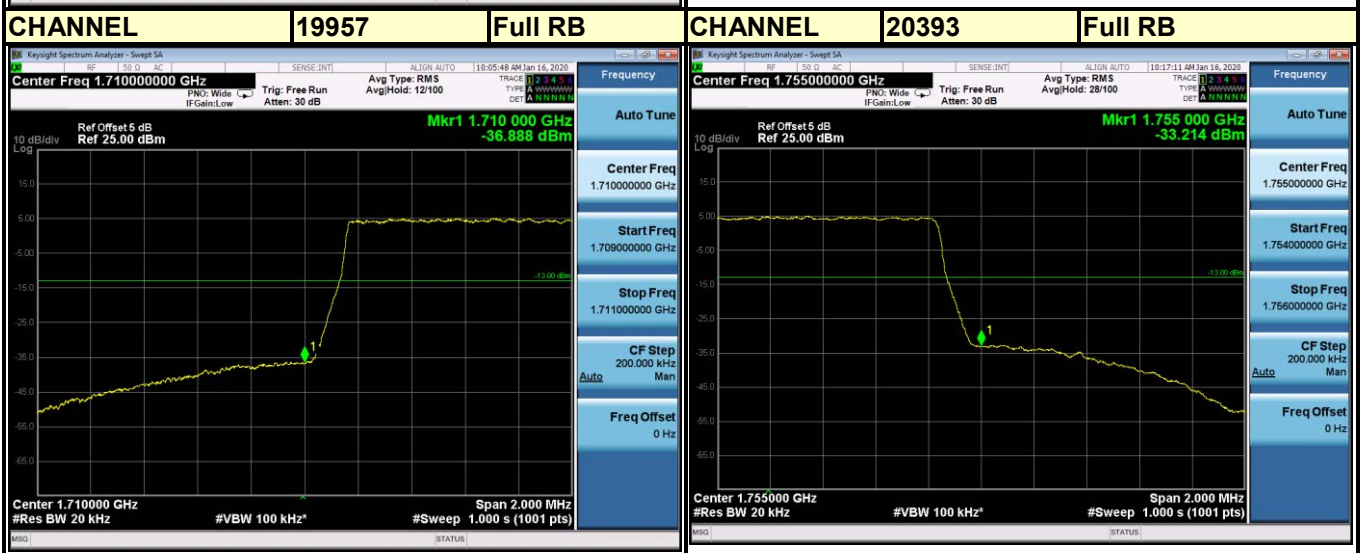




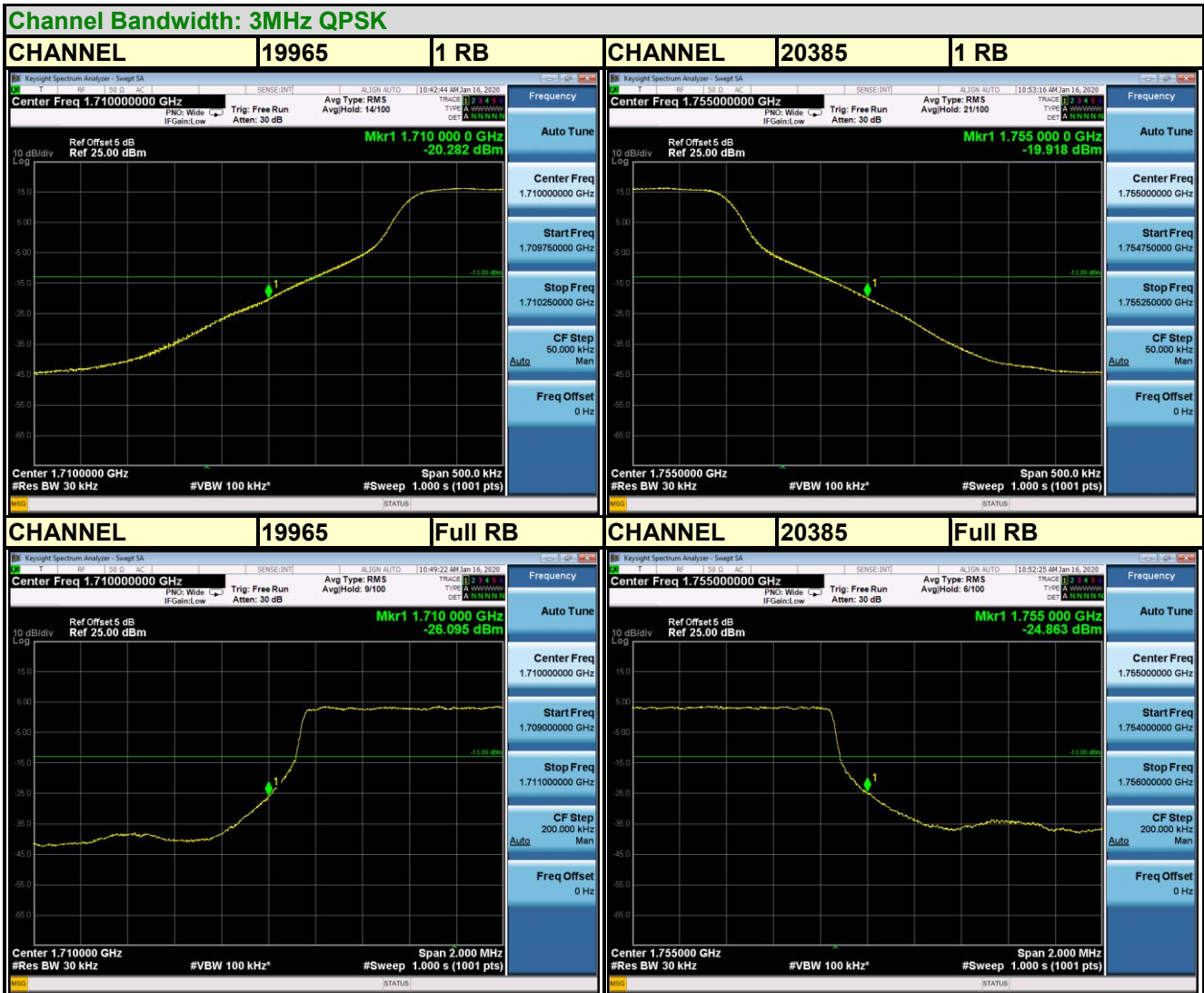
Test Report No.: RF200106W008-6

**Channel Bandwidth: 1.4MHz 64QAM**



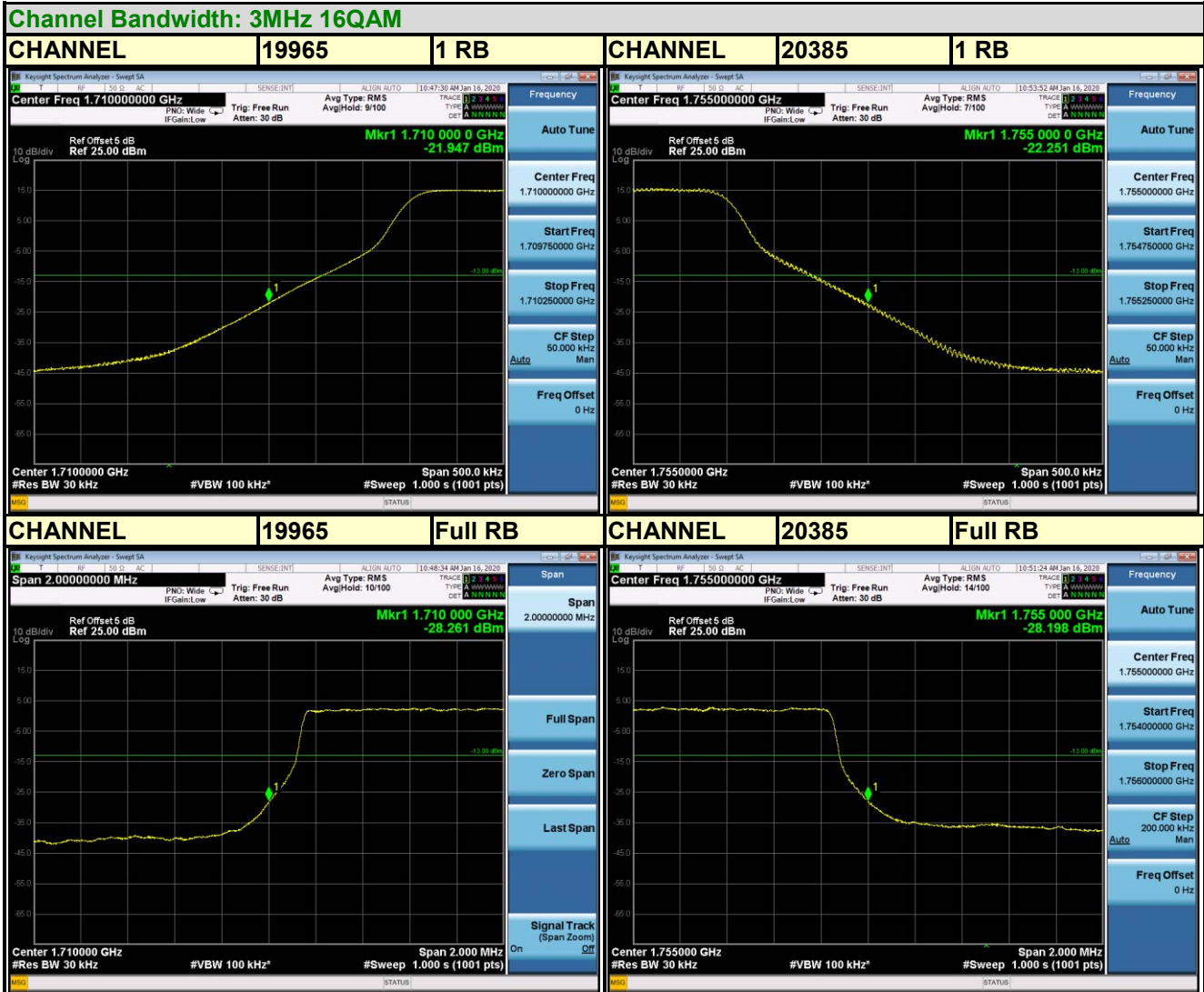


LTE BAND 4





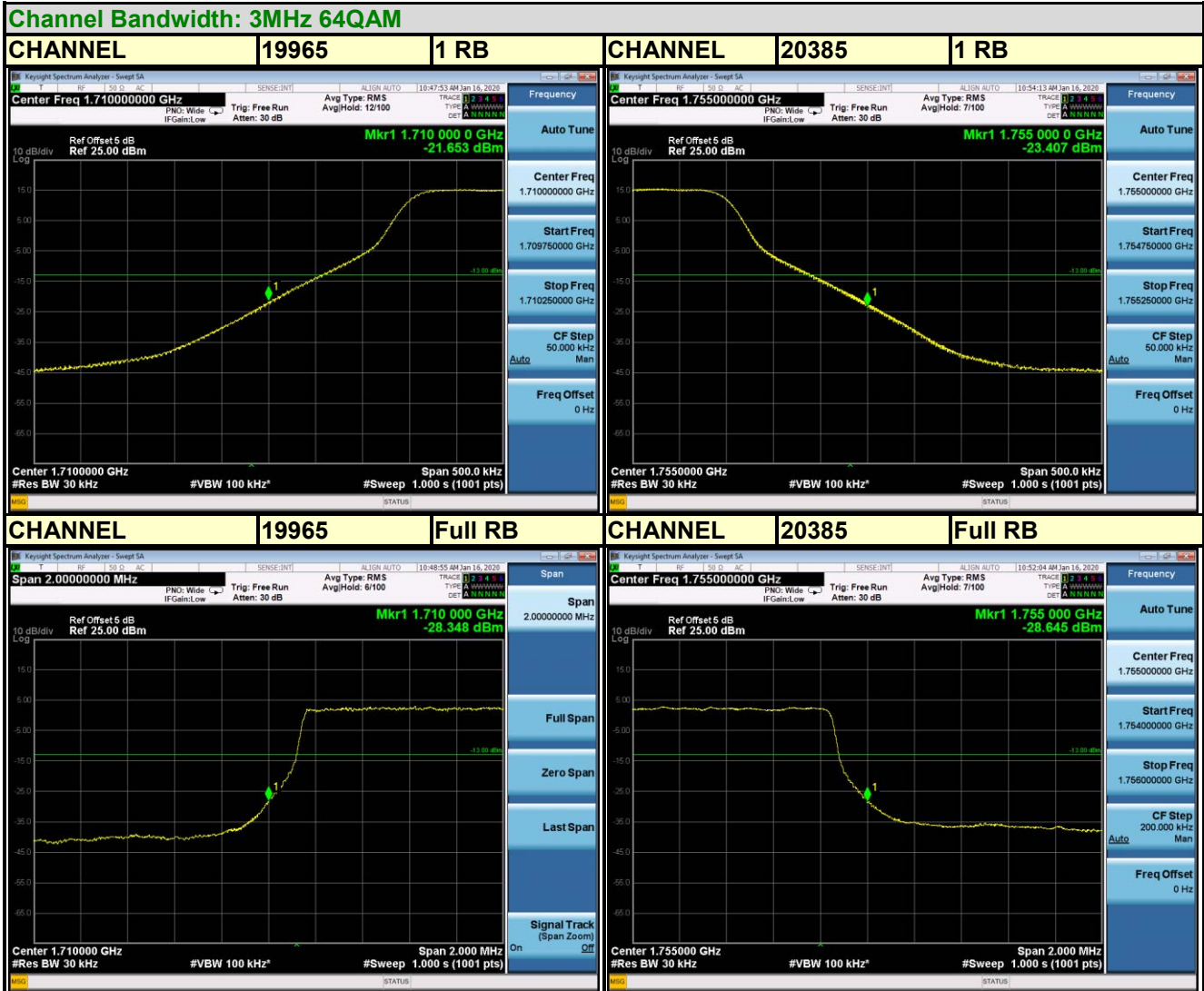
Test Report No.: RF200106W008-6





BUREAU VERITAS

Test Report No.: RF200106W008-6





LTE BAND 4







BUREAU VERITAS

