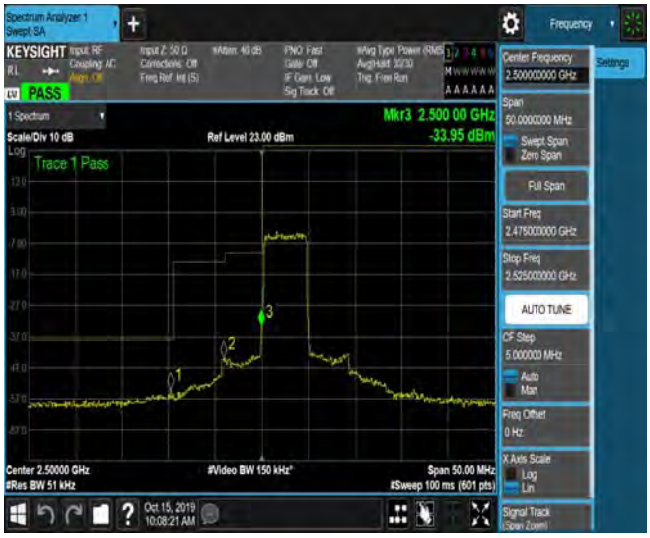
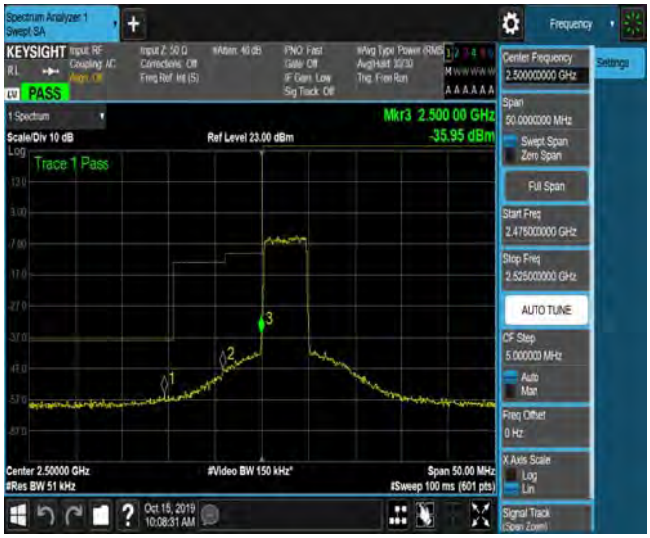
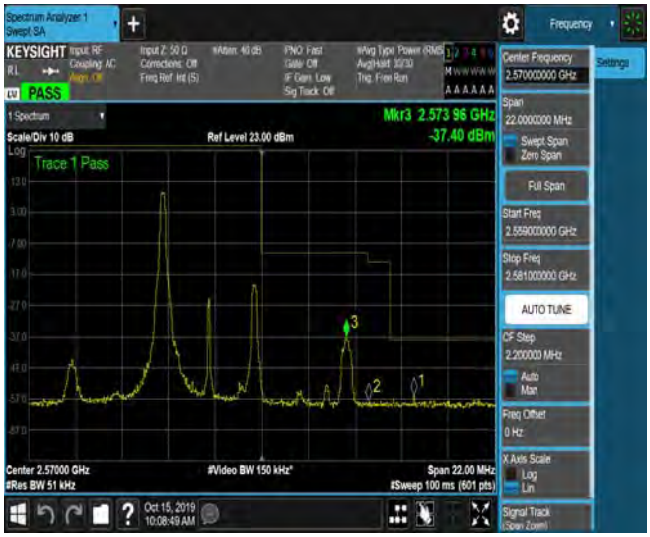
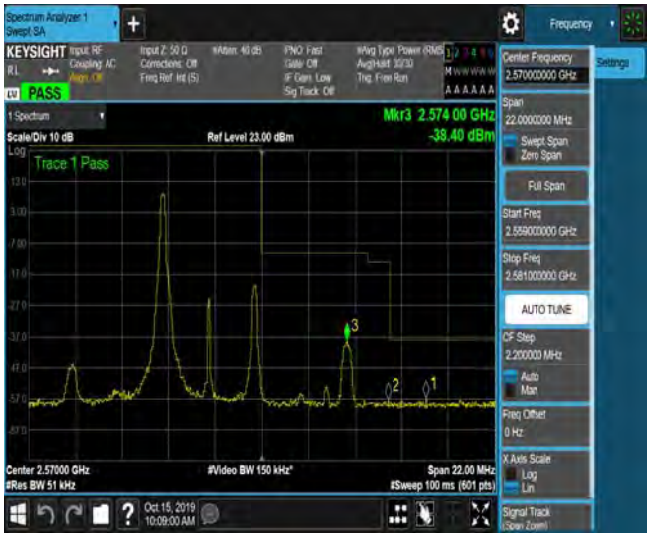
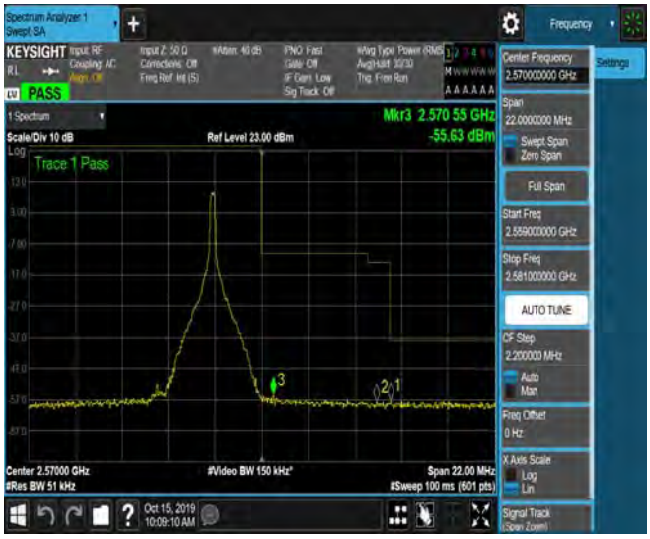
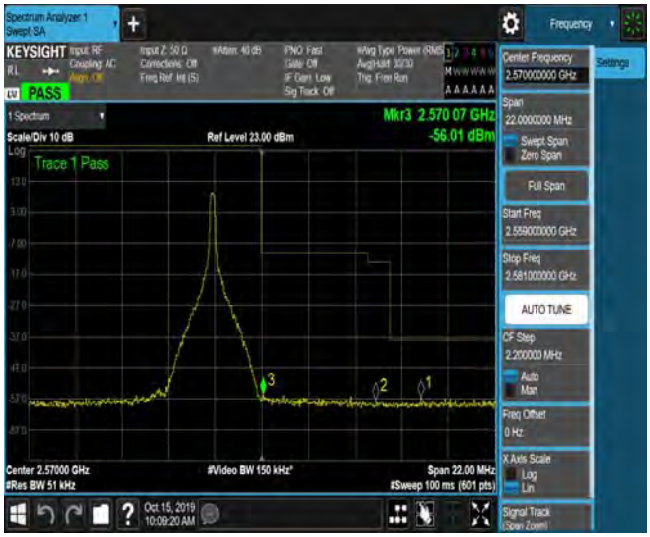
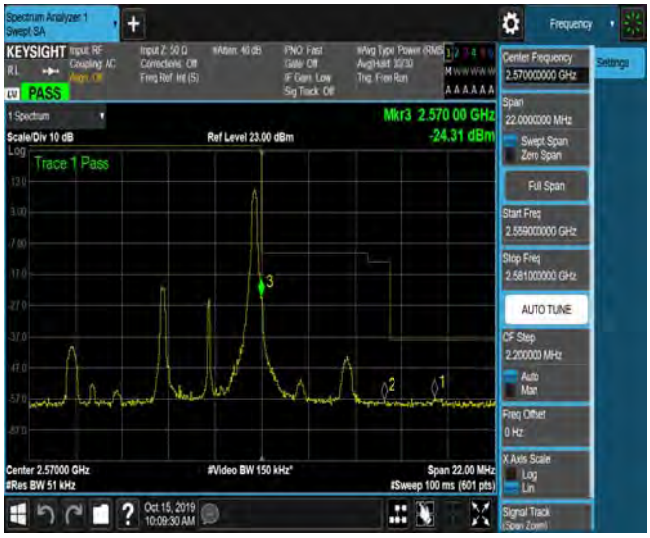
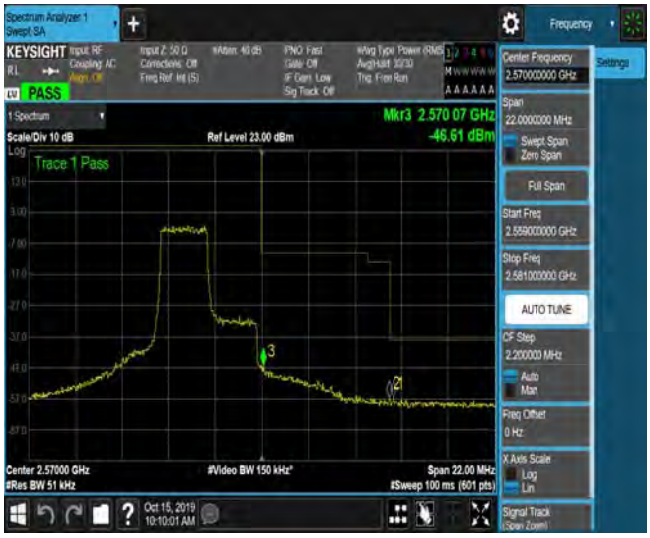
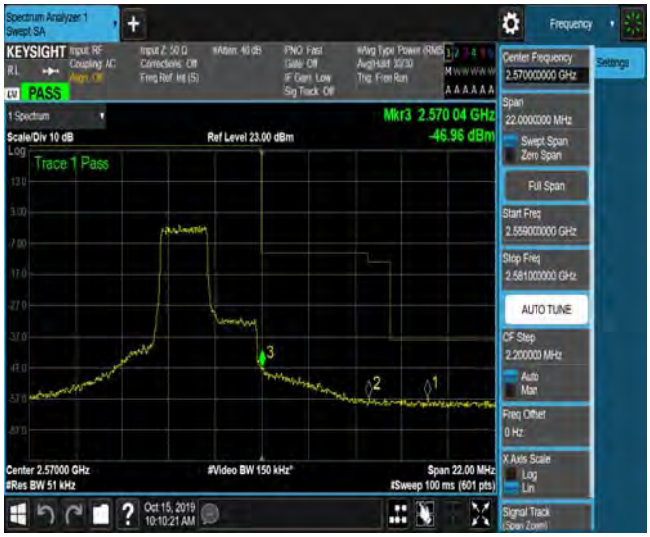
LTE Band 7_5MHz_QPSK_20775_25RB#0_-54.46,-44.25,-33.95_PASS

LTE Band 7_5MHz_16QAM_20775_25RB#0_-55.24,-47.25,-35.95_PASS

LTE Band 7_5MHz_QPSK_21425_1RB#0_-56.26,-58.01,-37.40_PASS


LTE Band 7_5MHz_16QAM_21425_1RB#0_-57.11,-57.66,-38.40_PASS

LTE Band 7_5MHz_QPSK_21425_1RB#12_-57.41,-57.90,-55.63_PASS

LTE Band 7_5MHz_16QAM_21425_1RB#12_-56.88,-57.62,-56.01_PASS


LTE Band 7_5MHz_QPSK_21425_1RB#24_-56.71,-57.46,-24.31_PASS

LTE Band 7_5MHz_16QAM_21425_1RB#24_-56.65,-57.78,-26.69_PASS

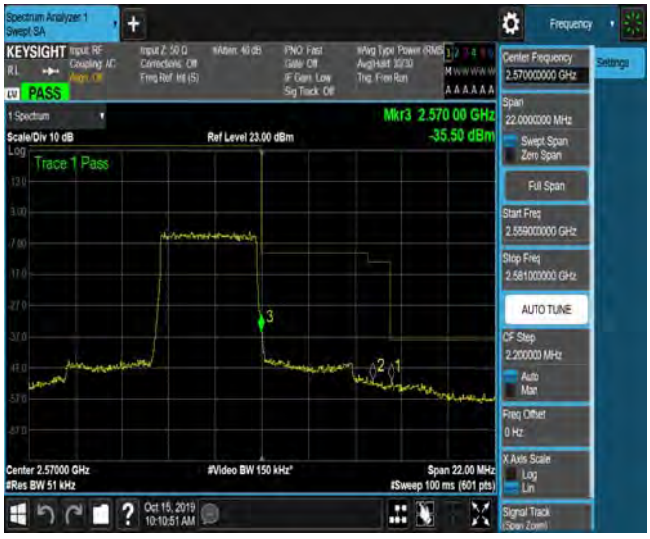
LTE Band 7_5MHz_QPSK_21425_12RB#0_-56.38,-56.61,-45.48_PASS

