



FCC Test Report

ANNEX 1 LTE BAND 12

FCC ID: 2A7RP-AT319S

Applicant: HANWEI ELECTRONICS GROUP CORPORATION
Address: No.169, Xue Song Road National Hi-Tech Zone, Zhengzhou, 450001, China
Manufacturer: HANWEI ELECTRONICS GROUP CORPORATION
Address: No.169, Xue Song Road National Hi-Tech Zone, Zhengzhou, 450001, China
EUT: ALCOHOL TESTER
Trade Mark: N/A
Model Number: AT319S
Date of Receipt: Jun. 09, 2022
Test Date: Jun. 09, 2022 – Aug. 04, 2022
Date of Report: Aug. 04, 2022
Prepared By: Shenzhen DL Testing Technology Co., Ltd.
Address: 101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong Industrial Zone, Baolong Street, Longgang District, Shenzhen, Guangdong, China
FCC CFR Title 47 Part27
FCC CFR Title 47 Part24 Subpart E
Applicable Standards: TIA-603 Rev E 2016
FCC KDB 971168 D01 Power Meas. License Digital Systems v03v01
ANSI C63.26:2015
Test Result: Pass
Report Number: DL-20220708027E

Prepared (Test Engineer): Pxing Huang
Reviewer (Supervisor): Jack Bu
Approved (Manager): Jade Yang



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.



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**1. EMISSION TEST RESULTS****1.1. -26dB and 99% Occupied Bandwidth****1.1.1. Test Result**

EUT Mode Bandwidth	Modulation	Frequency (MHz)	99% Occupy bandwidth (MHz)	-26dB bandwidth (MHz)
LTE Band 12 1.4 MHz	QPSK	699.7	1.095	1.306
	QAM16	699.7	1.095	1.274
	QPSK	707.5	1.109	1.274
	QAM16	699.7	1.099	1.293
	QPSK	715.3	1.098	1.278
	QAM16	699.7	1.102	1.279
LTE Band 12 3 MHz	QPSK	700.5	2.692	2.999
	QAM16	699.7	2.699	2.969
	QPSK	707.5	2.695	2.967
	QAM16	699.7	2.703	2.985
	QPSK	714.5	2.711	3.005
	QAM16	699.7	2.696	3.024
LTE Band 12 5 MHz	QPSK	701.5	4.515	4.993
	QAM16	699.7	4.504	4.989
	QPSK	707.5	4.511	4.968
	QAM16	699.7	4.510	5.003
	QPSK	713.5	4.519	4.964
	QAM16	699.7	4.514	4.959
LTE Band 12 10 MHz	QPSK	704.0	8.989	9.768
	QPSK	707.5	8.959	9.792
	QPSK	711.0	8.942	9.841

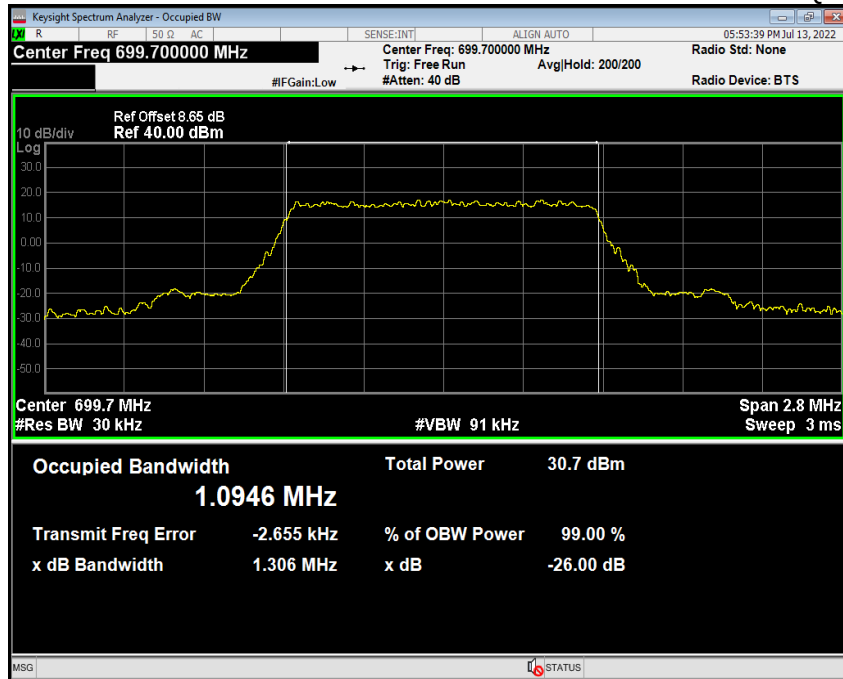
Note: Measurement Uncertainty: $\pm 20\text{Hz}$.

Test plot as follows:



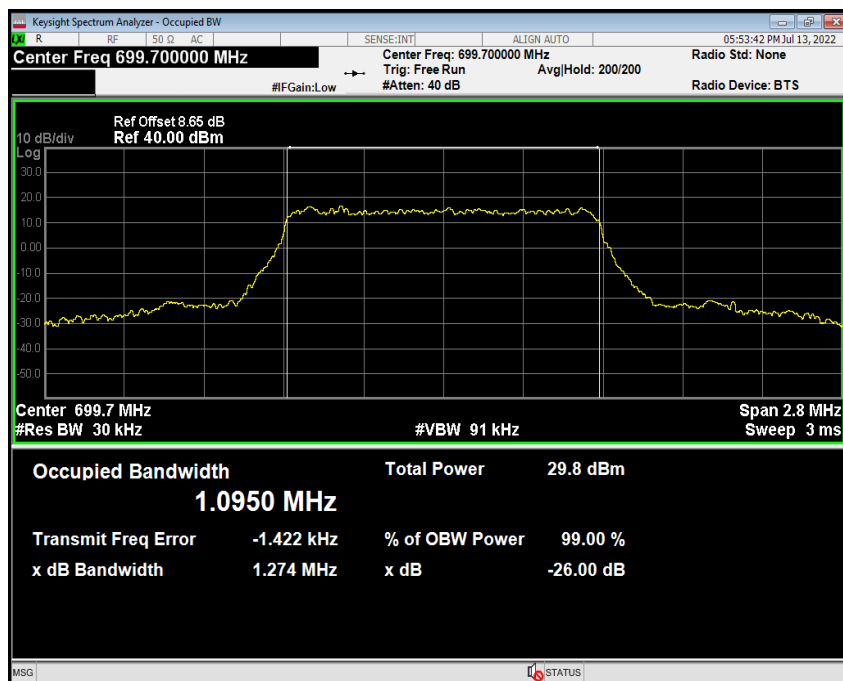
LTE Band 12 Lowest channel

1.4 MHz QPSK



LTE Band 12 Lowest channel

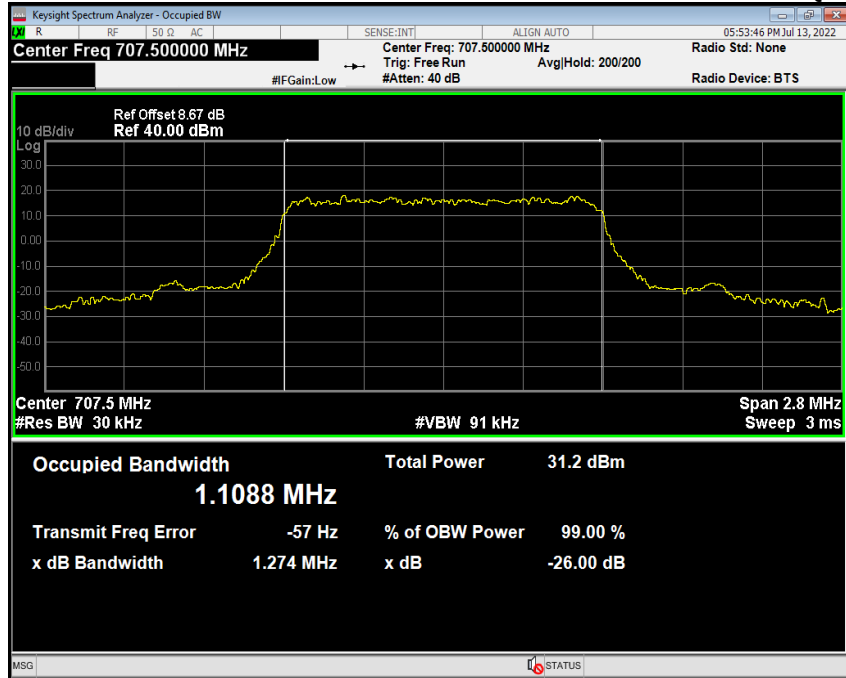
1.4 MHz QAM16





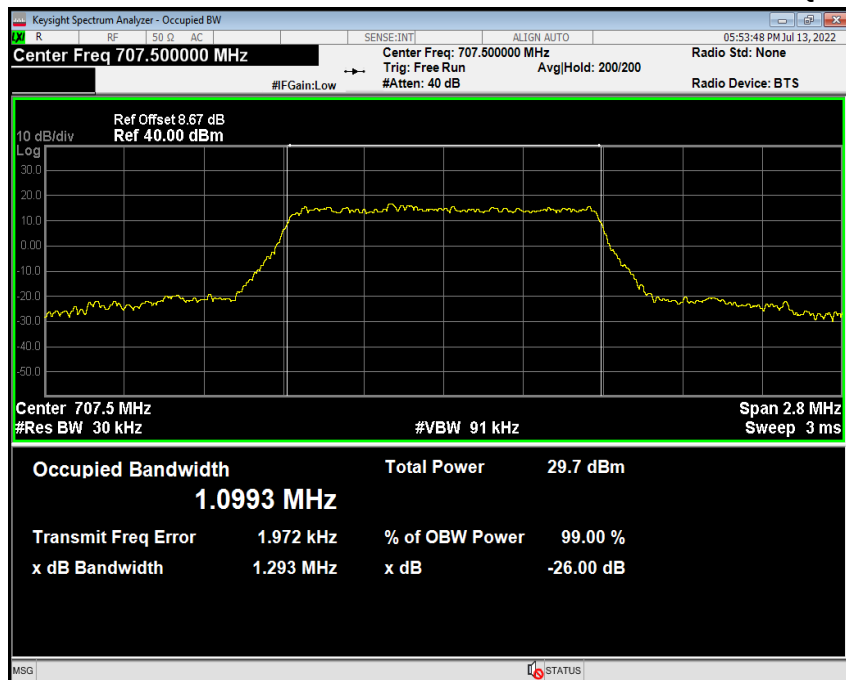
LTE Band 12 Middle channel

1.4 MHz QPSK



LTE Band 12 Middle channel

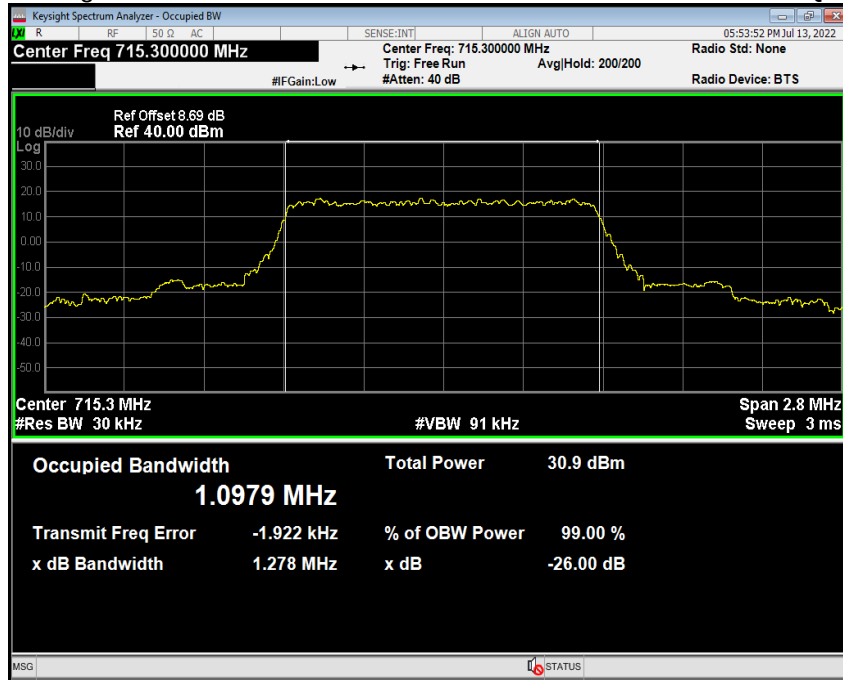
1.4 MHz QAM16





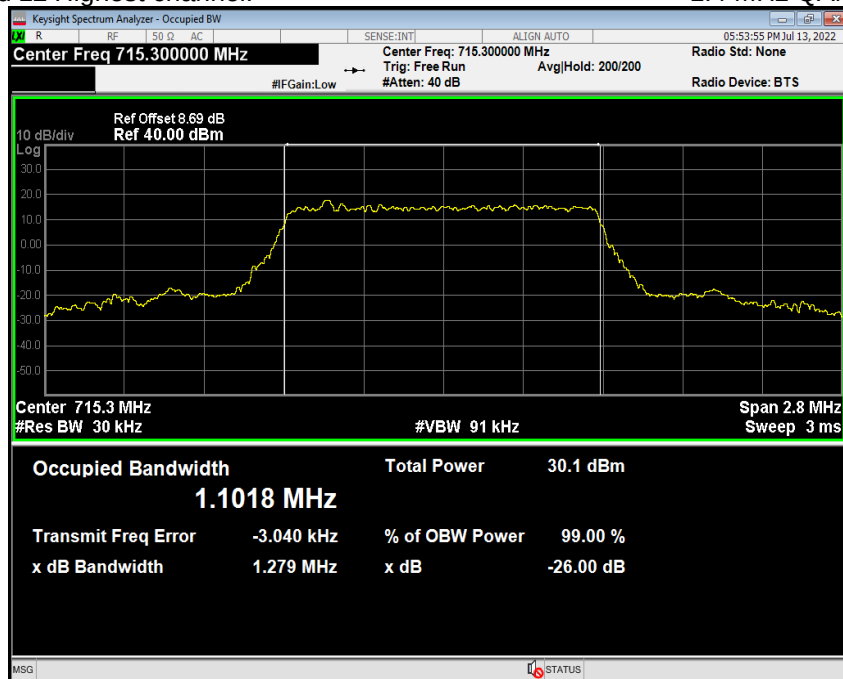
LTE Band 12 Highest channel:

1.4 MHz QPSK



LTE Band 12 Highest channel:

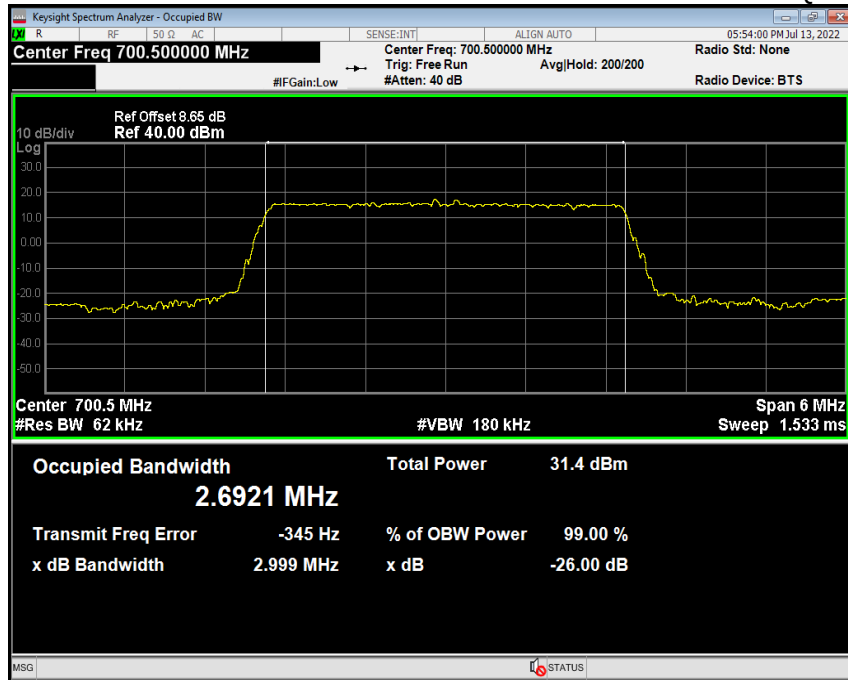
1.4 MHz QAM16





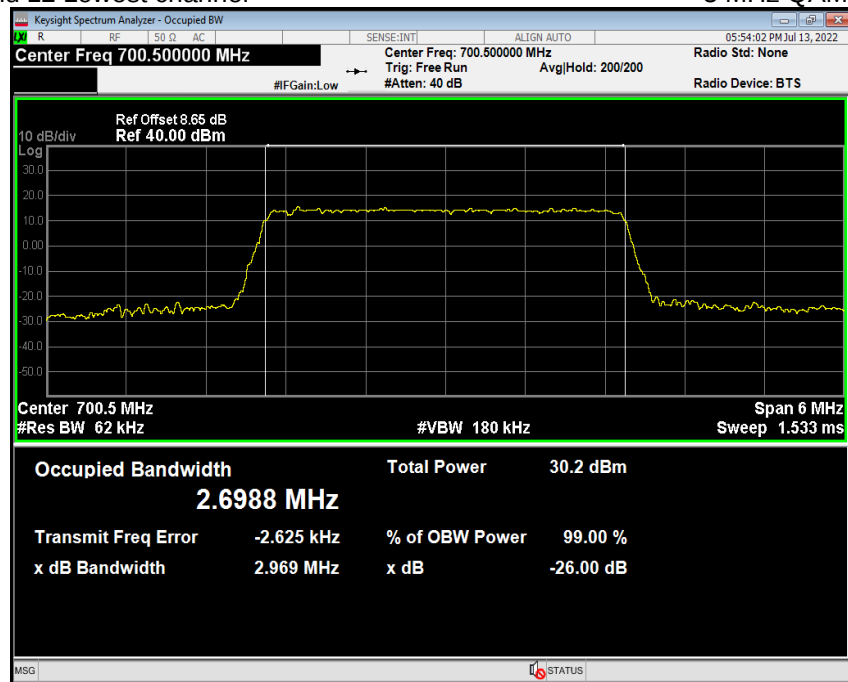
LTE Band 12 Lowest channel

3 MHz QPSK



LTE Band 12 Lowest channel

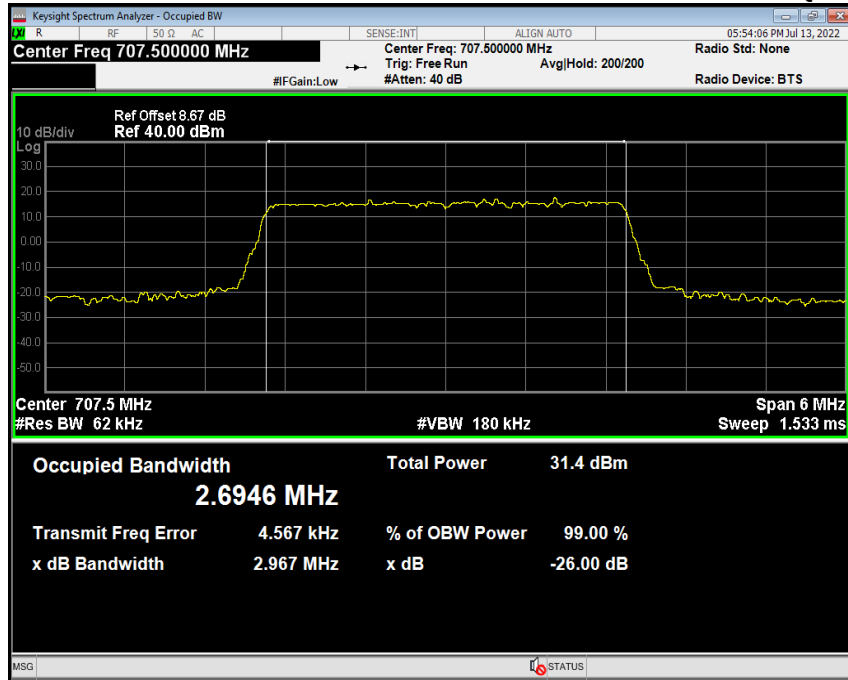
3 MHz QAM16





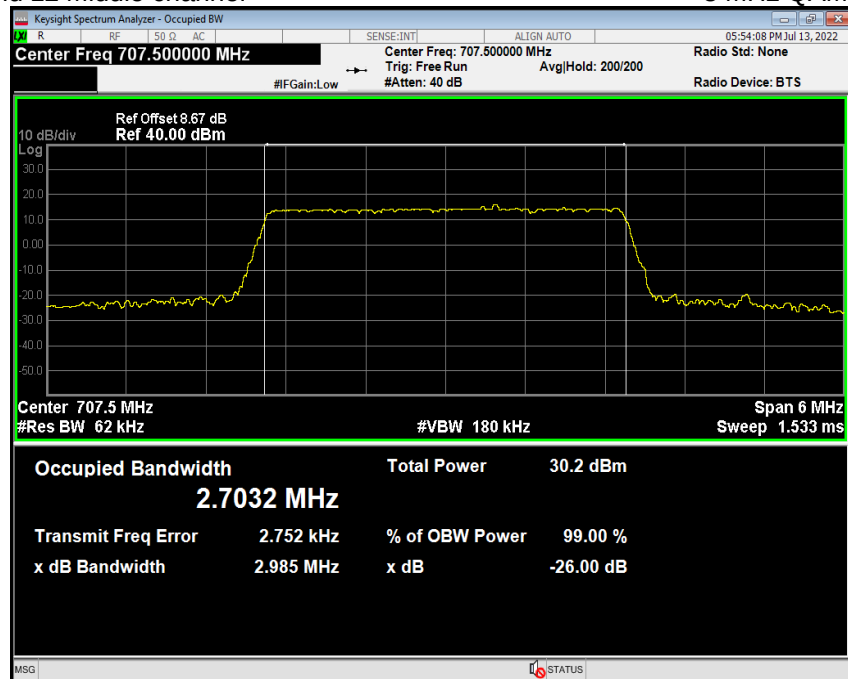
LTE Band 12 Middle channel

3 MHz QPSK



LTE Band 12 Middle channel

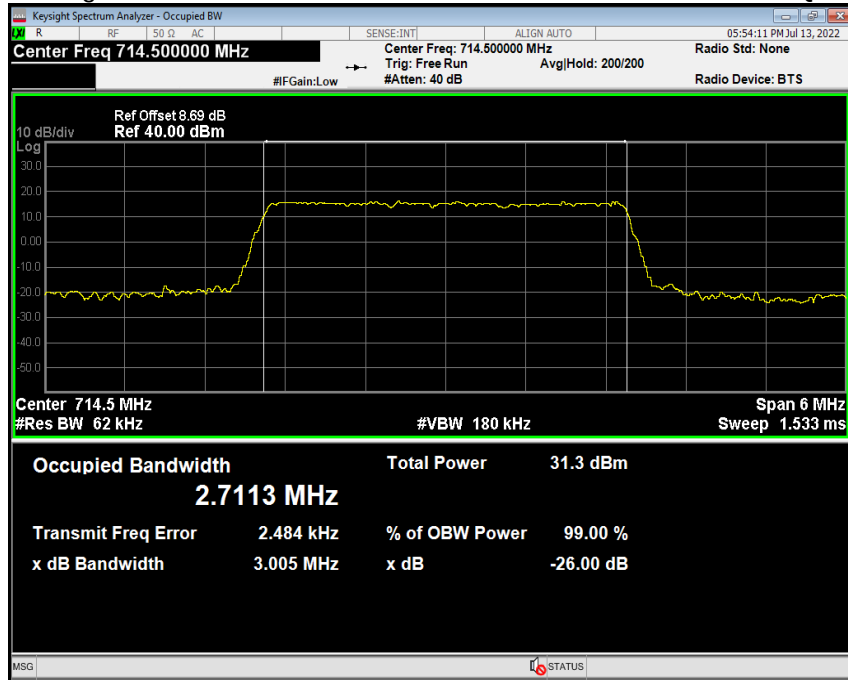
3 MHz QAM16





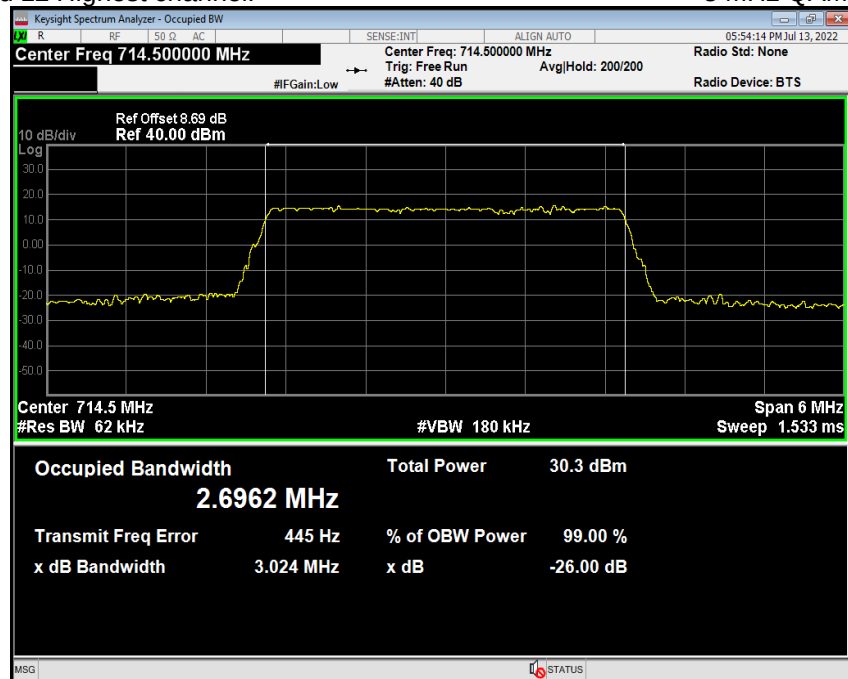
LTE Band 12 Highest channel:

3 MHz QPSK



LTE Band 12 Highest channel:

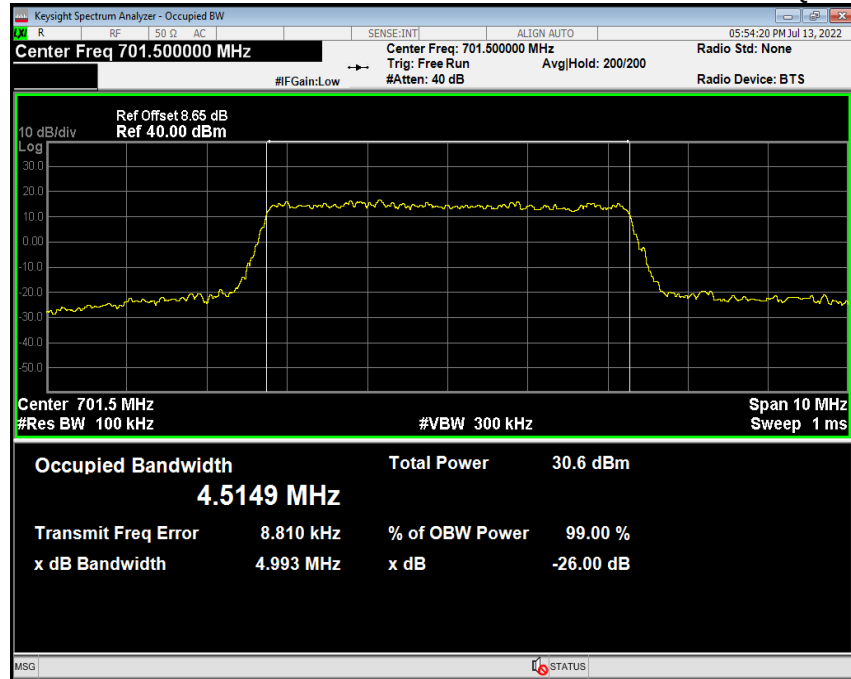
3 MHz QAM16





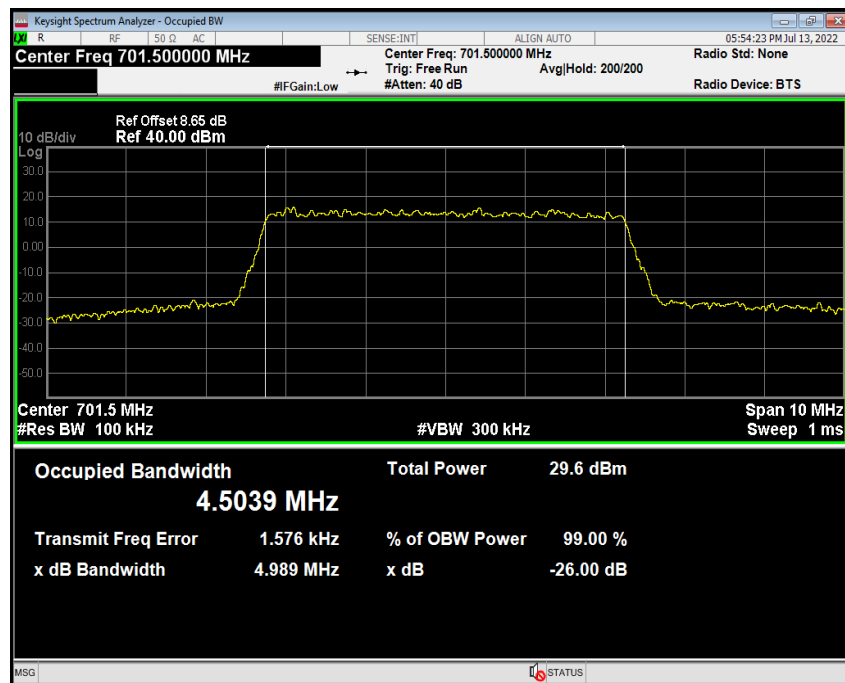
LTE Band 12 Lowest channel

5 MHz QPSK



LTE Band 12 Lowest channel

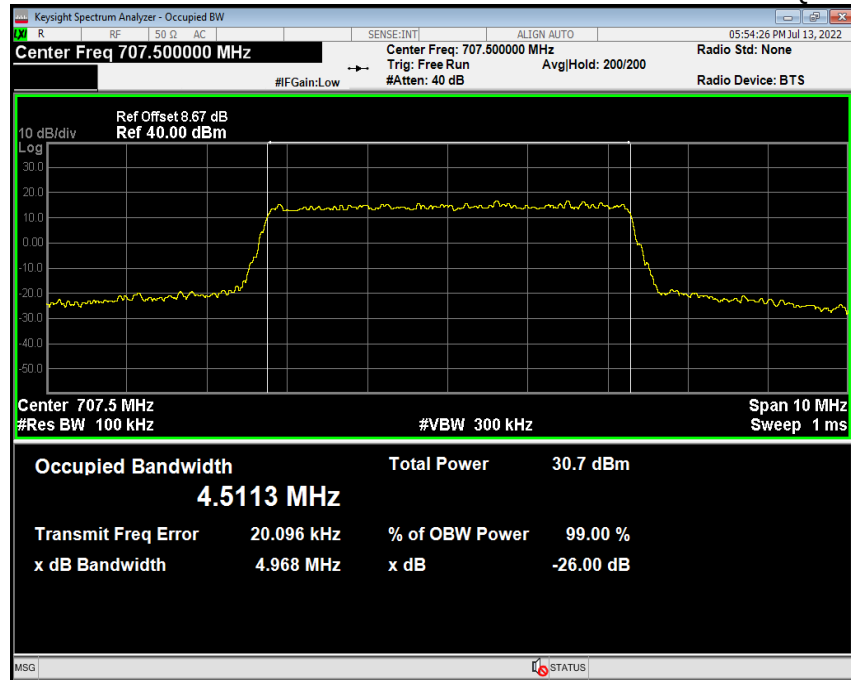
5 MHz QAM16





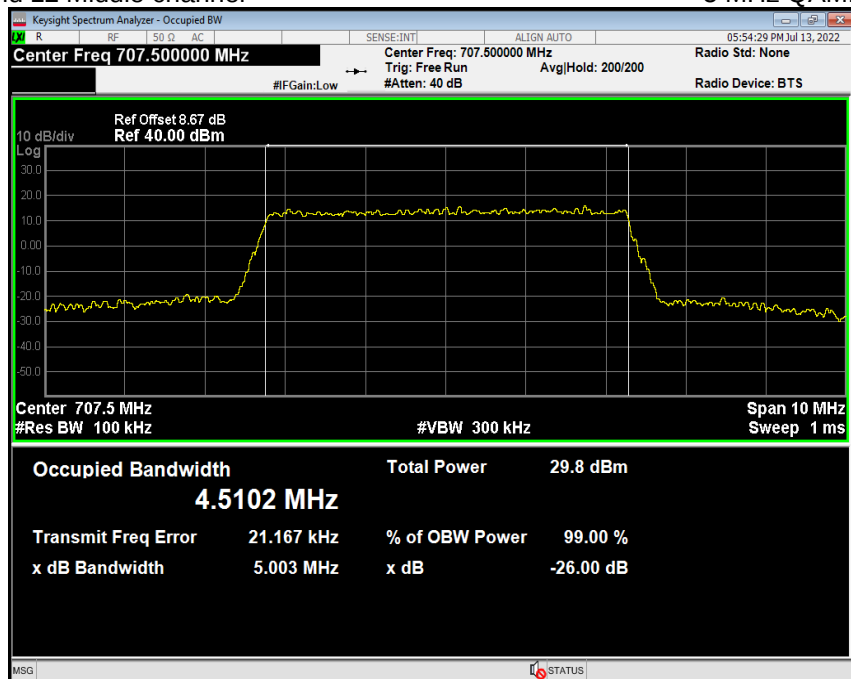
LTE Band 12 Middle channel

5 MHz QPSK



LTE Band 12 Middle channel

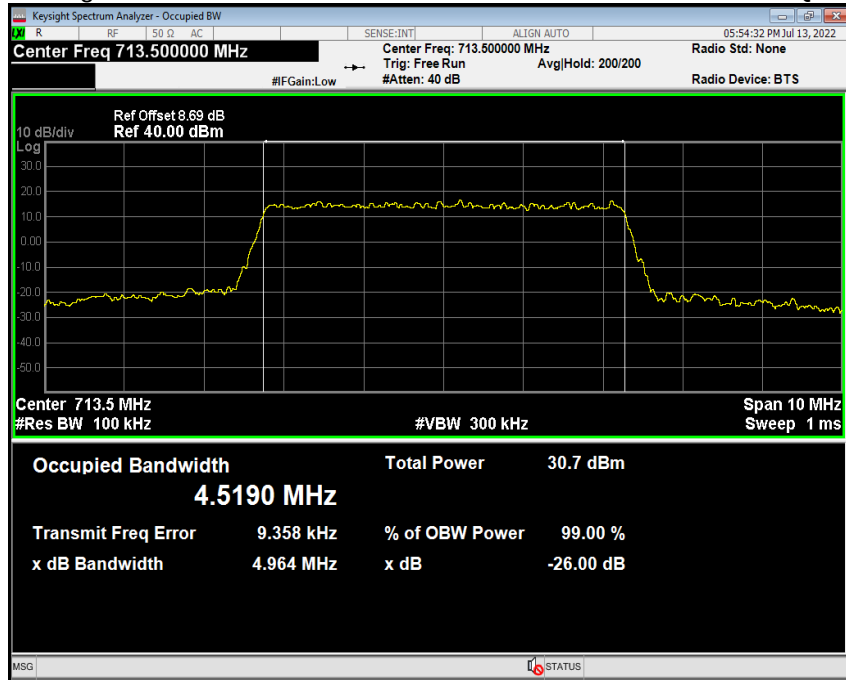
5 MHz QAM16





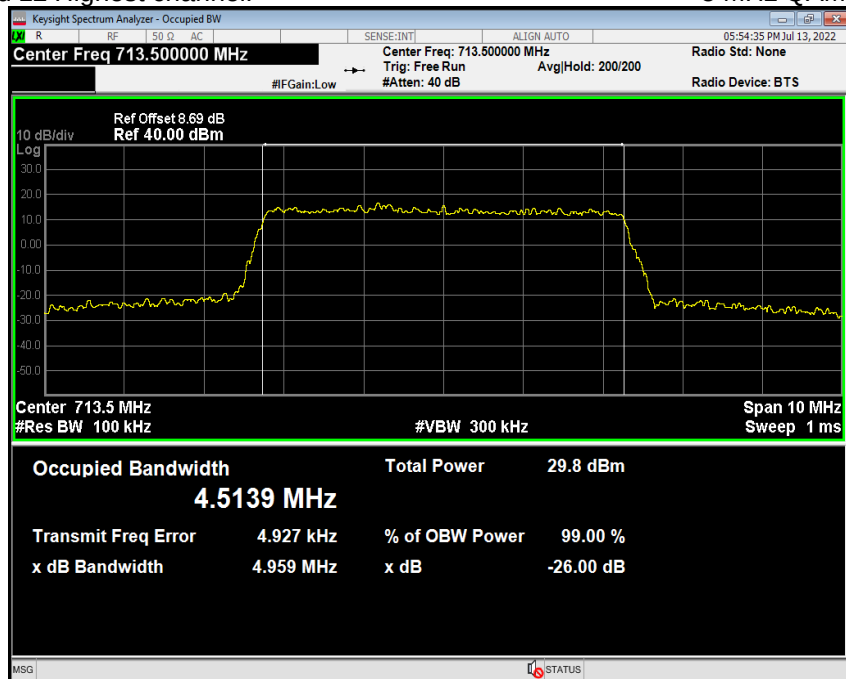
LTE Band 12 Highest channel:

5 MHz QPSK



LTE Band 12 Highest channel:

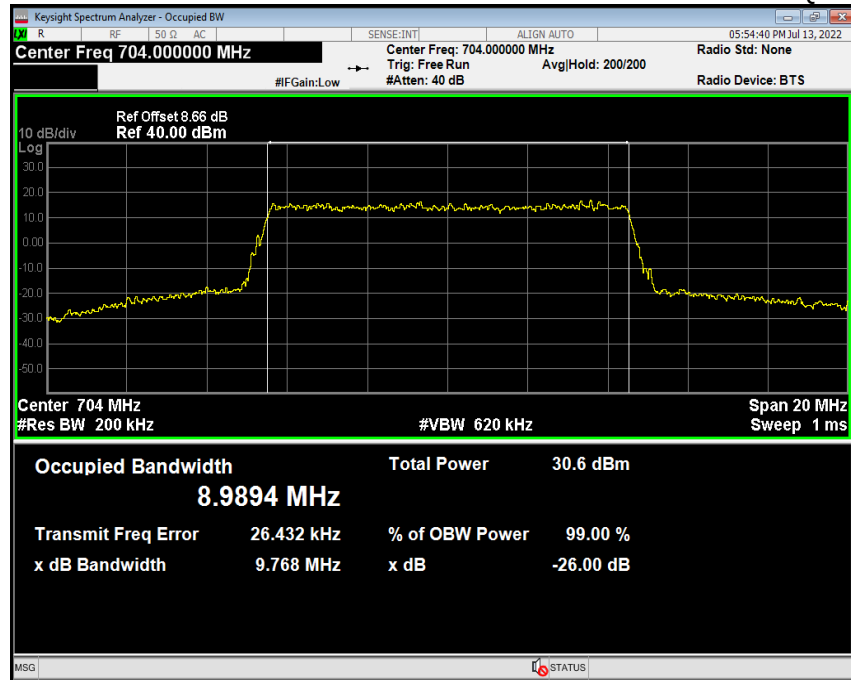
5 MHz QAM16





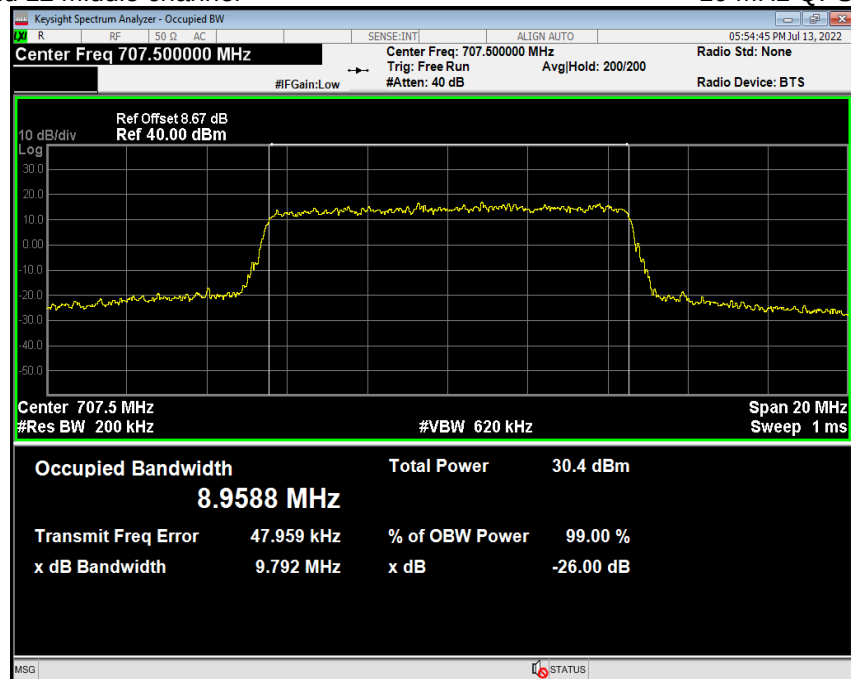
LTE Band 12 Lowest channel

10 MHz QPSK



LTE Band 12 Middle channel

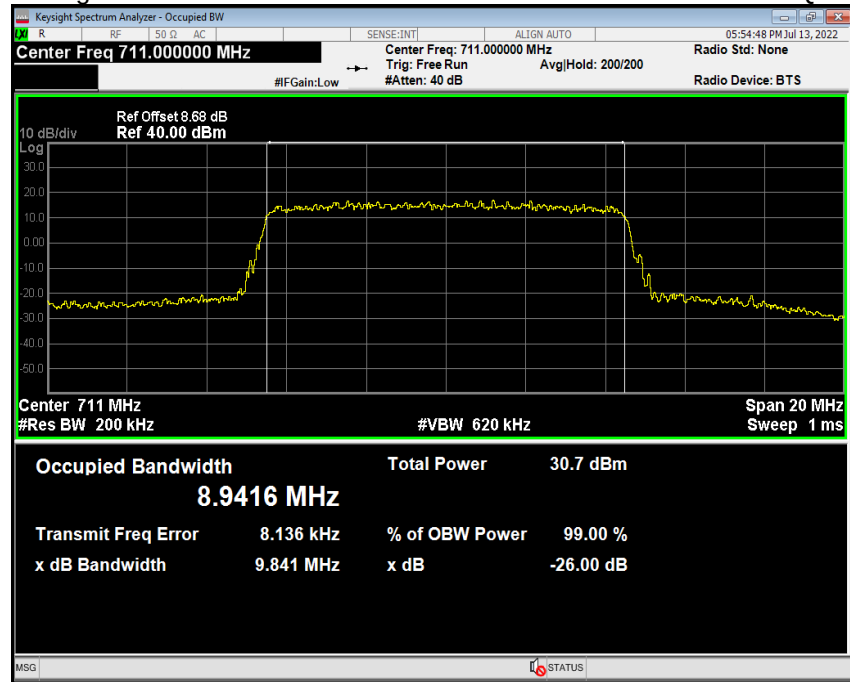
10 MHz QPSK





LTE Band 12 Highest channel:

10 MHz QPSK





1.2. Conducted Spurious Emissions

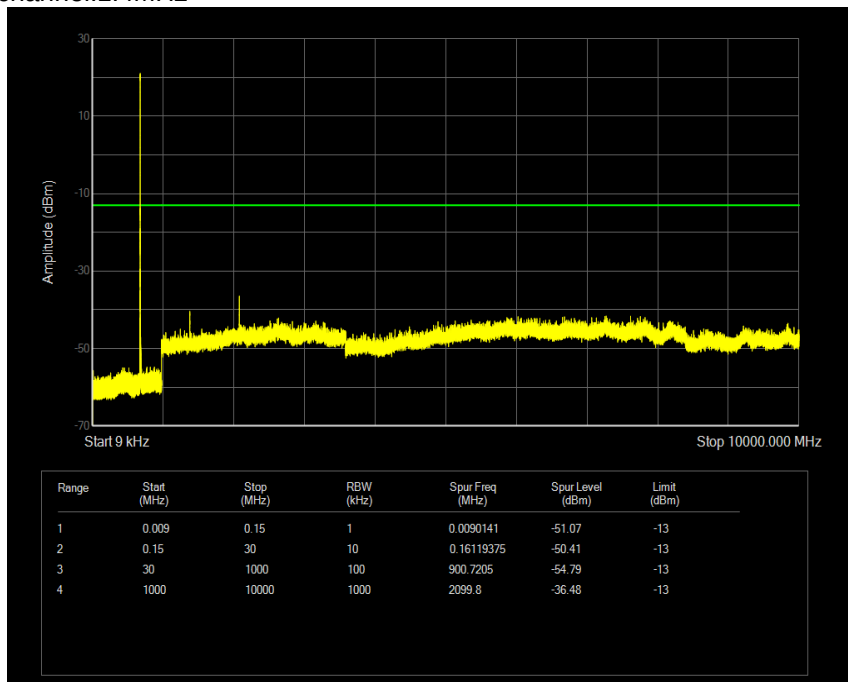
1.2.1. Test Result

The measurement frequency range is from 0.009MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

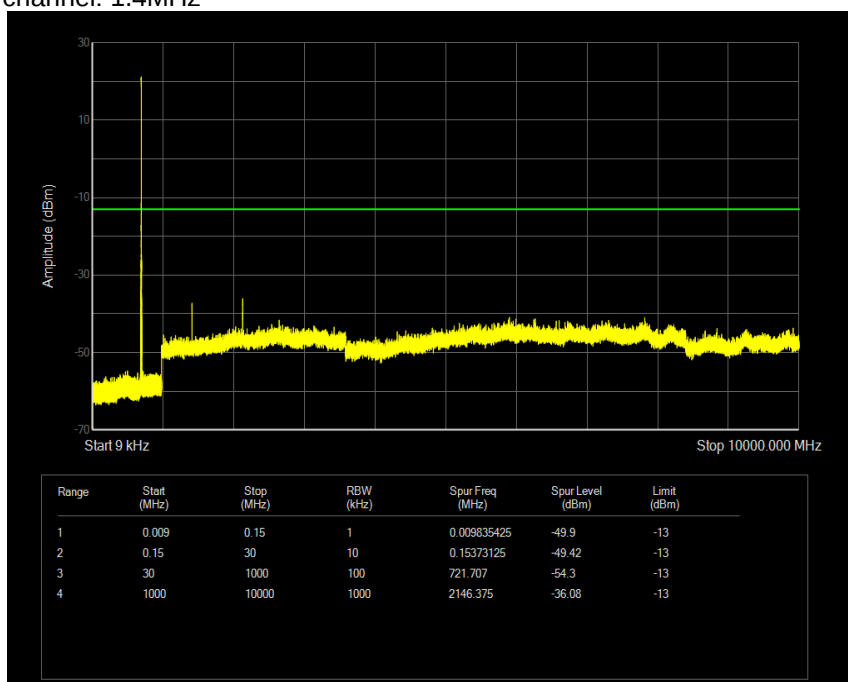
For LTE mode, the plot only show the QPSK, Lowest channel& Highest channel the worst data.

Pass, the table and plot please see annex.

