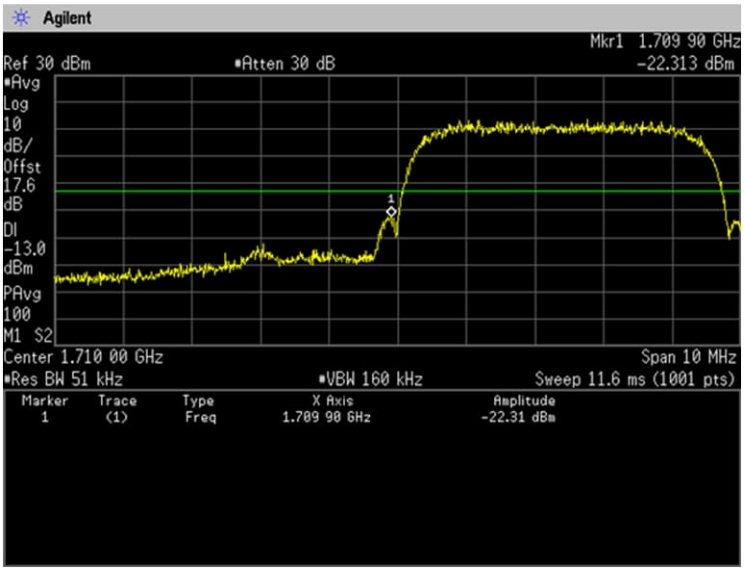
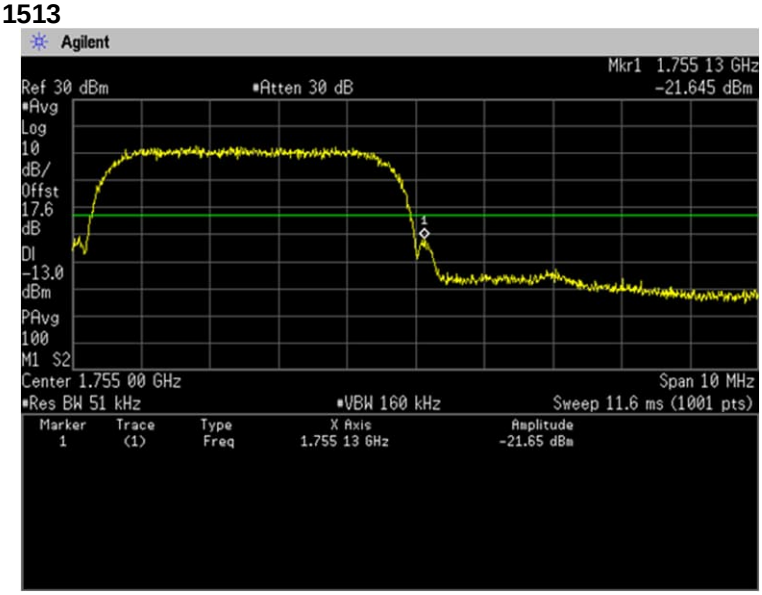
4.4.4 Trace data

[WCDMA Band IV]
(Band Edge)

Channel: 1312



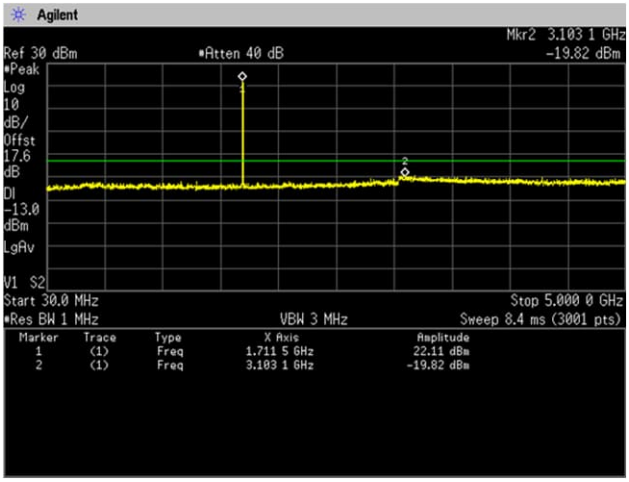
Channel: 1513



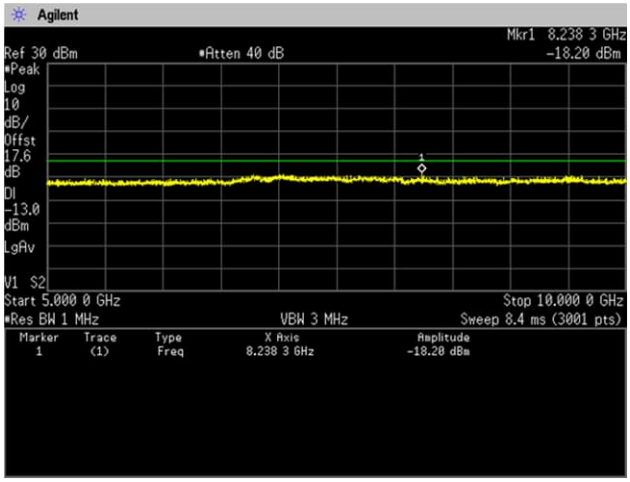
(Spurious Emissions)
Note: Conducted spurious test was measured in the worst case of conducted output power.

Channel: 1312

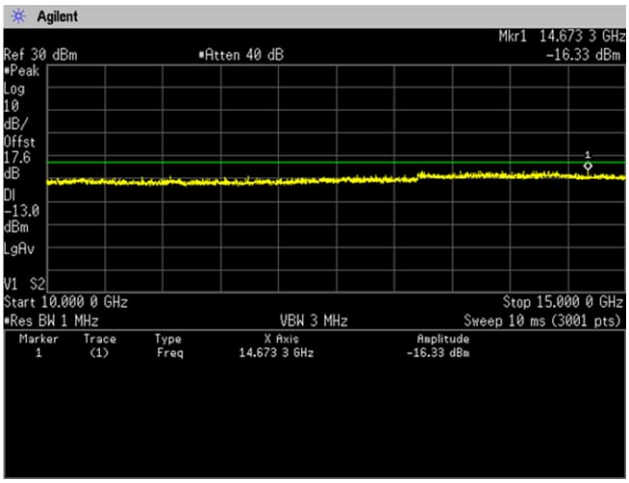
30MHz-5GHz



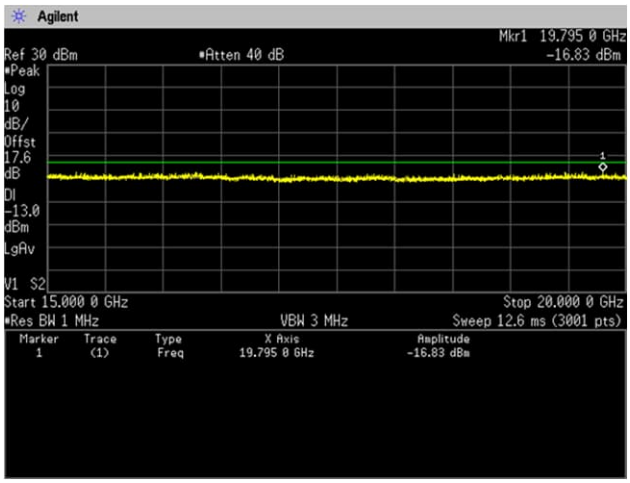
5GHz-10GHz



10GHz-15GHz

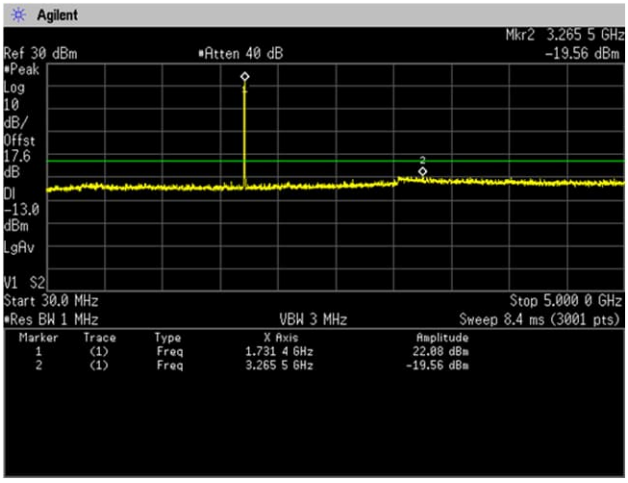


15GHz-20GHz

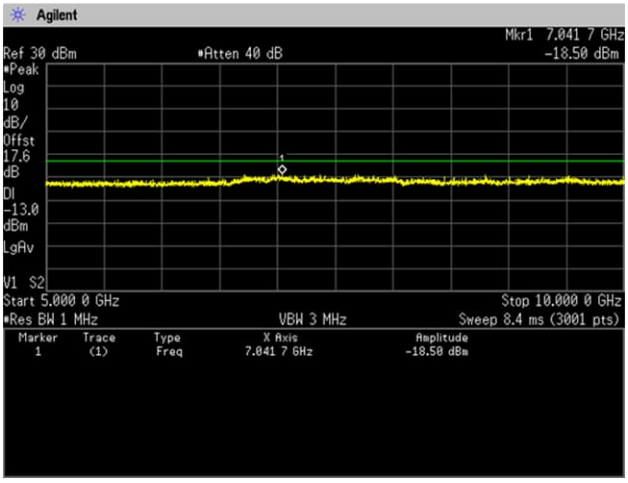


Channel: 1413

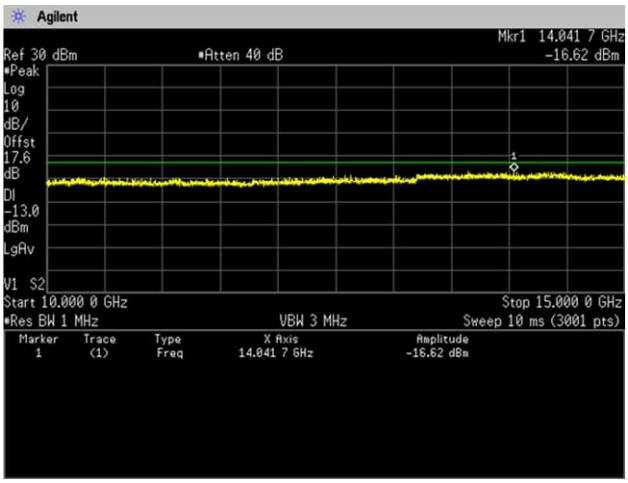
30MHz-5GHz



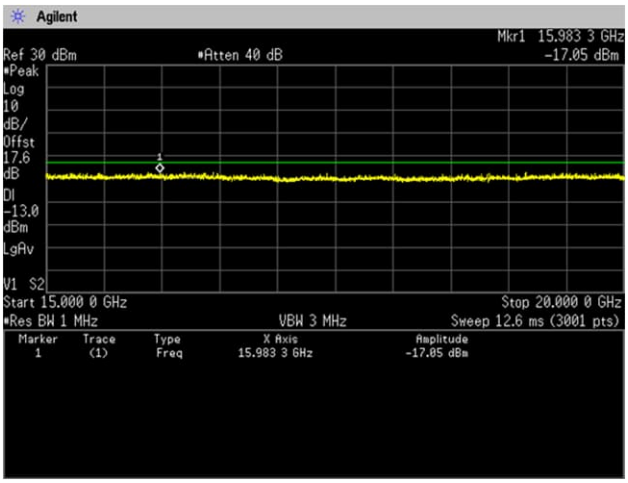
5GHz-10GHz



10GHz-15GHz

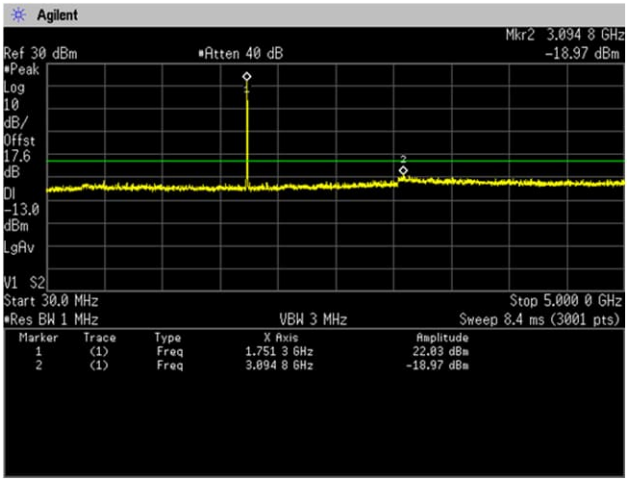


15GHz-20GHz

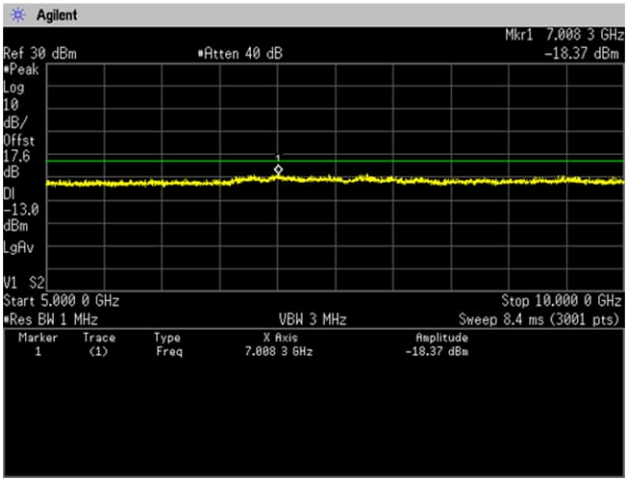


Channel: 1513

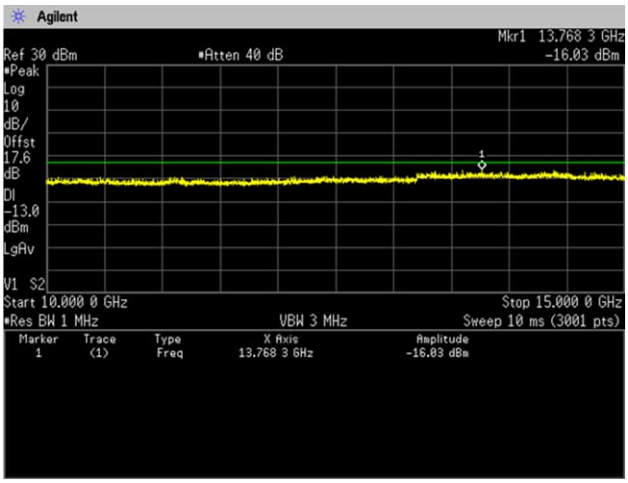
30MHz-5GHz



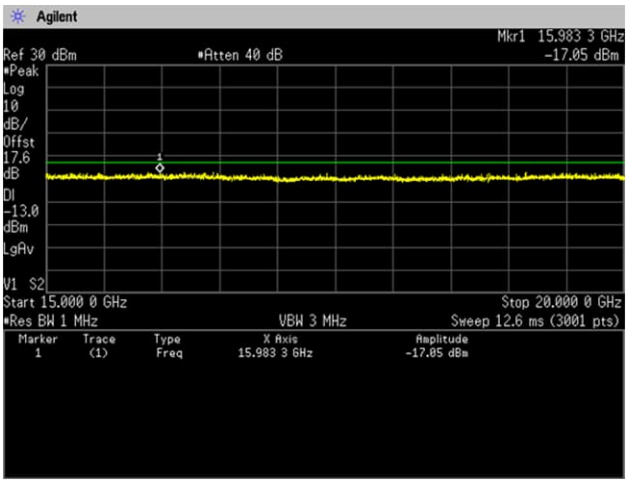
5GHz-10GHz



10GHz-15GHz

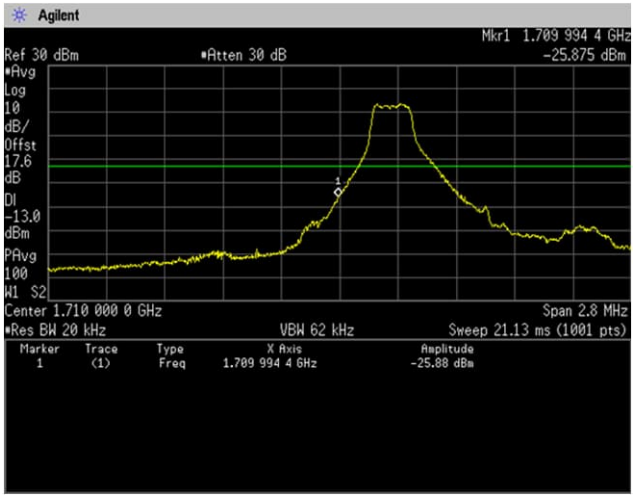


15GHz-20GHz

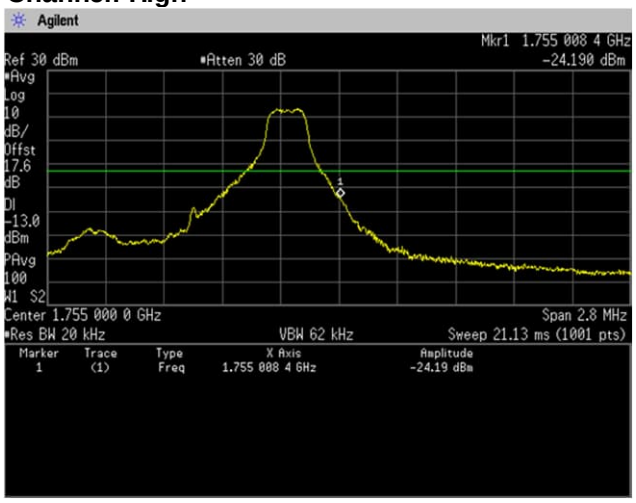


[LTE Band IV]
(Band Edge)

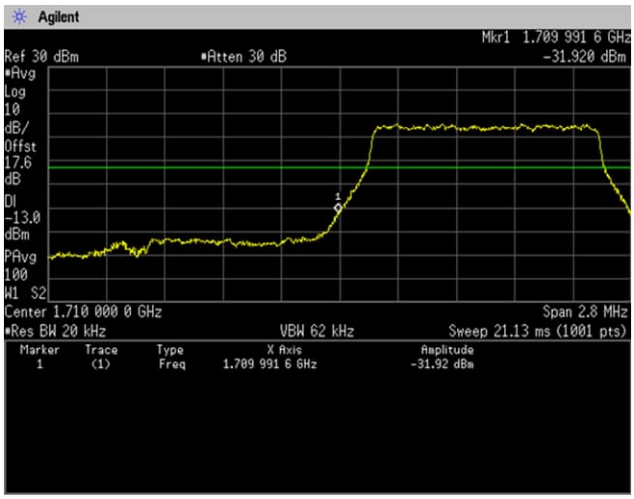
QPSK, BW 1.4MHz, RB1-0
Channel: Low



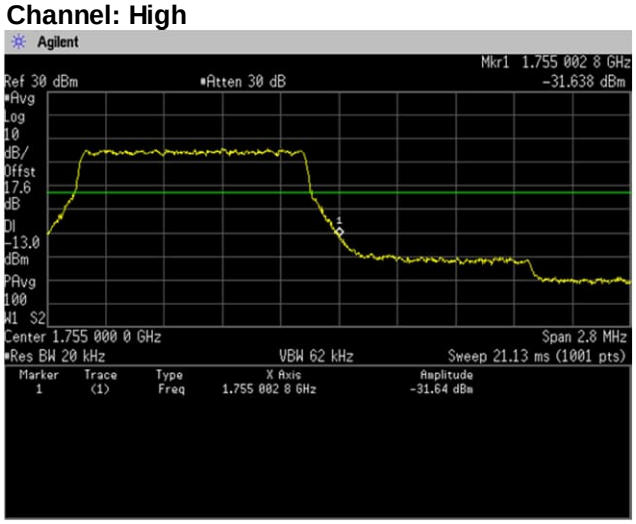
RB1-5
Channel: High



QPSK, BW 1.4MHz, RB6-0
Channel: Low

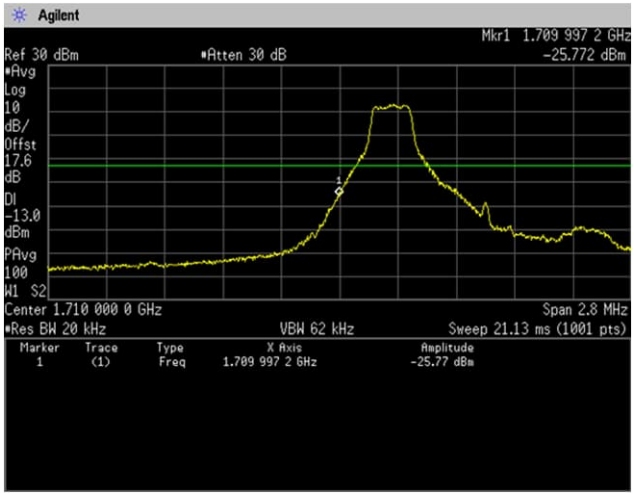


Channel: High

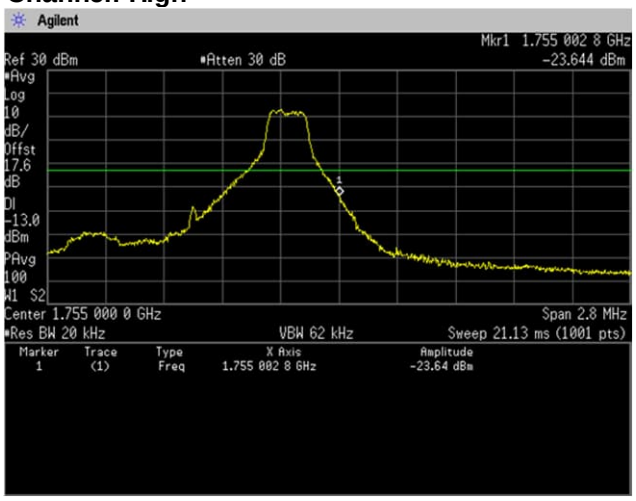


[LTE Band IV]
(Band Edge)

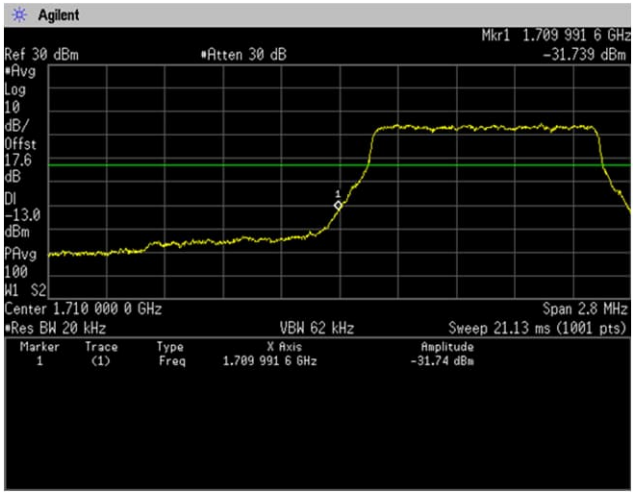
16QAM, BW 1.4MHz, RB1-0
Channel: Low



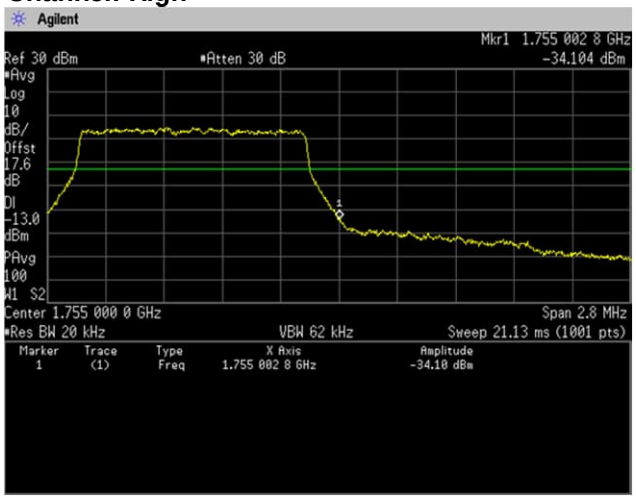
RB1-5
Channel: High



16QAM, BW 1.4MHz, RB6-0
Channel: Low

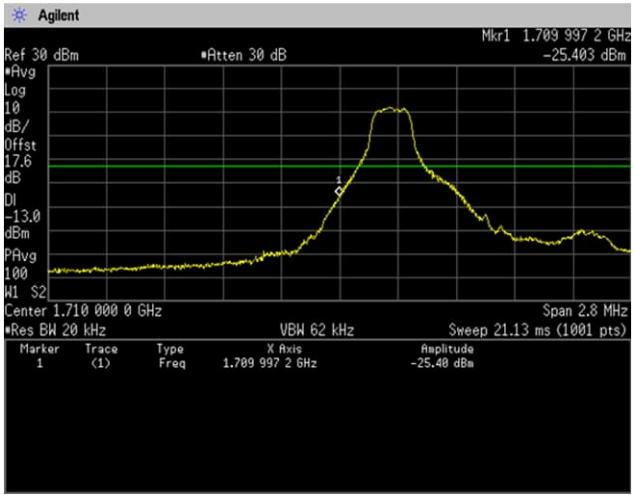


Channel: High

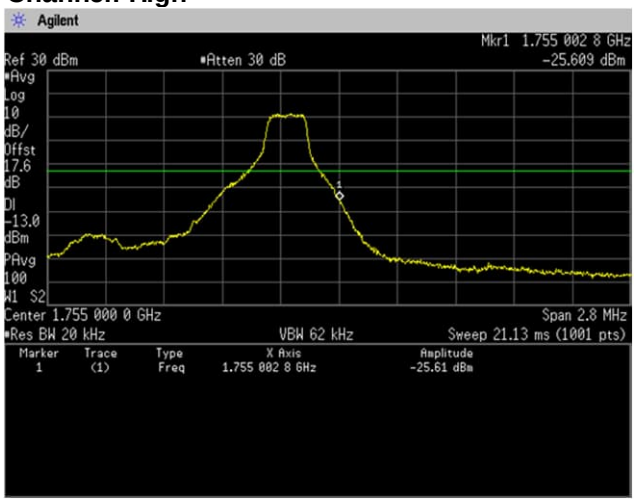


[LTE Band IV]
(Band Edge)

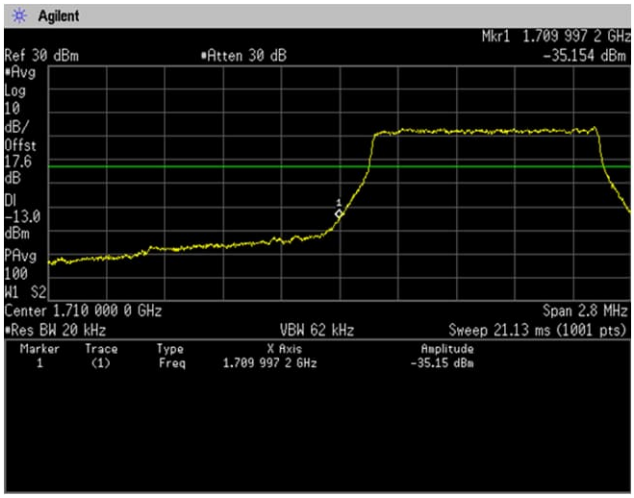
64QAM, BW 1.4MHz, RB1-0
Channel: Low



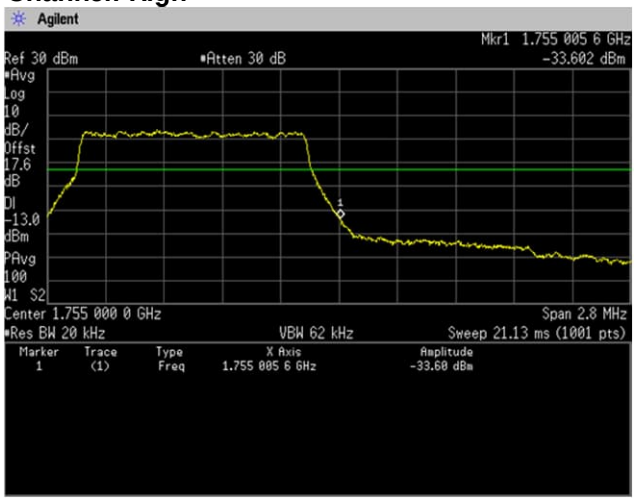
RB1-5
Channel: High



64QAM, BW 1.4MHz, RB6-0
Channel: Low

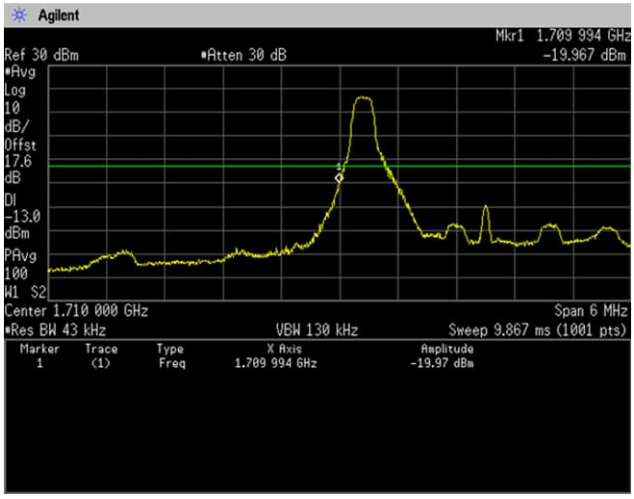


Channel: High

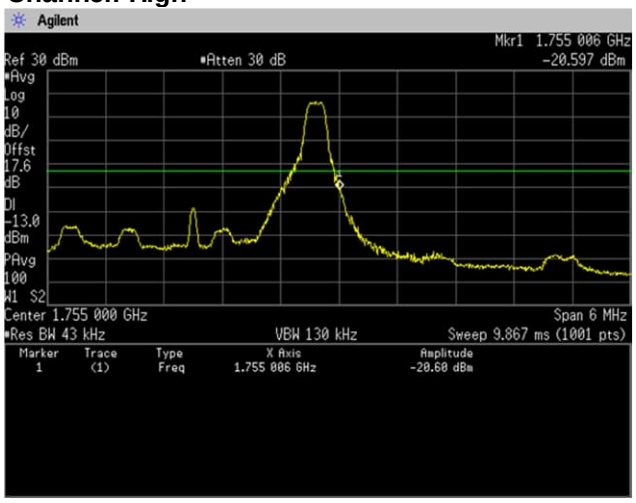


[LTE Band IV]
(Band Edge)

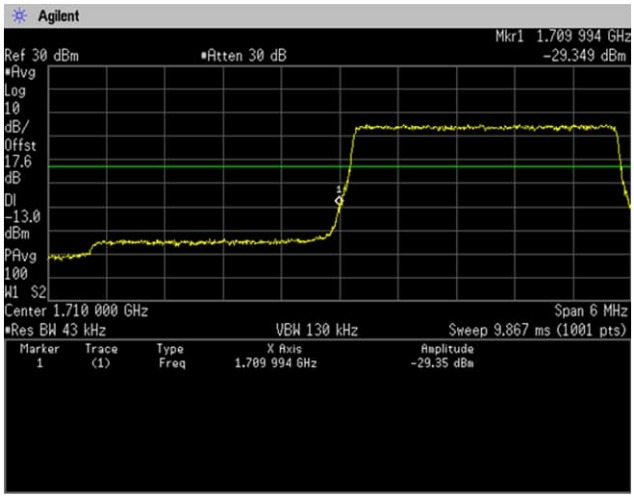
QPSK, BW 3MHz, RB1-0
Channel: Low



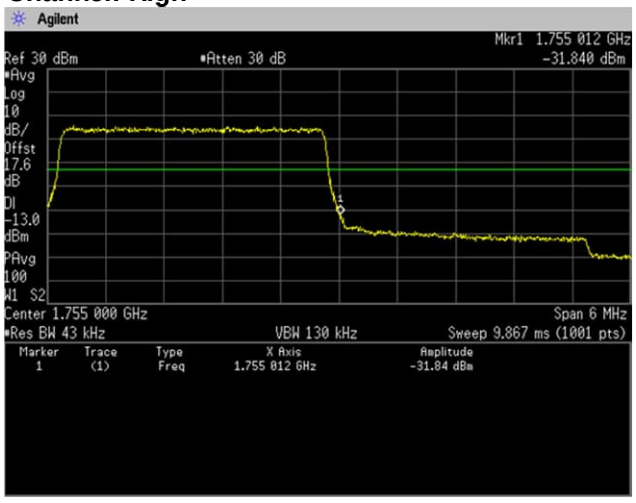
RB1-14
Channel: High



QPSK, BW 3MHz, RB15-0
Channel: Low

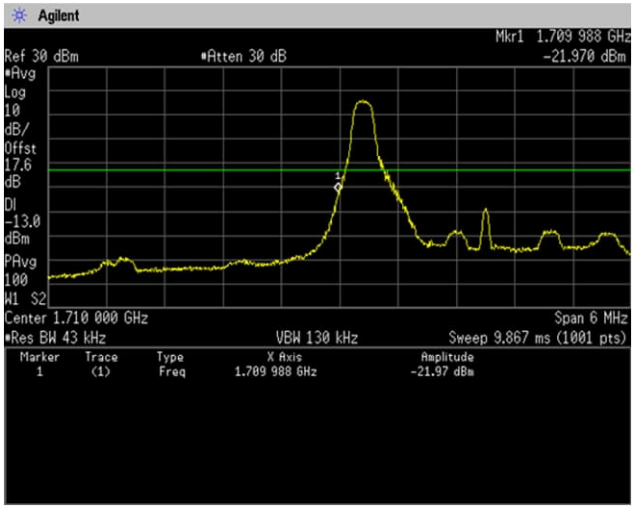


Channel: High

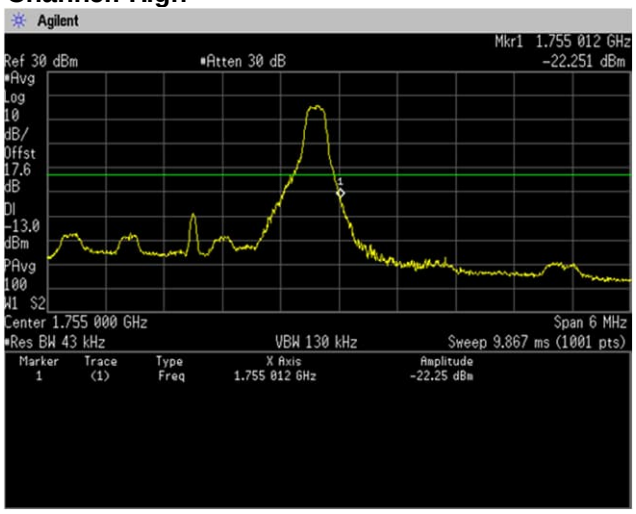


[LTE Band IV]
(Band Edge)

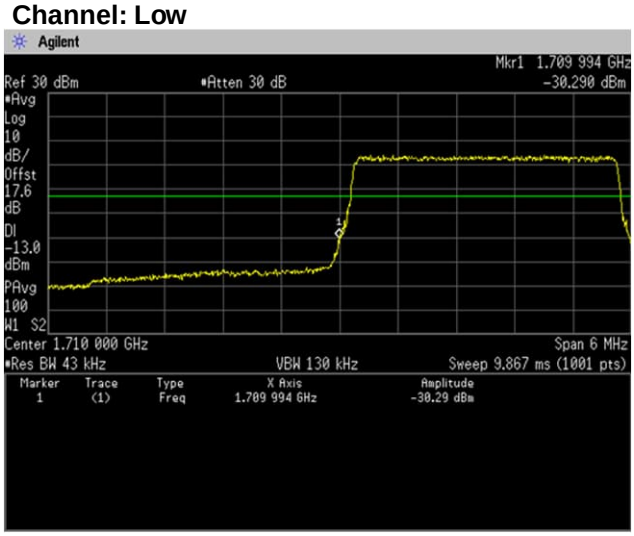
16QAM, BW 3MHz, RB1-0
Channel: Low



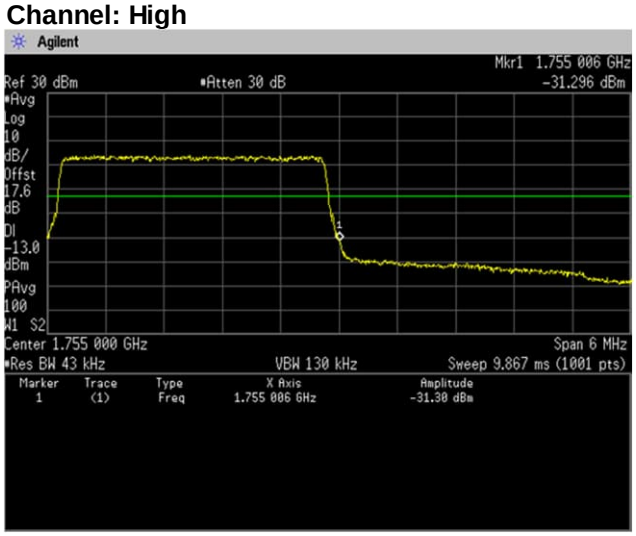
RB1-14
Channel: High



16QAM, BW 3MHz, RB15-0
Channel: Low

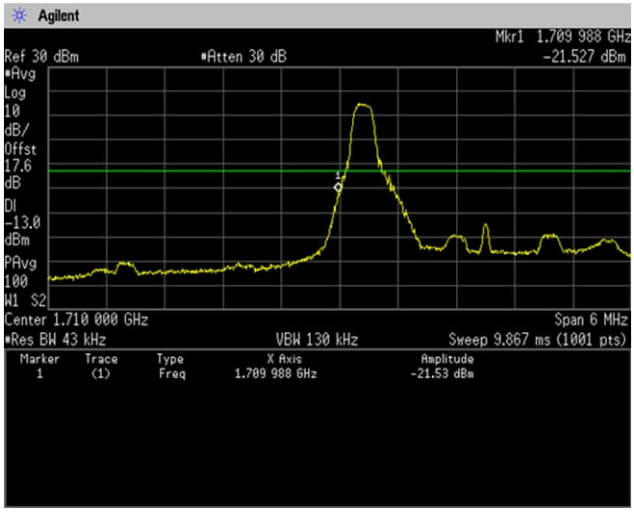


Channel: High

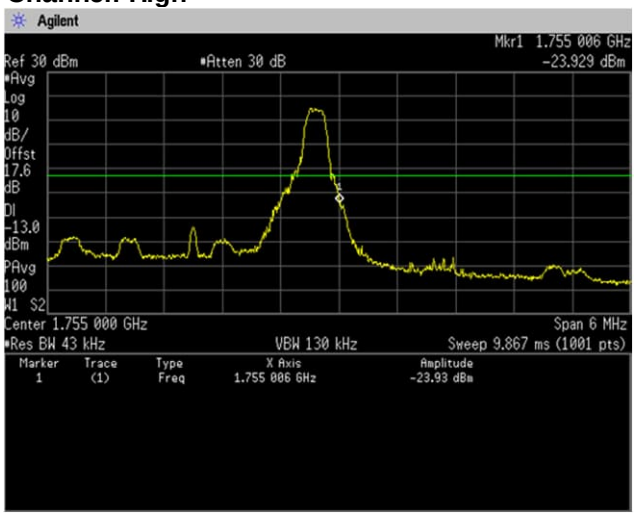


[LTE Band IV]
(Band Edge)

