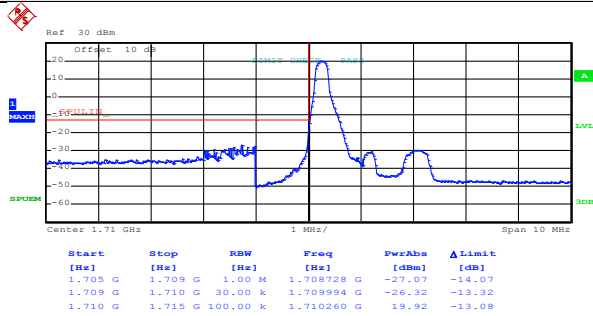


Band edge emission:

LTE band 4 part:1.4MHz:

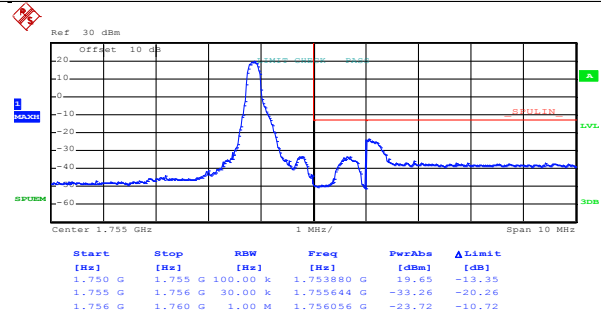
Test Mode:

LTE band 4(QPSK RB Size 1 & RB Offset 0)



Date: 19.MAR.2017 19:05:17

Lowest channel

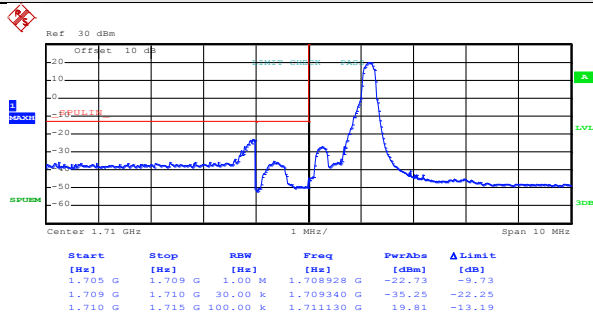


Date: 19.MAR.2017 19:06:39

Highest channel

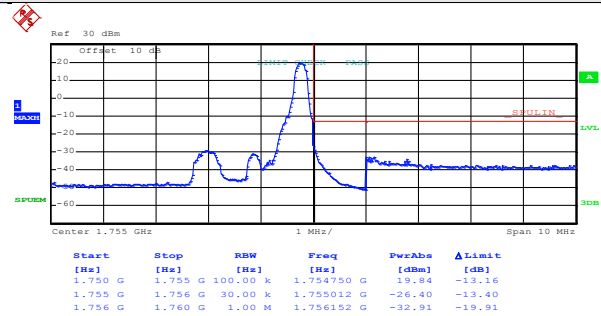
Test Mode:

LTE band 4(QPSK RB Size 1 & RB Offset 5)



Date: 19.MAR.2017 19:05:32

Lowest channel

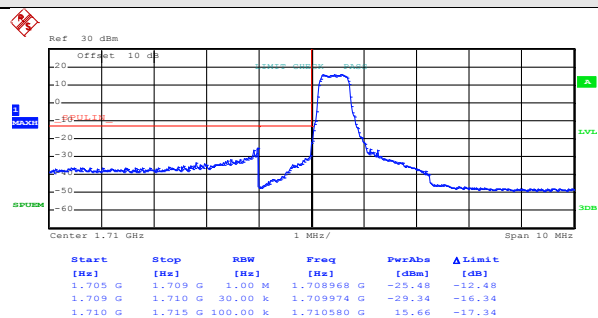


Date: 19.MAR.2017 19:06:51

Highest channel

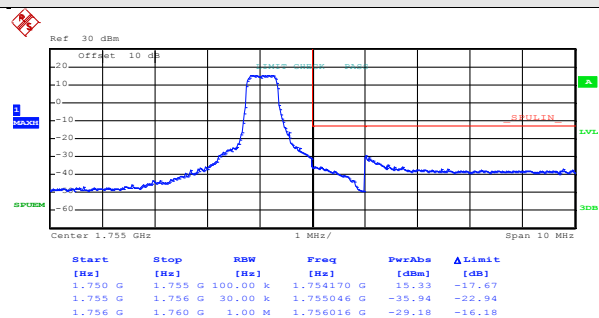
Test Mode:

LTE band 4(QPSK RB Size 3 & RB Offset 0)



Date: 19.MAR.2017 19:05:48

Lowest channel

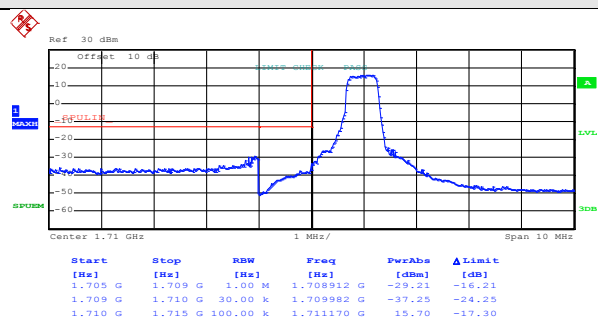


Date: 19.MAR.2017 19:07:08

Highest channel

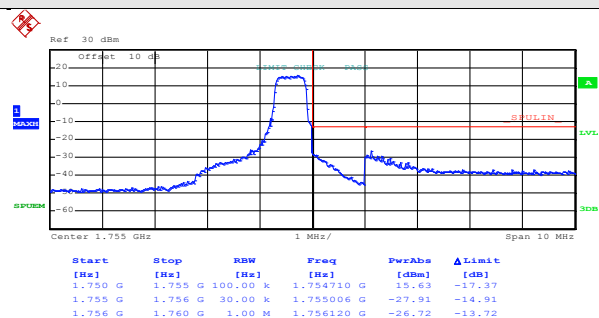
Test Mode:

LTE band 4(QPSK RB Size 3 & RB Offset 2)



Date: 19.MAR.2017 19:06:04

Lowest channel

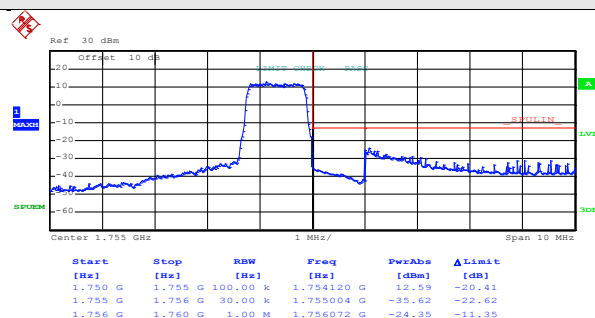
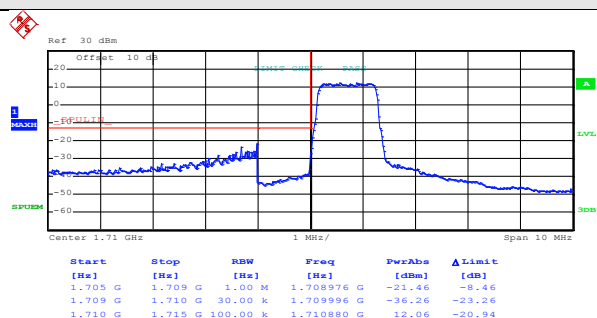


Date: 19.MAR.2017 19:07:21

Highest channel

Test Mode:

LTE band 4(QPSK RB Size 6 & RB Offset 0)



Date: 19.MAR.2017 19:06:17

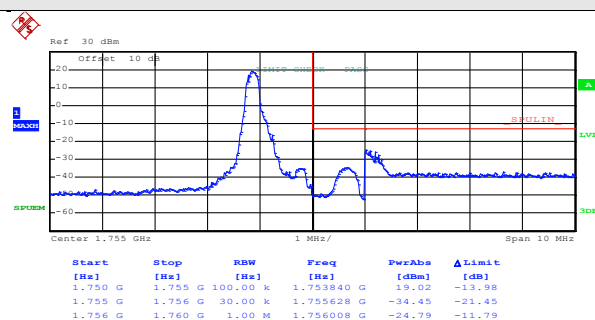
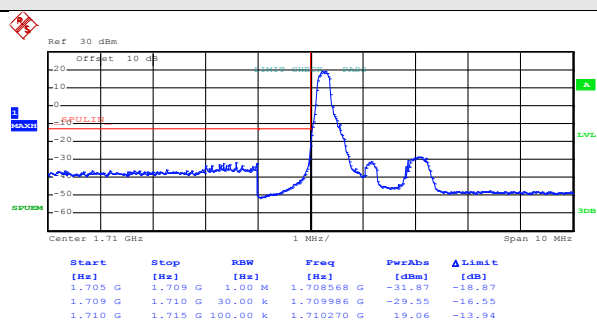
Date: 19.MAR.2017 19:07:36

Lowest channel

Highest channel

Test Mode:

LTE band 4(16QAM RB Size 1 & RB Offset 0)



Date: 19.MAR.2017 19:05:24

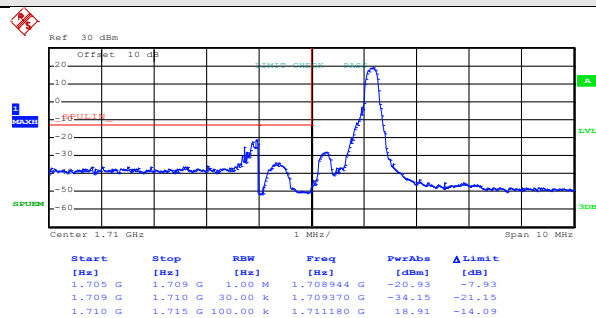
Date: 19.MAR.2017 19:06:44

Lowest channel

Highest channel

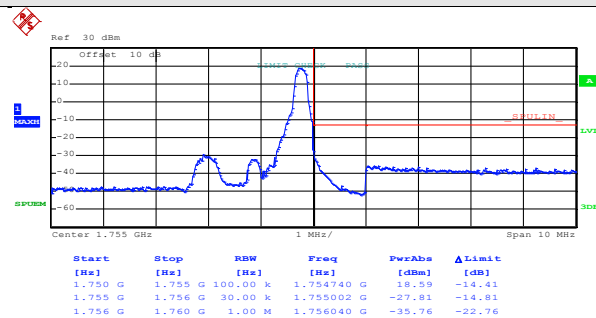
Test Mode:

LTE band 4(16QAM RB Size 1 & RB Offset 5)



Date: 19.MAR.2017 19:05:40

Lowest channel

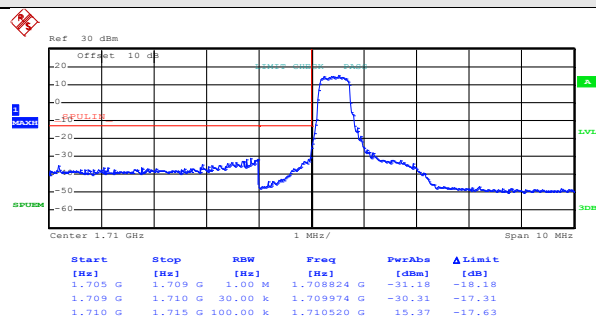


Date: 19.MAR.2017 19:06:58

Highest channel

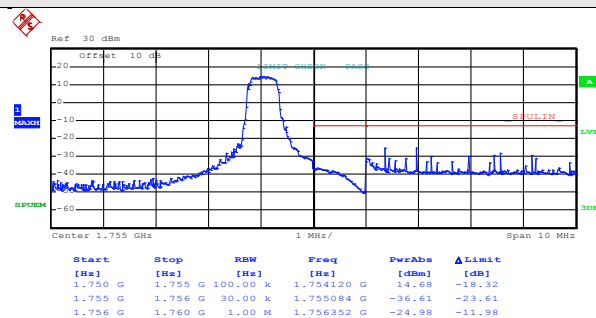
Test Mode:

LTE band 4(16QAM RB Size 3 & RB Offset 0)



Date: 19.MAR.2017 19:05:54

Lowest channel

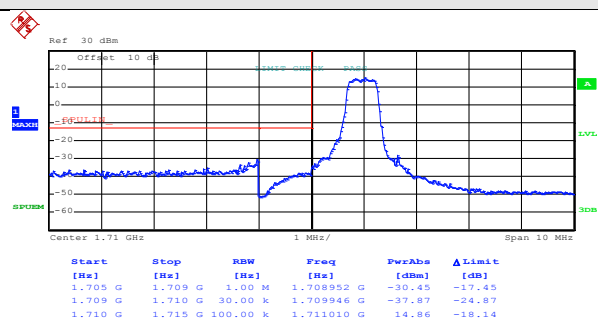


Date: 19.MAR.2017 19:07:13

Highest channel

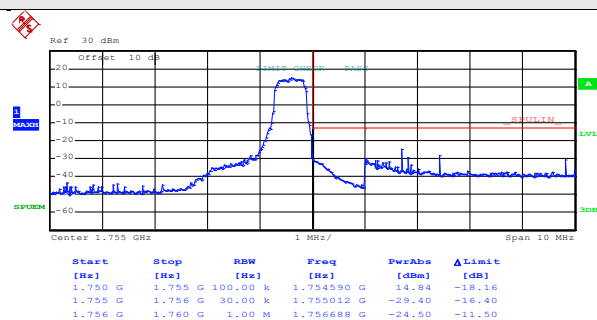
Test Mode:

LTE band 4(16QAM RB Size 3 & RB Offset 2)



