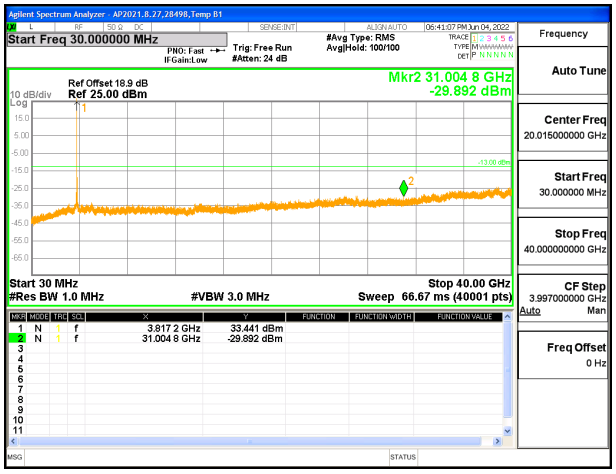
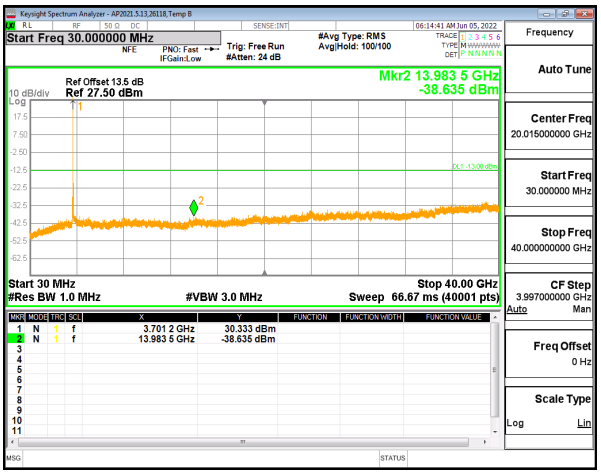
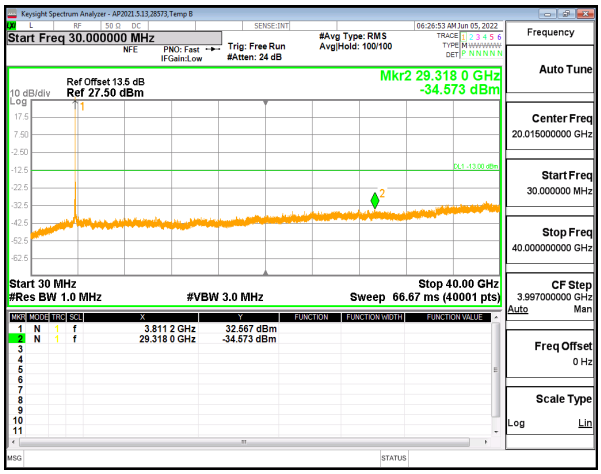


5G NR n77 50MHz BPSK Middle Channel RB1-1

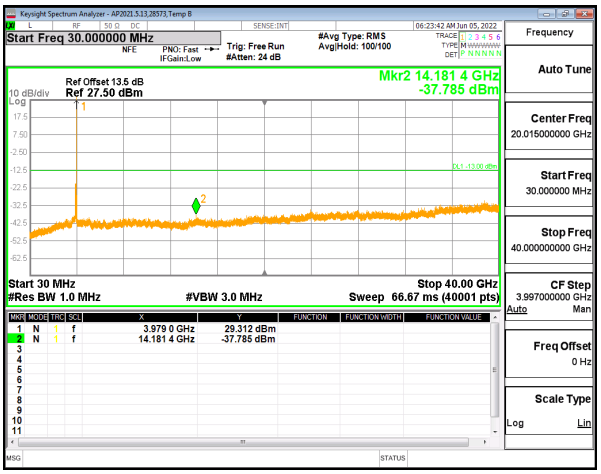
5G NR n77 50MHz BPSK High Channel RB1-132



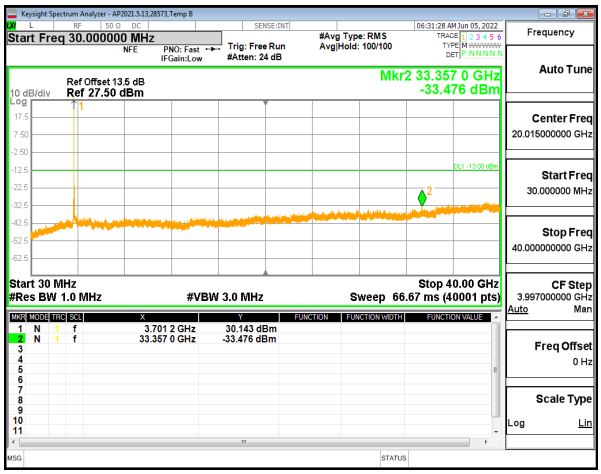
5G NR n77 60MHz BPSK Low Channel RB1-0



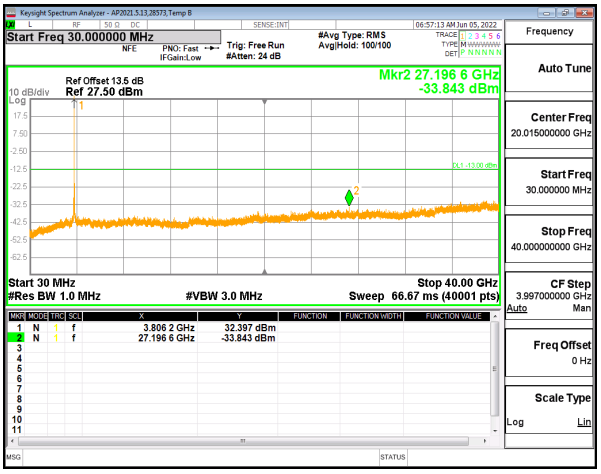
5G NR n77 60MHz BPSK Middle Channel RB1-1



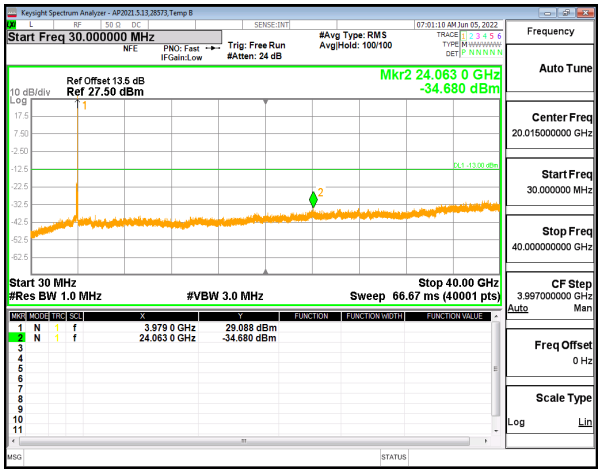
5G NR n77 60MHz BPSK High Channel RB1-161



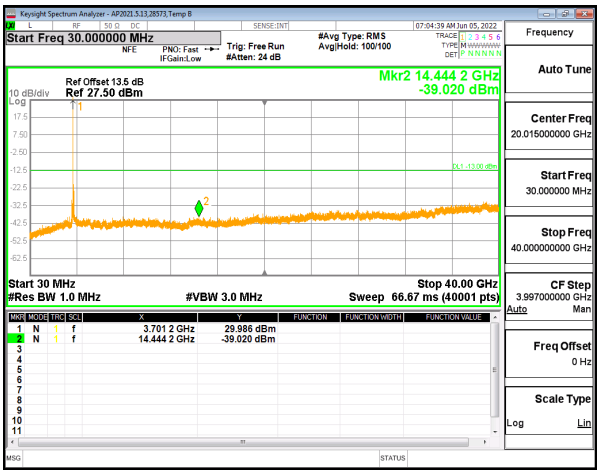
5G NR n77 70MHz BPSK Low Channel RB1-0



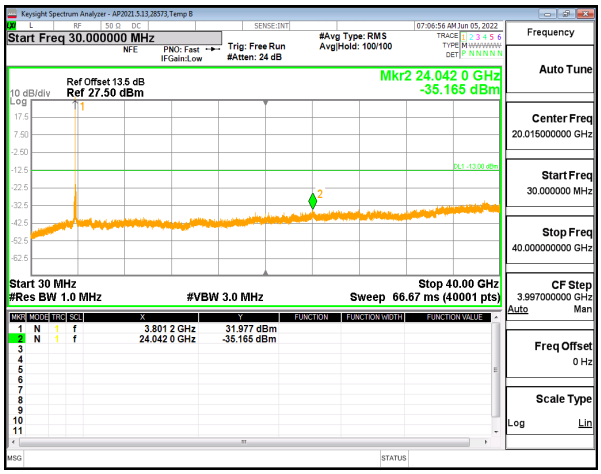
5G NR n77 70MHz BPSK Middle Channel RB1-1



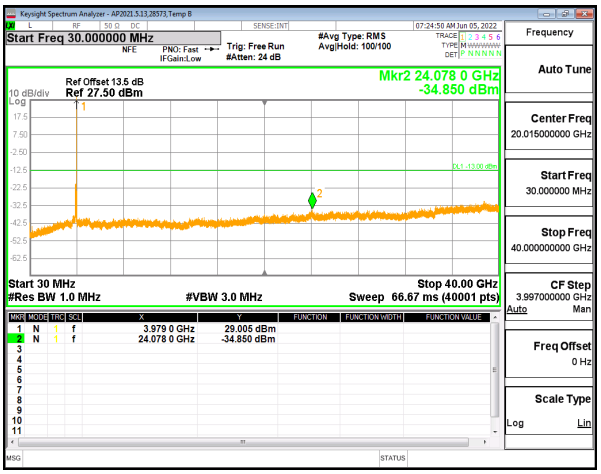
5G NR n77 70MHz BPSK High Channel RB1-188



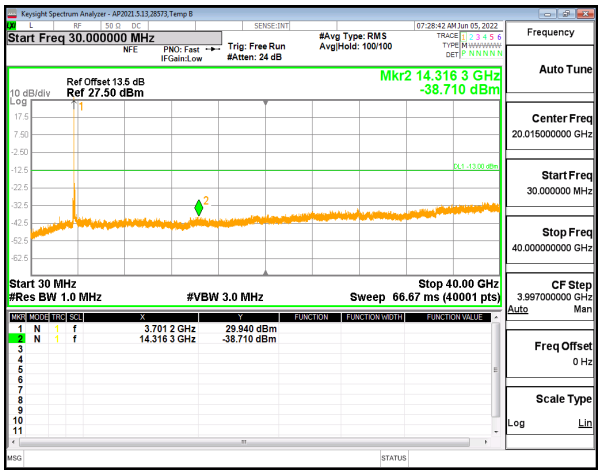
5G NR n77 80MHz BPSK Low Channel RB1-0



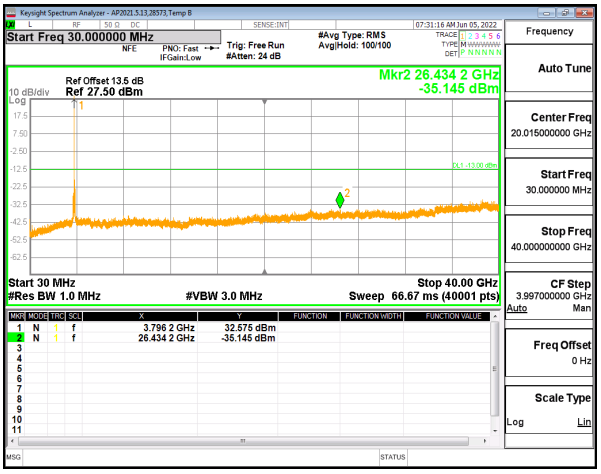
5G NR n77 80MHz BPSK Middle Channel RB1-1



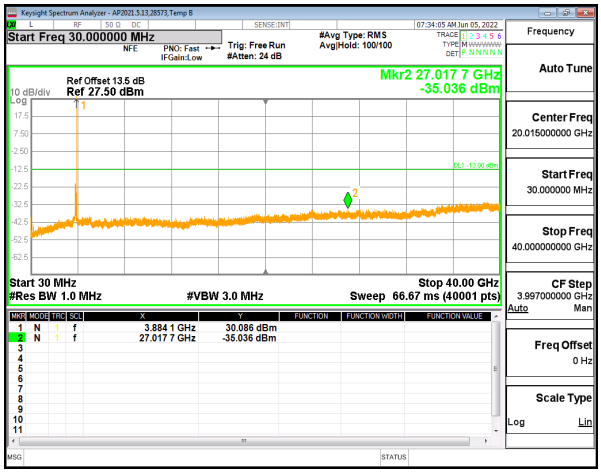
5G NR n77 80MHz BPSK High Channel RB1-216



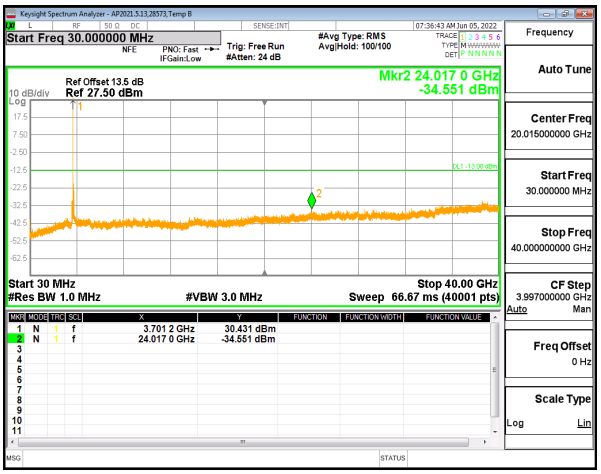
5G NR n77 90MHz BPSK Low Channel RB1-0



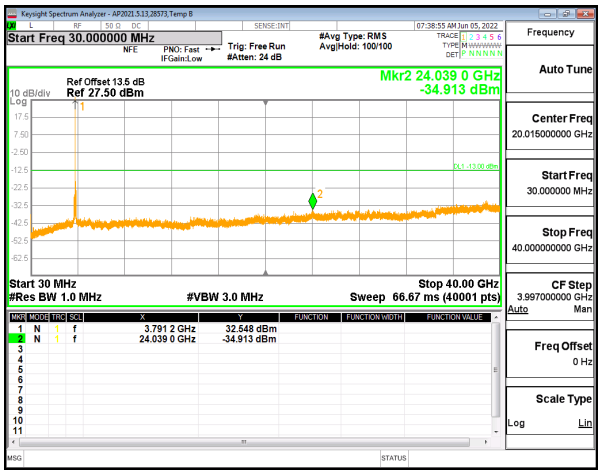
5G NR n77 90MHz BPSK Middle Channel RB1-1



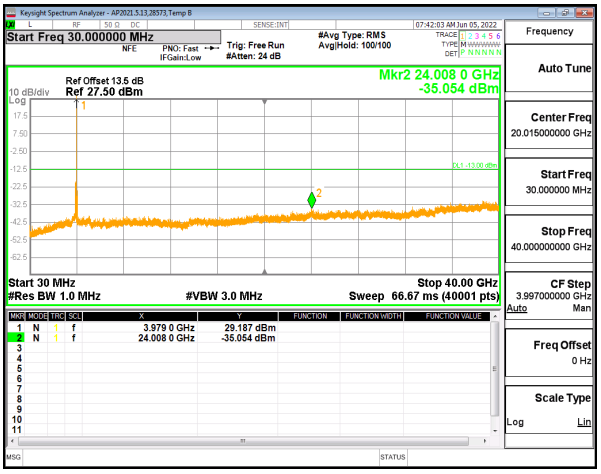
5G NR n77 90MHz BPSK High Channel RB1-244



5G NR n77 100MHz BPSK Low Channel RB1-1



5G NR n77 100MHz BPSK Middle Channel RB1-1



5G NR n77 100MHz BPSK High Channel RB1-272

9.4. FREQUENCY STABILITY

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- Temp. = −30°C to +50°C
- Voltage = (85% - 115%)

  Low voltage, 3.23VDC, Normal, 3.8VDC and High voltage, 4.37VDC.
  End Voltage, 3.2VDC.

Frequency Stability vs Temperature:
The EUT is place inside a temperature chamber. The temperature is set to 20ºC and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50ºC is reached.

Frequency Stability vs Voltage:
The peak frequency error is recorded (worst-case).

RESULTS

See the following pages.

9.4.1. LTE BAND 5 AND 5G NR n5

LIMITS

FCC: §22.355
The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

Test Engineer ID: 27979 **Test Date:** 6/30/2022

QPSK, (10MHz BANDWIDTH))

Band	5	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		824	849		2.5	
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)		824.5298	848.4781			
Extreme (50°C)		824.5298	848.4781	-2.57	-0.003	Yes
Extreme (40°C)		824.5298	848.4781	-2.43	-0.003	Yes
Extreme (30°C)		824.5298	848.4782	3.03	0.004	Yes
Extreme (10°C)	Normal	824.5298	848.4782	2.44	0.003	Yes
Extreme (0°C)		824.5298	848.4781	1.47	0.002	Yes
Extreme (-10°C)		824.5298	848.4781	-1.59	-0.002	Yes
Extreme (-20°C)		824.5298	848.4781	1.68	0.002	Yes
Extreme (-30°C)		824.5298	848.4782	2.61	0.003	Yes
20°C	15%	824.5298	848.4781	-1.59	-0.002	Yes
	-15%	824.5298	848.4781	1.57	0.002	Yes
	End Point Voltage	824.5298	848.4781	1.86	0.002	Yes

5G NR n5 BPSK (20MHz BANDWIDTH)

Band	5	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		824	849		2.5	
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	824.5053	847.3886			
Extreme (50°C)		824.5053	847.3886	-1.52	-0.002	Yes
Extreme (40°C)		824.5053	847.3886	-2.03	-0.002	Yes
Extreme (30°C)		824.5053	847.3885	-9.6	-0.011	Yes
Extreme (10°C)		824.5053	847.3886	1.2	0.001	Yes
Extreme (0°C)		824.5053	847.3886	-1.92	-0.002	Yes
Extreme (-10°C)		824.5053	847.3886	2.04	0.002	Yes
Extreme (-20°C)		824.5053	847.3886	1.33	0.002	Yes
Extreme (-30°C)		824.5053	847.3886	2.34	0.003	Yes
20°C	15%	824.5053	847.3886	-1.94	-0.002	Yes
	-15%	824.5053	847.3886	1.26	0.002	Yes
	End Point Voltage	824.5053	847.3886	1.73	0.002	Yes

9.4.2. LTE BAND 7 AND 5G NR n7

LIMITS

FCC: §27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Engineer ID: 27979 **Test Date:** 5/20/2022

LTE BAND 7 QPSK (20MHz BANDWIDTH)

Band	7	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2500	2570			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)		2501.4870	2568.4840			
Extreme (50°C)		2501.4870	2568.4840	2.7	0.001	Yes
Extreme (40°C)		2501.4870	2568.4840	-0.6	0.000	Yes
Extreme (30°C)		2501.4870	2568.4840	-1.3	-0.001	Yes
Extreme (10°C)	Normal	2501.4870	2568.4840	-1.0	0.000	Yes
Extreme (0°C)		2501.4870	2568.4840	1.1	0.000	Yes
Extreme (-10°C)		2501.4870	2568.4840	2.5	0.001	Yes
Extreme (-20°C)		2501.4870	2568.4840	1.6	0.001	Yes
Extreme (-30°C)		2501.4870	2568.4840	1.1	0.000	Yes
20°C	15%	2501.4870	2568.4840	3.2	0.001	Yes
	-15%	2501.4870	2568.4840	3.5	0.001	Yes
	End Point Voltage	2501.4870	2568.4840	0.8	0.000	Yes

5G NR n7 BPSK (40MHz BANDWIDTH)

Band	7	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2500	2570			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)		2500.8796	2569.1327			
Extreme (50°C)		2500.8796	2569.1327	-4.76	-0.002	Yes
Extreme (40°C)		2500.8796	2569.1327	-2.93	-0.001	Yes
Extreme (30°C)		2500.8796	2569.1327	2.62	0.001	Yes
Extreme (10°C)	Normal	2500.8796	2569.1327	3.62	0.001	Yes
Extreme (0°C)		2500.8796	2569.1327	1.93	0.001	Yes
Extreme (-10°C)		2500.8796	2569.1327	2.21	0.001	Yes
Extreme (-20°C)		2500.8796	2569.1327	-1.75	-0.001	Yes
Extreme (-30°C)		2500.8796	2569.1327	2.32	0.001	Yes
20°C	15%	2500.8796	2569.1327	5.07	0.002	Yes
	-15%	2500.8796	2569.1327	3.24	0.001	Yes
	End Point Voltage	2500.8796	2569.1327	-6.75	-0.003	Yes

9.4.3. LTE BAND 12 AND 5G NR n12

LIMITS

FCC: §27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Engineer ID: 27979 **Test Date:** 5/20/2022

LTE BAND 12 QPSK (10MHz BANDWIDTH)

Band	12	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		699	716			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)		669.0681	715.8792			
Extreme (50°C)		669.0681	715.8792	-1.2	-0.002	Yes
Extreme (40°C)		669.0681	715.8792	0.8	0.001	Yes
Extreme (30°C)		669.0681	715.8792	-1.5	-0.002	Yes
Extreme (10°C)	Normal	669.0681	715.8792	0.6	0.001	Yes
Extreme (0°C)		669.0681	715.8792	0.0	0.000	Yes
Extreme (-10°C)		669.0681	715.8792	1.4	0.002	Yes
Extreme (-20°C)		669.0681	715.8792	1.1	0.002	Yes
Extreme (-30°C)		669.0681	715.8792	-2.9	-0.004	Yes
20°C	15%	669.0681	715.8792	0.3	0.000	Yes
	-15%	669.0681	715.8792	-0.2	0.000	Yes
	End Point Voltage	669.0681	715.8792	7.0	0.010	Yes

5G NR n12 BPSK (15MHz BANDWIDTH)

Band	12	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		699	716			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	699.4334	714.8349			
Extreme (50°C)		699.4334	714.8349	1.96	0.003	Yes
Extreme (40°C)		699.4334	714.8349	1.98	0.003	Yes
Extreme (30°C)		699.4334	714.8349	-1.13	-0.002	Yes
Extreme (10°C)		699.4334	714.8349	1.35	0.002	Yes
Extreme (0°C)		699.4334	714.8349	1.59	0.002	Yes
Extreme (-10°C)		699.4334	714.8349	1.23	0.002	Yes
Extreme (-20°C)		699.4334	714.8349	1.12	0.002	Yes
Extreme (-30°C)		699.4334	714.8349	1.27	0.002	Yes
20°C	15%	699.4334	714.8349	2.39	0.003	Yes
	-15%	699.4334	714.8349	1.23	0.002	Yes
	End Point Voltage	699.4334	714.8349	1.16	0.002	Yes

9.4.4. LTE BAND 13

LIMITS

FCC: §27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Engineer ID: 27979 **Test Date:** 5/20/2022

LTE BAND 13 QPSK (10MHz BANDWIDTH)

Band	13	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		777	787			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	777.1264	786.8743			
Extreme (50°C)		777.1264	786.8743	2.1	0.003	Yes
Extreme (40°C)		777.1264	786.8743	1.4	0.002	Yes
Extreme (30°C)		777.1264	786.8743	-0.1	0.000	Yes
Extreme (10°C)		777.1264	786.8743	1.4	0.002	Yes
Extreme (0°C)		777.1264	786.8743	1.8	0.002	Yes
Extreme (-10°C)		777.1264	786.8743	2.2	0.003	Yes
Extreme (-20°C)		777.1264	786.8743	2.5	0.003	Yes
Extreme (-30°C)		777.1264	786.8743	1.2	0.002	Yes
20°C	15%	777.1264	786.8743	2.0	0.003	Yes
	-15%	777.1264	786.8743	0.8	0.001	Yes
	End Point Voltage	777.1264	786.8743	0.1	0.000	Yes

9.4.5. LTE BAND 14 AND 5G NR n14

LIMITS

FCC: §90.539
(e) The frequency stability of mobile, portable and control transmitters operating in the wideband segment must be 1.25 ppm or better when AFC is locked to a base station, and 5 ppm or better when AFC is not locked.

Test Engineer ID: 27979 **Test Date:** 6/30/2022

LTE BAND 14 QPSK (10MHz BANDWIDTH)

Band	14	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		788	798			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	788.1100	797.8660			
Extreme (50°C)		788.1100	797.8660	-4.02	-0.005	Yes
Extreme (40°C)		788.1100	797.8660	-2.25	-0.003	Yes
Extreme (30°C)		788.1100	797.8660	-1.21	-0.002	Yes
Extreme (10°C)		788.1100	797.8660	-1.16	-0.001	Yes
Extreme (0°C)		788.1100	797.8660	-1.14	-0.001	Yes
Extreme (-10°C)		788.1100	797.8660	1.51	0.002	Yes
Extreme (-20°C)		788.1100	797.8660	-1.29	-0.002	Yes
Extreme (-30°C)		788.1100	797.8660	1.21	0.002	Yes
20°C	15%	788.1100	797.8660	1.3	0.002	Yes
	-15%	788.1100	797.8660	-1.03	-0.001	Yes
	End Point Voltage	788.1100	797.8660	-4.3	-0.005	Yes

5G NR n14 BPSK (10MHz BANDWIDTH)

Band	14	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		788	798			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)		788.3199	797.2826			
Extreme (50°C)		788.3199	797.2826	1.54	0.002	Yes
Extreme (40°C)		788.3199	797.2826	1.71	0.002	Yes
Extreme (30°C)		788.3199	797.2826	-3.62	-0.005	Yes
Extreme (10°C)	Normal	788.3199	797.2826	-5.25	-0.007	Yes
Extreme (0°C)		788.3199	797.2826	-2.58	-0.003	Yes
Extreme (-10°C)		788.3199	797.2826	-1.86	-0.002	Yes
Extreme (-20°C)		788.3199	797.2826	-2.59	-0.003	Yes
Extreme (-30°C)		788.3199	797.2826	-1.36	-0.002	Yes
20°C	15%	788.3199	797.2826	-3.68	-0.005	Yes
	-15%	788.3199	797.2826	-2.48	-0.003	Yes
	End Point Voltage	788.3199	797.2826	-2.75	-0.003	Yes

9.4.6. LTE BAND 17

LIMITS

FCC: §27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Engineer ID: 27979 **Test Date:** 5/20/2022

QPSK (10MHz BANDWIDTH)

Band	17	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		704	716			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	704.1062	715.8784			
Extreme (50°C)		704.1062	715.8784	1.1	0.002	Yes
Extreme (40°C)		704.1062	715.8784	-1.1	-0.002	Yes
Extreme (30°C)		704.1062	715.8784	0.3	0.000	Yes
Extreme (10°C)		704.1062	715.8784	0.8	0.001	Yes
Extreme (0°C)		704.1062	715.8784	-0.7	-0.001	Yes
Extreme (-10°C)		704.1062	715.8784	2.1	0.003	Yes
Extreme (-20°C)		704.1062	715.8784	0.8	0.001	Yes
Extreme (-30°C)		704.1062	715.8784	-1.4	-0.002	Yes
20°C	15%	704.1062	715.8784	0.9	0.001	Yes
	-15%	704.1062	715.8784	-1.1	-0.002	Yes
	End Point Voltage	704.1062	715.8784	-0.7	-0.001	Yes

9.4.7. LTE BAND 25 AND 5G NR n25

LIMITS

FCC: §24.235
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Engineer ID: 27979 **Test Date:** 5/20/2022

LTE BAND 25 QPSK (20MHz BANDWIDTH)

Band	25	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		1850	1915		2.5	
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)		1850.2904	1914.5660			
Extreme (50°C)		1850.2904	1914.5660	2.7	0.001	Yes
Extreme (40°C)		1850.2904	1914.5660	-0.2	0.000	Yes
Extreme (30°C)		1850.2904	1914.5660	-2.4	-0.001	Yes
Extreme (10°C)	Normal	1850.2904	1914.5660	-3.1	-0.002	Yes
Extreme (0°C)		1850.2904	1914.5660	-2.6	-0.001	Yes
Extreme (-10°C)		1850.2904	1914.5660	1.7	0.001	Yes
Extreme (-20°C)		1850.2904	1914.5660	-2.8	-0.001	Yes
Extreme (-30°C)		1850.2904	1914.5660	-1.9	-0.001	Yes
20°C	15%	1850.2904	1914.5660	-4.1	-0.002	Yes
	-15%	1850.2904	1914.5660	-2.1	-0.001	Yes
	End Point Voltage	1850.2904	1914.5660	2.5	0.001	Yes

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5G NR n25 BPSK (40MHz BANDWIDTH)

Band	25	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		1850	1915		2.5	
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)		1850.1131	1914.2905			
Extreme (50°C)		1850.1131	1914.2905	-2.67	-0.001	Yes
Extreme (40°C)		1850.1131	1914.2905	-3.37	-0.002	Yes
Extreme (30°C)		1850.1131	1914.2905	-4.31	-0.002	Yes
Extreme (10°C)	Normal	1850.1131	1914.2905	-2.76	-0.001	Yes
Extreme (0°C)		1850.1131	1914.2905	-3.05	-0.002	Yes
Extreme (-10°C)		1850.1131	1914.2905	-3.22	-0.002	Yes
Extreme (-20°C)		1850.1131	1914.2905	-4.81	-0.003	Yes
Extreme (-30°C)		1850.1131	1914.2905	-4.14	-0.002	Yes
20°C	15%	1850.1131	1914.2905	-5.45	-0.003	Yes
	-15%	1850.1131	1914.2905	-3.76	-0.002	Yes
	End Point Voltage	1850.1131	1914.2905	4.3	0.002	Yes

9.4.8. LTE BAND 26 AND 5G NR n26 (FCC PART 90S)

LIMITS

FCC: §90.213
The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

Test Engineer ID: 27979 **Test Date:** 5/20/2022

LTE BAND 26 QPSK (10MHz BANDWIDTH)

Band	26	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		814	824		2.5	
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)		814.1422	823.8781			
Extreme (50°C)		814.1422	823.8781	1.6	0.002	Yes
Extreme (40°C)		814.1422	823.8781	0.9	0.001	Yes
Extreme (30°C)		814.1422	823.8781	-0.7	-0.001	Yes
Extreme (10°C)	Normal	814.1422	823.8781	1.5	0.002	Yes
Extreme (0°C)		814.1422	823.8781	2.5	0.003	Yes
Extreme (-10°C)		814.1422	823.8781	2.8	0.003	Yes
Extreme (-20°C)		814.1422	823.8781	1.2	0.001	Yes
Extreme (-30°C)		814.1422	823.8781	0.4	0.001	Yes
20°C	15%	814.1422	823.8781	1.2	0.001	Yes
	-15%	814.1422	823.8781	2.2	0.003	Yes
	End Point Voltage	814.1422	823.8781	3.0	0.004	Yes

9.4.9. LTE BAND 26 AND 5G NR n26 (FCC PART 22H)

LIMITS

FCC: §22.355
The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

Test Engineer ID:	27979	Test Date:	5/23/2022

LTE BAND 26 QPSK (10MHz BANDWIDTH)

Band	26	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		824	849		2.5	
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	824.1300	848.8460			
Extreme (50°C)		824.1300	848.8460	0.8	0.001	Yes
Extreme (40°C)		824.1300	848.8460	-1.5	-0.002	Yes
Extreme (30°C)		824.1300	848.8460	2.5	0.003	Yes
Extreme (10°C)		824.1300	848.8460	-0.3	0.000	Yes
Extreme (0°C)		824.1300	848.8460	1.1	0.001	Yes
Extreme (-10°C)		824.1300	848.8460	1.6	0.002	Yes
Extreme (-20°C)		824.1300	848.8460	0.9	0.001	Yes
Extreme (-30°C)		824.1300	848.8460	0.7	0.001	Yes
20°C	15%	824.1300	848.8460	-0.8	-0.001	Yes
	-15%	824.1300	848.8460	-1.9	-0.002	Yes
	End Point Voltage	824.1300	848.8460	-2.7	-0.003	Yes

5G NR n26 BPSK (10MHz BANDWIDTH)

Band	26	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		824	849		2.5	
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	824.3470	848.2740			
Extreme (50°C)		824.3470	848.2740	-1.9	-0.002	Yes
Extreme (40°C)		824.3470	848.2740	-2.1	-0.003	Yes
Extreme (30°C)		824.3470	848.2740	-3.3	-0.004	Yes
Extreme (10°C)		824.3470	848.2740	-2.1	-0.003	Yes
Extreme (0°C)		824.3470	848.2740	1.5	0.002	Yes
Extreme (-10°C)		824.3470	848.2740	-2.1	-0.002	Yes
Extreme (-20°C)		824.3470	848.2740	-2.8	-0.003	Yes
Extreme (-30°C)		824.3470	848.2740	-3.3	-0.004	Yes
20°C	15%	824.3470	848.2740	-3.3	-0.004	Yes
	-15%	824.3470	848.2740	-2.3	-0.003	Yes
	End Point Voltage	824.3470	848.2740	-4.8	-0.006	Yes

5G NR n26 BPSK (10MHz BANDWIDTH)

Band	26	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		814	824		2.5	
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal					
Extreme (50°C)						
Extreme (40°C)						
Extreme (30°C)						
Extreme (10°C)						
Extreme (0°C)						
Extreme (-10°C)						
Extreme (-20°C)						
Extreme (-30°C)						
20°C	15%					
	-15%					
	End Point Voltage					

9.4.10. LTE BAND 30 AND 5G NR n30

LIMITS

FCC: §27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Engineer ID: 27979 **Test Date:** 5/20/2022

LTE BAND 30 QPSK (10MHz BANDWIDTH)

Band	30	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2305	2315			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	2305.1661	2314.8546			
Extreme (50°C)		2305.1661	2314.8546	-1.7	-0.001	Yes
Extreme (40°C)		2305.1661	2314.8546	-1.8	-0.001	Yes
Extreme (30°C)		2305.1661	2314.8546	-2.7	-0.001	Yes
Extreme (10°C)		2305.1661	2314.8546	5.3	0.002	Yes
Extreme (0°C)		2305.1661	2314.8546	-0.7	0.000	Yes
Extreme (-10°C)		2305.1661	2314.8546	0.4	0.000	Yes
Extreme (-20°C)		2305.1661	2314.8546	-1.6	-0.001	Yes
Extreme (-30°C)		2305.1661	2314.8546	0.1	0.000	Yes
20°C	15%	2305.1661	2314.8546	-3.2	-0.001	Yes
	-15%	2305.1661	2314.8546	-0.8	0.000	Yes
	End Point Voltage	2305.1661	2314.8546	-3.2	-0.001	Yes

5G NR n30 BPSK (10MHz BANDWIDTH)

Band	30	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2305	2315			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	2305.3236	2314.3580			
Extreme (50°C)		2305.3236	2314.3580	-6.42	-0.003	Yes
Extreme (40°C)		2305.3236	2314.3580	-7.73	-0.003	Yes
Extreme (30°C)		2305.3236	2314.3580	-4.85	-0.002	Yes
Extreme (10°C)		2305.3236	2314.3580	-5.35	-0.002	Yes
Extreme (0°C)		2305.3236	2314.3580	-2.83	-0.001	Yes
Extreme (-10°C)		2305.3236	2314.3580	-4.11	-0.002	Yes
Extreme (-20°C)		2305.3236	2314.3580	-3.26	-0.001	Yes
Extreme (-30°C)		2305.3236	2314.3580	-2.86	-0.001	Yes
20°C	15%	2305.3236	2314.3580	-6.91	-0.003	Yes
	-15%	2305.3236	2314.3580	-2.39	-0.001	Yes
	End Point Voltage	2305.3236	2314.3580	-4.86	-0.002	Yes

9.4.11. LTE BAND 41 AND 5G NR n41

LIMITS

FCC: §27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Engineer ID: 27979 **Test Date:** 5/20/2022

LTE BAND 41 QPSK (20MHz BANDWIDTH)

Band	41	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2496	2690			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	2496.7421	2689.2463			
Extreme (50°C)		2496.7421	2689.2463	-3.1	-0.001	Yes
Extreme (40°C)		2496.7421	2689.2463	-2.5	-0.001	Yes
Extreme (30°C)		2496.7421	2689.2463	-2.1	-0.001	Yes
Extreme (10°C)		2496.7421	2689.2463	-4.1	-0.002	Yes
Extreme (0°C)		2496.7421	2689.2463	-1.5	-0.001	Yes
Extreme (-10°C)		2496.7421	2689.2463	-1.2	0.000	Yes
Extreme (-20°C)		2496.7421	2689.2463	-4.1	-0.002	Yes
Extreme (-30°C)		2496.7421	2689.2463	-1.8	-0.001	Yes
20°C	15%	2496.7421	2689.2463	-2.5	-0.001	Yes
	-15%	2496.7421	2689.2463	-2.2	-0.001	Yes
	End Point Voltage	2496.7421	2689.2463	-3.5	-0.001	Yes

5G NR n41 BPSK (100MHz BANDWIDTH)

Band	41	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2496	2690			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	2497.1693	2687.7478			
Extreme (50°C)		2497.1693	2687.7477	-11.93	-0.005	Yes
Extreme (40°C)		2497.1693	2687.7477	-13.09	-0.005	Yes
Extreme (30°C)		2497.1693	2687.7477	-5.67	-0.002	Yes
Extreme (10°C)		2497.1693	2687.7477	-9.96	-0.004	Yes
Extreme (0°C)		2497.1693	2687.7477	-5.58	-0.002	Yes
Extreme (-10°C)		2497.1693	2687.7477	-11.01	-0.004	Yes
Extreme (-20°C)		2497.1693	2687.7478	-1.19	0.000	Yes
Extreme (-30°C)		2497.1693	2687.7477	-4.98	-0.002	Yes
20°C	15%	2497.1693	2687.7477	-9.31	-0.004	Yes
	-15%	2497.1693	2687.7477	-9.11	-0.004	Yes
	End Point Voltage	2497.1693	2687.7477	-3.51	-0.001	Yes

9.4.12. LTE BAND 48

Test Engineer ID: 27979 **Test Date:** 5/20/2022

LTE BAND 48 QPSK (20MHz BANDWIDTH)

Band	48	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		3550	3700			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)		3550.7228	3699.2623			
Extreme (50°C)		3550.7228	3699.2623	-1.5	0.000	Yes
Extreme (40°C)		3550.7228	3699.2623	1.0	0.000	Yes
Extreme (30°C)		3550.7228	3699.2623	1.9	0.001	Yes
Extreme (10°C)	Normal	3550.7228	3699.2623	2.5	0.001	Yes
Extreme (0°C)		3550.7228	3699.2623	-2.1	-0.001	Yes
Extreme (-10°C)		3550.7228	3699.2623	1.7	0.000	Yes
Extreme (-20°C)		3550.7228	3699.2623	-1.9	-0.001	Yes
Extreme (-30°C)		3550.7228	3699.2623	-2.3	-0.001	Yes
20°C	15%	3550.7228	3699.2623	1.4	0.000	Yes
	-15%	3550.7228	3699.2623	1.1	0.000	Yes
	End Point Voltage	3550.7228	3699.2623	-1.9	-0.001	Yes

9.4.13. LTE BAND 66 AND 5G NR n66

LIMITS

FCC: §27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Engineer ID: 27979 **Test Date:** 5/20/2022

LTE BAND 66 QPSK (20MHz BANDWIDTH)

Band	66	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		1710	1780			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)		1710.4580	1779.5460			
Extreme (50°C)		1710.4580	1779.5460	-2.8	-0.002	Yes
Extreme (40°C)		1710.4580	1779.5460	-1.5	-0.001	Yes
Extreme (30°C)		1710.4580	1779.5460	1.5	0.001	Yes
Extreme (10°C)	Normal	1710.4580	1779.5460	-1.6	-0.001	Yes
Extreme (0°C)		1710.4580	1779.5460	3.6	0.002	Yes
Extreme (-10°C)		1710.4580	1779.5460	-1.7	-0.001	Yes
Extreme (-20°C)		1710.4580	1779.5460	-2.6	-0.001	Yes
Extreme (-30°C)		1710.4580	1779.5460	-1.7	-0.001	Yes
20°C	15%	1710.4580	1779.5460	1.0	0.001	Yes
	-15%	1710.4580	1779.5460	1.8	0.001	Yes
	End Point Voltage	1710.4580	1779.5460	2.0	0.001	Yes

5G NR n66 BPSK (40MHz BANDWIDTH)

Band	66	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		1710	1780			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	1710.4860	1779.4267			
Extreme (50°C)		1710.4860	1779.4267	-4.22	-0.002	Yes
Extreme (40°C)		1710.4860	1779.4267	-3.8	-0.002	Yes
Extreme (30°C)		1710.4860	1779.4267	-2.92	-0.002	Yes
Extreme (10°C)		1710.4860	1779.4267	-3.86	-0.002	Yes
Extreme (0°C)		1710.4860	1779.4267	-2.27	-0.001	Yes
Extreme (-10°C)		1710.4860	1779.4267	-2.43	-0.001	Yes
Extreme (-20°C)		1710.4860	1779.4267	-5.04	-0.003	Yes
Extreme (-30°C)		1710.4860	1779.4267	-5.26	-0.003	Yes
20°C	15%	1710.4860	1779.4267	-4.11	-0.002	Yes
	-15%	1710.4860	1779.4267	-2.56	-0.001	Yes
	End Point Voltage	1710.4860	1779.4267	-2.25	-0.001	Yes

9.4.14. 5G NR n70

LIMITS

FCC: §27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Engineer ID: 27979 **Test Date:** 5/20/2022

5G NR n70 BPSK (25MHz BANDWIDTH)

Band	70	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		1695	1710			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	1695.4493	1708.8327			
Extreme (50°C)		1695.4493	1708.8327	-3.7	-0.002	Yes
Extreme (40°C)		1695.4493	1708.8327	1.62	0.001	Yes
Extreme (30°C)		1695.4493	1708.8327	2.56	0.002	Yes
Extreme (10°C)		1695.4493	1708.8327	-2.53	-0.001	Yes
Extreme (0°C)		1695.4493	1708.8327	2.8	0.002	Yes
Extreme (-10°C)		1695.4493	1708.8327	3.31	0.002	Yes
Extreme (-20°C)		1695.4493	1708.8327	1.54	0.001	Yes
Extreme (-30°C)		1695.4493	1708.8327	-3.35	-0.002	Yes
20°C	15%	1695.4493	1708.8327	3.57	0.002	Yes
	-15%	1695.4493	1708.8327	1.14	0.001	Yes
	End Point Voltage	1695.4493	1708.8327	3.3	0.002	Yes

9.4.15. LTE BAND 71 AND 5G NR n71

LIMITS

FCC: §27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Engineer ID: 27979 **Test Date:** 6/30/2022

LTE BAND 71 QPSK (20MHz BANDWIDTH)

Band	71	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		663	698			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	663.4260	697.5460			
Extreme (50°C)		663.4260	697.5460	-1.78	-0.003	Yes
Extreme (40°C)		663.4260	697.5460	-1.4	-0.002	Yes
Extreme (30°C)		663.4260	697.5460	5.2	0.008	Yes
Extreme (10°C)		663.4260	697.5460	-2.48	-0.004	Yes
Extreme (0°C)		663.4260	697.5460	2.7	0.004	Yes
Extreme (-10°C)		663.4260	697.5460	2.33	0.003	Yes
Extreme (-20°C)		663.4260	697.5460	2.21	0.003	Yes
Extreme (-30°C)		663.4260	697.5460	1.93	0.003	Yes
20°C	15%	663.4260	697.5460	-1.93	-0.003	Yes
	-15%	663.4260	697.5460	-1.17	-0.002	Yes
	End Point Voltage	663.4260	697.5460	-2.34	-0.003	Yes

5G NR n71 BPSK (20MHz BANDWIDTH)

Band	71	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		663	698			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	663.5392	696.3899			
Extreme (50°C)		663.5391	696.3899	-4.92	-0.007	Yes
Extreme (40°C)		663.5392	696.3899	-2.14	-0.003	Yes
Extreme (30°C)		663.5392	696.3899	-3.32	-0.005	Yes
Extreme (10°C)		663.5391	696.3899	-5.31	-0.008	Yes
Extreme (0°C)		663.5392	696.3899	-3.85	-0.006	Yes
Extreme (-10°C)		663.5392	696.3899	-3.44	-0.005	Yes
Extreme (-20°C)		663.5392	696.3899	-2.79	-0.004	Yes
Extreme (-30°C)		663.5392	696.3899	-1.43	-0.002	Yes
20°C	15%	663.5392	696.3899	1.96	0.003	Yes
	-15%	663.5392	696.3899	1.19	0.002	Yes
	End Point Voltage	663.5392	696.3899	2.62	0.004	Yes

9.4.16. 5G NR n77 (FCC Part 27 3450-3550MHz)

LIMITS

FCC: §27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Engineer ID: 27979 **Test Date:** 5/20/2022

5G NR n77 BPSK (100MHz BANDWIDTH)

Band	77	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		3450	3550			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	3451.1625	3547.7821			
Extreme (50°C)		3451.1625	3547.7821	-16.58	-0.005	Yes
Extreme (40°C)		3451.1625	3547.7821	-8.18	-0.002	Yes
Extreme (30°C)		3451.1625	3547.7821	-6.24	-0.002	Yes
Extreme (10°C)		3451.1625	3547.7821	-11.31	-0.003	Yes
Extreme (0°C)		3451.1625	3547.7821	-9.94	-0.003	Yes
Extreme (-10°C)		3451.1625	3547.7821	-2.33	-0.001	Yes
Extreme (-20°C)		3451.1625	3547.7821	-8.81	-0.003	Yes
Extreme (-30°C)		3451.1625	3547.7821	-17.39	-0.005	Yes
20°C	15%	3451.1625	3547.7821	-1.69	0.000	Yes
	-15%	3451.1625	3547.7821	-10.11	-0.003	Yes
	End Point Voltage	3451.1625	3547.7821	-10.41	-0.003	Yes

9.4.17. 5G NR n77 (FCC Part 27 3700-3980MHz)

LIMITS

FCC: §27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Engineer ID: 27979 **Test Date:** 5/20/2022

5G NR n77 BPSK (100MHz BANDWIDTH)

Band	77	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		3700	3980			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	3701.0751	3977.7838			
Extreme (50°C)		3701.0751	3977.7837	-11.45	-0.003	Yes
Extreme (40°C)		3701.0751	3977.7837	-2.41	-0.001	Yes
Extreme (30°C)		3701.0751	3977.7837	-8.65	-0.002	Yes
Extreme (10°C)		3701.0751	3977.7837	-8.41	-0.002	Yes
Extreme (0°C)		3701.0751	3977.7837	-2.52	-0.001	Yes
Extreme (-10°C)		3701.0751	3977.7837	-2.93	-0.001	Yes
Extreme (-20°C)		3701.0751	3977.7837	-11.53	-0.003	Yes
Extreme (-30°C)		3701.0751	3977.7837	-3.45	-0.001	Yes
20°C	15%	3701.0751	3977.7837	-9.44	-0.002	Yes
	-15%	3701.0751	3977.7837	-4.55	-0.001	Yes
	End Point Voltage	3701.0751	3977.7837	-7.58	-0.002	Yes

9.5. PEAK-TO-AVERAGE POWER RATIO

LIMIT

In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

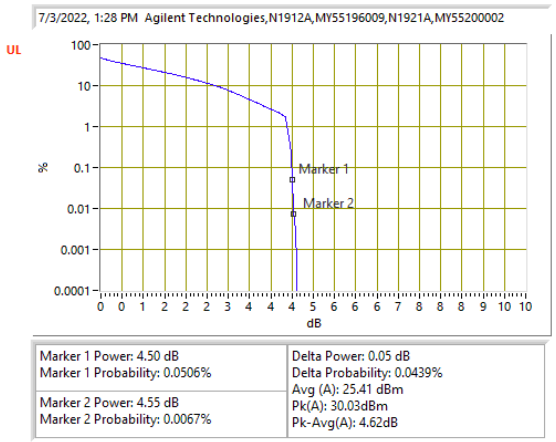
RESULT

Antenna 1 was used to measure as the worst case; full resource block (FRB) for each bandwidth was used to measure as the worst case. The results from all CCDF measurements are passed with 13dB peak-to-average power ratio criteria.