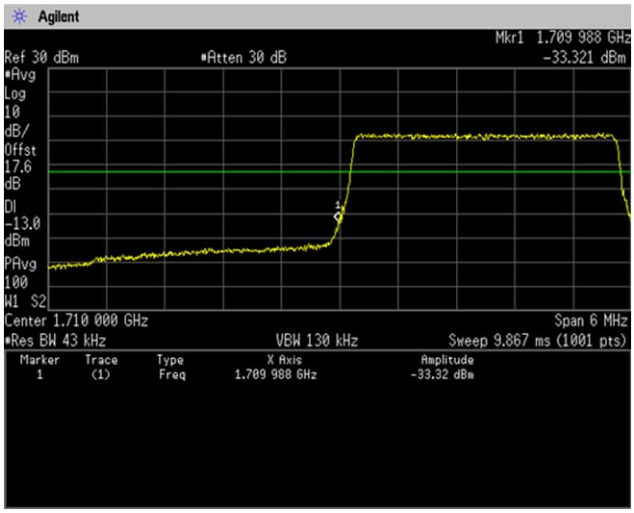
64QAM, BW 3MHz, RB1-0
Channel: Low



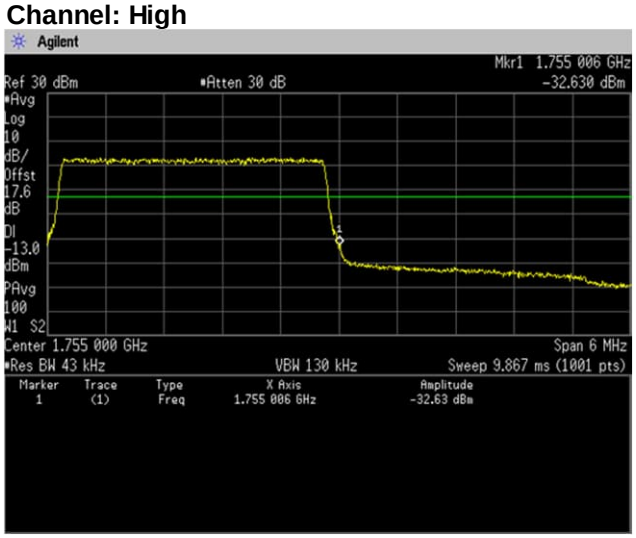
RB1-14
Channel: High



64QAM, BW 3MHz, RB15-0
Channel: Low

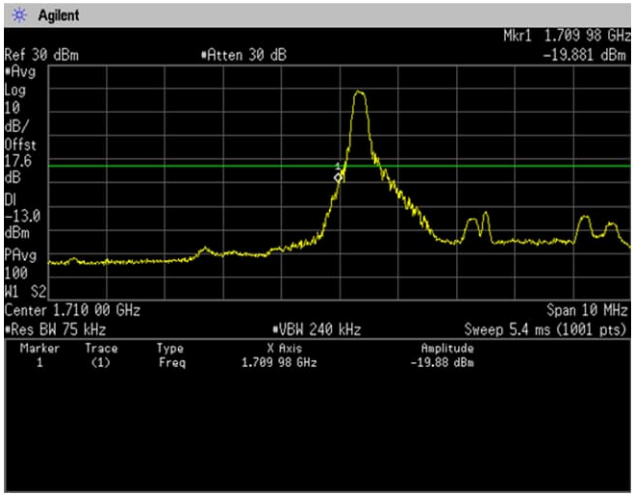


Channel: High

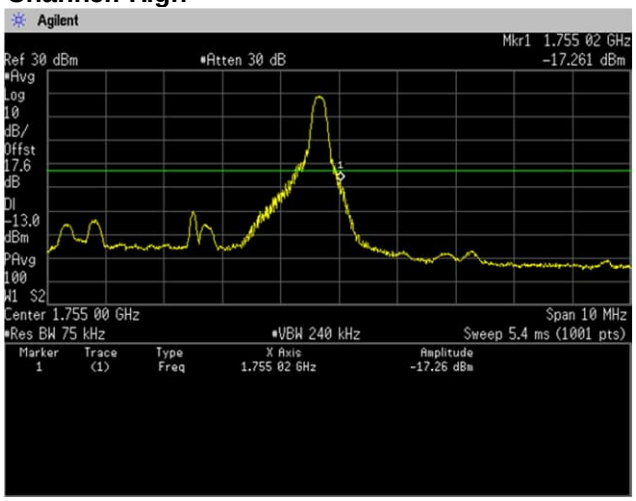


[LTE Band IV]
(Band Edge)

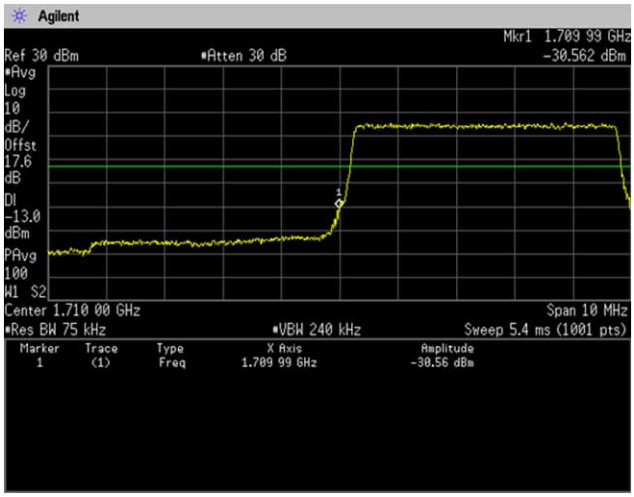
QPSK, BW 5MHz, RB1-0
Channel: Low



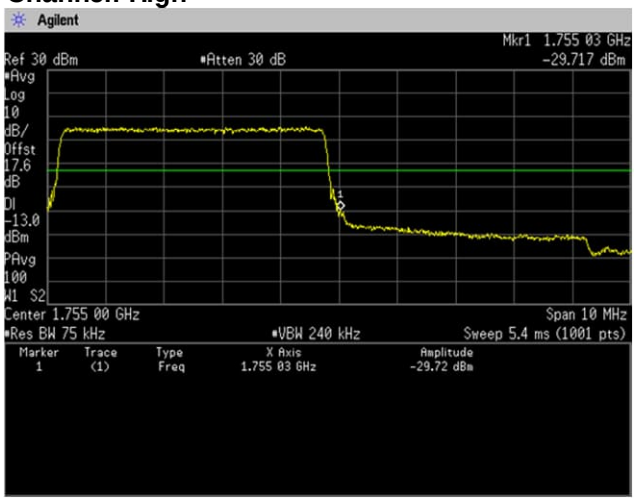
RB1-24
Channel: High



QPSK, BW 5MHz, RB25-0
Channel: Low

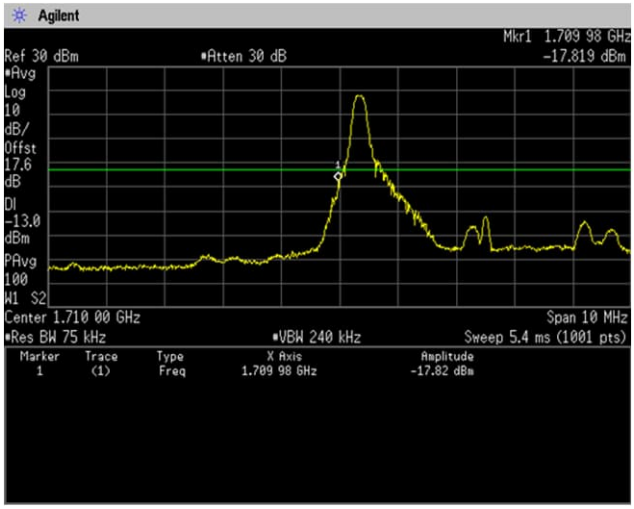


Channel: High

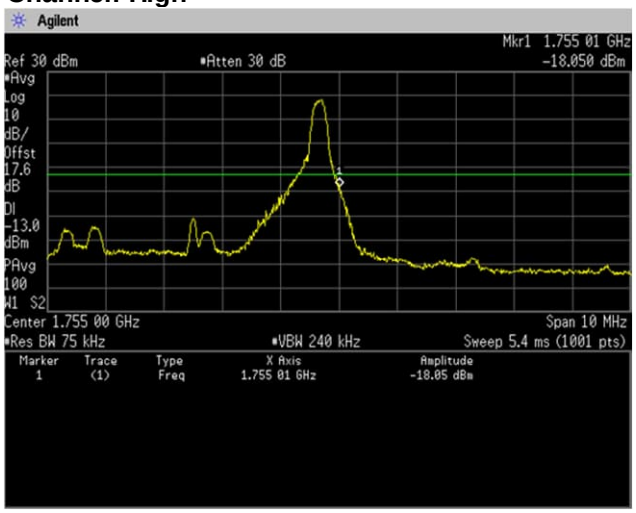


[LTE Band IV]
(Band Edge)

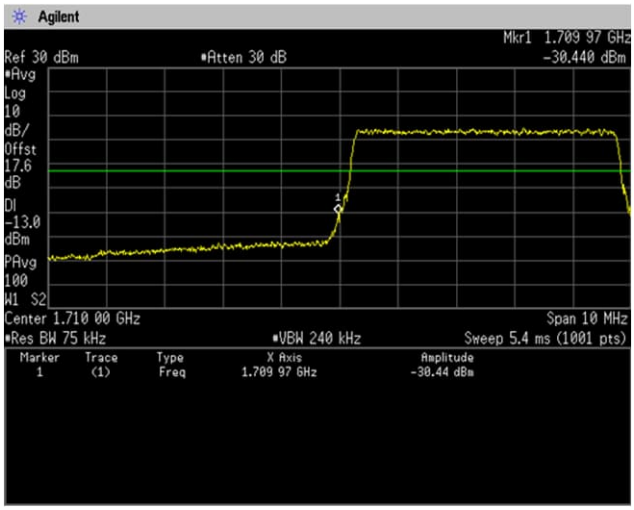
16QAM, BW 5MHz, RB1-0
Channel: Low



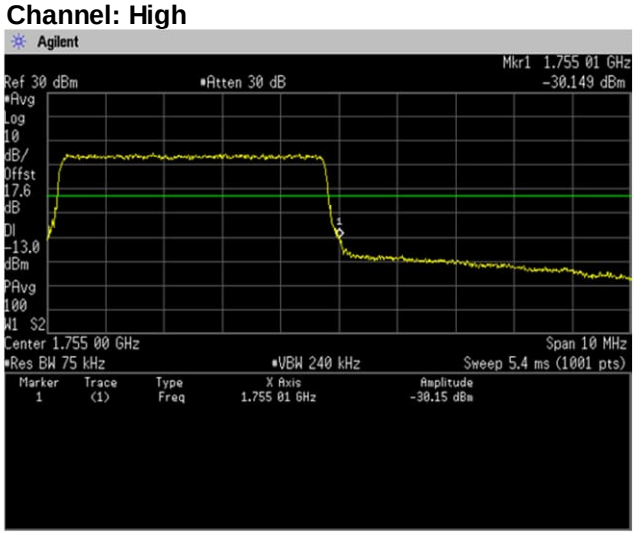
RB1-24
Channel: High



16QAM, BW 5MHz, RB25-0
Channel: Low

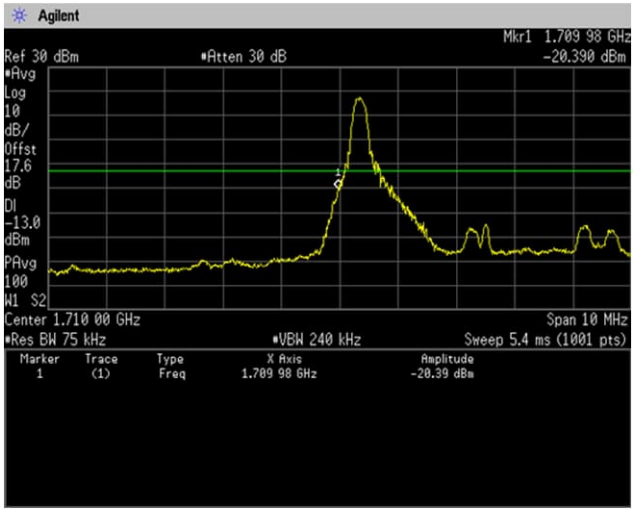


Channel: High

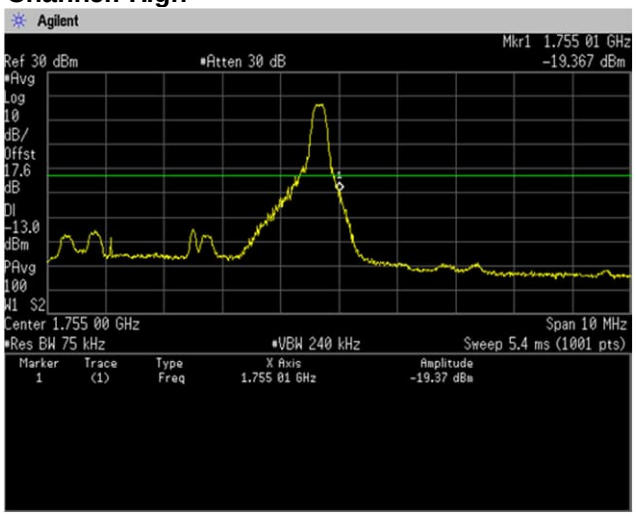


[LTE Band IV]
(Band Edge)

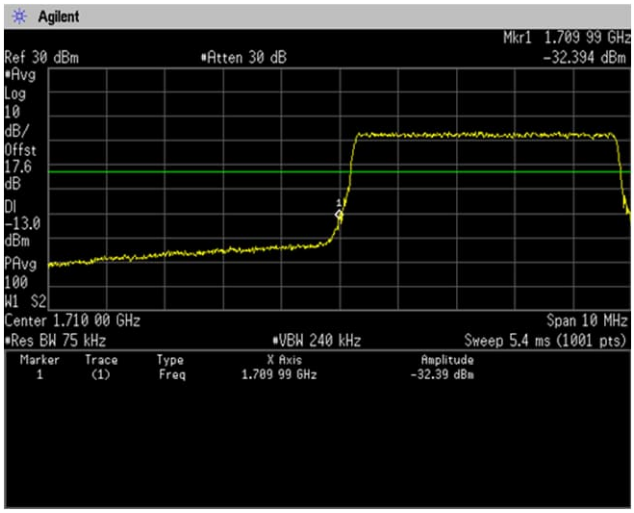
64QAM, BW 5MHz, RB1-0
Channel: Low



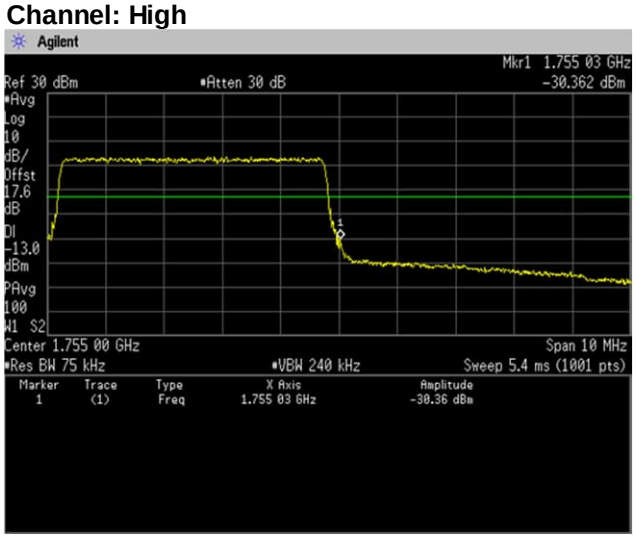
RB1-24
Channel: High



64QAM, BW 5MHz, RB25-0
Channel: Low

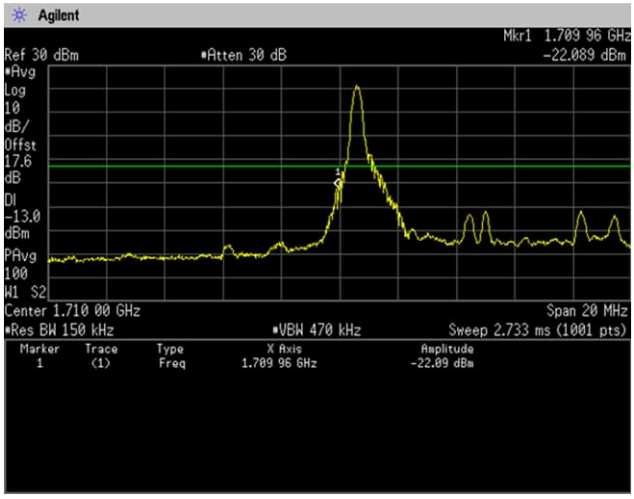


Channel: High

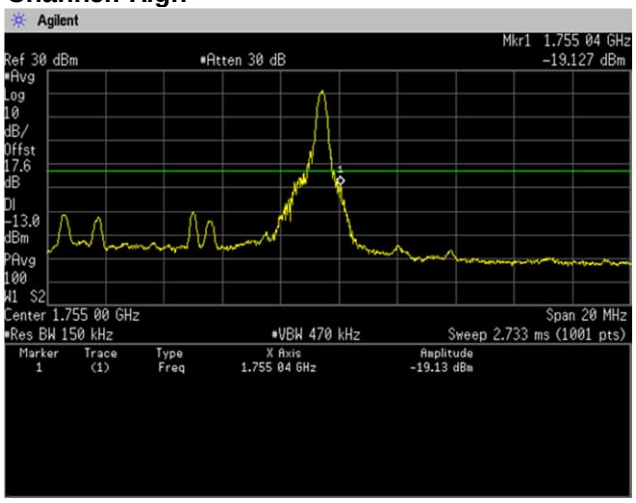


[LTE Band IV]
(Band Edge)

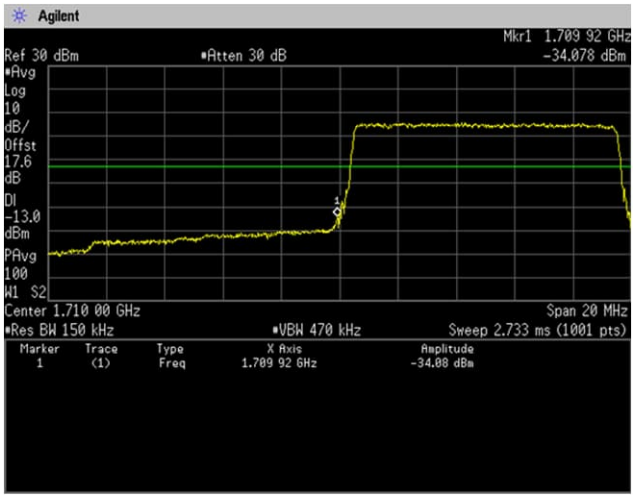
QPSK, BW 10MHz, RB1-0
Channel: Low



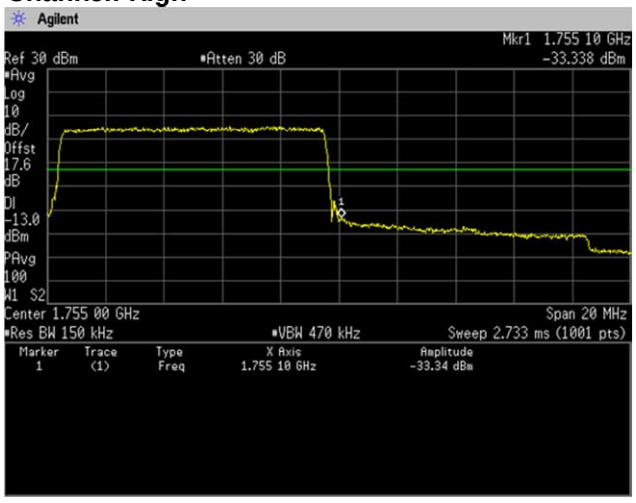
RB1-49
Channel: High



QPSK, BW 10MHz, RB50-0
Channel: Low

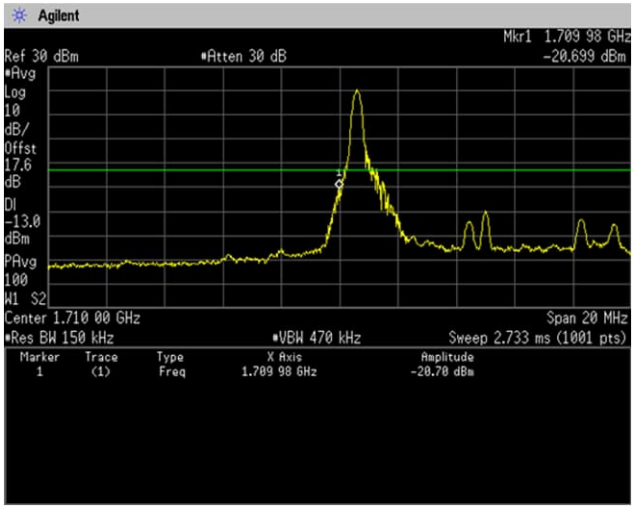


Channel: High

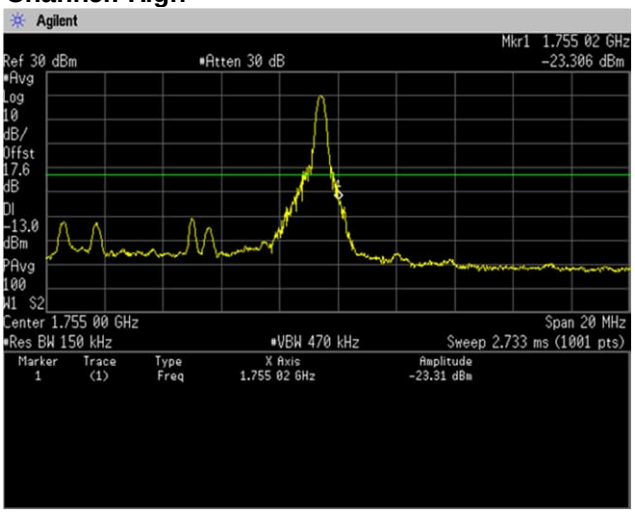


[LTE Band IV]
(Band Edge)

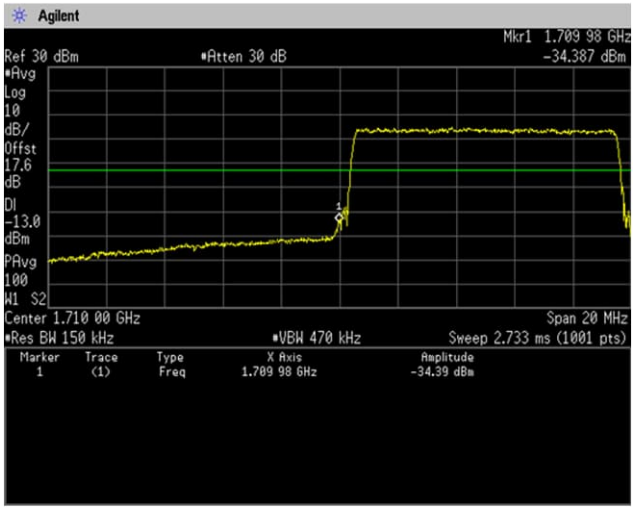
16QAM, BW 10MHz, RB1-0
Channel: Low



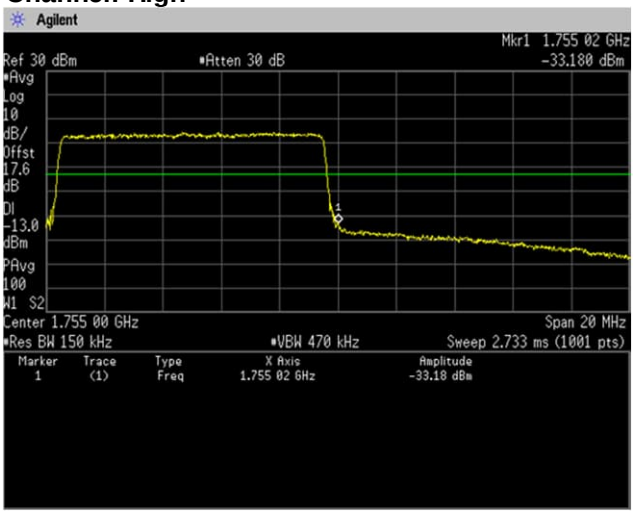
RB1-49
Channel: High



16QAM, BW 10MHz, RB50-0
Channel: Low

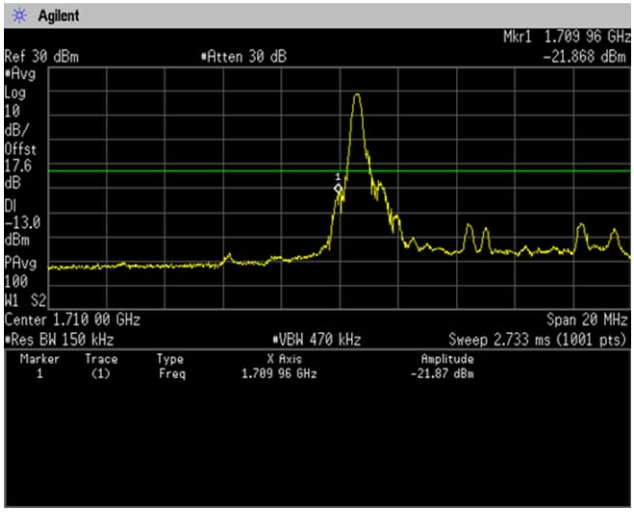


Channel: High

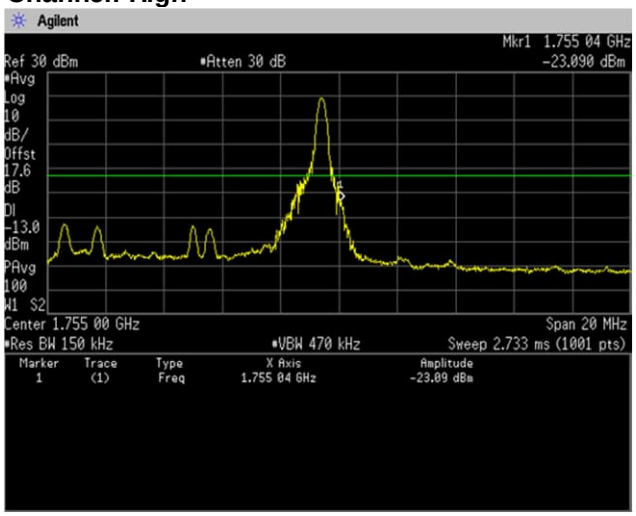


[LTE Band IV]
(Band Edge)

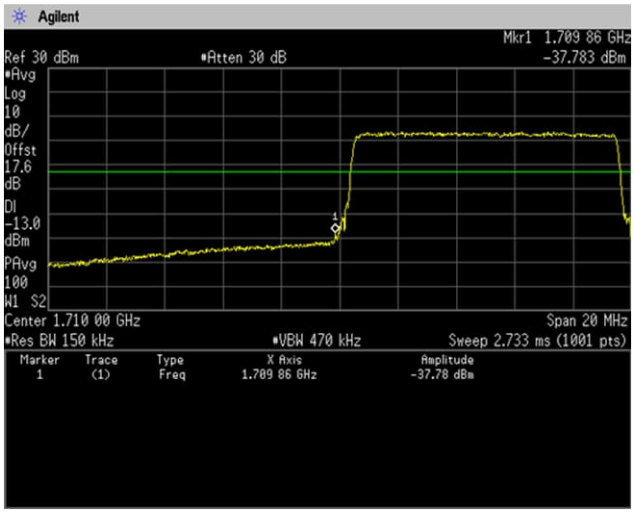
64QAM, BW 10MHz, RB1-0
Channel: Low



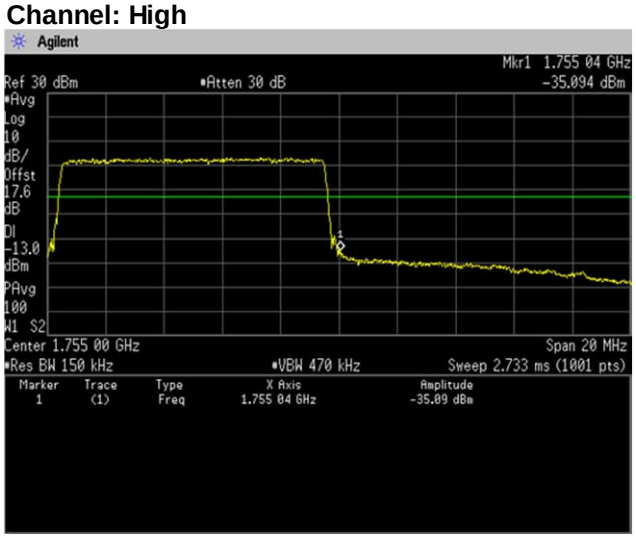
RB1-49
Channel: High



64QAM, BW 10MHz, RB50-0
Channel: Low

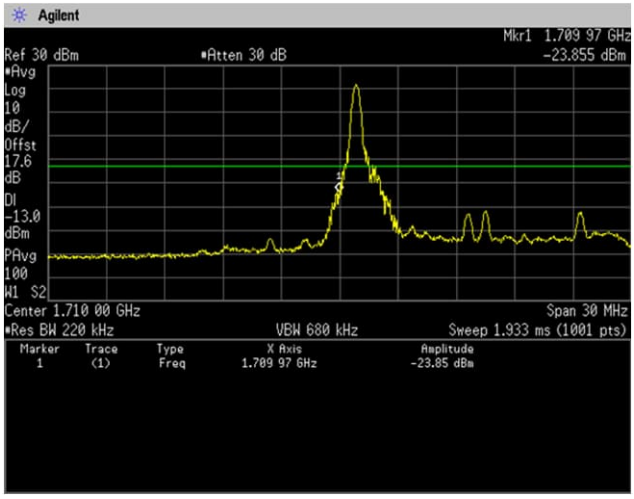


Channel: High

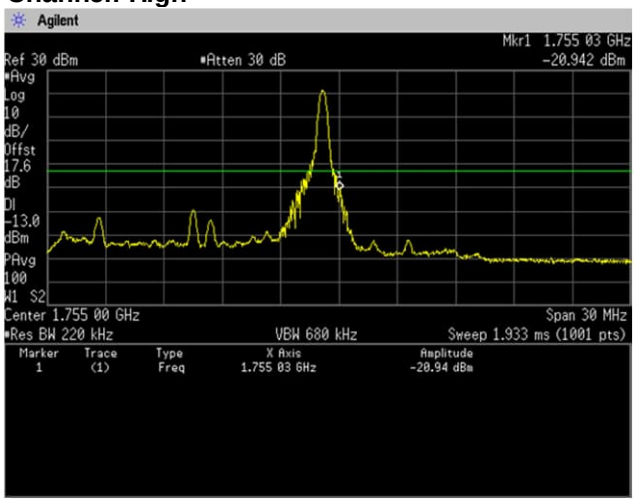


[LTE Band IV]
(Band Edge)

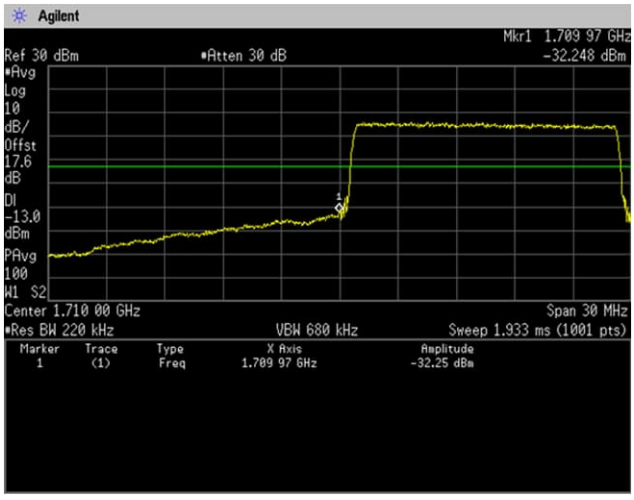
QPSK, BW 15MHz, RB1-0
Channel: Low



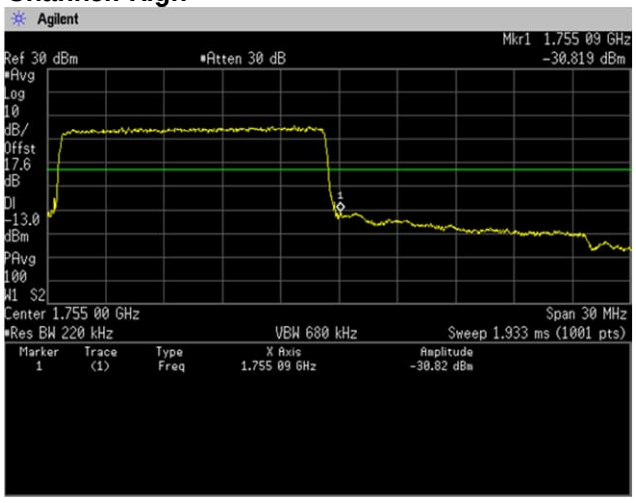
RB1-74
Channel: High



QPSK, BW 15MHz, RB75-0
Channel: Low

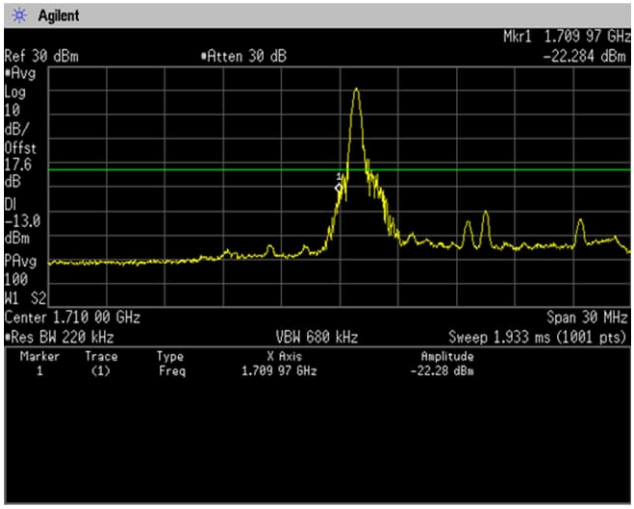


Channel: High

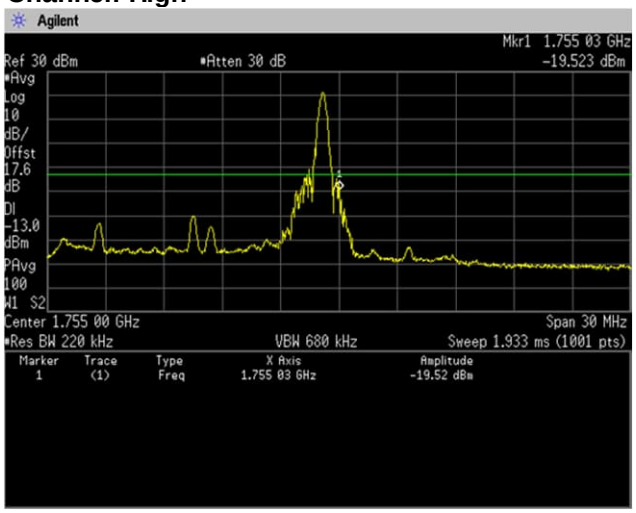


[LTE Band IV]
(Band Edge)

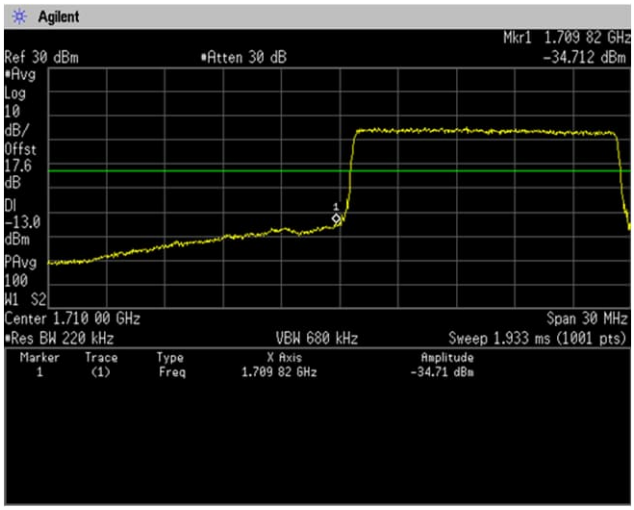
16QAM, BW 15MHz, RB1-0
Channel: Low



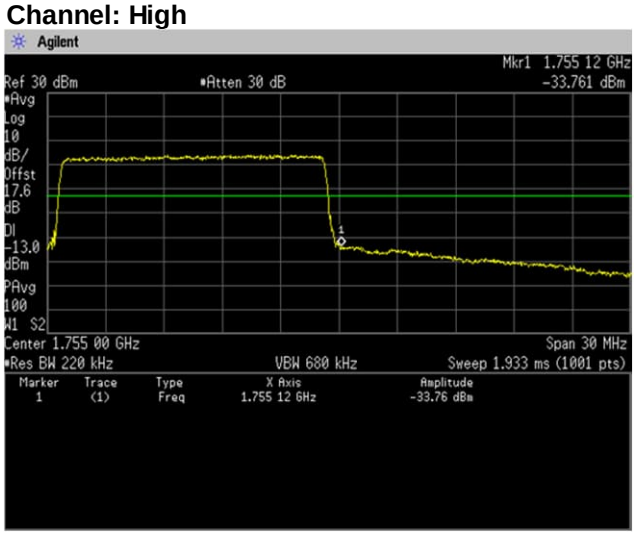
RB1-74
Channel: High



16QAM, BW 15MHz, RB75-0
Channel: Low

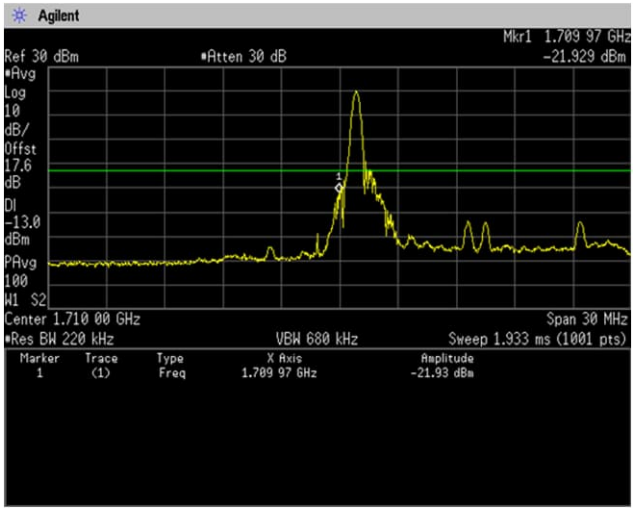


Channel: High

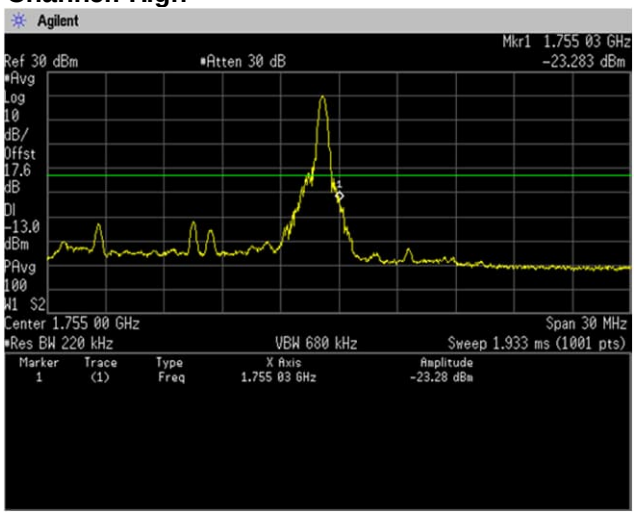


[LTE Band IV]
(Band Edge)