LTE Band 12 Lowest channel:1.4MHz

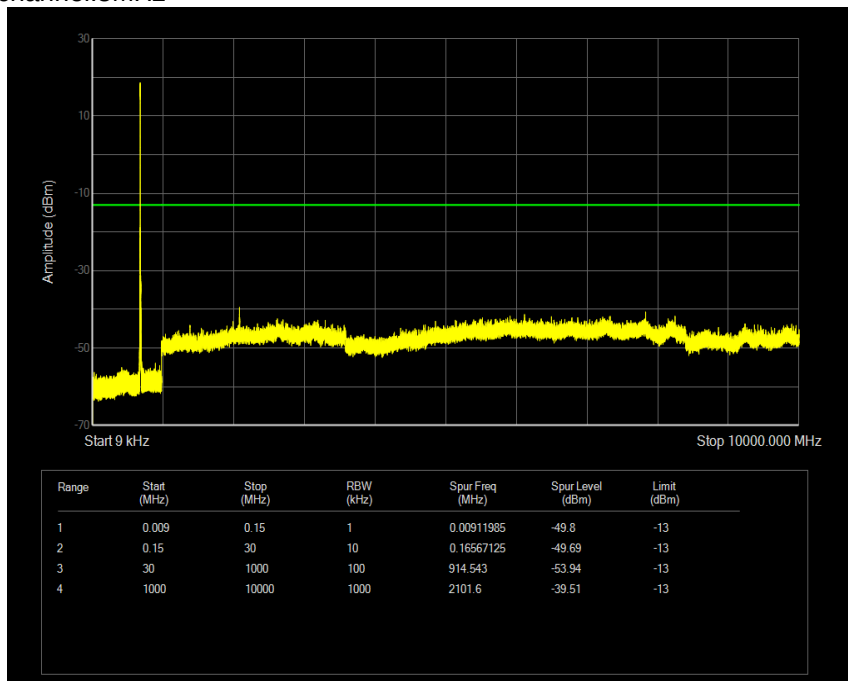


LTE Band 12 Highest channel: 1.4MHz

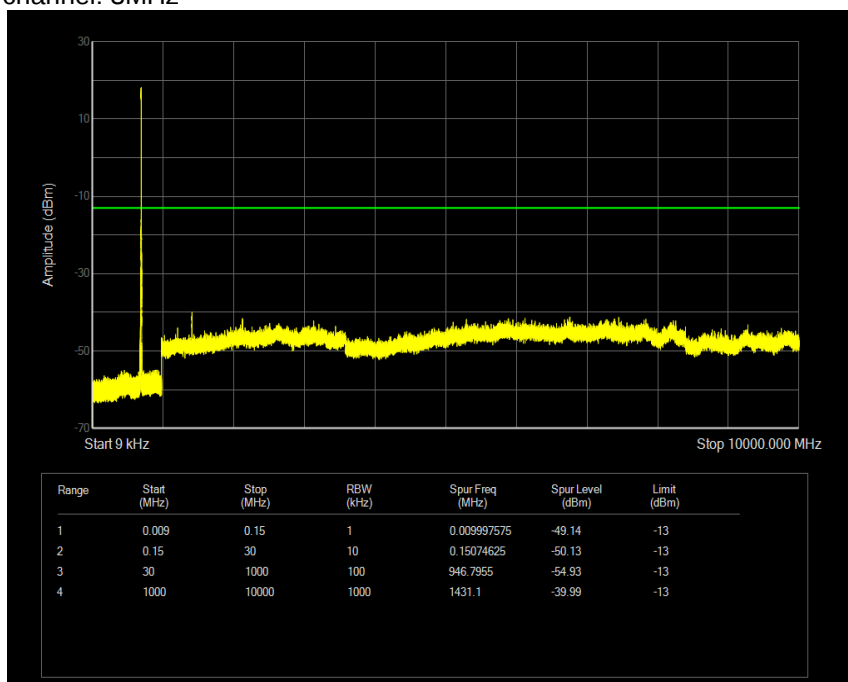




LTE Band 12 Lowest channel: 3MHz

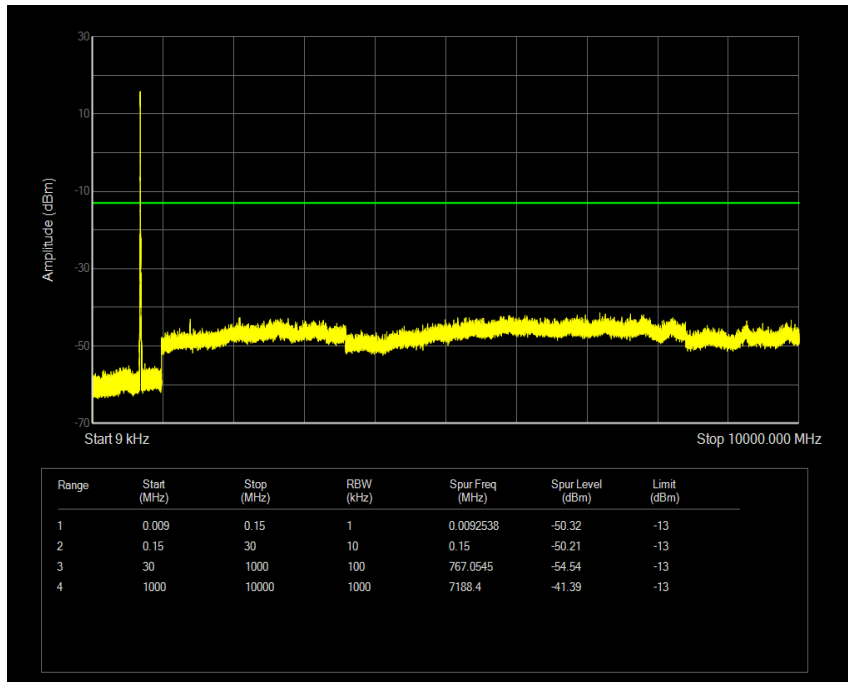


LTE Band 12 Highest channel: 3MHz

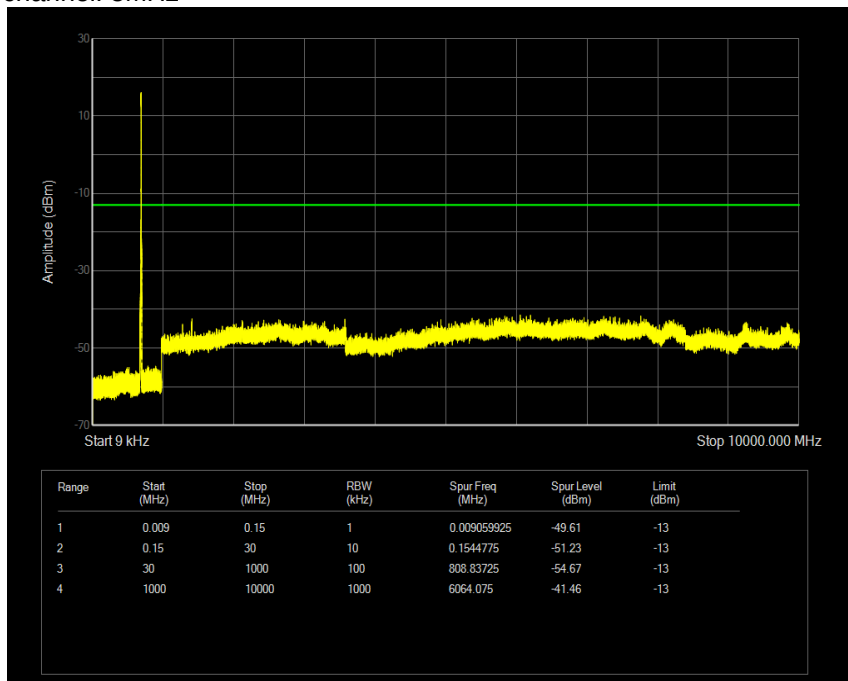




LTE Band 12 Lowest channel:5MHz

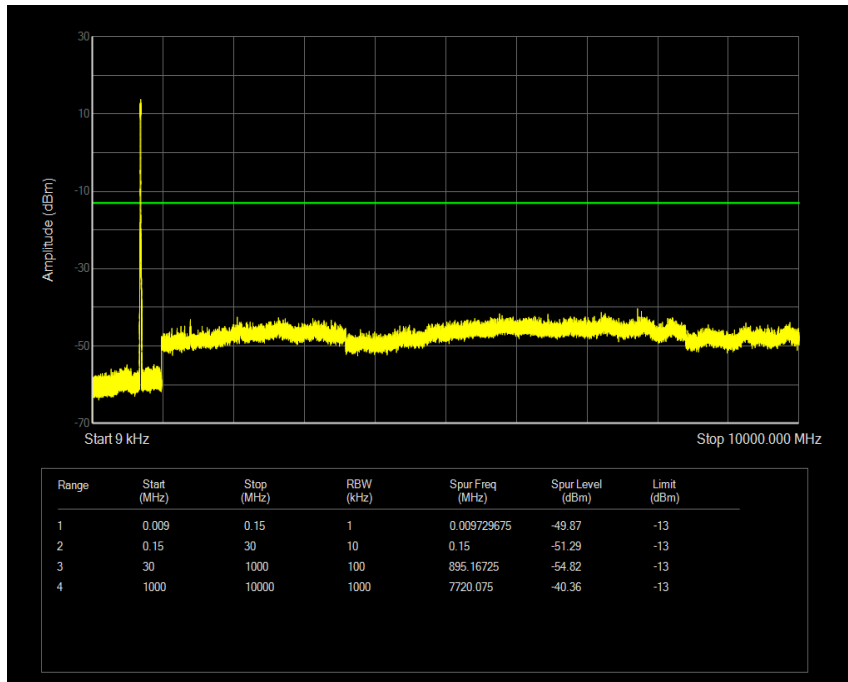


LTE Band 12 Highest channel: 5MHz

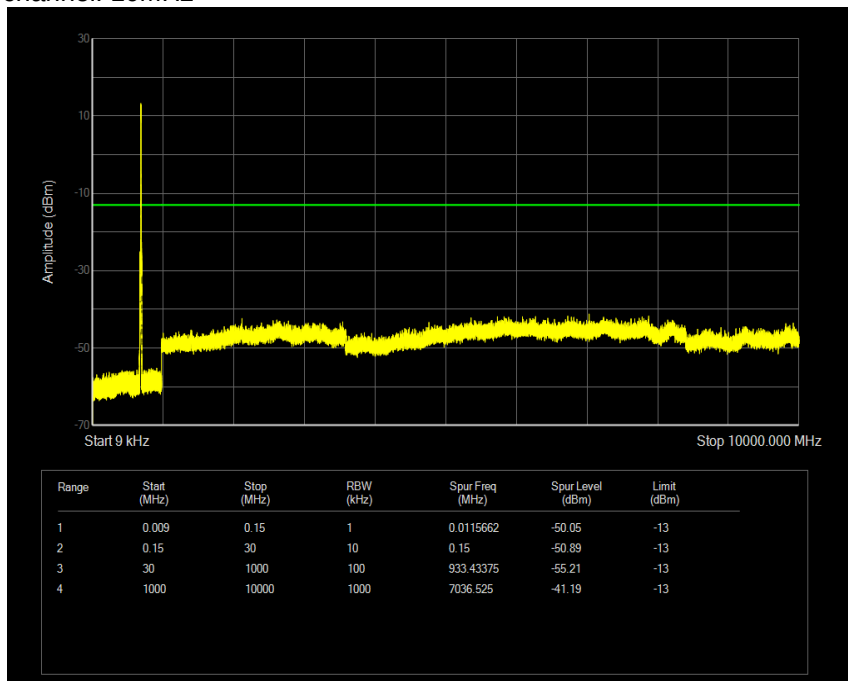




LTE Band 12 Lowest channel:10MHz



LTE Band 12 Highest channel: 10MHz





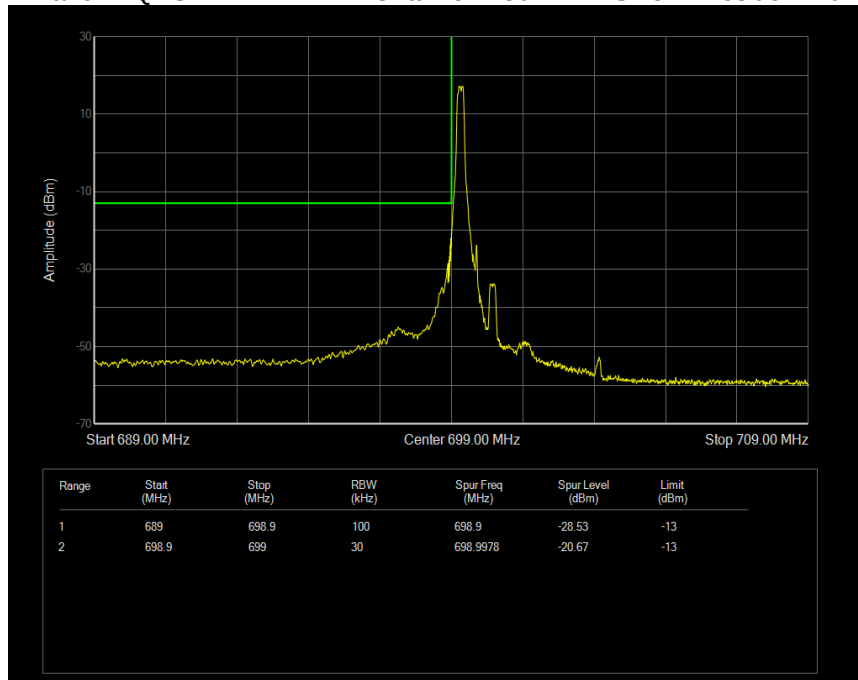
1.3. Conducted Out of Band Emissions

1.3.1. Test Result

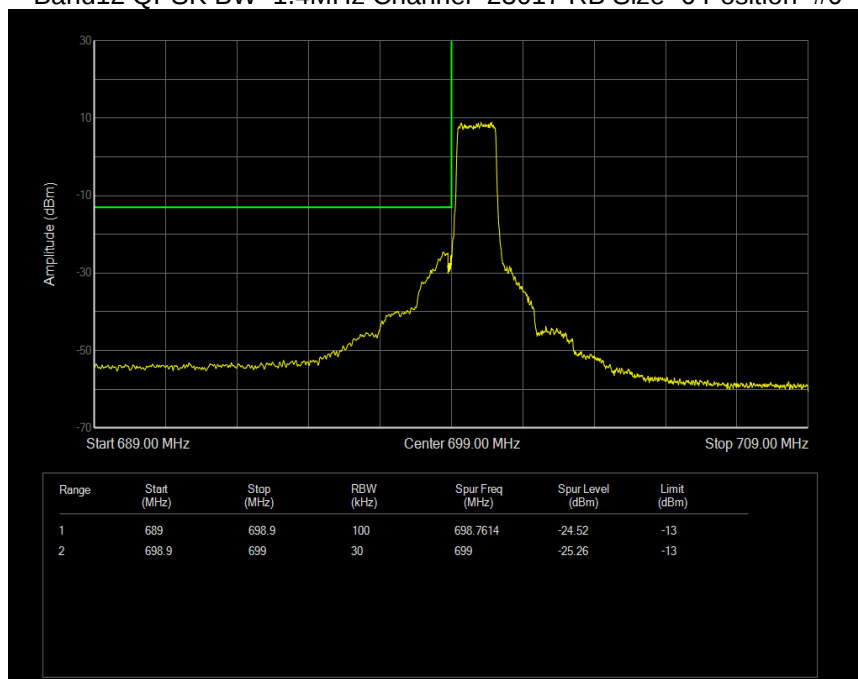
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

LTE Category is Cat1, So the bandwidth 10M/15/20M does not support QAM16.

