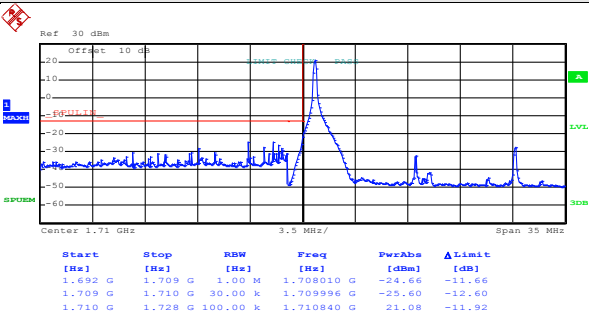


15MHz:

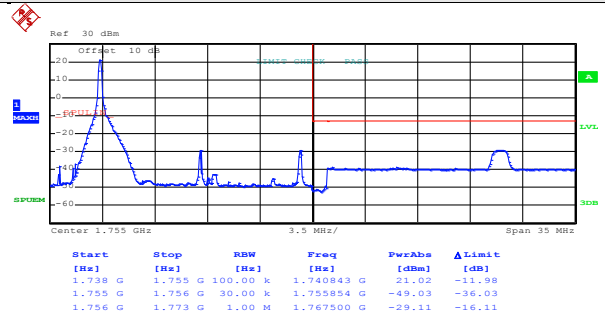
Test Mode:

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



Date: 18.APR.2017 20:19:30

Lowest channel

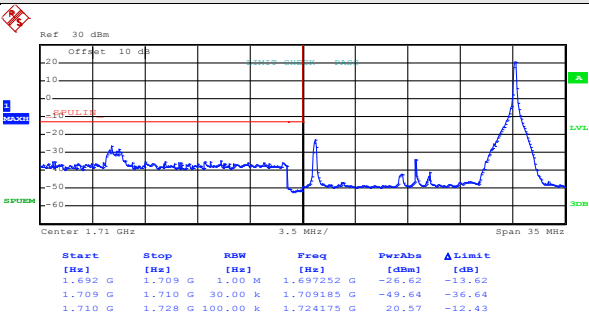


Date: 18.APR.2017 20:21:03

Highest channel

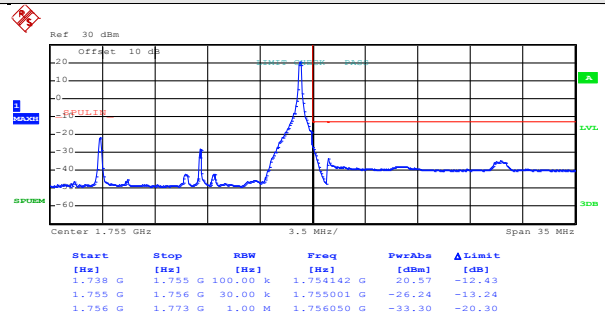
Test Mode:

LTE band 4(QPSK RB Size 1 & RB Offset 74)



Date: 18.APR.2017 20:20:02

Lowest channel

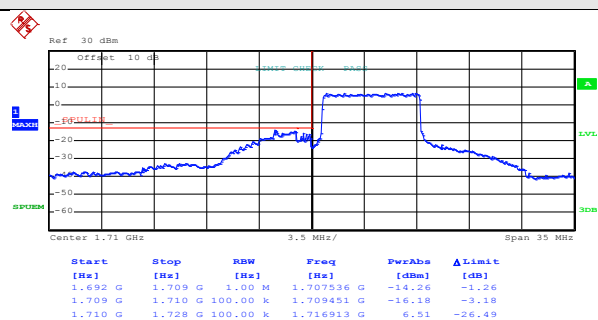


Date: 18.APR.2017 20:21:31

Highest channel

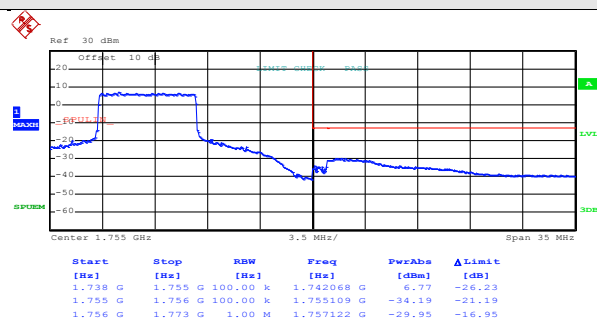
Test Mode:

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



Date: 18.APR.2017 20:24:27

Lowest channel

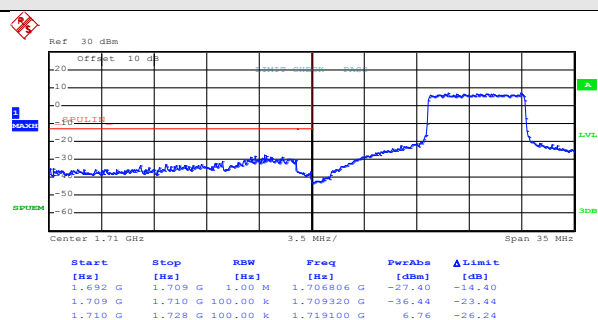


Date: 18.APR.2017 20:22:47

Highest channel

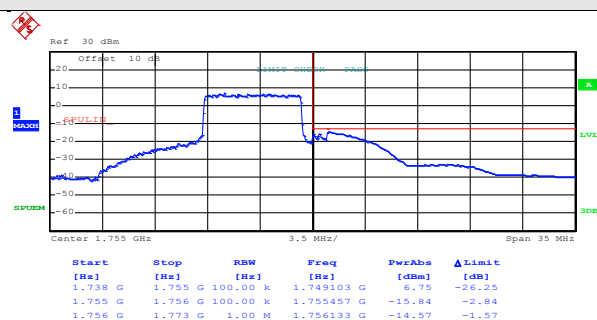
Test Mode:

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



Date: 18.APR.2017 20:25:30

Lowest channel

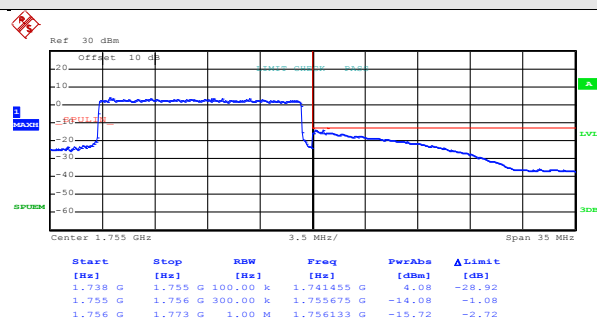
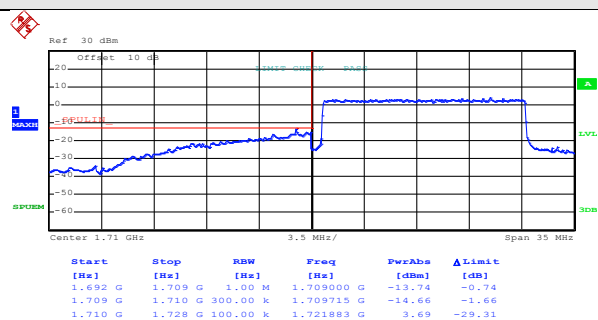


Date: 18.APR.2017 20:23:24

Highest channel

Test Mode:

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



Date: 18.APR.2017 20:26:34

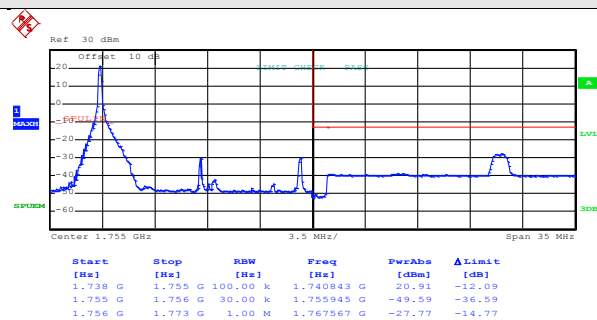
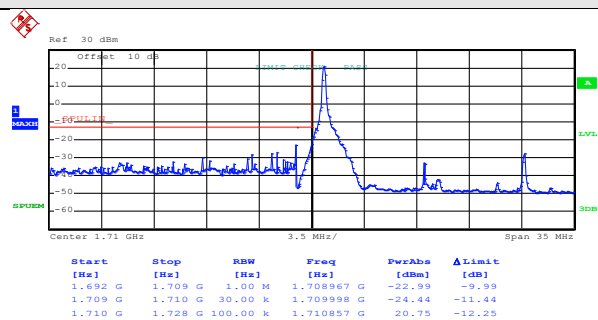
Date: 18.APR.2017 20:27:12

Lowest channel

Highest channel

Test Mode:

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



Date: 18.APR.2017 20:19:41

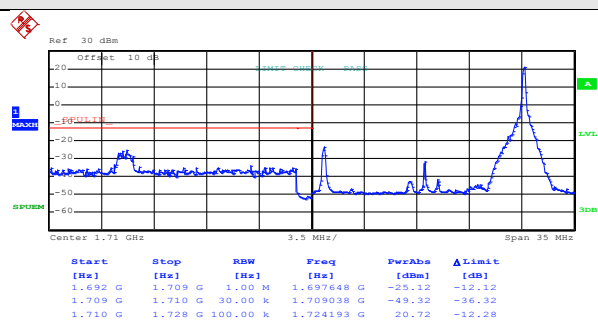
Date: 18.APR.2017 20:21:17

Lowest channel

Highest channel

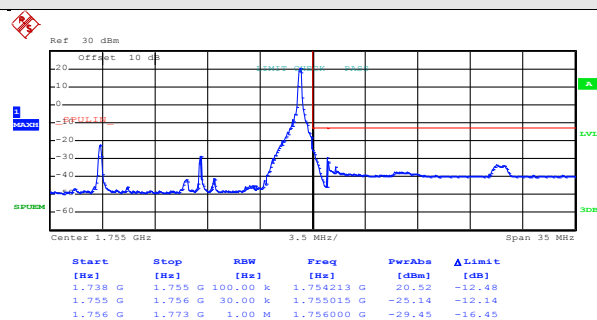
Test Mode:

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



Date: 18.APR.2017 20:20:15

Lowest channel

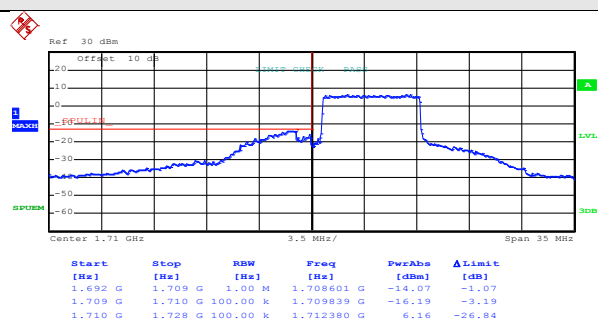


Date: 18.APR.2017 20:21:43

Highest channel

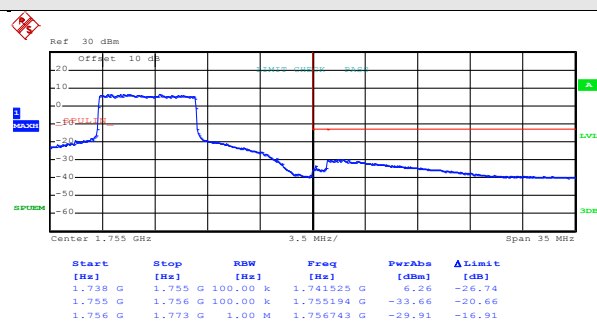
Test Mode:

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



Date: 18.APR.2017 20:24:37

Lowest channel

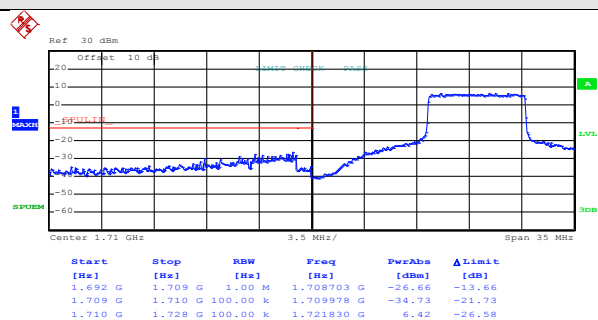


Date: 18.APR.2017 20:22:58

Highest channel

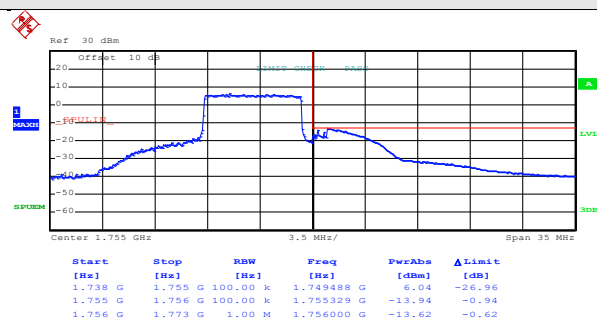
Test Mode:

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



Date: 18.APR.2017 20:25:41

Lowest channel

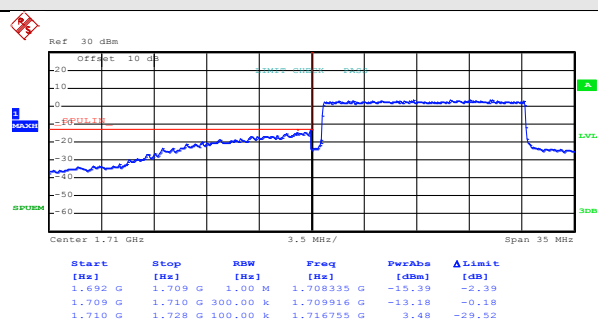


Date: 18.APR.2017 20:23:44

Highest channel

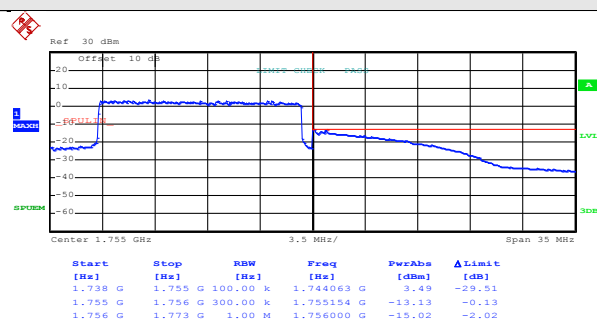
Test Mode:

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



Date: 18.APR.2017 20:26:43

Lowest channel

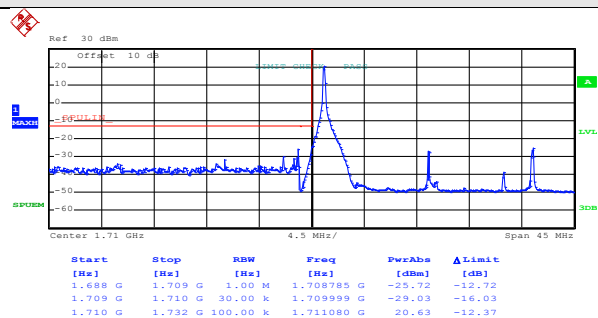


Date: 18.APR.2017 20:27:31

Highest channel

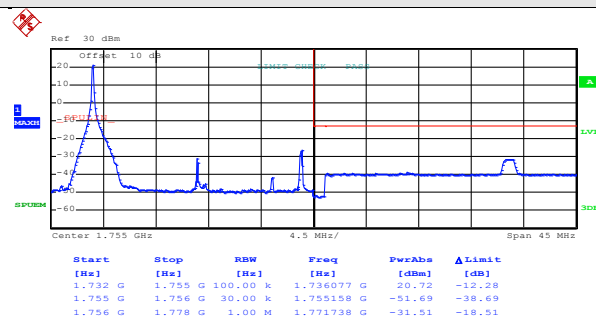
20MHz:

Test Mode:	LTE band 4(QPSK RB Size 1 & RB Offset 0)
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Date: 18.APR.2017 20:29:46

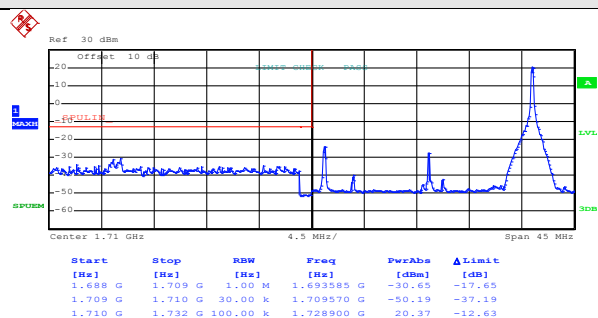
Lowest channel



Date: 18.APR.2017 20:31:15

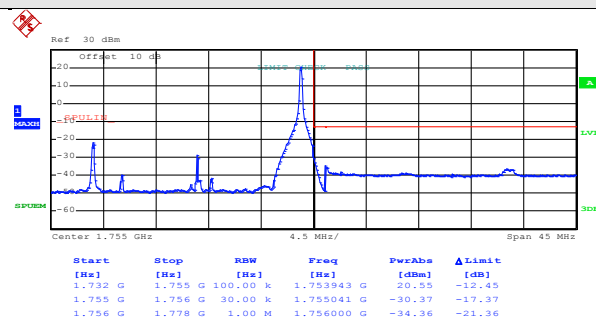
Highest channel

Test Mode:	LTE band 4(QPSK RB Size 1 & RB Offset 99)
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Date: 18.APR.2017 20:30:12

Lowest channel

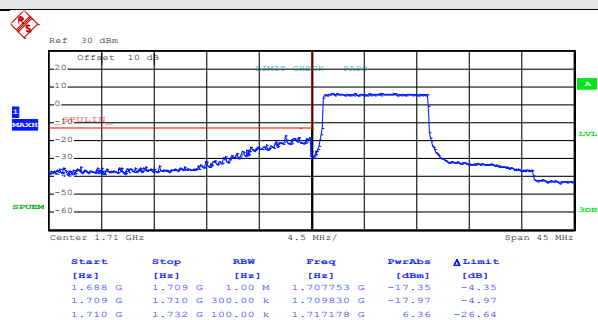


Date: 18.APR.2017 20:31:50

Highest channel

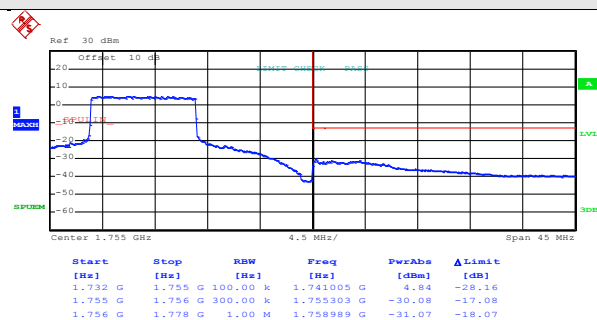
Test Mode:

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



Date: 22.APR.2017 10:04:44

Lowest channel

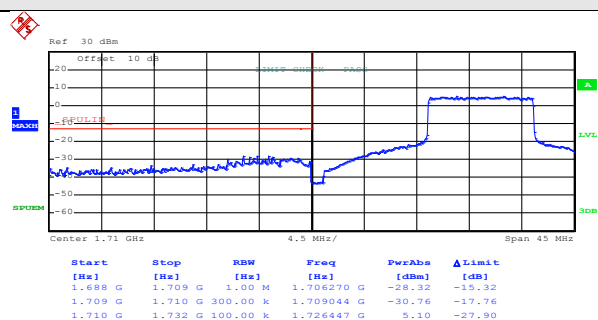


Date: 18.APR.2017 20:32:51

Highest channel

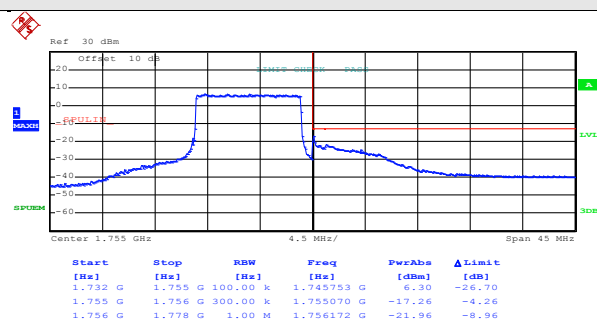
Test Mode:

