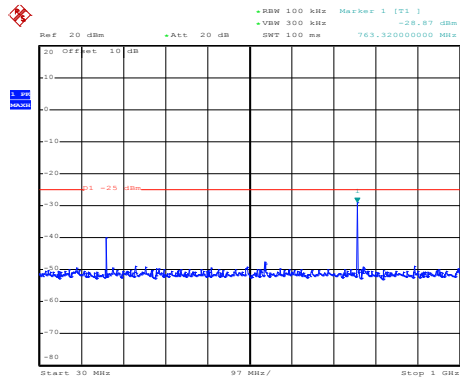
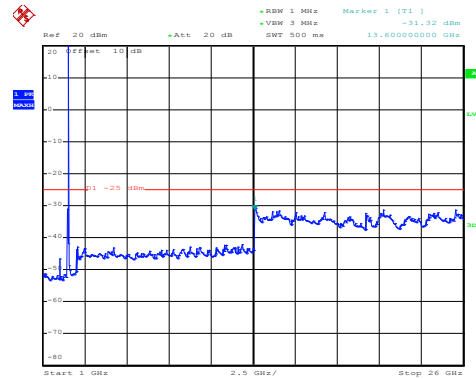


LTE Band 7: 16 QAM & RB Size 1 BW: 20MHz Lowest channel



Date: 10.MAR.2019 11:30:36

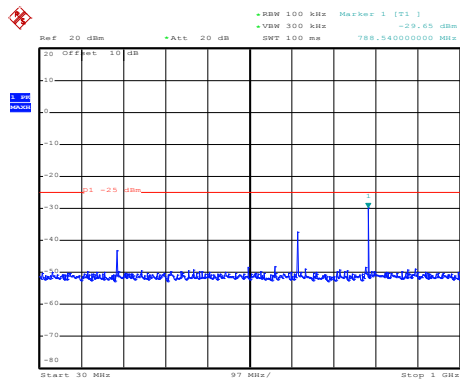
30MHz~1GHz



Date: 10.MAR.2019 11:12:15

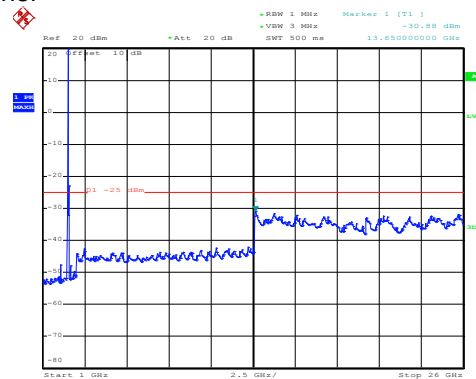
1GHz~25GHz

Middle channel



Date: 10.MAR.2019 11:30:09

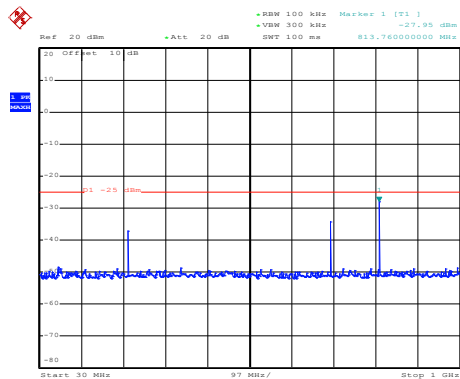
30MHz~1GHz



Date: 10.MAR.2019 11:10:31

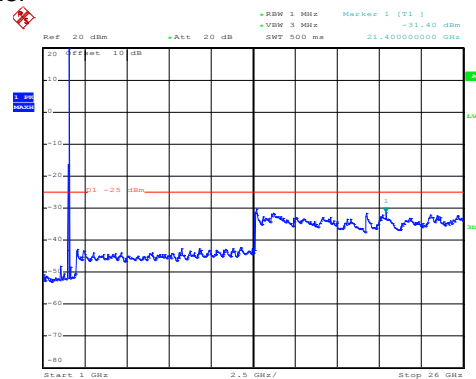
1GHz~25GHz

High channel



Date: 10.MAR.2019 11:25:20

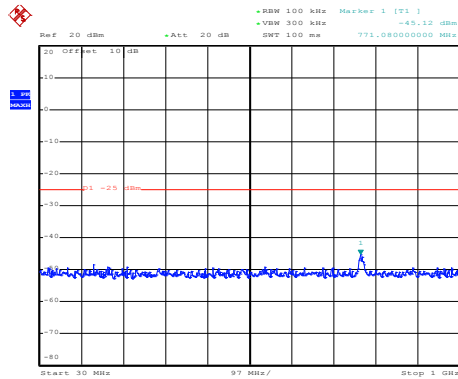
30MHz~1GHz



Date: 10.MAR.2019 11:10:03

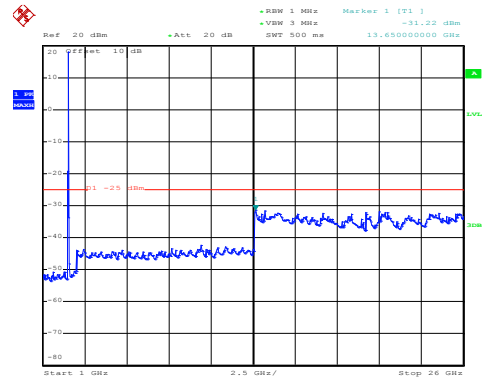
1GHz~25GHz

LTE Band 7: 16 QAM & RB Size 100 BW: 20MHz Lowest channel



Date: 10.MAR.2019 11:30:58

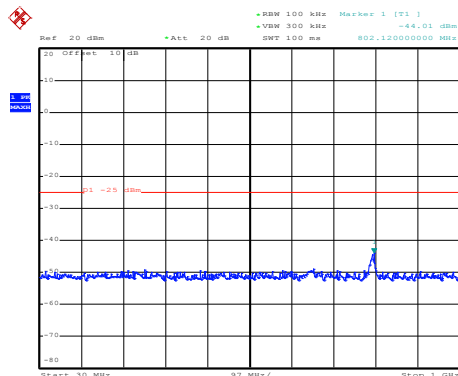
30MHz~1GHz



Date: 10.MAR.2019 11:11:32

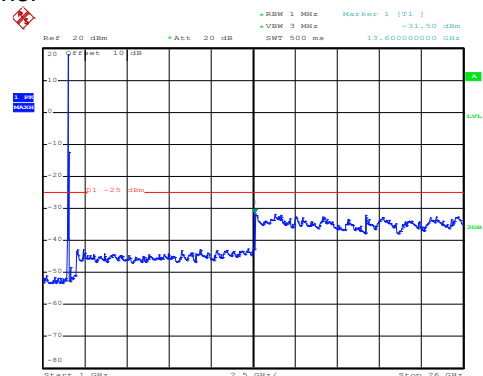
1GHz~25GHz

Middle channel



Date: 10.MAR.2019 11:29:45

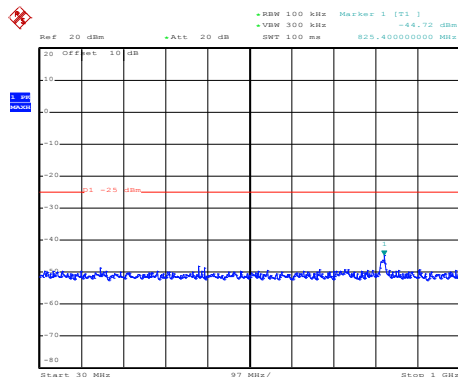
30MHz~1GHz



Date: 10.MAR.2019 11:10:58

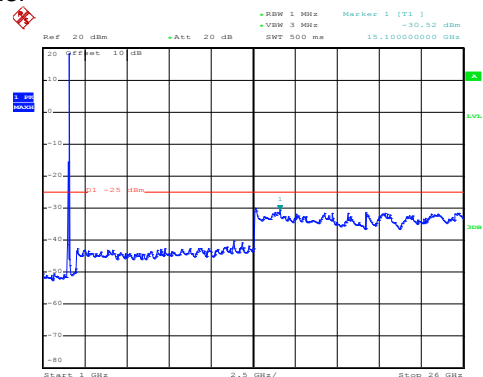
1GHz~25GHz

High channel



Date: 10.MAR.2019 11:29:07

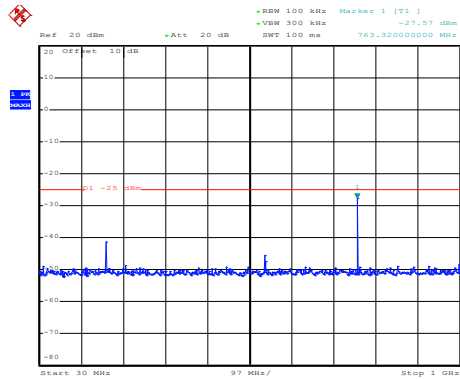
30MHz~1GHz



Date: 10.MAR.2019 11:09:17

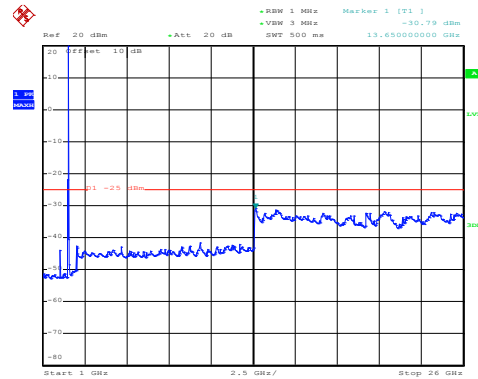
1GHz~25GHz

LTE Band 7: QPSK & RB Size 1 BW: 20MHz Lowest channel



Date: 10.MAR.2019 11:30:28

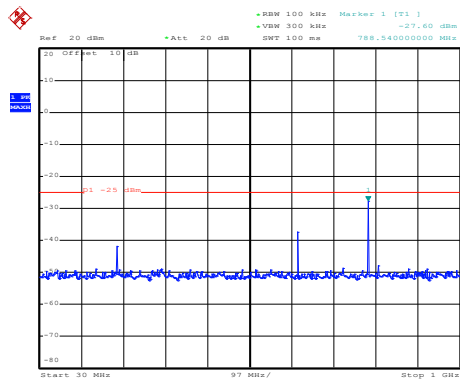
30MHz~1GHz



Date: 10.MAR.2019 11:11:53

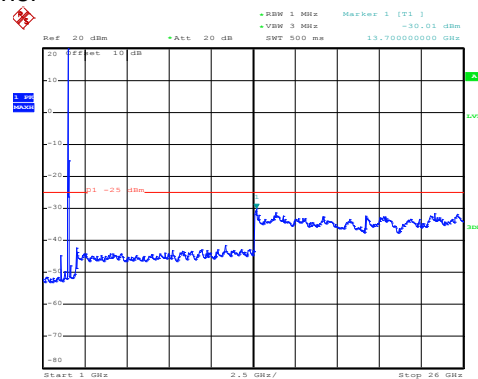
1GHz~25GHz

Middle channel



Date: 10.MAR.2019 11:29:56

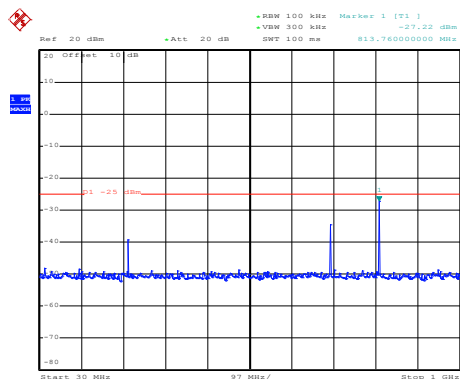
30MHz~1GHz



Date: 10.MAR.2019 11:10:23

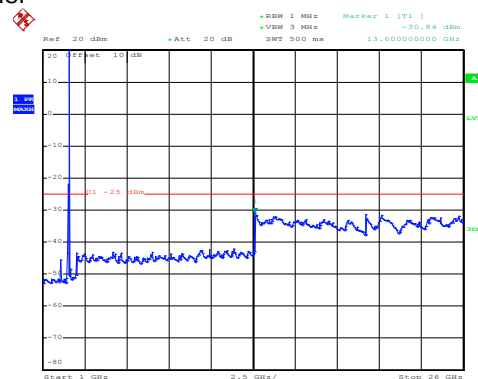
1GHz~25GHz

High channel



Date: 10.MAR.2019 11:24:59

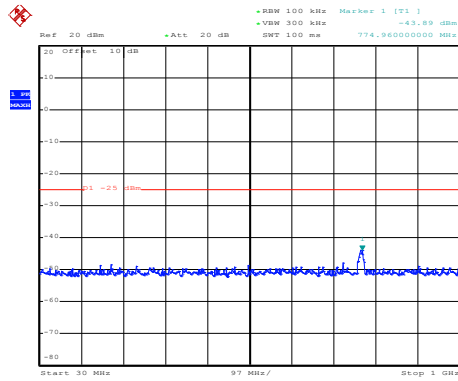
30MHz~1GHz



Date: 10.MAR.2019 11:09:48

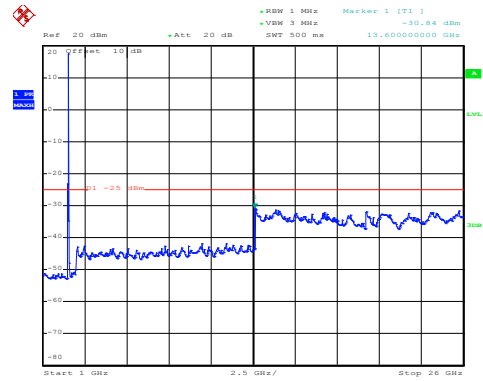
1GHz~25GHz

LTE Band 7: QPSK & RB Size 100 BW: 20MHz Lowest channel



Date: 10.MAR.2019 11:30:49

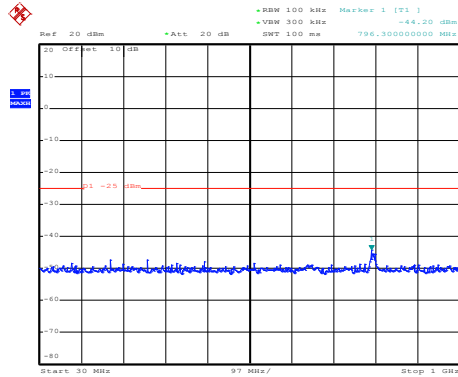
30MHz~1GHz



Date: 10.MAR.2019 11:11:21

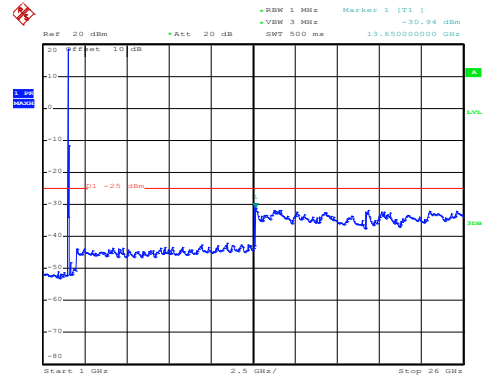
1GHz~25GHz

Middle channel



Date: 10.MAR.2019 11:29:36

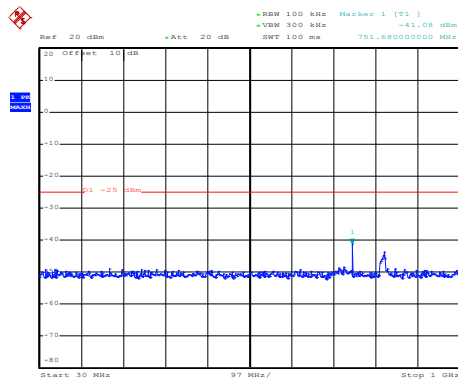
30MHz~1GHz



Date: 10.MAR.2019 11:10:47

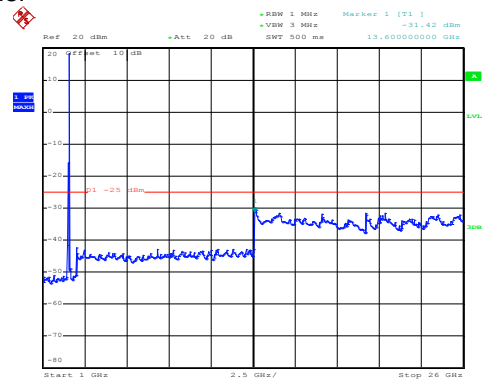
1GHz~25GHz

High channel



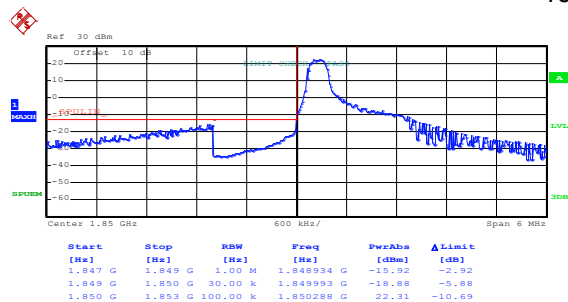
Date: 10.MAR.2019 11:28:57

30MHz~1GHz



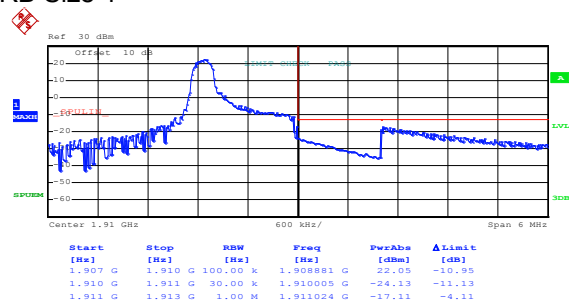
Date: 10.MAR.2019 11:09:30

1GHz~25GHz

Band edge emission:**LTE Band 2 part:****LTE Band 2, BW: 1.4MHz
16QAM & RB Size 1**

