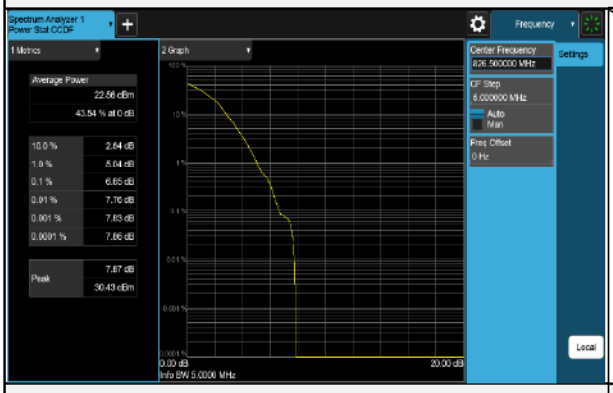
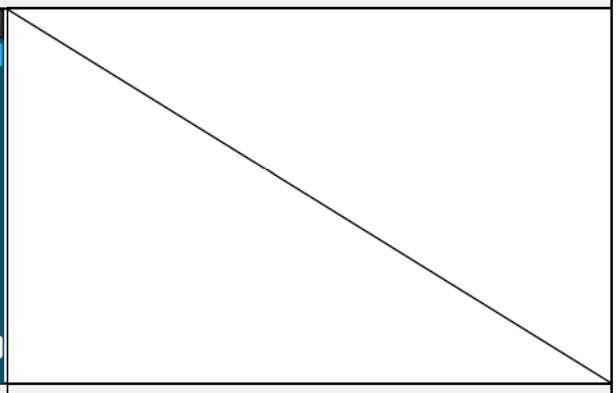
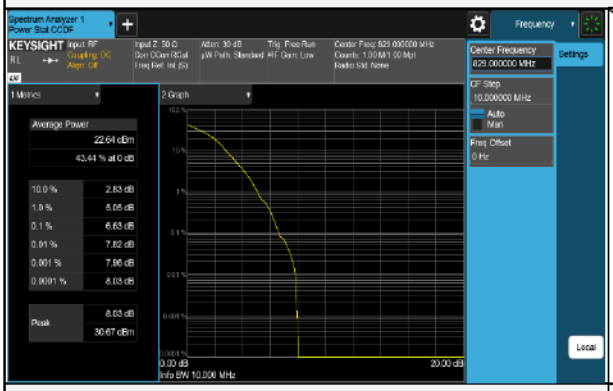
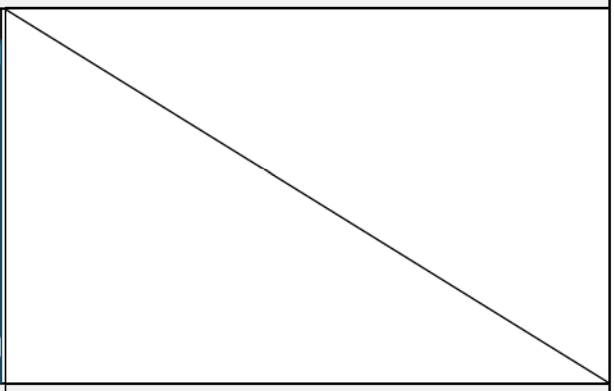
LTE Band 5 (Channel Bandwidth 5MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	20425	826.5	5.35	13	Pass
QPSK	20525	836.5	5.12	13	Pass
QPSK	20625	846.5	5.17	13	Pass
16QAM	20425	826.5	6.65	13	Pass
16QAM	20525	836.5	6.28	13	Pass
16QAM	20625	846.5	6.31	13	Pass
64QAM	20425	826.5	6.48	13	Pass
64QAM	20525	836.5	6.31	13	Pass
64QAM	20625	846.5	6.31	13	Pass

Spectrum Plot of Worst Value	
	
16QAM CH 20425 (826.5MHz)	

LTE Band 5 (Channel Bandwidth 10MHz)

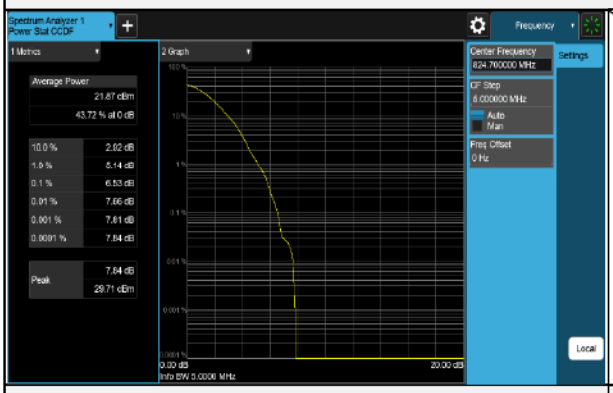
Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	20450	829	5.30	13	Pass
QPSK	20525	836.5	5.17	13	Pass
QPSK	20600	844	5.30	13	Pass
16QAM	20450	829	6.63	13	Pass
16QAM	20525	836.5	6.26	13	Pass
16QAM	20600	844	6.44	13	Pass
64QAM	20450	829	6.43	13	Pass
64QAM	20525	836.5	6.31	13	Pass
64QAM	20600	844	6.37	13	Pass

Spectrum Plot of Worst Value	
	
16QAM CH 20450 (829MHz)	

LTE Band 26 (Channel Bandwidth 1.4MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	26797	824.7	5.61	13	Pass
QPSK	26915	836.5	5.14	13	Pass
QPSK	27033	848.3	4.99	13	Pass
16QAM	26797	824.7	6.41	13	Pass
16QAM	26915	836.5	6.15	13	Pass
16QAM	27033	848.3	6.16	13	Pass
64QAM	26797	824.7	6.53	13	Pass
64QAM	26915	836.5	6.41	13	Pass
64QAM	27033	848.3	6.34	13	Pass

Spectrum Plot of Worst Value

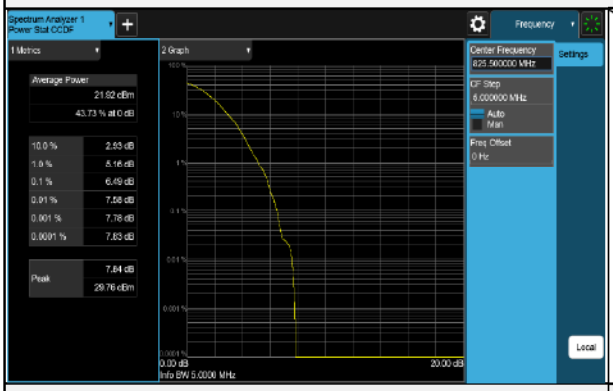


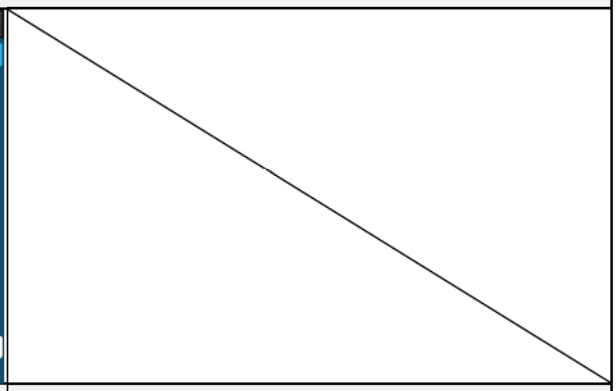
64QAM CH 26797 (824.7MHz)