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



Date: 18.APR.2017 20:37:10

Lowest channel

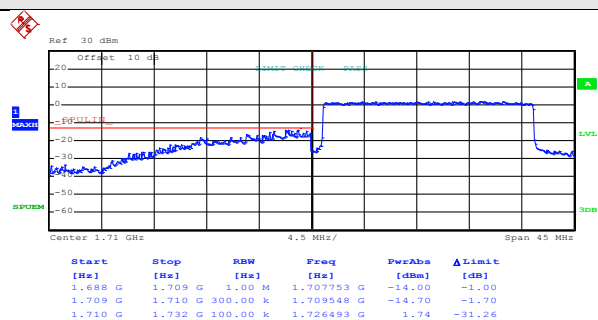


Date: 22.APR.2017 10:05:52

Highest channel

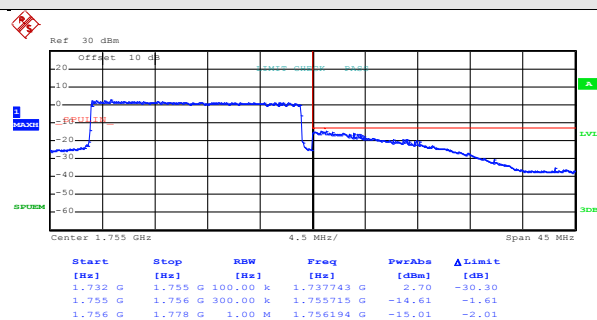
Test Mode:

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



Date: 18.APR.2017 20:37:42

Lowest channel

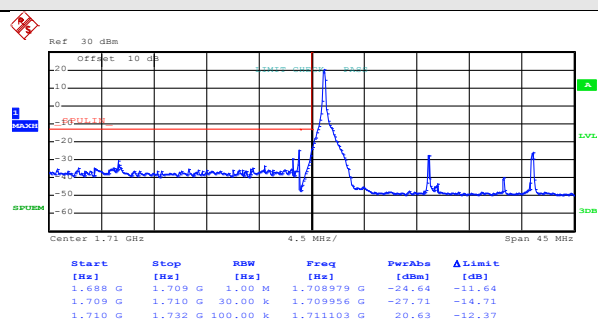


Date: 18.APR.2017 20:35:24

Highest channel

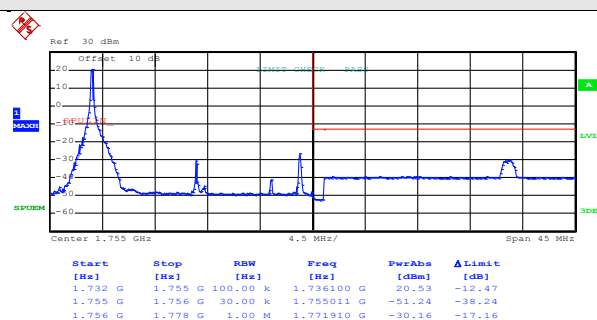
Test Mode:

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



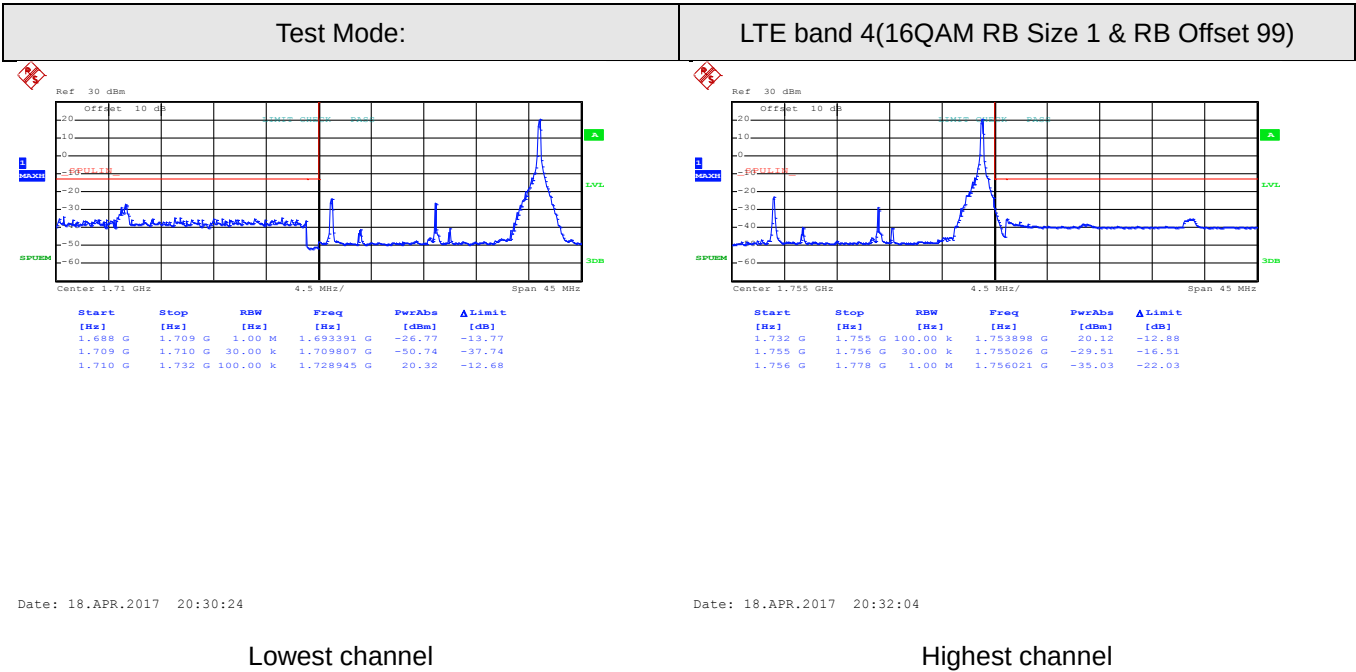
Date: 18.APR.2017 20:29:57

Lowest channel



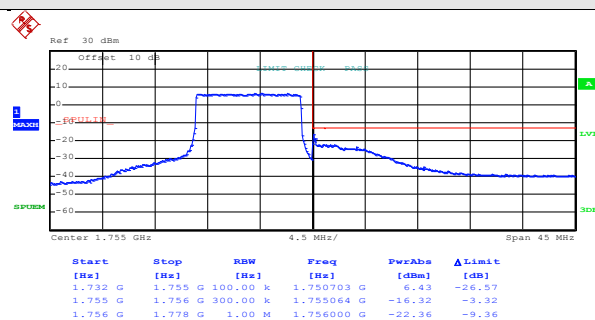
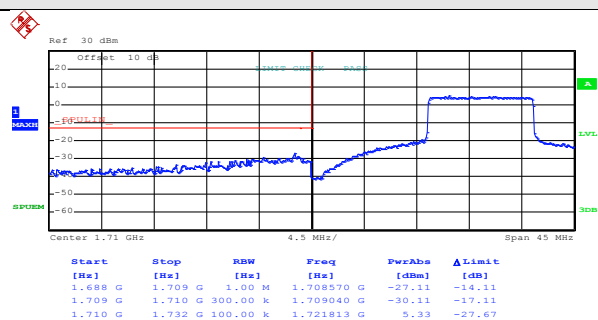
Date: 18.APR.2017 20:31:34

Highest channel



Test Mode:

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



Date: 18.APR.2017 20:37:25

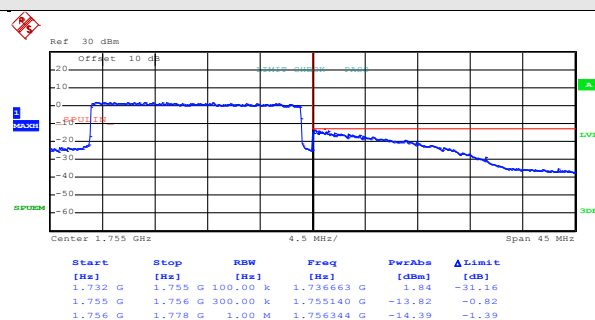
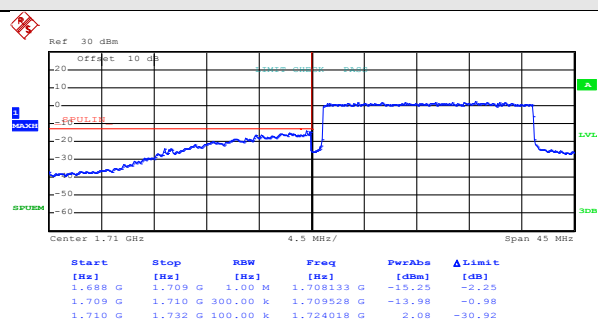
Date: 22.APR.2017 10:06:07

Lowest channel

Highest channel

Test Mode:

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



Date: 18.APR.2017 20:38:12

Date: 18.APR.2017 20:35:43

Lowest channel

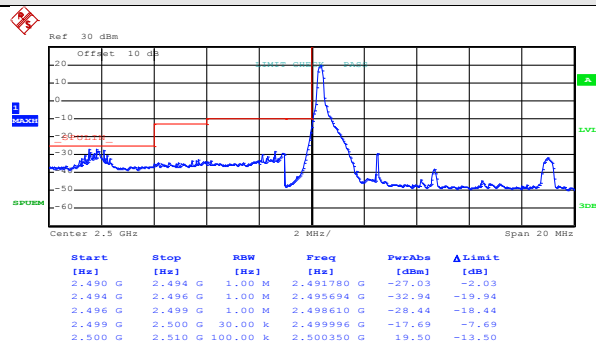
Highest channel

LTE band 7 part:

5MHz:

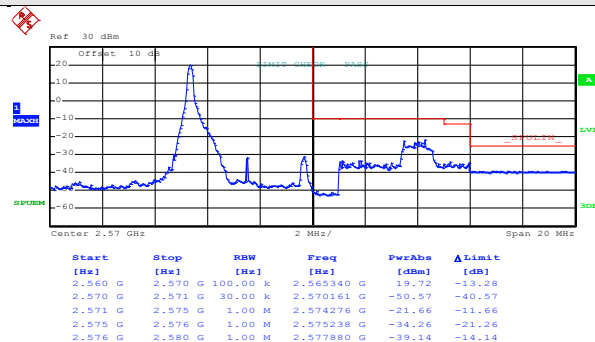
Test Mode:

LTE band 7(QPSK RB Size 1 & RB Offset 0)



Date: 18.APR.2017 20:55:44

Lowest channel

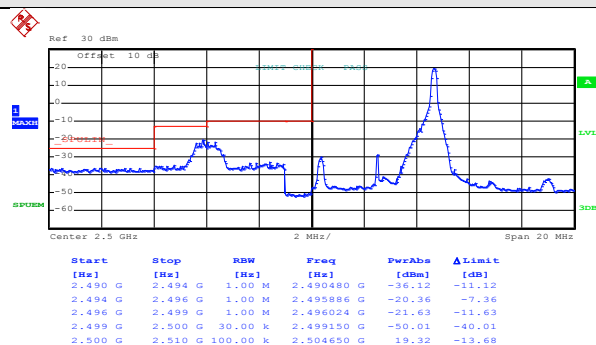


Date: 18.APR.2017 20:58:48

Highest channel

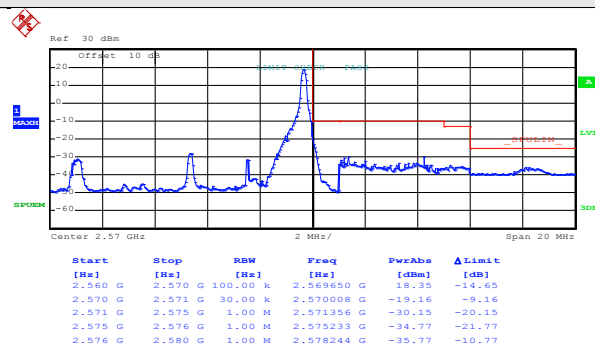
Test Mode:

LTE band 7(QPSK RB Size 1 & RB Offset 24)



Date: 18.APR.2017 20:56:12

Lowest channel

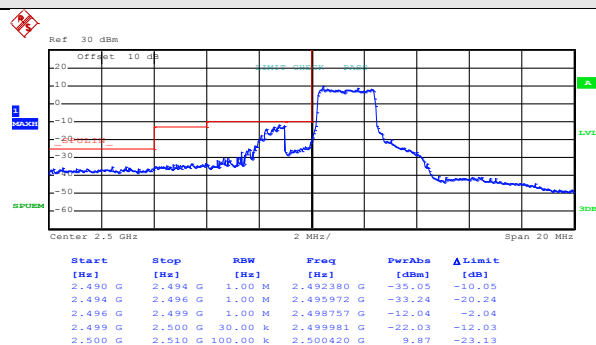


Date: 18.APR.2017 20:59:29

Highest channel

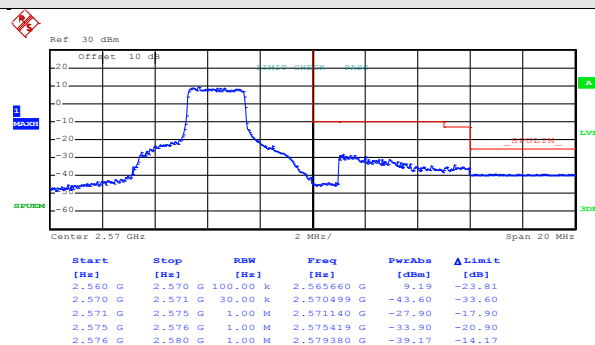
Test Mode:

LTE band 7(QPSK RB Size 12 & RB Offset 0)



Date: 18.APR.2017 20:56:43

Lowest channel

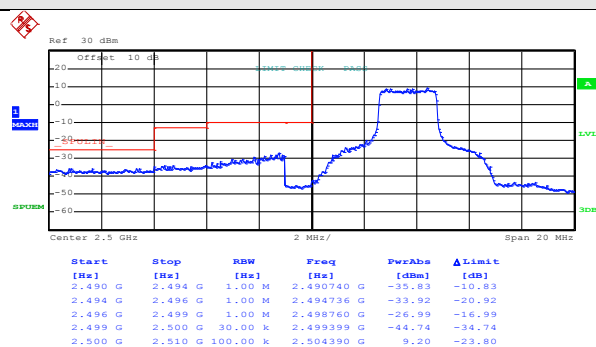


Date: 18.APR.2017 21:00:01

Highest channel

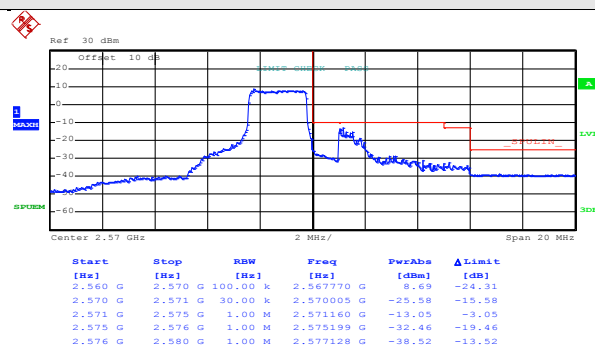
Test Mode:

LTE band 7(QPSK RB Size 12 & RB Offset 11)



Date: 18.APR.2017 20:57:31

Lowest channel

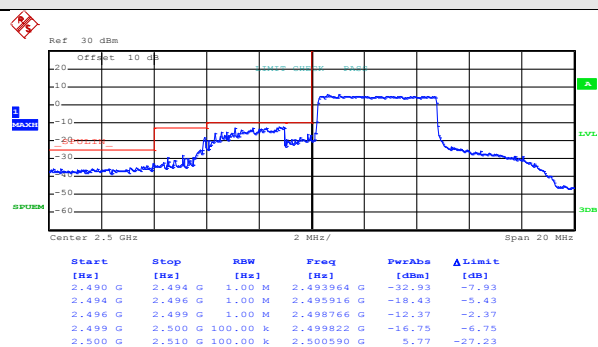


Date: 18.APR.2017 21:00:49

Highest channel

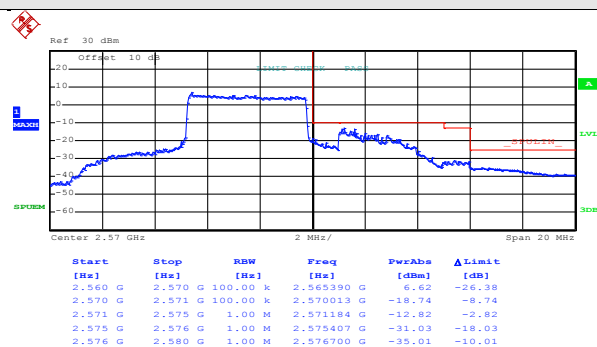
Test Mode:

LTE band 7(QPSK RB Size 25 & RB Offset 0)



Date: 18.APR.2017 21:02:06

Lowest channel

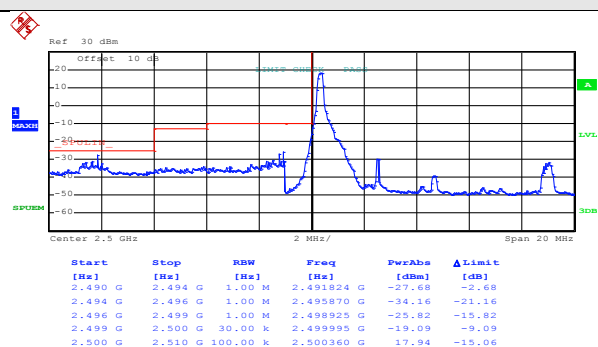


Date: 18.APR.2017 21:03:36

Highest channel

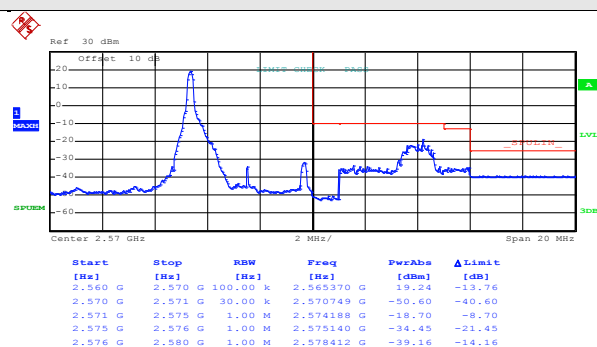
Test Mode:

LTE band 7(16QAM RB Size 1 & RB Offset 0)



Date: 18.APR.2017 20:55:58

Lowest channel

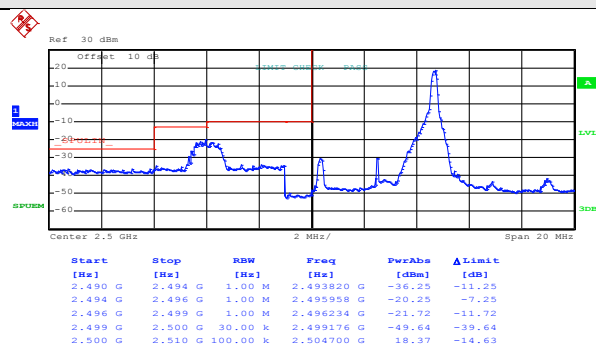


Date: 18.APR.2017 20:59:00

Highest channel

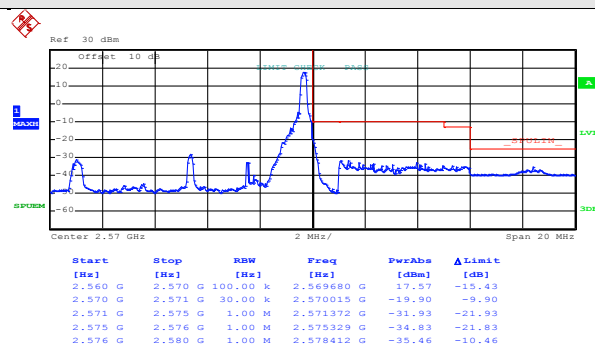
Test Mode:

LTE band 7(16QAM RB Size 1 & RB Offset 24)



Date: 18.APR.2017 20:56:25

Lowest channel

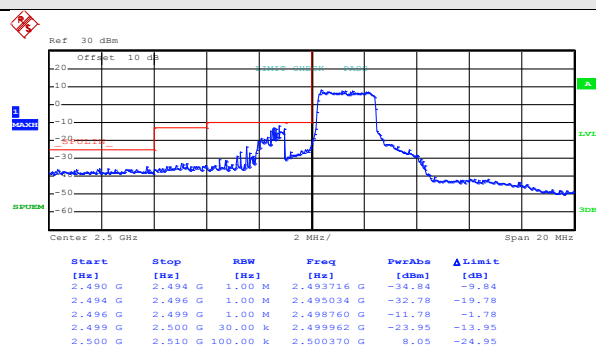


Date: 18.APR.2017 20:59:44

Highest channel

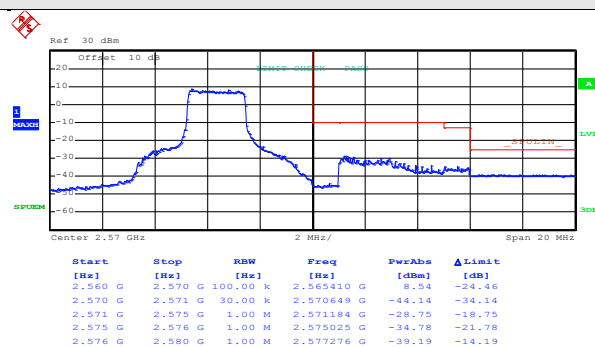
Test Mode:

LTE band 7(16QAM RB Size 12 & RB Offset 0)