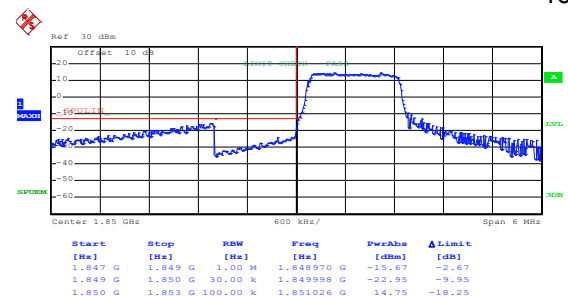
Date: 6.MAR.2019 21:01:03

Lowest channel



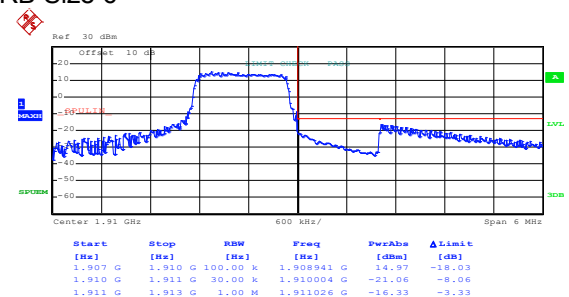
Date: 6.MAR.2019 21:03:36

Highest channel

16QAM & RB Size 6

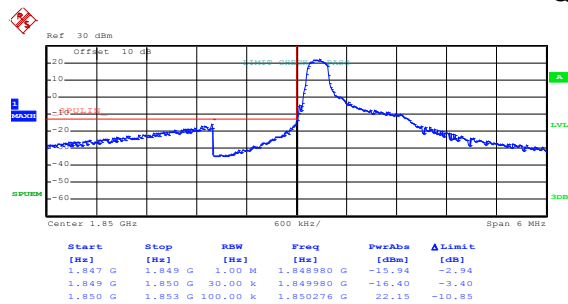
Date: 6.MAR.2019 21:01:38

Lowest channel



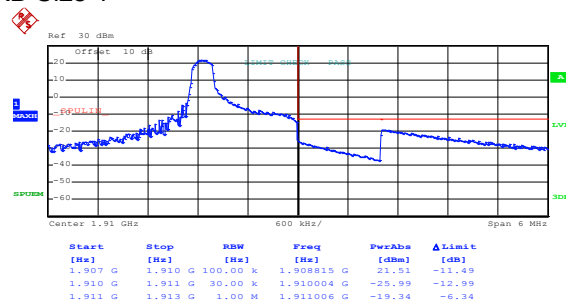
Date: 6.MAR.2019 21:04:04

Highest channel

LTE Band 2, BW: 1.4MHz
QPSK & RB Size 1

Date: 6.MAR.2019 20:59:43

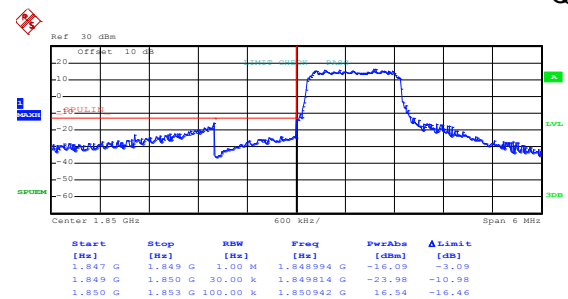
Lowest channel



Date: 6.MAR.2019 21:03:23

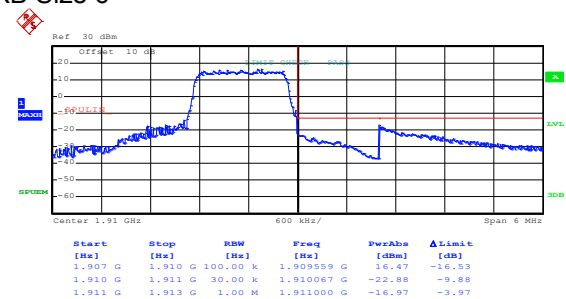
Highest channel

QPSK & RB Size 6



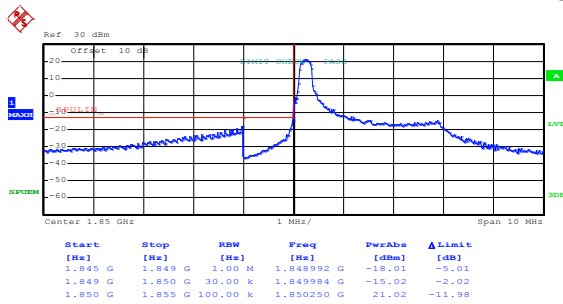
Date: 6.MAR.2019 21:01:21

Lowest channel



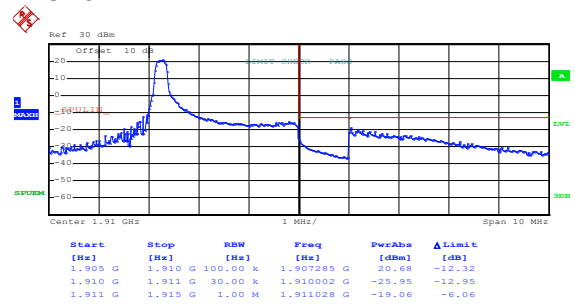
Date: 6.MAR.2019 21:03:53

Highest channel

LTE Band 2, BW: 3MHz
16QAM & RB Size 1

Date: 6.MAR.2019 21:07:20

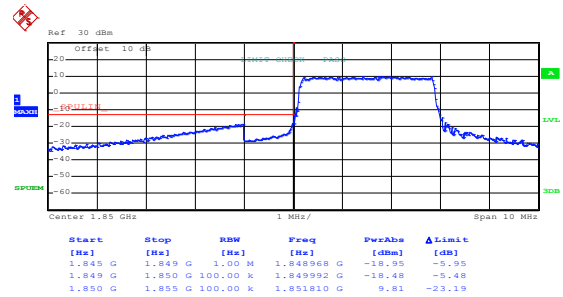
Lowest channel



Date: 6.MAR.2019 21:09:35

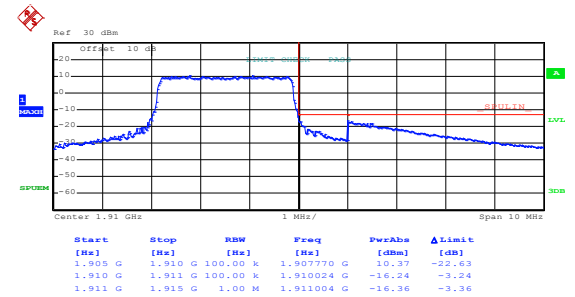
Highest channel

16QAM & RB Size 15



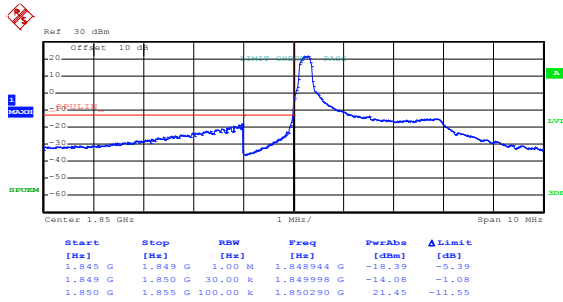
Date: 6.MAR.2019 21:08:33

Lowest channel



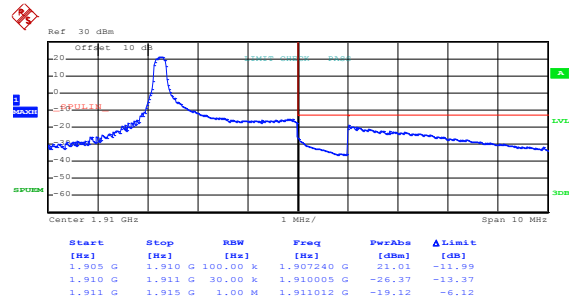
Date: 7.MAR.2019 17:28:24

Highest channel

LTE Band 2, BW: 3MHz
QPSK & RB Size 1

Date: 6.MAR.2019 21:07:06

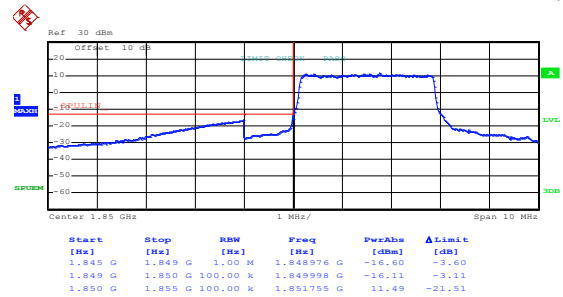
Lowest channel



Date: 6.MAR.2019 21:09:27

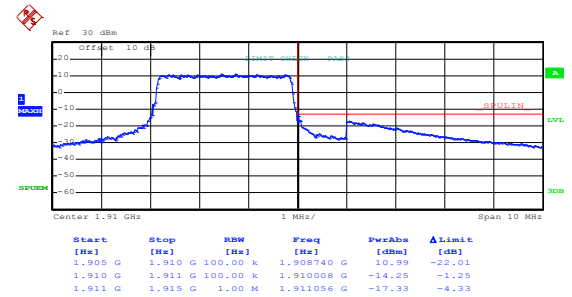
Highest channel

QPSK & RB Size 15



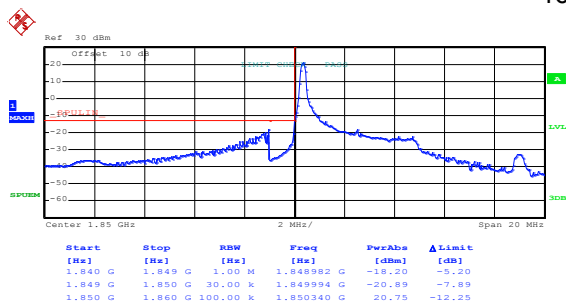
Date: 6.MAR.2019 21:08:22

Lowest channel



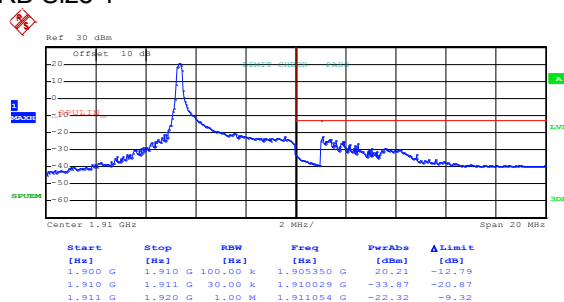
Date: 7.MAR.2019 17:28:08

Highest channel

LTE Band 2, BW: 5MHz
16QAM & RB Size 1

Date: 6.MAR.2019 21:13:33

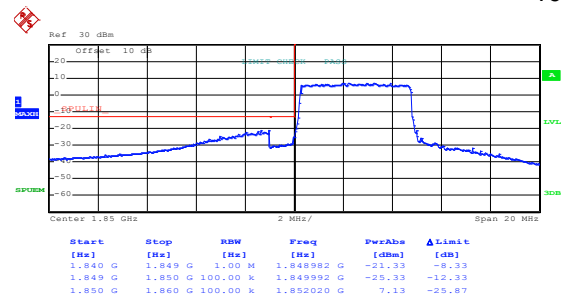
Lowest channel



Date: 6.MAR.2019 21:19:08

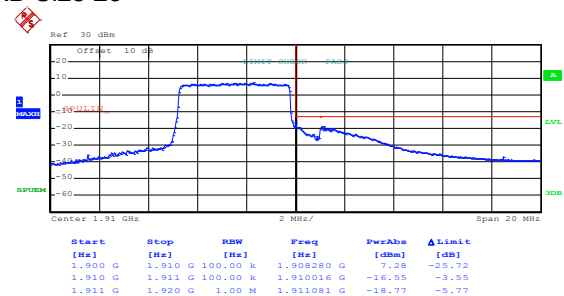
Highest channel

16QAM & RB Size 25



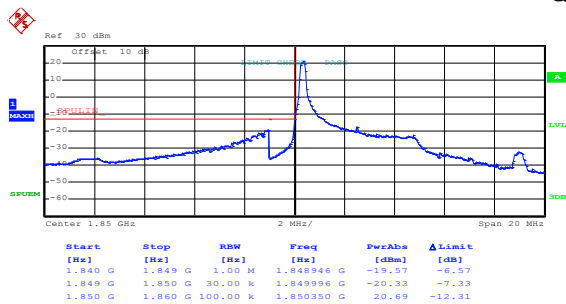
Date: 6.MAR.2019 21:18:26

Lowest channel



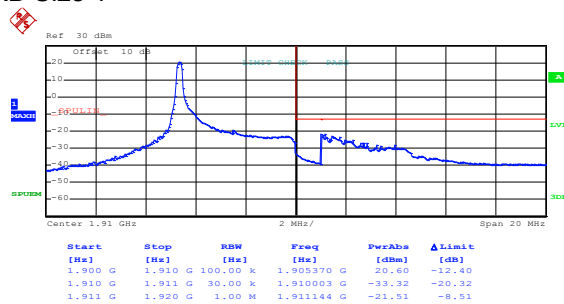
Date: 6.MAR.2019 21:20:19

Highest channel

LTE Band 2, BW: 5MHz
QPSK & RB Size 1

Date: 6.MAR.2019 21:13:25

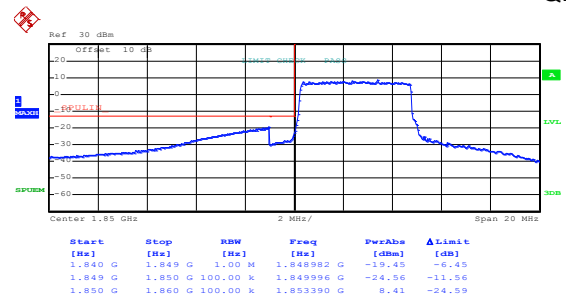
Lowest channel



Date: 6.MAR.2019 21:19:01

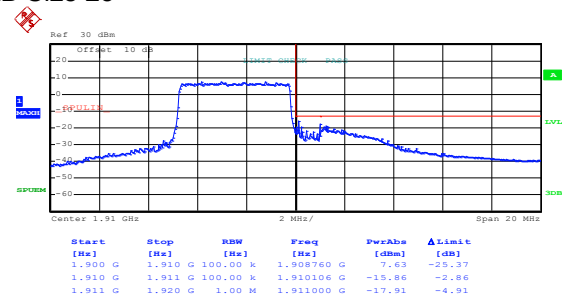
Highest channel

QPSK & RB Size 25



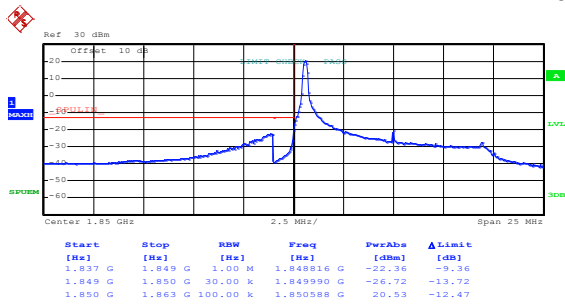
Date: 6.MAR.2019 21:18:16

Lowest channel



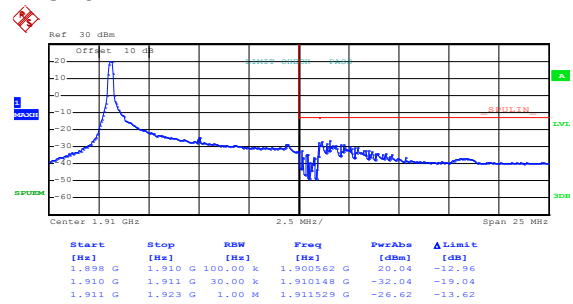
Date: 6.MAR.2019 21:19:58

Highest channel

LTE Band 2, BW: 10MHz
16QAM & RB Size 1

