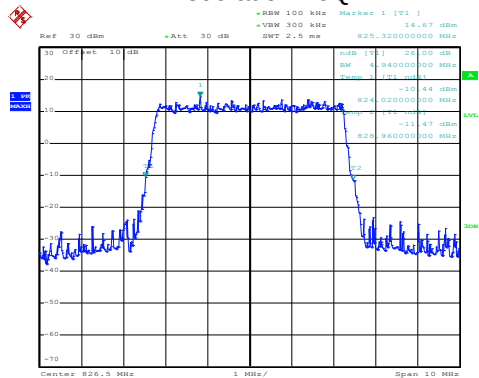


Date: 4.MAY.2017 11:03:48

Highest channel

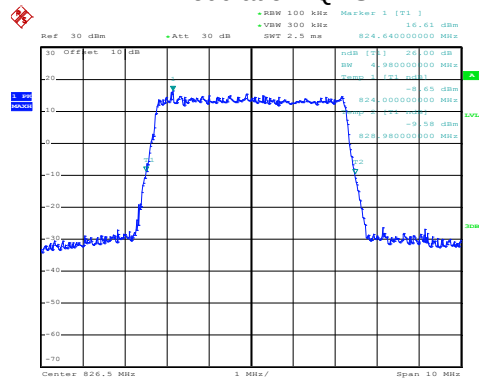
Test Item:-26dBc bandwidth
BW: 5MHz

Modulation:16QAM



Date: 4.MAY.2017 11:05:27

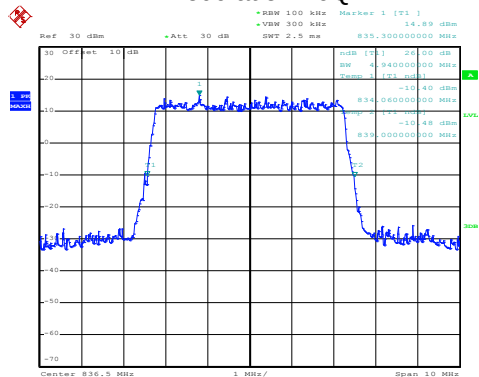
Modulation: QPSK



Date: 4.MAY.2017 11:05:21

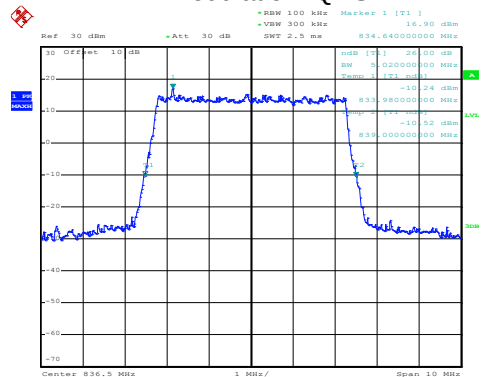
Lowest channel

Modulation:16QAM



Date: 4.MAY.2017 11:06:31

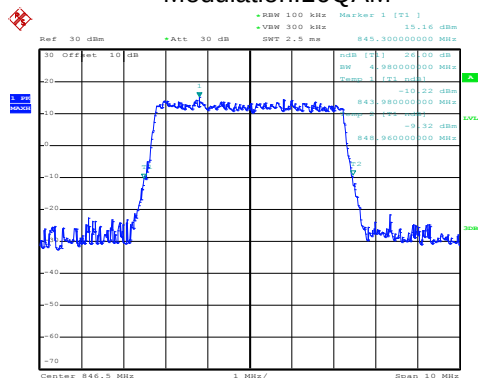
Modulation: QPSK



Date: 4.MAY.2017 11:06:22

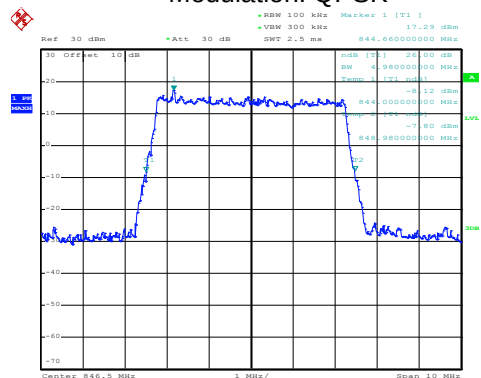
Middle channel

Modulation:16QAM



Date: 4.MAY.2017 11:07:56

Modulation: QPSK

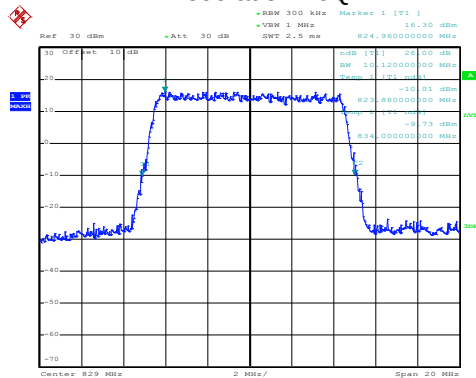


Date: 4.MAY.2017 11:07:22

Highest channel

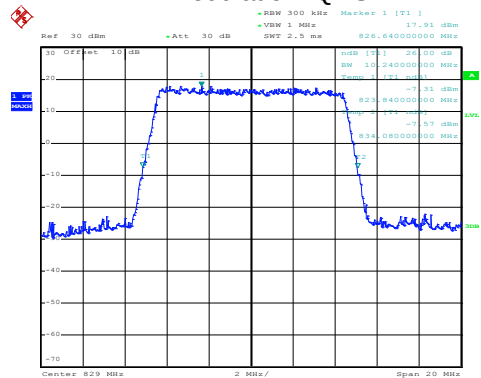
Test Item:-26dBc bandwidth
BW: 10MHz

Modulation:16QAM



Date: 4.MAY.2017 11:10:09

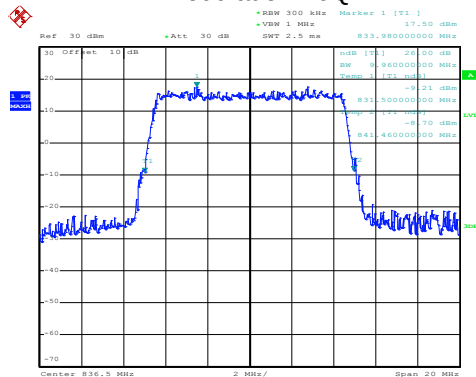
Modulation: QPSK



Date: 4.MAY.2017 11:10:03

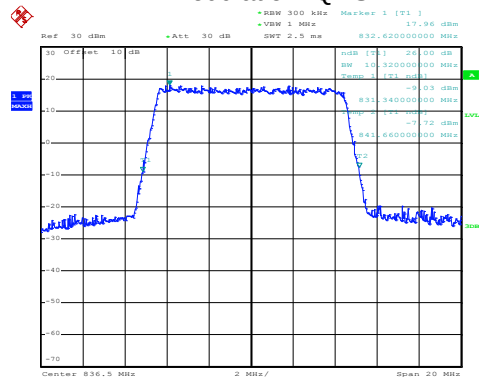
Lowest channel

Modulation:16QAM



Date: 4.MAY.2017 11:11:22

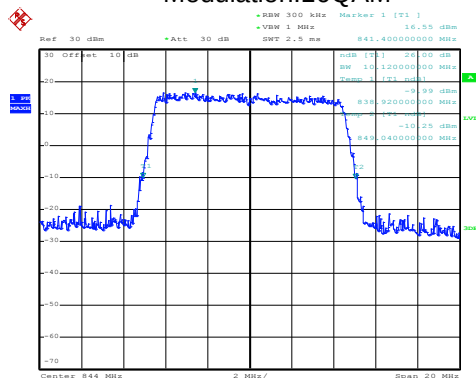
Modulation: QPSK



Date: 4.MAY.2017 11:11:10

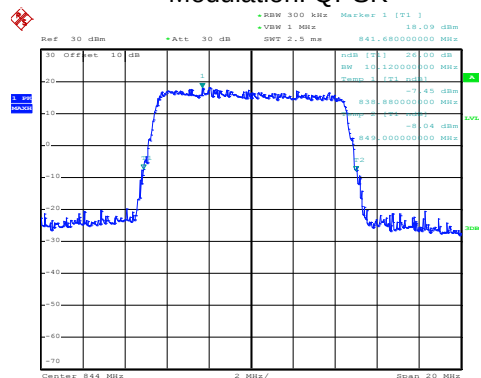
Middle channel

Modulation:16QAM



Date: 4.MAY.2017 11:12:33

Modulation: QPSK



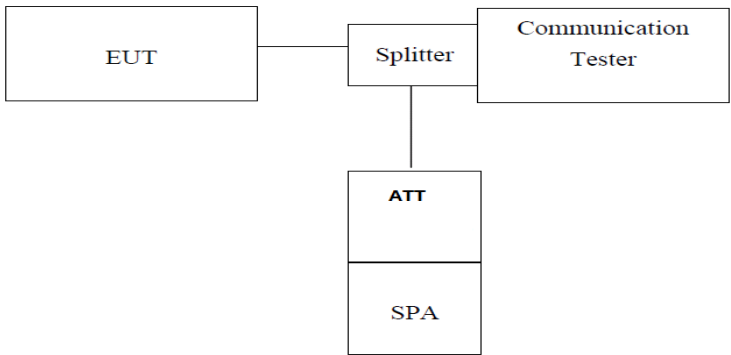
Date: 4.MAY.2017 11:12:25

Highest channel

6.8 Modulation Characteristic

According to FCC § 2.1047(d), Part 22H there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

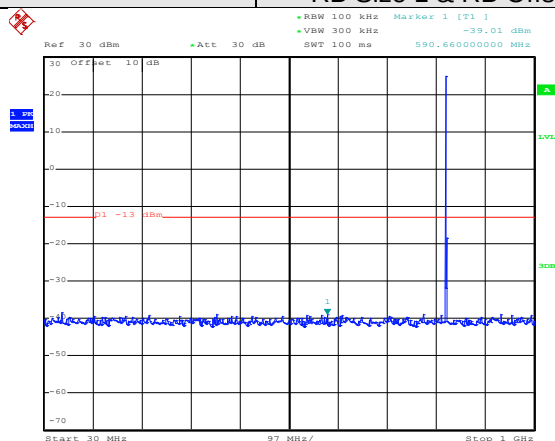
6.9 Out of band emission at antenna terminals

Test Requirement:	FCC Part 22.917(a)
Test Method:	FCC part2.1051
Limit:	Band2, Band4, Band17: 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). Band7: 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.
Test setup:	 <i>Note: Measurement setup for testing on Antenna connector</i>
Test Procedure:	1 The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. 2 The resolution bandwidth of the spectrum analyzer was set at 100 kHz when below 1GHz, 1MHz when above 1 GHz; sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic. 3 For the out of band: Set the RBW=100 kHz, VBW=300 kHz when below 1 GHz, RBW =1 MHz, VBW=3 MHz when above 1 GHz, Start=30MHz, Stop= 10th harmonic. 4 Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions.
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Test plots as follows:

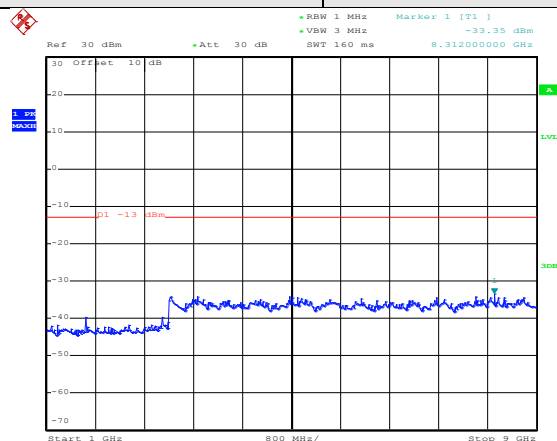
Spurious emission LTE band 5 Part: 1.4MHz

Test Mode:	LTE band 5(1.4 MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:02:23

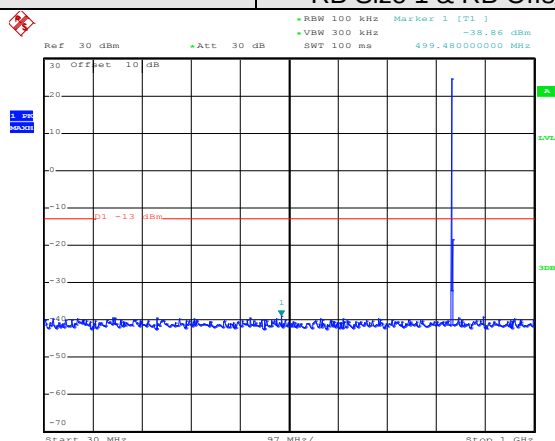
30MHz~1GHz



Date: 3.MAY.2017 16:27:20

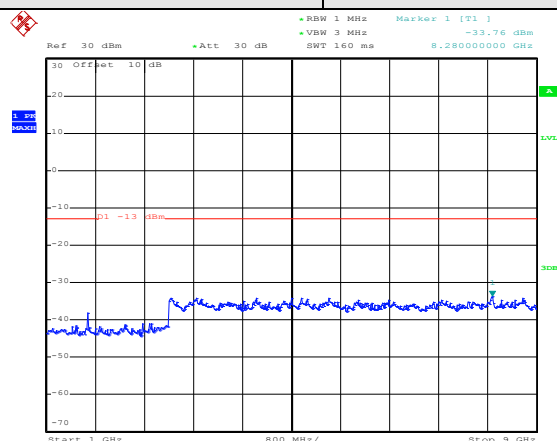
1GHz~9GHz

Test Mode:	LTE band 5(1.4 MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:05:30

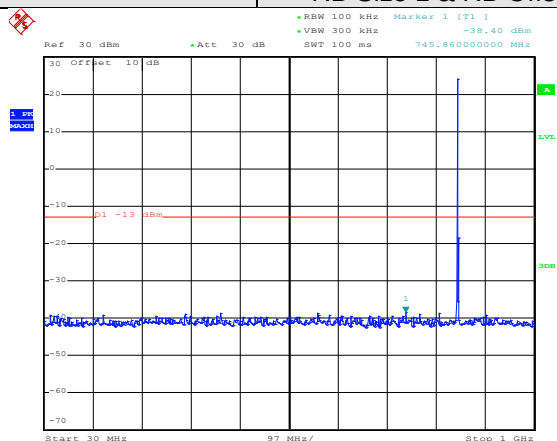
30MHz~1GHz



Date: 3.MAY.2017 16:32:39

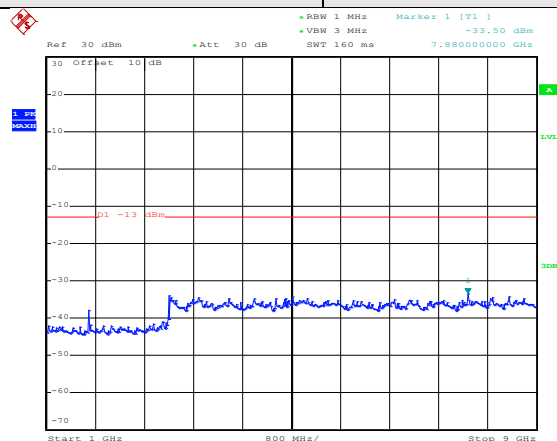
1GHz~9GHz

Test Mode:	LTE band 5(1.4 MHz16QAM) RB Size 1 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:08:44

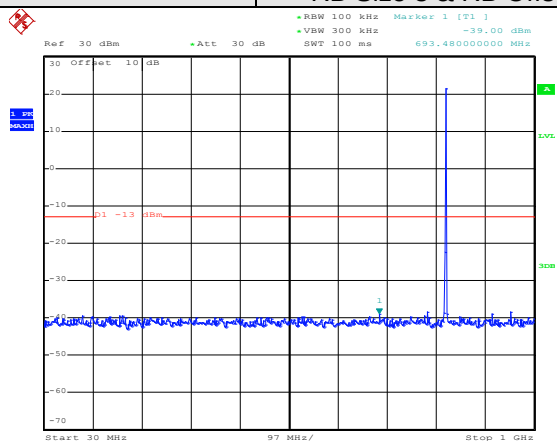
30MHz~1GHz



Date: 3.MAY.2017 16:34:41

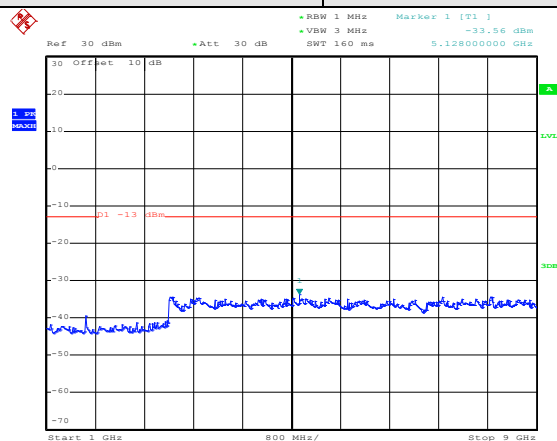
1GHz~9GHz

Test Mode:	LTE band 5(1.4 MHz 16QAM) RB Size 3 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:03:01

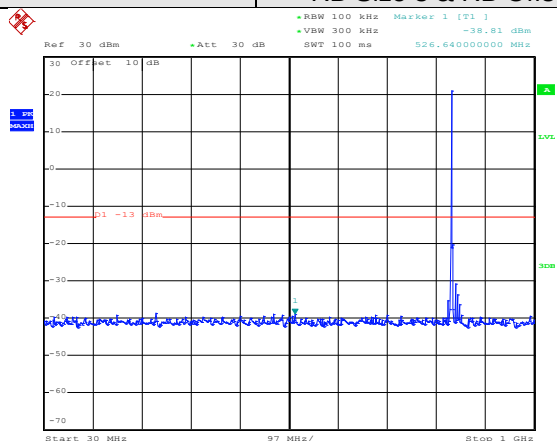
30MHz~1GHz



Date: 3.MAY.2017 16:27:44

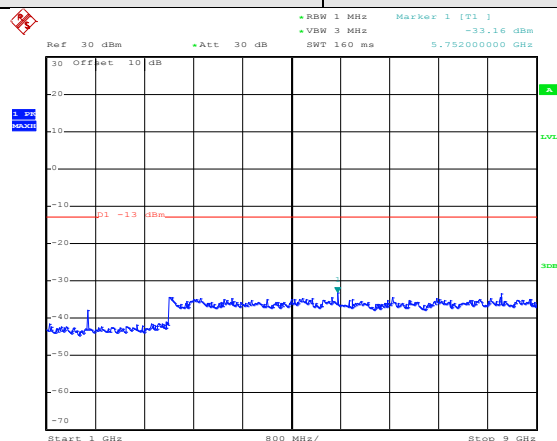
1GHz~9GHz

Test Mode:	LTE band 5(1.4 MHz 16QAM) RB Size 3 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:06:59

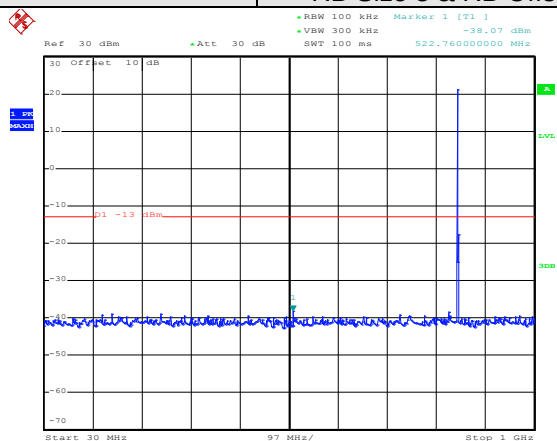
30MHz~1GHz



Date: 3.MAY.2017 16:33:07

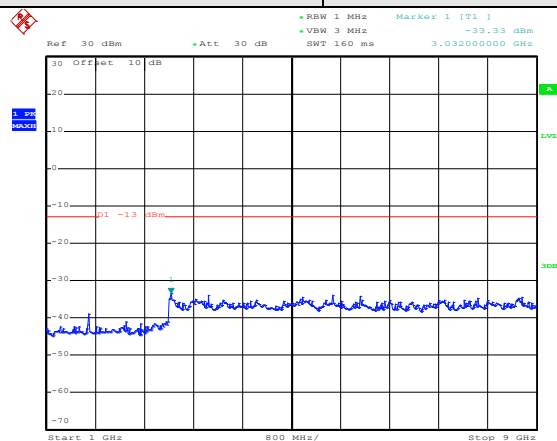
1GHz~9GHz

Test Mode:	LTE band 5(1.4 MHz16QAM) RB Size 3 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:09:20

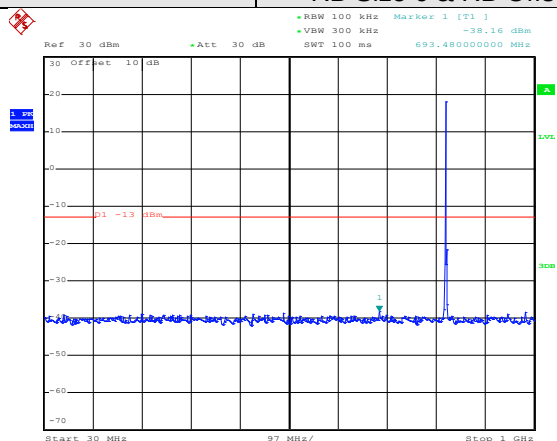
30MHz~1GHz



Date: 3.MAY.2017 16:35:10

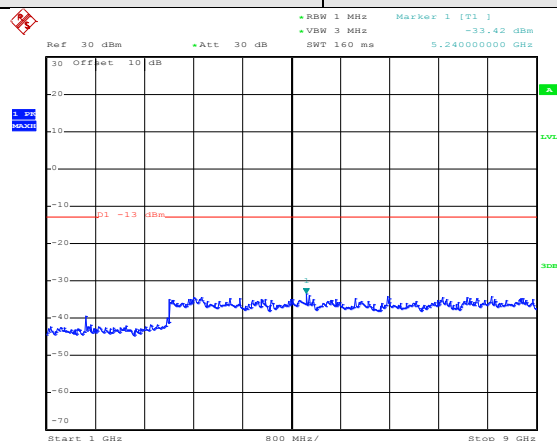
1GHz~9GHz

Test Mode:	LTE band 5(1.4 MHz 16QAM) RB Size 6 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:03:58

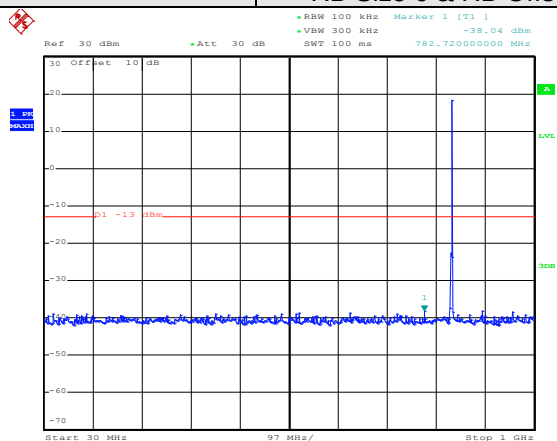
30MHz~1GHz



Date: 3.MAY.2017 16:28:10

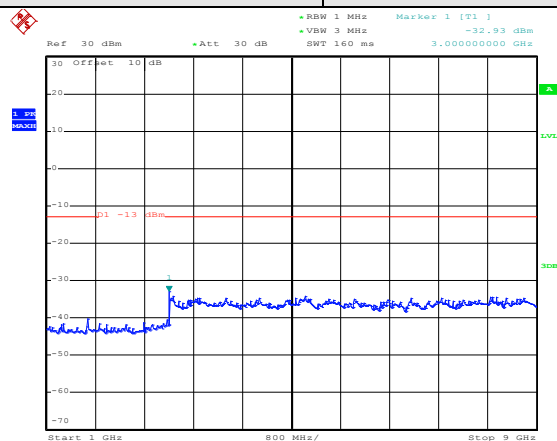
1GHz~9GHz

Test Mode:	LTE band 5(1.4 MHz 16QAM) RB Size 6 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:07:57

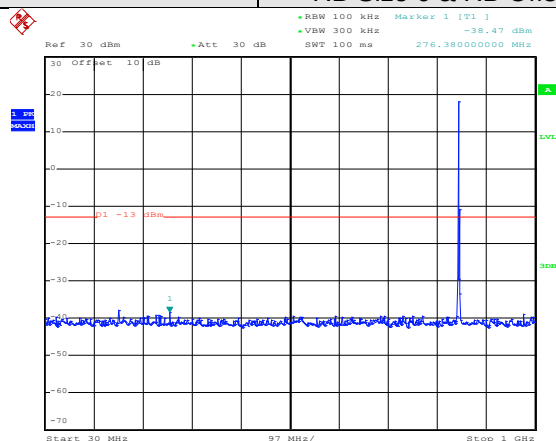
30MHz~1GHz



Date: 3.MAY.2017 16:33:39

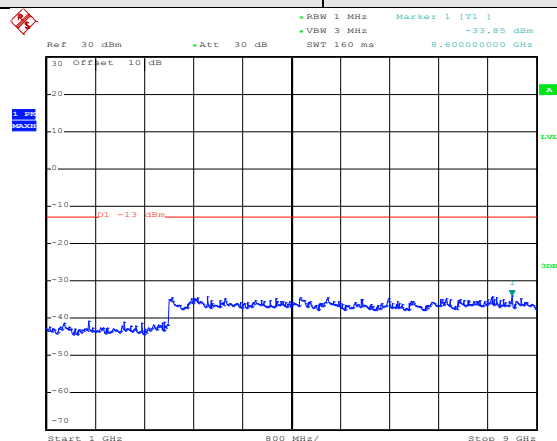
1GHz~9GHz

Test Mode:	LTE band 5(1.4 MHz 16QAM) RB Size 6 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:09:49

