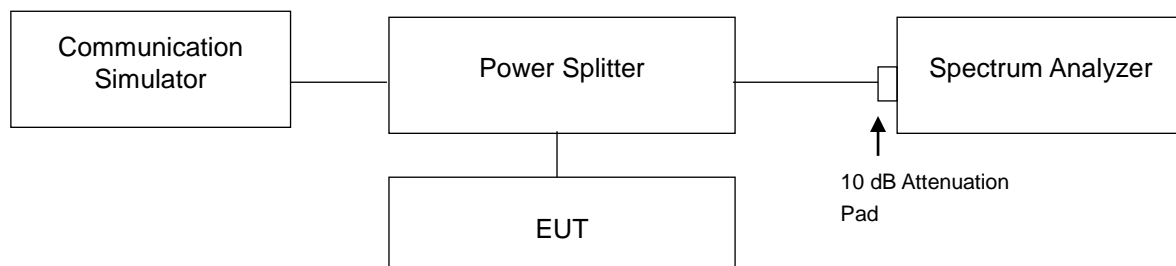


## 4.5 Out-of-Band Emissions Measurement

### 4.5.1 Limits of Out-of-Band Emissions Measurement

According to FCC 27.53(m)(4)&(6) specified that power of any emission outside of the channel edge must be attenuated below the transmitting power (P) by a 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. In addition, the attenuation factor shall not be less that  $43 + 10 \log (P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log (P)$  dB at or below 2490.5 MHz. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed.

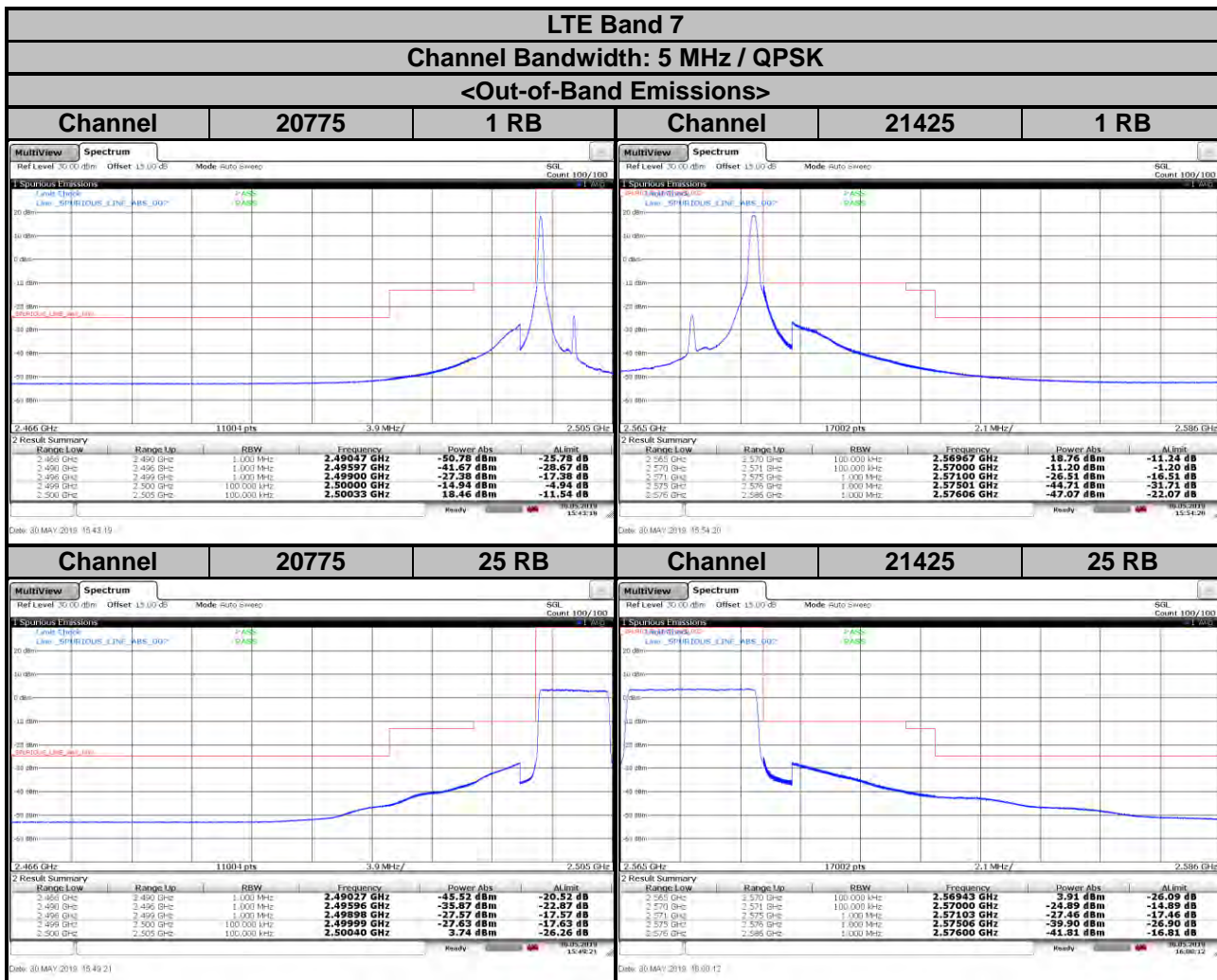
### 4.5.2 Test Setup



### 4.5.3 Test Procedures

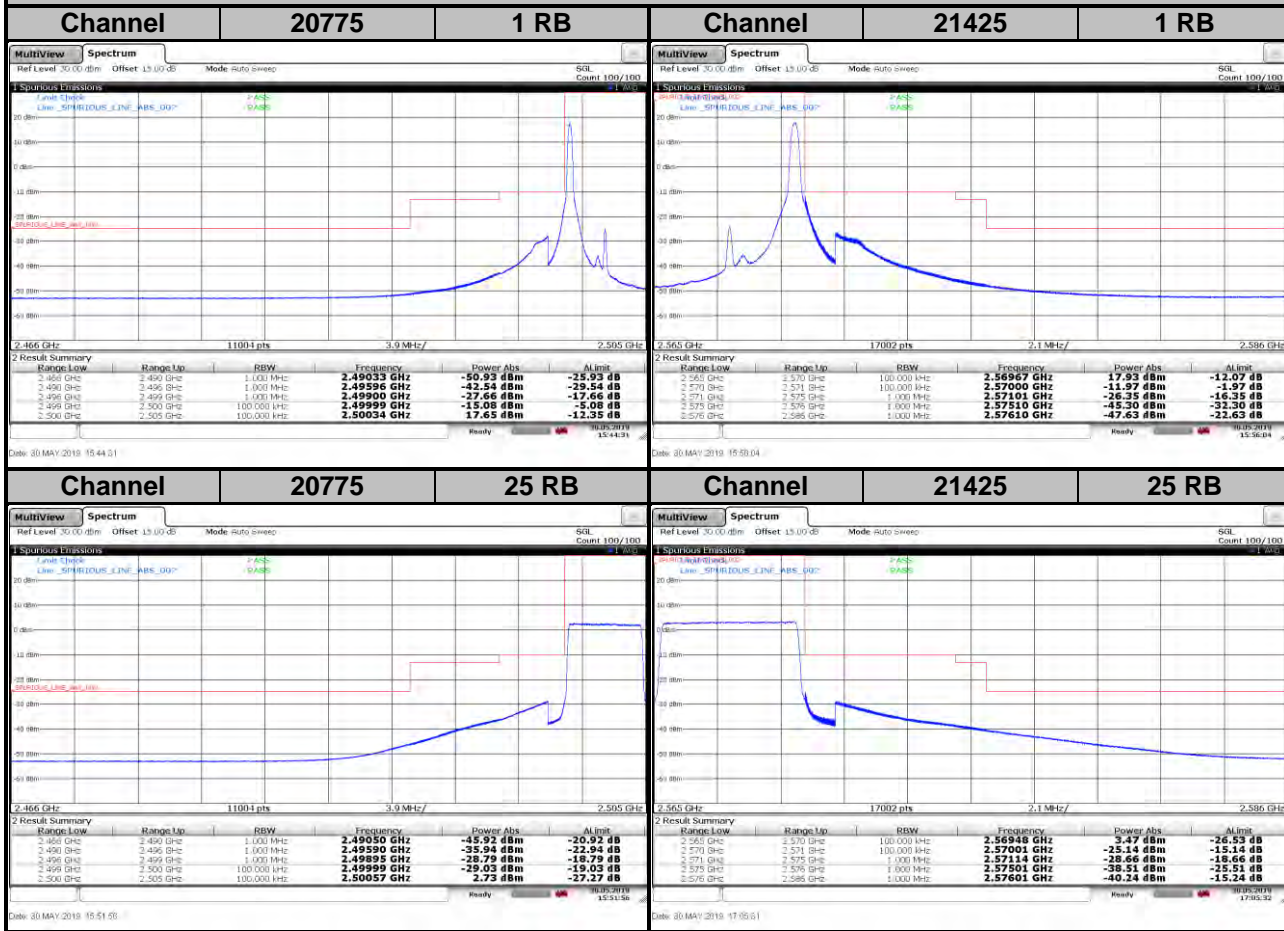
- a. The EUT was set up for the maximum peak power with LTE link data modulation. The power was measured with R&S Spectrum Analyzer. All measurements were done at 2 channels (low and high operational frequency range.).
- b. The out-of-band emissions measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- c. Record the max. trace plot into the test report.