Test Report No.: RF200106W008-6





BUREAU VERITAS

Test Report No.: RF200106W008-6





Test Report No.: RF200106W008-6

LTE BAND 4

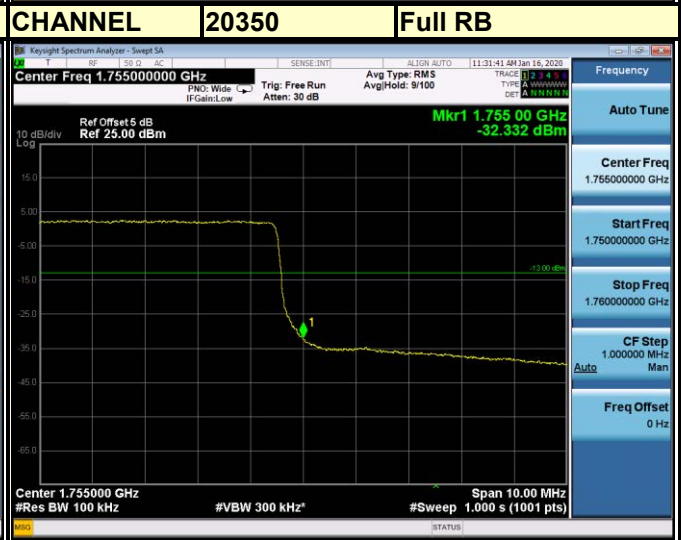
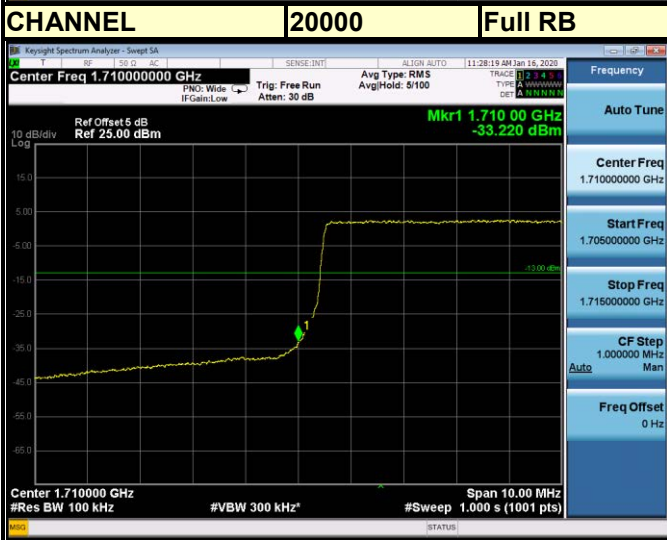






Test Report No.: RF200106W008-6

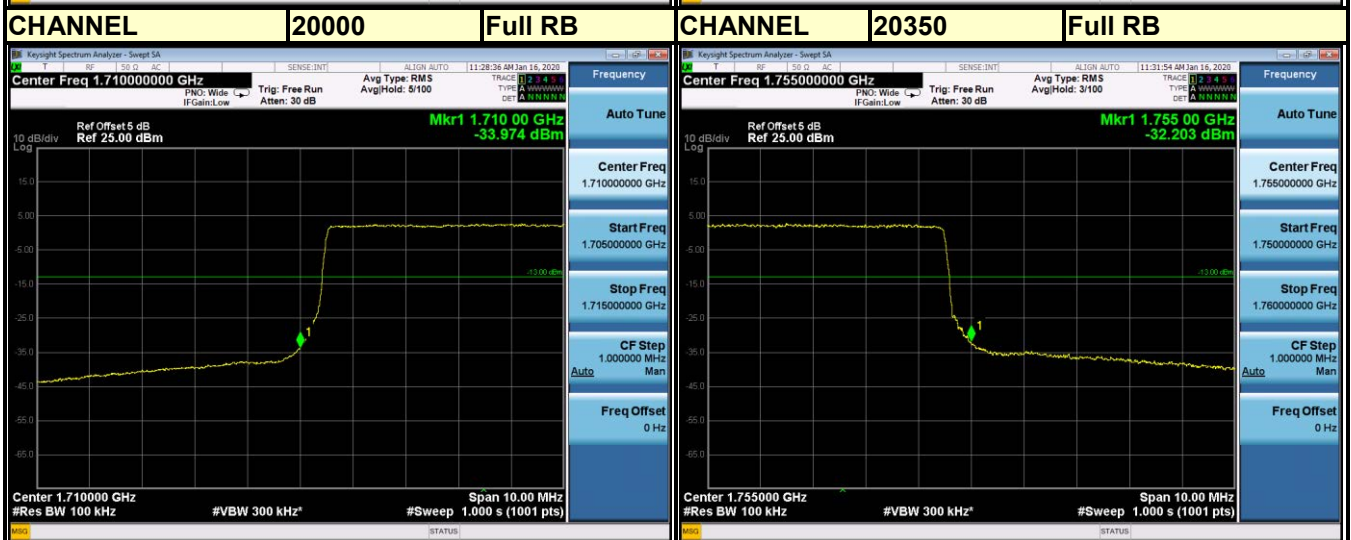
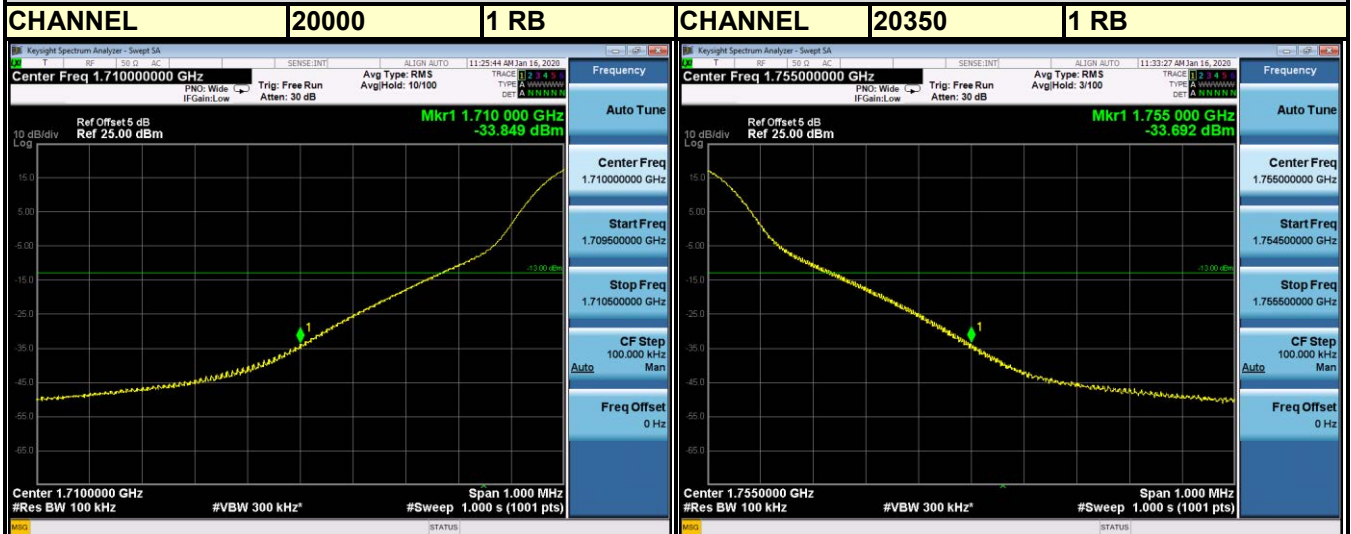
Channel Bandwidth: 10MHz 16QAM