Band12 QPSK BW=1.4MHz Channel=23017 RB Size=1 Position=#0

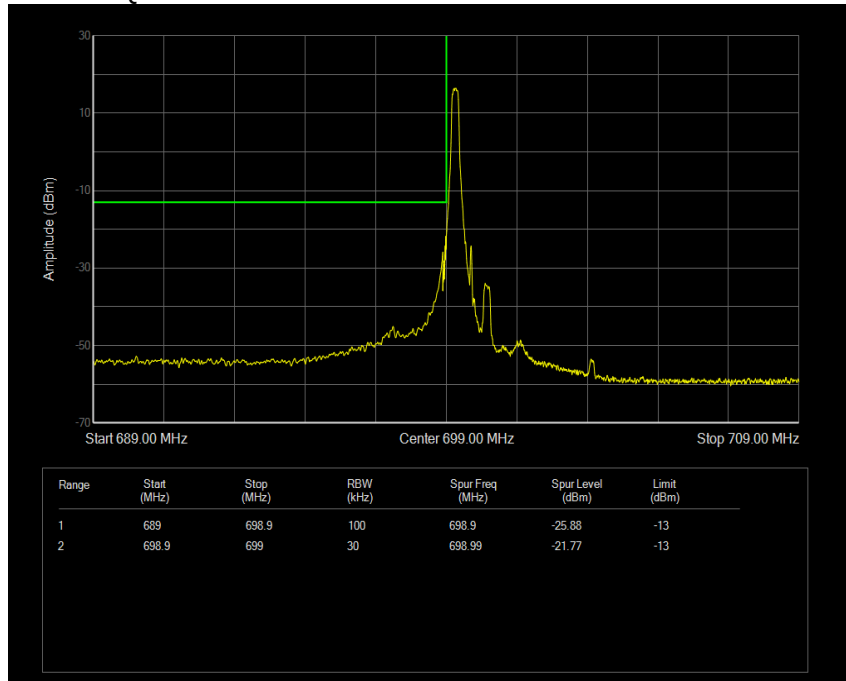


Band12 QPSK BW=1.4MHz Channel=23017 RB Size=6 Position=#0

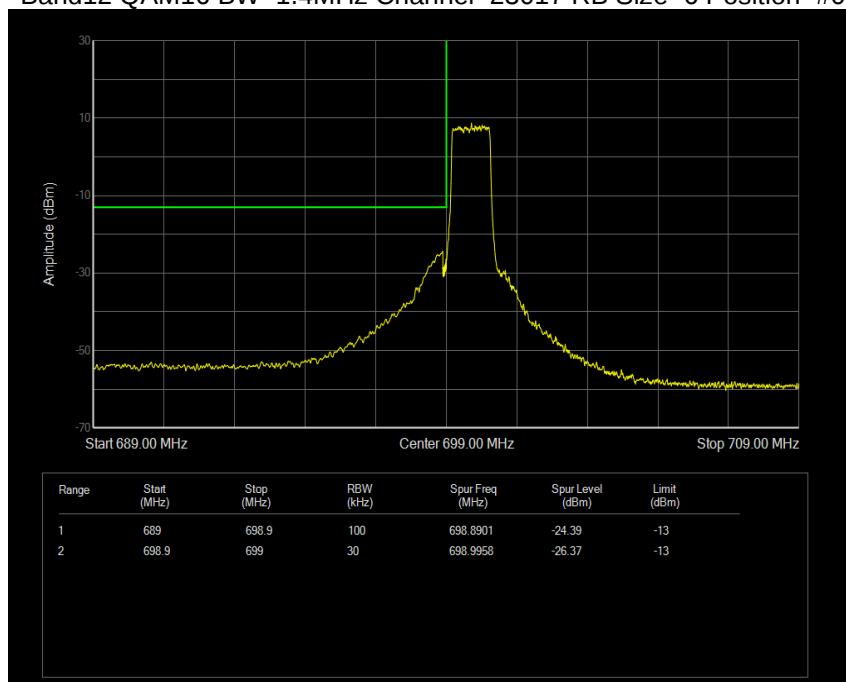




Band12 QAM16 BW=1.4MHz Channel=23017 RB Size=1 Position=#0

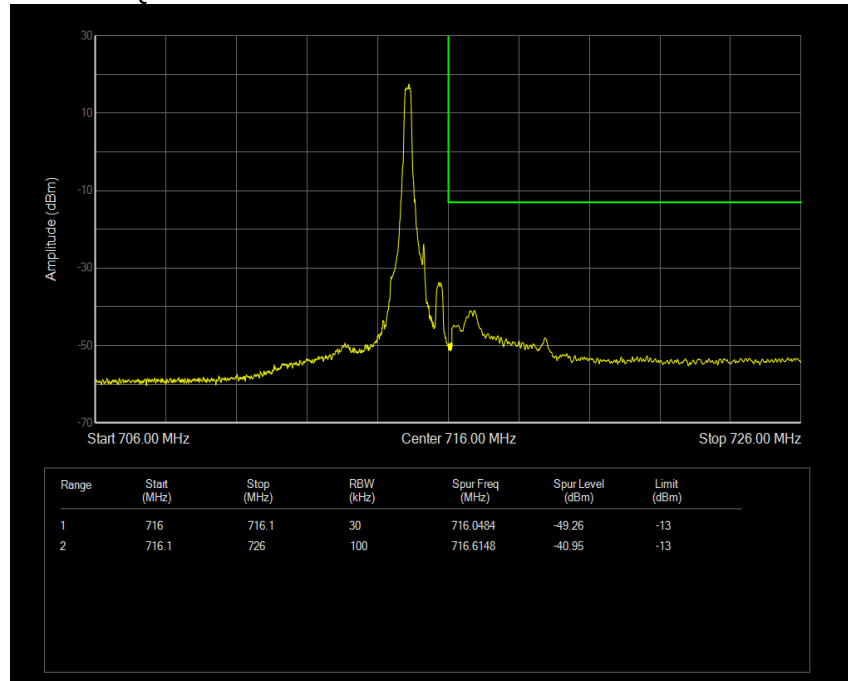


Band12 QAM16 BW=1.4MHz Channel=23017 RB Size=6 Position=#0

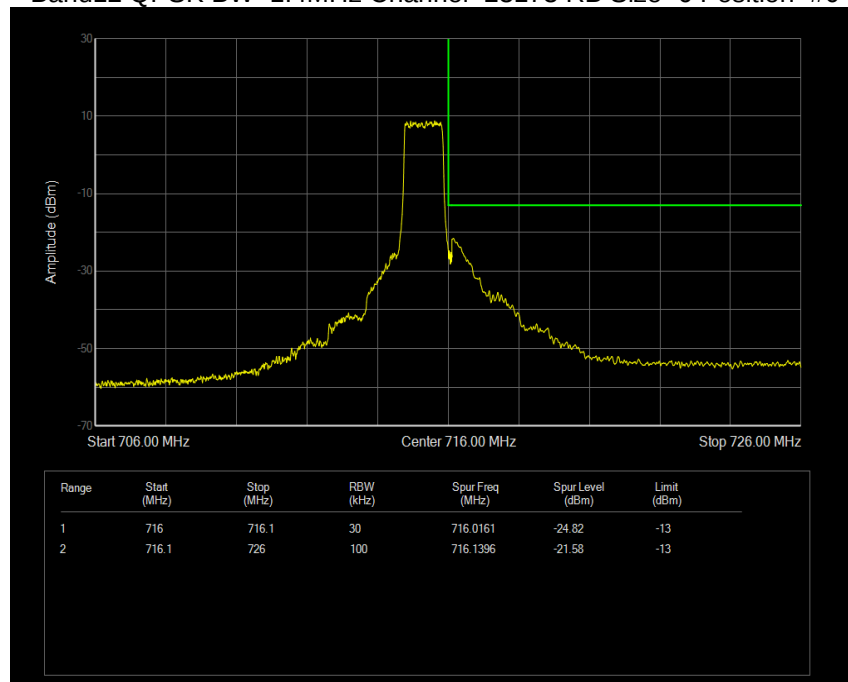




Band12 QPSK BW=1.4MHz Channel=23173 RB Size=1 Position=#0

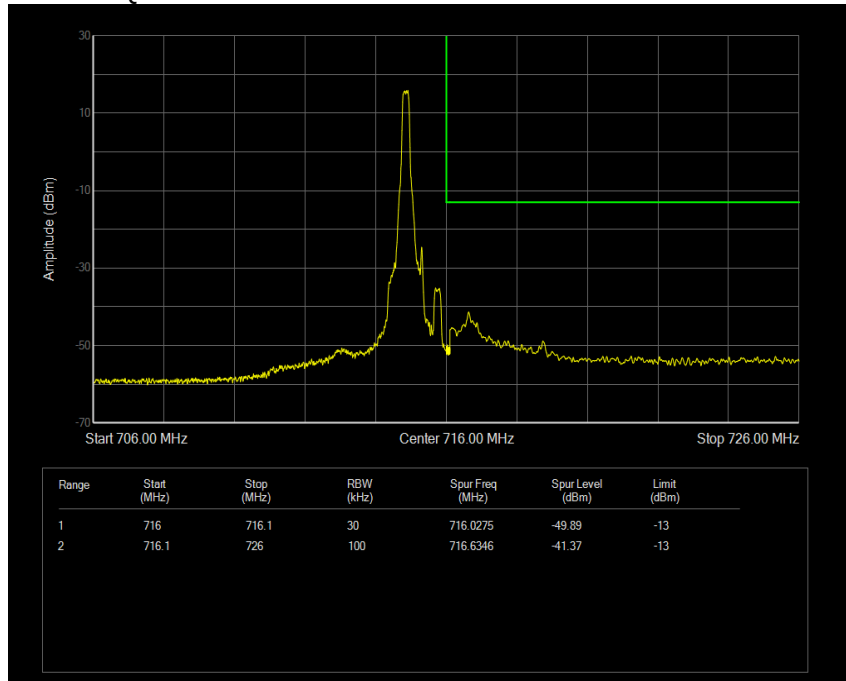


Band12 QPSK BW=1.4MHz Channel=23173 RB Size=6 Position=#0

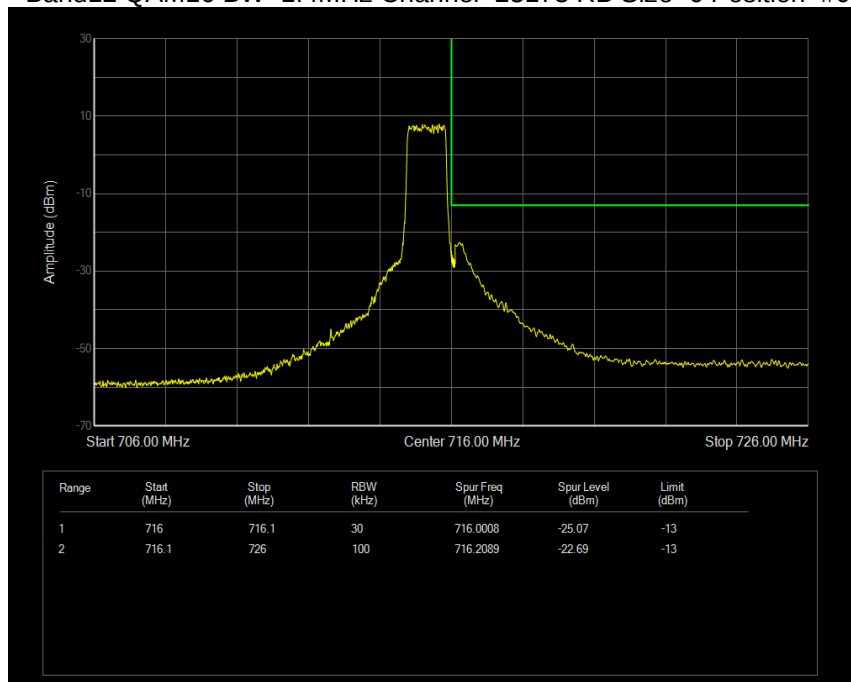




Band12 QAM16 BW=1.4MHz Channel=23173 RB Size=1 Position=#0

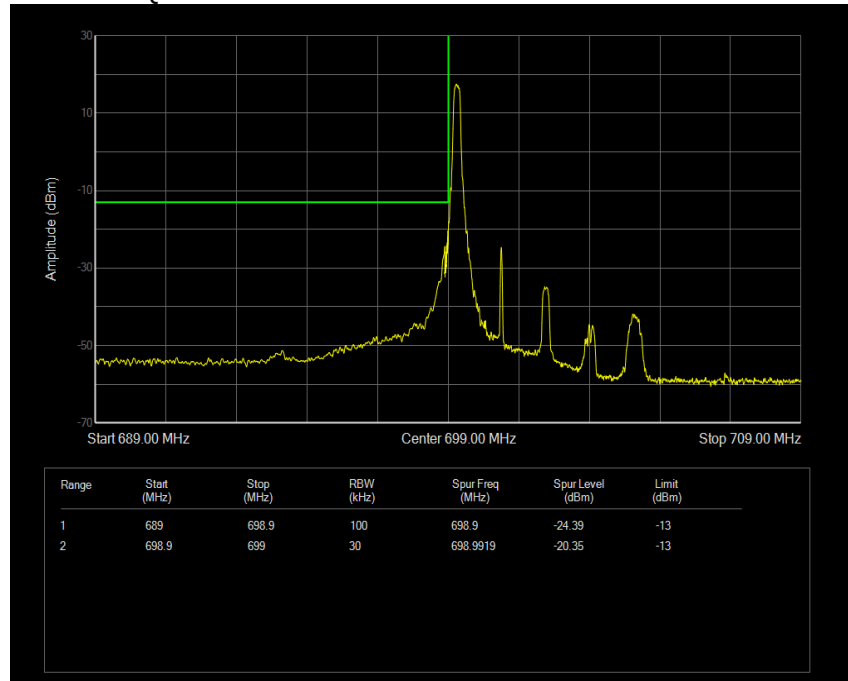


Band12 QAM16 BW=1.4MHz Channel=23173 RB Size=6 Position=#0

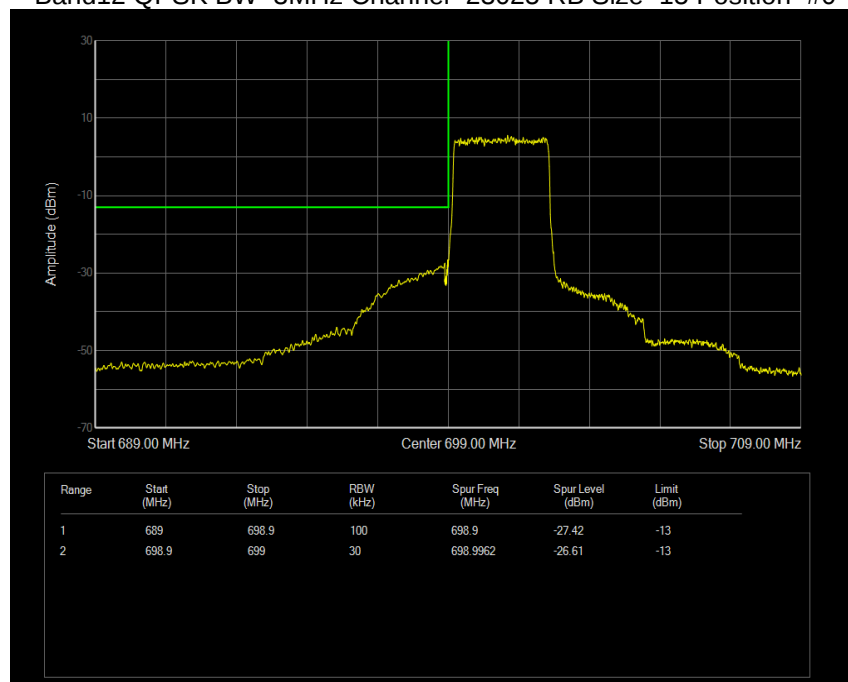




Band12 QPSK BW=3MHz Channel=23025 RB Size=1 Position=#0

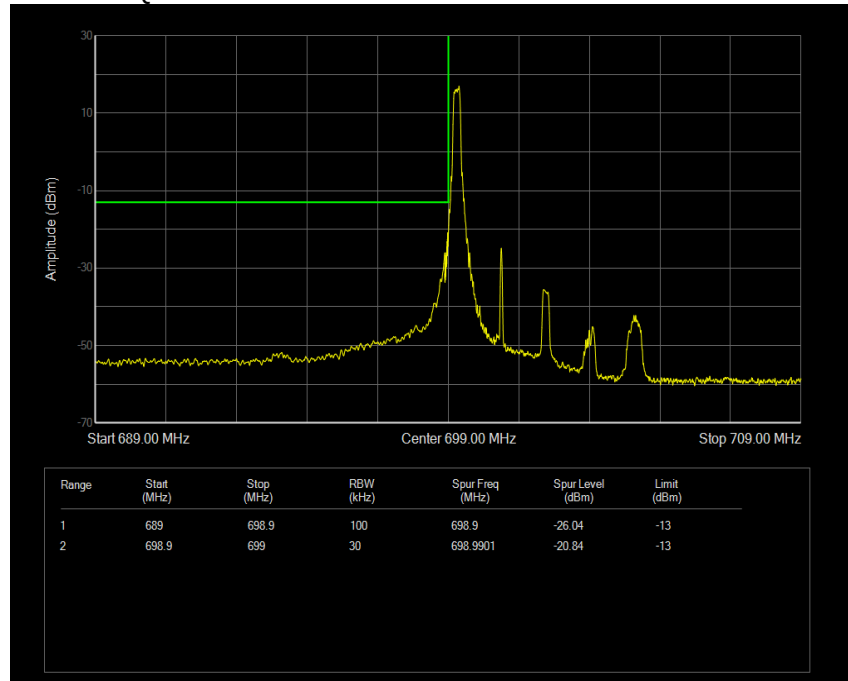