### 4.5.4 Test Results



**LTE Band 7**  
**Channel Bandwidth: 5 MHz / 16QAM**

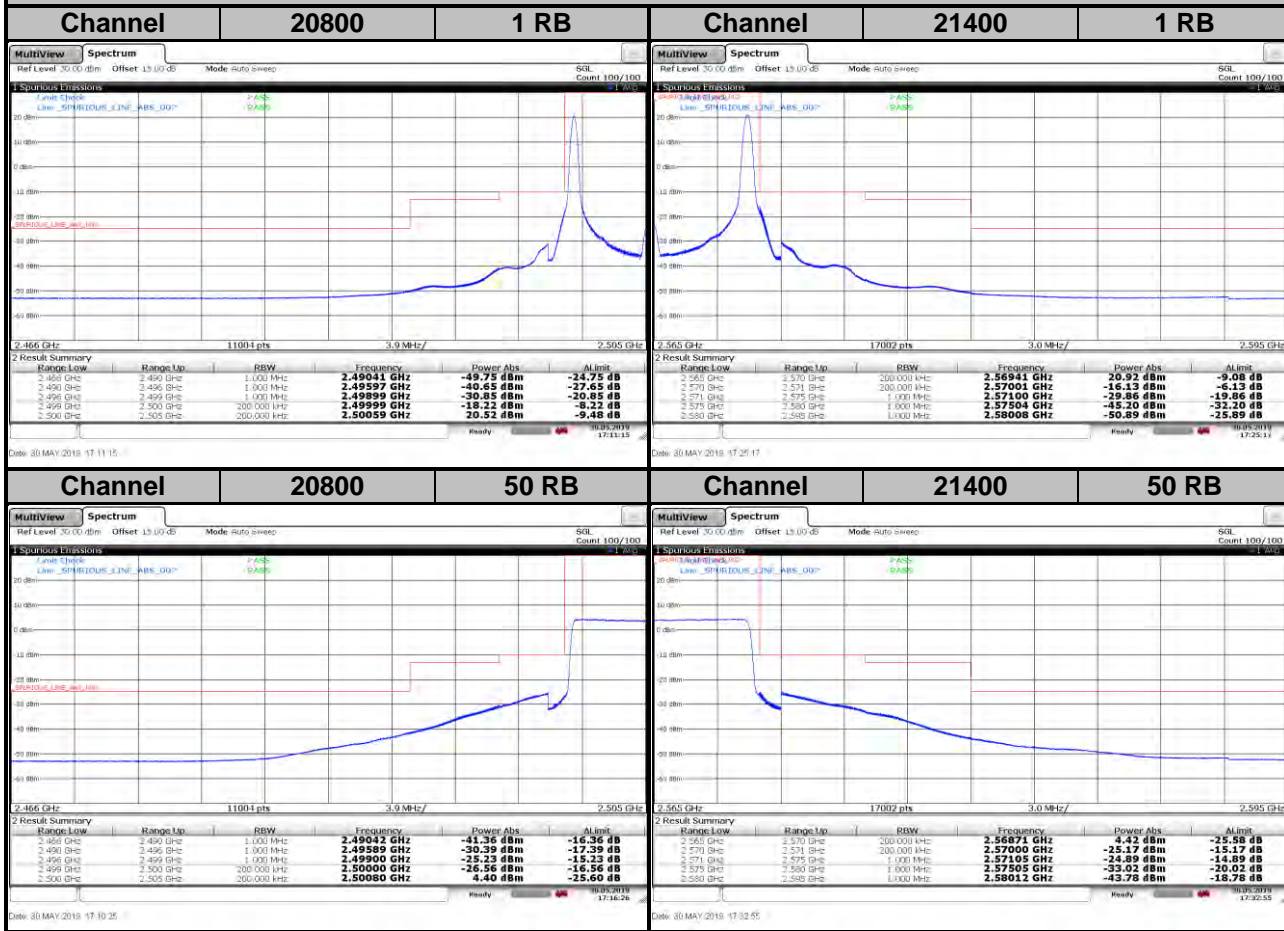
**<Out-of-Band Emissions>**



LTE Band 7

Channel Bandwidth: 10 MHz / QPSK

<Out-of-Band Emissions>

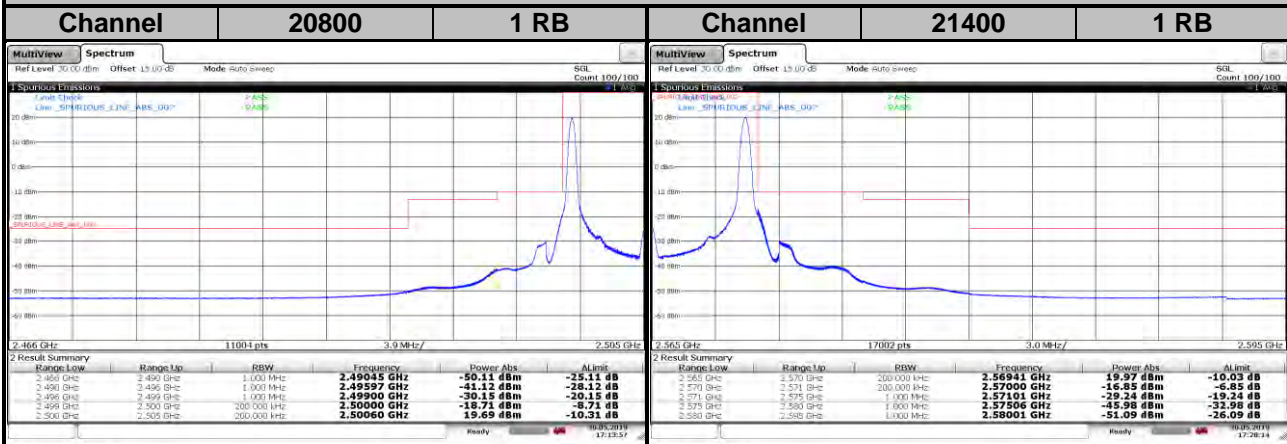




LTE Band 7

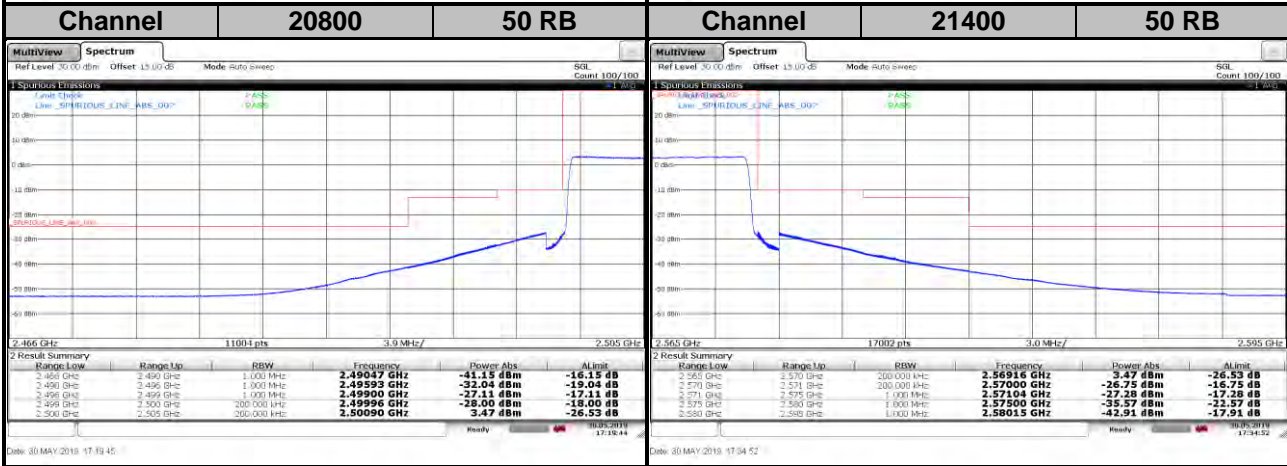
Channel Bandwidth: 10 MHz / 16QAM

<Out-of-Band Emissions>



Date: 30 MAY 2018 17:13:59

