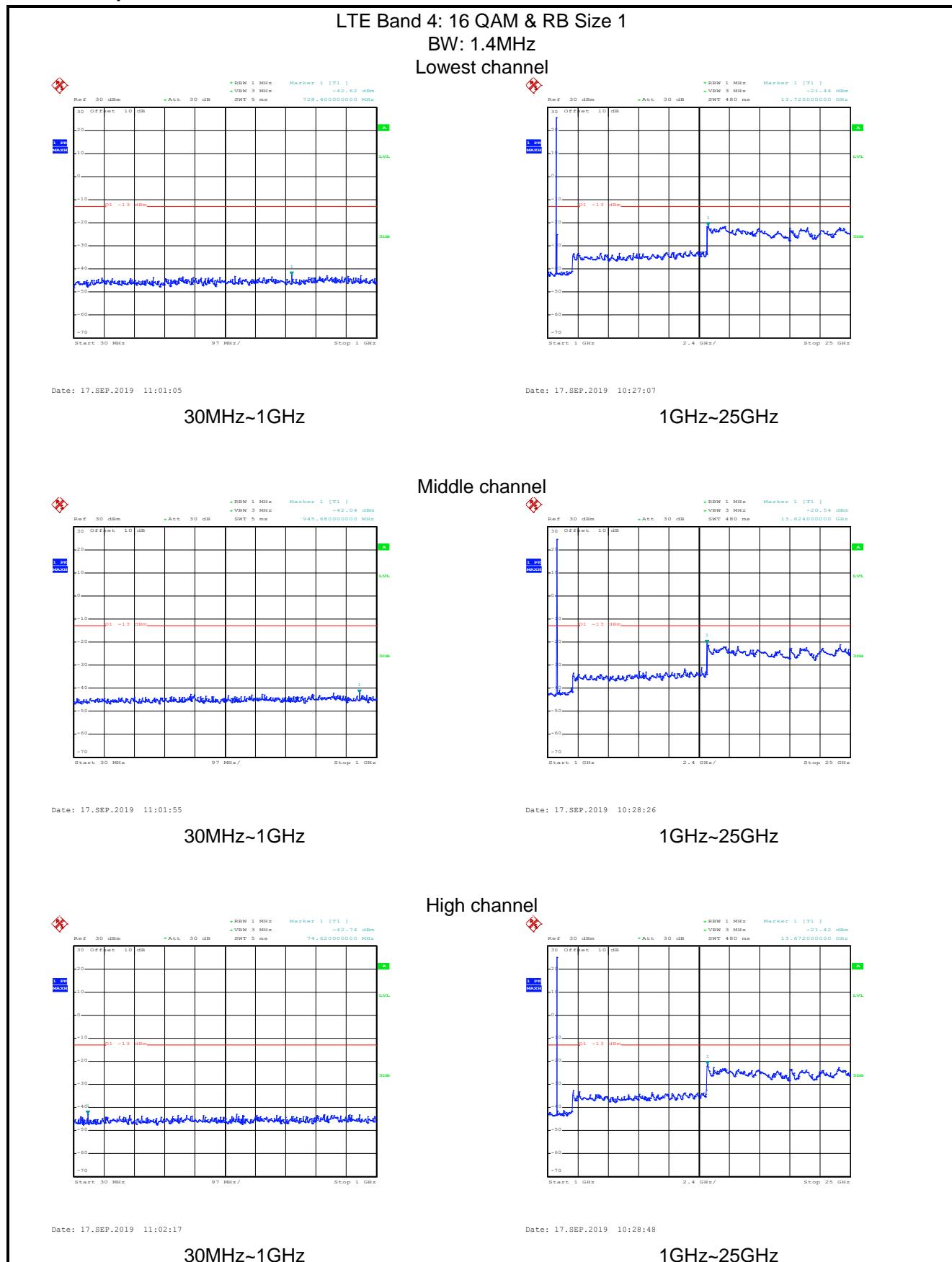
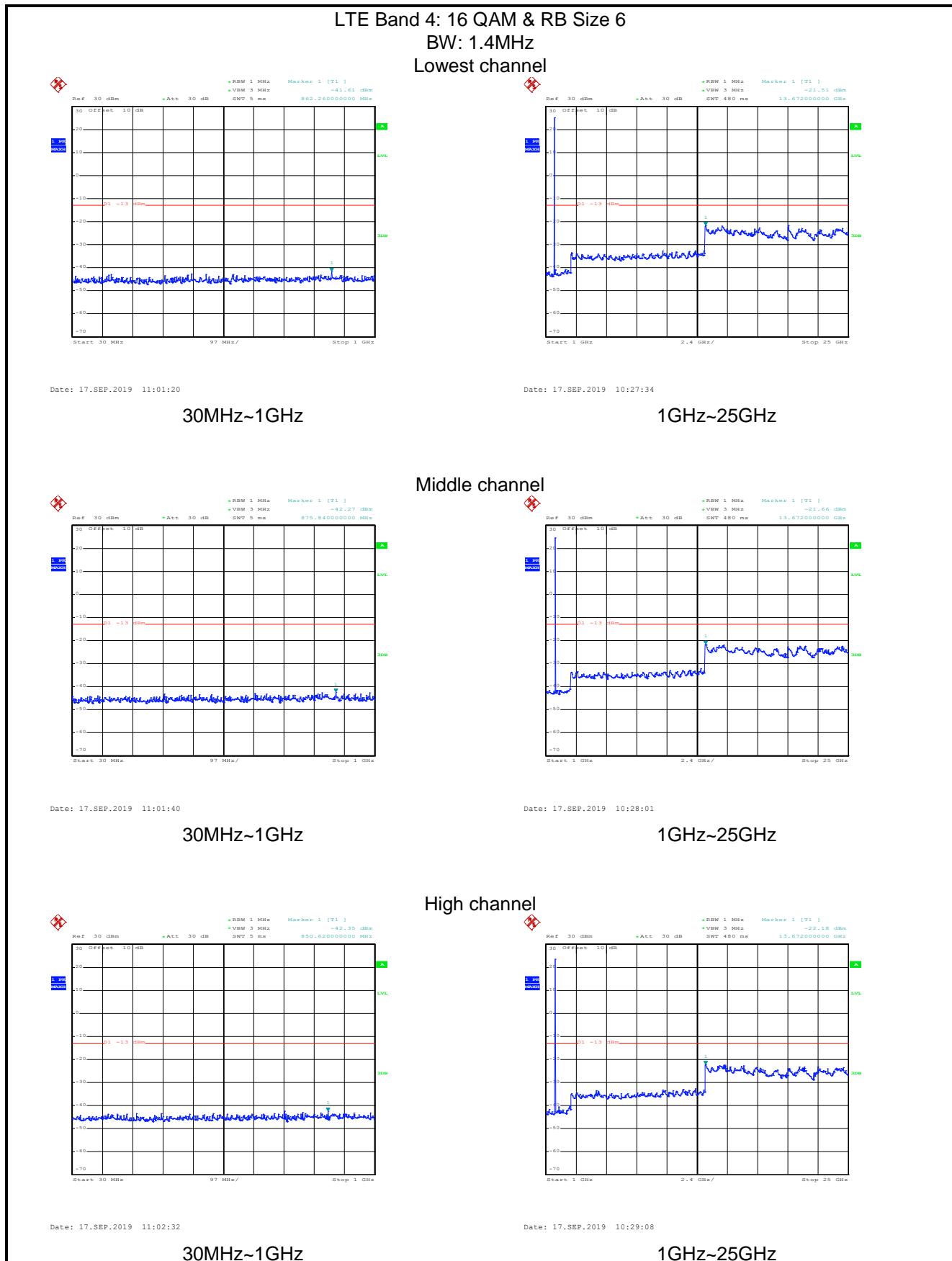
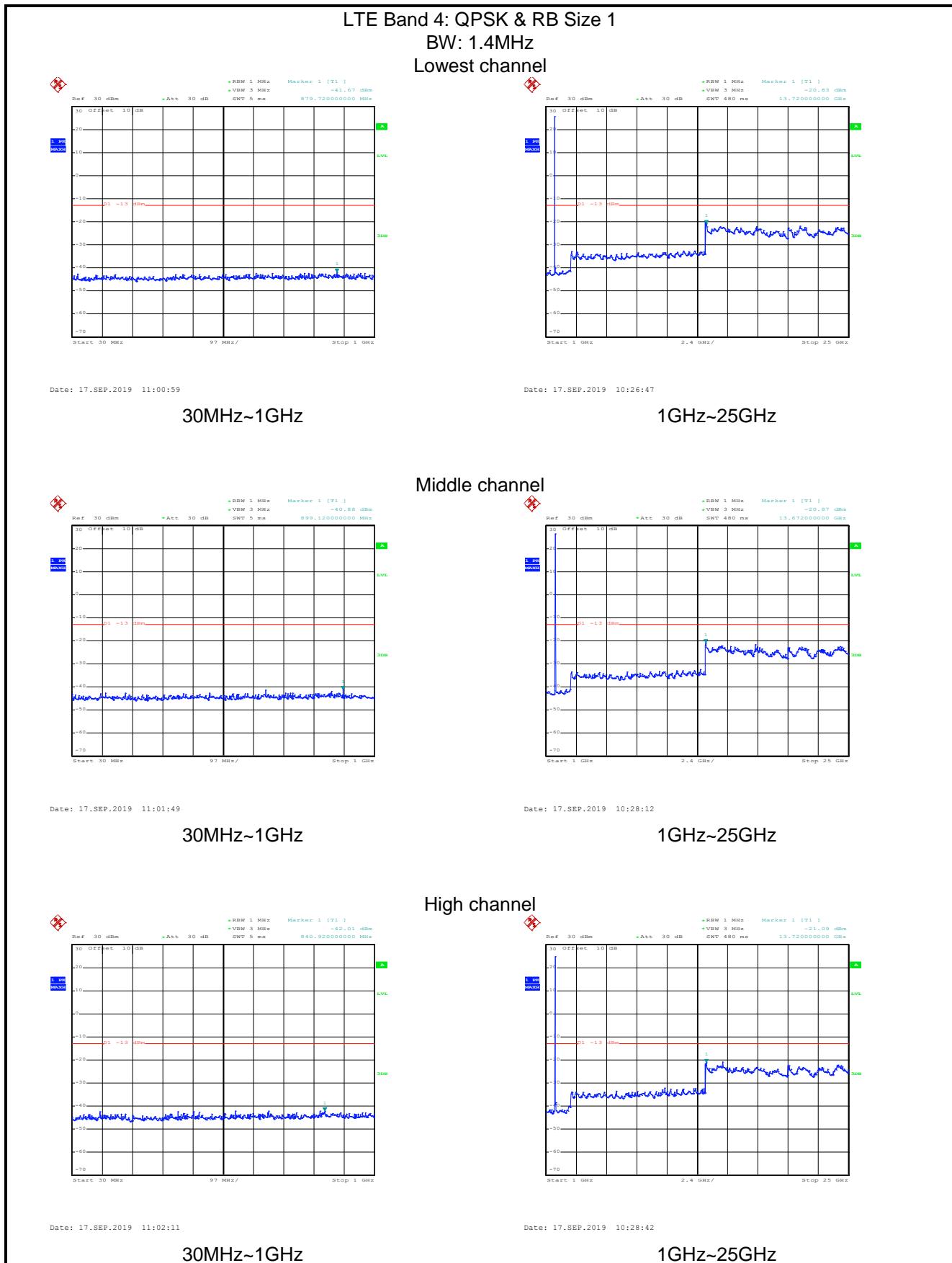
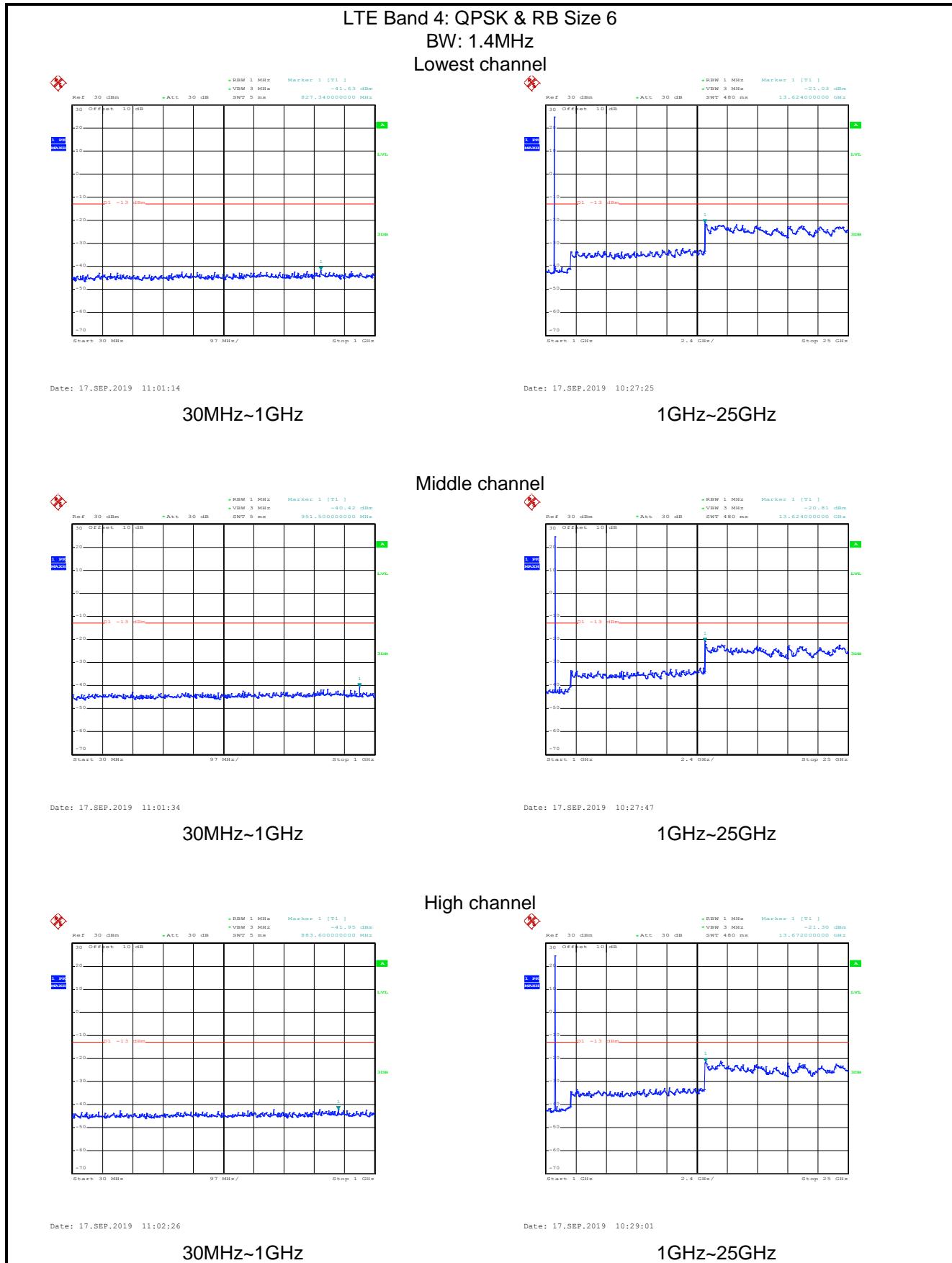


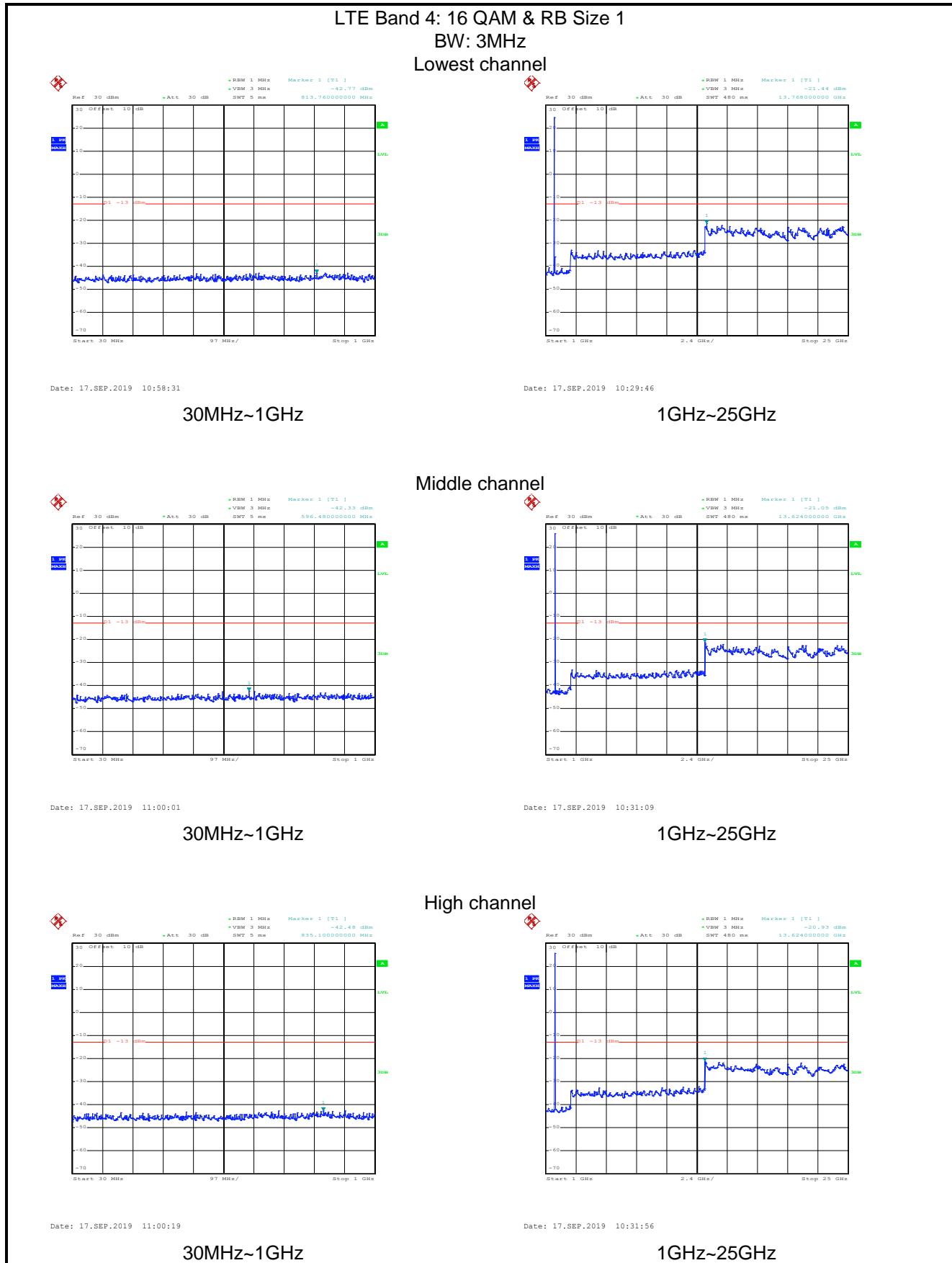
LTE Band 4 part:

