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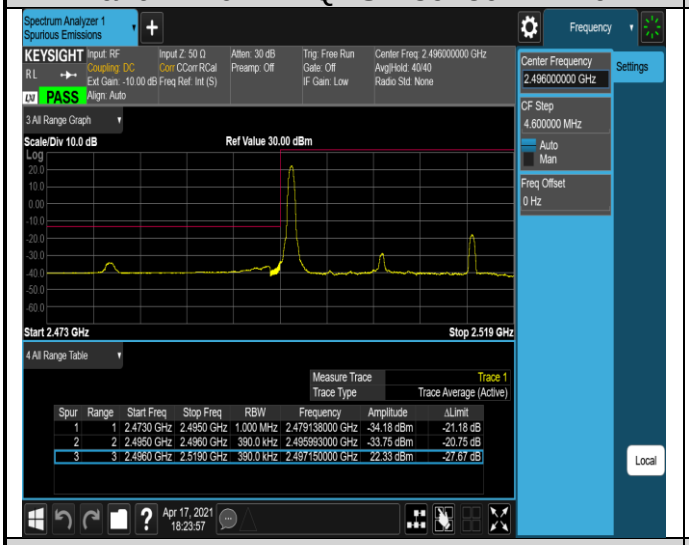
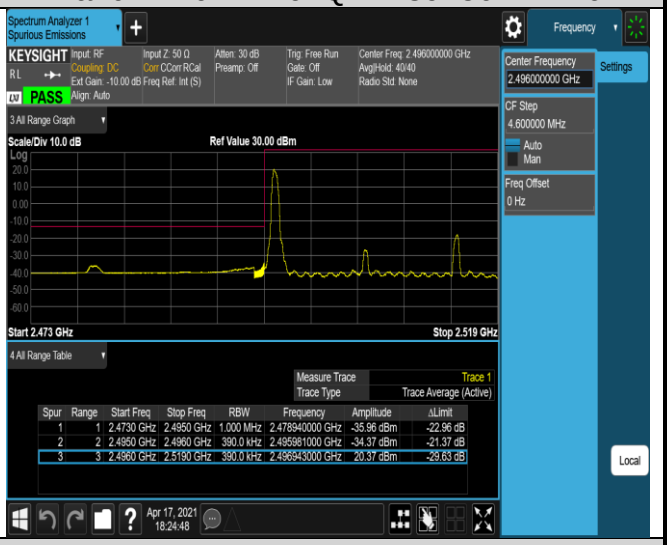
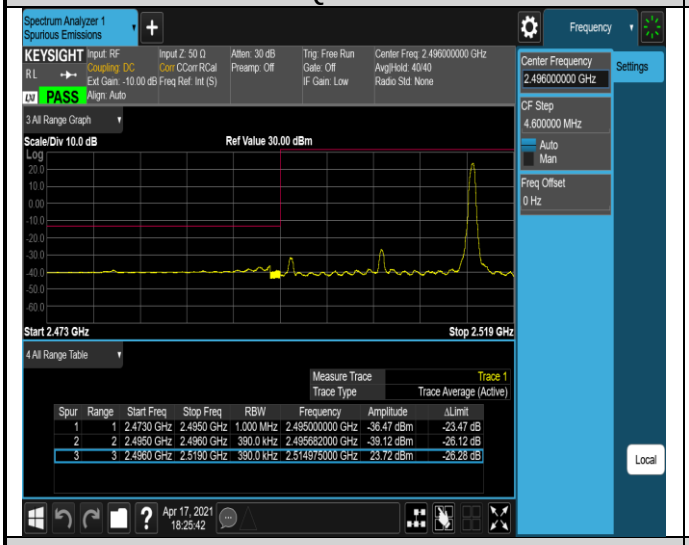


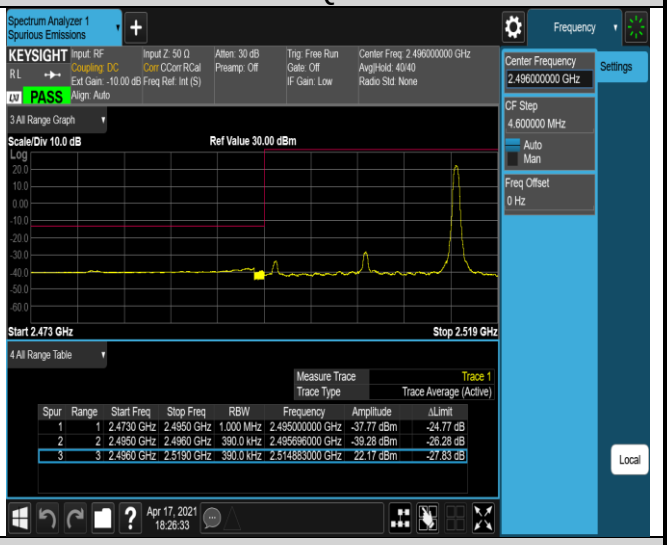
Band41-20MHz-64QAM-39750-1RB#0



Band41-20MHz-QPSK-39750-1RB#99



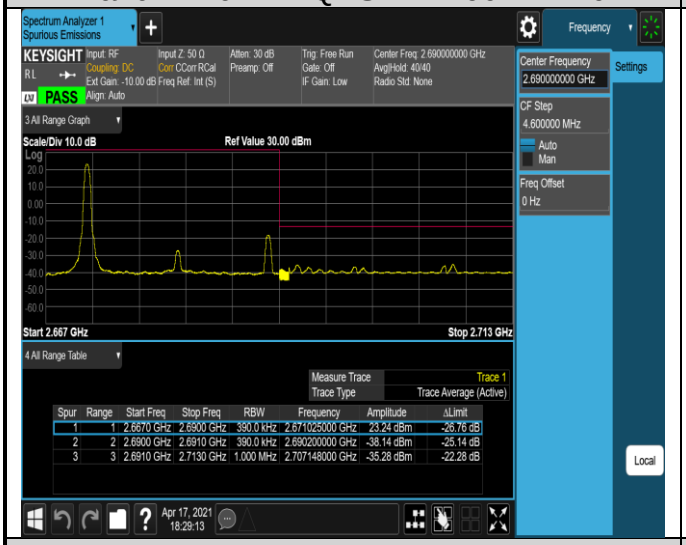
Band41-20MHz-64QAM-39750-1RB#99



Band41-20MHz-QPSK-39750-100RB#0

Band41-20MHz-64QAM-39750-100RB#0

Band41-20MHz-QPSK-41490-1RB#0



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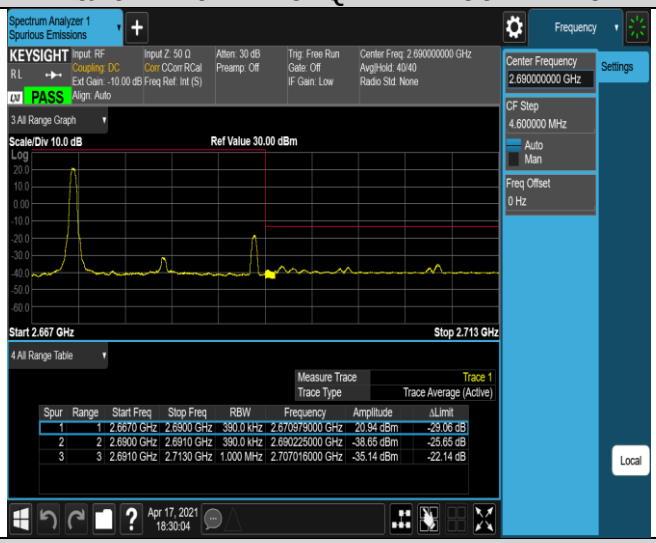

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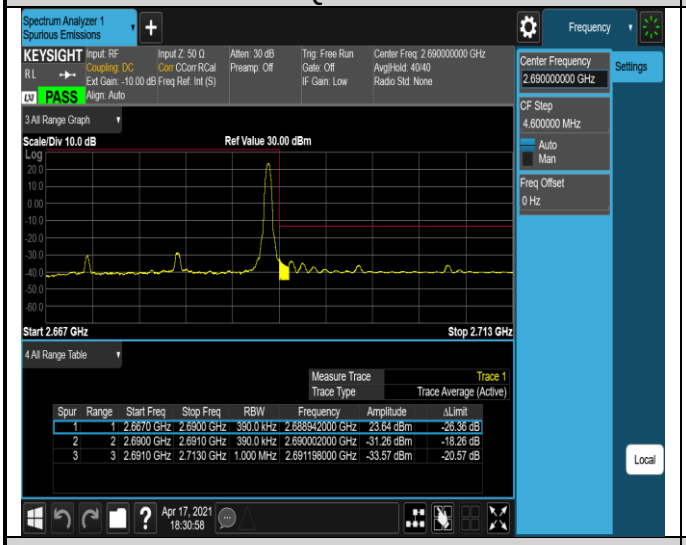

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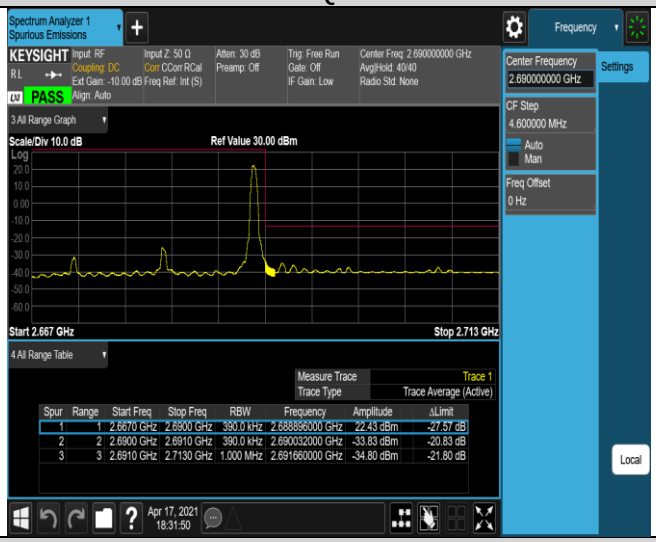