Date: 30 MAY 2018 17:28:14



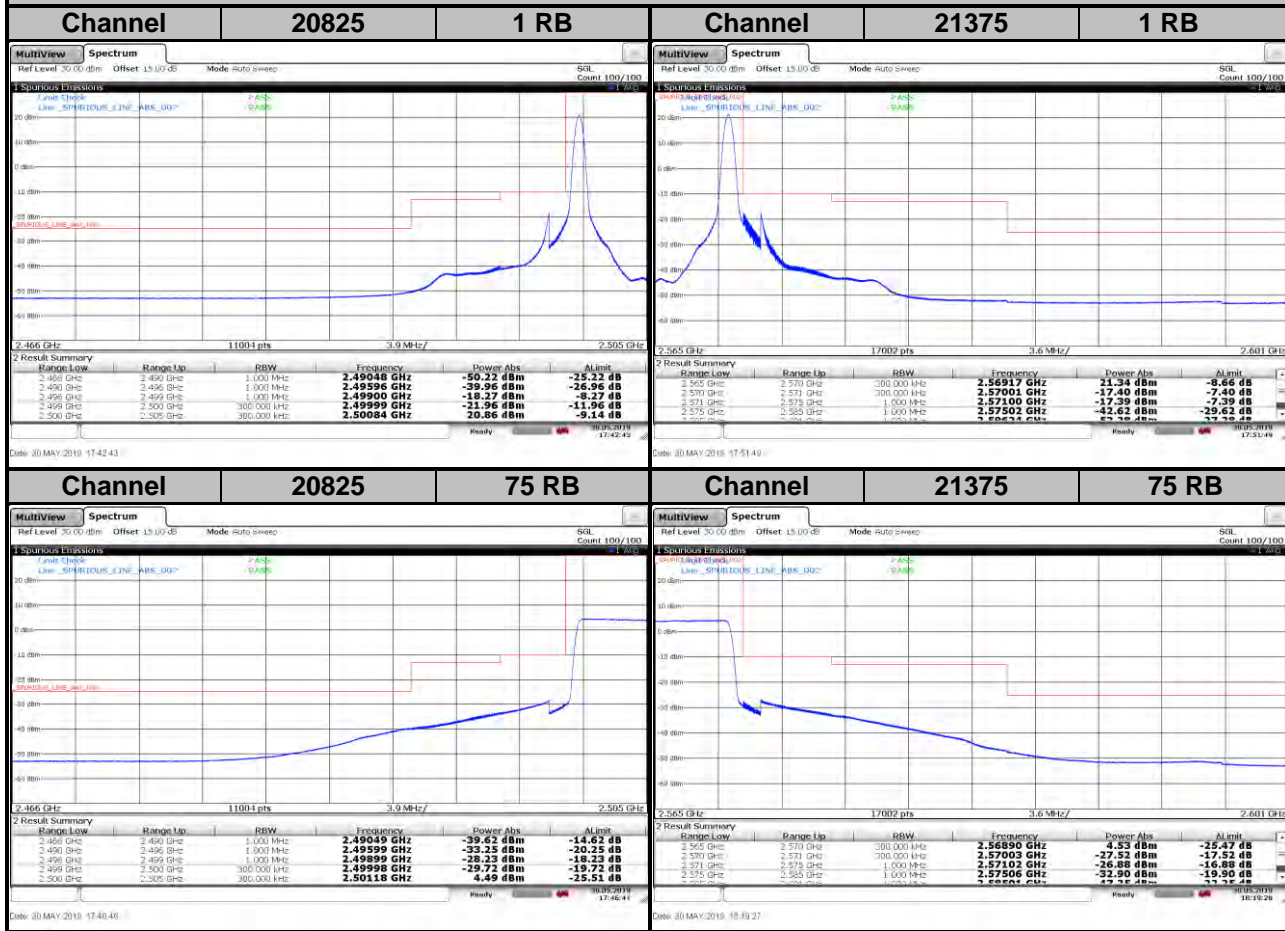
Date: 30 MAY 2018 17:13:45

Date: 30 MAY 2018 17:34:52

LTE Band 7

Channel Bandwidth: 15 MHz / QPSK

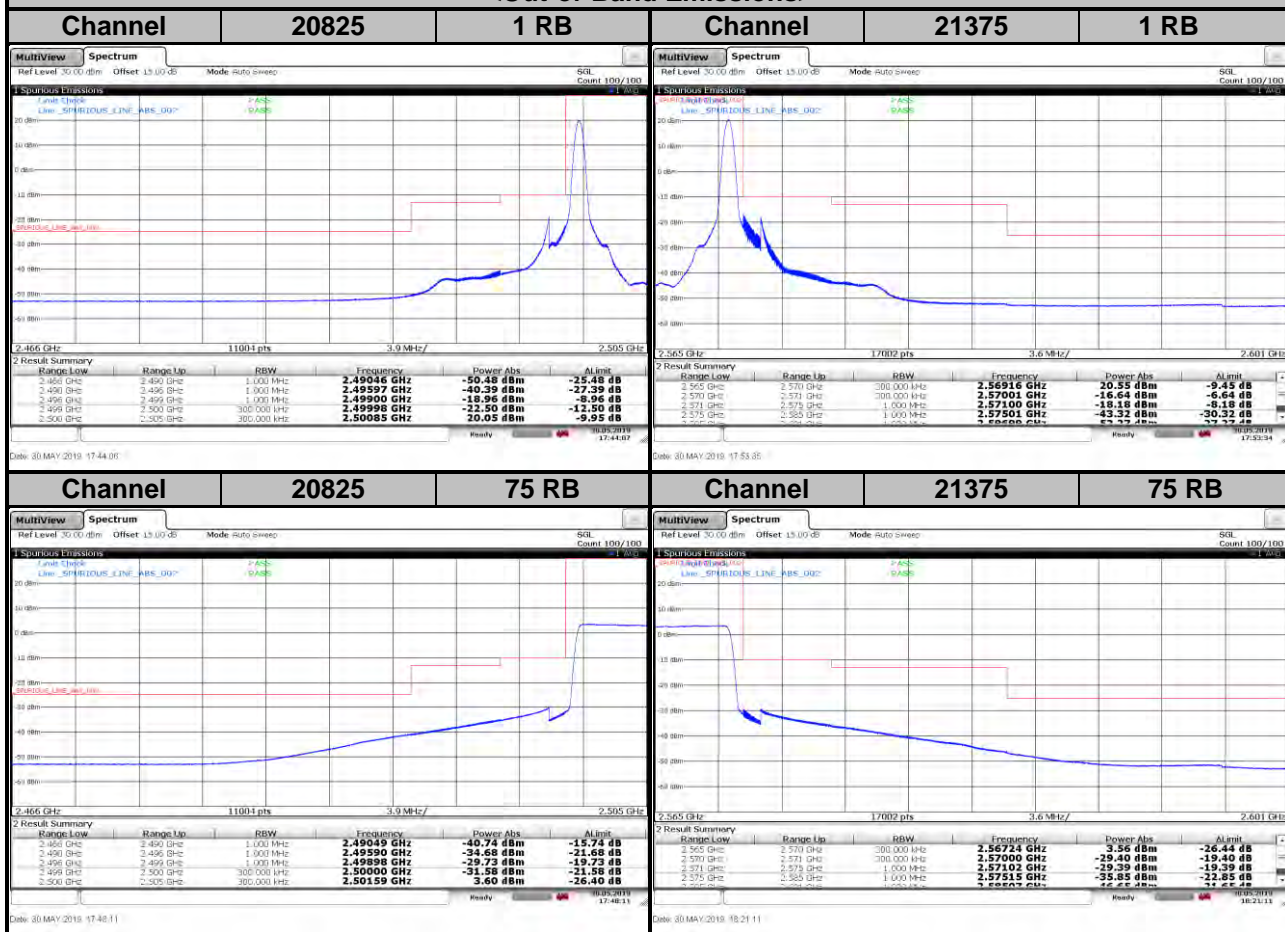
<Out-of-Band Emissions>



LTE Band 7

Channel Bandwidth: 15 MHz / 16QAM

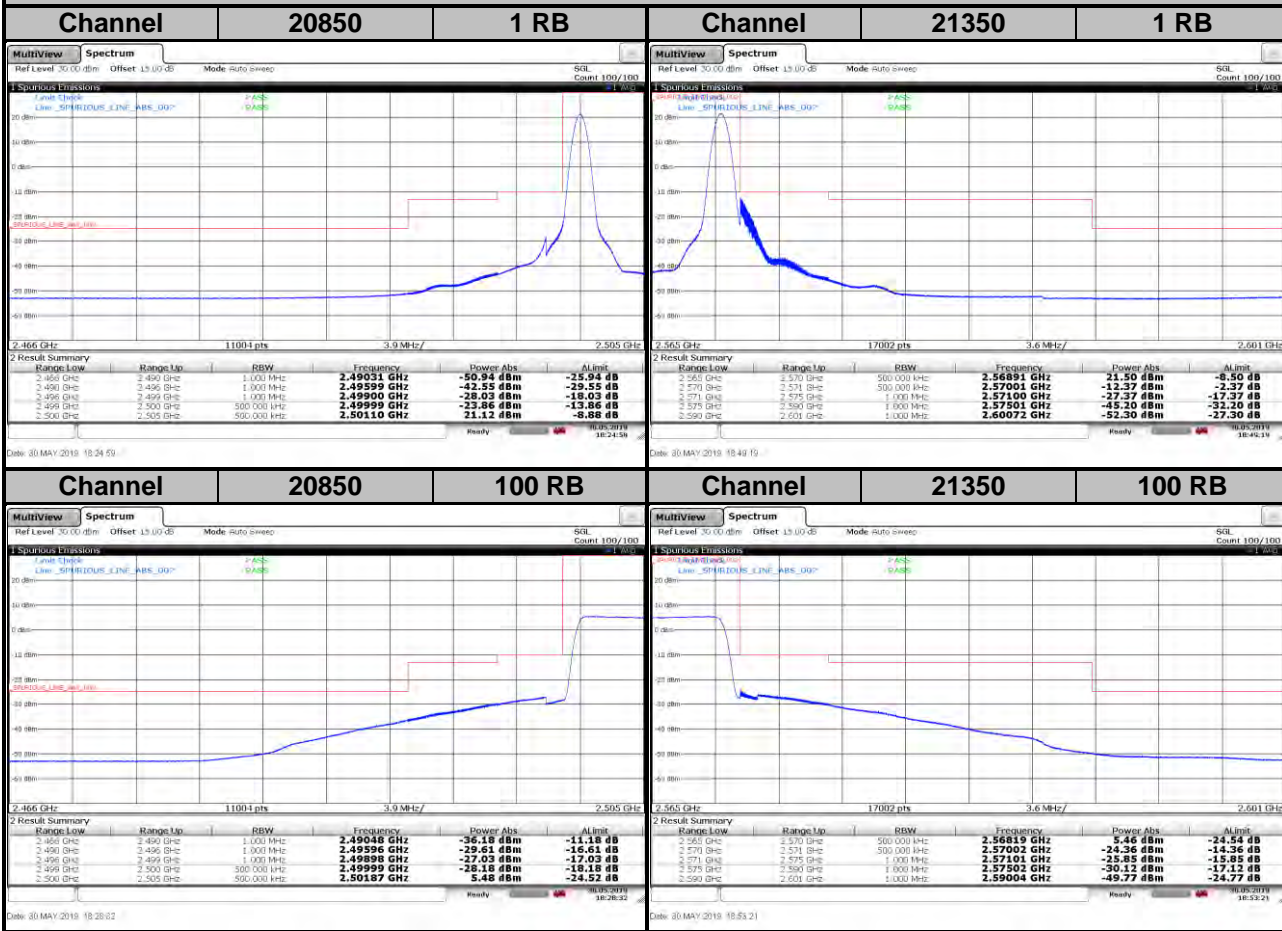
<Out-of-Band Emissions>



LTE Band 7

Channel Bandwidth: 20 MHz / QPSK

<Out-of-Band Emissions>