Band12 QPSK BW=3MHz Channel=23025 RB Size=15 Position=#0

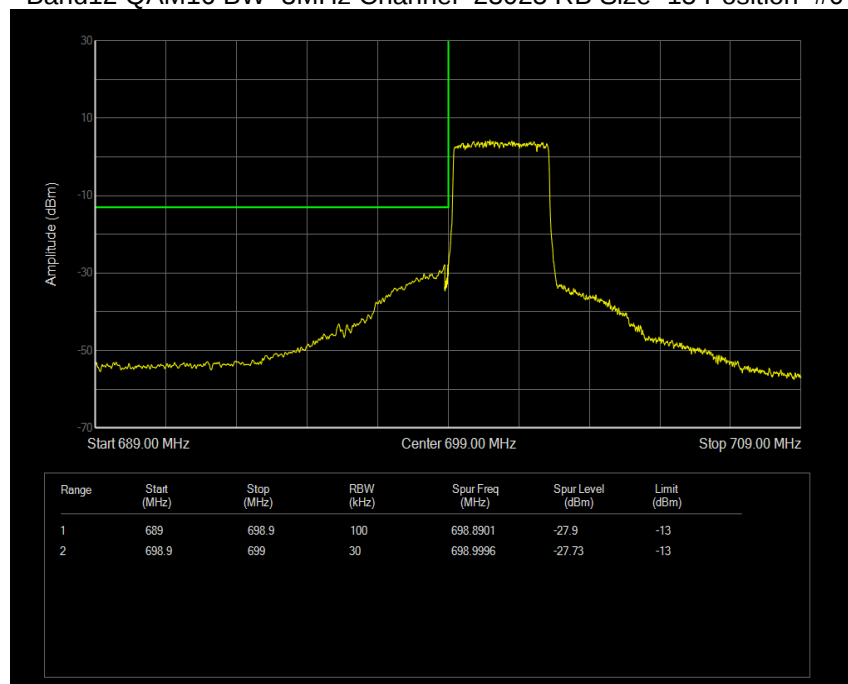




Band12 QAM16 BW=3MHz Channel=23025 RB Size=1 Position=#0

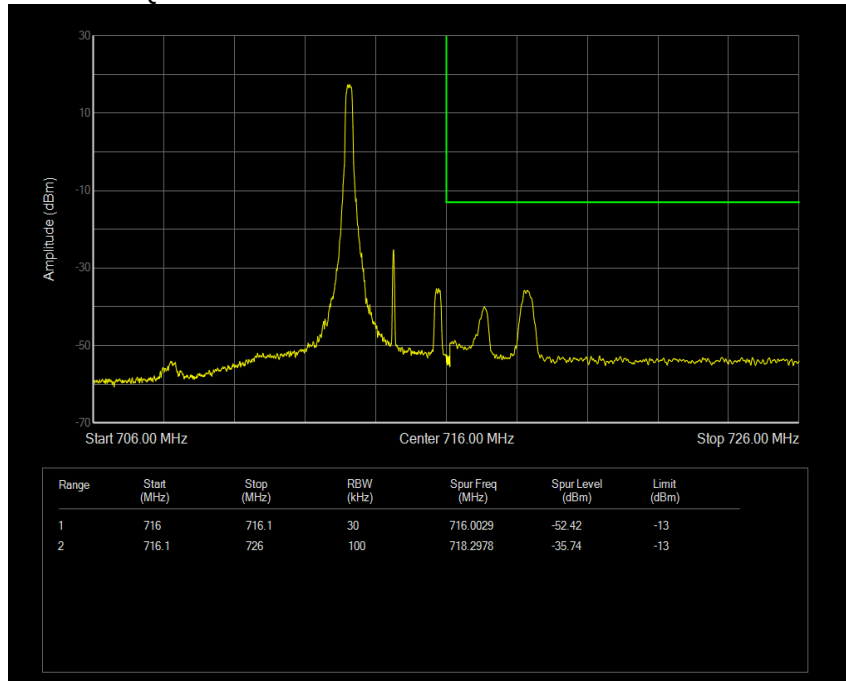


Band12 QAM16 BW=3MHz Channel=23025 RB Size=15 Position=#0

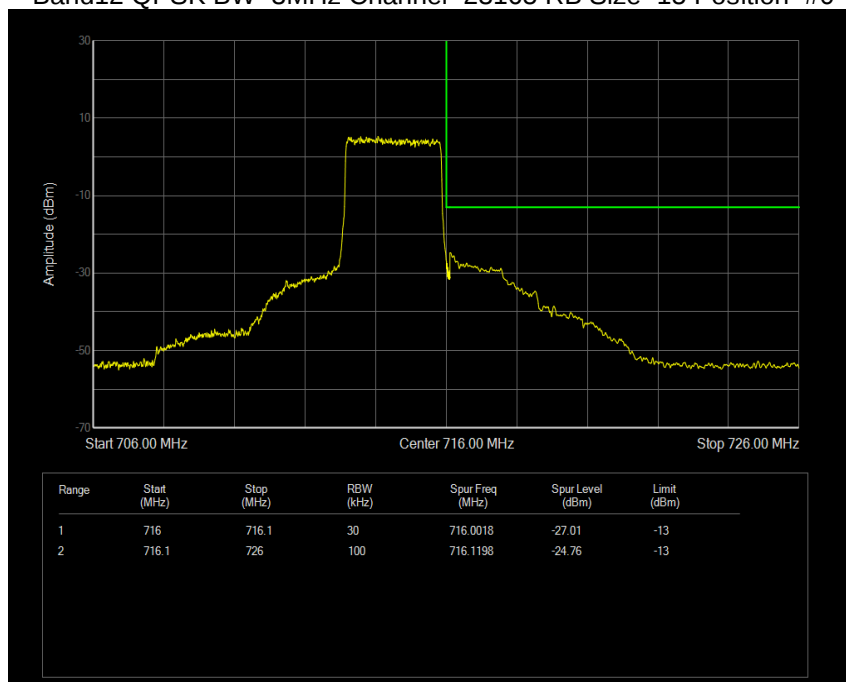




Band12 QPSK BW=3MHz Channel=23165 RB Size=1 Position=#0

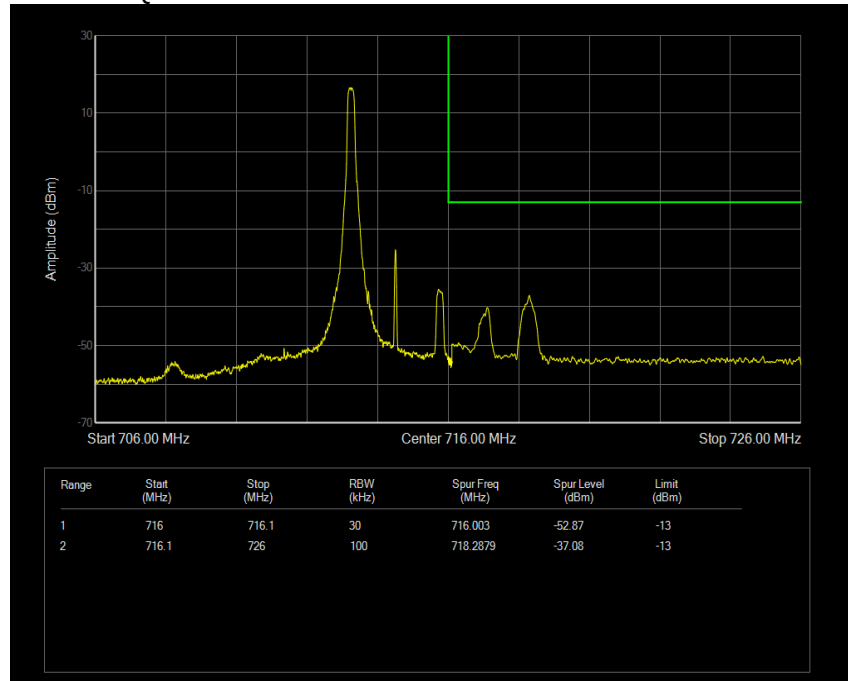


Band12 QPSK BW=3MHz Channel=23165 RB Size=15 Position=#0

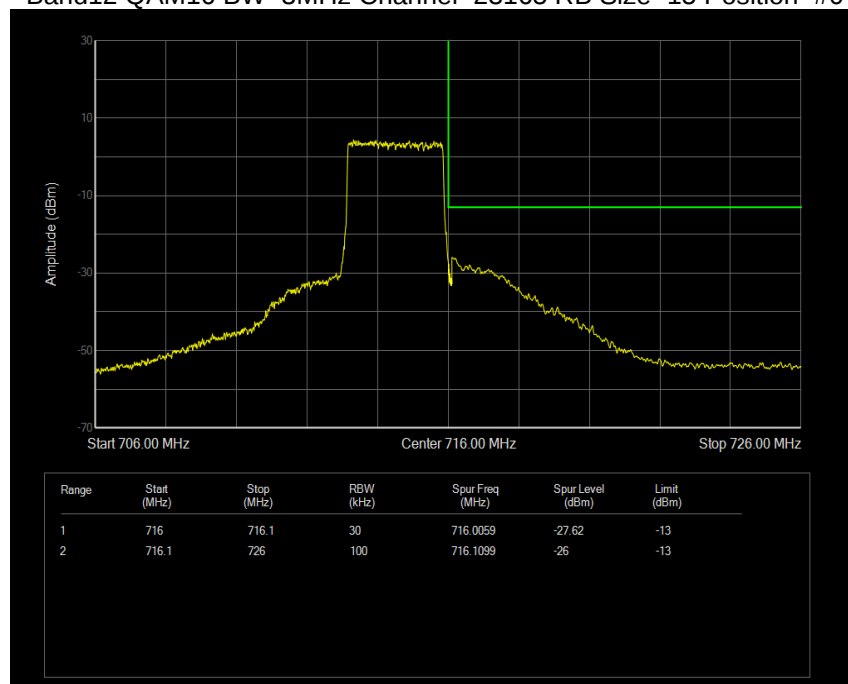




Band12 QAM16 BW=3MHz Channel=23165 RB Size=1 Position=#0

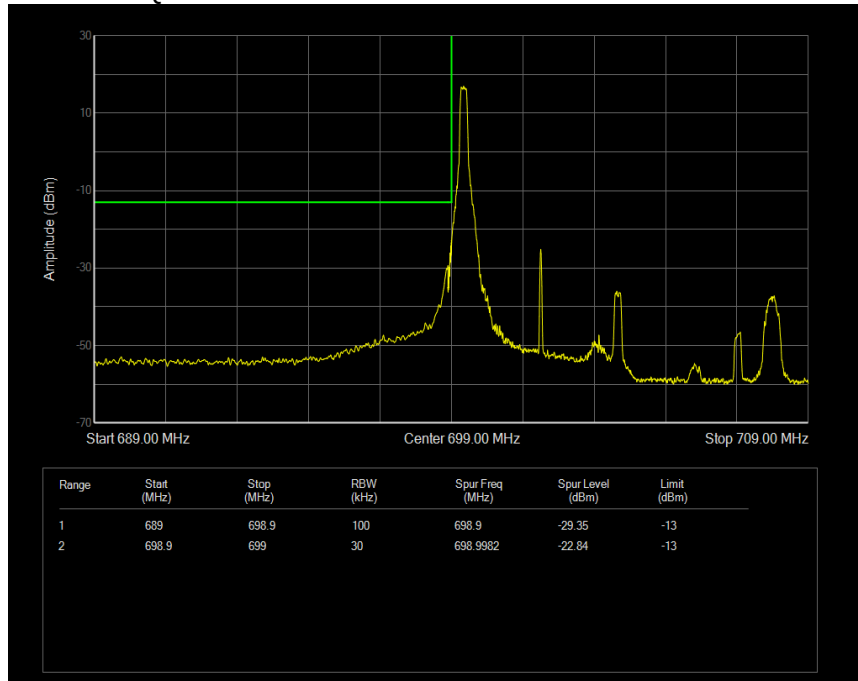


Band12 QAM16 BW=3MHz Channel=23165 RB Size=15 Position=#0

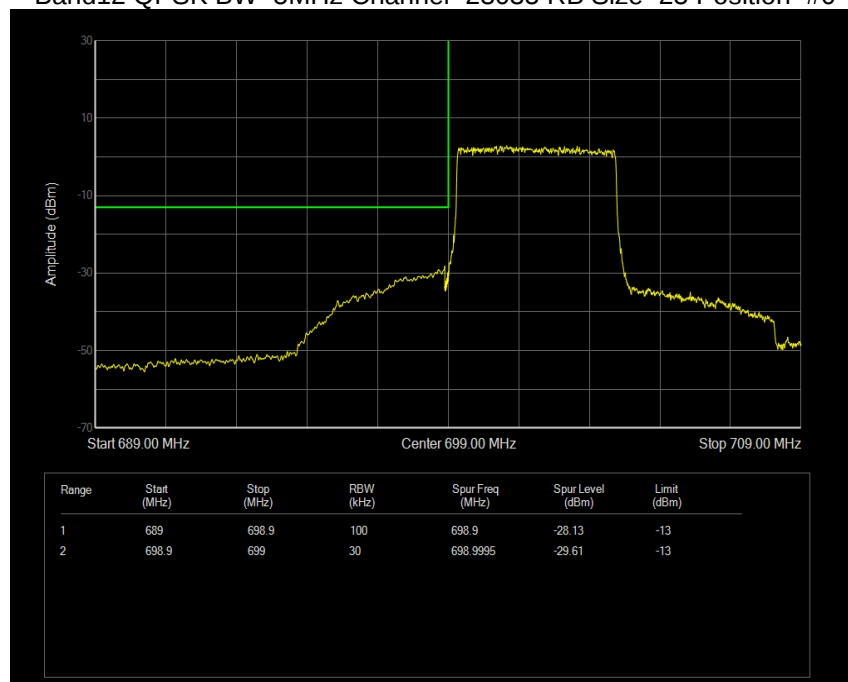




Band12 QPSK BW=5MHz Channel=23035 RB Size=1 Position=#0

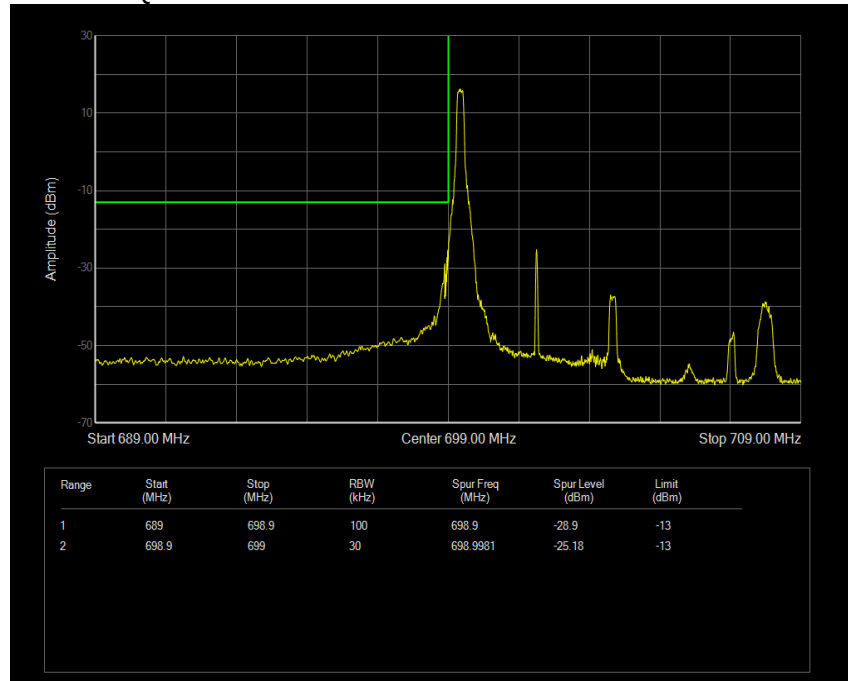


Band12 QPSK BW=5MHz Channel=23035 RB Size=25 Position=#0

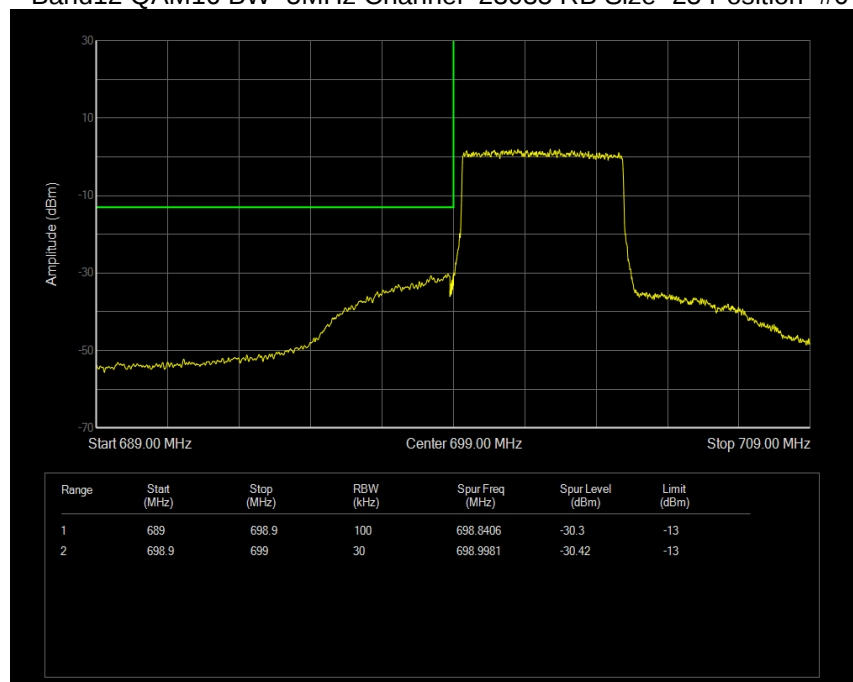