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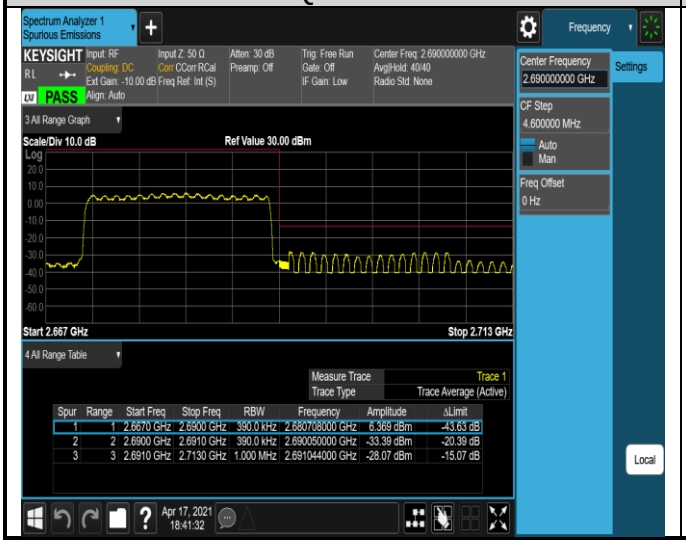

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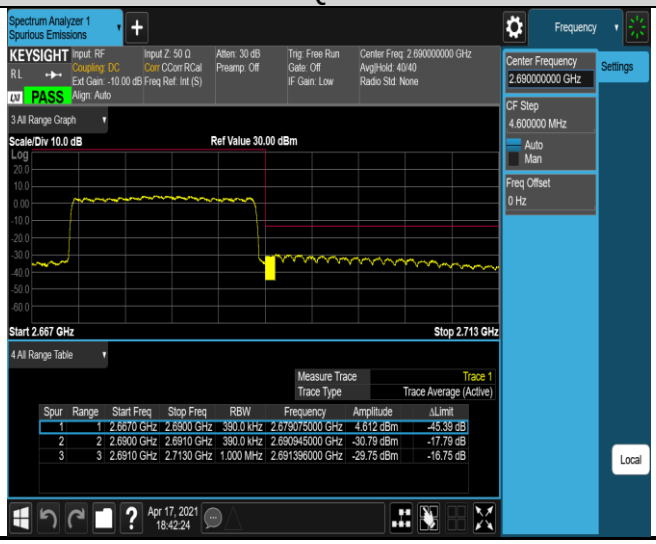
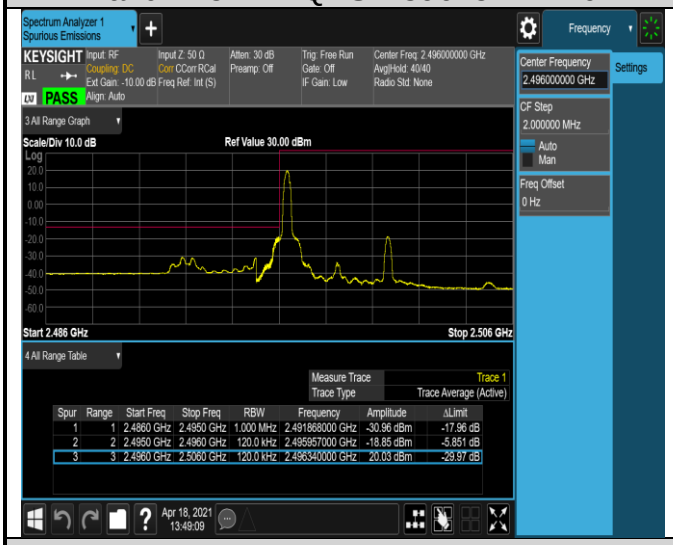


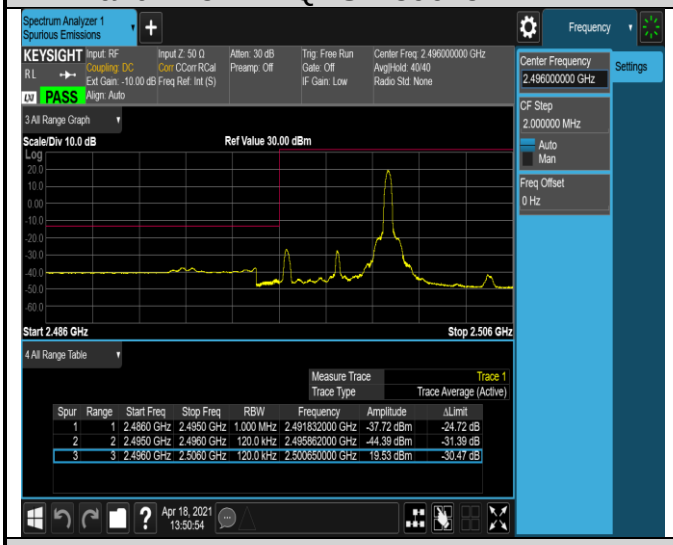
LTE Band 41 part: ANT1

Band41-5MHz-QPSK-39675-1RB#0



Band41-5MHz-64QAM-39675-1RB#0

Band41-5MHz-QPSK-39675-1RB#24



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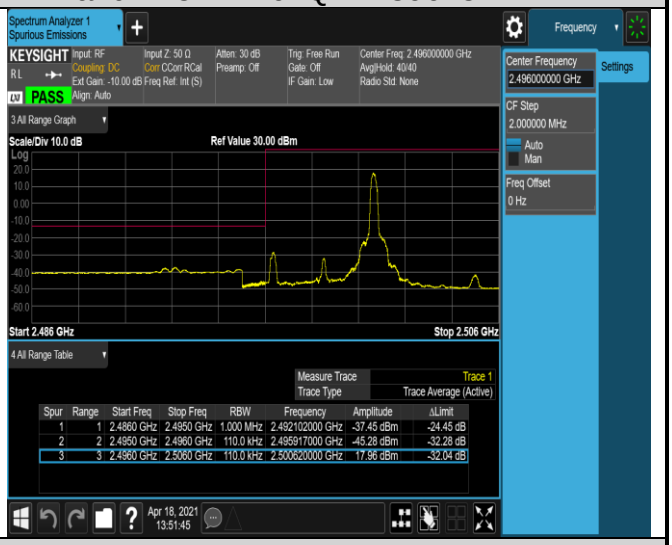
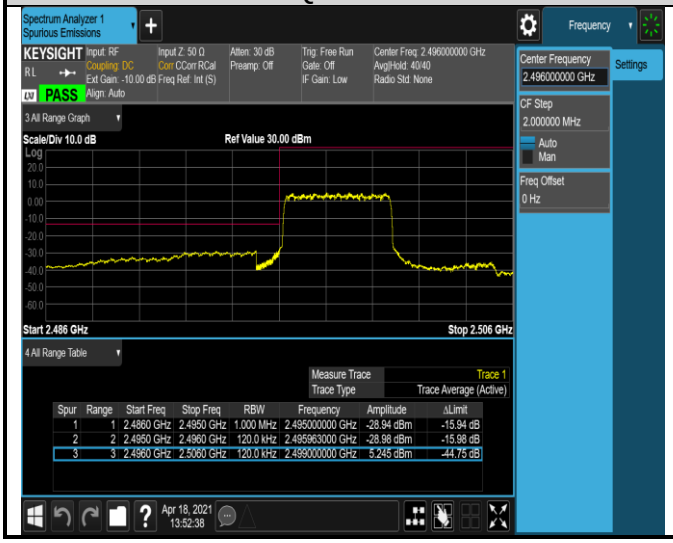


Band41-5MHz-QPSK-39675-25RB#0



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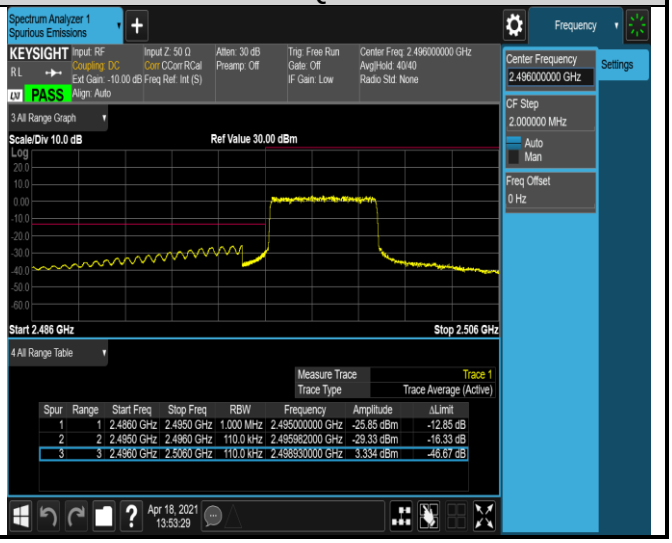

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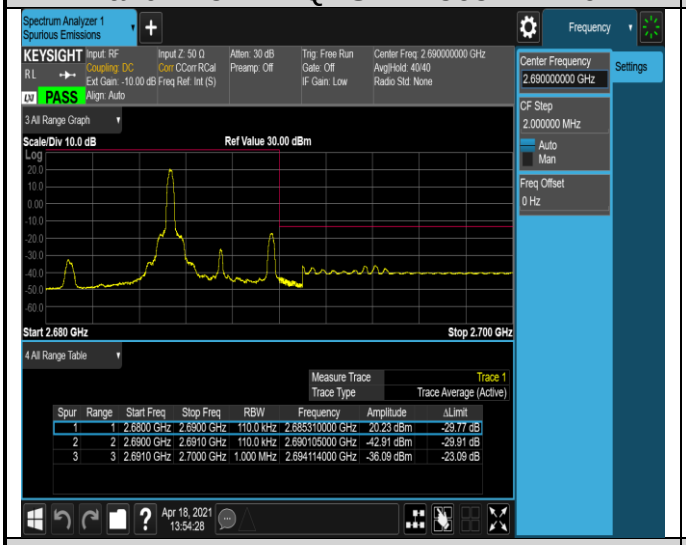