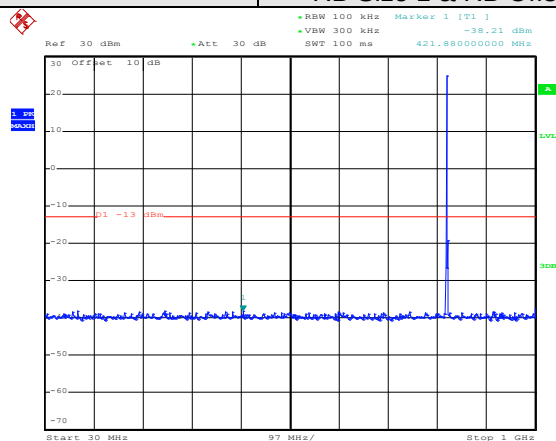
30MHz~1GHz



Date: 3.MAY.2017 16:35:35

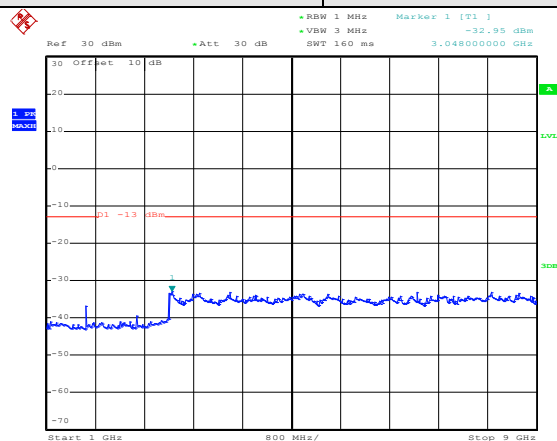
1GHz~9GHz

Test Mode:	LTE band 5(1.4 MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:02:05

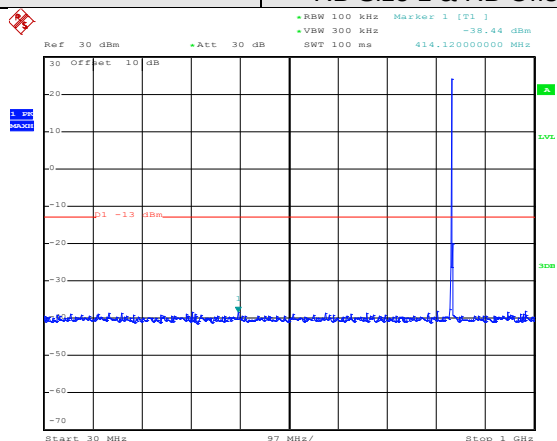
30MHz~1GHz



Date: 3.MAY.2017 16:27:00

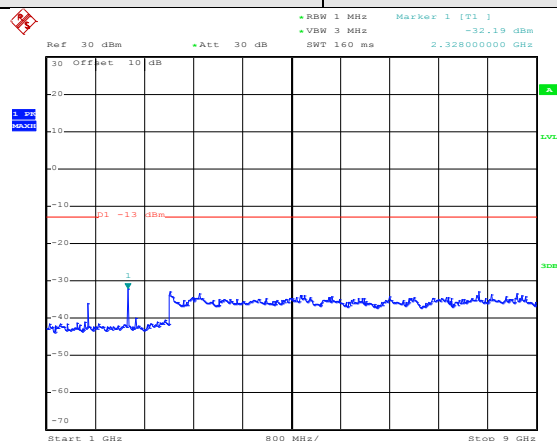
1GHz~9GHz

Test Mode:	LTE band 5(1.4 MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:04:57

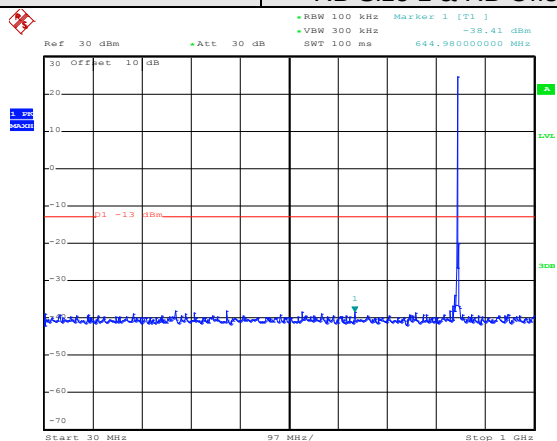
30MHz~1GHz



Date: 3.MAY.2017 16:32:26

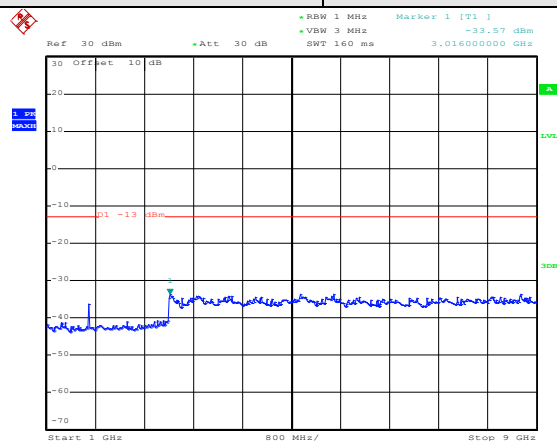
1GHz~9GHz

Test Mode:	LTE band 5(1.4 MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:08:30

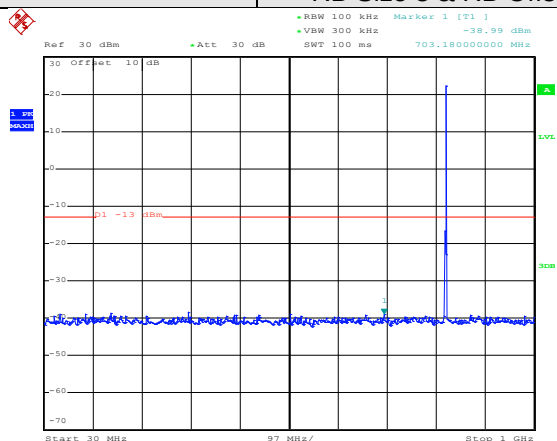
30MHz~1GHz



Date: 3.MAY.2017 16:34:30

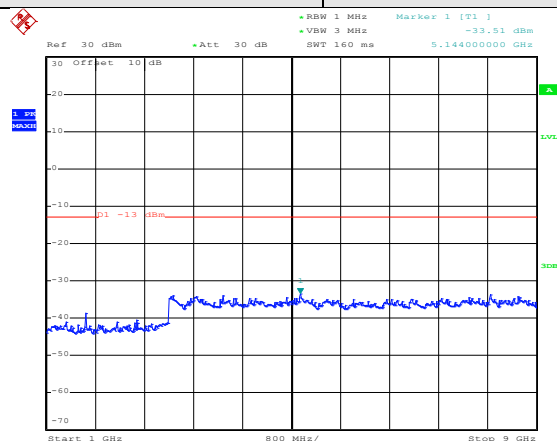
1GHz~9GHz

Test Mode:	LTE band 5(1.4 MHz QPSK) RB Size 3 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:02:43

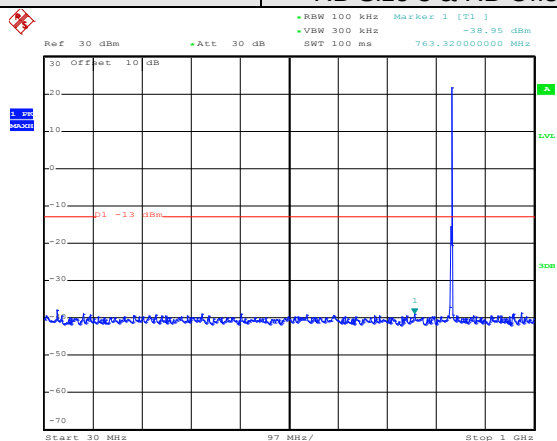
30MHz~1GHz



Date: 3.MAY.2017 16:27:33

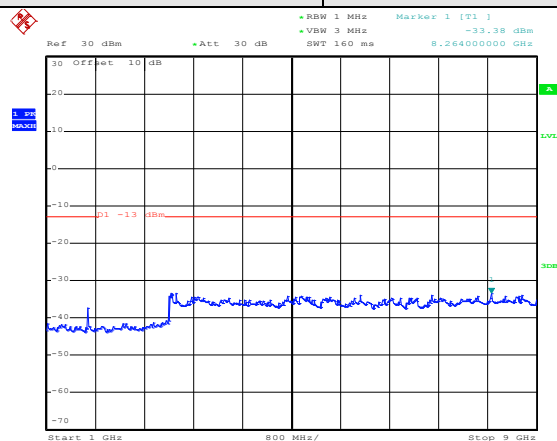
1GHz~9GHz

Test Mode:	LTE band 5(1.4 MHz QPSK) RB Size 3 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:06:42

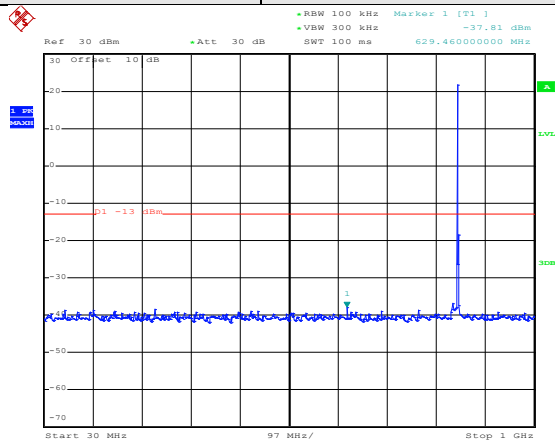
30MHz~1GHz



Date: 3.MAY.2017 16:32:56

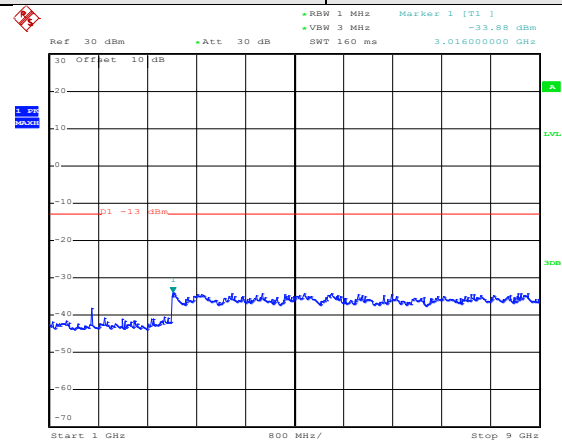
1GHz~9GHz

Test Mode:	LTE band 5(1.4 MHz QPSK) RB Size 3 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:09:08

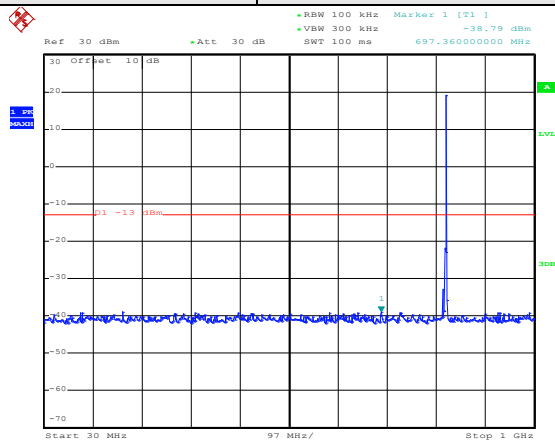
30MHz~1GHz



Date: 3.MAY.2017 16:34:58

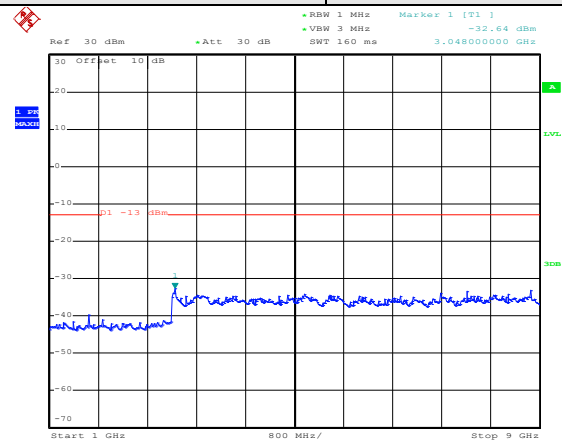
1GHz~9GHz

Test Mode:	LTE band 5(1.4 MHz QPSK) RB Size 6 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:03:29

30MHz~1GHz

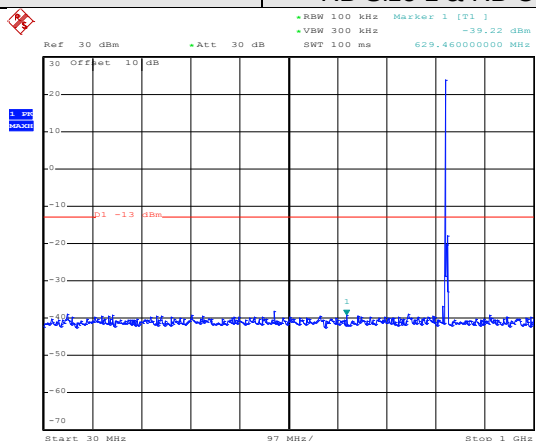


Date: 3.MAY.2017 16:28:01

1GHz~9GHz

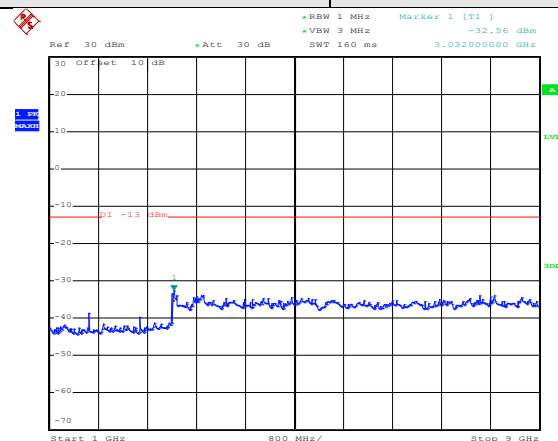
3MHz

Test Mode:	LTE band 5(3MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:16:11

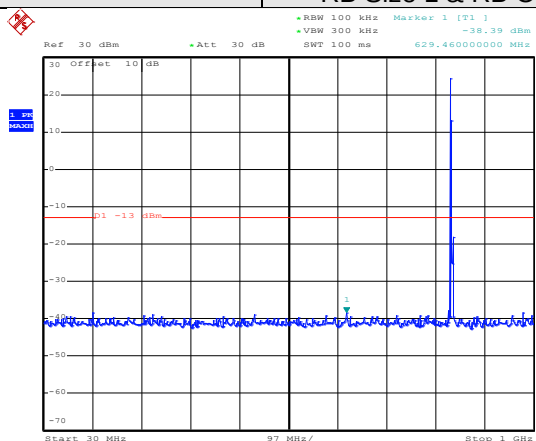
30MHz~1GHz



Date: 3.MAY.2017 16:36:56

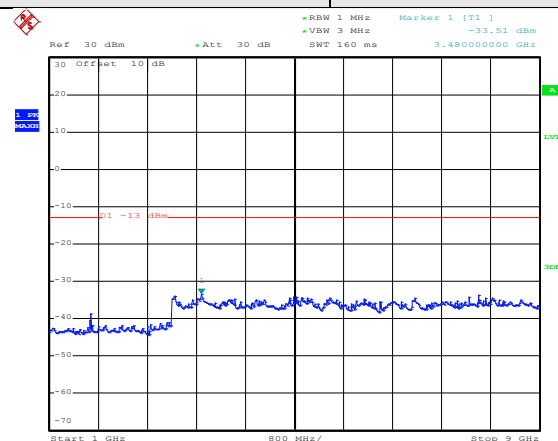
1GHz~9GHz

Test Mode:	LTE band 5(3MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:18:52

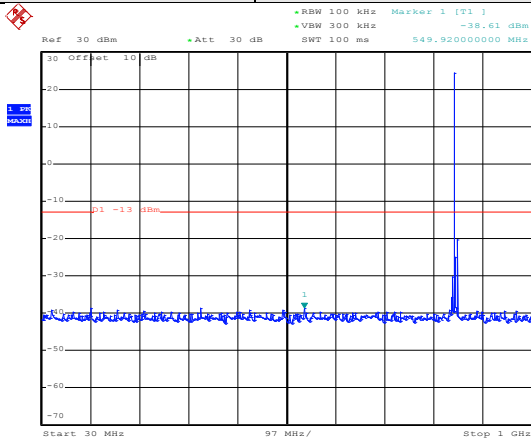
30MHz~1GHz



Date: 3.MAY.2017 16:38:44

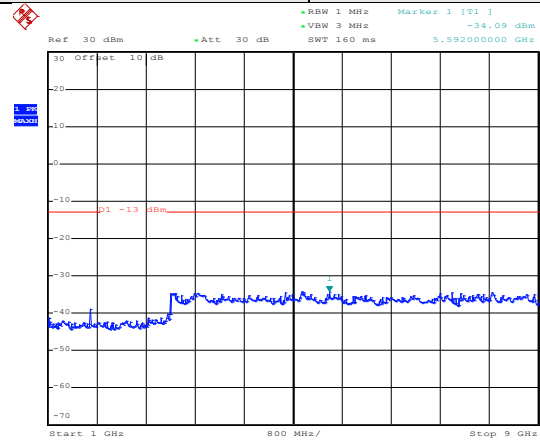
1GHz~9GHz

Test Mode:	LTE band 5(3MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:21:28

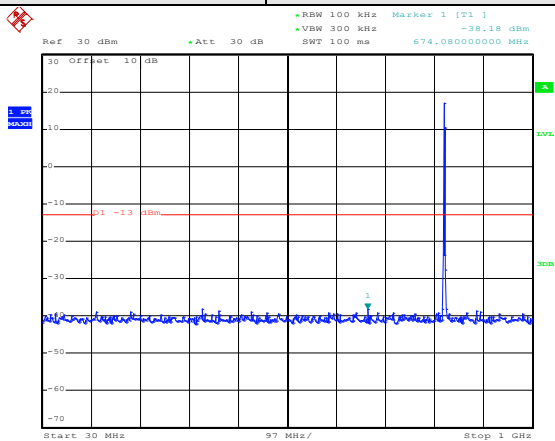
30MHz~1GHz



Date: 3.MAY.2017 16:40:33

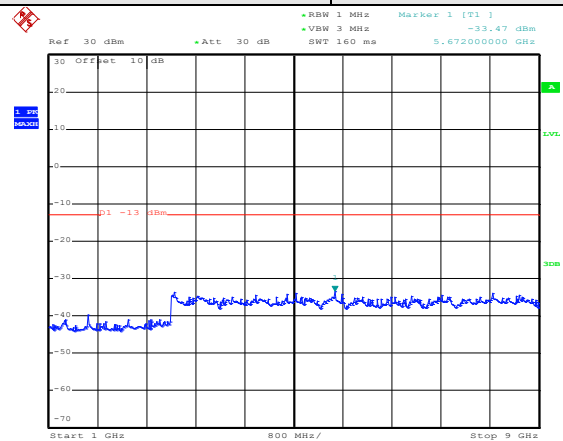
1GHz~9GHz

Test Mode:	LTE band 5(3MHz 16QAM) RB Size 8 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:17:15

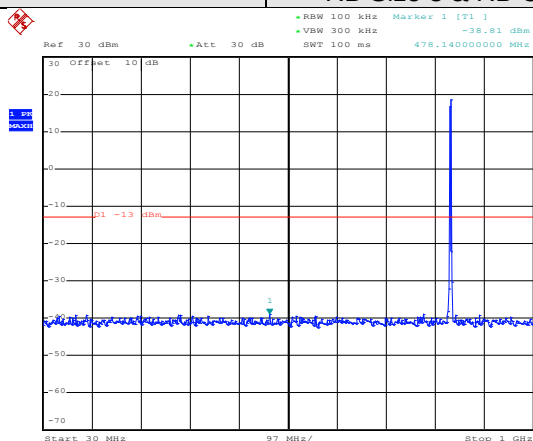
30MHz~1GHz



Date: 3.MAY.2017 16:37:27

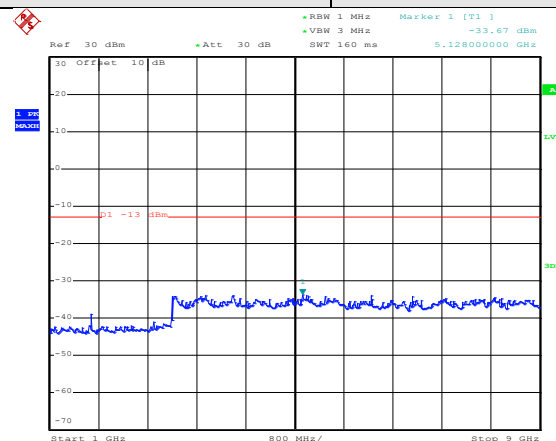
1GHz~9GHz

Test Mode:	LTE band 5(3MHz 16QAM) RB Size 8 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:19:40

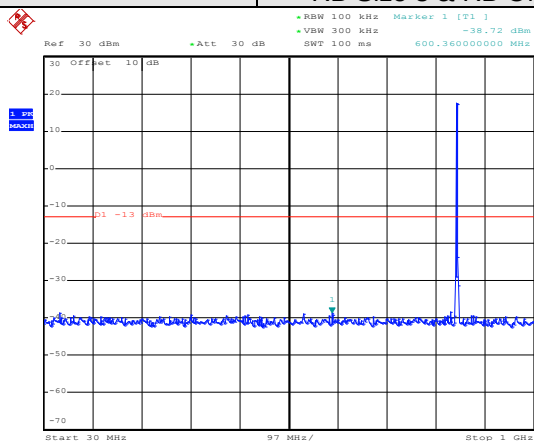
30MHz~1GHz



Date: 3.MAY.2017 16:39:15

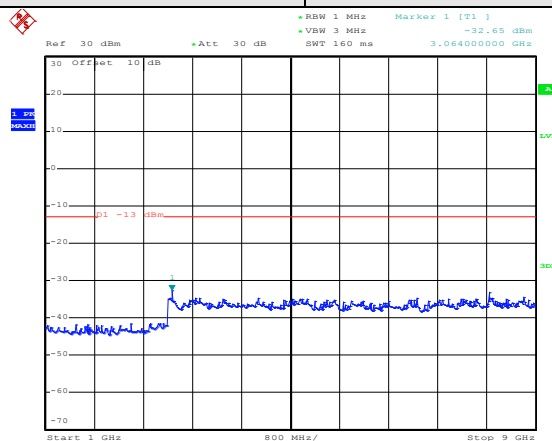
1GHz~9GHz

Test Mode:	LTE band 5(3MHz 16QAM) RB Size 8 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:22:09

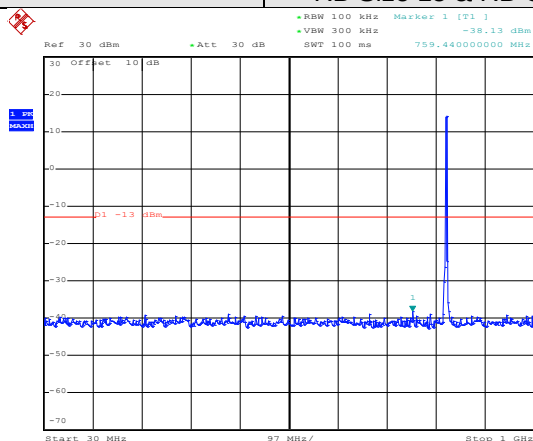
30MHz~1GHz



Date: 3.MAY.2017 16:40:56

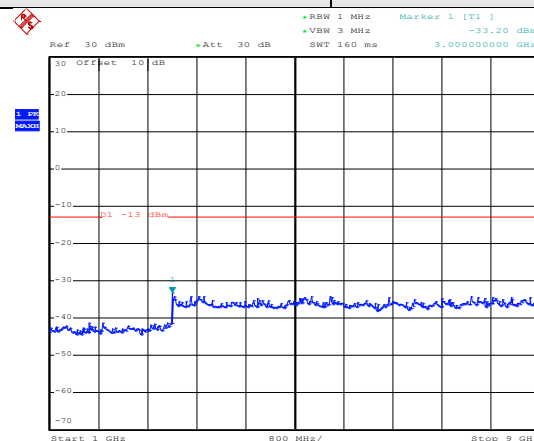
1GHz~9GHz

Test Mode:	LTE band 5(3MHz 16QAM) RB Size 15 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:17:54