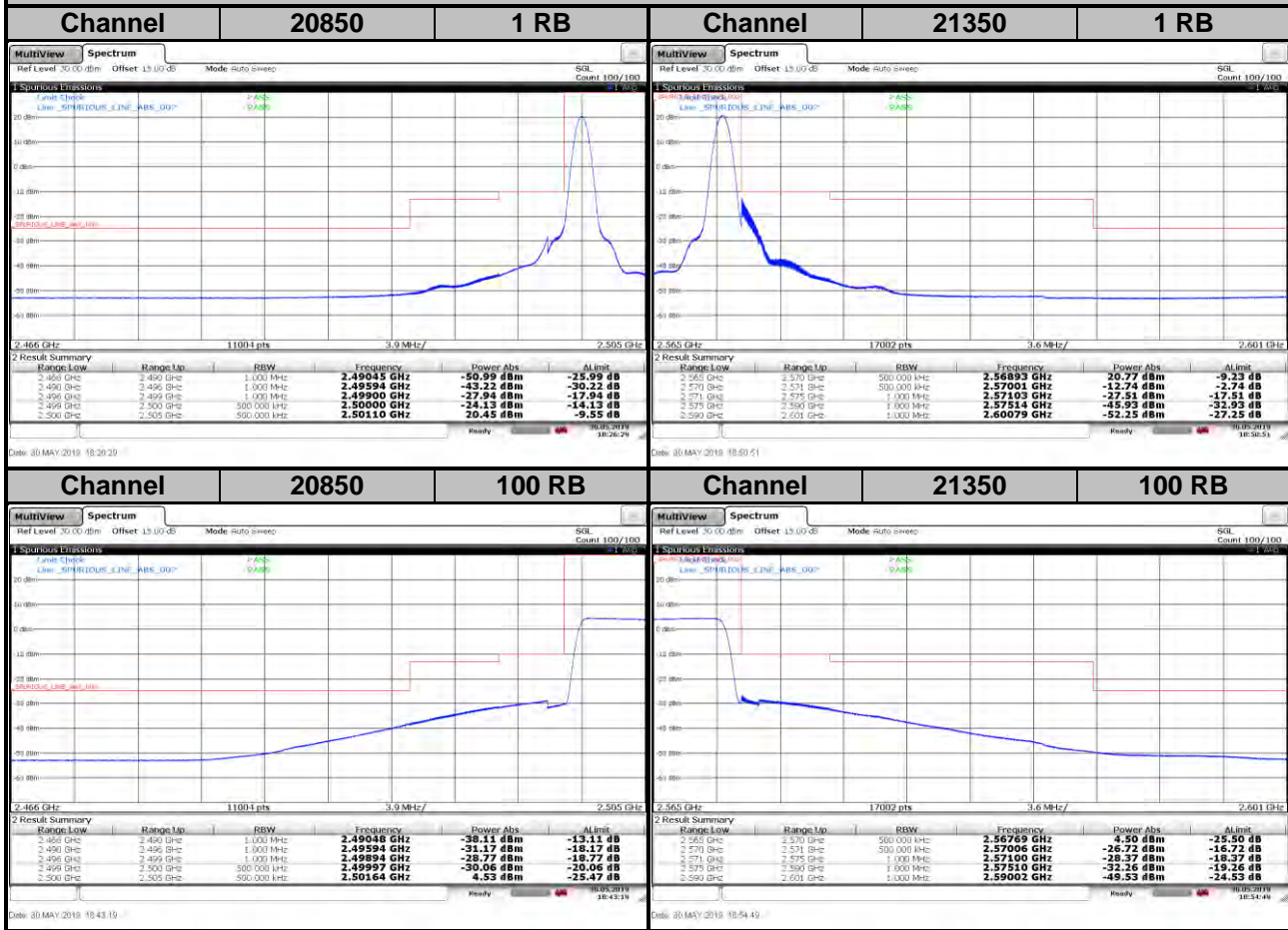




LTE Band 7

Channel Bandwidth: 20 MHz / 16QAM

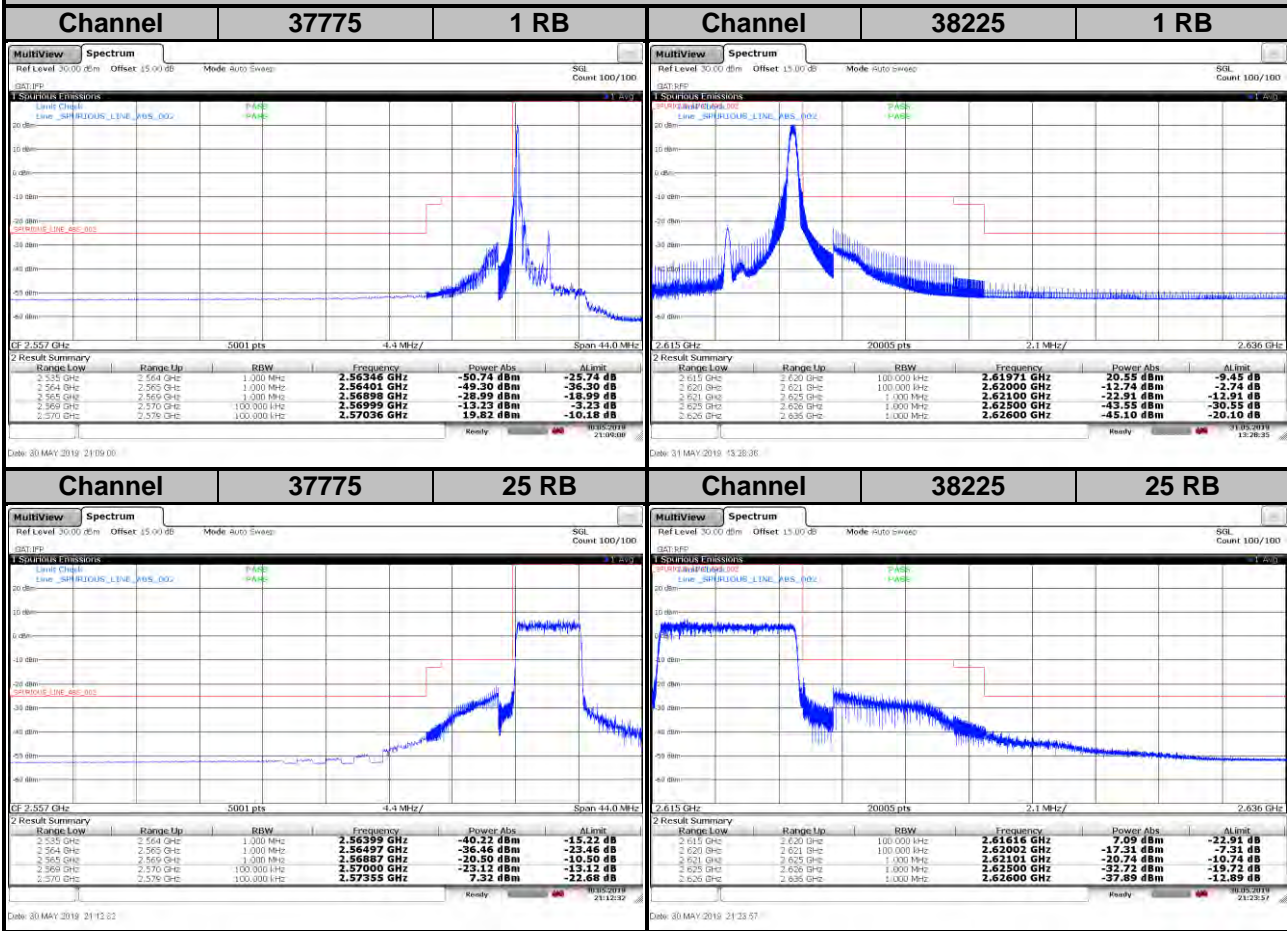
<Out-of-Band Emissions>



LTE Band 38

Channel Bandwidth: 5 MHz / QPSK

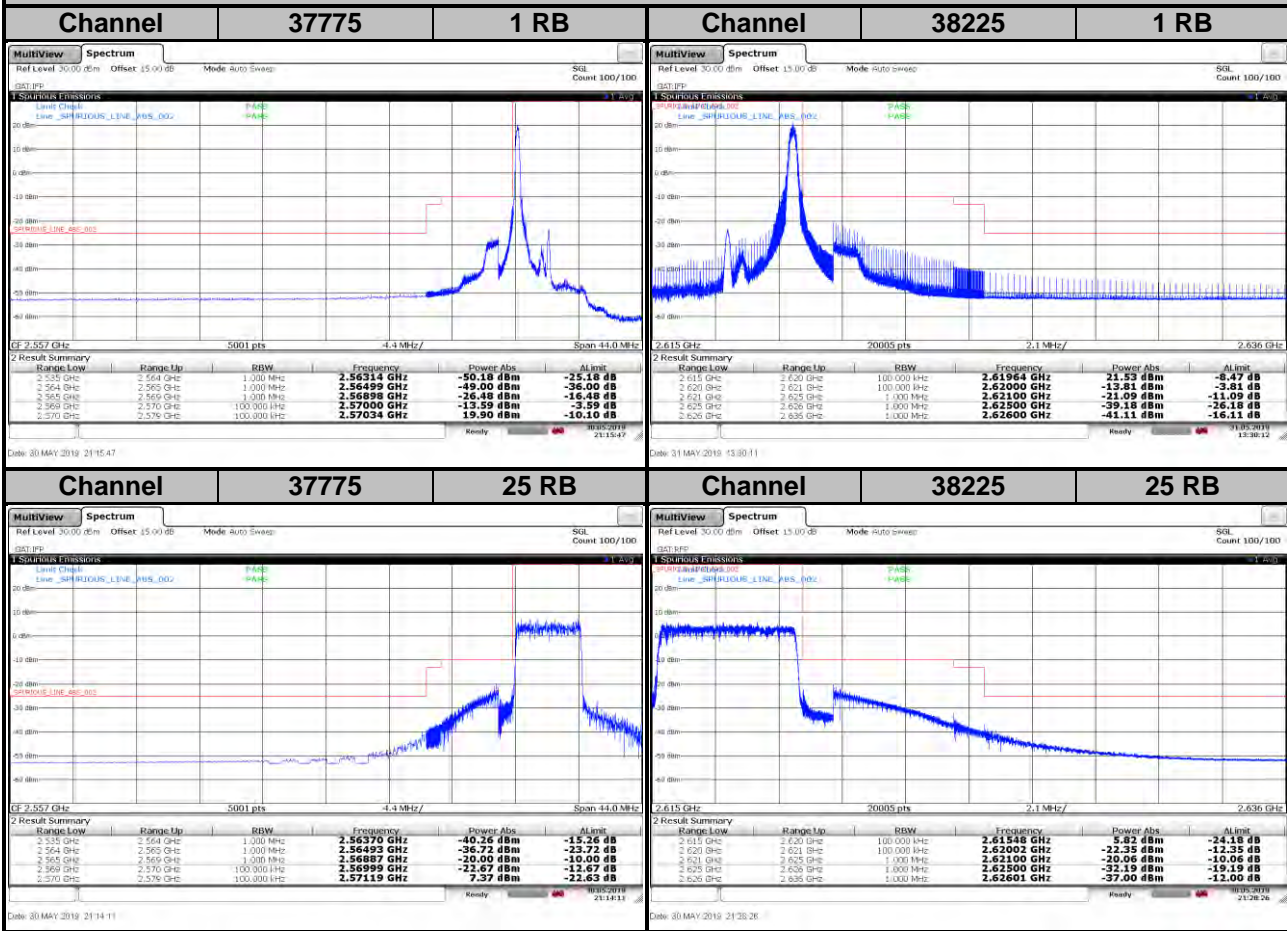
<Out-of-Band Emissions>



LTE Band 38

Channel Bandwidth: 5 MHz / 16QAM

<Out-of-Band Emissions>

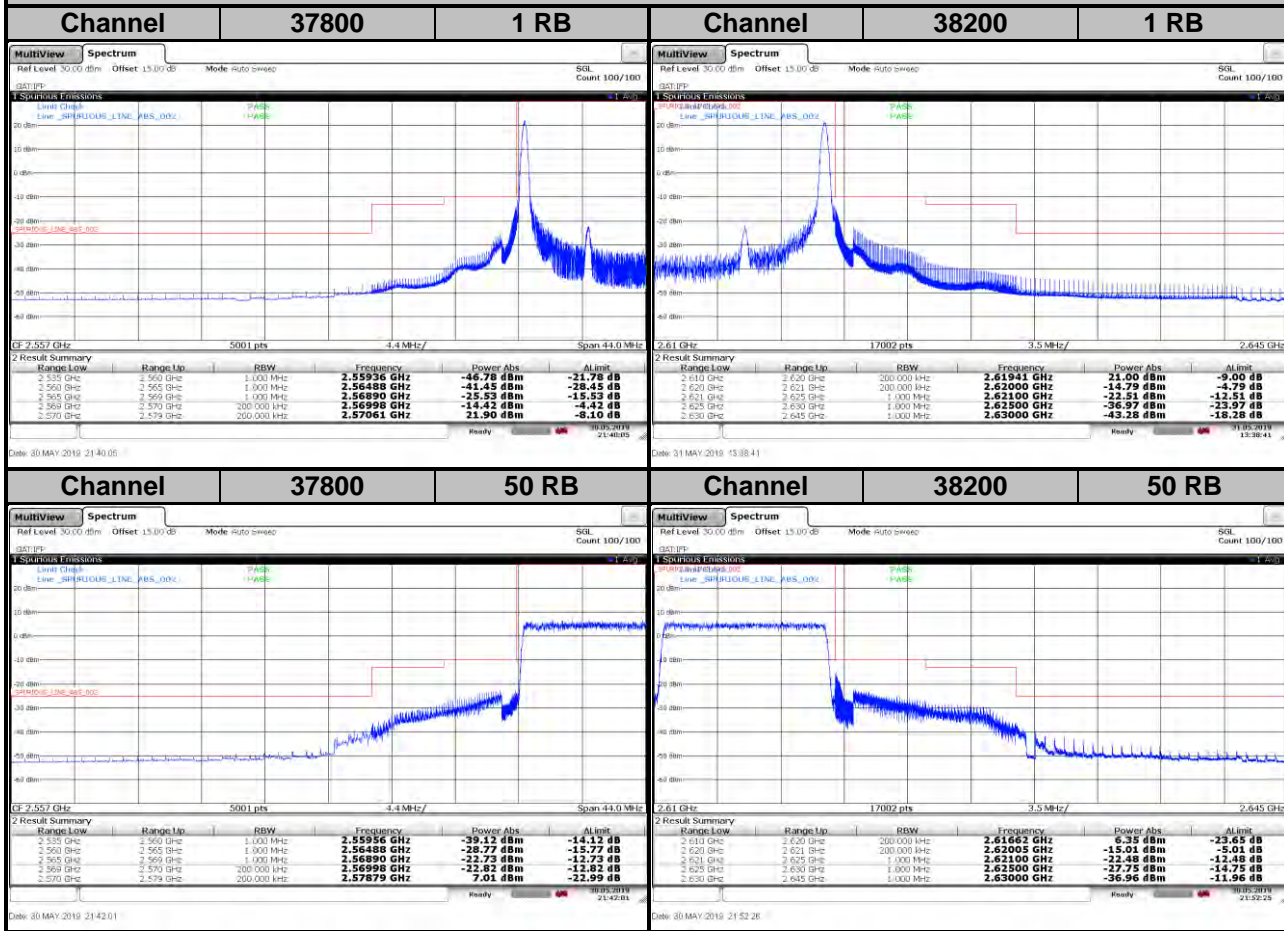




LTE Band 38

