

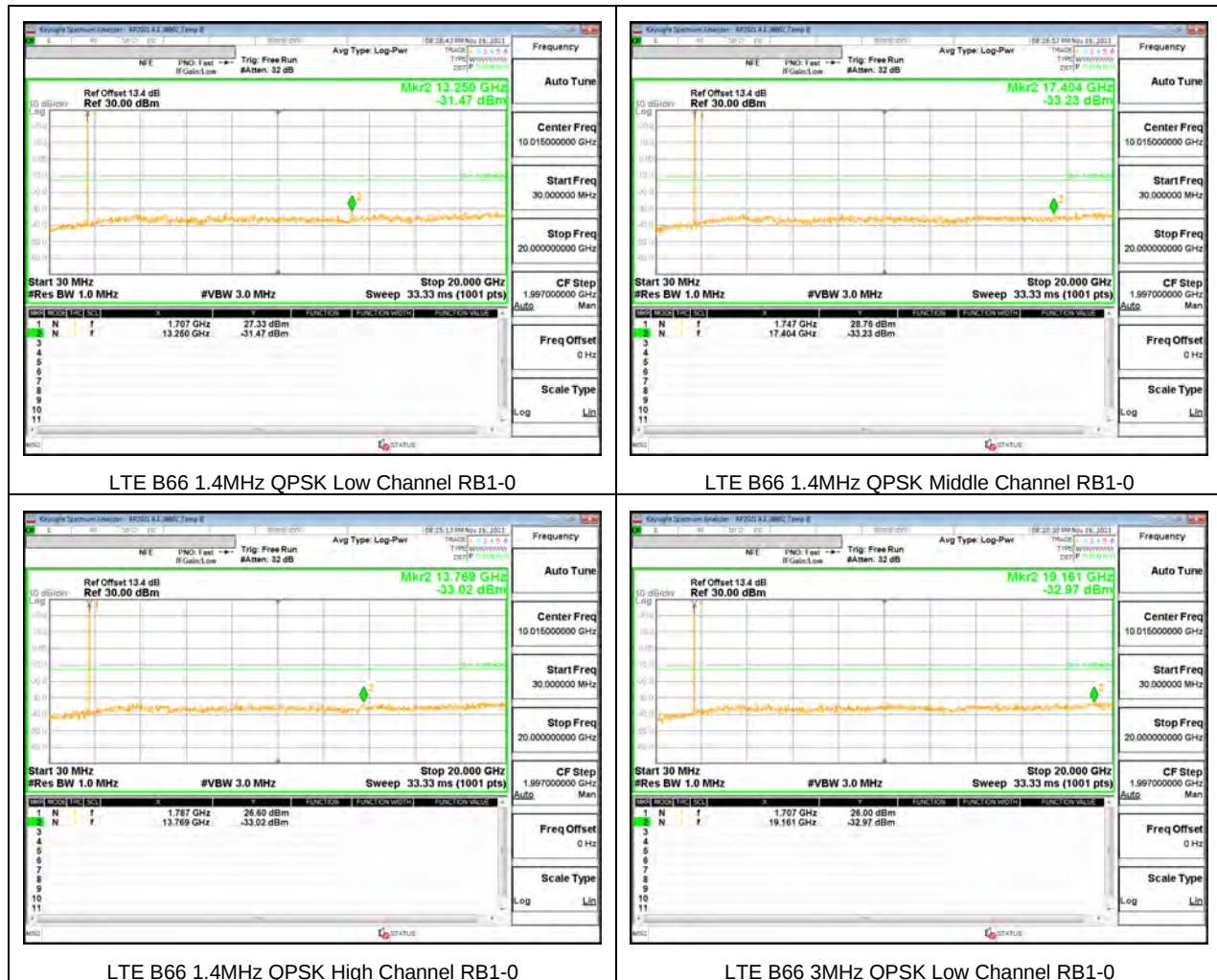
9.3.13. LTE BAND 66 AND 5G NR n66

LIMITS

FCC: §27.53 (h)

The minimum permissible attenuation level of any spurious emissions is $43 + 10 \log (P)$ dB where transmitting power (P) in Watts.

LTE BAND 66

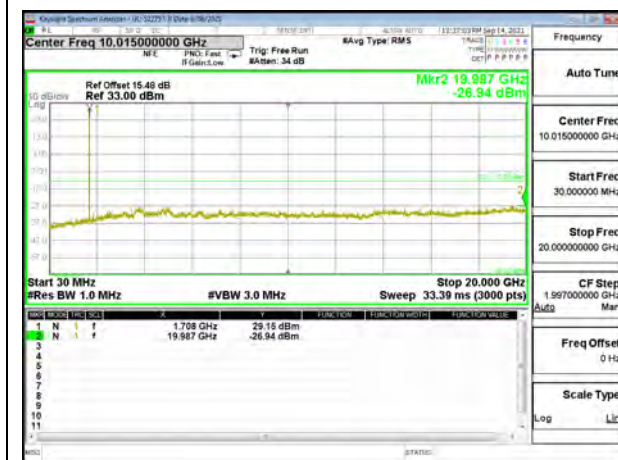




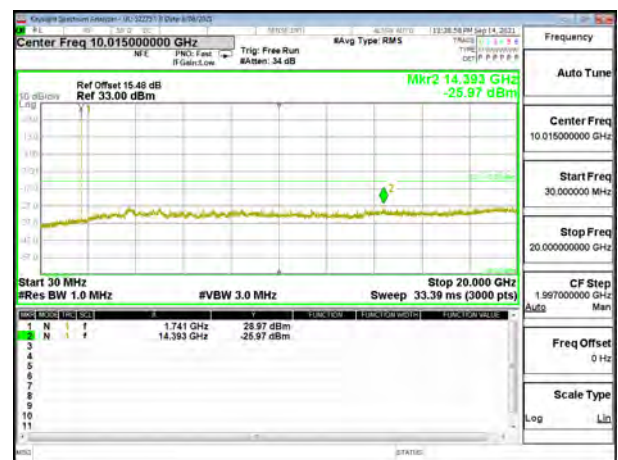
LTE B66 3MHz QPSK Middle Channel RB1-0



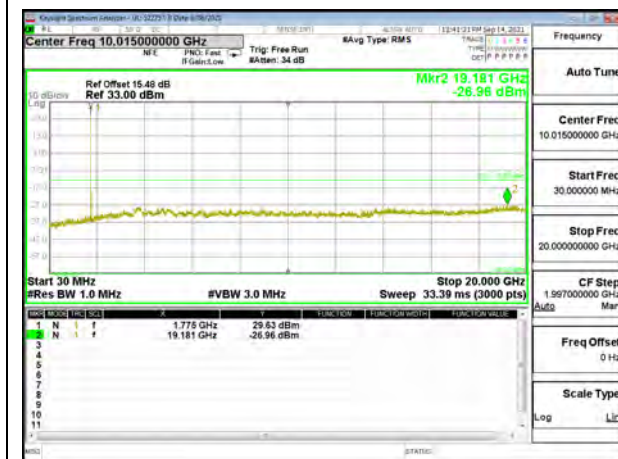
LTE B66 3MHz QPSK High Channel RB1-0



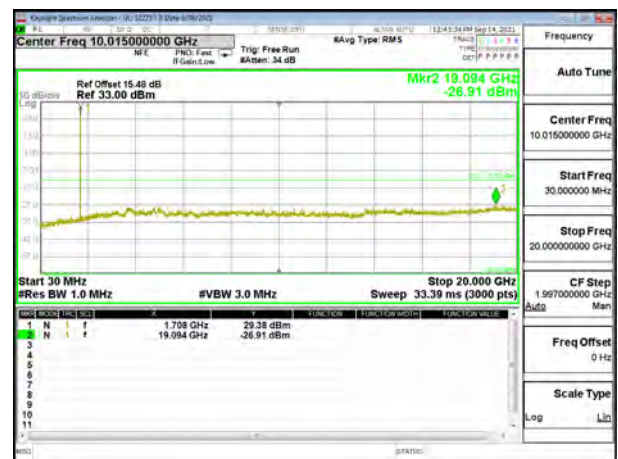
LTE B66 5MHz QPSK Low Channel RB1-0



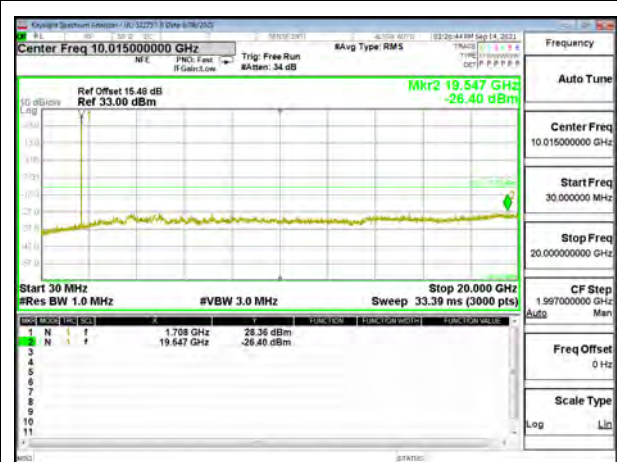
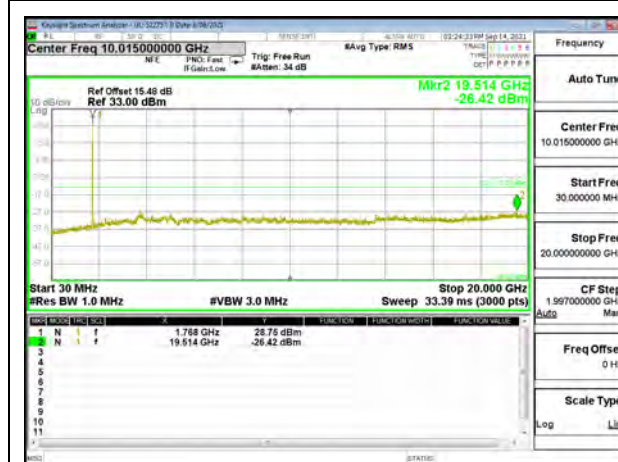
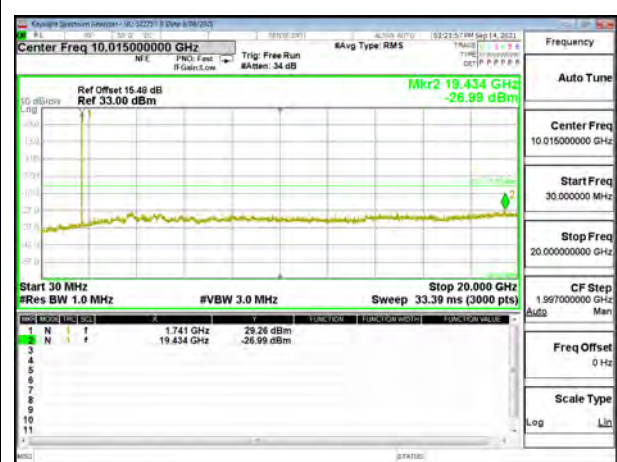
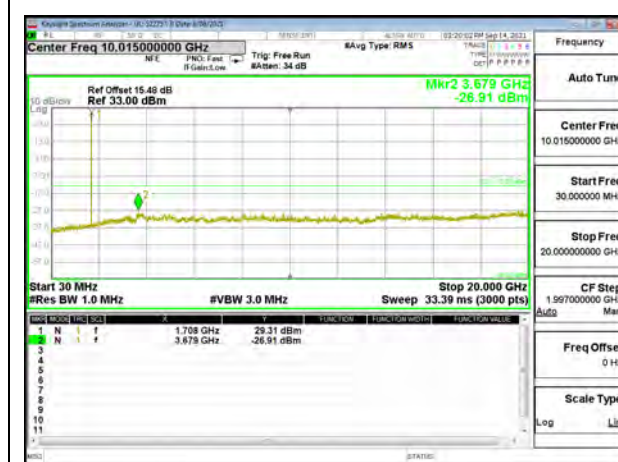
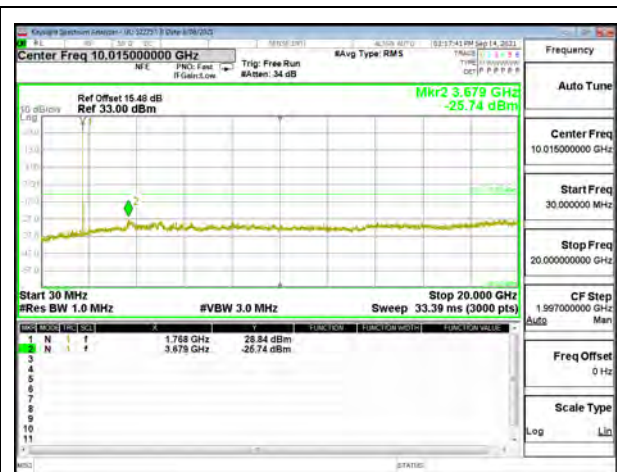
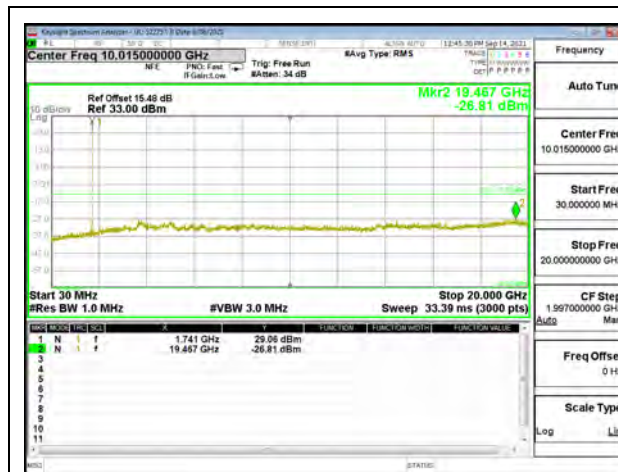
LTE B66 5MHz QPSK Middle Channel RB1-0

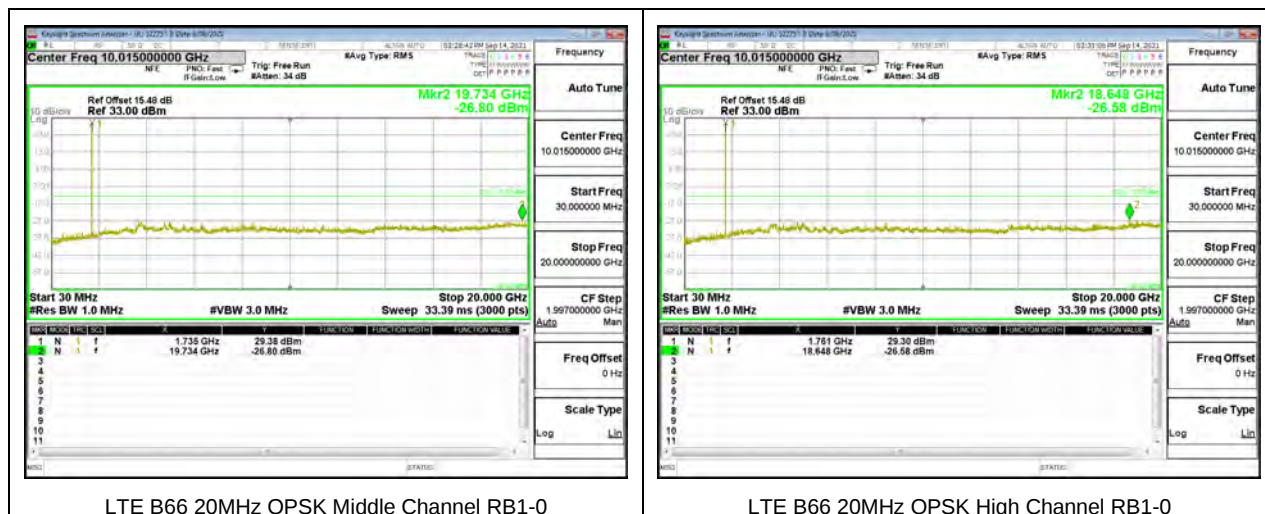


LTE B66 5MHz QPSK High Channel RB1-0

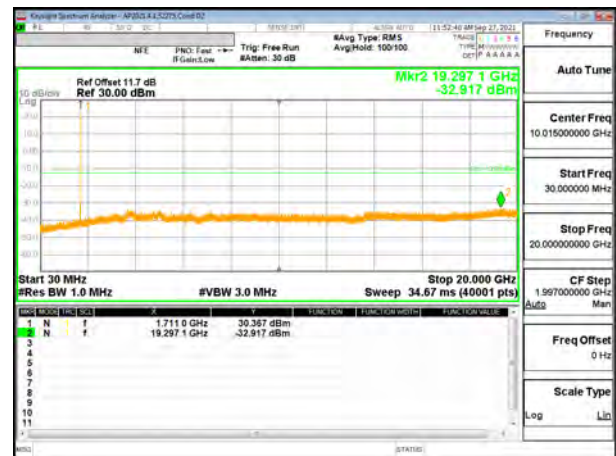
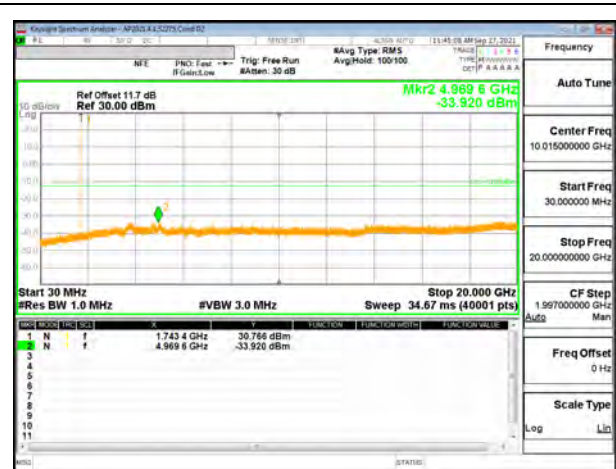


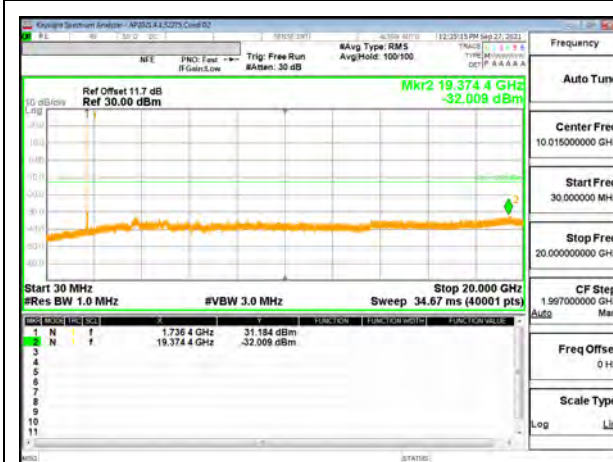
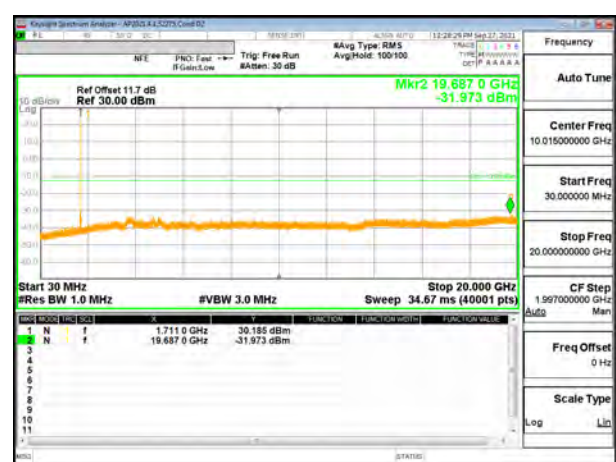
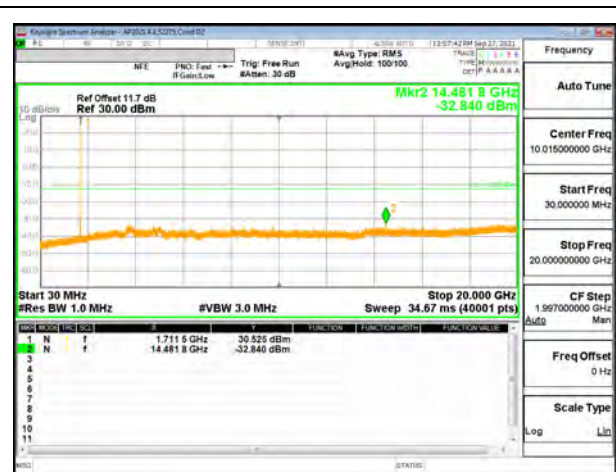
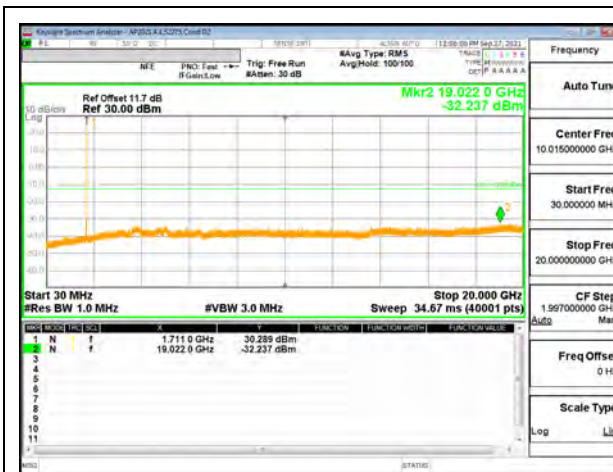
LTE B66 10MHz QPSK Low Channel RB1-0





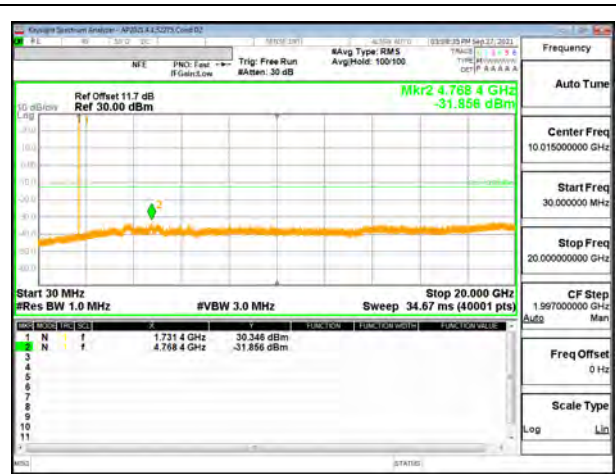
5G NR n66







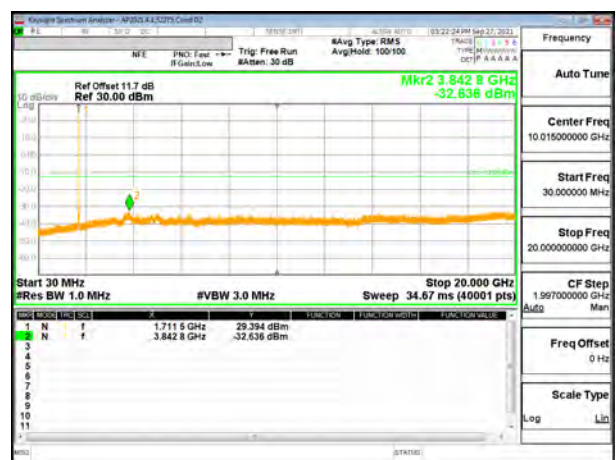
5G NR n66 30MHz BPSK Low Channel RB1-0



5G NR n66 30MHz BPSK Middle Channel RB1-1



5G NR n66 30MHz BPSK High Channel RB1-159



5G NR n66 40MHz BPSK Low Channel RB1-0



5G NR n66 40MHz BPSK Middle Channel RB1-1



5G NR n66 40MHz BPSK High Channel RB1-215

9.3.14. LTE BAND 71 AND 5G NR n71

LIMITS

FCC: §27.53 (g)

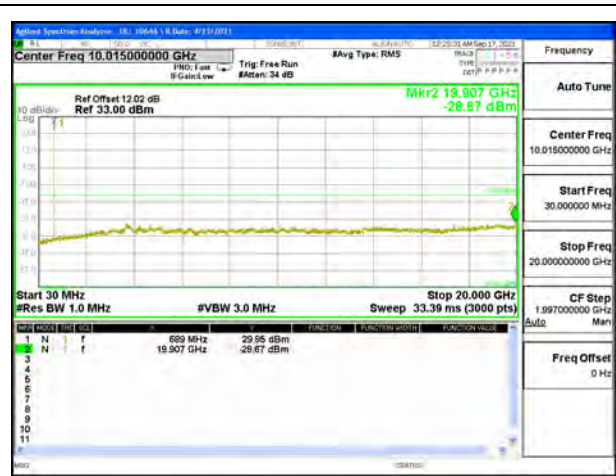
The minimum permissible attenuation level of any spurious emissions is $43 + 10 \log (P)$ dB where transmitting power (P) in Watts.

LTE BAND 71

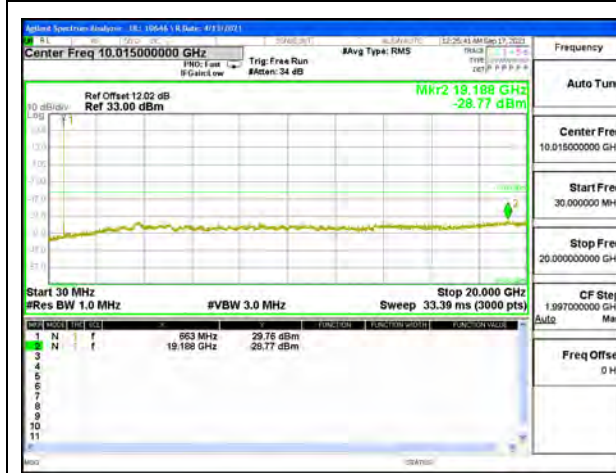




LTE B71 10MHz QPSK Middle Channel RB1-0



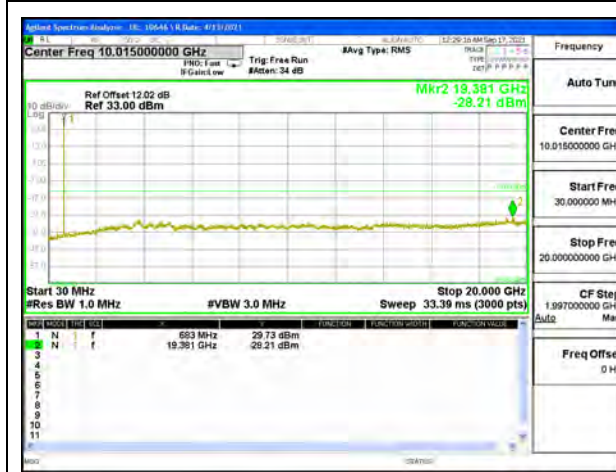
LTE 71 10MHz QPSK High Channel RB1-0



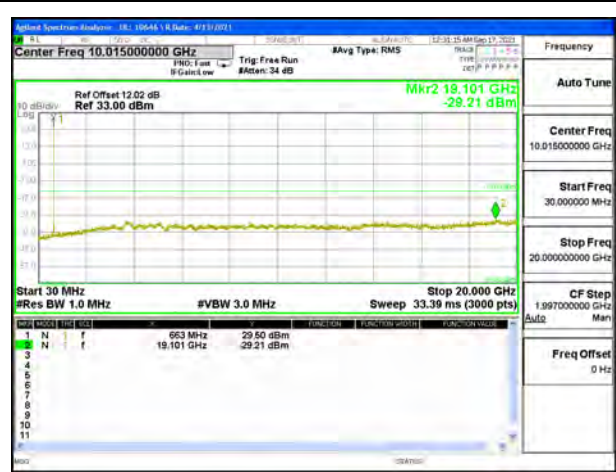
LTE B71 15MHz QPSK Low Channel RB1-0



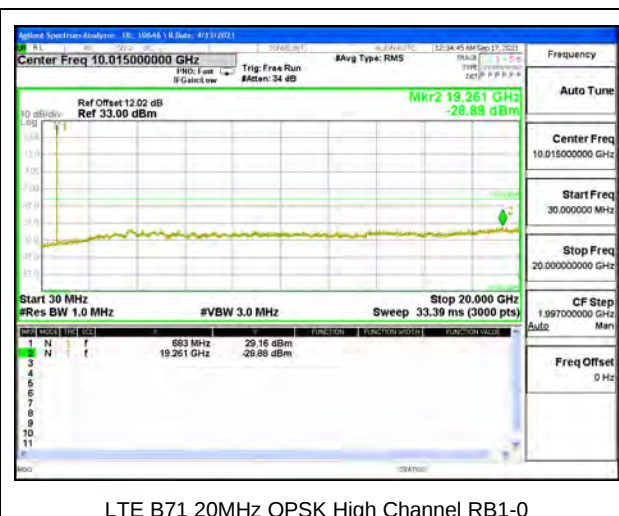
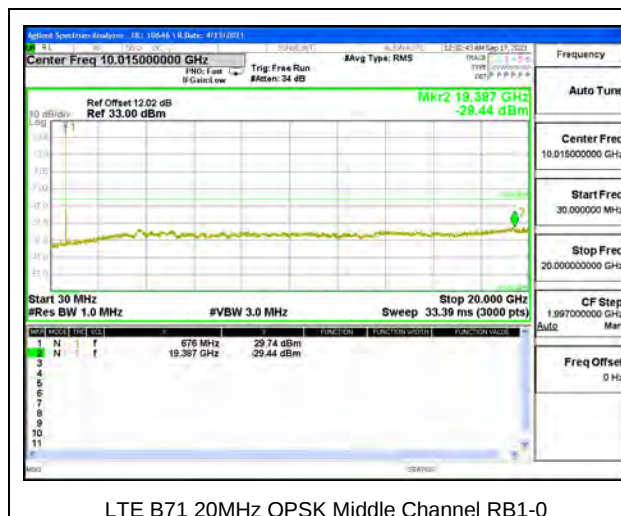
LTE B71 15MHz QPSK Middle Channel RB1-0