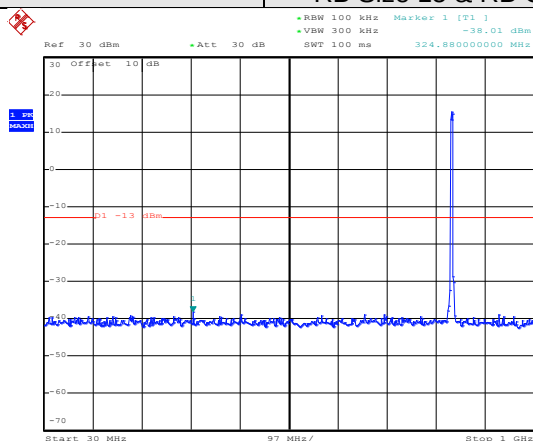
30MHz~1GHz



Date: 3.MAY.2017 16:37:51

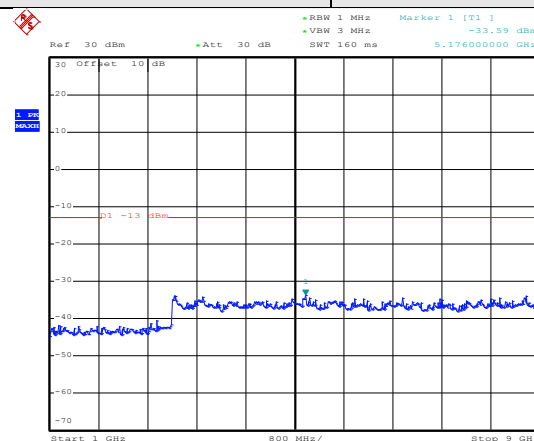
1GHz~9GHz

Test Mode:	LTE band 5(3MHz 16QAM) RB Size 15 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:20:26

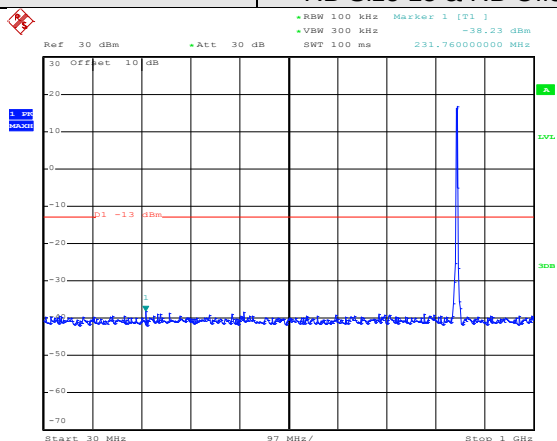
30MHz~1GHz



Date: 3.MAY.2017 16:39:40

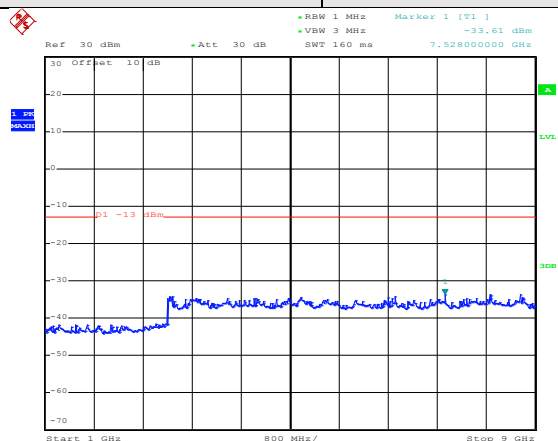
1GHz~9GHz

Test Mode:	LTE band 5(3MHz 16QAM) RB Size 15 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:24:19

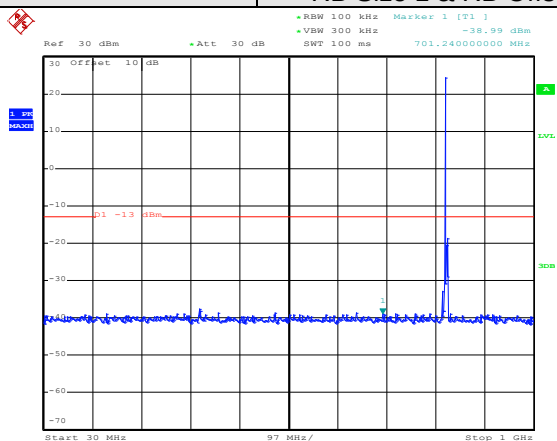
30MHz~1GHz



Date: 3.MAY.2017 16:41:19

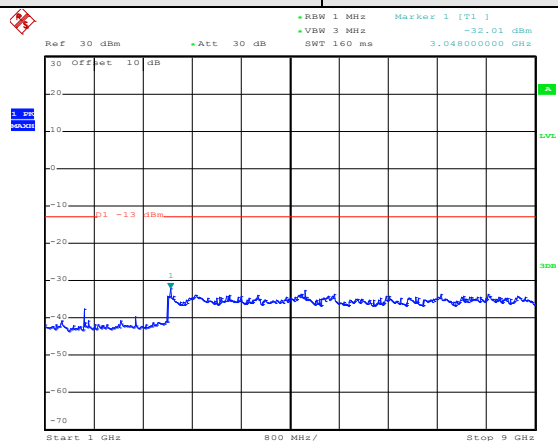
1GHz~9GHz

Test Mode:	LTE band 5(3MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:15:58

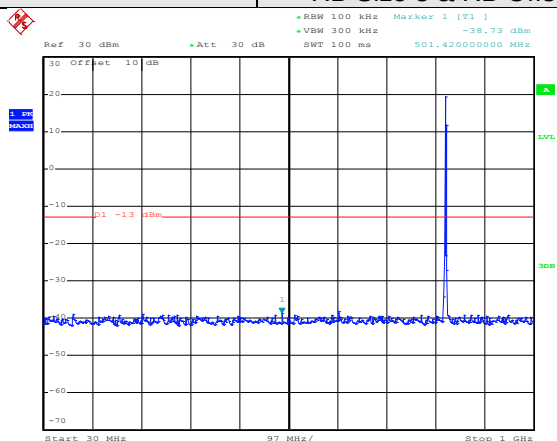
30MHz~1GHz



Date: 3.MAY.2017 16:36:43

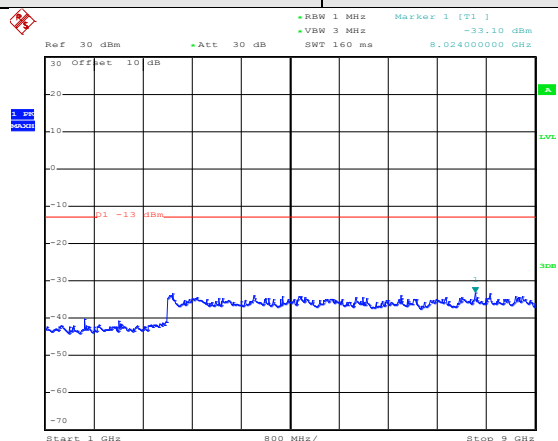
1GHz~9GHz

Test Mode:	LTE band 5(3MHz QPSK) RB Size 8 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:16:33

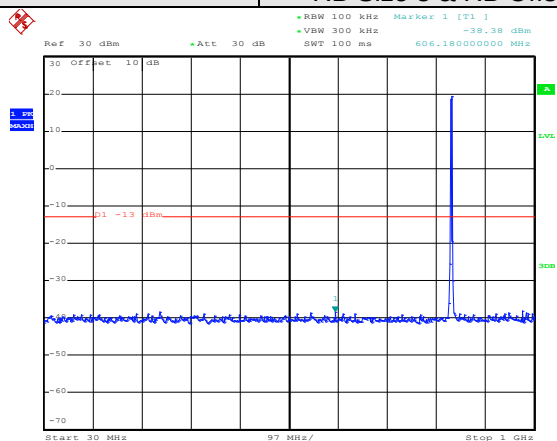
30MHz~1GHz



Date: 3.MAY.2017 16:37:14

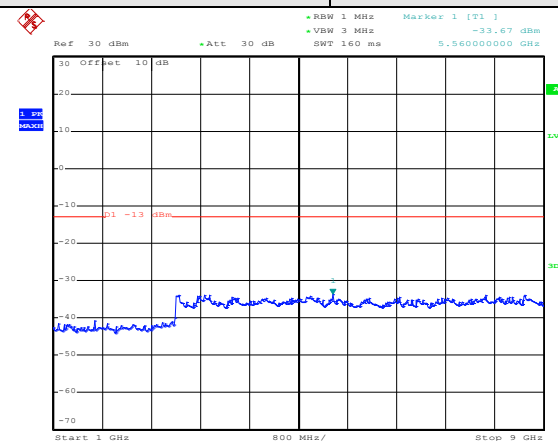
1GHz~9GHz

Test Mode:	LTE band 5(3MHz QPSK) RB Size 8 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:19:23

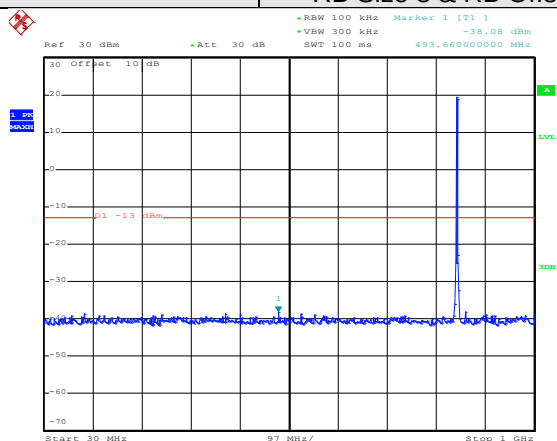
30MHz~1GHz



Date: 3.MAY.2017 16:39:03

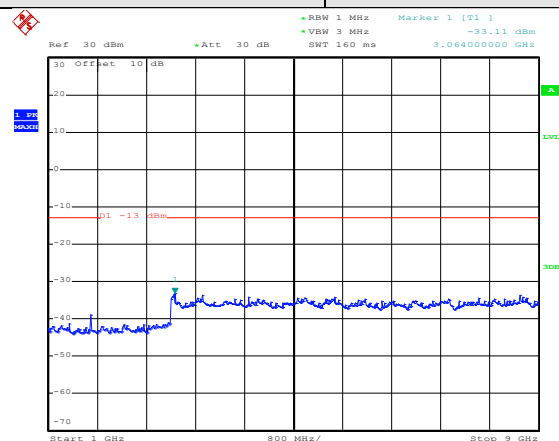
1GHz~9GHz

Test Mode:	LTE band 5(3MHz QPSK) RB Size 8 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:21:55

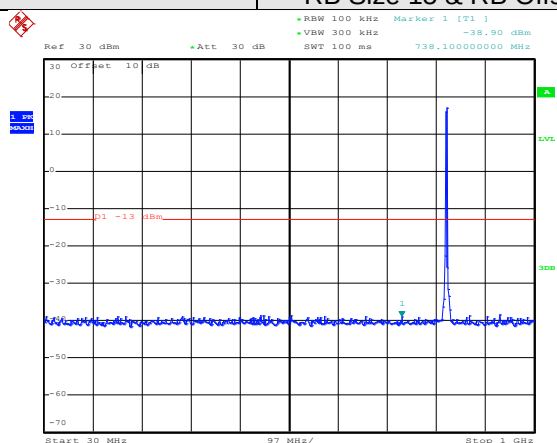
30MHz~1GHz



Date: 3.MAY.2017 16:40:47

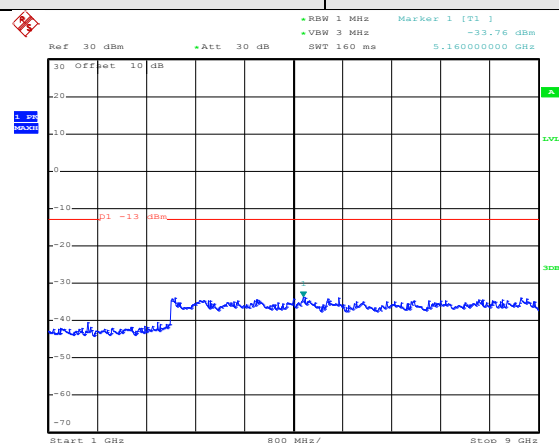
1GHz~9GHz

Test Mode:	LTE band 5(3MHz QPSK) RB Size 15 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:17:43

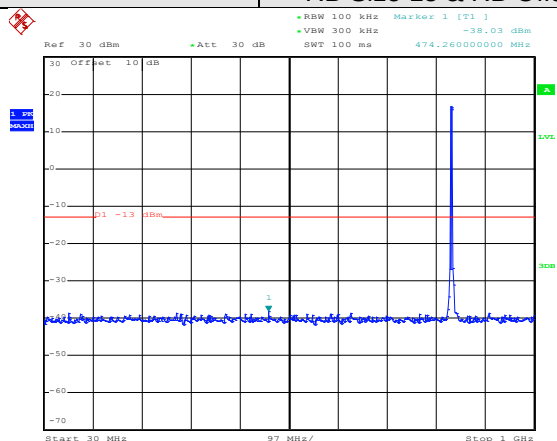
30MHz~1GHz



Date: 3.MAY.2017 16:37:40

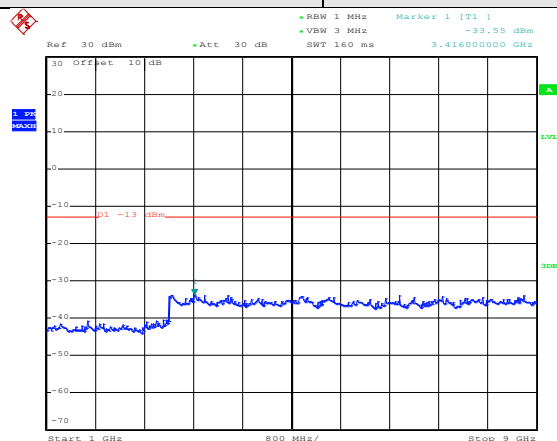
1GHz~9GHz

Test Mode:	LTE band 5(3MHz QPSK) RB Size 15 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:20:12

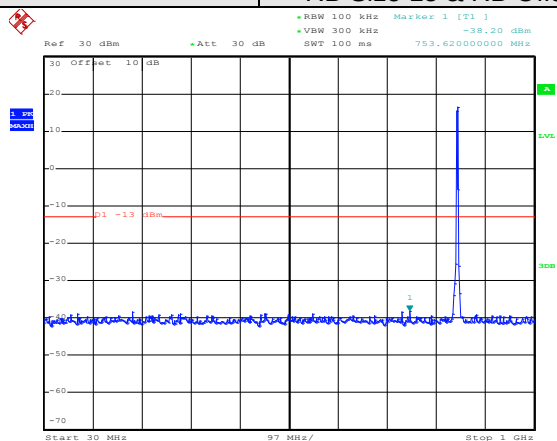
30MHz~1GHz



Date: 3.MAY.2017 16:39:29

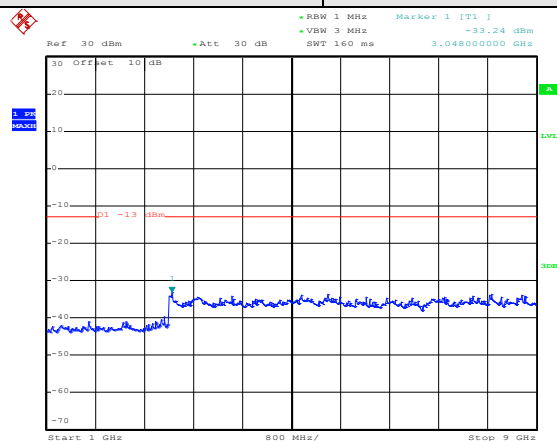
1GHz~9GHz

Test Mode:	LTE band 5(3MHz QPSK) RB Size 15 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:23:19

30MHz~1GHz

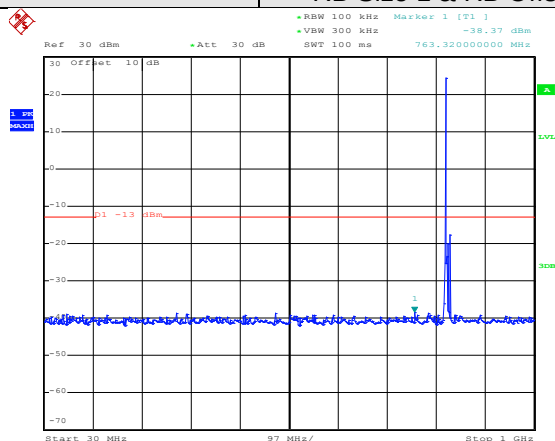


Date: 3.MAY.2017 16:41:08

1GHz~9GHz

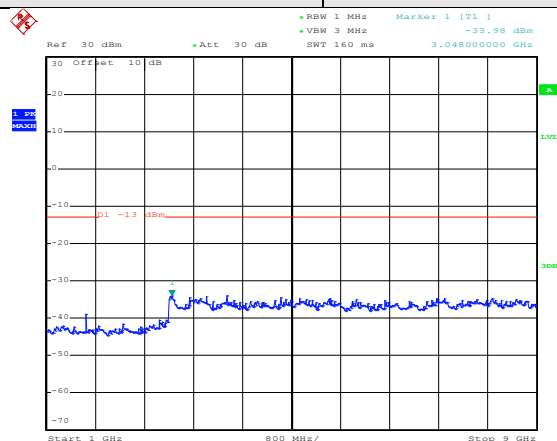
5MHz

Test Mode:	LTE band 5(5MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:37:47

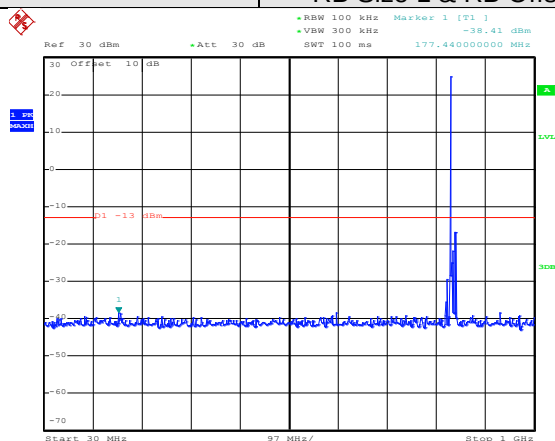
30MHz~1GHz



Date: 3.MAY.2017 16:42:38

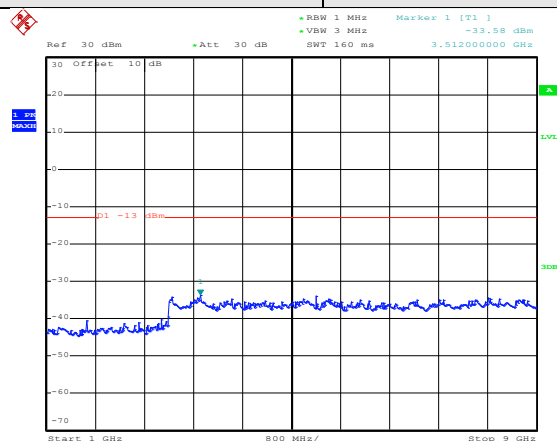
1GHz~9GHz

Test Mode:	LTE band 5(5MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:40:59

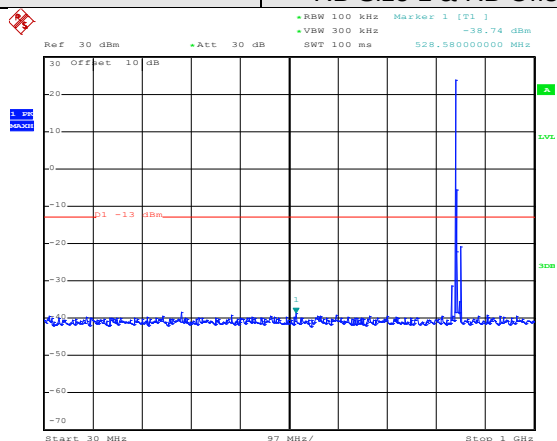
30MHz~1GHz



Date: 3.MAY.2017 16:45:06

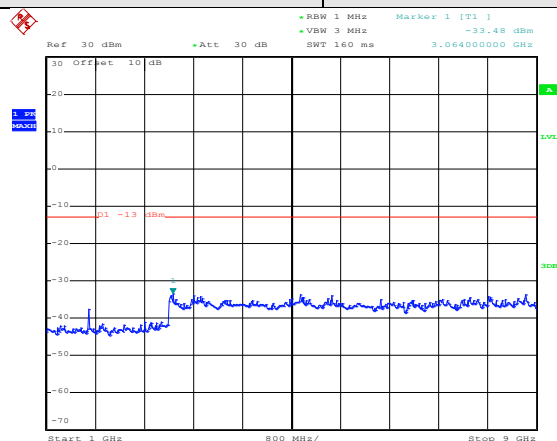
1GHz~9GHz

Test Mode:	LTE band 5(5MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:44:08

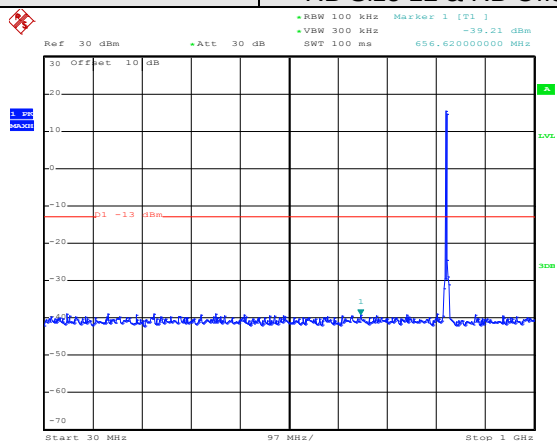
30MHz~1GHz



Date: 3.MAY.2017 16:46:58

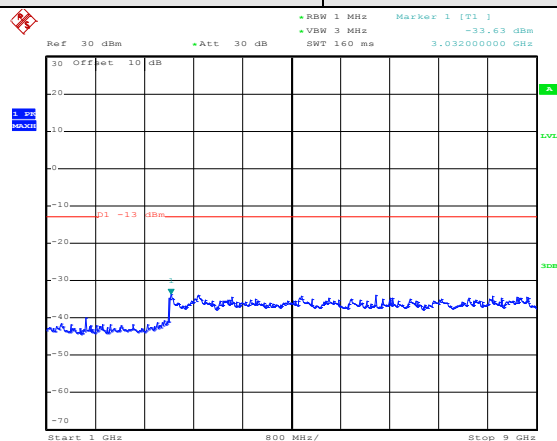
1GHz~9GHz

Test Mode:	LTE band 5(5MHz 16QAM) RB Size 12 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:38:32

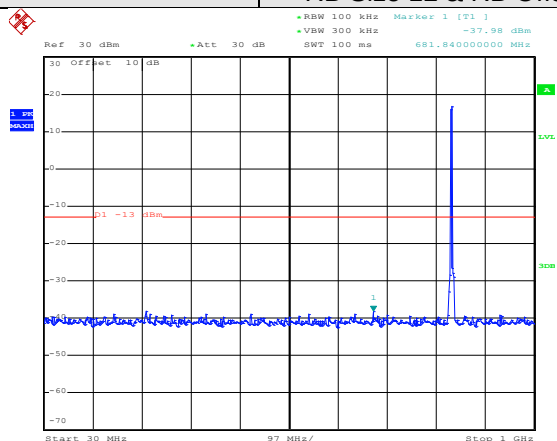
30MHz~1GHz



Date: 3.MAY.2017 16:43:14

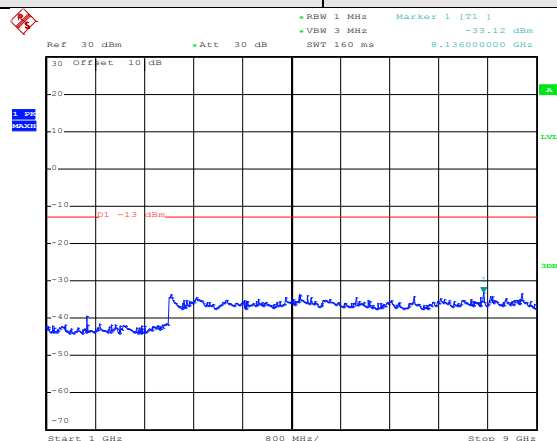
1GHz~9GHz

Test Mode:	LTE band 5(5MHz 16QAM) RB Size 12 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:41:38