LTE Band 26 (Channel Bandwidth 3MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	26805	825.5	5.32	13	Pass
QPSK	26915	836.5	5.05	13	Pass
QPSK	27025	847.5	4.89	13	Pass
16QAM	26805	825.5	6.42	13	Pass
16QAM	26915	836.5	6.14	13	Pass
16QAM	27025	847.5	5.90	13	Pass
64QAM	26805	825.5	6.49	13	Pass
64QAM	26915	836.5	6.29	13	Pass
64QAM	27025	847.5	6.24	13	Pass

Spectrum Plot of Worst Value



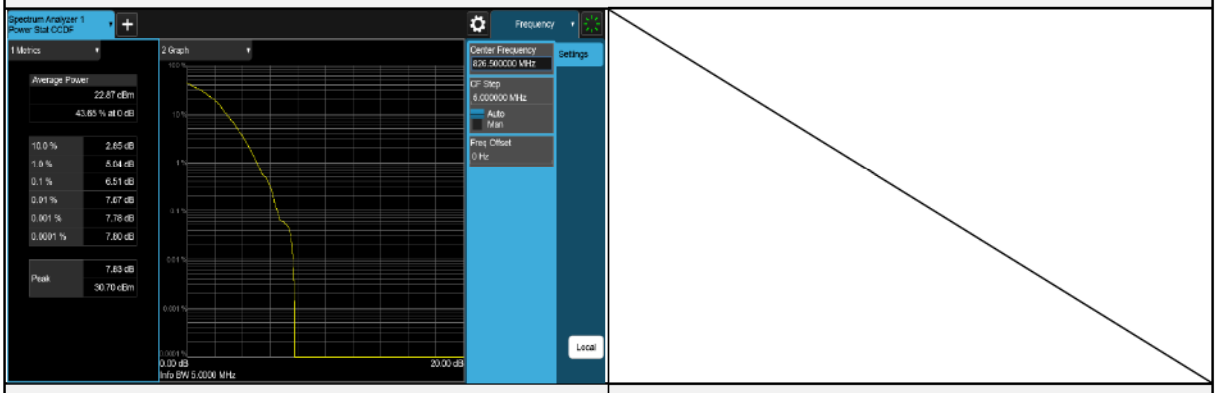


64QAM CH 26805 (825.5MHz)

LTE Band 26 (Channel Bandwidth 5MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	26815	826.5	5.30	13	Pass
QPSK	26915	836.5	5.05	13	Pass
QPSK	27015	846.5	5.13	13	Pass
16QAM	26815	826.5	6.51	13	Pass
16QAM	26915	836.5	6.11	13	Pass
16QAM	27015	846.5	6.28	13	Pass
64QAM	26815	826.5	6.45	13	Pass
64QAM	26915	836.5	6.23	13	Pass
64QAM	27015	846.5	6.37	13	Pass

Spectrum Plot of Worst Value

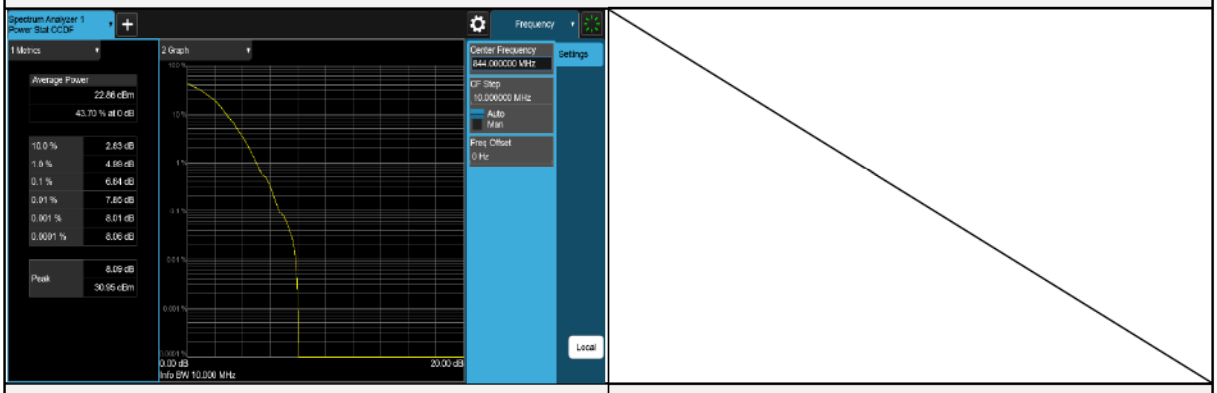


16QAM CH 26815 (826.5MHz)

LTE Band 26 (Channel Bandwidth 10MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	26840	829	5.24	13	Pass
QPSK	26915	836.5	5.08	13	Pass
QPSK	26990	844	5.32	13	Pass
16QAM	26840	829	6.43	13	Pass
16QAM	26915	836.5	6.37	13	Pass
16QAM	26990	844	6.64	13	Pass
64QAM	26840	829	6.52	13	Pass
64QAM	26915	836.5	6.30	13	Pass
64QAM	26990	844	6.47	13	Pass

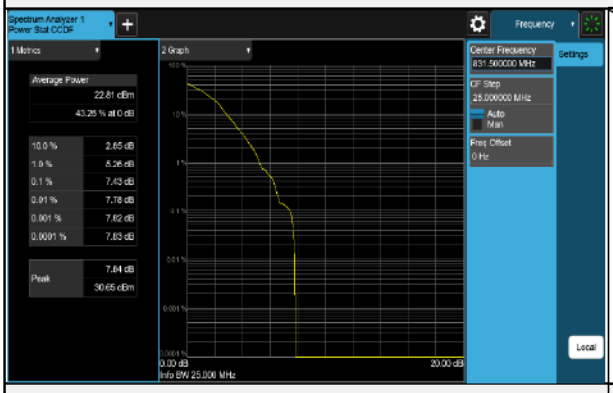
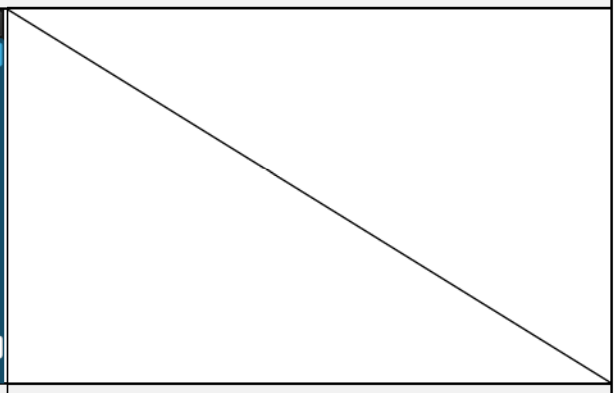
Spectrum Plot of Worst Value