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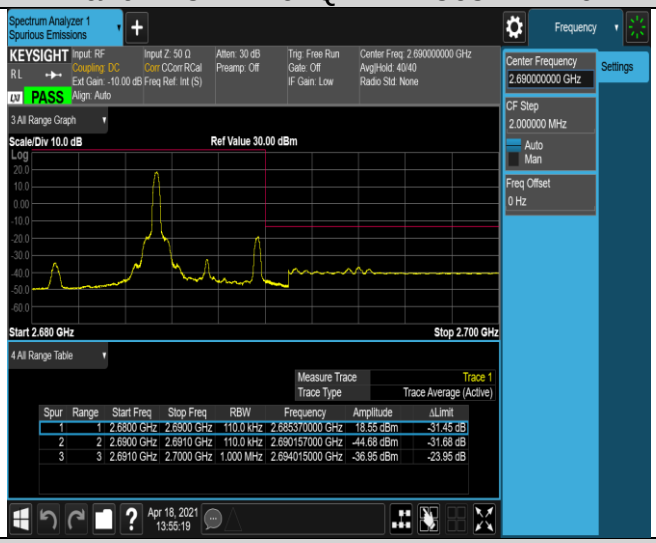

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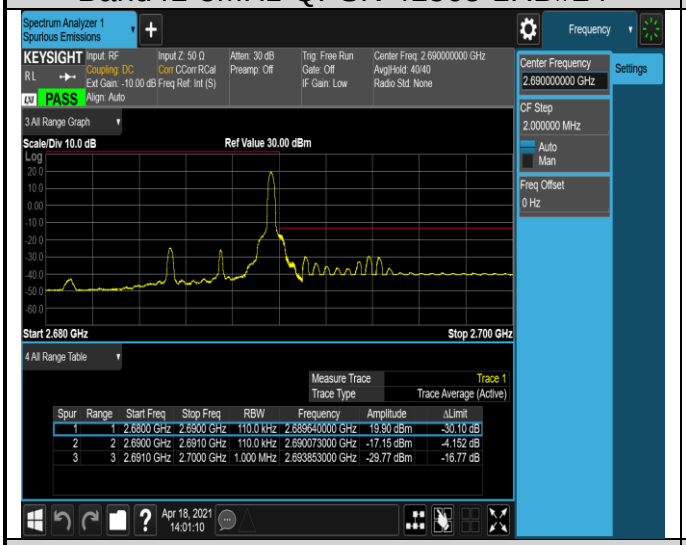

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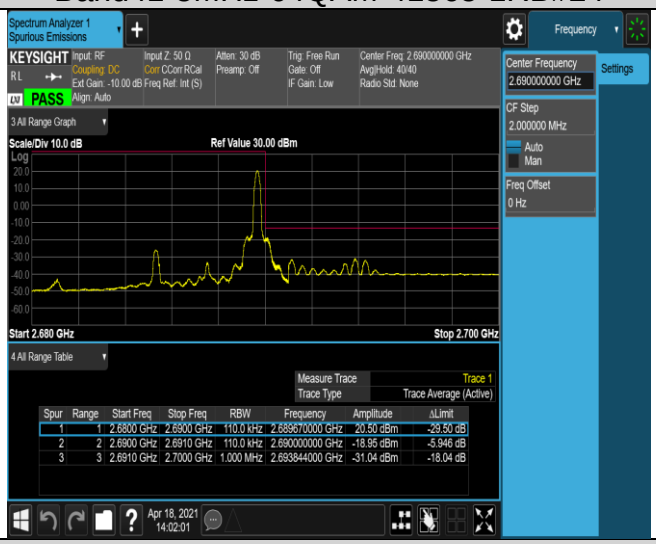

Band41-5MHz-QPSK-41565-25RB#0

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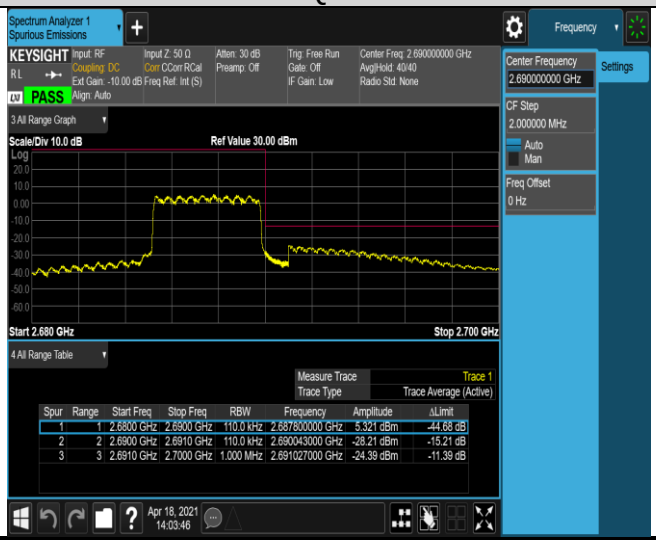

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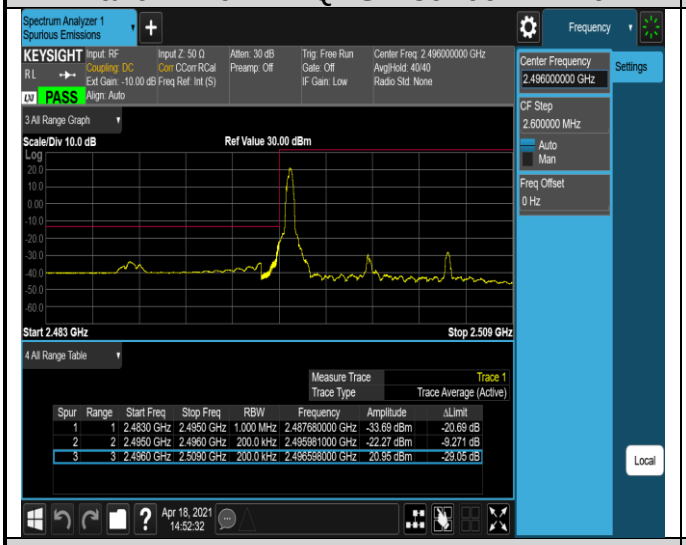

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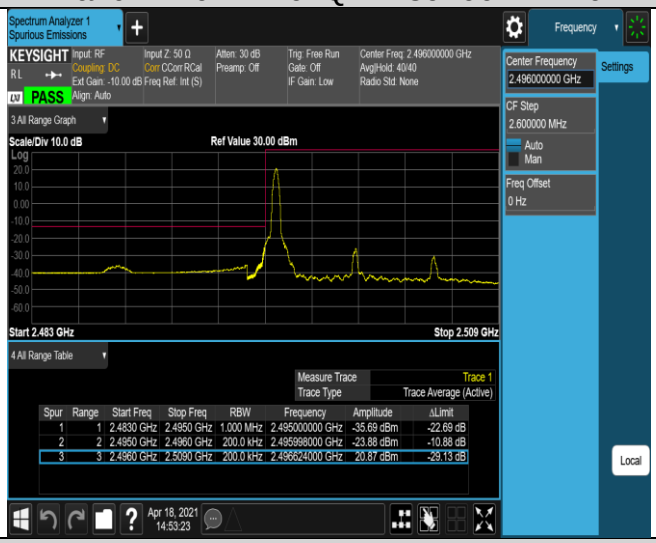

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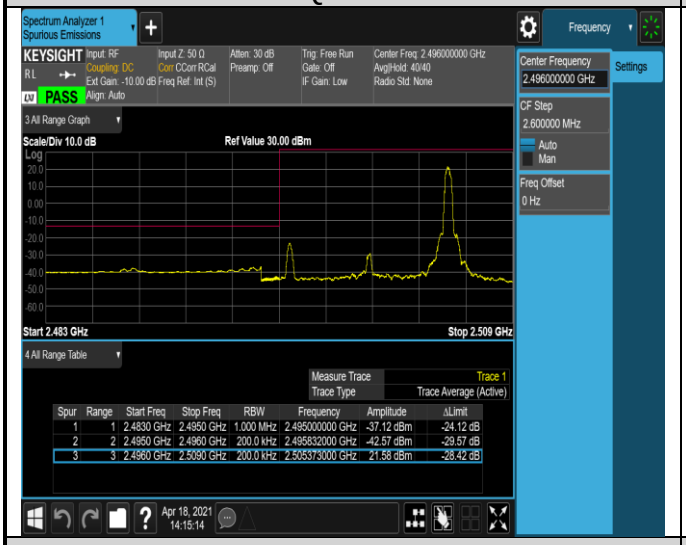

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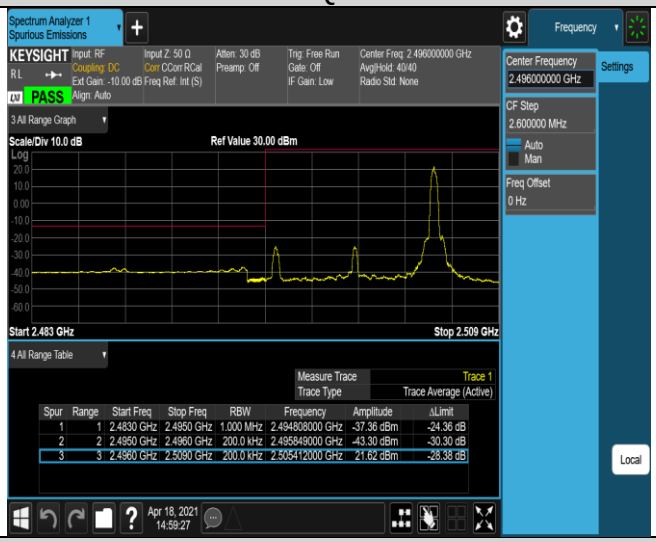

Band41-10MHz-QPSK-39700-50RB#0

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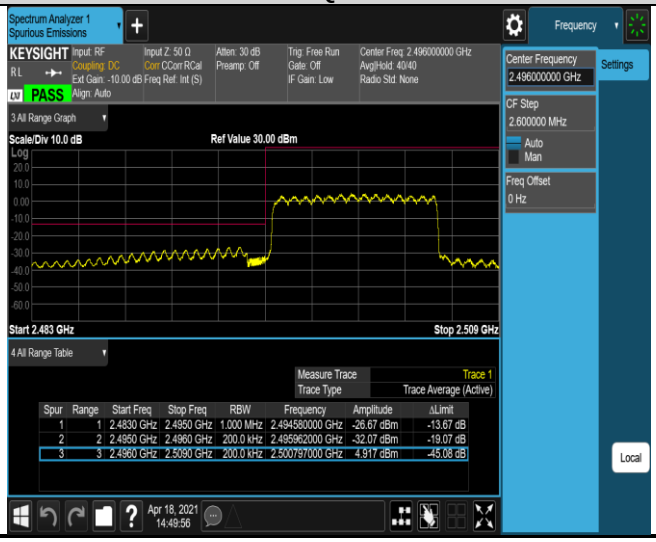