Date: 19.MAR.2017 19:06:10

Lowest channel

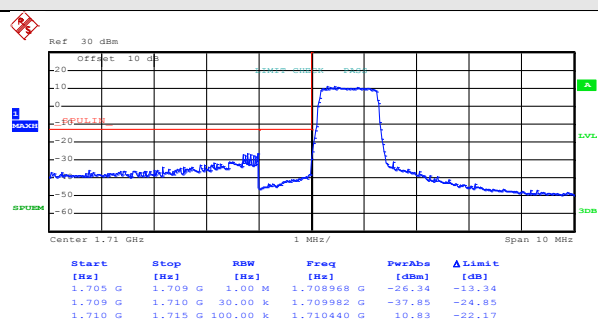


Date: 19.MAR.2017 19:07:27

Highest channel

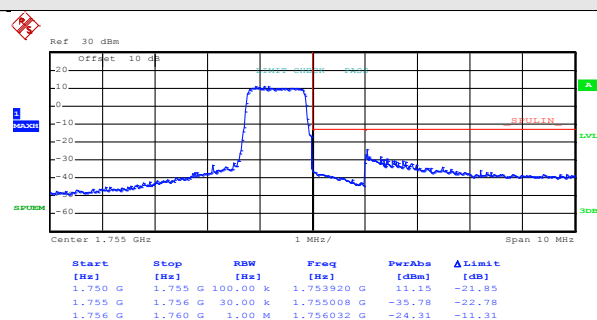
Test Mode:

LTE band 4(16QAM RB Size 6 & RB Offset 0)



Date: 19.MAR.2017 19:06:20

Lowest channel



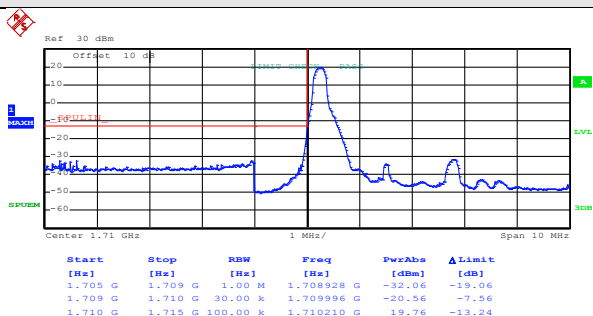
Date: 19.MAR.2017 19:07:39

Highest channel

3MHz:

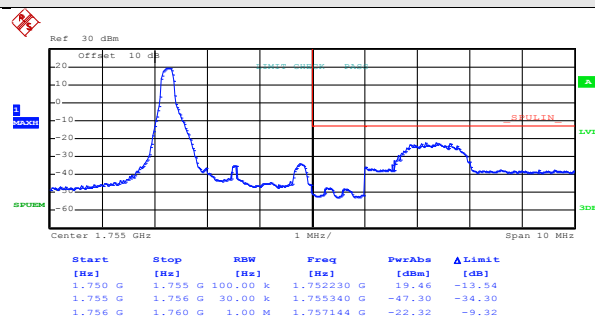
Test Mode:

LTE band 4(QPSK RB Size 1 & RB Offset 0)



Date: 19.MAR.2017 19:08:33

Lowest channel

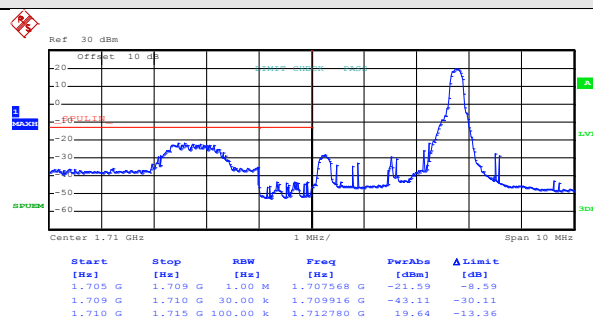


Date: 19.MAR.2017 19:10:11

Highest channel

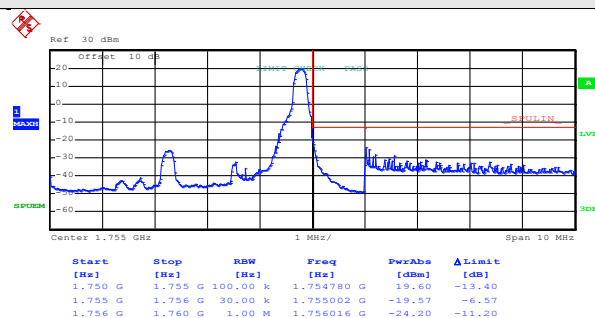
Test Mode:

LTE band 4(QPSK RB Size 1 & RB Offset 14)



Date: 19.MAR.2017 19:08:54

Lowest channel

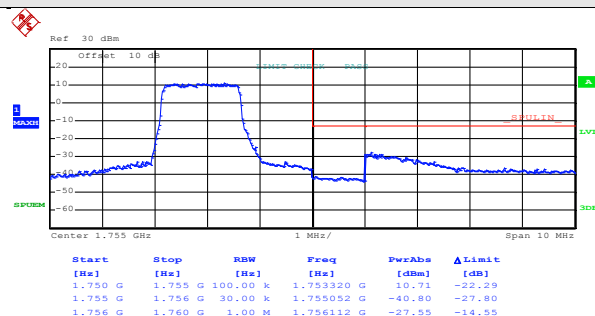
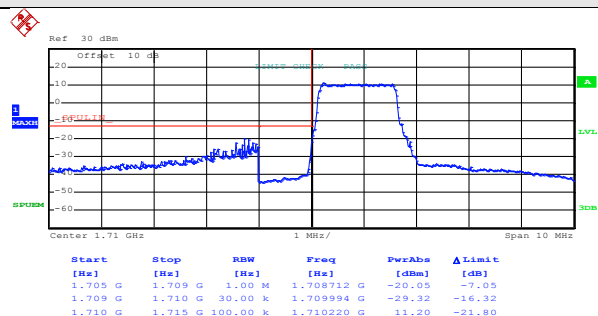


Date: 19.MAR.2017 19:10:27

Highest channel

Test Mode:

LTE band 4(QPSK RB Size 8 & RB Offset 0)



Date: 19.MAR.2017 19:09:09

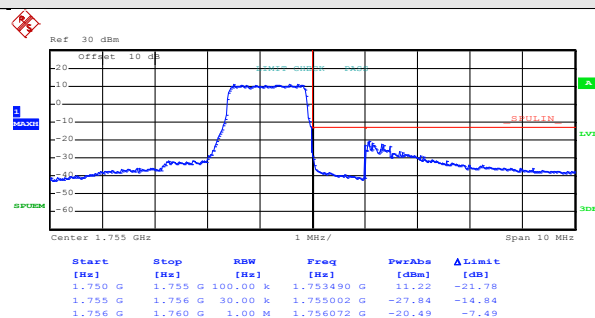
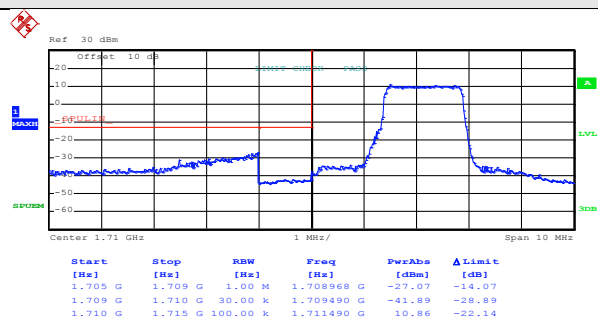
Date: 19.MAR.2017 19:10:44

Lowest channel

Highest channel

Test Mode:

LTE band 4(QPSK RB Size 8 & RB Offset 7)



Date: 19.MAR.2017 19:09:22

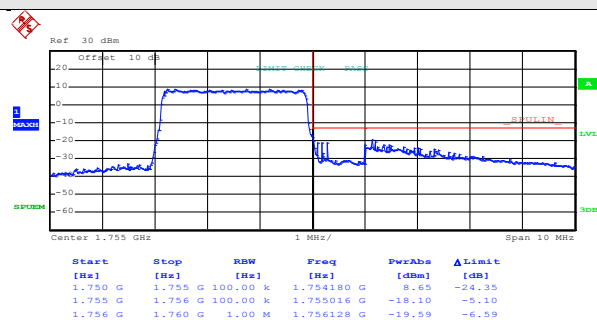
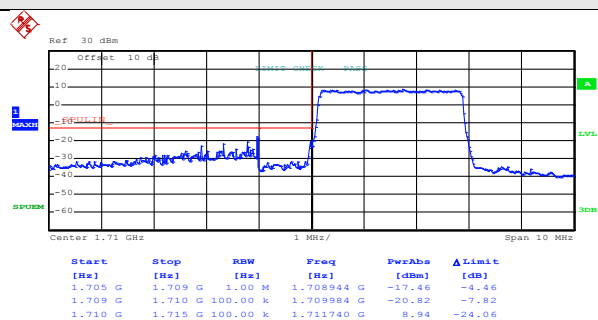
Date: 19.MAR.2017 19:11:02

Lowest channel

Highest channel

Test Mode:

LTE band 4(QPSK RB Size 15 & RB Offset 0)



Date: 19.MAR.2017 19:09:46

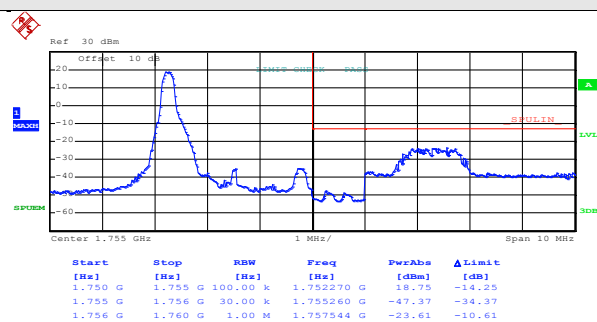
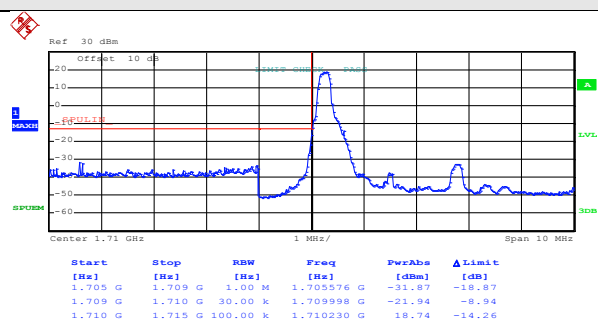
Date: 19.MAR.2017 19:11:27

Lowest channel

Highest channel

Test Mode:

LTE band 4(16QAM RB Size 1 & RB Offset 0)



Date: 19.MAR.2017 19:08:43

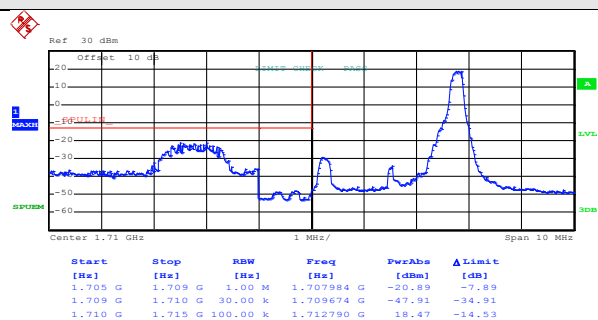
Date: 19.MAR.2017 19:10:17

Lowest channel

Highest channel

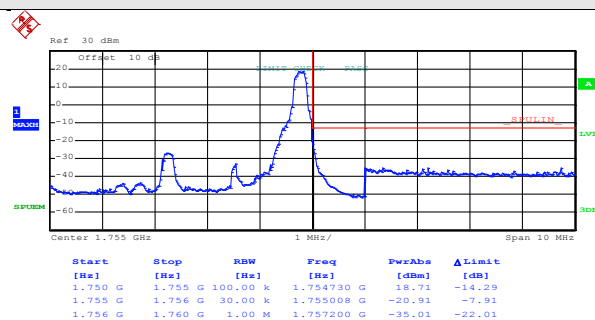
Test Mode:

LTE band 4(16QAM RB Size 1 & RB Offset 14)



Date: 19.MAR.2017 19:09:00

Lowest channel

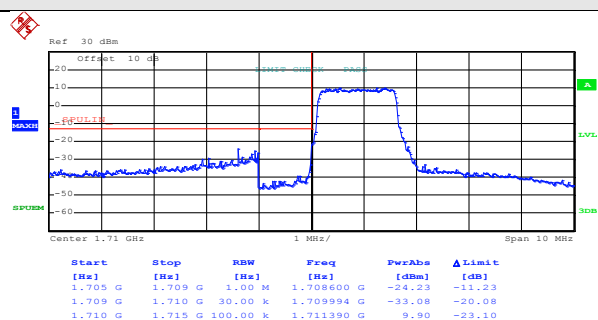


Date: 19.MAR.2017 19:10:33

Highest channel

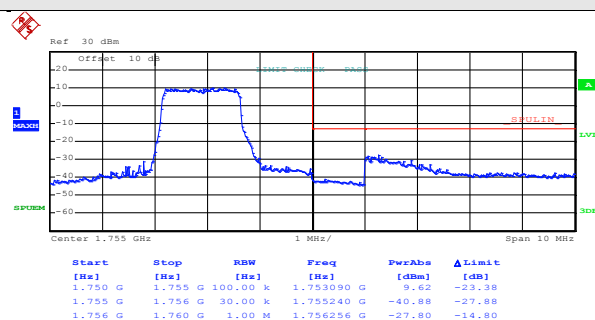
Test Mode:

LTE band 4(16QAM RB Size 8 & RB Offset 0)



Date: 19.MAR.2017 19:09:14

Lowest channel

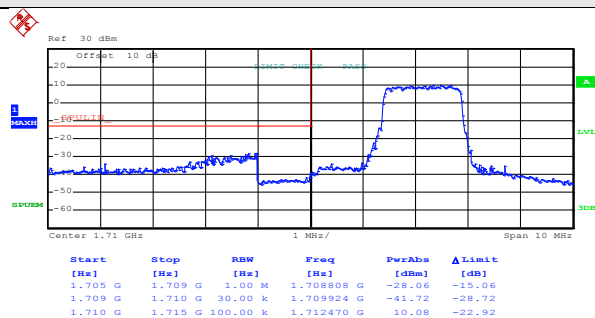


Date: 19.MAR.2017 19:10:48

Highest channel

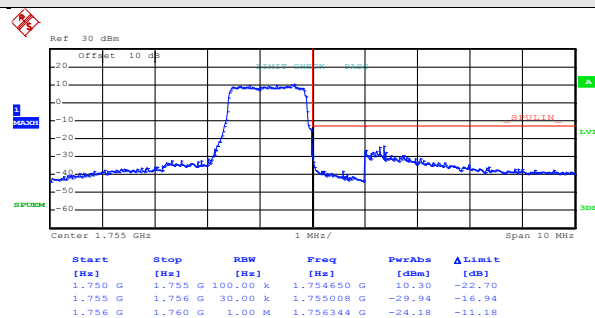
Test Mode:

LTE band 4(16QAM RB Size 8 & RB Offset 7)



Date: 19.MAR.2017 19:09:29

Lowest channel

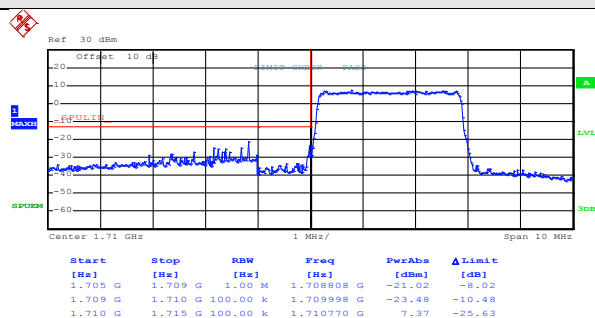


Date: 19.MAR.2017 19:11:07

Highest channel

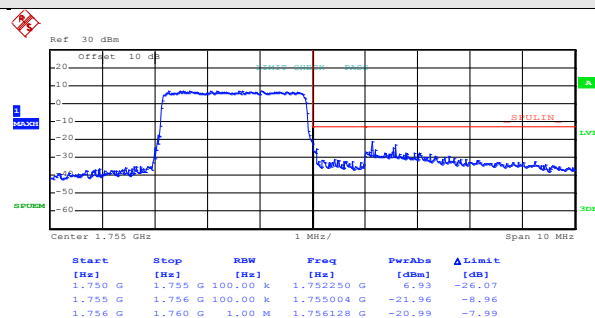
Test Mode:

LTE band 4(16QAM RB Size 15 & RB Offset 0)



Date: 19.MAR.2017 19:09:49

Lowest channel

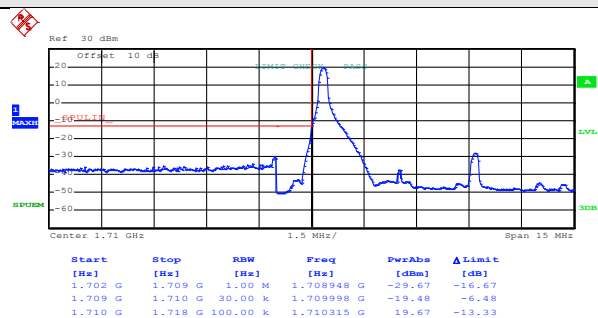


Date: 19.MAR.2017 19:11:31

Highest channel

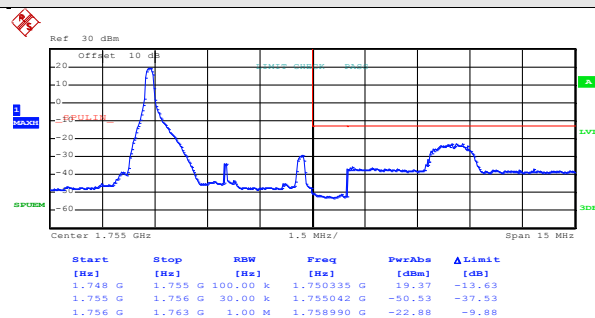
5MHz:

Test Mode:	LTE band 4(QPSK RB Size 1 & RB Offset 0)
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Date: 19.MAR.2017 19:12:13

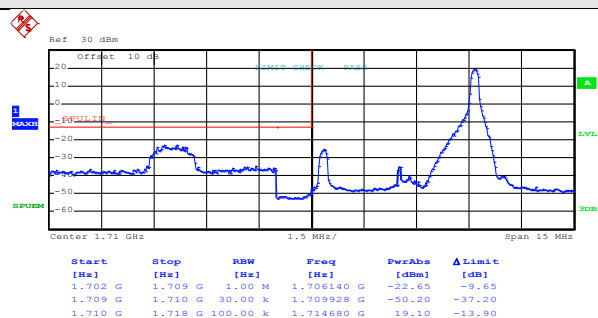
Lowest channel



Date: 19.MAR.2017 19:14:46

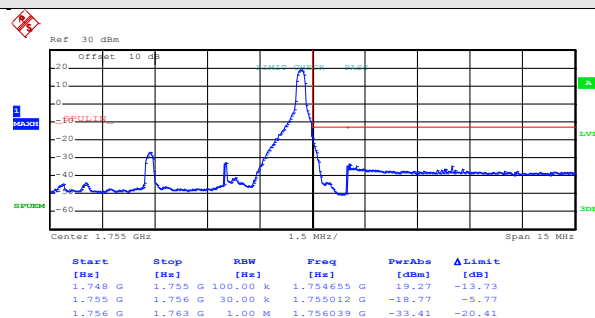
Highest channel

Test Mode:	LTE band 4(QPSK RB Size 1 & RB Offset 24)
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Date: 19.MAR.2017 19:13:13

Lowest channel

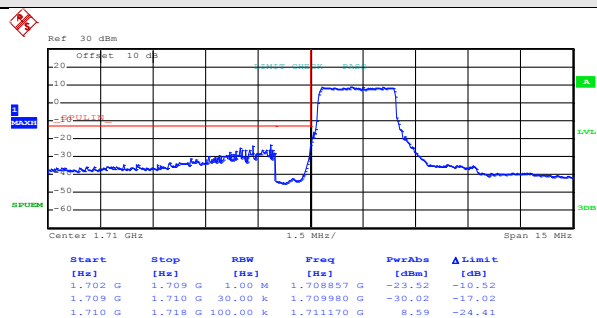


Date: 19.MAR.2017 19:15:03

Highest channel

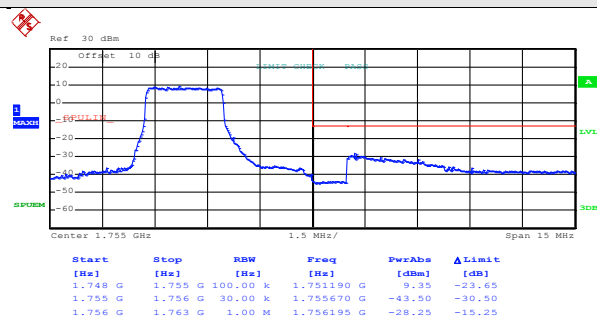
Test Mode:

LTE band 4(QPSK RB Size 12 & RB Offset 0)



Date: 19.MAR.2017 19:13:32

Lowest channel

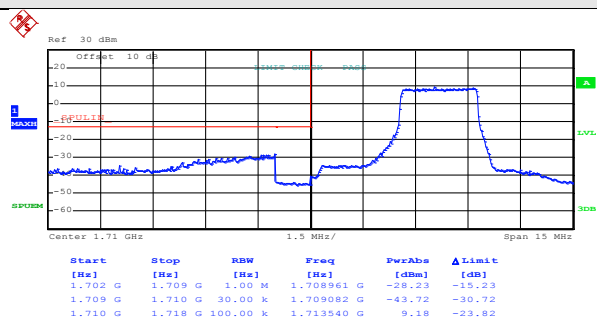


Date: 19.MAR.2017 19:15:19

Highest channel

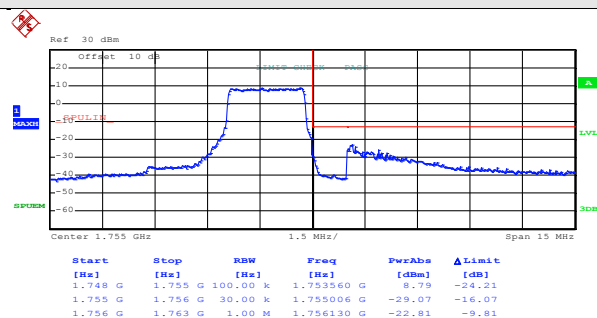
Test Mode:

LTE band 4(QPSK RB Size 12 & RB Offset 11)



Date: 19.MAR.2017 19:13:50

Lowest channel

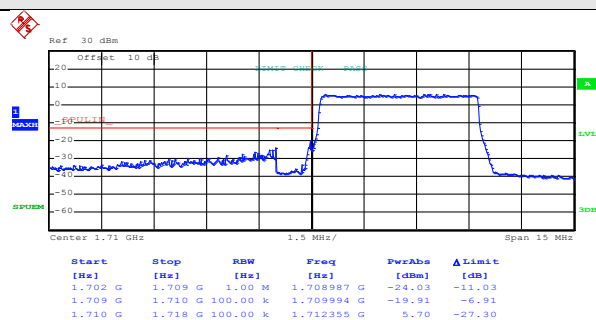


Date: 19.MAR.2017 19:15:34

Highest channel

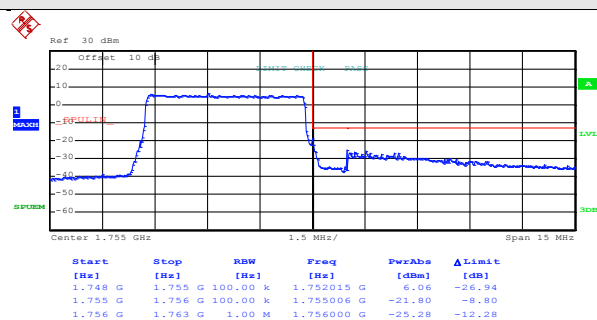
Test Mode:

LTE band 4(QPSK RB Size 25 & RB Offset 0)



Date: 19.MAR.2017 19:14:16

Lowest channel

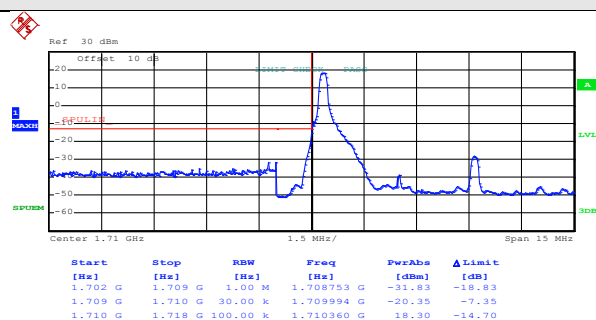


Date: 19.MAR.2017 19:15:56

Highest channel

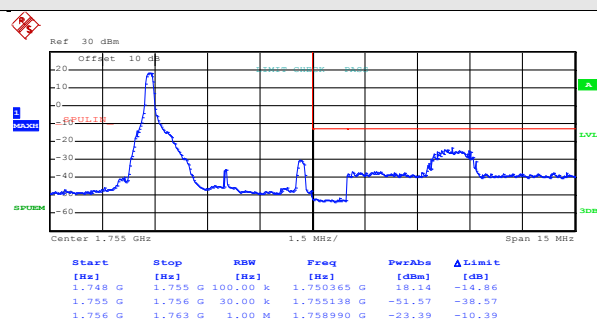
Test Mode:

LTE band 4(16QAM RB Size 1 & RB Offset 0)



Date: 19.MAR.2017 19:13:05

Lowest channel

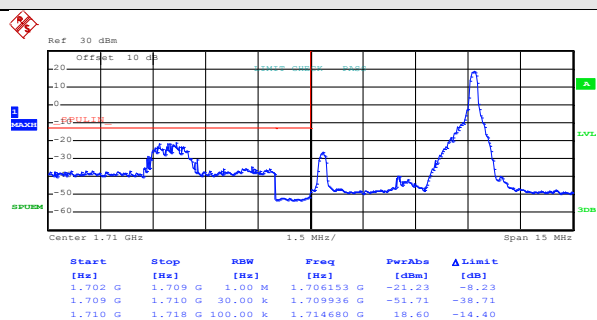


Date: 19.MAR.2017 19:14:51

Highest channel

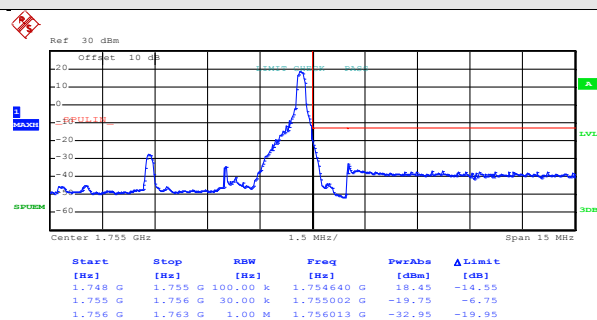
Test Mode:

LTE band 4(16QAM RB Size 1 & RB Offset 24)



Date: 19.MAR.2017 19:13:19

Lowest channel

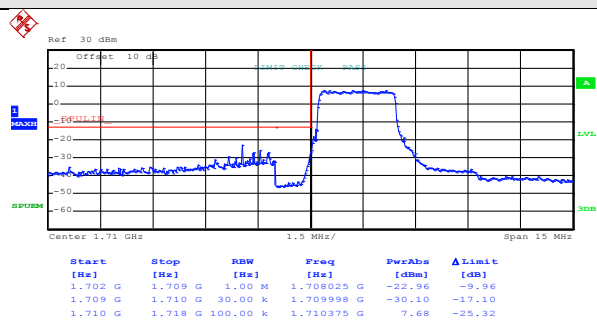


Date: 19.MAR.2017 19:15:10

Highest channel

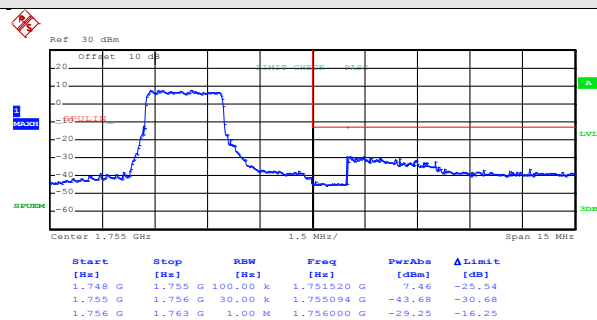
Test Mode:

LTE band 4(16QAM RB Size 12 & RB Offset 0)