16QAM CH 26990 (844MHz)

LTE Band 26 (Channel Bandwidth 15MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	26865	831.5	5.38	13	Pass
QPSK	26915	836.5	5.21	13	Pass
QPSK	26965	841.5	4.95	13	Pass
16QAM	26865	831.5	7.43	13	Pass
16QAM	26915	836.5	6.62	13	Pass
16QAM	26965	841.5	6.20	13	Pass
64QAM	26865	831.5	6.28	13	Pass
64QAM	26915	836.5	6.47	13	Pass
64QAM	26965	841.5	6.24	13	Pass

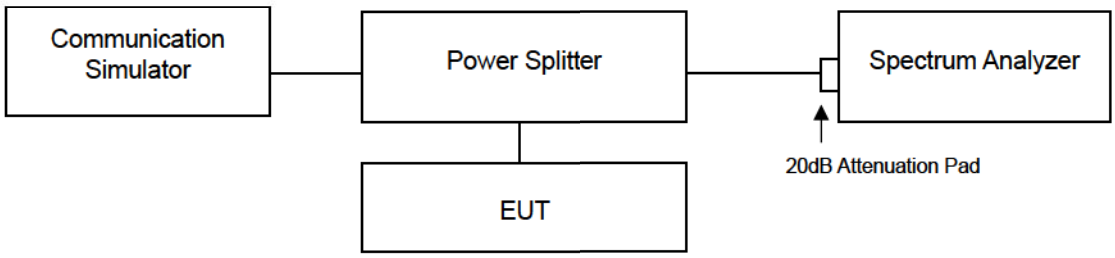
Spectrum Plot of Worst Value	
	
16QAM CH 26865 (831.5MHz)	

4.7 Conducted Spurious Emissions

4.7.1 Limits of Conducted Spurious Emissions Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

4.7.2 Test Setup



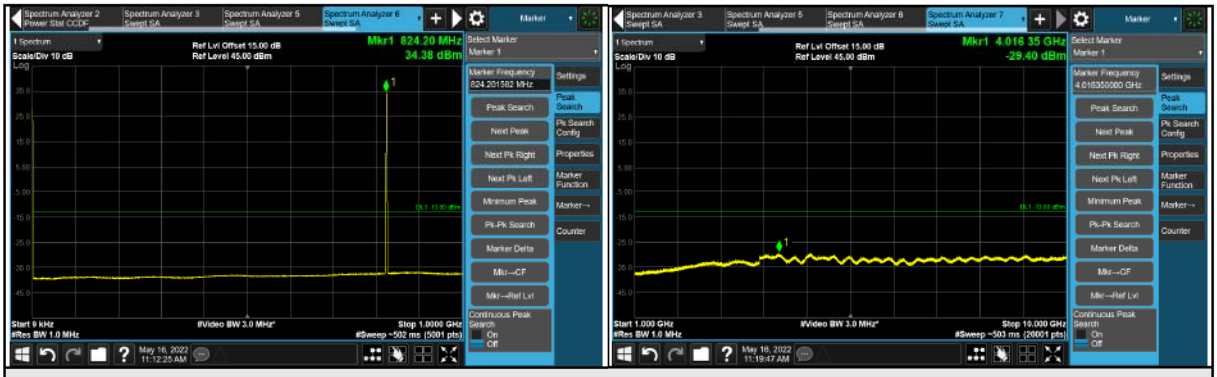
4.7.3 Test Procedure

a. All measurements were done at low, middle and high channels operational frequency range.

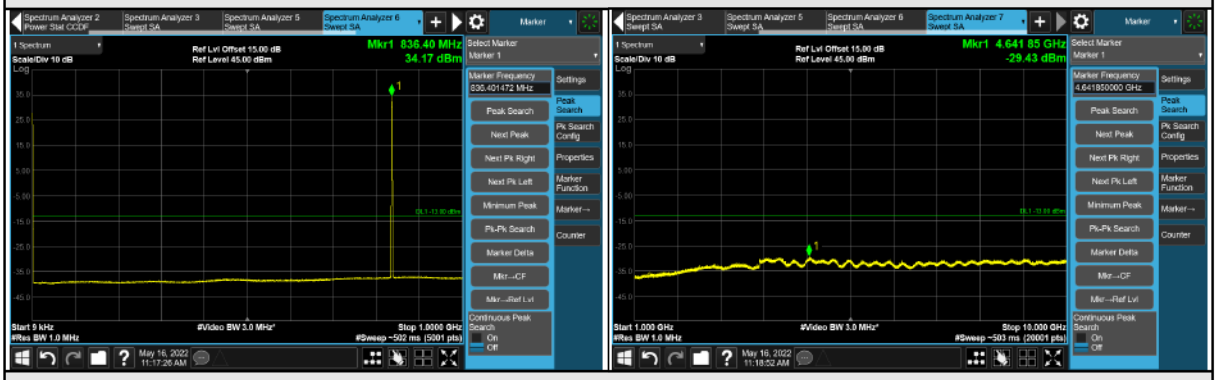
b. Measuring frequency range is from 9kHz to 9GHz / 10GHz. 20dB attenuation pad is connected with spectrum. RBW = 1MHz and VBW = 3MHz are used for conducted emission measurement.

4.7.4 Test Results

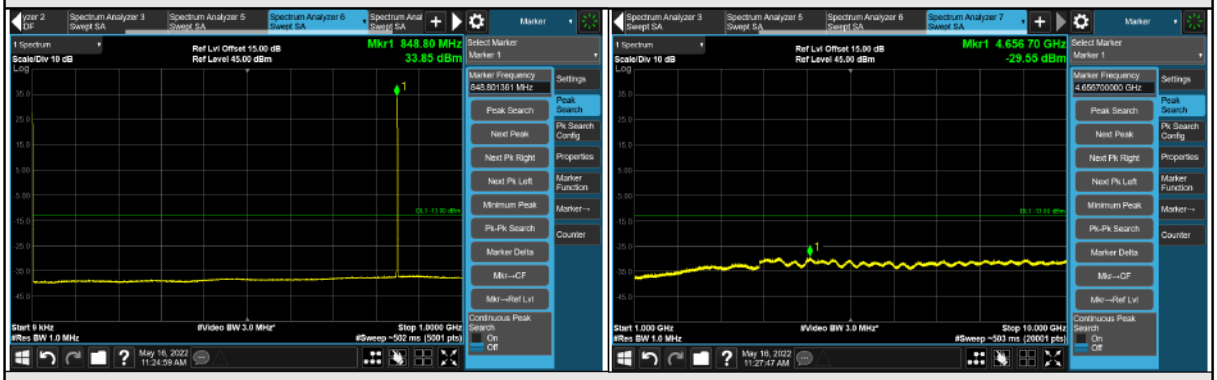
GPRS



CH 128 (824.2MHz)