Date: 6.MAR.2019 21:22:08

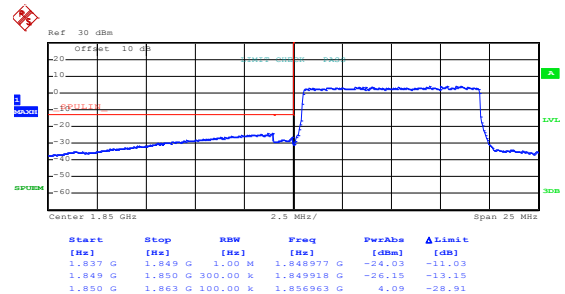
Lowest channel



Date: 6.MAR.2019 21:29:52

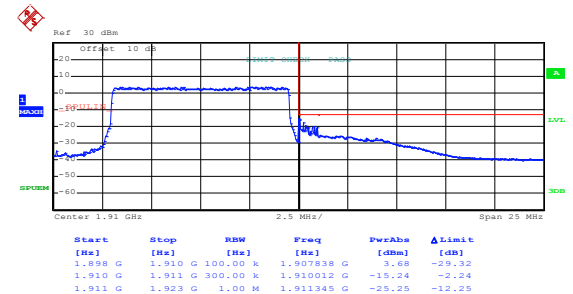
Highest channel

16QAM & RB Size 50



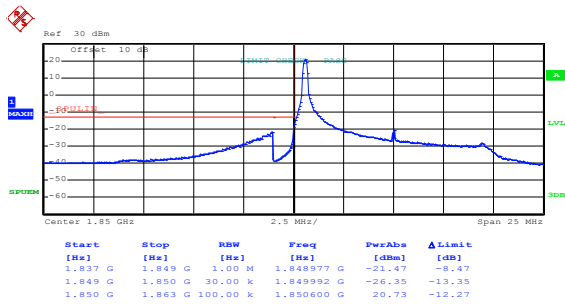
Date: 6.MAR.2019 21:23:15

Lowest channel



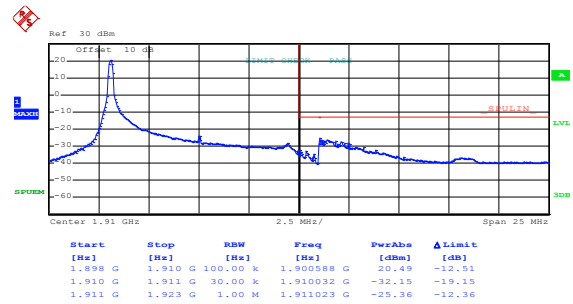
Date: 6.MAR.2019 21:24:20

Highest channel

LTE Band 2, BW: 10MHz
QPSK & RB Size 1

Date: 6.MAR.2019 21:21:56

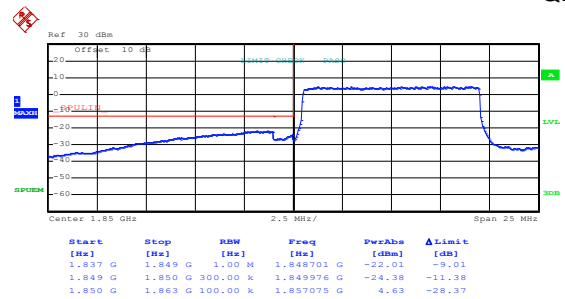
Lowest channel



Date: 6.MAR.2019 21:29:45

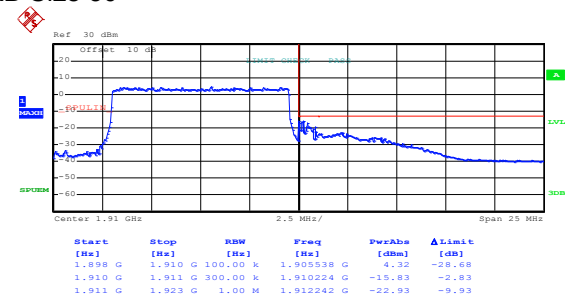
Highest channel

QPSK & RB Size 50



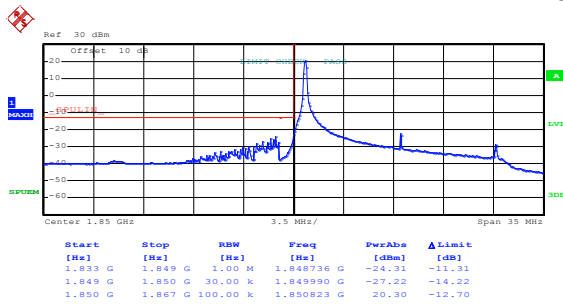
Date: 6.MAR.2019 21:23:00

Lowest channel



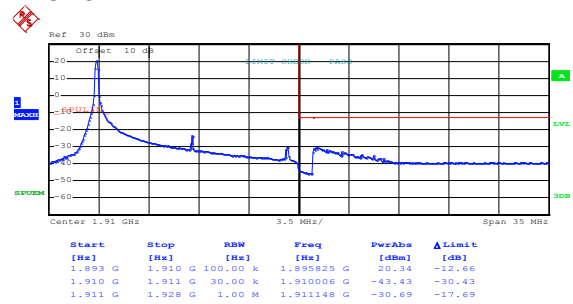
Date: 6.MAR.2019 21:25:07

Highest channel

LTE Band 2, BW: 15MHz
16QAM & RB Size 1

Date: 6.MAR.2019 21:36:33

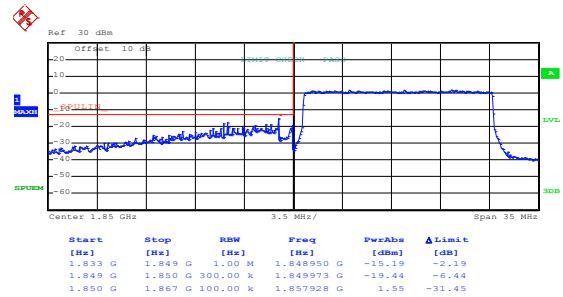
Lowest channel



Date: 6.MAR.2019 21:34:29

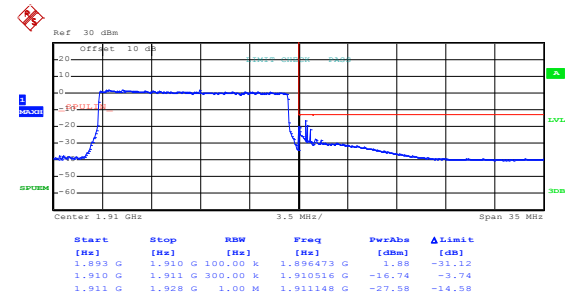
Highest channel

16QAM & RB Size 75



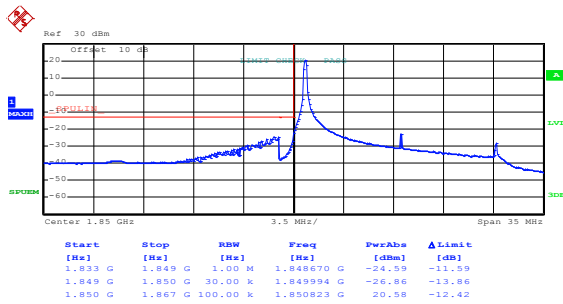
Date: 7.MAR.2019 17:30:12

Lowest channel



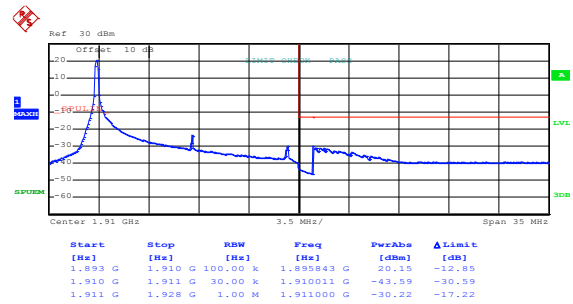
Date: 6.MAR.2019 21:35:50

Highest channel

LTE Band 2, BW: 15MHz
QPSK & RB Size 1

Date: 6.MAR.2019 21:36:22

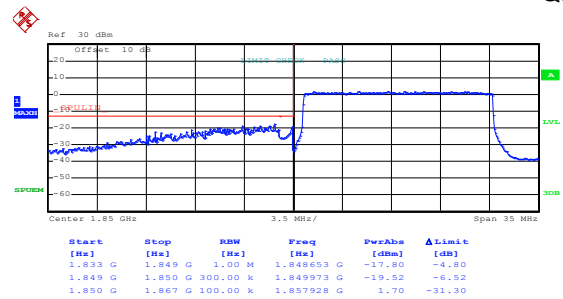
Lowest channel



Date: 6.MAR.2019 21:34:09

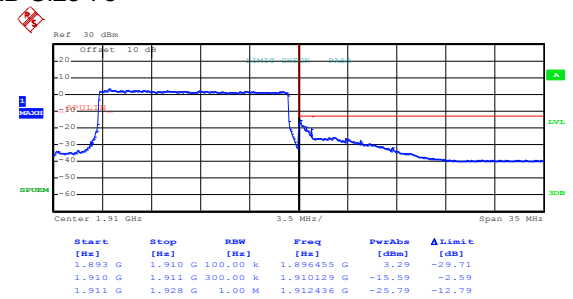
Highest channel

QPSK & RB Size 75



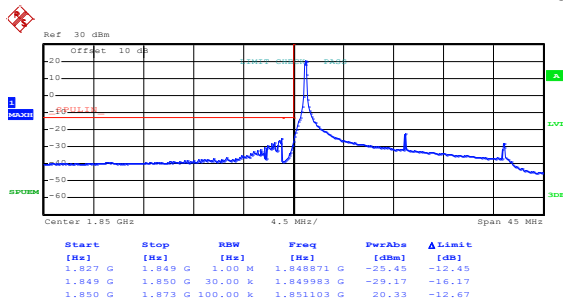
Date: 7.MAR.2019 17:30:03

Lowest channel



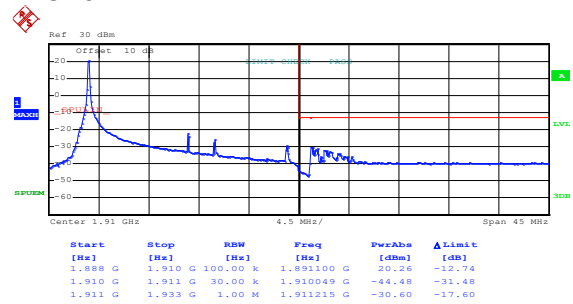
Date: 6.MAR.2019 21:35:19

Highest channel

LTE Band 2, BW: 20MHz
16QAM & RB Size 1

Date: 6.MAR.2019 21:38:40

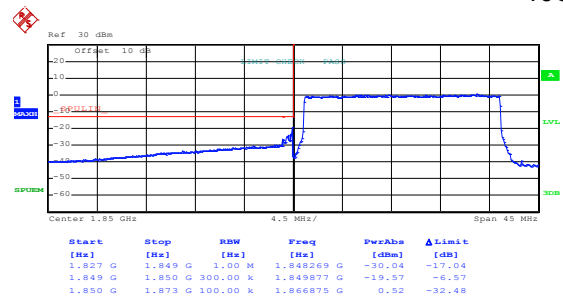
Lowest channel



Date: 6.MAR.2019 21:40:09

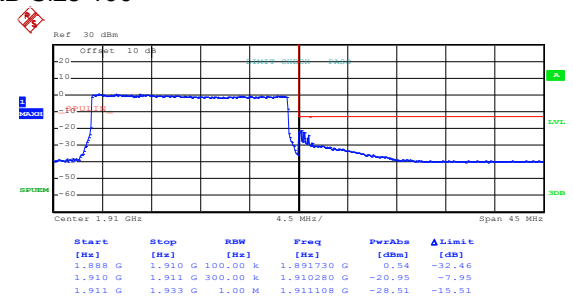
Highest channel

16QAM & RB Size 100



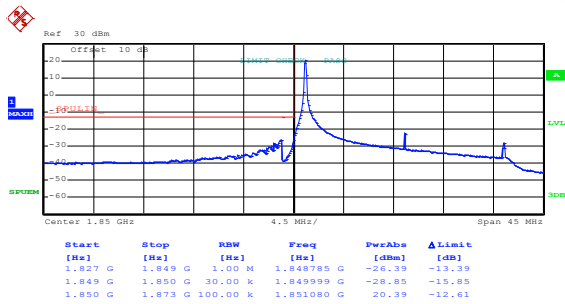
Date: 6.MAR.2019 21:39:26

Lowest channel



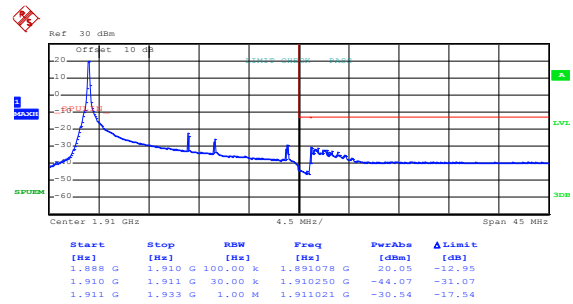
Date: 6.MAR.2019 21:40:40

Highest channel

LTE Band 2, BW: 20MHz
QPSK & RB Size 1

Date: 6.MAR.2019 21:38:33

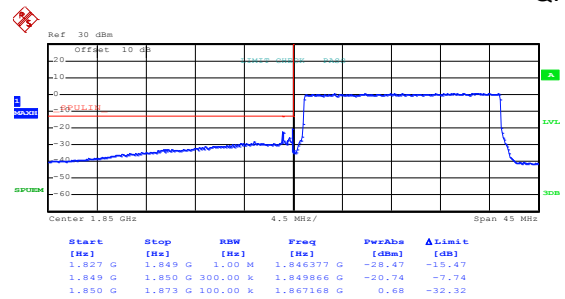
Lowest channel



Date: 6.MAR.2019 21:39:58

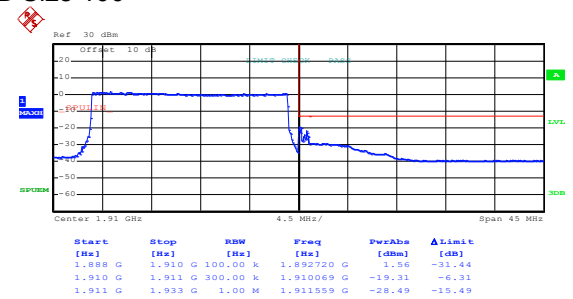
Highest channel

QPSK & RB Size 100



Date: 6.MAR.2019 21:39:18

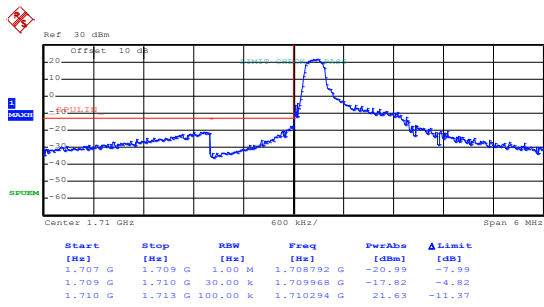
Lowest channel



Date: 6.MAR.2019 21:40:30

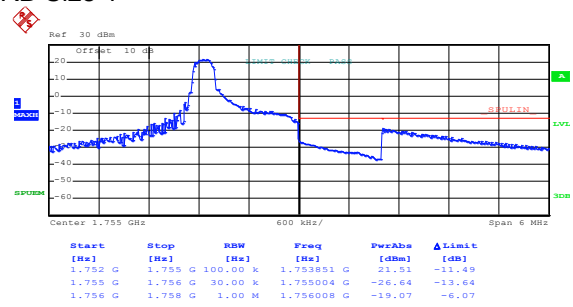
Highest channel

LTE Band 4 part:

LTE Band 4, BW: 1.4MHz
16QAM & RB Size 1

Date: 6.MAR.2019 21:42:32

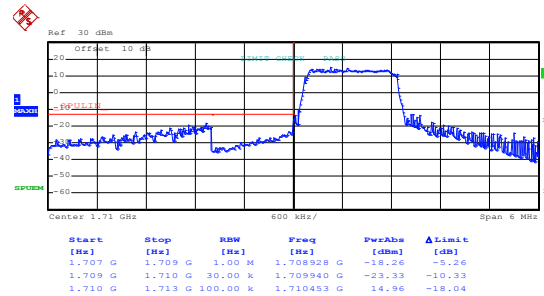
Lowest channel



Date: 7.MAR.2019 17:32:45

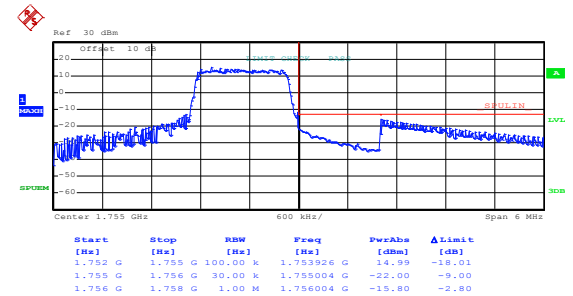
Highest channel

16QAM & RB Size 6



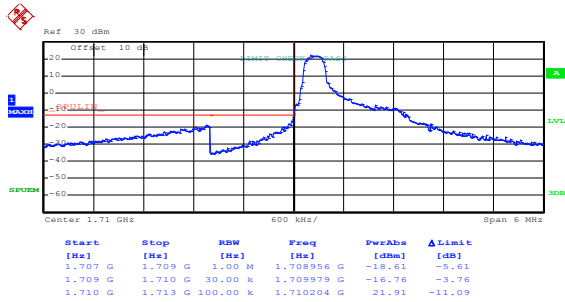
Date: 6.MAR.2019 21:42:57

Lowest channel



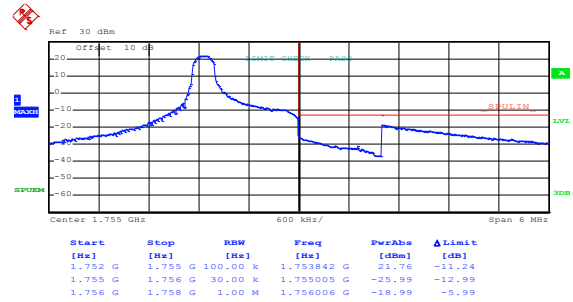
Date: 6.MAR.2019 21:44:02

Highest channel

LTE Band 4, BW: 1.4MHz
QPSK & RB Size 1

Date: 6.MAR.2019 21:42:25

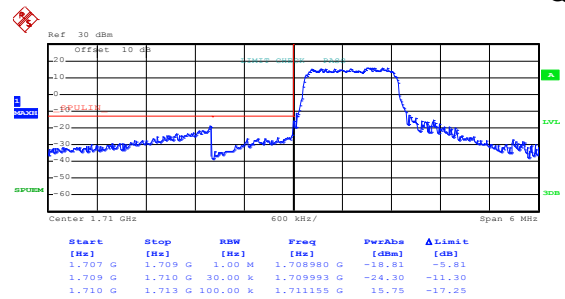
Lowest channel



Date: 7.MAR.2019 17:32:36

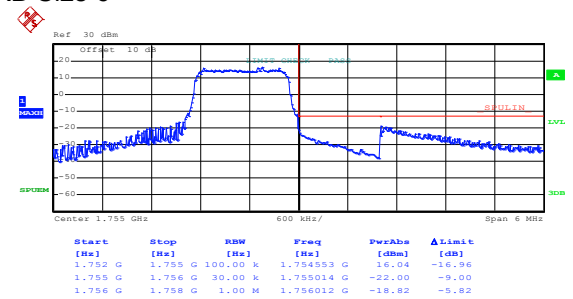
Highest channel

QPSK & RB Size 6



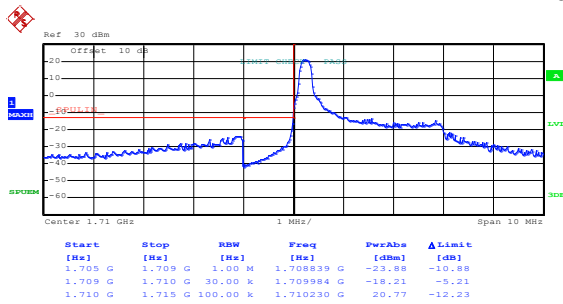
Date: 6.MAR.2019 21:42:47

Lowest channel



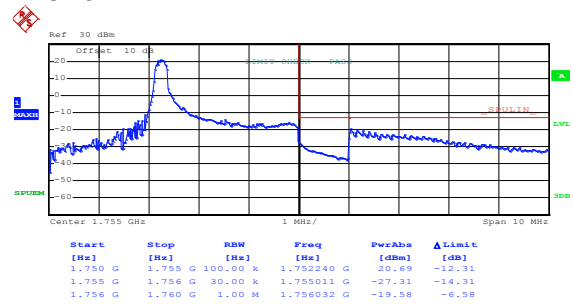
Date: 6.MAR.2019 21:44:12

Highest channel

LTE Band 4, BW: 3MHz
16QAM & RB Size 1

Date: 7.MAR.2019 17:41:22

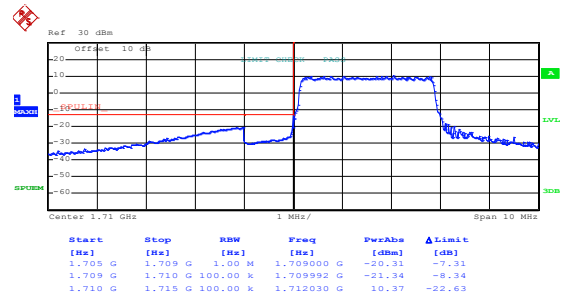
Lowest channel



Date: 7.MAR.2019 17:39:07

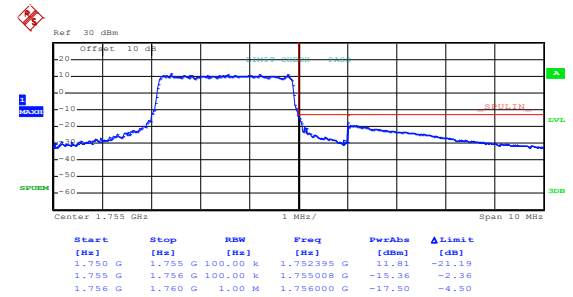
Highest channel

16QAM & RB Size 15



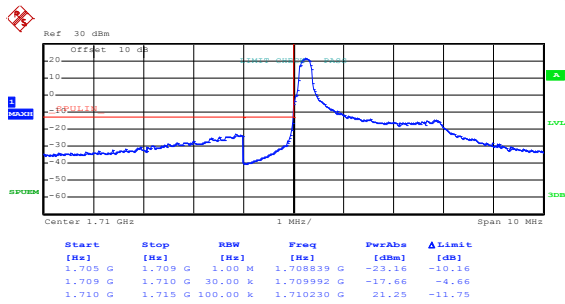
Date: 7.MAR.2019 17:41:52

Lowest channel



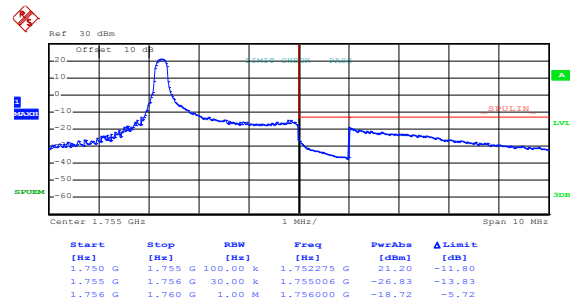
Date: 7.MAR.2019 17:40:00

Highest channel

LTE Band 4, BW: 3MHz
QPSK & RB Size 1

Date: 7.MAR.2019 17:41:14

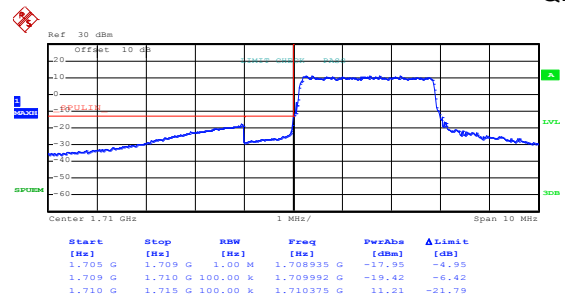
Lowest channel



Date: 7.MAR.2019 17:38:58

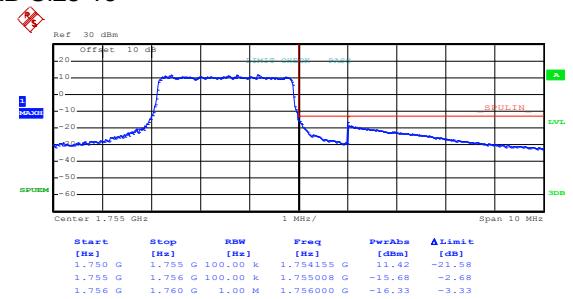
Highest channel

QPSK & RB Size 15



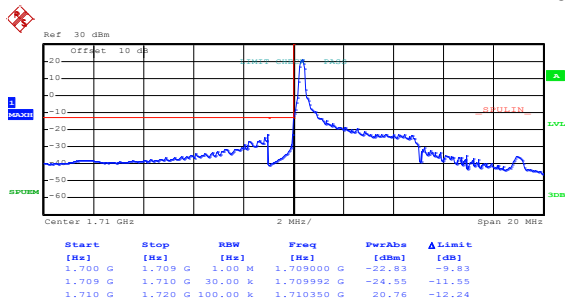
Date: 7.MAR.2019 17:41:42

Lowest channel



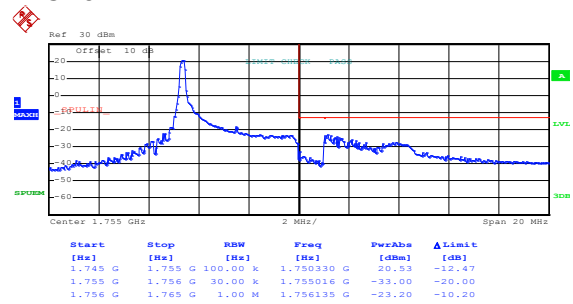
Date: 7.MAR.2019 17:39:52

Highest channel

LTE Band 4, BW: 5MHz
16QAM & RB Size 1

Date: 7.MAR.2019 17:42:57

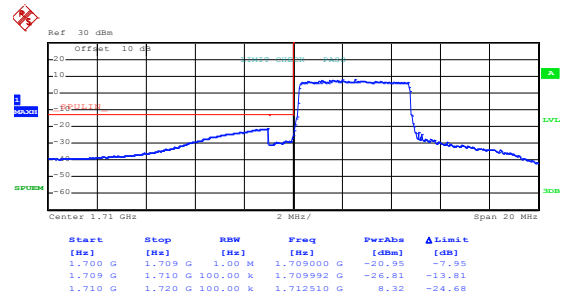
Lowest channel



Date: 7.MAR.2019 17:44:15

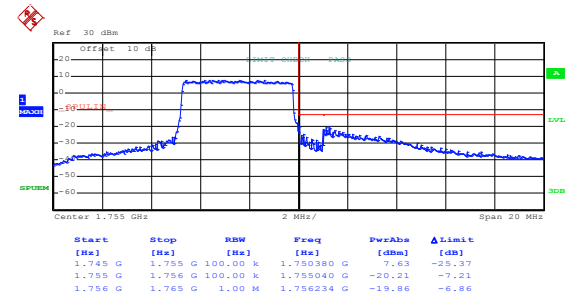
Highest channel

16QAM & RB Size 25



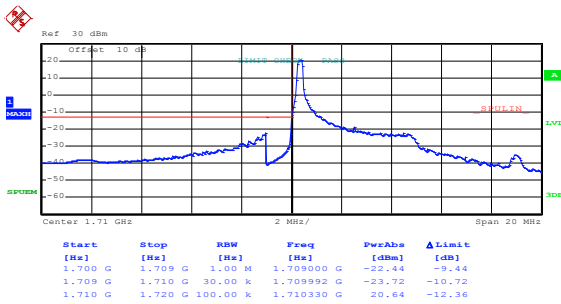
Date: 7.MAR.2019 17:43:38

Lowest channel



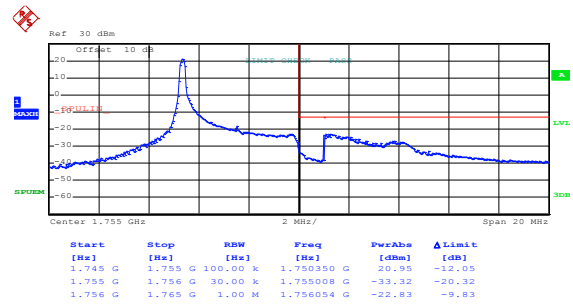
Date: 7.MAR.2019 17:44:43

Highest channel

LTE Band 4, BW: 5MHz
QPSK & RB Size 1

Date: 7.MAR.2019 17:42:50

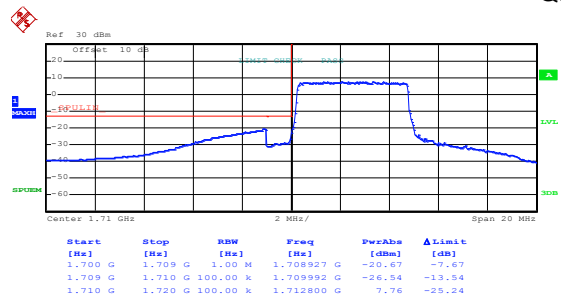
Lowest channel



Date: 7.MAR.2019 17:44:08

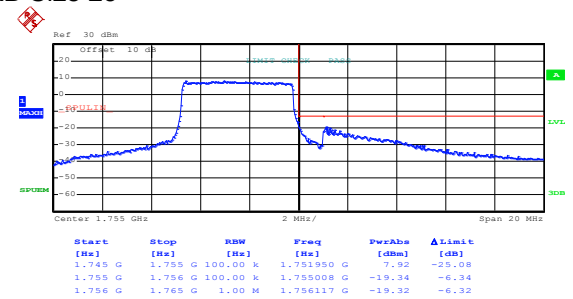
Highest channel

QPSK & RB Size 25



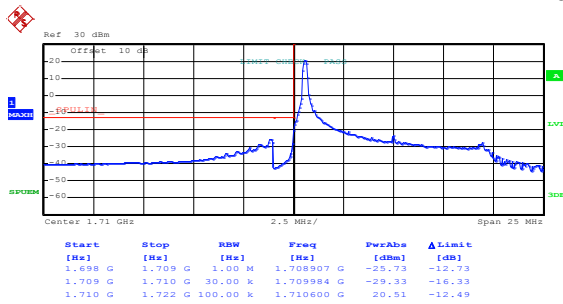
Date: 7.MAR.2019 17:43:31

Lowest channel



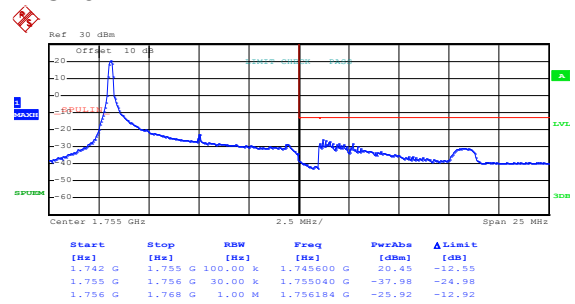
Date: 7.MAR.2019 17:44:38

Highest channel

LTE Band 4, BW: 10MHz