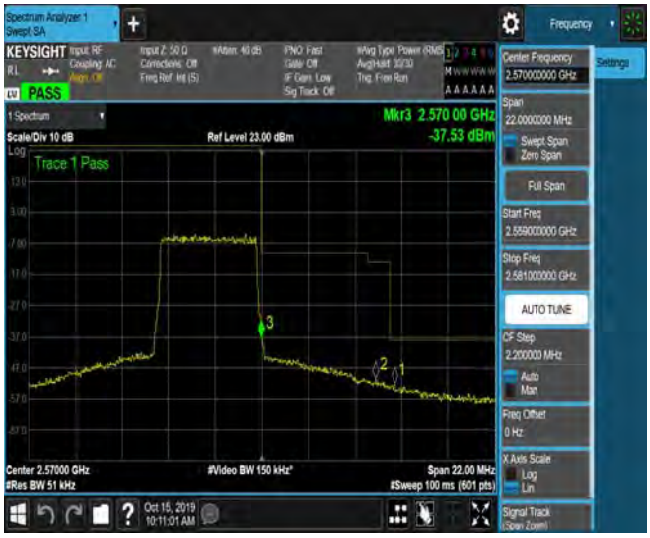

LTE Band 7_5MHz_16QAM_21425_12RB#0_-57.13,-57.01,-46.61_PASS

LTE Band 7_5MHz_QPSK_21425_12RB#6_-57.13,-56.25,-45.44_PASS

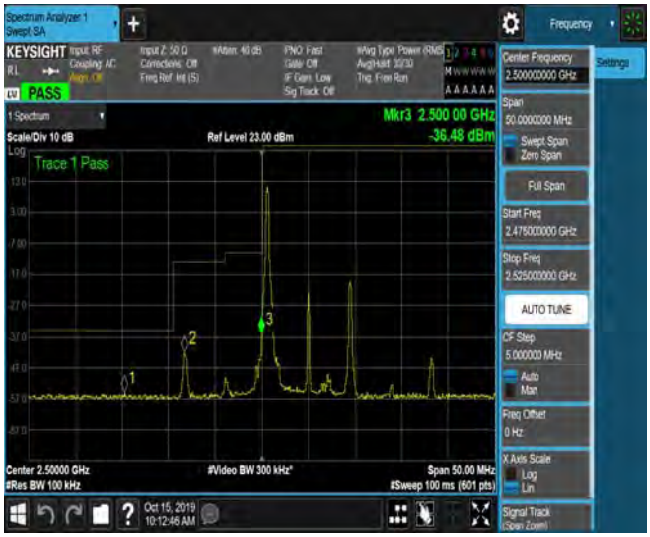
LTE Band 7_5MHz_16QAM_21425_12RB#6_-56.83,-57.11,-46.96_PASS


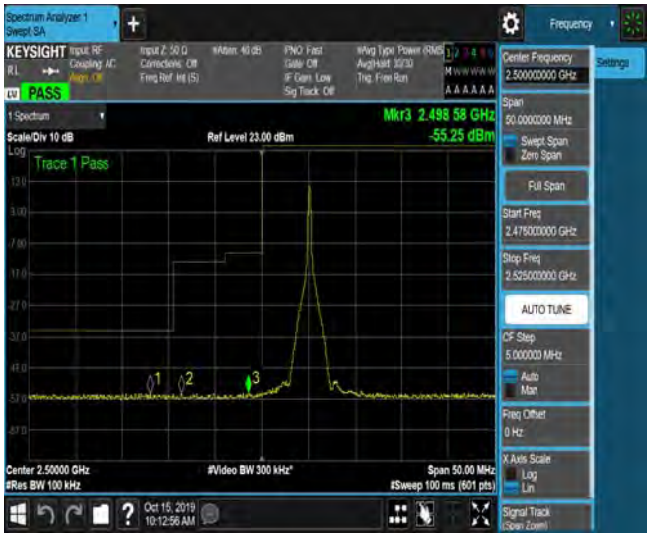
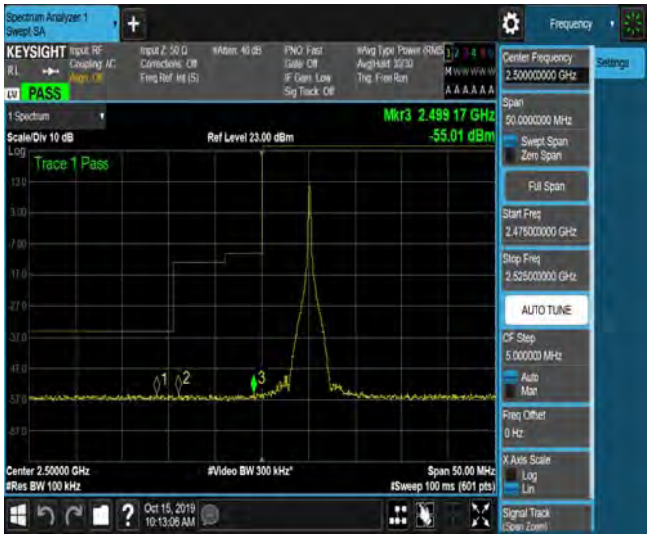
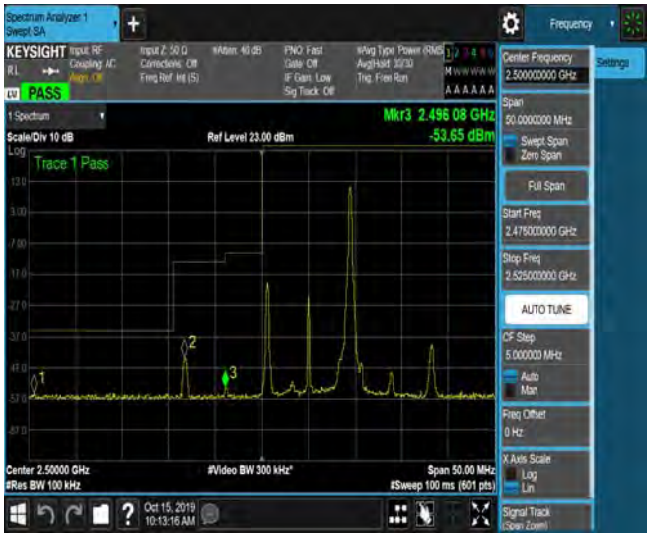
LTE Band 7_5MHz_QPSK_21425_12RB#13_-55.61,-53.86,-34.36_PASS

LTE Band 7_5MHz_16QAM_21425_12RB#13_-56.60,-55.10,-34.12_PASS

LTE Band 7_5MHz_QPSK_21425_25RB#0_-51.43,-51.26,-35.50_PASS


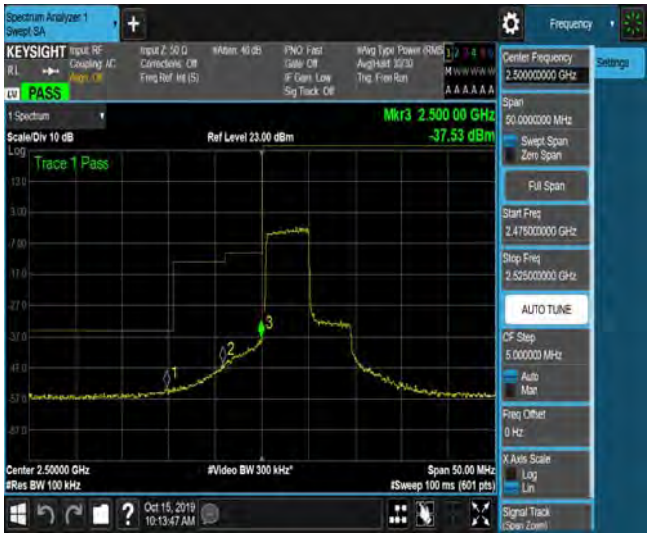
LTE Band 7_5MHz_16QAM_21425_25RB#0_-52.65,-50.82,-37.53_PASS

LTE Band 7_10MHz_QPSK_20800_1RB#0_-55.11,-41.09,-35.63_PASS

LTE Band 7_10MHz_16QAM_20800_1RB#0_-55.38,-42.40,-36.48_PASS


LTE Band 7_10MHz_QPSK_20800_1RB#24_-55.41,-55.45,-55.25_PASS

LTE Band 7_10MHz_16QAM_20800_1RB#24_-55.56,-55.11,-55.01_PASS

LTE Band 7_10MHz_QPSK_20800_1RB#49_-55.18,-43.69,-53.65_PASS


LTE Band 7_10MHz_16QAM_20800_1RB#49_-55.16,-42.90,-52.48_PASS

LTE Band 7_10MHz_QPSK_20800_25RB#0_-53.13,-43.99,-35.77_PASS

LTE Band 7_10MHz_16QAM_20800_25RB#0_-53.73,-46.04,-37.53_PASS


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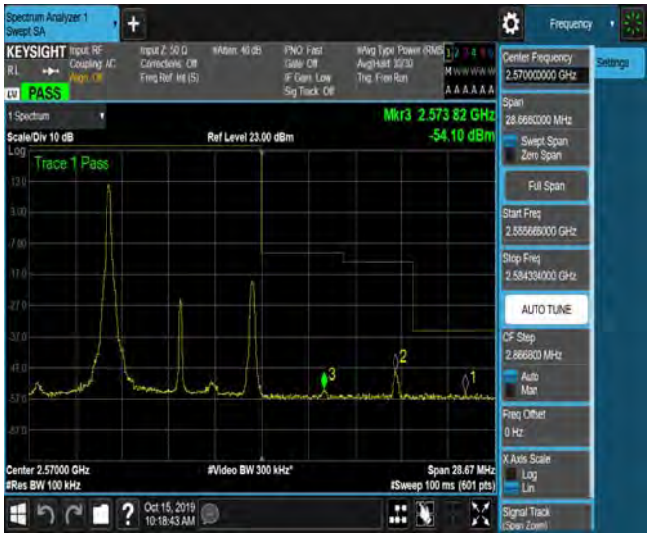
LTE Band 7_10MHz_16QAM_20800_25RB#12_-53.99,-46.29,-37.82_PASS

LTE Band 7_10MHz_QPSK_20800_25RB#25_-54.80,-51.45,-43.17_PASS


LTE Band 7_10MHz_16QAM_20800_25RB#25_-55.26,-52.69,-45.42_PASS

LTE Band 7_10MHz_QPSK_20800_50RB#0_-50.70,-45.31,-38.74_PASS

LTE Band 7_10MHz_16QAM_20800_50RB#0_-50.65,-45.12,-38.65_PASS


LTE Band 7_10MHz_QPSK_21400_1RB#0_-55.16,-48.33,-54.10_PASS

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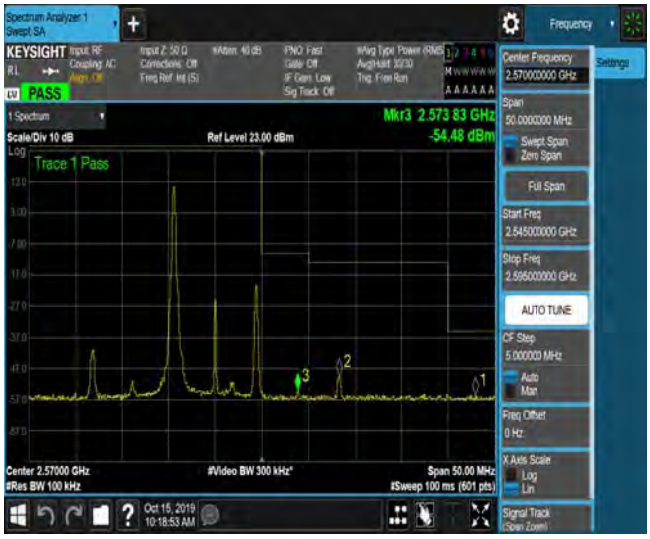
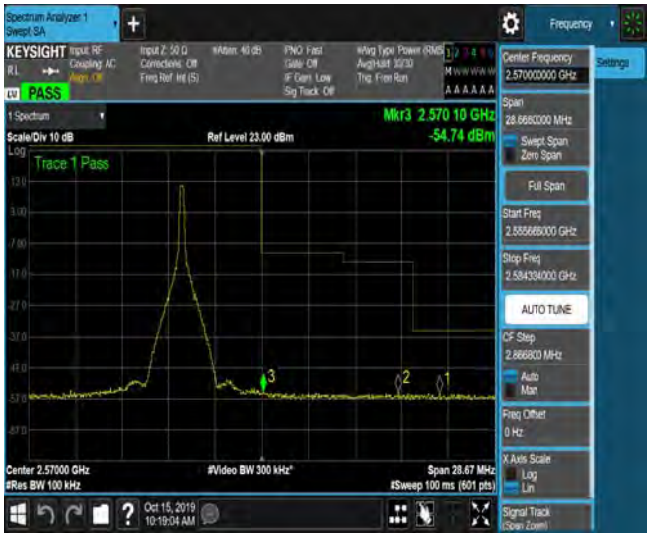
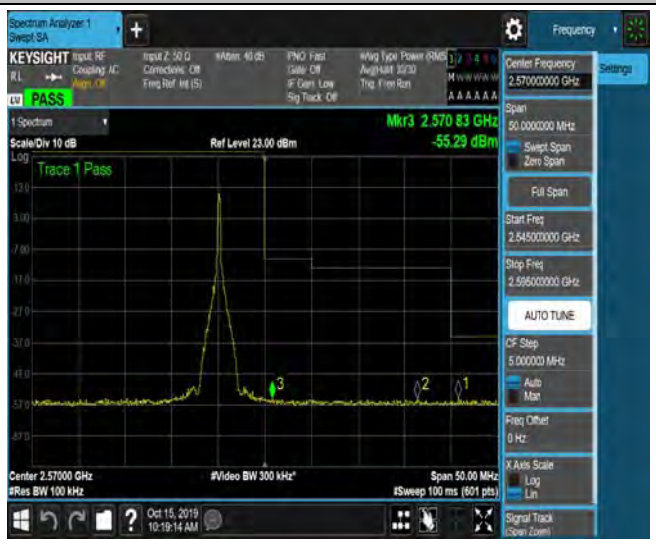