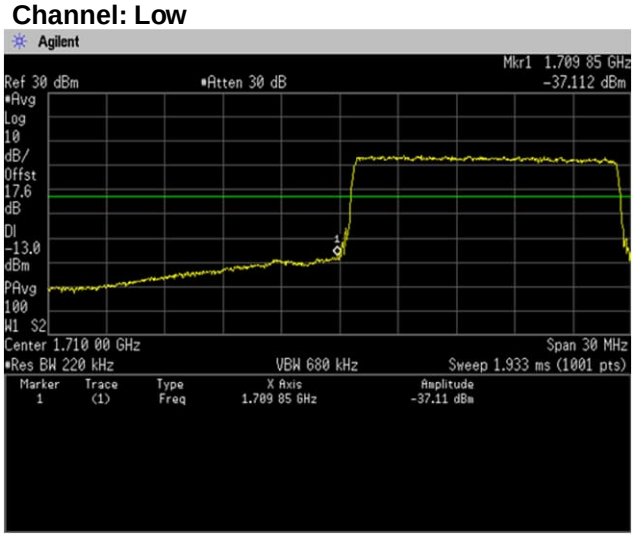
64QAM, BW 15MHz, RB1-0
Channel: Low



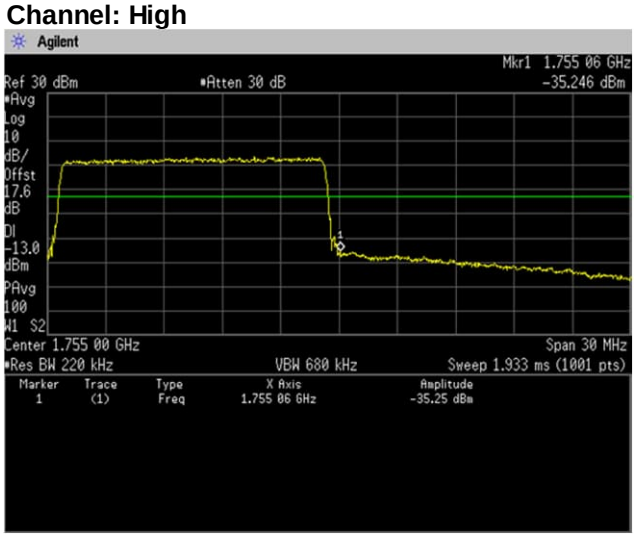
RB1-74
Channel: High



64QAM, BW 15MHz, RB75-0
Channel: Low

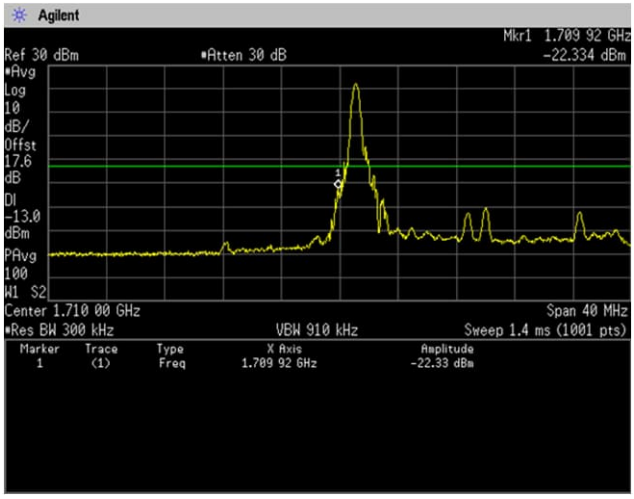


Channel: High

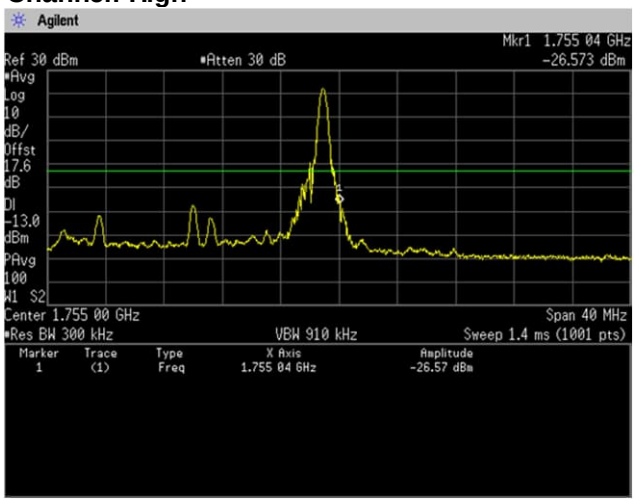


[LTE Band IV]
(Band Edge)

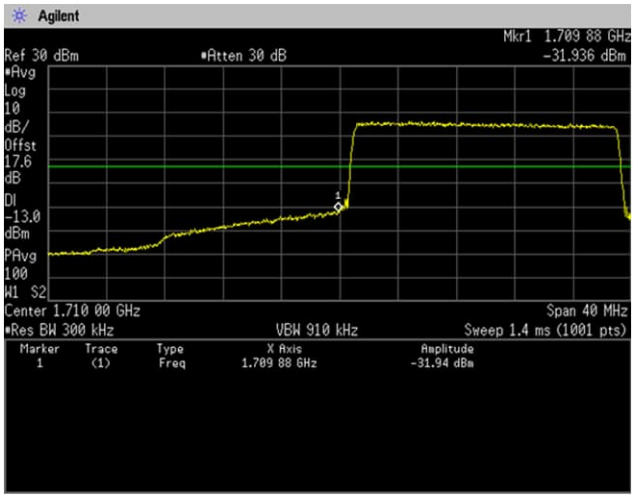
QPSK, BW 20MHz, RB1-0
Channel: Low



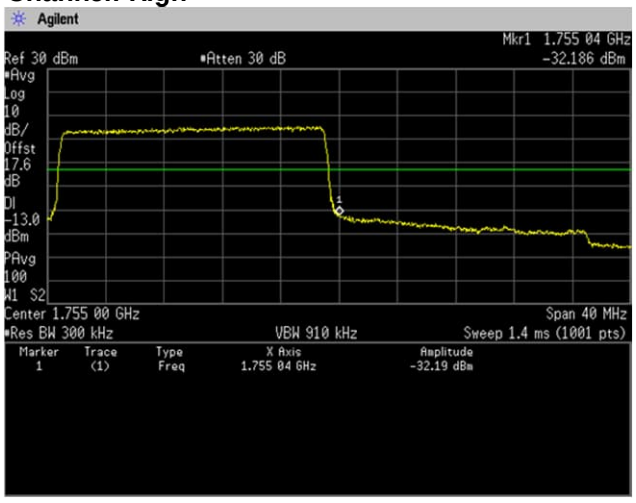
RB1-99
Channel: High



QPSK, BW 20MHz, RB100-0
Channel: Low

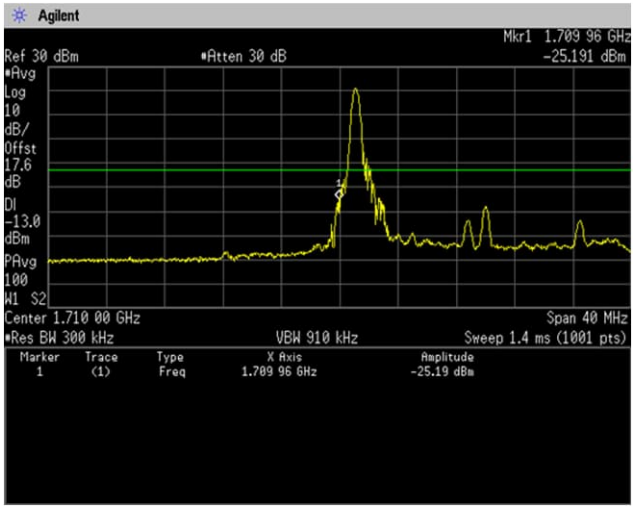


Channel: High

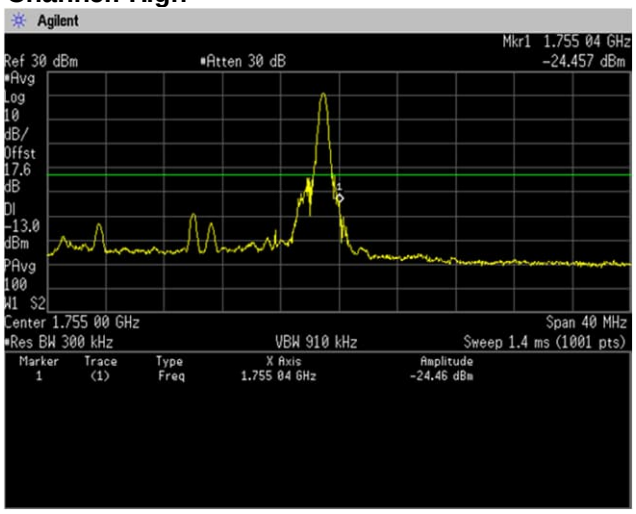


[LTE Band IV]
(Band Edge)

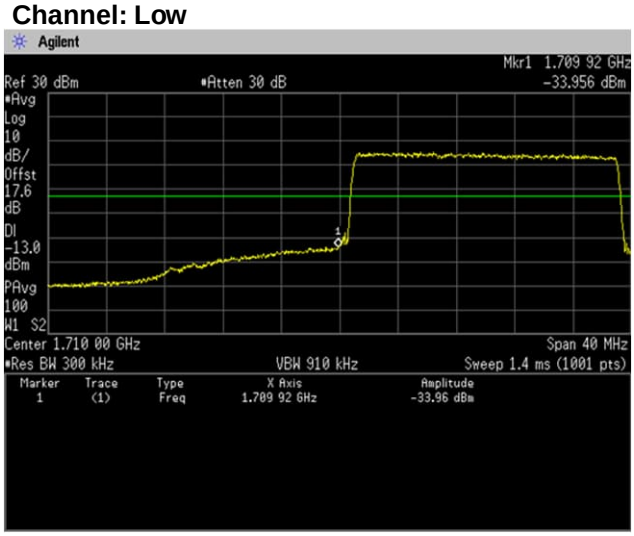
16QAM, BW 20MHz, RB1-0
Channel: Low



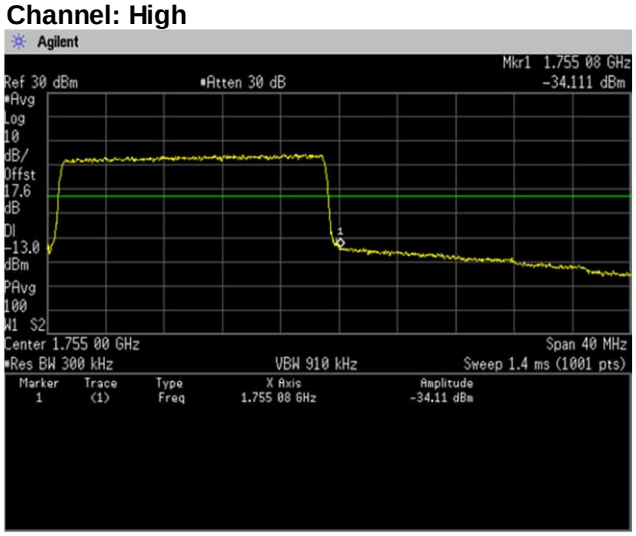
RB1-99
Channel: High



16QAM, BW 20MHz, RB75-0
Channel: Low

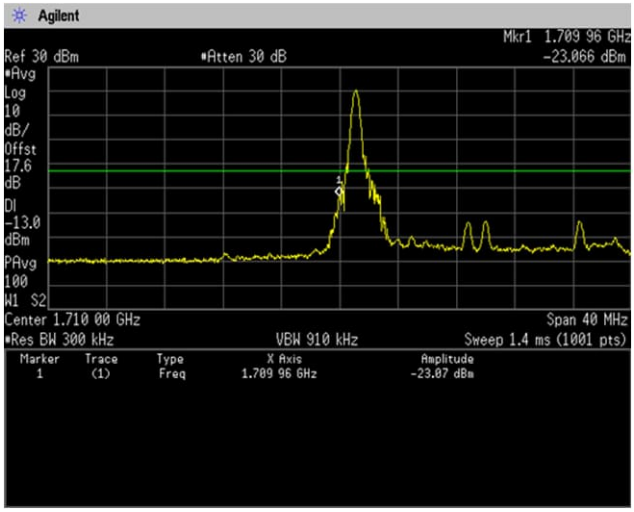


Channel: High

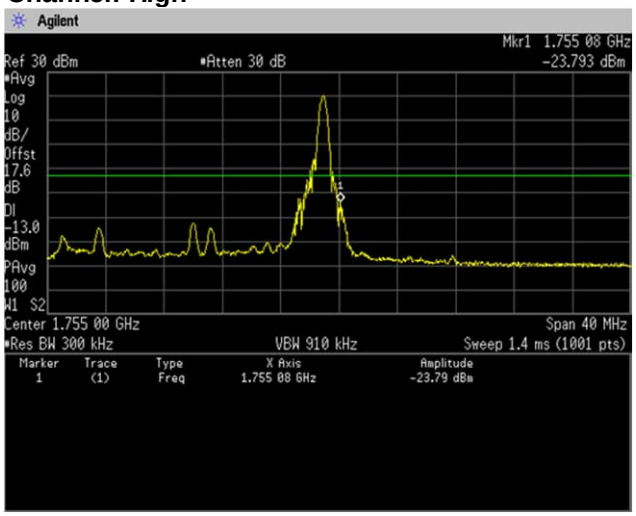


[LTE Band IV]
(Band Edge)

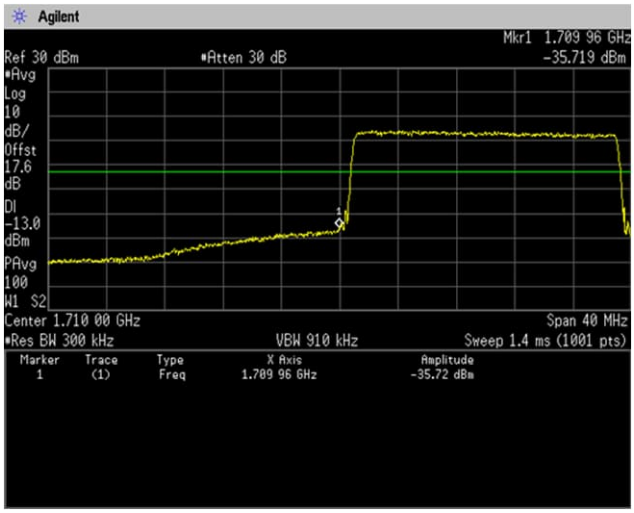
64QAM, BW 20MHz, RB1-0
Channel: Low



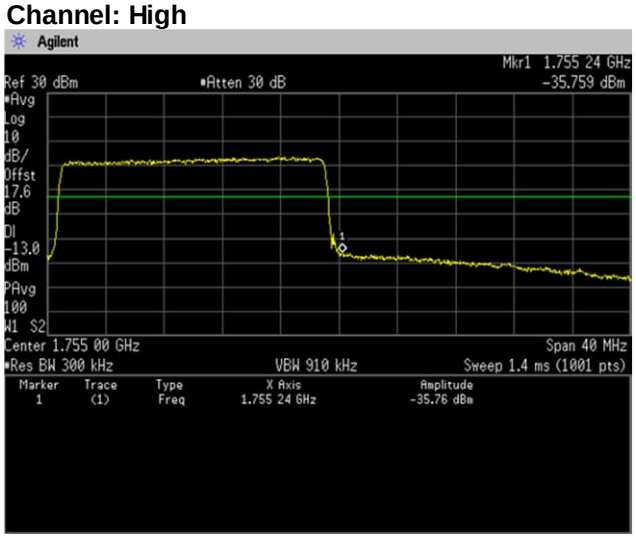
RB1-99
Channel: High



64QAM, BW 20MHz, RB100-0
Channel: Low



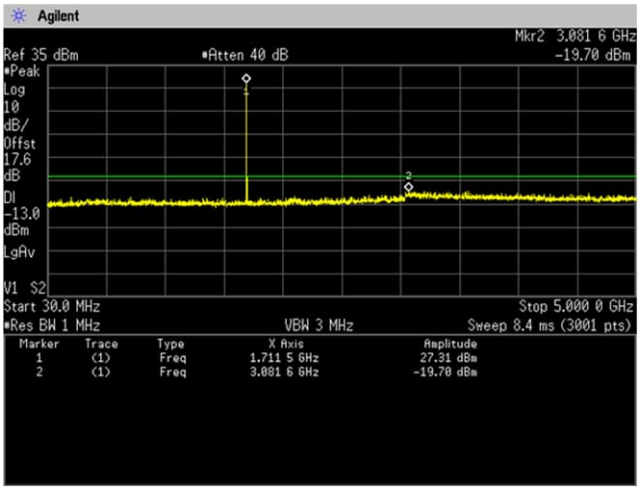
Channel: High



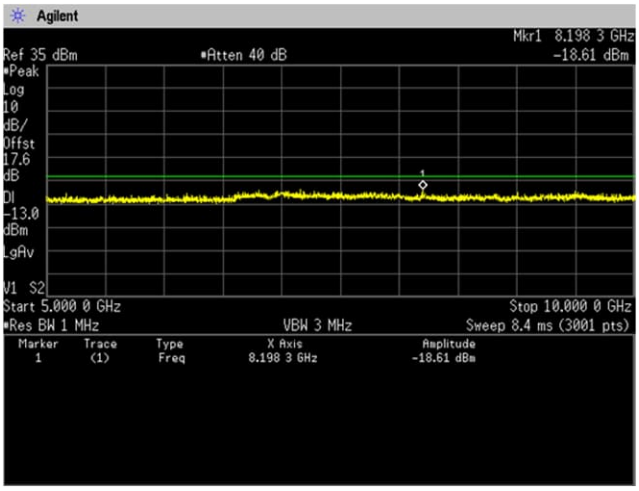
[LTE Band IV]
(Spurious Emissions)
Note: Conducted spurious test was measured in the worst case of Equivalent Isotropic Radiated Power.

QPSK, BW 1.4MHz, RB 1-3
Channel: Low

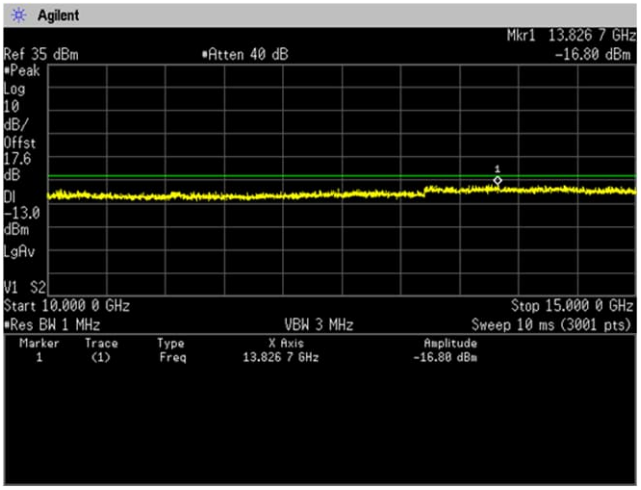
30MHz-5GHz



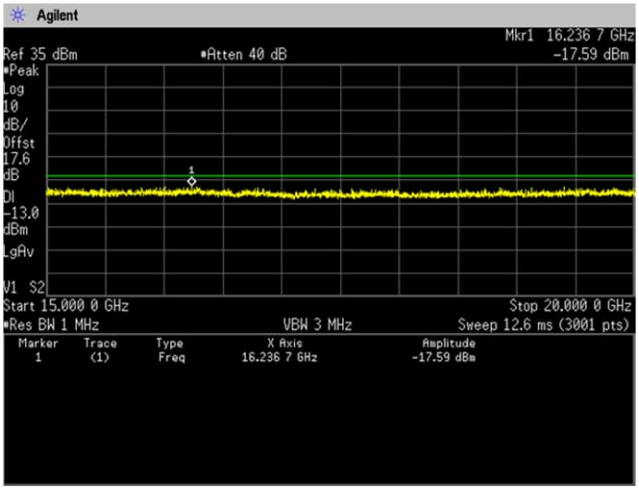
5GHz-10GHz



10GHz-15GHz



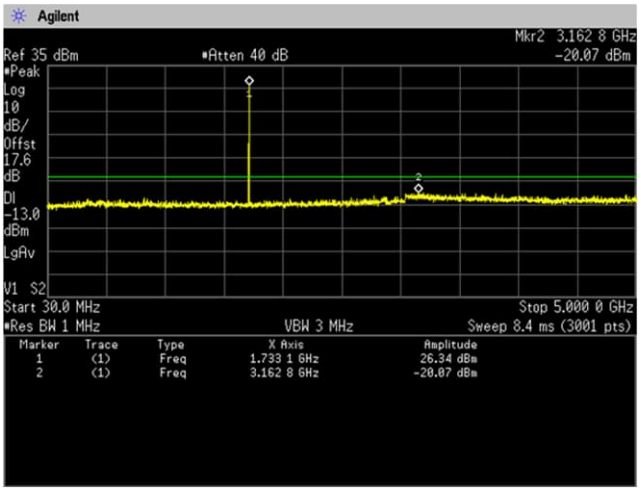
15GHz-20GHz



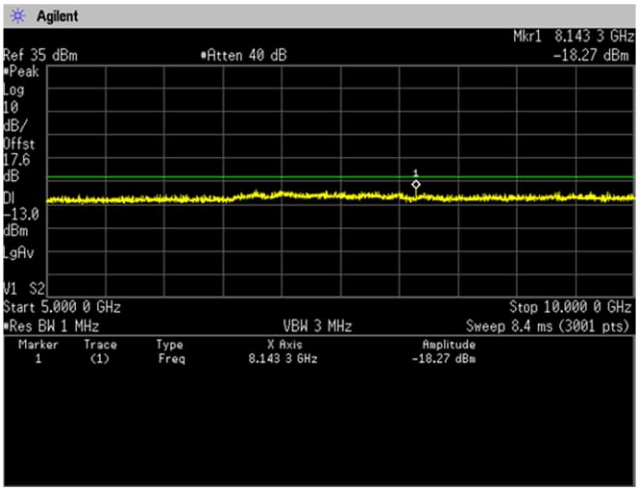
[LTE Band IV]
(Spurious Emissions)

Channel: Middle

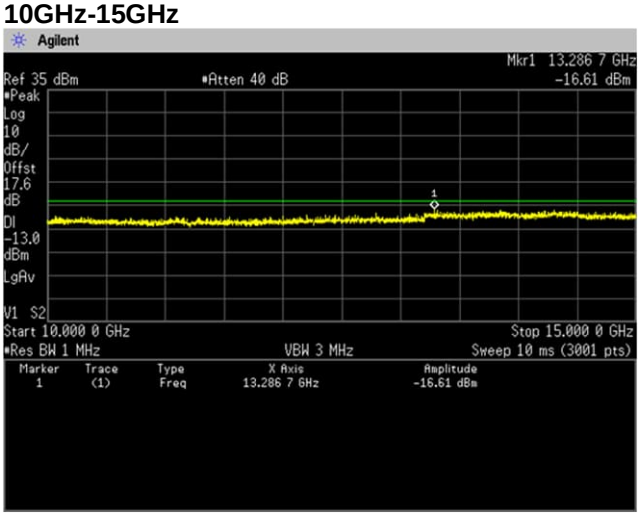
30MHz-5GHz



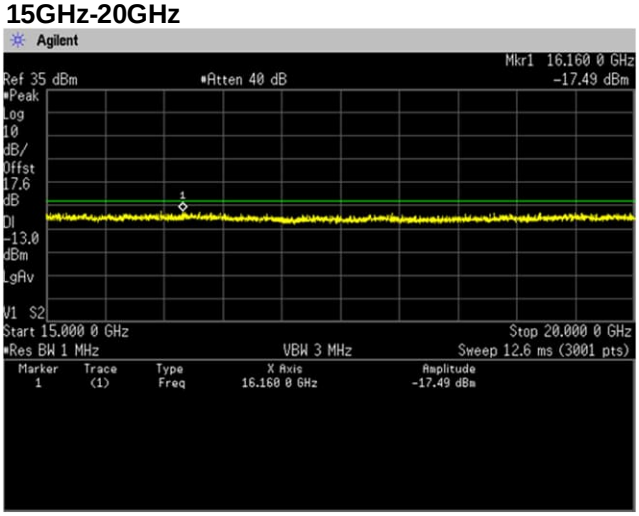
5GHz-10GHz



10GHz-15GHz



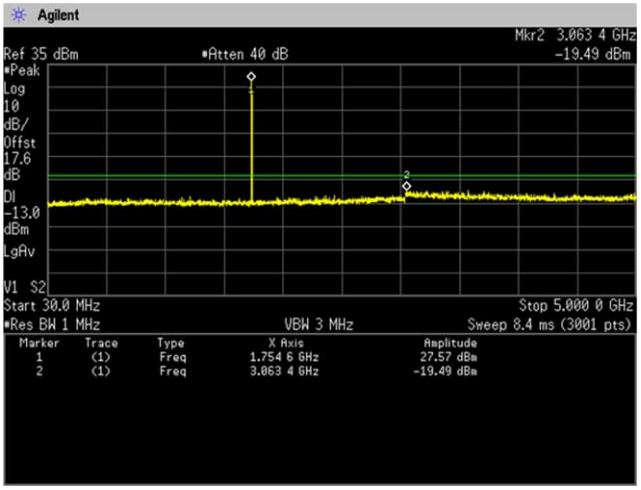
15GHz-20GHz



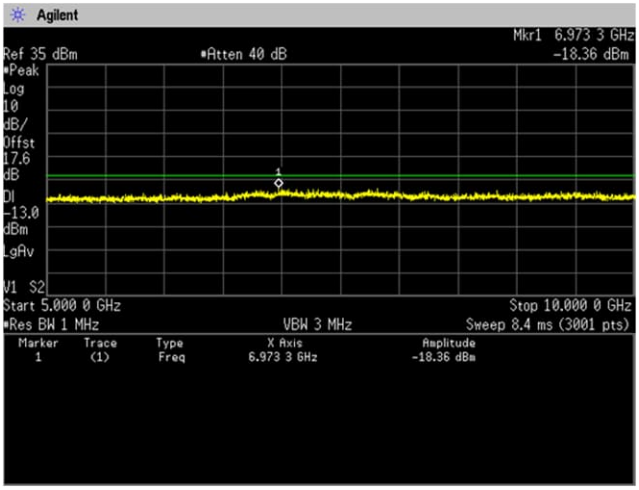
[LTE Band IV]
(Spurious Emissions)

Channel: High

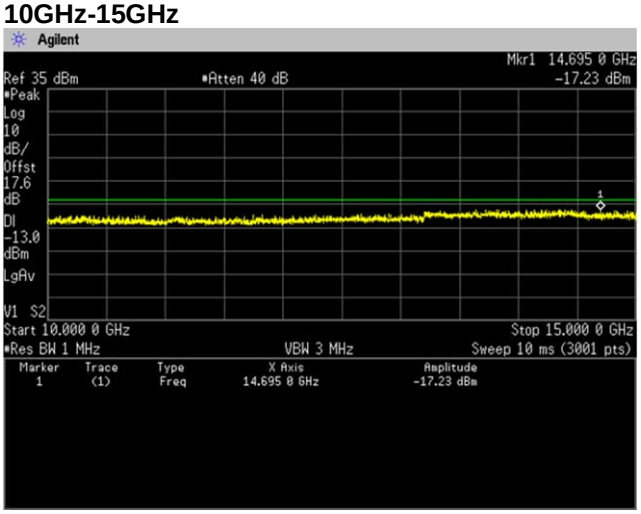
30MHz-5GHz



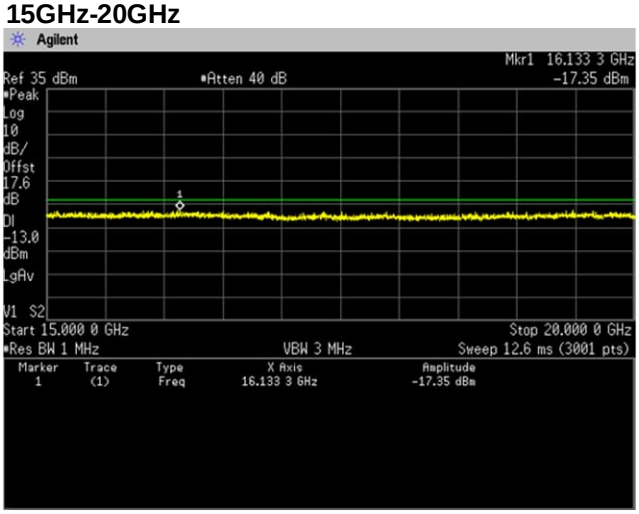
5GHz-10GHz



10GHz-15GHz

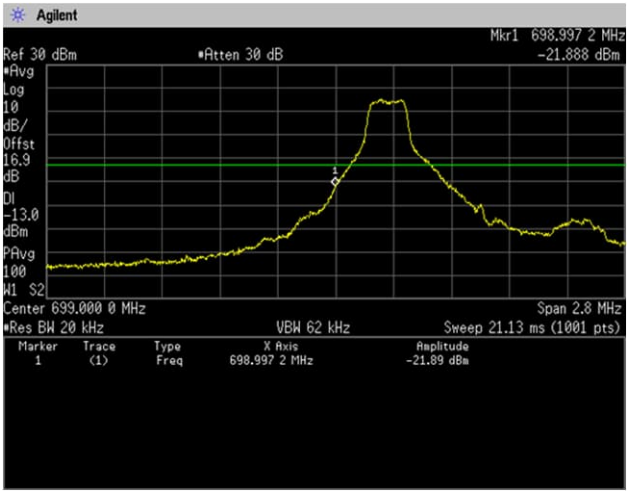


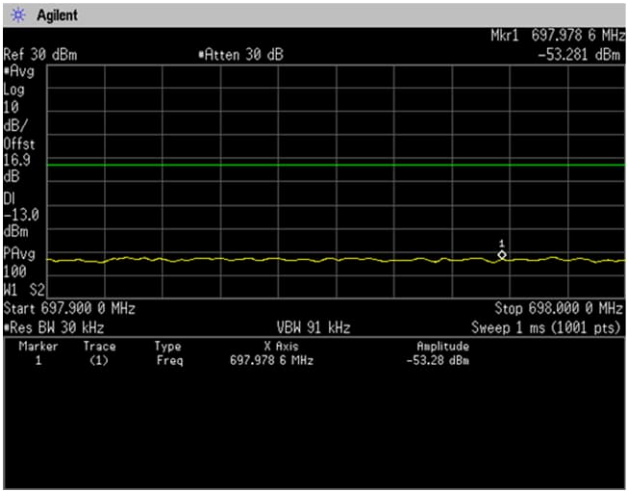
15GHz-20GHz



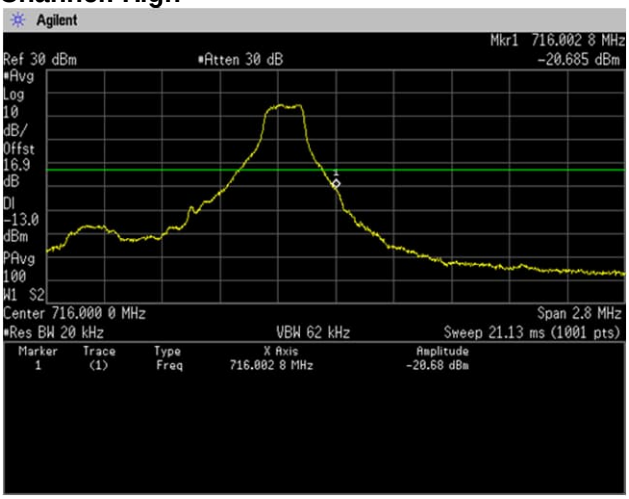
[LTE Band XII]
(Band Edge)

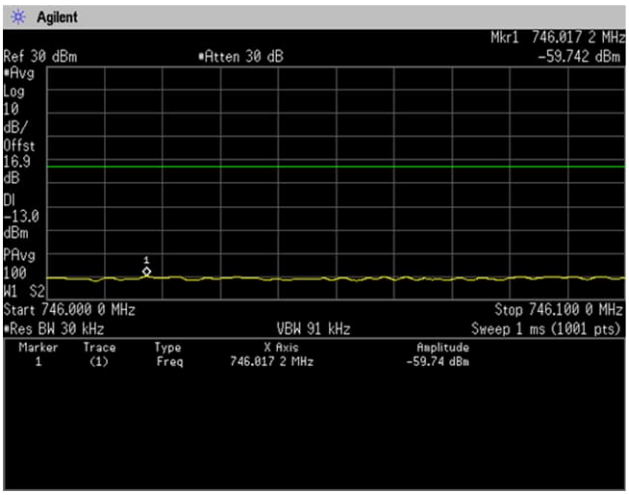
QPSK, BW 1.4MHz, RB1-0
Channel: Low **697.9-698.0 MHz**





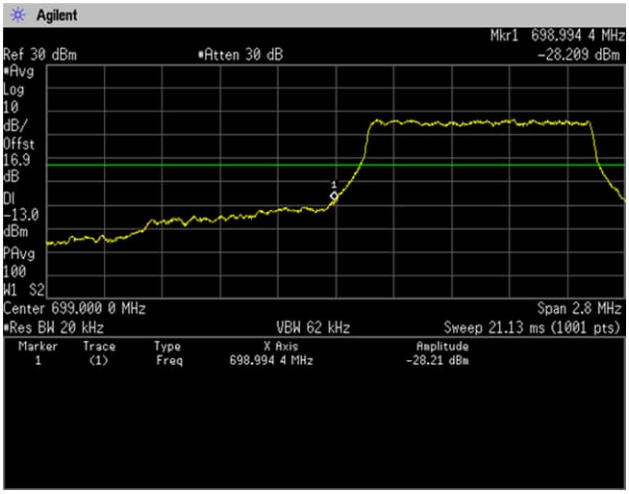
QPSK, BW 1.4MHz, RB1-5
Channel: High **746.0-746.1 MHz**

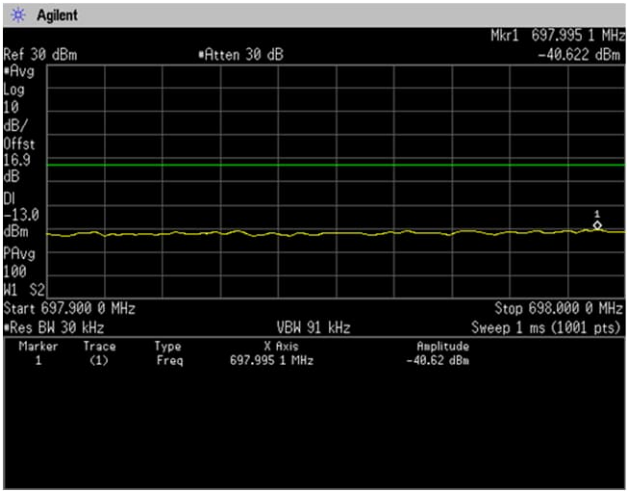




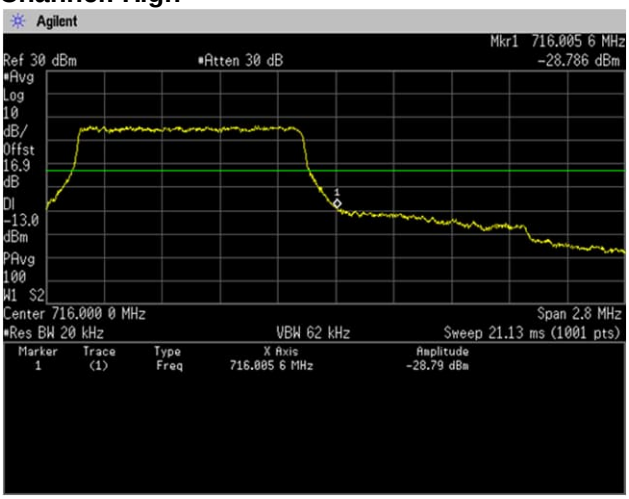
[LTE Band XII]
(Band Edge)

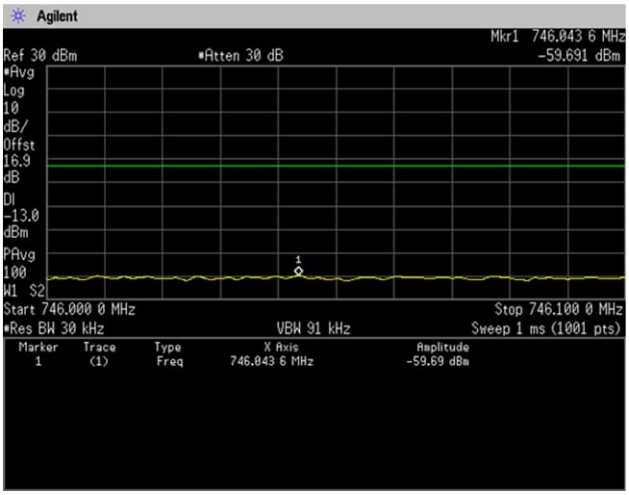
QPSK, BW 1.4MHz, RB6-0
Channel: Low **697.9-698.0 MHz**





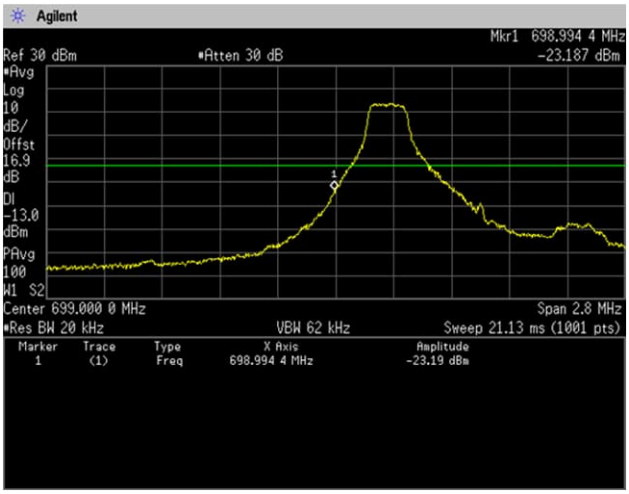
QPSK, BW 1.4MHz, RB6-0
Channel: High **746.0-746.1 MHz**