Date: 18.APR.2017 20:57:16

Lowest channel

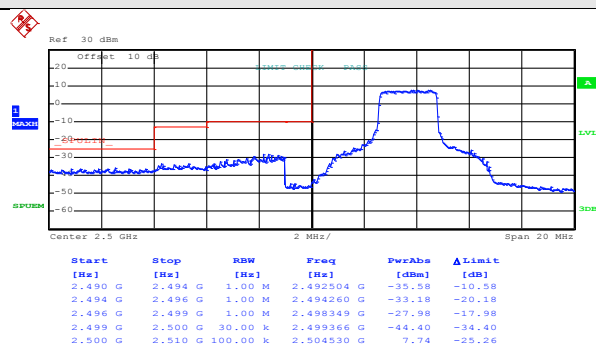


Date: 18.APR.2017 21:00:11

Highest channel

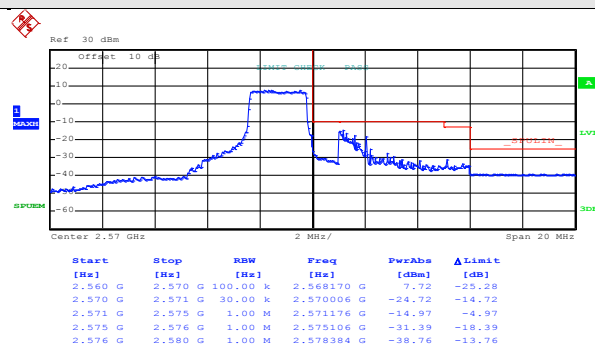
Test Mode:

LTE band 7(16QAM RB Size 12 & RB Offset 11)



Date: 18.APR.2017 20:57:44

Lowest channel

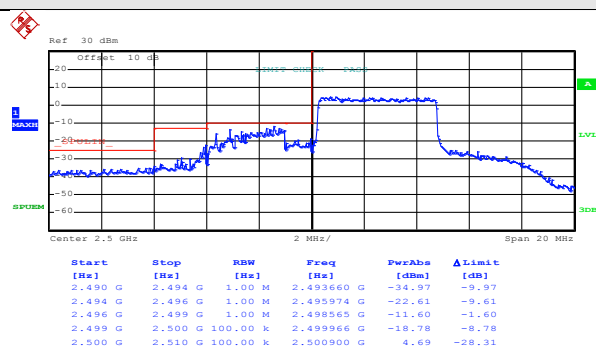


Date: 18.APR.2017 21:01:01

Highest channel

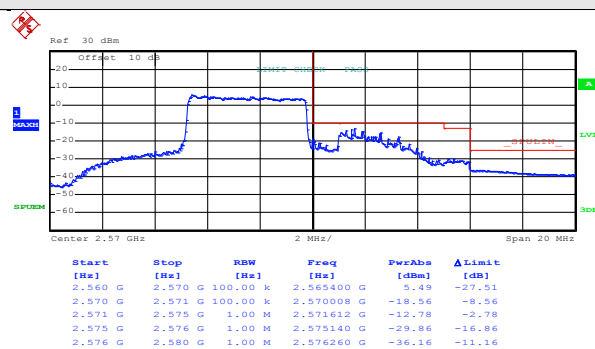
Test Mode:

LTE band 7(16QAM RB Size 25 & RB Offset 0)



Date: 18.APR.2017 21:02:23

Lowest channel



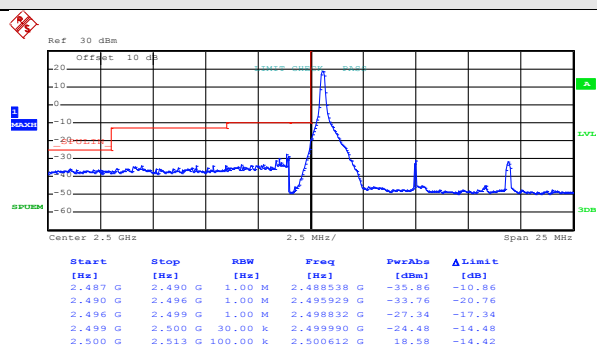
Date: 18.APR.2017 21:03:48

Highest channel

10MHz:

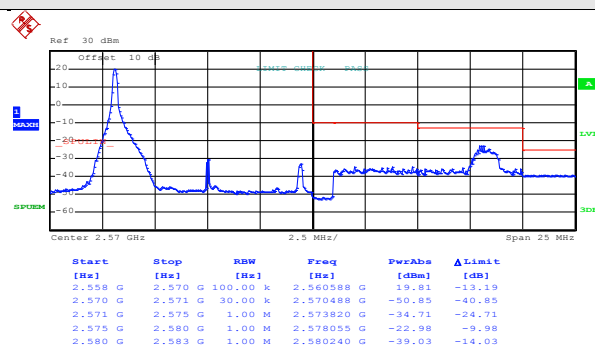
Test Mode:

LTE band 7(QPSK RB Size 1 & RB Offset 0)



Date: 18.APR.2017 21:05:58

Lowest channel

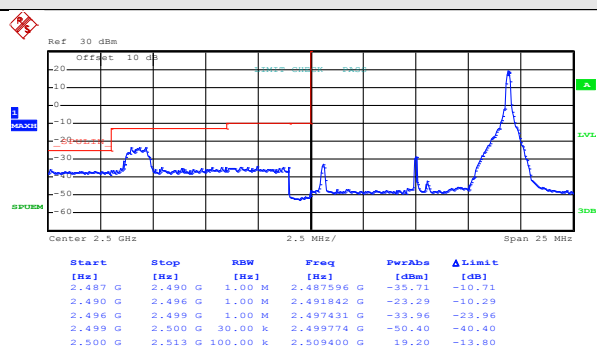


Date: 18.APR.2017 21:07:36

Highest channel

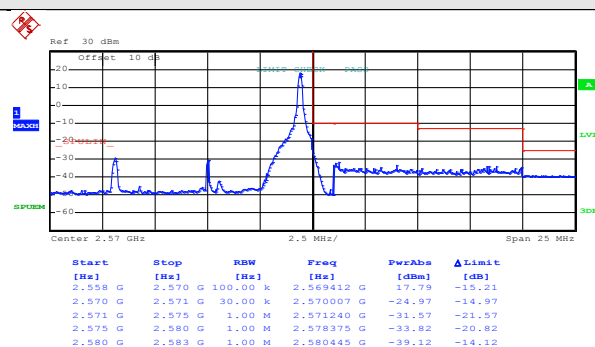
Test Mode:

LTE band 7(QPSK RB Size 1 & RB Offset 49)



Date: 18.APR.2017 21:06:36

Lowest channel

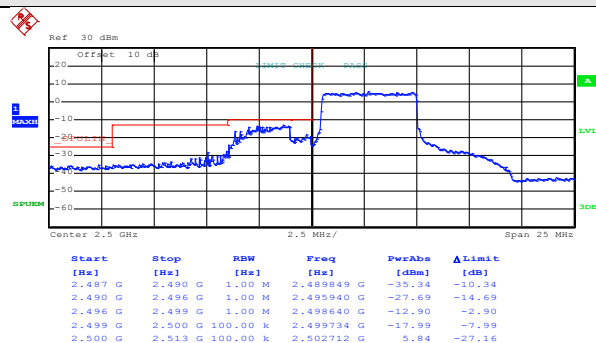


Date: 18.APR.2017 21:08:02

Highest channel

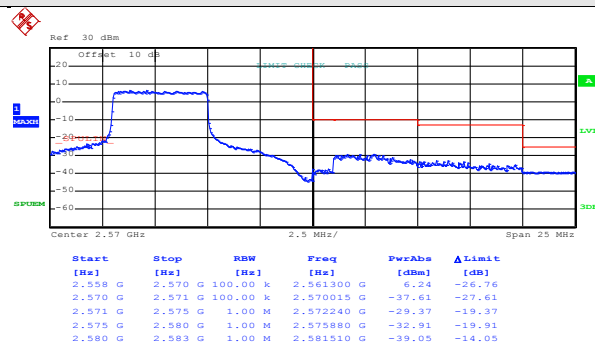
Test Mode:

LTE band 7(QPSK RB Size 25 & RB Offset 0)



Date: 18.APR.2017 21:10:33

Lowest channel

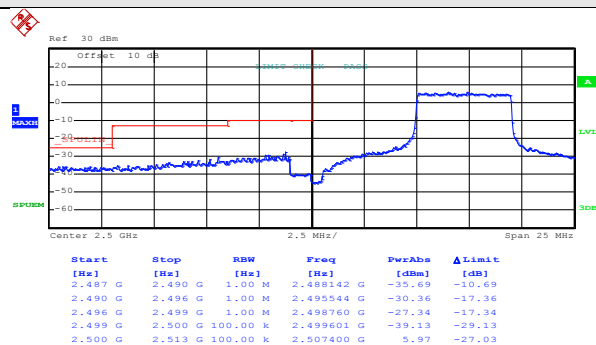


Date: 18.APR.2017 21:11:56

Highest channel

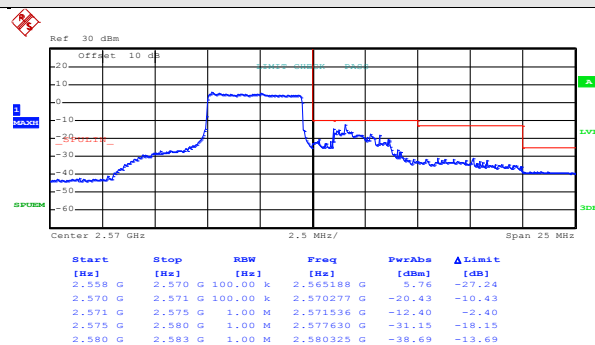
Test Mode:

LTE band 7(QPSK RB Size 25 & RB Offset 24)



Date: 18.APR.2017 21:11:06

Lowest channel

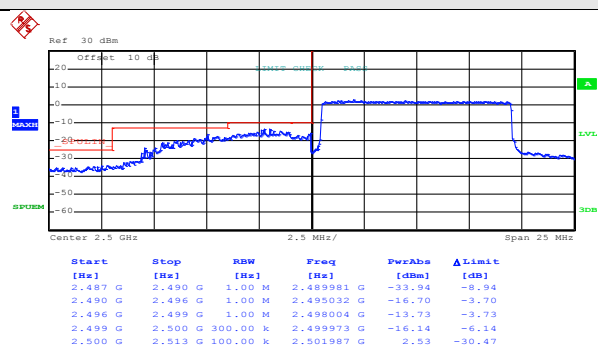


Date: 18.APR.2017 21:12:23

Highest channel

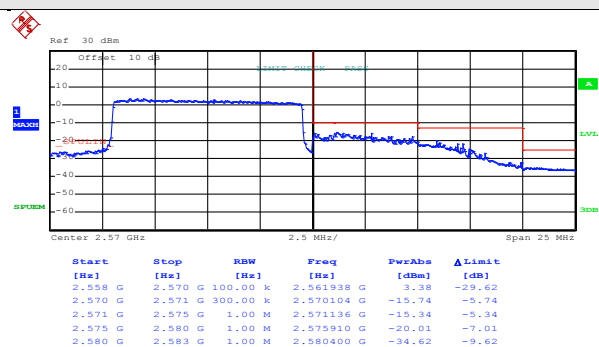
Test Mode:

LTE band 7(QPSK RB Size 50 & RB Offset 0)



Date: 18.APR.2017 21:13:41

Lowest channel

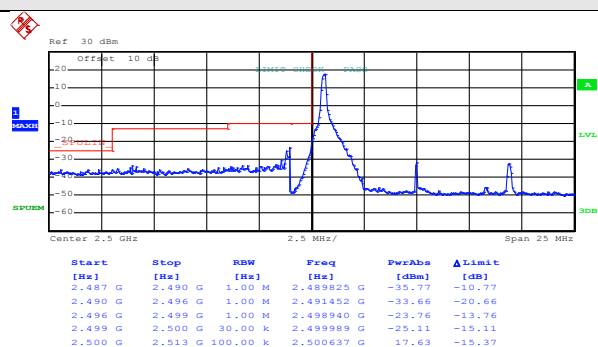


Date: 18.APR.2017 21:14:21

Highest channel

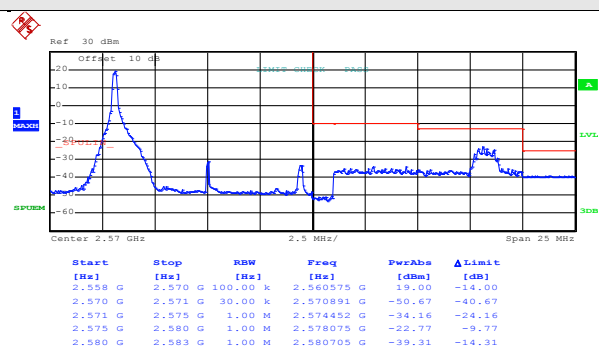
Test Mode:

LTE band 7(16QAM RB Size 1 & RB Offset 0)



Date: 18.APR.2017 21:06:09

Lowest channel

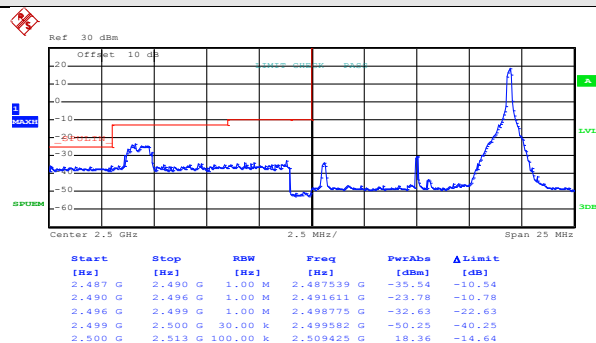


Date: 18.APR.2017 21:07:46

Highest channel

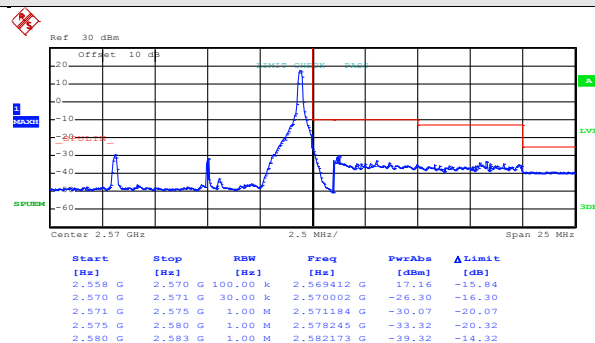
Test Mode:

LTE band 7(16QAM RB Size 1 & RB Offset 49)



Date: 18.APR.2017 21:06:47

Lowest channel

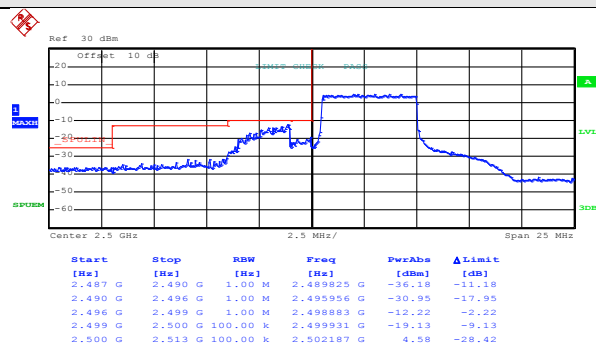


Date: 18.APR.2017 21:08:18

Highest channel

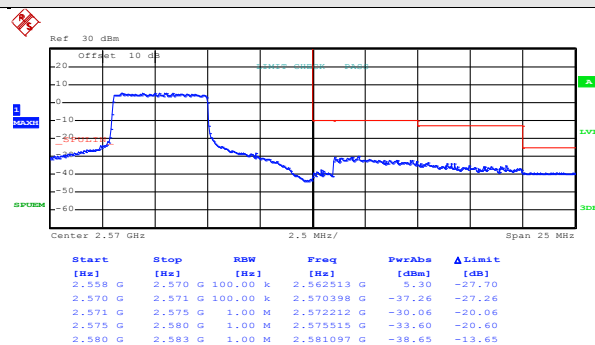
Test Mode:

LTE band 7(16QAM RB Size 25 & RB Offset 0)



Date: 18.APR.2017 21:10:50

Lowest channel

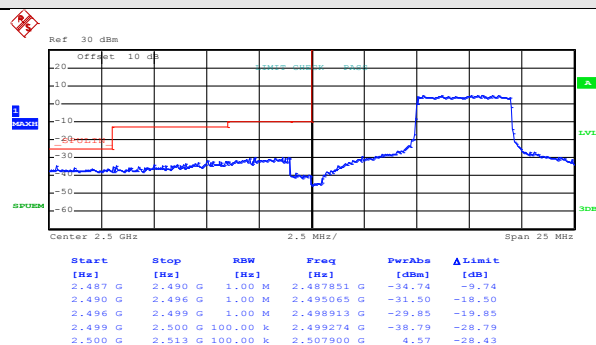


Date: 18.APR.2017 21:12:07

Highest channel

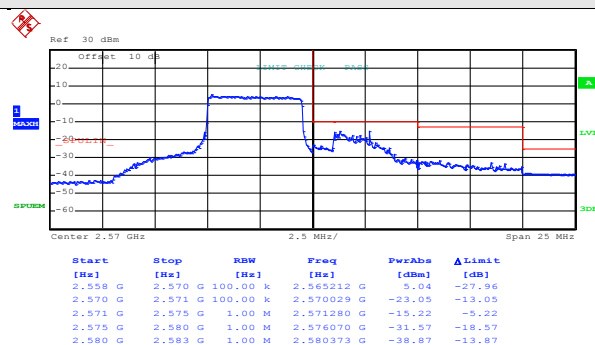
Test Mode:

LTE band 7(16QAM RB Size 25 & RB Offset 24)



Date: 18.APR.2017 21:11:21

Lowest channel

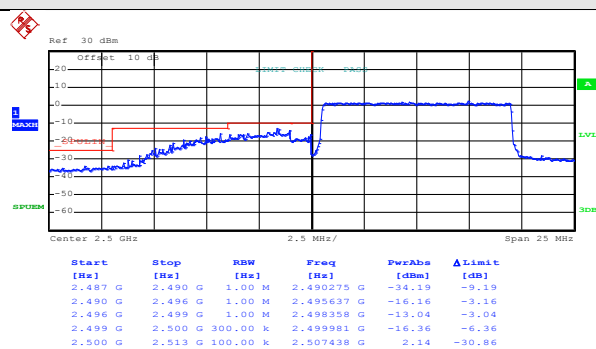


Date: 18.APR.2017 21:12:35

Highest channel

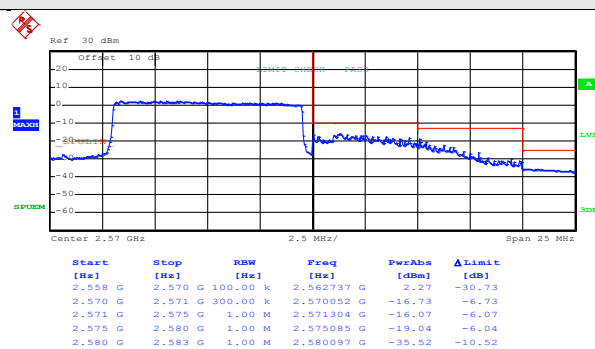
Test Mode:

LTE band 7(16QAM RB Size 50 & RB Offset 0)



Date: 18.APR.2017 21:13:54

Lowest channel



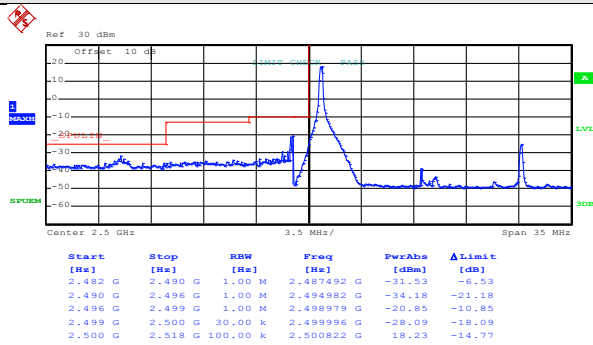
Date: 18.APR.2017 21:14:32

Highest channel

15MHz:

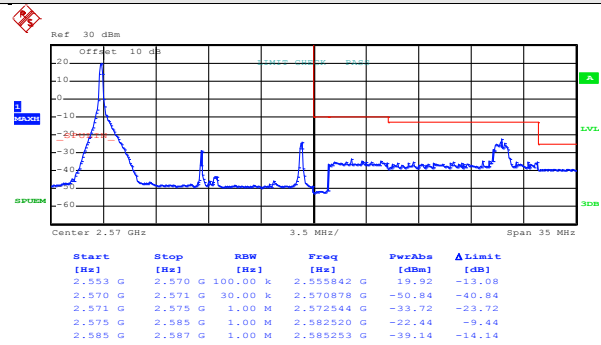
Test Mode:

LTE band 7(QPSK RB Size 1 & RB Offset 0)



Date: 18.APR.2017 21:15:45

Lowest channel

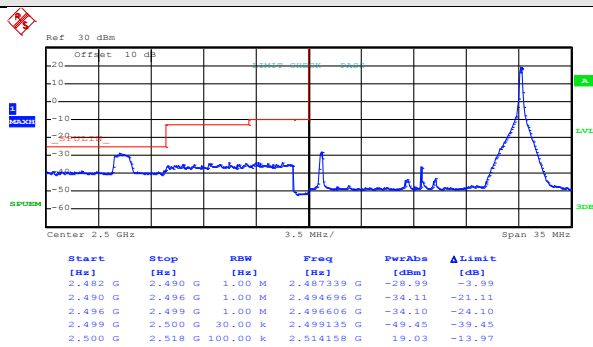


Date: 18.APR.2017 21:17:51

Highest channel

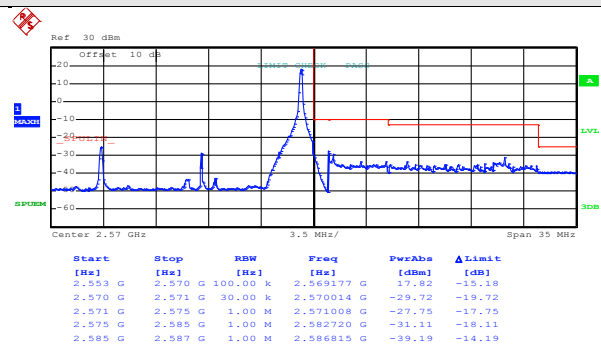
Test Mode:

LTE band 7(QPSK RB Size 1 & RB Offset 74)



Date: 18.APR.2017 21:16:36

Lowest channel

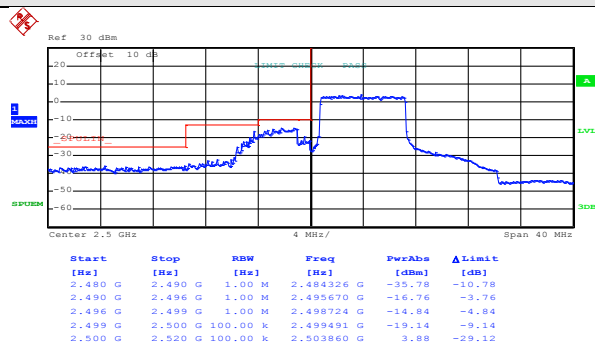


Date: 18.APR.2017 21:18:15

Highest channel

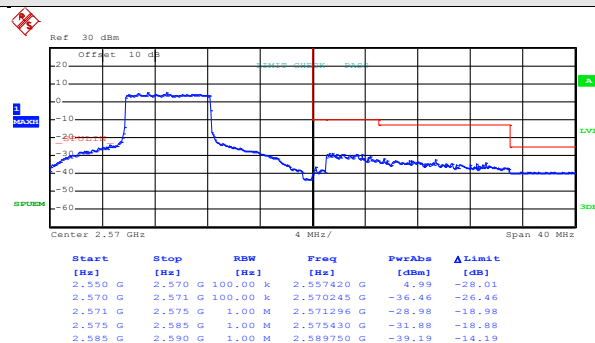
Test Mode:

LTE band 7(QPSK RB Size 36 & RB Offset 0)



Date: 18.APR.2017 21:19:22

Lowest channel

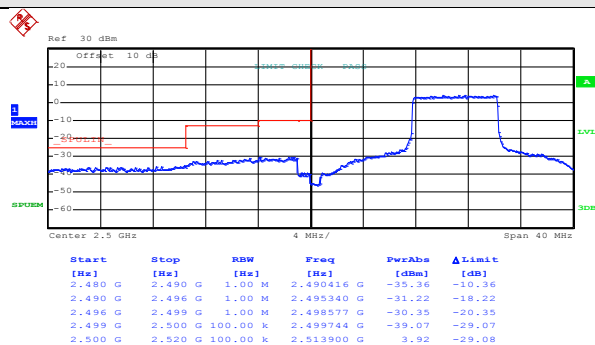


Date: 18.APR.2017 21:20:52

Highest channel

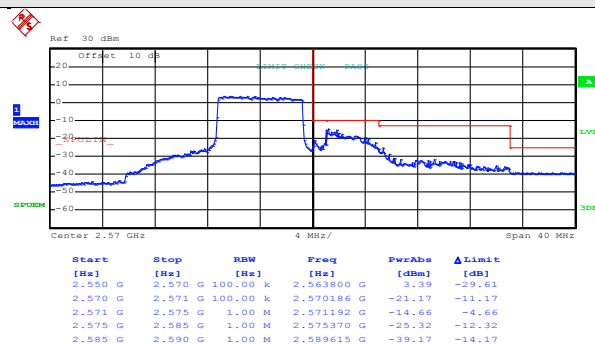
Test Mode:

LTE band 7(QPSK RB Size 36 & RB Offset 37)



Date: 18.APR.2017 21:19:51

Lowest channel

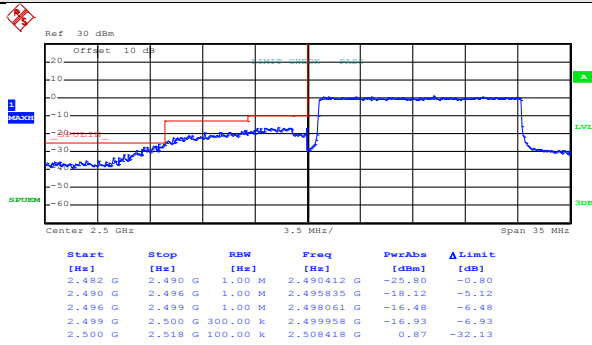


Date: 18.APR.2017 21:21:19

Highest channel

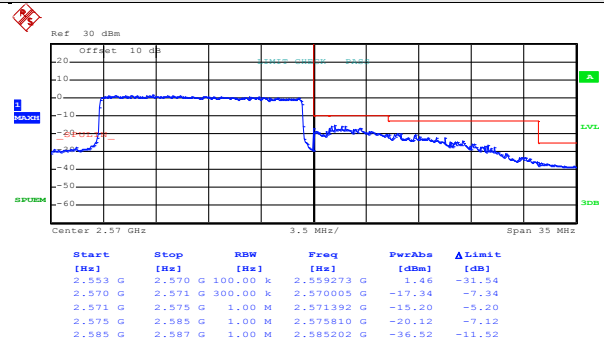
Test Mode:

LTE band 7(QPSK RB Size 75 & RB Offset 0)



Date: 18.APR.2017 21:24:22

Lowest channel

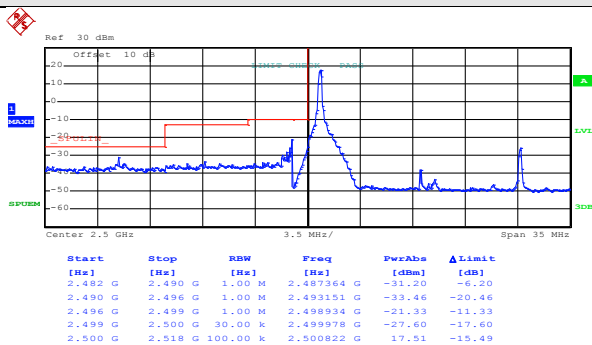


Date: 18.APR.2017 21:24:58

Highest channel

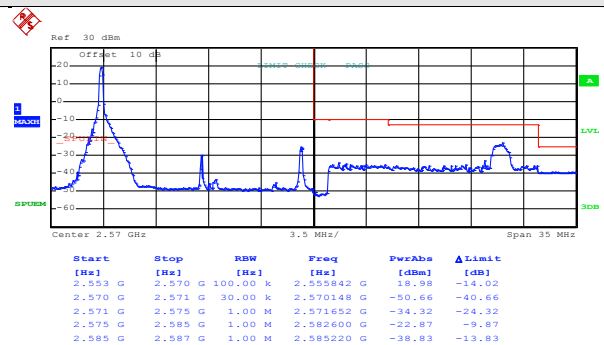
Test Mode:

LTE band 7(16QAM RB Size 1 & RB Offset 0)



Date: 18.APR.2017 21:15:55

Lowest channel

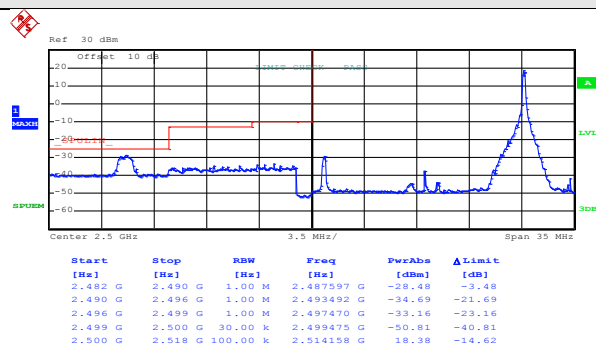


Date: 18.APR.2017 21:18:02

Highest channel

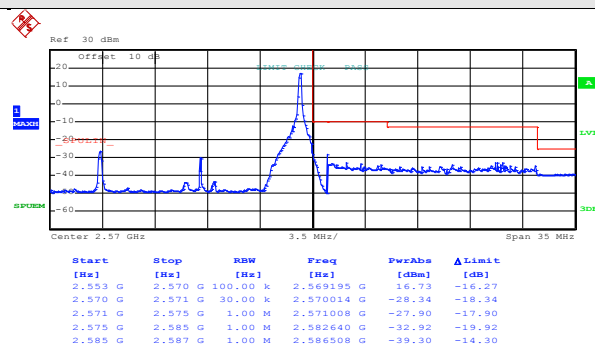
Test Mode:

LTE band 7(16QAM RB Size 1 & RB Offset 74)



Date: 18.APR.2017 21:16:48

Lowest channel

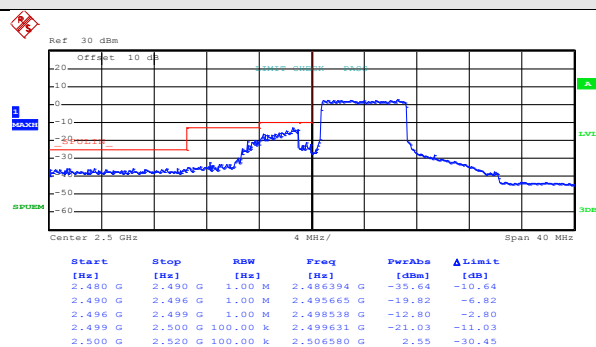


Date: 18.APR.2017 21:18:29

Highest channel

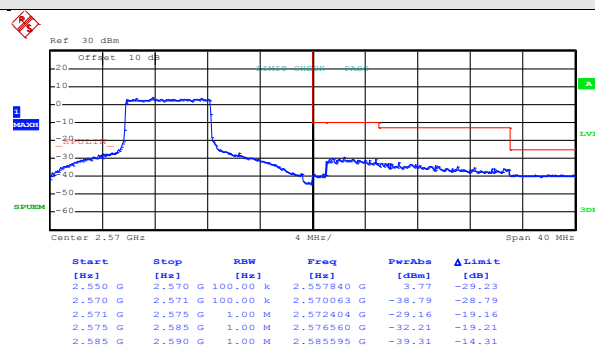
Test Mode:

LTE band 7(16QAM RB Size 36 & RB Offset 0)



Date: 18.APR.2017 21:19:34

Lowest channel

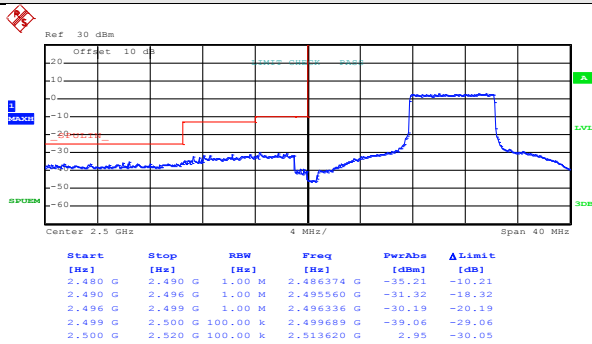


Date: 18.APR.2017 21:21:03

Highest channel

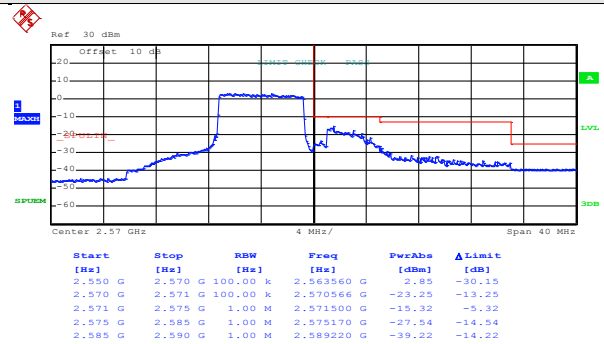
Test Mode:

LTE band 7(16QAM RB Size 36 & RB Offset 37)



Date: 18.APR.2017 21:20:03

Lowest channel

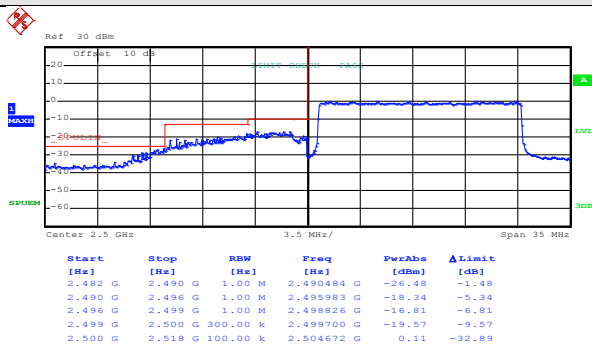


Date: 18.APR.2017 21:21:34

Highest channel

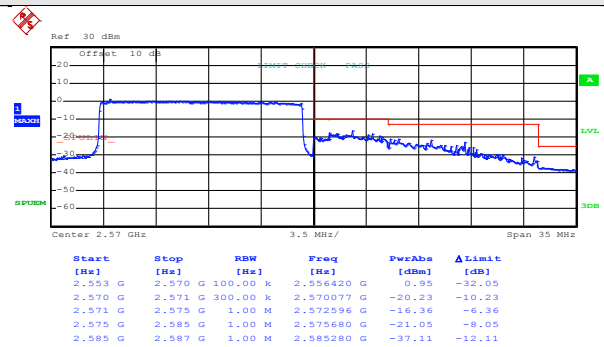
Test Mode:

LTE band 7(16QAM RB Size 75 & RB Offset 0)



Date: 18.APR.2017 21:24:34

Lowest channel



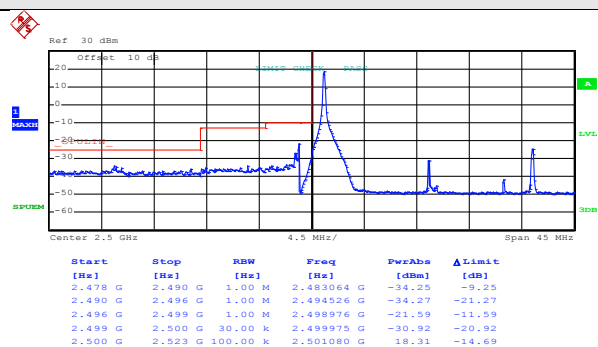
Date: 18.APR.2017 21:25:36

Highest channel

20MHz:

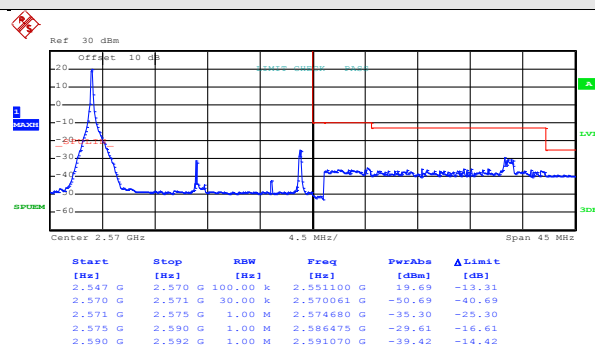
Test Mode:

LTE band 7(QPSK RB Size 1 & RB Offset 0)



Date: 18.APR.2017 21:30:50

Lowest channel

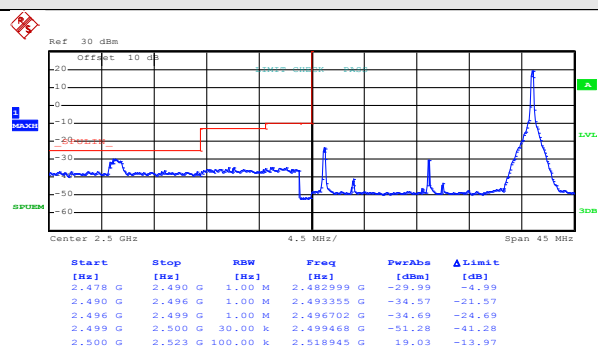


Date: 18.APR.2017 21:32:34

Highest channel

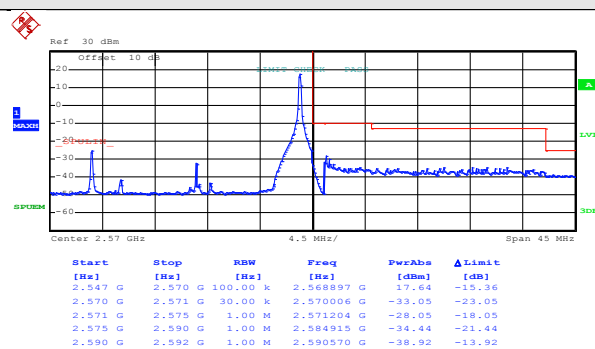
Test Mode:

LTE band 7(QPSK RB Size 1 & RB Offset 99)



Date: 18.APR.2017 21:31:17

Lowest channel

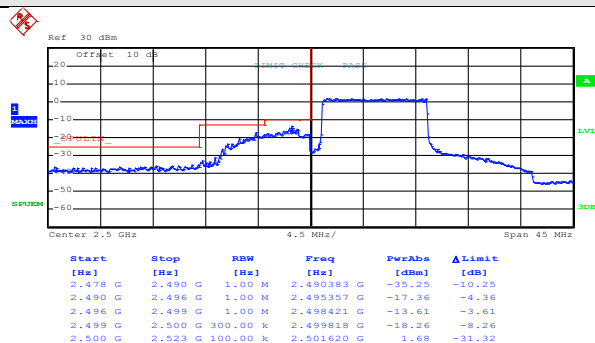


Date: 18.APR.2017 21:32:58

Highest channel

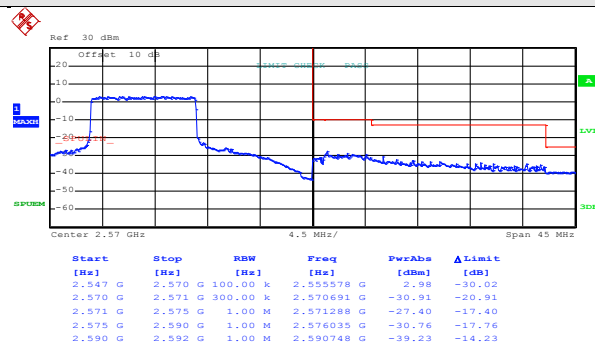
Test Mode:

LTE band 7(QPSK RB Size 50 & RB Offset 0)



Date: 18.APR.2017 21:34:37

Lowest channel

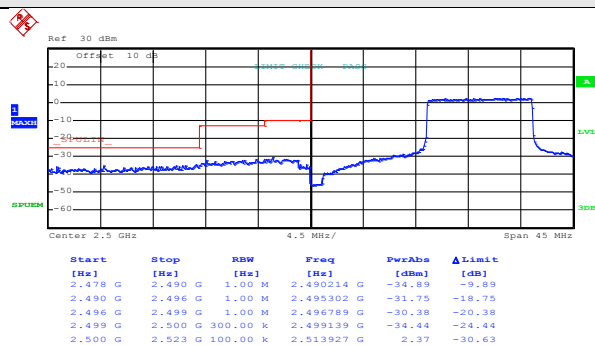


Date: 18.APR.2017 21:36:51

Highest channel

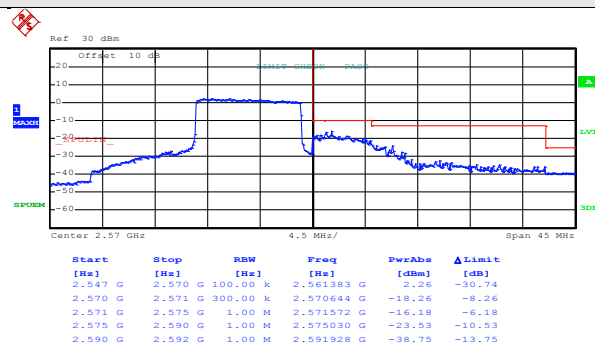
Test Mode:

LTE band 7(QPSK RB Size 50 & RB Offset 49)



Date: 18.APR.2017 21:35:13

Lowest channel

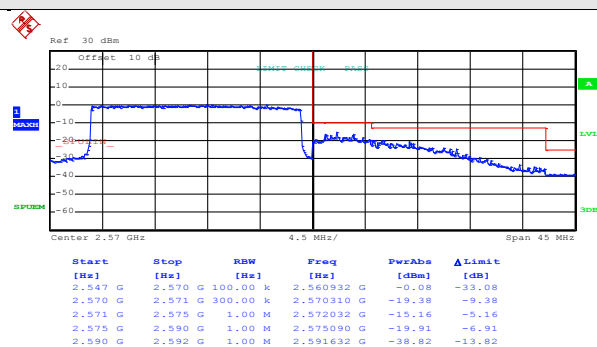
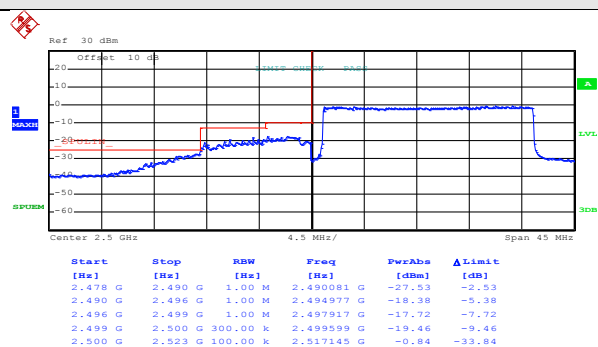


Date: 18.APR.2017 21:37:24

Highest channel

Test Mode:

LTE band 7(QPSK RB Size 100 & RB Offset 0)



Date: 18.APR.2017 21:36:06

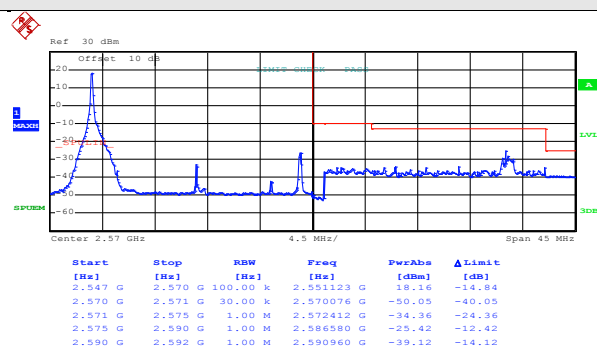
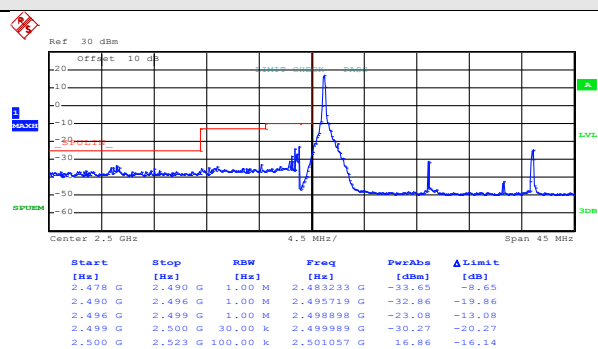
Date: 18.APR.2017 21:37:53

Lowest channel

Highest channel

Test Mode:

LTE band 7(16QAM RB Size 1 & RB Offset 0)



Date: 18.APR.2017 21:31:00

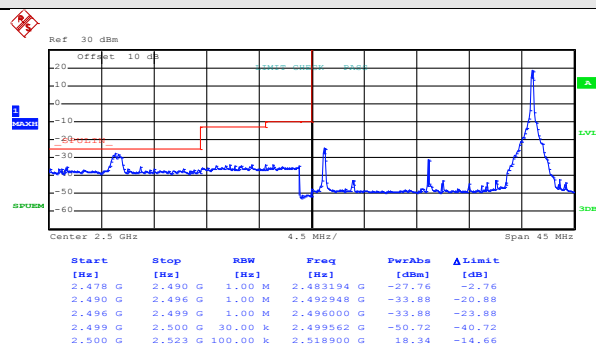
Date: 18.APR.2017 21:32:44

Lowest channel

Highest channel

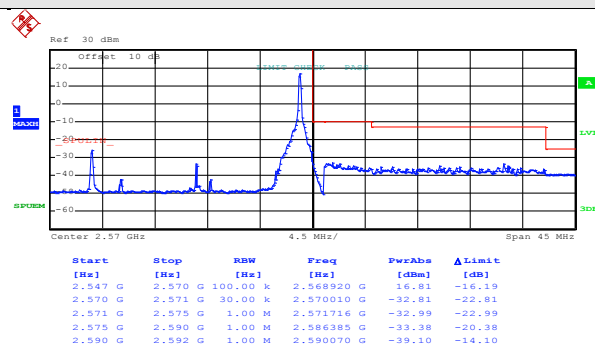
Test Mode:

LTE band 7(16QAM RB Size 1 & RB Offset 99)



Date: 18.APR.2017 21:31:36

Lowest channel

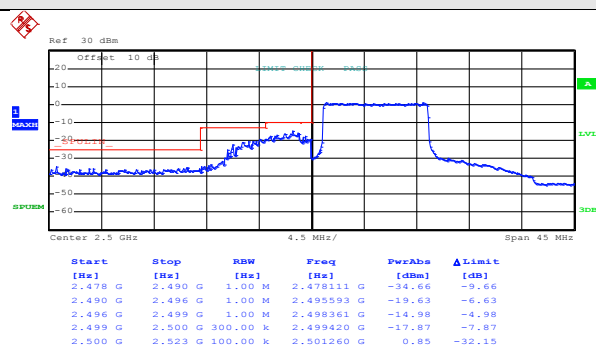


Date: 18.APR.2017 21:33:12

Highest channel

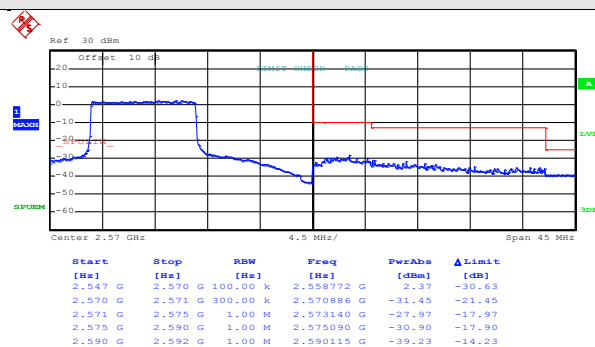
Test Mode:

LTE band 7(16QAM RB Size 50 & RB Offset 0)



Date: 18.APR.2017 21:34:46

Lowest channel

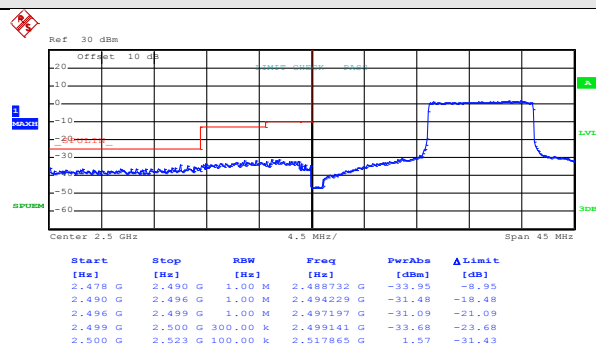


Date: 18.APR.2017 21:37:04

Highest channel

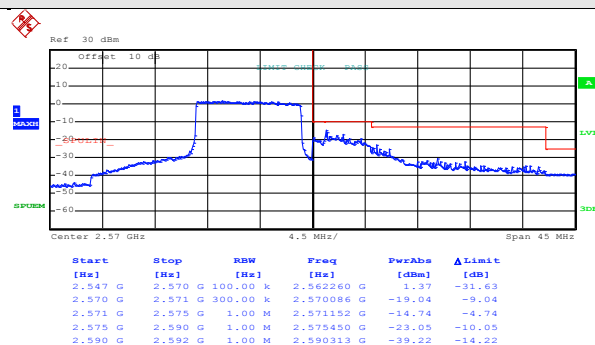
Test Mode:

LTE band 7(16QAM RB Size 50 & RB Offset 49)



Date: 18.APR.2017 21:35:25

Lowest channel

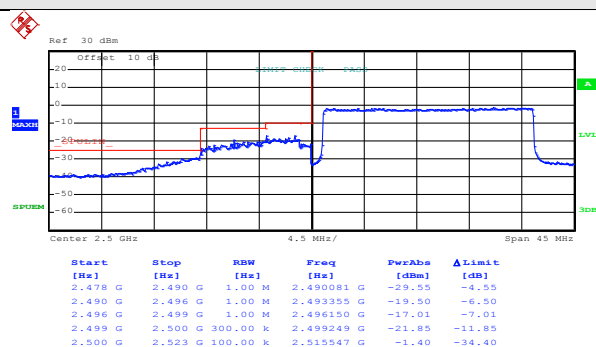


Date: 18.APR.2017 21:37:38

Highest channel

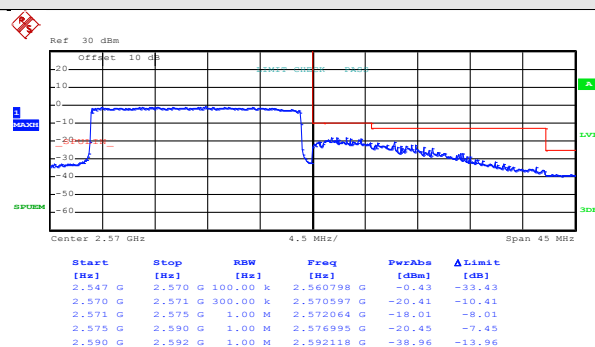
Test Mode:

LTE band 7(16QAM RB Size 100 & RB Offset 0)



Date: 18.APR.2017 21:36:16

Lowest channel



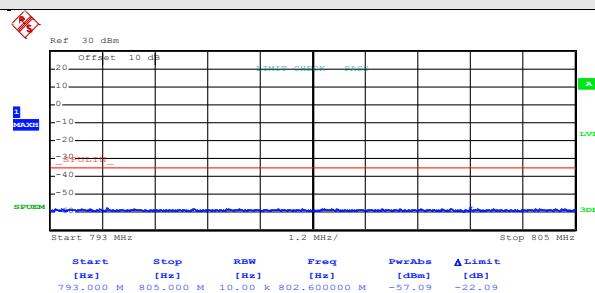
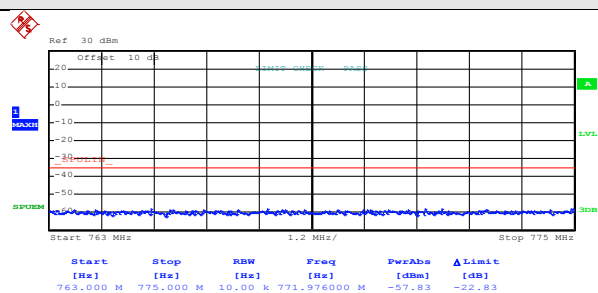
Date: 18.APR.2017 21:38:08

Highest channel

LTE band 13 part:5MHz:

Test Mode:

LTE band 13(QPSK RB Size 1 & RB Offset 0)



Date: 22.JUN.2017 15:25:20

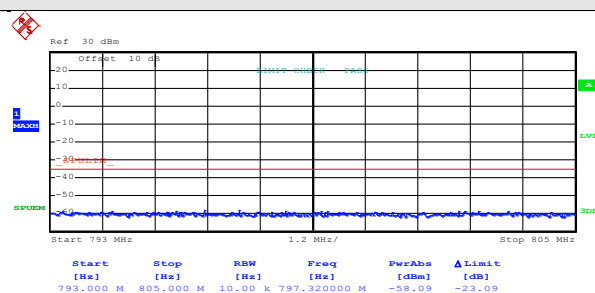
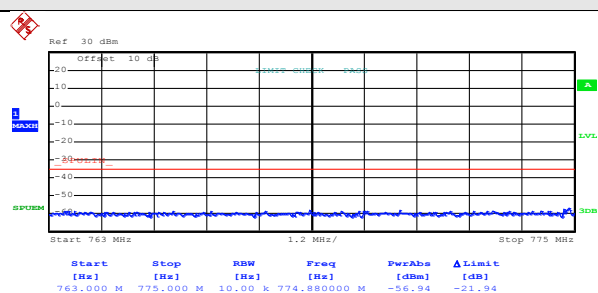
Date: 22.JUN.2017 15:33:11

Lowest channel

Highest channel

Test Mode:

LTE band 13(QPSK RB Size 1 & RB Offset 24)



Date: 22.JUN.2017 15:26:37

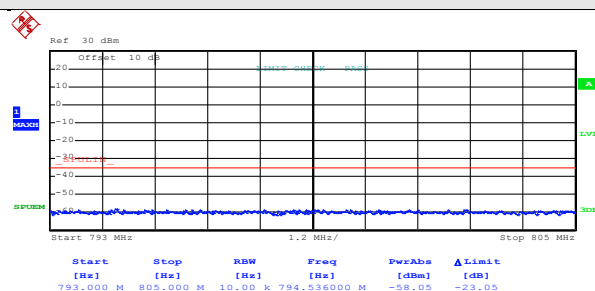
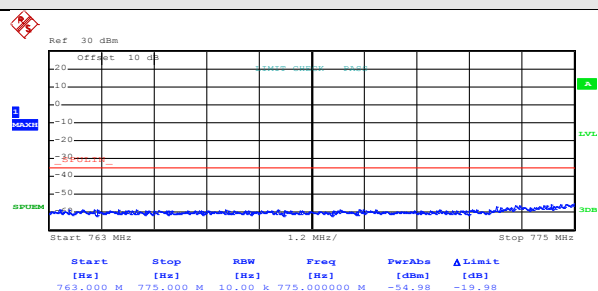
Date: 22.JUN.2017 15:34:32

Lowest channel

Highest channel

Test Mode:

LTE band 13(QPSK RB Size 12 & RB Offset 0)



Date: 22.JUN.2017 15:27:42

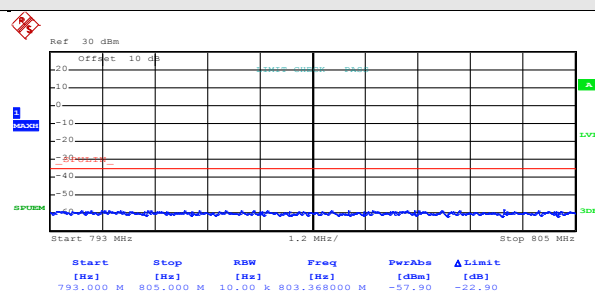
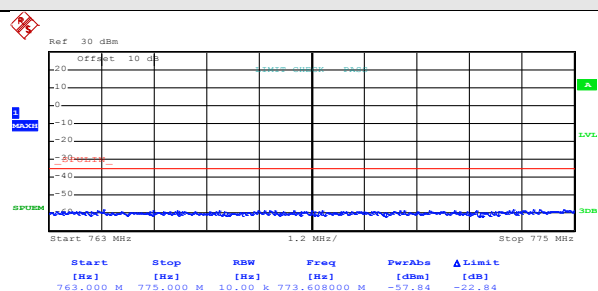
Date: 22.JUN.2017 15:35:19

Lowest channel

Highest channel

Test Mode:

LTE band 13(QPSK RB Size 12 & RB Offset 11)



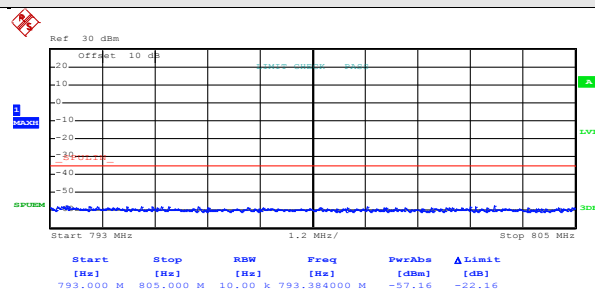
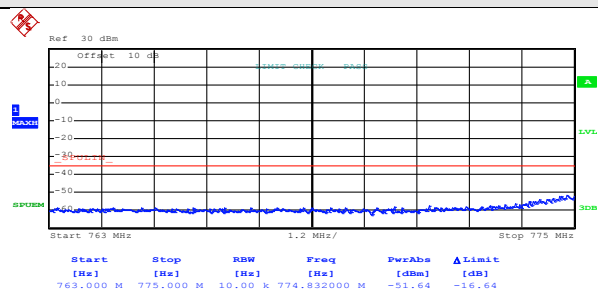
Date: 22.JUN.2017 15:28:35

Date: 22.JUN.2017 15:36:08

Lowest channel

Highest channel

Test Mode:	LTE band 13(QPSK RB Size 25 & RB Offset 0)
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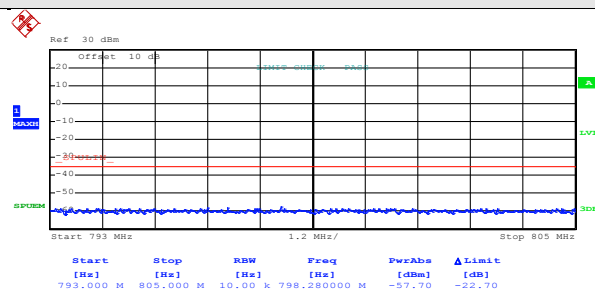
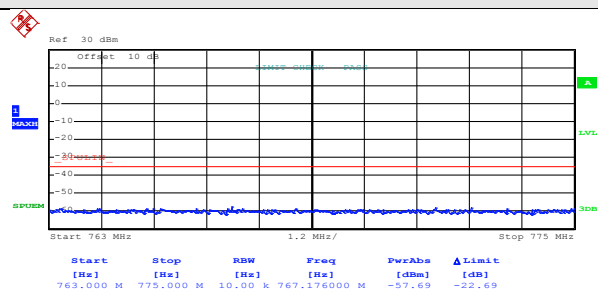
Date: 22.JUN.2017 15:29:22