LTE B71 15MHz QPSK High Channel RB1-0



LTE B71 20MHz QPSK Low Channel RB1-0



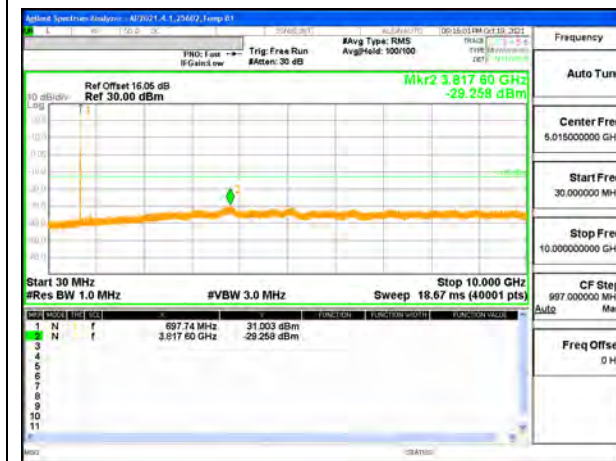
5G NR n71



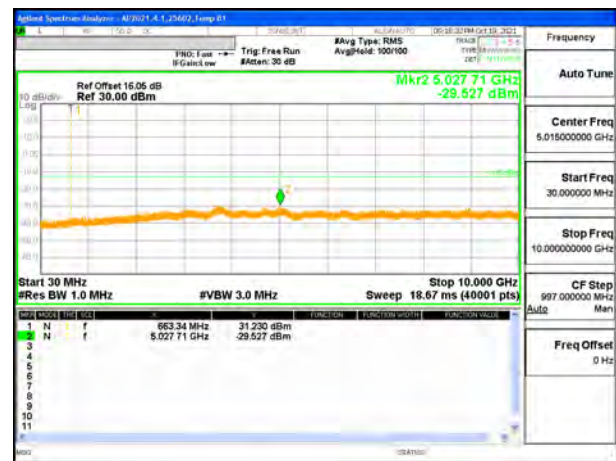
5G NR n71 5MHz BPSK Low Channel RB1-0



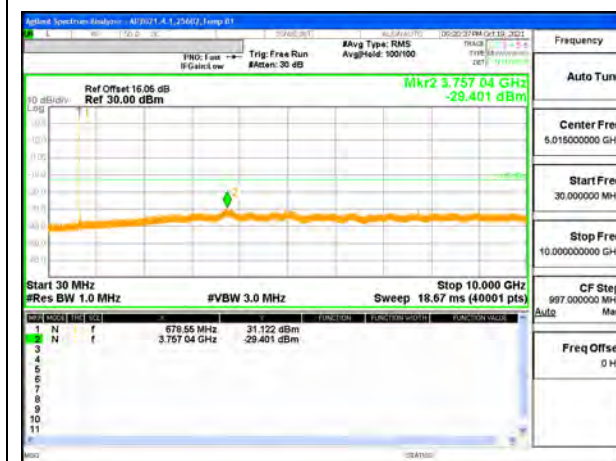
5G NR n71 5MHz BPSK Middle Channel RB1-1



5G NR n71 5MHz BPSK High Channel RB1-24



5G NR n71 10MHz BPSK Low Channel RB1-0



5G NR n71 10MHz BPSK Middle Channel RB1-1



5G NR n71 10MHz BPSK High Channel RB1-51



5G NR n71 15MHz BPSK Low Channel RB1-0



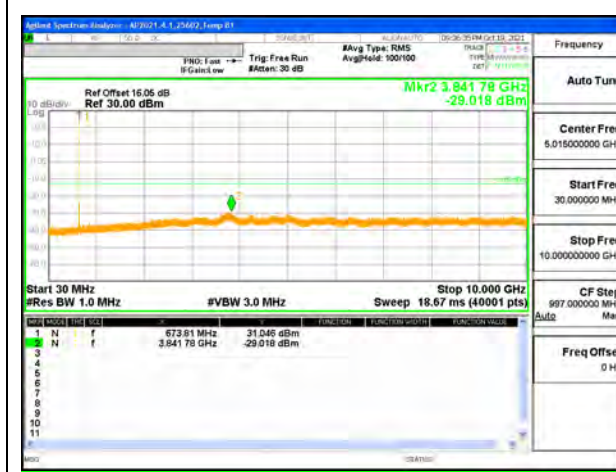
5G NR n71 15MHz BPSK Middle Channel RB1-1



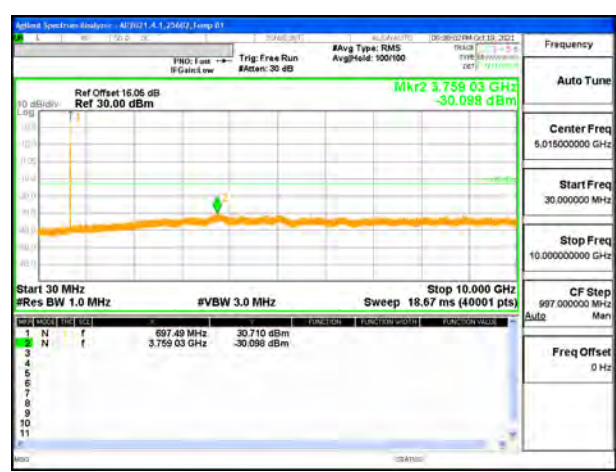
5G NR n71 15MHz BPSK High Channel RB1-78



5G NR n7120MHz BPSK Low Channel RB1-0



5G NR n71 20MHz BPSK Middle Channel RB1-1



5G NR n71 20MHz BPSK High Channel RB1-105

9.3.15. 5G NR n77 (3450-3550MHz)

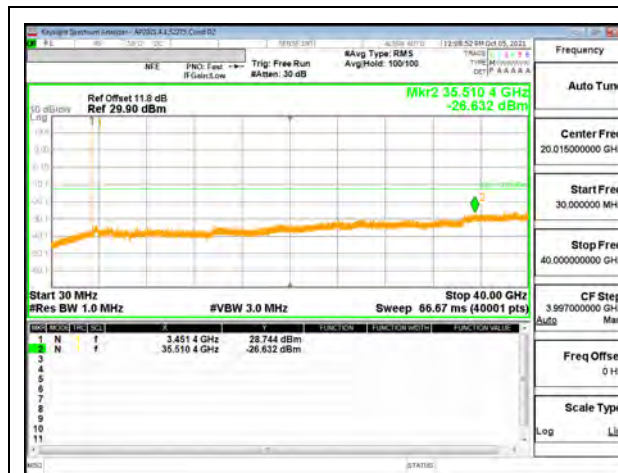
LIMITS

FCC: §27.53

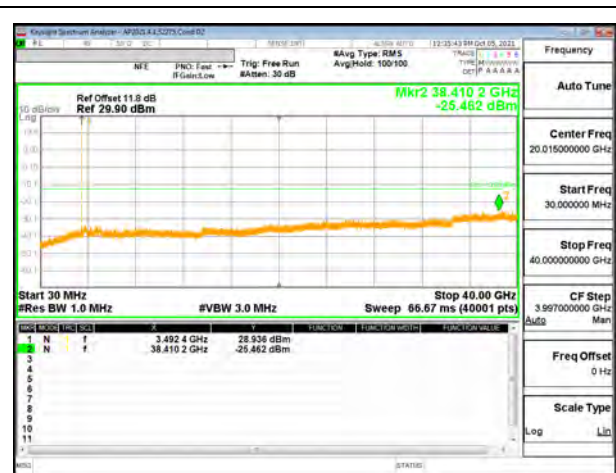
Emission limits

(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.



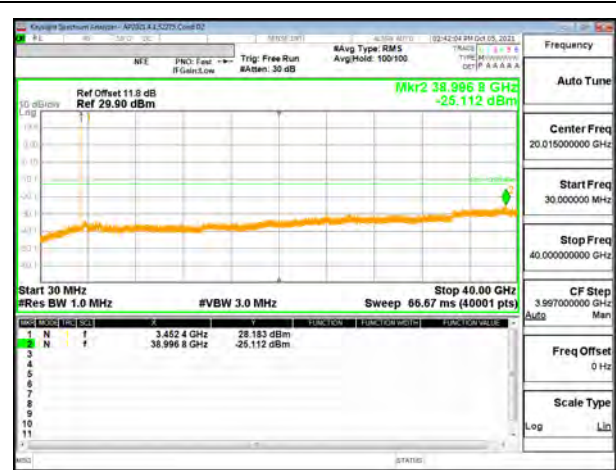
5G NR n77 20MHz BPSK Low Channel RB1-0



5G NR n77 20MHz BPSK Middle Channel RB1-1

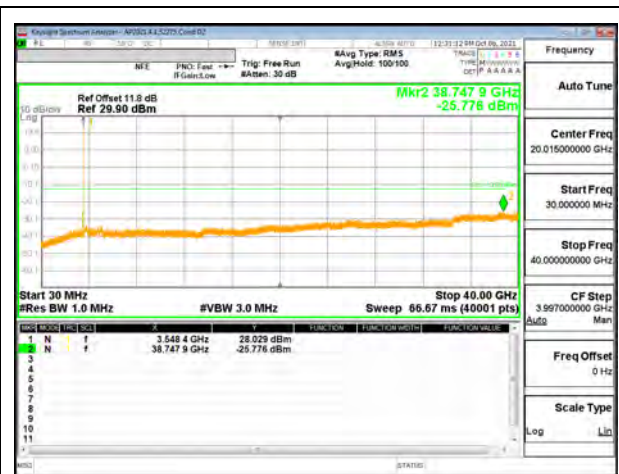
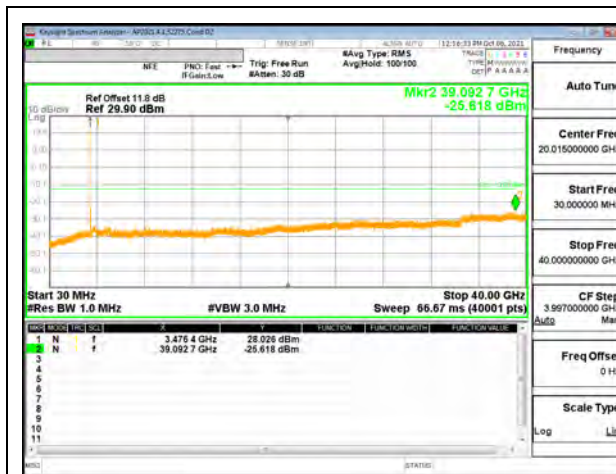


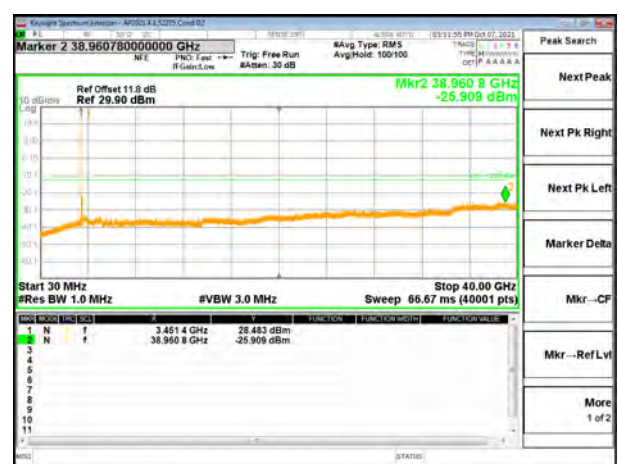
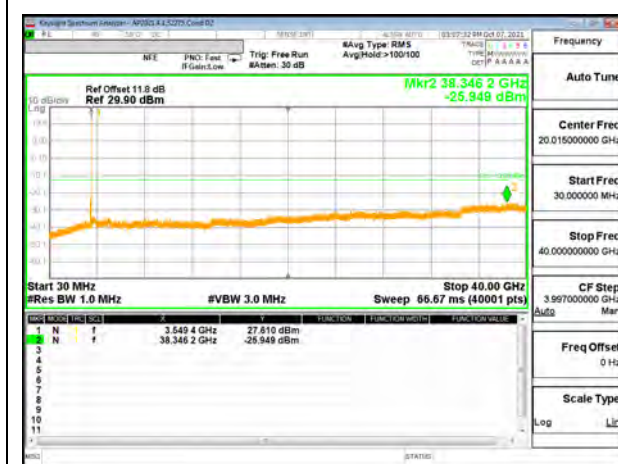
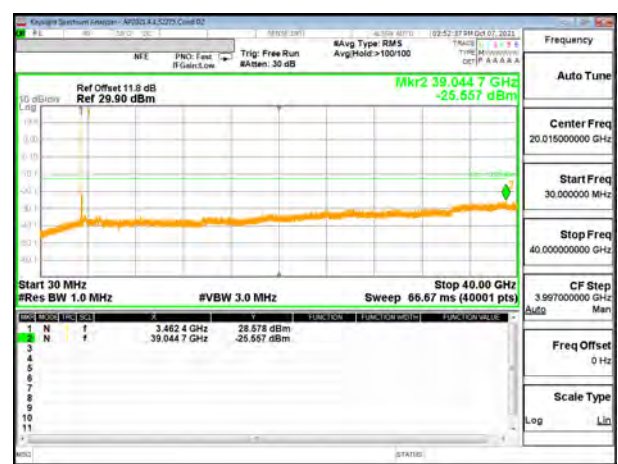
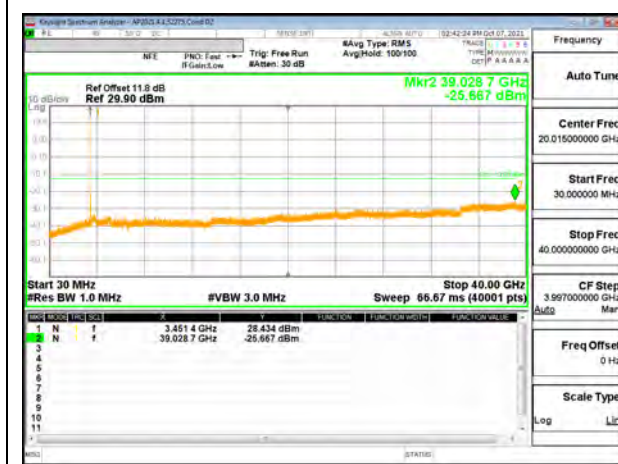
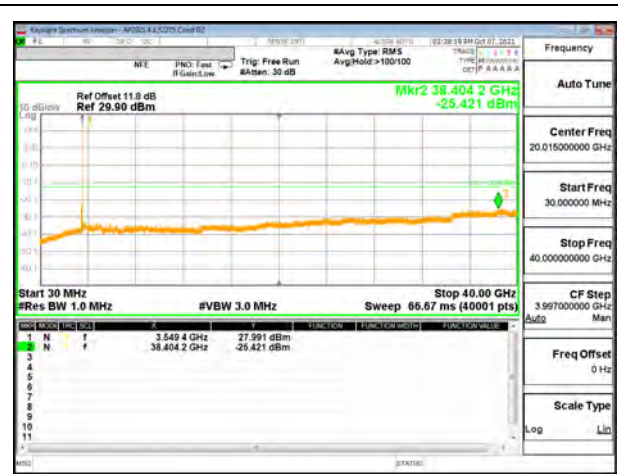
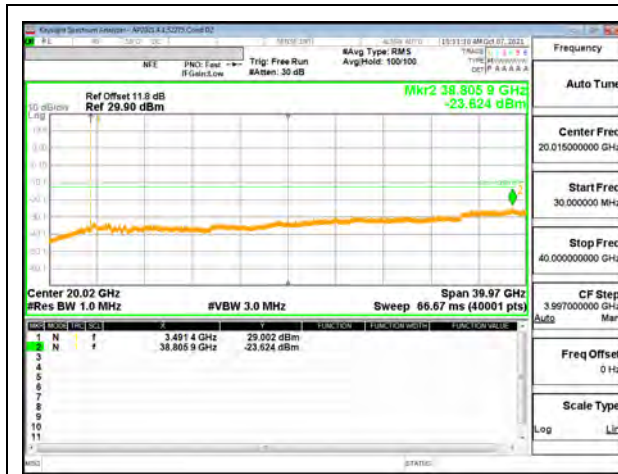
5G NR n77 20MHz BPSK High Channel RB1-50

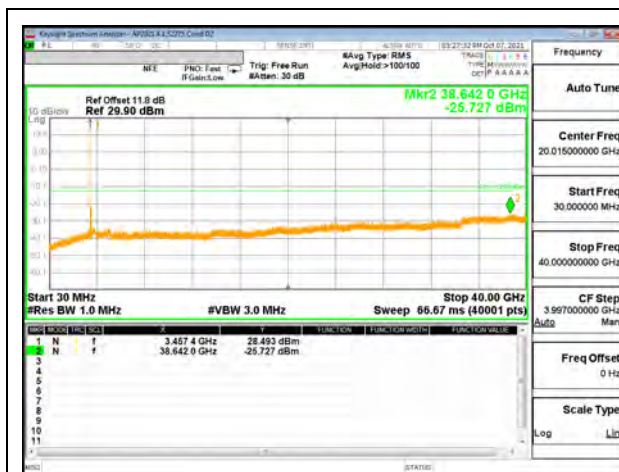


5G NR n77 30MHz BPSK Low Channel RB1-0









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



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



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

9.3.16. 5G NR n77 (3700-3980MHz)

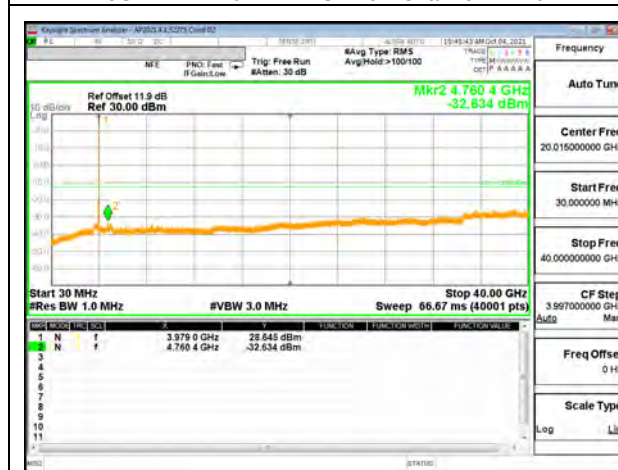
LIMITS

FCC: §27.53

Emission limits

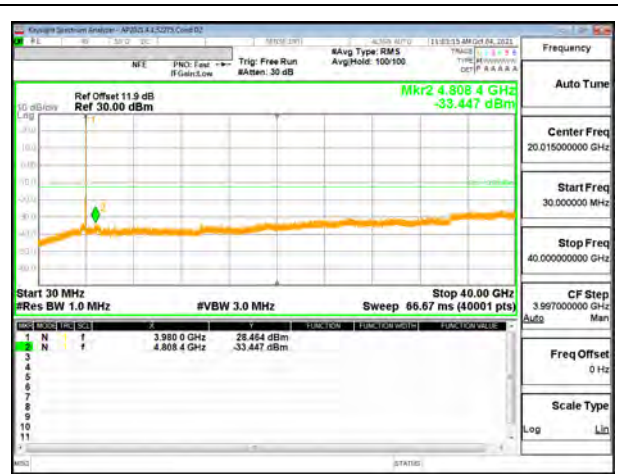
(1) 3.7 GHz Service. The following emission limits apply to stations transmitting in the 3700-3980 MHz band:

(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.





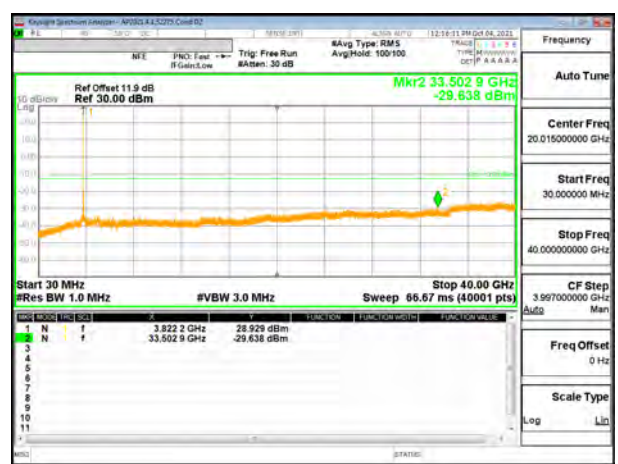
5G NR n77 30MHz BPSK Middle Channel RB1-1



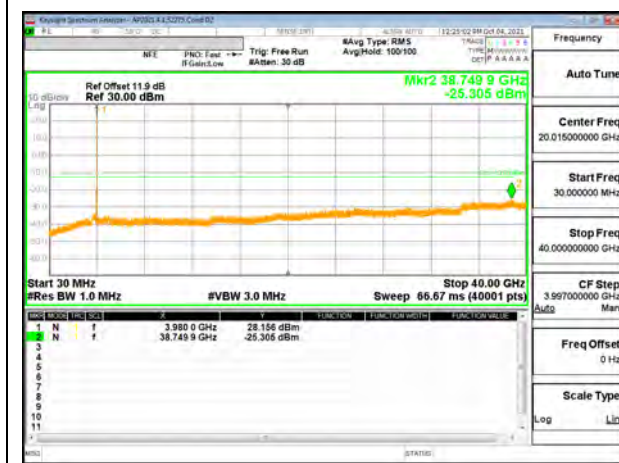
5G NR n77 30MHz BPSK High Channel RB1-77



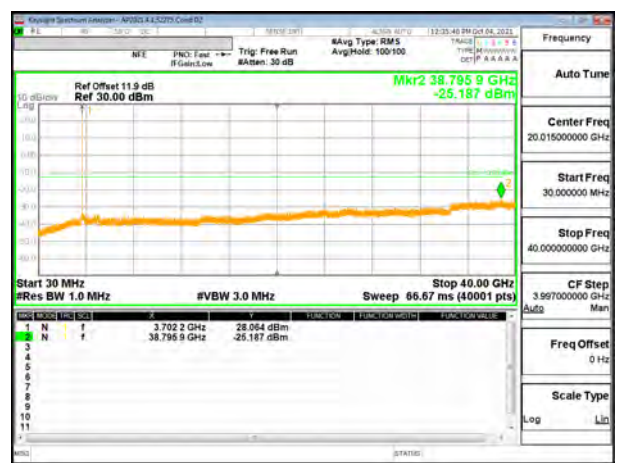
5G NR n77 40MHz BPSK Low Channel RB1-0



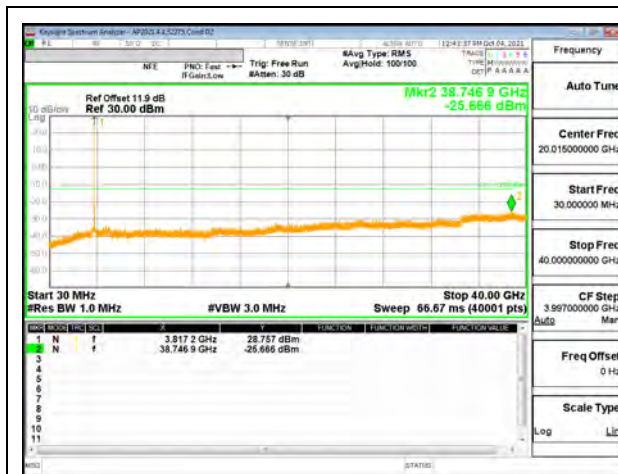
5G NR n77 40MHz BPSK Middle Channel RB1-1



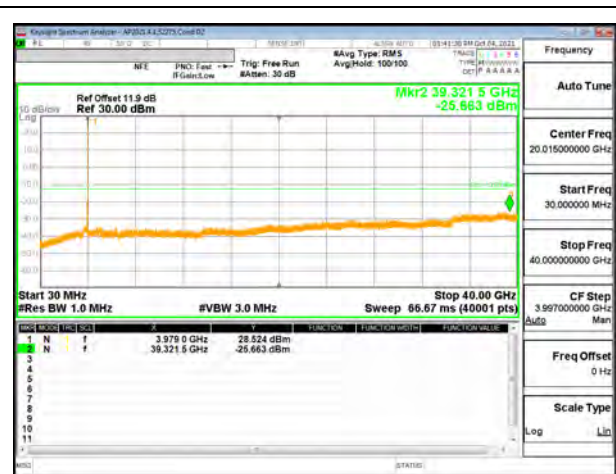
5G NR n77 40MHz BPSK High Channel RB1-105



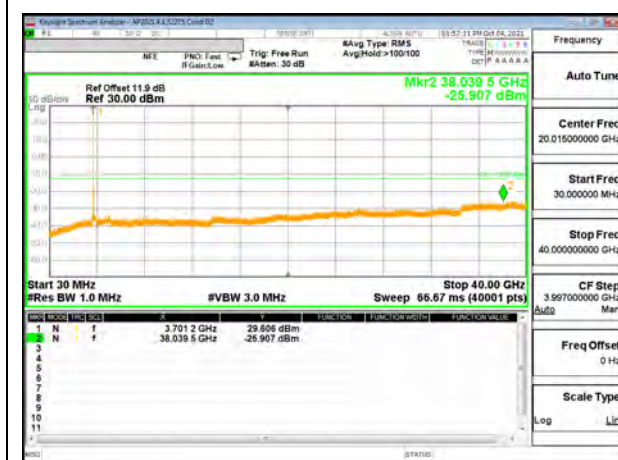
5G NR n77 50MHz BPSK Low Channel RB1-0



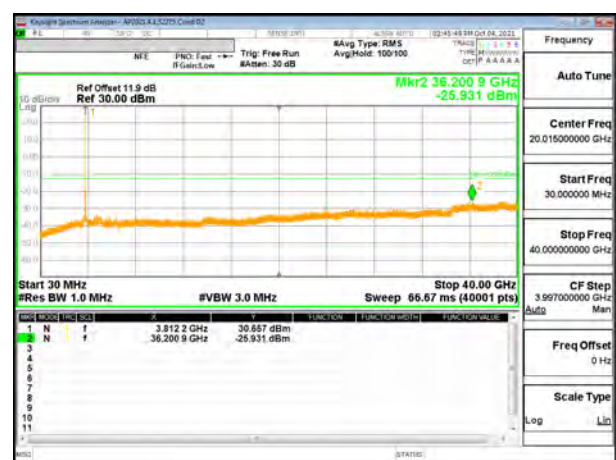
5G NR n77 50MHz BPSK Middle Channel RB1-1



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



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



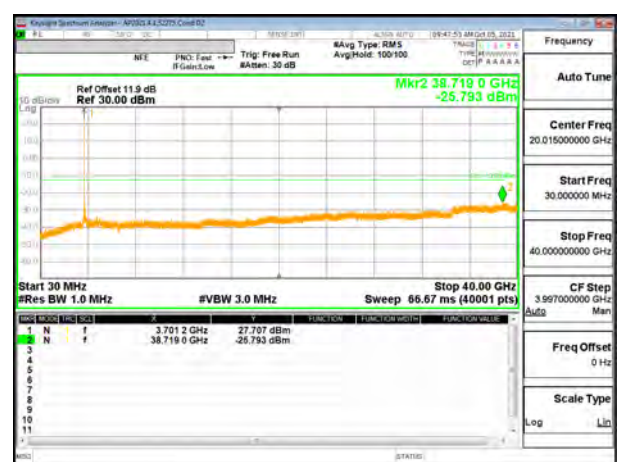
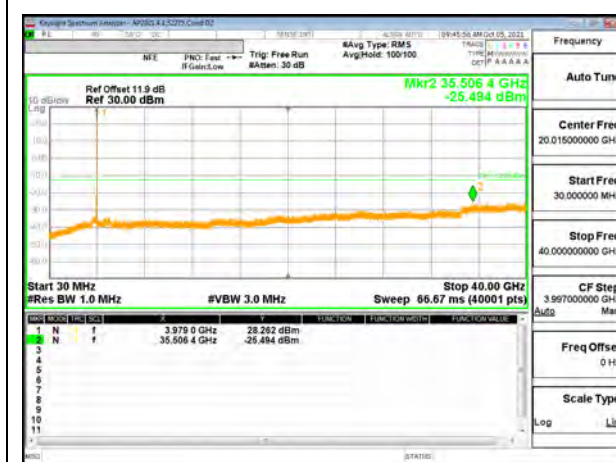
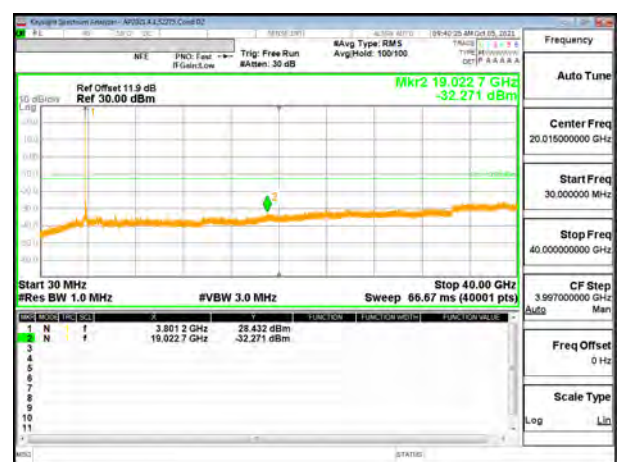
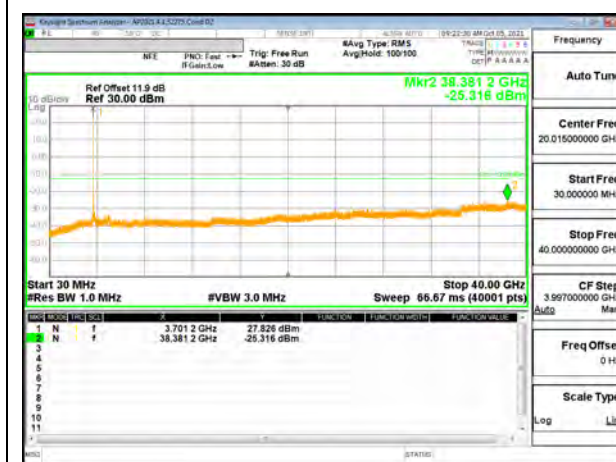
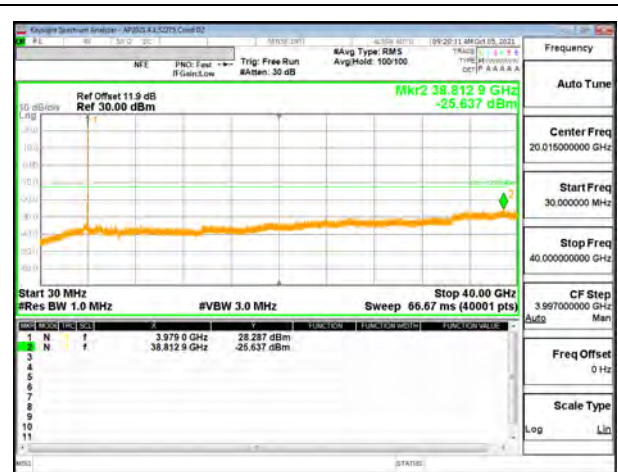
5G NR n77 60MHz BPSK Middle Channel RB1-1



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



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





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, 3.80VDC and High voltage, 4.37VDC.
End Voltage, 2.8VDC.