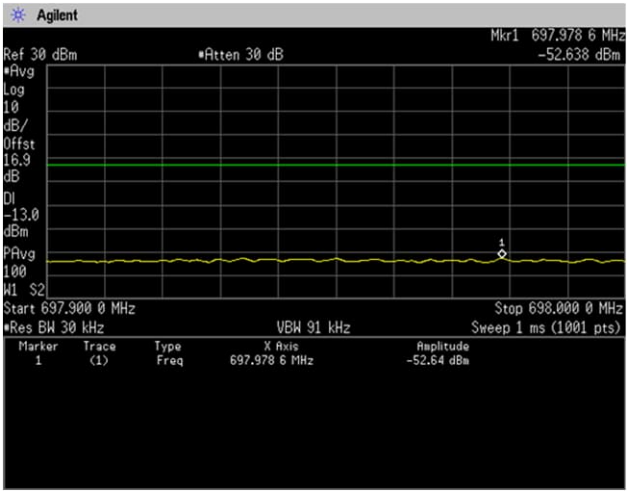




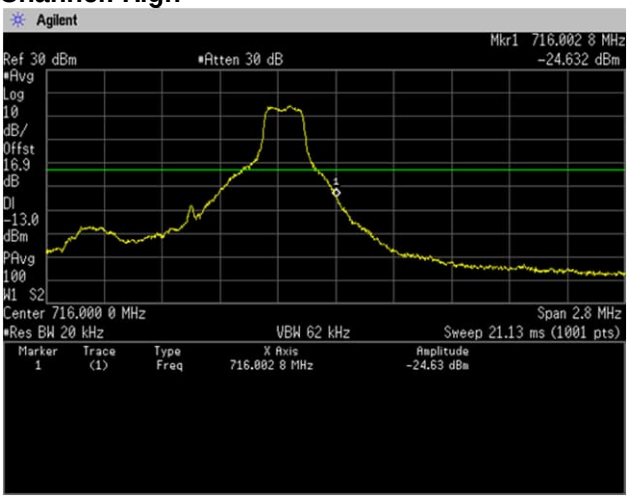
[LTE Band XII]
(Band Edge)

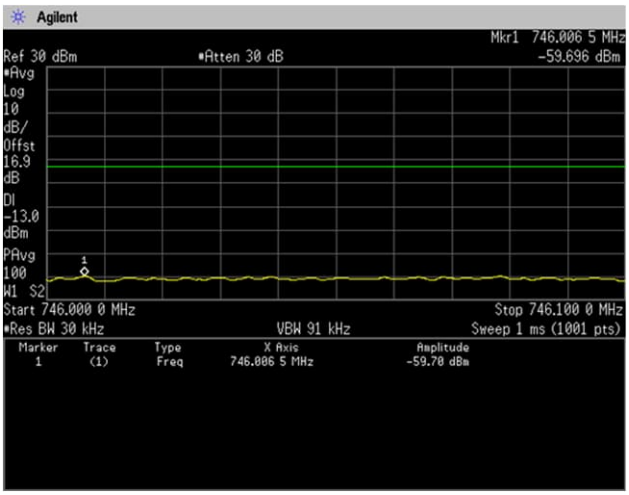
16QAM, BW 1.4MHz, RB1-0
Channel: Low **697.9-698.0 MHz**





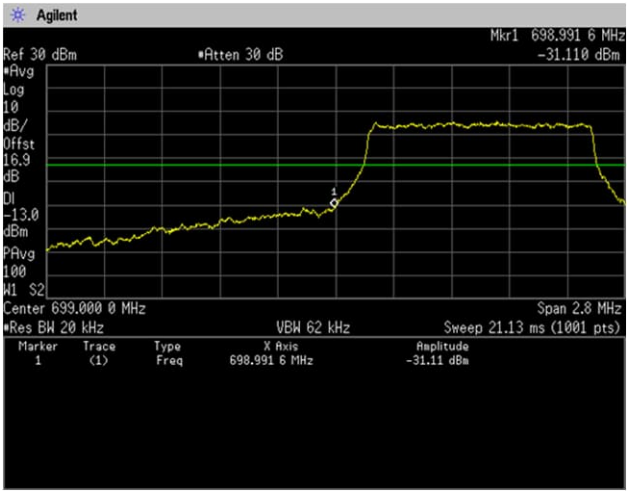
16QAM, BW 1.4MHz, RB1-5
Channel: High **746.0-746.1 MHz**

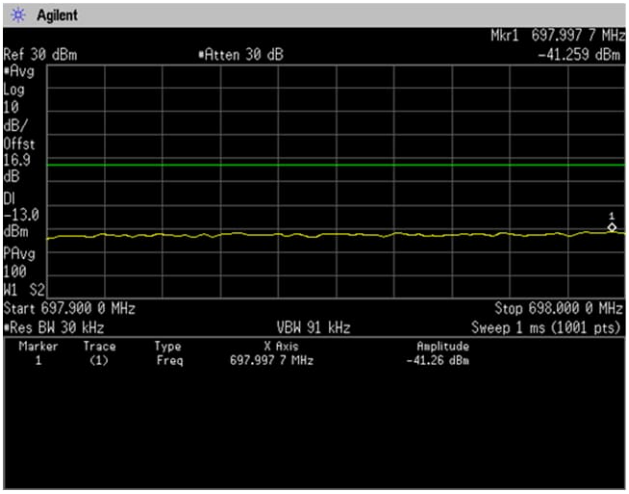




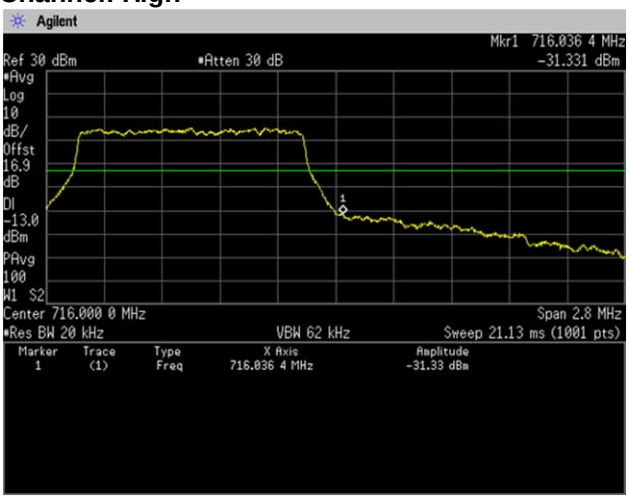
[LTE Band XII]
(Band Edge)

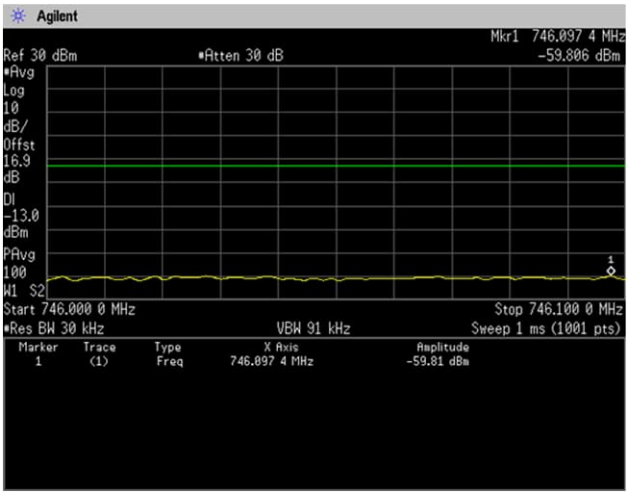
16QAM, BW 1.4MHz, RB6-0
Channel: Low **697.9-698.0 MHz**





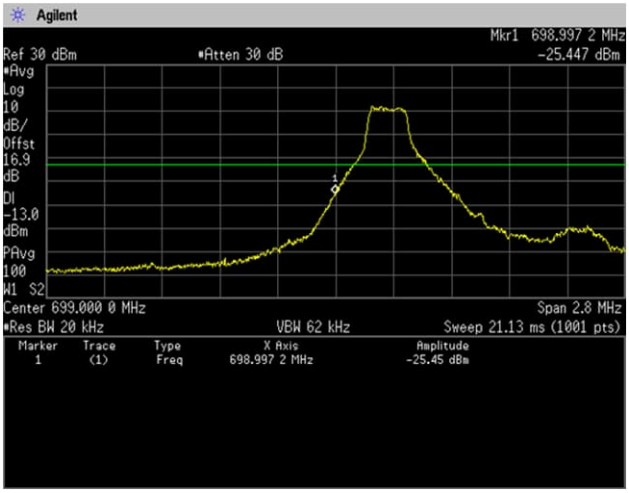
16QAM, BW 1.4MHz, RB6-0
Channel: High **746.0-746.1 MHz**

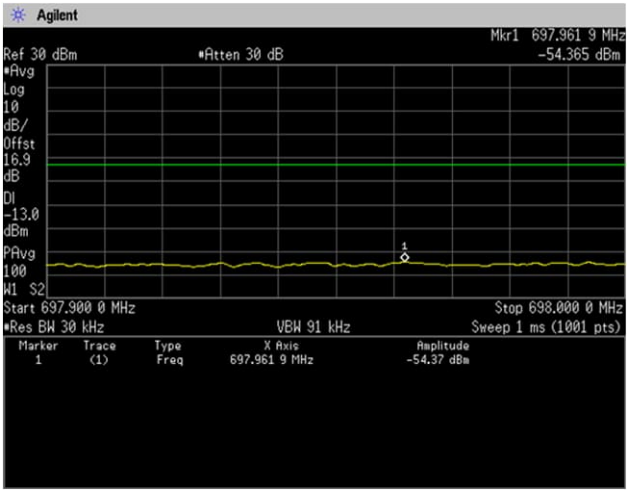




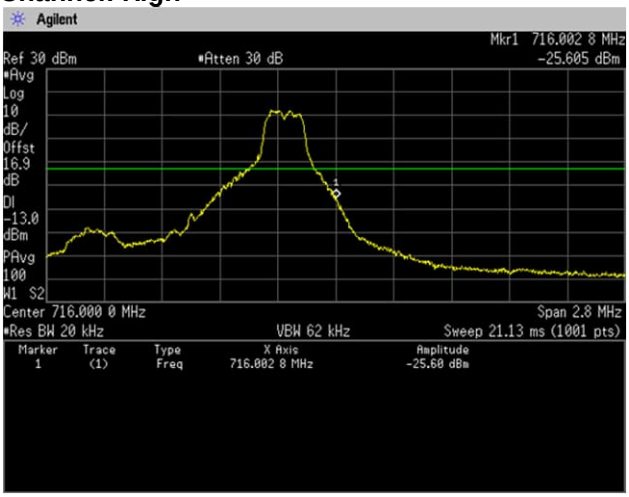
[LTE Band XII]
(Band Edge)

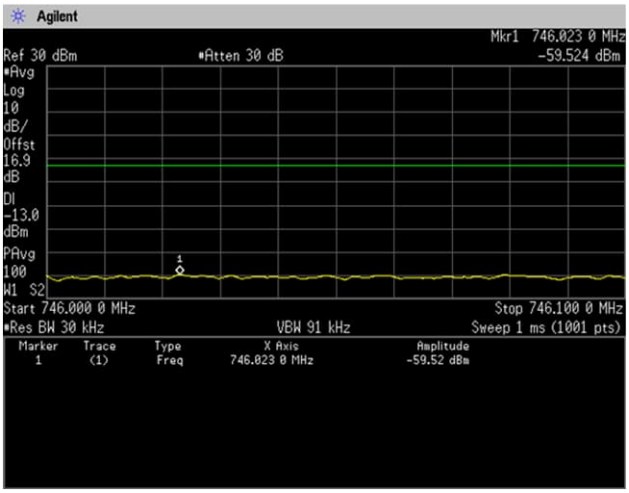
64QAM, BW 1.4MHz, RB1-0
Channel: Low **697.9-698.0 MHz**





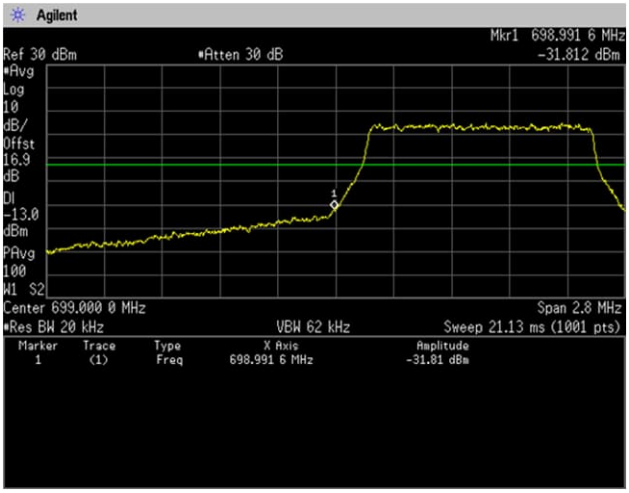
64QAM, BW 1.4MHz, RB1-5
Channel: High **746.0-746.1 MHz**

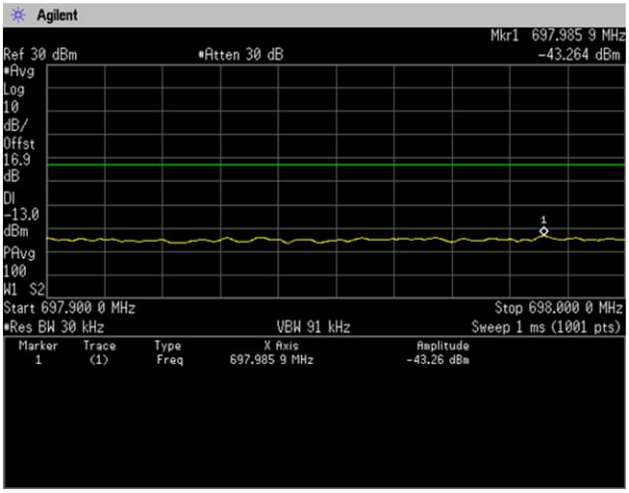




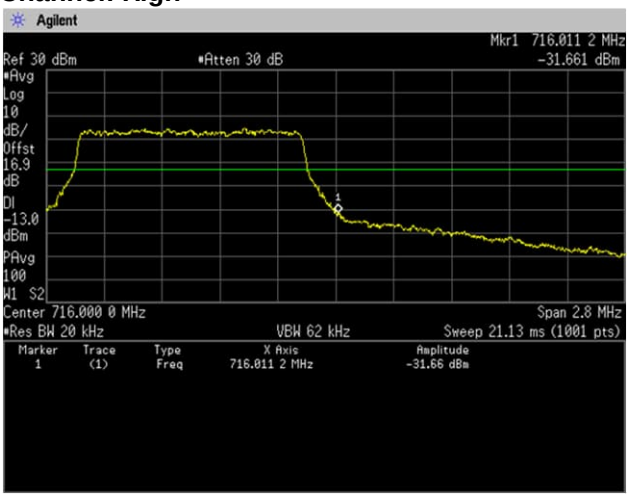
[LTE Band XII]
(Band Edge)

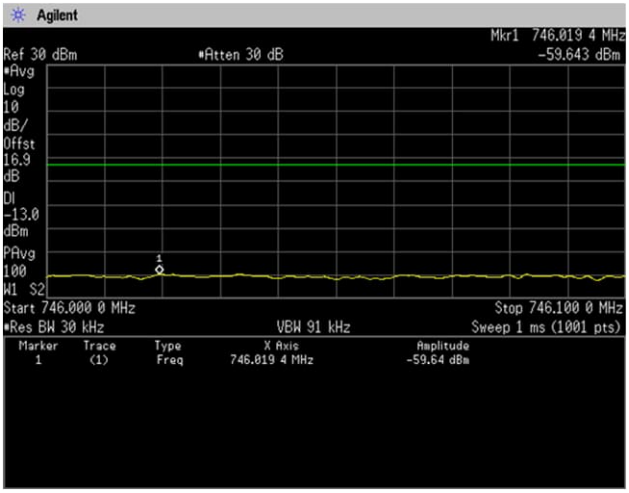
64QAM, BW 1.4MHz, RB6-0
Channel: Low **697.9-698.0 MHz**





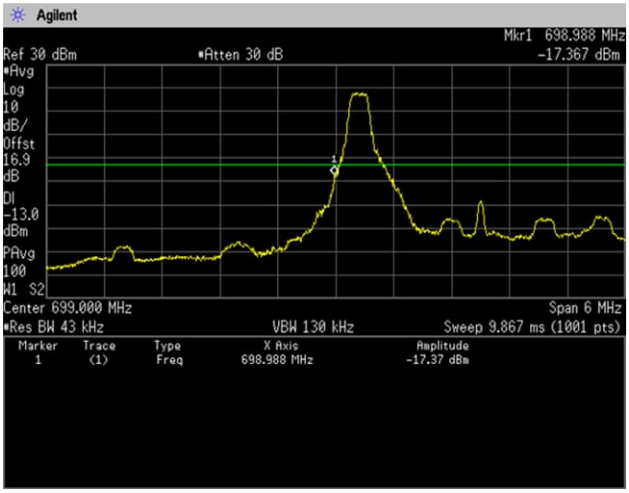
64QAM, BW 1.4MHz, RB6-0
Channel: High **746.0-746.1 MHz**

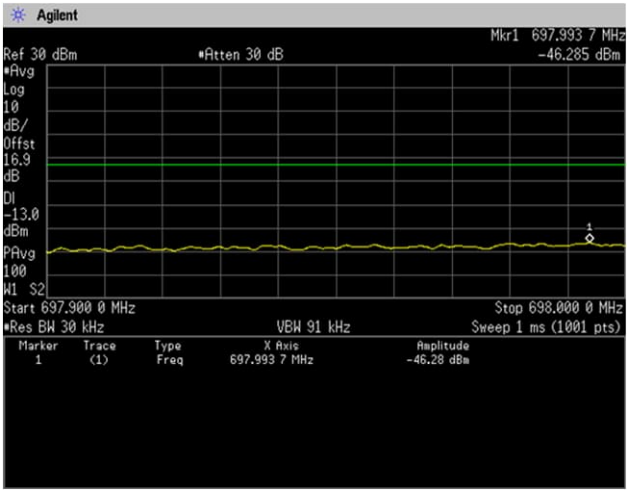




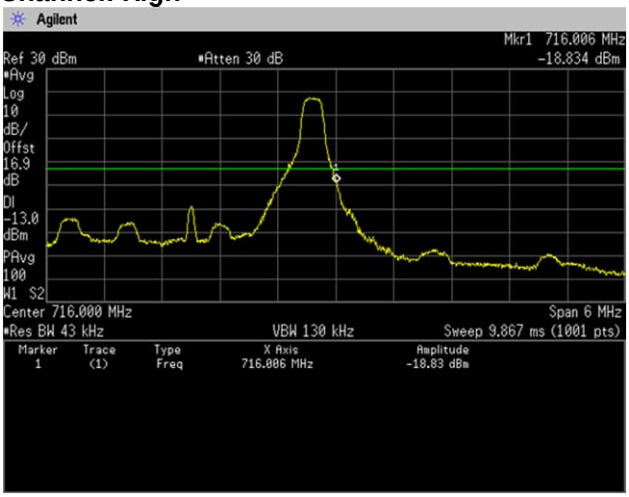
[LTE Band XII]
(Band Edge)

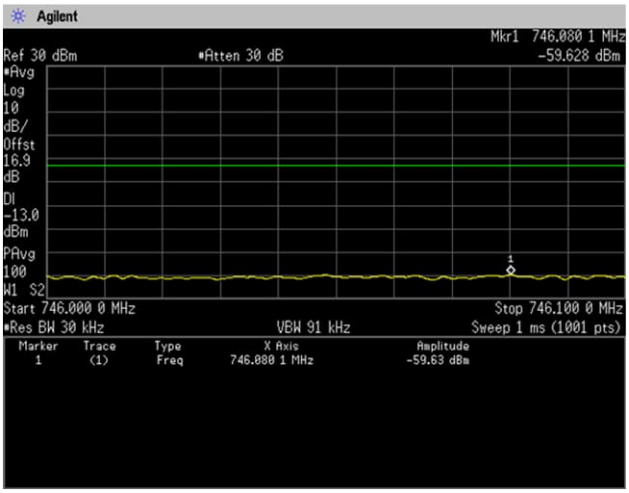
QPSK, BW 3MHz, RB1-0
Channel: Low **697.9-698.0 MHz**





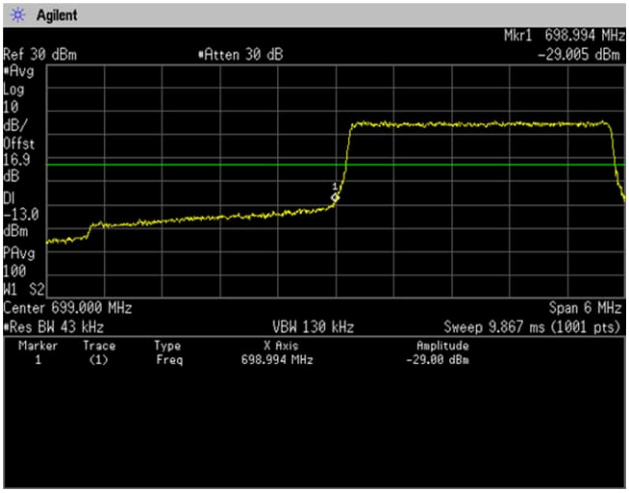
QPSK, BW 3MHz, RB1-14
Channel: High **746.0-746.1 MHz**

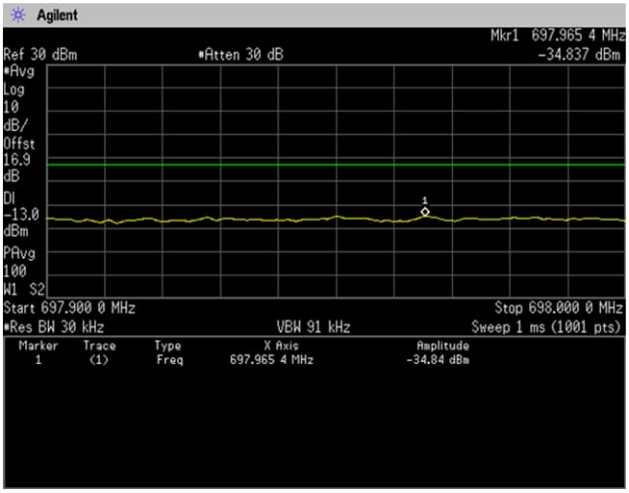




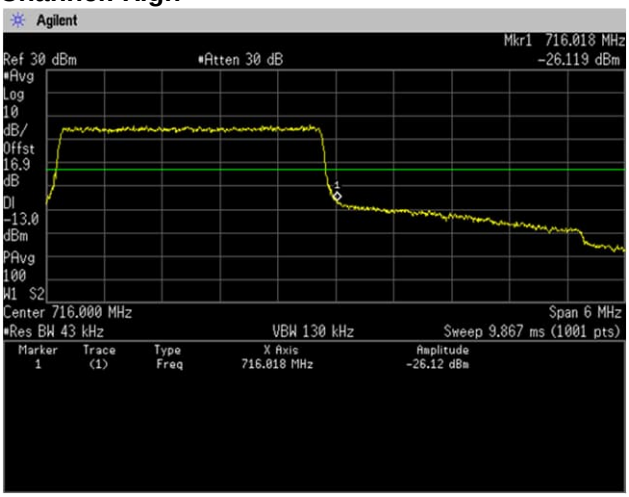
[LTE Band XII]
(Band Edge)

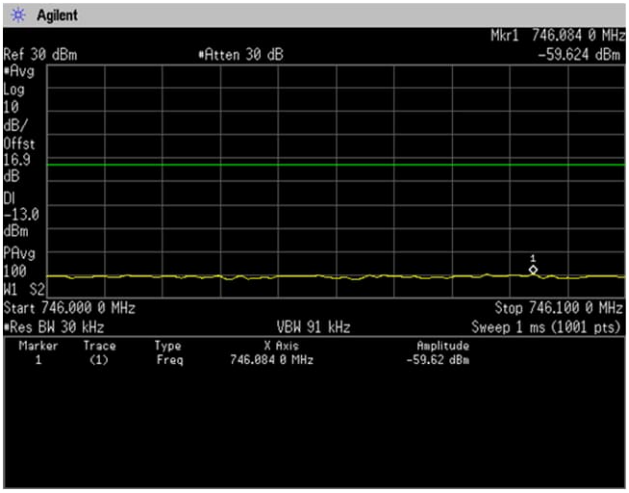
QPSK, BW 3MHz, RB15-0
Channel: Low **697.9-698.0 MHz**





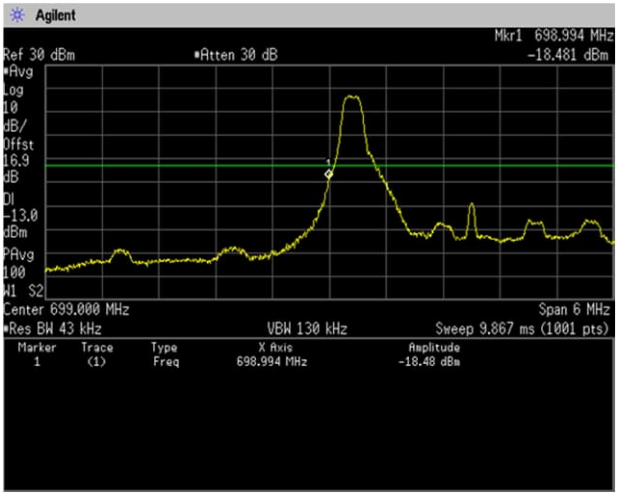
QPSK, BW 3MHz, RB15-0
Channel: High **746.0-746.1 MHz**

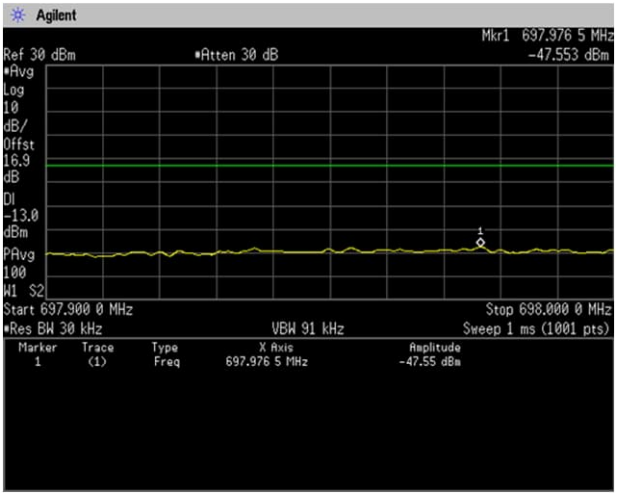




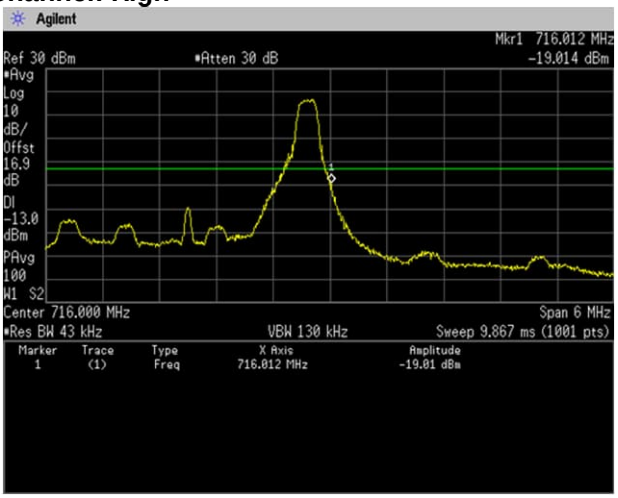
[LTE Band XII]
(Band Edge)

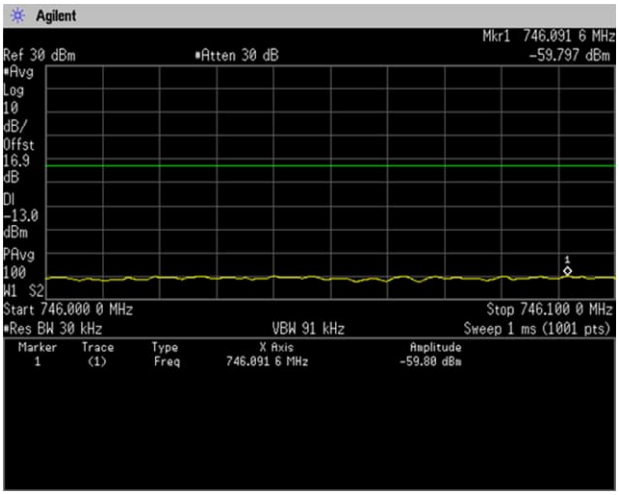
16QAM, BW 3MHz, RB1-0
Channel: Low **697.9-698.0 MHz**





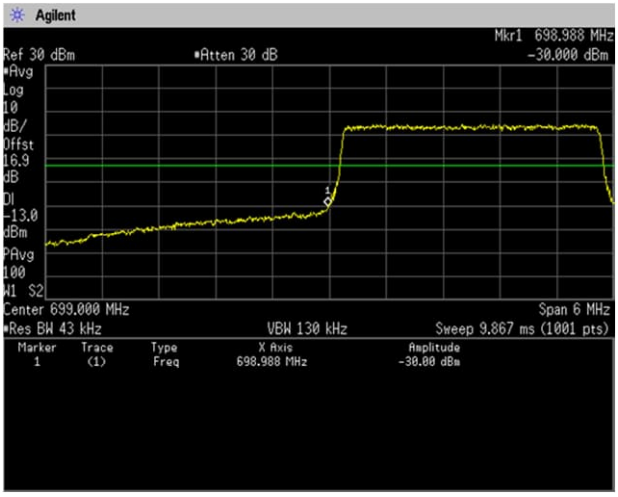
16QAM, BW 3MHz, RB1-14
Channel: High **746.0-746.1 MHz**

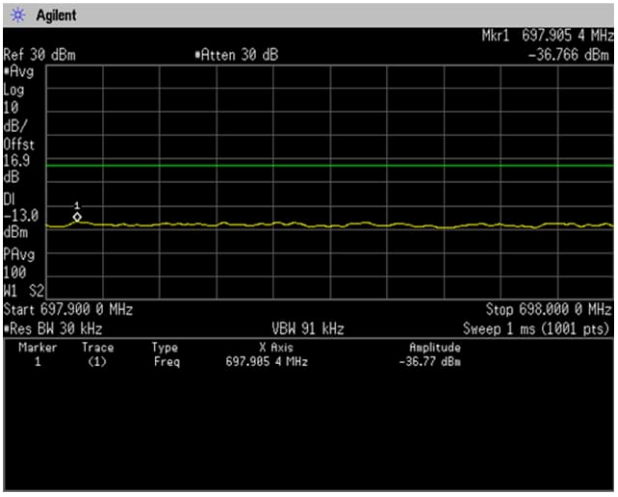




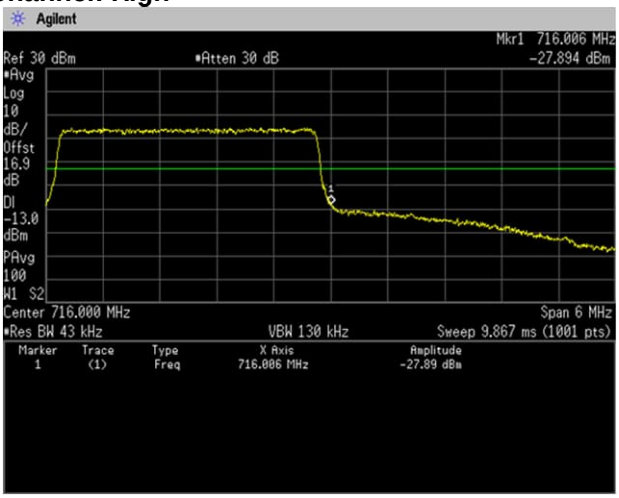
[LTE Band XII]
(Band Edge)

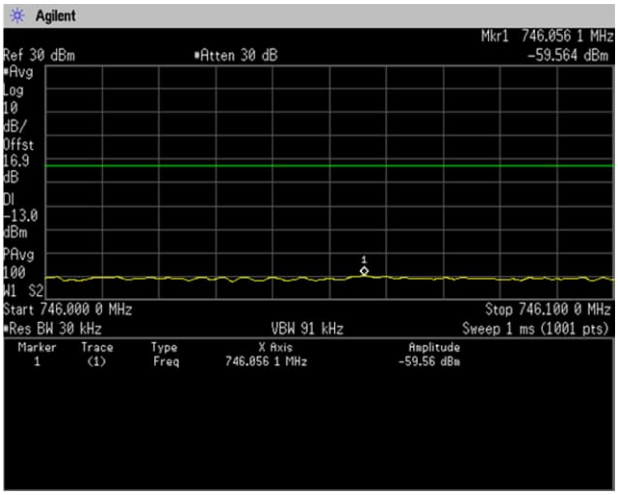
16QAM, BW 3MHz, RB15-0
Channel: Low **697.9-698.0 MHz**





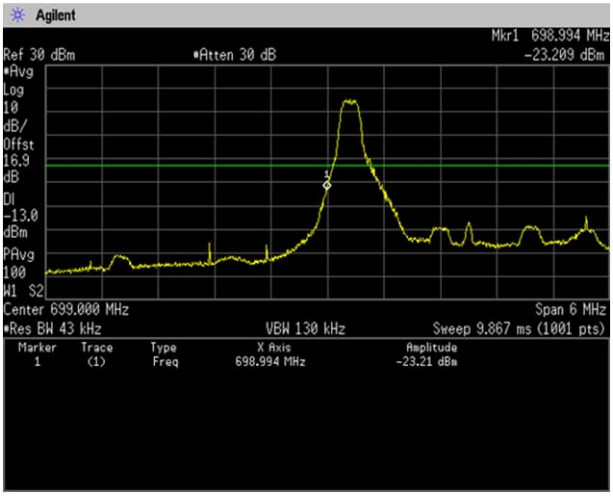
16QAM, BW 3MHz, RB15-0
Channel: High **746.0-746.1 MHz**

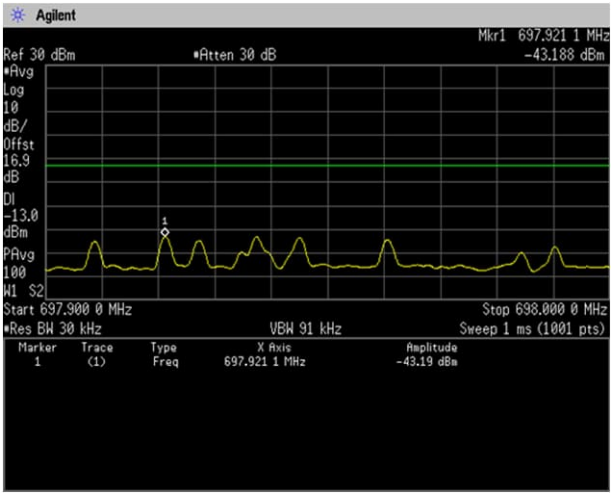




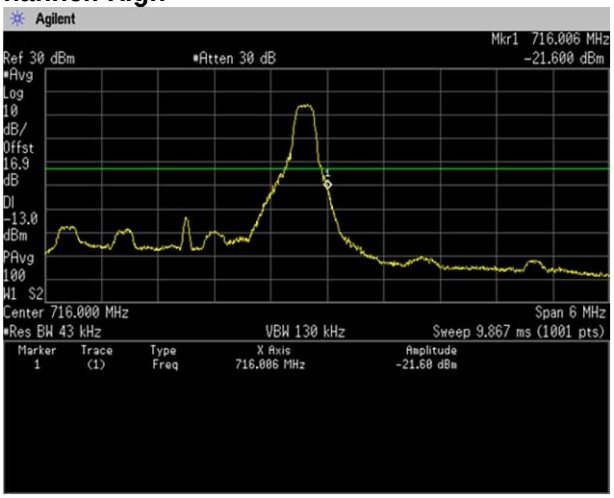
[LTE Band XII]
(Band Edge)

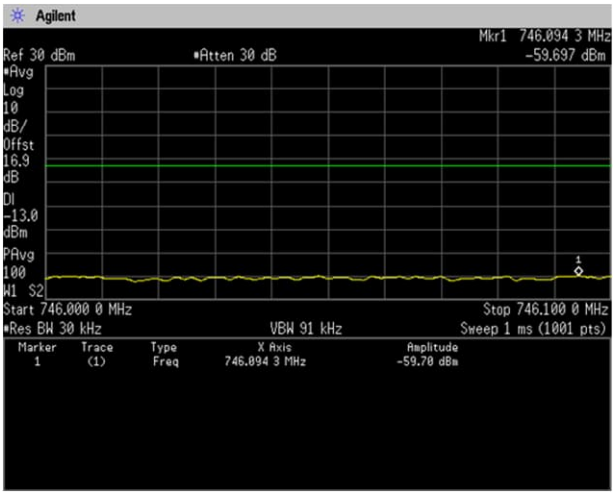
64QAM, BW 3MHz, RB1-0
Channel: Low **697.9-698.0 MHz**





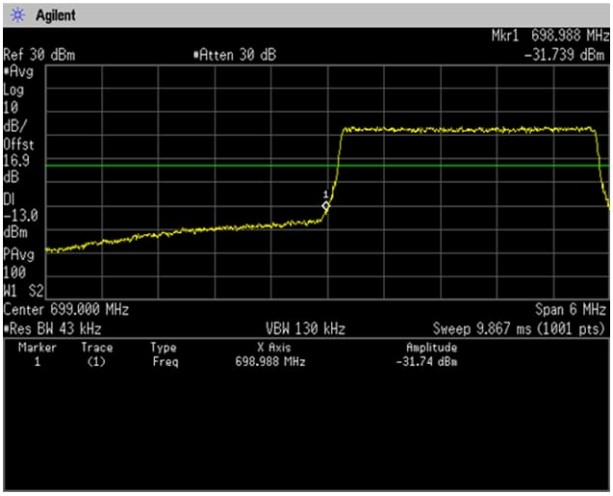
64QAM, BW 3MHz, RB1-14
Channel: High **746.0-746.1 MHz**