Test Report No.: RF200106W008-6

**Channel Bandwidth: 10MHz 64QAM**





BUREAU VERITAS

Test Report No.: RF200106W008-6

LTE BAND 4

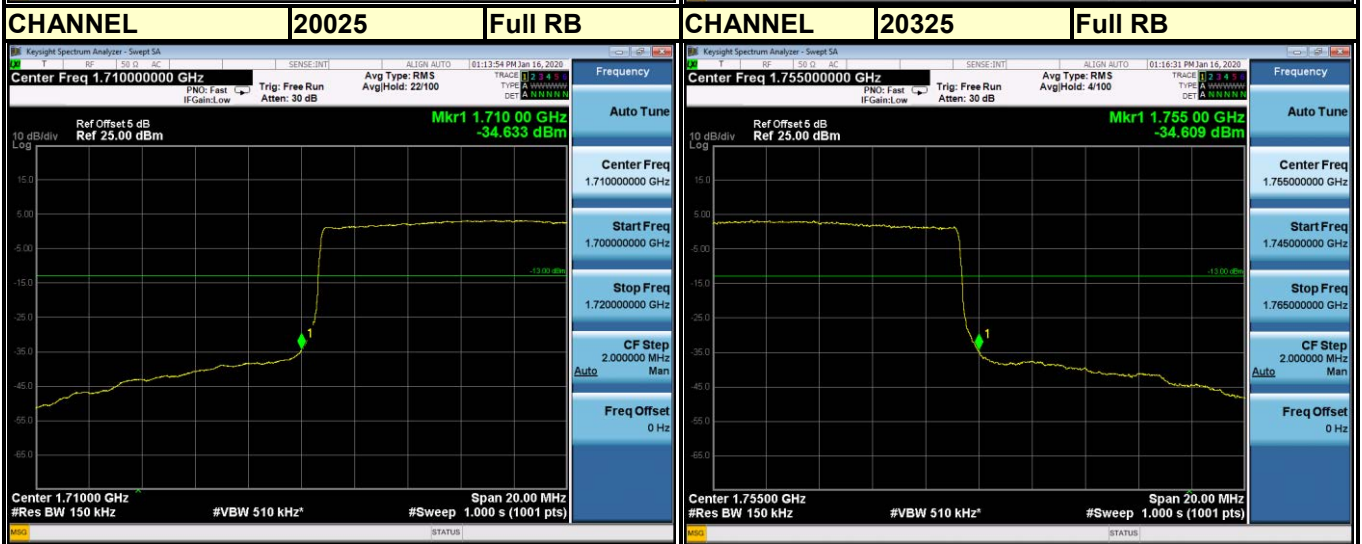
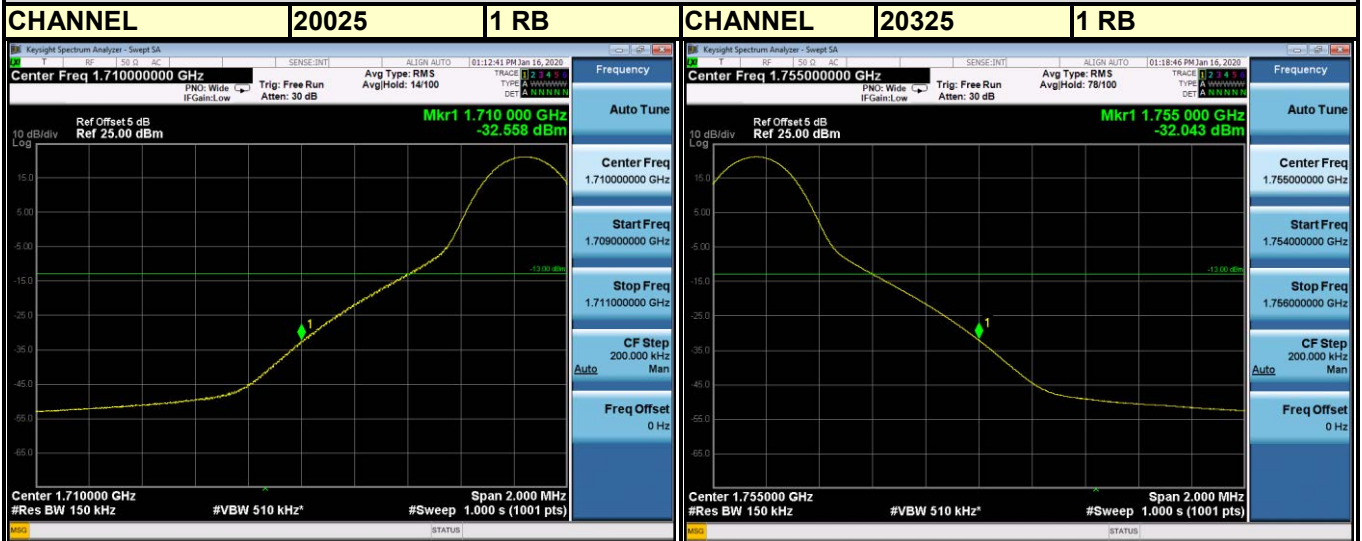
Channel Bandwidth: 15MHz QPSK





Test Report No.: RF200106W008-6

**Channel Bandwidth: 15MHz 16QAM**

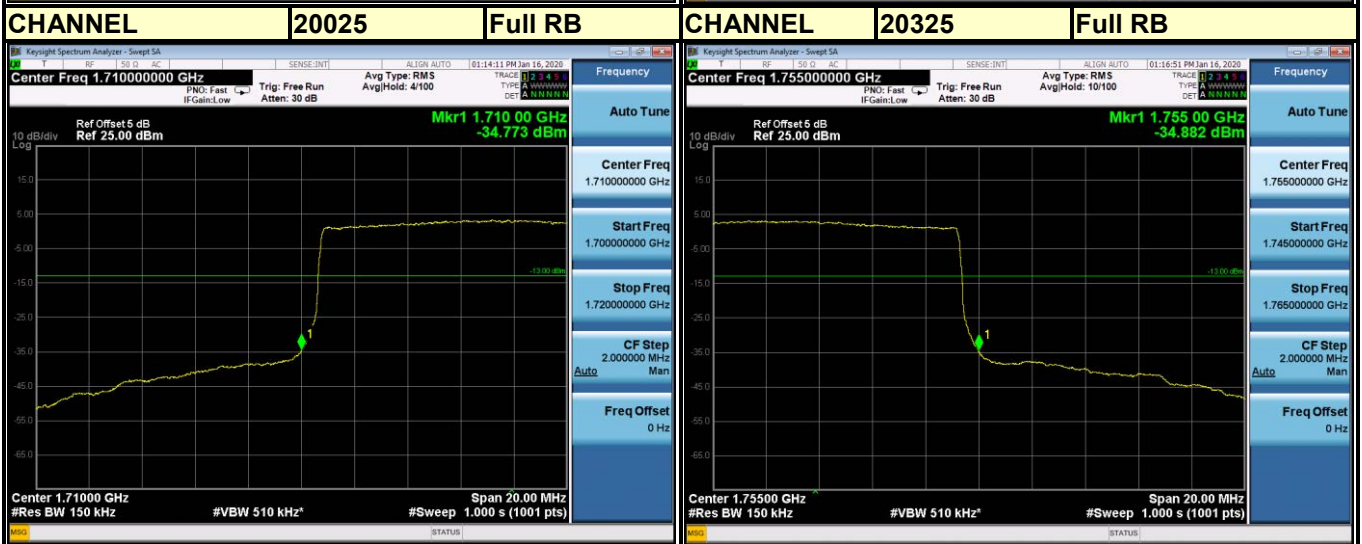
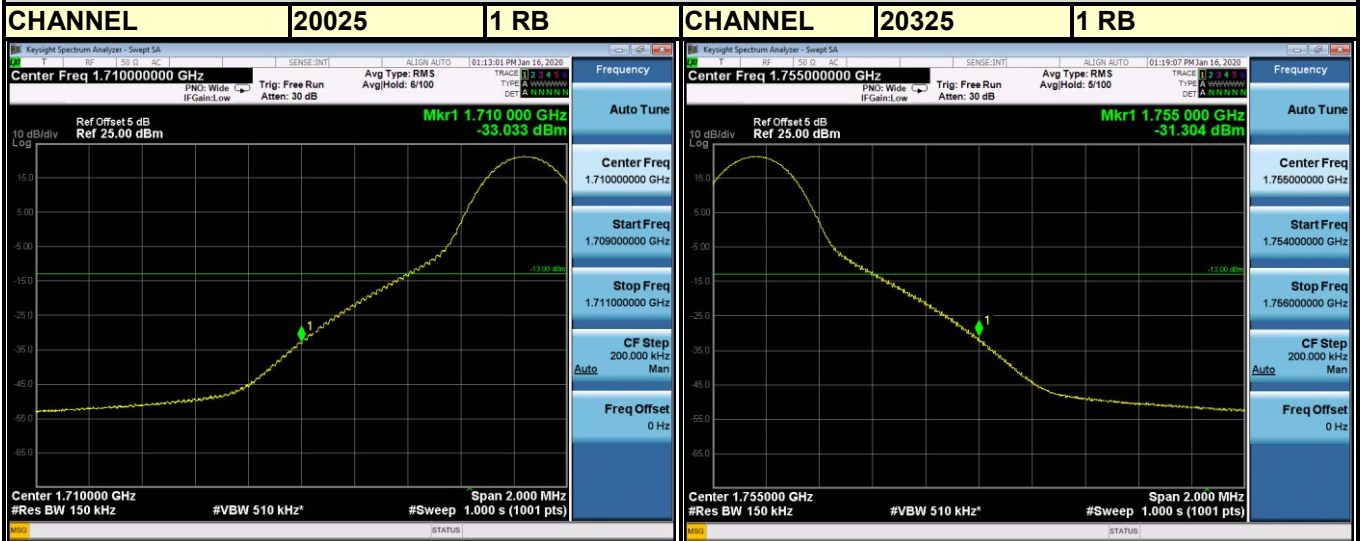