Date: 19.MAR.2017 19:13:40

Lowest channel

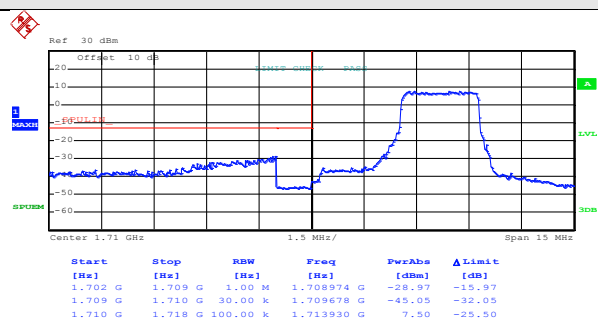


Date: 19.MAR.2017 19:15:25

Highest channel

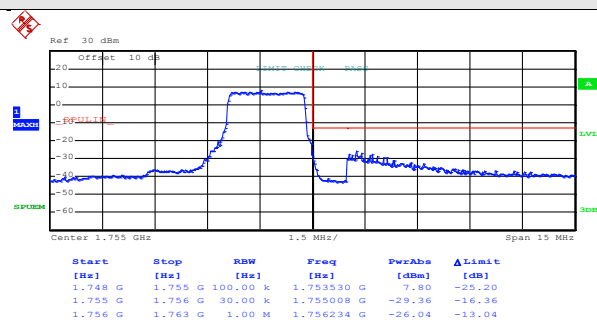
Test Mode:

LTE band 4(16QAM RB Size 12 & RB Offset 11)



Date: 19.MAR.2017 19:13:58

Lowest channel

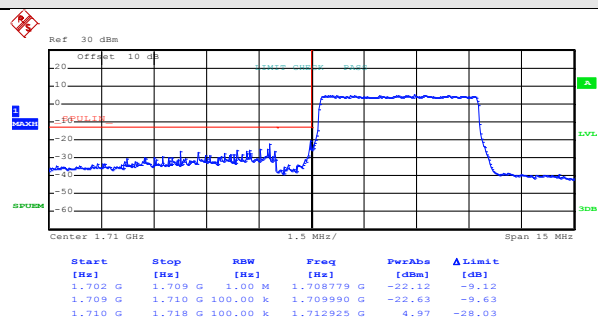


Date: 19.MAR.2017 19:15:42

Highest channel

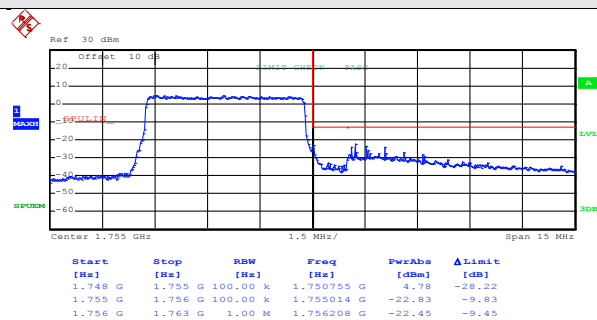
Test Mode:

LTE band 4(16QAM RB Size 25 & RB Offset 0)



Date: 19.MAR.2017 19:14:25

Lowest channel

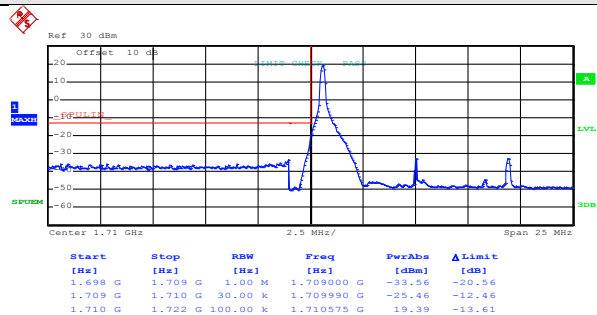


Date: 19.MAR.2017 19:16:00

Highest channel

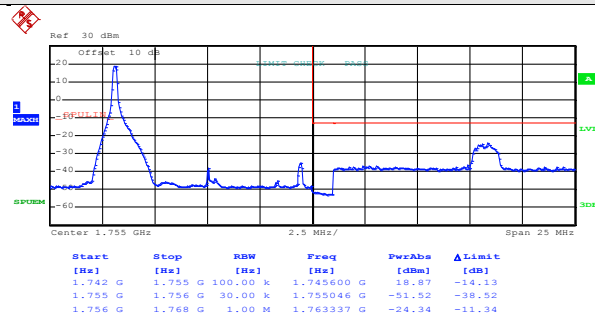
10MHz:

Test Mode:	LTE band 4(QPSK RB Size 1 & RB Offset 0)
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Date: 19.MAR.2017 19:16:39

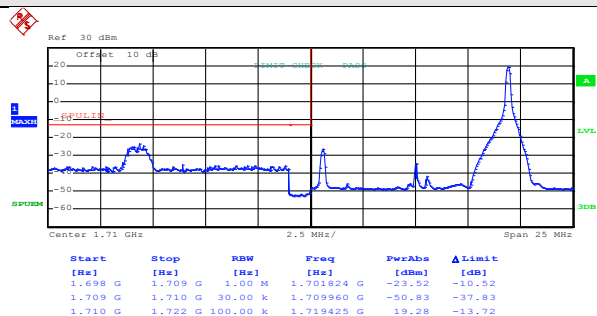
Lowest channel



Date: 19.MAR.2017 19:19:21

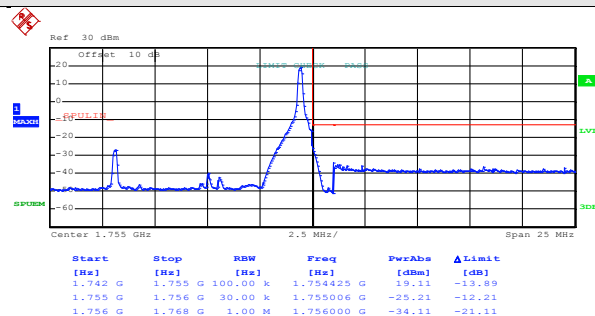
Highest channel

Test Mode:	LTE band 4(QPSK RB Size 1 & RB Offset 49)
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Date: 19.MAR.2017 19:17:00

Lowest channel

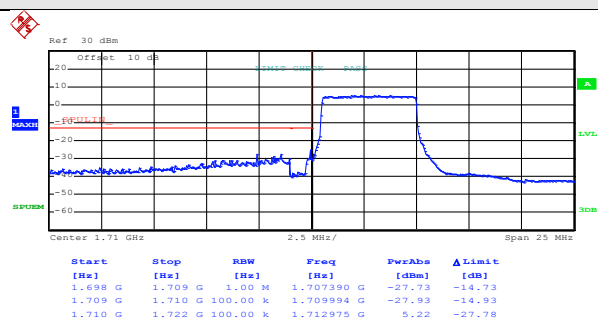


Date: 19.MAR.2017 19:19:36

Highest channel

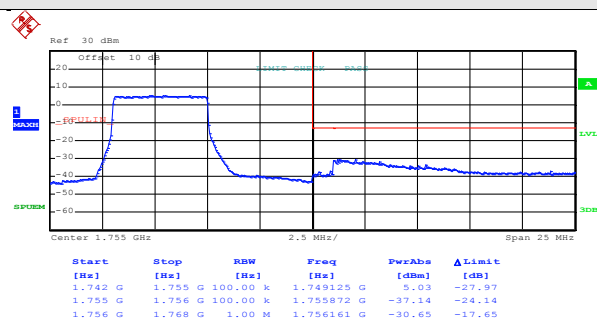
Test Mode:

LTE band 4(QPSK RB Size 25 & RB Offset 0)



Date: 19.MAR.2017 19:18:08

Lowest channel

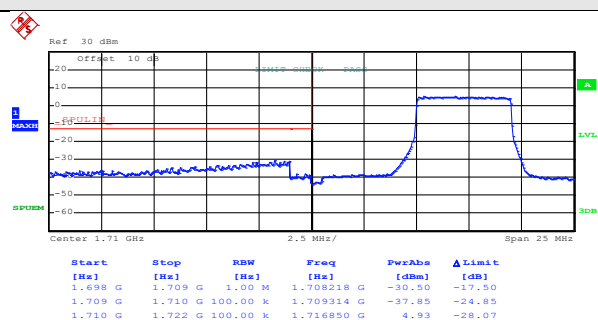


Date: 19.MAR.2017 19:20:03

Highest channel

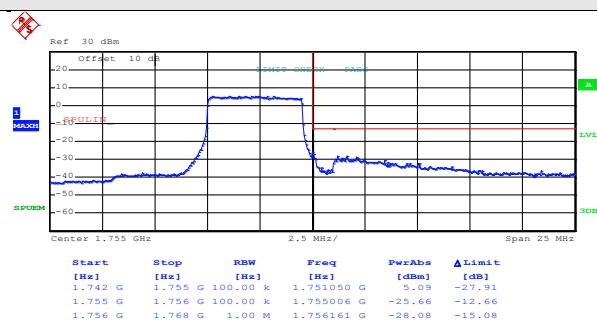
Test Mode:

LTE band 4(QPSK RB Size 25 & RB Offset 24)



Date: 19.MAR.2017 19:18:28

Lowest channel

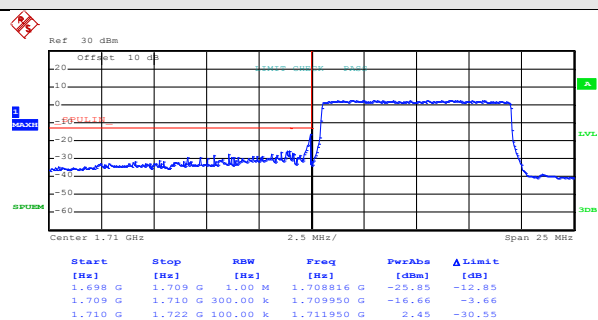


Date: 19.MAR.2017 19:20:19

Highest channel

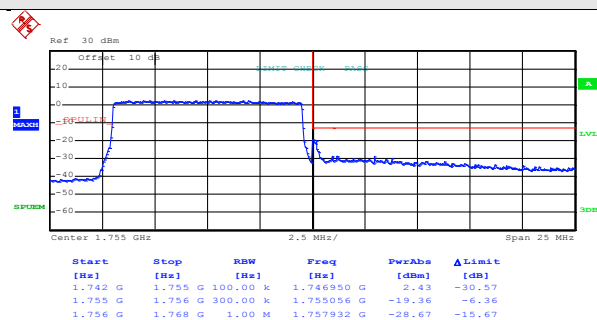
Test Mode:

LTE band 4(QPSK RB Size 50 & RB Offset 0)



Date: 19.MAR.2017 19:18:54

Lowest channel

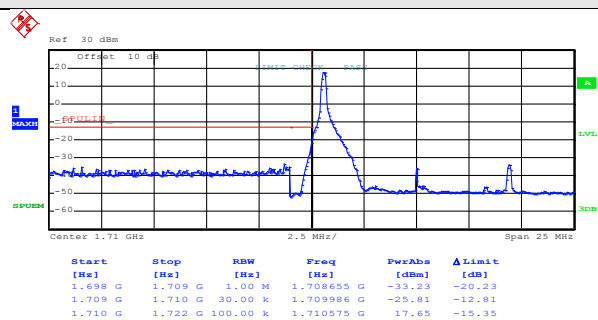


Date: 19.MAR.2017 19:20:38

Highest channel

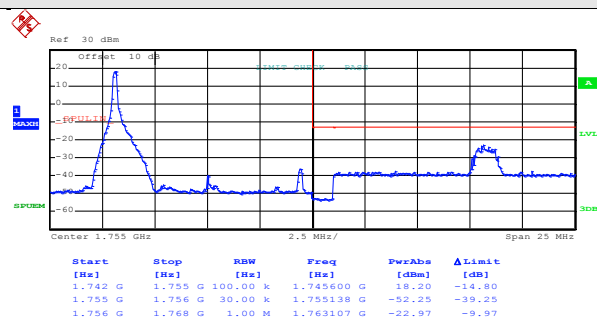
Test Mode:

LTE band 4(16QAM RB Size 1 & RB Offset 0)



Date: 19.MAR.2017 19:16:27

Lowest channel

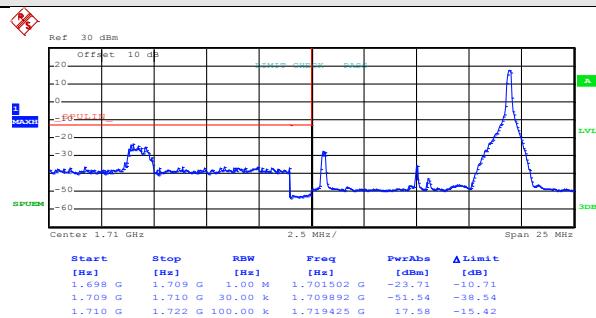


Date: 19.MAR.2017 19:19:26

Highest channel

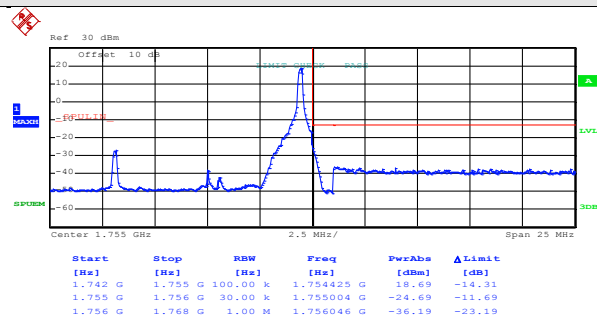
Test Mode:

LTE band 4(16QAM RB Size 1 & RB Offset 49)