CH 189 (836.4MHz)

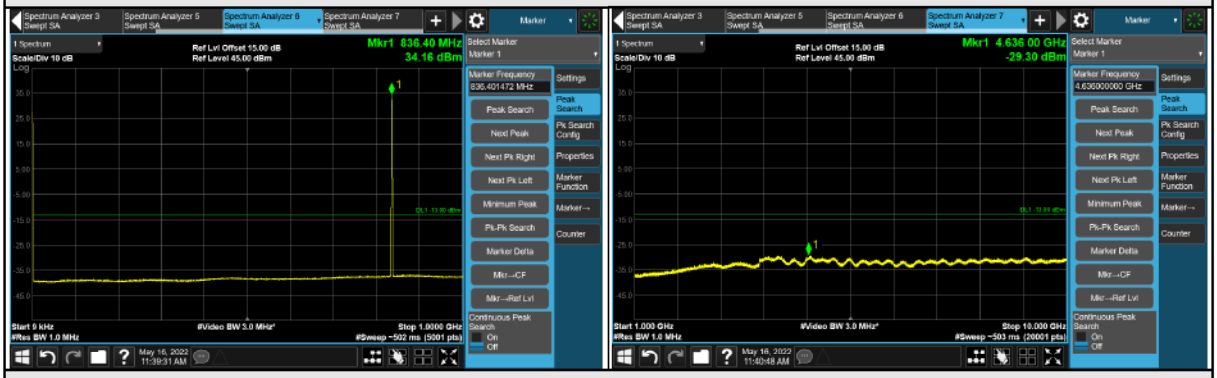


CH 251 (848.8MHz)

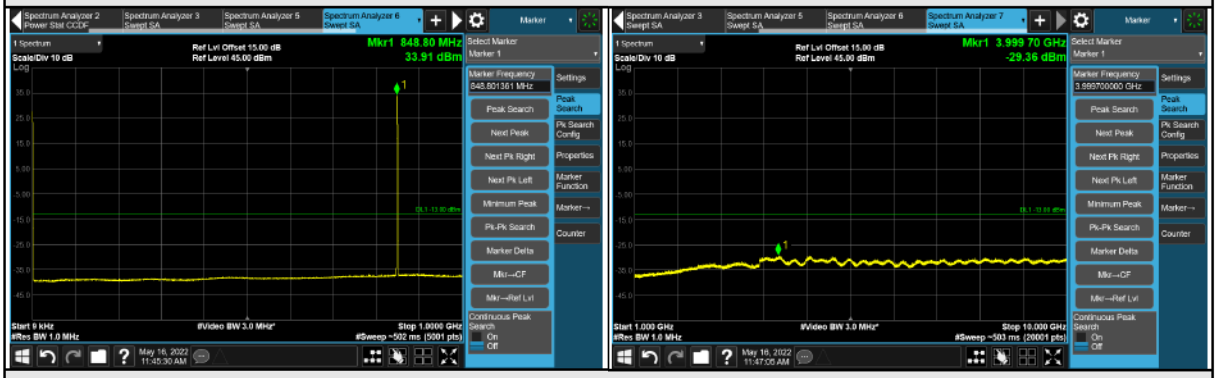
*The 9kHz signal over the limit is from Spectrum.

EDGE

CH 128 (824.2MHz)



CH 189 (836.4MHz)

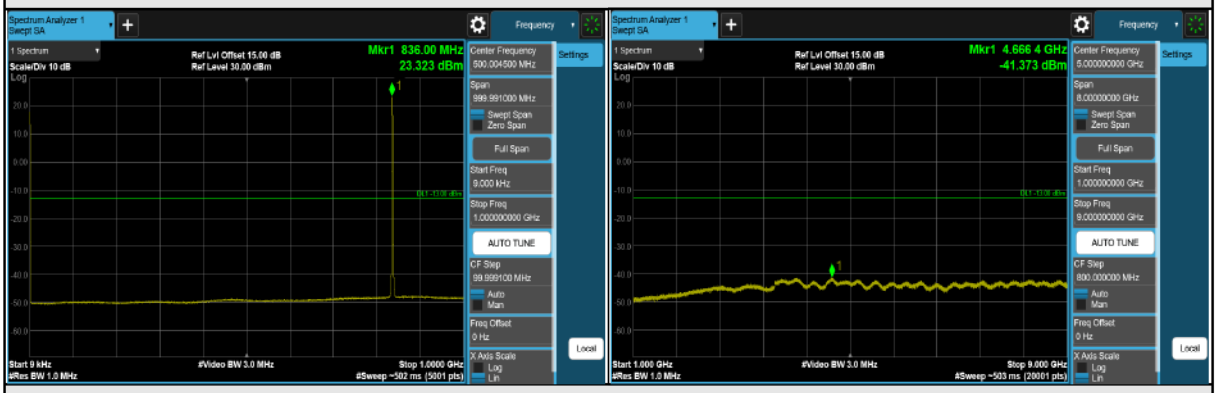


CH 251 (848.8MHz)

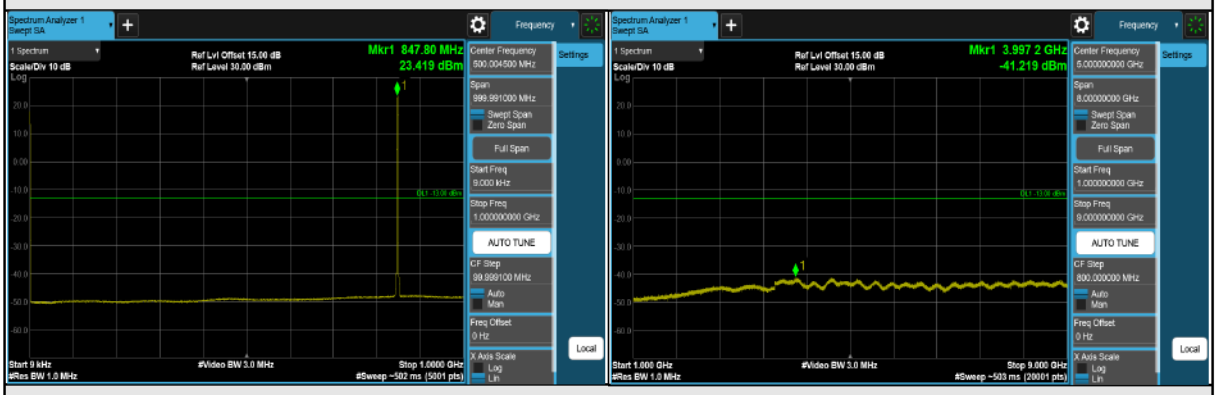
*The 9kHz signal over the limit is from Spectrum.