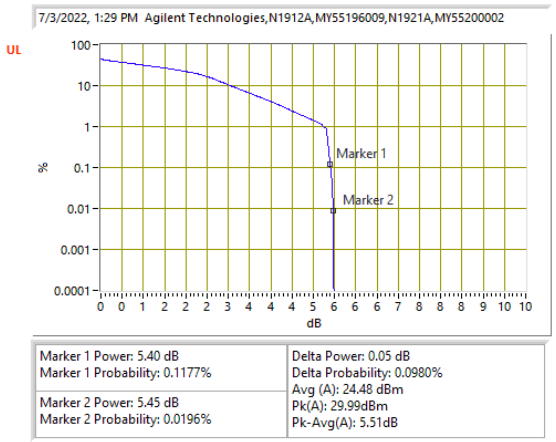
9.5.1. LTE BAND 5 AND 5G NR n5

LTE BAND 5

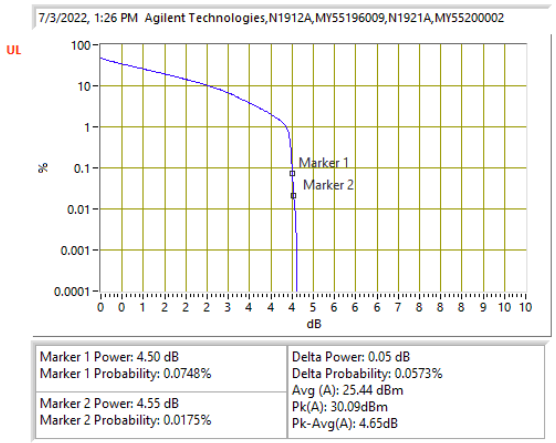
Test Engineer ID: 52275 **Test Date:** 6/3/2022



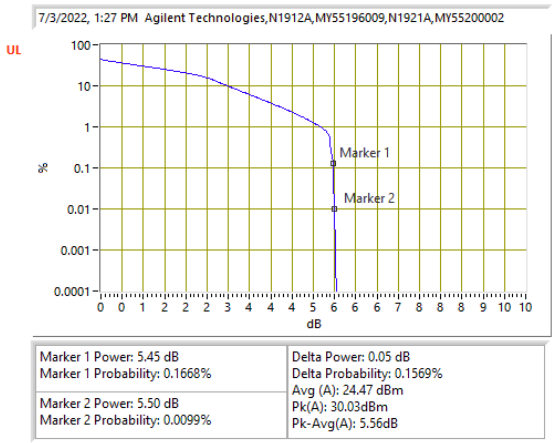
LTE B5 1.4MHz QPSK Middle Channel



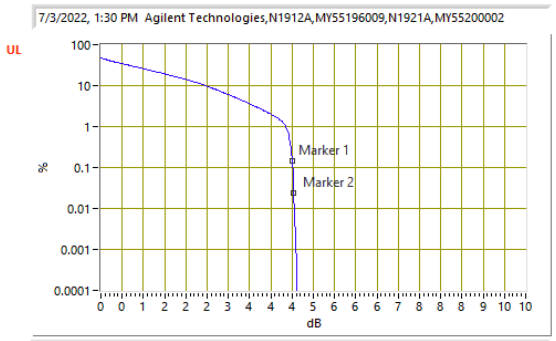
LTE B5 1.4MHz 16QAM Middle Channel



LTE B5 3MHz QPSK Middle Channel

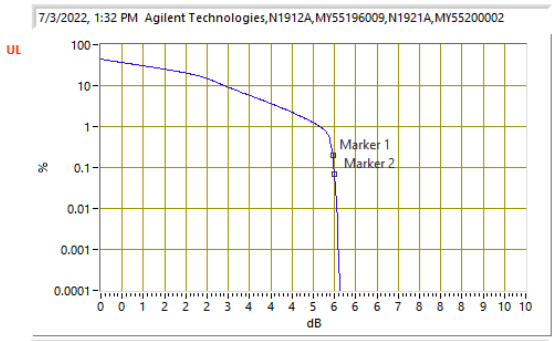


LTE B5 3MHz 16QAM Middle Channel



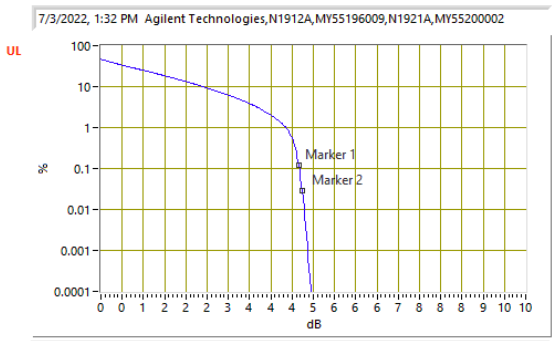
Marker 1 Power: 4.50 dB Marker 1 Probability: 0.1482%	Delta Power: 0.05 dB Delta Probability: 0.1347% Avg (A): 25.46 dBm Pk(A): 30.11dBm Pk-Avg(A): 4.65dB
Marker 2 Power: 4.55 dB Marker 2 Probability: 0.0135%	

LTE B5 5MHz QPSK Middle Channel



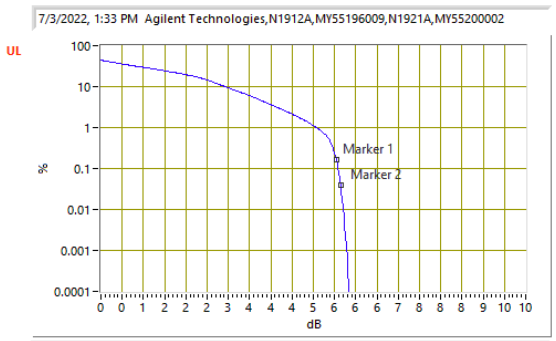
Marker 1 Power: 5.45 dB Marker 1 Probability: 0.2324%	Delta Power: 0.05 dB Delta Probability: 0.1650% Avg (A): 24.53 dBm Pk(A): 30.19dBm Pk-Avg(A): 5.66dB
Marker 2 Power: 5.50 dB Marker 2 Probability: 0.0674%	

LTE B5 5MHz 16QAM Middle Channel



Marker 1 Power: 4.65 dB Marker 1 Probability: 0.1376%	Delta Power: 0.10 dB Delta Probability: 0.1147% Avg (A): 25.53 dBm Pk(A): 30.54dBm Pk-Avg(A): 5.02dB
Marker 2 Power: 4.75 dB Marker 2 Probability: 0.0230%	

LTE B5 10MHz QPSK Middle Channel

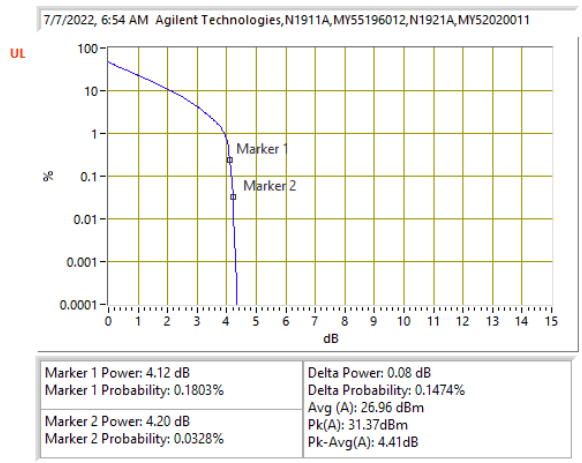


Marker 1 Power: 5.55 dB Marker 1 Probability: 0.1503%	Delta Power: 0.10 dB Delta Probability: 0.1176% Avg (A): 24.54 dBm Pk(A): 30.49dBm Pk-Avg(A): 5.95dB
Marker 2 Power: 5.65 dB Marker 2 Probability: 0.0327%	

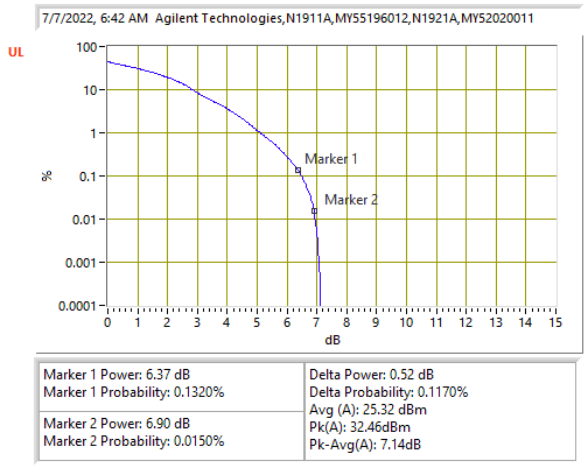
LTE B5 10MHz 16QAM Middle Channel

5G NR n5

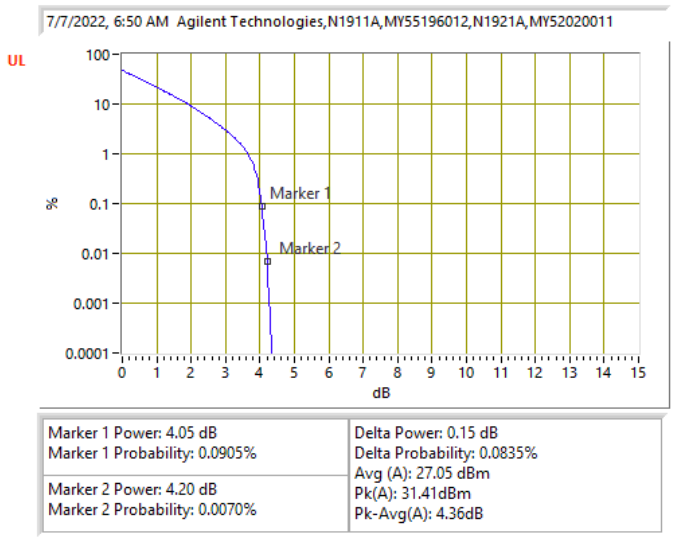
Test Engineer ID: 27979 **Test Date:** 6/30/2022



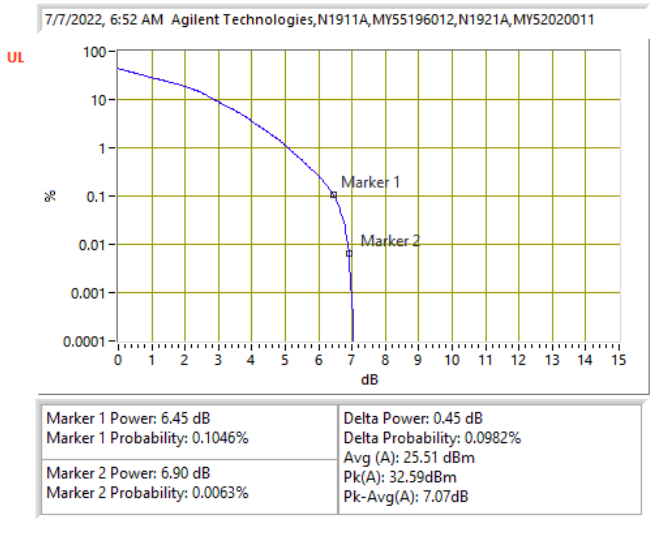
5G NR n5 5MHz BPSK Middle Channel



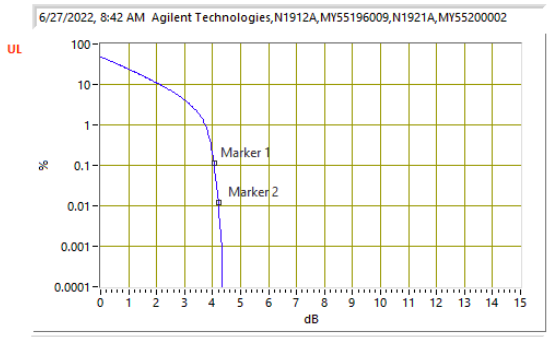
5G NR n5 5MHz 16QAM Middle Channel



5G NR n 10MHz BPSK Middle Channel

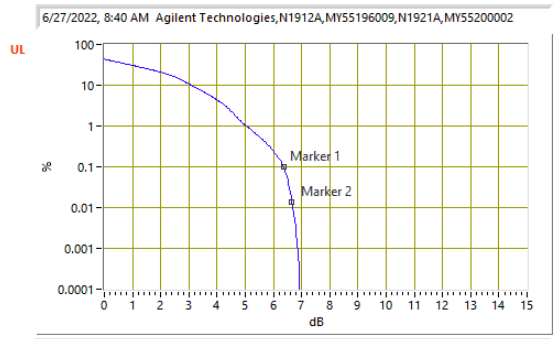


5G NR n5 10MHz 16QAM Middle Channel



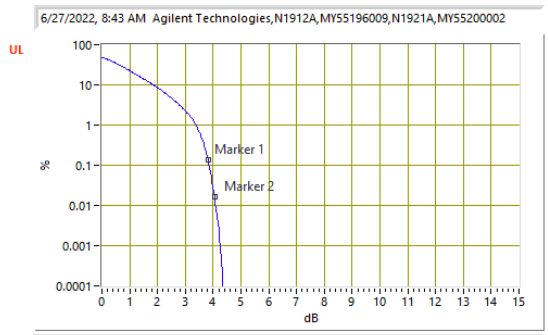
Marker 1 Power: 4.05 dB Marker 1 Probability: 0.1121%	Delta Power: 0.15 dB Delta Probability: 0.1001%
Marker 2 Power: 4.20 dB Marker 2 Probability: 0.0120%	Avg (A): 25.97 dBm Pk(A): 30.37dBm Pk-Avg(A): 4.40dB

5G NR n5 15MHz BPSK Middle Channel



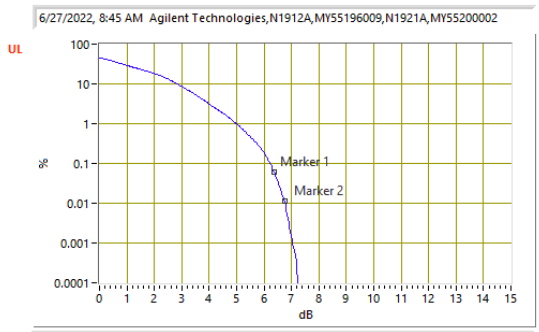
Marker 1 Power: 6.37 dB Marker 1 Probability: 0.0941%	Delta Power: 0.30 dB Delta Probability: 0.0828%
Marker 2 Power: 6.67 dB Marker 2 Probability: 0.0113%	Avg (A): 24.51 dBm Pk(A): 31.52dBm Pk-Avg(A): 7.01dB

5G NR n5 15MHz 16QAM Middle Channel



Marker 1 Power: 3.83 dB Marker 1 Probability: 0.1226%	Delta Power: 0.23 dB Delta Probability: 0.1062%
Marker 2 Power: 4.05 dB Marker 2 Probability: 0.0164%	Avg (A): 25.96 dBm Pk(A): 30.40dBm Pk-Avg(A): 4.44dB

5G NR n5 20MHz BPSK Middle Channel



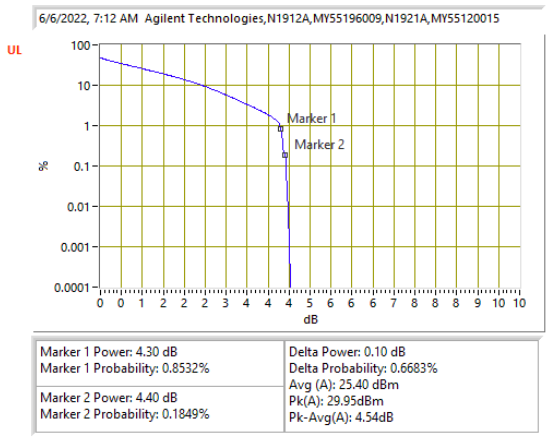
Marker 1 Power: 6.37 dB Marker 1 Probability: 0.0591%	Delta Power: 0.37 dB Delta Probability: 0.0481%
Marker 2 Power: 6.75 dB Marker 2 Probability: 0.0110%	Avg (A): 24.53 dBm Pk(A): 31.91dBm Pk-Avg(A): 7.38dB

5G NR n5 20MHz 16QAM Middle Channel

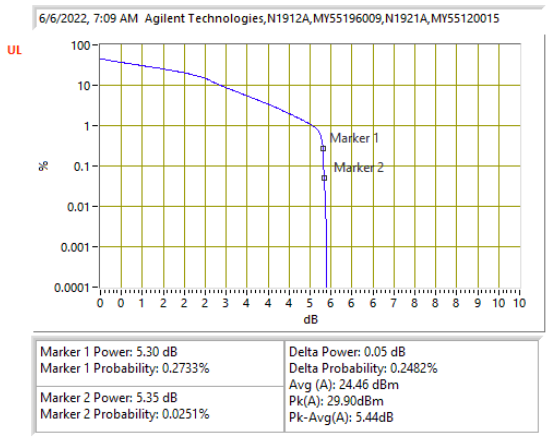
9.5.2. LTE BAND 7 AND 5G NR n7

LTE BAND 7

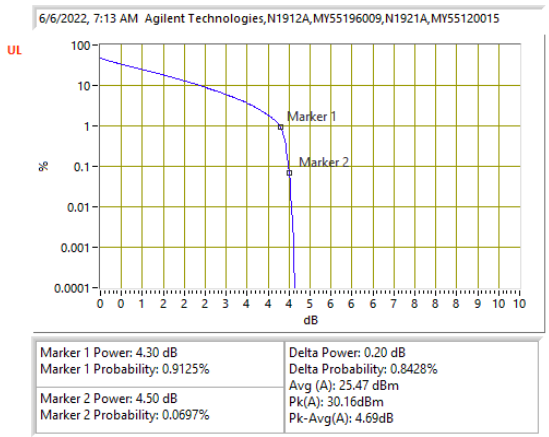
Test Engineer ID: 39004 **Test Date:** 6/6/2022



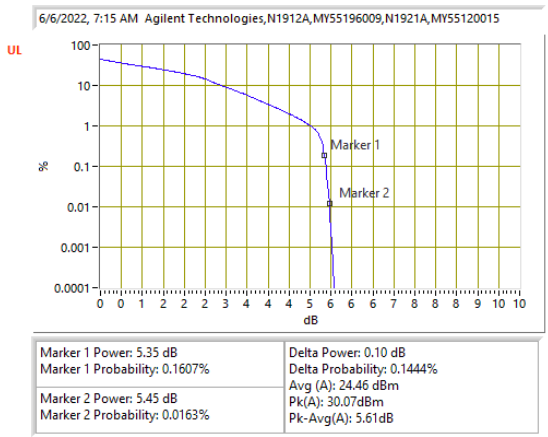
LTE B7 5MHz QPSK Middle Channel



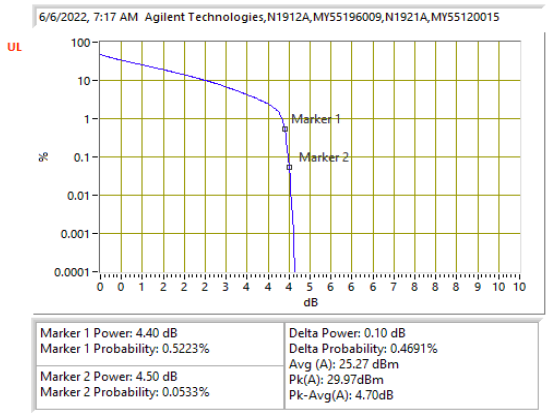
LTE B7 5MHz 16QAM Middle Channel



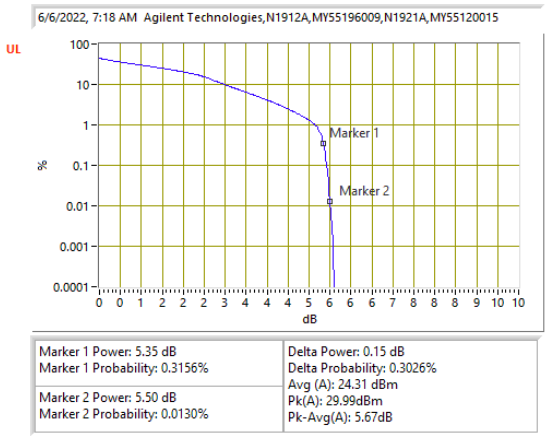
LTE B7 10MHz QPSK Middle Channel



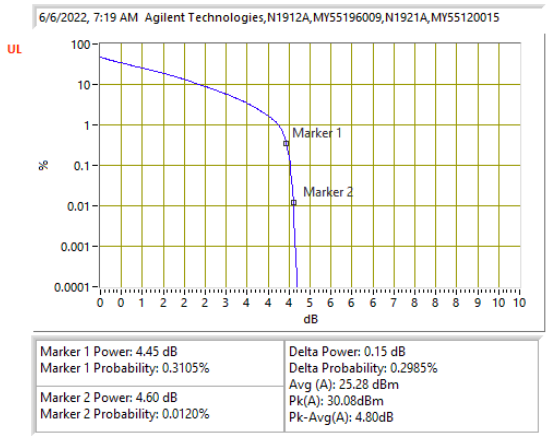
LTE B7 10MHz 16QAM Middle Channel



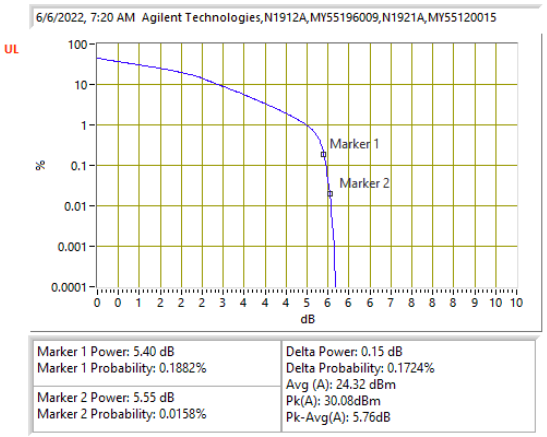
LTE B7 15MHz QPSK Middle Channel



LTE B7 15MHz 16QAM Middle Channel



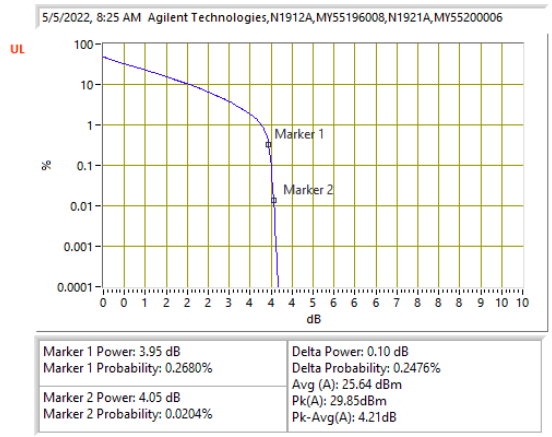
LTE B7 20MHz QPSK Middle Channel



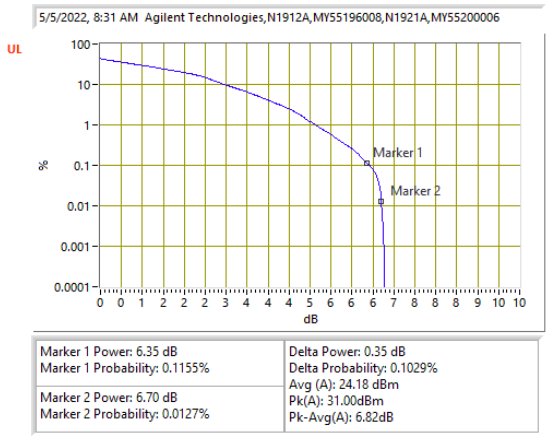
LTE B7 20MHz 16QAM Middle Channel

5G NR n7

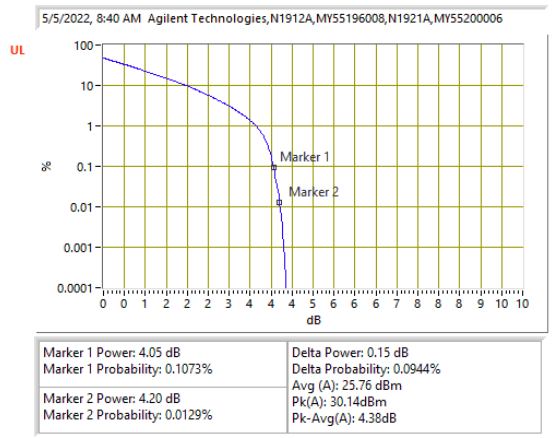
Test Engineer ID: 27957 **Test Date:** 6/6/2022



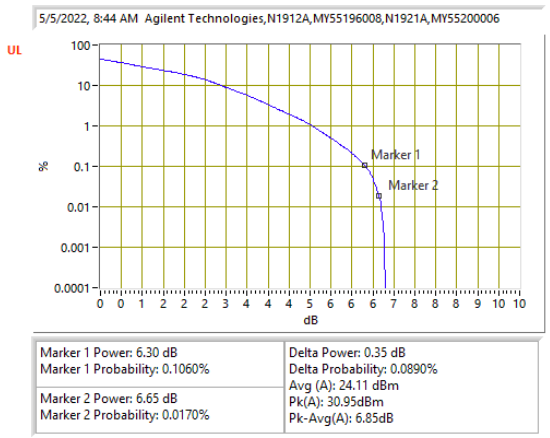
5G NR n7 5MHz BPSK Middle Channel



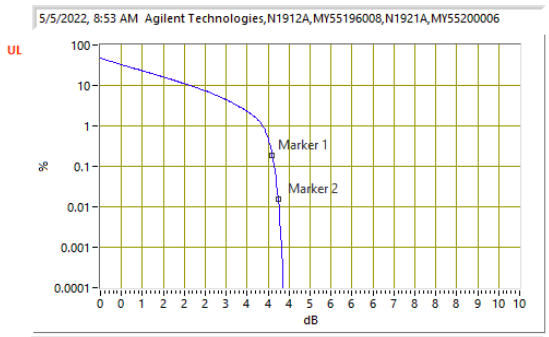
5G NR n7 5MHz 16QAM Middle Channel



5G NR n7 10MHz BPSK Middle Channel

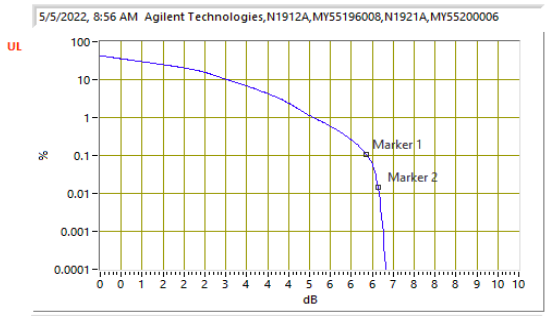


5G NR n7 10MHz 16QAM Middle Channel



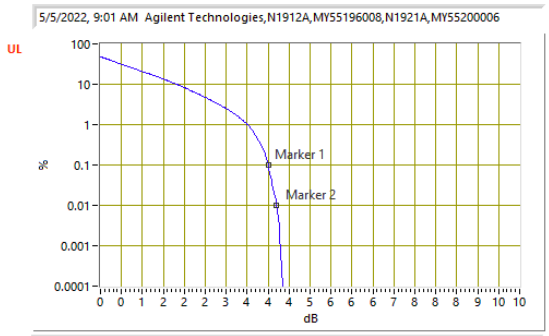
Marker 1 Power: 4.10 dB Marker 1 Probability: 0.1910%	Delta Power: 0.15 dB Delta Probability: 0.1793%
Marker 2 Power: 4.25 dB Marker 2 Probability: 0.0117%	Avg (A): 25.86 dBm Pk(A): 30.24dBm Pk-Avg(A): 4.38dB

5G NR n7 15MHz BPSK Middle Channel



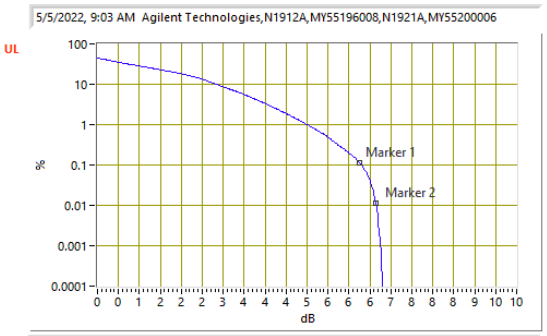
Marker 1 Power: 6.35 dB Marker 1 Probability: 0.1079%	Delta Power: 0.30 dB Delta Probability: 0.0959%
Marker 2 Power: 6.65 dB Marker 2 Probability: 0.0120%	Avg (A): 24.36 dBm Pk(A): 31.25dBm Pk-Avg(A): 6.89dB

5G NR n7 15MHz 16QAM Middle Channel



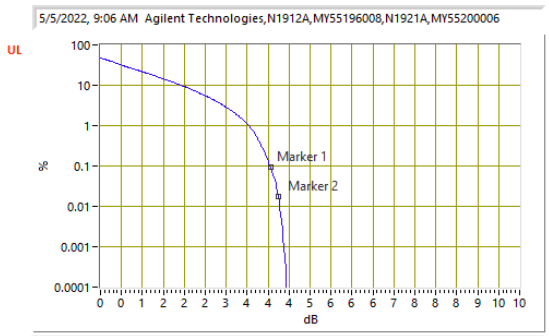
Marker 1 Power: 4.00 dB Marker 1 Probability: 0.1000%	Delta Power: 0.20 dB Delta Probability: 0.0899%
Marker 2 Power: 4.20 dB Marker 2 Probability: 0.0102%	Avg (A): 25.73 dBm Pk(A): 30.13dBm Pk-Avg(A): 4.39dB

5G NR n7 20MHz BPSK Middle Channel



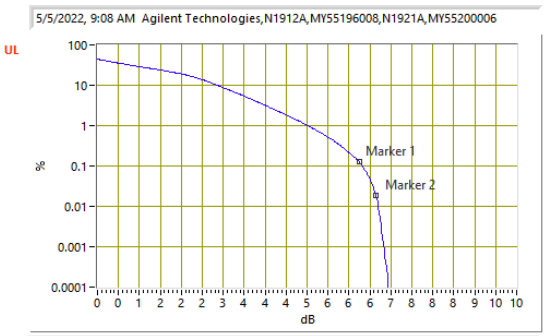
Marker 1 Power: 6.25 dB Marker 1 Probability: 0.1132%	Delta Power: 0.40 dB Delta Probability: 0.1032%
Marker 2 Power: 6.65 dB Marker 2 Probability: 0.0100%	Avg (A): 24.36 dBm Pk(A): 31.22dBm Pk-Avg(A): 6.87dB

5G NR n7 20MHz 16QAM Middle Channel



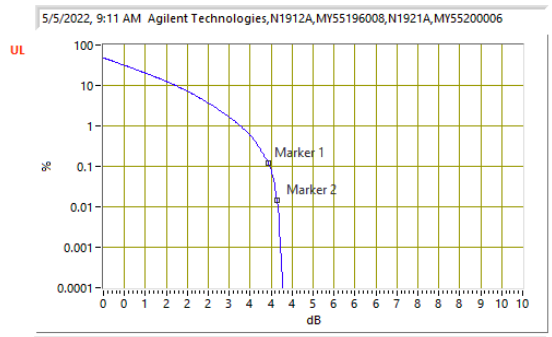
Marker 1 Power: 4.05 dB Marker 1 Probability: 0.1002%	Delta Power: 0.20 dB Delta Probability: 0.0848%
Marker 2 Power: 4.25 dB Marker 2 Probability: 0.0154%	Avg (A): 25.78 dBm Pk(A): 30.36dBm Pk-Avg(A): 4.59dB

5G NR n7 25MHz BPSK Middle Channel

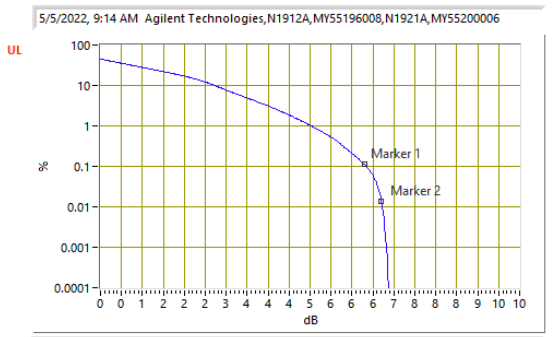


Marker 1 Power: 6.25 dB Marker 1 Probability: 0.1238%	Delta Power: 0.40 dB Delta Probability: 0.1063%
Marker 2 Power: 6.65 dB Marker 2 Probability: 0.0175%	Avg (A): 24.32 dBm Pk(A): 31.39dBm Pk-Avg(A): 7.06dB

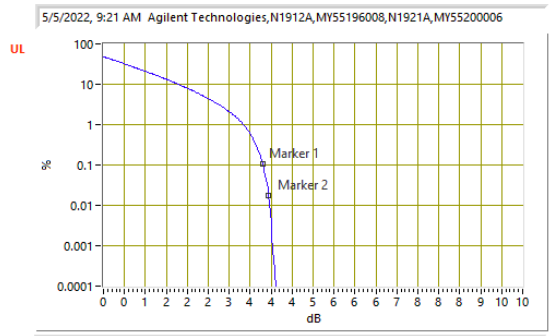
5G NR n7 25MHz 16QAM Middle Channel



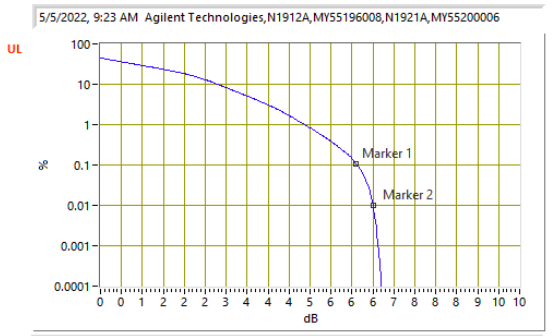
5G NR n7 30MHz BPSK Middle Channel



5G NR n7 30MHz 16QAM Middle Channel



5G NR n7 40MHz BPSK Middle Channel

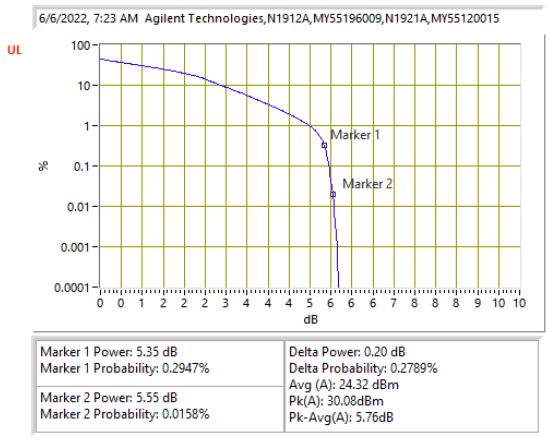


5G NR n7 40MHz 16QAM Middle Channel

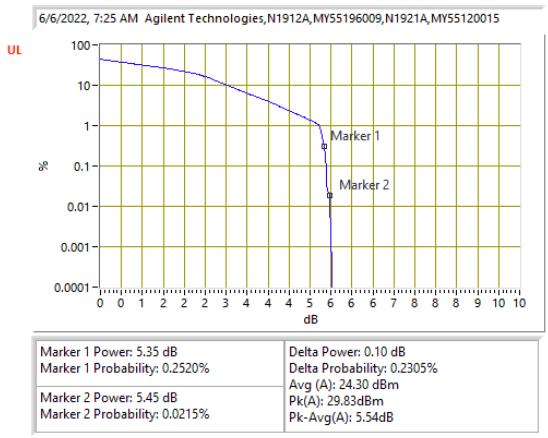
9.5.3. LTE BAND 12 AND 5G NR n12

LTE BAND 12

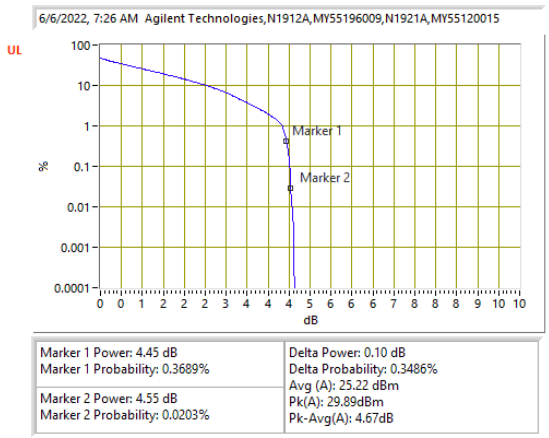
Test Engineer ID: 39004 **Test Date:** 6/6/2022



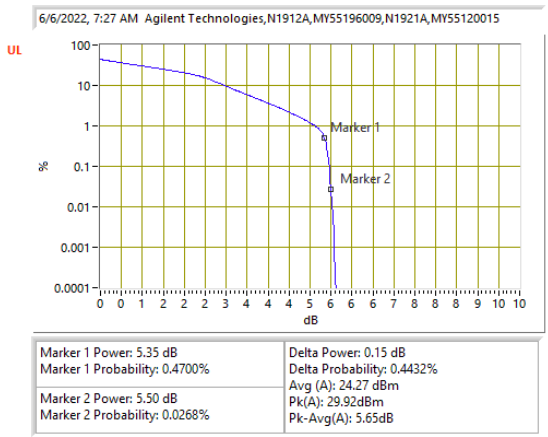
LTE B12 1.4MHz QPSK Middle Channel



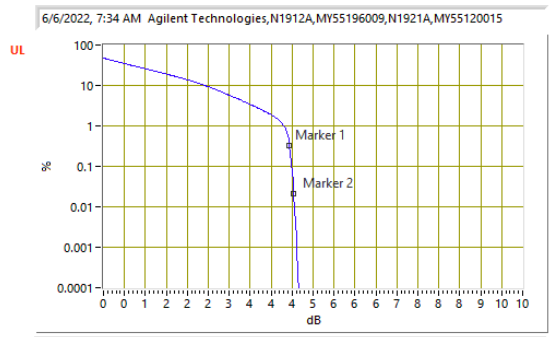
LTE B12 1.4MHz 16QAM Middle Channel



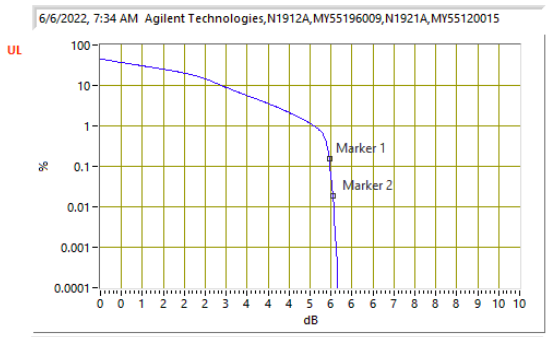
LTE B12 3MHz QPSK Middle Channel



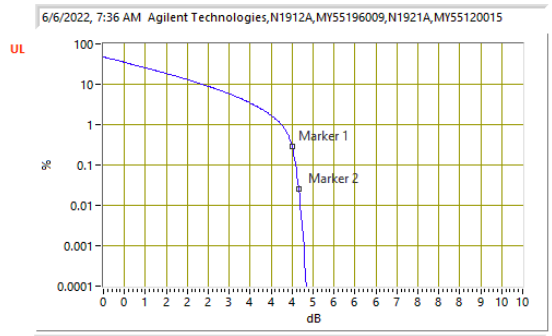
LTE B12 3MHz 16QAM Middle Channel



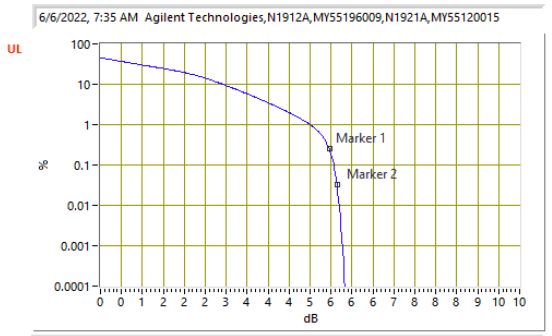
LTE B12 5MHz QPSK Middle Channel



LTE B12 5MHz 16QAM Middle Channel



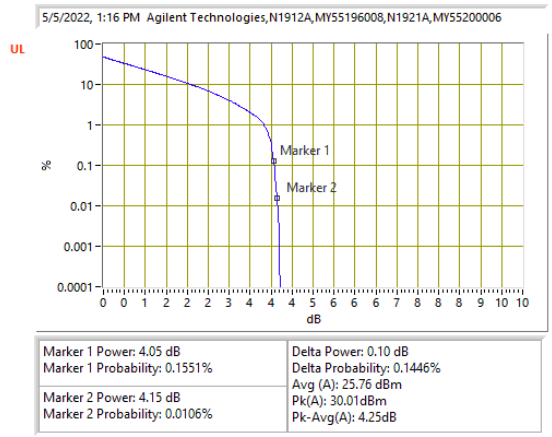
LTE B12 10MHz QPSK Middle Channel



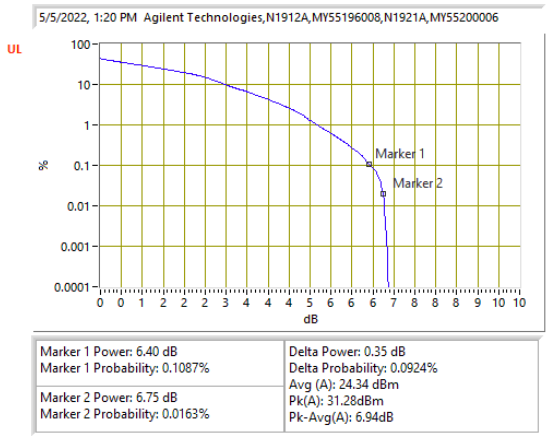
LTE B12 10MHz 16QAM Middle Channel

5G NR n12

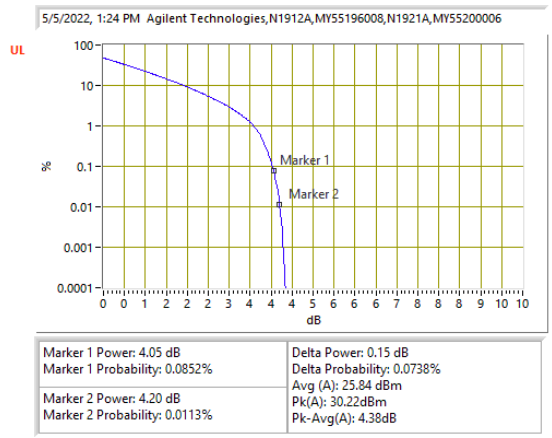
Test Engineer ID: 27957 **Test Date:** 5/5/2022