Date: 22.JUN.2017 15:37:08

Lowest channel

Highest channel

Test Mode:	LTE band 13(16QAM RB Size 1 & RB Offset 0)
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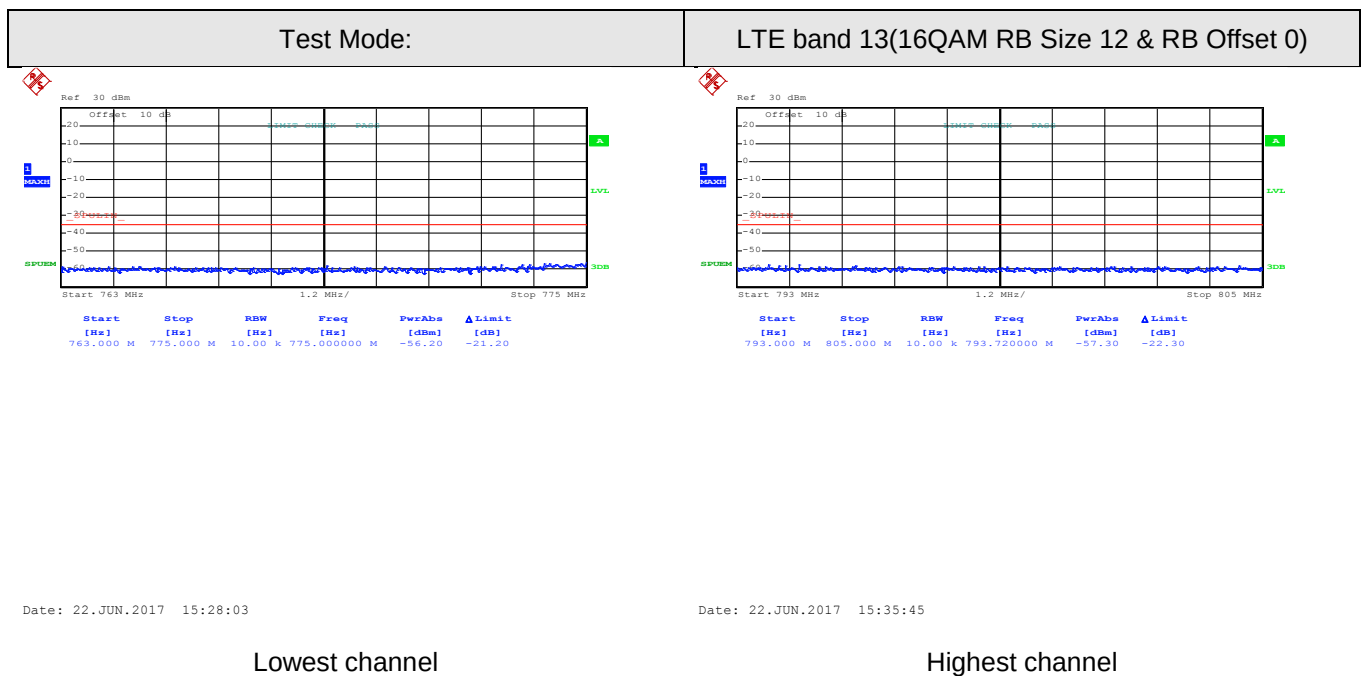
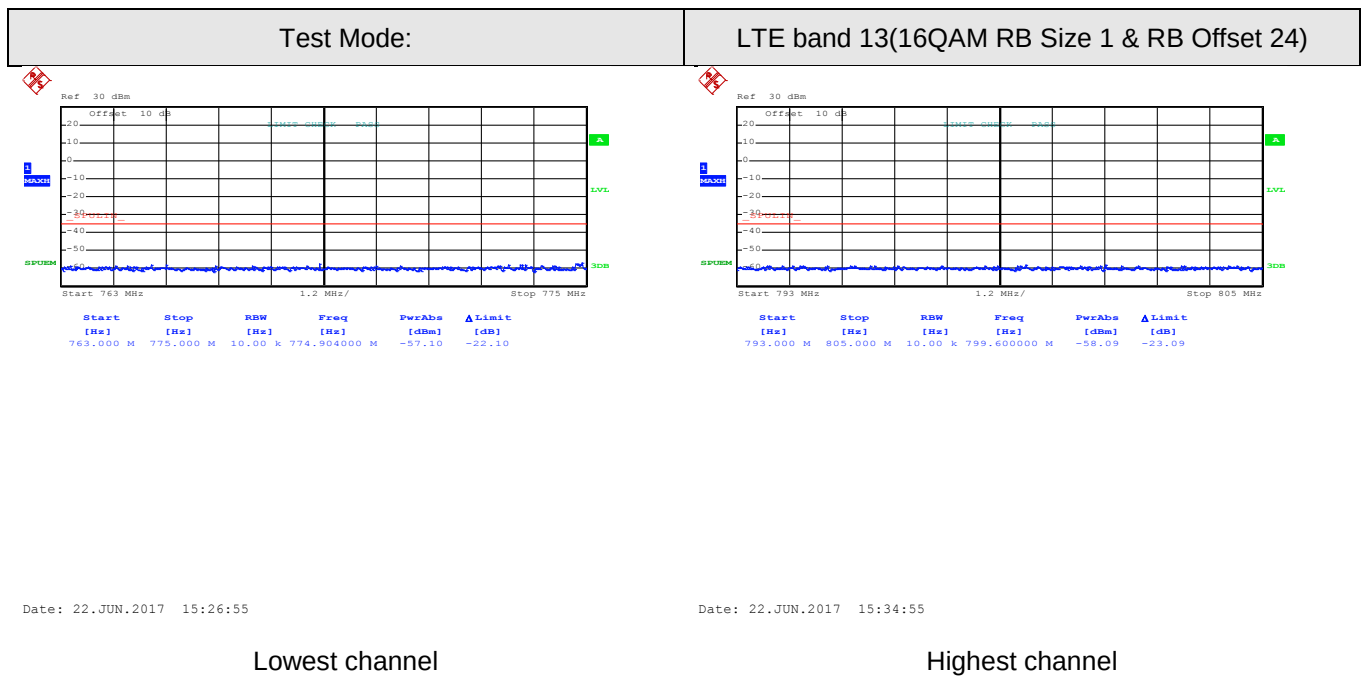


Date: 22.JUN.2017 15:25:41

Date: 22.JUN.2017 15:33:30

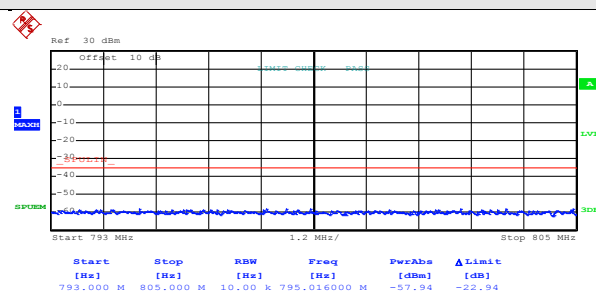
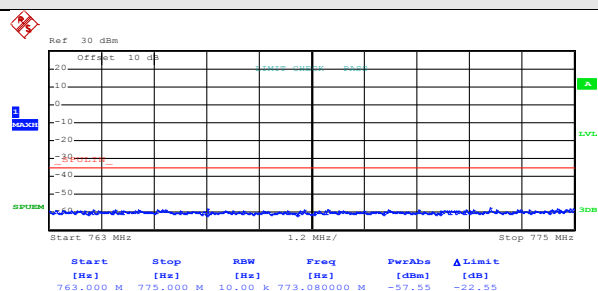
Lowest channel

Highest channel



Test Mode:

LTE band 13(16QAM RB Size 12 & RB Offset 11)



Date: 22.JUN.2017 15:28:53

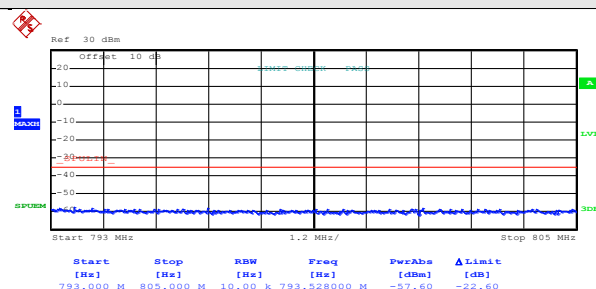
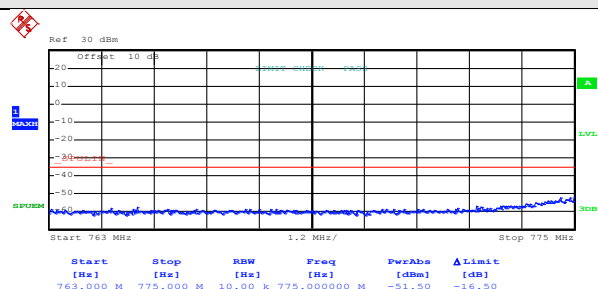
Date: 22.JUN.2017 15:36:22

Lowest channel

Highest channel

Test Mode:

LTE band 13(16QAM RB Size 25 & RB Offset 0)



Date: 22.JUN.2017 15:29:38

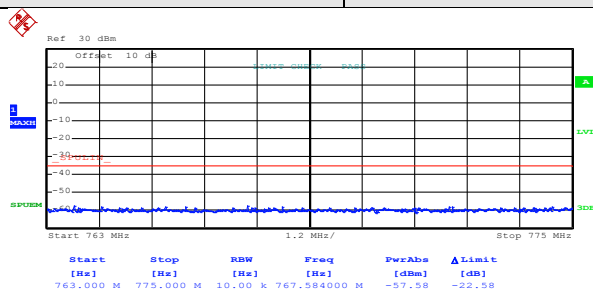
Date: 22.JUN.2017 15:37:21

Lowest channel

Highest channel

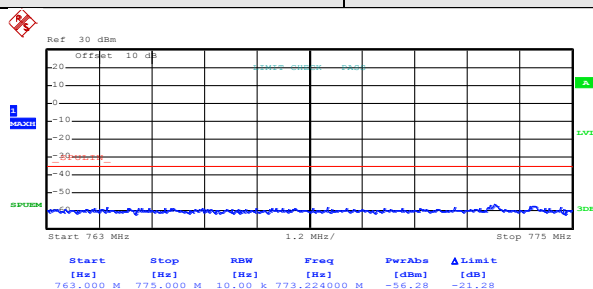
10MHz:

Test Mode:	LTE band 13(QPSK RB Size 1 & RB Offset 0)
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Date: 22.JUN.2017 15:40:48

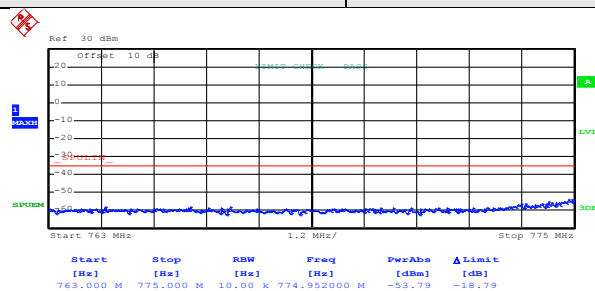
Test Mode:	LTE band 13(QPSK RB Size 1 & RB Offset 49)
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Date: 22.JUN.2017 15:41:36

Test Mode:

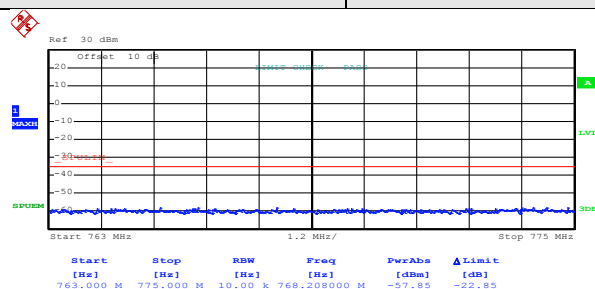
LTE band 13(QPSK RB Size 25 & RB Offset 0)



Date: 22.JUN.2017 15:42:38

Test Mode:

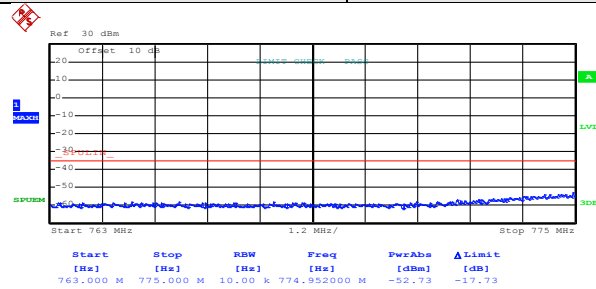
LTE band 13(QPSK RB Size 25 & RB Offset 24)



Date: 22.JUN.2017 15:43:32

Test Mode:

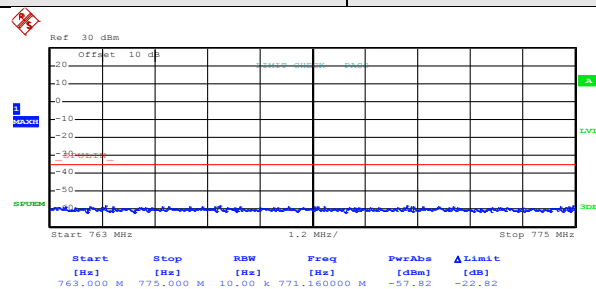
LTE band 13(QPSK RB Size 50 & RB Offset 0)



Date: 22.JUN.2017 15:44:08

Test Mode:

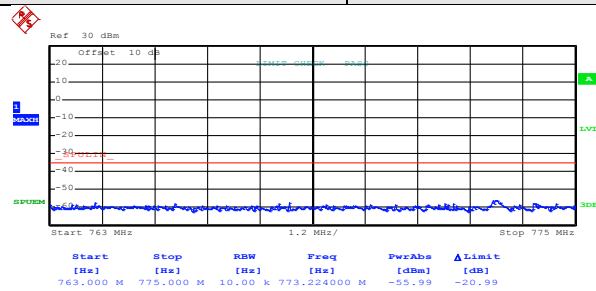
LTE band 13(16QAM RB Size 1 & RB Offset 0)



Date: 22.JUN.2017 15:41:03

Test Mode:

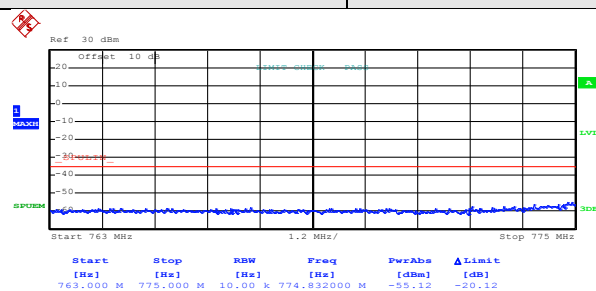
LTE band 13(16QAM RB Size 1 & RB Offset 49)



Date: 22.JUN.2017 15:41:54

Test Mode:

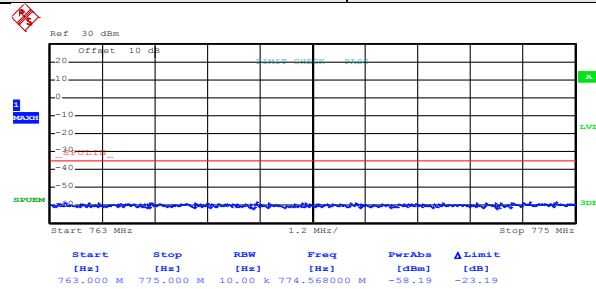
LTE band 13(16QAM RB Size 25 & RB Offset 0)



Date: 22.JUN.2017 15:42:53

Test Mode:

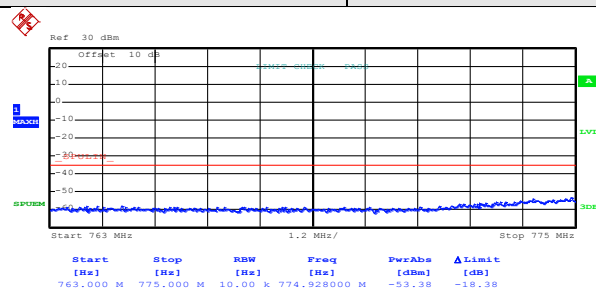
LTE band 13(16QAM RB Size 25 & RB Offset 24)



Date: 22.JUN.2017 15:43:46

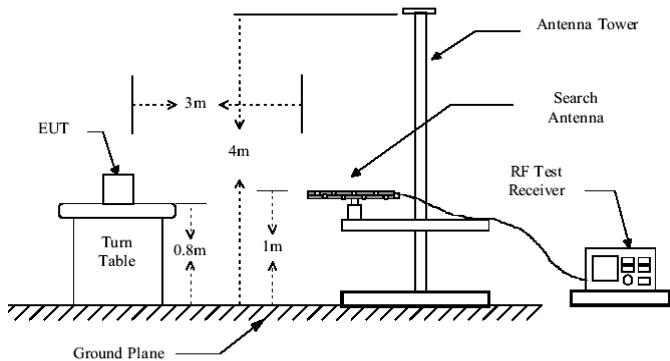
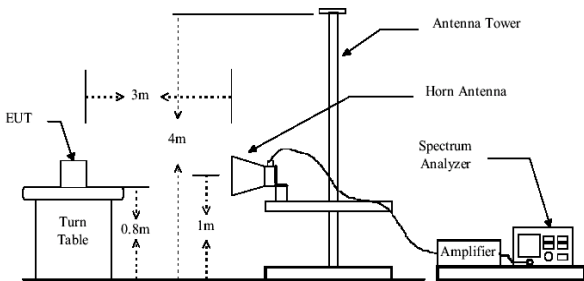
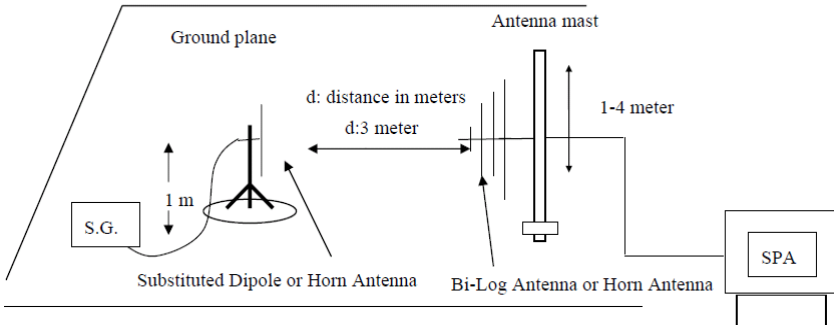
Test Mode:

LTE band 13(16QAM RB Size 50 & RB Offset 0)



Date: 22.JUN.2017 15:44:23

6.10 ERP, EIRP Measurement

Test Requirement:	24.232 (c), part 27.50(a), part 27.50(d), part 27.50 (h)
Test Method:	FCC part2.1046
Limit:	LTE Band 2: 2W EIRP LTE Band 4: 1W EIRP LTE Band 7: 2W EIRP LTE band 13: 3W 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 2 part

Lowest channel

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)								
1850.70	18607	QPSK	1.4	H	V	18.93	33.00	Pass
					H	15.18		
1850.70	18607	16QAM	1.4	H	V	18.90		
					H	14.96		
1.4MHz(RB size 3 & RB offset 0)								
1850.70	18607	QPSK	1.4	H	V	18.55	33.00	Pass
					H	14.65		
1850.70	18607	16QAM	1.4	H	V	18.40		
					H	14.70		
1.4MHz(RB size 6 & RB offset 0)								
1850.70	18607	QPSK	1.4	H	V	17.38	33.00	Pass
					H	13.77		
1850.70	18607	16QAM	1.4	H	V	17.35		
					H	13.93		

Middle channel

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)								
1880.00	18900	QPSK	1.4	H	V	18.87	33.00	Pass
					H	15.23		
1880.00	18900	16QAM	1.4	H	V	18.92		
					H	15.04		
1.4MHz(RB size 3 & RB offset 0)								
1880.00	18900	QPSK	1.4	H	V	18.56	33.00	Pass
					H	14.78		
1880.00	18900	16QAM	1.4	H	V	18.25		
					H	14.19		
1.4MHz(RB size 6 & RB offset 0)								
1880.00	18900	QPSK	1.40	H	V	17.28	33.00	Pass
					H	13.68		
1880.00	18900	16QAM	1.40	H	V	17.47		
					H	13.56		

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)								
1909.30	19193	QPSK	1.4	H	V	18.57	33.00	Pass
					H	15.24		
1909.30	19193	16QAM	1.4	H	V	18.70		
					H	14.26		
1.4MHz(RB size 3 & RB offset 0)								
1909.30	19193	QPSK	1.4	H	V	18.45	33.00	Pass
					H	14.29		
1909.30	19193	16QAM	1.4	H	V	18.76		
					H	14.53		
1.4MHz(RB size 6 & RB offset 0)								
1909.30	19193	QPSK	1.4	H	V	17.88	33.00	Pass
					H	13.92		
1909.30	19193	16QAM	1.4	H	V	17.56		
					H	13.68		

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)								
1860.00	18700	QPSK	20	H	V	18.45	33.00	Pass
					H	15.17		
1860.00	18700	16QAM	20	H	V	18.65		
					H	14.24		
20MHz(RB size 50 & RB offset 0)								
1860.00	18700	QPSK	20	H	V	18.57	33.00	Pass
					H	14.68		
1860.00	18700	16QAM	20	H	V	18.53		
					H	14.59		
20MHz(RB size 100 & RB offset 0)								
1860.00	18700	QPSK	20	H	V	17.47	33.00	Pass
					H	13.55		
1860.00	18700	16QAM	20	H	V	17.59		
					H	13.57		

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)								
1880.00	18900	QPSK	20	H	V	18.86	33.00	Pass
					H	14.96		
1880.00	18900	16QAM	20	H	V	18.65		
					H	14.23		
20MHz(RB size 50 & RB offset 0)								
1880.00	18900	QPSK	20	H	V	18.69	33.00	Pass
					H	14.53		
1880.00	18900	16QAM	20	H	V	18.75		
					H	14.29		
20MHz(RB size 100 & RB offset 0)								
1880.00	18900	QPSK	20	H	V	17.56	33.00	Pass
					H	13.86		
1880.00	18900	16QAM	20	H	V	17.57		
					H	13.42		

Highest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
20MHz(RB size 1 & RB offset 0)								
1900.00	19100	QPSK	20	H	V	18.77	33.00	Pass
					H	15.05		
1900.00	19100	16QAM	20	H	V	14.85		
					H	18.33		
20MHz(RB size 50 & RB offset 0)								
1900.00	19100	QPSK	20	H	V	18.74	33.00	Pass
					H	14.58		
1900.00	19100	16QAM	20	H	V	18.25		
					H	14.73		
20MHz(RB size 100 & RB offset 0)								
1900.00	19100	QPSK	20	H	V	17.49	33.00	Pass
					H	13.26		
1900.00	19100	16QAM	20	H	V	17.46		
					H	13.72		

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	19.37	30.00	Pass
					H	19.84		
1710.70	19957	16QAM	1.4	H	V	19.63		
					H	19.97		
1.4MHz(RB size 3 & RB offset 0)								
1710.70	19957	QPSK	1.4	H	V	19.37	30.00	Pass
					H	19.71		
1710.70	19957	16QAM	1.4	H	V	19.59		
					H	19.84		
1.4MHz(RB size 6 & RB offset 0)								
1710.70	19957	QPSK	1.4	H	V	18.83	30.00	Pass
					H	19.11		
1710.70	19957	16QAM	1.4	H	V	19.25		
					H	19.64		