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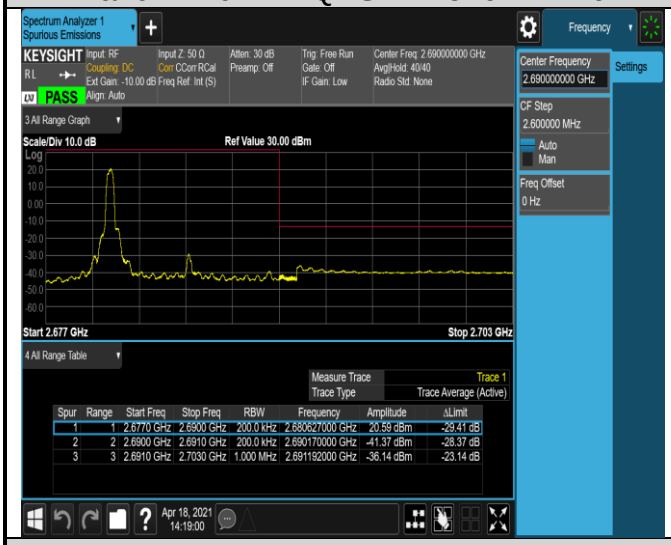

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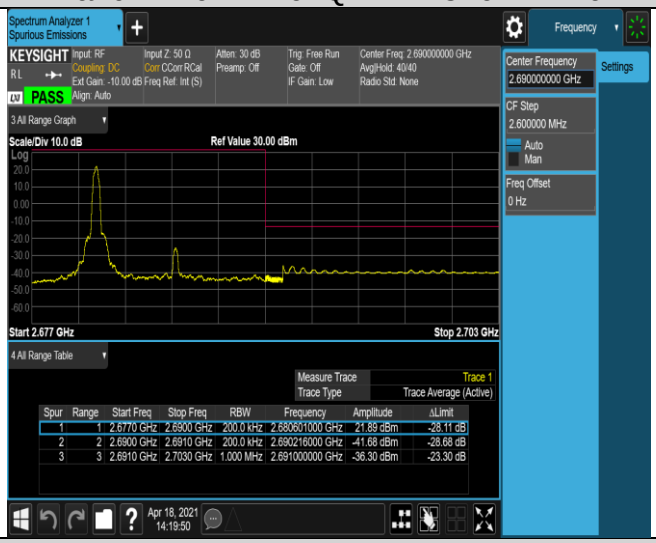

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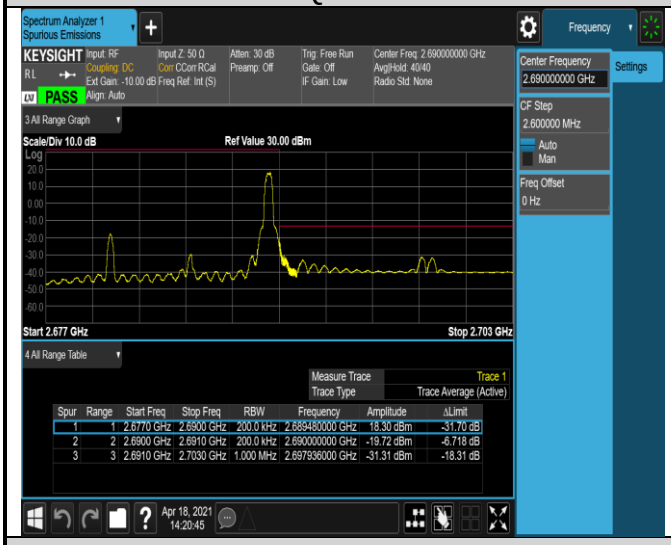

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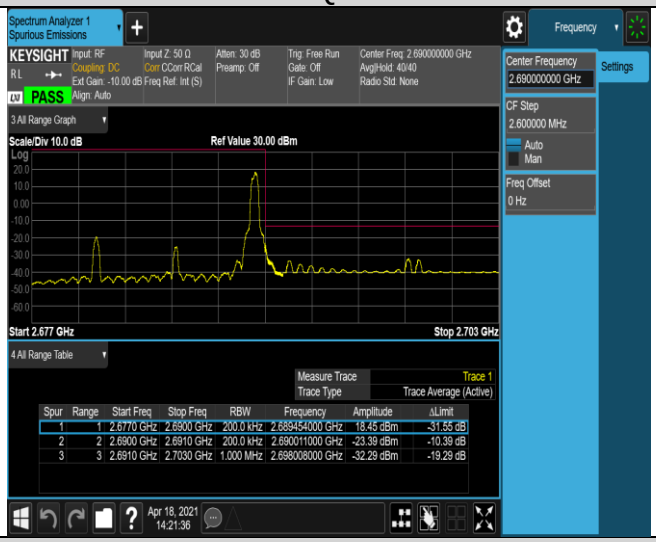

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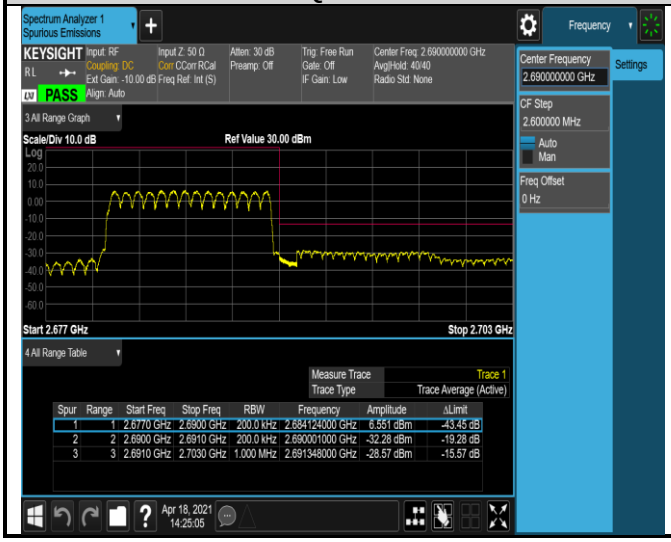

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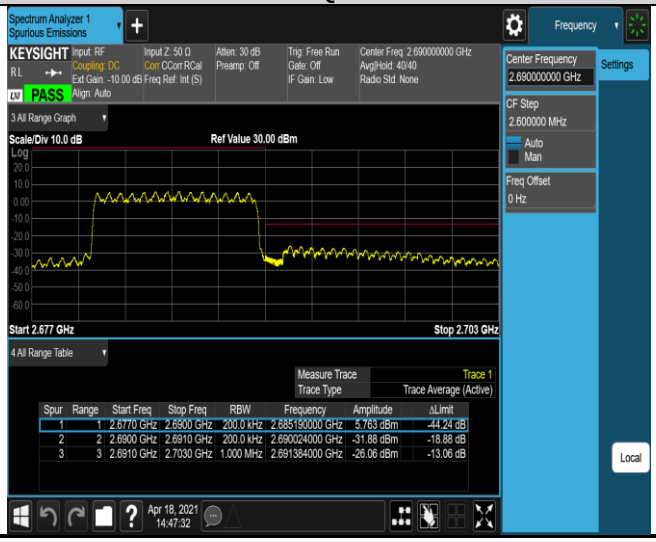
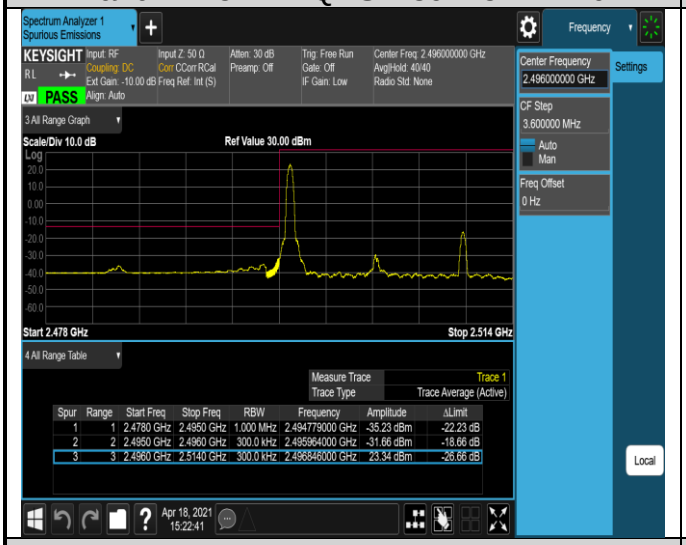