Band12 QAM16 BW=5MHz Channel=23035 RB Size=1 Position=#0

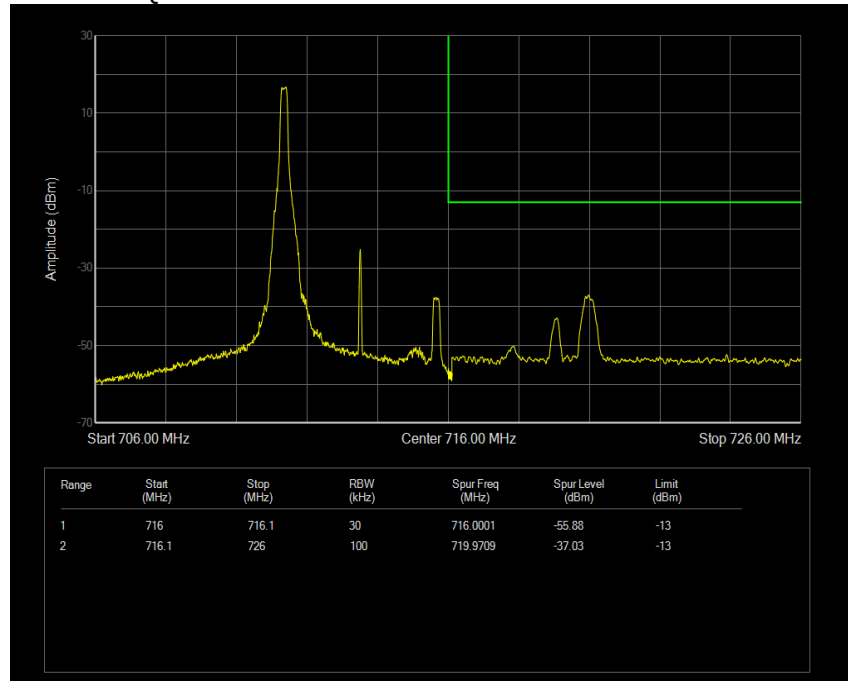


Band12 QAM16 BW=5MHz Channel=23035 RB Size=25 Position=#0

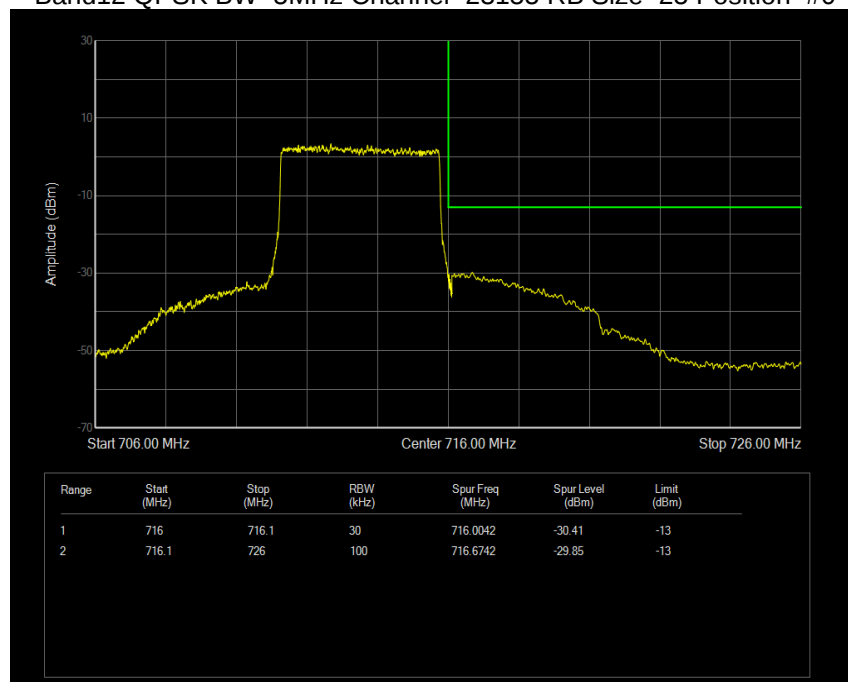




Band12 QPSK BW=5MHz Channel=23155 RB Size=1 Position=#0

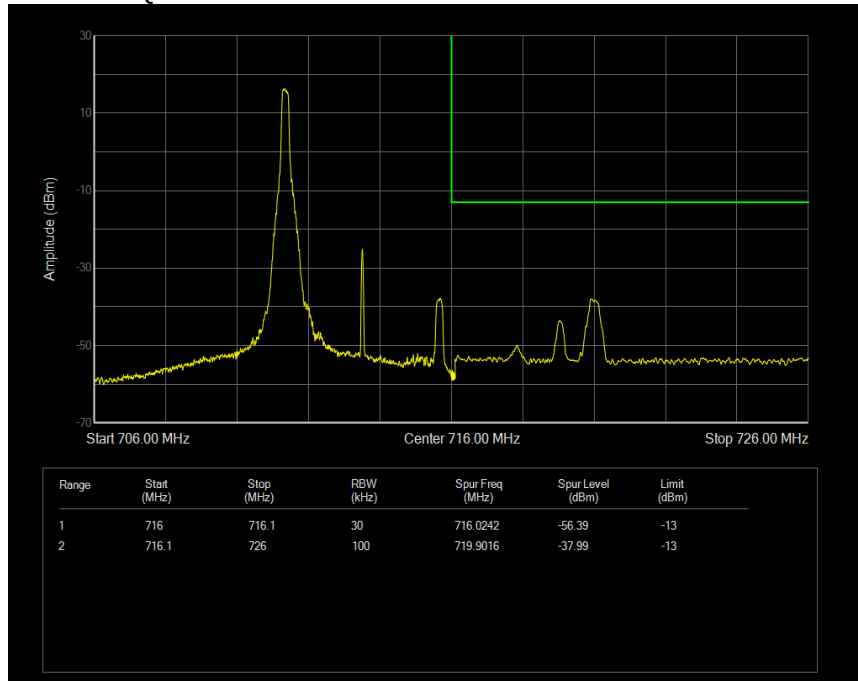


Band12 QPSK BW=5MHz Channel=23155 RB Size=25 Position=#0

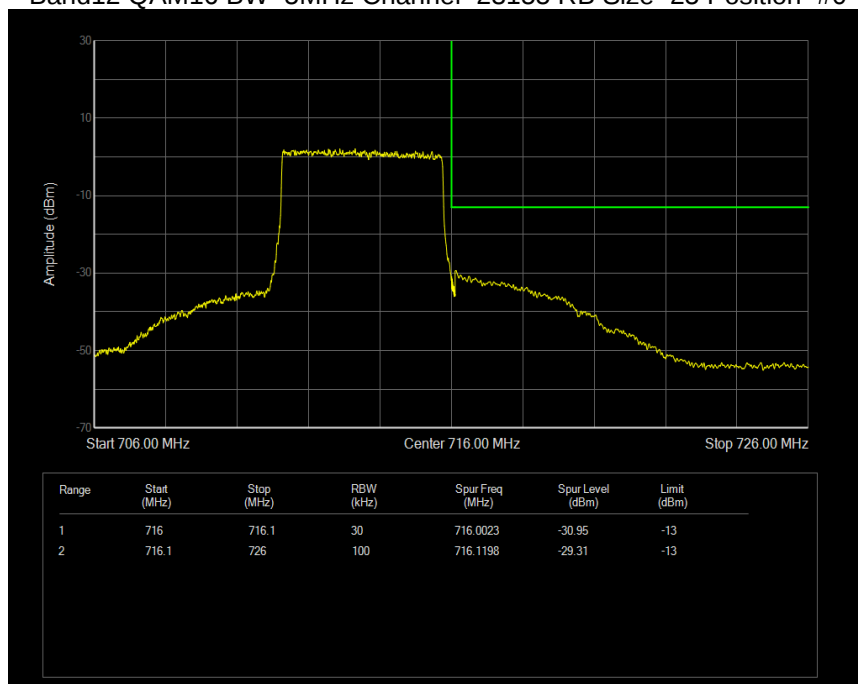




Band12 QAM16 BW=5MHz Channel=23155 RB Size=1 Position=#0

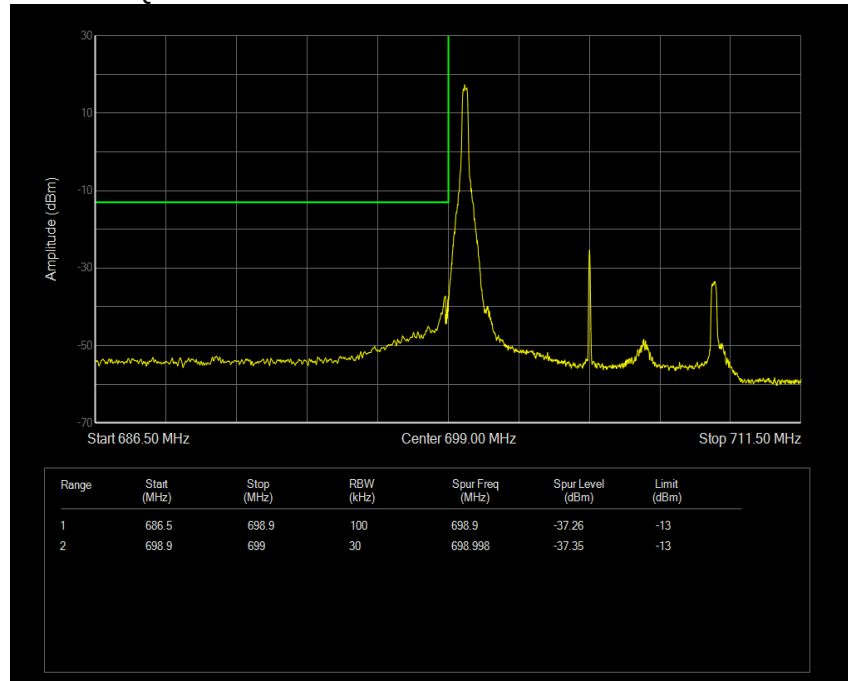


Band12 QAM16 BW=5MHz Channel=23155 RB Size=25 Position=#0

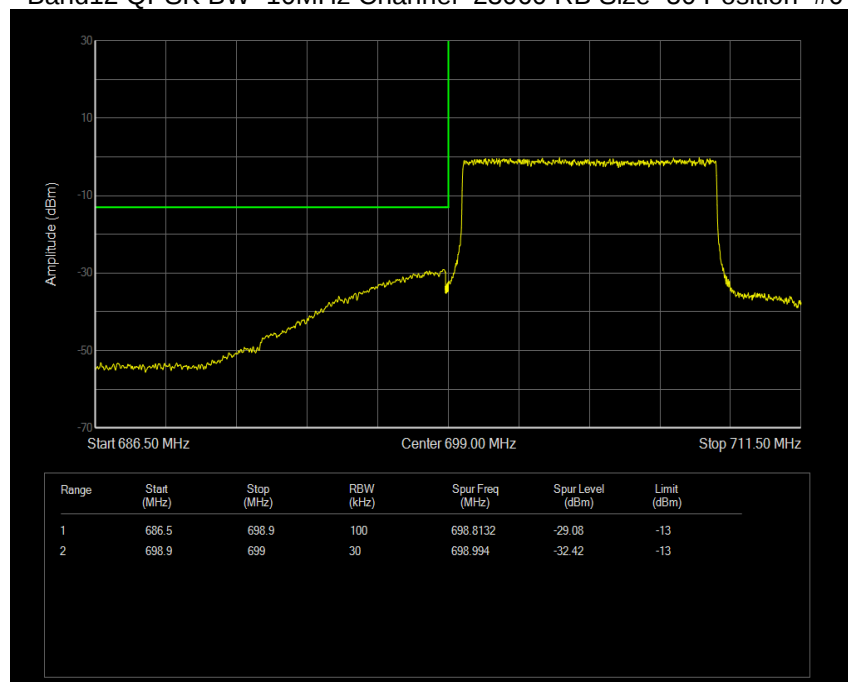




Band12 QPSK BW=10MHz Channel=23060 RB Size=1 Position=#0

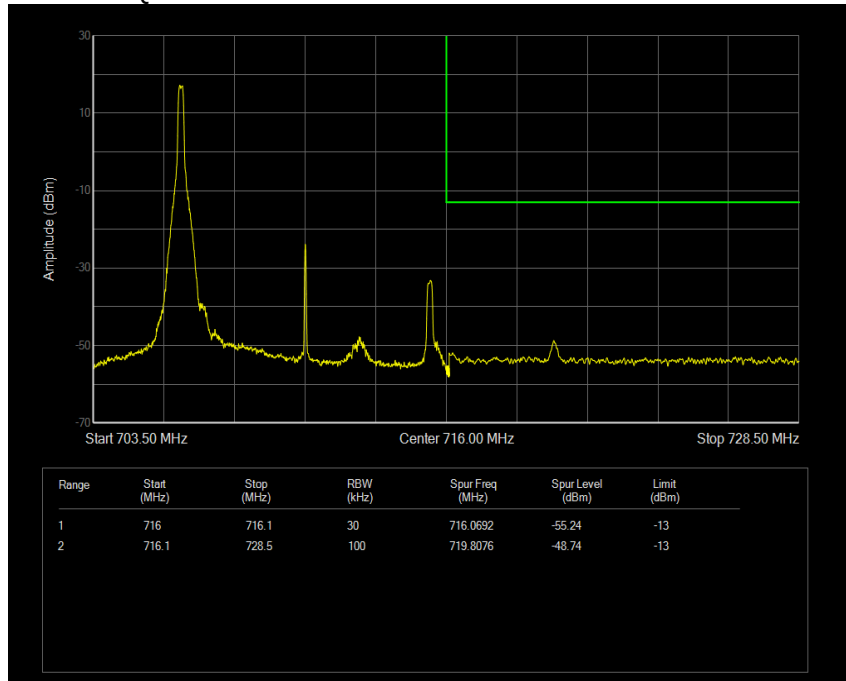


Band12 QPSK BW=10MHz Channel=23060 RB Size=50 Position=#0

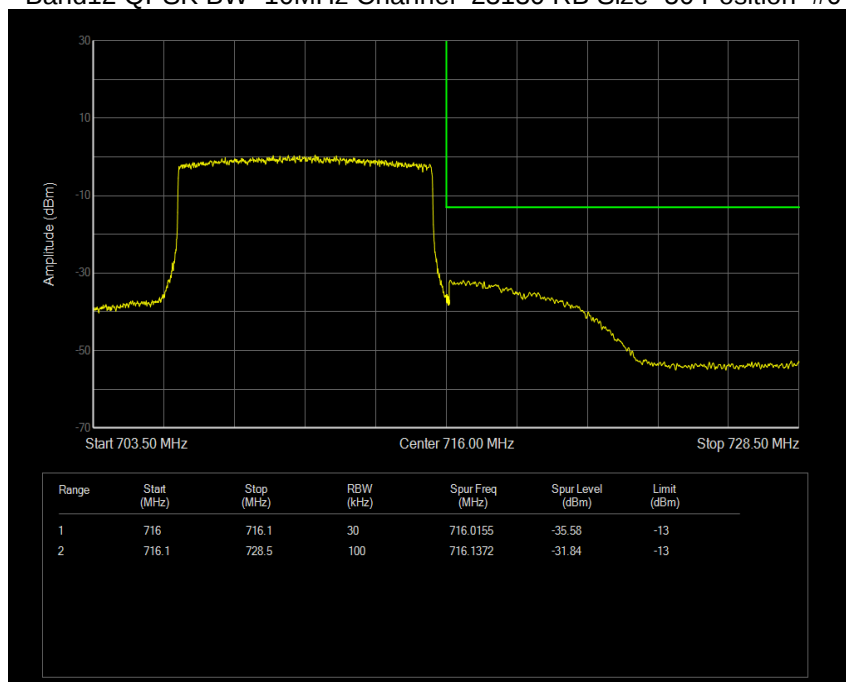




Band12 QPSK BW=10MHz Channel=23130 RB Size=1 Position=#0



Band12 QPSK BW=10MHz Channel=23130 RB Size=50 Position=#0



***** END *****