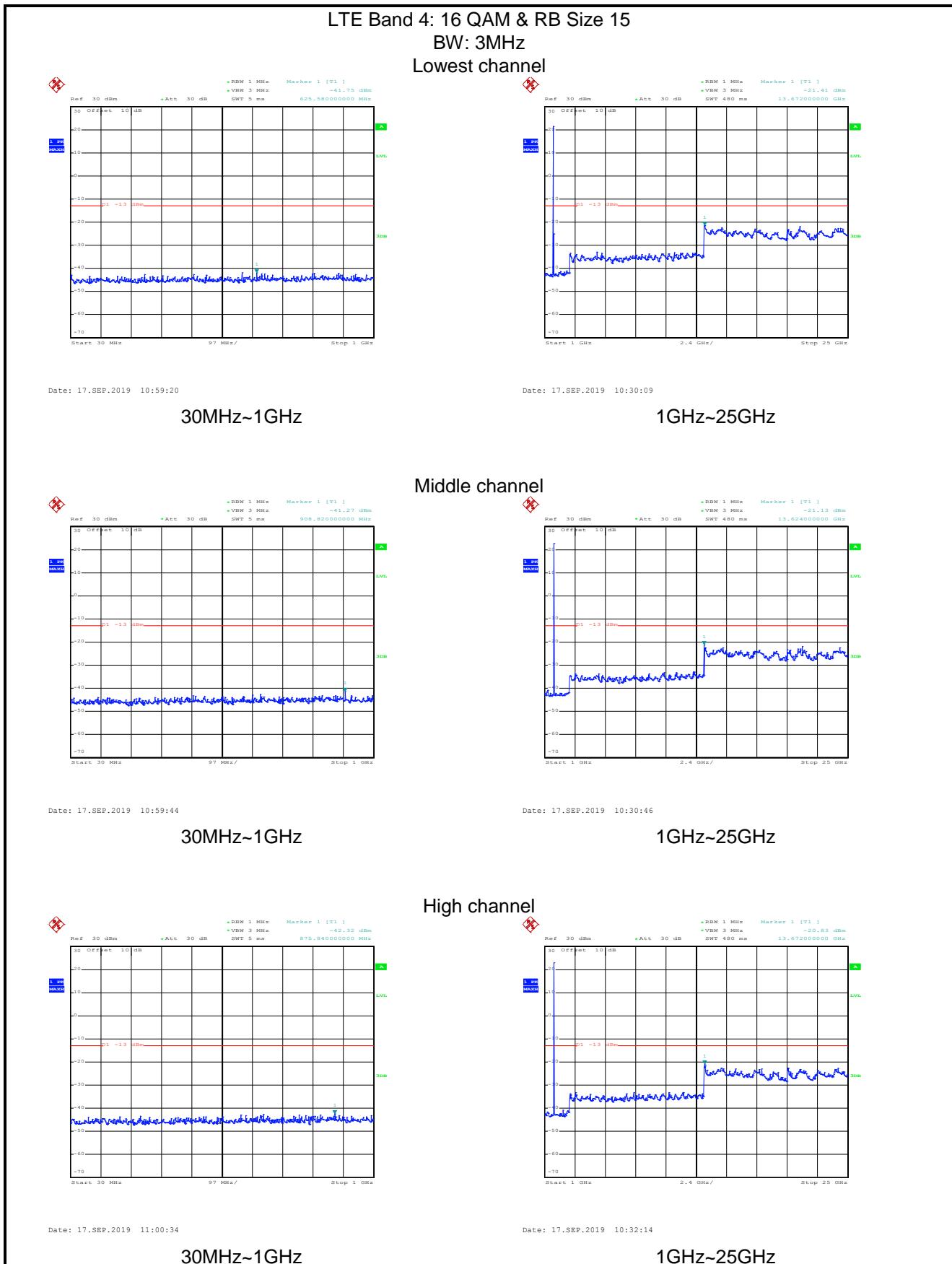


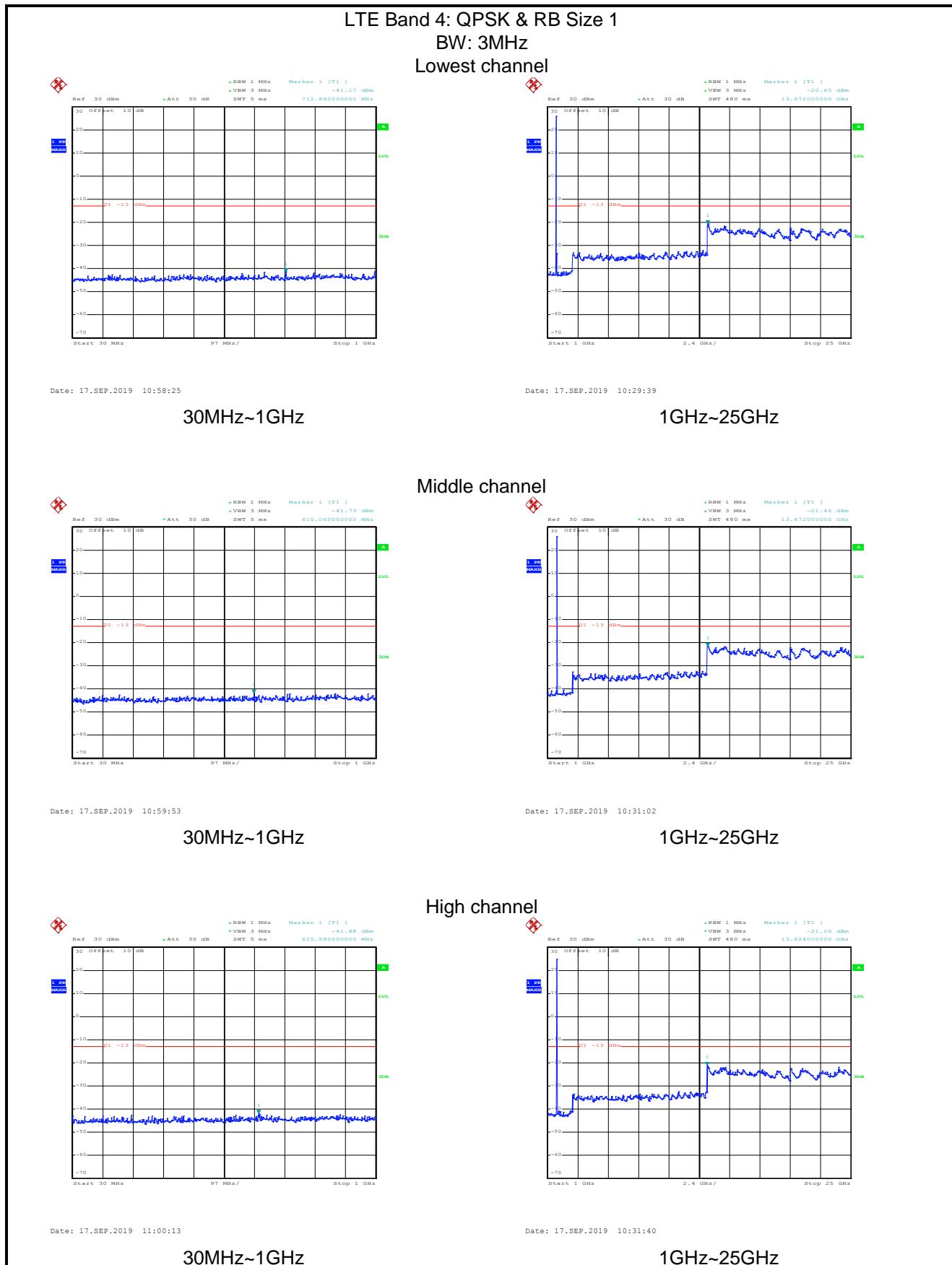


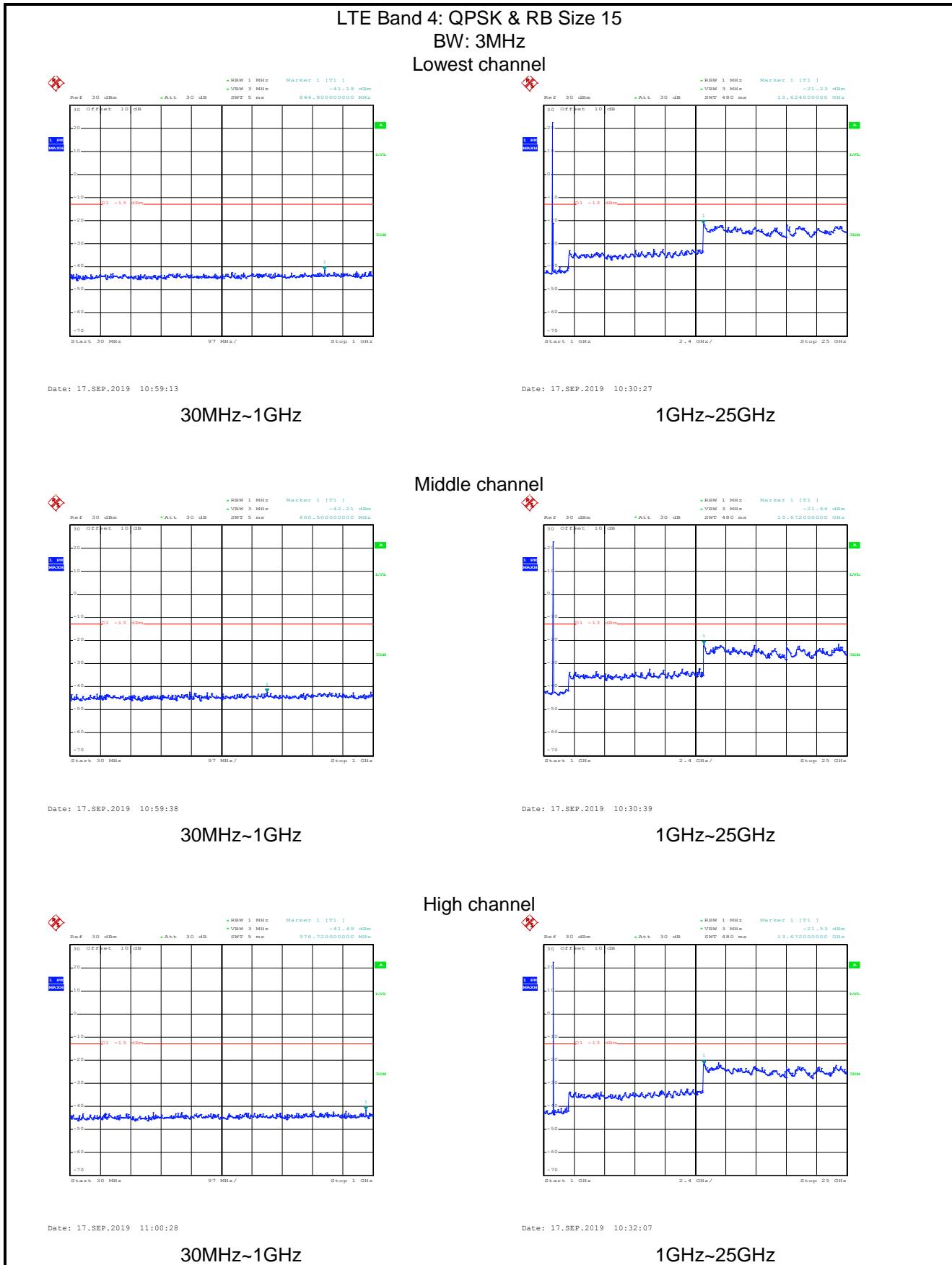


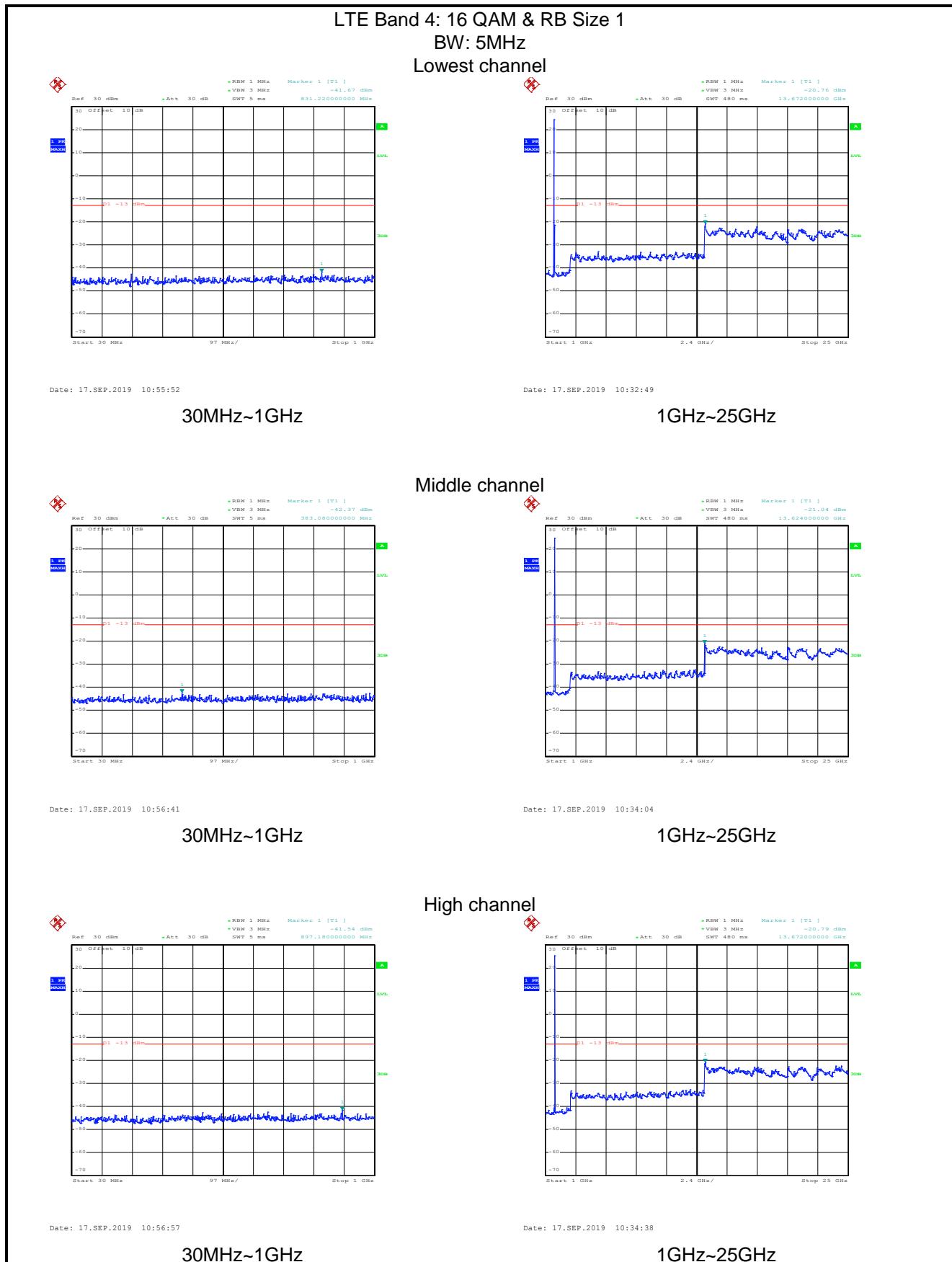


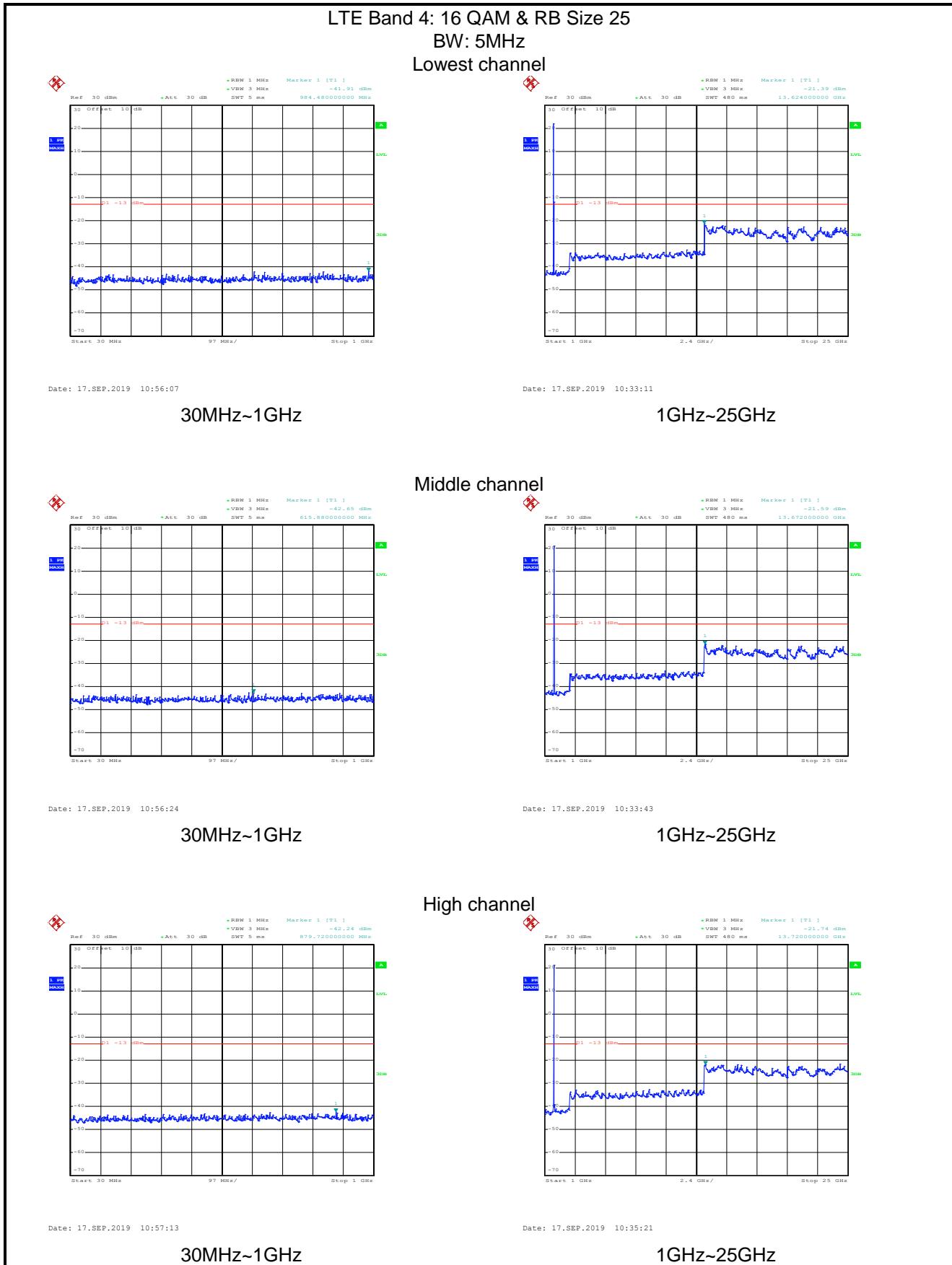


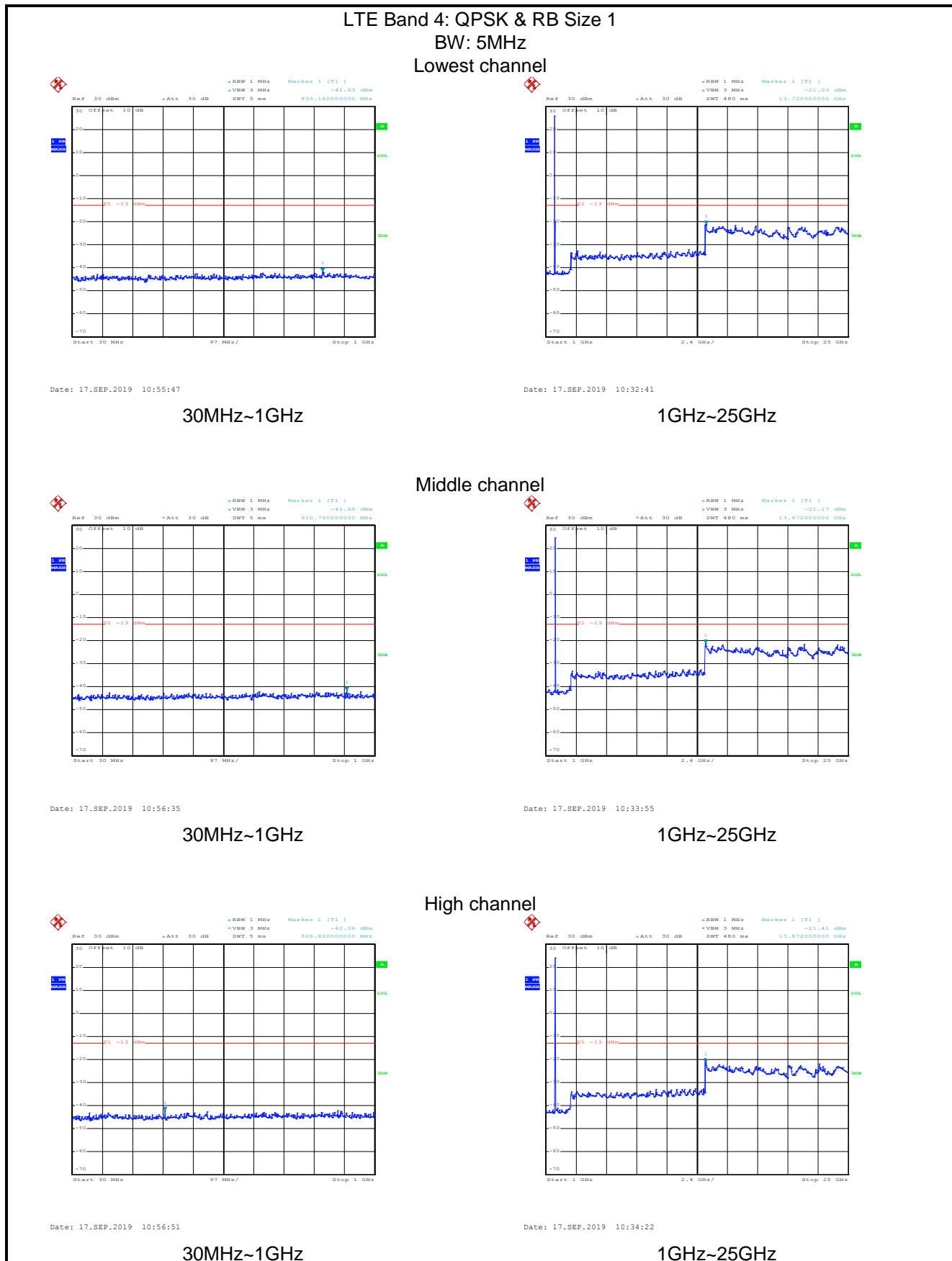