BUREAU VERITAS

Test Report No.: RF200106W008-6

Channel Bandwidth: 15MHz 64QAM



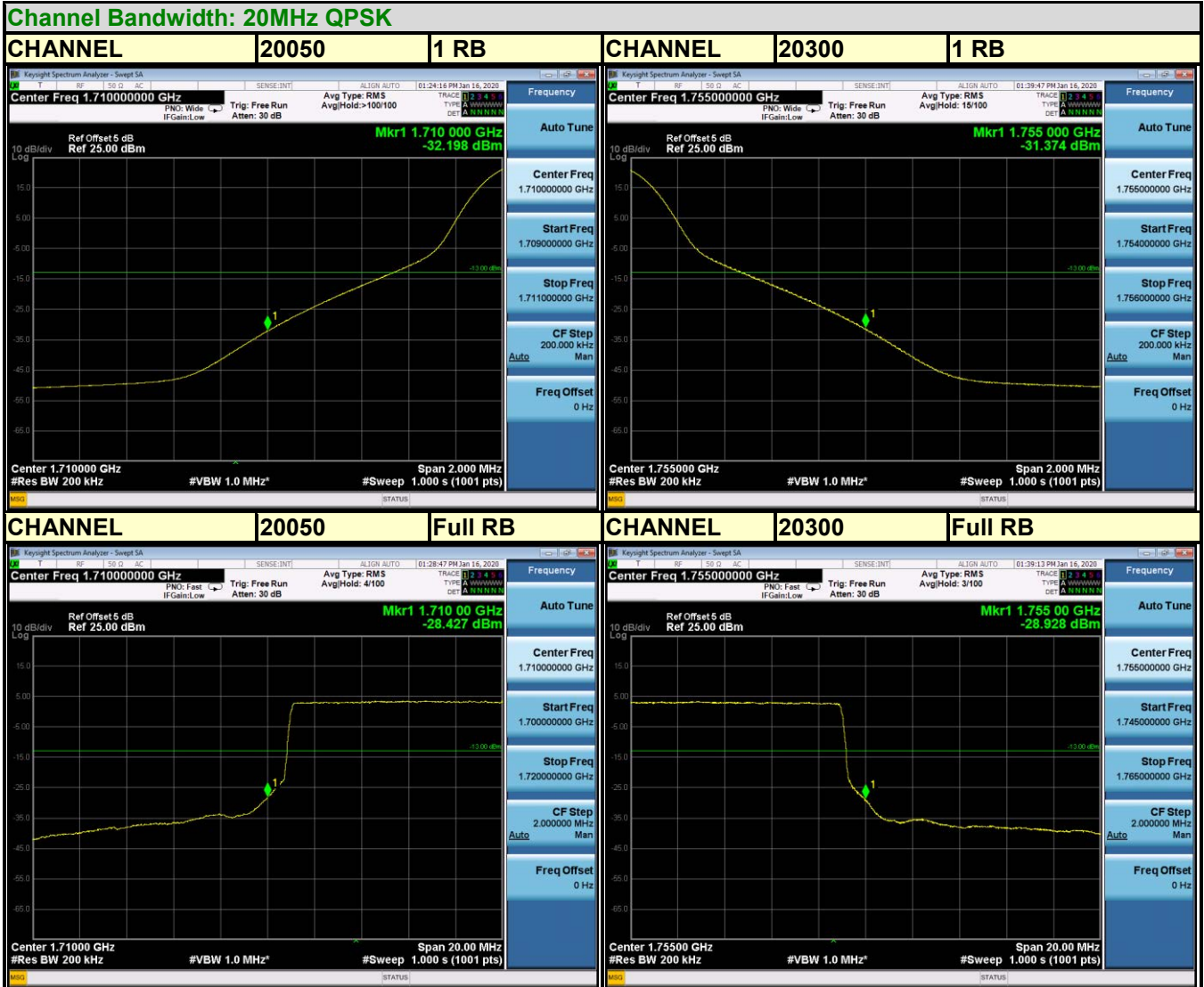




BUREAU VERITAS

Test Report No.: RF200106W008-6

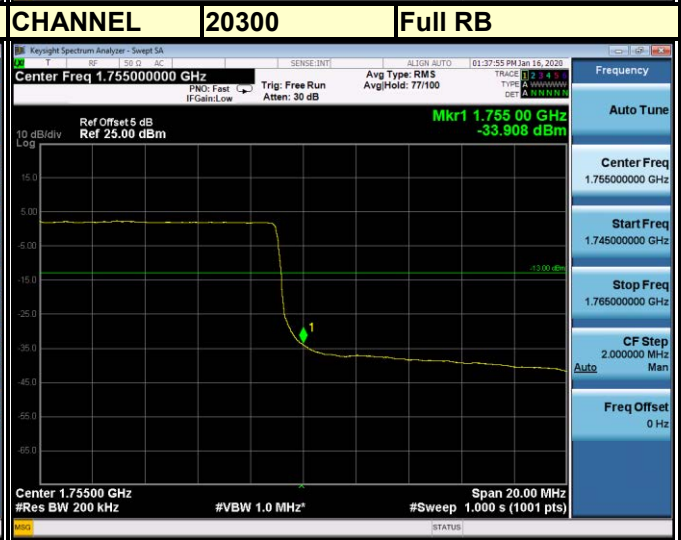
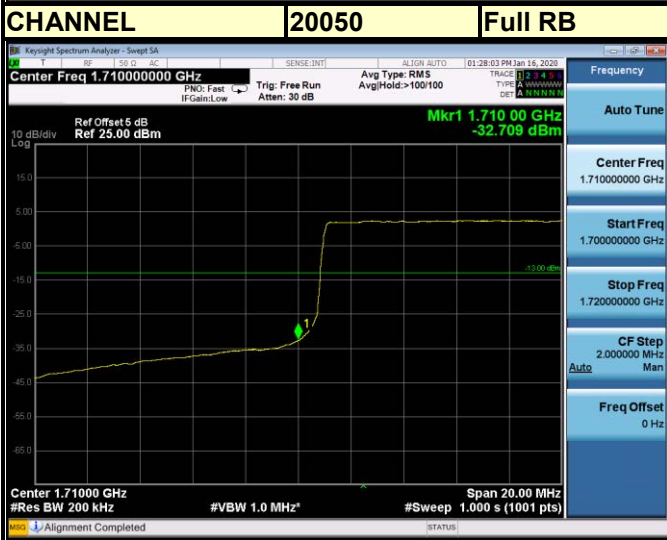
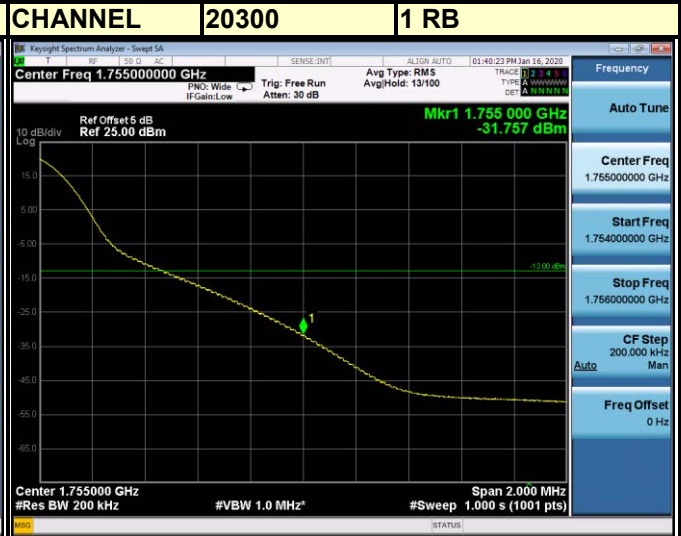
LTE BAND 4







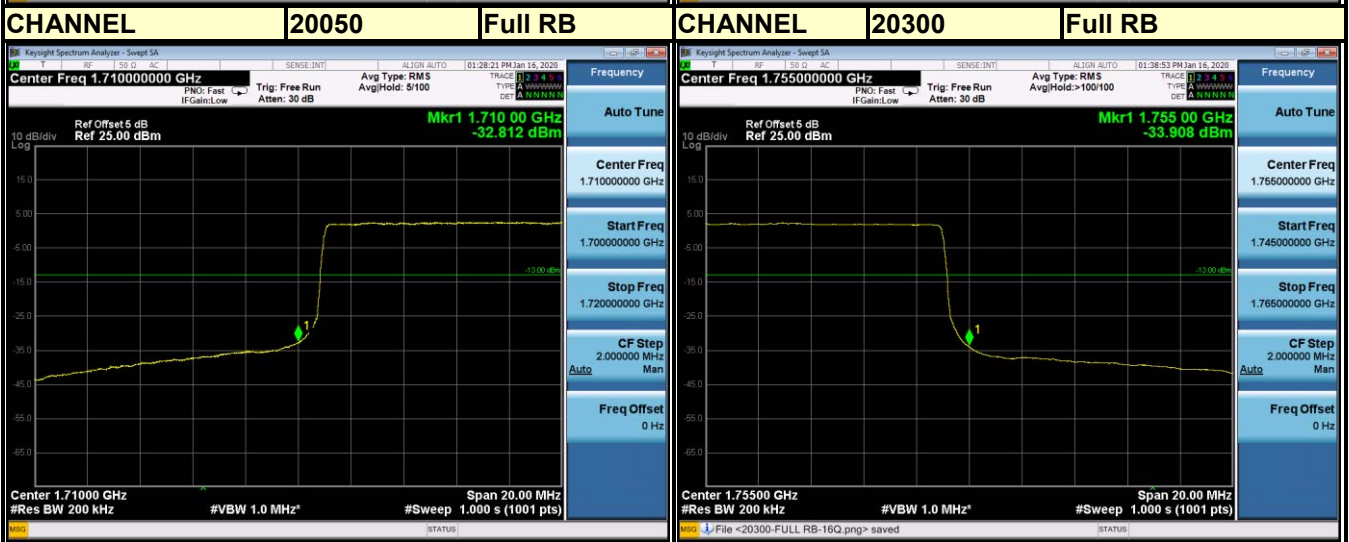
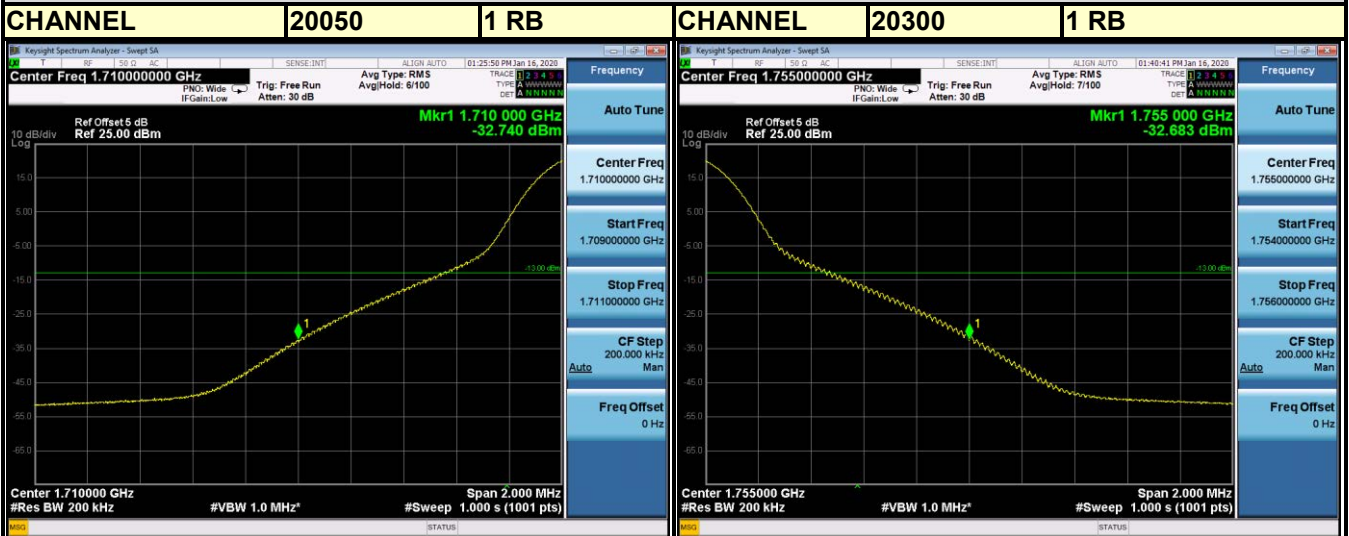
**Channel Bandwidth: 20MHz 16QAM**