Date: 19.MAR.2017 19:17:07

Lowest channel

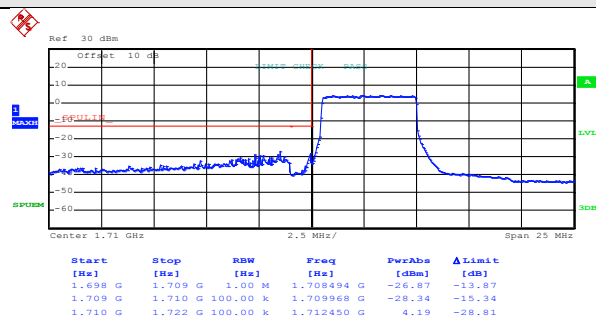


Date: 19.MAR.2017 19:19:43

Highest channel

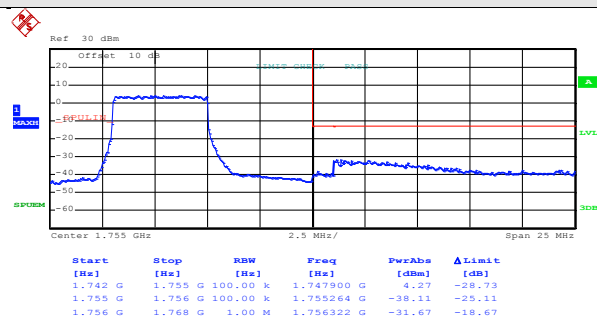
Test Mode:

LTE band 4(16QAM RB Size 25 & RB Offset 0)



Date: 19.MAR.2017 19:18:16

Lowest channel

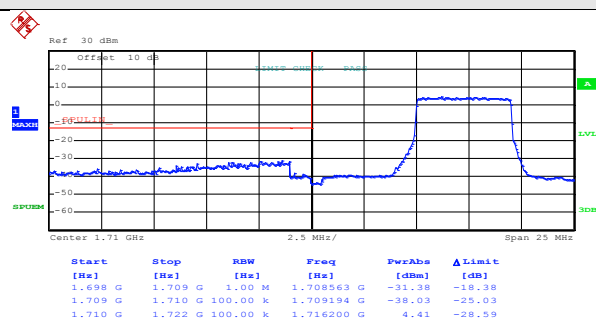


Date: 19.MAR.2017 19:20:09

Highest channel

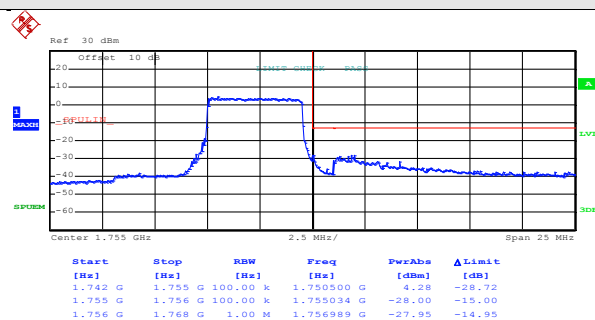
Test Mode:

LTE band 4(16QAM RB Size 25 & RB Offset 24)



Date: 19.MAR.2017 19:18:36

Lowest channel

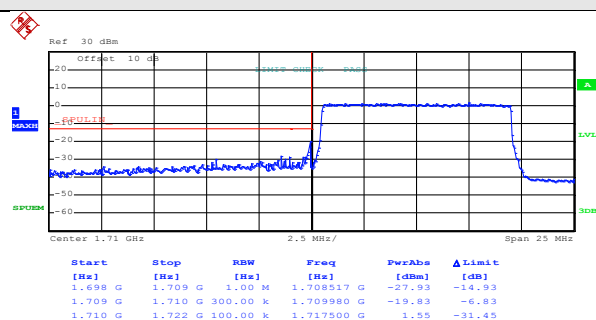


Date: 19.MAR.2017 19:20:26

Highest channel

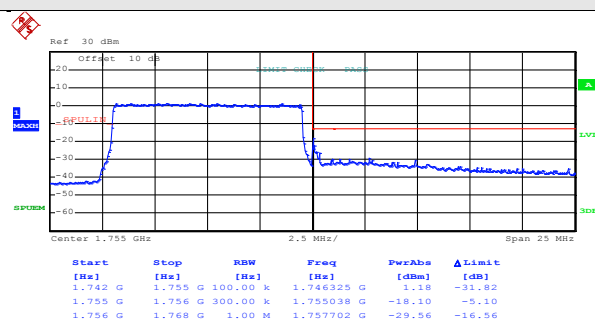
Test Mode:

LTE band 4(16QAM RB Size 50 & RB Offset 0)



Date: 19.MAR.2017 19:18:59

Lowest channel

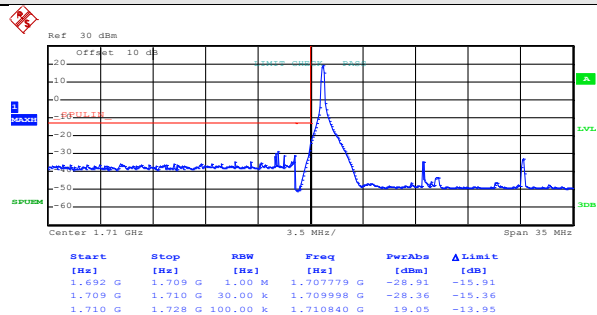


Date: 19.MAR.2017 19:20:42

Highest channel

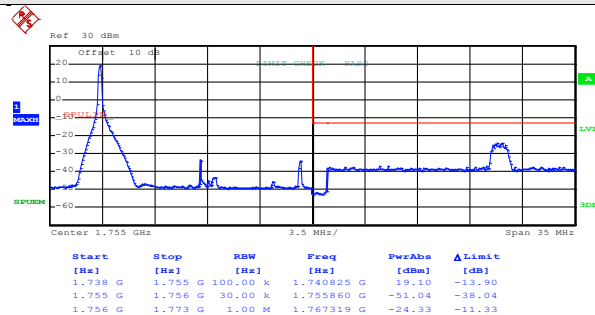
15MHz:

Test Mode:	LTE band 4(QPSK RB Size 1 & RB Offset 0)
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Date: 19.MAR.2017 19:21:20

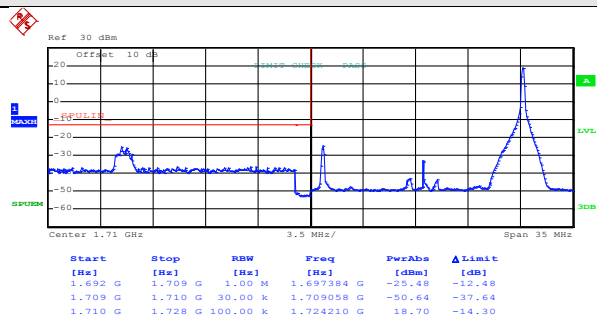
Lowest channel



Date: 19.MAR.2017 19:23:15

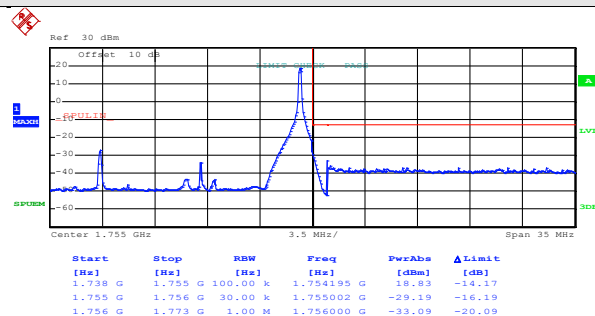
Highest channel

Test Mode:	LTE band 4(QPSK RB Size 1 & RB Offset 74)
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Date: 19.MAR.2017 19:21:42

Lowest channel

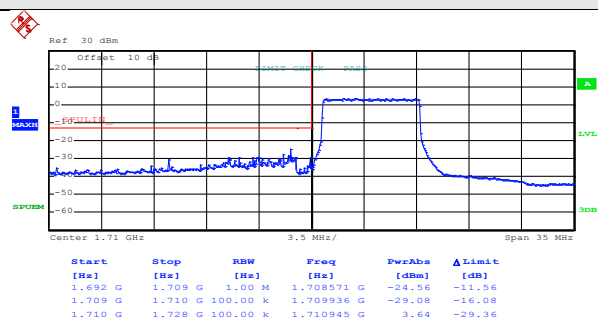


Date: 19.MAR.2017 19:23:29

Highest channel

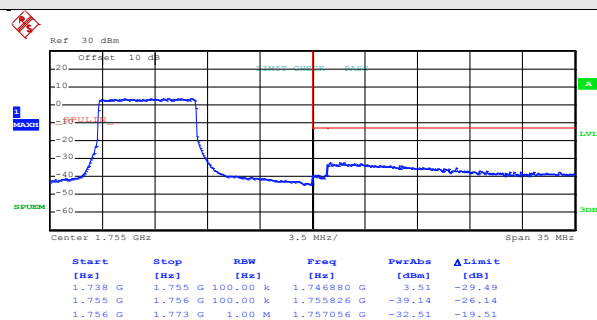
Test Mode:

LTE band 4(QPSK RB Size 36 & RB Offset 0)



Date: 19.MAR.2017 19:22:12

Lowest channel

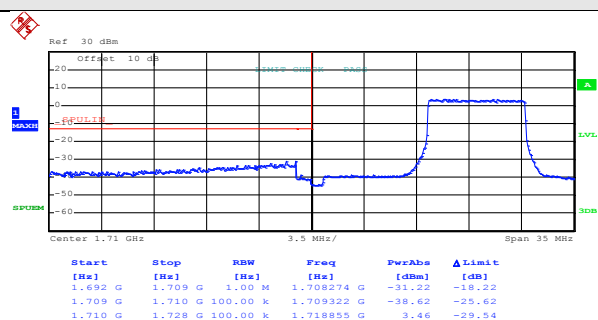


Date: 19.MAR.2017 19:23:58

Highest channel

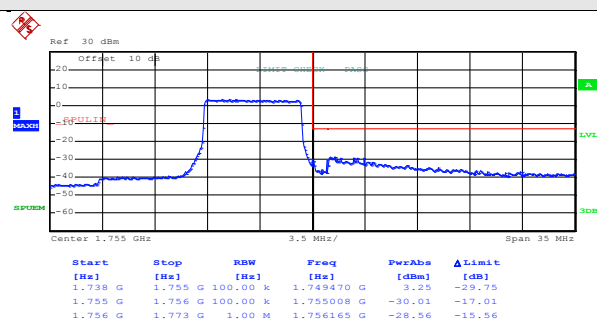
Test Mode:

LTE band 4(QPSK RB Size 36 & RB Offset 37)



Date: 19.MAR.2017 19:22:27

Lowest channel

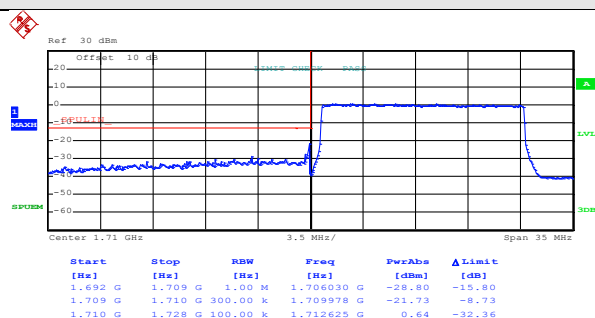


Date: 19.MAR.2017 19:24:13

Highest channel

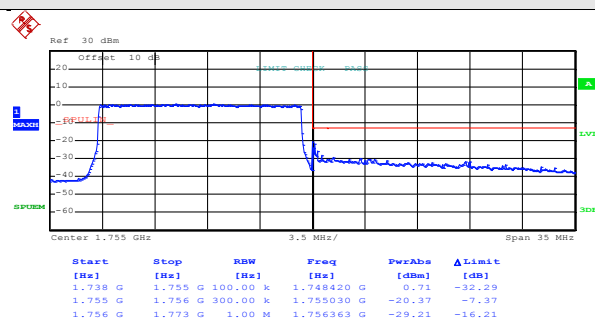
Test Mode:

LTE band 4(QPSK RB Size 75 & RB Offset 0)



Date: 19.MAR.2017 19:22:49

Lowest channel

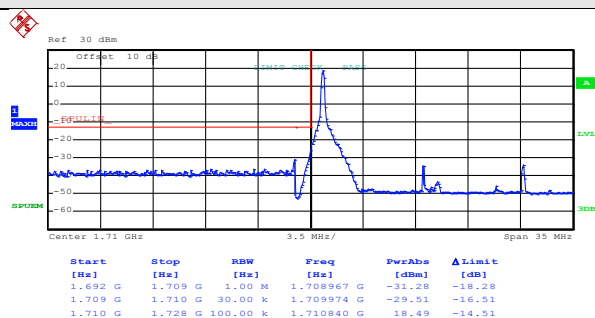


Date: 19.MAR.2017 19:24:36

Highest channel

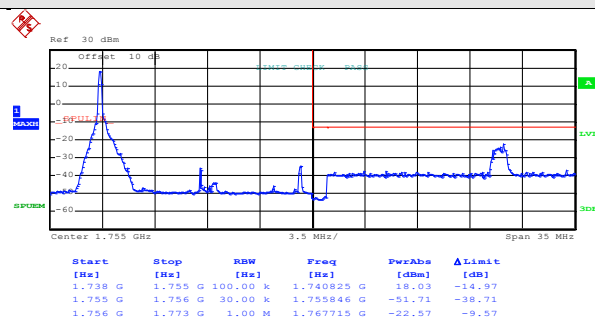
Test Mode:

LTE band 4(16QAM RB Size 1 & RB Offset 0)



Date: 19.MAR.2017 19:21:33

Lowest channel

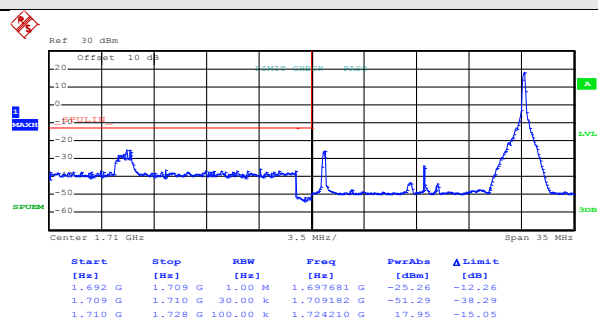


Date: 19.MAR.2017 19:23:19

Highest channel

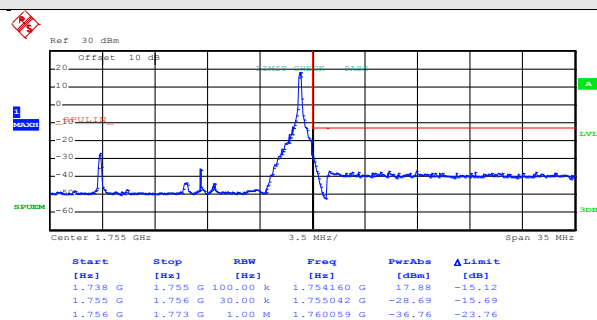
Test Mode:

LTE band 4(16QAM RB Size 1 & RB Offset 74)



Date: 19.MAR.2017 19:21:49

Lowest channel

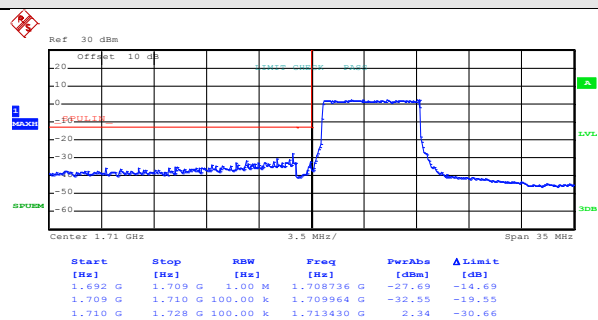


Date: 19.MAR.2017 19:23:40

Highest channel

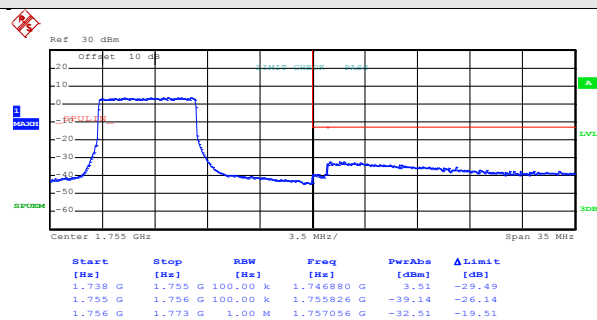
Test Mode:

LTE band 4(16QAM RB Size 36 & RB Offset 0)



Date: 19.MAR.2017 19:22:17

Lowest channel

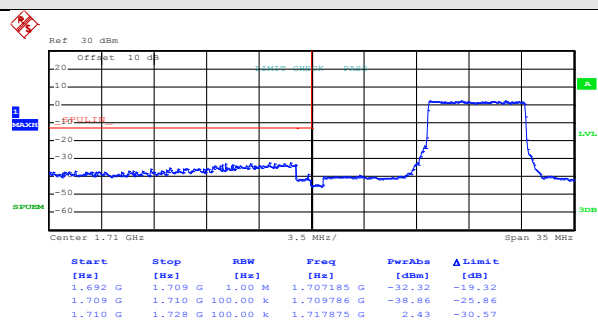


Date: 19.MAR.2017 19:23:58

Highest channel

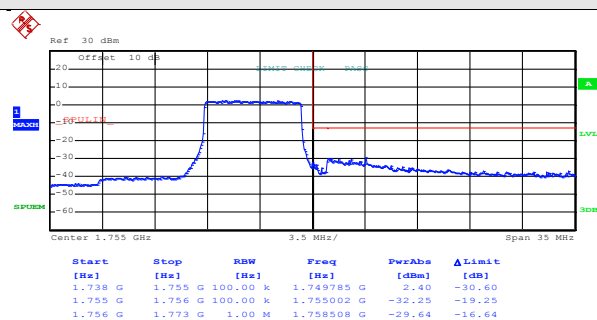
Test Mode:

LTE band 4(16QAM RB Size 36 & RB Offset 37)



Date: 19.MAR.2017 19:22:36

Lowest channel

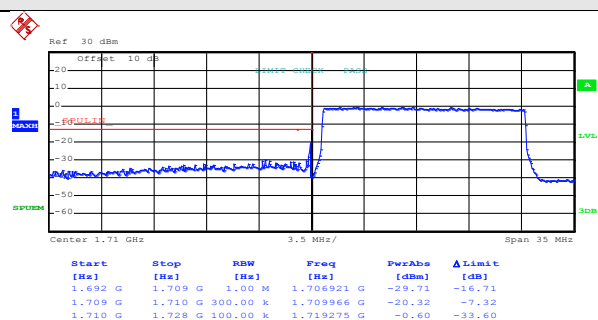


Date: 19.MAR.2017 19:24:20

Highest channel

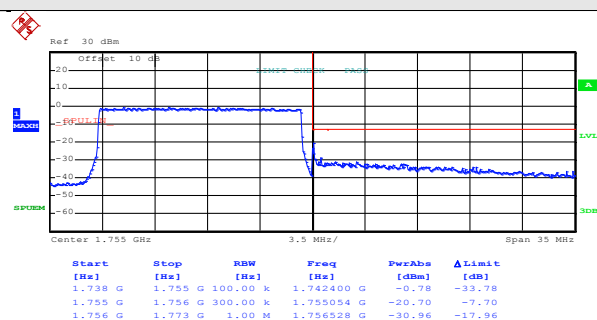
Test Mode:

LTE band 4(16QAM RB Size 75 & RB Offset 0)



Date: 19.MAR.2017 19:22:53

Lowest channel

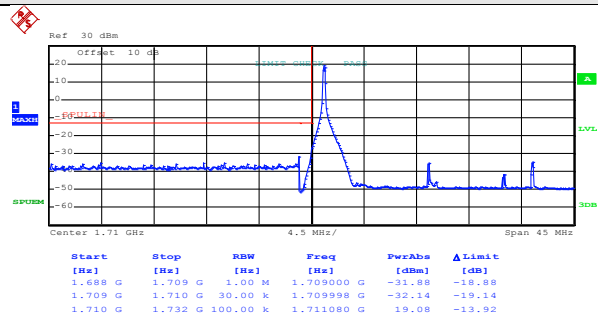


Date: 19.MAR.2017 19:24:40

Highest channel

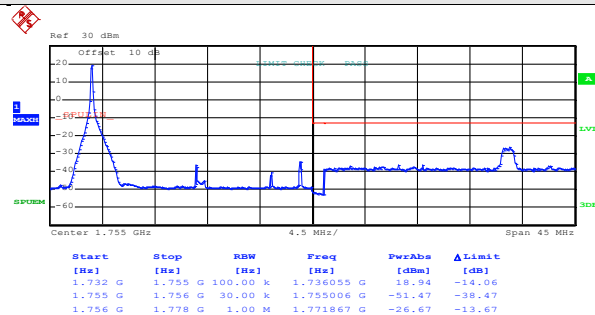
20MHz:

Test Mode:	LTE band 4(QPSK RB Size 1 & RB Offset 0)
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Date: 19.MAR.2017 19:25:36

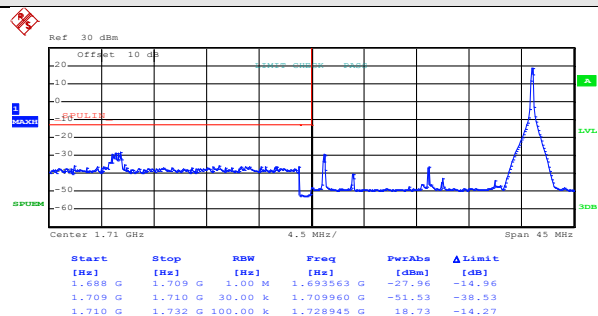
Lowest channel



Date: 19.MAR.2017 19:27:16

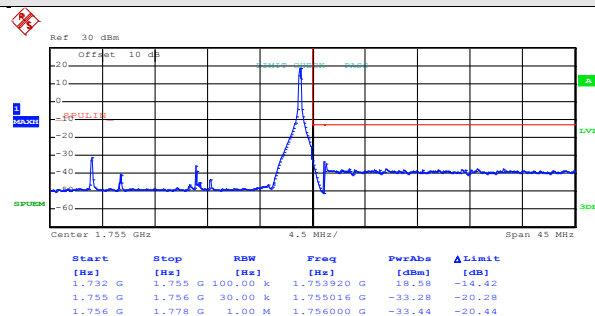
Highest channel

Test Mode:	LTE band 4(QPSK RB Size 1 & RB Offset 99)
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Date: 19.MAR.2017 19:25:49

Lowest channel

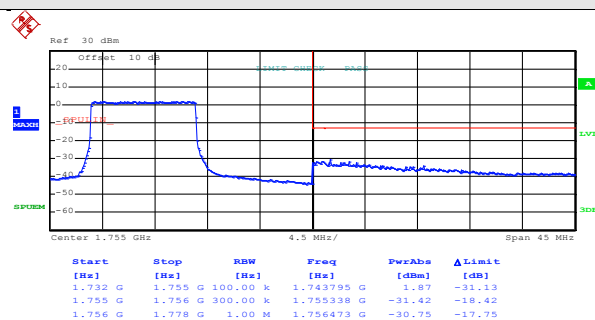
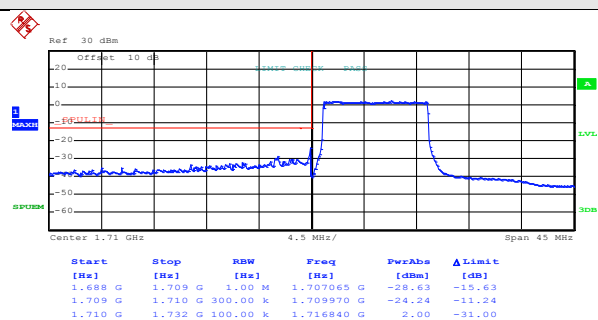


Date: 19.MAR.2017 19:27:31

Highest channel

Test Mode:

LTE band 4(QPSK RB Size 50 & RB Offset 0)



Date: 19.MAR.2017 19:26:12

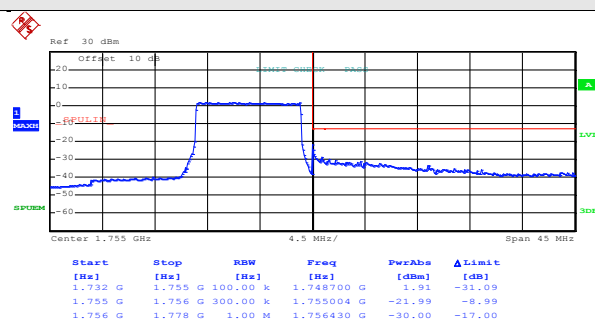
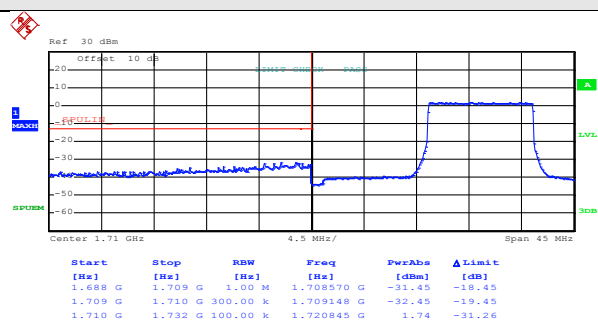
Date: 19.MAR.2017 19:27:53

Lowest channel

Highest channel

Test Mode:

LTE band 4(QPSK RB Size 50 & RB Offset 49)



Date: 19.MAR.2017 19:26:29

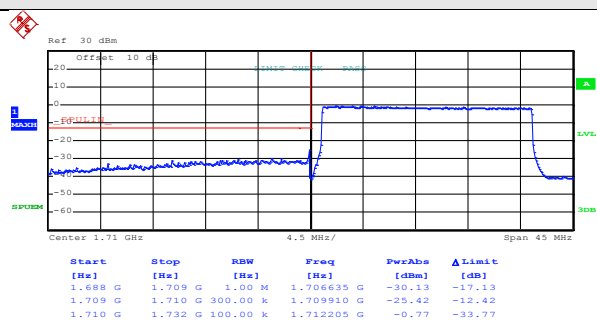
Date: 19.MAR.2017 19:28:10

Lowest channel

Highest channel

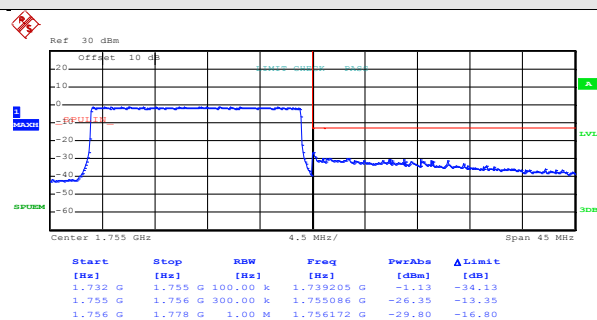
Test Mode:

LTE band 4(QPSK RB Size 100 & RB Offset 0)



Date: 19.MAR.2017 19:26:49

Lowest channel

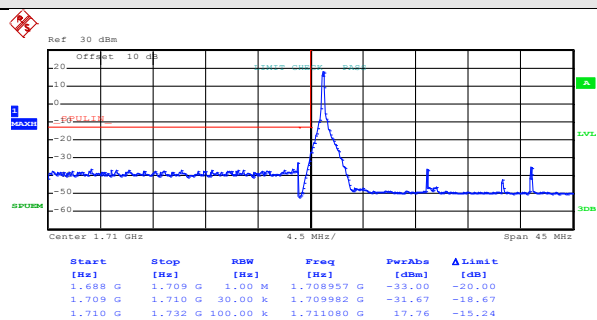


Date: 19.MAR.2017 19:28:31

Highest channel

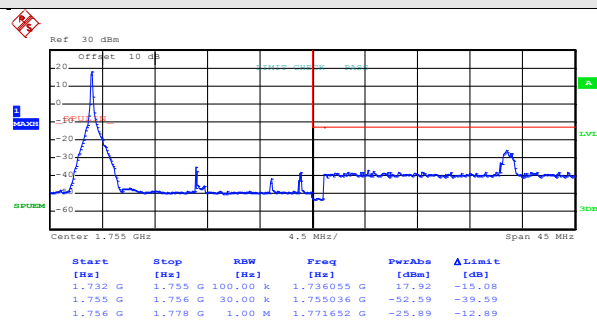
Test Mode:

LTE band 4(16QAM RB Size 1 & RB Offset 0)



Date: 19.MAR.2017 19:25:41

Lowest channel

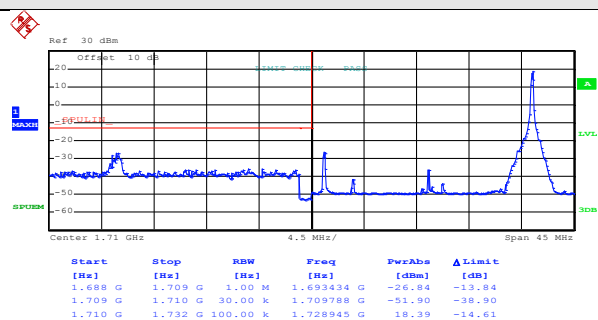


Date: 19.MAR.2017 19:27:22

Highest channel

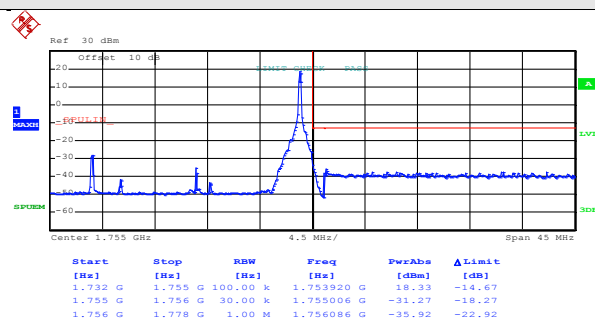
Test Mode:

LTE band 4(16QAM RB Size 1 & RB Offset 99)



Date: 19.MAR.2017 19:25:56

Lowest channel

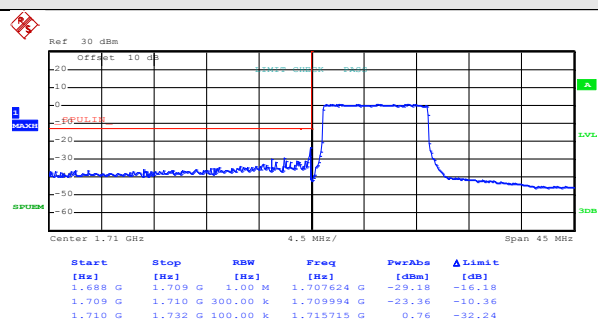


Date: 19.MAR.2017 19:27:38

Highest channel

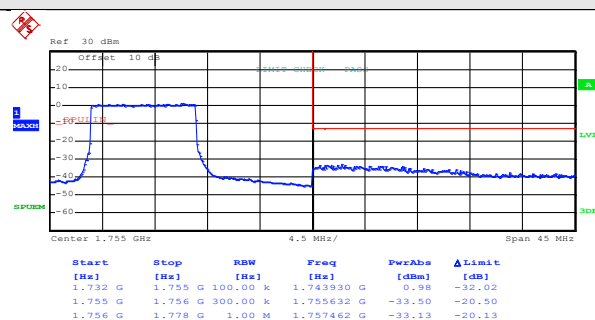
Test Mode:

LTE band 4(16QAM RB Size 50 & RB Offset 0)



Date: 19.MAR.2017 19:26:20

Lowest channel

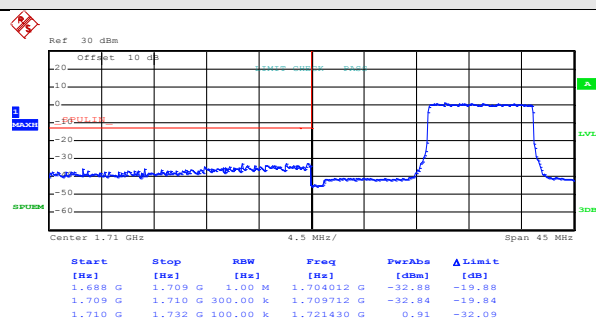


Date: 19.MAR.2017 19:27:59

Highest channel

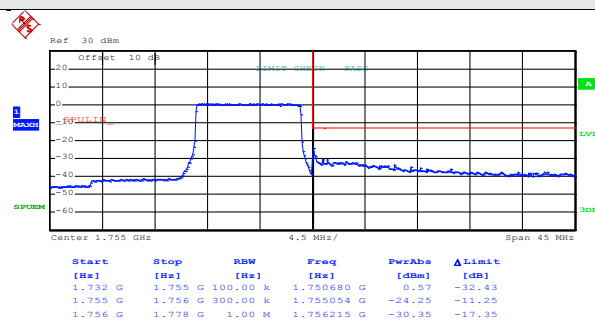
Test Mode:

LTE band 4(16QAM RB Size 50 & RB Offset 49)



Date: 19.MAR.2017 19:26:36

Lowest channel

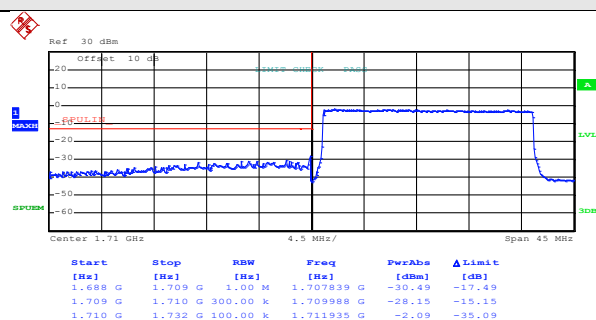


Date: 19.MAR.2017 19:28:18

Highest channel

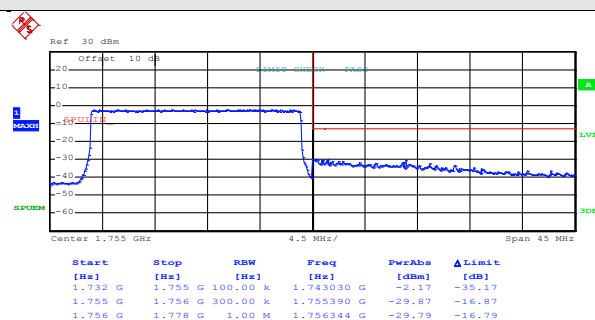
Test Mode:

LTE band 4(16QAM RB Size 100 & RB Offset 0)



Date: 19.MAR.2017 19:26:55

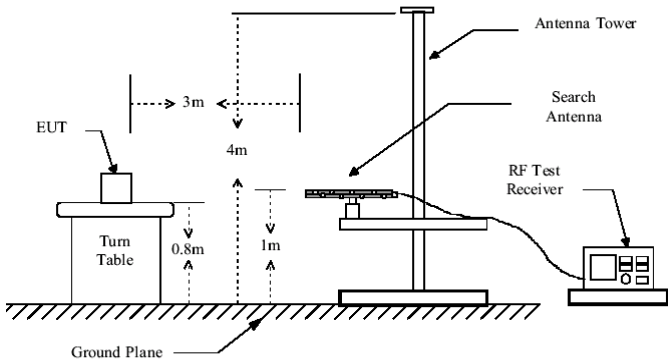
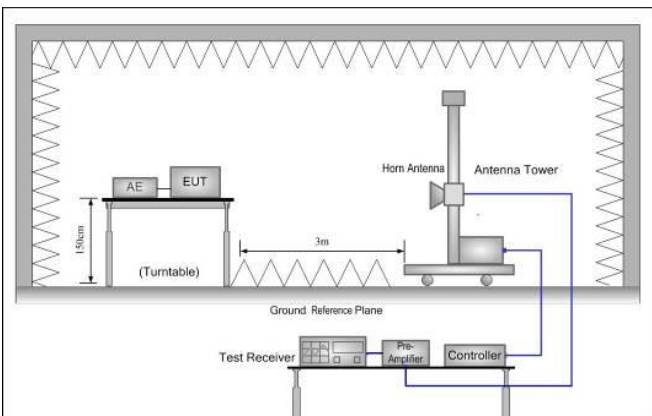
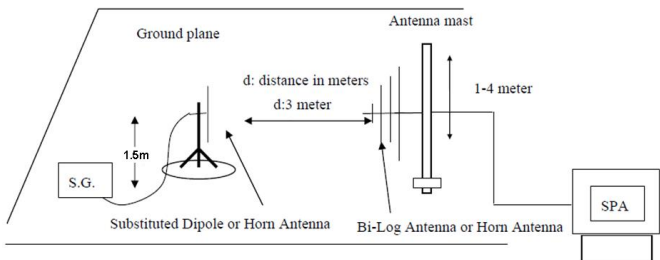
Lowest channel



Date: 19.MAR.2017 19:28:38

Highest channel

6.10 ERP, EIRP Measurement

Test Requirement:	24.232 (c), part 27.50(d)
Test Method:	FCC part2.1046
Limit:	LTE Band 4: 1W EIRP
Test setup:	<p>Below 1GHz</p>  <p>Above 1GHz</p>  <p>Substituted method:</p> 

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

Measurement Data (worst case):

LTE band 4 part

Lowest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
1.4MHz(RB size 1 & RB offset 0)								
1710.70	19957	QPSK	1.4	H	V	16.44	30.00	Pass
					H	19.08		
1710.70	19957	16QAM	1.4	H	V	15.72		
					H	18.86		
1.4MHz(RB size 3 & RB offset 0)								
1710.70	19957	QPSK	1.4	H	V	16.71	30.00	Pass
					H	18.92		
1710.70	19957	16QAM	1.4	H	V	16.52		
					H	18.85		
1.4MHz(RB size 6 & RB offset 0)								
1710.70	19957	QPSK	1.4	H	V	14.60	30.00	Pass
					H	17.07		
1710.70	19957	16QAM	1.4	H	V	14.80		
					H	17.11		

Middle channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
1.4MHz(RB size 1 & RB offset 0)								
1732.50	20175	QPSK	1.4	H	V	16.17	30.00	Pass
					H	19.71		
1732.50	20175	16QAM	1.4	H	V	15.24		
					H	18.34		
1.4MHz(RB size 3 & RB offset 0)								
1732.50	20175	QPSK	1.4	H	V	16.41	30.00	Pass
					H	18.11		
1732.50	20175	16QAM	1.4	H	V	16.39		
					H	18.37		
1.4MHz(RB size 6 & RB offset 0)								
1732.50	20175	QPSK	1.4	H	V	14.60	30.00	Pass
					H	17.11		
1732.50	20175	16QAM	1.4	H	V	14.41		
					H	17.59		

Highest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
1.4MHz(RB size 1 & RB offset 0)								
1754.30	20393	QPSK	1.4	H	V	16.36	30.00	Pass
					H	19.34		
1754.30	20393	16QAM	1.4	H	V	15.37		
					H	18.23		
1.4MHz(RB size 3 & RB offset 0)								
1754.30	20393	QPSK	1.4	H	V	16.93	30.00	Pass
					H	18.23		
1754.30	20393	16QAM	1.4	H	V	16.24		
					H	18.41		
1.4MHz(RB size 6 & RB offset 0)								
1754.30	20393	QPSK	1.4	H	V	14.17	30.00	Pass
					H	17.44		
1754.30	20393	16QAM	1.4	H	V	14.36		
					H	17.52		

Lowest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
20MHz(RB size 1 & RB offset 0)								
1720.00	20050	QPSK	20	H	V	16.12	30.00	Pass
					H	19.36		
1720.00	20050	16QAM	20	H	V	15.36		
					H	18.57		
20MHz(RB size 50 & RB offset 0)								
1720.00	20050	QPSK	20	H	V	16.33	30.00	Pass
					H	18.25		
1720.00	20050	16QAM	20	H	V	16.58		
					H	18.24		
20MHz(RB size 100 & RB offset 0)								
1720.00	20050	QPSK	20	H	V	14.63	30.00	Pass
					H	17.31		
1720.00	20050	16QAM	20	H	V	14.55		
					H	17.95		

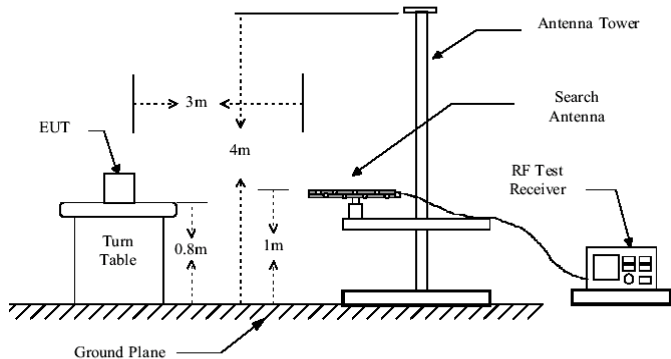
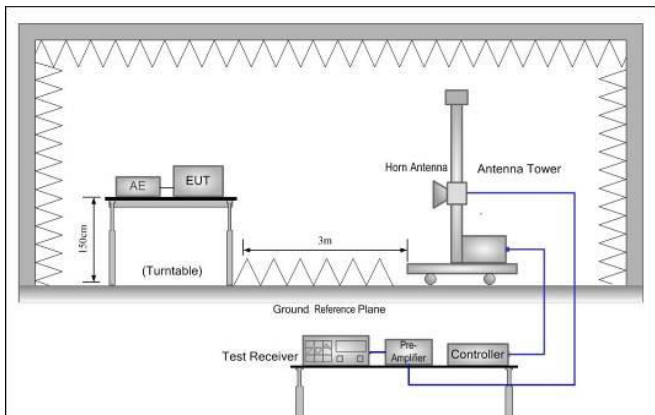
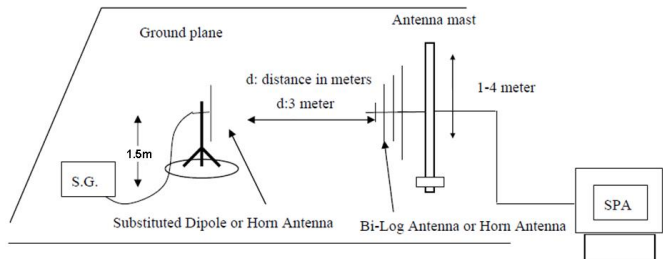
Middle channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
20MHz(RB size 1 & RB offset 0)								
1732.50	20175	QPSK	20	H	V	16.17	30.00	Pass
					H	19.35		
1732.50	20175	16QAM	20	H	V	15.16		
					H	18.24		
20MHz(RB size 50 & RB offset 0)								
1732.50	20175	QPSK	20	H	V	16.03	30.00	Pass
					H	18.24		
1732.50	20175	16QAM	20	H	V	16.36		
					H	18.21		
20MHz(RB size 100 & RB offset 0)								
1732.50	20175	QPSK	20	H	V	14.51	30.00	Pass
					H	17.82		
1732.50	20175	16QAM	20	H	V	14.63		
					H	17.87		