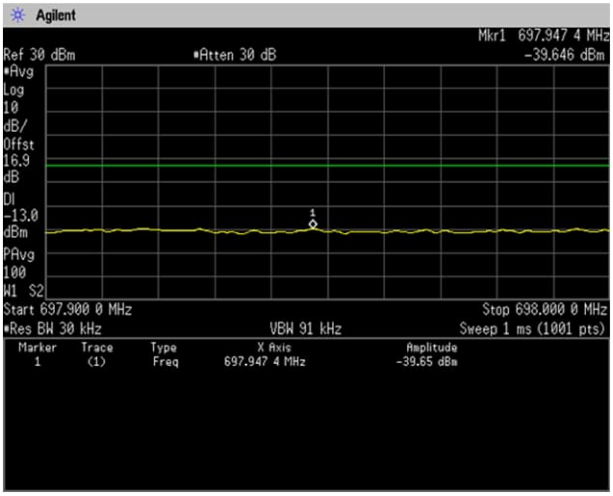




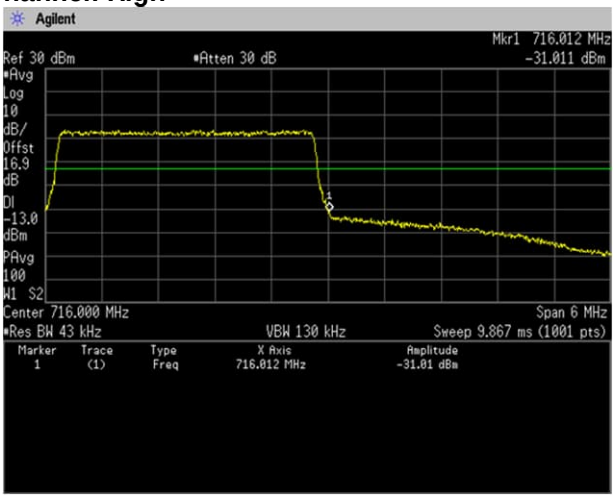
[LTE Band XII]
(Band Edge)

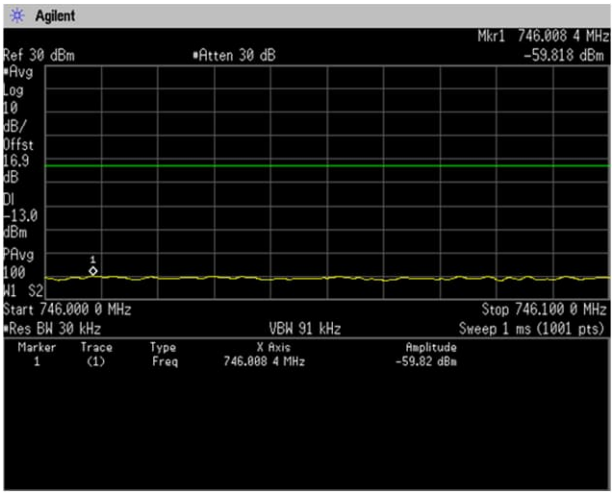
64QAM, BW 3MHz, RB15-0
Channel: Low **697.9-698.0 MHz**





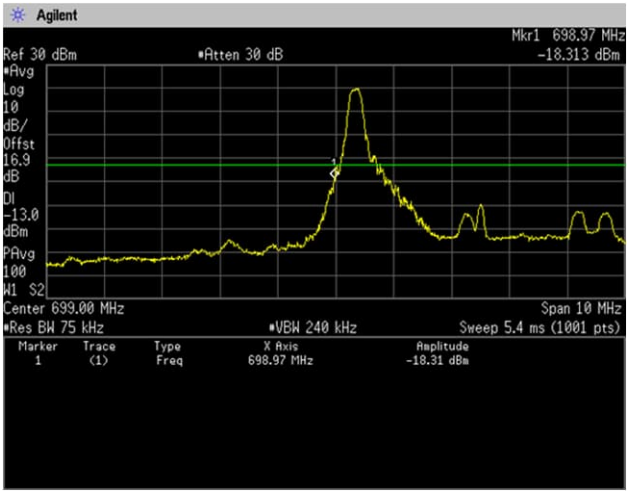
64QAM, BW 3MHz, RB15-0
Channel: High **746.0-746.1 MHz**

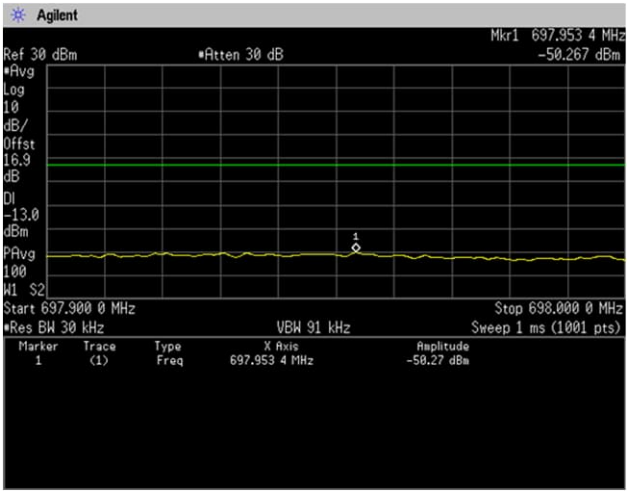




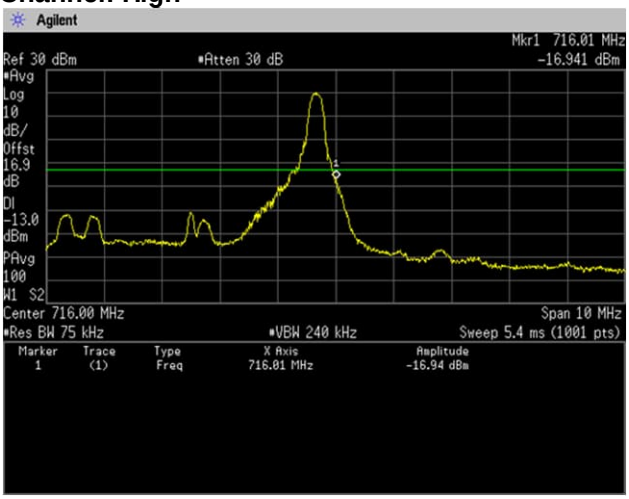
[LTE Band XII]
(Band Edge)

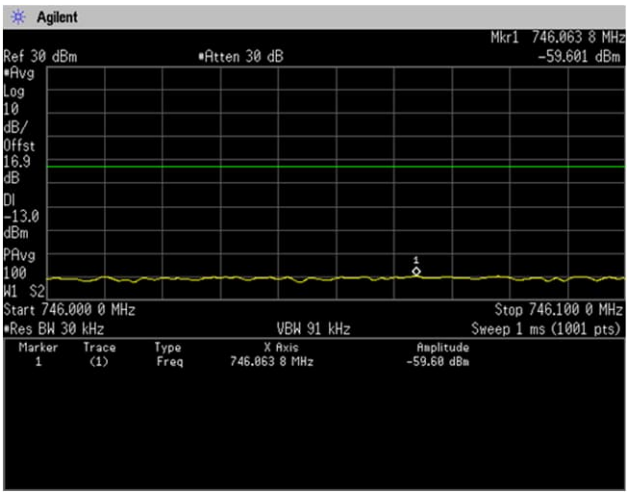
QPSK, BW 5MHz, RB1-0
Channel: Low **697.9-698.0 MHz**





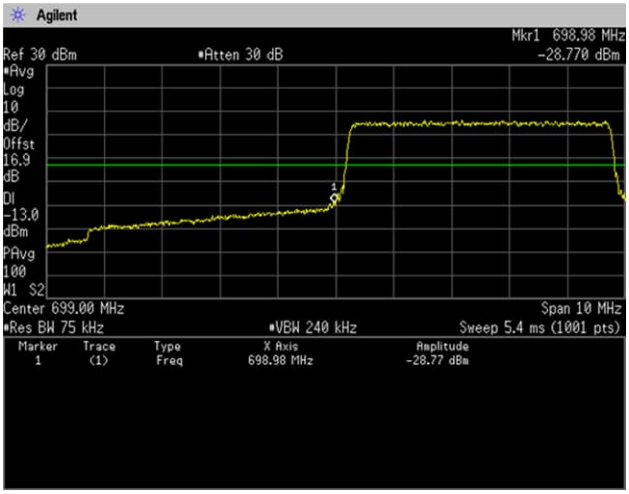
QPSK, BW 5MHz, RB1-24
Channel: High **746.0-746.1 MHz**

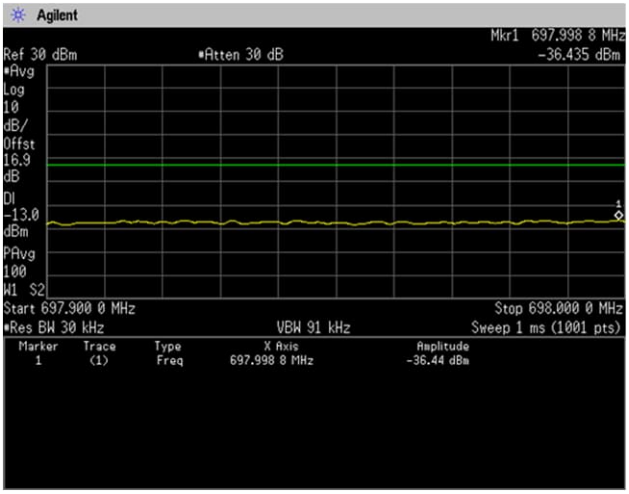




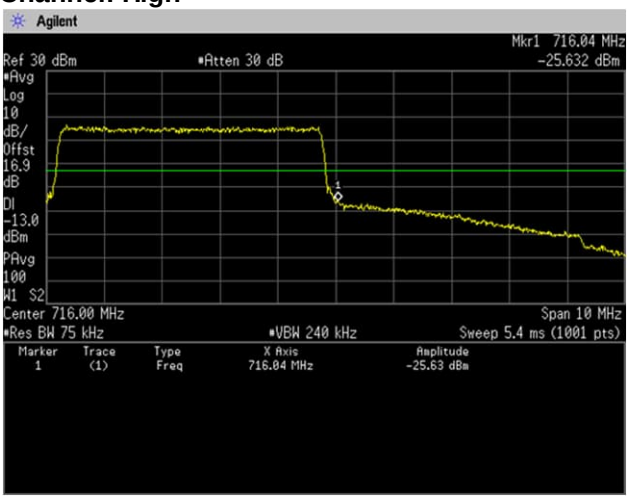
[LTE Band XII]
(Band Edge)

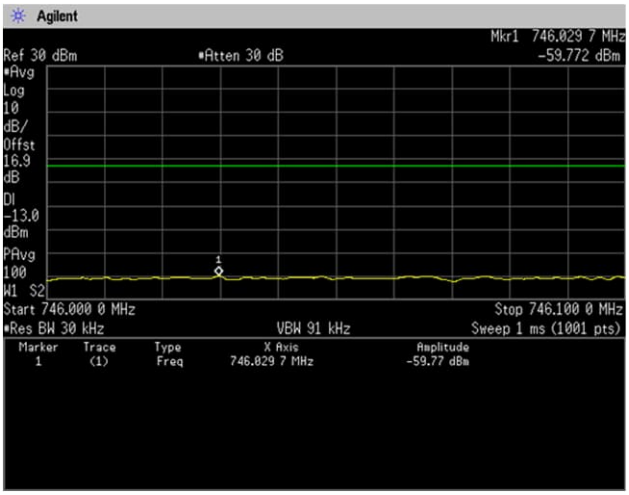
QPSK, BW 5MHz, RB25-0
Channel: Low **697.9-698.0 MHz**





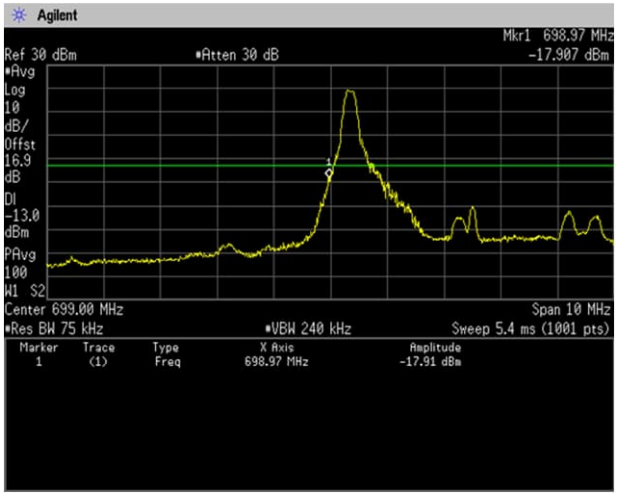
QPSK, BW 5MHz, RB25-0
Channel: High **746.0-746.1 MHz**

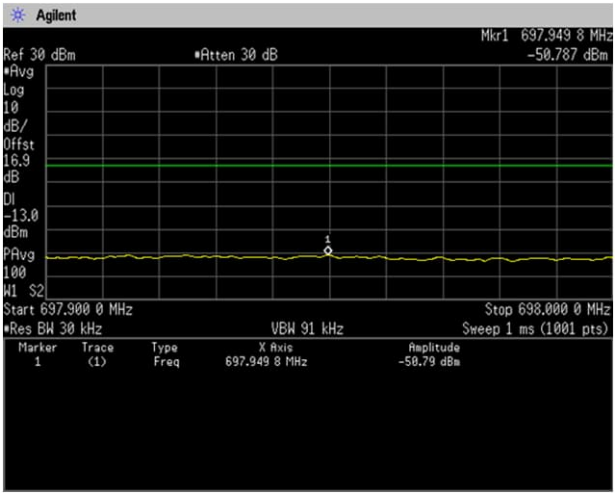




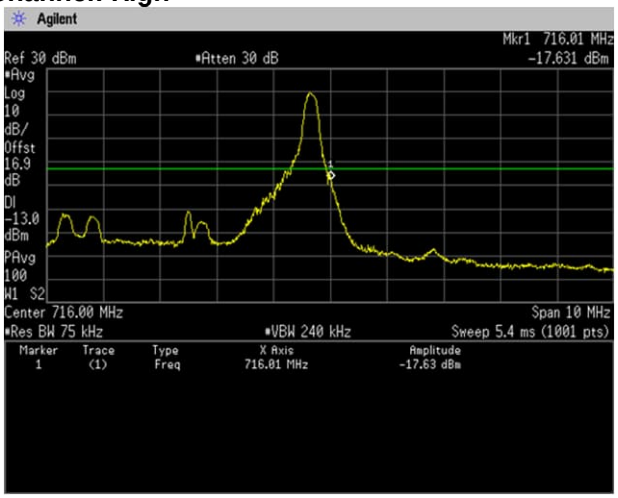
[LTE Band XII]
(Band Edge)

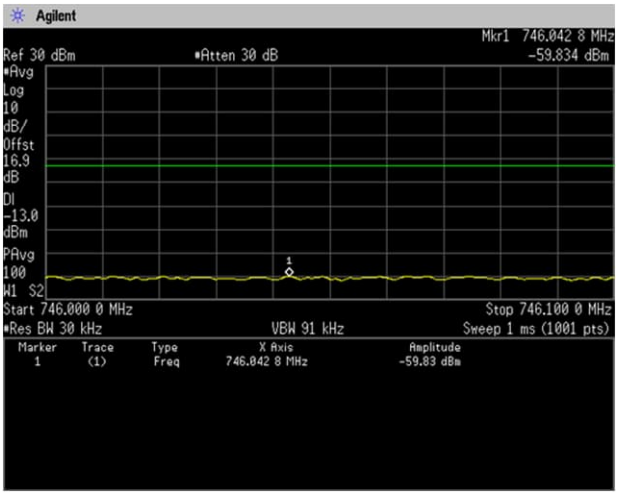
16QAM, BW 5MHz, RB1-0
Channel: Low **697.9-698.0 MHz**





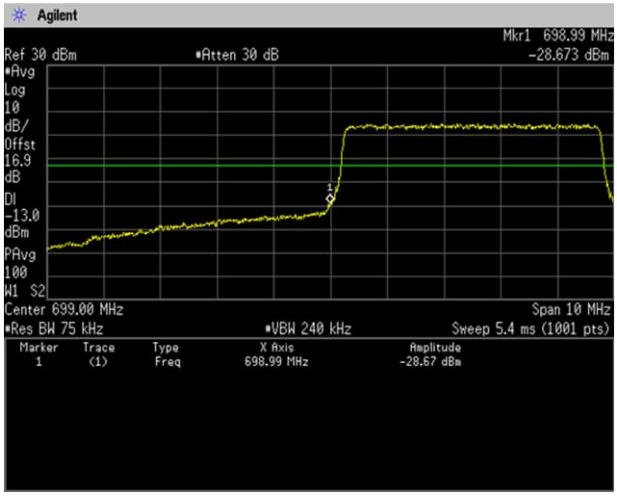
16QAM, BW 5MHz, RB1-24
Channel: High **746.0-746.1 MHz**

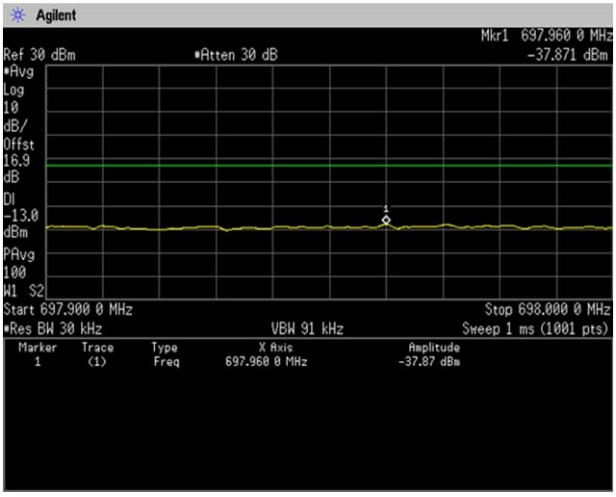




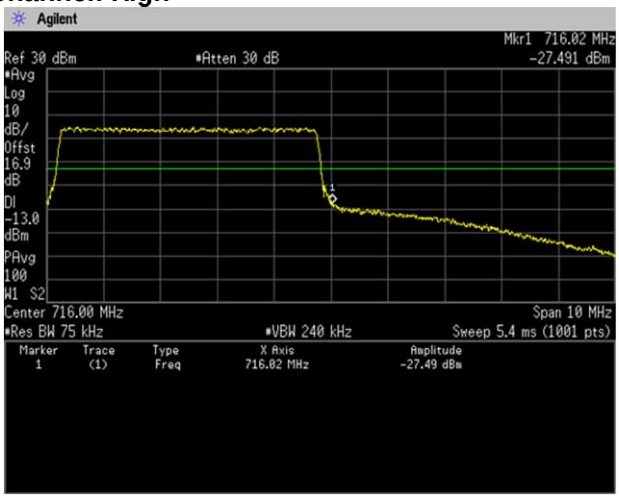
[LTE Band XII]
(Band Edge)

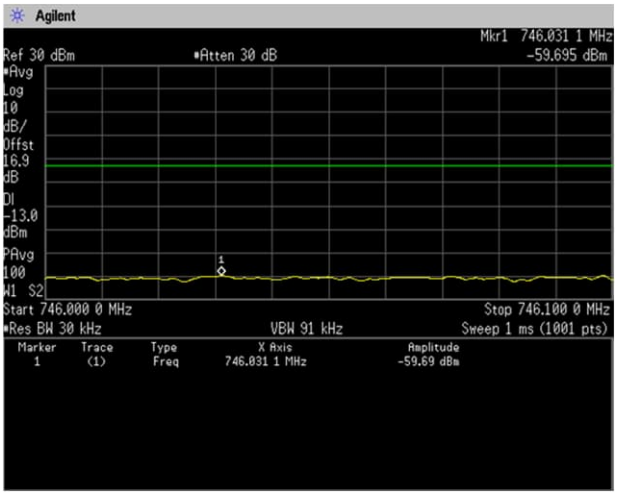
16QAM, BW 5MHz, RB25-0
Channel: Low **697.9-698.0 MHz**





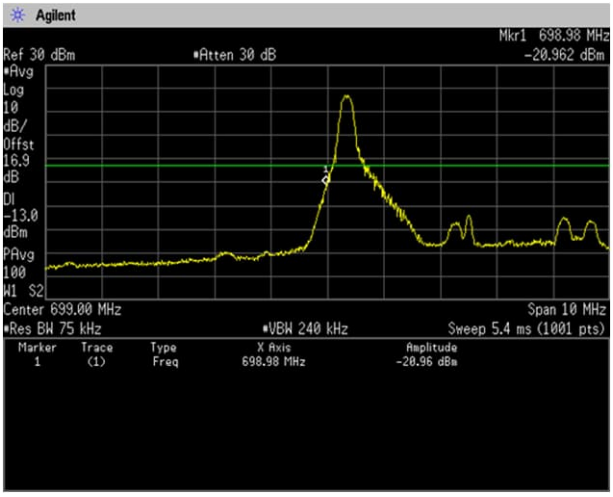
16QAM, BW 5MHz, RB25-0
Channel: High **746.0-746.1 MHz**

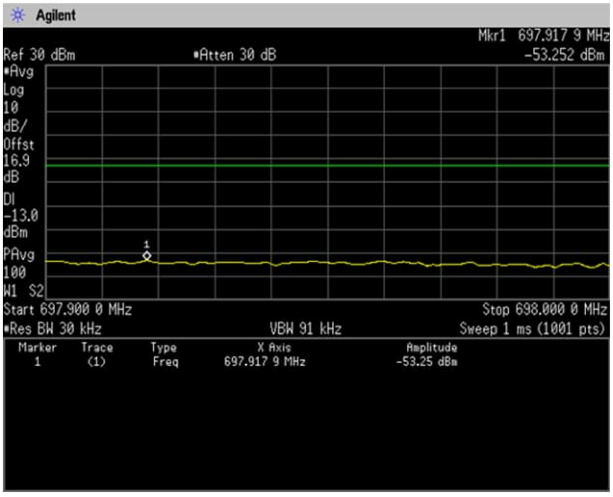




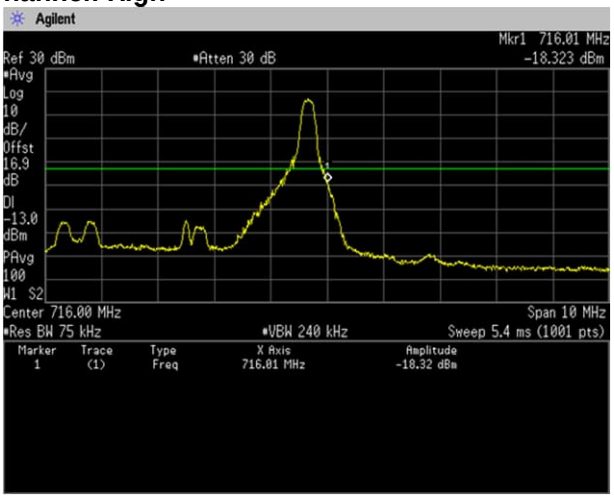
[LTE Band XII]
(Band Edge)

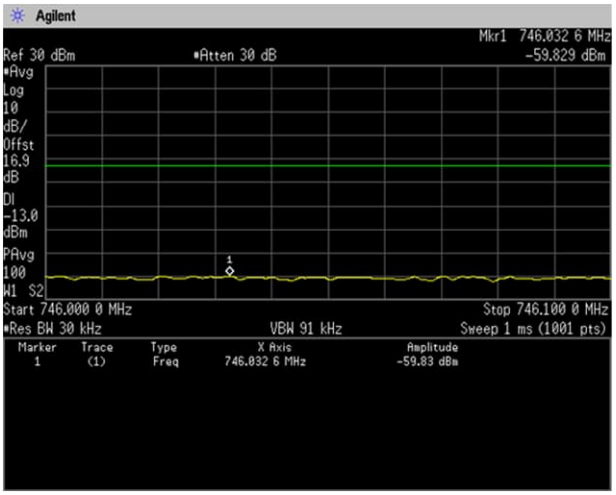
64QAM, BW 5MHz, RB1-0
Channel: Low **697.9-698.0 MHz**





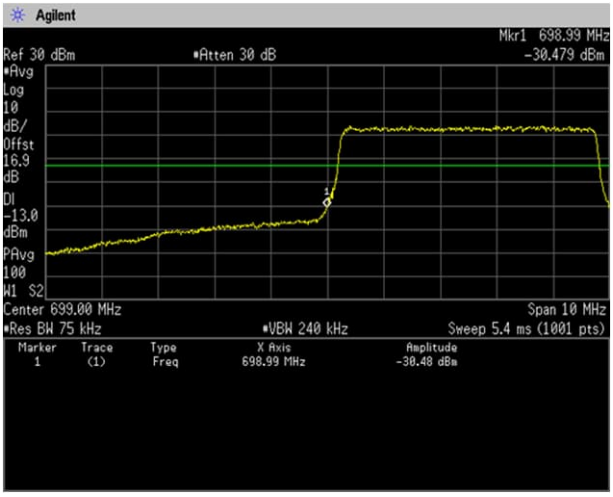
64QAM, BW 5MHz, RB1-24
Channel: High **746.0-746.1 MHz**

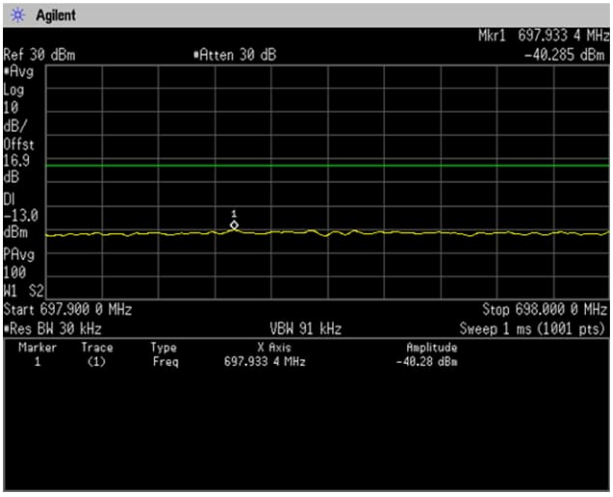




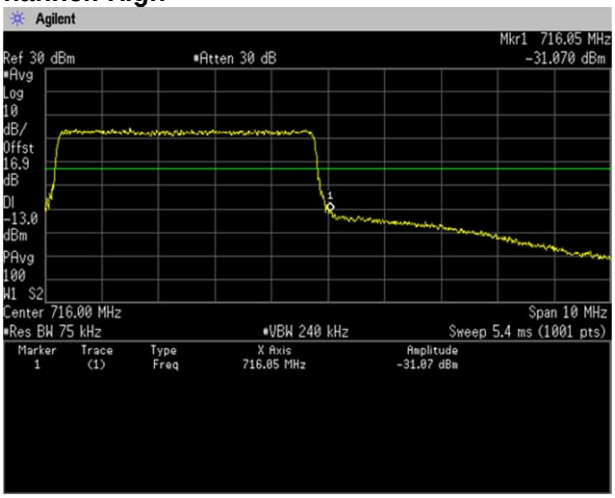
[LTE Band XII]
(Band Edge)

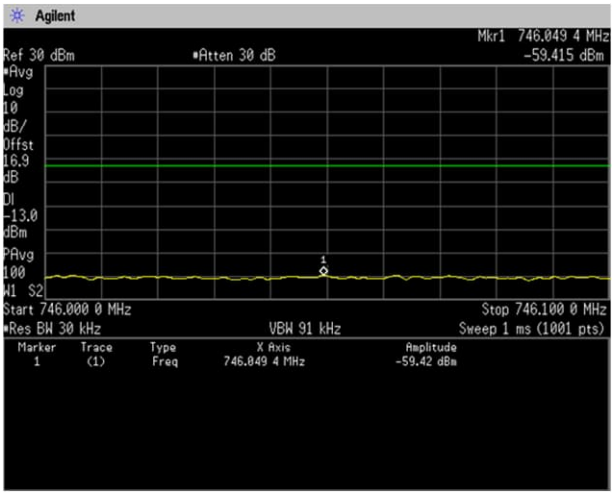
64QAM, BW 5MHz, RB25-0
Channel: Low **697.9-698.0 MHz**





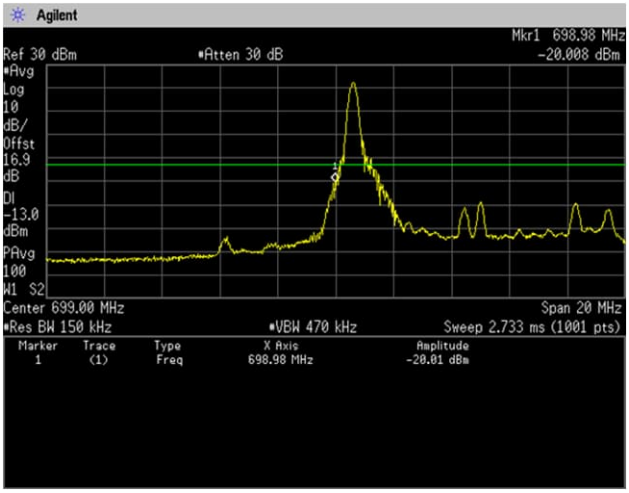
64QAM, BW 5MHz, RB25-0
Channel: High **746.0-746.1 MHz**

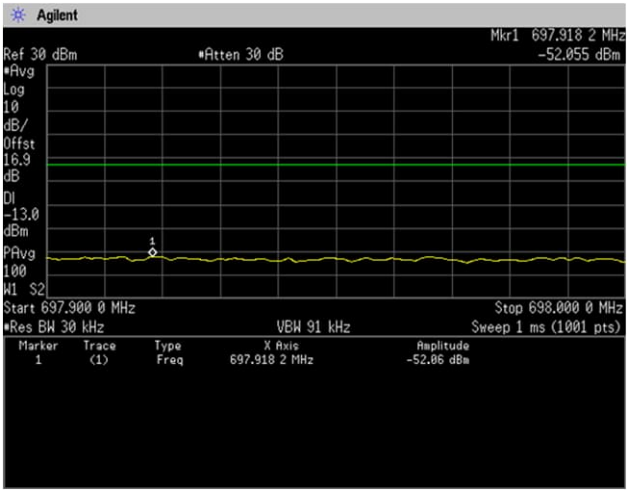




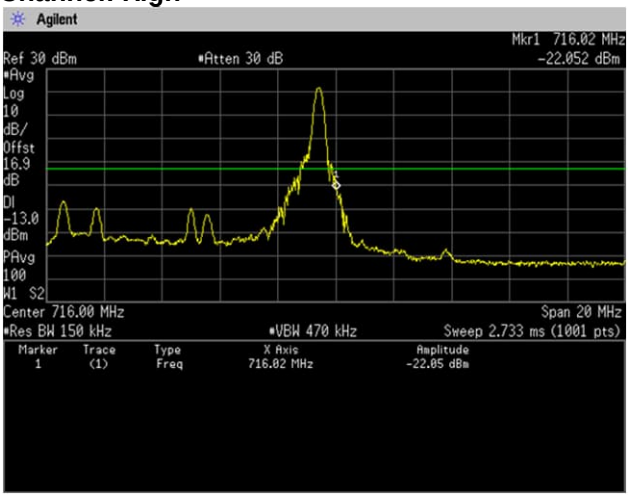
[LTE Band XII]
(Band Edge)

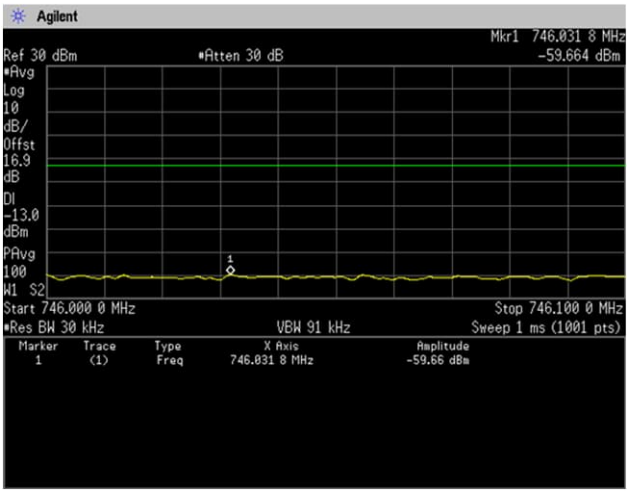
QPSK, BW 10MHz, RB1-0
Channel: Low **697.9-698.0 MHz**





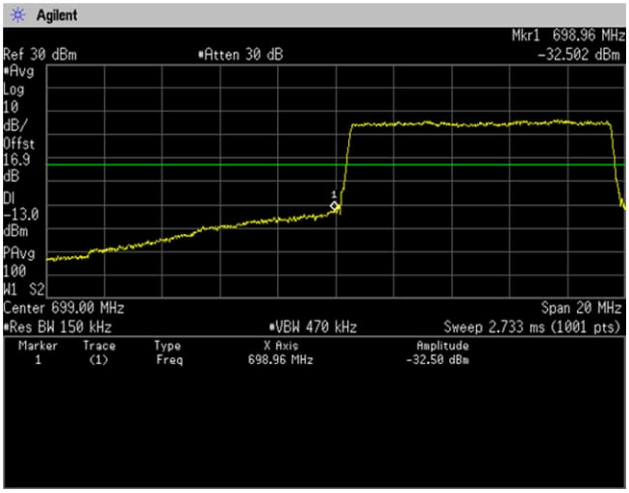
QPSK, BW 10MHz, RB1-49
Channel: High **746.0-746.1 MHz**

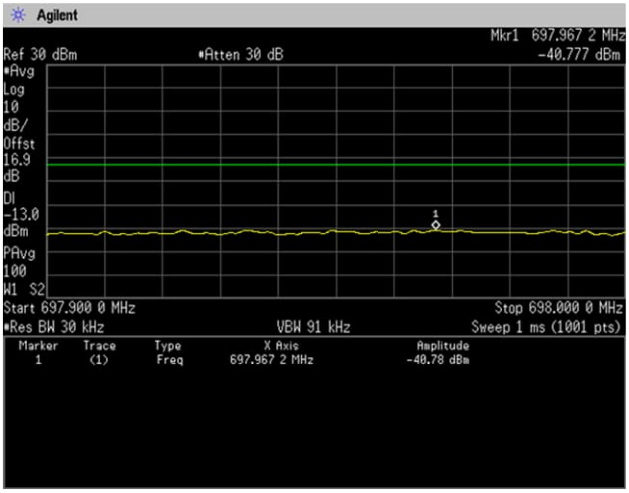




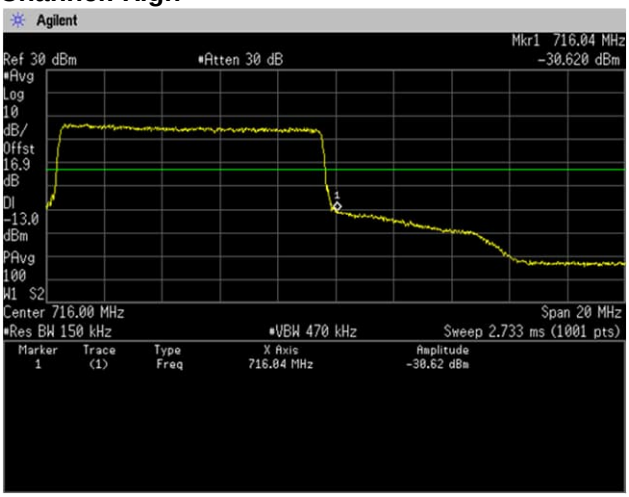
[LTE Band XII]
(Band Edge)

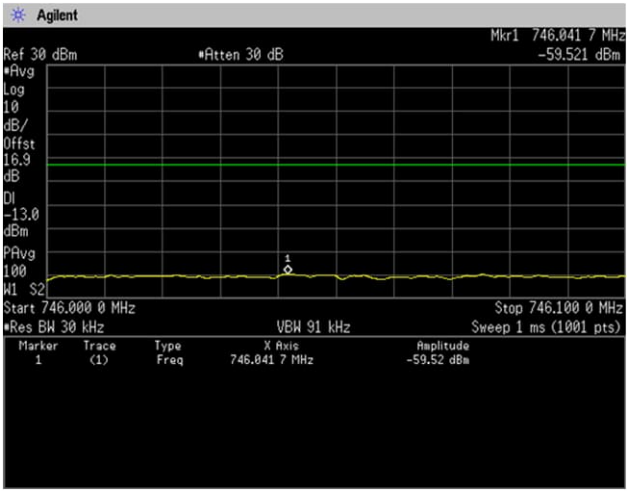
QPSK, BW 10MHz, RB50-0
Channel: Low **697.9-698.0 MHz**





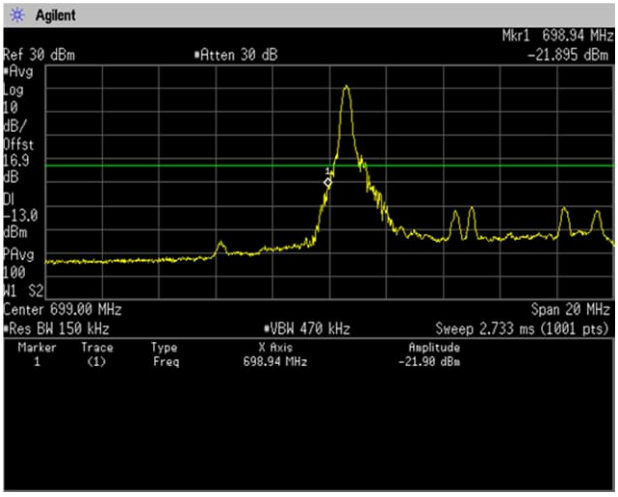
QPSK, BW 10MHz, RB50-0
Channel: High **746.0-746.1 MHz**

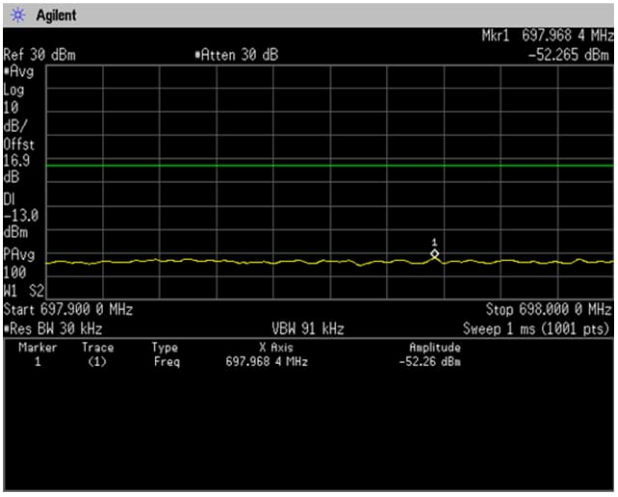




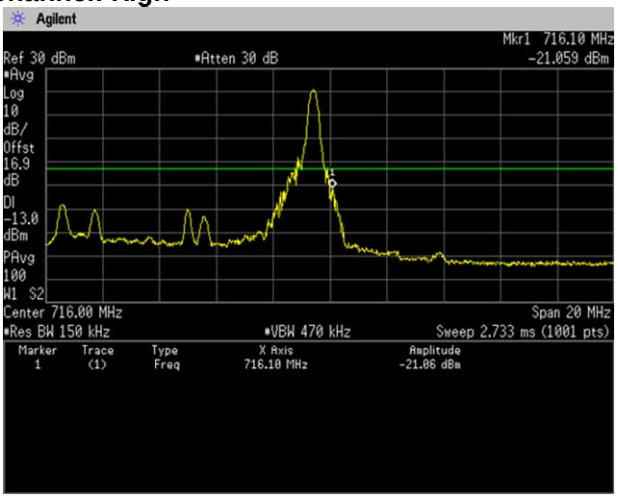
[LTE Band XII]
(Band Edge)