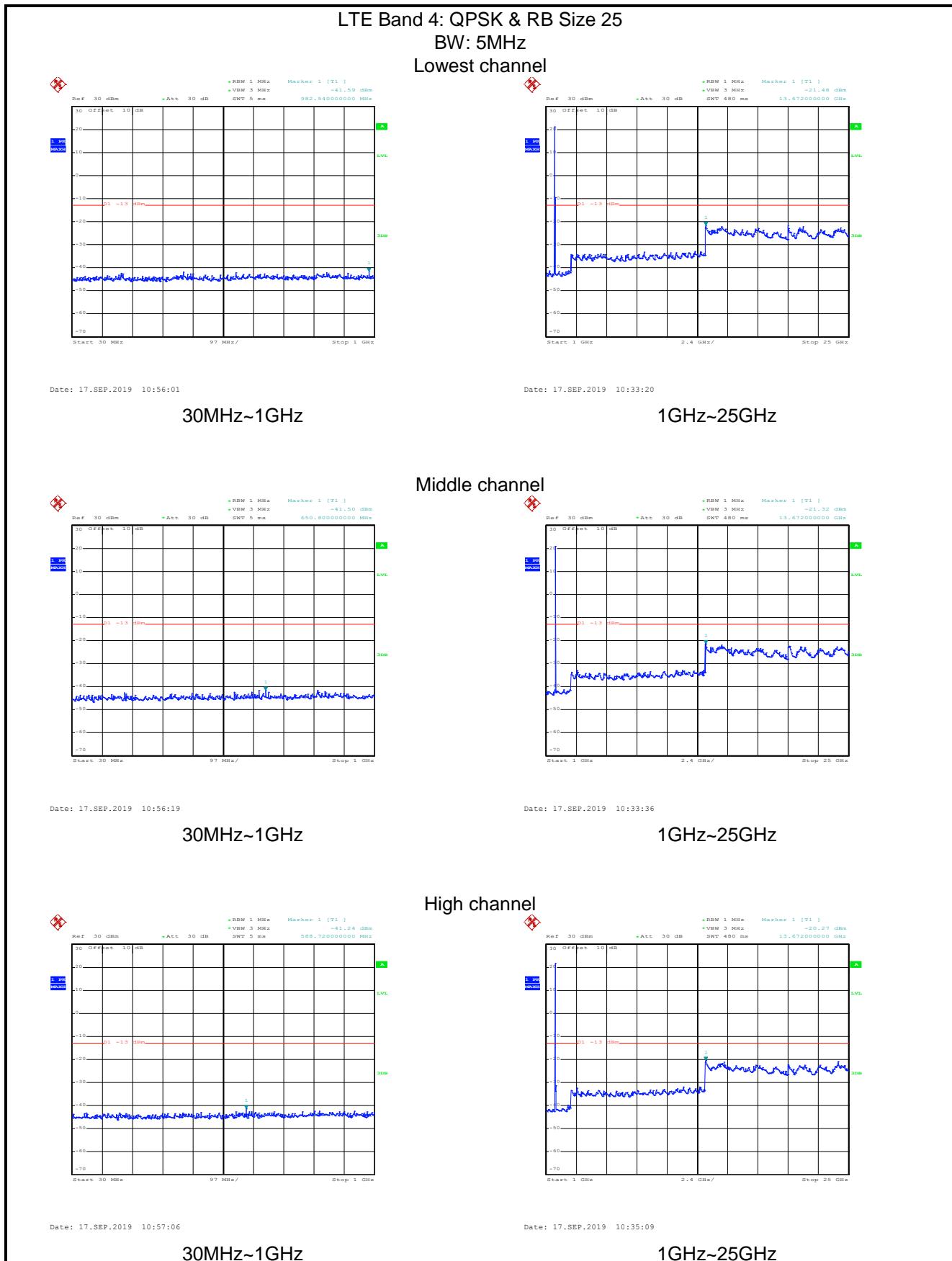


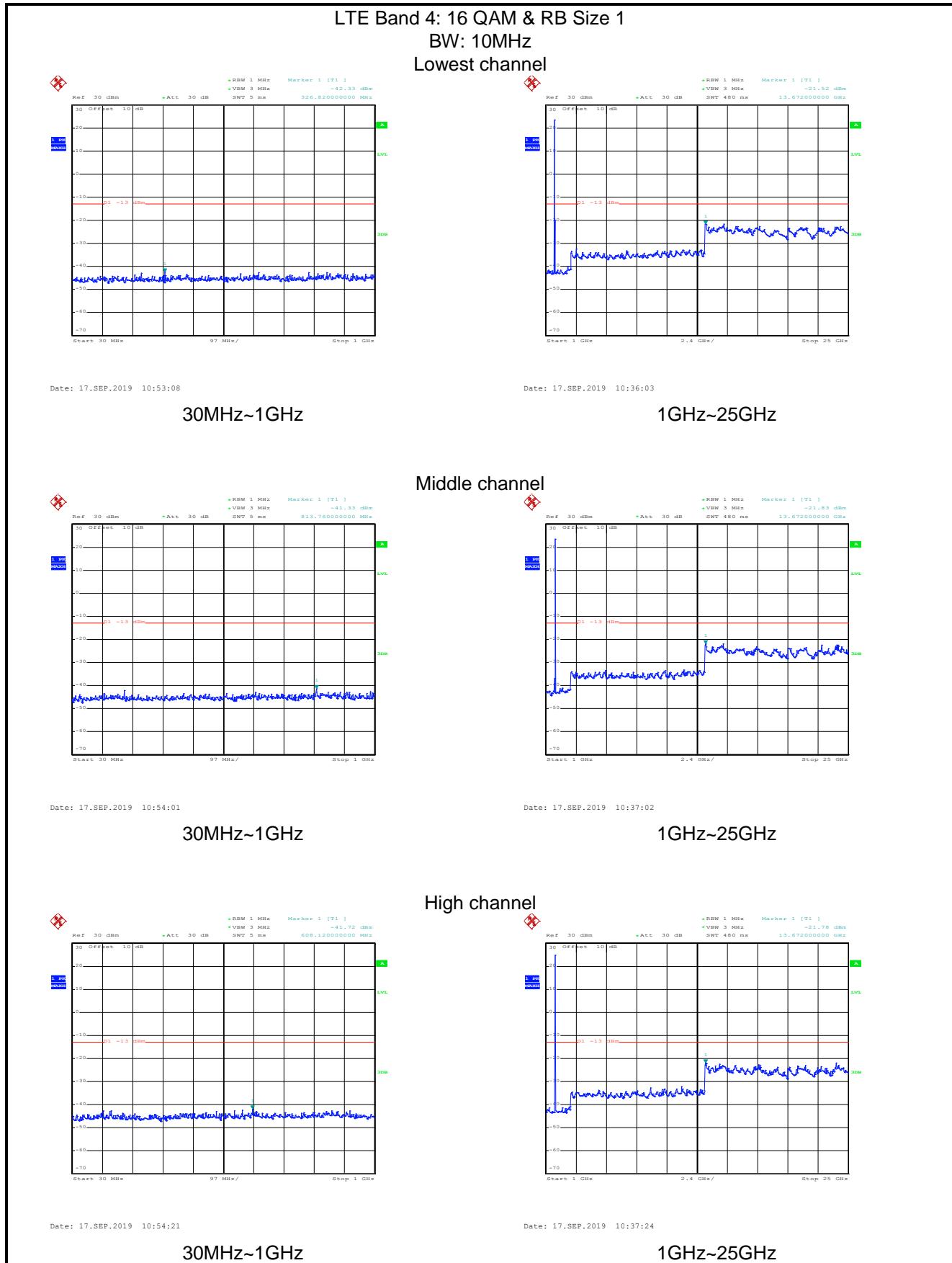


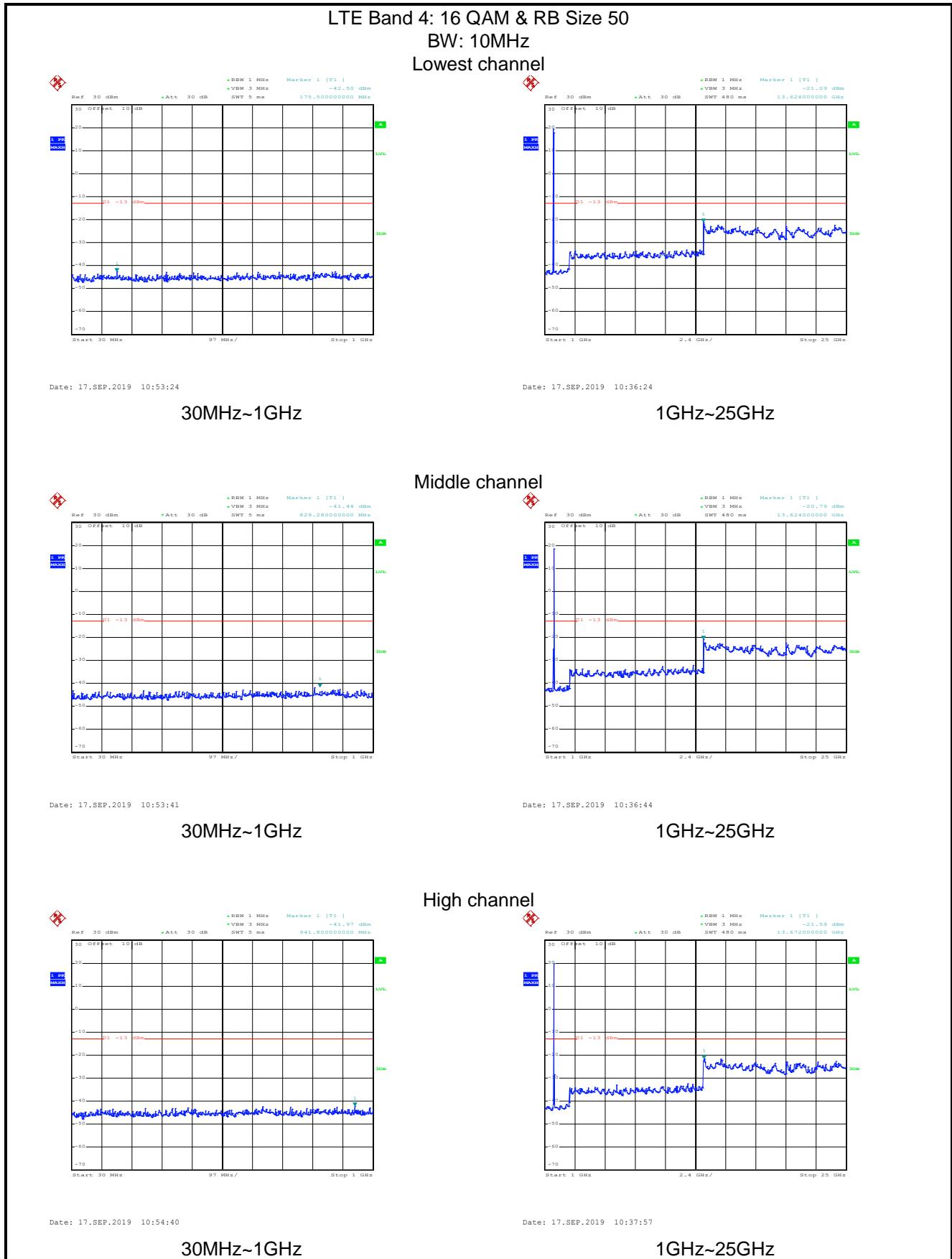


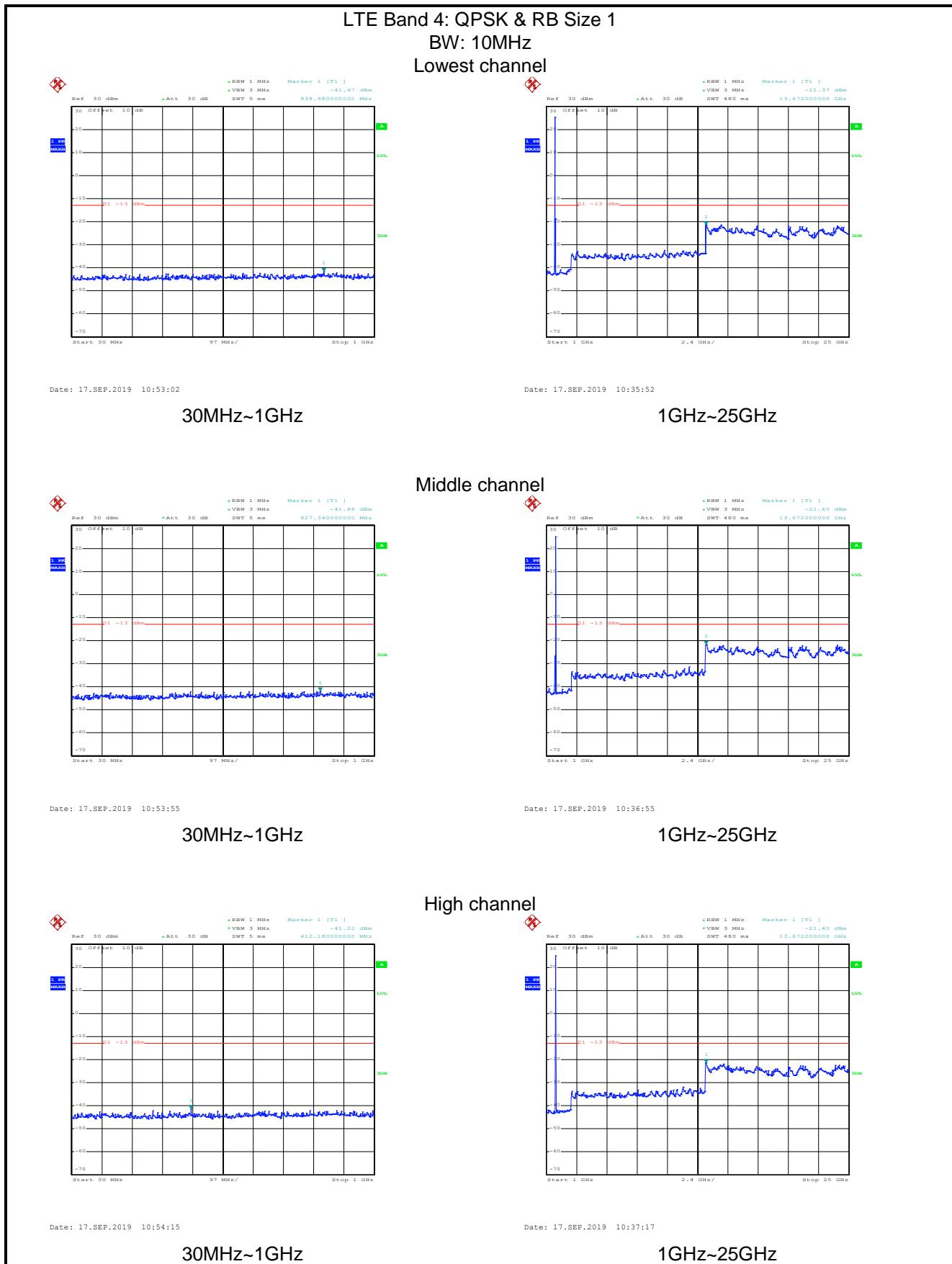


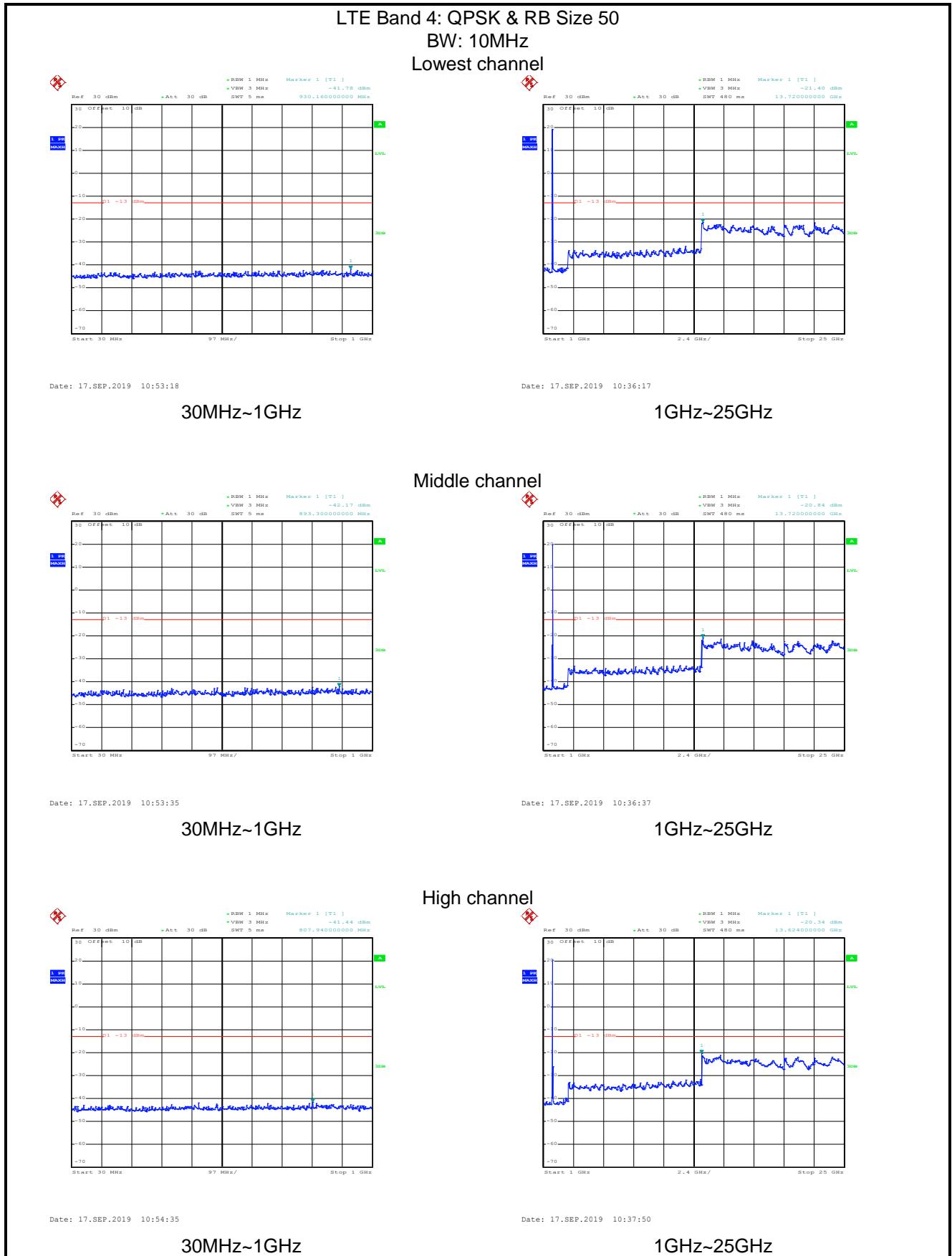