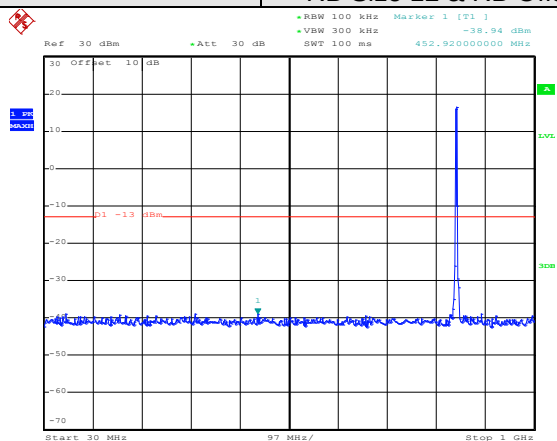
30MHz~1GHz



Date: 3.MAY.2017 16:45:34

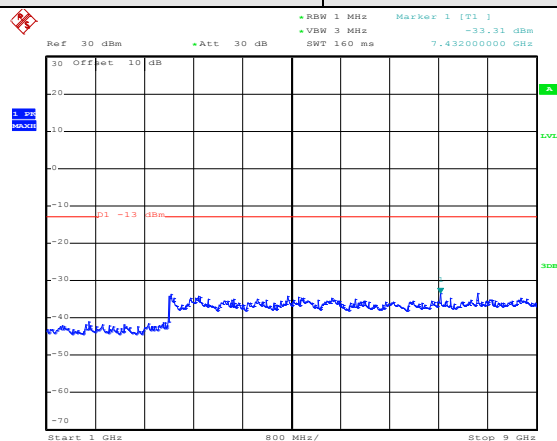
1GHz~9GHz

Test Mode:	LTE band 5(5MHz 16QAM) RB Size 12 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:44:53

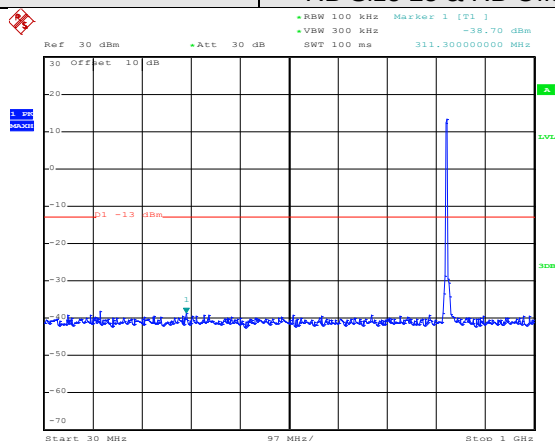
30MHz~1GHz



Date: 3.MAY.2017 16:47:24

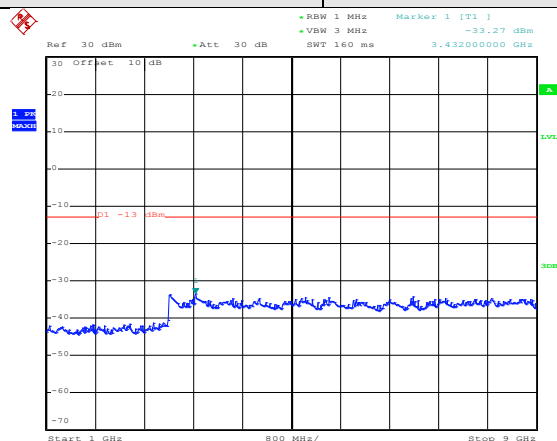
1GHz~9GHz

Test Mode:	LTE band 5(5MHz 16QAM) RB Size 25 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:39:47

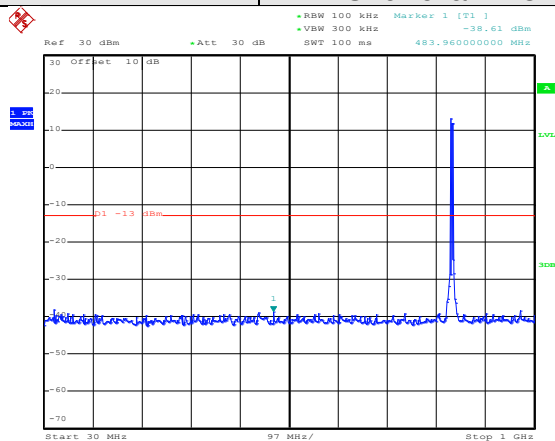
30MHz~1GHz



Date: 3.MAY.2017 16:44:07

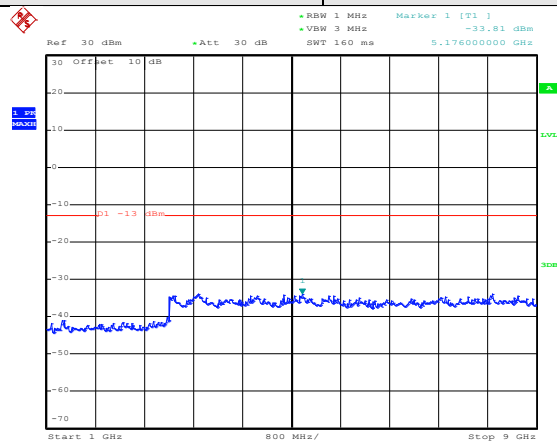
1GHz~9GHz

Test Mode:	LTE band 5(5MHz 16QAM) RB Size 25 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:42:20

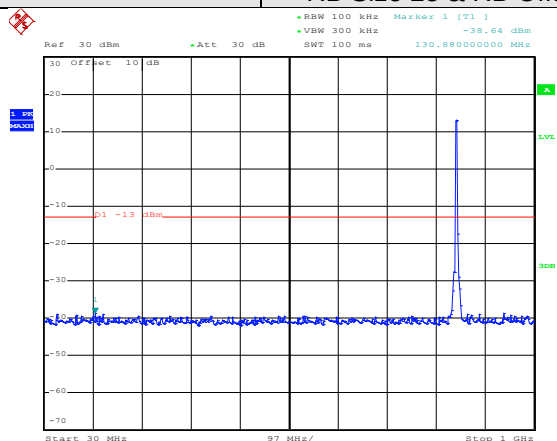
30MHz~1GHz



Date: 3.MAY.2017 16:46:03

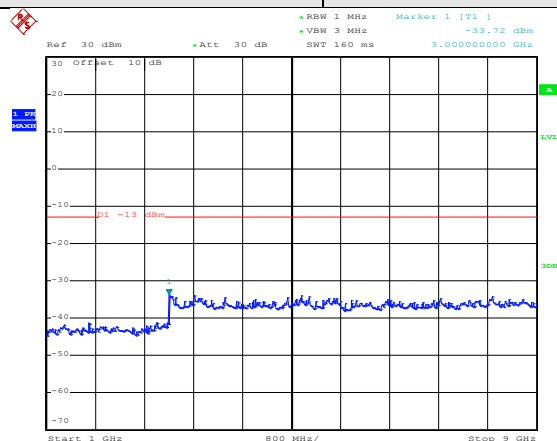
1GHz~9GHz

Test Mode:	LTE band 5(5MHz 16QAM) RB Size 25 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:45:44

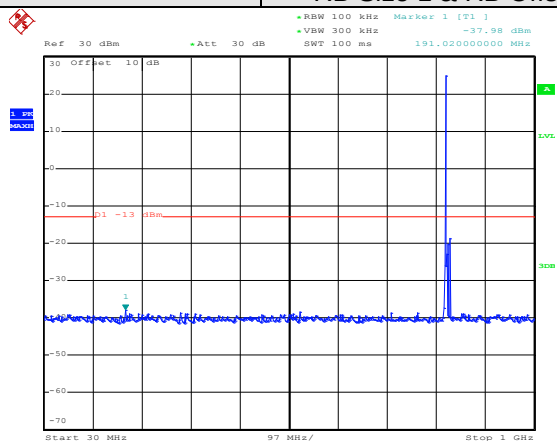
30MHz~1GHz



Date: 3.MAY.2017 16:47:49

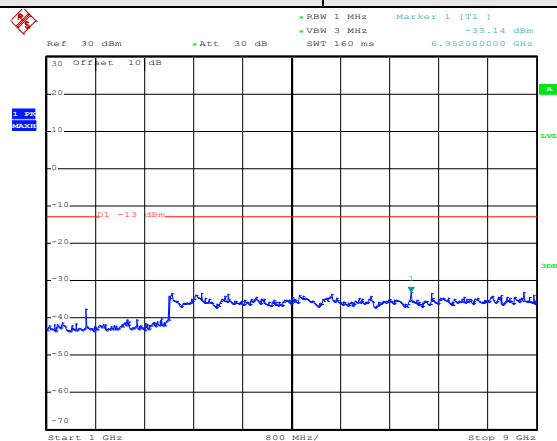
1GHz~9GHz

Test Mode:	LTE band 5(5MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:37:23

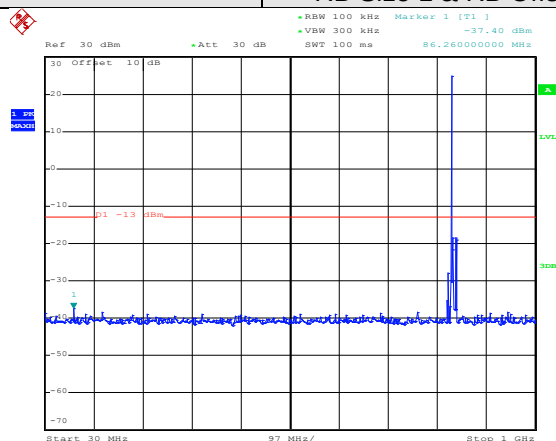
30MHz~1GHz



Date: 3.MAY.2017 16:42:03

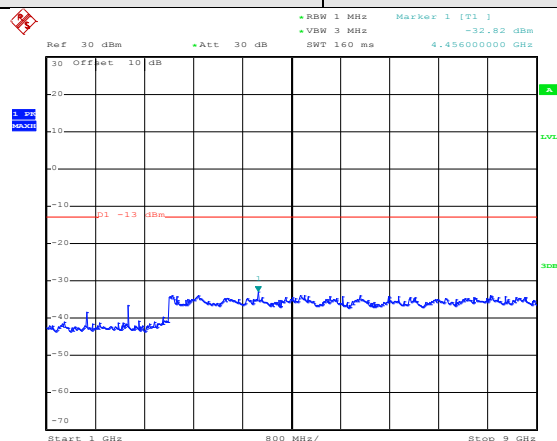
1GHz~9GHz

Test Mode:	LTE band 5(5MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:40:43

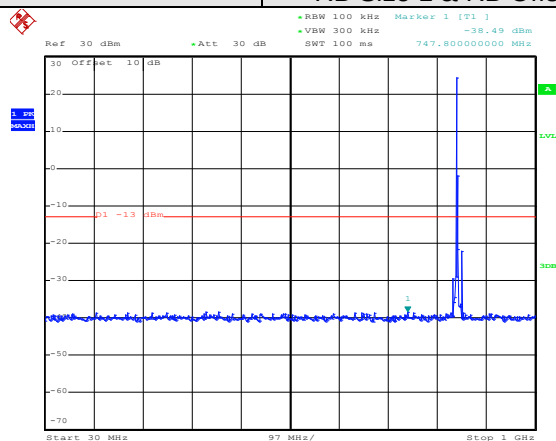
30MHz~1GHz



Date: 3.MAY.2017 16:44:54

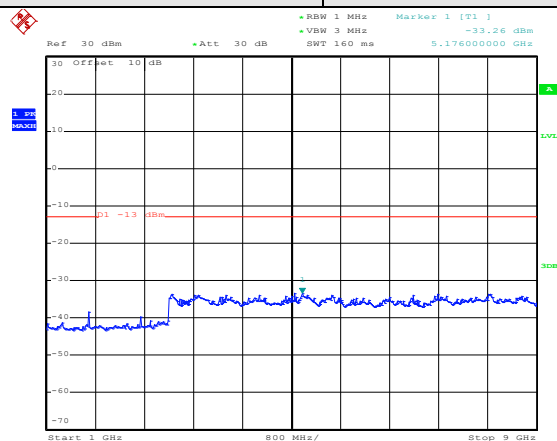
1GHz~9GHz

Test Mode:	LTE band 5(5MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:43:49

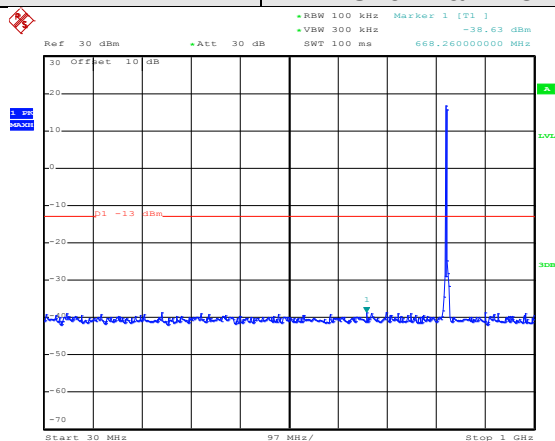
30MHz~1GHz



Date: 3.MAY.2017 16:46:48

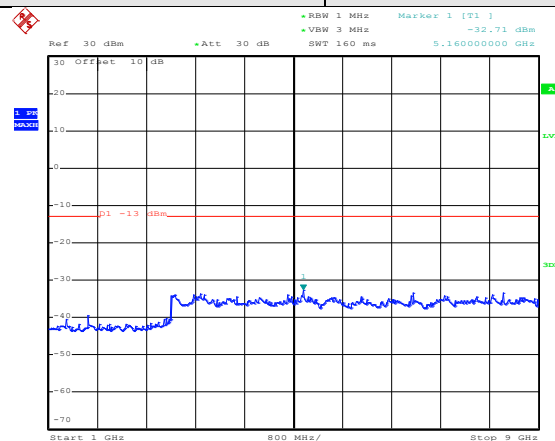
1GHz~9GHz

Test Mode:	LTE band 5(5MHz QPSK) RB Size 12 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:38:12

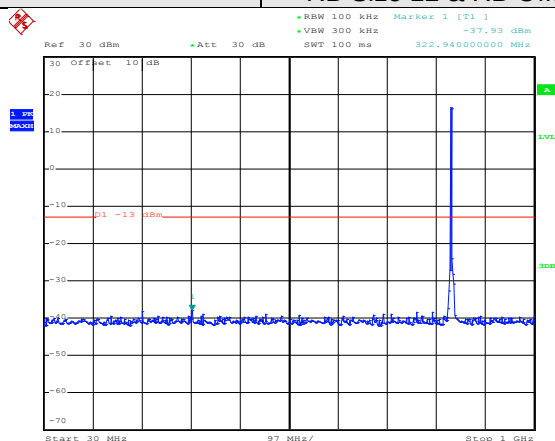
30MHz~1GHz



Date: 3.MAY.2017 16:43:02

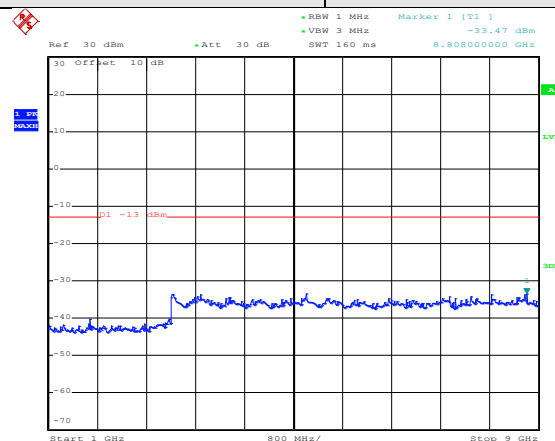
1GHz~9GHz

Test Mode:	LTE band 5(5MHz QPSK) RB Size 12 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:41:22

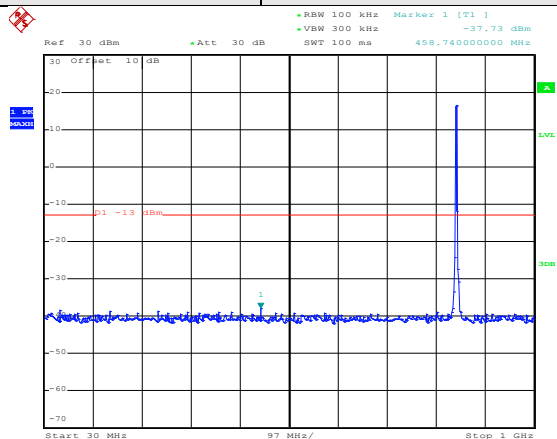
30MHz~1GHz



Date: 3.MAY.2017 16:45:21

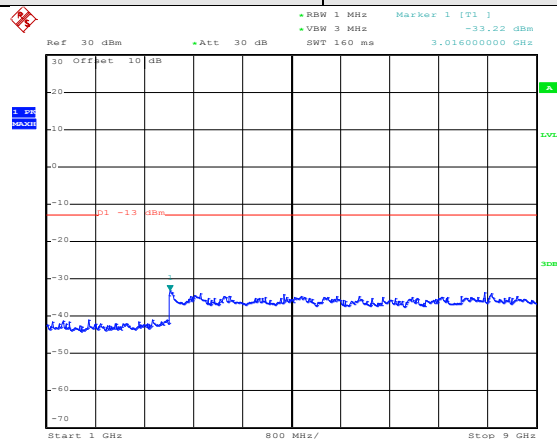
1GHz~9GHz

Test Mode:	LTE band 5(5MHz QPSK) RB Size 12 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:44:37

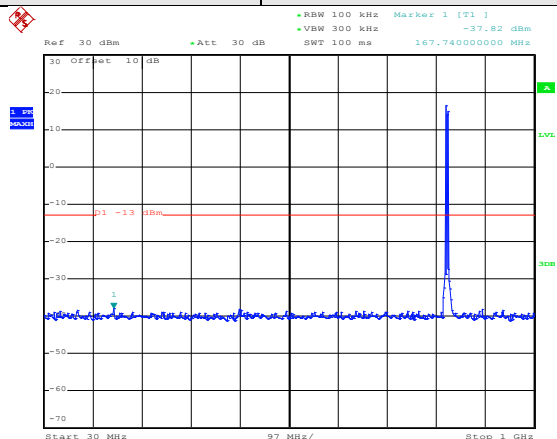
30MHz~1GHz



Date: 3.MAY.2017 16:47:14

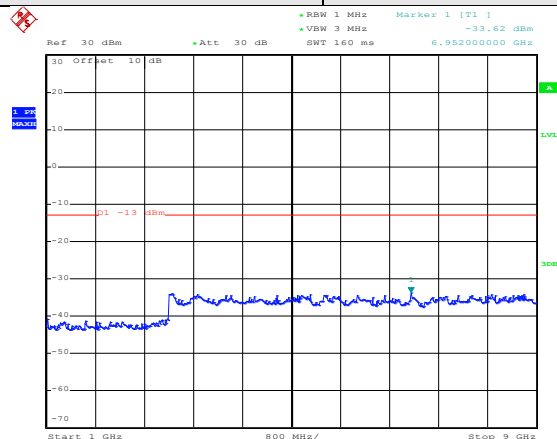
1GHz~9GHz

Test Mode:	LTE band 5(5MHz QPSK) RB Size 25 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:39:31

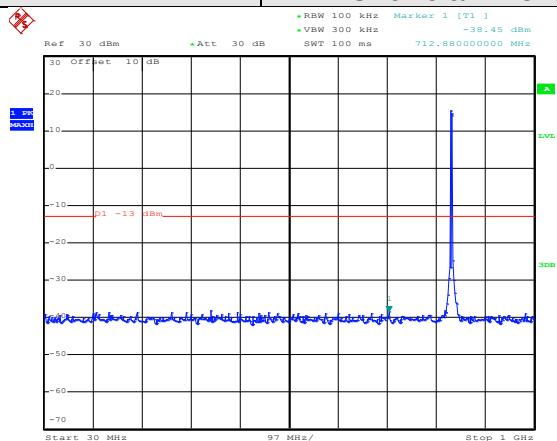
30MHz~1GHz



Date: 3.MAY.2017 16:43:54

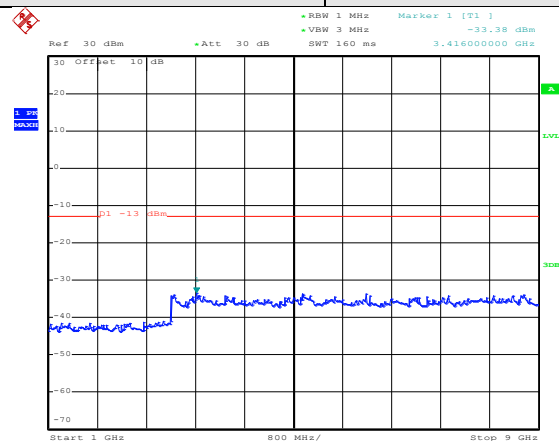
1GHz~9GHz

Test Mode:	LTE band 5(5MHz QPSK) RB Size 25 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:42:03

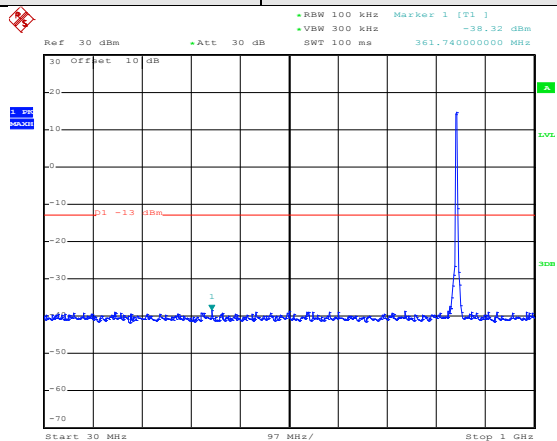
30MHz~1GHz



Date: 3.MAY.2017 16:45:52

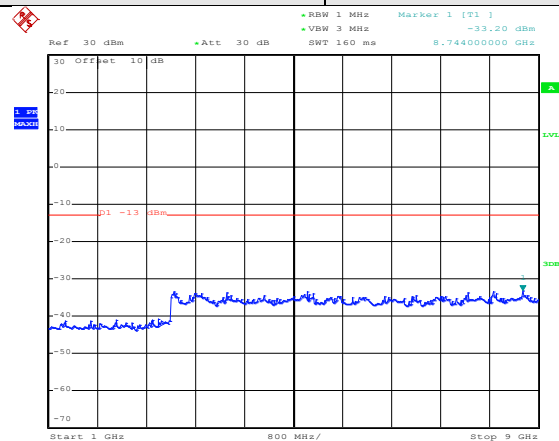
1GHz~9GHz

Test Mode:	LTE band 5(5MHz QPSK) RB Size 25 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:45:23

30MHz~1GHz

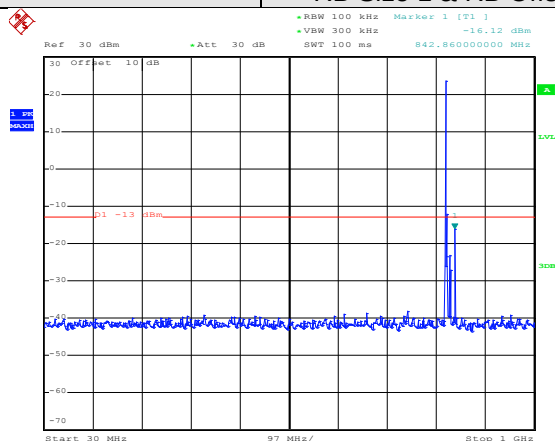


Date: 3.MAY.2017 16:47:40

1GHz~9GHz

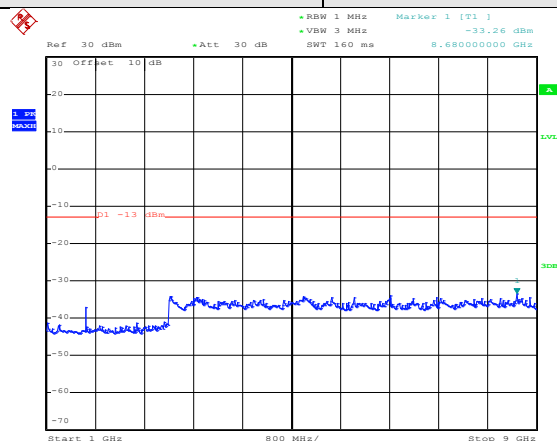
10MHz

Test Mode:	LTE band 5(10MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:47:58

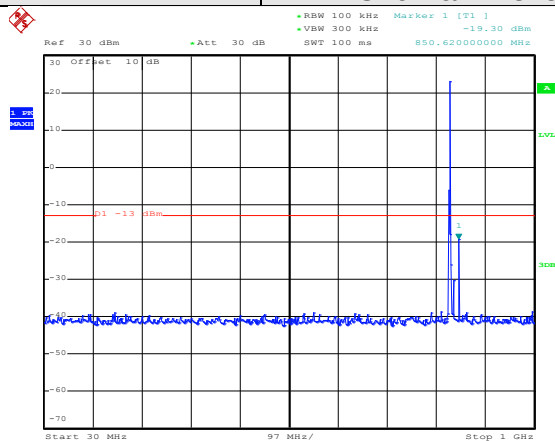
30MHz~1GHz



Date: 3.MAY.2017 16:48:52

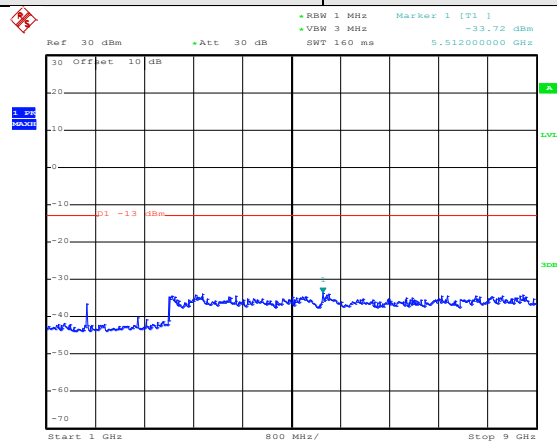
1GHz~9GHz

Test Mode:	LTE band 5(10MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:50:57