High channel

High channel								
Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
20MHz(RB size 1 & RB offset 0)								
1745.00	20300	QPSK	20	H	V	16.57	30.00	Pass
					H	19.54		
1745.00	20300	16QAM	20	H	V	15.11		
					H	18.85		
20MHz(RB size 50 & RB offset 0)								
1745.00	20300	QPSK	20	H	V	16.24	30.00	Pass
					H	18.21		
1745.00	20300	16QAM	20	H	V	16.80		
					H	18.44		
20MHz(RB size 100 & RB offset 0)								
1745.00	20300	QPSK	20	H	V	14.33	30.00	Pass
					H	17.10		
1745.00	20300	16QAM	20	H	V	14.31		
					H	17.24		

6.11 Field strength of spurious radiation measurement

Test Requirement:	Part 27.53(h)
Test Method:	FCC part2.1053
Limit:	LTE Band 2, LTE Band 4: -13dBm,
Test setup:	<p>Below 1GHz</p>  <p>Above 1GHz</p>  <p>Substituted method:</p> 
Test Procedure:	<ol style="list-style-type: none"> 1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. 2. During the 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. ERP / EIRP = S.G. output (dBm) + Antenna Gain(dB/dBi) – 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 4 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				
3421.40	Vertical	-42.71	-13.00	Pass
5132.10	V	-37.10		
6842.80	V	-34.78		
3421.40	Horizontal	-42.78		
5132.10	H	-41.35		
6842.80	H	-35.15		
Middle				
3465.00	Vertical	-46.56	-13.00	Pass
5197.50	V	-39.21		
6930.00	V	-36.12		
3465.00	Horizontal	-45.04		
5197.50	H	-41.16		
6930.00	H	-35.54		
Highest				
3508.60	Vertical	-46.58	-13.00	Pass
5262.90	V	-39.12		
7017.20	V	-34.39		
3508.60	Horizontal	-46.20		
5262.90	H	-42.58		
7017.20	H	-36.12		

3MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3423.00	Vertical	-42.53	-13.00	Pass
5134.50	V	-37.42		
6846.00	V	-34.46		
3423.00	Horizontal	-42.94		
5134.50	H	-41.21		
6846.00	H	-35.46		
Middle				
3465.00	Vertical	-46.84	-13.00	Pass
5197.50	V	-39.41		
6930.00	V	-36.26		
3465.00	Horizontal	-45.46		
5197.50	H	-41.94		
6930.00	H	-36.52		
Highest				
3507.00	Vertical	-46.36	-13.00	Pass
5260.50	V	-39.41		
7014.00	V	-36.47		
3507.00	Horizontal	-46.24		
5260.50	H	-42.23		
7014.00	H	-36.14		

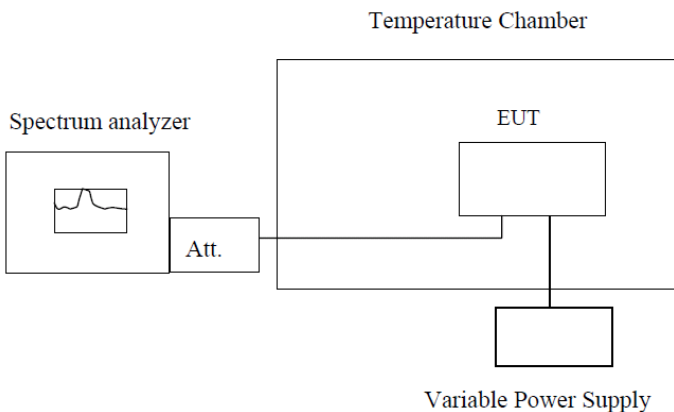
5MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3425.00	Vertical	-42.35	-13.00	Pass
5137.50	V	-37.65		
6850.00	V	-34.42		
3425.00	Horizontal	-42.57		
5137.50	H	-41.46		
6850.00	H	-35.42		
Middle				
3465.00	Vertical	-46.41	-13.00	Pass
5197.50	V	-39.57		
6930.00	V	-36.93		
3465.00	Horizontal	-45.66		
5197.50	H	-41.54		
6930.00	H	-35.57		
Highest				
3505.00	Vertical	-46.57	-13.00	Pass
5257.50	V	-39.12		
7010.00	V	-34.21		
3505.00	Horizontal	-46.99		
5257.50	H	-42.66		
7010.00	H	-36.41		

10MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3430.00	Vertical	-42.34	-13.00	Pass
5145.00	V	-37.51		
6860.00	V	-34.57		
3430.00	Horizontal	-42.78		
5145.00	H	-41.61		
6860.00	H	-35.99		
Middle				
3465.00	Vertical	-46.29	-13.00	Pass
5197.50	V	-39.79		
6930.00	V	-36.12		
3465.00	Horizontal	-45.62		
5197.50	H	-41.42		
6930.00	H	-36.37		
Highest				
3500.00	Vertical	-46.56	-13.00	Pass
5250.00	V	-39.56		
7000.00	V	-36.41		
3500.00	Horizontal	-46.42		
5250.00	H	-42.37		
7000.00	H	-36.42		

15MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3435.00	Vertical	-42.34	-13.00	Pass
5152.50	V	-37.52		
6870.00	V	-34.63		
3435.00	Horizontal	-42.04		
5152.50	H	-41.53		
6870.00	H	-35.26		
Middle				
3465.00	Vertical	-46.42	-13.00	Pass
5197.50	V	-39.41		
6930.00	V	-36.57		
3465.00	Horizontal	-45.41		
5197.50	H	-41.42		
6930.00	H	-35.45		
Highest				
3495.00	Vertical	-46.12	-13.00	Pass
5242.50	V	-39.99		
6990.00	V	-34.33		
3495.00	Horizontal	-46.57		
5242.50	H	-42.12		
6990.00	H	-36.22		

20MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3440.00	Vertical	-42.49	-13.00	Pass
5160.00	V	-37.37		
6880.00	V	-34.43		
3440.00	Horizontal	-42.65		
5160.00	H	-41.42		
6880.00	H	-35.78		
Middle				
3465.00	Vertical	-46.74	-13.00	Pass
5197.50	V	-39.42		
6930.00	V	-36.27		
3465.00	Horizontal	-45.42		
5197.50	H	-41.37		
6930.00	H	-36.53		
Highest				
3490.00	Vertical	-46.65	-13.00	Pass
5235.00	V	-39.28		
6980.00	V	-36.79		
3490.00	Horizontal	-46.61		
5235.00	H	-42.12		
6980.00	H	-36.28		

6.12 Frequency stability V.S. Temperature measurement

Test Requirement:	FCC Part2.1055(a)(1)(b)
Test Method:	FCC Part2.1055(a)(1)(b)
Limit:	±2.5ppm
Test setup:	 <p>Note : Measurement setup for testing on Antenna connector</p>
Test procedure:	<ol style="list-style-type: none"> 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 4(QPSK):

Reference Frequency: LTE Band 4(1.4MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	173	0.099856	±2.5	Pass
	-20	155	0.089466		
	-10	142	0.081962		
	0	160	0.092352		
	10	135	0.077922		
	20	156	0.090043		
	30	159	0.091775		
	40	158	0.091198		
	50	134	0.077345		
Reference Frequency: LTE Band 4(3MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	166	0.095815	±2.5	Pass
	-20	124	0.071573		
	-10	135	0.077922		
	0	138	0.079654		
	10	148	0.085426		
	20	149	0.086003		
	30	159	0.091775		
	40	160	0.092352		
	50	144	0.083117		
Reference Frequency: LTE Band 4(5MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	170	0.098124	±2.5	Pass
	-20	146	0.084271		
	-10	158	0.091198		
	0	152	0.087734		
	10	124	0.071573		
	20	125	0.072150		
	30	126	0.072727		
	40	109	0.062915		
	50	107	0.061760		

Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	169	0.097547	±2.5	Pass
	-20	145	0.083694		
	-10	158	0.091198		
	0	157	0.090620		
	10	163	0.094084		
	20	160	0.092352		
	30	128	0.073882		
	40	123	0.070996		
	50	137	0.079076		
Reference Frequency: LTE Band 4(15MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	180	0.103896	±2.5	Pass
	-20	146	0.084271		
	-10	178	0.102742		
	0	175	0.101010		
	10	174	0.100433		
	20	169	0.097547		
	30	125	0.072150		
	40	138	0.079654		
	50	109	0.062915		
Reference Frequency: LTE Band 4(20MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	165	0.095238	±2.5	Pass
	-20	139	0.080231		
	-10	145	0.083694		
	0	105	0.060606		
	10	127	0.073304		
	20	116	0.066955		
	30	118	0.068110		
	40	108	0.062338		
	50	125	0.072150		

LTE Band 4(16QAM):

Reference Frequency: LTE Band 4(1.4MHz) Middle channel=20175 channel=1732.50MHz

Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	122	0.070418	±2.5	Pass
	-20	103	0.059452		
	-10	117	0.067532		
	0	116	0.066955		
	10	120	0.069264		
	20	104	0.060029		
	30	106	0.061183		
	40	109	0.062915		
	50	119	0.068687		

Reference Frequency: LTE Band 4(3MHz) Middle channel=20175 channel=1732.50MHz

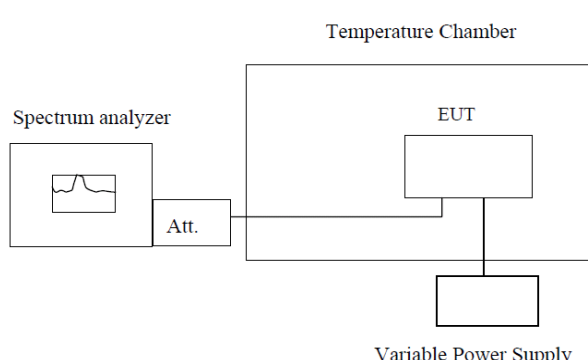
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	140	0.080808	±2.5	Pass
	-20	136	0.078499		
	-10	130	0.075036		
	0	125	0.072150		
	10	107	0.061760		
	20	118	0.068110		
	30	119	0.068687		
	40	124	0.071573		
	50	128	0.073882		

Reference Frequency: LTE Band 4(5MHz) Middle channel=20175 channel=1732.50MHz

Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	149	0.086003	±2.5	Pass
	-20	105	0.060606		
	-10	117	0.067532		
	0	135	0.077922		
	10	136	0.078499		
	20	107	0.061760		
	30	118	0.068110		
	40	100	0.057720		
	50	125	0.072150		

Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	137	0.079076	±2.5	Pass
	-20	124	0.071573		
	-10	126	0.072727		
	0	105	0.060606		
	10	117	0.067532		
	20	130	0.075036		
	30	122	0.070418		
	40	129	0.074459		
	50	136	0.078499		
Reference Frequency: LTE Band 4(15MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	144	0.083117	±2.5	Pass
	-20	125	0.072150		
	-10	126	0.072727		
	0	134	0.077345		
	10	130	0.075036		
	20	115	0.066378		
	30	114	0.065801		
	40	106	0.061183		
	50	101	0.058297		
Reference Frequency: LTE Band 4(20MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	129	0.074459	±2.5	Pass
	-20	101	0.058297		
	-10	114	0.065801		
	0	113	0.065224		
	10	106	0.061183		
	20	98	0.056566		
	30	107	0.061760		
	40	126	0.072727		
	50	125	0.072150		

6.13 Frequency stability V.S. Voltage measurement

Test Requirement:	FCC Part2.1055(d)(1)(2)
Test Method:	FCC Part2.1055(d)(1)(2)
Limit:	2.5ppm
Test setup:	 <p>Note : Measurement setup for testing on Antenna connector</p>
Test procedure:	<ol style="list-style-type: none"> 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 4(QPSK):

Reference Frequency: LTE Band 4(1.4MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.30	85	0.049062	±2.5	Pass
	3.80	77	0.044444		
	3.50	90	0.051948		
Reference Frequency: LTE Band 4(3MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.30	80	0.046176	±2.5	Pass
	3.80	67	0.038672		
	3.50	49	0.028283		
Reference Frequency: LTE Band 4(5MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.30	58	0.033478	±2.5	Pass
	3.80	91	0.052525		
	3.50	77	0.044444		
Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.30	86	0.049639	±2.5	Pass
	3.80	85	0.049062		
	3.50	80	0.046176		
Reference Frequency: LTE Band 4(15MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.30	74	0.042713	±2.5	Pass
	3.80	75	0.043290		
	3.50	79	0.045599		
Reference Frequency: LTE Band 4(20MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.30	67	0.038672	±2.5	Pass
	3.80	64	0.036941		
	3.50	59	0.034055		

LTE Band 4(16QAM):

Reference Frequency: LTE Band 4(1.4MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.30	55	0.031746	±2.5	Pass
	3.80	70	0.040404		
	3.50	49	0.028283		
Reference Frequency: LTE Band 4(3MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.30	80	0.046176	±2.5	Pass
	3.80	76	0.043867		
	3.50	90	0.051948		
Reference Frequency: LTE Band 4(5MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.30	78	0.045022	±2.5	Pass
	3.80	77	0.044444		
	3.50	68	0.039250		
Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.30	49	0.028283	±2.5	Pass
	3.80	48	0.027706		
	3.50	70	0.040404		
Reference Frequency: LTE Band 4(15MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.30	66	0.038095	±2.5	Pass
	3.80	79	0.045599		
	3.50	89	0.051371		
Reference Frequency: LTE Band 4(20MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.30	85	0.049062	±2.5	Pass
	3.80	80	0.046176		
	3.50	77	0.044444		