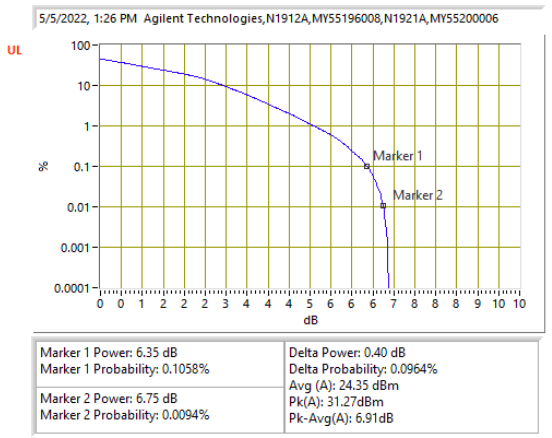
5G NR n12 5MHz BPSK Middle Channel



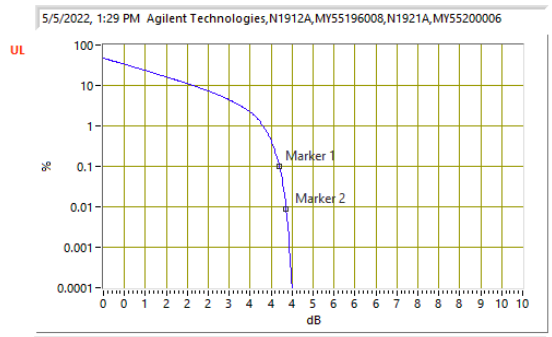
5G NR n12 5MHz 16QAM Middle Channel



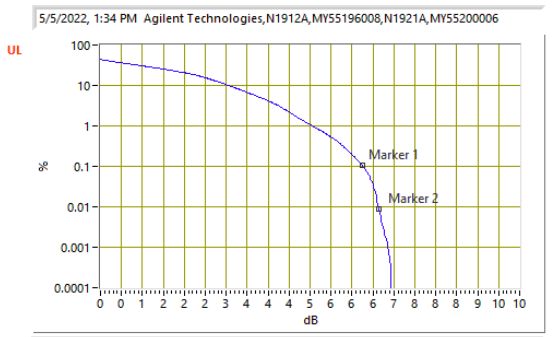
5G NR n12 10MHz BPSK Middle Channel



5G NR n12 10MHz 16QAM Middle Channel



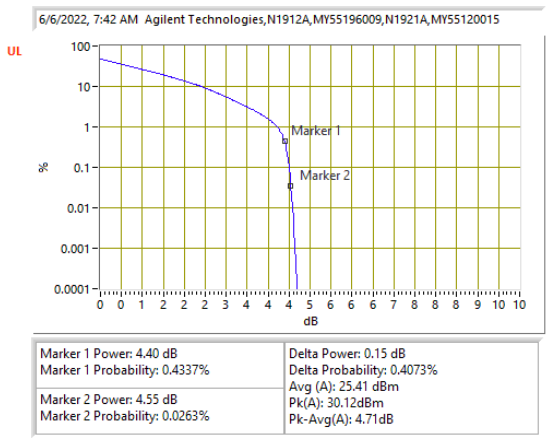
5G NR n12 15MHz BPSK Middle Channel



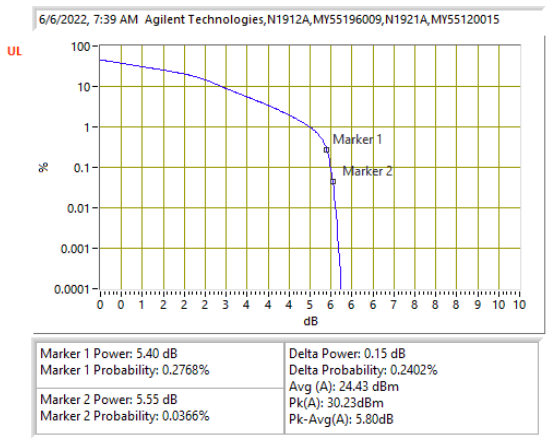
5G NR n12 15MHz 16QAM Middle Channel

9.5.4. LTE BAND 13

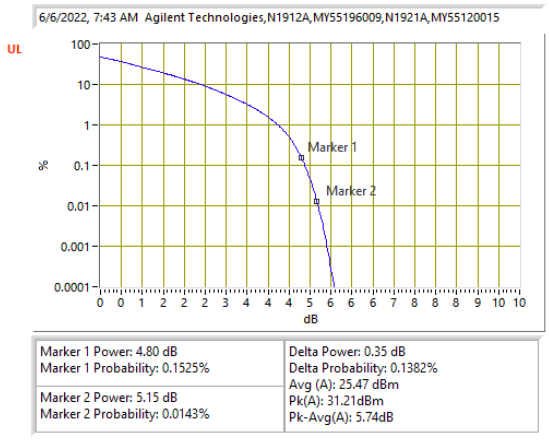
Test Engineer ID: 39004 **Test Date:** 6/6/2022



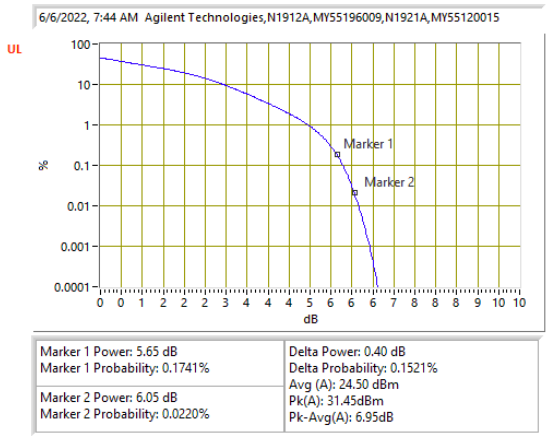
LTE B13 5MHz QPSK Middle Channel



LTE B13 5MHz 16QAM Middle Channel



LTE B13 10MHz QPSK Middle Channel

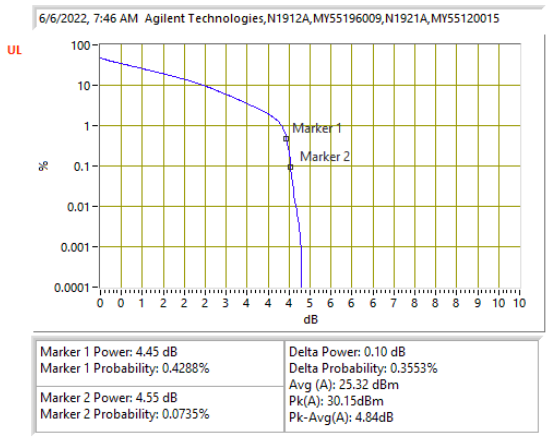


LTE B13 10MHz 16QAM Middle Channel

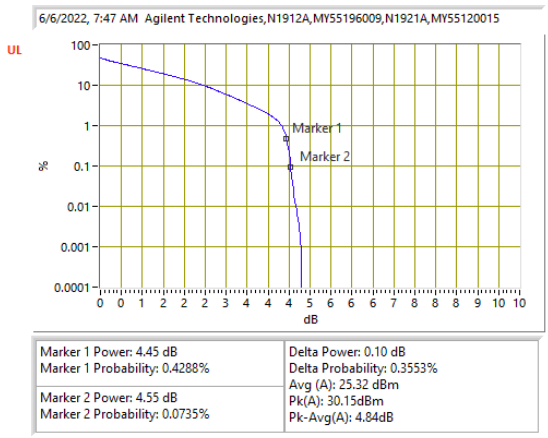
9.5.5. LTE BAND 14 AND 5G NR n14

LTE BAND 14

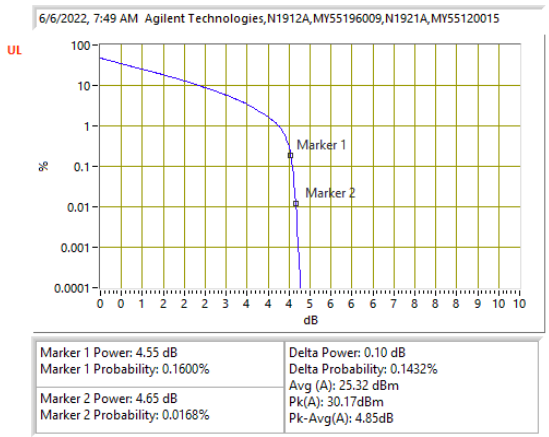
Test Engineer ID: 39004 **Test Date:** 6/6/2022



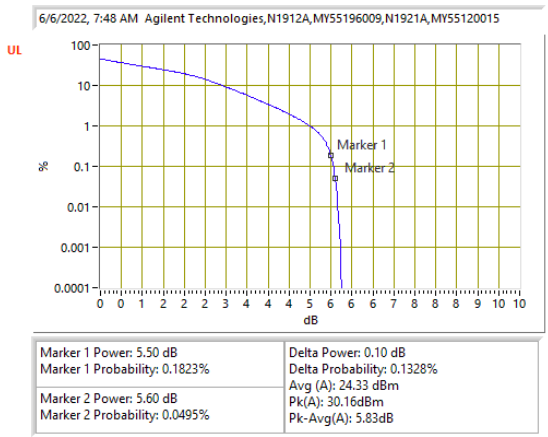
LTE B14 5MHz QPSK Middle Channel



LTE B14 5MHz 16QAM Middle Channel



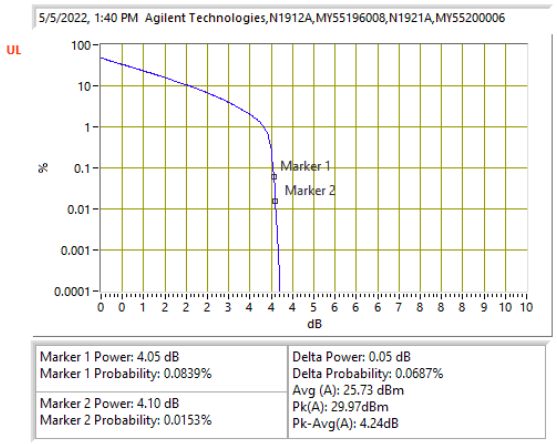
LTE B14 10MHz QPSK Middle Channel



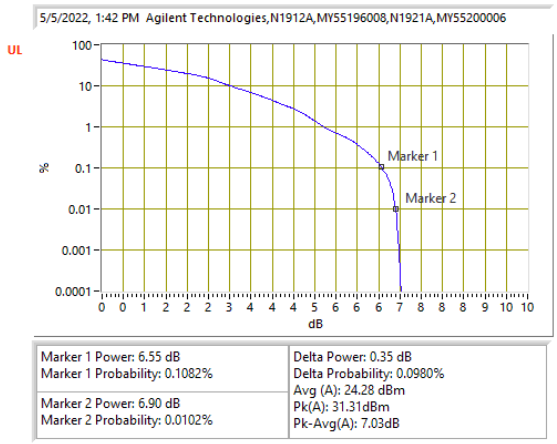
LTE B14 10MHz 16QAM Middle Channel

5G NR n14

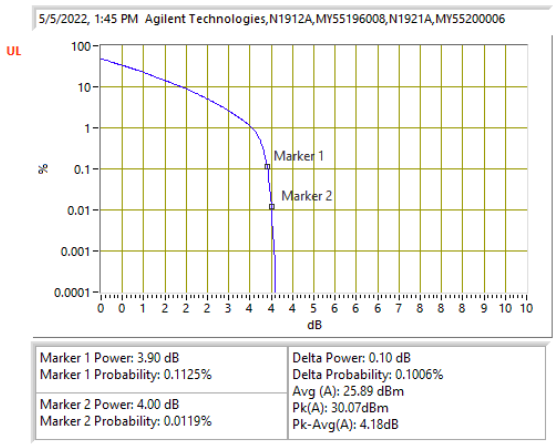
Test Engineer ID:	52275	Test Date:	5/5/2022



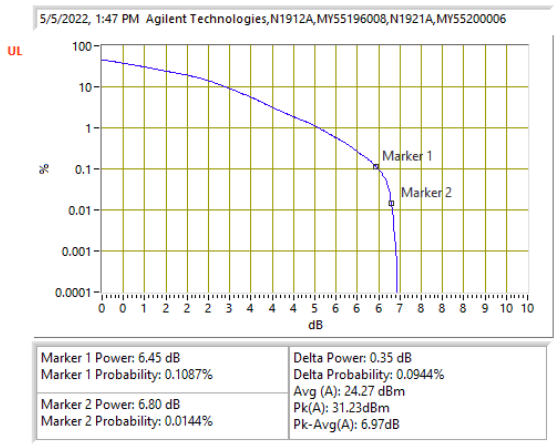
5G NR n14 5MHz BPSK Middle Channel



5G NR n14 5MHz 16QAM Middle Channel



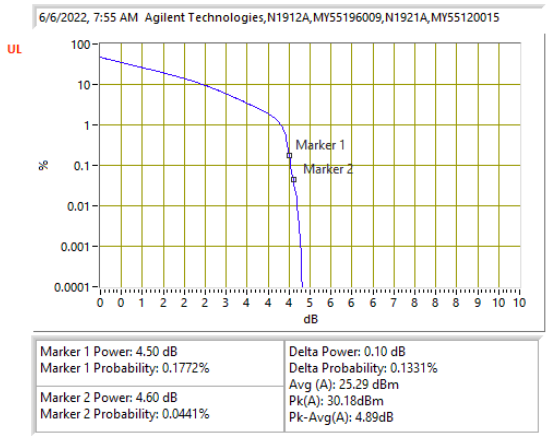
5G NR n14 10MHz BPSK Middle Channel



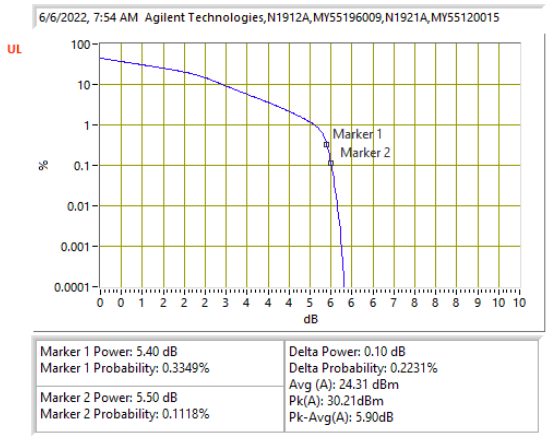
5G NR n14 10MHz 16QAM Middle Channel

9.5.6. LTE BAND 17

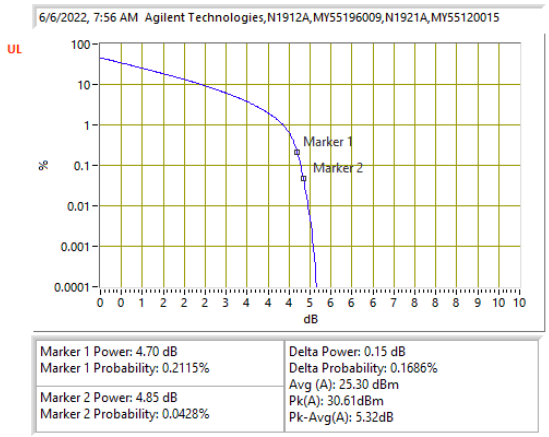
Test Engineer ID: 39004 **Test Date:** 6/6/2022



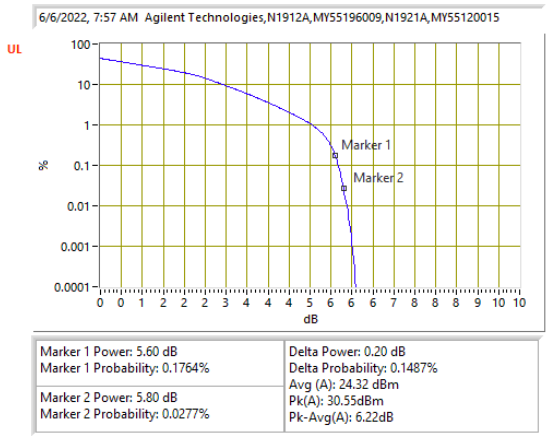
LTE B17 5MHz QPSK Middle Channel



LTE B17 5MHz 16QAM Middle Channel



LTE B17 10MHz QPSK Middle Channel

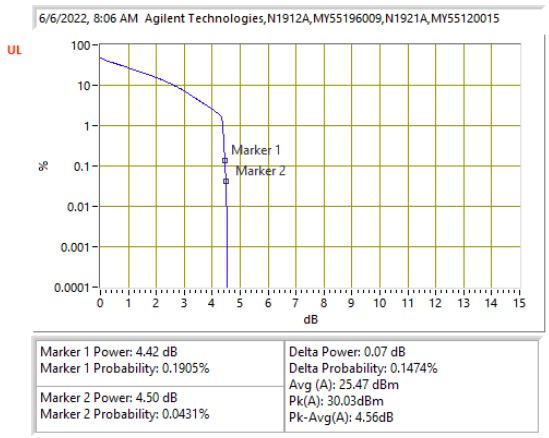


LTE B17 10MHz 16QAM Middle Channel

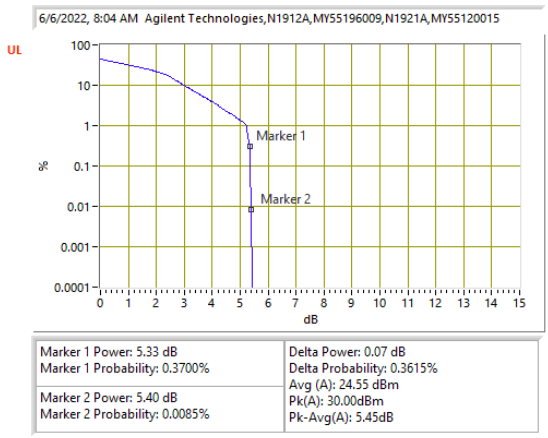
9.5.7. LTE BAND 25 AND 5G NR n25

LTE BAND 25

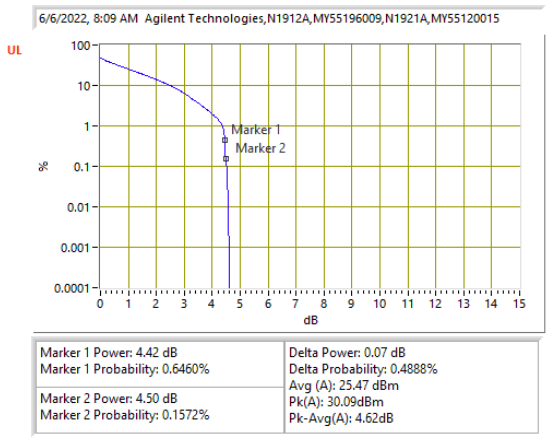
Test Engineer ID: 39004 **Test Date:** 6/6/2022



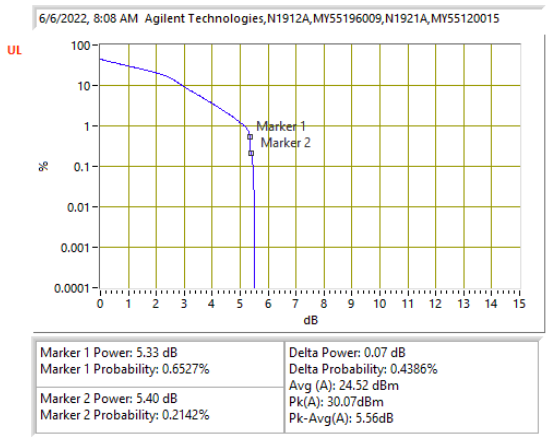
LTE B25 1.4MHz QPSK Middle Channel



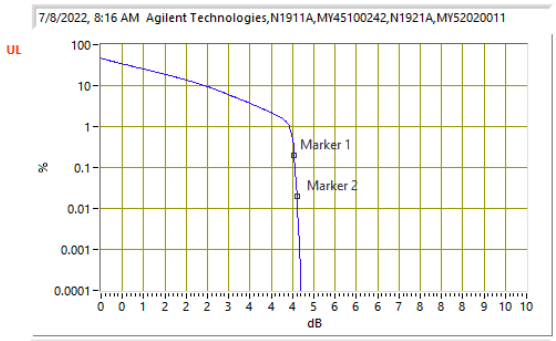
LTE B25 1.4MHz 16QAM Middle Channel



LTE B25 3MHz QPSK Middle Channel

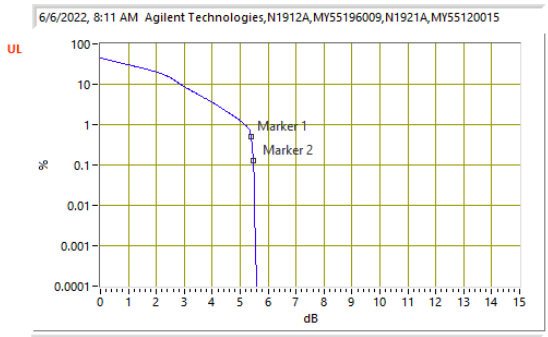


LTE B25 3MHz 16QAM Middle Channel



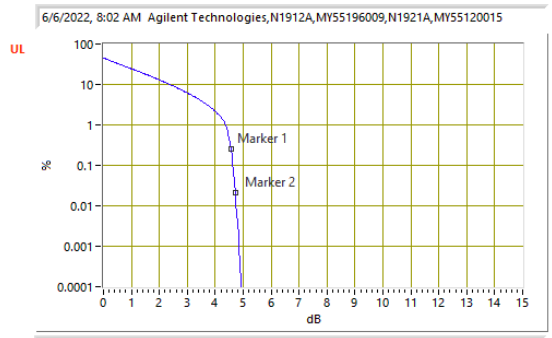
Marker 1 Power: 4.55 dB Marker 1 Probability: 0.1346%	Delta Power: 0.05 dB Delta Probability: 0.1154%
Marker 2 Power: 4.60 dB Marker 2 Probability: 0.0193%	Avg (A): 26.35 dBm Pk(A): 31.07dBm Pk-Avg(A): 4.72dB

LTE B25 5MHz QPSK Middle Channel



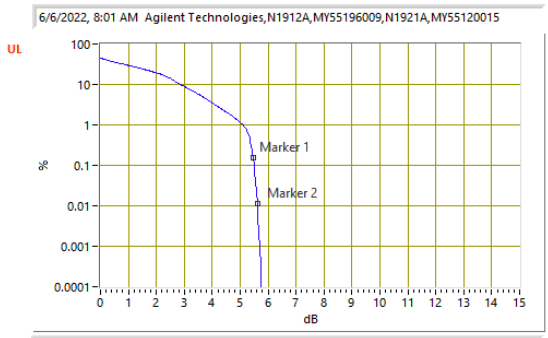
Marker 1 Power: 5.40 dB Marker 1 Probability: 0.4986%	Delta Power: 0.08 dB Delta Probability: 0.4281%
Marker 2 Power: 5.47 dB Marker 2 Probability: 0.0705%	Avg (A): 24.55 dBm Pk(A): 30.17dBm Pk-Avg(A): 5.61dB

LTE B25 5MHz 16QAM Middle Channel



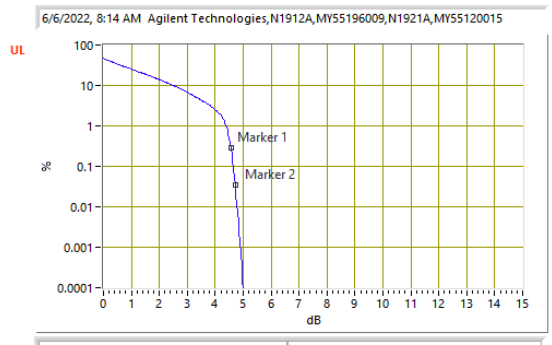
Marker 1 Power: 4.58 dB Marker 1 Probability: 0.2181%	Delta Power: 0.15 dB Delta Probability: 0.2024%
Marker 2 Power: 4.72 dB Marker 2 Probability: 0.0157%	Avg (A): 25.55 dBm Pk(A): 30.59dBm Pk-Avg(A): 5.04dB

LTE B25 10MHz QPSK Middle Channel



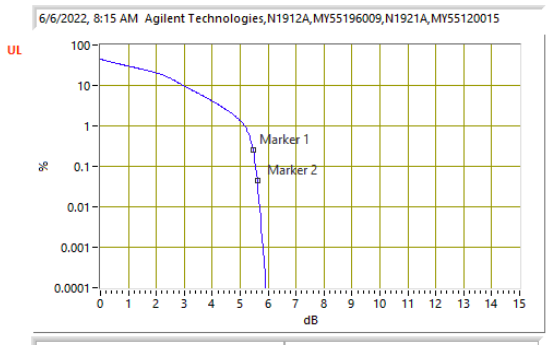
Marker 1 Power: 5.47 dB Marker 1 Probability: 0.1315%	Delta Power: 0.15 dB Delta Probability: 0.1237%
Marker 2 Power: 5.62 dB Marker 2 Probability: 0.0078%	Avg (A): 24.55 dBm Pk(A): 30.43dBm Pk-Avg(A): 5.88dB

LTE B25 10MHz 16QAM Middle Channel



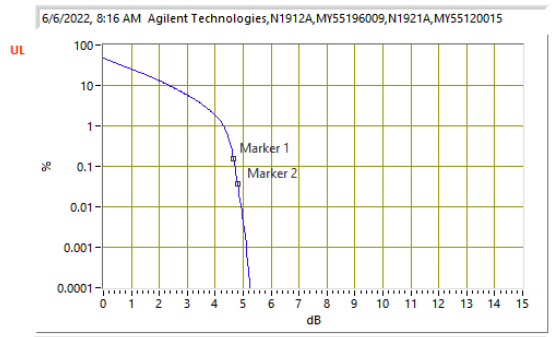
Marker 1 Power: 4.58 dB Marker 1 Probability: 0.2369%	Delta Power: 0.15 dB Delta Probability: 0.2107%
Marker 2 Power: 4.72 dB Marker 2 Probability: 0.0263%	Avg (A): 25.38 dBm Pk(A): 30.51dBm Pk-Avg(A): 5.13dB

LTE B25 15MHz QPSK Middle Channel

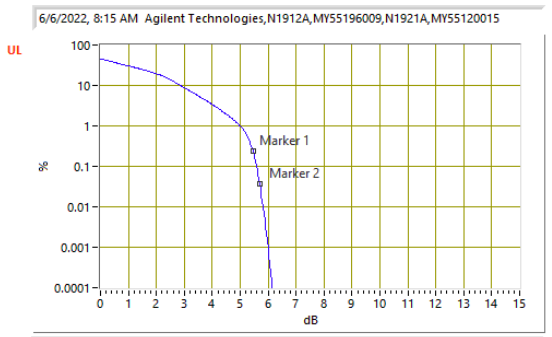


Marker 1 Power: 5.47 dB Marker 1 Probability: 0.2284%	Delta Power: 0.15 dB Delta Probability: 0.1938%
Marker 2 Power: 5.62 dB Marker 2 Probability: 0.0345%	Avg (A): 24.43 dBm Pk(A): 30.55dBm Pk-Avg(A): 6.12dB

LTE B25 15MHz 16QAM Middle Channel



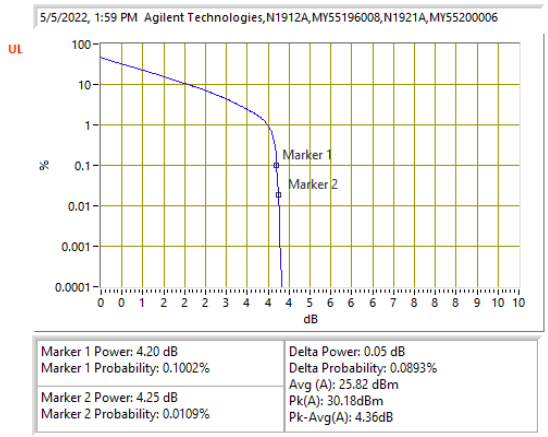
LTE B25 20MHz QPSK Middle Channel



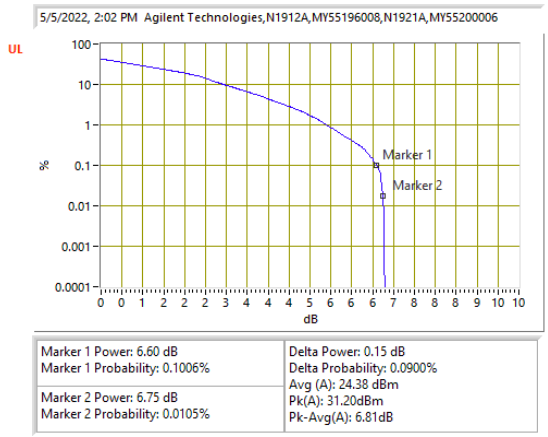
LTE B25 20MHz 16QAM Middle Channel

5G NR n25

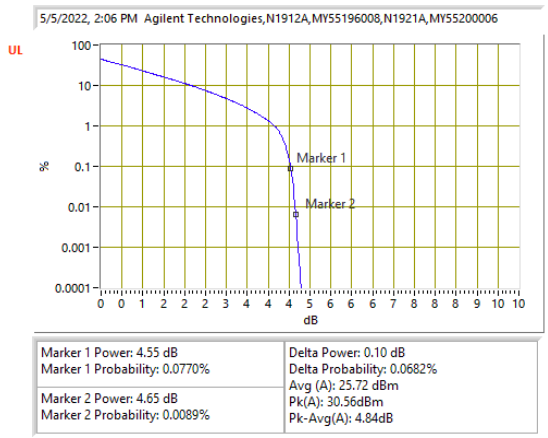
Test Engineer ID: 27979 **Test Date:** 6/6/2022



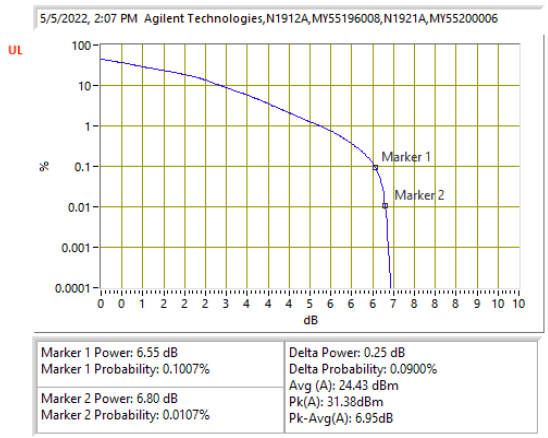
5G NR n25 5MHz BPSK Middle Channel



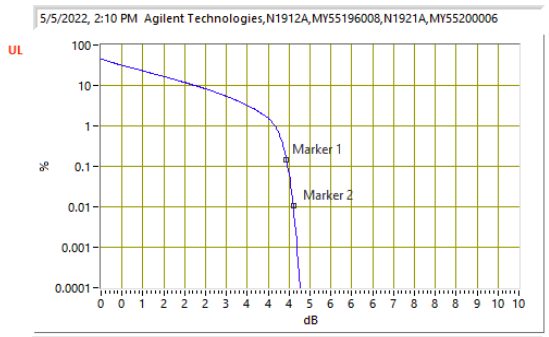
5G NR n25 5MHz 16QAM Middle Channel



5G NR n25 10MHz BPSK Middle Channel

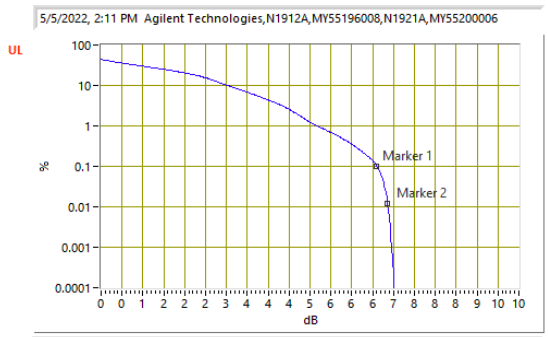


5G NR n25 10MHz 16QAM Middle Channel



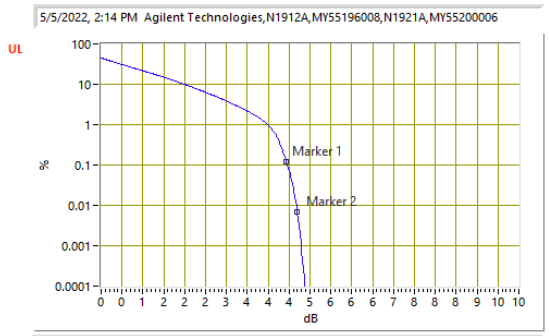
Marker 1 Power: 4.45 dB Marker 1 Probability: 0.1242%	Delta Power: 0.15 dB Delta Probability: 0.1139% Avg (A): 25.89 dBm Pk(A): 30.69dBm Pk-Avg(A): 4.80dB
Marker 2 Power: 4.60 dB Marker 2 Probability: 0.0103%	

5G NR n25 15MHz BPSK Middle Channel



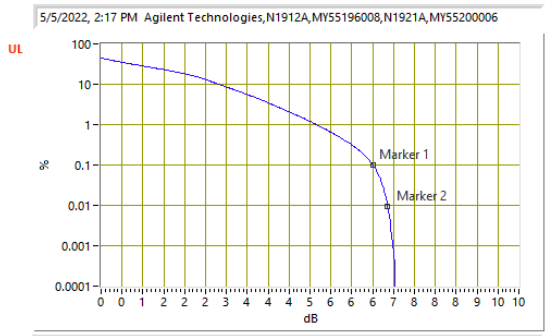
Marker 1 Power: 6.60 dB Marker 1 Probability: 0.1020%	Delta Power: 0.25 dB Delta Probability: 0.0878% Avg (A): 24.37 dBm Pk(A): 31.40dBm Pk-Avg(A): 7.03dB
Marker 2 Power: 6.85 dB Marker 2 Probability: 0.0142%	

5G NR n25 15MHz 16QAM Middle Channel



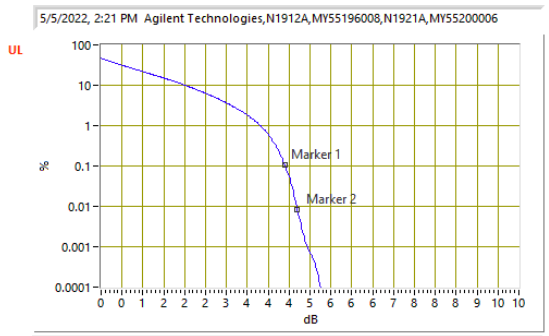
Marker 1 Power: 4.45 dB Marker 1 Probability: 0.1079%	Delta Power: 0.25 dB Delta Probability: 0.1009% Avg (A): 25.92 dBm Pk(A): 30.86dBm Pk-Avg(A): 4.94dB
Marker 2 Power: 4.70 dB Marker 2 Probability: 0.0070%	

5G NR n25 20MHz BPSK Middle Channel



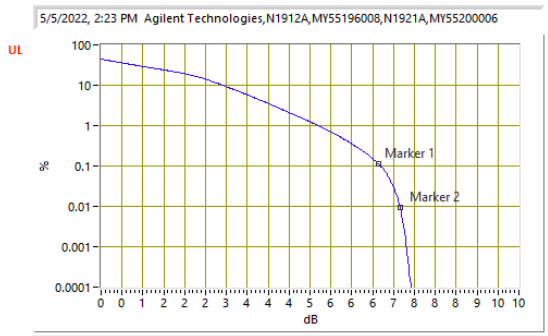
Marker 1 Power: 6.50 dB Marker 1 Probability: 0.1024%	Delta Power: 0.35 dB Delta Probability: 0.0918% Avg (A): 24.42 dBm Pk(A): 31.56dBm Pk-Avg(A): 7.14dB
Marker 2 Power: 6.85 dB Marker 2 Probability: 0.0107%	

5G NR n25 20MHz 16QAM Middle Channel



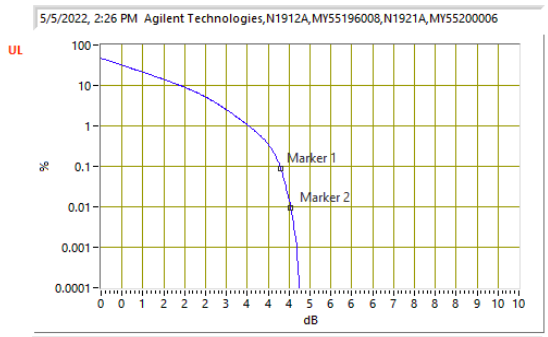
Marker 1 Power: 4.40 dB Marker 1 Probability: 0.1075%	Delta Power: 0.30 dB Delta Probability: 0.0992% Avg (A): 25.83 dBm Pk(A): 31.24dBm Pk-Avg(A): 5.42dB
Marker 2 Power: 4.70 dB Marker 2 Probability: 0.0083%	

5G NR n25 25MHz BPSK Middle Channel



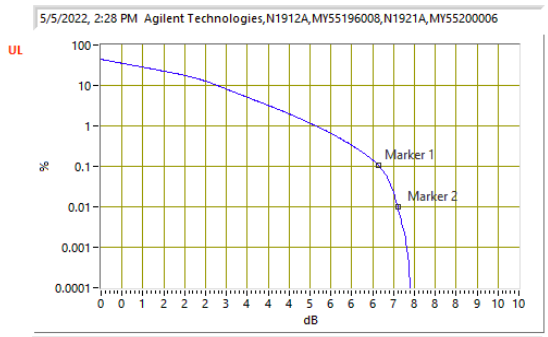
Marker 1 Power: 6.65 dB Marker 1 Probability: 0.1089%	Delta Power: 0.50 dB Delta Probability: 0.0986% Avg (A): 24.38 dBm Pk(A): 31.92dBm Pk-Avg(A): 7.54dB
Marker 2 Power: 7.15 dB Marker 2 Probability: 0.0103%	

5G NR n25 25MHz 16QAM Middle Channel



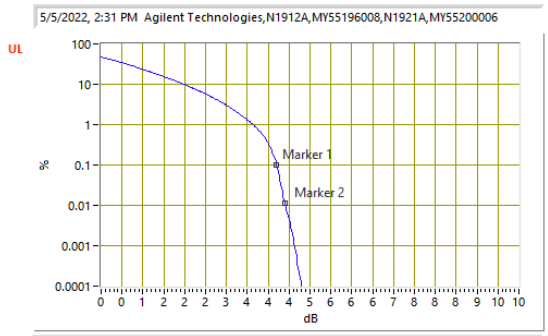
Marker 1 Power: 4.30 dB Marker 1 Probability: 0.0909%	Delta Power: 0.25 dB Delta Probability: 0.0827% Avg (A): 26.00 dBm Pk(A): 30.83dBm Pk-Avg(A): 4.83dB
Marker 2 Power: 4.55 dB Marker 2 Probability: 0.0083%	

5G NR n25 30MHz BPSK Middle Channel



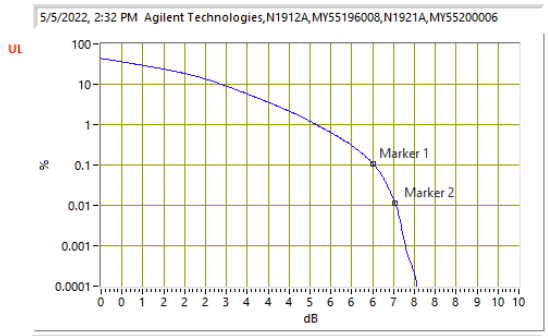
Marker 1 Power: 6.65 dB Marker 1 Probability: 0.1035%	Delta Power: 0.45 dB Delta Probability: 0.0935% Avg (A): 24.45 dBm Pk(A): 31.93dBm Pk-Avg(A): 7.48dB
Marker 2 Power: 7.10 dB Marker 2 Probability: 0.0100%	

5G NR n25 30MHz 16QAM Middle Channel



Marker 1 Power: 4.20 dB Marker 1 Probability: 0.1015%	Delta Power: 0.20 dB Delta Probability: 0.0902% Avg (A): 25.91 dBm Pk(A): 30.85dBm Pk-Avg(A): 4.94dB
Marker 2 Power: 4.40 dB Marker 2 Probability: 0.0113%	

5G NR n25 40MHz BPSK Middle Channel



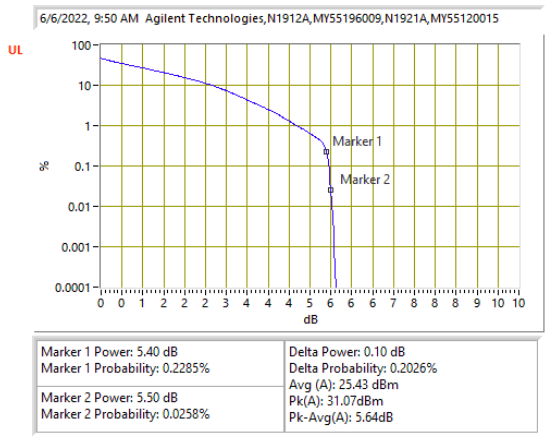
Marker 1 Power: 6.50 dB Marker 1 Probability: 0.1086%	Delta Power: 0.55 dB Delta Probability: 0.0978% Avg (A): 24.39 dBm Pk(A): 32.02dBm Pk-Avg(A): 7.63dB
Marker 2 Power: 7.05 dB Marker 2 Probability: 0.0108%	

5G NR n25 40MHz 16QAM Middle Channel

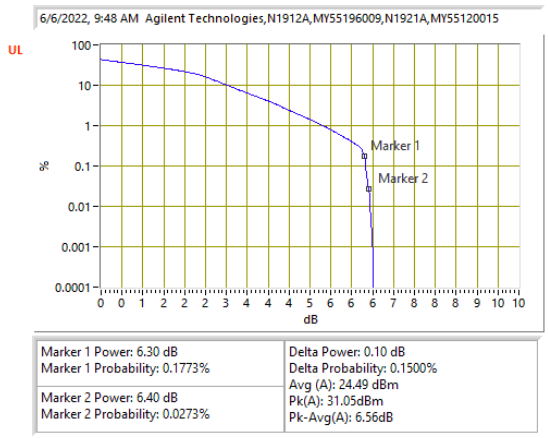
9.5.8. LTE BAND 26 AND 5G NR n26 (FCC PART 90S)

LTE BAND 26 (FCC PART 90S)

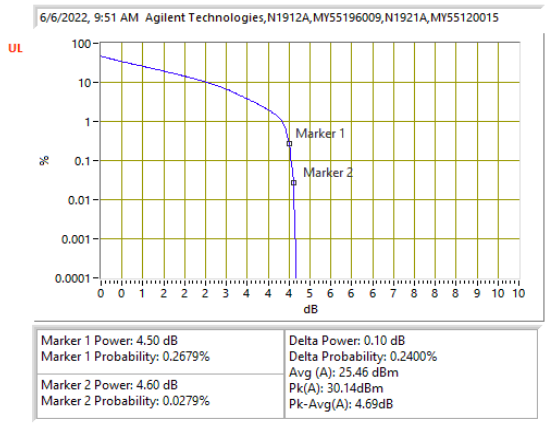
Test Engineer ID: 39004 **Test Date:** 6/6/2022



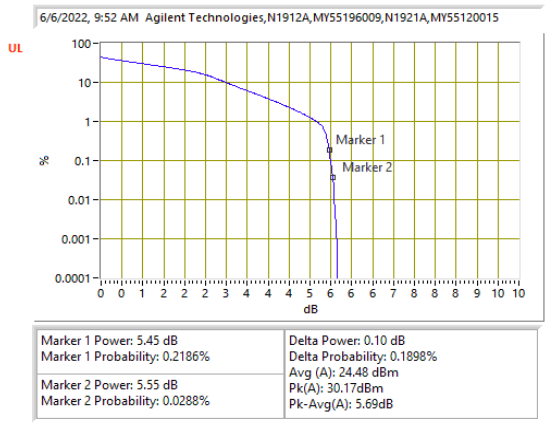
LTE B26 1.4MHz QPSK Middle Channel



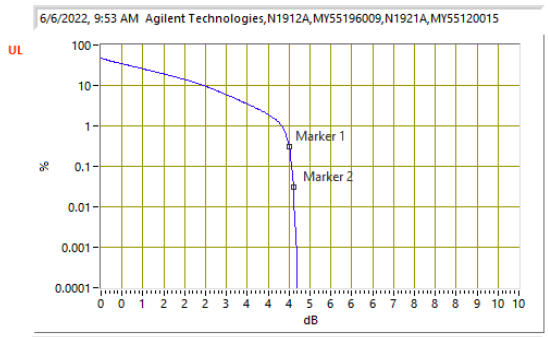
LTE B26 1.4MHz 16QAM Middle Channel



LTE B26 3MHz QPSK Middle Channel

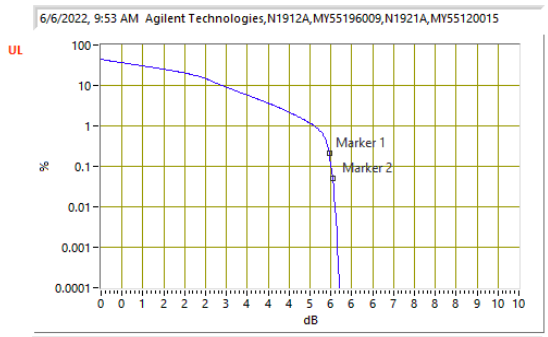


LTE B26 3MHz 16QAM Middle Channel



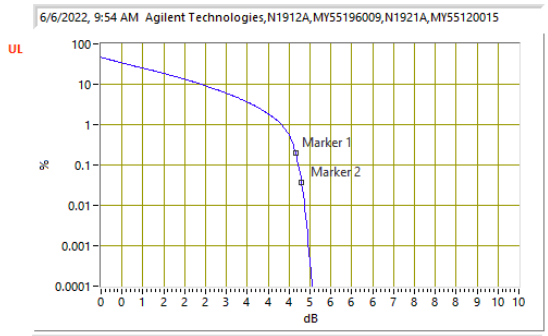
Marker 1 Power: 4.50 dB Marker 1 Probability: 0.3115%	Delta Power: 0.10 dB Delta Probability: 0.2814% Avg (A): 25.48 dBm Pk(A): 30.23dBm Pk-Avg(A): 4.74dB
Marker 2 Power: 4.60 dB Marker 2 Probability: 0.0301%	

LTE B26 5MHz QPSK Middle Channel



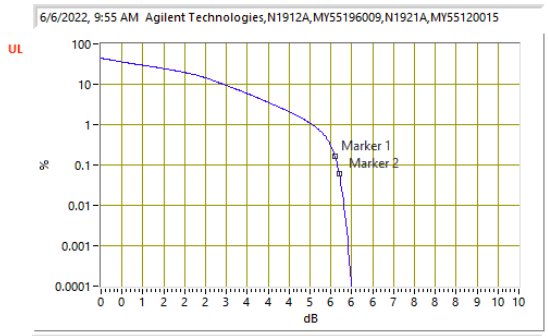
Marker 1 Power: 5.45 dB Marker 1 Probability: 0.2394%	Delta Power: 0.10 dB Delta Probability: 0.1998% Avg (A): 24.49 dBm Pk(A): 30.26dBm Pk-Avg(A): 5.76dB
Marker 2 Power: 5.55 dB Marker 2 Probability: 0.0396%	

LTE B26 5MHz 16QAM Middle Channel



Marker 1 Power: 4.65 dB Marker 1 Probability: 0.2171%	Delta Power: 0.15 dB Delta Probability: 0.1810% Avg (A): 25.50 dBm Pk(A): 30.69dBm Pk-Avg(A): 5.18dB
Marker 2 Power: 4.80 dB Marker 2 Probability: 0.0361%	