Band41-15MHz-QPSK-39725-1RB#0



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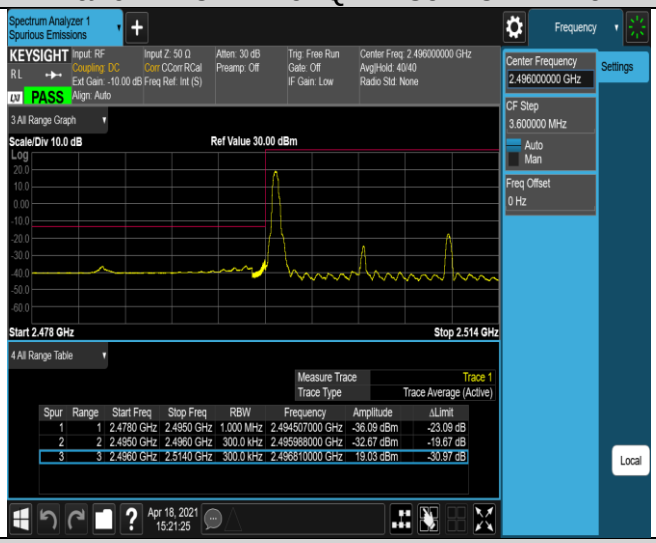
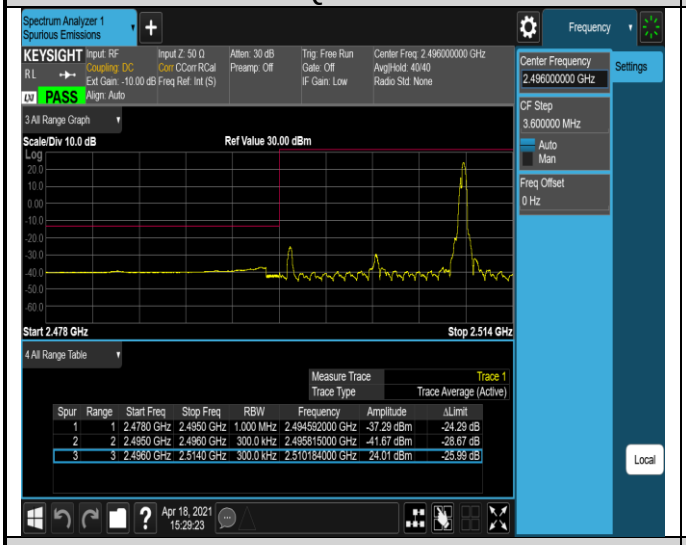
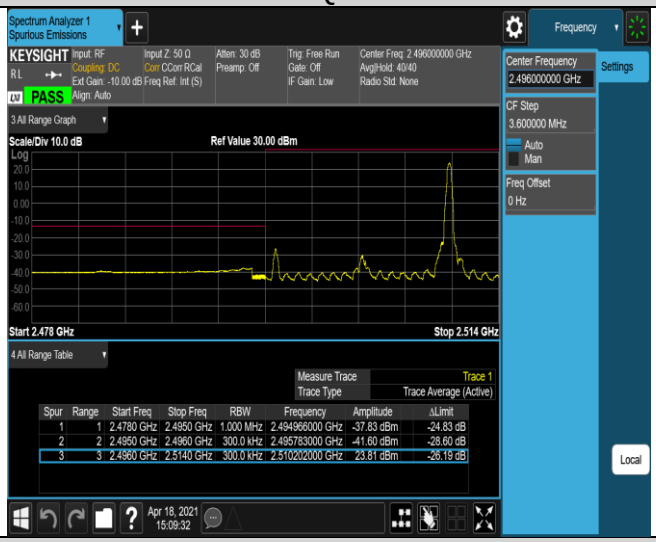


Band41-15MHz-QPSK-39725-1RB#74



Band41-15MHz-64QAM-39725-1RB#74



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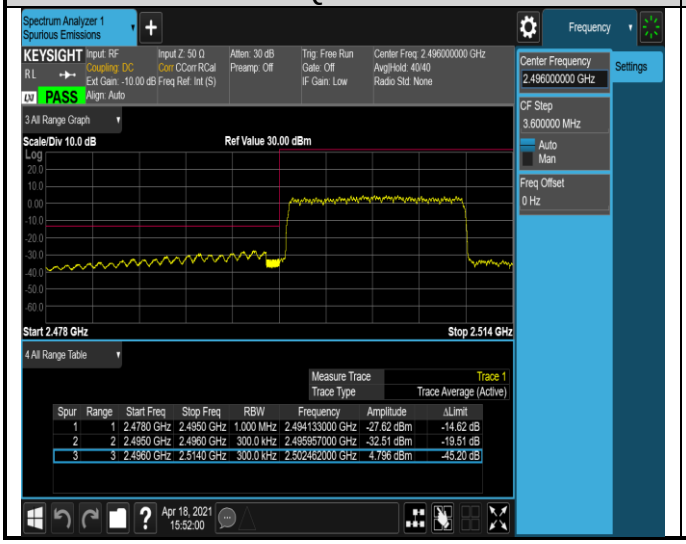

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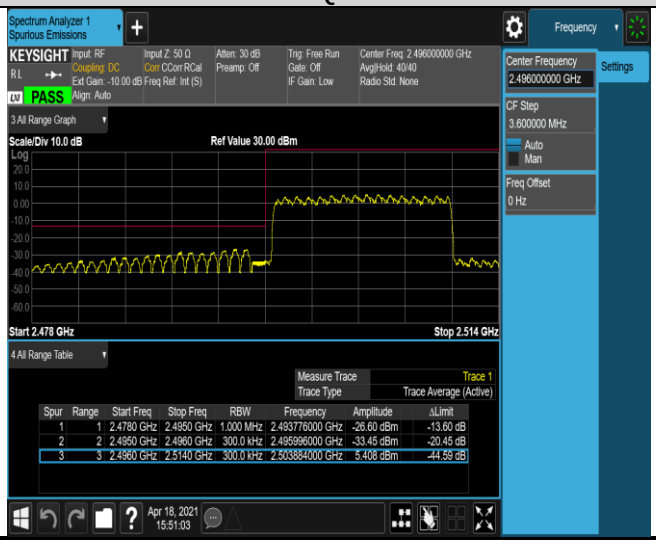

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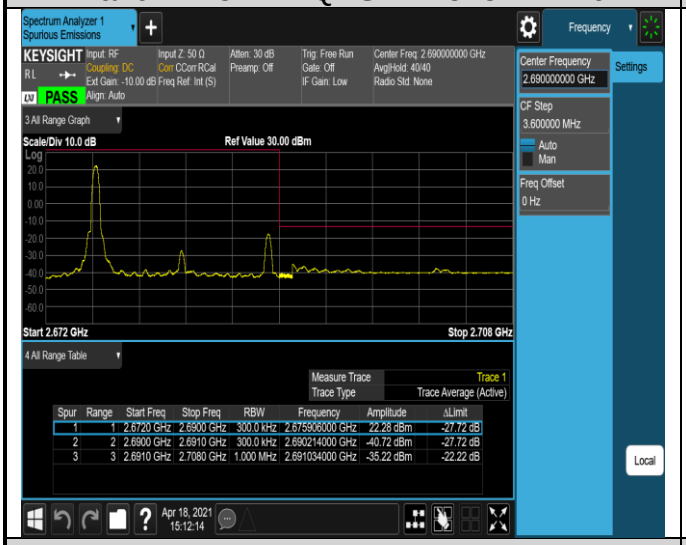

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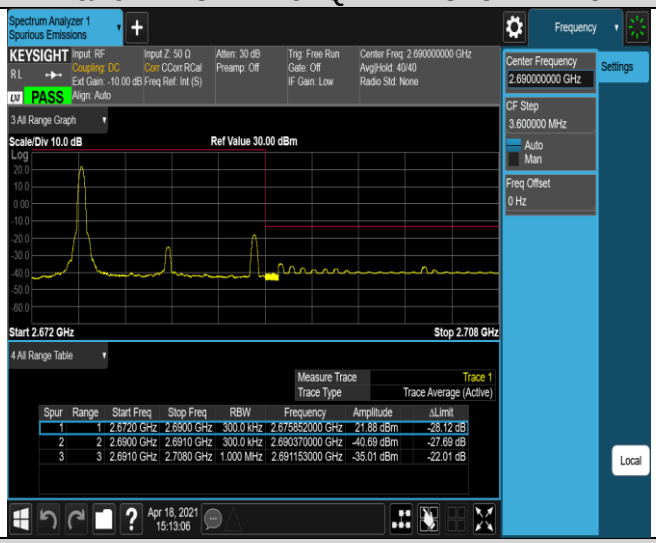

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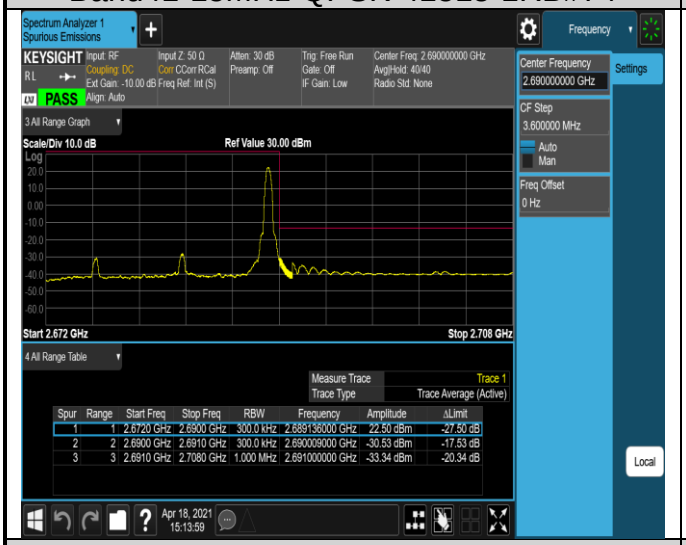

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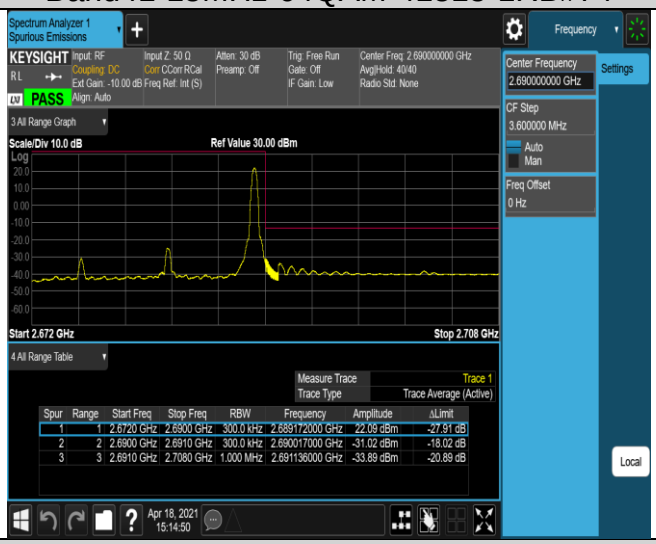

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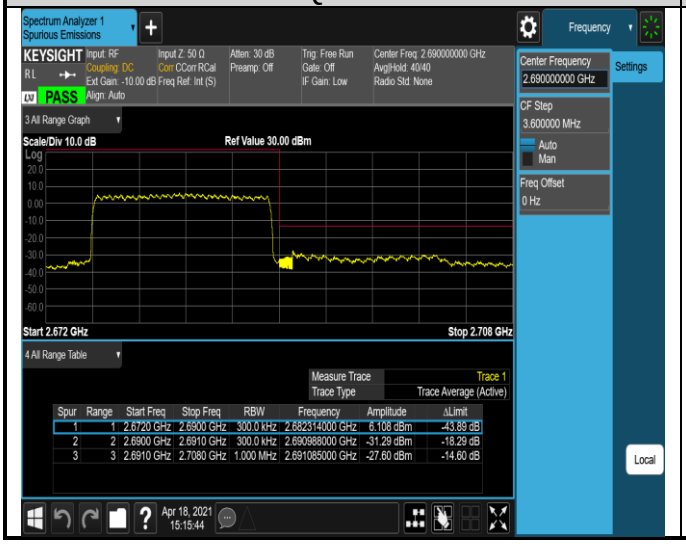