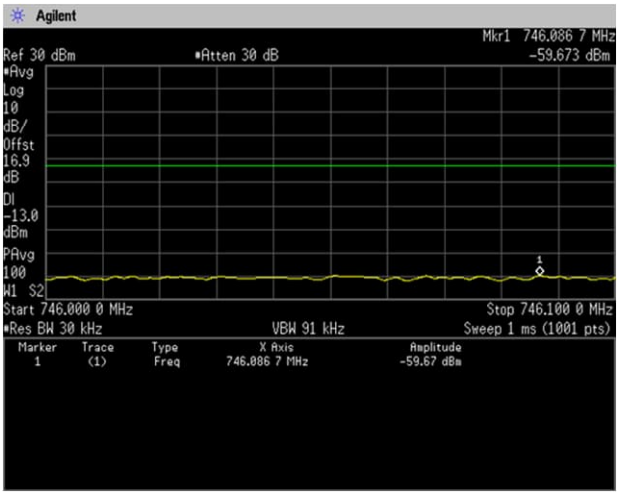
16QAM, BW 10MHz, RB1-0
Channel: Low **697.9-698.0 MHz**





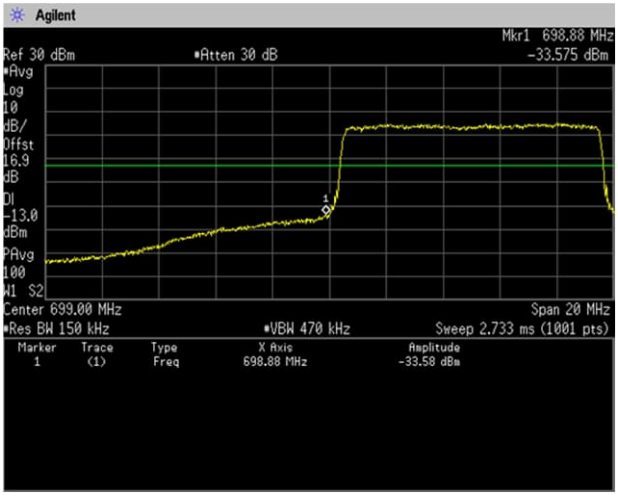
16QAM, BW 10MHz, RB1-49
Channel: High **746.0-746.1 MHz**

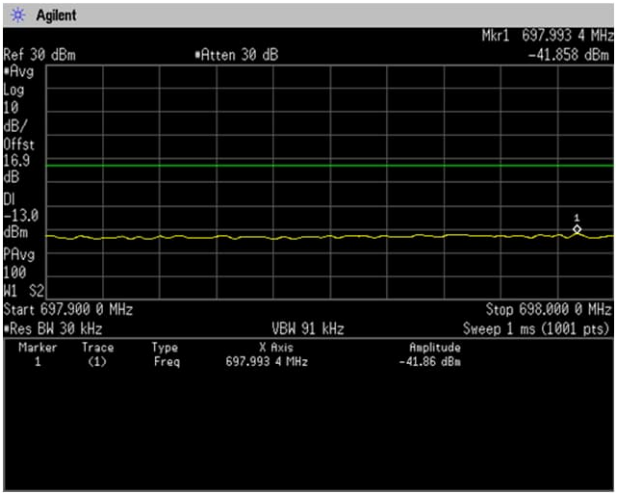




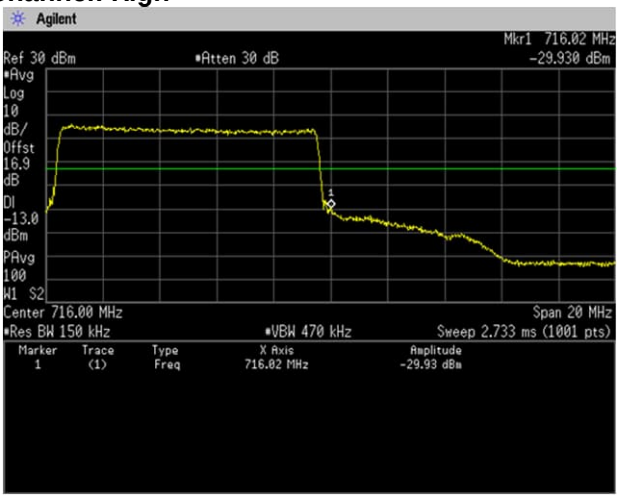
[LTE Band XII]
(Band Edge)

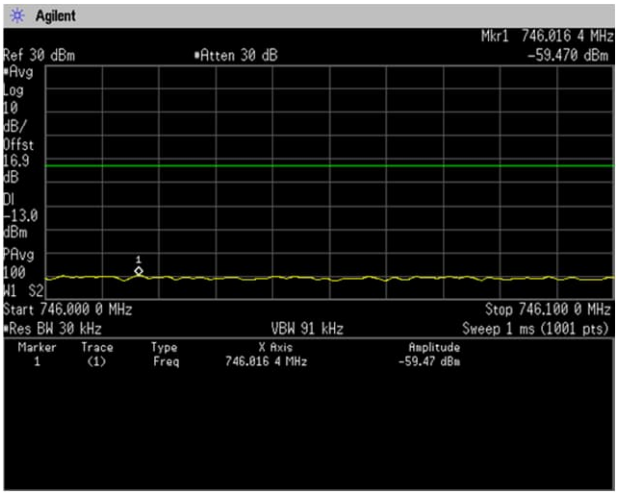
16QAM, BW 10MHz, RB50-0
Channel: Low **697.9-698.0 MHz**





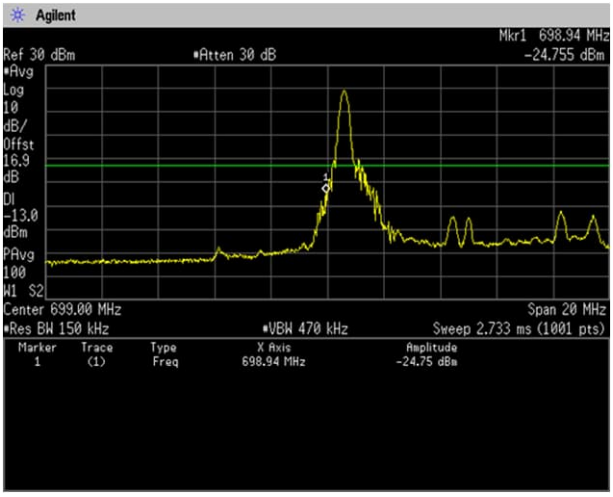
16QAM, BW 10MHz, RB50-0
Channel: High **746.0-746.1 MHz**

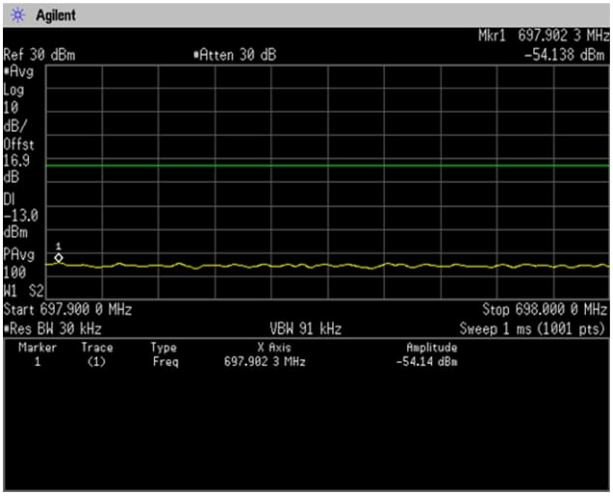




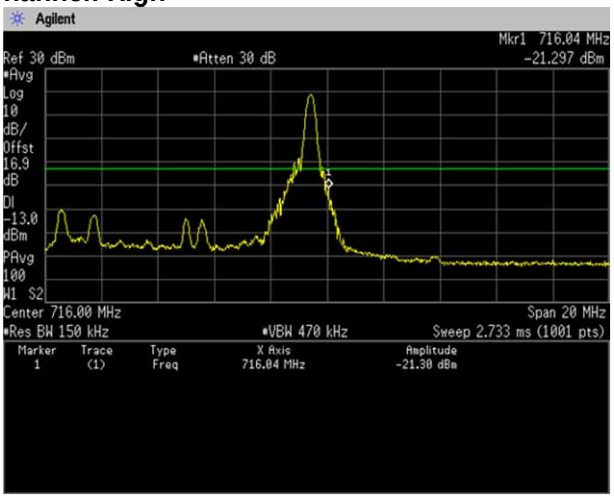
[LTE Band XII]
(Band Edge)

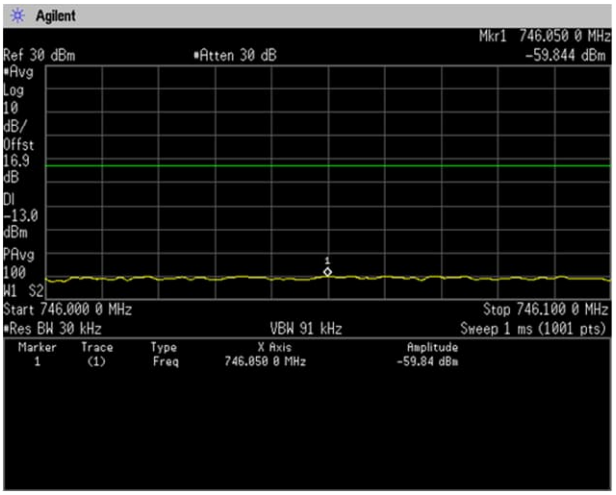
64QAM, BW 10MHz, RB1-0
Channel: Low **697.9-698.0 MHz**





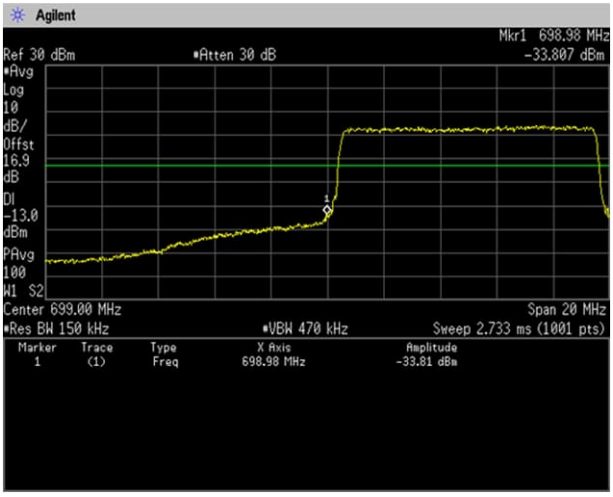
64QAM, BW 10MHz, RB1-49
Channel: High **746.0-746.1 MHz**

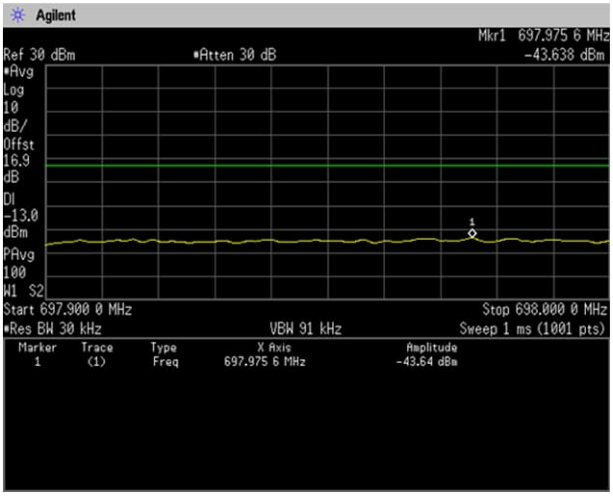




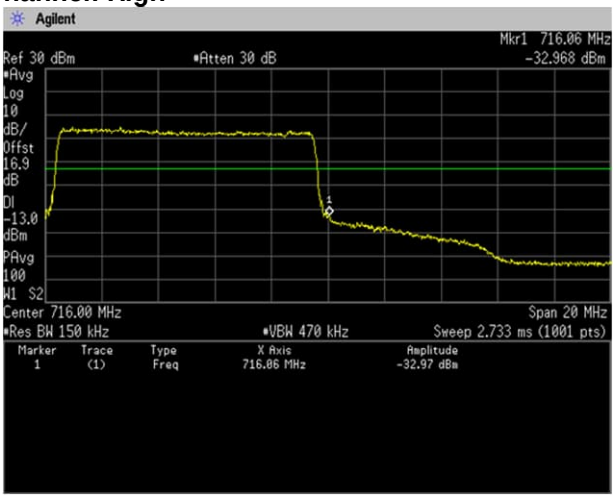
[LTE Band XII]
(Band Edge)

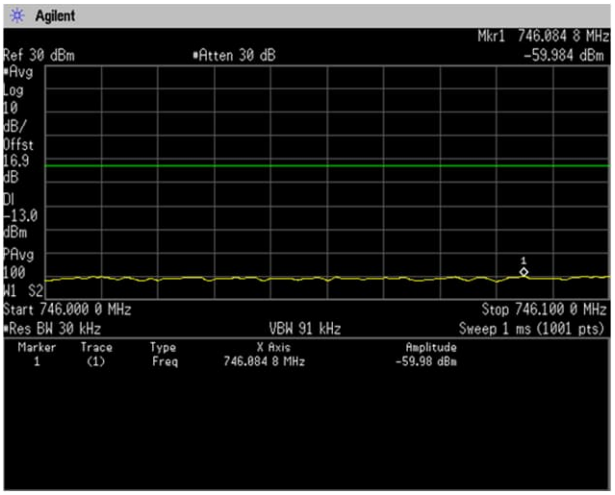
64QAM, BW 10MHz, RB50-0
Channel: Low **697.9-698.0 MHz**





64QAM, BW 10MHz, RB50-0
Channel: High **746.0-746.1 MHz**

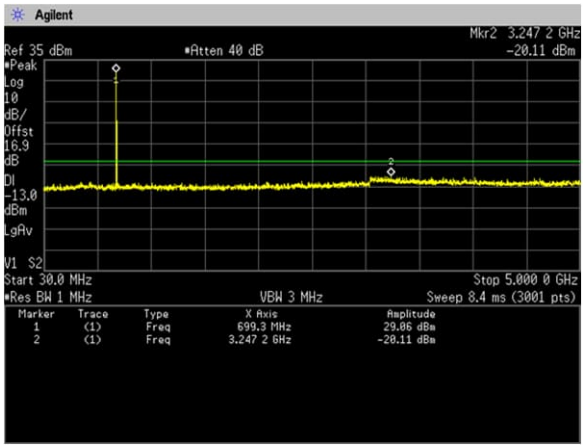




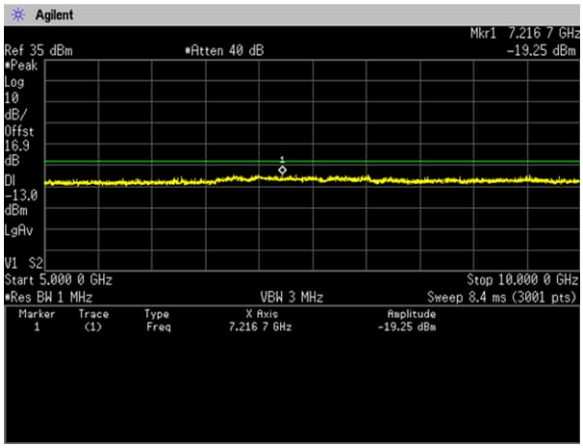
[LTE Band XII]
(Spurious Emissions)
Note: Conducted spurious test was measured in the worst case of Effective Radiated Power.

QPSK, BW 1.4MHz, RB 1-3
Channel: Low

30MHz-5GHz

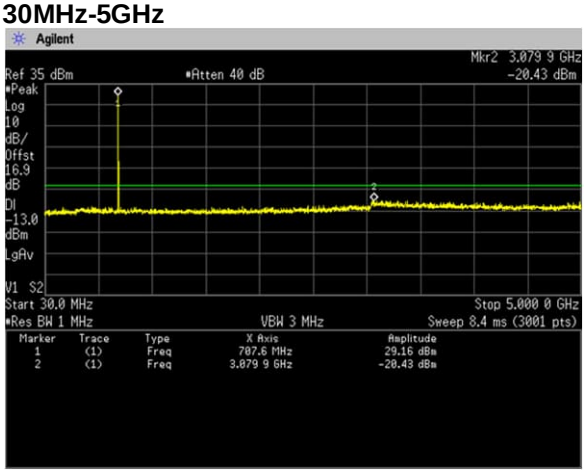


5GHz-10GHz

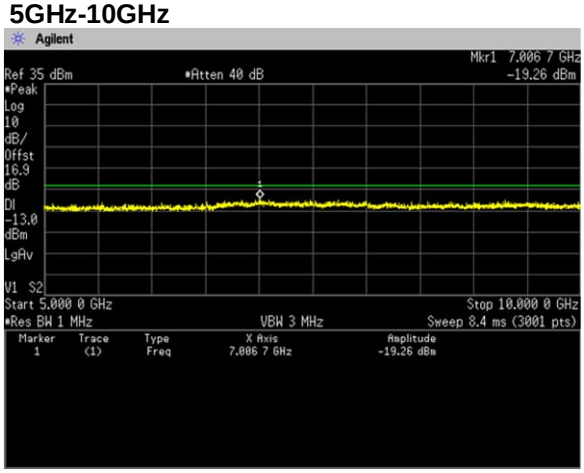


Channel: Middle

30MHz-5GHz

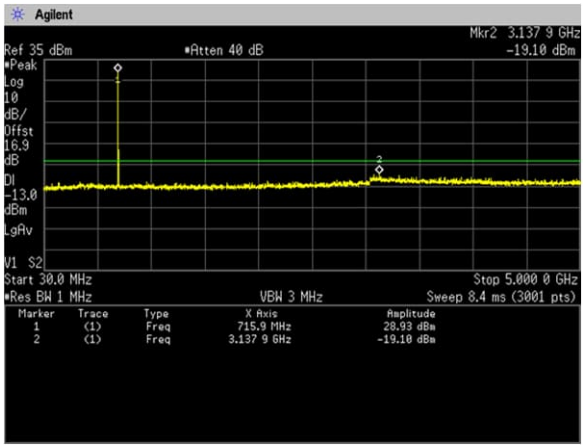


5GHz-10GHz

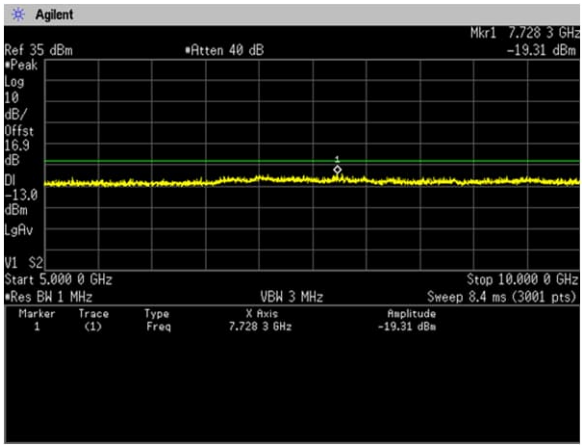


Channel: High

30MHz-5GHz

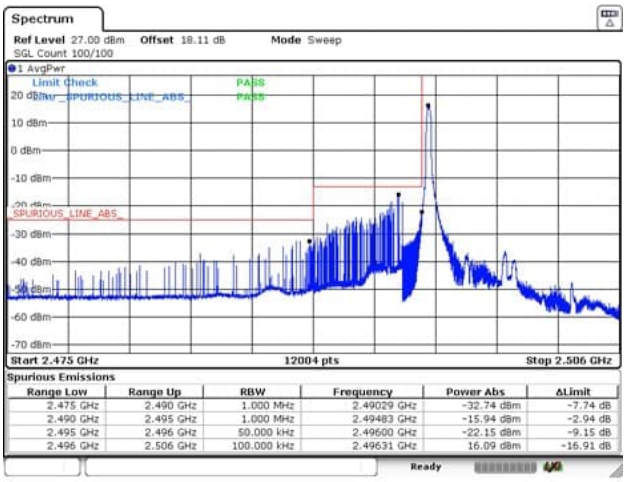


5GHz-10GHz

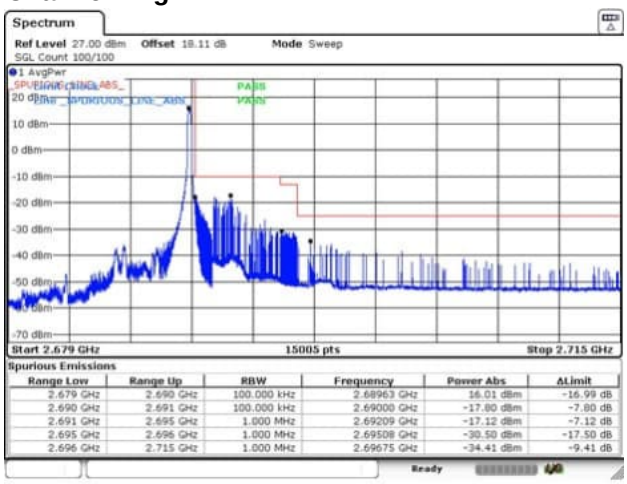


[LTE Band XLI]
(Band Edge)

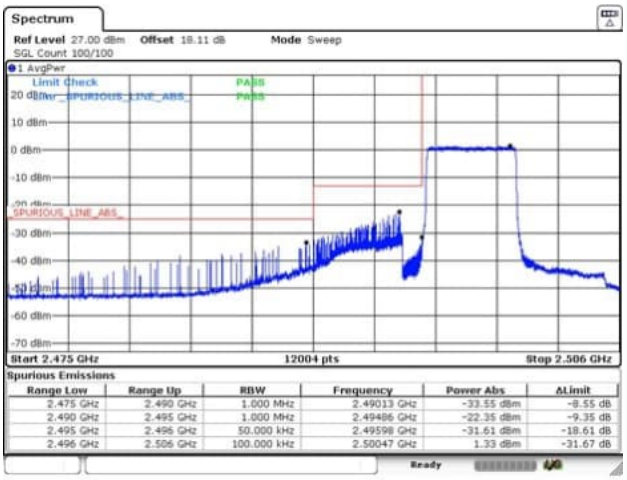
QPSK, BW 5MHz, RB1-0
Channel: Low



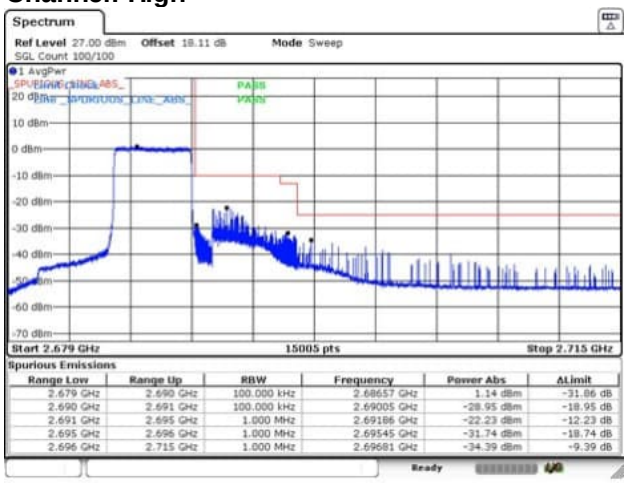
RB1-24
Channel: High



QPSK, BW 5MHz, RB25-0
Channel: Low

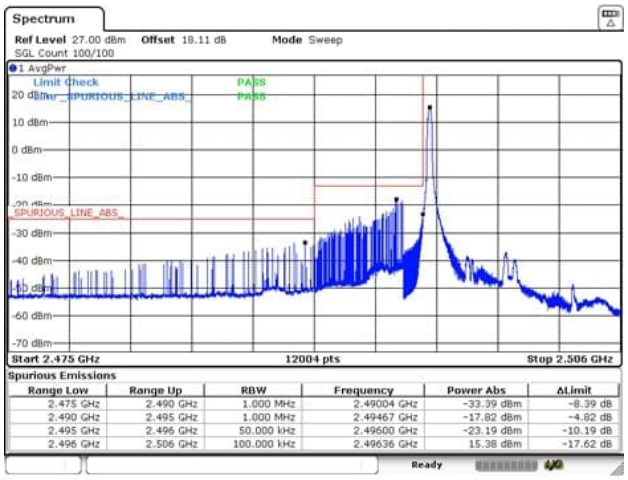


Channel: High

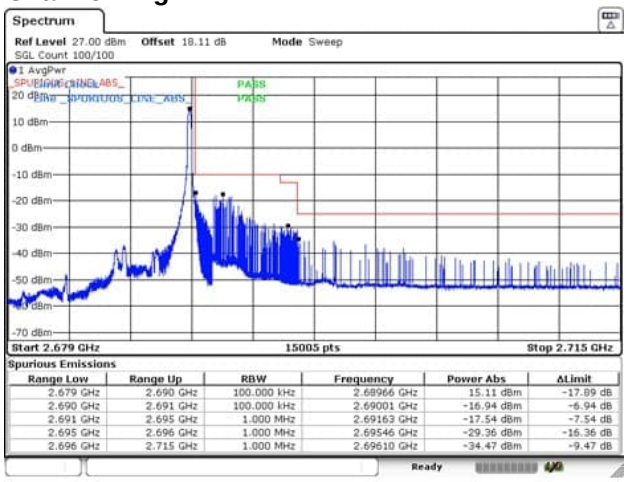


[LTE Band XLI]
(Band Edge)

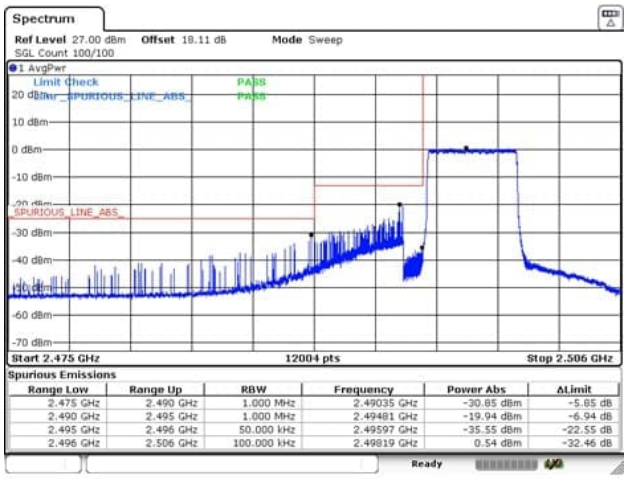
16QAM, BW 5MHz, RB1-0
Channel: Low



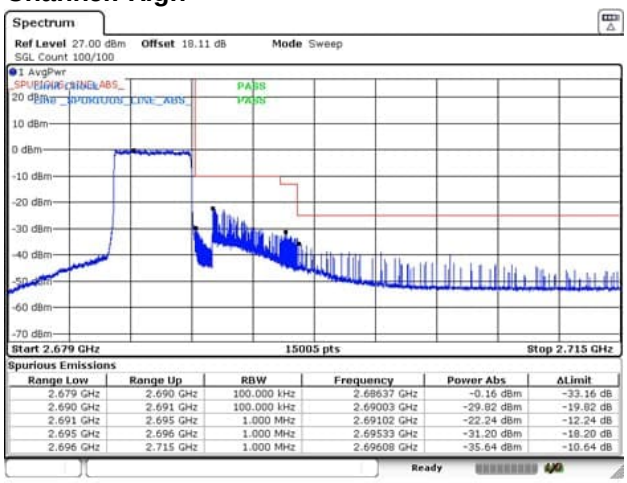
RB1-24
Channel: High



16QAM, BW 5MHz, RB25-0
Channel: Low

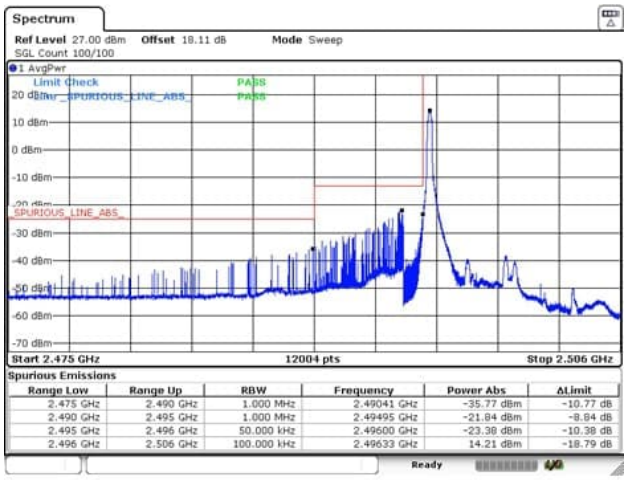


Channel: High

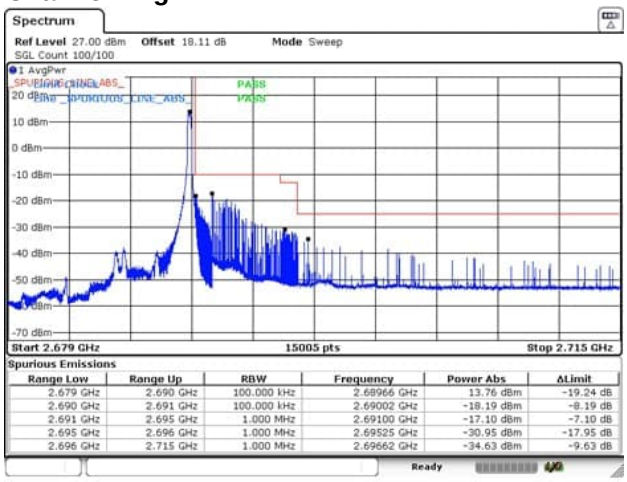


[LTE Band XLI]
(Band Edge)

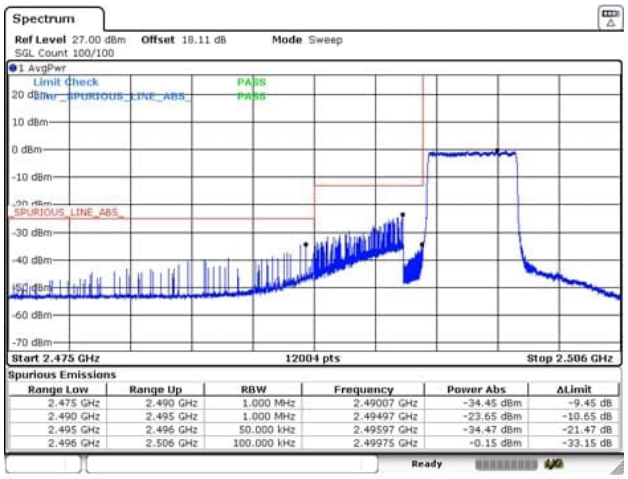
64QAM, BW 5MHz, RB1-0
Channel: Low



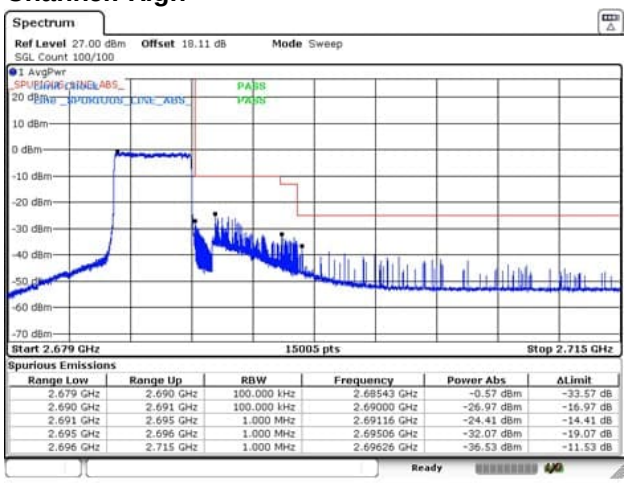
RB1-24
Channel: High



64QAM, BW 5MHz, RB25-0
Channel: Low

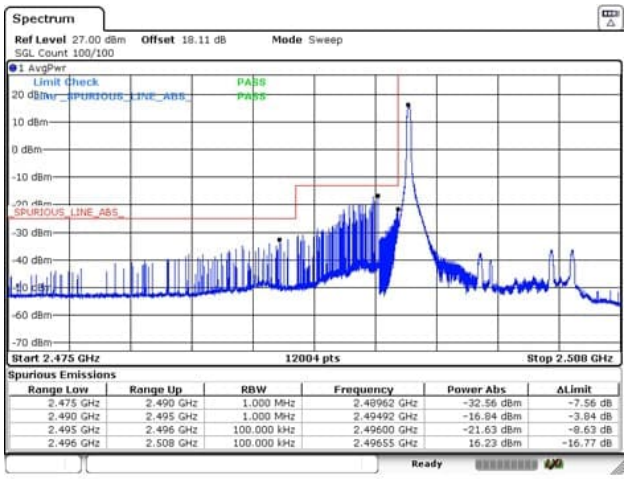


Channel: High

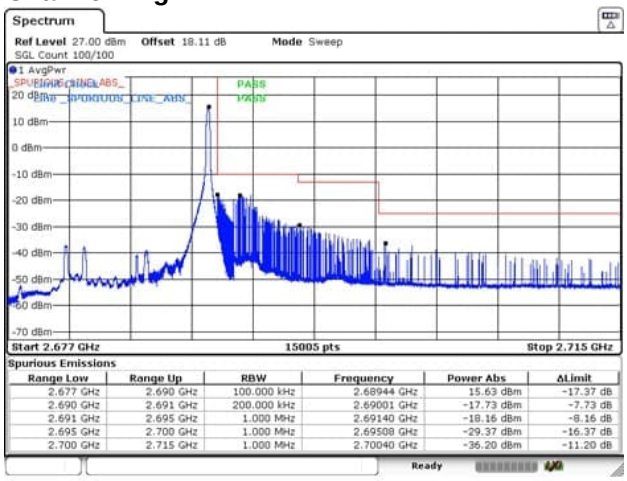


[LTE Band XLI]
(Band Edge)

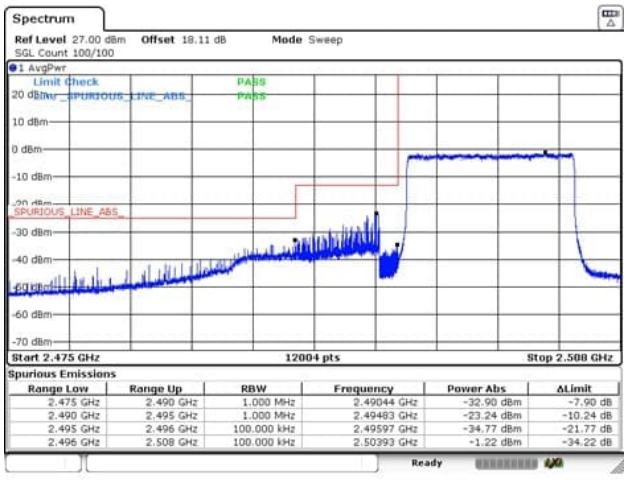
QPSK, BW 10MHz, RB1-0
Channel: Low



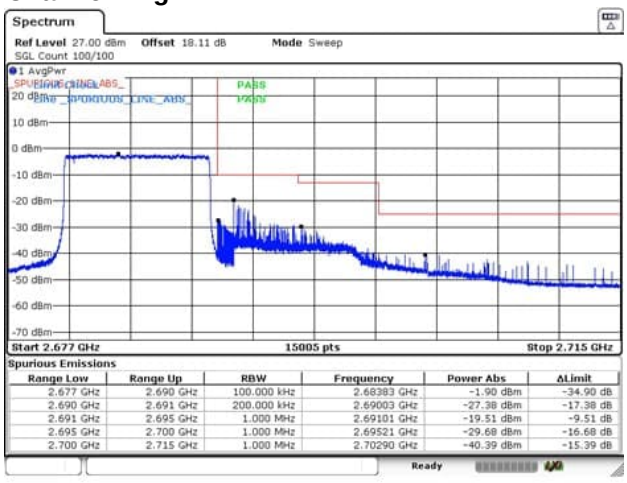
RB1-49
Channel: High



QPSK, BW 10MHz, RB50-0
Channel: Low

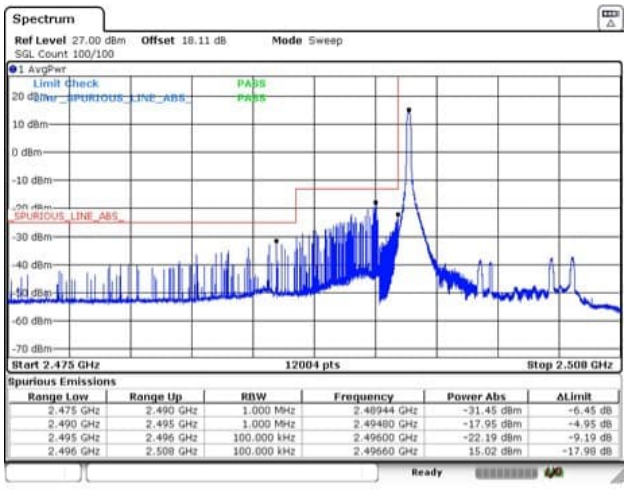


Channel: High

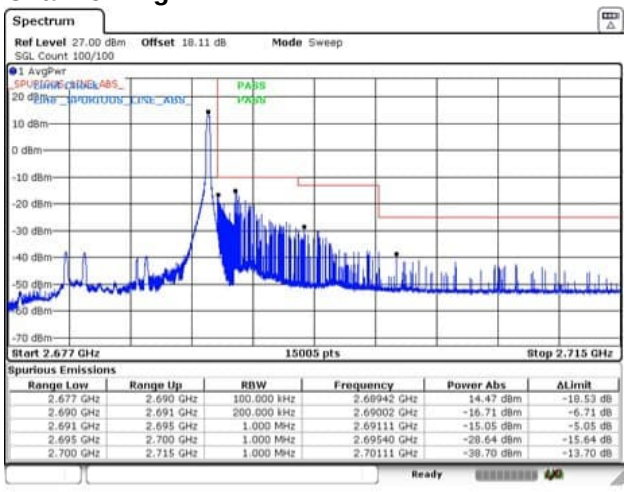


[LTE Band XLI]
(Band Edge)