Test Report No.: RF200106W008-6

**Channel Bandwidth: 20MHz 64QAM**



### 3.6 CONDUCTED SPURIOUS EMISSIONS

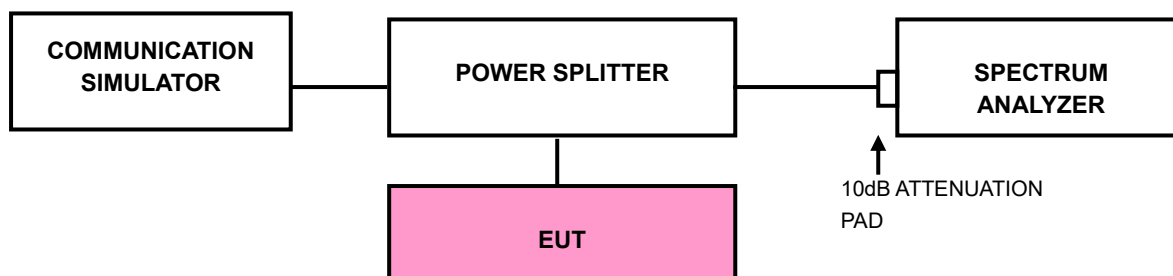
#### 3.6.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB. The limit of emission equal to  $-13\text{dBm}$

#### 3.6.2 TEST PROCEDURE

- a. The EUT makes a phone call to the communication simulator. All measurements were done at middle operational frequency range.
- b. Measuring frequency range is from 30 MHz to 19.1GHz for WCDMA Band 4 & LTE Band 4. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz are used for conducted emission measurement.