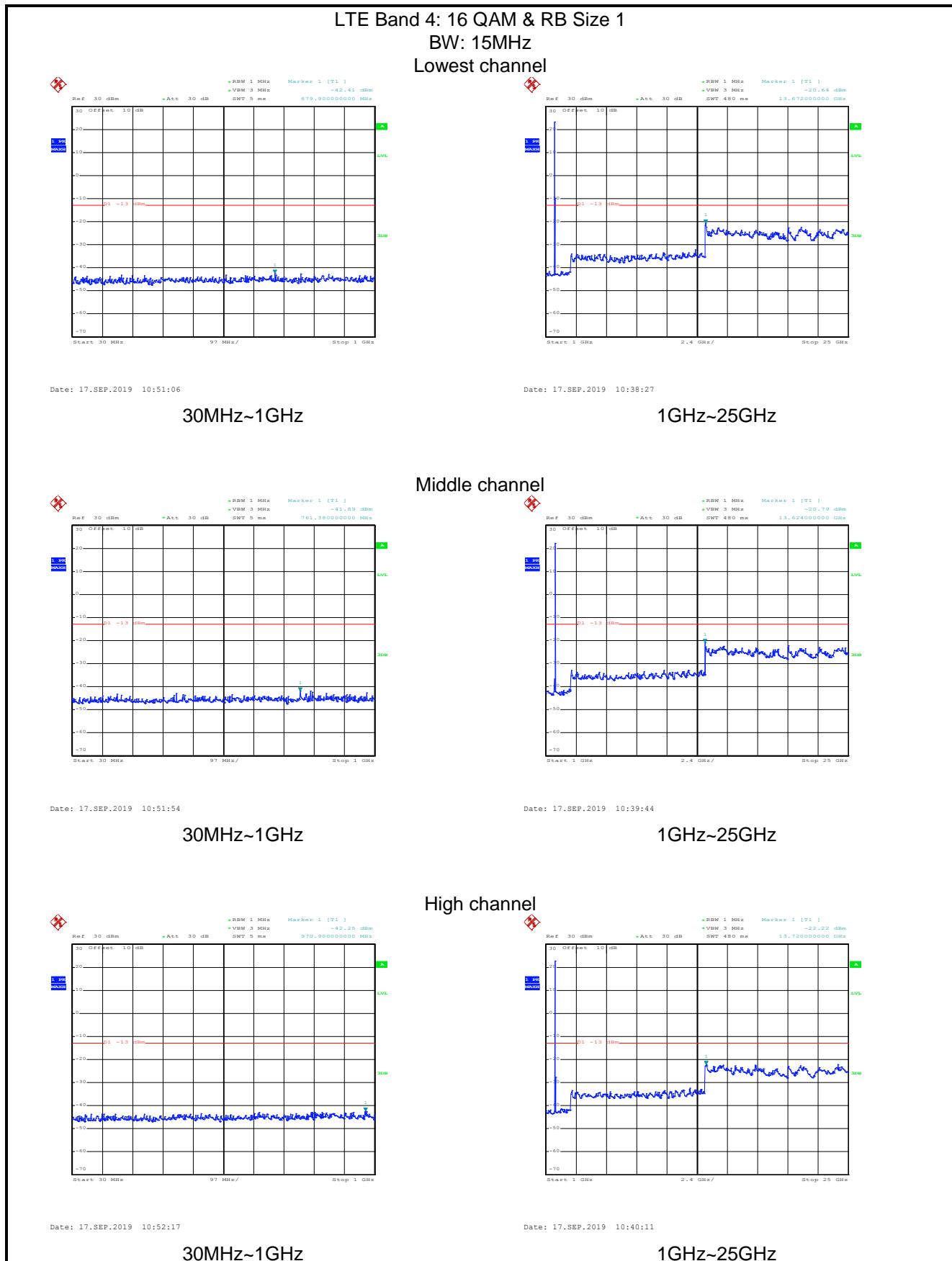


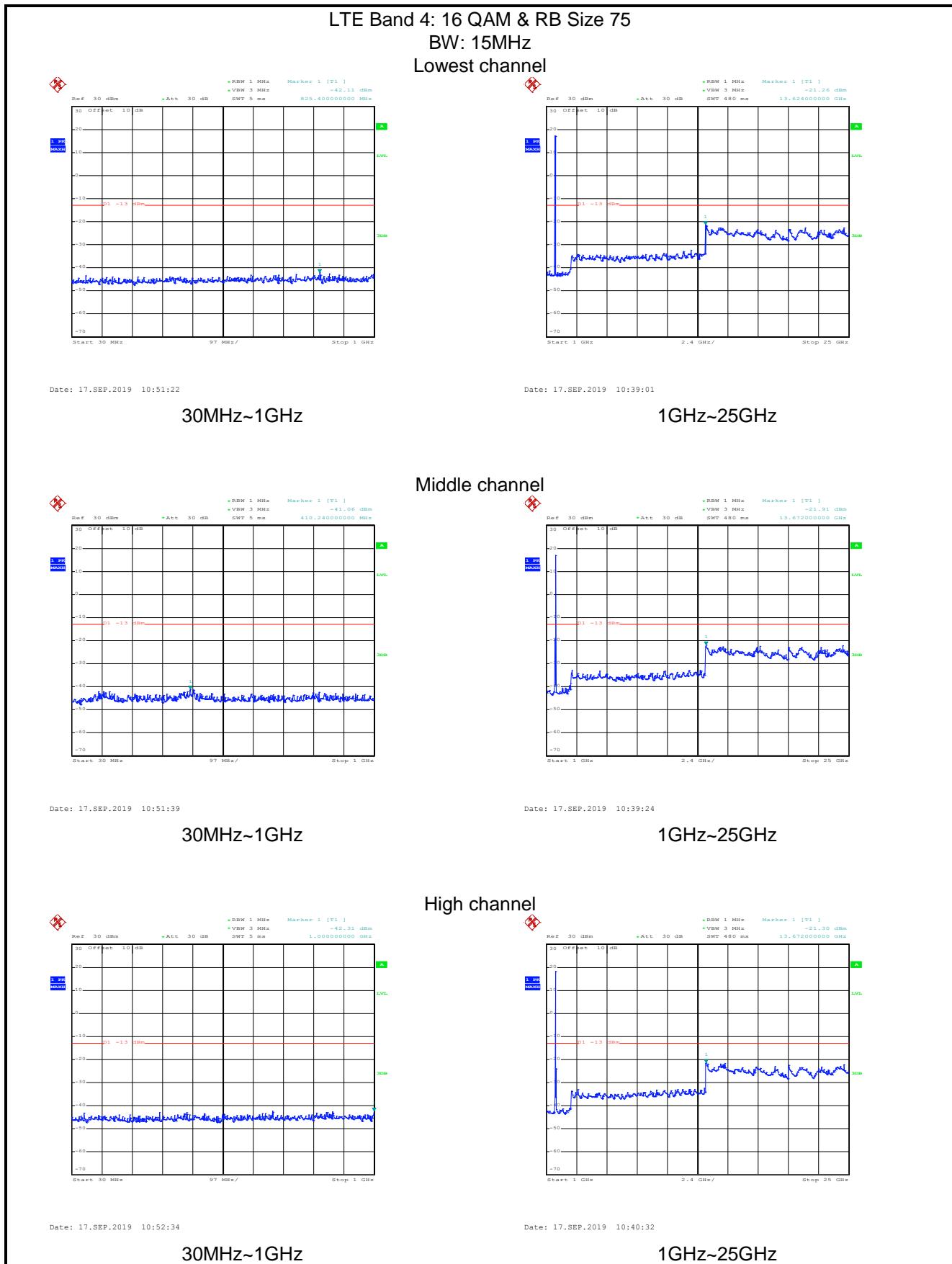


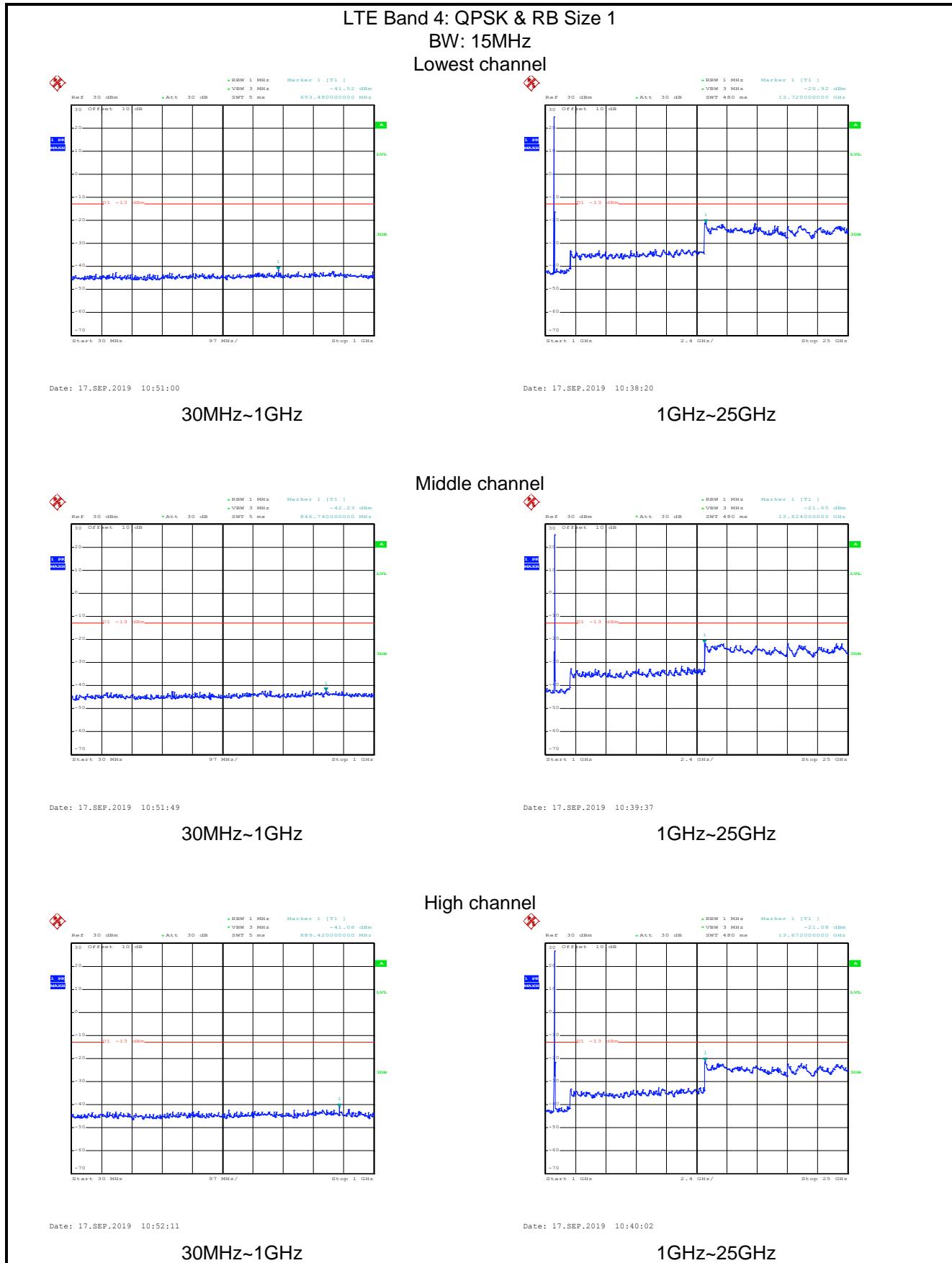


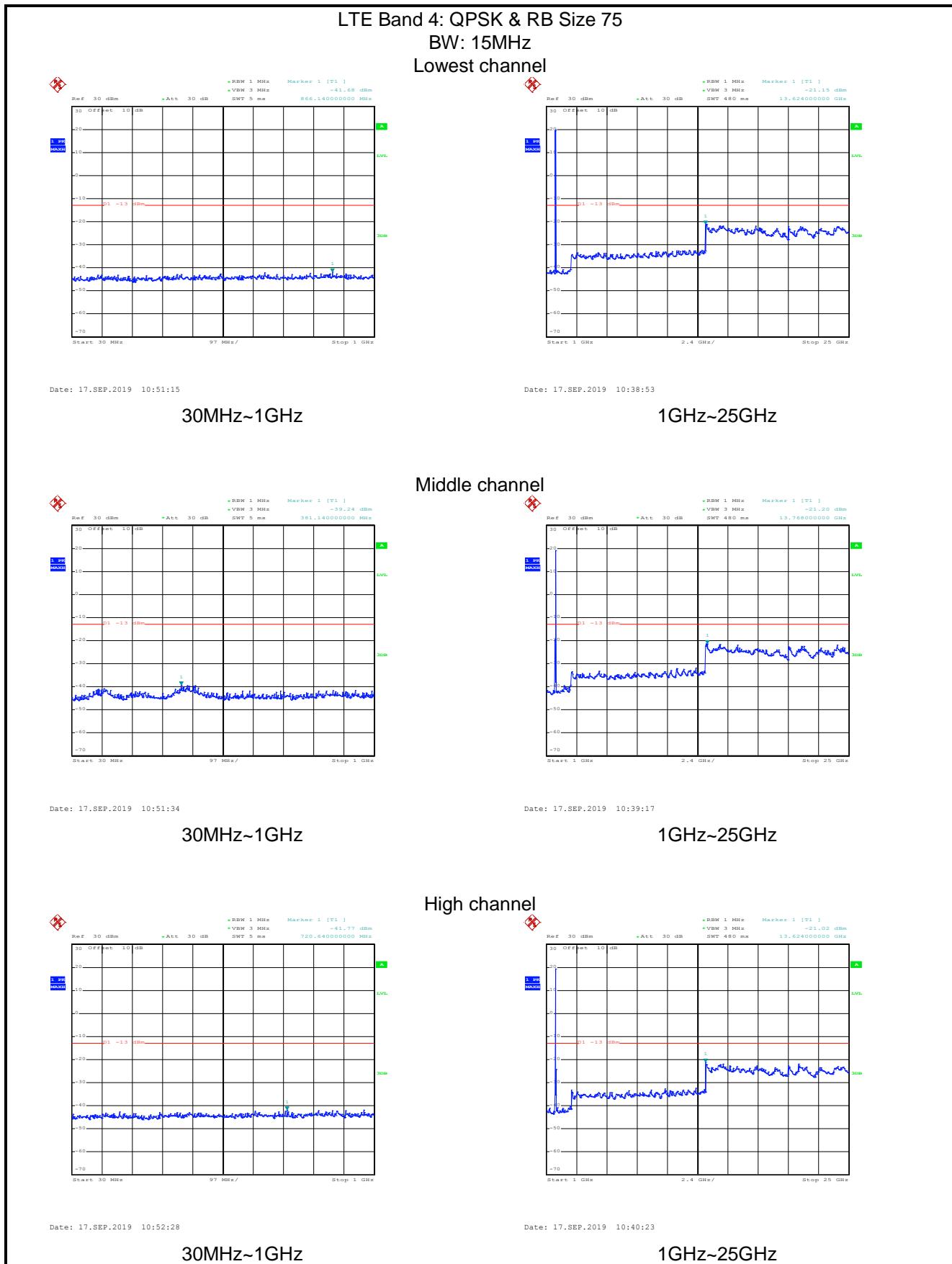


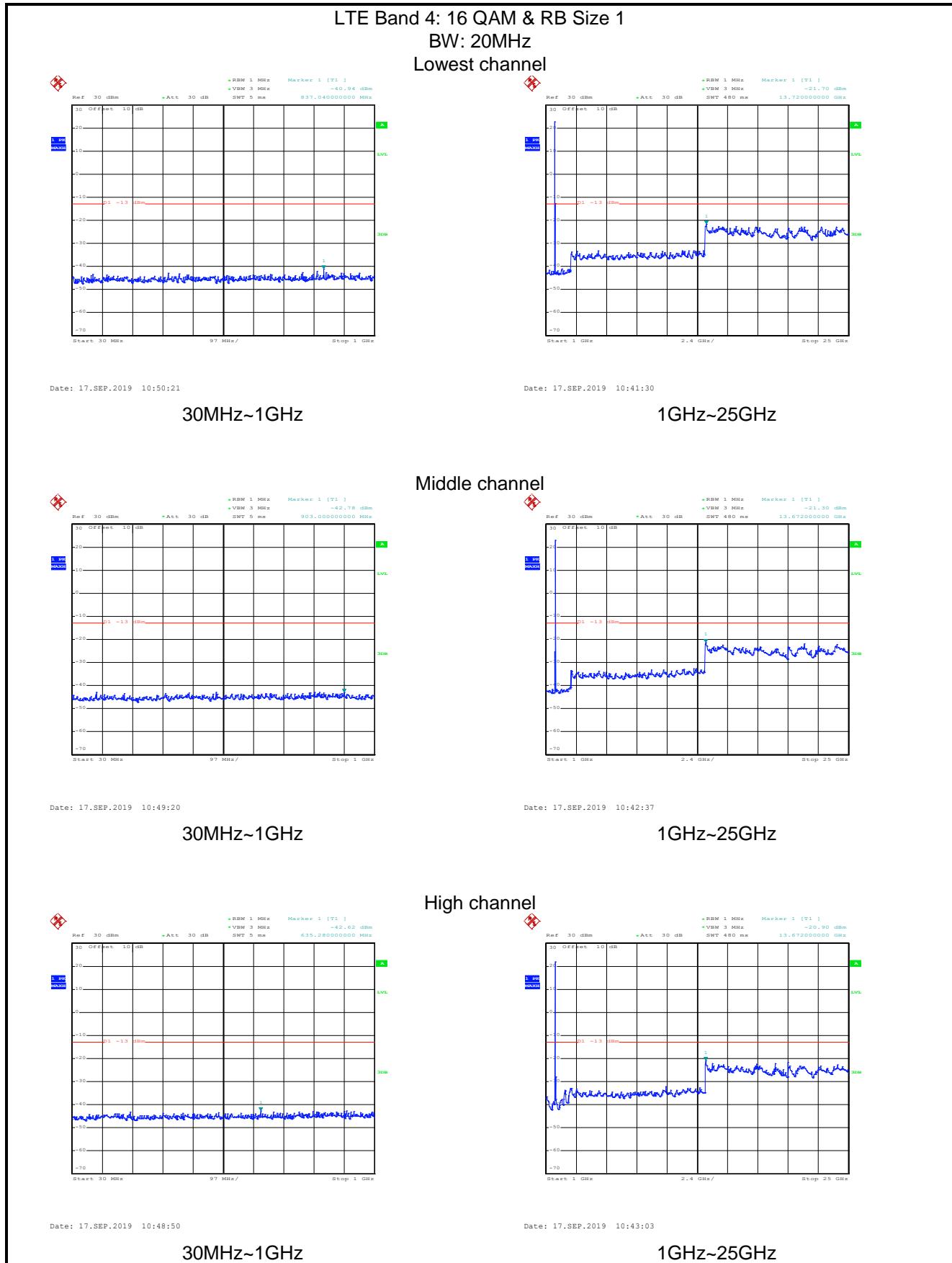


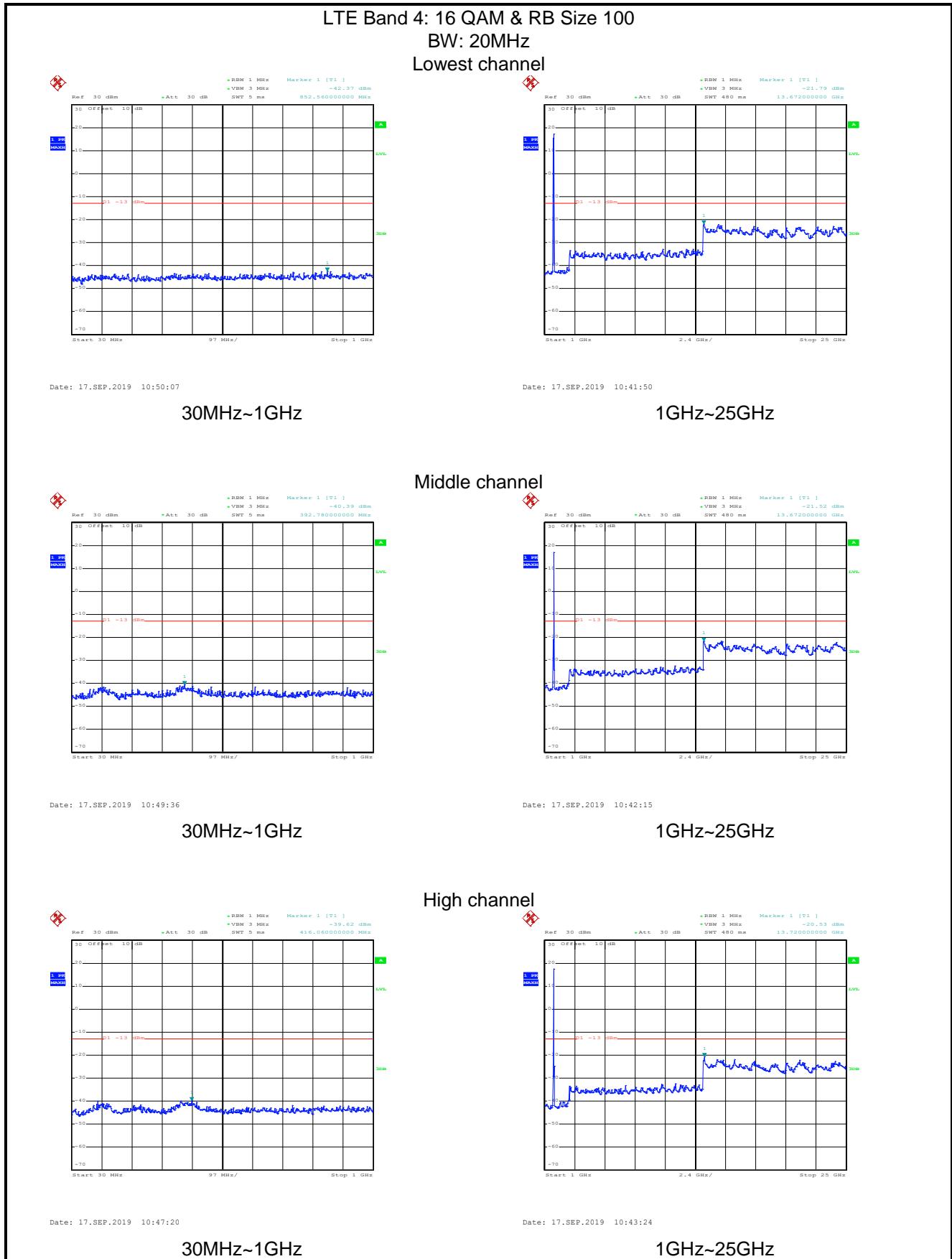