LTE Band 5 (Channel Bandwidth 1.4MHz)

CH 20407 (824.7MHz)



CH 20525 (836.5MHz)

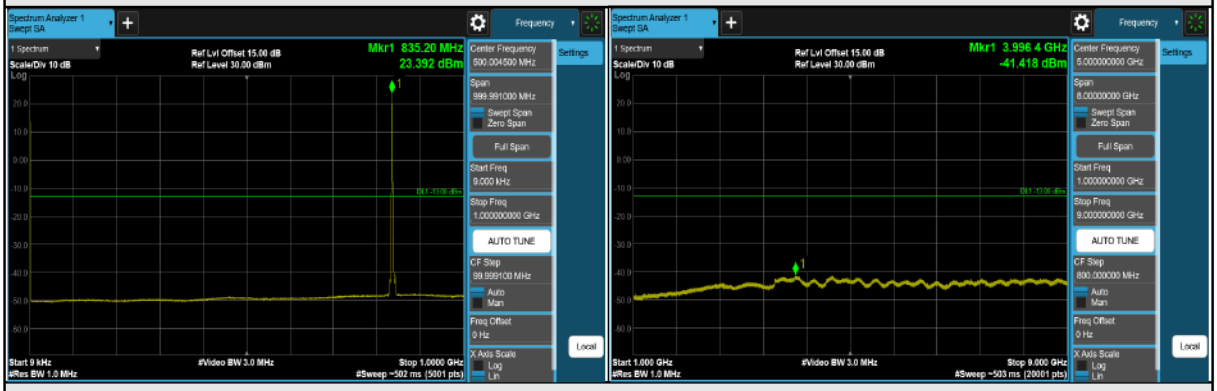


CH 20643 (848.3MHz)

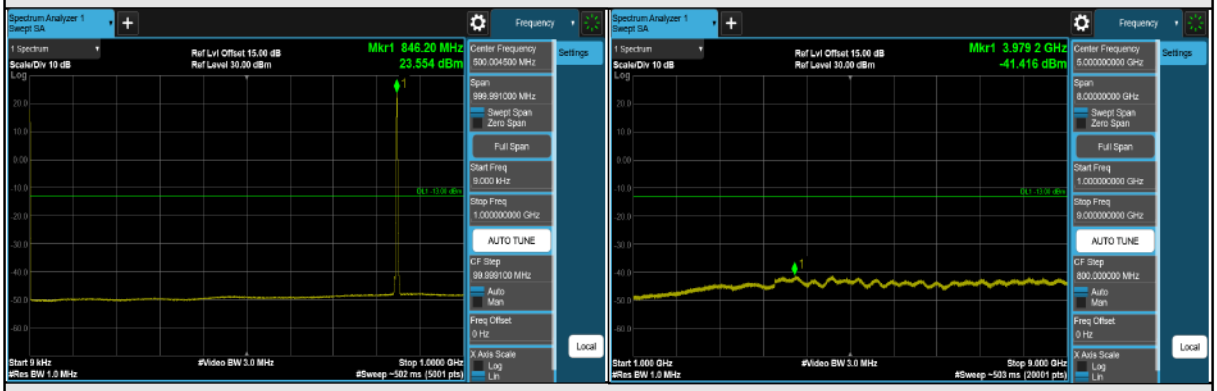
*The 9kHz signal over the limit is from Spectrum.

LTE Band 5 (Channel Bandwidth 3MHz)

CH 20415 (825.5MHz)



CH 20525 (836.5MHz)

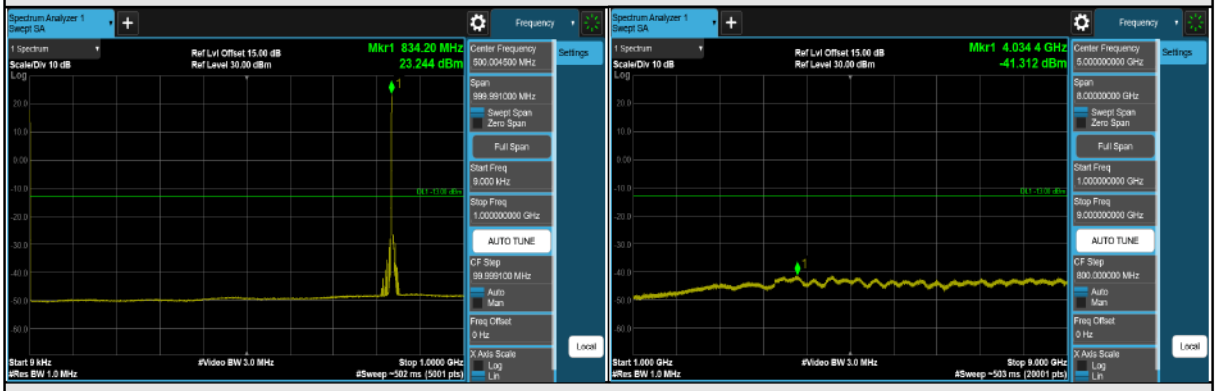


CH 20635 (847.5MHz)

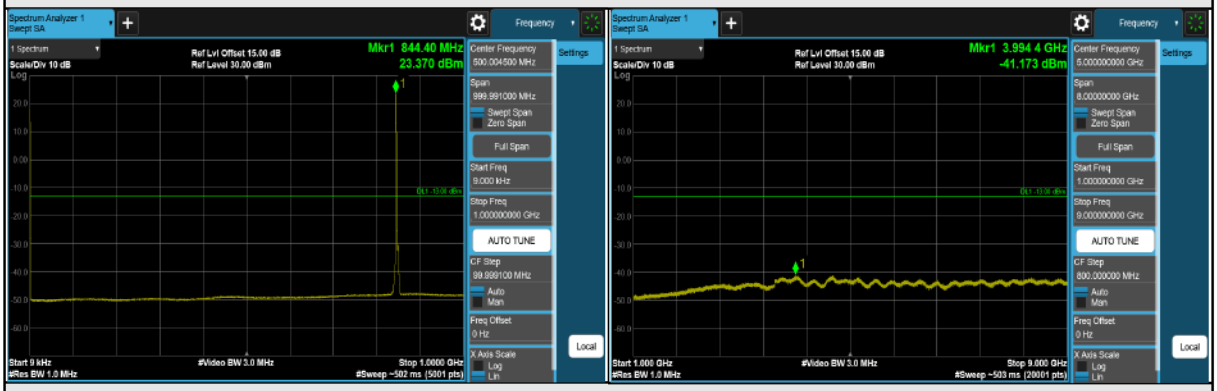
*The 9kHz signal over the limit is from Spectrum.