LTE B26 10MHz QPSK Middle Channel

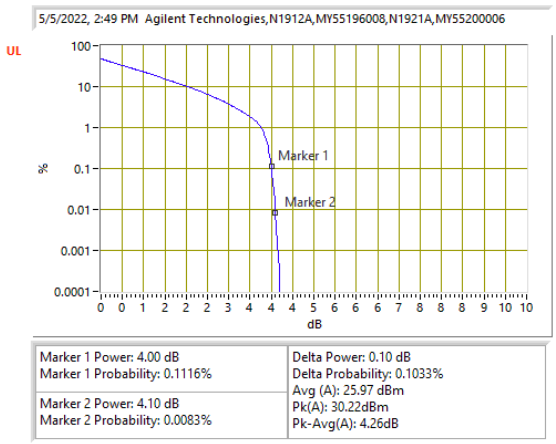


Marker 1 Power: 5.60 dB Marker 1 Probability: 0.1614%	Delta Power: 0.10 dB Delta Probability: 0.1011% Avg (A): 24.54 dBm Pk(A): 30.62dBm Pk-Avg(A): 6.08dB
Marker 2 Power: 5.70 dB Marker 2 Probability: 0.0603%	

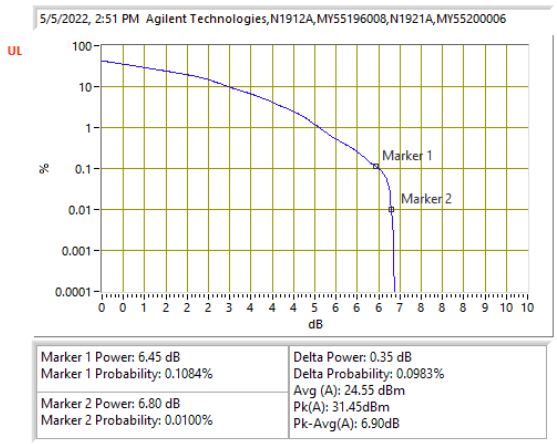
LTE B26 10MHz 16QAM Middle Channel

5G NR n26 (FCC PART 90S)

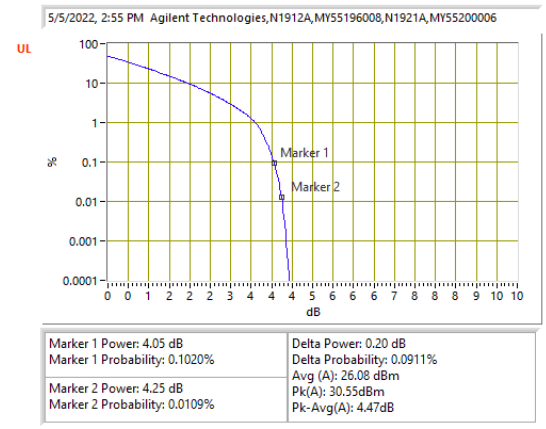
Test Engineer ID: 52275 **Test Date:** 5/5/2022



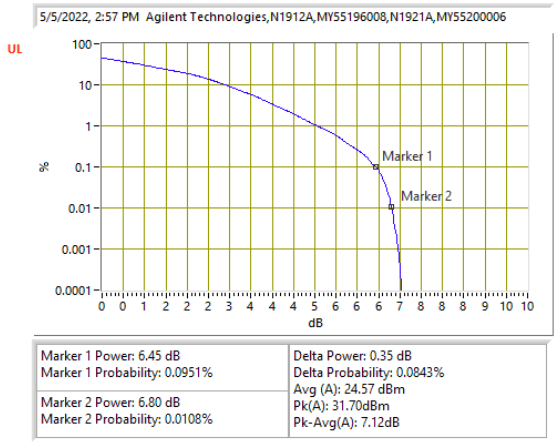
5G NR n26 5MHz BPSK Middle Channel ID:52275



5G NR n26 5MHz 16QAM Middle Channel ID:52275



5G NR n26 10MHz BPSK Middle Channel ID:52275

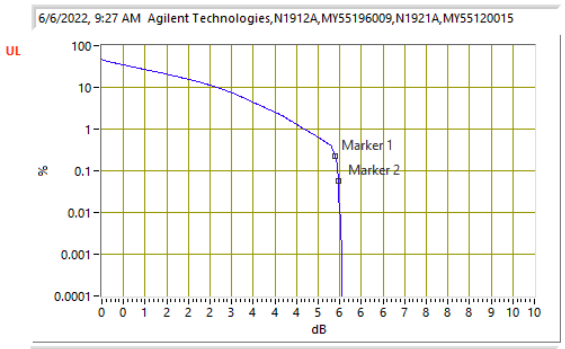


5G NR n26 10MHz 16QAM Middle Channel ID:52275

9.5.9. LTE BAND 26 AND 5G NR n26 (FCC PART 22H)

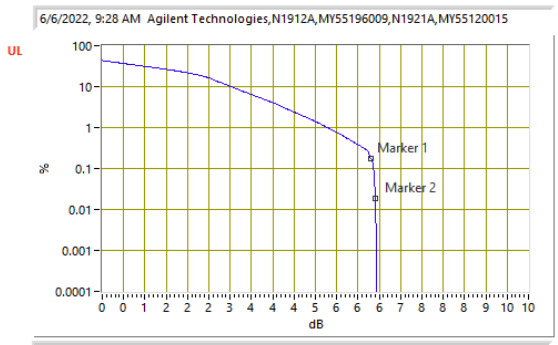
LTE BAND 26

Test Engineer ID:	39004	Test Date:	6/7/2022



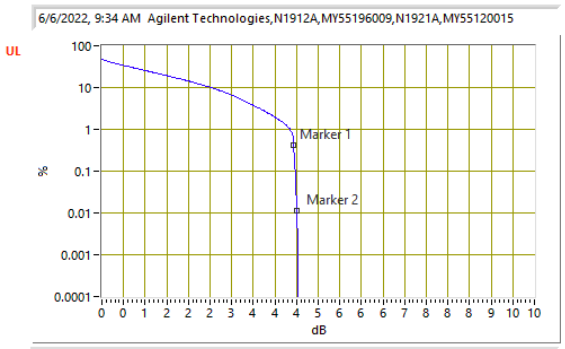
Marker 1 Power: 5.40 dB Marker 1 Probability: 0.2255%	Delta Power: 0.05 dB Delta Probability: 0.1324% Avg (A): 25.35 dBm Pk(A): 30.91dBm Pk-Avg(A): 5.55dB
Marker 2 Power: 5.45 dB Marker 2 Probability: 0.0932%	

LTE B26 1.4MHz QPSK Middle Channel



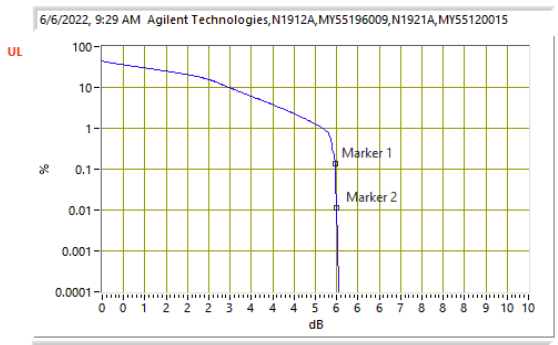
Marker 1 Power: 6.30 dB Marker 1 Probability: 0.1730%	Delta Power: 0.10 dB Delta Probability: 0.1546% Avg (A): 24.44 dBm Pk(A): 30.88dBm Pk-Avg(A): 6.45dB
Marker 2 Power: 6.40 dB Marker 2 Probability: 0.0185%	

LTE B26 1.4MHz 16QAM Middle Channel



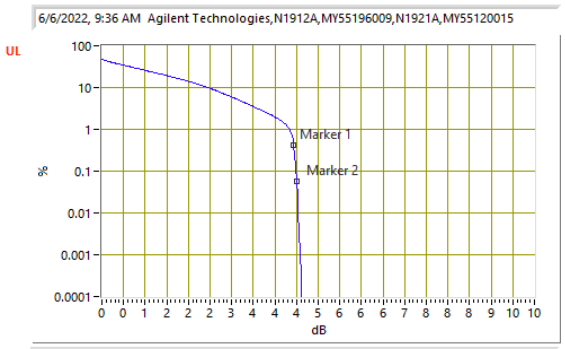
Marker 1 Power: 4.45 dB Marker 1 Probability: 0.3092%	Delta Power: 0.05 dB Delta Probability: 0.2979% Avg (A): 25.38 dBm Pk(A): 29.94dBm Pk-Avg(A): 4.56dB
Marker 2 Power: 4.50 dB Marker 2 Probability: 0.0114%	

LTE B26 3MHz QPSK Middle Channel

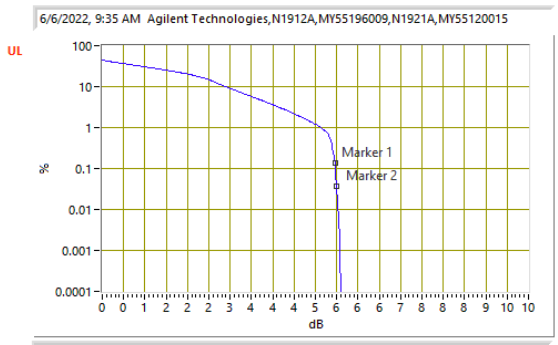


Marker 1 Power: 5.45 dB Marker 1 Probability: 0.1834%	Delta Power: 0.05 dB Delta Probability: 0.1718% Avg (A): 24.40 dBm Pk(A): 29.98dBm Pk-Avg(A): 5.57dB
Marker 2 Power: 5.50 dB Marker 2 Probability: 0.0116%	

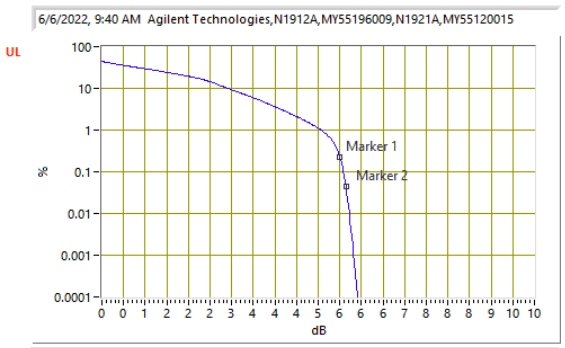
LTE B26 3MHz 16QAM Middle Channel



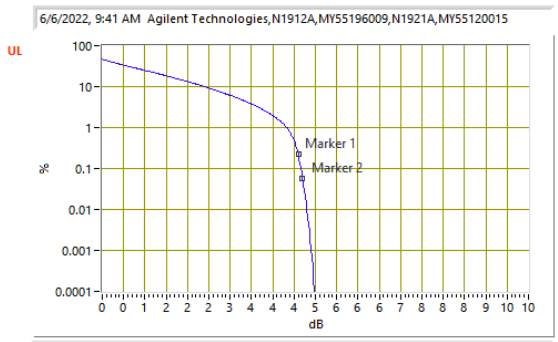
LTE B26 5MHz QPSK Middle Channel



LTE B26 5MHz 16QAM Middle Channel



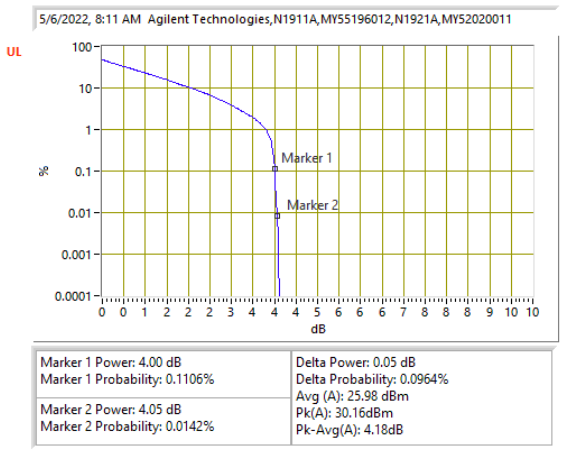
LTE B26 10MHz QPSK Middle Channel



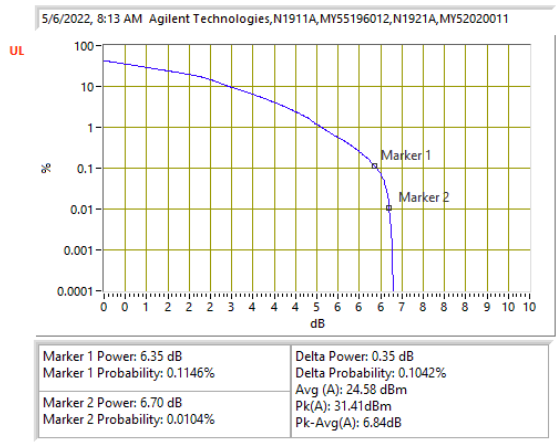
LTE B26 10MHz 16QAM Middle Channel

5G NR n26

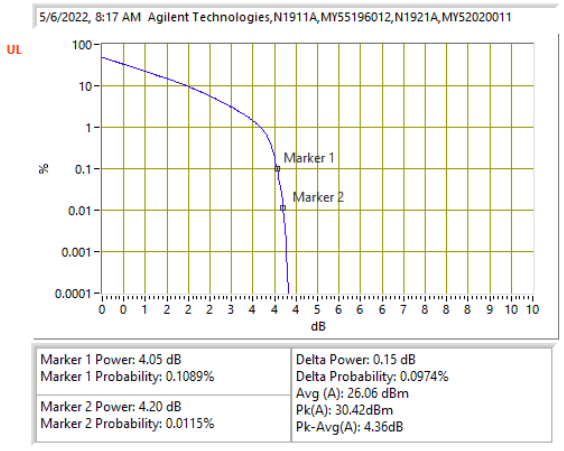
Test Engineer ID:	52275	Test Date:	5/5/2022



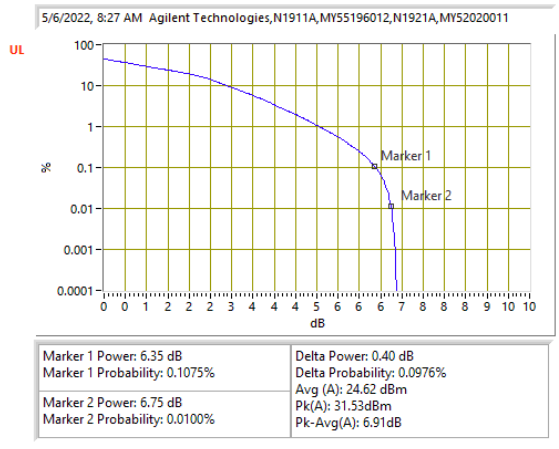
5G NR n26 5MHz BPSK Middle Channel



5G NR n26 5MHz 16QAM Middle Channel



5G NR n26 10MHz BPSK Middle Channel

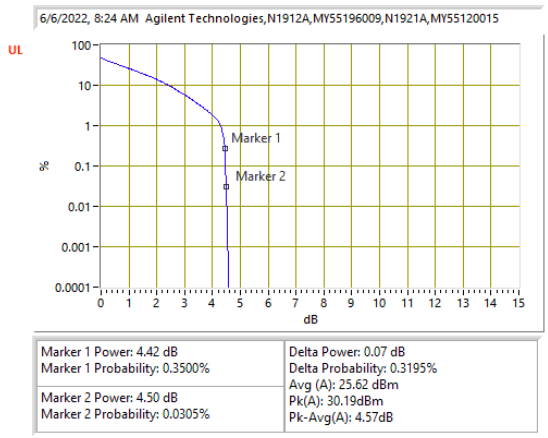


5G NR n26 10MHz 16QAM Middle Channel

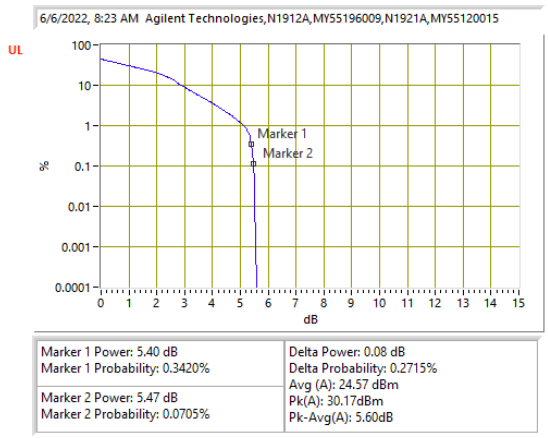
9.5.10. LTE BAND 30 AND 5G NR n30

LTE BAND 30

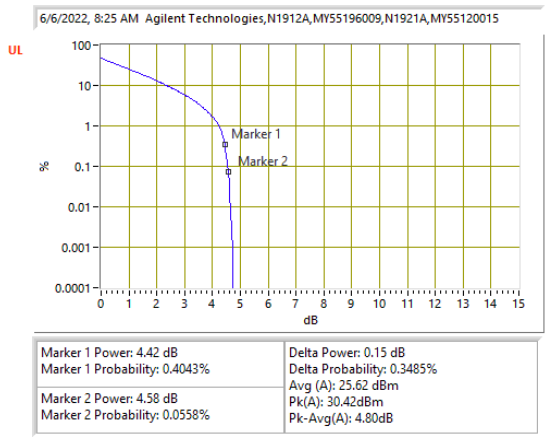
Test Engineer ID: 39004 **Test Date:** 6/6/2022



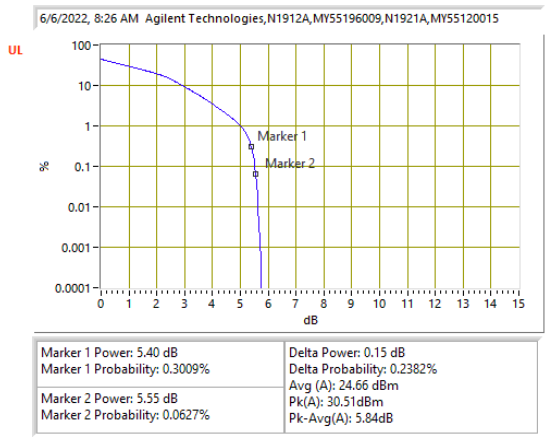
LTE B30 5MHz QPSK Middle Channel



LTE B30 5MHz 16QAM Middle Channel



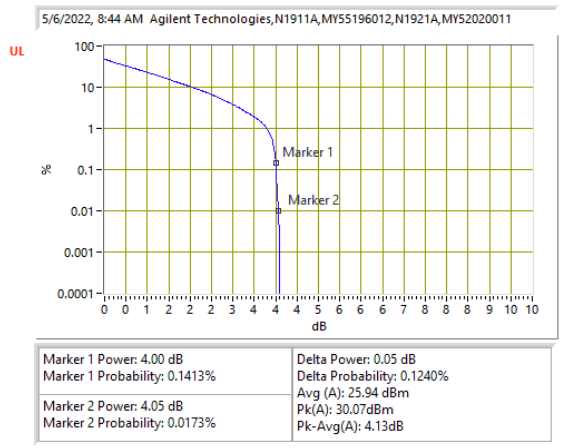
LTE B30 10MHz QPSK Middle Channel



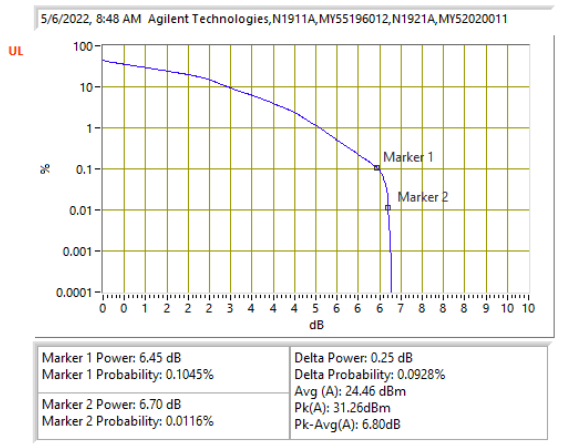
LTE B30 10MHz 16QAM Middle Channel

5G NR n30

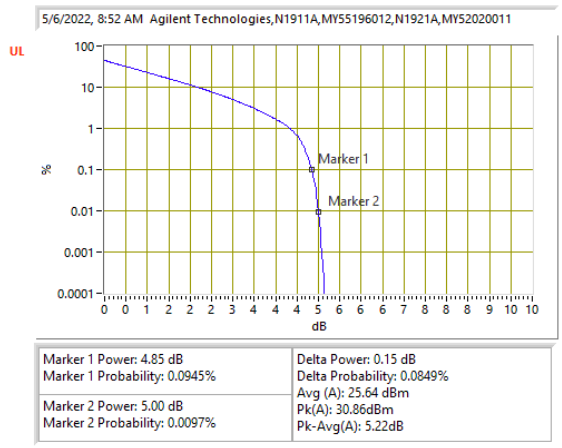
Test Engineer ID: 52275 **Test Date:** 2/1/2022



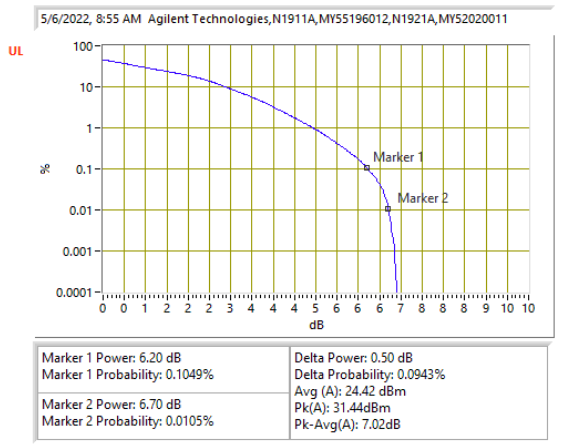
5G NR n30 5MHz BPSK Middle Channel



5G NR n30 5MHz 16QAM Middle Channel



5G NR n30 10MHz BPSK Middle Channel



5G NR n30 10MHz 16QAM Middle Channel

9.5.11. LTE BAND 41 AND 5G NR n41

Test Engineer ID: 27979 **Test Date:** 5/5/2022

Band	Bandwidth (MHz)	Frequency (MHz)	RB Allocation	RB OffSet	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
						Peak	Average	
Band 41	5MHz	2595.0	25	0	QPSK	34.07	21.42	*5.65
					16QAM	33.14	21.35	*4.79
	10MHz		50	0	QPSK	34.22	21.42	*5.8
					16QAM	33.07	21.37	*4.7
	15MHz		75	0	QPSK	34.07	21.26	*5.81
					16QAM	33.09	21.23	*4.86
	20MHz		100	0	QPSK	34.16	21.26	*5.9
					16QAM	33.18	21.25	*4.93
5G NR n41	20MHz		50	0	BPSK	32.07	28.21	3.86
					16QAM	32.93	26.85	6.08
	30MHz		75	0	BPSK	32.26	28.41	3.85
					16QAM	33.15	27.03	6.12
	40MHz		100	0	BPSK	32.49	28.95	3.54
					16QAM	32.99	27.11	5.88
	50MHz		128	0	BPSK	32.42	28.82	3.60
					16QAM	33.01	27.2	5.81
	60MHz		162	0	BPSK	32.44	28.88	3.56
					16QAM	32.81	26.86	5.95
	70MHz		180	0	BPSK	32.72	30.18	2.54
					16QAM	33.72	28.79	4.93
	80MHz		216	0	BPSK	32.61	28.84	3.77
					16QAM	32.77	27.22	5.55
	90MHz		243	0	BPSK	32.22	28.81	3.41
					16QAM	32.35	26.85	5.50
	100MHz		270	0	BPSK	31.33	28.09	3.24
					16QAM	32.18	26.48	5.70

9.5.12. LTE BAND 48

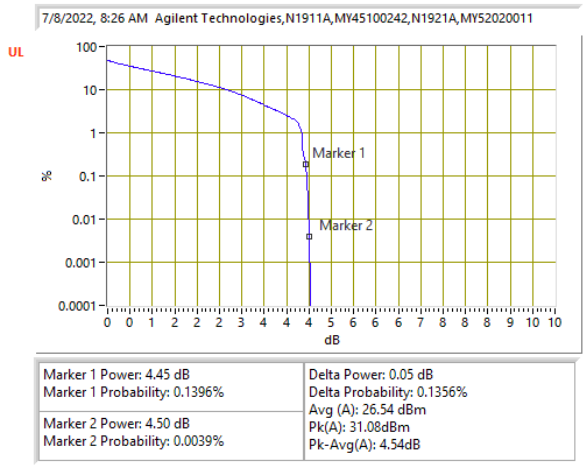
Test Engineer ID: 39004 **Test Date:** 6/6/2022

Band	Bandwidth (MHz)	Frequency (MHz)	RB Allocation	RB OffSet	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
						Peak	Average	
LTE Band 48	5MHz	3625.0	25	0	QPSK	35.14	25.74	*2.41
					16QAM	34.25	25.7	*1.56
	10MHz		50	0	QPSK	35.26	25.75	*2.52
					16QAM	34.35	25.73	*1.63
	15MHz		75	0	QPSK	35.04	25.57	*2.48
					16QAM	34.06	25.54	*1.53
	20MHz		100	0	QPSK	35.14	25.59	*2.56
					16QAM	34.12	25.57	*1.56
*Duty Cycle Correction Factor (dB) =			6.99					
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor								

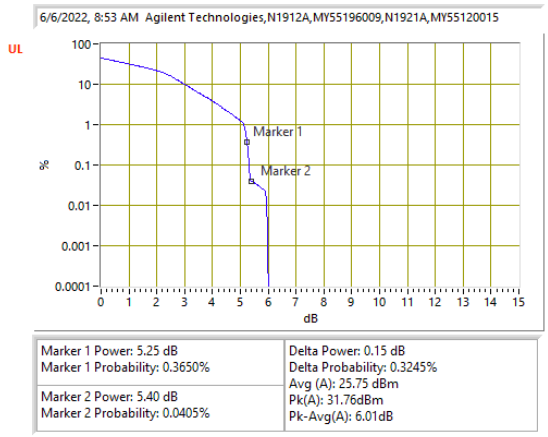
9.5.13. LTE BAND 66 AND 5G NR n66

LTE BAND 66

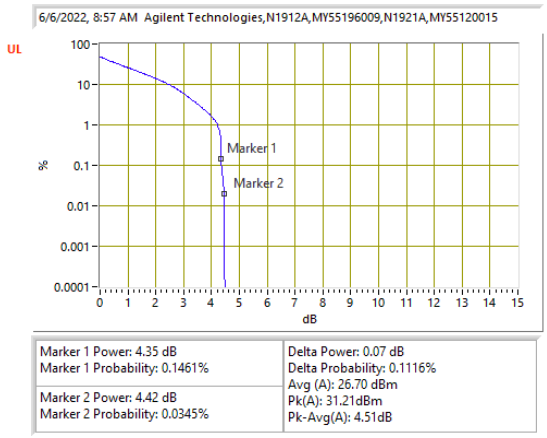
Test Engineer ID: 39004 **Test Date:** 6/6/2022



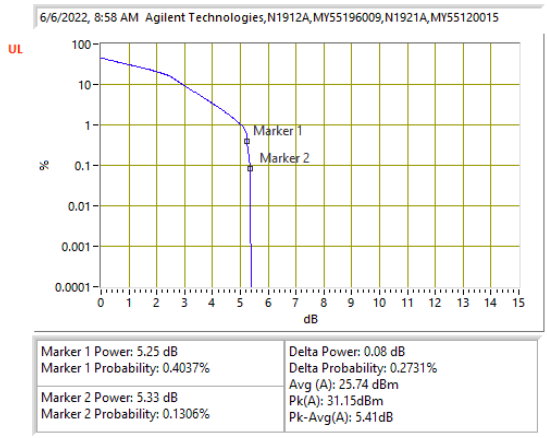
LTE B66 1.4MHz QPSK Middle Channel



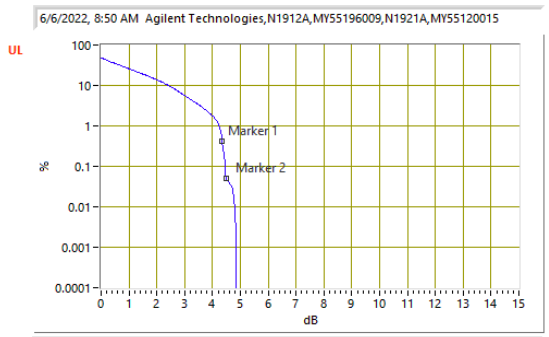
LTE B66 1.4MHz 16QAM Middle Channel



LTE B66 3MHz QPSK Middle Channel

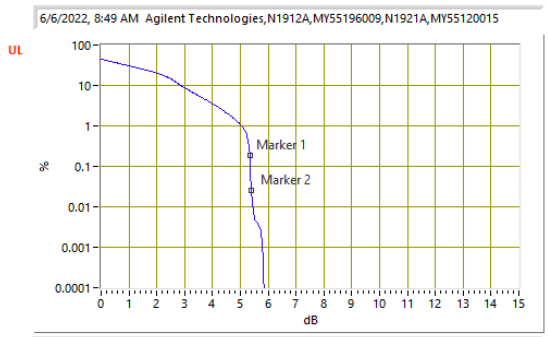


LTE B66 3MHz 16QAM Middle Channel



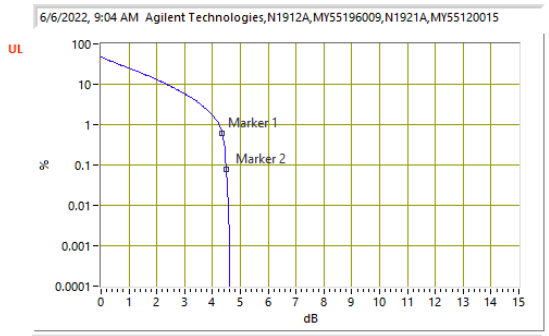
Marker 1 Power: 4.35 dB Marker 1 Probability: 0.4097%	Delta Power: 0.15 dB Delta Probability: 0.3599%
Marker 2 Power: 4.50 dB Marker 2 Probability: 0.0498%	Avg (A): 26.71 dBm Pk(A): 31.59dBm Pk-Avg(A): 4.88dB

LTE B66 5MHz QPSK Middle Channel



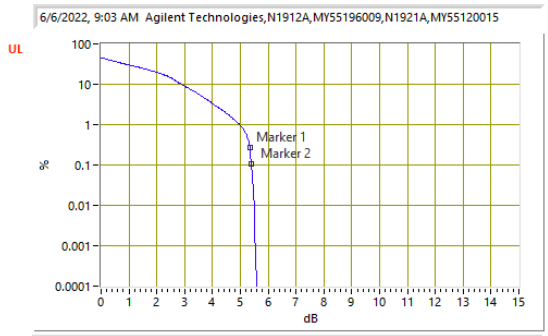
Marker 1 Power: 5.33 dB Marker 1 Probability: 0.2471%	Delta Power: 0.07 dB Delta Probability: 0.2217%
Marker 2 Power: 5.40 dB Marker 2 Probability: 0.0253%	Avg (A): 25.73 dBm Pk(A): 31.62dBm Pk-Avg(A): 5.88dB

LTE B66 5MHz 16QAM Middle Channel



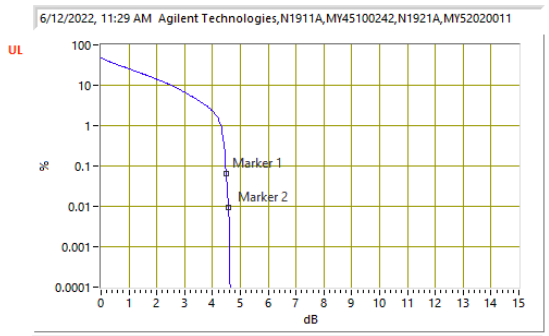
Marker 1 Power: 4.35 dB Marker 1 Probability: 0.6046%	Delta Power: 0.15 dB Delta Probability: 0.5257%
Marker 2 Power: 4.50 dB Marker 2 Probability: 0.0789%	Avg (A): 26.74 dBm Pk(A): 31.41dBm Pk-Avg(A): 4.67dB

LTE B66 10MHz QPSK Middle Channel



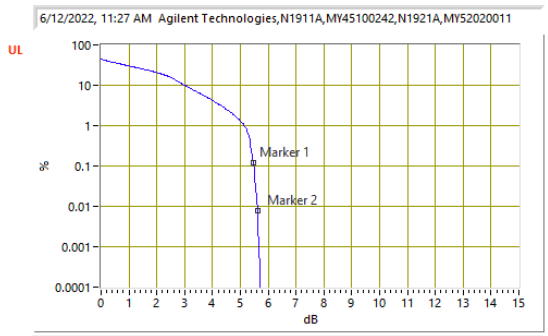
Marker 1 Power: 5.33 dB Marker 1 Probability: 0.3178%	Delta Power: 0.07 dB Delta Probability: 0.2108%
Marker 2 Power: 5.40 dB Marker 2 Probability: 0.1070%	Avg (A): 25.76 dBm Pk(A): 31.39dBm Pk-Avg(A): 5.63dB

LTE B66 10MHz 16QAM Middle Channel



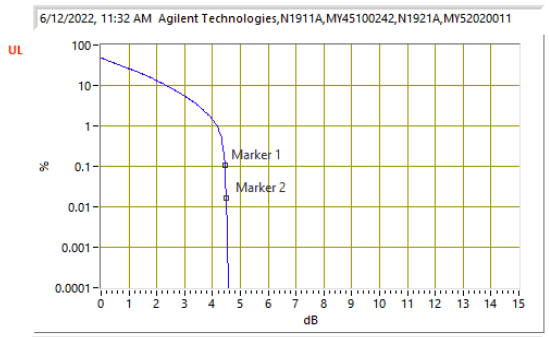
Marker 1 Power: 4.50 dB Marker 1 Probability: 0.0630%	Delta Power: 0.08 dB Delta Probability: 0.0573%
Marker 2 Power: 4.58 dB Marker 2 Probability: 0.0057%	Avg (A): 25.56 dBm Pk(A): 30.23dBm Pk-Avg(A): 4.67dB

LTE B66 15MHz QPSK Middle Channel

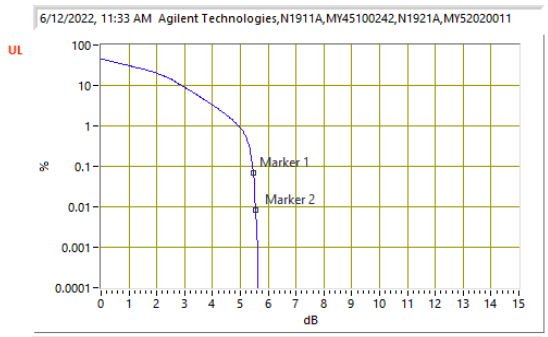


Marker 1 Power: 5.47 dB Marker 1 Probability: 0.0988%	Delta Power: 0.15 dB Delta Probability: 0.0938%
Marker 2 Power: 5.62 dB Marker 2 Probability: 0.0050%	Avg (A): 24.58 dBm Pk(A): 30.33dBm Pk-Avg(A): 5.75dB

LTE B66 15MHz 16QAM Middle Channel



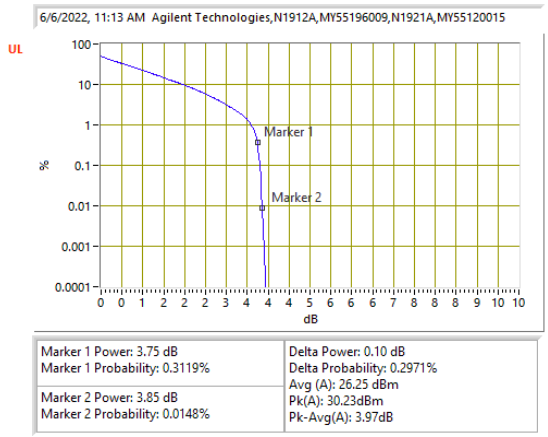
LTE B66 20MHz QPSK Middle Channel



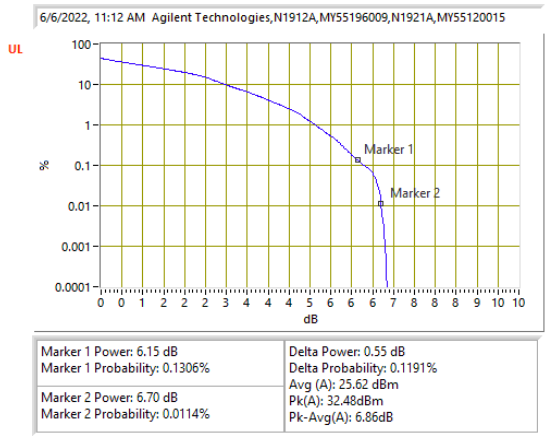
LTE B66 20MHz 16QAM Middle Channel

5G NR n66

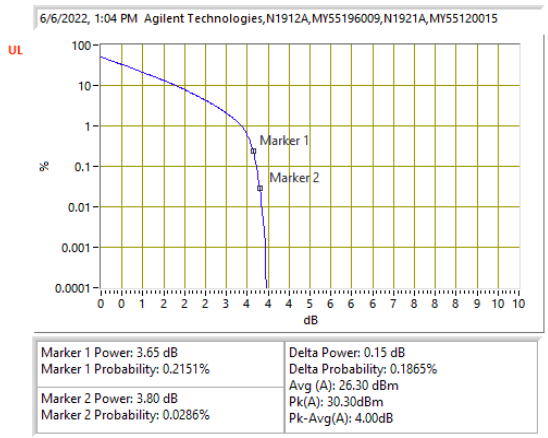
Test Engineer ID: 27957 **Test Date:** 6/6/2022



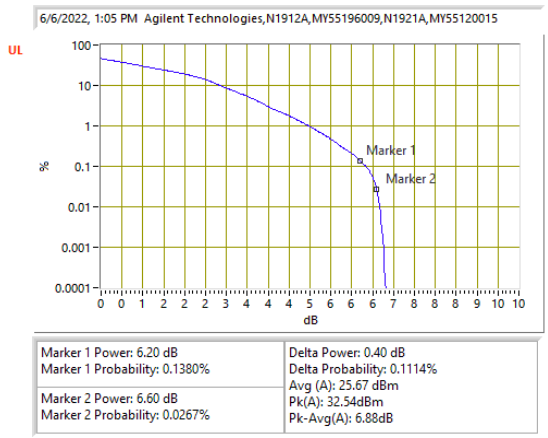
5G NR n66 5MHz BPSK Middle Channel



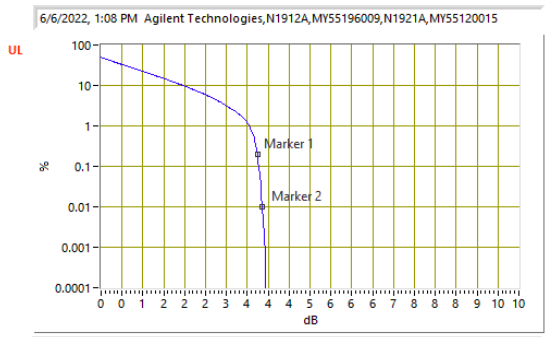
5G NR n66 5MHz 16QAM Middle Channel



5G NR n66 10MHz BPSK Middle Channel

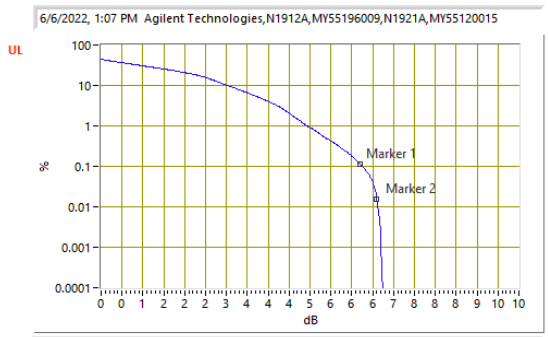


5G NR n66 10MHz 16QAM Middle Channel



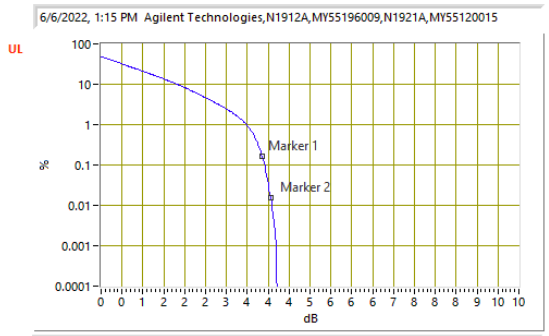
Marker 1 Power: 3.75 dB	Delta Power: 0.10 dB
Marker 1 Probability: 0.1632%	Delta Probability: 0.1489%
	Avg (A): 26.47 dBm
Marker 2 Power: 3.85 dB	Pk(A): 30.49dBm
Marker 2 Probability: 0.0142%	Pk-Avg(A): 4.01dB

5G NR n66 15MHz BPSK Middle Channel



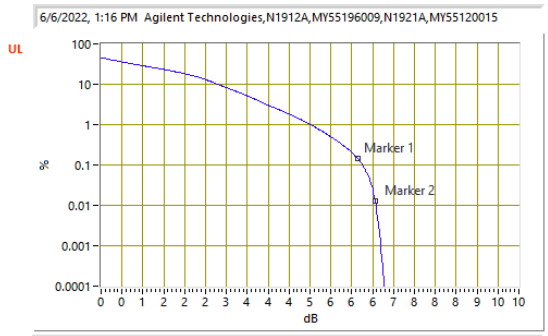
Marker 1 Power: 6.20 dB	Delta Power: 0.40 dB
Marker 1 Probability: 0.1142%	Delta Probability: 0.0985%
	Avg (A): 25.84 dBm
Marker 2 Power: 6.60 dB	Pk(A): 32.66dBm
Marker 2 Probability: 0.0157%	Pk-Avg(A): 6.83dB

5G NR n66 15MHz 16QAM Middle Channel



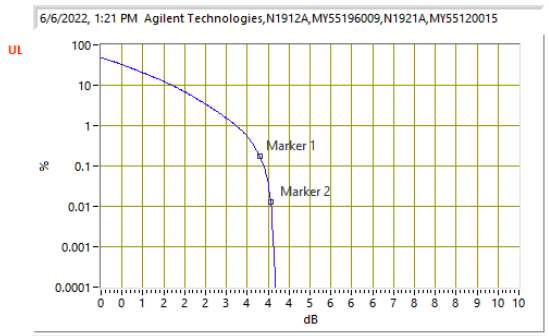
Marker 1 Power: 3.85 dB	Delta Power: 0.20 dB
Marker 1 Probability: 0.1749%	Delta Probability: 0.1572%
	Avg (A): 26.57 dBm
Marker 2 Power: 4.05 dB	Pk(A): 30.82dBm
Marker 2 Probability: 0.0177%	Pk-Avg(A): 4.26dB

5G NR n66 20MHz BPSK Middle Channel



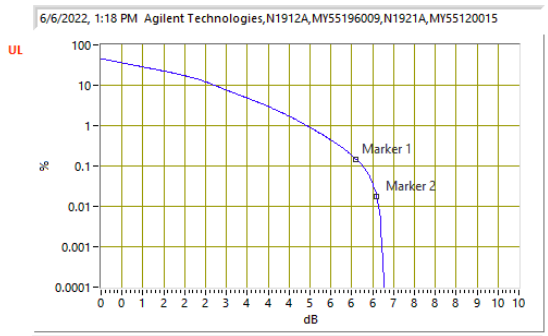
Marker 1 Power: 6.15 dB	Delta Power: 0.40 dB
Marker 1 Probability: 0.1399%	Delta Probability: 0.1251%
	Avg (A): 25.78 dBm
Marker 2 Power: 6.55 dB	Pk(A): 32.64dBm
Marker 2 Probability: 0.0148%	Pk-Avg(A): 6.86dB

5G NR n66 20MHz 16QAM Middle Channel



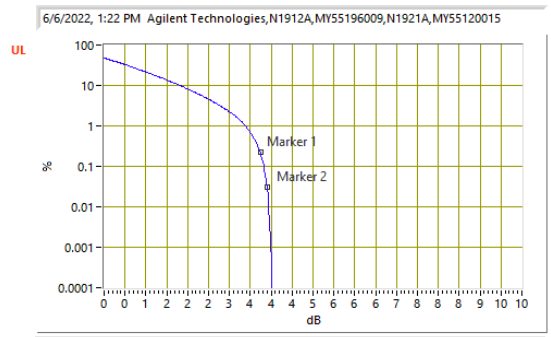
Marker 1 Power: 3.80 dB	Delta Power: 0.25 dB
Marker 1 Probability: 0.1698%	Delta Probability: 0.1537%
	Avg (A): 26.52 dBm
Marker 2 Power: 4.05 dB	Pk(A): 30.73dBm
Marker 2 Probability: 0.0161%	Pk-Avg(A): 4.21dB

5G NR n66 30MHz BPSK Middle Channel

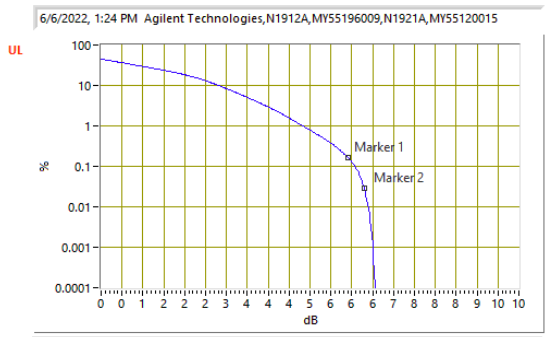


Marker 1 Power: 6.10 dB	Delta Power: 0.50 dB
Marker 1 Probability: 0.1483%	Delta Probability: 0.1310%
	Avg (A): 25.76 dBm
Marker 2 Power: 6.60 dB	Pk(A): 32.56dBm
Marker 2 Probability: 0.0173%	Pk-Avg(A): 6.80dB