LTE Band 7_10MHz_QPSK_21400_1RB#24_-55.47,-55.13,-54.74_PASS


LTE Band 7_10MHz_16QAM_21400_1RB#24_-55.12,-55.35,-55.29_PASS

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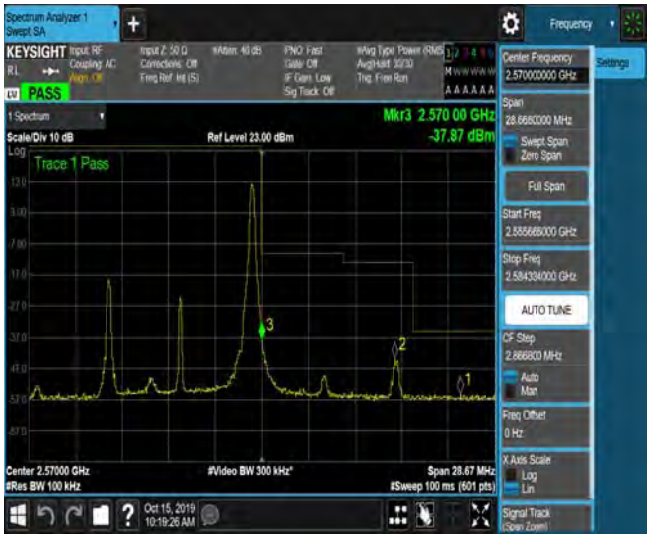
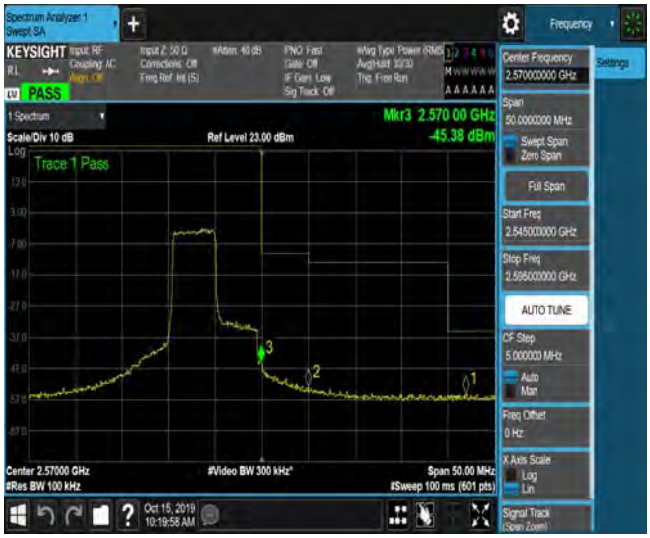

LTE Band 7_10MHz_16QAM_21400_1RB#49_-55.84,-44.55,-38.10_PASS


LTE Band 7_10MHz_QPSK_21400_25RB#0_-54.92,-53.01,-44.76_PASS

LTE Band 7_10MHz_16QAM_21400_25RB#0_-55.19,-53.09,-45.38_PASS

LTE Band 7_10MHz_QPSK_21400_25RB#12_-54.69,-53.06,-44.67_PASS


LTE Band 7_10MHz_16QAM_21400_25RB#12_-55.80,-53.55,-45.80_PASS

LTE Band 7_10MHz_QPSK_21400_25RB#25_-53.41,-49.23,-38.43_PASS

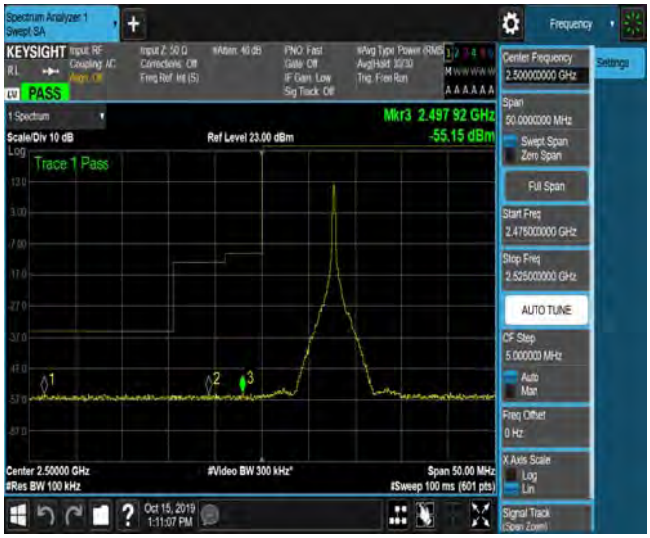
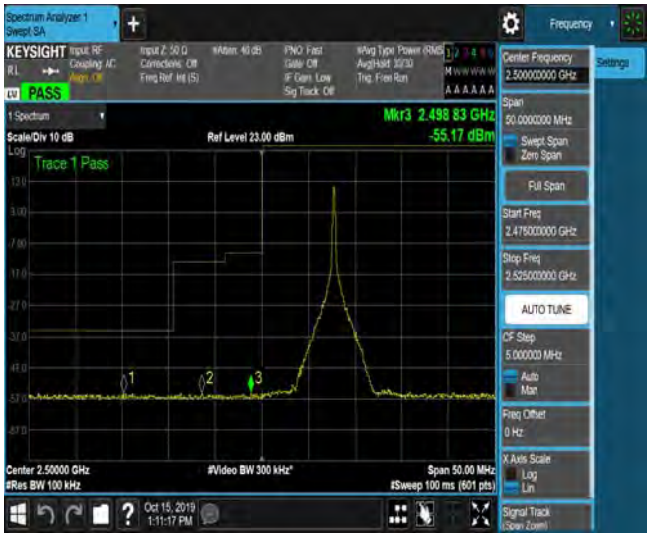
LTE Band 7_10MHz_16QAM_21400_25RB#25_-55.68,-48.86,-38.38_PASS


LTE Band 7_10MHz_QPSK_21400_50RB#0_-51.58,-46.01,-40.09_PASS

LTE Band 7_10MHz_16QAM_21400_50RB#0_-55.47,-45.90,-38.69_PASS

LTE Band 7_15MHz_QPSK_20825_1RB#0_-43.50,-52.09,-36.04_PASS


LTE Band 7_15MHz_16QAM_20825_1RB#0_-44.57,-52.38,-37.26_PASS

LTE Band 7_15MHz_QPSK_20825_1RB#38_-55.45,-55.20,-55.15_PASS

LTE Band 7_15MHz_16QAM_20825_1RB#38_-55.28,-55.29,-55.17_PASS


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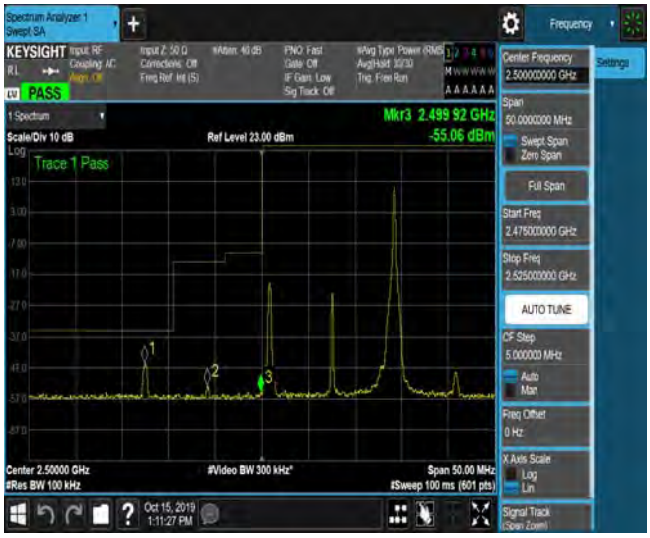
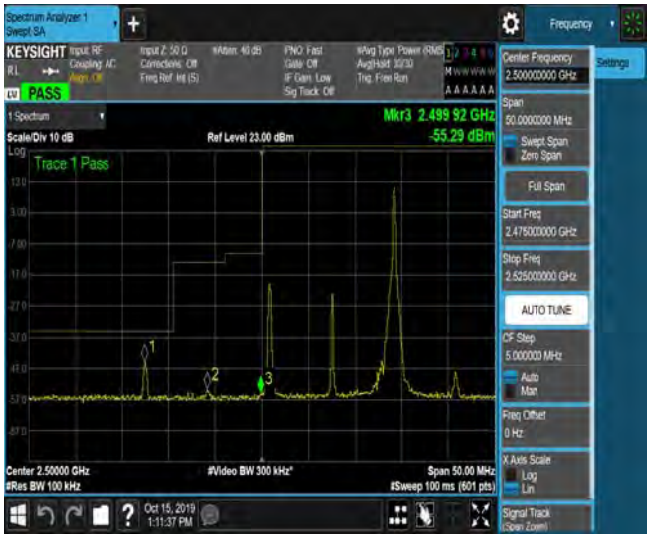
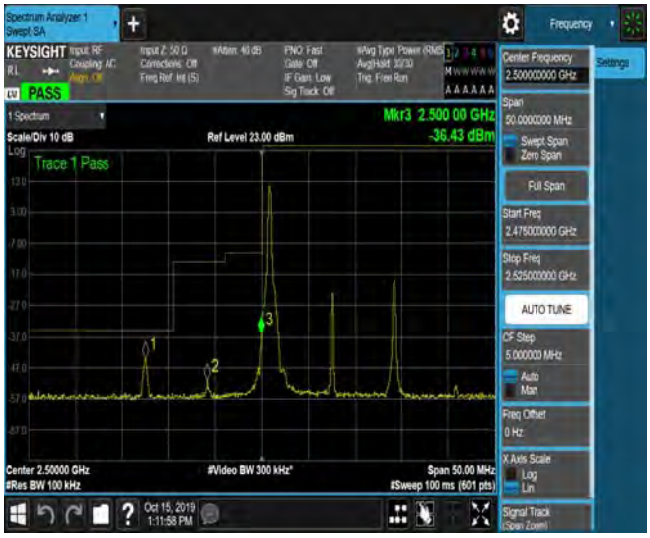

LTE Band 7_15MHz_16QAM_20825_1RB#74_-45.00,-53.98,-55.29_PASS

LTE Band 7_15MHz_QPSK_20825_38RB#0_-45.11,-52.46,-37.07_PASS


LTE Band 7_15MHz_16QAM_20825_38RB#0_-44.36,-51.42,-36.43_PASS

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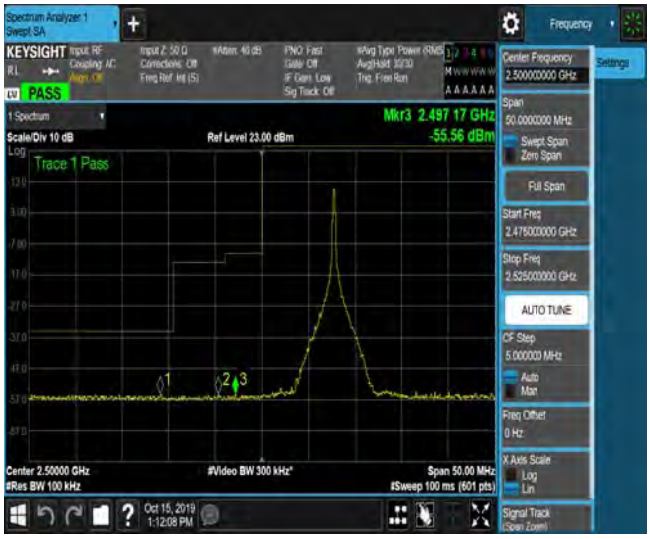
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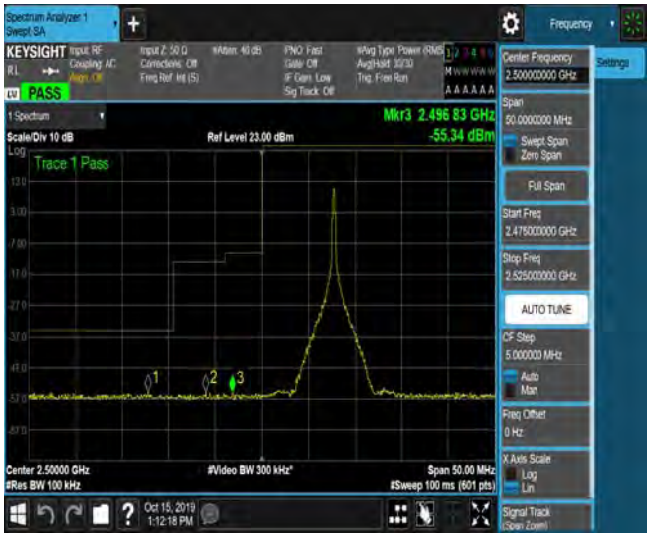


LTE Band 7_15MHz_QPSK_20825_38RB#37_-45.46,-53.88,-55.24_PASS

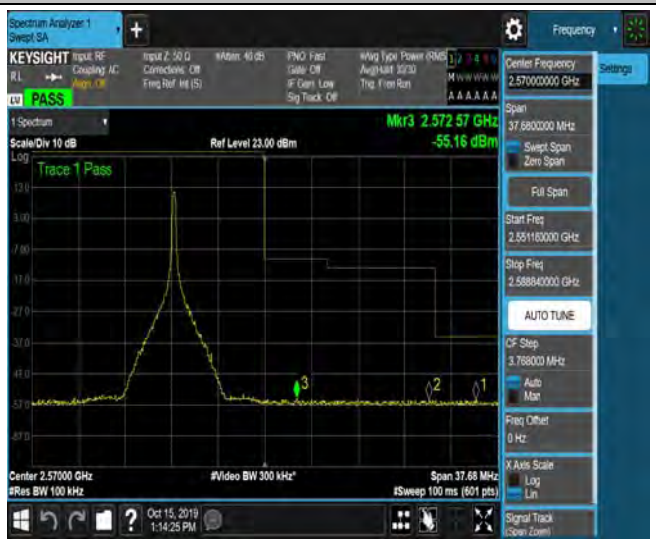
LTE Band 7_15MHz_16QAM_20825_38RB#37_-45.20,-53.37,-55.09_PASS

