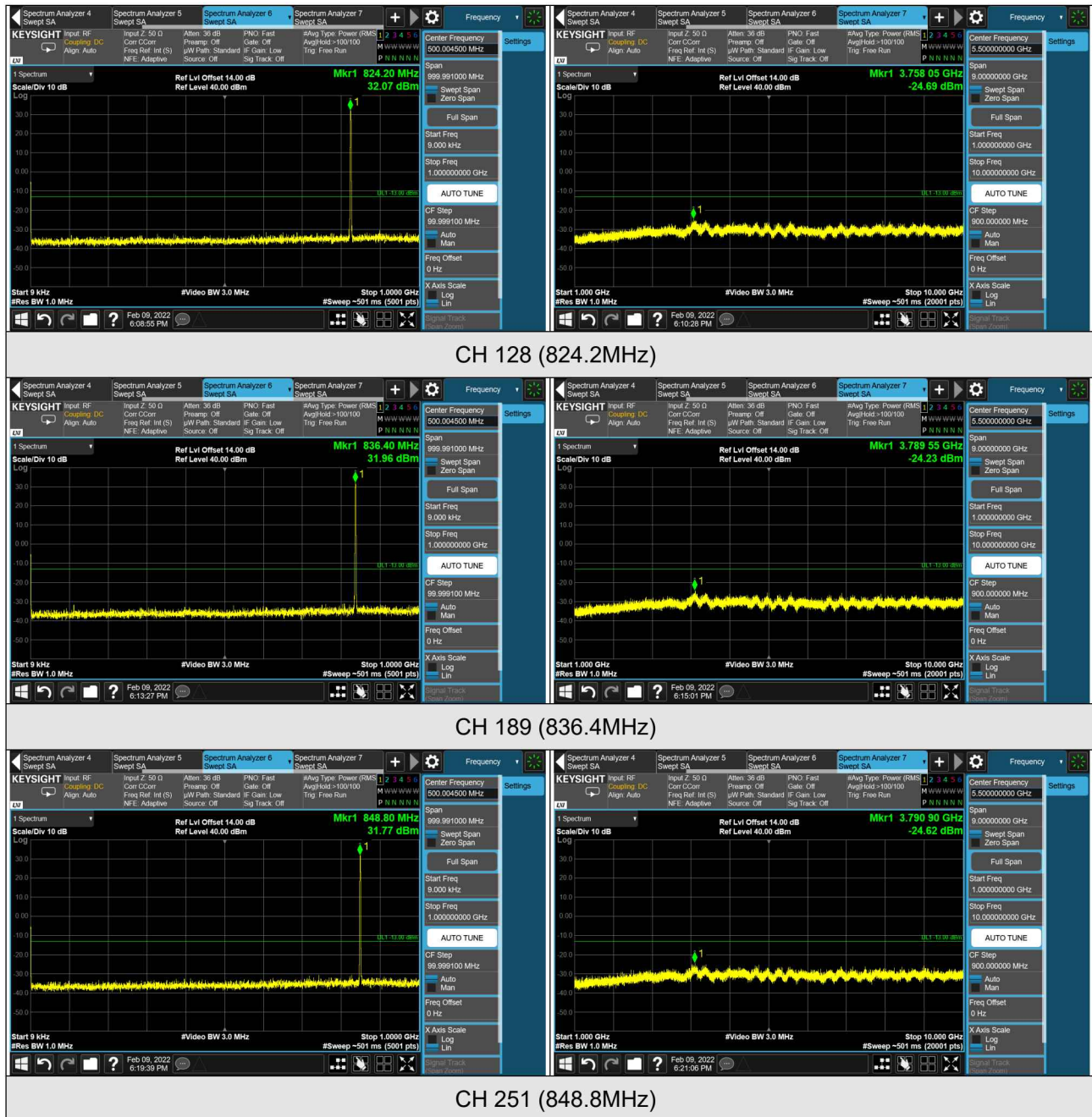


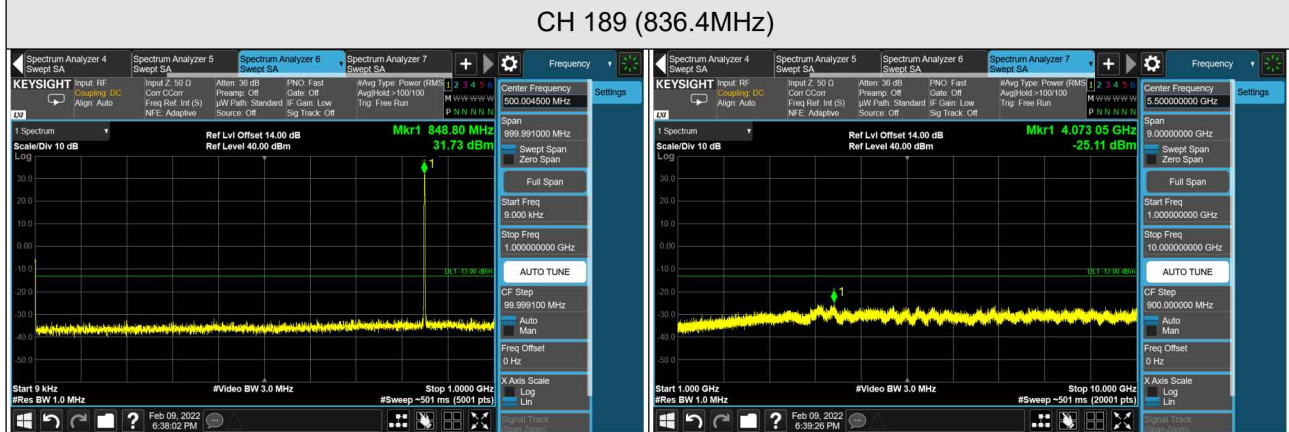
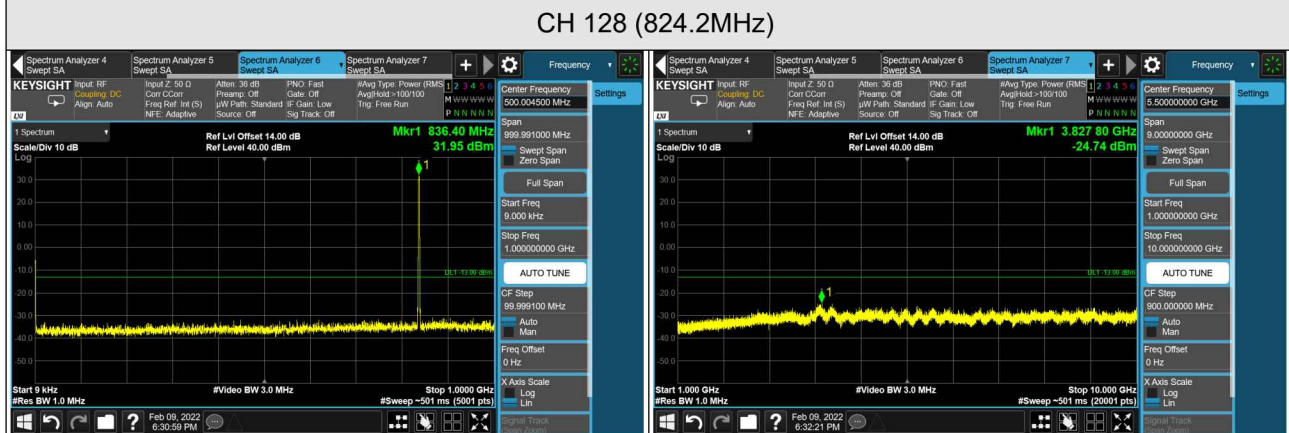
4.7.4 Test Results