Channel Bandwidth: 10 MHz / QPSK

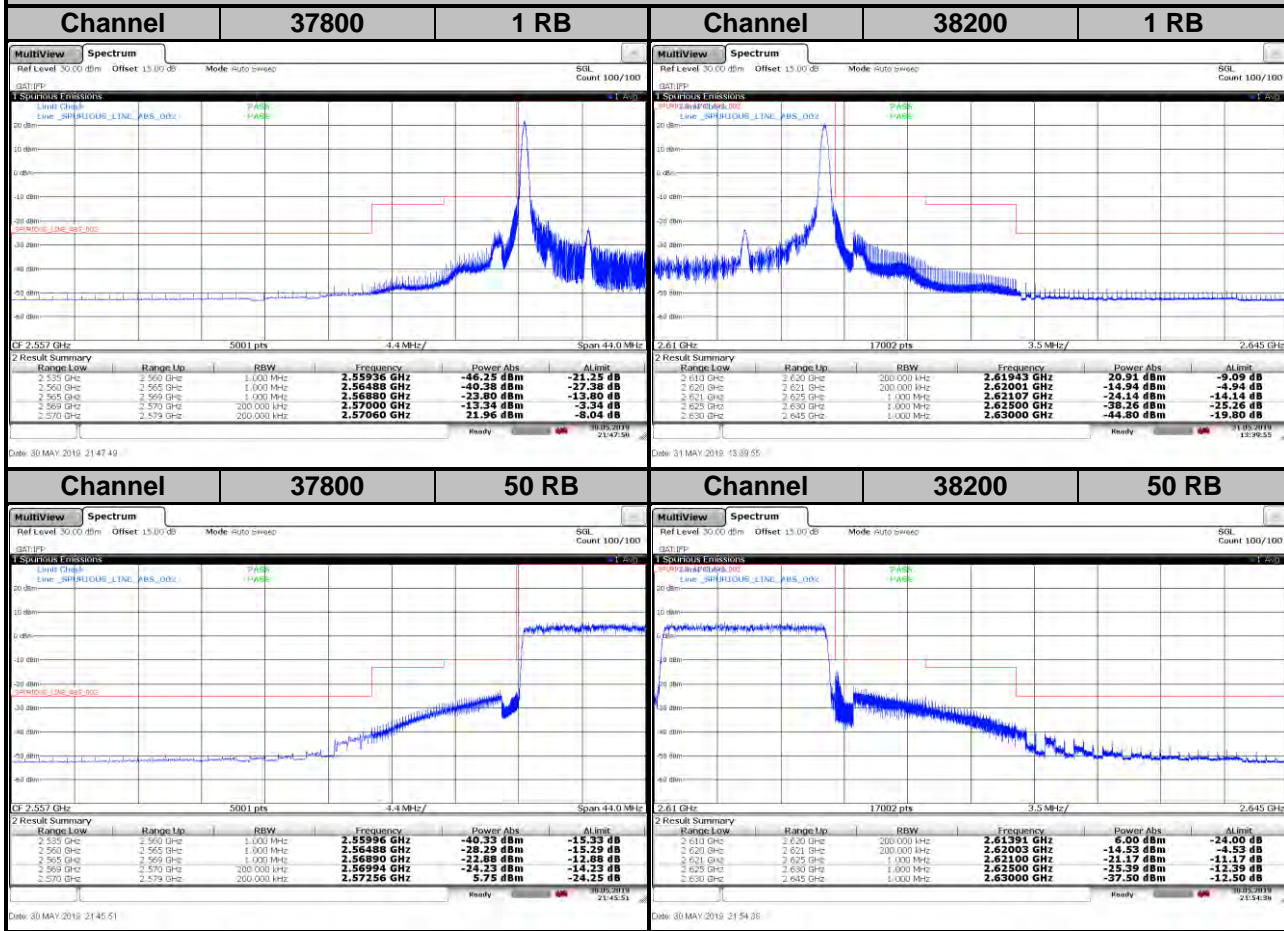
<Out-of-Band Emissions>





**LTE Band 38**  
**Channel Bandwidth: 10 MHz / 16QAM**

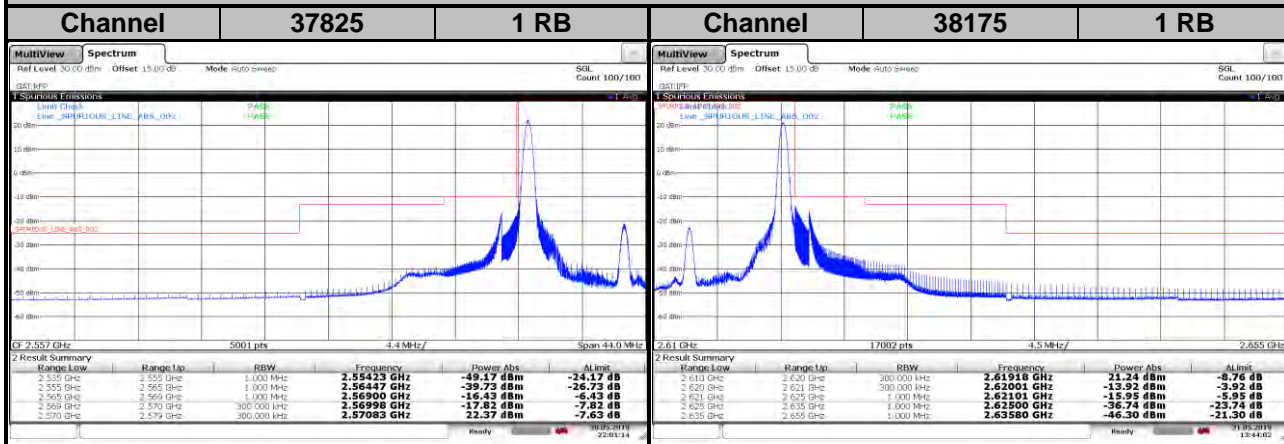
**<Out-of-Band Emissions>**



LTE Band 38

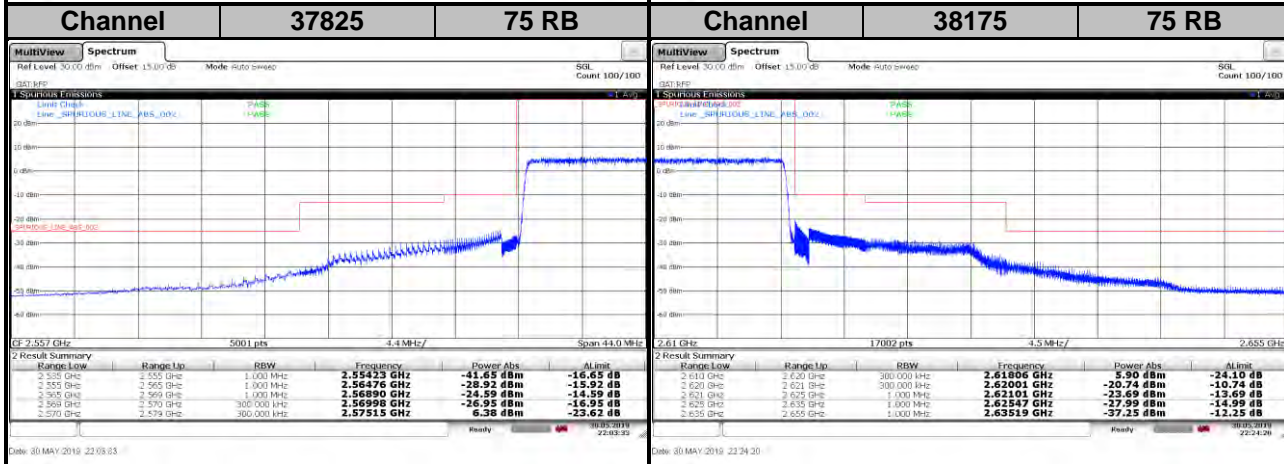
Channel Bandwidth: 15 MHz / QPSK

<Out-of-Band Emissions>



Date: 30 MAY 2018 22:01:13

Date: 31 MAY 2018 13:44:02