5G NR n66 30MHz 16QAM Middle Channel



5G NR n66 40MHz BPSK Middle Channel

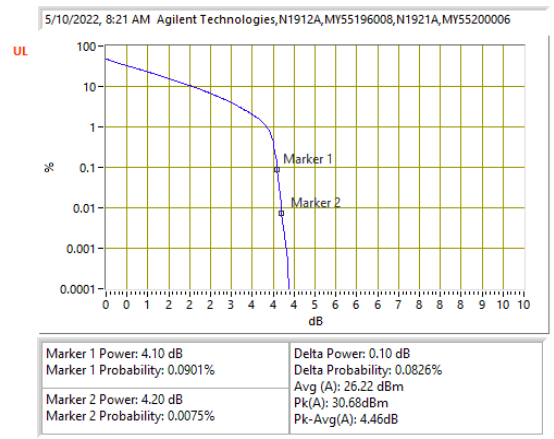


5G NR n66 40MHz 16QAM Middle Channel

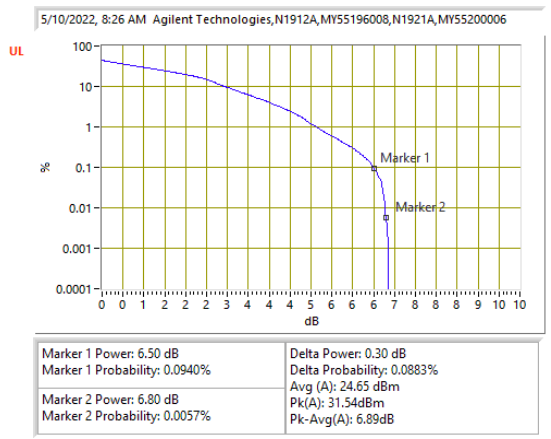
9.5.14. 5G NR n70

5G NR n70

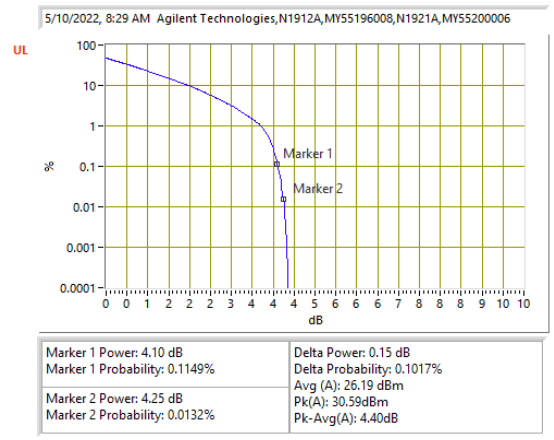
Test Engineer ID: 27957 **Test Date:** 5/10/2022



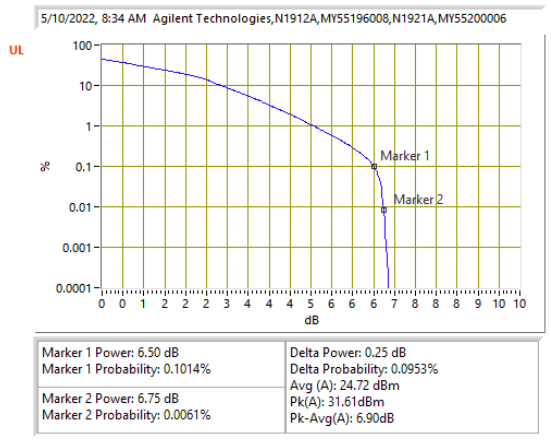
5G NR n70 5MHz BPSK Middle Channel



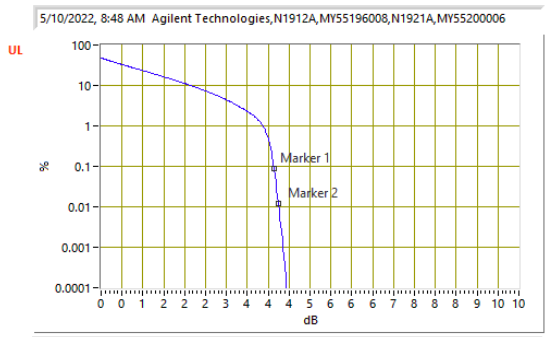
5G NR n70 5MHz 16QAM Middle Channel



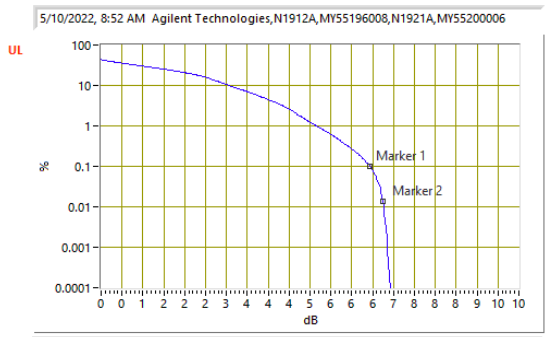
5G NR n70 10MHz BPSK Middle Channel



5G NR n70 10MHz 16QAM Middle Channel



5G NR n70 15MHz BPSK Middle Channel

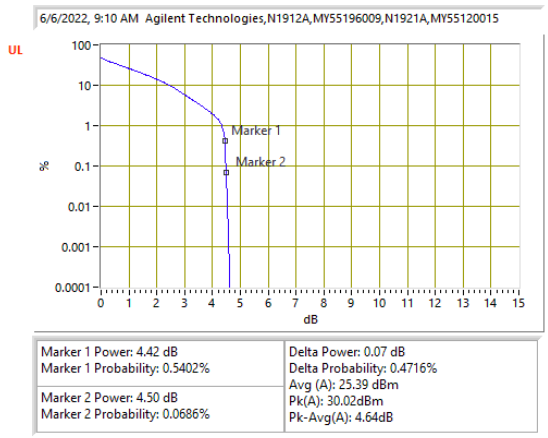


5G NR n70 15MHz 16QAM Middle Channel

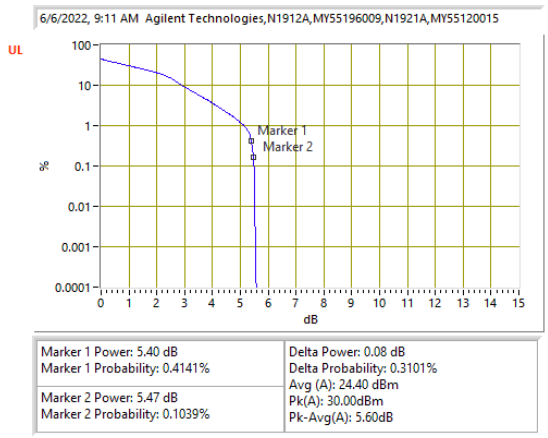
9.5.15. LTE BAND 71 AND 5G NR n71

LTE BAND 71

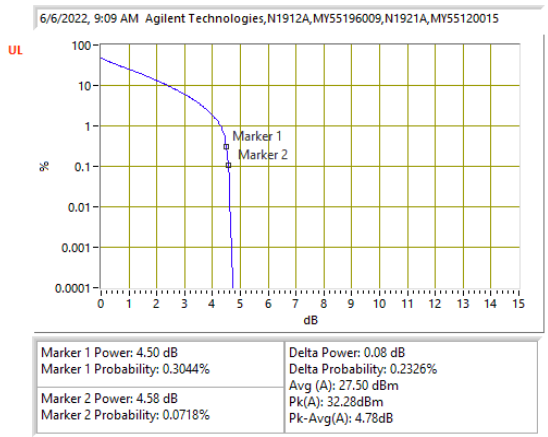
Test Engineer ID: 39004 **Test Date:** 5/10/2022



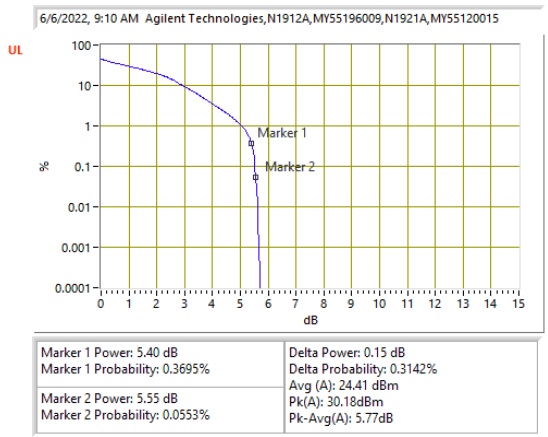
LTE B71 5MHz QPSK Middle Channel



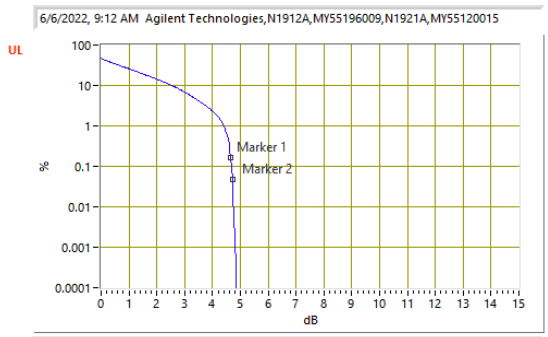
LTE B71 5MHz 16QAM Middle Channel



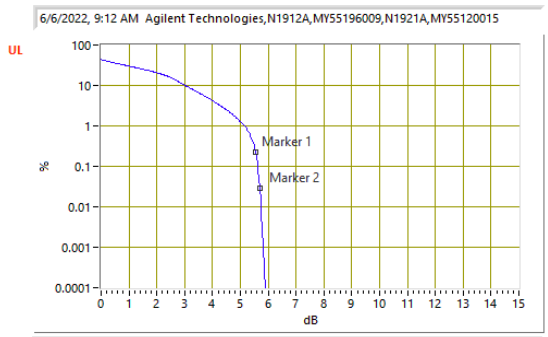
LTE B71 10MHz QPSK Middle Channel



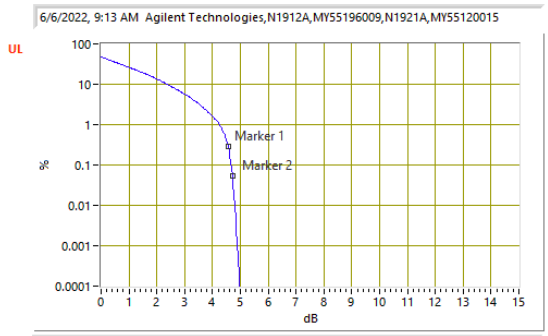
LTE B71 10MHz 16QAM Middle Channel



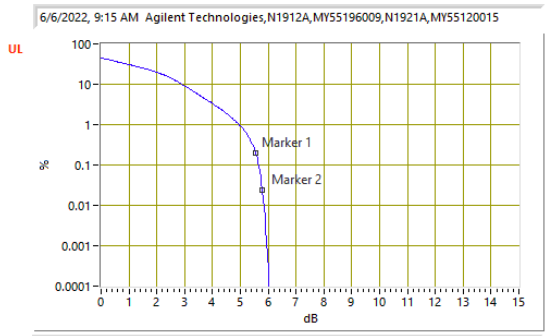
LTE B71 15MHz QPSK Middle Channel



LTE B71 15MHz 16QAM Middle Channel



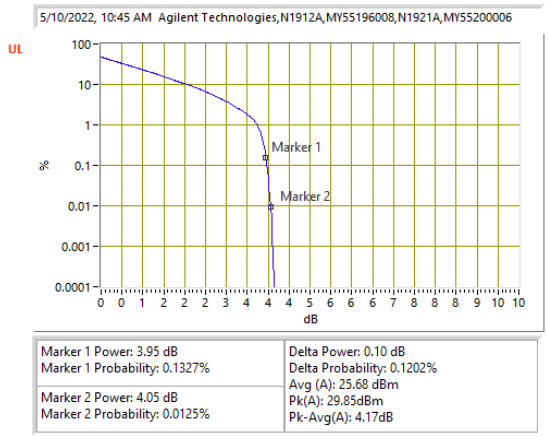
LTE B71 20MHz QPSK Middle Channel



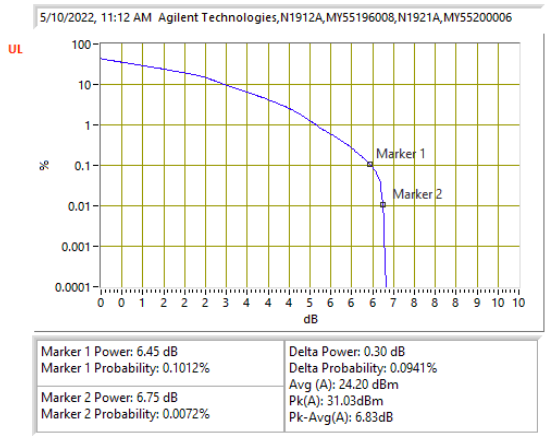
LTE B71 20MHz 16QAM Middle Channel

5G NR n71

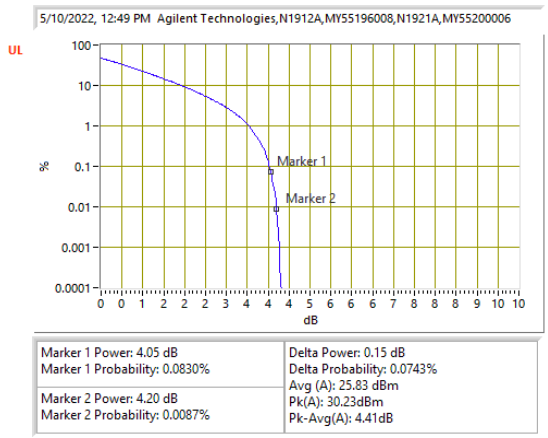
Test Engineer ID: 27957 **Test Date:** 5/10/2022



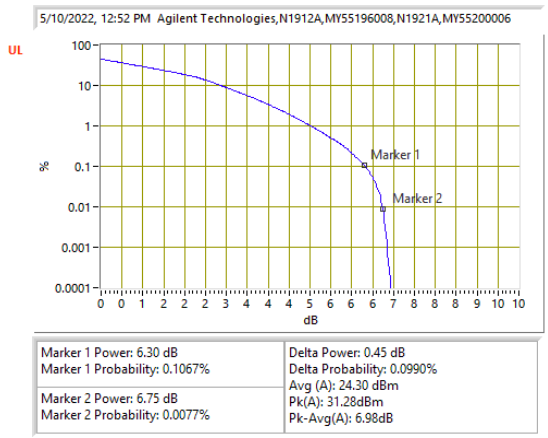
5G NR n71 5MHz BPSK Middle Channel



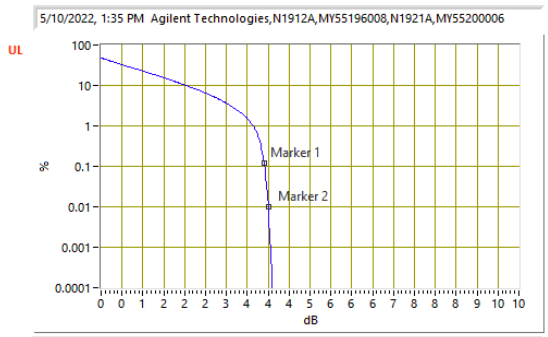
5G NR n71 5MHz 16QAM Middle Channel



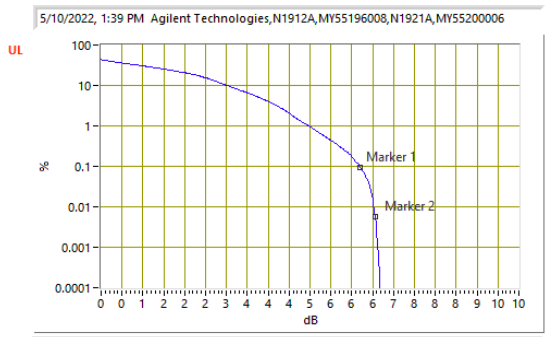
5G NR n71 10MHz BPSK Middle Channel



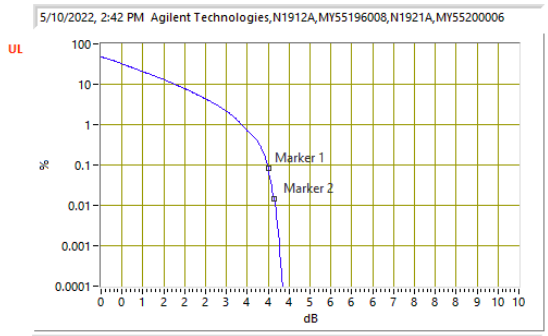
5G NR n71 10MHz 16QAM Middle Channel



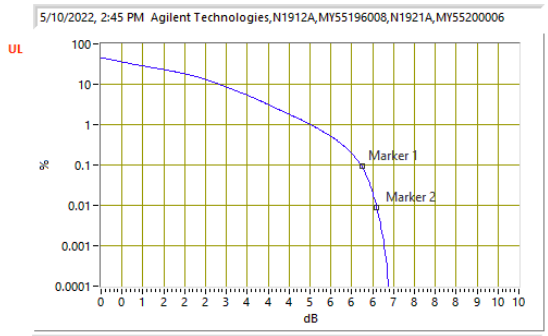
5G NR n71 15MHz BPSK Middle Channel



5G NR n71 15MHz 16QAM Middle Channel



5G NR n71 20MHz BPSK Middle Channel



5G NR n71 20MHz 16QAM Middle Channel

9.5.16. 5G NR n77 (FCC Part 27 3450-3550MHz)

Test Engineer ID: 28498 **Test Date:** 5/26/2022

Band	Bandwidth (MHz)	Frequency (MHz)	RB Allocation	RB OffSet	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
						Peak	Average	
5G Band n77	10MHz	3500.0	24	0	BPSK	35.03	30.34	4.69
					16QAM	35.37	28.42	6.95
	15MHz		36	0	BPSK	34.97	30.31	4.66
					16QAM	35.25	28.43	6.82
	20MHz		50	0	BPSK	35.06	30.41	4.65
					16QAM	35.38	28.42	6.96
	30MHz		75	0	BPSK	35.02	30.38	4.64
					16QAM	35.54	28.44	7.10
	40MHz		100	0	BPSK	34.91	30.71	4.20
					16QAM	35.50	28.26	7.24
	50MHz		128	0	BPSK	34.63	30.52	4.11
					16QAM	34.88	28.05	6.83
	60MHz		162	0	BPSK	34.67	30.23	4.44
					16QAM	34.84	27.79	7.05
	70MHz		180	0	BPSK	34.57	30.03	4.54
					16QAM	34.68	27.53	7.15
	80MHz		216	0	BPSK	34.02	29.88	4.14
					16QAM	31.18	27.25	3.93
	90MHz		243	0	BPSK	30.08	29.74	0.34
					16QAM	34.49	27.35	7.14
	100MHz		270	0	BPSK	34.78	29.75	5.03
					16QAM	34.34	27.31	7.03
Duty Cycle Correction Factor (dB) =			0.00					
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor								

9.5.17. 5G NR n77 (FCC Part 27 3700-3980MHz)

Test Engineer ID: 52275 **Test Date:** 7/7/2022

Band	Bandwidth (MHz)	Frequency (MHz)	RB Allocation	RB OffSet	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
						Peak	Average	
Band n77	10MHz	3840.0	24	0	BPSK	35.00	30.49	4.51
					16QAM	35.89	28.9	6.99
	15MHz		36	0	BPSK	34.92	30.63	4.29
					16QAM	35.73	28.97	6.76
	20MHz		50	0	BPSK	34.59	30.64	3.95
					16QAM	35.49	28.92	6.57
	30MHz		75	0	BPSK	34.20	30.53	3.67
					16QAM	35.16	28.78	6.38
	40MHz		100	0	BPSK	34.09	30.56	3.53
					16QAM	34.68	28.83	5.85
	50MHz		128	0	BPSK	33.42	30.29	3.13
					16QAM	34.09	28.51	5.58
	60MHz		162	0	BPSK	33.20	30.2	3.00
					16QAM	33.48	28.38	5.10
	70MHz		180	0	BPSK	30.04	33.14	-3.10
					16QAM	33.85	28.15	5.70
	80MHz		216	0	BPSK	32.64	30.07	2.57
					16QAM	33.19	28.14	5.05
	90MHz		243	0	BPSK	32.55	29.97	2.58
					16QAM	32.85	28.06	4.79
	100MHz		270	0	BPSK	32.25	29.97	2.28
					16QAM	32.68	28.09	4.59
Duty Cycle Correction Factor (dB) =								
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor								

10. RADIATED TEST RESULTS

Radiated measurement using the Field Strength Method

Using the test configuration shown in Figure 6 below, We measure the radiated emissions directly from the EUT and convert the measured field strength or received power to ERP or EIRP, as required, for comparison to the applicable limits. As stated in 5.5.1 of ANSI C63.26-2015, the field strength measurement method using a test site validated to the requirements of ANSI C63.4 is an alternative to the substitution measurement method.

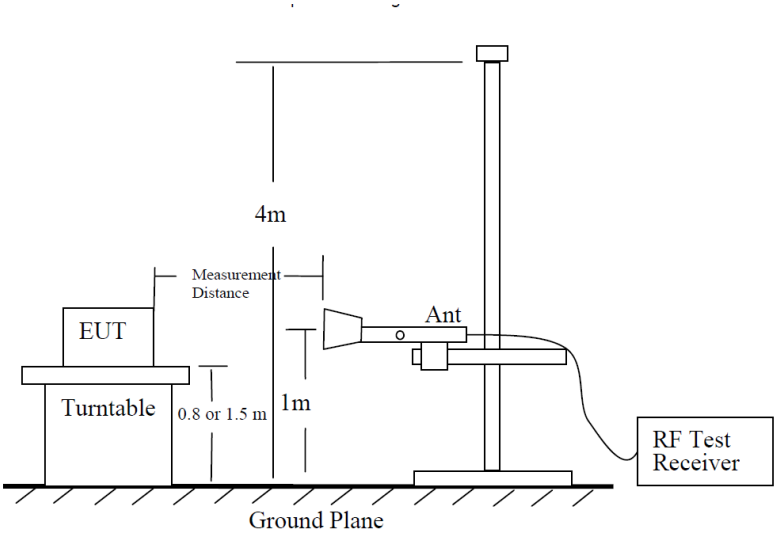


Figure 6—Test site-up for radiated ERP and/or EIRP measurements

Radiated Power Measurement Calculation According to ANSI C63.26-2015

a) E (dBμV/m) = Measured amplitude level (dBμV) + Cable Loss (dB) + Antenna Factor (dB/m).

b) E (dBμV/m) = Measured amplitude level (dBm) + 107 + Cable Loss (dB) + Antenna Factor (dB/m).

c) E (dBμV/m) = EIRP (dBm) − 20log(D) + 104.8; where D is the measurement distance (in the far field region) in m.

d) EIRP (dBm) = E (dBμV/m) + 20log(D) − 104.8; where D is the measurement distance (in the far field region) in m.

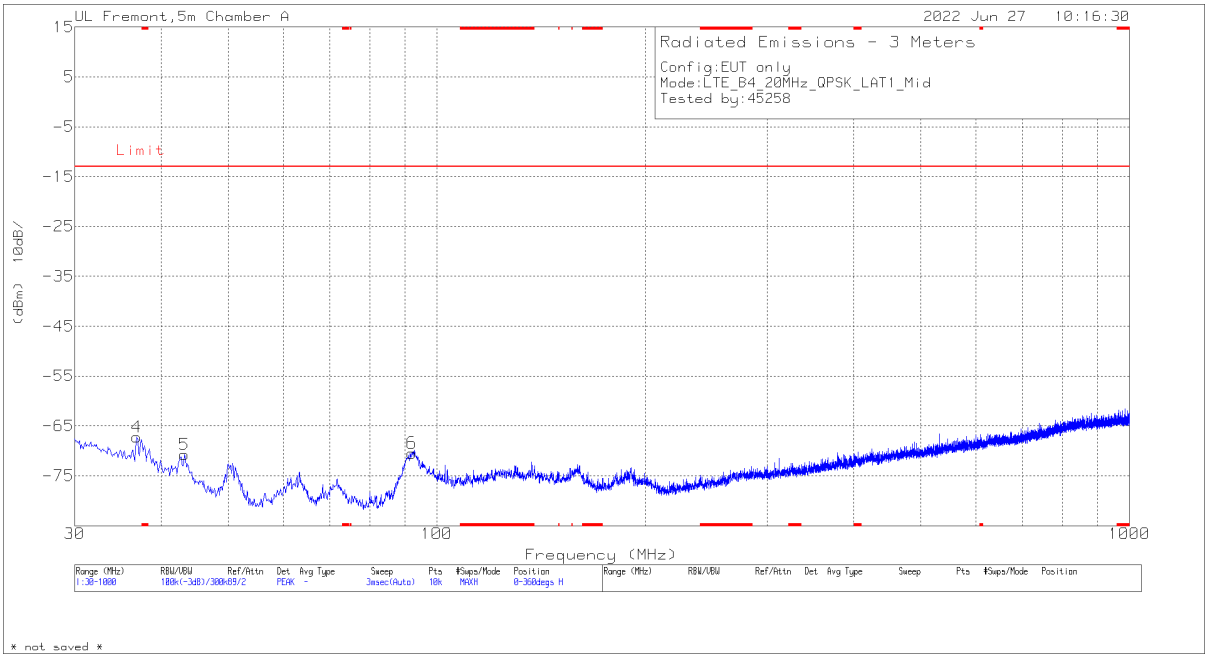
So, from d)

The measuring distance is usually at 3m, then 20*Log(3)=9.5424

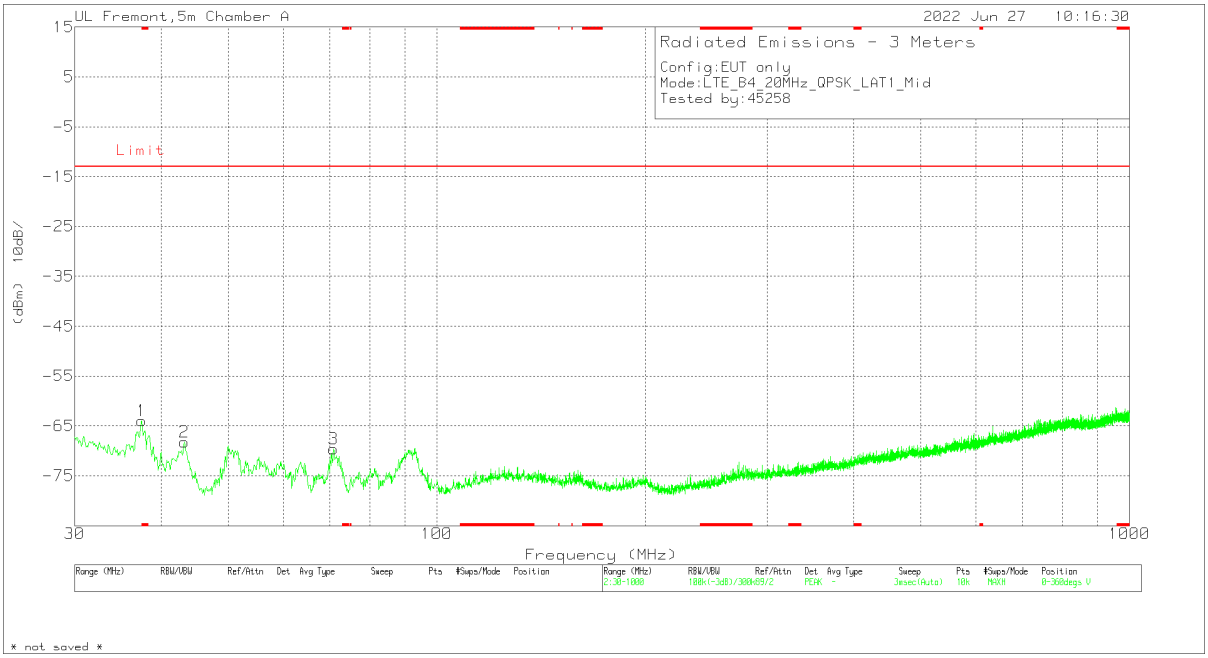
Then, EIRP (dBm) = E (dBμV/m) + 9.5424 − 104.8 = E (dBμV/m) – 95.2576

Note: Confidence check of each chamber is performed daily to see if any degradation from expected/normal reading reference data. Ambient check of each chamber is performed monthly.

Example Plot Below 1GHz



Horizontal Polarity

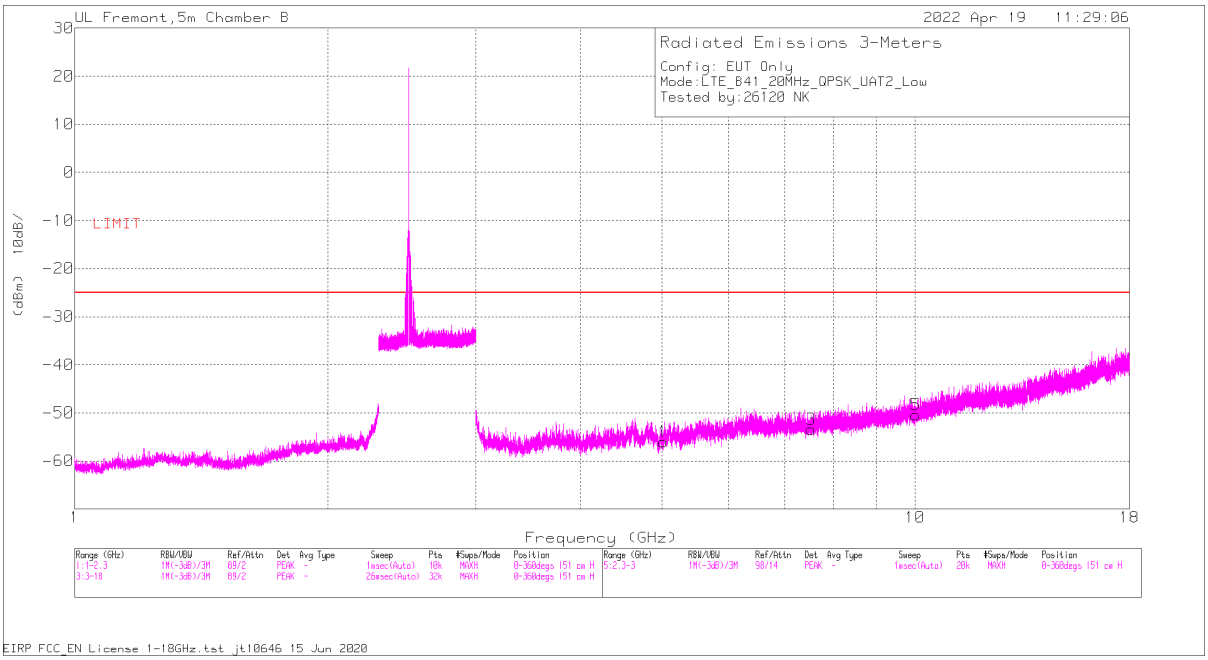


Vertical Polarity

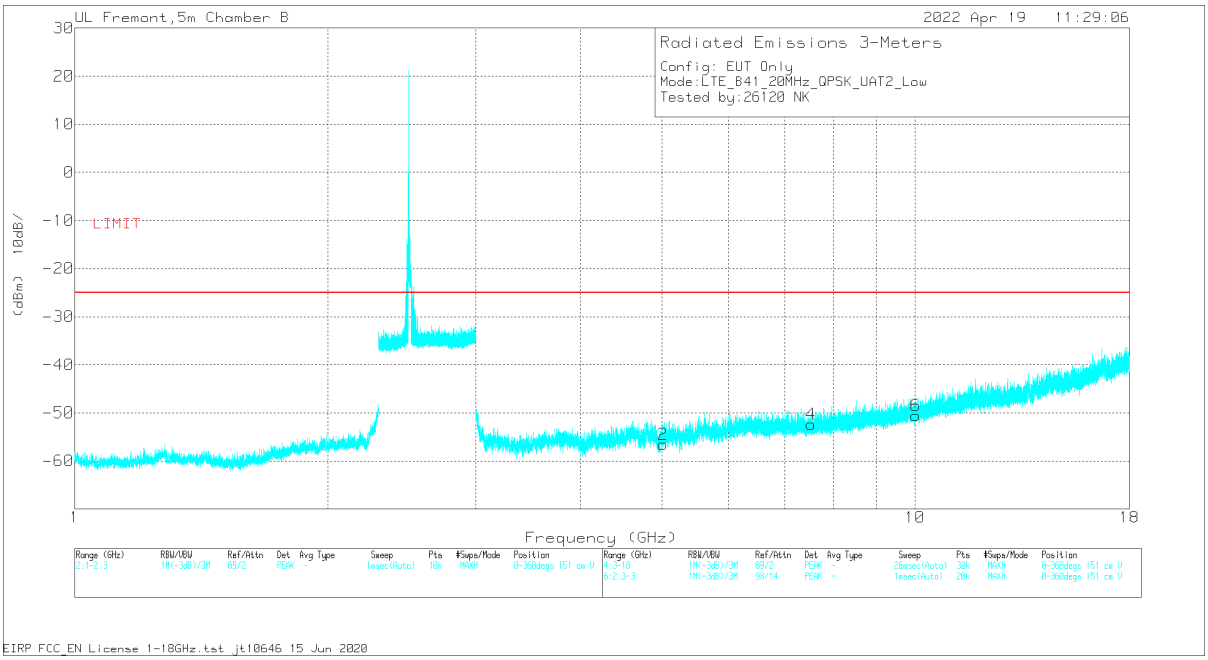
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	85151 ACF (dB)_3m	Amp/Cbl (dB/m)	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
4	36.887	31.99	Pk	23.2	-27.2	-95.2	-67.21	-13	-54.21	H
1	37.469	35.59	Pk	22.8	-27.2	-95.2	-64.01	-13	-51.01	V
5	43.192	32.77	Pk	18.7	-27	-95.2	-70.73	-13	-57.73	H
2	43.192	35.22	Pk	18.7	-27	-95.2	-68.28	-13	-55.28	V
3	70.934	37.93	Pk	14.4	-26.7	-95.2	-69.57	-13	-56.57	V
6	91.983	36.87	Pk	14.3	-26.4	-95.2	-70.43	-13	-57.43	H

Example Plot Above 1GHz



Horizontal Polarity



Vertical Polarity

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
1	5.011875	35.13	Pk	34.1	-30.8	.8	-95.2	-55.97	-25	-30.97	H
2	5.011875	34.6	Pk	34.1	-30.8	.8	-95.2	-56.5	-25	-31.5	V
3	7.517813	32.85	Pk	35.7	-27	.3	-95.2	-53.35	-25	-28.35	H
4	7.517813	33.87	Pk	35.7	-27	.3	-95.2	-52.33	-25	-27.33	V
6	10.02375	31.8	Pk	37.1	-24.8	.6	-95.2	-50.5	-25	-25.5	V
5	10.024219	31.79	Pk	37.2	-24.8	.6	-95.2	-50.41	-25	-25.41	H

10.1. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 1

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

All tests above 1GHz were done with a Resolution Bandwidth of 1MHz, and a Video Bandwidth of 3MHz

RESULTS

Both QPSK and 16QAM modes are tested, widest QPSK bandwidths results are reported as worst case for LTE bands.

Both BPSK and 16QAM modes are tested, widest BPSK bandwidths results are reported as worst case for 5G NRs

10.1.1. LTE BAND 5 AND 5G NR n5

LIMITS

FCC: §22.917(a)
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.

QPSK LTE BAND 5 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/20/2022
Test Engineer:	26120
Configuration:	EUT only
Mode	LTE5 QPSK 10MHz
Chamber #:	Chamber

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 829MHz										
1.658089	41.07	Pk	28.3	-34.9	.7	-95.2	-60.03	-13	-47.03	H
1.658089	39.07	Pk	28.3	-34.9	.7	-95.2	-62.03	-13	-49.03	V
2.518594	53.89	Pk	32.7	-34.7	.5	-95.2	-42.81	-13	-29.81	H
2.518534	41.65	Pk	32.7	-34.7	.5	-95.2	-55.05	-13	-42.05	V
3.315912	39.07	Pk	32.6	-33.8	.5	-95.2	-56.83	-13	-43.83	H
3.315912	39.97	Pk	32.6	-33.8	.5	-95.2	-55.93	-13	-42.93	V
Mid Channel, 836.5MHz										
1.673245	40.27	Pk	28.4	-34.9	.7	-95.2	-60.73	-13	-47.73	H
1.673245	39.66	Pk	28.4	-34.9	.7	-95.2	-61.34	-13	-48.34	V
2.496293	46.38	Pk	32.8	-34.8	.5	-95.2	-50.32	-13	-37.32	V
2.496302	49.33	Pk	32.8	-34.8	.5	-95.2	-47.37	-13	-34.37	H
3.346223	39.36	Pk	32.5	-33.7	.4	-95.2	-56.64	-13	-43.64	H
3.346223	39.45	Pk	32.5	-33.7	.4	-95.2	-56.55	-13	-43.55	V
High Channel, 844MHz										
1.687911	41.8	Pk	28.7	-34.9	.7	-95.2	-58.9	-13	-45.9	H
1.687911	39.87	Pk	28.7	-34.9	.7	-95.2	-60.83	-13	-47.83	V
2.518582	51.7	Pk	32.7	-34.7	.5	-95.2	-45.00	-13	-32.00	H
2.518666	49.36	Pk	32.7	-34.7	.5	-95.2	-47.34	-13	-34.34	V
3.376045	39.72	Pk	32.6	-33.6	.5	-95.2	-55.98	-13	-42.98	H
3.376045	40.06	Pk	32.6	-33.6	.5	-95.2	-55.64	-13	-42.64	V

BPSK 5G NR n5 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/19/2022
Test Engineer:	27927
Configuration:	EUT only
Mode	n5 BPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345(dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 834MHz										
1.668845	52.19	Pk	28.6	-44.9	.7	-95.2	-58.61	-13	-45.61	H
1.668845	54.01	Pk	28.6	-44.9	.7	-95.2	-56.79	-13	-43.79	V
2.502889	48.59	Pk	32.7	-44.1	.6	-95.2	-57.41	-13	-44.41	H
2.502889	49.37	Pk	32.7	-44.1	.6	-95.2	-56.63	-13	-43.63	V
3.306134	47.65	Pk	32.8	-42.2	.7	-95.2	-56.25	-13	-43.25	H
3.306134	48.05	Pk	32.8	-42.2	.7	-95.2	-55.85	-13	-42.85	V
Mid Channel, 836.5MHz										
1.673733	51.83	Pk	28.6	-45	.7	-95.2	-59.07	-13	-46.07	H
1.673733	51.88	Pk	28.6	-45	.7	-95.2	-59.02	-13	-46.02	V
2.509245	50.13	Pk	32.8	-44.1	.7	-95.2	-55.67	-13	-42.67	H
2.509245	50.37	Pk	32.8	-44.1	.7	-95.2	-55.43	-13	-42.43	V
3.346223	46.79	Pk	32.7	-41.9	.5	-95.2	-57.11	-13	-44.11	H
3.346223	48.3	Pk	32.7	-41.9	.5	-95.2	-55.6	-13	-42.6	V
High Channel, 839MHz										
1.678133	51.31	Pk	28.6	-45	.7	-95.2	-59.59	-13	-46.59	H
1.678133	51.88	Pk	28.6	-45	.7	-95.2	-59.02	-13	-46.02	V
2.517067	48.42	Pk	32.8	-44.2	.7	-95.2	-57.48	-13	-44.48	H
2.517067	48.83	Pk	32.8	-44.2	.7	-95.2	-57.07	-13	-44.07	V
3.356	47.11	Pk	32.6	-42.1	.6	-95.2	-56.99	-13	-43.99	H
3.356	47.78	Pk	32.6	-42.1	.6	-95.2	-56.32	-13	-43.32	V

10.1.2. LTE BAND 7 AND 5G NR n7

LIMITS

FCC: §27.53 (m)
At least 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)(6) of this section.

QPSK LTE BAND 7 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/20/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE7 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2510MHz										
5.020313	34.5	Pk	34	-30.8	.8	-95.2	-56.7	-25	-31.7	H
5.020313	36.6	Pk	34	-30.8	.8	-95.2	-54.6	-25	-29.6	V
7.53	33.42	Pk	35.8	-27	.3	-95.2	-52.68	-25	-27.68	H
7.53	34.22	Pk	35.8	-27	.3	-95.2	-51.88	-25	-26.88	V
10.040156	30.84	Pk	37.1	-24.9	.7	-95.2	-51.46	-25	-26.46	H
10.040156	30.97	Pk	37.1	-24.9	.7	-95.2	-51.33	-25	-26.33	V
Mid Channel, 2535MHz										
5.07	35.54	Pk	34.1	-30.6	.7	-95.2	-55.46	-25	-30.46	H
5.07	36.21	Pk	34.1	-30.6	.7	-95.2	-54.79	-25	-29.79	V
7.605	31.79	Pk	35.9	-27	.4	-95.2	-54.11	-25	-29.11	H
7.605	33.5	Pk	35.9	-27	.4	-95.2	-52.4	-25	-27.4	V
10.14	33.1	Pk	37.2	-24.8	.7	-95.2	-49	-25	-24	H
10.14	32.28	Pk	37.2	-24.8	.7	-95.2	-49.82	-25	-24.82	V
High Channel, 2560MHz										
5.120156	36.78	Pk	34.2	-30.7	.8	-95.2	-54.12	-25	-29.12	H
5.120156	38.05	Pk	34.2	-30.7	.8	-95.2	-52.85	-25	-27.85	V
7.68	34.02	Pk	35.9	-26.8	.5	-95.2	-51.58	-25	-26.58	H
7.68	32.18	Pk	35.9	-26.8	.5	-95.2	-53.42	-25	-28.42	V
10.239844	32.82	Pk	37.3	-25	.8	-95.2	-49.28	-25	-24.28	H
10.239844	34.26	Pk	37.3	-25	.8	-95.2	-47.84	-25	-22.84	V

BPSK 5G NR n7 (50.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/20/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	N7 BPSK 50MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345(dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2525MHz										
5.040469	46.18	Pk	34.1	-41.6	.6	-95.2	-55.92	-25	-30.92	H
5.040469	48.2	Pk	34.1	-41.6	.6	-95.2	-53.9	-25	-28.9	V
7.561406	41.8	Pk	35.8	-38.2	.4	-95.2	-55.4	-25	-30.4	H
7.561406	44.74	Pk	35.8	-38.2	.4	-95.2	-52.46	-25	-27.46	V
10.081875	43.74	Pk	37.4	-37.1	.6	-95.2	-50.56	-25	-25.56	H
10.081875	45.28	Pk	37.4	-37.1	.6	-95.2	-49.02	-25	-24.02	V
Mid Channel, 2535MHz										
5.063438	49.07	Pk	34.1	-41.6	.6	-95.2	-53.03	-25	-28.03	H
5.070938	46.36	Pk	34.2	-41.6	.7	-95.2	-55.54	-25	-30.54	V
7.605	45.58	Pk	35.8	-38.1	.4	-95.2	-51.52	-25	-26.52	H
7.605938	44.36	Pk	35.8	-38.1	.4	-95.2	-52.74	-25	-27.74	V
10.144219	46.14	Pk	37.4	-36.3	.6	-95.2	-47.36	-25	-22.36	H
10.145625	45.59	Pk	37.4	-36.3	.6	-95.2	-47.91	-25	-22.91	V
High Channel, 2545MHz										
5.106094	45.25	Pk	34.2	-41.4	.8	-95.2	-56.35	-25	-31.35	H
5.106094	47.95	Pk	34.2	-41.4	.8	-95.2	-53.65	-25	-28.65	V
7.65	42.9	Pk	35.8	-38.1	.3	-95.2	-54.3	-25	-29.3	H
7.65	42.82	Pk	35.8	-38.1	.3	-95.2	-54.38	-25	-29.38	V
10.200469	43.3	Pk	37.4	-36.1	.8	-95.2	-49.8	-25	-24.8	H
10.200469	44.45	Pk	37.4	-36.1	.8	-95.2	-48.65	-25	-23.65	V

10.1.3. LTE BAND 12 AND 5G NR n12

LIMITS

FCC: §27.53 (g)
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.