GPRS



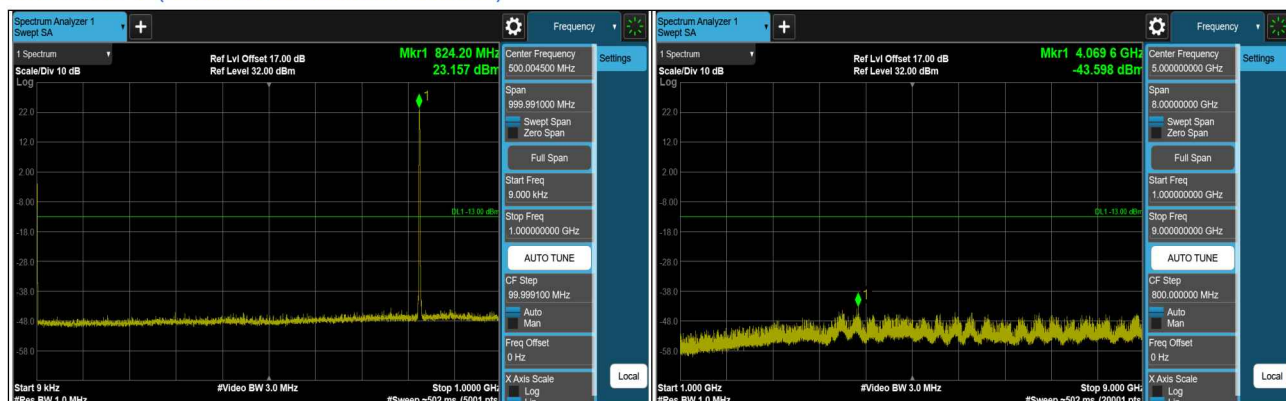
*The 9kHz signal over the limit is from Spectrum.

EDGE

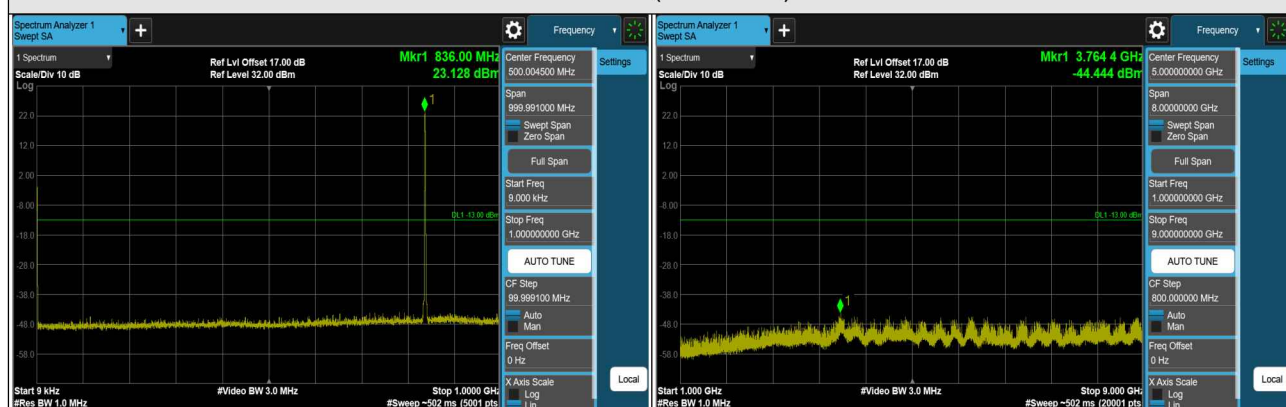


*The 9kHz signal over the limit is from Spectrum.

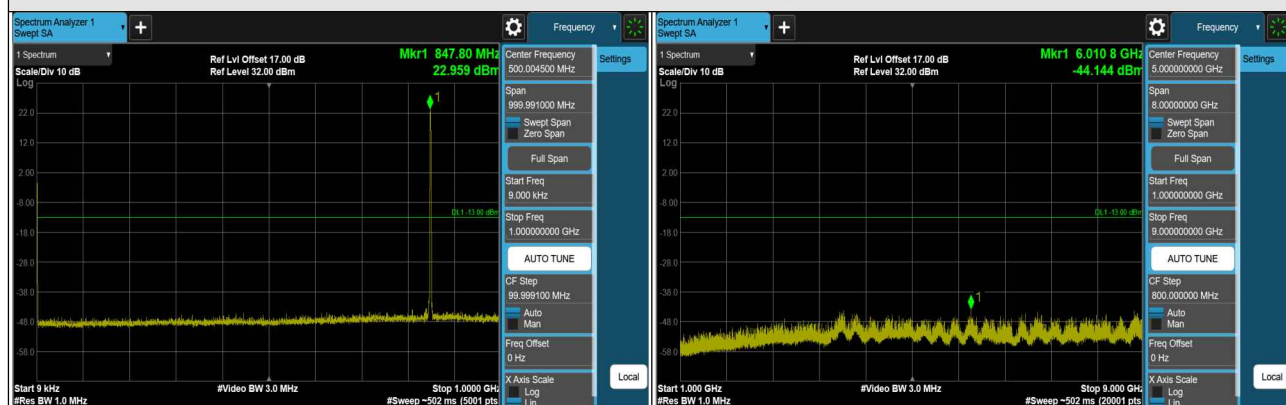
LTE Band 5 (Channel Bandwidth 1.4MHz)



CH 20407 (824.7MHz)



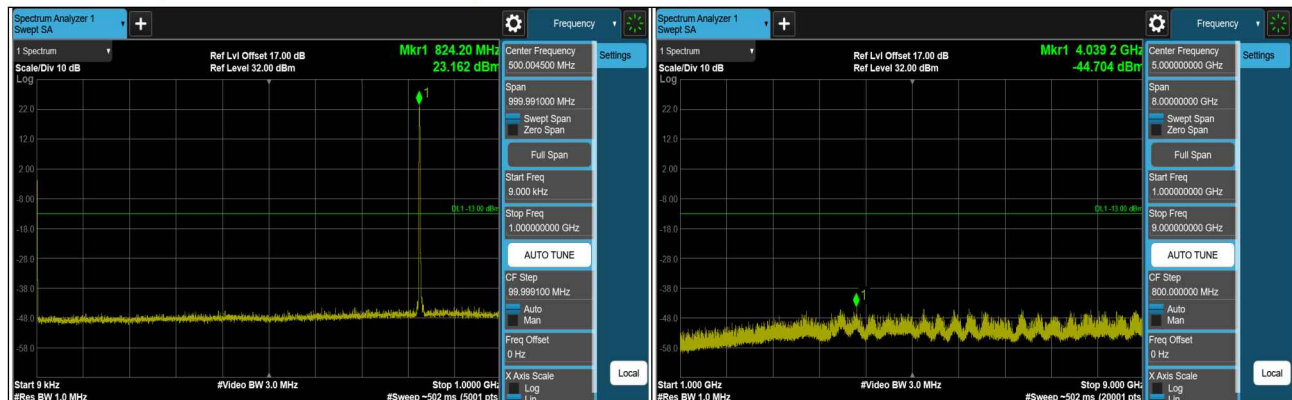
CH 20525 (836.5MHz)