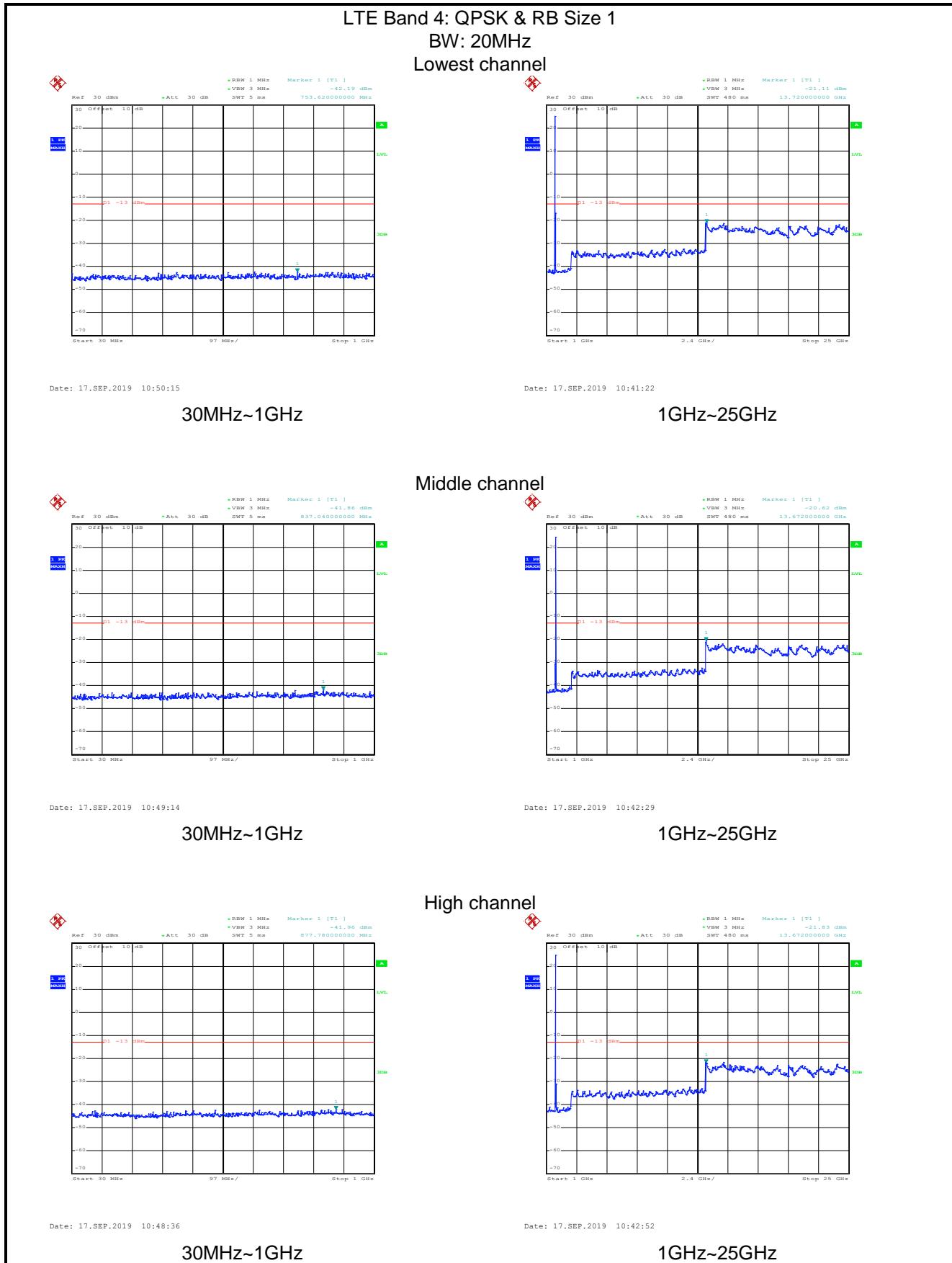


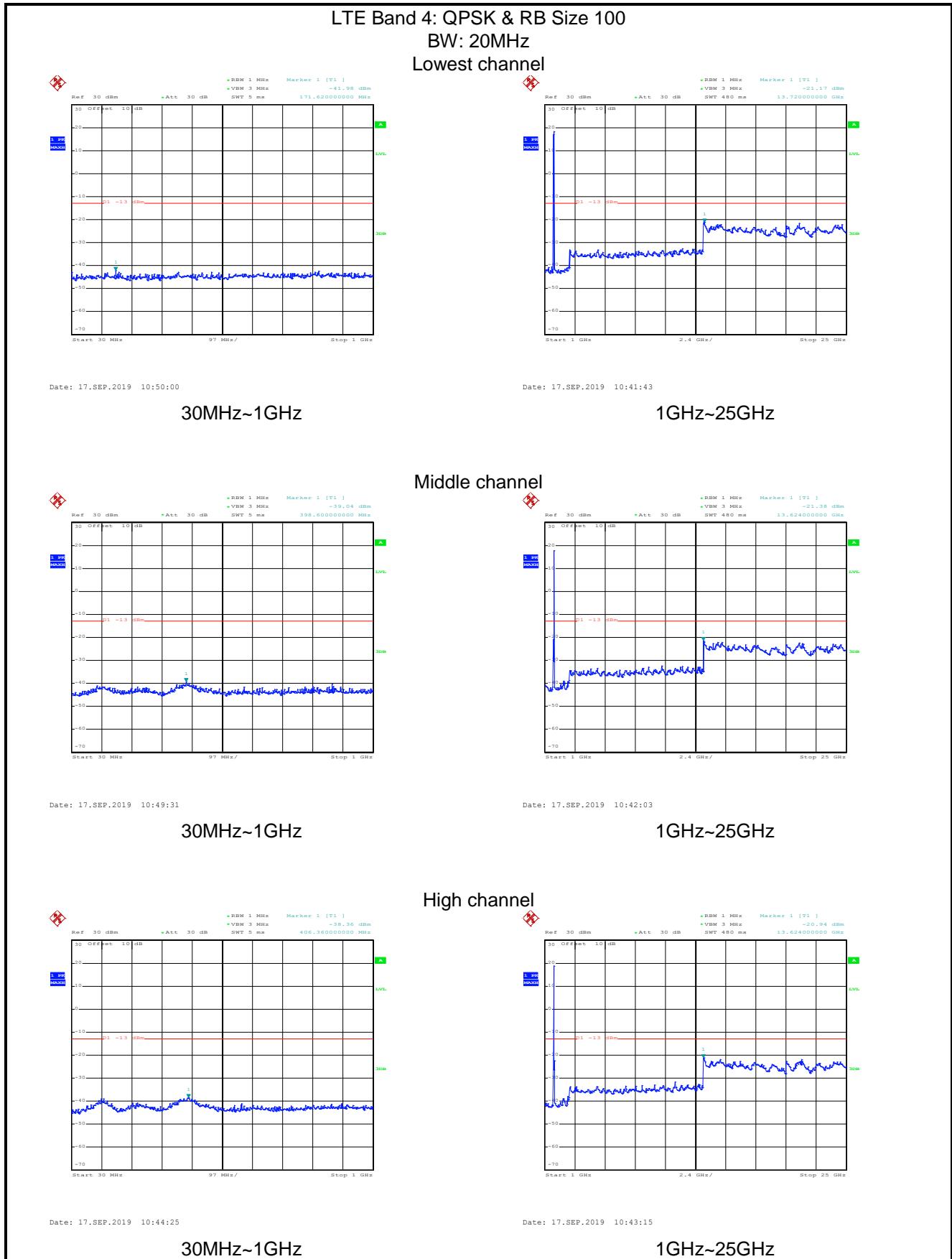






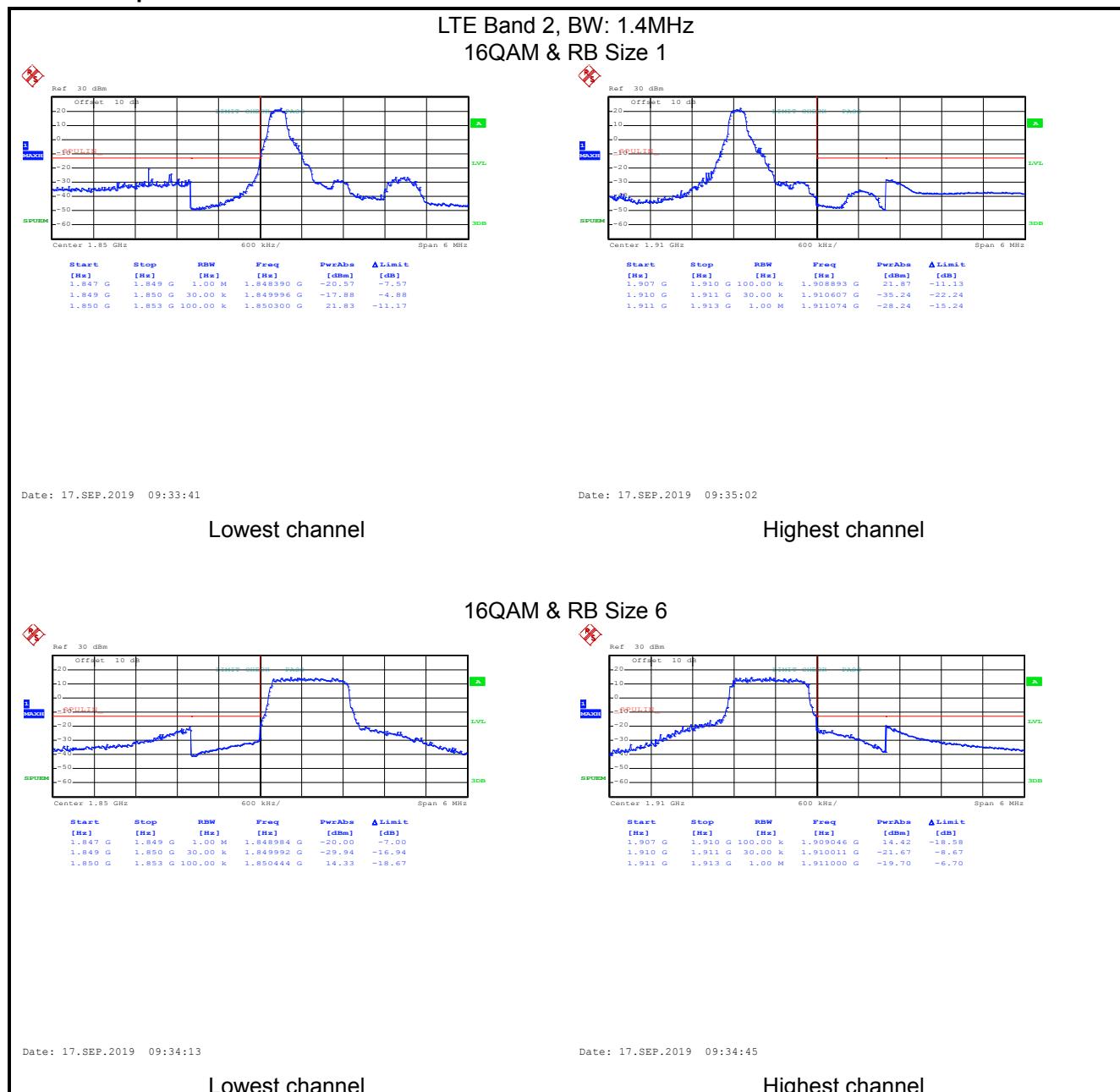




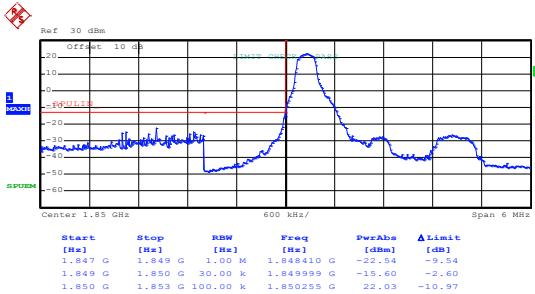


Band edge emission:

LTE Band 2 part:

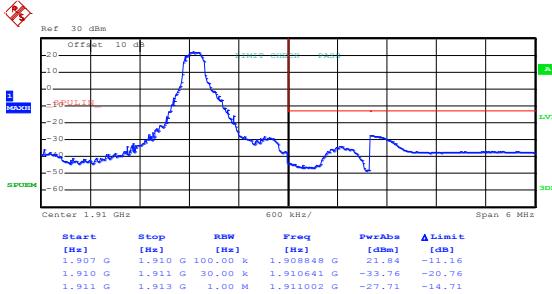


LTE Band 2, BW: 1.4MHz
QPSK & RB Size 1



Date: 17.SEP.2019 09:33:28

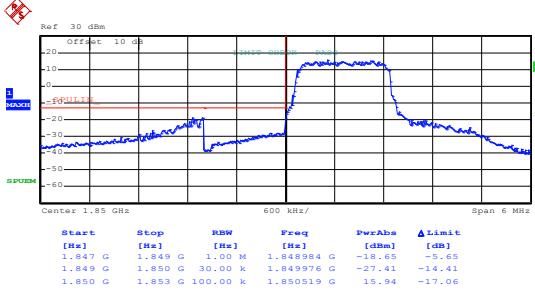
Lowest channel



Date: 17.SEP.2019 09:34:55

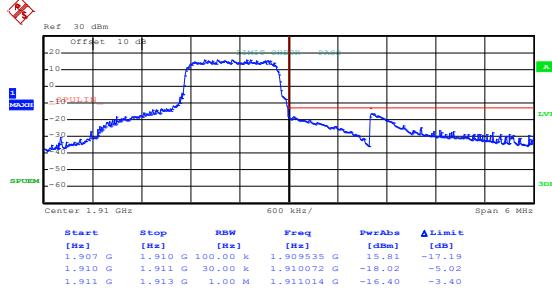
Highest channel

QPSK & RB Size 6



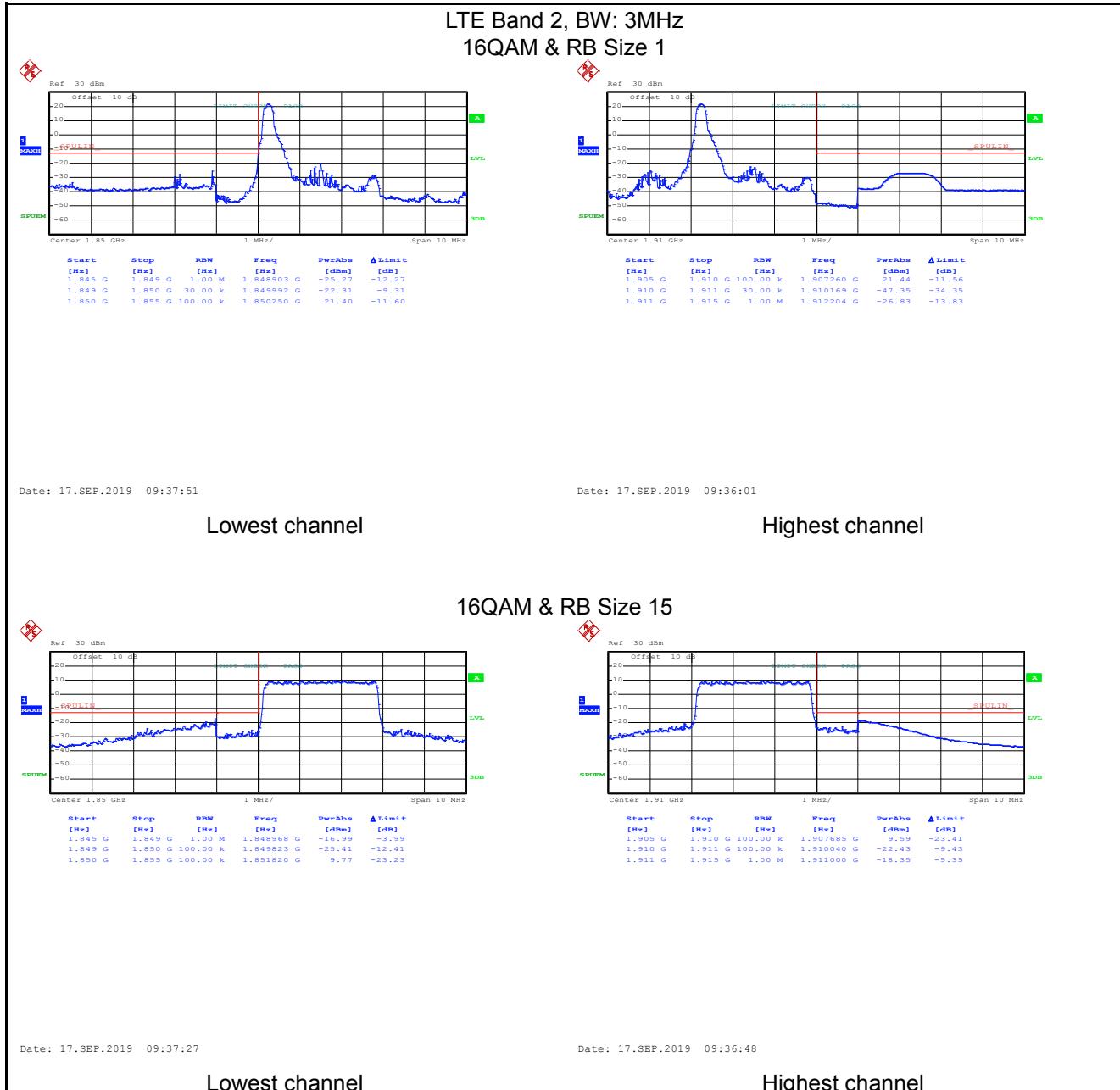
Date: 17.SEP.2019 09:34:04

Lowest channel

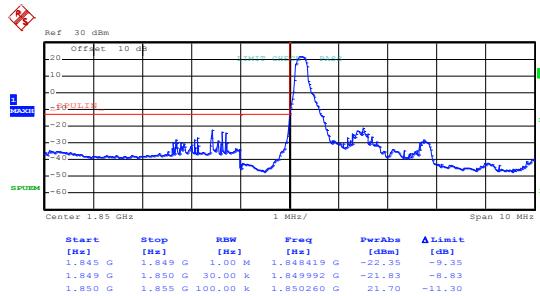


Date: 17.SEP.2019 09:34:37

Highest channel

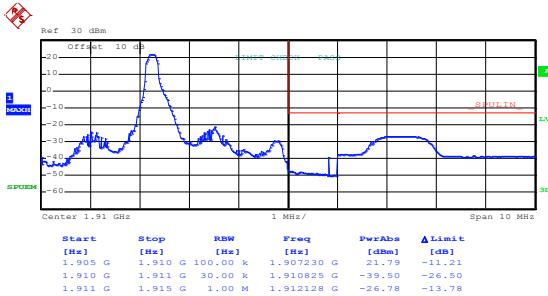


LTE Band 2, BW: 3MHz
QPSK & RB Size 1



Date: 17.SEP.2019 09:37:41

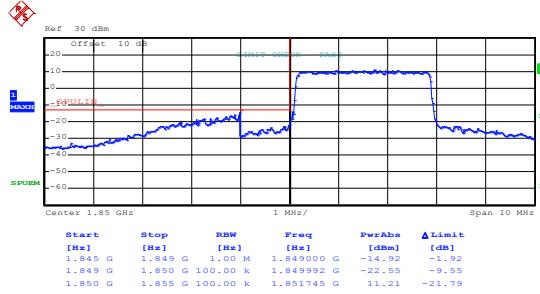
Lowest channel



Date: 17.SEP.2019 09:35:47

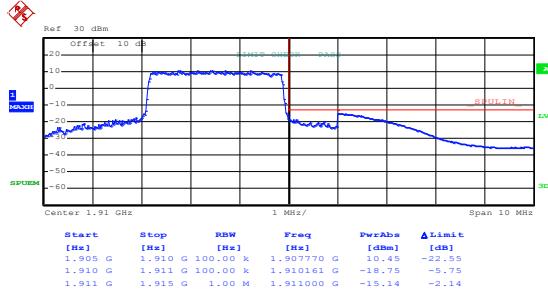
Highest channel

QPSK & RB Size 15



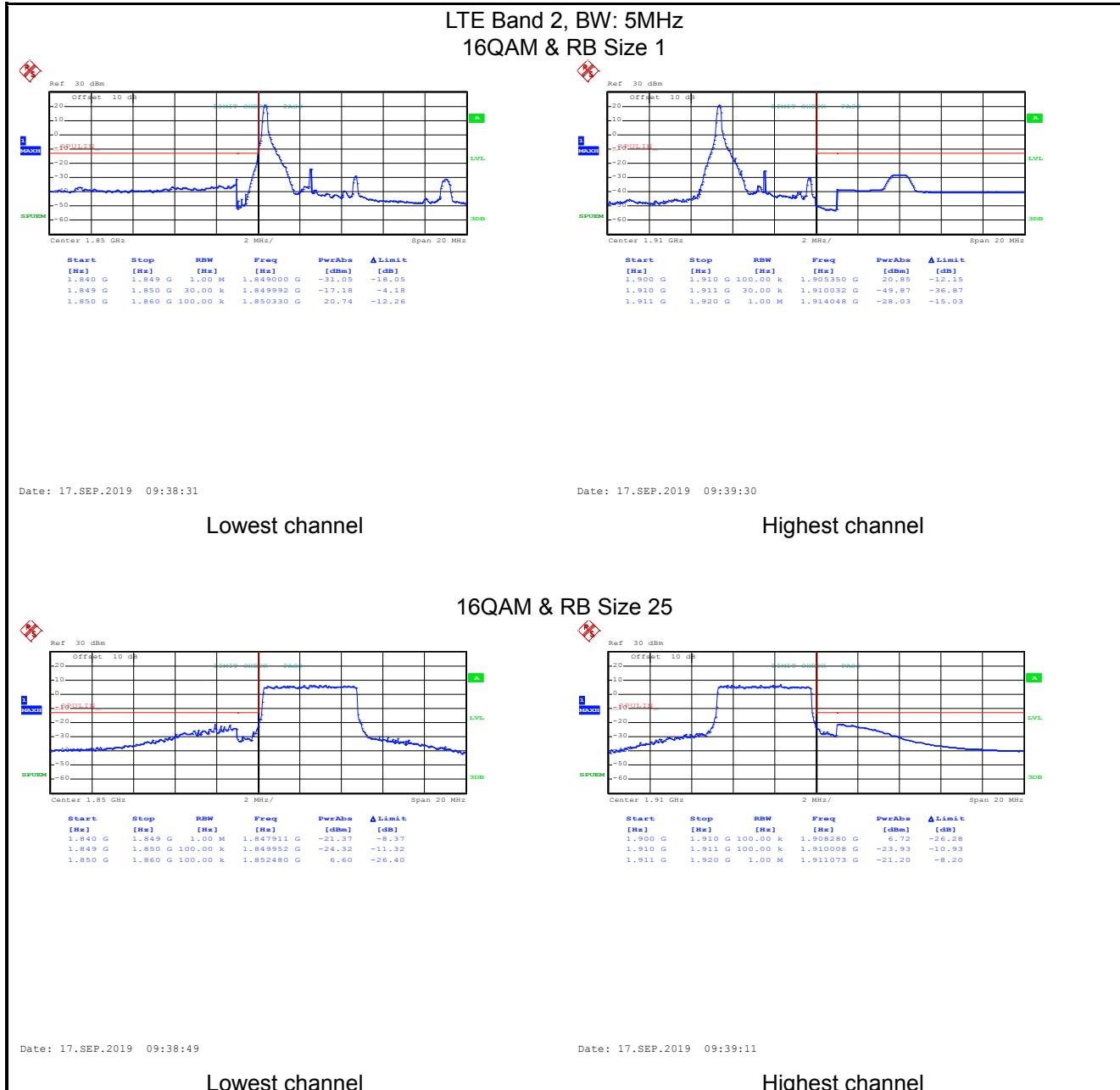
Date: 17.SEP.2019 09:37:20

Lowest channel

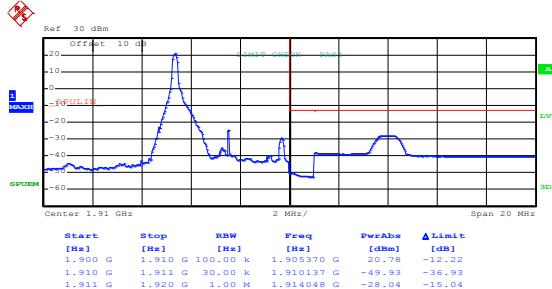
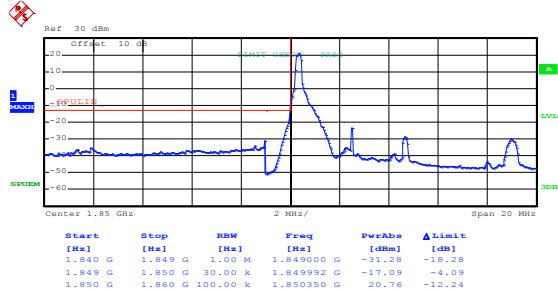


Date: 17.SEP.2019 09:36:42

Highest channel



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

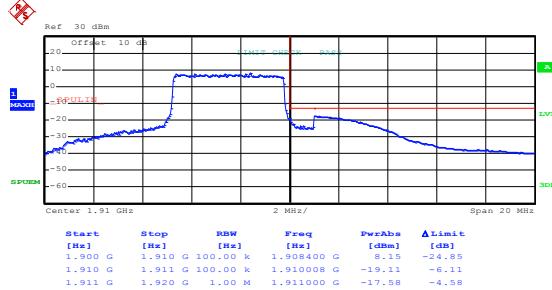
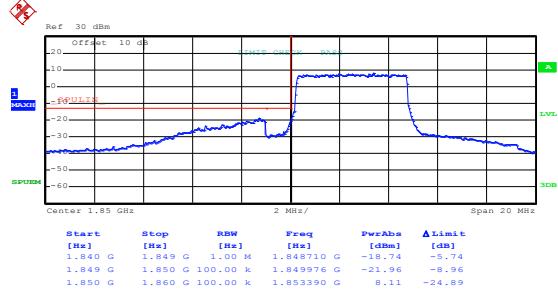


Date: 17.SEP.2019 09:38:26

Date: 17.SEP.2019 09:39:25

Lowest channel**Highest channel**

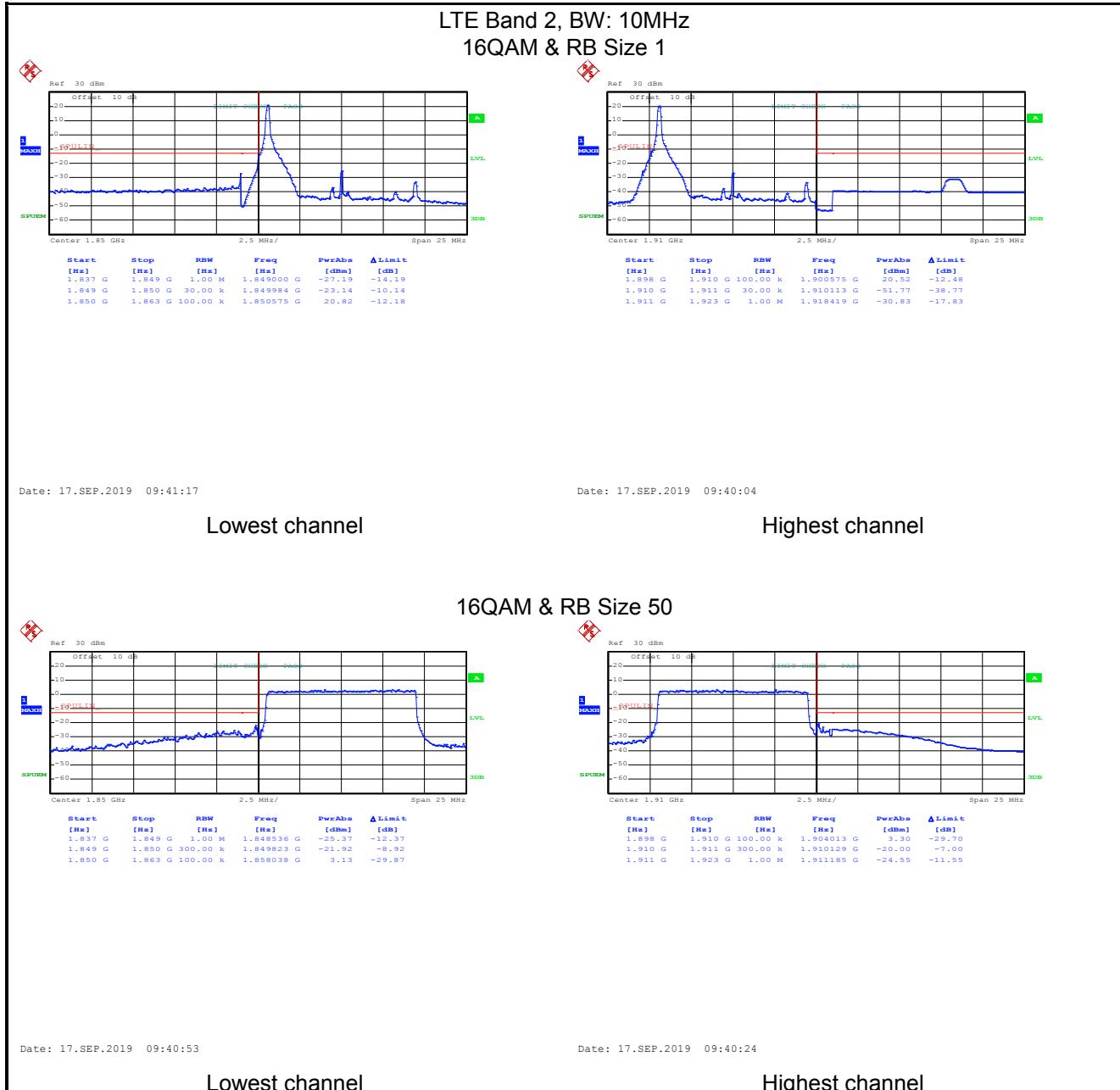
QPSK & RB Size 25



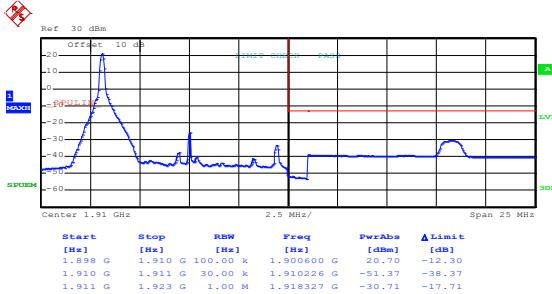
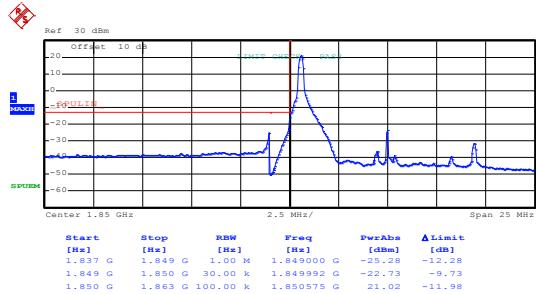
Date: 17.SEP.2019 09:38:44