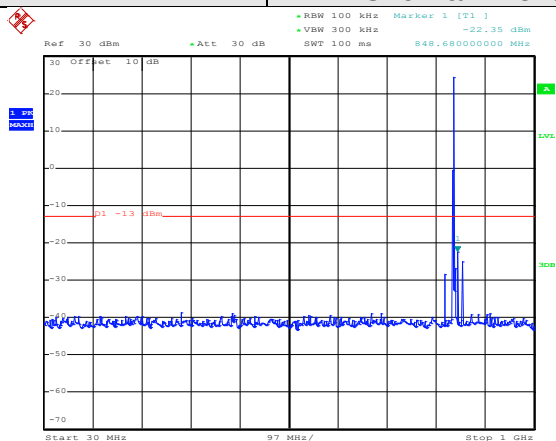
30MHz~1GHz



Date: 3.MAY.2017 16:51:21

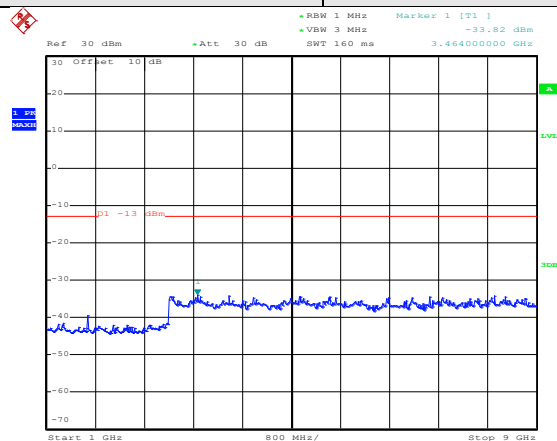
1GHz~9GHz

Test Mode:	LTE band 5(10MHz 16QAM) RB Size 1 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:54:05

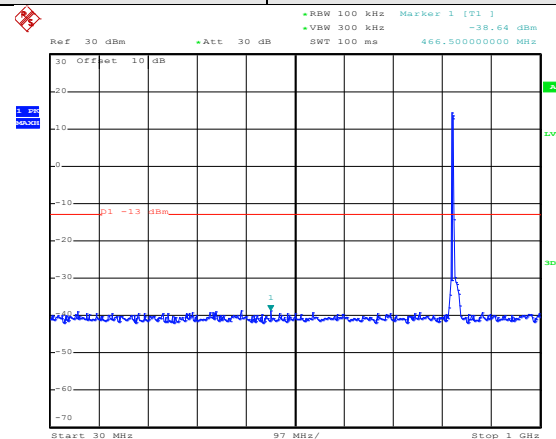
30MHz~1GHz



Date: 3.MAY.2017 16:53:03

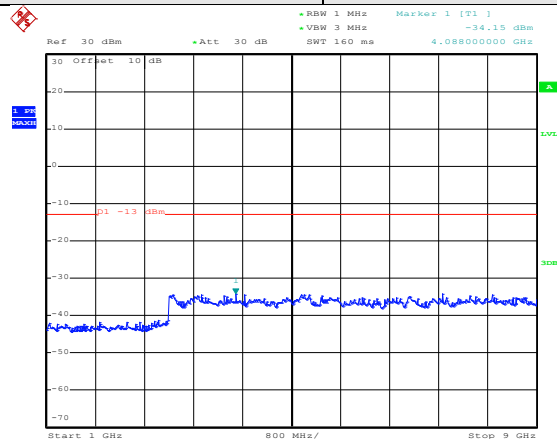
1GHz~9GHz

Test Mode:	LTE band 5(10MHz 16QAM) RB Size 25 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:48:49

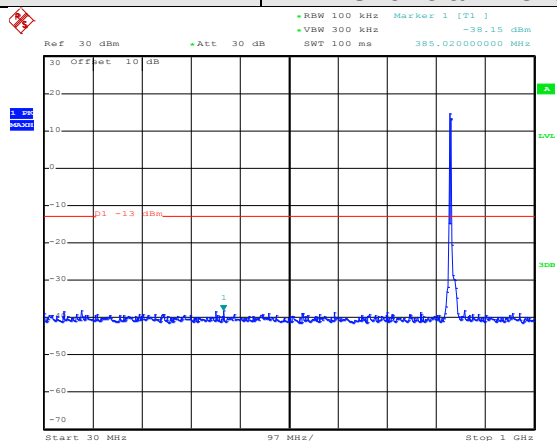
30MHz~1GHz



Date: 3.MAY.2017 16:49:24

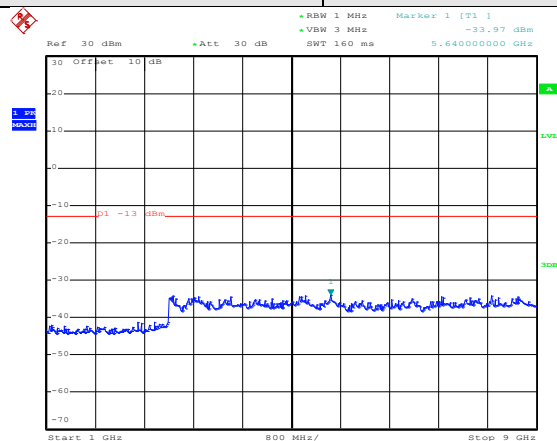
1GHz~9GHz

Test Mode:	LTE band 5(10MHz 16QAM) RB Size 25 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:52:22

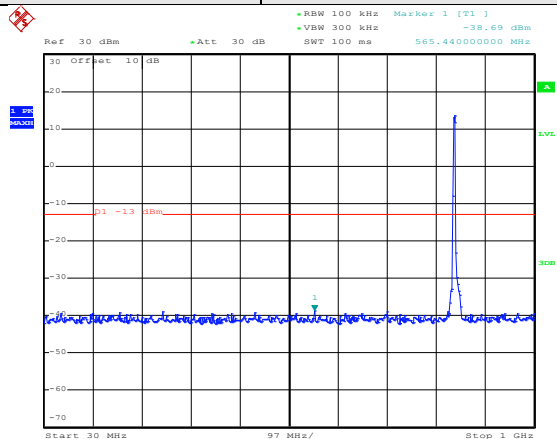
30MHz~1GHz



Date: 3.MAY.2017 16:51:51

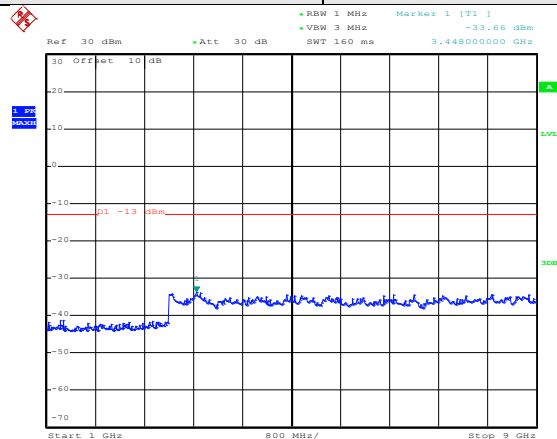
1GHz~9GHz

Test Mode:	LTE band 5(10MHz 16QAM) RB Size 25 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:54:46

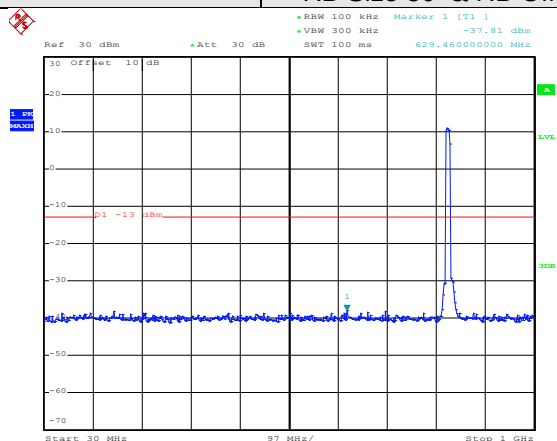
30MHz~1GHz



Date: 3.MAY.2017 16:53:35

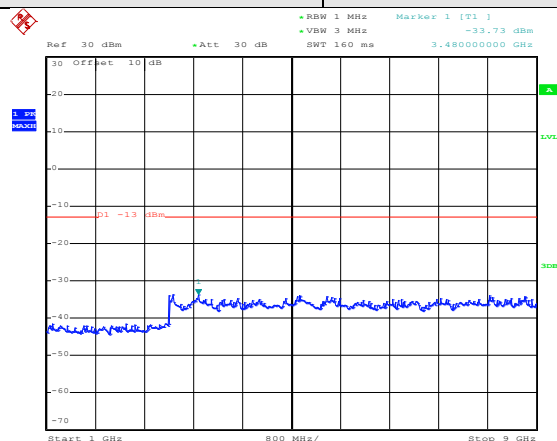
1GHz~9GHz

Test Mode:	LTE band 5(10MHz 16QAM) RB Size 50 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:50:06

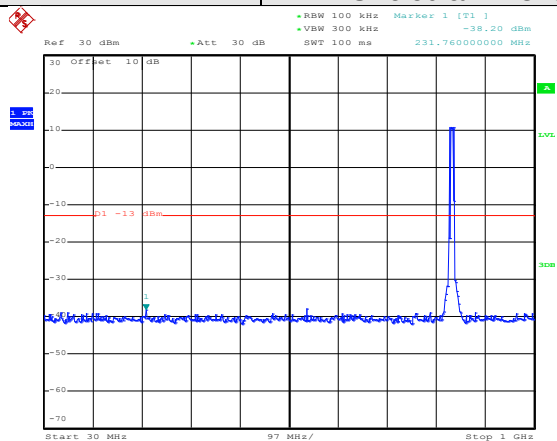
30MHz~1GHz



Date: 3.MAY.2017 16:49:52

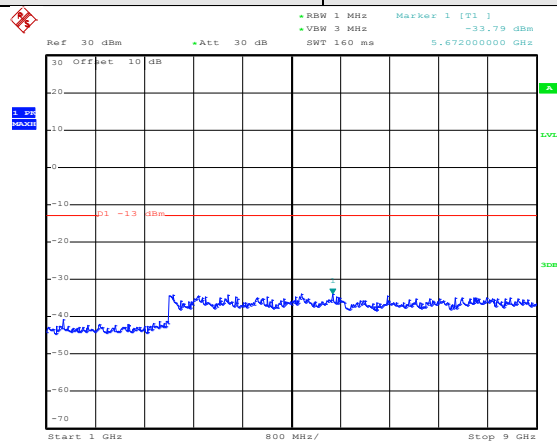
1GHz~9GHz

Test Mode:	LTE band 5(10MHz 16QAM) RB Size 50 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:53:19

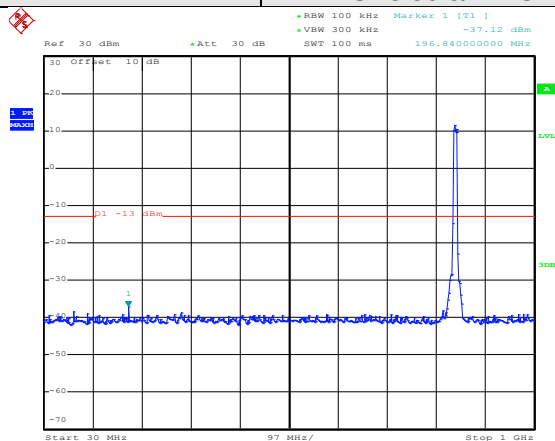
30MHz~1GHz



Date: 3.MAY.2017 16:52:12

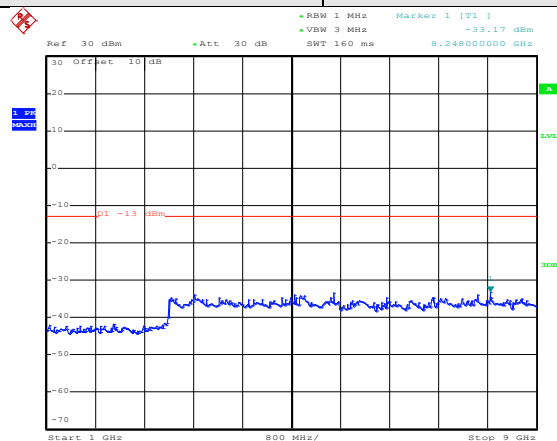
1GHz~9GHz

Test Mode:	LTE band 5(10MHz 16QAM) RB Size 50 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:55:31

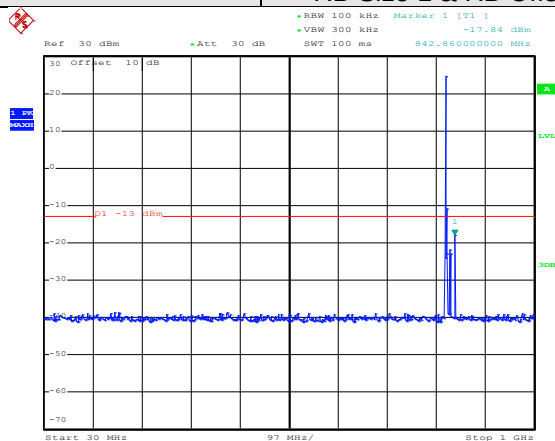
30MHz~1GHz



Date: 3.MAY.2017 16:54:07

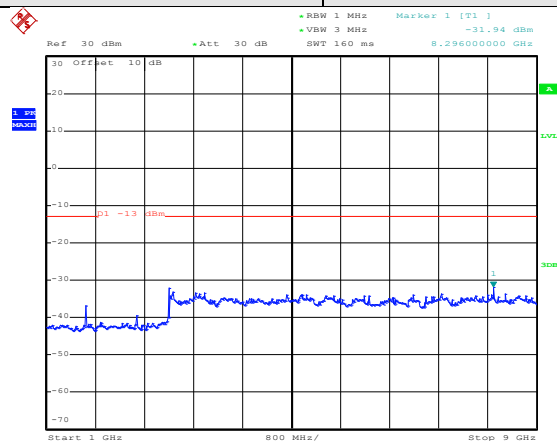
1GHz~9GHz

Test Mode:	LTE band 5(10MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:47:45

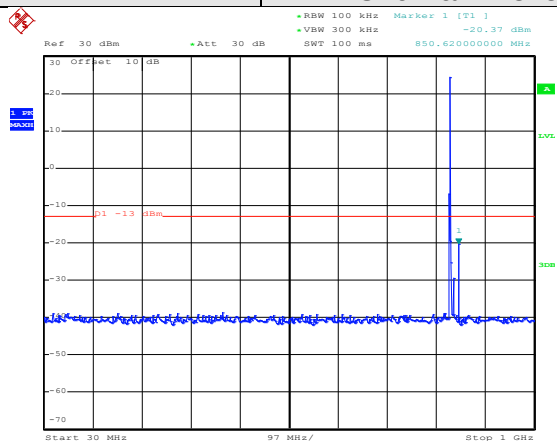
30MHz~1GHz



Date: 3.MAY.2017 16:48:39

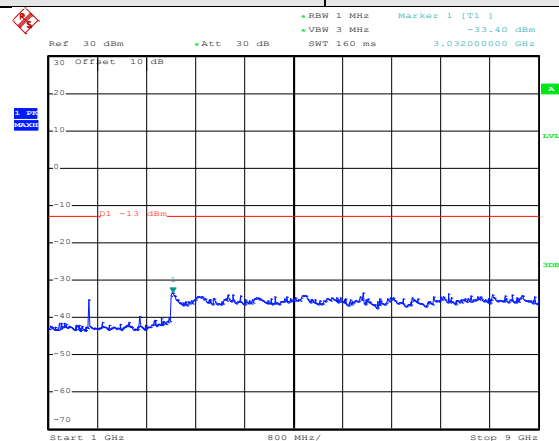
1GHz~9GHz

Test Mode:	LTE band 5(10MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:50:41

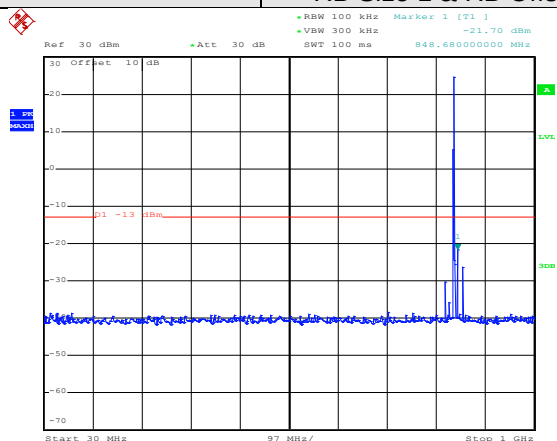
30MHz~1GHz



Date: 3.MAY.2017 16:51:03

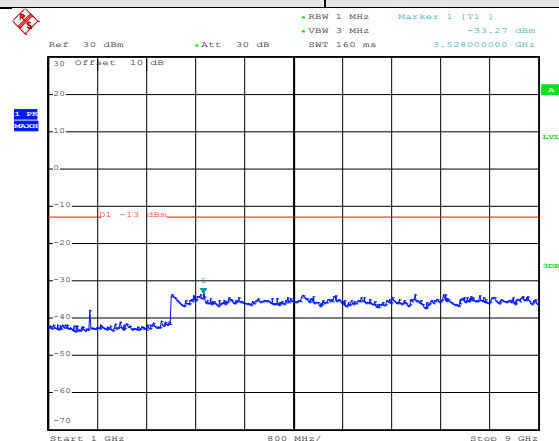
1GHz~9GHz

Test Mode:	LTE band 5(10MHz QPSK) RB Size 1 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:53:53

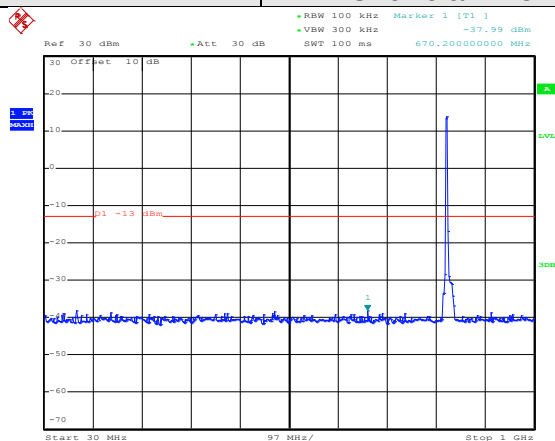
30MHz~1GHz



Date: 3.MAY.2017 16:52:52

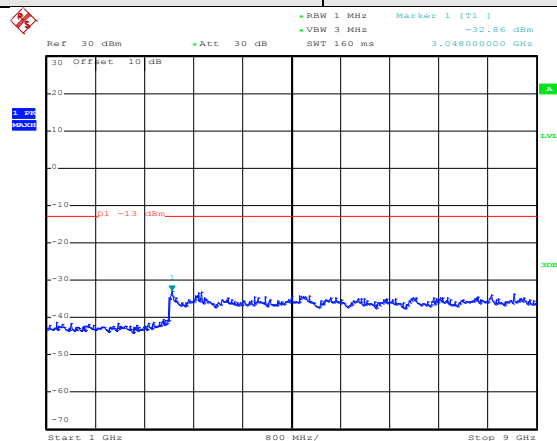
1GHz~9GHz

Test Mode:	LTE band 5(10MHz QPSK) RB Size 25 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:48:27

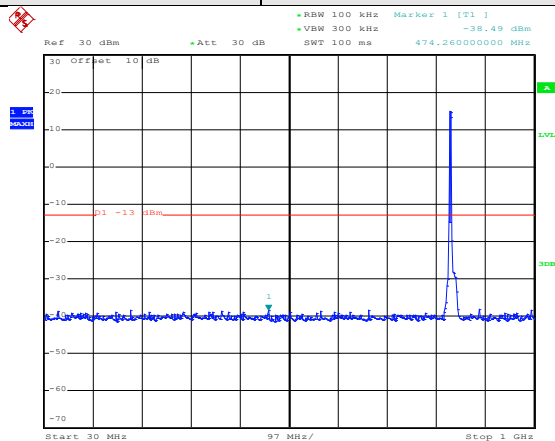
30MHz~1GHz



Date: 3.MAY.2017 16:49:09

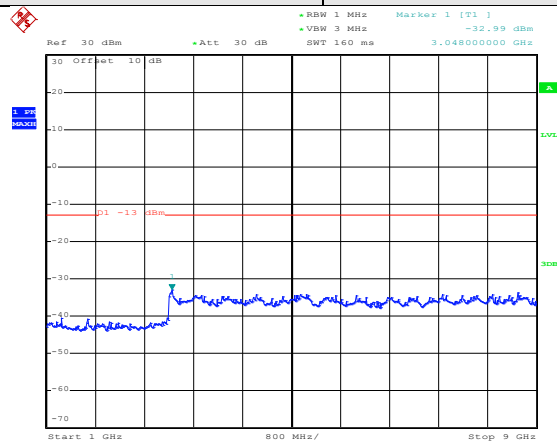
1GHz~9GHz

Test Mode:	LTE band 5(10MHz QPSK) RB Size 25 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:51:45

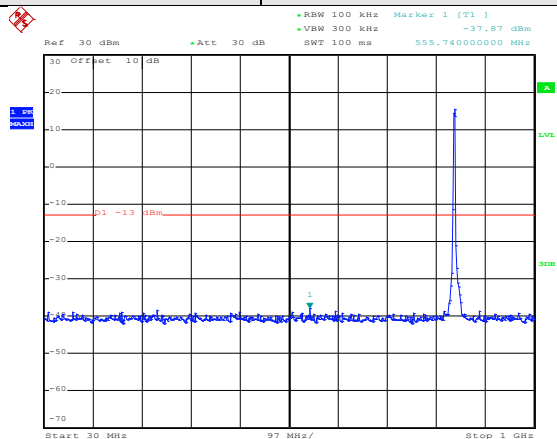
30MHz~1GHz



Date: 3.MAY.2017 16:51:38

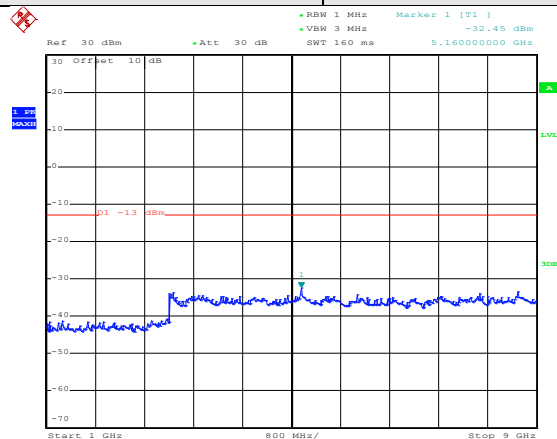
1GHz~9GHz

Test Mode:	LTE band 5(10MHz QPSK) RB Size 25 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:54:27

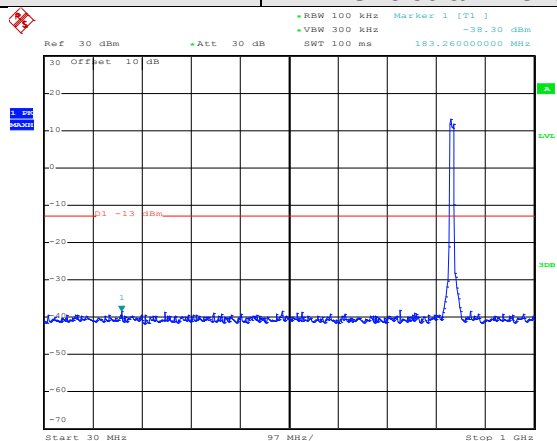
30MHz~1GHz



Date: 3.MAY.2017 16:53:19

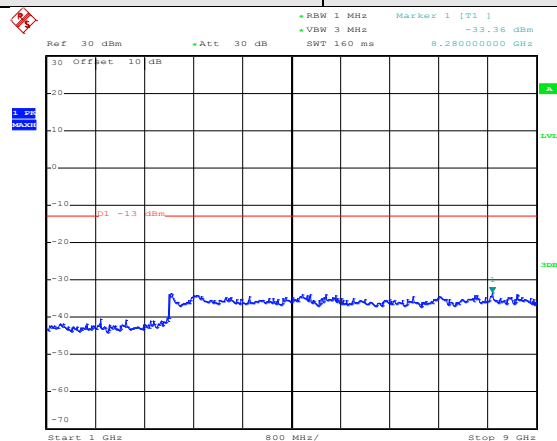
1GHz~9GHz

Test Mode:	LTE band 5(10MHz QPSK) RB Size 50 & RB Offset 0	Test Channel:	Lowest channel
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Date: 3.MAY.2017 17:59:09