Frequency Stability vs Temperature:

The EUT is placed inside a temperature chamber. The temperature is set to 20°C 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 +50°C is reached.

Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case).

RESULTS

See the following pages.

9.4.1. 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:	25602	Test Date:	11/5/2021
-------------------	-------	------------	-----------

5G NR n5 QPSK (20MHz BANDWIDTH)

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	824.5252	847.3903		
Extreme (50C)		824.5252	847.3903	2.6	0.003
Extreme (40C)		824.5252	847.3903	3.8	0.005
Extreme (30C)		824.5252	847.3903	3.4	0.004
Extreme (10C)		824.5252	847.3903	3.0	0.004
Extreme (0C)		824.5252	847.3903	3.5	0.004
Extreme (-10C)		824.5252	847.3903	2.4	0.003
Extreme (-20C)		824.5252	847.3903	3.6	0.004
Extreme (-30C)		824.5252	847.3903	2.9	0.003
20C	15%	824.5252	847.3903	3.0	0.004
	-15%	824.5252	847.3903	4.7	0.006
	End Point	824.5252	847.3903	3.1	0.004

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:	25602	Test Date:	11/5/2021
-------------------	-------	------------	-----------

LTE BAND 7 QPSK (20MHz BANDWIDTH)

Limit		2500	2570	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	2500.7872	2569.1933		
Extreme (50C)		2500.7872	2569.193	-7.1	-0.003
Extreme (40C)		2500.7872	2569.193	-5.7	-0.002
Extreme (30C)		2500.7872	2569.193	-5.3	-0.002
Extreme (10C)		2500.7872	2569.193	-7.1	-0.003
Extreme (0C)		2500.7872	2569.193	8.7	0.003
Extreme (-10C)		2500.7872	2569.193	-7.9	-0.003
Extreme (-20C)		2500.7872	2569.193	-7.6	-0.003
Extreme (-30C)		2500.7872	2569.193	-6.7	-0.003
20C	15%	2500.7872	2569.193	8.7	0.003
	-15%	2500.7872	2569.193	6.5	0.003
	End Point	2500.7872	2569.193	-6.8	-0.003

5G NR n7 QPSK (40MHz BANDWIDTH)

Limit		2500	2570	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	2500.6839	2569.3081		
Extreme (50C)		2500.6839	2569.3081	-7.4	-0.003
Extreme (40C)		2500.6839	2569.3081	-8.1	-0.003
Extreme (30C)		2500.6839	2569.3081	8.3	0.003
Extreme (10C)		2500.6839	2569.3081	6.9	0.003
Extreme (0C)		2500.6839	2569.3081	6.9	0.003
Extreme (-10C)		2500.6839	2569.3081	6.7	0.003
Extreme (-20C)		2500.6839	2569.3081	5.8	0.002
Extreme (-30C)		2500.6839	2569.3081	5.2	0.002
20C	15%	2500.6839	2569.3081	-6.1	-0.002
	-15%	2500.6839	2569.3081	6.6	0.003
	End Point	2500.6839	2569.3081	-7.0	-0.003

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:	25602	Test Date:	11/5/2021
-------------------	-------	------------	-----------

LTE BAND 12 QPSK (10MHz BANDWIDTH)

Limit		699	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	699.2712	715.7211		
Extreme (50C)		699.2712	715.7211	2.9	0.004
Extreme (40C)		699.2712	715.7211	3.8	0.005
Extreme (30C)		699.2712	715.7211	-3.3	-0.005
Extreme (10C)		699.2712	715.7211	4.7	0.007
Extreme (0C)		699.2712	715.7211	4.4	0.006
Extreme (-10C)		699.2712	715.7211	3.9	0.005
Extreme (-20C)		699.2712	715.7211	4.0	0.006
Extreme (-30C)		699.2712	715.7211	4.0	0.006
20C	15%	699.2712	715.7211	2.9	0.004
	-15%	699.2712	715.7211	3.7	0.005
	End Point	699.2712	715.7211	-4.0	-0.006

5G NR n12 QPSK (15MHz BANDWIDTH)

Limit		699	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	699.4189	714.8401		
Extreme (50C)		699.4189	714.8401	2.7	0.004
Extreme (40C)		699.4189	714.8401	2.7	0.004
Extreme (30C)		699.4189	714.8401	2.6	0.004
Extreme (10C)		699.4189	714.8401	3.7	0.005
Extreme (0C)		699.4189	714.8401	3.1	0.004
Extreme (-10C)		699.4189	714.8401	3.5	0.005
Extreme (-20C)		699.4189	714.8401	2.7	0.004
Extreme (-30C)		699.4189	714.8401	3.0	0.004
20C	15%	699.4189	714.8401	2.7	0.004
	-15%	699.4189	714.8401	2.5	0.004
	End Point	699.4189	714.8401	3.0	0.004

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:	25602	Test Date:	11/5/2021
-------------------	-------	------------	-----------

QPSK (10MHz BANDWIDTH)

Limit		777	787	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	777.5380	786.4843		
Extreme (50C)		777.5380	786.4843	5.0	0.006
Extreme (40C)		777.5380	786.4843	5.8	0.007
Extreme (30C)		777.5380	786.4843	4.4	0.006
Extreme (10C)		777.5380	786.4843	4.4	0.006
Extreme (0C)		777.5380	786.4843	4.4	0.006
Extreme (-10C)		777.5380	786.4843	5.1	0.006
Extreme (-20C)		777.5380	786.4843	5.0	0.006
Extreme (-30C)		777.5380	786.4843	6.0	0.008
20C	15%	777.5380	786.4843	4.7	0.006
	-15%	777.5380	786.4843	4.5	0.006
	End Point	777.5380	786.4843	4.4	0.006

9.4.5. LTE BAND 14

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:	25780	Test Date:	11/8/2021
-------------------	-------	------------	-----------

QPSK (10MHz BANDWIDTH)

Limit		788	798	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	788.5261	797.4085		
Extreme (50C)		788.5261	797.4085	5.6	0.007
Extreme (40C)		788.5261	797.4085	3.4	0.004
Extreme (30C)		788.5261	797.4085	-5.2	-0.007
Extreme (10C)		788.5261	797.4085	5.3	0.007
Extreme (0C)		788.5261	797.4085	6.8	0.009
Extreme (-10C)		788.5261	797.4085	4.3	0.005
Extreme (-20C)		788.5261	797.4085	6.0	0.008
Extreme (-30C)		788.5261	797.4085	4.5	0.006
20C	15%	788.5261	797.4085	6.1	0.008
	-15%	788.5261	797.4085	5.1	0.006
	End Point	788.5261	797.4085	5.7	0.007

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:	25780	Test Date:	11/8/2021
-------------------	-------	------------	-----------

QPSK (10MHz BANDWIDTH)

Limit		704	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	704.5275	715.7898		
Extreme (50C)		704.5275	715.7898	-2.7	-0.004
Extreme (40C)		704.5275	715.7898	3.7	0.005
Extreme (30C)		704.5275	715.7898	3.5	0.005
Extreme (10C)		704.5275	715.7898	4.5	0.006
Extreme (0C)		704.5275	715.7898	4.0	0.006
Extreme (-10C)		704.5275	715.7898	3.5	0.005
Extreme (-20C)		704.5275	715.7898	3.4	0.005
Extreme (-30C)		704.5275	715.7898	3.6	0.005
20C	15%	704.5275	715.7898	-3.6	-0.005
	-15%	704.5275	715.7898	2.8	0.004
	End Point	704.5275	715.7898	3.6	0.005

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:	25602	Test Date:	11/5/2021
-------------------	-------	------------	-----------

LTE BAND 25 QPSK (20MHz BANDWIDTH)

Limit		1850	1915	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1850.8001	1914.1932		
Extreme (50C)		1850.8001	1914.1932	-7.5	-0.004
Extreme (40C)		1850.8001	1914.1932	-6.0	-0.003
Extreme (30C)		1850.8001	1914.1932	-6.6	-0.004
Extreme (10C)		1850.8001	1914.1932	-5.4	-0.003
Extreme (0C)		1850.8001	1914.1932	-8.3	-0.004
Extreme (-10C)		1850.8001	1914.1932	-7.3	-0.004
Extreme (-20C)		1850.8001	1914.1932	-7.5	-0.004
Extreme (-30C)		1850.8001	1914.1932	-7.8	-0.004
20C	15%	1850.8001	1914.1932	-7.8	-0.004
	-15%	1850.8001	1914.1932	-6.7	-0.004
	End Point	1850.8001	1914.1932	-5.4	-0.003

5G NR n25 QPSK (40MHz BANDWIDTH)

Limit		1850	1915	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1850.6476	1914.3729		
Extreme (50C)		1850.6476	1914.3729	3.7	0.002
Extreme (40C)		1850.6476	1914.3729	4.1	0.002
Extreme (30C)		1850.6476	1914.3729	3.8	0.002
Extreme (10C)		1850.6476	1914.3729	3.7	0.002
Extreme (0C)		1850.6476	1914.3729	4.4	0.002
Extreme (-10C)		1850.6476	1914.3729	4.7	0.003
Extreme (-20C)		1850.6476	1914.3729	4.8	0.003
Extreme (-30C)		1850.6476	1914.3729	3.7	0.002
20C	15%	1850.6476	1914.3729	3.4	0.002
	-15%	1850.6476	1914.3729	4.0	0.002
	End Point	1850.6476	1914.3729	3.9	0.002

9.4.8. LTE BAND 26 (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:	25602	Test Date:	11/2/2021
-------------------	-------	------------	-----------

QPSK (5MHz BANDWIDTH)

Limit		814	824	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	814.5328	823.4862		
Extreme (50C)		814.5328	823.4862	-3.1	-0.004
Extreme (40C)		814.5328	823.4862	-3.0	-0.004
Extreme (30C)		814.5328	823.4862	-3.4	-0.004
Extreme (10C)		814.5328	823.4862	5.5	0.007
Extreme (0C)		814.5328	823.4862	3.9	0.005
Extreme (-10C)		814.5328	823.4862	3.2	0.004
Extreme (-20C)		814.5328	823.4862	3.7	0.005
Extreme (-30C)		814.5328	823.4862	6.0	0.007
20C	15%	814.5328	823.4862	-3.8	-0.005
	-15%	814.5328	823.4862	4.0	0.005
	End Point	814.5328	823.4862	-3.7	-0.004

9.4.9. LTE BAND 26 (PART 22)

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:	25602	Test Date:	11/5/2021
-------------------	-------	------------	-----------

QPSK (15MHz BANDWIDTH)w

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	824.5330	848.4530		
Extreme (50C)		824.5330	848.4530	-4.7	-0.006
Extreme (40C)		824.5330	848.4530	-3.5	-0.004
Extreme (30C)		824.5330	848.4530	-3.3	-0.004
Extreme (10C)		824.5330	848.4530	3.4	0.004
Extreme (0C)		824.5330	848.4530	4.0	0.005
Extreme (-10C)		824.5330	848.4530	3.1	0.004
Extreme (-20C)		824.5330	848.4530	4.4	0.005
Extreme (-30C)		824.5330	848.4530	3.6	0.004
20C	15%	824.5330	848.4530	-4.1	-0.005
	-15%	824.5330	848.4530	-3.9	-0.005
	End Point	824.5330	848.4530	-3.0	-0.004

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:	25602	Test Date:	11/5/2021
-------------------	-------	------------	-----------

LTE BAND 30 QPSK (10MHz BANDWIDTH)

Limit		2305	2315	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	2305.5390	2314.5042		
Extreme (50C)		2305.5390	2314.5042	5.7	0.002
Extreme (40C)		2305.5390	2314.5042	4.4	0.002
Extreme (30C)		2305.5390	2314.5042	4.2	0.002
Extreme (10C)		2305.5390	2314.5042	-5.6	-0.002
Extreme (0C)		2305.5390	2314.5042	-8.7	-0.004
Extreme (-10C)		2305.5390	2314.5042	-7.1	-0.003
Extreme (-20C)		2305.5390	2314.5042	-5.5	-0.002
Extreme (-30C)		2305.5390	2314.5042	-5.6	-0.002
20C	15%	2305.5390	2314.5042	-4.4	-0.002
	-15%	2305.5390	2314.5042	5.2	0.002
	End Point	2305.5390	2314.5042	5.0	0.002

5G NR n30 QPSK (10MHz BANDWIDTH)

Limit		2305	2315	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	2305.1952	2314.4857		
Extreme (50C)		2305.1952	2314.4857	-8.2	-0.004
Extreme (40C)		2305.1952	2314.4857	-9.5	-0.004
Extreme (30C)		2305.1952	2314.4857	-9.8	-0.004
Extreme (10C)		2305.1952	2314.4857	-7.2	-0.003
Extreme (0C)		2305.1952	2314.4857	-8.7	-0.004
Extreme (-10C)		2305.1952	2314.4857	-8.2	-0.004
Extreme (-20C)		2305.1952	2314.4857	-5.8	-0.002
Extreme (-30C)		2305.1952	2314.4857	-5.3	-0.002
20C	15%	2305.1952	2314.4857	-7.8	-0.003
	-15%	2305.1952	2314.4857	-7.7	-0.003
	End Point	2305.1952	2314.4857	7.9	0.003

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:	25602	Test Date:	11/5/2021
-------------------	-------	------------	-----------

LTE BAND 41 QPSK (20MHz BANDWIDTH)

Limit		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	2496.7946	2689.0861		
Extreme (50C)		2496.7946	2689.0861	-8.9	-0.003
Extreme (40C)		2496.7946	2689.0861	-9.8	-0.004
Extreme (30C)		2496.7946	2689.0861	-7.5	-0.003
Extreme (10C)		2496.7946	2689.0861	-7.7	-0.003
Extreme (0C)		2496.7946	2689.0861	-7.9	-0.003
Extreme (-10C)		2496.7946	2689.0861	-8.7	-0.003
Extreme (-20C)		2496.7946	2689.0861	-6.8	-0.003
Extreme (-30C)		2496.7946	2689.0861	-9.2	-0.004
20C	15%	2496.7946	2689.0861	-8.3	-0.003
	-15%	2496.7946	2689.0861	-7.5	-0.003
	End Point	2496.7946	2689.0861	-7.7	-0.003

5G NR n41 QPSK (100MHz BANDWIDTH)

Limit		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	2497.1833	2687.8718		
Extreme (50C)		2497.1833	2687.8718	-15.4	-0.006
Extreme (40C)		2497.1833	2687.8718	-13.7	-0.005
Extreme (30C)		2497.1833	2687.8718	-16.0	-0.006
Extreme (10C)		2497.1833	2687.8718	-14.2	-0.005
Extreme (0C)		2497.1833	2687.8718	-12.4	-0.005
Extreme (-10C)		2497.1833	2687.8718	-15.9	-0.006
Extreme (-20C)		2497.1833	2687.8718	-14.8	-0.006
Extreme (-30C)		2497.1833	2687.8718	-15.0	-0.006
20C	15%	2497.1833	2687.8718	-14.6	-0.006
	-15%	2497.1833	2687.8718	-11.5	-0.004
	End Point	2497.1833	2687.8718	-13.2	-0.005

9.4.12. LTE BAND 48

Test Engineer ID:	25602	Test Date:	11/5/2021
-------------------	-------	------------	-----------

LTE BAND 48 QPSK (20MHz BANDWIDTH)

Limit		3550	3700	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	3550.9038	3698.8892		
Extreme (50C)		3550.9038	3698.8892	-10.1	-0.003
Extreme (40C)		3550.9038	3698.8892	-9.6	-0.003
Extreme (30C)		3550.9038	3698.8892	-9.3	-0.003
Extreme (10C)		3550.9038	3698.8892	-8.0	-0.002
Extreme (0C)		3550.9038	3698.8892	-9.6	-0.003
Extreme (-10C)		3550.9038	3698.8892	-9.5	-0.003
Extreme (-20C)		3550.9038	3698.8892	-9.2	-0.003
Extreme (-30C)		3550.9038	3698.8892	-9.6	-0.003
20C	15%	3550.9038	3698.8892	-10.2	-0.003
	-15%	3550.9038	3698.8892	-13.7	-0.004
	End Point	3550.9038	3698.8892	-12.7	-0.003

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:	25602	Test Date:	11/5/2021
-------------------	-------	------------	-----------

LTE BAND 66 QPSK (20MHz BANDWIDTH)

Limit		1710	1780	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	1710.8070	1779.2130		
Extreme (50C)		1710.8070	1779.2130	-5.1	-0.003
Extreme (40C)		1710.8070	1779.2130	-7.2	-0.004
Extreme (30C)		1710.8070	1779.2130	-5.9	-0.003
Extreme (10C)		1710.8070	1779.2130	-5.1	-0.003
Extreme (0C)		1710.8070	1779.2130	-6.7	-0.004
Extreme (-10C)		1710.8070	1779.2130	-6.1	-0.003
Extreme (-20C)		1710.8070	1779.2130	-7.5	-0.004
Extreme (-30C)		1710.8070	1779.2130	-8.5	-0.005
20C	15%	1710.8070	1779.2130	-6.2	-0.004
	-15%	1710.8070	1779.2130	-10.3	-0.006
	End Point	1710.8070	1779.2130	-5.4	-0.003

5G NR n66 QPSK (40MHz BANDWIDTH)

Limit		1710	1780	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1710.6667	1779.6167		
Extreme (50C)		1710.6667	1779.6167	-5.0	-0.003
Extreme (40C)		1710.6667	1779.6167	-4.8	-0.003
Extreme (30C)		1710.6667	1779.6167	-5.4	-0.003
Extreme (10C)		1710.6667	1779.6167	-5.8	-0.003
Extreme (0C)		1710.6667	1779.6167	-5.4	-0.003
Extreme (-10C)		1710.6667	1779.6167	-4.6	-0.003
Extreme (-20C)		1710.6667	1779.6167	-4.8	-0.003
Extreme (-30C)		1710.6667	1779.6167	-5.0	-0.003
20C	15%	1710.6667	1779.6167	-5.0	-0.003
	-15%	1710.6667	1779.6167	-5.2	-0.003
	End Point	1710.6667	1779.6167	-5.8	-0.003

9.4.14. 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:	25602	Test Date:	11/5/2021
-------------------	-------	------------	-----------

LTE BAND 71 QPSK (20MHz BANDWIDTH)

Limit		663	698	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	664.0687	696.9431		
Extreme (50C)		664.0687	696.9431	-3.0	-0.004
Extreme (40C)		664.0687	696.9431	3.0	0.004
Extreme (30C)		664.0687	696.9431	3.7	0.005
Extreme (10C)		664.0687	696.9431	3.8	0.006
Extreme (0C)		664.0687	696.9431	3.2	0.005
Extreme (-10C)		664.0687	696.9431	4.3	0.006
Extreme (-20C)		664.0687	696.9431	3.3	0.005
Extreme (-30C)		664.0687	696.9431	3.2	0.005
20C	15%	664.0687	696.9431	-2.9	-0.004
	-15%	664.0687	696.9431	-4.1	-0.006
	End Point	664.0687	696.9431	-3.3	-0.005

5G NR n71 QPSK (20MHz BANDWIDTH)

Limit		663	698	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	663.5312	696.3845		
Extreme (50C)		663.5312	696.3845	-5.0	-0.007
Extreme (40C)		663.5312	696.3845	-4.8	-0.007
Extreme (30C)		663.5312	696.3845	-5.4	-0.008
Extreme (10C)		663.5312	696.3845	-5.8	-0.008
Extreme (0C)		663.5312	696.3845	-5.4	-0.008
Extreme (-10C)		663.5312	696.3845	-4.6	-0.007
Extreme (-20C)		663.5312	696.3845	-4.8	-0.007
Extreme (-30C)		663.5312	696.3845	-5.0	-0.007
20C	15%	663.5312	696.3845	-5.0	-0.007
	-15%	663.5312	696.3845	-5.2	-0.008
	End Point	663.5312	696.3845	-5.8	-0.008

9.4.15. 5G NR n77 (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:	25780	Test Date:	11/8/2021
-------------------	-------	------------	-----------

5G NR n77 QPSK (100MHz BANDWIDTH)

Limit		3450	3550	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	3451.2500	3547.8536		
Extreme (50C)		3451.2500	3547.8536	-28.7	-0.008
Extreme (40C)		3451.2500	3547.8536	-20.9	-0.006
Extreme (30C)		3451.2500	3547.8536	-22.8	-0.007
Extreme (10C)		3451.2500	3547.8536	-19.5	-0.006
Extreme (0C)		3451.2500	3547.8536	-23.1	-0.007
Extreme (-10C)		3451.2500	3547.8536	-17.5	-0.005
Extreme (-20C)		3451.2500	3547.8536	-21.5	-0.006
Extreme (-30C)		3451.2500	3547.8536	-19.6	-0.006
20C	15%	3451.2500	3547.8536	-18.1	-0.005
	-15%	3451.2500	3547.8536	-22.5	-0.006
	End Point	3451.2500	3547.8536	-21.6	-0.006

9.4.16. 5G NR n77 (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:	25780	Test Date:	11/8/2021
-------------------	-------	------------	-----------

5G NR n77 QPSK (100MHz BANDWIDTH)

Limit		3700	3980	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	3701.0637	3977.0000		
Extreme (50C)		3701.0637	3977.0000	-30.9	-0.008
Extreme (40C)		3701.0637	3977.0000	36.4	0.009
Extreme (30C)		3701.0637	3977.0000	-30.3	-0.008
Extreme (10C)		3701.0637	3977.0000	-30.2	-0.008
Extreme (0C)		3701.0637	3977.0000	31.5	0.008
Extreme (-10C)		3701.0637	3977.0000	-28.6	-0.007
Extreme (-20C)		3701.0637	3977.0000	-30.0	-0.008
Extreme (-30C)		3701.0637	3977.0000	-29.2	-0.008
20C	15%	3701.0637	3977.0000	-31.2	-0.008
	-15%	3701.0637	3977.0000	-31.3	-0.008
	End Point	3701.0637	3977.0000	27.6	0.007

9.5. PEAK-TO-AVERAGE POWER RATIO

LIMIT

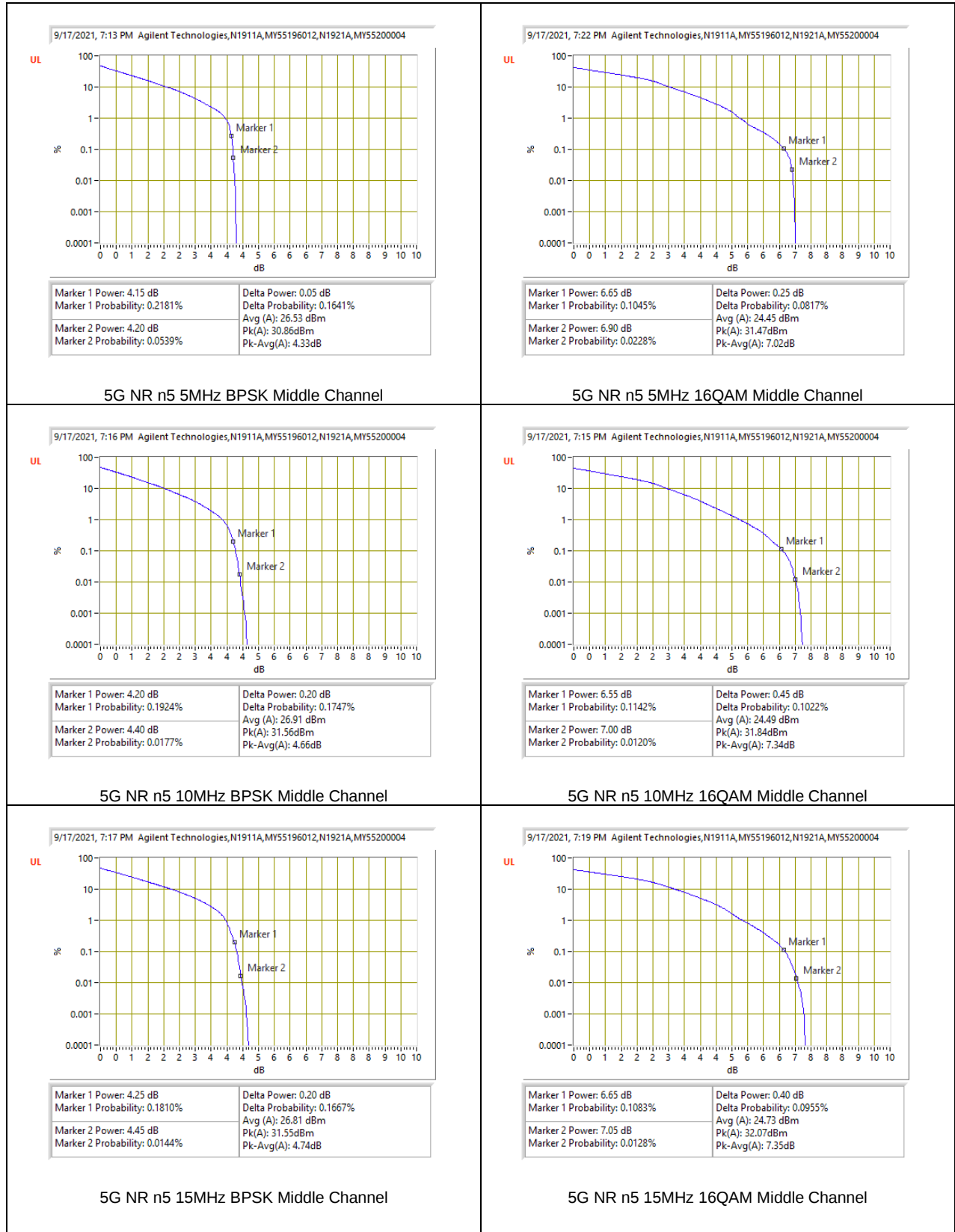
In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

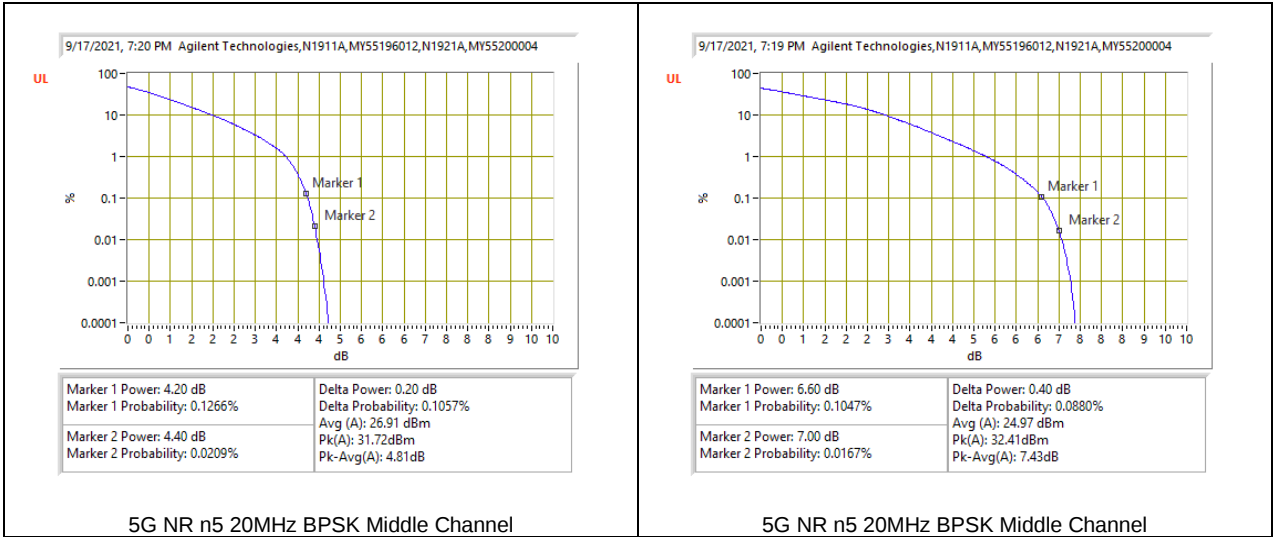
RESULT

Antenna 1 or 7 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.