QPSK LTE BAND 12 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/20/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE12 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 704MHz										
1.398978	44.07	Pk	28.7	-34.9	1	-95.2	-56.33	-13	-43.33	H
1.399467	41.99	Pk	28.7	-34.9	1	-95.2	-58.41	-13	-45.41	V
2.098578	47.72	Pk	31.2	-34.9	.6	-95.2	-50.58	-13	-37.58	H
2.098578	42.82	Pk	31.2	-34.9	.6	-95.2	-55.48	-13	-42.48	V
2.815778	39.43	Pk	32.3	-34.5	.5	-95.2	-57.47	-13	-44.47	H
2.815778	39.13	Pk	32.3	-34.5	.5	-95.2	-57.77	-13	-44.77	V
Mid Channel, 707.5MHz										
1.415111	39.68	Pk	28.9	-34.9	.9	-95.2	-60.62	-13	-47.62	H
1.415111	40.3	Pk	28.9	-34.9	.9	-95.2	-60	-13	-47	V
2.108845	48.56	Pk	31.2	-34.8	.6	-95.2	-49.64	-13	-36.64	H
2.109334	44.6	Pk	31.2	-34.8	.6	-95.2	-53.6	-13	-40.6	V
2.829956	39.29	Pk	32.3	-34.4	.5	-95.2	-57.51	-13	-44.51	H
2.829956	39.31	Pk	32.3	-34.4	.5	-95.2	-57.49	-13	-44.49	V
High Channel, 711MHz										
1.413156	43.86	Pk	28.9	-34.9	.9	-95.2	-56.44	-13	-43.44	V
1.413644	44.49	Pk	28.9	-34.9	.9	-95.2	-55.81	-13	-42.81	H
2.1196	47.75	Pk	31.2	-34.8	.5	-95.2	-50.55	-13	-37.55	H
2.122045	41.11	Pk	31.2	-34.8	.5	-95.2	-57.19	-13	-44.19	V
2.844134	39.45	Pk	32.2	-34.4	.6	-95.2	-57.35	-13	-44.35	H
2.844134	38.64	Pk	32.2	-34.4	.6	-95.2	-58.16	-13	-45.16	V

BPSK 5G NR n12 (15.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/21/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	N12 BPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345(dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 706.5MHz										
1.398978	44.07	Pk	28.7	-34.9	1	-95.2	-56.33	-13	-43.33	H
1.399467	41.99	Pk	28.7	-34.9	1	-95.2	-58.41	-13	-45.41	V
2.098578	47.72	Pk	31.2	-34.9	.6	-95.2	-50.58	-13	-37.58	H
2.098578	42.82	Pk	31.2	-34.9	.6	-95.2	-55.48	-13	-42.48	V
2.815778	39.43	Pk	32.3	-34.5	.5	-95.2	-57.47	-13	-44.47	H
2.815778	39.13	Pk	32.3	-34.5	.5	-95.2	-57.77	-13	-44.77	V
Mid Channel, 707.5MHz										
1.415111	39.68	Pk	28.9	-34.9	.9	-95.2	-60.62	-13	-47.62	H
1.415111	40.3	Pk	28.9	-34.9	.9	-95.2	-60	-13	-47	V
2.108845	48.56	Pk	31.2	-34.8	.6	-95.2	-49.64	-13	-36.64	H
2.109334	44.6	Pk	31.2	-34.8	.6	-95.2	-53.6	-13	-40.6	V
2.829956	39.29	Pk	32.3	-34.4	.5	-95.2	-57.51	-13	-44.51	H
2.829956	39.31	Pk	32.3	-34.4	.5	-95.2	-57.49	-13	-44.49	V
High Channel, 708.5MHz										
1.413156	43.86	Pk	28.9	-34.9	.9	-95.2	-56.44	-13	-43.44	V
1.413644	44.49	Pk	28.9	-34.9	.9	-95.2	-55.81	-13	-42.81	H
2.1196	47.75	Pk	31.2	-34.8	.5	-95.2	-50.55	-13	-37.55	H
2.122045	41.11	Pk	31.2	-34.8	.5	-95.2	-57.19	-13	-44.19	V
2.844134	39.45	Pk	32.2	-34.4	.6	-95.2	-57.35	-13	-44.35	H
2.844134	38.64	Pk	32.2	-34.4	.6	-95.2	-58.16	-13	-45.16	V

10.1.4. LTE BAND 13

LIMITS

FCC: §27.53
(c) 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.
(f) Emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

QPSK LTE BAND 13 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/20/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE13 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 782MHz										
*1.564222	40.13	Pk	27.8	-34.9	.8	-95.2	-61.37	-40	-21.37	H
*1.564222	39.9	Pk	27.8	-34.9	.8	-95.2	-61.6	-40	-21.6	V
2.345956	38.9	Pk	31.8	-34.8	.6	-95.2	-58.7	-13	-45.7	H
2.345956	39.76	Pk	31.8	-34.8	.6	-95.2	-57.84	-13	-44.84	V
3.128178	38.25	Pk	32.9	-34.1	.5	-95.2	-57.65	-13	-44.65	H
3.128178	40.37	Pk	32.9	-34.1	.5	-95.2	-55.53	-13	-42.53	V

*** Emissions in the GPS band were wideband emissions therefore the -40dBm/MHz limit was used.**

10.1.5. LTE BAND 14

LIMITS

FCC: §90.543 Emission Limitations. (Band 14)
(e) For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:
(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.

(f) For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation

QPSK LTE BAND 14 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/21/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE14 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 793										
*1.576933	45.18	Pk	27.7	-34.9	.8	-95.2	-56.42	-40	-16.42	H
*1.577422	44.79	Pk	27.7	-34.9	.8	-95.2	-56.81	-40	-16.81	V
2.3792	39.65	Pk	31.9	-34.8	.6	-95.2	-57.85	-13	-44.85	H
2.3792	38.49	Pk	31.9	-34.8	.6	-95.2	-59.01	-13	-46.01	V
3.171689	39.79	Pk	32.7	-34	.5	-95.2	-56.21	-13	-43.21	H
3.171689	42.15	Pk	32.7	-34	.5	-95.2	-53.85	-13	-40.85	V

*** Emissions in the GPS band were wideband emissions therefore the -40dBm/MHz limit was used.**

BPSK 5G NR n14 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	7/08/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	5G NR n14_10MHz_BPSK
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 793MHz										
1.586222	40.87	Pk	28.2	-34.8	.8	-95.2	-60.13	-40	-20.13	H
1.586222	39.04	Pk	28.2	-34.8	.8	-95.2	-61.96	-40	-21.96	V
2.3792	40.4	Pk	32.2	-34.7	.6	-95.2	-56.7	-13	-43.7	H
2.379689	38.99	Pk	32.2	-34.7	.6	-95.2	-58.11	-13	-45.11	V
3.172178	39.33	Pk	33.2	-34.1	.5	-95.2	-56.27	-13	-43.27	H
3.172178	40.69	Pk	33.2	-34.1	.5	-95.2	-54.91	-13	-41.91	V

*** Emissions in the GPS band were wideband emissions therefore the -40dBm/MHz limit was used.**

10.1.6. LTE BAND 17

LIMITS

FCC: §27.53 (g)
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.

QPSK LTE BAND 17 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/21/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE17 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 709MHz										
1.409244	43.41	Pk	28.8	-34.9	1	-95.2	-56.89	-13	-43.89	H
1.409244	43.04	Pk	28.8	-34.9	1	-95.2	-57.26	-13	-44.26	V
2.126934	39.97	Pk	31.2	-34.9	.5	-95.2	-58.43	-13	-45.43	H
2.126934	39.72	Pk	31.2	-34.9	.5	-95.2	-58.68	-13	-45.68	V
2.835823	39.49	Pk	32.2	-34.4	.5	-95.2	-57.41	-13	-44.41	H
2.835823	42	Pk	32.2	-34.4	.5	-95.2	-54.9	-13	-41.9	V
Mid Channel, 710MHz										
1.410711	43.31	Pk	28.8	-34.9	1	-95.2	-56.99	-13	-43.99	V
1.4112	43.13	Pk	28.8	-34.9	1	-95.2	-57.17	-13	-44.17	H
1.862933	42.43	Pk	30.7	-34.8	.6	-95.2	-56.27	-13	-43.27	H
1.872222	43.74	Pk	30.8	-34.8	.6	-95.2	-54.86	-13	-41.86	V
2.840223	39.93	Pk	32.2	-34.4	.6	-95.2	-56.87	-13	-43.87	H
2.840223	40.31	Pk	32.2	-34.4	.6	-95.2	-56.49	-13	-43.49	V
High Channel, 711MHz										
1.413156	44.02	Pk	28.9	-34.9	.9	-95.2	-56.28	-13	-43.28	H
1.413644	41.58	Pk	28.9	-34.9	.9	-95.2	-58.72	-13	-45.72	V
2.1328	42.21	Pk	31.2	-34.9	.5	-95.2	-56.19	-13	-43.19	H
2.133289	40.76	Pk	31.2	-34.9	.5	-95.2	-57.64	-13	-44.64	V
2.844134	38.88	Pk	32.2	-34.4	.6	-95.2	-57.92	-13	-44.92	H
2.844134	39.45	Pk	32.2	-34.4	.6	-95.2	-57.35	-13	-44.35	V

10.1.7. LTE BAND 25 AND 5G NR n25

LIMITS

FCC: §24.238(a)
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.

QPSK LTE BAND 25 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/20/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE25 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.72	37.37	Pk	33.3	-32.2	-95.2	-56.73	-13	-43.73	H
3.72	38.83	Pk	33.3	-32.2	-95.2	-55.27	-13	-42.27	V
5.580469	35.83	Pk	34.8	-29.6	-95.2	-54.17	-13	-41.17	H
5.580469	36.8	Pk	34.8	-29.6	-95.2	-53.2	-13	-40.2	V
7.44	33.25	Pk	35.8	-26.3	-95.2	-52.45	-13	-39.45	H
7.44	31.97	Pk	35.8	-26.3	-95.2	-53.73	-13	-40.73	V
Mid Channel, 1882.5MHz									
3.765	39.57	Pk	33.5	-32	-95.2	-54.13	-13	-41.13	H
3.765	38.35	Pk	33.5	-32	-95.2	-55.35	-13	-42.35	V
5.6475	35.82	Pk	35	-30.1	-95.2	-54.48	-13	-41.48	H
5.6475	36.45	Pk	35	-30.1	-95.2	-53.85	-13	-40.85	V
7.530469	33.43	Pk	35.8	-26.1	-95.2	-52.07	-13	-39.07	H
7.530469	32.85	Pk	35.8	-26.1	-95.2	-52.65	-13	-39.65	V
High Channel, 1905MHz									
1.984088	51.48	Pk	31.3	-34.8	-95.2	-47.22	-13	-44.22	V
1.984411	52.33	Pk	31.3	-34.8	-95.2	-46.37	-13	-33.37	H
3.81	39.02	Pk	33.7	-31.8	-95.2	-54.28	-13	-41.28	H
3.81	37.24	Pk	33.7	-31.8	-95.2	-56.06	-13	-43.06	V
5.715	35.99	Pk	34.9	-29.2	-95.2	-53.51	-13	-40.51	H
5.715	36.75	Pk	34.9	-29.2	-95.2	-52.75	-13	-39.75	V

BPSK 5G NR n25 (40.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/21/2022
Test Engineer:	27927
Configuration:	EUT Only
Mode	N25 BPSK 40MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1870MHz									
3.741563	48.14	Pk	33.4	-40.4	-95.2	-54.06	-13	-41.06	H
3.7425	47.32	Pk	33.4	-40.5	-95.2	-54.98	-13	-41.98	V
5.609531	47.58	Pk	34.6	-39.4	-95.2	-52.42	-13	-39.42	H
5.61	46.07	Pk	34.6	-39.4	-95.2	-53.93	-13	-40.93	V
7.4775	43.13	Pk	35.8	-37.8	-95.2	-54.07	-13	-41.07	H
7.4775	45.51	Pk	35.8	-37.8	-95.2	-51.69	-13	-38.69	V
Mid Channel, 1882.5MHz									
3.764063	48.11	Pk	33.5	-40.4	-95.2	-53.99	-13	-40.99	V
3.768281	46.55	Pk	33.5	-40.2	-95.2	-55.35	-13	-42.35	H
5.647031	45.46	Pk	34.6	-39.3	-95.2	-54.44	-13	-41.44	H
5.6475	45.48	Pk	34.6	-39.3	-95.2	-54.42	-13	-41.42	V
7.52625	44.09	Pk	35.8	-37.8	-95.2	-53.11	-13	-40.11	H
7.53	45.86	Pk	35.8	-37.8	-95.2	-51.34	-13	-38.34	V
High Channel, 1895MHz									
3.799219	47.02	Pk	33.5	-40.6	-95.2	-55.28	-13	-42.28	H
3.799219	45.67	Pk	33.5	-40.6	-95.2	-56.63	-13	-43.63	V
5.747344	47.22	Pk	34.7	-39.2	-95.2	-52.48	-13	-39.48	V
5.747813	43.94	Pk	34.7	-39.2	-95.2	-55.76	-13	-42.76	H
7.577813	45.09	Pk	35.8	-37.5	-95.2	-51.81	-13	-38.81	H
7.577813	42.87	Pk	35.8	-37.5	-95.2	-54.03	-13	-41.03	V

10.1.8. LTE BAND 26 AND 5G NR n26 (FCC PART 90S)

LIMITS

FCC: §90.691
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.

QPSK LTE BAND 26 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/21/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE26 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 819MHz										
1.638045	41.45	Pk	28.4	-34.9	.7	-95.2	-59.55	-13	-46.55	H
1.638045	39.14	Pk	28.4	-34.9	.7	-95.2	-61.86	-13	-48.86	V
2.456934	39.24	Pk	32.4	-34.7	.6	-95.2	-57.66	-13	-44.66	H
2.456934	39.59	Pk	32.4	-34.7	.6	-95.2	-57.31	-13	-44.31	V
3.275823	38.86	Pk	32.8	-33.8	.5	-95.2	-56.84	-13	-43.84	H
3.275823	39.1	Pk	32.8	-33.8	.5	-95.2	-56.6	-13	-43.6	V

BPSK 5G NR n26 Part 90s(10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/22/2022
Test Engineer:	27927
Configuration:	EUT Only
Mode	n26 BPSK 10MHz
Chamber #:	Chamber G

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	limit	Margin (dB)	Polarity
Mid Channel, 819MHz										
1.637556	51.61	Pk	28.7	-45	.7	-95.2	-59.19	-13	-46.19	H
1.637556	52.4	Pk	28.7	-45	.7	-95.2	-58.4	-13	-45.4	V
2.457423	50.07	Pk	32.3	-44.2	.5	-95.2	-56.53	-13	-43.53	H
2.457423	50.65	Pk	32.3	-44.2	.5	-95.2	-55.95	-13	-42.95	V
3.275334	47.93	Pk	32.8	-42.2	.8	-95.2	-55.87	-13	-42.87	H
3.275334	47.31	Pk	32.8	-42.2	.8	-95.2	-56.49	-13	-43.49	V

10.1.9. LTE BAND 26 AND 5G NR n26 (FCC PART 22H)

LIMITS

FCC: §22.917(a)
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.

QPSK LTE BAND 26 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	7/15/2022
Test Engineer:	26120
Configuration:	EUT only
Mode	LTE26 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 831.5MHz										
1.662978	39.95	Pk	28.5	-34.9	.7	-95.2	-60.95	-13	-47.95	H
1.662978	42.05	Pk	28.5	-34.9	.7	-95.2	-58.85	-13	-45.85	V
2.494578	39.28	Pk	32.7	-34.7	.5	-95.2	-57.42	-13	-44.42	H
2.494578	40.83	Pk	32.7	-34.7	.5	-95.2	-55.87	-13	-42.87	V
3.326178	38.83	Pk	33.1	-33.8	.5	-95.2	-56.57	-13	-43.57	H
3.326178	40.14	Pk	33.1	-33.8	.5	-95.2	-55.26	-13	-42.26	V
Mid Channel, 836.5MHz										
1.673245	40.37	Pk	28.6	-34.8	.7	-95.2	-60.33	-13	-47.33	H
1.673245	41.07	Pk	28.6	-34.8	.7	-95.2	-59.63	-13	-46.63	V
2.509245	40.99	Pk	32.7	-34.7	.5	-95.2	-55.71	-13	-42.71	H
2.509245	40.07	Pk	32.7	-34.7	.5	-95.2	-56.63	-13	-43.63	V
3.346223	40.34	Pk	33.1	-33.7	.4	-95.2	-55.06	-13	-42.06	H
3.346223	41.37	Pk	33.1	-33.7	.4	-95.2	-54.03	-13	-41.03	V
High Channel, 841.5MHz										
1.683022	39.83	Pk	28.8	-34.8	.7	-95.2	-60.67	-13	-47.67	H
1.683022	40.15	Pk	28.8	-34.8	.7	-95.2	-60.35	-13	-47.35	V
2.5244	40.65	Pk	32.7	-34.6	.5	-95.2	-55.95	-13	-42.95	H
2.5244	41.62	Pk	32.7	-34.6	.5	-95.2	-54.98	-13	-41.98	V
3.366267	38.36	Pk	33.1	-33.8	.5	-95.2	-57.04	-13	-44.04	H
3.366267	38.47	Pk	33.1	-33.8	.5	-95.2	-56.93	-13	-43.93	V

BPSK 5G NR n26 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	7/15/2022
Test Engineer:	26120
Configuration:	EUT only
Mode	N26 BPSK 20MHz
Chamber #:	Chamber

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 834.0MHz										
1.658089	40.81	Pk	28.4	-34.8	.7	-95.2	-60.09	-13	-47.09	H
1.658089	40.12	Pk	28.4	-34.8	.7	-95.2	-60.78	-13	-47.78	V
2.487245	40.3	Pk	32.6	-34.8	.5	-95.2	-56.6	-13	-43.6	H
2.487245	41.02	Pk	32.6	-34.8	.5	-95.2	-55.88	-13	-42.88	V
3.315912	40.49	Pk	33.1	-33.7	.5	-95.2	-54.81	-13	-41.81	H
3.315912	40.5	Pk	33.1	-33.7	.5	-95.2	-54.8	-13	-41.8	V
Mid Channel, 836.5MHz										
1.673245	39.45	Pk	28.6	-34.8	.7	-95.2	-61.25	-13	-48.25	H
1.673245	39.62	Pk	28.6	-34.8	.7	-95.2	-61.08	-13	-48.08	V
2.509245	40.27	Pk	32.7	-34.7	.5	-95.2	-56.43	-13	-43.43	H
2.509245	40.45	Pk	32.7	-34.7	.5	-95.2	-56.25	-13	-43.25	V
3.346223	37.75	Pk	33.1	-33.7	.4	-95.2	-57.65	-13	-44.65	H
3.346223	38.85	Pk	33.1	-33.7	.4	-95.2	-56.55	-13	-43.55	V
High Channel, 839.0MHz										
1.678133	39.95	Pk	28.7	-34.8	.7	-95.2	-60.65	-13	-47.65	H
1.678133	40.15	Pk	28.7	-34.8	.7	-95.2	-60.45	-13	-47.45	V
2.489423	43.5	Pk	32.7	-34.7	.5	-95.2	-53.2	-13	-40.2	H
2.488711	40.34	Pk	32.7	-34.7	.5	-95.2	-56.36	-13	-43.36	V
3.346223	39.21	Pk	33.1	-33.7	.4	-95.2	-56.19	-13	-43.19	H
3.346223	39.2	Pk	33.1	-33.7	.4	-95.2	-56.2	-13	-43.2	V

10.1.10. LTE BAND 30 AND 5G NR n30

LIMITS

FCC: §27.53 (a)
For mobile and portable stations operating in the 2305-2315 MHz: by a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

QPSK LTE BAND 30 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	6/7/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE30 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.62	33.78	RMS	34.3	-29.1	-95.2	-56.22	-40	-16.22	H
4.62	34.27	RMS	34.3	-29.1	-95.2	-55.73	-40	-15.73	V
6.929531	33.42	RMS	35.8	-26	-95.2	-51.98	-40	-11.98	V
6.93	31	RMS	35.8	-26	-95.2	-54.4	-40	-14.4	H
9.24	29.48	RMS	36.4	-23.6	-95.2	-52.92	-40	-12.92	H
9.24	28.83	RMS	36.4	-23.6	-95.2	-53.57	-40	-13.57	V

BPSK 5G NR n30 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	6/7/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	n30 BPSK 10MHz
Chamber #:	Chamber B

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB)	Amp/Cbl/Fltr/ Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
1	4.62	34.86	RMS	34.3	-29.1	-95.2	-55.14	-40	-15.14	H
2	4.62	33.23	RMS	34.3	-29.1	-95.2	-56.77	-40	-16.77	V
3	6.93	31.35	RMS	35.8	-26	-95.2	-54.05	-40	-14.05	H
4	6.93	30.53	RMS	35.8	-26	-95.2	-54.87	-40	-14.87	V
6	9.239531	30.06	RMS	36.4	-23.6	-95.2	-52.34	-40	-12.34	V
5	9.24	31.41	RMS	36.4	-23.6	-95.2	-50.99	-40	-10.99	H

10.1.11. LTE BAND 41 AND 5G NR n41

LIMITS

FCC: §27.53 (m)
At least 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)(6) of this section.

QPSK LTE BAND 41 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/21/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE41 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2506MHz										
4.806094	37.11	Pk	34.2	-30.4	.8	-95.2	-53.49	-25	-28.49	H
4.806094	41.3	Pk	34.2	-30.4	.8	-95.2	-49.3	-25	-24.3	V
7.518281	32.58	Pk	35.7	-27	.3	-95.2	-53.62	-25	-28.62	H
7.518281	32.33	Pk	35.7	-27	.3	-95.2	-53.87	-25	-28.87	V
10.024219	31.11	Pk	37.2	-24.8	.6	-95.2	-51.09	-25	-26.09	H
10.024219	31.15	Pk	37.2	-24.8	.6	-95.2	-51.05	-25	-26.05	V
Mid Channel, 2593MHz										
5.185781	36.24	Pk	34.2	-30.7	.8	-95.2	-54.66	-25	-29.66	H
5.185781	35.73	Pk	34.2	-30.7	.8	-95.2	-55.17	-25	-30.17	V
7.778906	34.7	Pk	35.9	-26.9	.3	-95.2	-51.2	-25	-26.2	H
7.778906	33.17	Pk	35.9	-26.9	.3	-95.2	-52.73	-25	-27.73	V
10.372031	30.51	Pk	37.6	-24.9	.8	-95.2	-51.19	-25	-26.19	H
10.372031	32.03	Pk	37.6	-24.9	.8	-95.2	-49.67	-25	-24.67	V
High Channel, 2680MHz										
5.360156	36.81	Pk	34.5	-30.1	.5	-95.2	-53.49	-25	-28.49	H
5.360156	34.67	Pk	34.5	-30.1	.5	-95.2	-55.63	-25	-30.63	V
8.04	33.47	Pk	35.9	-26.3	.4	-95.2	-51.73	-25	-26.73	H
8.04	34.42	Pk	35.9	-26.3	.4	-95.2	-50.78	-25	-25.78	V
10.720313	32.4	Pk	38	-24	.6	-95.2	-48.2	-25	-23.2	H
10.720313	32.39	Pk	38	-24	.6	-95.2	-48.21	-25	-23.21	V

BPSK LTE BAND n41 (100.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/22/2022
Test Engineer:	27927
Configuration:	EUT Only
Mode	n41 BPSK 100MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345(dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2506MHz										
5.090156	47.47	Pk	34.2	-41.6	.8	-95.2	-54.33	-25	-29.33	V
5.091563	46.93	Pk	34.2	-41.5	.8	-95.2	-54.77	-25	-29.77	H
7.638281	43.88	Pk	35.8	-38.1	.4	-95.2	-53.22	-25	-28.22	H
7.638281	42.32	Pk	35.8	-38.1	.4	-95.2	-54.78	-25	-29.78	V
10.180313	46.32	Pk	37.4	-36.1	.6	-95.2	-46.98	-25	-21.98	H
10.18125	45.15	Pk	37.4	-36.1	.6	-95.2	-48.15	-25	-23.15	V
Mid Channel, 2593MHz										
5.186719	46.91	Pk	34.3	-41.4	.8	-95.2	-54.59	-25	-29.59	H
5.186719	46.25	Pk	34.3	-41.4	.8	-95.2	-55.25	-25	-30.25	V
7.773281	43.64	Pk	35.9	-37.9	.3	-95.2	-53.26	-25	-28.26	H
7.773281	45.91	Pk	35.9	-37.9	.3	-95.2	-50.99	-25	-25.99	V
10.372031	44.86	Pk	37.5	-36.5	.8	-95.2	-48.54	-25	-23.54	H
10.372031	43.16	Pk	37.5	-36.5	.8	-95.2	-50.24	-25	-25.24	V
High Channel, 2680MHz										
5.279531	45.14	Pk	34.4	-40.9	.3	-95.2	-56.26	-25	-31.26	H
5.279531	46.57	Pk	34.4	-40.9	.3	-95.2	-54.83	-25	-29.83	V
7.920938	41.69	Pk	35.9	-37.7	.2	-95.2	-55.11	-25	-30.11	H
7.920938	44.05	Pk	35.9	-37.7	.2	-95.2	-52.75	-25	-27.75	V
10.56	41.97	Pk	37.6	-35.2	.7	-95.2	-50.13	-25	-25.13	H
10.56	42.89	Pk	37.6	-35.2	.7	-95.2	-49.21	-25	-24.21	V

10.1.12. LTE BAND 66 AND 5G NR n66

LIMITS

FCC: §27.53 (h)
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.

QPSK LTE BAND 66 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/26/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE66 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1720MHz									
3.440156	39.07	Pk	32.7	-33	-95.2	-56.43	-13	-43.43	H
3.440156	39.3	Pk	32.7	-33	-95.2	-56.2	-13	-43.2	V
5.16	35.31	Pk	34.2	-29.6	-95.2	-55.29	-13	-42.29	H
5.16	36.17	Pk	34.2	-29.6	-95.2	-54.43	-13	-41.43	V
6.879844	33.36	Pk	35.9	-26.6	-95.2	-52.54	-13	-39.54	V
6.880313	32.56	Pk	35.9	-26.6	-95.2	-53.34	-13	-40.34	H
Mid Channel, 1745MHz									
3.489844	38.78	Pk	32.9	-32.9	-95.2	-56.42	-13	-43.42	H
3.489844	38.44	Pk	32.9	-32.9	-95.2	-56.76	-13	-43.76	V
5.235	35.88	Pk	34.2	-28.8	-95.2	-53.92	-13	-40.92	H
5.235	35.97	Pk	34.2	-28.8	-95.2	-53.83	-13	-40.83	V
6.980156	32.35	Pk	35.8	-26.3	-95.2	-53.35	-13	-40.35	H
6.980156	33.05	Pk	35.8	-26.3	-95.2	-52.65	-13	-39.65	V
High Channel, 1770MHz									
3.540469	39.46	Pk	33.1	-32.7	-95.2	-55.34	-13	-42.34	H
3.540469	37.99	Pk	33.1	-32.7	-95.2	-56.81	-13	-43.81	V
5.31	34.43	Pk	34.4	-29.7	-95.2	-56.07	-13	-43.07	H
5.31	35.14	Pk	34.4	-29.7	-95.2	-55.36	-13	-42.36	V
7.08	33.51	Pk	35.7	-26.7	-95.2	-52.69	-13	-39.69	H
7.08	31.68	Pk	35.7	-26.7	-95.2	-54.52	-13	-41.52	V

BPSK 5G NR n66 (40.0MHZ BANDWIDTH)

Project #:	14040868
Date:	5/9/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	n66 BPSK 40MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1730MHz									
3.459844	37.13	Pk	32.8	-33	-95.2	-58.27	-13	-45.27	H
3.459844	38.1	Pk	32.8	-33	-95.2	-57.3	-13	-44.3	V
5.19	35.63	Pk	34.2	-29.1	-95.2	-54.47	-13	-41.47	H
5.19	33.99	Pk	34.2	-29.1	-95.2	-56.11	-13	-43.11	V
6.920156	33.46	Pk	35.8	-26.2	-95.2	-52.14	-13	-39.14	H
6.920156	32.82	Pk	35.8	-26.2	-95.2	-52.78	-13	-39.78	V
Mid Channel, 1745MHz									
3.489844	39.29	Pk	32.9	-32.9	-95.2	-55.91	-13	-42.91	H
3.489844	38.06	Pk	32.9	-32.9	-95.2	-57.14	-13	-44.14	V
5.235	34.37	Pk	34.2	-28.8	-95.2	-55.43	-13	-42.43	H
5.235	34.31	Pk	34.2	-28.8	-95.2	-55.49	-13	-42.49	V
6.980156	33.53	Pk	35.8	-26.3	-95.2	-52.17	-13	-39.17	H
6.980156	34.6	Pk	35.8	-26.3	-95.2	-51.1	-13	-38.1	V
High Channel, 1760MHz									
3.519844	37.89	Pk	33.1	-32.8	-95.2	-57.01	-13	-44.01	H
3.519844	38.53	Pk	33.1	-32.8	-95.2	-56.37	-13	-43.37	V
5.286094	34.41	Pk	34.2	-29.3	-95.2	-55.89	-13	-42.89	H
5.286094	35.2	Pk	34.2	-29.3	-95.2	-55.1	-13	-42.1	V
7.040156	33.13	Pk	35.7	-26.8	-95.2	-53.17	-13	-40.17	H
7.040156	31.49	Pk	35.7	-26.8	-95.2	-54.81	-13	-41.81	V

10.1.13. 5G NR n70

LIMITS

FCC: §27.53 (h)
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.

BPSK 5G NR n70 (15.0MHZ BANDWIDTH based on 5G NR n70 maximum frequency range)

Project #:	14040868
Date:	5/9/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	N70 BPSK 15MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 1702.5MHz									
3.405	38.38	Pk	32.5	-33	-95.2	-57.32	-13	-44.32	H
3.405	39.63	Pk	32.5	-33	-95.2	-56.07	-13	-43.07	V
5.1075	36.26	Pk	34.1	-30.2	-95.2	-55.04	-13	-42.04	H
5.1075	36.5	Pk	34.1	-30.2	-95.2	-54.8	-13	-41.8	V
6.81	33.9	Pk	35.7	-26.9	-95.2	-52.5	-13	-39.5	H
6.81	34.3	Pk	35.7	-26.9	-95.2	-52.1	-13	-39.1	V

10.1.14. LTE BAND 71 AND 5G NR n71

LIMITS

FCC: §27.53 (g)
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.

QPSK LTE BAND 71 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/26/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE71 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 673MHz										
1.346178	37.98	Pk	29.1	-34.8	1.3	-95.2	-61.62	-13	-48.62	H
1.346178	38.88	Pk	29.1	-34.8	1.3	-95.2	-60.72	-13	-47.72	V
1.991511	43.16	Pk	31.2	-34.8	.6	-95.2	-55.04	-13	-42.04	V
1.992	45.75	Pk	31.2	-34.8	.6	-95.2	-52.45	-13	-39.45	H
2.692089	38.81	Pk	32.4	-34.6	.5	-95.2	-58.09	-13	-45.09	H
2.692089	40.62	Pk	32.4	-34.6	.5	-95.2	-56.28	-13	-43.28	V
Mid Channel, 680.5MHz										
1.360844	39.86	Pk	29.1	-34.9	1.1	-95.2	-60.04	-13	-47.04	H
1.360844	40.59	Pk	29.1	-34.9	1.1	-95.2	-59.31	-13	-46.31	V
2.014489	44.85	Pk	31.3	-34.8	.6	-95.2	-53.25	-13	-40.25	H
2.014978	42.56	Pk	31.3	-34.8	.6	-95.2	-55.54	-13	-42.54	V
2.722889	41.25	Pk	32.5	-34.6	.5	-95.2	-55.55	-13	-42.55	H
2.722889	39.48	Pk	32.5	-34.6	.5	-95.2	-57.32	-13	-44.32	V
High Channel, 688MHz										
1.376	39.99	Pk	28.8	-34.9	1	-95.2	-60.31	-13	-47.31	H
1.376	40.44	Pk	28.8	-34.9	1	-95.2	-59.86	-13	-46.86	V
2.036978	47.16	Pk	31.3	-34.8	.6	-95.2	-50.94	-13	-37.94	H
2.036978	44.38	Pk	31.3	-34.8	.6	-95.2	-53.72	-13	-40.72	V
2.752223	40.46	Pk	32.5	-34.5	.6	-95.2	-56.14	-13	-43.14	H
2.752223	39.34	Pk	32.5	-34.5	.6	-95.2	-57.26	-13	-44.26	V

BPSK 5G NR n71 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/26/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	n71 BPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 680.5MHz										
1.346667	54.21	Pk	28.9	-45.2	1.1	-95.2	-56.19	-13	-43.19	H
1.346667	59.88	Pk	28.9	-45.2	1.1	-95.2	-50.52	-13	-37.52	V
2.049689	50.57	Pk	31.2	-44.5	.5	-95.2	-57.43	-13	-44.43	H
2.049689	50.92	Pk	31.2	-44.5	.5	-95.2	-57.08	-13	-44.08	V
2.733156	49.88	Pk	31.9	-43.9	.5	-95.2	-56.82	-13	-43.82	H
2.733156	51.54	Pk	31.9	-43.9	.5	-95.2	-55.16	-13	-42.16	V

10.2. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 2

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

All tests above 1GHz were done with a Resolution Bandwidth of 1MHz, and a Video Bandwidth of 3MHz

RESULTS

Both QPSK and 16QAM modes are tested, widest QPSK bandwidths results are reported as worst case for LTE bands.

Both BPSK and 16QAM modes are tested, widest BPSK bandwidths results are reported as worst case for 5G NRs

10.2.1. LTE BAND 5 AND 5G NR n5

LIMITS

FCC: §22.917(a)
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.

QPSK LTE BAND 5 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/27/2022
Test Engineer:	26120
Configuration:	EUT only
Mode	LTE5 QPSK 10MHz
Chamber #:	Chamber

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 829MHz										
1.658089	40.66	Pk	28.3	-34.9	.7	-95.2	-60.44	-13	-47.44	H
1.658089	40.43	Pk	28.3	-34.9	.7	-95.2	-60.67	-13	-47.67	V
2.487245	41.85	Pk	32.7	-34.8	.5	-95.2	-54.95	-13	-41.95	H
2.487245	40.21	Pk	32.7	-34.8	.5	-95.2	-56.59	-13	-43.59	V
3.315912	39.2	Pk	32.6	-33.8	.5	-95.2	-56.7	-13	-43.7	H
3.315912	39.18	Pk	32.6	-33.8	.5	-95.2	-56.72	-13	-43.72	V
Mid Channel, 836.5MHz										
1.673245	41.44	Pk	28.4	-34.9	.7	-95.2	-59.56	-13	-46.56	H
1.673245	41.06	Pk	28.4	-34.9	.7	-95.2	-59.94	-13	-46.94	V
2.509245	40.64	Pk	32.7	-34.7	.5	-95.2	-56.06	-13	-43.06	H
2.509245	39.33	Pk	32.7	-34.7	.5	-95.2	-57.37	-13	-44.37	V
3.346223	38.76	Pk	32.5	-33.7	.4	-95.2	-57.24	-13	-44.24	H
3.346223	38.22	Pk	32.5	-33.7	.4	-95.2	-57.78	-13	-44.78	V
High Channel, 844MHz										
1.687911	40.33	Pk	28.7	-34.9	.7	-95.2	-60.37	-13	-47.37	H
1.687911	39.74	Pk	28.7	-34.9	.7	-95.2	-60.96	-13	-47.96	V
2.532223	38.99	Pk	32.6	-34.7	.5	-95.2	-57.81	-13	-44.81	H
2.532223	38.97	Pk	32.6	-34.7	.5	-95.2	-57.83	-13	-44.83	V
3.376045	38.39	Pk	32.6	-33.6	.5	-95.2	-57.31	-13	-44.31	H
3.376045	39.56	Pk	32.6	-33.6	.5	-95.2	-56.14	-13	-43.14	V

BPSK 5G NR n5 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/22/2022
Test Engineer:	27661
Configuration:	EUT only
Mode	n5 BPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345(dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 834MHz										
1.659556	41.7	Pk	28.2	-34.9	.7	-95.2	-59.5	-13	-46.5	V
1.6752	42.52	Pk	28.4	-34.9	.7	-95.2	-58.48	-13	-45.48	H
2.474045	47.3	Pk	32.6	-34.8	.5	-95.2	-49.6	-13	-36.6	H
2.474045	45.52	Pk	32.6	-34.8	.5	-95.2	-51.38	-13	-38.38	V
3.344267	41.7	Pk	32.5	-33.7	.4	-95.2	-54.3	-13	-41.3	H
3.363823	40.76	Pk	32.5	-33.7	.5	-95.2	-55.14	-13	-42.14	V
Mid Channel, 836.5MHz										
1.690845	42.65	Pk	28.8	-34.9	.6	-95.2	-58.05	-13	-45.05	H
1.694756	41.84	Pk	28.8	-34.9	.6	-95.2	-58.86	-13	-45.86	V
2.481378	44.8	Pk	32.6	-34.8	.5	-95.2	-52.1	-13	-39.1	H
2.481378	42.65	Pk	32.6	-34.8	.5	-95.2	-54.25	-13	-41.25	V
3.334978	40.73	Pk	32.6	-33.7	.5	-95.2	-55.07	-13	-42.07	V
3.335956	41.92	Pk	32.6	-33.7	.5	-95.2	-53.88	-13	-40.88	H
High Channel, 839MHz										
1.682533	42.07	Pk	28.7	-34.9	.7	-95.2	-58.63	-13	-45.63	H
1.686445	42.06	Pk	28.7	-34.9	.7	-95.2	-58.64	-13	-45.64	V
2.488711	49.64	Pk	32.7	-34.8	.5	-95.2	-47.16	-13	-34.16	H
2.488711	42.98	Pk	32.7	-34.8	.5	-95.2	-53.82	-13	-40.82	V
3.334489	41.33	Pk	32.6	-33.7	.5	-95.2	-54.47	-13	-41.47	V
3.340356	42.18	Pk	32.5	-33.7	.4	-95.2	-53.82	-13	-40.82	H

10.2.2. LTE BAND 7 AND 5G NR n7

LIMITS

FCC: §27.53 (m)
At least 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)(6) of this section.

QPSK LTE BAND 7 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/19/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE7 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2510MHz										
5.020313	35.78	Pk	34	-30.8	.8	-95.2	-55.42	-25	-30.42	H
5.020313	37.41	Pk	34	-30.8	.8	-95.2	-53.79	-25	-28.79	V
7.53	33.83	Pk	35.8	-27	.3	-95.2	-52.27	-25	-27.27	H
7.53	33.31	Pk	35.8	-27	.3	-95.2	-52.79	-25	-27.79	V
10.040156	32.17	Pk	37.1	-24.9	.7	-95.2	-50.13	-25	-25.13	H
10.040156	31.97	Pk	37.1	-24.9	.7	-95.2	-50.33	-25	-25.33	V
Mid Channel, 2535MHz										
5.07	36.39	Pk	34.1	-30.6	.7	-95.2	-54.61	-25	-29.61	V
5.070469	35.16	Pk	34.1	-30.6	.7	-95.2	-55.84	-25	-30.84	H
7.605	32.28	Pk	35.9	-27	.4	-95.2	-53.62	-25	-28.62	H
7.605	33.34	Pk	35.9	-27	.4	-95.2	-52.56	-25	-27.56	V
10.14	30.5	Pk	37.2	-24.8	.7	-95.2	-51.6	-25	-26.6	H
10.14	33.35	Pk	37.2	-24.8	.7	-95.2	-48.75	-25	-23.75	V
High Channel, 2560MHz										
5.120156	36.5	Pk	34.2	-30.7	.8	-95.2	-54.4	-25	-29.4	H
5.120156	35.49	Pk	34.2	-30.7	.8	-95.2	-55.41	-25	-30.41	V
7.68	34.92	Pk	35.9	-26.8	.5	-95.2	-50.68	-25	-25.68	H
7.68	34.08	Pk	35.9	-26.8	.5	-95.2	-51.52	-25	-26.52	V
10.240313	30.63	Pk	37.3	-25	.8	-95.2	-51.47	-25	-26.47	H
10.240313	31.55	Pk	37.3	-25	.8	-95.2	-50.55	-25	-25.55	V

BPSK 5G NR n7 (50.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/25/2022
Test Engineer:	27927
Configuration:	EUT Only
Mode	n7 BPSK 50MHz
Chamber #:	Chamber G

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345(dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2525MHz										
5.041875	48.21	Pk	34.1	-41.6	.6	-95.2	-53.89	-25	-28.89	H
5.041875	45.79	Pk	34.1	-41.6	.6	-95.2	-56.31	-25	-31.31	V
7.559531	41.93	Pk	35.8	-38.2	.3	-95.2	-55.37	-25	-30.37	H
7.559531	44.15	Pk	35.8	-38.2	.3	-95.2	-53.15	-25	-28.15	V
10.078125	45.18	Pk	37.4	-37	.7	-95.2	-48.92	-25	-23.92	H
10.078125	46.72	Pk	37.4	-37	.7	-95.2	-47.38	-25	-22.38	V
Mid Channel, 2535MHz										
5.069531	45.11	Pk	34.2	-41.6	.7	-95.2	-56.79	-25	-31.79	H
5.069531	46.69	Pk	34.2	-41.6	.7	-95.2	-55.21	-25	-30.21	V
7.603125	42.3	Pk	35.7	-38.1	.4	-95.2	-54.9	-25	-29.9	H
7.603125	44.82	Pk	35.7	-38.1	.4	-95.2	-52.38	-25	-27.38	V
10.139063	43.49	Pk	37.4	-36.4	.7	-95.2	-50.01	-25	-25.01	H
10.139063	44.73	Pk	37.4	-36.4	.7	-95.2	-48.77	-25	-23.77	V
High Channel, 2545MHz										
5.100469	47.43	Pk	34.2	-41.4	.8	-95.2	-54.17	-25	-29.17	H
5.100469	45.88	Pk	34.2	-41.4	.8	-95.2	-55.72	-25	-30.72	V
7.651875	44.65	Pk	35.8	-38	.3	-95.2	-52.45	-25	-27.45	H
7.651875	43.29	Pk	35.8	-38	.3	-95.2	-53.81	-25	-28.81	V
10.201875	42.73	Pk	37.4	-36.1	.8	-95.2	-50.37	-25	-25.37	H
10.201875	44.23	Pk	37.4	-36.1	.8	-95.2	-48.87	-25	-23.87	V

10.2.3. LTE BAND 12 AND 5G NR n12

LIMITS

FCC: §27.53 (g)
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.

QPSK LTE BAND 12 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/27/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE12 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 704MHz										
1.407778	39.43	Pk	28.8	-34.9	1	-95.2	-60.87	-13	-47.87	H
1.408267	39.09	Pk	28.8	-34.9	1	-95.2	-61.21	-13	-48.21	V
2.096134	42.01	Pk	31.2	-34.9	.6	-95.2	-56.29	-13	-43.29	V
2.098089	44.1	Pk	31.2	-34.9	.6	-95.2	-54.2	-13	-41.2	H
2.816267	38.69	Pk	32.3	-34.5	.5	-95.2	-58.21	-13	-45.21	H
2.816267	39.88	Pk	32.3	-34.5	.5	-95.2	-57.02	-13	-44.02	V
Mid Channel, 707.5MHz										
1.415111	39.37	Pk	28.9	-34.9	.9	-95.2	-60.93	-13	-47.93	H
1.415111	39.84	Pk	28.9	-34.9	.9	-95.2	-60.46	-13	-47.46	V
2.107378	43.98	Pk	31.2	-34.8	.6	-95.2	-54.22	-13	-41.22	V
2.109334	40.58	Pk	31.2	-34.8	.6	-95.2	-57.62	-13	-44.62	H
2.829956	40.36	Pk	32.3	-34.4	.5	-95.2	-56.44	-13	-43.44	H
2.829956	39.4	Pk	32.3	-34.4	.5	-95.2	-57.4	-13	-44.4	V
High Channel, 711MHz										
1.421956	39.31	Pk	29	-34.9	.9	-95.2	-60.89	-13	-47.89	H
1.421956	40.06	Pk	29	-34.9	.9	-95.2	-60.14	-13	-47.14	V
2.1196	40.97	Pk	31.2	-34.8	.5	-95.2	-57.33	-13	-44.33	H
2.1196	43.88	Pk	31.2	-34.8	.5	-95.2	-54.42	-13	-41.42	V
2.844134	39.79	Pk	32.2	-34.4	.6	-95.2	-57.01	-13	-44.01	H
2.844134	39.05	Pk	32.2	-34.4	.6	-95.2	-57.75	-13	-44.75	V

BPSK 5G NR n12 (15.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/21/2022
Test Engineer:	27661
Configuration:	EUT Only
Mode	n12 BPSK 15MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF80402 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 706.5MHz										
1.417067	42.08	Pk	29	-34.9	.9	-95.2	-58.12	-13	-45.12	V
1.420733	41.84	Pk	29	-34.9	.9	-95.2	-58.36	-13	-45.36	H
2.099067	45.9	Pk	31.2	-34.9	.6	-95.2	-52.4	-13	-39.4	H
2.105422	42.22	Pk	31.2	-34.9	.6	-95.2	-56.08	-13	-43.08	V
2.833867	41.79	Pk	32.3	-34.4	.5	-95.2	-55.01	-13	-42.01	H
2.833867	41.67	Pk	32.3	-34.4	.5	-95.2	-55.13	-13	-42.13	V
Mid Channel, 707.5MHz										
1.4112	42.11	Pk	28.8	-34.9	1	-95.2	-58.19	-13	-45.19	V
1.413156	41.98	Pk	28.9	-34.9	.9	-95.2	-58.32	-13	-45.32	H
2.095156	41.39	Pk	31.2	-34.8	.6	-95.2	-56.81	-13	-43.81	V
2.102	53.12	Pk	31.2	-34.9	.6	-95.2	-45.18	-13	-32.18	H
2.827023	41.98	Pk	32.3	-34.4	.5	-95.2	-54.82	-13	-41.82	H
2.837289	41.2	Pk	32.2	-34.4	.5	-95.2	-55.7	-13	-42.7	V
High Channel, 708.5MHz										
1.421956	41.43	Pk	29	-34.9	.9	-95.2	-58.77	-13	-45.77	V
1.423911	41.82	Pk	29	-34.9	.9	-95.2	-58.38	-13	-45.38	H
2.104445	42.14	Pk	31.2	-34.9	.6	-95.2	-56.16	-13	-43.16	V
2.104934	52.44	Pk	31.2	-34.9	.6	-95.2	-45.86	-13	-32.86	H
2.851467	42.94	Pk	32.2	-34.4	.6	-95.2	-53.86	-13	-40.86	H
2.851467	41.26	Pk	32.2	-34.4	.6	-95.2	-55.54	-13	-42.54	V

10.2.4. LTE BAND 13

LIMITS

FCC: §27.53
(c) 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.
(f) Emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

QPSK LTE BAND 13 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/27/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE13 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 782MHz										
*1.564222	40.66	Pk	27.8	-34.9	.8	-95.2	-60.84	-40	-20.84	H
*1.564222	38.96	Pk	27.8	-34.9	.8	-95.2	-62.54	-40	-22.54	V
2.345956	39.95	Pk	31.8	-34.8	.6	-95.2	-57.65	-13	-44.65	H
2.345956	40.89	Pk	31.8	-34.8	.6	-95.2	-56.71	-13	-43.71	V
3.124267	39.68	Pk	32.9	-34.1	.5	-95.2	-56.22	-13	-43.22	H
3.124267	40.6	Pk	32.9	-34.1	.5	-95.2	-55.3	-13	-42.3	V

*** Emissions in the GPS band were wideband emissions therefore the -40dBm/MHz limit was used.**

10.2.5. LTE BAND 14

LIMITS

FCC: §90.543 Emission Limitations. (Band 14)
(e) For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:
(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.