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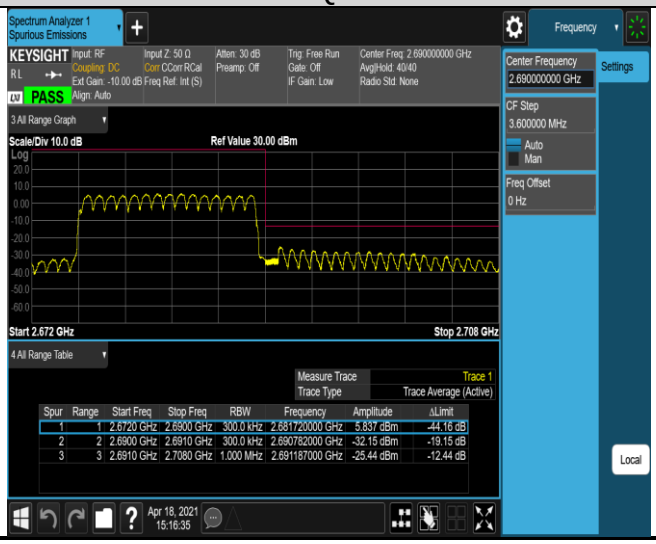
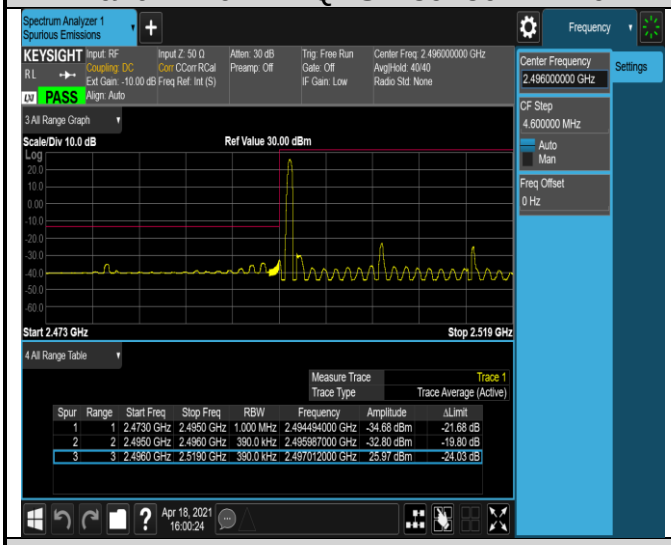


Band41-20MHz-QPSK-39750-1RB#0



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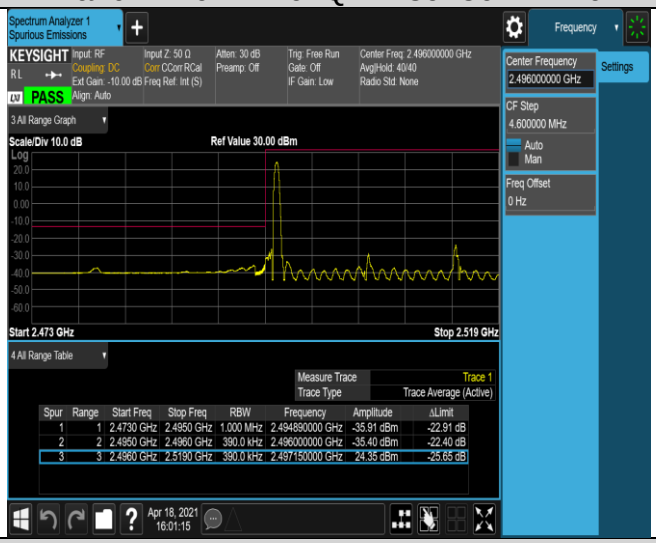
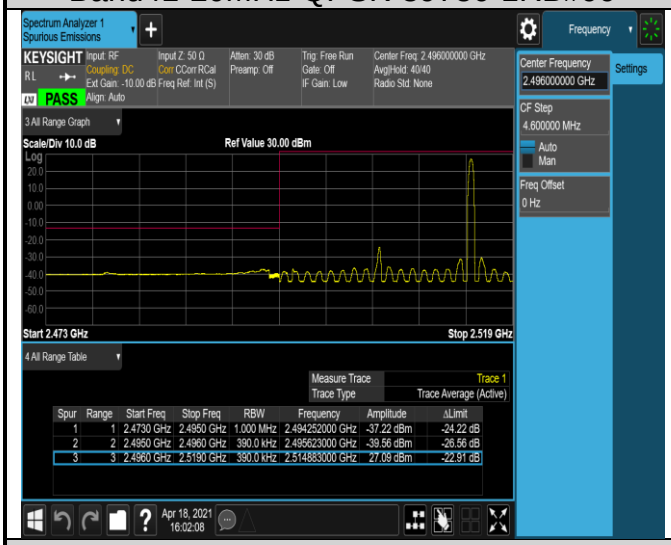


Band41-20MHz-QPSK-39750-1RB#99



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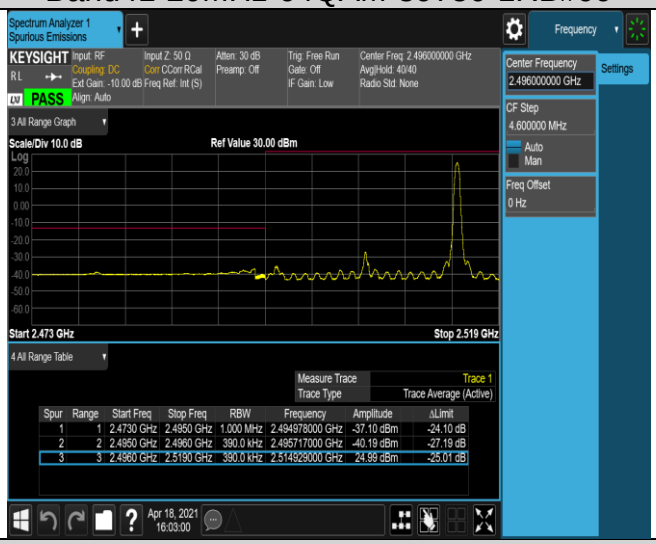
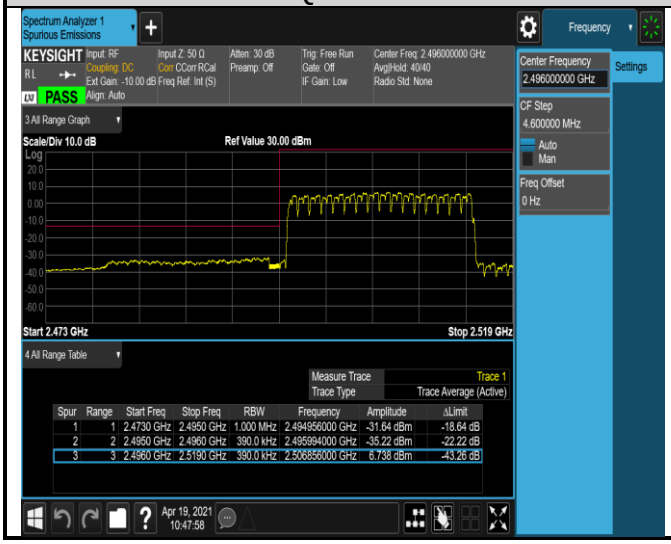
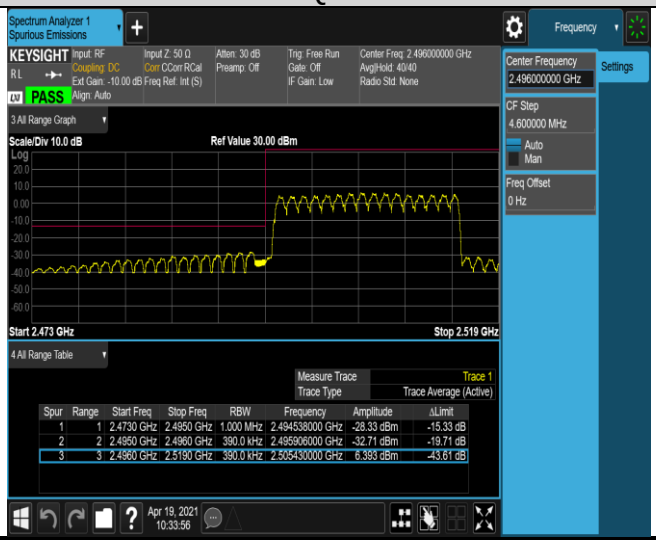


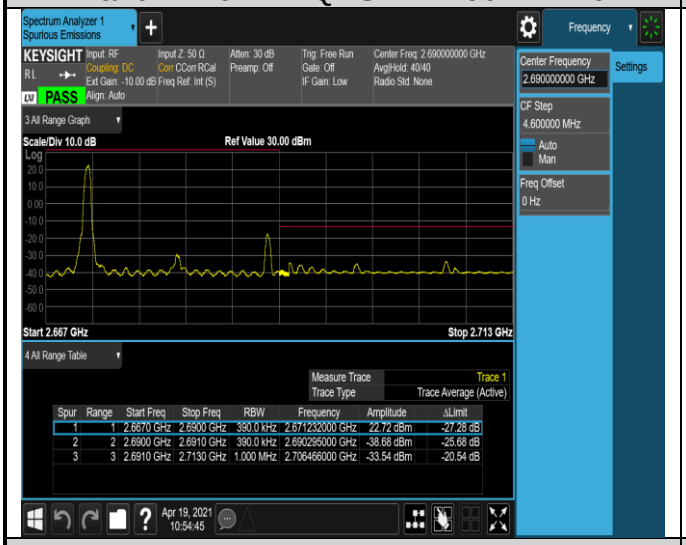
Band41-20MHz-QPSK-39750-100RB#0



Band41-20MHz-64QAM-39750-100RB#0



Band41-20MHz-QPSK-41490-1RB#0



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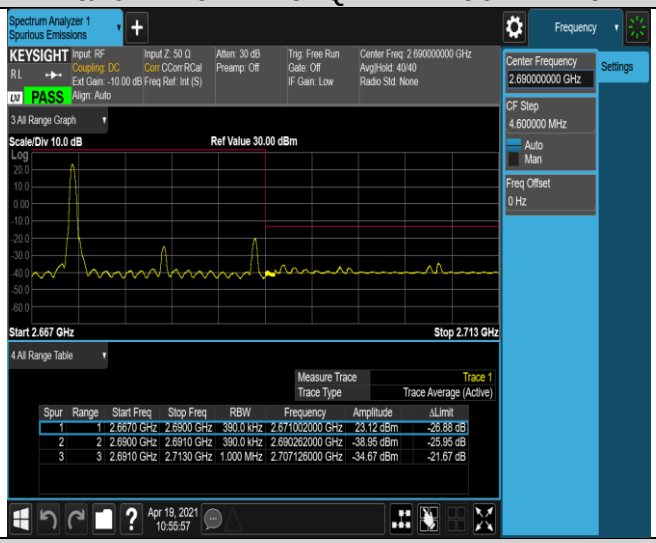