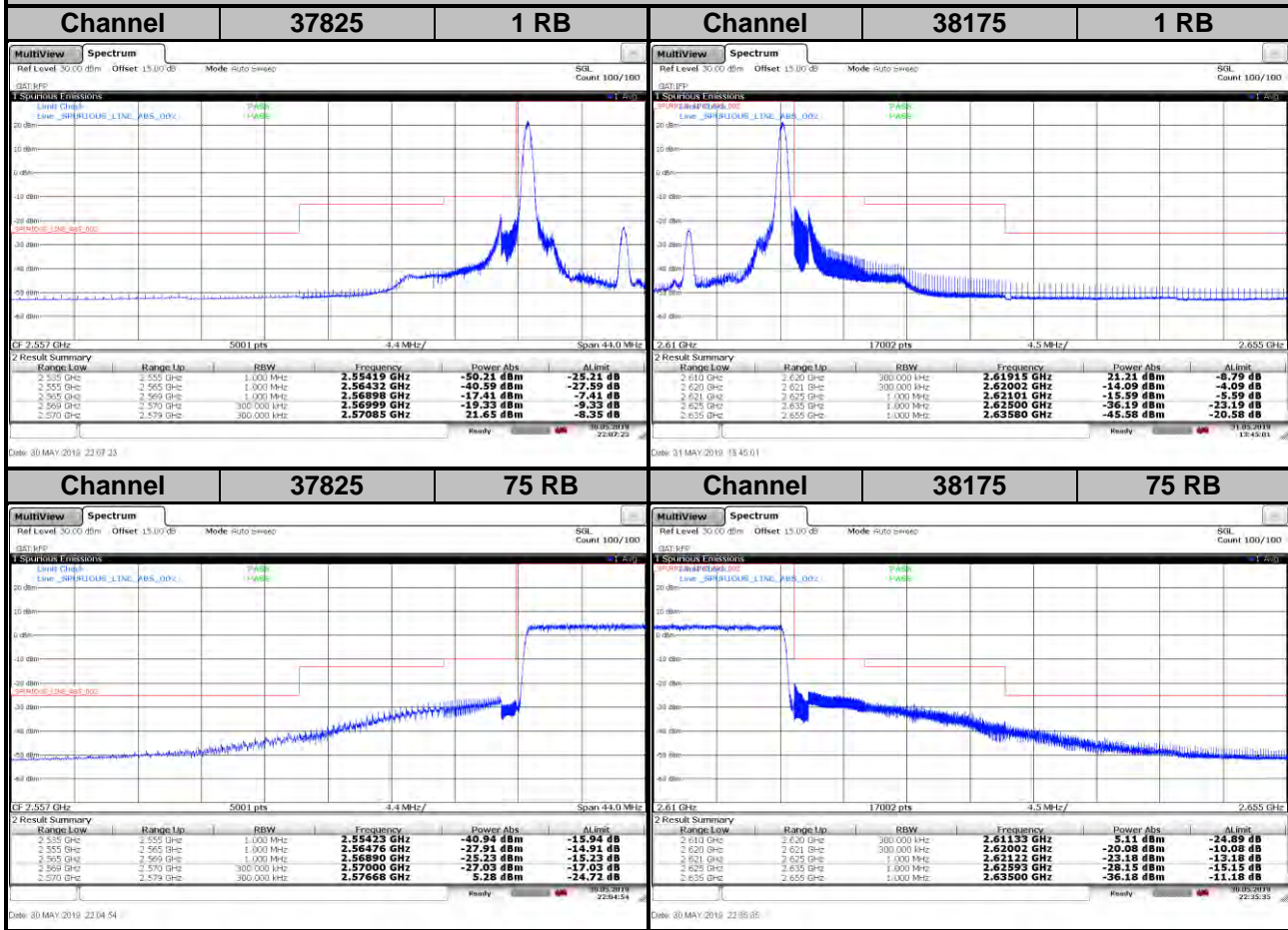
Date: 30 MAY 2018 22:03:03

Date: 30 MAY 2018 22:24:20

LTE Band 38

Channel Bandwidth: 15 MHz / 16QAM

<Out-of-Band Emissions>

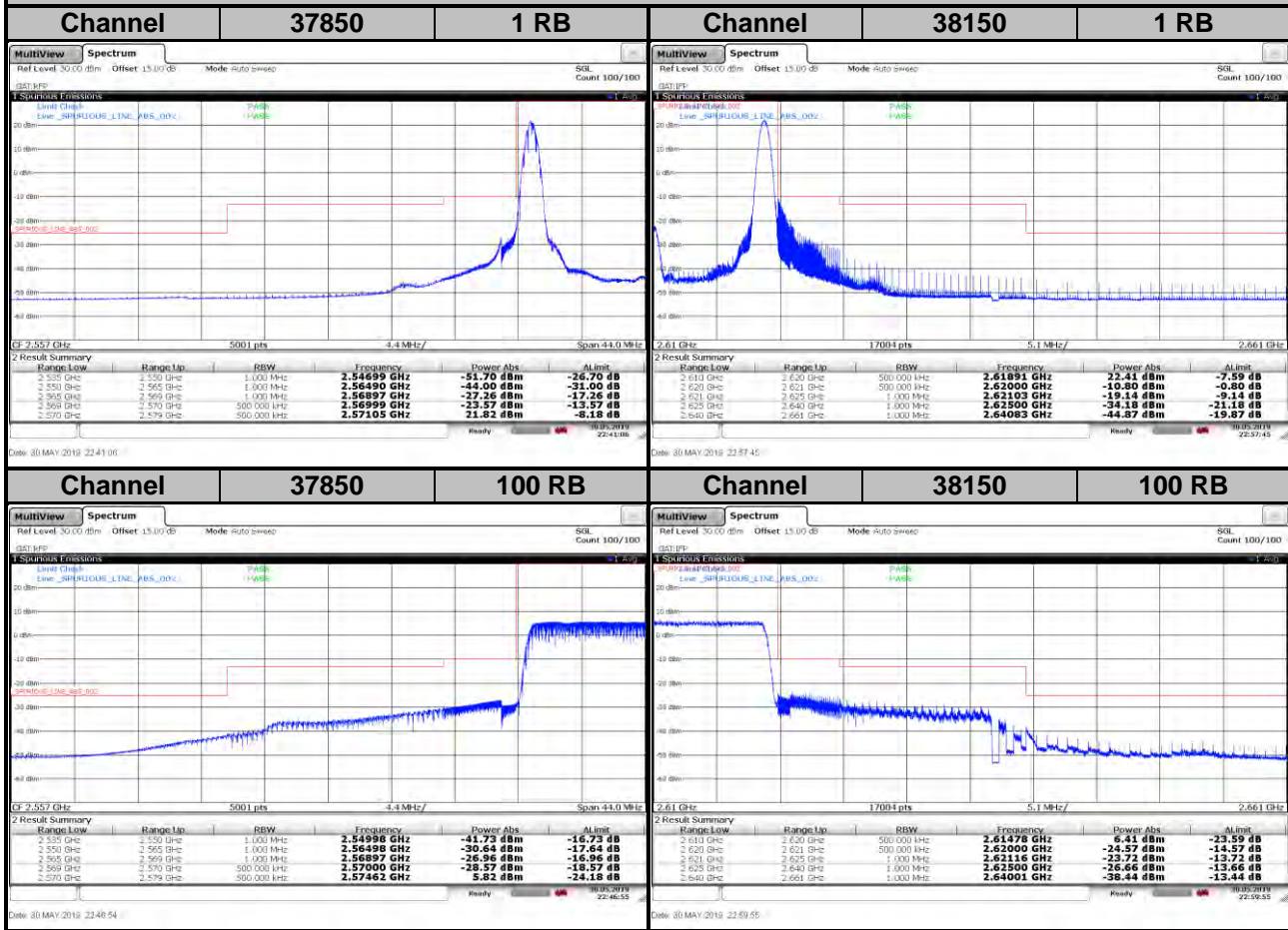




LTE Band 38

Channel Bandwidth: 20 MHz / QPSK

<Out-of-Band Emissions>

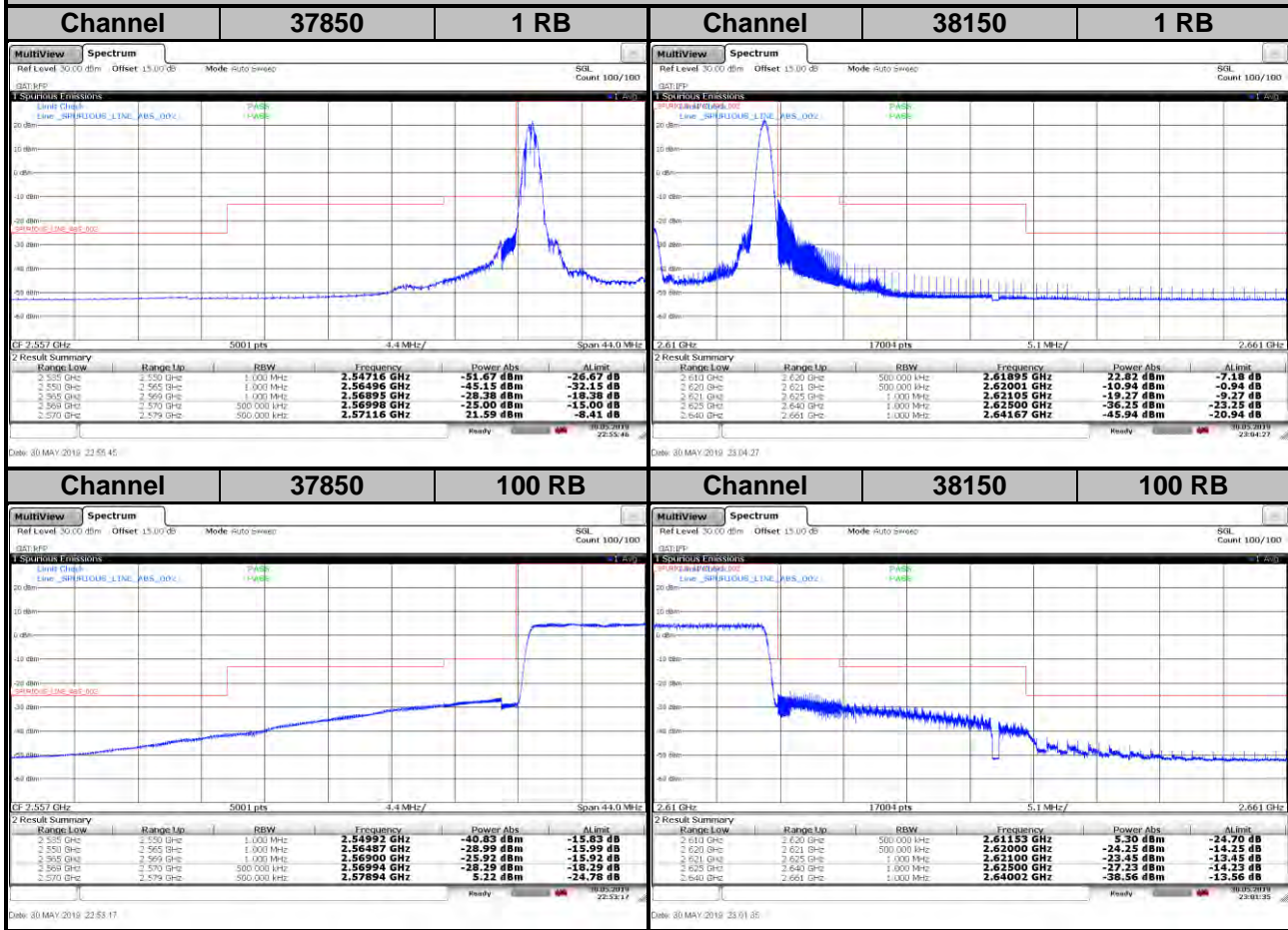




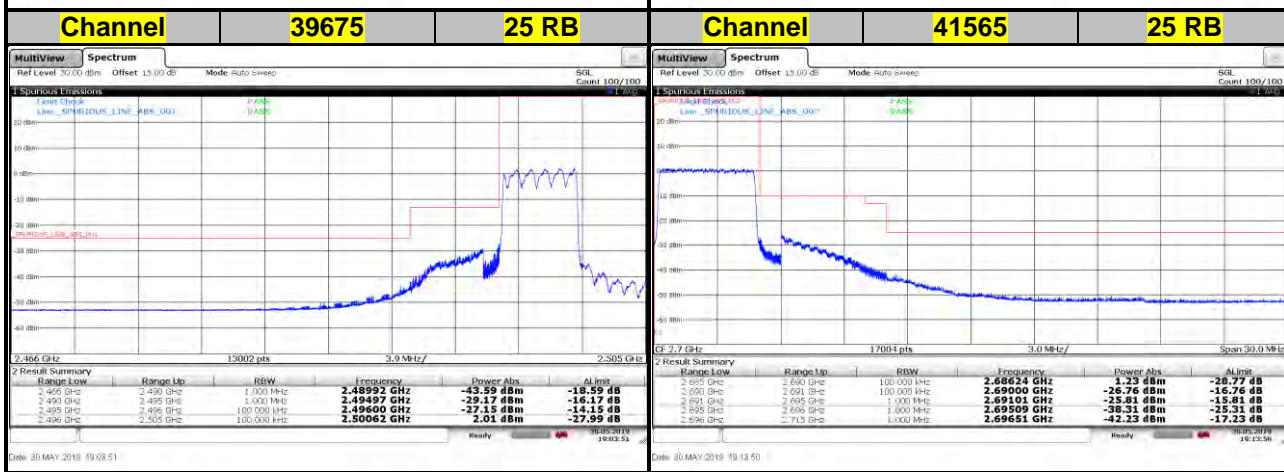
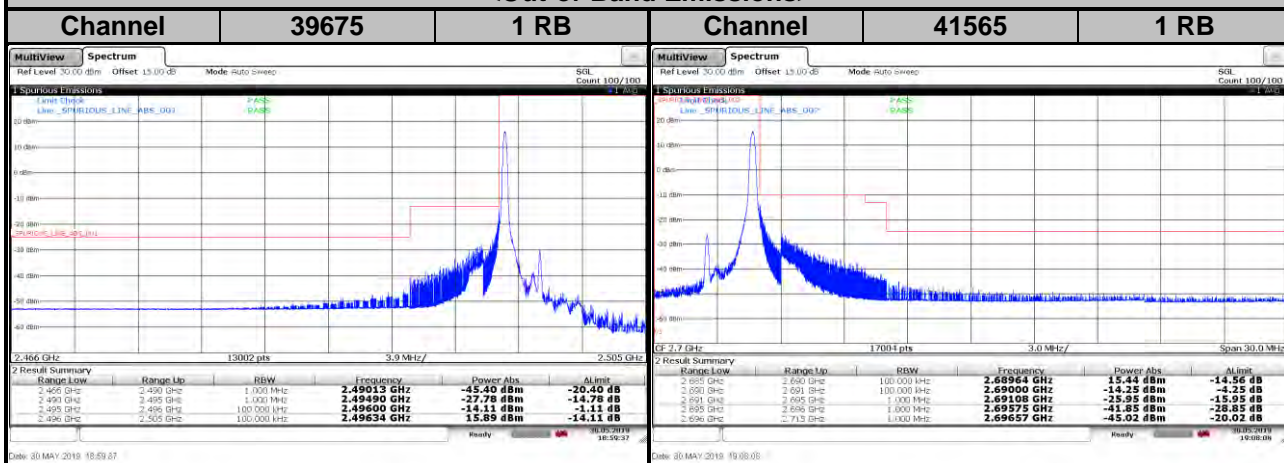
LTE Band 38