LTE Band 7_15MHz_QPSK_20825_75RB#0_-46.86,-44.55,-41.32_PASS


LTE Band 7_15MHz_16QAM_20825_75RB#0_-46.91,-45.19,-42.19_PASS

LTE Band 7_15MHz_QPSK_21375_1RB#0_-53.04,-46.01,-42.49_PASS

LTE Band 7_15MHz_16QAM_21375_1RB#0_-55.62,-47.67,-54.59_PASS


LTE Band 7_15MHz_QPSK_21375_1RB#38_-55.57,-55.58,-55.16_PASS

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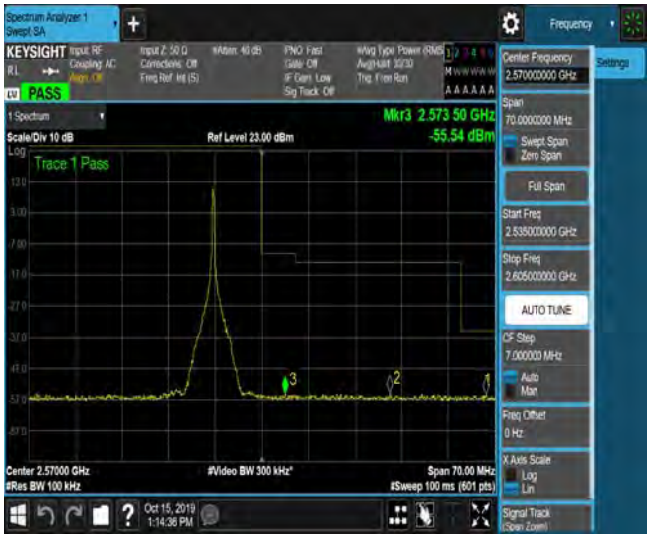
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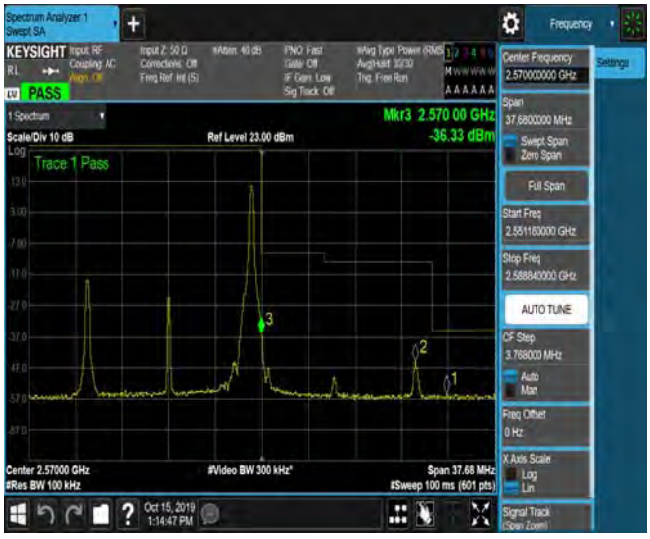
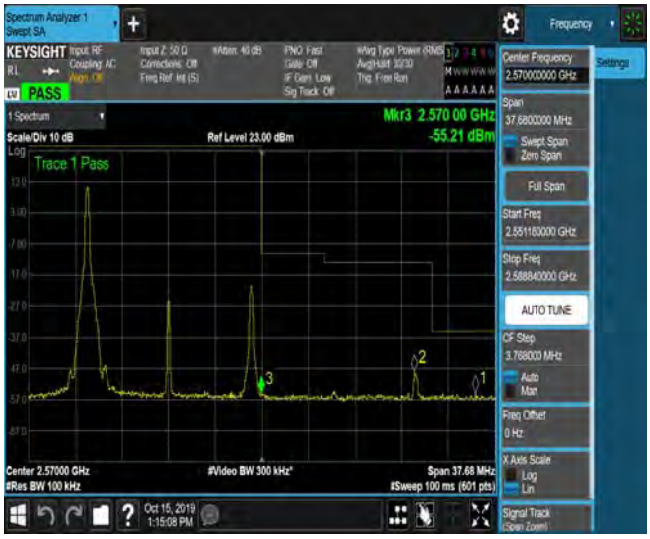
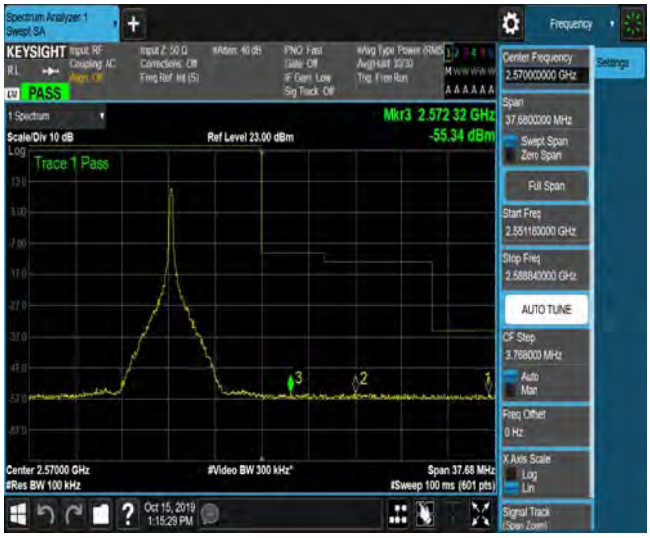


LTE Band 7_15MHz_16QAM_21375_1RB#74_-55.54,-47.48,-38.88_PASS

LTE Band 7_15MHz_QPSK_21375_38RB#0_-55.00,-48.31,-55.21_PASS

LTE Band 7_15MHz_16QAM_21375_38RB#0_-55.59,-49.92,-54.57_PASS


LTE Band 7_15MHz_QPSK_21375_38RB#18_-55.41,-55.39,-55.34_PASS

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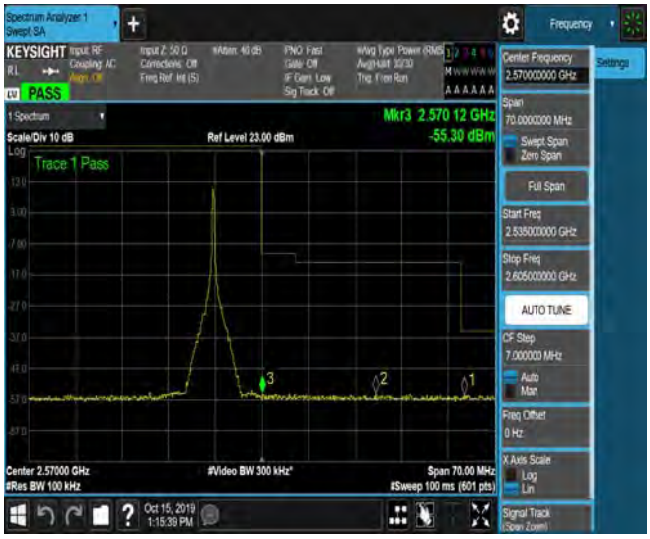
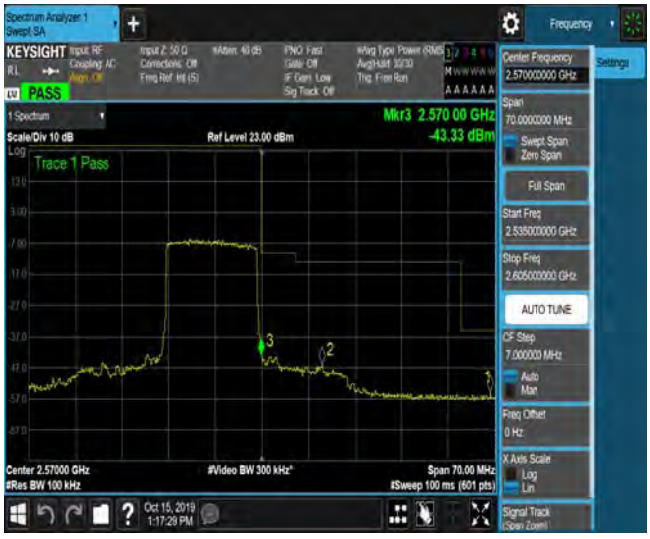
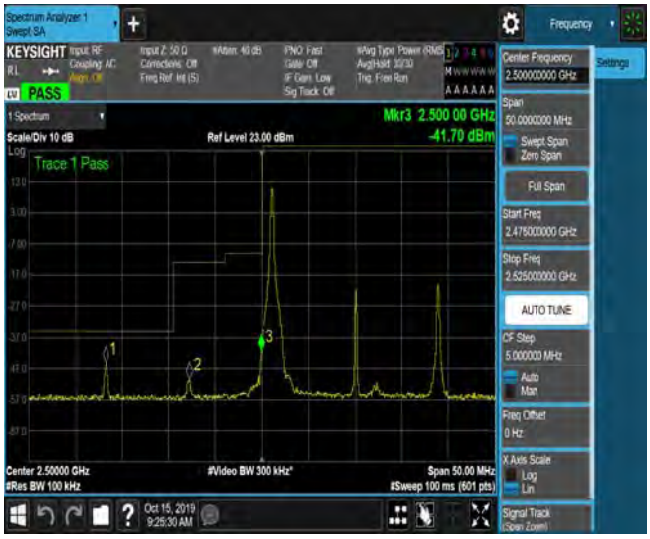
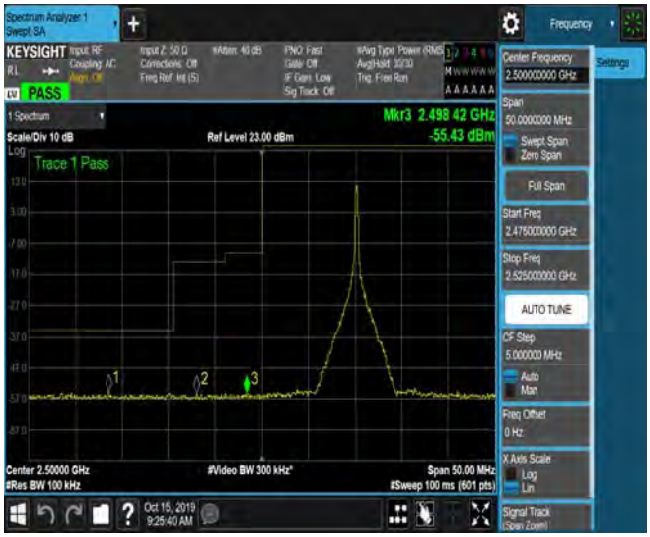

LTE Band 7_15MHz_QPSK_21375_38RB#37_-55.43,-45.64,-38.64_PASS

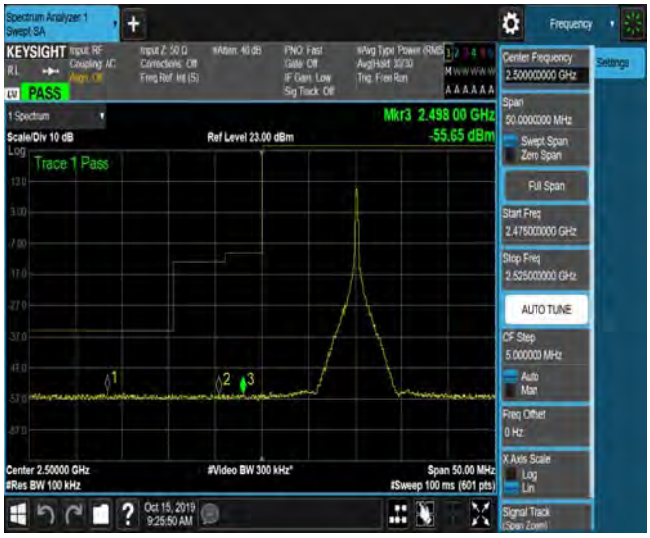

LTE Band 7_15MHz_16QAM_21375_38RB#37_-55.26,-47.60,-38.91_PASS

LTE Band 7_15MHz_QPSK_21375_75RB#0_-53.86,-46.62,-43.51_PASS

LTE Band 7_15MHz_16QAM_21375_75RB#0_-55.02,-46.08,-43.33_PASS


LTE Band 7_20MHz_QPSK_20850_1RB#0_-43.64,-49.09,-43.04_PASS

LTE Band 7_20MHz_16QAM_20850_1RB#0_-45.75,-50.84,-41.70_PASS

LTE Band 7_20MHz_QPSK_20850_1RB#49_-54.96,-55.56,-55.43_PASS


LTE Band 7_20MHz_16QAM_20850_1RB#49_-55.14,-55.74,-55.65_PASS

LTE Band 7_20MHz_QPSK_20850_1RB#99_-49.94,-53.20,-55.38_PASS

LTE Band 7_20MHz_16QAM_20850_1RB#99_-51.31,-53.49,-55.55_PASS


LTE Band 7_20MHz_QPSK_20850_50RB#0_-51.39,-45.54,-42.71_PASS

LTE Band 7_20MHz_16QAM_20850_50RB#0_-50.88,-45.07,-43.11_PASS

LTE Band 7_20MHz_QPSK_20850_50RB#25_-51.23,-45.29,-43.17_PASS


LTE Band 7_20MHz_16QAM_20850_50RB#25_-50.90,-44.65,-42.85_PASS

LTE Band 7_20MHz_QPSK_20850_50RB#50_-54.53,-51.72,-48.10_PASS

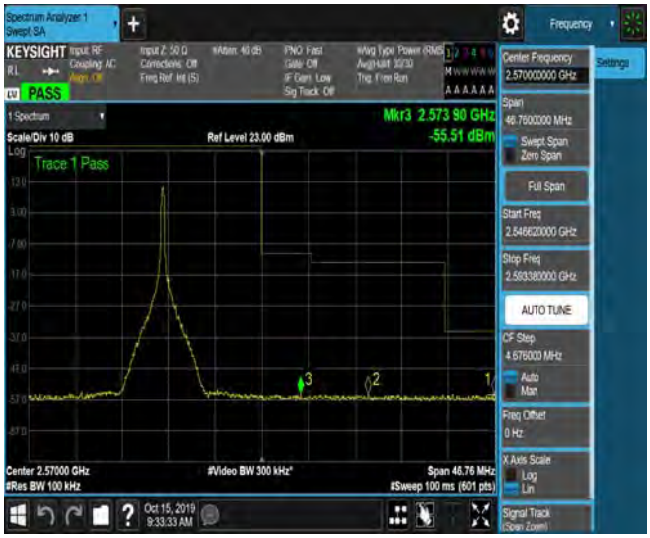
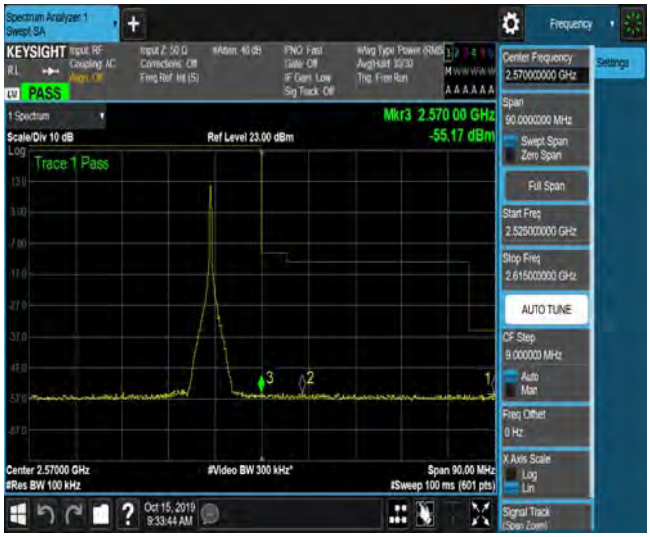
LTE Band 7_20MHz_16QAM_20850_50RB#50_-54.44,-51.64,-48.45_PASS