(f) For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation

QPSK LTE BAND 14 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/27/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE14 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 793										
1.586222	39.56	Pk	27.8	-34.9	.8	-95.2	-61.94	-40	-21.94	H
1.586222	39.39	Pk	27.8	-34.9	.8	-95.2	-62.11	-40	-22.11	V
2.3792	39.1	Pk	31.9	-34.8	.6	-95.2	-58.4	-13	-45.4	H
2.3792	40.54	Pk	31.9	-34.8	.6	-95.2	-56.96	-13	-43.96	V
3.172178	40.22	Pk	32.7	-34	.5	-95.2	-55.78	-13	-42.78	H
3.172178	39.2	Pk	32.7	-34	.5	-95.2	-56.8	-13	-43.8	V

*** Emissions in the GPS band were wideband emissions therefore the -40dBm/MHz limit was used.**

BPSK 5G NR n14 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/27/2022
Test Engineer:	27927
Configuration:	EUT Only
Mode	n14 BPSK 10MHz
Chamber #:	Chamber G

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 793MHz										
1.576933	50.85	Pk	27.6	-45	.8	-95.2	-60.95	-40	-20.95	H
1.576933	55.2	Pk	27.6	-45	.8	-95.2	-56.6	-40	-16.6	V
2.365022	56.98	Pk	31.9	-44.3	.5	-95.2	-50.12	-13	-37.12	H
2.365022	50.31	Pk	31.9	-44.3	.5	-95.2	-56.79	-13	-43.79	V
3.172667	48.26	Pk	32.6	-42.6	.5	-95.2	-56.44	-13	-43.44	H
3.172667	46.5	Pk	32.6	-42.6	.5	-95.2	-58.2	-13	-45.2	V

*** Emissions in the GPS band were wideband emissions therefore the -40dBm/MHz limit was used.**

10.2.6. LTE BAND 17

LIMITS

FCC: §27.53 (g)
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.

QPSK LTE BAND 17 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/27/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE17 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 709MHz										
1.418533	41.24	Pk	29	-34.9	.9	-95.2	-58.96	-13	-45.96	H
1.419022	39.84	Pk	29	-34.9	.9	-95.2	-60.36	-13	-47.36	V
2.113734	48.43	Pk	31.2	-34.9	.6	-95.2	-49.87	-13	-36.87	H
2.113734	40.23	Pk	31.2	-34.9	.6	-95.2	-58.07	-13	-45.07	V
2.836311	39.84	Pk	32.2	-34.4	.5	-95.2	-57.06	-13	-44.06	H
2.836311	39.51	Pk	32.2	-34.4	.5	-95.2	-57.39	-13	-44.39	V
Mid Channel, 710MHz										
1.42	40.23	Pk	29	-34.9	.9	-95.2	-59.97	-13	-46.97	H
1.42	40.18	Pk	29	-34.9	.9	-95.2	-60.02	-13	-47.02	V
2.116667	47.55	Pk	31.2	-34.9	.5	-95.2	-50.85	-13	-37.85	H
2.116667	40.62	Pk	31.2	-34.9	.5	-95.2	-57.78	-13	-44.78	V
2.840223	39.49	Pk	32.2	-34.4	.6	-95.2	-57.31	-13	-44.31	H
2.840223	39.38	Pk	32.2	-34.4	.6	-95.2	-57.42	-13	-44.42	V
High Channel, 711MHz										
1.422445	41.64	Pk	29	-34.9	.9	-95.2	-58.56	-13	-45.56	V
1.423911	42.49	Pk	29	-34.9	.9	-95.2	-57.71	-13	-44.71	H
2.1196	40.98	Pk	31.2	-34.8	.5	-95.2	-57.32	-13	-44.32	V
2.120089	47.72	Pk	31.2	-34.8	.5	-95.2	-50.58	-13	-37.58	H
2.844134	40.18	Pk	32.2	-34.4	.6	-95.2	-56.62	-13	-43.62	H
2.844134	38.92	Pk	32.2	-34.4	.6	-95.2	-57.88	-13	-44.88	V

10.2.7. LTE BAND 25 AND 5G NR n25

LIMITS

FCC: §24.238(a)
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.

QPSK LTE BAND 25 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/28/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE25 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.721875	40.7	Pk	33.4	-32.2	-95.2	-53.3	-13	-40.3	H
3.722344	38.34	Pk	33.4	-32.2	-95.2	-55.66	-13	-42.66	V
5.58	36.47	Pk	34.8	-29.6	-95.2	-53.53	-13	-40.53	H
5.58	35.73	Pk	34.8	-29.6	-95.2	-54.27	-13	-41.27	V
7.44	32.81	Pk	35.8	-26.3	-95.2	-52.89	-13	-39.89	V
7.440469	33.36	Pk	35.7	-26.3	-95.2	-52.44	-13	-39.44	H
Mid Channel, 1882.5MHz									
3.765	37.24	Pk	33.5	-32	-95.2	-56.46	-13	-43.46	H
3.765	37.61	Pk	33.5	-32	-95.2	-56.09	-13	-43.09	V
5.6475	35.72	Pk	35	-30.1	-95.2	-54.58	-13	-41.58	H
5.6475	36.09	Pk	35	-30.1	-95.2	-54.21	-13	-41.21	V
7.53	31.83	Pk	35.8	-26.1	-95.2	-53.67	-13	-40.67	H
7.530469	35.06	Pk	35.8	-26.1	-95.2	-50.44	-13	-37.44	V
High Channel, 1905MHz									
3.808594	39.46	Pk	33.6	-31.8	-95.2	-53.94	-13	-40.94	V
3.809063	39.81	Pk	33.6	-31.8	-95.2	-53.59	-13	-40.59	H
5.715	36.65	Pk	34.9	-29.2	-95.2	-52.85	-13	-39.85	H
5.715938	34.51	Pk	34.9	-29.2	-95.2	-54.99	-13	-41.99	V
7.62	33.68	Pk	35.8	-26.5	-95.2	-52.22	-13	-39.22	H
7.62	34.78	Pk	35.8	-26.5	-95.2	-51.12	-13	-38.12	V

BPSK 5G NR n25 (40.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/18/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	n25 BPSK 40MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1870MHz									
3.740156	38.87	Pk	33.5	-32.2	-95.2	-55.03	-13	-42.03	H
3.740156	38.15	Pk	33.5	-32.2	-95.2	-55.75	-13	-42.75	V
5.61	35.44	Pk	35	-29.7	-95.2	-54.46	-13	-41.46	H
5.61	35.32	Pk	35	-29.7	-95.2	-54.58	-13	-41.58	V
7.480313	33.38	Pk	35.7	-26.2	-95.2	-52.32	-13	-39.32	H
7.480313	31.16	Pk	35.7	-26.2	-95.2	-54.54	-13	-41.54	V
Mid Channel, 1882.5MHz									
3.765	38.24	Pk	33.5	-32	-95.2	-55.46	-13	-42.46	H
3.765	37.55	Pk	33.5	-32	-95.2	-56.15	-13	-43.15	V
5.6475	36.6	Pk	35	-30.1	-95.2	-53.7	-13	-40.7	H
5.6475	36.06	Pk	35	-30.1	-95.2	-54.24	-13	-41.24	V
7.53	33.8	Pk	35.8	-26.1	-95.2	-51.7	-13	-38.7	H
7.53	32.5	Pk	35.8	-26.1	-95.2	-53	-13	-40	V
High Channel, 1895MHz									
3.789844	38.3	Pk	33.6	-31.9	-95.2	-55.2	-13	-42.2	H
3.790313	37.48	Pk	33.6	-31.9	-95.2	-56.02	-13	-43.02	V
5.685	36.18	Pk	34.9	-29.7	-95.2	-53.82	-13	-40.82	H
5.685	37.31	Pk	34.9	-29.7	-95.2	-52.69	-13	-39.69	V
7.580156	34.26	Pk	35.8	-26.2	-95.2	-51.34	-13	-38.34	H
7.580156	32.91	Pk	35.8	-26.2	-95.2	-52.69	-13	-39.69	V

10.2.8. LTE BAND 26 AND 5G NR n26 (FCC PART 90S)

LIMITS

FCC: §90.691
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.

QPSK LTE BAND 26 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/28/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE26 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 819MHz										
1.638045	39.79	Pk	28.4	-34.9	.7	-95.2	-61.21	-13	-48.21	H
1.638045	40.24	Pk	28.4	-34.9	.7	-95.2	-60.76	-13	-47.76	V
2.456934	40.47	Pk	32.4	-34.7	.6	-95.2	-56.43	-13	-43.43	H
2.456934	39.91	Pk	32.4	-34.7	.6	-95.2	-56.99	-13	-43.99	V
3.275823	40.4	Pk	32.8	-33.8	.5	-95.2	-55.3	-13	-42.3	H
3.276312	39.86	Pk	32.8	-33.8	.5	-95.2	-55.84	-13	-42.84	V

BPSK 5G NR n26 Part 90s (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/27/2022
Test Engineer:	27927
Configuration:	EUT Only
Mode	n26 BPSK 10MHz
Chamber #:	Chamber G

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	limit	Margin (dB)	Polarity
Mid Channel, 819MHz										
1.638045	51.56	Pk	28.7	-45	.7	-95.2	-59.24	-13	-46.24	H
1.638533	51.88	Pk	28.7	-44.9	.7	-95.2	-58.82	-13	-45.82	V
2.456934	51.45	Pk	32.3	-44.3	.5	-95.2	-55.25	-13	-42.25	H
2.456934	49.34	Pk	32.3	-44.3	.5	-95.2	-57.36	-13	-44.36	V
3.277778	47.15	Pk	32.8	-42.3	.8	-95.2	-56.75	-13	-43.75	H
3.277778	48.77	Pk	32.8	-42.3	.8	-95.2	-55.13	-13	-42.13	V

10.2.9. LTE BAND 26 AND 5G NR n26 (FCC PART 22H)

LIMITS

FCC: §22.917(a)
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.

QPSK LTE BAND 26 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	7/15/2022
Test Engineer:	26120
Configuration:	EUT only
Mode	LTE26 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 831.5MHz										
1.662978	40.71	Pk	28.5	-34.9	.7	-95.2	-60.19	-13	-47.19	H
1.662978	40.99	Pk	28.5	-34.9	.7	-95.2	-59.91	-13	-46.91	V
2.494578	42.2	Pk	32.7	-34.7	.5	-95.2	-54.5	-13	-41.5	H
2.494578	39.74	Pk	32.7	-34.7	.5	-95.2	-56.96	-13	-43.96	V
3.326178	39.86	Pk	33.1	-33.8	.5	-95.2	-55.54	-13	-42.54	H
3.326178	40.98	Pk	33.1	-33.8	.5	-95.2	-54.42	-13	-41.42	V
Mid Channel, 836.5MHz										
1.673245	40.77	Pk	28.6	-34.8	.7	-95.2	-59.93	-13	-46.93	H
1.673245	41.64	Pk	28.6	-34.8	.7	-95.2	-59.06	-13	-46.06	V
2.509245	40.4	Pk	32.7	-34.7	.5	-95.2	-56.3	-13	-43.3	H
2.509245	40.55	Pk	32.7	-34.7	.5	-95.2	-56.15	-13	-43.15	V
3.346223	40.73	Pk	33.1	-33.7	.4	-95.2	-54.67	-13	-41.67	H
3.346223	39.34	Pk	33.1	-33.7	.4	-95.2	-56.06	-13	-43.06	V
High Channel, 841.5MHz										
1.684	41.98	Pk	28.8	-34.8	.7	-95.2	-58.52	-13	-45.52	H
1.684	40.02	Pk	28.8	-34.8	.7	-95.2	-60.48	-13	-47.48	V
2.5244	40.98	Pk	32.7	-34.6	.5	-95.2	-55.62	-13	-42.62	H
2.5244	40.34	Pk	32.7	-34.6	.5	-95.2	-56.26	-13	-43.26	V
3.366267	40.59	Pk	33.1	-33.8	.5	-95.2	-54.81	-13	-41.81	H
3.366267	40.36	Pk	33.1	-33.8	.5	-95.2	-55.04	-13	-42.04	V

BPSK 5G NR n26 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	7/8/2022
Test Engineer:	26120
Configuration:	EUT only
Mode	N26 BPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 834.0MHz										
1.658089	41.02	Pk	28.4	-34.8	.7	-95.2	-59.88	-13	-46.88	H
1.658089	40.22	Pk	28.4	-34.8	.7	-95.2	-60.68	-13	-47.68	V
2.487245	40.88	Pk	32.6	-34.8	.5	-95.2	-56.02	-13	-43.02	H
2.487245	42.43	Pk	32.6	-34.8	.5	-95.2	-54.47	-13	-41.47	V
3.315912	39.34	Pk	33.1	-33.7	.5	-95.2	-55.96	-13	-42.96	H
3.315912	40.06	Pk	33.1	-33.7	.5	-95.2	-55.24	-13	-42.24	V
Mid Channel, 836.5MHz										
1.673245	42.12	Pk	28.6	-34.8	.7	-95.2	-58.58	-13	-45.58	H
1.673245	38.8	Pk	28.6	-34.8	.7	-95.2	-61.9	-13	-48.9	V
2.509245	41.53	Pk	32.7	-34.7	.5	-95.2	-55.17	-13	-42.17	H
2.509245	40.9	Pk	32.7	-34.7	.5	-95.2	-55.8	-13	-42.8	V
3.346223	38.72	Pk	33.1	-33.7	.4	-95.2	-56.68	-13	-43.68	H
3.346223	38.43	Pk	33.1	-33.7	.4	-95.2	-56.97	-13	-43.97	V
High Channel, 839.0MHz										
1.6664	42.67	Pk	28.5	-34.9	.7	-95.2	-58.23	-13	-45.23	H
1.666889	42.3	Pk	28.5	-34.9	.7	-95.2	-58.6	-13	-45.6	V
2.532223	39.91	Pk	32.8	-34.6	.5	-95.2	-56.59	-13	-43.59	H
2.532223	40.15	Pk	32.8	-34.6	.5	-95.2	-56.35	-13	-43.35	V
3.376045	40.44	Pk	33.1	-33.7	.5	-95.2	-54.86	-13	-41.86	H
3.376045	38.25	Pk	33.1	-33.7	.5	-95.2	-57.05	-13	-44.05	V

10.2.10. LTE BAND 30 AND 5G NR N30

LIMITS

FCC: §27.53 (a)
For mobile and portable stations operating in the 2305-2315 MHz: by a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

QPSK LTE BAND 30 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	6/7/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE30 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.62	33.83	RMS	34.3	-29.1	-95.2	-56.17	-40	-16.17	H
4.62	34.79	RMS	34.3	-29.1	-95.2	-55.21	-40	-15.21	V
6.93	30.88	RMS	35.8	-26	-95.2	-54.52	-40	-14.52	H
6.93	31.31	RMS	35.8	-26	-95.2	-54.09	-40	-14.09	V
9.24	30.48	RMS	36.4	-23.6	-95.2	-51.92	-40	-11.92	H
9.24	29.49	RMS	36.4	-23.6	-95.2	-52.91	-40	-12.91	V

BPSK 5G NR n30 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	6/7/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	n30_10MHz_BPSK
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	limit	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.62	33.87	RMS	34.3	-29.1	-95.2	-56.13	-40	-16.13	H
4.62	33.42	RMS	34.3	-29.1	-95.2	-56.58	-40	-16.58	V
6.93	33.51	RMS	35.8	-26	-95.2	-51.89	-40	-11.89	H
6.93	30.44	RMS	35.8	-26	-95.2	-54.96	-40	-14.96	V
9.24	29.72	RMS	36.4	-23.6	-95.2	-52.68	-40	-12.68	H
9.24	29.05	RMS	36.4	-23.6	-95.2	-53.35	-40	-13.35	V

10.2.11. LTE BAND 41 AND 5G NR n41

LIMITS

FCC: §27.53 (m)
At least 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)(6) of this section.

QPSK LTE BAND 41 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/19/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE41 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2506MHz										
5.011875	35.13	Pk	34.1	-30.8	.8	-95.2	-55.97	-25	-30.97	H
5.011875	34.6	Pk	34.1	-30.8	.8	-95.2	-56.5	-25	-31.5	V
7.517813	32.85	Pk	35.7	-27	.3	-95.2	-53.35	-25	-28.35	H
7.517813	33.87	Pk	35.7	-27	.3	-95.2	-52.33	-25	-27.33	V
10.02375	31.8	Pk	37.1	-24.8	.6	-95.2	-50.5	-25	-25.5	V
10.024219	31.79	Pk	37.2	-24.8	.6	-95.2	-50.41	-25	-25.41	H
Mid Channel, 2593MHz										
5.18625	38.33	Pk	34.2	-30.7	.8	-95.2	-52.57	-25	-27.57	H
5.18625	37.53	Pk	34.2	-30.7	.8	-95.2	-53.37	-25	-28.37	V
7.778906	33.43	Pk	35.9	-26.9	.3	-95.2	-52.47	-25	-27.47	H
7.778906	34.37	Pk	35.9	-26.9	.3	-95.2	-51.53	-25	-26.53	V
10.372031	31.53	Pk	37.6	-24.9	.8	-95.2	-50.17	-25	-25.17	H
10.372031	32.4	Pk	37.6	-24.9	.8	-95.2	-49.3	-25	-24.3	V
High Channel, 2680MHz										
5.360156	35.65	Pk	34.5	-30.1	.5	-95.2	-54.65	-25	-29.65	H
5.360156	35.24	Pk	34.5	-30.1	.5	-95.2	-55.06	-25	-30.06	V
8.04	34.01	Pk	35.9	-26.3	.4	-95.2	-51.19	-25	-26.19	H
8.04	32.68	Pk	35.9	-26.3	.4	-95.2	-52.52	-25	-27.52	V
10.719844	31.05	Pk	38	-24.1	.6	-95.2	-49.65	-25	-24.65	H
10.719844	34.66	Pk	38	-24.1	.6	-95.2	-46.04	-25	-21.04	V

BPSK LTE BAND n41 (100.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/21/2022
Test Engineer:	27661
Configuration:	EUT Only
Mode	n41 QPSK 100MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345(dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2506MHz										
5.088281	38.25	Pk	34.2	-30.5	.8	-95.2	-52.45	-25	-27.45	H
5.089219	38.54	Pk	34.2	-30.5	.8	-95.2	-52.16	-25	-27.16	V
7.728281	35.24	Pk	35.8	-26.8	.3	-95.2	-50.66	-25	-25.66	V
7.760625	38.2	Pk	35.9	-26.9	.3	-95.2	-47.7	-25	-22.7	H
10.130625	34.33	Pk	37.2	-24.9	.7	-95.2	-47.87	-25	-22.87	V
10.162031	35.02	Pk	37.2	-24.9	.5	-95.2	-47.38	-25	-22.38	H
Mid Channel, 2593MHz										
5.172656	39.71	Pk	34.2	-30.6	.7	-95.2	-51.19	-25	-26.19	H
5.180156	39.52	Pk	34.2	-30.6	.7	-95.2	-51.38	-25	-26.38	V
7.787344	35.84	Pk	35.9	-26.8	.4	-95.2	-49.86	-25	-24.86	H
7.801875	35.68	Pk	35.9	-26.7	.4	-95.2	-49.92	-25	-24.92	V
10.288125	34.4	Pk	37.4	-24.9	.7	-95.2	-47.6	-25	-22.6	H
10.325625	35.02	Pk	37.5	-24.9	.6	-95.2	-46.98	-25	-21.98	V
High Channel, 2680MHz										
5.288438	38.18	Pk	34.2	-30.2	.4	-95.2	-52.62	-25	-27.62	V
5.302031	38.38	Pk	34.3	-30.4	.6	-95.2	-52.32	-25	-27.32	H
7.77375	39.61	Pk	35.8	-26.9	.3	-95.2	-46.39	-25	-21.39	V
7.943906	35.18	Pk	35.8	-26.5	.2	-95.2	-50.52	-25	-25.52	H
10.538906	34.02	Pk	37.8	-24.4	.5	-95.2	-47.28	-25	-22.28	V
10.583906	34.65	Pk	37.9	-24.2	.9	-95.2	-45.95	-25	-20.95	H

10.2.12. LTE BAND 66 AND 5G NR n66

LIMITS

FCC: §27.53 (h)
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.

QPSK LTE BAND 66 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/28/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE66 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1720MHz									
3.422344	38.52	Pk	32.6	-26.1	-95.2	-50.18	-13	-37.18	H
3.422344	33.46	Pk	32.6	-26.1	-95.2	-55.24	-13	-42.24	V
5.160469	32.69	Pk	34.4	-23.7	-95.2	-51.81	-13	-38.81	V
5.160469	33.38	Pk	34.4	-23.7	-95.2	-51.12	-13	-38.12	H
6.880781	30.45	Pk	35.5	-20.8	-95.2	-50.05	-13	-37.05	H
6.880781	29.33	Pk	35.5	-20.8	-95.2	-51.17	-13	-38.17	V
Mid Channel, 1745MHz									
3.490781	34.56	Pk	32.5	-25.6	-95.2	-53.74	-13	-40.74	H
3.490781	33.78	Pk	32.5	-25.6	-95.2	-54.52	-13	-41.52	V
5.235469	31.69	Pk	34.5	-23.9	-95.2	-52.91	-13	-39.91	H
5.235469	33.08	Pk	34.5	-23.9	-95.2	-51.52	-13	-38.52	V
6.980156	28.95	Pk	35.4	-20	-95.2	-50.85	-13	-37.85	H
6.980156	32.35	Pk	35.4	-20	-95.2	-47.45	-13	-34.45	V
High Channel, 1770MHz									
3.540469	34.57	Pk	32.7	-24.9	-95.2	-52.83	-13	-39.83	H
3.540469	33.21	Pk	32.7	-24.9	-95.2	-54.19	-13	-41.19	V
5.31	31.26	Pk	34.6	-23	-95.2	-52.34	-13	-39.34	V
5.31	32.23	Pk	34.6	-23	-95.2	-51.37	-13	-38.37	H
7.080469	31.17	Pk	35.5	-20.1	-95.2	-48.63	-13	-35.63	H
7.080469	29.96	Pk	35.5	-20.1	-95.2	-49.84	-13	-36.84	V

BPSK 5G NR n66 (40.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/18/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	n66 BPSK 40MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1730MHz									
3.459844	37.65	Pk	32.8	-33	-95.2	-57.75	-13	-44.75	V
3.460313	37.97	Pk	32.8	-33	-95.2	-57.43	-13	-44.43	H
5.19	34.41	Pk	34.2	-29.1	-95.2	-55.69	-13	-42.69	H
5.19	34.6	Pk	34.2	-29.1	-95.2	-55.5	-13	-42.5	V
6.920156	32.82	Pk	35.8	-26.2	-95.2	-52.78	-13	-39.78	H
6.920156	32.63	Pk	35.8	-26.2	-95.2	-52.97	-13	-39.97	V
Mid Channel, 1745MHz									
3.489844	38.01	Pk	32.9	-32.9	-95.2	-57.19	-13	-44.19	H
3.489844	39.63	Pk	32.9	-32.9	-95.2	-55.57	-13	-42.57	V
5.235	33.96	Pk	34.2	-28.8	-95.2	-55.84	-13	-42.84	V
5.235469	33.77	Pk	34.2	-28.9	-95.2	-56.13	-13	-43.13	H
6.980156	32.51	Pk	35.8	-26.3	-95.2	-53.19	-13	-40.19	H
6.980156	32.2	Pk	35.8	-26.3	-95.2	-53.5	-13	-40.5	V
High Channel, 1760MHz									
3.519844	37.62	Pk	33.1	-32.8	-95.2	-57.28	-13	-44.28	H
3.519844	37.69	Pk	33.1	-32.8	-95.2	-57.21	-13	-44.21	V
5.28	34.1	Pk	34.3	-29.3	-95.2	-56.1	-13	-43.1	H
5.28	33.95	Pk	34.3	-29.3	-95.2	-56.25	-13	-43.25	V
7.040156	33.3	Pk	35.7	-26.8	-95.2	-53	-13	-40	H
7.040156	33.27	Pk	35.7	-26.8	-95.2	-53.03	-13	-40.03	V

10.2.13. 5G NR n70

LIMITS

FCC: §27.53 (h)
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.

BPSK 5G NR n70 (15.0MHZ BANDWIDTH based on 5G NR n70 maximum frequency range)

Project #:	14040868
Date:	5/9/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	N70 BPSK 15MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 1702.5MHz									
3.405	38.51	Pk	32.5	-33	-95.2	-57.19	-13	-44.19	H
3.405	37.55	Pk	32.5	-33	-95.2	-58.15	-13	-45.15	V
5.086406	45.77	Pk	34.2	-30.5	-95.2	-45.73	-13	-32.73	H
5.086406	46.19	Pk	34.2	-30.5	-95.2	-45.31	-13	-32.31	V
6.810469	33.51	Pk	35.7	-26.9	-95.2	-52.89	-13	-39.89	H
6.810469	32.04	Pk	35.7	-26.9	-95.2	-54.36	-13	-41.36	V

10.2.14. LTE BAND 71 AND 5G NR n71

LIMITS

FCC: §27.53 (g)
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.

QPSK LTE BAND 71 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/26/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE71 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 673MHz										
1.346178	39.49	Pk	29.1	-34.8	1.3	-95.2	-60.11	-13	-47.11	H
1.346178	38.84	Pk	29.1	-34.8	1.3	-95.2	-60.76	-13	-47.76	V
2.018889	39.23	Pk	31.3	-34.8	.6	-95.2	-58.87	-13	-45.87	H
2.018889	38.58	Pk	31.3	-34.8	.6	-95.2	-59.52	-13	-46.52	V
2.692089	38.43	Pk	32.4	-34.6	.5	-95.2	-58.47	-13	-45.47	H
2.692578	38.52	Pk	32.4	-34.6	.5	-95.2	-58.38	-13	-45.38	V
Mid Channel, 680.5MHz										
1.360844	40.01	Pk	29.1	-34.9	1.1	-95.2	-59.89	-13	-46.89	V
1.361333	40.4	Pk	29.1	-34.9	1.1	-95.2	-59.5	-13	-46.5	H
2.014489	44.16	Pk	31.3	-34.8	.6	-95.2	-53.94	-13	-40.94	H
2.014978	44.51	Pk	31.3	-34.8	.6	-95.2	-53.59	-13	-40.59	V
2.7224	40.19	Pk	32.5	-34.6	.5	-95.2	-56.61	-13	-43.61	H
2.723378	42.45	Pk	32.4	-34.6	.5	-95.2	-54.45	-13	-41.45	V
High Channel, 688MHz										
1.376	41.46	Pk	28.8	-34.9	1	-95.2	-58.84	-13	-45.84	H
1.376	39.81	Pk	28.8	-34.9	1	-95.2	-60.49	-13	-47.49	V
2.036978	45.67	Pk	31.3	-34.8	.6	-95.2	-52.43	-13	-39.43	V
2.037467	46.38	Pk	31.3	-34.8	.6	-95.2	-51.72	-13	-38.72	H
2.752223	38.92	Pk	32.5	-34.5	.6	-95.2	-57.68	-13	-44.68	H
2.752223	39.3	Pk	32.5	-34.5	.6	-95.2	-57.3	-13	-44.3	V

BPSK 5G NR n71 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/26/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	n71 BPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 680.5MHz										
1.346667	62.55	Pk	28.9	-45.2	1.1	-95.2	-47.85	-13	-34.85	V
1.347156	57.88	Pk	28.9	-45.2	1	-95.2	-52.62	-13	-39.62	H
2.019867	51.08	Pk	31.5	-44.4	.5	-95.2	-56.52	-13	-43.52	V
2.020356	54.29	Pk	31.5	-44.4	.5	-95.2	-53.31	-13	-40.31	H
2.732667	51.54	Pk	31.9	-43.9	.5	-95.2	-55.16	-13	-42.16	H
2.732667	48.98	Pk	31.9	-43.9	.5	-95.2	-57.72	-13	-44.72	V

10.3. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 3

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

All tests above 1GHz were done with a Resolution Bandwidth of 1MHz, and a Video Bandwidth of 3MHz

RESULTS

Both QPSK and 16QAM modes are tested, widest QPSK bandwidths results are reported as worst case for LTE bands.

Both BPSK and 16QAM modes are tested, widest BPSK bandwidths results are reported as worst case for 5G NRs

10.3.1. LTE BAND 7 AND 5G NR n7

LIMITS

FCC: §27.53 (m)
At least 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)(6) of this section.

QPSK LTE BAND 7 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/29/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE7 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2510MHz										
5.019844	35.34	Pk	34	-30.8	.8	-95.2	-55.86	-25	-30.86	H
5.019844	35.31	Pk	34	-30.8	.8	-95.2	-55.89	-25	-30.89	V
7.53	32.41	Pk	35.8	-27	.3	-95.2	-53.69	-25	-28.69	H
7.53	34.51	Pk	35.8	-27	.3	-95.2	-51.59	-25	-26.59	V
10.040156	32.39	Pk	37.1	-24.9	.7	-95.2	-49.91	-25	-24.91	H
10.040156	31.1	Pk	37.1	-24.9	.7	-95.2	-51.2	-25	-26.2	V
Mid Channel, 2535MHz										
5.07	35.81	Pk	34.1	-30.6	.7	-95.2	-55.19	-25	-30.19	H
5.07	36.5	Pk	34.1	-30.6	.7	-95.2	-54.5	-25	-29.5	V
7.605469	32.78	Pk	35.9	-27	.4	-95.2	-53.12	-25	-28.12	H
7.605469	34.72	Pk	35.9	-27	.4	-95.2	-51.18	-25	-26.18	V
10.14	33.68	Pk	37.2	-24.8	.7	-95.2	-48.42	-25	-23.42	H
10.14	31.81	Pk	37.2	-24.8	.7	-95.2	-50.29	-25	-25.29	V
High Channel, 2560MHz										
5.120156	34.77	Pk	34.2	-30.7	.8	-95.2	-56.13	-25	-31.13	H
5.121094	36.83	Pk	34.2	-30.7	.8	-95.2	-54.07	-25	-29.07	V
7.68	32.24	Pk	35.9	-26.8	.5	-95.2	-53.36	-25	-28.36	H
7.68	34.59	Pk	35.9	-26.8	.5	-95.2	-51.01	-25	-26.01	V
10.240313	32.12	Pk	37.3	-25	.8	-95.2	-49.98	-25	-24.98	H
10.240781	33.29	Pk	37.3	-25	.8	-95.2	-48.81	-25	-23.81	V

BPSK 5G NR n7 (50.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/26/2022
Test Engineer:	45258
Configuration:	EUT Only
Mode	n7 BPSK 50MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2525MHz										
5.000156	33.95	Pk	34.2	-24.5	.8	-95.2	-50.75	-25	-25.75	H
5.000156	34	Pk	34.2	-24.5	.8	-95.2	-50.7	-25	-25.7	V
7.500469	28.42	Pk	35.7	-20.2	.4	-95.2	-50.88	-25	-25.88	H
7.500469	28.67	Pk	35.7	-20.2	.4	-95.2	-50.63	-25	-25.63	V
10.000313	28.68	Pk	37.2	-17.6	.5	-95.2	-46.42	-25	-21.42	H
10.000313	27.12	Pk	37.2	-17.6	.5	-95.2	-47.98	-25	-22.98	V
Mid Channel, 2535MHz										
5.069531	33.26	Pk	34.4	-23.7	.7	-95.2	-50.54	-25	-25.54	H
5.069531	34.33	Pk	34.4	-23.7	.7	-95.2	-49.47	-25	-24.47	V
7.605	30.86	Pk	35.7	-20	.4	-95.2	-48.24	-25	-23.24	H
7.605	29.87	Pk	35.7	-20	.4	-95.2	-49.23	-25	-24.23	V
10.14	29.02	Pk	37.3	-17.7	.7	-95.2	-45.88	-25	-20.88	H
10.14	29.89	Pk	37.3	-17.7	.7	-95.2	-45.01	-25	-20.01	V
High Channel, 2545MHz										
5.140313	33.52	Pk	34.3	-23.9	.8	-95.2	-50.48	-25	-25.48	H
5.140313	32.99	Pk	34.3	-23.9	.8	-95.2	-51.01	-25	-26.01	V
7.710469	31.64	Pk	35.7	-19.6	.4	-95.2	-47.06	-25	-22.06	H
7.710469	29.07	Pk	35.7	-19.6	.4	-95.2	-49.63	-25	-24.63	V
10.280625	31.2	Pk	37.5	-17.2	.7	-95.2	-43	-25	-18	H
10.280625	29.91	Pk	37.5	-17.2	.7	-95.2	-44.29	-25	-19.29	V

10.3.2. LTE BAND 25 AND 5G NR n25

LIMITS

FCC: §24.238(a)
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.

QPSK LTE BAND 25 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/29/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE25 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.72	36.88	Pk	33.3	-32.2	-95.2	-57.22	-13	-44.22	H
3.72	38.42	Pk	33.3	-32.2	-95.2	-55.68	-13	-42.68	V
5.58	38.16	Pk	34.8	-29.6	-95.2	-51.84	-13	-38.84	H
5.58	37.27	Pk	34.8	-29.6	-95.2	-52.73	-13	-39.73	V
7.440469	33.03	Pk	35.7	-26.3	-95.2	-52.77	-13	-39.77	V
7.440938	33.77	Pk	35.7	-26.3	-95.2	-52.03	-13	-39.03	H
Mid Channel, 1882.5MHz									
3.765	37.68	Pk	33.5	-32	-95.2	-56.02	-13	-43.02	H
3.765	36.8	Pk	33.5	-32	-95.2	-56.9	-13	-43.9	V
5.647031	37.56	Pk	35	-30.1	-95.2	-52.74	-13	-39.74	H
5.647031	37.34	Pk	35	-30.1	-95.2	-52.96	-13	-39.96	V
7.53	32.67	Pk	35.8	-26.1	-95.2	-52.83	-13	-39.83	H
7.53	32.78	Pk	35.8	-26.1	-95.2	-52.72	-13	-39.72	V
High Channel, 1905MHz									
3.81	37.87	Pk	33.7	-31.8	-95.2	-55.43	-13	-42.43	H
3.81	38.1	Pk	33.7	-31.8	-95.2	-55.2	-13	-42.2	V
5.715469	35.95	Pk	34.9	-29.2	-95.2	-53.55	-13	-40.55	H
5.715469	37.4	Pk	34.9	-29.2	-95.2	-52.1	-13	-39.1	V
7.62	33.79	Pk	35.8	-26.5	-95.2	-52.11	-13	-39.11	H
7.62	32.42	Pk	35.8	-26.5	-95.2	-53.48	-13	-40.48	V

BPSK 5G NR n25 (40.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/27/2022
Test Engineer:	27927
Configuration:	EUT Only
Mode	n25 BPSK 40MHz
Chamber #:	Chamber G

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1870MHz									
3.739219	47.27	Pk	33.4	-40.3	-95.2	-54.83	-13	-41.83	H
3.739219	45.55	Pk	33.4	-40.3	-95.2	-56.55	-13	-43.55	V
5.61	45.35	Pk	34.6	-39.4	-95.2	-54.65	-13	-41.65	H
5.61	46.68	Pk	34.6	-39.4	-95.2	-53.32	-13	-40.32	V
7.480313	45.2	Pk	35.8	-37.8	-95.2	-52	-13	-39	H
7.480313	44.16	Pk	35.8	-37.8	-95.2	-53.04	-13	-40.04	V
Mid Channel, 1882.5MHz									
3.765	47.4	Pk	33.5	-40.3	-95.2	-54.6	-13	-41.6	H
3.765	45.58	Pk	33.5	-40.3	-95.2	-56.42	-13	-43.42	V
5.647031	45.56	Pk	34.6	-39.3	-95.2	-54.34	-13	-41.34	H
5.647031	44.03	Pk	34.6	-39.3	-95.2	-55.87	-13	-42.87	V
7.531406	44.49	Pk	35.8	-37.8	-95.2	-52.71	-13	-39.71	H
7.531406	43.37	Pk	35.8	-37.8	-95.2	-53.83	-13	-40.83	V
High Channel, 1895MHz									
3.789844	45.53	Pk	33.5	-40.3	-95.2	-56.47	-13	-43.47	H
3.789844	44.97	Pk	33.5	-40.3	-95.2	-57.03	-13	-44.03	V
5.685	46.55	Pk	34.7	-39.2	-95.2	-53.15	-13	-40.15	H
5.685	45.09	Pk	34.7	-39.2	-95.2	-54.61	-13	-41.61	V
7.579219	42.62	Pk	35.8	-37.5	-95.2	-54.28	-13	-41.28	H
7.579219	43.67	Pk	35.8	-37.5	-95.2	-53.23	-13	-40.23	V

10.3.3. LTE BAND 30 AND 5G NR n30

LIMITS

FCC: §27.53 (a)
For mobile and portable stations operating in the 2305-2315 MHz: by a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

QPSK LTE BAND 30 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	6/7/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE30 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.62	34.01	RMS	34.3	-29.1	-95.2	-55.99	-40	-15.99	H
4.62	33	RMS	34.3	-29.1	-95.2	-57	-40	-17	V
6.93	32.06	RMS	35.8	-26	-95.2	-53.34	-40	-13.34	H
6.93	31.83	RMS	35.8	-26	-95.2	-53.57	-40	-13.57	V
9.24	29.81	RMS	36.4	-23.6	-95.2	-52.59	-40	-12.59	H
9.24	28.57	RMS	36.4	-23.6	-95.2	-53.83	-40	-13.83	V

BPSK 5G NR n30 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	6/7/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	5G NR n30_10MHz_BPSK
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	limit	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.62	33.52	RMS	34.3	-29.1	-95.2	-56.48	-40	-16.48	H
4.62	35.66	RMS	34.3	-29.1	-95.2	-54.34	-40	-14.34	V
6.93	31.55	RMS	35.8	-26	-95.2	-53.85	-40	-13.85	H
6.93	32.37	RMS	35.8	-26	-95.2	-53.03	-40	-13.03	V
9.24	29.4	RMS	36.4	-23.6	-95.2	-53	-40	-13	H
9.24	28.93	RMS	36.4	-23.6	-95.2	-53.47	-40	-13.47	V

10.3.4. LTE BAND 41 AND 5G NR n41

LIMITS

FCC: §27.53 (m)
At least 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)(6) of this section.

QPSK LTE BAND 41 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/29/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE41 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2506MHz										
5.011875	34.2	Pk	34.1	-30.8	.8	-95.2	-56.9	-25	-31.9	H
5.011875	34.2	Pk	34.1	-30.8	.8	-95.2	-56.9	-25	-31.9	V
7.517813	31.88	Pk	35.7	-27	.3	-95.2	-54.32	-25	-29.32	H
7.518281	34.78	Pk	35.7	-27	.3	-95.2	-51.42	-25	-26.42	V
10.02375	32.54	Pk	37.1	-24.8	.6	-95.2	-49.76	-25	-24.76	V
10.024219	32.75	Pk	37.2	-24.8	.6	-95.2	-49.45	-25	-24.45	H
Mid Channel, 2593MHz										
5.18625	35.55	Pk	34.2	-30.7	.8	-95.2	-55.35	-25	-30.35	H
5.18625	35.85	Pk	34.2	-30.7	.8	-95.2	-55.05	-25	-30.05	V
7.779375	34.14	Pk	35.9	-26.9	.3	-95.2	-51.76	-25	-26.76	H
7.779375	34.37	Pk	35.9	-26.9	.3	-95.2	-51.53	-25	-26.53	V
10.372031	31.7	Pk	37.6	-24.9	.8	-95.2	-50	-25	-25	H
10.372031	31.52	Pk	37.6	-24.9	.8	-95.2	-50.18	-25	-25.18	V
High Channel, 2680MHz										
5.360156	34.56	Pk	34.5	-30.1	.5	-95.2	-55.74	-25	-30.74	H
5.360156	34.04	Pk	34.5	-30.1	.5	-95.2	-56.26	-25	-31.26	V
8.04	31.79	Pk	35.9	-26.3	.4	-95.2	-53.41	-25	-28.41	H
8.04	32.7	Pk	35.9	-26.3	.4	-95.2	-52.5	-25	-27.5	V
10.720313	32.48	Pk	38	-24	.6	-95.2	-48.12	-25	-23.12	H
10.720313	32.2	Pk	38	-24	.6	-95.2	-48.4	-25	-23.4	V

BPSK LTE BAND n41 (100.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/26/2022
Test Engineer:	45258
Configuration:	EUT Only
Mode	n41 QPSK 100MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345(dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2546MHz										
5.0925	32.91	Pk	34.4	-23.9	.8	-95.2	-50.99	-25	-25.99	H
5.0925	33.98	Pk	34.4	-23.9	.8	-95.2	-49.92	-25	-24.92	V
7.639219	30.79	Pk	35.7	-19.6	.4	-95.2	-47.91	-25	-22.91	H
7.639219	33.05	Pk	35.7	-19.6	.4	-95.2	-45.65	-25	-20.65	V
10.185	30.54	Pk	37.3	-17.5	.6	-95.2	-44.26	-25	-19.26	H
10.185	27.87	Pk	37.3	-17.5	.6	-95.2	-46.93	-25	-21.93	V
Mid Channel, 2593MHz										
5.185313	32.3	Pk	34.4	-23.6	.8	-95.2	-51.3	-25	-26.3	H
5.185313	35.54	Pk	34.4	-23.6	.8	-95.2	-48.06	-25	-23.06	V
7.779375	29.37	Pk	35.7	-19.9	.3	-95.2	-49.73	-25	-24.73	H
7.779375	32.07	Pk	35.7	-19.9	.3	-95.2	-47.03	-25	-22.03	V
10.371563	30.85	Pk	37.5	-16.9	.8	-95.2	-42.95	-25	-17.95	H
10.371563	30.09	Pk	37.5	-16.9	.8	-95.2	-43.71	-25	-18.71	V
High Channel, 2640MHz										
5.279531	31.81	Pk	34.4	-24.3	.3	-95.2	-52.99	-25	-27.99	H
5.279531	33.62	Pk	34.4	-24.3	.3	-95.2	-51.18	-25	-26.18	V
7.92	29.92	Pk	35.8	-19.7	.2	-95.2	-48.98	-25	-23.98	H
7.92	31.72	Pk	35.8	-19.7	.2	-95.2	-47.18	-25	-22.18	V
10.560469	27.49	Pk	37.8	-17.2	.7	-95.2	-46.41	-25	-21.41	H
10.560469	30.43	Pk	37.8	-17.2	.7	-95.2	-43.47	-25	-18.47	V

10.3.5. LTE BAND 66 AND 5G NR n66

LIMITS

FCC: §27.53 (h)
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.

QPSK LTE BAND 66 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	5/2/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE66 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1720MHz									
3.441094	40.58	Pk	32.7	-33	-95.2	-54.92	-13	-41.92	H
3.441094	39.69	Pk	32.7	-33	-95.2	-55.81	-13	-42.81	V
5.16	36.06	Pk	34.2	-29.6	-95.2	-54.54	-13	-41.54	H
5.160469	35.58	Pk	34.2	-29.6	-95.2	-55.02	-13	-42.02	V
6.880313	34.02	Pk	35.9	-26.6	-95.2	-51.88	-13	-38.88	H
6.880781	34.79	Pk	35.9	-26.6	-95.2	-51.11	-13	-38.11	V
Mid Channel, 1745MHz									
3.490313	36.59	Pk	32.9	-32.9	-95.2	-58.61	-13	-45.61	H
3.490781	39.07	Pk	32.9	-32.9	-95.2	-56.13	-13	-43.13	V
5.235	35.39	Pk	34.2	-28.8	-95.2	-54.41	-13	-41.41	H
5.235	34.92	Pk	34.2	-28.8	-95.2	-54.88	-13	-41.88	V
6.981563	34.87	Pk	35.8	-26.3	-95.2	-50.83	-13	-37.83	H
6.9825	34.97	Pk	35.7	-26.3	-95.2	-50.83	-13	-37.83	V
High Channel, 1770MHz									
3.54	38.09	Pk	33.1	-32.8	-95.2	-56.81	-13	-43.81	H
3.54	37.84	Pk	33.1	-32.8	-95.2	-57.06	-13	-44.06	V
5.31	33.85	Pk	34.4	-29.7	-95.2	-56.65	-13	-43.65	H
5.31	36.22	Pk	34.4	-29.7	-95.2	-54.28	-13	-41.28	V
7.08	33.34	Pk	35.7	-26.7	-95.2	-52.86	-13	-39.86	H
7.08	34.03	Pk	35.7	-26.7	-95.2	-52.17	-13	-39.17	V

BPSK 5G NR n66 (40.0MHZ BANDWIDTH)

Project #:	14040868
Date:	5/5/2022
Test Engineer:	45258
Configuration:	EUT Only
Mode	LTE66 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1720MHz									
3.460313	35.38	Pk	32.6	-26.1	-95.2	-53.32	-13	-40.32	H
3.460313	35.56	Pk	32.6	-26.1	-95.2	-53.14	-13	-40.14	V
5.19	34.25	Pk	34.4	-24	-95.2	-50.55	-13	-37.55	H
5.19	33.65	Pk	34.4	-24	-95.2	-51.15	-13	-38.15	V
6.920156	30.76	Pk	35.5	-20.8	-95.2	-49.74	-13	-36.74	H
6.920156	32.12	Pk	35.5	-20.8	-95.2	-48.38	-13	-35.38	V
Mid Channel, 1745MHz									
3.490313	35.63	Pk	32.6	-25.6	-95.2	-52.57	-13	-39.57	H
3.490313	34.65	Pk	32.6	-25.6	-95.2	-53.55	-13	-40.55	V
5.235	32.95	Pk	34.5	-23.9	-95.2	-51.65	-13	-38.65	H
5.235	33.81	Pk	34.5	-23.9	-95.2	-50.79	-13	-37.79	V
6.980156	31.8	Pk	35.5	-20	-95.2	-47.9	-13	-34.9	H
6.980156	30.19	Pk	35.5	-20	-95.2	-49.51	-13	-36.51	V
High Channel, 1760MHz									
3.52125	32.93	Pk	32.9	-25.4	-95.2	-54.77	-13	-41.77	H
3.52125	35.63	Pk	32.9	-25.4	-95.2	-52.07	-13	-39.07	V
5.28	32.69	Pk	34.4	-23.5	-95.2	-51.61	-13	-38.61	H
5.28	33.08	Pk	34.4	-23.5	-95.2	-51.22	-13	-38.22	V
7.040625	30.11	Pk	35.5	-19.7	-95.2	-49.29	-13	-36.29	H
7.040625	33.7	Pk	35.5	-19.7	-95.2	-45.7	-13	-32.7	V

10.3.6. 5G NR n70

LIMITS

FCC: §27.53 (h)
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.