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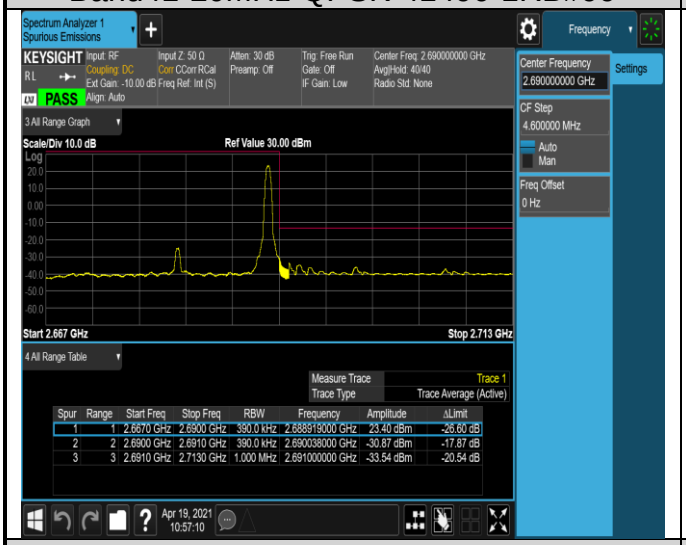

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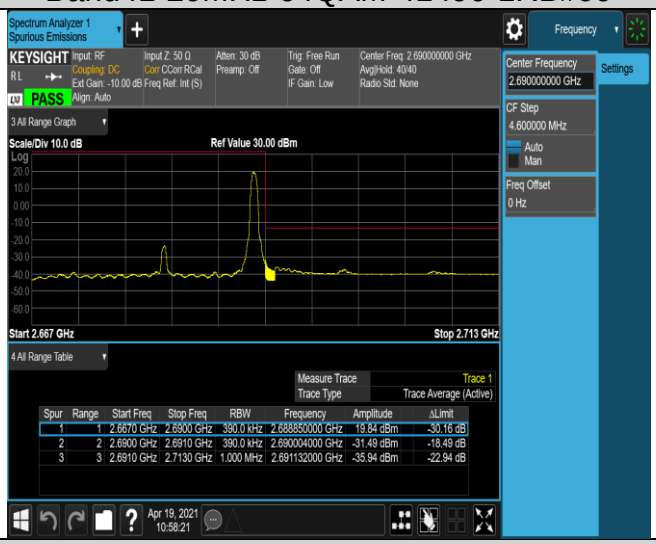

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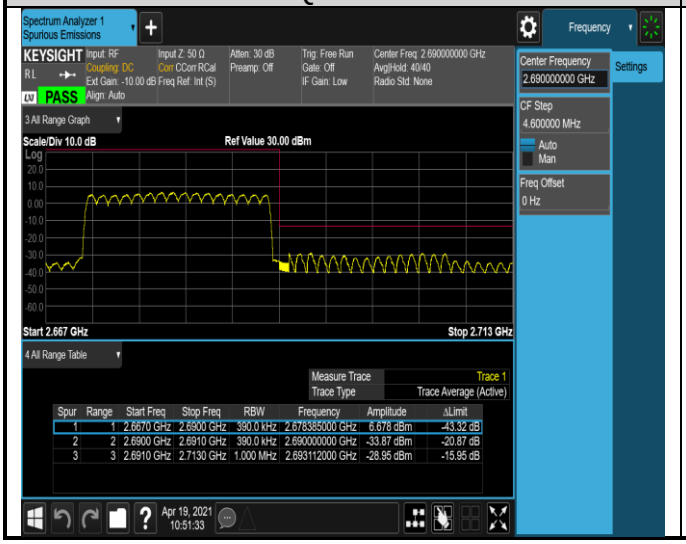
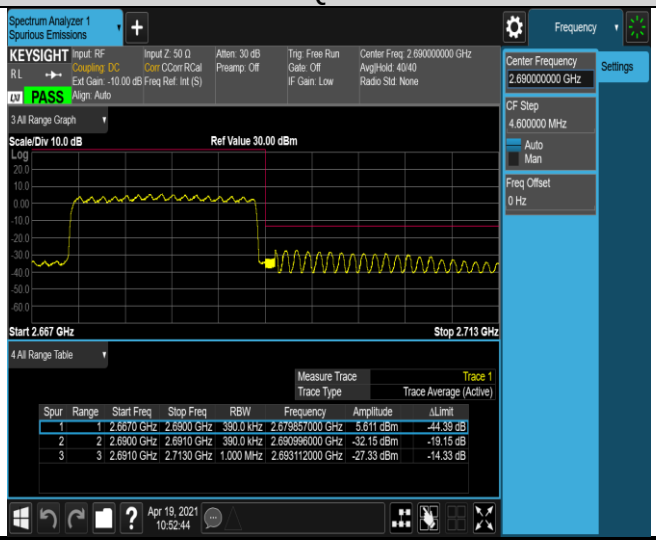
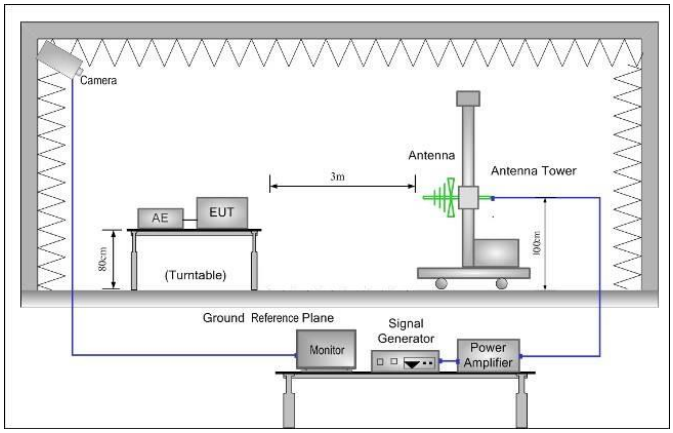
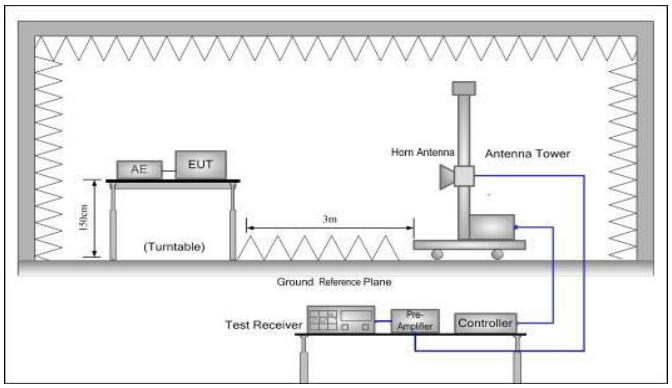


Band41-20MHz-64QAM-41490-100RB#0



6.5 Field strength of spurious radiation measurement

Test Requirement:	Part 27.53(m)
Limit:	LTE Band 41: For all fixed digital user stations, the attenuation factor shall be not less than 43 + 10 log (P) dB at the channel edge.
Test setup:	Below 1GHz  Above 1GHz 
Test Procedure:	1. The EUT was placed on the top of a rotating table 0.8m(below 1GHz)/1.5m(above 1GHz) above the ground at a 3 meter camber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. 2. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. 3. The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method. 4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency. ERP / EIRP = S.G. output (dBm) + Antenna Gain(dB/dBi) – Cable Loss (dB)
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details.
Test results:	Passed

Measurement Data:

LTE Band 41 part:

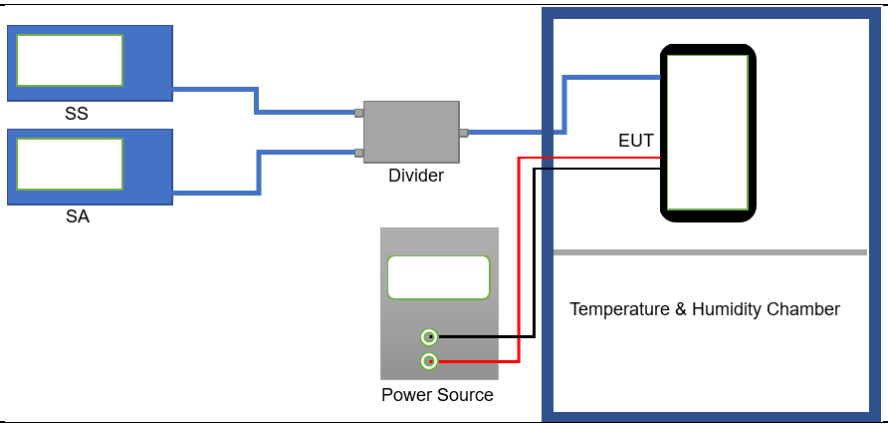
Band 41 (5MHz)							
Lowest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurous Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
4997.00	-53.57	13.00	0.94	-41.51	-13.00	-28.51	Vertical
7495.50	-42.78	11.50	1.65	-32.93	-13.00	-19.93	Vertical
9994.00	-43.26	11.70	1.91	-33.47	-13.00	-20.47	Vertical
4997.00	-54.04	13.00	0.94	-41.98	-13.00	-28.98	Horizontal
7495.50	-41.83	11.50	1.65	-31.98	-13.00	-18.98	Horizontal
9994.00	-41.56	11.70	1.91	-31.77	-13.00	-18.77	Horizontal
Middle channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurous Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
5186.00	-53.85	12.89	1.04	-42.00	-13.00	-29.00	Vertical
7779.00	-42.32	11.17	1.73	-32.88	-13.00	-19.88	Vertical
10372.00	-43.12	11.48	1.97	-33.61	-13.00	-20.61	Vertical
5186.00	-54.09	12.89	1.04	-42.24	-13.00	-29.24	Horizontal
7779.00	-41.50	11.17	1.73	-32.06	-13.00	-19.06	Horizontal
10372.00	-41.61	11.48	1.97	-32.10	-13.00	-19.10	Horizontal
Highest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurous Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
5375.00	-52.79	12.78	1.11	-41.12	-13.00	-28.12	Vertical
8062.50	-42.35	10.92	1.82	-33.25	-13.00	-20.25	Vertical
10750.00	-42.73	11.25	2.00	-33.48	-13.00	-20.48	Vertical
5375.00	-54.11	12.78	1.11	-42.44	-13.00	-29.44	Horizontal
8062.50	-41.13	10.92	1.82	-32.03	-13.00	-19.03	Horizontal
10750.00	-40.83	11.25	2.00	-31.58	-13.00	-18.58	Horizontal
Remark: *The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report.*							