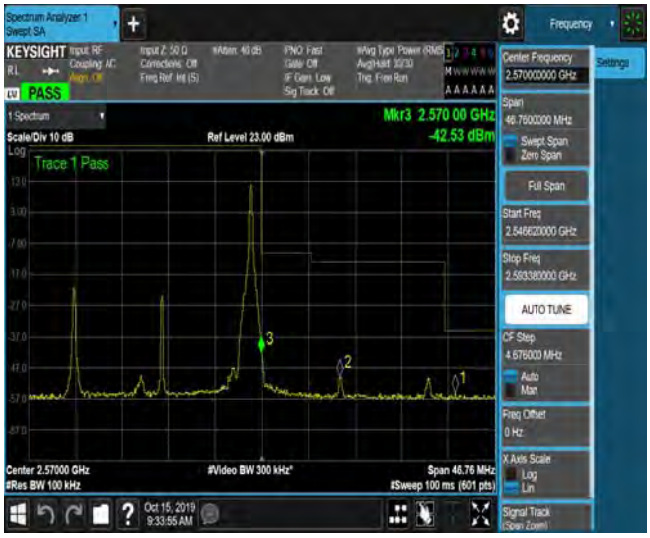

LTE Band 7_20MHz_QPSK_20850_100RB#0_-48.57,-48.29,-45.21_PASS

LTE Band 7_20MHz_16QAM_20850_100RB#0_-48.39,-47.97,-45.60_PASS

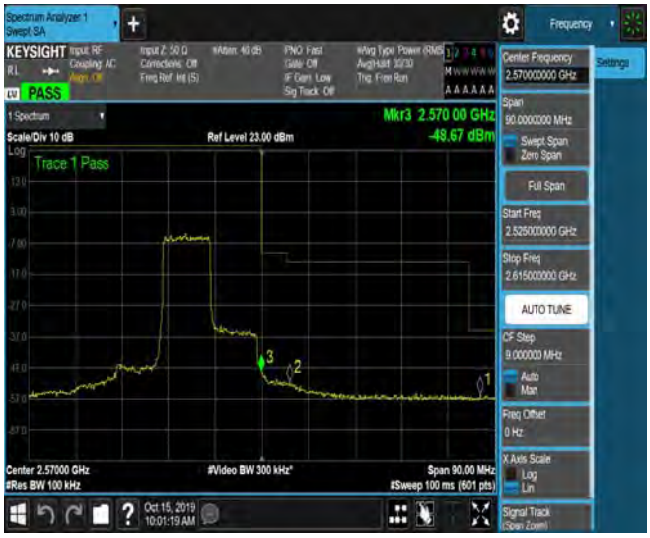
LTE Band 7_20MHz_QPSK_21350_1RB#0_-54.83,-47.05,-44.55_PASS


LTE Band 7_20MHz_16QAM_21350_1RB#0_-55.78,-50.19,-55.64_PASS

LTE Band 7_20MHz_QPSK_21350_1RB#49_-55.41,-55.55,-55.51_PASS

LTE Band 7_20MHz_16QAM_21350_1RB#49_-55.58,-55.16,-55.17_PASS


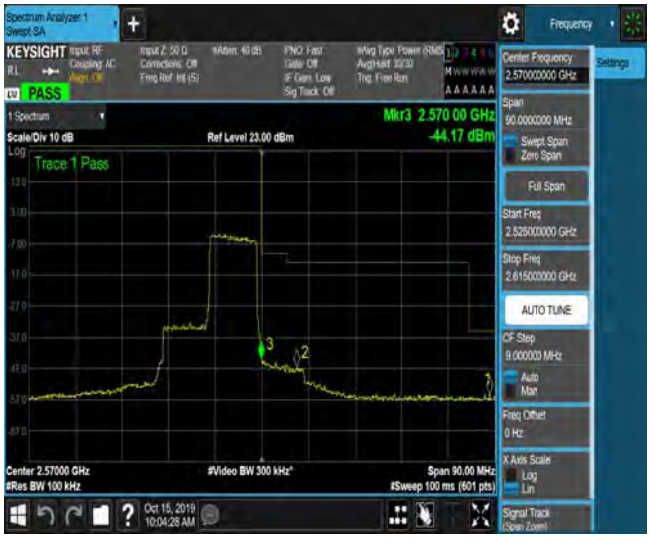
LTE Band 7_20MHz_QPSK_21350_1RB#99_-55.37,-50.17,-42.53_PASS

LTE Band 7_20MHz_16QAM_21350_1RB#99_-55.80,-50.34,-41.70_PASS

LTE Band 7_20MHz_QPSK_21350_50RB#0_-55.61,-52.09,-47.68_PASS


LTE Band 7_20MHz_16QAM_21350_50RB#0_-55.62,-51.78,-48.67_PASS

LTE Band 7_20MHz_QPSK_21350_50RB#25_-55.50,-52.21,-47.78_PASS

LTE Band 7_20MHz_16QAM_21350_50RB#25_-56.24,-51.81,-47.96_PASS


LTE Band 7_20MHz_QPSK_21350_50RB#50_-55.10,-46.53,-43.50_PASS

LTE Band 7_20MHz_16QAM_21350_50RB#50_-55.46,-46.78,-44.17_PASS

LTE Band 7_20MHz_QPSK_21350_100RB#0_-55.31,-47.03,-45.21_PASS


LTE Band 7_20MHz_16QAM_21350_100RB#0_-56.10,-47.11,-44.35_PASS


5.5 Peak-to-Average Power Ratio (PAPR)

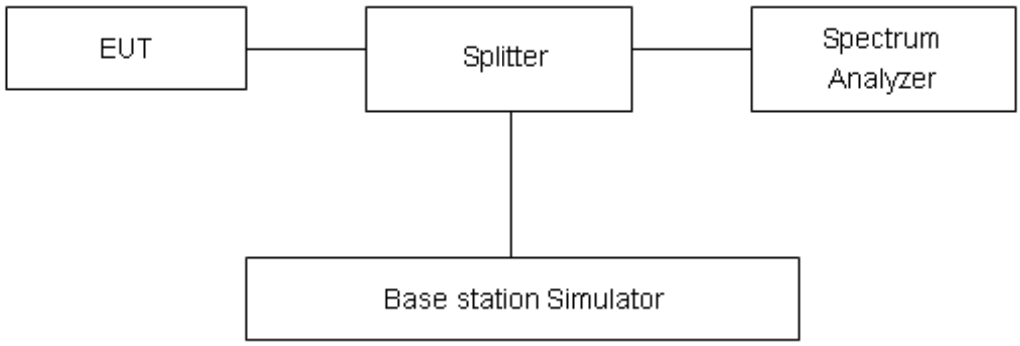
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

Measure the total peak power and record as PPk. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (*e.g.*, dBm). Determine the PAPR from:
PAPR (dB) = PPk (dBm) - PAvg (dBm).

Test Setup



Limits

Rule Part 27.50(d)(5) Equipment employed must be authorized in accordance with the provisions of 24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for thenormal distribution is with the coverage factor k = 2, U= 0.4 dB.

Test Results

Band	Channel	Peak-to-Average Ratio(dB)	Limit(dBm)	Verdict
WCDMA Band IV	1312	3.14	13	PASS
WCDMA Band IV	1413	3.08	13	PASS
WCDMA Band IV	1513	3.13	13	PASS

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
LTE Band 4	1.4MHz	QPSK	19957	6RB#0	5.23	13	PASS
LTE Band 4	1.4MHz	16QAM	19957	6RB#0	5.18	13	PASS
LTE Band 4	1.4MHz	QPSK	20175	6RB#0	5.01	13	PASS
LTE Band 4	1.4MHz	16QAM	20175	6RB#0	5.95	13	PASS
LTE Band 4	1.4MHz	QPSK	20393	6RB#0	5.09	13	PASS
LTE Band 4	1.4MHz	16QAM	20393	6RB#0	5.14	13	PASS
LTE Band 4	3MHz	QPSK	19965	15RB#0	5.24	13	PASS
LTE Band 4	3MHz	16QAM	19965	15RB#0	5.23	13	PASS
LTE Band 4	3MHz	QPSK	20175	15RB#0	5.01	13	PASS
LTE Band 4	3MHz	16QAM	20175	15RB#0	4.97	13	PASS
LTE Band 4	3MHz	QPSK	20385	15RB#0	5.14	13	PASS
LTE Band 4	3MHz	16QAM	20385	15RB#0	5.18	13	PASS
LTE Band 4	5MHz	QPSK	19975	25RB#0	5.29	13	PASS
LTE Band 4	5MHz	16QAM	19975	25RB#0	5.28	13	PASS
LTE Band 4	5MHz	QPSK	20175	25RB#0	5.04	13	PASS
LTE Band 4	5MHz	16QAM	20175	25RB#0	5.09	13	PASS
LTE Band 4	5MHz	QPSK	20375	25RB#0	5.13	13	PASS
LTE Band 4	5MHz	16QAM	20375	25RB#0	5.13	13	PASS
LTE Band 4	10MHz	QPSK	20000	50RB#0	5.21	13	PASS
LTE Band 4	10MHz	16QAM	20000	50RB#0	5.18	13	PASS
LTE Band 4	10MHz	QPSK	20175	50RB#0	5.11	13	PASS
LTE Band 4	10MHz	16QAM	20175	50RB#0	5.09	13	PASS
LTE Band 4	10MHz	QPSK	20350	50RB#0	5.12	13	PASS
LTE Band 4	10MHz	16QAM	20350	50RB#0	5.13	13	PASS
LTE Band 4	15MHz	QPSK	20025	75RB#0	4.97	13	PASS
LTE Band 4	15MHz	16QAM	20025	75RB#0	4.99	13	PASS
LTE Band 4	15MHz	QPSK	20175	75RB#0	4.92	13	PASS
LTE Band 4	15MHz	16QAM	20175	75RB#0	4.94	13	PASS
LTE Band 4	15MHz	QPSK	20325	75RB#0	4.91	13	PASS
LTE Band 4	15MHz	16QAM	20325	75RB#0	4.92	13	PASS
LTE Band 4	20MHz	QPSK	20050	100RB#0	5.25	13	PASS
LTE Band 4	20MHz	16QAM	20050	100RB#0	5.25	13	PASS
LTE Band 4	20MHz	QPSK	20175	100RB#0	5.32	13	PASS
LTE Band 4	20MHz	16QAM	20175	100RB#0	5.31	13	PASS

LTE Band 4	20MHz	QPSK	20300	100RB#0	5.29	13	PASS
LTE Band 4	20MHz	16QAM	20300	100RB#0	5.28	13	PASS

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
LTE Band 7	5MHz	QPSK	20775	25RB#0	5.14	13	PASS
LTE Band 7	5MHz	16QAM	20775	25RB#0	5.04	13	PASS
LTE Band 7	5MHz	QPSK	21100	25RB#0	5.20	13	PASS
LTE Band 7	5MHz	16QAM	21100	25RB#0	5.19	13	PASS
LTE Band 7	5MHz	QPSK	21425	25RB#0	5.22	13	PASS
LTE Band 7	5MHz	16QAM	21425	25RB#0	5.13	13	PASS
LTE Band 7	10MHz	QPSK	20800	50RB#0	5.04	13	PASS
LTE Band 7	10MHz	16QAM	20800	50RB#0	5.05	13	PASS
LTE Band 7	10MHz	QPSK	21100	50RB#0	5.13	13	PASS
LTE Band 7	10MHz	16QAM	21100	50RB#0	5.16	13	PASS
LTE Band 7	10MHz	QPSK	21400	50RB#0	5.20	13	PASS
LTE Band 7	10MHz	16QAM	21400	50RB#0	5.16	13	PASS
LTE Band 7	15MHz	QPSK	20825	75RB#0	4.96	13	PASS
LTE Band 7	15MHz	16QAM	20825	75RB#0	4.97	13	PASS
LTE Band 7	15MHz	QPSK	21100	75RB#0	5.02	13	PASS
LTE Band 7	15MHz	16QAM	21100	75RB#0	5.00	13	PASS
LTE Band 7	15MHz	QPSK	21375	75RB#0	5.00	13	PASS
LTE Band 7	15MHz	16QAM	21375	75RB#0	5.02	13	PASS
LTE Band 7	20MHz	QPSK	20850	100RB#0	5.29	13	PASS
LTE Band 7	20MHz	16QAM	20850	100RB#0	5.30	13	PASS
LTE Band 7	20MHz	QPSK	21100	100RB#0	5.33	13	PASS
LTE Band 7	20MHz	16QAM	21100	100RB#0	5.32	13	PASS
LTE Band 7	20MHz	QPSK	21350	100RB#0	5.33	13	PASS
LTE Band 7	20MHz	16QAM	21350	100RB#0	5.34	13	PASS

5.6 Frequency Stability

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -40°C to +85°C in 10°C step size.