Test Engineer ID:	50822	Test Date:	9/17/2021
-------------------	-------	------------	-----------

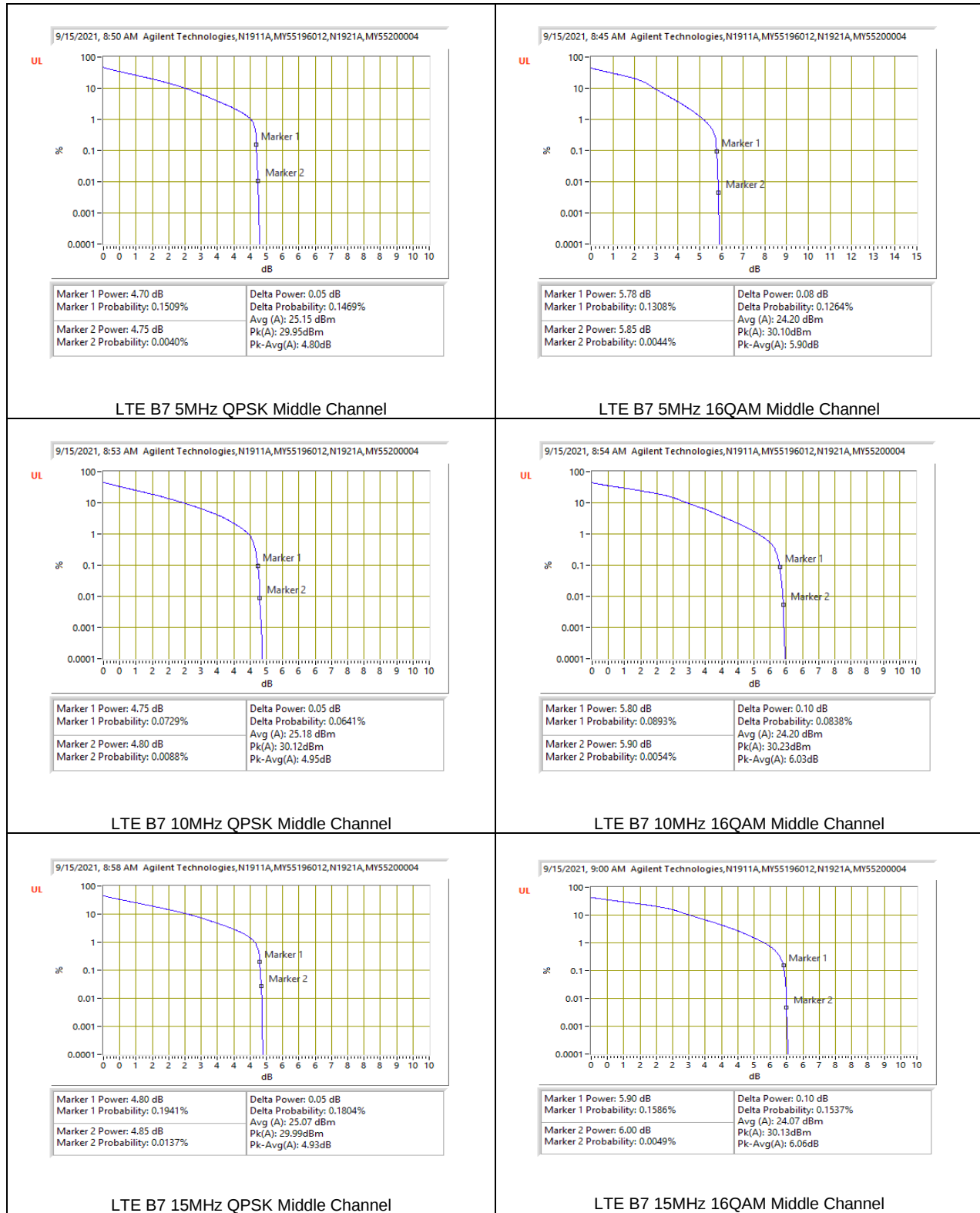
9.5.1. 5G NR n5

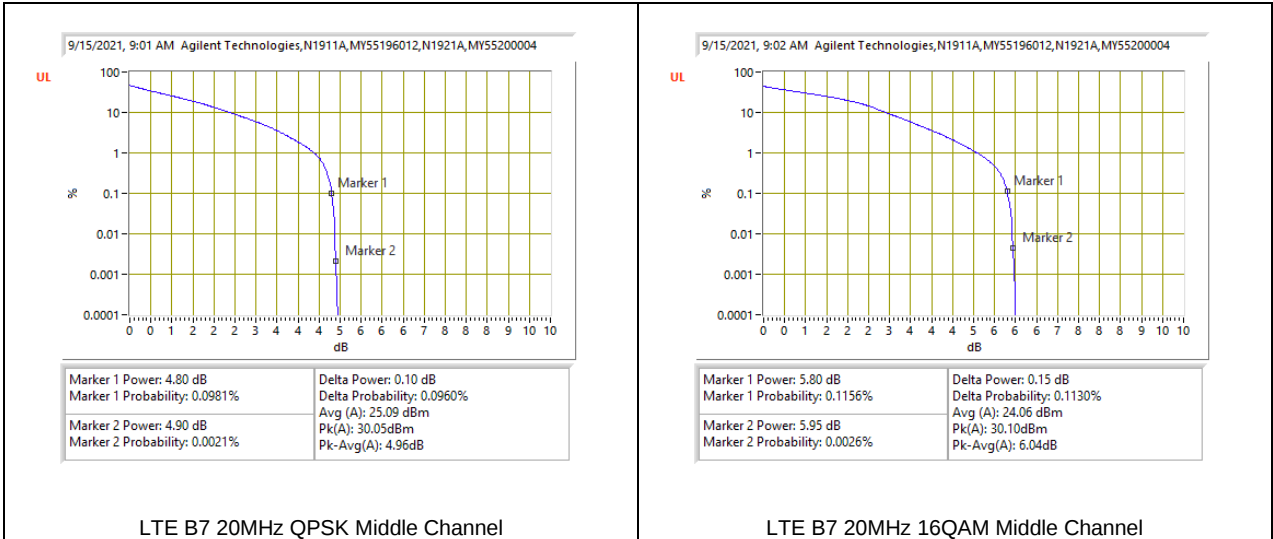




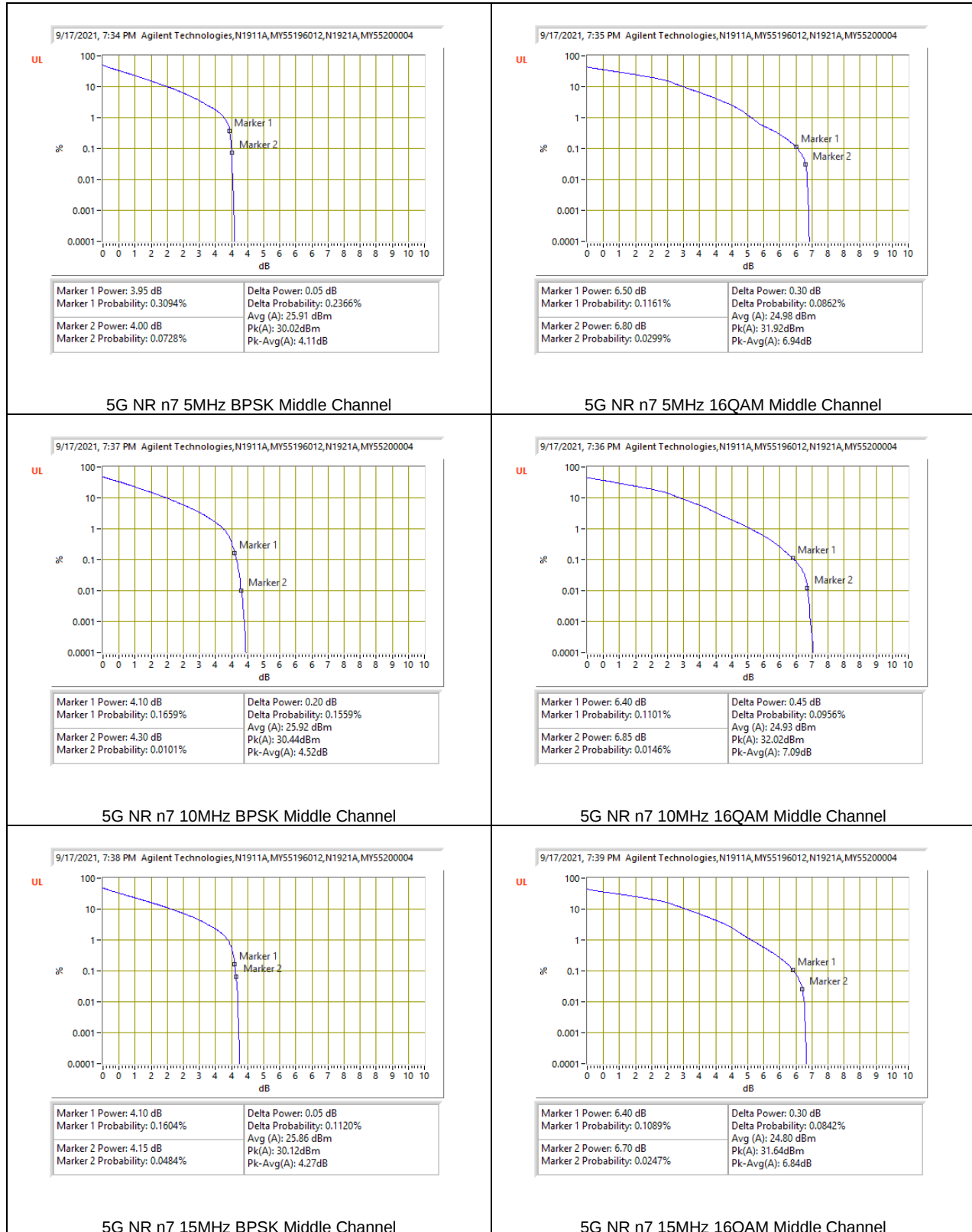
9.5.2. LTE BAND 7 AND 5G NR n7

LTE BAND 7

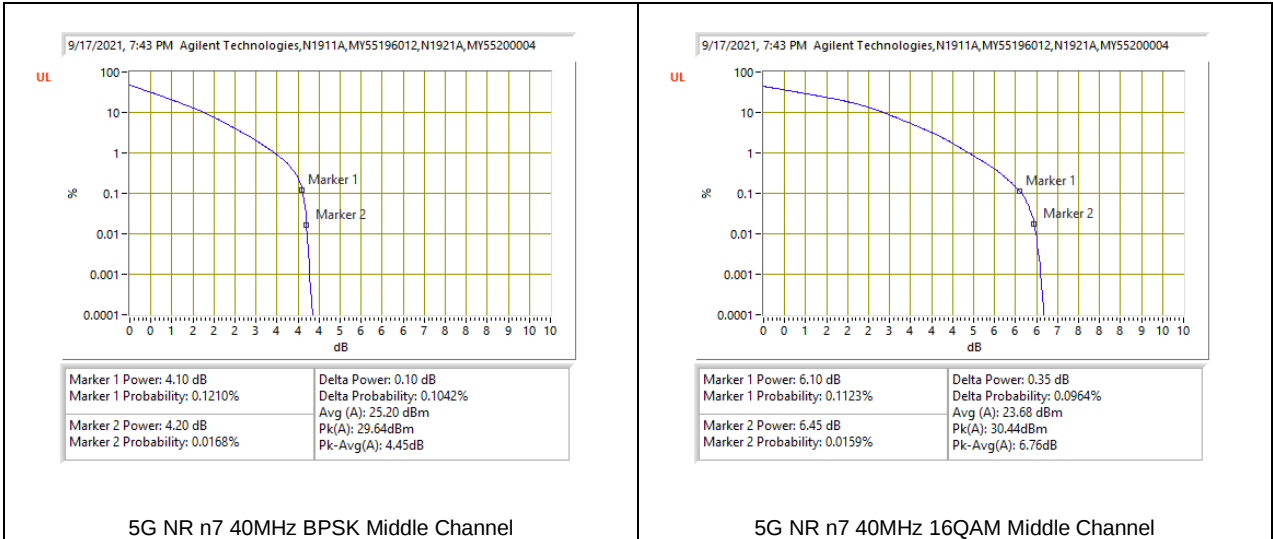




5G NR n7

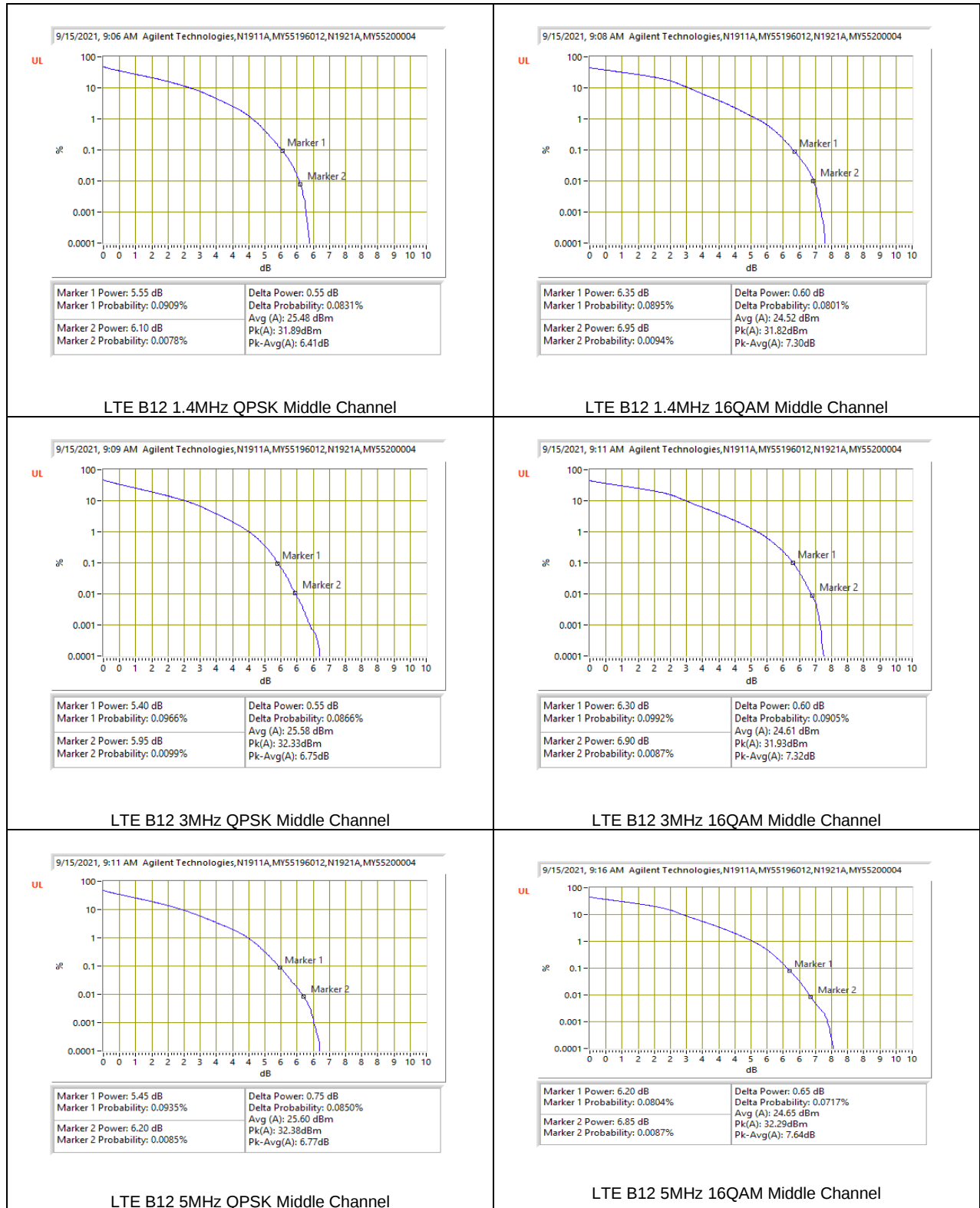


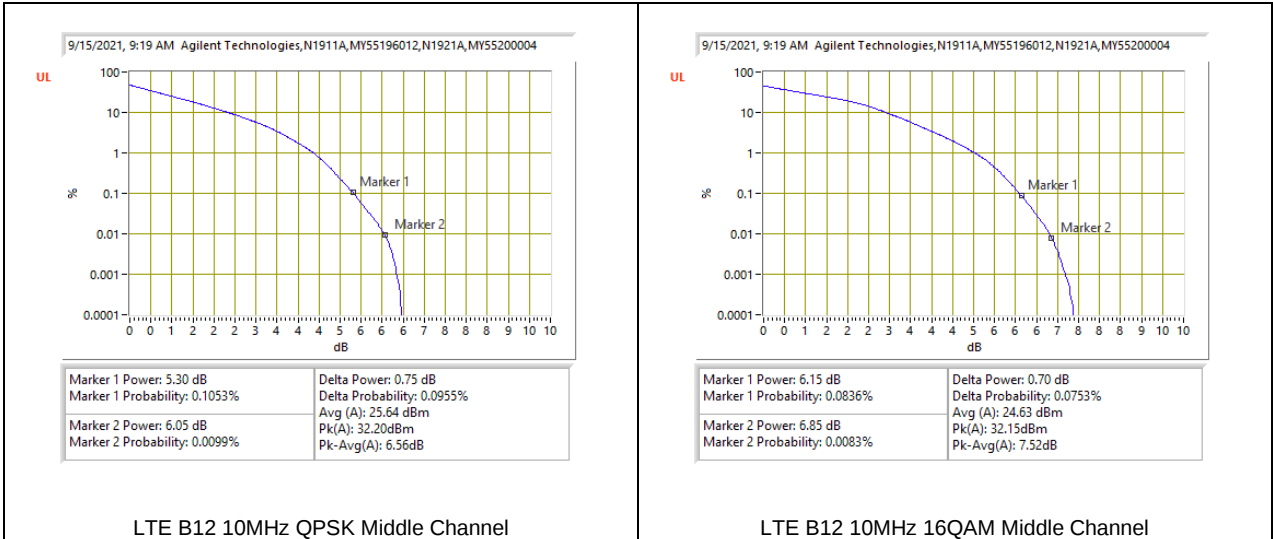




9.5.3. LTE BAND 12 AND 5G NR n12

LTE BAND 12





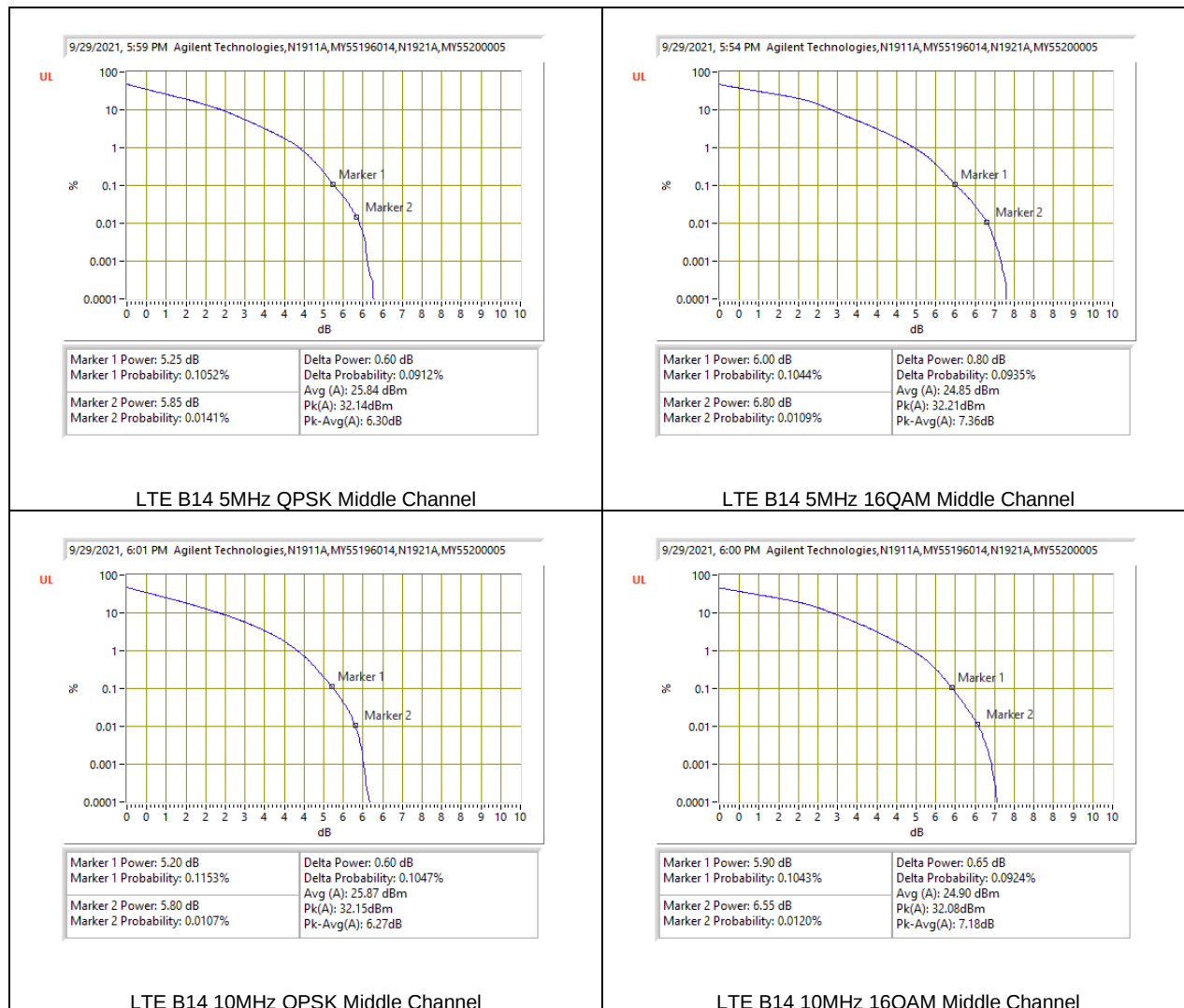
5G NR n12



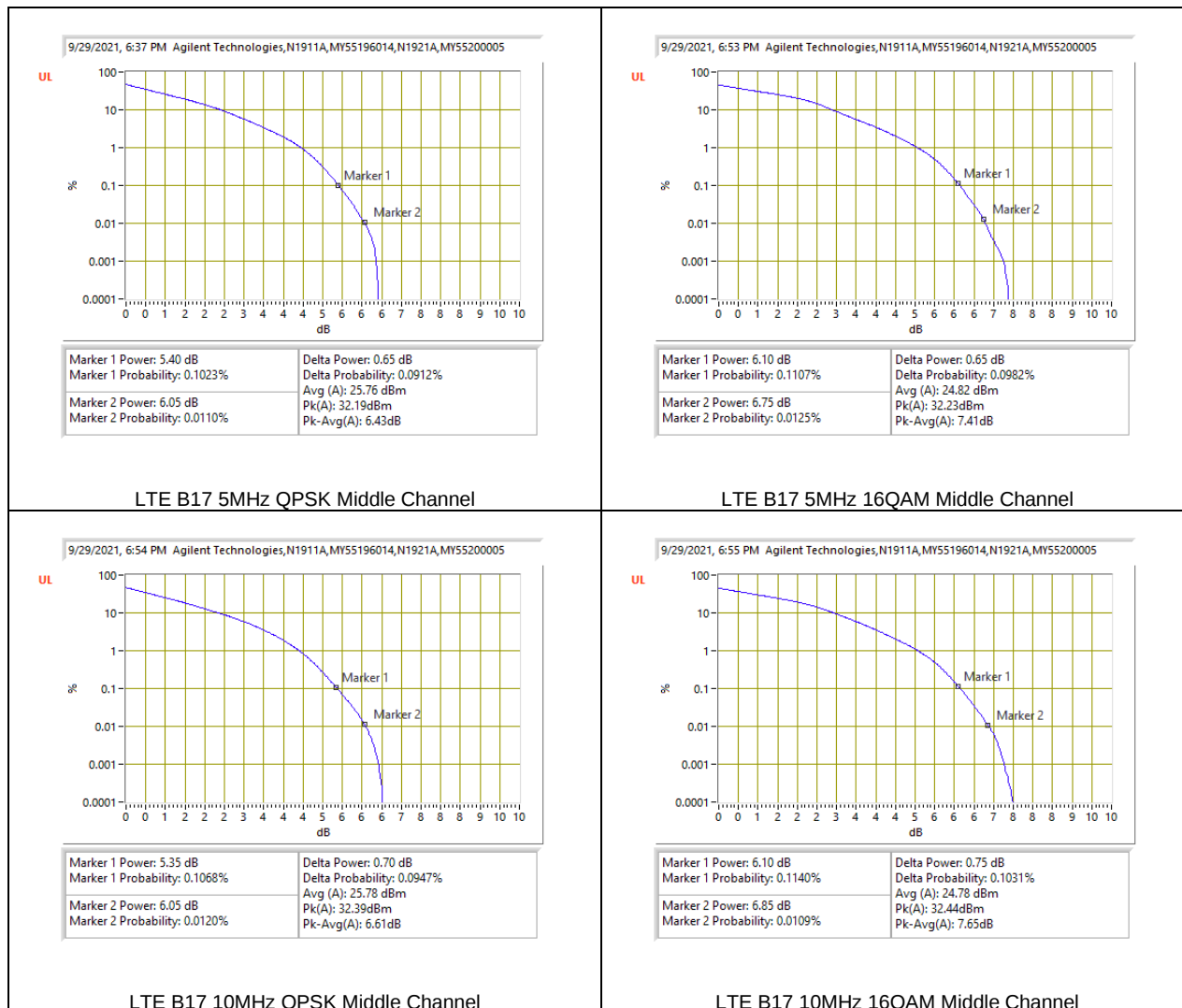
9.5.4. LTE BAND 13



9.5.5. LTE BAND 14

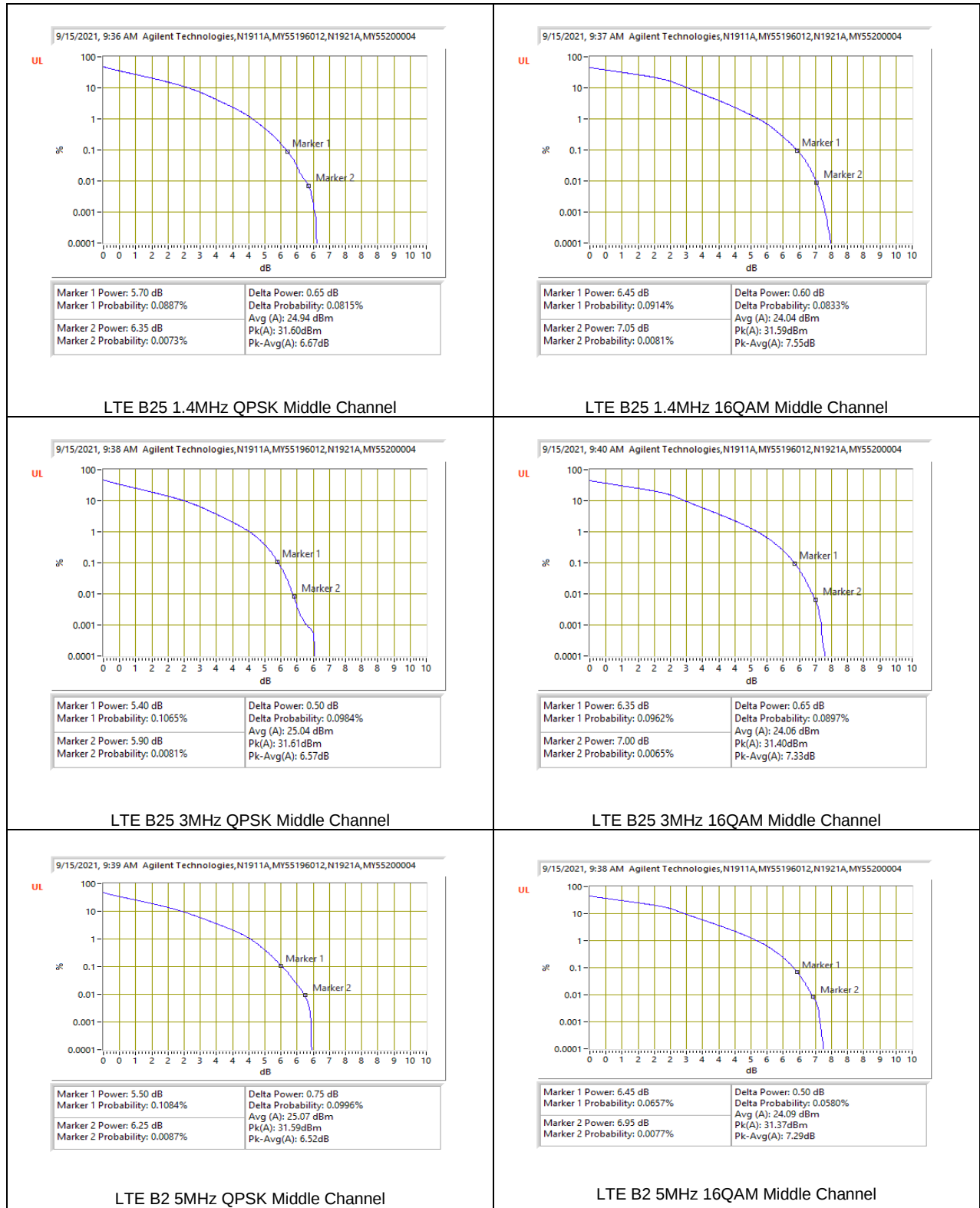


9.5.6. LTE BAND 17



9.5.7. LTE BAND 25 AND 5G NR n25

LTE BAND 25

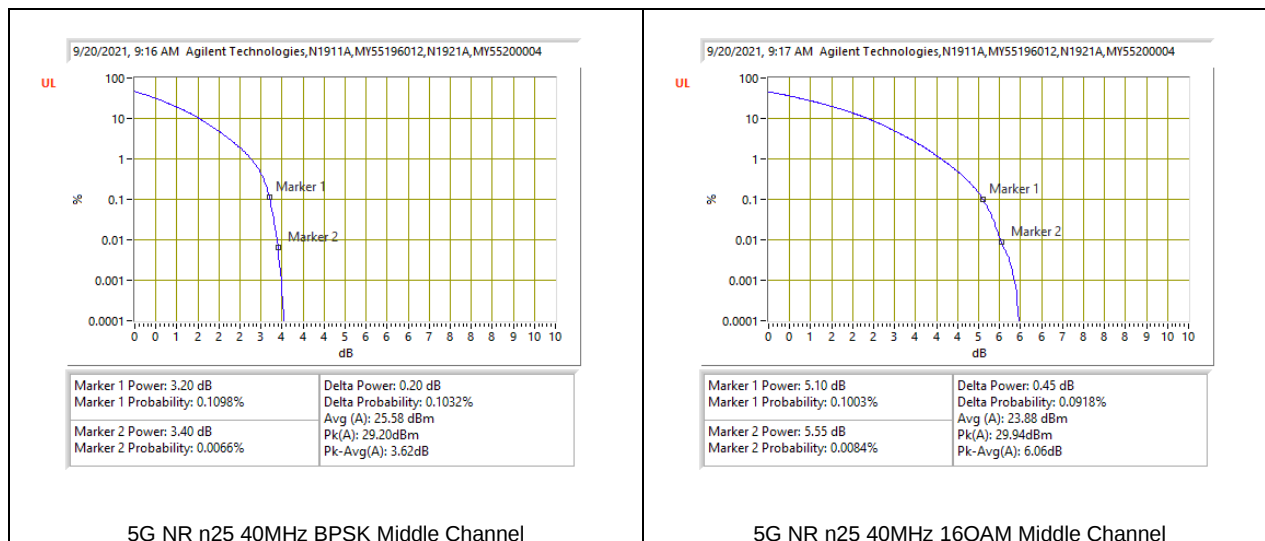




5G NR n25

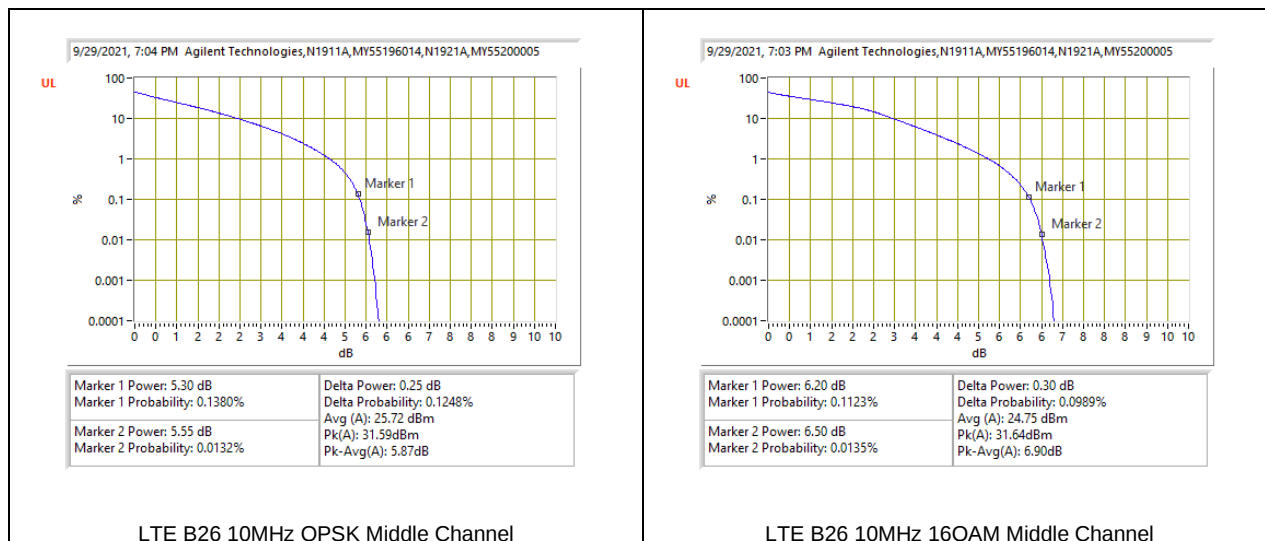






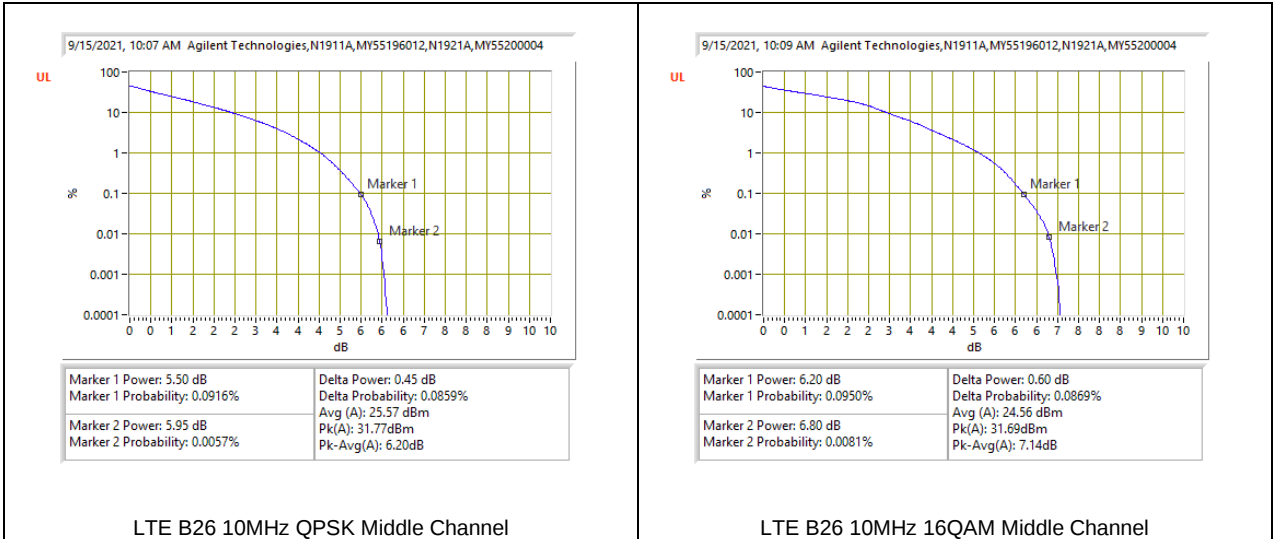
9.5.8. LTE BAND 26 (PART 90S)





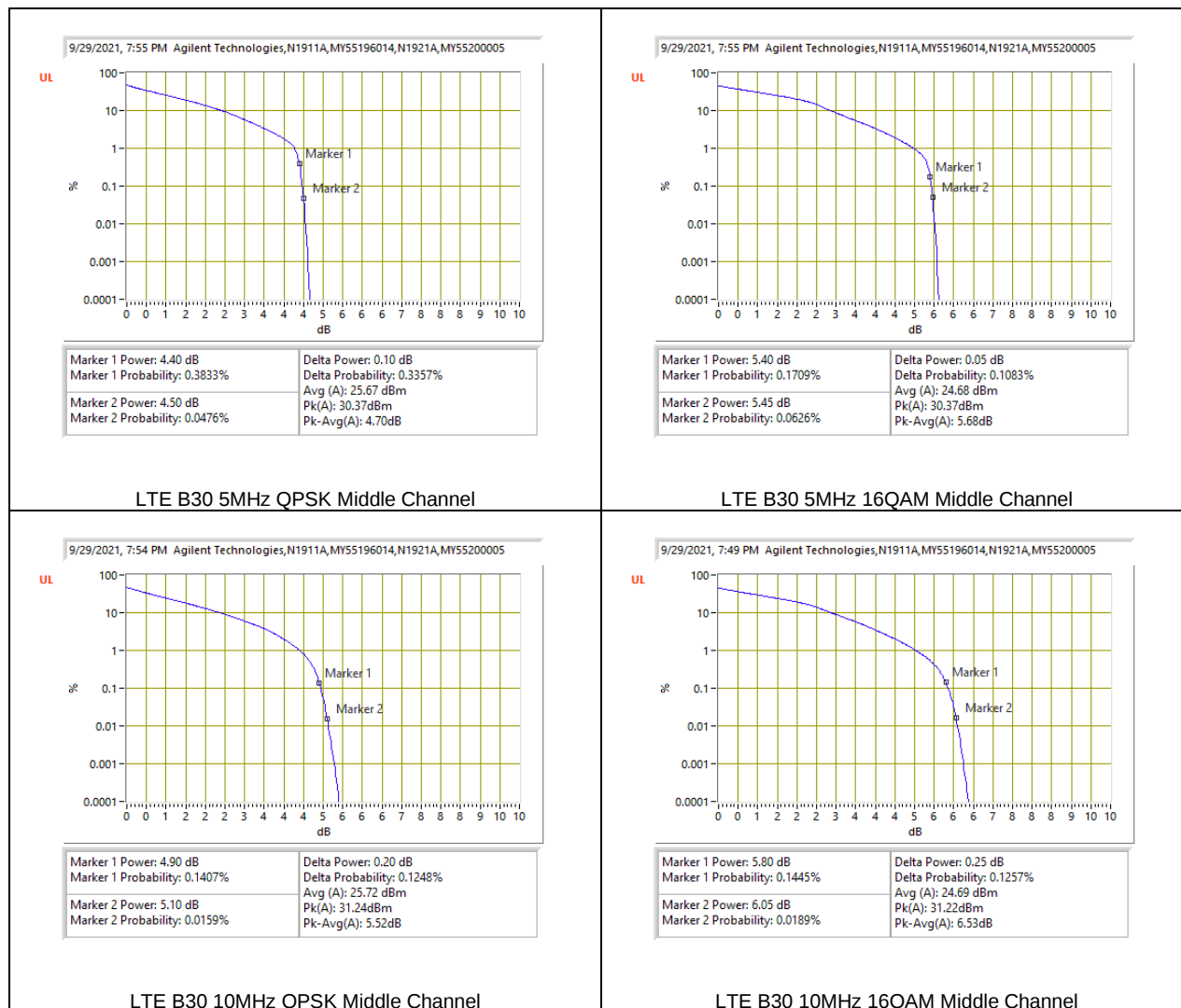
9.5.9. LTE BAND 26 (PART 22)





9.5.10. LTE BAND 30 AND 5G NR n30

LTE BAND 30



5G NR n30



9.5.11. LTE BAND 41 AND 5G NR n41

Test Engineer ID:	25780	Test Date:	9/29/2021
-------------------	-------	------------	-----------

Band	Bandwidth (MHz)	Frequency (MHz)	RB Allocation	RB OffSet	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)	
						Peak	Average		
Band 41	5MHz	2593.0	25	0	QPSK	34.12	20.85	*6.28	
					16QAM	34.53	19.86	*7.68	
	10MHz		50	0	QPSK	34.87	20.89	*6.99	
					16QAM	34.19	19.89	*7.31	
	15MHz		75	0	QPSK	34.46	20.73	*6.74	
					16QAM	34.11	19.72	*7.404	
20MHz	100		0	QPSK	34.31	20.73	*6.59		
				16QAM	34.10	19.75	*7.36		
LTE 5G NR n41	20MHz		50	0	BPSK	30.08	26.01	4.07	
					16QAM	31.21	24.81	6.40	
	30MHz			75	0	BPSK	30.89	26.30	4.59
						16QAM	31.35	24.83	6.52
	40MHz	100		0	BPSK	30.28	26.23	4.05	
					16QAM	31.23	24.88	6.35	
	50MHz	128	0	BPSK	30.35	26.14	4.21		
				16QAM	31.14	24.75	6.39		
	60MHz	162	0	BPSK	32	28.28	3.72		
				16QAM	32.63	26.57	6.06		
	80MHz	216	0	BPSK	30.19	27.98	2.21		
				16QAM	32.68	26.30	6.38		
	90MHz	243	0	BPSK	31.44	27.85	3.59		
				16QAM	32.32	26.35	5.97		
	100MHz	270	0	BPSK	31.44	27.85	3.59		
				16QAM	31.78	26.46	5.32		
	*Duty Cycle Correction Factor (dB) =			6.99					
	Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor								

9.5.12. LTE BAND 48

Test Engineer ID:	25602	Test Date:	10/22/2021
-------------------	-------	------------	------------

Band	Bandwidth (MHz)	Frequency (MHz)	RB Allocation	RB OffSet	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
						Peak	Average	
Band 48	5MHz	3625.0	25	0	QPSK	30.16	17.68	*5.49
					16QAM	30.03	16.72	*6.32
	10MHz		50	0	QPSK	30.14	17.73	*5.42
					16QAM	29.93	16.71	*6.23
	15MHz		75	0	QPSK	30.06	17.56	*5.51
					16QAM	29.93	16.6	*6.34
	20MHz		100	0	QPSK	29.84	17.41	*5.44
					16QAM	29.79	16.47	*6.33
*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





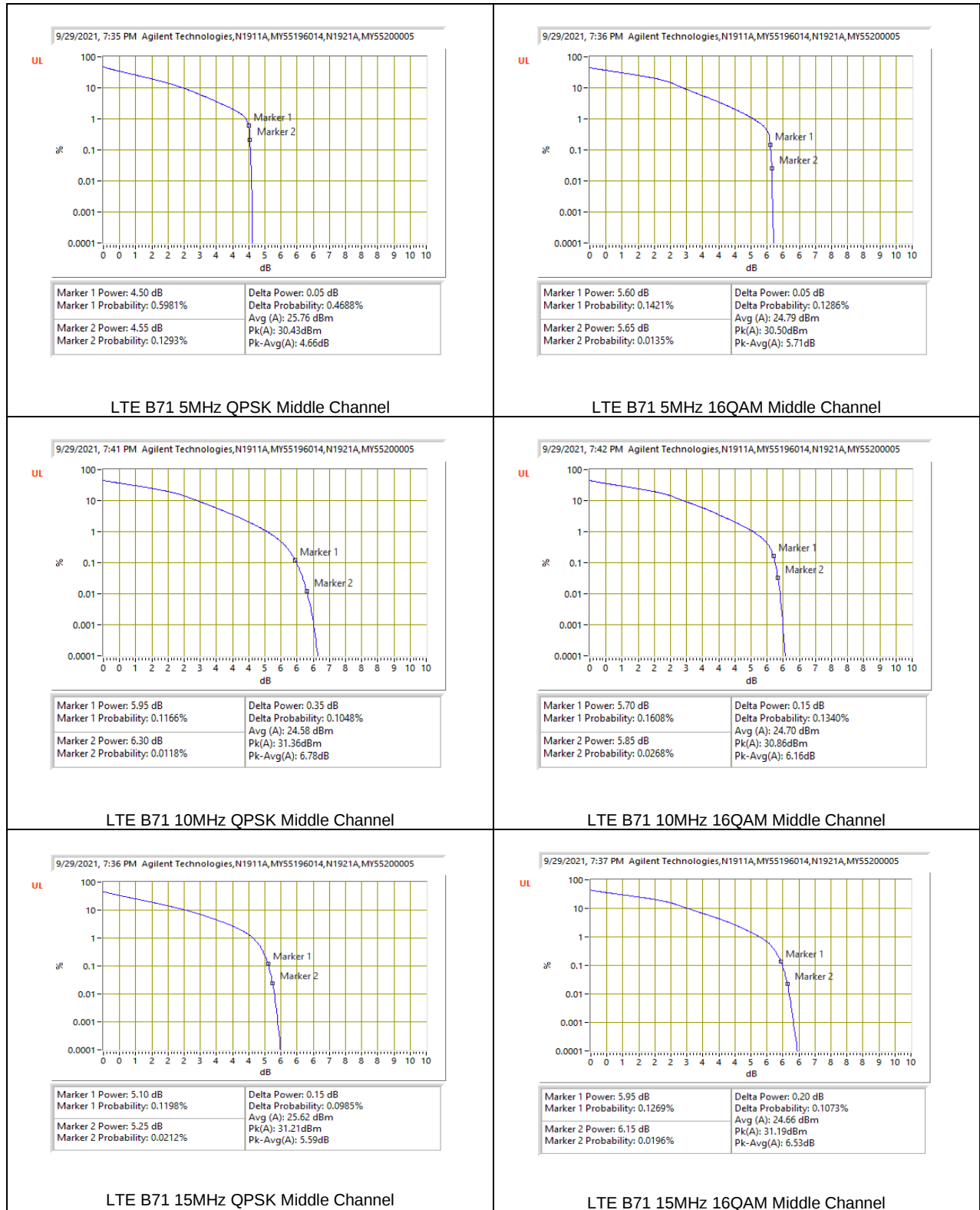
5G NR n66

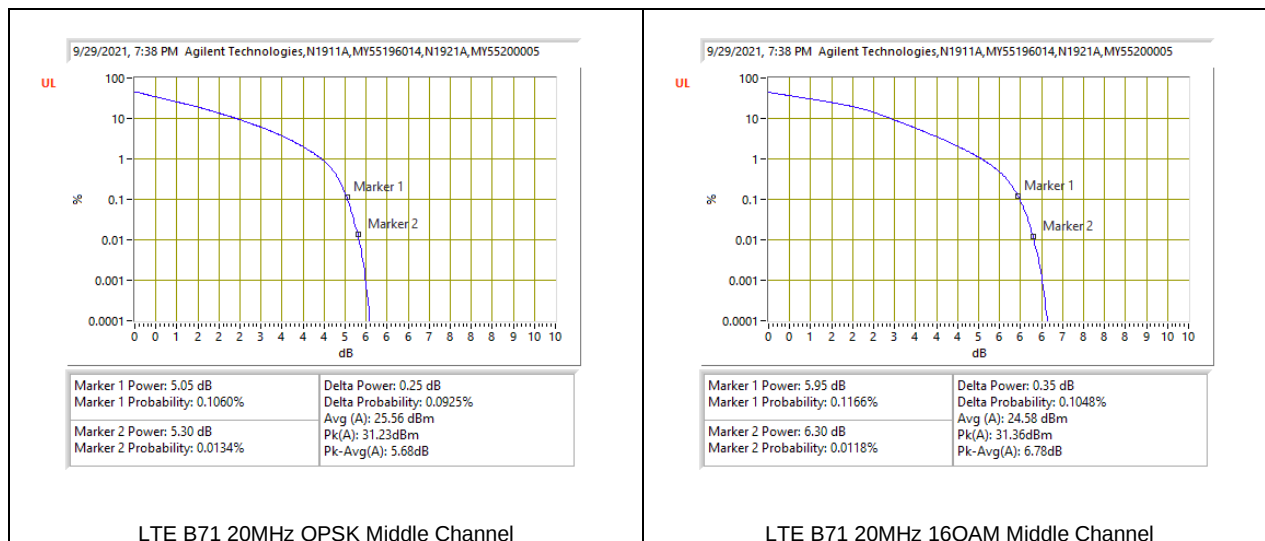