16QAM & RB Size 1

Date: 7.MAR.2019 17:47:06

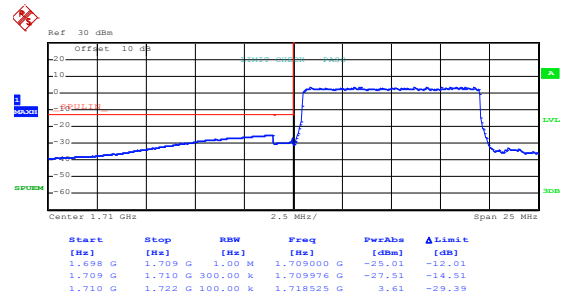
Lowest channel



Date: 7.MAR.2019 17:46:35

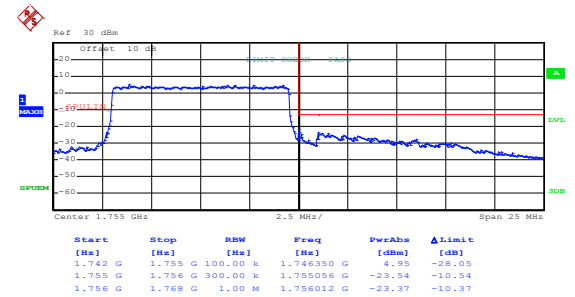
Highest channel

16QAM & RB Size 50



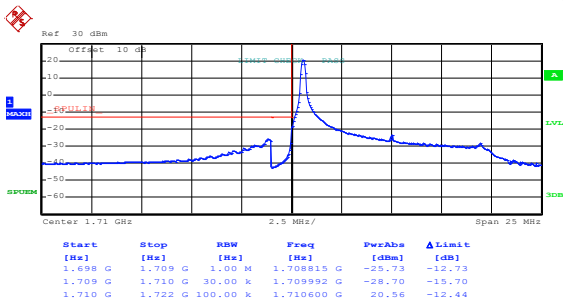
Date: 7.MAR.2019 17:47:32

Lowest channel



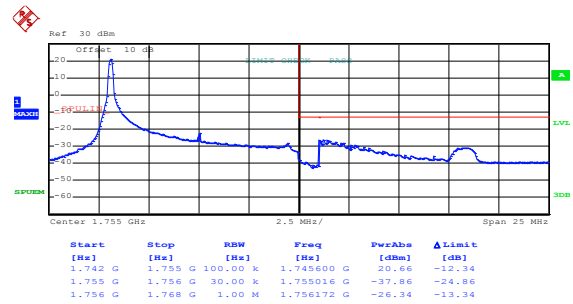
Date: 7.MAR.2019 17:46:05

Highest channel

LTE Band 4, BW: 10MHz
QPSK & RB Size 1

Date: 7.MAR.2019 17:47:00

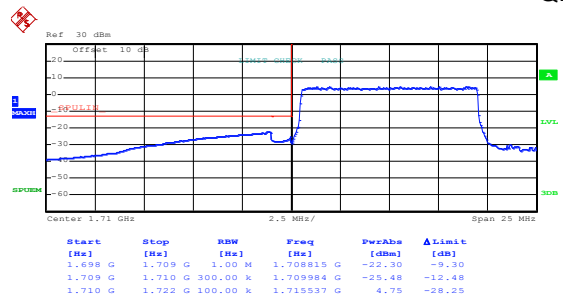
Lowest channel



Date: 7.MAR.2019 17:46:25

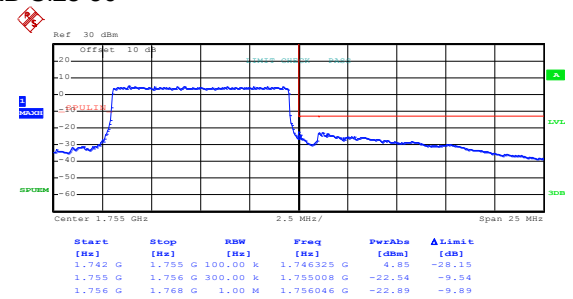
Highest channel

QPSK & RB Size 50



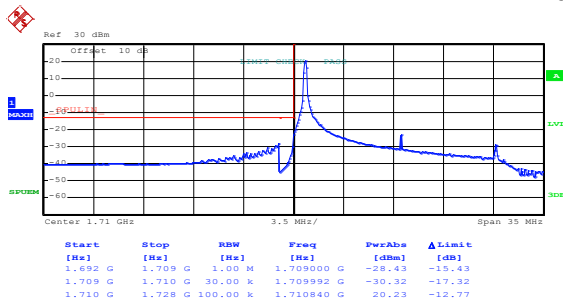
Date: 7.MAR.2019 17:47:24

Lowest channel



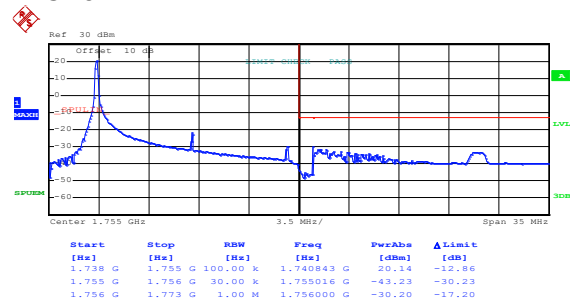
Date: 7.MAR.2019 17:45:59

Highest channel

LTE Band 4, BW: 15MHz
16QAM & RB Size 1

Date: 7.MAR.2019 17:48:17

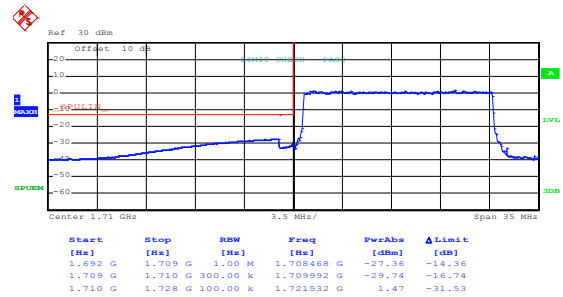
Lowest channel



Date: 7.MAR.2019 17:49:22

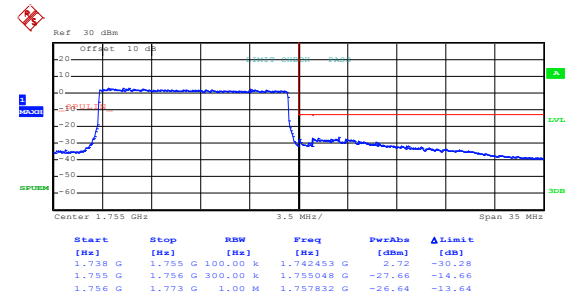
Highest channel

16QAM & RB Size 75



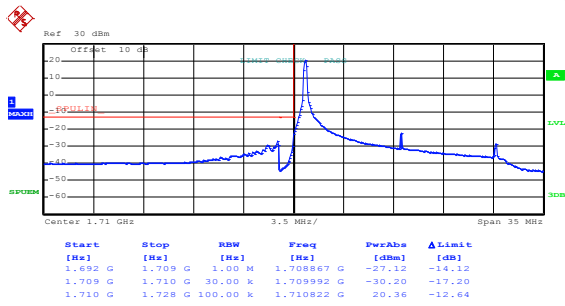
Date: 7.MAR.2019 17:48:46

Lowest channel



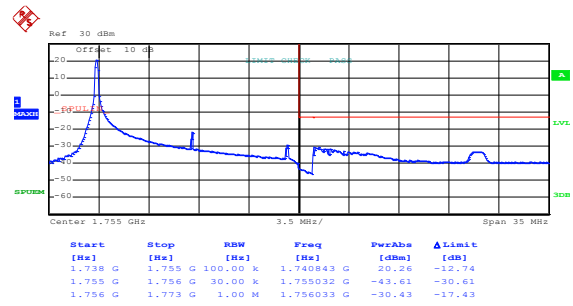
Date: 7.MAR.2019 17:49:48

Highest channel

LTE Band 4, BW: 15MHz
QPSK & RB Size 1

Date: 7.MAR.2019 17:48:10

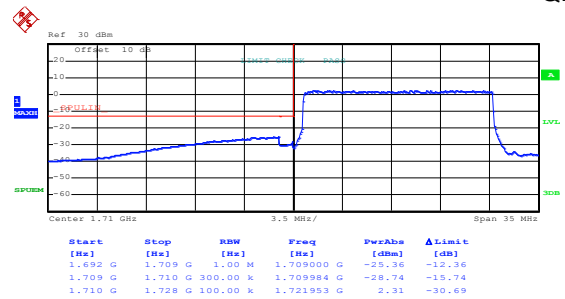
Lowest channel



Date: 7.MAR.2019 17:49:13

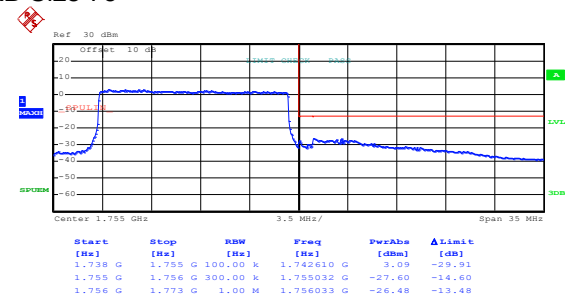
Highest channel

QPSK & RB Size 75



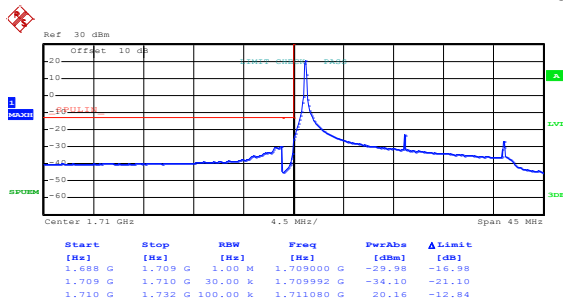
Date: 7.MAR.2019 17:48:38

Lowest channel



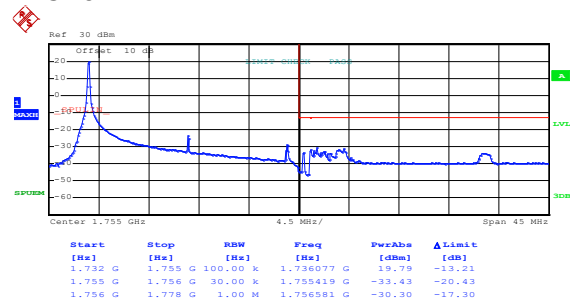
Date: 7.MAR.2019 17:49:42

Highest channel

LTE Band 4, BW: 20MHz
16QAM & RB Size 1

Date: 7.MAR.2019 17:53:07

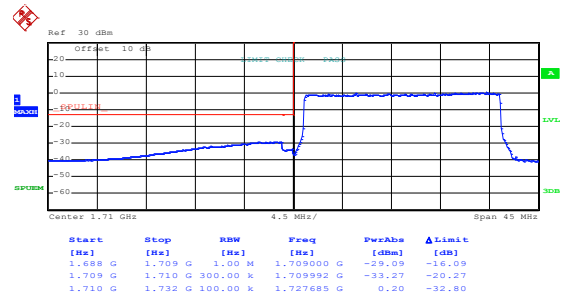
Lowest channel



Date: 7.MAR.2019 17:51:09

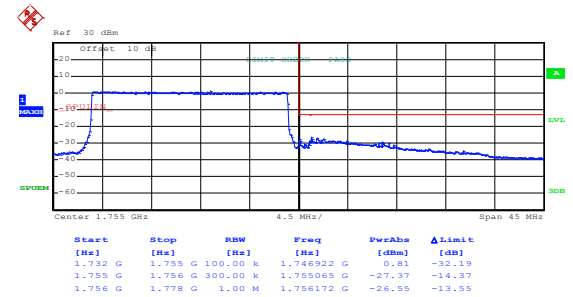
Highest channel

16QAM & RB Size 100



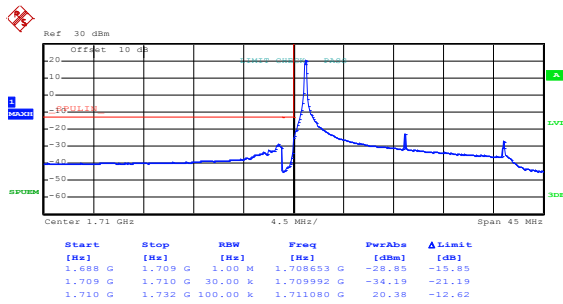
Date: 7.MAR.2019 17:52:10

Lowest channel



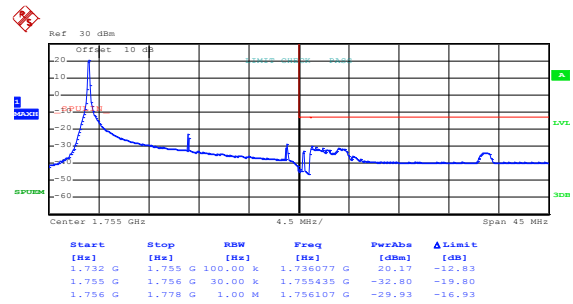
Date: 7.MAR.2019 17:50:35

Highest channel

LTE Band 4, BW: 20MHz
QPSK & RB Size 1

Date: 7.MAR.2019 17:52:54

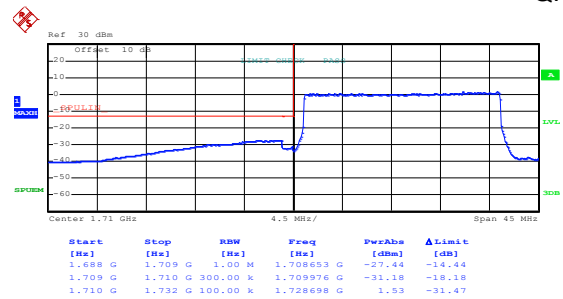
Lowest channel



Date: 7.MAR.2019 17:51:01

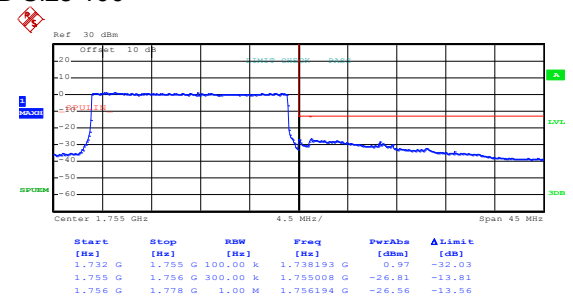
Highest channel

QPSK & RB Size 100



Date: 7.MAR.2019 17:52:01

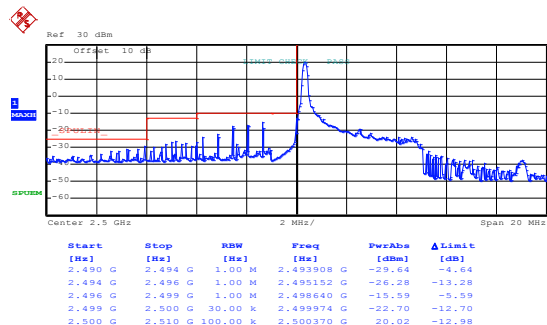
Lowest channel



Date: 7.MAR.2019 17:50:28

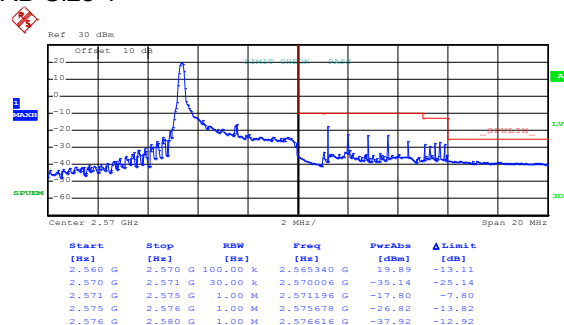
Highest channel

LTE Band 7 part:

LTE Band 7, BW: 5MHz
16QAM & RB Size 1

Date: 7.MAR.2019 12:54:50

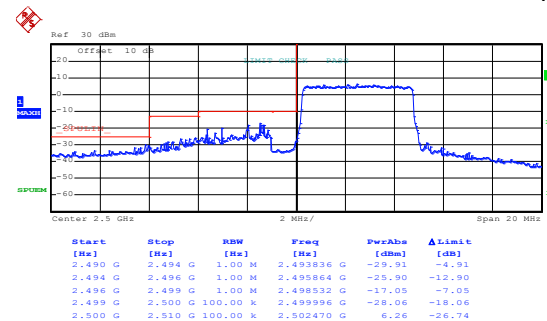
Lowest channel



Date: 7.MAR.2019 12:57:35

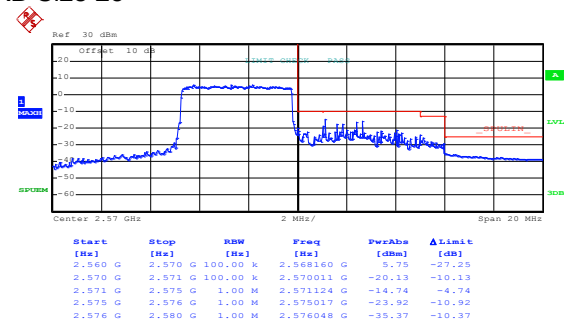
Highest channel

16QAM & RB Size 25



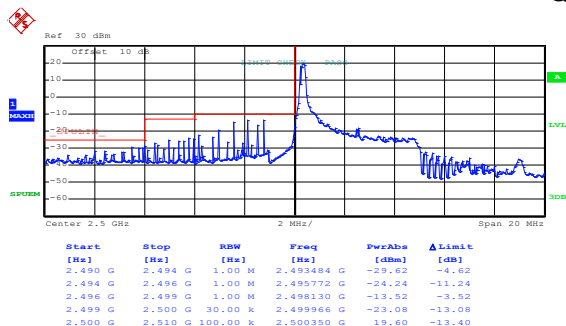
Date: 7.MAR.2019 12:55:50

Lowest channel



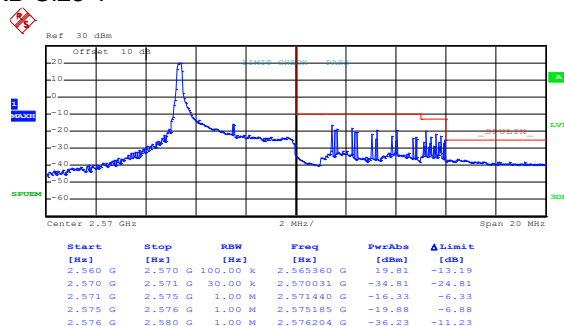
Date: 7.MAR.2019 13:02:13

Highest channel

LTE Band 7, BW: 5MHz
QPSK & RB Size 1

Date: 7.MAR.2019 12:54:38

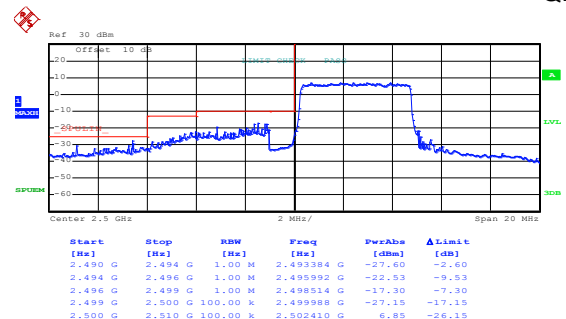
Lowest channel



Date: 7.MAR.2019 12:57:24

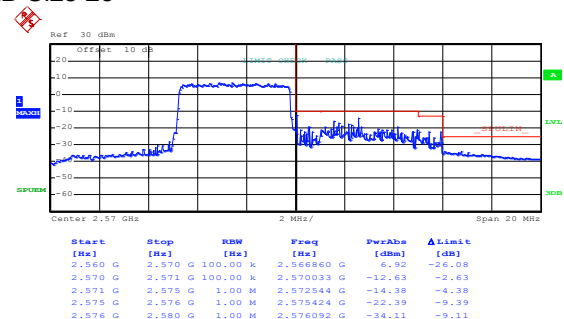
Highest channel

QPSK & RB Size 25



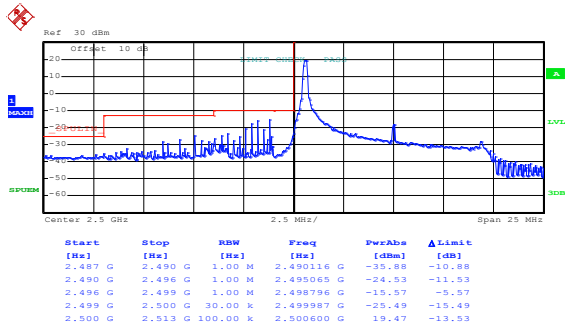
Date: 7.MAR.2019 12:55:37

Lowest channel



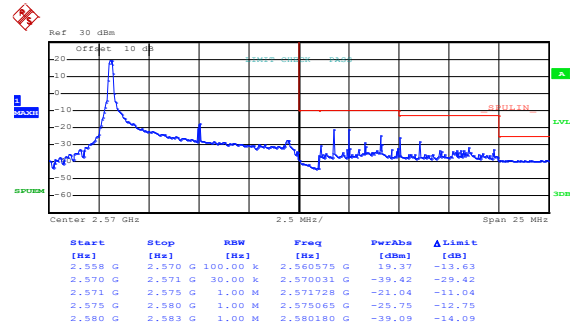
Date: 7.MAR.2019 13:01:32

Highest channel

LTE Band 7, BW: 10MHz
16QAM & RB Size 1

Date: 7.MAR.2019 13:22:42

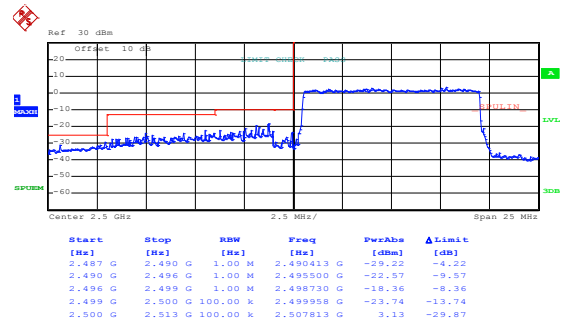
Lowest channel



Date: 7.MAR.2019 13:25:51

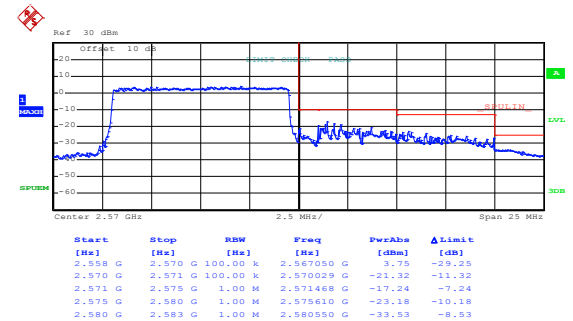
Highest channel

16QAM & RB Size 50



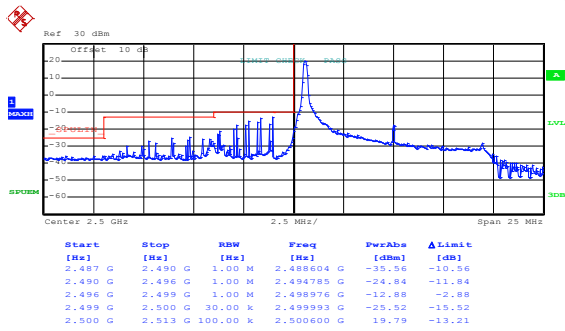
Date: 7.MAR.2019 13:23:21

Lowest channel



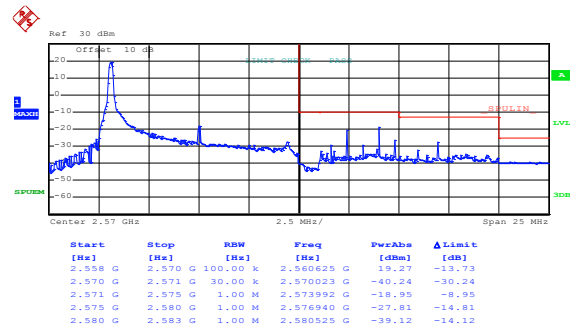
Date: 7.MAR.2019 13:24:46

Highest channel

LTE Band 7, BW: 10MHz
QPSK & RB Size 1

Date: 7.MAR.2019 13:22:24

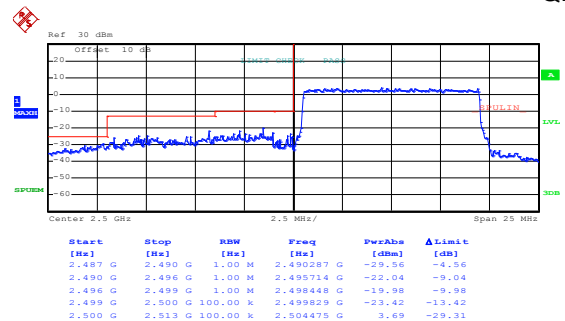
Lowest channel



Date: 7.MAR.2019 13:25:42

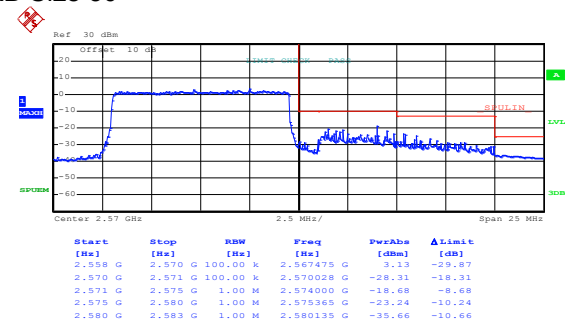
Highest channel

QPSK & RB Size 50



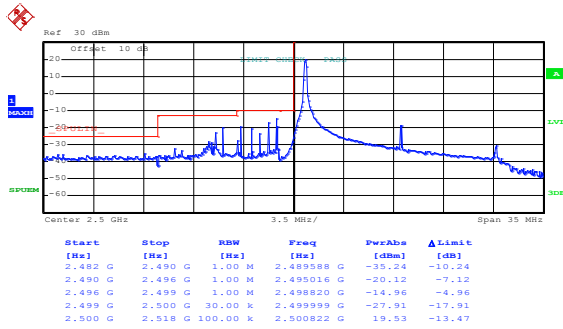
Date: 7.MAR.2019 13:23:12

Lowest channel



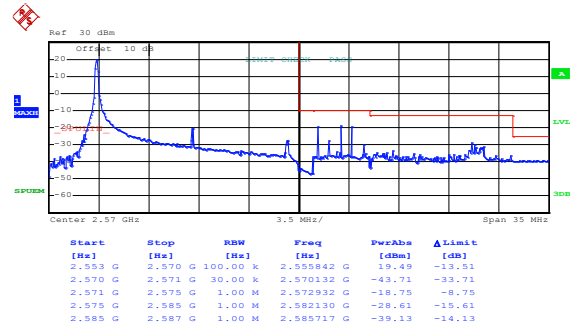
Date: 7.MAR.2019 13:24:38

Highest channel

LTE Band 7, BW: 15MHz
16QAM & RB Size 1

Date: 7.MAR.2019 13:17:46

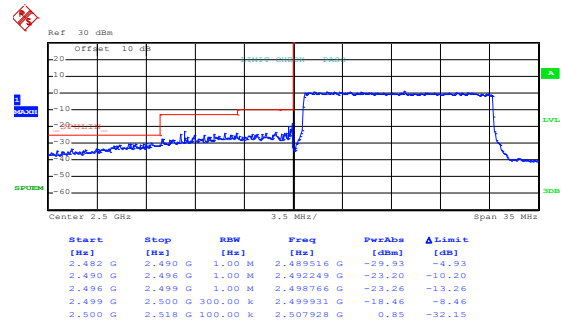
Lowest channel



Date: 7.MAR.2019 13:15:56

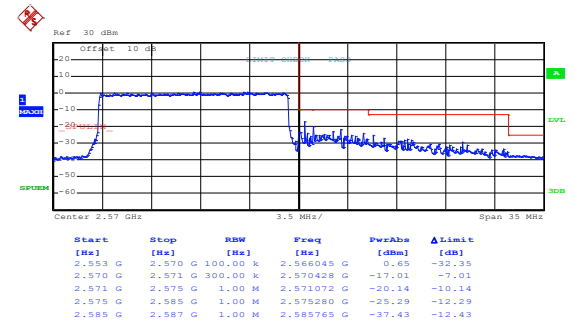
Highest channel

16QAM & RB Size 75



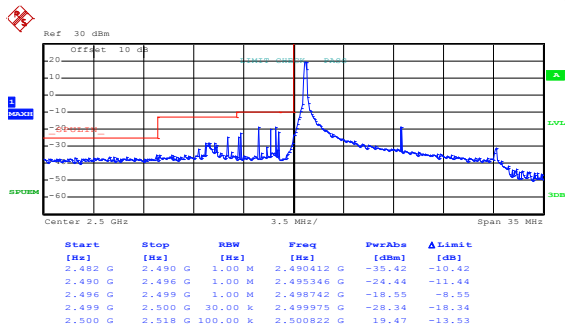
Date: 7.MAR.2019 13:16:58

Lowest channel