Band 41 (20MHz)							
Lowest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurous Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
5012.00	-52.96	12.99	0.95	-40.92	-13.00	-27.92	Vertical
7518.00	-43.63	11.48	1.66	-33.81	-13.00	-20.81	Vertical
10024.00	-43.34	11.69	1.92	-33.57	-13.00	-20.57	Vertical
5012.00	-53.92	12.99	0.95	-41.88	-13.00	-28.88	Horizontal
7518.00	-41.24	11.48	1.66	-31.42	-13.00	-18.42	Horizontal
10024.00	-41.47	11.69	1.92	-31.70	-13.00	-18.70	Horizontal
Middle channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurous Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
5186.00	-52.73	12.89	1.04	-40.88	-13.00	-27.88	Vertical
7779.00	-43.67	11.17	1.73	-34.23	-13.00	-21.23	Vertical
10372.00	-43.03	11.48	1.97	-33.52	-13.00	-20.52	Vertical
5186.00	-54.21	12.89	1.04	-42.36	-13.00	-29.36	Horizontal
7779.00	-40.82	11.17	1.73	-31.38	-13.00	-18.38	Horizontal
10372.00	-41.20	11.48	1.97	-31.69	-13.00	-18.69	Horizontal
Highest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurous Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
5360.00	-52.36	12.78	1.10	-40.68	-13.00	-27.68	Vertical
8040.00	-42.85	10.91	1.79	-33.73	-13.00	-20.73	Vertical
10720.00	-42.80	11.27	1.99	-33.52	-13.00	-20.52	Vertical
5360.00	-53.95	12.78	1.10	-42.27	-13.00	-29.27	Horizontal
8040.00	-40.69	10.91	1.79	-31.57	-13.00	-18.57	Horizontal
10720.00	-40.66	11.27	1.99	-31.38	-13.00	-18.38	Horizontal

Remark:

The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report.

6.6 Frequency stability V.S. Temperature measurement

Test Requirement:	Part 27.54, Part 2.1055(a)(1)(b)
Limit:	Within authorized band for Band 41
Test setup:	
Test procedure:	1. The equipment under test was connected to an external DC power supply and input rated voltage. 2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. 3. The EUT was placed inside the temperature chamber. 4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25℃ operating frequency as reference frequency. 5. Turn EUT off and set the chamber temperature to –40℃. After the temperature stabilized for approximately 30 minutes recorded the frequency. 6. Repeat step measure with 10℃ increased per stage until the highest temperature of +55℃ reached
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data (worst case):

LTE Band 41 part:

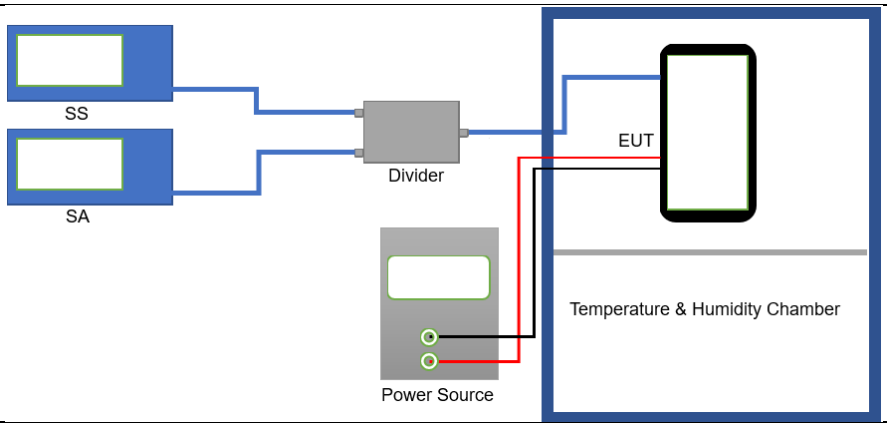
Reference Frequency: LTE Band 41 (5MHz)Middle channel=40620 channel=2593.0MHz					
Power supplied (AC)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
120	-40	174	0.067104	Within authorized band for Band 41	Pass
	-30	150	0.057848		
	-20	142	0.054763		
	-10	134	0.051678		
	0	168	0.064790		
	10	127	0.048978		
	20	113	0.043579		
	30	160	0.061705		
	40	120	0.046278		
	50	151	0.058234		
	55	149	0.057462		
64QAM					
120	-40	171	0.065947	Within authorized band for Band 41	Pass
	-30	151	0.058234		
	-20	143	0.055148		
	-10	164	0.063247		
	0	157	0.060548		
	10	134	0.051678		
	20	127	0.048978		
	30	118	0.045507		
	40	109	0.042036		
	50	124	0.047821		
	55	137	0.052835		
Note: Only the worst case shown in the report.					

Reference Frequency: LTE Band 41 (10MHz)Middle channel=40620 channel=2593.0MHz					
Power supplied (AC)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
120	-40	174	0.067104	Within authorized band for Band 41	Pass
	-30	150	0.057848		
	-20	142	0.054763		
	-10	134	0.051678		
	0	168	0.064790		
	10	127	0.048978		
	20	113	0.043579		
	30	160	0.061705		
	40	120	0.046278		
	50	151	0.058234		
	55	149	0.057462		
64QAM					
120	-40	171	0.065947	Within authorized band for Band 41	Pass
	-30	151	0.058234		
	-20	143	0.055148		
	-10	164	0.063247		
	0	157	0.060548		
	10	134	0.051678		
	20	127	0.048978		
	30	118	0.045507		
	40	109	0.042036		
	50	124	0.047821		
	55	137	0.052835		
Note: Only the worst case shown in the report.					

Reference Frequency: LTE Band 41 (15MHz)Middle channel=40620 channel=2593.0MHz					
Power supplied (AC)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
120	-40	170	0.065561	Within authorized band for Band 41	Pass
	-30	160	0.061705		
	-20	153	0.059005		
	-10	145	0.055920		
	0	136	0.052449		
	10	121	0.046664		
	20	116	0.044736		
	30	107	0.041265		
	40	130	0.050135		
	50	149	0.057462		
	55	158	0.060933		
64QAM					
120	-40	167	0.064404	Within authorized band for Band 41	Pass
	-30	159	0.061319		
	-20	154	0.059391		
	-10	143	0.055148		
	0	136	0.052449		
	10	130	0.050135		
	20	124	0.047821		
	30	116	0.044736		
	40	105	0.040494		
	50	158	0.060933		
	55	137	0.052835		
Note: Only the worst case shown in the report.					

Reference Frequency: LTE Band 41 (20MHz)Middle channel=40620 channel=2593.0MHz					
Power supplied (AC)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
120	-40	173	0.066718	Within authorized band for Band 41	Pass
	-30	156	0.060162		
	-20	140	0.053992		
	-10	130	0.050135		
	0	120	0.046278		
	10	110	0.042422		
	20	134	0.051678		
	30	148	0.057077		
	40	162	0.062476		
	50	145	0.055920		
	55	138	0.053220		
64QAM					
120	-40	170	0.065561	Within authorized band for Band 41	Pass
	-30	166	0.064019		
	-20	157	0.060548		
	-10	150	0.057848		
	0	143	0.055148		
	10	134	0.051678		
	20	125	0.048207		
	30	118	0.045507		
	40	109	0.042036		
	50	154	0.059391		
	55	167	0.064404		
Note: Only the worst case shown in the report.					

6.7 Frequency stability V.S. Voltage measurement

Test Requirement:	Part 27.54, Part 2.1055(d)(2)
Limit:	Within authorized band for Band 41
Test setup:	
Test procedure:	1. Set chamber temperature to 25℃. Use a variable AC power source to power the EUT and set the voltage to rated voltage. 2. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency. 3. Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data (worst case):

LTE Band 41 part:

Reference Frequency: LTE Band 41 (5MHz) Middle channel=40620 channel=2593.0MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	102	81	0.031238	Within authorized band for Band 41	Pass
	120	75	0.028924		
	138	63	0.024296		
64QAM					
25	102	79	0.030467	Within authorized band for Band 41	Pass
	120	72	0.027767		
	138	61	0.023525		
Note: Only the worst case shown in the report.					

Reference Frequency: LTE Band 41 (10MHz) Middle channel=40620 channel=2593.0MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	102	83	0.032009	Within authorized band for Band 41	Pass
	120	71	0.027381		
	138	67	0.025839		
64QAM					
25	102	81	0.031238	Within authorized band for Band 41	Pass
	120	77	0.029695		
	138	68	0.026224		
Note: Only the worst case shown in the report.					

Reference Frequency: LTE Band 41 (15MHz) Middle channel=40620 channel=2593.0MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	102	88	0.033938	Within authorized band for Band 41	Pass
	120	65	0.025067		
	138	74	0.028538		
64QAM					
25	102	77	0.029695	Within authorized band for Band 41	Pass
	120	81	0.031238		
	138	56	0.021597		
Note: Only the worst case shown in the report.					

Reference Frequency: LTE Band 41 (20MHz) Middle channel=40620 channel=2593.0MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	102	79	0.030467	Within authorized band for Band 41	Pass
	120	55	0.021211		
	138	81	0.031238		
64QAM					
25	102	89	0.034323	Within authorized band for Band 41	Pass
	120	61	0.023525		
	138	74	0.028538		
Note: Only the worst case shown in the report.					