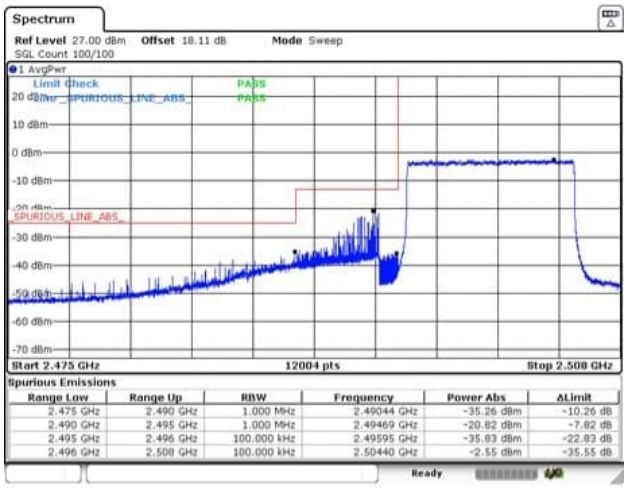
16QAM, BW 10MHz, RB1-0
Channel: Low



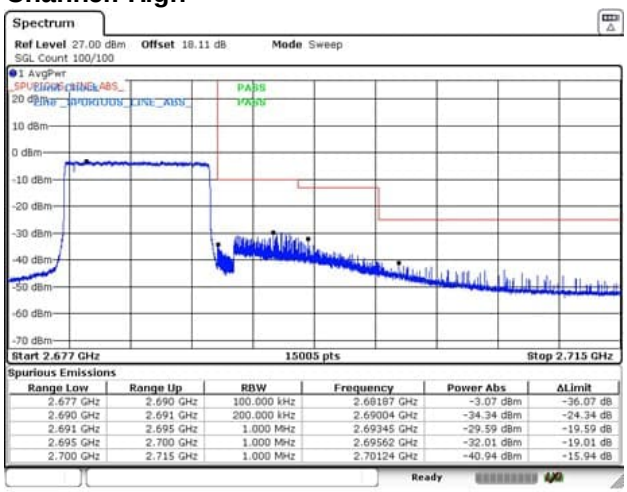
RB1-49
Channel: High



16QAM, BW 10MHz, RB50-0
Channel: Low

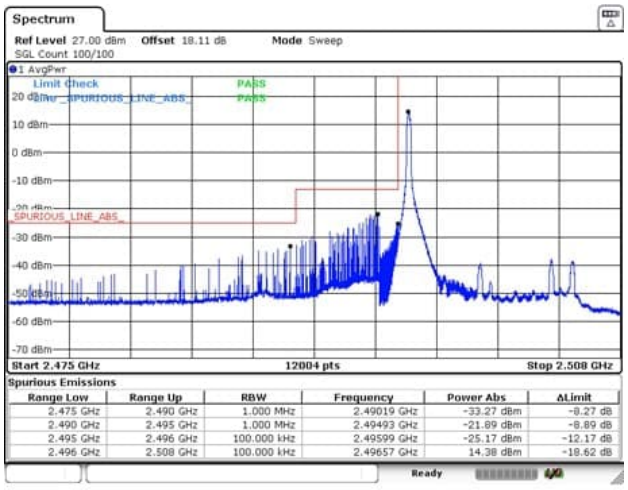


Channel: High

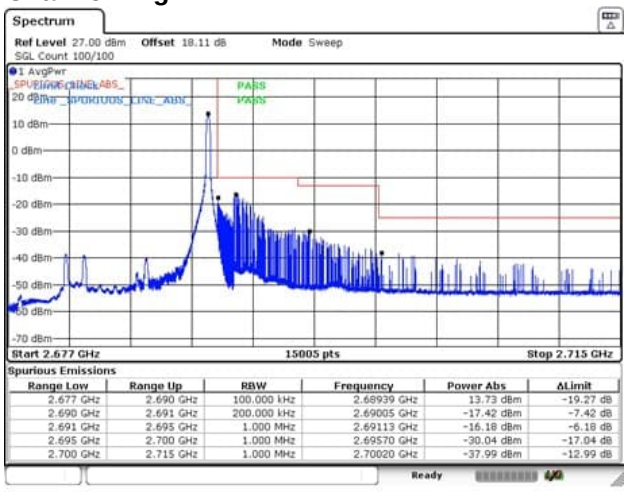


[LTE Band XLI]
(Band Edge)

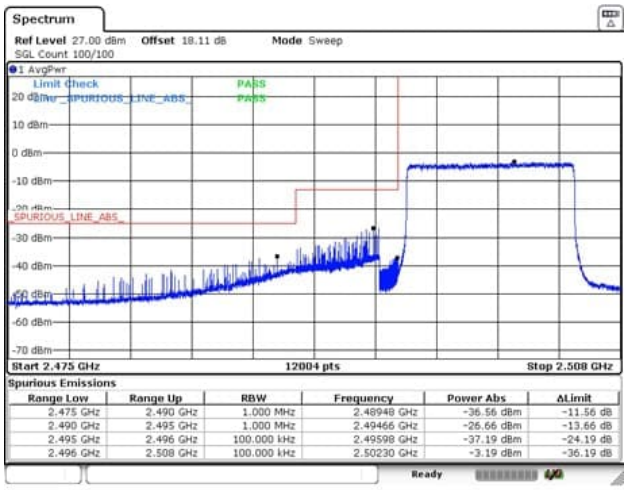
64QAM, BW 10MHz, RB1-0
Channel: Low



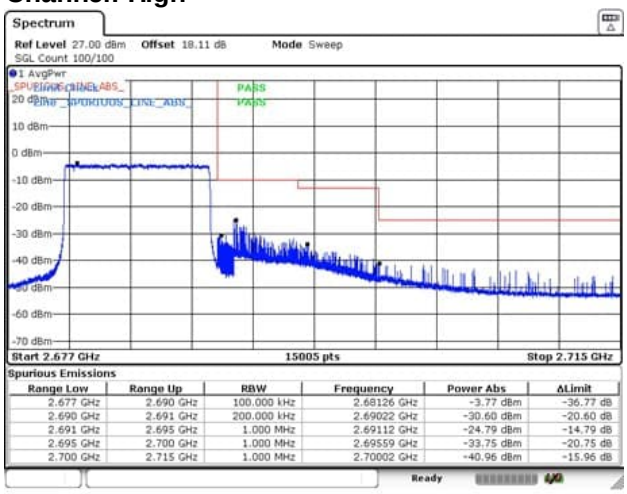
RB1-49
Channel: High



64QAM, BW 10MHz, RB50-0
Channel: Low

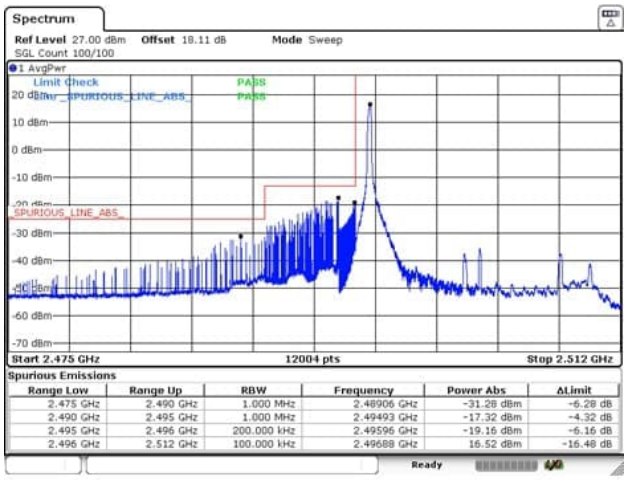


Channel: High

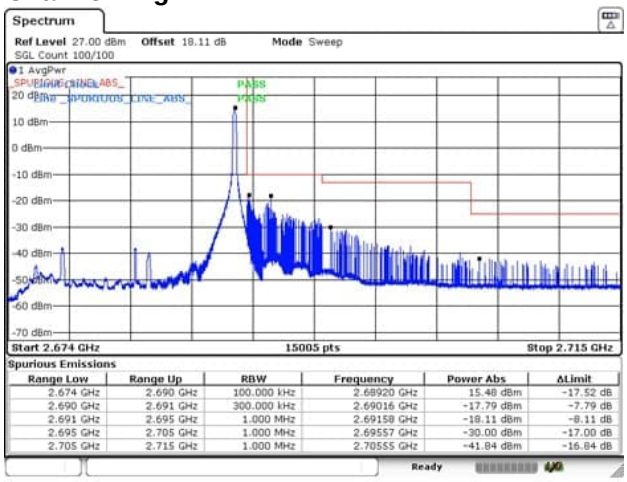


[LTE Band XLI]
(Band Edge)

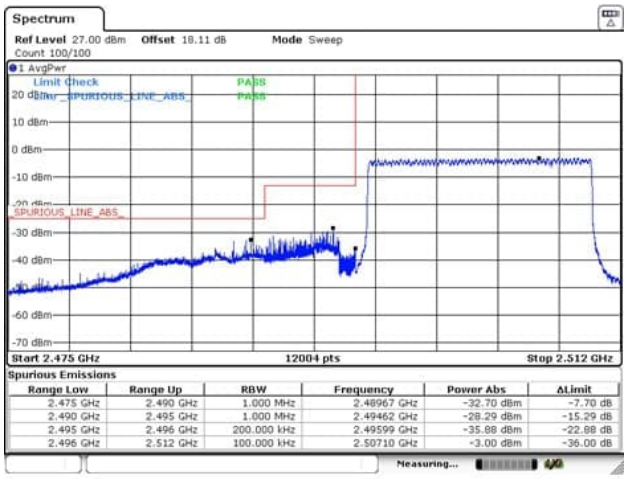
QPSK, BW 15MHz, RB1-0
Channel: Low



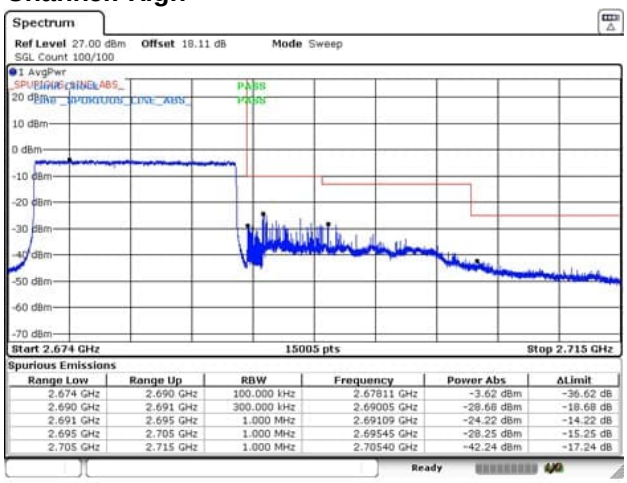
RB1-74
Channel: High



QPSK, BW 15MHz, RB75-0
Channel: Low

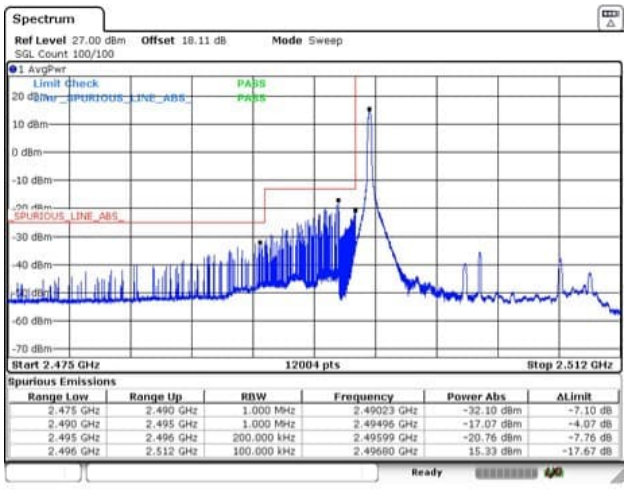


Channel: High

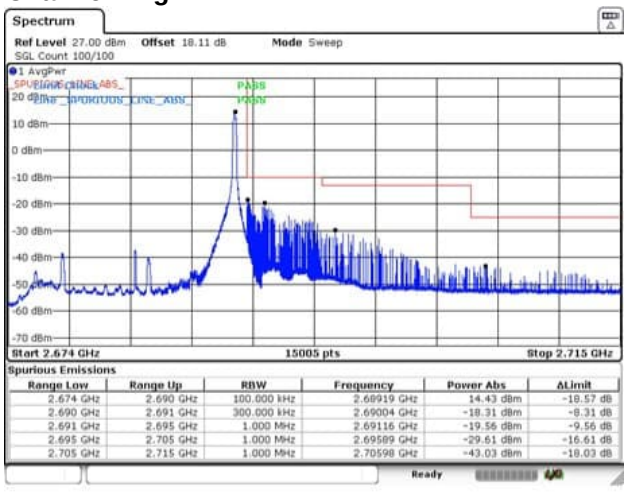


[LTE Band XLI]
(Band Edge)

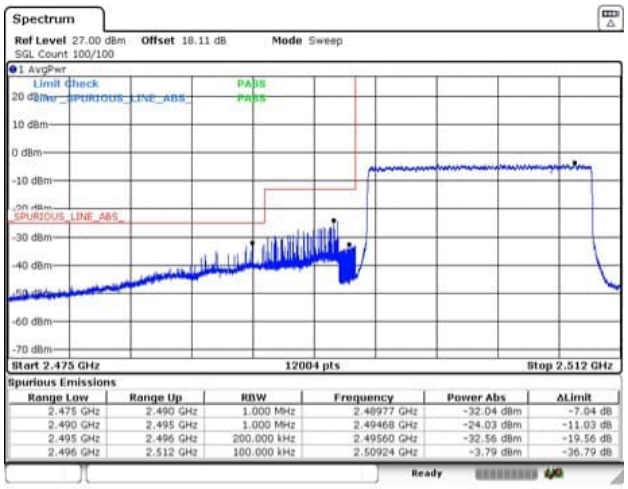
16QAM, BW 15MHz, RB1-0
Channel: Low



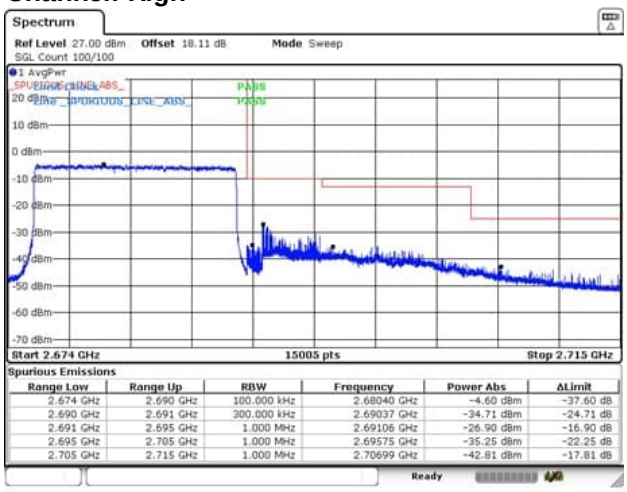
RB1-74
Channel: High



16QAM, BW 15MHz, RB75-0
Channel: Low

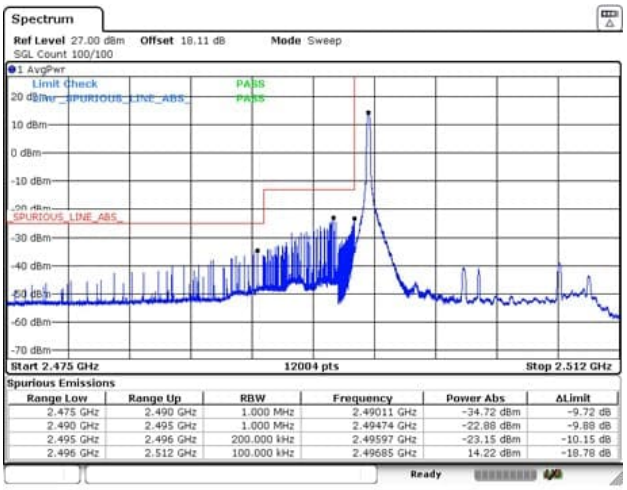


Channel: High

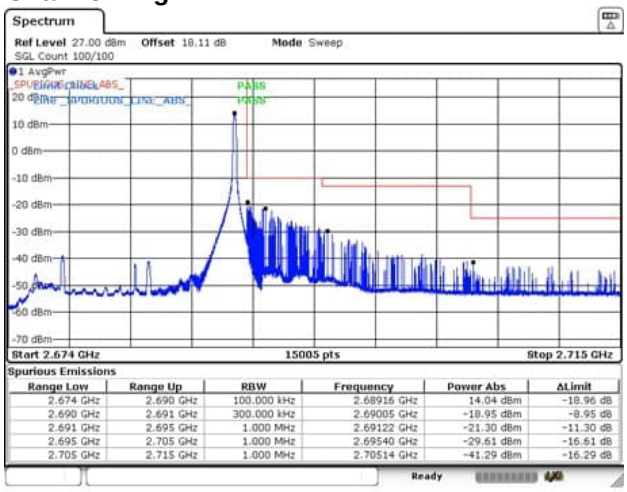


[LTE Band XLI]
(Band Edge)

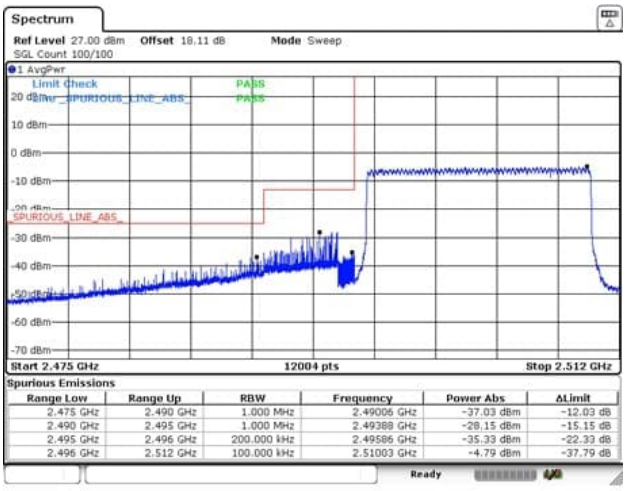
64QAM, BW 15MHz, RB1-0
Channel: Low



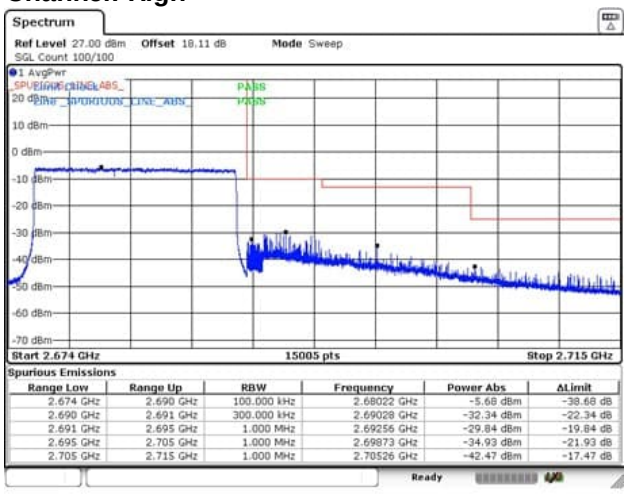
RB1-74
Channel: High



64QAM, BW 15MHz, RB75-0
Channel: Low

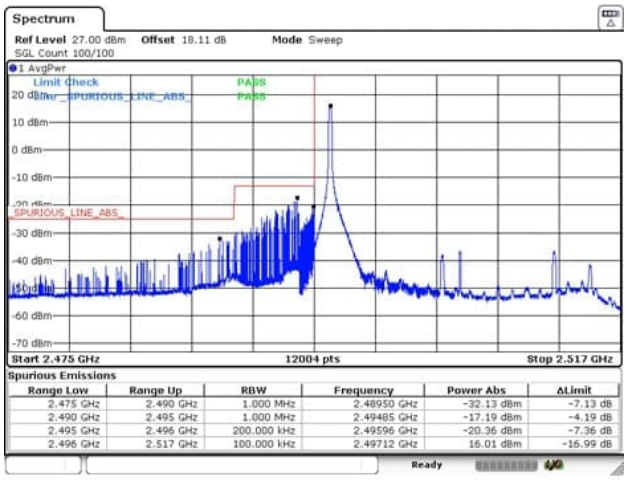


Channel: High

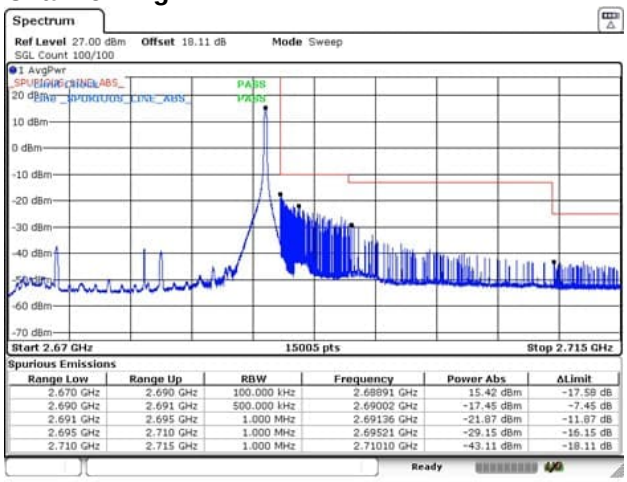


[LTE Band XLI]
(Band Edge)

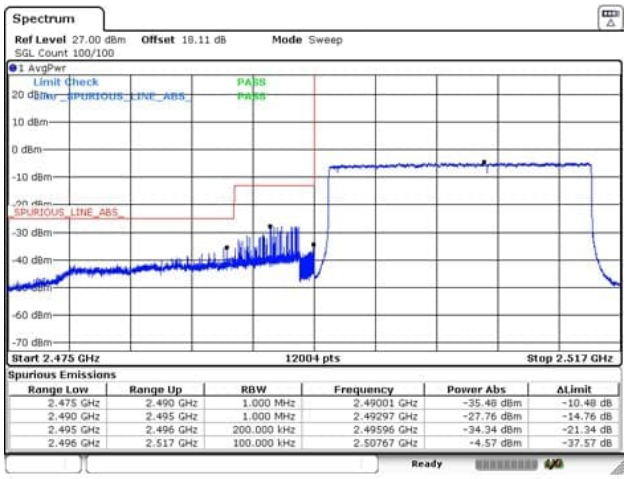
QPSK, BW 20MHz, RB1-0
Channel: Low



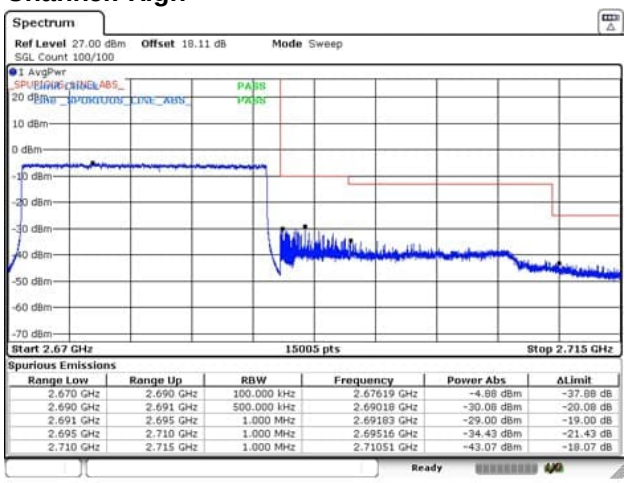
RB1-99
Channel: High



QPSK, BW 20MHz, RB100-0
Channel: Low

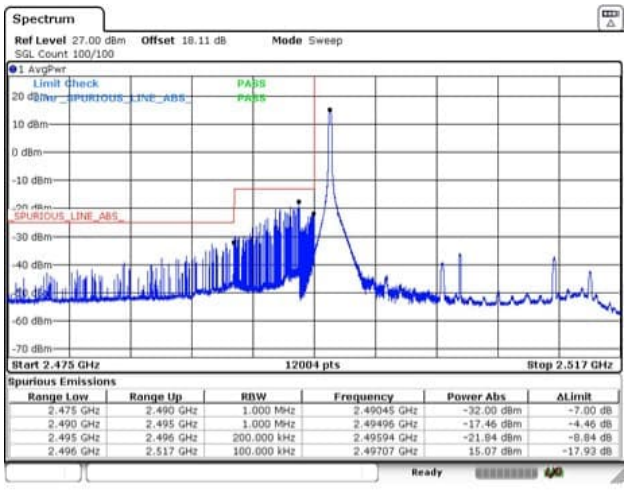


Channel: High

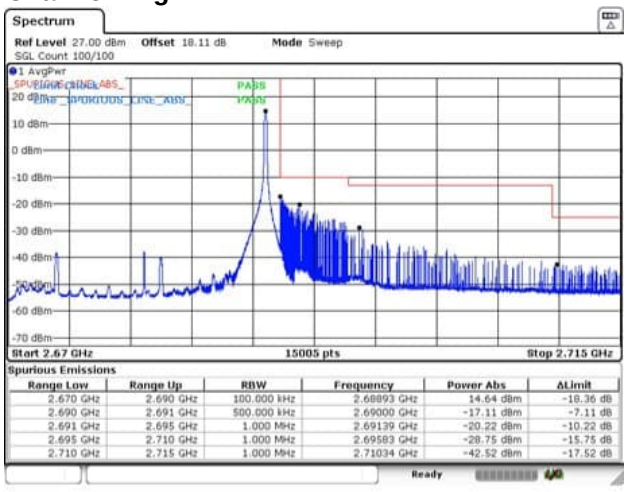


[LTE Band XLI]
(Band Edge)

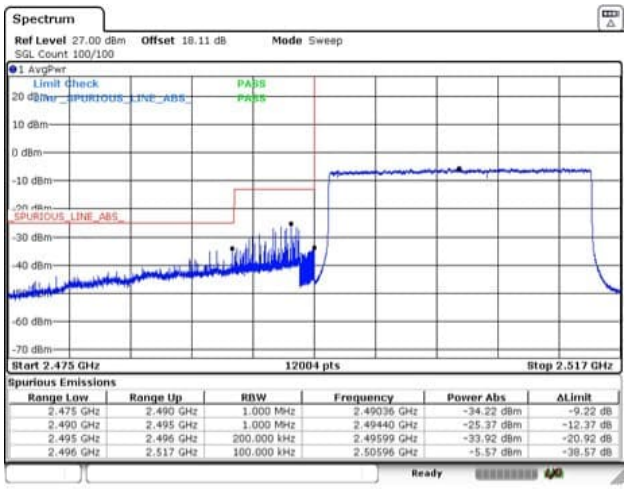
16QAM, BW 20MHz, RB1-0
Channel: Low



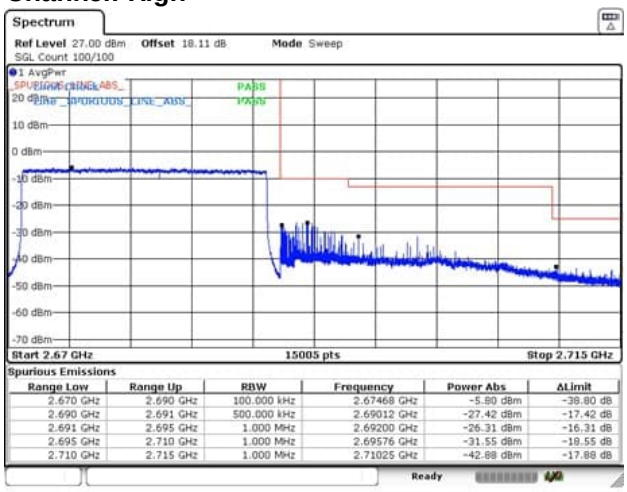
RB1-99
Channel: High



16QAM, BW 20MHz, RB100-0
Channel: Low

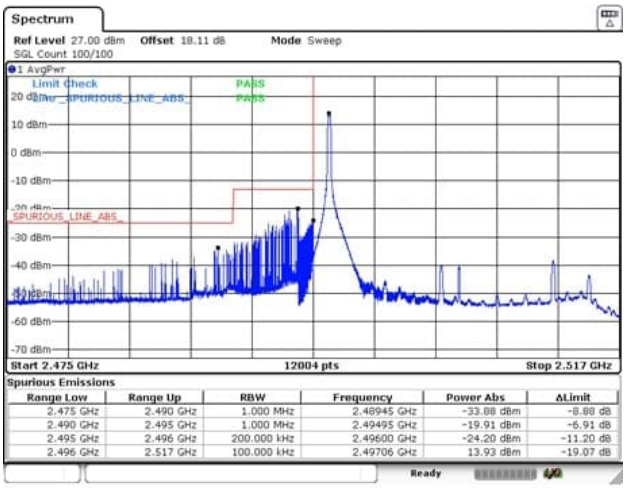


Channel: High

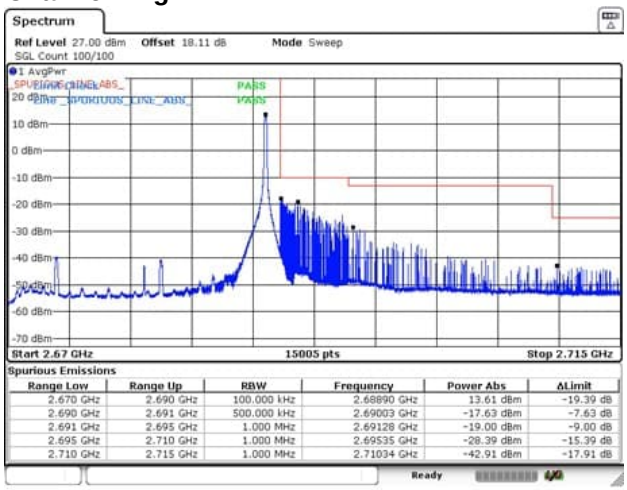


[LTE Band XLI]
(Band Edge)

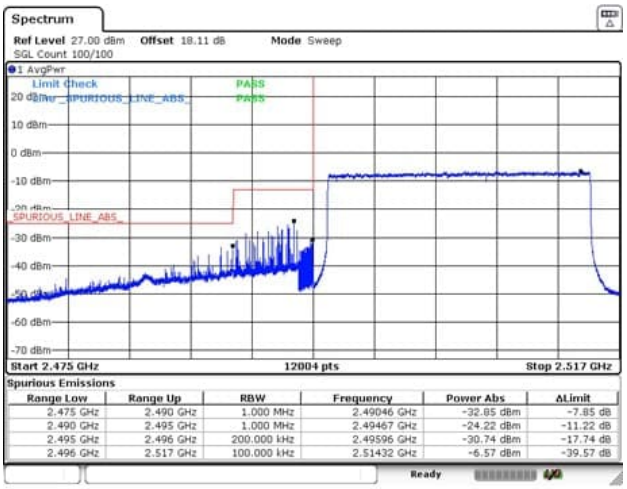
64QAM, BW 20MHz, RB1-0
Channel: Low



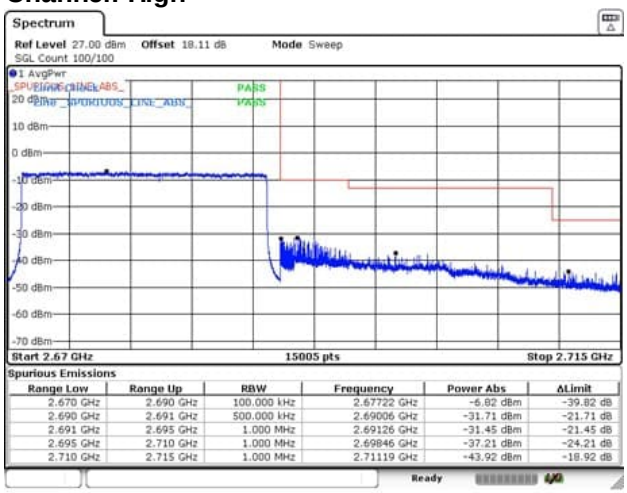
RB1-99
Channel: High



64QAM, BW 20MHz, RB100-0
Channel: Low



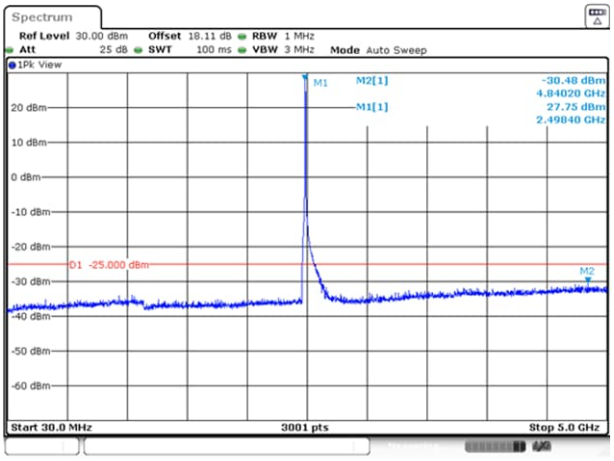
Channel: High



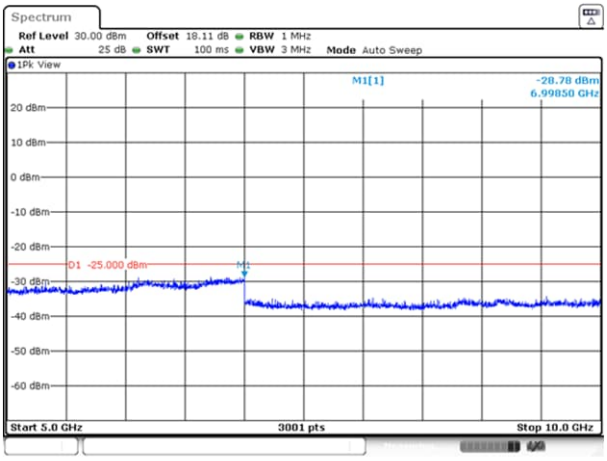
[LTE Band XLI]
(Spurious Emissions)
Note: Conducted spurious test was measured in the worst case of Equivalent Isotropic Radiated Power.

QPSK, BW 5MHz, RB 1-13
Channel: Low

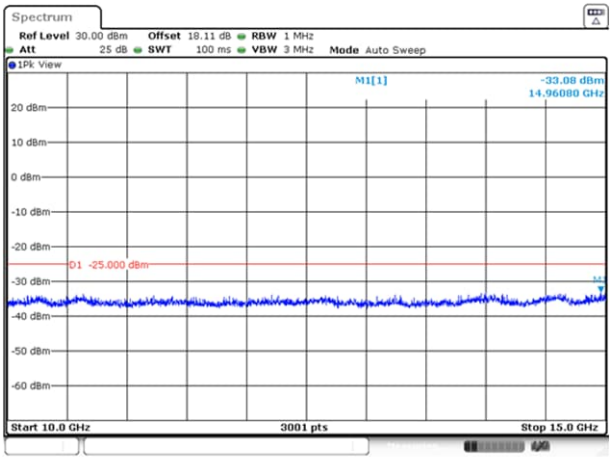
30MHz-5GHz



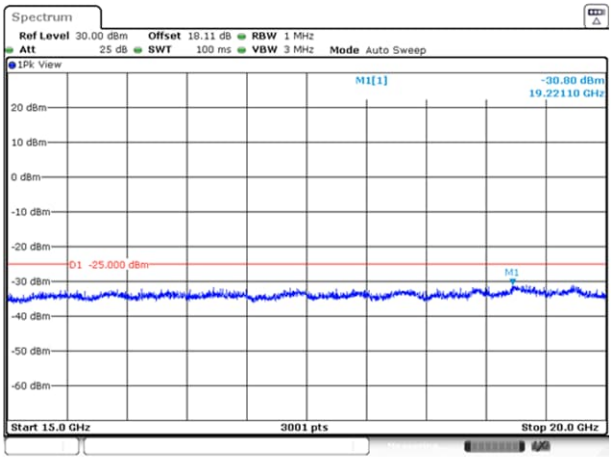
5GHz-10GHz



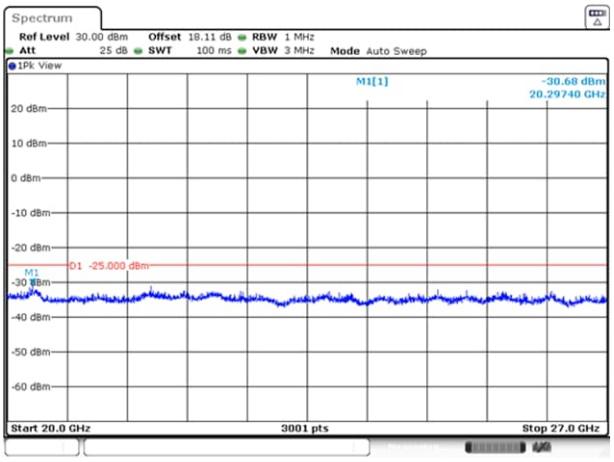
10GHz-15GHz



15GHz-20GHz



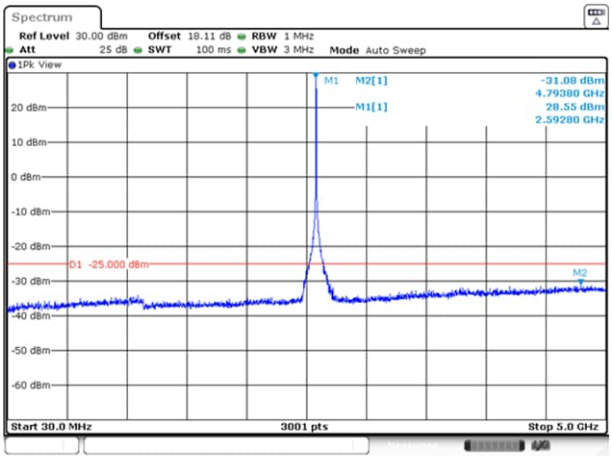
20GHz-27GHz



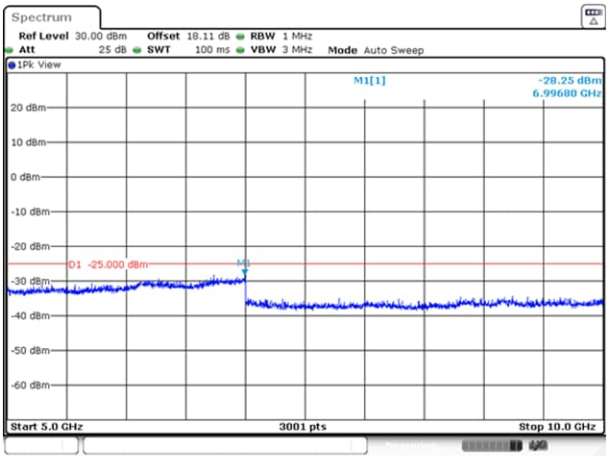
[LTE Band XLI]
(Spurious Emissions)