LTE Band 5 (Channel Bandwidth 5MHz)

CH 20425 (826.5MHz)



CH 20525 (836.5MHz)

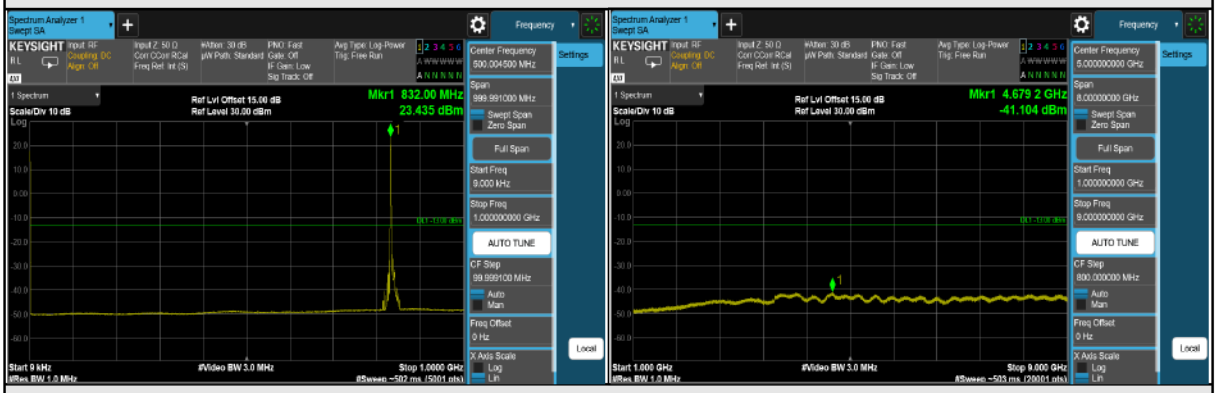


CH 20625 (846.5MHz)

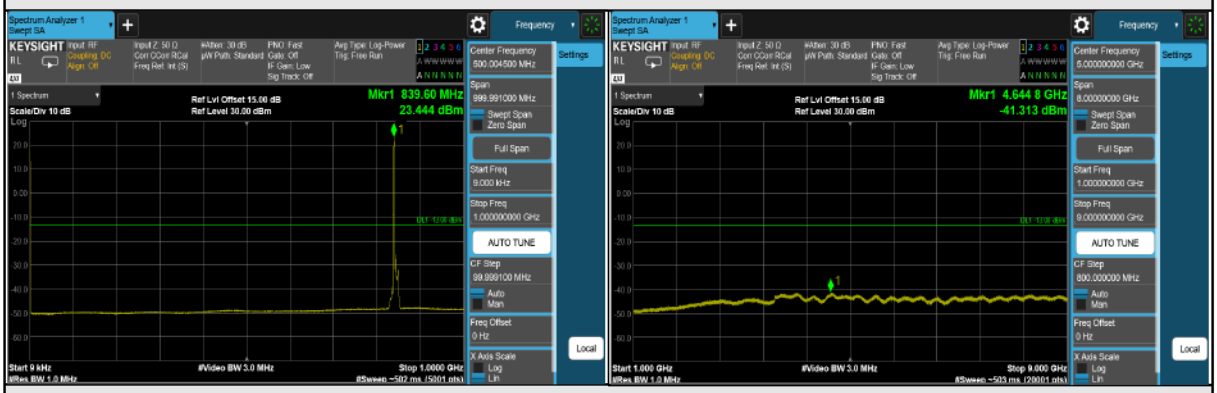
*The 9kHz signal over the limit is from Spectrum.

LTE Band 5 (Channel Bandwidth 10MHz)

CH 20450 (829MHz)



CH 20525 (836.5MHz)

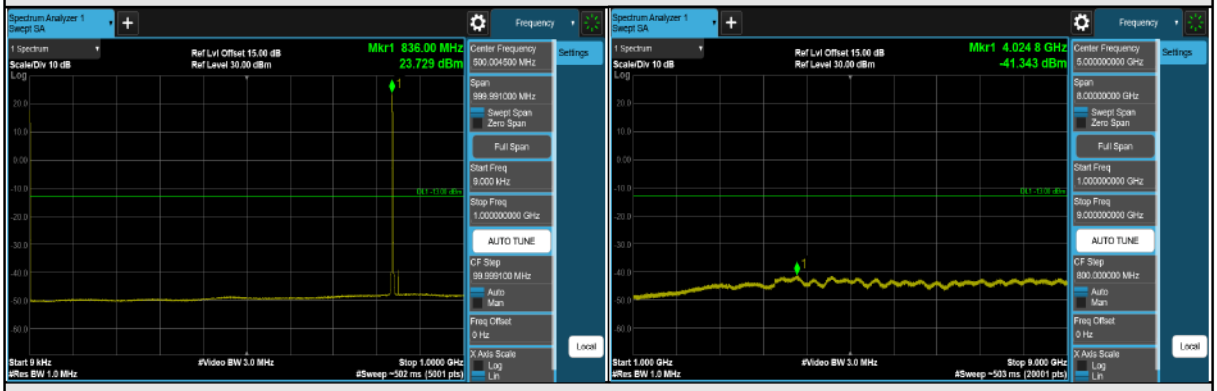


CH 20600 (844MHz)

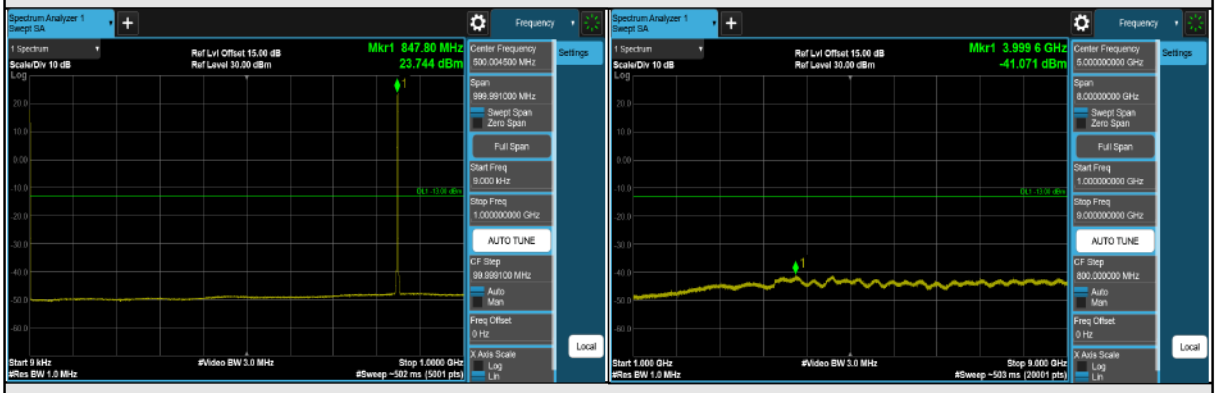
*The 9kHz signal over the limit is from Spectrum.