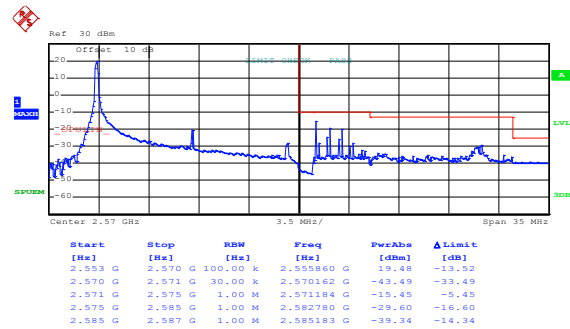
Date: 7.MAR.2019 13:15:24

Highest channel

LTE Band 7, BW: 15MHz
QPSK & RB Size 1

Date: 7.MAR.2019 13:17:34

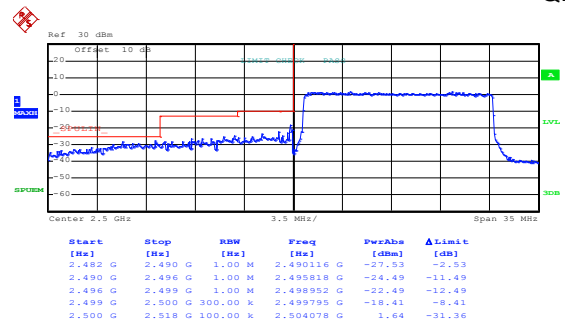
Lowest channel



Date: 7.MAR.2019 13:15:48

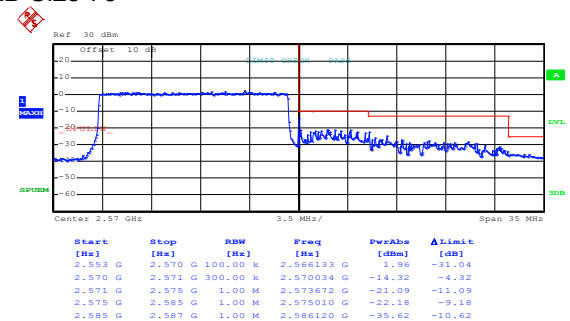
Highest channel

QPSK & RB Size 75



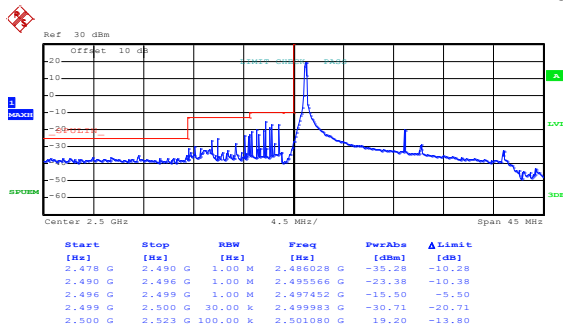
Date: 7.MAR.2019 13:16:46

Lowest channel



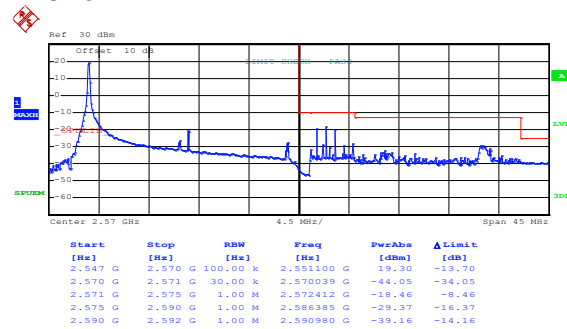
Date: 7.MAR.2019 13:15:14

Highest channel

LTE Band 7, BW: 20MHz
16QAM & RB Size 1

Date: 7.MAR.2019 13:27:31

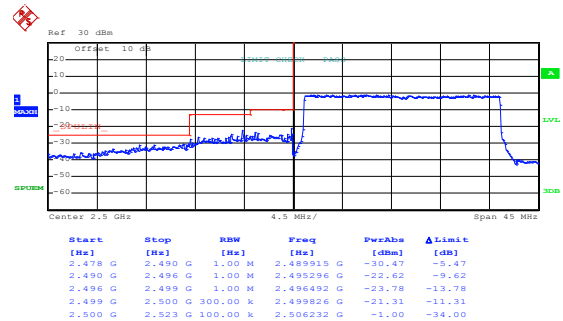
Lowest channel



Date: 7.MAR.2019 13:28:49

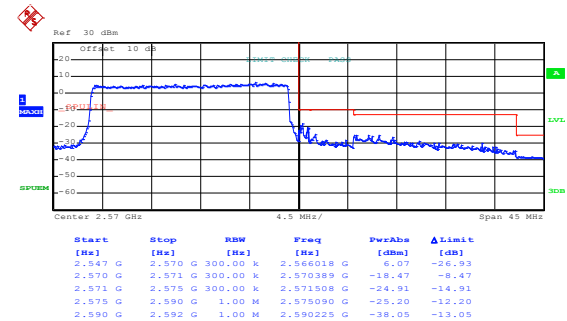
Highest channel

16QAM & RB Size 100



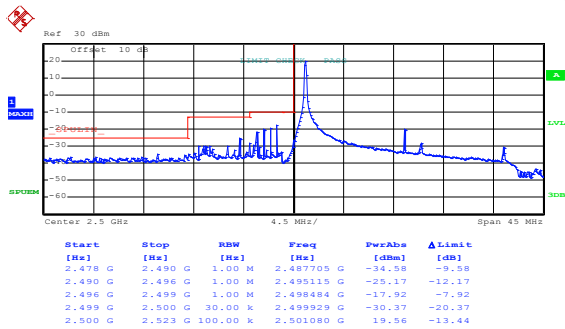
Date: 7.MAR.2019 13:28:10

Lowest channel



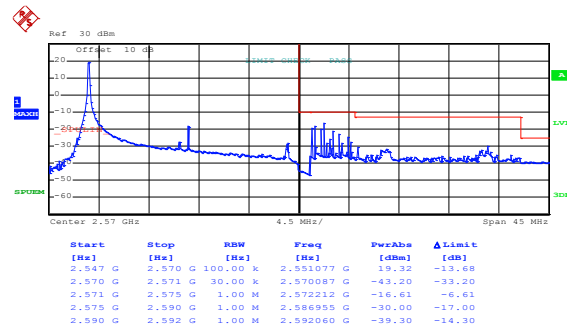
Date: 7.MAR.2019 13:31:44

Highest channel

LTE Band 7, BW: 20MHz
QPSK & RB Size 1

Date: 7.MAR.2019 13:27:23

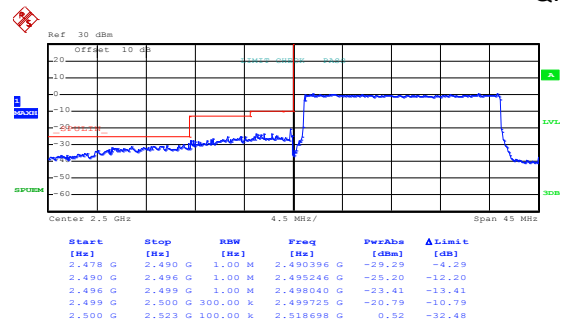
Lowest channel



Date: 7.MAR.2019 13:28:41

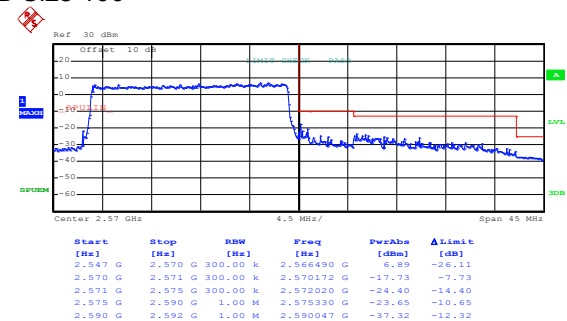
Highest channel

QPSK & RB Size 100



Date: 7.MAR.2019 13:27:59

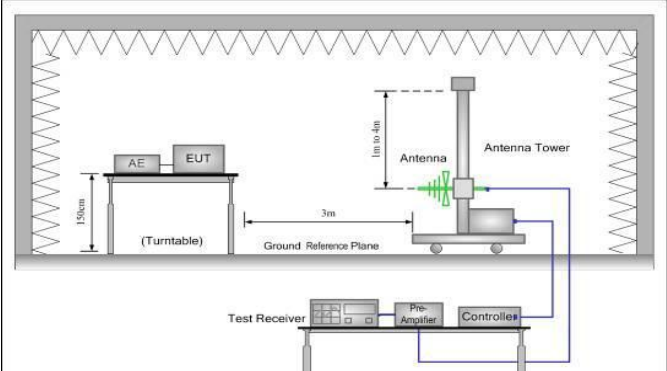
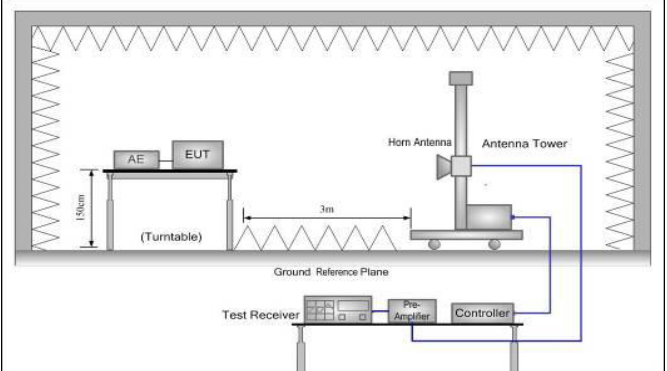
Lowest channel



Date: 7.MAR.2019 13:31:37

Highest channel

6.5 Field strength of spurious radiation measurement

Test Requirement:	Part 24.238 (a), Part 27.53(m), Part 27.53(h)
Test Method:	ANSI/TIA-603-D 2010
Limit:	LTE Band 2 & 4 & 5 & 12 & 17: The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB (-13 dBm). LTE Band 7: For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log(P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log(P)$ dB at or below 2490.5 MHz.
Test setup:	Below 1GHz  Above 1GHz 
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. ERP / EIRP = S.G. output (dBm) + Antenna Gain(dB/dBi) – Cable Loss (dB)
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details.
Test results:	Passed