9.5.14. LTE BAND 71 AND 5G NR n71

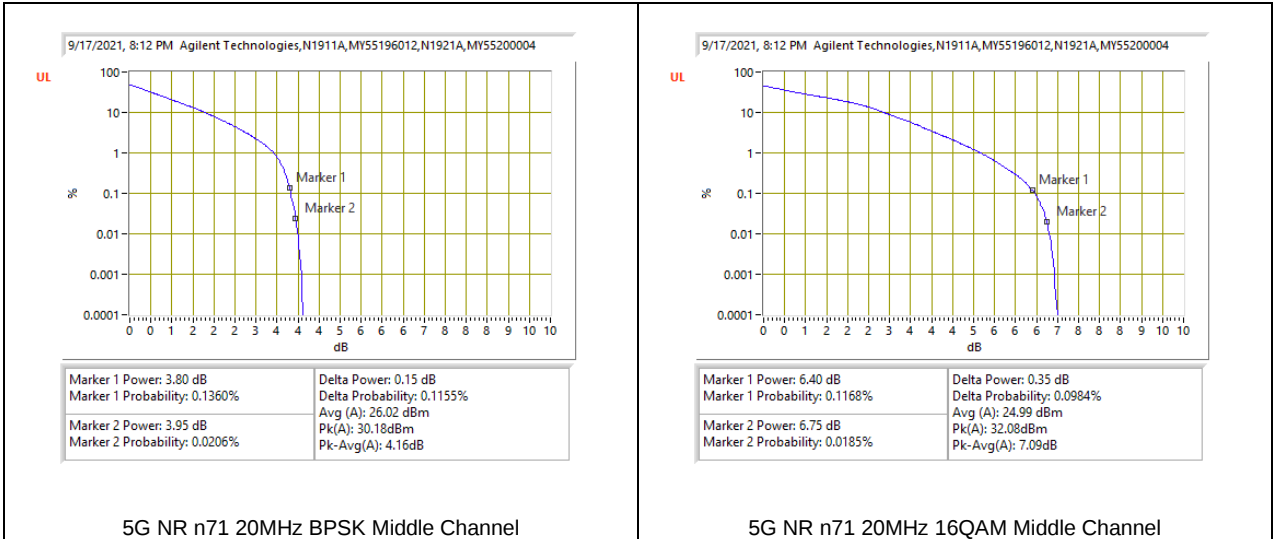
LTE BAND 71





5G NR n71





9.5.15. 5G NR n77 (3450-3550MHz)

Test Engineer ID:	52275	Test Date:	10/11/2021
-------------------	-------	------------	------------

Band	Bandwidth (MHz)	Frequency (MHz)	RB Allocation	RB OffSet	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
						Peak	Average	
LTE 5G NR n77	20MHz	3500.0	50	0	BPSK	30.07	26.59	3.48
					16QAM	32.18	24.92	7.26
	30MHz		75	0	BPSK	29.98	26.46	3.52
					16QAM	30.50	24.96	5.54
	40MHz		100	0	BPSK	26.97	26.34	0.63
					16QAM	30.47	24.86	5.61
	50MHz		128	0	BPSK	30.53	25.83	4.70
					16QAM	30.24	25.01	5.23
	60MHz		162	0	BPSK	29.67	26.44	3.23
					16QAM	30.25	24.81	5.44
	70MHz		180	0	BPSK	29.58	26.37	3.21
					16QAM	30.23	24.74	5.49
	80MHz		216	0	BPSK	29.23	26.40	2.83
					16QAM	29.88	24.79	5.09
	90MHz		243	0	BPSK	29.33	26.29	3.04
					16QAM	29.78	24.64	5.14
	100MHz		270	0	BPSK	29.03	26.39	2.64
					16QAM	29.90	24.67	5.23

9.5.16. 5G NR n77 (3700-3980MHz)

Test Engineer ID:	52275	Test Date:	10/11/2021
-------------------	-------	------------	------------

Band	Bandwidth (MHz)	Frequency (MHz)	RB Allocation	RB OffSet	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
						Peak	Average	
LTE 5G NR n77	20MHz	3840.0	50	0	BPSK	31.90	28.32	3.58
					16QAM	32.14	27.01	5.13
	30MHz		75	0	BPSK	31.39	27.98	3.41
					16QAM	31.98	26.66	5.32
	40MHz		100	0	BPSK	31.45	27.89	3.56
					16QAM	31.88	26.41	5.47
	50MHz		128	0	BPSK	31.41	28.12	3.29
					16QAM	31.70	26.68	5.02
	60MHz		162	0	BPSK	30.54	27.60	2.94
					16QAM	30.96	25.76	5.20
	70MHz		180	0	BPSK	31.01	27.62	3.39
					16QAM	30.99	25.80	5.19
	80MHz		216	0	BPSK	30.50	27.57	2.93
					16QAM	31.04	26.11	4.93
	90MHz		243	0	BPSK	30.14	27.46	2.68
					16QAM	30.50	25.65	4.85
	100MHz		270	0	BPSK	30.16	27.52	2.64
					16QAM	30.52	25.74	4.78

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.

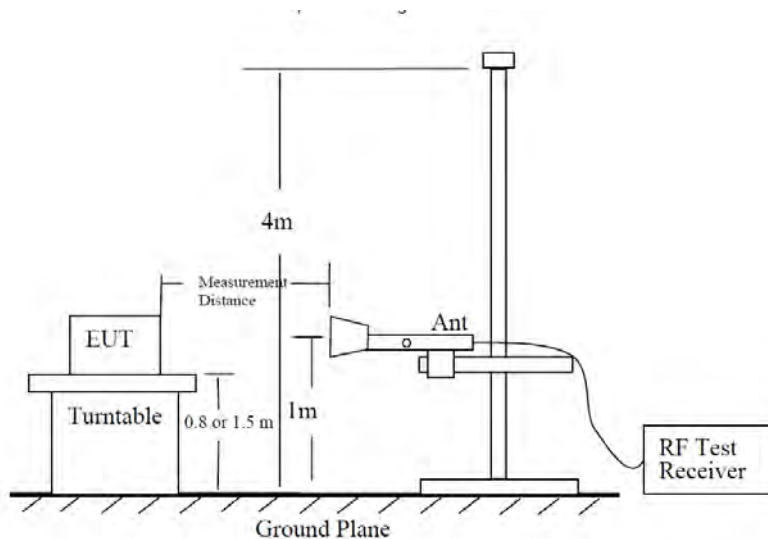


Figure 6—Test site-up for radiated ERP and/or EIRP measurements

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

- a) $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dB}\mu\text{V)} + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}.$
- b) $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}.$
- c) $E \text{ (dB}\mu\text{V/m)} = \text{EIRP (dBm)} - 20\log(D) + 104.8$; where D is the measurement distance (in the far field region) in m.
- d) $\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m.

So, from d)

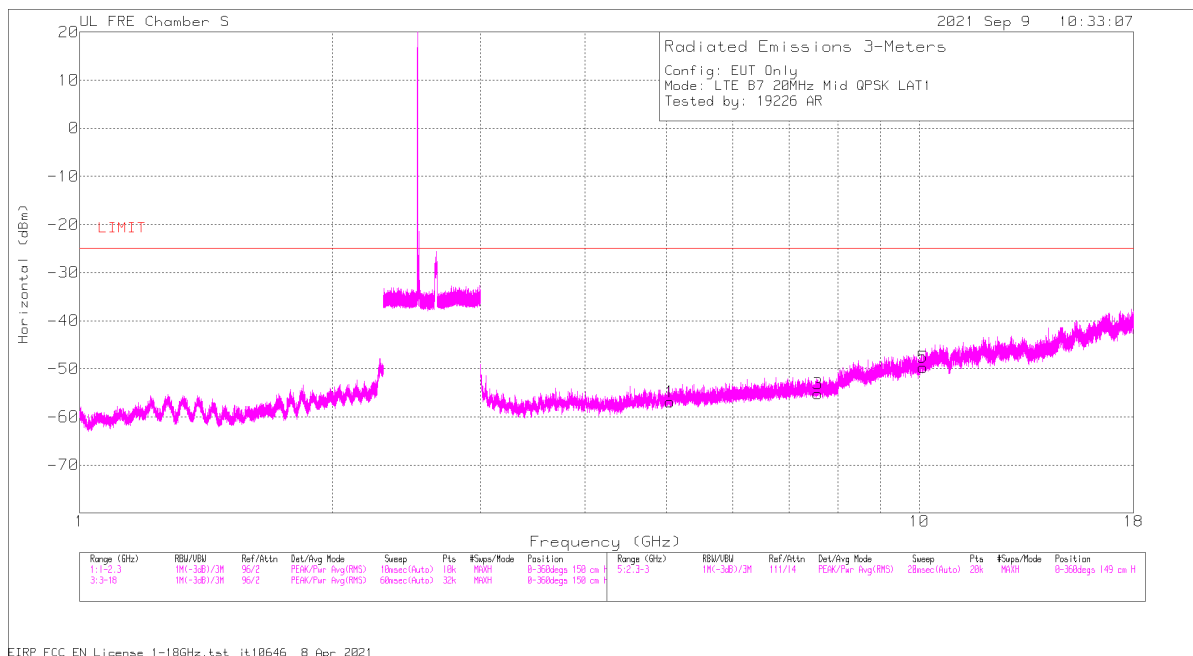
The measuring distance is usually at 3m, then $20 \cdot \log(3) = 9.5424$

Then, $\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 9.5424 - 104.8 = E \text{ (dB}\mu\text{V/m)} - 95.2576$

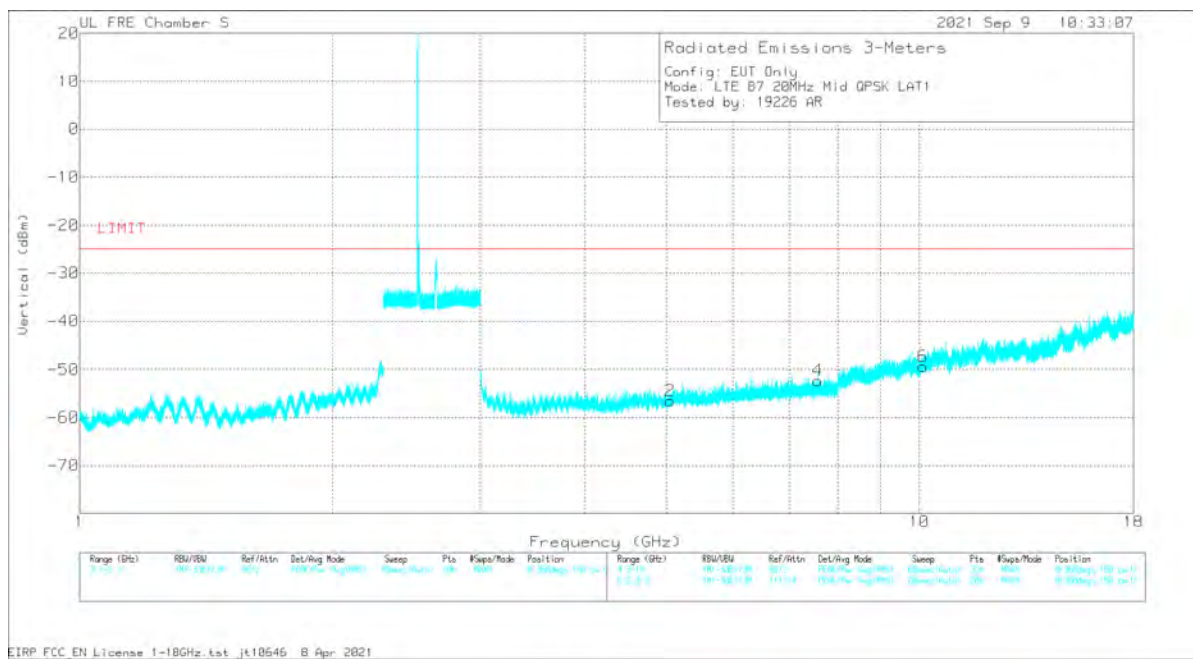
Note that: we do confidence check to our chambers every day to see if any degradation from expected/normal reading reference data. Also we do ambient check to all our chambers every month.