LTE Band 26 (Channel Bandwidth 1.4MHz)

CH 26797 (824.7MHz)



CH 26915 (836.5MHz)

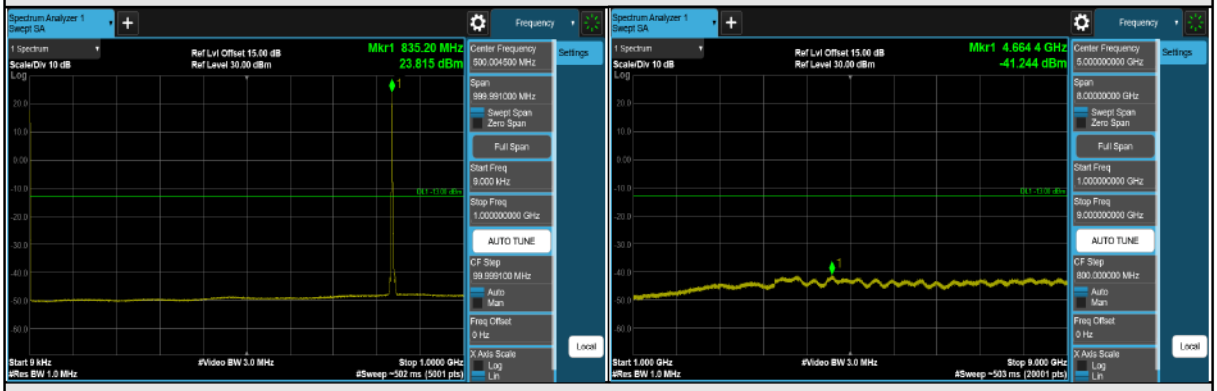


CH 27033 (848.3MHz)

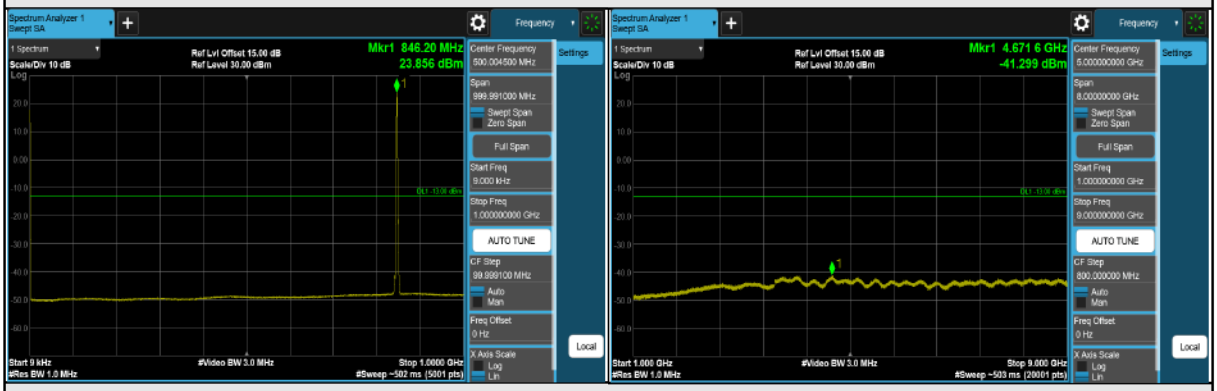
*The 9kHz signal over the limit is from Spectrum.

LTE Band 26 (Channel Bandwidth 3MHz)

CH 26805 (825.5MHz)



CH 26915 (836.5MHz)

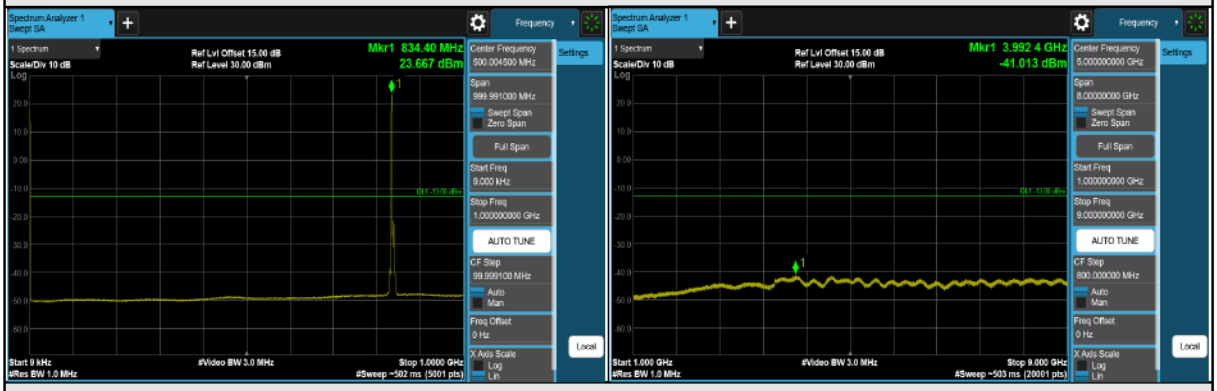


CH 27025 (847.5MHz)

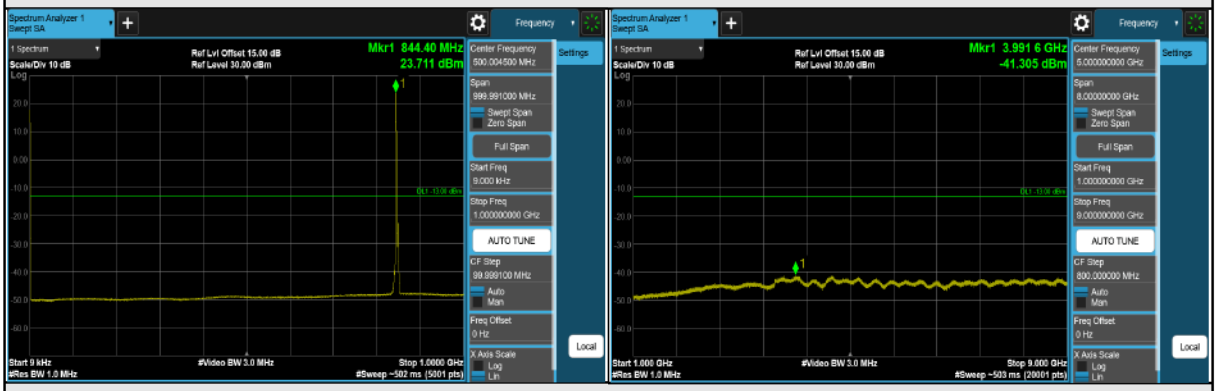
*The 9kHz signal over the limit is from Spectrum.