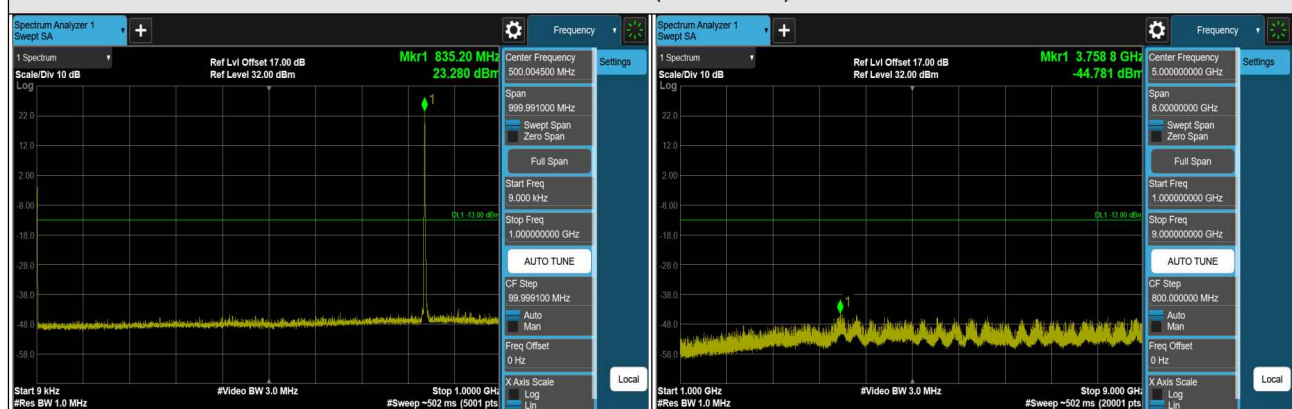
CH 20643 (848.3MHz)

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

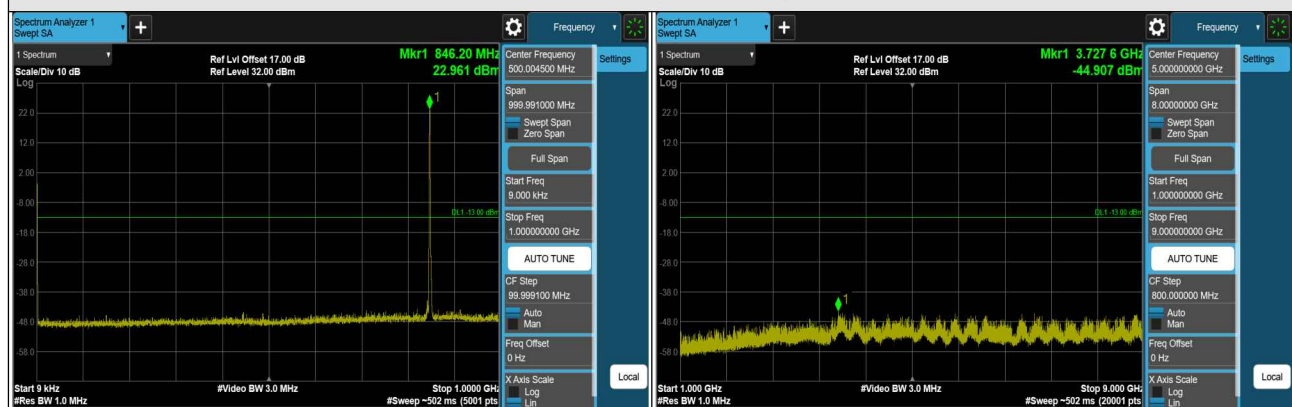
LTE Band 5 (Channel Bandwidth 3MHz)



CH 20415 (825.5MHz)



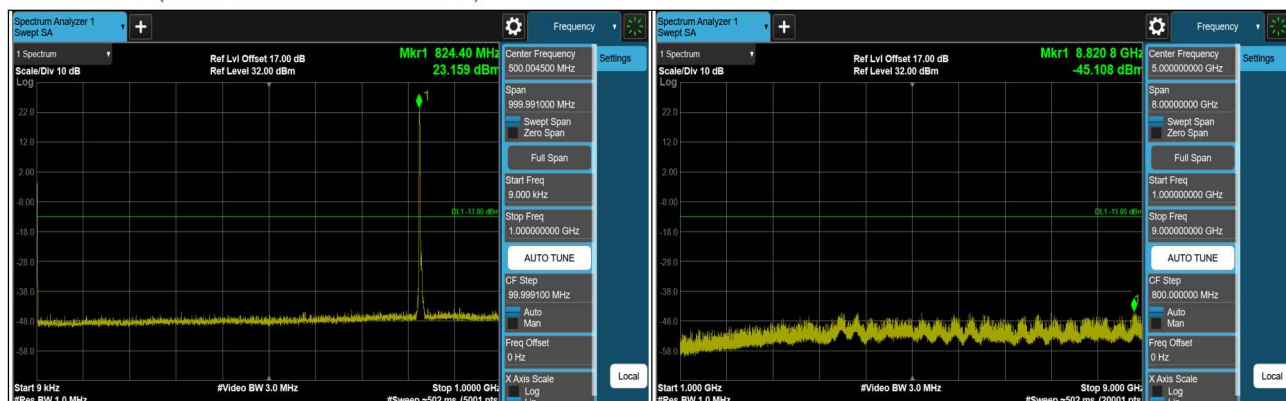
CH 20525 (836.5MHz)



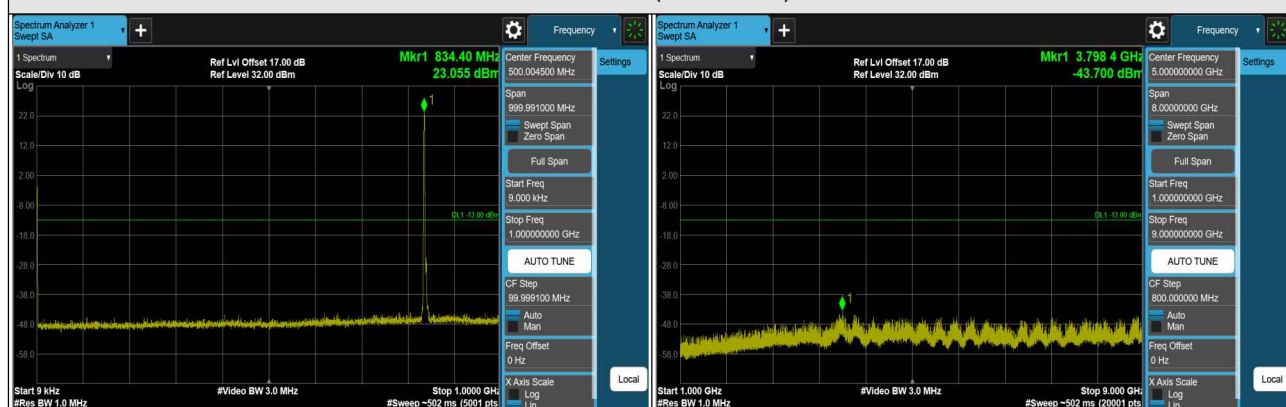
CH 20635 (847.5MHz)

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

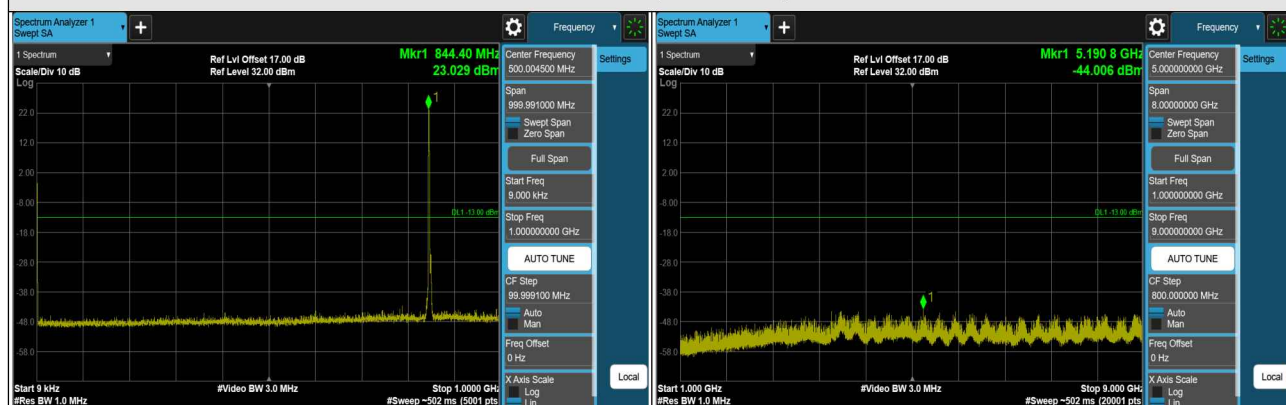
LTE Band 5 (Channel Bandwidth 5MHz)