#### 3.6.3 TEST SETUP

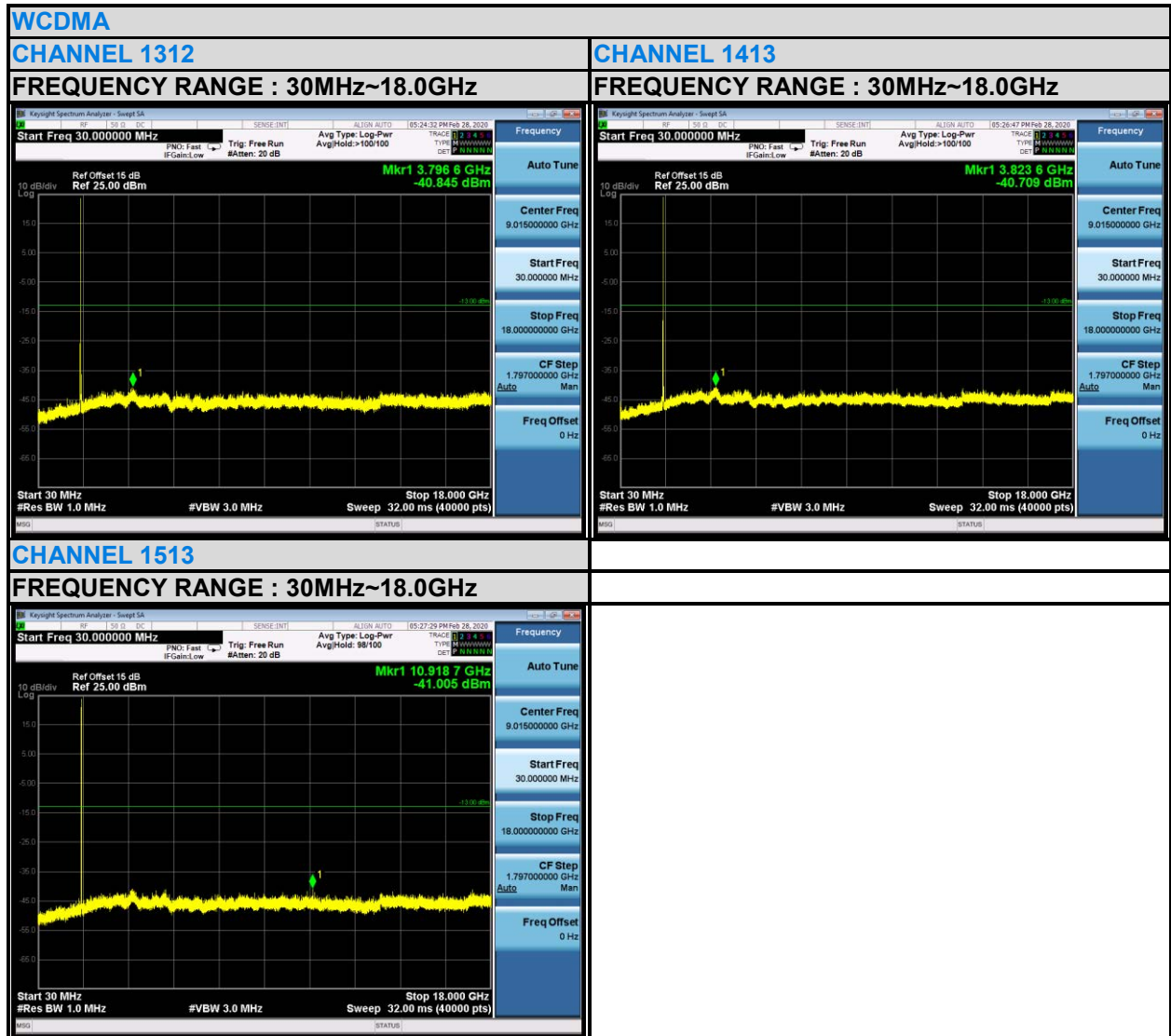




BUREAU VERITAS

Test Report No.: RF200106W008-6

### 3.6.4 TEST RESULTS





BUREAU VERITAS

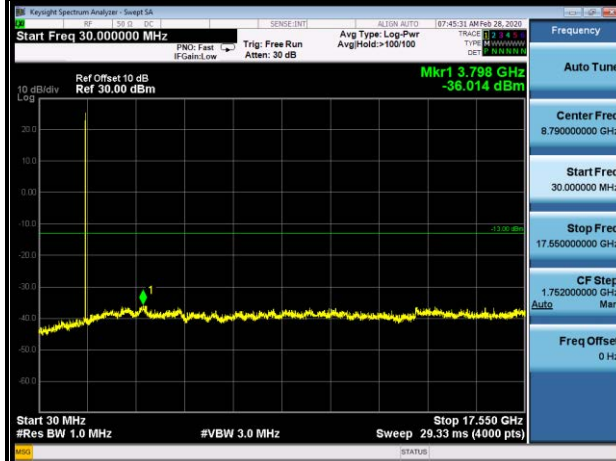
Test Report No.: RF200106W008-6

LTE BAND 4

1.4MHz / QPSK

CHANNEL 19957

FREQUENCY RANGE : 30MHz~17.55GHz



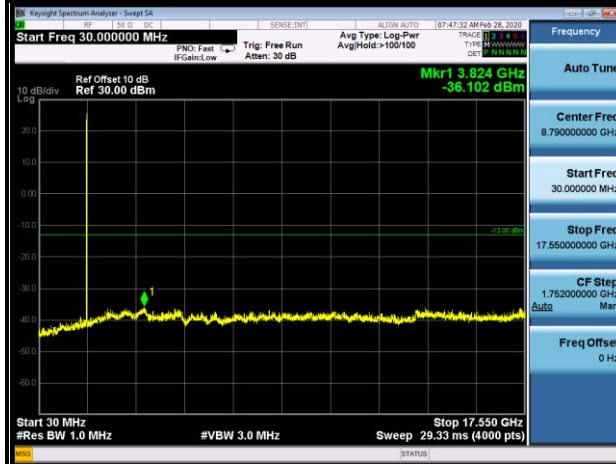
CHANNEL 20175

FREQUENCY RANGE : 30MHz~17.55GHz



CHANNEL 20393

FREQUENCY RANGE : 30MHz~17.55GHz





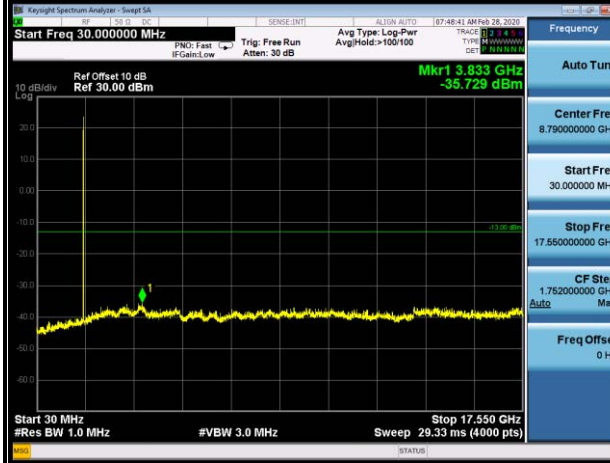
BUREAU VERITAS

Test Report No.: RF200106W008-6

### 3MHz / QPSK

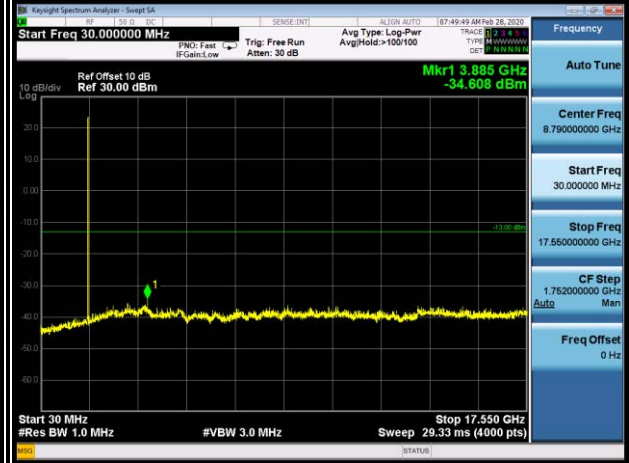
#### CHANNEL 19965

FREQUENCY RANGE : 30MHz~17.55GHz



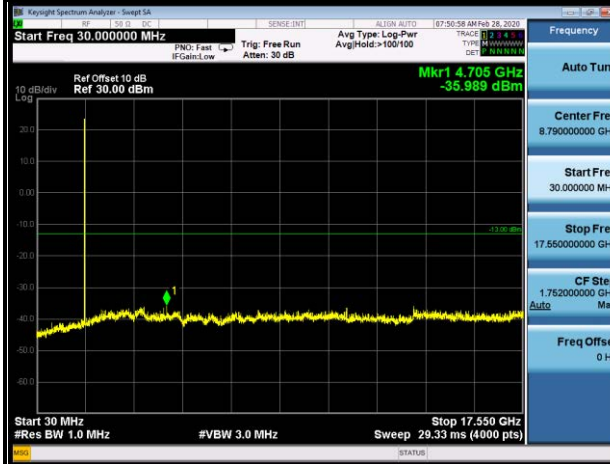
#### CHANNEL 20175

FREQUENCY RANGE : 30MHz~17.55GHz



#### CHANNEL 20385

FREQUENCY RANGE : 30MHz~17.55GHz







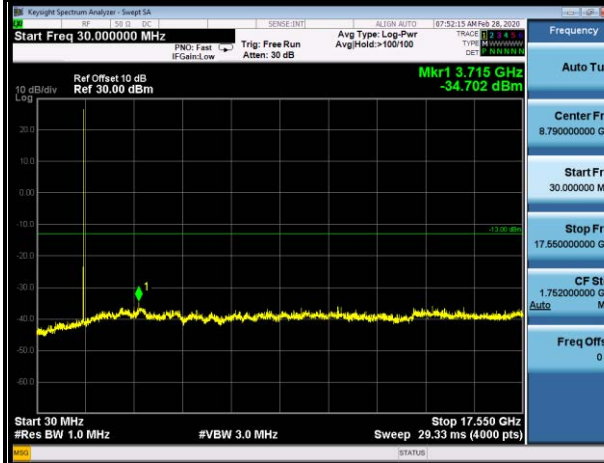
BUREAU VERITAS

Test Report No.: RF200106W008-6

5MHz / QPSK

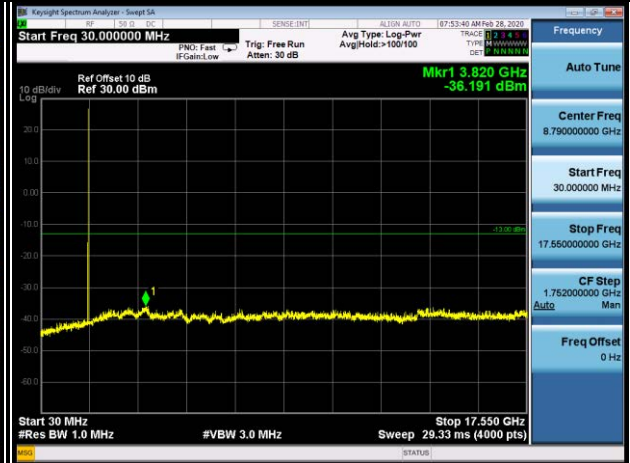
CHANNEL 19975

FREQUENCY RANGE : 30MHz~17.55GHz



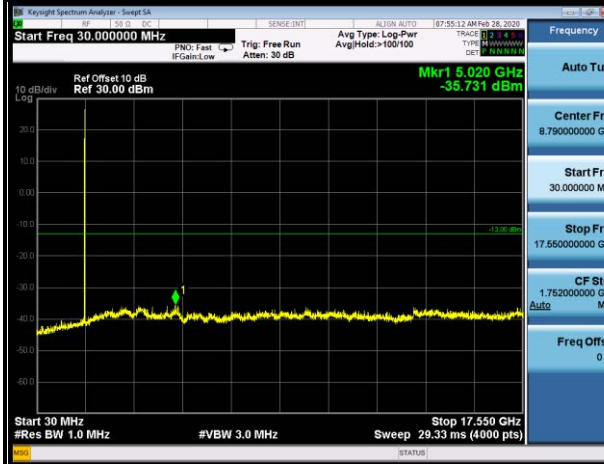
CHANNEL 20175

FREQUENCY RANGE : 30MHz~17.55GHz



CHANNEL 20375

FREQUENCY RANGE : 30MHz~17.55GHz





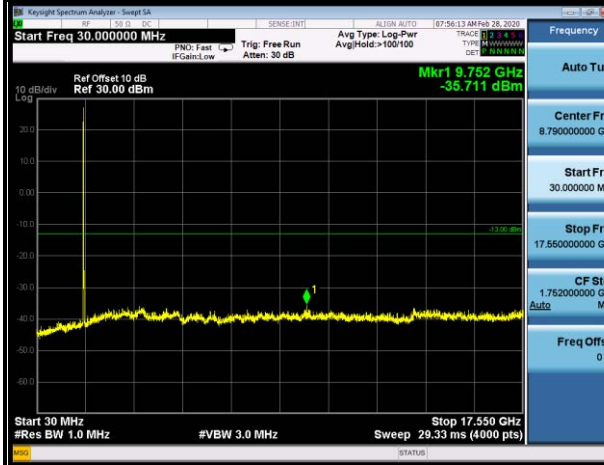
BUREAU VERITAS

Test Report No.: RF200106W008-6

10MHz / QPSK

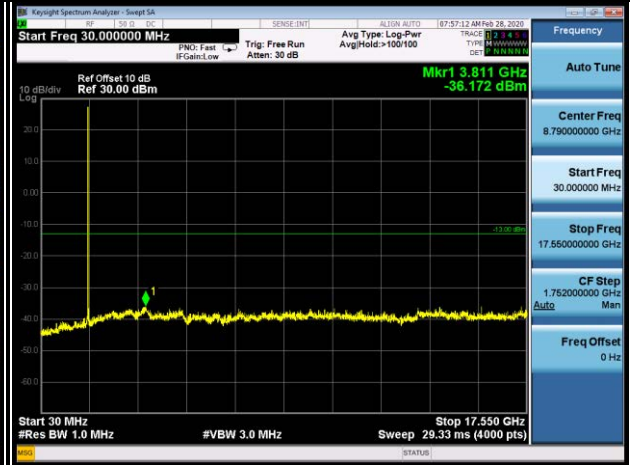
CHANNEL 2000

FREQUENCY RANGE : 30MHz~17.55GHz



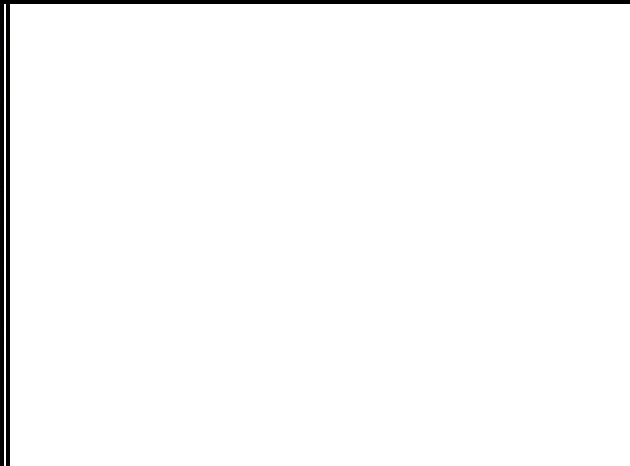
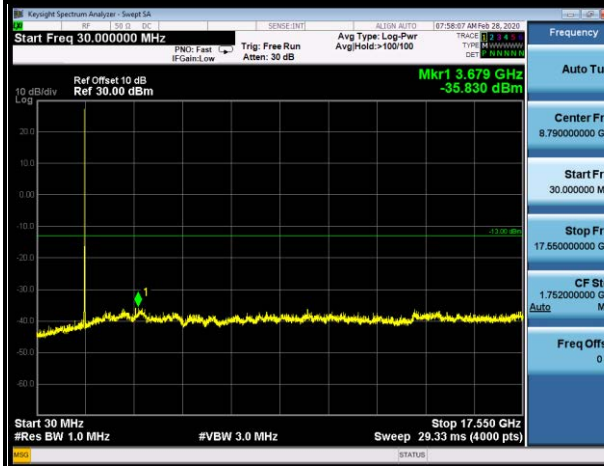
CHANNEL 20175