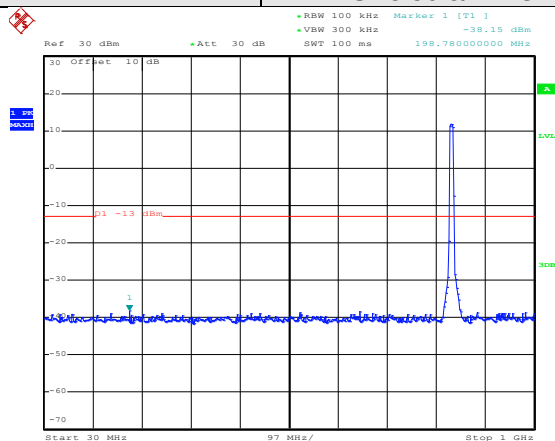
30MHz~1GHz



Date: 3.MAY.2017 16:49:43

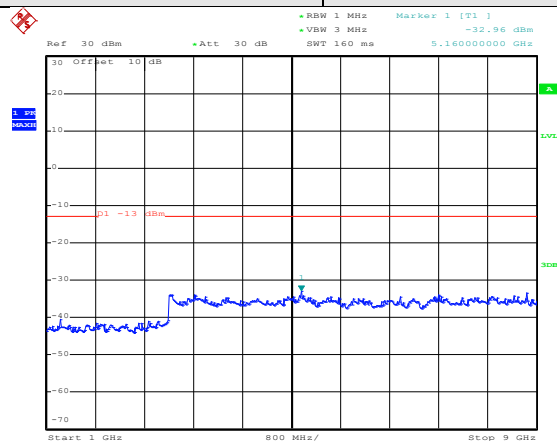
1GHz~9GHz

Test Mode:	LTE band 5(10MHz QPSK) RB Size 50 & RB Offset 0	Test Channel:	Middle channel
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Date: 3.MAY.2017 17:52:54

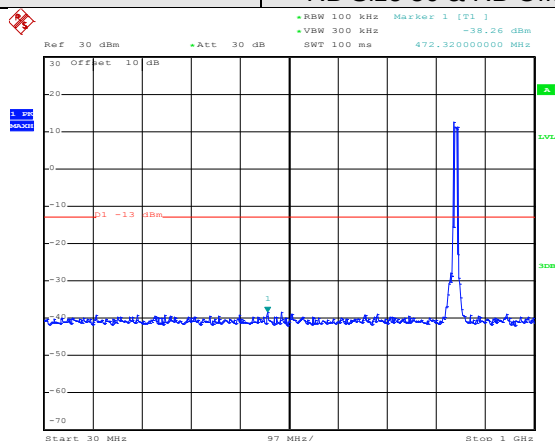
30MHz~1GHz



Date: 3.MAY.2017 16:52:05

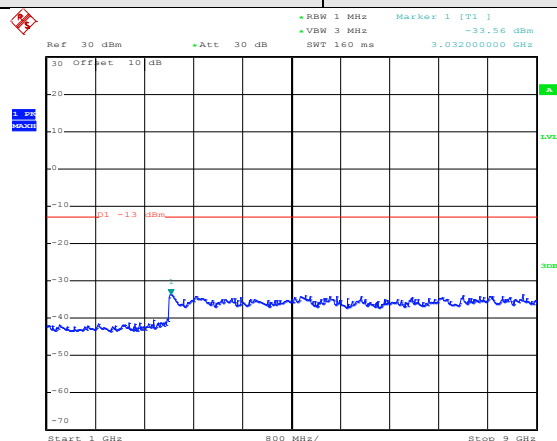
1GHz~9GHz

Test Mode:	LTE band 5(10MHz QPSK) RB Size 50 & RB Offset 0	Test Channel:	Highest channel
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Date: 3.MAY.2017 17:55:03

30MHz~1GHz



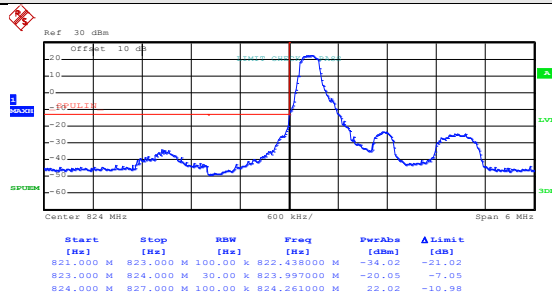
Date: 3.MAY.2017 16:53:55

1GHz~9GHz

**Band edge emission:
LTE band 5 part:1.4MHz:**

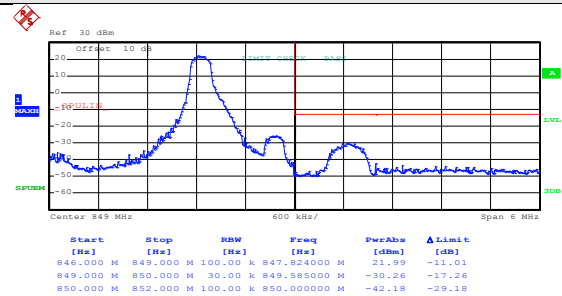
Test Mode:

LTE band 5(QPSK RB Size 1 &RB Offset0)



Date: 4.MAY.2017 09:37:51

Lowest channel

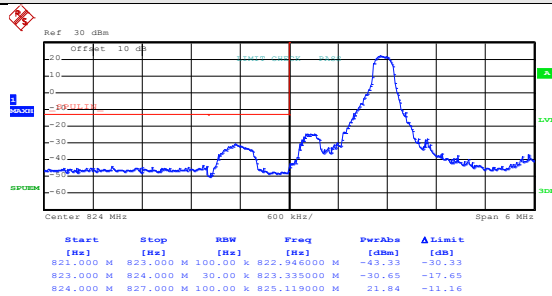


Date: 4.MAY.2017 09:43:34

Highest channel

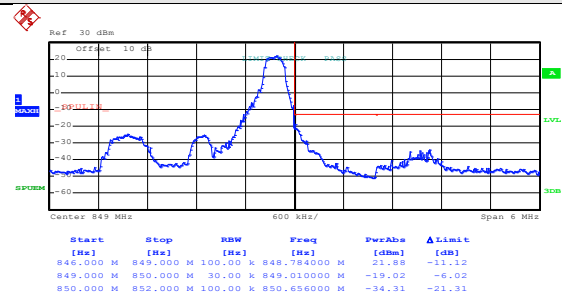
Test Mode:

LTE band 5(QPSK RB Size 1 &RB Offset 5)



Date: 4.MAY.2017 09:38:49

Lowest channel

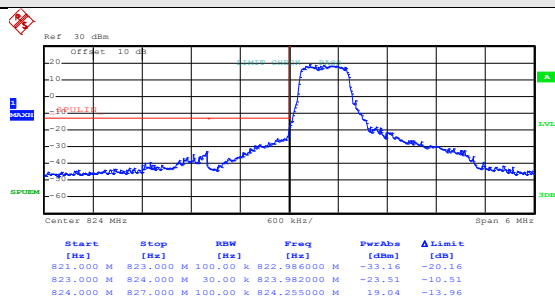


Date: 4.MAY.2017 09:44:12

Highest channel

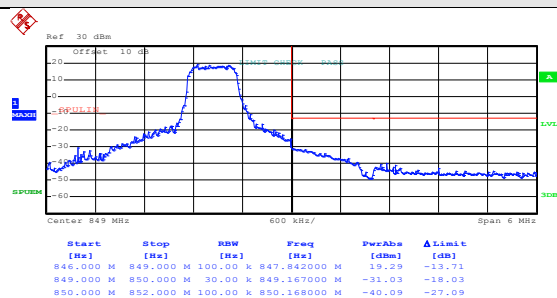
Test Mode:

LTE band 5(QPSK RB Size 3 &RB Offset0)



Date: 4.MAY.2017 09:40:17

Lowest channel

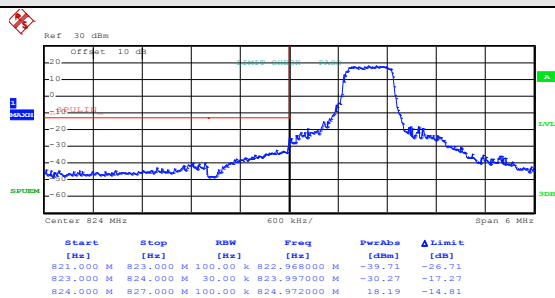


Date: 4.MAY.2017 09:44:53

Highest channel

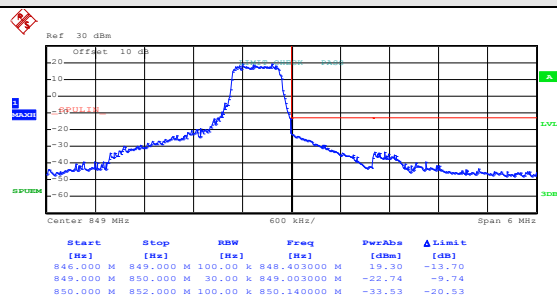
Test Mode:

LTE band 5(QPSK RB Size 3 &RB Offset 2)



Date: 4.MAY.2017 09:40:46

Lowest channel

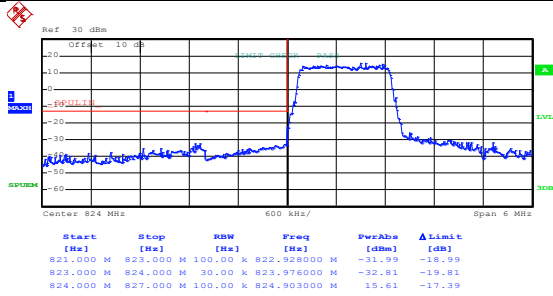


Date: 4.MAY.2017 09:45:17

Highest channel

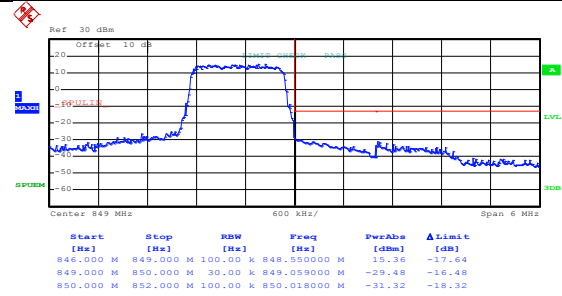
Test Mode:

LTE band 5(QPSK RB Size 6 & RB Offset 0)



Date: 4.MAY.2017 09:42:00

Lowest channel

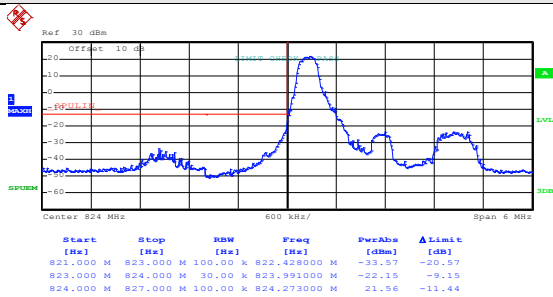


Date: 4.MAY.2017 09:45:54

Highest channel

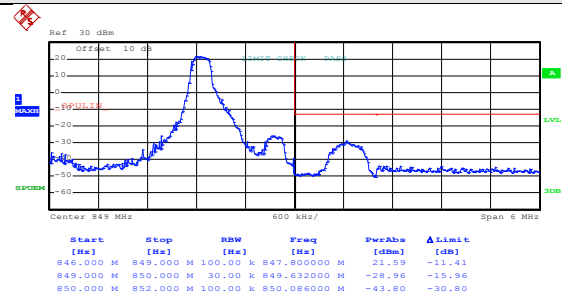
Test Mode:

LTE band 5(16QAM RB Size 1 & RB Offset 0)



Date: 4.MAY.2017 09:38:14

Lowest channel

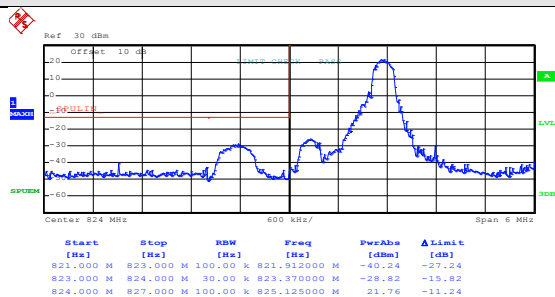


Date: 4.MAY.2017 09:43:52

Highest channel

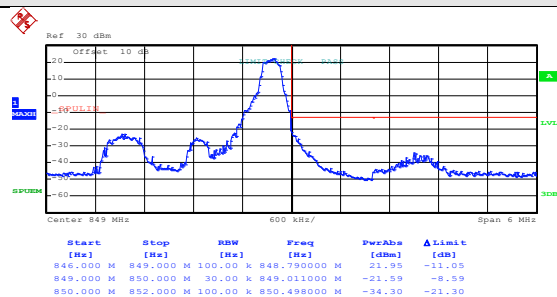
Test Mode:

LTE band 5(16QAM RB Size 1 & RB Offset 5)



Date: 4.MAY.2017 09:39:15

Lowest channel

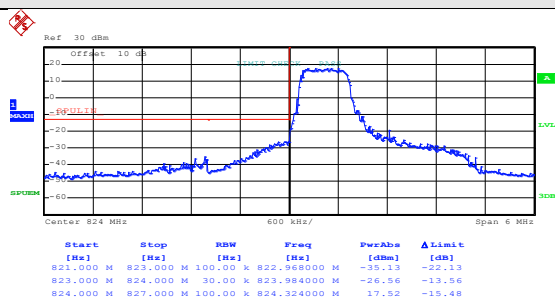


Date: 4.MAY.2017 09:44:34

Highest channel

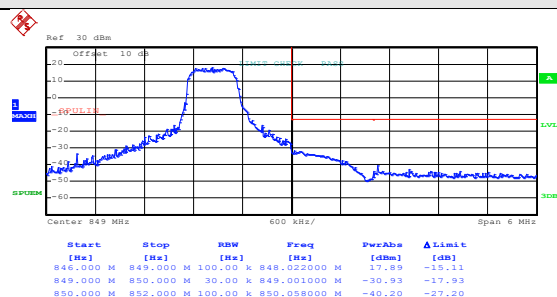
Test Mode:

LTE band 5(16QAM RB Size 3 & RB Offset 0)



Date: 4.MAY.2017 09:40:30

Lowest channel

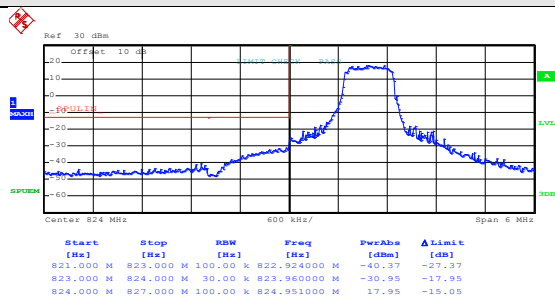


Date: 4.MAY.2017 09:45:04

Highest channel

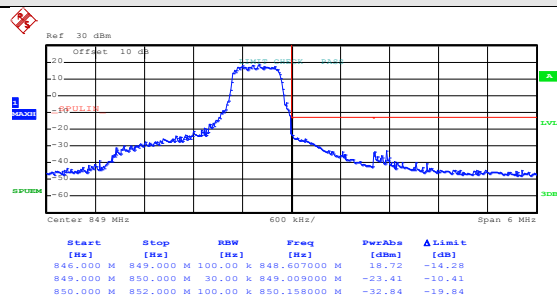
Test Mode:

LTE band 5(16QAM RB Size 3 & RB Offset 2)



Date: 4.MAY.2017 09:41:11

Lowest channel

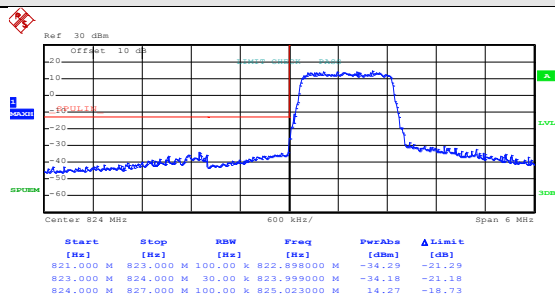


Date: 4.MAY.2017 09:45:40

Highest channel

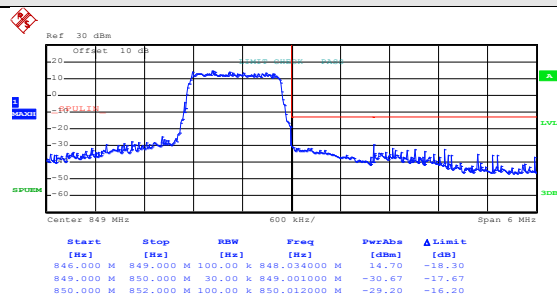
Test Mode:

LTE band 5(16QAM RB Size 6 & RB Offset 0)



Date: 4.MAY.2017 09:42:10

Lowest channel

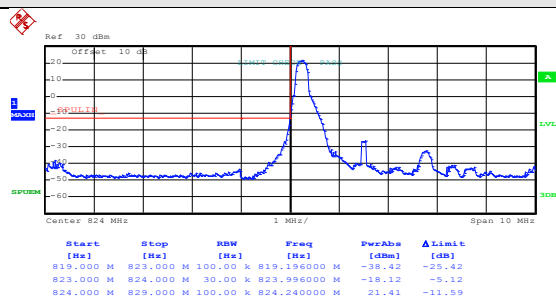


Date: 4.MAY.2017 09:46:05

Highest channel

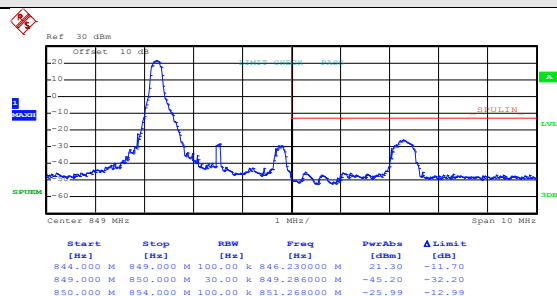
3MHz:

Test Mode:	LTE band 5(QPSK RB Size 1 & RB Offset 0)
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Date: 4.MAY.2017 09:55:36

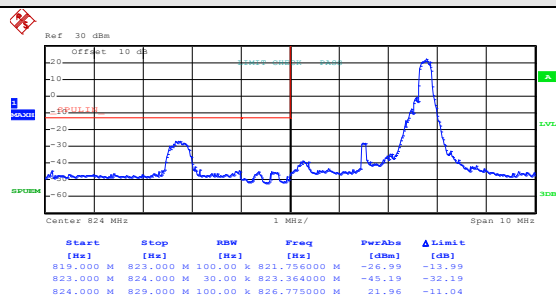
Lowest channel



Date: 4.MAY.2017 10:07:57

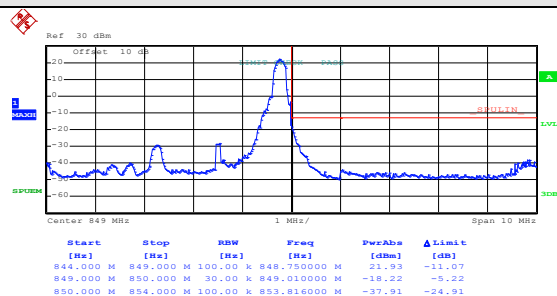
Highest channel

Test Mode:	LTE band 5(QPSK RB Size 1 & RB Offset 14)
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Date: 4.MAY.2017 10:04:58

Lowest channel

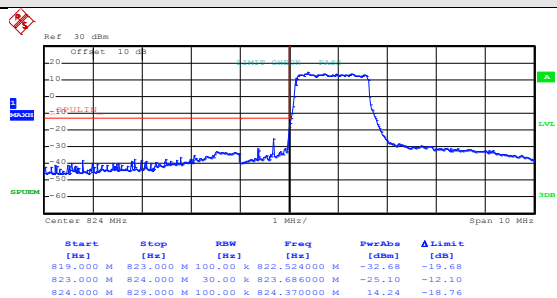


Date: 4.MAY.2017 10:08:19

Highest channel

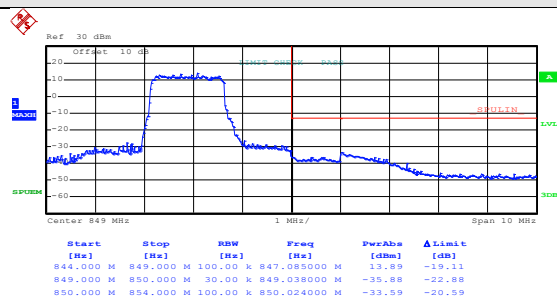
Test Mode:

LTE band 5(QPSK RB Size 8 & RB Offset 0)



Date: 4.MAY.2017 10:06:03

Lowest channel

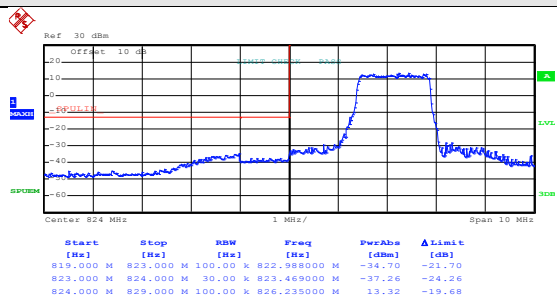


Date: 4.MAY.2017 10:08:44

Highest channel

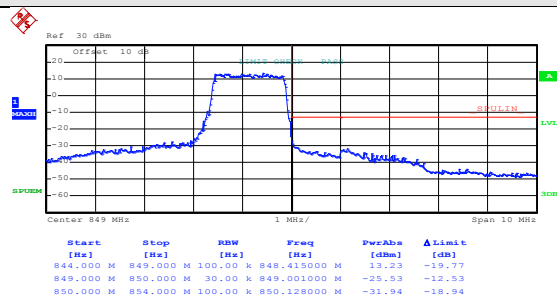
Test Mode:

LTE band 5(QPSK RB Size 8 & RB Offset 7)



Date: 4.MAY.2017 10:07:09

Lowest channel

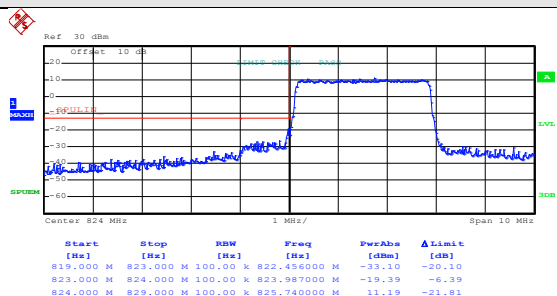


Date: 4.MAY.2017 10:09:08

Highest channel

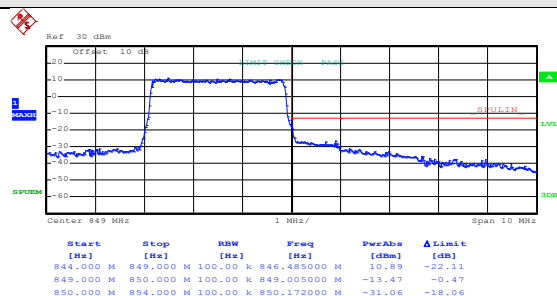
Test Mode:

LTE band 5(QPSK RB Size 15 & RB Offset 0)



Date: 4.MAY.2017 10:11:11

Lowest channel

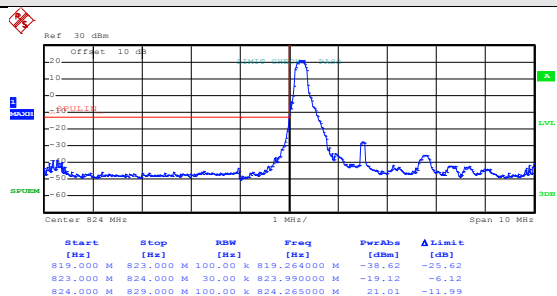


Date: 4.MAY.2017 10:10:29

Highest channel

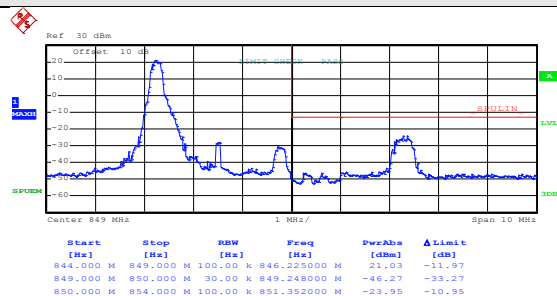
Test Mode:

LTE band 5(16QAM RB Size 1 & RB Offset 0)



Date: 4.MAY.2017 10:04:35

Lowest channel

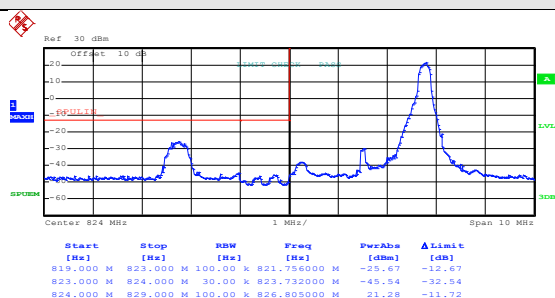


Date: 4.MAY.2017 10:08:07

Highest channel

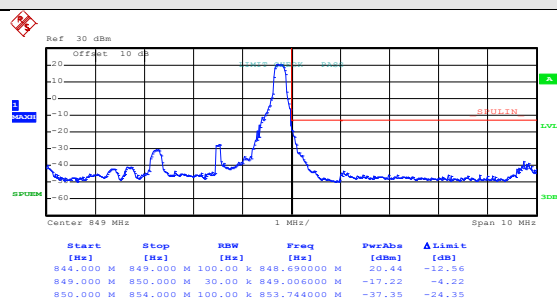
Test Mode:

LTE band 5(16QAM RB Size 1 & RB Offset 14)



Date: 4.MAY.2017 10:05:10

Lowest channel

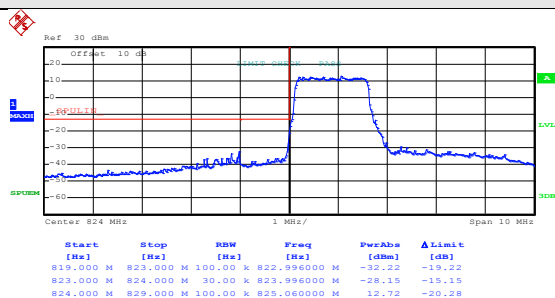


Date: 4.MAY.2017 10:08:29

Highest channel

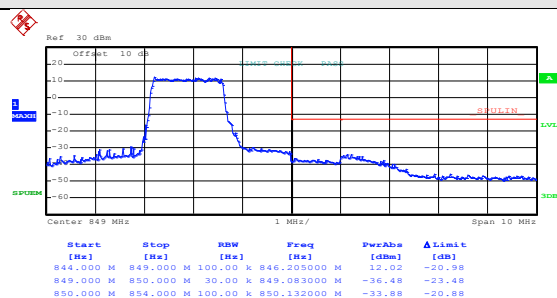
Test Mode:

LTE band 5(16QAM RB Size 8 & RB Offset 0)



Date: 4.MAY.2017 10:06:17

Lowest channel

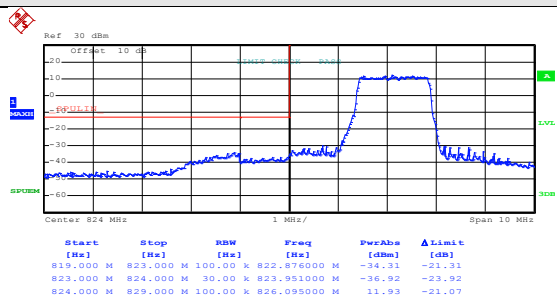


Date: 4.MAY.2017 10:08:53

Highest channel

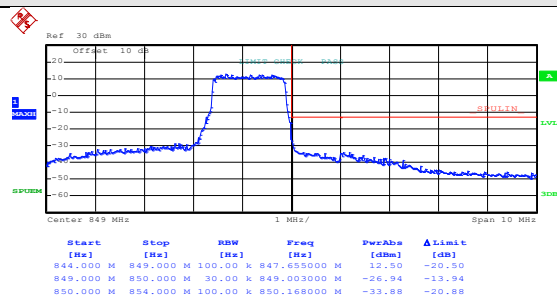
Test Mode:

LTE band 5(16QAM RB Size 8 & RB Offset 7)



Date: 4.MAY.2017 10:07:21

Lowest channel

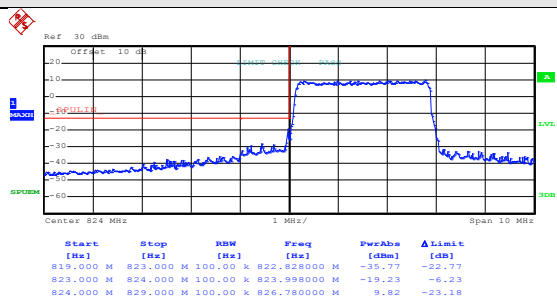


Date: 4.MAY.2017 10:09:18

Highest channel

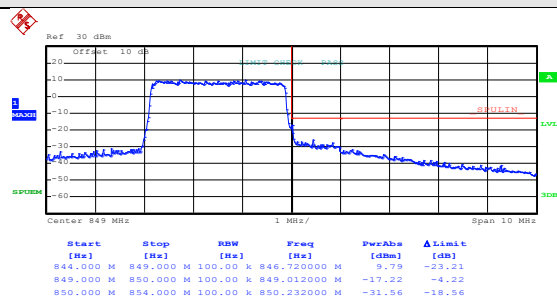
Test Mode:

LTE band 5(16QAM RB Size 15 & RB Offset 0)



Date: 4.MAY.2017 10:11:20

Lowest channel



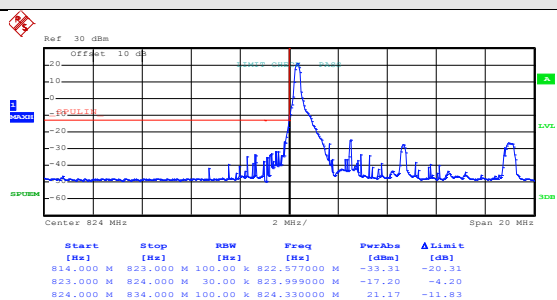
Date: 4.MAY.2017 10:10:40

Highest channel

5MHz:

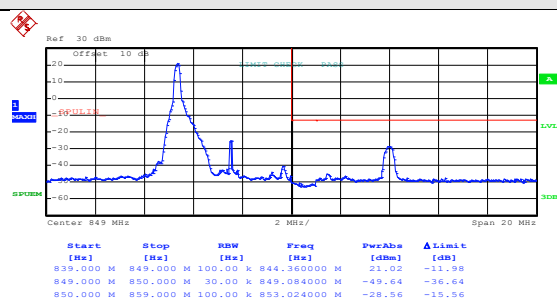
Test Mode:

LTE band 5(QPSK RB Size 1 & RB Offset 0)



Date: 4.MAY.2017 10:13:25

Lowest channel

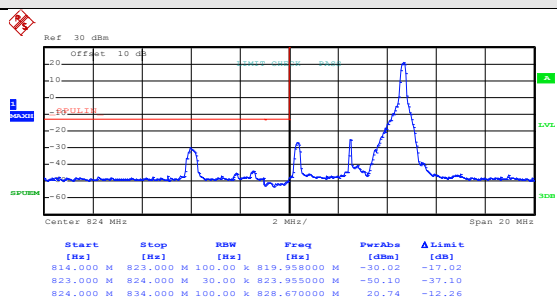


Date: 4.MAY.2017 10:16:11

Highest channel

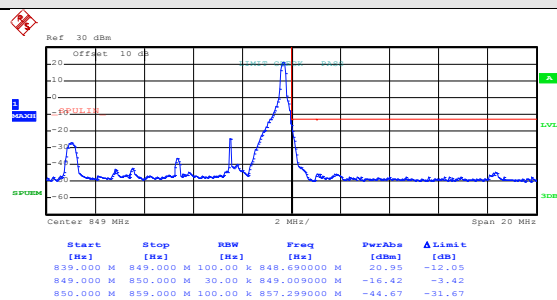
Test Mode:

LTE band 5(QPSK RB Size 1 & RB Offset 24)



Date: 4.MAY.2017 10:14:07

Lowest channel

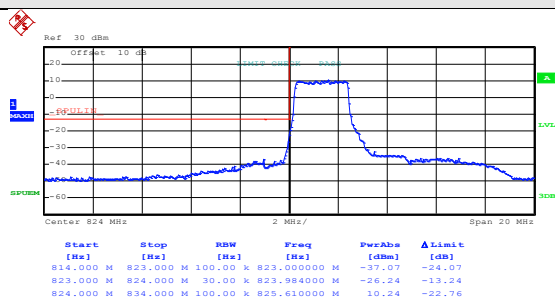


Date: 4.MAY.2017 10:16:37

Highest channel

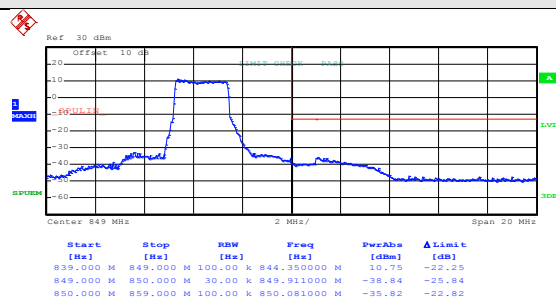
Test Mode:

LTE band 5(QPSK RB Size 12 & RB Offset 0)



Date: 4.MAY.2017 10:14:40

Lowest channel

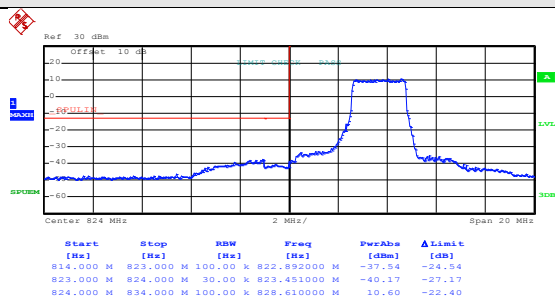


Date: 4.MAY.2017 10:17:12

Highest channel

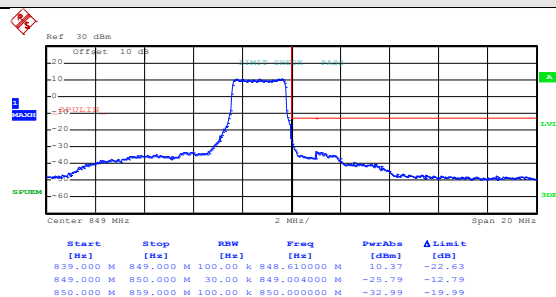
Test Mode:

LTE band 5(QPSK RB Size 12 & RB Offset 11)



Date: 4.MAY.2017 10:15:13

Lowest channel

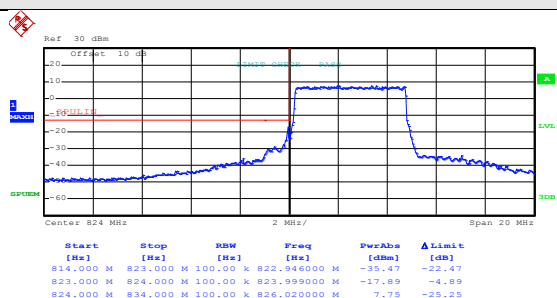


Date: 4.MAY.2017 10:17:42

Highest channel

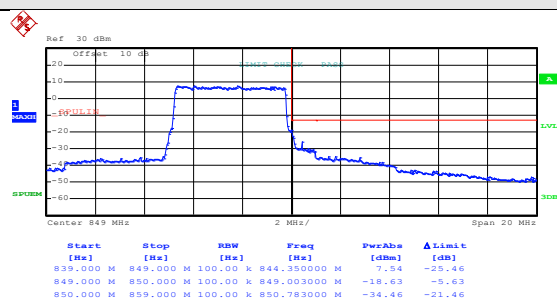
Test Mode:

LTE band 5(QPSK RB Size 25 & RB Offset 0)



Date: 4.MAY.2017 10:37:17

Lowest channel

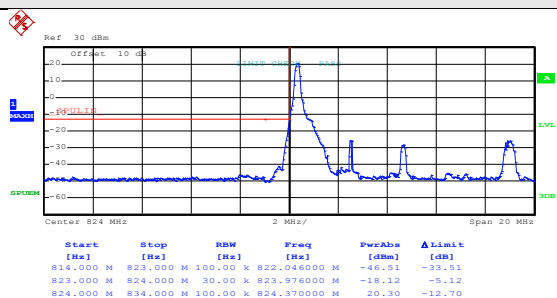


Date: 4.MAY.2017 10:18:39

Highest channel

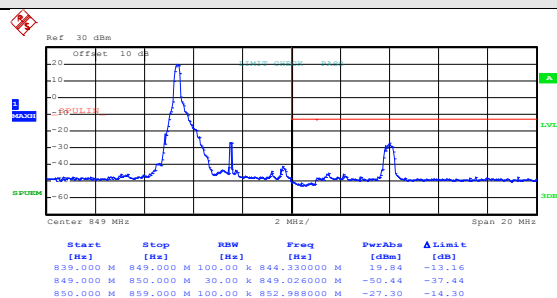
Test Mode:

LTE band 5(16QAM RB Size 1 & RB Offset 0)



Date: 4.MAY.2017 10:13:42

Lowest channel

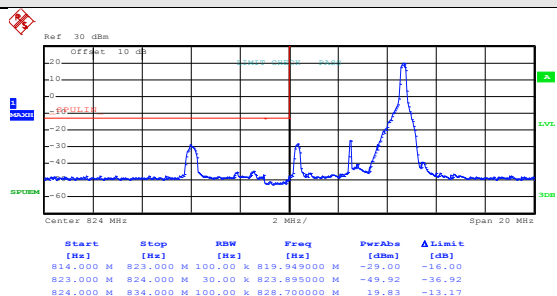


Date: 4.MAY.2017 10:16:22

Highest channel

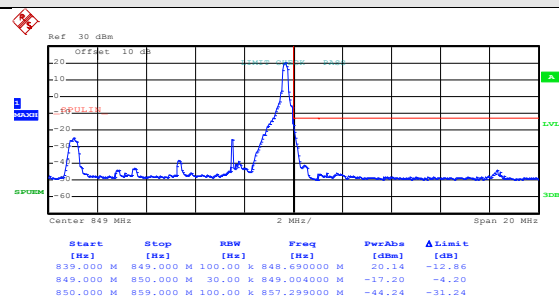
Test Mode:

LTE band 5(16QAM RB Size 1 & RB Offset 24)



Date: 4.MAY.2017 10:14:22

Lowest channel

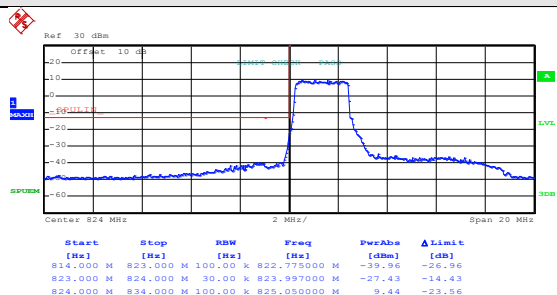


Date: 4.MAY.2017 10:16:56

Highest channel

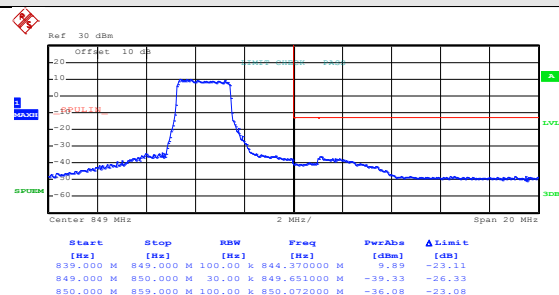
Test Mode:

LTE band 5(16QAM RB Size 12 & RB Offset 0)



Date: 4.MAY.2017 10:14:51

Lowest channel

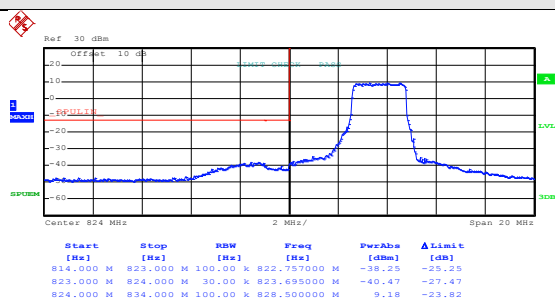


Date: 4.MAY.2017 10:17:24

Highest channel

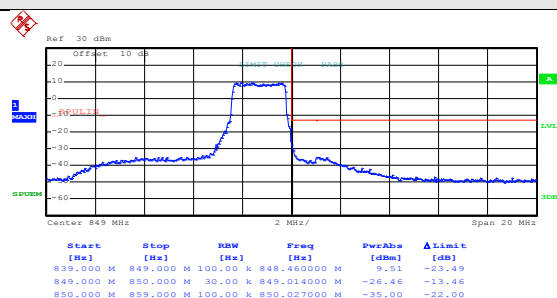
Test Mode:

LTE band 5(16QAM RB Size 12 & RB Offset 11)



Date: 4.MAY.2017 10:15:30

Lowest channel

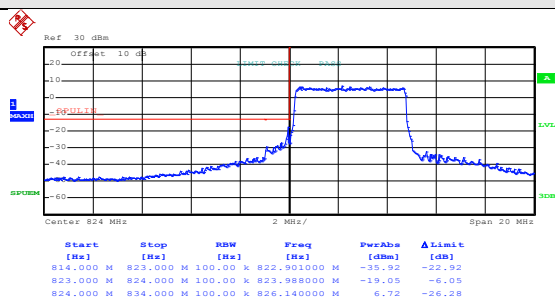


Date: 4.MAY.2017 10:17:56

Highest channel

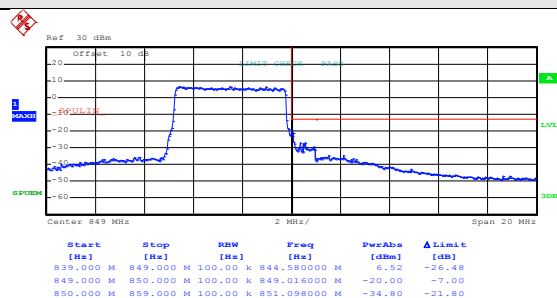
Test Mode:

LTE band 5(16QAM RB Size 25 & RB Offset 0)



Date: 4.MAY.2017 10:37:29

Lowest channel



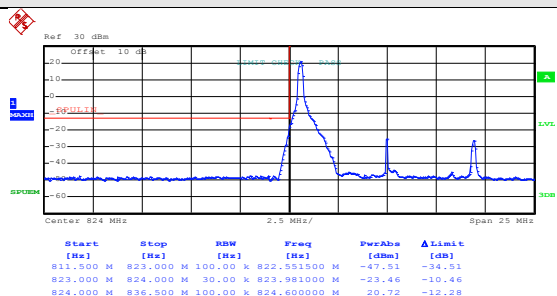
Date: 4.MAY.2017 10:18:48

Highest channel

10MHz:

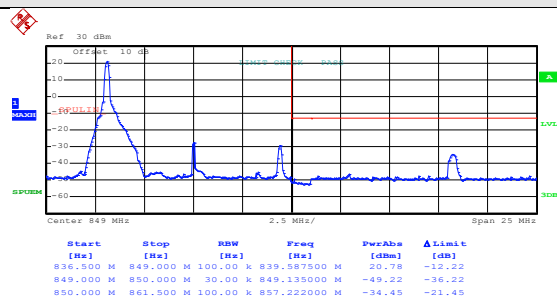
Test Mode:

LTE band 5(QPSK RB Size 1 & RB Offset 0)



Date: 4.MAY.2017 10:21:25

Lowest channel

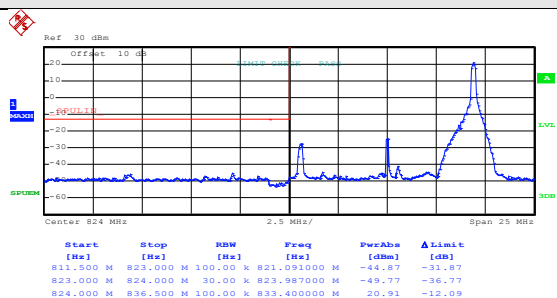


Date: 4.MAY.2017 10:25:45

Highest channel

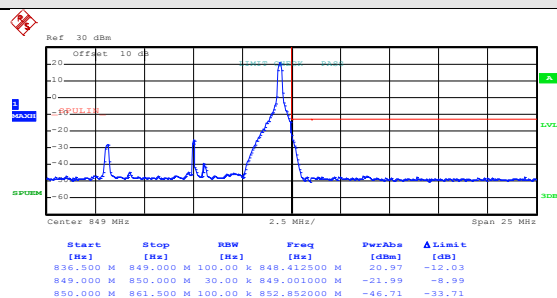
Test Mode:

LTE band 5(QPSK RB Size 1 & RB Offset 49)



Date: 4.MAY.2017 10:21:51

Lowest channel

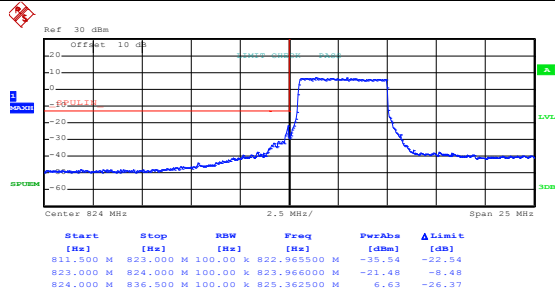


Date: 4.MAY.2017 10:26:12

Highest channel

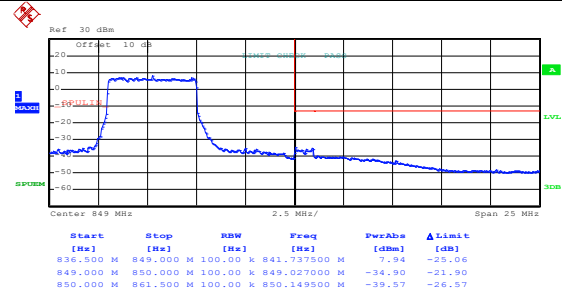
Test Mode:

LTE band 5(QPSK RB Size 25 & RB Offset 0)



Date: 4.MAY.2017 10:28:53

Lowest channel

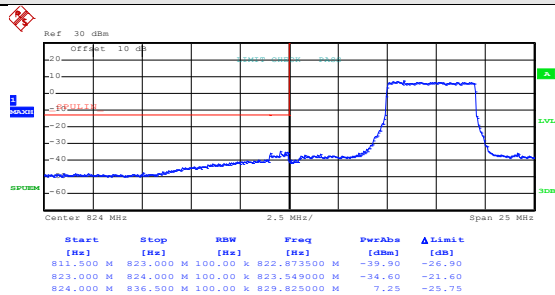


Date: 4.MAY.2017 10:27:32

Highest channel

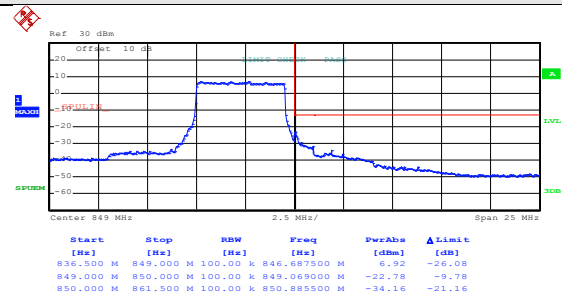
Test Mode:

LTE band 5(QPSK RB Size 25 & RB Offset 24)



Date: 4.MAY.2017 10:29:22

Lowest channel

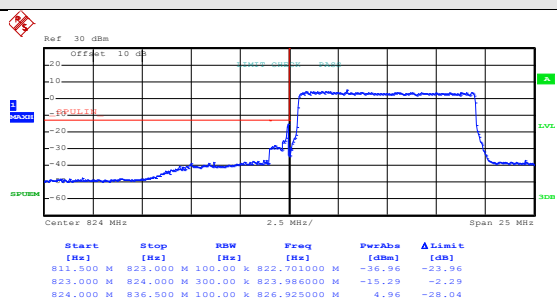


Date: 4.MAY.2017 10:28:00

Highest channel

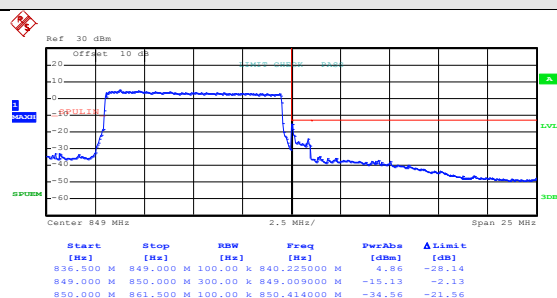
Test Mode:

LTE band 5(QPSK RB Size 50 & RB Offset 0)



Date: 4.MAY.2017 10:31:19

Lowest channel

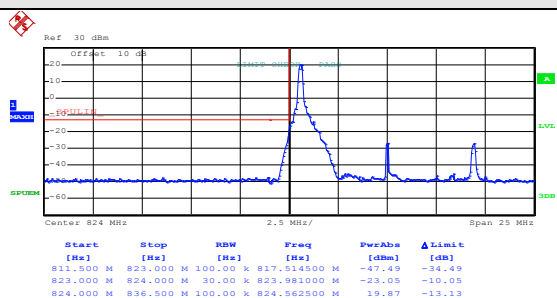


Date: 4.MAY.2017 10:31:57

Highest channel

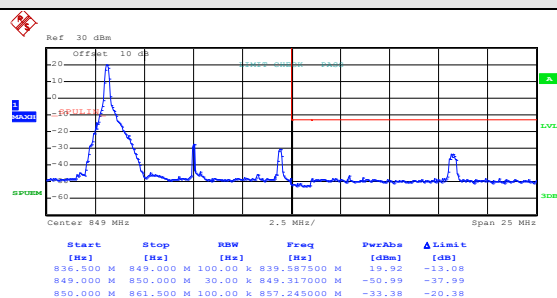
Test Mode:

LTE band 5(16QAM RB Size 1 & RB Offset 0)