10.1. Example Plot

Horizontal Polarity



Vertical Polarity



Trace Markers

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
5.05015	51.66	Pk	34.1	-42.1	.6	-95.2	-50.94	-25	-25.94	H
5.05215	50.95	Pk	34.1	-42.1	.6	-95.2	-51.65	-25	-26.65	V
7.57376	48.88	Pk	36.2	-39.1	.4	-95.2	-48.82	-25	-23.82	V
7.57486	49.47	Pk	36.1	-39.1	.4	-95.2	-48.33	-25	-23.33	H
10.09964	47.17	Pk	37.3	-37	.7	-95.2	-47.03	-25	-22.03	H
10.10186	47.9	Pk	37.3	-37	.7	-95.2	-46.3	-25	-21.3	V

10.2. FIELD STRENGTH OF SPURIOUS RADIATION, Ant 1

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

All tests below 1GHz were done with a Resolution Bandwidth of 100kHz, and a Video Bandwidth of 300kHz.

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

RESULTS

10.2.1. 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.

BPSK 5G NR n5 (20.0MHZ BANDWIDTH)

Project #:	13911916
Date:	12/10/2021
Test Engineer:	24943
Configuration:	EUT only
Mode	5G NR n5 BPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 834MHz										
1.710889	43.03	Pk	29.1	-34.9	.7	-95.2	-57.27	-13	-44.27	V
1.7588	42.51	Pk	29.8	-34.9	.8	-95.2	-56.99	-13	-43.99	H
2.448623	43.7	Pk	32.3	-34.8	.6	-95.2	-53.40	-13	-40.40	V
2.615823	43.11	Pk	32.4	-34.7	.6	-95.2	-53.79	-13	-40.79	H
3.503645	42.14	Pk	33	-33.4	.5	-95.2	-52.96	-13	-39.96	H
3.736845	42.22	Pk	33.5	-32.7	.5	-95.2	-51.68	-13	-38.68	V
Mid Channel, 836.5MHz										
1.6532	39.59	Pk	28.4	-34.9	.7	-95.2	-61.41	-13	-48.41	H
1.6532	40.05	Pk	28.4	-34.9	.7	-95.2	-60.95	-13	-47.95	V
2.479423	40.38	Pk	32.6	-34.8	.5	-95.2	-56.52	-13	-43.52	H
2.479423	40.14	Pk	32.6	-34.8	.5	-95.2	-56.76	-13	-43.76	V
3.306134	38.89	Pk	32.6	-33.8	.5	-95.2	-57.01	-13	-44.01	H
3.306134	39	Pk	32.6	-33.8	.5	-95.2	-56.90	-13	-43.09	V
High Channel, 839MHz										
1.435156	43.23	Pk	29	-34.9	.9	-95.2	-56.97	-13	-43.97	H
1.850222	42.95	Pk	30.8	-34.8	.6	-95.2	-55.65	-13	-42.65	V
2.462311	43.33	Pk	32.5	-34.8	.5	-95.2	-53.67	-13	-40.67	H
2.519023	42.89	Pk	32.7	-34.7	.5	-95.2	-53.81	-13	-40.81	V
3.676712	42.66	Pk	33.2	-32.9	.5	-95.2	-51.74	-13	-38.74	V
3.799423	42.88	Pk	33.6	-32.4	.5	-95.2	-50.62	-13	-37.62	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 #:	13911916
Date:	09/9/2021
Test Engineer:	19226
Configuration:	EUT only
Mode	LTE Band 7 QPSK 20MHz
Chamber #:	Chamber S

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2510MHz										
4.99943	51.39	Pk	33.9	-42.2	.8	-95.2	-51.31	-25	-26.31	V
5.002	51.5	Pk	33.9	-42.2	.8	-95.2	-51.2	-25	-26.2	H
7.50158	49.13	Pk	36.2	-39.2	.4	-95.2	-48.67	-25	-23.67	H
7.50278	48.93	Pk	36.2	-39.2	.3	-95.2	-48.97	-25	-23.97	V
10.00058	48.37	Pk	37.2	-37.8	.5	-95.2	-46.93	-25	-21.93	H
10.00085	48.47	Pk	37.2	-37.8	.5	-95.2	-46.83	-25	-21.83	V
Mid Channel, 2535MHz										
5.05015	51.66	Pk	34.1	-42.1	.6	-95.2	-50.94	-25	-25.94	H
5.05215	50.95	Pk	34.1	-42.1	.6	-95.2	-51.65	-25	-26.65	V
7.57376	48.88	Pk	36.2	-39.1	.4	-95.2	-48.82	-25	-23.82	V
7.57486	49.47	Pk	36.1	-39.1	.4	-95.2	-48.33	-25	-23.33	H
10.09964	47.17	Pk	37.3	-37	.7	-95.2	-47.03	-25	-22.03	H
10.10186	47.9	Pk	37.3	-37	.7	-95.2	-46.3	-25	-21.3	V
High Channel, 2560MHz										
4.9999	50.92	Pk	33.9	-42.2	.8	-95.2	-51.78	-25	-26.78	V
5.0001	50.87	Pk	33.9	-42.2	.8	-95.2	-51.83	-25	-26.83	H
7.49976	49.62	Pk	36.1	-39.2	.4	-95.2	-48.28	-25	-23.28	V
7.50128	48.63	Pk	36.1	-39.2	.4	-95.2	-49.27	-25	-24.27	H
9.99847	47.53	Pk	37.2	-37.8	.5	-95.2	-47.77	-25	-22.77	H
10.00133	48.41	Pk	37.2	-37.8	.5	-95.2	-46.89	-25	-21.89	V

BPSK 5G NR 7 (40.0MHZ BANDWIDTH)

Project #:	13911916
Date:	09/27/2021
Test Engineer:	25019
Configuration:	EUT only
Mode	5G NR n7 BPSK 40MHz
Chamber #:	Chamber S

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2520MHz										
4.99831	51.47	Pk	33.9	-42.1	.8	-95.2	-51.13	-25	-26.13	V
4.99925	50.36	Pk	33.9	-42.1	.8	-95.2	-52.24	-25	-27.24	H
7.4984	48.29	Pk	36.2	-39.2	.4	-95.2	-49.51	-25	-24.51	H
7.50101	49.44	Pk	36.1	-39.3	.4	-95.2	-48.56	-25	-23.56	V
9.99866	48.13	Pk	37.2	-37.8	.5	-95.2	-47.17	-25	-22.17	V
10.00076	48.01	Pk	37.2	-37.8	.5	-95.2	-47.29	-25	-22.29	H
Mid Channel, 2535MHz										
5.03009	51.66	Pk	34	-42.1	.7	-95.2	-50.94	-25	-25.94	V
5.03172	51.01	Pk	34	-42.1	.7	-95.2	-51.59	-25	-26.59	H
7.5443	48.09	Pk	36.2	-39.2	.3	-95.2	-49.81	-25	-24.81	V
7.5449	48.96	Pk	36.2	-39.1	.3	-95.2	-48.84	-25	-23.84	H
10.05932	48.25	Pk	37.3	-37.4	.7	-95.2	-46.35	-25	-21.35	H
10.06133	48.62	Pk	37.3	-37.4	.7	-95.2	-45.98	-25	-20.98	V
High Channel, 2550MHz										
5.05817	52.12	Pk	34.2	-42	.6	-95.2	-50.28	-25	-25.28	V
5.06012	51.39	Pk	34.2	-42	.6	-95.2	-51.01	-25	-26.01	H
7.58825	48.92	Pk	36.2	-39.1	.5	-95.2	-48.68	-25	-23.68	V
7.59106	48.68	Pk	36.1	-39.1	.5	-95.2	-49.02	-25	-24.02	H
10.11965	47.26	Pk	37.3	-36.9	.7	-95.2	-46.84	-25	-21.84	H
10.11987	47.41	Pk	37.3	-36.9	.7	-95.2	-46.69	-25	-21.69	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 #:	13911916
Date:	09/3/2021
Test Engineer:	19226
Configuration:	EUT only
Mode	LTE Band 12 QPSK 10MHz
Chamber #:	Chamber S

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 704MHz										
1.33906	56.44	Pk	29.2	-45.1	1.1	-95.2	-53.56	-13	-40.56	V
1.33965	56.62	Pk	29.3	-45.1	1.1	-95.2	-53.28	-13	-40.28	H
2.08172	54.65	Pk	31.6	-45.1	.5	-95.2	-53.55	-13	-40.55	H
2.0839	54.4	Pk	31.6	-45.1	.5	-95.2	-53.80	-13	-40.80	V
2.77516	52.97	Pk	32.6	-44	.5	-95.2	-53.13	-13	-40.13	H
2.77597	52.84	Pk	32.6	-44	.5	-95.2	-53.26	-13	-40.26	V
Mid Channel, 707.5MHz										
1.39376	55.64	Pk	28.8	-45	1	-95.2	-54.76	-13	-41.76	H
1.39469	56.77	Pk	28.8	-45	1	-95.2	-53.63	-13	-40.63	V
2.0914	53.93	Pk	31.6	-45.2	.5	-95.2	-54.37	-13	-41.37	V
2.09153	54.4	Pk	31.6	-45.2	.5	-95.2	-53.90	-13	-40.90	H
2.79098	52.63	Pk	32.6	-43.9	.5	-95.2	-53.37	-13	-40.37	H
2.79117	53.02	Pk	32.6	-43.9	.5	-95.2	-52.98	-13	-39.98	V
High Channel, 711MHz										
2.11979	52.56	Pk	31.5	-37.1	.5	-95.2	-47.74	-13	-34.74	H
1.41293	45.84	Pk	29.1	-37.1	.9	-95.2	-56.46	-13	-43.46	H
2.82441	46.35	Pk	32.5	-37	.7	-95.2	-52.65	-13	-39.65	H
2.11979	48.79	Pk	31.5	-37.1	.5	-95.2	-51.51	-13	-38.51	V
1.41272	45.81	Pk	29.1	-37.1	.9	-95.2	-56.49	-13	-43.49	V
2.82647	45.65	Pk	32.4	-37	.7	-95.2	-53.45	-13	-40.45	V

BPSK 5G NR n12 (15.0MHZ BANDWIDTH)

Project #:	13911916
Date:	09/23/2021
Test Engineer:	16226
Configuration:	EUT only
Mode	5G NR n12 BPSK 10MHz
Chamber #:	Chamber S

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 706.5MHz										
1.39903	66.27	Pk	28.8	-45	.9	-95.2	-44.23	-13	-31.23	V
1.39916	66.22	Pk	28.8	-45	.9	-95.2	-44.28	-13	-31.28	H
2.09861	55.94	Pk	31.6	-45.2	.5	-95.2	-52.36	-13	-39.36	H
2.09887	57.07	Pk	31.6	-45.2	.5	-95.2	-51.23	-13	-38.23	V
2.79564	52.67	Pk	32.6	-43.9	.5	-95.2	-53.33	-13	-40.33	H
2.79788	53.42	Pk	32.7	-43.9	.5	-95.2	-52.48	-13	-39.48	V
Mid Channel, 707.5MHz										
1.40088	71.26	Pk	28.7	-45	.9	-95.2	-39.34	-13	-26.34	H
1.4009	70.64	Pk	28.7	-45	.9	-95.2	-39.96	-13	-26.96	V
2.1005	55.9	Pk	31.6	-45.2	.5	-95.2	-52.4	-13	-39.4	V
2.10126	55.38	Pk	31.6	-45.2	.5	-95.2	-52.92	-13	-39.92	H
2.80112	53.22	Pk	32.7	-43.9	.5	-95.2	-52.68	-13	-39.68	V
2.80198	53.49	Pk	32.7	-43.9	.5	-95.2	-52.41	-13	-39.41	H
High Channel, 708.5MHz										
1.40281	53.92	Pk	28.7	-45	.9	-95.2	-56.68	-13	-43.68	H
1.40336	54.35	Pk	28.7	-45	.9	-95.2	-56.25	-13	-43.25	V
2.10293	55.28	Pk	31.6	-45.2	.5	-95.2	-53.02	-13	-40.02	V
2.10487	55.1	Pk	31.6	-45.2	.5	-95.2	-53.2	-13	-40.2	H
2.80425	53.7	Pk	32.7	-43.8	.5	-95.2	-52.1	-13	-39.1	V
2.80454	54.24	Pk	32.7	-43.8	.5	-95.2	-51.56	-13	-38.56	H

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 #:	13911916
Date:	10/04/2021
Test Engineer:	26120
Configuration:	EUT only
Mode	LTE Band 13 QPSK 10MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 782MHz										
1.5652	38.41	Pk	28.2	-29.5	.9	-95.2	-57.19	-40	-17.19	H
2.43151	46.78	Pk	31.9	-28	.5	-95.2	-44.02	-13	-31.02	H
5.49782	36.7	Pk	34.8	-23.2	.7	-95.2	-46.20	-13	-33.20	H
1.56471	36.25	Pk	28.2	-29.5	.9	-95.2	-59.35	-40	-19.35	V
2.34547	37.96	Pk	31.9	-28.2	.5	-95.2	-53.04	-13	-40.04	V
3.12916	34.46	Pk	33.1	-26.7	.6	-95.2	-53.74	-13	-40.74	V

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 #:	13911916
Date:	09/7/2021
Test Engineer:	12491
Configuration:	EUT only
Mode	LTE Band 14 QPSK 10MHz
Chamber #:	Chamber J

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 793MHz										
1.57742	46.73	Pk	27.9	-37.2	.8	-95.2	-56.97	-40	-16.97	H
2.37918	46.1	Pk	32.1	-37.1	.5	-95.2	-53.6	-13	-40.6	H
3.15506	45.69	Pk	32.9	-36.6	.5	-95.2	-52.71	-13	-39.71	H
1.57296	45.69	Pk	27.9	-37.2	.9	-95.2	-57.91	-40	-17.91	V
2.37623	45.89	Pk	32.1	-37.2	.5	-95.2	-53.91	-13	-40.91	V
3.15338	44.7	Pk	32.9	-36.6	.5	-95.2	-53.7	-13	-40.7	V

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 #:	13911916
Date:	09/7/2021
Test Engineer:	24839
Configuration:	EUT only
Mode	LTE Band 14 QPSK 10MHz
Chamber #:	Chamber J

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 709MHz										
1.40921	48.2	Pk	29.1	-37.1	.9	-95.2	-54.1	-13	-41.1	H
2.11395	46.27	Pk	31.6	-37.1	.5	-95.2	-53.93	-13	-40.93	H
2.81606	46.44	Pk	32.5	-37	.6	-95.2	-52.66	-13	-39.66	H
1.41269	46.57	Pk	29.1	-37.1	.9	-95.2	-55.73	-13	-42.73	V
2.10979	46.49	Pk	31.5	-37.1	.5	-95.2	-53.81	-13	-40.81	V
2.81507	46.88	Pk	32.5	-37	.6	-95.2	-52.22	-13	-39.22	V
Mid Channel, 710MHz										
1.41141	49.55	Pk	29.1	-37.1	.9	-95.2	-52.75	-13	-39.75	H
2.11889	46.4	Pk	31.5	-37.1	.5	-95.2	-53.9	-13	-40.9	H
2.82215	45.8	Pk	32.5	-37	.7	-95.2	-53.2	-13	-40.2	H
1.41103	46.09	Pk	29.1	-37.1	.9	-95.2	-56.21	-13	-43.21	V
2.11551	45.36	Pk	31.5	-37.1	.5	-95.2	-54.94	-13	-41.94	V
2.8235	45.54	Pk	32.5	-37	.7	-95.2	-53.46	-13	-40.46	V
High Channel, 711MHz										
1.41316	47.39	Pk	29.1	-37.1	.9	-95.2	-54.91	-13	-41.91	H
2.11751	45.66	Pk	31.5	-37.1	.5	-95.2	-54.64	-13	-41.64	H
2.81936	46.25	Pk	32.5	-37	.6	-95.2	-52.85	-13	-39.85	H
1.40958	46.23	Pk	29.1	-37.1	.9	-95.2	-56.07	-13	-43.07	V
2.11991	48.73	Pk	31.5	-37.1	.5	-95.2	-51.57	-13	-38.57	V
2.82715	45.97	Pk	32.4	-37	.7	-95.2	-53.13	-13	-40.13	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 #:	13911916
Date:	12/7/2021
Test Engineer:	26277
Configuration:	EUT only
Mode	LTE Band 25 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 1860MHz										
3.732068	40.88	Pk	33.5	-32.7	.6	-95.2	-52.92	-13	-39.92	H
3.738372	41.8	Pk	33.5	-32.7	.6	-95.2	-52.00	-13	-39.00	V
5.58623	39.38	Pk	34.9	-30.1	.5	-95.2	-50.52	-13	-37.52	H
5.596898	38.41	Pk	35	-30	.4	-95.2	-51.39	-13	-38.39	V
7.445726	36.96	Pk	35.7	-26.9	.6	-95.2	-48.84	-13	-35.84	H
7.45009	35.27	Pk	35.7	-26.9	.6	-95.2	-50.53	-13	-37.53	V
Mid Channel, 1882.5MHz										
3.748554	40.93	Pk	33.5	-32.6	.7	-95.2	-52.67	-13	-39.67	H
3.759221	41.52	Pk	33.5	-32.6	.7	-95.2	-52.08	-13	-39.08	V
5.651204	38.2	Pk	35	-30	.5	-95.2	-51.5	-13	-38.5	H
5.659446	39.53	Pk	35	-30	.4	-95.2	-50.27	-13	-37.27	V
7.538337	34.96	Pk	35.8	-27	.7	-95.2	-50.74	-13	-37.74	H
7.543186	36.8	Pk	35.8	-26.9	.7	-95.2	-48.80	-13	-35.80	V
High Channel, 1905MHz										
3.841165	39.19	Pk	33.6	-32.4	.6	-95.2	-54.21	-13	-41.21	H
3.848923	39.69	Pk	33.6	-32.4	.7	-95.2	-53.61	-13	-40.61	V
5.718601	38.27	Pk	34.8	-30.1	.5	-95.2	-51.73	-13	-38.73	V
5.719571	39.79	Pk	34.8	-30.1	.6	-95.2	-50.11	-13	-37.11	H
7.601856	36.21	Pk	35.8	-27	.4	-95.2	-49.79	-13	-36.79	V
7.619311	35.36	Pk	35.7	-26.9	.5	-95.2	-50.54	-13	-37.54	H

BPSK 5G NR 25 (40.0MHZ BANDWIDTH)

Project #:	13911916
Date:	10/4/2021
Test Engineer:	25019
Configuration:	EUT only
Mode	5G NR n25 BPSK 20MHz
Chamber #:	Chamber S

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 1870MHz										
3.69832	50.52	Pk	33.5	-41.4	.7	-95.2	-51.88	-13	-38.88	H
3.70054	50.41	Pk	33.5	-41.4	.7	-95.2	-51.99	-13	-38.99	V
5.54861	50.14	Pk	34.5	-40.7	.7	-95.2	-50.56	-13	-37.56	V
5.55182	51.74	Pk	34.5	-40.8	.6	-95.2	-49.16	-13	-36.16	H
7.39839	49.3	Pk	36.3	-39.4	.5	-95.2	-48.5	-13	-35.5	H
7.40078	48.71	Pk	36.3	-39.4	.5	-95.2	-49.09	-13	-36.09	V
Mid Channel, 1882.5MHz										
3.72449	51.11	Pk	33.5	-41.4	.7	-95.2	-51.29	-13	-38.29	V
3.72673	50.54	Pk	33.5	-41.4	.7	-95.2	-51.86	-13	-38.86	H
5.4867	50.35	Pk	34.4	-41	.4	-95.2	-51.05	-13	-38.05	V
5.48852	50.41	Pk	34.4	-41	.4	-95.2	-50.99	-13	-37.99	H
7.44872	48.92	Pk	36.2	-39.4	.4	-95.2	-49.08	-13	-36.08	H
7.45185	48.78	Pk	36.3	-39.3	.4	-95.2	-49.02	-13	-36.02	V
High Channel, 1895MHz										
3.74824	50.57	Pk	33.5	-41.4	.6	-95.2	-51.93	-13	-38.93	V
3.7502	50.1	Pk	33.5	-41.4	.6	-95.2	-52.40	-13	-39.40	H
5.62653	49.32	Pk	34.6	-40.5	.6	-95.2	-51.18	-13	-38.18	H
5.6269	50.57	Pk	34.6	-40.5	.6	-95.2	-49.93	-13	-36.93	V
7.49885	48.36	Pk	36.1	-39.3	.4	-95.2	-49.64	-13	-36.64	H
7.50143	49.08	Pk	36.1	-39.2	.4	-95.2	-48.82	-13	-35.82	V

10.2.8. LTE BAND 26 (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 #:	13911916
Date:	09/9/2021
Test Engineer:	25019
Configuration:	EUT only
Mode	LTE Band 26 QPSK 10MHz
Chamber #:	Chamber J

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 819MHz										
1.62924	55.61	Pk	28.7	-37.2	.7	-95.2	-47.39	-13	-34.39	H
2.44381	50.47	Pk	32.2	-37.2	.6	-95.2	-49.13	-13	-36.13	H
3.25617	45.91	Pk	32.9	-36.5	.4	-95.2	-52.49	-13	-39.49	H
1.62916	51.35	Pk	28.7	-37.2	.7	-95.2	-51.65	-13	-38.65	V
2.44368	54.1	Pk	32.2	-37.2	.6	-95.2	-45.50	-13	-32.50	V
3.25645	45.21	Pk	32.9	-36.5	.4	-95.2	-53.19	-13	-40.19	V

10.2.9. LTE BAND 26 (PART 22)

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 (15.0MHZ BANDWIDTH)

Project #:	13911916
Date:	09/10/2021
Test Engineer:	19226
Configuration:	EUT only
Mode	LTE Band 26 QPSK 15MHz
Chamber #:	Chamber S

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 831.5MHz										
1.64969	61.51	Pk	28.4	-45.1	.8	-95.2	-49.59	-13	-36.59	H
1.6497	57.24	Pk	28.4	-45.1	.8	-95.2	-53.86	-13	-40.86	V
2.47318	54.67	Pk	32.1	-45	.5	-95.2	-52.93	-13	-39.93	H
2.47362	54.48	Pk	32.1	-45	.5	-95.2	-53.12	-13	-40.12	V
3.29558	50.55	Pk	32.4	-41.8	.8	-95.2	-53.25	-13	-40.25	H
3.29694	50.72	Pk	32.4	-41.8	.8	-95.2	-53.08	-13	-40.08	V
Mid Channel, 836.5MHz										
1.65959	63.37	Pk	28.5	-45.1	.8	-95.2	-47.63	-13	-34.63	H
1.65977	62.24	Pk	28.5	-45.1	.8	-95.2	-48.76	-13	-35.76	V
2.48806	53.81	Pk	32.2	-45	.5	-95.2	-53.69	-13	-40.69	H
2.48928	54.21	Pk	32.2	-45	.6	-95.2	-53.19	-13	-40.19	V
3.31785	50.46	Pk	32.3	-41.7	.6	-95.2	-53.54	-13	-40.54	V
3.31829	50.69	Pk	32.3	-41.7	.6	-95.2	-53.31	-13	-40.31	H
High Channel, 841.5MHz										
1.66938	57.58	Pk	28.4	-45.1	.7	-95.2	-53.62	-13	-40.62	V
1.66958	61.32	Pk	28.4	-45.1	.7	-95.2	-49.88	-13	-36.88	H
2.50226	54.02	Pk	32.3	-44.9	.6	-95.2	-53.18	-13	-40.18	H
2.50342	54.39	Pk	32.3	-44.9	.7	-95.2	-52.71	-13	-39.71	V
3.3354	50.54	Pk	32.3	-41.8	.5	-95.2	-53.66	-13	-40.66	H
3.33651	51	Pk	32.3	-41.8	.5	-95.2	-53.20	-13	-40.20	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 #:	13911916
Date:	12/15/2021
Test Engineer:	39006
Configuration:	EUT only
Mode	LTE Band 30 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.61469	34.96	RMS	34.2	-29.2	-95.2	-55.24	-40	-15.24	V
4.627773	34.44	RMS	34.2	-29.1	-95.2	-55.66	-40	-15.66	H
6.913703	32.11	RMS	35.8	-26.3	-95.2	-53.59	-40	-13.59	H
6.916899	36.29	RMS	35.8	-26.3	-95.2	-49.41	-40	-9.41	V
9.208795	29.64	RMS	36.3	-23.5	-95.2	-52.76	-40	-12.76	V
9.21471	30.06	RMS	36.3	-23.5	-95.2	-52.34	-40	-12.34	H

BPSK 5G NR 30 (10.0MHZ BANDWIDTH)

Project #:	13911916
Date:	12/15/2021
Test Engineer:	39006
Configuration:	EUT only
Mode	5G NR BPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.611141	36.25	RMS	34.2	-29.2	-95.2	-53.95	-40	-13.95	H
4.612994	34.82	RMS	34.2	-29.2	-95.2	-55.38	-40	-15.38	V
6.916627	34.3	RMS	35.8	-26.3	-95.2	-51.40	-40	-11.40	H
6.916827	34.36	RMS	35.8	-26.3	-95.2	-51.34	-40	-11.34	V
9.204338	30.74	RMS	36.3	-23.6	-95.2	-51.76	-40	-11.76	V
9.251274	29.91	RMS	36.4	-23.7	-95.2	-52.59	-40	-12.59	H

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 #:	13911916
Date:	09/9/2021
Test Engineer:	19226
Configuration:	EUT only
Mode	LTE Band 41 QPSK 20MHz
Chamber #:	Chamber S

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2506MHz										
4.49151	51.9	Pk	33.9	-42.5	.6	-95.2	-51.30	-25	-26.30	H
4.49166	51.07	Pk	33.9	-42.4	.6	-95.2	-52.03	-25	-27.03	V
4.49172	51.37	Pk	33.9	-42.4	.6	-95.2	-51.73	-25	-26.73	H
7.48718	49.13	Pk	36.2	-39.3	.3	-95.2	-48.87	-25	-23.87	V
9.98448	48.93	Pk	37.2	-37.7	.5	-95.2	-46.27	-25	-21.27	V
9.98653	48.9	Pk	37.3	-37.7	.5	-95.2	-46.20	-25	-21.20	H
Mid Channel, 2593MHz										
5.16523	51.31	Pk	34.5	-41.8	.7	-95.2	-50.49	-25	-25.49	V
5.16693	50.58	Pk	34.5	-41.8	.7	-95.2	-51.22	-25	-26.22	H
7.74824	48.65	Pk	36	-38.4	.3	-95.2	-48.65	-25	-23.65	H
7.74837	48.49	Pk	36	-38.4	.3	-95.2	-48.81	-25	-23.81	V
10.33157	48.72	Pk	37.4	-36.9	.6	-95.2	-45.38	-25	-20.38	H
10.33343	48.18	Pk	37.4	-36.9	.6	-95.2	-45.92	-25	-20.92	V
High Channel, 2680MHz										
5.34026	50.6	Pk	34.5	-41.3	.6	-95.2	-50.80	-25	-25.80	V
5.34094	50.88	Pk	34.5	-41.3	.6	-95.2	-50.52	-25	-25.52	H
8.00911	47.65	Pk	36	-38	.3	-95.2	-49.25	-25	-24.25	H
8.01098	47.41	Pk	36	-38	.3	-95.2	-49.49	-25	-24.49	V
10.68065	47.3	Pk	37.9	-35.3	.5	-95.2	-44.80	-25	-19.80	H
10.68185	47.16	Pk	37.9	-35.3	.5	-95.2	-44.94	-25	-19.94	V