CH 20425 (826.5MHz)



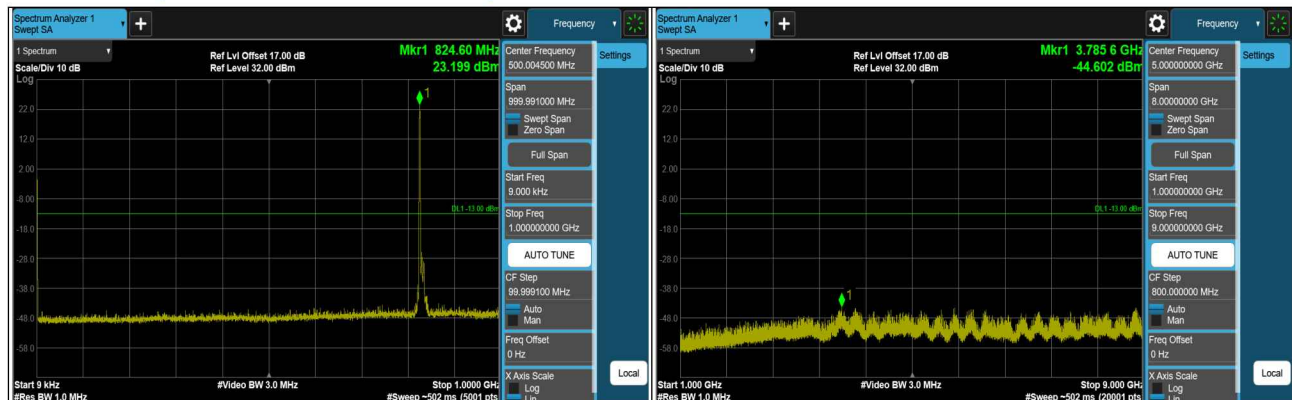
CH 20525 (836.5MHz)



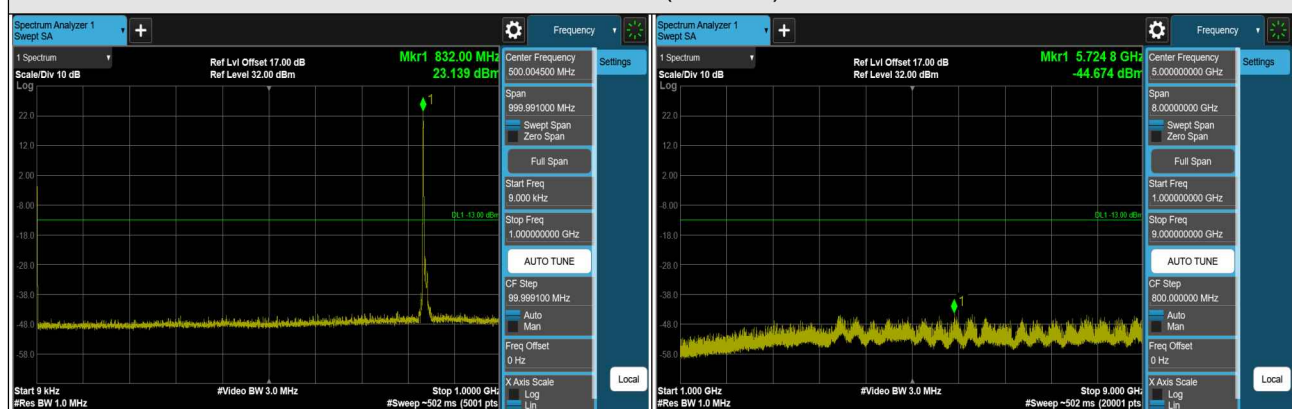
CH 20625 (846.5MHz)

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

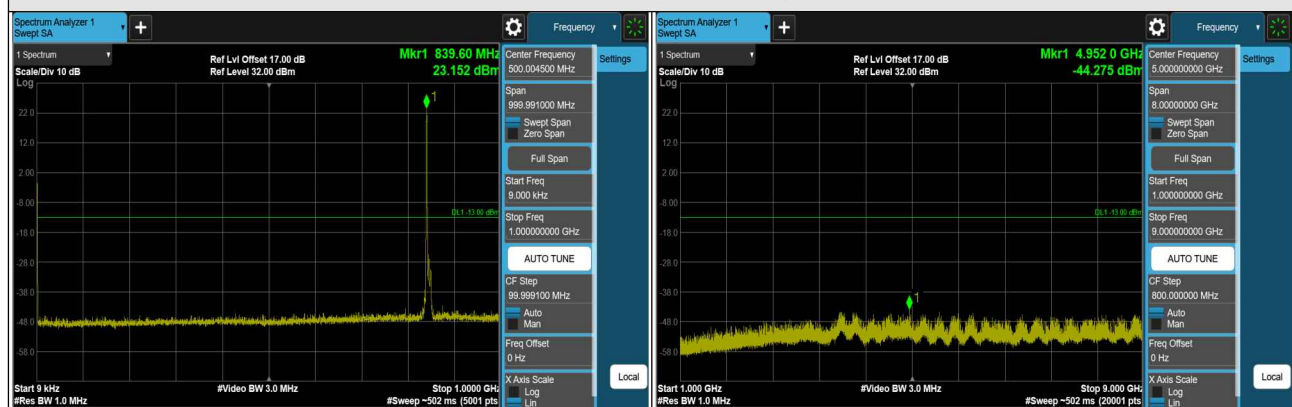
LTE Band 5 (Channel Bandwidth 10MHz)



CH 20450 (829MHz)