(1)With all power removed, the temperature was decreased to -10°C and permitted to stabilize for three hours.

(2)Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.

(3) Repeat the above measurements at 10°C increments from -40°C to +85°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

Frequency Stability (Voltage Variation)

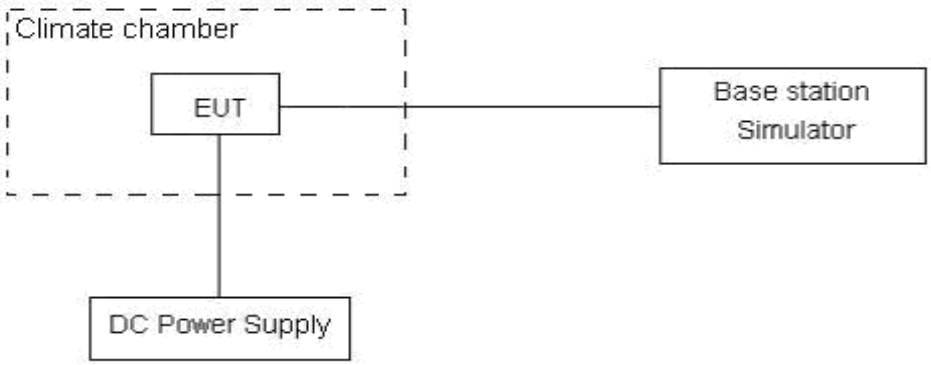
The frequency stability shall be measured with variation of primary supply voltage as follows:

(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

(2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery-operating end point which shall be specified by the manufacturer.

This transceiver is specified to operate with an input voltage of between 3.3 V and 4.3 V, with a nominal voltage of 3.8V.

Test setup



Limits

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

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75％ confidence level for the normal distribution is with the coverage factor k = 3,U=0.01ppm.

Test Result

WCDMA B4						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
Temperature	Voltage	BPSK	QPSK	BPSK	QPSK	
Normal（25℃）	Normal	11.52	13.97	0.00613	0.00743	PASS
Extreme（85℃）		1.35	16.47	0.00072	0.00876	PASS
Extreme（80℃）		2.06	4.79	0.00110	0.00255	PASS
Extreme（70℃）		14.80	5.80	0.00787	0.00309	PASS
Extreme（60℃）		5.63	8.39	0.00300	0.00446	PASS
Extreme（50℃）		3.87	7.35	0.00206	0.00391	PASS
Extreme（40℃）		17.62	3.17	0.00937	0.00168	PASS
Extreme（30℃）		6.41	4.57	0.00341	0.00243	PASS
Extreme（20℃）		8.97	13.44	0.00477	0.00715	PASS
Extreme（10℃）		9.17	6.28	0.00488	0.00334	PASS
Extreme（0℃）		15.74	14.84	0.00837	0.00789	PASS
Extreme（-10℃）		2.08	12.76	0.00111	0.00678	PASS
Extreme（-20℃）		13.33	14.21	0.00709	0.00756	PASS
Extreme（-30℃）		10.19	7.57	0.00542	0.00403	PASS
Extreme（-40℃）		9.76	7.70	0.00519	0.00410	PASS
25℃	LV	5.92	5.32	0.00315	0.00283	PASS
	HV	4.36	17.06	0.00232	0.00907	PASS

LTE Band 4						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	1.4MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	7.69	16.18	0.00409	0.00860	PASS
Extreme（85℃）		1.10	5.37	0.00059	0.00285	PASS
Extreme（80℃）		7.09	7.48	0.00377	0.00398	PASS
Extreme（70℃）		14.53	12.51	0.00773	0.00666	PASS
Extreme（60℃）		15.47	6.66	0.00823	0.00354	PASS
Extreme（50℃）		17.00	9.09	0.00904	0.00484	PASS
Extreme（40℃）		9.41	14.88	0.00501	0.00791	PASS
Extreme（30℃）		15.87	3.58	0.00844	0.00191	PASS
Extreme（20℃）		13.41	8.39	0.00713	0.00446	PASS
Extreme（10℃）		17.89	15.66	0.00952	0.00833	PASS
Extreme（0℃）		14.61	1.93	0.00777	0.00102	PASS

Extreme（-10℃）		12.35	11.66	0.00657	0.00620	PASS
Extreme（-20℃）		17.76	12.03	0.00945	0.00640	PASS
Extreme（-30℃）		17.69	17.05	0.00941	0.00907	PASS
Extreme（-40℃）		13.69	7.22	0.00728	0.00384	PASS
25℃	LV	12.03	7.51	0.00640	0.00399	PASS
	HV	4.16	2.73	0.00221	0.00145	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	3MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	12.61	3.52	0.00671	0.00187	PASS
Extreme（85℃）		1.28	7.04	0.00068	0.00374	PASS
Extreme（80℃）		10.85	11.60	0.00577	0.00617	PASS
Extreme（70℃）		16.61	3.29	0.00883	0.00175	PASS
Extreme（60℃）		2.12	9.50	0.00113	0.00505	PASS
Extreme（50℃）		17.78	5.02	0.00946	0.00267	PASS
Extreme（40℃）		7.72	8.62	0.00410	0.00459	PASS
Extreme（30℃）		5.79	14.34	0.00308	0.00763	PASS
Extreme（20℃）		15.87	5.63	0.00844	0.00299	PASS
Extreme（10℃）		12.03	16.19	0.00640	0.00861	PASS
Extreme（0℃）		5.84	11.40	0.00311	0.00606	PASS
Extreme（-10℃）		14.40	17.75	0.00766	0.00944	PASS
Extreme（-20℃）		15.02	14.58	0.00799	0.00776	PASS
Extreme（-30℃）		1.43	14.38	0.00076	0.00765	PASS
Extreme（-40℃）		13.09	6.48	0.00697	0.00345	PASS
25℃	LV	6.12	3.92	0.00326	0.00209	PASS
	HV	1.81	8.54	0.00096	0.00454	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	15.33	15.37	0.00816	0.00817	PASS
Extreme（85℃）		5.35	4.03	0.00284	0.00214	PASS
Extreme（80℃）		5.69	1.81	0.00303	0.00096	PASS
Extreme（70℃）		12.58	11.36	0.00669	0.00604	PASS
Extreme（60℃）		15.62	14.07	0.00831	0.00748	PASS
Extreme（50℃）		10.81	9.79	0.00575	0.00521	PASS
Extreme（40℃）		4.77	14.95	0.00254	0.00795	PASS
Extreme（30℃）		11.93	13.43	0.00634	0.00715	PASS
Extreme（20℃）		6.61	14.83	0.00351	0.00789	PASS
Extreme（10℃）		2.67	2.41	0.00142	0.00128	PASS

Extreme（0℃）		5.48	14.58	0.00291	0.00775	PASS
Extreme（-10℃）		17.23	7.89	0.00916	0.00420	PASS
Extreme（-20℃）		2.51	16.70	0.00134	0.00888	PASS
Extreme（-30℃）		6.40	3.97	0.00340	0.00211	PASS
Extreme（-40℃）		11.33	8.41	0.00602	0.00448	PASS
25℃	LV	7.91	11.31	0.00421	0.00602	PASS
	HV	16.65	9.91	0.00886	0.00527	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	13.01	17.16	0.00692	0.00913	PASS
Extreme（85℃）		3.85	6.60	0.00205	0.00351	PASS
Extreme（80℃）		7.44	10.04	0.00396	0.00534	PASS
Extreme（70℃）		7.54	2.82	0.00401	0.00150	PASS
Extreme（60℃）		1.26	3.44	0.00067	0.00183	PASS
Extreme（50℃）		8.68	15.31	0.00462	0.00814	PASS
Extreme（40℃）		11.53	17.87	0.00613	0.00950	PASS
Extreme（30℃）		10.40	15.88	0.00553	0.00844	PASS
Extreme（20℃）		11.26	7.11	0.00599	0.00378	PASS
Extreme（10℃）		17.43	1.75	0.00927	0.00093	PASS
Extreme（0℃）		7.03	17.77	0.00374	0.00945	PASS
Extreme（-10℃）		8.01	14.00	0.00426	0.00745	PASS
Extreme（-20℃）		10.24	7.88	0.00545	0.00419	PASS
Extreme（-30℃）		14.74	7.30	0.00784	0.00388	PASS
Extreme（-40℃）		12.26	15.88	0.00652	0.00845	PASS
25℃	LV	8.40	12.87	0.00447	0.00684	PASS
	HV	17.02	13.20	0.00905	0.00702	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	15MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	15.21	1.09	0.00809	0.00058	PASS
Extreme（85℃）		3.51	17.54	0.00187	0.00933	PASS
Extreme（80℃）		14.12	13.53	0.00751	0.00719	PASS
Extreme（70℃）		11.85	6.34	0.00631	0.00337	PASS
Extreme（60℃）		3.91	15.26	0.00208	0.00812	PASS
Extreme（50℃）		5.96	12.67	0.00317	0.00674	PASS
Extreme（40℃）		3.07	11.77	0.00163	0.00626	PASS
Extreme（30℃）		4.24	4.05	0.00225	0.00215	PASS
Extreme（20℃）		8.05	14.48	0.00428	0.00770	PASS

Extreme（10℃）		17.75	8.02	0.00944	0.00427	PASS
Extreme（0℃）		6.05	10.89	0.00322	0.00579	PASS
Extreme（-10℃）		4.93	9.91	0.00262	0.00527	PASS
Extreme（-20℃）		14.80	13.49	0.00787	0.00718	PASS
Extreme（-30℃）		11.68	1.03	0.00621	0.00055	PASS
Extreme（-40℃）		13.20	16.83	0.00702	0.00895	PASS
25℃	LV	13.77	2.84	0.00733	0.00151	PASS
	HV	1.65	14.95	0.00088	0.00795	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	20MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）		1.30	16.83	0.00069	0.00895	PASS
Extreme（85℃）		6.31	5.13	0.00336	0.00273	PASS
Extreme（80℃）		11.30	17.71	0.00601	0.00942	PASS
Extreme（70℃）		6.59	15.61	0.00350	0.00830	PASS
Extreme（60℃）		6.56	4.37	0.00349	0.00233	PASS
Extreme（50℃）		12.46	2.75	0.00663	0.00146	PASS
Extreme（40℃）		1.72	17.78	0.00092	0.00946	PASS
Extreme（30℃）	Normal	17.51	13.91	0.00931	0.00740	PASS
Extreme（20℃）		15.55	9.12	0.00827	0.00485	PASS
Extreme（10℃）		13.95	15.99	0.00742	0.00850	PASS
Extreme（0℃）		6.08	5.22	0.00323	0.00277	PASS
Extreme（-10℃）		9.84	8.84	0.00523	0.00470	PASS
Extreme（-20℃）		13.05	11.51	0.00694	0.00612	PASS
Extreme（-30℃）		12.56	8.45	0.00668	0.00449	PASS
Extreme（-40℃）		6.94	12.23	0.00369	0.00651	PASS
25℃	LV	8.28	1.52	0.00441	0.00081	PASS
	HV	13.09	10.70	0.00696	0.00569	PASS

LTE Band 7						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）		2.11	6.86	0.00112	0.00365	PASS
Extreme（85℃）		12.74	15.78	0.00678	0.00840	PASS
Extreme（80℃）	Normal	1.75	1.45	0.00093	0.00077	PASS
Extreme（70℃）		1.75	14.36	0.00093	0.00764	PASS
Extreme（60℃）		12.98	10.71	0.00690	0.00570	PASS

Extreme（50℃）		8.46	6.02	0.00450	0.00320	PASS
Extreme（40℃）		7.59	5.37	0.00404	0.00285	PASS
Extreme（30℃）		7.96	10.57	0.00423	0.00562	PASS
Extreme（20℃）		11.54	12.60	0.00614	0.00670	PASS
Extreme（10℃）		5.31	1.55	0.00282	0.00083	PASS
Extreme（0℃）		4.58	15.70	0.00244	0.00835	PASS
Extreme（-10℃）		3.06	7.42	0.00163	0.00395	PASS
Extreme（-20℃）		9.72	15.03	0.00517	0.00799	PASS
Extreme（-30℃）		1.52	17.78	0.00081	0.00946	PASS
Extreme（-40℃）		4.28	10.98	0.00228	0.00584	PASS
25℃	LV	9.72	12.03	0.00517	0.00640	PASS
	HV	3.63	10.83	0.00193	0.00576	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	11.73	17.51	0.00624	0.00931	PASS
Extreme（85℃）		15.74	9.33	0.00837	0.00496	PASS
Extreme（80℃）		6.21	11.90	0.00330	0.00633	PASS
Extreme（70℃）		15.43	4.92	0.00821	0.00262	PASS
Extreme（60℃）		2.86	15.96	0.00152	0.00849	PASS
Extreme（50℃）		12.56	11.94	0.00668	0.00635	PASS
Extreme（40℃）		1.52	1.25	0.00081	0.00066	PASS
Extreme（30℃）		12.80	10.26	0.00681	0.00546	PASS
Extreme（20℃）		7.96	5.14	0.00424	0.00273	PASS
Extreme（10℃）		17.72	12.95	0.00942	0.00689	PASS
Extreme（0℃）		11.76	16.80	0.00625	0.00894	PASS
Extreme（-10℃）		8.18	7.08	0.00435	0.00377	PASS
Extreme（-20℃）		13.20	3.88	0.00702	0.00207	PASS
Extreme（-30℃）		12.00	14.29	0.00639	0.00760	PASS
Extreme（-40℃）		14.89	12.32	0.00792	0.00656	PASS
25℃	LV	3.35	3.91	0.00178	0.00208	PASS
	HV	2.94	7.51	0.00156	0.00400	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	15MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	14.89	3.57	0.00792	0.00190	PASS
Extreme（85℃）		2.75	11.83	0.00146	0.00629	PASS
Extreme（80℃）		15.38	14.91	0.00818	0.00793	PASS
Extreme（70℃）		10.87	7.14	0.00578	0.00380	PASS