BPSK 5G NR 41 (100.0MHZ BANDWIDTH)

Project #:	13911916
Date:	09/27/2021
Test Engineer:	25019
Configuration:	EUT only
Mode	5G NR n41 BPSK 100MHz
Chamber #:	Chamber S

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2546MHz										
3.73882	50.72	Pk	33.5	-41.4	.6	-95.2	-51.78	-25	-26.78	H
3.74049	51.55	Pk	33.5	-41.5	.6	-95.2	-51.05	-25	-26.05	V
5.60811	49.75	Pk	34.4	-40.5	.7	-95.2	-50.85	-25	-25.85	V
5.6104	49.69	Pk	34.5	-40.5	.7	-95.2	-50.81	-25	-25.81	H
7.48014	49.26	Pk	36.2	-39.3	.3	-95.2	-48.74	-25	-23.74	H
7.48043	48.57	Pk	36.2	-39.3	.3	-95.2	-49.43	-25	-24.43	V
Mid Channel, 2593MHz										
5.08453	52.18	Pk	34.4	-42	.8	-95.2	-49.82	-25	-24.82	V
5.08786	51.41	Pk	34.4	-42	.8	-95.2	-50.59	-25	-25.59	H
7.62839	49.02	Pk	36.1	-38.9	.4	-95.2	-48.58	-25	-23.58	V
7.62934	48.56	Pk	36.1	-38.9	.4	-95.2	-49.04	-25	-24.04	H
10.17285	47.62	Pk	37.4	-36.6	.6	-95.2	-46.18	-25	-21.18	H
10.17295	47.32	Pk	37.4	-36.6	.6	-95.2	-46.48	-25	-21.48	V
High Channel, 2640MHz										
5.1799	51.46	Pk	34.5	-41.7	.7	-95.2	-50.24	-25	-25.24	H
5.18045	50.44	Pk	34.5	-41.7	.7	-95.2	-51.26	-25	-26.26	V
7.7694	47.63	Pk	36.1	-38.4	.3	-95.2	-49.57	-25	-24.57	H
7.77036	48.1	Pk	36.1	-38.4	.3	-95.2	-49.10	-25	-24.10	V
10.3603	48.36	Pk	37.5	-36.6	.8	-95.2	-45.14	-25	-20.14	V
10.36045	47.85	Pk	37.5	-36.6	.8	-95.2	-45.65	-25	-20.65	H

10.2.12. 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 #:	13911916
Date:	01/11/2022
Test Engineer:	30606
Configuration:	EUT only
Mode	LTE Band 48 QPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	T1792 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 3560MHz										
7.119206	23.47	RMS	35.6	-20.7	.5	-95.2	-56.33	-40	-16.33	H
7.144322	22.95	RMS	35.6	-20.5	.5	-95.2	-56.65	-40	-16.65	V
10.674609	20.87	RMS	37.9	-17.1	.6	-95.2	-52.93	-40	-12.93	H
10.675491	21.27	RMS	37.9	-17.1	.6	-95.2	-52.53	-40	-12.53	V
14.241028	21.42	RMS	39.1	-15.8	.8	-95.2	-49.68	-40	-9.68	H
14.254247	22.33	RMS	39.1	-15.8	.8	-95.2	-48.77	-40	-8.77	V
Mid Channel, 3625MHz										
7.176488	23.26	RMS	35.6	-20.4	.6	-95.2	-56.14	-40	-16.14	V
7.20645	22.94	RMS	35.6	-20.5	.6	-95.2	-56.56	-40	-16.56	H
10.817372	20.54	RMS	37.9	-16.5	.6	-95.2	-52.66	-40	-12.66	V
10.820456	20.58	RMS	37.9	-16.5	.6	-95.2	-52.62	-40	-12.62	H
14.562684	21.16	RMS	39.8	-16	.8	-95.2	-49.44	-40	-9.44	V
14.563566	22.18	RMS	39.8	-16	.8	-95.2	-48.42	-40	-8.42	H
High Channel, 3690MHz										
7.380056	20.99	RMS	35.6	-20.4	.7	-95.2	-58.31	-40	-18.31	H
7.380056	19.72	RMS	35.6	-20.4	.7	-95.2	-59.58	-40	-19.58	V
11.06985	18.88	RMS	37.8	-16.5	.7	-95.2	-54.32	-40	-14.32	H
11.06985	18.67	RMS	37.8	-16.5	.7	-95.2	-54.53	-40	-14.53	V
14.760084	19.34	RMS	39.8	-15.4	.7	-95.2	-50.76	-40	-10.76	H
14.760084	19.45	RMS	39.8	-15.4	.7	-95.2	-50.65	-40	-10.65	V

10.2.13. 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 #:	13911916
Date:	12/10/201
Test Engineer:	24943
Configuration:	EUT only
Mode	LTE Band 66 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1720MHz									
3.801094	40.65	Pk	33.6	-31.8	-95.2	-52.75	-13	-39.75	V
4.199531	40.64	Pk	33.5	-31	-95.2	-52.06	-13	-39.06	H
5.1825	39.55	Pk	34.2	-29.2	-95.2	-50.65	-13	-37.65	V
5.758125	38.75	Pk	34.9	-28.4	-95.2	-49.95	-13	-36.95	H
7.795313	36.83	Pk	35.9	-25.8	-95.2	-48.27	-13	-35.27	V
8.419688	36.5	Pk	35.8	-24.5	-95.2	-47.40	-13	-34.40	H
Mid Channel, 1745MHz									
3.758906	42.56	Pk	33.5	-32.1	-95.2	-51.24	-13	-38.24	V
4.787813	39.76	Pk	34.2	-30.2	-95.2	-51.44	-13	-38.44	H
4.826719	40.67	Pk	34.1	-30.1	-95.2	-50.53	-13	-37.53	V
6.279844	37.75	Pk	35.9	-27.9	-95.2	-49.45	-13	-36.45	V
6.962813	37.7	Pk	35.7	-26.3	-95.2	-48.10	-13	-35.10	H
9.099844	35.51	Pk	36.4	-23.7	-95.2	-46.99	-13	-33.99	H
High Channel, 1770MHz									
4.786875	39.94	Pk	34.2	-30.1	-95.2	-51.16	-13	-38.16	V
4.79625	39.11	Pk	34.2	-30.2	-95.2	-52.09	-13	-39.09	H
6.352969	36.84	Pk	35.8	-26.9	-95.2	-49.46	-13	-36.46	H
6.474375	37.73	Pk	35.8	-27.4	-95.2	-49.07	-13	-36.07	V
7.791094	35.91	Pk	35.9	-25.7	-95.2	-49.09	-13	-36.09	H
7.920938	38.47	Pk	35.9	-26.3	-95.2	-47.13	-13	-34.13	V

BPSK 5G NR n66 (40.0MHZ BANDWIDTH)

Project #:	13911916
Date:	12/15/2021
Test Engineer:	39006
Configuration:	EUT only
Mode	5G NR n66 BPSK 40MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1730MHz									
3.458906	40.34	Pk	32.8	-33	-95.2	-55.06	-13	-42.06	V
3.465	40.31	Pk	32.8	-33	-95.2	-55.09	-13	-42.09	H
5.157188	38.71	Pk	34.3	-29.7	-95.2	-51.89	-13	-38.89	H
5.157656	37.84	Pk	34.3	-29.7	-95.2	-52.76	-13	-39.76	V
6.869063	35.81	Pk	35.8	-26.6	-95.2	-50.19	-13	-37.19	V
6.885469	36.01	Pk	35.8	-26.6	-95.2	-49.99	-13	-36.99	H
Mid Channel, 1745MHz									
3.486563	41.36	Pk	32.9	-32.9	-95.2	-53.84	-13	-40.84	V
3.507656	40.19	Pk	33	-32.9	-95.2	-54.91	-13	-41.91	H
5.214375	37.99	Pk	34.2	-29.2	-95.2	-52.21	-13	-39.21	V
5.23875	36.65	Pk	34.2	-28.9	-95.2	-53.25	-13	-40.25	H
6.895313	35.33	Pk	35.8	-26.6	-95.2	-50.67	-13	-37.67	V
6.9675	35.58	Pk	35.7	-26.3	-95.2	-50.22	-13	-37.22	H
High Channel, 1760MHz									
3.507656	39.74	Pk	33	-32.9	-95.2	-55.36	-13	-42.36	V
3.516563	40.01	Pk	33.1	-32.8	-95.2	-54.89	-13	-41.89	H
5.280469	36.72	Pk	34.3	-29.3	-95.2	-53.48	-13	-40.48	H
5.283281	36.84	Pk	34.3	-29.3	-95.2	-53.36	-13	-40.36	V
6.613594	38.08	Pk	35.7	-26.4	-95.2	-47.82	-13	-34.82	H
6.628125	34.65	Pk	35.7	-26.1	-95.2	-50.95	-13	-37.95	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 #:	13911916
Date:	09/10/2021
Test Engineer:	19226
Configuration:	EUT only
Mode	LTE Band 71 QPSK 20MHz
Chamber #:	Chamber S

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 673MHz										
1.3283	59.23	Pk	28.9	-45.2	1.2	-95.2	-51.07	-13	-38.07	H
1.32853	55.25	Pk	28.9	-45.2	1.2	-95.2	-55.05	-13	-42.05	V
1.99078	55.54	Pk	31	-45.1	.5	-95.2	-53.26	-13	-40.26	H
1.99123	54.55	Pk	31	-45.1	.5	-95.2	-54.25	-13	-41.25	V
2.65288	54.00	Pk	32	-44.4	.4	-95.2	-53.20	-13	-40.20	V
2.6539	53.62	Pk	32	-44.4	.4	-95.2	-53.58	-13	-40.58	H
Mid Channel, 680.5MHz										
1.366711	41.34	Pk	29.1	-34.9	1	-95.2	-58.66	-13	-45.66	V
1.3672	40.47	Pk	29.1	-34.9	1	-95.2	-59.53	-13	-46.53	H
2.045289	41.14	Pk	31.4	-34.8	.6	-95.2	-56.86	-13	-43.86	V
2.052134	40.87	Pk	31.4	-34.8	.6	-95.2	-57.13	-13	-44.13	H
2.722889	41.42	Pk	32.5	-34.6	.5	-95.2	-55.38	-13	-42.38	V
2.728756	42.22	Pk	32.4	-34.6	.5	-95.2	-54.68	-13	-41.68	H
High Channel, 688MHz										
1.35559	54.88	Pk	29.5	-45.2	1	-95.2	-55.02	-13	-42.02	V
1.3576	55.06	Pk	29.4	-45.2	1	-95.2	-54.94	-13	-41.94	H
2.03322	53.8	Pk	31.4	-45.2	.5	-95.2	-54.70	-13	-41.70	H
2.03584	53.33	Pk	31.4	-45.2	.5	-95.2	-55.17	-13	-42.17	V
2.71235	53.43	Pk	32.3	-44.3	.5	-95.2	-53.27	-13	-40.27	H
2.71338	53.38	Pk	32.3	-44.3	.5	-95.2	-53.32	-13	-40.32	V

BPSK 5G NR 71 (20.0MHZ BANDWIDTH)

Project #:	13911916
Date:	12/8/2021
Test Engineer:	26277
Configuration:	EUT only
Mode	5G NR n71 BPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 673MHz										
1.342756	41.64	Pk	29	-34.8	1.3	-95.2	-58.06	-13	-45.06	V
1.345689	41.09	Pk	29.1	-34.7	1.3	-95.2	-58.41	-13	-45.41	H
2.005689	40.01	Pk	31.3	-34.8	.6	-95.2	-58.09	-13	-45.09	V
2.006667	41.07	Pk	31.3	-34.8	.6	-95.2	-57.03	-13	-44.03	H
2.667156	41.31	Pk	32.4	-34.7	.5	-95.2	-55.69	-13	-42.69	H
2.668134	41.51	Pk	32.4	-34.7	.5	-95.2	-55.49	-13	-42.49	V
Mid Channel, 680.5MHz										
1.365733	42.7	Pk	29.1	-34.9	1	-95.2	-57.30	-13	-44.30	H
1.367689	41.04	Pk	29.1	-34.9	1	-95.2	-58.96	-13	-45.96	V
2.039422	41.35	Pk	31.3	-34.8	.6	-95.2	-56.75	-13	-43.75	V
2.0448	41.25	Pk	31.4	-34.8	.6	-95.2	-56.75	-13	-43.75	H
2.737556	41.87	Pk	32.5	-34.6	.5	-95.2	-54.93	-13	-41.93	V
2.740978	41.53	Pk	32.5	-34.6	.6	-95.2	-55.17	-13	-42.17	H
High Channel, 688MHz										
1.366711	41.1	Pk	29.1	-34.9	1	-95.2	-58.90	-13	-45.90	V
1.375022	42.44	Pk	28.8	-34.8	1	-95.2	-57.76	-13	-44.76	H
2.049689	41.28	Pk	31.4	-34.8	.6	-95.2	-56.72	-13	-43.72	V
2.060445	41.03	Pk	31.4	-34.8	.6	-95.2	-56.97	-13	-43.97	H
2.739511	41.2	Pk	32.5	-34.6	.5	-95.2	-55.60	-13	-42.60	V
2.7488	40.77	Pk	32.5	-34.5	.6	-95.2	-55.83	-13	-42.83	H

10.2.15. 5G NR n77 (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 #:	13911916
Date:	09/29/2021
Test Engineer:	45258
Configuration:	EUT only
Mode	n77 BPSK 100MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 3500MHz									
7.000	33.54	Pk	35.7	-26.9	-95.2	-52.86	-13	-39.86	H
7.000	32.48	Pk	35.7	-26.9	-95.2	-53.92	-13	-40.92	V
10.301	33.6	Pk	37.4	-24.9	-95.2	-49.1	-13	-36.1	H
10.301	31.89	Pk	37.4	-24.9	-95.2	-50.81	-13	-37.81	V
14.0015	32.96	Pk	38.6	-20.1	-95.2	-43.74	-13	-30.74	H
14.0015	32.89	Pk	38.6	-20.1	-95.2	-43.81	-13	-30.81	V

10.2.16. 5G NR n77 (3700-3980MHz)

LIMITS

FCC: §27.53

(1) 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 #:	13911916
Date:	10/5/2021
Test Engineer:	30606
Configuration:	EUT only
Mode	n77 BPSK 100MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 3750MHz									
7.501	35.22	Pk	35.8	-26.9	-95.2	-51.08	-13	-38.08	H
7.501	32.27	Pk	35.8	-26.9	-95.2	-54.03	-13	-41.03	V
11.2505	31.56	Pk	38	-22.4	-95.2	-48.04	-13	-35.04	H
11.2505	32.77	Pk	38	-22.4	-95.2	-46.83	-13	-33.83	V
15	29.63	Pk	39.6	-19.3	-95.2	-45.27	-13	-32.27	H
15	31.44	Pk	39.6	-19.3	-95.2	-43.46	-13	-30.46	V
Mid Channel, 3840MHz									
7.68	34.44	Pk	35.9	-26.6	-95.2	-51.46	-13	-38.46	H
7.68	33.87	Pk	35.9	-26.6	-95.2	-52.03	-13	-39.03	V
11.52	30.54	Pk	38.2	-22.2	-95.2	-48.66	-13	-35.66	H
11.52	31.77	Pk	38.2	-22.2	-95.2	-47.43	-13	-34.43	V
15.36	30.77	Pk	40.2	-19.6	-95.2	-43.83	-13	-30.83	H
15.36	30.67	Pk	40.2	-19.6	-95.2	-43.93	-13	-30.93	V
High Channel, 3930MHz									
7.86	34.13	Pk	35.9	-26.4	-95.2	-51.57	-13	-38.57	H
7.86	32.46	Pk	35.9	-26.4	-95.2	-53.24	-13	-40.24	V
11.79	30.78	Pk	38.4	-20.8	-95.2	-46.82	-13	-33.82	H
11.79	30.98	Pk	38.4	-20.8	-95.2	-46.62	-13	-33.62	V
15.7205	31.09	Pk	40.4	-19	-95.2	-42.71	-13	-29.71	H
15.7205	29.27	Pk	40.4	-19	-95.2	-44.53	-13	-31.53	V

10.3. FIELD STRENGTH OF SPURIOUS RADIATION, Ant 2

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

All tests below 1GHz were done with a Resolution Bandwidth of 100kHz, and a Video Bandwidth of 300kHz.

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

RESULTS

10.3.1. 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 5G NR n5 (20.0MHZ BANDWIDTH)

Project #:	13911916
Date:	09/23/2021
Test Engineer:	30606
Configuration:	EUT only
Mode	5G NR n5 BPSK 20MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 829MHz										
1.66575	39.23	Pk	28.5	-29.4	.7	-95.2	-56.17	-13	-43.17	H
1.6823	39.51	Pk	28.4	-29.2	.7	-95.2	-55.79	-13	-42.79	V
2.5025	38.5	Pk	32.3	-28	.6	-95.2	-51.80	-13	-38.80	H
2.51904	38.64	Pk	32.4	-28.1	.8	-95.2	-51.46	-13	-38.46	V
3.32084	37.62	Pk	32.6	-26.6	.6	-95.2	-50.98	-13	-37.98	H
3.34356	37.18	Pk	32.6	-26.5	.5	-95.2	-51.42	-13	-38.42	V
Mid Channel, 836.5MHz										
1.661	39.51	Pk	28.5	-29.4	.8	-95.2	-55.79	-13	-42.79	H
1.6787	38.97	Pk	28.4	-29.3	.7	-95.2	-56.43	-13	-43.43	V
2.49433	38.26	Pk	32.2	-28	.6	-95.2	-52.14	-13	-39.14	H
2.512	37.89	Pk	32.4	-28.1	.7	-95.2	-52.31	-13	-39.31	V
3.33751	37.07	Pk	32.6	-26.6	.5	-95.2	-51.63	-13	-38.63	V
3.34102	37.07	Pk	32.6	-26.5	.5	-95.2	-51.53	-13	-38.53	H
High Channel, 844MHz										
1.68713	39.08	Pk	28.4	-29.2	.7	-95.2	-56.22	-13	-43.22	V
1.68966	39.62	Pk	28.4	-29.2	.7	-95.2	-55.68	-13	-42.68	H
2.51888	38.55	Pk	32.4	-28.1	.8	-95.2	-51.55	-13	-38.55	H
2.52324	38.46	Pk	32.4	-28.1	.8	-95.2	-51.64	-13	-38.64	V
3.33421	37.64	Pk	32.6	-26.6	.5	-95.2	-51.06	-13	-38.06	V
3.3568	37.25	Pk	32.8	-26.6	.6	-95.2	-51.15	-13	-38.15	H

10.3.2. 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 #:	13911916
Date:	09/8/2021
Test Engineer:	19226
Configuration:	EUT only
Mode	LTE Band LTE7 QPSK 20MHz
Chamber #:	Chamber S

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2510MHz										
4.99836	50.32	Pk	33.9	-42.1	.8	-95.2	-52.28	-25	-27.28	V
4.9984	50.77	Pk	33.9	-42.1	.8	-95.2	-51.83	-25	-26.83	H
7.49865	49.29	Pk	36.2	-39.2	.4	-95.2	-48.51	-25	-23.51	H
7.49944	49.03	Pk	36.1	-39.2	.4	-95.2	-48.87	-25	-23.87	V
10.00043	48	Pk	37.2	-37.8	.5	-95.2	-47.30	-25	-22.30	H
10.00171	48.4	Pk	37.3	-37.8	.5	-95.2	-46.80	-25	-21.80	V
Mid Channel, 2535MHz										
4.99836	50.32	Pk	33.9	-42.1	.8	-95.2	-52.28	-25	-27.28	V
4.9984	50.77	Pk	33.9	-42.1	.8	-95.2	-51.83	-25	-26.83	H
7.49865	49.29	Pk	36.2	-39.2	.4	-95.2	-48.51	-25	-23.51	H
7.49944	49.03	Pk	36.1	-39.2	.4	-95.2	-48.87	-25	-23.87	V
10.00043	48	Pk	37.2	-37.8	.5	-95.2	-47.30	-25	-22.30	H
10.00171	48.4	Pk	37.3	-37.8	.5	-95.2	-46.80	-25	-21.80	V
High Channel, 2560MHz										
5.12016	37.32	Pk	34.2	-30.7	.8	-95.2	-53.58	-25	-28.58	H
5.12063	37.86	Pk	34.2	-30.7	.8	-95.2	-53.04	-25	-28.04	V
7.68047	35.21	Pk	35.9	-26.7	.5	-95.2	-50.29	-25	-25.29	H
7.68047	35.01	Pk	35.9	-26.7	.5	-95.2	-50.49	-25	-25.49	V
10.24266	33.88	Pk	37.3	-25	.8	-95.2	-48.22	-25	-23.22	H
10.24266	33.26	Pk	37.3	-25	.8	-95.2	-48.84	-25	-23.84	V

BPSK 5G NR 7 (40.0MHZ BANDWIDTH)

Project #:	13911916
Date:	09/27/2021
Test Engineer:	26277
Configuration:	EUT only
Mode	5G NR n7 BPSK 40MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2520MHz										
5.04516	39.7	Pk	34	-30.7	.6	-95.2	-51.6	-25	-26.6	V
5.04844	38.78	Pk	34.1	-30.7	.6	-95.2	-52.42	-25	-27.42	H
7.54078	36.54	Pk	35.8	-26.9	.3	-95.2	-49.46	-25	-24.46	V
7.56516	35.44	Pk	35.8	-27	.4	-95.2	-50.56	-25	-25.56	H
10.04531	35.64	Pk	37.1	-24.9	.7	-95.2	-46.66	-25	-21.66	V
10.07625	34.12	Pk	37.2	-24.9	.7	-95.2	-48.08	-25	-23.08	H
Mid Channel, 2535MHz										
5.03438	38.65	Pk	34	-30.6	.7	-95.2	-52.45	-25	-27.45	V
5.06766	38.67	Pk	34.1	-30.7	.6	-95.2	-52.53	-25	-27.53	H
7.59703	34.95	Pk	35.8	-27	.4	-95.2	-51.05	-25	-26.05	V
7.62	35	Pk	35.8	-26.9	.4	-95.2	-50.90	-25	-25.90	H
10.11141	35.14	Pk	37.2	-25	.7	-95.2	-47.16	-25	-22.16	V
10.15266	33.87	Pk	37.2	-24.8	.6	-95.2	-48.33	-25	-23.33	H
High Channel, 2550MHz										
5.11172	39.26	Pk	34.2	-30.6	.8	-95.2	-51.54	-25	-26.54	V
5.12531	38.27	Pk	34.2	-30.7	.8	-95.2	-52.63	-25	-27.63	H
7.68938	35.98	Pk	35.8	-26.7	.5	-95.2	-49.62	-25	-24.62	H
7.70906	35.64	Pk	35.9	-26.9	.4	-95.2	-50.16	-25	-25.16	V
10.25156	34.42	Pk	37.4	-25	.7	-95.2	-47.68	-25	-22.68	H
10.26938	34.71	Pk	37.3	-24.9	.7	-95.2	-47.39	-25	-22.39	V

10.3.3. 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 #:	13911916
Date:	09/8/2021
Test Engineer:	39006
Configuration:	EUT only
Mode	LTE Band 12 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1- 18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 704MHz										
1.40827	41.1	Pk	28.8	-34.9	.9	-95.2	-59.30	-13	-46.30	H
1.40827	40.58	Pk	28.8	-34.9	.9	-95.2	-59.82	-13	-46.82	V
2.11178	41.11	Pk	31.2	-34.9	.5	-95.2	-57.29	-13	-44.29	H
2.11227	41.04	Pk	31.2	-34.9	.5	-95.2	-57.36	-13	-44.36	V
2.81676	39.23	Pk	32.3	-34.5	.6	-95.2	-57.57	-13	-44.57	H
2.81676	39.1	Pk	32.3	-34.5	.6	-95.2	-57.70	-13	-44.70	V
Mid Channel, 707.5MHz										
1.41487	40.51	Pk	28.9	-34.9	.9	-95.2	-59.79	-13	-46.79	H
1.4156	42.1	Pk	28.9	-34.9	.9	-95.2	-58.20	-13	-45.20	V
2.12253	40.66	Pk	31.2	-34.9	.5	-95.2	-57.74	-13	-44.74	H
2.12253	39.33	Pk	31.2	-34.9	.5	-95.2	-59.07	-13	-46.07	V
2.83044	40.85	Pk	32.3	-34.4	.7	-95.2	-55.75	-13	-42.75	H
2.83044	39.46	Pk	32.3	-34.4	.7	-95.2	-57.14	-13	-44.14	V
High Channel, 711MHz										
1.42244	40.62	Pk	29	-34.9	.9	-95.2	-59.58	-13	-46.58	H
1.42244	39.96	Pk	29	-34.9	.9	-95.2	-60.24	-13	-47.24	V
2.13378	40.74	Pk	31.2	-34.9	.5	-95.2	-57.66	-13	-44.66	V
2.13427	42.04	Pk	31.2	-34.9	.5	-95.2	-56.36	-13	-43.36	H
2.84413	41.38	Pk	32.2	-34.4	.7	-95.2	-55.32	-13	-42.32	H
2.84413	39.6	Pk	32.2	-34.4	.7	-95.2	-57.10	-13	-44.10	V

BPSK 5G NR n12 (15.0MHZ BANDWIDTH)

Project #:	13911916
Date:	09/23/2021
Test Engineer:	30606
Configuration:	EUT only
Mode	5G NR n12 BPSK 15MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1- 18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 706.5MHz										
1.4156	40.07	Pk	28.8	-29.9	.9	-95.2	-55.33	-13	-42.33	V
1.41609	38.32	Pk	28.8	-29.9	.9	-95.2	-57.08	-13	-44.08	H
2.12156	37.2	Pk	31.5	-28.6	.5	-95.2	-54.60	-13	-41.60	H
2.12302	36.66	Pk	31.5	-28.6	.5	-95.2	-55.14	-13	-42.14	V
2.83338	36.94	Pk	32.3	-27.3	.7	-95.2	-52.56	-13	-39.56	H
2.83631	36.11	Pk	32.3	-27.2	.7	-95.2	-53.29	-13	-40.29	V
Mid Channel, 707.5MHz										
1.40827	38.48	Pk	28.9	-29.9	.9	-95.2	-56.82	-13	-43.82	V
1.42244	39.44	Pk	28.7	-29.8	.9	-95.2	-55.96	-13	-42.96	H
2.12498	37.58	Pk	31.5	-28.6	.5	-95.2	-54.22	-13	-41.22	H
2.13329	36.62	Pk	31.6	-28.4	.5	-95.2	-54.88	-13	-41.88	V
2.828	36.31	Pk	32.2	-27.2	.7	-95.2	-53.19	-13	-40.19	H
2.83876	36.37	Pk	32.2	-27.2	.7	-95.2	-53.13	-13	-40.13	V
High Channel, 708.5MHz										
1.40338	38.15	Pk	29	-29.8	.9	-95.2	-56.95	-13	-43.95	V
1.40876	38.41	Pk	28.9	-29.9	.9	-95.2	-56.89	-13	-43.89	H
2.11716	36.93	Pk	31.4	-28.7	.5	-95.2	-55.07	-13	-42.07	V
2.12938	36.97	Pk	31.6	-28.5	.5	-95.2	-54.63	-13	-41.63	H
2.84511	36.54	Pk	32.3	-27.2	.7	-95.2	-52.86	-13	-39.86	V
2.8456	37.4	Pk	32.2	-27.2	.7	-95.2	-52.10	-13	-39.10	H

10.3.4. 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 #:	13911916
Date:	09/8/2021
Test Engineer:	39006
Configuration:	EUT only
Mode	LTE Band 13 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1- 18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 782MHz										
1.56471	40.95	Pk	27.8	-34.9	.9	-95.2	-60.45	-40	-20.45	H
1.56471	42.32	Pk	27.8	-34.9	.9	-95.2	-59.08	-40	-19.08	V
2.34644	40.88	Pk	31.8	-34.8	.6	-95.2	-56.72	-13	-43.72	V
2.34693	41.2	Pk	31.8	-34.8	.6	-95.2	-56.40	-13	-43.40	H
3.12867	41.87	Pk	32.9	-34.1	.6	-95.2	-53.93	-13	-40.93	H
3.12867	40.37	Pk	32.9	-34.1	.6	-95.2	-55.43	-13	-42.43	V

10.3.5. 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 #:	13911916
Date:	09/8/2021
Test Engineer:	39006
Configuration:	EUT only
Mode	LTE Band 14 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1- 18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 793MHz										
1.58573	41.12	Pk	27.8	-34.9	.8	-95.2	-60.38	-40	-20.38	H
1.58671	41.67	Pk	27.8	-34.9	.8	-95.2	-59.83	-40	-19.83	V
2.38091	41.55	Pk	31.9	-34.8	.6	-95.2	-55.95	-13	-42.95	H
2.38116	41.41	Pk	31.9	-34.8	.6	-95.2	-56.09	-13	-43.09	V
3.17267	39.91	Pk	32.7	-34	.5	-95.2	-56.09	-13	-43.09	V
3.17316	42	Pk	32.7	-34	.5	-95.2	-54.00	-13	-41.00	H