FREQUENCY RANGE : 30MHz~17.55GHz



CHANNEL 20350

FREQUENCY RANGE : 30MHz~17.55GHz





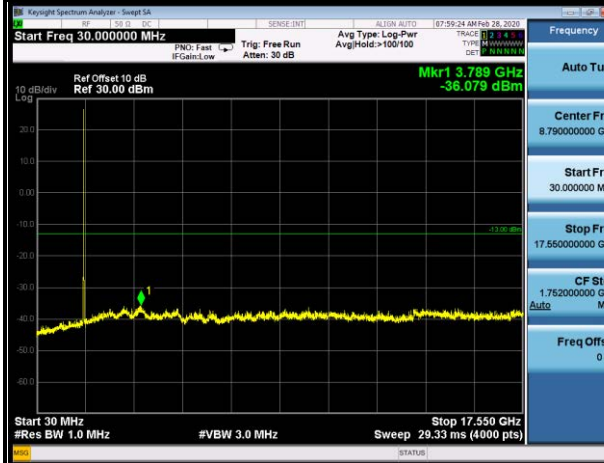
BUREAU VERITAS

Test Report No.: RF200106W008-6

15MHz / QPSK

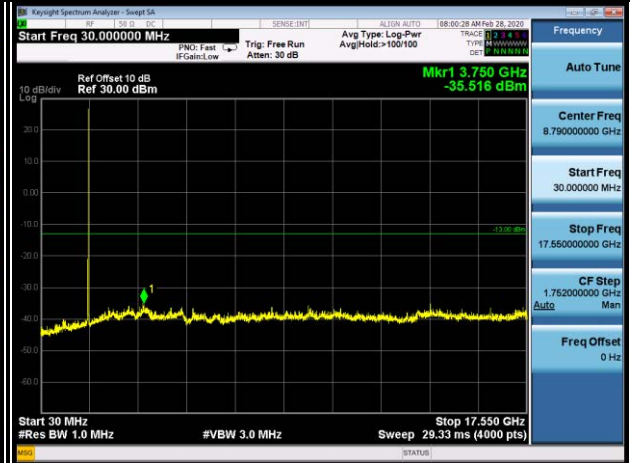
CHANNEL 20025

FREQUENCY RANGE : 30MHz~17.55GHz



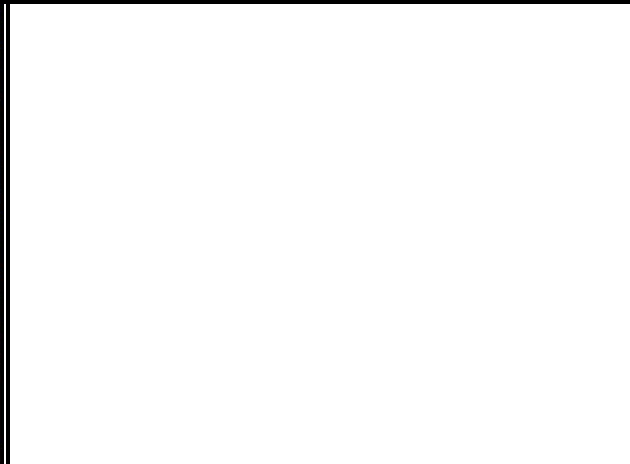
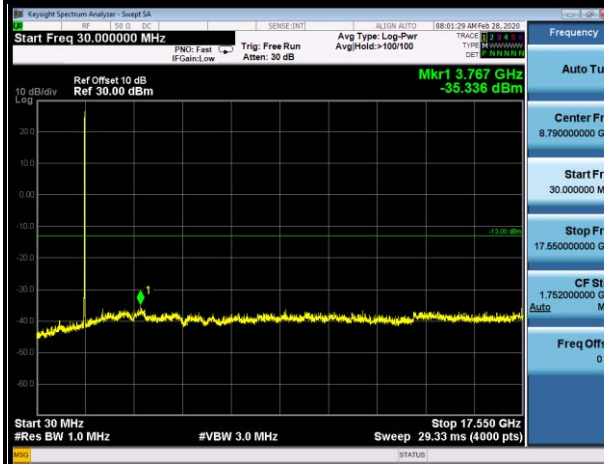
CHANNEL 20175

FREQUENCY RANGE : 30MHz~17.55GHz



CHANNEL 20325

FREQUENCY RANGE : 30MHz~17.55GHz





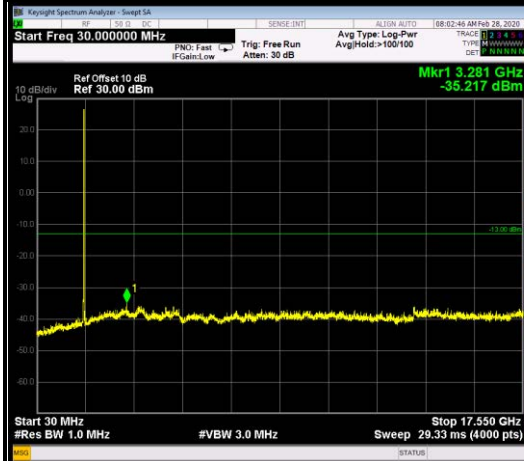
BUREAU VERITAS

Test Report No.: RF200106W008-6

20MHz / QPSK

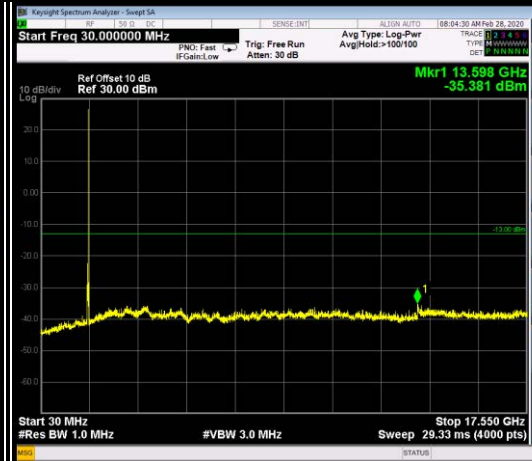
CHANNEL 20050

FREQUENCY RANGE : 30MHz~17.55GHz



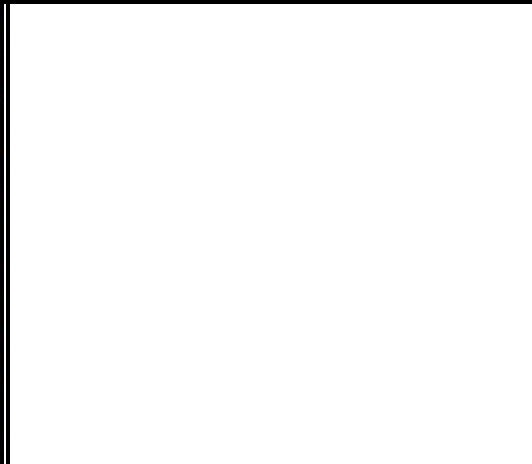
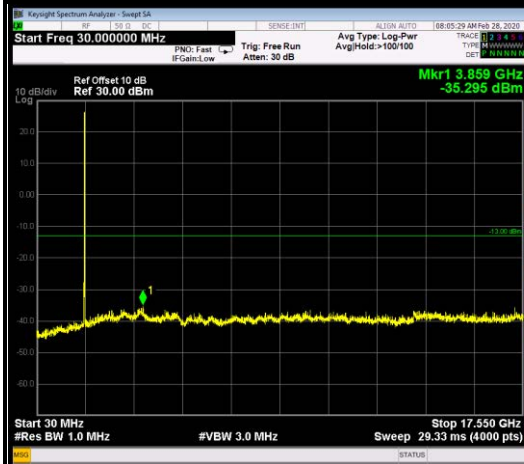
CHANNEL 20175

FREQUENCY RANGE : 30MHz~17.55GHz



CHANNEL 20300

FREQUENCY RANGE : 30MHz~17.55GHz





### 3.7 RADIATED EMISSION MEASUREMENT

#### 3.7.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB. The limit of emission equal to  $-13\text{dBm}$

#### 3.7.2 TEST PROCEDURES

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G
- c.  $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn.}$
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole,  $\text{E.R.P power} = \text{E.I.P.R power} - 2.15\text{dBi.}$

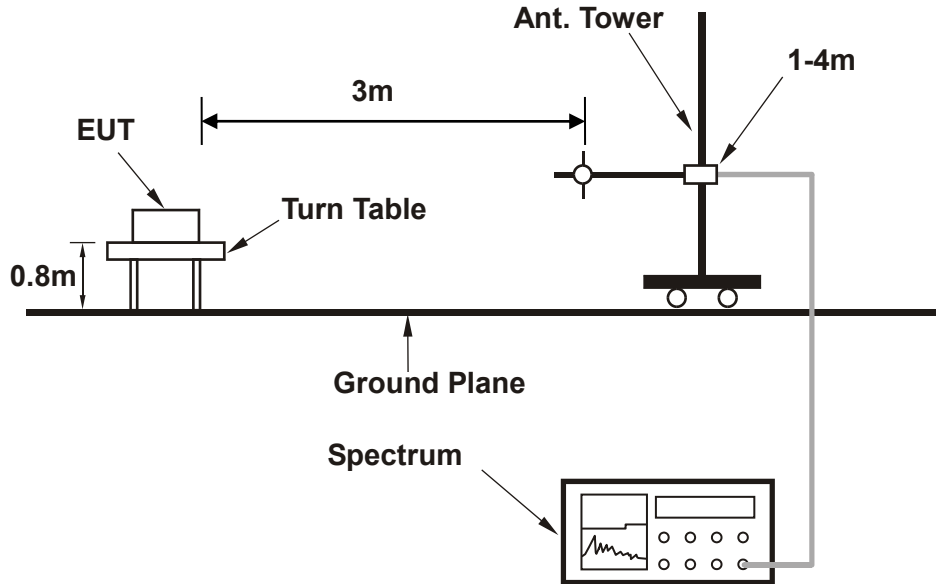
**NOTE:** The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