Extreme（60℃）		12.23	7.97	0.00650	0.00424	PASS
Extreme（50℃）		5.15	1.68	0.00274	0.00090	PASS
Extreme（40℃）		10.62	6.80	0.00565	0.00362	PASS
Extreme（30℃）		3.97	11.51	0.00211	0.00612	PASS
Extreme（20℃）		17.51	17.20	0.00931	0.00915	PASS
Extreme（10℃）		11.95	5.62	0.00636	0.00299	PASS
Extreme（0℃）		15.11	2.44	0.00804	0.00130	PASS
Extreme（-10℃）		14.46	10.68	0.00769	0.00568	PASS
Extreme（-20℃）		10.23	16.25	0.00544	0.00864	PASS
Extreme（-30℃）		11.87	16.09	0.00632	0.00856	PASS
Extreme（-40℃）		7.68	3.56	0.00409	0.00190	PASS
25℃	LV	17.66	8.10	0.00939	0.00431	PASS
	HV	5.95	13.43	0.00316	0.00714	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	20MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal（25℃）	Normal	16.82	4.34	0.00895	0.00231	PASS
Extreme（85℃）		8.03	13.59	0.00427	0.00723	PASS
Extreme（80℃）		7.03	8.37	0.00374	0.00445	PASS
Extreme（70℃）		5.70	16.77	0.00303	0.00892	PASS
Extreme（60℃）		5.64	4.69	0.00300	0.00250	PASS
Extreme（50℃）		6.48	16.14	0.00345	0.00858	PASS
Extreme（40℃）		3.88	15.21	0.00206	0.00809	PASS
Extreme（30℃）		4.79	11.60	0.00255	0.00617	PASS
Extreme（20℃）		11.58	11.02	0.00616	0.00586	PASS
Extreme（10℃）		8.00	9.49	0.00426	0.00505	PASS
Extreme（0℃）		13.63	14.40	0.00725	0.00766	PASS
Extreme（-10℃）		7.05	10.07	0.00375	0.00536	PASS
Extreme（-20℃）		3.72	11.61	0.00198	0.00618	PASS
Extreme（-30℃）		15.68	3.70	0.00834	0.00197	PASS
Extreme（-40℃）		14.73	15.70	0.00783	0.00835	PASS
25℃	LV	1.29	16.41	0.00069	0.00873	PASS
	HV	4.81	9.42	0.00256	0.00501	PASS

5.7 Spurious Emissions at Antenna Terminals

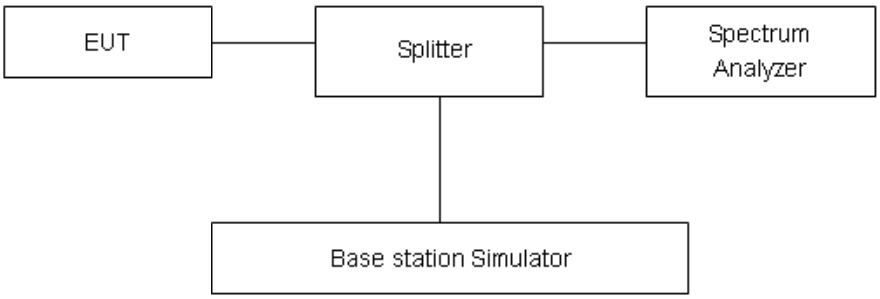
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 9kHz to the 10th harmonic of the carrier. The peak detector is used.
RBW is set to 100kHz, VBW is set to 300kHz for 30MHz~1GHz
RBW is set to 1MHz, VBW is set to 3MHz for above 1GHz, Sweep is set to ATUO.
Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup



Limits

Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB..”
Rule Part 27.53(m) 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section.

Part 27.53(h) Limit	-13 dBm
Part 27.53(m) Limit	-25 dBm

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75％ confidence level for the normal distribution is with the coverage factor *k* = 1.96.

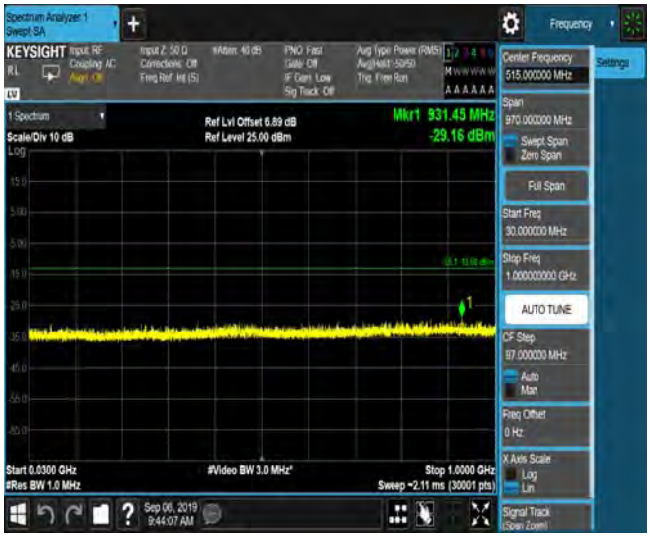
Frequency	Uncertainty
9kHz-1GHz	0.684 dB
1GHz-27GHz	1.407 dB

Test Result

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions more than 20 dB below the limit are not reported.

The signal beyond the limit is carrier.

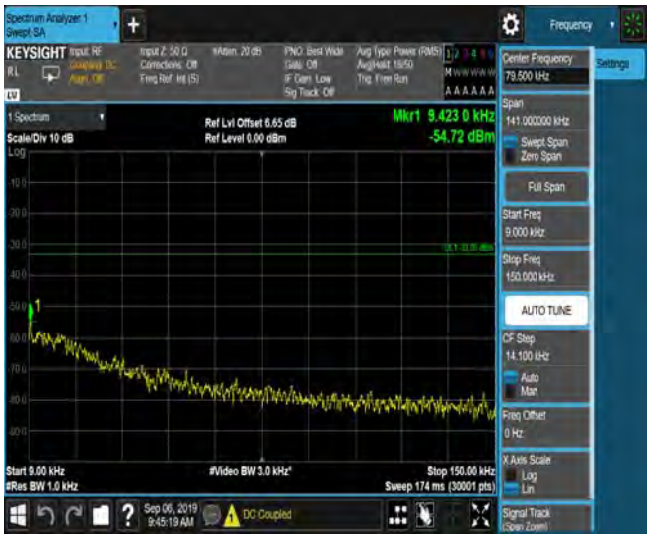
WCDMA Band IV_1312

WCDMA Band IV_1312

WCDMA Band IV_1312

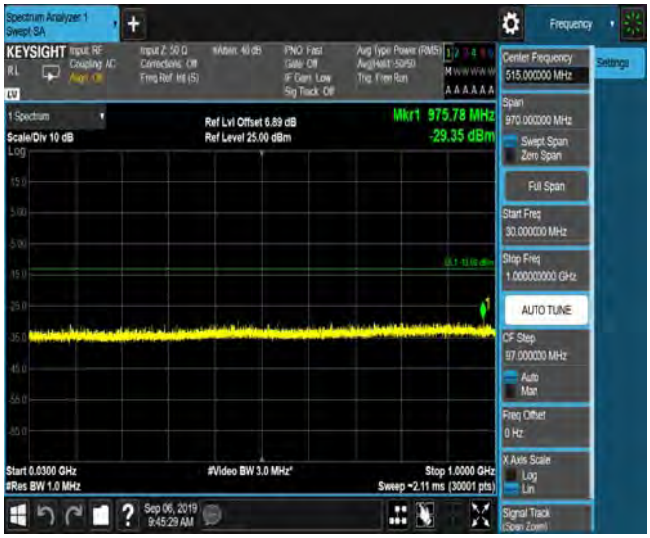

WCDMA Band IV_1312

WCDMA Band IV_1312

WCDMA Band IV_1312

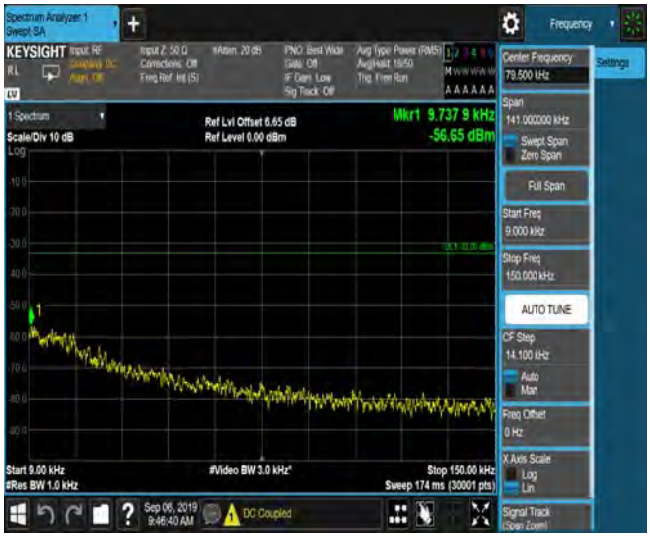


WCDMA Band IV_1413

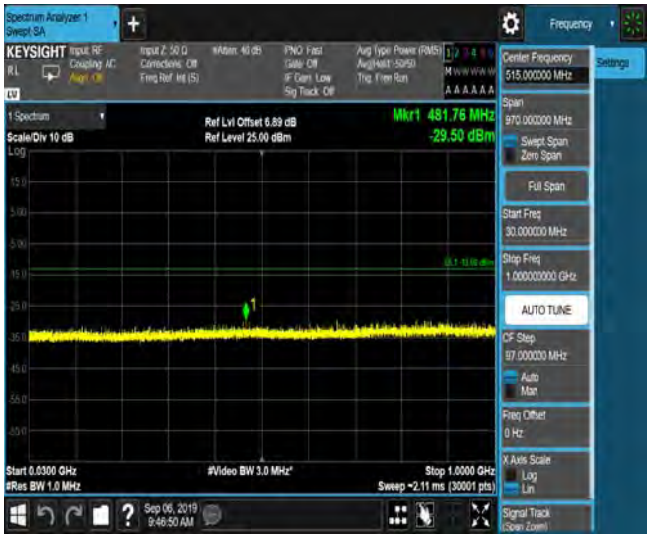
WCDMA Band IV_1413

WCDMA Band IV_1413


WCDMA Band IV_1413

WCDMA Band IV_1413

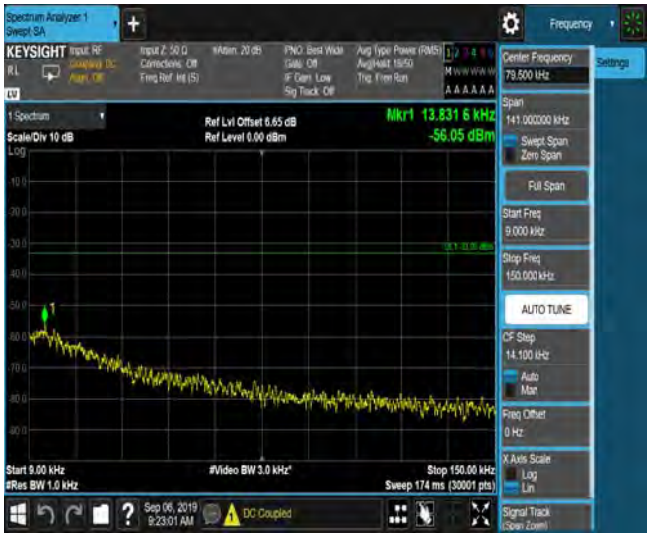
WCDMA Band IV_1413


WCDMA Band IV_1513

WCDMA Band IV_1513

WCDMA Band IV_1513


WCDMA Band IV_1513

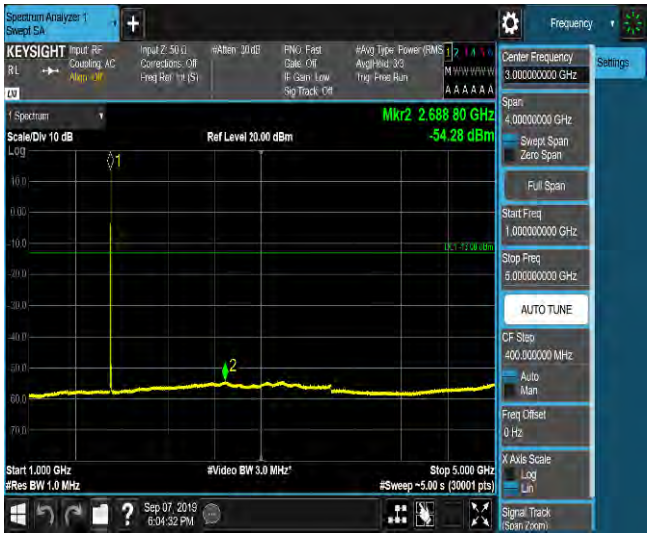
WCDMA Band IV_1513

WCDMA Band IV_1513


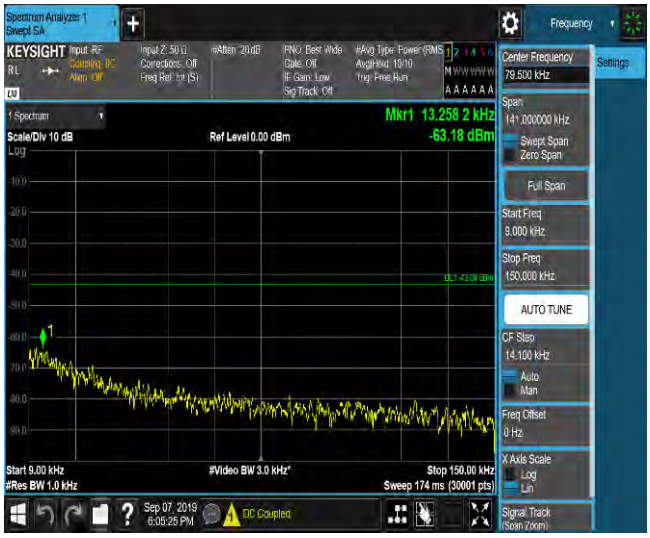
LTE Band 4_1.4MHz_QPSK_19957_1RB#0_Range1:0.009~0.15MHz_-64.17_PASS