Channel Bandwidth: 20 MHz / 16QAM

<Out-of-Band Emissions>

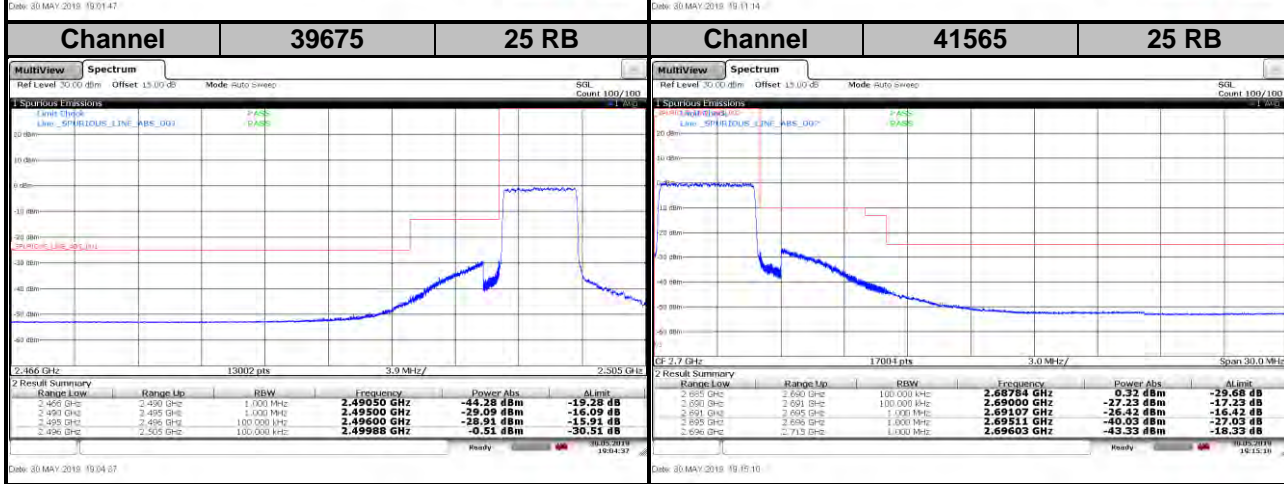
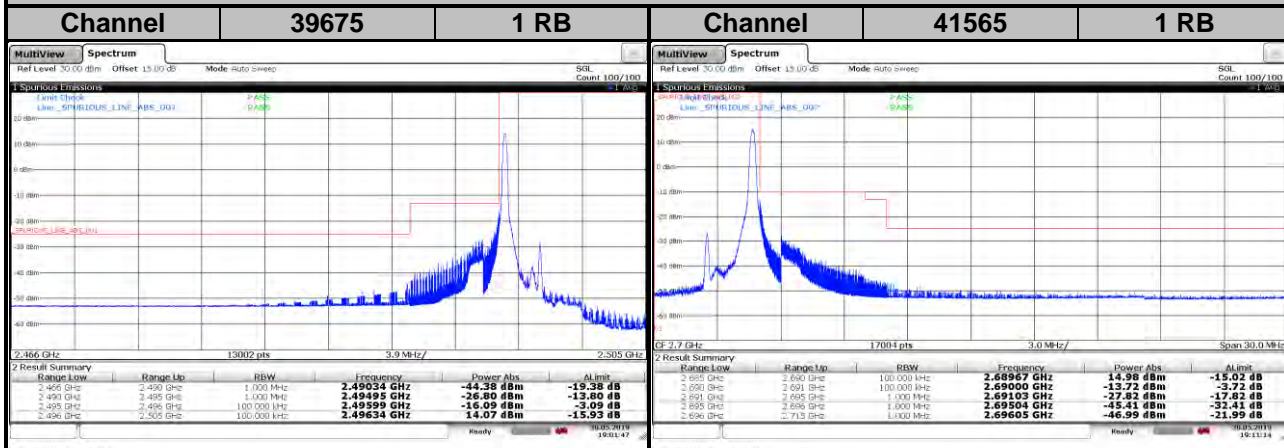


**LTE Band 41**  
**Channel Bandwidth: 5 MHz / QPSK**  
**<Out-of-Band Emissions>**



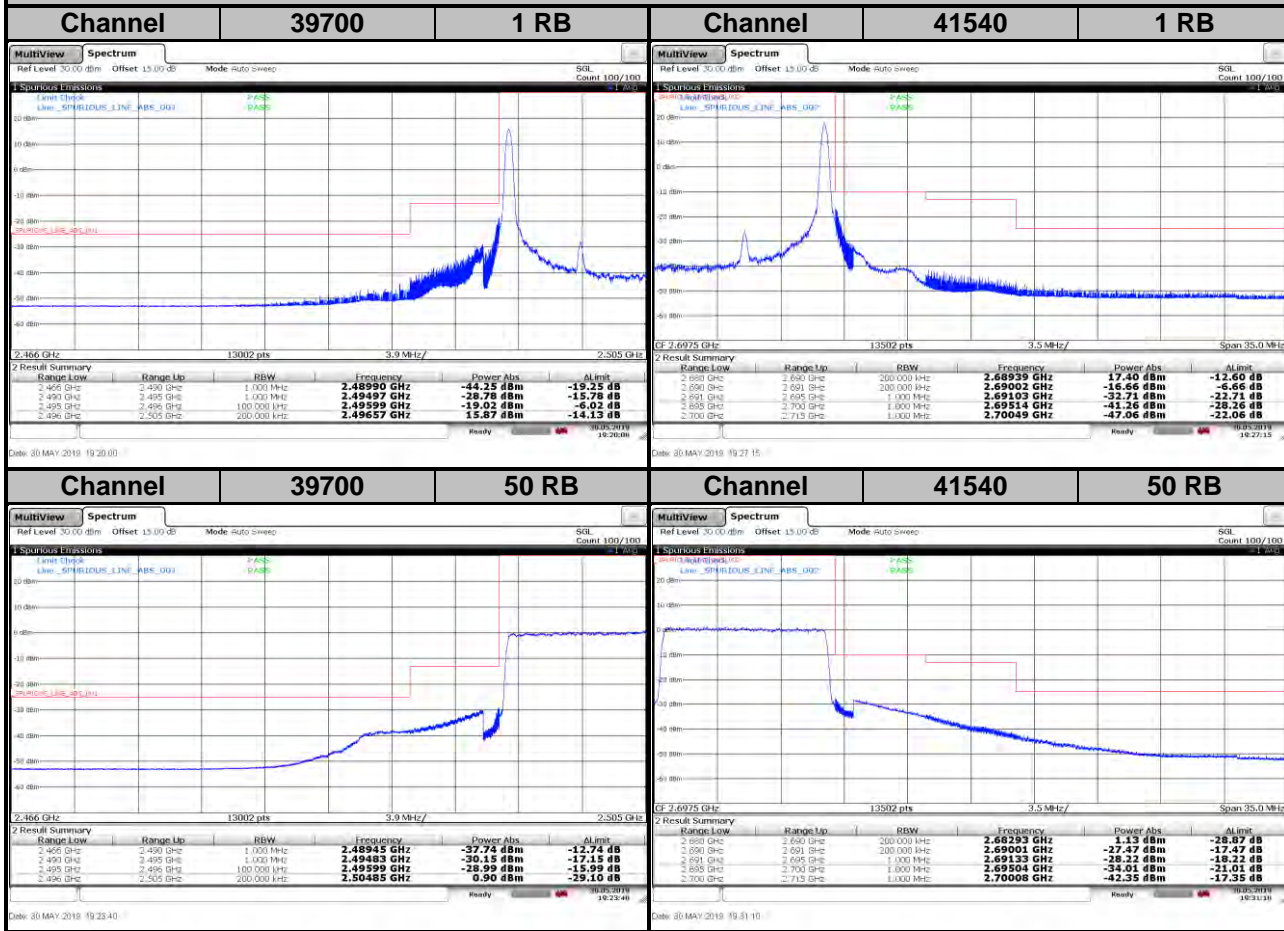
**LTE Band 41**  
**Channel Bandwidth: 5 MHz / 16QAM**