Channel: Middle

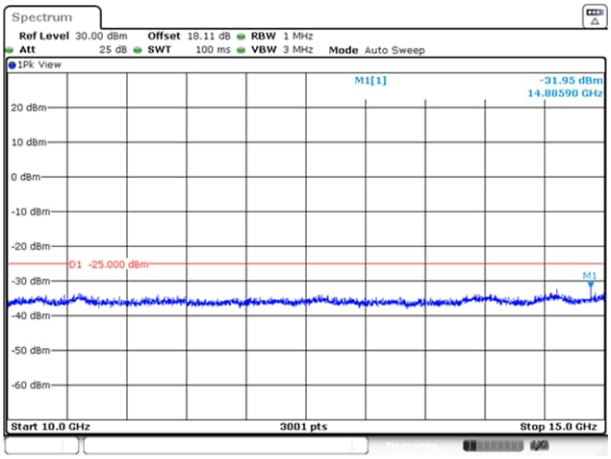
30MHz-5GHz



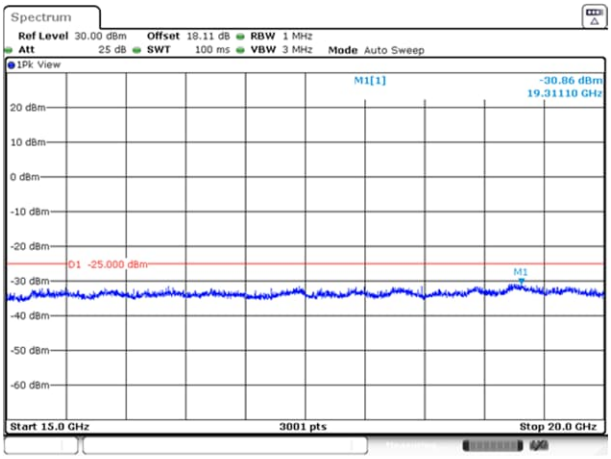
5GHz-10GHz



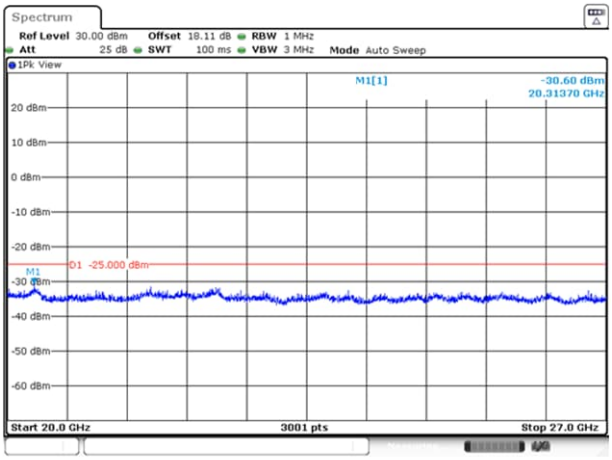
10GHz-15GHz



15GHz-20GHz



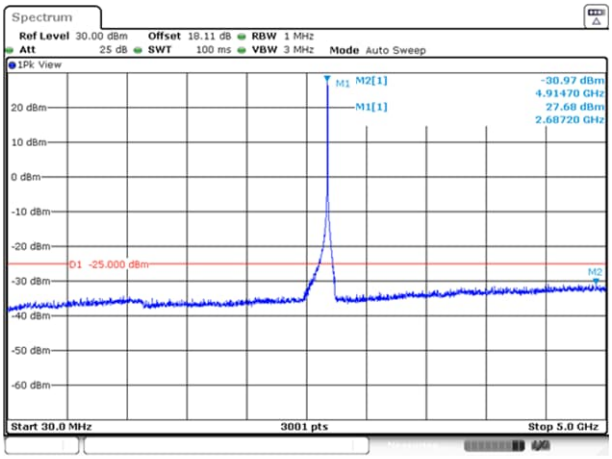
20GHz-27GHz



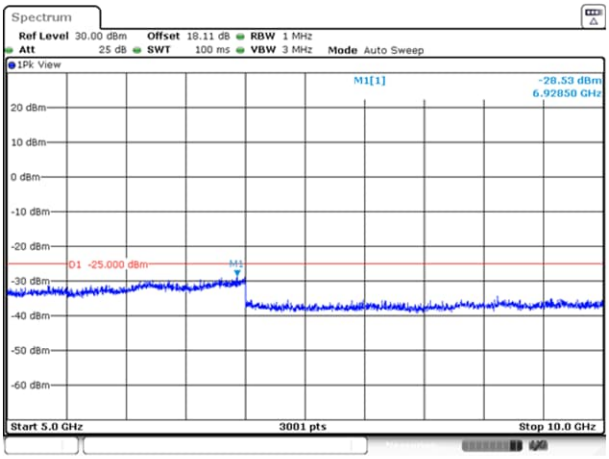
[LTE Band XLI]
(Spurious Emissions)

Channel: High

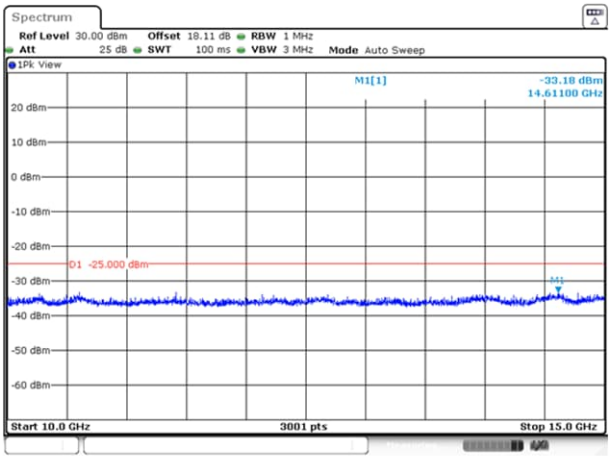
30MHz-5GHz



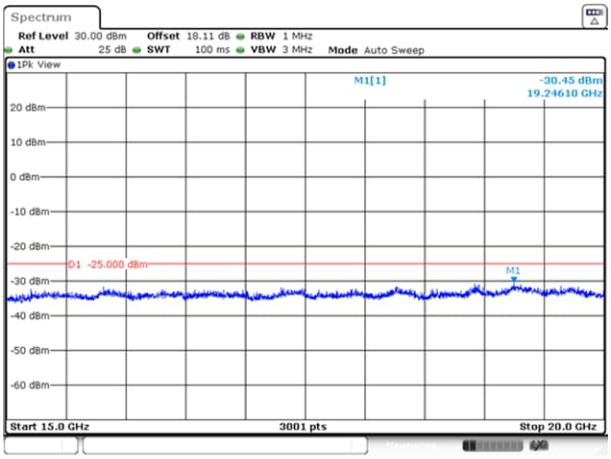
5GHz-10GHz



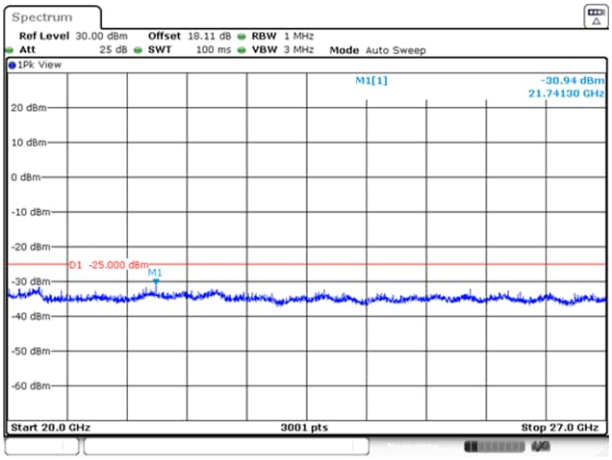
10GHz-15GHz



15GHz-20GHz



20GHz-27GHz



4.5 Radiated Emissions and Harmonic Emissions

4.5.1 Measurement procedure

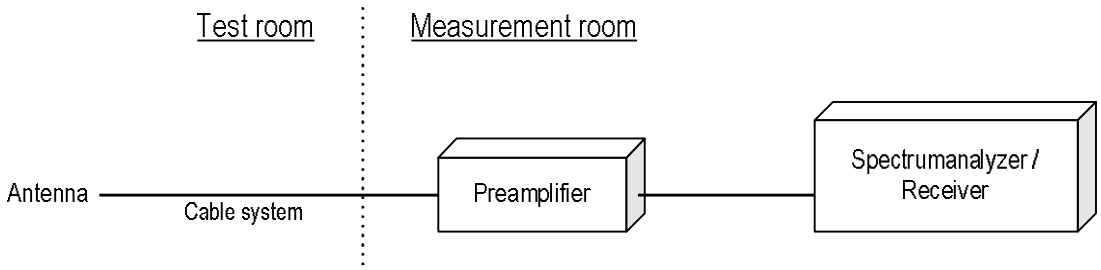
[FCC 27.53, 2.1053]

<Step 1>
The EUT and support equipment are placed on a 1 meter x 1 meter surface, 0.8 meter height (Below 1GHz) or 0.6 meter x 0.6 meter surface, 1.5 meter height (Above 1GHz) styrene foam table. Radiated emission measurements are performed at 3 meter distance with the broadband antenna (Biconical antenna, Log periodic antenna and double ridged guide antenna). The antenna is positioned both the horizontal and vertical planes of polarization and height is varied 1 to 4 meters and stopped at height producing the maximum emission.
The bandwidth of the spectrum analyzer is set to 1 MHz. The turntable is rotated by 360 degrees and stopped at azimuth of producing the maximum emission. The frequency is investigated up to 20GHz.

<Step 2>
The substitution antenna is replaced by the transmitter antenna (EUT).
The frequency of the signal generator is adjusted to the measurement frequency.
Level of the signal generator is adjusted to the level that is obtained from step 1, and record the emission level of signal generator.

The spectrum analyzer is set to;
a) RBW = 100 kHz for below 1GHz and 1MHz for above 1GHz / VBW ≥ 3 x RBW
b) Detector = Peak
c) Trace mode = Max hold
d) Sweep time = auto-couple

- Test configuration



4.5.2 Calculation method

Result (EIRP) = Ant. Input - Cable loss + Antenna Gain
Margin = Limit – Result (EIRP)

Example:
Limit @ 1420 MHz : -13.0 dBm
Ant. Input = -55.6 dBm Cable loss = 1.0dB Ant. Gain = 5.9 dBi
Result = -55.6 - 1.0 + 5.9 = -50.7 dBm
Margin = -13.0 - (-50.7) = 37.7 dB

4.5.3 Limit

-13 dBm or less

4.5.4 Test data

Date	:	25-April-2024			
Temperature	:	22.2 [˚C]			
Humidity	:	40.9 [%]	Test engineer	:	
Test place	:	3m Semi-anechoic chamber			Chiaki Kanno

Date	:	26-April-2024			
Temperature	:	21.8 [˚C]			
Humidity	:	38.8 [%]	Test engineer	:	
Test place	:	3m Semi-anechoic chamber			Tadahiro Seino

Date	:	26~27-April-2024			
Temperature	:	22.8 [˚C]			
Humidity	:	38.0 [%]	Test engineer	:	
Test place	:	3m Semi-anechoic chamber			Chiaki Kanno

[WCDMA Band IV]
Channel: 1312

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3424.8	-59.3	-52.3	1.6	8.1	-45.8	-13.0	32.8

Channel: 1413

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3465.2	-58.8	-51.9	1.6	8.3	-45.2	-13.0	32.2

Channel: 1513

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3505.2	-59.2	-52.1	1.6	8.2	-45.5	-13.0	32.5

[LTE Band IV]
QPSK, BW 1.4MHz
Channel: 19957

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3421.4	-59.3	-52.3	1.6	8.0	-45.8	-13.0	32.8

Channel: 20175

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3465.0	-59.5	-52.6	1.6	8.3	-45.9	-13.0	32.9

Channel: 20393

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3508.6	-59.5	-52.4	1.6	8.2	-45.8	-13.0	32.8

16QAM, BW 1.4MHz
Channel: 19957

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3421.4	-59.5	-52.5	1.6	8.0	-46.0	-13.0	33.0

Channel: 20175

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3465.0	-59.5	-52.6	1.6	8.3	-45.9	-13.0	32.9

Channel: 20393

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3508.6	-59.2	-52.1	1.6	8.2	-45.5	-13.0	32.5

64QAM, BW 1.4MHz
Channel: 19957

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3421.4	-59.7	-52.7	1.6	8.0	-46.2	-13.0	33.2

Channel: 20175

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3465.0	-59.2	-52.3	1.6	8.3	-45.6	-13.0	32.6

Channel: 20393

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3508.6	-59.5	-52.4	1.6	8.2	-45.8	-13.0	32.8

QPSK, BW 3MHz
Channel: 19965

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3423.0	-59.1	-52.1	1.6	8.0	-45.6	-13.0	32.6

Channel: 20175

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3465.0	-59.3	-52.4	1.6	8.3	-45.7	-13.0	32.7

Channel: 20385

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3507.0	-59.3	-52.2	1.6	8.2	-45.6	-13.0	32.6

16QAM, BW 3MHz
Channel: 19965

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3423.0	-59.2	-52.2	1.6	8.0	-45.7	-13.0	32.7

Channel: 20175

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3465.0	-59.7	-52.8	1.6	8.3	-46.1	-13.0	33.1

Channel: 20385

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3507.0	-59.0	-51.9	1.6	8.2	-45.3	-13.0	32.3

64QAM, BW 3MHz
Channel: 19965

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3423.0	-59.7	-52.7	1.6	8.0	-46.2	-13.0	33.2

Channel: 20175

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3465.0	-59.7	-52.8	1.6	8.3	-46.1	-13.0	33.1

Channel: 20385

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3507.0	-59.0	-51.9	1.6	8.2	-45.3	-13.0	32.3

QPSK, BW 5MHz
Channel: 19975

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3425.0	-59.2	-52.2	1.6	8.1	-45.7	-13.0	32.7

Channel: 20175

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3465.0	-59.2	-52.3	1.6	8.3	-45.6	-13.0	32.6

Channel: 20375

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3505.0	-59.2	-52.1	1.6	8.2	-45.5	-13.0	32.5

16QAM, BW 5MHz
Channel: 19975

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3425.0	-59.1	-52.1	1.6	8.1	-45.6	-13.0	32.6

Channel: 20175

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3465.0	-59.4	-52.5	1.6	8.3	-45.8	-13.0	32.8

Channel: 20375

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3505.0	-59.6	-52.5	1.6	8.2	-45.9	-13.0	32.9

64QAM, BW 5MHz
Channel: 19975

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3425.0	-59.3	-52.3	1.6	8.1	-45.8	-13.0	32.8

Channel: 20175

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3465.0	-59.1	-52.2	1.6	8.3	-45.5	-13.0	32.5

Channel: 20375

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3505.0	-59.7	-52.6	1.6	8.2	-46.0	-13.0	33.0

QPSK, BW 10MHz
Channel: 20000

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3430.0	-59.4	-52.4	1.6	8.1	-45.9	-13.0	32.9

Channel: 20175

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3465.0	-59.2	-52.3	1.6	8.3	-45.6	-13.0	32.6

Channel: 20350

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3500.0	-59.8	-52.7	1.6	8.2	-46.1	-13.0	33.1

16QAM, BW 10MHz
Channel: 20000

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3430.0	-59.5	-52.5	1.6	8.1	-46.0	-13.0	33.0

Channel: 20175

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3465.0	-59.5	-52.6	1.6	8.3	-45.9	-13.0	32.9

Channel: 20350

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3500.0	-59.5	-52.4	1.6	8.2	-45.8	-13.0	32.8

64QAM, BW 10MHz
Channel: 20000

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3430.0	-59.8	-52.8	1.6	8.1	-46.3	-13.0	33.3

Channel: 20175

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3465.0	-59.8	-52.9	1.6	8.3	-46.2	-13.0	33.2

Channel: 20350

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3500.0	-59.5	-52.4	1.6	8.2	-45.8	-13.0	32.8

QPSK, BW 15MHz
Channel: 20025

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3435.0	-59.7	-52.7	1.6	8.2	-46.1	-13.0	33.1

Channel: 20175

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3465.0	-59.6	-52.7	1.6	8.3	-46.0	-13.0	33.0

Channel: 20325

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3495.0	-59.8	-52.7	1.6	8.2	-46.1	-13.0	33.1

16QAM, BW 15MHz
Channel: 20025

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3435.0	-59.3	-52.3	1.6	8.2	-45.7	-13.0	32.7

Channel: 20175

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3465.0	-59.5	-52.6	1.6	8.3	-45.9	-13.0	32.9

Channel: 20325

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3495.0	-59.3	-52.2	1.6	8.2	-45.6	-13.0	32.6

64QAM, BW 15MHz
Channel: 20025

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3435.0	-59.7	-52.7	1.6	8.2	-46.1	-13.0	33.1

Channel: 20175

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3465.0	-59.6	-52.7	1.6	8.3	-46.0	-13.0	33.0

Channel: 20325

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3495.0	-59.2	-52.1	1.6	8.2	-45.5	-13.0	32.5

QPSK, BW 20MHz
Channel: 20050

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3440.0	-59.5	-52.5	1.6	8.2	-45.9	-13.0	32.9

Channel: 20175

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3465.0	-59.2	-52.3	1.6	8.3	-45.6	-13.0	32.6

Channel: 20300

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3490.0	-59.4	-52.3	1.6	8.2	-45.7	-13.0	32.7

16QAM, BW 20MHz
Channel: 20050

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3440.0	-59.3	-52.3	1.6	8.2	-45.7	-13.0	32.7

Channel: 20175

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3465.0	-59.1	-52.2	1.6	8.3	-45.5	-13.0	32.5

Channel: 20300

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3490.0	-59.6	-52.5	1.6	8.2	-45.9	-13.0	32.9

64QAM, BW 20MHz
Channel: 20050

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3440.0	-59.4	-52.4	1.6	8.2	-45.8	-13.0	32.8

Channel: 20175

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3465.0	-60.0	-53.1	1.6	8.3	-46.4	-13.0	33.4

Channel: 20300

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	3490.0	-59.5	-52.4	1.6	8.2	-45.8	-13.0	32.8

[LTE Band XII]
QPSK, BW 1.4MHz
Channel: 23017

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1399.4	-59.0	-53.8	1.0	4.2	-50.6	-13.0	37.6

Channel: 23095

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1415.0	-59.2	-54.2	1.0	4.5	-50.7	-13.0	37.7

Channel: 23173

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1430.6	-59.1	-54.9	1.0	4.8	-51.1	-13.0	38.1

16QAM, BW 1.4MHz
Channel: 23017

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1399.4	-59.4	-54.2	1.0	4.2	-51.0	-13.0	38.0

Channel: 23095

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1415.0	-59.3	-54.3	1.0	4.5	-50.8	-13.0	37.8

Channel: 23173

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1430.6	-59.0	-54.8	1.0	4.8	-51.0	-13.0	38.0

64QAM, BW 1.4MHz
Channel: 23017

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1399.4	-59.2	-54.0	1.0	4.2	-50.8	-13.0	37.8

Channel: 23095

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1415.0	-59.2	-54.2	1.0	4.5	-50.7	-13.0	37.7

Channel: 23173

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1430.6	-58.9	-54.7	1.0	4.8	-50.9	-13.0	37.9

QPSK, BW 3MHz
Channel: 23025

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1401.0	-58.3	-53.1	1.0	4.2	-49.9	-13.0	36.9

Channel: 23095

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1415.0	-58.3	-53.3	1.0	4.5	-49.8	-13.0	36.8

Channel: 23165

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1429.0	-58.8	-56.3	1.0	4.7	-52.6	-13.0	39.6

16QAM, BW 3MHz
Channel: 23025

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1401.0	-58.9	-53.7	1.0	4.2	-50.5	-13.0	37.5

Channel: 23095

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1415.0	-59.0	-54.0	1.0	4.5	-50.5	-13.0	37.5

Channel: 23165

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1429.0	-59.4	-55.2	1.0	4.7	-51.5	-13.0	38.5

64QAM, BW 3MHz
Channel: 23025

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1401.0	-59.0	-53.8	1.0	4.2	-50.6	-13.0	37.6

Channel: 23095

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1415.0	-58.4	-53.4	1.0	4.5	-49.9	-13.0	36.9

Channel: 23165

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1429.0	-59.4	-55.2	1.0	4.7	-51.5	-13.0	38.5

QPSK, BW 5MHz
Channel: 23035

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1403.0	-58.8	-53.6	1.0	4.2	-50.4	-13.0	37.4

Channel: 23095

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1415.0	-59.0	-54.0	1.0	4.5	-50.5	-13.0	37.5

Channel: 23155

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1427.0	-58.7	-54.5	1.0	4.7	-50.8	-13.0	37.8

16QAM, BW 5MHz
Channel: 23035

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1403.0	-59.0	-53.8	1.0	4.2	-50.6	-13.0	37.6

Channel: 23095

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1415.0	-59.2	-54.2	1.0	4.5	-50.7	-13.0	37.7

Channel: 23155

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1427.0	-58.5	-54.3	1.0	4.7	-50.6	-13.0	37.6

64QAM, BW 5MHz
Channel: 23035

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1403.0	-59.4	-54.2	1.0	4.2	-51.0	-13.0	38.0

Channel: 23095

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1415.0	-59.0	-54.0	1.0	4.5	-50.5	-13.0	37.5

Channel: 23155

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1427.0	-58.8	-54.6	1.0	4.7	-50.9	-13.0	37.9

QPSK, BW 10MHz
Channel: 23060

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1408.0	-59.0	-53.8	1.0	4.3	-50.5	-13.0	37.5

Channel: 23095

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1415.0	-58.9	-53.9	1.0	4.5	-50.4	-13.0	37.4

Channel: 23130

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1422.0	-59.2	-55.0	1.0	4.6	-51.4	-13.0	38.4

16QAM, BW 10MHz
Channel: 23060

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1408.0	-59.3	-54.1	1.0	4.3	-50.8	-13.0	37.8

Channel: 23095

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1415.0	-58.9	-53.9	1.0	4.5	-50.4	-13.0	37.4

Channel: 23130

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1422.0	-59.2	-55.0	1.0	4.6	-51.4	-13.0	38.4

64QAM, BW 10MHz
Channel: 23060

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1408.0	-59.3	-54.1	1.0	4.3	-50.8	-13.0	37.8

Channel: 23095

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1415.0	-59.0	-54.0	1.0	4.5	-50.5	-13.0	37.5

Channel: 23130

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	1422.0	-59.0	-54.8	1.0	4.6	-51.2	-13.0	38.2

[LTE Band XL I]
QPSK, BW 5MHz
Channel: 39675

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	4997.0	-59.4	-51.7	1.9	10.1	-43.6	-25.0	18.6

Channel: 40620

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5186.0	-59.6	-51.8	1.9	10.3	-43.4	-25.0	18.4

Channel: 41565

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5375.0	-59.8	-52.0	2.0	10.5	-43.5	-25.0	18.5

16QAM, BW 5MHz
Channel: 39675

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	4997.0	-60.0	-52.3	1.9	10.1	-44.2	-25.0	19.2

Channel: 40620

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5186.0	-59.7	-51.9	1.9	10.3	-43.5	-25.0	18.5

Channel: 41565

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5375.0	-59.3	-51.5	2.0	10.5	-43.0	-25.0	18.0

64QAM, BW 5MHz
Channel: 39675

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	4997.0	-59.7	-52.0	1.9	10.1	-43.9	-25.0	18.9

Channel: 40620

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5186.0	-59.7	-51.9	1.9	10.3	-43.5	-25.0	18.5

Channel: 41565

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5375.0	-60.0	-52.2	2.0	10.5	-43.7	-25.0	18.7

QPSK, BW 10MHz
Channel: 39700

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5002.0	-60.2	-52.5	1.9	10.0	-44.4	-25.0	19.4

Channel: 40620

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5186.0	-59.6	-51.8	1.9	10.3	-43.4	-25.0	18.4

Channel: 41540

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5370.0	-60.0	-52.2	2.0	10.5	-43.7	-25.0	18.7

16QAM, BW 10MHz
Channel: 39700

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5002.0	-59.8	-52.1	1.9	10.0	-44.0	-25.0	19.0

Channel: 40620

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5186.0	-59.7	-51.9	1.9	10.3	-43.5	-25.0	18.5

Channel: 41540

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5370.0	-59.9	-52.1	2.0	10.5	-43.6	-25.0	18.6

64QAM, BW 10MHz
Channel: 39700

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5002.0	-59.8	-52.1	1.9	10.0	-44.0	-25.0	19.0

Channel: 40620

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5186.0	-60.0	-52.2	1.9	10.3	-43.8	-25.0	18.8

Channel: 41540

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5370.0	-59.5	-51.7	2.0	10.5	-43.2	-25.0	18.2

QPSK, BW 15MHz
Channel: 39725

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5007.0	-59.8	-52.1	1.9	10.1	-43.9	-25.0	18.9

Channel: 40620

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5186.0	-60.0	-52.2	1.9	10.3	-43.8	-25.0	18.8

Channel: 41515

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5365.0	-59.6	-51.8	2.0	10.5	-43.3	-25.0	18.3

16QAM, BW 15MHz
Channel: 39725

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5007.0	-59.8	-52.1	1.9	10.1	-43.9	-25.0	18.9

Channel: 40620

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5186.0	-59.9	-52.1	1.9	10.3	-43.7	-25.0	18.7

Channel: 41515

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5365.0	-59.8	-52.0	2.0	10.5	-43.5	-25.0	18.5

64QAM, BW 15MHz
Channel: 39725

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5007.0	-59.9	-52.2	1.9	10.1	-44.0	-25.0	19.0

Channel: 40620

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5186.0	-59.8	-52.0	1.9	10.3	-43.6	-25.0	18.6

Channel: 41515

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5365.0	-59.6	-51.8	2.0	10.5	-43.3	-25.0	18.3

QPSK, BW 20MHz
Channel: 39750

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5012.0	-59.5	-51.8	1.9	10.1	-43.6	-25.0	18.6

Channel: 40620

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5186.0	-60.0	-52.2	1.9	10.3	-43.8	-25.0	18.8

Channel: 41490

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5360.0	-59.7	-51.9	2.0	10.5	-43.4	-25.0	18.4

16QAM, BW 20MHz
Channel: 39750

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5012.0	-59.5	-51.8	1.9	10.1	-43.6	-25.0	18.6

Channel: 40620

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5186.0	-60.1	-52.3	1.9	10.3	-43.9	-25.0	18.9

Channel: 41490

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5360.0	-59.8	-52.0	2.0	10.5	-43.5	-25.0	18.5

64QAM, BW 20MHz
Channel: 39750

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5012.0	-59.7	-52.0	1.9	10.1	-43.8	-25.0	18.8

Channel: 40620

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5186.0	-59.9	-52.1	1.9	10.3	-43.7	-25.0	18.7

Channel: 41490

H/V	Frequency [MHz]	S.A Reading [dBm]	Ant. Input [dBm]	Cable loss [dB]	Ant.Gain [dBi]	Result [dBm]	Limit [dBm]	Margin [dB]
H	5360.0	-59.6	-51.8	2.0	10.5	-43.3	-25.0	18.3

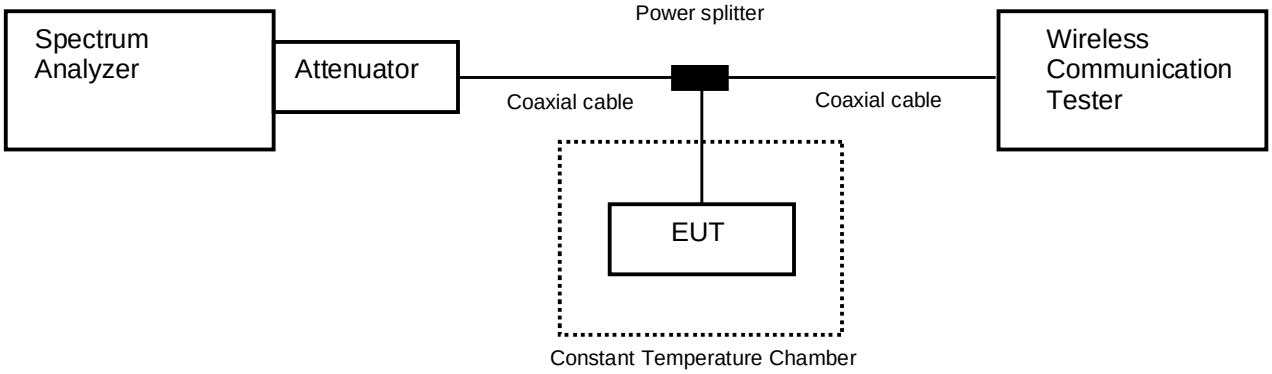
4.6 Frequency Stability

4.6.1 Measurement procedure

[FCC 27.54, 2.1055]

The EUT was placed of an inside of an constant temperature chamber as the temperature in the chamber was varied between -30˚C and +50˚C. The temperature was incremented by 10˚C intervals and the unit was allowed to stabilize at each measurement. The frequency drift was measured with the normal Temperature and voltage tolerance and it is presented as the ppm unit.

- Test configuration



4.6.2 Limit

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

4.6.3 Measurement result

Date	:	25-April-2024		
Temperature	:	20.7 [˚C]		
Humidity	:	48.3 [%]	Test engineer	:
Test place	:	Shielded room No.4		Kazunori Saito

Date	:	26-April-2024		
Temperature	:	18.6 [˚C]		
Humidity	:	45.4 [%]	Test engineer	:
Test place	:	Shielded room No.4		Kazunori Saito

[WCDMA Band IV]
Channel: 1413

Power Supply [V]	Temperature [ºC]	Measurements Frequency [Hz]	Frequency Tolerance [ppm]	Result
3.87	25(Ref.)	1,732,599,992	0.00000	Pass
	50	1,732,599,996	0.00254	Pass
	40	1,732,600,016	0.01400	Pass
	30	1,732,599,991	-0.00057	Pass
	20	1,732,600,010	0.01033	Pass
	10	1,732,599,994	0.00101	Pass
	0	1,732,599,997	0.00259	Pass
	-10	1,732,600,006	0.00832	Pass
	-20	1,732,600,007	0.00877	Pass
	-30	1,732,600,008	0.00940	Pass
3.48	25	1,732,599,991	-0.00069	Pass
4.26	25	1,732,599,988	-0.00246	Pass

[LTE Band IV]
QPSK, BW 10MHz
Channel: 20175

Power Supply [V]	Temperature [ºC]	Measurements Frequency [Hz]	Frequency Tolerance [ppm]	Result
3.87	25(Ref.)	1,732,500,015	0.00000	Pass
	50	1,732,500,013	-0.00129	Pass
	40	1,732,499,991	-0.01397	Pass
	30	1,732,499,988	-0.01576	Pass
	20	1,732,499,988	-0.01598	Pass
	10	1,732,499,978	-0.02128	Pass
	0	1,732,500,025	0.00589	Pass
	-10	1,732,500,028	0.00729	Pass
	-20	1,732,500,026	0.00646	Pass
	-30	1,732,499,969	-0.02674	Pass
3.48	25	1,732,499,990	-0.01469	Pass
4.26	25	1,732,499,991	-0.01383	Pass

Calculation;
Frequency Tolerance (ppm) = Measurements Frequency (Hz) – Reference Frequency (Hz) / Reference Frequency (Hz) x 1000000

[LTE Band XII]
QPSK, BW 10MHz
Channel: 23095

Power Supply [V]	Temperature [ºC]	Measurements Frequency [Hz]	Frequency Tolerance [ppm]	Result
3.87	25(Ref.)	707,499,992	0.00000	Pass
	50	707,499,991	-0.00117	Pass
	40	707,499,991	-0.00030	Pass
	30	707,499,993	0.00188	Pass
	20	707,499,995	0.00435	Pass
	10	707,499,991	-0.00164	Pass
	0	707,499,990	-0.00239	Pass
	-10	707,499,987	-0.00654	Pass
	-20	707,499,986	-0.00851	Pass
	-30	707,499,985	-0.00950	Pass
3.48	25	707,499,994	0.00319	Pass
4.26	25	707,499,995	0.00417	Pass

Calculation;
Frequency Tolerance (ppm) = Measurements Frequency (Hz) – Reference Frequency (Hz) / Reference Frequency (Hz) x 1000000

[LTE Band XL I]
QPSK, BW 10MHz
Channel: 40620

Power Supply [V]	Temperature [ºC]	Measurements Frequency [Hz]	Frequency Tolerance [ppm]	Result
3.87	25(Ref.)	2,592,999,983	0.00000	Pass
	50	2,592,999,982	-0.00040	Pass
	40	2,592,999,984	0.00037	Pass
	30	2,592,999,978	-0.00206	Pass
	20	2,592,999,972	-0.00409	Pass
	10	2,592,999,977	-0.00241	Pass
	0	2,592,999,951	-0.01228	Pass
	-10	2,593,000,026	0.01674	Pass
	-20	2,593,000,028	0.01752	Pass
	-30	2,593,000,051	0.02614	Pass
3.48	25	2,592,999,987	0.00145	Pass
4.26	25	2,592,999,985	0.00094	Pass

Calculation;
Frequency Tolerance (ppm) = Measurements Frequency (Hz) – Reference Frequency (Hz) / Reference Frequency (Hz) x 1000000

5 Measurement Uncertainty

Expanded uncertainties stated are calculated with a coverage Factor k=2.
Please note that these results are not taken into account when measurement uncertainty considerations contained in ETSI TR 100 028 Parts 1 and 2 determining compliance or non-compliance with test result.

Test item	Measurement uncertainty
Conducted emission, AMN (9 kHz – 150 kHz)	±3.7 dB
Conducted emission, AMN (150 kHz – 30 MHz)	±3.3 dB
Radiated emission (9kHz – 30 MHz)	±3.8 dB
Radiated emission (30 MHz – 1000 MHz)	±5.4 dB
Radiated emission (1 GHz – 6 GHz)	±4.6 dB
Radiated emission (6 GHz – 18 GHz)	±4.7 dB
Radiated emission (18 GHz – 40 GHz)	±6.3 dB
Radio Frequency	$\pm 1.3 * 10^{-8}$
RF power, conducted	±0.7 dB
Adjacent channel power	±1.5 dB
Temperature	±0.6 °C
Humidity	±1.2 %
Voltage (DC)	±0.4 %
Voltage (AC, <10kHz)	±0.2 %

Judge	Measured value and standard limit value	
PASS	Case1	Standard limit value +Uncertainty -Uncertainty Measured value Even if it takes uncertainty into consideration, a standard limit value is fulfilled.
	Case2	Although measured value is in a standard limit value, a limit value won't be fulfilled if uncertainty is taken into consideration.
FAIL	Case3	Although measured value exceeds a standard limit value, a limit value will be fulfilled if uncertainty is taken into consideration.
	Case4	Even if it takes uncertainty into consideration, a standard limit value isn't fulfilled.

6 Laboratory Information

Testing was performed and the report was issued at:

TÜV SÜD Japan Ltd. Yonezawa Testing Center

Address: 5-4149-7 Hachimanpara, Yonezawa-shi, Yamagata, 992-1128 Japan
Phone: +81-238-28-2881

Accreditation and Registration
A2LA
Certificate #3686.03

VLAC
Accreditation No.: VLAC-013

BSMI
Laboratory Code: SL2-IN-E-6018, SL2-A1-E-6018

Innovation, Science and Economic Development Canada
ISED#: 4224A

VCCI Council
Registration number: A-0166

Appendix A. Test Equipment

Antenna port conducted test

Equipment	Company	Model No.	Serial No.	Cal. Due	Cal. Date
Spectrum analyzer	Agilent Technologies	E4440A	US44302655	31-Oct-2024	06-Oct-2023
Spectrum analyzer	ROHDE&SCHWARZ	FSV40	101732	31-May-2025	17-May-2024
Attenuator	Weinschel	56-10	J4993	31-Dec-2024	19-Dec-2023
Microwave cable	Junkosha Inc.	MWX221/1m	N/A(S400)	31-Mar-2025	7-Mar-2024
Power divider	Keysight	11636B	MY51359874	30-Sep-2024	20-Sep-2023
Wideband Radio Frequency Tester	ROHDE&SCHWARZ	CMW500	126079	31-Aug-2024	31-Aug-2023
Wideband Radio Frequency Tester	ROHDE&SCHWARZ	CMW500	116338	30-Sep-2024	21-Sep-2024
Temperature and humidity chamber	ESPEC	PL1KP	14007261	30-Jun-2024	30-Jun-2023

Radiated emission

Equipment	Company	Model No.	Serial No.	Cal. Due	Cal. Date
EMI Receiver	ROHDE&SCHWARZ	ESW44	103171	31-Oct-2024	19-Oct-2023
Preamplifier	SONOMA	310	372170	30-Sep-2024	21-Sep-2023
Biconical antenna	Schwarzbeck	VHBB9124/BBA9106	1344	30-Jun-2024	19-Jun-2023
Log periodic antenna	Schwarzbeck	VUSLP9111B	346	31-Dec-2024	22-Dec-2023
Attenuator	TOYO Connector	NA-PJ-6/6dB	N/A(S541)	30-Sep-2024	21-Sep-2023
Attenuator	TAMAGAWA.ELEC	CFA-10/3dB	N/A(S503)	31-Jul-2024	20-Jul-2023
Preamplifier	TSJ	MLA-100M18-B02-40	1929118	31-Dec-2024	19-Dec-2023
Attenuator	AEROFLEX	26A-10	081217-08	31-Dec-2024	19-Dec-2023
Double ridged guide antenna	ETS LINDGREN	3117	00052315	30-Jun-2024	22-Jun-2023
Attenuator	HUBER+SUHNER	6803.17.B	N/A(2340)	31-Dec-2024	20-Dec-2023
Double ridged guide antenna	A.H.Systems Inc.	SAS-574	469	31-Aug-2024	8-Aug-2023
Preamplifier	TSJ	MLA-1840-B03-35	1240332	31-Aug-2024	8-Aug-2023
Notch Filter	Micro-Tronics	BRM50706	003	31-Jul-2024	19-Jul-2023
Band rejection filter	Micro-Tronics	BRC50719	014	31-Dec-2024	18-Dec-2023
Notch Filter	Micro-Tronics	BRM50709	G024	28-Feb-2025	21-Feb-2024
Signal generator	ROHDE&SCHWARZ	SMB100A	177525	31-Dec-2024	20-Dec-2023
RF power amplifier	R&K	CGA020M602-2633R	B40240	30-Jun-2024	21-Jun-2023
Attenuator	Qualwave Inc.	QFA2620-26.5-20-S	22295089	30-Sep-2024	20-Sep-2023
Microwave cable	HUBER+SUHNER	SUCOFELX102/2m	31648	31-Mar-2025	7-Mar-2024
Dipole antenna	Schwarzbeck	VHAP	1021	31-Jul-2024	06-Jul-2023
Dipole antenna	Schwarzbeck	UHAP	993	31-Jul-2024	06-Jul-2023
Double ridged guide antenna	ETS LINDGREN	3117	00218815	31-Dec-2024	7-Dec-2023
Wideband Radio Frequency Tester	ROHDE&SCHWARZ	CMW500	126079	31-Aug-2024	31-Aug-2023
Wideband Radio Frequency Tester	ROHDE&SCHWARZ	CMW500	116338	30-Sep-2024	21-Sep-2024
Microwave cable	HUBER+SUHNER	SUCOFLEX104/9m	800690/4	31-Oct-2024	20-Oct-2023
		SUCOFLEX104/1m	my24610/4	31-Dec-2024	20-Dec-2023
		SUCOFLEX104/9m	2001099/4	31-Dec-2024	20-Dec-2023
		SUCOFLEX104/1m	MY32976/4	31-Dec-2024	20-Dec-2023
		SUCOFLEX104/2m	SN MY28404/4	31-Dec-2024	20-Dec-2023
		SUCOFLEX104/7m	41625/6	31-Dec-2024	21-Dec-2023
Software	TOYO Technica	ES10/RE-AJ	Ver.2023.01.001	N/A	N/A
Absorber	RIKEN	PFP30	N/A	N/A	N/A
3m Semi an-echoic Chamber	TOKIN	N/A	N/A(9002-NSA)	31-May-2024	28-May-2023
3m Semi an-echoic Chamber	TOKIN	N/A	N/A(9002-SVSWR)	31-May-2024	29-May-2023

*: The calibrations of the above equipment are traceable to NIST or equivalent standards of the reference organizations.