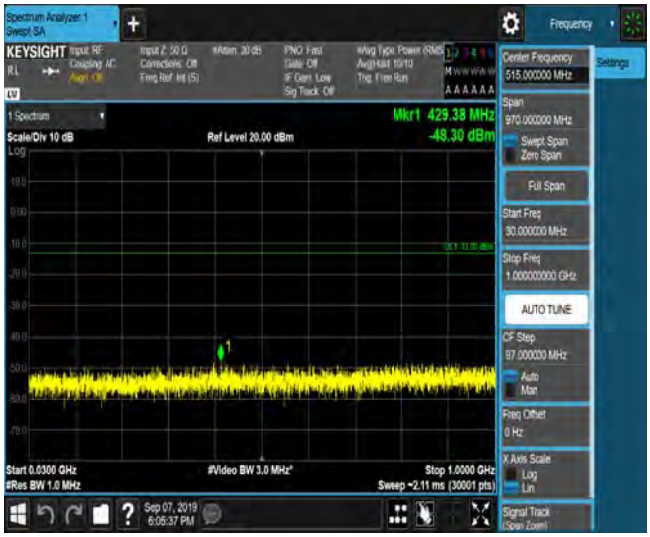
LTE Band 4_1.4MHz_QPSK_19957_1RB#0_Range2:0.15~30MHz_-59.81_PASS

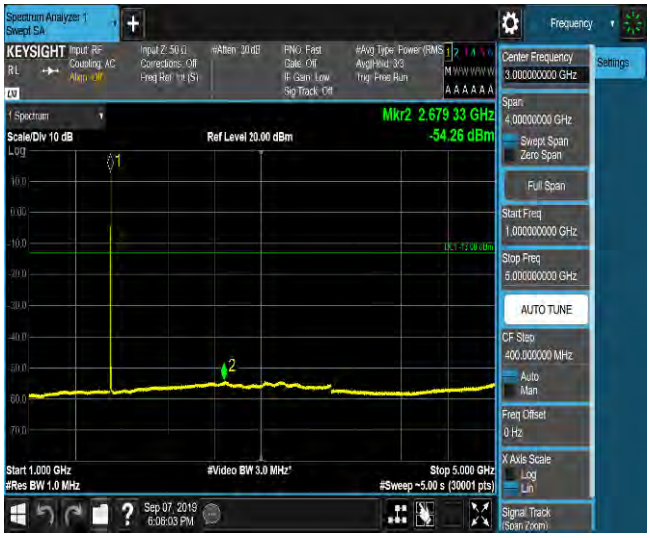
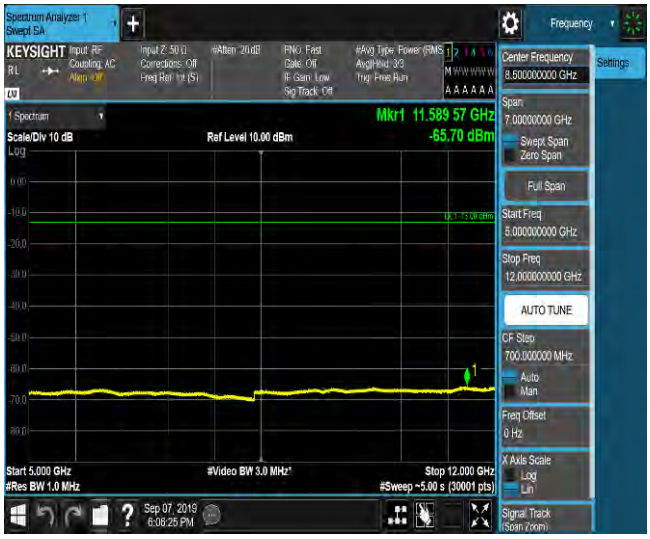
LTE Band 4_1.4MHz_QPSK_19957_1RB#0_Range3:30~1000MHz_-47.66_PASS

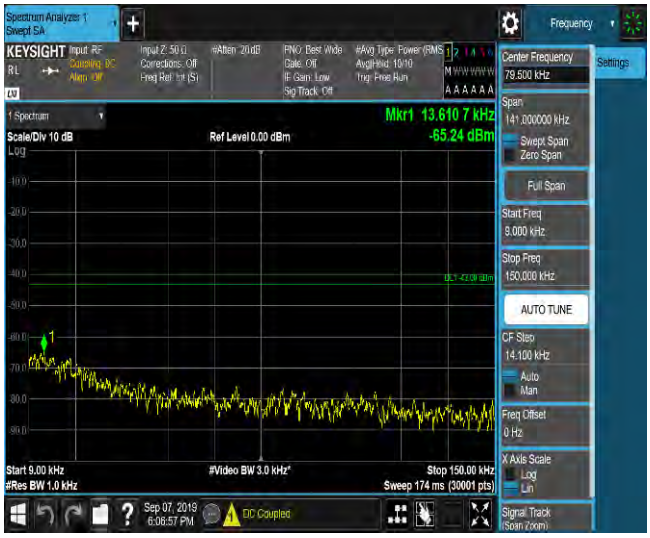

LTE Band 4_1.4MHz_QPSK_19957_1RB#0_Range4:1000~5000MHz_-54.28_PASS

LTE Band 4_1.4MHz_QPSK_19957_1RB#0_Range5:5000~12000MHz_-65.69_PASS

LTE Band 4_1.4MHz_QPSK_19957_1RB#0_Range6:12000~18000MHz_-55.54_PASS

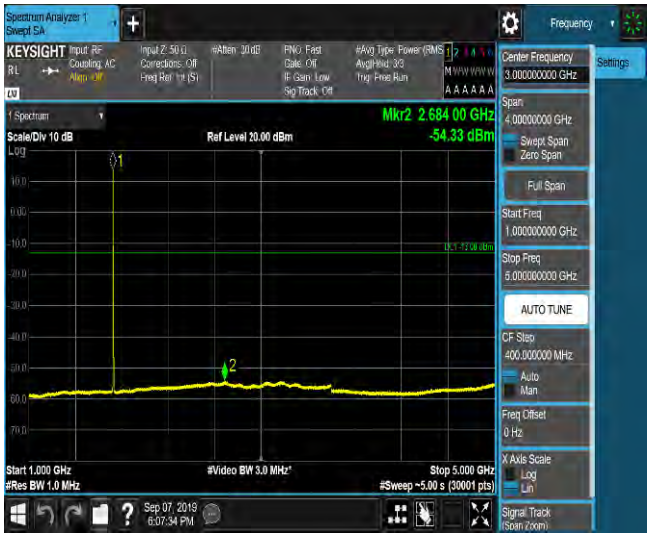

LTE Band 4_1.4MHz_16QAM_19957_1RB#0_Range1:0.009~0.15MHz_-63.18_PASS

LTE Band 4_1.4MHz_16QAM_19957_1RB#0_Range2:0.15~30MHz_-59.76_PASS

LTE Band 4_1.4MHz_16QAM_19957_1RB#0_Range3:30~1000MHz_-48.3_PASS


LTE Band 4_1.4MHz_16QAM_19957_1RB#0_Range4:1000~5000MHz_-54.26_PASS

LTE Band 4_1.4MHz_16QAM_19957_1RB#0_Range5:5000~12000MHz_-65.7_PASS

LTE Band 4_1.4MHz_16QAM_19957_1RB#0_Range6:12000~18000MHz_-55.48_PASS


LTE Band 4_1.4MHz_QPSK_20175_1RB#0_Range1:0.009~0.15MHz_-65.24_PASS

LTE Band 4_1.4MHz_QPSK_20175_1RB#0_Range2:0.15~30MHz_-59.61_PASS

LTE Band 4_1.4MHz_QPSK_20175_1RB#0_Range3:30~1000MHz_-47.42_PASS


LTE Band 4_1.4MHz_QPSK_20175_1RB#0_Range4:1000~5000MHz_-54.33_PASS

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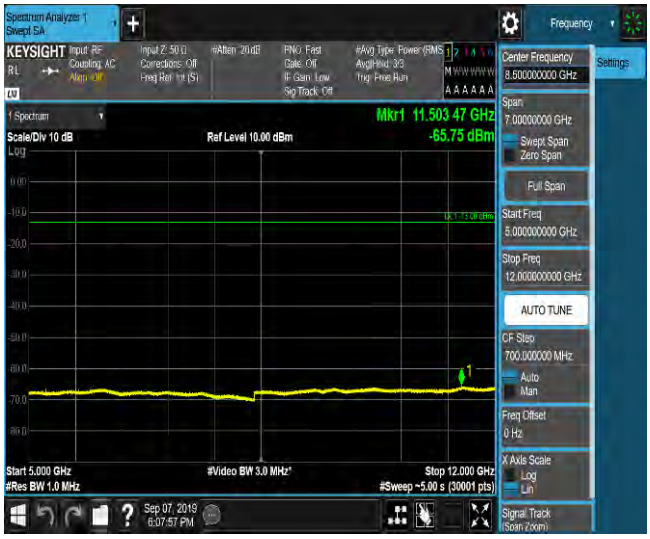
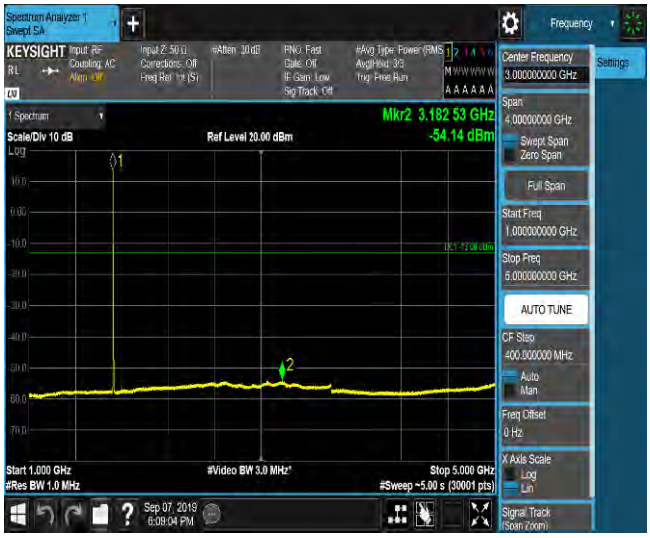

LTE Band 4_1.4MHz_QPSK_20175_1RB#0_Range6:12000~18000MHz_-55.45_PASS


LTE Band 4_1.4MHz_16QAM_20175_1RB#0_Range1:0.009~0.15MHz_-64.47_PASS

LTE Band 4_1.4MHz_16QAM_20175_1RB#0_Range2:0.15~30MHz_-58.52_PASS

LTE Band 4_1.4MHz_16QAM_20175_1RB#0_Range3:30~1000MHz_-46.39_PASS


LTE Band 4_1.4MHz_16QAM_20175_1RB#0_Range4:1000~5000MHz_-54.14_PASS

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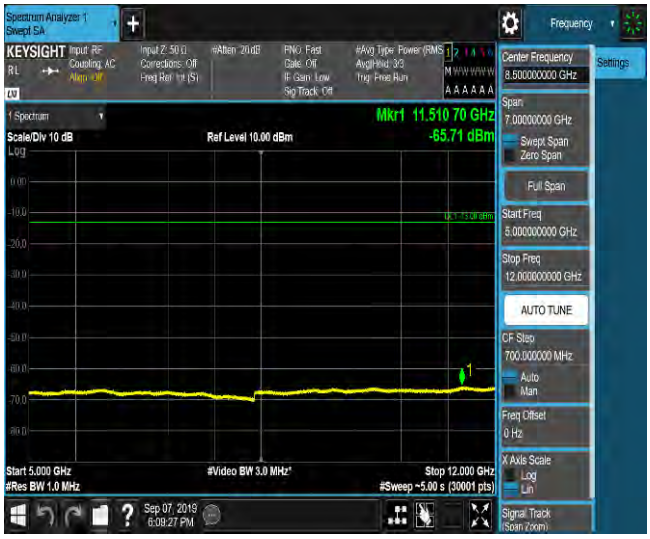
LTE Band 4_1.4MHz_16QAM_20175_1RB#0_Range6:12000~18000MHz_-55.29_PASS


LTE Band 4_1.4MHz_QPSK_20393_1RB#0_Range1:0.009~0.15MHz_-63.84_PASS

LTE Band 4_1.4MHz_QPSK_20393_1RB#0_Range2:0.15~30MHz_-59.95_PASS

LTE Band 4_1.4MHz_QPSK_20393_1RB#0_Range3:30~1000MHz_-47.59_PASS