10.3.6. 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 #:	13911916
Date:	09/9/2021
Test Engineer:	39006
Configuration:	EUT only
Mode	LTE Band 17 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 709MHz										
1.41756	39.99	Pk	29	-34.9	.9	-95.2	-60.21	-13	-47.21	H
1.41804	41.51	Pk	29	-34.9	.9	-95.2	-58.69	-13	-45.69	V
2.12644	41.91	Pk	31.2	-34.9	.5	-95.2	-56.49	-13	-43.49	H
2.12644	40.5	Pk	31.2	-34.9	.5	-95.2	-57.90	-13	-44.90	V
2.83582	40.69	Pk	32.2	-34.4	.7	-95.2	-56.01	-13	-43.01	H
2.83631	40.88	Pk	32.2	-34.4	.7	-95.2	-55.82	-13	-42.82	V
Mid Channel, 710MHz										
1.42147	41.12	Pk	29	-34.9	.9	-95.2	-59.08	-13	-46.08	V
1.42196	40.62	Pk	29	-34.9	.9	-95.2	-59.58	-13	-46.58	H
2.13133	41.31	Pk	31.2	-34.9	.5	-95.2	-57.09	-13	-44.09	H
2.13133	40.82	Pk	31.2	-34.9	.5	-95.2	-57.58	-13	-44.58	V
2.84022	41.42	Pk	32.2	-34.4	.7	-95.2	-55.28	-13	-42.28	H
2.84022	40.51	Pk	32.2	-34.4	.7	-95.2	-56.19	-13	-43.19	V
High Channel, 711MHz										
1.42196	40.61	Pk	29	-34.9	.9	-95.2	-59.59	-13	-46.59	V
1.42293	41.77	Pk	29	-34.9	.9	-95.2	-58.43	-13	-45.43	H
2.13329	42.13	Pk	31.2	-34.9	.5	-95.2	-56.27	-13	-43.27	H
2.13329	40.64	Pk	31.2	-34.9	.5	-95.2	-57.76	-13	-44.76	V
2.84316	41.71	Pk	32.2	-34.4	.7	-95.2	-54.99	-13	-41.99	H
2.84316	42.00	Pk	32.2	-34.4	.7	-95.2	-54.70	-13	-41.70	V

10.3.7. 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 #:	13911916
Date:	09/9/2021
Test Engineer:	39006
Configuration:	EUT only
Mode	LTE Band 25 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 1860MHz										
3.78928	41.25	Pk	33.6	-32.5	.7	-95.2	-52.15	-13	-39.15	V
3.81353	40.97	Pk	33.7	-32.4	.6	-95.2	-52.33	-13	-39.33	H
5.72442	38.78	Pk	34.8	-30	.6	-95.2	-51.02	-13	-38.02	H
5.72442	39.47	Pk	34.8	-30	.6	-95.2	-50.33	-13	-37.33	V
7.62271	36.35	Pk	35.8	-26.9	.4	-95.2	-49.55	-13	-36.55	H
7.63483	36.19	Pk	35.9	-26.9	.4	-95.2	-49.61	-13	-36.61	V
Mid Channel, 1882.5MHz										
3.71995	42.07	Pk	33.3	-32.7	.7	-95.2	-51.83	-13	-38.83	H
3.73207	41.35	Pk	33.5	-32.7	.7	-95.2	-52.35	-13	-39.35	V
5.60272	39.16	Pk	34.9	-29.9	.4	-95.2	-50.64	-13	-37.64	V
5.60756	38.12	Pk	35	-29.9	.5	-95.2	-51.48	-13	-38.48	H
7.45882	36.54	Pk	35.8	-26.9	.4	-95.2	-49.36	-13	-36.36	H
7.48209	36.56	Pk	35.7	-26.8	.4	-95.2	-49.34	-13	-36.34	V
High Channel, 1905MHz										
3.78928	41.25	Pk	33.6	-32.5	.7	-95.2	-52.15	-13	-39.15	V
3.81353	40.97	Pk	33.7	-32.4	.6	-95.2	-52.33	-13	-39.33	H
5.72442	38.78	Pk	34.8	-30	.6	-95.2	-51.02	-13	-38.02	H
5.72442	39.47	Pk	34.8	-30	.6	-95.2	-50.33	-13	-37.33	V
7.62271	36.35	Pk	35.8	-26.9	.4	-95.2	-49.55	-13	-36.55	H
7.63483	36.19	Pk	35.9	-26.9	.4	-95.2	-49.61	-13	-36.61	V

BPSK 5G NR 25 (40.0MHZ BANDWIDTH)

Project #:	13911916
Date:	12/8/2021
Test Engineer:	26277
Configuration:	EUT only
Mode	5G NR n25 BPSK 40MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	PK Margin (dB)	Polarity
Low Channel, 1870MHz										
3.717037	41	Pk	33.3	-32.8	.7	-95.2	-53.00	-13	-40.00	V
3.722856	40.54	Pk	33.4	-32.7	.7	-95.2	-53.26	-13	-40.26	H
5.5872	39.18	Pk	34.9	-30.1	.5	-95.2	-50.72	-13	-37.72	H
5.594958	39.18	Pk	35	-30	.4	-95.2	-50.62	-13	-37.62	V
7.419543	34.66	Pk	35.8	-26.8	.6	-95.2	-50.94	-13	-37.94	V
7.443302	36.18	Pk	35.7	-26.8	.6	-95.2	-49.52	-13	-36.52	H
Mid Channel, 1882.5MHz										
3.763585	41.59	Pk	33.6	-32.6	.8	-95.2	-51.81	-13	-38.81	V
3.768434	40.77	Pk	33.5	-32.6	.8	-95.2	-52.73	-13	-39.73	H
5.648779	38.48	Pk	35	-30	.5	-95.2	-51.22	-13	-38.22	H
5.663325	38.66	Pk	35	-30	.4	-95.2	-51.14	-13	-38.14	V
7.533488	37.79	Pk	35.8	-27	.7	-95.2	-47.91	-13	-34.91	H
7.542216	35.55	Pk	35.8	-27	.7	-95.2	-50.15	-13	-37.15	V
High Channel, 1895MHz										
3.798496	40.91	Pk	33.6	-32.5	1	-95.2	-52.19	-13	-39.19	V
3.799466	40.08	Pk	33.6	-32.4	.9	-95.2	-53.02	-13	-40.02	H
5.713752	38.86	Pk	34.9	-30.1	.5	-95.2	-51.04	-13	-38.04	H
5.72151	38.07	Pk	34.8	-30	.6	-95.2	-51.73	-13	-38.73	V
7.633857	34.9	Pk	35.9	-26.9	.7	-95.2	-50.60	-13	-37.60	H
7.668284	35.52	Pk	35.8	-26.8	.2	-95.2	-50.48	-13	-37.48	V

10.3.8. LTE BAND 26 (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 #:	13911916
Date:	09/10/2021
Test Engineer:	39006
Configuration:	EUT only
Mode	LTE Band 25 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1- 18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 819MHz										
1.62729	41.68	Pk	28.4	-34.9	.7	-95.2	-59.32	-13	-46.32	V
1.64196	41.98	Pk	28.4	-34.9	.7	-95.2	-59.02	-13	-46.02	H
2.46427	41.96	Pk	32.5	-34.8	.5	-95.2	-55.04	-13	-42.04	V
2.46769	41.56	Pk	32.6	-34.8	.5	-95.2	-55.34	-13	-42.34	H
3.26067	41.15	Pk	32.8	-33.9	.5	-95.2	-54.65	-13	-41.65	V
3.27044	41.14	Pk	32.9	-33.8	.7	-95.2	-54.26	-13	-41.26	H

10.3.9. LTE BAND 26 (PART 22)

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 (15.0MHZ BANDWIDTH)

Project #:	13911916
Date:	09/10/2021
Test Engineer:	39006
Configuration:	EUT only
Mode	LTE Band 26 QPSK 15MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 831.5MHz										
1.65173	40.9	Pk	28.4	-34.9	.8	-95.2	-60.00	-13	-47.00	V
1.65711	42.71	Pk	28.3	-34.9	.8	-95.2	-58.29	-13	-45.29	H
2.48284	41.88	Pk	32.6	-34.8	.5	-95.2	-55.02	-13	-42.02	H
2.48773	41.97	Pk	32.7	-34.8	.5	-95.2	-54.83	-13	-41.83	V
3.30564	41.42	Pk	32.6	-33.8	.7	-95.2	-54.28	-13	-41.28	V
3.32227	42.01	Pk	32.6	-33.8	.6	-95.2	-53.79	-13	-40.79	H
Mid Channel, 836.5MHz										
1.66884	42.17	Pk	28.3	-34.9	.7	-95.2	-58.93	-13	-45.93	V
1.67569	42.14	Pk	28.5	-34.9	.7	-95.2	-58.76	-13	-45.76	H
2.50729	41.25	Pk	32.7	-34.7	.7	-95.2	-55.25	-13	-42.25	V
2.51022	42.4	Pk	32.7	-34.7	.7	-95.2	-54.10	-13	-41.10	H
3.34182	41.14	Pk	32.5	-33.7	.6	-95.2	-54.66	-13	-41.66	V
3.34671	41.79	Pk	32.5	-33.7	.6	-95.2	-54.01	-13	-41.01	H
High Channel, 841.5MHz										
1.68107	43.41	Pk	28.6	-34.9	.7	-95.2	-57.39	-13	-44.39	H
1.68302	41.69	Pk	28.7	-34.9	.7	-95.2	-59.01	-13	-46.01	V
2.4936	42.44	Pk	32.8	-34.7	.6	-95.2	-54.06	-13	-41.06	V
2.49702	42.95	Pk	32.8	-34.8	.6	-95.2	-53.65	-13	-40.65	H
3.33987	40.53	Pk	32.6	-33.7	.6	-95.2	-55.17	-13	-42.17	H
3.34524	40.72	Pk	32.5	-33.7	.6	-95.2	-55.08	-13	-42.08	V

10.3.10. 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 #:	13911916
Date:	09/14/2021
Test Engineer:	31300
Configuration:	EUT only
Mode	LTE Band 30 QPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.62000	34.07	RMS	34.2	-29.1	-95.2	-56.03	-40	-16.03	H
4.62000	34.83	RMS	34.2	-29.1	-95.2	-55.27	-40	-15.27	V
6.93000	31.19	RMS	35.8	-26	-95.2	-54.21	-40	-14.21	V
6.93094	30.77	RMS	35.8	-26	-95.2	-54.63	-40	-14.63	H
9.24047	29.19	RMS	36.3	-23.7	-95.2	-53.41	-40	-13.41	H
9.24047	29.82	RMS	36.3	-23.7	-95.2	-52.78	-40	-12.78	V

BPSK 5G NR 30 (10.0MHZ BANDWIDTH)

Project #:	13911916
Date:	1/5/2022
Test Engineer:	26277
Configuration:	EUT only
Mode	5G NR n30 BPSK 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 2310MHz									
4.61351	34.81	RMS	34.2	-29.2	-95.2	-55.39	-40	-15.39	V
4.617024	35.2	RMS	34.2	-29.1	-95.2	-54.90	-40	-14.90	H
6.918972	32.61	RMS	35.8	-26.2	-95.2	-52.99	-40	-12.99	V
6.926163	32.53	RMS	35.8	-26.1	-95.2	-52.97	-40	-12.97	H
8.489979	31.08	RMS	35.9	-24.8	-95.2	-53.02	-40	-13.02	V
8.498238	31.38	RMS	35.9	-24.8	-95.2	-52.72	-40	-12.72	H

10.3.11. 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 #:	13911916
Date:	09/13/2021
Test Engineer:	31300
Configuration:	EUT only
Mode	LTE Band 41 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2506MHz										
5.01188	37.81	Pk	34.1	-30.8	.8	-95.2	-53.29	-25	-28.29	H
5.01188	37.3	Pk	34.1	-30.8	.8	-95.2	-53.80	-25	-28.80	V
7.51688	35.77	Pk	35.7	-27	.3	-95.2	-50.43	-25	-25.43	H
7.51781	37.84	Pk	35.7	-27	.3	-95.2	-48.36	-25	-23.36	V
10.02516	33.13	Pk	37.2	-24.8	.6	-95.2	-49.07	-25	-24.07	H
10.02563	31.45	Pk	37.2	-24.8	.7	-95.2	-50.65	-25	-25.65	V
Mid Channel, 2593MHz										
5.18625	37.28	Pk	34.2	-30.7	.8	-95.2	-53.62	-25	-28.62	H
5.18625	36.98	Pk	34.2	-30.7	.8	-95.2	-53.92	-25	-28.92	V
7.77938	35.1	Pk	35.9	-26.9	.3	-95.2	-50.80	-25	-25.80	H
7.77938	34.94	Pk	35.9	-26.9	.3	-95.2	-50.96	-25	-25.96	V
10.3725	33.08	Pk	37.6	-24.9	.8	-95.2	-48.62	-25	-23.62	H
10.3725	33.47	Pk	37.6	-24.9	.8	-95.2	-48.23	-25	-23.23	V
High Channel, 2680MHz										
5.16047	37.43	Pk	34.2	-30.5	.8	-95.2	-53.27	-25	-28.27	H
5.16047	36.92	Pk	34.2	-30.5	.8	-95.2	-53.78	-25	-28.78	V
7.74047	33.6	Pk	35.9	-26.8	.3	-95.2	-52.20	-25	-27.20	H
7.74047	33.33	Pk	35.9	-26.8	.3	-95.2	-52.47	-25	-27.47	V
10.32	33.45	Pk	37.5	-24.9	.6	-95.2	-48.55	-25	-23.55	H
10.32	31.91	Pk	37.5	-24.9	.6	-95.2	-50.09	-25	-25.09	V

BPSK 5G NR n41 (100.0MHZ BANDWIDTH)

Project #:	13911916
Date:	10/2/2021
Test Engineer:	26277
Configuration:	EUT only
Mode	5G NR n41 BPSK 100MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 2546MHz										
4.99453	43.71	Pk	34	-30.8	.7	-95.2	-47.59	-25	-22.59	H
4.99453	42.2	Pk	34	-30.8	.7	-95.2	-49.10	-25	-24.10	V
7.66547	35.54	Pk	35.8	-26.8	.3	-95.2	-50.36	-25	-25.36	H
7.70953	36.52	Pk	35.9	-26.9	.4	-95.2	-49.28	-25	-24.28	V
10.12266	35.91	Pk	37.2	-25	.7	-95.2	-46.39	-25	-21.39	V
10.13438	34.94	Pk	37.2	-24.9	.7	-95.2	-47.26	-25	-22.26	H
Mid Channel, 2593MHz										
5.17594	38.85	Pk	34.2	-30.6	.7	-95.2	-52.05	-25	-27.05	V
5.18109	38.32	Pk	34.2	-30.6	.7	-95.2	-52.58	-25	-27.58	H
7.75078	36.06	Pk	35.9	-26.9	.3	-95.2	-49.84	-25	-24.84	V
7.78453	36.3	Pk	35.9	-26.8	.4	-95.2	-49.40	-25	-24.40	H
10.32094	34.72	Pk	37.5	-24.9	.6	-95.2	-47.28	-25	-22.28	V
10.38047	34.18	Pk	37.6	-24.8	.8	-95.2	-47.42	-25	-22.42	H
High Channel, 2640MHz										
5.35688	37.48	Pk	34.5	-30.1	.5	-95.2	-52.82	-25	-27.82	H
5.35688	37.42	Pk	34.5	-30.1	.5	-95.2	-52.88	-25	-27.88	V
8.03156	34.64	Pk	35.8	-26.4	.3	-95.2	-50.86	-25	-25.86	V
8.05453	35.63	Pk	35.8	-26.3	.4	-95.2	-49.67	-25	-24.67	H
10.69594	33.99	Pk	37.9	-24.3	.5	-95.2	-47.11	-25	-22.11	V
10.71938	34.25	Pk	38	-24.1	.6	-95.2	-46.45	-25	-21.45	H

10.3.12. 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 #:	13911916
Date:	09/10/2021
Test Engineer:	39006
Configuration:	EUT only
Mode	LTE Band 66 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1720MHz									
3.419531	37.84	Pk	32.6	-33	-95.2	-57.76	-13	-44.76	V
3.449063	37.23	Pk	32.7	-33	-95.2	-58.27	-13	-45.27	H
5.146406	37.14	Pk	34.2	-29.9	-95.2	-53.76	-13	-40.76	V
5.164219	35.53	Pk	34.2	-29.5	-95.2	-54.97	-13	-41.97	H
6.855938	33.25	Pk	35.7	-26.7	-95.2	-52.95	-13	-39.95	H
6.867656	34.17	Pk	35.8	-26.6	-95.2	-51.83	-13	-38.83	V
Mid Channel, 1745MHz									
3.479063	37.02	Pk	32.9	-32.9	-95.2	-58.18	-13	-45.18	V
3.490781	38.78	Pk	32.9	-32.9	-95.2	-56.42	-13	-43.42	H
5.20875	34.12	Pk	34.2	-29.2	-95.2	-56.08	-13	-43.08	V
5.235469	35.69	Pk	34.2	-28.9	-95.2	-54.21	-13	-41.21	H
6.974531	34.19	Pk	35.8	-26.3	-95.2	-51.51	-13	-38.51	V
6.986719	33.23	Pk	35.7	-26.3	-95.2	-52.57	-13	-39.57	H
High Channel, 1770MHz									
3.520781	38.88	Pk	33.1	-32.8	-95.2	-56.02	-13	-43.02	V
3.532969	37.92	Pk	33.1	-32.8	-95.2	-56.98	-13	-43.98	H
5.289844	35.16	Pk	34.3	-29.3	-95.2	-55.04	-13	-42.04	V
5.308125	35.37	Pk	34.4	-29.6	-95.2	-55.03	-13	-42.03	H
7.083281	32.78	Pk	35.7	-26.6	-95.2	-53.32	-13	-40.32	H
7.083281	32.04	Pk	35.7	-26.6	-95.2	-54.06	-13	-41.06	V

BPSK 5G NR n66 (40.0MHZ BANDWIDTH)

Project #:	13911916
Date:	09/28/2021
Test Engineer:	26277
Configuration:	EUT only
Mode	5G NR n66 BPSK 40MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 1730MHz									
3.45188	40.62	Pk	32.7	-33	-95.2	-54.88	-13	-41.88	V
3.45891	39.83	Pk	32.8	-33	-95.2	-55.57	-13	-42.57	H
5.18625	37.54	Pk	34.2	-29.2	-95.2	-52.66	-13	-39.66	V
5.19938	37.55	Pk	34.2	-29.2	-95.2	-52.65	-13	-39.65	H
6.90797	36.83	Pk	35.8	-26.4	-95.2	-48.97	-13	-35.97	V
6.93797	35.28	Pk	35.8	-26	-95.2	-50.12	-13	-37.12	H
Mid Channel, 1745MHz									
3.48375	40.94	Pk	32.9	-32.9	-95.2	-54.26	-13	-41.26	V
3.48609	40.88	Pk	32.9	-32.9	-95.2	-54.32	-13	-41.32	H
5.23313	38.42	Pk	34.2	-28.8	-95.2	-51.38	-13	-38.38	V
5.24109	37.6	Pk	34.2	-28.8	-95.2	-52.20	-13	-39.20	H
6.95109	35.1	Pk	35.7	-26.2	-95.2	-50.60	-13	-37.60	V
6.96703	35.91	Pk	35.7	-26.3	-95.2	-49.89	-13	-36.89	H
High Channel, 1760MHz									
3.49125	40.41	Pk	32.9	-32.9	-95.2	-54.79	-13	-41.79	V
3.51891	40.29	Pk	33.1	-32.8	-95.2	-54.61	-13	-41.61	H
5.25328	38.51	Pk	34.1	-28.8	-95.2	-51.39	-13	-38.39	V
5.28094	36.5	Pk	34.3	-29.3	-95.2	-53.70	-13	-40.70	H
7.00406	37.14	Pk	35.7	-26.4	-95.2	-48.76	-13	-35.76	V
7.03125	36.39	Pk	35.6	-26.8	-95.2	-50.01	-13	-37.01	H

10.3.13. 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 #:	13911916
Date:	09/7/2021
Test Engineer:	19226
Configuration:	EUT only
Mode	LTE Band 71 QPSK 20MHz
Chamber #:	Chamber S

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 673MHz										
1.36182	41.68	Pk	29.1	-34.9	1	-95.2	-58.32	-13	-45.32	V
1.36818	43.28	Pk	29	-34.9	1	-95.2	-56.82	-13	-43.82	H
2.0668	41.72	Pk	31.3	-34.8	.5	-95.2	-56.48	-13	-43.48	V
2.06827	43.2	Pk	31.3	-34.8	.5	-95.2	-55.00	-13	-42.00	H
2.70969	41.51	Pk	32.5	-34.6	.5	-95.2	-55.29	-13	-42.29	H
2.718	42.52	Pk	32.5	-34.6	.5	-95.2	-54.28	-13	-41.28	V
Mid Channel, 680.5MHz										
1.36524	42.1	Pk	29.1	-34.9	1	-95.2	-57.90	-13	-44.90	V
1.37209	41.35	Pk	28.9	-34.8	1	-95.2	-58.75	-13	-45.75	H
2.03258	41.33	Pk	31.3	-34.8	.6	-95.2	-56.77	-13	-43.77	V
2.0492	41.42	Pk	31.4	-34.8	.6	-95.2	-56.58	-13	-43.58	H
2.71262	43.14	Pk	32.5	-34.6	.5	-95.2	-53.66	-13	-40.66	V
2.72631	41.63	Pk	32.4	-34.6	.5	-95.2	-55.27	-13	-42.27	H
High Channel, 688MHz										
1.37453	41.99	Pk	28.8	-34.8	1	-95.2	-58.21	-13	-45.21	V
1.37844	42.72	Pk	28.8	-34.9	1	-95.2	-57.58	-13	-44.58	H
2.05653	42.08	Pk	31.4	-34.8	.5	-95.2	-56.02	-13	-43.02	V
2.06289	41.51	Pk	31.4	-34.8	.5	-95.2	-56.59	-13	-43.59	H
2.75076	42.27	Pk	32.5	-34.5	.6	-95.2	-54.33	-13	-41.33	V
2.76102	42.34	Pk	32.4	-34.5	.5	-95.2	-54.46	-13	-41.46	H

BPSK 5G NR 71 (20.0MHZ BANDWIDTH)

Project #:	13911916
Date:	09/24/2022
Test Engineer:	26277
Configuration:	EUT only
Mode	5G NR n71 BPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 673MHz										
1.34618	41.58	Pk	29.1	-34.8	1.1	-95.2	-58.22	-13	-45.22	V
1.35547	41.77	Pk	29.1	-34.8	1	-95.2	-58.13	-13	-45.13	H
2.014	41.89	Pk	31.3	-34.8	.5	-95.2	-56.31	-13	-43.31	V
2.02182	42.46	Pk	31.3	-34.8	.5	-95.2	-55.74	-13	-42.74	H
2.68084	41.8	Pk	32.4	-34.6	.6	-95.2	-55.00	-13	-42.00	V
2.68622	41.44	Pk	32.4	-34.6	.6	-95.2	-55.36	-13	-42.36	H
Mid Channel, 680.5MHz										
1.36133	42.04	Pk	29.1	-34.9	1	-95.2	-57.96	-13	-44.96	V
1.36378	42.55	Pk	29.1	-34.9	1	-95.2	-57.45	-13	-44.45	H
2.04333	42.14	Pk	31.4	-34.8	.6	-95.2	-55.86	-13	-42.86	V
2.04773	42.53	Pk	31.4	-34.8	.6	-95.2	-55.47	-13	-42.47	H
2.72387	42.68	Pk	32.4	-34.6	.5	-95.2	-54.22	-13	-41.22	H
2.72876	42.14	Pk	32.4	-34.6	.5	-95.2	-54.76	-13	-41.76	V
High Channel, 688MHz										
1.37453	41.99	Pk	28.8	-34.8	1	-95.2	-58.21	-13	-45.21	V
1.37844	42.72	Pk	28.8	-34.9	1	-95.2	-57.58	-13	-44.58	H
2.05653	42.08	Pk	31.4	-34.8	.5	-95.2	-56.02	-13	-43.02	V
2.06289	41.51	Pk	31.4	-34.8	.5	-95.2	-56.59	-13	-43.59	H
2.75076	42.27	Pk	32.5	-34.5	.6	-95.2	-54.33	-13	-41.33	V
2.76102	42.34	Pk	32.4	-34.5	.5	-95.2	-54.46	-13	-41.46	H

10.4. FIELD STRENGTH OF SPURIOUS RADIATION, Ant 4

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

All tests below 1GHz were done with a Resolution Bandwidth of 100kHz, and a Video Bandwidth of 300kHz.

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

RESULTS

10.4.1. 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 #:	13911916
Date:	09/16/2021
Test Engineer:	31300
Configuration:	EUT only
Mode	LTE Band 48 QPSK 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	T1792 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 3560MHz										
7.12053	26.89	RMS	35.6	-26.9	.5	-95.2	-59.11	-40	-19.11	H
7.12053	26.55	RMS	35.6	-26.9	.5	-95.2	-59.45	-40	-19.45	V
10.68056	24.88	RMS	37.9	-24.3	.6	-95.2	-56.12	-40	-16.12	V
10.68122	25.42	RMS	37.9	-24.3	.6	-95.2	-55.58	-40	-15.58	H
14.24059	22.82	RMS	38.9	-20.2	.8	-95.2	-52.88	-40	-12.88	H
14.24059	22.72	RMS	38.9	-20.2	.8	-95.2	-52.98	-40	-12.98	V
Mid Channel, 3625MHz										
7.30207	27.2	RMS	35.7	-26.4	.6	-95.2	-58.1	-40	-18.1	V
7.34437	27.14	RMS	35.7	-26.7	.6	-95.2	-58.46	-40	-18.46	H
10.76626	25.96	RMS	38	-23.9	.6	-95.2	-54.54	-40	-14.54	H
10.77639	25.39	RMS	38	-23.7	.6	-95.2	-54.91	-40	-14.91	V
13.84138	23.64	RMS	38.5	-20.2	.8	-95.2	-52.46	-40	-12.46	H
13.84358	23.2	RMS	38.5	-20.2	.8	-95.2	-52.90	-40	-12.90	V
High Channel, 3690MHz										
7.37918	26.96	RMS	35.7	-26.8	.7	-95.2	-58.64	-40	-18.64	H
7.38006	27.25	RMS	35.7	-26.8	.7	-95.2	-58.35	-40	-18.35	V
11.07073	24.01	RMS	37.9	-23.5	.6	-95.2	-56.19	-40	-16.19	H
11.07073	23.7	RMS	37.9	-23.5	.6	-95.2	-56.50	-40	-16.50	V
14.76053	23.33	RMS	39.7	-20.1	.8	-95.2	-51.47	-40	-11.47	H
14.76053	22.52	RMS	39.7	-20.1	.8	-95.2	-52.28	-40	-12.28	V

10.4.2. 5G NR n77 (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 #:	13911916
Date:	09/28/2021
Test Engineer:	30606
Configuration:	EUT only
Mode	n77 BPSK 100MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Mid Channel, 3500MHz									
7.005	32.4	Pk	35.5	-19.6	-95.2	-46.9	-13	-33.9	V
7.0055	31.65	Pk	35.5	-19.6	-95.2	-47.65	-13	-34.65	H
9.8555	34.51	Pk	37	-17.2	-95.2	-40.89	-13	-27.89	V
10.495	32.57	Pk	37.6	-16.8	-95.2	-41.83	-13	-28.83	H
13.9885	31.27	Pk	38.8	-15.7	-95.2	-40.83	-13	-27.83	V
14.016	31.65	Pk	38.8	-15.9	-95.2	-40.65	-13	-27.65	H

10.4.3. 5G NR n77 (3700-3980MHz)

LIMITS

FCC: §27.53

(1) 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 #:	13911916
Date:	09/29/2021
Test Engineer:	30606
Configuration:	EUT only
Mode	n77 BPSK 100MHz
Chamber #:	Chamber A

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T348 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	Harmonics limit	Margin (dB)	Polarity
Low Channel, 3750MHz									
7.495	31.73	Pk	35.6	-18.8	-95.2	-46.67	-13	-33.67	H
7.505	30.95	Pk	35.6	-18.9	-95.2	-47.55	-13	-34.55	V
11.2635	31.06	Pk	37.9	-15.9	-95.2	-42.14	-13	-29.14	V
11.276	30.22	Pk	38	-15.8	-95.2	-42.78	-13	-29.78	H
15.0225	31.59	Pk	39.9	-15.1	-95.2	-38.81	-13	-25.81	V
15.031	31.93	Pk	39.9	-15.1	-95.2	-38.47	-13	-25.47	H
Mid Channel, 3840MHz									
7.5755	32.61	Pk	35.6	-20	-95.2	-46.99	-13	-33.99	V
7.6825	31.72	Pk	35.8	-18.9	-95.2	-46.58	-13	-33.58	H
11.5055	30.44	Pk	38.2	-16.3	-95.2	-42.86	-13	-29.86	V
11.52	30.95	Pk	38.2	-16.5	-95.2	-42.55	-13	-29.55	H
15.344	31.23	Pk	40.6	-15.4	-95.2	-38.77	-13	-25.77	H
15.37	32.38	Pk	40.6	-15.4	-95.2	-37.62	-13	-24.62	V
High Channel, 3930MHz									
7.861	32.71	Pk	35.8	-19.6	-95.2	-46.29	-13	-33.29	V
7.8685	31.92	Pk	35.8	-19.5	-95.2	-46.98	-13	-33.98	H
11.7795	29.96	Pk	38.4	-15.7	-95.2	-42.54	-13	-29.54	H
11.7925	30.34	Pk	38.5	-15.9	-95.2	-42.26	-13	-29.26	V
15.722	31.45	Pk	40.8	-14.1	-95.2	-37.05	-13	-24.05	V
15.7325	31.14	Pk	40.9	-13.8	-95.2	-36.96	-13	-23.96	H

11. SETUP PHOTOS

Please refer to 13900916-EP1V1 for setup photos

END OF REPORT