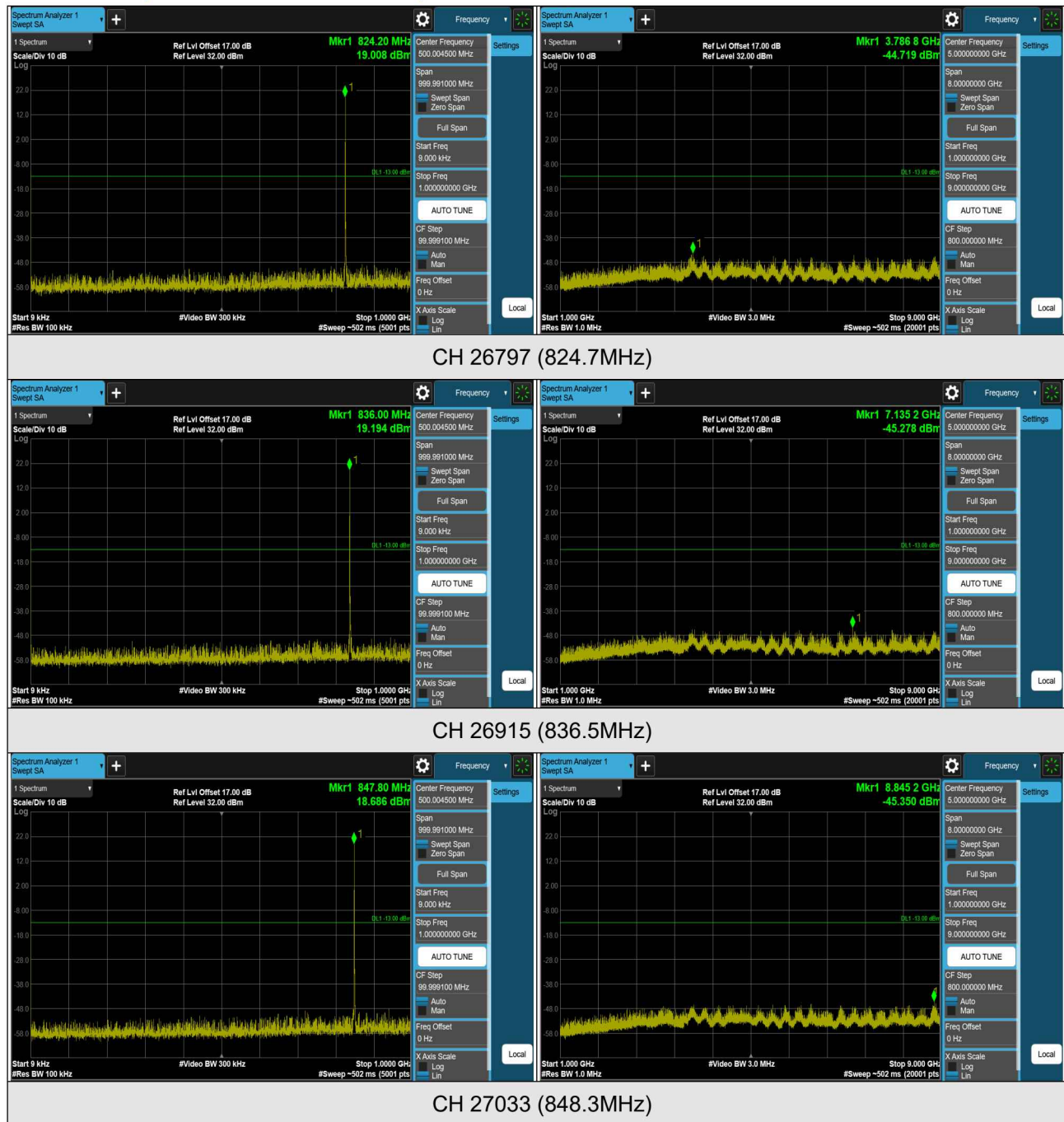
CH 20525 (836.5MHz)



CH 20600 (844MHz)

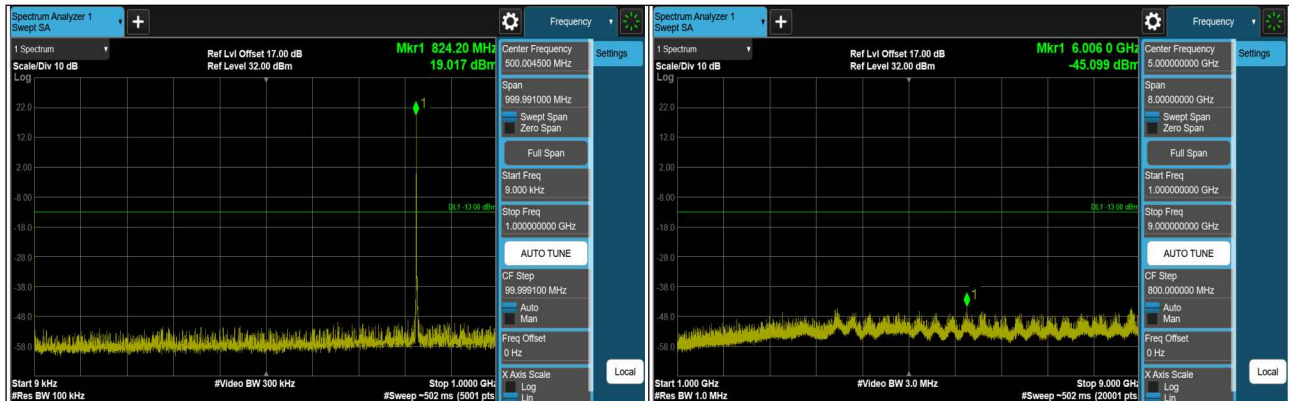
*The 9kHz signal over the limit is from Spectrum.

LTE Band 26 (Channel Bandwidth 1.4MHz)

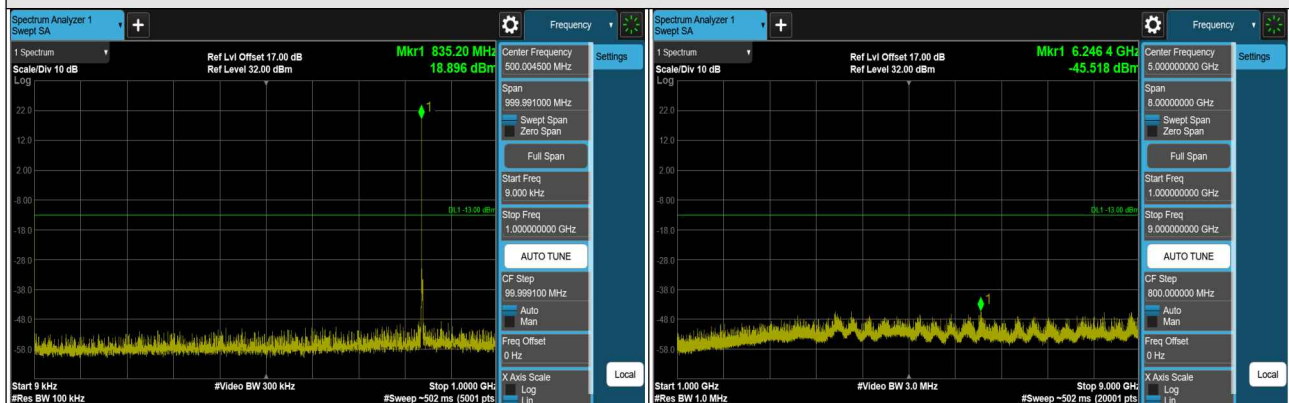


*The 9kHz signal over the limit is from Spectrum.

LTE Band 26 (Channel Bandwidth 3MHz)



CH 26805 (825.5MHz)



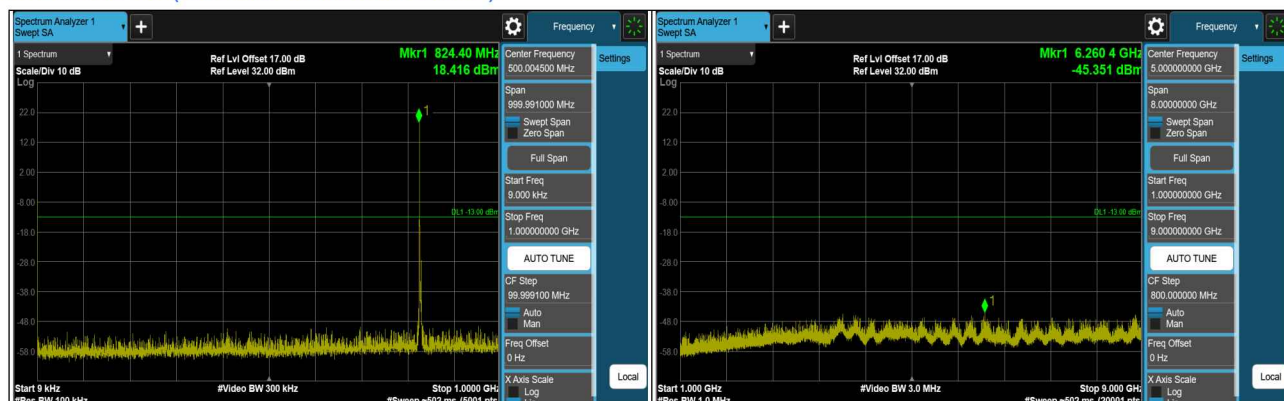
CH 26915 (836.5MHz)