Measurement Data:**LTE Band 2 part:**

LTE Band 2, WB: 1.4MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
3701.40	Vertical	-45.96	-13.00	Pass
5552.10	V	-40.35		
7402.00	V	-35.09		
3701.40	Horizontal	-46.93		
5552.10	H	-39.74		
7402.00	H	-34.47		
Middle Channel				
3760.00	Vertical	-46.00	-13.00	Pass
5640.00	V	-40.81		
7520.00	V	-38.10		
3760.00	Horizontal	-48.18		
5640.00	H	-40.18		
7520.00	H	-36.31		
Highest Channel				
3816.60	Vertical	-47.53	-13.00	Pass
5724.90	V	-43.06		
7633.20	V	-38.27		
3816.60	Horizontal	-46.41		
5724.90	H	-41.07		
7633.20	H	-35.48		
Note: 1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report. 2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 2, WB: 3MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
3703.00	Vertical	-46.87	-13.00	Pass
5554.50	V	-40.59		
7406.00	V	-35.92		
3703.00	Horizontal	-46.87		
5554.50	H	-39.86		
7406.00	H	-34.95		
Middle Channel				
3760.00	Vertical	-46.00	-13.00	Pass
5640.00	V	-40.98		
7520.00	V	-35.96		
3760.00	Horizontal	-48.63		
5640.00	H	-40.52		
7520.00	H	-36.48		
Highest Channel				
3817.00	Vertical	-47.86	-13.00	Pass
5725.50	V	-43.65		
7634.00	V	-38.57		
3817.00	Horizontal	-46.92		
5725.50	H	-41.68		
7634.00	H	-36.37		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 2, WB: 5MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
3705.00	Vertical	-46.86	-13.00	Pass
5557.50	V	-40.87		
7410.00	V	-35.96		
3705.00	Horizontal	-46.97		
5557.50	H	-39.84		
7410.00	H	-34.67		
Middle Channel				
3760.00	Vertical	-46.09	-13.00	Pass
5640.00	V	-40.92		
7520.00	V	-38.34		
3760.00	Horizontal	-48.26		
5640.00	H	-40.34		
7520.00	H	-36.73		
Highest Channel				
3815.00	Vertical	-47.58	-13.00	Pass
5722.50	V	-43.21		
7630.00	V	-38.29		
3815.00	Horizontal	-46.57		
5722.50	H	-41.26		
7630.00	H	-35.58		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 2, WB: 10MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
3710.00	Vertical	-46.86	-13.00	Pass
5565.00	V	-40.64		
7420.00	V	-35.58		
3710.00	Horizontal	-46.85		
5565.00	H	-39.64		
7420.00	H	-34.86		
Middle Channel				
3760.00	Vertical	-46.21	-13.00	Pass
5640.00	V	-40.87		
7520.00	V	-38.49		
3760.00	Horizontal	-48.35		
5640.00	H	-40.58		
7520.00	H	-36.94		
Highest Channel				
3810.00	Vertical	-47.96	-13.00	Pass
5715.00	V	-43.28		
7620.00	V	-38.94		
3810.00	Horizontal	-46.87		
5715.00	H	-41.56		
7620.00	H	-36.53		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 2, WB: 15MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
3715.00	Vertical	-46.92	-13.00	Pass
5572.50	V	-40.87		
7430.00	V	-35.89		
3715.00	Horizontal	-46.95		
5572.50	H	-39.87		
7430.00	H	-34.86		
Middle Channel				
3760.00	Vertical	-46.11	-13.00	Pass
5640.00	V	-40.86		
7520.00	V	-38.37		
3760.00	Horizontal	-48.29		
5640.00	H	-40.38		
7520.00	H	-36.85		
Highest Channel				
3805.00	Vertical	-47.85	-13.00	Pass
5707.50	V	-43.29		
7610.00	V	-38.36		
3805.00	Horizontal	-46.78		
5707.50	H	-41.29		
7610.00	H	-35.83		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 2, WB: 20MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
3720.00	Vertical	-46.98	-13.00	Pass
5580.00	V	-40.83		
7440.00	V	-35.49		
3720.00	Horizontal	-46.96		
5580.00	H	-39.82		
7440.00	H	-34.83		
Middle Channel				
3760.00	Vertical	-46.16	-13.00	Pass
5640.00	V	-40.86		
7520.00	V	-38.35		
3760.00	Horizontal	-48.23		
5640.00	H	-40.38		
7520.00	H	-36.87		
Highest Channel				
3800.00	Vertical	-47.85	-13.00	Pass
5700.00	V	-43.25		
7600.00	V	-38.39		
3800.00	Horizontal	-46.84		
5700.00	H	-41.43		
7600.00	H	-36.43		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 4 part:

LTE Band 4, WB: 1.4MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
3421.40	Vertical	-46.99	-13.00	Pass
5132.10	V	-44.51		
6842.80	V	-39.23		
3421.40	Horizontal	-48.02		
5132.10	H	-43.38		
6842.80	H	-36.96		
Middle Channel				
3465.00	Vertical	-47.50	-13.00	Pass
5197.50	V	-42.14		
6930.00	V	-36.53		
3465.00	Horizontal	-46.69		
5197.50	H	-42.30		
6930.00	H	-36.58		
Highest Channel				
3508.60	Vertical	-46.63	-13.00	Pass
5262.90	V	-41.91		
7017.20	V	-34.55		
3508.60	Horizontal	-46.29		
5262.90	H	-41.60		
7017.20	H	-46.43		
Note: 1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report. 2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 4, WB: 3MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
3423.00	Vertical	-46.87	-13.00	Pass
5134.50	V	-44.58		
6846.00	V	-39.57		
3423.00	Horizontal	-48.92		
5134.50	H	-43.67		
6846.00	H	-36.83		
Middle Channel				
3465.00	Vertical	-47.82	-13.00	Pass
5197.50	V	-42.64		
6930.00	V	-36.83		
3465.00	Horizontal	-46.93		
5197.50	H	-42.87		
6930.00	H	-36.89		
Highest Channel				
3507.00	Vertical	-46.87	-13.00	Pass
5260.50	V	-41.62		
7014.00	V	-34.75		
3507.00	Horizontal	-46.64		
5260.50	H	-41.87		
7014.00	H	-46.93		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 4, WB: 5MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
3425.00	Vertical	-46.98	-13.00	Pass
5137.50	V	-44.52		
6850.00	V	-39.26		
3425.00	Horizontal	-48.37		
5137.50	H	-43.35		
6850.00	H	-36.98		
Middle Channel				
3465.00	Vertical	-47.64	-13.00	Pass
5197.50	V	-42.28		
6930.00	V	-36.59		
3465.00	Horizontal	-46.64		
5197.50	H	-42.57		
6930.00	H	-36.67		
Highest Channel				
3505.00	Vertical	-46.87	-13.00	Pass
5257.50	V	-41.89		
7010.00	V	-34.67		
3505.00	Horizontal	-46.35		
5257.50	H	-41.68		
7010.00	H	-46.58		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 4, WB: 10MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
3430.00	Vertical	-46.97	-13.00	Pass
5145.00	V	-44.64		
6860.00	V	-39.52		
3430.00	Horizontal	-48.86		
5145.00	H	-43.64		
6860.00	H	-36.68		
Middle Channel				
3465.00	Vertical	-47.98	-13.00	Pass
5197.50	V	-42.54		
6930.00	V	-36.78		
3465.00	Horizontal	-46.87		
5197.50	H	-42.81		
6930.00	H	-36.92		
Highest Channel				
3500.00	Vertical	-46.89	-13.00	Pass
5250.00	V	-41.58		
7000.00	V	-34.67		
3500.00	Horizontal	-46.45		
5250.00	H	-41.92		
7000.00	H	-46.89		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 4, WB: 15MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
3435.00	Vertical	-46.96	-13.00	Pass
5152.50	V	-44.58		
6870.00	V	-39.37		
3435.00	Horizontal	-48.87		
5152.50	H	-43.69		
6870.00	H	-36.69		
Middle Channel				
3465.00	Vertical	-47.72	-13.00	Pass
5197.50	V	-42.36		
6930.00	V	-36.98		
3465.00	Horizontal	-46.74		
5197.50	H	-42.67		
6930.00	H	-36.84		
Highest Channel				
3495.00	Vertical	-46.86	-13.00	Pass
5242.50	V	-41.98		
6990.00	V	-34.68		
3495.00	Horizontal	-46.42		
5242.50	H	-41.89		
6990.00	H	-46.87		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 4, WB: 20MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
3440.00	Vertical	-46.98	-13.00	Pass
5160.00	V	-44.56		
6880.00	V	-39.47		
3440.00	Horizontal	-48.83		
5160.00	H	-43.62		
6880.00	H	-36.66		
Middle Channel				
3465.00	Vertical	-47.78	-13.00	Pass
5197.50	V	-42.37		
6930.00	V	-36.92		
3465.00	Horizontal	-46.74		
5197.50	H	-42.69		
6930.00	H	-36.87		
Highest Channel				
3490.00	Vertical	-46.86	-13.00	Pass
5235.00	V	-41.98		
6980.00	V	-34.68		
3490.00	Horizontal	-46.42		
5235.00	H	-41.89		
6980.00	H	-46.87		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 7 part:

LTE Band 7, WB: 5MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
5005.00	Vertical	-42.98	-25.00	Pass
7507.50	V	-36.68		
10010.00	V	-34.36		
5005.00	Horizontal	-43.57		
7507.50	H	-34.59		
10010.00	H	-31.04		
Middle Channel				
5070.00	Vertical	-43.20	-25.00	Pass
7605.00	V	-36.01		
10140.00	V	-32.15		
5070.00	Horizontal	-43.26		
7605.00	H	-36.39		
10140.00	H	-31.85		
Highest Channel				
5135.00	Vertical	-41.32	-25.00	Pass
7702.50	V	-34.54		
10270.00	V	-31.74		
5135.00	Horizontal	-42.15		
7702.50	H	-35.66		
10270.00	H	-32.74		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 7, WB: 10MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
5010.00	Vertical	-42.96	-25.00	Pass
7515.00	V	-36.64		
10020.00	V	-34.38		
5010.00	Horizontal	-43.57		
7515.00	H	-34.62		
10020.00	H	-31.29		
Middle Channel				
5070.00	Vertical	-43.23	-25.00	Pass
7605.00	V	-36.01		
10140.00	V	-32.17		
5070.00	Horizontal	-43.28		
7605.00	H	-36.39		
10140.00	H	-31.89		
Highest Channel				
5130.00	Vertical	-41.36	-25.00	Pass
7695.00	V	-34.58		
10260.00	V	-31.74		
5130.00	Horizontal	-42.14		
7695.00	H	-35.66		
10260.00	H	-32.79		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 7, WB: 15MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
5015.00	Vertical	-42.87	-25.00	Pass
7522.50	V	-36.69		
10030.00	V	-34.76		
5015.00	Horizontal	-43.58		
7522.50	H	-34.67		
10030.00	H	-31.08		
Middle Channel				
5070.00	Vertical	-43.28	-25.00	Pass
7605.00	V	-36.02		
10140.00	V	-32.17		
5070.00	Horizontal	-43.29		
7605.00	H	-36.42		
10140.00	H	-31.87		
Highest Channel				
5125.00	Vertical	-41.39	-25.00	Pass
7687.50	V	-34.67		
10250.00	V	-31.86		
5125.00	Horizontal	-42.25		
7687.50	H	-35.68		
10250.00	H	-32.76		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 7, WB: 20MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
5020.00	Vertical	-42.86	-25.00	Pass
7530.00	V	-36.97		
10040.00	V	-34.59		
5020.00	Horizontal	-43.67		
7530.00	H	-34.62		
10040.00	H	-31.09		
Middle Channel				
5070.00	Vertical	-43.26	-25.00	Pass
7605.00	V	-36.09		
10140.00	V	-32.28		
5070.00	Horizontal	-43.29		
7605.00	H	-36.42		
10140.00	H	-31.87		
Highest Channel				
5120.00	Vertical	-41.38	-25.00	Pass
7680.00	V	-34.59		
10240.00	V	-31.78		
5120.00	Horizontal	-42.19		
7680.00	H	-35.67		
10240.00	H	-32.67		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

6.6 Frequency stability V.S. Temperature measurement

Test Requirement:	Part 24.235, Part 27.54, Part 2.1055(a)(1)(b)
Test Method:	ANSI/TIA-603-D 2010
Limit:	±2.5ppm
Test setup:	
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 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data (worst case):

LTE Band 2 part:

Reference Frequency: LTE Band 2 (10MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	198	0.105319	±2.5	Pass
	-20	155	0.082447		
	-10	163	0.086702		
	0	123	0.065426		
	10	188	0.100000		
	20	174	0.092553		
	30	114	0.060638		
	40	105	0.055851		
	50	150	0.079787		
16QAM					
3.80	-30	123	0.065426	±2.5	Pass
	-20	150	0.079787		
	-10	166	0.088298		
	0	122	0.064894		
	10	144	0.076596		
	20	140	0.074468		
	30	156	0.082979		
	40	133	0.070745		
	50	138	0.073404		
Note: Only the worst case shown in the report.					

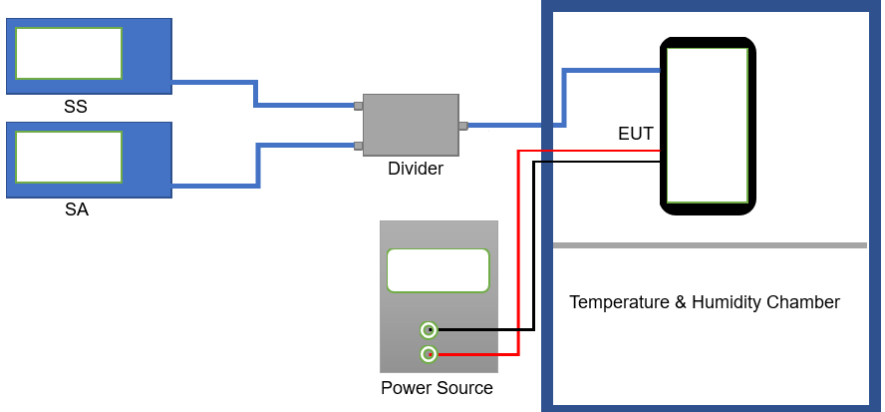
LTE Band 4 part:

Reference Frequency: LTE Band 4 (10MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	198	0.114286	±2.5	Pass
	-20	155	0.089466		
	-10	163	0.094084		
	0	123	0.070996		
	10	188	0.108514		
	20	174	0.100433		
	30	114	0.065801		
	40	105	0.060606		
	50	150	0.086580		
16QAM					
3.80	-30	123	0.070996	±2.5	Pass
	-20	150	0.086580		
	-10	166	0.095815		
	0	122	0.070418		
	10	144	0.083117		
	20	140	0.080808		
	30	156	0.090043		
	40	133	0.076768		
	50	138	0.079654		
Note: Only the worst case shown in the report.					

LTE Band 7 part:

Reference Frequency: LTE Band 7 (10MHz) Middle channel=21100 Frequency=2535.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	198	0.078107	±2.5	Pass
	-20	155	0.061144		
	-10	163	0.064300		
	0	123	0.048521		
	10	188	0.074162		
	20	174	0.068639		
	30	114	0.044970		
	40	105	0.041420		
	50	150	0.059172		
16QAM					
3.80	-30	123	0.048521	±2.5	Pass
	-20	150	0.059172		
	-10	166	0.065483		
	0	122	0.048126		
	10	144	0.056805		
	20	140	0.055227		
	30	156	0.061538		
	40	133	0.052465		
	50	138	0.054438		
Note: Only the worst case shown in the report.					

6.7 Frequency stability V.S. Voltage measurement

Test Requirement:	Part 24.235, Part 27.54, Part 2.1055(d)(2)
Test Method:	ANSI/TIA-603-D 2010
Limit:	±2.5ppm
Test setup:	 The diagram illustrates the test setup. A Signal Source (SS) and a Spectrum Analyzer (SA) are connected to a Divider. The output of the Divider is connected to the EUT (Equipment Under Test) inside a Temperature & Humidity Chamber. A Power Source is also connected to the EUT.
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 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data (worst case):

LTE Band 2 part:

Reference Frequency: LTE Band 2(10MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	4.35	98	0.052128	±2.5	Pass
	3.80	65	0.034574		
	3.50	74	0.039362		
16QAM					
25	4.35	80	0.042553	±2.5	Pass
	3.80	96	0.051064		
	3.50	48	0.025532		
Note: Only the worst case shown in the report.					

LTE Band 4 part:

Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	4.35	98	0.056566	±2.5	Pass
	3.80	65	0.037518		
	3.50	74	0.042713		
16QAM					
25	4.35	80	0.046176	±2.5	Pass
	3.80	96	0.055411		
	3.50	48	0.027706		
Note: Only the worst case shown in the report.					

LTE Band 7 part:

Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	4.35	98	0.038659	±2.5	Pass
	3.80	65	0.025641		
	3.50	74	0.029191		
16QAM					
25	4.35	80	0.031558	±2.5	Pass
	3.80	96	0.037870		
	3.50	48	0.018935		
Note: Only the worst case shown in the report.					

8 EUT Constructional Details

Reference to the test report No. CCISE190300101.

-----End of report-----