LTE Band 26 (Channel Bandwidth 5MHz)

CH 26815 (826.5MHz)



CH 26915 (836.5MHz)

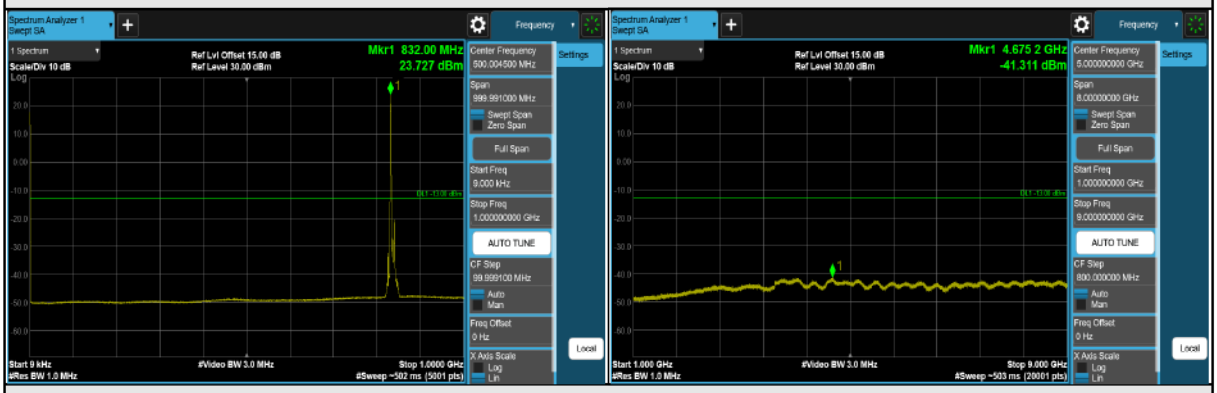


CH 27015 (846.5MHz)

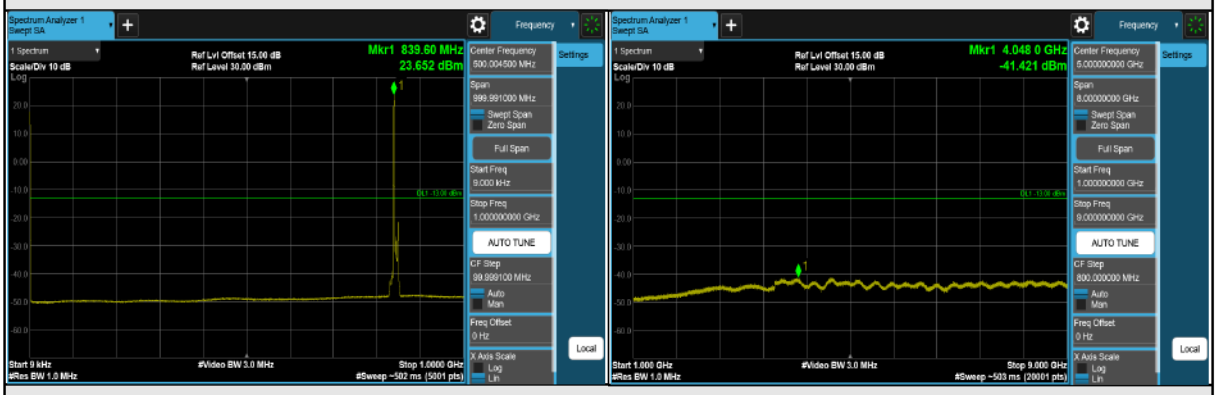
*The 9kHz signal over the limit is from Spectrum.

LTE Band 26 (Channel Bandwidth 10MHz)

CH 26840 (829MHz)



CH 26915 (836.5MHz)

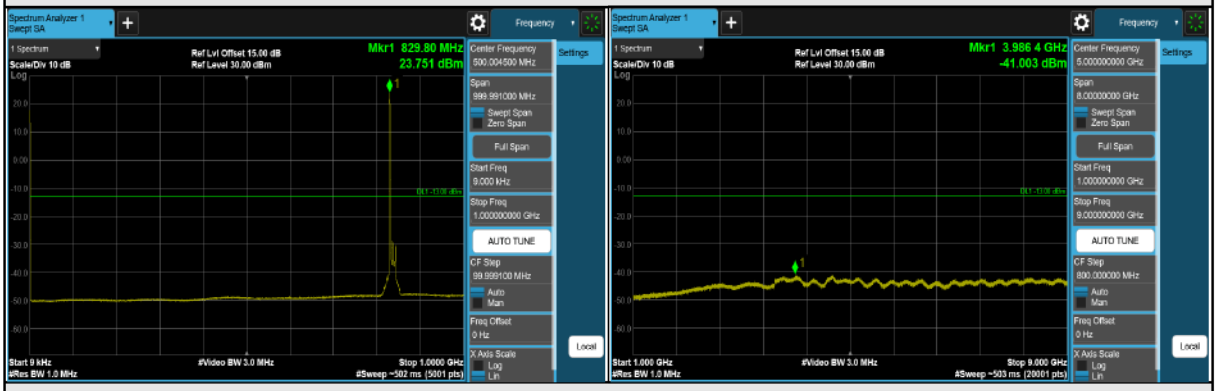


CH 26990 (844MHz)

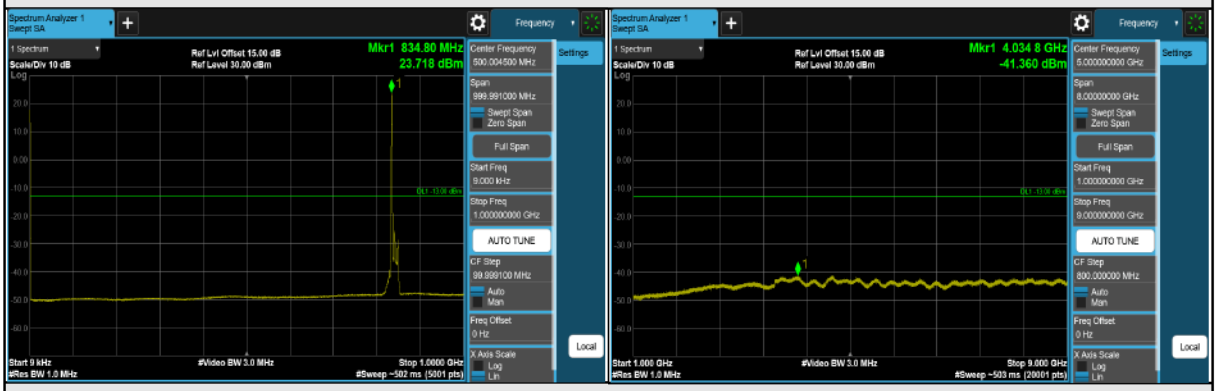
*The 9kHz signal over the limit is from Spectrum.

LTE Band 26 (Channel Bandwidth 15MHz)

CH 26865 (831.5MHz)



CH 26915 (836.5MHz)



CH 26965 (841.5MHz)

*The 9kHz signal over the limit is from Spectrum.

4.8 Radiated Emission Measurement

4.8.1 Limits of Radiated Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

4.8.2 Test Procedure

a. In the semi-anechoic chamber, EUT placed on the 0.8m (below or equal 1GHz) and/or 1.5m (above 1GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.

b. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

c. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP/ERP level.

d. Following C63.26 section 5.5 and 5.2.7
   - EIRP (dBm) = E (dBμV/m) + 20log(D) - 104.8; where D is the measurement distance (in the far field region) in m.
   - ERP (dBm) = E (dBμV/m) + 20log(D) - 104.8 - 2.15; where D is the measurement distance (in the far field region) in m.

Note:
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.
2. The emission levels were against the limit of frequency range 9 kHz ~ 30 MHz:
   The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

4.8.3 Deviation from Test Standard

No deviation.