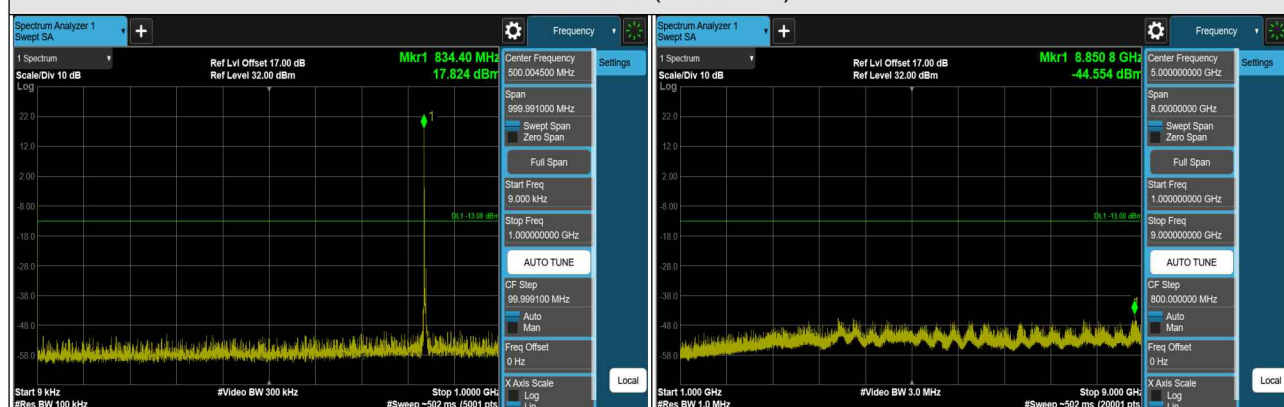
CH 27025 (847.5MHz)

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

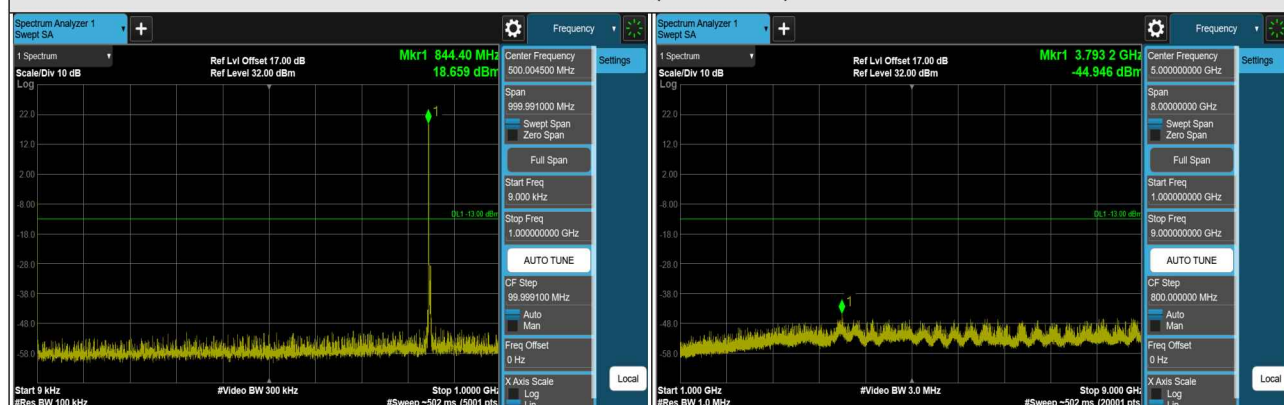
LTE Band 26 (Channel Bandwidth 5MHz)



CH 26815 (826.5MHz)



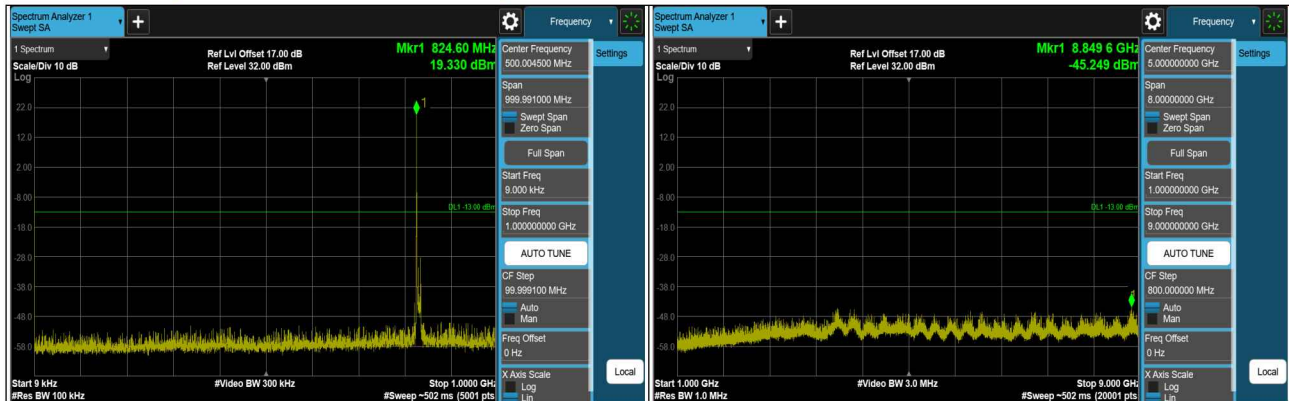
CH 26915 (836.5MHz)



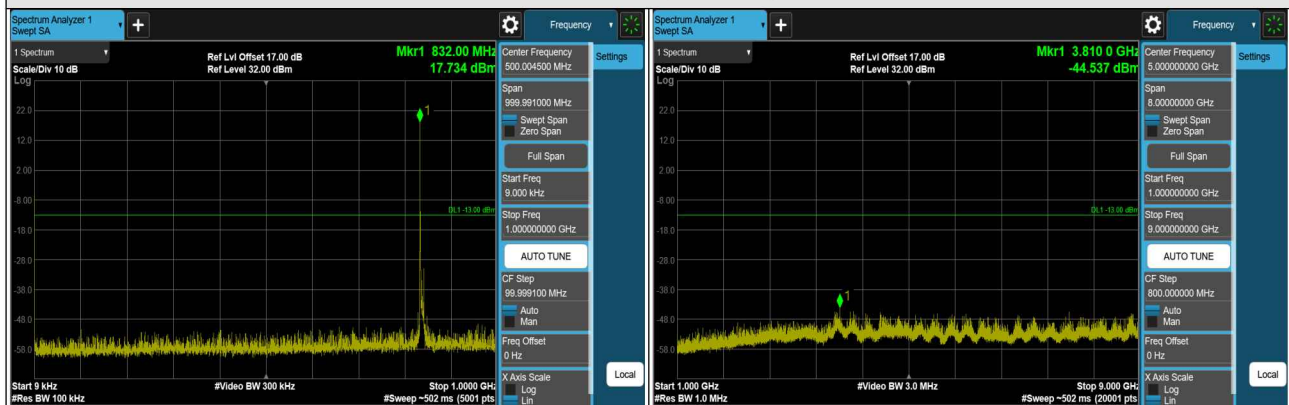
CH 27015 (846.5MHz)