Date: 17.SEP.2019 09:39:06

Lowest channel**Highest channel**



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



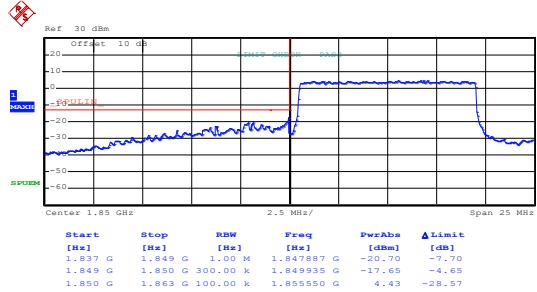
Date: 17.SEP.2019 09:41:11

Date: 17.SEP.2019 09:40:00

Lowest channel

Highest channel

QPSK & RB Size 50

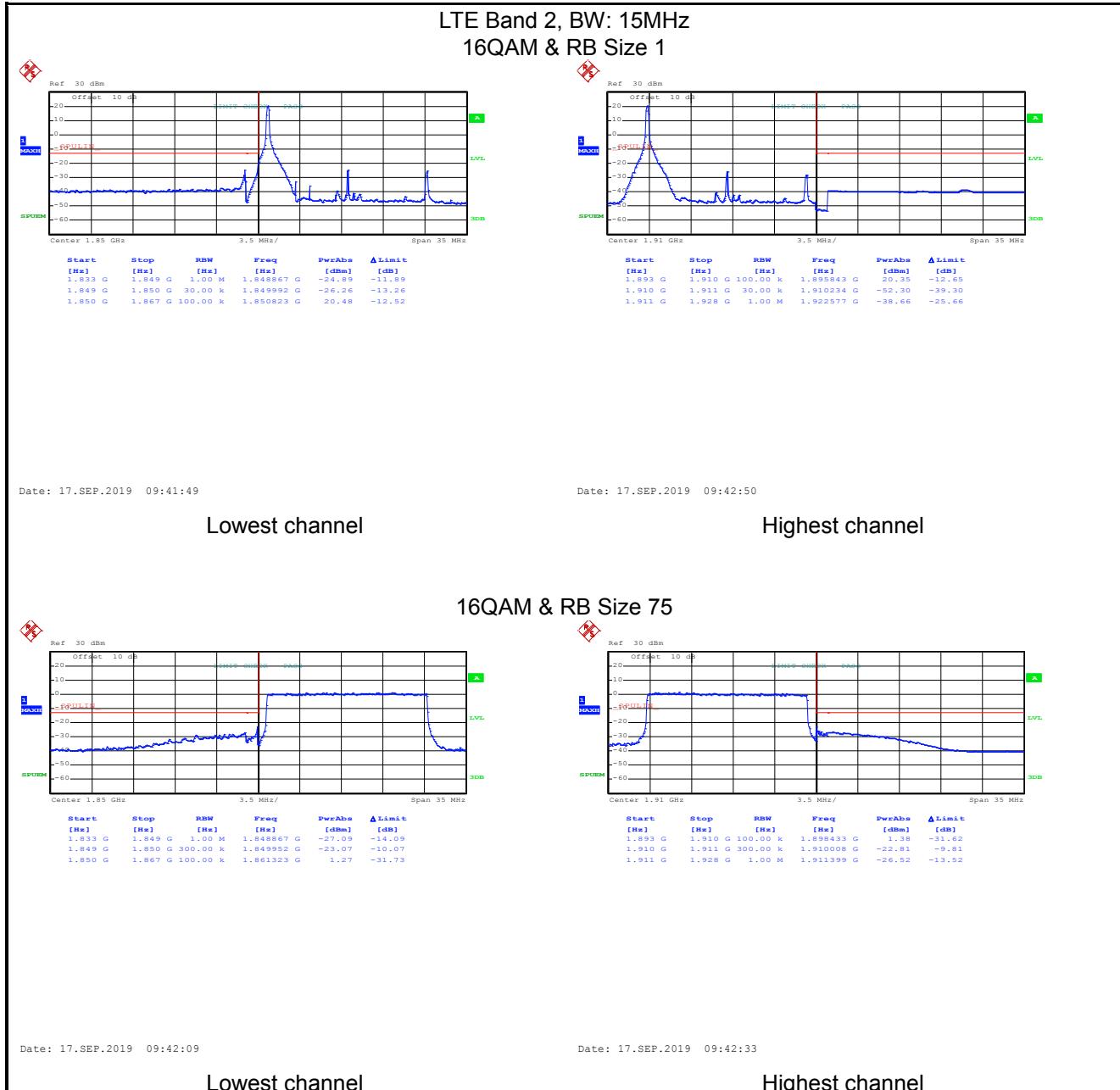


Date: 17.SEP.2019 09:40:46

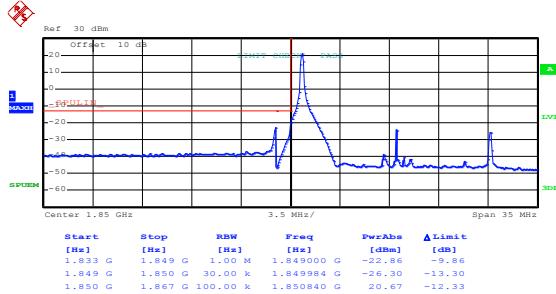
Date: 17.SEP.2019 09:40:19

Lowest channel

Highest channel

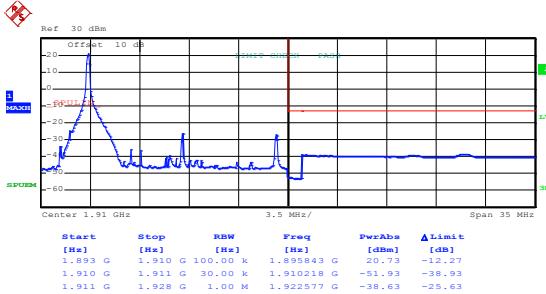


LTE Band 2, BW: 15MHz
QPSK & RB Size 1



Date: 17.SEP.2019 09:41:44

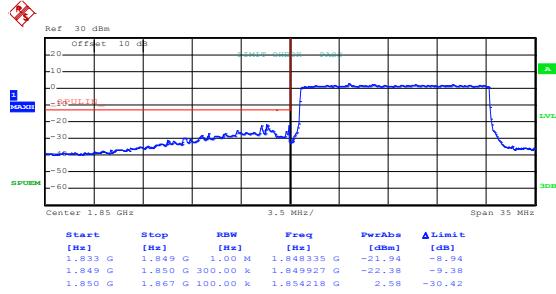
Lowest channel



Date: 17.SEP.2019 09:42:46

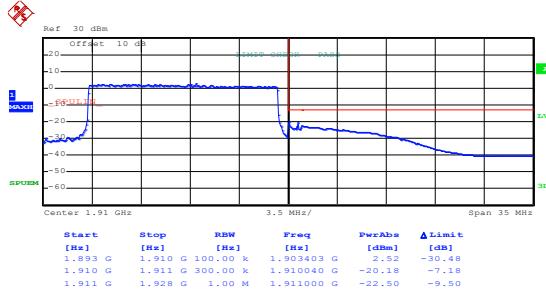
Highest channel

QPSK & RB Size 75



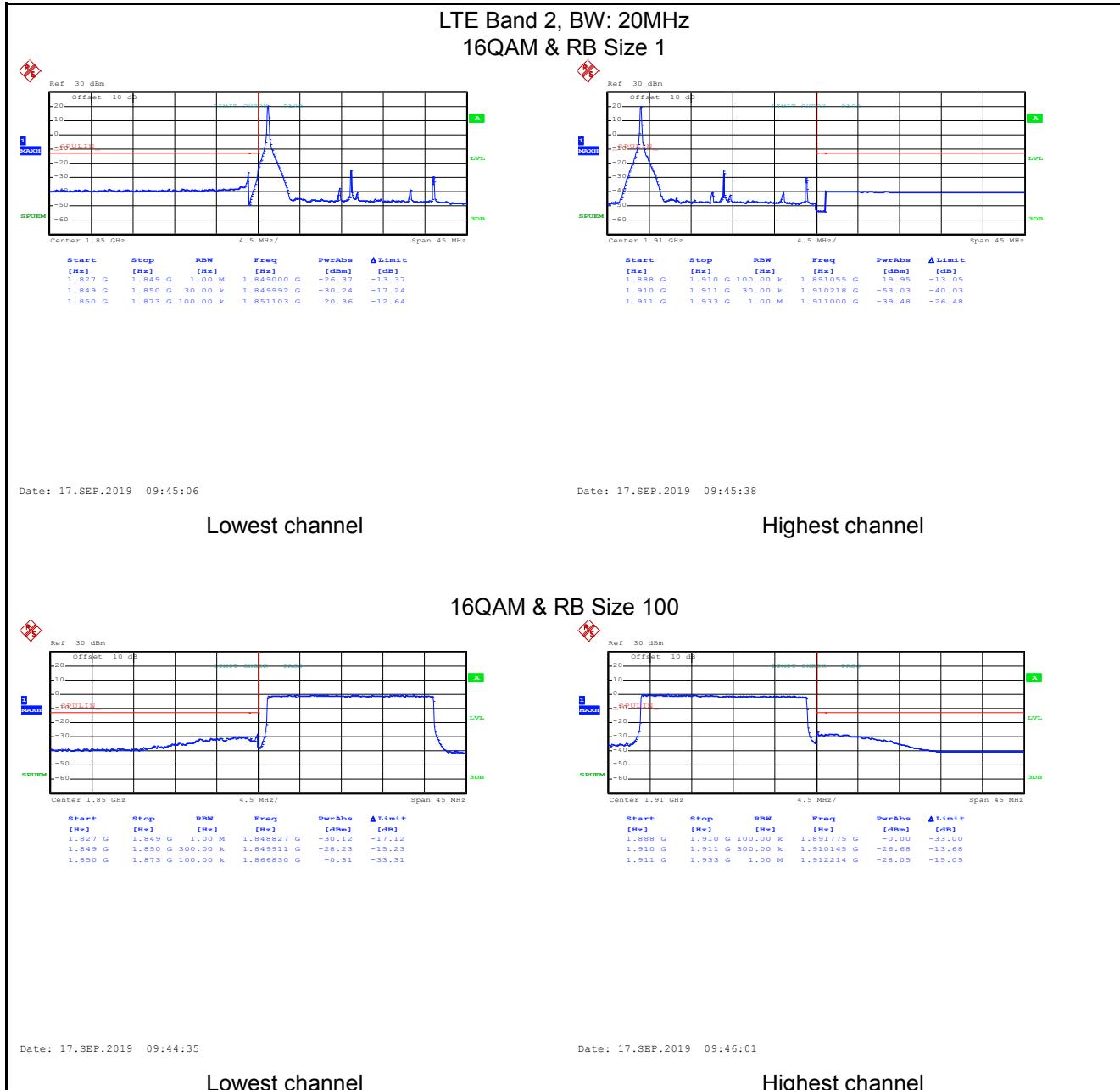
Date: 17.SEP.2019 09:42:02

Lowest channel

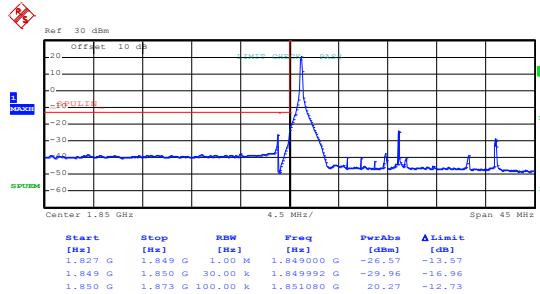


Date: 17.SEP.2019 09:42:27

Highest channel

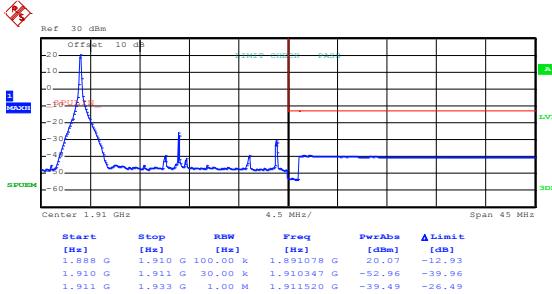


LTE Band 2, BW: 20MHz
QPSK & RB Size 1



Date: 17.SEP.2019 09:44:53

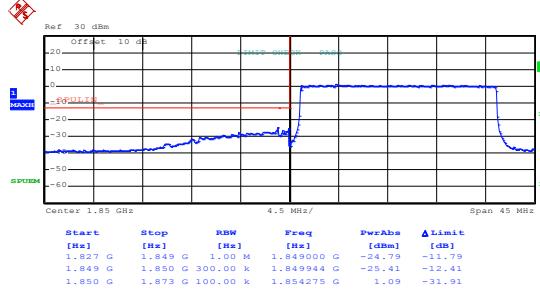
Lowest channel



Date: 17.SEP.2019 09:45:33

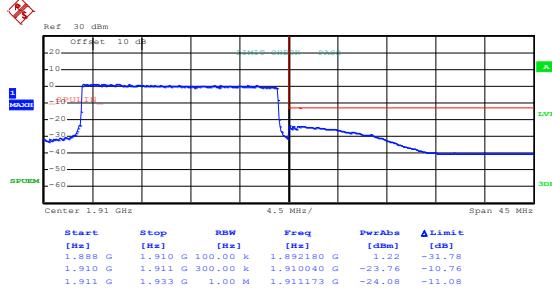
Highest channel

QPSK & RB Size 100



Date: 17.SEP.2019 09:44:26

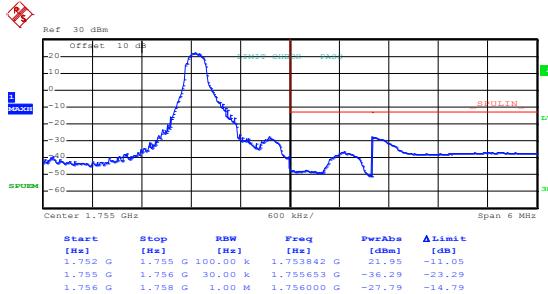
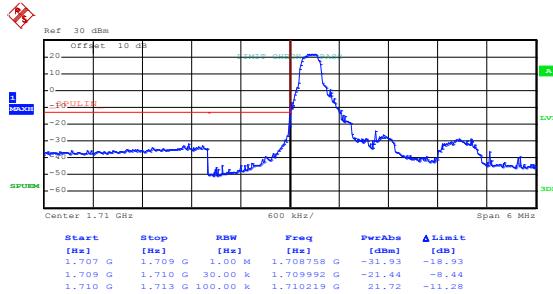
Lowest channel



Date: 17.SEP.2019 09:45:54

Highest channel

LTE Band 4 part:

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

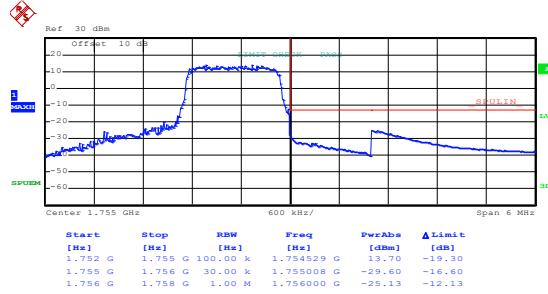
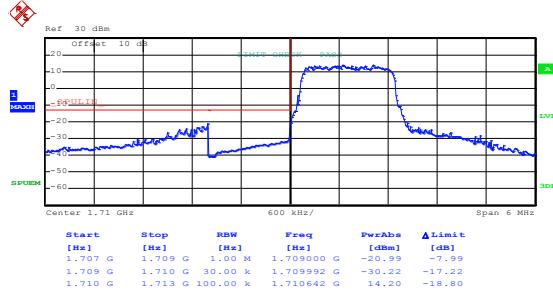
Date: 17.SEP.2019 09:47:16

Date: 17.SEP.2019 09:48:18

Lowest channel

Highest channel

16QAM & RB Size 6



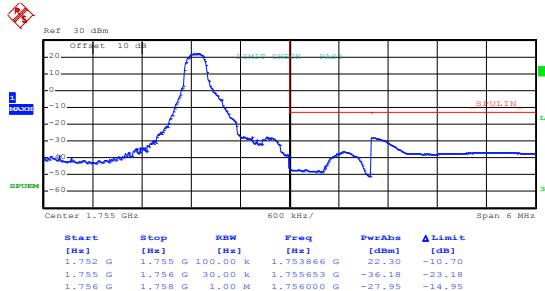
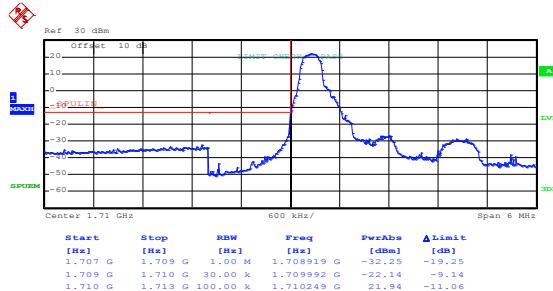
Date: 17.SEP.2019 09:47:37

Date: 17.SEP.2019 09:48:00

Lowest channel

Highest channel

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



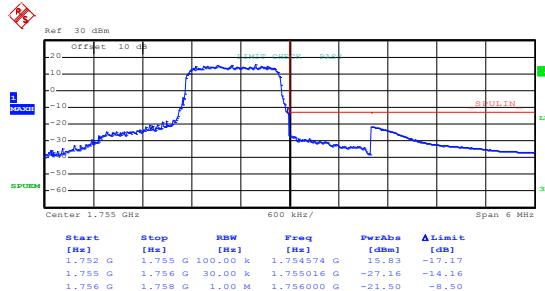
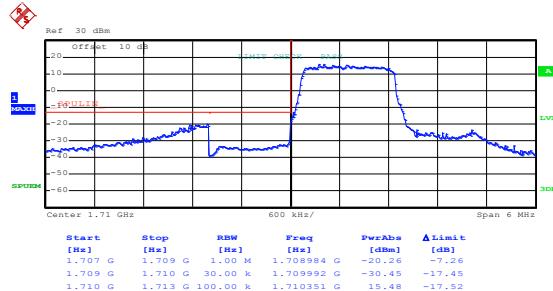
Date: 17.SEP.2019 09:47:23