#### 3.7.3 DEVIATION FROM TEST STANDARD

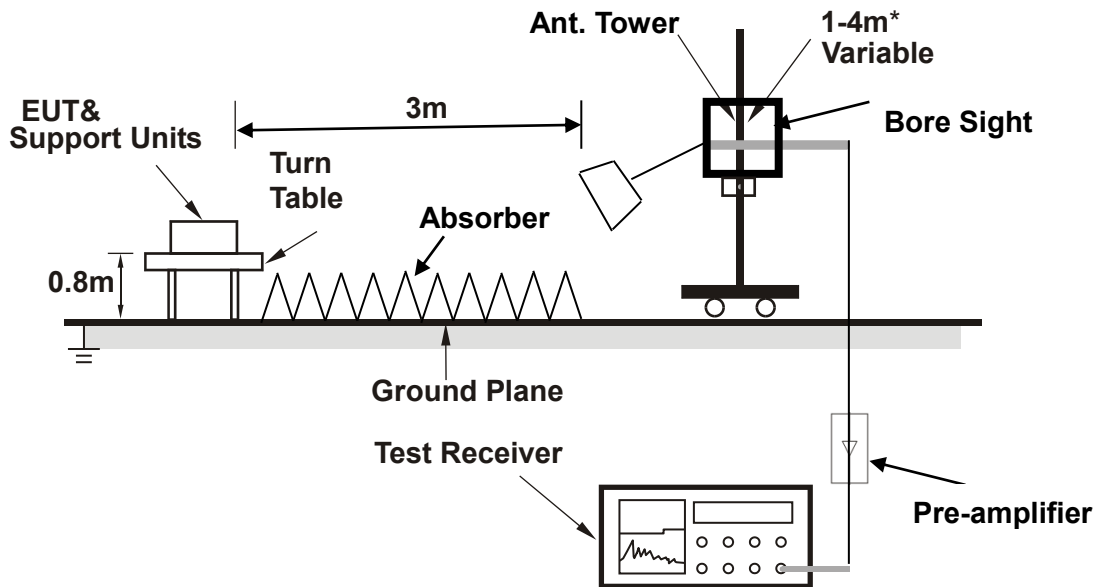
No deviation

### 3.7.4 TEST SETUP

#### < Frequency Range 30MHz~1GHz >



#### <Frequency Range above 1GHz>



**Note:** Above 1G is a directional antenna

Depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

For the actual test configuration, please refer to the attached file (Test Setup Photo).





Test Report No.: RF200106W008-6

### 3.7.5 TEST RESULTS

#### BELOW 1GHz WORST-CASE DATA

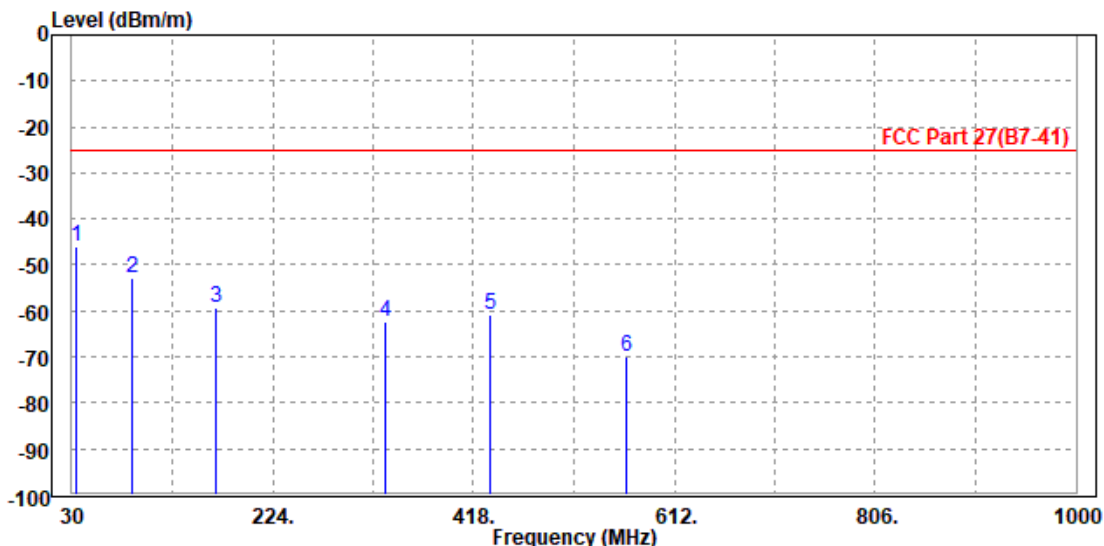
30 MHz – 1GHz data:

WCDMA IV

CHANNEL BANDWIDTH: 10MHz / QPSK

<b>MODE</b>	TX channel 1413	<b>FREQUENCY RANGE</b>	Below 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V/9V/10/12V from adapter
<b>TESTED BY</b>	Star Le		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit	Over	Factor	Remark	Pol/Phase	
	MHz	dBm/m	dBm	dBm/m	dB	dB/m			
1	PP	33.890	-45.98	-59.98	-25.00	-20.98	14.00	Peak	Horizontal
2		88.120	-52.76	-43.98	-25.00	-27.76	-8.78	Peak	Horizontal
3		169.250	-59.40	-41.26	-25.00	-34.40	-18.14	Peak	Horizontal
4		332.870	-62.27	-49.56	-25.00	-37.27	-12.71	Peak	Horizontal
5		433.750	-60.79	-50.36	-25.00	-35.79	-10.43	Peak	Horizontal
6		565.840	-70.12	-60.85	-25.00	-45.12	-9.27	Peak	Horizontal

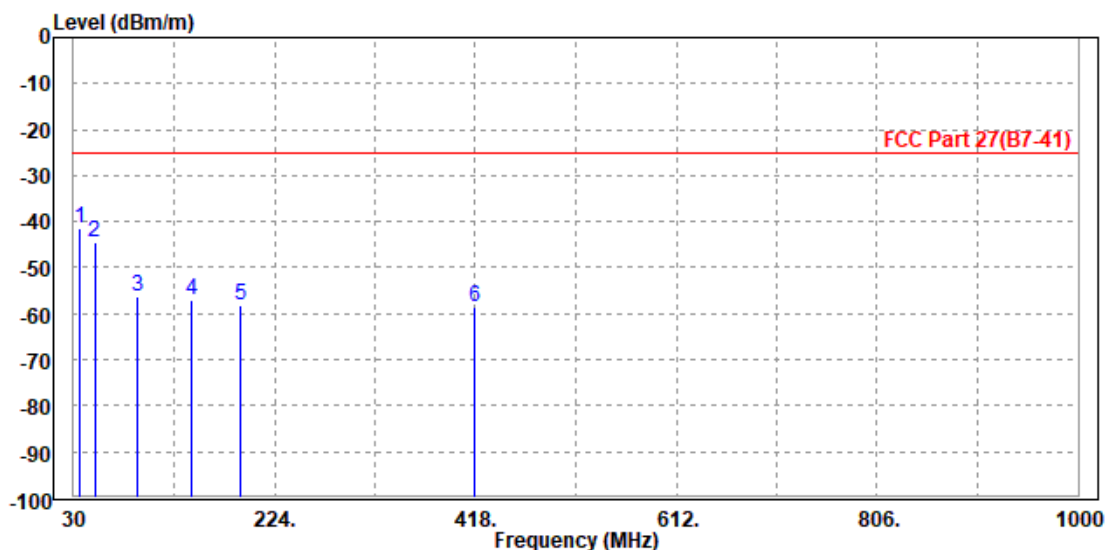




Test Report No.: RF200106W008-6

<b>MODE</b>	TX channel 1413	<b>FREQUENCY RANGE</b>	Below 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V/9V/10/12V from adapter
<b>TESTED BY</b>	Star Le		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase	
	MHz	dBm/m	dBm	dBm/m	dB	dB/m			
1	PP	35.960	-41.42	-40.11	-25.00	-16.42	-1.31	Peak	Vertical
2		50.260	-44.53	-39.62	-25.00	-19.53	-4.91	Peak	Vertical
3		91.220	-56.43	-45.88	-25.00	-31.43	-10.55	Peak	Vertical
4		144.220	-56.96	-41.00	-25.00	-31.96	-15.96	Peak	Vertical
5		191.220	-58.08	-46.33	-25.00	-33.08	-11.75	Peak	Vertical
6		417.110	-58.63	-48.33	-25.00	-33.63	-10.30	Peak	Vertical





Test Report No.: RF200106W008-6

**ABOVE 1GHz**

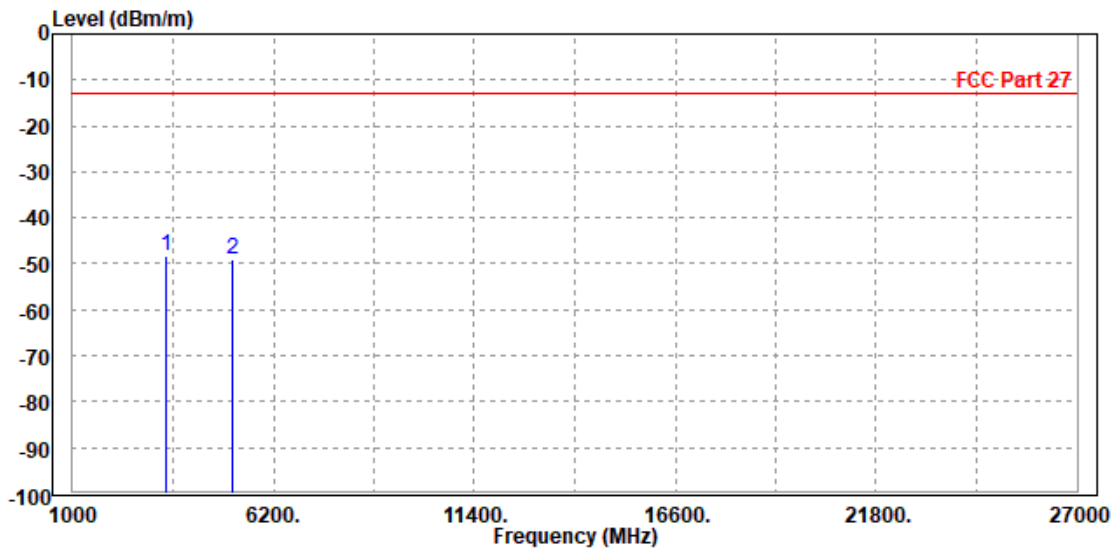
**Note:** For higher frequency, the emission is too low to be detected.

**WCDMA Band IV:**

**CH 1312**

<b>MODE</b>	TX channel 1312	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V/9V/10/12V from adapter
<b>TESTED BY</b>	Star Le		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3418.000	-48.28	-56.87	-13.00	-35.28	8.59	Peak	Horizontal
2	5137.200	-49.18	-58.12	-13.00	-36.18	8.94	Peak	Horizontal





Test Report No.: RF200106W008-6

<b>MODE</b>	TX channel 1312	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V/9V/10/12V from adapter
<b>TESTED BY</b>	Star Le		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3418.000	-47.88	-56.99	-13.00	-34.88	9.11	Peak	Vertical
2 PP	5137.200	-47.40	-57.25	-13.00	-34.40	9.85	Peak	Vertical