Date: 4.MAY.2017 10:21:35

Lowest channel

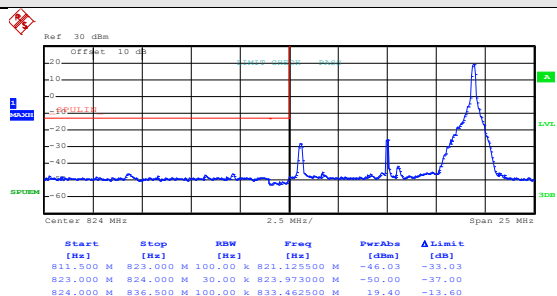


Date: 4.MAY.2017 10:25:56

Highest channel

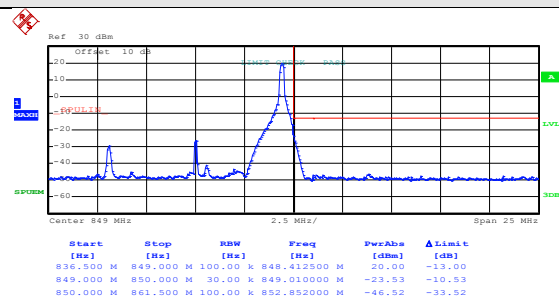
Test Mode:

LTE band 5(16QAM RB Size 1 & RB Offset 49)



Date: 4.MAY.2017 10:22:07

Lowest channel

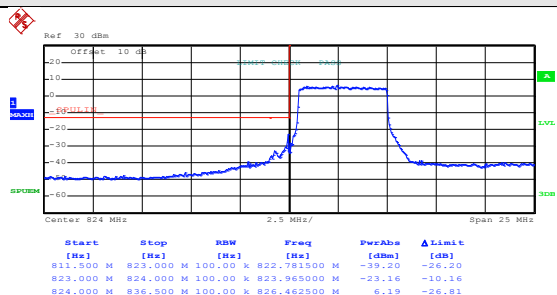


Date: 4.MAY.2017 10:26:23

Highest channel

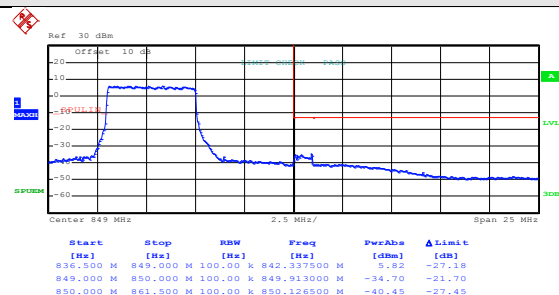
Test Mode:

LTE band 5(16QAM RB Size 25 & RB Offset 0)



Date: 4.MAY.2017 10:29:04

Lowest channel

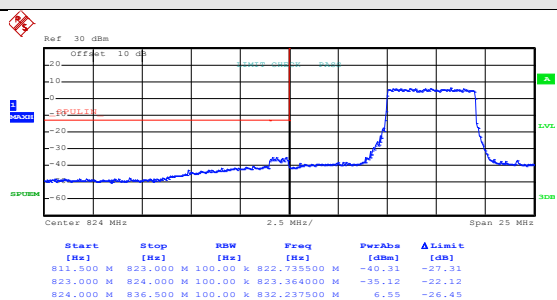


Date: 4.MAY.2017 10:27:45

Highest channel

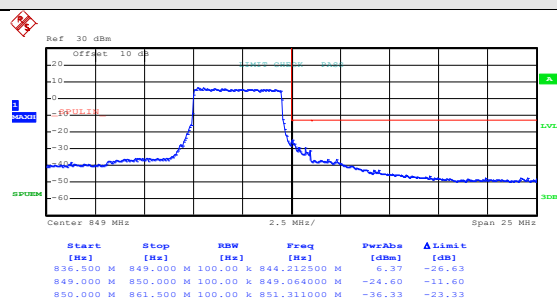
Test Mode:

LTE band 5(16QAM RB Size 25 & RB Offset 24)



Date: 4.MAY.2017 10:29:37

Lowest channel

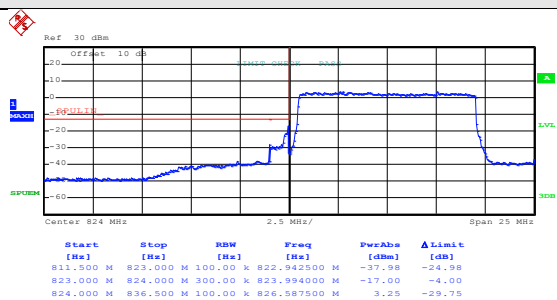


Date: 4.MAY.2017 10:28:12

Highest channel

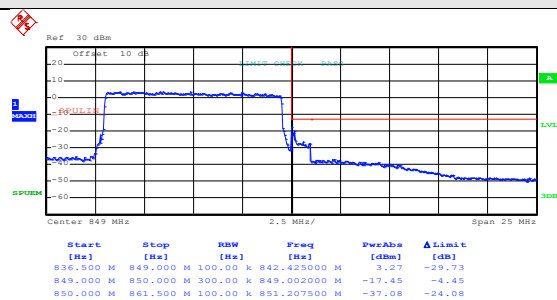
Test Mode:

LTE band 5(16QAM RB Size 50 & RB Offset 0)



Date: 4.MAY.2017 10:31:29

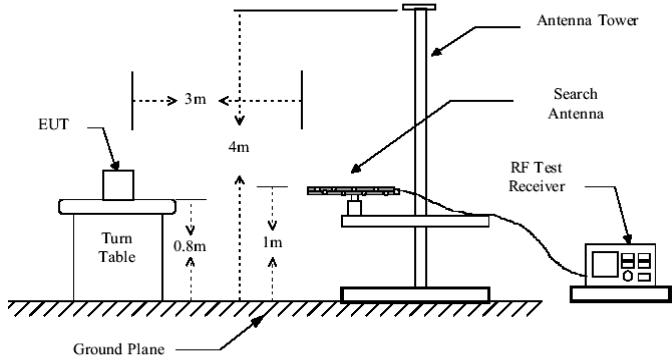
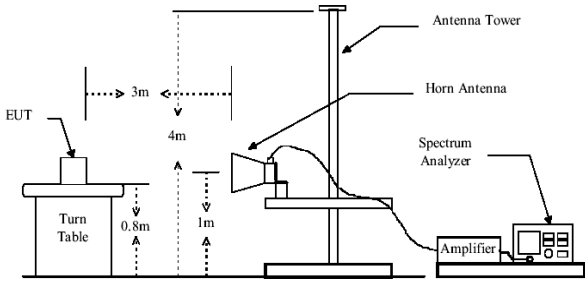
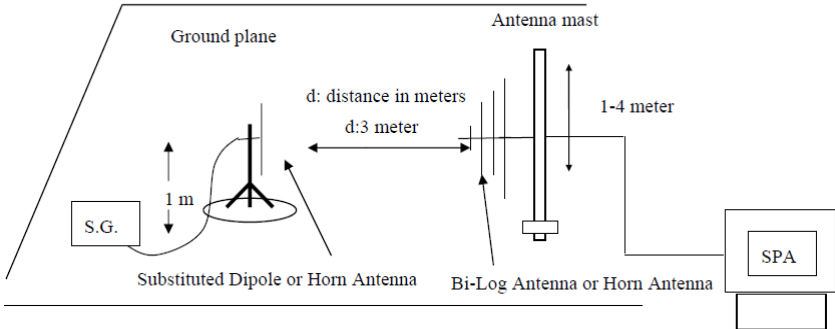
Lowest channel



Date: 4.MAY.2017 10:32:07

Highest channel

6.10 ERP, EIRP Measurement

Test Requirement:	FCC part 22.913 (a)
Test Method:	FCC part2.1046
Limit:	LTE Band 5: 7W EIRP
Test setup:	Below 1GHz  Above 1GHz  Substituted method: 

Test Procedure:	1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. 2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated. 3. ERP in frequency band below 1GHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows: $\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable Loss (dB)}$ 4. EIRP in frequency band above 1GHz were measured using a substitution method. The EUT was replaced by or horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows: $\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable Loss (dB)}$ 5. The worse case was relating to the conducted output power.
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data (worst case):

LTE band 5 part

Lowest channel

Lowest channel								
Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
1.4MHz(RB size 1 & RB offset 0)								
824.70	20407	QPSK	1.4	H	V	24.77	38.45	Pass
					H	14.47		
824.70	20407	16QAM	1.4	H	V	24.48		
					H	14.53		
1.4MHz(RB size 3& RB offset 0)								
824.70	20407	QPSK	1.4	H	V	25.30	38.45	Pass
					H	14.41		
824.70	20407	16QAM	1.4	H	V	25.21		
					H	14.08		
1.4MHz(RB size 6& RB offset 0)								
824.70	20407	QPSK	1.4	H	V	22.56	38.45	Pass
					H	12.46		
824.70	20407	16QAM	1.4	H	V	22.72		
					H	12.78		

Middle channel

Middle Channel								
Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
1.4MHz(RB size 1 & RB offset 0)								
836.50	20525	QPSK	1.4	H	V	24.39	38.45	Pass
					H	13.25		
836.50	20525	16QAM	1.4	H	V	24.43		
					H	13.60		
1.4MHz(RB size 3& RB offset 0)								
836.50	20525	QPSK	1.4	H	V	25.62	38.45	Pass
					H	14.50		
836.50	20525	16QAM	1.4	H	V	25.16		
					H	14.14		
1.4MHz(RB size 6& RB offset 0)								
836.50	20525	QPSK	1.4	H	V	22.58	38.45	Pass
					H	12.46		
836.50	20525	16QAM	1.4	H	V	22.76		
					H	12.73		

Highest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
1.4MHz(RB size 1 & RB offset 0)								
848.30	20643	QPSK	1.4	H	V	24.53	38.45	Pass
					H	13.58		
848.30	20643	16QAM	1.4	H	V	24.45		
					H	13.37		
1.4MHz(RB size 3& RB offset 0)								
848.30	20643	QPSK	1.4	H	V	25.35	38.45	Pass
					H	14.52		
848.30	20643	16QAM	1.4	H	V	25.34		
					H	14.25		
1.4MHz(RB size 6& RB offset 0)								
848.30	20643	QPSK	1.4	H	V	22.57	38.45	Pass
					H	12.68		
848.30	20643	16QAM	1.4	H	V	22.59		
					H	12.66		

Lowest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
10MHz(RB size 1 & RB offset 0)								
829.00	20450	QPSK	10	H	V	24.76	38.45	Pass
					H	14.35		
829.00	20450	16QAM	10	H	V	24.65		
					H	14.28		
10MHz(RB size 25& RB offset 0)								
829.00	20450	QPSK	10	H	V	25.36	38.45	Pass
					H	14.75		
829.00	20450	16QAM	10	H	V	25.57		
					H	14.39		
10MHz(RB size 50& RB offset 0)								
829.00	20450	QPSK	10	H	V	22.37	38.45	Pass
					H	12.57		
829.00	20450	16QAM	10	H	V	22.63		
					H	12.75		

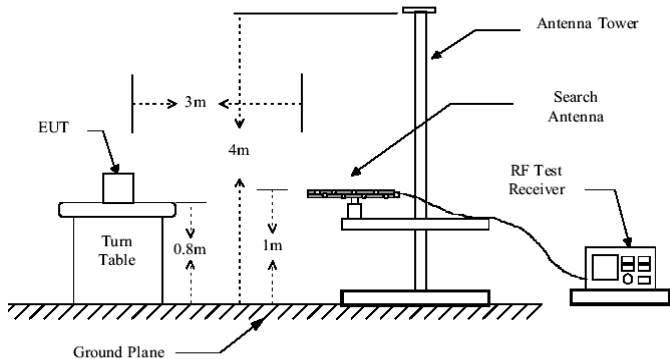
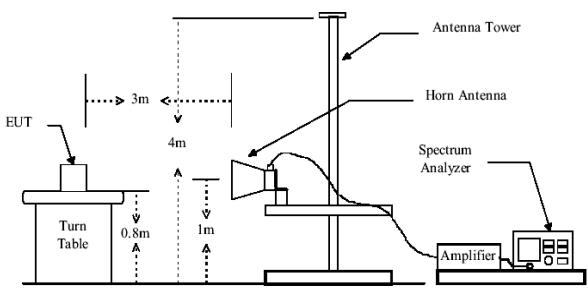
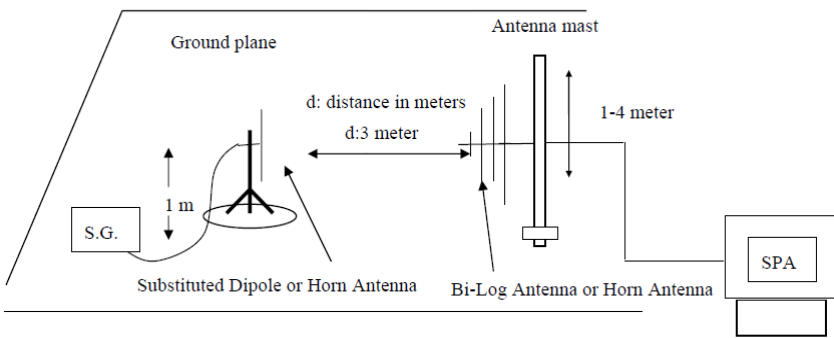
Middle channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
10MHz(RB size 1 & RB offset 0)								
836.50	20525	QPSK	10	H	V	24.58	38.45	Pass
					H	14.55		
836.50	20525	16QAM	10	H	V	24.72		
					H	14.20		
10MHz(RB size 25& RB offset 0)								
836.50	20525	QPSK	10	H	V	25.49	38.45	Pass
					H	14.37		
836.50	20525	16QAM	10	H	V	25.42		
					H	14.22		
10MHz(RB size 50 & RB offset 0)								
836.50	20525	QPSK	10	H	V	22.56	38.45	Pass
					H	12.38		
836.50	20525	16QAM	10	H	V	22.49		
					H	12.26		

High channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
10MHz(RB size 1 & RB offset 0)								
844.00	20600	QPSK	10	H	V	24.77	38.45	Pass
					H	14.50		
844.00	20600	16QAM	10	H	V	24.61		
					H	14.34		
10MHz(RB size 25& RB offset 0)								
844.00	20600	QPSK	10	H	V	25.24	38.45	Pass
					H	14.56		
844.00	20600	16QAM	10	H	V	25.17		
					H	14.31		
10MHz(RB size 50 & RB offset 0)								
844.00	20600	QPSK	10	H	V	22.47	38.45	Pass
					H	12.59		
844.00	20600	16QAM	10	H	V	22.65		
					H	12.46		

6.11 Field strength of spurious radiation measurement

Test Requirement:	FCC Part 22.917(a)
Test Method:	FCC part2.1053
Limit:	LTE Band 5: -13dBm,
Test setup:	Below 1GHz  Above 1GHz  Substituted method: 
Test Procedure:	1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. 2. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. 3. The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method. 4. The spurious emissions attenuation was calculated as the difference

	between radiated power at the fundamental frequency and the spurious emissions frequency. $\text{ERP / EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain(dB/dBi)} - \text{Cable Loss (dB)}$
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details.
Test results:	Passed

Measurement Data (worst case):**Below 1GHz:**

The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.

Above 1GHz

For above 1 GHz, all test modes were performed, and just the worst case shown in the report.

LTE Band 5 Part:

1.4MHz(RB size 1 & RB offset 0) for QPSK

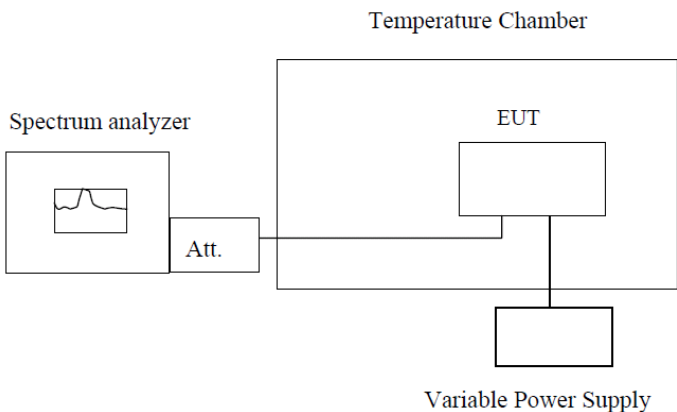
1.4MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
1649.40	Vertical	-52.70	-13	Pass
2474.10	V	-47.94		
3298.80	V	-51.91		
1649.40	Horizontal	-51.89		
2474.10	H	-47.74		
3298.80	H	-51.73		
Middle				
1673.00	Vertical	-51.56	-13	Pass
2509.50	V	-51.51		
3346.00	V	-51.20		
1673.00	Horizontal	-51.83		
2509.50	H	-50.48		
3346.00	H	-51.62		
Highest				
1696.60	Vertical	-52.84	-13	Pass
2544.90	V	-51.01		
3393.20	V	-52.30		
1696.60	Horizontal	-52.89		
2544.90	H	-52.18		
3393.20	H	-50.87		

3MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
1651.00	Vertical	-52.36	-13	Pass
2476.50	V	-50.86		
3302.00	V	-51.68		
1651.00	Horizontal	-52.43		
2476.50	H	-50.11		
3302.00	H	-52.43		
Middle				
1673.00	Vertical	-51.78	-13	Pass
2509.50	V	-52.39		
3346.00	V	-52.46		
1673.00	Horizontal	-51.77		
2509.50	H	-51.45		
3346.00	H	-52.26		
Highest				
1695.00	Vertical	-52.85	-13	Pass
2542.50	V	-52.36		
3390.00	V	-51.49		
1695.00	Horizontal	-52.87		
2542.50	H	-51.95		
3390.00	H	-51.32		

5MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
1653.00	Vertical	-52.36	-13	Pass
2479.50	V	-48.69		
3306.00	V	-51.22		
1653.00	Horizontal	-52.75		
2479.50	H	-49.63		
3306.00	H	-51.76		
Middle				
1673.00	Vertical	-52.33	-13	Pass
2509.50	V	-51.46		
3346.00	V	-52.75		
1673.00	Horizontal	-51.47		
2509.50	H	-50.77		
3346.00	H	-52.38		
Highest				
1693.00	Vertical	-52.78	-13	Pass
2539.50	V	-52.36		
3386.00	V	-52.48		
1693.00	Horizontal	-51.69		
2539.50	H	-52.76		
3386.00	H	-50.95		

10MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
1658.00	Vertical	-51.87	-13	Pass
2487.00	V	-50.69		
3316.00	V	-52.31		
1658.00	Horizontal	-52.24		
2487.00	H	-50.75		
3316.00	H	-51.69		
Middle				
1673.00	Vertical	-52.55	-13	Pass
2509.50	V	-51.69		
3346.00	V	-51.41		
1673.00	Horizontal	-52.38		
2509.50	H	-52.47		
3346.00	H	-51.69		
Highest				
1688.00	Vertical	-52.37	-13	Pass
2532.00	V	-51.49		
3376.00	V	-51.25		
1688.00	Horizontal	-52.83		
2532.00	H	-52.42		
3376.00	H	-51.67		

6.12 Frequency stability V.S. Temperature measurement

Test Requirement:	Part 24.235, Part 27.54, Part 2.1055(a)(1)(b)
Test Method:	FCC Part2.1055(a)(1)(b)
Limit:	$\pm 2.5\text{ppm}$
Test setup:	 Note : Measurement setup for testing on Antenna connector
Test procedure:	1. The equipment under test was connected to an external DC power supply and input rated voltage. 2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. 3. The EUT was placed inside the temperature chamber. 4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. 5. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. 6. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	All three channels of all modulations have been tested, but only the worst channel and the worst modulation show in this test item.

Measurement Data (the worst channel):

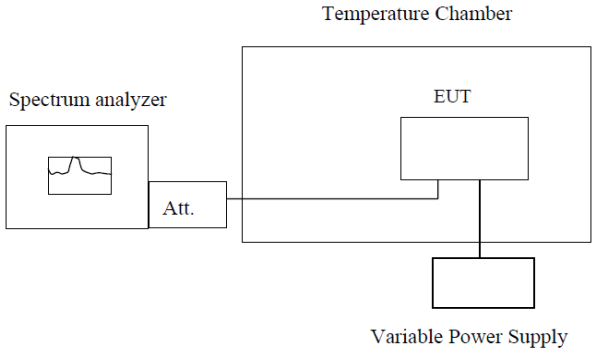
LTE Band 5(QPSK):

Reference Frequency: LTE Band 5(1.4MHz) Middle channel=20525Frequency=836.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.7	-30	199	0.237896	±2.5	Pass
	-20	123	0.147041		
	-10	144	0.172146		
	0	155	0.185296		
	10	160	0.191273		
	20	150	0.179319		
	30	143	0.170950		
	40	171	0.204423		
	50	180	0.215182		
Reference Frequency: LTE Band 5(3MHz) Middle channel=20525Frequency=836.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.7	-30	166	0.198446	±2.5	Pass
	-20	123	0.147041		
	-10	130	0.155409		
	0	125	0.149432		
	10	136	0.162582		
	20	161	0.192469		
	30	144	0.172146		
	40	148	0.176928		
	50	150	0.179319		
Reference Frequency: LTE Band 5(5MHz) Middle channel=20525Frequency=836.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.7	-30	123	0.147041	±2.5	Pass
	-20	132	0.157800		
	-10	133	0.158996		
	0	162	0.193664		
	10	128	0.153019		
	20	144	0.172146		
	30	148	0.176928		
	40	171	0.204423		
	50	160	0.191273		
Reference Frequency: LTE Band 5(10MHz) Middle channel=20525Frequency=836.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.7	-30	155	0.185296	±2.5	Pass
	-20	123	0.147041		
	-10	130	0.155409		
	0	151	0.180514		
	10	141	0.168559		
	20	161	0.192469		
	30	107	0.127914		
	40	144	0.172146		
	50	109	0.130305		

LTE Band 5(16QAM):

Reference Frequency: LTE Band 5(1.4MHz) Middle channel=20525Frequency=836.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.7	-30	165	0.197250	±2.5	Pass
	-20	123	0.147041		
	-10	131	0.156605		
	0	126	0.150628		
	10	160	0.191273		
	20	144	0.172146		
	30	148	0.176928		
	40	171	0.204423		
	50	101	0.120741		
Reference Frequency: LTE Band 5(3MHz) Middle channel=20525Frequency=836.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.7	-30	168	0.200837	±2.5	Pass
	-20	162	0.193664		
	-10	132	0.157800		
	0	136	0.162582		
	10	144	0.172146		
	20	145	0.173341		
	30	123	0.147041		
	40	126	0.150628		
	50	107	0.127914		
Reference Frequency: LTE Band 5(5MHz) Middle channel=20525Frequency=836.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.7	-30	171	0.204423	2.5	Pass
	-20	141	0.168559		
	-10	146	0.174537		
	0	178	0.212791		
	10	161	0.192469		
	20	133	0.158996		
	30	131	0.156605		
	40	123	0.147041		
	50	114	0.136282		
Reference Frequency: LTE Band 5(10MHz) Middle channel=20525Frequency=836.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.7	-30	156	0.186491	2.5	Pass
	-20	123	0.147041		
	-10	132	0.157800		
	0	126	0.150628		
	10	131	0.156605		
	20	144	0.172146		
	30	147	0.175732		
	40	160	0.191273		
	50	169	0.202032		

6.13 Frequency stability V.S. Voltage measurement

Test Requirement:	Part 24.235, Part 27.54, Part 2.1055(d)(2)
Test Method:	FCC Part2.1055(d)(1)(2)
Limit:	2.5ppm
Test setup:	 Note : Measurement setup for testing on Antenna connector
Test procedure:	1. Set chamber temperature to 25°C. Use a variable DC power source to power the EUT and set the voltage to rated voltage. 2. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency. 3. Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details, and all channels have been tested, only shows the worst channel data in this report.
Test results:	Passed

Measurement Data (the worst channel):

LTE Band 5(QPSK):

Reference Frequency: LTE Band 5(1.4MHz) Middle channel=20525Frequency=836.50MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.20	99	0.118350	±2.5	Pass
	3.70	85	0.101614		
	3.14	64	0.076509		
Reference Frequency: LTE Band 5(3MHz) Middle channel=20525Frequency=836.50MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.20	88	0.105200	±2.5	Pass
	3.70	74	0.088464		
	3.14	90	0.107591		
Reference Frequency: LTE Band 5(5MHz) Middle channel=20525Frequency=836.50MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.20	84	0.100418	±2.5	Pass
	3.70	74	0.088464		
	3.14	90	0.107591		
Reference Frequency: LTE Band5(10MHz) Middle channel=20525Frequency=836.50MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.20	96	0.114764	±2.5	Pass
	3.70	45	0.053796		
	3.14	80	0.095637		

LTE Band 5(16QAM):

Reference Frequency: LTE Band 5(1.4MHz) Middle channel=20525Frequency=836.50MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.20	84	0.100418	±2.5	Pass
	3.70	64	0.076509		
	3.14	70	0.083682		
Reference Frequency: LTE Band 5(3MHz) Middle channel=20525Frequency=836.50MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.20	99	0.118350	±2.5	Pass
	3.70	78	0.093246		
	3.14	80	0.095637		
Reference Frequency: LTE Band 5(5MHz) Middle channel=20525Frequency=836.50MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.20	93	0.111178	±2.5	Pass
	3.70	64	0.076509		
	3.14	82	0.098027		
Reference Frequency: LTE Band 5(10MHz) Middle channel=20525Frequency=836.50MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.20	84	0.100418	±2.5	Pass
	3.70	75	0.089659		
	3.14	90	0.107591		