**<Out-of-Band Emissions>**



**LTE Band 41**  
**Channel Bandwidth: 10 MHz / QPSK**

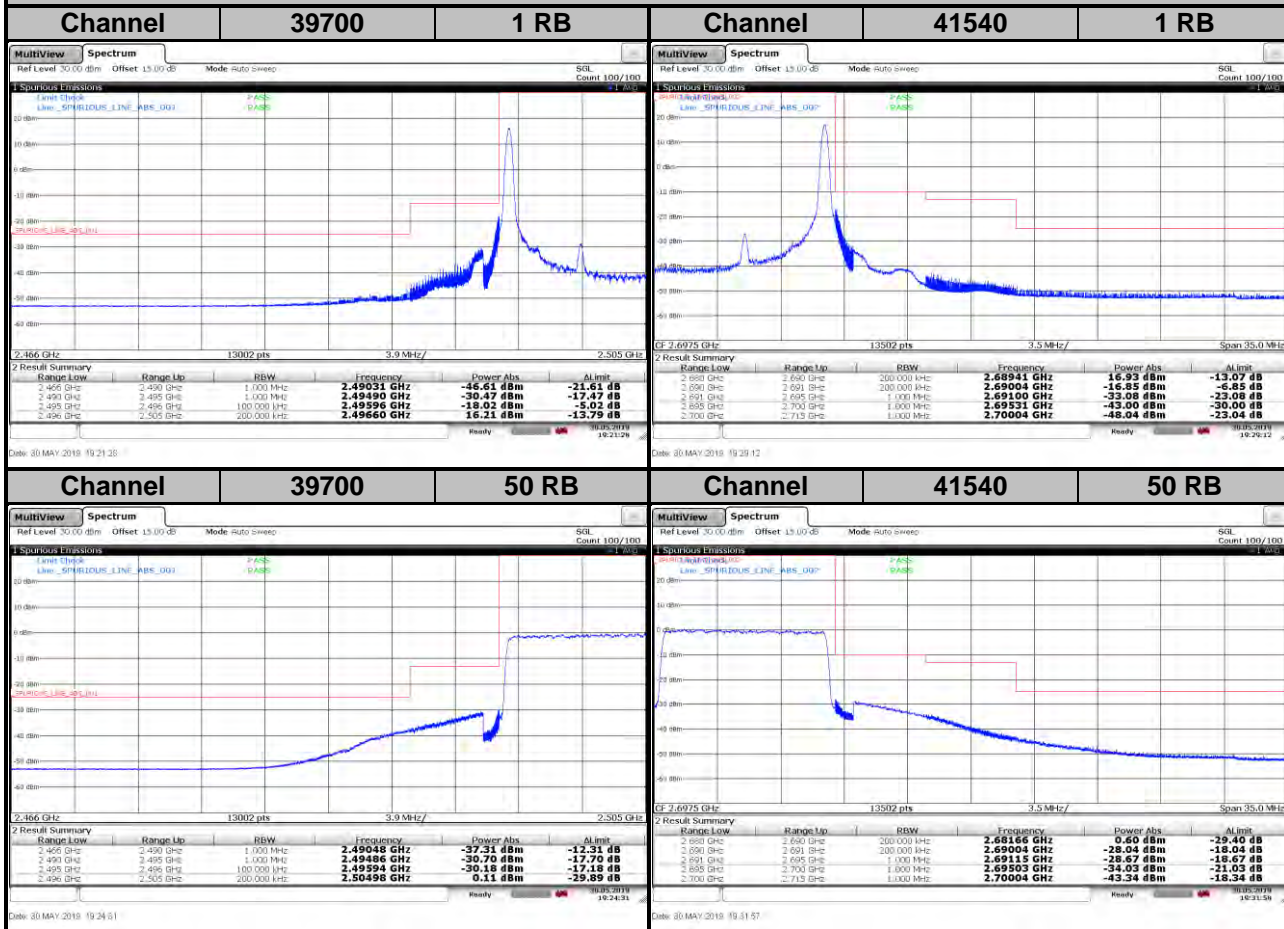
**<Out-of-Band Emissions>**





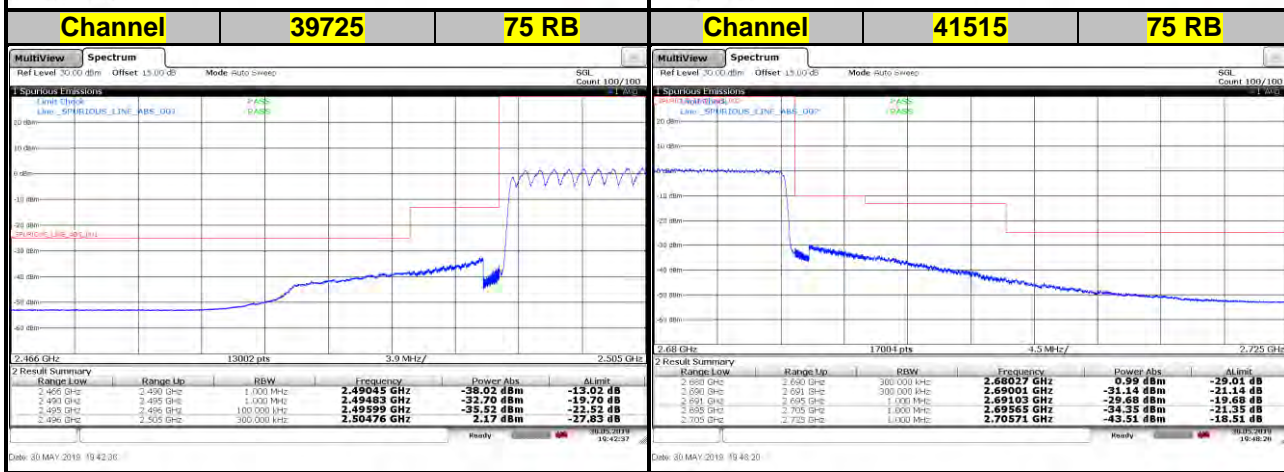
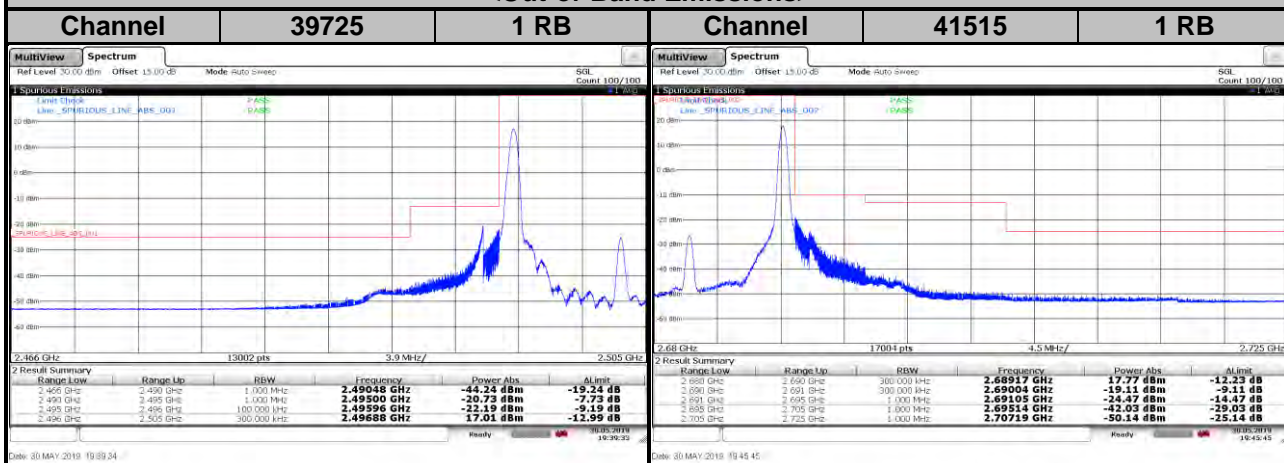
**LTE Band 41**  
**Channel Bandwidth: 10 MHz / 16QAM**

**<Out-of-Band Emissions>**



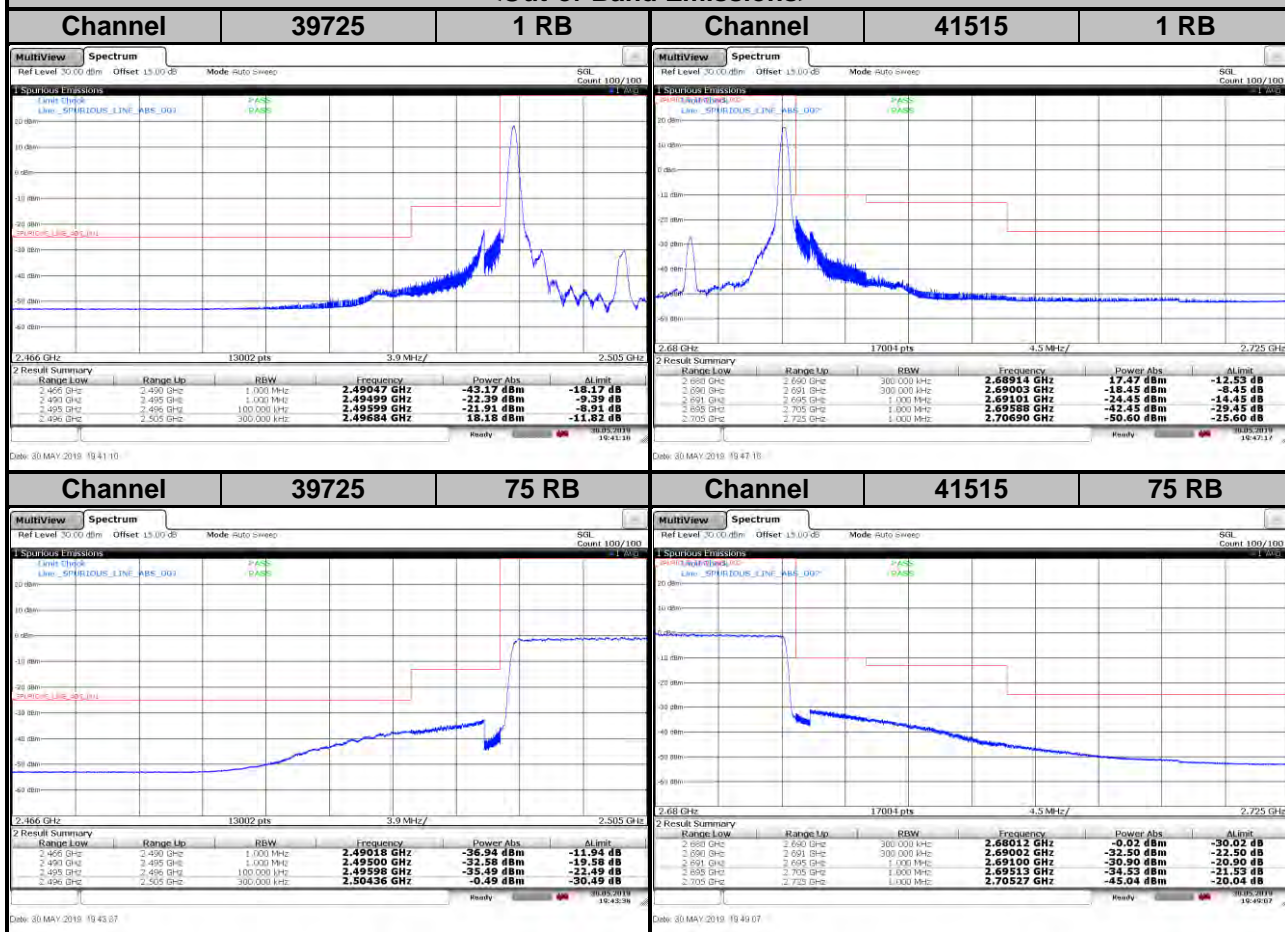
**LTE Band 41**  
**Channel Bandwidth: 15 MHz / QPSK**

**<Out-of-Band Emissions>**



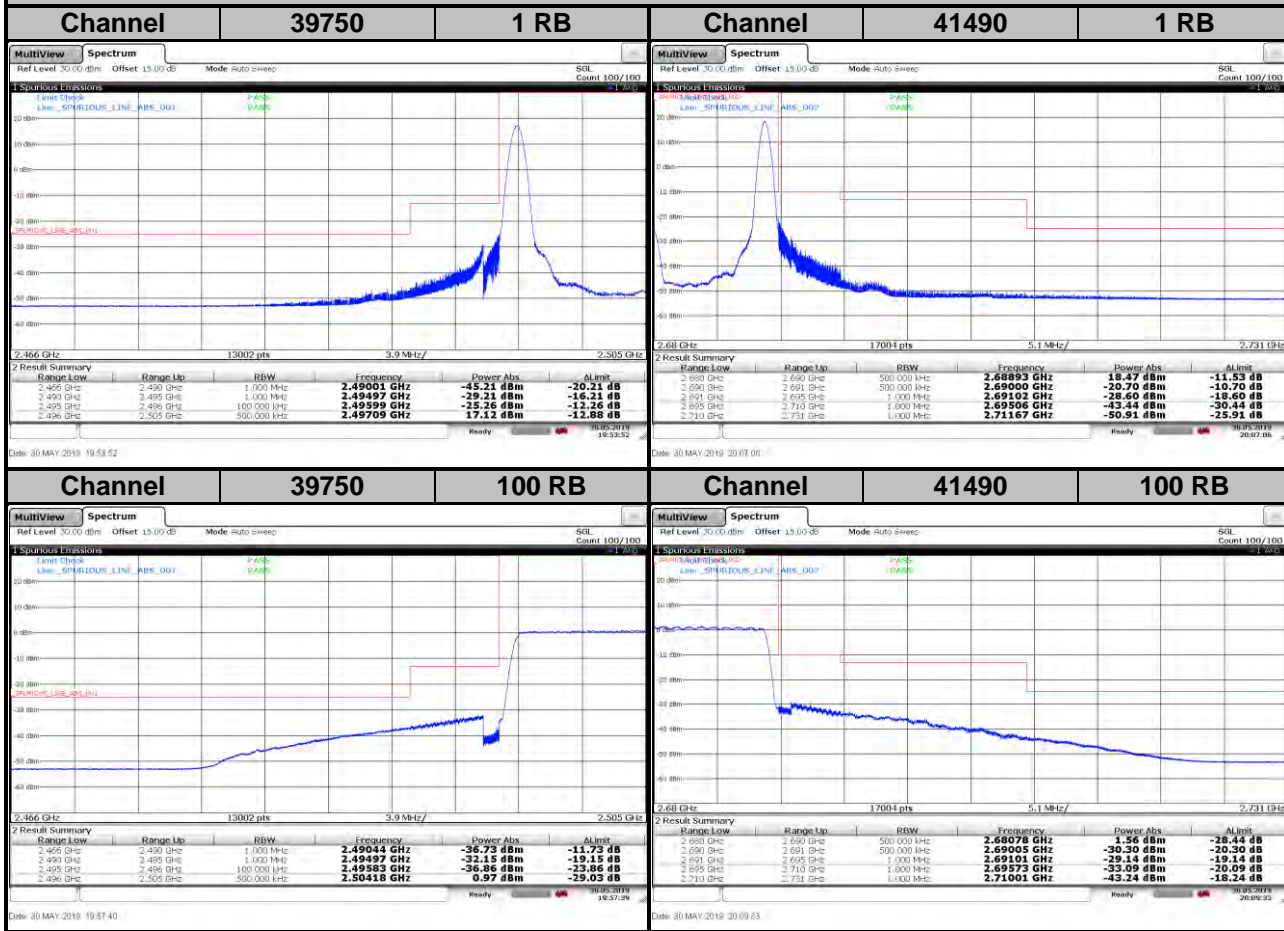
**LTE Band 41**  
**Channel Bandwidth: 15 MHz / 16QAM**

**<Out-of-Band Emissions>**



**LTE Band 41**  
**Channel Bandwidth: 20 MHz / QPSK**

**<Out-of-Band Emissions>**





**LTE Band 41**  
**Channel Bandwidth: 20 MHz / 16QAM**

**<Out-of-Band Emissions>**