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	19.32	30.00	Pass
					H	19.75		
1732.50	20175	16QAM	1.4	H	V	19.52		
					H	19.86		
1.4MHz(RB size 3 & RB offset 0)								
1732.50	20175	QPSK	1.4	H	V	19.26	30.00	Pass
					H	19.57		
1732.50	20175	16QAM	1.4	H	V	19.43		
					H	19.77		
1.4MHz(RB size 6 & RB offset 0)								
1732.50	20175	QPSK	1.4	H	V	18.95	30.00	Pass
					H	19.36		
1732.50	20175	16QAM	1.4	H	V	19.12		
					H	19.61		

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	19.58	30.00	Pass
					H	19.37		
1754.30	20393	16QAM	1.4	H	V	19.73		
					H	19.88		
1.4MHz(RB size 3 & RB offset 0)								
1754.30	20393	QPSK	1.4	H	V	19.46	30.00	Pass
					H	19.67		
1754.30	20393	16QAM	1.4	H	V	19.53		
					H	19.69		
1.4MHz(RB size 6 & RB offset 0)								
1754.30	20393	QPSK	1.4	H	V	18.92	30.00	Pass
					H	19.43		
1754.30	20393	16QAM	1.4	H	V	19.13		
					H	19.56		

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	19.32	30.00	Pass
					H	19.56		
1720.00	20050	16QAM	20	H	V	19.43		
					H	19.76		
20MHz(RB size 50 & RB offset 0)								
1720.00	20050	QPSK	20	H	V	19.28	30.00	Pass
					H	19.46		
1720.00	20050	16QAM	20	H	V	19.55		
					H	19.67		
20MHz(RB size 100 & RB offset 0)								
1720.00	20050	QPSK	20	H	V	18.96	30.00	Pass
					H	19.33		
1720.00	20050	16QAM	20	H	V	19.12		
					H	19.45		

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	19.40	30.00	Pass
					H	19.52		
1732.50	20175	16QAM	20	H	V	19.61		
					H	19.75		
20MHz(RB size 50 & RB offset 0)								
1732.50	20175	QPSK	20	H	V	19.28	30.00	Pass
					H	19.43		
1732.50	20175	16QAM	20	H	V	19.35		
					H	19.57		
20MHz(RB size 100 & RB offset 0)								
1732.50	20175	QPSK	20	H	V	18.84	30.00	Pass
					H	19.32		
1732.50	20175	16QAM	20	H	V	19.11		
					H	19.56		

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	19.24	30.00	Pass
					H	19.55		
1745.00	20300	16QAM	20	H	V	19.34		
					H	19.75		
20MHz(RB size 50 & RB offset 0)								
1745.00	20300	QPSK	20	H	V	19.42	30.00	Pass
					H	19.53		
1745.00	20300	16QAM	20	H	V	19.48		
					H	19.63		
20MHz(RB size 100 & RB offset 0)								
1745.00	20300	QPSK	20	H	V	19.04	30.00	Pass
					H	19.26		
1745.00	20300	16QAM	20	H	V	19.17		
					H	19.38		

LTE band 7 part

Lowest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
5MHz(RB size 1 & RB offset 0)								
2502.50	20775	QPSK	5	H	V	17.95	33.00	Pass
					H	17.90		
2502.50	20775	16QAM	5	H	V	18.03		
					H	17.56		
5MHz(RB size 12& RB offset 0)								
2502.50	20775	QPSK	5	H	V	17.23	33.00	Pass
					H	16.15		
2502.50	20775	16QAM	5	H	V	17.62		
					H	16.41		
5MHz(RB size 25& RB offset 0)								
2502.50	20775	QPSK	5	H	V	15.23	33.00	Pass
					H	14.57		
2502.50	20775	16QAM	5	H	V	15.36		
					H	15.06		

Middle channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
5MHz(RB size 1 & RB offset 0)								
2535.00	21100	QPSK	5	H	V	17.89	33.00	Pass
					H	17.92		
2535.00	21100	16QAM	5	H	V	18.10		
					H	17.45		
5MHz(RB size 12& RB offset 0)								
2535.00	21100	QPSK	5	H	V	17.45	33.00	Pass
					H	16.32		
2535.00	21100	16QAM	5	H	V	17.56		
					H	16.35		
5MHz(RB size 25& RB offset 0)								
2535.00	21100	QPSK	5	H	V	15.35	33.00	Pass
					H	14.75		
2535.00	21100	16QAM	5	H	V	15.23		
					H	14.89		

Highest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
5MHz(RB size 1 & RB offset 0)								
2567.50	21425	QPSK	5	H	V	18.91	33.00	Pass
					H	18.88		
2567.50	21425	16QAM	5	H	V	19.12		
					H	18.47		
5MHz(RB size 12& RB offset 0)								
2567.50	21425	QPSK	5	H	V	17.56	33.00	Pass
					H	16.37		
2567.50	21425	16QAM	5	H	V	17.85		
					H	16.55		
5MHz(RB size 25& RB offset 0)								
2567.50	21425	QPSK	5	H	V	15.68	33.00	Pass
					H	14.78		
2567.50	21425	16QAM	5	H	V	15.69		
					H	14.87		

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)								
2510.00	20850	QPSK	20	H	V	18.90	33.00	Pass
					H	18.87		
2510.00	20850	16QAM	20	H	V	19.07		
					H	18.52		
20MHz(RB size 50 & RB offset 0)								
2510.00	20850	QPSK	20	H	V	17.54	33.00	Pass
					H	16.52		
2510.00	20850	16QAM	20	H	V	17.63		
					H	17.40		
20MHz(RB size 100 & RB offset 0)								
2510.00	20850	QPSK	20	H	V	15.49	33.00	Pass
					H	14.57		
2510.00	20850	16QAM	20	H	V	15.71		
					H	14.95		

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)								
2535.00	21100	QPSK	20	H	V	18.86	33.00	Pass
					H	18.89		
2535.00	21100	16QAM	20	H	V	19.01		
					H	18.42		
20MHz(RB size 50 & RB offset 0)								
2535.00	21100	QPSK	20	H	V	17.50	33.00	Pass
					H	16.68		
2535.00	21100	16QAM	20	H	V	17.54		
					H	16.38		
20MHz(RB size 100 & RB offset 0)								
2535.00	21100	QPSK	20	H	V	15.73	33.00	Pass
					H	14.65		
2535.00	21100	16QAM	20	H	V	15.53		
					H	14.89		

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)								
2560.00	21350	QPSK	20	H	V	18.85	33.00	Pass
					H	18.89		
2560.00	21350	16QAM	20	H	V	19.13		
					H	18.51		
20MHz(RB size 50 & RB offset 0)								
2560.00	21350	QPSK	20	H	V	17.63	33.00	Pass
					H	16.55		
2560.00	21350	16QAM	20	H	V	17.41		
					H	16.45		
20MHz(RB size 100 & RB offset 0)								
2560.00	21350	QPSK	20	H	V	15.76	33.00	Pass
					H	14.43		
2560.00	21350	16QAM	20	H	V	15.67		
					H	14.96		

**LTE band 13 part
Lowest channel**

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
5MHz(RB size 1 & RB offset 0)								
779.50	23205	QPSK	5	H	V	20.89	34.77	Pass
					H	19.89		
779.50	23205	16QAM	5	H	V	21.21		
					H	20.12		
5MHz(RB size 12 & RB offset 0)								
779.50	23205	QPSK	5	H	V	20.31	34.77	Pass
					H	19.45		
779.50	23205	16QAM	5	H	V	19.93		
					H	19.96		
5MHz(RB size 25 & RB offset 0)								
779.50	23205	QPSK	5	H	V	19.16	34.77	Pass
					H	18.28		
779.50	23205	16QAM	5	H	V	19.20		
					H	18.09		

Middle channel

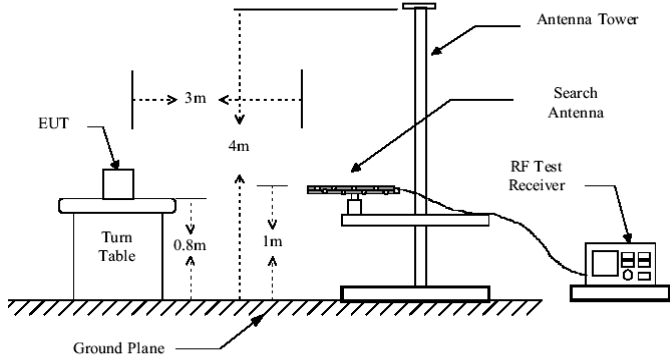
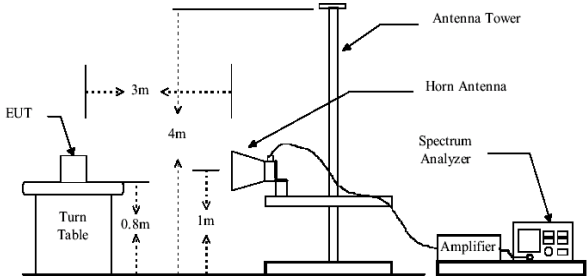
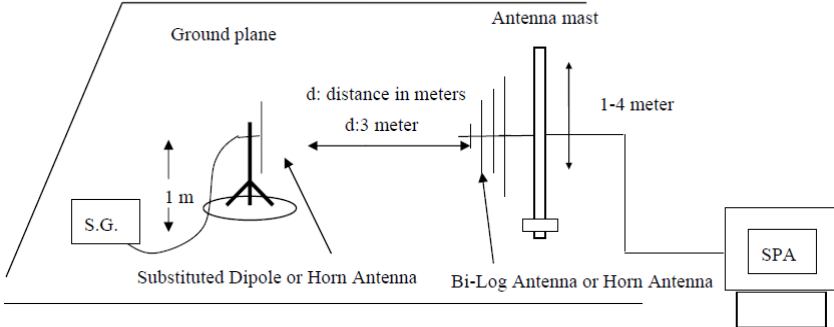
Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
5MHz(RB size 1 & RB offset 0)								
782.00	23230	QPSK	5	H	V	20.75	34.77	Pass
					H	19.84		
782.00	23230	16QAM	5	H	V	21.31		
					H	20.20		
5MHz(RB size 12 & RB offset 0)								
782.00	23230	QPSK	5	H	V	20.24	34.77	Pass
					H	19.40		
782.00	23230	16QAM	5	H	V	19.92		
					H	19.89		
5MHz(RB size 25 & RB offset 0)								
782.00	23230	QPSK	5	H	V	19.32	34.77	Pass
					H	18.24		
782.00	23230	16QAM	5	H	V	19.25		
					H	18.17		

Highest channel

Highest channel								
Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
5MHz(RB size 1 & RB offset 0)								
784.50	23255	QPSK	5	H	V	20.87	34.77	Pass
					H	19.93		
784.50	23255	16QAM	5	H	V	21.27		
					H	20.31		
5MHz(RB size 12 & RB offset 0)								
784.50	23255	QPSK	5	H	V	20.13	34.77	Pass
					H	19.36		
784.50	23255	16QAM	5	H	V	19.82		
					H	19.76		
5MHz(RB size 25 & RB offset 0)								
784.50	23255	QPSK	5	H	V	19.15	34.77	Pass
					H	18.23		
784.50	23255	16QAM	5	H	V	19.28		
					H	18.20		

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
10MHz(RB size 1 & RB offset 0)								
782.00	23230	QPSK	20	H	V	20.17	34.77	Pass
					H	19.85		
782.00	23230	16QAM	20	H	V	21.28		
					H	20.13		
10MHz(RB size 25& RB offset 0)								
782.00	23230	QPSK	20	H	V	21.23	34.77	Pass
					H	19.27		
782.00	23230	16QAM	20	H	V	19.85		
					H	19.92		
10MHz(RB size 50& RB offset 0)								
782.00	23230	QPSK	20	H	V	19.17	34.77	Pass
					H	18.25		
782.00	23230	16QAM	20	H	V	19.24		
					H	18.33		

6.11 Field strength of spurious radiation measurement

Test Requirement:	Part 24.238 (a), Part 27.53(c), Part 27.53(m), Part 27.53(h)
Test Method:	FCC part2.1053
Limit:	LTE Band 2, LTE Band 4, LTE band 13: -13dBm, LTE Band 7: -25dBm
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 2 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				
3701.40	Vertical	-35.47	-13.00	Pass
5552.10	V	-17.97		
7402.00	V	-33.36		
3701.40	Horizontal	-36.20		
5552.10	H	-19.53		
7402.00	H	-35.67		
Middle				
3760.00	Vertical	-33.07	-13.00	Pass
5640.00	V	-18.11		
7520.00	V	-32.96		
3760.00	Horizontal	-36.27		
5640.00	H	-22.54		
7520.00	H	-36.86		
Highest				
3816.60	Vertical	-32.26	-13.00	Pass
5724.90	V	-17.56		
7633.20	V	-31.35		
3816.60	Horizontal	-34.82		
5724.90	H	-22.78		
7633.20	H	-34.32		

3MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3703.00	Vertical	-35.26	-13.00	Pass
5554.50	V	-18.42		
7406.00	V	-33.28		
3703.00	Horizontal	-36.52		
5554.50	H	-19.57		
7406.00	H	-35.69		
Middle				
3760.00	Vertical	-33.23	-13.00	Pass
5640.00	V	-18.25		
7520.00	V	-33.21		
3760.00	Horizontal	-36.28		
5640.00	H	-22.56		
7520.00	H	-36.89		
Highest				
3817.00	Vertical	-32.15	-13.00	Pass
5725.50	V	-18.67		
7634.00	V	-31.20		
3817.00	Horizontal	-35.26		
5725.50	H	-22.32		
7634.00	H	-34.51		

5MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3705.00	Vertical	-35.83	-13.00	Pass
5557.50	V	-18.31		
7410.00	V	-33.34		
3705.00	Horizontal	-36.81		
5557.50	H	-19.27		
7410.00	H	-35.42		
Middle				
3760.00	Vertical	-33.19	-13.00	Pass
5640.00	V	-18.75		
7520.00	V	-33.27		
3760.00	Horizontal	-37.08		
5640.00	H	-23.21		
7520.00	H	-36.67		
Highest				
3815.00	Vertical	-32.58	-13.00	Pass
5722.50	V	-18.42		
7630.00	V	-31.23		
3815.00	Horizontal	-34.53		
5722.50	H	-23.42		
7630.00	H	-34.12		

10MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3710.00	Vertical	-35.75	-13.00	Pass
5565.00	V	-18.53		
7420.00	V	-34.12		
3710.00	Horizontal	-37.10		
5565.00	H	-19.80		
7420.00	H	-35.67		
Middle				
3760.00	Vertical	-33.10	-13.00	Pass
5640.00	V	-18.73		
7520.00	V	-33.11		
3760.00	Horizontal	-36.62		
5640.00	H	-23.59		
7520.00	H	-36.56		
Highest				
3810.00	Vertical	-32.28	-13.00	Pass
5715.00	V	-18.52		
7620.00	V	-31.39		
3810.00	Horizontal	-34.83		
5715.00	H	-23.53		
7620.00	H	-34.35		

15MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3715.00	Vertical	-36.12	-13.00	Pass
5572.50	V	-18.80		
7430.00	V	-34.10		
3715.00	Horizontal	-36.21		
5572.50	H	-19.42		
7430.00	H	-35.25		
Middle				
3760.00	Vertical	-33.53	-13.00	Pass
5640.00	V	-18.14		
7520.00	V	-33.28		
3760.00	Horizontal	-36.53		
5640.00	H	-23.36		
7520.00	H	-36.67		
Highest				
3805.00	Vertical	-32.23	-13.00	Pass
5707.50	V	-18.47		
7610.00	V	-32.20		
3805.00	Horizontal	-35.58		
5707.50	H	-23.18		
7610.00	H	-35.67		

20MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3720.00	Vertical	-36.21	-13.00	Pass
5580.00	V	-18.55		
7440.00	V	-34.12		
3720.00	Horizontal	-35.98		
5580.00	H	-19.54		
7440.00	H	-35.22		
Middle				
3760.00	Vertical	-33.86	-13.00	Pass
5640.00	V	-18.84		
7520.00	V	-33.20		
3760.00	Horizontal	-36.53		
5640.00	H	-23.35		
7520.00	H	-36.76		
Highest				
3800.00	Vertical	-32.37	-13.00	Pass
5700.00	V	-18.82		
7600.00	V	-32.53		
3800.00	Horizontal	-34.57		
5700.00	H	-22.16		
7600.00	H	-34.22		

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	-38.12	-13.00	Pass
5132.10	V	-30.96		
6842.80	V	-26.98		
3421.40	Horizontal	-37.19		
5132.10	H	-29.66		
6842.80	H	-33.01		
Middle				
3465.00	Vertical	-36.66	-13.00	Pass
5197.50	V	-26.79		
6930.00	V	-33.31		
3465.00	Horizontal	-39.08		
5197.50	H	-28.61		
6930.00	H	-38.72		
Highest				
3508.60	Vertical	-39.03	-13.00	Pass
5262.90	V	-24.49		
7017.20	V	-34.17		
3508.60	Horizontal	-39.55		
5262.90	H	-22.75		
7017.20	H	-36.55		

3MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3423.00	Vertical	-38.92	-13.00	Pass
5134.50	V	-31.22		
6846.00	V	-27.43		
3423.00	Horizontal	-38.16		
5134.50	H	-29.21		
6846.00	H	-33.35		
Middle				
3465.00	Vertical	-36.23	-13.00	Pass
5197.50	V	-26.37		
6930.00	V	-33.86		
3465.00	Horizontal	-40.17		
5197.50	H	-29.35		
6930.00	H	-37.44		
Highest				
3507.00	Vertical	-39.53	-13.00	Pass
5260.50	V	-25.47		
7014.00	V	-34.75		
3507.00	Horizontal	-40.18		
5260.50	H	-23.75		
7014.00	H	-36.56		

5MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3425.00	Vertical	-38.52	-13.00	Pass
5137.50	V	-31.19		
6850.00	V	-27.13		
3425.00	Horizontal	-37.85		
5137.50	H	-29.60		
6850.00	H	-33.53		
Middle				
3465.00	Vertical	-36.59	-13.00	Pass
5197.50	V	-26.35		
6930.00	V	-33.82		
3465.00	Horizontal	-39.54		
5197.50	H	-29.67		
6930.00	H	-38.51		
Highest				
3505.00	Vertical	-39.21	-13.00	Pass
5257.50	V	-24.78		
7010.00	V	-34.50		
3505.00	Horizontal	-39.56		
5257.50	H	-22.76		
7010.00	H	-36.86		

10MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3430.00	Vertical	-39.65	-13.00	Pass
5145.00	V	-31.25		
6860.00	V	-27.13		
3430.00	Horizontal	-38.52		
5145.00	H	-28.79		
6860.00	H	-32.19		
Middle				
3465.00	Vertical	-36.56	-13.00	Pass
5197.50	V	-26.38		
6930.00	V	-34.15		
3465.00	Horizontal	-39.58		
5197.50	H	-28.76		
6930.00	H	-38.76		
Highest				
3500.00	Vertical	-39.23	-13.00	Pass
5250.00	V	-24.57		
7000.00	V	-34.92		
3500.00	Horizontal	-39.58		
5250.00	H	-22.38		
7000.00	H	-36.57		

15MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3435.00	Vertical	-38.52	-13.00	Pass
5152.50	V	-31.20		
6870.00	V	-27.42		
3435.00	Horizontal	-38.13		
5152.50	H	-29.61		
6870.00	H	-33.75		
Middle				
3465.00	Vertical	-36.57	-13.00	Pass
5197.50	V	-26.33		
6930.00	V	-36.15		
3465.00	Horizontal	-39.56		
5197.50	H	-27.98		
6930.00	H	-38.46		
Highest				
3495.00	Vertical	-39.52	-13.00	Pass
5242.50	V	-24.51		
6990.00	V	-35.26		
3495.00	Horizontal	-40.13		
5242.50	H	-23.78		
6990.00	H	-37.42		

20MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3440.00	Vertical	-38.74	-13.00	Pass
5160.00	V	-32.02		
6880.00	V	-26.82		
3440.00	Horizontal	-37.43		
5160.00	H	-29.33		
6880.00	H	-33.24		
Middle				
3465.00	Vertical	-36.70	-13.00	Pass
5197.50	V	-26.35		
6930.00	V	-33.08		
3465.00	Horizontal	-39.10		
5197.50	H	-28.73		
6930.00	H	-38.76		
Highest				
3490.00	Vertical	-39.58	-13.00	Pass
5235.00	V	-25.35		
6980.00	V	-35.12		
3490.00	Horizontal	-39.65		
5235.00	H	-23.13		
6980.00	H	-36.76		

LTE Band 7 Part:

5MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
5005.00	Vertical	-48.00	-25.00	Pass
7507.50	V	-41.85		
5005.00	Horizontal	-48.15		
7507.50	H	-42.66		
Middle				
5070.00	Vertical	-46.38	-25.00	Pass
7605.00	V	-41.04		
5070.00	Horizontal	-47.10		
7605.00	H	-42.11		
Highest				
5135.00	Vertical	-44.76	-25.00	Pass
7702.50	V	-38.33		
5135.00	Horizontal	-44.12		
7702.50	H	-39.45		

10MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
5010.00	Vertical	-48.56	-25.00	Pass
7515.00	V	-43.21		
5010.00	Horizontal	-48.79		
7515.00	H	-42.57		
Middle				
5070.00	Vertical	-47.15	-25.00	Pass
7605.00	V	-42.55		
5070.00	Horizontal	-46.79		
7605.00	H	-43.15		
Highest				
5130.00	Vertical	-43.25	-25.00	Pass
7695.00	V	-39.77		
5130.00	Horizontal	-44.74		
7695.00	H	-39.87		

15MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
5015.00	Vertical	-48.57	-25.00	Pass
7522.50	V	-42.19		
5015.00	Horizontal	-48.67		
7522.50	H	-42.56		
Middle				
5070.00	Vertical	-46.89	-25.00	Pass
7605.00	V	-41.26		
5070.00	Horizontal	-47.96		
7605.00	H	-42.39		
Highest				
5125.00	Vertical	-44.77	-25.00	Pass
7687.50	V	-38.59		
5125.00	Horizontal	-44.21		
7687.50	H	-39.86		

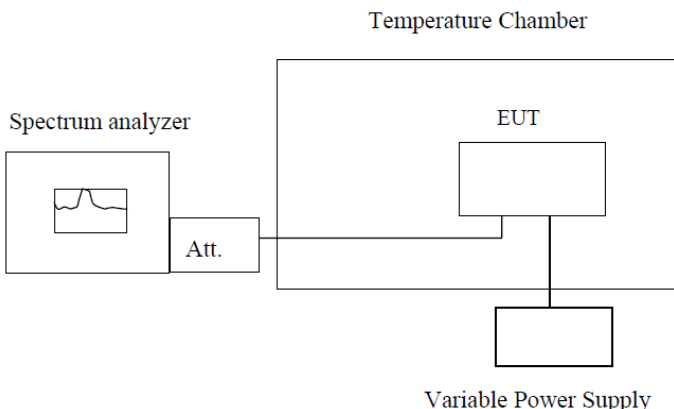
20MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
5020.00	Vertical	-48.47	-25.00	Pass
7530.00	V	-43.09		
5020.00	Horizontal	-48.86		
7530.00	H	-43.27		
Middle				
5070.00	Vertical	-46.22	-25.00	Pass
7605.00	V	-42.51		
5070.00	Horizontal	-46.54		
7605.00	H	-42.68		
Highest				
5120.00	Vertical	-43.95	-25.00	Pass
7680.00	V	-39.08		
5120.00	Horizontal	-44.43		
7680.00	H	-39.48		

LTE band 13 Part:

5MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
1559.00	Vertical	-41.71	-13.00	Pass
2338.50	V	-30.46		
3118.00	V	-39.74		
1559.00	Horizontal	-42.27		
2338.50	H	-39.24		
3118.00	H	-40.83		
Middle				
1564.00	Vertical	-38.93	-13.00	Pass
2346.00	V	-33.11		
3128.00	V	-38.35		
1564.00	Horizontal	-46.10		
2346.00	H	-38.81		
3128.00	H	-40.10		
Highest				
1569.00	Vertical	-33.53	-13.00	Pass
2353.50	V	-33.99		
3138.00	V	-41.43		
1569.00	Horizontal	-42.01		
2353.50	H	-36.61		
3138.00	H	-41.41		

10MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1564.00	Vertical	-39.65	-13.00	Pass
2346.00	V	-32.78		
3128.00	V	-38.56		
1564.00	Horizontal	-46.68		
2346.00	H	-39.11		
3128.00	H	-40.78		

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 2(QPSK):

Reference Frequency: LTE Band 2(1.4MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	177	0.094149	±2.5	Pass
	-20	152	0.080851		
	-10	133	0.070745		
	0	120	0.063830		
	10	141	0.075000		
	20	102	0.054255		
	30	123	0.065426		
	40	117	0.062234		
	50	160	0.085106		
Reference Frequency: LTE Band 2(3MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	174	0.092553	±2.5	Pass
	-20	156	0.082979		
	-10	138	0.073404		
	0	109	0.057979		
	10	128	0.068085		
	20	133	0.070745		
	30	149	0.079255		
	40	152	0.080851		
	50	170	0.090426		
Reference Frequency: LTE Band 2(5MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	165	0.087766	±2.5	Pass
	-20	163	0.086702		
	-10	112	0.059574		
	0	107	0.056915		
	10	123	0.065426		
	20	116	0.061702		
	30	138	0.073404		
	40	147	0.078191		
	50	106	0.056383		

Reference Frequency: LTE Band 2(10MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	190	0.101064	±2.5	Pass
	-20	163	0.086702		
	-10	152	0.080851		
	0	142	0.075532		
	10	138	0.073404		
	20	125	0.066489		
	30	140	0.074468		
	40	140	0.074468		
	50	106	0.056383		
Reference Frequency: LTE Band 2(15MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	179	0.095213	±2.5	Pass
	-20	158	0.084043		
	-10	133	0.070745		
	0	112	0.059574		
	10	104	0.055319		
	20	126	0.067021		
	30	136	0.072340		
	40	120	0.063830		
	50	114	0.060638		
Reference Frequency: LTE Band 2(20MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	163	0.086702	±2.5	Pass
	-20	125	0.066489		
	-10	142	0.075532		
	0	136	0.072340		
	10	174	0.092553		
	20	105	0.055851		
	30	122	0.064894		
	40	113	0.060106		
	50	134	0.071277		

LTE Band 2(16QAM):

Reference Frequency: LTE Band 2(1.4MHz) Middle channel=18900 channel=1880.00MHz

Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	188	0.100000	±2.5	Pass
	-20	145	0.077128		
	-10	136	0.072340		
	0	125	0.066489		
	10	113	0.060106		
	20	123	0.065426		
	30	135	0.071809		
	40	140	0.074468		
	50	116	0.061702		

Reference Frequency: LTE Band 2(3MHz) Middle channel=18900 channel=1880.00MHz

Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	187	0.099468	±2.5	Pass
	-20	120	0.063830		
	-10	113	0.060106		
	0	136	0.072340		
	10	145	0.077128		
	20	126	0.067021		
	30	133	0.070745		
	40	118	0.062766		
	50	126	0.067021		

Reference Frequency: LTE Band 2(5MHz) Middle channel=18900 channel=1880.00MHz

Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	160	0.085106	±2.5	Pass
	-20	142	0.075532		
	-10	103	0.054787		
	0	125	0.066489		
	10	112	0.059574		
	20	143	0.076064		
	30	105	0.055851		
	40	126	0.067021		
	50	146	0.077660		

Reference Frequency: LTE Band 2(10MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	178	0.094681	±2.5	Pass
	-20	125	0.066489		
	-10	106	0.056383		
	0	113	0.060106		
	10	125	0.066489		
	20	160	0.085106		
	30	142	0.075532		
	40	132	0.070213		
	50	105	0.055851		
Reference Frequency: LTE Band 2(15MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	178	0.094681	±2.5	Pass
	-20	163	0.086702		
	-10	115	0.061170		
	0	142	0.075532		
	10	135	0.071809		
	20	105	0.055851		
	30	126	0.067021		
	40	138	0.073404		
	50	146	0.077660		
Reference Frequency: LTE Band 2(20MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	189	0.100532	±2.5	Pass
	-20	125	0.066489		
	-10	136	0.072340		
	0	154	0.081915		
	10	106	0.056383		
	20	123	0.065426		
	30	126	0.067021		
	40	143	0.076064		
	50	126	0.067021		

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	177	0.102165	±2.5	Pass
	-20	125	0.072150		
	-10	136	0.078499		
	0	142	0.081962		
	10	113	0.065224		
	20	105	0.060606		
	30	135	0.077922		
	40	126	0.072727		
	50	146	0.084271		
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	147	0.084848	±2.5	Pass
	-20	102	0.058874		
	-10	113	0.065224		
	0	126	0.072727		
	10	133	0.076768		
	20	134	0.077345		
	30	112	0.064646		
	40	106	0.061183		
	50	125	0.072150		
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	185	0.106782	±2.5	Pass
	-20	126	0.072727		
	-10	147	0.084848		
	0	155	0.089466		
	10	173	0.099856		
	20	102	0.058874		
	30	113	0.065224		
	40	142	0.081962		
	50	135	0.077922		

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	176	0.101587	±2.5	Pass
	-20	152	0.087734		
	-10	163	0.094084		
	0	105	0.060606		
	10	128	0.073882		
	20	142	0.081962		
	30	136	0.078499		
	40	174	0.100433		
	50	108	0.062338		
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	196	0.113131	±2.5	Pass
	-20	152	0.087734		
	-10	142	0.081962		
	0	136	0.078499		
	10	122	0.070418		
	20	150	0.086580		
	30	142	0.081962		
	40	130	0.075036		
	50	126	0.072727		
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	150	0.086580	±2.5	Pass
	-20	110	0.063492		
	-10	123	0.070996		
	0	102	0.058874		
	10	124	0.071573		
	20	123	0.070996		
	30	130	0.075036		
	40	150	0.086580		
	50	112	0.064646		

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	167	0.096392	±2.5	Pass
	-20	152	0.087734		
	-10	142	0.081962		
	0	136	0.078499		
	10	112	0.064646		
	20	130	0.075036		
	30	125	0.072150		
	40	142	0.081962		
	50	103	0.059452		

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	177	0.102165	±2.5	Pass
	-20	152	0.087734		
	-10	136	0.078499		
	0	142	0.081962		
	10	125	0.072150		
	20	116	0.066955		
	30	125	0.072150		
	40	142	0.081962		
	50	135	0.077922		

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	152	0.087734		
	-10	142	0.081962		
	0	143	0.082540		
	10	106	0.061183		
	20	125	0.072150		
	30	142	0.081962		
	40	135	0.077922		
	50	128	0.073882		

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	163	0.094084	±2.5	Pass
	-20	125	0.072150		
	-10	142	0.081962		
	0	122	0.070418		
	10	120	0.069264		
	20	113	0.065224		
	30	104	0.060029		
	40	123	0.070996		
	50	106	0.061183		
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	170	0.098124	±2.5	Pass
	-20	125	0.072150		
	-10	136	0.078499		
	0	125	0.072150		
	10	142	0.081962		
	20	103	0.059452		
	30	123	0.070996		
	40	122	0.070418		
	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	188	0.108514	±2.5	Pass
	-20	142	0.081962		
	-10	136	0.078499		
	0	152	0.087734		
	10	141	0.081385		
	20	105	0.060606		
	30	126	0.072727		
	40	133	0.076768		
	50	137	0.079076		

LTE Band 7(QPSK):

Reference Frequency: LTE Band 7(5MHz) Middle channel=21100Frequency=2535.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	175	0.069034	±2.5	Pass
	-20	115	0.045365		
	-10	126	0.049704		
	0	130	0.051282		
	10	125	0.049310		
	20	142	0.056016		
	30	133	0.052465		
	40	152	0.059961		
	50	141	0.055621		
Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	142	0.056016	±2.5	Pass
	-20	103	0.040631		
	-10	112	0.044181		
	0	153	0.060355		
	10	140	0.055227		
	20	126	0.049704		
	30	102	0.040237		
	40	142	0.056016		
	50	130	0.051282		
Reference Frequency: LTE Band 7(15MHz) Middle channel=21100 Frequency=2535.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	145	0.057199	±2.5	Pass
	-20	126	0.049704		
	-10	135	0.053254		
	0	102	0.040237		
	10	111	0.043787		
	20	102	0.040237		
	30	123	0.048521		
	40	143	0.056410		
	50	145	0.057199		
Reference Frequency: LTE Band 7(20MHz) Middle channel=21100 Frequency=2535.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	147	0.057988	±2.5	Pass
	-20	152	0.059961		
	-10	122	0.048126		
	0	134	0.052860		
	10	106	0.041815		
	20	116	0.045759		
	30	124	0.048915		
	40	105	0.041420		
	50	142	0.056016		

LTE Band 7(16QAM):

Reference Frequency: LTE Band 7(5MHz) Middle channel=21100 Frequency=2535.00MHz

Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	137	0.054043	±2.5	Pass
	-20	102	0.040237		
	-10	142	0.056016		
	0	144	0.056805		
	10	105	0.041420		
	20	126	0.049704		
	30	155	0.061144		
	40	127	0.050099		
	50	156	0.061538		

Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.00MHz

Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	142	0.056016	±2.5	Pass
	-20	136	0.053649		
	-10	152	0.059961		
	0	142	0.056016		
	10	105	0.041420		
	20	123	0.048521		
	30	134	0.052860		
	40	125	0.049310		
	50	103	0.040631		

Reference Frequency: LTE Band 7(15MHz) Middle channel=21100 Frequency=2535.00MHz

Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	179	0.070611	2.5	Pass
	-20	125	0.049310		
	-10	105	0.041420		
	0	126	0.049704		
	10	130	0.051282		
	20	122	0.048126		
	30	140	0.055227		
	40	115	0.045365		
	50	125	0.049310		

Reference Frequency: LTE Band 7(20MHz) Middle channel=21100 Frequency=2535.00MHz

Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	167	0.065878	2.5	Pass
	-20	152	0.059961		
	-10	135	0.053254		
	0	142	0.056016		
	10	123	0.048521		
	20	105	0.041420		
	30	123	0.048521		
	40	134	0.052860		
	50	150	0.059172		

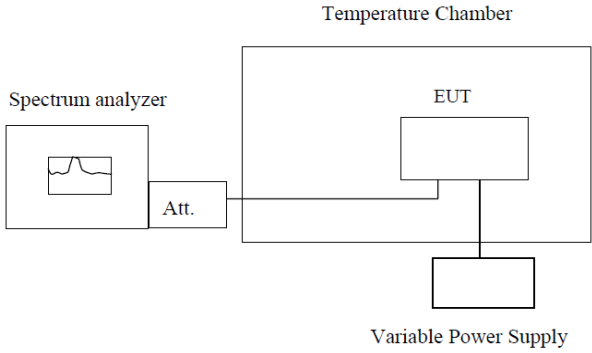
LTE band 13(QPSK):

Reference Frequency: LTE band 13(5MHz) Middle channel=23230 channel=782.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	146	0.186701	±2.5	Pass
	-20	132	0.168798		
	-10	120	0.153453		
	0	115	0.147059		
	10	107	0.136829		
	20	126	0.161125		
	30	138	0.176471		
	40	149	0.190537		
	50	127	0.162404		
Reference Frequency: LTE band 13(10MHz) Middle channel=23230 channel=782.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	185	0.236573	±2.5	Pass
	-20	106	0.13555		
	-10	127	0.162404		
	0	136	0.173913		
	10	142	0.181586		
	20	115	0.147059		
	30	126	0.161125		
	40	135	0.172634		
	50	142	0.181586		

LTE band 13(16QAM):

Reference Frequency: LTE band 13(5MHz) Middle channel=23230 channel=782.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	168	0.214834	±2.5	Pass
	-20	142	0.181586		
	-10	133	0.170077		
	0	140	0.179028		
	10	105	0.134271		
	20	125	0.159847		
	30	116	0.148338		
	40	133	0.170077		
	50	105	0.134271		
Reference Frequency: LTE band 13(10MHz) Middle channel=23230 channel=782.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	170	0.217391	±2.5	Pass
	-20	136	0.173913		
	-10	125	0.159847		
	0	142	0.181586		
	10	105	0.134271		
	20	113	0.144501		
	30	125	0.159847		
	40	106	0.135550		
	50	155	0.198210		

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 2(QPSK):

Reference Frequency: LTE Band 2(1.4MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	74	0.039362	±2.5	Pass
	3.80	96	0.051064		
	3.23	88	0.046809		
Reference Frequency: LTE Band 2(3MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	75	0.039894	±2.5	Pass
	3.80	68	0.036170		
	3.23	80	0.042553		
Reference Frequency: LTE Band 2(5MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	97	0.051596	±2.5	Pass
	3.80	68	0.036170		
	3.23	74	0.039362		
Reference Frequency: LTE Band 2(10MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	88	0.046809	±2.5	Pass
	3.80	57	0.030319		
	3.23	49	0.026064		
Reference Frequency: LTE Band 2(15MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	85	0.045213	±2.5	Pass
	3.80	69	0.036702		
	3.23	79	0.042021		
Reference Frequency: LTE Band 2(20MHz) Middle channel=20175 channel=1880.00MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	63	0.033511	±2.5	Pass
	3.80	78	0.041489		
	3.23	48	0.025532		

LTE Band 2(16QAM):

Reference Frequency: LTE Band 2(1.4MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	85	0.045213	±2.5	Pass
	3.80	67	0.035638		
	3.23	49	0.026064		
Reference Frequency: LTE Band 2(3MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	78	0.041489	±2.5	Pass
	3.80	68	0.036170		
	3.23	90	0.047872		
Reference Frequency: LTE Band 2(5MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	75	0.039894	±2.5	Pass
	3.80	98	0.052128		
	3.23	88	0.046809		
Reference Frequency: LTE Band 2(10MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	63	0.033511	±2.5	Pass
	3.80	74	0.039362		
	3.23	59	0.031383		
Reference Frequency: LTE Band 2(15MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	79	0.042021	±2.5	Pass
	3.80	59	0.031383		
	3.23	72	0.038298		
Reference Frequency: LTE Band 2(20MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	99	0.052660	±2.5	Pass
	3.80	68	0.036170		
	3.23	70	0.037234		

LTE Band 4(QPSK):

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	4.37	85	0.049062	±2.5	Pass
	3.80	74	0.042713		
	3.23	66	0.038095		
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	4.37	69	0.039827	±2.5	Pass
	3.80	76	0.043867		
	3.23	80	0.046176		
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	4.37	79	0.045599	±2.5	Pass
	3.80	77	0.044444		
	3.23	84	0.048485		
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	4.37	68	0.039250	±2.5	Pass
	3.80	59	0.034055		
	3.23	47	0.027128		
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	4.37	102	0.058874	±2.5	Pass
	3.80	97	0.055988		
	3.23	66	0.038095		
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	4.37	77	0.044444	±2.5	Pass
	3.80	89	0.051371		
	3.23	84	0.048485		

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	4.37	68	0.039250	±2.5	Pass
	3.80	73	0.042136		
	3.23	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	4.37	67	0.038672	±2.5	Pass
	3.80	84	0.048485		
	3.23	92	0.053102		
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	4.37	76	0.043867	±2.5	Pass
	3.80	45	0.025974		
	3.23	83	0.047908		
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	4.37	77	0.044444	±2.5	Pass
	3.80	95	0.054834		
	3.23	86	0.049639		
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	4.37	74	0.042713	±2.5	Pass
	3.80	85	0.049062		
	3.23	66	0.038095		
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	4.37	70	0.040404	±2.5	Pass
	3.80	98	0.056566		
	3.23	67	0.038672		

LTE Band 7(QPSK):

LTE Band 7(5MHz)

Reference Frequency: LTE Band 7(5MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	76	0.029980	±2.5	Pass
	3.80	84	0.033136		
	3.23	59	0.023274		
Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	79	0.031164	±2.5	Pass
	3.80	68	0.026824		
	3.23	83	0.032742		
Reference Frequency: LTE Band 7(15MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	93	0.036686	±2.5	Pass
	3.80	77	0.030375		
	3.23	46	0.018146		
Reference Frequency: LTE Band 7(20MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	90	0.035503	±2.5	Pass
	3.80	65	0.025641		
	3.23	63	0.024852		

LTE Band 7(16QAM):

Reference Frequency: LTE Band 7(5MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	78	0.030769	±2.5	Pass
	3.80	63	0.024852		
	3.23	70	0.027613		
Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	82	0.032347	±2.5	Pass
	3.80	45	0.017751		
	3.23	96	0.037870		
Reference Frequency: LTE Band 7(15MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	87	0.034320	±2.5	Pass
	3.80	46	0.018146		
	3.23	92	0.036292		
Reference Frequency: LTE Band 7(20MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	92	0.036292	±2.5	Pass
	3.80	63	0.024852		
	3.23	84	0.033136		

LTE band 13(QPSK):

Reference Frequency: LTE band 13(5MHz) Middle channel=23230 channel=782.00MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	77	0.098465	±2.5	Pass
	3.80	84	0.107417		
	3.23	95	0.121483		
Reference Frequency: LTE band 13(10MHz) Middle channel=23230 channel=782.00MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	65	0.083120	±2.5	Pass
	3.80	82	0.104859		
	3.23	48	0.061381		

LTE band 13(16QAM):

Reference Frequency: LTE band 13(5MHz) Middle channel=23230 channel=782.00MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	99	0.126598	±2.5	Pass
	3.80	65	0.083120		
	3.23	45	0.057545		
Reference Frequency: LTE band 13(10MHz) Middle channel=23230 channel=782.00MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.37	80	0.102302	±2.5	Pass
	3.80	47	0.060102		
	3.23	66	0.084399		