Date: 17.SEP.2019 09:48:14

Lowest channel

Highest channel

QPSK & RB Size 6

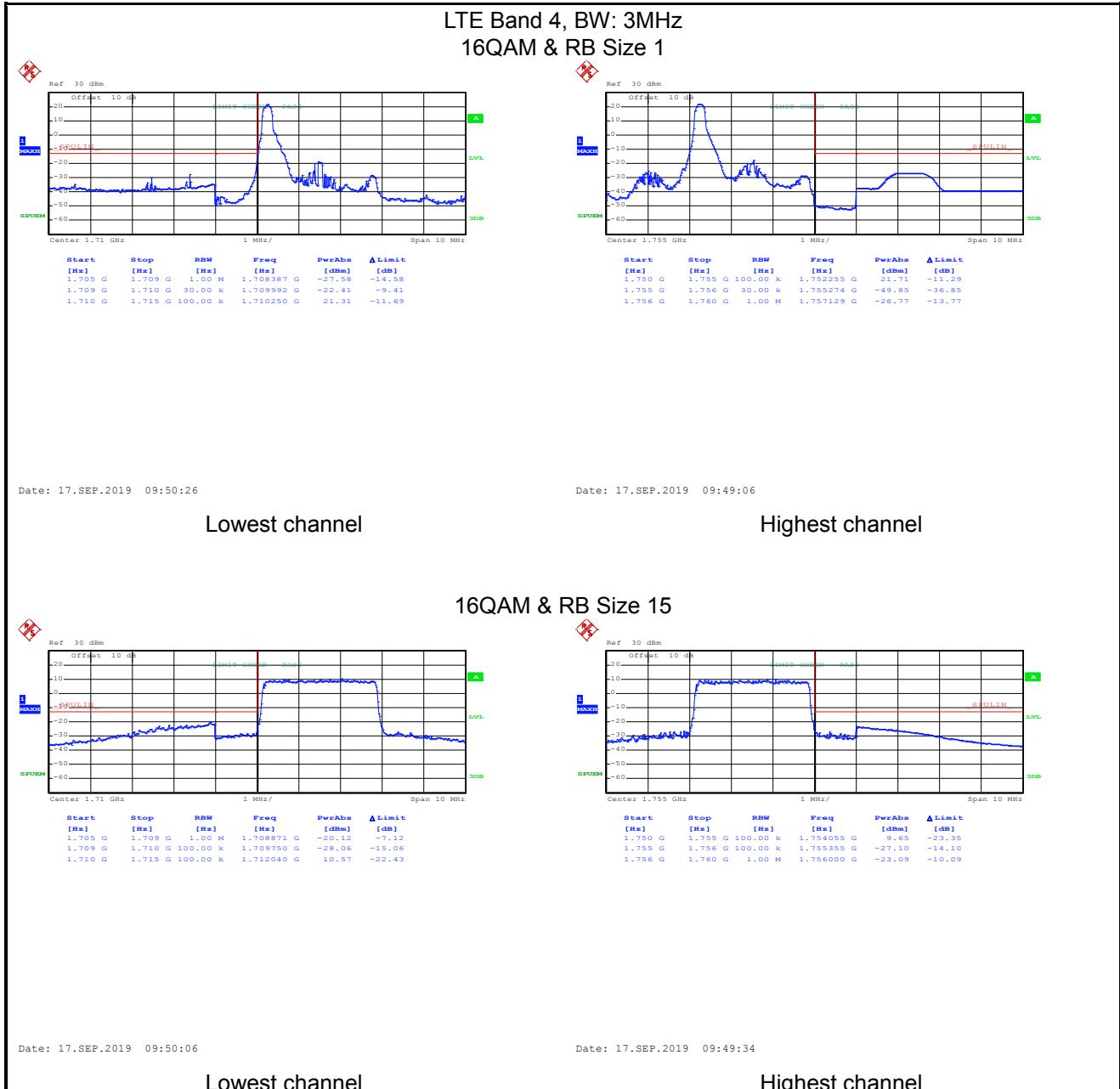


Date: 17.SEP.2019 09:47:32

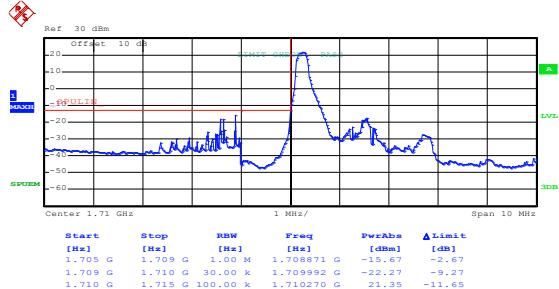
Date: 17.SEP.2019 09:47:54

Lowest channel

Highest channel



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



Date: 17.SEP.2019 09:50:20

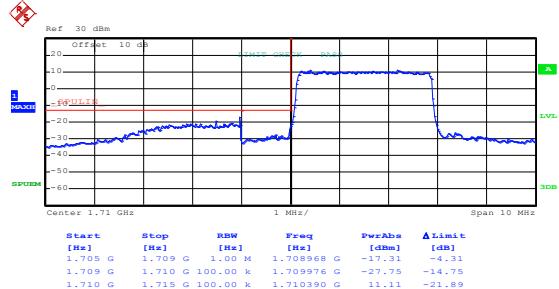
Lowest channel



Date: 17.SEP.2019 09:48:49

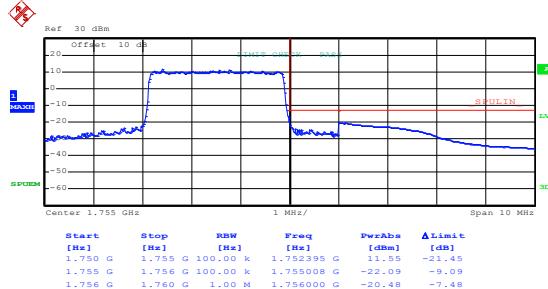
Highest channel

QPSK & RB Size 15



Date: 17.SEP.2019 09:49:59

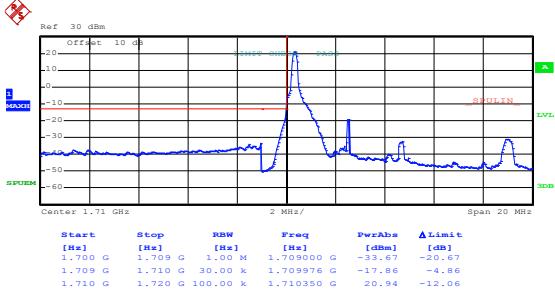
Lowest channel



Date: 17.SEP.2019 09:49:29

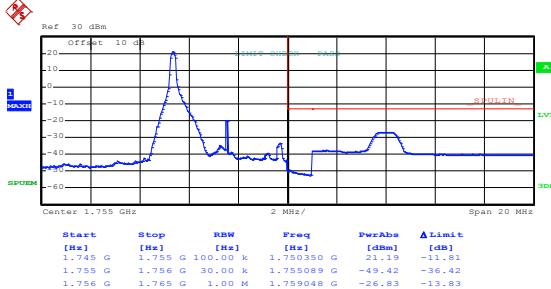
Highest channel

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



Date: 17.SEP.2019 09:50:58

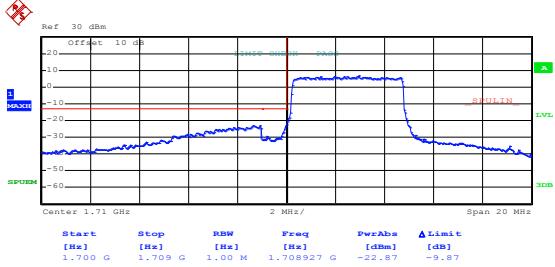
Lowest channel



Date: 17.SEP.2019 09:52:05

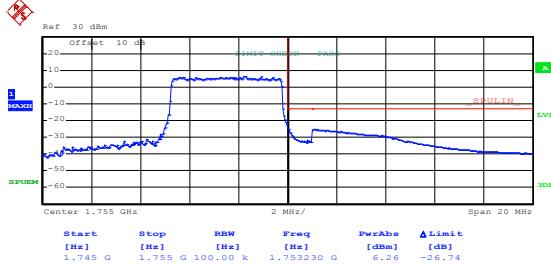
Highest channel

16QAM & RB Size 25



Date: 17.SEP.2019 09:51:19

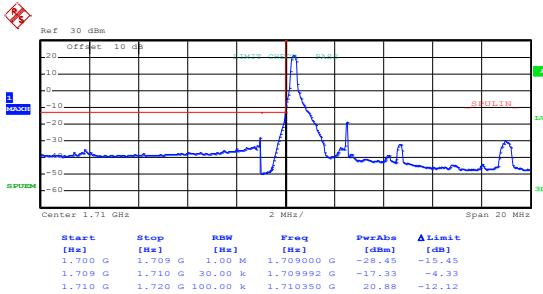
Lowest channel



Date: 17.SEP.2019 09:51:39

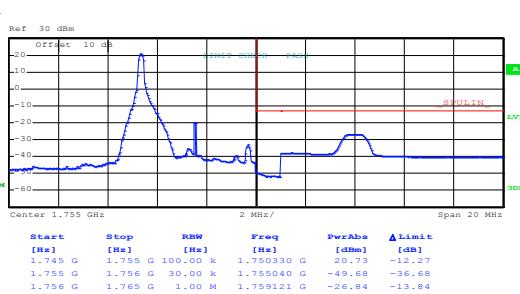
Highest channel

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



Date: 17.SEP.2019 09:50:54

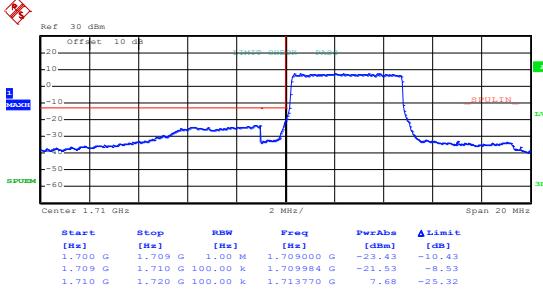
Lowest channel



Date: 17.SEP.2019 09:51:55

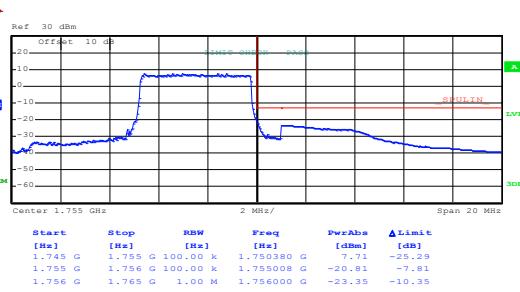
Highest channel

QPSK & RB Size 25



Date: 17.SEP.2019 09:51:14

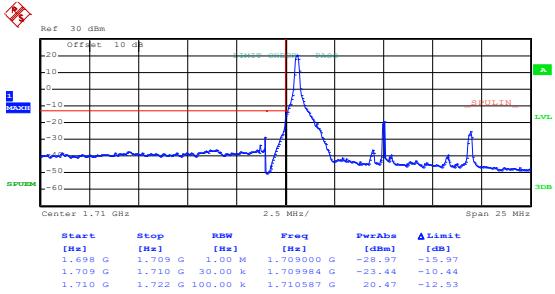
Lowest channel



Date: 17.SEP.2019 09:51:33

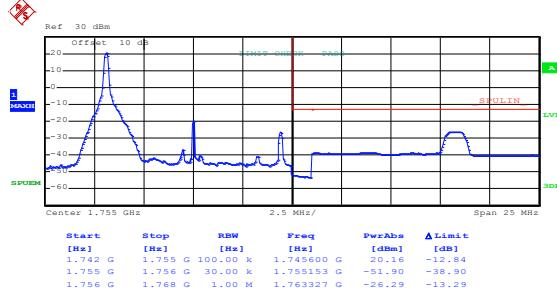
Highest channel

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



Date: 17.SEP.2019 09:53:44

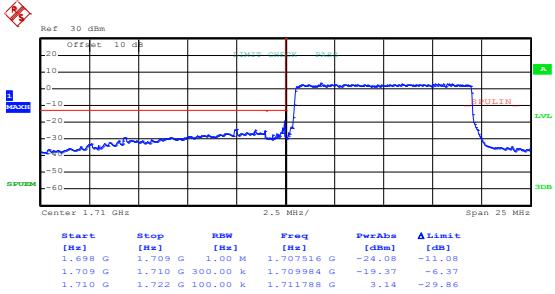
Lowest channel



Date: 17.SEP.2019 09:52:35

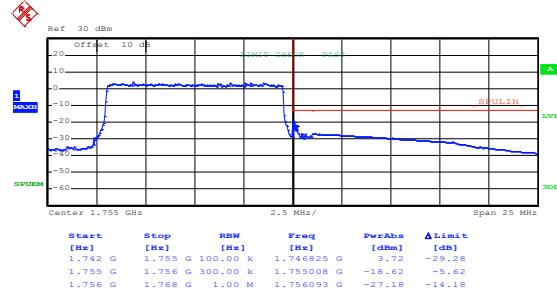
Highest channel

16QAM & RB Size 50



Date: 17.SEP.2019 09:53:24

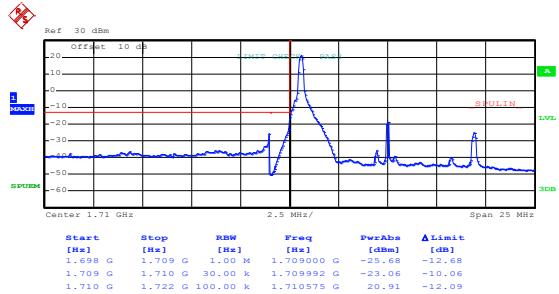
Lowest channel



Date: 17.SEP.2019 09:52:58

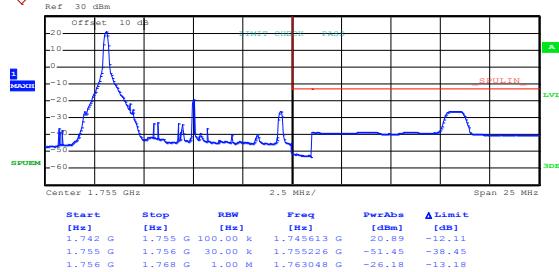
Highest channel

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



Date: 17.SEP.2019 09:53:40

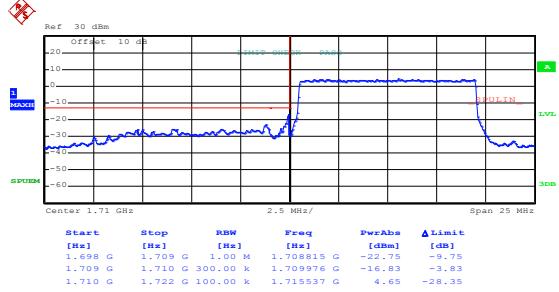
Lowest channel



Date: 17.SEP.2019 09:52:30

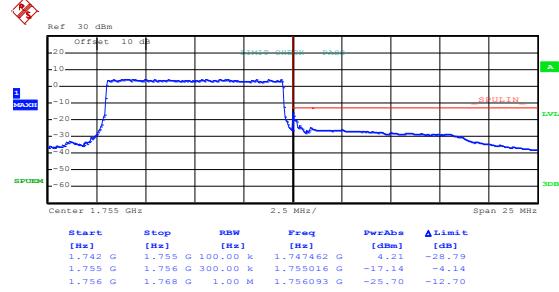
Highest channel

QPSK & RB Size 50



Date: 17.SEP.2019 09:53:18

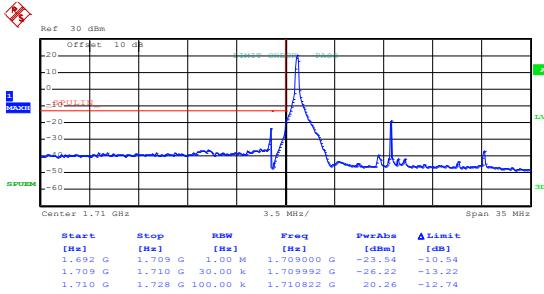
Lowest channel



Date: 17.SEP.2019 09:52:49

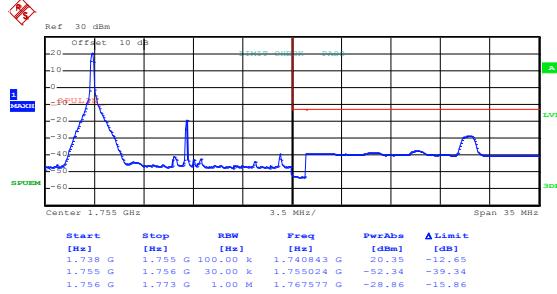
Highest channel

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



Date: 17.SEP.2019 09:54:30

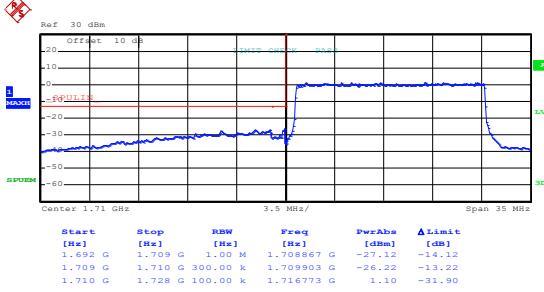
Lowest channel



Date: 17.SEP.2019 09:55:31

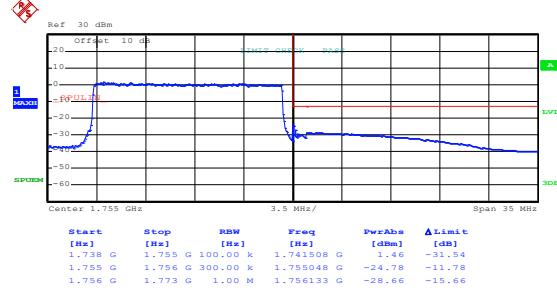
Highest channel

16QAM & RB Size 75



Date: 17.SEP.2019 09:54:51

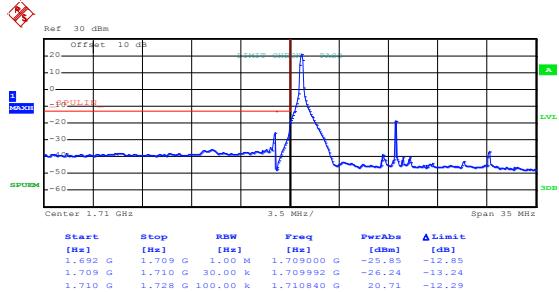
Lowest channel



Date: 17.SEP.2019 09:55:12

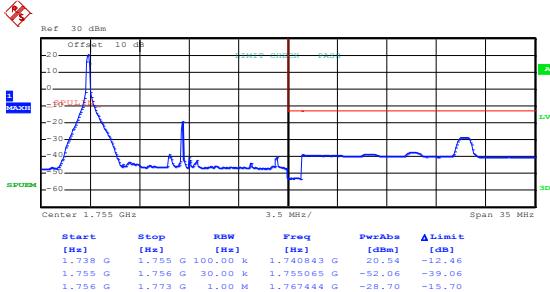
Highest channel

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



Date: 17.SEP.2019 09:54:25

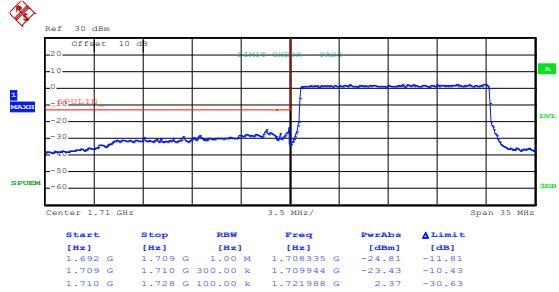
Lowest channel



Date: 17.SEP.2019 09:55:26

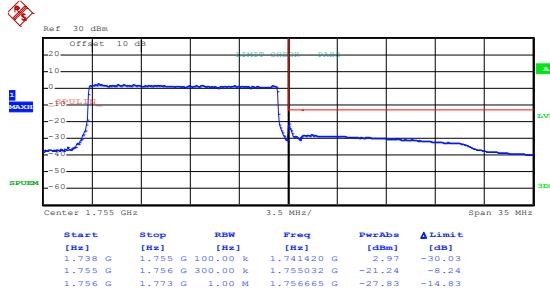
Highest channel

QPSK & RB Size 75



Date: 17.SEP.2019 09:54:46

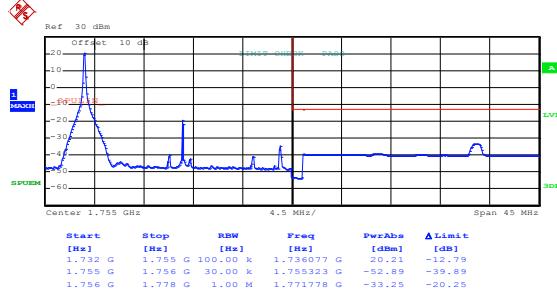
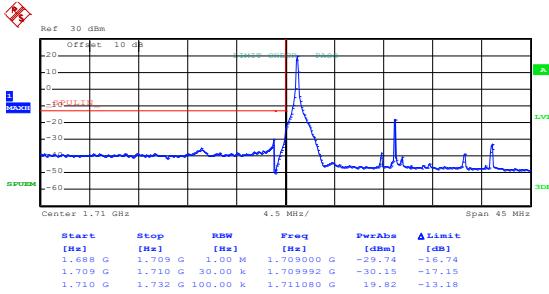
Lowest channel



Date: 17.SEP.2019 09:55:06

Highest channel

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



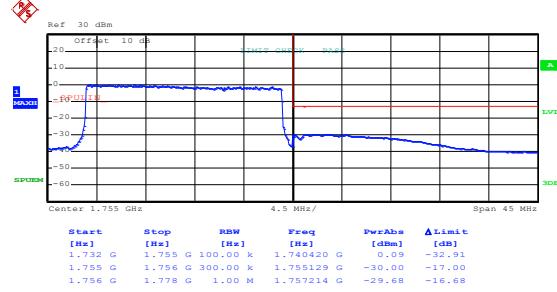
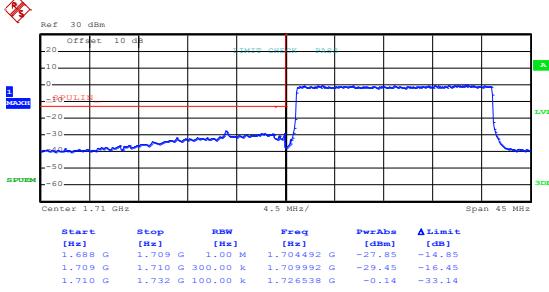
Date: 17.SEP.2019 09:57:10

Date: 17.SEP.2019 09:56:02

Lowest channel

Highest channel

16QAM & RB Size 100



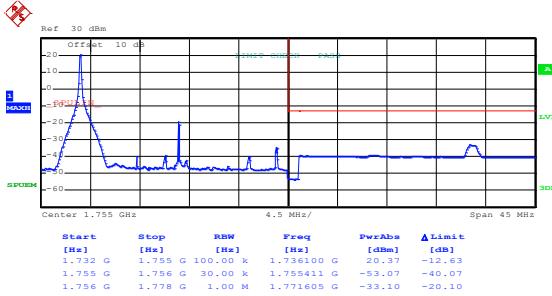
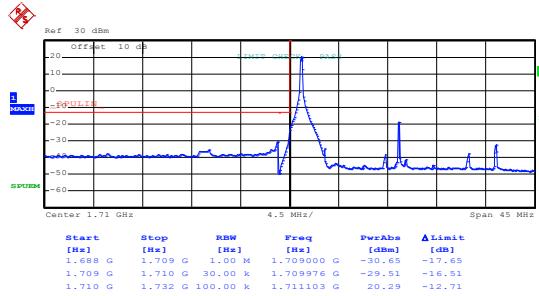
Date: 17.SEP.2019 09:56:44

Date: 17.SEP.2019 09:56:24

Lowest channel

Highest channel

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



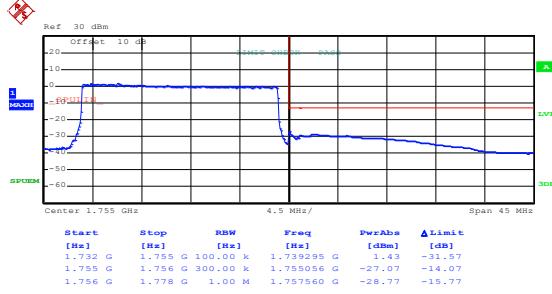
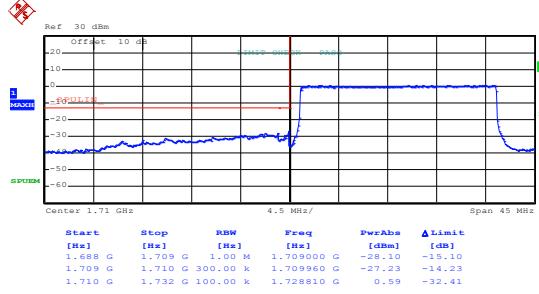
Date: 17.SEP.2019 09:57:05

Lowest channel

Date: 17.SEP.2019 09:55:56

Highest channel

QPSK & RB Size 100



Date: 17.SEP.2019 09:56:39

Lowest channel

Date: 17.SEP.2019 09:56:19

Highest channel

6.5 Field strength of spurious radiation measurement

Test Requirement:	Part 24.238 (a), Part 27.53(h)
Limit:	LTE Band 2 & 4: The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB (-13 dBm).
Test setup:	<p>Below 1GHz</p> <p>Above 1GHz</p>
Test Procedure:	<ol style="list-style-type: none"> The EUT was placed on a 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. 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. 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. 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 5.10 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	-49.58	-13.00	Pass
5552.10	V	-42.38		
7402.00	V	-37.83		
3701.40	Horizontal	-49.68		
5552.10	H	-42.53		
7402.00	H	-36.68		
Middle Channel				
3760.00	Vertical	-49.61	-13.00	Pass
5640.00	V	-42.47		
7520.00	V	-37.89		
3760.00	Horizontal	-49.72		
5640.00	H	-42.61		
7520.00	H	-36.89		
Highest Channel				
3816.60	Vertical	-49.56	-13.00	Pass
5724.90	V	-42.68		
7633.20	V	-37.64		
3816.60	Horizontal	-49.86		
5724.90	H	-42.58		
7633.20	H	-36.98		

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	-49.54	-13.00	Pass
5580.00	V	-42.67		
7440.00	V	-37.59		
3720.00	Horizontal	-49.83		
5580.00	H	-42.56		
7440.00	H	-36.89		
Middle Channel				
3760.00	Vertical	-49.58	-13.00	Pass
5640.00	V	-42.64		
7520.00	V	-37.83		
3760.00	Horizontal	-49.38		
5640.00	H	-42.58		
7520.00	H	-36.94		
Highest Channel				
3800.00	Vertical	-49.61	-13.00	Pass
5700.00	V	-42.53		
7600.00	V	-37.86		
3800.00	Horizontal	-49.97		
5700.00	H	-42.68		
7600.00	H	-39.87		

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 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	-50.70	-13.00	Pass
5132.10	V	-45.81		
6842.80	V	-38.77		
3421.40	Horizontal	-49.96		
5132.10	H	-45.30		
6842.80	H	-39.12		
Middle Channel				
3465.00	Vertical	-50.74	-13.00	Pass
5197.50	V	-45.86		
6930.00	V	-38.92		
3465.00	Horizontal	-49.87		
5197.50	H	-45.64		
6930.00	H	-39.89		
Highest Channel				
3508.60	Vertical	-50.78	-13.00	Pass
5262.90	V	-45.92		
7017.20	V	-38.94		
3508.60	Horizontal	-49.89		
5262.90	H	-45.67		
7017.20	H	-39.86		

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	-50.38	-13.00	Pass
5160.00	V	-45.87		
6880.00	V	-38.94		
3440.00	Horizontal	-49.57		
5160.00	H	-45.83		
6880.00	H	-39.24		
Middle Channel				
3465.00	Vertical	-50.77	-13.00	Pass
5197.50	V	-45.67		
6930.00	V	-38.54		
3465.00	Horizontal	-49.86		
5197.50	H	-45.37		
6930.00	H	-39.92		
Highest Channel				
3490.00	Vertical	-50.84	-13.00	Pass
5235.00	V	-45.83		
6980.00	V	-38.64		
3490.00	Horizontal	-49.85		
5235.00	H	-45.73		
6980.00	H	-39.68		

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)
Limit:	Within authorized band
Test setup:	<p>The diagram illustrates the test setup. A central Power Source feeds into a Divider. One output from the Divider goes to a Signal Source (SS) and another to a Spectrum Analyzer (SA). Both the SS and SA are connected to a common EUT (Equipment Under Test). The EUT is situated within a Temperature & Humidity Chamber. A red line indicates the connection from the Power Source to the EUT.</p>
Test procedure:	<ol style="list-style-type: none"> 1. The equipment under test was connected to an external DC power supply and input rated voltage. 2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. 3. The EUT was placed inside the temperature chamber. 4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. 5. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. 6. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached
Test Instruments:	Refer to section 5.10 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	186	0.098936	Within authorized band	Pass
	-20	147	0.078191		
	-10	159	0.084574		
	0	136	0.072340		
	10	171	0.090957		
	20	155	0.082447		
	30	136	0.072340		
	40	180	0.095745		
	50	184	0.097872		
16QAM					
3.80	-30	177	0.094149	Within authorized band	Pass
	-20	155	0.082447		
	-10	146	0.077660		
	0	132	0.070213		
	10	110	0.058511		
	20	113	0.060106		
	30	148	0.078723		
	40	170	0.090426		
	50	174	0.092553		

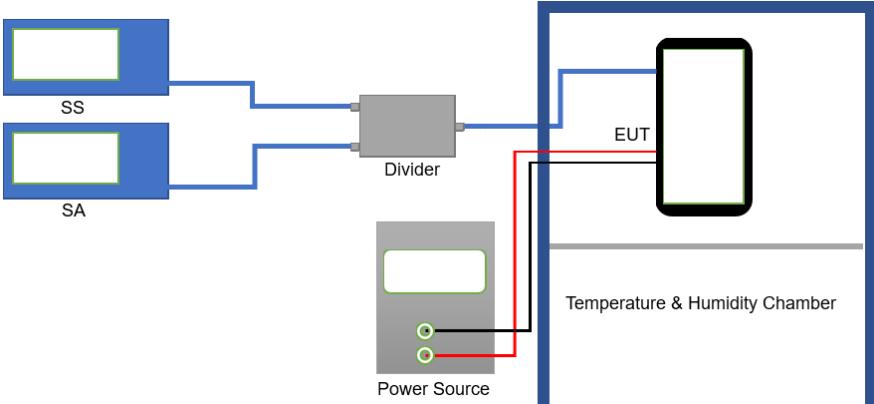
Note: Only the worst case shown in the report.

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	199	0.114863	Within authorized band	Pass
	-20	147	0.084848		
	-10	185	0.106782		
	0	186	0.107359		
	10	175	0.101010		
	20	172	0.099278		
	30	123	0.070996		
	40	145	0.083694		
	50	156	0.090043		
16QAM					
3.80	-30	185	0.106782	Within authorized band	Pass
	-20	174	0.100433		
	-10	163	0.094084		
	0	123	0.070996		
	10	141	0.081385		
	20	112	0.064646		
	30	104	0.060029		
	40	180	0.103896		
	50	182	0.105051		

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)
Limit:	Within authorized band
Test setup:	 <p>The diagram illustrates the test setup. A Power Source provides power to a Divider. The output of the Divider connects to an EUT (Equipment Under Test) which is placed inside a Temperature & Humidity Chamber. A Signal Source (SS) and a Spectrum Analyzer (SA) are connected to the input of the Divider. A red line indicates a connection from the Power Source to the EUT.</p>
Test procedure:	<ol style="list-style-type: none"> Set chamber temperature to 25°C. Use a variable DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency. Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.
Test Instruments:	Refer to section 5.10 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	Within authorized band	Pass
	3.80	58	0.030851		
	3.50	63	0.033511		
16QAM					
25	4.35	78	0.041489	Within authorized band	Pass
	3.80	55	0.029255		
	3.50	66	0.035106		

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	66	0.038095	Within authorized band	Pass
	3.80	32	0.018470		
	3.50	45	0.025974		
16QAM					
25	4.35	76	0.043867	Within authorized band	Pass
	3.80	45	0.025974		
	3.50	20	0.011544		

Note: Only the worst case shown in the report.