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

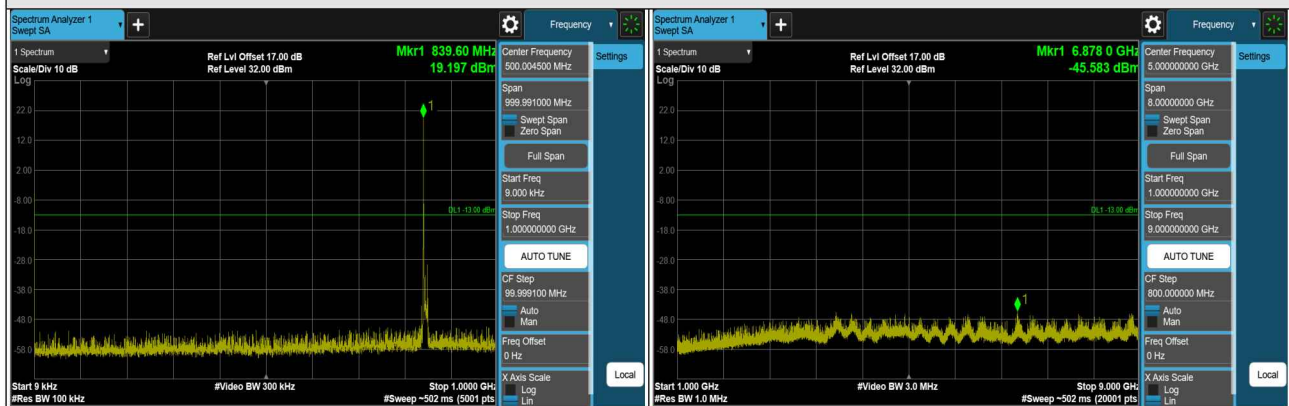
LTE Band 26 (Channel Bandwidth 10MHz)



CH 26840 (829MHz)



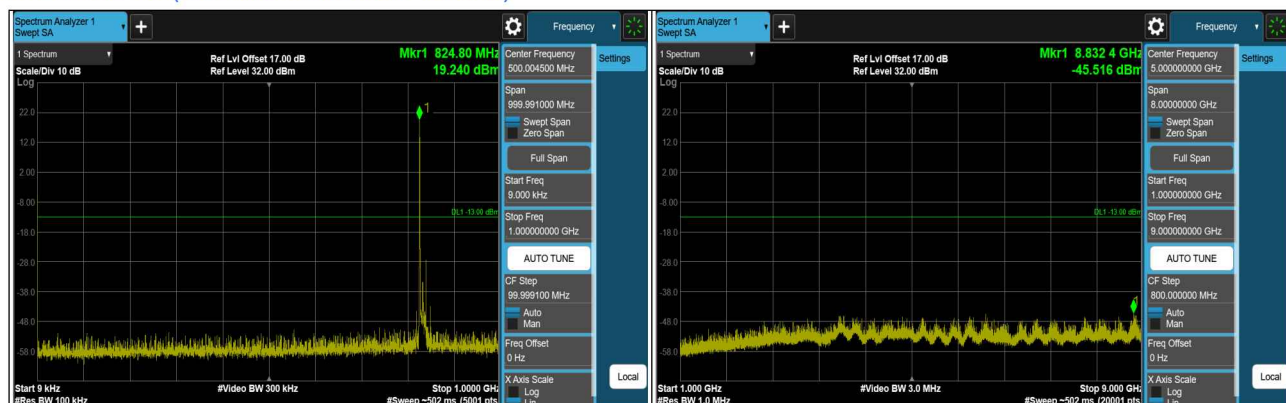
CH 26915 (836.5MHz)



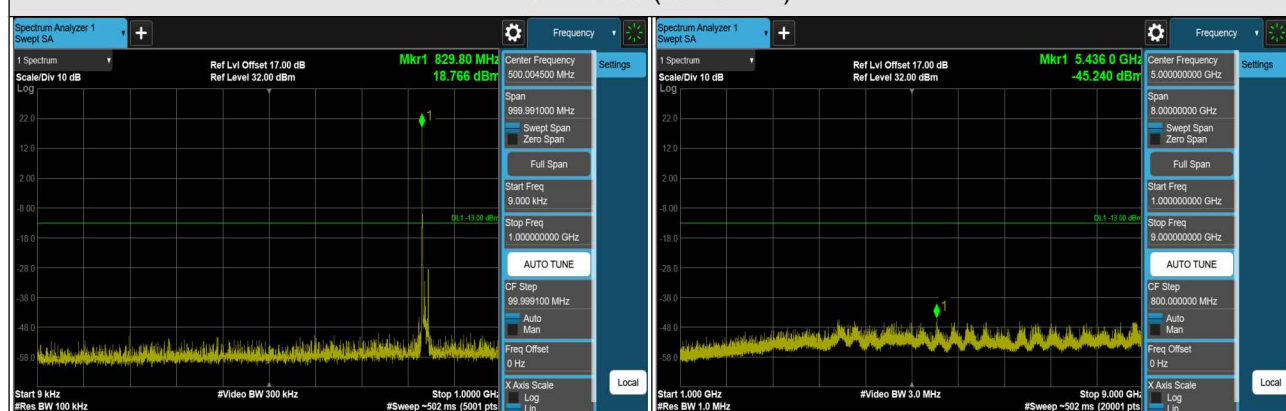
CH 26990 (844MHz)

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

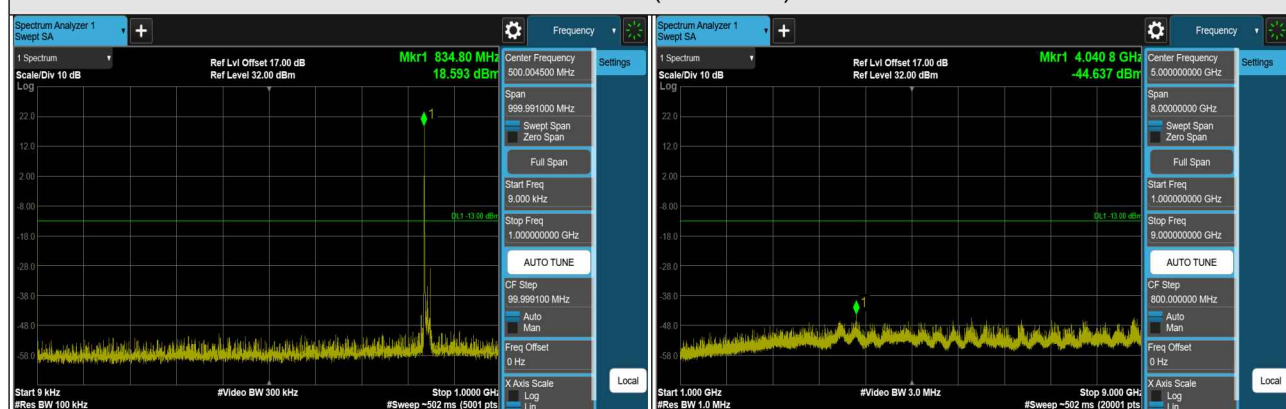
LTE Band 26 (Channel Bandwidth 15MHz)



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
 - $\text{EIRP (dBm)} = E (\text{dB}\mu\text{V/m}) + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m.
 - $\text{ERP (dBm)} = E (\text{dB}\mu\text{V/m}) + 20\log(D) - 104.8 - 2.15$; where D is the measurement distance (in the far field region) in m.