BPSK 5G NR n70 (15.0MHZ BANDWIDTH based on 5G NR n70 maximum frequency range)

Project #:	14040868
Date:	5/9/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	n70 QPSK 15MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 1702.5MHz									
3.405	37.15	Pk	32.5	-33	-95.2	-58.55	-13	-45.55	H
3.405	38.12	Pk	32.5	-33	-95.2	-57.58	-13	-44.58	V
5.1075	36.24	Pk	34.1	-30.2	-95.2	-55.06	-13	-42.06	H
5.1075	37.38	Pk	34.1	-30.2	-95.2	-53.92	-13	-40.92	V
6.809531	35.04	Pk	35.7	-26.9	-95.2	-51.36	-13	-38.36	V
6.810469	32.4	Pk	35.7	-26.9	-95.2	-54	-13	-41	H

10.4. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 4

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

All tests above 1GHz were done with a Resolution Bandwidth of 1MHz, and a Video Bandwidth of 3MHz

RESULTS

Both QPSK and 16QAM modes are tested, widest QPSK bandwidths results are reported as worst case for LTE bands.

Both BPSK and 16QAM modes are tested, widest BPSK bandwidths results are reported as worst case for 5G NRs

10.4.1. LTE BAND 7 AND 5G NR n7

LIMITS

FCC: §27.53 (m)
At least 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)(6) of this section.

QPSK LTE BAND 7 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	5/2/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE7 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2510MHz										
5.020313	35.44	Pk	34	-30.8	.8	-95.2	-55.76	-25	-30.76	H
5.020313	36.05	Pk	34	-30.8	.8	-95.2	-55.15	-25	-30.15	V
7.53	33.41	Pk	35.8	-27	.3	-95.2	-52.69	-25	-27.69	H
7.53	33.39	Pk	35.8	-27	.3	-95.2	-52.71	-25	-27.71	V
10.040156	31.84	Pk	37.1	-24.9	.7	-95.2	-50.46	-25	-25.46	H
10.040156	30.58	Pk	37.1	-24.9	.7	-95.2	-51.72	-25	-26.72	V
Mid Channel, 2535MHz										
5.070469	36.04	Pk	34.1	-30.6	.7	-95.2	-54.96	-25	-29.96	H
5.070469	34.93	Pk	34.1	-30.6	.7	-95.2	-56.07	-25	-31.07	V
7.604063	34.99	Pk	35.9	-27	.4	-95.2	-50.91	-25	-25.91	H
7.604063	34.22	Pk	35.9	-27	.4	-95.2	-51.68	-25	-26.68	V
10.14	34.78	Pk	37.2	-24.8	.7	-95.2	-47.32	-25	-22.32	H
10.14	32.04	Pk	37.2	-24.8	.7	-95.2	-50.06	-25	-25.06	V
High Channel, 2560MHz										
5.120156	36.04	Pk	34.2	-30.7	.8	-95.2	-54.86	-25	-29.86	H
5.121094	38.7	Pk	34.2	-30.7	.8	-95.2	-52.2	-25	-27.2	V
7.680469	32.58	Pk	35.9	-26.7	.5	-95.2	-52.92	-25	-27.92	H
7.680938	35.32	Pk	35.9	-26.7	.5	-95.2	-50.18	-25	-25.18	V
10.240313	32.25	Pk	37.3	-25	.8	-95.2	-49.85	-25	-24.85	H
10.240313	32.21	Pk	37.3	-25	.8	-95.2	-49.89	-25	-24.89	V

BPSK 5G NR n7 (50.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/26/2022
Test Engineer:	45258
Configuration:	EUT only
Mode	n7 BPSK 50MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2525MHz										
5.020781	34.37	Pk	34.2	-24.2	.7	-95.2	-50.13	-25	-25.13	H
5.020781	33.6	Pk	34.2	-24.2	.7	-95.2	-50.9	-25	-25.9	V
7.53	30.65	Pk	35.6	-20.2	.3	-95.2	-48.85	-25	-23.85	H
7.53	29.56	Pk	35.6	-20.2	.3	-95.2	-49.94	-25	-24.94	V
10.040156	30.76	Pk	37.1	-17.8	.7	-95.2	-44.44	-25	-19.44	H
10.040156	28.32	Pk	37.1	-17.8	.7	-95.2	-46.88	-25	-21.88	V
Mid Channel, 2535MHz										
5.070938	33.02	Pk	34.4	-23.7	.7	-95.2	-50.78	-25	-25.78	H
5.070938	34.34	Pk	34.4	-23.7	.7	-95.2	-49.46	-25	-24.46	V
7.605469	28.87	Pk	35.7	-20	.4	-95.2	-50.23	-25	-25.23	H
7.605469	31.64	Pk	35.7	-20	.4	-95.2	-47.46	-25	-22.46	V
10.140469	30.79	Pk	37.3	-17.7	.6	-95.2	-44.21	-25	-19.21	H
10.140469	28.67	Pk	37.3	-17.7	.6	-95.2	-46.33	-25	-21.33	V
High Channel, 2545MHz										
5.139375	33.82	Pk	34.3	-23.9	.8	-95.2	-50.18	-25	-25.18	H
5.139375	31.98	Pk	34.3	-23.9	.8	-95.2	-52.02	-25	-27.02	V
7.709531	30.29	Pk	35.7	-19.6	.4	-95.2	-48.41	-25	-23.41	H
7.709531	31.59	Pk	35.7	-19.6	.4	-95.2	-47.11	-25	-22.11	V
10.280156	31.66	Pk	37.4	-17.2	.7	-95.2	-42.64	-25	-17.64	H
10.280156	28.61	Pk	37.4	-17.2	.7	-95.2	-45.69	-25	-20.69	V

10.4.2. LTE BAND 25 AND 5G NR n25

LIMITS

FCC: §24.238(a)
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.

QPSK LTE BAND 25 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	5/2/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE25 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1860MHz									
3.719531	39.31	Pk	33.3	-32.2	-95.2	-54.79	-13	-41.79	V
3.72	39.1	Pk	33.3	-32.2	-95.2	-55	-13	-42	H
5.58	37.34	Pk	34.8	-29.6	-95.2	-52.66	-13	-39.66	H
5.580469	38.43	Pk	34.8	-29.6	-95.2	-51.57	-13	-38.57	V
7.439063	34.84	Pk	35.8	-26.3	-95.2	-50.86	-13	-37.86	V
7.440469	35.19	Pk	35.7	-26.3	-95.2	-50.61	-13	-37.61	H
Mid Channel, 1882.5MHz									
3.765	39.24	Pk	33.5	-32	-95.2	-54.46	-13	-41.46	H
3.765	38.01	Pk	33.5	-32	-95.2	-55.69	-13	-42.69	V
5.647031	36.28	Pk	35	-30.1	-95.2	-54.02	-13	-41.02	H
5.647031	36.43	Pk	35	-30.1	-95.2	-53.87	-13	-40.87	V
7.53	33.88	Pk	35.8	-26.1	-95.2	-51.62	-13	-38.62	H
7.53	32.63	Pk	35.8	-26.1	-95.2	-52.87	-13	-39.87	V
High Channel, 1905MHz									
3.808125	40.31	Pk	33.6	-31.8	-95.2	-53.09	-13	-40.09	V
3.81	39.45	Pk	33.7	-31.8	-95.2	-53.85	-13	-40.85	H
5.714063	37.4	Pk	34.9	-29.2	-95.2	-52.1	-13	-39.1	H
5.715	36.19	Pk	34.9	-29.2	-95.2	-53.31	-13	-40.31	V
7.62	34.23	Pk	35.8	-26.5	-95.2	-51.67	-13	-38.67	H
7.62	33.78	Pk	35.8	-26.5	-95.2	-52.12	-13	-39.12	V

BPSK 5G NR n25 (40.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/28/2022
Test Engineer:	27927
Configuration:	EUT Only
Mode	n25 BPSK 40MHz
Chamber #:	Chamber G

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1870MHz									
3.740625	47.13	Pk	33.4	-40.4	-95.2	-55.07	-13	-42.07	H
3.740625	45.46	Pk	33.4	-40.4	-95.2	-56.74	-13	-43.74	V
5.551875	48.39	Pk	34.5	-39.8	-95.2	-52.11	-13	-39.11	H
5.551875	50.73	Pk	34.5	-39.8	-95.2	-49.77	-13	-36.77	V
7.497656	47.94	Pk	35.7	-37.8	-95.2	-49.36	-13	-36.36	H
7.497656	43.52	Pk	35.7	-37.8	-95.2	-53.78	-13	-40.78	V
Mid Channel, 1882.5MHz									
3.765	45.82	Pk	33.5	-40.3	-95.2	-56.18	-13	-43.18	H
3.765	44.49	Pk	33.5	-40.3	-95.2	-57.51	-13	-44.51	V
5.647969	45.35	Pk	34.6	-39.4	-95.2	-54.65	-13	-41.65	H
5.647969	44.07	Pk	34.6	-39.4	-95.2	-55.93	-13	-42.93	V
7.530469	44.09	Pk	35.8	-37.8	-95.2	-53.11	-13	-40.11	H
7.530469	42.18	Pk	35.8	-37.8	-95.2	-55.02	-13	-42.02	V
High Channel, 1995MHz									
3.790781	46.14	Pk	33.5	-40.4	-95.2	-55.96	-13	-42.96	H
3.790781	44.23	Pk	33.5	-40.4	-95.2	-57.87	-13	-44.87	V
5.684063	44.18	Pk	34.7	-39.2	-95.2	-55.52	-13	-42.52	H
5.684063	46.28	Pk	34.7	-39.2	-95.2	-53.42	-13	-40.42	V
7.580625	42.37	Pk	35.8	-37.5	-95.2	-54.53	-13	-41.53	H
7.580625	44.2	Pk	35.8	-37.5	-95.2	-52.7	-13	-39.7	V

10.4.3. LTE BAND 30 AND 5G NR n30

LIMITS

FCC: §27.53 (a)
For mobile and portable stations operating in the 2305-2315 MHz: by a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

QPSK LTE BAND 30 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	6/7/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE30 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.62	34.44	RMS	34.3	-29.1	-95.2	-55.56	-40	-15.56	H
4.620469	32.67	RMS	34.3	-29.1	-95.2	-57.33	-40	-17.33	V
6.93	30.59	RMS	35.8	-26	-95.2	-54.81	-40	-14.81	H
6.93	32.81	RMS	35.8	-26	-95.2	-52.59	-40	-12.59	V
9.24	29.55	RMS	36.4	-23.6	-95.2	-52.85	-40	-12.85	H
9.24	29.9	RMS	36.4	-23.6	-95.2	-52.5	-40	-12.5	V

BPSK 5G NR n30 (10.0MHZ BANDWIDTH)

Project #:	14040868
Date:	6/7/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE30 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.62	34.44	RMS	34.3	-29.1	-95.2	-55.56	-40	-15.56	H
4.620469	32.67	RMS	34.3	-29.1	-95.2	-57.33	-40	-17.33	V
6.93	30.59	RMS	35.8	-26	-95.2	-54.81	-40	-14.81	H
6.93	32.81	RMS	35.8	-26	-95.2	-52.59	-40	-12.59	V
9.24	29.55	RMS	36.4	-23.6	-95.2	-52.85	-40	-12.85	H
9.24	29.9	RMS	36.4	-23.6	-95.2	-52.5	-40	-12.5	V

10.4.4. LTE BAND 41 AND 5G NR n41

LIMITS

FCC: §27.53 (m)
At least 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)(6) of this section.

QPSK LTE BAND 41 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	5/3/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE41 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2506MHz										
5.013281	37.82	Pk	34.1	-30.8	.8	-95.2	-53.28	-25	-28.28	V
5.026875	38.23	Pk	34.1	-30.7	.7	-95.2	-52.87	-25	-27.87	H
7.473281	34.89	Pk	35.7	-26.8	.3	-95.2	-51.11	-25	-26.11	V
7.520625	36.2	Pk	35.8	-27	.3	-95.2	-49.9	-25	-24.9	H
10.02375	34.12	Pk	37.1	-24.8	.6	-95.2	-48.18	-25	-23.18	H
10.048594	34.6	Pk	37.1	-24.9	.7	-95.2	-47.7	-25	-22.7	V
Mid Channel, 2593MHz										
5.161875	38.17	Pk	34.2	-30.5	.7	-95.2	-52.63	-25	-27.63	H
5.161875	38.68	Pk	34.2	-30.5	.7	-95.2	-52.12	-25	-27.12	V
7.785	36.09	Pk	35.9	-26.8	.4	-95.2	-49.61	-25	-24.61	H
7.798594	35.55	Pk	35.9	-26.7	.4	-95.2	-50.05	-25	-25.05	V
10.359844	33.19	Pk	37.6	-24.8	.8	-95.2	-48.41	-25	-23.41	V
10.379531	34.08	Pk	37.6	-24.8	.8	-95.2	-47.52	-25	-22.52	H
High Channel, 2680MHz										
5.391094	37.44	Pk	34.4	-30	.7	-95.2	-52.66	-25	-27.66	H
5.394375	36.53	Pk	34.5	-30	.7	-95.2	-53.47	-25	-28.47	V
8.041406	35.72	Pk	35.9	-26.3	.4	-95.2	-49.48	-25	-24.48	H
8.041406	36.27	Pk	35.9	-26.3	.4	-95.2	-48.93	-25	-23.93	V
10.763906	34.01	Pk	38	-24	.9	-95.2	-46.29	-25	-21.29	V
10.768594	34.32	Pk	38	-23.9	.9	-95.2	-45.88	-25	-20.88	H

BPSK LTE BAND n41 (100.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/26/2022
Test Engineer:	45258
Configuration:	EUT Only
Mode	n41 BPSK 100MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2546MHz										
5.0925	32.39	Pk	34.4	-23.9	.8	-95.2	-51.51	-25	-26.51	H
5.0925	32.51	Pk	34.4	-23.9	.8	-95.2	-51.39	-25	-26.39	V
7.367813	30.24	Pk	35.5	-20.4	.5	-95.2	-49.36	-25	-24.36	H
7.367813	29.08	Pk	35.5	-20.4	.5	-95.2	-50.52	-25	-25.52	V
10.184063	30.85	Pk	37.3	-17.5	.6	-95.2	-43.95	-25	-18.95	H
10.184063	30.51	Pk	37.3	-17.5	.6	-95.2	-44.29	-25	-19.29	V
Mid Channel, 2593MHz										
5.186719	32.47	Pk	34.4	-23.6	.8	-95.2	-51.13	-25	-26.13	H
5.186719	33.89	Pk	34.4	-23.6	.8	-95.2	-49.71	-25	-24.71	V
7.779375	31.04	Pk	35.7	-19.9	.3	-95.2	-48.06	-25	-23.06	H
7.779375	30.65	Pk	35.7	-19.9	.3	-95.2	-48.45	-25	-23.45	V
10.3725	28.67	Pk	37.5	-16.9	.8	-95.2	-45.13	-25	-20.13	H
10.3725	31.51	Pk	37.5	-16.9	.8	-95.2	-42.29	-25	-17.29	V
High Channel, 2640MHz										
5.279531	46.96	Pk	34.4	-40.9	.3	-95.2	-54.44	-25	-29.44	H
5.279531	44.72	Pk	34.4	-40.9	.3	-95.2	-56.68	-25	-31.68	V
7.92	43.46	Pk	36	-37.7	.2	-95.2	-53.24	-25	-28.24	H
7.92	43.09	Pk	36	-37.7	.2	-95.2	-53.61	-25	-28.61	V
10.560938	45.15	Pk	37.6	-35.3	.7	-95.2	-47.05	-25	-22.05	H
10.560938	43.89	Pk	37.6	-35.3	.7	-95.2	-48.31	-25	-23.31	V

10.4.5. LTE BAND 48

LIMITS

FCC: §96.41
(e) 3.5 GHz Emissions and Interference Limits—
(2) Additional protection levels. Notwithstanding paragraph (d)(1) of this section, the conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.

QPSK LTE BAND 48 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	6/12/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE48 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	172654 HPF (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 3560MHz										
7.120528	27.44	RMS	35.6	-20.7	.5	-95.2	-52.36	-40	-12.36	V
7.120528	27.44	RMS	35.6	-20.7	.5	-95.2	-52.36	-40	-12.36	V
10.679456	23.83	RMS	38	-17.1	.6	-95.2	-49.87	-40	-9.87	H
10.679456	22.24	RMS	38	-17.1	.6	-95.2	-51.46	-40	-11.46	V
14.240588	24.91	RMS	39.1	-15.8	.8	-95.2	-46.19	-40	-6.19	H
14.240588	25.41	RMS	39.1	-15.8	.8	-95.2	-45.69	-40	-5.69	V
Mid Channel, 3625MHz										
7.250072	26.66	RMS	35.5	-20.5	.6	-95.2	-52.94	-40	-12.94	H
7.250072	27.39	RMS	35.5	-20.5	.6	-95.2	-52.21	-40	-12.21	V
10.875534	24.32	RMS	37.8	-16.7	.5	-95.2	-49.28	-40	-9.28	H
10.875534	24.35	RMS	37.8	-16.7	.5	-95.2	-49.25	-40	-9.25	V
14.500116	24.3	RMS	39.7	-16.5	.8	-95.2	-46.9	-40	-6.9	V
14.500556	23.67	RMS	39.7	-16.5	.8	-95.2	-47.53	-40	-7.53	H
High Channel, 3690MHz										
7.380056	29.35	RMS	35.8	-26.8	.7	-95.2	-56.15	-40	-16.15	H
7.380056	32.19	RMS	35.8	-26.8	.7	-95.2	-53.31	-40	-13.31	V
11.070291	31.51	RMS	37.8	-23.5	.6	-95.2	-48.79	-40	-8.79	H
11.070291	29.56	RMS	37.8	-23.5	.6	-95.2	-50.74	-40	-10.74	V
14.760084	26.83	RMS	39.9	-20.1	.8	-95.2	-47.77	-40	-7.77	H
14.760084	27.91	RMS	39.9	-20.1	.8	-95.2	-46.69	-40	-6.69	V

10.4.6. LTE BAND 66 AND 5G NR n66

LIMITS

FCC: §27.53 (h)
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.

QPSK LTE BAND 66 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	5/3/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE66 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1720MHz									
3.421875	44.8	Pk	32.6	-33	-95.2	-50.8	-13	-37.8	V
3.422344	44.42	Pk	32.6	-33	-95.2	-51.18	-13	-38.18	H
5.16	36.16	Pk	34.2	-29.6	-95.2	-54.44	-13	-41.44	H
5.16	37.38	Pk	34.2	-29.6	-95.2	-53.22	-13	-40.22	V
6.879844	34.67	Pk	35.9	-26.6	-95.2	-51.23	-13	-38.23	H
6.880313	36.27	Pk	35.9	-26.6	-95.2	-49.63	-13	-36.63	V
Mid Channel, 1745MHz									
3.489844	37.42	Pk	32.9	-32.9	-95.2	-57.78	-13	-44.78	H
3.489844	38.21	Pk	32.9	-32.9	-95.2	-56.99	-13	-43.99	V
5.235	34.03	Pk	34.2	-28.8	-95.2	-55.77	-13	-42.77	H
5.235	34.63	Pk	34.2	-28.8	-95.2	-55.17	-13	-42.17	V
6.980156	35.34	Pk	35.8	-26.3	-95.2	-50.36	-13	-37.36	H
6.980156	33.59	Pk	35.8	-26.3	-95.2	-52.11	-13	-39.11	V
High Channel, 1770MHz									
3.54	39.09	Pk	33.1	-32.8	-95.2	-55.81	-13	-42.81	H
3.54	37.7	Pk	33.1	-32.8	-95.2	-57.2	-13	-44.2	V
5.31	36.47	Pk	34.4	-29.7	-95.2	-54.03	-13	-41.03	H
5.31	34.29	Pk	34.4	-29.7	-95.2	-56.21	-13	-43.21	V
7.08	33.15	Pk	35.7	-26.7	-95.2	-53.05	-13	-40.05	H
7.08	34.93	Pk	35.7	-26.7	-95.2	-51.27	-13	-38.27	V

BPSK 5G NR n66 (40.0MHZ BANDWIDTH)

Project #:	14040868
Date:	5/5/2022
Test Engineer:	45258
Configuration:	EUT Only
Mode	n66 BPSK 40MHz
Chamber #:	Chamber A

A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1730MHz									
3.460313	33.82	Pk	32.6	-26.1	-95.2	-54.88	-13	-41.88	H
3.460313	36.36	Pk	32.6	-26.1	-95.2	-52.34	-13	-39.34	V
5.19	32.19	Pk	34.4	-24	-95.2	-52.61	-13	-39.61	H
5.19	35.6	Pk	34.4	-24	-95.2	-49.2	-13	-36.2	V
6.921563	32.65	Pk	35.5	-20.8	-95.2	-47.85	-13	-34.85	H
6.921563	33.13	Pk	35.5	-20.8	-95.2	-47.37	-13	-34.37	V
Mid Channel, 1745MHz									
3.491719	36.81	Pk	32.6	-25.6	-95.2	-51.39	-13	-38.39	H
3.491719	34.74	Pk	32.6	-25.6	-95.2	-53.46	-13	-40.46	V
5.235938	34.79	Pk	34.5	-23.9	-95.2	-49.81	-13	-36.81	H
5.235938	33.74	Pk	34.5	-23.9	-95.2	-50.86	-13	-37.86	V
6.981563	33.62	Pk	35.5	-20	-95.2	-46.08	-13	-33.08	H
6.981563	31.94	Pk	35.5	-20	-95.2	-47.76	-13	-34.76	V
High Channel, 1760MHz									
3.520781	34.57	Pk	32.9	-25.4	-95.2	-53.13	-13	-40.13	H
3.520781	33.04	Pk	32.9	-25.4	-95.2	-54.66	-13	-41.66	V
5.280469	32.18	Pk	34.4	-23.6	-95.2	-52.22	-13	-39.22	H
5.280469	33.54	Pk	34.4	-23.6	-95.2	-50.86	-13	-37.86	V
7.040156	30.55	Pk	35.5	-19.7	-95.2	-48.85	-13	-35.85	H
7.040156	29.76	Pk	35.5	-19.7	-95.2	-49.64	-13	-36.64	V

10.4.7. 5G NR n70

LIMITS

FCC: §27.53 (h)
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.

BPSK 5G NR n70 (15.0MHZ BANDWIDTH based on 5G NR n70 maximum frequency range)

Project #:	14040868
Date:	5/9/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	N70 BPSK 15MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 1702.5MHz									
3.405	39.44	Pk	32.5	-33	-95.2	-56.26	-13	-43.26	H
3.405	38.3	Pk	32.5	-33	-95.2	-57.4	-13	-44.4	V
5.107031	35.72	Pk	34.1	-30.3	-95.2	-55.68	-13	-42.68	V
5.1075	37.87	Pk	34.1	-30.2	-95.2	-53.43	-13	-40.43	H
6.81	33.43	Pk	35.7	-26.9	-95.2	-52.97	-13	-39.97	H
6.81	32.17	Pk	35.7	-26.9	-95.2	-54.23	-13	-41.23	V

10.4.8. 5G NR n77 (FCC Part 27 3450-3550MHz)

LIMITS

FCC: §27.53
Emission limits
(n) 3.45 GHz Service. The following emission limits apply to stations transmitting in the 3450-3550 MHz band:
(2) For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

BPSK 5G NR n77 (100.0MHZ BANDWIDTH)

Project #:	14040868
Date:	5/18/2022
Test Engineer:	27927
Configuration:	EUT Only
Mode	N77 BPSK 100MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB	208398 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 3500MHz										
7.002	44.49	Pk	35.7	-38.4	.5	-95.2	-52.91	-13	-39.91	H
7.002	42.8	Pk	35.7	-38.4	.5	-95.2	-54.6	-13	-41.6	V
10.501003	42.3	Pk	37.6	-35.3	.6	-95.2	-50	-13	-37	H
10.501003	43.71	Pk	37.6	-35.3	.6	-95.2	-48.59	-13	-35.59	V
14.000006	44.58	Pk	38.8	-34.9	.7	-95.2	-46.02	-13	-33.02	H
14.000006	45.94	Pk	38.8	-34.9	.7	-95.2	-44.66	-13	-31.66	V

10.4.9. 5G NR n77 (FCC Part 27 3700-3980MHz)

LIMITS

FCC: §27.53
(l) 3.7 GHz Service.The following emission limits apply to stations transmitting in the 3700-3980 MHz band:
(2) For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

BPSK 5G NR n77 (100.0MHZ BANDWIDTH)

Project #:	14040868
Date:	5/4/2022
Test Engineer:	45258
Configuration:	EUT Only
Mode	N77 BPSK 100MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 3750MHz									
7.5005	32.18	Pk	35.7	-18.8	-95.2	-46.12	-13	-33.12	H
7.5005	29.21	Pk	35.7	-18.8	-95.2	-49.09	-13	-36.09	V
11.252	29.5	Pk	37.9	-16.1	-95.2	-43.9	-13	-30.9	H
11.252	27.31	Pk	37.9	-16.1	-95.2	-46.09	-13	-33.09	V
15.002	30.22	Pk	39.8	-15.1	-95.2	-40.28	-13	-27.28	H
15.002	31.04	Pk	39.8	-15.1	-95.2	-39.46	-13	-26.46	V
Mid Channel, 3840MHz									
7.6805	31.05	Pk	35.7	-18.9	-95.2	-47.35	-13	-34.35	H
7.6805	28.94	Pk	35.7	-18.9	-95.2	-49.46	-13	-36.46	V
11.5205	30.65	Pk	38.2	-16.5	-95.2	-42.85	-13	-29.85	H
11.5205	29.19	Pk	38.2	-16.5	-95.2	-44.31	-13	-31.31	V
15.3605	30.4	Pk	40.6	-15.5	-95.2	-39.7	-13	-26.7	H
15.3605	31.73	Pk	40.6	-15.5	-95.2	-38.37	-13	-25.37	V
High Channel, 3930MHz									
7.8625	31.18	Pk	35.8	-19.6	-95.2	-47.82	-13	-34.82	H
7.8625	31.92	Pk	35.8	-19.6	-95.2	-47.08	-13	-34.08	V
11.789	30.69	Pk	38.5	-15.9	-95.2	-41.91	-13	-28.91	H
11.789	28.2	Pk	38.5	-15.9	-95.2	-44.4	-13	-31.4	V
15.723	27.38	Pk	40.9	-14.1	-95.2	-41.02	-13	-28.02	H
15.723	30.53	Pk	40.9	-14.1	-95.2	-37.87	-13	-24.87	V

10.5. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 7

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

All tests above 1GHz were done with a Resolution Bandwidth of 1MHz, and a Video Bandwidth of 3MHz.

RESULTS

Both QPSK and 16QAM modes are tested, widest QPSK bandwidths results are reported as worst case for LTE bands.

Both BPSK and 16QAM modes are tested, widest BPSK bandwidths results are reported as worst case for 5G NRs

10.5.1. LTE BAND 48

LIMITS

FCC: §96.41
(e) 3.5 GHz Emissions and Interference Limits—
(2) Additional protection levels. Notwithstanding paragraph (d)(1) of this section, the conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz

QPSK LTE BAND 48 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	6/7/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE48 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	T1792 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	limit	Margin (dB)	Polarity
Low Channel, 3560MHz										
7.139916	27.86	RMS	35.6	-20.6	.6	-95.2	-51.74	-40	-11.74	H
7.139916	25.55	RMS	35.6	-20.6	.6	-95.2	-54.05	-40	-14.05	V
10.710741	25.78	RMS	37.9	-17.1	.5	-95.2	-48.12	-40	-8.12	H
10.710741	24.61	RMS	37.9	-17.1	.5	-95.2	-49.29	-40	-9.29	V
14.279363	23.73	RMS	39.2	-15.9	.7	-95.2	-47.47	-40	-7.47	H
14.279363	22.83	RMS	39.2	-15.9	.7	-95.2	-48.37	-40	-8.37	V
Mid Channel, 3625MHz										
7.250072	26.1	RMS	35.5	-20.5	.6	-95.2	-53.5	-40	-13.5	H
7.250072	28.38	RMS	35.5	-20.5	.6	-95.2	-51.22	-40	-11.22	V
10.875534	23.93	RMS	37.8	-16.7	.5	-95.2	-49.67	-40	-9.67	H
10.875534	24.77	RMS	37.8	-16.7	.5	-95.2	-48.83	-40	-8.83	V
14.500556	25.87	RMS	39.7	-16.5	.8	-95.2	-45.33	-40	-5.33	H
14.500556	24.87	RMS	39.7	-16.5	.8	-95.2	-46.33	-40	-6.33	V
High Channel, 3690MHz										
7.360669	27.46	RMS	35.6	-20.3	.7	-95.2	-51.74	-40	-11.74	H
7.360669	26.2	RMS	35.6	-20.3	.7	-95.2	-53	-40	-13	V
11.040328	24.64	RMS	37.8	-16.4	.6	-95.2	-48.56	-40	-8.56	H
11.040328	24.86	RMS	37.8	-16.4	.6	-95.2	-48.34	-40	-8.34	V
14.719547	24.35	RMS	39.9	-15.7	.9	-95.2	-45.75	-40	-5.75	V
14.719988	24.08	RMS	39.9	-15.7	.9	-95.2	-46.02	-40	-6.02	H

10.5.2. 5G NR n77 (FCC Part 27 3450-3550MHz)

LIMITS

FCC: §27.53
Emission limits
(n) 3.45 GHz Service. The following emission limits apply to stations transmitting in the 3450-3550 MHz band:
(2) For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

BPSK 5G NR n77 (100.0MHZ BANDWIDTH)

Project #:	14040868
Date:	5/18/2022
Test Engineer:	27927
Configuration:	EUT Only
Mode	N77 BPSK 100MHz
Chamber #:	Chamber G

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	T1792 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 3500MHz										
7.001119	42.93	Pk	35.7	-38.4	.5	-95.2	-54.47	-13	-41.47	H
7.001119	45.33	Pk	35.7	-38.4	.5	-95.2	-52.07	-13	-39.07	V
10.500122	44.05	Pk	37.6	-35.3	.6	-95.2	-48.25	-13	-35.25	H
10.500122	42.94	Pk	37.6	-35.3	.6	-95.2	-49.36	-13	-36.36	V
14.000888	43.73	Pk	38.9	-34.9	.7	-95.2	-46.77	-13	-33.77	H
14.000888	44.47	Pk	38.9	-34.9	.7	-95.2	-46.03	-13	-33.03	V

10.5.3. 5G NR n77 (FCC Part 27 3700-3980MHz)

LIMITS

FCC: §27.53
(l) 3.7 GHz Service.The following emission limits apply to stations transmitting in the 3700-3980 MHz band:
(2) For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

BPSK 5G NR n77 (100.0MHZ BANDWIDTH)

Project #:	14040868
Date:	5/18/2022
Test Engineer:	27927
Configuration:	EUT Only
Mode	N77 BPSK 100MHz
Chamber #:	Chamber G

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 3750MHz									
7.6965	35.71	Pk	35.8	-26.7	-95.2	-50.39	-13	-37.39	H
7.71	35.41	Pk	35.9	-26.8	-95.2	-50.69	-13	-37.69	V
11.4485	35.13	Pk	38.2	-22.4	-95.2	-44.27	-13	-31.27	H
11.4565	33.2	Pk	38.2	-22.4	-95.2	-46.2	-13	-33.2	V
15.4	33.44	Pk	40.4	-19.5	-95.2	-40.86	-13	-27.86	H
15.4405	33.25	Pk	40.4	-18.6	-95.2	-40.15	-13	-27.15	V
Mid Channel, 3840MHz									
7.6535	34.79	Pk	35.8	-26.4	-95.2	-51.01	-13	-38.01	V
7.6695	35.5	Pk	35.8	-26.5	-95.2	-50.4	-13	-37.4	H
11.502	33.28	Pk	38.3	-21.8	-95.2	-45.42	-13	-32.42	H
11.5055	32.17	Pk	38.3	-21.9	-95.2	-46.63	-13	-33.63	V
15.314	32.28	Pk	40.1	-19.3	-95.2	-42.12	-13	-29.12	V
15.333	34.02	Pk	40.1	-19.3	-95.2	-40.38	-13	-27.38	H
High Channel, 3930MHz									
7.8785	34.67	Pk	35.9	-26.2	-95.2	-50.83	-13	-37.83	V
7.8875	35.12	Pk	35.9	-26.2	-95.2	-50.38	-13	-37.38	H
11.78	33.07	Pk	38.4	-20.9	-95.2	-44.63	-13	-31.63	V
11.7915	32.46	Pk	38.4	-20.8	-95.2	-45.14	-13	-32.14	H
15.719	33.53	Pk	40.4	-19	-95.2	-40.27	-13	-27.27	H
15.7445	32.59	Pk	40.3	-18.6	-95.2	-40.91	-13	-27.91	V

10.6. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 8

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

All tests above 1GHz were done with a Resolution Bandwidth of 1MHz, and a Video Bandwidth of 3MHz.

RESULTS

Both QPSK and 16QAM modes are tested, widest QPSK bandwidths results are reported as worst case for LTE bands.

Both BPSK and 16QAM modes are tested, widest BPSK bandwidths results are reported as worst case for 5G NRs

10.6.1. LTE BAND 48

LIMITS

FCC: §96.41
(e) 3.5 GHz Emissions and Interference Limits—
(2) Additional protection levels. Notwithstanding paragraph (d)(1) of this section, the conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz

QPSK LTE BAND 48 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	6/7/2022
Test Engineer:	45258
Configuration:	EUT Only
Mode	LTE48 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	T1792 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	limit	Margin (dB)	Polarity
Low Channel, 3560MHz										
7.120088	28.91	RMS	35.6	-20.7	.5	-95.2	-50.89	-40	-10.89	H
7.120088	27.54	RMS	35.6	-20.7	.5	-95.2	-52.26	-40	-12.26	V
10.680778	25.61	RMS	38	-17.1	.6	-95.2	-48.09	-40	-8.09	H
10.680778	26.19	RMS	38	-17.1	.6	-95.2	-47.51	-40	-7.51	V
14.240588	25.01	RMS	39.1	-15.8	.8	-95.2	-46.09	-40	-6.09	V
14.241469	24.51	RMS	39.1	-15.8	.8	-95.2	-46.59	-40	-6.59	H
Mid Channel, 3625MHz										
7.250072	27.54	RMS	35.5	-20.5	.6	-95.2	-52.06	-40	-12.06	H
7.250072	26.71	RMS	35.5	-20.5	.6	-95.2	-52.89	-40	-12.89	V
10.875094	25.3	RMS	37.8	-16.7	.5	-95.2	-48.3	-40	-8.3	H
10.875094	27.05	RMS	37.8	-16.7	.5	-95.2	-46.55	-40	-6.55	V
14.499234	24.03	RMS	39.7	-16.5	.8	-95.2	-47.17	-40	-7.17	V
14.500116	23.67	RMS	39.7	-16.5	.8	-95.2	-47.53	-40	-7.53	H
High Channel, 3690MHz										
7.380056	24.44	RMS	35.6	-20.4	.7	-95.2	-54.86	-40	-14.86	H
7.380056	29.09	RMS	35.6	-20.4	.7	-95.2	-50.21	-40	-10.21	V
11.070731	26.56	RMS	37.8	-16.5	.6	-95.2	-46.74	-40	-6.74	H
11.070731	24.79	RMS	37.8	-16.5	.6	-95.2	-48.51	-40	-8.51	V
14.670197	24.66	RMS	39.9	-15.4	.9	-95.2	-45.14	-40	-5.14	H
14.670197	24.91	RMS	39.9	-15.4	.9	-95.2	-44.89	-40	-4.89	V

10.6.2. 5G NR n77 (FCC Part 27 3450-3550MHz)

LIMITS

FCC: §27.53
Emission limits
(n) 3.45 GHz Service. The following emission limits apply to stations transmitting in the 3450-3550 MHz band:
(2) For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

BPSK 5G NR n77 (100.0MHZ BANDWIDTH)

Project #:	14040868
Date:	5/10/2022
Test Engineer:	27927
Configuration:	EUT Only
Mode	N77 BPSK 100MHz
Chamber #:	Chamber G

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	T1792 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 3500MHz										
6.999797	45.16	Pk	35.7	-38.3	.5	-95.2	-52.14	-13	-39.14	H
6.999797	42.5	Pk	35.7	-38.3	.5	-95.2	-54.8	-13	-41.8	V
10.501003	44.28	Pk	37.6	-35.3	.6	-95.2	-48.02	-13	-35.02	H
10.501003	43.22	Pk	37.6	-35.3	.6	-95.2	-49.08	-13	-36.08	V
14.000888	43.1	Pk	38.9	-34.9	.7	-95.2	-47.4	-13	-34.4	H
14.000888	44.37	Pk	38.9	-34.9	.7	-95.2	-46.13	-13	-33.13	V

10.6.3. 5G NR n77 (FCC Part 27 3700-3980MHz)

LIMITS

FCC: §27.53
(l) 3.7 GHz Service.The following emission limits apply to stations transmitting in the 3700-3980 MHz band:
(2) For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

BPSK 5G NR n77 (100.0MHZ BANDWIDTH)

Project #:	14040868
Date:	4/23/2022
Test Engineer:	27661
Configuration:	EUT Only
Mode	N77 BPSK 100MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 3750MHz									
7.5025	35.26	Pk	35.8	-26.9	-95.2	-51.04	-13	-38.04	V
7.5095	35.69	Pk	35.7	-26.9	-95.2	-50.71	-13	-37.71	H
11.212	34.46	Pk	37.9	-22.2	-95.2	-45.04	-13	-32.04	V
11.2315	33.87	Pk	38	-22.7	-95.2	-46.03	-13	-33.03	H
14.979	32.79	Pk	39.6	-19	-95.2	-41.81	-13	-28.81	V
15.001	32.61	Pk	39.7	-19.3	-95.2	-42.19	-13	-29.19	H
Mid Channel, 3840MHz									
7.6405	35.23	Pk	35.9	-26.3	-95.2	-50.37	-13	-37.37	V
7.66325	36.66	Pk	35.8	-26.4	-95.2	-49.14	-13	-36.14	H
11.5345	33.22	Pk	38.3	-22.1	-95.2	-45.78	-13	-32.78	H
11.5365	31.95	Pk	38.3	-22	-95.2	-46.95	-13	-33.95	V
15.327	31.91	Pk	40.1	-19.2	-95.2	-42.39	-13	-29.39	V
15.3315	32.04	Pk	40.1	-19.3	-95.2	-42.36	-13	-29.36	H
High Channel, 3930MHz									
7.8625	35.45	Pk	35.9	-26.4	-95.2	-50.25	-13	-37.25	H
7.867	35.85	Pk	35.9	-26.3	-95.2	-49.75	-13	-36.75	V
11.771	33.79	Pk	38.4	-21.1	-95.2	-44.11	-13	-31.11	V
11.778	32.07	Pk	38.4	-20.9	-95.2	-45.63	-13	-32.63	H
15.723	32.2	Pk	40.4	-19	-95.2	-41.6	-13	-28.6	H
15.748	31.93	Pk	40.3	-18.6	-95.2	-41.57	-13	-28.57	V

10.7. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 9

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

All tests above 1GHz were done with a Resolution Bandwidth of 1MHz, and a Video Bandwidth of 3MHz.

RESULTS

Both QPSK and 16QAM modes are tested, widest QPSK bandwidths results are reported as worst case for LTE bands.

Both BPSK and 16QAM modes are tested, widest BPSK bandwidths results are reported as worst case for 5G NRs

10.7.1. LTE BAND 48

LIMITS

FCC: §96.41
(e) 3.5 GHz Emissions and Interference Limits—
(2) Additional protection levels. Notwithstanding paragraph (d)(1) of this section, the conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz

QPSK LTE BAND 48 (20.0MHZ BANDWIDTH)

Project #:	14040868
Date:	6/7/2022
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE48 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 80402 (dB/m)	Amp/Cbl (dB)	T1792 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	limit	Margin (dB)	Polarity
Low Channel, 3560MHz										
7.120088	25.77	RMS	35.6	-20.7	.5	-95.2	-54.03	-40	-14.03	H
7.120088	27.41	RMS	35.6	-20.7	.5	-95.2	-52.39	-40	-12.39	V
10.680338	24.67	RMS	38	-17.1	.6	-95.2	-49.03	-40	-9.03	H
10.680338	24.49	RMS	38	-17.1	.6	-95.2	-49.21	-40	-9.21	V
14.280244	24.68	RMS	39.2	-15.9	.7	-95.2	-46.52	-40	-6.52	H
14.280244	24.55	RMS	39.2	-15.9	.7	-95.2	-46.65	-40	-6.65	V
Mid Channel, 3625MHz										
7.250513	26.27	RMS	35.5	-20.5	.6	-95.2	-53.33	-40	-13.33	H
7.250513	26.83	RMS	35.5	-20.5	.6	-95.2	-52.77	-40	-12.77	V
10.874653	23.8	RMS	37.8	-16.7	.5	-95.2	-49.8	-40	-9.8	H
10.874653	24.88	RMS	37.8	-16.7	.5	-95.2	-48.72	-40	-8.72	V
14.500556	23.98	RMS	39.7	-16.5	.8	-95.2	-47.22	-40	-7.22	H
14.500997	24.72	RMS	39.7	-16.5	.8	-95.2	-46.48	-40	-6.48	V
High Channel, 3690MHz										
7.380938	26.34	RMS	35.6	-20.4	.7	-95.2	-52.96	-40	-12.96	H
7.380938	24.62	RMS	35.6	-20.4	.7	-95.2	-54.68	-40	-14.68	V
11.071172	24.72	RMS	37.8	-16.5	.6	-95.2	-48.58	-40	-8.58	H
11.071172	24.99	RMS	37.8	-16.5	.6	-95.2	-48.31	-40	-8.31	V
14.761406	24.97	RMS	39.8	-15.4	.8	-95.2	-45.03	-40	-5.03	V
14.761847	25.22	RMS	39.8	-15.4	.8	-95.2	-44.78	-40	-4.78	H

10.7.2. 5G NR n77 (FCC Part 27 3450-3550MHz)

LIMITS

FCC: §27.53
Emission limits
(n) 3.45 GHz Service. The following emission limits apply to stations transmitting in the 3450-3550 MHz band:
(2) For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

BPSK 5G NR n77 (100.0MHZ BANDWIDTH)

Project #:	14040868
Date:	5/10/2022
Test Engineer:	27927
Configuration:	EUT Only
Mode	N77 BPSK 100MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	T1792 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 3500MHz										
6.999356	42.46	Pk	35.7	-38.3	.5	-95.2	-54.84	-13	-41.84	H
6.999356	44.01	Pk	35.7	-38.3	.5	-95.2	-53.29	-13	-40.29	V
10.500122	43.06	Pk	37.6	-35.3	.6	-95.2	-49.24	-13	-36.24	H
10.500122	43.91	Pk	37.6	-35.3	.6	-95.2	-48.39	-13	-35.39	V
13.999566	43.68	Pk	38.8	-34.9	.7	-95.2	-46.92	-13	-33.92	H
13.999566	45.25	Pk	38.8	-34.9	.7	-95.2	-45.35	-13	-32.35	V

10.7.3. 5G NR n77 (FCC Part 27 3700-3980MHz)

LIMITS

FCC: §27.53
(l) 3.7 GHz Service.The following emission limits apply to stations transmitting in the 3700-3980 MHz band:
(2) For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

BPSK 5G NR n77 (100.0MHZ BANDWIDTH)

Project #:	14040868
Date:	5/4/2022
Test Engineer:	45258
Configuration:	EUT Only
Mode	N77 BPSK 100MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 3750MHz									
7.5	30.19	Pk	35.7	-18.8	-95.2	-48.11	-13	-35.11	H
7.5	31.22	Pk	35.7	-18.8	-95.2	-47.08	-13	-34.08	V
11.25	29.11	Pk	38	-16.2	-95.2	-44.29	-13	-31.29	H
11.25	26.54	Pk	38	-16.2	-95.2	-46.86	-13	-33.86	V
15.0005	29.41	Pk	39.8	-15.1	-95.2	-41.09	-13	-28.09	H
15.0005	26.55	Pk	39.8	-15.1	-95.2	-43.95	-13	-30.95	V
Mid Channel, 3840MHz									
7.6805	30.02	Pk	35.7	-18.9	-95.2	-48.38	-13	-35.38	H
7.6805	29.27	Pk	35.7	-18.9	-95.2	-49.13	-13	-36.13	V
11.5205	29.74	Pk	38.2	-16.5	-95.2	-43.76	-13	-30.76	H
11.5205	27.47	Pk	38.2	-16.5	-95.2	-46.03	-13	-33.03	V
15.3605	29.97	Pk	40.6	-15.5	-95.2	-40.13	-13	-27.13	H
15.3605	30.75	Pk	40.6	-15.5	-95.2	-39.35	-13	-26.35	V
High Channel, 3930MHz									
7.8605	29.29	Pk	35.8	-19.6	-95.2	-49.71	-13	-36.71	H
7.8605	30.54	Pk	35.8	-19.6	-95.2	-48.46	-13	-35.46	V
11.79	30.67	Pk	38.5	-15.9	-95.2	-41.93	-13	-28.93	H
11.79	29.35	Pk	38.5	-15.9	-95.2	-43.25	-13	-30.25	V
15.7205	30.5	Pk	40.9	-14.2	-95.2	-38	-13	-25	H
15.7205	29.6	Pk	40.9	-14.2	-95.2	-38.9	-13	-25.9	V

11. SETUP PHOTOS

Please refer to 14040868-EP1V1 for setup photos.

END OF REPORT