Note:

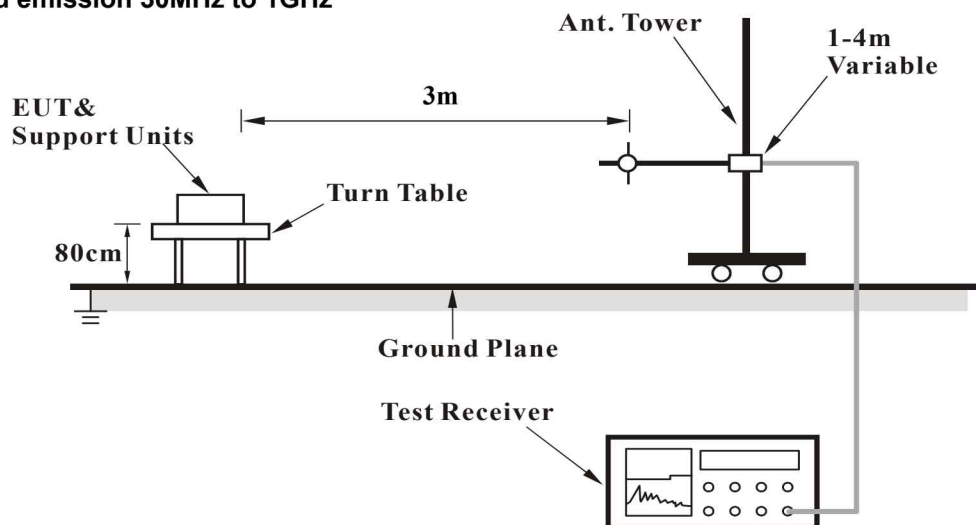
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.
2. The emission levels were against the limit of frequency range 9 kHz ~ 30 MHz:
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

4.8.3 Deviation from Test Standard

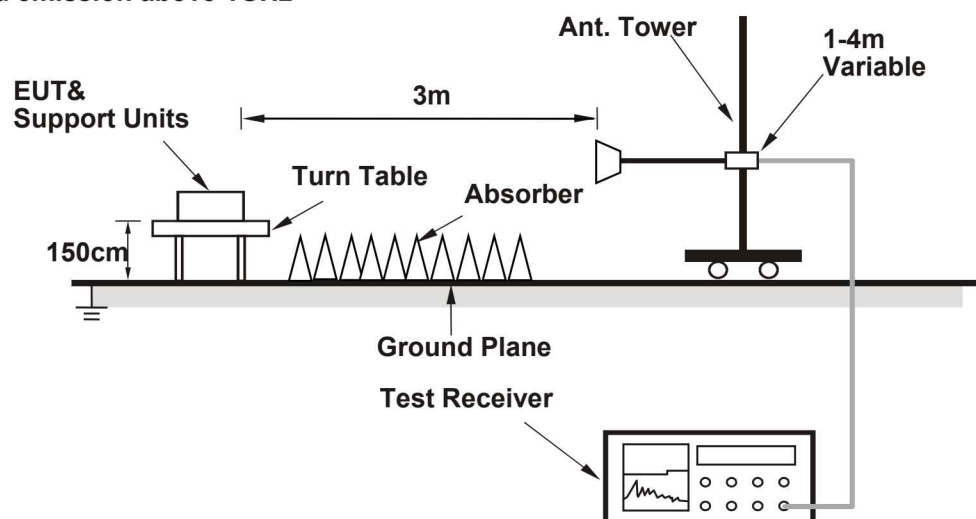
No deviation.

4.8.4 Test Setup

For radiated emission 30MHz to 1GHz



For radiated emission above 1GHz



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

4.8.5 Test Results

Below 1GHz

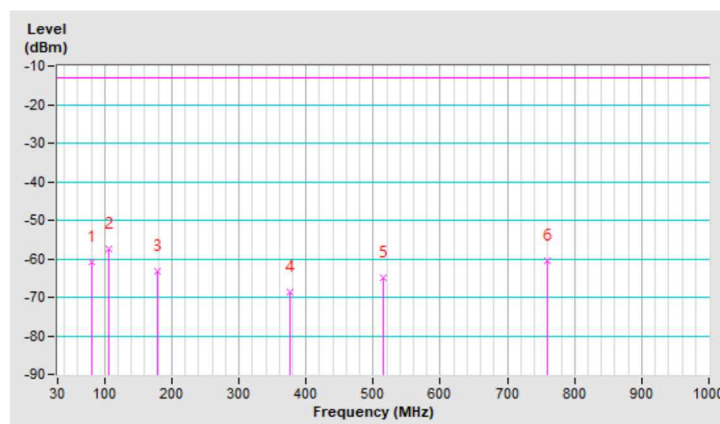
GPRS

Mode	TX channel 128 (824.2MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 64%RH	Input Power	4.0Vdc
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	81.26	-60.86	-13.00	-47.86	2.32 H	54	59.51	-120.37
2	106.56	-57.55	-13.00	-44.55	1.01 H	55	60.49	-118.04
3	178.35	-63.28	-13.00	-50.28	2.43 H	65	53.21	-116.49
4	375.23	-68.48	-13.00	-55.48	2.01 H	341	43.67	-112.15
5	514.29	-64.92	-13.00	-51.92	3.21 H	11	43.41	-108.33
6	758.93	-60.55	-13.00	-47.55	1.52 H	22	42.53	-103.08

Remarks:

1. $ERP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8 - 2.15$
3. $Margin\ value = ERP - Limit\ value$
4. The other ERP levels were very low against the limit.

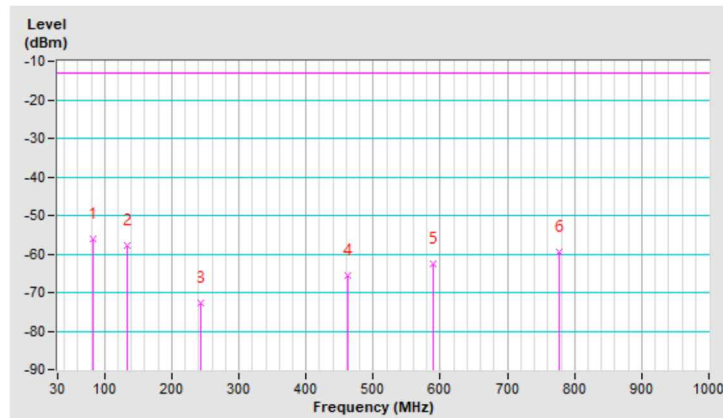


Mode	TX channel 128 (824.2MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 64%RH	Input Power	4.0Vdc
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	83.26	-56.10	-13.00	-43.10	2.14 V	104	64.49	-120.59
2	134.00	-57.83	-13.00	-44.83	1.55 V	232	57.52	-115.35
3	242.62	-72.59	-13.00	-59.59	2.32 V	141	44.51	-117.10
4	462.23	-65.76	-13.00	-52.76	1.85 V	223	43.78	-109.54
5	589.67	-62.71	-13.00	-49.71	2.84 V	165	43.59	-106.30
6	777.65	-59.51	-13.00	-46.51	2.32 V	157	43.04	-102.55

Remarks:

1. $ERP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8 - 2.15$
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.



LTE Band 5 (Channel Bandwidth 10MHz)

Mode	TX channel 20600 (844.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 64%RH	Input Power	4.0Vdc
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	47.46	-54.87	-13.00	-41.87	1.26 H	214	55.20	-110.07
2	111.48	-51.63	-13.00	-38.63	1.54 H	74	60.85	-112.48
3	177.44	-59.03	-13.00	-46.03	1.89 H	279	52.34	-111.37
4	316.15	-58.49	-13.00	-45.49	2.32 H	164	50.26	-108.75
5	523.73	-52.22	-13.00	-39.22	1.04 H	262	50.85	-103.07
6	645.95	-49.46	-13.00	-36.46	1.13 H	50	50.47	-99.93

Remarks:

1. $ERP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8 - 2.15$
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

